

VALUE ENGINEERING CHANGE PROPOSAL MISSOURI DEPARTMENT OF TRANSPORTATION

Conceptual Proposal Final Proposal Date 8/23/12

Contract ID 11118-D04 Job No. J5P2157

County Osage Route 63 Original Contract Amount \$4,153,988.06

Contractor APAC-Missouri, Inc. By Casey J. Castrop

Designed By MoDOT Phone 573-449-0886

VECP# 16.2 ~~XXXXXX~~ (to be completed by C.O.) VECP or PDVECP
VECP# 12-55

1. Description of existing requirements and proposed change(s). Advantages/Disadvantages
The change to the typical sections at the north end of the Rt. 63 project have been reviewed and APAC is in agreement with the quantities. APAC is submitting this Value Engineering Change Proposal for the realized savings from this change. Please see the attached cost/savings breakdown sheet.

2. Estimate of reduction in construction costs. ~~\$33,242.04~~ \$32,510.04

3. Prediction of any effects the proposed change(s) will have on other department costs, such as maintenance and operations.
None

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

_____ (date)

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

_____ (date) _____ (effect)

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

_____ (date and/or dates)

Additional Comments:

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

Comments: VE No. 2 eliminates the placement of SP125, SP190 & BP-1 on the NB lanes of Rte 63 from Log Mile 161.881 to Log Mile 162.022 which is existing concrete pavement in very good condition. Constructing a 2 inch mill & fill throughout the SB lanes also eliminates the need for existing median guardrail modifications that are not currently provided for in the contract. The SP125 (4 feet widening in trench) also remedies _____ 8-24-12
 Submitted By Resident Engineer _____ Date _____
 a portion of the SB driving lane of Rte 63 that is in poor condition. Therefore, I recommend approval of this PDVE which results

Comments: in a 75/25 (Commission/Contractor) split of savings
 Agree that the proposal is a good idea and eliminates resurfacing sound PCCP and issues with guardrail, while addressing pavement concerns in the area. Final V.E. savings for this VE#2(@ a 75/25 split) and the previous VE#1(@ a 50/50 split) should coordinate and be based on final field measured quantities as appropriate and applicable per each VE.

Approval Recommended _____
 Rejection Recommended _____
 District Engineer _____ Date _____

Comments: N/A

Approval Recommended _____
 Rejection Recommended _____
 Federal Highway Administration _____ Date _____
 Required for FHWA Full Oversight Projects

Comments: This is a very good solution that eliminates an overlay of concrete that is in good condition, and fixes an unstable existing widening section rather than overlaying.
 (75/25 cost share)

Approval _____
 Rejection _____
 State Construction and Materials Engineer _____ Date _____

Rt. 63 Osage
 J5P2157
 ID# 111118-D04

VE #2 - Rt. 63 Osage - J5P2157

Savings		Route 63 Osage	
Item 280	BP-1 Pavement		
Item 530	Modified Milling Depth Trans.	NBL LM 161.881 To LM 161.909 X 40' Wide - 666.7 syds @ \$3.50/syd	\$2,333.45
Item 530	Modified Milling Depth Trans.	SBL LM 161.555 To LM 161.683 X 24' Wide - 400 syds @ \$3.50/syd	\$1,400.00
Item 5102	SP125C 70-22 - 1.75"	65.17 tons @ \$64.71/ton	\$4,217.15
Item 5103	SP190C 70-22 - 2"	777.44 tons @ \$62.67/ton	\$48,722.16
		TOTAL SAVINGS	\$67,850.04
			<hr/>
		294.5 tons @ \$120.00/ton	\$35,340.00
		TOTAL COST	\$35,340.00
			<hr/>
		Savings	\$32,510.04
			<hr/>
		Total Savings MoDOT	\$24,382.53
			<hr/>
		Total Savings APAC	\$8,127.51

VE No. 2 proposes to change the typical sections from Log Mile 161.655 to Log Mile 162.058 to eliminate the placement of asphaltic concrete over the top of existing concrete pavement which is in good condition. The proposed VE No. 2 will also eliminate concerns with respect to existing median guardrail which would become non-compliant if 3.75 inches of additional asphaltic pavement was placed adjacent to the existing median guardrail. VE No. 2 is in the area where Rte. 63 transitions from 4 lanes to 2 lanes just south of the Rte. 50 and Rte. 63 interchange. The existing concrete pavement in the northbound lanes of Rte. 63 from Log Mile 161.881 to Log Mile 162.022 is in good condition. The existing southbound lanes of Rte. 63 from Log Mile 161.655 to Log Mile 162.022 is asphalt pavement in fair condition with the exception of the outside 4 feet in the driving lane from Log Mile 161.749 to Log Mile 162.034. Cores at this location revealed pavement which was in very poor condition. The following VE proposal will address all of the concerns listed above. VE Proposal No. 2 proposes to eliminate the proposed 2 inch lift of SP190 and 1.75 inch lift of SP125 in the NB and SB lanes and replace it with a 2 inch mill and fill section of SP 125 in the southbound lanes only from Log Mile 161.655 to Log Mile 162.022. The depth transitions from the typical section changes from VE No. 1 to VE No. 2 would occur from Log Mile 162.022 to Log Mile 162.058. The existing aggregate shoulders throughout the area listed as a part of VE No. 2 would continue to receive a 4 foot wide and 3.75 inch deep placement of BP-1. VE No. 2 will alleviate the guardrail concerns as well as eliminate the placement of asphaltic pavement over the top of existing concrete pavement in the NB lanes which is in good condition. In addition to this, a 4 foot wide and 8 inch deep trench will be milled to remove the existing deteriorated asphalt pavement at the location listed above and subsequently replace it with SP125 (4 foot widening in trench). A price per ton for SP125 (4 foot widening in trench) is provided for payment of this item because this work is substantially different in nature as compared to the SP125 provided in the approved VE No. 1 proposal. Our proposed price is \$120.00 per Ton for the 294.5 Tons of SP125 needed to complete the SP125 (4 foot widening in trench). No quantity adjustments will be made as a result of the additional coldmilling required for the 4 foot widening in trench nor will any quantity adjustments be made for the additional depth of coldmilling required for the 2 inch mill and fill operation throughout the limits noted above. The changes to the quantities are listed below.

The following calculations result in underruns to the following items:

BP-1

LM	to	LM	Location	Length (ft.)	Width (ft.)	Thickness	Tons
161.655		161.917	SB shldrs.	1383.36	8.0	3.75	253.62
161.917		161.941	SB out shldr.	126.72	4.0	3.75	11.62
161.917		161.941	SB in shldr.	126.72	6.5 (avg)	3.75	18.88
161.941		162.022	SB out shldr.	427.68	4.0	3.75	39.20
162.022		162.058	SB & NB shld.	187.50	8.0	3.75	34.38
161.881		161.917	NB shldrs.	190.08	14.0	3.75	60.98
161.917		161.941	NB out shldr.	126.72	10.0	3.75	29.04
161.941		162.022	NB out shldr.	427.68	10.0	3.75	<u>98.01</u>
Total Underrun							545.73

SP125

LM	to	LM	Location	Length (ft.)	Width (ft.)	Thickness	Tons
161.655		161.917	SB	1383.36	24.146	1.75	357.22
161.917		161.941	SB	126.72	24.146	1.75	32.72
161.941		162.022	SB	427.68	24.073	1.75	110.11
162.022		162.058	SB & NB	187.50	24.146	1.75	48.42
161.881		161.917	NB	190.08	24.146	1.75	49.08
161.917		161.941	NB	126.72	24.073	1.75	32.62
161.941		162.022	NB	427.68	12.073 (avg)	1.75	<u>55.22</u>
Total Underrun							685.39

SP190

LM	to	LM	Location	Length (ft.)	Width (ft.)	Thickness	Tons
161.655		161.917	SB	1383.36	24.458	2.0	413.53
161.917		161.941	SB	126.72	24.458	2.0	37.88
161.941		162.022	SB	427.68	24.230	2.0	126.66
162.022		162.058	SB & NB	187.50	24.458	2.0	56.05
161.881		161.917	NB	190.08	24.458	2.0	56.82
161.917		161.941	NB	126.72	24.230	2.0	37.53
161.941		162.022	NB	427.68	12.229 (avg)	2.0	<u>63.92</u>
Total Underrun							792.39

Modified Cold Milling (Depth Transitions)

LM	to	LM	Location	Length (ft.)	Width (ft.)	S.Y.'s
161.881		161.909	NB	150	40	666.7
161.655		161.683	SB	150	24	<u>400</u>
Total Underrun						1066.7

The following calculations result in overruns to the following items:

BP-1

LM	to	LM	Location	Length (ft.)	Width (ft.)	Thickness	Tons
161.655		161.917	SB shldrs.	1383.36	8.0	3.75	253.62
161.917		162.022	SB out shldr.	554.4	4.0	3.75	50.82
162.022		162.058	SB & NB shldr	187.5	8.0	3.75	<u>34.38</u>
Total Overrun							338.82

SP125 (contract price)

LM	to	LM	Location	Length (ft.)	Width (ft.)	Thickness	Tons
161.655		161.917	SB	1383.36	24.167	2.0	408.61
161.917		162.022	SB	554.4	24.083	2.0	163.19
162.022		162.058	SB & NB	187.5	24.146	1.75	48.42
Total Overrun							620.22

SP125 (4' widening in trench)

LM	to	LM	Location	Length (ft.)	Width (ft.)	Thickness	Tons
161.749		162.034	SB	1505	4.0	8.0	<u>294.5</u>
Total Overrun							294.5

SP190

LM	to	LM	Location	Length (ft.)	Width (ft.)	Thickness	Tons
162.039		162.058	SB & NB	100.0	24.458	1.0 (avg)	<u>14.95</u>
Total Overrun							14.95

This results in the following overruns and underruns:

Line No. 0530	Modified Cold Milling (Depth Transitions)	-1066.7 Sq. Yds.
Line No. 0280	Bituminous Pavement Mixture PG 64-22, BP-1	-206.91 Tons
Line No. 5102	Asphaltic Concrete Mixture PG 70-22 SP125 (175 inches deep)	-65.17 Tons
Line No. 5103	Asphaltic Concrete Mixture PG 70-22 SP190 (2.0 inches deep)	-777.44 Tons
New Cont. Item	Asphaltic Concrete Mixture PG 70-22 SP125(4' widening in trench)+294.5Tons	

CONTINGENT ITEM PRICE CHECK

Contract ID 111118-D04 Job No. J5P2157 Change Order No. 02
Route 63 County Osage
Item Description SP125 (4 feet widening in trench)
Item Code 403-01.03 Proposed Price/Unit \$120.00 per ton
Line Number 5107 Units to be Constructed 294.5 tons

MoDOT Unit Bid Price Book Comparison:

Year _____ Statewide Average Price _____ Average Quantity _____
District _____ Average Price _____ Average Quantity _____

Comparison With Prices on Other Area Projects:

Route _____ County _____ Job No. _____
Price _____ Quantity _____

Remarks/Other Analysis/Considerations:

The unit bid price book has pricing available for Asphaltic Concrete Mixture PG 70-22 (SP125 mix), however, due to the small quantity needed and the requirement of placing this mixture in a 4 foot wide trench, a pay item report was acquired from the Estimating Section of the Design Division. As noted in the attached Pay Item Report, the weighted average is \$95.77 per ton with an average quantity of 453.45 tons. The proposed price of \$120.00 per ton is 25% higher than the weighted average price of \$95.77, however, the proposed price of \$120.00 per ton includes removing 1505 feet of existing pavement which is 4 feet wide and 8 inches deep. This amount of coldmilling is 669 Sq. Yds.. Job No. J5P0969 has 1006 Sq. Yds. Of Coldmilling Bituminous Pavement for Removal of Surfacing (3 inch Thick or Less) for \$4.11 per Sq. Yd..
669 Sq. Yds. X \$4.11 per Sq. Yd. = \$2749.59.

Therefore, the additional coldmilling results in an increased cost per ton of $\$2749.59 / 294.5 \text{ tons} = \9.34 per ton
The estimated cost per ton for SP125 (4 feet in Trench) becomes $\$95.77 + \$9.34 = \$105.11$
The proposed price of \$120.00 per ton as compared to the estimated price of \$105.11 is 14% higher.
Based on the information listed above, the proposed price of \$120.00 per ton for SP125 (4 feet widening in trench) is acceptable.

Is the proposed price approved: Yes By Whom? Terry Imhoff
Date approved/rejected 8-24-12 Contractor notified? Yes

Responsible Person: <u>Terry Imhoff</u> Date: <u>8-24-12</u>

MISSOURI PAY ITEM REPORT

Pay Item: 4030103 ASPHALTIC CONCRETE MIXTURE PG 70-22 (SP125C MIX)

TOTALS	High:	190.00	Wtd. Average:	95.77	Total Quan:	11,789.60	Count:	26
	Low:	69.47	Std. Deviation:	106.40	Avg. Quan:	453.45	Median:	95.49
				32.06				

Contractor	Project ID	County	Position	Bid Date	Quantity	Unit	Price	Extension
ideler inc.	110422-401	platte	1	04/22/2011	756.90	TON	70.04	53,013.28
superior bowen asphalt company, llc	110422-401	platte	2	04/22/2011	756.90	TON	69.47	52,581.84
apac-missouri, inc.	110422-801	taney	1	04/22/2011	899.60	TON	85.00	76,466.00
emery sapp & sons inc.	110422-801	taney	2	04/22/2011	899.60	TON	85.65	77,050.74
h. r. quadri contractors, llc	110527-902	pHELPS	1	05/27/2011	314.50	TON	95.49	30,031.61
kolb grading inc., dave	110527-902	pHELPS	2	05/27/2011	314.50	TON	95.49	30,031.61
l. f. Krupp construction, inc. dba Krupp	110722-B01	lincoln	1	07/22/2011	727.90	TON	92.60	67,403.54
constructio	110722-B01	lincoln	2	07/22/2011	727.90	TON	80.25	58,413.98
mid-river asphalt inc.	110923-G11	mc donald	1	09/23/2011	480.00	TON	85.17	40,881.60
apac-missouri, inc., richardson-bass	110923-G11	mc donald	2	09/23/2011	480.00	TON	101.80	48,864.00
hutchens construction co.	111021-C03	jackson	1	10/21/2011	208.60	TON	95.71	19,965.11
ideler inc.	111021-C03	jackson	2	10/21/2011	208.60	TON	84.50	17,626.70
chester bross const. co./c.b. equipment inc.	120120-G03	greene, various	1	01/20/2012	710.80	TON	125.00	88,850.00
hunter chase & associates, inc.	120120-G03	greene, various	2	01/20/2012	710.80	TON	135.00	95,958.00
joes bridge & grading, inc.	120120-H03	new madrid, stoddard	1	01/20/2012	125.40	TON	150.00	18,810.00
Widel, inc.	120120-H03	new madrid, stoddard	2	01/20/2012	60.20	TON	140.00	17,556.00
chester bross const. co./c.b. equipment inc.	120120-H03	new madrid, stoddard	1	01/20/2012	60.20	TON	170.00	10,234.00
Widel, inc.	120120-H03	new madrid, stoddard	2	01/20/2012	60.20	TON	190.00	11,438.00
lethman construction, llc.	120217-B02	marion	1	02/17/2012	312.40	TON	106.00	33,114.40
hartman & co., inc.	120217-G11	marion	2	02/17/2012	312.40	TON	106.00	33,114.40
emery sapp & sons inc.	120217-G11	greene	1	02/17/2012	610.10	TON	124.00	75,652.40
r.v. wagner inc.	120217-H05	st. francois	2	02/17/2012	610.10	TON	71.50	43,622.15
chester bross const. co./c.b. equipment inc.	120217-H05	st. francois	1	02/17/2012	115.60	TON	149.80	17,316.88
radmacher brothers excavating co., inc.	120525-C06	jackson	2	02/17/2012	572.80	TON	80.35	9,288.46
emery sapp & sons inc.	120525-C06	jackson	1	05/25/2012	572.80	TON	90.00	51,552.00
	120525-C06	jackson	2	05/25/2012	572.80	TON	87.65	50,205.92

Report Settings

Selected Pay Item: 4030103 :asphaltic concrete mixture pg 70-22 (sp125c mix)

Include Bidders: Low 2 Bids

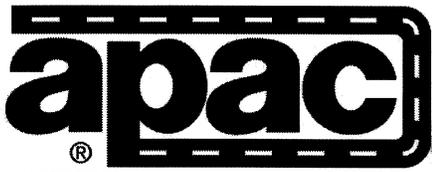
Sel. County/Region: All Regions / All Counties

Include Lettings: From: 01/21/2011 TO: 07/27/2012

Quantity Range: From 0.00 to 1,000.00 TON

Omit High/Low Price: NO

Averages Type: Weighted Average



APAC-Missouri, Inc.

1591-A East Prathersville Road
Columbia, MO 65202
P.O. Box 1117
Columbia, MO 65205
Tel: 573 449-0886, Fax: 573 449-2980

July 31, 2012

Mr. Terry Imhoff, R.E.
MoDOT Jefferson City Project Office
5617 Red Eagle Dr.
Jefferson City, MO 65109

RE: Route 63 Osage
Job No. J5P2157
Contract I.D. No. 111118-D04

Dear Mr. Imhoff:

APAC respectfully submits the price of \$120.00 per ton for the removal and replacement with asphalt in the area on the north end of Route 63. Our proposed operation would mill and pave the existing typical section prior to any profile change.

- 1,475' Length X 4' Wide X 8" Depth = 288 Tons

If you have any questions or require any additional information, feel free to contact me at 573.449.0886.

Sincerely,
APAC-Missouri, Inc.

Casey J. Castrop
Project Manager

Cc: Job File



apac Safety First *Always*