

VALUE ENGINEERING STUDY

Project # STP00-1004-00(002) PI No. 631260-

EXTENSION OF SR 382 FROM CR 239 TO SR 5/515 Gilmer County, Georgia

Prepared for:



17 November 2011



1200 Abernathy Road, Building 600, Suite 950
Atlanta, Georgia 30328
770-481-1600 Fax 770-481-1640

17 November 2011

Mr. Matt Sanders, AVS
Value Engineering Specialist
GDOT - Engineering Services
One Georgia Center - 5th Floor
600 W. Peachtree Street NW
Atlanta, GA 30308

Re: V.E. Workshop on Extension of SR 382 from CR 239 to SR 5/515, Gilmer County, Georgia
Project #: STP00-1004-00(002) - PI#: 631260-

Dear Mr. Sanders:

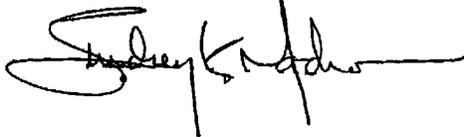
U.S. Cost, Inc. is pleased to submit two (2) hard copies and one (1) CD of the Value Engineering Study Report on the above referenced project. We appreciate the assistance and participation of the GDOT personnel as well as the GDOT design team.

This Workshop resulted in the development of ten (10) value- enhancing proposals. We hope that incorporation of some of these value improvement alternatives provided herein results in an enhanced project in relation to cost, constructability and long-term performance of the project features.

Please feel free to contact either myself or Tom Orr to discuss any information within this report. We look forward to the next opportunity to be of service to the Georgia Department of Transportation.

Sincerely,

U.S. COST INCORPORATED



Lindsey Gardner, P.E., CVS-Life, FSAVE
V.E. Team Leader

CC: L. Myers, GDOT

VALUE ENGINEERING TEAM STUDY

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VALUE ENGINEERING STUDY

PROJECT DESCRIPTION

This project consists of realigning SR382 for 0.35 miles (from MP 9.72, on existing SR382) to meet sight distance requirement at its intersection with CR239/Old Highway 5 (at MP 10.13, on existing SR382), extending it (from MP 10.13, on existing SR382) east for 0.44 miles on new location, and finally terminating it at its junction with SR 5/SR 515 (at MP 6.21, on existing SR515). The project also includes 0.13 mile of a 12 foot right turning lane and 0.17 mile of a 12 foot acceleration lane added to SR515 (on its west side) at its junction with the proposed SR382 extension. The CR239/Old Highway 5 will be reconstructed south-north for 0.29 mile to account for subsequent grade changes due to SR382 improvement and to account for new turn lanes at the new intersection. The project is located in Gilmer County near Ella Gap. The typical section will be two 12 foot lanes with 10 foot shoulders (6.5 feet paved) to accommodate bike traffic. The length of the project is approximately 0.79 miles on SR382 and 0.29 miles on CR239/Old Highway 5 and 0.30 miles on SR515 for a total of 1.88 miles.

Description and reasons for project approach:

- *Alignment:* The alignment has been shifted 0.07 mile (or 367 feet) south of the existing intersection of SR382 and CR239. This shift minimizes the environmental impact of the proposed alignment on project surroundings (especially nearby creeks) and minimizes the utility and earthwork costs.
- *Project termini:* See the proposed project description above.
- *Changes in right-of-way limits:* The project topographic features (terrain) are mountainous, consequently the ROW is drastically varying and requires a maximum ROW of **300 feet** to be applied at some locations.
- *Controlling criteria:* Since the terrain is mountainous, proposed maximum grade of the mainline is set at **9%** and the proposed maximum grade allowable is also set at **9%**. The proposed maximum grade of driveways is set at **20%**.

Estimated Project Costs

	Cost
Construction Including Contingencies	\$6,145,827
Fuel Adjustment	\$972,294
Right-of-Way	\$5,542,100
Utilities (Reimbursable)	\$1,102,000
Utilities Contingencies (30%)	\$330,600
Totals	\$14,092,821

VALUE ENGINEERING STUDY

KEY INFORMATION/NOTES

Introduction

U.S. Cost conducted the Value Engineering Team Study on Extension of SR 382 to SR 515 from CR 239, Gilmer County, Georgia. The V.E. study was conducted for four (4) days, 14-17 November 2011, at the Georgia Department of Transportation 5th floor Conference Room, in Atlanta, GA. The study team was furnished with the Schematic data dated October 2011. The following individuals were members of the V.E. team:

Name	Firm	Discipline
Lindsey Gardner, P.E., CVS	U.S. Cost, Inc.	VE Team Leader (VETL)
Steven W. Gaines, P.E.	Wolverton & Associates	Roadway Engineer
Bill Deyo, P.E.	KEA Group	Construction

Value Engineering Study Process

The 4-day Value Engineering Study followed the Value Engineering Job Plan as certified by SAVE International as follows:

- Information Phase (Monday)
- Function Analysis Phase (Monday)
- Creative Phase (Monday)
- Evaluation Phase (Monday-Tuesday)
- Development Phase (Tuesday - Wednesday)
- Presentation Phase (Thursday AM)

Information Phase

The V.E. team was first briefed on the project design by GDOT Designers and Project Management representatives in a Design Presentation the morning of the first day of the V.E. Study. The briefing included a review of the design requirements and rationale for the selection and arrangement of the major project features. Discussions regarding alternatives considered, adjacent properties/facilities, and project criteria and constraints were also discussed during the design presentation. Project issues that were observed by the team from the design briefing are as follows:

GDOT Restrictions

- Re-signing the road section is off limits
- The routing for SR 382 extension is established

VALUE ENGINEERING STUDY

KEY INFORMATION/NOTES

VE Team Observations

- Existing intersection needs a four-way stop or signalization.
- No breakover design has been provided at the intersection (will increase excavation)
- Purchase of 300' ROW appears excessive in some areas
- The cost of the road per mile is significant
- Design speed limit should be reduced to 45 mph due to steep grade 7-9%
- Project may not be needed if the existing intersection of SR 382 & SR 555 one and half (± 1.5) miles South could be reconfigured for a smooth transition onto SR 515
- Existing SR 382 intersection with CR 239 could remain at the existing location
- ROW costs and legal work could be reduced with modifying the new road work.
- Intersection of new SR 382 with existing SR 515 (65 mph corridor) requires extensive modifications to prevent accidents.
- SR 382 Extension is not a designated bike route and does not require the wider shoulder
- New intersection does not need widening and striping for the future traffic.

Function Analysis

As a basic part of the V.E. process, the team conducted a Function Analysis session on the Extension of SR 382 to SR 515 from CR 239 project to identify the needs and goals of the project and facilitate the creative idea session, by addressing functions as opposed to the specific design elements.

The Basic Function of the project is to *Upgrade Corridor*. A detailed project function analysis of the characteristics of the project and the project features is presented in the Appendix.

VALUE ENGINEERING STUDY

KEY INFORMATION/NOTES

Project Design Criteria

During the meeting, project design criteria were also identified. The following listing identifies the design criteria with which the project must comply:

- GDOT Design Policies
- FHWA Design Policies
- Environmental Restrictions (EA Requirements)
- Potential Wetland Problems
- Bike lane Requirements (although not designated)

Alternative Idea Evaluation Criteria

The session participants identified the characteristics for evaluating the V.E. ideas for which alternatives would be the most acceptable for incorporation in the project. The highest ranked ideas would satisfy several of these criteria. The subjective evaluation criteria for V.E. ideas are as follows:

- Reduces Cost
- Reduces Construction Time
- Improves Constructability
- Simplifies Traffic Control and Phasing
- Allows for future improvements

Risk Analysis

The group identified the following project risk elements, which may impact the Extension of SR 382 to SR 515 from CR 239 project. This exercise served as a catalyst for the Creative Phase of the study when several ideas were suggested which would mitigate these project construction risks.

Risk Elements

- Funding Problems – missing elements in the current cost estimate
- Impact to daily Traffic
- Traffic control during construction
- Construction delays
- Wetlands and erosion control on steep slopes
- Federal protection of vegetation

VALUE ENGINEERING STUDY

KEY INFORMATION/NOTES

Creative Phase

The Creative Phase of the V.E. study was initiated the morning of the second day of the study. A total of seventeen (17) creative ideas were generated for further investigation by the team. Many of the creative ideas focused on limiting impacts on adjacent areas, minimization of earthwork, optimum construction phasing, relocating existing SR 382 intersection with CR 239, plus various other design elements of the project. Additional ideas were generated reflecting alternative project components based on an understanding of local construction products and materials and the relative costs of installing them.

A listing of all creative ideas on this project is included in Appendix A.

Evaluation Phase

The ideas generated during the Creative Phase were reviewed and evaluated by the VE session participants during a session held on the afternoon of the first study day and morning of the second day. The intent of the meeting was to allow the participants an opportunity to discuss and evaluate the ideas. A few of the V.E. ideas were dropped at that time as being conceptually unacceptable, or in conflict with previous agreements or agency policies. The ranking system consisted of session participants assigning a one phase ranking for acceptability and cost impact to each idea. The Acceptability ranking was based on how each idea improves the value of the project when considered against the evaluation criteria listed previously. Those ideas, which the V.E. Team felt had the most promise, were given a designation of 1-5 on development acceptability. Approximately ten (10) out of the original seventeen (17) creative ideas were deemed promising for further investigation and analysis by the V.E. team.

The time management ranking system used by the VE team is as follows:

ACCEPTABILITY OF IDEA

- 5 points - Excellent Idea
- 4 points - Good Idea
- 3 points - Fair Idea
- 2 points - Marginal Idea
- 1 point - Do Not Develop

VALUE ENGINEERING STUDY

KEY INFORMATION/NOTES

Development Phase

The specific proposals found in the body of this report represent the positive results of investigations by the V.E. team on the Extension of SR 382 to SR 515 from CR 239 project. Each proposal represents a quality enhancing or cost saving alternative, which is documented by words, drawings and numbers. The proposal format presents the idea, describes the original design element proposed for change and the proposed change, lists the perceived advantages and disadvantages of the proposed change and supports the idea with a detailed cost estimate for the original and proposed design. Where necessary for clarity, the proposal also includes thumbnail design drawings and supporting engineering calculations.

Many of the V.E. proposals require some level of redesign on specific portions of the project to implement the modification. Further, several of the V.E. ideas may involve modifications to the Criteria, or current goals, of the project. These ideas are presented to initiate additional discussion and investigation during the next phase of design.

Presentation Phase

A presentation to GDOT representatives and Designers was conducted 17 November 2011 at 9 AM.

Basis of V.E. Cost Savings

The cost information for proposals in this report are based on the cost data prepared by the GDOT design team, GDOT bid tabs, VE Team member experience, and discussions with vendors/Contractors. Therefore, the savings presented in the proposals is a general order of magnitude (estimate of the potential savings) if the idea were to be accepted. These figures are solely intended to identify the most attractive design solution, and are not prepared to represent a net deduction to the overall project budget. The costs are in 2011 dollars. A 28-month contract duration is scheduled. The GDOT cost estimate direct numbers included Overhead and Profit; thus, markups are shown as “included” in each V.E. proposal. Petroleum adjustment clause was in the estimate.

VALUE ENGINEERING STUDY

KEY INFORMATION/NOTES

Evaluation of Alternatives

When reviewing the value engineering proposals, consider each part of an alternative on its own merit. There may be a tendency to disregard an entire alternative because of a concern about one aspect of it. We encourage partial acceptance of ideas; thus, each aspect of an alternative should be considered for incorporation into the design, even if the entire alternative is not implemented. Variations of these proposed alternatives are encouraged.

Several of these alternatives/proposals are either “mutually exclusive” or have overlapping cost savings with other alternatives. These are indicated in the Proposal Summary Table. Items indicated as mutually exclusive indicates that acceptance of one alternative, precludes acceptance of the related proposal. Decision-makers are encouraged to evaluate these alternatives carefully in order to select the combination of alternatives that provide the greatest benefits to the project.

VALUE ENGINEERING STUDY

VALUE ENGINEERING RESULTS

The VE Team generated seventeen (17) creative ideas and developed ten (10) proposals for consideration by GDOT. The alternatives involve: reducing pavement widths, reducing shoulder widths, revising roadway profiles, increasing slopes.

Proposal Highlights

EARTHWORK/PROFILE (EW)

EW-1.0 - Use GEOGRID fabric from Station 547+00 to Station 549+50 to increase slopes from 2:1 up to 1.5:1 requiring less embankment and ROW. The proposed recommendation is to increase the slopes from 2:1 to 1.5:1 thus requiring less embankment and less ROW. This alternative will save \$394,000 in construction costs, including significant reduction in earthwork and reducing ROW acquisition by 10,000 SF.

EW-2.0 - Revise SR 382 profile to reduce earthwork and ROW impacts on West side of CR 239. The proposed change proposes a SR 382 roadway profile that reduces the quantity of required earthwork and the amount of right-of-way impacts on the west side of CR 239. The cross slope of CR 239/SR 382 will be changed from normal crown to reverse crown at the intersection to facilitate the profile adjustment. This alternative will save \$100,000 in construction costs, including reductions in earthwork and ROW acquisition.

EW-2.1 - Revise SR 382 & SR 382 extension profile to reduce earthwork and ROW impacts. The proposed change proposes a roadway profile that reduces the quantity of required earthwork and amount of right-of-way impacts on SR 382 and SR 382 Extension. The proposed speed design for the roadway profile will be changed from 55 mph to 45 mph. This alternative will save \$308,000 in construction costs, including reductions in earthwork and ROW acquisition.

EW-4.0 - Revise front slopes from 4:1 to 6:1 effectively raising the ditch bottom one foot. The proposed recommendation is to use 6:1 front slopes throughout the project limits in lieu of 4:1 slope. This revision satisfies AASHTO and GDOT standards while providing a cost savings to the project. This alternative will save \$35,000 in construction costs, including reductions in earthwork.

EW-6.0 - Reduce travel lane width from 12'-0" to 11'-0" wide on SR 392 & CR. The original design proposes a standard 12 foot width lane throughout the project. The proposed change to an 11 foot lane width is adequate for a 50 mph corridor. This alternative will save \$77,000 in construction costs, including reductions in earthwork and pavement.

VALUE ENGINEERING STUDY

VALUE ENGINEERING RESULTS

PAVEMENT (PV)

PV-2.0 - Reduce paved shoulder width from 6'-6" to 4'-0" on SR 382 and Extension and CR 239 improvements. The proposed change proposes to install a 4 foot wide paved shoulder on the SR 382 extension and CR 239. During the VE process, it was discovered that this route was not a designated bike route. This alternative will save \$48,000 in construction costs, including reductions in impervious area.

PV-2.1 - Reduce paved shoulder width from 6'-6" to 2'-0" on SR 382 and Extension and CR 239 improvements. As an alternative to PV-2.0, the proposed change proposes to install a 2 foot wide paved shoulder on the SR 382 extension and CR 239, and eliminate the width for bike traffic. This is not an approved/designated bike route. This alternative will save \$87,000 in construction costs.

PV-4.0 - Reduce pavement width, shoulder width and striping. The current design widens the road at the intersection of CR 239, SR 382, and new SR382 extension, and installs striped medians for future turn lanes. The proposed recommendation is to reduce the lane width, bike lanes, and striping at the new intersection. These improvements are not warranted for the volume of traffic at this intersection. This alternative will save \$101,000 in construction costs.

PV-6.0 - Major Scope Change: Eliminate the extension of SR 382 to SR 515 by making improvements to intersection 1.5 mile South. The current design realigns existing SR 382 and provides a new extension to SR 382 to SR 515. This creates a new intersection with CR 239, SR 382 and the new extension of SR 382 to SR5/515. The proposed recommendation is to eliminate this extension and replace movement with turn lane improvements further south on SR 382 (approximately 1.5 miles) at existing SR 515 intersection. This major alternative will save \$4,252,000 in construction costs.

PV-6.1 - Major Scope Change: Eliminate the relocation and extension of SR 382 to SR 515 (entire scope – realignment of existing SR 382, extension of SR 382to SR 515 and modification to CR 239: by making improvements to intersection 1.5 mile South. The current design is to relocate SR 382 South of the existing location where it intersects with CR 239. The proposed recommendation is to eliminate the relocation and replace movement with turn lane improvements further south on SR 382 at existing SR 515 intersection. This major alternative will save \$7,610,000 in construction costs.

SUMMARY OF VALUE ENGINEERING PROPOSALS

STP00-1004-00(002) / 631260 SR 382 Extension from CR 239 to SR 515 GILMER COUNTY, GEORGIA

IDEA NO.	PROPOSAL DESCRIPTION	CONSTRUCTION SAVINGS	RELATED PROPOSALS
	Note: Brackets mean additional cost		
	EARTHWORK (EW)		
1.0	Use GEOGRID fabric from Station 547+00 to Station 549+50 to increase slopes from 2:1 up to 1.5:1 – requiring less embankment and ROW	459,379	
2.0	Revise SR 382 profile to reduce earthwork and ROW and impacts on West side of CR239	100,678	Mutually exclusive with EW-2.1
2.1	Revise SR 382 & SR 382 extension profile to reduce earthwork and ROW impacts	307,748	Mutually exclusive with EW-2.0
4.0	Revise front slopes from 4:1 to 6:1 effectively raising the ditch bottom one foot.	34,630	
6.0	Reduce travel lane width from 12'-0" to 11'-0" on SR 382 & CR 239	76,667	
	PAVEMENT (PV)		
2.0	Reduce paved shoulder width from 6'-6" to 4'-0" on SR 382 and Extension and CR 239 improvements	48,402	Mutually exclusive with PV-2.1
2.1	Reduce paved shoulder width from 6'-6" to 2'-0" on SR 382 and Extension and CR 239 improvements	87,103	Mutually exclusive with PV-2.0
4.0	Reduce pavement width, shoulder width and striping @ intersection	101,129	Cost savings overlap with PV-2.0, PV-2.1, and EW-6.0
6.0	Major Scope Change: Eliminate the extension of SR 382 to SR 515 by making improvements to intersection 1.5 mile South	4,251,998	Cost savings overlap with all other proposals

SUMMARY OF VALUE ENGINEERING PROPOSALS

**STP00-1004-00(002) / 631260
 SR 382 Extension from CR 239 to SR 515
 GILMER COUNTY, GEORGIA**

IDEA NO.	PROPOSAL DESCRIPTION	CONSTRUCTION SAVINGS	RELATED PROPOSALS
	Note: Brackets mean additional cost		
6.1	Major Scope Change: Eliminate the relocation and extension of SR 382 to SR 515 (entire scope – realignment of existing SR 382, extension of SR 382 to SR 515 and mods to CR 239) by making improvements to intersection 1.5 mile South	7,611,087	Acceptance of this proposal eliminates all proposals above

VALUE ENGINEERING PROPOSAL

PROPOSAL NUMBER: EW-1.0	PAGE NUMBER: 1 of 5
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PROJECT #/PI #:	STP00-1004-00(002) / 631260-
PROJECT TITLE:	SR382 Ext from CR239 to SR5/SR515, Gilmer County

PROPOSAL DESCRIPTION:	USE GEOGRID FROM STATION 547 TO 549+50 TO INCREASE SLOPES FROM 2:1 UP TO 1.5:1 REQUIRING LESS EMBANKMENT AND ROW.
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ORIGINAL DESIGN: The current design for the new extension of SR 382 to SR 515 has designed the slopes at a 2:1 ratio.

PROPOSED CHANGE: The proposed recommendation is to increase the slopes from 2:1 to 1.5:1 thus requiring less embankment and less ROW.

JUSTIFICATION: The use of steeper slopes in mountainous areas of 1.5:1 reduces the quantity of cut and fill; and ROW cost.

ADVANTAGES:

- Requires less embankment
- Less ROW
- Reduces community impact
- Less slope maintenance

DISADVANTAGES:

- Mowing will be less frequent due to difficulty

	INITIAL COST	OPERATING COST	TOTAL LIFE-CYCLE COST
ORIGINAL DESIGN:	\$ 484,450		\$ 484,450
PROPOSED CHANGE:	\$ 25,071		\$ 25,071
SAVINGS:	\$ 459,379		\$ 459,379

COST ESTIMATING WORKSHEET

PROPOSAL NUMBER: EW-1.0	PAGE NUMBER: 2 of 5
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PROJECT #/PI #: STP00-1004-00(002) / 631260-

ORIGINAL DESIGN

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Borrow Exc. 206-0002	1		88,800	5.45	484,450
SUBTOTAL – COST TO PRIME					484,450
MARKUP					Incl.
TOTAL CONTRACT COST					484,450

PROPOSED CHANGE

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Borrow Exc. 206-0002	1	CY	5400	5.45	29,430
Geotextile 457-1005	3	SY	5555	5.12	28,441
Reduced ROW	1	SF	(10,000)	3.28	(32,800)
SUBTOTAL – COST TO PRIME					25,071
MARKUP					Incl.
TOTAL CONTRACT COST					25,071

Difference [Original-Proposed] **459,379**

SOURCES

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Project Cost Estimate 2. USC Estimate Database 3. GDOT Item Mean Summary 4. Means Estimating Manual | <ol style="list-style-type: none"> 5. Richardson's Estimating Manual 6. Vendor (Specify) 7. Other (Specify) |
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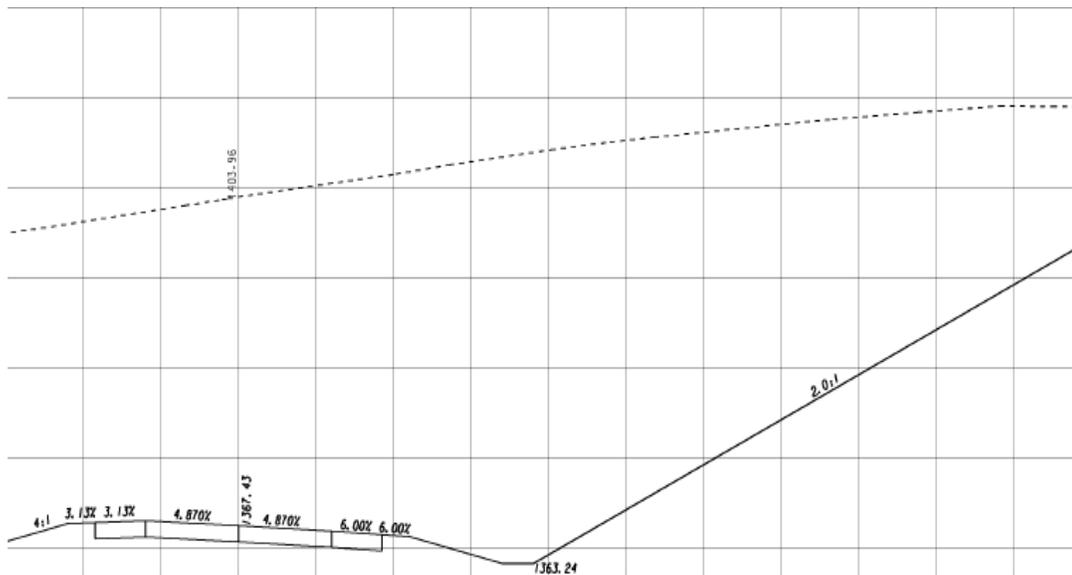
ORIGINAL DESIGN SKETCH/DETAIL

PROPOSAL NUMBER: EW-1.0

PAGE NUMBER: 3 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-

Use of 2:1 slopes in high fill areas Station 547+00 to Station 549+50 without GEOGRID



Existing Design

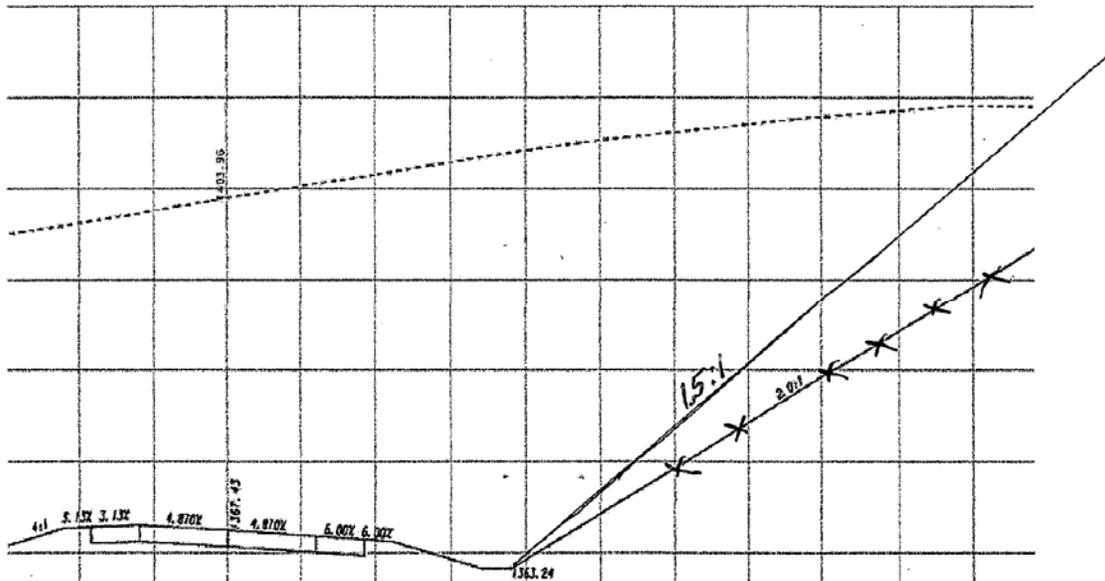
PROPOSED CHANGE SKETCH/DETAIL

PROPOSAL NUMBER: EW-1.0

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PROJECT #/PI #: STP00-1004-00(002) / 631260-

Use 1.5:1 slopes w/GEOGRID fabric Station 547+00 to Station 549+50



CALCULATIONS

PROPOSAL NUMBER: EW-1.0

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PROJECT #/PI #: STP00-1004-00(002) / 631260-

Volume :

500 LF X area 300 SF = 150000 CF/27= 5555 CY @\$5.45/CY

GEO GRID

Area:

5 00 LF X 100 LF = 50000 SF/9 = 5555 SY@ \$5.12

ROW

Area:

500 LF X 20 FT = 10000 SF

VALUE ENGINEERING PROPOSAL

PROPOSAL NUMBER: EW-2.0

PAGE NUMBER: 1 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-
PROJECT TITLE: SR382 Ext from CR239 to SR5/SR515, Gilmer County

PROPOSAL DESCRIPTION: REVISE SR 382 PROFILE TO REDUCE EARTHWORK AND ROW IMPACTS ON WEST SIDE OF CR 239.

ORIGINAL DESIGN: The original design proposes a roadway profile that results in significant earthwork and right-of-way impacts on SR 382 on the west side of CR 239.

PROPOSED CHANGE: The proposed change proposes a SR 382 roadway profile that reduces the quantity of required earthwork and the amount of right-of-way impacts on the west side of CR 239. The cross slope of CR 239/SR 382 will be changed from normal crown to reverse crown at the intersection to facilitate the profile adjustment.

JUSTIFICATION: The original design proposes a profile that produces significant excavation on SR 382 on the west side of CR 239 because of the tie-in at CR 239. The maximum allowable breakover for a side street at an intersection is 4%. Although the standard cross slope for a roadway with a tangent alignment is normal crown, a reverse crown cross slope may be implemented. This change in cross slope allows the profile to be raised and reduces required excavation.

ADVANTAGES:

- Earthwork Savings
- ROW Savings

DISADVANTAGES:

- Reverse Crown in Tangent Section

	INITIAL COST	OPERATING COST	TOTAL LIFE- CYCLE COST
ORIGINAL DESIGN:	\$ 880,463		\$ 880,463
PROPOSED CHANGE:	\$ 779,785		\$ 779,785
SAVINGS:	\$ 100,678		\$ 100,678

COST ESTIMATING WORKSHEET

PROPOSAL NUMBER: EW-2.0	PAGE NUMBER: 2 of 5
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PROJECT #/PI #: STP00-1004-00(002) / 631260-

ORIGINAL DESIGN

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Unclass Excav	1	CY	156,325	5.36	837,902
ROW	1	SF	12,976	3.28	42,561
Asphalt Leveling	1	TN	0	73.07	0
SUBTOTAL – COST TO PRIME					880,463
MARKUP					Incl.
TOTAL CONTRACT COST					880,463

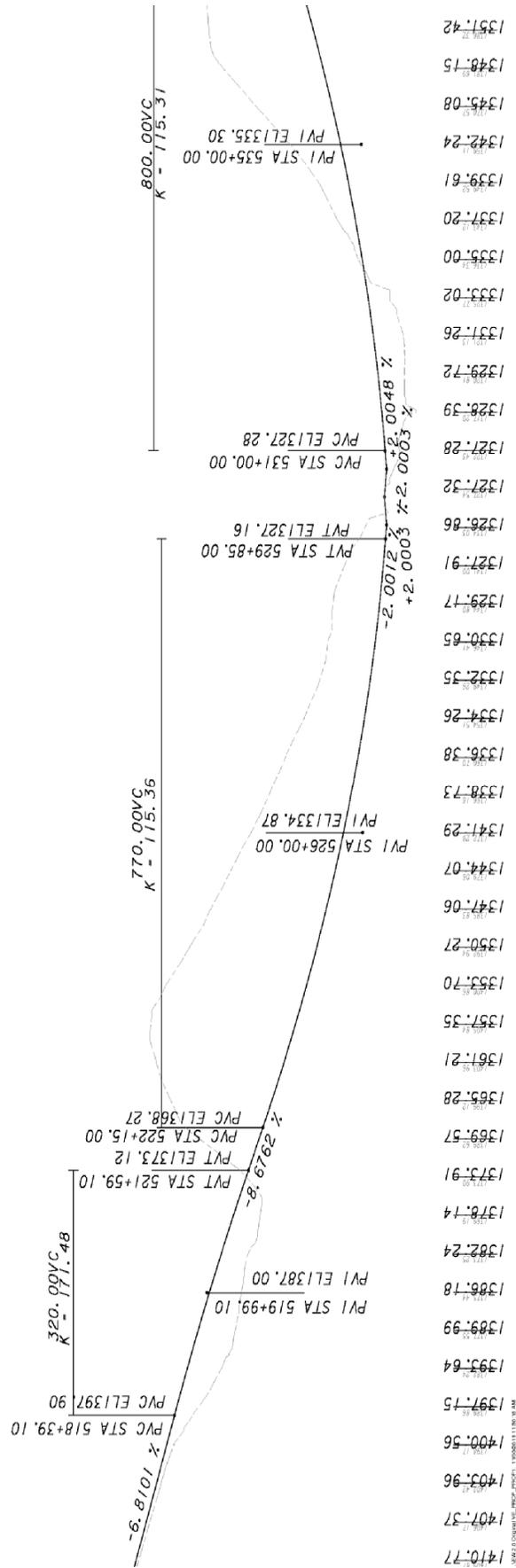
PROPOSED CHANGE

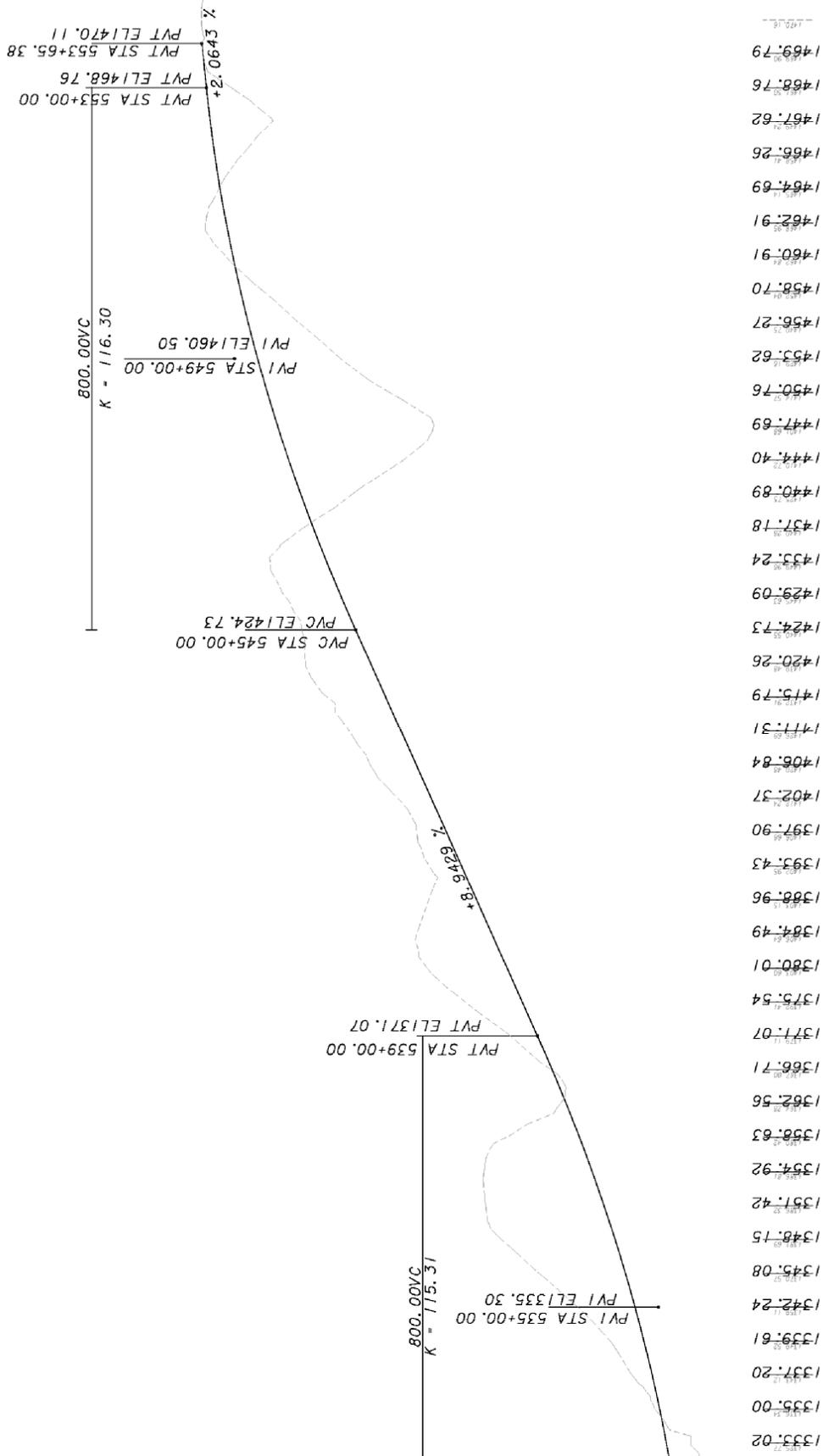
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Unclass Excav	1	CY	143,969	5.36	771,674
ROW	1	SF	0	3.28	0
Asphalt Leveling	1	TN	111	73.07	8,111
SUBTOTAL – COST TO PRIME					779,785
MARKUP					Incl.
TOTAL CONTRACT COST					779,785

Difference [Original-Proposed] **100,678**

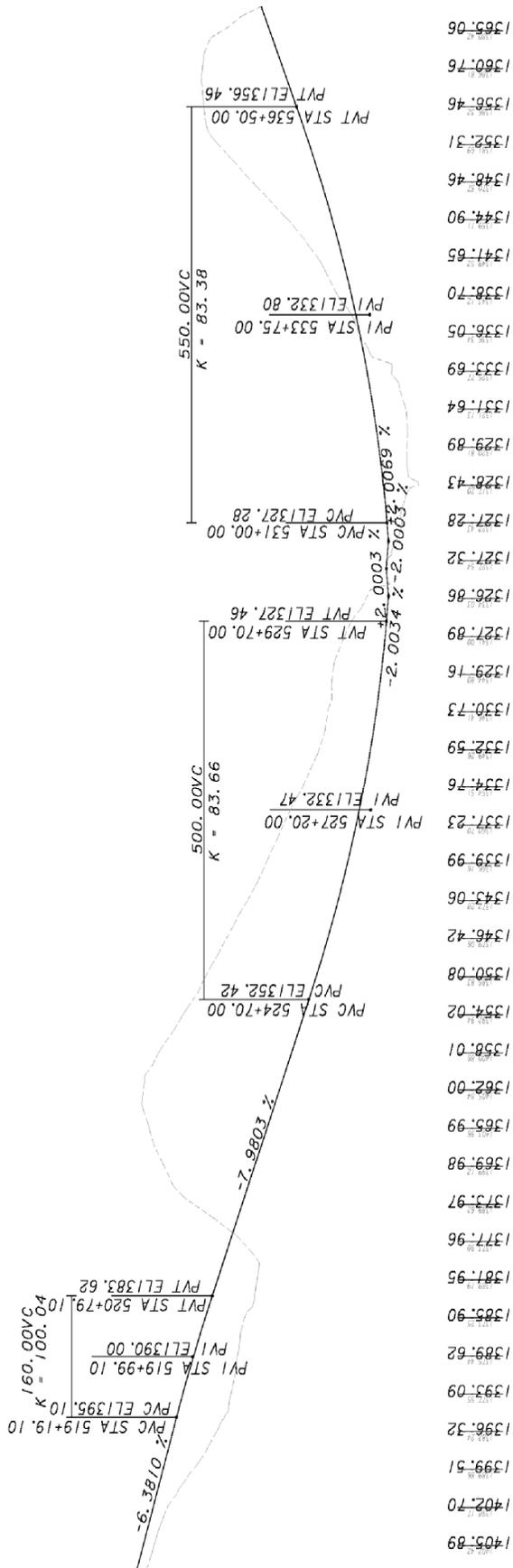
SOURCES

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Project Cost Estimate 2. USC Estimate Database 3. GDOT Item Mean Summary 4. Means Estimating Manual | <ol style="list-style-type: none"> 5. Richardson's Estimating Manual 6. Vendor (Specify) 7. Other (Specify) |
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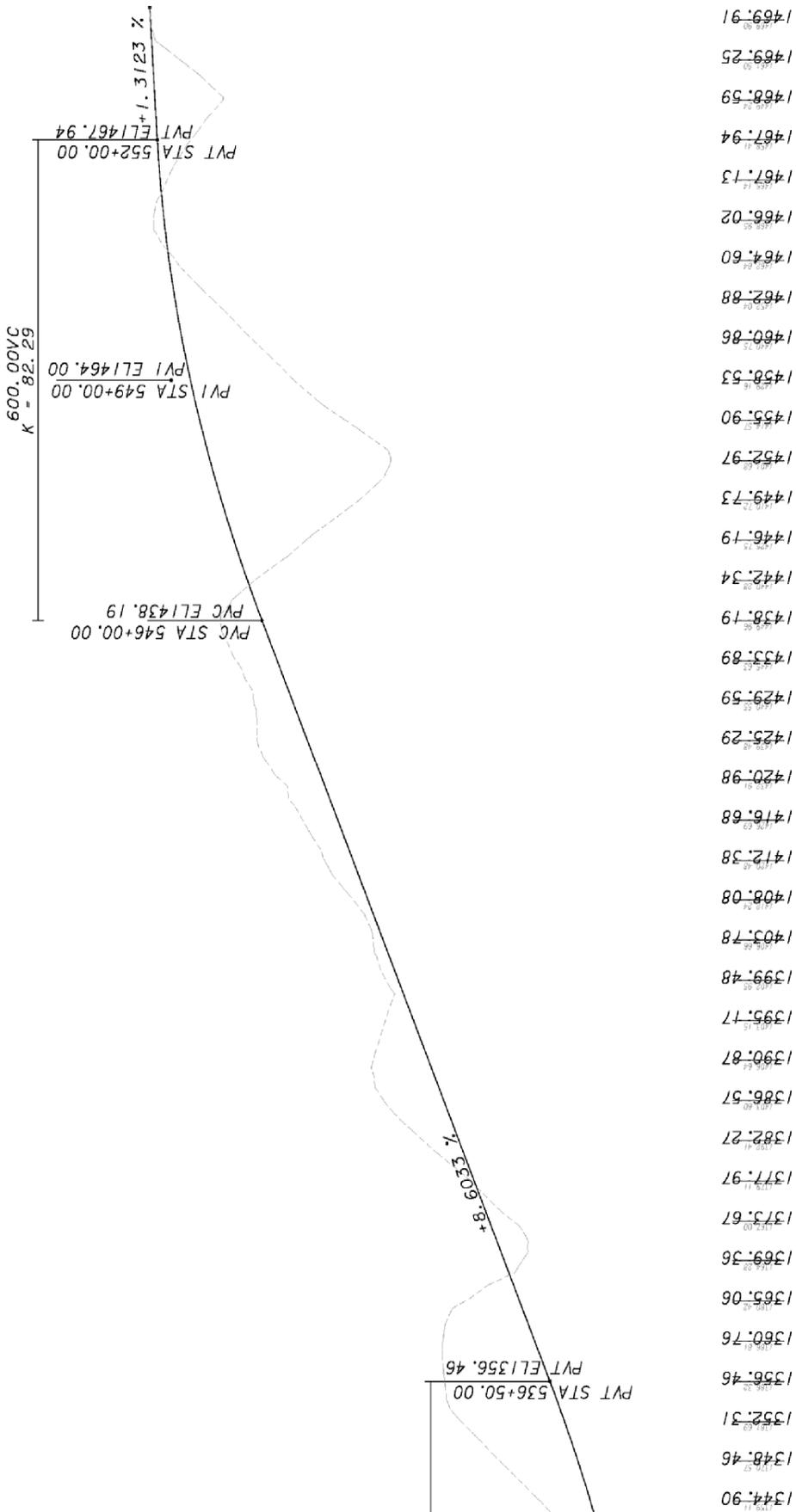




ORIGINAL PROFILE
2 OF 2



EW-2.0 - PROPOSED PROFILE
1 OF 2



U.S. COST
VALUE MANAGEMENT CONSULTANTS

EW-2.0 - PROPOSED PROFILE
2 OF 2

CALCULATIONS

PROPOSAL NUMBER: EW-2.0

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Assumptions

- Earthwork savings determined from Caice end area report file.

- Required Leveling for one 12' width lane for 1000' length with an average depth of 2"
Area of Leveling = $(1000 \text{ lf})(12 \text{ lf})/9 = 1333 \text{ sy}$

- Asphalt tons/sy per inch thickness = $(1 \text{ in})(1 \text{ ft}/12 \text{ in})(110 \text{ lb}/1 \text{ cf})(9 \text{ sf}/1 \text{ sy})(1 \text{ ton}/2000 \text{ lb}) = 0.04125$

2" Asphalt Leveling – $(2)(0.04125) = 0.083 \text{ tons/sy}$ (assume same cost as 12.5 mm)

- Average profile elevation raise of 2' results in 8' width ROW savings (2:1 backslopes on both sides of road).

Original Design

Required Leveling Area = 0 sy

Wt Leveling = 0 tons

Unclassified Excavation = 156,325 cy

Additional ROW for 2' Raise = $(8 \text{ lf})(53000-51378) = 12,976 \text{ sf}$

Proposed Change

Required Leveling Area = $(1000 \text{ lf})(12 \text{ lf}) = 12,000 \text{ sf} = 1133 \text{ sy}$

Wt Leveling = $(1333 \text{ sy})(0.083 \text{ tons/sy}) = 111 \text{ tons}$

Unclassified Excavation = 143,969 cy

Additional ROW for 2' Raise = 0 sf

VALUE ENGINEERING PROPOSAL

PROPOSAL NUMBER: EW-2.1

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PROJECT #/PI #: STP00-1004-00(002) / 631260-
PROJECT TITLE: SR382 Ext from CR239 to SR5/SR515, Gilmer County

PROPOSAL DESCRIPTION: REVISE SR 382 & SR 382 EXTENSION PROFILE TO REDUCE EARTHWORK AND ROW IMPACTS.

ORIGINAL DESIGN: The original design proposes a roadway profile that results in significant earthwork and right-of-way impacts on SR 382 and SR 382 Extension.

PROPOSED CHANGE: The proposed change proposes a roadway profile that reduces the quantity of required earthwork and amount of right-of-way impacts on SR 382 and SR 382 Extension. The proposed speed design for the roadway profile will be changed from 55 mph to 45 mph.

JUSTIFICATION: The original design proposes a profile that produces significant excavation on SR 382 and SR 382 Extension. These two roads are at a stop condition at the intersection with CR 239/SR 382. The proposed change proposes a reduction of speed design to 45 mph due to the stop condition and the results of the traffic study which show that a signal is not warranted. The revisions to the profile generate significant cost savings in earthwork and right-of-way.

ADVANTAGES:

- Earthwork Savings
- ROW Savings

DISADVANTAGES:

- Reduced Speed Design at Intersection

	INITIAL COST	OPERATING COST	TOTAL LIFE-CYCLE COST
ORIGINAL DESIGN:	\$ 1,954,609		\$ 1,954,609
PROPOSED CHANGE:	\$ 1,646,861		\$ 1,646,861
SAVINGS:	\$ 307,748		\$ 307,748

COST ESTIMATING WORKSHEET

PROPOSAL NUMBER: EW-2.1	PAGE NUMBER: 2 of 5
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PROJECT #/PI #: STP00-1004-00(002) / 631260-

ORIGINAL DESIGN

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Unclass Excav	1	CY	282,391	5.36	1,513,616
Embankment	1	CY	62,033	5.45	338,080
ROW	1	SF	31,376	3.28	102,913
SUBTOTAL – COST TO PRIME					1,954,609
MARKUP					Incl.
TOTAL CONTRACT COST					1,954,609

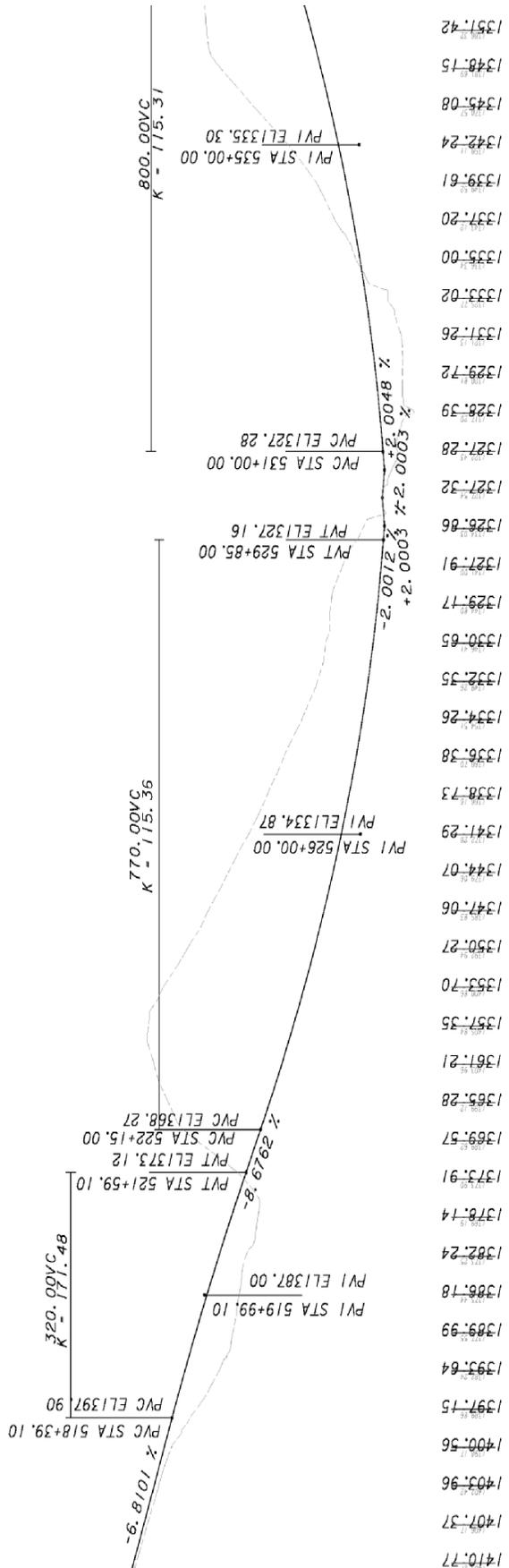
PROPOSED CHANGE

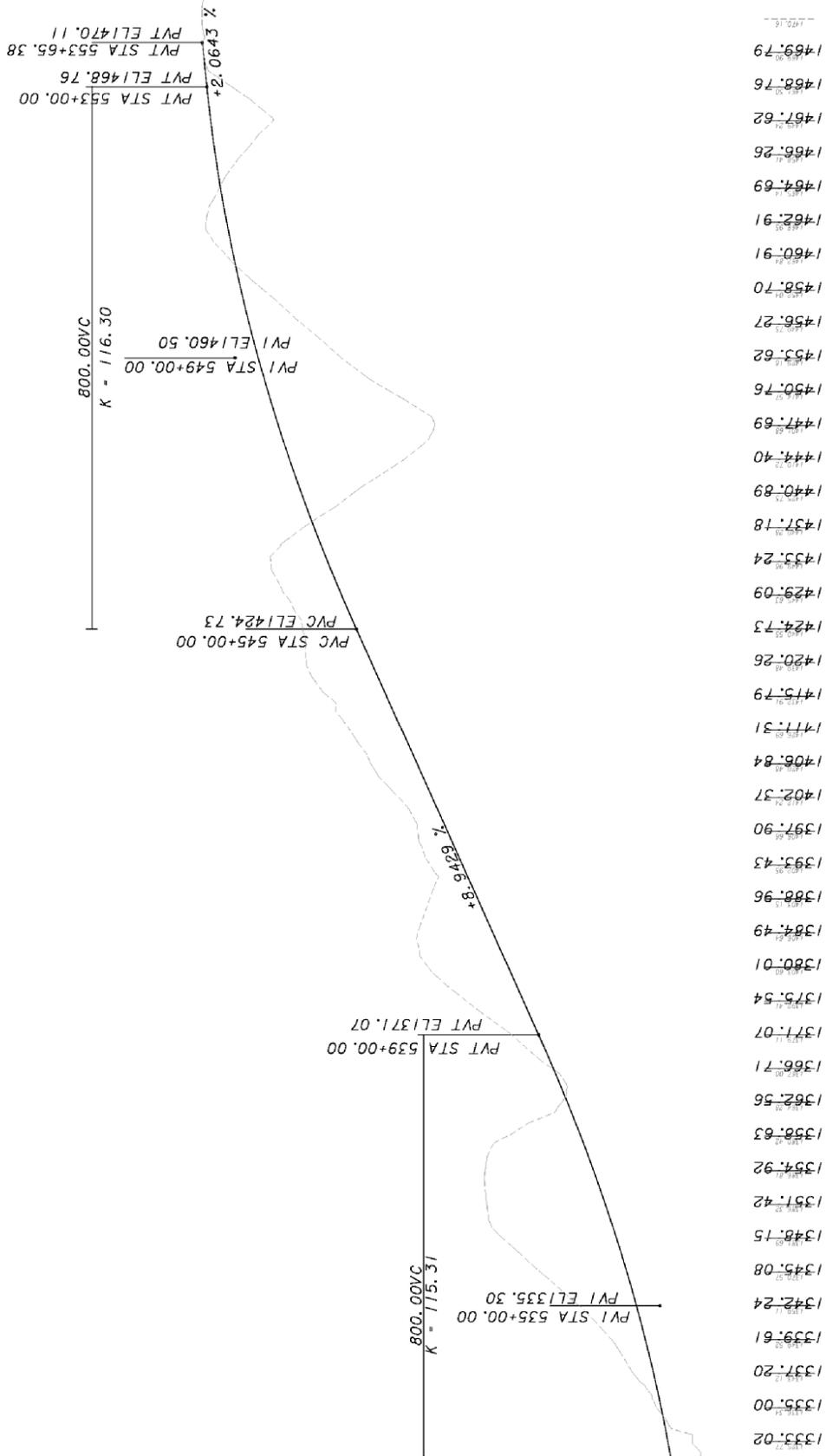
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Unclass Excav	1	CY	224,886	5.36	1,205,389
Embankment	1	CY	81,004	5.45	441,472
ROW	1	SF	0	3.28	0
SUBTOTAL – COST TO PRIME					1,646,861
MARKUP					Incl.
TOTAL CONTRACT COST					1,646,861

Difference [Original-Proposed] **307,748**

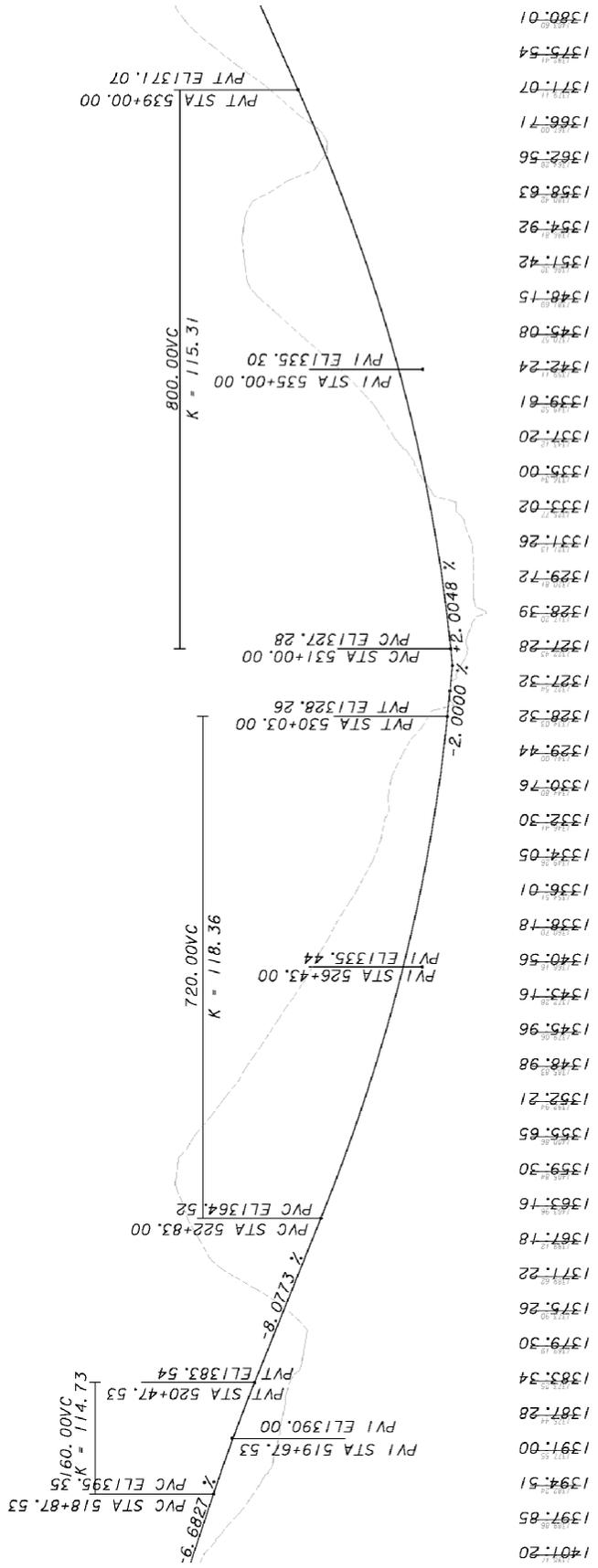
SOURCES

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Project Cost Estimate 2. USC Estimate Database 3. GDOT Item Mean Summary 4. Means Estimating Manual | <ol style="list-style-type: none"> 5. Richardson's Estimating Manual 6. Vendor (Specify) 7. Other (Specify) |
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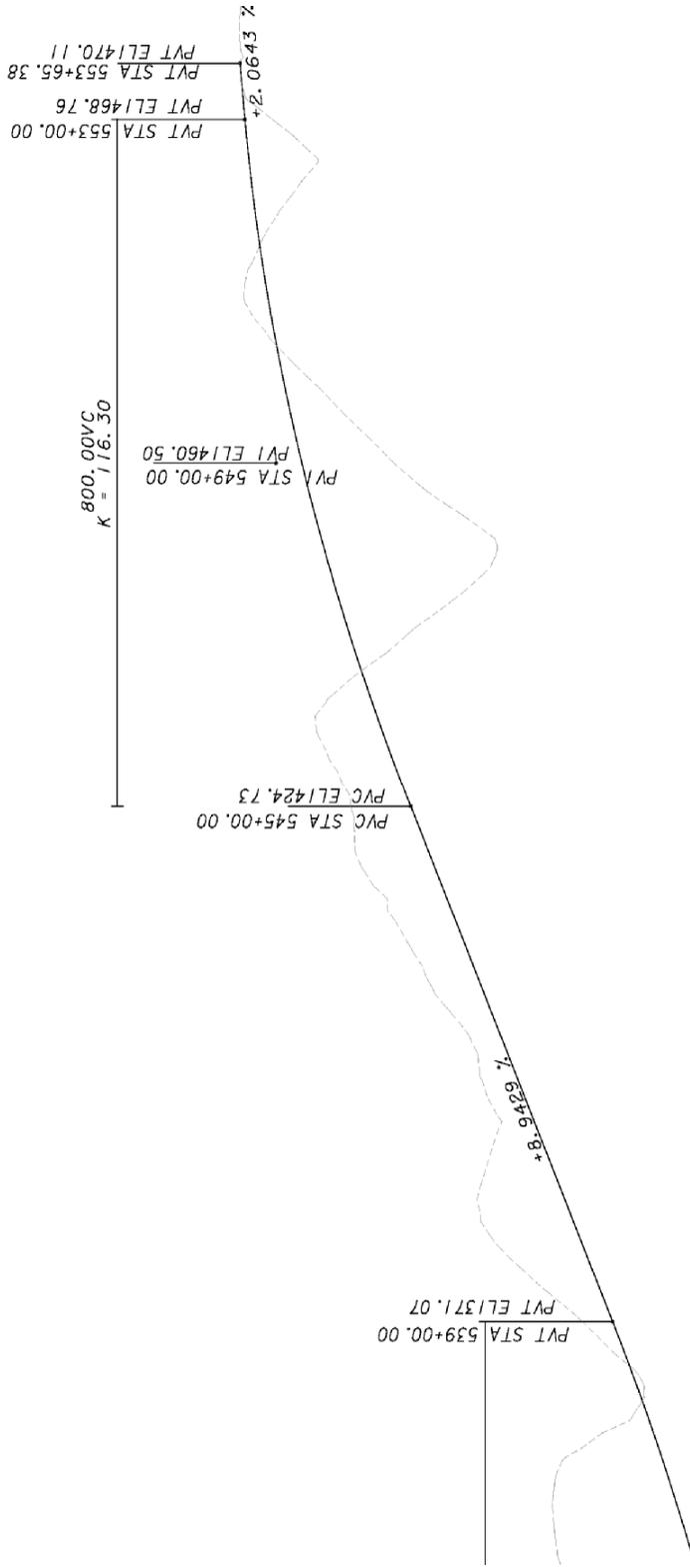




ORIGINAL PROFILE
2 OF 2



EW-2.1 - PROPOSED PROFILE
1 OF 2



1470.15
1469.79
1468.76
1467.62
1466.26
1464.69
1462.91
1460.91
1458.70
1456.27
1453.62
1450.76
1447.69
1444.40
1440.89
1437.18
1433.24
1429.09
1424.73
1420.26
1415.79
1411.31
1406.84
1402.37
1397.90
1393.43
1388.96
1384.49
1380.01
1375.54
1371.07
1366.71
1362.56
1358.63
1354.92
1351.42

EW-2.1 - PROPOSED PROFILE
2 OF 2

CALCULATIONS

PROPOSAL NUMBER: EW-2.1

PAGE NUMBER: 5 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-

Assumptions

- Earthwork savings determined from Caice end area report file.
- Average profile elevation raise of 2' results in 8' width ROW savings (2:1 backslopes on both sides of road).

Original Design

Unclassified Excavation = 282,391 cy

Embankment = 62,033 cy

Additional ROW for 2' Raise = (8 lf)(55300-51378) = 31,376 sf

Proposed Change

Unclassified Excavation = 224,886 cy

Embankment = 81,004 cy

Additional ROW for 2' Raise = 0 sf

VALUE ENGINEERING PROPOSAL

PROPOSAL NUMBER: EW-4.0	PAGE NUMBER: 1 of 3
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PROJECT #/PI #:	STP00-1004-00(002) / 631260-
PROJECT TITLE:	SR382 Ext from CR239 to SR5/SR515, Gilmer County

PROPOSAL DESCRIPTION:	REVISE FRONT SLOPES FROM 4:1 TO 6:1 EFFECTIVELY RAISING THE DITCH BOTTOM ONE FOOT.
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ORIGINAL DESIGN: The current design for front slopes are 4:1 throughout the project, where they can use them.

PROPOSED CHANGE: The proposed recommendation is to use 6:1 front slopes throughout the project limits in lieu of 4:1 slope in the current construction documents.

JUSTIFICATION: No need to specify 4:1 slopes at many locations along the corridor. This revision satisfies AASHTO and GDOT standards while providing a cost savings to the project.

ADVANTAGES:

- Construction savings in both cut and fill areas
- Decreases earthwork quantity
- Meets AASHTO and GDOT standards

DISADVANTAGES:

- None apparent

	INITIAL COST	OPERATING COST	TOTAL LIFE-CYCLE COST
ORIGINAL DESIGN:	\$ 2,880,390		\$ 2,880,390
PROPOSED CHANGE:	\$ 2,845,760		\$ 2,845,760
SAVINGS:	\$ 34,630		\$ 34,630

COST ESTIMATING WORKSHEET

PROPOSAL NUMBER: EW-4.0	PAGE NUMBER: 2 of 3
--------------------------------	----------------------------

PROJECT #/PI #: STP00-1004-00(002) / 631260-

ORIGINAL DESIGN

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Borrow Exc. 206-0002	1	CY	88,800	5.45	484,450
ROW	1	SF	729,672	3.28	2,395,940
SUBTOTAL – COST TO PRIME					2,880,390
MARKUP					Incl.
TOTAL CONTRACT COST					2,880,390

PROPOSED CHANGE

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Borrow Exc. 206-0002	1	CY	88,312	5.45	481,300
ROW	1	SF	720,872	3.28	2,364,460
SUBTOTAL – COST TO PRIME					2,845,760
MARKUP					Incl.
TOTAL CONTRACT COST					2,845,760

Difference [Original-Proposed] **34,630**

SOURCES

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Project Cost Estimate 2. USC Estimate Database 3. GDOT Item Mean Summary 4. Means Estimating Manual | <ol style="list-style-type: none"> 5. Richardson's Estimating Manual 6. Vendor (Specify) 7. Other (Specify) |
|---|--|

CALCULATIONS

PROPOSAL NUMBER: EW-4.0

PAGE NUMBER: 3 of 3

PROJECT #/PI #: STP00-1004-00(002) / 631260-

RT.

Sta 515+00 to Sta 529+50 = 1450 lf

Sta 534+50 to Sta 538+00 = 350 lf

Sta 539+50 to Sta 546+50 = 700 lf

Sta 550+50 to Sta 552+00 = 150 lf

LT.

Sta 522+00 to Sta 529+50 = 750 lf

Sta 534+50 to Sta 537+50 = 300 lf

Sta 539+50 to Sta 546+00 = 650 lf

Sta 550+50 to Sta 551+00 = 50 lf

Total 4400 lf

Volume Reduction:

4400 LF X area 3 SF = 13200 CF/27= 488 CY.

ROW Reduction

Area:

4400 LF X 2 FT = 8800 SF

VALUE ENGINEERING PROPOSAL

PROPOSAL NUMBER: EW-6.0

PAGE NUMBER: 1 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-

PROJECT TITLE: SR382 Ext from CR239 to SR5/SR515, Gilmer County

PROPOSAL DESCRIPTION: REDUCE TRAVEL LANE WIDTH FROM 12'-0" TO 11'-0" ON SR 392 AND CR 239.

ORIGINAL DESIGN: The original design proposed to install 12 foot wide travel lanes.

PROPOSED CHANGE: The proposed recommendation is to install 11 foot wide travel lanes.

JUSTIFICATION: The original design proposes a standard 12 foot width lane throughout the project. The function of the travel lanes is to convey traffic, and this function can be accomplished through a reduced width travel lane. The proposed alignment through the new location sections requires significant excavation and embankment due to hilly terrain. The proposed change is adequate for a 50 mph corridor and will result in significant savings in earthwork and pavement.

Note: Additional savings for shoulder width reduction, see PV-2.0 and PV 2.1

ADVANTAGES:

- Reduces Earthwork
- Reduces Pavement Area
- Width is adequate for 50 mph traffic

DISADVANTAGES:

- Narrows Travel Lane

	INITIAL COST	OPERATING COST	TOTAL LIFE-CYCLE COST
ORIGINAL DESIGN:	\$ 76,677		\$ 76,667
PROPOSED CHANGE:	\$ 0		\$ 0
SAVINGS:	\$ 76,677		\$ 76,667

COST ESTIMATING WORKSHEET

PROPOSAL NUMBER: EW-6.0	PAGE NUMBER: 2 of 5
--------------------------------	----------------------------

PROJECT #/PI #: STP00-1004-00(002) / 631260-

ORIGINAL DESIGN

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
12.5mm Superpave	1	TN	70	73.07	5,115
19mm Superpave	1	TN	94	62.66	5,890
25mm Superpave	1	TN	282	57.80	16,300
Graded Aggregate Base	1	TN	564	16.13	9,097
Unclass Excav	1	CY	7514	5.36	40,275
SUBTOTAL – COST TO PRIME					76,677
MARKUP					Incl.
TOTAL CONTRACT COST					76,677

PROPOSED CHANGE

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
12.5mm Superpave	1	TN	0	73.07	0
19mm Superpave	1	TN	0	62.66	0
25mm Superpave	1	TN	0	57.80	0
Graded Aggregate Base	1	TN	0	16.13	0
Unclass Excav	1	CY	0	5.36	0
SUBTOTAL – COST TO PRIME					0
MARKUP					Incl.
TOTAL CONTRACT COST					0

Difference [Original-Proposed] **76,677**

SOURCES

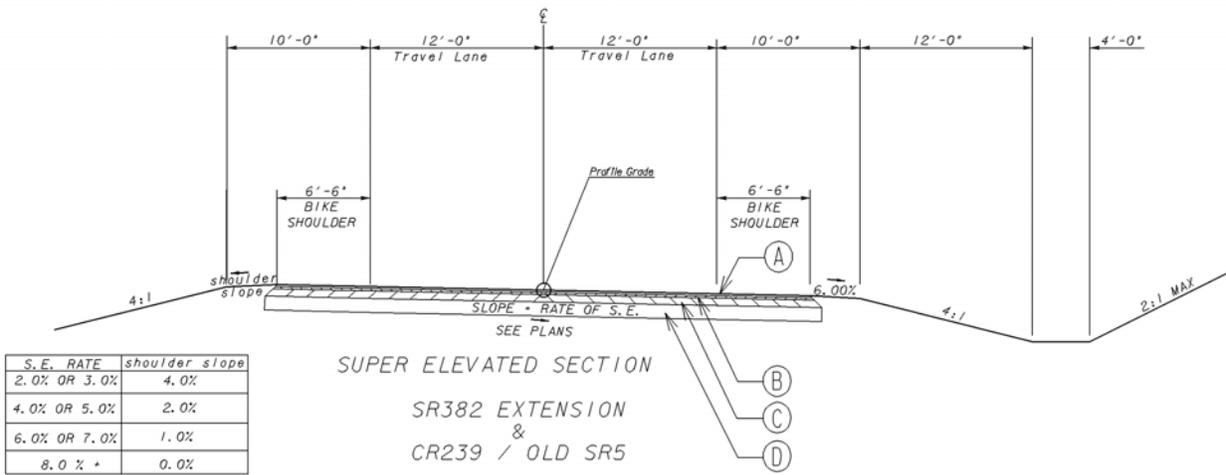
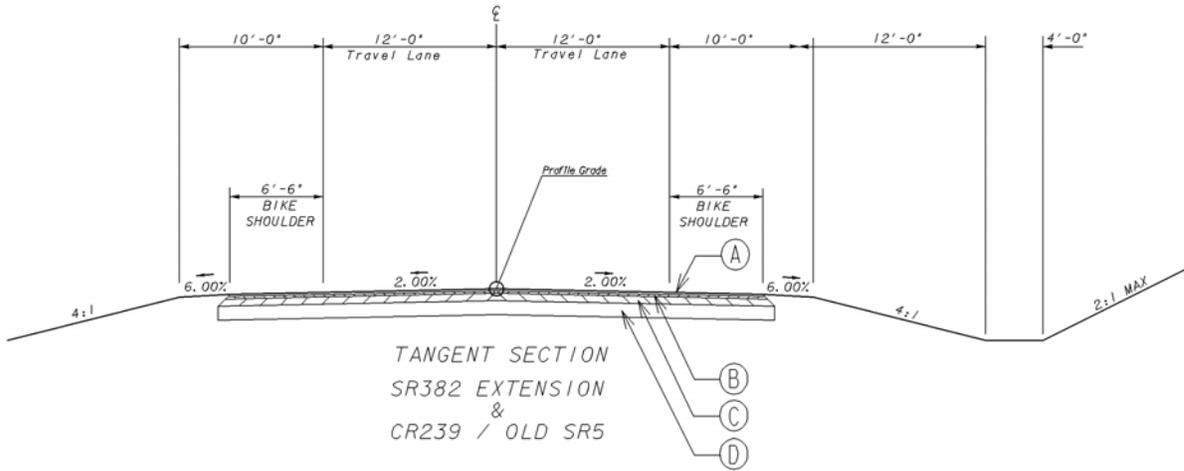
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| <ol style="list-style-type: none"> 1. Project Cost Estimate 2. USC Estimate Database 3. GDOT Item Mean Summary 4. Means Estimating Manual | <ol style="list-style-type: none"> 5. Richardson's Estimating Manual 6. Vendor (Specify) 7. Other (Specify) |
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ORIGINAL DESIGN SKETCH/DETAIL

PROPOSAL NUMBER: EW-6.0

PAGE NUMBER: 3 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-



S.E. RATE	shoulder slope
2.0% OR 3.0%	4.0%
4.0% OR 5.0%	2.0%
6.0% OR 7.0%	1.0%
8.0% +	0.0%

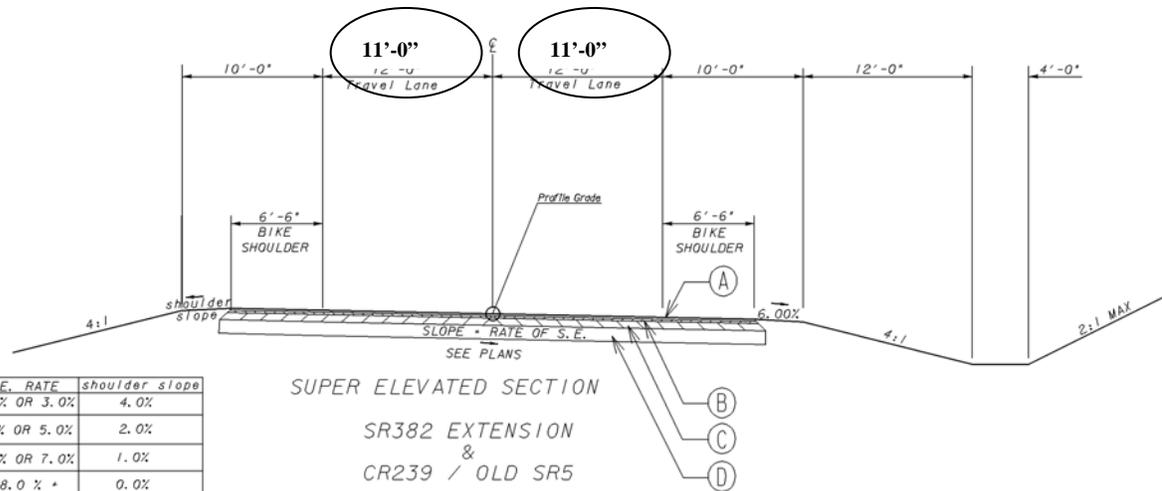
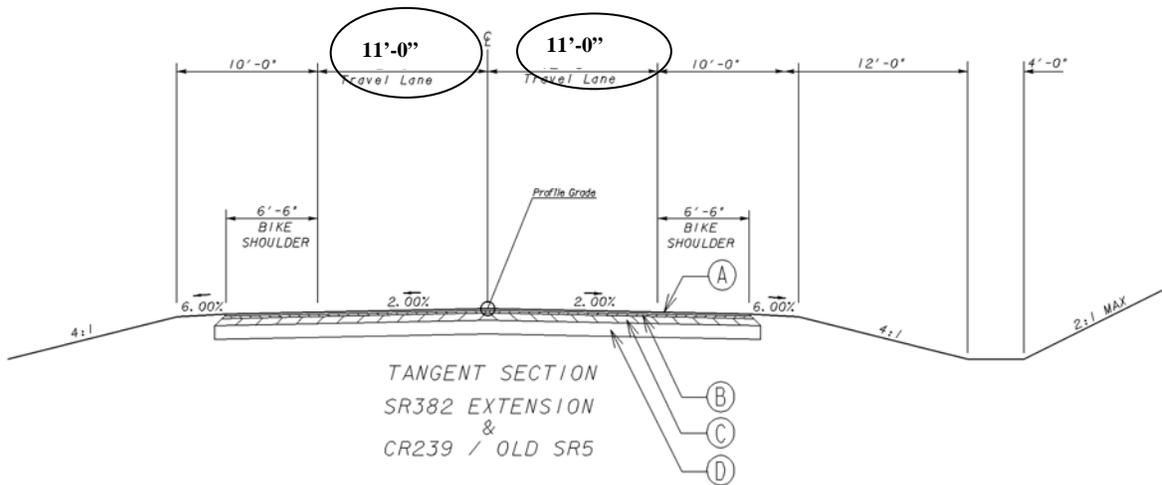
Original Design

PROPOSED CHANGE SKETCH/DETAIL

PROPOSAL NUMBER: EW-6.0

PAGE NUMBER: 4 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-



S. E. RATE	shoulder slope
2.0% OR 3.0%	4.0%
4.0% OR 5.0%	2.0%
6.0% OR 7.0%	1.0%
8.0% +	0.0%

CALCULATIONS

PROPOSAL NUMBER: EW-6.0

PAGE NUMBER: 5 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-

Assumptions

Reduced Travel Lane Width for all roads on project.

Pavement Spread Rate

Tons/sy per inch thickness = (1 in)(1 ft/12 in)(110 lb/1 cf)(9 sf/1 sy)(1 ton/2000 lb) = 0.04125

1.5" 12.5mm Superpave – 0.062 tons/sy

2" 19mm Superpave – 0.083 tons/sy

6" 25mm Superpave – 0.25 tons/sy

12" Graded Aggregate Base – 0.50 tons/sy

SR 382 & Extension Length = (55300-51378) = 3922 lf

CR 329/SR 382 Length = (3200-2050) = 1150 lf

Total Length = 3922 lf + 1150 lf = 5072 lf

Earthwork – Assume average depth of 20 feet for 1 foot width savings

Original Design

Additional Pavement Area = (5,072 lf)(2 lf) = 10,144 sf = 1127 sy

Wt 12.5mm = (1127 sy)(0.062 tons/sy) = 70 tons

Wt 19mm = (1127 sy)(0.083 tons/sy) = 94 tons

Wt 25mm = (1127 sy)(0.25 tons/sy) = 282 tons

Wt 12" GAB = (1127 sy)(0.50 tons/sy) = 564 tons

Additional 1' Earthwork = (5,072 lf)(2 lf)(20 lf)/27 = 7,514 cy

Proposed Change

Pavement Area = (5072 lf)(0 lf) = 0 sy

Wt 12.5mm = 0 tons

Wt 19mm = 0 tons

Wt 25mm = 0 tons

Wt 12" GAB = 0 tons

Additional Earthwork = 0 cy

VALUE ENGINEERING PROPOSAL

PROPOSAL NUMBER: PV-2.0	PAGE NUMBER: 1 of 5
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PROJECT #/PI #:	STP00-1004-00(002) / 631260-
PROJECT TITLE:	SR382 Ext from CR239 to SR5/SR515, Gilmer County

PROPOSAL DESCRIPTION:	REDUCE PAVED SHOULDER WIDTH FROM 6.5 FEET TO 4 FEET ON SR 382 EXTENSION AND CR 239.
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ORIGINAL DESIGN: The original design required a 6.5 foot width paved shoulder on the SR 382 extension to SR 515 and CR 239. The 6.5 foot width provided for installation of rumble strips and 4'-0" width for bike traffic

PROPOSED CHANGE: The proposed change proposes to install a 4 foot wide paved shoulder on the SR 382 extension and CR 239. It was discovered that this route was not a designated bike route.

JUSTIFICATION: The proposed 6.5 foot paved shoulder width provides adequate width for bike traffic. SR 382 is currently designated as a GDOT bike route and requires adequate width shoulders to account for bike traffic. However, SR 382 extension and CR 239 are not on a bike route and do not require additional paved shoulder width. Share the road signs should be installed.

ADVANTAGES:

- Cost Savings
- Reduced Impervious Area
- Removes bikes from a very mountainous road

DISADVANTAGES:

- Bike Facilities Not Provided

	INITIAL COST	OPERATING COST	TOTAL LIFE-CYCLE COST
ORIGINAL DESIGN:	\$ 125,794		\$ 125,794
PROPOSED CHANGE:	\$ 77,392		\$ 77,392
SAVINGS:	\$ 48,402		\$ 48,402

COST ESTIMATING WORKSHEET

PROPOSAL NUMBER: PV-2.0	PAGE NUMBER: 2 of 5
--------------------------------	----------------------------

PROJECT #/PI #: STP00-1004-00(002) / 631260-

ORIGINAL DESIGN

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
12.5mm Superpave	1	TN	242	73.07	17,683
19mm Superpave	1	TN	324	62.66	20,302
25mm Superpave	1	TN	975	57.80	56,355
Graded Aggregate Base	1	TN	1950	16.13	31,454
SUBTOTAL – COST TO PRIME					125,794
MARKUP					Incl.
TOTAL CONTRACT COST					125,794

PROPOSED CHANGE

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
12.5mm Superpave	1	TN	149	73.07	10,887
19mm Superpave	1	TN	199	62.66	12,469
25mm Superpave	1	TN	600	57.80	34,680
Graded Aggregate Base	1	TN	1200	16.13	19,356
SUBTOTAL – COST TO PRIME					77,392
MARKUP					Incl.
TOTAL CONTRACT COST					77,392

Difference [Original-Proposed] **48,402**

SOURCES

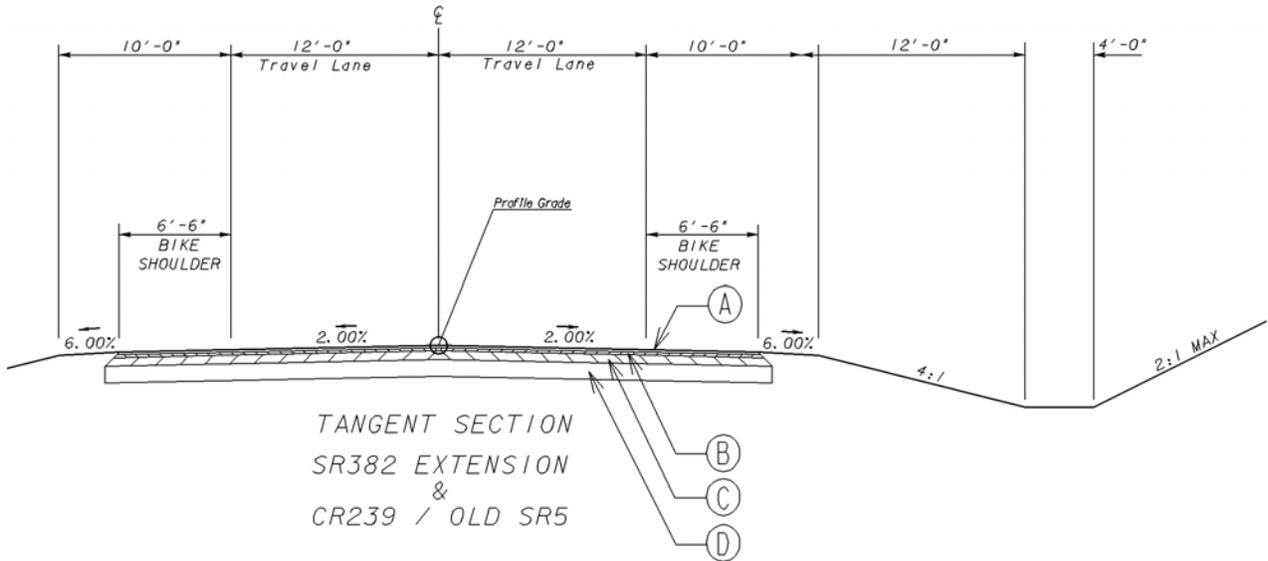
- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Project Cost Estimate 2. USC Estimate Database 3. GDOT Item Mean Summary 4. Means Estimating Manual | <ol style="list-style-type: none"> 5. Richardson's Estimating Manual 6. Vendor (Specify) 7. Other (Specify) |
|---|--|

ORIGINAL DESIGN SKETCH/DETAIL

PROPOSAL NUMBER: PV-2.0

PAGE NUMBER: 3 of 5

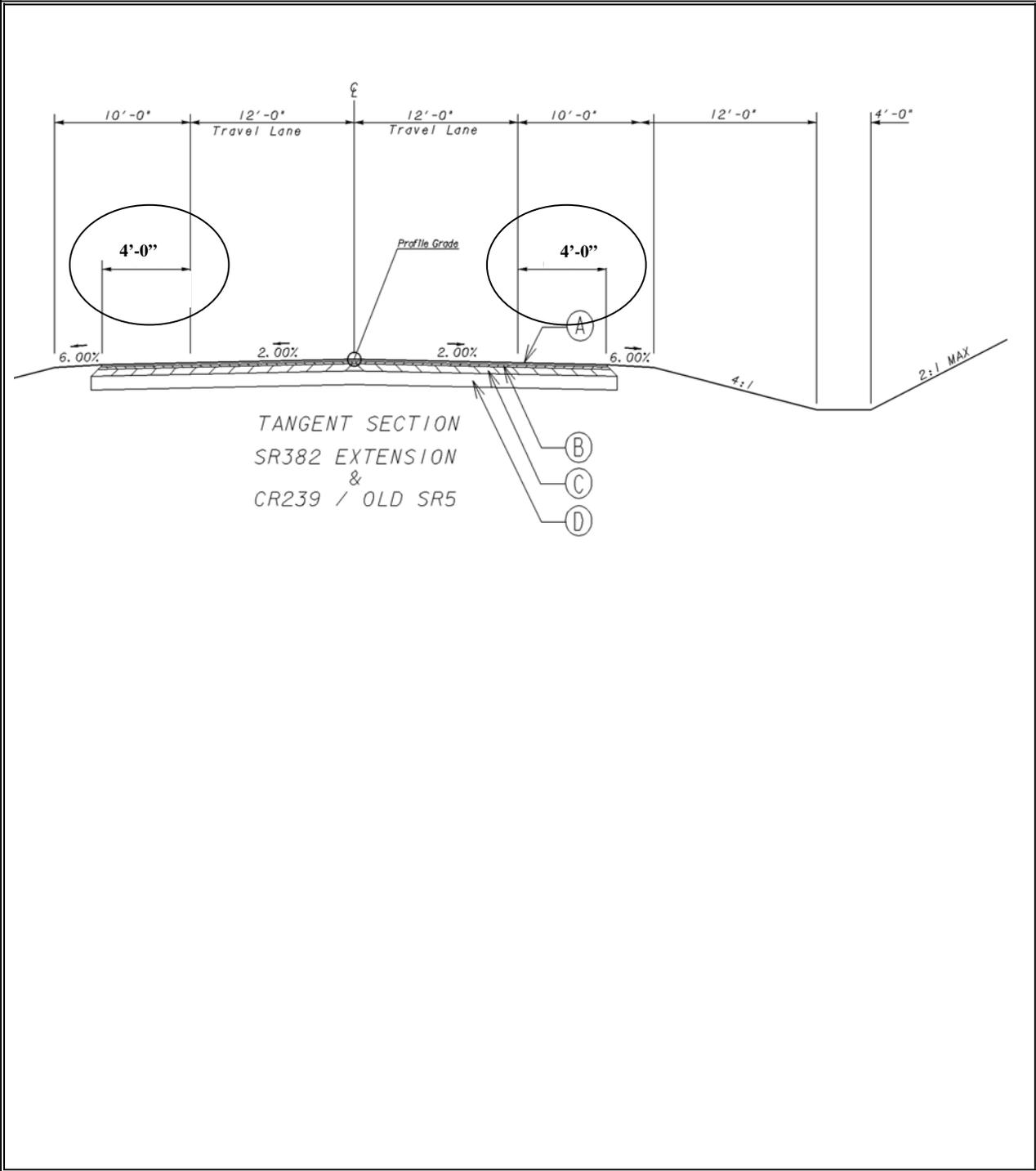
PROJECT #/PI #: STP00-1004-00(002) / 631260-



PROPOSED CHANGE SKETCH/DETAIL

PROPOSAL NUMBER: PV-2.0 **PAGE NUMBER:** 4 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-



CALCULATIONS

PROPOSAL NUMBER: PV-2.0

PAGE NUMBER: 5 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-

Assumptions

- Reduced Paved Shoulder Width for CR 329 and SR 382 Extension Only.

- Pavement Spread Rate

tons/sy per inch thickness = (1 in)(1 ft/12 in)(110 lb/1 cf)(9 sf/1 sy)(1 ton/2000 lb) = 0.04125

1.5" 12.5mm Superpave – 0.062 tons/sy

2" 19mm Superpave – 0.083 tons/sy

6" 25mm Superpave – 0.25 tons/sy

12" Graded Aggregate Base – 0.50 tons/sy

SR 382 Extension Shoulder Length = (2)(55300-53100) = 4400 lf

CR 329 Length = (2)(3300-2800) = 1000 lf

Total Length = 1000 lf + 4400 lf = 5400 lf

Original Design

Paved Shoulder Area = (5400 lf)(6.5 lf) = 35100 sf = 3900 sy

Wt 12.5mm = (3900 sy)(0.062 tons/sy) = 242 tons

Wt 19mm = (3900 sy)(0.083 tons/sy) = 324 tons

Wt 25mm = (3900 sy)(0.25 tons/sy) = 975 tons

Wt 12" GAB = (3900 sy)(0.50 tons/sy) = 1950 tons

Proposed Change

Paved Shoulder Area = (5400 lf)(4 lf) = 21,600 sf = 2400 sy

Wt 12.5mm = (2400 sy)(0.062 tons/sy) = 149 tons

Wt 19mm = (2400 sy)(0.083 tons/sy) = 199 tons

Wt 25mm = (2400 sy)(0.25 tons/sy) = 600 tons

Wt 12" GAB = (2400 sy)(0.50 tons/sy) = 1200 tons

VALUE ENGINEERING PROPOSAL

PROPOSAL NUMBER: PV-2.1	PAGE NUMBER: 1 of 5
--------------------------------	----------------------------

PROJECT #/PI #:	STP00-1004-00(002) / 631260-
PROJECT TITLE:	SR382 Ext from CR239 to SR5/SR515, Gilmer County

PROPOSAL DESCRIPTION:	REDUCE PAVED SHOULDER WIDTH FROM 6.5 FEET TO 2 FEET ON SR 382 EXTENSION AND CR 239.
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ORIGINAL DESIGN: The original design proposed to install a 6.5 foot wide paved shoulder on the SR 382 extension and CR 239. The 6'-5" foot width provided for installation of rumble strips and 4'-0" width for bike traffic.

PROPOSED CHANGE: The proposed change proposes to install a 2 foot wide paved shoulder on the SR 382 extension and CR 239, and eliminate the 4.0 foot width for bike traffic. This is not an approved/designated bike route.

JUSTIFICATION: The proposed 6.5 foot paved shoulder width provides adequate width for bike traffic. SR 382 is currently designated as a GDOT bike route and requires adequate width shoulders to account for bike traffic. However, SR 382 extension and CR 239 are not on a bike route and do not require additional paved shoulder width.

ADVANTAGES:

- Capital Cost Savings
- Reduced Impervious Area
- Reduces long term maintenance cost

DISADVANTAGES:

- Bike Facilities Not Provided

	INITIAL COST	OPERATING COST	TOTAL LIFE-CYCLE COST
ORIGINAL DESIGN:	\$ 125,794		\$ 125,794
PROPOSED CHANGE:	\$ 38,691		\$ 38,691
SAVINGS:	\$ 87,103		\$ 87,103

COST ESTIMATING WORKSHEET

PROPOSAL NUMBER:	PV-2.1	PAGE NUMBER:	2 of 5
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PROJECT #/PI #:	STP00-1004-00(002) / 631260-
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ORIGINAL DESIGN

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
12.5mm Superpave	1	TN	242	73.07	17,683
19mm Superpave	1	TN	324	62.66	20,302
25mm Superpave	1	TN	975	57.80	56,355
Graded Aggregate Base	1	TN	1950	16.13	31,454
SUBTOTAL – COST TO PRIME					125,794
MARKUP					Incl.
TOTAL CONTRACT COST					125,794

PROPOSED CHANGE

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
12.5mm Superpave	1	TN	74	73.07	5,407
19mm Superpave	1	TN	100	62.66	6,266
25mm Superpave	1	TN	300	57.80	17,340
Graded Aggregate Base	1	TN	600	16.13	9,678
SUBTOTAL – COST TO PRIME					38,691
MARKUP					Incl.
TOTAL CONTRACT COST					38,691

Difference [Original-Proposed] **87,103**

SOURCES

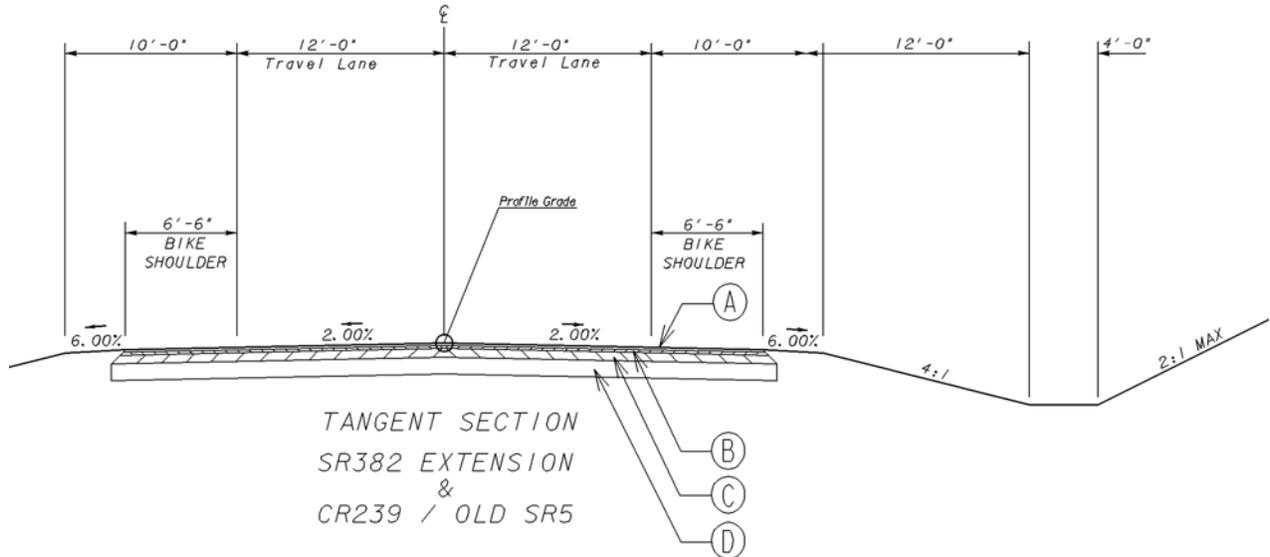
- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Project Cost Estimate 2. USC Estimate Database 3. GDOT Item Mean Summary 4. Means Estimating Manual | <ol style="list-style-type: none"> 5. Richardson's Estimating Manual 6. Vendor (Specify) 7. Other (Specify) |
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ORIGINAL DESIGN SKETCH/DETAIL

PROPOSAL NUMBER: PV-2.1

PAGE NUMBER: 3 of 5

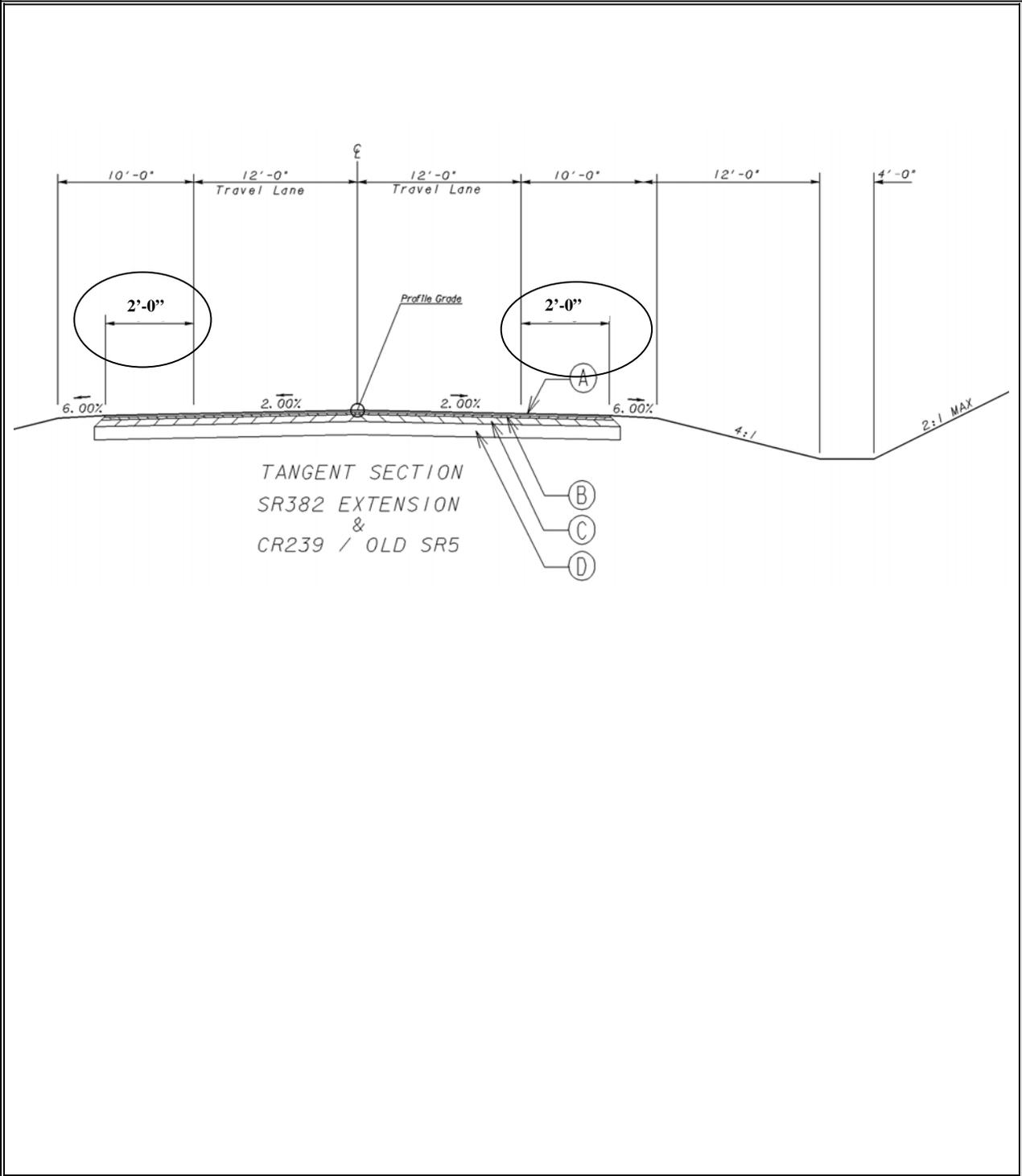
PROJECT #/PI #: STP00-1004-00(002) / 631260-



PROPOSED CHANGE SKETCH/DETAIL

PROPOSAL NUMBER: PV-2.1 **PAGE NUMBER:** 4 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-



CALCULATIONS

PROPOSAL NUMBER: PV-2.1

PAGE NUMBER: 5 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-

Assumptions

- Reduced Paved Shoulder Width for CR 329 and SR 382 Extension Only.

- Pavement Spread Rate

tons/sy per inch thickness = (1 in)(1 ft/12 in)(110 lb/1 cf)(9 sf/1 sy)(1 ton/2000 lb) = 0.04125

1.5" 12.5mm Superpave – 0.062 tons/sy

2" 19mm Superpave – 0.083 tons/sy

6" 25mm Superpave – 0.25 tons/sy

12" Graded Aggregate Base – 0.50 tons/sy

SR 382 Extension Shoulder Length = (2)(55300-53100) = 4400 lf

CR 329 Length = (2)(3300-2800) = 1000 lf

Total Length = 1000 lf + 4400 lf = 5400 lf

Original Design

Paved Shoulder Area = (5400 lf)(6.5 lf) = 35100 sf = 3900 sy

Wt 12.5mm = (3900 sy)(0.062 tons/sy) = 242 tons

Wt 19mm = (3900 sy)(0.083 tons/sy) = 324 tons

Wt 25mm = (3900 sy)(0.25 tons/sy) = 975 tons

Wt 12" GAB = (3900 sy)(0.50 tons/sy) = 1950 tons

Proposed Change

Paved Shoulder Area = (5400 lf)(2 lf) = 10,800 sf = 1200 sy

Wt 12.5mm = (1200 sy)(0.062 tons/sy) = 74 tons

Wt 19mm = (1200 sy)(0.083 tons/sy) = 100 tons

Wt 25mm = (1200 sy)(0.25 tons/sy) = 300 tons

Wt 12" GAB = (1200 sy)(0.50 tons/sy) = 600 tons

VALUE ENGINEERING PROPOSAL

PROPOSAL NUMBER: PV-4.0	PAGE NUMBER: 1 of 5
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PROJECT #/PI #:	STP00-1004-00(002) / 631260-
PROJECT TITLE:	SR382 Ext from CR239 to SR5/SR515, Gilmer County

PROPOSAL DESCRIPTION:	ELIMINATE PAVED AND MARKED MEDIANS AT INTERSECTION OF CR239 AND SR382.
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ORIGINAL DESIGN: The current design widens the road at the intersection of CR 239, SR 382, and new SR382 extension, and installs striped medians for future turn lanes.

PROPOSED CHANGE: The proposed recommendation is to reduce the lane width, bike lanes, and striping at the new intersection.

JUSTIFICATION: These improvements are not warranted for the volume of traffic at this intersection.

ADVANTAGES:

- Provides LOS
- Adequate lane width meets AASHTO
- Reduces capital cost
- Reduces ROW cost

DISADVANTAGES:

- None apparent
- May be required in the future if traffic volumes increase drastically

	INITIAL COST	OPERATING COST	TOTAL LIFE-CYCLE COST
ORIGINAL DESIGN:	\$ 2,023,814		\$ 2,023,814
PROPOSED CHANGE:	\$ 1,922,685		\$ 1,922,685
SAVINGS:	\$ 101,129		\$ 101,129

COST ESTIMATING WORKSHEET

PROPOSAL NUMBER: PV-4.0	PAGE NUMBER: 2 of 5
--------------------------------	----------------------------

PROJECT #/PI #: STP00-1004-00(002) / 631260-

ORIGINAL DESIGN

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Borrow 206-0002	1	CY	88,800	5.45	483,960
402-4510 Asphalt	1	TN	4,347	73.07	317,635
402-3190 Asphalt	1	TN	3,924	62.18	243,994
402-3121 Asphalt	1	TN	11,739	57.39	673,701
310-1101 Aggr Base	1	TN	18,609	15.96	297,000
653-6006 Thermo Striping	1	SY	2,838	2.63	7,464
SUBTOTAL – COST TO PRIME					2,023,814
MARKUP					Incl.
TOTAL CONTRACT COST					2,023,814

PROPOSED CHANGE

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Borrow 206-0002	1	CY	81,147	5.45	442,251
Asphalt 402-4510	1	TN	4,277	73.07	312,519
Asphalt 402-3190	1	TN	3,819	62.18	237,465
Asphalt 402-3121	1	TN	11,599	57.39	665,667
Aggr. Base 310-1101	1	TN	16,543	15.96	264,026
Thermo Striping 653-6006	1	SY	287	2.63	757
SUBTOTAL – COST TO PRIME					1,922,685
MARKUP					Incl.
TOTAL CONTRACT COST					1,922,685

Difference [Original-Proposed] **101,129**

SOURCES

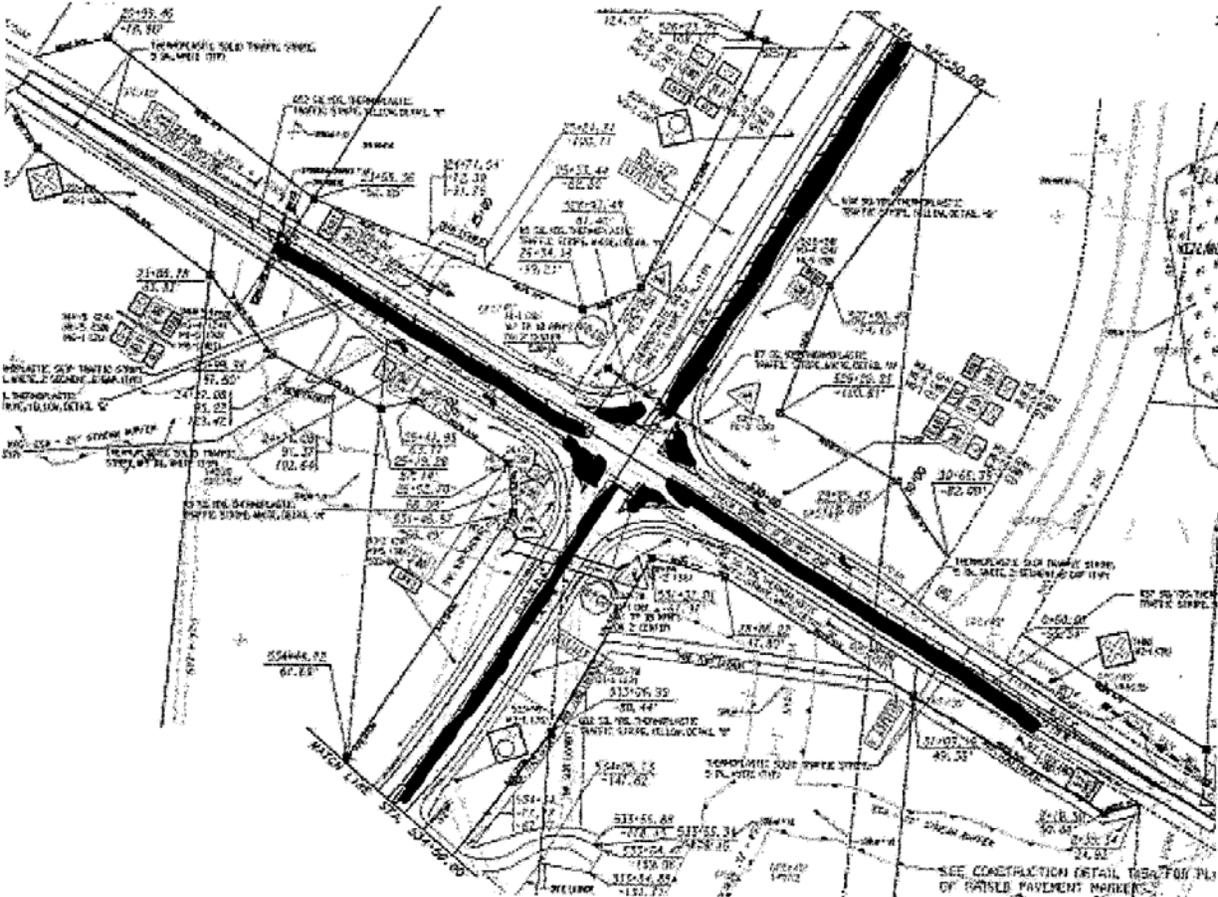
- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Project Cost Estimate 2. USC Estimate Database 3. GDOT Item Mean Summary 4. Means Estimating Manual | <ol style="list-style-type: none"> 5. Richardson's Estimating Manual 6. Vendor (Specify) 7. Other (Specify) |
|---|--|

PROPOSED DESIGN SKETCH/DETAIL

PROPOSAL NUMBER: PV-4.0

PAGE NUMBER: 4 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-



Proposed Change:

Reduce Median Width, Eliminate Striping Turnouts, Earthwork, ROW

CALCULATIONS

PROPOSAL NUMBER: PV-4.0

PAGE NUMBER: 5 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-

Quantity Reductions

From signing and marking sheet 26-3

$$652 \text{ SY} + 630 \text{ SY} + 632 \text{ SY} + 637 \text{ SY} = 2551 \text{ SY}$$

653-6006 = 2551 SY Striping reduction

206-0002 = 7653 CY Borrow reduction

310-1101 = 2066 TN Aggr Base reduction

ASPHALT CALCS 2551 SY X 110 #/SY in. X THICKNESS/2000= TN

Asphalt reductions

402-4510 = 70.15 TN

402-3190 = 105.28 TN

402-3121 = 140.30 TN

VALUE ENGINEERING PROPOSAL

PROPOSAL NUMBER: PV-6.0	PAGE NUMBER: 1 of 5
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PROJECT #/PI #:	STP00-1004-00(002) / 631260-
PROJECT TITLE:	SR382 Ext from CR239 to SR5/SR515, Gilmer County

PROPOSAL DESCRIPTION: ELIMINATE THE EXTENSION OF SR 382 TO SR 515 (MAJOR SCOPE CHANGE) BY MAKING IMPROVEMENTS TO SR 382 AND SR 515 APPROXIMATELY 1.5 MILES TO THE SOUTH.

ORIGINAL DESIGN: The current design realigns existing SR 382 and provides a new extension to SR 382 to SR 515. This creates a new intersection with CR 239, SR 382 and the new extension of SR 382 to SR5/515.

PROPOSED CHANGE: The proposed recommendation is to eliminate this extension and replace movement with turn lane improvements further south on SR 382 (approximately 1.5 mile) at existing SR 515 intersection.

JUSTIFICATION: Provides traffic movements without major construction. Changes the entire scope of work from a major project to a minor project.

ADVANTAGES:

- Meets AASHTO
- Provides cost savings
- Less community disruption
- Reduces ROW impacts

DISADVANTAGES:

- Cancels extension of SR 382 to SR 515

	INITIAL COST	OPERATING COST	TOTAL LIFE-CYCLE COST
ORIGINAL DESIGN:	\$ 7,649,089		\$ 7,649,089
PROPOSED CHANGE:	\$ 3,397,091		\$ 3,397,091
SAVINGS:	\$ 4,251,998		\$ 4,251,998

COST ESTIMATING WORKSHEET

PROPOSAL NUMBER:	PV-6.0	PAGE NUMBER:	2 of 5
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PROJECT #/PI #:	STP00-1004-00(002) / 631260-
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ORIGINAL DESIGN

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
TOTAL PROJECT COST	1				7,649,089
SUBTOTAL – COST TO PRIME					7,649,089
MARKUP					Incl.
TOTAL CONTRACT COST					7,649,089

PROPOSED CHANGE

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
relocation as proposed of SR 382 to CR 239	1				3,359,089
Turn lane construction 1.6 miles south	1	Varies-see calculations			+38,002
SUBTOTAL – COST TO PRIME					3,397,091
MARKUP					Incl.
TOTAL CONTRACT COST					3,397,091

Difference [Original-Proposed] **4,251,998**

SOURCES

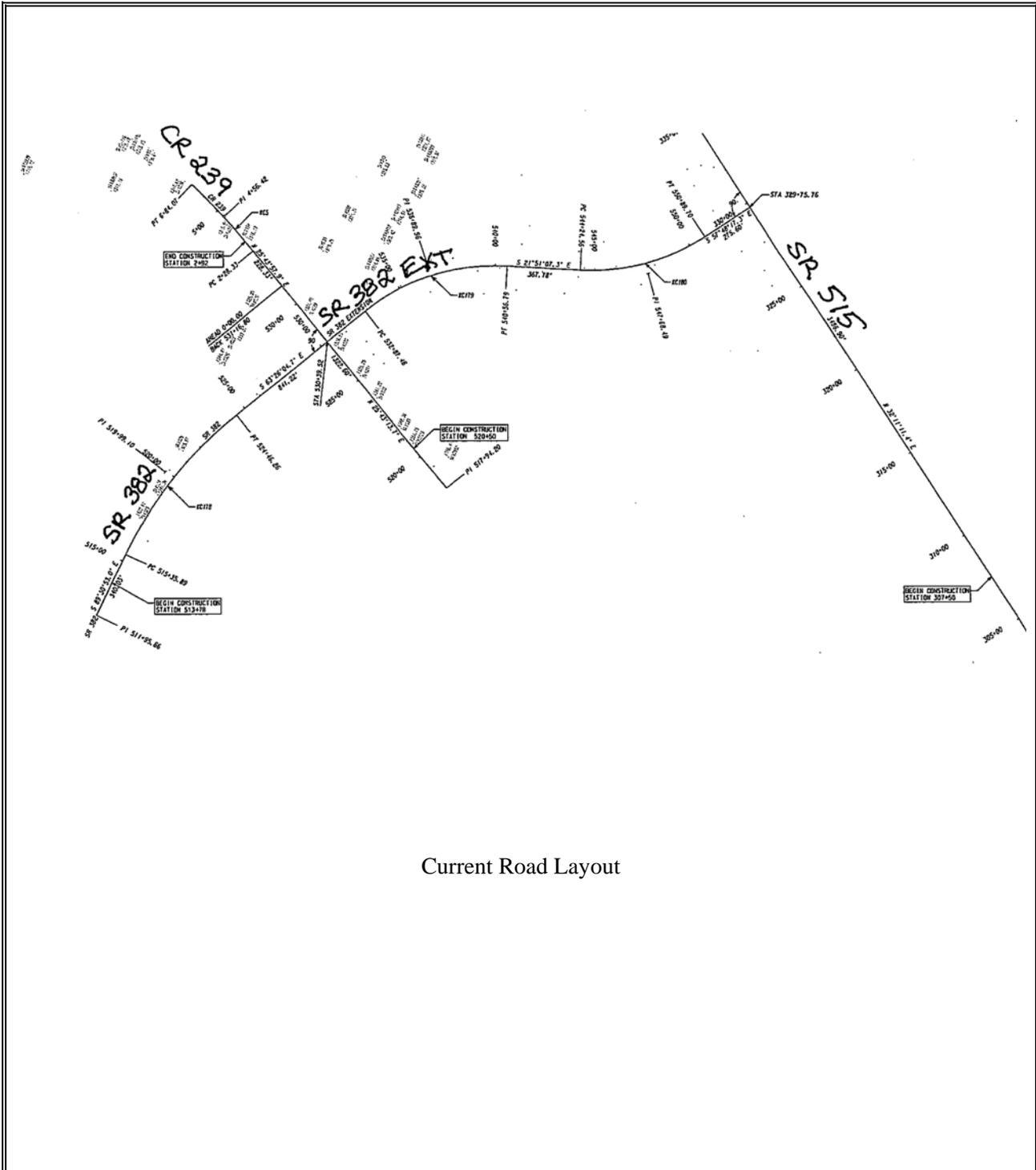
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|---|--|
| <ol style="list-style-type: none"> 1. Project Cost Estimate 2. USC Estimate Database 3. GDOT Item Mean Summary 4. Means Estimating Manual | <ol style="list-style-type: none"> 5. Richardson's Estimating Manual 6. Vendor (Specify) 7. Other (Specify) |
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ORIGINAL DESIGN SKETCH/DETAIL

PROPOSAL NUMBER: PV-6.0

PAGE NUMBER: 3 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-



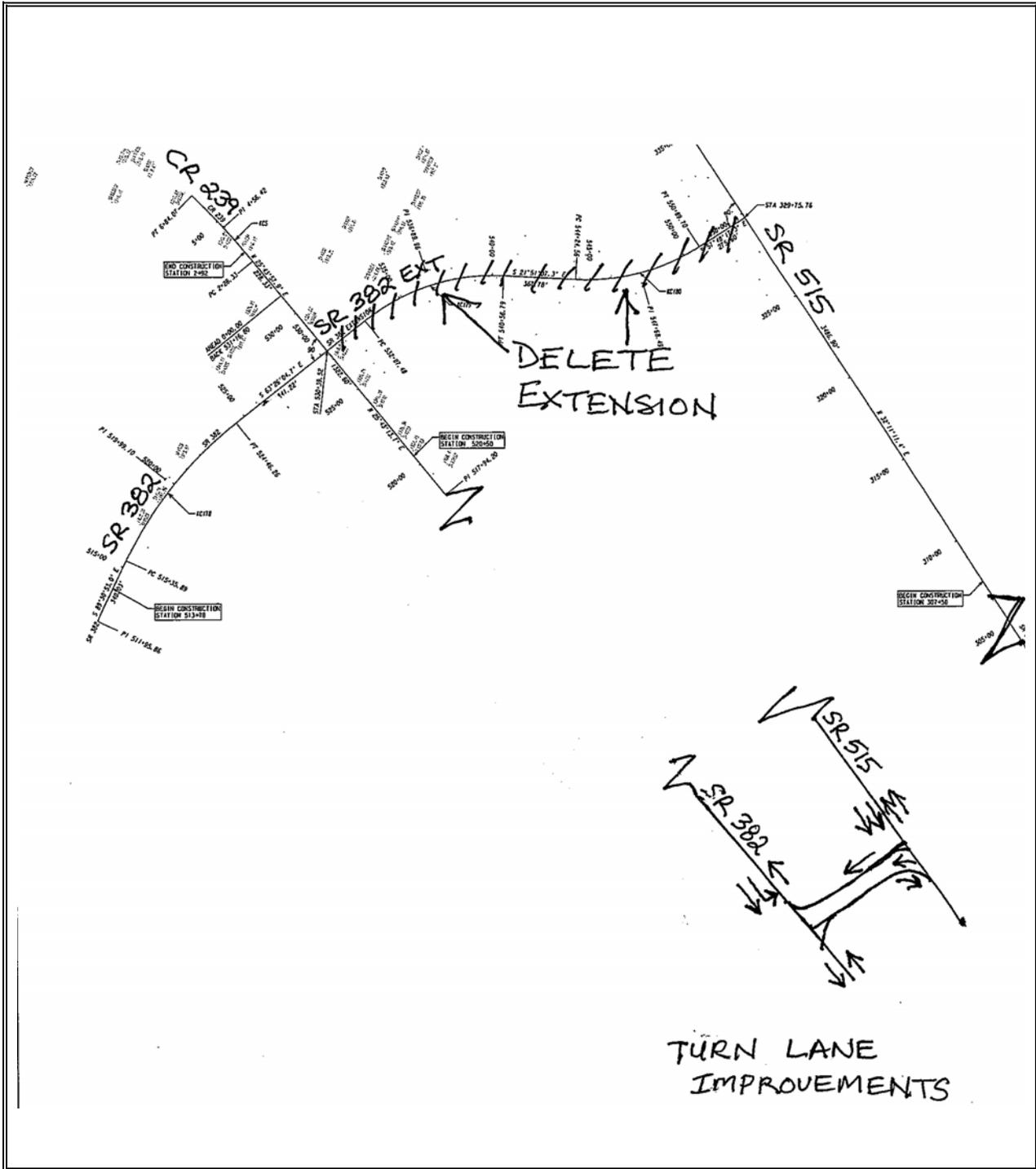
Current Road Layout

PROPOSED CHANGE SKETCH/DETAIL

PROPOSAL NUMBER: PV-6.0

PAGE NUMBER: 4 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-



CALCULATIONS

PROPOSAL NUMBER: PV-6.0

PAGE NUMBER: 5 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-

Total Estimated project cost = \$7,649,089

Total estimated. cost/total length x SR 382 extension length = reduction

Extension Cost:

$\$7,649,089/3922 = \$1950/\text{LF} \times 2200 \text{ LF} = \$4,290,000.$

Relocation Cost:

$\$7,649,089 - \$4,290,000 = \$3,359,089$

TURN LANE CONSTRUCTION

Borrow + aggr. Base + Paving + markings= turn lane (existing ROW)

Borrow = $550 \text{ LF} \times 12 \text{ FT lane} \times 5 \text{ ft. embankment} / 27 = 1222 \text{ cy} @ \$5.45/\text{cy} = \$6660.$

Aggr. Base = $550 \times 12 \times 1 \times 135 \text{ pcf} / 2000 = 445.5 \text{ TN} @ \$15.96 / \text{TN} = \$7710.$

Asphalt = $(\text{thickness} \times 110 \text{ \#/syi} \times (550 \times 12 / 9)) / 2000 = \text{TN}$

Item 402-4510 = $60 \text{ TN} @ \$73.07 = \4384

Item 402-3190 = $80 \text{ TN} @ \$62.18 = \4374

Item 402-3121 = $240 \text{ TN} @ \$57.39 = \13874

Markings 1000 lf edge/lane lines @ $\$0.30/\text{lf} = \$300.$

VALUE ENGINEERING PROPOSAL

PROPOSAL NUMBER: PV-6.1	PAGE NUMBER: 1 of 5
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PROJECT #/PI #:	STP00-1004-00(002) / 631260-
PROJECT TITLE:	SR382 Ext from CR239 to SR5/SR515, Gilmer County

PROPOSAL DESCRIPTION: ELIMINATE THE RELOCATION AND EXTENSION OF SR 382 TO SR 515 (MAJOR SCOPE CHANGE) BY MAKING IMPROVEMENTS TO SR 382 AND SR 515 APPROXIMATELY 1.5 MILES TO THE SOUTH.

ORIGINAL DESIGN: The current design is to relocate SR 382 South of the existing location where it intersects with CR 239.

PROPOSED CHANGE: The proposed recommendation is to eliminate the relocation and replace movement with turn lane improvements further south on SR 382 at existing SR 515 intersection.

JUSTIFICATION: If the improvements for connecting to SR-515 are accepted then the relocation/realignment of existing SR 382 is not required.

ADVANTAGES:

- Meets AASHTO
- Provides cost savings
- Less community disruption
- Reduces ROW impacts
- Reduces maintaining new SR 382

DISADVANTAGES:

- A longer distance for commuters to merge onto SR 515
- May have to make some improvements to existing SR 382 heading South to the connection of SR 515

	INITIAL COST	OPERATING COST	TOTAL LIFE-CYCLE COST
ORIGINAL DESIGN:	\$ 7,649,089		\$ 7,649,089
PROPOSED CHANGE:	\$ 38,002		\$ 38,002
SAVINGS:	\$ 7,611,087		\$ 7,611,087

COST ESTIMATING WORKSHEET

PROPOSAL NUMBER:	PV-6.1	PAGE NUMBER:	2 of 5
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PROJECT #/PI #:	STP00-1004-00(002) / 631260-
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ORIGINAL DESIGN

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
TOTAL PROJECT COST	1				7,649,089
SUBTOTAL – COST TO PRIME					7,649,089
MARKUP					Incl.
TOTAL CONTRACT COST					7,649,089

PROPOSED CHANGE

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Turn lane construction 1.6 miles south	1	Varies-see calculations			38,002
SUBTOTAL – COST TO PRIME					38,002
MARKUP					Incl.
TOTAL CONTRACT COST					38,002

Difference [Original-Proposed] **7,611,087**

SOURCES

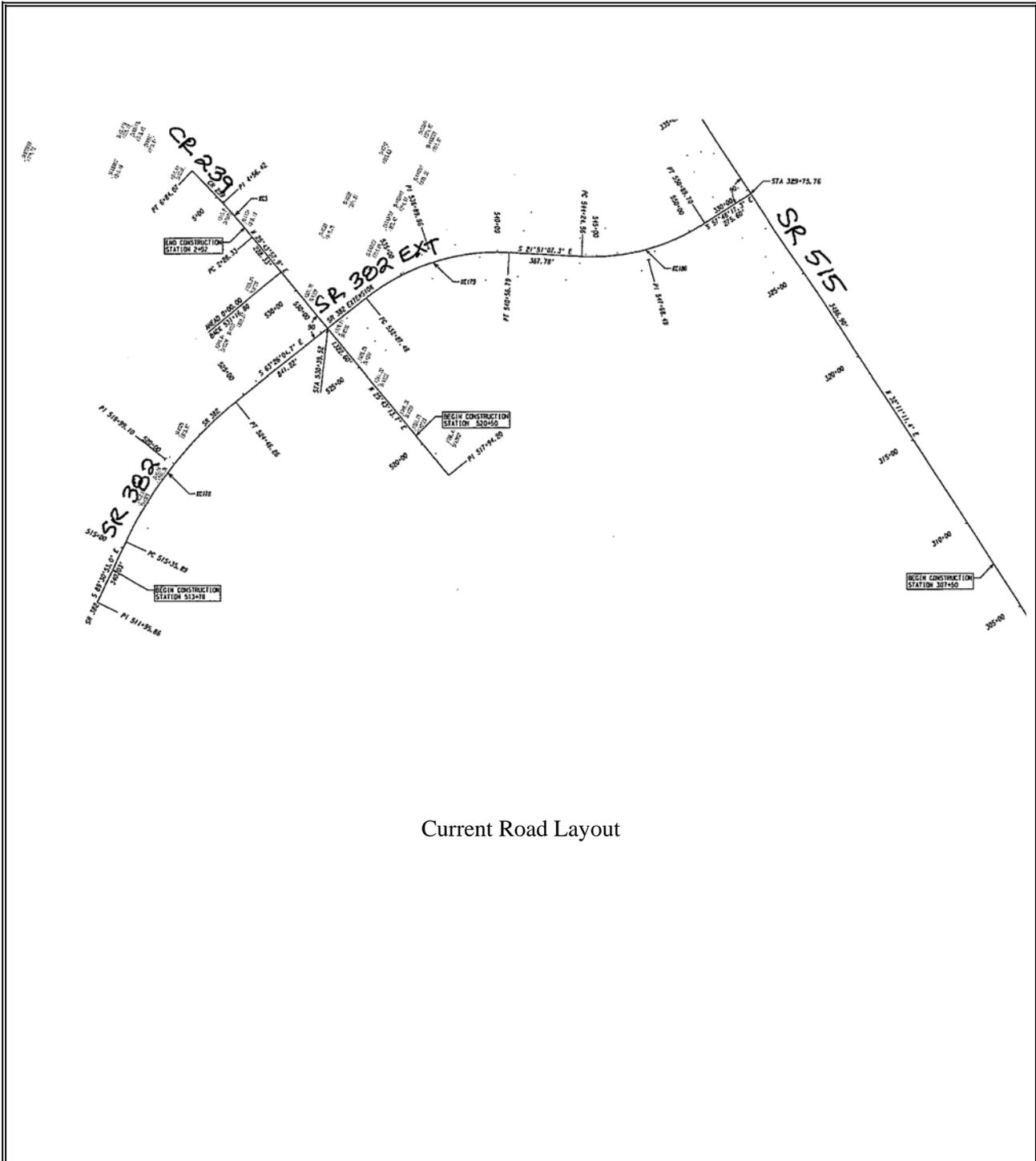
- | | |
|---|--|
| <ul style="list-style-type: none"> 1. Project Cost Estimate 2. USC Estimate Database 3. GDOT Item Mean Summary 4. Means Estimating Manual | <ul style="list-style-type: none"> 5. Richardson's Estimating Manual 6. Vendor (Specify) 7. Other (Specify) |
|---|--|

ORIGINAL DESIGN SKETCH/DETAIL

PROPOSAL NUMBER: PV-6.1

PAGE NUMBER: 3 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-



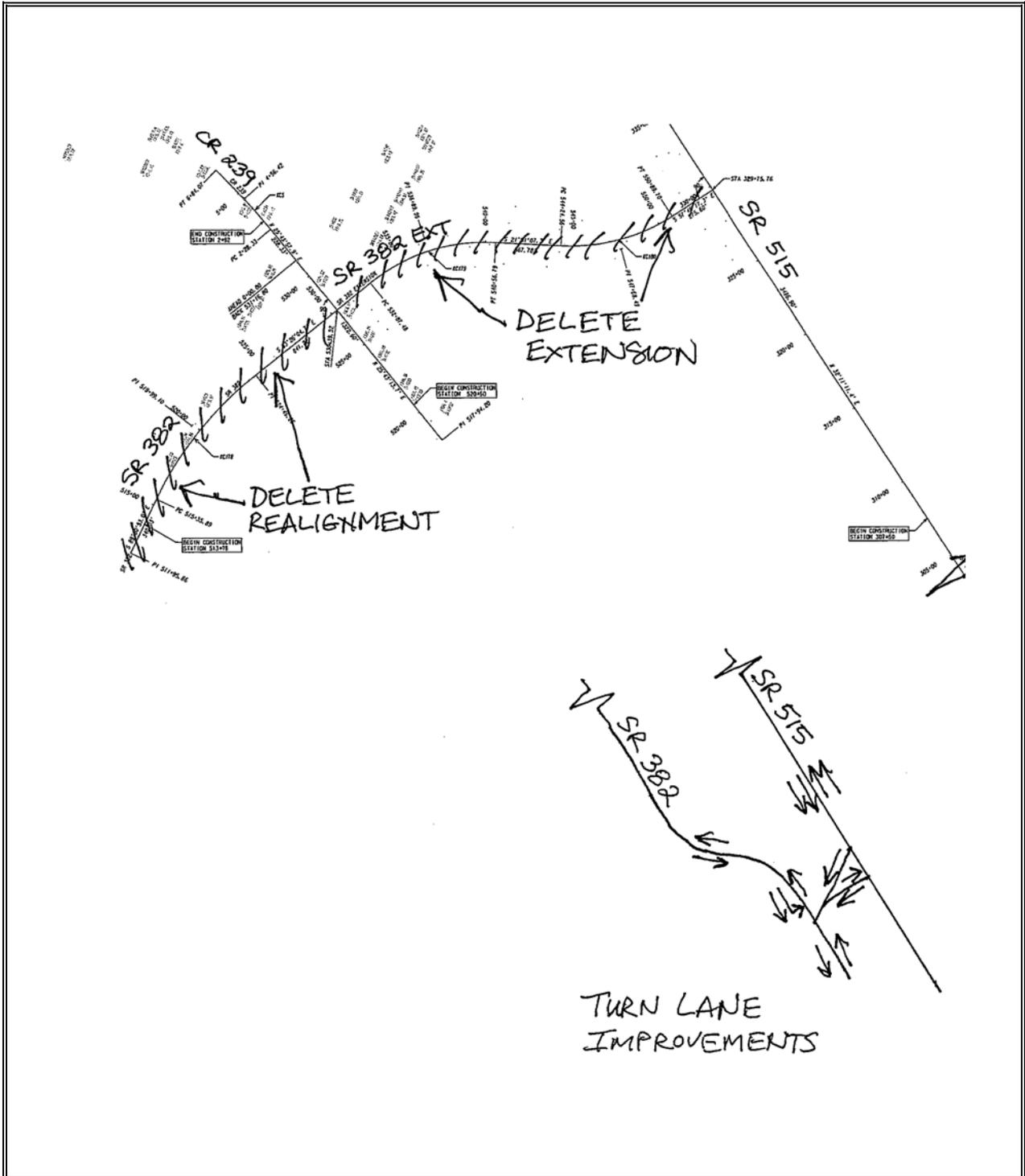
Current Road Layout

PROPOSED CHANGE SKETCH/DETAIL

PROPOSAL NUMBER: PV-6.1

PAGE NUMBER: 4 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-



CALCULATIONS

PROPOSAL NUMBER: PV-6.1

PAGE NUMBER: 5 of 5

PROJECT #/PI #: STP00-1004-00(002) / 631260-

Original Total Estimated Project cost = \$7,649,089 (including ROW, utilities)

TURN LANE CONSTRUCTION

Borrow + aggr. Base + Paving + markings= turn lane (existing ROW)

Borrow = 550 LF X 12 FT lane X 5 ft. embankment /27 = 1222 cy @\$5.45/cy = \$6660.

Aggr. Base = 550x12x1x135 pcf/2000 = 445.5 TN @ \$15.96 /TN = \$7710.

Asphalt = (thickness x 110 #/syi x (550x12/9))/2000 = TN

Item 402-4510 = 60 TN @ \$73.07 = \$4384

Item 402-3190 = 80 TN @ \$62.18 = \$4374

Item 402-3121 = 240 TN @ \$57.39 = \$13874

Markings 1000 lf edge/lane lines @ \$0.30/lf = \$300.

Signs = \$700.

Total = \$38002

VALUE ENGINEERING STUDY

FUNCTION ANALYSIS

The following functions for the Extension of SR 382 to SR 515 from CR 239 project were identified during discussions with the VE participants on the first day of the study. These two-word functions consist of an active verb, and a quantifiable (measurable) noun. The functions represent the proposed capital improvement expenditures of the project, and assist the V.E. team in becoming familiar with the needs and long-term goals for the project. The Basic Function of the project is to “Upgrade Corridor”. The following are considered by the V.E. team to be Secondary and Supporting Functions.

VERB	NOUN		VERB	NOUN
Reduce	Delays		Purchase	ROW
Collect	Stormwater		Install	Signage
Install	Buffers		Excavate	Unclassified Material
Maintain	Traffic		Purchase	Fill Material
Extend	SR 382		Control	Erosion
Award	Contract		Improve	Sight Distance
Support	Vehicles		Support	Trucks
Eliminate	Turnaround's		Control	Traffic
Re-establish	Vegetation		Maintain	Intersection Elevation
Excavate	Earthwork		Establish	Slopes
Install	Base-course		Upgrade	Intersection
Replace	Driveways		Install	Guardrails
Install	Rumble Strips		Stabilize	Slopes (new)
Connect	To SR-515		Clear	Site
Reduce	Impacts		Install	Fences

VALUE ENGINEERING STUDY

COST MODEL/DISTRIBUTION

**SR382 Ext from CR239 to SR5/SR515 New APD Corridor
Gilmer County**

TOTAL PROJECT	ITEM	COST \$	% OF TOTAL
-			
	RIGHT OF WAY (ROW)	2,930,000	37.55%
	UNCLSS EXCAVATION	1,179,105	15.11%
	UTILITIES	850,000	10.89%
	RECYCLE AC (25 MM)	609,446	7.81%
	BORROW EXCAVATION, INCL MATERIAL	484,450	6.21%
	RECYCLE AC 12.5MM SP, GP2 ONLY INCL P-MBM 7 HL	317,646	4.07%
	RECYL AC 12.5MM SP, GP2, BM&HL	277,662	3.56%
	GRAVEL AGGERGATE BASE, INCL MATERIAL	260,748	3.34%
	RECYCLE AC (19MM) SP, GP1,OR 2 INCL BM&HL	220,265	2.82%
	CLASS A CONCRETE & REBAR	116,246	1.49%
	CLEARING AND GRUBBING	105,000	1.35%
	GUARD RAIL AND ANCHORAGE (TP1 & TP12)	60,402	0.77%
	FIELD ENGINEERS OFFICE TP3	58,721	0.75%
	DROP INLETS, END SECTIONS, MANHOLES, FLARED ENDS	52,929	0.68%
	SED TRAP, SED BASIN, ROCK EMBANK, RIP RAP	51,753	0.66%
	NEW DRIVEWAYS 6" & 8" & CONC DRAIN, CONC PAVE DITCH	41,007	0.53%
	STORM PIPING	40,772	0.52%
	STRIPING-SOLID, THERMO, RAISED MARKERS, ARROW	37,251	0.48%
	MILLED ASPHALT CONC PAVEMENT - VARB DEPTH	34,068	0.44%
	TRAFFIC CONTROL	32,286	0.41%
	MISC RUMB STRIPS, SIGNS & ETC.	30,299	0.39%
	GRASSING, MULCH, LIQUID LIME, AGRICLTURAL LIME	12,919	0.17%
TOTAL - PROJECT (\$ / MILE)	.00/SF)	7,802,975	100.00%

VALUE ENGINEERING STUDY

BRAINSTORMING OR SPECULATION IDEAS

PROJECT TITLE: EXTENSION OF SR 382 TO SR 515

PROJECT LOCATION: GILMER COUNTY, GEORGIA

NO.	IDEA	RANK
	EARTHWORK (EW)	
1.0	Install GEOGRID reinforcement to increase front slopes and back slopes	Drop
2.0	Revise profiles to reduce the cubic yards that may closely balance cut and fill on SR382 extension to SR 515 - Reduce the ROW width on SR 382 extension to SR 515 from 300' wide to ± 200' wide (increases slide slopes in deep cuts)	5
3.0	Revise/reduce break over grades at intersection of SR515 and CR239 (this may increase cost)	5 Increase excavation
4.0	Change/Use 6:1 front slopes and ilo of 4:1 for drainage ditches	
5.0	Construct or install retaining walls to reduce large slopes in various locations on the SR 382 extension to SR 515 (mountain area)	Drop to expensive
6.0	dropped	
7.0	Install electronic signal at reworked intersection	See Design Review
8.0	Re-classify the site as mountainous	5
9.0	Require/investigate ROW easement from break point and permanent easement beyond	4
10.0	Design for a 45mph speed limit on SR-392 Extension to SR 5/515	See Design Comments
	PAVEMENT (PV)	
1.0	Provide different shoulder pavement thickness ilo of full road depth	Drop GDOT criteria
2.0	Reduce paved shoulder width from 6' – 6" to 4'-0" on SR 382 extension to SR 515 and CR 239	
2.1	Reduce pave shoulder width from 6'-6" to 2'-0" on SR 382 extension to SR 515 and CR 239	
3.0	Eliminate bike lane designation for SR 382 extension to SR 515 – this area is not designated as a bike lane	
4.0	Eliminate paved and marked medians at intersection of CR 239 and SR 382	
5.0	Reduce lane width from 12'-0" to 11'-0" for SR 382 extension to SR – 515 since traffic will be 50 mph or less	
6.0	Eliminate the extending SR 382 to SR -515 (major scope change) by making improvements (easy merging) to SR 515 and SR 382 approximately 1.6 miles to the south.	

VALUE ENGINEERING WORKSHOP AGENDA

For GEORGIA DEPARTMENT OF TRANSPORTATION

**Project #: STP00-1004-00(002) - PI#: 631260-
SR382 Ext from CR239 to SR5/SR515 New APD Corridor, Gilmer County**

28 HOUR - V.E. STUDY

14-17 November 2011

The value engineering workshop for the subject project will be conducted for 3-1/2 days from 14-17 November 2011, **in the Engineering Services Conference Room (5CR1L2) on the 5th floor of the GDOT General Office Facility located at 600 W. Peachtree Street NW, Atlanta GA 30308; POC – Matt Sanders @ (404)631-1752 voice**

Pre-workshop Activities

The V.E. Team Leader coordinates logistics with GDOT, and confirms project objectives and any unique requests, and develops a cost model for the project. The V.E. Team receives and reviews all project documents.

MONDAY

0800 - 0900

V.E. Team Introduction Phase

Lindsey Gardner, P.E., CVS
Team Leader, U.S. Cost, Inc.
(V.E. Team Only)

The VETL will review previous events along with activities planned for the week and outline several areas which may be investigated by the V.E. team.

The team members will discuss their initial impression and understanding of the project with other team members based on their pre-study review of the project plans, cost estimates, and available calculations. The V.E. Team Leader will provide cost models, and cost bar graphs to help the team identify the high-cost features of the project.

0900 - 1100

Project Design Briefing

V.E. Team; A/E, GDOT

The A/E project design manager will discuss the project constraints/requirements and the proposed design solution(s) in detail. The V.E. team members will ask questions as appropriate to completely understand the project requirements and the proposed design solution (both alternatives considered and those recommended by the design team).

MONDAY (CONTINUED)

1100 - 1200 **Function Analysis Phase** V.E. Team

The V.E. team will discuss the required functions of the project. The project cost model will be analyzed to identify functions provided by all project features.

1200 - 1300 **Lunch**

1300 - 1600 **Creative Phase** V.E. Team

The V.E. team will creatively review, Brainstorm, and tabulate possible design alternatives for the project. While the designer's solution will serve as the "baseline", the team will identify alternatives not in the recommended solution, but deserving of further investigation. Each project feature will be carefully analyzed with the basic questions in mind:

What is the system/item?

What does it do (what is its basic function)?

What must it do?

What does it cost?

What is the item worth?

What else will do the same, or a better job?

What does that alternative cost?

During the creative phase, the team will not judge the ideas. The essential requirements for the project, however, must always be considered.

1600 - 1700 **Analysis Phase** V.E. Team

During this phase, all of the ideas or alternatives will be ranked according to their potential for life-cycle (25-year) cost reduction and the potential for acceptance by GDOT, Engineering Designers, and other appropriate parties.

TUESDAY
0800 - 1700

Development Phase

V.E. Team

During the development phase, each team member will gather information and prepare written proposals for those ideas assigned to him/her. These may require additional discussions with the designer, GDOT representatives, outside contractors and suppliers, and other specialists to fully define the alternative. The team members will prepare sketches, perform calculations and develop other data to support each proposal. In addition, each team member will prepare estimates of costs for each alternative as originally designed, and as proposed by the V.E. team.

WEDNESDAY
0800 - 1200

Development Phase

V.E. Team

1200 - 1300

Lunch

1300 - 1700

Development Phase & Quality Review

V.E. Team

THURSDAY

8:00 – 9:00

Prepare for Presentation

V.E. Team

9:00 – 10:00

V.E. Presentation

V.E. Team Members, Design Team & GDOT Reps

The Value Engineering Team will present the proposals developed in the course of the study to the design team representatives and any participating stakeholders. The intent of the presentation is to give a clear understanding of the basis of the proposals rather than to reach a conclusion as to their acceptability. A summary table of results will be distributed at the presentation. The formal V.E. Reports will be issued within 8 business days of the workshop conclusion.

10:00 – 12:00

V.E. Team Wrap-up & Final QC/QA

V.E. Team Members only

The Value Engineering Team will have a wrap-up session consisting of a final review of proposals to ensure consistency and clarity of content.