Form C-104
Rev. 02/2009

VALUE ENGINEERING CHANGE PROPOSAL
MISSOURI DEPARTMENT OF TRANSPORTATION

☐ Conceptual Proposal ☒ Final Proposal

Date 9/10/2010

Contract ID 090821-602

Job No. J6U1028P & J6U1028Q

County St. Charles

Original Bid Cost $43,991,879.40

Contractor Fred Weber, Inc.

By Chris A. Wilmes

Designed By MODOT

Phone (636) 978-9835

VECP# 10-04 (to be completed by C.O.)

VECP ☒ or PDVECP ☐

1. **Description of existing requirements and proposed change(s). Advantages/Disadvantages**
   Existing: Construct Rte 364 and Central School Road Bridge according to Job J6U1028Q plans.

   Proposed: Adjust the profile of Rte 364, relocate Ramp 10 to the west, reduce MSE Walls, adjust the length and width of CSR Bridge. Drainage, grading, paving and MSE Walls associated with these changes will result in considerable savings. Potential constructibility issues have been minimized by reducing MSE Wall height along the South Outer Roadway.

2. **Estimate of reduction in construction costs.** $2,400,000

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

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

   N/A
   (date)

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

   10/15/2010 (date) — Need to proceed with ordering material (effect)

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

   N/A
   (date and/or dates)

Additional Comments:
The summary of quantity adjustments attached are actual savings taken from the approved plans prepared by EFK Moen. The adjustments to the profile and relocation of Ramp 10 have eliminated Temporary Shoring and a substantial amount of MSE Wall construction. These changes have also eliminated constructibility issues that would have been encountered with MSE Wall straps and the construction staging on the South Outer Road.

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

Comments: Conceptual proposal was previously approved. Since that time the design work has been completed and additional savings were realized. The concept of the proposal has not changed. I recommend approval.

Submitted By Resident Engineer — Date

Comments: The design work has been reviewed by the area team to make sure that it is compatible with the rest of the project. I am in agreement and recommend approval.

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: 2010.09.16 15:40:36 -05'00'

[X] **Approval Recommended**

[ ] **Rejection Recommended**

District Engineer — Date

Comments:

N/A

[ ] **Approval Recommended**

[ ] **Rejection Recommended**

Federal Highway Administration
Required for FHWA Full Oversight Projects — Date

Comments: Approved on the basis of involvement of the area team and the assumption that the changes are compatible with the intent of the project. Denis Glascock 9/17/2010

Digitally signed by Denis Glascock
DN: cn=Denis Glascock, c=US, o=MoDOT, ou=3H35, email=Denis.Glascock@modot.mo.gov
Date: 2010.09.17 11:40:22 -05'00'

[X] **Approval**

[ ] **Rejection**

State Construction and Materials Engineer — Date

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

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
	3340	Class A Excavation	CY	532,835.00	452,223.00	-80612.00	$5.00		-$403,060.00
	3350	Class C Excavation	CY	1,472.00	365.00	-1107.00	$22.00		-$24,354.00
	3360	Compacting Embankment	CY	123,584.00	115,339.00	-8245.00	$0.75		-$6,183.75
	3370	Class 3 Excavation	CY	1,313.00	1,342.00	29.00	$20.00	$580.00	
	3380	Class 3 Excavation in Rock	CY	310.00	335.00	25.00	$20.00	$500.00	
	3400	Temporary Shoring	LS	1.00	0.00	-1.00	$300,000.00		-$300,000.00
	3420	Misc. Soil Improvements	SY	17,510.00	15,756.00	-1754.00	$10.00		-$17,540.00
	3490	Misc. Concrete Shoulder Under Type D Barrier (10")	SY	1,133.10	1,365.80	232.70	$45.00	$10,471.50	
	3500	Misc. Concrete Shoulder Under Type D Barrier (8.5")	SY	724.10	803.30	79.20	$53.00	$4,197.60	
	3520	Concrete Approach Pavement	SY	152.00	0.00	-152.00	$110.00		-$16,720.00
	3560	Misc. 60" Energy Dissipator	EA	1.00	0.00	-1.00	$15,000.00		-$15,000.00
	3570	Pipe Aggregate Pavement Edge Drain	LF	11,937.00	10,162.00	-1775.00	$5.25		-$9,318.75
	3580	Outlet Pipes & Splash Pads	EA	33.00	16.00	-17.00	$650.00		-$11,050.00
	3590	Guardrail Type A	LF	11,186.00	10,743.00	-443.00	$16.00		-$7,088.00
	3630	Bridge Anchor Section, 6.5' Posts	EA	1.00	2.00	1.00	$1,600.00	$1,600.00	
	3640	Transition Section, 6.5' Posts	EA	9.00	10.00	1.00	$300.00	$300.00	
	3670	Type C Crashworthy End Terminal	EA	4.00	3.00	-1.00	$14,000.00		-$14,000.00
	3680	End Anchor	EA	16.00	15.00	-1.00	$800.00		-$800.00
	3690	Chain Link Fence (Retaining Walls)	LF	3,407.00	1,947.00	-1460.00	$16.50		-$24,090.00
	3750	Concrete Gutter Type A	LF	5,484.00	4,699.00	-785.00	$32.50		-$25,512.50
	3780	Furnishing Type 2 Rock Ditch Liner	CY	84.70	79.70	-5.00	$22.00		-$110.00
	3790	Furnishing Type 3 Rock Ditch Liner	CY	485.00	316.00	-169.00	$22.00		-$3,718.00
	3810	Placing Type 2 Rock Ditch Liner	CY	84.70	79.70	-5.00	$36.00		-$180.00
	3820	Placing Type 3 Rock Ditch Liner	CY	485.00	316.00	-169.00	$32.00		-$5,408.00
	3840	Bedding Material For Rock Ditch Liner	CY	354.00	293.00	-61.00	$51.00		-$3,111.00
	3850	Rock Lining	CY	67.00	61.00	-6.00	$72.00		-$432.00
	3860	Furnishing Type 2 Rock Blanket	CY	1,515.00	316.00	-1199.00	$23.00		-$27,577.00
	3870	Placing Type 2 Rock Blanket	CY	1,515.00	316.00	-1199.00	$30.00		-$35,970.00
	3940	Grate and Bearing Plate (3x2)	EA	11.00	8.00	-3.00	$615.00		-$1,845.00
	3950	Grate and Bearing Plate (5x2)	EA	7.00	5.00	-2.00	$810.00		-$1,620.00
	3990	Curved Vane Grate and Frame 4'x 2'	EA	73.00	77.00	4.00	$830.00	$3,320.00	
	4020	Manhole Frame and Cover, Type 1-B	EA	7.00	8.00	1.00	$430.00	$430.00	
	4030	Manhole Frame and Cover, Type 4	EA	8.00	7.00	-1.00	$345.00		-$345.00
	4160	Concrete Traffic Barrier, Type B	LF	38.00	0.00	-38.00	$70.00		-$2,660.00
	4180	Concrete Traffic Barrier, Type D	LF	4,714.00	2,509.00	-2205.00	$40.00		-$88,200.00
	4190	Concrete Traffic Barrier, Type D Mod	LF	2,451.00	2,830.00	379.00	$105.00	$39,795.00	
	4440	Concrete and Masonry Protection System	LS	1.00	0.00	-1.00	$8,500.00		-$8,500.00
	4445	Sacrificial Graffiti Protection	LS	1.00	0.00	-1.00	$8,500.00		-$8,500.00
	4460	Mechanically Stabilized Earth Wall System	SF	13,420.00	4,065.00	-9355.00	$55.00		-$514,525.00
	4490	18" Pipe Group B	LF	128.00	72.00	-56.00	$55.00		-$3,080.00
	4520	60 IN Group C Pipe	LF	102.00	0.00	-102.00	$94.00		-$9,588.00
	4530	12" Class III Reinforced Concrete Pipe	LF	1,698.00	2,151.00	453.00	$45.00	$20,385.00	
	4540	15" Class III Reinforced Concrete Pipe (8.042)	LF	8,069.00	7,953.00	-116.00	$50.00		-$5,800.00
	4550	18" Class III Reinforced Concrete Pipe	LF	2,649.00	2,579.00	-70.00	$60.00		-$4,200.00
	4560	21" Class III Reinforced Concrete Pipe	LF	607.00	572.00	-35.00	$65.00		-$2,275.00
	4570	24" Class III Reinforced Concrete Pipe	LF	381.00	453.00	72.00	$70.00	$5,040.00	
	4590	30" Class III Reinforced Concrete Pipe	LF	452.00	356.00	-96.00	$95.00		-$9,120.00
	4600	36" Class III Reinforced Concrete Pipe	LF	107.00	479.00	372.00	$100.00	$37,200.00	
	4610	48" Class III Reinforced Concrete Pipe	LF	365.00	367.00	2.00	$140.00	$280.00	
	4630	Jacked 60" Class III Reinforced Concrete Pipe	LF	231.00	0.00	-231.00	$1,500.00		-$346,500.00
	4640	Precast Concrete Manhole - 48"	FT	218.00	197.00	-21.00	$260.00		-$5,460.00
J6U1028Q	4650	Precast Concrete Manhole - 60"	FT	125.00	141.00	16.00	$275.00	$4,400.00	

4660	Precast Concrete Manhole - 72"	FT	15.00	20.00	5.00	$285.00	$1,425.00		
4670	Precast Concrete Drop Inlet 2' x 2'	FT	113.00	114.00	1.00	$455.00	$455.00		
4680	Precast Concrete Drop Inlet 3' x 2'	FT	50.00	62.00	12.00	$400.00	$4,800.00		
4690	Precast Concrete Drop Inlet 4' x 2'	FT	303.00	330.00	27.00	$465.00	$12,555.00		
4710	Precast Concrete Drop Inlet 5' x 2'	FT	31.00	23.00	-8.00	$440.00		-$3,520.00	
4730	18" Group B Flared End Section	EA	1.00	0.00	-1.00	$390.00		-$390.00	
4750	15" Precast Concrete FES	EA	5.00	4.00	-1.00	$845.00		-$845.00	
4760	18" Precast Concrete Flared End Section	EA	2.00	1.00	-1.00	$960.00		-$960.00	
4780	30" Precast Concrete Flared End Section	EA	3.00	1.00	-2.00	$1,450.00		-$2,900.00	
4790	60" Precast Concrete Flared End Section	EA	1.00	0.00	-1.00	$3,700.00		-$3,700.00	
4800	60 IN Group C FES	EA	2.00	0.00	-2.00	$2,200.00		-$4,400.00	
4990	Stabilized Permeable Base (4") (Current Bid & CO - 67,079.2)	SY	62,392.50	0.00	-62392.50	$6.50		-$405,551.25	***
5000	Type 1 Aggregate For Base (4") (Current Bid & CO - 71,052.2)	SY	69,682.20	0.00	-69682.20	$4.50		-$313,569.90	***
5010	Type 5 Aggregate For Base (4") (Bid & CO - 31,320.1)	SY	29,543.80	29,121.40	-422.40	$6.00		-$2,534.40	***
5020	Concrete Pavement (10") (Add3/CO6 - 63,365.1)	SY	62,747.60	62,909.00	161.40	$31.70	$5,116.38		***
5030	Concrete Pavement (8.5") (Bid & CO - 20,879)	SY	18,228.80	16,288.40	-1940.40	$36.30		-$70,436.52	***
5050	Type A2 Shoulder (Bid & CO - 18,137.8)	SY	18,236.90	18,743.60	506.70	$28.00	$14,187.60		***
5100	Type 5 Aggregate For Base (4") (Bid & CO - 45,215.9))	SY	45,216.30	45,663.30	447.00	$5.80	$2,592.60		***
5120	Concrete Pavement (8.5") (Bid & CO - 37,158.9)	SY	37,103.40	37,250.90	147.50	$40.00	$5,900.00		***
5140	Concrete Curb (6IN and Under) Type A	LF	10,558.00	12,253.00	1695.00	$9.00	$15,255.00		***
5150	Type A2 Shoulder (Bid & CO - 1,536.3)	SY	1,591.90	1,673.70	81.80	$31.00	$2,535.80		***
8002	Concrete Pavement (8.5IN) CSR	SY	6,255.30	6,407.30	152.00	$46.85	$7,121.20		
5930	Class 1 Excavation	CY	145.00	330.00	185.00	$37.00	$6,845.00		
5940	Class 1 Excavation In Rock	CY	114.00	72.00	-42.00	$125.00		-$5,250.00	
5950	Bridge Approach Slab (Bridge)	SY	473.00	0.00	-473.00	$206.00		-$97,438.00	
5960	112" Curved Pedestrian Fence	LF	197.00	185.00	-12.00	$110.00		-$1,320.00	
5970	Structural Steel Piles (14")	LF	836.00	0.00	-836.00	$69.00		-$57,684.00	*Rev
5980	Pre-bore for Piling	LF	364.00	365.00	1.00	$125.00	$125.00		
5990	Pile Point Reinforcement	EA	20.00	0.00	-20.00	$145.00		-$2,900.00	
6000	Class B Concrete (Substructure)	CY	308.40	269.90	-38.50	$360.00		-$13,860.00	
6010	Slab on Concrete I Girder	SY	1907.00	1623.00	-284.00	$230.00		-$65,320.00	
6020	Safety Barrier Curb	LF	422.00	359.00	-63.00	$52.00		-$3,276.00	
6030	Prestressed Concrete NU 43 Girder	LF	1652.00	1367.00	-285.00	$230.00		-$65,550.00	
6040	Reinforcing Steel (Bridges)	LB	43130.00	35570.00	-7560.00	$1.25		-$9,450.00	
6080	Plain Neoprene Bearing Pad	EA	18.00	16.00	-2.00	$146.00		-$292.00	
6090	Laminated Neoprene Bearing Pad	EA	18.00	16.00	-2.00	$230.00		-$460.00	
6100	Corrugated Metal Pipe Pile Spacers	EA	20.00	18.00	-2.00	$1.00		-$2.00	
6130	Mechanically Stabilized Earth Wall System - Br. A6757	SF	4762.00	3,505.00	-1257.00	$55.00		-$69,135.00	
6180	Mechanically Stabilized Earth Wall System - Br. A6758	SF	23978.00	14,195.00	-9783.00	$55.00		-$538,065.00	
New	Concrete and Masonry Protection System (#1 & #2)	LS	0.00	1.00	1.00	$4,800.00	$4,800.00		
New	Sacrificial Graffiti Protection (#1 & #2)	LS	0.00	1.00	1.00	$4,800.00	$4,800.00		
New	Select Granular Backfill (Mod Appr Slab)	CY	0.00	871.00	871.00	$25.00	$21,775.00		Ln0110E
New	12 IN Group C Pipe	LF	0.00	140.00	140.00	$35.00	$4,900.00		Ln4480Q
New	18 IN Group C Pipe	LF	0.00	60.00	60.00	$55.00	$3,300.00		Ln4490Q
New	15" Pipe Group B	LF	90.00	126.00	36.00	$40.00	$1,440.00		
New	24" Precast Concrete Flared End Section	EA	0.00	1.00	1.00	$1,180.00	$1,180.00		Ln1250P
New	36" Precast Concrete Flared End Section	EA	0.00	1.00	1.00	$1,920.00	$1,920.00		Ln1270P
New	12" Rock Fill Base	SY	0.00	69,716.00	69716.00	$10.50	$732,018.00		
New	Modified Approach Slab	SY	0.00	460.00	460.00	$150.00	$69,000.00		Ln0260B
New	Structural Steel Piles (14")- *revised price	LF	0.00	749.00	749.00	$60.00	$44,940.00		*Rev
New	Design Costs	LS	0.00	1.00	1.00	$200,000.00	$200,000.00		
							$1,297,485.68	-$3,702,250.07	

Total VE Savings To Be Shared	$2,404,764.39
Total Savings - MoDot	$1,202,382.20
Total Savings - Fred Weber, Inc.	$1,202,382.20

VALUE ENGINEERING CHECK SHEET

TYPE OF WORK

(Check one that applies)

- ☐ Bridge/Structure/Footings
- ☐ Drainage Structures (RCP, RCB, CMP's, ect.)
- ☐ TCP/MOT
- ☐ Paving (PCCP, ect.)
- ☐ Grading/MSE Walls
- ☐ Signal/Lighting/ITS
- ➢ Misc. Bridge and MSE wall

SUMMARY OF PROPOSAL

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

This VE involves redesigning the layout of the roadway slightly to decrease the need for MSE walls, and to shorten a bridge.

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.