

ORIGINAL TO GENERAL FILES

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

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

FILE P.I. # 522460-
STP00-0149-01(030)
Bulloch County
GDOT District 5 - Jesup
SR 67 Improvements

OFFICE Design Policy & Support

DATE October 17, 2012

FROM  for Brent Story, State Design Policy Engineer

TO SEE DISTRIBUTION

SUBJECT APPROVED REVISED CONCEPT REPORT

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

Attachment

DISTRIBUTION:

Bobby Hilliard, Program Control Administrator
Genetha Rice-Singleton, State Program Delivery Engineer
Glenn Bowman, State Environmental Administrator
Cindy VanDyke, State Transportation Planning Administrator
Ben Rabun, State Bridge Engineer
Kathy Zahul, State Traffic Engineer
Angela Robinson, Financial Management Administrator
Lisa Myers, State Project Review Engineer
Charles "Chuck" Hasty, State Materials Engineer
Jeff Baker, State Utilities Engineer
Paul Tanner, Asst. State Transportation Data Administrator
Attn: Systems & Classification Branch
Ken Thompson, Statewide Location Bureau Chief
Andy Casey, State Roadway Design Engineer
Attn: Dennis Odom, District Design Engineer
Karon Ivery, District Engineer
Brad Saxon, District Preconstruction Engineer
Stephen Thomas, District Utilities Engineer
David Moyer, Project Manager
BOARD MEMBER - 12th Cong. District

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

Project Type: <u>WIDENING</u>	P.I. Number: <u>522460</u>
GDOT District: <u>JESUP - D5</u>	County: <u>BULLOCH</u>
Federal Route Number: <u>N/A</u>	State Route Number: <u>67</u>

The proposed project revision consists of modifying the median width from 44 ft. to 32 ft., as well as modifying sections of the roadway to a five lane. Also the revision will reduce the inside travel lanes from 12 ft. to 11 ft. This will lessen environmental impacts on Historical Boundaries. The speed limit is being revised to 45 mph in the urban 5 lane sections and 55 mph elsewhere.

Submitted for approval:

Karol Ivery 8/27/2012
Karol Ivery, District 5 Engineer, District Office Head DATE

Genetha Rice-Singleton 8/28/2012
Genetha Rice-Singleton, State Program Delivery Engineer DATE

David G. Moyer 8/27/2012
David Moyer, GDOT Project Manager DATE

Recommendation for approval:

GLEN BOWMAN/EKP* 9/6/2012
State Environmental Administrator DATE

BEN RABUN/EKP* 9/26/2012
State Bridge Design Engineer DATE

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

CYNTHIA VAN DYKE/EKP* 9/6/2012
State Transportation Planning Administrator DATE

** - RECOMMENDATION ON FILE*

PLANNING, APPROVED CONCEPT, & BACKGROUND DATA

Project Justification Statement: State Route 67 serves as a primary route for traffic traveling between Statesboro and I-16 and as a direct link between two major employers, Georgia Southern University and Fort Stewart. In 2009, this project was identified as a priority by the Bulloch County/City of Statesboro Long Range Transportation Plan, which recommended widening to four lanes. This corridor has been designated a Statewide bicycle route, known as March to the Sea, and intersects with an additional Statewide bicycle route at SR 46, known as Trans Georgia.

Based on design-level “no-build” traffic approved by the Office of Planning, current year (2010) volumes on the corridor range from 7,600 ADT to 9,400 ADT and are projected to range between 14,500 ADT and 17,900 ADT by the design year (2040). The corridor is currently operating at an acceptable level-of-service “C” and is projected to decline to unacceptable levels-of-service “D” and “E” by year 2040 if no improvements are made. Current year (2010) traffic volume on the I-16 westbound on-ramp and east-bound off-ramp is 750 ADT; the westbound off-ramp and east-bound on-ramp current year (2010) traffic volume is 3,100 ADT. In the design year (2040), these ramp volumes are projected to increase to 1,550 ADT and 6,500 ADT, respectively. It is anticipated that the I-16 ramp approaches will decline from an acceptable level-of-service “B” in the current year to “F” in the design year, which represents unacceptable conditions. Improvements to SR 67, including the I-16 ramp intersections, would help relieve traffic congestion and accommodate future growth in traffic due to anticipated development along the corridor.

To the north, this project ties in to an existing four-lane section on SR 67 just prior to Burkhalter Road and the City of Statesboro. To the south, this project begins just south of the I-16 interchange, where traffic volume drops by approximately 60% and is projected to operate at level-of-service “B” in the year 2040. Based on this information, the proposed limits accommodate the primary purpose of this project, which is to relieve congestion and improve conditions for traffic between Statesboro and I-16.

Description of the approved concept: Project ST00-0149-01(030) begins approximately 0.4 miles south of I-16 and extends north to a point just south of CR 585 (Burkhalter Road). The existing 2-lane roadway will be reconstructed to a 4-lane roadway with a 44 ft. divided depressed median (normal), then transition to a 14 ft. two-way left turn lane approximately 200 feet south of CR 585 and continue to the end of the project. Widening will be on the eastside except for a short transition to the west side to reduce impact on existing historical property (Alt-B). The project includes reconstruction of I-16 ramp intersections and some relocation of the WB exit ramp. Project length is approximately 10.86 miles.

PDP Classification: Major Minor

Federal Oversight: Full Oversight Exempt State Funded Other

Projected Traffic as shown in the approved Concept Report: AADT

Open Year (1997): 2,300-7,000 Design Year (2017): 3,500-10,700

Updated Traffic: AADT

Open Year (2020): 4,100-11,700 Design Year (2040): 6700-19,600

Functional Classification (Mainline): Rural Minor Arterial

VE Study anticipated: No Yes Completed – Date: 5/14/2012
VE Implementation Letter attached.

PROPOSED REVISIONS

Approved Features:	Proposed Features:
<p>The project includes a <u>44 ft. wide depressed median</u>.</p> <p>The approved concept did not address the fact that SR67 is a state bicycle route.</p> <p>The typical sections include <u>4-12 ft. travel lanes</u> throughout the project.</p> <p>The existing 2-lane roadway will be reconstructed to a 4-lane roadway with a 44 ft. divided depressed median (normal), then transition to a 14 ft. two-way left turn lane approximately 200 feet south of CR 585 and continue to the end of the project.</p>	<p>The depressed median will be <u>32 ft. in width</u>.</p> <p>Typical sections will include a 6.5-foot paved shoulder in the rural sections and 4-foot bike lanes will be utilized in the curb and gutter sections of the project.</p> <p>The four travel lanes will consist of <u>12 ft. outside lanes and 11 ft. inside lanes</u>.</p> <p>There will be four 5-lane sections consisting of 12 ft. outside lanes, 11 ft. inside lanes and a 14 ft. flush median:</p> <ul style="list-style-type: none"> • The first 5-lane section is passing through a Historical Site; Resource 4: Martin Miller House, as well as through Denmark community. This section will utilize both rural and urban sections, and the urban portion will require a design speed of 45 mph. Approximately 0.25 mi will have rural shoulders and 0.27 mi will have curb and gutter. (See Typical Section No. 4, 5, and 6) • The second 5-lane section is passing through a Historical Site; Resource 11: Griffin-Futch House. Approximately 3700 ft. (0.7 miles) will have a rural shoulder (see Typical Section No. 2). There will be a 400

<p>Design speed is 55 mph.</p> <p>Construct a parallel bridge over I-16.</p>	<p>ft. section having a curb and gutter section (see Typical Section No. 9). This curb and gutter section will have an 8 ft. paved shoulder, with the curb face 10 ft. from the edge of the travel lane, used to greatly reduce impacts to historical boundaries on both sides of the road and avoid the structure on the right side of the road. Speed design in the 400' portion will be 45 mph.</p> <ul style="list-style-type: none"> • The third 5-lane section is passing through two Historical Sites: Resource 15 and 16: Hagan-Meeks-Bunce House. Approximately 5587 ft. (1.06 miles) will have a rural shoulder (see Typical Section No. 2, 4, 5, and 12). • The fourth 5-lane section is begins approximately 4526 ft. (0.86 miles) south of CR 585 and continues to the end of the project. Approximately 1908 ft. (0.36 miles) will have a rural shoulder (see Typical Section No. 2 and 4) and 420 ft. will have an urban shoulder (see Typical Section No. 6). Speed design will be 45 mph in the 420' ending urban portion of the project. <p>Design speed will be 45 and 55 mph.</p> <p>Parallel Bridge over I-16 is being eliminated.</p>
<p>Reason for change:</p> <p>Reducing the typical section to a 5-lane roadway and a 45 mph design speed in the first three 5-lane project areas will help to reduce the environmental impact on the Historical boundaries and greatly reduce the overall Construction and Right of Way costs for this project. Eliminating the parallel Bridge over I-16 is to reduce overall construction cost.</p>	

In 2002, under PI# 522465, the existing bridge over Zetterower Creek was replaced with a culvert on a new roadway alignment, and an existing bridge over Woodcock Branch was replaced with a new bridge on a new roadway alignment. During this 2002 project, both existing bridges over Zetterower Creek and Woodcock Branch were removed. Under the proposed revision of PI# 522460, the existing culvert for Zetterower Creek that was built in 2002 will be retained and a culvert extension will be needed. The existing bridge that was built in 2002 over Woodcock Branch will be retained as well, and a twin bridge over Woodcock Branch will be constructed.

ENVIRONMENTAL

Air Quality:

Is the project located in a PM 2.5 Non-attainment area? No Yes
 Is the project located in an Ozone Non-attainment area? No Yes

Potential environmental impacts of proposed revision: No Environmental document has been completed at this time. The said revisions reduce impacts to the historic boundaries.

Have proposed revisions been reviewed by environmental staff? No Yes

Environmental responsibilities (Studies/Documents/Permits): Environmental impacts will not increase by the proposed revisions.

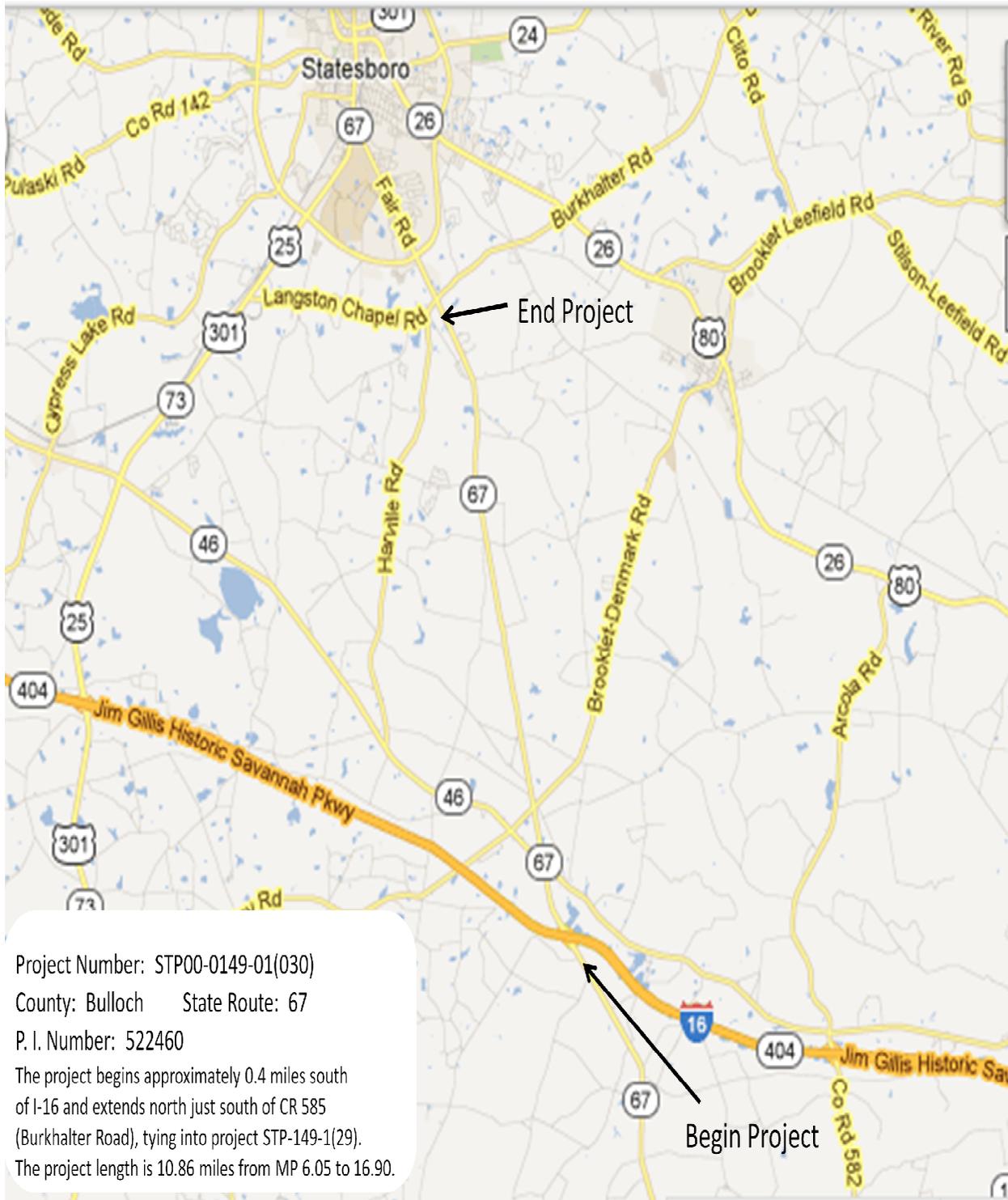
PROJECT COST & ADDITIONAL INFORMATION

Updated Cost Estimate		Date of Estimate
Base Construction Cost including Engineering and Inspection:	\$ 21,906,561.00	7/11/2012
Liquid AC Adjustment:	\$ 1,095,328.00	8/15/2012
<u>Total Construction Cost:</u>	\$ 2,358,049.00	
Right-of-Way:	\$ 7,208,000.00	11/3/2011
Utilities (reimbursable costs):	\$ 709,060.00	8/17/2012
Environmental Mitigation:	Pending	
TOTAL PROJECT COST:	\$34,955,828.00	

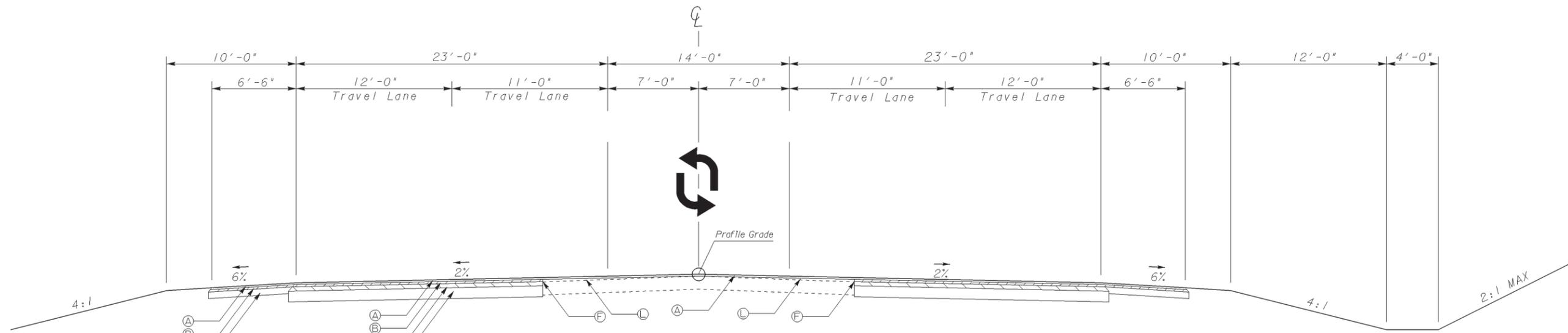
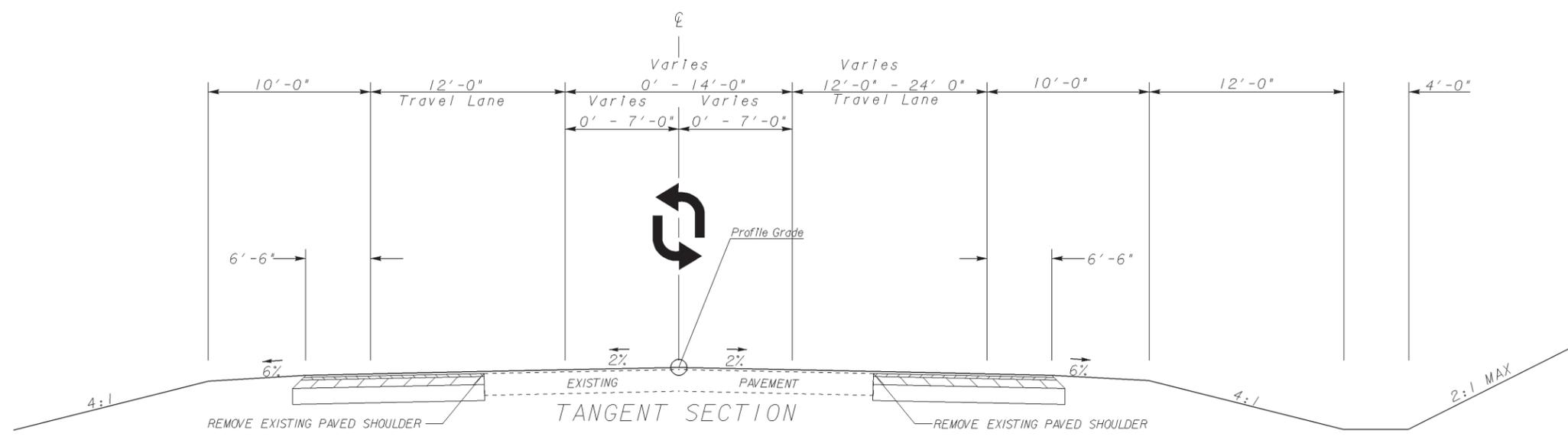
Recommendation: Recommend that the proposed revision to the concept be approved for implementation.

Comments: *n/a*

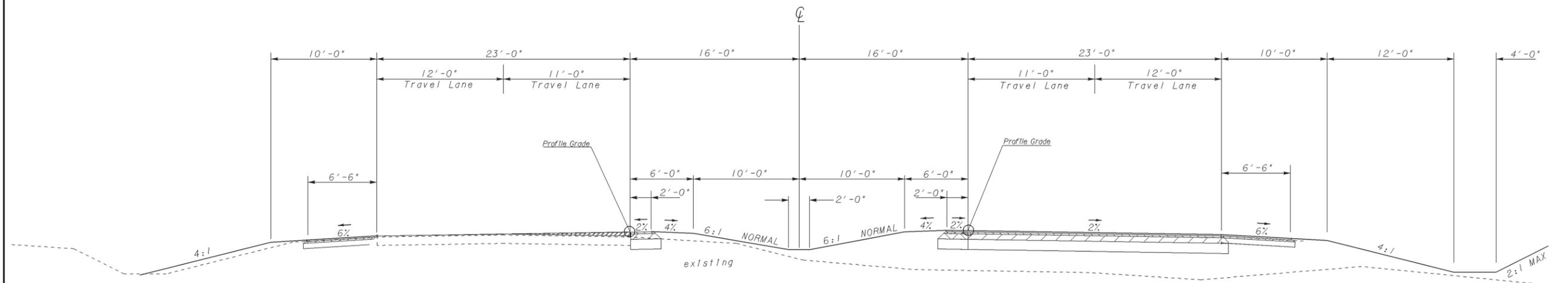
1. Project Location Map



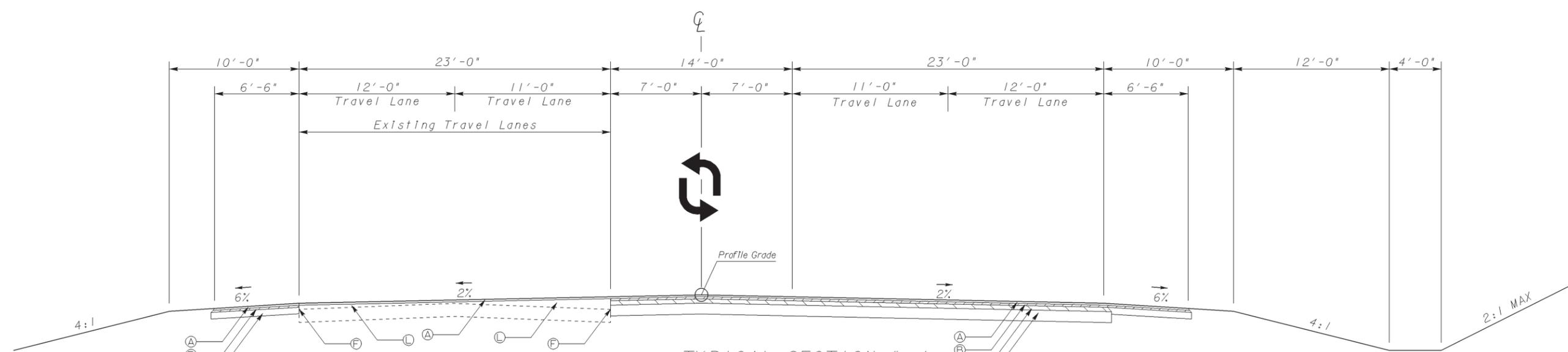
2. Revised Typical Sections



REVISION DATES				STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION
				OFFICE: TYPICAL SECTIONS
				DRAWING No. 5-001



TYPICAL SECTION # 3
157+50 TO 229+50



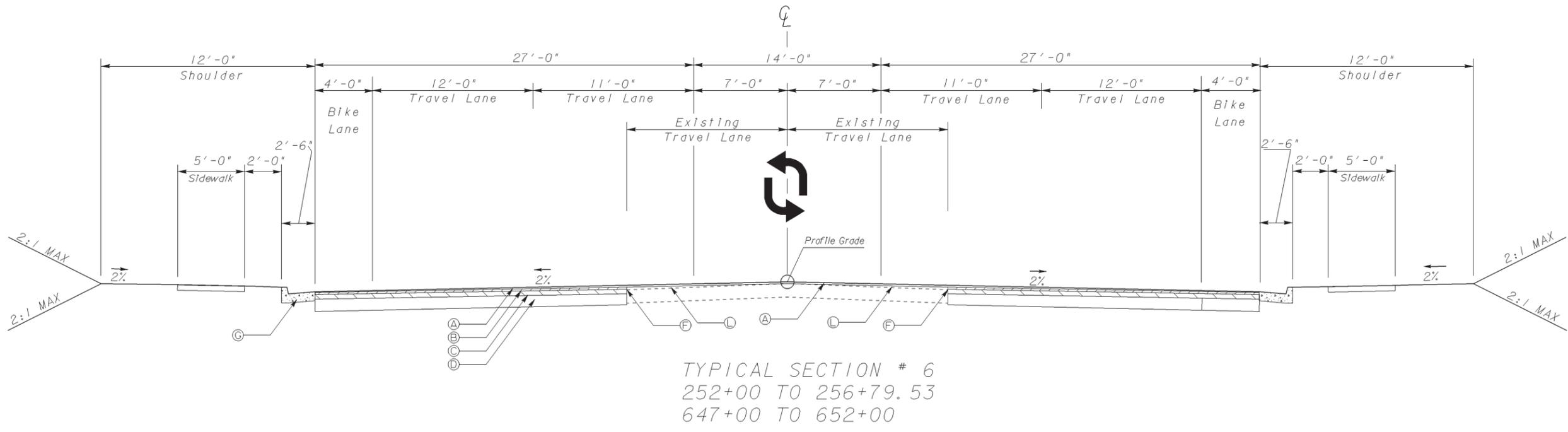
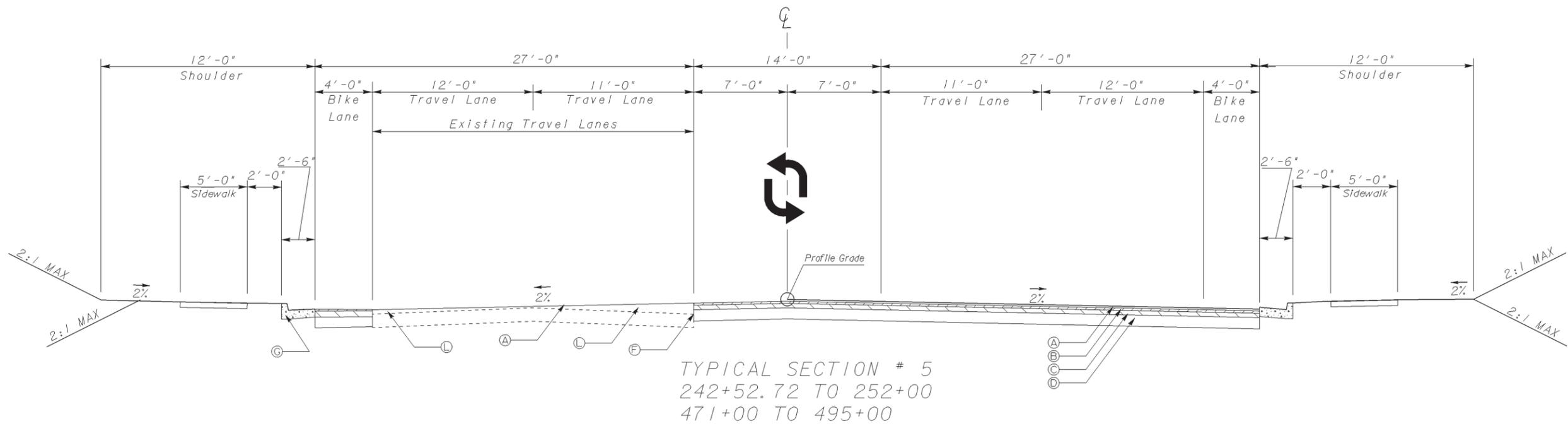
TYPICAL SECTION # 4
229+50 TO 242+52.72
471+00 TO 495+00
629+00 TO 642+00

REVISION DATES	

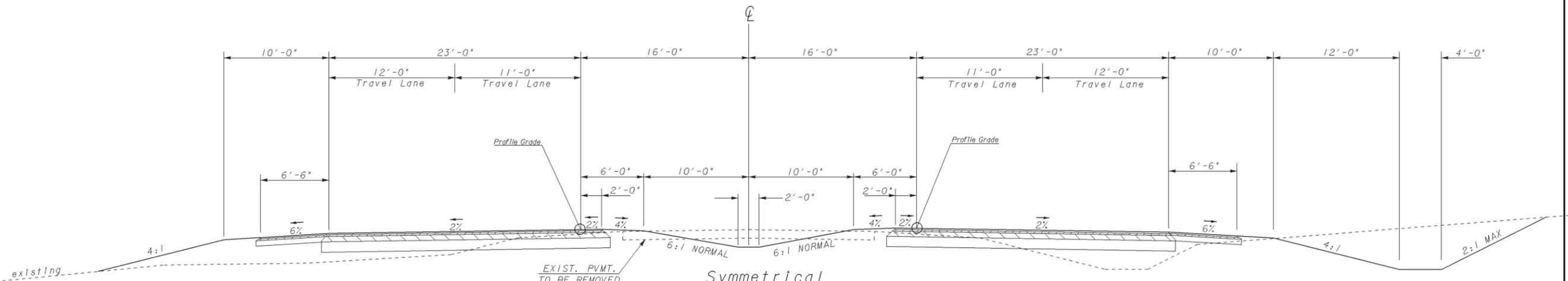
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE: **TYPICAL SECTIONS**

DRAWING No.
5-002

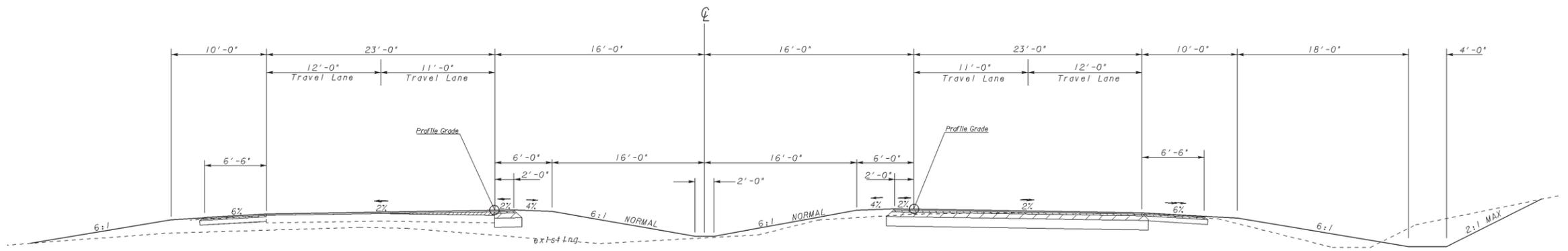


REVISION DATES				STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION
				OFFICE:
				TYPICAL SECTIONS
				DRAWING No. 5-003



Symmetrical
4 Lanes With a 32' Median
(D.S. 55mph)
NORMAL CROWN

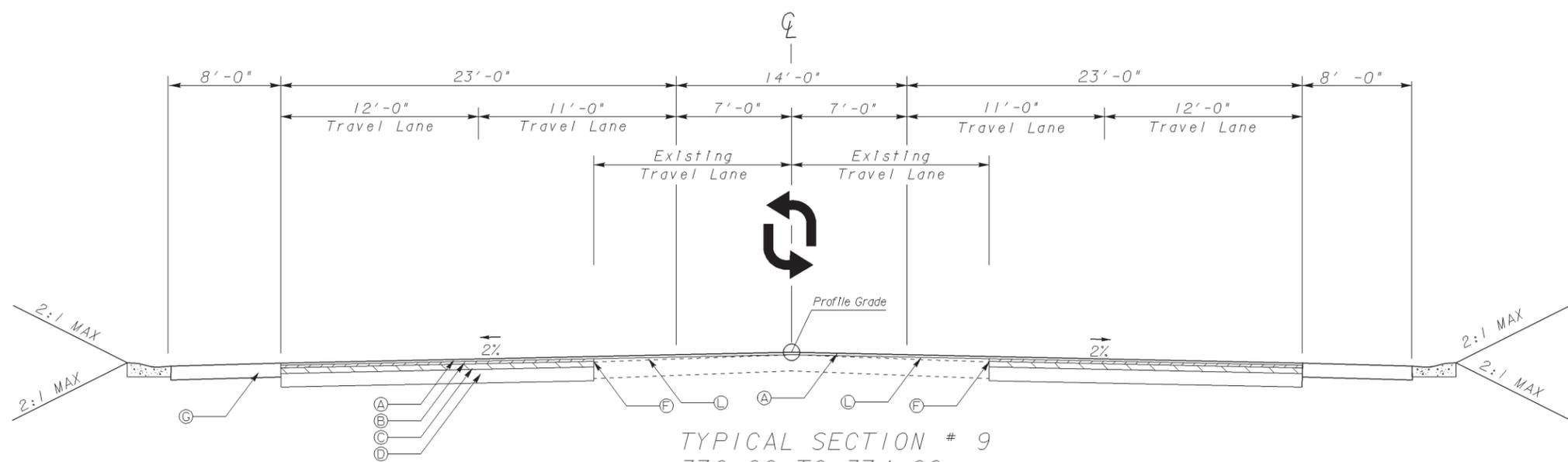
TYPICAL SECTION # 7
256+79.53 TO 263+00
319+00 TO 343+00
397+00 TO 399+00
520+00 TO 523+00



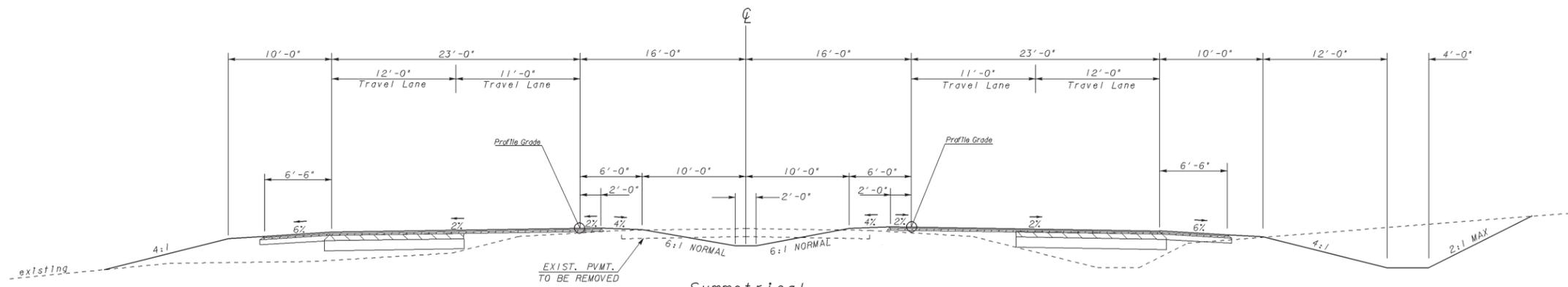
FOR AREA BEFORE AND AFTER BRIDGE
AT WOODCOCK BRANCH (STA 323+54.32 TO STA 332+59.21)

TYPICAL SECTION # 8
263+00 TO 319+00
399+00 TO 495+00
523+00 TO 629+00

	REVISION DATES							STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION
								OFFICE: TYPICAL SECTIONS
								DRAWING No. 5-004

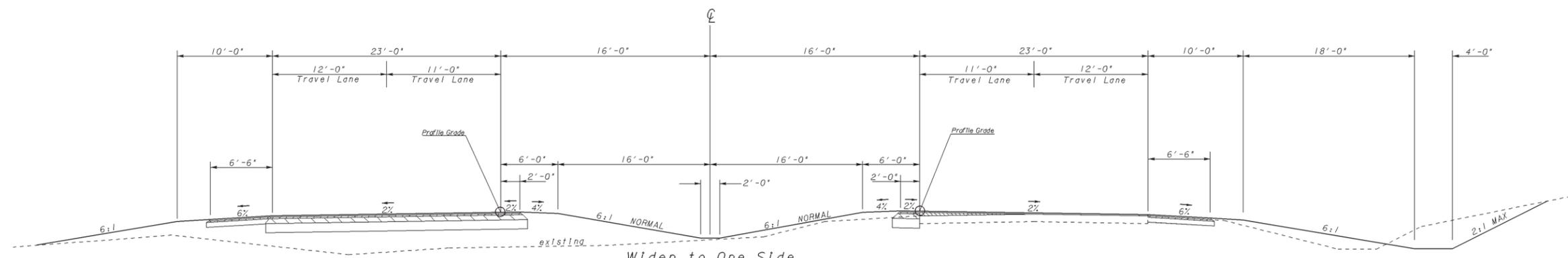


TYPICAL SECTION # 9
370+00 TO 374+00
Urban 4-Lane 14' Flush Median
2 to 4 Symmetrical
Tangent



Symmetrical
4 Lanes With a 32' Median
(D.S. 55mph)
NORMAL CROWN
TYPICAL SECTION # 10
380+00 TO 385+00
517+00 TO 520+00

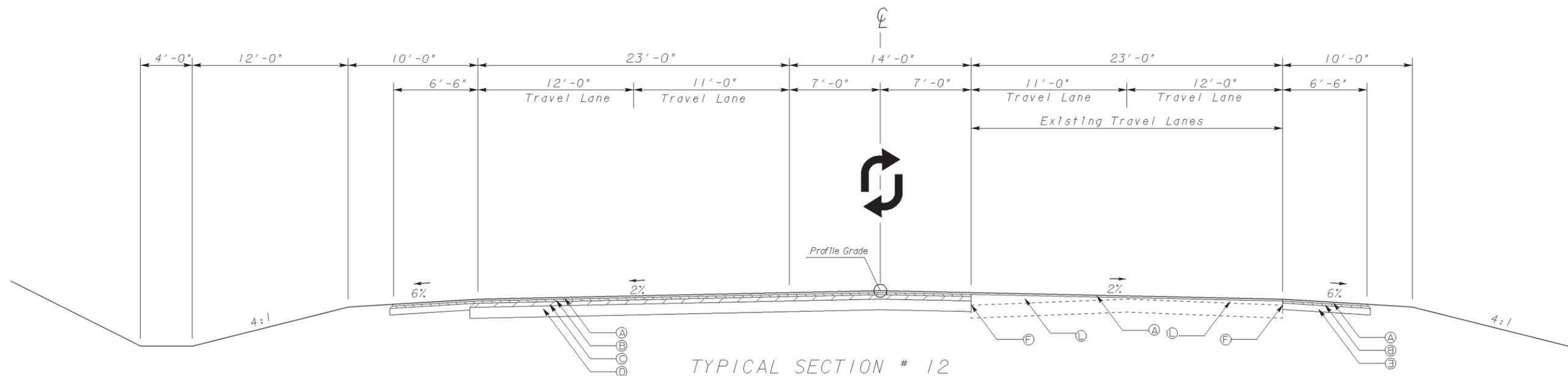
				REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION
					OFFICE: TYPICAL SECTIONS
					DRAWING No. 5-005



Widen to One Side
4 Lanes With a 32' Median
NORMAL CROWN

FOR AREA BEFORE AND AFTER CULVERT AT
ZETTERWOWER BRANCH (STA 388+79.59 TO STA 394+57.91)

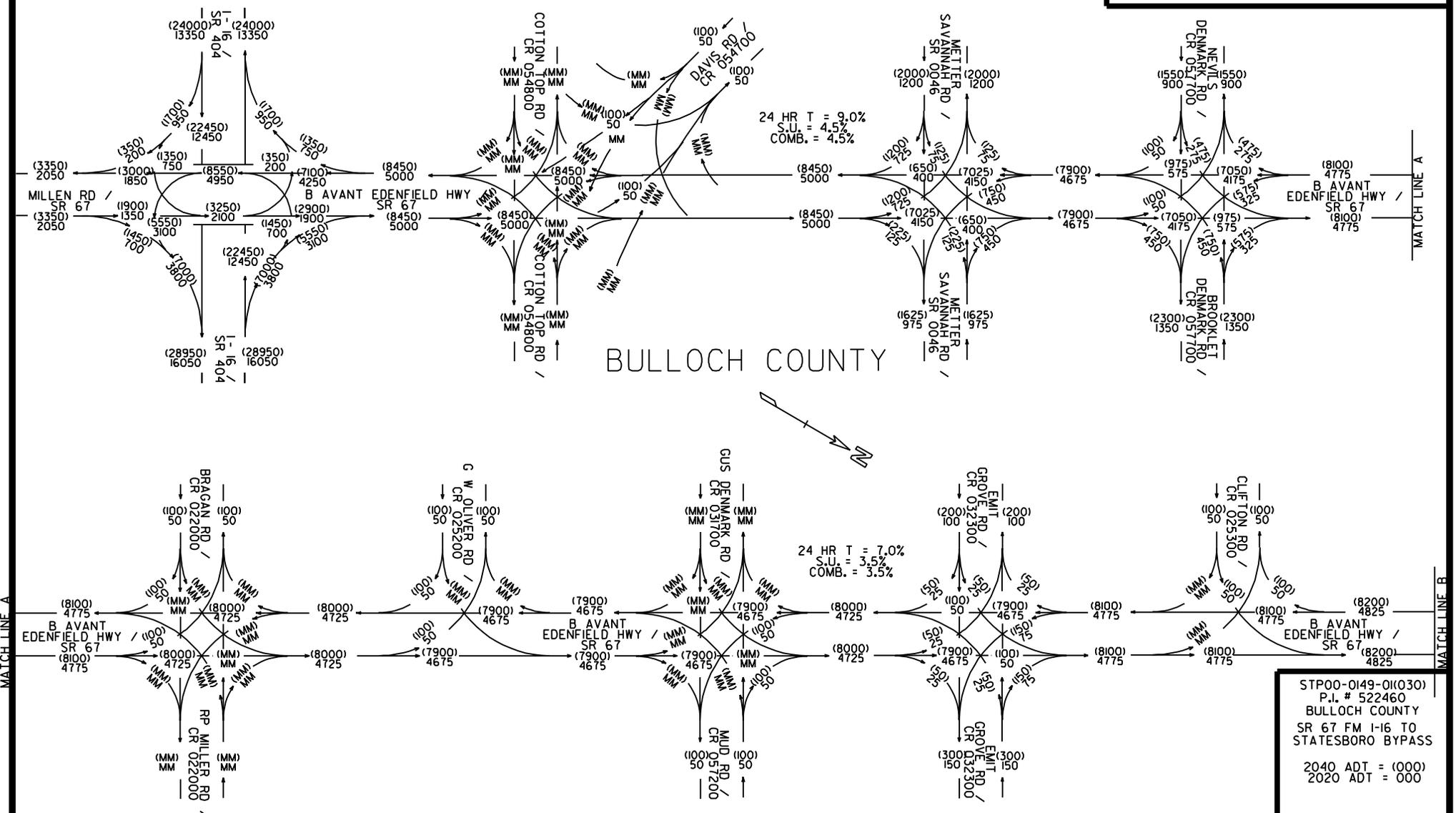
TYPICAL SECTION # 11
385+00 TO 397+00



TYPICAL SECTION # 12
503+00 TO 517+00

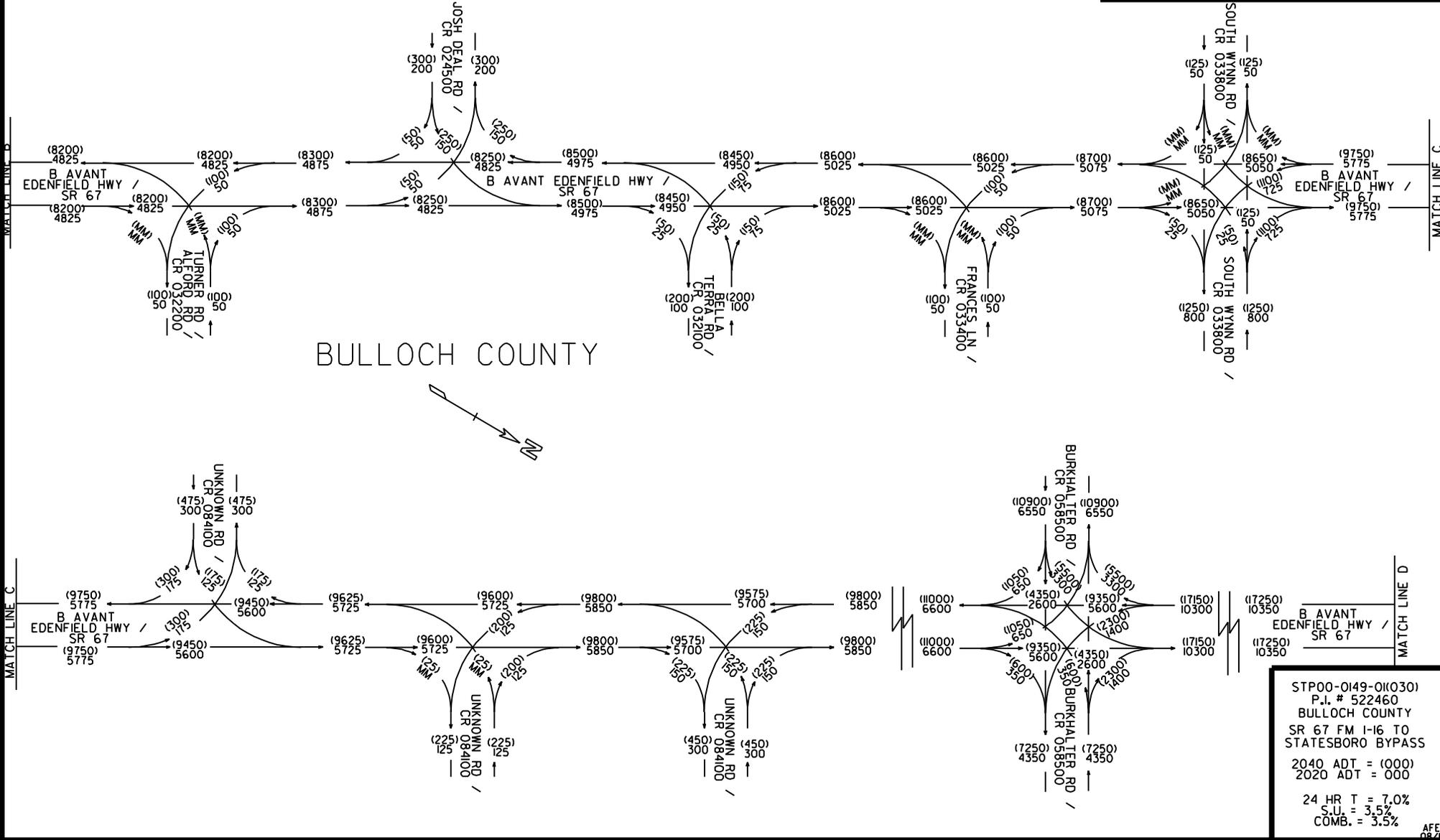
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				STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION
				OFFICE: TYPICAL SECTIONS
				DRAWING No. 5-006

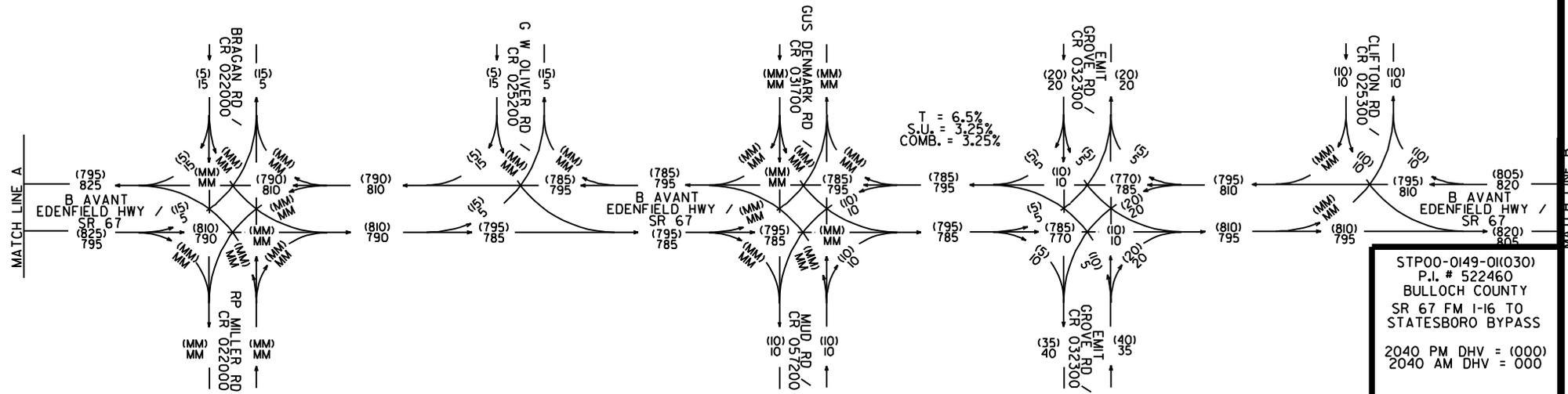
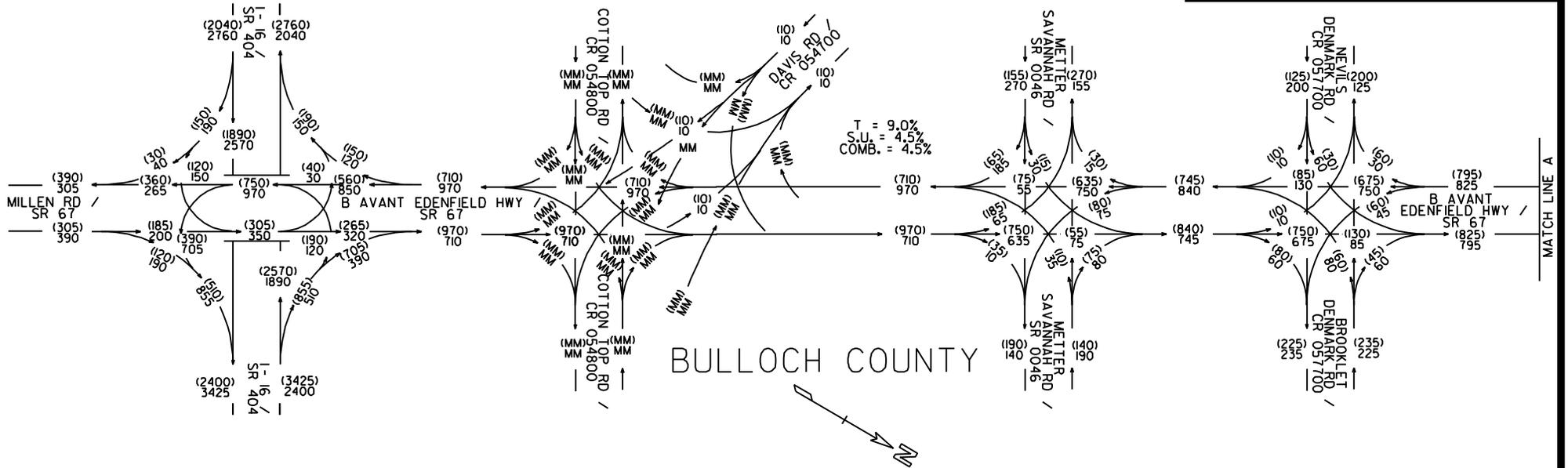
3. Revised Design Traffic



STP00-0149-01(030)
P.L. # 522460
BULLOCH COUNTY
SR 67 FM I-16 TO
STATESBORO BYPASS

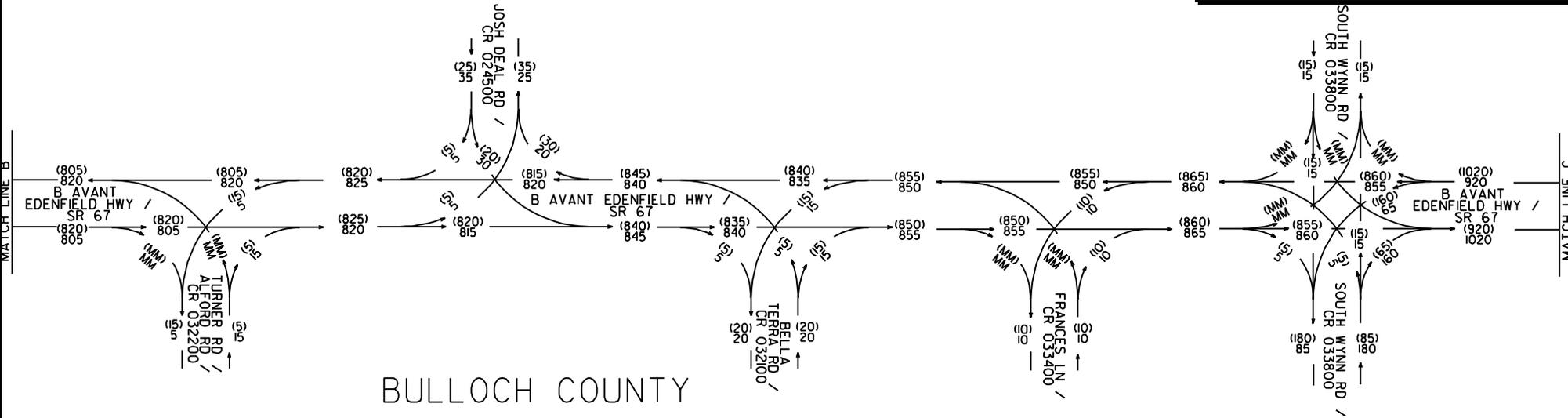
2040 ADT = (000)
2020 ADT = 000



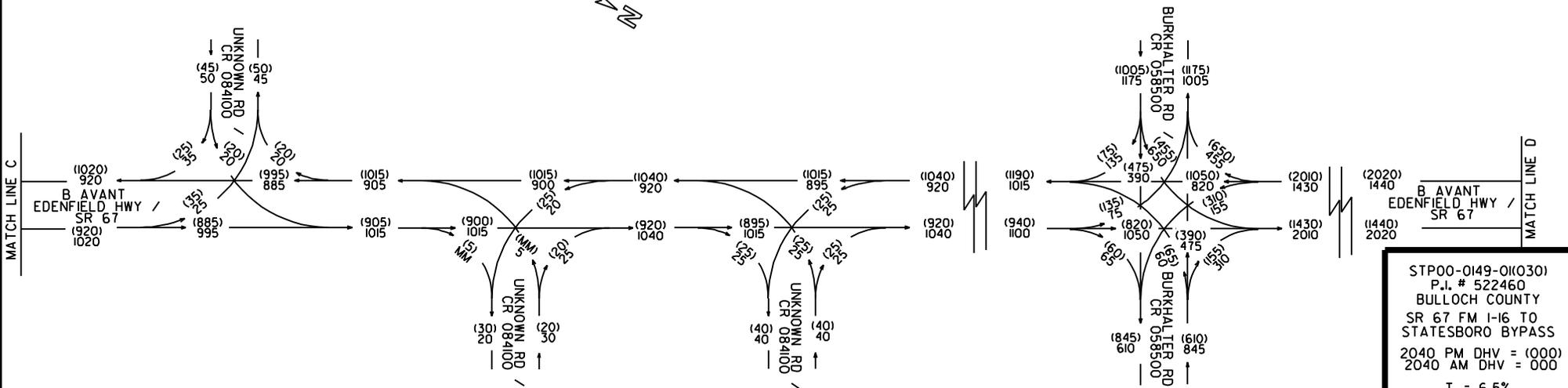
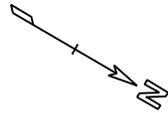


STP00-0149-01(030)
P.I. # 522460
BULLOCH COUNTY
SR 67 FM I-16 TO
STATESBORO BYPASS

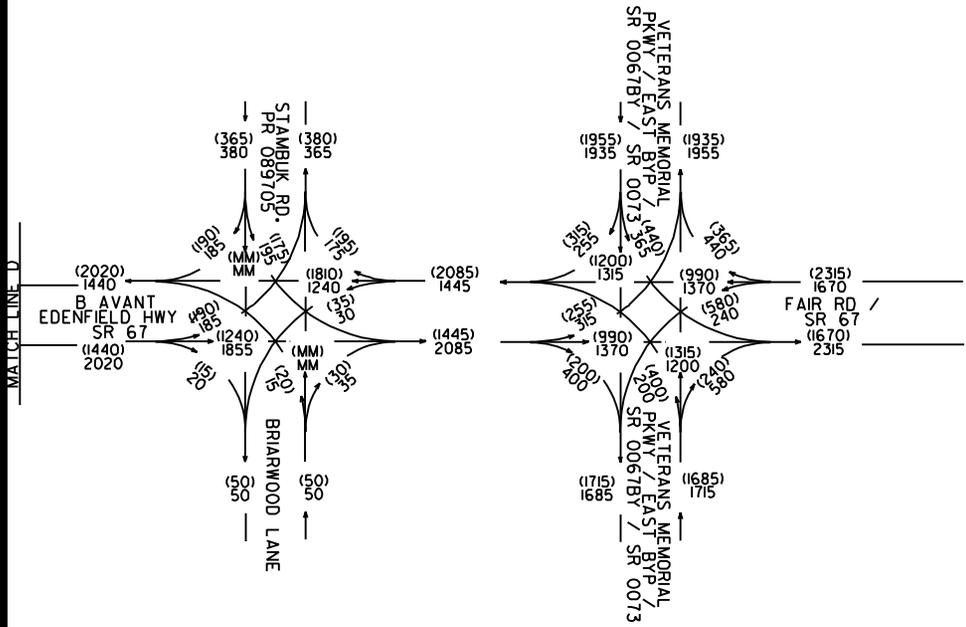
2040 PM DHV = (000)
2040 AM DHV = 000



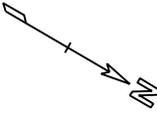
BULLOCH COUNTY



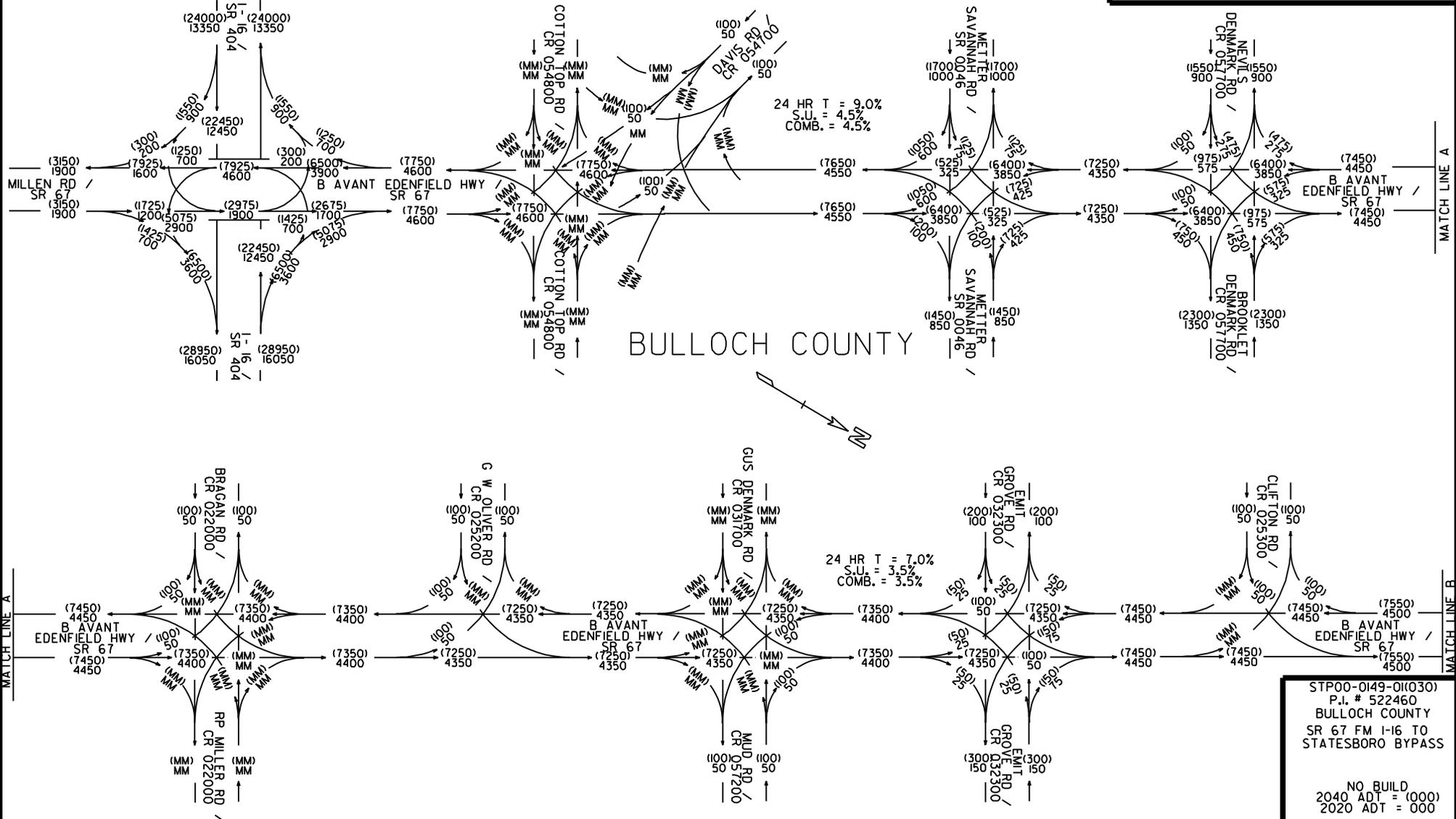
STP00-0149-01(030)
P.I. # 522460
BULLOCH COUNTY
SR 67 FM 1-16 TO
STATESBORO BYPASS
2040 PM DHV = (000)
2040 AM DHV = 000
T = 6.5%
S.U. = 3.25%
COMB. = 3.25%



BULLOCH COUNTY

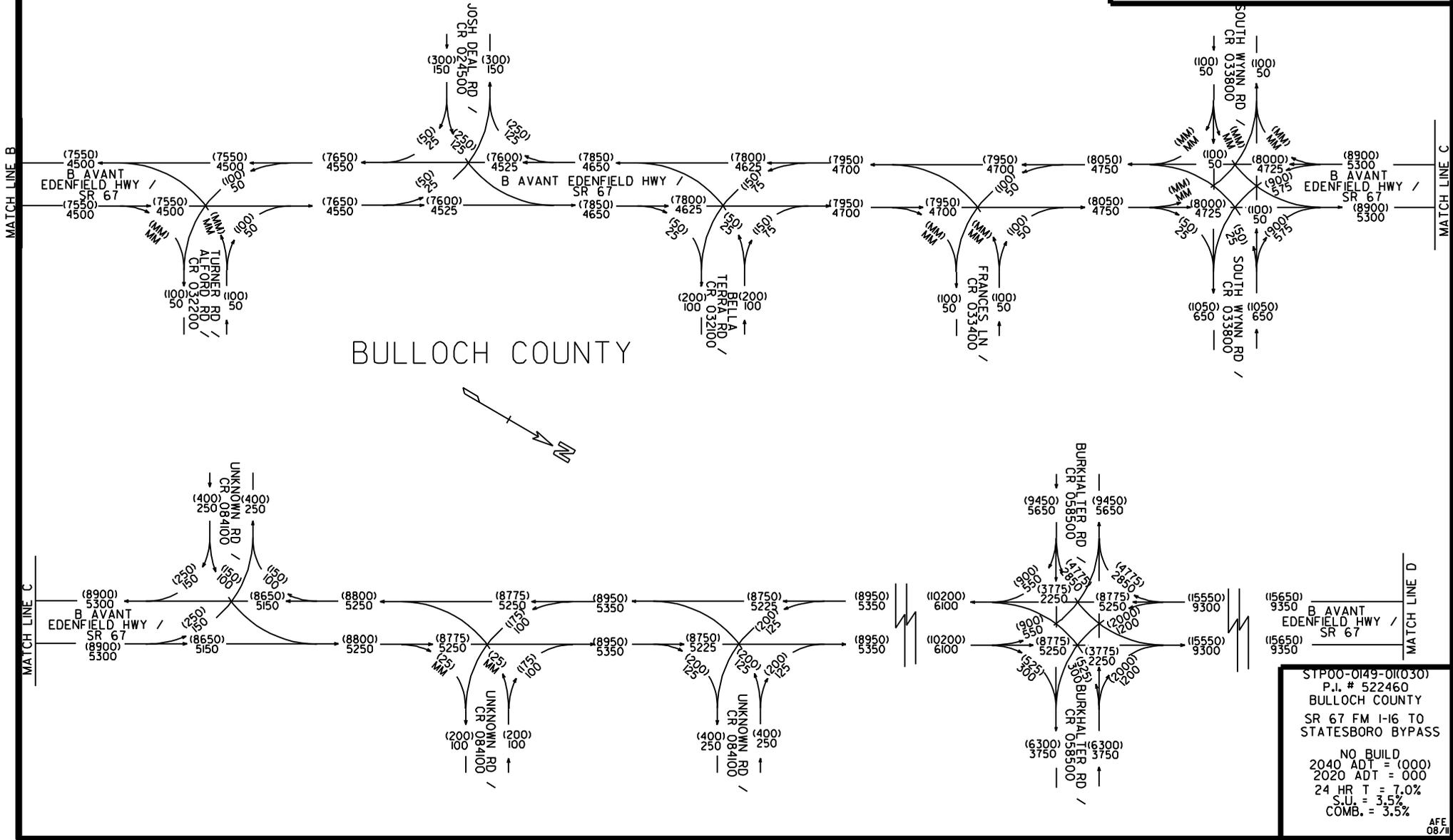


STP00-0149-01(030)
P.I. # 522460
BULLOCH COUNTY
SR 67 FM I-16 TO
STATESBORO BYPASS
2040 PM DHV = 1000
2040 AM DHV = 000
T = 6.5%
S.U. = 3.25%
COMB. = 3.25%



STP00-0149-01(030)
P.I. # 522460
BULLOCH COUNTY
SR 67 FM I-16 TO
STATESBORO BYPASS

NO BUILD
2040 ADT = (000)
2020 ADT = 000

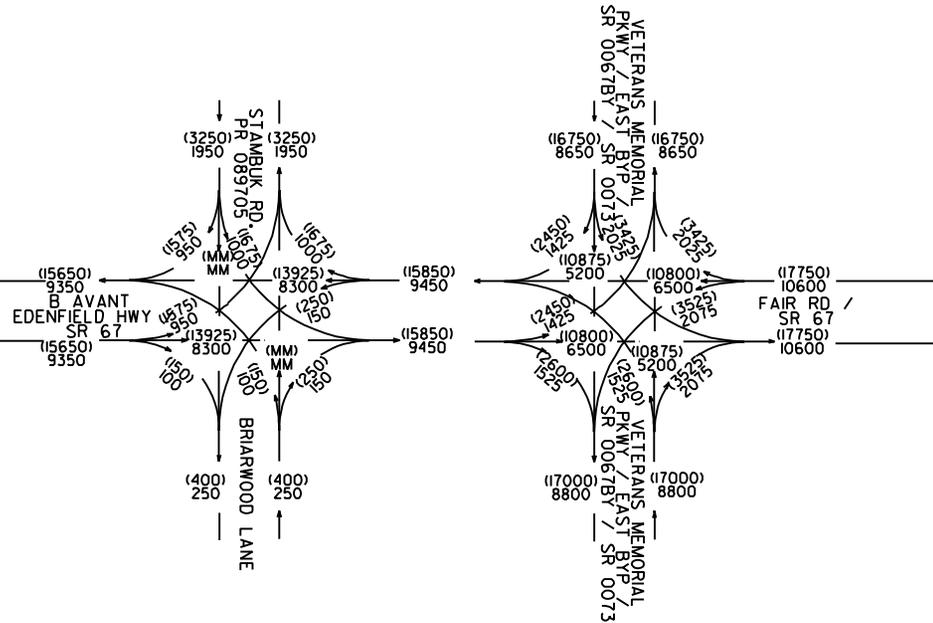


STP00-0149-01(030)
P.I. # 522460
BULLOCH COUNTY
SR 67 FM I-16 TO
STATESBORO BYPASS

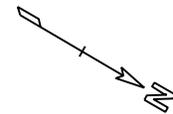
NO BUILD
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2020 ADT = 000
24 HR T = 7.0%
S.U. = 3.5%
COMB. = 3.5%

AFE
08/11

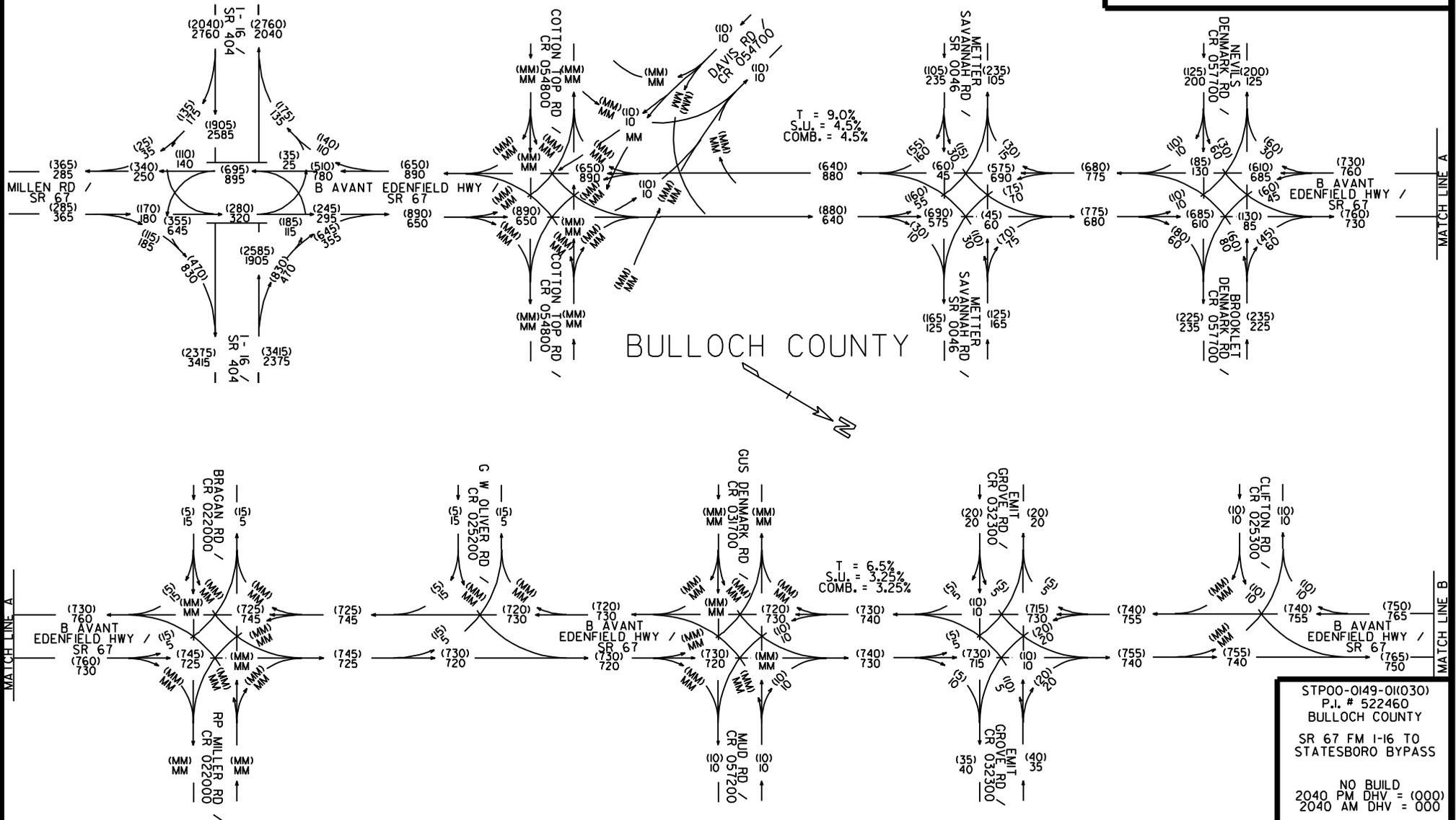
MATCH LINE D

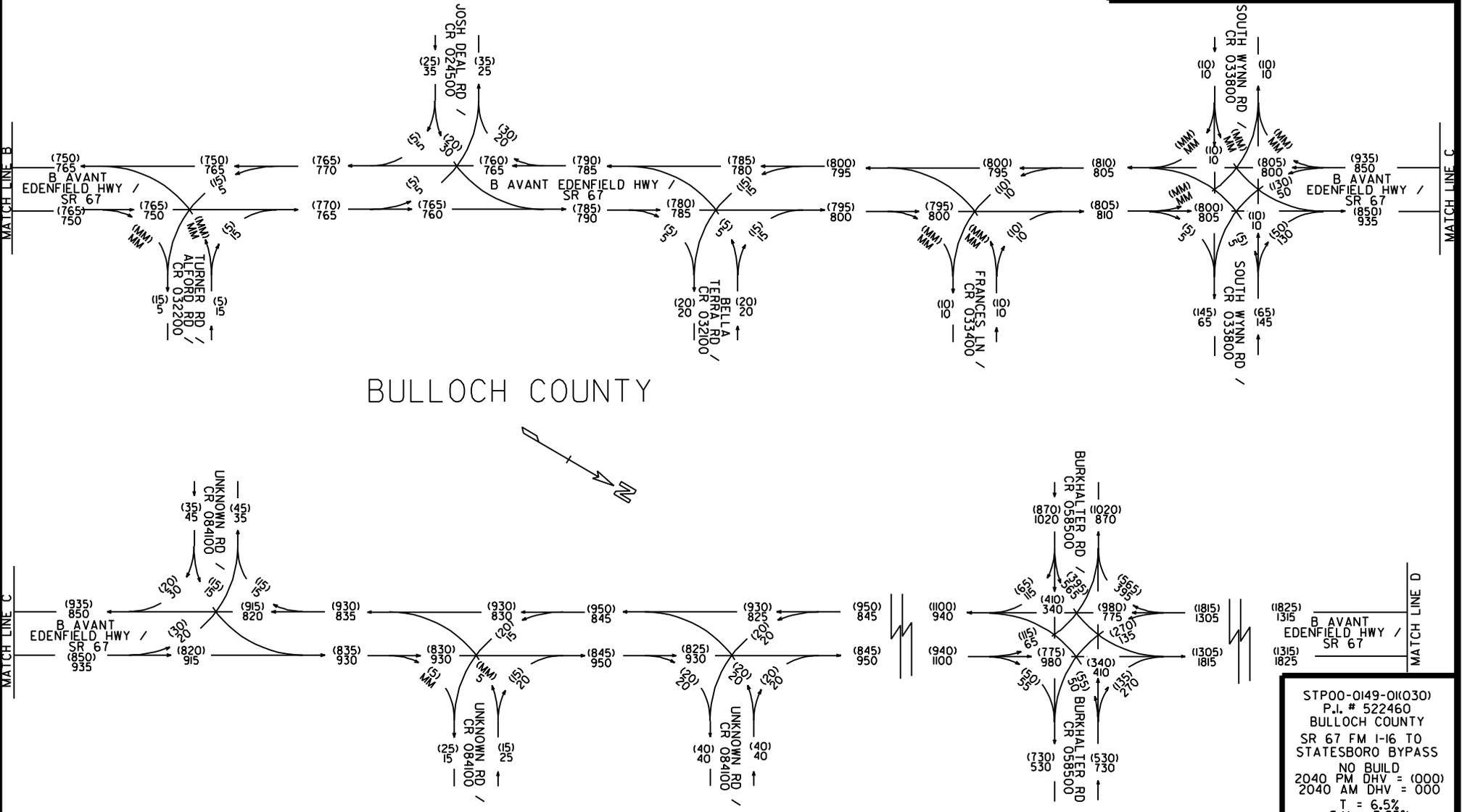


BULLOCH COUNTY



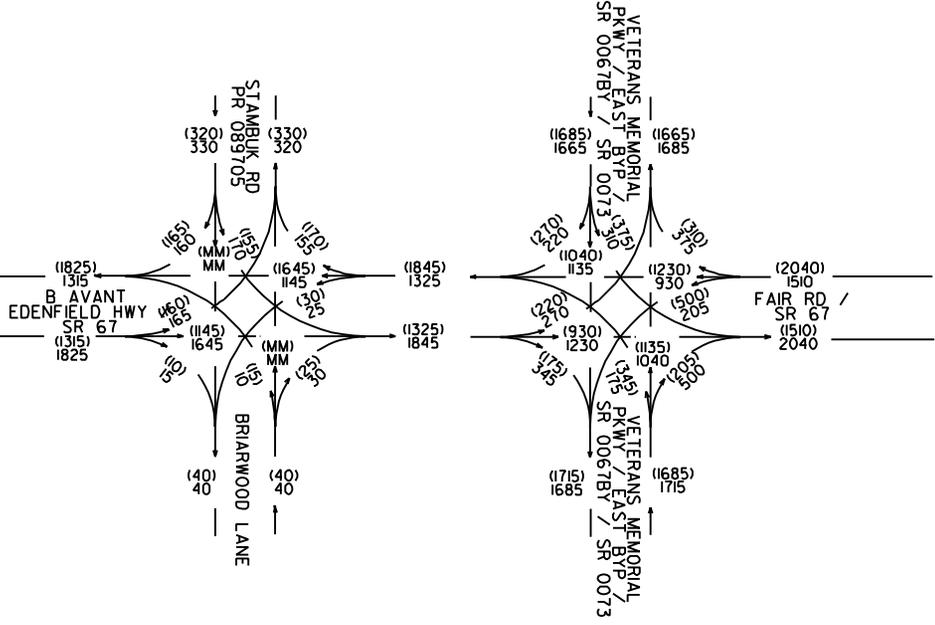
STP00-0149-01(030)
 P.L. # 522460
 BULLOCH COUNTY
 SR 67 FM I-16 TO
 STATESBORO BYPASS
 NO. BULD.
 2040 ADT = 000
 2020 ADT = 000
 24 HR T = 7.0%
 S.U. = 3.5%
 COMB. = 3.5%



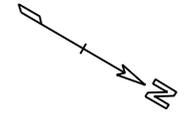


STP00-0149-0(K030)
P.I. # 522460
BULLOCH COUNTY
SR 67 FM I-16 TO
STATESBORO BYPASS
NO BUILD
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2040 AM DHV = 000
T = 6.5%
S.U. = 3.25%
COMB. = 3.25%

MATCH LINE D

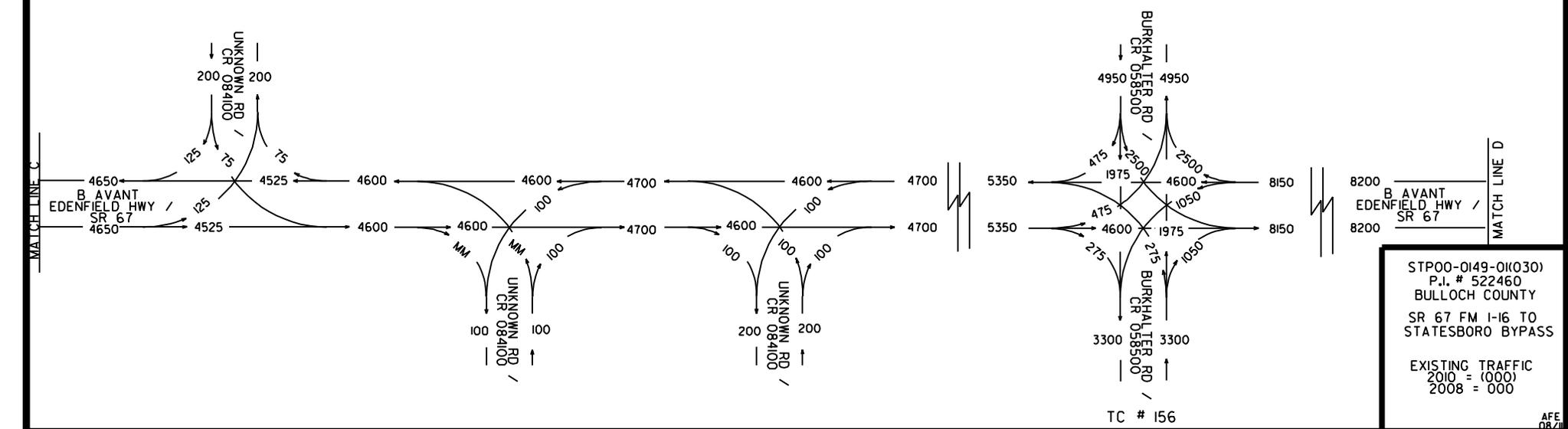
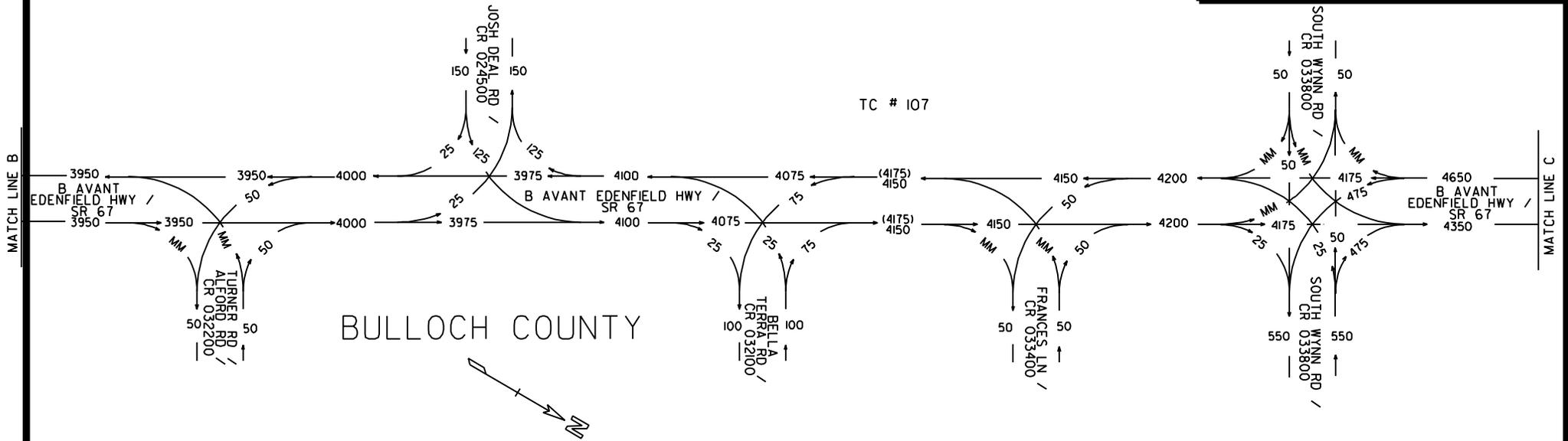


BULLOCH COUNTY



STP00-0149-01(030)
 P.I. # 522460
 BULLOCH COUNTY
 SR 67 FM I-16 TO
 STATESBORO BYPASS

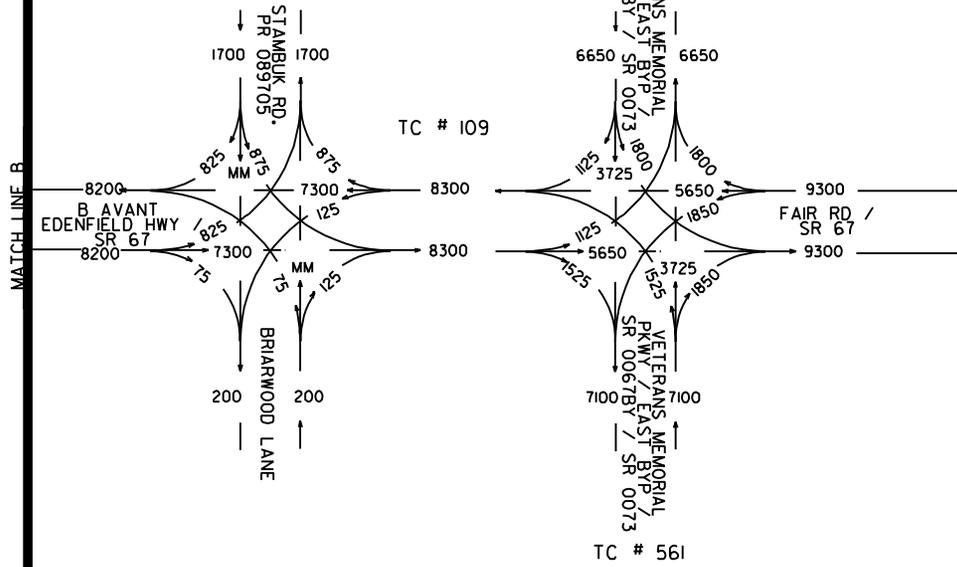
NO BUILD
 2040 PM DHV = (000)
 2040 AM DHV = 000



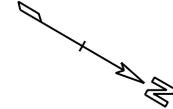
STP00-0149-01(030)
P.L. # 522460
BULLOCH COUNTY
SR 67 FM I-16 TO
STATESBORO BYPASS

EXISTING TRAFFIC
2010 = (000)
2008 = 000

AFE
08/11



BULLOCH COUNTY



STP00-0149-01(030)
 P.I. # 522460
 BULLOCH COUNTY
 SR 67 FM I-16 TO
 STATESBORO BYPASS

EXISTING TRAFFIC
 2010 = (000)
 2008 = 000

4. SHPO Documentation

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P.I. # 522460 **OFFICE** Environmental Services
DATE April 13, 2011
FROM Sharman Southall
TO Files
SUBJECT GDOT Project STP00-0149-01(030), Bulloch County;
P.I. # 522460: HP-040727-001
Technical Assistance Meeting.

A meeting was held between Amanda Schraner and Richard Cloues of the State Historic Preservation Office (SHPO) and GDOT historian, Sharman Southall on Friday, March 18, 2011, to discuss the anticipated effects of the subject project to three resources within the APE of the subject project. The resources are the Griffin-Futch House, the Hagan-Meeks-Bunce House, and the Hagan-Bunce House.

Layouts and recent pictures of the Griffin-Futch House were presented at the meeting (see attached). After discussing the proposed minimization efforts, it was determined that the Hagan- Meeks-Bunce House and the Hagan-Bunce House would not be adversely affected by the proposed project (see attached notes for proposed minimization efforts). In the case of the Griffin-Futch House, SHPO asked that the loss of setback be measured and historic aerials be consulted in order to confirm the date of construction of the associated barn. It was agreed that the amount of setback loss would be quantified and that information, along with confirmation that the barn was visible on historic aerials and a summary statement concerning the anticipated effects to the resource, would be sent to SHPO (see attached notes) for their review. Historic aerials were consulted and dated the house and barn to 1941.

This additional information was sent and an email response was received (see attached email) concurring with the determination of no adverse effect to the Griffin-Futch House. In summary, it was determined that the Griffin-Futch House, Hagan- Meeks-Bunce House, and the Hagan-Bunce House would not be adversely affected by the proposed project based on the implementation of the minimization efforts described in the attached notes.

SRS/

cc: Rodney N. Barry, P.E., FHWA, w/attachment (Attn: Jennifer Giersch)
David Crass, Deputy SHPO, w/attachment
Coastal Regional Commission, w/attachment
Bobby Dollar, GDOT NEPA

Summary of Project Information for TA Meeting Held March 18, 2011

Project Description:

The proposed project is located along State Route (SR) 67 in Bulloch County. The proposed project would begin approximately 0.4 mile south of I-16 and extends north to a point south of County Road (CR) 585/Burkhalter Road. The existing two-lane roadway would be reconstructed to a four-lane roadway with a divided median. The divided median would be a 44-footwide depressed median, then transition to a 14-foot two-way left turn lane approximately 2000 feet south of CR 585 and continue north to the end of the project. The proposed project includes reconstruction of I-16 ramp intersections and some relocation of the westbound exit ramp. The project length is approximately 10.86 miles.

10 National Register eligible historic properties were identified within the proposed project's APE. These historic properties are the Martin Miller House, the Denmark Bragan House, The Griffin Futch House, the Martin House, the Hagan Meeks Bunce House, the Hagan Bunce House, the Anderson Martin House, the Martin Quattlebaum House, the Smith House, and the Rushing House. The Denmark Bragan House and the Smith House are no longer considered within the APE of the proposed project. Of the remaining 8 properties, three properties, the Griffin-Futch House, the Hagan-Meeks-Bunce House, and the Hagan-Bunce House were difficult to avoid because the Griffin-Futch House possesses a house and barn on opposite sides of SR 67 and the Hagan-Meeks-Bunce House is located across SR 67 from the Hagan-Bunce House.

Efforts to minimize harm are:

Griffin-Futch House

12' lanes with 11' outside lanes

14' center turn lane (no median – this is a 5 lane section used to reduce RW impacts)

10' Offset curb & gutter from Proposed Edge of Pavement for 400'

Existing vertical alignment maintained in front of house, slightly lower north & south of house.

All work in front of house & barn within existing ROW, but ROW being acquired within boundary. Total acres to be +/- 0.861 acres

Barn is presently located on the right-of-way line (35 feet from edge of pavement) and would be approximately 20 feet closer to the edge of pavement after construction. Trees around barn would be maintained.

House is presently located approximately 78 feet from the edge of pavement and would be approximately 20 feet closer to the edge of pavement after construction. We will likely impact 3 out of 4 pecan trees.

Hagan-Meeks-Bunce House and the Hagan-Bunce House

12' lanes with 11' outside lanes

14' center turn lane (no median – this is a 5 lane section used to reduce RW impacts)

Curb & gutter

All widening on west side of SR 67

Construction limits on east side within existing ROW

Trees okay

ROW being acquired within boundary. East side (house close to road) 13119 SF or 0.301 acres; on the west side the historic boundary does not lay within the entire parcel, only a portion of it, so only within the historic boundary the required rw is 37454 SF or 0.860 acres.

Hagan-Meeks-Bunce House is presently located approximately 275 feet from edge of pavement and would be approximately 40 feet closer after construction. Some vegetation around drive could be removed but non-contributing due to move.

Hagan-Bunce House is presently located 50 feet from edge of pavement and this distance would be maintained. Surrounding vegetation would be maintained except in area of slope and ditch work.







Southall, Sharman

From: Amanda Schraner [Amanda.Schraner@dnr.state.ga.us]
Sent: Monday, March 28, 2011 10:52 AM
To: Southall, Sharman
Subject: Re. Bulloch County PI# 522460

Sharman,

After considering your summary email, photos, and layouts, we agree that the proposed project will result in no adverse effect to the Griffin-Futch House, the Hagan-Meeks-Bunce House, and the Hagan-Bunce House. I am including this email in our file for reference when the AOE is submitted in the future. Thanks, Amanda

>>> "Southall, Sharman" <SSouthall@dot.ga.gov> 3/24/2011 11:28 AM >>>
Hi Amanda,

Attached is a summary of the minimization efforts and the anticipated effects to the properties discussed in the March 18, 2011 TA with you and Richard. I also consulted historic aerials and was able to determine that the barn and the house (Griffin-Hutch House) date back to circa 1941.

As we discussed, I have described my assessment of the effects to the Griffin-Futch House and would like for you and Richard to agree, disagree via email. Once we reach a decision, I'll incorporate the entire "discussion" in a memo to file and copy ya'll and the usual suspects.

Let me know if you see a problem with the approach or if you have other questions for me or design. Thanks for your help on this one. The situation seems very borderline to me, and I appreciate having your input.

Sharman Southall
Historian
GDOT
Office of Environmental Services
600 West Peachtree Street, NW
16th Floor
Atlanta, Georgia 30308
404.631.1057

5. Construction Cost Estimate

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE PROJECT No. STP00-0149-01(030), Bulloch
SR67 FM I-16 TO STATESBORO BYPASS
P.I. No. 522460

OFFICE OPD

DATE 8/20/2012

FROM Genetha Rice Singleton, State Program Delivery Engineer

TO Lisa L. Myers, Project Review Engineer

SUBJECT REVISIONS TO PROGRAMMED COSTS

PROJECT MANAGER David Moyer

MNGT LET DATE 1/15/2017

MNGT R/W DATE 3/15/2014

PROGRAMMED COST (TPro W/OUT INFLATION)

LAST ESTIMATE UPDATE

CONSTRUCTION \$34,955,828

DATE 5/31/2011

RIGHT OF WAY \$10,712,000

DATE 4/30/2010

UTILITIES \$None

DATE Select Date

REVISED COST ESTIMATES

CONSTRUCTION* \$25,359,938

RIGHT OF WAY \$7,208,000

UTILITIES \$709,060

* Costs contain 5% Engineering and Inspection and Liquid AC Adjustments.

REASON FOR COST INCREASE Update for concept and yearly update.

SUMMARY

Construction Cost Estimate:	\$21,906,561	(Base Estimate)
Engineering and Inspection:	\$1,095,328	(Base Estimate x 5 %)
Total Fuel & Liquid AC Adjustment	\$ 2,358,049	(From attached worksheet)
Construction Total:	\$25,359,938	

Utility Total: \$709,060

REIMBURSABLE UTILITY COST

Utility Owner	Reimbursable Costs
Frontier Communications	\$157,300
Excelsior EMC	\$551,760
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Attachments

STATE HIGHWAY AGENCY

DATE : 08/15/2012

PAGE : 1

JOB ESTIMATE REPORT

JOB NUMBER : 522460- SPEC YEAR: 01
 DESCRIPTION: WIDENING OF SR-67 FROM STATESBORO TO I-16
 FOUR LANING OF SR 67 FROM I-16 TO BURKHALTER RD

ITEMS FOR JOB 522460-

LINE	ITEM	ALT	UNITS	DESCRIPTION	QUANTITY	PRICE	AMOUNT
0004	206-0002		CY	BORROW EXCAV, INCL MATL 2011 EST + 2% INFLATION = 2012 EST	100000.000	4.08	408000.00
0005	207-0203		CY	FOUND BK FILL MATL, TP II	140000.000	32.81	4594073.40
0015	310-1101		TN	GR AGGR BASE CRS, INCL MATL	111931.000	15.64	1751252.28
0019	402-3100		TN	REC AC 9.5 MM SP, TPI, GP1 OR BL1, INCL BM&HL	27086.000	71.41	1934283.58
0020	402-3190		TN	RECYL AC 19 MM SP, GP 1 OR 2, INC BM&HL	27086.000	72.35	1959776.38
0025	402-3121		TN	RECYL AC 25MM SP, GP1/2, BM&HL	70214.000	68.20	4788602.52
0030	402-1812		TN	RECYL AC LEVELING, INC BM&HL	3864.000	70.44	272205.89
0035	413-1000		GL	BITUM TACK COAT	30700.000	2.52	77397.16
0038	441-6720		LF	CONC CURB & GUTTER/ 6"X30" TP7 2011 EST + 2% INFLATION = 2012 EST	5042.000	11.36	57277.12
0039	441-3999		LF	CONCRETE V GUTTER	800.000	23.82	19058.72
0040	550-1180		LF	STM DR PIPE 18", H 1-10	11000.000	30.36	333984.86
0045	668-1100		EA	CATCH BASIN, GP 1	135.000	2244.46	303002.35
0050	201-1500		LS	CLEARING & GRUBBING - REMOVE TREES AND STUMPS	1.000	3000000.00	3000000.00
0055	441-0748		SY	CONC MEDIAN, 6 IN	208.000	47.09	9796.01
0060	433-1000		SY	REINF CONC APPROACH SLAB	293.000	153.34	44928.70
0080	543-9000		LS	CONSTR OF BRIDGE COMPLETE - \$95 PR SQ FT X 7172 SQ FT	1.000	681340.00	681340.00
0090	500-3800		CY	CL A CONC, INCL REINF STEEL CULVERT EX @ ZETTEROWER CRK	340.000	906.13	308087.21
0095	652-5701		LF	SOLID TRAF STRIPE, 24", WHITE	160.000	9.67	1547.20
0100	652-5803		LF	SOLID TRAF STRIPE, 10 IN, WHIT	1.000	4.52	4.52
0105	653-2501		LM	THERMO SOLID TRAF ST, 5 IN, WH	25.000	1562.57	39064.41
0109	647-1000		LS	TRAF SIGNAL INSTALLATION NO - DENMARK AREA TRAFFIC SIGNAL INSTALL	1.000	175000.00	175000.00
0110	653-2502		LM	THERMO SOLID TRAF ST, 5 IN YE	20.000	1653.37	33067.44
0115	150-0001		LS	TRAFFIC CONTROL, NON-REFUNDABLE DEDUCT	1.000	225000.00	225000.00
0120	153-1300		EA	FIELD ENGINEERS OFFICE TP 3	1.000	67991.83	67991.84
0125	706-1002		AC	TURF ESTABLISHMENT, TP B	66.000	52.00	3432.00
0130	654-1001		EA	RAISED PVMT MARKERS TP 1	500.000	3.09	1547.94
0135	654-1002		EA	RAISED PVMT MARKERS TP 2	500.000	2.72	1362.95
0140	654-1003		EA	RAISED PVMT MARKERS TP 3	1350.000	3.19	4308.46
0145	432-5010		SY	MILL ASPH CONC PVMT, VARB DEPTH	15000.000	2.26	33943.95

STATE HIGHWAY AGENCY

DATE : 08/15/2012

PAGE : 2

JOB ESTIMATE REPORT

0149	641-1100	LF	GUARDRAIL, TP T	200.000	52.61	10522.02
0150	641-1200	LF	GUARDRAIL, TP W	10000.000	15.85	158553.40
0155	641-5001	EA	GUARDRAIL ANCHORAGE, TP 1	12.000	624.09	7489.18
0160	641-5012	EA	GUARDRAIL ANCHORAGE, TP 12	12.000	1780.95	21371.51
0165	550-3318	EA	SAFETY END SECTION 18",STD,4:1	242.000	565.52	136856.73
0170	171-0030	LF	TEMPORARY SILT FENCE, TYPE C	54064.000	3.18	172127.88
0175	171-0010	LF	TEMPORARY SILT FENCE, TYPE A	54064.000	1.73	93713.46
0180	165-0010	LF	MAINT OF TEMP SILT FENCE, TP A	27032.000	0.71	19445.47
0185	165-0030	LF	MAINT OF TEMP SILT FENCE, TP C	27032.000	0.67	18357.70
0190	163-0528	LF	CONSTR AND REM FAB CK DAM -TP C SLT FN	1000.000	4.88	4889.75
0195	163-0527	EA	CNST/REM RIP RAP CKDM,STN P RIPRAP/SN BG	10.000	365.41	3654.11
0200	163-0503	EA	CONSTR AND REMOVE SILT CONTROL GATE,TP 3	10.000	392.86	3928.63
0205	165-0087	EA	MAINT OF SILT CONTROL GATE, TP 3	10.000	82.77	827.72
0210	165-0041	LF	MAINT OF CHECK DAMS - ALL TYPES	1000.000	1.80	1806.31
0215	165-0110	EA	MAINT OF ROCK FILTER DAM	10.000	150.80	1508.00
0220	643-8200	LF	BARRIER FENCE (ORANGE), 4 FT	5000.000	3.26	16346.60
0225	163-0300	EA	CONSTRUCTION EXIT	10.000	1388.68	13886.81
0230	165-0101	EA	MAINT OF CONST EXIT	20.000	449.80	8996.02
0235	636-1020	SF	HWY SGN,TP1MAT,REFL SH TP3	800.000	12.67	10143.03
0240	636-1029	SF	HWY SGN,TP2 MATL,REFL SH TP 3	800.000	15.21	12169.46
0245	636-2080	LF	GALV STEEL POSTS, TP 8	1500.000	7.31	10974.26
0255	210-0200	LM	GRADING PER MILE	10.500	4729.18	49656.41

ITEM TOTAL						21906561.37
INFLATED ITEM TOTAL						21906561.37

TOTALS FOR JOB 522460-						-----
ESTIMATED COST:						21906561.35
CONTINGENCY PERCENT (0.0):						0.00
ESTIMATED TOTAL:						21906561.35

NOTE: The item totals include all alternate items. The estimated totals include only the low cost alternate items.

6. Liquid AC Adjustment Cost Estimate

PROJ. NO.

STP00-0149-01(030)

CALL NO.

P.I. NO.

522460-

DATE

8/15/2012

INDEX (TYPE)

REG. UNLEADED

Aug-12

\$ 3.431

DIESEL

\$ 3.786

LIQUID AC

\$ 596.00

Link to Fuel and AC Index:

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

LIQUID AC ADJUSTMENTS

PA=[((APM-APL)/APL)]xTMTxAPL

Asphalt

Price Adjustment (PA)

2310990

\$

2,310,990.00

Monthly Asphalt Cement Price month placed (APM)

Max. Cap

60%

\$ 953.60

Monthly Asphalt Cement Price month project let (APL)

\$ 596.00

Total Monthly Tonnage of asphalt cement (TMT)

6462.5

ASPHALT	Tons	%AC	AC ton
Leveling	3864	5.0%	193.2
12.5 OGFC		5.0%	0
12.5 mm		5.0%	0
9.5 mm SP	27086	5.0%	1354.3
25 mm SP	70214	5.0%	3510.7
19 mm SP	28086	5.0%	1404.3
	129250		6462.5

BITUMINOUS TACK COAT

Price Adjustment (PA)

\$ 47,059.30

\$

47,059.30

Monthly Asphalt Cement Price month placed (APM)

Max. Cap

60%

\$ 953.60

Monthly Asphalt Cement Price month project let (APL)

\$ 596.00

Total Monthly Tonnage of asphalt cement (TMT)

131.5975971

Bitum Tack

Gals	gals/ton	tons
30639	232.8234	131.597597

PROJ. NO.

STP00-0149-01(030)

CALL NO.

P.I. NO.

522460-

DATE

8/15/2012

BITUMINOUS TACK COAT (surface treatment)

Price Adjustment (PA)						0	\$	-
Monthly Asphalt Cement Price month placed (APM)		Max. Cap	60%	\$	953.60			
Monthly Asphalt Cement Price month project let (APL)				\$	596.00			
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
					0

TOTAL LIQUID AC ADJUSTMENT	\$	2,358,049.30
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PROJ. NO.: STP00-0149-01(030)
P.I. NO. 522460-
DATE: 8/15/2012

Base Construction Cost		\$	21,906,561.35
E & I	5%	\$	1,095,328.07
Construction Contingency		\$	-
Subtotal Construction Cost		\$	<u>23,001,889.42</u>
Liquid AC Adjustment (50 % cap)		\$	<u>2,358,049.30</u>
Total Construction Cost		\$	<u>25,359,938.72</u>

7. Right-of-Way Cost Estimate

**GEORGIA DEPARTMENT OF TRANSPORTATION
PRELIMINARY ROW COST ESTIMATE SUMMARY**

Date: 11/3/2011 Project: STP-0149-01(030)
 Revised: County: Bulloch
 PI: 522460

Description: SR 67 from I -16 to Stateboro Bypass
 Project Termini: Widening and reconstruction of SR 67 from I-16

Existing ROW: Varies
 Required ROW: Varies
 Parcels: 77

Land and Improvements \$5,306,370.00

Proximity Damage	\$0.00
Consequential Damage	\$115,000.00
Cost to Cures	\$0.00
Trade Fixtures	\$0.00
Improvements	\$1,875,000.00

Valuation Services \$105,000.00

Legal Services \$501,975.00

Relocation \$439,000.00

Demolition \$184,000.00

Administrative \$671,500.00

TOTAL ESTIMATED COSTS \$7,207,845.00

TOTAL ESTIMATED COSTS (ROUNDED) \$7,208,000.00

Preparation Credits	Hours	Signature

Prepared By: Lashene Alexander CG#: 286999 (11/03/2011)
 Approved By: Lashene Alexander CG#: 286999 (11/03/2011)

NOTE: No Market Appreciation is included in this Preliminary Cost Estimate

8. Utilities Cost Estimate

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE STP00-0149-01(030), Bulloch County
P.I. # 522460

OFFICE Jesup

DATE 8/17/2012

FROM Stephen Thomas, District Utilities Engineer

TO David Moyer, Project Manager
Attention: Rebecca Thigpen

SUBJECT REVISED UTILITY COST ESTIMATE

As requested by your office, we are furnishing you with an Updated Utility Cost Estimate of each utility with facilities potentially located within the above project limits.

Facility Owner	Non-Reimbursable	Reimbursable	Comments
Bulloch Rural Telephone	\$ 605,000.00	\$ 0.00	
Excelsior EMC	\$ 484,000.00	\$ 551,760.00	
Frontier Communications	\$ 181,500.00	\$ 157,300.00	
Georgia Power - Distribution	\$ 17,600.00	\$ 0.00	
Northland Cablevision	\$ 11,000.00	\$ 0.00	
Totals	\$1,299,100.00	\$ 709,060.00	
Total Reimbursement		\$ 709,060.00	

CC; Angie Robinson, Office of Financial Management;
Terry Brigman, Assistant State Utilities Engineer
District Office File
Utilities Office File

9. VE Implementation Letter

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: STP00-0149-01(030) Bulloch **OFFICE:** Engineering Services
P.I. No.: 522460-
SR 67 Widening **DATE:** May 14, 2012

FROM: Lisa L. Myers, State Project Review Engineer *llm*

TO: Bobby K. Hilliard, P.E. State Program Delivery Engineer
Attn.: David Moyer, Office of Program Delivery

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

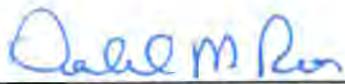
The VE Study for the above project was held January 23-26, 2012. Responses were received on May 10, 2012. Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. The Project Manager shall incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project. Please note, if the implementation of a VE recommendation requires a Design Exception and/or Design Variance, the DE or DV must be requested separately.

ALT #	Description	Potential Savings/ LCC	Implement	Comments
A-1 & A-2	Construct SR 67 as a 5-lane roadway from the I-16 N ramp intersection to the north side of the Griffin-Futch House historic area (Sta. 380+00).	\$397,000	No	The 55 mph speed design for this rural arterial warrants a 44 feet wide median, but it was reduced to 32 feet wide and the only reduction to the five lane undivided sections is to minimize historical impacts along this corridor. The current design which uses a variety of these typical sections was established through several studies and public meetings. District designers have determined that the use of grassed median sections will add long term value to this project.
A-9	Shift the new SB bridge closer to the existing bridge and reduce the median width from 44 feet to 32 feet (Sta. 330+00 /Woodcock Branch).	\$32,000	Yes	This will be done.

A-10	Keep the 5-lane roadway and shift the alignment to the west from Sta. 343+00 to Sta. 370+00 to reduce or eliminate impacts to historic property on the east side.	\$0	No	The current design was developed in consultation and coordination with SHPO and by shifting the alignment west the additional required right of way would adversely affect the Griffin/Futch House/Resource #11. Besides impacting the existing pecan tree grove, this shift would move the road even closer to a historic barn located only 35 feet from the current edge of pavement. These negative effects are not worth implementing when there is no value added documented in the form of cost savings for this idea.
A-10.1	Continue the divided 4-lane roadway and shift the mainline alignment to the west from Sta. 343+00 to Sta. 370+00 to reduce or eliminate impacts to historic property on the east side.	Cost increase (\$54,000)	No	The current design was developed in consultation and coordination with SHPO and by shifting the alignment west the additional required right of way would adversely affect the Griffin/Futch House/Resource #11. Besides impacting the existing pecan tree grove, this shift would move the road even closer to a historic barn located only 35 feet from the current edge of pavement. These negative effects are not worth implementing when there are added costs associated with this idea.
B-10	Construct a V Gutter through the 5-lane section at Sta. 370+00 to Sta. 374+00 in lieu of the standard curb and gutter.	Cost increase (\$3,000)	Yes	This will be done.
I-2	Shift the new SB roadway alignment closer to the existing box culvert location and reduce the median width from 44 feet to 32 feet (Sta. 391+50).	\$30,000	Yes	This will be done.

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

Approved:


Gerald M. Ross, PE, Chief Engineer

Date:

5/15/12

**STP00-0149-01(030) Bulloch County
Implementation of Value Engineering Study Alternatives**

**P.I. No. 522460
Page 3**

LLM/MJS

Attachments

c: Russell McMurry
Bobby Hilliard/Stanley Hill/David Moyer
Brad Saxon/Dennis Odom/Rebecca Thigpen
Paul Liles/Ben Rabun/Bill Duvall
Melissa Harper
Bobby Dollar
Will Murphy/Claude "CR" Jackson
Ken Werho
Matt Sanders

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENTAL CORRESPONDENCE

FILE STP00-0149-01(030), Bulloch County OFFICE Program Delivery
P.I. No. 522460
SR 67 from I-16 to Statesboro Bypass DATE May 7, 2012

FROM ^{S.H.}_{SH} Bobby K. Hilliard, P.E., State Program Delivery Engineer

TO Lisa Myers, State Project Review Engineer
Attention: Matt Sanders

SUBJECT **Value Engineering Study Report Responses**

The above referenced project consists of widening of SR 67 to four travel lanes from I-16 to the Statesboro Bypass.

In the attached letter, District 5 Design, the design for this project, has responded to the Value Engineering Study Report recommendations. Concurrences from the appropriate GDOT Offices are also attached.

The Office of Program Delivery concurs with District 5 Design's implementation recommendations, as well as recommendations provided by the Division of Engineering (Office of Bridge Design).

If there are any questions, please contact David Moyer of this Office at (404) 291-588

^{S.H.}
BKH: SH: DGM
Attachments

cc: Russell McMurray, Director of Engineering

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE STP00-0149-01(030), Bulloch County **DATE** April 27, 2012
PI: 522460
SR 67 Widening

FROM Bradford W. Saxon, P.E., District Preconstruction Engineer

TO Bobby Hilliard, P.E., State Program Delivery Engineer
Attn: David Moyer

SUBJECT VALUE ENGINEERING RESPONSE

The value engineering study for the above referenced project dated February 2, 2012 contained six recommendations requiring responses. Below are our recommendations for these alternatives:

- **Idea A-1 & A-2:** Construct SR 67 as a 5 lane roadway from the I-16 North Ramp intersection to the north side of the Griffin-Futch House historic area (Station 380).

VE Savings: \$397,000

Recommendation: No, will not implement.

District 5 Design Team recommends to keep the sections of roadway split between the 32' divided four lanes and undivided 5 lanes. The 44' divided median is the preferred design for the 55mph speed design for the Rural Minor Arterial throughout the state. The median has already been reduced to 44' to 32', and the reduction to 5 lane sections was due only to historical impacts. The current design was established through several studies, over a period of many years. Because this project has several special instances that reflect back to impacting historical resources and small communities, we have chosen to narrow the typical section only in these locations, as the preferred typical is the divided 4 lane.

Also, AASHTO's Geometric Design of Highways and Streets widely encourages the use of divided medians in new designs. This project is a very practical example of widening with the use of a grassed center median to add long term value to his corridor while providing a desirable driving condition.

- **Idea A-9:** Shift the new SB Bridge closer to the existing bridge and reduce the median width from 44 feet to 32 feet (Station 330/Woodcock Branch).

VE Savings: \$32,000

Recommendation: Yes, will implement.

The office of Bridge Design concurs with this decision. "The bridges can be built with a reduced median width."-Bill Duvall (Office of Bridge Design).

- **Idea A-10:** Keep the 5-lane roadway and shift the alignment to the west between Stations 343-370 to reduce/eliminate impacts to historic property on the east side.

VE Savings: \$0

Recommendation: No, will not implement.

Resource 11/Griffin-Futch House is an agricultural property that contains a historic house, pecan grove, and agricultural fields on the west side of SR 67, as well as a historic barn and agricultural fields on the east side. The project has been designed to minimize impacts to the farm in order to avoid adverse effects to the resource. These effects would involve 4(f) and cause delays in project implementation. Although the current design does impact three of the pecan trees on the west side, it avoids impacting the historic barn which is located 35 feet from the current edge of pavement. This design was developed in consultation with SHPO, and their agreement with the current design and its effect will allow the project to advance. SHPO has in the past been in favor of reworking ditches, etc. for drainage purposes on historical properties. By shifting the alignment to the west as proposed by this study, we run the risk of affecting the REQD RW even further in the north-west quadrant of Resource no. 11, which could further affect the existing pecan tree grove. This would be an immediate adverse effect to the historical resource. There are no proposed savings to implement either the VE studies recommendation, or to keep the design the same. Right of way impacts would change locations, but the cost would remain the same.

- **Idea A-10.1: Alternative to Idea A-10-** Continue the divided 4-lane roadway and shift the mainline alignment to the west between Station 343-370 to reduce/eliminate impacts to historic property on the east side.

VE Savings: (\$54,000)

Recommendation: No, will not implement

Resource 11/Griffin-Futch House is an agricultural property that contains a historic house, pecan grove, and agricultural fields on the west side of SR 67, as well as a historic barn and agricultural fields on the east side. The project has been designed to minimize impacts to the farm in order to avoid adverse effects to the resource. These effects would involve 4(f) and cause delays in project implementation. Although the current design does impact three of the pecan trees on the west side, it avoids impacting the historic barn which is located 35 feet from the current edge of pavement. This design was developed in consultation with SHPO, and their agreement with the current design and its effect will allow the project to advance. SHPO has in the past been in favor of reworking ditches, etc. for drainage purposes on historical properties. By shifting the alignment to the west as proposed by this study, we run the risk of affecting the REQD RW even further in the north-west quadrant of Resource no. 11, which could further affect the existing pecan tree grove. This would be an immediate adverse effect to the historical resource.

Also, this also creates a very short 950' 5-lane section of roadway between the Griffin-Futch House and the 32' median beginning just prior to the culvert extension@ Zetterower Branch. There is no cost savings with this recommendation.

- **Idea B-10:** Use V-Gutter in the 5-lane roadway section at Stations 370-374 in-lieu-of standard Type 7 Curb and Gutter.

VE Savings: (\$3,000)

Recommendation: **Yes, will implement.**

- **Idea I-2:** Shift the new SB roadway alignment closer to the existing box culvert and reduce the median width from 44 feet to 32 feet (Station 391+50)

VE Savings: \$30,000

Recommendation: **Yes, will implement.**

The office of bridge design concurs with this decision. "The bridges can be built with a reduced median width."-Bill Duvall (Office of Bridge Design).

If you have any questions and/or comments, please contact Brad Saxon at (912)427-5715/ bsaxon@dot.ga.gov or Rebecca Thigpen at (912) 427-5794/ rethigpen@dot.ga.gov.

BWS:ADO:RYT

Copy: Bill Duvall, Bridge Office
Atlanta Files
Jesup Files

10. Highway Capacity Study

Phone: _____ Fax: _____
 E-Mail: _____

Two-Way Two-Lane Highway Segment Analysis

Analyst _____
 Agency/Co. _____
 Date Performed 5/2/2011
 Analysis Time Period _____
 Highway _____
 From/To _____
 Jurisdiction _____
 Analysis Year _____
 Description _____

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.88	
Lane width	12.0	ft	% Trucks and buses	6	%
Segment length	0.0	mi	% Recreational vehicles	4	%
Terrain type	Level		% No-passing zones	50	%
Grade: Length		mi	Access points/mi	5	/mi
Up/down		%			

Two-way hourly volume, V	1790	veh/h
Directional split	60 / 40	%

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.994	
Two-way flow rate, (note-1) vp	2046	pc/h
Highest directional split proportion (note-2)	1228	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.3	mi/h
Free-flow speed, FFS	58.8	mi/h
Adjustment for no-passing zones, fnp	0.8	mi/h
Average travel speed, ATS	42.1	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2034	pc/h
Highest directional split proportion (note-2)	1220	
Base percent time-spent-following, BPTSF	83.3	%
Adj.for directional distribution and no-passing zones, fd/np	3.4	
Percent time-spent-following, PTSF	86.7	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.64	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If $vp \geq 3200$ pc/h, terminate analysis-the LOS is F.
2. If highest directional split $vp \geq 1700$ pc/h, terminate analysis-the LOS is F.

TWO-WAY STOP CONTROL SUMMARY

General Information				Site Information			
Analyst	GDOT			Intersection	SR67 AT SR404 EB OFF RAMP		
Agency/Co.	D5-T/OPS			Jurisdiction			
Date Performed	8/21/2012			Analysis Year	2040 BUILD		
Analysis Time Period	AM DHV						
Project Description 522460							
East/West Street: SR404 EB RAMP				North/South Street: SR67			
Intersection Orientation: North-South				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)		200	190	705	265		
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	
Hourly Flow Rate, HFR (veh/h)	0	200	190	705	265	0	
Percent Heavy Vehicles	0	--	--	9	--	--	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	0	1	1	0	
Configuration			TR	L	T		
Upstream Signal		0			0		
Minor Street	Eastbound			Westbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	150	0	40				
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	
Hourly Flow Rate, HFR (veh/h)	150	0	40	0	0	0	
Percent Heavy Vehicles	9	0	9	0	0	0	
Percent Grade (%)		0			0		
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	1	0	0	0	0	
Configuration		LTR					
Delay, Queue Length, and Level of Service							
Approach	Northbound	Southbound	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11
Lane Configuration		L					LTR
v (veh/h)		705					190
C (m) (veh/h)		1131					31
v/c		0.62					6.13
95% queue length		4.57					22.98
Control Delay (s/veh)		13.3					2560
LOS		B					F
Approach Delay (s/veh)	--	--					2560
Approach LOS	--	--					F

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information					
Analyst	GDOT		Intersection	SR67 AT SR404 EB OFF RAMP				
Agency/Co.	D5-T/OPS		Jurisdiction					
Date Performed	8/21/2012		Analysis Year	2040 BUILD				
Analysis Time Period	PM DHV							
Project Description 522460								
East/West Street: SR404 EB RAMP			North/South Street: SR67					
Intersection Orientation: North-South			Study Period (hrs): 0.25					
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)		185	120	390	0			
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	0	185	120	390	0	0		
Percent Heavy Vehicles	0	--	--	9	--	--		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	0	1	1	0		
Configuration			TR	L	T			
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	120	0	30					
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	120	0	30	0	0	0		
Percent Heavy Vehicles	9	0	9	0	0	0		
Percent Grade (%)		0			0			
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	1	0	0	0	0		
Configuration		LTR						
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L					LTR	
v (veh/h)		390					150	
C (m) (veh/h)		1217					207	
v/c		0.32					0.72	
95% queue length		1.40					4.74	
Control Delay (s/veh)		9.3					58.0	
LOS		A					F	
Approach Delay (s/veh)	--	--					58.0	
Approach LOS	--	--					F	

TWO-WAY STOP CONTROL SUMMARY

General Information				Site Information			
Analyst	GDOT			Intersection	SR67 AT SR404 OFF RAMP		
Agency/Co.	D5-T/OPS			Jurisdiction			
Date Performed	8/22/2012			Analysis Year	2040 BUILD		
Analysis Time Period	AM DHV						
Project Description 522460				North/South Street: SR67			
East/West Street: SR404 WB RAMP				Study Period (hrs): 0.25			
Intersection Orientation: North-South							
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	30	320			850	120	
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	
Hourly Flow Rate, HFR (veh/h)	30	320	0	0	850	120	
Percent Heavy Vehicles	9	--	--	0	--	--	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	1	1	0	0	1	0	
Configuration	L	T				TR	
Upstream Signal		0			0		
Minor Street	Eastbound			Westbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)				120	0	390	
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	
Hourly Flow Rate, HFR (veh/h)	0	0	0	120	0	390	
Percent Heavy Vehicles	0	0	0	9	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	0	1	0	
Configuration					LTR		
Delay, Queue Length, and Level of Service							
Approach	Northbound	Southbound	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11
Lane Configuration	L			LTR			
v (veh/h)	30			510			
C (m) (veh/h)	683			404			
v/c	0.04			1.26			
95% queue length	0.14			21.96			
Control Delay (s/veh)	10.5			165.4			
LOS	B			F			
Approach Delay (s/veh)	--	--	165.4				
Approach LOS	--	--	F				

TWO-WAY STOP CONTROL SUMMARY

General Information				Site Information				
Analyst	GDOT			Intersection	SR 67 AT SR 404 WB RAMP			
Agency/Co.	D5-T/OPS			Jurisdiction				
Date Performed	8/22/2012			Analysis Year	2040 BUILD			
Analysis Time Period	PM DHV							
Project Description 522460								
East/West Street: SR404 WB RAMP				North/South Street: SR 67				
Intersection Orientation: North-South				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	40	265			560	150		
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	40	265	0	0	560	150		
Percent Heavy Vehicles	9	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	1	1	0	0	1	0		
Configuration	L	T				TR		
Upstream Signal		0			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				190	0	705		
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	0	0	0	190	0	705		
Percent Heavy Vehicles	0	0	0	9	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	1	0		
Configuration					LTR			
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L			LTR				
v (veh/h)	40			895				
C (m) (veh/h)	858			543				
v/c	0.05			1.65				
95% queue length	0.15			50.63				
Control Delay (s/veh)	9.4			319.3				
LOS	A			F				
Approach Delay (s/veh)	--	--		319.3				
Approach LOS	--	--		F				