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Project Description

Proposed I-20, I-26, and I-126 Interchange improvements in Columbia, Richland & Lexington Counties, SC, at six (6) locations:

Described as:

Site 1 – I-20 Bridge Replacement at CSX Railroad Milepost C-5.52, USDOT Crossing 843296E (main track); Lexington Co.

Site 2 – I-26 Bridge Replacement at CSX Railroad Milepost C-4.14, USDOT Crossing 843301Y (main track); Richland Co.

Site 3 – New I-26 Ramp Bridge at CSX Railroad Milepost C-4.12 (main track); Richland Co.

Site 4 – New I-126 Bridge at CSX Railroad Milepost C-4.06 (main track); Richland Co.

Site 5 – Demolish Existing Bridge at CSX Railroad Milepost C-4.01, USDOT Crossing 640404L (main track); Richland Co.

Site 6 – New I-126 Bridge at CSX Railroad Milepost C-3.62 (main track); Richland Co.

CSX Transportation Project File: **OP No. SC0424**

CSX Transportation is hereinafter referred to as “CSXT”. South Carolina Department of Transportation is hereinafter referred to as “SCDOT”. Successful Design Build Team is hereinafter referred to as “Design Build Team” or “Contractor”.

Railroad requirements are provided to assist bidders and are based on CSXT understanding of the project described above, with each crossing being a grade separation supporting highway over track. Requirements for these locations are included; however, upon receiving plan submittals, CSXT will provide a complete list of project specific requirements.

A site investigation was performed on May 3, 2018, at each proposed crossing location. The Request for Railroad Engineering Requirements for Inclusion into Design-build Project Bid Package Agreement dated May 14, 2018 included a Scope of Work which outlines “Engineering Requirements” to be provided by CSXT. Each scope item is copied below and is followed by a response and/or detailed CSXT requirements.

1.1 Project Site Visit

At the time of the site visit, no CSXT Communication & Signals facilities were observed to be located sufficiently close to any of the six (6) crossing locations sufficient to warrant adjustment of those facilities. Contractor access and other work within CSXT shall be arranged in such a way as to avoid and protect Communication & Signals facilities, including buried utilities.

Aerial wireline facilities were observed at each crossing. Utilities installed longitudinally along CSXT Right-of-Way may not be identified by SC811 utility locating service. It is the Design Build Team's responsibility to locate all pipe and wire facilities located within CSXT right-of-way and coordinate relocations with the designated CSXT representative.

CSXT utility design and construction requirements and specifications can be found at the following URL: : <https://www.csx.com/index.cfm/customers/value-added-services/property-real-estate/permitting-utility-installations-and-rights-of-entry/>

1.2 CSXT Right-of-Way

Valuation Maps "V04145" and "V04144" are included with this submittal. CSXT right-of-way is roughly centered on the existing mainline track along the CN&L subdivision. The right-of-way is approximately 100-feet wide along the CN&L Subdivision at Site 1, having railroad milepost C-5.52. The right-of-way is approximately 50-feet wide beginning at RR STA 236+56 and maintains this width to the east for Sites 2, 3, 4, 5, & 6 at railroad mileposts C-4.14, C-4.12, C-4.06, & C-3.62; respectively. Actual roadway alignment and railroad right-of-way widths shall be verified during the Preliminary Engineering process. The CSX Real Estate Representative was contacted to obtain exact right-of-way widths at each location. Additional roadway/bridge design information may be necessary to generate that information. Any inquiries for the Real Estate Representative should be directed through SCDOT.

1.3 Existing Track(s) and Additional Track(s) and/or Service Roads

For Site 1, provide 100-ft of horizontal clearance orthogonal to and centered on the mainline track and CSXT Right-of-Way. For the remaining Sites, provide 50-ft of horizontal clearance orthogonal to and centered on the mainline track and CSXT Right-of-Way. This is to accommodate access roads, utilities, drainage, and two (2) future tracks, one either side of the existing mainline, with 15-ft track centers. Assume top-of-rail elevations to match that of the existing mainline rails. Also, the standard 23-ft minimum vertical clearance will be required over all three tracks, six (6) feet from each track centerline. The structure shall bridge the entire right-of-way. MSE walls will not be permitted within the right-of-way.

1.4 Train Counts and Types

The current train traffic on the CN&L subdivision during a typical day through the Project Corridor limits is two (2) moves per day at a maximum authorized speed of 49 MPH with no passenger service. This represents an average of one (1) through train, one (1) night through train, and no switching trains. The traffic count does not include hi-rail moves or parts of trains from maintenance equipment.

1.5 Right-of-Entry Requirements

Right-of-Entry application(s) for boring, surveying, and other needs to access CSXT property prior to obtaining an executed Construction Agreement, can be found at this URL: <https://www.csx.com/index.cfm/customers/value-added-services/property-real-estate/permitting-utility-installations-and-rights-of-entry/>

The Design Build Team shall be responsible for negotiating and securing all necessary right-of-entry agreements. All costs associated with the railroad Right-of-Entry process shall be borne by the Design Build Team.

Separate application and payment are required before any crossing of CSXT track by a temporary at-grade or ‘mat’ crossing. Additional application information can be found at the above link.

The Design Build Team shall be responsible securing necessary agreement(s) to construct temporary construction rail crossings. All designs and costs associated with this process shall be borne by the Design Build Team.

1.6 CSXT Engineering Standards and Criteria

Standards/Criteria – CSXT current design and construction standards, clearance requirements, insurance requirements, and sample Preliminary Engineering and Construction Agreements are in the *CSXT Public Project Information for Construction and Improvement Projects That May Involve the Railroad*. The document can be downloaded at the following URL: <https://www.csx.com/index.cfm/library/files/about-us/property/public-project-manual/>

Clearances – Bridge bents will not be permitted on CSXT right-of-way within the CN&L Subdivision over the main track from RRMP C-3.62 to C-5.52 at the six project locations. The new bridges shall span the entire CSXT right-of-way. All existing structures shall be removed to a minimum three (3) feet below finished grade. Make accommodations for future track situated fifteen (15) feet from existing track, center-to-center each side of each existing track. Twenty-three (23) feet of vertical clearance is required as measured at six (6) feet from centerline of each future track. Top of rail elevations shall be surveyed throughout the project limits to verify whether the track is located within a vertical curve. If the track is located within a sag vertical curve, the vertical clearance shall be set assuming the track will be raised sufficiently to remove the sag.

Construction clearance shall not reduce the existing minimum vertical clearance for demolition of bridge structures and shall provide at least thirteen (13) feet of horizontal clearance from centerline of mainline track, each side, at each location. Maintain twenty-three (23) feet of vertical clearance at all new bridge construction locations.

Insurance Requirements (other) – SCDOT and Contractor, if and to the extent that either is performing work on or about CSXT's property, shall procure and maintain required insurance as described in the attached CSXT Special Provisions and Insurance Submittal Checklist. A sample compliant COI Certificate is attached for reference.

Fencing – Protective fencing requirements are described in the CSXT Public Project Manual under Criteria for Overhead Bridges, Part V.

Contractor Submittal – Contractor construction methodologies and submittals shall be approved by CSXT in advance of the work being performed. All submittals shall be in accordance with the Public Project Manual and are to include, but are not limited to:

- Emergency Action Plan – Include hospital and fire department phone numbers, a map from the work site to the nearest hospital, CSXT emergency number 800-232-0144, etc.
- Construction Equipment and Access– Include a plan view drawing or sketch of the jobsite. Include a general description of the construction work to take place within CSXT right-of-way, construction vehicle operating limits, construction vehicle and equipment overnight security protocols, material staging areas, work zones, scaffolding, temporary fencing, etc.

- Bridge Demolition Plan – site access, erosion control, crane lift plans, including location relative to track, calculations for heaviest crane pick(s), shoring, etc.
- Substructure Construction Plan – erosion control, shoring, crane lift plans, including location relative to track, calculations for heaviest substructure-related crane pick(s), etc.
- Beam Setting and Superstructure Construction Plan – crane lift plans, including location, beam truck staging area, calculations for pick weight and temporary bracing, etc.
- Jack and Bore Plan – minimum depth from bottom of rail, shoring, track monitoring, etc.
- Excess Soil Management Plan – Soil that is excavated on CSXT right of way shall not be removed from the property without permission from a CSXT representative. Contractor will be responsible for any needed stockpiling and handling of the soil while on CSXT property and erosion control of any stockpiled soil. Also, any excess soil that is not re-used within CSXT right of way shall be tested by a CSXT representative in accordance with CSXT Soil and Water Management Policy. Contractor would then load and transport excess soil to a landfill approved by CSXT.
- Approved CSXT Landfills – The following are the closest landfills to the project area.
 - Republic Northeast Sanitary Landfill in Eastover is approximately 38-miles away from the project area.
 - WM Richland Landfill in Elgin is approximately 34-miles from the project area.
 - Republic Lee County Landfill in Bishopville is approximately 64-miles from the project area.

1.7 Site Specific Criteria

Contractor is to perform their own investigations, the following is meant as information, and may not be not all-inclusive.

Site 1 –I-20 Bridge Replacement, DOT No. 843296E, RRMP C-5.52

- Site Access: An existing at-grade crossing for Rolling Pines Rd is located approximately 840-ft northwest from bridge centerline.
- Drainage: Existing 36-inch and 24-inch RCP's are located under CSXT track approximately 200-ft northwest from bridge centerline. Shallow track side ditches exist either side of the mainline track. Positive drainage shall be maintained through construction.
- Utilities: CSXT records indicate a BellSouth communication line is buried 72-inches below top of rail encased in a 16-inch steel pipe approximately 140-ft southeast from bridge centerline.
- Right-of-Way: The CSXT Right-of-Way is 100-feet wide roughly centered on the existing mainline track.

- Excess Soil: Excess soil not reused within CSXT Right-of-Way will need to be transported to a CSXT approved Landfill.

Site 2 – I-26 Bridge Replacement DOT No. 843301Y, RRMP C-4.14

- Site Access: There is no existing access to the bridge for construction equipment.
- Drainage: An existing 36-inch RCP is located under CSXT track approximately 280-ft northwest from bridge centerline. Shallow track side ditches exist either side of the mainline track. Positive drainage shall be maintained through construction.
- Utilities: CSXT records indicate there are no utilities present in the Right-of-Way within the vicinity of the bridge. However, during the site assessment a sanitary sewer line belonging to the City of Columbia was observed approximately 330-ft northwest of the bridge centerline crossing the mainline track.
- Right-of-Way: The CSXT Right-of-Way is 50-feet wide roughly centered on the existing mainline track.
- Excess Soil: Excess soil not reused within CSXT Right-of-Way will need to be transported to a CSXT approved Landfill.

Site 3 – New I-26 Ramp Bridge at CSX Railroad Milepost C-4.12

- Site Access: An existing trail is located to the geographic south running parallel to the CSXT Right-of-Way.
- Drainage: An existing 36-inch RCP is located under CSXT mainline track approximately 400-ft northwest from bridge centerline along the track. Also, an 18-inch RCP is located directly under the bridge crossing the mainline. Shallow track side ditches exist either side of the mainline track. Positive drainage shall be maintained through construction.
- Utilities: CSXT records indicate there are no utilities present in the Right-of-Way within the vicinity of the bridge. However, during the site assessment a sanitary sewer line belonging to the City of Columbia was observed approximately 150-ft northwest of the bridge centerline crossing the mainline track.
- Right-of-Way: The CSXT Right-of-Way is 50-feet wide roughly centered on the existing mainline track.
- Excess Soil: Excess soil not reused within CSXT Right-of-Way will need to be transported to a CSXT approved Landfill.

Site 4 – New I-126 Bridge at CSX Railroad Milepost C-4.06

- Information from Site 3 applies to this bridge.

Site 5 – Demolish Existing Bridge DOT No. 640404L, RRMP C-4.01

- Information from Site 3 applies to this bridge.

Site 6 – New I-126 Bridge at CSX Railroad Milepost C-3.62

- Site Access: An existing trail is located to the geographic south running parallel to the CSXT Right-of-Way
- Drainage: An existing 36-inch RCP is located under CSXT mainline track approximately 440-ft northwest from proposed bridge centerline along the track. Shallow track side ditches exist either side of the mainline track. Positive drainage shall be maintained through construction.
- Utilities: CSXT records indicate a South Carolina Electric & Gas Co. wireline over the mainline track approximately 140-ft southeast from the proposed bridge centerline.
- Right-of-Way: The CSXT Right-of-Way is 50-feet wide roughly centered on the existing mainline track.
- Excess Soil: Excess soil not reused within CSXT Right-of-Way will need to be transported to a CSXT approved Landfill.

1.8 Preliminary Engineering Review

The estimate of actual CSXT expenses relating to PE review of the design materials will depend on the complexities of the project, duration of review, number of design submittals, and other variables. The below budget estimate includes reviews of the preliminary design package, revised preliminary design package, and final design packages. Should additional reviews become necessary, cost is approximately \$1,500.00 for each location requiring additional review. Actual cost will vary depending on complexity of railroad involvement and prior unresolved comments. Additional cost will be incurred whenever design plans are revised and resubmitted to CSXT for review.

The following PE estimate captures work performed by CSXT for attendance in a pre-design meeting, design development coordination correspondence, documentation, reports, review of design concepts, and other work performed in support of the design-build team prior to delivery of the preliminary design plans and calculations for initial PE review. All scope will be performed on a time and material basis. Should advance payment be required by CSXT Public Projects, unused monies will be refunded to the payee following completion and acceptance of the project.

Based on limited information, below is an anticipated PE estimate for CSXT's in-office and contracted services. This estimate is based on plan reviews for two (2) bridge rebuilds, three (3) new bridges, and one (1) bridge demolition.

Anticipated PE scope and budget estimate is listed on the following page:

EXHIBIT A – RAILROAD DESIGN CRITERIA

Task	Est. Cost
1. CSXT In-Office Administrative Support	\$7,000.00
2. Construction & Administrative Engineering Services (Arcadis)	\$50,000.00
PE Project file setup, project initiation, and Unifier setup	\$1,500.00
Generate PE estimate, review PE agreement, and routing of PE Agreement	\$600.00
Site assessment/onsite predesign meeting with D-B team	\$4,000.00
Coordinate with CSXT for future operational needs	\$600.00
Coordinate with CSXT Technology and Positive Train Control	\$700.00
Verify right-of-way limits and property requirements	\$500.00
Coordination with Signal Assistant and conflict determination	\$600.00
Initial review of utility maps and agreements; conflict analysis	\$1,500.00
Review of preliminary design plans and calculations (6 locations)	\$12,000.00
Review of revised preliminary plans and calculations (6 locations)	\$10,000.00
Review of final plans and calculations (6 locations)	\$6,000.00
Final coordination with Property Services for easement requirements	\$500.00
Generate approval letter and delivery	\$400.00
Generate construction cost estimate	\$600.00
Review draft construction Agreement, with routing of Agreement	\$500.00
Ongoing administration and Monthly Coordination Meetings (8 months)	\$5,000.00
SUBTOTAL	\$57,000.00
10% Contingency	\$5,700.00
TOTAL BUDGET APPROXIMATION	\$62,700.00

1.9 CSXT Services

Design Review – PE scope and cost estimate are described in item number 1.8 Preliminary Engineering Review. A 30-day PE review timeline is generally allotted for each design review. Typically, three reviews of the design plans and calculations are required. Additional reviews may be necessary depending on the complexity of the project, completeness of each submittal, and adequacy of each response to prior comment request.

Construction Submission Review – All construction activities within and over CSXT right-of-way will require CSXT review of contractor methodologies and plans. Applicable construction design and plan submissions, as described in the CSXT Construction Submission Criteria, must be reviewed and approved by the CSXT Representative (General Engineering Consultant for CSXT) before work related to those submissions may commence on CSXT right-of-way. The reviews can take up to 30 days; however, every effort will be made to complete reviews within two (2) weeks. A CSXT Construction Monitoring Representative shall be onsite during critical construction activities occurring within and over CSXT right-of-way. Minimum advanced notice of 5 days is required for critical construction activities that require a CSXT Construction Monitoring Representative to be present. That includes demolition activities, girder lifts, and concrete pours near and over CSXT track or signal facilities.

CSXT Flagging Protection – Flagging protection is required for each day that the Contractor is working within CSXT operating right-of-way. Cost for flagging protection depends on the length of the work day, number of days worked per week, and duration of the project requiring flagging protection. The average flagging cost per day for a long-term assignment is \$1,300.00, which is based on a 10-hour work day for the Contractor, and 12-hour day by the railroad flagman. This cost includes the base pay for the flagman, overhead, and generally includes travel expenses, meals, lodging, equipment, etc. The charge to the Contractor by CSXT will be the actual cost based on the rate of pay for CSXT's employees who are available for flagging service at the time the service is required. Work by a flagman in excess of 8 hours per day or 40 hours per week may result in overtime pay at 1 ½ time the employee direct rate. If nighttime flagging services are required, the flagman is guaranteed an 8-hour dayshift and is paid regular overtime. After sixteen (16) hours, the overtime pay is 2 times the appropriate rate.

EXHIBIT A – RAILROAD DESIGN CRITERIA

Flagging Notices – It may take up to thirty (30) days to secure flagging protection. Six (6) days advance notification is required to terminate flagging protection. See the attached documents for additional reference. Flagging may not be available to meet the Contractors schedule needs, depending on availability of qualified CSXT employees. Construction schedule coordination at the onset of design is advised.

Once the flagman is assigned, he will typically remain on the project, at project cost, until the project no longer requires flagging protection.

CE&I Expenses – The following order of magnitude estimate, is based on the anticipated expenses that CSXT expects to incur as a result of providing construction engineering and inspection services in support of this project. These expenses are listed by task in the table below. Flagging expenses will be added at a later date. Track and signal work expenses are not included, but may become necessary.

Task	Est. Cost
1. CSXT contract labor with additives and expenses	\$6,000.00
2. Construction & Administrative Engineering Services (Arcadis)	\$369,600.00
Project file setup, project initiation, CSXT setup	\$500.00
Process State construction authorization letter and return an Acknowledgement letter	\$700.00
Attend preconstruction mtg., with prep., reporting, and travel	\$3,000.00
Utility permitting and adjustment coordination and communications	\$1,000.00
Review of schedule and ongoing coordination of insurance approval and flagging protection	\$21,000.00
Review of contractor demo/erection/access submissions (2 reviews at 6 bridge location)	\$12,000.00
Site 1 bridge demolition and construction inspection and monitoring	\$55,000.00
Site 2 bridge demolition and construction inspection and monitoring	\$55,000.00
Site 3 bridge construction inspection and monitoring	\$35,000.00
Site 4 bridge construction inspection and monitoring	\$35,000.00
Site 5 bridge demolition inspection and monitoring	\$20,000.00
Site 6 bridge construction inspection and monitoring	\$55,000.00
Excess Soil Inspection Support Services for estimated 8000 CY of Soil Testing, Removal, and Disposal (350 CY/day)	\$25,000.00
Monthly progress inspections (36 months), with travel and reporting	\$36,000.00
Ongoing management, administration, billing, and oversight (72 months)	\$15,000.00
Project close-out activities	\$400.00
SUBTOTAL	\$375,600.00
10% Contingency	\$37,560.00
TOTAL BUDGET APPROXIMATION	\$413,160.00

1.10 Railway Easement

To progress the project to the construction phase, formal property rights will be required through CSXT Real Estate and Facility Management. The following information is required:

- Finalized map with the permanent easements or fee parcel areas clearly identified,
- Survey of the easement or parcel areas, with legal descriptions for each,
- Formal offer of compensation along with any supporting information,
- Any documents SCDOT requires for processing the real estate transaction, and,
- Cover letter explaining the purpose of the project and need for each easement or fee parcel, the City, County and State location of the project, full contact information for agency contact, confirmation that agency is working with CSXT Public Projects and the CSX assigned OP number.

Enclosures:

Railroad Valuation (“VAL”) Maps

CSXT Public Project Manual

CSXT Special Provisions

Insurance Checklist

Sample COI Certificate