ORIGINAL TO GENERAL FILES

D.O.T. 66

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE	P. I. No. 311665-, Dooly County IM-NH-75-1(227) I-75 at SR 27 Interchange	**OFFICE**	Preconstruction
		DATE	June 21, 2006

FROM Margaret B. Pirkle, P.E., Assistant Director of Preconstruction

TO SEE DISTRIBUTION

SUBJECT APPROVED REVISED PROJECT CONCEPT REPORT

Attached for your files is the approval for subject project.

MBP/cj

Attachment

DISTRIBUTION:

Brian Summers
Harvey Keepler
Ken Thompson
Jamie Simpson
Michael Henry
Keith Golden
Joe Palladi (file copy)
Babs Abubakari
Brent Story
Thomas Howell
BOARD MEMBER
FHWA

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE IM-NH-75-1(227) Dooly County
I-75 @ SR 27 Interchange
P. I. Number: 311665

OFFICE Road and Airport Design

DATE January 12, 2006

FROM Brent A. Story, P.E., State Road and Airport Design Engineer

TO Margaret B. Pirkle, P.E., Assistant Director of Preconstruction

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 revised concept is to reconstruct the SR 27 Bridge over I-75, provide separation between the interchange ramps and relocate the local streets.

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

DATE 1/23/06

State Transportation Planning Administrator

BAS: RDA
Attachment

DISTRIBUTION:

Brian Summers, with attachment
Harvey Keepler, with attachment
Carla Holmes, with attachment
Joe Palladi, with attachment
Jamie Simpson, with attachment
Keith Golden, with attachment
Thomas Howell, with attachment
Paul Liles, with attachment

RECEIVED
JAN 20 2006
OFFICE OF PLANNING

REVISED PROJECT CONCEPT REPORT

IM-NH-75-1(227)
P.I. Number 311665
Dooly County

Need and Purpose: The need exists to improve sight distance and operations at the interchange of I-75 and SR 27 in Dooly County north of the city of Vienna.

Located on a school bus route, the existing SR 27 bridge over I-75 is 34.7 feet wide and 254 feet long with 2 foot shoulders in each direction. The sufficiency rating for this bridge is 57.5. The sufficiency rating is a number from 0 to 100 and is a method of evaluating data by calculating four separate factors to obtain a numeric value which is indicative of a bridge sufficiency to remain in service. The Office of Bridge Design has determined that any structure with a sufficiency rating less than 50 should be replaced rather than improved. Even though, the sufficiency rating is above this, it is still recommended by the GDOT State Maintenance Engineer that the bridge be replaced rather than widened and overlayed. This is due to the "substandard load rating of all elements of the bridge and the marginal condition of the deck", according to a maintenance letter dated May 18, 2005. In addition, the current sight distance at the bridge is inadequate and the proximity of the current bridge alignment to two gas stations located on the west side of I-75 is an issue that would be improved if the bridge were to be replaced on a new alignment. If the bridge was to remain on its existing alignment, it would not allow access to these two businesses without a design variance to limited access and intersection distances.

The following table summarizes the corridor's accident statistics[1]:

	2002		2003		2004	
	SR27 from SR 27 to I-75	State[2]	SR27 from SR 27 to I-75	State[2]	SR27 from SR 27 to I-75	State[2]
Total Accidents	3		3		3	
Accident rate[3]	1259	89	1235	89[4]	1206	89[4]
Injuries	1		2		2	
Injury Rate	420	46	823	46	804	46
Fatalities	0		0		0	
Fatality Rate	0.00	1.36	0.00	1.36	0.00	1.36

The accident rates along this section of roadway were above the statewide average for a road of this type (Rural Minor Arterial, non-NHS) in 2002, 2003 and 2004. The improvement to the existing facility should help to reduce the accidents along the project corridor by correcting the

[1] The increase in the site specific statistics from data shown on the original concept report (dated March 2000) is due to differences in the factors used in calculating the rates (i.e. traffic volume and length of roadway)

[2] Statewide rates for similar facilities (Rural Minor Arterial)

[3] Accident rates per 100 Million Vehicle Miles Traveled

[4] Statewide accident values are not available for the years 2003 and 2004. The accident rates from the year 2002 were used.

alignment to current state route standards. The accidents along the project corridor consists of rear-end, sideswipes, and angle intersecting collisions which are caused by turning movements to and from SR 27 onto the interstate.

Existing 2005 traffic volumes along this section of SR 27 are approximately 2170 vehicles per day (vpd) with 17 percent generated by trucks. Future volumes are expected to be approximately 2,400 vpd in 2010; and 3,800 vpd in 2030. The level-of-service along this section of SR 27 is and would remain at an acceptable level-of-service "B" or better through the year 2030. This section of SR 27 is not on the Georgia Bicycle route network.

The proposed project would improve safety by improving sight distance for vehicles accessing SR 27 from I-75. Replacing the bridge over I-75 would improve the bridge sufficiency as well as enhance the sight distance, traffic flow, and safety for the traffic exiting and entering the Interstate.

Project location: This project is located in Dooly County, near the City of Vienna. Proposed improvements to SR 27 are from Milepost 14.9 to Milepost 15.6, a distance of 0.7 miles.

Description of the approved concept: Widen the overpass on State Route 27 at Interstate 75 to allow for a 10 ft. shoulder on the north side and a 12 ft. shoulder on the south side to provide appropriate sight distance from the exit ramps. Existing SR 27 would be overlaid only. County Road 155 would be relocated to a distance of 660 ft. from the southbound exit ramp. The I-75 northbound and southbound exit ramps would be reconstructed to meet GDOT Construction Detail R-2 and to provide an intersection angle of 75° at SR 27.

Length:	Bridge Widening:	254 ft.	CR 155 Realignment:	0.47 mi.
	NB (Exit) Ramp Realign.:	0.44 mi.	SB (Exit) Ramp Realign.:	0.36 mi.

PDP Classification: Major __X__ Minor _____
Federal Oversight: Full Oversight (X), Exempt( ), State Funded( ), or Other ( )

Functional Classification: Rural Minor Arterial

U. S. Route Number(s): I-75 **State Route Number(s):** 27

Traffic (AADT) as shown in the approved concept:
Current Year: 2,880 vpd (2005) Design Year: 4,030 vpd (2025)

Proposed features to be revised: In lieu of widening the existing SR 27 bridge over I-75, as described in the most recent concept report (dated March 15, 2000), this bridge would be replaced on a new alignment (Milepost 14.9 to 15.3). The proposed alignment would be located to the north of the existing alignment to avoid the two existing service stations located south of SR 27. In addition, the proposed typical sections of the ramps and typical sections of SR 27 along the roadway and at the bridge are to be revised.

The most recent concept report (dated March 15, 2000) shows that the typical section of SR 27

would be unchanged from the existing, consisting of two 12 ft. travel lanes with 8 ft. grass shoulders. This would be revised to show 2 ft. paved shoulders with 8 ft. grass shoulders. Right and left turn bays would be added to provide for traffic movements entering I-75. To accommodate these left turn lanes, a 24 ft. raised median would be added along SR 27 crossing the bridge.

The most recent concept report (dated March 15, 2000) shows that the bridge would be widened such that it provides two 12 ft. travel lanes with a 10 ft. shoulder on the north side and a 12 ft. shoulder on the south side. The additional width on the south side shoulder is necessary to provide adequate sight distance from the ramp terminal across the bridge. Since the bridge would be replaced, the revised concept would show two 12 ft. lanes with 10 ft. shoulders as well as a 24 ft. raised median.

The most recent concept report (dated March 15, 2000) shows the proposed typical section for the ramps to be 16 ft. travel lane that widens to 24 ft. to allow for a turn lane at the intersection. The predicted traffic volumes do not show the need for left turn lanes. Therefore they would not be proposed on the revised concept report.

The scope of the most recent concept report (dated March 15, 2000) would also be changed to include realignments at CR 340 and CR 209 in addition to CR 155 to provide acceptable distances from the northbound and southbound ramps. It would also include the addition of a frontage road to provide access control in the vicinity of the interchange. This frontage road would be used by two service stations located west of I-75. The increased scope would also include the replacement of the northbound and southbound entrance ramps in addition to the exit ramps.

Description of the Revised Features to be Approved:

Roadway

The proposed project is to realign 0.7 mi. of SR 27 (county miles 14 to 15) to the north of the existing alignment. This new alignment would accommodate the bridge replacement over I-75 as well as alleviate impacts to the two service stations located south of SR 27. SR 27 would be widened to accommodate two 12 ft. traffic lanes as well as a 24 ft. raised median in the vicinity of the SR 27 bridge over I-75. The project would also realign 0.6 mi. of CR 155 and construct 788 feet of pavement for the addition of a frontage road along SR 27, which would provide access to the two service stations. This intersection is to be positioned as far away from the southbound ramps as possible without impacting a stream that runs to the west of I-75. This distance will be approximately 660 ft. CR 340 and CR 209 would also be realigned so that their intersections with SR 27 are 1000 ft. from the northbound ramps of I-75. Connector roads would be constructed for CR 340 and CR 209 to allow access to the existing alignments, which are to remain after construction is complete. Cul-de-sacs would also be added to the county roads near their present intersections with SR 27. The county roads and frontage road of this project would each consist of two 12 ft. travel lanes with 4 ft. unpaved shoulders.

Length:	SR 27 Realignment:	0.7 mi.	CR 155 Realignment:	0.6 mi.

CR 340 Realignment:	0.6 mi.	CR 209 Realignment:	0.5 mi.
CR 340 Connector:	520 ft.	CR 209 Connector:	586 ft.
SB Entrance Ramp Realign.:	0.5 mi.	NB Exit Ramp Realign.:	0.4 mi.
SB Exit Ramp Realign.:	0.5 mi.	NB Entrance Ramp Realign.:	0.5 mi.
Frontage Rd. New Align.:	778 ft.		

Bridges

The existing SR 27 bridge over I-75 would be replaced in accordance with the maintenance letter dated May 18, 2005. The bridge would be built such that it would provide a minimum of 16'-6" of vertical clearance and would provide for future widening of I-75 for up to four additional lanes. The bridge is proposed to be 71.25 ft. wide, which would provide for two 12 ft. travel lanes, 10 ft. shoulders, and a 24 ft. raised median.

Length: Bridge Replacement: 280 ft.

Miscellaneous revisions:

DESIGN SPEED: 35 mph for Frontage Rd. and connector roads for CR 340 and CR 209.

TRAFFIC CONTROL DURING CONSTRUCITON:

1. Traffic can be maintained on SR 27 while the new bridge is being constructed; new bridge to be constructed on an offset alignment.
2. There would be no need for staging on CR 155, CR 340, or CR 209. Existing CR 155, CR 340, and CR 209 are to remain in service until completion of the new roadway. These alignments are predominately on new location, and the tie-in to the existing can be constructed under traffic.
3. Traffic can be maintained on the existing ramps while the relocated ramps are being built, although small amounts of temporary pavement may be necessary where the existing ramps intersect the proposed SR 27 alignment.

PROPOSED STRUCTURES: SR 27 bridge replacement (length: 285 ft.; width: 67.25 ft.)

SIGHT DISTANCE: Appropriate intersection sight distances would be provided for all ramp terminal intersections with SR 27 as well as all County Road intersections within the scope of this project.

DESIGN EXCEPTIONS REQUESTED:

	UNDETERMINED	YES	NO
STOPPING SIGHT DISTANCE	( )	( )	(X)

NUMBER OF PARCELS IMPACTED: 16

DISPLACEMENTS: 1 Commercial (Abandoned service station in SE quadrant of interchange)

Updated traffic data (AADT):

Current Year: 2,400 vpd (2010) Design Year: 3,800 vpd (2030)

Programmed/Schedule:

P.E.: 2007 R/W: 2006 Construction: 2008

Revised cost estimates:

1. Construction cost including inflation and E&C = $9,405,000
2. Right-of-way = $925,000
3. Utilities = $24,000 (No change)

Is the project located in a Non-attainment area? _____ Yes __X__ No

Recommendation: It is recommended that the proposed revisions to the concept be approved for implementation.

Attachments:

1. Sketch Map
2. Typical Sections
3. Construction Cost Estimate
4. Bridge Inventory Sheets (SIA)
5. Bridge Maintenance Letter dated May 18, 2005
6. Cost Difference between Rehab Bridge and Bridge Replacement
7. Bridge Salvage Letter dated December 12, 2005
8. Traffic Analysis (Appendices of Traffic Study is not included)
9. Traffic Diagrams
10. Approved Concept Report dated May 8, 2000

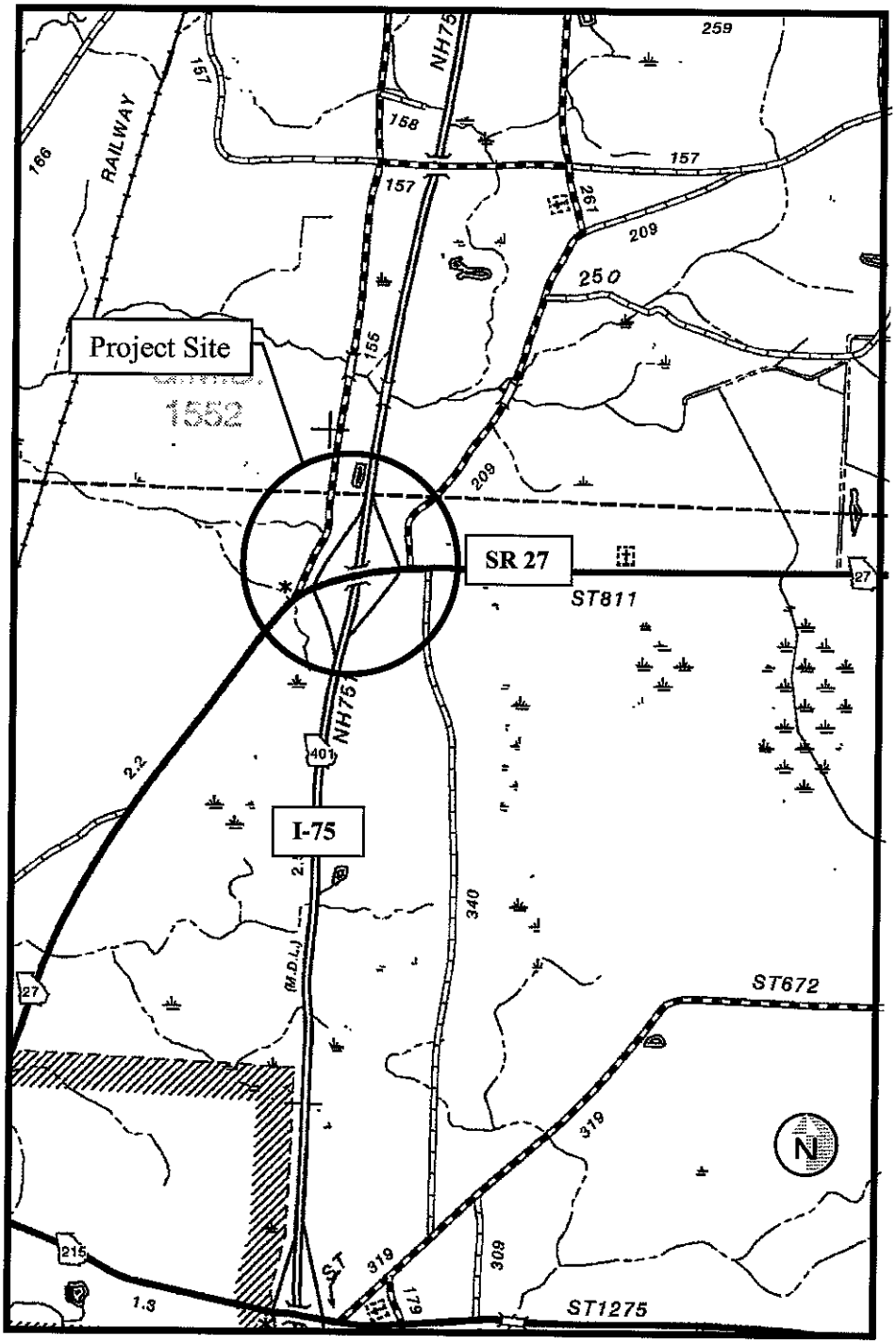
Concur: _____
Director of Preconstruction

Approve: _____
for Division Administrator, FHWA

Approve: _____
Chief Engineer

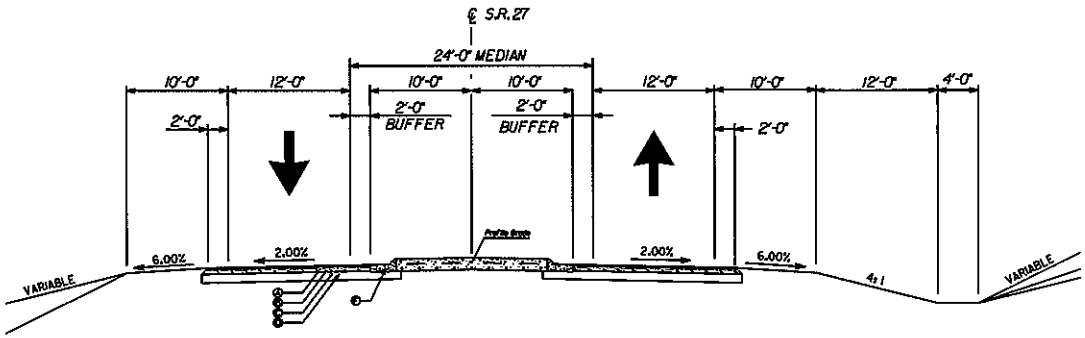
Sketch Map

IM-NH-75-1(227) Dooly County, GA PI# 311665

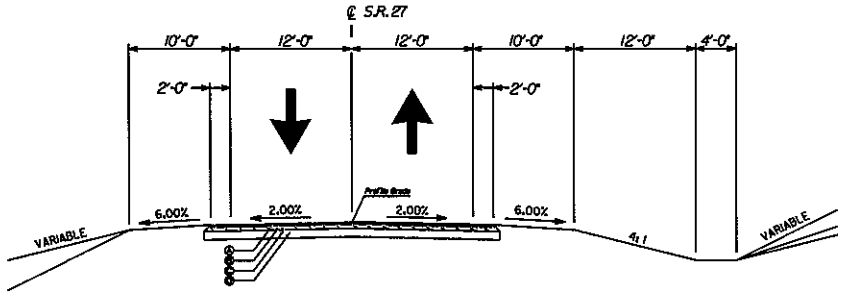


Sketch Map

Typical Sections



S. R. 27 TYPICAL SECTION
TANGENT SECTION WITH 24' RAISED MEDIAN



S. R. 27 TYPICAL SECTION
TANGENT SECTION

REQUIRED PAVEMENT

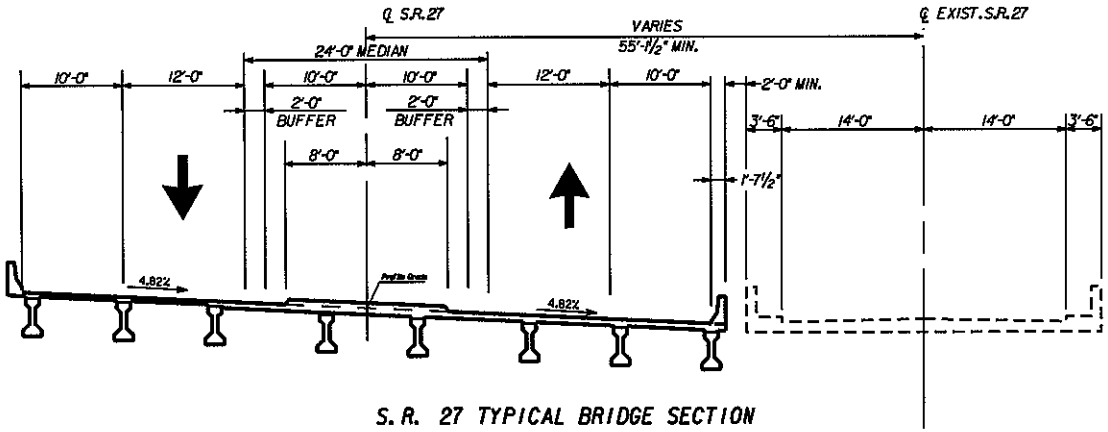
Ⓐ 135 LBS/SY RECYCLED ASPH CONC 9.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM & H LIME (SUPERPAVE LEVEL B)
Ⓑ 220 LBS/SY RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM & H LIME (SUPERPAVE LEVEL B)
Ⓒ 440 LBS/SY RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM & H LIME (SUPERPAVE LEVEL A)
Ⓓ GRADED AGGREGATE BASE, 12"
Ⓔ RECYCLED ASPH CONC LEVELING, INCL BITUM & H LIME-AS REQ'D
Ⓕ 8"X30" CONC. CURB & GUTTER, GA. STD. 9032 B. TYPE 7

J.B. TRIMBLE, INC.
6445 Powers Ferry Road,
Suite 100
Atlanta, GA 30339

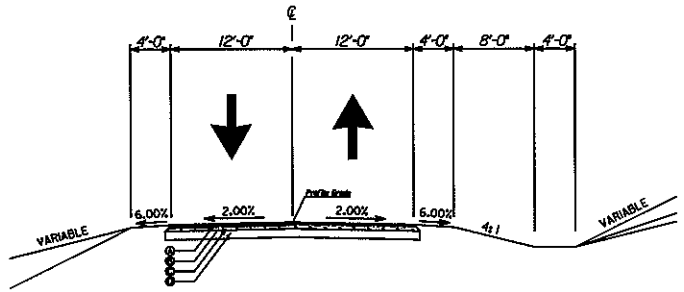
REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: ROAD DESIGN
TYPICAL SECTIONS

DATETIME### #USER#	TIME### ##PENTABLE##	#DGN#	COUNTY DOOLY	PROJECT NUMBER IN-RH-75-1(287)	SHEET NO.	TOTAL SHEETS



S. R. 27 TYPICAL BRIDGE SECTION



C. R. 340, C. R. 209, C. R. 155, C. R. 340 CONNECTOR, C. R. 209 CONNECTOR & FRONTAGE ROAD A TYPICAL SECTION
TANGENT SECTION

REQUIRED PAVEMENT

Ⓐ 135 LBS/SY RECYCLED ASPH CONC 9.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM & H LIME (SUPERPAVE LEVEL B)
Ⓑ 220 LBS/SY RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM & H LIME (SUPERPAVE LEVEL B)
Ⓒ 440 LBS/SY RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM & H LIME (SUPERPAVE LEVEL A)
Ⓓ GRADED AGGREGATE BASE, 12"
Ⓔ RECYCLED ASPH CONC LEVELING, INCL BITUM & H LIME-AS REQ'D

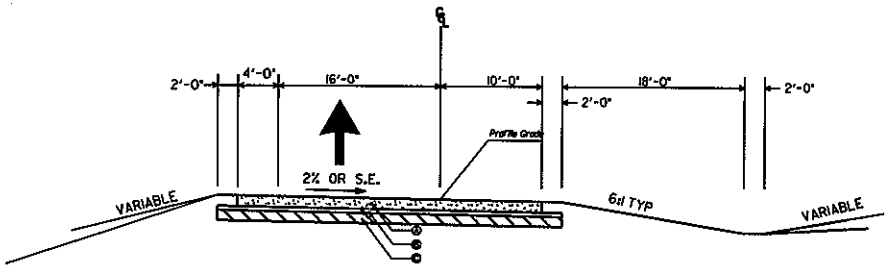
JBT J.B. TRIMBLE, INC.
6445 Powers Ferry Road,
Suite 100
Atlanta, GA 30339

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: ROAD DESIGN

TYPICAL SECTIONS

DATETIME###	TIME###			COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
#USER#	##PENTABLE##	#DGN#		DOOLY	IM-NH-75-1(287)		



NORTHBOUND AND SOUTHBOUND ENTRANCE AND EXIT RAMPS
TYPICAL SECTION

REQUIRED PAVEMENT

Ⓐ PLAIN PC PAVEMENT, CL HES CONC., 12"
Ⓑ 330 LBS/SY RECYCLED ASPH CONC 19 MM SUPERPAVE, INCL BITUM & H LIME (SUPERPAVE LEVEL A)
Ⓒ GRADED AGGREGATE BASE, 12"

J.B. TRIMBLE, INC.
6445 Powers Ferry Road,
Suite 100
Atlanta, GA 30339

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: ROAD DESIGN
TYPICAL SECTIONS
DRAWING NO.

Construction Cost Estimate

Estimate Report for file "IM-NH-75-1(227)"

Section Pavement

Item Number	Quantity	Units	Unit Price	Item Description	Cost
310-5120	87929	SY	13.77	GR AGGR BASE CRS, 12 INCH, INCL MATL	1210782.33
400-3130	2279	TN	62.47	ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL POLYMER-MODIFIED BITUM MATL & H LIME	142369.13
400-3604	3715	TN	68.33	ASPH CONC 12.5 MM SMA, GP 2 ONLY, INCL POLYMER-MODIFIED BITUM MATL & H LIME	253845.95
402-1812	542	TN	40.69	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	22053.98
402-3110	3582	TN	39.28	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	140700.96
402-3121	20963	TN	41.66	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	873318.58
402-3190	5838	TN	43.56	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2,INCL BITUM MATL & H LIME	254303.28
413-1000	13606	GL	1.01	BITUM TACK COAT	13742.06
433-1000	511	SY	146.78	REINF CONC APPROACH SLAB	75004.58
439-0056	33769	SY	60.45	PLAIN PC CONC PVMT, CL HES CONC, 12 INCH THK	2041336.05
				Section Sub Total:	**$5,027,456.90**

Section Traffic Control

Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	30000.00	TRAFFIC CONTROL -	30000.00
				Section Sub Total:	**$30,000.00**

Section Drainage

Item Number	Quantity	Units	Unit Price	Item Description	Cost
500-3101	186	CY	458.46	CLASS A CONCRETE	85273.56
511-1000	24367	LB	0.72	BAR REINF STEEL	17544.24
550-1180	870	LF	31.29	STORM DRAIN PIPE, 18 IN, H 1-10	27222.30
550-1240	120	LF	37.62	STORM DRAIN PIPE, 24 IN, H 1-10	4514.40
550-3318	58	EA	688.89	SAFETY END SECTION 18 IN, STORM DRAIN, 4:1 SLOPE	39955.62
550-3324	8	EA	933.84	SAFETY END SECTION 24 IN, STORM DRAIN, 4:1 SLOPE	7470.72
				Section Sub Total:	**$181,980.84**

Section Clearing and Grubbing

Item Number	Quantity	Units	Unit Price	Item Description	Cost
201-1500	1	LS	86303.00	CLEARING & GRUBBING - 52 AC R/W	86303.00
210-0100	1	LS	544187.00	GRADING COMPLETE -	544187.00
				Section Sub Total:	**$630,490.00**

Section Erosion Control

Item Number	Quantity	Units	Unit Price	Item Description	Cost
163-0232	26	AC	473.25	TEMPORARY GRASSING	12304.50
163-0240	234	TN	205.25	MULCH	48028.50
163-0503	33	EA	484.32	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 3	15982.56
163-0521	500	EA	166.18	CONSTRUCT AND REMOVE TEMPORARY DITCH CHECKS	83090.00
165-0010	3000	LF	1.06	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	3180.00
165-0040	500	EA	69.66	MAINTENANCE OF EROSION CONTROL CHECKDAMS/DITCH CHECKS	34830.00
165-0087	33	EA	175.19	MAINTENANCE OF SILT CONTROL GATE, TP 3	5781.27
171-0010	60000	LF	1.83	TEMPORARY SILT FENCE, TYPE A	109800.00
603-2180	321	SY	32.56	STN DUMPED RIP RAP, TP 3, 12 IN	10451.76
603-7000	321	SY	3.99	PLASTIC FILTER FABRIC	1280.79
700-6910	52	AC	768.58	PERMANENT GRASSING	39966.16
700-7000	52	TN	58.37	AGRICULTURAL LIME	3035.24
700-7010	130	GL	18.58	LIQUID LIME	2415.40
700-8000	16	TN	257.90	FERTILIZER MIXED GRADE	4126.40
700-8100	2600	LB	1.48	FERTILIZER NITROGEN CONTENT	3848.00
				Section Sub Total:	**$378,120.58**

Section Guardrail

Item Number	Quantity	Units	Unit Price	Item Description	Cost
641-1100	84	LF	31.00	GUARDRAIL, TP T	2604.00
641-1200	8165	LF	13.56	GUARDRAIL, TP W	110717.40
641-5001	7	EA	473.05	GUARDRAIL ANCHORAGE, TP 1	3311.35
641-5012	7	EA	1546.11	GUARDRAIL ANCHORAGE, TP 12	10822.77
				Section Sub Total:	**$127,455.52**

Section Signing and Marking

Item Number	Quantity	Units	Unit Price	Item Description	Cost
610-9402	6	LS	2762.44	REM STR SUPPORT, TYPE 2, INCL ILLUM SIGN SYSTEM, STA -	16574.64
636-1020	500	SF	13.54	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	6770.00
636-1076	1176	SF	28.30	HIGHWAY SIGNS, ALUM EXTRUDED PANELS, REFL SHEETING TP 6	33280.80
636-2020	50	LF	4.54	GALV STEEL POSTS, TP 2	227.00
638-1001	4	LS	70943.32	STR SUPPORT FOR OVERHEAD SIGN, TP I , STA -	283773.28
638-1003	2	LS	33672.25	STR SUPPORT FOR OVERHEAD SIGN, TP III, STA -	67344.50
652-5451	39908	LF	0.13	SOLID TRAFFIC STRIPE, 5 IN, WHITE	5188.04
652-5452	38908	LF	0.13	SOLID TRAFFIC STRIPE, 5 IN, YELLOW	5058.04
653-1704	1120	LF	3.34	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	3740.80
				Section Sub Total:	**$421,957.10**

Section Miscellaneous

Item Number	Quantity	Units	Unit Price	Item Description	Cost
153-1300	1	EA	54046.72	FIELD ENGINEERS OFFICE TP 3	54046.72
				Section Sub Total:	**$54,046.72**

Section Bridge

Item Number	Quantity	Units	Unit Price	Item Description	Cost
505-1100	20306	SF	80.00	BRIDGE NO. 1	1624480.00
540-1201	1	LS	73560.54	REMOVAL OF PARTS OF EXISTING BR, STA NO -	73560.54
				Section Sub Total:	**$1,698,040.54**

Total Estimated Cost: $8,549,548.20

Subtotal Construction Cost	**$8,549,548.20**
E&C Rate 10.0 %	$854,954.82
Inflation Rate 0.0 % @ 3.0 Years	$0.00
Total Construction Cost	**$9,404,503.02**
Right Of Way	$925,000.00
ReImb. Utilities	$24,000.00
Grand Total Project Cost	**$10,353,503.02**

Bridge Inventory Sheets

BRIDGE INVENTORY DATA LISTING GEORGIA DEPARTMENT OF TRANSPORTATION

Structure ID: 093-0007-0 **Dooly** SUFF. RATING 57.55

Location & Geography

*	Structure I.D.No:	093-0007-0	
	200 Bridge Information	06	
*	6A Feature Int:	I-75 @ 111.85 (EXIT 112)	
*	6B Critical Bridge:	0	
*	7A Route Number Carried:	SR00027	
*	7B Facility Carried:	SR 27	
*	9 Location:	2.5 MI NE OF VIENNA	
	2 DOT District:	3	
	207 Year Photo:	2003	
*	91 Inspection Frequency:	24 Date: 08/20/2003	
	92A Fract Crit Insp Freq:	00 Date: 02/01/1901	
	92B Underwater Insp Freq:	00 Date: 02/01/1901	
	92C Other Spc. Insp Freq:	00 Date: 02/01/1901	
*	4 Place Code:	00000	
*	5 Inventory Route (O/U):	1	
	Type:	3	
	Designation:	1	
	Number:	00027	
	Direction:	0	
*	16 Latitude: 32-07.3	MMS Prefix: SR	
*	17 Longitude: 83-45.7	MMS Suffix: 00 MP: 15.64	
	98 Border Bridge:	000 %Shared: 00	
	99 ID Number:	000000000000000	
*	100 STRAHNET:	2	
	12 Base Highway Network:	1	
	13A LRS Inventory Route:	931002700	
	13B Sub Inventory Route:	0	
*	101 Parallel Structure:	N	
*	102 Direction of Traffic:	0	
*	264 Road Inventory Mile Post:	015.36	
*	208 Inspection Area:	08 Initials: JLA	
	Engineer's Initial:	SGM	

* Location I.D. No.: 093-00027D-015.64E

*	104 Highway System:	0	
*	26 Functional Classification:	06	
*	204 Federal Route Type:	S No.: 00811	
	105 Federal Lands Highway:	0	
*	110 Truck Route:	0	
	206 School Bus Route:	1	
	217 Benchmark Elevation:	0392.60	
	218 Datum:	2	
*	19 Bypass Length:	04	
*	20 Toll:	3	
*	21 Maintenance:	01	
*	22 Owner:	01	
*	31 Design Load:	6	
	37 Historical Significance:	5	
	205 Congressional District:	03	
	27 Year Constructed:	1960	
	106 Year Reconstructed:	0000	
	33 Bridge Median:	0	
	34 Skew:	36	
	35 Structure Flared:	0	
	38 Navigation Control:	N	
	213 Special Steel Design:	0	
	267 Type of Paint:	4	
*	42 Type of Service on:	1	
		1	
	214 Movable Bridge:	0	
	203 Type Bridge:	C-O-M-O	
	259 Pile Encasement:	3	
*	43 Structure Type Main:	4 02	
	45 No. Spans Main:	002	
	44 Structure Type Appr:	3 02	
	46 No. Spans Appr:	0002	
	226 Bridge Curve Horz:	1 Vert: 1	
	111 Pier Protection:	0	
	107 Deck Structure Type:	1	
	108 Wearing Surface Type:	1	
	M	0	
	F	0	

Signs & Attachments

	225 Expansion Joint Type:	02	
	242 Deck Drains:	0	
	243 Parapet Location:	0	
	Height:	0.00	
	Width:	0.00	
	238 Curb:	1.20	2
	239 Handrail:	7	7
*	240 Median Barrier Rail:	0	
	241 Bridge Median Height:	0.00	
	Width:	0.00	
*	230 Guardrail Loc Dir Rear:	3	
	Fwrd:	3	
	Oppo Dir Rear:	0	
	Fwrd:	0	
	244 Approach Slab:	3	
	224 Retaining Wall:	0	
	233 Posted Speed Limit:	55	
	236 Warning Sign:	0	
	234 Delineator:	1	
	235 Hazard Boards:	0	
	237 Utilities Gas:	00	
	W	00	
	Ele	00	
	Telephone:	00	
	Se	00	
	247 Lighting Street:	0	
	Naviagtion:	0	
	Aerial:	0	
*	248 County Continuity No.:	00	

BRIDGE INVENTORY DATA LISTING GEORGIA DEPARTMENT OF TRANSPORTATION

Structure ID: 093-0007-0 **Dooly** SUFF. RATING 57.55

Programming Data

201 Project No.: I-75-1 (21) 111
202 Plans Available: 4
249 Prop. Proj. No. IM-NH-75-1 (227)
250 Approval Status: 0000
251 P.I. No.: 311665-
252 Contract Date: 02/01/2008
260 Seismic No.: 00000
75 Type Work: 00 0
94 Bridge Imp. Cost: $ 0
95 Roadway Imp. Cost: $ 0
96 Total Imp Cost: $ 0
76 Imp. Length: 000000
97 Imp. Year: 0000
114 Future ADT: 002100 Year: 2023

Hydraulic Data

215 Waterway Data
Highwater Elev.: 0000.0 Year: 1900
Avg. Streambed Elev.: 0000.0 Freq.: 00
Drainage Area: 00000
Area Of Opening: 000000
113 Scour Critical: N
216 Water Depth: 00.0 Br. Height: 00.0
222 Slope Protection: 4
221 Spur Dikes Rear: 0 Fwrd: 0
219 Fender System: 0
220 Dolphin: 0
223 Culvert Cover: 000
Type: 0
No. Barrels: 0
Width: 0.00 Height: 0.00
Length: 0 Apron: 0
* 265 U/W Insp. Area: 0 Diver: ZZZ

* Location I.D. No.: 093-00027D-015.64E

Measurements

* 29 ADT: 001400 Year: 2003
109 % Trucks: 15
* 28 Lanes On: 02 Under: 06
210 No. Tracks On: 00 Under: 00
* 48 Max. Span Length: 0085
* 49 Structure Length: 254
51 Br. Rwdy. Width: 28.00
52 Deck Width: 34.20
* 47 Tot. Horz. Cl: 28.00
50 Curb/Sdewlk Width: 2.00/2.00
32 Approach Rdwy Width: 024
* 229 Shoulder Width:
Rear Lt: 8.00 Type: 8 Rt: 8.00
Fwrd Lt: 8.00 Type: 8 Rt: 8.00
Pavement Width:
Rear: 24.00 Type: 2
Fwrd: 24.00 Type: 2
Intersection Rear: 1 Fwrd: 1
36 Safety Features Br. Rail: 2
Transition: 2
App. G. Rail: 2
App. Rail End: 2
53 Minimum Cl.Over: 99 ' 99 "
Under: H 17 ' 03 "
* 228 Min. Vertical Cl
Act. Odm Dir: 99 ' 99 "
Oppo. Dir: 99 ' 99 "
Posted Odm. Dir: 00 ' 00 "
Oppo. Dir: 00 ' 00 "
55 Lateral Undercl. Rt: H 11.30
56 Lateral Undercl. Lt: 17.80
* 10 Max Min Vert Cl: 99 ' 99 " Dir: 0
39 Nav Vert Cl: 000 Horz: 0000
116 Nav Vert Cl Closed: 000
245 Deck Thickness Main: 6.50
Deck Thick Approach: 6.50
246 Overlay Thickness: 0.00
212 Year Last Painted: Sup: 1997 Sub: 0000

Ratings

65 Inventory Rating Method: 1
63 Inventory Rating Method: 1
66 Inventory Type: 2 Rating: 18
64 Operating Type: 2 Rating: 31
231 Calculated Loads
H-Modified: 21 1
HS-Modified: 19 0
Type 3: 30 1
Type 3s2: 38 1
Timber: 34 1
Piggyback: 40 0
261 H Inventory Rating: 17
262 H Operating Rating: 28
67 Structural Evaluation: 4
58 Deck Condition: 5
59 Superstructure Condition: 7
* 227 Collision Damage: 0
60A Substructure Condition: 7
60B Scour Condition: N
60C Underwater Condition: N
71 Waterway Adequacy: N
61 Channel Protection Cond: N
68 Deck Geometry: 3
69 UnderClr. Horz/Vert: 7
72 Appr. Alignment: 5
62 Culvert: N

Posting Data

70 Bridge Posting Required: 4
41 Struct Open, Posted, Cl: P
* 103 Temporary Structure: 0
232 Posted Loads H-Modified: 21
HS-Modified: 00
Type 3: 30
Type3s2: 38
Timber: 34
Piggyback: 00
253 Notification Date 02/01/1901
253 Fed Notify Date: 02/01/1901 0

Bridge Maintenance Letter dated May 18, 2005

DOT saw replace bridge

Department of Transportation
State of Georgia

HAROLD E. LINNENKOHL
COMMISSIONER
(404) 656-5206

DAVID E. STUDSTILL JR., P.E.
CHIEF ENGINEER
(404) 656-5277

LARRY E. DENT
DEPUTY COMMISSIONER
(404) 656-5212

EARL MAHFUZ
TREASURER
(404) 656-5224

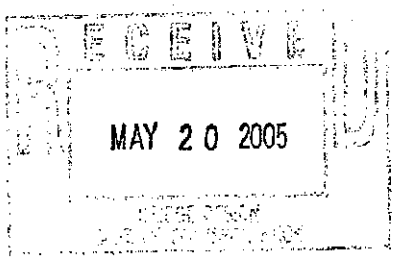
INTERDEPARTMENT CORRESPONDENCE

May 18, 2005

FROM: David Crim, State Maintenance Engineer

TO: Paul Liles, P.E., State Bridge Design Engineer
Attn: John Tiernan

SUBJECT: Bridge Replacement / Bridge Condition Survey



IM-NH-75-1(227) / Dooly
P.I. No. 311665
Structure ID 093-0007-0
Location ID 093-00027D-015.64E
SR 27 over I-75

This bridge was built in 1960 and consists of concrete bents, steel beam superstructure, and a concrete deck. The original design load capacity is HS-20 and the current load rating capacity is significantly lower, less than HS-15. The sufficiency rating on the structure is 57.5, and the bridge is classified as Functionally Obsolete and requires widening. The substandard load rating is based on all three elements of the bridge. The structure does have a thin deck that is only 6.5 inches thick, which is not desirable for an interchange bridge associated with the Interstate. The deck is also in marginal condition and will require hydrodemolition/overlay. Our experience with hydrodemolition on older state route bridges with 6 inch decks has been very poor. In every case, we have either had 40% or more blow through or a need to replace the deck. The concrete caps are also under-reinforced for shear. The steel superstructure also rates below the desirable level with no direct method of rehabilitation.

Due to the substandard load rating of all elements of the bridge and the marginal condition of the deck it is recommended that this structure be replaced.

If further information is required, please contact Brian Summers at (404) 635-8179.

DC/BKS

cc: Myron Banks

Cost Difference between Rehab. Bridge and Bridge Replacement

IM-NH-75-1(227)
P.I. Number 311665
Dooly County

Cost Comparison: Bridge Rehab. Vs. Bridge Replacement

Bridge Rehab. Costs

Rehabilitation of the SR 27 bridge over I-75 in Dooly County will require hydrodemolition/overlay and widening of the existing steel beam bridge. The existing bridge is 34.7 ft wide by 254 ft long (8814 ft^2). The bridge would be widened 8 ft more on the south side and 10 ft more on the north side for a total of 4572 ft^2.

				Cost
Hydrodemolition/overlay	8814 ft^2	at	\$24 /ft^2	\$211,536
Steel Beam Bridge Widening	4572 ft^3	at	\$125 /ft^2	\$571,500
			Total	**\$783,036**

Bridge Replacement Costs

The replacement bridge is estimated to be 71.25 ft wide by 285 ft (assumed length) for a total of 20,306 ft^2.

				Cost
Bridge No. 1	20306 ft^2	at	\$80 /ft^2	\$1,624,480
			Total	**\$1,624,480**

Comparison

Bridge Rehab. Costs		\$783,036
Bridge Replacement Costs		\$1,624,480
	Difference	**\$841,444**

Bridge Salvage Letter dated December 12, 2005

HAROLD E. LINNENKOHL
COMMISSIONER
(404) 656-5206

DAVID E. STUDSTILL, JR, P.E.
CHIEF ENGINEER
(404) 656-5277

Department of Transportation
State of Georgia

LARRY E. DENT
DEPUTY COMMISSIONER
(404) 656-5212

EARL L. MAHFUZ
TREASURER
(404) 656-5224

INTERDEPARTMENT CORRESPONDENCE

December 12, 2005

FROM: David Crim, State Maintenance Engineer

TO: Brent Story, P.E., State Road and Airport Design Engineer
Attn: David Acree

SUBJECT: Salvage Material for I-75 at SR 27

IM-NH-75-1(227) / Dooly County
P.I. No. 311665
Structure ID 093-0007-0
Location ID 093-00027D-015.64E
I-75 at SR 27

The structural steel shall be salvaged from the existing bridge as a part of this construction project. The beams in Spans #1 and #4 are simple beams and shall not be cut. The beams in Spans #2 and #3 are continuous beams and shall be cut at Bent #3. The resulting beam lengths for Spans #1 and #4 will be approximately 43 feet. The resulting beam length for Span #2 will be approximately 85 feet. The resulting beam length for Span #3 will be approximately 83 feet. The resulting beams from all four spans shall be salvaged. The aluminum handrail and posts shall be salvaged.

The salvaged materials shall be delivered to the District 3 Bridge Maintenance Headquarters located in Butler, Georgia. The District Maintenance Engineer shall be contacted 2 weeks prior to delivery to allow for arrangement of unloading these materials.

If further information is required, please contact Ben Rabun at (404) 635-8179.

DCC/BFR/JAD

CC: Kenneth Robinson, District Maintenance Engineer
file

Traffic Analysis

GEORGIA DEPARTMENT OF TRANSPORTATION

INTERCHANGE ANALYSIS

I-75/SR 27
VIENNA, GEORGIA

DECEMBER 15, 2005

ARCADIS
Infrastructure, environment, buildings

1. Executive Summary

The Interstate 75/SR 27 Interchange project in Vienna, Georgia consists of four intersections, beginning at Liberty Church Road on the west end and continuing to Bowen Road/Coppedge Road on the east end. SR 27 is a two-lane, undivided rural roadway. This corridor has become a major roadway to connect the City of Vienna to I-75.

To identify the needed intersection improvements, ARCADIS conducted a capacity analysis for each intersection. Two geometric conditions were analyzed, no-build and build. The no-build condition consisted of no improvements to the existing geometry. The build condition consisted of relocating the four existing intersections on SR 27 to allow more distance between them. Capacity analyses and traffic simulations were conducted for each intersection for the open year (2010) and design year (2030). Signal warrant analyses were also performed for the open year (2010) and design year (2030) to determine whether signalized traffic control is justified for the four intersections on the study corridor.

The following tables summarize the proposed level of service (LOS) and vehicle delay for the no-build and build condition for the open and design years. The details of the analysis are included in Section 4 of this report.

Table 1. Summary of No-Build Condition (2010)

Intersection	2010 LOS (AM/PM)				2010 Control Delay(s) (AM/PM)			
	EB (L)	WB (L)	NB (LR)	SB (LR)	EB (L)	WB (L)	NB (LR)	SB (LR)
Liberty Church Road at SR 27	A/A	-	-	A/A	7.6/7.5	-	-	9.7/9.5
I-75 Southbound Ramps at SR 27	-	A/A	-	A/A	-	7.5/7.6	-	9.4/9.4
I-75 Northbound Ramps at SR 27	A/A	-	A/A	-	7.6/7.5	-	9.7/9.4	-
Bowen Road at SR 27	A/A	-	-	A/A	7.4/7.5	-	-	8.9/9.3
Coppedge Road at SR 27	-	A/A	A/A	-	-	7.4/7.5	8.9/9.2	-

Table 2. Summary of No-Build Condition (2030)

Intersection	2030 LOS (AM/PM)				2030 Control Delay(s) (AM/PM)			
	EB (L)	WB (L)	NB (LR)	SB (LR)	EB (L)	WB (L)	NB (LR)	SB (LR)
Liberty Church Road at SR 27	A/A	-	-	B/B	7.8/7.6	-	-	10.6/10.1
I-75 Southbound Ramps at SR 27	-	A/A	-	B/A	-	7.7/7.7	-	10.3/9.8
I-75 Northbound Ramps at SR 27	A/A	-	B/B	-	7.7/7.7	-	10.7/10.2	-
Bowen Road at SR 27	A/A	-	-	A/A	7.5/7.6	-	-	9.2/9.8
Coppedge Road at SR 27	-	A/A	A/A	-	-	7.5/7.6	9.2/9.5	-

Table 3. Summary of Build Condition (2010)

Intersection	2010 LOS (AM/PM)				2010 Control Delay(s) (AM/PM)			
	EB (L)	WB (L)	NB (LR)	SB (LR)	EB (L)	WB (L)	NB (LR)	SB (LR)
Liberty Church Road at SR 27	A/A	-	-	A/A	7.6/7.5	-	-	9.7/9.5
I-75 Southbound Ramps at SR 27	-	A/A	-	A/A	-	7.5/7.6	-	9.2/9.2
I-75 Northbound Ramps at SR 27	A/A	-	A/A	-	7.6/7.5	-	9.7/9.4	-
Bowen Road/ Coppedge Road at SR 27	A/A	A/A	A/A	A/A	7.4/7.5	7.3/7.3	9.4/9.5	8.9/9.9

Table 4. Summary of Build Condition (2030)

Intersection	2030 LOS (AM/PM)				2030 Control Delay(s) (AM/PM)			
	EB (L)	WB (L)	NB (LR)	SB (LR)	EB (L)	WB (L)	NB (LR)	SB (LR)
Liberty Church Road at SR 27	A/A	-	-	B/B	7.8/7.6	-	-	10.6/10.1
I-75 Southbound Ramps at SR 27	-	A/A	-	B/A	-	7.7/7.7	-	10.3/9.8
I-75 Northbound Ramps at SR 27	A/A	-	B/B	-	7.7/7.7	-	10.7/10.1	-
Bowen Road/ Coppedge Road at SR 27	A/A	A/A	A/B	B/B	7.5/7.6	7.4/7.4	9.8/10.8	10.5/11

2. Project Location

The project consists of four intersections on SR 27 at the following locations:

- Liberty Church Road at SR 27
- I-75 Southbound Ramps at SR 27
- I-75 Northbound Ramps at SR 27
- Bowen Road/Coppedge Road at SR 27

The four intersections on SR 27 are currently stop-controlled. The project location map is shown on Figure 1.

3. Traffic Volumes

The traffic volumes analyzed for the capacity analyses and signal warrants were provided by the Georgia Department of Transportation (Georgia DOT). These volumes included the 2030 a.m. and p.m. peak-hour and the 2010 and 2030 average daily traffic (ADT) volumes. To calculate peak-hour volumes for 2010 a.m. and p.m. peak hours, the ratio between the 2010 ADT and the 2030 ADT, which is 0.62, was used. The projected 2010 and 2030 peak-hour turning movement volumes along SR 27 at the four study intersections are shown on Figure 2 and Figure 3, respectively. The ADT volumes for 2010 and 2030 are shown on Figure 4.

Figure 1. Project Location Map

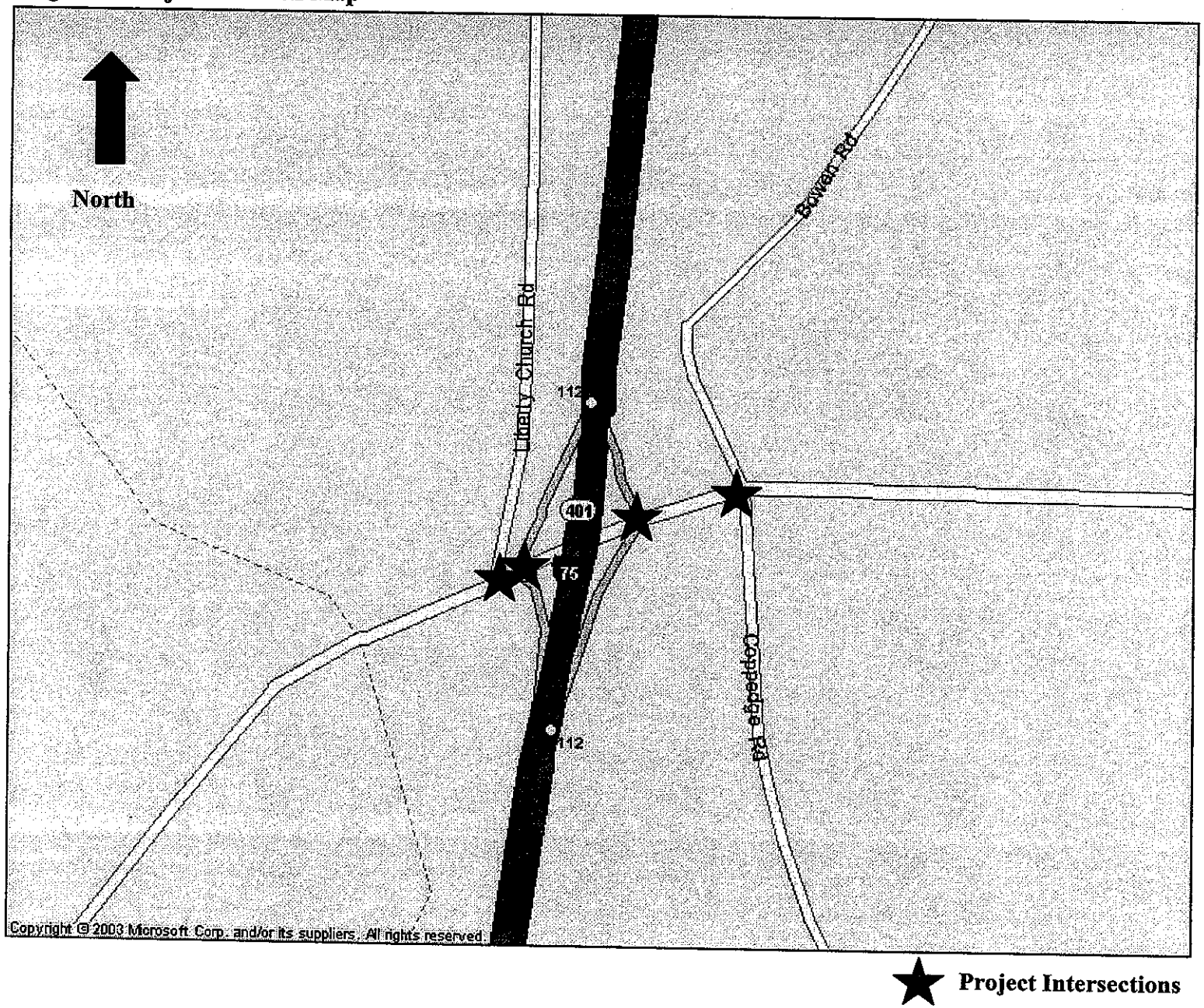
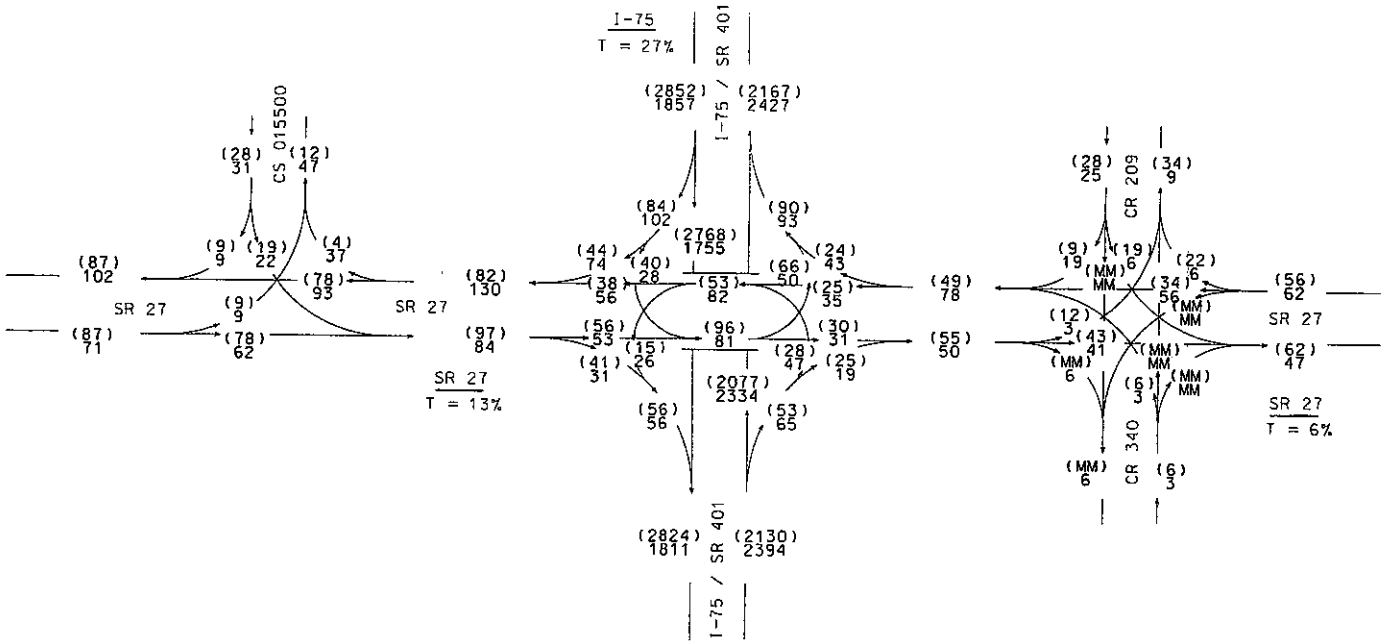


Figure 2

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENT/LOCATION

DOOLY COUNTY

N



NH-IM-75-1(227)
P.I.#311665
DOOLY COUNTY

SR 27 @ I-75

2010PM DHV = (000)
2010 AM DHV = 000

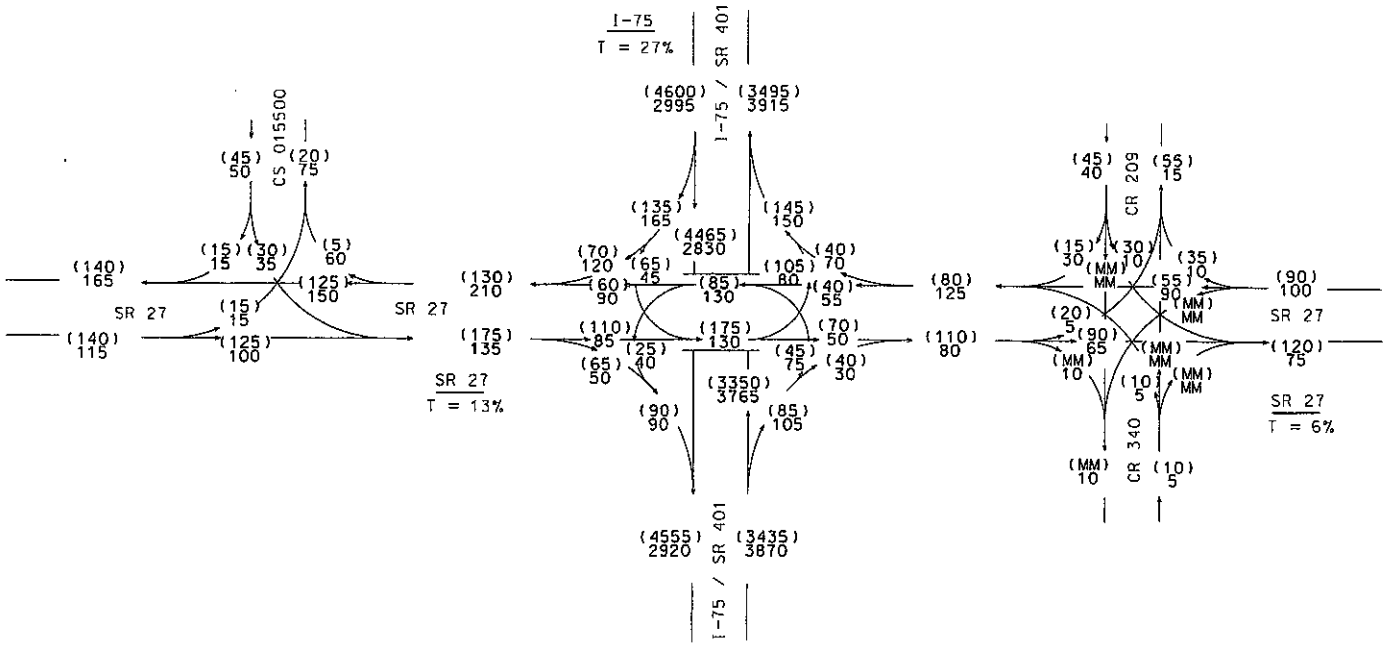
RFN
10/05

Figure 3

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENT/LOCATION

DOOLY COUNTY

N



NH-IM-75-1(227)
P.I.#311665
DOOLY COUNTY

SR 27 @ I-75

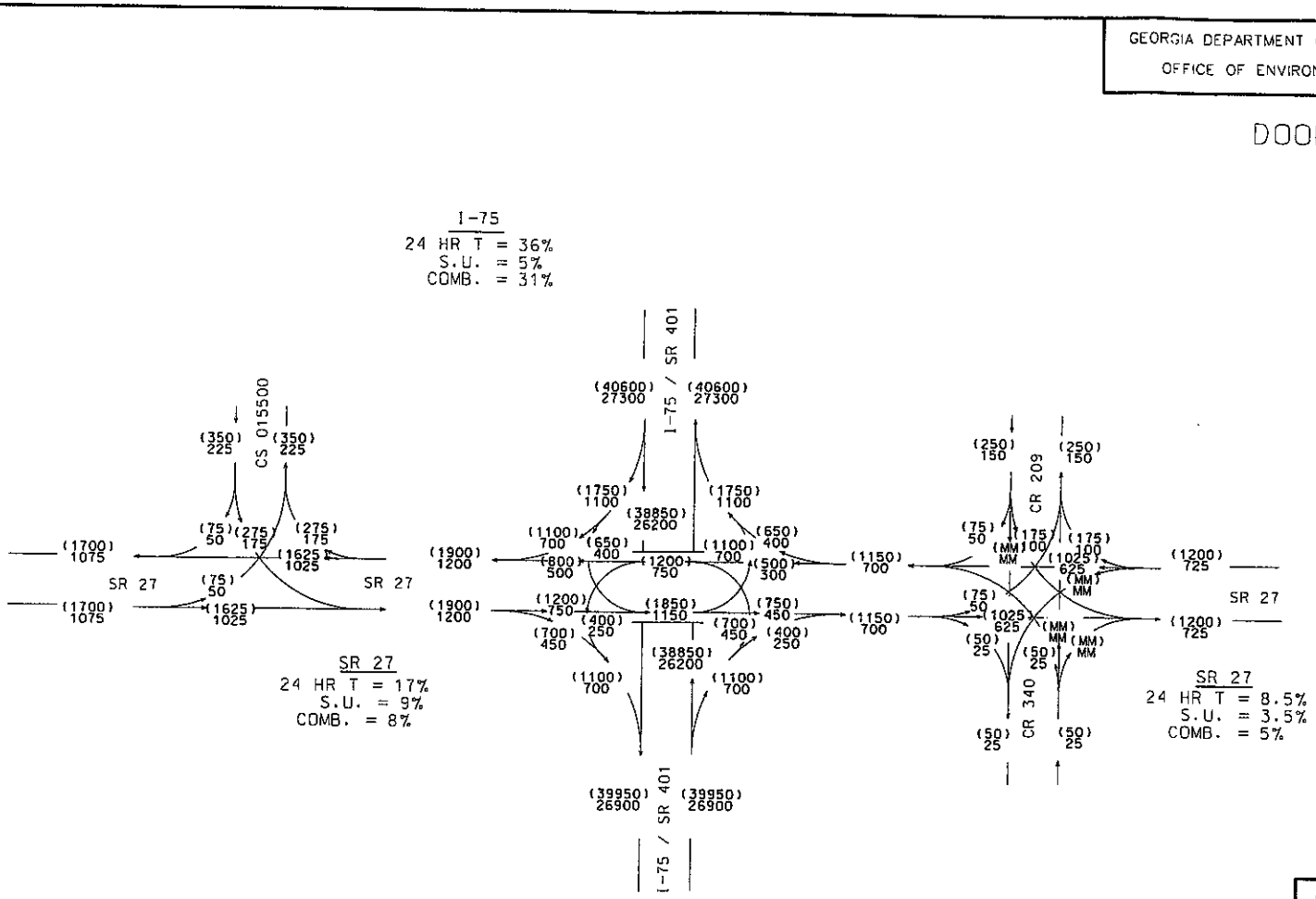
2030 PM DHV = (000)
2030 AM DHV = 000

RFN
10/05

Figure 4

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENT/LOCATION

DOOLY COUNTY



NH-IM-75-1(227)
P.I.#31165
DOOLY COUNTY

SR 27 @ I-75

2030 ADT = (000)
2010 ADT = 000

RFN
10/05

4. Signal Warrant Analysis

This signal warrant study was performed to determine whether a traffic control signal is justified for the four intersections on the SR 27 corridor. The corridor begins at Liberty Church Road on the west end and continues to Bowen Road and Coppedge Road on the east end.

The eight signal warrants identified in the *Manual on Uniform Traffic Control Devices, Millennium Edition (MUTCD)* were analyzed based on 2010 and 2030 build year traffic volumes. Table 5 summarizes the results of the individual signal warrants.

Table 5. Summary of Traffic Control Signal Warrants

Traffic Control Signal Warrant	Results
Warrant 1, Eight-Hour Vehicular Volumes	Not Warranted
Warrant 2, Four-Hour Vehicular Volumes	Not Analyzed
Warrant 3, Peak-Hour Volumes	Not Warranted
Warrant 4, Pedestrian Volumes	Not Applicable
Warrant 5, School Crossing	Not Applicable
Warrant 6, Coordinated Signal System	Not Applicable
Warrant 7, Crash Experience	Not Applicable
Warrant 8, Roadway Network	Not Applicable

The signal warrant analyses determined that Warrant 1 and Warrant 3 were not satisfied for the four intersections on the SR 27 corridor. Therefore, signalization of the proposed intersections is not recommended.

4.1 Warrants for Justifying Traffic Control Signals

4.1.1 Warrant 1 – Eight-Hour Vehicular Volumes

Warrant 1 is intended to determine the need for a traffic signal under two conditions. The first condition, condition A, is where a large volume of intersecting traffic over an eight-hour period is the principal reason to consider installing a traffic control signal. A summary of the warrant results for condition A for the open year (2010) is shown in Table 6. A summary of Warrant 1 results for condition A for the design year (2030) is shown in Table 7.

Table 6. Warrant 1, Eight-Hour Vehicular Volume (Condition A) Evaluation

Intersection	Projected ADT Year 2010		Hourly Volume* (During 8 hours)		Required Hourly Volume		Warrant Met?
	Major	Minor	Major	Minor	Major	Minor	
SR 27 at Liberty Church Road	2,275	225	143	15	350	105	No
SR 27 at I-75 Southbound Ramps (enter and exit ramps)	1,950	1,100	122	70	350	105	No
SR 27 at I-75 Southbound Ramps (enter and exit ramps)	1,850	1,100	116	70	350	105	No
SR 27 at Coppedge Road/ Bowen Road	1,425	150	90	10	350	105	No

*Hourly Volume=ADT*6.25 percent (*Institute of Transportation Engineers Manual of Traffic Signal Design, 2nd Edition)*

Table 7. Warrant 1, Eight-Hour Vehicular Volume (Condition A) Evaluation

Intersection	Projected ADT Year 2030		Hourly Volume* (During 8 hours)		Required Hourly Volume		Warrant Met?
	Major	Minor	Major	Minor	Major	Minor	
SR 27 at Liberty Church Road	3,600	350	225	22	350	105	No
SR 27 at I-75 Southbound Ramps (enter and exit ramps)	3,100	1,750	194	110	350	105	No
SR 27 at I-75 Southbound Ramps (enter and exit ramps)	3,000	1,750	188	110	350	105	No
SR 27 at Coppedge Road/ Bowen Road	2,350	250	147	16	350	105	No

*Hourly Volume=ADT*6.25 percent (*Institute of Transportation Engineers Manual of Traffic Signal Design, 2nd Edition)*

Since the hourly breakdown volumes were not provided for Warrant 1, these traffic volumes were estimated. The *Institute of Transportation Engineers (ITE) Manual of Traffic Signal Design, 2nd edition*, states that the eight highest hour values may be obtained based upon the ADT. These values are based on the assumption that the eight highest hours will each exceed 6.25 percent of the ADT.

The second condition, condition B, is where the traffic volume on a major street is sufficiently heavy over an eight-hour period to cause significant delay or conflict for the side street entering or crossing the major street. A summary of the warrant results for condition B for the open year (2010) is shown in Table 8. A summary of the warrant results for the design year (2030) is shown in Table 9.

Table 8. Warrant 1, Eight-Hour Vehicular Volume (Condition B) Evaluation

Intersection	Projected ADT Year 2010		Hourly Volume* (During 8 hours)		Required Hourly Volume		Warrant Met?
	Major	Minor	Major	Minor	Major	Minor	
SR 27 at Liberty Church Road	2,275	225	143	15	525	53	No
SR 27 at I-75 Southbound Ramps (enter and exit ramps)	1,950	1,100	122	70	525	53	No
SR 27 at I-75 Southbound Ramps (enter and exit ramps)	1,850	1,100	116	70	525	53	No
SR 27 at Coppedge Road/ Bowen Road	1,425	150	90	10	525	53	No

*Hourly Volume=ADT*6.25 percent (*Institute of Transportation Engineers Manual of Traffic Signal Design, 2nd Edition)*

Table 9. Warrant 1, Eight-Hour Vehicular Volume (Condition B) Evaluation

Intersection	Projected ADT Year 2030		Hourly Volume* (During 8 hours)		Required Hourly Volume		Warrant Met?
	Major	Minor	Major	Minor	Major	Minor	
SR 27 at Liberty Church Road	3,600	350	225	22	525	53	No
SR 27 at I-75 Southbound Ramps (enter and exit ramps)	3,100	1,750	194	110	525	53	No
SR 27 at I-75 Southbound Ramps (enter and exit ramps)	3,000	1,750	188	110	525	53	No
SR 27 at Coppedge Road/ Bowen Road	2,350	250	147	16	525	53	No

*Hourly Volume=ADT*6.25 percent (*Institute of Transportation Engineers Manual of Traffic Signal Design, 2nd Edition)*

Warrant Satisfied: Not Satisfied

4.1.2 Warrant 2 – Four-Hour Vehicular Volumes

Warrant 2 is intended to determine if the volume of intersecting traffic over a four-hour period is significantly heavy to consider the installation of a traffic signal.

Warrant: Not Analyzed

4.1.3 Warrant 3 – Peak-Hour Volumes

Warrant 3 is intended to determine if the volumes for one hour of an average day cause the minor street traffic to suffer undue delay, therefore justifying a traffic signal. Table 10 shows the comparison between the mainline and side street vehicle approaches. A summary of the warrant results for the project corridor are shown in Table 11.

Table 10. Warrant 3, Peak-Hour Volumes (70 Percent Factor)

(Community Less Than 10,000 Populations or Above 70 Km/H or Above 40 Mph on Major Street)

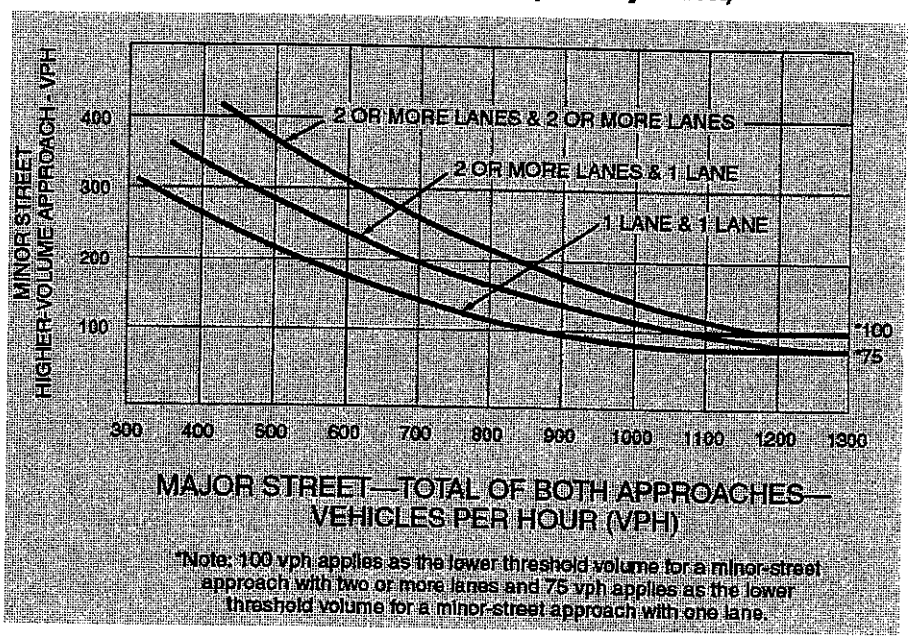


Table 11. Warrant 3, Peak-Hour Evaluation

Intersection	Peak Hour Volume (2010)		Peak Hour Volume (2030)		Warrant Met?
	Major	Minor	Major	Minor	
SR 27 at Liberty Church Road	202	47	325	75	No
SR 27 at I-75 Southbound Ramps (enter and exit ramps)	165	102	265	165	No
SR 27 at I-75 Southbound Ramps (enter and exit ramps)	158	93	255	150	No
SR 27 at Coppedge Road/ Bowen Road	124	34	200	55	No

Warrant Satisfied: Not Satisfied

4.1.4 Warrant 4 – Pedestrian Volumes

Warrant 4 is intended for application where the traffic volumes on a major street are sufficiently heavy to cause pedestrians excessive delay in crossing the major street.

Warrant: Not Applicable

4.1.5 Warrant 5 – School Crossing

Warrant 5 is intended for application where the principal reason to consider installing a traffic signal is school children crossing the major street.

Warrant: Not Applicable

4.1.6 Warrant 6 – Coordinated Signal System

Warrant 6 is intended for application where progressive movement in a coordinated signal system necessitates the installation of a traffic signal.

Warrant: Not Applicable

4.1.7 Warrant 7 – Crash Experience

Warrant 7 is intended for application where the frequency and severity of accidents are the principal reason to consider installing a traffic signal.

Warrant: Not Applicable

4.1.8 Warrant 8 – Roadway Network

Warrant 8 is intended for application where two or more major routes intersect and the traffic is encouraged to concentrate or organize traffic flow on a roadway network.

Warrant: Not Applicable

5. Capacity Analysis

The *Highway Capacity Manual, Fourth Edition*, published in 2000, outlines the process of defining the LOS and evaluating the various types of highway facilities. The manual provides procedures for evaluating stop-controlled intersections and freeway merge and diverge conditions. The Highway Capacity Software HCS+ was used to facilitate the capacity analyses for this study.

5.1 Merge Analysis

The criteria for evaluating the operation of a merge and diverge ramp are defined in the *Highway Capacity Manual* and are measured in terms of density. LOS A represents when the flow from the departing merge area is less than the capacity of the downstream freeway, whereas LOS F is when the flow from the departing merge area is more than the capacity of the downstream freeway. LOS criteria are shown in Table 12.

Table 12. Level of Service Criteria for Merge and Diverge Areas

Level of Service	Density (pc/mi/ln)
A	< 10
B	>10 to 20
C	> 20 to 28
D	> 28 to 35
E	> 35
F	Demand exceeds capacity

5.2 Diverge Analysis

The LOS criteria for diverge areas are shown in Table 12. Just as with merge area conditions, diverge areas are calculated based on unsaturated flow conditions and are not calculated when capacity has been exceeded. A poor LOS is present when demand exceeds capacity. This happens when the approaching freeway segment or the departing freeway segment is at or beyond capacity.

5.3 Unsignalized Analysis

The *Highway Capacity Manual* defines LOS for an unsignalized intersection in terms of average total vehicle delay experienced by left-turn motorists from the side street. LOS A represents little or no delay, while LOS F is very congested with average total vehicle delay exceeding 50 seconds for unsignalized intersections. LOS D is considered acceptable. LOS F is typically unacceptable. The LOS criteria for unsignalized intersections are shown in Table 13.

Table 13. Level of Service Criteria for Unsignalized Intersections

Level of Service	Control Delay Per Vehicle (Sec)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

6. Analysis and Recommendations

6.1 Merge Analysis

The existing lane configurations for the northbound and southbound ramp merges with I-75 were evaluated for 2010 and 2030. Summaries of the merge analysis results are shown in Table 14 and Table 15.

Table 14. Summary of Merge Analysis (No-Build)

Year	Period	Ramp	Speed (mph)	Density (pc/mi/ln)	LOS
2010	AM	SB On	61.0	16.2	B
	PM	SB On	60.0	21.9	C
	AM	NB On	60.0	20.0	C
	PM	NB On	60.0	18.5	B
2030	AM	SB On	60.0	22.8	C
	PM	SB On	58.0	32.0	D
	AM	NB On	59.0	28.9	D
	PM	NB On	59.0	26.5	D

Table 15. Summary of Merge Analysis (Build)

Year	Period	Ramp	Speed (mph)	Density (pc/mi/ln)	LOS
2010	AM	SB On	61.0	16.2	B
	PM	SB On	60.0	21.9	C
	AM	NB On	60.0	20.0	C
	PM	NB On	60.0	18.5	B
2030	AM	SB On	60.0	22.8	C
	PM	SB On	58.0	32.0	D
	AM	NB On	59.0	28.9	D
	PM	NB On	59.0	26.5	D

For the no-build and build conditions, results indicate that the merging ramps are an acceptable LOS for the open year (2010) and design year (2030). The HCS analyses for the merge condition are provided in Appendix A.

6.2 Diverge Analysis

The existing lane configuration for the northbound and southbound diverge from I-75 was evaluated for 2010 and 2030. Summaries of the diverge analysis results are shown in Table 16 and Table 17.

Table 16. Summary of Diverge Analysis (No-Build)

Year	Period	Ramp	Speed (mph)	Density (pc/mi/ln)	LOS
2010	AM	SB Off	65.0	18.5	B
	PM	SB Off	65.0	25.0	C
	AM	NB Off	65.1	22.1	C
	PM	NB Off	65.1	20.3	C
2030	AM	SB Off	64.8	26.0	C
	PM	SB Off	64.9	35.0	D
	AM	NB Off	65.0	31.0	D
	PM	NB Off	65.0	28.5	D

Table 17. Summary of Diverge Analysis (Build)

Year	Period	Ramp	Speed (mph)	Density (pc/mi/ln)	LOS
2010	AM	SB Off	65.0	18.5	B
	PM	SB Off	65.0	25.0	C
	AM	NB Off	65.1	22.1	C
	PM	NB Off	65.1	20.3	C
2030	AM	SB Off	64.8	26.0	C
	PM	SB Off	64.9	35.0	D
	AM	NB Off	65.0	31.0	D
	PM	NB Off	65.0	28.5	D

For the no-build and build conditions, results indicate that the diverging ramps are an acceptable LOS for the open year (2010) and design year (2030). The HCS analyses for the diverge condition is provided in Appendix B.

6.3 Accident Analysis

Georgia DOT provided accident data for the SR 27 corridor in the study area. The data represents all of the reported accidents occurring in 2002, 2003, and 2004. The data provided the number and type of accidents at specified locations.

During the three-year period, only nine accidents were reported. The most common accident type is right-angle accidents (56 percent). A summary table with accident rates for each year along the project location is provided in Appendix C.

6.4 Intersection Analysis

6.4.1 No-Build Analysis

The open year (2010) and design year (2030) a.m. and p.m. peak-hour volumes were analyzed under the current geometric conditions. The intersection delays and LOS for the 2010 and 2030 no-build condition are summarized in Table 18 and Table 19. The capacity analyses for the open year and design year are provided in Appendix D.

Table 18. Summary of No-Build Condition (2010)

Intersection	2010 LOS (AM/PM)				2010 Control Delay(s) (AM/PM)			
	EB (L)	WB (L)	NB (LR)	SB (LR)	EB (L)	WB (L)	NB (LR)	SB (LR)
Liberty Church Road at SR 27	A/A	-	-	A/A	7.6/7.5	-	-	9.7/9.5
I-75 Southbound Ramps at SR 27	-	A/A	-	A/A	-	7.5/7.6	-	9.4/9.4
I-75 Northbound Ramps at SR 27	A/A	-	A/A	-	7.6/7.5	-	9.7/9.4	-
Bowen Road at SR 27	A/A	-	-	A/A	7.4/7.5	-	-	8.9/9.3
Coppedge Road at SR 27	-	A/A	A/A	-	-	7.4/7.5	8.9/9.2	-

Table 19. Summary of No-Build Condition (2030)

Intersection	2030 LOS (AM/PM)				2030 Control Delay(s) (AM/PM)			
	EB (L)	WB (L)	NB (LR)	SB (LR)	EB (L)	WB (L)	NB (LR)	SB (LR)
Liberty Church Road at SR 27	A/A	-	-	B/B	7.8/7.6	-	-	10.6/10.1
I-75 Southbound Ramps at SR 27	-	A/A	-	B/A	-	7.7/7.7	-	10.3/9.8
I-75 Northbound Ramps at SR 27	A/A	-	B/B	-	7.7/7.7	-	10.7/10.2	-
Bowen Road at SR 27	A/A	-	-	A/A	7.5/7.6	-	-	9.2/9.8
Coppedge Road at SR 27	-	A/A	A/A	-	-	7.5/7.6	9.2/9.5	

For the no-build conditions, the LOS for 2010 and 2030 are acceptable for each intersection.

6.4.2 Build Analysis

The open year (2010) and design year (2030) a.m. and p.m. peak-hour volumes were analyzed under the proposed geometric conditions. The recommended changes were based on safety concerns and heavier turning movements onto the interstate ramps than at other intersections in the study corridor. The proposed geometric changes to the corridor are as follows:

- Add a left-turn lane westbound on SR 27 at the I-75 southbound ramps
- Add a right-turn lane eastbound on SR 27 at the I-75 southbound ramps
- Add a left-turn lane eastbound on SR 27 at the I-75 northbound ramps
- Add a right-turn lane westbound on SR 27 at the I-75 northbound ramps

The National Cooperative Highway Research Program (NCHRP) Report 457, *Evaluating Intersection Improvements: An Engineering Study Guide,* gives three criteria for providing a left-turn bay on a major road:

- A left-turn lane should be considered at any median crossover on a divided, high-speed road.
- A left-turn lane should be provided on the unstopped approach of a high-speed rural highway when it intersects with other arterials or collectors.
- A left-turn lane is recommended on the unstopped approach of any intersection when the combination of intersection volumes intersects above or to the right of the appropriate trend line.

Based on the second criteria, ARCADIS recommends the provision for a left-turn lane as specified above. The first criterion is not applicable to this project and the third criterion does not meet the volume projections.

The intersection delays and LOS for the 2010 and 2030 build conditions are summarized in Table 20 and Table 21. The capacity analyses for the open year and design year are provided in Appendix D.

Table 20. Summary of Build Condition (2010)

Intersection	2010 LOS (AM/PM)				2010 Control Delay(s) (AM/PM)			
	EB (L)	WB (L)	NB (LR)	SB (LR)	EB (L)	WB (L)	NB (LR)	SB (LR)
Liberty Church Road at SR 27	A/A	-	-	A/A	7.6/7.5	-	-	9.7/9.5
I-75 Southbound Ramps at SR 27	-	A/A	-	A/A	-	7.5/7.6	-	9.2/9.2
I-75 Northbound Ramps at SR 27	A/A	-	A/A	-	7.6/7.5	-	9.7/9.4	-
Bowen Road/Coppedge Road at SR 27	A/A	A/A	A/A	A/A	7.4/7.5	7.3/7.3	9.4/9.5	8.9/9.9

Table 21. Summary of Build Condition (2030)

Intersection	2030 LOS (AM/PM)				2030 Control Delay(s) (AM/PM)			
	EB (L)	WB (L)	NB (LR)	SB (LR)	EB (L)	WB (L)	NB (LR)	SB (LR)
Liberty Church Road at SR 27	A/A	-	-	B/B	7.8/7.6	-	-	10.6/10.1
I-75 Southbound Ramps at SR 27	-	A/A	-	B/A	-	7.7/7.7	-	10.3/9.8
I-75 Northbound Ramps at SR 27	A/A	-	B/B	-	7.7/7.7	-	10.7/10.1	-
Bowen Road/Coppedge Road at SR 27	A/A	A/A	A/B	B/B	7.5/7.6	7.4/7.4	9.8/10.8	10.5/11

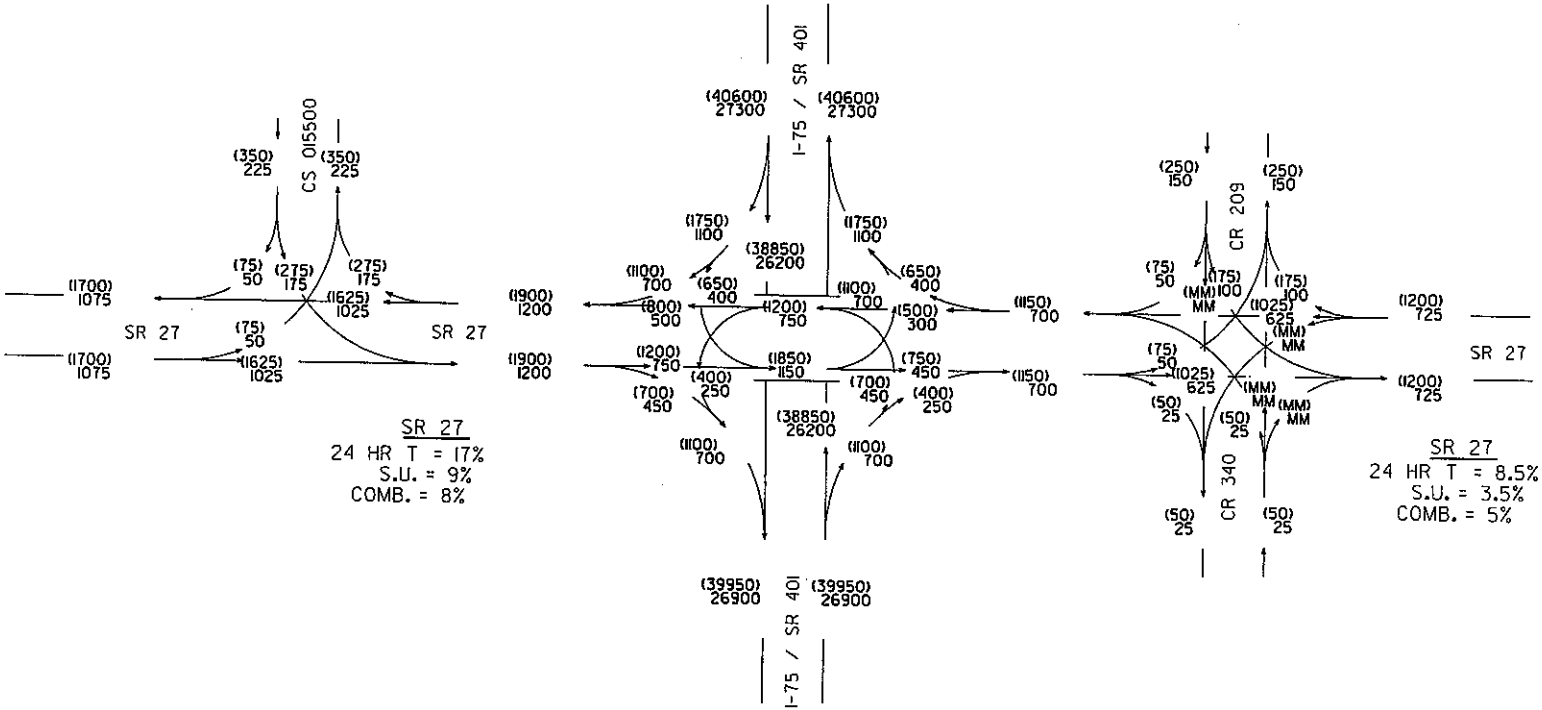
Under the build condition, the LOS for 2010 and 2030 are acceptable for each intersection. The 2030 build year intersection sketches are provided in Appendix E.

Traffic Diagrams

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENT/LOCATION

DOOLY COUNTY

N



NH-IM-75-1(227)
P.I.#311665
DOOLY COUNTY

SR 27 @ I-75

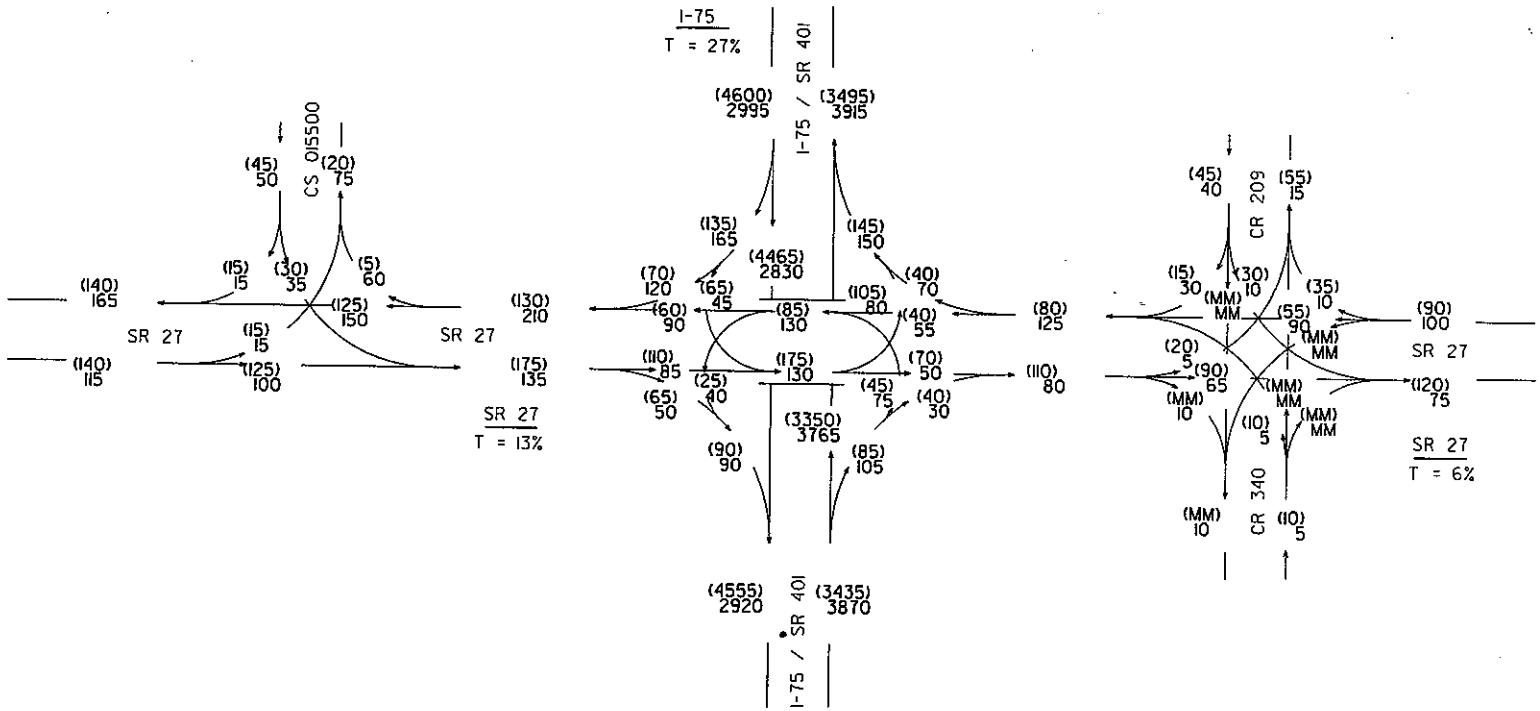
2030 ADT = (000)
2010 ADT = 000

RFN
10/05

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENT/LOCATION

DOOLY COUNTY

N



NH-IM-75-1(227)
P.I.#311665
DOOLY COUNTY

SR 27 @ I-75

2030 PM DHV = (000)
2030 AM DHV = 000

RFN
10/05

Approved Concept Report dated May 8, 2000

D.O.T. 66

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE IM-NH-75-1(227) Dooly County
P.I. No. 311665

OFFICE Preconstruction

DATE May 8, 2000

FROM Thomas L. Turner, P.E., Director of Preconstruction

TO Wayne Shackelford, Commissioner

SUBJECT PROJECT CONCEPT REPORT

This project is the improvements to the SR 27 interchange over I-75 north of the City of Vienna. The purpose of this project is to improve the sight distance for vehicles exiting I-75 onto SR 27. This project will also relocate CR 155, 660' away from the southbound exit ramp. The accident rates along this section of SR 27 are 252 accidents/100 million vehicle miles of travel (MVMT) in 1995; 201 accidents/100 MVMT in 1996; and 175 accidents/100 MVMT in 1997. The accident rates along this section of roadway were above the statewide average for a road of this type in 1995. State Route 27 is a two lane roadway with 8' rural shoulders and a posted speed limit of 55 MPH. The existing bridge is 254' x 34.7' with a sufficiency rating of 88. County Road 155 consists of two, 12' lanes with 10' rural shoulders. Existing 1998 traffic volumes along this section of SR 27 are 1,700 VPD. Future volumes are expected to be approximately 2,200 VPD in 2008 and 2,800 VPD in 2018. The Level of Service (LOS) along this section of SR 27 is and will remain at LOS "C" or above through the year 2018.

The proposed construction will widen the bridge on SR 27 over I-75 to allow for a 10' paved shoulder on the north side and a 12' shoulder on the south side to provide appropriate sight distance from the exit ramps. Existing SR 27 will be overlaid only. County Road 155 will be relocated 660' from the southbound exit ramp. The I-75 northbound and southbound exit ramps will be reconstructed to meet GDOT requirements and provide an intersection angle of 75° at SR 27. Ramps will be constructed 16' in width and widen to 24' at the SR 27 intersection to allow for a turn lane. The speed design is 55 MPH for SR 27 and CR 155, and 50 MPH for the ramps. Traffic will be maintained during construction.

The existing vertical curve attains desirable stopping sight distance of 45 MPH only. The intersection sight distance across the bridge from ramp terminals is improved by widening the bridge shoulders. However, a design exception will be requested for stopping sight distance.

Environmental concerns include requiring a COE 404 Permit; a NEPA document will be prepared; a public hearing will be held; time saving procedures are not appropriate.

ORIGINAL TO GENERAL FILES

D.O.T. 66

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE IM-NH-75-1(227) Dooly County
P. I. No. 311665

OFFICE Preconstruction

DATE May 30, 2000

FROM C. Wayne Hutto, Assistant Director of Preconstruction

TO SEE DISTRIBUTION

SUBJECT **PROJECT CONCEPT REPORT APPROVAL**

Attached for your files is the approval for subject project.

CWH/cj

Attachment

DISTRIBUTION:

Tom Turner
David Mulling
David Studstill (ATTN: Harvey Keepler)
Jerry Hobbs
Herman Griffin
Georgene Geary (ATTN: Michael Henry)
Marion Waters
Marta Rosen
Paul Liles
Don Mills
~~Jimmy Chambers (ATTN: Ted Cashin)~~
Glenn Durrence
Jim Kennerly
FHWA

IM-NH-75-1(227) Dooly
May 8, 2000

The estimated costs for this project are:

	PROPOSED	APPROVED	PROG DATE	LET DATE
Construction (includes E&C and inflation)	$1,924,000	$3,076,000	2003	03-02
Right-of-Way	$ 612,000	$ 629,000		
Utilities*	$ 24,000	-----		

*LGPA to be sent.

This project will improve safety and operational capacity along this section of roadway. I recommend this project concept be approved.

TLT:JDQ/cj

Attachment

CONCUR _____
Frank L. Danchetz, P.E., Chief Engineer

APPROVE _____
for Larry R. Dreihaup, Division Administrator, FHWA

APPROVE _____
Wayne Shackelford, Commissioner

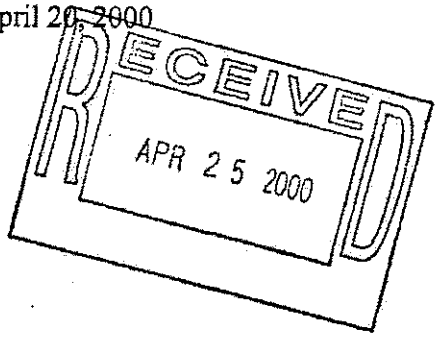
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENTAL CORRESPONDENCE

FILE: IM-NH-75-1(227) Dooly
P.I. Number 311665

OFFICE: Atlanta, Georgia

DATE: April 20, 2000



FROM: David Mulling, Project Review Engineer DTM

TO: Wayne Hutto, Assistant Director of Pre-construction

SUBJECT: **CONCEPT REPORT**

We have reviewed the concept report submitted April 13, 2000 by the letter from James A. Kennerly dated March 20, 2000, and have no comments.

The costs for the project are:

Construction	$1,521,000
Inflation	$ 228,000
E&C	$ 175,000
Reimbursable Utilities	$ 24,000
Right of Way	$ ~~611,000~~ 612,000 - SDP.

DTM

c: Jim Kennerly

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
OFFICE OF ROAD AND AIRPORT DESIGN

PROJECT CONCEPT REPORT

Project Number: IM-NH-75-1 (227)
P. I. Number: 311665
County: DOOLY

Federal Route No.: 75
State Route No.: 27

Date of Report: 03/15/00

RECOMMENDATION FOR APPROVAL

4-12-00
DATE

James A. Kennedy
State Road and Airport Design Engineer

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

DATE — State Transportation Planning Administrator

DATE — State Transportation Programming Engineer

DATE — State Environmental/Location Engineer

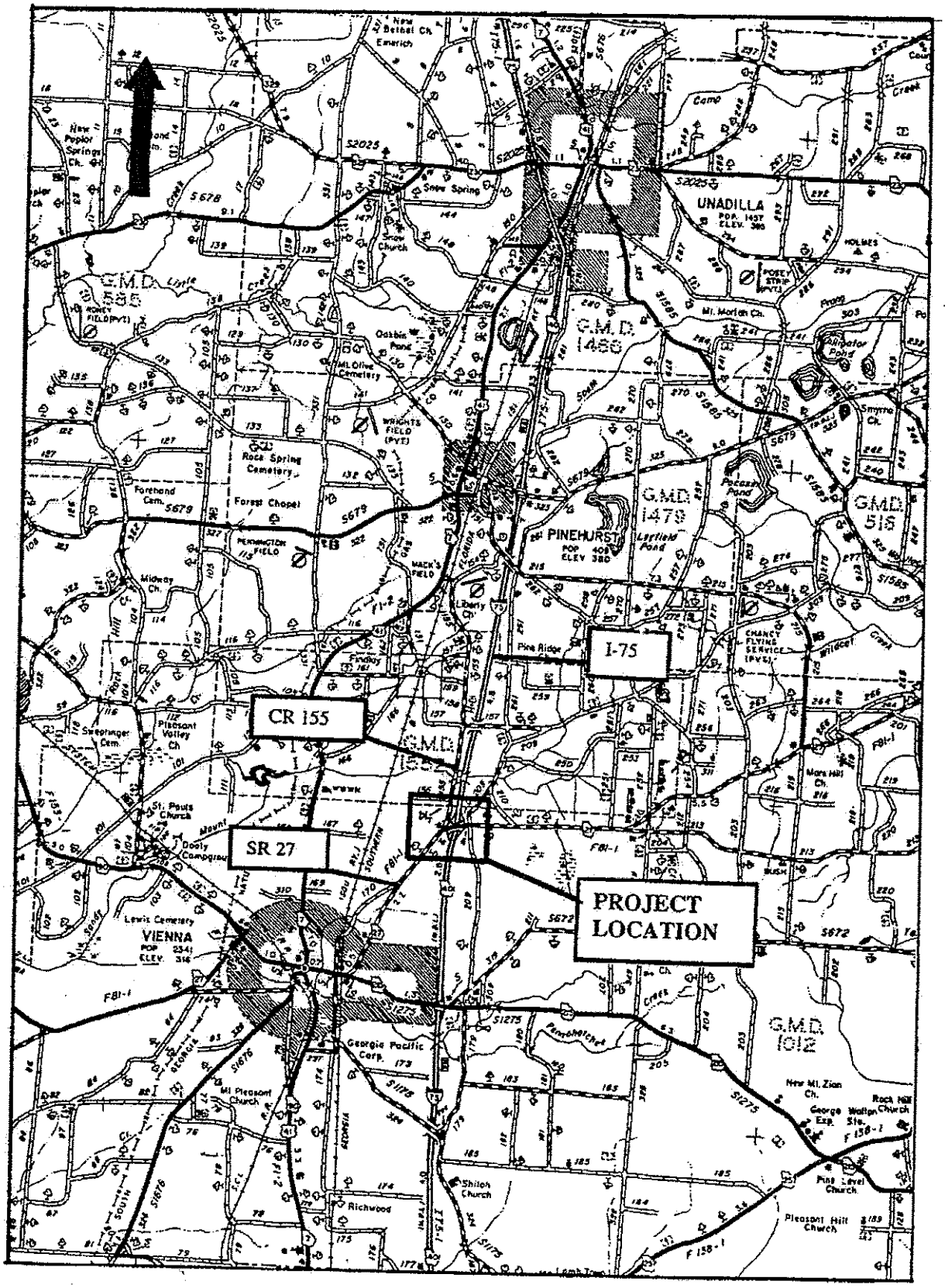
DATE — District Engineer

DATE — Project Review Engineer

DATE — State Traffic Operations Engineer

DATE — State Bridge and Structural Engineer

PROJECT MAP:


I-75
CR 155
SR 27
PROJECT LOCATION
PINEHURST
UNADILLA
VIENNA
G.M.D. 535
G.M.D. 486
G.M.D. 479
G.M.D. 516
G.M.D. 1012
G.M.D. 185

PROJECT NEED & PURPOSE:

The purpose of this project is to improve the State Route 27/I-75 interchange in Dooly County north of the city of Vienna. The project will widen the SR 27 bridge over I-75 to improve sight distance from the ramp terminals. A frontage road (CR 155) will be relocated farther away from the southbound exit ramp terminal to allow for a more acceptable distance. The northbound and southbound exit ramps will also be reconstructed to meet current exit ramp design standards. The improvements will improve the sight distance, operation and safety of this interchange.

The sufficiency rating for this bridge is 88.0. The sufficiency rating is a number from 0 to 100 and is a method of evaluating data by calculating four separate factors to obtain a numeric value which is indicative of bridge sufficiency to remain in service. The Office of Bridge Design has determined that any structure with a sufficiency rating less than 50 should be replaced rather than improved.

Located on a school bus route, the bridge is 34.7 ft. wide and 254 ft. long with 2 ft. shoulders in each direction. The current sight distance at the bridge is inadequate. The accident rates along this section of SR 27 are 252 accidents/100 million-vehicle mile of travel (MVMT) in 1995; 201 accidents/100 MVMT in 1996; and 175 accidents/100 MVMT in 1997. The accident rates along this section of roadway were above the statewide average for a road of this type (Rural Minor Arterial, non-NHS) in 1995.

Existing 1998 traffic volumes along this section of SR 27 are approximately 1,700 vehicles per day (vpd) with 19 percent generated by trucks. Future volumes are expected to be approximately 2,200 vpd in 2008; and 2,800 vpd in 2018. The level-of-service along this section of SR 27 is and will remain at an acceptable level-of-service "C" or above through the year 2018.

There is one project in the Construction Work Program that will affect this project. The project STP-081-1(23), PI 343510 which will resurface SR 27 from MP 12.18 in Vienna to the subject SR 27 bridge over I-75, MP 15.64. This project is scheduled to begin in year 2000. State Route 27 is not a Georgia bicycle route.

The proposed project will improve safety by improving sight distance for vehicles accessing SR 27 from I-75. Widening the bridge over I-75 will enhance the sight distance, traffic flow and safety for the traffic exiting and accessing the Interstate.

DESCRIPTION AND LOCATION: Widen the overpass on State Route 27 at Interstate 75 to allow for a 10 ft. shoulder on the north side and a 12 ft. shoulder on the south side to provide appropriate sight distance from the exit ramps. Existing SR 27 will be overlaid only. County Road 155 will be relocated to a distance of 660 ft. from the southbound exit ramp. The I-75 northbound and southbound exit ramps will be reconstructed to meet GDOT Construction Detail R-2 and to provide an intersection angle of 75° at SR 27.

LENGTH: Bridge Widening: 254 ft. CR 155 Relocation: 0.47 miles
NB Ramp: 0.44 miles SB Ramp: 0.36 miles

P.I.NO.: 311665

STATE ROUTE NO.: 27 FEDERAL RT NO.: 75 COUNTY ROAD NO: N/A

TRAFFIC (ADT): CURRENT YEAR 2005=2,880 vpd
PROJECTED YEAR 2025=4,030 vpd

PDP CLASSIFICATION: FOS (X) EXEMPT ( ) SF ( )

FUNCTIONAL CLASSIFICATION: Rural Minor Arterial.

EXISTING DESIGN:

TYPICAL SECTION:

S.R. 27: Two 12 ft. travel lanes with 8 ft. grass shoulders.
Ramps: One 20 ft. travel lane with 4 in. concrete integral mountable curb and 8 ft. grass shoulders.
CR 155: Two 12 ft. travel lanes with 10 ft. grass shoulders.

POSTED SPEED: 55 mph

MAX. EXISTING GRADE: SR 27: 4.8% Ramps: 4.7%

EXISTING MAJOR STRUCTURES: 1. SR 27 overpass at I-75.

S. RTG: 88.0 LENGTH: 254 FT WIDTH: 34.7FT

PROPOSED DESIGN:

PROPOSED TYPICAL SECTION:

The proposed bridge typical section consists of two 12 ft. travel lanes with a 10 ft. shoulder on the north side and a 12 ft. shoulder on the south side. The additional width on the south side shoulder is necessary to provide adequate sight distance from the ramp terminal across the bridge.

The typical section for CR 155 will be two 12 ft. travel lanes with 10 ft. grass shoulders.

The typical section for the ramps will be a 16 ft. travel lane that widens to 24 ft. to allow for a turn lane at the intersection. The inside shoulder is 6 ft. and the outside shoulder is 8 ft.

PROPOSED RIGHT-OF-WAY WIDTH: Varies.

DESIGN SPEED: 55 mph for SR 27 and CR 155.
50 mph for the exit ramps.

MAXIMUM DEGREE OF CURVATURE:

SR 27	ALLOWABLE:	5°15'
	PROPOSED:	2° 05'
CR 155	ALLOWABLE:	6°
	PROPOSED:	6°
Ramps	ALLOWABLE:	7°30'
	PROPOSED:	7°

MAXIMUM GRADE:

SR 27	ALLOWABLE:	5.0%
	PROPOSED:	4.8% (Maximum grade on SR 27 occurs on the existing eastbound approach to the bridge. Reconstruction of bridge approaches is not included in the proposed alternate.)
CR 155	ALLOWABLE:	5.0%
	PROPOSED:	<2%
Ramps	ALLOWABLE:	5.0%
	PROPOSED:	4.7%

TYPE ACCESS: Limited Access.

TRAFFIC CONTROL DURING CONSTRUCTION:

1. Traffic can be maintained on SR 27 while the existing bridge is being widened.
2. There will be no need for staging on CR 155. Existing CR 155 is to remain in service until completion of the new roadway.
3. Traffic can be maintained while the relocated ramps are being built.

PROPOSED STRUCTURES: SR 27 bridge widening (length: 254 ft; width: 54 ft)

SPECIAL DRAINAGE CONSIDERATIONS: None.

SIGHT DISTANCE:

The existing vertical curve attains desirable stopping sight distance for 45 mph only. The intersection sight distance across the bridge from ramp terminals is improved by widening the bridge shoulders. Additional shoulder widening on the SR 27 south shoulder is necessary due to the skew and curvilinear alignment of SR 27 relative to the northbound exit ramp terminal.

DESIGN EXCEPTIONS REQUESTED:

CONTROLLING CRITERIA	UNDETERMINED	YES	NO
HORIZONTAL ALIGNMENT:	( )	( )	(X)
ROADWAY WIDTH:	( )	( )	(X)
SHOULDER WIDTH:	( )	( )	(X)
VERTICAL GRADES:	( )	( )	(X)
CROSS SLOPES:	( )	( )	(X)
STOPPING SIGHT DISTANCE:	( )	(X)	( )
SUPERELEVATION RATES:	( )	( )	(X)
HORIZONTAL CLEARANCE:	( )	( )	(X)
SPEED DESIGN:	( )	( )	(X)
VERTICAL CLEARANCE:	( )	( )	(X)
BRIDGE WIDTH:	( )	( )	(X)
BRIDGE STRUCTURAL CAPACITY:	( )	( )	(X)

NUMBER OF PARCELS IMPACTED: 6

DISPLACEMENTS: 2 Gas Stations

COORDINATION AND SCHEDULING

CONCEPT TEAM MEETING DATE: January 12, 2000

CONFORMS TO TIP/STIP? Yes

MEETS LOGICAL TERMINI REQUIREMENTS? Yes

P.A.R. MEETING: Not Anticipated

LEVEL OF ENVIRONMENTAL ANALYSIS: NEPA Categorical Exclusion

PUBLIC INVOLVEMENT: Public Hearing

PERMITS REQUIRED: COE 404 (Nationwide Permits), NPDES

TIME SAVINGS PROCEDURES APPROPRIATE: No.

SCHEDULING CONSIDERATIONS:

TIME TO COMPLETE ENVIRONMENTAL: 9 MONTHS

TIME TO COMPLETE PRELIMINARY RD/RW PLANS: 12 MONTHS

TIME TO COMPLETE 404 PERMIT: 4 MONTHS

TIME TO COMPLETE FINAL CONSTRUCTION PLANS: 12 MONTHS

TIME TO BUY RIGHT OF WAY: 6 MONTHS

LOCAL GOVERNMENT COMMITMENTS: None.

OTHER PROJECTS IN THE AREA:

1. SR 27 resurfacing from I-75 to Vienna (STP-081-1(23)).

PROBABLE LOCATIONS OF UST's:
There are three potential UST locations near the project. None will be impacted by construction. Two of the properties are displacements due to the acquisition of limited access.

PROBABLE LOCATIONS OF HAZARDOUS WASTE:
The three potential UST mentioned above are potential hazardous waste sites.

HISTORY OR ARCHEOLOGY:
There are four potential historic resources near the project. None will be impacted by the project.

ENVIRONMENTAL CONCERNS: None.

ALTERNATES CONSIDERED:

1. Widen existing bridge and relocate CR 155. This alternate was selected because it addresses the immediate safety concerns (sight distance) for the least cost. The bridge sufficiency rating (88.0) makes this structure a good candidate for widening. It will also accommodate the design year traffic. This alternate also includes the reconstruction of the northbound and southbound exit ramps to meet the Department's Construction Detail R-2 and to provide an acceptable intersection angle with SR 27. The ramp design allows for widening of I-75.

2. Reconstruct bridge over I-75 to four lanes with raised median to allow for the future widening of I-75. Proposed bridge would allow for vertical end walls. Ramp terminals and CR 155 would be relocated. CR 209 would be realigned to intersect SR 27 at CR 304. This alternate was not selected due to an estimated construction cost of $4,708,449 and additional right of way impacts. It also goes beyond addressing the immediate safety concerns.

3. Similar to alternate 2 except the proposed bridge would have end rolls rather than vertical end walls. This alternate was not selected due to the construction cost of $5,047,634 (longer bridge), and additional right of way impacts.

4. The "no build" alternate was also considered. This was not chosen because the inadequate sight distance at the ramps needs to be addressed.

COMMENTS: Vertical clearance was checked over I-75 for the 14 ft. widening of the bridge on the south side. The minimum of 16'-6" is maintained.

ATTACHMENTS: Cost Estimate, Typical Sections, Bridge Inventory Data Sheet, Traffic Volume Diagram, Concept Team Meeting Minutes, and Programming Document.

PRELIMINARY COST ESTIMATE

PROJECT NUMBER: 311665

COUNTY: DOOLY

DATE: April 3, 2000

ESTIMATED LETTING YEAR: 2003

PREPARED BY: GREENHORNE & O'MARA, INC.

PROJECT LENGTH: 1.35 miles

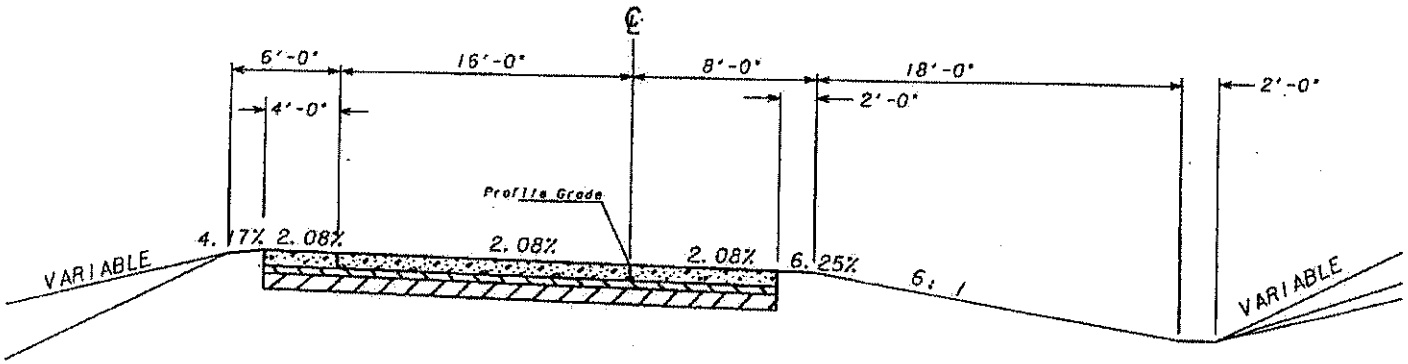
( )PROGRAMMING PROCESS (X)CONCEPT DEVELOPMENT ( )DURING PROJECT DEV.

PROJECT COST	
A. RIGHT-OF-WAY:	
1. PROPERTY (R/W & EASEMENT) 4.4 AC.	$ 383,352
2. DISPLACEMENTS: NONE	$ 0
3. OTHER COST (ADM./COST, INFLATION)	$ 228,094
SUBTOTAL:A	$ 611,446
B. REIMBURSABLE UTILITIES:	
1. RAILROAD	$ 0
2. TRANSMISSION LINES	$ 0
3. SERVICES	$ 24,000
SUBTOTAL:B	$ 24,000
C. CONSTRUCTION:	
1. MAJOR STRUCTURES	
a. OVERPASSES (254 ft. X 26 ft.) 6,604 SF	$ 330,200
b. APPROACH SLAB 160 SY	$ 15,727
SUBTOTAL:C-1	$ 345,927
2. GRADING AND DRAINAGE:	
a. EARTHWORK 25,000 CY EMBANKMENT	$ 111,500
b. DRAINAGE:	
1) CROSS DRAIN PIPE	$ 10,000
2) LONGITUDINAL SYSTEMS (INCL CATCH BASINS)	$ 0
SUBTOTAL:C-2	$ 121,500

PROJECT COST		
3. BASE AND PAVING:		
a. AGGREGATE BASE – 10,471 TNS @ $13.05/ TN		$ 136,647
b. ASPHALT PAVING: SURFACE – 906 TN	$ 34.55/TN	$ 31,303
BINDER – 728 TN	$ 34.54/TN	$ 25,146
BASE - 4448 TN	$ 34.62/TN	$ 153,990
SUBTOTAL:C-3.b		$ 347,086
c. CONCRETE PAVING		$ 585,744
d. OTHER		$
SUBTOTAL:C-3		$ 932,830
4. LUMP ITEMS:		
a. GRASSING – 10 AC		$ 10,000
b. CLEARING AND GRUBBING - 14 AC		$ 57,020
c. LANDSCAPING		$ 0
d. EROSION CONTROL		$ 5,000
e. TRAFFIC CONTROL		$ 20,000
SUBTOTAL:C-4		$ 92,020
5. MISCELLANEOUS:		
a. LIGHTING - NONE		$ 0
b. SIGNING - MARKING		$ 10,000
c. GUARDRAIL - 1040 LF AND 4 ANCHORS		$ 18,480
d. CURB & GUTTER - NONE		$ 0
SUBTOTAL:C-5		$ 28,480
6. SPECIAL FEATURES SUBTOTAL:C-6		$ 0

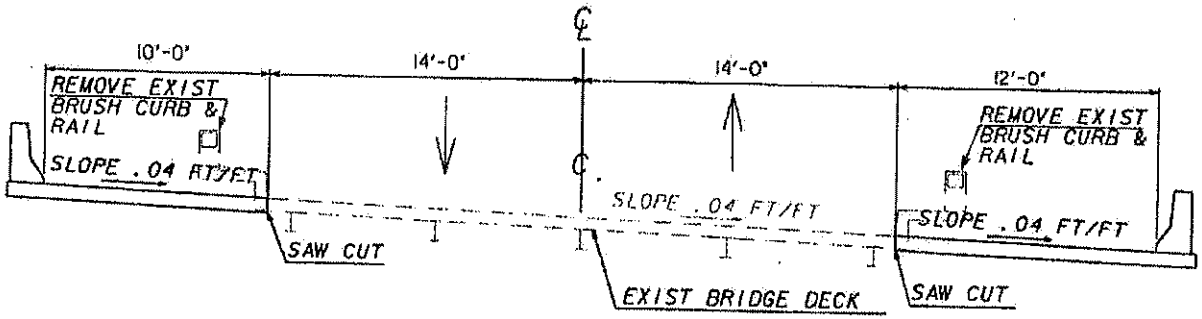
ESTIMATE SUMMARY			
A. RIGHT-OF-WAY		$ 611,446	
B. REIMBURSABLE UTILITIES		$ 24,000	
C. CONSTRUCTION			
1. MAJOR STRUCTURES		$ 345,927	
2. GRADING AND DRAINAGE		$ 121,500	
3. BASE AND PAVING		$ 932,830	
4. LUMP ITEMS		$ 92,020	
5. MISCELLANEOUS		$ 28,480	
6. SPECIAL FEATURES		$ 0	
SUBTOTAL CONSTRUCTION COST		$ 1,520,757	
E. & C. (10%)		$ 152,076	
INFLATION (5% PER YEAR)			
NUMBER OF YEARS	3	$ 228,114	
TOTAL CONSTRUCTION COST		$ 1,900,947	
GRAND TOTAL PROJECT COST		**$ 2,512,393**	

311665\311665typ.dgn Mar. 20, 2000 13:25:34

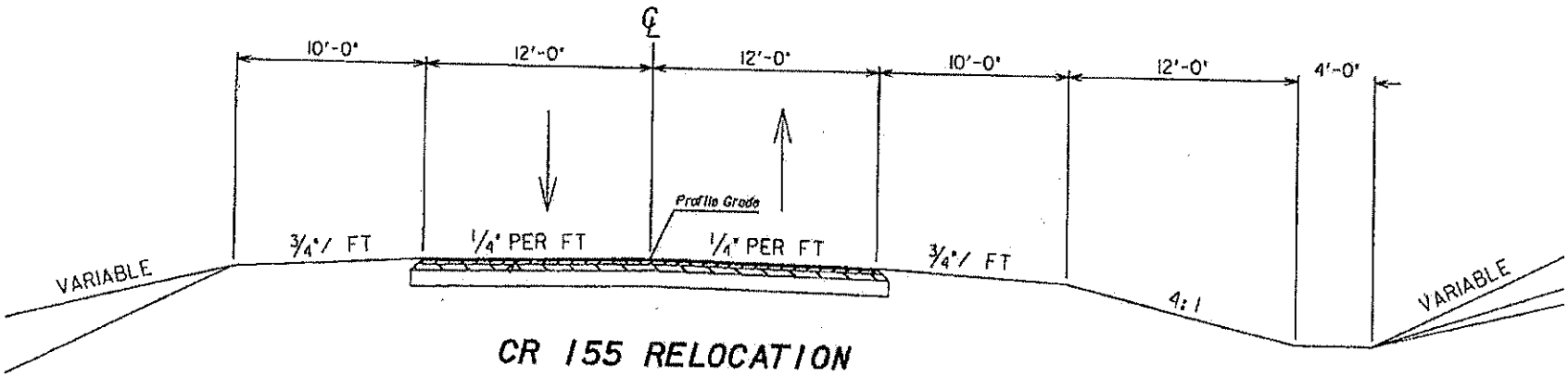


RAMP TANGENT SECTION

GEORGIA
DEPARTMENT OF TRANSPORTATION
TYPICAL SECTIONS



SR 27 BRIDGE WIDENING



CR 155 RELOCATION

GREENHORNE & O'MARA
2211 NEWMARKET PARKWAY
SUITE 104
MARIETTA, GA 30067
PHONE: (770) 988-9555

SR 27 BRIDGE WIDENING
CR 155 RELOCATION

GEORGIA
DEPARTMENT OF TRANSPORTATION
TYPICAL SECTIONS
PROJECT: IM-NH-75-1(227)
COUNTY: DOOLY
DATE:
DRAWING

...\8928\wo27\dgn\311665typ.dgn Jan. 14, 2000 15:21:34

Location & Geography

* Structure I.D. No.: 093-0007-0
200 Bridge Information: 06

* 6A Feature Int.: I-75 (EXIT 37)
* 6B Critical Bridge: 0
* 7A Route Number Carried: SR00027
* 7B Facility Carried: SR 27
* 9 Location: 2.5 MI NE OF VIENNA
2 DOT District: 3
207 Year Photo: 1997

* 91 Inspection Frequency: 24 Date: 08/01/1997
92A Fract Crit Insp Freq: 0 00 Date: 0000
92B Underwater Insp Freq: 0 00 Date: 0000
92C Other Spc. Insp Freq: 0 00 Date: 0000

* 4 Place Code: 00000

* 5 Inventory Route (O/U): 1
Type: 3
Designator: 1
Number: 00027
Direction: 0

* 16 Latitude: 32-07.3
* 17 Longitude: 083-45.7

98 Border Bridge: 000 %Shared: 00
99 ID Number: 000000000000000

* 100 Defense Highway: 2
* 101 Parallel Structure: N
* 102 Direction of Traffic: 2
264 Road Inventory Mile Post: 015.36

* 208 Inspection Area: 08 Initials: LEM

* Location I.D. No: 093-00027D-015.64E
* XReferen I.D. No: 000-000000-000.000

Dou[redacted]County

* 104 Highway System: 0
* 26 Functional Classification: 06
* 204 Federal Route Type: F No: 081-1
* 110 Truck Route: 0
206 School Bus Route: 1
217 Benchmark Elevation: 392.60
218 Datum: 2
* 19 Bypass Length: 4
* 20 Toll: 3
* 21 Maintenance: 01
* 22 Owner: 01
* 31 Design Load: 6
37 Historical Significance: 5
205 Congressional District: 08
* 27 Year Constructed: 1960
106 Year Reconstructed: 0000
33 Bridge Median: 0
34 Skew: 36
35 Structure Flared: 0
38 Navigation Control: N
213 Special Steel Design: 0
267 Type of Paint: 2

* 42 Type Service On: 1
Under: 1
214 Movable Bridge: 00
203 Type Bridge: Z-O-M-O
259 Pile Encasement: 3
* 43 Structure Type Main: 4 02
45 No. Spans Main: 002
44 Structure Type Appr: 3 3
46 No. Spans Appr: 0002
226 Bridge Curve Horz: 1 Vert: 1
111 Pier Protection: 0
107 Deck Structure Type: 1

108 Wearing Surface Type: 1
Membrane: 0
Protection: 0

SUFF[redacted]ING: 88.0

Signs & Attachments

223 Expansion Joint Type: 02
242 Deck Drains: 0

243 Parapet Location: 0
Height: 0
Width: 0

238 Curb: 1.2 2
239 Handrail: 7 7
* 240 Median Barrier Rail: 0

241 Bridge Median Height: 0
Width: 0

* 230 Guardrail Loc Dir Rear: 3
Fwrd: 3
Oppo Dir Rear: 0
Fwrd: 0

244 Approach Slab: 3
224 Retaining Wall: 0

233 Posted Speed Limit: 00
236 Warning Sign: 0
234 Delineator: 1
235 Hazard Boards: 0

237 Utilities Gas: 00
Water: 00
Electric: 00
Telephone: 00
Sewer: 00

247 Lighting Street: 0
Navigation: 0
Aerial: 0

* 248 County Continuity No: 00

Programming Data

201 Project No: I-75-1 (21) 111
202 Plans Available: 1
249 Prop. Proj No:
250 Approval Status: 0000
251 P.I. No: 000000
252 Contract Date: 0000
260 Seismic No: 00000
75 Type Work: 00 0
94 Bridge Imp. Cost: $ 0
95 Roadway Imp. Cost: $ 0
96 Total Imp. Cost: $ 0
76 Imp. Length: 000000
97 Imp. Year: 0000
114 Future ADT: 002100 Year: 2016

Hydraulic Data

215 Waterway Data
Highwater Elev: 0000.0 Year: 0000
Flood Elev: 0000.0 Freq: 000
Avg. Streambed Elev: 0000.0
Drainage Area: 00000
Area of Opening: 000000
113 Scour Critical: N
216 Water Depth: 00.0 Br Height: 00.0
222 Slope Protection: 4
221 Spur Dikes Rear: 0 Fwrd: 0
219 Fender System: 0
220 Dolphin: 0
223 Culvert Cover: 000
Type: 0
No Barrels: 0
Width: 0.0
Height: 0.0
Length: 0
Apron: 0
* 265 U/W Insp. Area: 0 Diver: ZZZ

* Location I.D. No: 093-00027D-015.64E
* XReferen I.D. No: 000-000000-000.000

Measurements

* 29 ADT: 001400 Year: 1996
109 % Trucks: 19
* 28 Lanes On: 02 Under: 06
210 No. Tracks On: 00 Under: 00
* 48 Max. Span Length: 0085
* 49 Structure Length: 254
51 Br. Rdwy. Width: 28.0
52 Deck Width: 34.7
* 47 Tot. Horz. Cl: 28.0
50 Curb/Sdewlk Width: 2.0/2.0
32 Approach Rdwy Width: 024
* 229 Shlder Width:
Rear Lt: 8.0 Type: 8 Rt: 8.0
Fwrd Lt: 8.0 Type: 8 Rt: 8.0
Pvment Width:
Rear: 24.0 Type: 2
Fwrd: 24.0 Type: 2
Intersection Rear: 1 Fwrd: 1
36 Safety Features Br. Rail: 2
Transition: 2
App. G. Rail: 2
App. Rail End: 2
53 Minimum Cl. Over: 99'99"
Under: H 17' 02"
* 228 Min. Vert. Cl
Act. Odm. Dir: 99' 99"
Oppo. Dir: 99' 99"
Posted Odm. Dir: 00' 00"
Oppo. Dir: 00' 00"
55 Lateral Underel. Rt: H 11.3
56 Lateral Underel. Lt: 17.8
* 10 Max Min Vert Cl: 18' 4 " Dir: 0
39 Nav Vert Cl: 000 Horz: 0000
116 Nav Vert Cl Closed: 000
245 Deck Thickness Main: 7.0
Deck Thick Approach: 7.0
246 Overlay Thickness: 0.0
211 Tons Structural Steel: 114.0
212 Year Last Painted: Sup: 1997 Sub: 0000

Ratings

66 Inventory Type: 2 Rating: 36
64 Operating Type: 2 Rating: 63
231 Calculated Loads
H-Modified: 20 0
HS-Modified: 25 0
Type 3: 28 0
Type 3s2: 40 0
Timber: 36 0
Piggyback: 40 0
261 H Inventory Rating: 23
262 H Operating Rating: 40
67 Structural Evaluation: 7
58 Deck Condition: 6
59 Superstructure Condition: 8
* 227 Collision Damage: 0
60A Substructure Condition: 7
60B Scour Condition: N
60C Underwater Condition: N
71 Waterway Adequacy: N
61 Channel Protection Cond: N
68 Deck Geometry: 5
69 UnderClr. Horz/Vert: 7
72 Appr. Alignment: 5
62 Culvert: N

Posting Data

70 Bridge Posting Required: 5
41 Struct Open, Posted, Cl: A
* 103 Temporary Structure: 0

232 Posted Loads H-Modified: 00
HS-Modified: 00
Type 3: 00
Type 3S2: 00
Timber: 00
Piggyback: 00
253 Notification Date: 0000
253 Fed Notify Date: 0000 0

Location & Geography

* Structure I.D. No.: 093-0007-0-A
* 6A Feature Int.: SR 27
* 6B Critical Bridge: 0
* 7A Route Number Carried: SR00401
* 7B Facility Carried: I-75
* 9 Location: 2.5 MI NE OF VIENNA

* 91 Inspection Frequency: 00 Date: 0000
* 4 Place Code: 00000

* 5 Inventory Route (O/U): 2
Type: 1
Designator: 1
Number: 00075
Direction: 0

* 16 Latitude: 32.07.3
* 17 Longitude: 32.45.7

* 100 Defense Highway: 1
* 101 Parallel Structure: N
* 102 Direction of Traffic: 2
* 104 Highway System: 1
* 26 Functional Classification: 01
* 204 Federal Route Type: 1 No: 075-1
* 110 Truck Route:
* 19 Bypass Length: 0
* 20 Toll: 3
* 21 Maintenance: 01
* 22 Owner: 01

* 27 Year Constructed: 1960

* 42 Type Service On: 1
Under: 1
* 43 Structure Type Main: 4 02

* Location I.D. No: 093-00401D-111.85N
* XReferen I.D. No:

Signs & Attachments

* 240 Median Barrier Rail: 0

* 230 Guardrail Loc Dir Rear: 5
Fwrd: 5
Oppo Dir Rear: 6
Fwrd: 6

Measurements

* 29 ADT: 039000 Year: 1996

* 28 Lanes On: 02 Under: 06

* 48 Max. Span Length: 0085
* 49 Structure Length: 254

* 47 Tot. Horz. Cl: 54.5

* 229 Shlder Width:
Rear Lt: 10.0 Type: 2 Rt: 10.0
Fwrd Lt: 10.0 Type: 2 Rt: 10.0
Pvment Width:
Rear: 36.0 Type: 1
Fwrd: 36.0 Type: 1
Intersection Rear: 1 Fwrd: 1

* 228 Min. Vert. Cl
Act. Odm. Dir: 17' 11"
Oppo. Dir: 17' 02"
Posted Odm. Dir: 00' 00"
Oppo. Dir: 00' 00"

* 10 Max Min Vert Cl: 18' 04" Dir: 2

* 208 Inspection Area: 08 Initials: LEM
* 265 U/W Insp. Area: 0 Diver: ZZZ

Ratings

* 227 Collision Damage: 0

Posting Data

* 103 Temporary Structure: 0

* 248 County Continuity No: 00

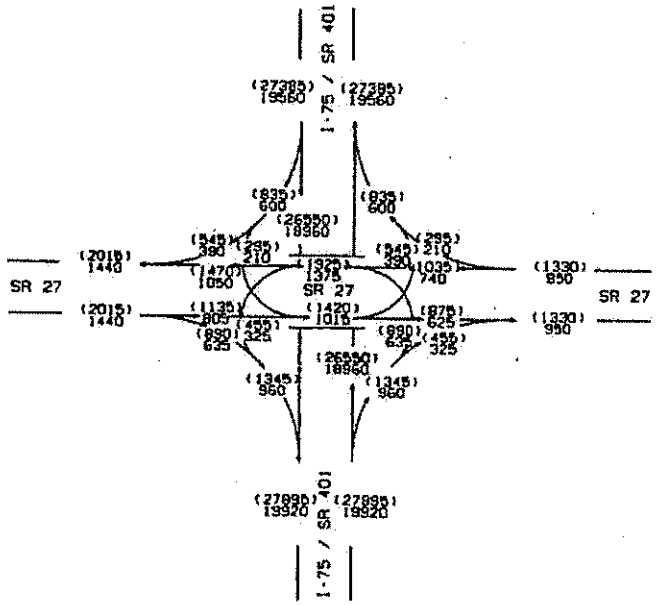
SHEET 1 OF 3

2025 AADT - (000)
2005 AADT - 000

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENT/LOCATION

DOOLY COUNTY

N



NH-IM-75-1(227)
P.I. #311665
DOOLY COUNTY

SR 27 @ I-75

2025 AADT - (000)
2005 AADT - 000

24 HR T - 8.5%
S.U. - 3.5%
COMB. - 5%

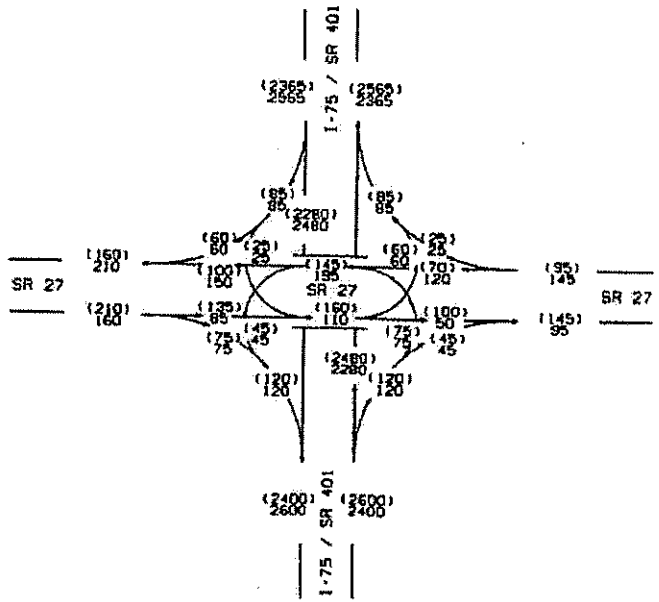
SHEET 2 OF 3

2025 PM DHV - (000)
2025 AM DHV - 000

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENT/LOCATION

DOOLY COUNTY

N



NH-IM-75-1(227)
P.I. #311665
DOOLY COUNTY
SR 27 @ I-75
2025 PM DHV - (000)
2025 AM DHV - 000
T - 6%

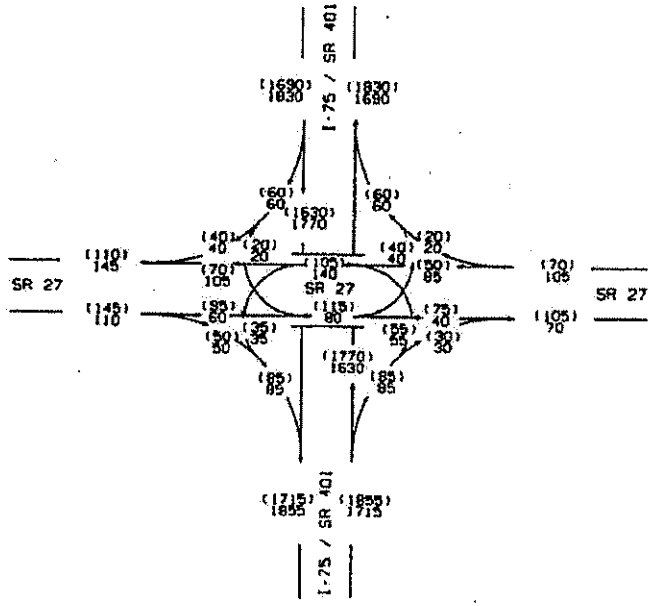
SHEET 3 OF 3

2005 PM DHV - (000)
2005 AM DHV - 000

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENT/LOCATION

DOOLY COUNTY

N



NH-IM-75-1(227)
P.I. # 311665
DOOLY COUNTY
SR 27 @ I-75
2005 PM DHV - (000)
2005 AM DHV - 000
T - 6%

MEMORANDUM OF CONCEPT TEAM MEETING

Project: GDOT Project Work Order No. 27
I-75 Widen Bridge and Ramps at SR 27.
Project No. IM-NH-75-1(227), Dooly County
P.I. No. 311665
G&O No. 8928

Date: January 12, 2000

Place: Offices of Road Design Conference Room

Present:

Rick Reasons	GDOT Road Design
Jim Kennerly	GDOT Road Design
Stanley Hill	GDOT Road Design
Rick Ford	GDOT R/W
Tim Smith	GDOT Traffic Ops
Jerry Wylie	Georgia Power Company
Ken Estes	GDOT Traffic Ops
Mitch Britt	GDOT Environmental
Jeff Hiott	GDOT Road Design
Dom Saulino	Parsons Brinckerhoff
Harry Graham	GDOT Traffic Ops
Kerry Gore	GDOT Utilities
Katie Mullins	GDOT Programming
Jeff Carroll	GDOT Planning
David Mulling	GDOT Engineering Services
Theon Grojean	Greenhorne & O'Mara
Rick Hartline	Greenhorne & O'Mara
Robert Lewis	Greenhorne & O'Mara

Distribution: Attendees, Jim Chambers (GDOT)

Purpose: Concept Team Meeting

DISCUSSION:

1. Stanley Hill of Road Design began by introducing the project and briefly reviewing the front end of the Concept Report.

changes are necessary. He pointed out that only one accident had occurred in the past three years and it was at the intersection of CR 155.

3. Theon Grojean of G&O briefly described each alternate. Alternate 1 proposes widening the existing bridge to increase sight distance and relocating CR 155 to a point 300 feet from the southbound exit ramp terminal. Alternate 2 proposes construction of a new bridge and new SR 27 to meet 55 MPH design speed as well as moving the ramp terminals farther away from I-75 to accommodate a longer bridge. The bridge will be lengthened enough to accommodate a proposed eight lane section on I-75, which is planned for sometime in the future. Alternate 3 is similar to Alternate 2 except that Alternate 3 proposes end rolls at the new bridge whereas Alternate 2 proposes vertical end walls.
4. Rick Ford of GDOT R/W stated that there are no severe impacts with either alternate and there are no displacements. An estimate of R/W costs will be submitted tomorrow (01/13). He cautioned against adding large easements because of the impacts to the commercial land.
5. GDOT Utilities stated that there was no estimate available, but obviously Alternate 1 will cost less for Utilities Relocation. Both Alternates, however, are pretty standard relocations.
6. Mitch Britt of GDOT Environmental stated that there was no preference for either alternative. Neither would require a public meeting and both would fall under a Nationwide Permit.
7. Katie Mullins of GDOT Programming stated the project is scheduled for letting in the 2003 program and that the R/W money is budgeted for the year 2001.
8. David Mulling of Engineering Services asked how soon would I-75 likely be widened. The widening of I-75 is not identified even in the long range plan.
9. Jim Kennerly stated that everyone should keep in mind that the project was developed for the purpose of improving sight distance, and that Alternative 2 may be a lot more than is needed. The accident history does not suggest a problem worth rebuilding the bridge. However, if CR 155 is to be relocated, it should be moved to intersect with SR 27 at a point 660 ft. from the exit ramp. That way, if SR 27 is ever widened to four lanes with a raised median we can put a median opening at that location.
10. Harry Graham stated that the project is being driven by the fact that sight distance is limited at the bridge and it is difficult for slow moving vehicles, such as school buses, to pull out. He stated a preference for Alternate 2 since the vertical curve at the existing bridge only meets a 45 mph design speed.
11. Others, however, disagreed, since Alternate 1 accomplishes the purpose of improving sight distance. It is doubtful that FHWA would approve Alternate 2 since the widening of I-75 is not in the long range plan. Also, since vertical clearance is not a problem on the existing bridge, it may be possible to widen I-75 half a lane to the inside and half a lane to the outside and still maintain the existing bridge. G&O will check the horizontal clearance in the median of I-75 for the widening.
12. The vertical curve on the existing bridge does NOT meet the current 55 MPH design speed and the sight distance (SB exit at SR 27) over the crest does NOT meet 55 MPH, although widening the bridge does move the bridge side barrier from the sight line. The vertical curve does meet 45 MPH and the sight distance is very close to meeting 50 MPH.

13. It was agreed that Alternate 1 is the preferred alternate, with the following conditions:
    a. It will mean either signing this portion of SR 27 for 45 MPH or it will require a design

exception for the vertical curve on the bridge.

b. The Concept Plan will show Limited Access to points that are 300 feet from the ramp terminals even if it means a total property take. The gas station on the east side of I-75 is closed, but the two on the west side are still operating. This should not affect environmental nor require a public meeting.
c. The intersection of CR 155 will be moved to a point that is 660 feet from the southbound exit ramp terminal as located in Alternate 2. This is to meet the minimum criteria for median opening spacing for future construction.
d. G&O will check the existing ramps with current design criteria and if they meet it, then the ramps will remain as they are. If a ramp does not meet current criteria, then the Concept Plan will show complete reconstruction of the ramp, including changing the intersection angle with SR 27 to a minimum of 75^ and terminating the ramp at I-75 to accommodate the future widening of half a lane to the outside.

The preceding represents our understanding of the items discussed. Should you have any comments or questions, please contact us so that we may incorporate them.

Respectfully submitted,
Greenhorne & O'Mara, Inc.

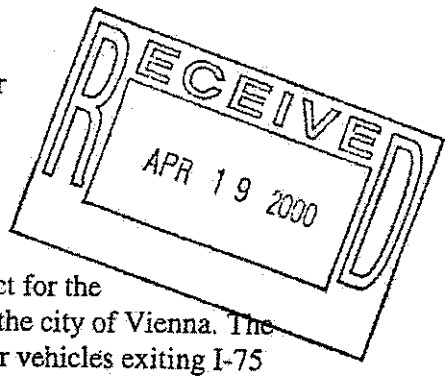
Theon F. Grojean, P.E.
Senior Project Manager

Department of Transportation
State of Georgia

INTERDEPARTMENTAL CORRESPONDENCE

File: IM-NH-75-1(227)/Dooly County
P.I. No. 311665

Office: Traffic Operations
Atlanta, Georgia
Date: April 14, 2000



From: M. G. Waters, III, P.E., State Traffic Operations Engineer

To: Wayne Hutto, Assistant Director of Preconstruction

Subject: Project Concept Report Review

We have reviewed the concept report on the above project for the improvements to the SR 27 interchange at I-75, north of the city of Vienna. The purpose of this project is to improve the sight distance for vehicles exiting I-75 onto SR 27. This project will also relocate CR 155 a distance of 660 feet from the southbound exit ramp.

SR 27 is a two lane rural roadway with 8 foot grassed shoulders and a posted speed limit of 55mph. The existing bridge is 34.7 feet in width and has a sufficiency rating of 88.0. CR 155 consists of two 12 foot lanes with 10 foot grassed shoulders.

The I-75 northbound and southbound exit ramps will be reconstructed, by this project, to meet GDOT requirements and provide an intersection angle of 75° at SR 27. The bridge will be widened to 46 feet, providing two 12 foot lanes, a 10 foot shoulder on the north side and a 12 foot shoulder on the south side. The additional width of the south shoulder is to provide adequate sight distance from the ramp terminal across the bridge. Ramps will be constructed 16 feet in width and widen to 24 feet at the SR 27 intersection to allow for a turn lane. The speed design is 55mph for SR 27 and CR 155, and 50mph for the ramps. Traffic is to be maintained during construction with CR 155 remaining in service until completion of the new alignment.

We request conduit be installed, on the bridge, as part of this project. The conduit would be used for the future interconnection of the Advanced Transportation Management System components in this area. Our Traffic Operations Design Office can provide details and cost estimates for inclusion in the project.

We believe this concept will improve safety and operational capacity along this section of roadway.

With the recommended statement, we find this report satisfactory for approval.

MGW:TWS

Attachment (signature page)

c: David Studstill
James A. Kennerly, State Road and Airport Design Engineer
Attention: Stanley Hill
David Mulling, w/attachment
Marta Rosen
Chuck Hasty, TMC
Mark Demidovich, TMC
Paul Liles, State Bridge Design Engineer
General Files