

VALUE ENGINEERING CHANGE PROPOSAL MISSOURI DEPARTMENT OF TRANSPORTATION

Conceptual Proposal Final Proposal Date 8/26/13

Contract ID 130726-A01 Job No. J1I2156 / J1I2158

County Andrew / Clinton Route 29 / 35 Original Contract Amount \$4,545,831.40

Contractor APAC - Missouri By Jeremy Bexten, P.E.

Designed By Jeremy Bexten, P.E. Phone 573-289-6571

VECP# 13-48 (to be completed by C.O.) VECP or PDVECP

1. Description of existing requirements and proposed change(s). Advantages/Disadvantages

Advantages - Allows material suppliers more time to make shop drawings and more time for approval; Reduces overtime required for the project (material suppliers and contractors); more likely allows the head to head traffic to be removed before the winter months; reduces cold weather concreting safety and quality risks; allows contractor and MoDOT more time to prepare for the start of this project; No maintenance on the I-35 bridge this winter; APAC will repair the bridge during the crossover construction; Less maintenance for MoDOT on I-29 after the correction

Disadvantages - Maintenance of the I-29 bridges throughout the winter.

2. Estimate of reduction in construction costs. \$75,100.00

3. Prediction of any effects the proposed change(s) will have on other department costs, such as maintenance and operations.

Less overtime and inspection will be required from MoDOT. Some costs and cost savings between maintaining the I-29 bridges this winter as opposed to the I-35 bridges.

MoDOT and APAC will split the cost of the repairs of the I-29 bridges. The cost of the repairs is \$19.00 per SF and MoDOT will pay APAC \$9.50 per SF for the repairs up to 800 SF.

4. Anticipated date for submittal of detailed change(s) of items required by Section 104.6 of the Specifications.

8/26/13
(date)

5. Deadline for issuing a change order to obtain maximum cost reduction, noting the effect of contract completion time or delivery schedule.

8/28/13 We plan on starting the work on I-29 on Thursday so we will
(date) need acceptance by Wednesday the 28th.
(effect)

6. Dates of any previous or concurrent submission of the same proposal.

8/9/13, 8/15/13
(date and/or dates)

Additional Comments:

**** Portion Below This Line To Be Filled Out by MoDOT ****

Comments: See attached RE comment sheet.

Submitted By Resident Engineer

Date

Comments:

**Approval
Recommended**

District Engineer

Date

**Rejection
Recommended**

Comments:

N/A

**Approval
Recommended**

Federal Highway Administration
Required for FHWA Full Oversight Projects

Date

**Rejection
Recommended**

Comments:

Concur with the recommendations outlined in the RE comments for cost and time adjustments. This proposal would be classified as a PDVECP (25% cost share).

Approval

State Construction and Materials Engineer

Date

Rejection



APAC-Missouri, Inc.

1591-A East Prathersville Road
Columbia, MO 65202
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Tel: 573 449-0886, Fax: 573 449-2980

Thursday, August 22, 2013

Mr. Larry Jacobson R.E.
Maryville Project Office
28320 250th St.
Maryville, MO 64468

RE: I-29 Andrew / I-35 Clinton, J1I2156 & J1I2158, Contract I.D. 130726-A01

Dear Mr. Jacobson:

APAC – Missouri hereby submits a Practical Design proposal to complete the 2 bridges on I-35 before Dec 15, 2013 and the other bridges on I-29 in Andrew County before July 1, 2013. This will be a switch of the order of operations from the proposed contract. The reason we are requesting this switch is the early notice to precede, the size of the bridges, and the time needed to produce the material for the I-29 bridges.

In order to complete the twin bridges on I-29 before December 15th we would need excellent weather and absolutely no delays in the approval of the shop drawings. The schedule for these 2 bridges allow for at least 2 months of construction for each bridge. We would need delivery of 4 hinges and 3 expansion devices by about September 15th which is 4 weeks from the NTP and only 5 weeks from the award date. The bridges on I-35 do not have hinge or expansion work so the material delays will not affect us.

The other reason for asking for this change is the size of the bridges. The I-29 bridge decks are about 2355 SY and the bridge decks on I-35 are 706 SY. The amount of overtime needed to complete these 2 bridges before December 15th will be much less.

The final reason for making the switch to the contract is the weather. I have addressed the scheduling issues we will be facing, but the last issue is the December weather. If these bridges come down to the wire for completion, we will be looking at some very cold temperatures and a major threat of snow. We would be looking at slip forming the curb on about Dec. 10th and pouring the deck on December 5th. The average temperature for St. Joseph on Dec. 5th is about a high of 43 degrees and a low temperature that falls below freezing most nights. Not only is this a safety hazard for traffic travelling head to head on the other bridge, but the chances of a delay in construction are very high. There are also costs and safety risks of working in cold weather that is hard to quantify and calculate.

We feel reducing the overtime, allowing the suppliers additional time to get the shop drawings and product produced and approved, reducing the amount of hot water and risks associated with cold weather concrete, APAC can offer a total savings of \$75,100. The cost in addition to the safety benefit of not having traffic head to head in the middle of December is a win-win scenario for both APAC and MoDOT.

APAC will perform major preventative maintenance with concrete to both lanes of both bridges on I-29 during the crossover construction this fall. MoDOT is to maintain the bridges prior to the start of this construction and during the time period between the completion of the crossover construction and the start of bridge construction. The estimated start of bridge construction is March 1st. Since MODOT



Committed to **SAFE** Production



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is assuming some risk in accepting maintenance of the bridges over the winter, APAC will offer 50% of the costs of repairing the I-29 bridges in exchange for MoDOT assuming this risk.

Savings Summary by work item

APAC overtime savings - \$35,000
Subcontractor overtime savings (All-Pro) - \$10,000
Material supplier overtime savings – \$25,000
Hot water in concrete savings – \$2,500
Cold weather work savings - \$2,500

TOTAL SAVINGS ESTIMATE - \$75,000

Preventative Maintenance Breakdown – Maximum of 8 – 5'x5' patches per lane – 800 SF total

Labor per lane – 3 laborers, 2 carpenter x 10 hours x \$50.00 per hr - \$2,500
Equip per lane – 1 Air compressor, 3 jack hammers, 1 truck x 7 hrs x \$45 / hr - \$315
Material per lane – High Early B-2 w/ class rock - \$175 / CY x 5 CY - \$875
Epoxy for patches - \$100 per lane

Total costs of \$3,790 per lane x 4 Lanes / 800 SF = \$19.00 per SF

New Contract Prices

Item 430 bid price of \$241 / SY - P.D. price of \$231 / SY
Item 490 bid price of \$22,000 / EA - P.D. price of \$18,500 / EA
Item 610 bid price of \$241 / SY - P.D. price of \$231 / SY
Item 670 bid price of \$22,000 / EA - P.D. price of \$18,500 / EA
New Item - Preventative maintenance of I-29 w/ 800 SF Maximum – \$19.00 per SF

\$9.50 / SF cost / risk split between APAC and MoDOT

Total Practical Design Proposal - \$75,100 + Split of Repair Cost / Risk

MoDOT Share - \$56,325 + \$9.50 per SF of repair

APAC Share - \$18,775 + \$9.50 per SF of repair

Please feel free to call with any questions or concerns you may have.

Sincerely,
APAC-Missouri, Inc.

Jeremy Bexten, P.E.
Area Manager

Cc: Job File



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Contract: 130726-A01

Job J1I2156, Route I-29, Andrew County and J1I2158, Route I-35, Clinton County

VE proposal RE Comments:

I have reviewed the proposal to switch the sequence of work on the 130726-A01 project from the Route I-29 bridges being completed by December 15, 2013 to the I-35 structures being completed by December 15, 2013 and then the I-29 structures to be completed by July 1, 2014. Milestone damages are set to at \$3,200.00 per day for having the Route I-29 structures completed by December 15, 2013 and will be changed to the Route I-35 structures.

I have discussed the maintenance of the bridges with Marty Liles, District Maintenance Engineer, Scott Stephens, District Bridge Engineer, Mary Miller, District Construction and Materials Engineer and Scott Gray, Maintenance Superintendent in charge of both the I-29 and I-35 bridges and they agree that the structures can be switched in sequence. The revised proposal has APAC – Mo performing repairs to the Route I-29 structures in September 2013 and MoDOT doing minor patching over the winter.

There will be maintenance on the I-29 bridges from September 2013 to approximately March 2014 (an additional 7 months) that will add to MoDOT's cost of maintaining the structure, but there will be a savings by not having to maintain the I-35 structures. APAC has proposed to do half-sole repairs on I-29 to get the structures up to a good surface at a cost of \$19.00 per Square Foot, to be paid 50% by MoDOT. This will save MoDOT from doing the major repairs and allow minimal patching over the next 7 months, thereby making the switch from I-29 to I-35 comparable in maintenance. The 2012 average unit bid price for half-sole repair is \$35.71 per Square Foot, so MoDOT's proposed share is 27% of the statewide unit bid cost. We anticipate 15 to 19 patches or 160 to 300 Square Feet for a total repair cost of \$3,120 to \$5,776 to be split 50% APAC and 50% MoDOT.

The I-35 structures are in better condition and that is the main reason why the District Design Engineer, Troy Slagle had added the JSP to complete the I-29 structures by December 15, 2013. The district maintenance, design and construction are forces are good with the change as long as the maintenance is addressed.

The I-29 structures are longer (600 feet verses 180 feet each) than the I-35 bridges and have hinge repairs and expansions joints that will add to time and fabrication if constructed this season. There is a greater potential to get caught in head to head traffic on I-29 due to early winter weather which is considerably less desirable than any additional deck repairs over the winter. The structures will still have only about 4 months (March to July) to be complete just as it would in the fall (August 15 to December 15) but there will be no chance of having to work out cold weather deck and barrier concrete next season on the last structure prior to opening, only the potential for a later start in March due to cold weather.

There revised cost breakdown shows a \$10.00 per Square Yard reduction for bid items 430 and 610, Slab on Steel for the I-29 structures and a \$3,500 Each reduction for bid items 490 and 670, Hinge Modification, which totals \$75,100. They are requesting a payment of \$9.50 per Square Foot for half-sole repairs to the I-29 structures to perform maintenance on the I-29 structures which would be in addition to the VE proposal costs share.

I recommend acceptance of the VE proposal. This should be a practical design savings of 75%/25%.