**C-R-S: WAR US 22 3.57**

**PID 121423**

**DRAFT Scope Narrative**

# PDP Phase Included in this Agreement:

# Agreement is for the Preliminary Engineering (PE) and Detail Design*.*

# Agreement between Consultant and Ohio Department of Transportation.

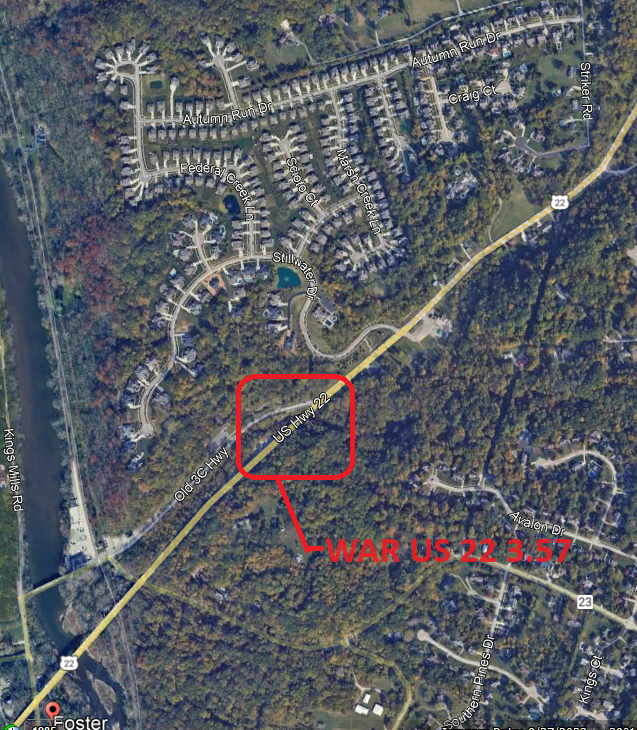
# This is a Two part agreement to prepare a feasibility study, and then prepare plans through final design.

# Study Location:

Bridge WAR-22-3.57 (SFN 8300062) which carries US 22 over Bear Run, about 4,500’ north of the Little Miami River and just south of the northern intersection with Old 3C Highway.

**Map of existing bridge:**

The existing bridge is highlighted in red on the map below.

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Study Description:

**Purpose & Need:**

The primary issues include:

1. Bridge WAR-22-3.57 (SFN 8300062) which carries US 22 over Bear Run has a boxbeam superstructure that is deteriorating.
2. At the northern intersection of US 22 and Old 3C Highway, vehicles on northbound/eastbound US 22 have a significant delay waiting to turn left onto Old 3C highway causing additional delay to northbound/eastbound through traffic.

Secondary issues that require consideration are as follows:

1. The WAR-22-0357 bridge has substructure that is in good condition because of 2014 repairs, but is approaching 100 years of age. It isn’t expected to last the life of another superstructure.
2. Due to congestion, there is a regional desire to add additional capacity to US 22 (widen) from south of the Little Miami River to SR48 in the future. However, no significant studies have been completed, so the number of lanes or alignment have not been determined.
3. Design the new bridge to not preclude future widening.

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

**Structures:**

1. Replace the existing bridge. Preference is given to a single span I-beam bridge with semi-integral abutments placed behind the existing abutments. Widen existing bridge to accommodate a 12’ wide northbound lane, 12’ wide southbound lane, a 12’ wide northbound left turn lane, a 4’ wide left/west shoulder, and a 10’ wide east shoulder. Portions of the existing abutment may remain in place to protect and minimize stream slope impacts. The depth and stability of the rock in a stream environment will be key factors in determining the span length.
2. Perform a hydrologic and hydraulic analysis per L&D Volume 2, Section 1107
   * 1. Complete FEMA coordination per L&D Volume 2, Section 1005
     2. Conduct a scour analysis per L&D Volume 2, Section 1008.10. This task should be “if authorized” depending on the scour potential of the geotechnical findings and section 305.2.1.2.b of the Bridge Design manual.
     3. Confirm construction can stay above the OHWM, otherwise, complete a Waterway Permit Hydraulic Analysis per L&D Volume 2, Section 1010.
3. The proposed structure will utilize galvanized reinforcing,
4. Seal the exposed 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).
5. Replace the existing approach guardrail as needed to meet MGS standards.
6. 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. Widen the existing roadway to accommodate a 225’ left turn lane (including 50’ diverging taper), along northbound/eastbound US-22 at the T intersection with Old 3C Highway.
2. Reconstruct the concrete island (constructed with PID 121860) to allow left turns from US-22 to Old 3C, but maintain the Old 3C left turn restriction to US-22.
3. Mill and fill existing pavement. Widened areas shall be full thickness asphalt.

**Pavement:**

For US 22 and Old 3C Highway (CR 10):

The full depth composition will be flexible. The final composition will be adjusted to match the existing pavement thickness to keep the drainage beneath the pavement consistent.

It is anticipated that the geotechnical borings will verify the existing pavement depth. The Item 301 and Item 304 layers will be increased if needed after the borings are analyzed.

The minimum full depth pavement composition is:

|  |  |
| --- | --- |
| 1.25” | Item 441 – Asphalt Concrete Surface Course, Type 1, PG64-22 (448) |
|  | Item 407 – Non-Tracking Tack Coat |
| 1.75” | Item 441 – Asphalt Concrete Intermediate Course, Type 2 (448) |
|  | Item 407 – Non-Tracking Tack Coat |
| 8” | Item 301 – Asphalt Concrete Base, PG 64-22 (449) |
| 6” | Item 304 – Aggregate Base |
| TBD | Subgrade Treatment – Undercut or Chemical Stabilization |

**Traffic:**

* + - 1. Maintain the existing flasher at the intersection. Include costs in feasibility study.
      2. No safety studies are required. Refer to previous safety study for turn lane justification.

**Geotechnical:**

Geotechnical borings and recommendations are to be provided by the consultant to address the hillside cut at southeast end of the project, proposed bridge foundations, and the existing steep slope at the southwest corner of the existing bridge.

1. **Hillside Cut Southeast:** It is anticipated that a significant cut into the hillside, possibly as deep as 20 feet, will be needed at the southeast end of the project. A soil profile of the hillside to determine rock and soil properties and strata are needed for a Wall Justification and Wall Type Study to determine the feasibility of a cut slope vs a wall and the type of wall. A minimum of two soil profiles shall be provided. The consultant shall provide the necessary geotechnical recommendations including a review the hillside global stability and the recommended method to retain the cut if necessary.
2. **Bridge Abutments:** The existing bridge is supported by spread foundations, which is also anticipated for the new bridge. One boring is anticipated behind each of the existing abutments as well as 1 boring at each of the widened abutment locations (4 total). The geotechnical study will need to determine the elevation of previous rock excavation that occurred behind the existing abutments, recommend the appropriate abutment foundation type, abutment foundation parameters, safe distance from the stream given rock properties and profile, soil properties for scour analysis, recommended footing elevation, and slope face treatment if needed.
3. **Existing Embankment Slope Protection Southwest of existing bridge:** Evaluate the existing stone and grout slope protection that exists at the southwest corner of the bridge. Determine if this slope can remain given the expected abutment type and construction methods, if there is a safe standoff distance that the road could be shifted over to avoid impact, and/or if additional treatment is needed such as shotcrete and/or rock anchors.

A proposed boring plan is provided on the next page, but may be altered by the project team with the consultation and approval of the District Geotechnical Engineer.

A high angle view of a road

Description automatically generated with low confidence

**Drainage:**

Based on visual inspection and existing plan review, the consultant should determine if there are lateral crossings into the structures. Determine if the lateral crossings are relating to curb and gutter drainage, ditch drainage, or offsite drainage. If the lateral crossings are only related to curb and gutter drainage, then confirm it is acceptable to remove the structures and outlet pipes.

**Maintenance:**

None required

**Maintenance of Traffic:**

Maintain two lanes of traffic by constructing two lanes of the proposed bridge to the south/east of the existing structure in Phase 1, then replacing the existing structure in Phase 2. Temporary MOT lanes shall consist of 11’ lanes and barrier offset (2’ preferred, 1’ minimum if necessary).

**Environmental:**

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

**Survey:**

Consultant to survey.

**Right-of-Way:**

Right-of-way will be required. Feasibility Study to determine project limits, number of parcels, and acres of each parcel. ODOT to provide R/W estimate. Consultant to prepare R/W plans during final design.

**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](http://www.dot.state.oh.us/Divisions/Engineering/CaddMapping/CADD_Services/Standards/Pages/Files.aspx). 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:**

Prepare a feasibility study including the following:

* Structure type study including span length, abutment height, wingwall configuration and confirming preferred bridge type.
* Geotechnical borings and study including recommendations for acceptable rock slope cuts, foundation types, and wall justification/type study, etc.
* Hydrology and Hydraulics study including scour. Determine if a TAF will be needed. Design elevations of the TAF if needed will be completed during Part 2
* Propose new locations for storm-sewer utilities that conflict.
* There is a utility crossing about 25’ upstream of the bridge in a concrete encasement. Given the terrain, we are not opposed to allowing it to stay in place if the abutment can be constructed overtop and the utility company is OK with this.
* There is a storm sewer outlet at the northeast corner that will conflict with the abutment and will need relocated.
* Aerial utility poles.
* Any other utilities found during survey.
* Construction Work Limits for environmental work including contractor staging area(s).
* Provide the following for Maintenance of Traffic (MOT).
* Contractor work zone for slope work in phase 1 and limits of temporary pavement.
* Cross section of MOT on the structure that includes the following: lane widths, barrier offsets, Portable Barrier (PB) locations, PB locations relative to existing boxbeam dimensions for both generic PB and proprietary PB, and dimension between existing and phase 1. Ensure the dimension between the existing bridge is sufficient working room for deck forming, overhang brackets, closure pours, abutment work, etc.
* Determine if there is MOT benefit to overbuilding the bridge width.
* Environmental tasks.
* Level 1 ESR
  + Perform field work in summer prior to FS
  + In FS state acres of tree impacts beyond 100’, list any PMRT impacts too
  + In FS state all stream and wetland impacts (anything within the construction limits)
  + Note that the Level 1 ESR will not be submitted until Stage 1 plans are available to accurately document impacts.
* Public Involvement (PI) letters
  + 1st batch of letters notifying the public, and local service providers, of the project and asking for comments to consider while designing the project.  Including relevant comments in the FS.  Inform the public that a follow up letter will be sent once plans are further refined and will include more information such as MOT impacts.
  + 2nd batch of letters will include all require information per OES guidelines for project notification letters and our typical letter to local service providers regarding MOT.
* R/W impacts including parcels and acreage. ODOT will provide the estimated cost
* Total Project estimate broken out by funding splits.

**Project Management:**

Part 1 shall be the feasibility study. Upon acceptance of the feasibility, a contract modification will be requested to provide final plans and R/W.

**Funding:**

This project will be financed by the following funds:

* District Preservation Bridge (Percentage of State and Federal) to include the cost of a 2 lane bridge, new guardrail, Maintenance of traffic, and Mill fill or Roadway. Plan Split 01/S>2/10
* Highway Safety Improvement Program (HSIP) funding (percentage of State and Federal) to include the cost of one lane of the bridge, new pavement for left turn lane, and slope work necessary for the widening. Plan Split 02/SAF/21

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

**Design Designations:**

|  |  |
| --- | --- |
|  | WAR-22 |
| Functional Class | 03 Principal Arterial (Urban) |
| NHS | No |
| Opening Year AADT (2030) | 18,000 |
| Design Year AADT (2050) | 19,000 |
| Design Hourly Volume (2050) | 2,100 |
| Directional Distribution | 0.53 |
| TRUCKS (24 Hour B&C) | 3% |
| Trucks (Design Hour) | 2% |
| Posted Speed | 45 MPH |
| Design Speed | 50 MPH |

**Existing Plans:** See the FTP Site for existing plans and photos.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Arch No** | **Name** | **Year** | **PID** | **Description** |
| 1 | [08C1682](file:///\\D08fs100.dot.state.oh.us\archives\const\war\08c1682) | Cinci-Zanesville Rd | 1936 |  | Original bridge WAR-22-0357 plans |
| 2 | [08c1684](file:///\\D08fs100.dot.state.oh.us\archives\const\war\08c1684) | Cinci-Zanesville Rd | 1936 |  | Original bridge WAR-22-0303 plans |
| 3 | [08C3219](file:///\\D08fs100.dot.state.oh.us\archives\const\war\08c3219) | WAR-22-03.57 | 1983 |  | Superstructure Replacement Plans |
| 4 | [08C1871](file:///\\D08fs100.dot.state.oh.us\archives\const\ham\08c1871) | HAM/WAR-22-16.49/0.00 | 2003 | 20244 | Resurfacing Plans |
| 5 | [08c3546](file:///\\D08fs100.dot.state.oh.us\archives\const\d08\08c3546) | D08-BM-FY2015 | 2015 | 75625 | Abutment rehabilitation |
| 6 | [08c4198](file:///\\d08fs100.dot.state.oh.us\archives\Const\war\08C4198) | WAR-22-2.80 | 2016 | 100553 | 1.5” Mill & fill |

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

2023 Insp Photos: [\\D08fs100.dot.state.oh.us\archives\structures\bridges\23 photos\WAR\US22\0357](file:///\\D08fs100.dot.state.oh.us\archives\structures\bridges\23%20photos\WAR\US22\0357)

2024 Insp Photos: [\\D08fs100.dot.state.oh.us\archives\structures\bridges\24 photos\WAR\US22\0357](file:///\\D08fs100.dot.state.oh.us\archives\structures\bridges\24%20photos\WAR\US22\0357)

PIP Photos: [\\D08fs100.dot.state.oh.us\archives\structures\bridges\24 photos\WAR\US22\0357\PIP for PID 121423 Replacement](file:///\\D08fs100.dot.state.oh.us\archives\structures\bridges\24%20photos\WAR\US22\0357\PIP%20for%20PID%20121423%20Replacement)

FTP site with above info available here:

[\\ftp.dot.state.oh.us\pub$\Districts\D08\Programmatics\2025-January\121423 WAR-22-0357](file:///\\ftp.dot.state.oh.us\pub$\Districts\D08\Programmatics\2025-January\121423%20WAR-22-0357)

**Schedule:**

The Official schedule will be maintained in Ellis. The consultant may propose changes to the schedule that don’t alter the final plan package submittal or sale dates.