

## VALUE ENGINEERING CHANGE PROPOSAL MISSOURI DEPARTMENT OF TRANSPORTATION

**Conceptual Proposal**       **Final Proposal**      **Date** 2/21/13

**Contract ID** 130125-F01      **Job No.** J6I2412B

**County** St. Charles      **Route** 70      **Original Contract Amount** \$12,409,196.96

**Contractor** Millstone Bangert, Inc.      **By** Millstone Bangert, Inc.

**Designed By** \_\_\_\_\_      **Phone** 636-949-0038

**VECP#** 13-39 (to be completed by C.O.)      **VECP**       **or**      **PDVECP**

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

The current plans show constructing MSE Wall 13-6I2412B-002 beginning at Sta. 955+00. The proposed change is to construct a non standard Type E Barrier Wall (72") along the NOR in place of the the MSE Wall. Construction of the proposed barrier wall allows for the Type D barrier wall along I-70 to be substituted with Type A guardrail.

See attachment for additional details.

**2. Estimate of reduction in construction costs.**      \$55,748.05

**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.**

6/21/13  
(date)

Schedule impacts

\_\_\_\_\_  
(effect)

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

2/21/13  
(date and/or dates)

**Additional Comments:**

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

**Comments:** I recommend approval of this VE, I have reviewed the VE with the St. Charles Area team and have determined it to be equal or better to the as-bid design. The contractor will be providing a design for the gravity wall that will be signed and sealed by a P.E.

\_\_\_\_\_  
Submitted By Resident Engineer

\_\_\_\_\_  
Date

**Comments:** I recommend approval based on the Resident Engineer's comments. The contractor must provide a design that is signed and sealed by a P.E. and is acceptable to MoDOT.

**Approval  
Recommended**

\_\_\_\_\_  
District Engineer

\_\_\_\_\_  
Date

**Rejection  
Recommended**

**Comments:** 6" curb proposed under GR along I-70 EOP. MoDOT EPG requirements must be met, including allowable curb height in conjunction with GR. I concur with the comments offered above.

**Approval  
Recommended**

\_\_\_\_\_  
Federal Highway Administration  
Required for FHWA Full Oversight Projects

\_\_\_\_\_  
Date

**Rejection  
Recommended**

**Comments:** Approval is contingent on signed and sealed plans provided by the contractor.

**Approval**

\_\_\_\_\_  
State Construction and Materials Engineer

\_\_\_\_\_  
Date

**Rejection**

# Value Engineering Change Proposal

Job No. J6I2412B

## Sta. 954+50 to Sta. 959+50

**Type A Guardrail:** Beginning at Sta. 954+50, we are proposing to install Type A Guardrail along I-70 WB to Sta. 959+50 and eliminate the Type D Barrier.

**Type E Barrier:** In place of the guardrail (500') on the NOR, we are proposing to construct a non standard Type E Barrier Wall (72"), extend the I-70 slope limits to the NOR and eliminate the MSE Wall.

**Type A Integral Curb:** Install a 6" curb along the I-70 EOP between Sta. 954+50 and Sta. 955+15, channeling pavement runoff into DI 2-8.

**15" Storm Sewer:** Along the back side of the Type E Barrier Wall, install a 15" FES at Sta. 954+50 and extend the RCP to the existing drop inlet at Sta. 955+15. The watershed area is a very small area, along the south side of the NOR. See attached plan sheet highlighting the watershed area.

**Culvert Crossing:** Due to the crown in the road, runoff from the EB lane of the NOR will collect along the face of the proposed barrier wall and at the low spot on the NOR (Sta. 957+95) a 2x2 drop inlet will be constructed. A culvert pipe (12" RCP) will extend across the NOR and discharge into the road side ditch along the north side.

Attached is the following documentation associated with the proposed change:

- Revised Cross Sections (Sta. 954+50 to Sta. 959+50)
- Itemized breakdown of the adjusted quantities.
- Revised B-Sheet
- Excavation and embankment adjustments
- Storm sewer data sheet

The proposed change results in a cost savings of \$55,748.05

**I-70 / Dardenne  
J6I2412B**

**Concrete Barrier Wall / MSE Wall 002 (Sta. 954+50 to Sta. 959+50)**

<u>Line No.</u>	<u>Item No.</u>	<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Cost</u>
2470	2031000	Class A Excavation	(223.0)	CY	\$8.75	(\$1,951.25)
2490	2036000	Compacting Embankment	804.0	CY	\$1.00	\$804.00
2590	6061010	Guardrail Type A	0.0	LF	\$18.20	\$0.00
2610	6062204A	Bridge Anchor Section, 6.5 ft. Posts	2.0	EA	\$1,620.00	\$3,240.00
2620	6062300A	Transition Section, 6.5' Posts	2.0	EA	\$303.00	\$606.00
2680	236091042	Concrete Gutter Type B	500.0	LF	\$30.00	\$15,000.00
2690	60922011	Type A Int. Curb	65.0	LF	\$10.03	\$651.95
2880	6173100	Concrete Traffic Barrier, Type D	(450.0)	LF	\$46.00	(\$20,700.00)
2890	6173102	Concrete Traffic Barrier Type D (Retaining Wall)	(50.0)	LF	\$46.00	(\$2,300.00)
3020	7201000	Mechanically Stabilized Earth Wall	(2,903.0)	SF	\$35.00	(\$101,605.00)
3070	237261015	15" RCP	65.0	LF	\$46.25	\$3,006.25
change order		Concrete Traffic Barrier Type E (36")	150.0	LF	\$50.00	\$7,500.00
change order		Concrete Traffic Barrier Type E(72")	350.0	LF	\$100.00	\$35,000.00
change order		15" Precast Concrete FES	1.0	EA	\$500.00	\$500.00
change order		Culvert Crossing (NOR Low Spot)	1.0	LS	\$4,500.00	\$4,500.00
change order		Engineering Design	1.0	LS	TBD	
<b>VE SAVINGS:</b>						<b>(\$55,748.05)</b>

I-70 / Dardenne  
 J6I2412B

Barrier Wall 002 (Sta. 954+50 to Sta. 959+50)

Location	Sta.	Sta.	Length	Plan			
				Modified Type D Barrier	Type D Barrier	MSE Wall	Type A Guardrail
I-70	95450	95500	50	50			
I-70	95500	95950	450		450	2903	
NOR	95450	95950	500				500
				50	450	2903	500

Sta.	Sta.	Length	Type E Barrier (36")	Type E Barrier (72")	Type A Guardrail	Type A Int. Curb	Bridge Anchor Section	Transition Section	Embankment	Excavation	Type B Gutter	15" FES	15" RCP
95450	95500	50	50		50	* 65	1	1	39	(10.00)	50	1	** 65
95500	95850	350		350	350				554	(139.00)	350		
95850	95950	100	100		100		1	1	211	(74.00)	100		
			150	350	500	65	2	2	804	(223.00)	500	1	65

\* Type A Integral Curb (Sta. 954+50 to Sta. 955+15)  
 \*\* 15" RCP connects to existing drop inlet at Sta. 955+15

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**Embankment / Excavation**

<u>Sta.</u>	<u>Length</u>	<u>Area (sf)</u>	<u>Embankment (cy)</u>	<u>Area (sf)</u>	<u>Excavation (cy)</u>
95450		11.2			
95500	50	30.86	39	11	10
95600	100	48.4	147	12	43
95700	100	60.1	201	12	44
95800	100	51.1	206	16	52
95900	100	35	159	12	52
95950	50	21.5	52	12	22
	500	Total:	804	Total:	223



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**J612412B**

VE Wall 002 (Sta. 954+50 to Sta. 959+50)

Storm Sewer Data Sheet

<u>Description</u>	<u>Sta.</u>	<u>Offset</u>	<u>Length</u>	<u>Top</u>	<u>F.L.</u>	<u>slope(%)</u>
15" FES	954+50				463.4	
15" RCP	955+00				459.8	7.2
	955+15		65		458.7	7.2
Drop Inlet 2x2	957+95	34 Lt.		448.36	446.5	
12" RCP		68 Lt.	34		446.3	0.6

**I-70 / Dardenne  
J612412B**

VE Wall 002 (Sta. 954+50 to Sta. 959+50)

Culvert Crossing

<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Cost</u>
Full Depth Saw Cut	70	lf	\$4.75	\$332.50
Drop Inlet 2x2	2	ft	\$500.00	\$1,000.00
Curved Vane Grate	1	ea	\$500.00	\$500.00
12" RCP	32	lf	\$40.00	\$1,280.00
Asphalt Repair (8")	10	ton	\$150.00	<u>\$1,500.00</u>
			Total:	\$4,612.50