Form C-104
Rev. 02/2009

VALUE ENGINEERING CHANGE PROPOSAL
MISSOURI DEPARTMENT OF TRANSPORTATION

☐ **Conceptual Proposal** ☒ **Final Proposal** **Date** 3/23/10

Contract ID 090821-602 **Job No.** J6U1028P & J6U1028Q

County St. Charles 364 **Original Bid Cost** $43,991,879.40

Contractor Fred Weber, Inc. **By** Brandon Bates

Designed By MODOT **Phone** (636) 978-9835

VECP# 11-13 **(to be completed by C.O.)** **VECP** ☒ **or** **PDVECP** ☐

1. **Description of existing requirements and proposed change(s). Advantages/Disadvantages**
   Existing: Construct Rte 364, Ramp 13, and 1:1 Geosynthetic Reinforced Soil Slope System (GRSS) according to Job J6U1028P plans. This requires a Duckett Creek Force Main to be relocated prior to construction.

   Proposed: Please see attached.

2. **Estimate of reduction in construction costs.** $366

3. **Prediction of any effects the proposed change(s) will have on other department costs, such as maintenance and operations.**
   Reduction of future costs for maintaining the 45' tall 1:1 GRSS. Elimination of Construction Delays due to the Duckett Creek Force Main Relocation.

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.**

   4/8/2011 _____
   (date) (effect)

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

   N/A
   (date and/or dates)

Additional Comments:
The attached spreadsheet provides a summary of the major quantity adjustments resulting from this change. As well as reducing the maintenance aspect of the 1:1 GRSS the proposed changes will be more aesthetically pleasing.

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

Comments: This is somewhat of a revised concept from original VE Proposal #11-03. Per the orig. Concept VE the Global Stability Analysis was performed on the proposed MSE walls but failed. The contractor has revised their concept to reduce the amount of MSE Walls needed and fill in the channel by using 108" CMP. Global Stability Analysis was checked on the remaining walls and is attainable with some foundation improvements. I recommend approval of this concept.

Michael Castro

Digitally signed by Michael Castro
DN: cn=Michael Castro, c=US, o=MoDOT, ou=Route 364 Project Office, email=michael.castro@modot.mo.gov
Date: 2011.03.24 10:31:42 -05'00'

Submitted By Resident Engineer — Date

Comments: Approval is recommended as long we have not compromised the flow requirements for the channel or any 404 requirements. your PM should be able to follow up on these items.

Digitally signed by Matthew Budd
DN: cn=Matthew Budd, o=MoDOT, ou=D6 Construction and Materials, email=Matthew.Budd@modot.mo.gov, c=US
Date: 2011.03.29 11:46:49 -05'00'

[X] **Approval Recommended**

[ ] **Rejection Recommended**

District Engineer — Date

Comments:

Not Required

[ ] **Approval Recommended**

[ ] **Rejection Recommended**

Federal Highway Administration
Required for FHWA Full Oversight Projects — Date

Comments: Approval is contingent on satisfactory results achieved in the field and written acknowledgement by the contractor that they are responsible for the consequences including unanticipated impacts or delays.

Digitally signed by Denis Glascock
DN: cn=Denis Glascock, c=US, o=MoDOT, ou=3H35, email=Denis.Glascock@modot.mo.gov
Date: 2011.03.30 08:54:16 -05'00'

[X] **Approval**

[ ] **Rejection**

State Construction and Materials Engineer — Date: 3-30-11

Distribution: **Resident Engineer, Project Manager, District Construction & Materials Engineer, State Construction & Materials Engineer, FHWA Value Engineering Administrator – MoDOT, P. O. Box 270, Jefferson City, MO 65102**

Proposed: Fred Weber, Inc. proposes to eliminate the 1:1 Geosynthetic Reinforced Soil Slope System (GRSS) on the North Side of Rte 364 between Sta 598+00 and 603+00. FWI proposes to shift Ramp 13 150' to the East as shown in the provided Plan Sheets. This would permit FWI to construct two 390' long 108" CMP pipes with headwalls at both ends and two MSE walls where necessary between Sta 597+80 and 599+24 and between Sta 602+69 to 603+78 as shown in the attached plans and cross-sections. This would eliminate the need to relocate the Duckett Creek Sanitary 22" Force Main at a cost of $175,000. Drainage calculations completed by EFK Moen illustrate that the design changes would still meet specifications. Attached with plans and cross-sections is a Global Stability report completed by Midwest Testing.

Project Number	Line Item Number	Description	Units	Units Previously Provided For	Units To Be Constructed	Units Overrun, Underrun	Unit Price	Amount Of Overrun	Amount Of Underrun
	40	Class A	CY	283111.00	268,815.00	-14,296.00	$5.00		-$71,480.00
	60	Compacting Embankment	CY	218,688.00	235,512.00	16,824.00	$0.75	$12,618.00	
	70	Class 3 Excavation	CY	2,372.00	2,373.00	1.00	$20.00	$20.00	
	80	Class 3 Excavation In Rock	CY	597.00	595.00	-2.00	$20.00		-$40.00
	220	Guardrail Type A 6' Post	LF	7312.0	7113.0	-199.0	$16.00		-$3,184.00
	230	Guardrail Type A 7' Post	LF	125.0	0.0	-125.0	$28.00		-$3,500.00
	290	Type A Crashworthy End Terminal	EA	14.0	13.0	-1.0	$1800.00		-$1,800.00
	310	End Anchor	EA	10.0	9.0	-1.0	$800.00		-$800.00
	320	Chain-Link Fence (Retaining Walls)	LF	1272.0	1519.0	247.0	$16.50	$4,075.50	
	390	Concrete Gutter Type A	LF	2779.0	3041.0	262.0	$32.50	$8,515.00	
	460	Furnishing Type 1 Rock Blanket	CY	916.00	957.00	41.00	$23.00	$943.00	
	470	Placing Type 1 Rock Blanket	CY	916.00	957.00	41.00	$30.00	$1,230.00	
	530	Grate and Bearing Plate (3X2)	EA	14.0	15.0	1.0	$615.00	$615.00	
	600	Manhole Frame and Cover, Type 4	EA	31.00	30.00	-1.0	$345.00		-$345.00
	1010	15 IN. Class III RCP	LF	178.0	192.0	14.0	$45.00	$630.00	
	1040	24 IN. Class III RCP	LF	1730	1676.0	-54.0	$65.00		-$3,510.00
	1070	36 IN. Class III RCP	LF	1738	1745.0	7.0	$80.00	$560.00	
	1140	Precast Concrete Manhole - 48 IN.	FT	187	180.0	-7.0	$190.00		-$1,330.00
	1180	Precast Concrete Drop Inlet 3 FT X 2 FT	FT	72	77.0	5.0	$300.00	$1,500.00	
	1200	Precast Concrete Drop Inlet 5 FT X 2 FT	FT	56	57.0	1.0	$275.00	$275.00	
	1260	30 IN. Precast Concrete FES	EA	2	1	-1.0	$1450.00		-$1,450.00
	1270	36 IN. Precast Concrete FES	EA	1	0	-1.0	$1920.00		-$1,920.00
J6U1028P	1380	Type H Erosion Blanket	SY	2,796.00	0.00	-2,796.00	$4.60		-$12,861.60
	1390	Geosynthetic Reinforced Soil Slope System	SF	34,900.00	9,600.00	-25,300.00	$10.00		-$253,000.00
	1520	Type 5 Aggregate for Base (4 IN.) Ramp	SY	8635.0	8629.6	-5.4	$6.00		-$32.40
	1530	Concrete Pavement (10 IN.) ML	SY	58362.8	58920.4	557.6	$31.70	$17,675.92	
	1540	Concrete Pavement (8.5 IN.) RAMP	SY	9152.5	8586.1	-566.4	$36.30		-$20,560.32
	1560	Type A2 Shoulder ML	SY	19296.4	19305.6	9.2	$28.00	$257.60	
	1620	Type 5 Aggregate for Base (4 IN.) Outer Road	SY	36441.0	36196.2	-244.8	$5.80		-$1,419.84
	1650	Concrete Pavement (8.5 IN.) NOR	SY	28787.4	28550.1	-237.3	$36.00		-$8,542.80
	1680	Type A2 Shoulder NOR	SY	1143.4	1135.9	-7.5	$31.00		-$232.50
	1840	Cable Conduit, 2/C & 1 BARE NEUT. #8 AWG	LF	5910.0	6083.0	173.0	$2.49	$430.77	
	7037	Rock Fill Base	SY	83724	83729.8	5.8	$9.50	$55.10	
	NEW	Concrete Pavement (8.5 IN.) RAMP (Ramp 13 Relocation)	SY	0	913.0	913.0	$36.30	$33,141.90	
	NEW	MSE Wall	SF	0.00	3,633.00	3,633.00	$55.00	$199,815.00	
	NEW	Sacrificial Graffiti Protection Systems	LS	0.00	1.00	1.0	$2300.00	$2,300.00	
	NEW	Concrete & Masonary Protection System	LS	0.00	1.00	1.0	$2300.00	$2,300.00	
	NEW	108" CMP	LF	0.00	780.00	780.00	$205.00	$159,900.00	
	NEW	Class B Concrete(headwalls)	CY	0.00	48.00	48.00	$850.00	$40,800.00	
	NEW	Re-Steel (headwalls)	LB	0.00	7,110.00	7,110.00	$1.20	$8,532.00	
	NEW	30 IN. Class V RCP	LF	1960	1987.0	27.0	$90.00	$2,430.00	
	NEW	Furnishing Type 1 Rock Ditch Liner	CY	0	7.0	7.0	$18.00	$126.00	
	NEW	Placing Type 1 Rock Ditch Liner	CY	0	7.0	7.0	$27.00	$189.00	
	NEW	Seed	LS	0.00	1.00	1.00	$2,000.00	$2,000.00	
	NEW	Engineering Fee	LS	0.00	1.00	1.00	$59,707.50	$59,707.50	
	NEW	Duckett Creek Relocation	LS	1.00	0.00	-1.00	$175,000.00		-$175,000.00
								$560,642.29	-$561,008.46

Total Savings	$366.17
Total Savings - MoDot (50%)	$183.08
Total Savings - Fred Weber, Inc. (50%)	$183.08

Engineering Breakdown	
EFK Moen	33000
EFK Moen	11800
Aspen	9817.5
Midwest Testing	5090
	59707.5

VALUE ENGINEERING CHECK SHEET

TYPE OF WORK

(Check one that applies)

- o Bridge/Structure/Footings
- o Drainage Structures (RCP, RCB, CMP's, ect.)
- o TCP/MOT
- o Paving (PCCP, ect.)
- o Grading/MSE Walls
- o Signal/Lighting/ITS
- ✓ Misc – Ramps, Drainage, MSE Wall

SUMMARY OF PROPOSAL

(If needed, condense summary to a couple of lines)

This VE involves relocation of the ramp and the use of drainage features and MSE walls in lieu of a Reinforced Soil Slope.

SCANNING OF DOCUMENT

If the proposal is large, please mark or make note, which pages need to be scanned into the database. If there are special instructions, make note of them here.