Missouri
Department
of Transportation

MoDOT

Paula Gough, P.E., District Engineer

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December 14, 2007

Mr. Jay Bestgen
MoDOT Design Division
1320 Creek Trail Drive
Jefferson City, MO 65109

Dear Mr. Bestgen:

MoDOT's Northeast District is proud to present the Monroe County Route C bridge replacement for consideration for the 2008 Practice Design Awards for Excellence.

Introduction
In April 2004, MoDOT was considering realigning Route C, raising the road, and building a wider bridge to replace the Long Branch Bridge. However, the core team, consisting of designers and maintenance team members, evaluated several practical design elements that would eventually be approved due to the implementation of the formal practical design program at MoDOT.

Scope Comparison
The original preliminary design included the following design items:

1. On new alignment
2. Bridge width 32' with 16" safety barrier curbs
3. Total length .442 miles
4. Included raising the road above flood stage
5. Bridge designed for 100 year design flood frequency
6. Use of existing roadway and temporary bypass during construction
7. (66'-66'-66') prestressed concrete I-girder
8. Freeboard of 2.0

The final design, after incorporating practical design standards, included:

1. On existing alignment
2. Bridge width 26' with 16" safety barrier curbs
3. Total length .219 miles
4. Leaving road at existing elevation
5. Bridge designed for 50 year design flood frequency
6. Closed road during construction
7. Built (41'-51'-41') prestressed concrete I-girder spans
8. Freeboard of 1.21'
9. Reduced right of way acquisition and wetland impacts

Purpose and Need
The purpose of this project was to replace a narrow and obsolete Condition 3 bridge with a new, wider bridge that would serve the traveling public for decades to come. Since this area is primarily rural, the bridge needed to be wider to accommodate the increased width of farm equipment, thereby improving safety.

New Techniques, Methods and Non-Traditional Design
The practical design elements incorporated into this project were unique in that they were being implemented prior to the formal practical design program. However, all decisions were based on sound engineering design and judgment, satisfying the "purpose and need" of this project.

Cost Savings
The significant reduction in cost on this project allowed MoDOT to program at least one more bridge for repair or replacement. The conceptual design budget was $1,056,000, and after practical design was implemented, the cost was only $515,000.

Roadway User Expectations
Through extensive public involvement, area residents agreed it was in the best interest of funding to maintain the level of the road and deflate the standards and still provide them a new, wider bridge. The practical design elements incorporated into the project allowed for faster construction, reducing inconvenience to area motorists.

Please contact me if you have any further question regarding the Route 36 corridor project.

Sincerely,

Tom Batenhorst, P.E.
District Design Engineer

Before construction

Before construction


During construction

MoDOT PROJECTS
2008 APPLICATION FORM

Job No. 3S0478 **Route C** **County Monroe**

STIP Description (Scoping or Construction, state which STIP) 2006 – 2010 STIP; Replace bridge at Long Branch 1.2 miles south of Rte. M. Project involves bridge P-554.

Is the submittal for the entire project or just a portion of the project? Please explain: The submittal is for the entire project.

Project Manager (could have both) **MoDOT** Tom Batenhorst **Consultant**

Key core team members as approved by the MoDOT PM (may include consultants) (limit of 9)

Kimberly Armour, P.E.	Chad Daniel, P.E.	Tom Threlkeld
Mike Baxter, P.E.	Larry Ayres	Nathan Briggs
Jerad Noland, P.E.	Nathan Muenks	Marisa Brown, MABC

Project Contacts: **District** Tom Batenhorst, P.E. **Consultant**

Project Budget (construction only):

Conceptual budget $ 1,056,000 **Initial STIP Budget** $ 620,000

Final STIP budget $ 515,000 **Award amount** $ 525,000

Other : After change orders, total cost for project $522,000

Value Engineering study during design? yes ☐ no ■ (if yes) **Project Stage**

Total VE savings implemented $ **VE Contact Person**

Construction-stage VE (VECP)? yes ☐ no ■ (if yes) **Explain**

Total VECP savings $ **VECP Contact Person**

What would make this entry stand out from the rest of the entries when considering MoDOT's practical design philosophy? (In layman's terms - 100 words or fewer) There are three elements of this project that differentiate it from others. The first is that this project team used the practical design concept before the formal practical design program was implemented in MoDOT. Second, because of their innovation, the cost of the project was reduced to half the original estimates. Third, active public involvement and partnering increased consensus to close the road, not raise the road, and improve sight distance. Personal meetings with local residents helped MoDOT explain why the design did not include raising the road. The county commissioners approached MoDOT about partnering to remove and level a back slope that impeded sight distance near one of their county roads while the bridge was being replaced.

Send entries to: MoDOT Design Division, ATTN: Jay Bestgen
1320 Creek Trail Dr., Jefferson City, Missouri 65109

ALL ENTRIES MUST BE RECEIVED NO LATER THAN CLOSE OF BUSINESS ON DECEMBER 15, 2007.


LONG
BRANCH
APR 1 2005


IMPASSABLE
DURING
HIGH WATER
APR 1 2005


INTERSTATE