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Job Special Provisions (Bridge)

B. CONTRACTOR PROVIDED QA/QC

Forthcoming from MoDOT

C. PARTIAL PAYMENT FOR PLATE STEEL

1.0 Delete Sec 109.7.2.2.4.

D. STEEL PRICE ADJUSTMENT

Forthcoming from MoDOT

E. SELF-CONSOLIDATING CONCRETE FOR DRILLED SHAFTS (June 2009)

Insert the following:

701.3.1.1 Self-consolidating Concrete. In lieu of using Class B-2 concrete, the contractor may use Self-consolidating Concrete (SCC) to construct the drilled shafts. Self-consolidating Concrete is a specially designed concrete that enables the concrete to flow under the influence of its own weight and does not require mechanical vibration for consolidation. All material, proportioning, mixing and transporting of concrete shall be in accordance with Sec 501, except as specified herein.

701.3.1.2 Aggregate. Fine and coarse aggregate shall be in accordance with Sec 1005, except that the requirements for gradation will not apply.

701.3.1.2.1 Gradation. The contractor shall submit the target gradation and allowable gradation range of each fraction of each aggregate source used in the mix design. During production, the contractor shall be within the allowable gradation range for each aggregate that was submitted.

701.3.1.2.2 Maximum Size. For SCC mixes, 100 percent of each fraction shall pass the $\frac{3}{4}$ -inch sieve.

701.3.1.3 Admixture. All chemical admixtures shall be in accordance with Sec 1054, except as noted herein:

701.3.1.3.1 High Range Water Reducer. The polycarboxylate based high range water reducer shall be in accordance with AASHTO M 194, Type F or G. The high range water reducing admixture shall be added only after the concrete has reached the job site to reduce the potential for flash setting.

701.3.1.3.2 Viscosity Modifier. The viscosity-modifying admixture shall be evaluated according to the test methods and mix design proportions referenced in AASHTO M 194.

701.3.1.3.3 Combination. The self-consolidating admixture system shall consist of either a polycarboxylate based high range water-reducing admixture or a polycarboxylate based high range water reducer combined with a separate viscosity-modifying admixture.

701.3.1.4 Concrete Mix Design. At least 45 days prior to using SCC, the contractor shall submit a mix design for approval to Construction and Materials. The SCC mix shall be designed by absolute volume methods or an optimized mix design method such as Shilstone or other recognized optimization method.

701.3.1.4.1 Required Information. The mix design shall contain the following information:

- (a) Source, type and specific gravity of Portland cement
- (b) Source, type (class, grade, etc.) and specific gravity of supplementary materials, if used
- (c) Source, name, type and amount of admixture
- (d) Source, type (formation, etc.), ledge number if applicable, and gradation of the aggregate
- (e) Specific gravity and absorption of each fraction in accordance with AASHTO T 85 for coarse aggregate and AASHTO T 84 for fine aggregate, including raw data
- (f) Unit weight of each fraction in accordance with AASHTO T 19
- (h) The design air content and target slump flow
- (i) Batch weights of Portland cement and supplemental cementitious materials
- (j) Batch weights of coarse, intermediate and fine aggregates
- (k) Batch weight of water

701.3.1.4.2 Water Amount. The water per cementitious materials ratio shall meet the following requirements:

Water/Cementitious Materials Ratio	
Minimum	Maximum
0.32	0.45

701.3.1.4.3 Percent Fine Aggregate. The percent fine aggregate by absolute volume should range from 35 to 50 percent.

701.3.1.4.4 Minimum Cementitious Amount. The total amount of cementitious materials shall not be below 650 pounds per cubic yard.

701.3.1.4.5 Slump Flow. The slump flow test shall be performed in accordance with ASTM C 1611. The slump flow shall meet the following requirements:

Slump Flow (inches)	
Minimum	Maximum
22	30

The visual stability index rating shall be a maximum of 1.

701.3.1.4.6 Passing Ability. Passing ability of SCC shall be determined in accordance with ASTM C 1621 and shall not exceed 2 inches. The visual stability index rating shall be a maximum of 1.

701.3.1.4.7 Air Content. The minimum air content, when placed in the work, shall 5.0 percent. Test shall be performed in accordance with AASHTO T 152.

701.3.1.4.8 Compressive Strength. Concrete shall have a 28-day minimum compressive strength of 4000 psi (28 MPa). Test shall be performed in accordance with AASHTO T 22.

701.3.1.5 Additional Information. The contractor shall submit a Batching Sequence Plan outlining how the SCC mix will be batched and mixed. The Batching Sequence Plan shall be submitted to the Engineer for approval.

701.3.1.6 Trial Batch A trial batch shall be done prior to SCC being used to ensure the mix is in accordance with this special provision. The SCC mix design shall not be used until all of the specified criteria have been met. The trial batch shall be at least 3 cubic yards. The Engineer shall be present during the trial batch.. The SCC mix shall be tested for air content, slump flow, visual stability index, passing ability and compressive strength.

701.3.1.7 Production. SCC mix shall not be used until the concrete mix, the Batching Sequence Plan and the trial batch have been approved. The SCC mix shall not vary from the mix design submitted for approval. Any changes in material sources, aggregate gradations, or material content shall require a new SCC mix be resubmitted for approval. Changes to the water content and chemical admixture dosages will be allowed to handle changes in environmental conditions.

701.3.1.7.1 Forms. SCC mixes generate higher fluid pressures than conventional concrete mixes. Forms shall be mortar-tight and capable of supporting the additional pressure.

701.3.1.7.2 Reinforcement. Reinforcement and other critical components shall be tightly secured in the form to prevent these items from shifting during concrete placement.

701.3.1.8 Quality Control. The quality of freshly mixed SCC may fluctuate at the beginning of daily production, the contractor shall conduct air test, slump flow, visual stability index, and passing ability for every truck until consistent and compliant results are obtained. Subsequently, all testing shall be conducted in accordance with MoDOT specifications.

701.3.1.8.1 Slump Flow Requirement. The slump flow shall be within +/- 2 inches of the target slump flow designated by the contractor and shall not exceed 30 inches.

F. HLMR BEARING

1.0 Description. This item shall include furnishing and installing complete-in-place factory produced rotational guided expansion bearings and rotational fixed floating bearings in accordance with details shown on the plans and this special provision. The term HLMR (High-Load Multi-Rotational) bearing shall be considered interchangeable with Pot or Disc bearing.

2.0 Materials. Material requirements, tolerances, finishes and other details for these bearings are prescribed on the plans and in this special provision.

2.1 General.

2.1.1 Standard manufactured HLMR bearings meeting all contract requirements for materials, movement and loads shall be utilized. The bearing shall be capable of resisting a lateral load as shown on the plans. Masonry plates shall be designed for a maximum load of 1000 psi (6.9 MPa).

2.1.2 A center bar guide system may be used in lieu of an exterior guide bar system to meet plan requirements, provided the guide and keyway have mating surfaces of stainless steel and Teflon. For either system, provisions shall be made to accommodate the total transverse movements as shown on the plans before the guides are engaged. The fixed bearing shall also provide for the total transverse movements as shown on the plans. For both expansion and fixed bearings, the transverse movement indicated on the plans is due to thermal effects and no additional movement beyond what is specified on the plans shall be allowed. Provisions shall be made for the transverse guidance mechanism to allow equal movements, one-half of total movement, due to thermal expansion and contraction at 60°F (16°C). The guidance mechanism shall be adjusted appropriately for temperatures different than 60°F (16°C).

2.1.3 Any modifications required to meet the height of bearings shown on bridge plans will be the responsibility of the contractor. Cost of any modification required shall be borne by the contractor.

2.2 Polytetrafluoroethylene (PTFE) Requirements. PTFE sliding surfaces for expansion bearings are designed to translate or rotate by sliding of a self-lubricating PTFE surface across a smooth hard mating surface of stainless steel. The unfilled or filled PTFE sliding surfaces shall have 3/64-inch (1.0 mm) minimum thickness and 3/32-inch (2.0 mm) maximum thickness.

Maximum Coefficient of Friction (PTFE to stainless steel as furnished)	
At 75% of Capacity	0.03
At 25% of Capacity	0.05

2.2.1 The PTFE sliding surface shall be bonded under factory controlled conditions to a rigid back-up material capable of resisting any bending stresses to which the sliding surfaces may be subjected. Alternatively, PTFE material of twice the thickness specified above may be recessed for half its thickness in the back-up material.

2.2.2 The mating stainless steel surface to the PTFE shall be an accurate flat surface as required by the design and shall have a minimum Brinell hardness of 125 and a surface finish of less than 20 micro inches (0.508 μm) rms. The mating surfaces shall completely cover PTFE surface in all operating positions of the bearing. Stainless steel used as a mating surface shall be seal welded around its entire perimeter.

2.3 PTFE Resin. The virgin PTFE resin, filled or unfilled PTFE sheets, back-up materials and all other parts of the fixed or expansion bearings shall have the friction, mechanical and physical properties prescribed in this specification, or as shown on the bridge plans. PTFE resin shall be virgin material in accordance with ASTM D 4895. Specific gravity shall be 2.13 to 2.19. Melting point shall be ±623°F (±327°C).

2.4 Filler Material. Filler material when used, shall be milled glass fibers, carbon or other approved inert filler materials.

2.5 Adhesive Material. Adhesive material shall be an epoxy resin in accordance with Federal Specification MMA-A-134.

2.6 Unfilled PTFE Sheet. Finished unfilled PTFE sheet shall be made from virgin PTFE resin and in accordance with the following requirements.

Properties	Value	Test Method
Tensile Strength, psi (MPa) min.	2800 (19.3)	ASTM D 4895
Elongation, percent, min.	200	ASTM D 4895

2.7 Filled PTFE Sheet. Filled PTFE sheet shall be made from virgin PTFE resin uniformly blended with inert filler material. Finished filled PTFE sheets containing glass fiber or carbon shall be in accordance with the following requirements.

Mechanical Requirements			
Properties	15% Glass Fibers	25% Carbon	Test Method
Tensile Strength, psi (MPa) min.	2000 (13.8)	1300 (9.0)	ASTM D 4895
Elongation, percent, min.	150	75	ASTM D 4895

Physical Requirements			
Properties	15% Glass Fibers	25% Carbon	Test Method
Specific Gravity, min.	2.20	2.10	ASTM D 792
Melting Point, °F (°C)	81 ±18 (27 ±10)	621 ±18 (327 ±10)	ASTM D 4895

2.8 Surface Treatment. Where PTFE sheets are to be epoxy bonded, one side of the PTFE sheet shall be factory treated by an approved manufacturer by the sodium ammonia or sodium naphthalene process.

2.9 Stainless Steel Mating Surface. Stainless steel mating surfaces, when used, shall be 16-gage minimum thickness and in accordance with ASTM A 240 Type 304 with a surface finish of less than 20 micro inches (0.500 µm) rms. Stainless steel mating surfaces shall be polished or rolled as necessary to meet the friction requirements of this specification.

2.10 Structural Carbon Steel. Base plates, sole plates, guide bars, and other bridge bearing components shall be constructed of structural steel in accordance with ASTM A 709 Grade 36 (250) and shop coated a prime coat of the coating system as specified on the bridge plans to provide a minimum dry film thickness of 5 mils (125 µm) in accordance with [Sec 1081](#).

2.11 Elastomeric Components. The neoprene elastomer shall be 50 Durometer in accordance with [Sec 1038](#) and dimensions as shown on the bridge plans.

2.12 Guiding Arrangements. Guiding arrangements shall have Teflon to stainless steel sliding surfaces.

2.13 Fabrication.

2.13.1 Shop drawings shall be prepared in accordance with [Sec 1080](#).

2.13.2 Fabrication of all parts of the bearing shall be in strict accordance with the approved shop drawings. The clearance between guide bar and bearing of all guided bearings shall be maintained in strict compliance with the bridge plans.

2.13.3 During the welding procedure of the stainless steel plates to the top plate and guide bars the surface of the stainless steel plates shall be protected from weld splatter.

2.13.4 The bonding of the PTFE sheets shall be performed at the factory of the bearing manufacturer of the expansion bearing under controlled conditions and in accordance with the written instructions of the manufacturer of the approved adhesive system. After completion of the bonding operation, the PTFE surface shall be smooth and free from bubbles. Filled PTFE surfaces shall then be polished.

2.14 Testing and Acceptance. Each manufactured lot of bearing assemblies shall be accompanied by a manufacturer's certificate stating that the steel, neoprene elastomer and PTFE material are in accordance with this specification and shall show the actual test results for the materials used in the manufacturing of the bearings. Acceptance of bearing assemblies will be based on satisfactory manufacturer's certification, acceptable test results and inspection at the time of installation.

2.14.1 The manufacturer shall furnish facilities for the test and inspection of the completed bearings, representative samples at the plant or at an independent test facility.

2.14.2 A random sample from the production lot of bearings shall be tested. As soon as all bearings have been manufactured for a given project, notification shall be given to the engineer.

2.14.3 The test method and equipment shall be approved by the engineer and include the following requirements.

(a) The test shall be arranged so that the coefficient of friction of the first movement of the manufactured bearing can be determined.

(b) The bearing surface shall be cleaned prior to testing, upon instructions of the bearing manufacturer.

(c) The test shall be conducted at maximum working stress for the PTFE working surface with the test load applied continuously for 12 hours prior to measuring friction.

(d) The first movement static and dynamic coefficient of friction of the test bearing shall be determined at a sliding speed or less than one inch (25 mm) per minute and shall not exceed the coefficient of friction for design.

(e) The bearing specimen shall then be subjected to 100 movements of at least one inch (25 mm) of relative movement and if the test facility permits, the full design movement at a speed of less than one foot (305 mm) per minute. Following this test, the static and kinetic coefficient of friction shall be determined again and shall not exceed

the values measured in requirement (d). The bearing or specimen shall show no sign of bond failure or other defects.

(f) A proof load test shall be performed on a sample selected at random from the production lot, by applying load equal to 150 percent of the design capacity of the bearing for a period of one hour. The test bearing shall show no sign of failure or other defects while under load or subsequently upon disassembly and inspection.

2.14.4 Bearings represented by the test specimen passing the above requirements will be approved for use in the structure subject to on-site inspection for visible defects.

2.15 Packaging. The bearings shall be packaged and crated in such a manner that they will be protected from dust and moisture, and not become damaged while being handled, transported or stored. The contractor shall replace any bearing damaged during handling, transporting or storing at no expense to the Commission.

3.0 Construction Requirements. The bridge bearings are not designed to accept bending stresses and shall be fully supported over the entire area of the bottom and upper surfaces at all times when under load.

3.1 The bearing base plate shall be set to line and grade. The contractor shall locate the bearings at the proper elevation and orient them in the proper direction. The engineer will approve the location and orientation of the bearing. The upper part of the bearing shall be located relative to the base of the bearing according to the engineer's recommendations for the temperature at the time of erection.

3.2 If for any reason the bearings are disassembled, extreme care shall be used to insure that the rubber pads and piston rings are properly seated in the recess with the piston ring gaps 180 degrees apart.

3.3 It is necessary to exercise care in aligning both the base and upper part of the guided expansion bearing parallel to the axis of the structure, otherwise a wedging action will occur and unsought horizontal forces will result.

3.4 The contractor shall align all bearings on any one pier exactly to the direction as shown on the plans.

3.5 The contractor shall avoid scratching, gouging or otherwise marking the PTFE or mating stainless steel surfaces of the bearings during handling or erection. The contractor shall use whatever means are necessary to protect the bearings from dirt, grout or other foreign materials during the construction of other elements of the structure.

4.0 Method of Measurement. Measurement will be made per each. The HLMR bearing, complete in place, shall include the steel sole plate, masonry plate, HLMR bearing pad, anchor bolts, heavy hexagon nuts and washers, coating and any incidental material needed to complete the work.

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 for "POT Bearing".

G. MODULAR EXPANSION JOINT SYSTEM

1.0 Description. This work shall consist of furnishing materials, services, labor, tools, equipment, and incidentals necessary to design, fabricate, inspect, test and install the expansion joint system as specified.

1.1 General. The modular expansion joint system shall consist of multiple strip seal joints that shall allow movements as shown on the plans. The configuration of the expansion joint system shall consist of neoprene strip seals mechanically held in place by steel edge and separation beams. Each separation beam shall be supported by independent multiple support bars, which are welded to the separation beams. The multiple support bars shall be suspended over the joint opening by sliding elastomeric bearings. Scissor type modular expansion joint systems will not be permitted. An equidistant control system shall be incorporated that develops its maximum compressive force when the joint is at its maximum opening. The expansion joint system shall not incorporate any bolted connections between the separation beams and support bars. The final completed expansion joint system shall be continuous across the full width of the roadway and continue into the traffic barriers as shown on the plans.

1.2 Qualified Manufacturers. The qualified manufacturer shall have a minimum of 5 years experience in designing and fabricating modular expansion joint systems and be certified as a minimum under the AISC certification program for "Simple Bridges". The following manufacturers are known suppliers of modular expansion joint systems:

D.S. Brown
300 East Cherry Street
North Baltimore, OH 45872
Telephone (419) 257-3561
www.dsbrown.com

D.S. TechStar, Inc.
1219 West Main Cross Street
Findlay, OH 45840
Telephone: (419) 424 0888
www.techstar-inc.com

Watson-Bowman & Acme Corp
95 Pineview Drive
Amherst, NY 14120
Phone (716) 691-7566
www.wbacorp.com

2.0 Design Requirements.

2.1 Truck and Impact Loading. The modular expansion joint system shall be designed in accordance with the latest edition of AASHTO LRFD Bridge Design Specifications except that the LRFD truck loading shall be HS-20 Modified (HS-25) and impact being 100 percent. The modular expansion joint system shall be designed for the maximum number of lanes between the barrier curbs and the lane width shall be considered as 10 feet (3.05 m). The modular expansion joint system shall be designed such that the joint system is designed to support a wheel load being 12 inches (300 mm) from the roadway face of the curb. The modular expansion joint system shall be designed for the staged traffic loading as shown on plans.

2.2 Field Splices. The design and fabrication of the modular expansion joint system shall be one continuous unit without field splices except as required by stage construction requirements as shown on the plans. If the site and/or stage construction requirements require the need for field splices, the splices shall be located in areas outside the main traffic lanes or

as shown on the plans and consist of a welded separation beam splice in which the weld is a full penetration weld. The contractor shall complete the field splices in accordance with the details and procedures included in the shop drawings.

2.3 Movement. The modular expansion joint system shall be designed to provide the minimum total movement as noted on the plans and to accommodate all expected longitudinal movements (i.e. thermal, creep, shrinkage, elastic shortening, etc.) as well as vertical and horizontal rotations. This design shall incorporate strip seal glands with a maximum movement range of 3.15 inches (80 mm) per seal.

2.4 Fatigue. The modular expansion joint system shall be tested and designed following the guidelines provided in the National Cooperative Highway Research Program (NCHRP), Report 402 "Fatigue Design of Modular Bridge Expansion Joints" as well as the provisions included in Chapter 14, "Joints and Bearings", of the latest edition of AASHTO LRFD Bridge Design Specifications.

2.5 Water Tightness. After the modular expansion joint system has been completely installed, the joint shall be flooded for a minimum of one hour to a minimum depth of 3 inches (75 mm). Testing shall be done in stages with traffic flow maintained in accordance with the traffic control plans. If the engineer observes leakage, the expansion joint system shall be repaired at the contractor's expense. The repair procedure shall be as recommended by the manufacturer and approved by the engineer.

2.6 Corrosion Protection. All steel surfaces, except as noted, shall be hot dip galvanized in accordance with AASHTO M 111 (ASTM A 123).

2.7 Anchorage of Expansion System. The modular expansion joint system anchorage shall be designed by the manufacturer and included in the design computations and shown in the shop drawings.

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

3.1 Structural Steel. Structural Steel shall be in accordance with AASHTO M 270, Grade 50 (345) (ASTM A 709, Grade 50 (345)). All shop-welded connections that splice the horizontal separation beams and edge beams shall be full penetration welds. All separation beams to support bar welded connections shall be full penetration welds in accordance with NCHRP Report 402 requirements. Aluminum components will not be permitted. All fabrication of structural steel shall be in accordance with [Sec 712](#) and [1080](#).

3.2 Stainless Steel. The stainless steel shall be in accordance with [Sec 1038.4.2](#).

3.3 Sliding Bearings. The sliding bearings shall be fabricated as steel reinforced elastomeric pads with polytetrafluorethylene (PTFE) in accordance with [Sec 1038](#) and as required by the manufacturer. The bearings shall be designed so that they are removable and replaceable.

3.4 Strip Seals and Lubricant Adhesive. Strip seals and lubricant adhesive shall be in accordance with [Sec 717](#) and [1073](#). The strip seals shall not protrude above the top of the joint.

3.5 Submittals.

3.5.1 Design Computations and Shop Drawings. The contractor shall submit, for the engineer's review, the design computations and shop drawings, all shall be signed, sealed and stamped by a registered professional engineer in the State of Missouri in accordance with Authentication of Certain Documents in [Sec 107](#). The design computations shall include fatigue design and a strength design for all structural elements and connections. Shop drawings shall be prepared for the modular expansion joint system in accordance with [Sec 1080](#). The shop drawings shall also include the following:

- (a) Plans, elevation, and section of the joint system for each movement rating and roadway width showing dimensions and tolerances.
- (b) All ASTM, AASHTO or other material designations.
- (c) Method of installation, including but not limited to sequence, setting relative to temperature, anchorage during setting and installation at curbs.
- (d) Corrosion protection system.
- (e) Details of temporary support for shipping and handling.

3.5.2 Maintenance Manual. The manufacturer shall submit to the engineer a written maintenance manual and part replacement plan at the time of the shop drawing submission. Included in the submission shall be list of parts to be inspected, acceptable wear tolerances and the method of part replacement. The manufacturer shall conduct a pre-installation meeting to train MoDOT's construction inspectors and maintenance personnel on the installation and maintenance of the modular expansion joint system.

3.5.3 Certificates of Compliance. The manufacturer shall provide certification of the manufacturer's experience, including a list of projects, and certificate of compliance with the AISC certification program, in accordance with Section 1.2 of this job special provision, to be submitted to the engineer.

4.0 Construction Requirements. The expansion joint system shall be stored at the job site in accordance with the manufacturer's written recommendations. Damage to the joint system during shipping or handling will be cause for rejection of the joint system. Any damage to the corrosion protection system shall be repaired to the satisfaction of the engineer at the contractor's expense. The support boxes shall rest on cast-in-place concrete or grout pads installed into a preformed block out. Concrete shall be forced under and around support boxes, anchorage systems and supporting hardware. Proper consolidation shall be achieved by localized internal vibration. Installation of the modular expansion joint system shall be as recommended by the manufacturer. The contractor shall obtain the services of a qualified technical representative, approved by the manufacturer of the expansion joint system and acceptable to the engineer, to assist during the installation. The installation shall not occur without the qualified technical representative being present. The qualified technical representative shall have 3 years of experience working on installation of modular expansion joint systems on bridges. This experience shall also include modular joints that had field splices for staged construction.

5.0 Method of Measurement. Final measurement will not be made except for authorized changes during construction, or where appreciable errors are found in the contract quantity. Where required, the modular expansion joint system will be measured to the nearest linear foot (0.5 m), based on measurement from the roadway face of curb to roadway face of curb along the centerline of the joint. Portions of the joint that extend past the roadway face of curbs will not be measured for payment. The revision or correction will be computed and added to or deducted from the contract quantity.

6.0 Basis of Payment. Modular expansion joint system, including all material, coating, equipment, labor, fabrication, installation, technical assistance and any other incidental work necessary to complete this work, will be paid for at the contract unit price for "Modular Expansion Joint System".

H. DRAINAGE SYSTEM (ON STRUCTURE)

1.0 Description.

1.1 The work under this item consists of furnishing, fabricating and installing the drainage items necessary to complete the entire drainage system as shown on the design plans.

1.2 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.

2.0 Materials.

2.1 Scupper outlets and grates shall be equivalent to Neenah R-3921-V1. Castings shall be ductile iron in accordance with ASTM A 536 Grade 60-40-18. A fabricated outlet and grate of similar size and in accordance with the requirements for ASTM A 709 Grade 36 (250) steel may be submitted for approval. Castings shall be coated a prime coat of the coating system as specified on the bridge plans to provide a minimum dry film thickness of 5 mils (127 μ m) or may be galvanized in accordance with ASTM A 385. Steel outlets and grates shall be coated as described above or galvanized in accordance with ASTM A 123.

2.2 Reinforced fiberglass pipe, collection basins and fittings shall be a Reinforced Thermosetting Resin Pipe (RTRP) system in accordance with the requirements of ASTM D 2996. The RTRP system shall have a minimum short time rupture strength hoop tensile stress of 30,000 psi (207 MPa). The RTRP system shall be pigmented resin throughout the wall. The color of the RTRP system shall be concrete gray or as specified on the bridge plans. The RTRP system shall not be coated with paint, gel-coat or any other exterior coating.

2.3 The contractor shall furnish a manufacturer's certification to the engineer for each lot furnished, certifying that the materials supplied is 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 it represents.

3.0 Construction Requirements.

3.1 All connections shown on the plans to facilitate future removal for maintenance cleanout or flushing shall be made with a threaded gasket coupler system, bolted gasket flange system or a female to male threaded PVC plug. Adhesive bonded joints will be permitted for runs of pipe between such connections.

3.2 Runs of pipe shall be supported at a spacing of not greater than the lesser of those as recommended by the manufacturer of the pipe or as shown on the bridge plans. Supports that have point contact or narrow supporting areas shall be avoided. Standard sling, clamp, clevis hangers and shoe supports designed for use with steel pipe may be used. Minimum hanger thickness shall be 3/16 inch (5 mm) with the minimum strap width for the pipe sizes shown in the table below. Straps shall have 120 degree minimum contact with the pipe. Pipe supported on a surface with less than 120 degrees of contact shall have a split fiberglass pipe protective sleeve bonded in place with adhesive. All new steel, hangers and miscellaneous hardware for drainage system shall be ASTM A 709 Grade 36 (250) steel except as noted on the bridge plans. All new steel, hangers and miscellaneous hardware for drainage system shall be galvanized in accordance with ASTM A 153 except as noted on the bridge plans.

Pipe Sizes inches (mm)	Minimum Strap Width inches (mm)
3 (76.2)	1.25 (32)
4 (101.6)	1.25 (32)
6 (152.4)	1.50 (38)
8 (203.2)	1.75 (45)
10 (254.0)	1.75 (45)
12 (304.8)	2.00 (51)
14 (355.6)	2.00 (51)

3.3 The RTRP system shall be handled and installed in accordance with guidelines and procedures as recommended by the manufacturer.

4.0 Method of Measurement. No measurement will be made.

5.0 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 lump sum price for "Drainage System (On Structure)".

I. ELECTRIC RACEWAY ROUGH-IN AT LIGHT BLISTERS

1.0 Description. This work shall include the installation of all electrical items necessary to provide a light blister rough-in for the general roadway lighting systems. This work shall include, but not be limited to; PVC coated rigid aluminum raceways and other work as shown on the plans, or as required and as specified herein. All work shall be performed and fully comply with the specifications and details of; MODOT and the N.E.C, or other regulatory agencies as applicable.

All light blister rough-in raceway shall be PVC coated rigid aluminum, sized as per plans or the National Electrical Code. All materials shall be UL listed for the application used.

Job Special Provisions (Bridge)

Provide threaded rough-in conduits with watertight threaded caps, the threaded surface shall be coated when fitting up so that there will not be unprotected surfaces exposed.

Assembly of PVC coated rigid aluminum rough-in shall be as required and recommended by the manufacturer. Special tools or equipment required for the assembly shall be obtained from the manufacturer. At the completion of this project, all special tools or equipment purchased shall be turned over to MODOT.

All surface damage, scratches, abrasions etc. to the PVC coated rigid aluminum rough-in conduit and fittings etc. shall be repaired as recommended by, and furnished by the manufacturer.

Rough-in conduit minimum size shall be 1-1/4".

2.0 Measurement and Payment. No separate measurement or payment will be made for Electric raceway rough-in at light blisters. Cost shall be incidental to other items.

J. METRO EAST SANITARY DISTRICT (MESD) REQUIREMENTS

1.0 Indemnification. The contractor shall indemnify, defend and hold harmless the Metro East Sanitary District (MESD), its Officers, Boards, Commissions and Commissioners, agents and employees, from and against any and all claims, suits, judgments, costs, attorney fees, damages or other relief arising out of or resulting from, existing out of or through, or alleged to arise out of work performed on MESD properties which fall within the project limits. The contractor, shall not be required to indemnify MESD for negligence or willful misconduct on the part of the Officials, Boards, Commissions, agents or employees of the MESD and nothing herein shall affect the duty of said contractors in the State of Illinois to defend the MESD.

The contractor is also required to add MESD as an additional insured to the contractor's General Liability Insurance policy for this project.

Compliance with this special provision shall be included as part of the contract, and no additional compensation will be permitted.

K. TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS REQUIREMENTS

To Report an Emergency on property of the Terminal Railroad Association (hereinafter "Railroad"), call: (618) 451-8478.

1.0 Authority of Railroad Engineer and Commission's Representative.

1.1 Railroad's authorized representative, 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 Railroad tracks. The Railroad Engineer for this Project is identified below, with current contact information:

Mr. C. R. McQueen, Jr.
Director Engineering Services & Administration
Terminal Railroad Association of St. Louis
1000 St. Louis Union Station, Suite 200

Job Special Provisions (Bridge)

St. Louis, Missouri 63103
Office: (314)-539-4724
Fax: (314) 621-3673

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

2.0 Contractor's Indemnity Obligations to Railroad.

2.1 The term "Contractor" as used in these special provisions (the "Railroad Requirements") means the Commission's contractor for the construction of the proposed grade separation structure (the "Project"), and includes any and all subcontractors. The Contractor shall indemnify, defend and hold Railroad harmless from and against any and all loss, damage, claims, demands, causes of action, costs and expenses of any nature arising out of injury to or death of any person, or out of damage to or destruction of any property, including, without limitation, damage to fiber optic, communication and other cable lines and systems, where this injury, death, damage or destruction results from any cause arising out of work performed by the Contractor pursuant to the agreement between Railroad and Commission for this Project, and shall also release 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 Railroad's right of way by the Contractor. The Contractor's liability will not be affected if any damage or claim was occasioned by or contributed to by the negligence of Railroad, Railroad's agents, servants, employees or otherwise, except to the extent that any damage or claim has been proximately caused by the intentional misconduct or sole or gross negligence of Railroad, or any of Railroad's officers, employees, agents, subcontractors, successors or assigns. The Contractor's indemnity shall 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 Railroad harmless Railroad from any claims, expenses, costs, actions, demands, losses, fines, penalties, and fees, arising from, related to or connected, in whole or in part, with the removal of the Contractor's agents, servants, employees or invitees from Railroad's property for safety reasons.

2.3 The Contractor shall also indemnify, defend and hold Railroad harmless with reference to all fines or penalties imposed or assessed by federal, state and local governmental agencies against Railroad as the proximate result of contractor's work under this contract, including these Railroad Requirements.

3.0 Notice of Starting Work. The Contractor shall not commence any work on Railroad's right of way until the Contractor has complied with the following conditions:

3.1 At least thirty (30) days before beginning any work upon Railroad's right of way, the Contractor shall furnish to Railroad and Commission a schedule for all work required to complete the portion of the Project within Railroad's right of way, and shall arrange for a job site meeting between the Contractor, the Engineer, and Railroad Engineer. Railroad may withhold providing any flagmen until the Contractor has conducted the job site meeting and scheduled the Contractor's work.

3.2 At least thirty (30) days before the Contractor proposes to begin work on Railroad's right of way, the Contractor shall give to Railroad Engineer a written notice of intent to begin work on Railroad's right of way.

3.3 The Contractor shall obtain written or electronic authorization from Railroad to begin work on Railroad's right of way, including an outline of specific conditions with which the Contractor shall comply. Railroad shall not unreasonably withhold this authorization.

3.4 The Contractor shall obtain the insurance coverage required in Section 14.0 of these Railroad Requirements. Contractor shall submit written evidence of such coverage to Railroad prior to commencing any work.

3.5 Safety Orientation. The Contractor shall ensure that Contractor's superintendent has obtained certification of completion of the BNSF Railway safety orientation course available on the Internet at www.contractororientation.com (Certification currently costs \$11). The Contractor shall certify that each of Contractor's employees, subcontractors or invitees who will be working Railroad's right of way have received the same safety orientation through sessions conducted by the Contractor or through the Internet before any work shall be done on the Railroad's right of way.

3.6 Railroad's written authorization to proceed with the work, with a copy to the Engineer, will include the names, addresses and telephone numbers of 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 Interference with Railroad Operations.

4.1 The Contractor shall arrange and conduct all work so that there shall be no interference with Railroad's operations, including train, signal, telephone and telegraphic services; or damage to Railroad's property; poles, wires and other facilities of tenants, licensees, easement grantees and invitees on Railroad's right of way. Whenever work may affect the operations or safety of trains, the Contractor shall first submit the method of doing this work to Railroad Engineer for approval, but such approval shall not relieve the Contractor from liability. The Contractor shall defer any of its work that requires flagging service or inspection service until the flagging service required by Railroad is available at the job site.

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

4.3 If conditions arising from, or in connection with the work require immediate and unusual provisions to protect Railroad's operations and property, the Contractor shall make such provisions. If in the judgment of Railroad Engineer, or the Engineer if Railroad Engineer is absent, such provision is insufficient, 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 Railroad or Commission.

4.4 The Contractor shall be responsible for any damage to 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 Railroad's train delays that are caused exclusively by the Contractor. 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 Railroad's records. Railroad shall provide these records, upon request, to Commission or Commission's contractor.

5.0 Track Clearances.

5.1 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 Railroad Engineer at least seventy-two (72) hours in advance of the work.
- (b) Receive assurance from Railroad Engineer that arrangements have been made for flagging service as may be necessary.
- (c) Receive permission from Railroad Engineer to proceed with the work.
- (d) Ascertain that the Engineer has received copies of notice to Railroad and of Railroad's response.

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

6.0 Construction Procedures.

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

- (a) Subject to Railroad's inspection and review; and
- (b) In accordance with these Railroad Requirements.

6.2 Excavation. The subgrade of an operated track shall be maintained with the berm edge at least twelve feet (12') from centerline of track and not more than twenty-six inches (26") below top of the rail. The Contractor will not be required to make existing sections meet this specification if substandard, in which case the existing section will be maintained. The Contractor shall cease all work and notify 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. 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 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.

6.3 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 Railroad Engineer before work is performed, but such approval shall not relieve the Contractor from liability. Before submission of plans to 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 shoring rests solely with the Contractor. The temporary shoring along Railroad tracks shall be designed for the Cooper E80 loading. The design shall insure that the shoring is braced or substantially secured to prevent movement. The Contractor shall submit plans for the temporary shoring that shall be signed and sealed, by a Structural Engineer, licensed in the State of Illinois and then submitted for review by the Engineer.

6.4 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 Railroad Engineer for approval, the Engineer will first review such plans.

6.5 Falsework. The Contractor shall take special precaution and care to prevent any material from falling on Railroad's right of way. The Railroad Engineer shall first approve all procedures for preventing material from falling on Railroad's right of way, including need of and plans for temporary falsework, but such approval shall not relieve the Contractor from liability. Before submission of plans to Railroad Engineer for approval, the Engineer will first review such plans.

6.6 Blasting.

6.6.1 The Contractor shall obtain advance approval of Railroad Engineer and the Engineer for use of explosives on or adjacent to Railroad's property, which approval shall be in Railroad Engineer's and Engineer's sole discretion. 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 Railroad Engineer. At least seventy-two (72) hours advance notice to the person designated in Railroad's notice of authorization to proceed as mentioned in Section 3.2 of these Railroad Requirements, the contractor shall be required to arrange for the presence of Railroad Engineer and such flagging as 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

Job Special Provisions (Bridge)

trains, as well as correcting, at Contractor's expense, any track misalignment or other damage to Railroad's property resulting from the blasting as directed by Railroad Engineer. If Contractor's actions result in delay of trains, the Contractor shall bear the entire cost thereof.

6.6.2 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.

6.7 Maintenance of Railroad Facilities. The Contractor shall be required to maintain all ditches and drainage structures free of silt or other obstructions that 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 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.

6.8 Storage of Materials.

6.8.1 The Contractor shall not store or stockpile construction materials or equipment closer than twenty-five feet (25') to the centerline of the nearest railroad track or on 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 ten feet (10') from the exterior edge of the track at all times to allow for stopped train inspection.

6.9 Cleanup. Upon completion of the work, the Contractor shall remove from within the limits of 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 Railroad Engineer.

6.10 Buried Cable and Other Buried Facilities.

6.10.1 The Contractor acknowledges 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. The Contractor shall be responsible for contacting Railroad Engineer, 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 Railroad's property or right of way. The Contractor shall also use all reasonable methods when working on Railroad's property or right of way to determine if any other buried Lines, pipelines or utility facilities exist on Railroad's property or right of way.

6.10.2 Failure to mark or identify the buried Lines, pipelines or utility facilities will be sufficient cause for Railroad Engineer to stop construction at no cost to 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.

7.0 Damages. Railroad will not assume liability for any damages to the Contractor, Contractor's work, employees, servants, equipment and materials caused by railroad traffic, except to the extent that any damage or claim has been proximately caused by Railroad's intentional misconduct or sole or gross negligence. Any cost incurred by Railroad for repairing damages to Railroad's property or to property of Railroad's tenants, licensees, easement grantees and invitees caused by or resulting from the Contractor's operations shall be paid directly to Railroad by the Contractor.

8.0 Flagging Services.

8.1 When Railroad Requires Flagging. Railroad shall have sole authority to determine when flagging is necessary to protect Railroad's operations from the Contractor's activities relating to this Project. Whenever Railroad reasonably determines that flagging is needed, Railroad shall provide all necessary flagging services in accordance with these Railroad Requirements and the Agreement between Commission and Railroad. The Contractor shall be responsible for arranging flagging services with Railroad, as required by Railroad, to accomplish the highway improvement. Railroad shall not unreasonably withhold or delay providing any flagging service that is needed pursuant to these Railroad Requirements.

8.1.1 Without limitation, Railroad may require flagging services in each of the following circumstances :

- (a) any work (including the removal of existing structures or the construction of the new bridge) over any active track of Railroad.
- (b) any work on the existing structures of new bridge in close proximity with Railroads tracks.
- (c) transporting material or equipment over any active track, or any other operations involving the crossing of Railroad's tracks.
- (d) any operations involving close proximity with power lines or Railroad's signal and communication lines, underground cables, fuel or oil facilities or pipelines, which might result in fire or damage to any of such facilities, or endanger Railroad's operations, or endanger the public in the transaction of Railroad business.
- (e) any work which potentially impacts or violates operating clearances or which has a reasonable probability of accidental hazard to Railroad's traffic.
- (f) at any other times when, in the opinion and discretion of Railroad, conditions warrant the provisions of flagging services, or otherwise upon the request of Commission or anyone acting through or on behalf of Commission.

8.1.2 However, if the Contractor works upon Railroad's right of way within distances that violate instructions given by Railroad Engineer, or performs work upon Railroad's right of way that has not been scheduled with Railroad Engineer, then Railroad may reasonably require one (1) or more flagmen to be assigned full time until the Contractor has completed all its work upon Railroad's right of way relating to this Project.

8.2 Scheduling and Notification of Flagging.

8.2.1 Not less than thirty (30) days before beginning work upon Railroad's right of way pursuant to this Project, the Contractor shall give Railroad Engineer advance written notice of the Contractor's intent to begin work within Railroad's right of way in accordance with these Railroad Requirements. These notices shall include sufficient details of the proposed work to enable the Railroad Engineer to determine if the Railroad will require flagging. If the Railroad requires flagging, the Contractor shall not perform any work until the flagman or flagmen are present at the job site. Arrangements for flagging shall be confirmed not less than three (3) business days in advance of the need for flagging services. If any notices required to be given by this paragraph are in writing, the Contractor shall furnish the Engineer a copy; if notice is given verbally, the Contractor shall confirm that notice in writing with copy to the Engineer. Railroad may take up to thirty (30) days to provide flagging for this Project in response to the Contractor's first request. After flagging begins, Railroad usually assigns the flagman to work at the Project site on a continual basis until no longer needed and cannot provide flagging on a spot basis. If flagging becomes temporarily unnecessary and Railroad suspends flagging services, then Railroad may take up to thirty (30) days after the Contractor's request to resume flagging services for this Project. Due to Railroad labor agreements, Railroad may require the Contractor to give ten (10) working days notice before Railroad discontinues flagging services and ends the Contractor's responsibility for payment. The Contractor should address notification for flagging to:

Mr. C. R. McQueen, Jr.
Director Engineering Services & Administration
Terminal Railroad Association of St. Louis
1000 St. Louis Union Station, Suite 200
St. Louis, Missouri 63103
Office: (314)-539-4724
Fax: (314) 621-3673

8.2.2 The Railroad flagman assigned to the Project shall notify the Engineer upon arrival at the job site on the first day, or as soon thereafter as possible, that flagging services have begun, and on the last day that flagman performs such services for each separate period that Railroad provides flagging services. The Engineer will document such notification in the Project records.

8.2.3 If, after the Railroad assigns a flagman to the Project site, emergencies arise which require the Railroad to reassign the flagman elsewhere, then the Contractor shall delay work on Railroad's right of way until a flagman is again available. The Contractor, not Railroad, shall bear any additional costs resulting from this delay. Railroad shall resume flagging for this Project as soon as possible after the emergency has ended.

8.2.4 The Contractor shall provide a temporary structure to provide shelter from weather conditions for the person(s) providing flagging protection service on behalf of Railroad as described herein. The structure shall be provided in an area immediately accessible to

Railroad's main track and the construction site, and be equipped with telephone service, lighting and desk.

8.2.5 Upon request of Railroad, and at Contractor's expense, Contractor shall provide two-way radios for the use by Railroad's personnel engaged in the provision of flagging protection service as contemplated in this Contract.

8.2.6 Notwithstanding anything contained herein to the contrary, Railroad's providing of flagging protection services hereunder (or the performance of any other act by Railroad) shall not relieve, alter or otherwise modify Commission's or Contractor's continuing obligations to discharge their duties associated with the Project, and by providing such flagging protective services, Railroad has not assumed any liability associated with Commission's, Contractor's, their contractors' or subcontractors' actions or omissions in connection with the Project.

8.3 Payment for Flagging Services.

8.3.1 The Commission's contractor pursuant to Sec. 104 will be responsible for paying the Railroad directly for any and all costs of flagging which may be required to accomplish the construction.

8.3.2 Flagmen are generally classified as switchmen foremen.

8.3.3 The basic rate of pay for each flagman will be the Railroad's prevailing hourly rate in effect at the time the Railroad provides the flagging services. The current basic hourly rate of pay for an 8-hour day, Monday through Friday, is **\$28.01**.

8.3.4 The Railroad shall charge one and one-half times the basic rate if overtime is necessary or requested, and two and one-half times the basic rate applies if the Railroad provides flagging services on a holiday recognized by the Railroad. If the flagman is on overtime duty and the Contractor requires the flagman to work without taking a meal, then the Railroad may charge for a second meal period at the current basic hourly rate of pay for an 8-hour day, Monday through Friday (currently **\$28.01**).

8.3.5 In addition to the above basic hourly rate, the Railroad may charge for its related costs (additives) at the Railroad's normal additive rate (currently **82.24% = \$23.04** per hour) in effect at the time it provides the flagging services.

8.3.6 Headquarters of employees to be used as flagmen shall be located at 1201 McKinley Street, Venice, Illinois 62090.

8.3.7 The Contractor may furnish travel expenses, such as taxis, meals and accommodations for flagmen. Otherwise, the Railroad will charge an additional amount of **\$28.01** per hour (or at the Railroad's normal rate in effect at the time it provides the flagging services) for transporting the flagmen to/from job site via Railroad vehicle.

8.3.8 The Contractor shall reimburse the Railroad for the full 8-hour day for each day when the Railroad provides any flagging services. The Contractor shall also reimburse the Railroad for providing flagging services on any day when the Railroad assigns the flagman to work on this project, and must pay the flagman (even though the Contractor may not be working on that day), if the Railroad cannot reasonably reassign the flagman to perform other work.

8.4 Flagging Complaints Railroad and the Contractor shall resolve promptly any complaints about flagging. If the Contractor questions the need for a flagman it should telephone the Railroad Engineer, and Railroad's Manager of Public Projects. The Contractor shall confirm all telephone or oral complaints in writing within five (5) working days, with copies to the Railroad Engineer and Commission's Engineer.

9.0 Haul Across Railroads.

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

9.2 The Contractor shall not establish any crossing for transporting materials or equipment across the tracks of 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.

10.0 Work for the Contractor's Benefit. 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 Commission and Railroad, or will be covered by appropriate revisions to those documents, which shall be initiated and approved by Commission and/or Railroad. If the Contractor desires any changes in addition to the above, then the Contractor shall make separate arrangements with Railroad to accomplish those changes at the Contractor's expense.

11.0 Cooperation and Delays. The Contractor shall cooperate with Railroad in scheduling any staged construction involving work by Railroad or its tenants, licensees, easement grantees and invitees. The Contractor shall ascertain in advance, from Railroad, the lead-time required for assembling crews and materials, and include sufficient time for that in its work scheduling. The Contractor may not assert any charge or claim against Commission or Railroad resulting from any hindrance or delay the Contractor experiences because of railway traffic relating to any construction work by Railroad, or any other delay that is reasonable or necessary to protect the safety of railway traffic, or any other delay resulting from any person's compliance with these Railroad Requirements.

12.0 Trainman's Walkways. The Contractor shall maintain an unobstructed continuous space suitable for trainman's use in walking along trains, which shall extend to a line not less than twelve feet (12') from centerline of track, along the outer side of each exterior track of multiple operated track and on each side of single operated track. Before the close of each workday, the Contractor shall remove all temporary impediments to walkways and track drainage encroachments or obstructions allowed during work hours while Railway's protective service is provided. Beside any excavation near the walkway, the Contractor shall install a handrail with a minimum horizontal clearance of twelve feet (12') from centerline of track.

13.0 Not Used.

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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 Contractor shall carry the following insurance:

Commercial General Liability. Commercial General Liability Insurance having a combined single limit of not less than \$5,000,000 per occurrence and \$10,000,000 in the aggregate for all loss or liability, including attorneys' fees, arising out of bodily injury liability and property damage liability during the policy period. Said policy shall include "explosion, collapse, and underground hazard" ("XCU") coverage, shall be endorsed to name Railroad as an additional insured, and shall include a severability of interests provision and a waiver of subrogation.

Railroad Protective Liability. Railroad Protective Liability Insurance having a combined single limit of not less than \$2,000,000 each occurrence and \$6,000,000 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. The standards for the Railroad Protective Liability Insurance are as follows:

- (a) The insurer shall be rated A- or better by A.M. Best Company, Inc.
- (b) The policy shall be written using one of the following combinations of Insurance Services Office ("ISO") Railroad Protective Liability Insurance Form Numbers:
 - 1) CG 00 35 01 96 and CG 28 31 10 93
 - 2) CG 00 35 07 98 and CG 28 31 07 98.
- (c) *The named Insured shall be identified as the Terminal Railroad Association of St. Louis.*

14.2 Evidence of Insurance. The Declarations shall include the description of operations matching the project description in this Contract and shall include the appropriate Commission project and contract identification numbers. The job number and project location shall appear on the Declarations and shall include the appropriate highway designation:

*I-70, St. Clair County, IL
Construct bridge over Terminal Railroad Assoc. of St. Louis
MoDOT Job No. J6I0984C*

14.3 The name and address of the Contractor shall appear on the Declarations. The name and address of the Commission shall be identified on the Declarations as the "Involved Governmental Authority or Other Contracting Party".

14.4 Other endorsements/forms that will be accepted are:

- (a) Broad Form Nuclear Exclusion – Form IL 00 21.
- (b) thirty (30) -day Advance Notice of Non-renewal or cancellation.
- (c) Required State Cancellation Endorsement.

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(d) Quick Reference or Index Form CL/IL 240.

14.5 Endorsements/forms that will NOT be acceptable are:

- (a) Any Pollution Exclusion Endorsement except CG 28 31.
- (b) Any Punitive or Exemplary Damages Exclusion.
- (c) Known injury or Damage Exclusion form CG 00 59.
- (d) Any Common Policy Conditions form.
- (e) Any other endorsement/form not specifically authorized above.

14.6 If any part of the work is sublet, similar insurance, and evidence thereof as specified above, shall be provided by or on behalf of the subcontractor to cover the subcontractor's operations on Railroad's Property.

14.7 Prior to entry on Railroad's Property, the original Railroad Protective Liability Insurance Policy shall be submitted by the prime Contractor to the Commission at the address below for review and transmittal to the Railroad. In addition, certificates of insurance evidencing the Contractor's and any subcontractor's Commercial General Liability Insurance shall be issued to the Railroad and the Commission at the addresses below, and forwarded to the Commission for review and transmittal to the Railroad. The certificates of insurance shall state that the insurance coverage will not be suspended, voided, canceled, or reduced in coverage or limits without thirty (30) days advanced written notice to Railroad and the Commission. No work will be permitted on the Railroad's Property until the Railroad has reviewed and approved the evidence of insurance required herein.

Railroad
Mr. C. R. McQueen, Jr., Director
Engineering Services & Administration
Terminal Railroad Assoc. of St. Louis
1000 St. Louis Union Station, Suite 200
St. Louis, MO 63103

Commission
Mr. David Ahlvers
State Construction and Materials Engineer
MoDOT
P.O. Box 270
Jefferson City, MO 65102

15.0 Guidelines for Personnel on Railroad's Right of Way.

15.1 The Contractor's personnel shall wear hard hats, and appropriate eye and hearing protection shall be used. Working in shorts shall be prohibited. Shirts shall cover shoulders, back and abdomen. Working in tennis or jogging shoes, sandals, boots with high heels, cowboy and other slip-on type boots shall be prohibited. Hard-sole, lace-up footwear, zippered boots or boots cinched up with straps which fit snugly about the ankle shall be adequate. Safety boots are strongly recommended.

15.2 The Contractor's personnel shall not be allowed within twenty-five feet (25') of the centerline of Railroad's track without specific authorization from the flagman.

15.3 All persons working near Railroad's track while any train is passing shall look out for dragging bands or chains and protruding or shifted cargo.

15.4 The Contractor's personnel shall not cross Railroad's track without specific authorization from the flagman.

15.5 All welders and cutting torches working within twenty-five feet (25') of Railroad's track shall stop when any train is passing.

15.6 The Contractor shall not cross or touch any rail of Railroad's track with any steel tape or chain without permission from the flagman.

16.0 Guidelines for Equipment on Railroad's Right of Way.

16.1 The Contractor shall not allow any crane or boom equipment to set up to work or park within boom distance plus fifteen feet (15') from centerline of track without specific permission from the Railroad Engineer and flagman.

16.2 The Contractor shall not allow crane or boom equipment to foul track or to lift a load over the track without flag protection and track time.

16.3 All crane or boom equipment operators shall stay with their machines whenever crane or boom equipment is pointed toward Railroad's track.

16.4 All operators of cranes and boom equipment under load shall stop work while train is passing upon Railroad's track, including pile driving.

16.5 The Contractor shall secure all swinging loads to prevent movement while any train is passing upon Railroad's track.

16.6 The Contractor shall not allow any load to be suspended above a moving train.

16.7 The Contractor shall not allow any equipment within 25 feet of centerline of track without specific authorization of the flagman.

16.8 The Contractor shall not allow any tractors or any other equipment to touch the Railroad's ballast line without specific permission from Railroad Engineer and flagman.

16.9 The Contractor shall not allow any equipment or load movement within twenty-five feet (25') from, or anywhere above, a standing train or railroad equipment without specific authorization of the flagman.

16.10 All operating equipment within twenty-five feet (25') of Railroad's track shall halt operations when a train is passing. The flagman may halt all of the Contractor's other operating equipment if the flagman views the operation to be dangerous to the passing train.

16.11 The Contractor's equipment, loads and cables shall be prohibited from touching rails.

16.12 While clearing and grubbing, the Contractor shall remove no vegetation from railroad embankment with heavy equipment without specific permission from the Railroad Engineer and flagman.

16.13 The Contractor shall not park or store any equipment or materials on the Railroad's Property unless the Railroad Engineer has granted specific authorization therefor.

16.14 The Contractor shall effectively immobilize all unattended equipment that is left parked on the Railroad's Property, so that unauthorized persons cannot move it.

16.15 The Contractor shall turn all cranes and boom equipment away from Railroad's track after each workday or whenever unattended by an operator.

17.0 Legal Compliance and Hazardous Materials Reporting. Contractor shall comply with all applicable federal, state and local governmental laws and regulations—including the Resource Conservation and Recovery Act, the Clean Water Act, the Oil Pollution Act, the Hazardous Materials Transportation Act, the Comprehensive Environmental Response, Compensation and Liability Act, and other environmental, health and safety laws and regulations to the extent these requirements are applicable to the Contractor's work performed under this contract. 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 the Contractor's work, acts or omissions did not cause them to be there. If the Contractor discovers any hazardous waste, hazardous substance, petroleum or other deleterious material, including any non-containerized 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 Railroad of such discovery, by telephoning (618) 451-8478.
- (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 the release.

18.0 Personal Injury Reporting. Railroad must report certain injuries as a part of compliance with Federal Railroad Administration ("FRA") reporting requirements. The Contractor immediately shall report any personal injury to any employee of the Contractor, subcontractor or contractor's invitees while on Railroad's property, by phone, mail or preferably in person, to the Railroad Engineer. The Contractor shall complete the Non-Employee Personal Injury Data Collection Form and send it by Fax to Railroad Engineer no later than the close of shift on the date of the injury.

19.0 Failure to Comply. If the Contractor violates or fails to comply with any of the requirements of these Railroad Requirements, the Railroad may act as authorized in paragraphs (a) and (b) of this section, until the Contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Engineer.

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

20.0 Payment for Cost of Compliance. Commission shall not separately pay for any extra cost the Contractor or Railroad incurs on account of compliance with these Railroad

Requirements. The Contractor and Railroad shall include all such cost in the contract unit price for other items included in the contract. Railroad will not pay the Contractor for any work it performs to comply with these Railroad Requirements.

L. NORFOLK SOUTHERN RAILWAY COMPANY REQUIREMENTS

1.0 Authority of Railroad Engineer and Commission Engineer.

The authorized representative of the Railroad Company, hereinafter referred to as Railroad Engineer, shall have final authority in all matters affecting the safe maintenance of Railroad traffic of his Company including the adequacy of the foundations and structures supporting the Railroad tracks.

The authorized representative of the Commission, hereinafter referred to as the Engineer, shall have authority over all other matters as prescribed herein and in the Project Specifications.

2.0 Notice Of Starting Work.

A. The contractor shall not commence any work on railroad rights-of-way until he has complied with the following conditions:

a. Given the Railroad written notice, with copy to the Engineer who has been designated to be in charge of the work, at least ten days in advance of the date he proposes to begin work on Railroad rights-of-way.

Office of Chief Engineer
Bridges & Structures
Norfolk Southern Corporation
1200 Peachtree
Atlanta, Georgia 30309

b. Obtained written authorization from the Railroad to begin work on Railroad rights-of-way, such authorization to include an outline of specific conditions with which he must comply.

c. Obtained written approval from the Railroad of Railroad Protective Insurance Liability coverage as required by paragraph 14 herein.

d. Furnished a schedule for all work within the Railroad rights-of-way as required by paragraph 7,B,1.

B. 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.

3.0 Interference With Railroad Operations.

- A. The Contractor shall so arrange and conduct his work that there will be no interference with Railroad operations, including train, signal, telephone and telegraphic services, or damage to the property of the Railroad Company or to poles, wires, and other facilities of tenants on the rights-of-way of the Railroad Company. 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 flagging service or inspection service shall be deferred by the Contractor until the flagging service or inspection service required by the Railroad is available at the job site.
- C. Whenever work within Railroad rights-of-way is of such a nature that impediment to Railroad operations such as use of runaround tracks or necessity for reduced speed is unavoidable, the Contractor shall schedule and conduct his operations so that such impediment is reduced to the absolute minimum.
- D. 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 his absence, the Engineer, such provisions is insufficient, either may require or provide such provisions as he deems necessary. In any event, such unusual provisions shall be at the Contractor's expense and without cost to the Railroad or the Commission.

4.0 Track Clearances.

- A. 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 right-of-way, or before placing any obstruction over any track, the Contractor shall:
 - 1. Notify the Railroad's representative at least 72 hours in advance of the work.
 - 2. Receive assurance from the Railroad's representative that arrangements have been made for flagging service as may be necessary.
 - 3. Receive permission from the Railroad's representative to proceed with the work.
 - 4. Ascertain that the Engineer has received copies of notice to the Railroad and of the Railroad's response thereto.

5.0 Construction Procedures.

- A. General:

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

- 1. Subject to the inspection and approval of the Railroad.

Job Special Provisions (Bridge)

2. In accord with the Railroad's written outline of specific conditions.
3. In accord with the Railroad's general rules, regulations and requirements including those relating to safety, fall protection and personal protective equipment.
4. In accord with these Special Provisions.

B. Excavation:

The subgrade of an operated track shall be maintained with edge of beam 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 existing section will be maintained.

C. Excavation for Structures:

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. The design shall be in accordance with AREMA 8.20 and 8.28. All plans and calculations for shoring shall be prepared and signed by a Registered Professional Engineer. The 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. The procedure for doing such work, including need of and plans and calculations for shoring, shall first be approved by the Engineer and the Railroad Engineer, but such approval shall not relieve the Contractor from liability.

D. Demolition. Erection, Hoisting

1. Railroad tracks and other railroad property must be protected from damage during the procedure.
2. The Contractor is required to submit a plan showing the location of cranes, horizontally and vertically, operating radii, with 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.
3. Crane rating sheets showing cranes to be adequate for 150% of the actual weight of the pick. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted.
4. Plans and computations showing the weight of the pick must be submitted. Calculations shall be made from plans of the existing and/or proposed structure showing complete and sufficient details with supporting data for the demolition or 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.

Job Special Provisions (Bridge)

5. A data sheet must be submitted listing the types, size, and arrangements of all rigging and connection equipment.
 6. A complete procedure is to be submitted, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.
 7. All erection or demolition plans, procedures, data sheets, etc. submitted must be prepared, signed and sealed by a Registered Professional Engineer.
 8. The Railroad's representative must be present at the site during the entire demolition and erection procedure period.
 9. All procedures, plans and calculations shall first be approved by the Engineer and the Railroad Engineer, but such approval does not relieve the Contractor from liability.
- E. Blasting:
1. The Contractor shall obtain advance approval of the Railroad Engineer and the 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:
 - (a) Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of the Contractor and a licensed blaster.
 - (b) Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way radios.
 - (c) No blasting shall be done without the presence of an authorized representative of the Railroad. At least 72 hours advance notice to the person designated in the Railroad's notice of authorization to proceed (see paragraph 2B) will be required to arrange for the presence of an authorized Railroad representative and such flagging as the Railroad may require.
 - (d) 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 his expense any track misalignment or other damage to Railroad property resulting from the blasting as directed by the Railway's authorized representative. If his actions result in delay of trains, the Contractor shall bear the entire cost thereof.
 2. The Railroad representative will:
 - (a) Determine approximate location of trains and advise the Contractor the appropriate amount of time available for the blasting operation and clean up.
 - (b) Have the authority to order discontinuance of blasting if, in his opinion, blasting is too hazardous or is not in accord with these special provisions.

F. Maintenance of Railroad Facilities:

1. The Contractor will be required to maintain all ditches and drainage structures free of silt or other obstructions which may result from his 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.
2. All such maintenance and repair of damages due to the Contractor's operations shall be done at the Contractor's expense.

G. Storage of Materials and Equipment:

Materials and equipment shall not be stored where they will interfere with Railroad operations, nor on the rights-of-way of the Railroad Company without first having obtained permission from the Railroad Engineer, and such permission will be with the understanding that the Railroad Company 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.

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 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.

H. Cleanup:

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 Chief Engineer of the Railroad or his authorized representative.

6.0 Damages.

- A. The Contractor shall assume all liability for any and all damages to his work, employees, servants, equipment and materials caused by Railroad traffic.
- B. 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 Flagging Services.

- A. When Required:

Job Special Provisions (Bridge)

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 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 flagging.

Normally, the Railroad will assign one flagman to a project; but in some cases, more than one may be necessary, such as yard limits where three (3) flagmen 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, a flagman or flagmen may be required full time until the project has been completed.

B. Scheduling and Notification:

1. The Contractor's work requiring railroad flagging should be scheduled to limit the presence of a flagman at the site to a maximum of 50 hours per week. The Contractor shall receive Railroad approval of work schedules requiring a flagman's presence in excess of 40 hours per week.

2.. Not later than the time that approval is initially requested to begin work on Railroad right-of-way, Contractor shall furnish to the Railroad and the Commission 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 Commission, and the Railroad's authorized representative. Flagman or Flagmen may not be provided until the job site meeting has been conducted and the Contractor's work scheduled.

3. The Contractor will be required to give the Railroad representative at least 10 working days of advance written notice of intent to begin work within Railroad right-of-way in accordance with this special provision. 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 3 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 flagging 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 flagging is required, no work shall be undertaken until the flagman, or flagmen is present at the job site. It may take up to 30 days to obtain flagging initially from the Railroad. When flagging begins, the flagman 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, it may take up to 30 days to again obtain from the Railroad. Due to Railroad labor agreements, it is necessary to give 5 working days notice before flagging service may be discontinued and responsibility for payment stopped.

4. If, after the flagman is assigned to the project site, an emergency arises that requires the flagman's presence elsewhere, then the Contractor shall delay work on

Job Special Provisions (Bridge)

Railroad right-of-way until such time as the flagman is again available. Any additional costs resulting from such delay shall be borne by the Contractor and not the Commission or Railroad.

C. Payment:

1. The Commission's contractor pursuant to Sec. 104 will be responsible for paying the Railroad directly for any and all costs of flagging which may be required to accomplish the construction.
2. The estimated cost of flagging is \$400.00 per day based on a 10-hour work day. This cost includes the base pay for the flagman, overhead, and includes an estimated \$50 per diem charge for travel expenses, meals and lodging. The charge to the Commission 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.
3. Work by a flagman 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 a flagman 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 flagging rate is 2 and 1/2 times the normal rate.
4. Railroad work involved in preparing and handling bills will also be charged to the Commission. Charges to the Commission 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. Flagging costs are subject to change. The above estimates of flagging costs are provided for information only and are not binding in any way.

D. Verification:

1. The Contractor and Commission will review and sign the Railroad flagman's time sheet (Form 11123), attesting that the flagman was present during the time recorded. Flagmen may be removed by the Railroad if form is not signed. If flagman is removed, the Contractor will not be allowed to re-enter the Railroad right-of-way until the issue is resolved. Any complaints concerning flagman or flagmen must be resolved in a timely manner. If need for flagman or flagmen is questioned, please contact Railroad's System Engineer Public Improvements (404) 529-1641. All verbal complaints will be confirmed in writing by the Contractor within 5 working days with a copy to the Highway Engineer. Address all written correspondence to:

Office of Chief Engineer
Attn: T. D. Wyatt
Bridges & Structures System Engineer
Norfolk Southern Corporation
Public Improvements
1200 Peachtree Street
Atlanta, Georgia 30309

2. The Railroad flagman assigned to the project will be responsible for notifying the Project 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 he performs such services for each separate period that services are provided. The Project Engineer will document such notification in the project records. When requested, the Project Engineer will also sign the flagman's diary showing daily time spent and activity at the project site.

8.0 Haul Across Railroad.

- A. Where the plans show or imply that materials of any nature must be hauled across a Railroad, unless the plans clearly show that the Commission 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. The Contractor will be required to bear all costs incidental to such crossings whether services are performed by his own forces or by Railroad personnel.
- B. No crossing may be established for use of the Contractor for transporting materials or equipment across the tracks of the Railroad Company unless specific authority for its installation, maintenance, necessary watching and flagging thereof and removal, until a private crossing agreement has been executed between the Contractor and Railroad.

9.0 Work For The Benefit Of The Contractor.

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

10.0 Cooperation And Delays.

- A. 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 his schedule he shall ascertain, from the Railroad, the lead time required for assembling crews and materials and shall make due allowance therefore.
- B. No charge or claim of the Contractor against either the Commission or the Railroad Company will be allowed for hindrance or delay on account of railway traffic; any work done by the Railway Company or other delay incident to or necessary for safe maintenance of railway traffic or for any delays due to compliance with these special provisions.

11.0 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, 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 Railway's protective service is provided shall be removed before the close of each work day. If there is any excavation near the walkway, a handrail, with 10'-0" minimum clearance from centerline of track, shall be placed.

12.0 Guidelines For Personnel On Railroad Right-Of-Way.

- A. 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. Safety boots are strongly recommended.
- B. No one is allowed within 25' of the centerline of track without specific authorization from the flagman.
- C. All persons working near track while train is passing are to lookout for dragging bands, chains and protruding or shifted cargo.
- D. No one is allowed to cross tracks without specific authorization from the flagman.
- E. All welders and cutting torches working within 25' of track must stop when train is passing.
- F. No steel tape or chain will be allowed to cross or touch rails without permission.

13.0 Guidelines Equipment On Railroad Right-Of-Way.

- A. 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 flagman.
- B. No crane or boom equipment will be allowed to foul track or lift a load over the track without flag protection and track time.
- C. All employees will stay with their machines when crane or boom equipment is pointed toward track.
- D. All cranes and boom equipment under load will stop work while train is passing (including pile driving).
- E. Swinging loads must be secured to prevent movement while train is passing.
- F. No loads will be suspended above a moving train.

Job Special Provisions (Bridge)

- G. No equipment will be allowed within 25' of centerline of track without specific authorization of the flagman.
- H. Trucks, tractors or any equipment will not touch ballast line without specific permission from railroad official and flagman.
- I. No equipment or load movement within 25' or above a standing train or railroad equipment without specific authorization of the flagman.
- J. All operating equipment within 25' of track must halt operations when a train is passing. All other operating equipment may be halted by the flagman if the flagman views the operation to be dangerous to the passing train.
- K. All equipment, loads and cables are prohibited from touching rails.
- L. While clearing and grubbing, no vegetation will be removed from railroad embankment with heavy equipment without specific permission from the Railroad Engineer and flagman.
- M. No equipment or materials will be parked or stored on Railroad's property unless specific authorization is granted from the Railroad Engineer.
- N. All unattended equipment that is left parked on Railroad property shall be effectively immobilized so that it cannot be moved by unauthorized persons.
- O. All cranes and boom equipment will be turned away from track after each work day or whenever unattended by an operator.

14.0 Insurance.

- A. 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:
 - 1. Commercial General Liability Insurance having a combined single limit of not less than \$2,000,000 per occurrence for all loss, damage, cost and expense, including attorneys' fees, arising out of bodily injury liability and property damage liability during the policy period. Said policy shall include "explosion, collapse, and underground hazard" ("XCU") coverage, shall be endorsed to name Railroad specified in item A.2 below as an additional insured, and shall include a severability of interests provision.
 - 2. Railroad Protective Liability 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. If the project involves track over which passenger trains operate, the insurance limits required are not less than a combined single limit of \$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.

The standards for the Railroad Protective Liability Insurance are as follows:
The insurer must be rated A- or better by A.M. Best Company, Inc. The policy must be written using one of the following combinations of Insurance Services Office (“ISO”) Railroad Protective Liability Insurance Form Numbers:

CG 00 35 01 96 and CG 28 31 10 93; or
CG 00 35 07 98 and CG 28 31 07 98.

The named insured shall read:
[Name of railroad that owns the track]; and
Norfolk Southern Railway Company
Three Commercial Place
Norfolk, Virginia 23510-2191
Attn: D. W. Fries, Director Risk Management

The description of operations must appear on the Declarations, must match the project description in this agreement, and must include the appropriate Commission project and contract identification numbers. The job location must appear on the Declarations and must include the city, state and appropriate highway name/number. The name and address of the prime contractor must appear on the Declarations. The name and address of the Commission must be identified on the Declarations as the “Involved Governmental Authority or Other Contracting Party.”

Other endorsements/forms that will be accepted are:
Broad Form Nuclear Exclusion – Form IL 00 21
30-day Advance Notice of Non-renewal or cancellation
Required State Cancellation Endorsement
Quick Reference or Index Form CL/IL 240

Endorsements/forms that are NOT acceptable are:
Any Pollution Exclusion Endorsement except CG 28 31
Any Punitive or Exemplary Damages Exclusion
Known injury or Damage Exclusion form CG 00 59
Any Common Policy Conditions form

Any other endorsement/form not specifically authorized in item no. 2.h above.

B. If any part of the work is sublet, similar insurance, and evidence thereof as specified in A.1 above, shall be provided by or on behalf of the subcontractor to cover its operations on Railroad’s right of way.

Prior to entry on Railroad right-of-way, the original Railroad Protective Liability Insurance Policy shall be submitted by the Prime Contractor to the Commission at the address below for its review and transmittal to the Railroad. In addition, certificates of insurance evidencing the Prime Contractor’s and any subcontractors’ Commercial General Liability Insurance shall be issued to the Railroad and the Commission at the addresses below, and forwarded to the Commission for its review and transmittal to the Railroad. The certificates of insurance shall state that the insurance coverage will not be suspended, voided, canceled, or reduced in coverage or limits without (30) days advance written notice to Railroad and the Commission. No work will be permitted by Railroad on its right-of-way until it has reviewed and approved the evidence of insurance required herein.

Commission
Mr. David Ahlvers
State Construction and Materials Engineer
MoDOT
P.O. Box 270
Jefferson City, MO 65102

Railroad
Mr. D. W. Fries, ARM
Risk Manager
Norfolk Southern Corporation
Three Commercial Place
Norfolk, VA 23510-2191

15.0 Failure To Comply.

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

- A. The Railroad Engineer may require that the Contractor vacate Railroad property.
- B. The Engineer may withhold all monies due the Contractor on monthly statements.

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

16.0 Payment For Cost Of Compliance.

No separate payment will be made for any extra cost incurred on account of compliance with these special provisions. All such costs shall be included in prices bid for other items of the work as specified in the payment items.

Office of Chief Engineer
Bridges & Structures
Norfolk Southern Corporation
Atlanta, GA 30309

Date:
File:
Milepost:

M. KANSAS CITY SOUTHERN RAILWAY COMPANY REQUIREMENTS

To report an emergency on the Kansas City Southern Railway right of way call: (800) 892-6295.

1.0 Authority of Railroad Engineer and State Engineer.

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

The Railroad designates the following individual as the Railroad Engineer for this project. Except as otherwise provided in these Railroad Requirements, the contractor shall address all notices concerning this project to the following person:

Job Special Provisions (Bridge)

Mr. Paul Fetterman
Engineering Consultant
Kansas City Southern Railway
9200 NW 78th Street
Weatherby Lake, MO 64152
Cell: 816-305-6017
pfetterman@kcsouthern.com

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

1.3 The right of way of Railroad is located within this project and the contractor shall take care to insure that no debris or material is dropped on the Railroad's tracks. The project involves operations on Railroad's right of way and the contractor shall coordinate activities with the activities of the Railroad.

1.4 Indemnification of Railroad by Contractor. The term contractor as used herein includes any and all subcontractors. The contractor agrees to defend, indemnify and hold harmless Railroad, its directors, officers, employees, agents, successors and assigns from and against any injury or death of persons whomsoever or from any loss or damage to the Railroad's property, right of way, tracks and other facilities, herein called "Railroad's property," and from the Railroad's liability or loss incurred for damage to any other property in Railroad's care, custody or control in or upon Railroad's property, caused by acts or omissions of the contractor in performing work on this project, whether on, over, under or in the vicinity of the Railroad's property.

In the event the contractor shall fail to restore the Railroad's property immediately to a condition acceptable to the Railroad when any such loss or damage to the Railroad's property is called to the contractor's attention by the Railroad, then the Railroad may perform such corrective work at the cost of the contractor. The Railroad shall have the right to bring an action directly against the contractor to recover any loss or damage sustained by the Railroad by reason of the contractor's breach of agreements contained in this special provision. In addition to such remedies of the Railroad, the Commission will withhold from final payment due to the contractor the amount reasonably necessary to reimburse the Railroad for such loss or damage or for performing such work. The term "loss or damage" as used herein shall include, but not be limited to, the erosion and silting of, water damage to, and the accidental or intentional placing or dropping of objects on the Railroad's property.

2.0 Construction Requirements. The contractor's work on the Railroad's Property shall be performed in accordance with these Railroad Requirements. The contractor shall supply adequate equipment, labor and materials to perform the proposed work at the job site. The contractor shall take special precaution and care to prevent any debris or material from falling on the Railroad's right of way. The safe operation of the Railroad shall take precedence over all work and nothing shall be done by the contractor that will endanger the Railroad's operations. The contractor shall protect the Railroad property from any damage resulting from the contractor's acts or omissions during the highway project.

2.1 Contractor Plans and Procedures. Before performing any excavation, demolition, blasting, or construction of falsework on or over Railroad's right of way or adjacent to the Railroad's right of way that may interfere with the safe operation of the trains, the contractor

shall submit its shoring, demolition and falsework plans and relevant procedures to the Engineer for review, and to the Railroad Engineer for review and approval. Plans and calculations shall also be submitted demonstrating the adequacy of the contractor's drilled shaft casing to protect track against subsidence and/or displacements within track surcharge zones. These plans and procedures shall be signed and sealed by a Structural engineer licensed in the State of Illinois. However, such approval shall not relieve the contractor from any liability relating to this project. During the course of the project, the contractor shall submit any proposed changes to the approved plans or procedures to the Engineer for review and to the Railroad Engineer for review and approval. Any clearing and grubbing to increase the sight distance for a safer construction operation, or erection of temporary structures within the Railroad property shall not be done prior to the approval of the Railroad.

2.2 The contractor shall comply with the Railroad's rules and regulations concerning protection of persons and property and the contractor shall consult with the Railroad Engineer concerning the Railroad's rules and regulations. Any questions arising about coordination of work between the contractor and the Railroad Engineer or between the contractor and others shall be taken up with the Engineer and the contractor, Railroad Engineer and Engineer shall agree upon a method of coordination before commencing the work.

2.3. Prior to commencing any work upon, over or under the Railroad's right of way, the contractor shall furnish to the Railroad Engineer evidence that the contractor's insurance is in compliance with Section 4 of this special provision.

2.4 If the contractor must cross tracks with cleated or crawler type equipment, the track shall be protected with a temporary surfacing as approved by the Railroad Engineer. The Railroad will provide flaggers at crossings that have been approved pursuant to the provisions in Section 3 of this special provision.

2.5 The contractor shall, reasonably throughout each work day and at the end of each work day when performing work near the Railroad's tracks, inspect the track area and clean up any debris that may have been dropped on or within ten (10) feet of Railroad's tracks. When the project is completed, the contractor shall remove all debris and material from the Railroad's right of way.

3.0 Flagging Service. The Railroad has sole authority to determine the need for protective services, herein called "Flagging", required to protect the Railroad's facilities and operations. In general, the requirements for flagging 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 or alignment of any track, 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 up to three flaggers may be required. However, if the contractor violates instructions given by the Railroad Engineer or performs work that has not been scheduled with the Railroad Engineer under conditions describe herein, flaggers may be required full time until the project has been completed.

3.1 Scheduling and Notification.

3.1.1 The contractor shall notify the Railroad and arrange for flagging when performing any work within 25 feet of the centerline of any track. Except as authorized by the Engineer and Railroad Engineer, the contractor shall not work within 25 feet of the centerline of any track and

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shall locate all equipment, devices and materials at a sufficient distance from any track to ensure that no apparatus or part of any piece of equipment, device or material reach closer than 25 feet to the centerline of any track.

3.1.2 No later than the time approval is initially requested to begin work on Railroad's right of way, the contractor shall furnish to the Railroad Engineer and the Engineer a schedule for all work required to complete the portion of the project within the Railroad's right of way. Contractor shall arrange for a job site meeting among the contractor, the Engineer and the Railroad Engineer. Flagging service may not be provided until the job site meeting has been conducted and the contractor's work is scheduled.

3.1.3 The contractor shall make arrangements for flagging services with the following Railroad representative at least 15 business days in advance to commencing work on the Railroad's property. The contractor shall also notify this representative at least 2 days in advance of the date the contractor shall cease using the flagger.

Ms. Shannon Hass
Hanson Wilson Inc.
4015 S. 148th Street, Suite 100
Omaha, Nebraska 68137
Office: (402) 896-6100
Fax: (402) 896-9300
E-mail: Shannon.Haas@ HansonWilson.com
[E-mail is the preferred method of contact]

3.1.4 The contractor shall notify Railroad of the completion of the project within 30 days after the completion date. Railroad shall inspect Railroad's property within 30 days after the contractor has given this notice, to verify the contractor's compliance with these Railroad Requirements.

3.2 Rates of Pay and Other Related Costs for Flagging Services

3.2.1 The rate of pay for each flagger will be the prevailing rate for the class of employee used in accordance with labor agreements and schedules in effect at the time the work is performed. Wage rates are subject to change at any time by law or by agreement between the Railroad and the Railroad's employees and the rates may be retroactive as a result of negotiations or a ruling of an authorized governmental agency. Additional labor surcharges charges are also subject to change. If the wage rates or labor surcharges are changed, the costs charged will be based on the new rates and new surcharges. The estimates of flagging cost herein are provided for information only and are not binding in any way.

3.2.2 The Railroad may employ a separate company to provide flaggers when the Railroad, in its sole discretion, determines that it does not have the necessary work force to cover the flagging needs. The flagging costs charged will be the actual costs incurred by the Railroad to provide the protective services whether the flagger is a Railroad employee or an employee or independent contractor of a separate company.

3.2.3 The typical cost of flagging service is approximately \$750 per day per flagger based on an 10-hour workday. This daily rate includes the Railroad's overhead and indirect costs, travel, meals and lodging costs

3.2.3 For flagging service over eight hours per day, and any hours on Saturdays and Sundays will cost 1.5 times the current hourly rate. A rate of 2.5 times the current hourly rate will be paid for holidays.

3.3 Reimbursement of Railroad Flagging Costs. The Commission's contractor pursuant to Sec. 104 will be responsible for paying the Railroad directly for any and all costs of flagging which may be required to accomplish the construction.

4.0 Insurance Requirements. The amount of work to be performed upon, over or under the Railroad's right of way is estimated to be **percent** of the contractor's total bid for the project. In addition to any other forms of insurance or bonds required under the terms of the contract and specifications, the contractor will be required to carry insurance of the following kinds and amounts:

4.1 Commercial General Liability. Commercial General Liability Insurance having a combined single limit of not less than \$2,000,000 per occurrence and \$4,000,000 in aggregate for all loss, damage, cost and expense, including attorneys' fees, arising out of bodily injury liability and property damage liability during the policy period. Said policy shall include "explosion, collapse, and underground hazard" ("XCU") coverage, shall be endorsed to name the Railroad specified in Section 4.2 (c) of this special provision as an additional insured and shall include a severability of interests provision.

4.2 Railroad Protective Liability Insurance. Railroad Protective Liability Insurance having a combined single limit of not less than \$2,000,000 each occurrence and \$6,000,000 in the aggregate applying separately to each annual period. Said policy shall provide coverage for all loss, damage and expense arising from bodily injury and property damage liability, and physical damage to property attributed to acts or omissions at the job site. The standards for the Railroad Protective Liability Insurance are as follows:

(a) The insurer shall be rated A- or better by A.M. Best Company, Inc.

(b) The policy shall be written using one of the following combinations of Insurance Services Office ("ISO") Railroad Protective Liability Insurance Form Numbers:

(1) CG 00 35 01 96 and CG 28 31 10 93.

(2) CG 00 35 07 98 and CG 28 31 07 98.

(c) The named insured shall read:

The Kansas City Southern Railway Company
427 West 12th Street
Kansas City, MO 64105

4.3 Evidence of Insurance. The Declarations shall include the description of operations matching the project description in this special provision and shall include the appropriate Commission project and contract identification numbers. The job number and project location shall appear on the Declarations and shall include the city, state and appropriate highway designation:

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I-70, St. Clair County, IL
Job Number J6I0984C

4.3.1 The name and address of the prime contractor shall appear on the Declarations. The name and address of the Commission shall be identified on the Declarations as the “Involved Governmental Authority or Other Contracting Party”.

4.3.2 Other endorsements/forms that will be accepted are:

- (a) Broad Form Nuclear Exclusion – Form IL 00 21.
- (b) 30-day Advance Notice of Non-renewal or cancellation.
- (c) Required State Cancellation Endorsement.
- (d) Quick Reference or Index Form CL/IL 240.

4.3.3 Endorsements/forms that will NOT acceptable are:

- (a) Any Pollution Exclusion Endorsement except CG 28 31.
- (b) Any Punitive or Exemplary Damages Exclusion.
- (c) Known injury or Damage Exclusion form CG 00 59.
- (d) Any Common Policy Conditions form.
- (e) Any other endorsement/form not specifically authorized in this special provision.

4.3.4 If any part of the work is sublet, similar insurance and evidence thereof as specified above, shall be provided by or on behalf of the subcontractor to cover the subcontractor’s operations on the Railroad’s right of way.

4.3.5 Prior to entry on the Railroad’s right of way, the original Railroad Protective Liability Insurance Policy shall be submitted by the prime contractor to the Commission at the address below for review and transmittal to the Railroad. In addition, certificates of insurance evidencing the contractor’s and any subcontractor’s Commercial General Liability Insurance shall be issued to the Railroad and the Commission at the addresses below, and forwarded to the Commission for review and transmittal to the Railroad. The certificates of insurance shall state that the insurance coverage shall not be suspended, voided, canceled or reduced in coverage or limits without 30 days advanced written notice to the Railroad and the Commission. No work shall be permitted on the Railroad’s right of way until the Railroad has reviewed and approved the evidence of insurance required herein.

Railroad
Mr. Paul Fetterman
Engineering Consultant
Kansas City Southern Railway
9200 NW 78th Street
Weatherby Lake, MO 64152
Cell: 816-305-6017

Commission
Mr. Greg Horn, P.E.
Project Director
Mississippi River Bridge Project
707 N. Second Street
Suite 300
St. Louis, MO 63102

pfetterman@kcsouthern.com

Ofc: 314-236-2930
Gregory.Horn@modot.mo.gov

5.0 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 may be applied. Any such orders applied 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 vacate the Railroad's property.

(b) The Engineer may withhold all monies due to the contractor until the contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Engineer.

6.0 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 contract unit price for other items included in the contract.

N. UNION PACIFIC RAILWAY COMPANY REQUIREMENTS

1.01 Description.

This project includes construction work within the Right-of-Way and/or properties of the Union Pacific Railroad Company "UPRR" and adjacent to tracks, wire lines and other facilities. This section describes the special requirements for coordination with UPRR when work by the Contractor will be performed upon, over or under the UPRR Right-of-Way or may impact current or future UPRR operations. The Contractor will coordinate with UPRR while performing the work outlined in this Contract, and shall afford the same cooperation with UPRR as it does with the Agency. All submittals and work shall be completed in accordance with UPRR Guidelines and AREMA recommendations as modified by these minimum special requirements or as directed in writing by the UPRR Designated Representative.

For purposes of this project, the UPRR Designated Representative shall be the person or persons designated by the UPRR Manager of Industry and Public Projects to handle specific tasks related to the project.

1.02 Definition of Agency and Contractor.

As used in these UPRR requirements, the term "Commission" shall mean the Missouri Highways and Transportation Commission.

As used in these UPRR requirements, the term "Contractor" shall mean the contractor or contractor's hired by the Agency to perform any project work on any portion of UPRR's property and shall also include the contractor's subcontractors and the contractor's and subcontractor's respective officer, agents and employees, and others acting under its or their authority.

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1.03 UPRR Contacts.

The primary UPRR point of contact for this project is:

Dave McKernan
Manager Industry and Public Projects
Union Pacific Railroad Company
100 North Broadway, Suite 1500
St. Louis, Missouri 63102
Phone : 314-331-0682
Fax : 402-501-2520

For UPRR flagging services and track work, contact:

Bill Brendel
Manager Track Maintenance
Union Pacific Railroad Company
3412 Carondelet Avenue
Dupou, Illinois 62239
Phone : 618-286-0048
Fax: 618-286-0481

1.04 Request for Information / Clarification.

All Requests for Information ("RFI") involving work within any UPRR Right-Of-Way shall be in accordance with the procedures listed elsewhere in these bid documents. All RFI's shall be submitted to the Engineer of Record. The Engineer of Record will submit the RFI to the UPRR Designated Representative for review and approval for corresponding to work within the UPRR Right-Of-Way. The Contractor shall allow four (4) weeks for the review and approval process by UPRR.

1.05 Plans / Specifications.

The plans and specifications for this project, affecting the UPRR, are subject to the written approval by the UPRR and changes in the plans may be required after award of the Contract. Such changes are subject to the approval of the Agency and the UPRR.

2.01 Utilities and Fiber Optic.

All installations shall be constructed in accordance with current AREMA recommendations and UPRR specifications and requirements. UPRR general guidelines and the required application forms for utility installations can be found on the UPRR website at www.uprr.com.

3.01 General.

- A. Contractor shall perform all work in compliance with all applicable UPRR and FRA rules and regulations. Contractor shall arrange and conduct all work in such manner and at such times as shall not endanger or interfere with the safe operation of the tracks and property of UPRR and the traffic moving on such tracks, or the wires, signals and other property of UPRR, its tenants or licensees, at or in the vicinity of

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the work. UPRR shall be reimbursed by Contractor or Agency for train delay costs and lost revenue claims due to any delays or interruption of train operations resulting from Contractor's construction work or other activities.

- B. Construction activities will be permitted within 12 feet of the centerline of operational tracks only if absolutely necessary and UPRR's Designated Representative grants approval. Construction activities within 12 feet of the operational track(s) must allow the tracks to stay operational.
- C. Track protection is required for all work equipment (including rubber tired equipment) operating within 25 feet from nearest rail.
- D. The Contractor is also advised that new railroad facilities within the project may be built by UPRR and that certain Contractor's activities cannot proceed until that work is completed. The Contractor shall be aware of the limits of responsibilities and allow sufficient time in the schedule for that work to be accomplished and shall coordinate its efforts with the UPRR.

3.02 Railroad Operations.

- A. The Contractor shall be advised that trains and/or equipment are expected on any track, at any time, in either direction. Contractor shall become familiar with the train schedules in this location and structure its bid assuming intermittent track windows in this period, as defined in Paragraph B below.
- B. All railroad tracks within and adjacent to the Contract Site are active, and rail traffic over these facilities shall be maintained throughout the Project. Activities may include both through moves and switching moves to local customers. Railroad traffic and operations will occur continuously throughout the day and night on these tracks and shall be maintained at all times as defined herein. The Contractor shall coordinate and schedule the work so that construction activities do not interfere with railroad operations.
- C. Work windows for this Contract shall be coordinated with the Agency's and the UPRR's Designated Representatives. Types of work windows include Conditional Work Windows and Absolute Work Windows, as defined below:
 - 1. Conditional Work Window: A Conditional Work Window is a period of time that railroad operations have priority over construction activities. When construction activities may occur on and adjacent to the railroad tracks within 25 feet of the nearest track, a UPRR flag person will be required. At the direction of the UPRR flag person, upon approach of a train, and when trains are present on the tracks, the tracks must be cleared (i.e., no construction equipment, materials or personnel within 25 feet, or as directed by the UPRR Designated Representative, from the tracks). Conditional Work Windows are available for the Project.
 - 2. Absolute Work Window: An Absolute Work Window is a period of time that construction activities are given priority over railroad operations. During this time frame the designated railroad track(s) will be inactive for train movements and may be fouled by the Contractor. At the end of an Absolute Work Window

the railroad tracks and/or signals must be completely operational for train operations and all UPRR, Public Utilities Commission (PUC) and Federal Railroad Administration (FRA) requirements, codes and regulations for operational tracks must be complied with. In the situation where the operating tracks and/or signals have been affected, the UPRR will perform inspections of the work prior to placing that track back into service. UPRR flag persons will be required for construction activities requiring an Absolute Work Window. Absolute Work Windows will not generally be granted. Any request will require a detailed explanation for UPRR review.

3.03 Right of Entry, Advance Notice and Work Stoppages.

- A. Prior to beginning any work on or over the property of, or affecting the facilities of, the UPRR, the Contractor shall notify the primary railroad representative at least ten (10) working days in advance of such work and at least ten (10) working days in advance of proposed performance of any work by contractor in which any person or equipment will be within twenty-five (25) feet of any track or will be near enough to any track that any equipment extension (such as, but not limited to, a crane boom) will reach within twenty-five (25) feet of any track. **If the contractor will be on UPRR property outside the limits of the State's easements, Contractor shall enter into an agreement with the UPRR in the form of the "Contractor's Right of Entry Agreement", attached as Appendix A or latest version thereof provided by the UPRR. There is a fee for processing of the agreement. This cost shall be borne by the Contractor. Contractor shall submit a copy of the executed agreement and the insurance policies, binders, certificates and endorsements set forth therein to the Agency prior to commencing work on UPRR property. The right of entry agreement shall specify working time frames, flagging and inspection requirements, and any other items specified by the UPRR.**
- B. The Contractor shall give the advance notice to the UPRR as required above before commencing work in connection with construction upon or over UPRR's Right-of-Way and shall observe UPRR's rules and regulations with respect thereto.
- C. All work upon UPRR's Right-of-Way shall be done at such times and in such manner so as not to interfere with or endanger the operations of UPRR. Whenever work may affect the operations or safety of trains, the method of doing such work shall first be submitted to UPRR's Designated Representative for approval, but such approval shall not relieve the Contractor from liability. Any work to be performed by the Contractor, which requires flagging and/or inspection service, shall be deferred until the flagging protection required by UPRR is available at the job site. See Section 3.18 for railroad flagging requirements.
- D. The Contractor shall make requests in writing for both Absolute and Conditional Work Windows, at least two weeks in advance of any work. The written request must include:
1. Exactly what the work entails.
 2. The days and hours that work will be performed.
 3. The exact location of work, and proximity to the tracks.
 4. The type of window requested and the amount of time requested.
 5. The designated contact person.

The Contractor shall provide a written confirmation notice to the UPRR at least 48 hours before commencing work in connection with approved work windows when work will be performed within **25 feet of any track center line**. All work shall be performed in accordance with previously approved work plans.

- E. Should a condition arising from, or in connection with the work, require that immediate and unusual provisions be made to protect operations and property of UPRR, the Contractor shall make such provisions. If in the judgment of UPRR's Designated Representative such provisions are insufficient, the UPRR's Designated Representative may require or provide such provisions as deemed necessary. In any event, such provisions shall be at the Contractor's expense and without cost to the UPRR. UPRR or the Agency shall have the right to order Contractor to temporarily cease operations in the event of an emergency or, if in the opinion of the UPRR's Designated Representative, the Contractor's operations could endanger UPRR's operations. In the event such an order is given, Contractor shall immediately notify the Agency of the order.

3.04 Insurance.

Contractor shall not begin work upon or over UPRR's Right-of-Way until UPRR has been furnished the insurance policies, binders, certificates and endorsements as defined in Section 3.20 below and UPRR's Designated Representative has advised the Agency that such insurance is in accordance with the Agreement. The required insurance shall be kept in full force and effect during the performance of work and thereafter until Contractor removes all tools, equipment, and material from UPRR's property and cleans the premises in a manner reasonably satisfactory to UPRR. For the benefit of the Contractor and the Insurer(s), the current railroad traffic in the project area is estimated at [REDACTED] train movements per day at a maximum speed of [REDACTED] MPH.

3.05 Railroad Safety Orientation.

All personnel employed by the Contractor and all subcontractors must complete the UPRR course "Orientation for Contractor's Safety", and be registered prior to working on UPRR property. This orientation is available at www.contractororientation.com. This course is required to be completed annually.

3.06 Cooperation.

UPRR will cooperate with Contractor so that work may be conducted in an efficient manner, and will cooperate with Contractor in enabling use of UPRR's right-of-way in performing the work.

3.07 Minimum Construction Clearances for Falsework and Other Temporary Structures.

The Contractor shall abide by the following minimum temporary clearances during the course of construction:

- A. 13' – 0" horizontal from centerline of track
- B. 22' – 0" vertically above top of rail.

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For construction clearance less than listed above, local Operating Unit review and approval is required.

3.08 Approval of Reduced Clearances.

- A. The minimum track clearances to be maintained by the Contractor during construction are specified in Section 3.07 herein.
- B. Any proposed infringement on the specified minimum clearances due to the Contractor's operations shall be submitted to UPRR's Designated Representative through the Agency at least 30 days in advance of the work and shall not be undertaken until approved in writing by the UPRR's Designated Representative.
- C. No work shall commence until the Contractor receives in writing assurance from UPRR's Designated Representative that arrangements have been made for flagging service, as may be necessary and receives permission from UPRR's Designated Representative to proceed with the work.

3.09 Construction and As-Built Submittals.

- A. Submittals are required for construction materials and procedures as outlined below. The submittals shall include all review comments from the Agency and the Engineer of Record. All design submittals shall be stamped and signed by a Professional Engineer or Structural Engineer licensed in the State of Illinois.
- B. The tables below provide UPRR's minimum submittal requirements for the construction items noted. Submittal requirements are in addition to those specified elsewhere in these bid documents. The minimum review times indicated below represent UPRR's requirements only. The Contractor shall allow additional time for the Agency's review time as stated elsewhere in these bid documents.
- C. Submittals shall be made by the Agency to the UPRR Manager of Industry and Public Projects unless otherwise directed by the Railroad. Items in Table 1 shall be submitted for both railroad overpass and underpass projects, as applicable. Items in Table 2 shall be submitted for railroad underpass projects only.

TABLE 1

<i>ITEM</i>	DESCRIPTION	SETS REQD.	UPRR's Minimum Review Time
1	Shoring design and details	4	4 weeks
2	Falsework design and details	4	4 weeks
3	Drainage design provisions	4	4 weeks
4	Erection diagrams and sequence	4	4 weeks
5	Demolition diagram and sequence	4	4 weeks

Prior to or during construction of railroad underpass structures, the UPRR requires the review of drawings, reports, test data and material data sheets to determine compliance with the specifications. Product information for items noted in Table 2 be

submitted to UPRR’s Designated Representative through the Agency for their own review and approval of the material. The signed submittal and the Agency’s review comments will be reviewed by UPRR or their consultant. If a consultant performs the reviews, the consultant may reply directly to the Agency or its Designated Representative after consultation with UPRR. Review of the submittals will not be conducted until after review by the Agency or its Designated Representative. Review of the submittal items will require a minimum of four (4) weeks after receipt from the Agency.

TABLE 2

ITEM	DESCRIPTION	SETS REQD.	NOTES
1	Shop drawings	4	Steel and Concrete members
2	Bearings	4	For entire structures
3	Concrete Mix Designs	4	For entire structures
4	Rebar & Strand certifications	4	For superstructure only
5	28 day concrete strength	4	For superstructure only
6	Waterproofing material certifications and installation procedure	4	Waterproofing & protective boards
7	Structural steel certifications	4	All fracture critical members & other members requiring improved notch toughness
8	Fabrication and Test reports	4	All fracture critical members & other members requiring improved notch toughness
9	Welding Procedures and Welder Certification	4	AWS requirements
10	Foundation Construction Reports	4	Pile driving, drilled shaft construction, bearing pressure test reports for spread footings
11	Compaction testing reports for backfill at abutments	4	Must meet 95% maximum dry density, Modified Proctor ASTM D1557

D. As-Built Records shall be submitted to the UPRR within 60 days of completion of the structures. These records shall consist of the following items:

Overpass Projects

1. Electronic files of all structure design drawings with as-constructed modifications shown, in Microstation J or Acrobat .PDF format.
2. Hard copies of all structure design drawings with as-constructed modifications shown.

Underpass Projects

1. Electronic files of all structure design drawings with as-constructed modifications shown, in Microstation J or Acrobat .PDF format.
2. Hard copies of all structure design drawings with as-constructed modifications shown.
3. Final approved copies of shop drawings for concrete and steel members.
4. Foundation Construction Reports

5. Compaction testing reports for backfill at abutments

3.10 Approval of Details.

The details of the construction affecting the UPRR tracks and property not already included in the Contract Plans shall be submitted to UPRR's Designated Representative through the Agency for UPRR's review and written approval before such work is undertaken. Review and approval of these submittals will require a minimum of four (4) weeks in addition to the Agency's review time as stated elsewhere in these bid documents.

3.11 Maintenance of Railroad Facilities.

- A. 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; to promptly repair eroded areas within UPRR's right of way and to repair any other damage to the property of UPRR, or its tenants.
- B. All such maintenance and repair of damages due to the Contractor's operations shall be done at the Contractor's expense.
- C. The Contractor must submit a proposed method of erosion control and have the method reviewed by the UPRR prior to beginning any grading on the Project Site. Erosion control methods must comply with all applicable local, state and federal regulations.

3.12 Site Inspections by UPRR's Designated Representative.

- A. In addition to the office reviews of construction submittals, site inspections may be performed by UPRR's Designated Representative at significant points during construction, including but not limited to the following:
 - 1. Preconstruction meetings.
 - 2. Pile driving, drilling of caissons or drilled shafts.
 - 3. Reinforcement and concrete placement for railroad bridge substructure and/or superstructure.
 - 4. Erection of precast concrete or steel bridge superstructure.
 - 5. Placement of waterproofing (prior to placing ballast on bridge deck).
 - 6. Completion of the bridge structure.
- B. Site inspection is not limited to the milestone events listed above. Site visits to check progress of the work may be performed at any time throughout the construction as deemed necessary by UPRR.
- C. A detailed construction schedule, including the proposed temporary horizontal and vertical clearances and construction sequence for all work to be performed, shall be provided to the Agency for submittal to UPRR's Designated Representative for

review prior to commencement of work. This schedule shall also include the anticipated dates when the above listed events will occur. This schedule shall be updated for the above listed events as necessary, but at least monthly so that site visits may be scheduled.

3.13 UPRR Representatives.

- A. UPRR representatives, conductors, flag person or watch person will be provided by UPRR at expense of the Agency or Contractor (as stated elsewhere in these bid documents) to protect UPRR facilities, property and movements of its trains or engines. In general, UPRR will furnish such personnel or other protective services as follows:
1. When any part of any equipment is standing or being operated within 25 feet, measured horizontally, from centerline of any track on which trains may operate, or when any object is off the ground and any dimension thereof could extend inside the 25 foot limit, or when any erection or construction activities are in progress within such limits, regardless of elevation above or below track.
 2. For any excavation below elevation of track subgrade if, in the opinion of UPRR's Designated Representative, track or other UPRR facilities may be subject to settlement or movement.
 3. During any clearing, grubbing, excavation or grading in proximity to UPRR facilities, which, in the opinion of UPRR's Designated Representative, may endanger UPRR facilities or operations.
 4. During any contractor's operations when, in the opinion of UPRR's Designated Representative, UPRR facilities, including, but not limited to, tracks, buildings, signals, wire lines, or pipe lines, may be endangered.
 5. The Contractor shall arrange with the UPRR Designated Representative to provide the adequate number of flag persons to accomplish the work.

3.14 Walkways Required.

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 twelve feet (12') from centerline of track, shall be maintained. Any temporary impediments to walkways and track drainage encroachments or obstructions allowed during work hours while UPRR's flagman service is provided shall be removed before the close of each work day. Walkways with railings shall be constructed by Contractor over open excavation areas when in close proximity of track, and railings shall not be closer than 8' – 6" horizontally from center line of tangent track or 9' – 6" horizontally from centerline of curved track.

3.15 Communications and Signal Lines.

If required, UPRR will rearrange its communications and signal lines, its grade crossing warning devices, train signals and tracks, and facilities that are in use and maintained by

UPRR's forces in connection with its operation at expense of the Agency. This work by UPRR will be done by its own forces and it is not a part of the Work under this Contract.

3.16 Traffic Control.

Contractor's operations that control traffic across or around UPRR facilities shall be coordinated with and approved by the UPRR's Designated Representative.

3.17 Construction Excavations.

- A. The Contractor shall be required to take special precaution and care in connection with excavating and shoring. Excavations for construction of footings, piers, columns, walls or other facilities that require shoring shall comply with requirements of OSHA, AREMA and UPRR "Guidelines for Temporary Shoring".
- B. The Contractor shall contact UPRR's "Call Before Your Dig" at least 48 hours prior to commencing work at 1-800-336-9193 during normal business hours (6:30 a.m. to 8:00 p.m. central time, Monday through Friday, except holidays - also a 24 hour, 7 day a week number for emergency calls) to determine location of fiber optics. If a telecommunications system is buried anywhere on or near UPRR property, the Contractor will co-ordinate with UPRR and the Telecommunication Company(ies) to arrange for relocation or other protection of the system prior to beginning any work on or near UPRR property.

3.18 Railroad Flagging.

- A. Performance of any work by the Contractor in which person(s) or equipment will be within twenty-five (25) feet of any track, or will be near enough to any track that any equipment extension (such as, but not limited to, a crane boom) will reach within twenty-five (25) feet of any track, may require railroad flagging services or other protective measures. Contractor shall give the advance notice to the UPRR as required in Section 3.03 above before commencing any such work, so that the UPRR may determine the need for flagging or other protective measures to ensure the safety of the railroad's operations. Contractor shall comply with all other requirements regarding flagging as specified by Union Pacific. Any costs associated with failure to abide by these requirements will be borne by the Contractor.
- B. Reimbursement to Railroad will be required covering the full eight-hour day during which any flagman is furnished, unless the flagman can be assigned to other Railroad work during a portion of such day, in which event reimbursement will not be required for the portion of the day during which the flagman is engaged in other Railroad work. Reimbursement will also be required for any day not actually worked by the flagman following the flagman's assignment to work on the project for which Railroad is required to pay the flagman and which could not reasonably be avoided by Railroad by assignment of such flagman to other work, even though Contractor may not be working during such time. When it becomes necessary for Railroad to bulletin and assign an employee to a flagging position in compliance with union collective bargaining agreements, Contractor must provide Railroad a minimum of five (5) days notice prior to the cessation of the need for a flagman. If five (5) days notice of cessation is not given, Contractor will still be required to pay flagging charges for the five (5) day notice period required by union agreement to be given to

the employee, even though flagging is not required for that period. An additional ten (10) days notice must then be given to Railroad if flagging services are needed again after such five day cessation notice has been given to Railroad. The estimated pay rate for each flag person is \$ [REDACTED] per day for an 8 hour work day with time and one-half for overtime, Saturdays, Sundays; double time and one-half for holidays. Flagging rates are set by the UPRR and are subject to change.

3.19 Cleaning Right-of-Way.

Contractor shall, upon completion of the work to be performed by Contractor upon the premises, over or beneath the tracks of UPRR, promptly remove from the Right-of-Way of UPRR all of Contractor's tools, implements, and other materials whether brought upon the Right-of-Way by Contractor or any subcontractors, employee or agent of Contractor or of any subcontractor, and leave the Right-of-Way in a clean and presentable condition to satisfaction of UPRR.

3.20 Insurance Provisions.

Contractor shall, at its sole cost and expense, procure and maintain during the course of the Project and until all Project work on Railroad's property has been completed and the Contractor has removed all equipment and materials from the Railroad's property and has cleaned and restored Railroad's property to Railroad's satisfaction, the following insurance coverage:

- A. Commercial General Liability** insurance. Commercial general liability (CGL) with a limit of not less than \$5,000,000 each occurrence and an aggregate limit of not less than \$10,000,000. CGL insurance must be written on ISO occurrence form CG 00 01 12 04 (or a substitute form providing equivalent coverage).

The policy must also contain the following endorsement, which must be stated on the certificate of insurance:

- Contractual Liability Railroads ISO form CG 24 17 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Railroad Company Property" as the Designated Job Site.

- B. Business Automobile Coverage** insurance. Business auto coverage written on ISO form CA 00 01 (or a substitute form providing equivalent liability coverage) with a combined single limit of not less \$5,000,00 for each accident.

The policy must contain the following endorsements, which must be stated on the certificate of insurance:

- Coverage For Certain Operations In Connection With Railroads ISO form CA 20 70 10 01 (or substitute form providing equivalent coverage) showing "Union Pacific Property" as the Designated Job Site.
- Motor Carrier Act Endorsement – Hazardous materials clean up (MCS-90) if required by law.

Job Special Provisions (Bridge)

C. Workers Compensation and Employers Liability insurance. Coverage must include but not be limited to:

- Contractor's statutory liability under the workers' compensation laws of the state(s) affected by this Agreement.
- Employers' Liability (Part B) with limits of at least \$500,000 each accident, \$500,000 disease policy limit \$500,000 each employee.

If Contractor is self-insured, evidence of state approval and excel workers compensation coverage must be provided. Coverage must include liability arising out of the U.S. Longshoremen's and Harbor Workers' Act, the Jones Act, and the Outer Continental Shelf Land Act, if applicable.

The policy must contain the following endorsement, which must be stated on the certificate of insurance:

- Alternate Employer endorsement ISO form WC 00 03 01 A (or a substitute form providing equivalent coverage) showing Railroad in the schedule as the alternate employer (or a substitute form providing equivalent coverage).

D. Railroad Protective Liability insurance. Contractor must maintain Railroad Protective Liability insurance written on ISO occurrence form CG 00 35 12 04 (or a substitute form providing equivalent coverage) on behalf of Railroad as named insured, with a limit of not less than \$5,000,000 per occurrence and an aggregate of \$10,000,000. A binder stating the policy is in place must be submitted to Railroad before the work may be commenced and until the original policy is forwarded to Railroad.

E. Umbrella or Excess insurance. If Contractor utilizes umbrella or excess policies, these policies must "follow form" and afford no less coverage than the primary policy.

F. Pollution Liability insurance. Pollution liability coverage must be written on ISO form Pollution Liability Coverage Form Designated Sites CG 00 39 12 04 (or a substitute form providing equivalent liability coverage), with limits of at least \$5,000,000 per occurrence and an aggregate limit of \$10,000,000.

If the scope of work as defined in this Agreement includes the disposal of any hazardous or non-hazardous materials from the job site, Contractor must furnish to Railroad evidence of pollution legal liability insurance maintained by the disposal site operator for losses arising from the insured facility accepting the materials, with coverage in minimum amounts of \$1,000,000 per loss, and an annual aggregate of \$2,000,000.

Other Requirements

- G.** All policy(ies) required above (except worker's compensation and employers liability) must include Railroad as "Additional Insured" using ISO Additional Insured Endorsements CG 20 26, and CA 20 48 (or substitute forms providing equivalent coverage). The coverage provided to Railroad as additional insured shall, to the

extent provided under ISO Additional Insured Endorsement CG 20 26, and CA 20 48 provide coverage for Railroad's negligence whether sole or partial, active or passive, and shall not be limited by Contractor's liability under the indemnity provisions of this Agreement.

- H. Punitive damages exclusion, if any, must be deleted (and the deletion indicated on the certificate of insurance), unless the law governing this Agreement prohibits all punitive damages that might arise under this Agreement.
- I. Contractor waives all rights of recovery, and its insurers also waive all rights of subrogation of damages against Railroad and its agents, officers, directors and employees. This waiver must be stated on the certificate of insurance.
- J. Prior to commencing the work, Contractor shall furnish Railroad with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements in this Agreement.
- K. All insurance policies must be written by a reputable insurance company acceptable to Railroad or with a current Best's Insurance Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the work is to be performed.
- L. The fact that insurance is obtained by Contractor or by Railroad on behalf of 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 from Contractor or any third party will not be limited by the amount of the required insurance coverage.