

RACE STREET BRIDGE

SCOPE OF WORK



A. **Purpose:** Prepare preliminary and final design plans and related required documents and perform construction consultation services for the referenced project.

[illegible]

Federal Aid Policy Guide -current edition and updates –These documents are available for viewing or printing at the FHWA website www.fhwa.dot.gov/legregs/directives/fapgtoc.htm

PennDOT Publications and Policy -current editions and updates -These documents may be ordered, viewed or downloaded from www.dot.state.pa.us and they include:

- a) Design Manual Part 1 - Highway Procedures
- b) Design Manual Part 2 - Highway Design
- c) Design Manual Part 3 - Plans Presentation
- d) Design Manual Part 4 - Structures
- e) Design Manual Part 5 - Utility Relocation
- f) Design Related Strike-off letters
- g) PennDOT Bridge Design and Bridge Construction Standards
- h) PennDOT Roadway Construction Standards
- i) PennDOT Publication 122M -Survey and Mapping Manual
- j) Current PennDOT publications and directives not listed here but incorporated by reference
- k) PennDOT Publication 294 – Categorical Exclusion Evaluation Handbook
- l) Publication 213 – Work Zone Traffic Control

AASHTO Publications

- 1) AASHTO LRFD Bridge Design Specifications and Interim Specifications -current edition as adopted by PennDOT.
- 2) ANSI/AASHTO/AWS Bridge Welding Code -Current edition as adopted by PennDOT.
- 3) Current AASHTO Guide Specifications as referenced by the Department Design Manuals and Strike-off letters are incorporated by reference.

D. **Special Note:**

All references to the Department shall mean both the County and the Department of Transportation. The English System of units shall be used on this project.

Background:

Mercer County Bridge 802 (BMS# 43 7403 8812 0802) is a two lane closed spandrel reinforced concrete arch bridge with a span of 125 feet. The bridge consists of two closed spandrel arch spans. The bridge was built in 1921 and is open to traffic. The bridge carries vehicular and pedestrian traffic on Race Street across the Little Shenango River in the Borough of Greenville.

The bridge replacement project will consist of a bridge replacement on an alignment as determined during the preliminary engineering phase.

General Scope of Work

Prepare all necessary designs, calculations, plans and documents necessary to secure final P.S.&E. approval of the project.

All tracings, plans, specifications, drawings, studies, computations, models, mosaics, maps and all other materials, supplies and designs prepared, developed or obtained to complete the project shall be delivered to and become the property of the County. The original survey books, notes, sketches, records, charts, computations, computer programs, test results, and other data prepared or acquired to prepare the project shall be delivered to and become the property of the County without limitation or restrictions on their future use.

All plans prepared for this project must be supplied to the County on reproducible mylar and on computer media in AutoCAD™ 2002 or later format.

The major tasks are listed below:

Scope of Work -Part 1 -Preliminary Engineering Services

This work will consist of preliminary engineering services for the replacement of the structure which include, but are not limited to the following: Field Surveys, Level 2 CEE with Section 4(f) Report, Hydrologic and Hydraulic Study, Type, Size, and Location Study, Subsurface Boring, Sampling and Testing Contract, Preliminary Right of Way Activities, Utility Investigation, Preliminary Drainage Design, Safety Review, Preliminary Traffic Control Plan, Preliminary Pavement Design and Typical Sections, Design Field View, Public Involvement, Project Management and Coordination.

Field Surveys: Obtain field survey data as required to complete the preliminary engineering services. Obtain survey data in accordance with Pub. 122M.

Level 2 Categorical Exclusion Evaluation with Section 4(f)

It is anticipated that a Level 2 Categorical Exclusion Evaluation (CEE) will be needed to obtain the required environmental clearance for the proposed bridge replacement. Prepare the appropriate level of CEE as well as the supporting documents listed below.

- Complete Part A and B of the Categorical Exclusion Evaluation (CEE) form (Publication 294), which includes:
 - Additional narrative will be included as appropriate.
 - Supplemental information will be attached to the CEE form or placed in the technical file, as appropriate.
- Conduct secondary document research and review project site walkovers in order to complete an environmental evaluation.
- Specify and define mitigation measures for impacted environmental issues. Provide the general description and the location of any resources within or adjacent to the project work limits that are to be avoided during construction. Also provide measures to mitigate impacts to resources that cannot be avoided.
- Submit the completed CEE form and pertinent supporting documents for review, concurrence and approval to the District Office through ECMS.
- Assume one (1) public meeting to be conducted to present project findings and information to the general public. This meeting can be in conjunction with a county meeting. This meeting needs to meet the provisions of the Section 106 public involvement process.
- Identify, inventory, classify and analyze the physical and biological elements of streams and waterways within the project study area and the quantification of potential stream impacts.
- Title 25, Chapter 105.17 of the Pennsylvania Code will be used to identify wetlands and determine the impact of the proposed alternatives.
- Identify and quantify the regulatory floodplains and potential encroachment for each project alternative and preparation of the Floodplain Finding pursuant to Executive Order 11988.
- Coordinate with the U.S. Fish and Wildlife Service, PA Game Commission, PA Fish and Boat Commission, PNDI, PADEP and DCNR to determine the presence or absence of state or federally listed threatened and endangered species in the project area. This information will be used to determine if the proposed alternative will impact the life requisites of threatened, endangered species, biological resources and species of special concern in the project area.
- Federal Highways Administration must approve this document.
- PA Act 120 Compliance must also be performed.
- Prepare Programmatic Section 4(f) Evaluation in accordance with PennDOT Publication No. 349. The Programmatic Section 4(f) must be circulated. Refer to Pub. 349 for circulating guidelines.
- For CEE's, the Draft Section 4(f) Evaluation is typically circulated as a separate document. The conclusion and approval are typically issued in a separate approval letter.

Hydrologic and Hydraulic Study: Prepare all necessary studies, plans and investigations as required to obtain a waterway permit for the replacement structure. Resubmit these documents until approved.

Subsurface Boring, Sampling, and Testing Contract: Prepare and administer the Boring Contract in accordance with DM-4M pp 6.3.4.

Type, Size and Location Study:

A meeting will be held in the District Office to evaluate the Alternative Analysis Report, Type, Size and Location Plan, QA Forms, core boring logs and the hydrologic/hydraulic study. A formal TS&L submission will not be required.

Preliminary Right of Way Activities: A limited amount of right of way will be required. Provide early coordination with property owners to obtain right of way and any required temporary easements for construction purposes. Perform this work in accordance with current Design Manuals and policies. Strict adherence will be required in following the Department's guidelines in sending out the "Intent to Enter" letters.

Utility Investigation: Verify all utilities within the project area in accordance with the Design Manual. Forward preliminary plans to all utility companies to locate all existing facilities to determine conflicts and establish required mitigating factors for each alternative. A cost estimate for utility relocations for each alternate is required.

Preliminary Drainage Design: Prepare preliminary drainage design for both on and off structure drainage in accordance with the Design Manual.

Safety Review: Prepare and submit drawings and supplemental reports and calculations to the Department for Safety Review. Resubmit until accepted.

Preliminary Traffic Control Plan: Prepare and submit to the Department a Traffic Control Plan in accordance with Department Publications. Resubmit until accepted. Provide a brief assessment of viable project traffic control alternates.

Preliminary Pavement Design and Typical Sections: Prepare a preliminary pavement design for the expected traffic volume and composition. Prepare typical sections of the proposed pavement design for use in the construction plan set. Submit to the Department for acceptance.

Design Field View: Conduct design field view activities and prepare a Design Field View submission to the Department in accordance with current policies.

Public Involvement: Public involvement will consist of periodic media updates at scheduled public Commissioners meetings. Prepare monthly status reports and submit to the Mercer County Engineer for dissemination at these meetings. Anticipate attendance at two of these meetings during Phase 1.

Project Management and Coordination: Man-hours for this task shall be limited to 5% of the combined hours of tasks listed under Phase 1. Attend meetings as required to obtain approval of the items in Phase 1.

Scope of Work -Part 2 -Final Design Services

This work will consist of final design services for the replacement of the above structure which include, but are not limited to the following: Supplemental Surveys, Erosion & Sedimentation Control Plans, Waterway Permits, Cross Sections, Final Right-of-Way Plan, Traffic Control Plan, Utility Engineering, Foundation Design, Final Structure Design, Final Roadway Design, Final Plan Checks, CPM/Constructability Review, Plans, Specifications, and Estimate Submission, Public Involvement, and Project Management and Coordination.

Supplemental Surveys: Obtain supplemental field survey data as required to complete the final design services. Obtain survey data in accordance with Pub. 122M.

Erosion and Sedimentation Control Plans: Prepare an E&S Plan in accordance with current guidelines of the Department of Environmental Protection and the Mercer County Conservation District. Obtain acceptance of the plan from the Conservation District.

Waterway Permits: Prepare all investigations and documentation necessary to obtain a waterway permit from the Department of Environmental Protection. Resubmit as required to obtain the permit.

Cross Sections: Prepare cross sections as required to complete the construction plan.

Final Right of Way Plan: Prepare a right of way plan as required for parcels acquired any temporary easements for construction purposes. Include the services of a state approved appraiser and review appraiser as required. Submit appraisal documents to the Department and obtain acceptance. Mercer County will conduct negotiations for easements. All appraisal and negotiation functions, as well as preparation of the plan will be in accordance with the Local Public Agency Guide, PennDOT's Right of Way Manual, and Design Manual Chapters 3 and 5. Submit the final right-of-way plan to the District Right-of-Way Administrator for review. Department provided deed, temporary easement, agreement of sale and settlement statement forms will be used.

Traffic Control Plan: Refine the Preliminary Traffic Control Plan from Phase 1 as required to accommodate the project. Document notification and acceptance of selected alternate with affected emergency services and school district.

Utility Engineering: Coordinate and obtain all utility clearances as required to complete the project. Conduct a final design utility field view and prepare minutes from this meeting. Prepare the Utility Relocation Clearance Form D-419 in accordance with current guidelines. Utility meeting will be held prior to final Right-of-Way Plan submission. Utility forms and D-419 will be reviewed by the District Utility Relocation Administrator prior to final PS&E submission.

Foundation Design: Prepare and obtain acceptance of the foundation submission to include only the boring logs with boring layout, scour computations and the QA forms in

accordance with DM-4M, pp 1.9.4 and current department publications DM-4M, Pub. 293M, Pub. 222M, SOL, etc. Resubmit until accepted.

Final Structure Design: Prepare and obtain acceptance of the structure plans for the recommended structure. Prepare all design drawings and calculations (including seismic), structure related special provisions and quantities.

Final Roadway Design: Prepare and obtain acceptance of all roadway design and drawings. Prepare justification for any substandard features and obtain acceptance. Include signs and pavement markings as applicable.

Final Plan Check: Attend a final plan check with Department officials. Revise all plans as required to obtain an acceptable plan.

CPM/Constructability Review: Prepare and submit a CPM Schedule prior to the PS&E submission, detailing construction operations, construction phasing, production rates and working days and times. Conduct a constructability review of the as-designed structure and related features. Provide item and plan station text files in auto tab format for inclusion in ECMS.

Plans, Specifications, & Estimate Submission: Prepare a PS&E submission and submit to the Department for acceptance. Resubmit until accepted. Provide item and plan station text files in AutoTab format for inclusion in ECMS.

Public Involvement: Future public involvement will consist of periodic media updates at scheduled public Commissioners meetings. Prepare monthly status reports and submit to the Mercer County Engineer for dissemination at these meetings. Anticipate attendance at two of these meetings during Phase 2.

Project Management and Coordination: Man-hours for this task shall be limited to 5% of the combined hours of tasks listed under Phase 2. Attend meetings as required to obtain approval of the items in Phase 2.

Scope of Work -Part 3 -Shop Drawing Review/Construction Consultation

This work will consist of services during construction for the replacement of the above structure which include, but are not limited to the following: Shop Drawing Review and Construction Consultation.

General:

The Department will be responsible for bid reviews, addendums, awards, pre-bid and pre-construction conferences.

Perform all tasks necessary for construction supervision and contract administration, constructability, demolition plan review, shoring reviews, erection and construction sequencing and reviews, and shop drawing reviews.

Pre - Award:

The Department will obtain necessary approvals for required addendums to the approved PS&E package and issue to plan holders.

The Department will conduct a Pre-bid meeting with prospective contractors.

The Department will review and tabulate bids and recommend award or rejection of bids.

Post - Award:

The Department will conduct a Pre-construction conference with the successful bidder, Consultant, FHWA, County, Borough, Utilities, Conservation District, and any affected agencies.

Review and approve the demolition plan, erection and construction sequencing plans, Shoring and Falsework plans, and all shop drawings. Coordinate with the contractor, his engineers and fabricators until acceptable plans are received.

Perform Construction Consultation to the Inspection Team to clarify design intent on an as needed basis.

Terms, Conditions, and Provisions

The Consultant agrees to comply with and to provide the required work and services in accordance with the provisions listed below, which are to be incorporated into the AGREEMENT by reference.

- a) Commonwealth Contractor Responsibility Provisions, dated April 16, 1999
- b) Consultant Integrity Provisions, dated December 20, 1991
- c) Commonwealth Nondiscrimination/Sexual Harassment Clause, dated June 30, 1999
- d) Federal Nondiscrimination and Equal Employment Opportunity Clauses, dated January 1976
- e) Offset Provision for Commonwealth Contracts, dated April 16, 1999
- f) Pennsylvania Election Code, dated February 22, 2001
- g) Publication No. 442, Bureau of Design Specifications for Consultant Agreements, dated 3/13/2001
- h) Provisions Concerning the Americans With Disabilities Act, dated 01/2001

The Consultant will be required to certify their compliance with the following requirements:

- a) Consultant's Certification of Non-Collusion, dated February 1990
- b) Certification Regarding Debarment, Suspension and Other Responsibility Matters, dated August 1990
- c) Certificate of Restrictions on Lobbying, dated August 6, 1990
- d) Consultant's Acceptance of PA Workmen's Compensation Act, dated August, 1999

The Consultant agrees to comply with and to provide the required work and services in accordance with the Department's Standard Agreement Special Requirements, dated April 26, 2001 and the following standard method of payment special provisions:

Method of Payment -Cost Plus Fixed Fee, dated 5/16/2001

Method of Payment -Specific Rate of Compensation, dated 2/28/2001

The scope of work and services, as set forth in the Consultant's technical proposal, is to be performed in conformance with the requirements of the applicable provisions of the current Department Publications, Manuals, Handbooks, Policies and Procedures. The Department and the Consultant shall confer at any time when the Department issues an amendment, revision, amplification, increase, and/or change to any Publication, Manual, Handbook, Policy or Procedures to determine whether there is a change in scope and/or accepted work and services completed by the Consultant which is ordered changed. The Department, with the approval of the Federal Highway Administration (FHWA) when applicable, where there is such a change, will issue a Supplemental Agreement.

Preparation of Technical Proposal

Technical proposals will be required from the three firms that are short listed by the review committee. Submit five (5) copies of the technical proposal to the County by the date that will be established at the scope of work meeting.

Include this scope of work in the technical proposal.

Direct any questions to Mr. Mark A. Miller, P.E. at 724-662-4977.

Include a detailed schedule of all work items in the technical proposal. Identify controlling milestones.

The Consultant shall attain the Disadvantaged Business Enterprise goal of 10% of the total cost, excluding non-professional costs, including all supplements. Costs included in a DBE firm's price proposal as direct cost of work and services by others shall not count as DBE participation. In the alternative a showing of good faith effort shall be made.

Preparation of Price Proposal

A price proposal will be required from the firm recommended by the committee after review of the technical proposals. Prepare the price proposal in three parts as defined above.

Payment method for Part 1 and Part 2 will be Cost plus Net Fee.

Payment method for Part 3 will be Specific Rate of Compensation.

Prepare the proposal in accordance with the "Guide for Preparation of Engineering Agreements."

Use the specific subcategories as defined in this scope to tabulate man-hours and costs.

Submit five (5) copies of the price proposal to the County by the date that will be established at the scope of work meeting.

Negotiations will be conducted by the Department of Transportation.

SCOPING FIELD VIEW MINUTES
RACE STREET BRIDGE over Little Shenango River
GREENVILLE BOROUGH
MERCER COUNTY
July 26, 2006
1:00 PM

Attendance:

Mark Miller	Mercer County Bridge
Dave Anthony	PENNDOT District 1-0 / EQAD / Cultural Resources
Bill Koller	PENNDOT District 1-0 / Bridge
Tom Alcorn	PENNDOT District 1-0 / Planning-Programming
Chris Wolfgang	PENNDOT District 1-0 / Environmental
Kelly Luckenbill	PENNDOT Central Office / Project Development HQAD
Deb Gabriel	PENNDOT District 1-0 / Construction

This two-span closed spandrel arch bridge was originally built in 1921 and is currently on the bridge bill for replacement and is classified as an urban local. This local bridge is open to traffic and is not posted. The current ADT is 2727.

This bridge has an existing width of 28', roadway width of 20' with a 6' cantilever sidewalk. Consultant would like to maintain the existing alignment and width using a bebo arch under fill. Structural mounted guide rail would be required. The design exception checklist in SOL 432-06-05 approved 9/8/06 would be required. If possible, align existing sidewalk with the proposed structure. Use two core borings per substructure unit.

The bridge has been determined not to be historic. However, wetland delineation will need to be determined and/or looked at, as well as fish and mussel issues. The PNDI search has identified three hits within the project limits; they are endangered species, mussels and rattlesnakes. Coordination needs to occur with the US Fish & Wildlife and PA Fish & Boat. The district will look at the archeological involvement.

If the project involves a 4(f) document, the FHWA needs to field view. A programmatic checklist could be used for the structure and the base ball field may be identified as "no use".

This project is funded with federal, state and local money. A design field view submission will not be required; however, a line & grade submission is required. The consultant will be responsible for entering Part A of the scoping document and also for completing the final CE in ECMS. It is currently scoped at a CEE Level 2.

The consultant will be responsible for the completion of a RW plan as well as coordination efforts with the utility companies. If the existing water, sanitary sewer, overhead electric and telephone interfere with construction activities, relocation may be necessary.

The length of the detour has not been determined and coordinated with emergency services is required and should be incorporated with the Traffic Control Plan.

The bridge will be designed to the most current BRADD standards.

These minutes represent the writers understanding of what was discussed. If there are any additions, corrections or deletions which need to be made to these meeting minutes, please contact Tom Alcorn within 7 days of receipt.

Scoping Field View Minutes September 29, 2006

Bryan Spangler and Charles Carey of BQAD, met with Tom Alcorn and Tom Fox, District 1-0 and Mark Miller, Mercer County Bridge, for the re-scoping of the Race Street Bridge.

This scoping meeting was held to apply new policy on the selection, documentation and approval of bridge Type, Size and Location and Foundation submissions. The scope-of-work will be revised to include the following:

- Consultant will prepare the Hydrologic/Hydraulic Study to determine if the existing abutments can remain in place and still meet DEP permitting criteria.
- Core boring will be done during preliminary engineering (PE)
- A meeting will be held in the district office to discuss the findings and how to proceed with final design.
- The TS&L submission will not be required but a letter with the appropriate signatures will be kept in the design file.
- The RSGER submission will be eliminated and a formal Foundation Report is not required. However, the district will make this determination based on the complexity and geotechnical conditions of the project. As a minimum, the Foundation Report will include only the boring logs with boring layout, scour computations and QA forms.

This project is on the TIP for full replacement. The following items were discussed at the site.

Race Street Bridge: City of Greenville Bridge over Little Shenango River in Mercer County. This bridge, built in 1921, reconstructed in 1960, is a Two-Span Closed Spandrel Arch Bridge, 125 ft long on spread footings. It is open to traffic and not posted, detour length has not been determined, Bridge Roadway Width of 28.0 ft, and a paved Approach Roadway Width of 20.0 ft.

- Army Corp of Engineers has constructed five dams upstream to control flow. As a result, the bridge or adjacent approaches have never flooded.
- City of Greenville would like to retain the original appearance of the existing bridge. Listed below are the two proposed alternatives.
 - Arch façade with adjacent or spread box beams
 - Bebo Arch under fill on spread footing with structure mounted guide rail.
- The proposed structure should include two - 11' travel lanes, 6' sidewalk and two - 60' spans.
- Lowering the structure to improve the substandard vertical site distance was also discussed.
- Two core borings per substructure unit and one boring at the pier is recommended.
- One utility is known to be attached to the existing bridge.
- If the Bebo Arch alternative is used, pre-cast wing walls could be used, the deck and headwall would be cast in place. District has pre-approved Bebo Arch drawings.