

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
REVISED PROJECT CONCEPT REPORT**

Project Number: STP00-0079-01(042)
County: Coffee
P. I. Number: 431830
Federal Route Number: US 221
State Route Number: SR 135 & SR 206

The changes to the approved 2008 Concept Report include using 12-foot urban shoulders on SR 135 from west of US 441 to McDonald/Old Axson Road, using a rural typical section on SR 135 from McDonald/Old Axson Road to SR 32/West Green Road, using a 14-foot flush median rather than a 14-foot flush median with a future 20-foot median footprint from McDonald/Old Axson Road to SR 32/West Green Road, using an 8-foot raised median instead of a 14-foot flush median across the proposed bridge over the CSX Railroad, using a 12-foot urban shoulder without sidewalk on SR 158/Baker Highway west of SR 135, and realigning Old Bell Lake Road to remove the less than acceptable skew angle and not impacting the box culvert. These changes are based on the implementation of the approved Value Engineering recommendations (September 24, 2009).

Submitted for approval:

DATE 5/17/10


Columbia Engineering
Design Consultant Name and Firm Name

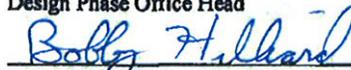
DATE _____

N/A
Local Government

DATE _____

N/A
Design Phase Office Head

DATE 6/1/2010


Office Head (Project Manager's Office)

DATE 6/1/10


Project Manager

Recommendation for approval:

DATE 7/14/10

GLENN BOWMAN ^{LC} (recommendation on file)
State Environmental Administrator

DATE 7/29/10

PAUL LILES ^{LC} (recommendation on file)
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 7/16/10


State Transportation Planning Administrator

REVISED PROJECT CONCEPT REPORT

Need and Purpose: See attached document.

Project location: This project is located in central Coffee County and ties into the southern portion of the SR 135 western bypass, which is an existing 4-lane with a flush median section, and into SR 32 to the east of the city. The project corridor is located entirely within the city limits of Douglas. The project length is 2.77 miles on SR 135 and runs from Mile Post 8.05 to 10.82.

Description of the approved concept:

The approved project concept proposed to widen and reconstruct SR 135/Perimeter Road from US 441 east to SR 32, including a railroad separation. There were two typical sections for the project corridor. The first typical section provided four 12' lanes, a 20' raised median, and 16' urban shoulders with curb and gutter and 5' sidewalk from US 441 to Old Axon/McDonald Road. From Old Axon/McDonald Road to the end of the project, the second typical section provided four 12' lanes, a 14' flush median, 16' urban shoulders with curb and gutter, and 5' sidewalks on a future 20' raised median footprint. The existing at-grade railroad crossing with CSX was to be replaced with a 300' x 84' concrete bridge that spanned the railroad and Iron Road, which runs parallel to the track.

PDP Classification: Major X Minor

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

Functional Classification: Urban Principal Arterial

U. S. Route Number(s): US 221 **State Route Number(s):** SR 135, SR 206

Traffic (AADT) as shown in the approved concept:

Base Year: (2013) 18,300 Design Year: (2033) 24,950

Updated traffic data (AADT):

Base Year: (2016) 19,200 Design Year: (2036) 26,000

Approved Programmed/Schedule:

P.E.: 2003 R/W: 2014 Construction: LR

VE Study Required Yes (X) No () **Held:** 07/20/2009-07/23/2009

Benefit/Cost Ratio: 1.44

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

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

<p>Approved Features: The following items will be revised from the 2008 Approved Concept Report:</p> <ul style="list-style-type: none"> Widen SR 135 from west of intersection with US 441 to the intersection of Old Axson/McDonald Road with an urban typical section, which includes 4 lanes and a 20' raised median, 16' shoulders, and 5' sidewalks. This will change due to the VE implementation to 	<p>Proposed Features: The concept report has been revised with the following items:</p> <ul style="list-style-type: none"> Widen SR 135 from west of intersection with US 441 to the intersection of Old Axson/McDonald Road with an urban typical section, which includes 4 lanes and a 20' raised median, 12' shoulders, and 5' sidewalks. Widen SR 135 from the intersection of Old
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<p>reduce the shoulder widths.</p> <ul style="list-style-type: none"> • Widen SR 135 from the intersection of Old Axson/McDonald Road to SR 32/West Green Road with an urban typical section, which includes 4 lanes, 14' flush median, 16' shoulders, and 5' sidewalks, on a future 20' median footprint. This is changing to significantly reduce construction and right-of-way (ROW) costs in addition to the VE recommendation to use a rural typical section without sidewalk. • Proposed 300' x 84' +/- new concrete bridge over CSX railroad. This is changing because of the decision to use rural shoulders and because of the VE implementation for an 8' raised median across the bridge in lieu of a 14' flush median. • Additional ROW will be required for the construction and widening of SR 135 corridor, as well as side roads. This is changing because US 441 has proposed raised medians with the dual left turn lanes, Mya Drive is a newly constructed roadway, Old Bell Lake Road will be relocated slightly to the north of its' existing location, Waldroup Avenue is proposed to become a cul-de-sac, and a new connector street is proposed to connect Waldroup Avenue to SR 135. 	<p>Axson/McDonald Road to SR 32/West Green Road with a rural typical section, which includes 4 lanes with a 14' flush median and 10' rural shoulders.</p> <ul style="list-style-type: none"> • Additional design exceptions and variances required: <ul style="list-style-type: none"> • A horizontal alignment design exception is required for maintaining the existing 40 degree skew angle at the intersection of SR 32/Ward Street and SR 135. Status: Approved • A design variance is required for reducing the median size on the proposed bridge from a 14' flush median to an 8' raised median. Status: Approved • A design variance is required for not providing sidewalk with the proposed urban shoulder on East Baker Highway (SR 158). Status: Approved • Proposed 251.5' x 75.25' +/- new concrete bridge over CSX railroad. • Proposed right-of-way (ROW) for US 441 will be increased due to the addition of raised medians; proposed ROW for Mya Drive is increased because it is a newly constructed roadway that must tie into SR 135; proposed ROW for Old Bell Lake Road has changed in design from a split new location (with 660' separation) to slightly realigning the existing roadway on new location to remove the less than desirable skew angle with SR 135; proposed ROW for Waldroup Avenue has changed because its' current tie-in at SR 135 cannot be maintained due to inadequate sight distance over the proposed bridge as well as an Environmental Justice business in the potential realignment path, thus resulting in Waldroup Avenue becoming a cul-de-sac. A new connector street is proposed to connect Waldroup Avenue to SR 135 which will require additional ROW along SR 135 and Waldroup Avenue.
<p>Reason for Change: To significantly reduce construction and ROW costs as well as the Value Engineering Recommendations.</p>	

Potential Environmental Impacts of Proposed Revision:

The overall reduction in project footprint is expected to result in reduction of impacts in regards to noise, wetlands/streams, etc. However, the addition of project elements (US 441 wider because of raised 8' median and dual left turn lanes, introduction of Mya Road) could result in increased impacts in other areas. These variations in impacts will need to be accurately documented in the environmental assessment and its supporting special studies for FHWA review. These revisions need to be completed prior to presentation of the revised project to the public.

Have Proposed Revisions Been Reviewed by Environmental Staff? (X) Yes () No

Environmental Responsibilities (Studies/Documents/Permits): Consultant (Edwards-Pitman, Inc.)

Increased Environmental impacts:

NEPA: The approved EA will need to be revised and resubmitted to FHWA for approval prior to PHOH.

Ecology: The reduction in roadway footprint in much of the corridor would result in changes to anticipated impacts to wetlands and streams. Additional survey work will be required and a revised ecology report will need to be prepared. The species examined for this project do not have seasonal survey requirements.

Archeology: It is anticipated that the overall reduction in project footprint would not result in effects to archaeological resources. Additional surveys will be required in locations where new right-of-way is to be acquired due to changes in secondary road alignments/approaches.

History: Because the Area of Potential Effect has not been altered significantly, the findings of the Historic Resource Survey Report are considered current for a period of five years. Therefore, additional surveys are not anticipated. However, an addendum to the AOE will be required to describe the changes in sound levels at the resources identified as well as any changes in ROW/easement in close proximity to the resources.

Air/Noise: It is anticipated that the changes described (reduction in roadway footprint) would necessitate updates in air and noise modeling. A revised Noise Impact Assessment and Air Quality Analysis that reports the updated modeling results will be required. However, it is not anticipated that the project as now proposed would result in any increase in noise or air quality impacts.

Public Involvement: These changes have been made prior to holding the PHOH allowing for the document (EA) to be revised and then presented to the public at the PHOH after approval by FHWA.

Updated Cost Estimate	
Base Construction Cost	\$17,762,136.00
Engineering and Inspection	\$888,107.00
Fuel & Asphalt Adjustment	\$4,092,200.00
<u>Total Construction Cost</u>	\$22,742,443.00
Right-of-Way	\$4,526,440.00
Utilities (reimbursable)	\$0
CSX Transportation, Inc. (reimbursable)	\$134,000.00
Utility Contingencies	\$0
Environmental Mitigation	\$1,144,128.00

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

Attachments:

1. Sketch Map,
2. Need and Purpose Statement,
3. Cost Estimates, including fuel adjustment
4. Typical Sections,
5. Traffic Diagrams,
6. Approved Traffic Study,
7. Approved Value Engineering Implementation Letter, and
8. B/C Ratio Worksheet.

Concur: _____

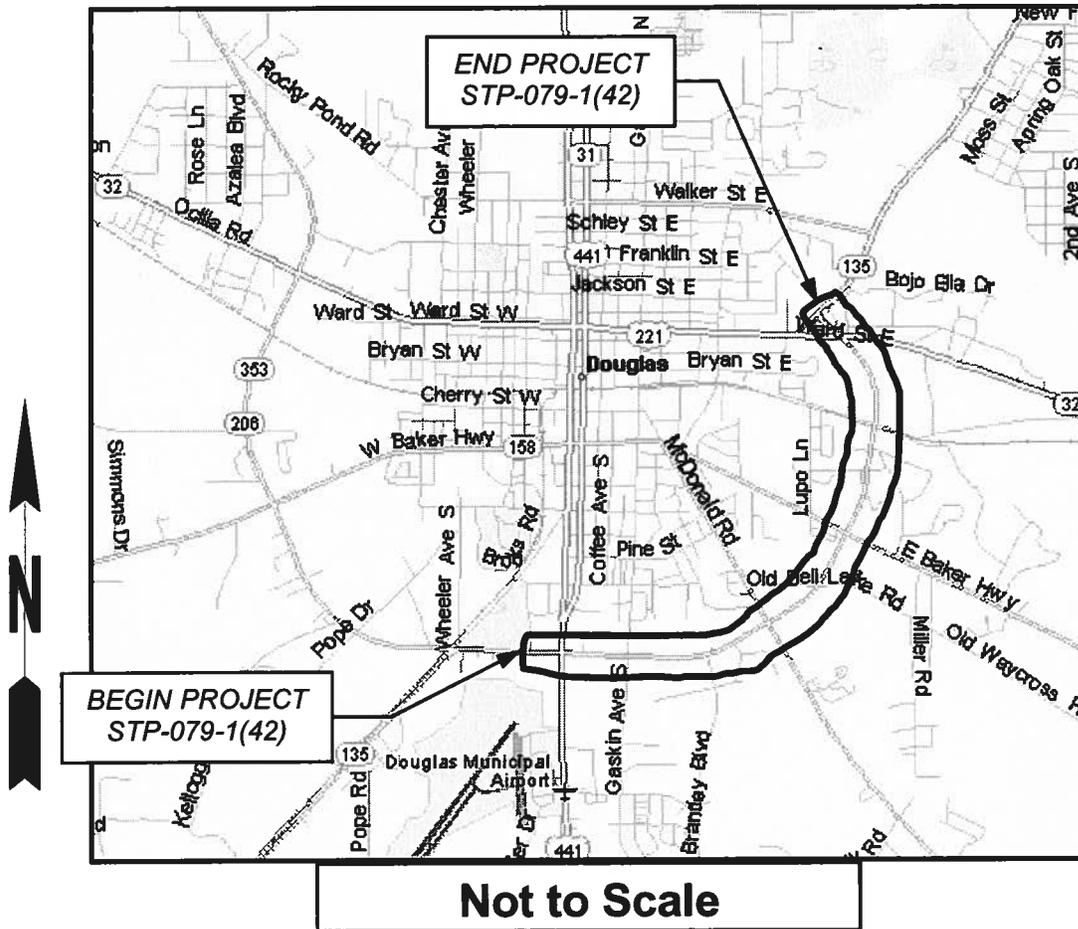

Director of Engineering

Approve: _____


Chief Engineer

Date: 8/20/10

PROJECT LOCATION MAP



**STP00-0079-01(042), Coffee County
SR 135 fm SR 31/US 441 East to SR 32 Incl. RR Separation
PI 431830**

Need & Purpose Statement
STP-079-1(42)
P.I. 431830 - Coffee County
Widening of SR-135 from US 441 to US 221
(a.k.a. 'Perimeter Road, Bowens Mill Road')

Roadway Description

SR-135, which is also partially co-routed with US 221 and SR-206 from the intersection of US 441 to the intersection with US 221 (northeastern portion of Douglas) in Coffee County, is functionally classified as a principal arterial. This section of roadway is also known as Perimeter Road and Bowens Mill Road, which serves as a bypass around the southern half of the city limits of Douglas. Regionally, Perimeter Road facilitates smoother east-west travel on SR-32 (a Governor's Road Improvement Program (GRIP) corridor) between I-75 to the west and I-95 in Brunswick to the east. The GRIP was initiated in the 1980's to address the importance of stimulating economic growth via an improved transportation network. In 2008, the total traffic volume ranged from 7,000 near US 221 to 19,800 vehicles per day near US 441, with an average of 18% truck traffic.

This section of Perimeter Road currently has two 12' lanes with 8' grassed shoulders, with a posted speed limit ranging from 35 to 55 mph. This section of Perimeter Road is located on a proposed bike route in the Southeast Georgia Regional Bike and Pedestrian Plan.

Background on Project

Consequent to a study conducted by the Office of Planning (April 1996), the S.H.I.P. Committee (currently known as the Project Nomination Review Committee) requested that the eastern portion of SR-135 be widened to match the four lane segment (western segment) of Perimeter Road under the assumptions that if this section of SR-135 was left as a two lane facility, it could create a bottleneck. In 1996, this section of SR-135 had a LOS D and was projected to have a future LOS E¹.

A recommended railroad overpass (located on the southeast portion of Perimeter Road) was predicated on reducing crash frequency and severity at the railroad: an estimated 50 school buses cross daily at this RR-crossing, which 23 to 36 trains utilize this segment of rail daily. In 1992 and 1993, the accident rates at the intersection (un-signalized) of Old Nichols Rd were higher than any other intersection along the southeast portion of Perimeter Road.

The proposed overpass was recommended also to improve traffic flow and travel time for trucks coming from the Wal-Mart Distribution Center in Douglas located on the southwest portion of Perimeter Road. Wal-Mart estimated that it had an output of 1,340 trucks per week as well as receiving 2,390 trucks weekly. These trucks utilized the southeast portion of Perimeter Road, therefore needing to cross the CSX RR tracks.

In order to decrease crash frequency and severity, improve operational traffic flow (LOS current/future), and reduce travel time, this project is proposed to construct two lanes in each direction on SR-135 from the SR-135/SR-206 intersection eastwards to Baker Road/SR-158. From Baker Road/SR-158, the project would be taken on to new location and bridged (grade separation) over the CSX railroad with two lanes in each direction. The project is then proposed to terminate at US 221/SR-135, northeast of Douglas.

Widening this section of roadway would enhance traffic flow by providing needed additional capacity to meet current and future traffic volumes.

The western terminus at the SR-135/SR-206 intersection with US 441 has logical termini due to the proposed project typical section matching the existing southwestern portion of the Perimeter Road's typical section, a 4-lane road with a 14' flush median. The eastern endpoint of the proposed project has its' logical termini ending at the US 221/SR-135 intersection in the northeastern part of Douglas because SR-135 ties into the existing US 221/SR-32 at a "T" intersection. Additionally, if the chosen alternate is re-aligned so that SR-135 merges with the existing US 221/SR-32, then the logical termini is also based on tying to the existing US 221/SR-32 four-lane roadway section. Currently, US 221/SR-32 has adequate capacity for the re-alignment of SR-135 with US 221/SR-32 based 2008 traffic data (2013 design year 18300 and 2033 future year 24950).

¹ Level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream. There are six levels or degrees of LOS consisting of letters 'A' thru 'F'. LOS A indicates the most optimal road operating conditions, whereas LOS F signifies the worst operational conditions. LOS C is considered to be the acceptable degree, which typically indicates the beginning of a range of traffic flow where the level of driving comfort declines noticeably on the roadway. LOS E represents at or near capacity for traffic flow.

Land Use

This area of land along Perimeter Road has mixed uses consisting of retail (Wal-mart, Lowe’s Home Improvement Center) agricultural, commercial, industrial, and residential. In addition, there is a middle school located at the northwest corner of the intersection with US 441, and the City of Douglas Municipal Airport is located at the southwest corner of this intersection.

Community of Coffee County and the City of Douglas

For the year 2000, there were four Census Tracts (CT) located in the vicinity of Perimeter Road. CT 13069990500 covers the northwest section of Douglas, between SR-32 and US 441. CT 13069990700 covers the southwest portion of Douglas and it is located south of SR-32 and west of US 441 (it overlaps SR-158 and SR-135). CT 13069990800 covers the southeast portion of Douglas, south of SR-32 and east of US 441 (it overlaps SR-158). CT13069990400 covers the northeast portion of Douglas, north of SR-32 and east of US 441 (overlaps US 221).

CT	% Minority	\$0 – 25K per household	\$25 – 50K per household	\$50 – 75K per household	\$75 – 100K per household	\$100K+ per household	1990 Population	2000 Population
13069990500	23.7	34%	30%	17%	7%	11%	3,207	3,748
13069990700	38.8	42%	36%	16%	2%	3%	4,190	5,158
13069990800	48	47%	30%	16%	4.5%	2%	6,969	8,231
13069990400	24	38.6%	32.8%	14.7%	6.8%	7%	4,995	5,433

In 2008, Coffee County had a population of 40,527 compared to the state's population, 9.3 million. From the years 2000- to 2008, the county's population grew 26.4%; from April 2000 to July 2008, the population grew 8.33%. In 2008, Coffee County had a minority segment that accounted for 28.4% of the county's total population, compared to the state's 34.6%. In 2007, the median household income was \$33,666 compared to the state \$49,080.

Crash Data

Year	Accidents	Accident Rate	Statewide Accident Average
2005	9	91	253
2006	1	9	288
2007	70	658	249

For the years 2005 thru 2007, the accident rates were lower than the statewide averages on Perimeter Road except in 2007, which was 658, versus the statewide average of 249. No fatalities were reported between 2005 and 2007. During the years observed, the types of crashes that occurred were as follows: approximately 33.75% were classified as 'Angle'; 55% were classified as 'Rear End'; 5% were classified as 'Head On'; 3.75% were classified as 'Sideswipe' 2.5% were classified as 'Not a Collision with another vehicle'.

Travel Demand

There are seven traffic count stations located along this specific section of Perimeter Road: TC 232 (located just west of the SR-206/SR-135 common section intersection with US 441/SR-31); TC 483 (located to the east of the intersection of SR-206/SR-135 with US 441/SR-31); TC 485 (located just west of the intersection with South Gaskin Avenue); TC 456 (located to the east of the intersection at South Gaskin Avenue and to just west of the intersection of CR-766/Brantley Boulevard); TC 454 (located in-between the intersections of CR-26/Old Bell Lake Road and SR-158/East Baker Highway with SR-206/SR-135); TC 458 (located north of the intersection with SR-158/East Baker Highway and south of the intersection with Waldroup Avenue); and TC 460 (located immediately south of SR-32 and north of the intersection with Ward Street)

In 2008, the average annual daily traffic (AADT) on Perimeter Road ranged from 7,000 to 19,800 vehicles, which gives

this section of roadway a LOS (Level-of-Service) ranging from 'C' to 'E'. In the year 2013 the AADT is projected to range from 9,300 to 18,300 vehicles with a LOS ranging from 'B' to 'C'. In the year 2033, the LOS is projected to range from 'C' to an 'D' (AADT ranging from 11,900 to 24,950 vehicles).

Projects in Local Vicinity

Project No.	Project Description	Project Schedule For FY04/06 STIP
PI No. 0004800	SR 32 From US 441 to Liberty ST/CR 552 incl. GA USS Bridge	PE – LR ROW – LR CST-LR
PI No. 0000293	SR 206 From SR 32 in Douglas to CR 143/Moseley Road	PE – LR ROW – LR CST-LR

Need & Purpose

The proposed project is needed to address current and future traffic congestion, therefore improving the LOS. Specifically, the overpass is needed to reduce crash frequency and severity at the railroad tracks as well as improve the travel time and operational traffic flow for trucks using Perimeter Road. The project's purpose will be to improve and enhance the operational flow for traffic along Perimeter Road and the flow of regional traffic, cars, and trucks traveling on the SR 32 GRIP corridor between 1-95 and 1-75 and needing to bypass the city of Douglas.

STATE HIGHWAY AGENCY
 JOB ESTIMATE REPORT

JOB NUMBER : 431830
 DESCRIPTION: SR135 FROM SR31/US441 TO SR32 INCLUDING RR SEPARATION
 SE DOUGLAS BYPASS

SPEC YEAR: 01
 ITEMS FOR JOB 431830

LINE	ITEM	ALT	UNITS	DESCRIPTION	QUANTITY	PRICE	AMOUNT
0005	402-3110		TN	RECY ASPH 9.5 MMSP,GPIOR2,INCL B M & HL	1160.000	80.54	93436.70
0010	402-3112		TN	RECYL AC 19MM SP, GP 1/2, BM&HL	22800.000	80.00	1824000.00
0015	402-3113		TN	RECYL AC 12.5MM SP,GPI/2,BM&HL	16610.000	57.19	949933.04
0020	402-3143		TN	RECYL AC 25 MM SP,GP 1 OR 2,INCL BM	44700.000	85.00	3799500.00
0025	413-1000		GL	BITUM TACK COAT	17300.000	2.57	44627.25
0030	456-2010		MI	INDENT RUMBLE STRIPS - GRND-IN-PL	2.000	901.67	1803.34
0035	201-1500		LS	CLEARING & GRUBBING - STP00-0079-01(042)	1.000	150000.00	150000.00
0040	310-5040		SY	GR AGGR BS CRS 4IN INCL MATL	560.000	8.50	4760.00
0045	310-5060		SY	GR AGGR BS CRS 6IN INCL MATL	1020.000	10.76	10983.06
0050	310-5100		SY	GR AGGR BS CRS 10IN INCL MATL	101750.000	15.36	1563852.73
0055	318-3000		TN	UNCLAS SURF CRS	1000.000	24.56	24562.59
0060	205-0001		CY	UNCLASS EXCAV	56000.000	6.36	356531.84
0065	206-0002		CY	BORROW EXCAV, INCL MATL	190000.000	4.61	876390.20
0070	207-0203		CY	FOUND BKFILL MATL, TP II	25200.000	30.79	775984.36
0075	150-1010		LS	TRAFFIC CONTROL - STP00-0079-01(042)	1.000	500000.00	500000.00
0080	163-0232		AC	TEMPORARY GRASSING	40.000	458.28	18331.48
0085	163-0240		TN	MULCH	100.000	206.87	20687.47
0090	163-0300		EA	CONSTRUCTION EXIT	4.000	1193.41	4773.66
0095	163-0503		EA	CONSTR AND REMOVE SILT CONTROL GATE,TP 3	60.000	364.69	21881.77
0100	163-0520		LF	CONSTR AND REMOVE TEMP PIPE SLOPE DRAIN	1000.000	14.15	14151.43
0105	163-0528		LF	CONSTR AND REM FAB CK DAM -TP C SLT FN	400.000	4.14	1659.68
0110	163-0529		LF	CNST/REM TEMP SED BAR OR BLD STRW CK DM	200.000	3.52	705.09
0115	163-0542		EA	CONSTR & REM STONE FILTER RING	126.000	771.00	97147.16
0120	163-0550		EA	CONS & REM INLET SEDIMENT TRAP	127.000	147.91	18785.20
0125	165-0010		LF	MAINT OF TEMP SILT FENCE, TP A	18500.000	0.57	10639.91
0130	165-0020		LF	MAINT OF TEMP SILT FENCE, TP B	1000.000	0.63	635.71
0135	165-0030		LF	MAINT OF TEMP SILT FENCE, TP C	3600.000	0.56	2037.10
0140	165-0041		LF	MAINT OF CHECK DAMS - ALL TYPES	600.000	1.20	720.65
0145	165-0050		LF	MAINT OF SILT RETENTION BARRIER	500.000	1.78	893.57
0150	165-0087		EA	MAINT OF SILT CONTROL GATE, TP 3	60.000	84.22	5053.21
0155	165-0101		EA	MAINT OF CONST EXIT	4.000	543.88	2175.52
0160	165-0105		EA	MAINT OF INLET SEDIMENT TRAP	127.000	58.52	7432.30
0165	165-0111		EA	MAINT OF STONE FILTER RING	126.000	123.37	15545.08
0170	167-0100		MO	WATER QUALITY MONITORING	4.000	521.54	2086.16
0175	167-1500		MO	WATER QUALITY INSPECTIONS	24.000	637.05	15289.30
0180	170-1000		LF	FLOAT SILT RETENTION BARRIER	500.000	12.44	6221.59
0185	171-0010		LF	TEMPORARY SILT FENCE, TYPE A	18500.000	1.60	29620.35
0190	171-0020		LF	TEMPORARY SILT FENCE, TYPE B	1000.000	1.05	1059.24
0195	171-0030		LF	TEMPORARY SILT FENCE, TYPE C	3600.000	3.47	12492.29
0200	716-1000		SY	EROSION CONTROL MATS,WATERWAYS	400.000	2.90	1162.16

STATE HIGHWAY AGENCY
 JOB ESTIMATE REPORT

0205	716-2000	SY	EROSION CONTROL MATS, SLOPES	2500.000	1.61	4032.93
0210	433-1200	SY	REF CONC APPR SL/I SLOPED EDGE	505.000	155.22	78390.65
0215	441-0016	SY	DRIVEWAY CONCRETE, 6 IN TK	210.000	45.13	9477.60
0220	441-0018	SY	DRIVEWAY CONCRETE, 8 IN TK	1180.000	37.29	44004.03
0225	441-0104	SY	CONC SIDEWALK, 4 IN	6600.000	28.76	189866.56
0230	441-0301	EA	CONC SPILLWAY, TP 1	2.000	2000.67	4001.34
0235	441-0748	SY	CONC MEDIAN, 6 IN	5900.000	39.84	235056.41
0240	441-4020	SY	CONC VALLEY GUTTER, 6 IN	115.000	34.08	3920.31
0245	441-4030	SY	CONC VALLEY GUTTER, 8 IN	670.000	47.56	31871.44
0250	550-1150	LF	STM DR PIPE 15",H 1-10	105.000	39.31	4128.00
0255	550-1180	LF	STM DR PIPE 18",H 1-10	9000.000	25.83	232481.43
0260	550-1240	LF	STM DR PIPE 24",H 1-10	890.000	35.81	31875.69
0265	550-1300	LF	STM DR PIPE 30",H 1-10	425.000	52.03	22116.65
0270	550-1360	LF	STM DR PIPE 36",H 1-10	1415.000	48.53	68674.97
0275	550-1420	LF	STM DR PIPE 42",H 1-10	330.000	62.56	20646.98
0280	550-1480	LF	STM DR PIPE 48",H 1-10	190.000	70.63	13420.74
0285	550-1600	LF	STM DR PIPE 60",H 1-10	105.000	107.15	11251.67
0290	550-2180	LF	SIDE DR PIPE 18",H 1-10	2700.000	21.27	57438.91
0295	550-2240	LF	SIDE DR PIPE 24",H 1-10	1040.000	23.94	24902.14
0300	573-2006	LF	UNDDR PIPE INCL DRAIN AGGR 6"	1000.000	13.15	13152.68
0305	576-1015	LF	SLOPE DRAIN PIPE, 15 IN	160.000	26.08	4173.30
0310	641-1100	LF	GUARDRAIL, TP T	60.000	3767.60	3767.60
0315	641-1200	LF	GUARDRAIL, TP W	1900.000	15.08	28661.99
0320	641-5001	EA	GUARDRAIL ANCHORAGE, TP 1	5.000	633.76	3168.83
0325	641-5012	EA	GUARDRAIL ANCHORAGE, TP 12	5.000	1819.96	9099.84
0330	550-3518	EA	SAFETY END SECTION 18",STD,6:1	2.000	642.86	1285.73
0335	550-3542	EA	SAFETY END SECTION 42",STD,6:1	2.000	2131.33	4262.66
0340	550-3618	EA	SAFETY END SECTION 18",SD,6:1	49.000	712.37	34906.37
0345	550-3624	EA	SAFETY END SECTION 24",SD,6:1	16.000	636.24	10179.89
0350	550-4218	EA	FLARED END SECT 18 IN, ST DR	18.000	480.13	8642.48
0355	550-4224	EA	FLARED END SECT 24 IN, ST DR	2.000	541.85	1083.72
0360	550-4230	EA	FLARED END SECT 30 IN, ST DR	1.000	802.10	802.11
0365	550-4242	EA	FLARED END SECT 42 IN, ST DR	2.000	956.76	1913.53
0370	577-1100	EA	METAL DR INLET - CMPLT ASSEMBLY	6.000	960.91	5765.47
0375	668-1100	EA	CATCH BASIN, GP 1	85.000	2060.65	175155.35
0380	668-1200	EA	CATCH BASIN, GP 2	6.000	2694.00	16164.03
0385	668-2100	EA	DROP INLET, GP 1	34.000	1787.50	60775.00
0390	668-2200	EA	DROP INLET, GP 2	1.000	2903.23	2903.23
0395	668-4300	EA	STORM SEW MANHOLE, TP 1	1.000	2138.33	2138.33
0400	436-1000	LF	ASPH CONC CURB - STP00-0079-01(042)	1900.000	10.43	19835.34
0405	441-5002	LF	CONC HEADER CURB, 6", TP 2	1700.000	11.45	19469.06
0410	441-6022	LF	CONC CURB & GUTTER, 6"X30"TP2	2200.000	14.09	310009.26
0415	441-6720	LF	CONC CURB & GUTTER/ 6"X30"TP7	10000.000	13.73	137378.10
0420	153-1300	EA	FIELD ENGINEERS OFFICE TP 3	1.000	60146.65	60146.65
0425	643-0105	LF	FIELD FENCE BARMIRE, 5 STRANDS	1000.000	5.59	5597.68
0430	643-1152	LF	CH LK FEN,ZC COAT, 6', 9 GA	1000.000	19.83	19831.34
0435	643-8001	EA	GATE, GALV METAL- STP00-0079-01(042)	4.000	1204.06	4816.27
0440	643-8200	LF	BARRIER FENCE (ORANGE), 4 FT	5000.000	1.81	9092.50
0445	634-1200	EA	RIGHT OF WAY MARKERS	215.000	91.88	19755.94
0450	432-0206	SY	MILL ASPH CONC PVMT/ 1.50" DEP	73500.000	1.27	93598.58
0455	432-0208	SY	MILL ASPH CONC PVMT/ 2" DEP	15250.000	3.64	55543.86
0460	700-6910	AC	PERMANENT GRASSING	50.000	1113.15	55657.64
0465	702-7501	LF	TREE PROTECTION BARRIER,TP 1	200.000	2.22	444.05
0470	647-1000	LS	TRAF SIGNAL INSTALLATION NO -	1.000	70000.00	70000.00

STATE HIGHWAY AGENCY
 JOB ESTIMATE REPORT

ITEM	SY	DESCRIPTION	QTY	UNIT	PRICE	TOTAL	AMOUNT	AMOUNT
0475	SY	STP00-0079-01(042) THERM TRAF STRIPING, WHITE	5000.000		2.61	13067.95		
0480	SY	THERM TRAF STRIPING, YELLOW	3500.000		2.60	9110.89		
0485	LF	CONDUIT, NONMETL, TP 3, 2 IN	530.000		3.75	1991.48		
0490	SE	HWY SGN,TP1MAT,REFL SH TP3	1100.000		12.61	13871.88		
0495	SE	HWY SGN,TP2 MATL,REFL SH TP 3	100.000		16.13	1613.60		
0500	SE	HWY SIGNS, TP1MAT,REFL SH TP 9	2000.000		16.87	33752.14		
0505	SE	HWY SIGNS,TP 2MAT,REFL SH TP 9	50.000		24.37	1218.69		
0510	LF	GALV STEEL POSTS, TP 7	1550.000		7.33	11368.34		
0515	LF	GALV STEEL POSTS, TP 8	1700.000		8.52	14498.13		
0520	EA	MILEPOST SIGNS	6.000		153.03	918.19		
0525	LF	PRF PL SD PVMT MKG,5",WH,TP PB	504.000		4.29	2162.33		
0530	GLF	PRF PL SK PVMT MKG,5",WH,TP PB	504.000		2.71	1370.03		
0535	LF	PRF PL SD PVMT MKG,5",YW,TP PB	504.000		4.38	2208.88		
0540	GLF	PRF PL SK PVMT MKG,5",YE,TP PB	504.000		3.10	1564.59		
0545	EA	RAISED PVMT MARKERS TP 1	1000.000		2.94	2941.11		
0550	EA	RAISED PVMT MARKERS TP 3	1110.000		3.00	3330.07		
0555	EA	COFFERDAM	1.000		14836.61	14836.62		
0560	LS	CONSTR OF BRIDGE COMPLETE - RAILROAD BRIDGE	1.000		2550000.00	2550000.00		
0565	LF	DIRECTIONAL BORE - 5 INCH	525.000		11.48	6027.48		
0570	LF	DIRECTIONAL BORE - 3 INCH	655.000		11.17	7318.45		
0575	SE	HWY SIGNS,TP 2MAT,REFL SH TP 9	220.000		23.36	5139.25		
0580	EA	STRAIN POLE, TP IV	20.000		6036.88	120737.60		
0585	LF	PVMT REF FAB STRIPS, TP2,18 INCH WIDTH	35600.000		1.72	61406.44		
0590	CY	CLASS A CONCRETE	950.000		553.87	526177.74		
0595	CY	CL A CONC, RET WALL	100.000		458.19	45819.97		
0600	CY	CL B CONC,BASE OR PVMT WIDEN	660.000		131.54	86818.18		
0605	LB	BAR REINF STEEL	97000.000		0.62	60301.02		
0610	SY	STN DUMPED RIP RAP, TP 3, 24"	3300.000		54.60	180201.58		
0615	SY	PLASTIC FILTER FABRIC	3300.000		3.57	11792.58		
0620	LF	CATCH BASIN, GP 1, ADDL DEPTH	33.000		166.22	5485.28		
0625	LF	CATCH BASIN, GP 2, ADDL DEPTH	16.000		225.62	3610.07		
0630	LF	DROP INLET, GP 1, ADDL DEPTH	17.000		228.79	3889.58		
0635	LF	DROP INLET, GP 2, ADDL DEPTH	3.000		230.41	691.23		
0640	LF	ST SEM MANHOLE,TP 1,A DEP,CL 1	5.000		180.49	902.48		
0645	LF	STEEL WIRE STRAND CABLE, 3/8"	2900.000		3.18	9248.04		
0650	EA	STEEL STRAIN POLE, TP III	22.000		7076.45	155681.98		
0655	EA	THERM PVMT MARK, ARROW, TP 2	225.000		65.29	14691.23		
0660	EA	THERM PVMT MARK, ARROW, TP 7	75.000		86.61	6496.29		
0665	EA	THERM PVMT MARK, WORD, TP 2	90.000		92.73	8345.74		
0670	LF	THERMO SOLID TRAF ST 5 IN, WHI	56000.000		0.26	14694.96		
0675	LF	THERMO SOLID TRAF ST, 5 IN YEL	55000.000		0.27	15360.95		
0680	LF	THERM SOLID TRAF STRIDE,24",WH	1200.000		3.03	3636.59		
0685	LF	THERM SOLID TRAF STRIDE, 8",WH	18000.000		1.47	26606.88		
0690	GLF	THERMO SKIP TRAF ST, 5 IN, WHI	42500.000		0.13	5944.90		
0695	GLF	THERMO SKIP TRAF ST, 5 IN, YEL	8600.000		0.11	995.54		
0700	LS	RAILROAD CONSTRUCTION	1.000		500000.00	500000.00		

ITEM TOTAL
 INFLATED ITEM TOTAL

17762135.97
 17762135.97

JOB ESTIMATE REPORT

TOTALS FOR JOB 431830

ESTIMATED COST:	17762136.00
CONTINGENCY PERCENT (0.0) :	0.00
ESTIMATED TOTAL:	17762136.00

PROJ. NO.

STP00-0079-01(042)

CALL NO.

9/29/2009

P.I. NO.

431830

DATE

6/24/2010

INDEX (TYPE)

DATE

INDEX

REG. UNLEADED

Jun-10

\$ 2.608

DIESEL

\$ 2.926

LIQUID AC

\$ 493.00

Link to Fuel and AC Index:

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

LIQUID AC ADJUSTMENTS

PA=[((APM-APL)/APL-0.05)XTMTxAPL

Asphalt

Price Adjustment (PA)

\$ 2,522,286.60

\$

2,522,286.60

Monthly Asphalt Cement Price month placed (APM)

Max. Cap

125%

\$ 1,109.25

Monthly Asphalt Cement Price month project let (APL)

\$ 493.00

Total Monthly Tonnage of asphalt cement (TMT)

4263.5

ASPHALT	Tons	%AC	AC ton
Leveling		5.0%	0
12.5 OGFC		5.0%	0
12.5 mm	16610	5.0%	830.5
9.5 mm SP	1160	5.0%	58
25 mm SP	44700	5.0%	2235
19 mm SP	22800	5.0%	1140
	85270		4263.5

BITUMINOUS TACK COAT

Price Adjustment (PA)

\$ 43,958.98

\$

43,958.98

Monthly Asphalt Cement Price month placed (APM)

Max. Cap

125%

\$ 1,109.25

Monthly Asphalt Cement Price month project let (APL)

\$ 493.00

Total Monthly Tonnage of asphalt cement (TMT)

74,305,245.95

Bitum Tack

Gals

gals/ton

tons

17300

232.8234

74.305246

PROJ. NO.

STP00-0079-01(042)

CALL NO.

9/29/2009

P.I. NO.

431830

DATE

6/24/2010

BITUMINOUS TACK COAT (surface treatment)

Price Adjustment (PA)

\$

\$

-

Monthly Asphalt Cement Price month placed (APM)

Max. Cap

125%

\$

1,109.25

Monthly Asphalt Cement Price month project let (APL)

\$

493.00

Total Monthly Tonnage of asphalt cement (TMT)

0

Bitum Tack

SY

Gals/SY

Gals

gals/ton

tons

Single Surf. Trmt.

0.20

0

232.8234

0

Double Surf. Trmt.

0.44

0

232.8234

0

Triple Surf. Trmt

0.71

0

232.8234

0

TOTAL LIQUID AC ADJUSTMENT

\$

2,566,245.58

PROJ. NO.

STP00-0079-01(042)

CALL NO.

9/29/2009

P.I. NO.

431830

DATE

6/24/2010

FUEL ADJUSTMENTS - BRIDGE

FPA = (((FPM-FPL)/FPL)-.10)(Qx(F/1000))FPL

Fuel Price Adjustment (FPA)

Monthly Fuel Price for month work was accomplished (FPM)

Monthly Fuel Price for month when project was let (FPL)

Quantity Placed (Q)

Fuel Usage Factor (F)

Cost \$ 2,132,180.98

1.5 8

REGULAR UNLEADED	\$ 9,592.26	DIESEL	\$ 57,396.61	TOTALS	\$ 66,988.86
	125%		6.584		
			2.608		2.926

Section	Bridge 1 Cost	Bridge 2 Cost	Bridge 3 Cost	Bridge 4 Cost
211				
500				
500				
500				
500				
500				
500				
501				
507				
507				
507				
511				
511				
520				
520				
524				
547				
547				

Section	Bridge 1 Cost	Bridge 2 Cost	Bridge 3 Cost	Bridge 4 Cost
Bridge Excavation				
Superstr Conc Cl AA				
Class A Concrete				
Class AA Concrete				
Concrete Handrail				
Concrete Barrier				
Structural Steel				
Prestressed Conc Beams				
Prestressed Conc Beams				
Prestressed Conc Beams				
Super Reinforcement				
Bar Reinf Steel				
Piling				
Piling				
Drilled Caisson				
Pile Encasement				
Pile Encasement				

Use when bridge items haven't been established. Assumes 80% of the estimated bridge cost will qualify for fuel adjustments.

EST. BRIDGE COST	\$ 2,665,226.23	% COST w/ADJ.	80%
COST	\$		2,132,180.98

TOTAL BRIDGE FUEL ADJUSTMENTS

\$ 9,592.26 \$ 57,396.61 \$ 66,988.86

TOTAL FUEL ADJUSTMENT (ROADWAY AND BRIDGE)

\$ 341,991.16 \$ 1,183,963.61 \$ 1,525,954.76

Preliminary Right of Way Cost Estimate

Date 5/14/09

Project: STP-079-1(42)

Existing/Required R/W: Varies/Varies

Project Termini: SR 32

Project Description: SR 135 FM SR 131/US441 East to SR 32 with R/R separation

P.L Number: 431830

No. Parcels: 110

Land:

Commercial

ROW 479,862 sf @ \$2.50/sf = \$1,199,655.00

Perm. Ease. 227,584 sf @ \$2.50/sf X 50% = \$ 284,480.00

Residential

ROW 168,615 sf @ \$0.35/sf = \$ 59,015.25

Perm. Ease. 111,577 @ \$0.35/sf X 50% = \$ 19,525.98

TOTAL

\$1,562,676.10

Improvements: commercial building, site improvements N/A

Relocation:

Commercial @ \$25,000/parcel =

Residential @ \$40,000/parcel =

Total \$ N/A

TOTAL: Improvements & Relocation

\$ N/A

Damages:

Proximity - \$ 87,500

Consequential - \$ N/A

Cost to Cure -- \$ 175,000

TOTAL

\$ 262,500.00

SUB-TOTAL:

\$1,825,176.10

Net Cost \$1,825,176.10

Scheduling Contingency 55 % \$1,003,846.80

Adm/Court Cost 60 % \$1,697,413.70

TOTAL

\$4,526,436.60

Total Cost

\$4,526,440.00 rd.

Prepared By: Cheryl H. Brewer

5-14-10

Approved:


Howard P. Copeland
R/W Administrator

REVISED: 12-8-06

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE STP-0079-01(42), Coffee County
P.I. No.: 431830

OFFICE: State Utilities Office

FROM 
Jeff Baker, State Utilities Engineer

DATE: March 1, 2010

TO Bobby Hilliard, State Program Delivery Engineer
ATTN: Jeremy T. Busby, Assistant Project Manager

SUBJECT PRELIMINARY RAILROAD COST FOR SURFACE WORK (CONCEPT ESTIMATE)

A review of railroads located within the project limits on the above referenced project has been conducted based on the proposed concept layout provided. Listed below is a breakdown of the estimated railroad costs:

<u>FACILITY OWNER</u>	<u>NON-REIMBURSABLE</u>	<u>REIMBURSABLE</u>
CSX Transportation, Inc.	\$134,000.00	\$0.00
Total Reimbursement Cost:	\$134,000.00	\$0.00

Total railroad surface work reimbursable cost for the above project is estimated to be:
\$134,000.00.

Please note that this amount does not include other reimbursable utility and railroad warning device costs that may be associated with this project. Please keep the railroad costs separate from other utilities in your designer's cost estimate.

If you have any questions, please contact Richard Crowley, (404)631-1372, rcrowley@dot.ga.gov or Loren Bartlett, (404) 631-1370, lbartlett@dot.ga.gov.

JB:RLC:lfb

cc: Lee Upkins, State Utilities Preconstruction Engineer
Angela Robinson, State Financial Management Administrator
Tim Warren, District 4 Utilities Engineer
Key Phillips, Railroad Crossing Program Manager

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE

Project No: STP00-0079-01(042)
 County: COFFEE
 P.L. #: 431830-

OFFICE: Tifton
 DATE: August 25, 2009

Description: *SR 135 FM SR 31/US 441 EAST TO SR 32 INCLUDING RR SEPARATION*

FROM *TW* Tim Warren, P.E., District Utilities Engineer

TO Jeremy Busby, Project Manager (VIA EMAIL)

SUBJECT UPDATED UTILITY COST ESTIMATE

A review of utilities located on the above referenced project has been conducted based on the latest available plans. Listed below is a breakdown of the anticipated reimbursable and non-reimbursable cost.

<u>Utility Owner</u>	<u>Reimbursable</u>	<u>Non-Reimbursable</u>	<u>Estimate Based on</u>
Alma Telephone Company	\$0.00	\$28,200.00	Site Visit / Available Drawings
Charter Communications	\$0.00	\$102,500.00	Site Visit / Available Drawings
City Of Douglas **	\$0.00	\$4,000,000.00	Site Visit / Available Drawings
Meag Power	\$0.00	\$396,000.00	Site Visit / Available Drawings
Satilla Emc	\$0.00	\$150,000.	Site Visit / Available Drawings
WINDSTREAM COMMUNICATIONS	\$0.00	\$2,554,000.00	Site Visit / Available Drawings
CSX Railroad (SEE Richard Crowley)	?????	???????	
Total	\$ 0.00	\$7,230,700.00	

30% Utility Contingency \$1,200,000.00

**** Indicates Potential Utility Aid Request from Local Gov't**

If additional information is needed, please contact me or Bill Cooper, Assistant District Utilities Engineer at (229) 386-3288.

BE
 TW:BC:KC.ec

c: Jeff Baker, P.E., State Utilities Engineer
 Brent Thomas, District Preconstruction Engineer
 Angela Whitworth, State Financial Management Administrator
 Richard Crowley, State Utilities Railroad Liaison Engineer

STP00-0079-01(042)

2/24/2010

PI#431830

Coffee County

SR135 from SR31/US441 to SR32 including RR separation

River Basin:	Satilla River
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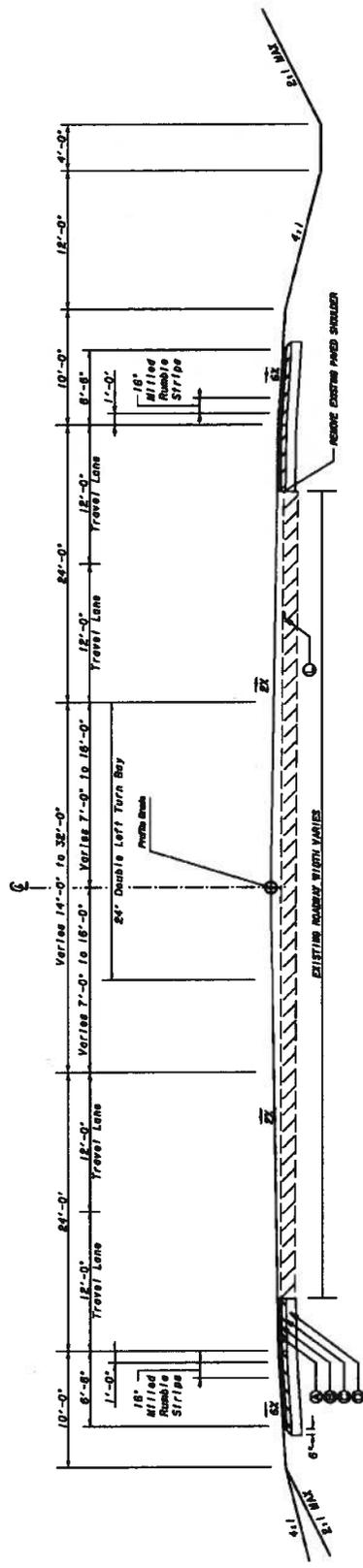
Wetlands:

Req'd Credits	Rate (\$/credit)	Cost (\$)
34.71	3500	\$121,485

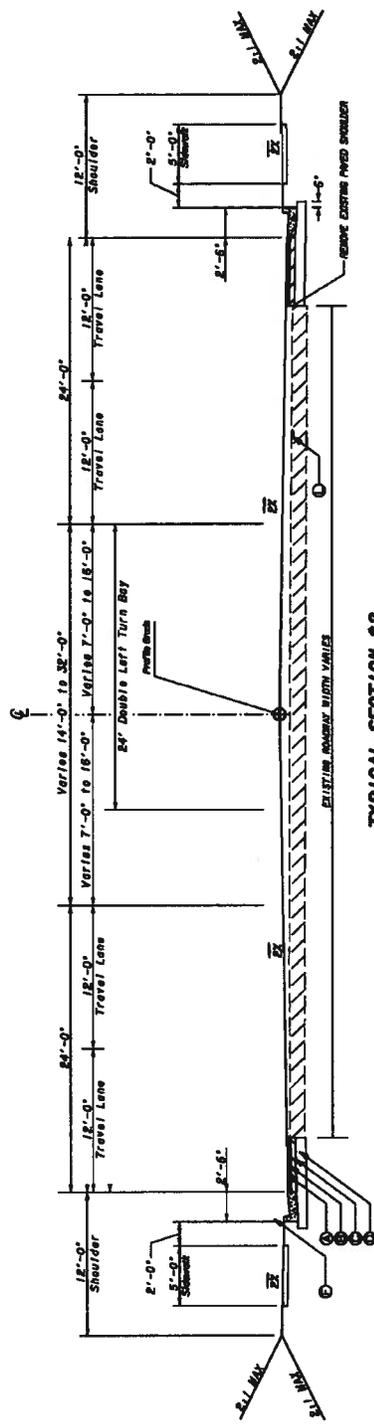
Streams:

Req'd Credits	Rate (\$/credit)	Cost (\$)
22725.4	45	\$1,022,643

Total Mitigation Costs	\$1,144,128
------------------------	--------------------

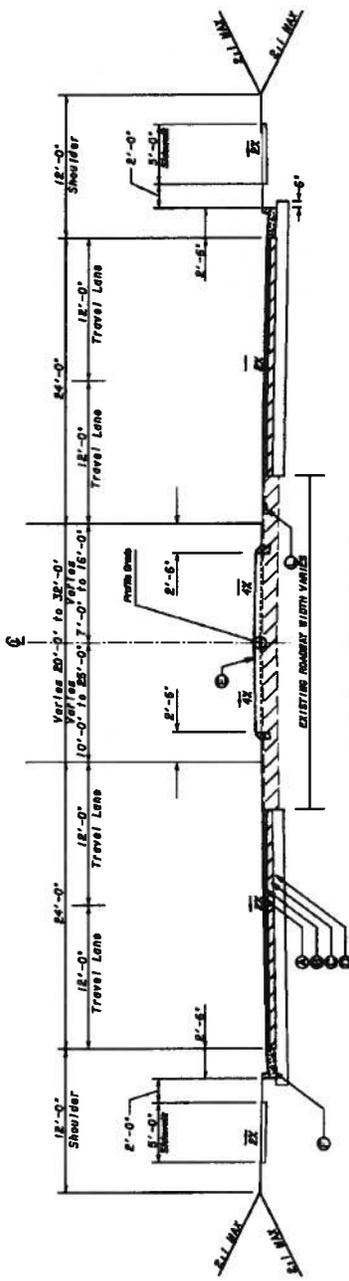


TYPICAL SECTION #1
TANGENT SECTION
RURAL MULTI-LANE SECTION
WITH DUAL LEFT TURN MEDIAN

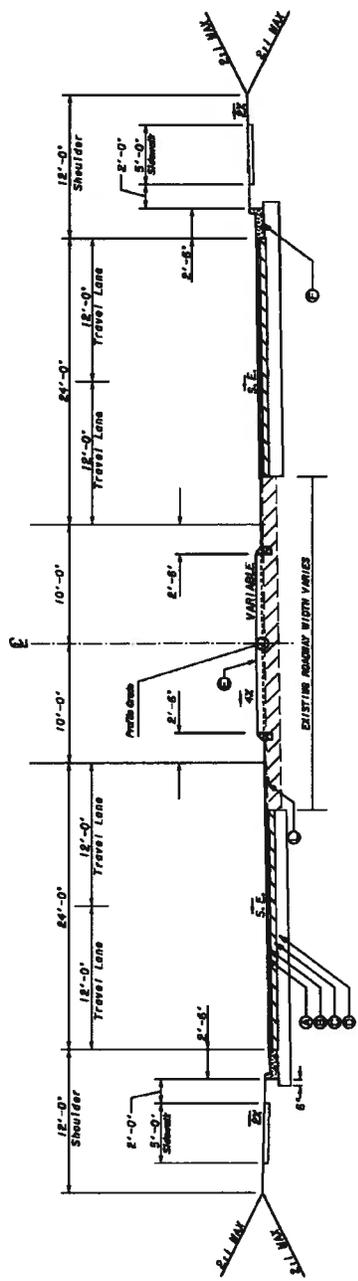


TYPICAL SECTION #2
TANGENT SECTION
URBAN MULTI-LANE SECTION
WITH 14' FLUSH MEDIAN

<p>STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE OF CONSULTANT DESIGN TYPICAL SECTIONS SR135 FM SR31/US441 TO SR32 INCLUDING RR SEPARATION COFFEE COUNTY</p>	<p>PROJECT NUMBER ST-172-1(02)</p>	<p>SHEET NO. TOTAL SHEETS</p>
	<p>COUNTY COFFEE COUNTY</p>	<p>REVISION DATES</p>
<p>Columbia Engineering 2763 Meadow Church Road, Suite 100 Dunwoody, GA 30097-4389 Phone: (770) 325-0667 Fax: (770) 325-0666</p>		

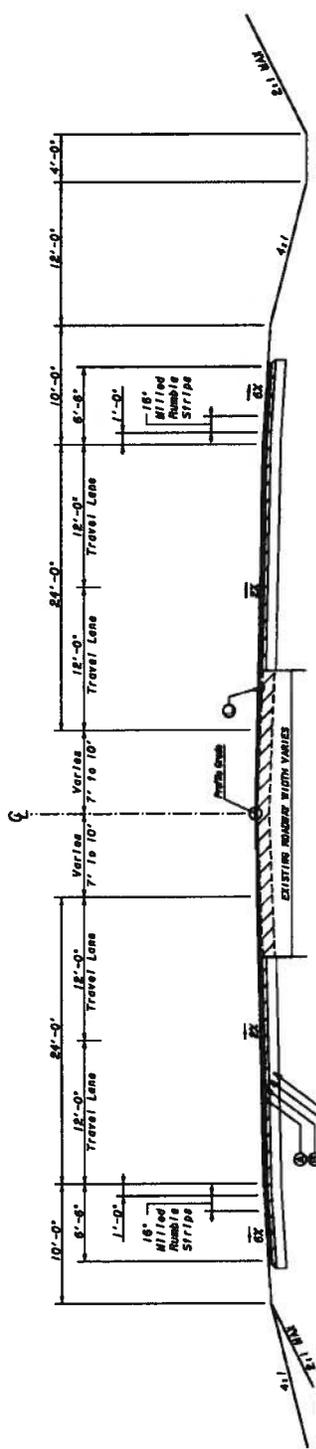


TYPICAL SECTION #3
 TANGENT SECTION
 URBAN MULTI-LANE SECTION
 WITH RAISED MEDIAN

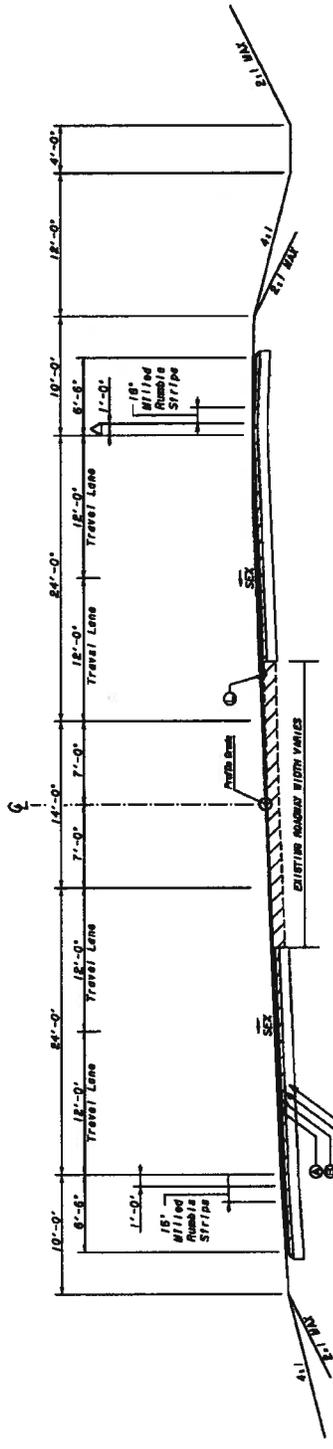


TYPICAL SECTION #4
 SUPERELEVATED
 URBAN MULTI-LANE SECTION
 WITH 20' RAISED MEDIAN

STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE OF CONSULTANT DESIGN TYPICAL SECTIONS SR135 FM SR31/US441 TO SR32 INCLUDING RR SEPARATION COFFEE COUNTY	REVISION DATES
	Columbia Engineering 2763 Meadow Church Road, Suite 100 Duluth, GA 30097-0885 Phone: (770) 251-0307 Fax: (770) 925-0565



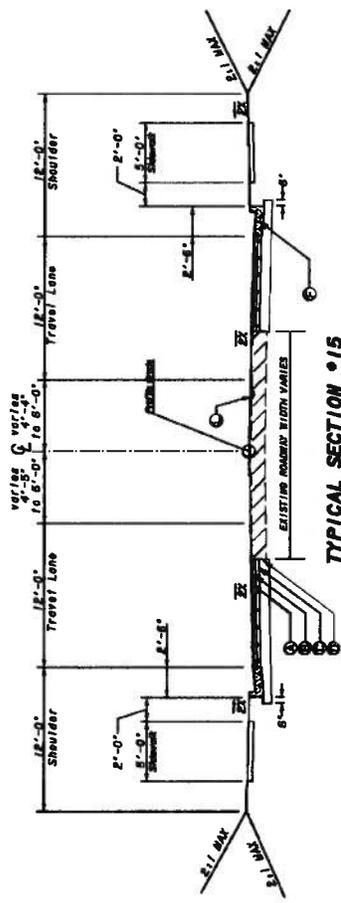
TYPICAL SECTION 05
 TANGENT SECTION
 RURAL 4-LANE SECTION
 WITH 14' FLUSH MEDIAN



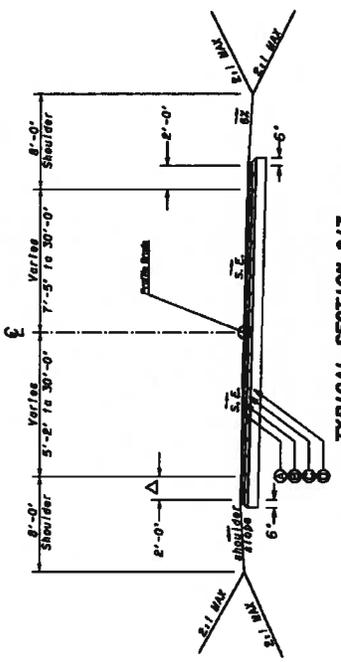
TYPICAL SECTION 06
 SUPER-ELEVATED
 RURAL 4-LANE SECTION
 WITH 14' FLUSH MEDIAN

REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE OF CONSULTANT DESIGN
	TYPICAL SECTIONS
	SR135 FM SR31/US441 TO SR32 INCLUDING RR SEPARATION
	COFFEE COUNTY

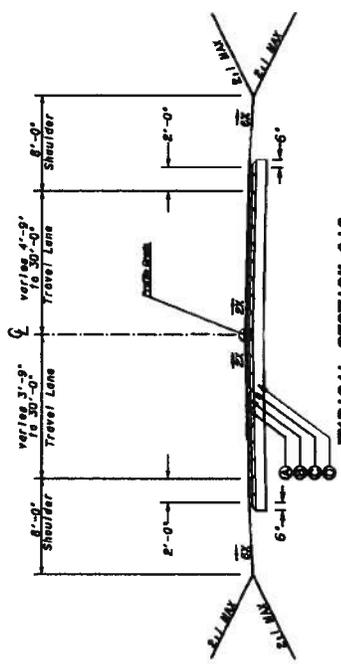
Columbia Engineering
 2763 Meadow Church Road, Suite 100
 Dalton, GA 30037-4989
 Phone: (706) 285-6537
 Fax: (706) 285-6586



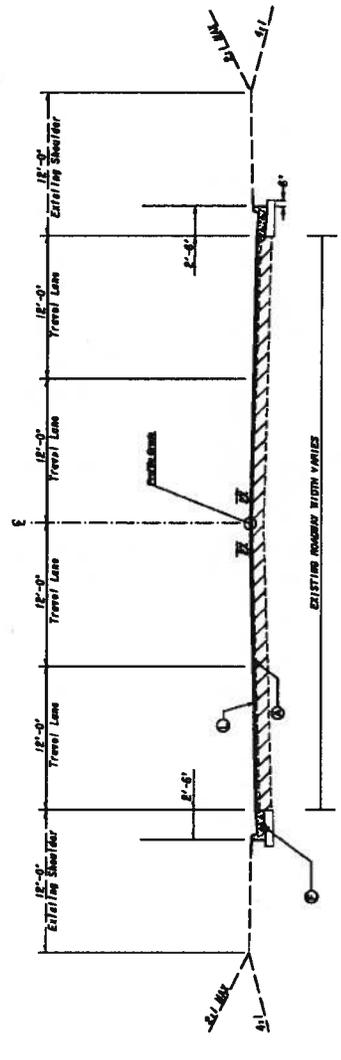
TYPICAL SECTION • 15
 TANGENT SECTION - NEW LOCATION
 URBAN 3-LANE SECTION



TYPICAL SECTION • 17
 SUPER ELEVATED SECTION - NEW LOCATION
 RURAL 2-LANE SECTION

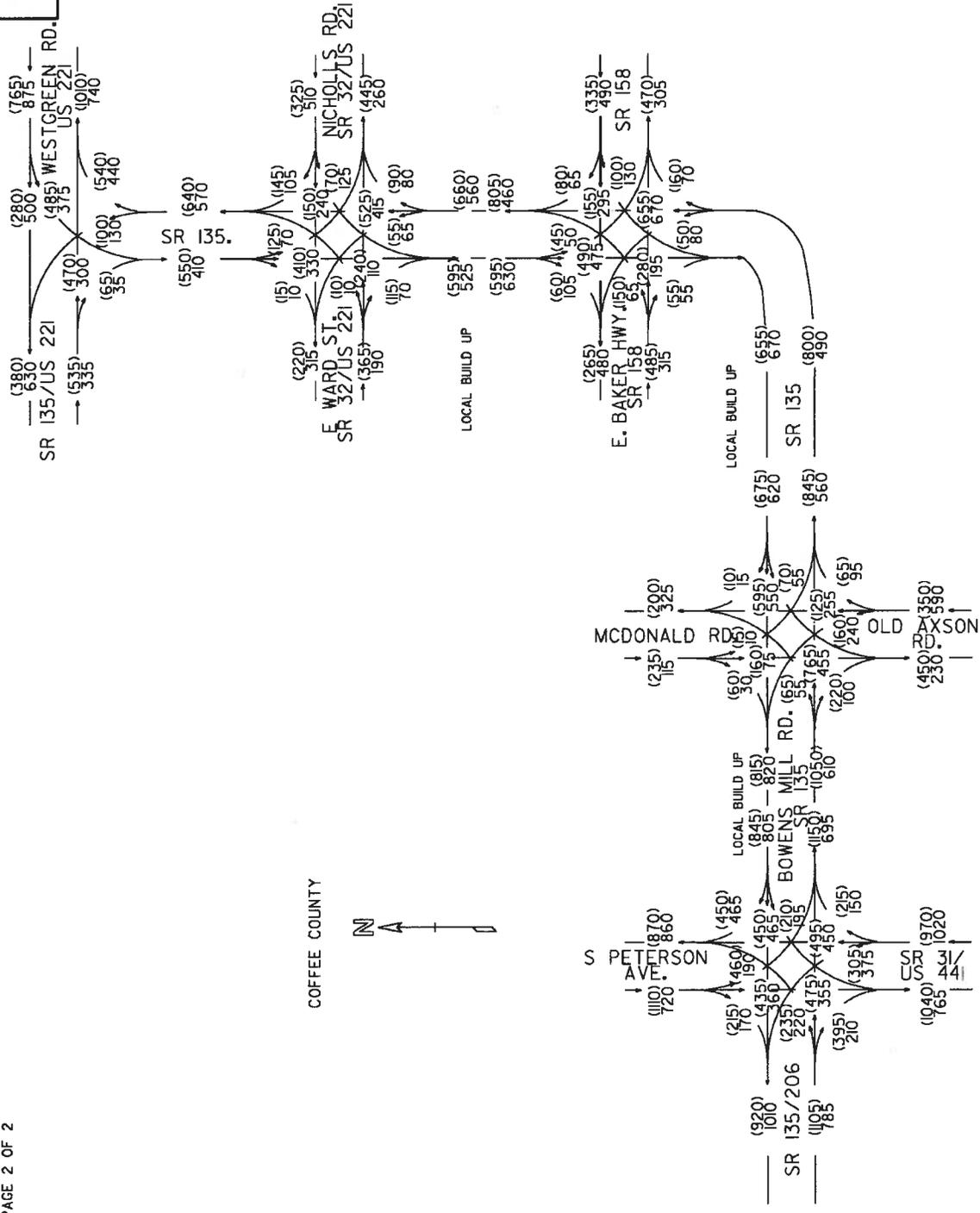


TYPICAL SECTION • 16
 TANGENT SECTION - NEW LOCATION
 RURAL 2-LANE SECTION



TYPICAL SECTION • 18
 TANGENT SECTION
 URBAN 4-LANE SECTION

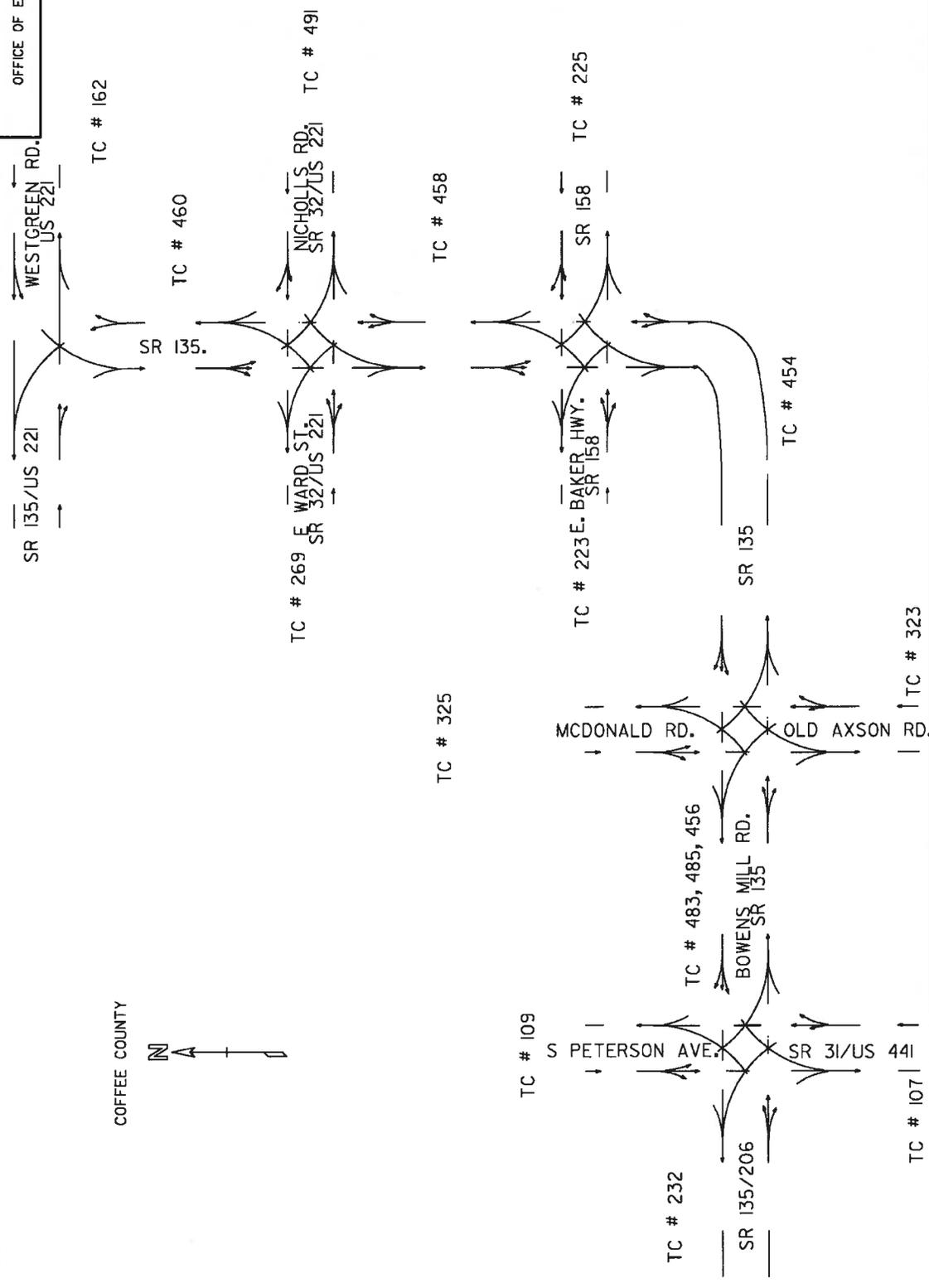
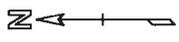
 Columbia Engineering <small>AN AFFILIATE OF COLUMBIA CONSULTANTS</small> 2763 Meadow Church Road, Suite 100 Duluth, GA 30097-4988 Phone: (770) 525-0357 Fax: (770) 525-0565	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE OF CONSULTANT DESIGN
	SR135 FM SR31/US441 TO SR32 INCLUDING RR SEPARATION COFFEE COUNTY
REVISION DATES	DRAWING NO: 5-07



2036 PM DHV = 000'
2036 AM DHV = 000'
T = 18%

STP00-0079-01(042)
P.L. # 431830
COFFEE COUNTY
SR 135 FM SR 31/
US 441
A.F.F.
02/70

COFFEE COUNTY



STP00-0079-01(042)
P.L. # 431830
COFFEE COUNTY
SR 135 FM SR 31/
US 441
APR
02/06



TRAFFIC ENGINEERING REPORT
For
PROPOSED ROADWAY IMPROVEMENTS SR 135
FROM SR31/US441 NORTH AND EAST TO US221
INCLUDING RAILROAD GRADE SEPARATION
COFFEE COUNTY, GA
GDOT PROJECT NO. STP-079-1(42)
P.I. No.: 431830

Prepared for the
Georgia Department of Transportation
W&A Project No. 06-629

January 22, 2007

WOLVERTON & ASSOCIATES, INC.
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SUITE 100
DULUTH, GA 30097
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www.wolverton-assoc.com

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1. INTRODUCTION

SR 135 TRAFFIC ENGINEERING REPORT

The purpose of this report is to analyze concept improvements for SR 135 in Douglas, Georgia. The project extends from SR 31/US 441 at its southwestern most point to US 221 at its northeastern point. This connection will serve bypass trips around the City of Douglas, Georgia to relieve traffic in the downtown district.

Improvements include:

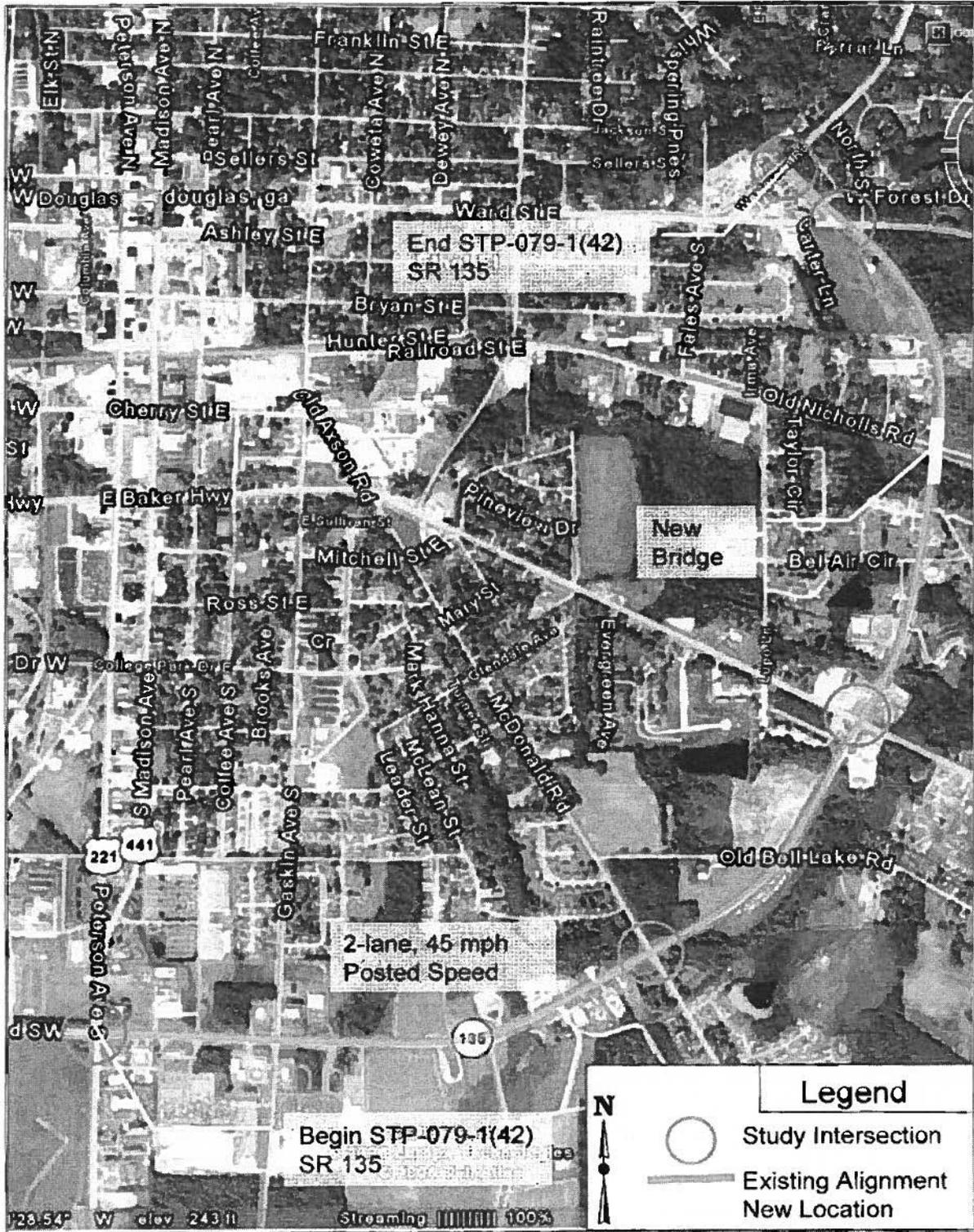
- widening the existing two-lane rural highway section on SR 135 to a four-lane divided rural section
- a new bridge for a grade separated section at the CSX rail crossing.

The project proposes a 14 foot flush median on a rural cross section for the entire length.

Figure 1 schematically illustrates the project concept and location.

These improvements are part of the Georgia Department of Transportation (GDOT) work program.

Figure 1 – Project Location Map



Methodology

Traffic on the major roadways; SR 135, is expected to increase as a result of continuing development in the region. Historical count data for the immediate area was obtained from the Georgia Department of Transportation (GDOT) in order to establish an historical traffic growth rate. The existing traffic was grown to provide an estimate for the 2013 and 2033 volumes. Estimates were then made of the traffic that will utilize SR 135. The existing traffic was re-routed and assigned to the roadway network for the build (2013) and design (2033) years.

EXISTING
CONDITIONS

2. EXISTING CONDITIONS

SR 135 TRAFFIC ENGINEERING REPORT

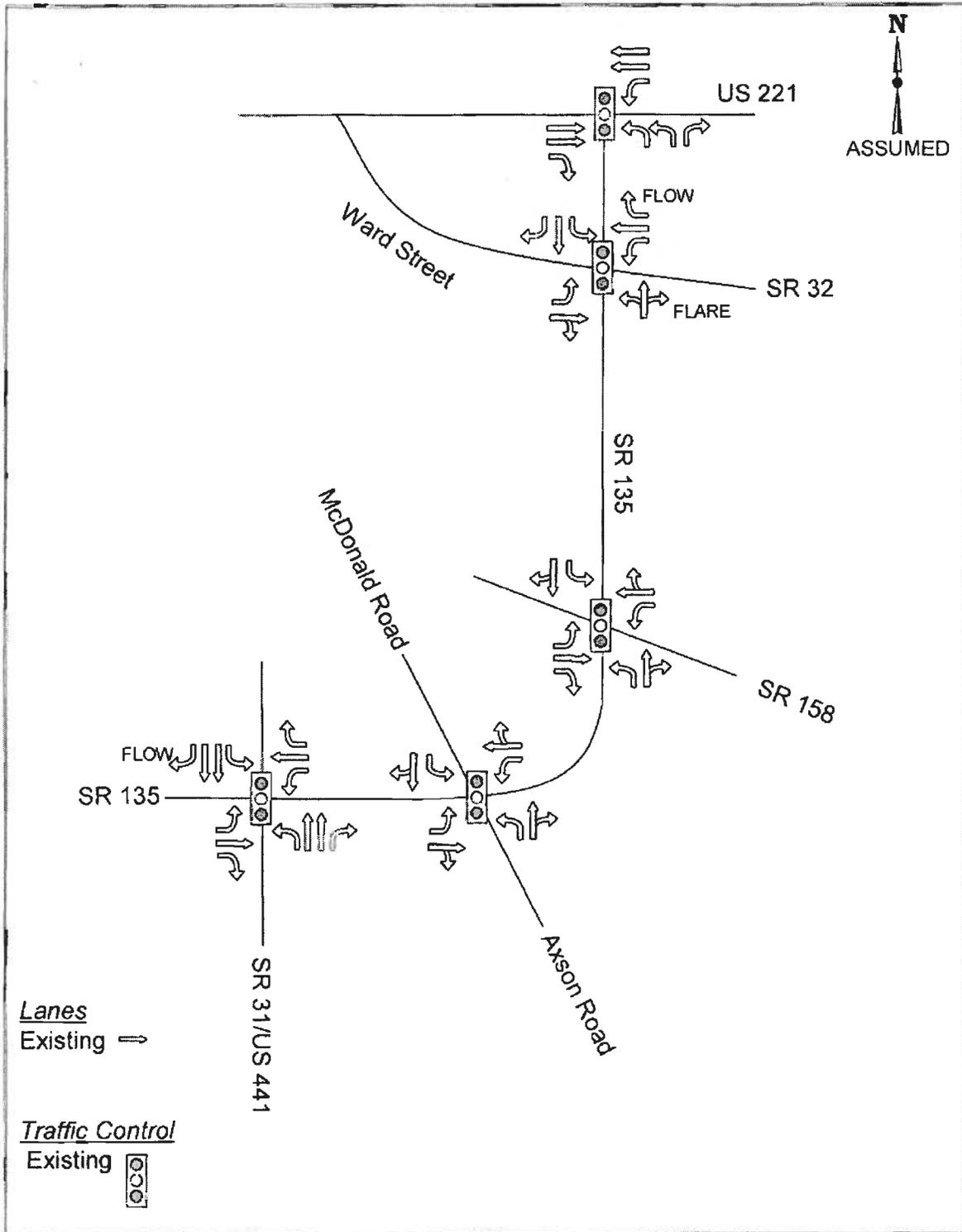
The project begins at the intersection of SR 135 and SR 31/US 441. SR 31/US 441 is a four-lane arterial that splits into a one way pair just north of the project.

Study intersections along the corridor are SR 135 at:

1. SR 31/US 441
2. McDonald Road/Old Axson Road
3. SR 158 (E. Baker Highway)
4. SR 32 (Ward Street)
5. US 221

Figure 2 shows the existing intersection geometry. As a general assumption for all figures in this report SR 135 is considered as being east/west at intersections 1 and 2 and SR 135 is considered as being north/south at intersections 3, 4, and 5.

Figure 2 – Existing Lane Geometry



TRAFFIC DATA

3. TRAFFIC DATA

SR 135 TRAFFIC ENGINEERING REPORT

Turning movement counts (TMCs) were collected at the study intersections and 24-hr vehicle classification tube counts at select locations in the study area. The existing peak volumes are illustrated in Figure 3. Printouts for TMCs and 24-hr vehicle classification tube counts are provided in Appendix A.

The years 2006, 2013, and 2033 traffic projections were formulated for locations in the project area corresponding to the tube count locations. The future year projections are graphed, and annual growth rates determined for the corridor. Printouts for the model data are provided in Appendix B.

Projected Average Daily Traffic Volumes, AADT

The growth rates were averaged to obtain an adjusted annual growth rate. The growth rates for the build year (2013) and design year (2033) were then calculated. A rate of 1.6% per year was calculated.

The growth rate was applied to the AADT numbers to project 24-hr traffic for the build year (2013) and design year (2033).

Projected Peak Hour Volumes

Using the 24-hr count, a 'K' factor and 'D' factor were calculated. The 'K' factor is the proportion of daily traffic occurring during the peak hour. The 'D' factor or directional factor is the percentage split of traffic traveling in either direction during a particular time of day.

Projected hourly traffic volumes are obtained by applying the growth rate to the existing traffic volumes found in Figure 3. Those projected hourly volumes are checked against those projections using the 'K' and 'D' factors. The projected peak volumes for the 2013 Build Year are illustrated in Figure 4, and projected peak volumes for the 2033 Design Year are illustrated in Figure 5. Traffic projections for the Build and Design Year ADT are provided in Appendix C.

Figure 3 – Existing Traffic Volumes

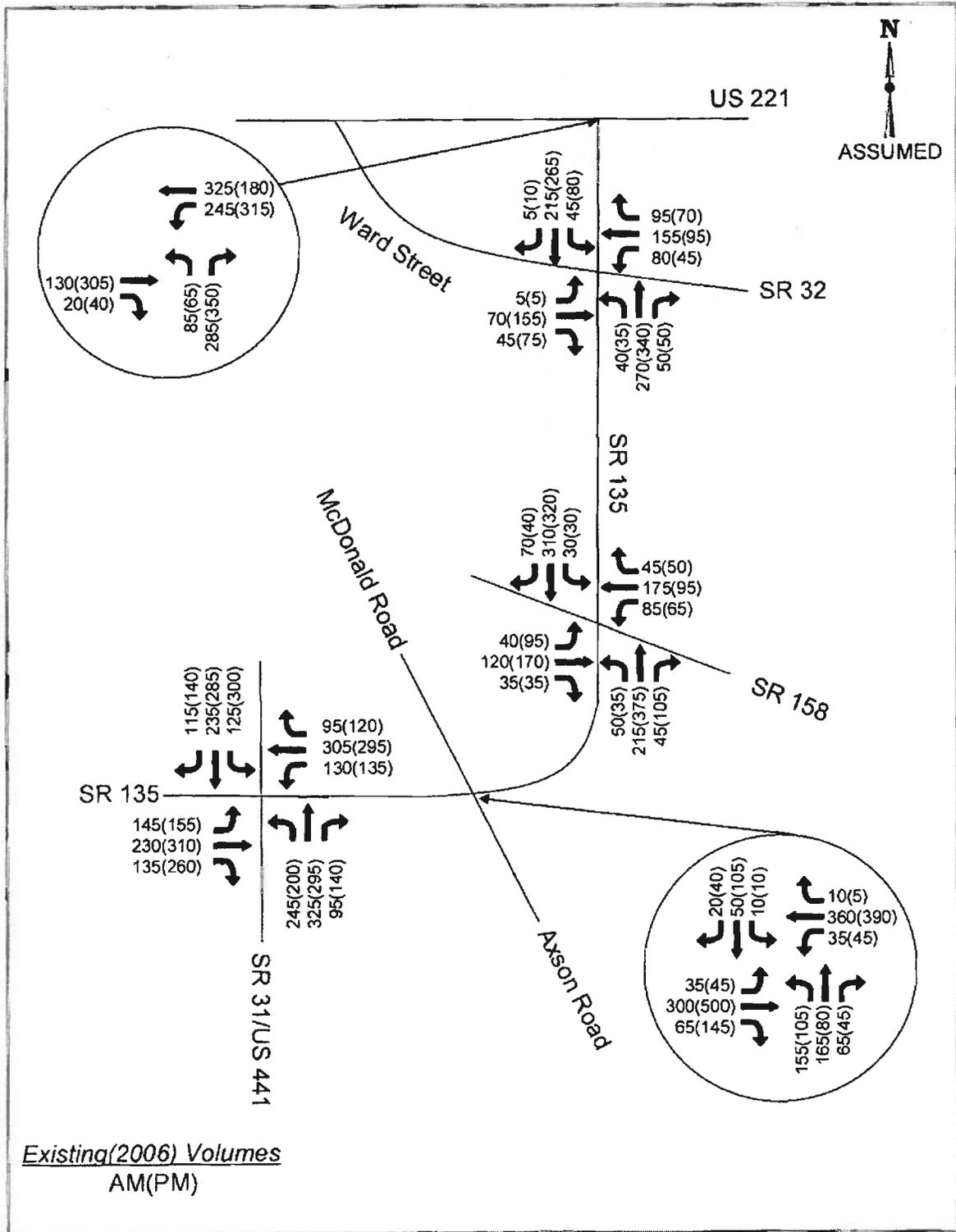


Figure 4 – Build Year (2013) Traffic Volumes

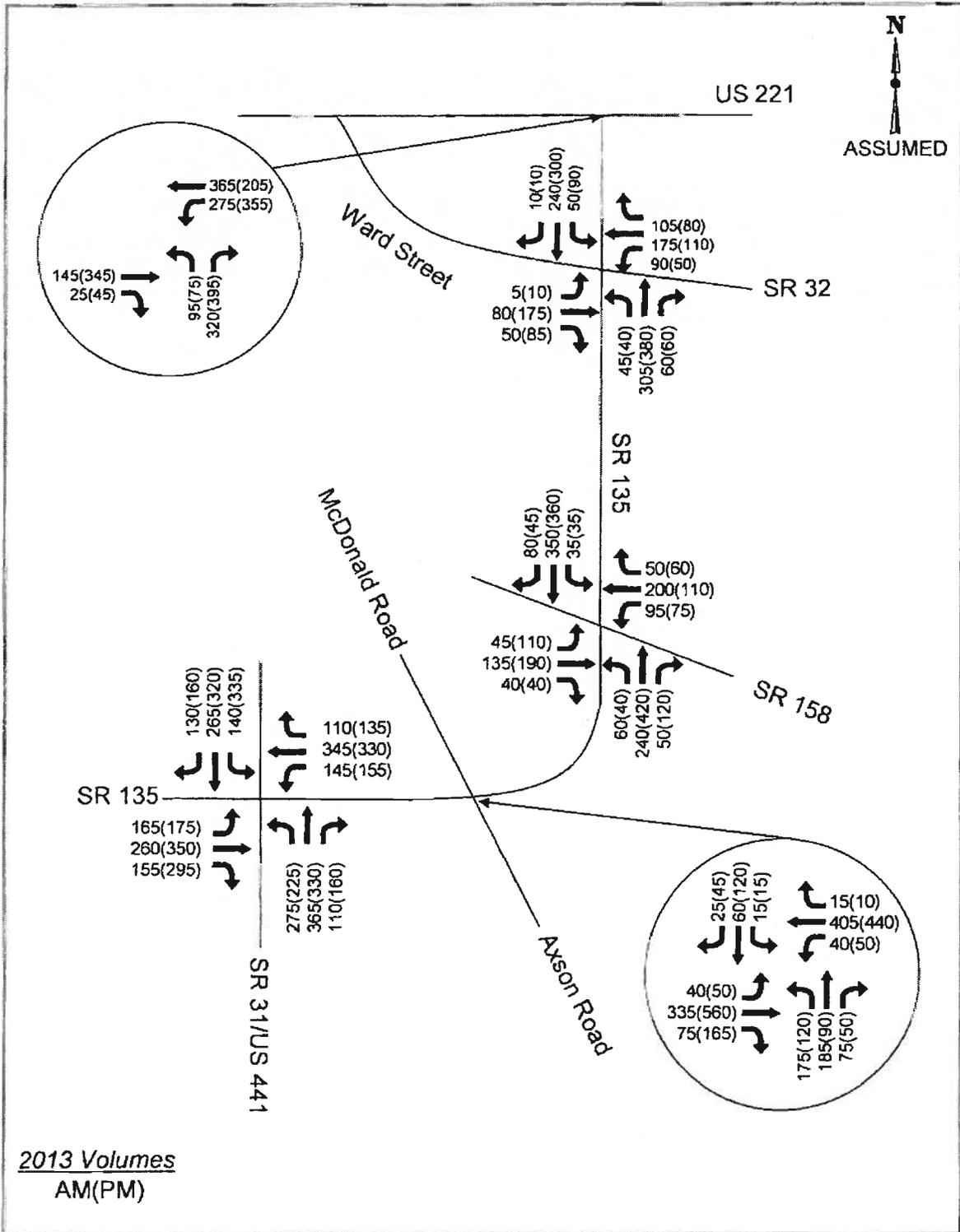
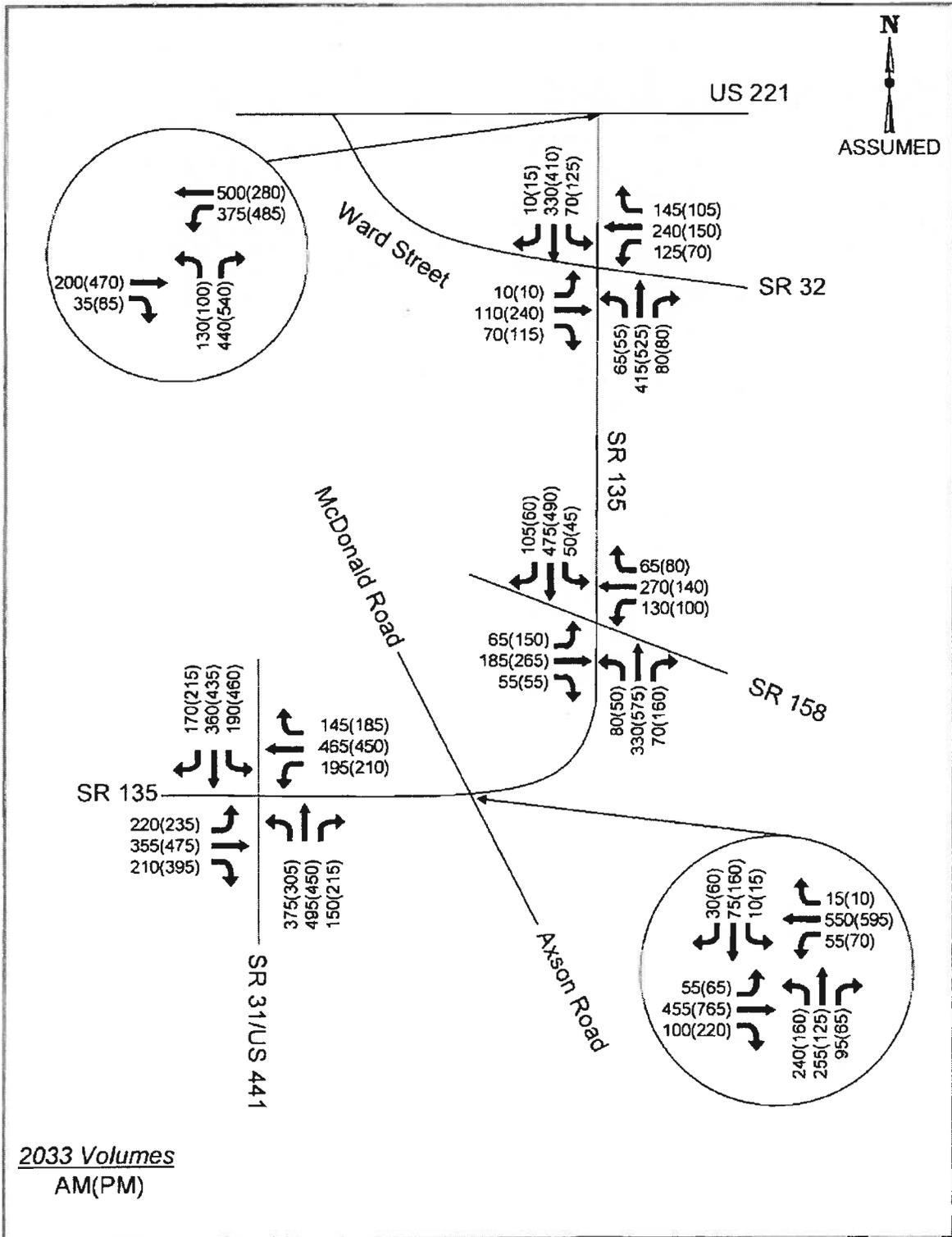


Figure 5 – Design Year (2033) Traffic Volumes



4. DATA ANALYSIS

SR 135 TRAFFIC ENGINEERING REPORT

Capacity

Capacity analysis was used to evaluate the projected volumes at the study intersections along the corridor. This process was used to define geometry and traffic control needed to result in acceptable levels of service for the projected conditions.

The *Synchro Program* was used to conduct capacity analysis. *Synchro* implements the capacity methods of the *Highway Capacity Manual (HCM)* ' for performing the industry standard evaluation of intersection performance. The delays used in the reports follow the procedure as recommended by the HCM.

The Highway Capacity Manual defines level of service (LOS) in terms of the amount of control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay and final acceleration delay.

The levels of service definitions for both stop controlled and signal controlled intersections are provided in Table 1.

Table 1 – Level of Service Criteria

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (SEC)	
	WITH STOP-SIGN CONTROL	WITH SIGNAL CONTROL
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

Source: Highway Capacity Manual

The GDOT has ranges of acceptable Levels of Service based on the area. Rural, sparsely developed areas have a minimum LOS requirement of C. This is due to the expectancy of rural residents for relatively uncongested conditions and design flexibility related to lower right of way costs of impacts. The minimum LOS for urban areas is D. This reflects the greater acceptance of delay and congestion by urban residents. Additionally, the increased density of developments makes right of way costs much higher in urban areas. The project corridor is rural in nature and has a minimum LOS requirement of C.

Capacity Analysis Results

No Build

Study intersections were initially evaluated with a no build option. This analysis shows what the level of service would be at each intersection in the Years 2013 and 2033 if the existing facility were to remain unchanged. This establishes a baseline for comparing improvements.

Table 2 contains the results of capacity analysis of projected volumes for the signalized intersections in the Build and Design Years.

The values shown in parenthesis indicate the estimated delay in seconds per vehicle. Asterisks indicate very high delay that is beyond the limits that can be estimated within the valid range of the capacity analysis procedure. Synchro printouts for the Build and Design Year no-build options are provided in Appendix D.

Table 2 – Capacity Analysis Results, No-Build

Intersection	2013		2033	
	AM Peak	PM Peak	AM Peak	PM Peak
SR 135 @ SR 31/US 441	C (23.7)	C (26.6)	C (31.0)	D (38.4)
SR 135 @ McDonald Rd/Axson Rd	C (22.2)	B (18.0)	C (25.5)	C (31.0)
SR 135 @ SR 158	B (19.0)	C (20.8)	C (21.3)	C (25.4)
SR 135 @ SR 32	B (18.6)	B (19.6)	C (22.4)	C (24.0)
SR 135 @ US 221	C (22.4)	C (24.8)	C (23.0)	C (25.9)

As shown in the table above, the intersection of US 441 at SR 135 in the PM Peak condition operate unacceptably in the Design Year with a LOS of D.

Build

The build option consists of constructing a four-lane divided facility with turn lanes at all median breaks. The concept calls for a 14 foot flush median with four twelve foot lanes. The proposed intersection configurations are shown in each intersection was analyzed using the proposed roadway configuration. Synchro printouts for the Build and Design Year build options are provided in Appendix E.

Table 3 – Capacity Analysis Results, Build

Intersection	2013		2033	
	AM Peak	PM Peak	AM Peak	PM Peak
SR 135 @ SR 31/US 441	C (21.9)	C (24.4)	C (25.0)	C (30.9)
SR 135 @ McDonald Rd/Axson Rd	C (20.7)	B (15.4)	C (20.8)	B (15.4)
SR 135 @ SR 158	B (19.4)	B (18.5)	B (19.8)	C (20.5)
SR 135 @ SR 32	B (17.5)	B (18.8)	B (18.1)	B (19.7)
SR 135 @ US 221	C (21.1)	C (25.6)	C (20.3)	C (28.3)

Table 3 shows the levels of service on the study intersections have improved with the addition of the project improvements.

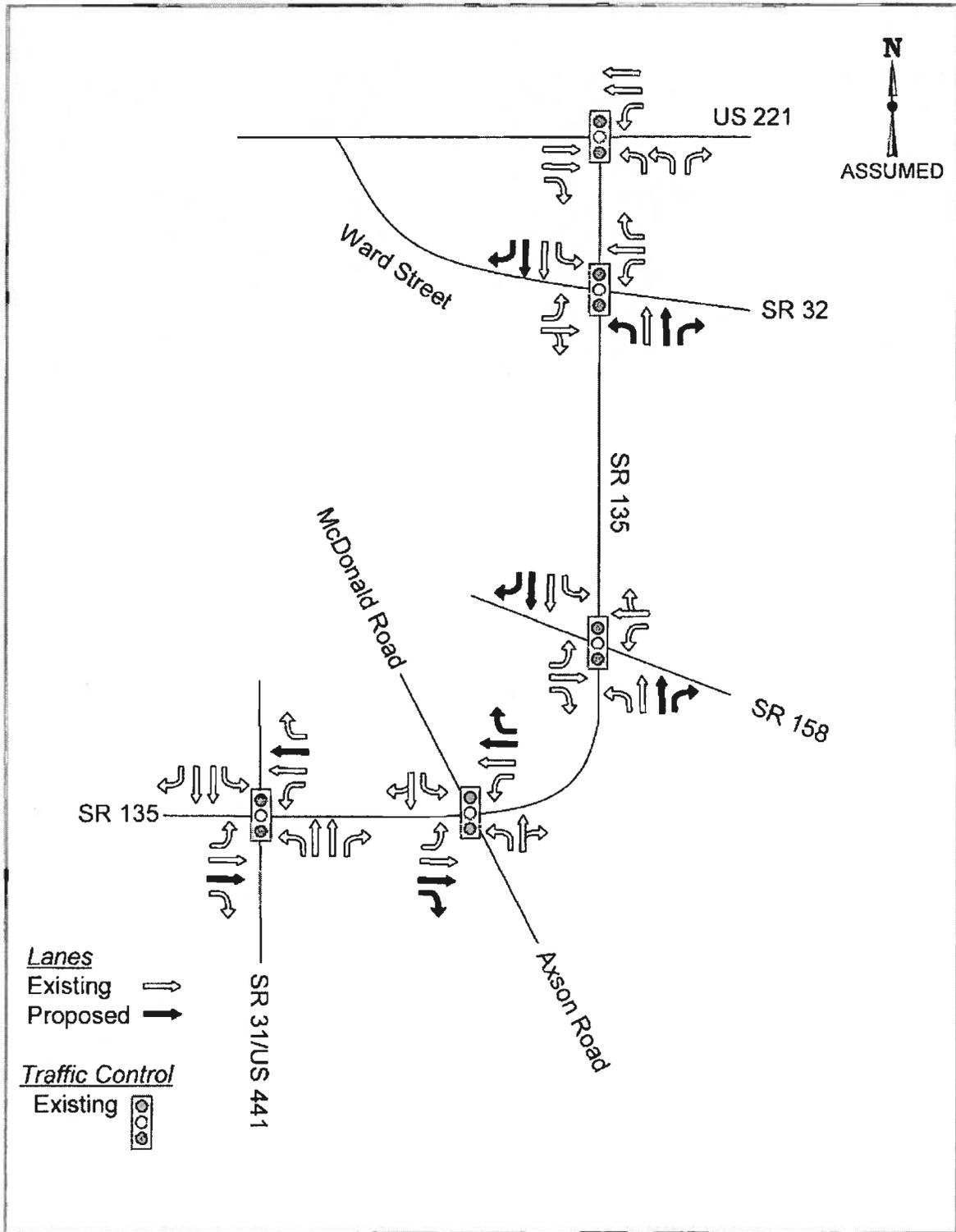
Lengths in Table 4 are the recommended storage length only. See GDOT standards and details for bay taper and deceleration lengths.

Table 4 – Storage Summary

SR 135 @	Recommended Storage Length (ft)												Control
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
US 441	200	250	100	175	*	*	275	200	75	425	200	75	Signalized
McDonald/Axson	*	125	25	*	200	*	225	275	---	25	200	---	Signalized
SR 158	125	200	25	125	300	---	*	225	75	*	100	*	Signalized
SR 32	25	325	---	150	225	50	*	200	*	25	75	25	Signalized
US 221	---	250	50	375	150	---	50	400	---	---	---	---	Signalized

* Queues are controlled by upstream signal, use GDOT minimum storage length.

Figure 6 – Proposed Lane Geometry



Access Management

Driveways along the existing alignments of SR 135 were noted for study. The only access management issues are between the intersections of SR 135 @ US 441 and SR 135 @ Gaskin Road. The existing accesses include a gas station, two fast food restaurants, shopping center, etc. The existing road network makes access to all existing points fully accessible. The median proposed divided cross-section allows for congestions to take place with the current number of driveways in this area. It is recommended that several of these driveways be linked to reduce the number of driveways between the intersections of SR 135 @ US 441 and SR 135 @ Gaskin Road. Linking these driveways and restricting them to right-in right-out access would be beneficial.

Crashes

The crash analysis examines the crash rates along the SR 135 corridor and compares them to statewide averages of similar facilities. The statewide averages are calculated using crash data annually collected by GDOT. Crash rates are based on the number of property damage, injury, and fatal crashes per million vehicle miles traveled. The calculations are as follows:

$$\#Crashes / \frac{adt \times section \ length \ (mi) \times 365}{100,000,000}$$

Crash data is collected for the previous three years that the data is available. Data for this project was collected for the years 2003, 2004, and 2005. Table 8 shows the comparison of the SR 135 crash rates with statewide averages.

Table 8 – Crash Rates

Section	Type	2003		2004		2005	
		Statewide	SR 135	Statewide	SR 135	Statewide	SR 135
SR 31/US 441 to US 221	Collision	775	35	342	308	363	125
	Injuries	195	9	89	128	95	62
	Fatalities	1.72	0	1.07	0	1.30	0

The section of SR 135 is consistently lower than the statewide average for injury and total crashes.

RECOMMENDATIONS

5. SUMMARY OF RECOMMENDATIONS

SR 135 TRAFFIC ENGINEERING REPORT

Based on the analysis documented in this report, Wolverton and Associates, Inc. make the following conclusions and recommendations:

1. A four-lane median divided facility will accommodate the projected traffic.
2. Change the channelized free flow right turn lane to a channelized yield control right turn lane at the intersection of SR 135 @ US 441. The exiting westbound through lane will be added from the widening project.
3. Existing access points along SR 135 between US 441 and Gaskin Road should be linked restricted to right in / right out.
4. Add a northbound and southbound right turn lane at the intersection of SR 135 @ SR 158 in addition to the through lane proposed for the widening project.
5. Add an eastbound and westbound right turn lane at the intersection of SR 135 @ McDonald/Axson Road in addition to the through lane proposed for the widening project.
6. At the intersection of SR 135 @ SR 32/Ward Street, add northbound right and left turn lanes, as well as a southbound right turn lane in addition to the through lane proposed for the widening project.
7. The intersection of SR 135 @ US 221 is to remain unchanged.

REFERENCES

1. Highway Capacity Manual, HCM 2000, Transportation Research Board, Washington, DC, 2000.
2. Signalized Intersections: An Informational Guide, Federal Highway Administration, Washington, DC, 2004.
3. Manual of Traffic Signal Design, Institute of Transportation Engineers, Washington, DC, 1982.
4. Manual on Uniform Traffic Control Devices, 2003 Edition, Federal Highway Administration, Washington, DC, 2003.
5. "Traffic Engineering," McShane and Roess, 1990, Prentice-Hall, Inc.

3031.00

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: STP00-0079-01(042) Coffee
P.I. No.: 431830
SR 135/Perimeter Road Widening

OFFICE: Engineering Services
DATE: September 17, 2009

FROM: Ronald E. Wishon, Project Review Engineer *REW*

TO: Bobby Hilliard, PE, State Program Delivery Engineer
Attn: Jeremy Busby

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

The VE Study for the above project was held July 20-23, 2009. Responses were received on September 1, 2009. Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. The Project Manager shall incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT #	Description	Potential Savings/LCC	Implement	Comments
T-1	Save 6 ft of section width by not providing for the future 20 ft median from Sta. 158+25 to Sta. 245+51	Proposed = \$1,124,000 Actual = \$864,718	Yes	This will be done. The original design includes a 14 ft flush median with an extra six feet of striped out pavement to accommodate a future 20 ft raised median. The VE recommendation is to eliminate the 6 ft of extra pavement and utilize the 14 ft flush median now and in the future. Design year traffic volumes (14,100 in 2013 and 19,100 in 2033) are within the range for a flush median (maximum 24,000 VPD). This section of the project is more rural in nature, without significant commercial development. Future development is not anticipated. The VE report assumed greater ROW savings than will actually occur. Bridge savings have also been adjusted.

	<p>T-2 Plan for a future 18 ft wide median instead of 20 ft median for the entire length of the project</p>	<p>Proposed = \$319,679 Actual = \$72,060</p>	<p>No</p>	<p>The corridor consists of two unique sections. From the beginning of the project to McDonald Road/Old Axson Road, the area is more developed and traffic volumes are higher. This section has been designed as an urban section, with a 20 ft raised concrete median.</p> <p>After the McDonald Road/Old Axson Road intersection, the area is mostly rural and traffic volumes decrease. This section has been designed as an urban section with a 14 ft flush median, with 6 ft of additional pavement so a future 20 ft raised median can be installed.</p> <p>Traffic volumes vary in the raised median section of the project. At the beginning of the project, the build year (2013) traffic is 19,200 and the design year (2033) traffic is 25,950. From US 441 to McDonald Road/Old Axson Road the build year traffic varies from 18,300 to 17,300 and the design year traffic varies from 24,950 to 23,400. The majority of these volumes meet the criteria for a raised concrete median to be constructed now. After the McDonald Road/Old Axson Road intersection, the traffic counts drop dramatically and a 14 ft flush median will be used now and in the future. There is no need for a future raised median in this area. (See T-1.)</p> <p>Business owners who attended the PIOH were opposed to a raised median, citing concerns about u-turning trucks and loss of local customers. Using an 18 ft median would reduce the raised concrete area between the turn lanes and opposing traffic to 1 ft. With mountable curb, vehicles may be inclined to attempt crossing the median into commercial driveways rather than traveling to the next median opening. If this concrete was removed and striped hatched areas were used instead, drivers could attempt to cross the striped areas. Cost savings are reduced due to implementation of T-1 and T-3.</p>
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T-3	Use a rural section in lieu of an urban section from Sta. 158+25 to Sta. 237+00	Proposed = \$524,497 Actual = \$914,900	Yes	This will be done, and the rural section will be extended to the end of the project (Sta. 245+51). This section of the project consists primarily of large, undeveloped tracts of land and some light industrial areas. Approximately 69% of the parcels in this area are commercial, 22% are undeveloped properties, and 9% are residential. Current development on this section of the corridor does not generate significant pedestrian traffic. This section is more rural in nature, without significant commercial development. There was no evidence of worn footpaths in the grass shoulders during site visits. Future development is not anticipated; however, if development should occur, the City could require the developer to add curb and gutter and sidewalk.
T-4	Use 11 ft through lanes on SR 135	\$613,592	No	The 24 hour truck traffic is considerably high (18%) in this urban arterial corridor.
T-5	Use 11 ft inside lanes and 12 ft outside lanes on SR 135	\$306,800	No	The 24 hour truck traffic is considerably high (18%) in this urban arterial corridor.
T-6	Use 12 ft shoulders in lieu of 16 ft shoulders throughout the project	Proposed = \$1,267,049 Actual = \$103,512	Yes	This will be done; however, much of the savings has been incorporated into the implementation of T-3.
B-1	Save 12 ft of bridge width by providing an 8 ft wide raised median on the new bridge in lieu of providing for a future 20 ft median	Proposed = \$411,539 Actual = \$482,529	Yes	This will be done.
B-2	Save 6 ft of bridge width by providing a 14 ft wide flush median on the new bridge in lieu of providing for a future 20 ft median	\$193,619	No	B-2 cannot be done because B-1 will be implemented.
B-3	Coordinate a construction window with CSX RR for girder replacement during new bridge construction	Design Suggestion	Yes	This will be done.

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Implementation of Value Engineering Study Alternatives

P.I. No. 431830

Page 4

B-4	Construct a bridge for realigned Old Bell Lake Road East in lieu of providing a quadruple 10 x 7 box culvert	(\$12,760) Cost increase	No	B-4 cannot be done because G-6 will be implemented.
D-1	Use HDPE pipe in lieu of concrete pipe for longitudinal storm drain piping	\$116,755	No	The soil survey was completed after the VE Study was held. It requires additional Type 2 Foundation Backfill Material around the HDPE pipes, which would result in an additional cost of \$361,492.
CG-1	Use 24 in wide curb and gutter in lieu of 30 in wide curb and gutter	\$68,370	No	Approximately 26 additional drainage structures will be required if this recommendation is implemented. This would result in an additional cost of \$76,607, negating any savings.
CG-2	Eliminate curb and gutter from McDonald Road and Old Axson Road	\$9,384	No	The original design already includes a rural section for these side roads.
CG-3	Eliminate curb and gutter, sidewalk and associated drainage from Baker Highway	Proposed = \$48,448 Actual = \$16,959	Yes, with modifications	Existing Baker Highway west of SR 135 has existing curb and gutter without sidewalk. The proposed design included sidewalk since current policy is to add sidewalk wherever there is curb and gutter. Based on the VE Study recommendation, the design will be changed to eliminate the proposed sidewalk; however the proposed curb and gutter and drainage will remain since they are replacing existing items that will be removed during construction. Within the project limits, this section of Baker Highway consists of wetlands and large undeveloped tracts. Other than a gas station located at the intersection of SR 135 and Baker Highway, there are no businesses to support pedestrians. Existing and proposed Baker Highway east of SR 135 utilizes a rural section; there is no proposed curb and gutter or sidewalk to remove. The proposed savings have been reduced to show removal of the sidewalk from Baker Highway west of SR 135 only.

S-1	Eliminate sidewalk on the east side of SR 135 between Gaskin Avenue (Sta. 123+25) and the end of the project (Sta. 245+50)	Proposed = \$218,159 Actual = \$402,207	Yes, with modifications	Because of the implementation of recommendation T-3, the only urban section is from Sta. 104+45 to Sta. 158+25. Due to proposed development in this area (movie theater, restaurant and shopping center) and its proximity to existing subdivisions, sidewalk should remain. Removing the sidewalk on both sides of the road in the rural section from Sta. 158+25 to the end of the project will result in greater savings than originally proposed by the VE Study.
S-2	Reduce the shoulder width from 16 ft to 12 ft and eliminate the sidewalk on the east side of SR 135 between Gaskin Avenue (Sta. 123+25) and the end of the project (Sta. 245+50)	Proposed = \$779,667 Actual = \$0	Yes	The savings for this recommendation have been included in recommendations T-6 and S-1.
G-1	Use striping to mark islands at intersections in lieu of providing raised concrete islands	Proposed = \$112,090 Actual = \$130,732	Yes, with modifications	By implementing T-3, some of the islands will be reduced in size. The US 411 intersection will require raised islands for pedestrian safety since there are 8 lanes for pedestrians to cross. A few other islands will remain, but wherever possible concrete islands can be removed.
G-2	Cul-de-sac Old Bell Lake Road West and provide Parcel #40 driveway access at Sta. 169+90	Proposed = \$217,531 Actual = \$91,286	Yes, with modifications	If the City of Douglas approves the closure of Old Bell Lake Road West, this recommendation will be implemented (with slight modifications from what was proposed by the VE Study.)
G-3	Make W. Forest Drive a right-in/right-out with a traffic island to improve traffic flow	Proposed as a Design Suggestion Actual = \$4,426	Yes	This will be done.
G-6	Realign Old Bell Lake Road East to eliminate the need for a box culvert	Proposed = \$488,480 Actual = \$441,183	Yes	This will be done. The cost savings was changed based on more accurate calculations for ROW and pavement.

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Implementation of Value Engineering Study Alternatives

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Page 6

G-7	Tie in Old Bell Lake Road East and West at the existing intersection in lieu of providing the proposed new alignment.	\$673,345	No	Since G-2 and G-6 will be implemented, G-7 cannot be done.
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Additional information was provided by email on September 3, 14, and 16, 2009.

The Office of Engineering Services concurs with the Project Manager's responses.

Approved:


Gerald M. Ross, PE, Chief Engineer

Date:

9/24/09

REW/LLM

Attachments

c: Genetha Rice Singleton
Paul Liles/Bill Duvall/Bill Ingalsbe/Judy Meisner
Bobby Hilliard/Mike Hathcock/Jeremy Busby
Paul Alimia
Joe Cowan
Ken Werho
Lisa Myers
Matt Sanders

Benefit Cost Analysis Work Sheet
CONGESTION Investment Strategy Projects

STP00-0079-01(042)

PI#431830

Coffee County

SR135 from SR31/US441 east to US221/SR32

Congestion Benefit = Tb + CMb

Time Benefit (Tb)

Db (hrs)	0.027111
ADT	18,081.00
Tb (\$s)	\$16,482,772.95

Commercial Benefit (CMb)

Db (hrs)	0.027111
% Truck Traffic	0.18
ADT	18,081.00
CMb	\$15,672,727.38

Total Congestion Benefit	\$32,155,500.32
Construction Cost	\$22,387,200.00

B/C Ratio	1.44
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