

# C-R-S: PRE SR 122 24.36 PID 119233 DRAFT Scope Narrative

Note: This scope narrative pertains only to PID 119233 which will be sold as a separate construction project on a separate schedule from PID 116568. Currently, SAFe only reflects PID 119233. Once the PID 119233 fee negotiation is accepted and complete, SAFe will be populated with information specific for PID 116568 to be entered as a separate contract modification.

## PDP Phase Included in this Agreement:

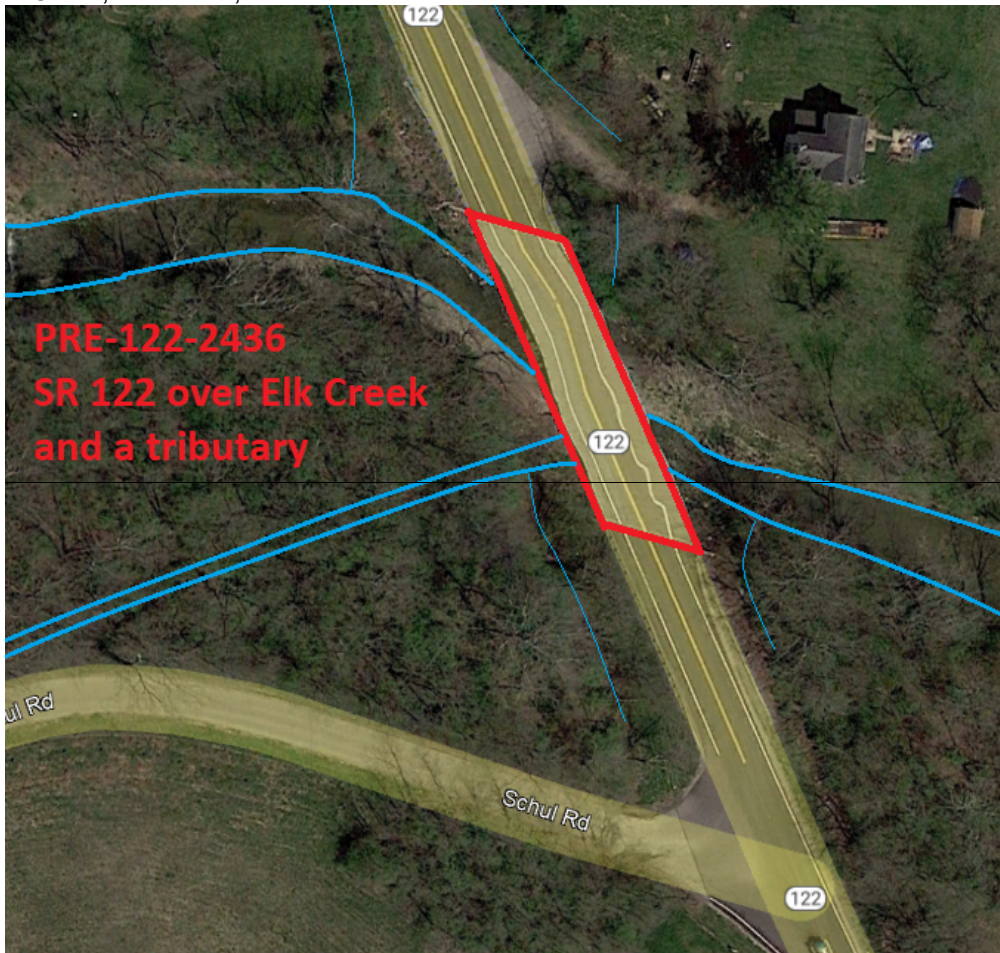
- Agreement is for the Preliminary Engineering (PE) and Detail Design.
- Agreement between Consultant and Ohio Department of Transportation.
- This is one part agreement to prepare plans through final design.

## Project Location:

Bridge PRE-122-24.36 (SFN 6802249) which carries SR 122 bridge over Elk Creek approximately 200 feet north of the SR 122 intersection with Jacksonburg/Schul Rd.

## Map of existing bridge:

The existing bridge is highlighted in red on the map. The blue lines are the approximate creek banks of Elk Creek, tributaries, and ditch lines.



**Study Description:****Purpose & Need:**

Bridge PRE-122-24.36 (SFN 6802249) which carries SR 122 bridge over Elk Creek is deteriorated and in need of repair. The primary deficiencies include:

1. The non-composite prestressed concrete box beams are deficient due to deteriorated, exposed and broken strands in the fascia boxbeam. Other boxbeam joints have substantial leaking and cracks are beginning to show on interior beams.
2. The asphalt wearing surface is near deficient due to raveling, potholes, and its inability to protect the underlying beams.
3. Expansion joints at the abutments have failed allowing substantial leakage onto the beam ends and abutments.

Secondary issues that require consideration are as follows:

1. The stream and SR 122 are poorly aligned with one another resulting in a high skew bridge.
2. The upstream bend is forcing the deep channel towards the north abutment slope. Rock Channel Protection has been added at least twice to protect the abutment slope.
3. The northernmost pier snags debris on a regular basis which requires frequent removal to prevent waterway blockage, scour, and unnecessary forces on the pier. Debris also gets caught between the north pier and the north abutment.

**Project Scope:** Discipline specific scope items have been identified below.

**Structures:**

1. Replace the existing structure. The new structure shall carry two 11' wide lanes, two 8' wide shoulders, and over the side drainage with Three Steel Tube railing per TST-2-21 for a bridge width of 38 feet.
2. Construct the bridge as a two span, prestressed I-beam bridge with a beam height of 36" to 42" to stay above the 100 year flood plain, and to eliminate the pier that is in the deep channel and therefore collects the most debris. The new pier should be located closer to the south bank and will result in unequal span lengths. The new pier shall be a wall type pier to minimize debris accumulation. The abutments shall be integral or semi-integral Existing abutment piling may be reused if abutment locations coincide. Location and height to be determined with hydraulic analysis during Stage 1.
3. The upstream bend in Elk Creek will continue to force stream meander to the north and threaten future abutment scour if the north stream banks is not stabilized. Regrade the upstream channel to have 2:1 slopes protected with Rock Channel Protection and install vane(s) or J-hook(s) to control the stream. Vanes shall be constructed from 2'x2'x6' concrete blocks a minimum of 2 blocks deep with the lower block completely buried as a foundation for the upper block to prevent bearing pressure failure. Consider widening/regrading the south banks of Elk Creek if necessary to compensate for the vanes to be installed on the north bank.
4. Perform a hydrologic and Hydraulic study using 1D and 2D modelling as appropriate to determine the items listed below. Consultant shall have previous experience with 2D modeling of vanes and/or J-Hooks.
  - a. Bridge size/hydraulic opening (1D).
  - b. Scour Analysis per L&D Volume 2, Section 1008.10.
  - c. Waterway Permit Hydraulic Analysis per L&D Volume 2, Section 1010.
  - d. Back Stresses, size vane(s) or J-Hooks (s), verify vane stability, etc.
  - e. Utilize tools in SRH-2D to export to HECRAS 1D for FEMA analysis to do a 2D informed 1D model" for FEMA Documentation.

5. Seal the concrete surfaces with an Epoxy Urethane sealer per the typical limits shown in the bridge design manual. Color shall be Federal Color 17778 (light neutral).
6. Replace the existing approach guardrail as needed to meet MGS standards.
7. Load Rate the structure per section 900 of the BDM.

Materials for all alternatives:

1. Concrete: Include macro-fibers and corrosion inhibitor in concrete mix. District to provide notes during design development.
2. Reinforcing steel: Use continuously galvanized reinforcing steel for all new reinforcing steel.

**Roadway:**

1. Mill and fill the approach roadway as necessary to obtain the final profile and erase any MOT scars.

**Traffic Analysis:**

Not required.

**Geotechnical:**

Obtain a boring at each of the three proposed substructure locations. Provide a geotechnical report based upon these borings and existing foundation information. Obtain necessary soil samples for scour and hydraulic modelling.

**Drainage:**

See structures section

**Maintenance:**

None required.

**Maintenance of Traffic:**

Detour using SR 744 to SR 503. In addition to typical signing, the detour should include PCMS in Gratis and a window contract will need to be included in the plans.

**Environmental:**

The consultant shall coordinate the environmental work. See the task list in SAFe for anticipated coordination.

**Survey:**

Consultant to survey.

**Right-of-Way:**

Consultant to prepare simplified R/W plans after the completion and acceptance of Stage 1 plans. It is anticipated that 2 parcels for standard highway easements will be acquired.

**Utility Coordination Requirements:**

Consultant to try to avoid utility conflicts throughout design while holding to the scope of work. If utility conflicts cannot be avoided, they should be minimized.

Consultant to provide a copy of the OUPS ticket information to ODOT PM (if applicable). Up to date utility contacts shall be used at each plan submission. Utility contact information can be requested by consultant from ODOT PM. If Ohio 811 (OUPS) are more than two (2) years old, a design non-marking ticket shall be requested to obtain most up to date Utility Members List. The ticket does not need to be submitted to obtain the Utility Members List.

Consultant to provide a utility set of plans with the utility lines shown in color using the most recent version of ODOTcadd\_UTPen.tbl at each plan submission. This file is found in the standard ODOTcadd executable file that can be downloaded from the [CADD services webpage](#). Additionally, Consultant to prepare a summary of potential utility conflicts at each plan submission. Summary to be provided to Utility Companies at each plan submission. Summary to include, but not limited to station and offset of conflict, type of conflict (direct, decreased cover, proximity, etc.), utility owner (if known) and utility type. Consultant to use District 8's 'standardized' letter for sending submissions and plans to Utility Companies for review and comment. Consultant to provide the ODOT PM a copy of all Utility Correspondence. Consultant to compile Utility Company responses and forward to the ODOT PM. Final compilation of utility correspondence is due 35 days after plan submission to utilities

A “no response” from a utility on a plan submission review cannot be considered as “no comment”, “no conflicts” and/or “a confirmation of the consultant’s findings” from the utility. A written response (email is sufficient) must be received from the utility verifying that they have no comments, no conflicts and/or they agree with the conflicts identified by the consultant.

Consultant to review the Utility Company responses and evaluate. The evaluation of the responses shall include validating that a conflict does exist or that a utility may remain in place. If a conflict does exist, consultant should provide an evaluation of the feasibility of potential resolutions. A disposition of utility status (i.e. utility to stay in place, utility facility relocation plan in writing or plan format) is required at the Stage 3 submission. This disposition shall be included to the utilities with the Stage 3 plan submission. This disposition shall be formulated based on utility responses from previous plan submissions.

A draft utility note shall be submitted after evaluation of the Stage 3 utility coordination in word format. The note should include discussion about the existing utilities for each utility, if they are staying in place and in service or if they are being relocated. If a utility is relocating, information about the location of their relocation should be included. Additionally, the relocation time frames should be included in the utility note as discussed with the utility companies. Example utility notes can be provided by the District utility coordinator upon request.

### **Feasibility Study:**

A formal feasibility study is not required. Critical items may be reviewed with the project manager during Stage 1 development if necessary.

### **Project Management:**

The project will be designed in 1 part and shall include all efforts through the completion of Final Tracings. The fee preparation should include a narrative that includes assumptions made during the preparation of the fee. Any scope revisions/additions necessary to complete the project that were not initially scoped may be modified as the project progresses when justified.

### **Funding:**

This project will likely be financed by the following funds:

- District Preservation Bridge (Percentage of State and Federal)

Plan splits will be required per the funding in Ellis at the time of Stage 3 Plans.

**Design Designations:**

	SR 122
Functional Class	05 Rural Major Collector
NHS	No
Opening Year AADT (2029)	3,100
Design Year AADT (2049)	3,500
Design Hourly Volume (2049)	450
Directional Distribution	0.65
TRUCKS (24 Hour B&C)	7%
TRUCKS (Design Hour)	5%

**Existing Plans:** See the [FTP site](#) for existing plans.

	Arch No	Name	Year	PID	Description
1	<a href="#">08c1956</a>	PRE-122-2436	1982		Original Plans
2	<a href="#">08c4422</a>	PRE-122-24.36	2016		Pier Rehab

**Bridge Inspection Photos:** See the FTP for existing inspection photos.

2023 Insp Photos: [\\D08FS100\archives\structures\bridges\23 photos\PRE\SR122\2436](#)

**Schedule:**

The Official schedule will be maintained in Ellis.