

Work Plan
Special Experimental Project No. 14 (SEP-14)
Michigan Department of Transportation
Design-Bid Build Project with Alternative Technical Concepts
for Superstructure Replacement

MDOT Job Number: TBD

Control Section: S05-81075

Location: Warren Road over US-23 in Ann Arbor Charter Township, Washtenaw County

Contract Cost: \$1,000,000

Introduction

The Michigan Department of Transportation (MDOT) proposes to use an Alternative Technical Concepts (ATC) contracting approach on a Design-Bid-Build project.

Purpose

The purpose of using ATC on this project is to allow contractors the ability to propose, and receive approval for, superstructure replacement plans in order to bring a contractor's innovations, available materials, and construction techniques into the project during the bidding process.

Project Scope and Background

The project will replace the superstructure of a previously demolished bridge span carrying Warren Road over northbound US-23. The previous superstructure in this span was demolished under emergency contract due to high load damaging all six beams in the cross section, and severely damaging three out of six beams. It is anticipated that the bridge will be completely removed and replaced in a future contract within two to three years.

An ATC process for superstructure replacement is being proposed to allow all potential construction methods to be considered pre-bid in order to maximize competition and incorporate innovative approaches and materials that will add value to the project while meeting durability and maintenance requirements. To accomplish these goals, the following steps are anticipated to be taken:

1. Construction plans and specifications will be developed that include an alternative lump sum item for superstructure replacement. The superstructure replacement item will include all costs for the contractor to replace the beams, deck, bearings, and railings, while also accounting for substructure modifications and possible temporary supports. The contractor will have the option of bidding the MDOT-furnished proposal for superstructure replacement or proposing a different alternative through a series of MDOT approvals. The MDOT-furnished option will be bid using standard items contained in a single proposal section, whereas a contractor-proposed alternative will be bid as a lump sum pay item.
2. A Special Provision for Alternative Technical Concepts for Superstructure Replacement will be developed to detail the goals, requirements, and guidelines of the ATC process. In this provision, MDOT will define minimum criteria that shall be met. In addition to the

Special Provision for ATC for Superstructure Replacement, a Liquidated Damages Special Provision and an early completion incentive pay item is anticipated to promote expedited construction to open the bridge to traffic as early as possible. All contract provisions related to the ATC process will be provided to the FHWA-Michigan Division for approval prior to advertising the project.

3. Preliminary plans and a draft Special Provision for ATC for Superstructure Replacement will be posted for industry review prior to project advertisement to allow Industry time to review the ATC process and begin preparing ATCs. Additional documentation will be included in the Reference Information Documents (RID), if necessary, to provide additional information related to the ATC process for this project.
4. Through the ATC process, contractors will be provided the opportunity to present alternate superstructure replacement concepts to MDOT. If a concept is approved for further development, the contractor will follow the requirements outlined in the Special Provision for ATC for Superstructure Replacement for additional information and re-submit for final approval. Final approval from MDOT will be needed if a contractor elects to use their ATC for the basis of their bid. Costs associated with the additional design work will be the contractor's responsibility and will be included in the lump sum cost for superstructure replacement.
5. Bids will be submitted electronically. MDOT will award the contract to the lowest responsive and responsible bidder.

Schedule

The Project is scheduled to be advertised in April 2022 with bids due in June 2022. Construction is expected to be completed in 2022. MDOT will post preliminary plans in advance of the project advertisement to allow the Contractors more time to evaluate possible ATCs.

Evaluation

MDOT will evaluate the success of this process based on the factors listed below. The evaluation will be included in a report that will be completed within 6 months of the project's completion.

1. Industry Reaction: MDOT will record and track the response from our contracting industry. This will also include an assessment of improvements to the process that may be proposed by industry.
2. ATCs Proposed: MDOT will assess the number of ATC concepts proposed, the number of concepts approved for bidding, and the number of concepts proposed at the time of bidding.
3. Time and Cost Savings: MDOT will compare the cost of the Engineer's Estimate of the base design to the cost of the selected contractor's superstructure replacement scheme. MDOT will also evaluate any time savings from alternate schemes proposed.
4. MDOT will evaluate the effectiveness of the contract language in facilitating the ATC process and MDOT's oversight.

5. Lessons Learned: MDOT will provide a summary of any lessons learned throughout the project and will include any items that may be improved on for the next project that uses a similar process.

Reporting

MDOT will prepare and submit a report on this project to FHWA. The report will be submitted to FHWA upon completion of the contract and final acceptance by the MDOT. The final report will contain all unique contract provisions related to the ATC process, an overall evaluation of the project along with any suggestions and recommendations for improving the process.