Utilizing Alternative Technical Concepts for Design-Bid-Build Construction Projects (SEP-14) FY 2020 Program Update

Purpose and Scope

The Missouri Department of Transportation (MoDOT) and the Federal Highway Administration (FHWA) have entered into a programmatic work plan agreement to approve the use of Alternative Technical Concepts (ATC) on any federally-eligible Design-Bid-Build construction projects when deemed appropriate and beneficial according to the guidelines set forth in MoDOT's Engineering Policy Guide (EPG), Article 147.1. With this agreement, MoDOT and FHWA agree to programmatically approve the use of ATCs, a form of "innovative contracting" identified under the FHWA's SEP-14 program, without requiring a specific work plan and approval for each individual project.

Introduction

An ATC is a proposed change to agency-supplied base design configurations, project scope, design criteria or construction criteria. This change provides a solution that is equal or better to the requirement in the contract. In the broadest sense, ATCs are similar to value engineering, but they are made as a part of the bid proposal before contract award. ATCs provide flexibility to the bidders in order to enhance innovation and achieve efficiency. MoDOT has successfully used ATCs on a handful of projects since 2010. To assist in determining whether or not to pursue ATCs, MoDOT has published Guidelines and Procedures in the EPG. Additional resources include a white paper on the standard ATC contracting process and a list of frequently asked questions (FAQs).

MoDOT routinely performs a Project Delivery Determination process which includes a high level risk assessment on projects that provide opportunity for significant value as a result of contractor input. The Project Delivery Determination includes evaluation of opportunities and obstacles attributed to both Design-Build and Design-Bid-Build. This information is used for decision making on choosing the appropriate delivery method for projects.

Following the decision to utilize Design-Bid-Build based on the outcome of the Project Delivery Determination on a project the owner should consider utilizing the Design-Bid-Build ATC process if the following conditions are present:

a) Risks identified in the Project Delivery Determination are appropriate for this approach.
b) The owner desires to achieve significant value from contractor input.
c) Industry is acceptable to the approach.
d) Owner resources are available.

Federal Fiscal Year 2020 Reporting

In FY 2020, only one project was delivered using Design-Bid-Build with ATC's. The I-49 Connector in the Southwest District. See attached report.

Performance Measures and Reporting

Tracker Measure 3f – Innovative Contracting Methods and Value Engineering (formally Tracker measure 4d) is MoDOT's performance measure that captures use of Design-Build, A+B Contracting,

and Design-Bid-Build ATC at MoDOT. The target is 10% of MoDOT's total program be used on innovative contracting. MoDOT's Tracker can be found at https://www.modot.org/innovative-contracting-and-value-engineering-3f. Measure 3f is located in the Deliver Transportation Solutions of Great Value section.

In State fiscal year 2020 (which runs from June 2019 to July 2020), two Design-Build projects were awarded in the St. Louis and Northeast Districts. The I-270 North Project is MoDOT's largest project in the last decade that will replace aging infrastructure, enhance safety and resiliency of the system and improve mobility for freight and passengers, all while creating an economic boost for nearby communities. The I-70 Climbing Lanes at Mineola Hill will construct eastbound and westbound truck climbing lanes to enable traffic to flow more safely and replace bridges within the project limits. ***MoDOT used the ATC Process to deliver the I-49 Missouri/Arkansas Connector Project in the Southwest District which will complete final five miles up to the Missouri/Arkansas border.*** MoDOT used innovative contracting to deliver 5 of 439 projects in FY 20 accounting for approximately 33% of the $1.14 Billion Program. The 2 projects per year and 10% of program value targets were achieved.

Industry Reaction

A debrief with the Contractor who was awarded the Contract was held and the following takeaways were found. Unsuccessful Contractors did not provide comments to the process.

- Overall, the I-49 Missouri-Arkansas Connector ATC process went very well.
- Flexibility on the process and open to new concepts and changes in the design.
- Feedback was timely and direct.
- One of the cornerstones of a good ATC process is confidentiality.
- We realize MoDOT has the right to reject any and all bids, but we suggest there be some assurances to help industry justify the bidding costs associated with ATCs.
- The schedule for an ATC bid option should be based on the complexity of the project. More complex projects should be allowed more time to fully develop ideas and ATC submittals.
- Base this document on the project. One size does not fit all. Continue to be flexible and to adapt but update the guidelines and procedures as major changes occur. Contractors should have the most current set of guidelines.
- Simplify the submittal requirements. There is some redundancy and information is repeated. Future maintenance could be a checkbox (less, same, or more for example).
- Streamline the bid day submittal requirements but make the team certify we are using approved ATC 1, ATC 2, etc. Those documents have the documentation regarding projected savings. Originally, it looked like we had to resubmit our documentation with the bid and attach approved ATCs and documentation to the ATC bid call. We appreciate MoDOT allowing these to be uploaded early so we could focus our efforts on the actual bid.
- If requested by contractor, Bidding and Contract Services to meet with bidders earlier in the process to outline bidding expectations and develop bid tabs and ATC bidding process.
- Consider providing a stipend for contractors that submit ATCs in their bid.

Alternate Technical Concepts Proposed

- Changes to the horizontal and vertical alignments.
- Changes to ramp configurations.
- Revised culvert dimensions.
- Revised connections between precast box culvert segments.

- Alternate joint sealing method between precast box culvert segments.
- Revised high-embankment typical section.

Cost and Time Savings

The result in the acceptance of the ATC's and subsequent change order can be found in the attachments. The Program Budget was exceeded, however due to the ability to utilize this Alternative Construction Method, the Department was able to award the Project. Overall, the use of the ATC process in FY 2020 resulted in a savings of over $6 million according to the bidding documents.

Lessons Learned (To Date):

- Although this project worked out well from a cost savings standpoint, this project may have been a great candidate for a CMGC process or Progressive Design-Build. Additional value may have been realized during the procurement with one of these procurement methods.
- We would suggest a detailed risk assessment be performed on ATCs to identify and assign risk to the appropriate party (MoDOT or Contractor). If this is done early, there could be more interest in the ATC process.
- Contractors need to know the risks they are assuming for using an approved ATC. Make it clear that the contractor can rely on MoDOT's estimated quantities for areas of the project or bid items that are not touched by the ATC. A contractor will price risk for quantities their engineer and the contractor's staff did not develop in relation to the ATC. Make this clear in the Guidelines and Procedures Document.
- The program budget was very dated and not even close to Contractors base plan estimate. This led to a concern whether the project would be awarded if more than 10% over the budget, even with ATC savings.
- Hiring a design firm to assist is costly. If the low bid is not awarded that is a sunk cost that is hard to recoup.
- Starting the process with a complete set of plans requiring no additional edits and a well thought out Guidelines and Procedures document would allow for streamlining of the process.
- If updates to the base plan set are needed, have those completed before the ATC process starts. Limit changes late in the process, particularly with any plan quantities.
- Limiting ATCs to three means one of two things will happen. 1) MoDOT will not realize all the potential financial benefits of the ATC process or 2) Smaller ATCs are bundled which can be confusing as it relates to the projected savings and bid submittal.

Procurement Phase Evaluation for the I-49 Missouri-Arkansas Connector

Special Experimental Project No. 14 (SEP-14) ATCs – Alternative Technical Concepts

Missouri Department of Transportation
Initial Report: SEP-14 Procurement Phase
ATC Contract for: Job Number J7P0601, I-49 Missouri-Arkansas Connector
Letting Date: March 20, 2020
Award Date: April 1, 2020
Report Date: September 30, 2020

A. Project Description

The scope of this project is to construct a new four-lane, interstate-standard highway on new alignment in McDonald County, Missouri. Limits of the project extend from existing Interstate 49 south of Route H at Pineville, Missouri to the Arkansas state line. The project is part of a larger effort by the Missouri and Arkansas Departments of Transportation to construct a bypass around Bella Vista, Arkansas and connect to existing Interstate 49 north of Bentonville, Arkansas (Figure 1). Once completed these projects will complete the Interstate 49 corridor between Kansas City, Missouri and Fort Smith, Arkansas.

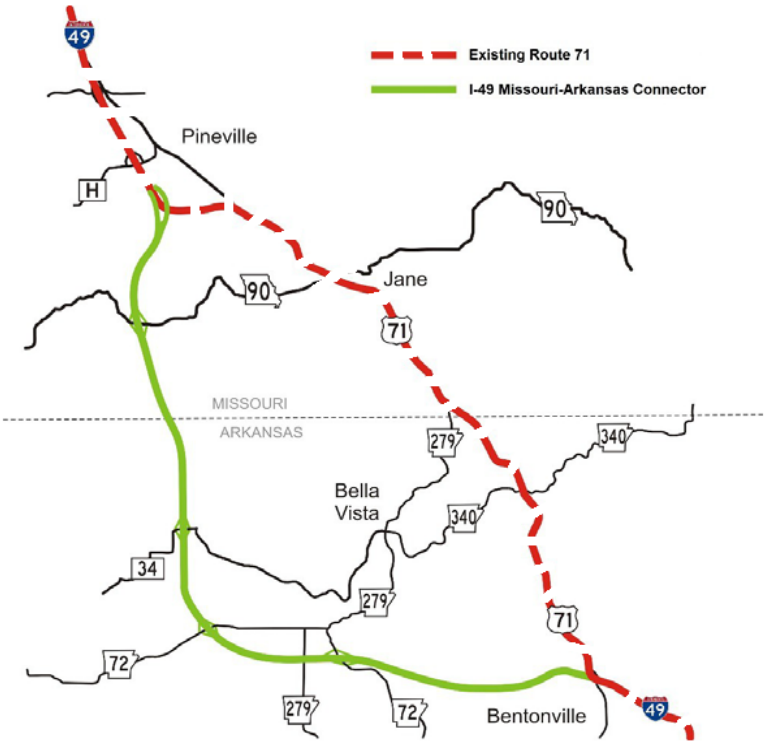

Figure 1: Project Location (J7P0601 is Missouri portion only)

The J7P0601 project involves construction of a five-mile segment of Interstate 49 between Route H at Pineville, Missouri and the Arkansas state line. The project was awarded on April 1, 2020 and completion is anticipated by September 30, 2021. Major items of work include grading, drainage, paving and bridges.

The construction of the I-49 Missouri-Arkansas Connector in northwest Arkansas and southwest Missouri is considered a high priority for the development of the transportation system in the region. This project will improve safety, reduce congestion, improve freight movement, reduce fuel usage, and reduce CO2 and VOC emissions, thereby greatly enhancing the sustainability of the region's transportation system. The project also will improve livability for residents and enhance the economic competitiveness of communities and businesses along the corridor. The project was awarded a U.S. Department of Transportation Better Utilizing Investments to Leverage Development (BUILD) Grant on December 11, 2018. This Grant, in the amount of $25 million, was the catalyst for MoDOT to move forward with completing the project. The Grant commitment was to award the Project within 1 year of receiving the grant.

B. Project Delivery Method Determination

On January 23, 2019 the MoDOT Southwest District held a Project Delivery Determination Workshop to aid in the selection of a project delivery method that best fit the project requirements. Design-build and design-bid-build were evaluated, and the opportunities and obstacles for each delivery method were analyzed and compared based on the draft goals of the project:

Draft Project- Goals
Goal #1: Deliver the project on budget – control quantities.
Goal #2: Deliver the project on time and make the connection to I-49.
Goal #3: Deliver a project that safely handles truck traffic (29%).
Goal #4: Deliver a long lasting transportation facility that minimizes environmental and RW impacts.

The workshop findings indicated that design-build and design-bid-build were both appropriate delivery methods for the project. It was ultimately decided to use design-bid-build with alternative technical concepts due to the following factors:

- Right of way for the project had already been acquired.
- A significant number of utilities had already been relocated.
- Design plans for the project were nearly complete and had been "on the shelf" since 2009 (although a significant amount of pay items needed to be updated and the cross sections needed to be reproduced in the current version of MoDOT's design software).
- Lack of preliminary engineering funding to cover design-build stipends.
- Lack of staff availability for design-build procurement.
- A re-evaluation of the Environmental Impact Statement was underway utilizing the current alignment and right of way footprint.

- Short timeframe required for plans delivery (ten-and-a-half months from late January to early December 2019) to meet the Grant commitment.
- ATCs offered a solution for contractors to add innovation and cost savings to the project prior to award.

C. Alternative Technical Concepts (ATCs)

ATCs are defined as proposed changes to the MoDOT-supplied base design that are made as part of the bid proposal before contract award. ATCs may involve concepts, design solutions, design standards, specifications, materials, products, construction methods or other solutions. ATCs allow for innovation, project schedule reduction and cost savings to obtain additional value for the project that meets or exceeds the project goals, and which provides a product equal to or better than the concept the ATC replaces.

All ATCs had to be pre-approved by MoDOT and the Federal Highway Administration Missouri Division (FHWA-MO) before the contractor could include the ATCs in their bid. All Contractors had the opportunity to bid ATCs or submit a bid based on the base design, but all were in direct competition. The contractor with the lowest responsive bid was awarded the project.

A breakdown of the ATC process for the project is as follows:

- The ATC process kicked off with an industry meeting at The Civic in Neosho, Missouri on September 24, 2019. An overview of the project was presented, along with an overview and tentative schedule for the ATC process. The 90% complete MoDOT base plans, electronic design files and supporting documents were posted to the MoDOT Southwest District project website after the meeting. Attendees of the industry meeting received regular updates via email when files were updated or added to the website. A list of attendees has been provided in an attachment.

- Contractors were not pre-qualified to enter into the ATC procurement process as it was open to anyone. There was also no limitation placed on the number of contractors that could participate in the ATC process.

- Contractors could submit any number of ATC concepts, however only three ATCs could be submitted with a contractor's bid. ATCs with similar subject matter and work type were allowed to be combined on a case by case basis (for example: grading modifications at the north end of the project and grading modifications at the south end of the project could be combined into a single ATC). ATCs combined in this manner were required to be bid as a single ATC and could not be later separated.

- Individual ATC concepts were required to have a minimum of $75,000 in cost savings, or a minimum of two (2) weeks in construction schedule reduction from base schedule to be eligible for consideration.

- ATCs were not limited to certain sections of the project or to major pay items. The only restrictions were:

    - All roadway and bridge design criteria had to meet Interstate standards.
    - No additional right of way could be acquired.
    - The project completion date could not be delayed.

    - ATCs had to be in full compliance with all previous state and federal approval actions (NEPA, design exceptions, etc.)
    - ATCs had to be consistent with, and could not negatively impact, the project goals.
    - ATCs had to be equal to, or better than, the base plans design.
    - All ATC safety elements had to meet or exceed the base plan safety elements.

- If a contractor requested, select MoDOT staff engaged in confidential one-on-one meetings with the contractor and the contractor's designer to discuss their ATC concepts. These meetings were optional, and not participating in the one-on-one meetings did not disqualify a contractor from participating in the ATC process.

- The contractor was required to submit a formal written ATC concept for evaluation by MoDOT and FHWA staff. The ATC concept was evaluated based on the requirements set forth in the I-49 Missouri-Arkansas Connector ATC Guidelines and Procedures document. The ATC had to include the required narrative, an estimate of cost and/or construction time savings, and a table of biddable quantities. Contractors were required to submit preliminary plans and biddable quantities. Contractors were responsible for all design costs, and became the engineer of record for ATCs.

- Once an ATC concept was submitted it was evaluated by the I-49 Missouri-Arkansas Connector ATC Review Team (the Review Team). The Review Team consisted of a multi-disciplinary selection of MoDOT and FHWA staff. Each member of the Review Team (except for FHWA staff who are bound by federal law) was required to sign a project-specific confidentiality agreement before they were allowed to evaluate ATCs.

- The Review Team evaluated the ATC concepts and responded within the agreed number of days. The Review Team response indicated whether the ATC concept was approved, conditionally approved, partially approved or not approved. ATCs were evaluated in accordance with the project goals and the requirements laid out in the ATC Guidelines and Procedures document.

- Once approved, the contractor had the option of including the ATC in their bid. Contractors electing to bid ATCs were required to notify MoDOT of their intent to bid ATCs so that a separate bid package could be prepared using the contractor's ATC quantities. All ATC bids received a unique call number separate from the base project. Contractors were not locked into bidding their ATCs. If the ATC became unviable for any reason then the contractor could still bid the MoDOT-supplied base plans. Contractors had the option of bidding either their pre-approved ATCs or the MoDOT-supplied base plans. They were not allowed to bid both.

- Stipends were not paid to unsuccessful ATC bidders, therefore all ATCs remained the confidential property of the contractor. If the successful bidder's bid contained ATCs, these ATCs became public upon award of the contract.

D. Bids Received

MoDOT received only two bids for the project. The first bidder (Emery Sapp and Sons) included three pre-approved ATCs in their bid. The second bidder (Koss Construction and Bob Bergkamp Construction) bid the MoDOT-supplied base plans. A third contractor went through the ATC approval process and had a pre-approved ATC, but elected not to bid on the project. Emery Sapp and Sons was declared the low bidder and was ultimately awarded the contract. This amount of bidders is typical for a project of this size in this location.

The ATCs bid by Emery Sapp and Sons resulted in an approximately $6 million overall savings to the project. Below is a summary of the three ATCs:

(1) Changes to the horizontal and vertical alignments at the north end of the project, changes to the vertical alignment from Route 90 to the Arkansas state line, and changes to the ramp configuration at the Route 90 diamond interchange.

(2) Revised culvert dimensions at certain locations, revised connections between precast box culvert segments, and an alternate joint sealing method between precast box culvert segments.

(3) Revised high-embankment typical section.

E. Contractor Feedback, MoDOT Responses and Lessons Learned

Feedback on the procurement process was received from the contractor who was awarded the project (Emery Sapp and Sons) and from the contractor's designer (Bartlett and West):

- General Feedback:
  - ESS – B&W: Overall, the I-49 Missouri-Arkansas Connector ATC process went very well. This is due in no small part to MoDOT and FHWA being flexible on the process and open to new concepts and changes in the design. Feedback was timely and direct with no sugar coating. When more review by MoDOT was needed it was done in a timely manner. When MoDOT saw a weakness, problem or concern it was quickly pointed out so the concern could be addressed in the ATC submittal or abandoned if there was no overall value from MoDOT's perspective.
  - MoDOT: We agree that the procurement process went very well. It is very important that MoDOT, as the project owner, be flexible and open-minded to new design concepts, methods and processes. It is also very important to provide timely and direct feedback to contractors regarding their ATCs. One of the goals of the ATC process from the MoDOT perspective is to get contractors to focus on ATCs that will produce the greatest cost and/or time savings. Timely feedback allows contractors to revise or abandon ATCs that have no value to MoDOT, rather than contractors wasting time and money on ATC ideas that will ultimately be rejected.
- Confidentiality:
  - ESS – B&W: One of the cornerstones of a good ATC process is confidentiality. MoDOT did an outstanding job maintaining confidentiality of the concepts and the detailed discussions that were held.
  - MoDOT: Confidentiality is essential in building contractor trust in the MoDOT team and in the ATC process itself. Any MoDOT staff reviewing an ATC were required to sign a project-specific confidentiality agreement. The core group of MoDOT staff participating in the one-on-one meetings consisted of the Project Manager, District Construction and Materials Engineer, Resident Engineer, three Designer representatives and one Construction Inspector representative. The expanded ATC Review Team consisted of representatives from the Traffic, Maintenance,

Environmental and Geotechnical Engineering departments. The Review Team was expanded as necessary depending on what expertise was needed to review specific ATC proposals. The core group handled most ATC reviews, while members of the expanded Review Team were only brought in on an as-needed basis. This would be considered additional reasonable internal effort, however the savings realized nullified the expense. This kept information compartmentalized, and reduced the opportunity for a confidentiality breach.

The pre-bid meeting was held for the project before the ATC submittal window had closed, and was well-attended by contractors and consultant designers. There was an instance during the meeting where a contractor blurted out an ATC idea in front of everyone in attendance. The contractor was told to submit the idea as an ATC, but the confidentiality of the ATC was already broken because it was mentioned in an open forum. Even generalizations such as, "An example of an ATC would be adjusting the vertical alignment to save on earthwork" could be perceived as a confidentiality breach by a contractor who had already included vertical alignment adjustments in their ATCs. In the future we recommend delaying the pre-bid meeting until after the ATC submittal window has closed. A delay was not possible in this case due to the compressed plans delivery timeline for this project.

- Alternative Delivery Process:
    - ESS – B&W: Although this project worked out well from a cost savings standpoint, this project may have been a great candidate for a CMGC process or Progressive Design-Build. Additional value may have been realized during the procurement with one of these procurement methods.
    - MoDOT: Although this project worked out well from a cost savings standpoint we do agree that it would have been a good candidate for CMGC (although not currently allowed by Missouri law), Progressive Design-Build, or Design-Build. Several factors played in to selecting alternative technical concepts as the delivery method as discussed in Section B of this report. A+B Bidding was not considered as a delivery method because we were matching the completion dates of the Arkansas DOT projects that had already been awarded, and saw little benefit to completing the project early when the Arkansas segments were not ready to open.
- Risk Assessment and Assignment:
    - ESS – B&W: In this case MoDOT accepted the risk for geotechnical and baseline survey data after several conversations and emails. This was a critical step to the ATC process being successful. We would suggest a detailed risk assessment be performed on ATCs to identify and assign risk to the appropriate party (MoDOT or Contractor). If this is done early, there could be more interest in the ATC process.
    - MoDOT: The project was originally set up so that the contractor assumed the risk of all pay items within the limits of their ATCs. MoDOT eventually accepted the risk for the geotechnical and baseline survey data due to our relatively high confidence in the completeness and accuracy of this data. MoDOT also accepted the risk for certain elements within the limits of the ATC that were not changed by the ATC (for example: If the contractor adjusted the vertical alignment then this change had no impact on the paving quantities. In this case MoDOT retained the risk for the paving items while the risk for the grading and drainage items shifted

to the contractor). On future projects, risks need to be thoroughly investigated and allocated to the appropriate party before the opening of the ATC submittal window. Risks allocated at this point can then be included in the ATC Guidelines and Procedures for all contractors to adhere to. In addition, a risk assessment needs to be performed on each individual ATC to identify and assign risk for specific pay items within the ATC. For this project the contractor was asked to provide an Excel file of the quantity tables, color coded to show what items the contractor would accept risk on, and what items MoDOT would accept risk on. The contractor's designer became the engineer of record for those items for which the contractor accepted the risk. Risk allocations and agreements on specific items need to be thoroughly documented for use during construction.

- Contractor Risk Allocation:
    - ESS – B&W: This needs to be clear early in the process. Contractors need to know the risks they are assuming for using an approved ATC. Make it clear that the contractor can rely on MoDOT's estimated quantities for areas of the project or bid items that are not touched by the ATC. A contractor will price risk for quantities their engineer and the contractor's staff did not develop in relation to the ATC. Make this clear in the Guidelines and Procedures Document.
    - MoDOT: The risks for individual ATCs should be evaluated and assigned as early in the process as possible. MoDOT's estimated quantities in non-ATC areas carry the same amount of risk as do the quantities in the base plans. In the future, there needs to be separation of ATC quantities and non-ATC quantities in the bid. Paying for ATCs as lump sums, or splitting ATC into different sections of the estimate are potential solutions to consider. This would also allow MoDOT to better track the cost of risk during the ATC process.
- Program Budget: Low Bid Amt. - $58.5M
    - ESS – B&W: The program budget was very dated and not even close to our base plan estimate. This led to a concern whether the project would be awarded if more than 10% over the budget, even with ATC savings. The acknowledgement that the STIP budget was low came late in the process. Hiring a design firm to assist is costly. If the low bid is not awarded that is a sunk cost that is hard to recoup. We realize MoDOT has the right to reject any and all bids, but we suggest there be some assurances to help us justify the bidding costs associated with ATCs. An updated program budget would have helped with that concern.
    - MoDOT: The program budget for the base plans was very dated due to the District not updating the estimate for several years. The District had unsuccessfully applied for a $32 million INFRA Grant a few years earlier, and the $25 million BUILD Grant we received was inadequate to completely fill the funding gap. We made further efforts to narrow this gap by holding a Practical Design Workshop and by incorporating practical design as the base plans were updated. There was significant contractor concern over whether or not this project would be awarded due to the funding shortfall. Contractors didn't want to invest significant resources designing ATCs and not be able to recoup their costs if the project was not awarded. The Southwest District leadership met with contractors to reassure them that the funding would be identified and the project would be awarded. We agree

that a current program budget at the outset of the ATC process would have alleviated contractor concerns that the contract would not be awarded. MoDOT must make sure that all estimates are kept current.

- Schedule:

    - ESS – B&W: The schedule for an ATC bid option should be based on the complexity of the project. More complex projects should be allowed more time to fully develop ideas and ATC submittals. We understand that providing additional time was important to MoDOT to ensure the most opportunity for teams to develop ATCs and to vet the ATC process. From our perspective there was a diminishing return as the new extended deadline approached. We would prefer a tighter timeline because our team engaged very early to develop our ATCs. That early effort provided a competitive advantage that is available to other teams if they do it. Do not rush the schedule but put MoDOT in a position to stick with the original schedule by giving teams plenty of time to identify, analyze and develop ATCs. Starting the process with a complete set of plans requiring no additional edits and a well thought out Guidelines and Procedures document would allow for streamlining of the process.

    - MoDOT: In this case, the schedule for the ATC bid option was set based on the completion deadline for the base plans. The base plans remained under development during the ATC process. Very few significant base plan changes were made to the plans released during the Industry Meeting, and any significant changes to the base plans were communicated to the ATC contractors promptly. Ideally the base plans would be completed and unchanging throughout the ATC process, although our aggressive project delivery timelines seldom make this situation likely.

      The ATC process timeline is hard to gauge. It is our Review Team's position that tighter timelines limit competition. The ATC timeline was extended by one month, but this was done once the ATC development process had begun. We extended the timeline due to the limited number of contractors participating in the process (two), hoping to get more participation. It is recommended in the future that MoDOT District leadership, including the District Engineer, sit down to establish a timeline for the ATC portion of the project. Once the timeline is established the dates should be entered into the Guidelines and Procedures document and not changed. For future projects we will be able to use the timeline for this project as a comparison for setting timelines for other projects.

- Base Plan Set:

    - ESS – B&W: If updates to the base plan set are needed, have those completed before the ATC process starts. Limit changes late in the process, particularly with any plan quantities.

    - MoDOT: This would be the ideal situation but is seldom practical due to aggressive project delivery timelines and MoDOT staff workload / availability. As evidenced by this project, it is not advisable to complete plans for a project and then let the plans sit on the shelf for a number of years. Changes to design philosophies,

design methods, design software, pay items, specifications, etc. require significant re-work to the plans when they are finally scheduled for letting.

- Guidelines and Procedures:

  - ESS – B&W: Base this document on the project. One size does not fit all. Continue to be flexible and to adapt but update the guidelines and procedures as major changes occur. Contractors should have the most current set of guidelines.

  - MoDOT: Efforts were made to tailor the Guidelines and Procedures document to the project. Several questions came up during the one-on-one meetings as to the meaning and interpretation of several items within the document. Changes and interpretations were communicated to contractors, however only one addendum was done for the document. In the future we recommend more frequent addenda, and additional effort to clarify some of the statements in the Guidelines and Procedures document before initiating the ATC process.

- Limit on Number of ATCs:

  - ESS – B&W: Limiting ATCs to three means one of two things will happen. 1) MoDOT will not realize all the potential financial benefits of the ATC process or 2) Smaller ATCs are bundled which can be confusing as it relates to the projected savings and bid submittal.

  - MoDOT: Contractors were limited to three pre-approved ATCs that could be submitted with their bid. Smaller ATCs dealing with similar subject matter could be combined into a larger ATC, but this larger ATC had to be bid as a whole and could not be separated. In addition to the number of ATCs, we also placed limits on the value of ATCs. ATCs were required to save a minimum of $75,000 in construction costs or a minimum of two weeks in construction time.

    MoDOT agrees that by restricting the number and content of ATCs that we did not realize all the potential innovations and cost benefits of the ATC process. These limits were placed on the ATCs due to MoDOT staff availability and workload. Several contractors submitting an unlimited number of ATCs would have easily overwhelmed the MoDOT staff assigned to the project. ATC restrictions need to be put in place based on MoDOT staff availability, project delivery timeline, and other project-specific factors. Putting limits on ATCs also forces contractors to think through the quality of their ATCs, and place emphasis on big-ticket items that have the most impact on the cost and schedule of the project. Cost savings for smaller items not captured in ATCs were captured during the Post Award Value Engineering Workshop, where an unlimited number of submittals was allowed.

    As a way to get around the three-ATC limit, ATCs with similar subject matter (for example: horizontal and vertical alignment changes at disconnected sections within the project limits) were allowed to be combined. These combined ATCs would have been much easier to administer during construction if they had been separated. Separation also would have made it easier to allocate risk on individual pay items within smaller sections of the project.

- ATC Submittal Form:

    - ESS – B&W: Simplify the submittal requirements. There is some redundancy and information is repeated. Future maintenance could be a checkbox (less, same, or more for example).

    - MoDOT: The intent of the ATC Submittal Form was for the contractor to produce a narrative about how their ATC impacts the projects goals, requirements and constraints. We don't think we asked for too much. The detailed submittal requirements forced the contractor to think through their ATC, and to address issues that have the potential to cause problems later in the project if not thoroughly thought out early in the process. The narrative also was an indication to the MoDOT and FHWA reviewers that the contractor had thoroughly vetted their ATC. A few items in the ATC Submittal Form could have been simplified, however the required narratives were essential to properly evaluating the ATC.

- One on One Meetings:

    - ESS – B&W: These were great and helped us vet the ATC ideas. MoDOT was open to new ideas and provided answers quickly on most of our questions. MoDOT was also available to our staff for questions in between the meetings. This allowed us to keep making progress on the ATCs. Do not limit the number of meetings or contact.

    - MoDOT: One-on-one meetings were optional for this project. Contractors electing to participate in one-on-one meetings could request them through the MoDOT Project Manager. Contractors electing not to participate in one-on-one meetings could handle ATC submittals through a secure SharePoint site. This kept the lines of communication open and worked well for our Review Team. Since the number of contractors that will be participating in the ATC process is unknown, we do not recommend unlimited one-on-one meetings. In the future we recommend that the one-on-one meeting schedule be included in the Guidelines and Procedures document, and allow contractors to sign up on a first-come-first-served basis. This system would also aid the Review Team by letting team members get these meetings on their calendars at an earlier date. More meetings could be added by addendum if the number of contractors requesting meetings exceeds the number of meeting slots available.

- Bidding Requirements:

    - ESS – B&W: Streamline the bid day submittal requirements but make the team certify we are using approved ATC 1, ATC 2, etc. Those documents have the documentation regarding projected savings. Originally, it looked like we had to resubmit our documentation with the bid and attach approved ATCs and documentation to the ATC bid call. We appreciate MoDOT allowing these to be uploaded early so we could focus our efforts on the actual bid.

      Also, be very clear what information is needed in the form of plans and bid quantities. Allow time from approval to bid day for these to be accurately completed. For example, culvert spacing calculations take time to perform and

verify. Because time was limited, we were forced to build in a contingency (cushion) reducing overall savings.

- MoDOT: Contractors were required to certify what ATCs they were including in their bid so that MoDOT Bidding and Contracting Services could prepare documents for a separate call number for the ATC bid. Contractors were not locked into bidding the ATC call, and were allowed to revert to bidding the base plans call. Contractors were required to submit their approved ATC documents so that the documents would become part of the contract should the ATC bidder be the successful bidder. Due to MoDOT's infrequent use of the ATC project delivery method, the details of the bid submittal process were unknown at the outset of the project and had to be developed over time. This led to contractor frustration due to contractors not knowing what documentation was required for submittal with their bid. Bid submittal requirements need to be clearly spelled out in the Guidelines and Procedures document. These issues will be more easily resolved in the future as the knowledge of our staff increases with increased usage of the ATC project delivery method.

- Alternate Design Requirements:
  - ESS – B&W: Even though the process was open to non-MoDOT specifications, there were some items that required following MoDOT standards (i.e.: interchange ramp layout details figure in EPG 234 does not quite agree with Green Book details).
  - MoDOT: The statement above references a specific instance where the MoDOT Review Team determined that following the MoDOT standards yielded a better value for the project than following the AASHTO standards. In general, all FHWA-approved manuals (AASHTO, other state DOTs, etc.) were eligible for inclusion as Additional Applicable Standards, but were subject to MoDOT Review Team approval.

- Bidding and Contract Services:
  - ESS – B&W: If requested by contractor, Bidding and Contract Services to meet with bidders earlier in the process to outline bidding expectations and develop bid tabs and ATC bidding process.
  - MoDOT: Bidding and Contracting Services staff did not have the details of the bidding expectations worked out early on in the process. Bidding and Contracting Services staff was able to hold one meeting with the contractor, however the lack of detail that could be provided at the time led to contractor frustration. General bid submittal requirements need to be known ahead of time and included in the Guidelines and Procedures document. Specific requirements can either be presented in the pre-bid meeting (so all contractors receive the same information at the same time) or in the one-on-one meetings. Since bid submittal requirements vary depending on the number and complexity of individual contractors' ATCs, we recommend the one-on-one meeting approach. The one-on-one meeting approach also allows contractors to ask specific questions about their bid submittal that would not be possible in an open forum.

- Stipend:

    - ESS – B&W: Consider providing a stipend for contractors that submit ATCs in their bid. If they bid the base plans no stipend unless they had an approved ATC. Reward those teams that try to find the desired savings by mitigating the bidding risk and outside design costs. The stipend could be a percentage of savings up to a maximum amount. MoDOT will own all ATC ideas if the stipend is accepted even from the non-winning bids. This could lead to additional savings in the project.

    - MoDOT: This project placed the design responsibility for ATCs on the contractors, with MoDOT personnel serving in an oversight role. Contractor recuperation of design costs is a significant hurdle that MoDOT needs to address in the ATC project delivery process when using this method. This issue is further complicated by the differing design effort required by individual ATCs. Some contractors may invest significant time and money developing an ATC while other contractors may propose viable ATCs that require very little to no design effort. Additionally, ATCs involving materials or construction methods may not save money on the project but may instead save a significant amount of construction time. Costs for these factors are difficult to quantify on a fair and equal basis.

      Contractors were told in the Guidelines and Procedures document that they would not be reimbursed for ATC design costs. The intent of this requirement was to force contractors to consider the risk / reward of pursuing ATCs. It was assumed that contractors would take the risk of hiring a designer due to the potential reward of wining the project. It also eliminated ATCs whose design costs could not be recuperated through cost savings. No direct reimbursement for design costs forced contractors to roll their design costs into the individual pay items in the contract. For this project we allowed contractors to roll their design costs into the Mobilization pay item, to be paid as an "actual cost item" per Section 618.2.1 of the Missouri Standard Specifications for Highway Construction.

      Payment for contractor design costs needs to be better addressed when using the contractor-designed ATC process. As a process improvement, MoDOT should evaluate the following options, along with any other options that would better define and streamline the process:

        - Pay a stipend for ATC design costs, even to unsuccessful bidders. There would be value to MoDOT to own all ATCs so that they could be used on the project (or on other projects).
        - Pay for ATCs as a lump sum, which would include design costs (only for a successful ATC bidder).
        - Add a line item to the contract to pay for ATC design costs (for all ATC bidders, but only paid to the successful ATC bidder).
        - Don't directly pay for design costs and force the contractors to roll design costs into the individual pay items in the contract (successful ATC bidder only).
        - Separate ATCs into different sections in the estimate, which would allow contractors to roll design costs into the individual pay items within those sections without impacting the costs of pay items in the non-ATC areas (successful ATC bidder only).

F. Conclusion

ATCs are not recommended for all projects and should be evaluated on a project by project basis through the Project Delivery Determination process. This project was a good fit for ATCs because it offered up a nearly complete set of design plans while leaving open the potential for contactors to identify substantial cost savings opportunities for a large, high-profit-potential project. The tight project delivery timeline was also a factor in project delivery method selection, although more time for the ATC process is recommended. MoDOT and FHWA staff were able to successfully conduct the ATC process without a full-time staff being dedicated to the project.

The Southwest District knew we were taking a large risk by modifying the ATC process to put design responsibility on the contractors. We didn't know if contractors would participate in the ATC process (due to the cost-risk of hiring a designer) or if they would hold out and realize the cost savings through value engineering proposals following project award (for which contractors are able to recoup a percentage of the savings). In the end it came down to MoDOT staff availability and project delivery time constraints, so we elected to try the new process.

We heard concerns from contractors and design consultants that the responsibility for ATC design would limit contractor participation due to risk and cost. This may have been the case, however the aggressive plans delivery timeline and aggressive project construction completion date most likely limited contractor participation as well. We were pleased with the end results, although we received only one ATC bidder. ATCs allowed us to save approximately $6 million on the project, with additional savings captured by post-award value engineering proposals.

This report is a summary of the ATC procurement process as required by the SEP-14 agreement. A second report will be submitted upon project completion to include any ATC-related issues experienced during the construction phase.

Pre-Bid Conference for the I-49 Missouri-Arkansas Connector (Job Number J7P0601)
Held January 30, 2020 at the MoDOT Southwest District Office in Springfield, Missouri

Name	Company/Organization	Telephone	Email
Cameron Sody	MoDOT	417-895-7612	cameron.sody@modot.mo.gov
Dawndy Baum	MoDOT	417-621-6328	Dawndy.Baum@modot.mo.gov
Karen Lane	MoDOT	417-834-6831	Karen.Lane@modot.mo.gov
Jason Stewart	MoDOT (Utilities)	417-621-6335	Jason.Stewart@modot.mo.gov
Mark Webb	Scurlock Industries	417-862-5088	mwebb@scurlockindustries.com
Shane Machin	Shaffer & Hines	417-725-4663	shane@shafferhines.com
Bruce Green	Bartlett & West	573-659-6720	Bruce.Green@Bartwest.com
Danica Stovall-Taylor	MoDOT-BCS	573-526-2923	danica.stovall-taylor@modot.mo.gov
Sam Niederhelm	MoDOT-BCS	573-526-5645	samuel.niederhelm@modot.mo.gov
Carl Schell	Seven Valleys Gas	417-846-3997	cschell3@hotmail.com
Rick Stockett	Riverside Gravel LLC	602-284-6244	RLStockett@live.com
Craig Switzer	MoDOT	417-621-6331	Craig.switzer@modot.mo.gov
Troy Hughes	MoDOT	573-526-2912	troy.hughes@modot.mo.gov

Pre-Bid Conference for the I-49 Missouri-Arkansas Connector (Job Number J7P0601)
Held January 30, 2020 at the MoDOT Southwest District Office in Springfield, Missouri

Name	Company/Organization	Telephone	Email
Sam Cook	Advanced Highway Sign & Supply, LLC	417-844-8074	sam@advancedhighwaysupply.com
Doug Fronick	APAC	417-773-3085	douglas.fronick@apac.com
Trenton Holtmayer	Emery Sapp & Sons, Inc.	573-489-8430	Trenton.Holtmayer@emerysapp.com
Chris Matson	Scurlock Industries	417-862-5088	cmatson@scurlockindustries.com
Chuck Broockerd	Construction Anchors	816-525-3640	Chuck@Constructionanchors.com
Barry Carter	Kolb Grading	314-574-9247	barryc@kolbgrading.com
Jarrod Logsden	Bloomsdale Excavating	573-483-2564	jal@blex.com
Kenny Voss	MoDOT	573-526-2924	kennethvoss@modot.mo.gov
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Pre-Bid Conference for the I-49 Missouri-Arkansas Connector (Job Number J7P0601)
Held January 30, 2020 at the MoDOT Southwest District Office in Springfield, Missouri

Submitter Name: Emery Sapp & Sons, Inc.

CONFIDENTIAL

ESS Proposed Bid Form

		MoDOT Base Bid				ESS ATC Bid				Variance	
Line Number	**Bid Item Description**	**Bid Quantity**	**Unit of Measure**	**Base Bid Unit Price**	**Extended Price MODOT Quantities**	**ESS Bid Form Quantities**	**Unit of Measure**	**ESS ATC 1, 2, &3 Unit Price**	**Extended Price ESS Quantities**	**Bid Quantity Variance**	**Extended Price Variance**
0010	CLEARING AND GRUBBING	236.00	ACRE	$ 3,100.00	$ 731,600.00	212.00	ACRE	$ 3,100.00	$ 657,200.00	-24.00	$ (74,400.00)
0020	REMOVAL OF IMPROVEMENTS	1.00	LS	$ 135,000.00	$ 135,000.00	1.00	LS	$ 135,000.00	$ 135,000.00	0.00	$ -
0030	UNCLASSIFIED EXCAVATION	4,728,285.00	CY	$ 5.72	$ 27,045,790.20	3,648,900.00	CY	$ 5.65	$ 20,616,285.00	(1,079,385.00)	$ (6,429,505.20)
0040	COMPACTING EMBANKMENT	4,832,720.00	CY	$ 0.85	$ 4,107,812.00	3,558,810.00	CY	$ 0.85	$ 3,024,988.50	(1,273,910.00)	$ (1,082,823.50)
0050	COMPACTING IN CUT	123.70	STA	$ 700.00	$ 86,590.00	120.70	STA	$ 700.00	$ 84,490.00	-3.00	$ (2,100.00)
0060	MISC. INTELLIGENT COMPACTION	1.00	LS	$ 13,000.00	$ 13,000.00	1.00	LS	$ 13,000.00	$ 13,000.00	0.00	$ -
0070	CLASS 3 EXCAVATION	7,286.00	CY	$ 10.50	$ 76,503.00	6,703.30	CY	$ 10.50	$ 70,384.65	-582.70	$ (6,118.35)
0080	CLASS 3 EXCAVATION IN ROCK	3,640.00	CY	$ 95.00	$ 345,800.00	5,387.60	CY	$ 95.00	$ 511,822.00	1747.60	$ 166,022.00
0090	CLASS 4 EXCAVATION	9,029.00	CY	$ 29.00	$ 261,841.00	8,236.30	CY	$ 29.00	$ 238,852.70	-792.70	$ (22,988.30)
0100	CLASS 4 EXCAVATION IN ROCK	166.00	CY	$ 105.00	$ 17,430.00	203.00	CY	$ 105.00	$ 21,315.00	37.00	$ 3,885.00
0110	INTERCEPTION DITCH	62.00	STA	$ 300.00	$ 18,600.00	80.00	STA	$ 300.00	$ 24,000.00	18.00	$ 5,400.00
0120	SUBGRADE COMPACTION (6-INCH DEPTH)	8.00	STA	$ 420.00	$ 3,360.00	12.00	STA	$ 420.00	$ 5,040.00	4.00	$ 1,680.00
0130	SUBGRADING AND SHOULDERING CLASS 1	8.00	STA	$ 1,260.00	$ 10,080.00	12.00	STA	$ 1,260.00	$ 15,120.00	4.00	$ 5,040.00
0140	TYPE 5 AGGREGATE FOR BASE (4 IN. THICK)	317.00	SY	$ 7.50	$ 2,377.50	317.00	SY	$ 7.50	$ 2,377.50	0.00	$ -
0150	GRAVEL (A) OR CRUSHED STONE (B)	4,489.00	SY	$ 5.50	$ 24,689.50	4,489.00	SY	$ 5.50	$ 24,689.50	0.00	$ -
0160	BITUMINOUS PAVEMENT MIXTURE PG64-22, (BP-1)	29.40	Ton	$ 144.00	$ 4,233.60	29.40	Ton	$ 144.00	$ 4,233.60	0.00	$ -
0170	BITUMINOUS PAVEMENT MIXTURE PG64-22 (BASE)	68.00	Ton	$ 108.00	$ 7,344.00	68.00	Ton	$ 108.00	$ 7,344.00	0.00	$ -
0180	BRIDGE APPROACH SLAB (MINOR ROAD)	142.00	SY	$ 150.00	$ 21,300.00	142.00	SY	$ 150.00	$ 21,300.00	0.00	$ -
0190	CONCRETE APPROACH PAVEMENT	286.00	SY	$ 125.00	$ 35,750.00	286.00	SY	$ 125.00	$ 35,750.00	0.00	$ -
0200	TYPE 2 FIELD LABORATORIES	1.00	LS	$ 33,500.00	$ 33,500.00	1.00	LS	$ 33,500.00	$ 33,500.00	0.00	$ -
0210	WATER CASING {COMMUNICATIONS ENCASEMENT}	302.00	LF	$ 39.00	$ 11,778.00	302.00	LF	$ 39.00	$ 11,778.00	0.00	$ -
0220	PIPE COLLAR, TYPE B	13.00	Each	$ 650.00	$ 8,450.00	17.00	Each	$ 650.00	$ 11,050.00	4.00	$ 2,600.00
0230	15 IN. SLOTTED DRAIN	140.00	LF	$ 160.00	$ 22,400.00	140.00	LF	$ 160.00	$ 22,400.00	0.00	$ -
0240	PAVED DITCH	61.00	SY	$ 95.00	$ 5,795.00	61.00	SY	$ 95.00	$ 5,795.00	0.00	$ -
0250	PLACING TYPE 2 ROCK DITCH LINER	1,703.00	CY	$ 24.00	$ 40,872.00	2,159.00	CY	$ 24.00	$ 51,816.00	456.00	$ 10,944.00
0260	PLACING TYPE 3 ROCK DITCH LINER	9,488.00	CY	$ 24.00	$ 227,712.00	3,738.00	CY	$ 24.00	$ 89,712.00	-5750.00	$ (138,000.00)
0270	PLACING TYPE 4 ROCK DITCH LINER	5,043.00	CY	$ 24.00	$ 121,032.00	4,795.00	CY	$ 24.00	$ 115,080.00	-248.00	$ (5,952.00)
0280	BEDDING MATERIAL FOR ROCK DITCH LINER	5,469.00	CY	$ 45.00	$ 246,105.00	3,264.00	CY	$ 45.00	$ 146,880.00	-2205.00	$ (99,225.00)
0290	ROCK LINING	225.00	CY	$ 49.00	$ 11,025.00	237.00	CY	$ 49.00	$ 11,613.00	12.00	$ 588.00
0300	PLACING TYPE 2 ROCK BLANKET	4,518.00	CY	$ 24.00	$ 108,432.00	4,518.00	CY	$ 24.00	$ 108,432.00	0.00	$ -
0310	SLOPE PROTECTION	125.00	SY	$ 120.00	$ 15,000.00	125.00	SY	$ 120.00	$ 15,000.00	0.00	$ -
0320	TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)	1.00	Each	$ 4,500.00	$ 4,500.00	1.00	Each	$ 4,500.00	$ 4,500.00	0.00	$ -
0330	GRATE AND BEARING PLATE (5 FT. X 3 FT. OR 1524 MM X 914 MM)	4.00	Each	$ 1,450.00	$ 5,800.00	4.00	Each	$ 1,450.00	$ 5,800.00	0.00	$ -
0340	CURVED VANE GRATE AND FRAME (2 FT. X 2 FT. OR 600MM X 600MM)	40.00	Each	$ 600.00	$ 24,000.00	48.00	Each	$ 600.00	$ 28,800.00	8.00	$ 4,800.00
0350	CURVED VANE GRATE AND FRAME (4 FT. X 2 FT. OR 1200MM X 600MM)	19.00	Each	$ 900.00	$ 17,100.00	19.00	Each	$ 900.00	$ 17,100.00	0.00	$ -
0360	CONSTRUCTION SIGNS	1,552.00	SF	$ 10.00	$ 15,520.00	1,552.00	SF	$ 10.00	$ 15,520.00	0.00	$ -
0370	ADVANCED WARNING RAIL SYSTEM	10.00	Each	$ 105.00	$ 1,050.00	10.00	Each	$ 105.00	$ 1,050.00	0.00	$ -
0380	FLAG ASSEMBLY	6.00	Each	$ 21.00	$ 126.00	6.00	Each	$ 21.00	$ 126.00	0.00	$ -
0390	CHANNELIZER (TRIM LINE) WITH LIGHT	50.00	Each	$ 37.00	$ 1,850.00	50.00	Each	$ 37.00	$ 1,850.00	0.00	$ -
0400	TYPE III MOVEABLE BARRICADE WITH LIGHTS	16.00	Each	$ 250.00	$ 4,000.00	16.00	Each	$ 250.00	$ 4,000.00	0.00	$ -
0410	FLASHING ARROW PANEL	1.00	Each	$ 2,400.00	$ 2,400.00	1.00	Each	$ 2,400.00	$ 2,400.00	0.00	$ -
0420	CHANGEABLE MESSAGE SIGN WITH COMMUNICATION INTERFACE, CONTRACTOR F	4.00	Each	$ 5,900.00	$ 23,600.00	4.00	Each	$ 5,900.00	$ 23,600.00	0.00	$ -
0430	TEMPORARY LONG-TERM RUMBLE STRIPS	4.00	Each	$ 750.00	$ 3,000.00	4.00	Each	$ 750.00	$ 3,000.00	0.00	$ -
0440	TEMPORARY SHORT-TERM RUMBLE STRIPS	4.00	Each	$ 4,200.00	$ 16,800.00	4.00	Each	$ 4,200.00	$ 16,800.00	0.00	$ -
0450	CONCRETE TRAFFIC BARRIER, TYPE B	190.00	LF	$ 95.00	$ 18,050.00	190.00	LF	$ 95.00	$ 18,050.00	0.00	$ -
0460	CONCRETE TRAFFIC BARRIER, TYPE C	23,345.00	LF	$ 74.00	$ 1,727,530.00	23,307.00	LF	$ 74.00	$ 1,724,718.00	-38.00	$ (2,812.00)
0470	CONCRETE TRAFFIC BARRIER, TYPE D	130.00	LF	$ 185.00	$ 24,050.00	130.00	LF	$ 185.00	$ 24,050.00	0.00	$ -
0480	MISC. WILDLIFE CROSSINGS	70.00	Each	$ 30.00	$ 2,100.00	70.00	Each	$ 30.00	$ 2,100.00	0.00	$ -
0490	MOBILIZATION	1.00	LS	$ 5,982,000.00	$ 5,982,000.00	1.00	LS	$ 5,982,000.00	$ 5,982,000.00	0.00	$ -
0500	ADDITIONAL MOBILIZATION FOR SEEDING	4.00	Each	$ 600.00	$ 2,400.00	4.00	Each	$ 600.00	$ 2,400.00	0.00	$ -
0510	6 IN. WHITE HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEADS	73,344.00	LF	$ 0.25	$ 18,336.00	73,142.00	LF	$ 0.25	$ 18,285.50	-202.00	$ (50.50)
0520	6 IN. YELLOW HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEAD	58,655.00	LF	$ 0.25	$ 14,663.75	56,942.00	LF	$ 0.25	$ 14,235.50	-1713.00	$ (428.25)
0530	12 IN. WHITE HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEAD	7,379.00	LF	$ 0.80	$ 5,903.20	5,639.00	LF	$ 0.80	$ 4,511.20	-1740.00	$ (1,392.00)

Pre-Bid Conference for the I-49 Missouri-Arkansas Connector (Job Number J7P0601)
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0540	4 IN. WHITE STANDARD WATERBORNE PAVEMENT MARKING PAINT, TYPE P BEADS	3,072.00	LF	$ 1.05	$ 3,225.60	3,072.00	LF	$ 1.05	$ 3,225.60	0.00	$ -
0550	4 IN. YELLOW STANDARD WATERBORNE PAVEMENT MARKING PAINT, TYPE P BEAD	3,550.00	LF	$ 1.05	$ 3,727.50	3,550.00	LF	$ 1.05	$ 3,727.50	0.00	$ -
0560	PAVEMENT MARKING REMOVAL	3,137.00	LF	$ 1.05	$ 3,293.85	3,137.00	LF	$ 1.05	$ 3,293.85	0.00	$ -
0570	PAVEMENT MARKING REMOVAL (SYMBOLS)	3.00	Each	$ 55.00	$ 165.00	3.00	Each	$ 55.00	$ 165.00	0.00	$ -
0580	SEPARATION GEOTEXTILE	131,225.00	SY	$ 1.65	$ 216,521.25	191,827.00	SY	$ 1.65	$ 316,514.55	60602.00	$ 99,993.30
0590	CONTRACTOR FURNISHED SURVEYING AND STAKING	1.00	LS	$ 384,300.00	$ 384,300.00	1.00	LS	$ 384,300.00	$ 384,300.00	0.00	$ -
0600	CLASS B-1 CONCRETE (CULVERTS)	7,621.30	CY	$ 555.00	$ 4,229,821.50	5,975.90	CY	$ 500.00	$ 2,987,950.00	-1645.40	$ (1,241,871.50)
0610	REINFORCING STEEL (CULVERTS)	1,221,580.00	LB	$ 0.28	$ 342,042.40	880,420.00	LB	$ 0.01	$ 8,804.20	-341160.00	$ (333,238.20)
0620	15 IN. PIPE GROUP B	6,890.00	LF	$ 40.00	$ 275,600.00	7,571.00	LF	$ 40.00	$ 302,840.00	681.00	$ 27,240.00
0630	18 IN. PIPE GROUP B	488.00	LF	$ 45.00	$ 21,960.00	488.00	LF	$ 45.00	$ 21,960.00	0.00	$ -
0640	24 IN. PIPE GROUP B	455.00	LF	$ 70.00	$ 31,850.00	1,285.00	LF	$ 70.00	$ 89,950.00	830.00	$ 58,100.00
0650	15 IN. PIPE GROUP C	155.00	LF	$ 40.00	$ 6,200.00	155.00	LF	$ 40.00	$ 6,200.00	0.00	$ -
0660	18 IN. PIPE GROUP C	77.00	LF	$ 45.00	$ 3,465.00	77.00	LF	$ 45.00	$ 3,465.00	0.00	$ -
0670	24 IN. PIPE GROUP C	40.00	LF	$ 70.00	$ 2,800.00	40.00	LF	$ 70.00	$ 2,800.00	0.00	$ -
0680	15 IN. PIPE GROUP A	1,137.00	LF	$ 55.00	$ 62,535.00	1,394.00	LF	$ 55.00	$ 76,670.00	257.00	$ 14,135.00
0690	18 IN. PIPE GROUP A	68.00	LF	$ 75.00	$ 5,100.00	-	LF	$ 75.00	$ -	-68.00	$ (5,100.00)
0700	24 IN. PIPE GROUP A	969.00	LF	$ 75.00	$ 72,675.00	500.00	LF	$ 75.00	$ 37,500.00	-469.00	$ (35,175.00)
0710	30 IN. PIPE GROUP A	872.00	LF	$ 80.00	$ 69,760.00	787.00	LF	$ 80.00	$ 62,960.00	-85.00	$ (6,800.00)
0720	36 IN. PIPE GROUP A	761.00	LF	$ 105.00	$ 79,905.00	501.00	LF	$ 105.00	$ 52,605.00	-260.00	$ (27,300.00)
0730	48 IN. PIPE GROUP A	584.00	LF	$ 145.00	$ 84,680.00	584.00	LF	$ 145.00	$ 84,680.00	0.00	$ -
0740	24 IN RCP (SPECIAL DESIGN)	584.00	LF	$ 120.00	$ 70,080.00	-	LF	$ 120.00	$ -	-584.00	$ (70,080.00)
0750	30 IN RCP (SPECIAL DESIGN)	527.00	LF	$ 130.00	$ 68,510.00	-	LF	$ 130.00	$ -	-527.00	$ (68,510.00)
0760	PRECAST CONCRETE DROP INLET 2 FT X 2 FT	206.00	LF	$ 630.00	$ 129,780.00	226.00	LF	$ 630.00	$ 142,380.00	20.00	$ 12,600.00
0770	PRECAST CONCRETE DROP INLET 4 FT X 2 FT	97.00	LF	$ 680.00	$ 65,960.00	97.00	LF	$ 680.00	$ 65,960.00	0.00	$ -
0780	PRECAST CONCRETE DROP INLET 5 FT X 3 FT	18.00	LF	$ 720.00	$ 12,960.00	18.00	LF	$ 720.00	$ 12,960.00	0.00	$ -
0790	15 IN. OR ALLOWED SUBSTITUTE GROUP B FLARED END SECTION	12.00	Each	$ 325.00	$ 3,900.00	13.00	Each	$ 325.00	$ 4,225.00	1.00	$ 325.00
0800	18 IN. OR ALLOWED SUBSTITUTE GROUP B FLARED END SECTION	4.00	Each	$ 330.00	$ 1,320.00	4.00	Each	$ 330.00	$ 1,320.00	0.00	$ -
0810	24 IN. OR ALLOWED SUBSTITUTE GROUP B FLARED END SECTION	1.00	Each	$ 500.00	$ 500.00	7.00	Each	$ 500.00	$ 3,500.00	6.00	$ 3,000.00
0820	15 IN. OR ALLOWED SUBSTITUTE GROUP A FLARED END SECTION	9.00	Each	$ 450.00	$ 4,050.00	10.00	Each	$ 450.00	$ 4,500.00	1.00	$ 450.00
0830	18 IN. OR ALLOWED SUBSTITUTE GROUP A FLARED END SECTION	1.00	Each	$ 750.00	$ 750.00	-	Each	$ 750.00	$ -	-1.00	$ (750.00)
0840	24 IN. OR ALLOWED SUBSTITUTE GROUP A FLARED END SECTION	6.00	Each	$ 550.00	$ 3,300.00	3.00	Each	$ 550.00	$ 1,650.00	-3.00	$ (1,650.00)
0850	30 IN. OR ALLOWED SUBSTITUTE GROUP A FLARED END SECTION	4.00	Each	$ 1,300.00	$ 5,200.00	2.00	Each	$ 1,300.00	$ 2,600.00	-2.00	$ (2,600.00)
0860	36 IN. OR ALLOWED SUBSTITUTE GROUP A FLARED END SECTION	4.00	Each	$ 1,700.00	$ 6,800.00	3.00	Each	$ 1,700.00	$ 5,100.00	-1.00	$ (1,700.00)
0870	48 IN. OR ALLOWED SUBSTITUTE GROUP A FLARED END SECTION	3.00	Each	$ 2,400.00	$ 7,200.00	3.00	Each	$ 2,400.00	$ 7,200.00	0.00	$ -
0880	15 IN. OR ALLOWED SUBSTITUTE GROUP C FLARED END SECTION	2.00	Each	$ 325.00	$ 650.00	2.00	Each	$ 325.00	$ 650.00	0.00	$ -
0890	18 IN. OR ALLOWED SUBSTITUTE GROUP C FLARED END SECTION	2.00	Each	$ 330.00	$ 660.00	2.00	Each	$ 330.00	$ 660.00	0.00	$ -
0900	24 IN. OR ALLOWED SUBSTITUTE GROUP C FLARED END SECTION	4.00	Each	$ 500.00	$ 2,000.00	4.00	Each	$ 500.00	$ 2,000.00	0.00	$ -
0910	24 IN PRECAST CONCRETE FES (SPECIAL DESIGN)	2.00	Each	$ 1,750.00	$ 3,500.00	-	Each	$ 1,750.00	$ -	-2.00	$ (3,500.00)
0920	30 IN PRECAST CONCRETE FES (SPECIAL DESIGN)	2.00	Each	$ 2,000.00	$ 4,000.00	-	Each	$ 2,000.00	$ -	-2.00	$ (4,000.00)
0930	SEEDING - COOL SEASON MIXTURES	45.30	ACRE	$ 2,300.00	$ 104,190.00	45.30	ACRE	$ 2,300.00	$ 104,190.00	0.00	$ -
0940	SEDIMENT BASIN EXCAVATION	7,175.00	CY	$ 6.00	$ 43,050.00	7,175.00	CY	$ 6.00	$ 43,050.00	0.00	$ -
0950	SEDIMENT BASIN ROCK	7,175.00	CY	$ 13.00	$ 93,275.00	7,175.00	CY	$ 13.00	$ 93,275.00	0.00	$ -
0960	SEDIMENT TRAP EXCAVATION	467.00	CY	$ 12.00	$ 5,604.00	467.00	CY	$ 12.00	$ 5,604.00	0.00	$ -
0970	SEDIMENT TRAP ROCK	467.00	CY	$ 50.00	$ 23,350.00	467.00	CY	$ 50.00	$ 23,350.00	0.00	$ -
0980	ROCK DITCH CHECK	28,532.00	LF	$ 10.00	$ 285,320.00	28,532.00	LF	$ 10.00	$ 285,320.00	0.00	$ -
0990	CURB INLET CHECK	2,196.00	Each	$ 80.00	$ 175,680.00	2,196.00	Each	$ 80.00	$ 175,680.00	0.00	$ -
1000	TYPE B BERM	20,530.00	LF	$ 2.00	$ 41,060.00	20,530.00	LF	$ 2.00	$ 41,060.00	0.00	$ -
1010	SLOPE DRAINS	6,817.00	LF	$ 7.00	$ 47,719.00	6,817.00	LF	$ 7.00	$ 47,719.00	0.00	$ -
1020	SEDIMENT REMOVAL	2,993.00	CY	$ 18.00	$ 53,874.00	2,993.00	CY	$ 18.00	$ 53,874.00	0.00	$ -
1030	TEMPORARY SEEDING AND MULCHING	9.10	ACRE	$ 1,200.00	$ 10,920.00	9.10	ACRE	$ 1,200.00	$ 10,920.00	0.00	$ -
1040	SILT FENCE	45,151.00	LF	$ 2.50	$ 112,877.50	45,151.00	LF	$ 2.50	$ 112,877.50	0.00	$ -
1050	MISC. TYPE 4 TURF REINFORCEMENT MAT	23,990.00	SY	$ 4.80	$ 115,152.00	26,571.00	SY	$ 4.80	$ 127,540.80	2581.00	$ 12,388.80
1060	PLACING ROCK BASE	0.00	SY	$ 3.00	$ -	-	SY	$ 3.00	$ -	0.00	$ -
1070	MISC. 11 INCHES, ASPHALTIC CONCRETE PAVEMENT SP125B	0.00	SY	$ 35.00	$ -	-	SY	$ 35.00	$ -	0.00	$ -
1080	BITUMINOUS SHOULDER RUMBLE STRIP	0.00	STA	$ 15.00	$ -	-	STA	$ 15.00	$ -	0.00	$ -
1090	PLACING ROCK BASE	263,210.00	SY	$ 0.75	$ 197,407.50	263,695.00	SY	$ 0.75	$ 197,771.25	485.00	$ 363.75
1100	CONCRETE PAVEMENT (9 IN. NON-REINFORCED 15 FT. JOINTS)	185,055.30	SY	$ 44.00	$ 8,142,433.20	184,663.30	SY	$ 44.00	$ 8,125,185.20	-392.00	$ (17,248.00)
1110	PORTLAND CEMENT CONCRETE SHOULDER RUMBLE STRIP	1,007.70	STA	$ 60.00	$ 60,462.00	1,023.90	STA	$ 60.00	$ 61,434.00	16.20	$ 972.00
1120	TYPE A2 SHOULDER	0.00	SY	$ 24.00	$ -	-	SY	$ 24.00	$ -	0.00	$ -
1130	TYPE A2 SHOULDER	51,589.00	SY	$ 28.00	$ 1,444,492.00	52,242.00	SY	$ 28.00	$ 1,462,776.00	653.00	$ 18,284.00
1140	PLACING ROCK BASE	29,165.00	SY	$ 0.75	$ 21,873.75	17,153.10	SY	$ 0.75	$ 12,864.83	-12011.90	$ (9,008.93)
1150	10 INCHES, ASPHALTIC CONCRETE PAVEMENT SP125C	18,529.00	SY	$ 40.00	$ 741,160.00	14,452.60	SY	$ 40.00	$ 578,104.00	-4076.40	$ (163,056.00)

Pre-Bid Conference for the I-49 Missouri-Arkansas Connector (Job Number J7P0601)
Held January 30, 2020 at the MoDOT Southwest District Office in Springfield, Missouri

1160	BITUMINOUS SHOULDER RUMBLE STRIP	23.40	STA	$ 13.00	$ 304.20	23.40	STA	$ 13.00	$ 304.20	0.00	$ -
1170	PLACING ROCK BASE	0.00	SY	$ 3.00	$ -	-	SY	$ 3.00	$ -	0.00	$ -
1180	CONCRETE PAVEMENT (8 IN. NON-REINFORCED, 15 FT. JOINTS)	0.00	SY	$ 38.00	$ -	-	SY	$ 38.00	$ -	0.00	$ -
1190	PORTLAND CEMENT CONCRETE SHOULDER RUMBLE STRIP	0.00	STA	$ 75.00	$ -	-	STA	$ 75.00	$ -	0.00	$ -
1200	TYPE A2 SHOULDER	4,916.00	SY	$ 36.00	$ 176,976.00	3,669.00	SY	$ 36.00	$ 132,084.00	-1247.00	$ (44,892.00)
1210	TYPE A2 SHOULDER	0.00	SY	$ 24.00	$ -	-	SY	$ 24.00	$ -	0.00	$ -
1220	MGS GUARDRAIL	14,088.00	LF	$ 23.00	$ 324,024.00	27,859.00	LF	$ 23.00	$ 640,757.00	13771.00	$ 316,733.00
1230	MGS BRIDGE APPROACH TRANSITION SECTION (EXTENDED CURB)	5.00	Each	$ 2,900.00	$ 14,500.00	5.00	Each	$ 2,900.00	$ 14,500.00	0.00	$ -
1240	MGS BRIDGE APPROACH TRANSITION SECTION (REGULAR/NO CURB)	7.00	Each	$ 2,800.00	$ 19,600.00	10.00	Each	$ 2,800.00	$ 28,000.00	3.00	$ 8,400.00
1250	MGS END ANCHOR	14.00	Each	$ 950.00	$ 13,300.00	25.00	Each	$ 950.00	$ 23,750.00	11.00	$ 10,450.00
1260	TYPE A CRASHWORTHY END TERMINAL (MASH)	20.00	Each	$ 2,800.00	$ 56,000.00	28.00	Each	$ 2,800.00	$ 78,400.00	8.00	$ 22,400.00
1270	LIGHTING POLE, 45 FT. OR 13.5 M, TYPE AT DESIGN 2	1.00	Each	$ 3,300.00	$ 3,300.00	1.00	Each	$ 3,300.00	$ 3,300.00	0.00	$ -
1280	LIGHTING POLE, 45 FT. OR 13.5 M, TYPE AT DESIGN 3	10.00	Each	$ 3,300.00	$ 33,000.00	10.00	Each	$ 3,300.00	$ 33,000.00	0.00	$ -
1290	BRACKET ARM, 15 FT. OR 4.6 M	11.00	Each	$ 900.00	$ 9,900.00	11.00	Each	$ 900.00	$ 9,900.00	0.00	$ -
1300	LUMINAIRE, LED-B	11.00	Each	$ 450.00	$ 4,950.00	11.00	Each	$ 450.00	$ 4,950.00	0.00	$ -
1310	BASE MOUNTED CONTROL STATION 240 VOLT - 4 CIRCUIT	2.00	Each	$ 6,900.00	$ 13,800.00	2.00	Each	$ 6,900.00	$ 13,800.00	0.00	$ -
1320	CONDUIT, 2 IN. RIGID, IN TRENCH	54.00	LF	$ 8.50	$ 459.00	54.00	LF	$ 8.50	$ 459.00	0.00	$ -
1330	CONDUIT, 3 IN. RIGID, IN TRENCH	458.00	LF	$ 10.50	$ 4,809.00	446.00	LF	$ 10.50	$ 4,683.00	-12.00	$ (126.00)
1340	CONDUIT, 3 IN. RIGID, PUSHED	180.00	LF	$ 23.00	$ 4,140.00	202.00	LF	$ 23.00	$ 4,646.00	22.00	$ 506.00
1350	TRENCHING TYPE I	8,771.00	LF	$ 4.80	$ 42,100.80	7,936.00	LF	$ 4.80	$ 38,092.80	-835.00	$ (4,008.00)
1360	PULL BOX, PREFORMED CLASS 2	22.00	Each	$ 1,100.00	$ 24,200.00	19.00	Each	$ 1,100.00	$ 20,900.00	-3.00	$ (3,300.00)
1370	PULL BOX, PREFORMED CLASS 3	2.00	Each	$ 1,400.00	$ 2,800.00	2.00	Each	$ 1,400.00	$ 2,800.00	0.00	$ -
1380	CABLE, 8 AWG 1 CONDUCTOR	180.00	LF	$ 1.10	$ 198.00	190.00	LF	$ 1.10	$ 209.00	10.00	$ 11.00
1390	CABLE, 10 AWG 1 CONDUCTOR, POLE AND BRACKET	1,320.00	LF	$ 1.05	$ 1,386.00	1,320.00	LF	$ 1.05	$ 1,386.00	0.00	$ -
1400	CABLE-CONDUIT, 1 IN., 2 CONDUCTORS AND 1 BARE NEUTRAL, 6 AWG	10,130.00	LF	$ 3.25	$ 32,922.50	9,310.00	LF	$ 3.25	$ 30,257.50	-820.00	$ (2,665.00)
1410	POLE FOUNDATION (45 FT. OR 13.5 M MOUNTING HEIGHT)	11.00	Each	$ 1,200.00	$ 13,200.00	11.00	Each	$ 1,200.00	$ 13,200.00	0.00	$ -
1420	POWER SUPPLY ASSEMBLY, TYPE 2, 240/120 VOLT SERVICE, LIGHTING ONLY	2.00	Each	$ 1,600.00	$ 3,200.00	2.00	Each	$ 1,600.00	$ 3,200.00	0.00	$ -
1430	CONCRETE FOOTINGS, EMBEDDED	32.00	CY	$ 875.00	$ 28,000.00	32.00	CY	$ 875.00	$ 28,000.00	0.00	$ -
1440	CONCRETE FOOTINGS, BOLT DOWN	93.80	CY	$ 675.00	$ 63,315.00	93.80	CY	$ 675.00	$ 63,315.00	0.00	$ -
1450	STRUCTURAL STEEL POSTS	12,710.00	LB	$ 4.25	$ 54,017.50	12,840.00	LB	$ 4.25	$ 54,570.00	130.00	$ 552.50
1460	PIPE POSTS	4,590.00	LB	$ 4.25	$ 19,507.50	4,630.00	LB	$ 4.25	$ 19,677.50	40.00	$ 170.00
1470	U-CHANNEL POST, 3 LB	103.00	LF	$ 9.00	$ 927.00	101.00	LF	$ 9.00	$ 909.00	-2.00	$ (18.00)
1480	7 FT. CHANNEL POST DELINEATOR, DOUBLE STACKED WHITE	30.00	Each	$ 42.00	$ 1,260.00	30.00	Each	$ 42.00	$ 1,260.00	0.00	$ -
1490	7 FT. CHANNEL POST DELINEATOR, WHITE	40.00	Each	$ 31.00	$ 1,240.00	40.00	Each	$ 31.00	$ 1,240.00	0.00	$ -
1500	7 FT. CHANNEL POST DELINEATOR, YELLOW	8.00	Each	$ 31.00	$ 248.00	8.00	Each	$ 31.00	$ 248.00	0.00	$ -
1510	7 FT. CHANNEL POST DELINEATOR, WHITE/RED	24.00	Each	$ 42.00	$ 1,008.00	24.00	Each	$ 42.00	$ 1,008.00	0.00	$ -
1520	7 FT. CHANNEL POST DELINEATOR, YELLOW/RED	8.00	Each	$ 42.00	$ 336.00	8.00	Each	$ 42.00	$ 336.00	0.00	$ -
1530	2 IN. PSST POST - 12 GA.	536.00	LF	$ 8.50	$ 4,556.00	536.00	LF	$ 8.50	$ 4,556.00	0.00	$ -
1540	POST ANCHOR FOR 2 IN. PSST - 12 GA.	153.00	LF	$ 28.00	$ 4,284.00	153.00	LF	$ 28.00	$ 4,284.00	0.00	$ -
1550	2.5 IN. PSST POST - 12 GA.	103.00	LF	$ 9.50	$ 978.50	103.00	LF	$ 9.50	$ 978.50	0.00	$ -
1560	POST ANCHOR FOR 2.5 IN. PSST - 7 GA.	24.00	LF	$ 35.00	$ 840.00	24.00	LF	$ 35.00	$ 840.00	0.00	$ -
1570	SH-FLAT SHEET	869.00	SF	$ 17.00	$ 14,773.00	869.00	SF	$ 17.00	$ 14,773.00	0.00	$ -
1580	ST-STRUCTURAL	3,030.00	SF	$ 28.00	$ 84,840.00	3,030.00	SF	$ 28.00	$ 84,840.00	0.00	$ -
1590	SHF-FLAT SHEET FLUORESCENT	16.00	SF	$ 28.00	$ 448.00	16.00	SF	$ 28.00	$ 448.00	0.00	$ -
1600	STF-STRUCTURAL FLUORESCENT	60.00	SF	$ 35.00	$ 2,100.00	60.00	SF	$ 35.00	$ 2,100.00	0.00	$ -
1610	122 FT SIGN TRUSS 693+42	1.00	LS	$ 76,500.00	$ 76,500.00	1.00	LS	$ 76,500.00	$ 76,500.00	0.00	$ -
1620	30 FT CANTILEVER SIGN TRUSS 677+75	1.00	LS	$ 33,550.00	$ 33,550.00	1.00	LS	$ 33,550.00	$ 33,550.00	0.00	$ -
1630	30 FT CANTILEVER SIGN TRUSS 709+35	1.00	LS	$ 33,950.00	$ 33,950.00	1.00	LS	$ 33,950.00	$ 33,950.00	0.00	$ -
1640	74 FT SIGN TRUSS 717+34	1.00	LS	$ 53,660.00	$ 53,660.00	1.00	LS	$ 53,660.00	$ 53,660.00	0.00	$ -
1650	RELOCATED SIGNS	2.00	Each	$ 265.00	$ 530.00	2.00	Each	$ 265.00	$ 530.00	0.00	$ -
1660	BRIDGE APPROACH SLAB (MAJOR ROAD)	220.00	SY	$ 280.00	$ 61,600.00	220.00	SY	$ 280.00	$ 61,600.00	0.00	$ -
1670	GALVANIZED STRUCTURAL STEEL PILES (12 IN)	456.00	LF	$ 54.00	$ 24,624.00	456.00	LF	$ 54.00	$ 24,624.00	0.00	$ -
1680	PRE-BORE FOR PILING	88.00	LF	$ 350.00	$ 30,800.00	88.00	LF	$ 350.00	$ 30,800.00	0.00	$ -
1690	CLASS B CONCRETE (SUBSTRUCTURE)	44.70	CY	$ 770.00	$ 34,419.00	44.70	CY	$ 770.00	$ 34,419.00	0.00	$ -
1700	SLAB ON CONCRETE I-GIRDER	391.00	SY	$ 435.00	$ 170,085.00	391.00	SY	$ 435.00	$ 170,085.00	0.00	$ -
1710	SAFETY BARRIER CURB	254.00	LF	$ 90.00	$ 22,860.00	254.00	LF	$ 90.00	$ 22,860.00	0.00	$ -
1720	TYPE 6 (54 IN.), PRESTRESSED CONCRETE I-GIRDER	413.00	LF	$ 230.00	$ 94,990.00	413.00	LF	$ 230.00	$ 94,990.00	0.00	$ -
1730	STEEL INTERMEDIATE DIAPHRAGM FOR P/S CONCRETE GIRDERS	4.00	EA	$ 490.00	$ 1,960.00	4.00	EA	$ 490.00	$ 1,960.00	0.00	$ -
1740	VERTICAL DRAIN AT END BENTS	2.00	EA	$ 2,300.00	$ 4,600.00	2.00	EA	$ 2,300.00	$ 4,600.00	0.00	$ -
1750	LAMINATED NEOPRENE BEARING PAD (TAPERED)	10.00	EA	$ 435.00	$ 4,350.00	10.00	EA	$ 435.00	$ 4,350.00	0.00	$ -
1760	PIPE PILE SPACERS	16.00	EA	$ 1,280.00	$ 20,480.00	16.00	EA	$ 1,280.00	$ 20,480.00	0.00	$ -
1770	CLASS 1 EXCAVATION	164.00	CY	$ 155.00	$ 25,420.00	164.00	CY	$ 155.00	$ 25,420.00	0.00	$ -

Pre-Bid Conference for the I-49 Missouri-Arkansas Connector (Job Number J7P0601)
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1780	GALVANIZED STRUCTURAL STEEL PILES (12 IN)	826.00	LF	$ 54.00	$ 44,604.00	826.00	LF	$ 54.00	$ 44,604.00	0.00	$ -
1790	PRE-BORE FOR PILING	176.00	LF	$ 250.00	$ 44,000.00	176.00	LF	$ 250.00	$ 44,000.00	0.00	$ -
1800	PILE POINT REINFORCEMENT	30.00	EA	$ 105.00	$ 3,150.00	30.00	EA	$ 105.00	$ 3,150.00	0.00	$ -
1810	CLASS B CONCRETE (SUBSTRUCTURE)	88.40	CY	$ 720.00	$ 63,648.00	88.40	CY	$ 720.00	$ 63,648.00	0.00	$ -
1820	SLAB ON CONCRETE I-GIRDER	637.00	SY	$ 340.00	$ 216,580.00	637.00	SY	$ 340.00	$ 216,580.00	0.00	$ -
1830	SAFETY BARRIER CURB	331.00	LF	$ 90.00	$ 29,790.00	331.00	LF	$ 90.00	$ 29,790.00	0.00	$ -
1840	TYPE 6 (54 IN.), PRESTRESSED CONCRETE I-GIRDER	652.00	LF	$ 230.00	$ 149,960.00	652.00	LF	$ 230.00	$ 149,960.00	0.00	$ -
1850	REINFORCING STEEL (BRIDGES)	8,400.00	LB	$ 1.40	$ 11,760.00	8,400.00	LB	$ 1.40	$ 11,760.00	0.00	$ -
1860	REINFORCING STEEL (EPOXY COATED)	3,570.00	LB	$ 1.55	$ 5,533.50	3,570.00	LB	$ 1.55	$ 5,533.50	0.00	$ -
1870	STEEL INTERMEDIATE DIAPHRAGM FOR P/S CONCRETE GIRDERS	6.00	EA	$ 490.00	$ 2,940.00	6.00	EA	$ 490.00	$ 2,940.00	0.00	$ -
1880	SLAB DRAIN	6.00	EA	$ 320.00	$ 1,920.00	6.00	EA	$ 320.00	$ 1,920.00	0.00	$ -
1890	VERTICAL DRAIN AT END BENTS	2.00	EA	$ 1,550.00	$ 3,100.00	2.00	EA	$ 1,550.00	$ 3,100.00	0.00	$ -
1900	LAMINATED NEOPRENE BEARING PAD	16.00	EA	$ 250.00	$ 4,000.00	16.00	EA	$ 250.00	$ 4,000.00	0.00	$ -
1910	PIPE PILE SPACERS	14.00	EA	$ 1,560.00	$ 21,840.00	14.00	EA	$ 1,560.00	$ 21,840.00	0.00	$ -
1920	CLASS 4 EXCAVATION	2,905.00	CY	$ 16.00	$ 46,480.00	2,905.00	CY	$ 16.00	$ 46,480.00	0.00	$ -
1930	CLASS B-1 CONCRETE (CULVERTS-BRIDGE) - #1 - A7052	1,794.20	CY	$ 570.00	$ 1,022,694.00	1,794.20	CY	$ 570.00	$ 1,022,694.00	0.00	$ -
1940	REINFORCING STEEL (CULVERTS-BRIDGE) - #1 - A7052	215,340.00	LB	$ 1.40	$ 301,476.00	215,340.00	LB	$ 1.40	$ 301,476.00	0.00	$ -
1950	CLASS 4 EXCAVATION	2,645.00	CY	$ 16.00	$ 42,320.00	1,956.00	CY	$ 16.00	$ 31,296.00	-689.00	$ (11,024.00)
1960	CLASS B-1 CONCRETE (CULVERTS-BRIDGE) - #2 - A7053	945.60	CY	$ 645.00	$ 609,912.00	1,041.20	CY	$ 645.00	$ 671,574.00	95.60	$ 61,662.00
1970	REINFORCING STEEL (CULVERTS-BRIDGE) - #2 - A7053	108,570.00	LB	$ 1.40	$ 151,998.00	112,000.00	LB	$ 1.40	$ 156,800.00	3430.00	$ 4,802.00
1980	CLASS 4 EXCAVATION	5,405.00	CY	$ 16.00	$ 86,480.00	5,405.00	CY	$ 16.00	$ 86,480.00	0.00	$ -
1990	CLASS B-1 CONCRETE (CULVERTS-BRIDGE) - #3 - A7054	2,690.40	CY	$ 590.00	$ 1,587,336.00	2,690.40	CY	$ 590.00	$ 1,587,336.00	0.00	$ -
2000	REINFORCING STEEL (CULVERTS-BRIDGE) - #3 - A7054	259,930.00	LB	$ 1.40	$ 363,902.00	259,930.00	LB	$ 1.40	$ 363,902.00	0.00	$ -
2010	MSE WALL A7595 - BENT 1 OF BRIDGE A7000	2,759.00	SF	$ 79.00	$ 217,961.00	2,759.00	SF	$ 79.00	$ 217,961.00	0.00	$ -
2020	MSE WALL A7596 - BENT 3 OF BRIDGE A7000	2,800.00	SF	$ 79.00	$ 221,200.00	2,800.00	SF	$ 79.00	$ 221,200.00	0.00	$ -
2030	MSE WALL A7800 - BENT 1 OF BRIDGE A6380	4,369.00	SF	$ 79.00	$ 345,151.00	4,369.00	SF	$ 79.00	$ 345,151.00	0.00	$ -
2040	MSE WALL A7801 - BENT 2 OF BRIDGE A6380	3,668.00	SF	$ 79.00	$ 289,772.00	3,668.00	SF	$ 79.00	$ 289,772.00	0.00	$ -
2050	TYPE D CRASHWORTHY END TERMINAL (MASH)	0.00	Each	$ 31,300.00	$ -	1.00	Each	$ 31,300.00	$ 31,300.00	1.00	$ 31,300.00
2060	30 IN. OR ALLOWED SUBSTITUTE GROUP B FLARED END SECTION	0.00	Each	$ 1,200.00	$ -	1.00	Each	$ 1,200.00	$ 1,200.00	1.00	$ 1,200.00
2070	PRECAST CONCRETE DROP INLET 3 FT X 3 FT	0.00	LF	$ 650.00	$ -	15.00	LF	$ 650.00	$ 9,750.00	15.00	$ 9,750.00
2080	CURVED VANE GRATE AND FRAME (3 FT. X 3 FT.)	0.00	Each	$ 900.00	$ -	3.00	Each	$ 900.00	$ 2,700.00	3.00	$ 2,700.00
2090	TEMP TRAFFIC BARRIER CONTRACTOR FURNISH CONTRACTOR RETAINED	0.00	LF	$ 27.00	$ -	800.00	LF	$ 27.00	$ 21,600.00	800.00	$ 21,600.00
3000	UTILITY RELOCATION STATION 912+00	0.00	LS	$ 100,000.00	$ -	1.00	LS	$ 100,000.00	$ 100,000.00	1.00	$ 100,000.00
			Concrete Alternate Totals		**$ 67,392,261.30**				**$ 58,509,892.93**		**$ (8,882,368.38)**