

**Practical Design
2007 Awards for Excellence
By: MoDot District 9**

February 1, 2007

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

Subject: Phelps County, Route 63
Job No. J9P0545
Resurfacing/Striping to add Climbing/Passing Lanes
Practical Design Entry

The subject project is being submitted for entry in the Practical Design 2007 Awards for Excellence. Below are facts relating to the improvements of Route 63.

Purpose and Need - Route 63 in Phelps County south of Rolla consists of horizontal and vertical alignments that do not allow for sufficient passing locations. As traffic volumes increase, including trucks, the level of service will become worse. There are also five locations on Route 63 between Edgar Springs and Rolla where climbing lanes are warranted due to steep grades.

Original Scope - Prior to practical design this project was scoped as resurfacing and widening to create passing/climbing lanes to have 3 – 12' lanes with 10' shoulders. The existing roadway template consists of part 40' and part 44'. Planned widening was 12' for the 40' sections and 8' for the 44' sections. This impacted right-of-way, crossroad culverts, entrances and involved earthwork. The project was redesigned to overlay and stripe 3-lane sections using the existing roadway template.

Practical Design Scope - Construct climbing/passing lane sections by resurfacing and striping existing Route 63 (no widening) from Route CC in Rolla to 3.4 miles south of the Little Piney Bridge for a distance of 13 miles. The proposed typical section consists of 1 – 12' driving lane, 1 – 11' driving lane, an 11' passing/climbing lane, and 2.5' shoulders for the 40' template and 7' / 2' shoulders for the 44' template. This scope supports the short-term alternatives of passing/climbing lanes as outlined in the South 63 Draft Environmental Assessment. The multiple driveways along with the 7' shoulder on the single lane side will provide the necessary refuge areas for stalled vehicles. Guardrail will also be extended for length of need and upgraded with crashworthy end terminals increasing the safety for this roadway.

Cost – The following costs are estimated since the project has not been awarded.

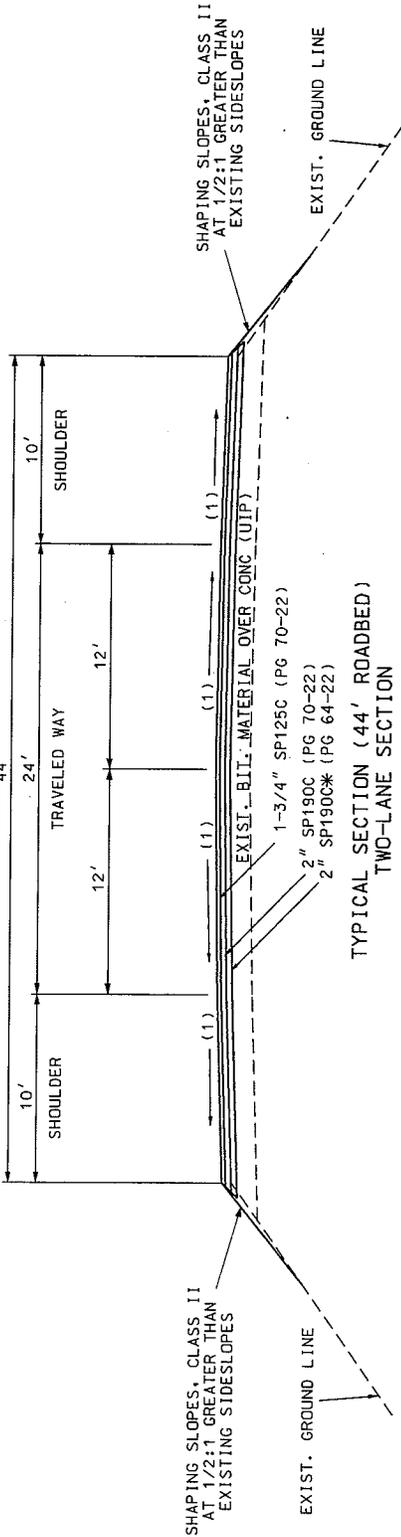
	Construction (\$1000's)	Right-of-Way (\$1000's)
Original Estimate	8,544	450
Practical Design Estimate	6,685	0
Savings	1,859	450

Traffic Management - The traffic control will be very similar with both scenarios. Typical shoulder work and flagger operations will be used to complete the project. The only difference being a much shorter duration for the shoulder work operation with the Practical Design Scope due to the elimination of all widening.

Summary - This project meets the purpose and need by adding lanes thus increasing capacity at a much lower cost than originally scoped prior to practical design implementation. The main difference in this design than the original, as discussed earlier, is the reduction in shoulder width. The purpose of a wider shoulder is to provide a breakdown area for motorists. The multiple driveways along Route 63 and the partial 7' shoulder will provide areas to pull off the roadway. Though, traffic will be traveling closer to the edge of shoulder than with the original design, a safer roadway will exist after construction due to providing designated passing areas and upgrading guardrail to current standards.

ASPHALT FACTORS	
TYPE	TONS/FT
SP125C	2.019
SP190C	2.031
FOR INFORMATIONAL PURPOSES ONLY	

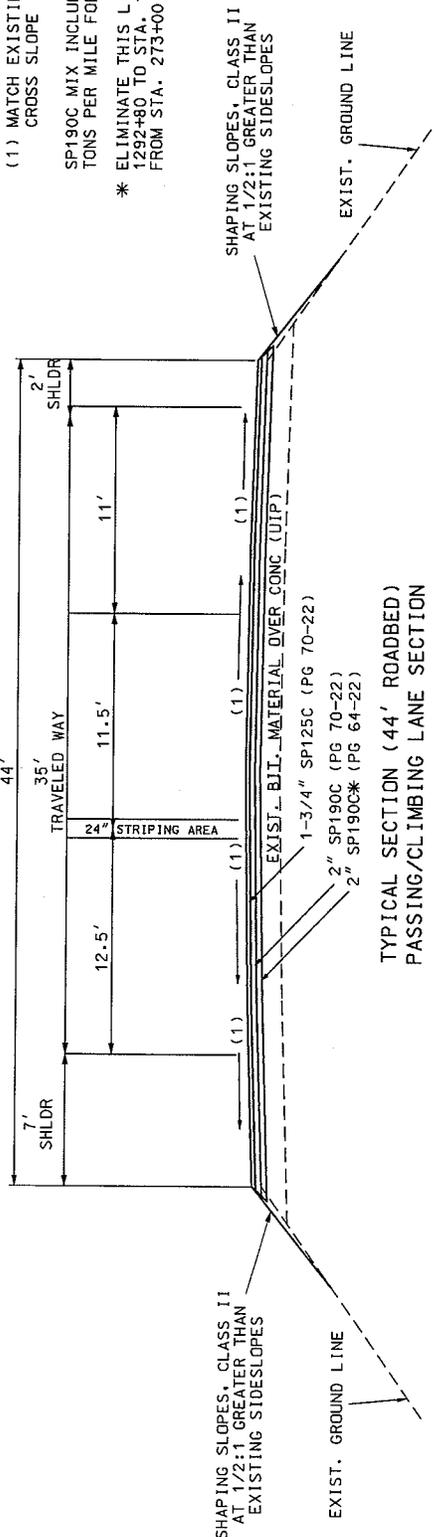
DATE	DESIGN	SHEET NO.
63	MD 9	Z
JOB NO.	JSP0545	
CONTRACT ID.		
PROJECT NO.		
COUNTY	PHELPS	
DATE		



STA. 1340+00.00 - 15+85.90
STA. 273+00.00 - 279+50.00

TYPICAL SECTION FOR LEFT TURN LANE
AT ROUTE W SHOWN ON PLAN SHEET 7

CROSS SLOPE
(1) MATCH EXISTING TRAVELWAY CROSS SLOPE
SP190C MIX INCLUDES 200 TONS PER MILE FOR IRREGULARITIES
* ELIMINATE THIS LIFT FROM STA. 1292+80 TO STA. 1340+00 AND FROM STA. 273+00 TO STA. 279+50

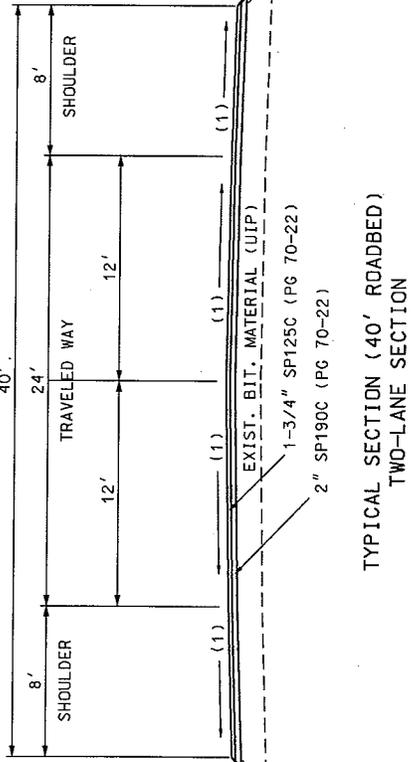


STA. 1340+00.00 - 15+85.90
STA. 273+00.00 - 279+50.00

TYPICAL SECTIONS
EXIST. 44' ROADBED
SHEET 1 OF 3

ROUTE	STATE	DISTRICT	SHEET NO.
63	MO	9	2
JOB NO.	CONTRACT ID.	PROJECT NO.	DATE
	J910545		
COUNTY	PHELPS		

EXIST. CENTERLINE



TYPICAL SECTION (40' ROADBED)
TWO-LANE SECTION

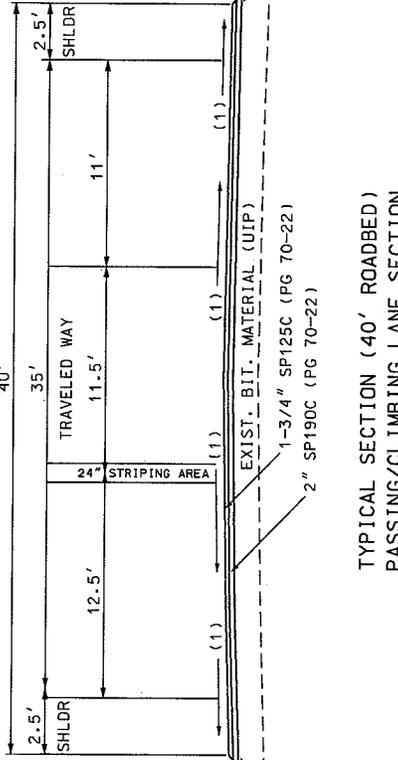
STA. 15+85.90 - 273+00.00

CROSS SLOPE

- (1) MATCH EXISTING TRAVELWAY CROSS SLOPE

SP190C MIX INCLUDES 200 TONS PER MILE FOR IRREGULARITIES

EXIST. CENTERLINE



TYPICAL SECTION (40' ROADBED)
PASSING/CLIMBING LANE SECTION

STA. 15+85.90 - 273+00.00

TYPICAL SECTIONS
EXIST. 40' ROADBED
SHEET 2 OF 3

2007 APPLICATION FORM

(required for each entry)

Job No. J9P0545 Route 63 County Phelps
STIP Description (Scoping or Construction, state which STIP) 05-09 06-10 07-11

Add Climbing/Passing Lanes and resurface from Rte. 63 in Rolla to 3.6 miles south of Little Piney River.

Project Manager (could have both)

MoDOT Rob Rakestraw Consultant —

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

<u>Rob Rakestraw</u>	<u>Pete Berry</u>	<u>Steve Belcher</u>
<u>Ed Hess</u>	<u>Jeff Johnson</u>	<u>Curt Worksey</u>
<u>Mike Wake</u>		

Project Contacts (will have both for consultant entry)

District Pete Berry Consultant \$ —
STIP budget \$ 8,994 or ^{Est.} Award cost \$ 6,685

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

VE Contact person —

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

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 displays innovativeness by reducing costs from roadway widening and additional right-of-way and still the end result provides a roadway that meets the purpose and need leaving this portion of Route 63 safer than the before condition.

Send entries to: MoDOT Design Division, ATTN: Jay Bestgen
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All entries must be received no later than close of business on February 1, 2007