

VALUE ENGINEERING CHANGE PROPOSAL
MISSOURI DEPARTMENT OF TRANSPORTATION

Conceptual Proposal Final Proposal Date: 2/5/10
Contract ID 090522-616 Job No. J6I1541B
County St. Louis Route I-55 Original Bid Cost \$6,631,734.51
Contractor Fred Weber, Inc. By Charlie Hayes
Designed By Jacobs Phone 314-316-6154

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

1. Description of existing requirements and proposed change(s). Advantages/Disadvantages
Existing: Existing twin bridges to be removed and replaced with steel girder structure. The replacement bridge is a two span structure on piling and drilled shaft foundations. There is one MSE wall to be constructed located at bent 3.

Proposed: Re-design the structure per the attached plans. Combine the two separate bridges into a single structure, eliminating a grider line. Add an MSE wall at bent 1 and re-design the wall at bent 3 to follow the roadway skew and shorten the bridge, eliminating deck and structural steel. Also proposed is re-designing the substructure type from drilled shafts at bent 2 to pile footing on bent 2. MSE Wall at bent 1 will have LCCF fill in lieu of select granular backfill to minimize settlement and a structure to bridge the box culvert under the wall to eliminate additional loading and facilitate future replacement/maintenance of the box culvert..

2. Estimate of reduction in construction costs. \$350,000.00
3. Prediction of any effects the proposed change(s) will have on other department costs, such as maintenance and operations. No known cost impact.
4. Anticipated date for submittal of detailed change(s) of items required by Section 104.6 of the Specifications.

2/5/10
(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.

1/5/10
(date and/or dates)

Additional Comments:

If any damage to the existing box culvert that is caused by the contractor driving pile next to the culvert will be repaired at the contractor's expense. ✓

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

Comments:

This VE proposal has been reviewed by MoDOT's South Area Team in District 6, James E Smith (MoDOT Design Liaison) and Greg Sunde (MoDOT Bridge Liaison). The contractor is currently working on applying for the "Flood Plain Development Permit" and "No Rise Certificate" if applicable. We feel that this VE Proposal should be approved pending that the Permit and Certificate mentioned above is approved by SBMA.

Scott Washausen

Submitted By Resident Engineer

3/11/10

Date

Comments:

THIS VE HAS BEEN REVIEWED BY THE DIST. 50. AREA TEAM, JC. DESIGN & JC BR. DESIGN. THE CONTRACTOR IS PURSUING THE NECESSARY PERMITS. ALL OF OUR QUESTIONS AND CONCERNS HAVE BEEN ADDRESSED AND UPON SECURING THE PERMITS APPROVAL TO THIS VE SHOULD BE GRANTED. AS ALWAYS, THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ACCEPTABLE RESULTS IN THE FIELD.

- Approval Recommended
 Rejection Recommended

Ed Clark

District Engineer

3-2-10

Date

Comments:

With the changes incorporated in the attachments to the attached email from Scott Washausen, I can recommend approval of this VEC. Email dated 3-25-10 relate to the changes to the bridge approach slab to make the joint normal between bridge approach slab and the Roadway Pavement.

- Approval Recommended
 Rejection Recommended

Ken Foster

Federal Highway Administration
Required for FHWA Full Oversight Projects

3/25/2010

Date

Comments:

Approved on the basis of, and enforcement of, the district's comments. 3/10/2010 Denis Glascock.

- Approval
 Rejection

David D. Glascock

State Construction and Materials Engineer

Digitally signed by Denis Glascock
DN: cn=Denis Glascock, c=US, o=MoDOT,
ou=9-H35, email=Denis.Glascock@modot.mo.gov
Date: 2010.03.10 09:05:39 -0800

3/10/2010

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

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.

SUMMARY OF PROPOSAL

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

This VE involves combining two parallel bridges into one.

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.

Foster, Ken (FHWA)

From: Scott.Washausen@modot.mo.gov
Sent: Thursday, March 25, 2010 12:45 PM
To: Gregory.Sunde@modot.mo.gov; Foster, Ken (FHWA)
Subject: Fw: J6I1541B, Union Road, VECP 10-10 , Contract ID 090522-616
Attachments: 2009-03-25 - Roadway.pdf; A7369-035_APN_J6I1541B_VE.pdf

Ken they have redesigned to what you suggested with the approach slab.

----- Forwarded by Scott J Washausen/D6/MODOT on 03/25/2010 12:40 PM -----

"Hayes, Charles E." <cehayes@fredweberinc.com> To "scott.washausen@modot.mo.gov" <scott.washausen@modot.mo.gov>, "Gregory.Poppitz@modot.mo.gov" <Gregory.Poppitz@modot.mo.gov>
03/25/2010 12:37 PM cc
Subject Fw: J6I1541B, Union Road, VECP 10-10 , Contract ID 090522-616

Sent via Charlie's BlackBerry

From: Brandon W. Poiter <bpoiter@twm-inc.com>
To: Hayes, Charles E.
Cc: Matthew J. Kitzmiller <mkitzmillier@twm-inc.com>
Sent: Thu Mar 25 12:25:01 2010
Subject: RE: J6I1541B, Union Road, VECP 10-10 , Contract ID 090522-616

Charlie,

I have attached a revised set of the roadway plans and the revised bridge approach slab sheet.

In response to Greg's question about the drainage, inlets are provided at STA. 8+94.52 and STA. 14+30.58 on the low side of the superelevation.

Sincerely,

THOUVENOT, WADE & MOERCHEN, INC.

SWANSEA - WATERLOO - EDWARDSVILLE - CARBONDALE - ST. CHARLES

201 East Main Street, Suite 3-A

Carbondale, Illinois 62901

Brandon W. Poiter, P.E., S.E.

Structural Engineer

Tel. No.: 618.549.8844

Fax No.: 618.549.8450

Cell No.: 618.713.7726

E-Mail: bpoiter@twm-inc.com

From: Hayes, Charles E. [<mailto:cehayes@fredweberinc.com>]
Sent: Monday, March 22, 2010 3:00 PM
To: Brandon W. Poiter; Rusty P. Christmann
Subject: FW: J6I1541B, Union Road, VECP 10-10 , Contract ID 090522-616
Importance: High

Gentlemen, here are the comments we have from the Feds/MoDOT on the VE proposal. I am not 100% sure I follow with what Ken is proposing, I understand what his concern is, however in this case we have no wing walls or bridge approach slabs since it had a modified approach slab in the design (if memory serves.) I understand the over-riding condition may still be there, but can you all review and comment? Give me a call if you want to chat about possible solutions and the magnitude of what is entailed.

Thank you,
Charlie

Charles E. Hayes
Project Manager
Fred Weber Construction, Inc.

From: Scott.Washausen@modot.mo.gov [<mailto:Scott.Washausen@modot.mo.gov>]
Sent: Monday, March 22, 2010 12:11 PM
To: Hayes, Charles E.
Cc: Gregory.Poppitz@modot.mo.gov
Subject: Fw: J6I1541B, Union Road, VECP 10-10 , Contract ID 090522-616

This is the response to Greg Sunde's comment. The plans show that this will be addressed with barrier on roadway then we may need to put a paved ditch down the grass slope if necessary to get water to the ditch. Do you agree?

Also is a concern from Ken Foster, FHWA. I see that we have two options we can either make the end bent non integral by installing a expansion. Joint or we can do what Ken suggested as a possible solution by making the bridge approach slab bigger. Have your bridge designers look at this. Thanks

----- Forwarded by Scott J Washausen/D6/MODOT on 03/22/2010 12:05 PM -----

Gregory G Sunde/SC/MODOT

03/22/2010 08:40 AM

To Scott J Washausen/D6/MODOT@MODOT
cc Robert C Lauer/D6/MODOT@MODOT, Shirley J Norris/D6/MODOT@MODOT
Subject Fw: J6I1541B, Union Road, VECP 10-10 , Contract ID 090522-616

Speaking of that area, I didn't look at the drainage off the end of the bridge, but I was wondering if that has been looked at by anybody. Will all the water coming of the bridge run down the fill face of the MSE wall on the low side of the superelevation?

3/25/2010

Thanks,
Greg Sunde
MoDOT – Bridge Division
Phone: 573-522-2560

----- Forwarded by Gregory G Sunde/SC/MODOT on 03/22/2010 08:36 AM -----

<Ken.Foster@dot.gov>

03/19/2010 03:35 PM

To <Scott.Washausen@MoDOT.mo.gov>
cc <Tina.Vogt@modot.mo.gov>, <Gregory.Budd@dot.gov>, <Robert.Lauer@MoDOT.mo.gov>,
<Matthew.Budd@modot.mo.gov>, <Gregory.Sunde@modot.mo.gov>, <Gregory.Poppitz@modot.mo.gov>
Subject RE: VECP 10-10 , Contract ID 090522-616

Scott,

As we discussed on the phone a bit ago, I have a concern about the large skew angle at the bridge approach slab / concrete approach slab interface at the sleeper slab joint and the affect of the concrete pavement/bridge approach slab slipping along this joint due to concrete pavement pressures and the affect this will have on the top of the MSE wall. History has show that Missouri has a problem with this slipping along the joint faces. The many broken bridge abutment wings from this slippage at the bridge fill face/bridge approach face attests to this problem.

When slippage along the interface at the sleeper slab joint occurs, the pavements will push out on the top of the MSE wall components and break the top of the walls. There is no allowance for this slippage as indicated in plan sheets for A7370, Sh. 2. The wall coping and top panels are very suspect to being damaged by any lateral shifting of the pavements. Loss of pavement support with the loss of the subgrade is likely to follow.

This issue should be considered by MoDOT.

One possible solution would be to extend the bridge approach slab on one side to make the joint at the sleeper slab normal with the concrete approach pavement. This would entail making the bridge approach joint larger, but with an equal reduction in the concrete approach pavement. In this scenario, there would be less tendency to slip along the interface.

Please let me know when MoDOT has considered the above concern, and with what resolve.

Thanks.

3/25/2010

Ken.

-----Original Message-----

From: Budd, Gregory (FHWA)
Sent: Tuesday, March 16, 2010 9:37 AM
To: Foster, Ken (FHWA)
Cc: Tina.Vogt@modot.mo.gov
Subject: FW: VECP 10-10 , Contract ID 090522-616

Ken,

Here is a VE for the 55@Union job. I believe that you were working with MoDOT on this one. Let me know if you need anything from me.

Greg Budd
Urban Transportation Engineer
Missouri Division Office
(573) 638-2621
gregory.budd@fhwa.dot.gov

-----Original Message-----

From: Tina.Vogt@modot.mo.gov [<mailto:Tina.Vogt@modot.mo.gov>]
Sent: Tuesday, March 16, 2010 8:49 AM
To: Richard.T.Miller@modot.mo.gov; Scott.Washausen@modot.mo.gov;
Denis.Glascock@modot.mo.gov; Paula.Fuhro@modot.mo.gov;
Matthew.Budd@modot.mo.gov; Budd, Gregory (FHWA)
Subject: VECP 10-10 , Contract ID 090522-616

Attached are the copies of the Construction Value Engineering Concept Proposal for Contract ID 090522-616 , Job No. J6I1541B .

Please let me know if you have trouble reading this file.

Thank you.

Tina Vogt
Senior Administrative Technician
573-522-6840