SUPERIOR NATIONAL FOREST

FR 912 MP 0.101 LITTLE ISABELLA RIVER CULVERT REPLACEMENT

Project Statement of Work (SOW)

US Department of Agriculture (USDA)

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Project

FR912@ MP 0.101 Little Isabella River Culvert Replacement

General Information

1.0 Scope of Work

The intent of this contract is to provide for the replacement of the Little Isabella River Culverts on low volume Forest Road 912; traffic control monitoring, removal of timber panel bridging, demolition and removal existing culverts, furnish and install new precast concrete culverts, head walls and wing walls; furnish and install rip rap, backfill and geotextile drainage material; furnish and place aggregate to final road grade; install permanent bridge signs; seed and mulch all disturbed areas; and protect the Little Isabella River and associated wetlands from siltation and other destructive impacts of construction.

The Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies necessary to meet the intent of this contract; and shall perform all work in close conformity with the drawings and specifications, and in accordance with the provisions of the contract.

The CO must approve any deviation in the specifications or drawings.

**** The Little Isabella River is a designated trout stream. All in-stream work must be performed between June 30th and September 15th. ****

2.0 Background

The existing Little Isabella River Culverts are a triple 72” wide x 48” high x 32’-0” long corrugated metal pipe arch culverts constructed in 1975. The existing culverts are spanned with timber panel bridging laid over the top of the culverts due to concerns about the integrity of the culverts. The coordinates for the bridge are 47.64611 N, - 91.418333 W. The timber panel bridging shall be preserved and returned to the Forest Service.

Existing Culverts

The new precast concrete box culverts will be two 24’-0” long x 12’-0” wide x 5’-0” high side by side. There will be two 1’-5” wide x 9” high x 14’-0” long precast concrete headwalls at the upstream and downstream faces of the precast culverts. There will be two precast concrete wing walls upstream and downstream at the culverts.

Contractor Requirements

3.0 Technical Requirements / Tasks

- All materials and workmanship shall be in accordance with the FHWA Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-14, published by the United States Department of Transportation, Federal Highway Administration.
- All project specifications shall follow the specification summary listed in the USFS Forest Road 912-MP 0.101 Little Isabella River Culvert drawing package signed on 09/06/2023, FHWA Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-14, and the project supplemental specifications.
- The contractor shall field verify the dimensions of all components before ordering materials. The Contracting Officer's Representative (COR) shall be notified of any observed differences from the dimensions given in the SOW or drawings or any observed omissions.
- The contractor shall submit the order (box culvert, wing walls, and head walls) (documentation, drawings, design documentation, etc.) from the culvert material vendor to the COR for review prior to proceeding with fabrication.
- The contractor shall establish traffic control before commencing with any work on the culverts.
- The contractor shall construct two 24'-0" long x 12'-0" wide x 5'-0" high side by side precast concrete culverts.
    - The culverts shall be designed to AASHTO LRFD Bridge Design Specifications, 9th edition, 2020, AASHTO Guidelines for Geometric Design of Low-Volume Roads, 2nd edition 2019, and FSH 7709.56b Transportation Structures Handbook, USDA Forest Service.
    - The structure shall be designed for HL93 vehicles. The design load shall accommodate concurrently Minnesota Statute 169.826 Gross Weight Seasonal Increases and 169.8261 Forest Products Special Permit. The structure shall have an operating load rating for all Minnesota standard permit vehicles greater than or equal to 1.0. The load rating shall be in accordance with The Manual for Bridge Evaluation, latest edition by AASHTO. The load rating report shall be a submittal item. A sample load rating summary table for the vehicles to be included in the load rating report is shown below.

Summary of Rating Factors

RATING LOAD	RATING FACTOR	SAFE LOAD CAPACITY (TONS)	SAFE POSTING LOAD (TONS)	CONTROLLING MEMBER/ STRESS	LIMIT STATE
HL 93 INV.	1.22	-	-	Flexure Maximum Effects	Strength I
HL 93 OPR.	1.58	-	-	Flexure Maximum Effects	Strength I
NRL	1.78	-	-	Flexure Maximum Effects	Strength I
TYPE 3	2.77	69	-	Flexure Maximum Effects	Strength I
MN_M3	2.64	63	-	Flexure Maximum Effects	Strength I
TYPE 3S2	2.94	105	-	Flexure Maximum Effects	Strength I
MN_M3S2-40	2.85	113	-	Flexure Maximum Effects	Strength I
TYPE 3-3	3.38	135	-	Flexure Maximum Effects	Strength I
MN_M3S3-40	2.81	112	-	Flexure Maximum Effects	Strength I
SU4	2.35	63	-	Flexure Maximum Effects	Strength I
SU5	2.23	69	-	Flexure Maximum Effects	Strength I
SU6	2.01	69	-	Flexure Maximum Effects	Strength I
SU7	1.88	73	-	Flexure Maximum Effects	Strength I
MN_6AXTR	2.29	113	-	Flexure Maximum Effects	Strength I
MN_7AXTR	2.39	118	-	Flexure Maximum Effects	Strength I
MN _A_Truck	3.15	164	-	Flexure Maximum Effects	Strength II
MN_B_Truck	2.40	162	-	Flexure Maximum Effects	Strength II
MN_C_ Truck	2.20	174	-	Flexure Maximum Effects	Strength II

- The maximum foundation pressure is calculated to be 588 psf for service limit state and 917 psf for strength limit state, based on gross width of the box.
- All reinforcing steel shall be in accordance with ASTM A615, grade 60 (F_y=60,000 psi). All welded wire reinforcement (W.W.R.) shall be in accordance with ASTM A1064 (F_y=70,000 psi). Galvanized inserts shall be galvanized per ASTM B633-SC4. Bolts, rods, washers, nuts shall be hot dip galvanized or electro-galvanized per ASTM B633-SC1.
- Any subsurface conditions or existing foundations encountered that are not represented on the plans or in the specifications shall be brought to the immediate attention of the engineer for the inspection and/or alternate foundation/footing design.
- Any subsurface conditions or existing foundations encountered that are not represented on the plans or in the specifications shall be brought to the immediate attention of the engineer for the inspection and/or an alternate foundation/footing design.
- Precast concrete box culvert design strength shall be f'_c = 5,000 p.s.i. minimum. Precast concrete wingwall design strength shall be f'_c = 4,000 p.s.i minimum. Concrete strength shall be greater than 2,500 p.s.i. prior to removal from forms and transport.
- Precast concrete box culvert manufacturing requirements shall be in accordance with the current ASTM C1577, AASHTO LRFD Bridge Design Specifications, and FP-14 Section 552.
- It is the fabricator's responsibility to make sure that the reinforcing steel assembly (reinforcement cage pattern) shall not exceed 3 layers of welded wire reinforcement. Multiple layers shall not be separated by more than the thickness of one longitudinal wire plus ¼ inch.

- The ends of the longitudinal distribution reinforcement shall not be more than 2 inches from the ends of the box section.
- Construction traffic over the box culvert section during construction shall be limited to a maximum single axle wheel load of 16,000 lbs or two (tandem) wheel loads of 13,000 lbs spaced at 4 feet apart. The minimum earth cover shall be in place prior to the deployment of heavy earth moving equipment larger than a D-4 dozer weighing in excess of 12 tons and having a track pressure of 80 psi or greater crossing the structure. At no time shall earth moving equipment exceeding the designed box culvert design loading operate over the box culvert structure.
- The precast box culvert sections shall be manufactured using the wet cast method.
- The clear distance of the end circumferential wires shall be not less than ½ inch or more than 2 inches from the ends of the box section.
- Fill and seal lifting holes in sections after placement of sections.
- All exposed corners on headwalls and wingwalls shown square on plans shall be beveled with ½" triangular moldings, except as otherwise noted.

4.0 Government Furnished

The Government will not be furnishing any materials or supplies for the removal of the existing bridge or the construction of the new bridge. The government Contracting Officer Representative (COR) must approve all materials, supplies and design drawings used on the project to ensure that they are meeting the project specifications.

5.0 Deliverables / Schedule

- The Period of Performance is 424 days following Notice to Proceed. Due to trout stream restrictions, stream construction shall not commence before June 30 and all in stream project work shall be completed by September 15.
- Contractor shall submit the project schedules and reports outlined in the Key Deliverables Table including a written project schedule within 15 business days of receipt of project award.
- The vendor prepared design documents (documentation, drawings, etc.) shall be reviewed and approved by the COR prior to proceeding with fabrication.
- The Government may take up to 14 calendar days from date of receipt to review project submittals.
- Contractor shall notify the Government of the date of substantial completion. At that time the Government shall inspect the work and provide Contractor with a copy of a punch list of items to complete before the project status is considered final completion. The project shall be considered complete once the COR has verified that all items on the punch list have been addressed.
- **Tasks and Associated Deliverables**: Timely submission of deliverables is essential to successfully completing the project. Schedules for deliverables are specified in Table 1. All deliverables shall be prepared and submitted according to format, content, and schedule described in the SOW. The progress report shall cover all work completed during the specified period and shall present the work to be accomplished during the subsequent period. This report shall also identify any problems that arose and a statement explaining how the problem was resolved. This report shall also identify any problems that have arisen but have not been completely resolved and provide an explanation.

Table 1

Key Deliverables

Item No.	Deliverable	Objective	Due
1	Proposed Project Plan	Defining the responsibilities, timeline, risks and milestones of contract objectives.	No later than fifteen (15) business days after contract award
2	Revised Project Schedule	Report schedule changes/updates	As project is updated until the contract expires
3	Vendor material list and drawings	Ensure the correct material specifications are provided	No later than sixty (60) business days after contract award
4	Construction Daily Reports	Monitor Construction Progress	Submitted weekly during construction phase
5	Monthly Status Report	Monthly report documenting tasks and issues identified during the month	The 5th day of each month after contract award

6.0 Travel

Travel expenses to the project site and during construction shall be included in the mobilization/demobilization costs for the project.

7.0 Contractor's Key Personnel

The Contractor shall assign workers who are experienced in construction to complete the described project. The personnel shall be experienced with precast concrete.

8.0 Security Requirements

There are no Security Requirements involved with this project.

9.0 Data Rights

The USFS Forest Road 912-MP 0.101 Little Isabella River Culvert drawing package supplied as a reference to successfully complete the required work outlined in the SOW and shall only be used for this project site.

10.0 Section 508 – Electronic and Information Technology Standards

Supply of Information technology is not part of this contract, so Section 508 requirements are not required for information technology. Section 508 requirements for all project communication and documents shall be followed.