

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

**OFFICE OF DESIGN POLICY & SUPPORT
INTERDEPARTMENTAL CORRESPONDENCE**

FILE P.I. #0006049 **OFFICE** Design Policy & Support
CSSTP-0006-00(049)
Cobb & Paulding Counties **DATE** April 30, 2010
SR 360 From SR 120/Paulding to New
Macland Rd/Cobb

FROM  Brent Story, State Design Policy Engineer

TO SEE DISTRIBUTION

SUBJECT APPROVED REVISED CONCEPT REPORT

Attached is the approved Revised Concept Report for the above subject project.

Attachment

DISTRIBUTION:

Genetha Rice-Singleton, Program Control Administrator
Ron Wishon, State Project Review Engineer
Glenn Bowman, State Environmental Administrator
Ken Thompson, Statewide Location Bureau Chief
Michael Henry, Systems & Classification Branch Chief
Keith Golden, State Traffic Operations Engineer
Angela Alexander, State Transportation Planning Administrator
Paul Liles, State Bridge Engineer
Bobby Hilliard, State Program Delivery Engineer
Angela Robinson, Financial Management Administrator
Jeff Baker, State Utilities Engineer
Kerry Bonner, Cartersville District Utilities Engineer
Jonathan Walker, Chamblee District Utilities Engineer
DeWayne Comer, Cartersville District Preconstruction Engineer
Mike Lobdell, Chamblee District Preconstruction Engineer
Kent Sager, Cartersville District Engineer
Bryant Poole, Chamblee District Engineer
Chandria Brown, Project Manager
BOARD MEMBER

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

REVISED PROJECT CONCEPT REPORT

Project Number: CSSTP-0006-00(049)
County: Cobb, Paulding
P. I. Number: 0006049
Federal Route Number: N/A
State Route Number: 360

The proposed changes to the approved concept would be revisions to the typical section and the project length. The typical section would be revised from a 24' raised median width to a 20' raised median width per Value Engineering Implementation. The project length would be revised from 5.8 miles to 6.2 miles to account for the tie-in tapers at the project beginning and end.

Submitted for approval:

DATE 01/07/2010

Ken McDuff, P.E. – Mulkey Engineers & Consultants
Design Consultant Name and Firm Name

DATE 01/07/2010

Bobby Hulhaed
Office Head – State Program Delivery Engineer

DATE 01/07/2010

Chandrin L. Brown
Project Manager – Office of Program Delivery

Recommendation for approval:

DATE 03/30/2010

Glenn Bowman / DRP*
State Environmental Administrator

DATE 04/07/2010

Paul Liles, Jr. / DRP*
State Bridge Design Engineer

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Program (RTP) and/or the State Transportation Improvement Program (STIP).

DATE 02/24/2010

Angela Alexander / DRP*
State Transportation Planning Administrator

* Recommendation on file

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE P.I. No. 0006049, Cobb-Paulding Counties OFFICE: Program Delivery
CSSTP-0006-00(049) SR 360 Widening and Reconstruction DATE: January 5, 2010

FROM: Bobby Hilliard, State Program Delivery Engineer *B.H.*

TO: Brent A. Story, State Design Policy Engineer
Attn: Dave Peters

SUBJECT Revised Project Concept Report

Attached is the original copy of the Revised Concept Report for your further handling for approval in accordance with the Plan Development Process (PDP).

The proposed changes to the approved concept are revisions to the typical section and the project length. The typical section will be revised from a 24' raised median width to a 20' raised median width per Value Engineering Implementation. The project length is revised from 5.8 miles to 6.2 miles to account for the tie-in tapers at the project beginning and end.

The revised concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Program (RTP) and/or the State Transportation Improvement Program (STIP).

DATE 2/25/10

S.H.

Distribution:



State Transportation Planning Administrator

Genetha Rice-Singleton, Program Control Administrator
Glenn Bowman, State Environmental Administrator
Keith Golden, Traffic Operations Engineer
Brian Summers, Project Review Engineer
Kent Sager, District 6 Engineer
Bryant Poole, District 7 Engineer
Paul Liles, State Bridge Design Engineer
Angela Robinson, State Transportation Financial Management Administrator
Angela Alexander, State Transportation Planning Administrator

REVISED PROJECT CONCEPT REPORT

Need and Purpose:

Need

This corridor is experiencing decreasing levels of service (LOS) due to increases in traffic volumes. The increase in traffic is generated from development along SR 360 and many urban collector and arterial streets as well as urban and rural local streets that connect to the corridor. Recent developments include several residential neighborhoods and commercial establishments that correspond to the increasingly suburbanized nature of the once rural landscape. Additionally, SR 360 links important routes, two sizeable cities, and several smaller communities. Improvements are needed to increase the existing capacity and improve operational deficiencies including:

- substandard capacity for existing and predicted traffic volumes;
- substandard horizontal and vertical geometry that create hazardous sight-distance problems;
- numerous side streets, driveways, and shopping center intersections without turn lanes that cause frequent stops in traffic flow.

Purpose

The purpose of this project is to enhance mobility along the SR 360 corridor to accommodate traffic generated by residential and commercial growth in Cobb and Paulding Counties, and to improve access between Dallas and Marietta. The transportation solution could also correct existing operational deficiencies, improve safety, and improve access to numerous side streets and driveways that cause frequent stops in traffic flow.

Project location:

The total project length is approximately 6.2 miles. In Paulding County, the proposed project corridor is approximately 3.1 miles in length and the corridor is approximately 3.1 miles in length in Cobb County. The Paulding County beginning mile log is 1.18 (at the SR 360/SR 120 intersection) and the ending mile log is 4.06. The Cobb County beginning mile log is 0 and the ending mile log is 2.92 (at the SR 360/SR 176 intersection).

Revised Concept Report
Project Number: CSSTP-0006-00(049)
P.I. Number: 0006049
County: Cobb, Paulding
Page 3

Description of the approved concept:

The proposed project consists of the reconstruction and widening of SR 360/Maclang Road from SR 120 in Paulding County to SR 176/New Maclang Road in Cobb County for an approximate distance of 5.8 miles (see location map). The Paulding County beginning mile log is 1.18 and the ending mile log is 4.06. The Cobb County beginning mile log is 0 and the ending mile log is 2.92. The proposed typical section will consist of four 12-foot lanes (two lanes in each direction) with curb & gutter and sidewalks (urban shoulders) and a 24' raised median. The proposed design speed is 45 mph. Some areas may require varying right-of-way widths to avoid or minimize impacts. The proposed right-of-way will be approximately 150 feet. The existing triple box culvert (10'W X 9'H) carrying Powder Springs Creek will be replaced with a bridge. The culvert currently shows scour problems as well as a collapse of one of the wing walls due to undermining. Although repairs have been made they are also beginning to deteriorate due to additional scouring. Replacement of the culvert with a bridge will eliminate the scour problem and continued maintenance problem.

PDP Classification: Major X Minor _____

Federal Oversight: Full Oversight (), Exempt (X), State Funded (), or Other ()

Functional Classification: Urban Minor Arterial

U. S. Route Number(s): N/A **State Route Number(s):** 360

Traffic (AADT) as shown in the approved concept:

Base Year: 24,500 (2012) Design Year: 43,000 (2032)

Updated Traffic (AADT):

Base Year: 28,538 (2012) Design Year: 42,428 (2032)

Approved Programmed/Schedule:

P.E. 1996 R/W: LR Construction: LR

VE Study Required Yes (X) No ()

VE Study was held February 12-15, 2008

Benefit/Cost Ratio 21.32

Revised Concept Report

Project Number: CSSTP-0006-00(049)

P.I. Number: 0006049

County: Cobb, Paulding

Page 4

Is the project located in an Ozone Non-attainment area? Yes (X) No ()

Is the project in a PM2.5 Non-Attainment area? Yes (X) No ()

The proposed project concept is consistent with the conforming plan model description in that SR 360's(Macland Road) proposed widening occurs between its intersections with SR 120/Charles Hardy Pkwy and SR 176/Lost Mountain Road/New Macland Rd. The project does, however, extend west of the SR360/SR 120 intersection and east of the SR 360/SR 176 intersection to tie in to the existing roadway.

<p>Approved Features:</p> <ul style="list-style-type: none">• Typical section: 4 - 12 foot lanes (two lanes in each direction) with a 24' raised median and urban shoulders with sidewalks.• Project termini: The SR 360 corridor extends between SR 120 in Paulding County and SR 176/New Macland Road in Cobb County and has both independent utility and logical termini. The Paulding County beginning mile log is 1.18 and the ending mile log is 4.06. The Cobb County beginning mile log is 0 and the ending mile log is 2.92.	<p>Proposed Features:</p> <ul style="list-style-type: none">• The median width is to be revised to a 20' raised median.• The beginning and the ending termini were extended to account for the tie-ins to the existing roadway at both project ends. This is explained in the Logical Termini section of the Environmental Document. The Paulding County beginning mile log is 1.94 located along CR371/Macland Road. Improvements then continue easterly through the SR 360/SR 120 intersection at mile log 1.18. The Paulding County ending mile log is 4.06 which is located at the Paulding/Cobb County line. The Cobb County beginning mile log is 0 at the Paulding/Cobb County line and improvements continue through the SR360/SR176 intersection, located at mile log 2.92, finally tying back into the existing 4-lane section of SR 360 at Cobb County mile log 3.1.
<p>Reason for Change: Revised median width per Value Engineering Study implementation and length to include tie to existing roadway.</p>	

Updated Cost Estimate	
Construction including Contingencies incl 5% E&I, 4% Contingency, Fuel & Liquid AC	\$37,030,522.00
Fuel Adjustment	\$5,546,537.00
Right-of-Way	\$22,550,000.00
Utilities (reimbursable)	\$1,900,963.00
Utility Contingencies (30%)	\$570,289.00

Recommendation: Recommend that the proposed revision to the concept be approved for implementation.

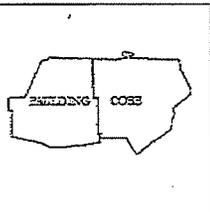
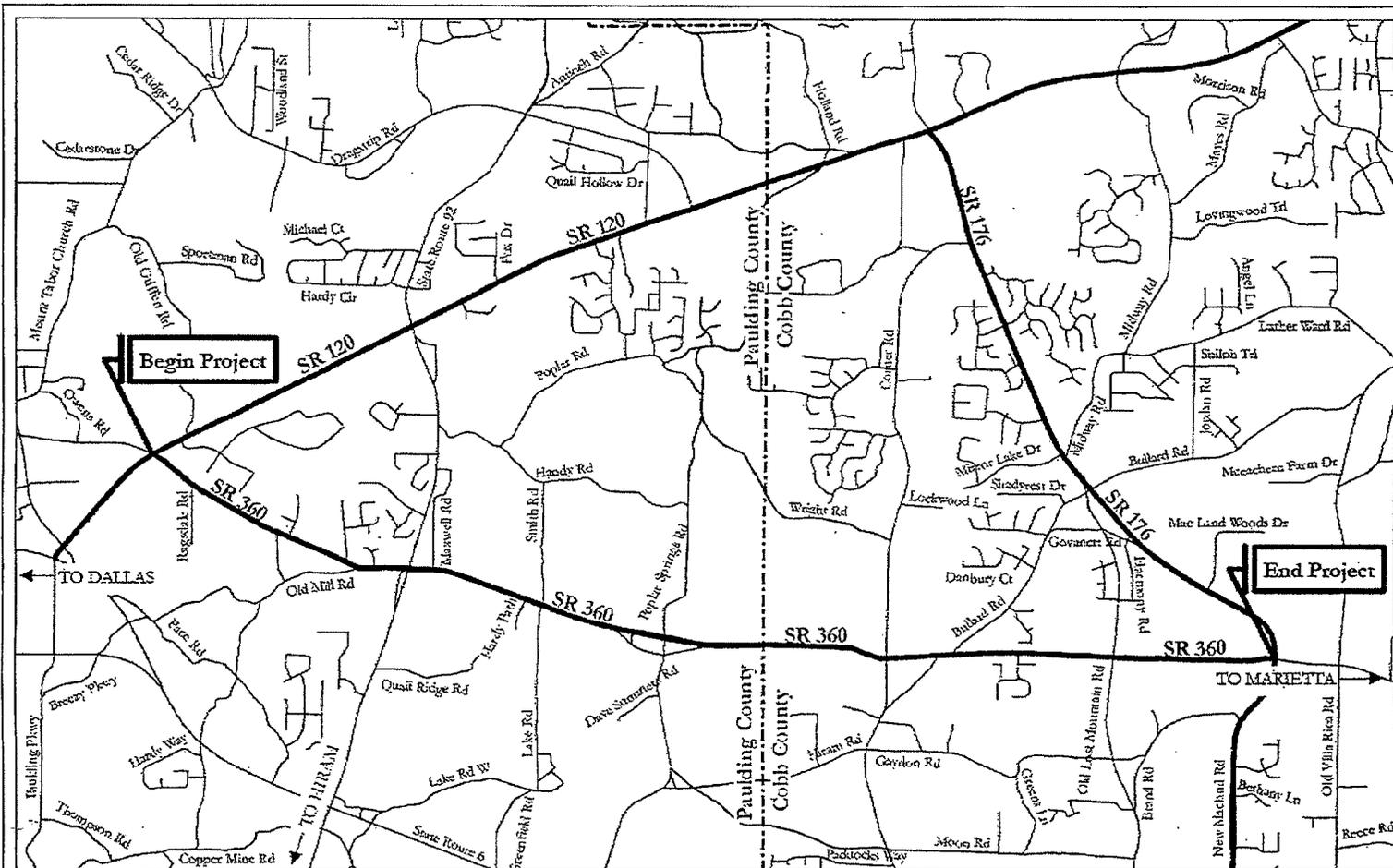
Attachments:

1. Sketch Map,
2. Cost Estimates
 - a. Revision to Programmed Cost
 - b. Construction
 - c. Fuel Price Adjustment
 - d. RW
 - e. Utility
3. Conforming plan's network schematics showing thru lanes, and
4. VE Study Implementation Letter
5. Typical Section
6. B/C Ratio
7. Updated Traffic Diagrams

Concur: 
Director of Engineering

Approve: 
Chief Engineer

4/30/2010
Date



Prepared for
Project Location Map
 SR 360 from SR 120 to SR 176
 Project Number CSSTP-0006-00(049), PI 0006049
 Cobb & Paulding Counties, Georgia

Courtesy of Georgia Department of Transportation: 1:42,000
 Roads and Highways
 County Boundaries

0 0.5 1 2 Miles

Figure No.
1

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE PROJECT No. CSSTP-0006-00(049) , Cobb & Paulding Co's

OFFICE Program Delivery

SR360/Macland Road Widening

DATE 11/10/2009

P.I. No. 0006049

FROM Bobby Hilliard, P.E., State Program Delivery Engineer

TO Ronald E. Wishon, Project Review Engineer

SUBJECT REVISIONS TO PROGRAMMED COSTS

PROJECT MANAGER Chandria Brown, P.E.

MNGT LET DATE --

MNGT R/W DATE --

PROGRAMMED COST (TPro W/OUT INFLATION)

LAST ESTIMATE UPDATE

CONSTRUCTION \$ 41,918,000.00

DATE 02/26/2007

RIGHT OF WAY \$ 47,800,000.00

DATE 02/26/2007

UTILITIES \$ --

DATE --

REVISED COST ESTIMATES

CONSTRUCTION* \$ 37,030,522.00

RIGHT OF WAY \$ 22,550,000.00

UTILITIES** \$ 2,471,252.00

* Costs contain 5 % Engineering and Inspection and 4 % Construction Contingencies.

** Costs contain 30 % contingency.

REASON FOR COST INCREASE

Yearly estimate update. The cost decreased primarily due to the reduced footprint per VE study (4' reduction in median width), and reduced asphalt costs.

CONTINGENCY SUMMARY

Construction Cost Estimate:	\$ <u>28,884,389.59</u>	(Base Estimate)
Engineering and Inspection:	\$ <u>1,444,219.48</u>	(Base Estimate x <u>5</u> %)
Construction Contingency:	\$ <u>1,155,375.58</u>	(Base Estimate x <u>4</u> %)
		(The Construction Contingency is based on the Project Improvement Type in TPro.)
Total Fuel Adjustment	\$ <u>2,249,100.08</u>	(From attached worksheet)
Total Liquid AC Adjustment	\$ <u>3,297,437.19</u>	(From attached worksheet)
Construction Total:	\$ <u>37,030,521.92</u>	
Utility Cost Estimate:	\$ <u>1,900,963.00</u>	
Utility Contingency:	\$ <u>570,288.90</u>	<u>30</u> %
Utility Total:	\$ <u>2,471,251.90</u>	

REIMBURSABLE UTILITY COST

Utility Owner	Reimbursable Cost
Greystone Power	\$412,325.00
Paulding Co. Water Authority	\$1,123,500.00
Bellsouth	\$365,138.00

Attachments

c: Genetha Rice-Singleton, State Program Control Administrator

**Estimate Report for file "CSSTP-0006-00(049), PI 0006049
(PLANS)"**

Section 1. Roadway					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	2500000.0	TRAFFIC CONTROL	2500000.0
153-1300	1	EA	77403.0	FIELD ENGINEERS OFFICE TP 3	77403.0
201-1500	1	LS	780000.0	CLEARING & GRUBBING	780000.0
208-0100	202957	CY	15.0	IN PLACE EMBANKMENT	3044355.0
310-1101	191900	TN	14.96	GR AGGR BASE CRS, INCL MATL	2870824.0
318-3000	6000	TN	23.24	AGGR SURF CRS	139440.0
402-1811	500	TN	70.0	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL	35000.0
402-3121	85500	TN	60.0	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	5130000.0
402-3130	21950	TN	65.0	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	1426750.0
402-3190	28400	TN	65.0	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	1846000.0
413-1000	28300	GL	2.0	BITUM TACK COAT	56600.0
432-5010	2000	SY	1.93	MILL ASPH CONC PVMT, VARIABLE DEPTH	3860.0
500-9999	250	CY	217.25	CLASS B CONC, BASE OR PVMT WIDENING	54312.5
634-1200	200	EA	102.91	RIGHT OF WAY MARKERS	20582.0
643-8200	3000	LF	1.95	BARRIER FENCE (ORANGE), 4 FT	5850.0
Section Sub Total:					\$17,990,976.50

Section 2. Guardrail					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
641-1100	150	LF	46.93	GUARDRAIL, TP T	7039.5
641-1200	12000	LF	20.0	GUARDRAIL, TP W	240000.0
641-5001	38	EA	620.25	GUARDRAIL ANCHORAGE, TP 1	23569.5
641-5012	38	EA	2000.0	GUARDRAIL ANCHORAGE, TP 12	76000.0
Section Sub Total:					\$346,609.00

Section 3. Concrete					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
433-1000	600	SY	153.11	REINF CONC APPROACH SLAB	91866.00
441-0016	2000	SY	39.98	DRIVEWAY CONCRETE, 6 IN TK	79960.0
441-0104	37200	SY	35.0	CONC SIDEWALK, 4 IN	1302000.0
441-0204	100	SY	35.46	PLAIN CONC DITCH PAVING, 4 IN	3546.0
441-0740	7580	SY	37.09	CONCRETE MEDIAN, 4 IN	281142.2
441-6222	78600	LF	17.01	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	1336986.00
441-6740	63200	LF	14.58	CONC CURB & GUTTER, 8 IN X 30 IN, TP 7	921456.0
620-0100	2500	LF	28.3	TEMPORARY BARRIER, METHOD NO. 1	70750.0
Section Sub Total:					\$4,087,706.20

Section 4. Drainage					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
441-0301	2	EA	1593.4	CONC SPILLWAY, TP 1	3186.8
550-1180	15290	LF	32.0	STORM DRAIN PIPE, 18 IN, H 1-10	489280.0
550-1240	7650	LF	38.0	STORM DRAIN PIPE, 24 IN, H 1-10	290700.0
550-1360	2040	LF	60.0	STORM DRAIN PIPE, 36 IN, H 1-10	122400.0
550-1480	550	LF	85.0	STORM DRAIN PIPE, 48 IN, H 1-10	46750.0
550-2180	2000	LF	28.2	SIDE DRAIN PIPE, 18 IN, H 1-10	56400.0
550-2240	400	LF	35.11	SIDE DRAIN PIPE, 24 IN, H 1-10	14044.0
550-3418	30	EA	664.12	SAFETY END SECTION 18 IN, SIDE DRAIN, 4:1 SLOPE	19923.6
550-3424	10	EA	1029.62	SAFETY END SECTION 24 IN, SIDE DRAIN, 4:1 SLOPE	10296.19
550-4218	20	EA	644.87	FLARED END SECTION 18 IN, STORM DRAIN	12897.4
550-4224	10	EA	776.56	FLARED END SECTION 24 IN, STORM DRAIN	7765.59
550-4236	5	EA	1221.96	FLARED END SECTION 36 IN, STORM DRAIN	6109.8
573-2006	3000	LF	14.24	UNDDR PIPE INCL DRAINAGE AGGR, 6 IN	42720.0
668-1100	260	EA	2500.12	CATCH BASIN, GP 1	650031.2

668-1110	100	LF	293.95	CATCH BASIN, GP 1, ADDL DEPTH	29395.0
668-2100	20	EA	2905.21	DROP INLET, GP 1	58104.2
668-4300	6	EA	1946.6	STORM SEWER MANHOLE, TP 1	11679.59
Section Sub Total:					\$1,871,683.40

Section 5. Culverts

Item Number	Quantity	Units	Unit Price	Item Description	Cost
207-0203	350	CY	51.26	FOUND BK FILL MATL, TP II	17941.0
500-3101	700	CY	407.98	CLASS A CONCRETE	285586.0
511-1000	72900	LB	0.91	BAR REINF STEEL	66339.0
Section Sub Total:					\$369,866.00

Section 6. Signing and Marking

Item Number	Quantity	Units	Unit Price	Item Description	Cost
632-0003	4	EA	14317.47	CHANGEABLE MESSAGE SIGN, PORTABLE, TYPE 3	57269.88
636-1020	1000	SF	14.96	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	14960.0
636-1029	250	SF	16.58	HIGHWAY SIGNS, TP 2 MATL, REFL SHEETING, TP 3	4145.0
636-1033	1500	SF	19.99	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 9	29984.99
636-2070	4500	LF	8.38	GALV STEEL POSTS, TP 7	37710.0
636-2080	300	LF	8.82	GALV STEEL POSTS, TP 8	2646.0
636-2090	600	LF	9.15	GALV STEEL POSTS, TP 9	5490.0
652-0091	15	EA	106.58	PAVEMENT MARKING, SYMBOL, TP 1	1598.7
652-0094	15	EA	56.77	PAVEMENT MARKING, SYMBOL, TP 4	851.55
653-0110	100	EA	59.44	THERMOPLASTIC PVMT MARKING, ARROW, TP 1	5944.0
653-0120	100	EA	73.73	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	7373.0
653-1704	2000	LF	3.99	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	7980.0
653-2501	15	LM	1314.42	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	19716.30
653-2502	15	LM	1340.23	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	20103.45
653-2804	2	LM	9008.77	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	18017.54
653-3501	40000	GLF	0.5	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	20000.0
653-6004	1500	SY	3.05	THERMOPLASTIC TRAF STRIPING, WHITE	4575.0
653-6006	2000	SY	2.92	THERMOPLASTIC TRAF STRIPING, YELLOW	5840.0
654-1001	30	EA	3.08	RAISED PVMT MARKERS TP 1	92.4
654-1003	3500	EA	3.8	RAISED PVMT MARKERS TP 3	13300.0
654-1010	15	EA	37.76	RAISED PVMT MARKERS TP 10	566.4
657-1085	600	LF	5.58	PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST (BLACK-WHITE), TP PB	3348.0
657-3085	600	GLF	8.04	PREFORMED PLASTIC SKIP PVMT MKG, 8 IN, CONTRAST (BLACK-WHITE), TP PB	4823.99
657-6085	600	LF	5.94	PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST (BLACK-YELLOW), TP PB	3564.00
Section Sub Total:					\$289,900.22

Section 7. Signal

Item Number	Quantity	Units	Unit Price	Item Description	Cost
639-4004	36	EA	7411.03	STRAIN POLE, TP IV	266797.08
647-1000	9	LS	90000.0	TRAFFIC SIGNAL INSTALLATION	810000.0
Section Sub Total:					\$1,076,797.08

Section 8. Erosion Control

Item Number	Quantity	Units	Unit Price	Item Description	Cost
163-0232	50	AC	778.51	TEMPORARY GRASSING	38925.5
163-0240	2000	TN	181.67	MULCH	363340.0

163-0300	50	EA	1773.05	CONSTRUCTION EXIT	88652.5
163-0520	500	LF	17.01	CONSTRUCT AND REMOVE TEMPORARY PIPE SLOPE DRAIN	8505.0
163-0531	10	EA	8399.13	CONSTRUCT AND REMOVE SEDIMENT BASIN, TP 1	83991.29
163-0550	250	EA	256.06	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	64015.0
165-0010	4000	LF	0.8	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	3200.0
165-0030	25000	LF	1.5	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	37500.0
165-0060	10	EA	1375.94	MAINTENANCE OF TEMPORARY SEDIMENT BASIN	13759.40
165-0101	50	EA	528.06	MAINTENANCE OF CONSTRUCTION EXIT	26402.99
165-0105	250	EA	92.6	MAINTENANCE OF INLET SEDIMENT TRAP	23150.0
167-1000	2	EA	406.3	WATER QUALITY MONITORING AND SAMPLING	812.6
167-1500	48	MO	1000.0	WATER QUALITY INSPECTIONS	48000.0
171-0010	8000	LF	1.62	TEMPORARY SILT FENCE, TYPE A	12960.0
171-0030	50000	LF	3.9	TEMPORARY SILT FENCE, TYPE C	195000.0
603-2182	600	SY	32.04	STN DUMPED RIP RAP, TP 3, 24 IN	19224.0
603-7000	600	SY	3.22	PLASTIC FILTER FABRIC	1932.00
700-6910	60	AC	1054.05	PERMANENT GRASSING	63243.0
700-7000	200	TN	65.0	AGRICULTURAL LIME	13000.0
700-7010	160	GL	21.65	LIQUID LIME	3464.0
700-8000	60	TN	289.61	FERTILIZER MIXED GRADE	17376.60
715-2200	300	SY	1.35	BITUMINOUS TREATED ROVING, WATERWAYS	405.0
716-2000	60000	SY	1.2	EROSION CONTROL MATS, SLOPES	72000.0
Section Sub Total:					\$1,198,858.90

Section 9. Bridge					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
000-0000	1	EA	415000.0	3 SIDED CULVERT (Florence Branch)	415000.0
500-0100	1500	SY	4.03	GROOVED CONCRETE	6045.0
500-1006	1	LS	432000.0	SUPERSTR CONCRETE, CL AA, BR NO - 1	432000.0
500-2100	300	LF	41.19	CONCRETE BARRIER	12357.0
500-3002	170	CY	538.61	CLASS AA CONCRETE	91563.7
507-9001	1000	LF	98.14	PSC BEAMS, AASHTO TYPE I, BR NO - 1	98140.0
507-9030	1000	LF	168.89	PSC BEAMS, AASHTO, BULB TEE, 54 IN, BR NO - 1	168890.0
511-1000	31245	LB	0.86	BAR REINF STEEL	26870.7
511-3000	1	LS	94000.0	SUPERSTR REINF STEEL, BR NO - 1	94000.0
520-1147	500	LF	64.08	PILING IN PLACE, STEEL H, HP 14 X 73	32040.0
520-4147	1	EA	0.89	LOAD TEST, STEEL H, HP 14 X 73	0.89
524-0010	100	LF	1588.25	DRILLED CAISSON -	158825.0
603-2024	2000	SY	52.88	STN DUMPED RIP RAP, TP 1, 24 IN	105760.0
603-7000	2000	SY	5.25	PLASTIC FILTER FABRIC	10500.0
Section Sub Total:					\$1,651,992.29

Total Estimated Cost: \$28,884,389.59

P.I. Number 6049

County Cobb/Paulding

Date 1/6/2010

Project Number CSSTP-0006-00(049)

Special Provision, Section 109-Measurement and Payment
FUEL PRICE ADJUSTMENT (ENGLISH 125% MAX)

ENTER FPL DIESEL	2.73
ENTER FPM DIESEL	6.143

ENTER FPL UNLEADED	2.55
ENTER FPM UNLEADED	5.7375

<http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx>

INCREASE ADJUSTMENT
125.00%

INCREASE ADJUSTMENT
125.00%

ROADWAY ITEMS	QUANTITY	DIESEL FACTOR	GALLONS DIESEL	UNLEADED FACTOR	GALLONS UNLEADED	REMARKS
Excavations paid as specified by Sections 205 (CUBIC YARD)	215145.000	0.29	62392.05	0.15	32271.75	
Excavations paid as specified by Sections 206 (CUBIC YARD)	77527.000	0.29	22482.83	0.15	11629.05	
GAB paid as specified by the ton under Section 310 (TON)	191900.000	0.29	55651.00	0.24	46056.00	
Hot Mix Asphalt paid as specified by the ton under Sections 400 (TON)		2.90		0.71		
Hot Mix Asphalt paid as specified by the ton under Sections 402 (TON)	136350.000	2.90	395415.00	0.71	96808.50	
PCC Pavement paid as specified by the square yard under Section 430 (SY)		0.25		0.20		

BRIDGE ITEMS	Quantity	Unit Price	QF/1000	Diesel Factor	Gallons Diesel	Unleaded Factor	Gallons Unleaded	REMARKS
Bridge Excavation (CY) Section 211				8.00		1.50		
Class __ Concrete (CY) Section 500	170.00	883.00	150.1100	8.00	1200.88	1.50	225.17	
Class __ Concrete (CY) Section 500				8.00		1.50		
Class __ Concrete (CY) Section 500				8.00		1.50		
Superstru Con Class__(CY) Section 500				8.00		1.50		
Superstru Con Class__(CY) Section 500				8.00		1.50		
Superstru Con Class__(CY) Section 500				8.00		1.50		
Concrete Handrail (LF) Section 500				8.00		1.50		
Concrete Barrier (LF) Section 500				8.00		1.50		

BRIDGE ITEMS	Quantity	Unit Price	QF/1000	Diesel Factor	Gallons Diesel	Unleaded Factor	Gallons Unleaded	REMARKS
Stru Steel Plan Quantity (LB) Section 501	31245.00	0.95	29.6828	8.00	237.46	1.50	44.52	
Stru Steel Plan Quantity (LB) Section 501				8.00		1.50		
PSC Beams____ (LF) Section 507	1000.00	98.14	98.1400	8.00	785.12	1.50	147.21	Type I
PSC Beams____ (LF) Section 507	1000.00	169.00	169.0000	8.00	1352.00	1.50	253.50	Bulb Tee
PSC Beams____ (LF) Section 507				8.00		1.50		
Stru Reinf Plan Quantity(LB) Section 511				8.00		1.50		
Stru Reinf Plan Quantity(LB) Section 511				8.00		1.50		
Bar Reinf Steel (LB) Section 511				8.00		1.50		
Piling__inch (LF) Section 520	500.00	64.08	32.0400	8.00	256.32	1.50	48.06	
Piling__inch (LF) Section 520				8.00		1.50		
Piling__inch (LF) Section 520				8.00		1.50		
Piling__inch (LF) Section 520				8.00		1.50		
Piling__inch (LF) Section 520				8.00		1.50		
Piling__inch (LF) Section 520				8.00		1.50		
Drilled Caisson,____ (LF) Section 524	100.00	1,588.25	158.8250	8.00	1270.60	1.50	238.24	66 in
Drilled Caisson,____ (LF) Section 524				8.00		1.50		
Drilled Caisson,____ (LF) Section 524				8.00		1.50		
Pile Encasement,____(LF) Section 547				8.00		1.50		
Pile Encasement,____(LF) Section 547				8.00		1.50		
SUM QF DIESEL=				541043.26	SUM QF UNLEADED=		187722.00	
DIESEL PRICE ADJUSTMENT(\$)					\$1,698,605.32			
UNLEADED PRICE ADJUSTMENT(\$)					\$550,494.76			

ASPHALT CEMENT PRICE ADJUSTMENT FOR BITUMINOUS TACK COAT(Surface Treatment 125% MAX)

APPLICABLE TO CONTRACTS CONTAINING THE 413 SPEC. SECTION 413.5.01 ADJUSTMENTS ASPHALT PRICE ADJUSTMENT FOR BITUMINOUS TACK COAT

<http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx>

ENTER APL

ENTER APM

125.00%	INCREASE ADJUSTMENT
----------------	----------------------------

Use this side for Asphalt Emulsion Only		
L.I.N.	TYPE	ASPHALT EMULSION (GALLONS)
TMT = <input style="width: 100px;" type="text"/>		
REMARKS: <input style="width: 95%; height: 20px;" type="text"/>		

Use this side for Asphalt Cement Only		
L.I.N.	TYPE	TACK (GALLONS)
TMT = <input style="width: 100px;" type="text"/>		
REMARKS: <input style="width: 95%; height: 20px;" type="text"/>		

MONTHLY PRICE ADJUSTMENT(\$)	
-------------------------------------	--

ADJUSTMENT SUMMARY

FUEL PRICE ADJUSTMENT (*ENGLISH 125% MAX*)

DIESEL PRICE ADJUSTMENT(\$) \$1,698,605.32

UNLEADED PRICE ADJUSTMENT(\$) \$550,494.76

ASPHALT CEMENT PRICE ADJUSTMENT (**BITUMINOUS TACK COAT 125% MAX**) \$57,761.19

400 / 402 ASPHALT CEMENT PRICE ADJUSTMENT **125% MAX** \$3,239,676.00

ASPHALT CEMENT PRICE ADJUSTMENT FOR BITUMINOUS TACK COAT(**Surface Treatment 125% MAX**)

REMARKS:

TOTAL ADJUSTMENTS	\$5,546,537.27
--------------------------	-----------------------

Department of Transportation State of Georgia

Interdepartmental Correspondence

FILE	R/W Cost Estimate	OFFICE	Atlanta
		DATE	October 28, 2009
FROM	Phil Copeland, Right of Way Administrator LaShone Alexander, Right of Way Cost Estimator		
TO	Chandria L. Brown, P.E., Project Manager		
SUBJECT	Preliminary Right of Way Cost Estimate Project: CSSTP-0006-00(049) Cobb County P.I. No.: 0006049 Description: SR 360/ Macland Road Widening		

As per your request, attached is a copy of the approved Preliminary Right of Way Cost Estimates on the above referenced projects.

Please note the area of Required R/W was furnished with your request.
Please include total Required R/W areas for the entire corridor in all future requests.

If you have any questions, please contact LaShone Alexander at One Georgia Center 600 West Parkway Street, NW Atlanta, GA 30308, Right of Way Office at (478) 553-1569 or (478) 232-4045.

PC: LA
Attachments
c: File

Preliminary Right of Way Cost Estimate

Date: October 22, 2009
Project: CSSTP-0006-00(049); Cobb & Paulding Counties
Existing/Required R/W: Varies/Varies
Project Termini: SR 120 to SR 176
Project Description: SR 360 / Macland Road Widening

P.I. Number: 0006049
No. Parcels: 254

Fee Simple:

Commercial - Paulding	60,749 sf @ \$	6.00 /sf = \$	364,494	
Residential - Paulding	464,094 sf @ \$	2.50 /sf = \$	1,160,235	
Heavy Commercial - Cobb	31,881 sf @ \$	14.00 /sf = \$	446,334	
Light Commercial - Cobb	67,625 sf @ \$	6.00 /sf = \$	405,750	
Residential - Cobb	370,173 sf @ \$	2.50 /sf = \$	925,433	
				\$ 3,302,246

Permanent Construction Easement:

Commercial - Paulding	55,726 sf @ \$	3.00 /sf = \$	167,178	
Residential - Paulding	538,596 sf @ \$	1.25 /sf = \$	673,245	
Heavy Commercial - Cobb	38,014 sf @ \$	7.00 /sf = \$	266,098	
Light Commercial - Cobb	176,905 sf @ \$	3.00 /sf = \$	530,715	
Residential - Cobb	624,355 sf @ \$	1.25 /sf = \$	780,444	
TOTAL				\$ 2,417,680

Improvements:

22 Residential	=	\$	819,000	
11 Commercial	=	\$	870,000	
TOTAL				\$ 1,689,000

Relocation:

11 Residential @ \$40,000 / displaced	=	\$	440,000	
9 Commercial @ \$15,000 / displaced	=	\$	135,000	
TOTAL				\$ 575,000

Damages:

Proximity - 39 Parcels		\$	740,000	
Consequential - 5 Parcels		\$	175,000	
Cost to Cure - 3 Parcels		\$	190,000	
TOTAL				\$ <u>1,105,000</u>

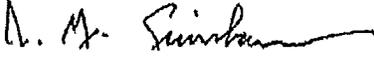
SUB-TOTAL

\$ 9,088,926

Net Cost		\$	9,088,926
Scheduling Contingency	55%	\$	4,998,909
Adm/Court Cost	60%	\$	8,452,701
		\$	22,540,536

Total Cost

\$ 22,550,000

Prepared By: 
John G. Simshauser, Cert. No. 2772
Moreland Altobelli Associates, Inc.

Reviewed / Approved: 
Howard P. Copeland
R/W Administrator

Note: Accuracy of estimate is the sole responsibility of the Preparer.

Note: The Market Appreciation (40%) is not included in this Preliminary Cost Estimate.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE OFFICE District Seven Utilities
DATE September 23, 2009

FROM Jonathan Walker, District Utilities Engineer

TO Kerry D. Bonner, District Utilities Engineer

SUBJECT Preliminary Utility Cost Estimate (Revised)
CSSTP-0006-00(049) Paulding/Cobb Counties
P.I. No. 0006049

As per your request, we are furnishing you with a revised Preliminary Utility Cost Estimate for the above referenced project.

FACILITY OWNER	NON-REIMBURSABLE	REIMBURSABLE
Greystone Power		\$ 412,325.00
Atlanta Gas Light Co.	\$ 718,057.00	
Paulding Co. Water Authority	\$3,808,665.00	\$1,123,500.00
BellSouth		\$365,138.00
Comcast Cable	No Cost	
<hr/>		
Totals	\$4,526,722.00	\$1,900,963.00
Total Preliminary Utility Cost Estimate		\$6,427,685.00

If you have any questions, please contact Mr. Clyde Cunningham at (770) 986-1117.

Sincerely,

Rachel Brown
District Engineer



For: Jonathan Walker
District Utilities Engineer

RB:JW:CAC

c: Jeff Baker, P.E.
File

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENTAL CORRESPONDENCE

OFFICE Planning

DATE November 19, 2009

FROM  Angela T. Alexander, State Transportation Planning Administrator

TO Bobby Hilliard, State Program Delivery Engineer
Attn: Chandria Brown, Project Manager

SUBJECT PROJECT CONCEPT CONFORMITY – Project CSSTP-0006-00(049) – PI 0006049 –
SR 360/Macland Road Widening from SR 120/Charles Hardy Parkway (Paulding County) to SR
176/Lost Mountain Road (Cobb County)

The Office of Planning is providing this letter of certification as prescribed by the Plan Development Process Manual. This project conforms to the Atlanta region's Air Quality Conformity Analysis.

This letter certifies that the project's concept of widening SR 360/Macland Road from SR 120/Charles Hardy Parkway to SR 176/Lost Mountain Road from two to four lanes conforms to the adopted Atlanta Regional Transportation Plan based on this November 19, 2009 review. The revised concept reduces the size of the median and increases the length of the project from 5.8 miles to 6.2 miles in order to tie into the existing roadway.

Attached is an excerpt from the plan, the network schematic, and the preconstruction status report for your reference. If any changes occur to the proposed concept, please notify this office immediately. If you have any questions, please call Kaycee Mertz at (404) 347-0245.

ATA: kem



Envision6 Regional Transportation Plan and FY 2008-2013 Transportation Improvement Program - Sorted by ARC Project Number

CO-365	JOHNSON FERRY ROAD	Jurisdiction	Cobb County	Existing	Planned	Length (mi.)	Network Year
N/A	AT SEWELL MILL ROAD	Sponsor	Cobb County	N/A	N/A	N/A	2020
Programmed		Service Type	Roadway Operational Upgrades	Analysis Exempt from Air Quality Analysis (40 CFR 93)			Open Year 2012

Status	Year	Fund Type	Federal	State	Local	Bonds	Total
PE AUTH	2008	Local Jurisdiction/Municipality Funds	\$0,000	\$0,000	\$0,000	\$0,000	\$0,000
ROW	2010	Local Jurisdiction/Municipality Funds	\$0,000	\$0,000	\$369,000	\$0,000	\$369,000
CST	2011	Local Jurisdiction/Municipality Funds	\$0,000	\$0,000	\$1,495,000	\$0,000	\$1,495,000
			\$0,000	\$0,000	\$1,864,000	\$0,000	\$1,864,000

CO-366	SR 360 (POWDER SPRINGS)/SR 280 (SOUTH COBB DRIVE) CONNECTOR	Jurisdiction	Cobb County	Existing	Planned	Length (mi.)	Network Year
0006936	FROM SOUTH OF CHESTNUT HILL ROAD ON POWDER SPRINGS ROAD TO LEADER ROAD AT SOUTH COBB DRIVE.	Sponsor	Cobb County	0/2	4	0.8	2030
Programmed		Service Type	General Purpose Roadway Capacity	Analysis In the Region's Air Quality Conformity Analysis			Open Year 2030

Status	Year	Fund Type	Federal	State	Local	Bonds	Total
PE	2010	Local Jurisdiction/Municipality Funds	\$0,000	\$0,000	\$759,835	\$0,000	\$759,835
ROW	LR 2014-2020	General Federal Aid - 2014-2030	\$8,880,000	\$0,000	\$2,220,000	\$0,000	\$11,100,000
CST	LR 2021-2030	General Federal Aid - 2014-2030	\$4,308,480	\$0,000	\$1,077,120	\$0,000	\$5,385,600
			\$13,188,480	\$0,000	\$4,056,955	\$0,000	\$17,245,435

CO-367	SR 360 (MACLAND ROAD)	Jurisdiction	Cobb County	Existing	Planned	Length (mi.)	Network Year
0006049	FROM SR 120 (MARIETTA HIGHWAY) IN PAULDING COUNTY TO SR 176 (NEW MACLAND ROAD / LOST MOUNTAIN ROAD) IN COBB COUNTY	Sponsor	GDOT	2	4	5.8	2030
Long Range		Service Type	General Purpose Roadway Capacity	Analysis In the Region's Air Quality Conformity Analysis			Open Year 2030

Status	Year	Fund Type	Federal	State	Local	Bonds	Total
PE AUTH	2005	STP - Statewide Flexible (GDOT)	\$0,000	\$0,000	\$0,000	\$0,000	\$0,000
ROW	LR 2021-2030	General Federal Aid - 2014-2030	\$15,100,000	\$3,775,000	\$0,000	\$0,000	\$18,875,000
CST	LR 2021-2030	General Federal Aid - 2014-2030	\$33,534,400	\$8,383,600	\$0,000	\$0,000	\$41,918,000
			\$48,634,400	\$12,158,600	\$0,000	\$0,000	\$60,793,000

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: CSSTP-0006-00(049) Cobb/Paulding **OFFICE:** Engineering Services
P.I. No.: 0006049
S.R. 360 Widening

DATE: May 29, 2008

FROM: Brian K. Summers, PE, Project Review Engineer *REW*

TO: Babs Abubakari, P.E., State Consultant Design and Program Delivery Engineer

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. Incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT #	Description	Potential Savings/LCC	Implement	Comments
PAVEMENT (P)				
P-1	Use 11-ft.-wide lanes for all lanes in lieu of 12-ft.-wide lanes	\$5,586,728	No	Based on traffic counts and accident history.
P-2	Use 11-ft.-wide lanes in lieu of 12-ft.-wide lanes for through lanes only	\$4,269,516	N/A	This does not apply since VE Alternative "P-1" will be implemented.
P-3	Use 11-ft.-wide lanes in lieu of 12-ft.-wide lanes for the SR 360 inside through lanes only	\$2,134,655	N/A	This does not apply since VE Alternative "P-1" will be implemented.
P-4	Use 11-ft.-wide lanes in lieu of 12-ft.-wide lanes for all turn lanes only	\$1,316,765	N/A	This does not apply since VE Alternative "P-1" will be implemented.
P-6	Reduce taper and storage length for left-turn lanes	\$781,899	No	Based on Capacity Analysis, the storage lengths shown are what are required based on the turning movements at each intersection.

CSSTP-0006-00(049) Cobb/Paulding
P.I. No. 0006049
Implementation of Value Engineering Study Alternatives
Page 2.

ALT #	Description	Potential Savings/LCC	Implement	Comments
PAVEMENT (P) - continued				
P-7	Take out U-turn at Station 191+00	\$198,417	Yes	This should be done.
P-8	Take out U-turn at Station 53+00	\$302,592	No	This U-turn would service six residential properties as well as a church. It would require them to travel another 1233' to make a U-turn.
P-9	Take out U-turn at Station 307+50	\$422,560 (proposed) \$211,280 (actual)	Yes/partial	The EB to WB U-turn Pavement can be removed but the WB to EB U-turn Pavement needs to be left in place in order to accommodate the seven residential properties that will need to be serviced.
RIGHT-OF-WAY (ROW)				
ROW-1	Use 18-in.-wide curb and gutter sections in lieu of 30-in.-wide sections	\$2,798,813	No	Results in a decrease in gutter spread. Since 11' lanes are now being used this would reduce the offset distance from the barrier face to the travel lane.
ROW-2	Use 24-in.-wide curb and gutter sections in lieu of 30-in.-wide sections	\$1,399,574 (proposed) \$1,051,363 (revised)	No	Results in a decrease in gutter spread. Since 11' lanes are now being used this would reduce the offset distance from the barrier face to the travel lane.
ROW-3	Use retaining walls to reduce right-of-way impacts	\$90,179	Yes	This should be done.

ALT #	Description	Potential Savings/I,CC	Implement	Comments
RIGHT-OF-WAY (ROW) - continued				
ROW-4	Reduce the width of the median from 24 ft. to 22 ft. wide	\$1,655,346	N/A	This does not apply since VI Alternative "ROW-5" will be implemented.
ROW-5	Reduce the width of the median from 24 ft. to 20 ft. wide	\$3,310,695	Yes	This should be done.
ROW-7	Delete the 4-ft.-wide buffer strips at the left-turn pockets in the median	\$1,698,871	N/A	This does not apply since VE Alternative "ROW-5" will be implemented.
ROW-8	Reduce the width of the urban shoulder from 16 ft. to 12 ft.	\$5,157,262	No	The 16' shoulders are needed in order to provide a space for the Utility Companies to relocate their facilities. (See attached list of proposed Utility Companies located along this corridor.) In addition, there are approximately 209 driveways along S.R. 360 and the sidewalks would have to wrap around the back side of the driveways in order to meet ADA requirements.
ROW-10	Reduce the back of outside curb to back of outside curb distance to the minimum (combines P-1, ROW-1 & ROW-7)	\$15,435,112	N/A	Does not apply since most of the savings shown has already been accounted for in VI Alternative "P-1", "ROW-1", and "ROW-7".

CSSTP-0006-00(049) Cobb/Paulding

P.I. No. 0006049

Implementation of Value Engineering Study Alternatives

Page 4.

ALT #	Description	Potential Savings/LCC	Implement	Comments
GENERAL (G)				
G-1	Improve intersections at Poplar Spring Road with Old Atlanta Road and Macland Circle and remove intersections of Old Atlanta Road and Macland Circle with SR 360	\$374,790	No	There is a project by Paulding County to widen Poplar Springs Road. Relocating the Old Atlanta Road/Macland Circle intersection would result in additional R/W impacts. The VE Alternative would not accommodate the widening project.
G-2	Cul-de-sac Bullard Road on south side of SR 360 and delete tee intersection	\$525,042	No	A subdivision has been added to the SE quadrant of Bullard Road. If a Cul-de-sac were placed on Bullard Road now it would restrict the access they currently have.
BRIDGES (B)				
B-1	Use a precast concrete arch culvert in lieu of a bridge at Powder Springs Creek	\$1,628,171	No	A culvert was considered but would not work hydraulically. The grade needs to be raised to convey the Design Year storm.
B-2	Use a single-span bridge in lieu of a three-span bridge at each bridge location	\$185,341	No	Based on the Hydraulic Study, the 150' long bridge is the shortest bridge that produces acceptable backwater values.

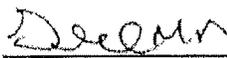
ALT #	Description	Potential Savings/LCC	Implement	Comments
SIDEWALKS (S)				
S-1	Place sidewalks on one side of road only	\$2,148,695	No	There are numerous churches, retail and commercial developments, 165 residential properties on S.R. 360 and many other subdivisions located on side roads that would generate significant pedestrian traffic.
S-2	Use asphalt in lieu of concrete for sidewalks	\$2,130,806	No	Would require significantly more future maintenance costs.
S-3	Install a sidewalk on the north side of SR 360 from Bullard Road to SR 176 and along the east side of Bullard Road in lieu of throughout the project	\$3,856,191	No	There are numerous churches, retail and commercial developments, 165 residential properties on S.R. 360 and many other subdivisions located on side roads that would generate significant pedestrian traffic.
EMBANKMENT (E)				
E-1	Use 2:1 cut slopes in lieu of 4:1 cut slopes in selected locations	\$1,689,170	Yes	This should be done.
E-3	Use 2:1 fill slopes in lieu of 4:1 fill slopes in selected locations, move the sidewalk closer to the edge of road, and add W-beam guard rail along the edge of the embankment	\$2,569,339	Yes	This should be done.

CSSTP-0006-00(049) Cobb/Paulding
P.I. No. 0006049
Implementation of Value Engineering Study Alternatives
Page 6.

A meeting was held on May 21, 2008 and Scott Gero and Ken McDuff with Mulkey Engineers, Inc., Stanley Hill, and Vinesha Pegram of Consultant Design, and Brian Summers, Ron Wishon and Lisa Myers of Engineering Services were in attendance.

Additional information was provided by the Project Manager on May 28, 2008.

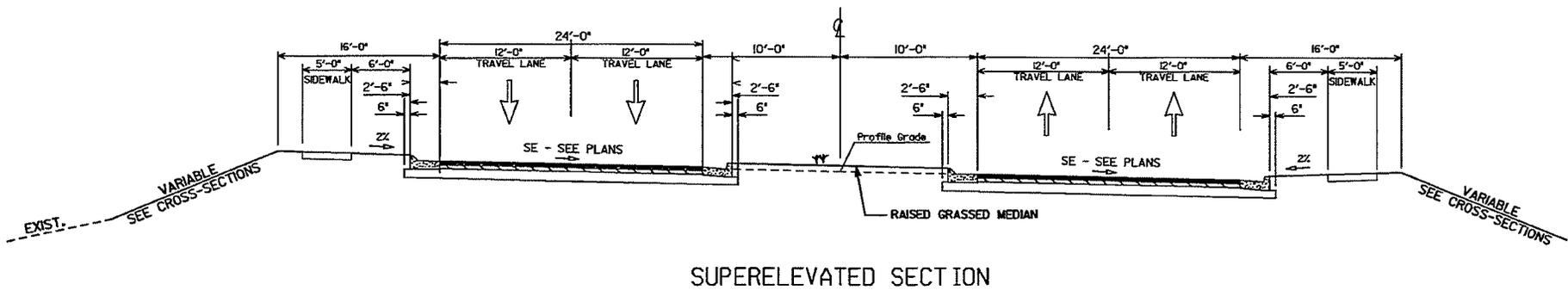
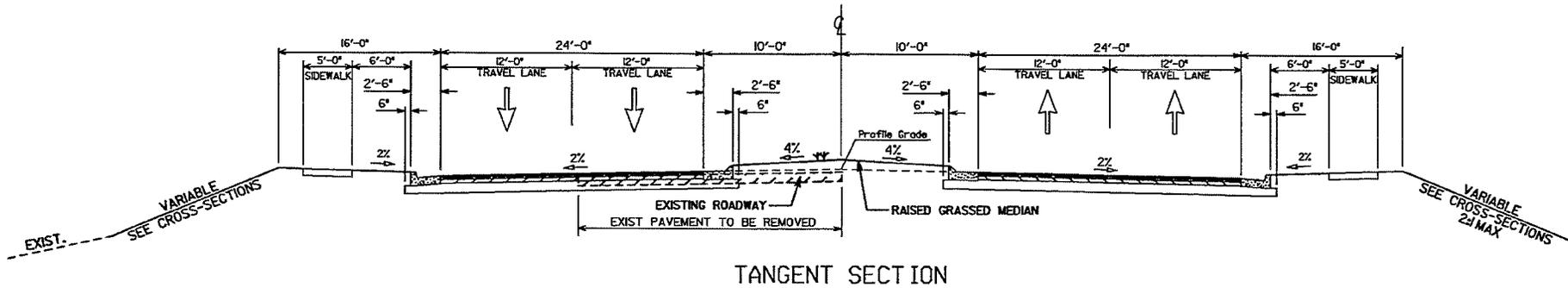
The results above reflect the consensus of those in attendance and those who provided input.

Approved:  Date: 6/22/08
Gerald M. Ross, P. E., Chief Engineer

BKS/REW

Attachments

- c: Gus Shanine, FHWA
- Todd Long
- Babs Ahubakari
- Stanley Hill
- Vinesha Pegram
- James Magnus
- Mickey McCree
- James Harry
- Kenny Beckworth
- Paul Liles
- Bill Ingalsbe
- Bill DuVall
- Steve Gaston
- Emmanuella Myrthil
- Patrick Allen
- Lisa Myers



**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENTAL CORRESPONDENCE

FILE PI 0006049 – SR 360 Widening from SR 120 to SR 176 in Paulding & Cobb Co. **OFFICE** Planning
DATE December 30, 2009

FROM  Angela T. Alexander, State Transportation Planning Administrator

TO Bobby Hillard, P.E., Transportation Engineering Administrator
ATTN: Chandria Brown, GDOT Project Manager

SUBJECT Micro-analysis Benefit/Cost Calculation

As requested by the project manager, this Office is providing the Benefit/Cost calculation for P.I. 0006049. The calculation is 21.32, which was based on the revised future-year traffic volume provided by the design consultant through the GDOT project manager. Please note that the volume provided [ADT: 42,428 vehicles per day in year 2032] represents an average annualized growth rate assumption of 1.6%, which is generally considered high.

Note that the Department's benefit/cost tool uses the same traffic volume for both "build" and "no-build" scenarios, hence it does *not* take into account the reality that a two-lane road would not be able to attract, or handle, 42,428 vehicles per day. This Office notes that, in reality, traffic volume in the "no-build" scenario would most likely be lower. As traffic volumes increase to this level, congestion would regularly approach "gridlock" conditions and motorists would seek alternate routes.

For quality control and comparison purposes, this Office conducted a second benefit/cost calculation using future year speed predicted by the Atlanta Regional Commission's year 2030 Travel Demand Model for a "build" scenario. The second analysis resulted in a benefit/cost ratio of 10.47, which represents a beneficial project and validates the original analysis.

Please see the enclosed technical memo and calculation sheet. If any changes occur to the proposed concept, please notify this Office immediately. If you have any questions, please call Kaycee Mertz at (404) 347-0245.

ATA: kem

Enclosure

GDOT Benefit-Cost Equations

1. Annualized Cost

$$A = P \times \frac{i}{1 - (1 + i)^{-n}}$$

where

A	annualized cost
P	total cost (PE + ROW + CST)
n	design life
i	discount rate

2. Auto Delay Savings

$$DC_A = (VHT_{NB} - VHT_B) \times (1 - T) \times Value_A$$

where

DC _A	auto delay cost savings
VHT _{NB}	vehicle hours traveled in 2035 - no build
VHT _B	vehicle hours of travel in 2035 - build
T	percent of traffic consisting of trucks
Value _A	value of time for autos

3. Truck Delay Savings

$$DC_T = (VHT_{NB} - VHT_B) \times T \times Value_T$$

where

DC _T	truck delay cost savings
VHT _{NB}	vehicle hours traveled in 2035 - no build
VHT _B	vehicle hours of travel in 2035 - build
T	percent of traffic consisting of trucks
Value _T	Value of time for trucks

4. Fuel Cost Savings

$$FC = (VMT_{NB} - VMT_B) \times \left(\frac{\text{Fuel Price}}{\text{Fuel Economy}} \right)$$

where

FC	fuel cost savings
VMT _{NB}	vehicle hours of travel in 2035 - no build
VMT _B	vehicle hours of travel in 2035 - build

5. Change in gross state product

$$GSP = (DC_A \times 0.0000071) + (DC_T \times 0.0000701)$$

where

GSP	Change in GSP
DC _A	auto delay cost savings
DC _T	truck delay cost savings

6.a Benefits with no GSP component

$$Benefits = DC_A + DC_T + FC$$

where

DC _A	auto delay cost savings
DC _T	truck delay cost savings
FC	fuel cost savings

6.b. Benefits with GSP component

$$Benefits = 0.7 \times (FC_A + DC_A) + GSP$$

where

FC _A	auto fuel cost savings
DC _A	auto delay cost savings

7. Benefit-Cost Ratio

$$B/C = \frac{Benefits}{Annualized Cost}$$

For micro-analysis benefit/cost ratios, speed is calculated as the ratio of VMT to VHT. In this analysis, VMT and VHT were derived from an HCS+ analysis of the roadway for both build and no-build scenarios. The calculated 21.32 benefit/cost ratio represents a very beneficial project. This high value is mostly due to the increase in projected average speed (VMT/VHT) along the roadway in the build scenario.

The second benefit/cost calculation, conducted for quality control, derived the "build" scenario VHT from the average speed (VMT/VHT) predicted in the Atlanta Regional Commission's year 2030 Travel Demand Model. GDOT's benefit/cost tool determines auto delay costs based on the change in VHT when the additional capacity is added.

GDOT Benefit-Cost Calculator

enter information in green cells

Project Information

ID 0006049
 Description SR 360 from SR 120 to SR 176 - Widen from 2 lanes to 4 lanes

Cost Estimate

Date of estimate 2009
 PE cost \$ 5,074,691
 ROW cost \$ 22,550,000
 UTILITY cost \$ 1,900,963 Reimbursable
 CST cost \$ 37,030,521
 Total \$ 66,556,175

Traffic in 2032 42428

Source of traffic data Design traffic provided by Design consultant and approved by GDOT Traffic Projectionists; Analysis in HCS Two-lane (No-build) and Arterials (build)

Without project (nobuild)
 Annual VMT 65,763,400
 Annual VHT 5,123,700
 Average speed (mph) 13

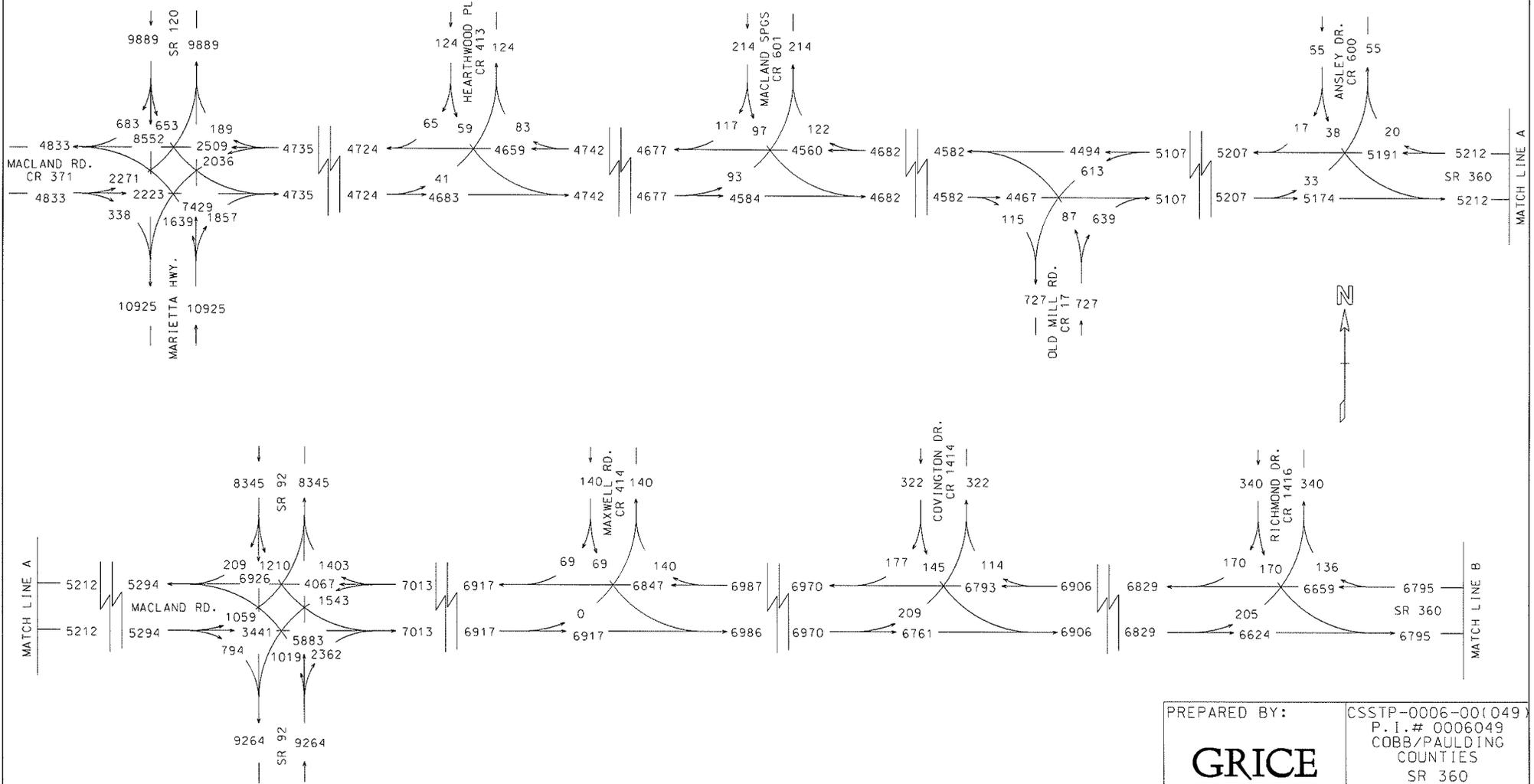
With project (build)
 Annual VMT 65,763,400
 Annual VHT 1,253,099
 Average speed (mph) 52

Parameters	Default	Override	Used
Analysis year	2035	2032	2032
Discount rate	7.0%		7%
Design life (years)	25		25
Base year of cost estimate	N/A	2009	2009
Current CST program year	N/A	2015	2015
Fuel price (\$/gallon)	3.22	2.50	2.50
Fuel economy (mpg)	18.03		18.03
Value of auto travel (\$/hr)	13.75		13.75
Value of truck travel (\$/hr)	72.65		72.65
Percent trucks	12%	8%	8%
Include GSP benefits	No		No

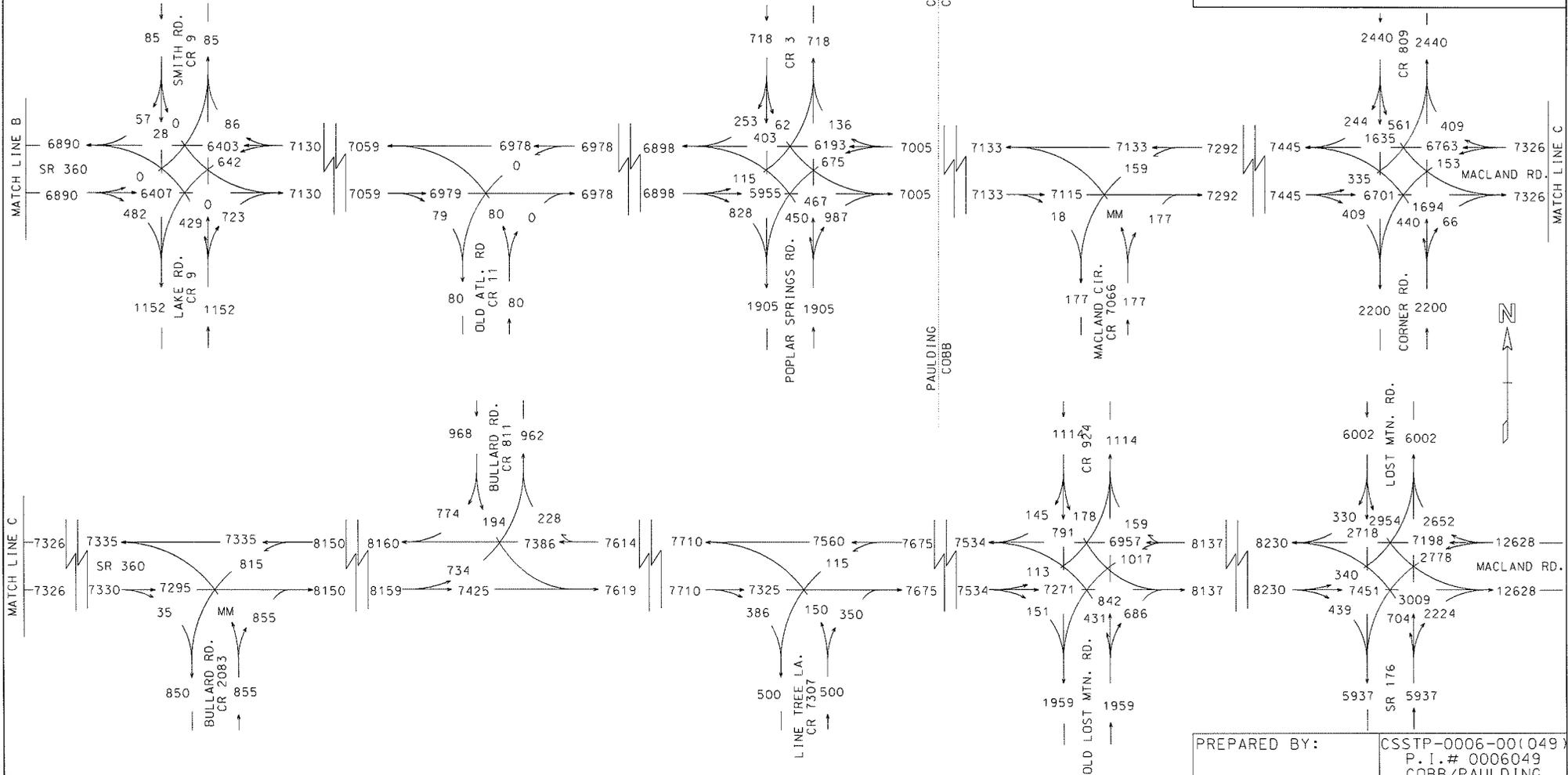
Costs	
Total cost	\$ 66,556,175
Annualized cost	\$ 3,351,169
Auto Delay Costs	
Nobuild	\$ 64,814,805
Build	\$ 15,851,702
Auto delay savings	\$ 48,963,103
Truck Delay Costs	
Nobuild	\$ 29,778,944
Build	\$ 7,283,011
Truck delay savings	\$ 22,495,933
Fuel Costs	
Nobuild	\$ 9,118,608
Build	\$ 9,118,608
Fuel cost savings	\$ -
Change in GSP	
Auto delay cost adjustment	NA
Truck delay cost adjustment	NA
Fuel cost adjustment	NA
Total benefit adjustment	NA
Benefits in 2032	\$ 71,459,036
Benefit-Cost Ratio	21.32

Notes

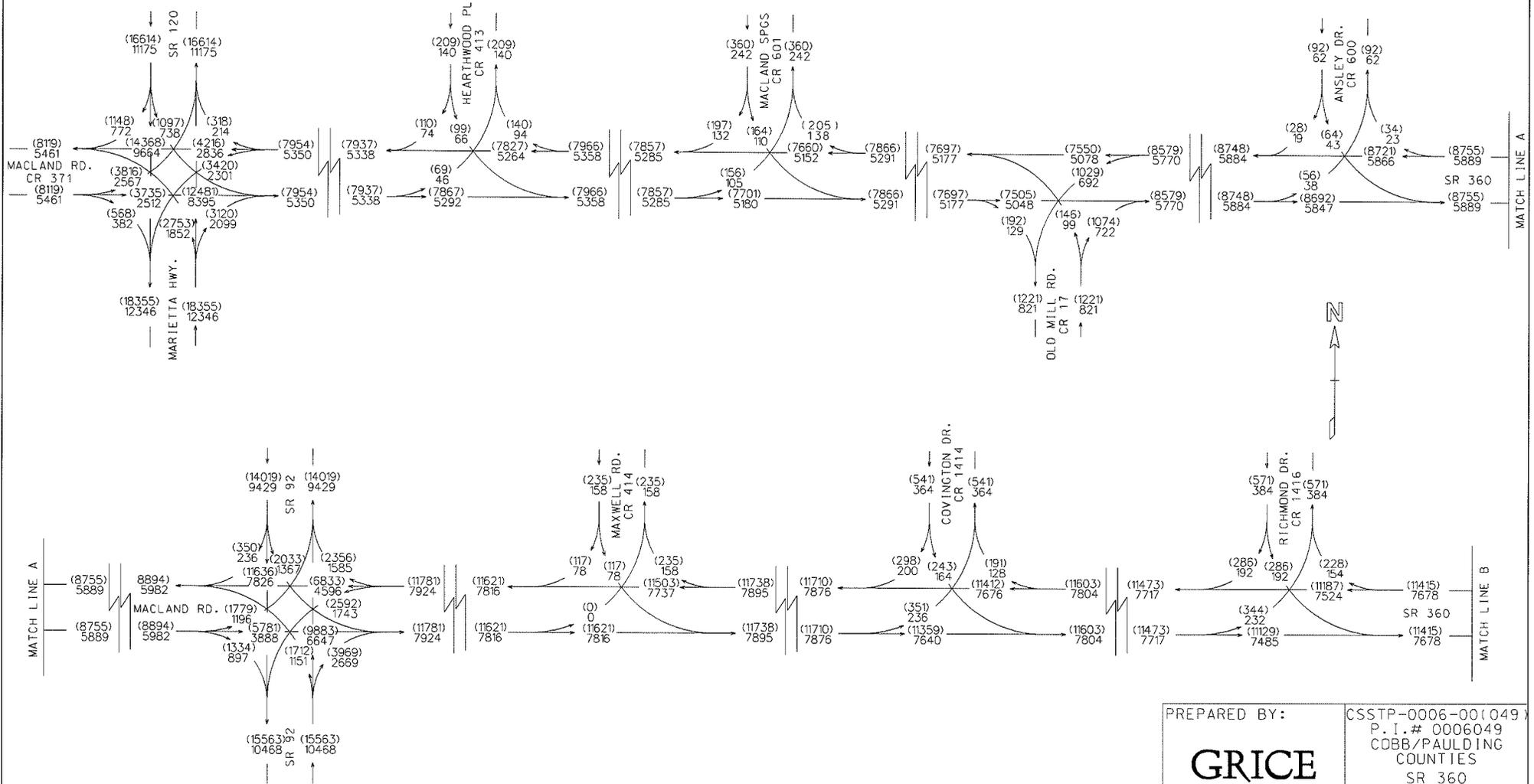
Project evaluation is based on length in proposed revised concept report, not current programming (6.2 miles instead of 5.8 miles); Cost estimate was prepared for revised concept report, 2009.



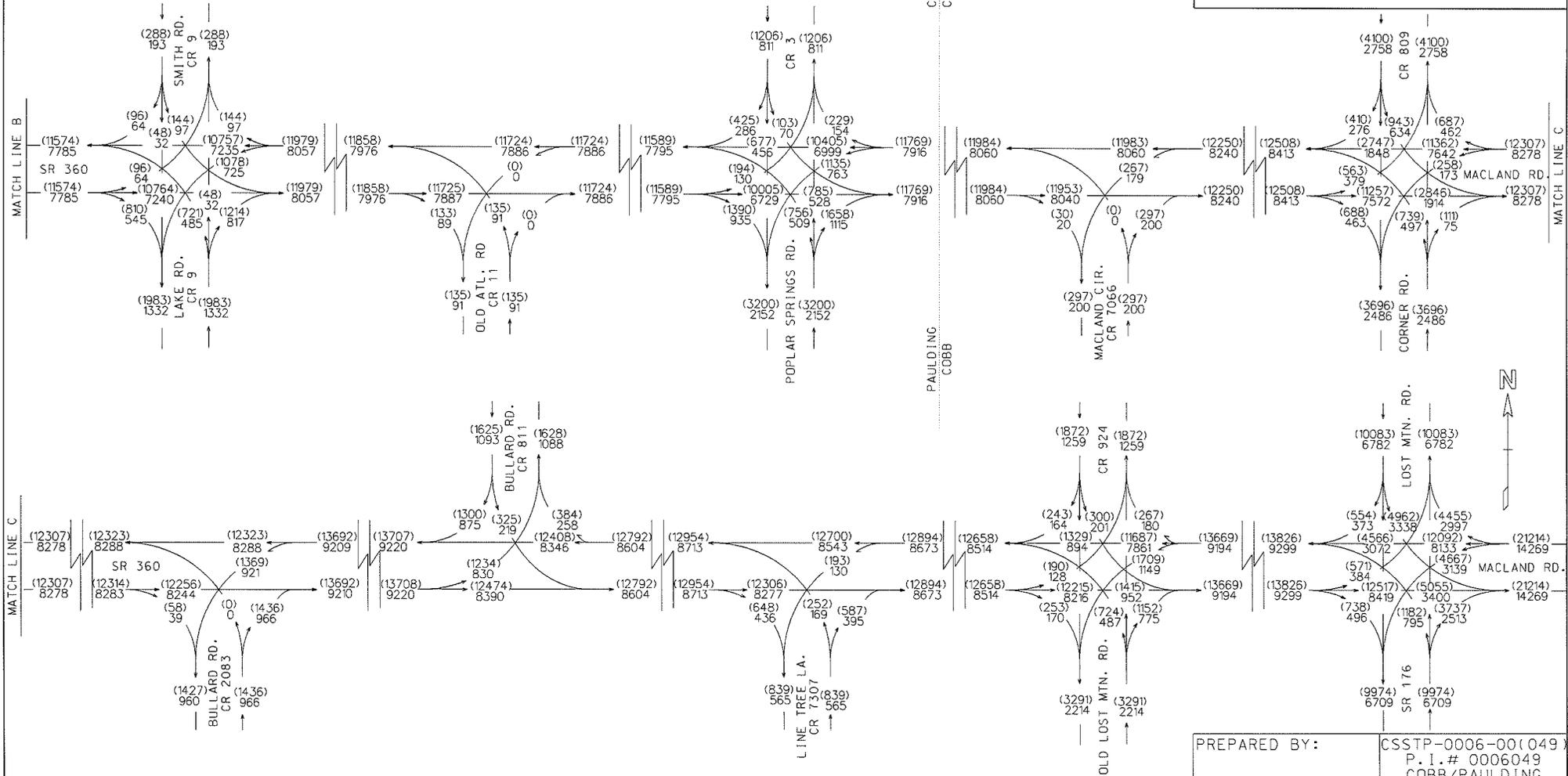
<p>PREPARED BY:</p> <p>GRICE & ASSOCIATES</p>	<p>CSSTP-0006-00(049) P. I. # 0006049 COBB/PAULDING COUNTIES SR 360 EXISTING 2006 ADT</p>
--	---



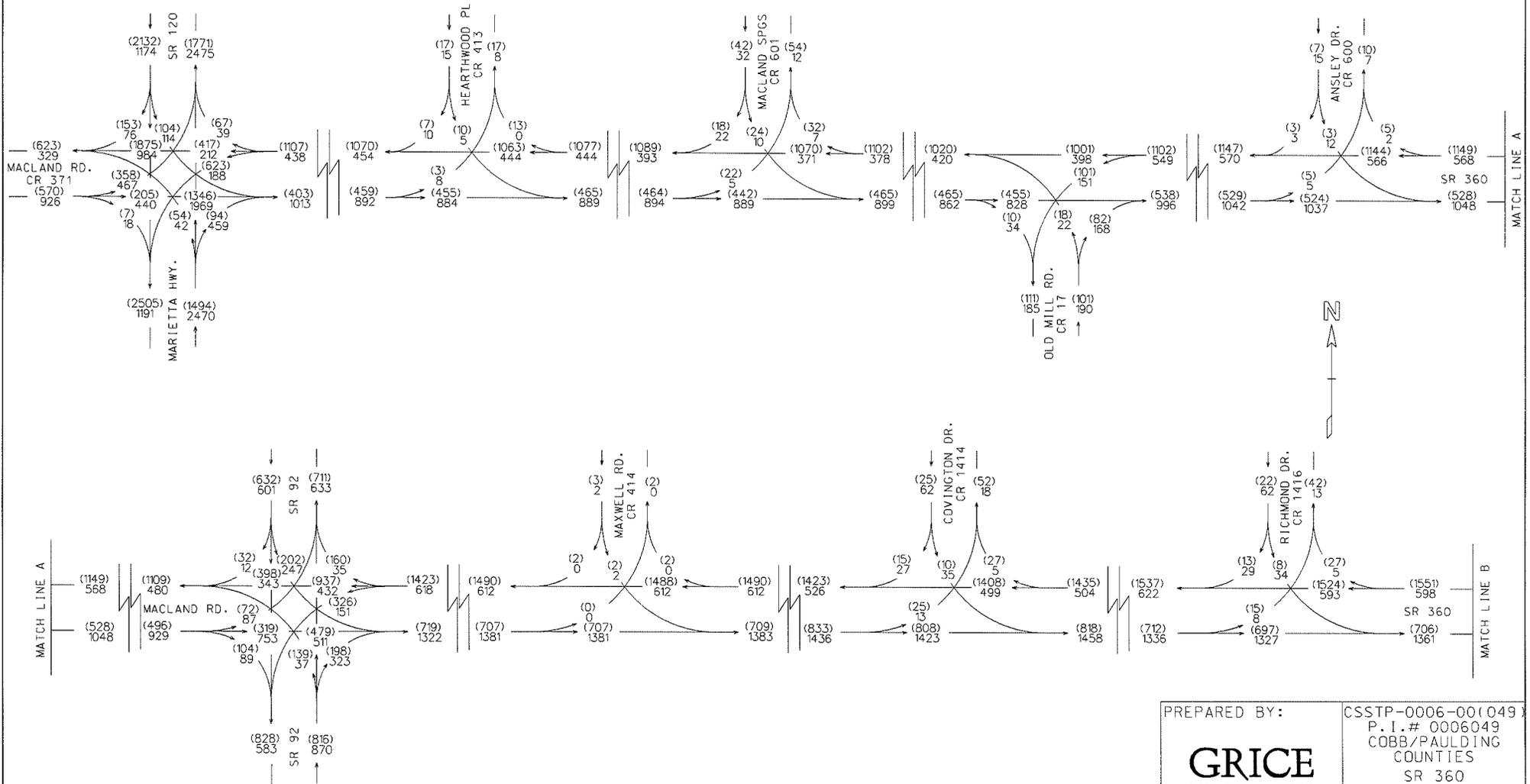
<p>PREPARED BY:</p> <p>GRICE & ASSOCIATES</p>	<p>CSSTP-0006-00(049) P.I.# 0006049 COBB/PAULDING COUNTIES SR 360 EXISTING 2006 ADT</p>
--	---



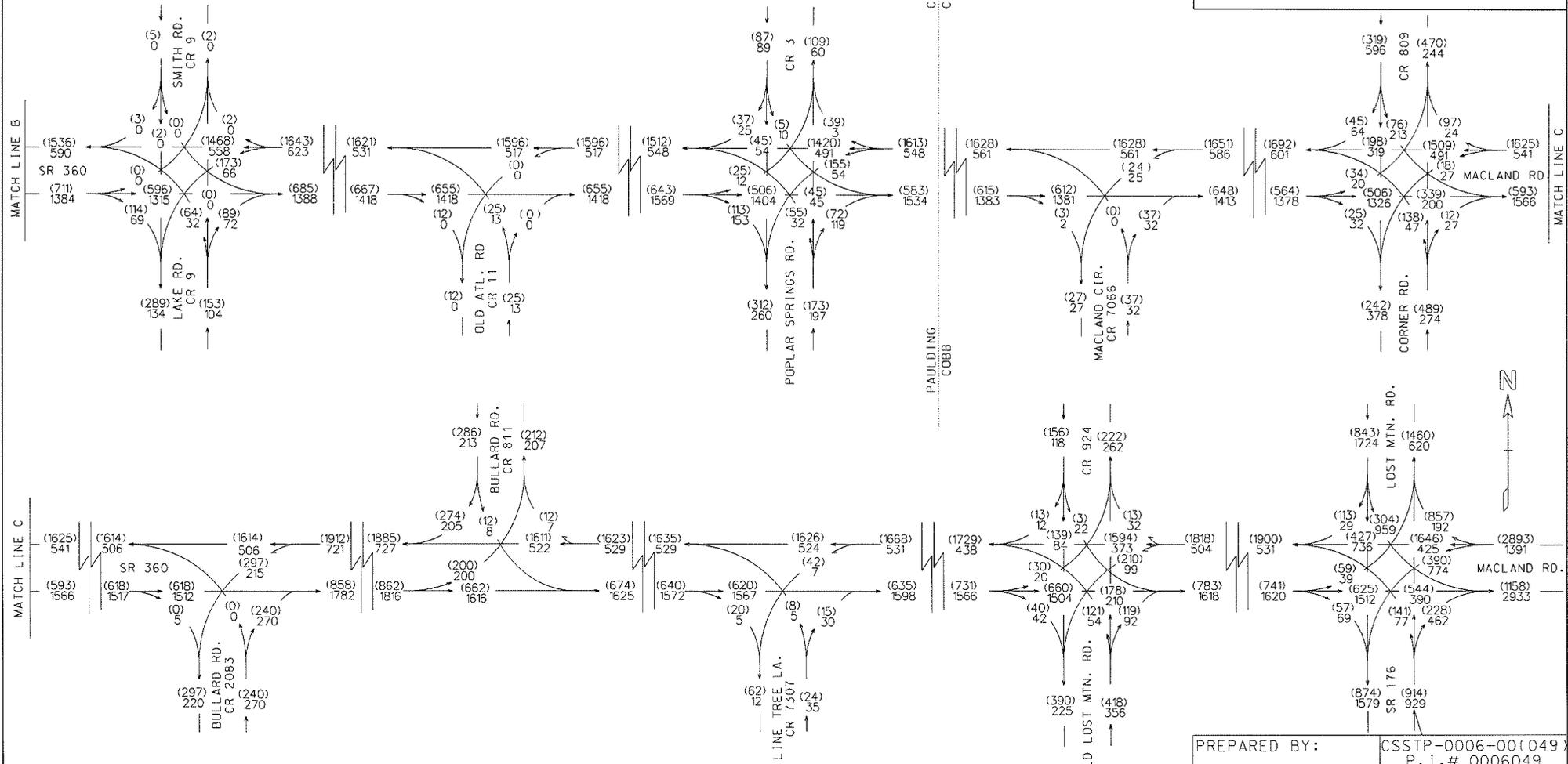
PREPARED BY:	CSSTP-0006-00(049)
	P. I. # 0006049
	COBB/PAULDING
	COUNTIES
	SR 360
	2012 ADT = 000
	2032 ADT = (000)
	24 HR. T = 4%
	S. U. = 3%
	COMB. = 1%



PREPARED BY: GRICE & ASSOCIATES	CSSTP-0006-00(049) P. I. # 0006049 COBB/PAULDING COUNTIES SR 360 2012 ADT = 000 2032 ADT = (000) 24 HR. T = 4% S.U. = 3% COMB. = 1%
--	--



PREPARED BY:	CSSTP-0006-00(049) P. 1. # 0006049 COBB/PAULDING COUNTIES SR 360
GRICE & ASSOCIATES	2032 AM DHV = 000 2032 PM DHV = (000) T = 3%
12/2006	



COUNTY
 COBB
 PAULDING
 COUNTY

PREPARED BY: GRICE & ASSOCIATES	CSSTP-0006-001049 P. I. # 0006049 COBB/PAULDING COUNTIES SR 360 2032 AM DHV = 000 2032 PM DHV = (000) T = 3%
--	---