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<tr><td rowspan="2"> 
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<tr><td></td><td>JOB NO. JSLM0066
St. Louis City, MO
Date Prepared: 3/3/2025</td></tr>
<tr><td>Date: 3/3/2025</td><td></td></tr>
<tr><td colspan="2">Only the following items of the Job Special Provisions (Bridge) are authenticated by this seal: A thru I</td></tr>
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A. CONSTRUCTION REQUIREMENTS

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

2.0 Construction Requirements. The plans and the asbestos and lead inspection reports for the existing structure and photographs from the collision damage are included in the contract in the bridge electronic deliverables zip file for informational purposes only.

2.1 The Contractor shall complete field measurements prior to ordering material.

2.1.1 The contractor shall be responsible for developing all required dimensional adjustments and coordinating the implementation of the dimensional adjustments with all involved fabricators and subcontractors. The contractor assumes all risks it may encounter in basing its bid prices, time or schedule of performance on the dimensions and elevations provided on the plans.

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

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

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

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

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

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

2.8 SSPC-SP2 and SSPC-SP-3 surface preparation shall be in accordance with the environmental regulations in Sec 1081 and collection of residue shall be in accordance with Sec 1081 for collection of blast residue. SSPC-SP6, SSPC-SP10 and SSPC-SP-11 surface preparation shall be in accordance with the approved blast media and environmental regulations in Sec 1081 and collection of blast residue shall be in accordance with Sec 1081.

3.0 Coating Information. The new steel and heat straightened portion of steel shall be coated in accordance with the contract plans.

3.1 Existing Bridge Information. The informational plans may be used by bidders in determining the amount of steel to be cleaned and recoated or overcoated with the full understanding that the State accepts no responsibility for accuracy of the estimated tons of existing steel shown in the table below. The bidder's acceptance and use of the estimate shown below shall be no cause for claim for any final adjustment in the contract unit price for the work involved in repainting. Each bidder is expected to carefully examine the structure(s), investigate the condition of existing paint and prepare an estimate of quantities involved before submitting a bid. Surface preparation and application of field coatings to the structural steel shall be based on the contract plan quantities. No final measurements will be made.

Bridge No.	Estimated Tons			Existing Paint System	Lead Based
	Coating System				
	System G	Calcium Sulfonate	Total		
A150121	1	0	1	G	No

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

(a) MoDOT - Design Division - Environmental Section
PO Box 270
105 W Capitol Ave, Jefferson City, MO 65102
Telephone (573) 526-4778

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

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

4.0 Method of Measurement. No measurement will be made.

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

B. REMOVAL OF INTERMEDIATE CROSS BRACE

1.0 Description. This work shall consist of the removal and disposal of 2 collision damaged existing intermediate cross braces according to the limits shown on the contract plans in Spans E34 or as directed by the engineer.

2.0 Removal Requirements. The contractor shall measure and inspect the 2 intermediate cross braces shown on the plans, determined to be within the zone of collision damage, and shall verify the members' thicknesses and measurements, prior to ordering new material. The

cross braces shall not be removed until new steel is on hand and the contractor is prepared to proceed with the order of work per the plans in a timely manner.

2.1 Removal shall be by methods such that the structure that is to remain in place is not damaged. After removal of stiffeners, any remaining weldment on the girders shall be ground smooth and flush to the girder web to remove potential points of stress risers to the satisfaction of the Engineer.

2.2 The methods used to remove the steel shall prevent any debris being dropped onto the roadway.

2.3 Disposal of materials shall be in accordance with Sec 202.

2.4 Any damage sustained to the structure that is to remain in place, as a result of the Contractor's operations, shall be repaired or the material replaced as approved by the Engineer at the Contractor's expense.

3.0 Method of Measurement. Final measurement of the removal of the intermediate cross braces will not be made except for authorized changes during construction.

4.0 Basis of Payment. Removal of existing intermediate cross braces will be measured per each and will include the removal of members, plates and stiffeners as shown on the plans. 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 Removal of Intermediate Cross Brace per each.

C. REMOVAL OF STIFFENERS

1.0 Description. This work shall consist of the removal and disposal of collision damaged existing stiffeners according to the limits shown on contract plans in Spans E34 or as directed by the engineer.

2.0 Removal Requirements. The contractor shall measure and inspect those stiffeners shown on the plans, determined to be within the zone of collision damage, and shall determine which of the stiffeners require replacement, and which could be heat straightened and remain in place. This field verification shall be performed by the contractor and with the approval of the engineer. The field verification and measurements shall be performed and approved by the engineer prior to ordering the new materials. The stiffeners shall not be removed until new steel is on hand and the contractor is prepared to proceed with the order of work per the plans in a timely manner. After removal of stiffeners, any remaining weldment on the girders shall be ground smooth and flush to the girder web to remove potential points of stress risers to the satisfaction of the Engineer.

2.1 The contact surfaces of all existing structural steel exposed by removal of the stiffeners shall be cleaned and repaired in accordance with the provisions of JSP I and Sec 1081.

2.2 The methods used to remove the steel shall prevent any debris from being dropped onto the roadway.

2.3 Disposal of materials shall be in accordance with Sec 202.

2.4 Any damage sustained to the structure that is to remain in place, as a result of the Contractor's operations, shall be repaired or the material replaced as approved by the Engineer at the Contractor's expense.

3.0 Method of Measurement. Final measurement of the removal of the stiffeners will be made per each, not exceeding the quantity shown on the plans.

4.0 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 Removal of Stiffeners per each.

D. PARTIAL REMOVAL AND STORAGE OF CONDUIT SYSTEM ON STRUCTURE

1.0 Description. This provision contains construction requirements for the partial removal and storage of the existing conduit system on the structure in Span E34. This work will impact the existing lighting conduit on the I-64 bridge and the work must be coordinated with the Commission's St. Louis District Lighting staff. This includes disconnection and safe storage and placement of the existing wiring in the conduit being removed and stored.

2.0 Construction Requirements. The existing conduit and wiring attached to Girder No. 1 shall be removed over Span E34 as is necessary to heat straighten and repair the girder. The disconnection of the electrical wiring, prior to the removal and storage of the conduit, shall be coordinated with MoDOT.

2.1 MoDOT is a member of MOOneCall System. Prior to any excavation or work within MoDOT Right-Of-way, the contractor must contact MOOneCall at 1-800-DIG-RITE and request for Utility Locates within noted project limits. If the scope of work contains modification, addition and/or expansion of existing underground MoDOT ITS, lighting, or signal facilities, the contractor must notify the MoDOT Utilities Locate staff prior to any work, in order for MoDOT to update MoDOT utility location records with Missouri One Call.

2.2 Contact. The contractor shall notify the MoDOT Lighting group via an email at least 5 days before any work that may impact the existing lighting network. The contractor shall include the Job#, location and brief scope of work in the email's subject line. The engineer shall be notified prior to making contact with Lighting staff. For MoDOT Utility location updates, the contractor must contact MoDOT TMC at 314-275-1500 and ask for Utility Locate Section at least seven calendar days before performing any work. For MoDOT Lighting please contact Brian Ducote at 314-205-7319.

2.3 The Contractor shall carefully remove the conduit for storage to avoid damage to any of the components. All removed components of the conduit system shall be stored in a secure manner at a location agreed upon by the Engineer until the work completion and the conduit is ready for re-installation.

2.4 Any damage sustained to the structure that is to remain in place, as a result of the Contractor's operations, shall be repaired or the material replaced as approved by the Engineer at the Contractor's expense.

3.0 Method of Measurement. No measurement will be made.

4.0 Basis of Payment. Payment for the above described work will be considered completely covered by the contract lump sum price for Partial Removal and Storage of Conduit System on Structure.

E. RE-INSTALLATION OF CONDUIT SYSTEM ON STRUCTURE

1.0 Description. This provision contains construction requirements for re-installation of the conduit system on the structure in Span E34.

2.0 Construction Requirements. The existing conduit system that was removed and stored shall be re-installed to the heat straightened and repaired Girder No. 1.

2.1 All existing electrical components of the I-64 bridge shall be re-installed and connected through the re-installed conduit. Coordinate with MoDOT's St. Louis District Lighting staff as per provision JSP D.

2.2. The contractor shall be solely responsible for making any necessary adjustments to the dimensions to facilitate re-use of the existing conduit system.

3.0 Method of Measurement. No measurement will be made.

4.0 Basis of Payment. Payment for the above described work will be considered completely covered by the contract lump sum price for Re-installation of Conduit System on Structure.

F. HEAT STRAIGHTENING

1.0 Description. This work shall consist of furnishing the necessary materials, labor, and equipment for heat straightening the damaged portion of Girder No. 1 and Girder No. 2 in Span E34 of I-64 EB over the area of collision impact above Tucker Blvd., as shown on the contract plans in accordance with this job special provision.

2.0 Experience Requirements. The contractor shall meet the experience requirements of either Experience Option 1 or Experience Option 2.

2.1 Experience Option 1.

2.1.1 The contractor's organization shall have at least five years of experience in conducting heat straightening repairs for damaged steel structures. During the preceding three-year period, the contractor shall have conducted an average of at least two heat straightening projects per year. Experience documentation shall include the following: date of project, location, bridge owner, number and type of members straightened, and duration of project.

2.1.2 The contractor's field supervisor shall be a registered professional engineer qualified to practice in one of the following disciplines: structural, metallurgical, or welding engineering.

2.2 Experience Option 2.

2.2.1 The contractor shall have at least ten years of experience in conducting heat straightening repairs for damaged steel structures and shall have conducted an average of at least ten heat straightening projects per year during the preceding three-year period.

2.2.2 Technicians involved in the conduct of heat applications during heat straightening shall have at least three years of experience on a minimum of 15 projects.

2.2.3 Experience documentation for both contractor and technicians shall include: date of project, location, bridge owner, number and type of members straightened, and duration of project.

3.0 Equipment.

3.1 Heating shall be with an oxygen-fuel combination. The fuel may be propane, acetylene or other similar fuel as selected by the contractor, subject to the engineer's approval.

3.2 Heat application shall be by single or multiple orifice tips only. The size of the tip shall be proportional to the thickness of the heated material. No cutting torch heads shall be permitted.

3.3 Jacks, come-alongs or other force application devices shall be gauged and calibrated so that the force exerted by the device may be controlled and measured. No external force shall be applied to the structure by the contractor unless it is measured.

4.0 Construction Requirements.

4.1 Damage Assessment.

4.1.1 The contractor shall inspect areas to be straightened for cracking. Any cracking detected shall be brought to the attention of the engineer. Methods of crack detection shall be one or more of the following methods as applicable:

a) Liquid penetrant examination in accordance with ASTM E 165.

b) Magnetic particle examination in accordance with ASTM E 709.

c) Radiographic testing in accordance with the Bridge Welding Code as specified in Sec 1080.3.3.4 and 1080.3.3.5.

d) Ultrasonic testing in accordance with the Bridge Welding Code as specified in Sec 1080.3.3.4 and 1080.3.3.5.

4.1.2 If cracking exists, the contractor shall determine whether the cracks shall be repaired before or after straightening. All identified cracks in welds shall be repaired by a certified welder in accordance with Sec 712.6.

4.1.3 The contractor shall identify and document all yield zones, yield lines and associated damage and provide this information to the engineer prior to initiation of heat straightening by either visual inspection or measurements.

4.1.4 Steel with strains up to 100 times the yield strain may be repaired by heat straightening. For strains greater than this limit, the engineer shall determine if heat straightening may be used.

4.1.5 Cracks and/or strains exceeding 100 times the yield strain or other serious defects shall be called to the attention of the engineer.

4.1.6 The contractor shall prepare and submit a work plan to the engineer for approval 14 days prior to initiating repairs. The engineer's acceptance of the plan shall not relieve the contractor of the responsibility for obtaining satisfactory results.

4.1.7 Upon completion of straightening, the steel surfaces shall be carefully inspected for the presence of cracks or other signs of distress. Any repair work and retesting of the repair work required as a result of this inspection will be paid for in accordance with Sec 109. This shall not relieve the contractor from responsibility to repair any damage caused by this work at the contractor's expense. Any delay or inconvenience caused by this inspection requirement will be non-compensable and effect on time of performance non-excusable.

4.2 Heat Application.

4.2.1 Prior to heat application, the determination of existing paint removal shall be made so as not to damage any of the surrounding existing paint that is to remain after the heating of the steel. See other contract documents to determine if existing paint is lead-based or non-lead based. The heating of the steel shall not damage any of the paint that is to be used in place and shall not create an environmental air quality issue.

4.2.2 The heat application shall be in accordance with Sec 1080.3.3.14.

4.2.3 The contractor shall use one or more of the following methods for routine, ongoing, documented temperature verification during heat straightening:

(a) Temperature sensitive crayons.

(b) Pyrometer.

(c) Infrared non-contact thermometer.

4.2.4 The material shall be heated in a single pass following the specified pattern and allowed to cool to below 250°F prior to re-heating.

4.2.5 Heating patterns and sequences shall be selected to match the type of damage and cross section shape.

4.2.6 Vee heats shall be shifted over the yield zone on successive heating cycles.

4.2.7 Simultaneous vee heats may be used provided that the clear spacing between vees is greater than the width of the plate element.

4.2.8 Repair of previously heat straightened members in the same region of damage may be conducted once. Further repairs shall not be performed without the approval of the engineer.

4.3 Application of Jacking Forces.

4.3.1 Jacks shall be placed so that forces are relieved as straightening occurs during cooling.

4.3.2 Magnitude of Jacking Forces.

(a) Jacking shall be limited so that the maximum bending moment in the heated zone shall be less than 50 percent of the plastic moment capacity of the member or major bending element. For local damage, the jacking force shall be limited to 50 percent of initial yield of the element.

(b) The jacking force shall be adjusted so that the sum of jacking-induced moments and estimated residual moments shall be less than 50 percent of the plastic moment capacity of the member. As an alternative to considering residual moments, the moment due to jacking forces can be limited to 25 percent of the plastic moment capacity of the member during the first two heating cycles. For additional heating cycles, the limit of 50 percent may again be used.

4.3.3 The contractor shall determine and document the maximum jacking force for each damage location and the proposed sequence of jacking and heating. Copies of the documentation shall be submitted to the engineer for acceptance 14 days before initiating repairs. Modifications due to changing conditions shall be submitted to the engineer. The maximum jacking force may be controlled by measuring the deflection resulting from the jacking force.

4.3.4 The calibration of jacks and electronic temperature monitoring equipment shall be performed and documented monthly, and load cells used for calibration must be certified within a two-year period.

4.4 Field Supervision of Repairs.

4.4.1 Jacking forces shall be monitored to ensure that limits are not exceeded.

4.4.2 Heating temperatures shall be monitored to ensure compliance with specified limits.

4.5 Tolerances.

4.5.1 The dimensions of heat straightened structural members shall be in accordance with the following tolerances:

Member Type	**Recommended Minimum Tolerance [1,2]**
Girders/beams, truss members, or columns: Within 10 feet or less Overall sweep excluding impact point At impact point	 1/4 inch 1/2 inch 3/4 inch
Local web deviations	d/100 but not less than 1/4 inch
Local flange deviations	b/100 but not less than 1/4 inch
[1] Units of member depth, d, and flange width, b, are inches [2] Tolerances for curved or cambered members should account for the original shape of the member	

4.5.2 The above tolerance limits may be relaxed with approval from the engineer based on one or more or the following considerations:

(a) Type and location of damage in the member.

(b) Time considerations resulting from the nature of traffic congestion during the repair operation.

(c) Degree of restoration required to restore structural integrity.

4.6 Damage Due to Contractor's Operations.

4.6.1 Care shall be exercised in the straightening operations to prevent additional damage to the members.

4.6.2 If, in the judgement of the engineer, the contractor's operations damage the members or the remaining structure, the contractor shall be required to modify the method of operations and make all necessary repairs or material replacement as approved by the engineer at the contractor's expense.

4.6.3 The work shall be performed by methods not likely to produce fracture or other injury to the steel members being straightened.

5.0 Method of Measurement. No measurement will be made.

6.0 Basis of Payment. Payment for the above described work including all material, labor, tools, equipment, and all incidentals necessary to complete this item of work will be considered completely covered by the contract lump sum price for Heat Straightening.

G. NON-DESTRUCTIVE TESTING

1.0 Description. This work shall consist of performing non-destructive testing on the fillet welds in the area as defined below and as shown on the plans and any other welds as directed by the engineer.

2.0 Construction Requirements.

2.1 After the intermediate cross braces and stiffeners being replaced are removed, and the girders are heat straightened and the surface preparation for recoating the structural steel is completed, Girders No. 1 & 2 shall have non-destructive (magnetic particle) testing performed. Perform non-destructive testing on the welds of the web and bottom flange of the plate girders where deemed necessary after heart straightening Girders No. 1 and 2, or as deemed necessary by the engineer, in the location of the collision damaged girders per the plans. Also, for the length impacted by the heat straightening of the girders, any appurtenances (stiffener/diaphragm connection plates) welded to the beams shall be tested. The engineer will also determine if there is a need for any additional testing of the cross brace welds to the adjacent beams in this area. Non-destructive testing shall be performed by an acceptable testing agency. The contractor shall submit to the engineer and Bridge Division (Fabrication@modot.mo.gov) the following documentation for each individual performing non-destructive testing (NDT): their certifications, current eye exam and the NDT company written practice, including the Level III individual certification used for written practice. Personnel performing the tests shall be qualified for SNT-TC-1A Level II.

2.2 The length of weld to be tested and the base metal, one inch either side of the weld, shall be cleaned of all rust prior to the testing.

2.3 If fatigue cracks are found, the cracks are expected to be very small and may be located in the base metal at the toe of the welds. Any cracks discovered by testing, regardless of length, shall be marked and reported to the engineer. All repairs shall be made by a certified welder in accordance with Sec 712.6. Any repair work and retesting of the repair work required, as a result of this inspection, will be paid for in accordance with "Heat Straightening". This shall not relieve the contractor from responsibility to repair any damage caused by this work at the contractor's expense. Any delay or inconvenience caused by this inspection requirement will be non-compensable and effect on time of performance non-excusable.

3.0 Method of Measurement. No measurement will be made.

4.0 Basis of Payment. Payment for the above described work including all material, labor, tools, equipment, and all incidentals necessary to complete this item of work will be considered completely covered by the contract lump sum price for Non-Destructive testing.

H. GRIND SURFACE DEFORMITIES

1.0 Description. This provision contains construction requirements for grinding surface deformities.

2.0 Construction Requirements. Steel surface deformities in the region of the impacted collision damage that will not be repaired by heat straightening in Girders No. 1 and 2, shall be ground smooth prior to application of paint. This work shall be performed prior to the Non-Destructive Testing and any weld repairs.

2.1 Gouges, nicks and similar surface deformities in the existing structural steel shall be ground smooth and flush to the adjacent steel to remove potential points of stress risers where directed by and to the satisfaction of the Engineer.

3.0 Method of Measurement. No measurement will be made.

4.0 Basis of Payment. Payment for the above described work will be considered completely covered by the contract lump sum price for Grind Surface Deformities.

I. STRUCTURAL STEEL REQUIREMENTS

1.0 Description. This provision contains general structural steel requirements for this project.

2.0 Material. All material shall be in accordance with Division 1000, Material Details, and specifically as shown below. The gray epoxy-mastic primer (non-aluminum) shall be compatible with concrete and produce a dry film thickness of no less than 3 mils (75 µm).

Item	Section
Structural Steel Construction	712
Gray Epoxy-Mastic Primer (non-aluminum)	1045

Item	Section
Structural Steel Fabrication	1080
Coating of Structural Steel	1081

3.0 Construction Requirements.

3.1 Before fabrication of new metalwork, the Contractor shall make the necessary measurements in the field to verify dimensions of the existing structure where new members are affected. Any deviation of the dimensions shown on the plans shall be called to the engineer's attention. The Contractor shall be responsible for developing all required dimensional adjustments and coordinating the implementation of the dimensional adjustments with all involved fabricators and subcontractors.

3.2 Prior to erection of the new structural steel, the steel that is to remain shall be carefully inspected for irregularities. If such irregularities are found, the irregularities shall be brought to the attention of the engineer.

3.3 Holes in the new intermediate cross brace connection plates and angles may be used as a template for drilling the holes in the existing material.

3.4 A minimum edge distance shall be maintained for all field drilled holes. The minimum edge distance for bolts shall be as shown in table below measured from the centerline of holes.

Bolt Diameter inch (mm)	Minimum Edge Distance inch (mm)
3/4 (19.0)	1-1/4 (32)
7/8 (22.2)	1-1/2 (38)
1 (25.4)	1-3/4 (45)

3.5 The surfaces of existing steel that will become faying surfaces for non-slip critical new connections, typically secondary members, shall be cleaned according to the manufacturer's recommendation and with a minimum of SSPC-SP-3 surface preparation and coated with one prime coat of Gray Epoxy-Mastic Primer (non-aluminum) in accordance with Sec 1081. The surfaces of existing steel that will become faying surfaces for slip critical new connections, typically primary members, shall be in accordance with contact surfaces in Sec 1081. Primary member connections include girder/beam splices, end diaphragms and intermediate diaphragms in curved structures.

3.6 Exposed girder/beam areas that are not faying surfaces or not covered by concrete that are scratched, damaged by the contractor or by field welding operations shall be touched up with Gray Epoxy-Mastic Primer (non-aluminum) in accordance with Sec 1081. The areas shall receive the coating system as shown on the plans.

4.0 Method of Measurement. No measurement will be made.

5.0 Basis of Payment. Payment for the above described work will be considered completely covered by the contract unit price for the structural steel items included in the contract. No payments or adjustments will be made where new members are affected due to any deviation of the dimensions shown on plans or shop drawings.