



MEMORANDUM

Missouri Department of Transportation

District 5 – Program Delivery

TO: Jay Bestgen
Assistant State Design Engineer

FROM: Jason Vanderfelt *JRV*
Transportation Project Manager

DATE: December 5, 2007

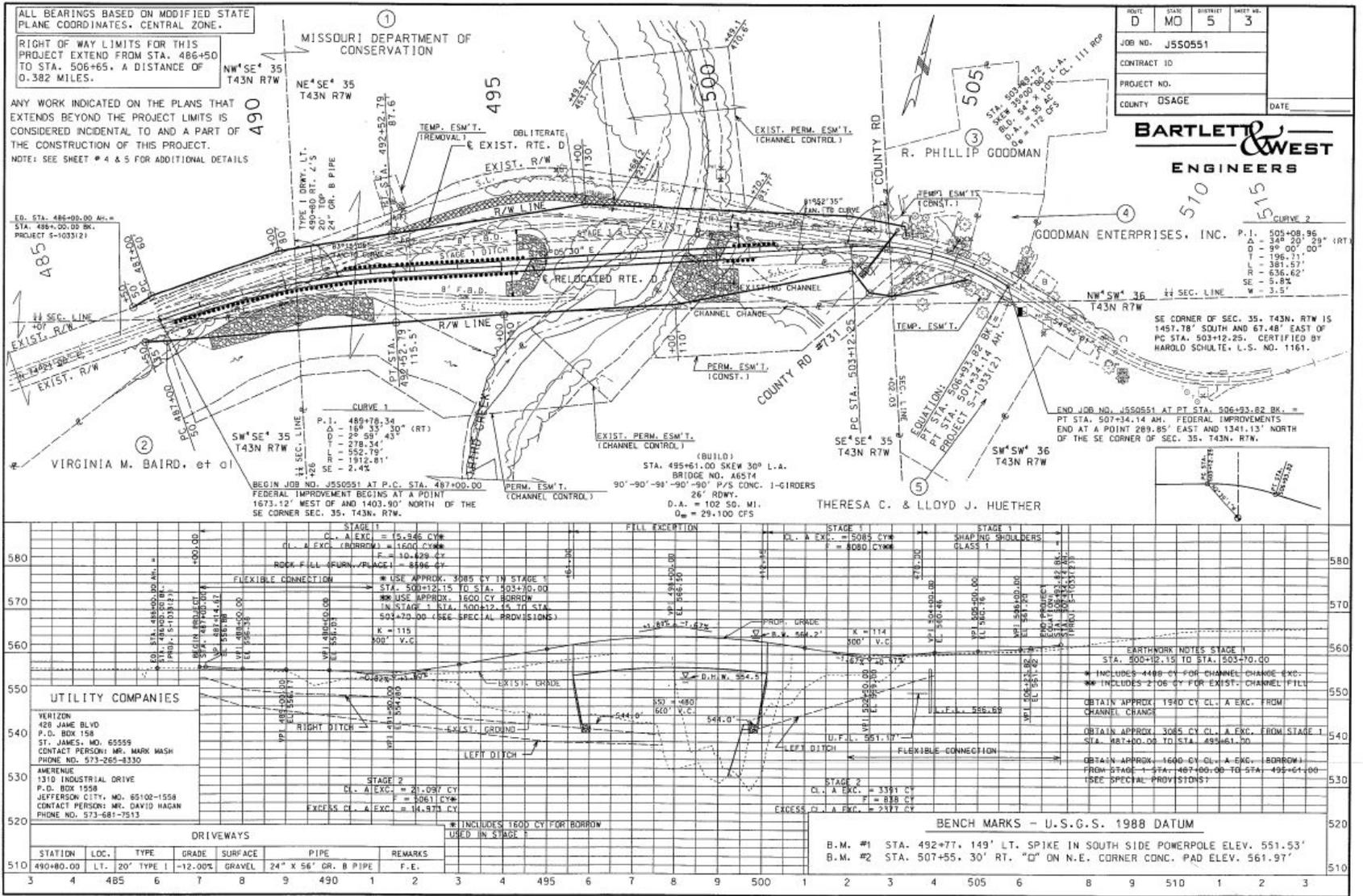
SUBJECT: Osage County, Route D
Job No. J5S0551
Practical Design
2007 Awards for Excellence
Project Summary

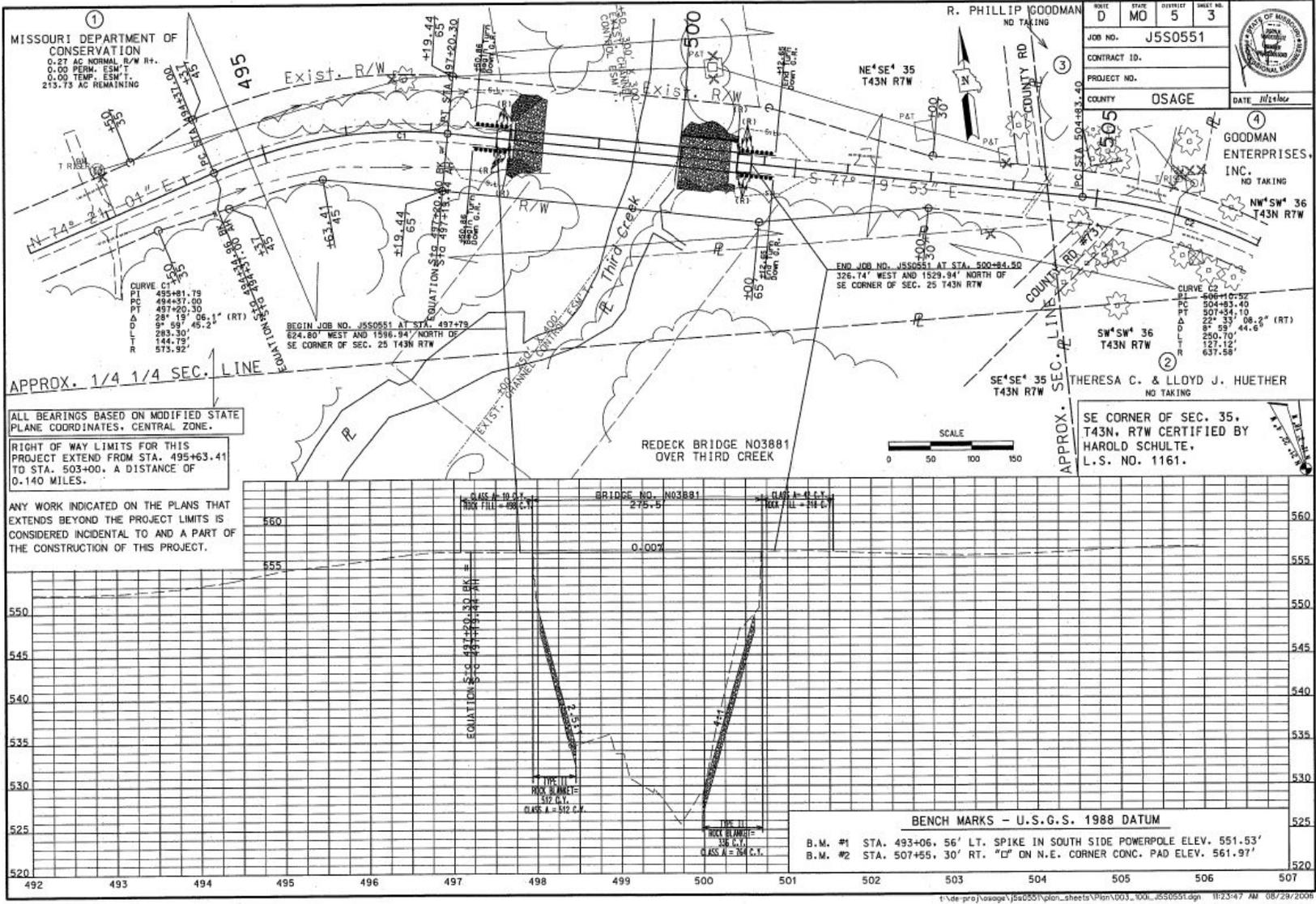
This project is located in Osage County on Route D near the town of Cooper Hill. The project was originally programmed in the 2005-2009 STIP as a bridge replacement project due to the condition 3 rating of the bridge. Due to the scope of the project and the workload of District staff, it was determined that a design consultant would be needed to complete the plans. The firm of Bartlett and West was selected to design the plans.

Project plans were nearing completion in 2005 when the concept of Practical Design was introduced. The plans called for relocating the existing roadway to the south of the existing roadway and constructing a new longer bridge over Third Creek. The new bridge would have been 174.5 feet longer than the existing bridge and 4 feet wider. 1,543 feet of new roadway would have been constructed and approximately 1,758 feet of the existing roadway obliterated. Approximately 5.4 acres of new right of way would have been required.

Following the introduction of Practical Design, the project was reviewed by applying the Practical Design philosophy. A number of cost saving measures were identified that would still allow the purpose and need of restoring the bridge to good condition to be met. The primary cost saving measure realized was that the bridge could be restored to good condition by replacing only the deck since the remaining components of the bridge were in satisfactory condition. With this cost saving measure being determined, many other cost saving measures were then added. By replacing only the bridge deck, the project could remain on the existing alignment and the existing pavement could remain in use and much less guardrail would be required. Low speeds also allowed the use of less costly guardrail ends. By utilizing the existing roadway, there would no longer be a need to purchase a large amount of right of way. Due to the reduced scope, the plans were completed by MoDOT Design staff.

The resulting cost savings due to practical design changes were that the construction cost decreased from \$1,856,000 to the award amount of \$580,345. This is a savings of \$1,275,655 or 68.7% of the original cost. Right of Way acquisition costs decreased from \$15,000 to \$810 and utility relocation costs were eliminated. This extensive use of the existing roadway to achieve the purpose and need of the project makes this an excellent example of the Practical Design philosophy.





Design Submitted With Practical Design Applied











460
26-48

2007 APPLICATION FORM

(required for each entry)

Job No. J5S0551

Route D

County Osage

STIP Description (Scoping or Construction, state which STIP)

05-09

06-10

07-11

Grading, paving and replace bridge over Third Creek 1.2 miles west of Gasconade County. Project involves bridge N-388

Project Manager (could have both)

MoDOT Jason Vanderfeltz

Consultant Herb Bailey (Prior to Practical Design)

Active core team members as approved by the MoDOT PM (may include consultants)

John Dietzel

Bruce Green

Alan Trampe

Melissa Scheperle

Steve Engelbrecht

Laurie Wyrick

Dan M. Smith

Jim Honse

Travis Tesreau

Terry Imhoff

Project Contacts (will have both for consultant entry)

District 5

Consultant \$171,831

STIP budget \$1,856,000

or

Award cost \$580,345

Value Engineering study during design? yes no (if yes) Project Stage _____

VE Contact person n/a

Construction-stage VE (VECP)? yes no (if yes) Explain _____

This project has been constructed.

Total VECP savings \$ _____

VECP Contact Person _____

Why is this entry the "poster" image for MoDOT's practical design philosophy?

(In layman's terms - 100 words or fewer - attach additional sheet if necessary) _____

This project is the poster image for MoDOT's practical design philosophy due its utilization of as many elements of the exisiting roadway as possible while making the necessary improvements to only those elements required to achieve the purpose and need for the project. These actions resulted in a great cost savings to MoDOT allowing other transportation improvements to be funded.