ORIGINAL TO GENERAL FILES

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

OFFICE OF DESIGN POLICY & SUPPORT
INTERDEPARTMENTAL CORRESPONDENCE

FILE P.I. # 0000481
STP00-0000-00(481)
Crisp County
GDOT District 4 - Tifton
SR 30/SR 90 from 4 lanes at I-75 to
Midway Road in Cordele
Widening and Improvements

OFFICE Design Policy & Support

DATE September 17, 2014

FROM for Brent Story, State Design Policy Engineer

TO SEE DISTRIBUTION

SUBJECT **APPROVED CONCEPT REPORT**

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

Attachment

DISTRIBUTION:

Glenn Bowman, Director of Engineering
Joe Carpenter, Director of P3/Program Delivery
Genetha Rice-Singleton, Assistant Director of P3/Program Delivery
Albert Shelby, State Program Delivery Engineer
Bobby Hilliard, Program Control Administrator
Cindy VanDyke, State Transportation Planning Administrator
Hiral Patel, State Environmental Administrator
Kathy Zahul, State Traffic Engineer
Angela Robinson, Financial Management Administrator
Lisa Myers, State Project Review Engineer
Charles "Chuck" Hasty, State Materials Engineer
Mike Bolden, State Utilities Engineer
Jeff Fletcher, Statewide Location Bureau Chief
Andy Casey, State Roadway Design Engineer
Attn: Fletcher Miller, Design Group Manager
Joe Sheffield, District Engineer
Brent Thomas, District Preconstruction Engineer
Tim Warren, District Utilities Engineer
Michelle Wright, Project Manager
BOARD MEMBER - 2nd Congressional District

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
PROJECT CONCEPT REPORT

Project Type:	Widening	P.I. Number:	0000481
GDOT District:	4	County:	Crisp
Federal Route Number:	280	State Route Number:	30, 90
	Project Number:	STP00-0000-00(481)	

The proposed project is the widening of SR 30/90/US280 in the City of Cordele from just east of I-75 northbound ramps to SR 30/90/US280 and Midway Road.

Submitted for approval:

C. Andy Cary — State Roadway Design Engineer — DATE 4/9/14

Albert Shelby BMB — State Program Delivery Engineer — DATE 7/9/14

for Michelle Hinzet — GDOT Project Manager — DATE 6-25-14

Recommendation for approval:

Program Control Administrator — DATE

* Hiral Patel /KLP — State Environmental Administrator — DATE 7-30-14

* Kathy Zahul /KLP — State Traffic Engineer — DATE 8-5-14

* Lisa Myers /KLP — Project Review Engineer — DATE 7-22-14

* Jun Birnkammer /KLP — For State Utilities Engineer — DATE 7-21-14

* Joe Sheffield /KLP — District Engineer — DATE 7-25-14

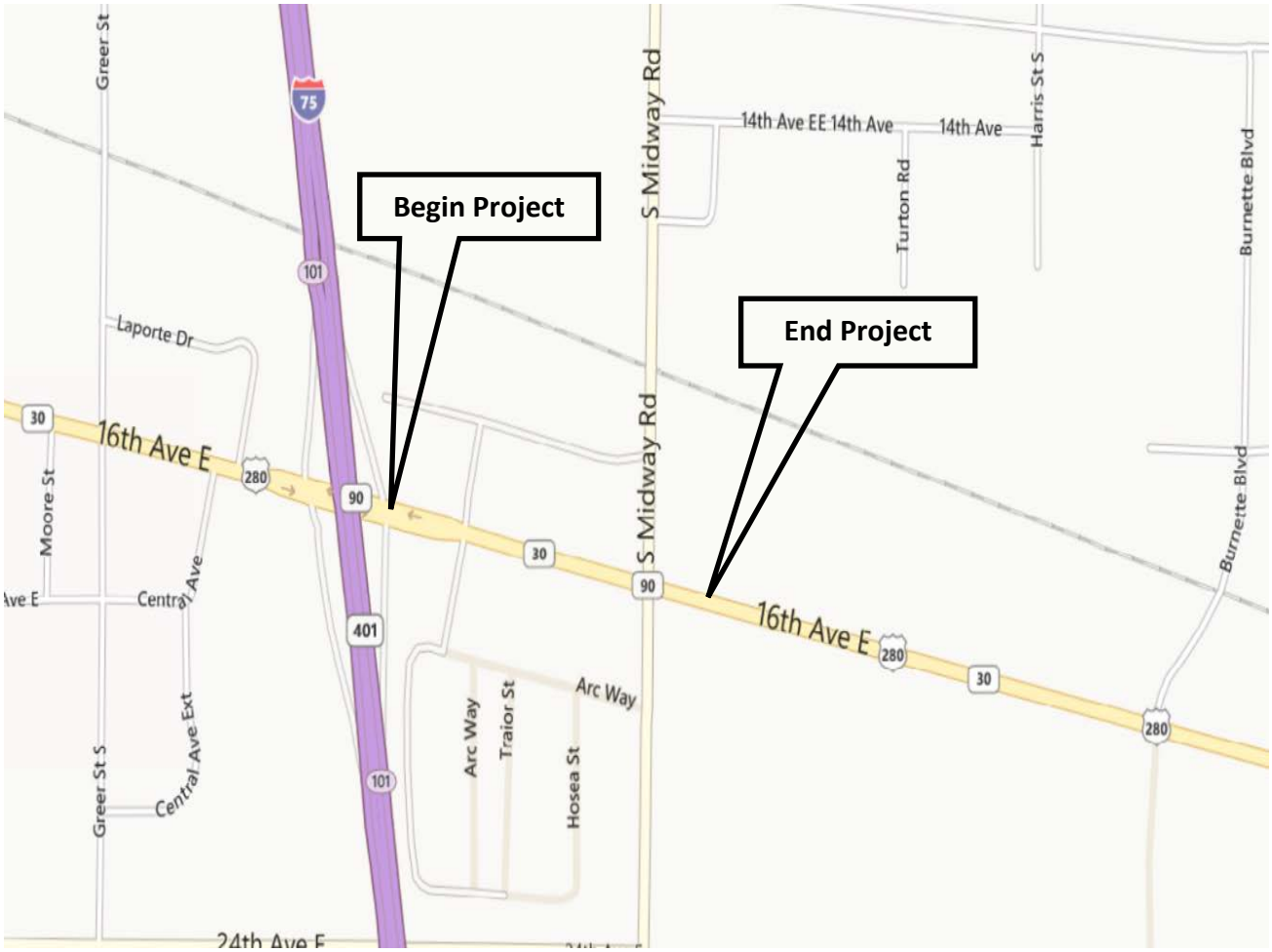
State Transportation Financial Management Administrator — DATE

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 K. Vaughn — State Transportation Planning Administrator — DATE 7-22-14

* Recommendation on file

PROJECT LOCATION MAP



PLANNING AND BACKGROUND

Project Justification Statement: (Prepared by the Office of Planning) The project was originally submitted to the PNRC for inclusion in the Department's work program in 1999. The project was also recommended in the 2010 Southwest Georgia Multi-County Transportation Study. This 2-lane section of SR 30/SR 90 is located in Crisp County (see map) and functionally classified as an urban principal arterial. This section of SR 30/SR 90 is part of the US 280 Governor's Road Improvement Program corridor that runs east-west across the state. This section of SR 30/SR 90 is not listed as a designated bike route in the Statewide Bicycle Plan.

Using approved design traffic for the year 2011, the average daily traffic (ADT) was 8,950, of which 15.5% represents truck traffic between I-75 and Midway Road. The corridor currently operates at a Level of Service (LOS) D. The projected design year (2039) traffic is projected to be 16,200 ADT which indicates a projected LOS E. LOS C is considered an acceptable level-of-service, which is outlined as a performance measure in the current Statewide Transportation Plan.

Analysis of the last available 3 years of crash data (2007- 2009) for this section of SR 30/SR 90 indicated that for two of the three years (2007, 2008) the accident rate and injury rate exceeded the statewide average of similarly functionally classified roadways. The facility did not exceed the statewide average for fatality rate and any of the three years.

The western project limit for PI 0000481 is proposed to tie into the existing four lane facility at the I-75 Northbound exit/entrance ramps. The eastern project limit for PI 0000481 is proposed at Midway Road/SR90, where according to design traffic there is an approximate 39% traffic drop east of the Midway Road/SR 90 intersection, located East of Cordele. SR 90 turns onto Midway Road at this intersection and runs south. A primary reason for the significant drop in traffic at this intersection is that vehicles and trucks utilize Midway Road at the eastern end of the project corridor to access local industries and the Cordele Inland Port.

The proposed project is needed to accommodate current and future traffic volumes and truck movements along this section of SR 30/SR 90 in Crisp County. In addition, the project may lessen crash frequency and severity within the project corridor. Final determination of logical termini is dependent on the Office of Environmental Services coordination with FHWA during the development of the environmental document.

Existing conditions: The existing typical section of SR 30/90/US 280 just east of I-75 to the intersection of Midway Road consists of two travel lanes (one in each direction) with urban and rural shoulders, and a continuous two-way left turn lane.

Other projects in the area: P.I. No. 0011757 – I-75 at SR 30/US 280 - Landscaping

MPO: Not Urban/Not in MPO **TIP #:** N/A

TIA Regional Commission: Not a TIA Project **RC Project ID:** N/A

Congressional District(s): 2

Federal Oversight: ☐ Full Oversight ☒ Exempt ☐ State Funded ☐ Other

Projected Traffic: ADT
Current Year (2011): 12,250 Open Year (2019): 13,250 Design Year (2039): 16,200
Traffic Projections Performed by: GDOT Office of Planning

County: Crisp

Functional Classification (Mainline): Urban Principal Arterial

Complete Streets - Bicycle, Pedestrian, and/or Transit Warrants:

Warrants met: ☐ None ☐ Bicycle ☒ Pedestrian ☐ Transit

Is this a 3R (Resurfacing, Restoration, & Rehabilitation) Project? ☒ No ☐ Yes

Pavement Evaluation and Recommendations

Preliminary Pavement Evaluation Summary Report Required? ☐ No ☒ Yes

Preliminary Pavement Type Selection Report Required? ☐ No ☒ Yes

Feasible Pavement Alternatives: ☐ HMA ☐ PCC ☒ HMA & PCC

Preliminary PES/PTS Reports were received on 5/29/2014.

*Cost Estimate assumes full-depth reconstruction and widening.

DESIGN DATA

Description of the proposed project: The project proposes to widen SR 30/90/US 280 in the City of Cordele in Crisp County, Georgia. The project begins just east of the I-75 northbound ramps and extends eastward to just east of the intersection of SR 30/90/US 280 and Midway Road. SR 30 will be widened to provide two lanes in each direction with a 14-ft flush median up to the intersection of Midway Road, where the outside eastbound lane will become a right turn lane. An upgrade to the existing signalized intersection of SR 30/90/US 280 and Midway Road along with the addition of right turn lanes will be included in the project.

Major Structures: N/A

Mainline Design Features: SR30/90/US280-Urban Principal Arterial

Feature	Existing	Standard*	Proposed
Typical Section			
- **Number of Lanes**	**2**	**N/A**	**4**
- **Lane Width(s)**	**12-ft**	**11-12 ft**	**12-ft**
- **Median Width & Type**	**14-ft flush**	**14-ft flush**	**14-ft flush**
- **Outside Shoulder or Border Area Width**	**10-ft**	**12-ft**	**16-ft**
- **Outside Shoulder Slope**	**4:1**	**2:1**	**2:1 Max/4:1 Min**
- **Inside Shoulder Width**	**N/A**	**N/A**	**N/A**
- **Sidewalks**	**N/A**	**5-ft**	**5-ft**
- **Auxiliary Lanes**	**12-ft LT/RT**	**10-12 ft LT/RT**	**12-ft LT/RT**
- **Bike Lanes**	**N/A**	**N/A**	**N/A**
Posted Speed	**35/45 MPH**		**35 MPH**
Design Speed	**45 MPH**	**45 MPH**	**35 MPH**
Min Horizontal Curve Radius	**N/A**	**N/A**	**N/A**
Maximum Superelevation Rate	**6%**	**6%**	**NC**
Maximum Grade	**1.33%**	**5%**	**2%**
Access Control	**Permitted**	**N/A**	**Permitted**
Design Vehicle	**Not available**	**WB-67**	**WB-67**
Pavement Type	**Concrete/Asphalt**	**Asphalt**	**Concrete/Asphalt**

*According to current GDOT design policy if applicable

Major Intersection: SR 30/90/US 280 at SR 90/Midway Road

County: Crisp

Lighting required: ☐ No ☒ Yes

Existing lighting on SR 30/90/US 280 is proposed to be relocated and/or replaced. A request has been made for the GDOT Office of Utilities and the GDOT Office of Design Policy & Support – Lighting Group to review existing lighting agreements such that Crisp County Power Commission would continue to provide energy and maintenance. Lighting agreements or commitment letters will be provided.

Off-site Detours Anticipated: ☒ No ☐ Undetermined ☐ Yes

Transportation Management Plan [TMP] Required: ☐ No ☒ Yes

If Yes: Project classified as: ☒ Non-Significant ☐ Significant

TMP Components Anticipated: ☒ TTC ☐ TO ☐ PI

Design Exceptions to FHWA/AASHTO controlling criteria anticipated:

FHWA/AASHTO Controlling Criteria	No	Undeter-mined	Yes	Appvl Date (if applicable)
1. Design Speed	☒	☐	☐	
2. Lane Width	☒	☐	☐	
3. Shoulder Width	☒	☐	☐	
4. Bridge Width	☒	☐	☐	
5. Horizontal Alignment	☒	☐	☐	
6. Superelevation	☒	☐	☐	
7. Vertical Alignment	☒	☐	☐	
8. Grade	☒	☐	☐	
9. Stopping Sight Distance	☒	☐	☐	
10. Cross Slope	☒	☐	☐	
11. Vertical Clearance	☒	☐	☐	
12. Lateral Offset to Obstruction	☒	☐	☐	
13. Bridge Structural Capacity	☒	☐	☐	

Design Variances to GDOT Standard Criteria anticipated:

GDOT Standard Criteria	Reviewing Office	No	Undeter-mined	Yes	Appvl Date (if applicable)
1. Access Control/Median Openings	DP&S	☒	☐	☐	
2. Intersection Sight Distance	DP&S	☒	☐	☐	
3. Intersection Skew Angle	DP&S	☒	☐	☐	
4. Lateral Offset to Obstruction	DP&S	☒	☐	☐	
5. Rumble Strips	DP&S	☒	☐	☐	
6. Safety Edge	DP&S	☒	☐	☐	
7. Median Usage	DP&S	☒	☐	☐	
8. Roundabout Illumination Levels	DP&S	☒	☐	☐	
9. Complete Streets	DP&S	☒	☐	☐	
10. ADA & PROWAG	DP&S	☒	☐	☐	
11. GDOT Construction Standards	DP&S	☒	☐	☐	
12. GDOT Drainage Manual	DP&S	☒	☐	☐	
13. GDOT Bridge & Structural Manual	Bridges	☒	☐	☐	

No design variance is anticipated.

VE Study anticipated: ☒ No ☐ Yes ☐ Completed – Date:

UTILITY AND PROPERTY

Temporary State Route needed: ☒ No ☐ Yes ☐ Undetermined

Railroad Involvement: None

Utility Involvements:

- City of Cordele (Water, Sewer, and Gas)
- Crisp County Power Commission (Electric Distribution)
- AT&T formerly Bellsouth (Telecommunications)
- Mediacom (Telecommunications)

SUE Required: ☐ No ☒ Yes ☐ Undetermined

Public Interest Determination Policy and Procedure recommended (Utilities)? ☒ No ☐ Yes

Right-of-Way (ROW): Existing width: 140 ft Proposed width: MAINTAIN EXISTING
Required Right-of-Way anticipated: ☐ None ☒ Yes ☐ Undetermined
Additional ROW may be required at the intersection to accommodate miters and right turn auxiliary lanes.

Easements anticipated: ☐ None ☒ Temporary ☒ Permanent ☒ Utility ☐ Other

Anticipated total number of impacted parcels:		15
Displacements anticipated:	Businesses:	0
	Residences:	0
	Other:	0
	Total Displacements:	0

Location and Design approval: ☐ Not Required ☒ Required

CONTEXT SENSITIVE SOLUTIONS

Issues of Concern: N/A

Context Sensitive Solutions Proposed: N/A

ENVIRONMENTAL & PERMITS

Anticipated Environmental Document:
GEPA: ☐ **NEPA:** ☒ CE ☐ EA/FONSI ☐ EIS

MS4 Permit Compliance – Is the project located in a MS4 area? ☐ No ☒ Yes

One outfall has been identified within the project limits, and is located just east of the I-75 northbound exit ramp. Existing roadway and additional project impervious areas runoff would be treated by enhanced swales beyond the urban shoulder. Approximately 0.34 acres of right of way would be required, affecting 7 commercial properties, if it is determined that an MS4 design is feasible. See Preliminary Hydrology Study.

Environmental Permits/Variances/Commitments/Coordination anticipated:

Permit/ Variance/ Commitment/ Coordination Anticipated	No	Yes	Remarks
1. U.S. Coast Guard Permit	☒	☐	
2. Forest Service/Corps Land	☒	☐	
3. CWA Section 404 Permit	☐	☒	
4. Tennessee Valley Authority Permit	☒	☐	
5. Buffer Variance	☐	☒	
6. Coastal Zone Management Coordination	☒	☐	
7. NPDES	☐	☒	
8. FEMA	☒	☐	
9. Cemetery Permit	☒	☐	
10. Other Permits	☒	☐	
11. Other Commitments	☒	☐	
12. Other Coordination	☒	☐	

Is a PAR required? ☒ No ☐ Yes ☐ Completed – Date:

Environmental Comments and Information:

NEPA/GEPA: A Categorical Exclusion is the anticipated environmental document for this project. The environmental special studies are underway but not yet surveyed. The finding of no other concerns other than History and Air Quality is based on a preliminary desktop review.

Ecology: Prior to ROW authorization, an ecology field survey and report is required. Species surveys (aquatic species and terrestrial plants), Informal Section 7 consultation, and FWCA coordination may also be required depending on the findings of the ecology field survey. Prior to construction letting, a Section 404 Nationwide Permit and possibly a Buffer Variance is required.

History: This project will extend beyond the existing pavement, and will require right of way, permanent and temporary easement; as such, the project will fall under Memorandum of Understanding (MOU) for minor highway projects. In a brief desktop review, a pecan farm at the southeast quadrant of SR 30/US 280 and SR 90/Midway Road was noted. A historic resource survey will need to be performed and coordinated with design, if it is determined that this or any other resources are eligible for the National Register. Regarding effects, typical concerns revolve around the potential disturbance of contributing features to historic properties such as walls, fences, or historic vegetation.

Archeology: No concerns.

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
Is a Carbon Monoxide hotspot analysis required? ☐ No ☒ Yes

The project corridor contains a traffic signal, the design year traffic volumes exceed 10,000 vpd (16,200 ADT) and the level of service is E. Therefore, a CO hotspot analysis is required.
An Air Quality report has been completed, including a study conducted for MSAT.

Noise Effects: This project includes the addition of a through-traffic lane, and therefore, is classified as a Type I project, which requires a full noise analysis. A Noise Effects report has been completed.

Public Involvement: A Public Information Open House meeting is required.

Major stakeholders:

- City of Cordele
- Crisp County
- Cordele - Crisp County Industrial Development Council

CONSTRUCTION

Issues potentially affecting constructability/construction schedule: N/A

Early Completion Incentives recommended for consideration: ☒ No ☐ Yes

COORDINATION, ACTIVITIES, RESPONSIBILITIES, AND COSTS

Initial Concept Meeting*:* 10/2/2013 – An overview of the project background and design proposal were discussed along with a slide show of various driveway access proposals. Recommendations were provided from the District Preconstruction Engineer, District 4 Utilities, the City of Cordele, and Crisp County representatives. See Meeting Minutes.

Concept Meeting: The 10/2/2013 Initial Concept Meeting will serve as the Concept Meeting. See Meeting Minutes.

Project Activity	Party Responsible for Performing Task(s)
Concept Development	GDOT Office of Roadway Design
Design	GDOT Office of Roadway Design
Right-of-Way Acquisition	GDOT District 4 Right of Way
Utility Relocation	Contractor or Utility Owner
Letting to Contract	GDOT Office of Bidding Administration
Construction Supervision	GDOT Contractor
Providing Material Pits	N/A
Providing Detours	N/A
Environmental Studies, Documents, & Permits	GDOT Office of Environmental Services
Environmental Mitigation	N/A
Construction Inspection & Materials Testing	GDOT District 4 Construction

Project Cost Estimate Summary and Funding Responsibilities:

	Breakdown of PE	ROW	Reimbursable Utility	CST*	Environmental Mitigation	Total Cost
Funded By	GDOT	GDOT	GDOT	GDOT	N/A	
$ Amount	$286,773	$1,172,000	$50,000	$2,326,890	N/A	$3,835,663
Date of Estimate	5/6/2009	8/19/2014	8/7/2014	8/25/2014	N/A	

*CST Cost includes: Construction, Engineering & Inspection, Liquid AC Cost Adjustment, and Contingencies.

ALTERNATIVES DISCUSSION

Preferred Alternative: Widen the existing 3-lane section of SR30/90/US280 to a 5-lane section including a 14' flush median, 16' urban shoulders with sidewalks, and improve access control by modifying driveways.			
Estimated Property Impacts:	**15**	**Estimated Total Cost:**	**$3,835,663**
Estimated ROW Cost:	**$1,172,000**	**Estimated CST Time:**	**18 Months**
Rationale: This alternative was selected because the project is included in the Governor's Road Improvement Program (GRIP), which is the state's multi-lane program of roads for economic development purposes. The selected alternative should meet the goals outlined in Project Justification.			

No-Build Alternative: Retain the existing 3-lane section of SR30/90/US280.			
Estimated Property Impacts:	**0**	**Estimated Total Cost:**	**$0**
Estimated ROW Cost:	**$0**	**Estimated CST Time:**	**0**
Rationale: This alternative was not selected because the project is included in the Governor's Road Improvement Program (GRIP), which is the state's multi-lane program of roads for economic development purposes.			

Alternative 1: Retain the existing 3-lane section of SR30/90/US280, build right turn lanes, 16' urban shoulders with sidewalks, and improve access control by modifying driveways.			
Estimated Property Impacts:	**15**	**Estimated Total Cost:**	**$2,251,863**
Estimated ROW Cost:	**$0**	**Estimated CST Time:**	**12 Months**
Rationale: This alternative was not selected because this project is included in the Governor's Road Improvement Program (GRIP), which is the state's multi-lane program of roads for economic development purposes. The Planning study evaluation of the corridor indicates the need for added capacity.			

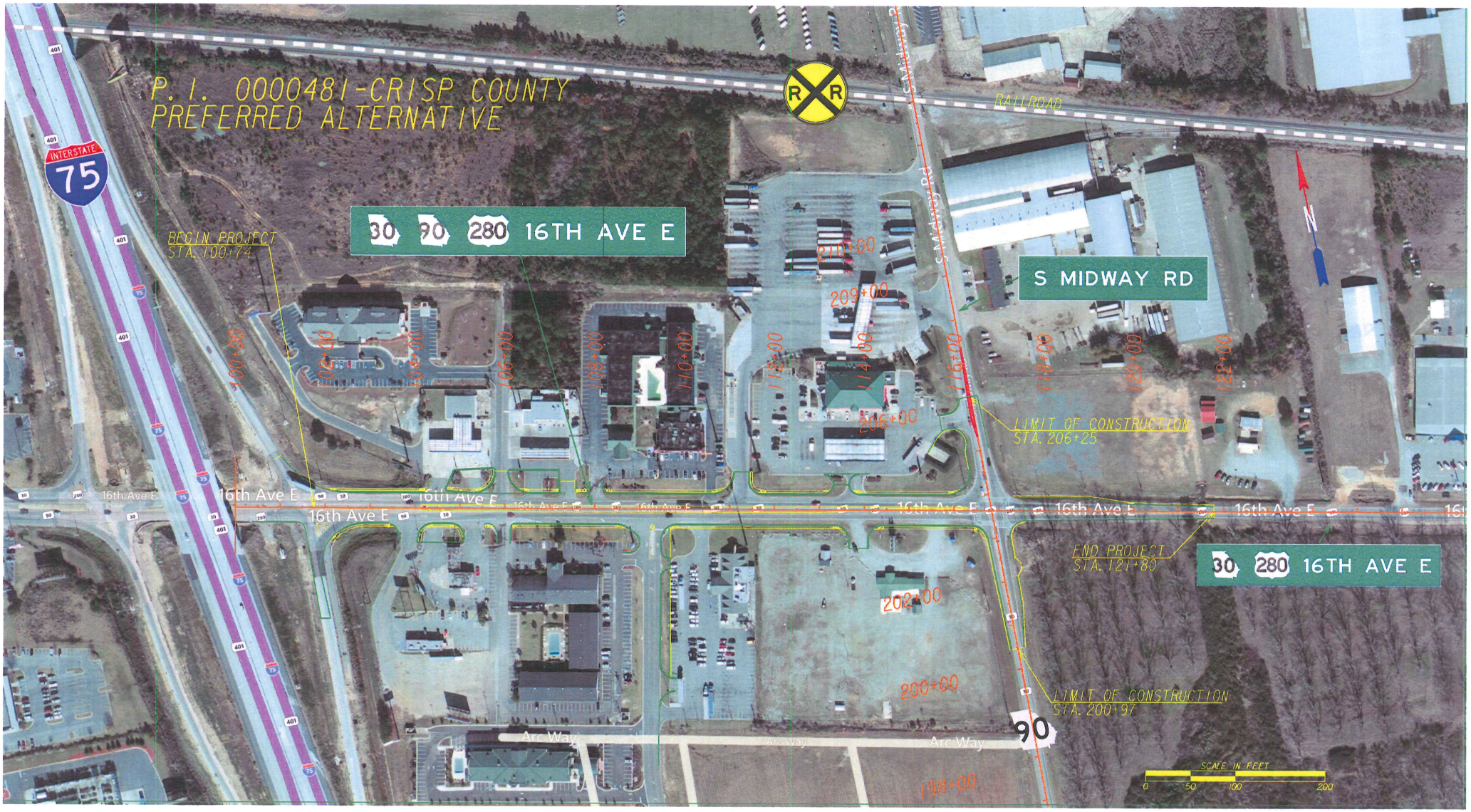
LIST OF ATTACHMENTS/SUPPORTING DATA

1. Concept Layout
2. Typical sections
3. Detailed Cost Estimates:
    a. Construction including Engineering and Inspection
    b. Completed Asphalt Price Adjustment forms
    c. Right-of-Way
    d. Utilities
4. Crash summaries
5. Traffic diagrams
6. Capacity analysis summary
7. Hydrology Study for MS4 Permit
8. Highway Safety Manual Crash Reduction Factor Calculations
9. Minutes of Concept meeting

APPROVALS

Concur: _____ 9/10/14
Director of Engineering Date

Approve: _____ 9/12/14
Chief Engineer Date


P. I. 0000481 - CRISP COUNTY
PREFERRED ALTERNATIVE
INTERSTATE 75
30 90 280 16TH AVE E
BEGIN PROJECT
STA. 100+74
RAILROAD
S MIDWAY RD
LIMIT OF CONSTRUCTION
STA. 206+25
END PROJECT
STA. 121+80
30 280 16TH AVE E
LIMIT OF CONSTRUCTION
STA. 200+97
90
16th Ave E
Arc Way
100+00
102+00
104+00
106+00
108+00
110+00
112+00
114+00
116+00
118+00
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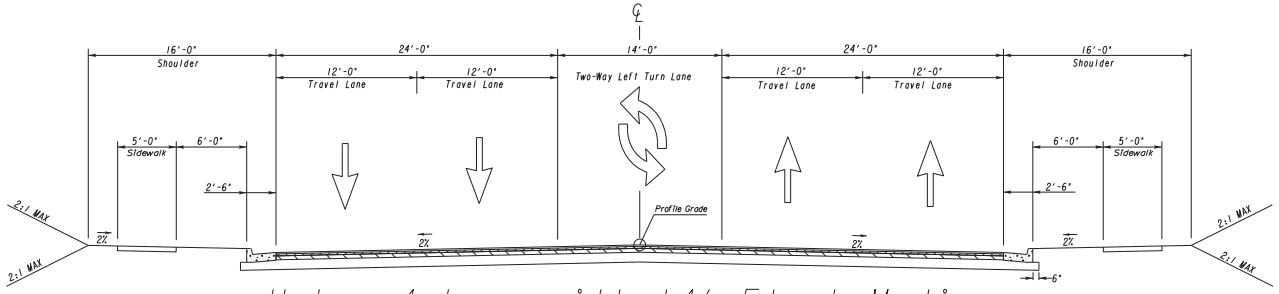
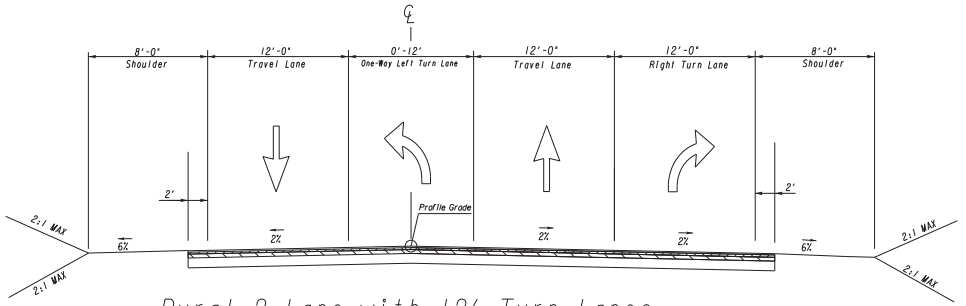


Urban 4-Lane with 14' Flush Median
SR 30 / SR 90



Rural 2-Lane with 12' Turn Lanes
Midway Rd (North) and SR 90 (South)

				REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION
		GEORGIA **DEPARTMENT OF TRANSPORTATION**	NOT TO SCALE		OFFICE: ROADWAY DESIGN **TYPICAL SECTIONS** CRISP COUNTY SR 30 DRAWING No. 05-000

12/14/2012 GPLN

CONTINGENCY SUMMARY

A.	**CONSTRUCTION COST ESTIMATE:**	$ 1,895,757.22	Base Estimate From CES		
B.	**ENGINEERING AND INSPECTION (E & I):**	$ 94,787.86	Base Estimate (A) x	**5**	%
C.	**CONTINGENCY:**	$ 199,054.51	Base Estimate (A) + E & I (B) x	**10**	%
			See % Table in "Risk Based Cost Estimation" Memo		
D.	**TOTAL LIQUID AC ADJUSTMENT:**	$ 137,290.63	Total From Liquid AC Spreadsheet		
E.	**CONSTRUCTION TOTAL:**	$ **2,326,890.22**	(A + B + C + D = E)		

REIMBURSABLE UTILTY COSTS

UTILITY OWNER	REIMBURSABLE COST
TOTAL	$ -

ATTACHMENTS:

Detailed Cost Estimate Printout From TRAQS
Liquid AC Adjustment Spreadsheet

DETAILED COST ESTIMATE

Georgia Department of Transportation

Job: 0000481PRED

JOB NUMBER *0000481PRED* **FED/STATE PROJECT NUMBER** *STP00-0000-00(481)*

SPEC YEAR: *01*

DESCRIPTION: *SR 30/SR 90 FROM 4 LANE @ I-75 TO MIDWAY RD IN CORDELE*

ITEMS FOR JOB 0000481PRED

010 - ROADWAY

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0180	150-1000	1.000	LS	$75,000.00000	TRAFFIC CONTROL - STP00-0000-00(481)	$75,000.00
0185	150-5010	2.000	EA	$7,858.59171	TRAF CTRL,PORTABLE IMPACT ATTN	$15,717.18
0030	210-0100	1.000	LS	$350,000.00000	GRADING COMPLETE - PRELIMINARY ESTIMATE	$350,000.00
0005	310-1101	11660.000	TN	$23.66896	GR AGGR BASE CRS, INCL MATL	$275,980.07
0010	402-3121	3583.000	TN	$75.27576	RECYL AC 25MM SP,GP1/2,BM&HL	$269,713.05
0015	402-3130	1609.000	TN	$70.00000	RECYL AC 12.5MM SP,GP2,BM&HL	$112,630.00
0020	402-3190	2146.000	TN	$82.65418	RECYL AC 19 MM SP,GP 1 OR 2 ,INC BM&HL	$177,375.87
0025	413-1000	2199.000	GL	$3.46652	BITUM TACK COAT	$7,622.88
0035	441-0104	2145.000	SY	$33.03570	CONC SIDEWALK, 4 IN	$70,861.58
0055	441-0748	50.000	SY	$51.76575	CONC MEDIAN, 6 IN	$2,588.29
0045	441-4030	30.000	SY	$54.45024	CONC VALLEY GUTTER, 8 IN	$1,633.51
0040	441-6222	3280.000	LF	$19.02453	CONC CURB & GUTTER/ 8"X30"TP2	$62,400.46
0190	634-1200	12.000	EA	$118.15018	RIGHT OF WAY MARKERS	$1,417.80
					SUBTOTAL FOR ROADWAY:	**$1,422,940.69**

020 - DRAINAGE

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0100	500-3101	3.000	CY	$686.19643	CLASS A CONCRETE	$2,058.59
0060	550-1180	1600.000	LF	$34.48895	STM DR PIPE 18",H 1-10	$55,182.32
0070	550-1240	640.000	LF	$40.04707	STM DR PIPE 24",H 1-10	$25,630.12
0075	550-1360	120.000	LF	$70.31050	STM DR PIPE 36",H 1-10	$8,437.26
0090	550-4224	1.000	EA	$654.21687	FLARED END SECT 24 IN, ST DR	$654.22
0095	550-4236	2.000	EA	$1,107.72890	FLARED END SECT 36 IN, ST DR	$2,215.46
0078	668-1100	12.000	EA	$2,046.28752	CATCH BASIN, GP 1	$24,555.45
0080	668-2100	11.000	EA	$1,865.61230	DROP INLET, GP 1	$20,521.74
0085	668-4300	1.000	EA	$1,902.62485	STORM SEW MANHOLE, TP 1	$1,902.62
					SUBTOTAL FOR DRAINAGE:	**$141,157.78**

DETAILED COST ESTIMATE

Georgia Department of Transportation

Job: 0000481PRED

030 - EROSION CONTROL

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0130	163-0232	1.000	AC	$147.56160	TEMPORARY GRASSING	$147.56
0125	163-0300	2.000	EA	$1,551.79801	CONSTRUCTION EXIT	$3,103.60
0170	163-0528	30.000	LF	$5.76530	CONSTR AND REM FAB CK DAM -TP C SLT FN	$172.96
0150	163-0550	23.000	EA	$187.58494	CONS & REM INLET SEDIMENT TRAP	$4,314.45
0140	165-0030	1500.000	LF	$0.25771	MAINT OF TEMP SILT FENCE, TP C	$386.57
0175	165-0041	30.000	LF	$0.97895	MAINT OF CHECK DAMS - ALL TYPES	$29.37
0145	165-0101	2.000	EA	$449.99540	MAINT OF CONST EXIT	$899.99
0155	165-0105	23.000	EA	$19.91797	MAINT OF INLET SEDIMENT TRAP	$458.11
0135	171-0030	3000.000	LF	$3.63097	TEMPORARY SILT FENCE, TYPE C	$10,892.91
0105	700-6910	2.000	AC	$999.89971	PERMANENT GRASSING	$1,999.80
0110	700-7000	4.000	TN	$99.79533	AGRICULTURAL LIME	$399.18
0115	700-8000	1.000	TN	$548.55147	FERTILIZER MIXED GRADE	$548.55
0120	700-8100	105.000	LB	$3.48500	FERTILIZER NITROGEN CONTENT	$365.93
0215	716-2000	21688.000	SY	$1.30555	EROSION CONTROL MATS, SLOPES	$28,314.77
0225	999-3155	690.000	LF	$49.92967	DRY SWALE EDGE DRAIN	$34,451.47
					SUBTOTAL FOR EROSION CONTROL:	**$86,485.22**

040 - SIGNING & MARKING

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0195	653-1501	5806.000	LF	$0.57547	THERMO SOLID TRAF ST 5 IN, WHI	$3,341.18
0200	653-1502	5806.000	LF	$0.54947	THERMO SOLID TRAF ST, 5 IN YEL	$3,190.22
0210	654-1003	132.000	EA	$3.68769	RAISED PVMT MARKERS TP 3	$486.78
					SUBTOTAL FOR SIGNING & MARKING:	**$7,018.18**

050 - TRAFFIC SIGNAL

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0220	647-1000	1.000	LS	$100,000.00000	TRAF SIGNAL INSTALLATION NO - 1	$100,000.00
					SUBTOTAL FOR TRAFFIC SIGNAL:	**$100,000.00**

060 - LIGHTING

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0265	681-0550	14.000	EA	$4,000.00000	LTG STD, ST, 50 FT MH 15 FT ARM	$56,000.00
0230	681-6366	14.000	EA	$500.00000	LUMINAIRE,TP 3, 400W,HP SODIUM	$7,000.00
0235	682-1406	9315.000	LF	$2.00000	CABLE, TP XHHW, AWG NO 6	$18,630.00
0240	682-1408	350.000	LF	$3.00000	CABLE, TP XHHW, AWG NO 2	$1,050.00
0245	682-6219	2700.000	LF	$6.00000	CONDUIT, NONMETL, TP 2, 1 IN	$16,200.00
0250	682-6222	300.000	LF	$7.00000	CONDUIT, NONMETL, TP 2, 2 IN	$2,100.00
0255	682-9000	1.000	LS	$10,000.00000	MAIN SVC PICK UP POINT	$10,000.00
0260	682-9021	4.000	EA	$1,500.00000	ELEC JCT BX,CONC GRD MOUNTED	$6,000.00
					SUBTOTAL FOR LIGHTING:	**$116,980.00**

COST GROUP FOR JOB 0000481PRED

LINE NUMBER	UNIT	CALCULATION RULE	QUANTITY	PRICE	COST GROUP ID	DESCRIPTION	AMOUNT
00000003	LS	NORM	1.000	$21,175.35	UDEF	USER-DEFINED (LUMP SUM)-SIGNS	$21,175.35
						SUBTOTAL:	**$21,175.35**

TOTALS FOR JOB 0000481PRED

DETAILED COST ESTIMATE

Georgia Department of Transportation

Job: 0000481PRED

ITEMS COST:	$1,874,581.87
COST GROUP COST:	$21,175.35
ESTIMATED COST:	$1,895,757.22
CONTINGENCY PERCENT:	0.00
ENGINEERING AND INSPECTION:	0.05
ESTIMATED COST WITH CONTINGENCY AND E&I:	$1,990,545.08

PROJ. NO.	STP00-0000-00(481)	CALL NO.
P.I. NO.	0000481	
DATE	8/25/2014	

INDEX (TYPE)	**DATE**	**INDEX**
REG. UNLEADED	Aug-14	
DIESEL		
LIQUID AC		$ 608.00

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)				**133845.12**	**$ 133,845.12**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$	972.80	
Monthly Asphalt Cement Price month project let (APL)			$	608.00	
Total Monthly Tonnage of asphalt cement (TMT)				366.9	

ASPHALT	**Tons**	**%AC**	**AC ton**
Leveling		5.0%	0
12.5 OGFC		5.0%	0
12.5 mm	1609	5.0%	80.45
9.5 mm SP		5.0%	0
25 mm SP	3583	5.0%	179.15
19 mm SP	2146	5.0%	107.3
	7338		**366.9**

BITUMINOUS TACK COAT

Price Adjustment (PA)			**$**	**3,445.51**	**$ 3,445.51**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$	972.80	
Monthly Asphalt Cement Price month project let (APL)			$	608.00	
Total Monthly Tonnage of asphalt cement (TMT)				9.444926927	

Bitum Tack Gals	gals/ton	tons
2199	232.8234	9.44492693

BITUMINOUS TACK COAT (surface treatment)

Price Adjustment (PA)				**0**	**$ -**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$	972.80	
Monthly Asphalt Cement Price month project let (APL)			$	608.00	
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	**$ 137,290.63**

GEORGIA DEPARTMENT OF TRANSPORTATION
PRELIMINARY ROW COST ESTIMATE SUMMARY

Date: 8/19/2014
Revised:

Project: STP00-0000-00(481)
County: Crisp
PI: 0000481

Description: Widening
Project Termini: Widening

Existing ROW: Varies
Parcels: 15
Required ROW: Varies

Land and Improvements		$795,000.00
Proximity Damage	*$0.00*	
Consequential Damage	*$0.00*	
Cost to Cures	*$0.00*	
Trade Fixtures	*$0.00*	
Improvements	*$250,000.00*	
Valuation Services		$93,750.00
Legal Services		$122,625.00
Relocation		$30,000.00
Demolition		$0.00
Administrative		$130,000.00
TOTAL ESTIMATED COSTS		$1,171,375.00
TOTAL ESTIMATED COSTS (ROUNDED)		***$1,172,000.00***

Preparation Credits	Hours	Signature

Prepared By: [signature] CG#: 286999 08/19/2014 (DATE)
Approved By: [signature] CG#: 286999 08/19/2014 (DATE)

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

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE

Project No: **STP00-0000-00(481)** OFFICE: **Tifton**
County **CRISP** DATE: **August 7, 2014**
P.I. # **0000481**

Description: ***SR 30/SR 90 FROM 4 LN @ I-75 TO MIDWAY RD IN CORDELE***

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

TO Maria Luchey, Project Manager **(VIA EMAIL)**

SUBJECT ***UPDATED*** **- UTILITY COST ESTIMATE**

A review of utilities located on the above referenced project has been conducted without a design concept.. Listed below is a breakdown of the anticipated reimbursable and non-reimbursable cost.

Utility Owner	Reimbursable	Non-Reimbursable	Estimate Based on
ATT / Bellsouth	$0.00	$43,000.00	Site Visit / Available Drawings
City of Cordele **	$0.00	$250,000.00	Site Visit / Available Drawings
Crisp County Power Commission	$50,000.00	$0.00	Site Visit / Available Drawings
Mediacom	$0.00	$31,000.00	Site Visit / Available Drawings
Total	$50,000.00	$324,000.00	

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

Estimate is based on the best available information at the current stage, unforeseen prior rights information may be provided by the Utility Company at a later date that could cause some non-reimbursable costs to shift to the reimbursable cost column.

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

c: Abdulvahid Munshi, State Utilities Office
Lee Upkins, State Utilities Office
Jun Birnkammer, State Utilities Office
Brent Thomas, District Preconstruction Engineer

ACCIDENT RATE CALCULATION for year(s) 2007,2008,2009

Year	County	Rt Type	Route Num	Low Milelog	High Milelog	ADT	Distance	Vehicle Miles
2007	Crisp	1	003000	11.28	11.47	13,950	0.19	2,651
2007	Crisp	1	003000	11.47	11.50	4,940	0.03	148

Total Vehicle Miles: 2,799	Total Accidents: 11	Accident Rate: 1,077
Average ADT: 12,721	Total Injuries: 4	Injury Rate: 392
Length in Miles: 0.22	Total Fatalities: 0	Fatality Rate: 0.00

NOTE: Rates are per 100 Million Vehicle Miles

Year	County	Rt Type	Route Num	Low Milelog	High Milelog	ADT	Distance	Vehicle Miles
2008	Crisp	1	003000	11.28	11.47	13,950	0.19	2,651
2008	Crisp	1	003000	11.47	11.50	4,940	0.03	148

Total Vehicle Miles: 2,799	Total Accidents: 8	Accident Rate: 783
Average ADT: 12,721	Total Injuries: 3	Injury Rate: 294
Length in Miles: 0.22	Total Fatalities: 0	Fatality Rate: 0.00

NOTE: Rates are per 100 Million Vehicle Miles

Year	County	Rt Type	Route Num	Low Milelog	High Milelog	ADT	Distance	Vehicle Miles
2009	Crisp	1	003000	11.28	11.47	13,532	0.19	2,571
2009	Crisp	1	003000	11.47	15.59	4,792	4.12	19,743
2009	Crisp	1	003000	11.14	11.47	13,532	0.33	4,466
2009	Crisp	1	003000	11.47	11.50	4,792	0.03	144

Total Vehicle Miles: 26,923	Total Accidents: 3	Accident Rate: 31
Average ADT: 5,765	Total Injuries: 0	Injury Rate: 0
Length in Miles: 4.67	Total Fatalities: 0	Fatality Rate: 0.00

NOTE: Rates are per 100 Million Vehicle Miles

Crash Data
(2011-2013)
P.I.0000481, SR30/90

Crisp County on SR 30 from I-75 Ramp to S. Midway Rd/SR90

2011	*Number of Incident*	Injury	Fatality
Rear End	*1*	0	0
Angle	*2*	3	0
Sideswipe-Same direction	*1*	3	0
Total	***4***	**6**	**0**

2012	Number of Incident	Injury	Fatality
Rear End	2	0	0
Angle	3	0	0
Not a Collision with Motor Vehicle	1	0	0
Total	**6**	**0**	**0**

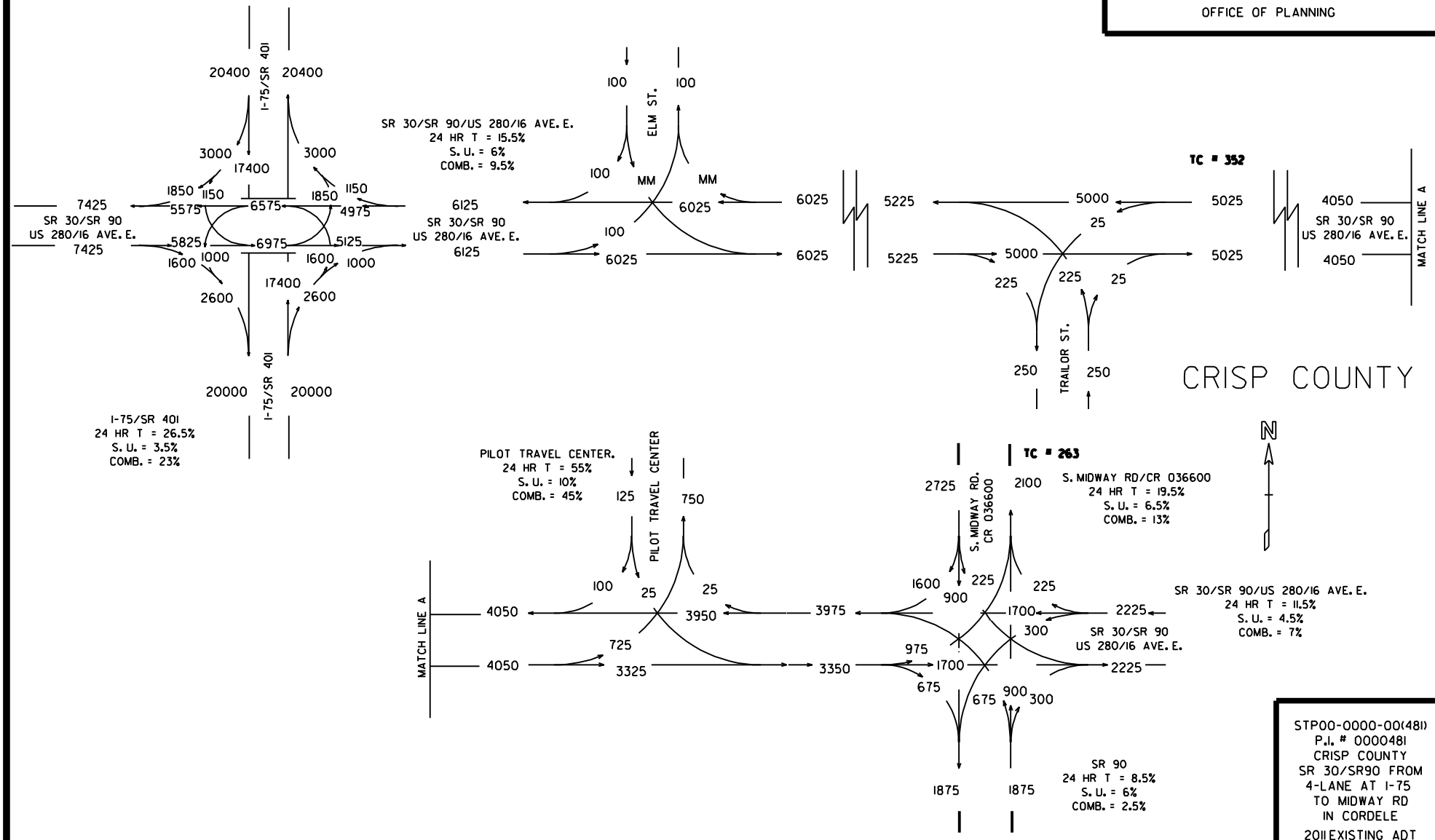
2013	Number of Incident	Injury	Fatality
Rear End	4	0	0
Angle	1	0	0
Sideswipe-Same direction	2	0	0
Not a Collision with Motor Vehicle	1	0	0
Total	**8**	**0**	**0**

*State-wide data compilation not yet available for these years

Attachment

SHEET 1 OF 8

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF PLANNING

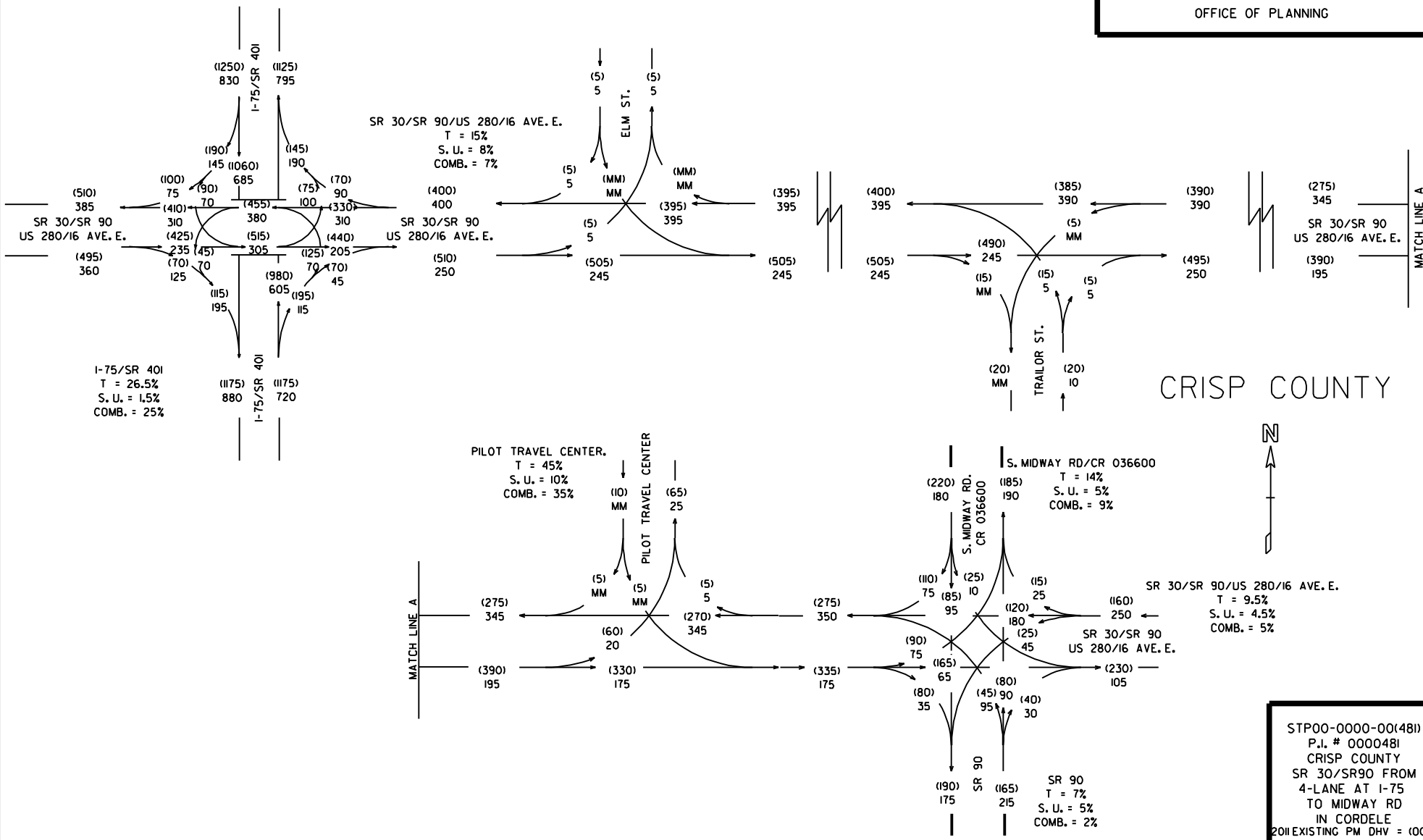


STP00-0000-00(481)
P.I. # 0000481
CRISP COUNTY
SR 30/SR90 FROM
4-LANE AT I-75
TO MIDWAY RD
IN CORDELE
2011 EXISTING ADT

RFN
02/13

SHEET 2 OF 8

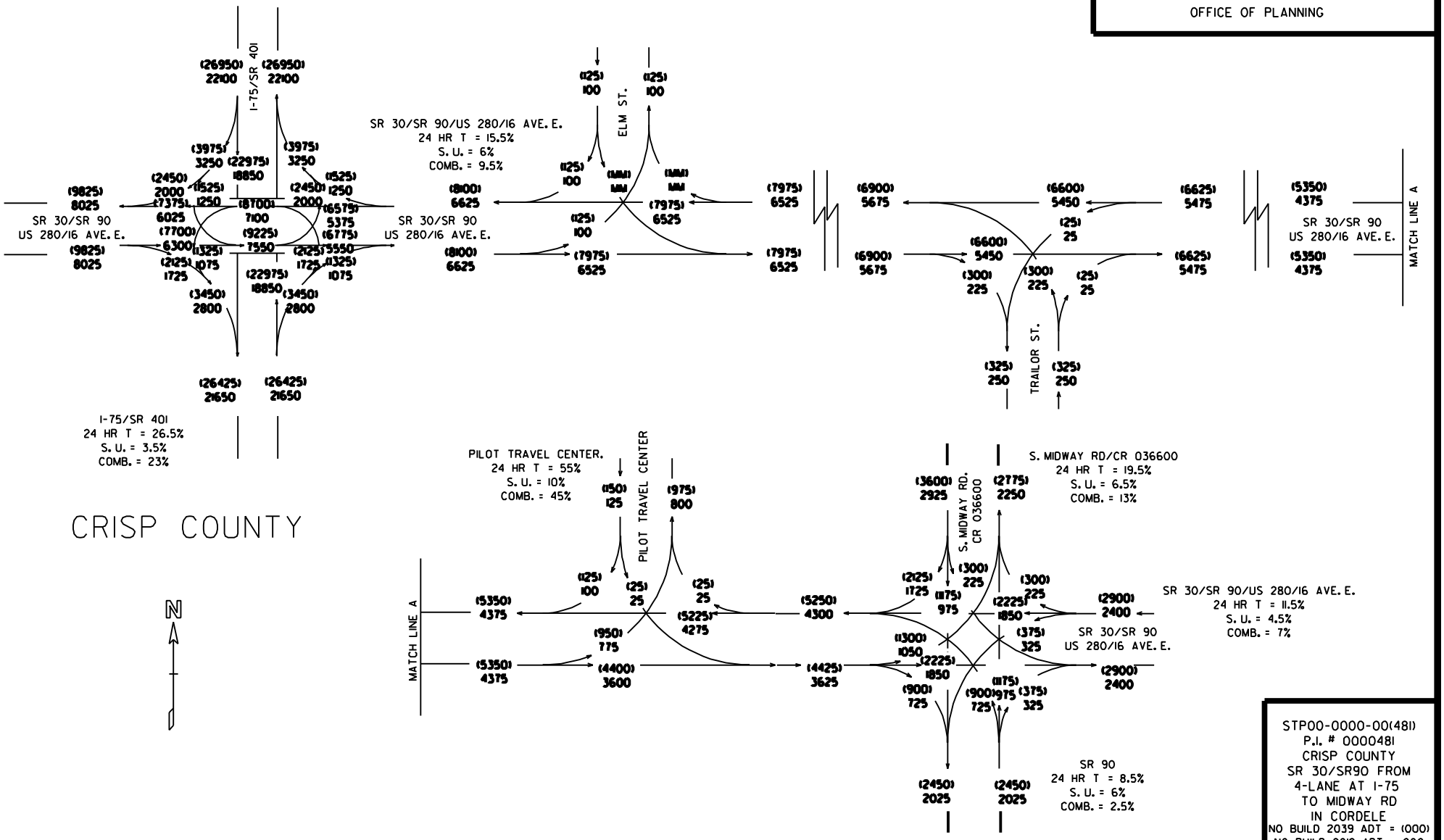
GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF PLANNING



STP00-0000-00(481)
P.I. # 0000481
CRISP COUNTY
SR 30/SR90 FROM
4-LANE AT I-75
TO MIDWAY RD
IN CORDELE
2011 EXISTING PM DHV = (000)
2011 EXISTING AM DHV = 000
RFN
02/13

SHEET 3 OF 8

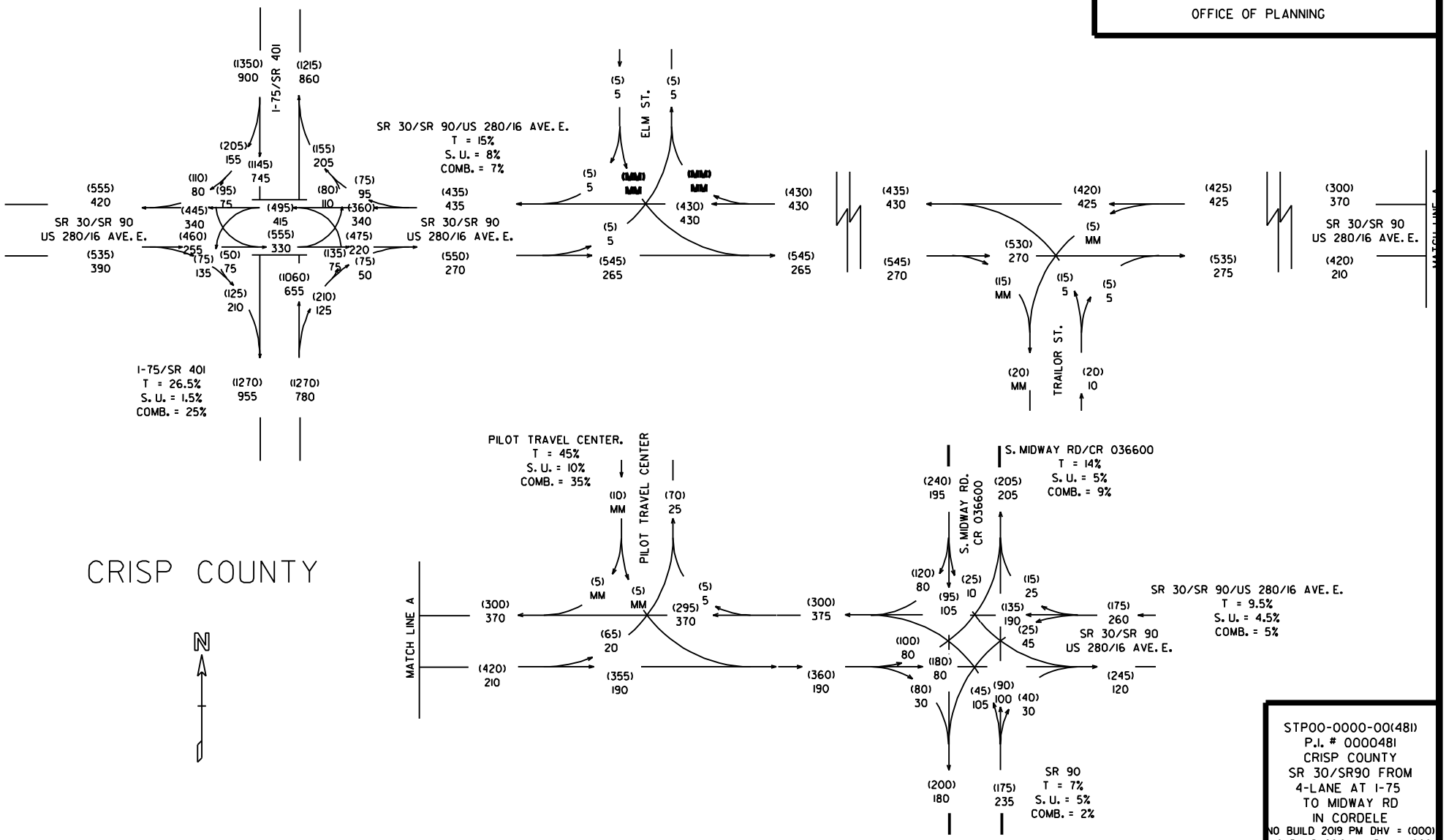
GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF PLANNING



STP00-0000-00(481)
P.I. # 0000481
CRISP COUNTY
SR 30/SR90 FROM
4-LANE AT I-75
TO MIDWAY RD
IN CORDELE
NO BUILD 2039 ADT = (000)
NO BUILD 2019 ADT = 000
RFN
02/13

SHEET 4 OF 8

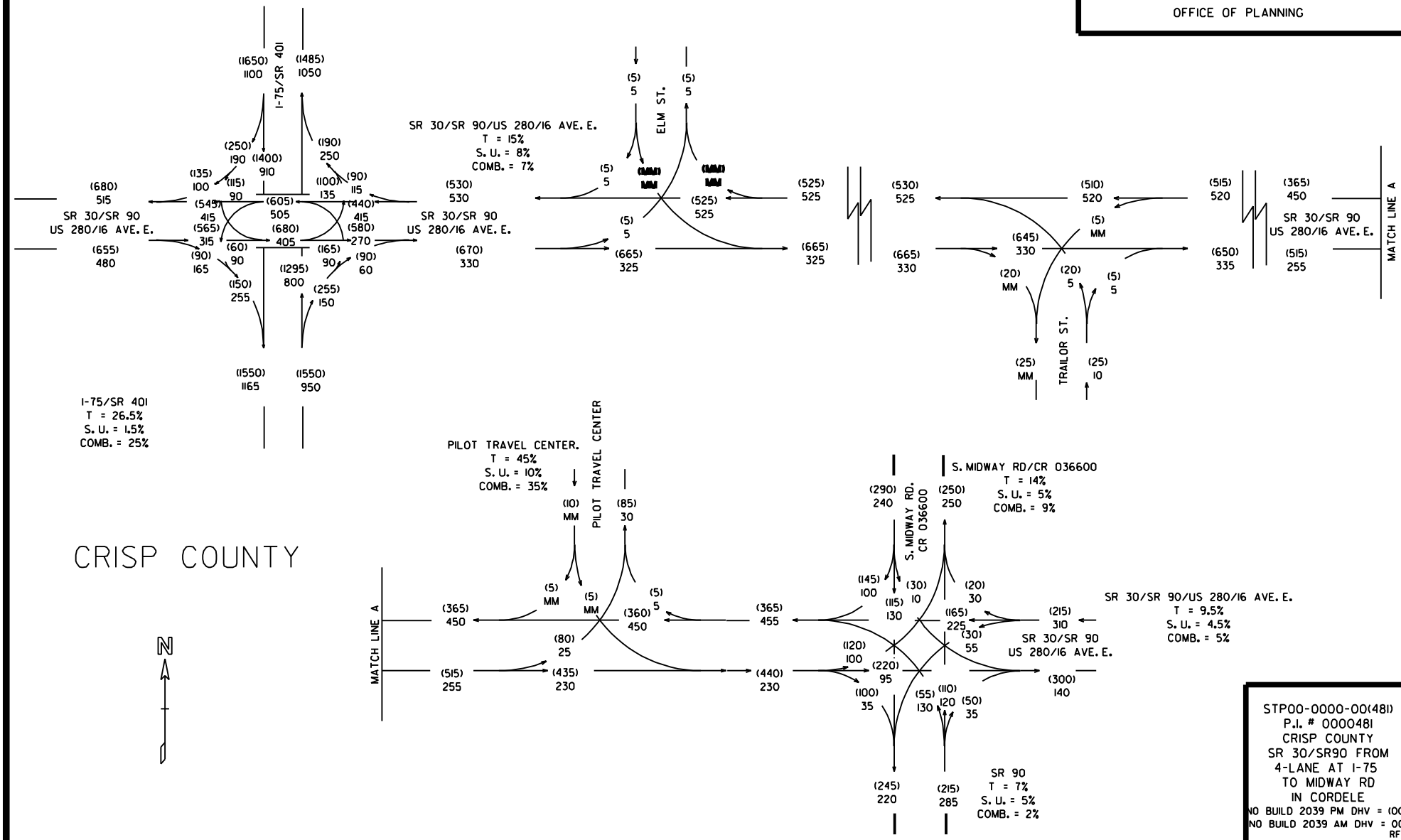
GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF PLANNING



STP00-0000-00(481)
P.I. # 0000481
CRISP COUNTY
SR 30/SR90 FROM
4-LANE AT I-75
TO MIDWAY RD
IN CORDELE
NO BUILD 2019 PM DHV = (000)
NO BUILD 2019 AM DHV = 000
RFN
02/13

GEORGIA DEPARTMENT OF TRANSPORTATION

OFFICE OF PLANNING

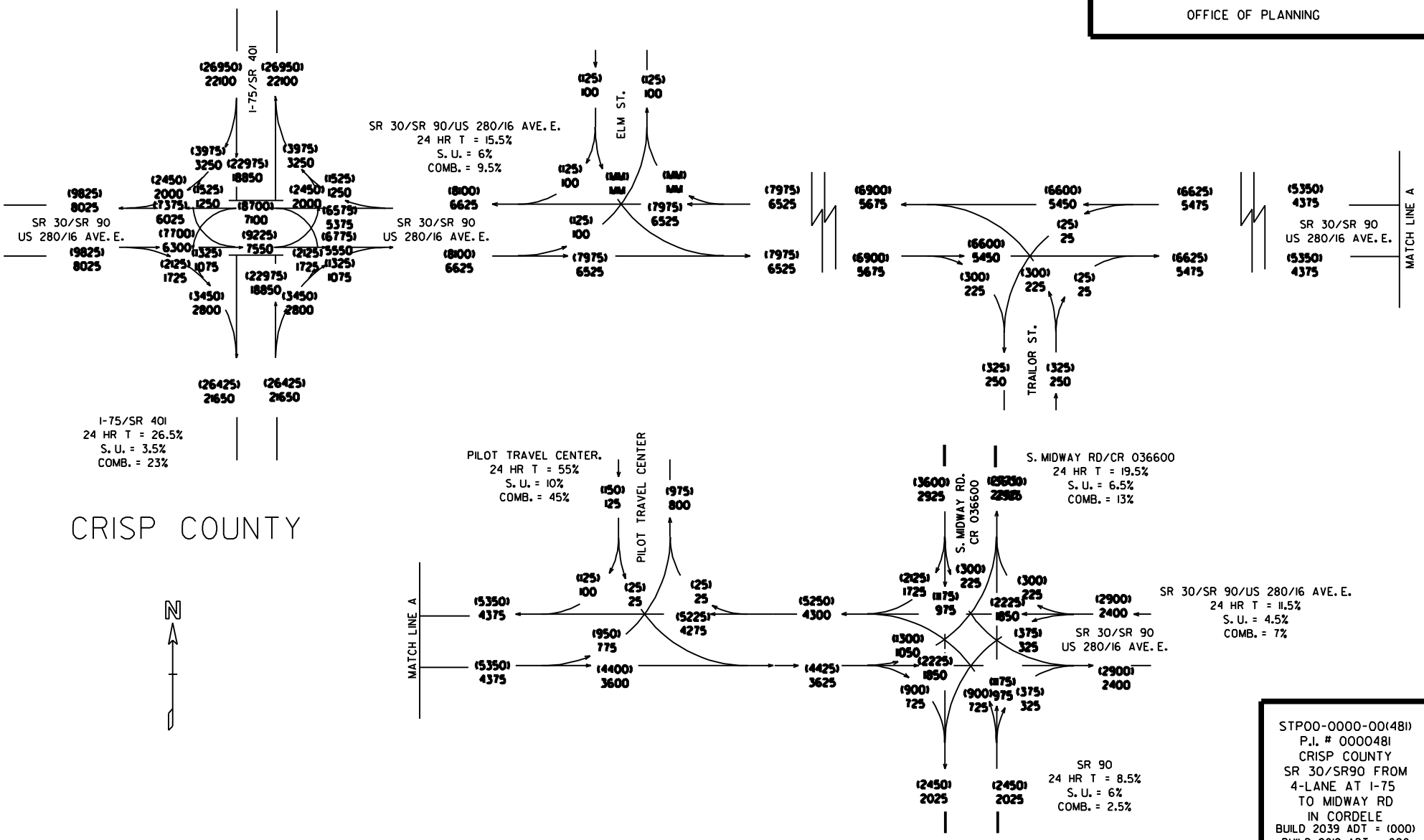


CRISP COUNTY

N

STP00-0000-00(481)
P.I. # 0000481
CRISP COUNTY
SR 30/SR90 FROM
4-LANE AT I-75
TO MIDWAY RD
IN CORDELE
NO BUILD 2039 PM DHV = (000
NO BUILD 2039 AM DHV = 000
RFN
02/13

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF PLANNING



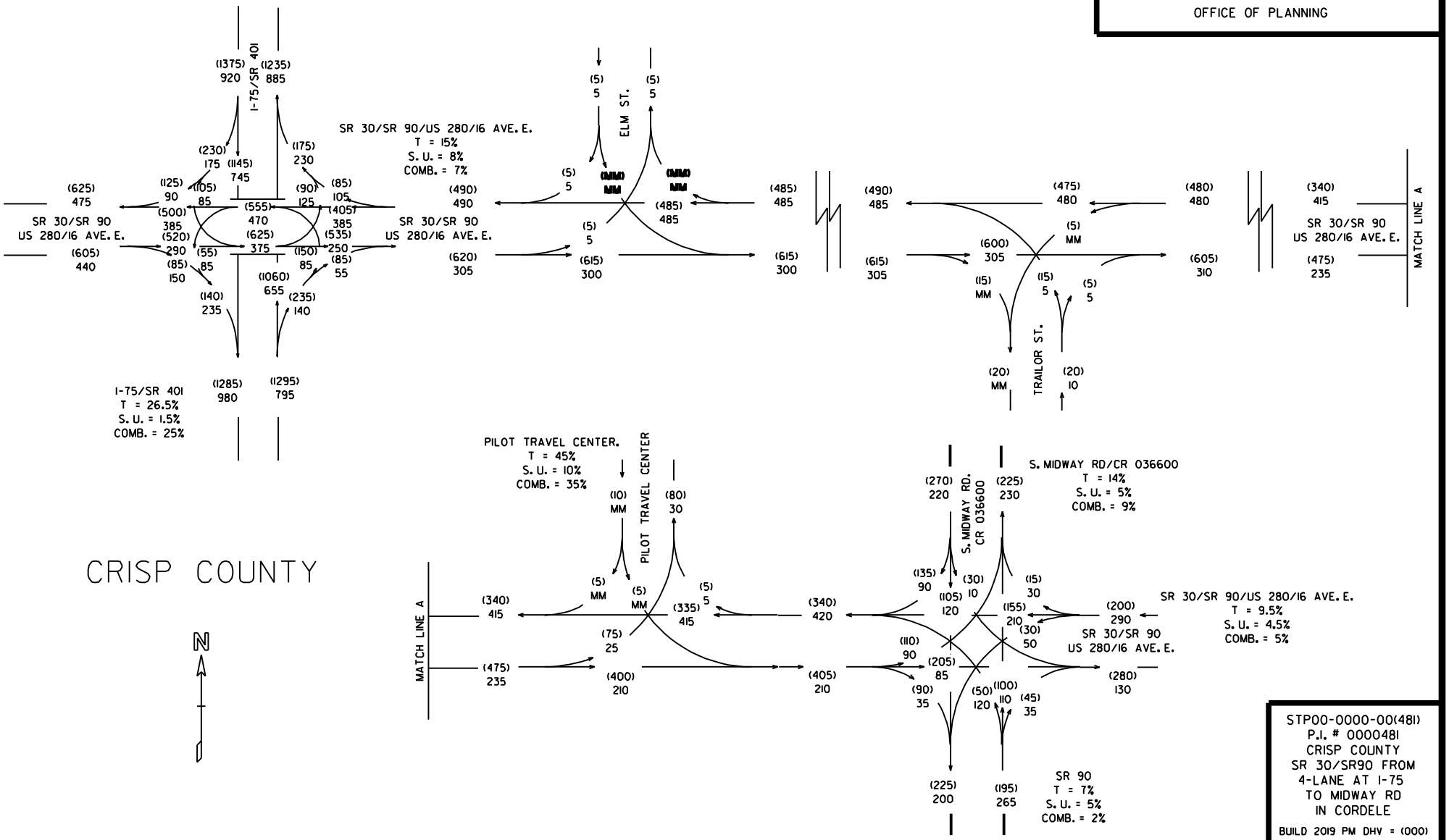
CRISP COUNTY

STP00-0000-00(481)
P.I. # 0000481
CRISP COUNTY
SR 30/SR90 FROM
4-LANE AT I-75
TO MIDWAY RD
IN CORDELE
BUILD 2039 ADT = (000)
BUILD 2019 ADT = 000
RFN
02/13

SHEET 7 OF 8

GEORGIA DEPARTMENT OF TRANSPORTATION

OFFICE OF PLANNING



CRISP COUNTY

STP00-0000-00(481)
P.I. # 0000481
CRISP COUNTY
SR 30/SR90 FROM
4-LANE AT I-75
TO MIDWAY RD
IN CORDELE

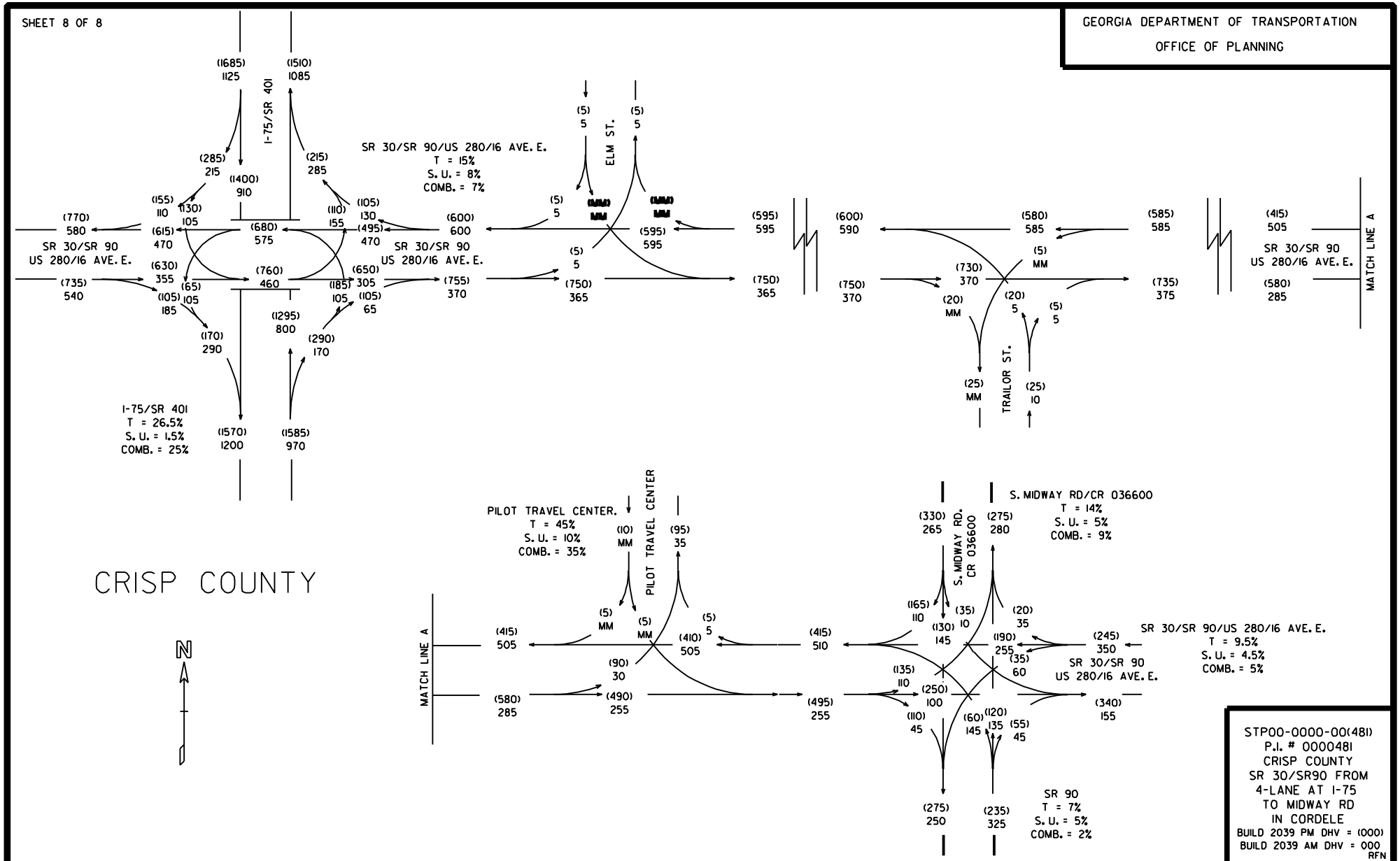
BUILD 2019 PM DHV = (000)
BUILD 2019 AM DHV = 000

RFN
02/13

SHEET 8 OF 8

GEORGIA DEPARTMENT OF TRANSPORTATION

OFFICE OF PLANNING



CRISP COUNTY

N

STP00-0000-00(481)
P.I. # 000048I
CRISP COUNTY
SR 30/SR90 FROM
4-LANE AT I-75
TO MIDWAY RD
IN CORDELE
BUILD 2039 PM DHV = (000)
BUILD 2039 AM DHV = 000
RFN
02/13

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst
Agency/Co.
Date Performed 8/6/2014
Analysis Time Period
Highway
From/To
Jurisdiction
Analysis Year
Description

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.90	
Shoulder width	5.0	ft	% Trucks and buses	15	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	25	/mi

Analysis direction volume, Vd 530 veh/h
Opposing direction volume, Vo 670 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.985		0.985	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	598	pc/h	756	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	52.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	1.3	mi/h
Adj. for access point density,(note-3) fA	6.3	mi/h
Free-flow speed, FFSd	44.5	mi/h
Adjustment for no-passing zones, fnp	1.3	mi/h
Average travel speed, ATSd	32.6	mi/h
Percent Free Flow Speed, PFFS	73.4	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	589	pc/h	744	pc/h
Base percent time-spent-following,(note-4) BPTSFd	59.7	%		
Adjustment for no-passing zones, fnp	29.6			
Percent time-spent-following, PTSFd	72.8	%		

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.36	
Peak 15-min vehicle-miles of travel, VMT15	44	veh-mi
Peak-hour vehicle-miles of travel, VMT60	159	veh-mi
Peak 15-min total travel time, TT15	1.3	veh-h
Capacity from ATS, CdATS	1675	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1675	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	32.6	mi/h
Percent time-spent-following, PTSFd (from above)	72.8	
Level of service, LOSd (from above)	E	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	588.9
Effective width of outside lane, We	22.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	7.93
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Preliminary Hydrology Study for MS4 Permit

Phase II MS4 Area – City of Cordele (Crisp County)

Preliminary Drainage Area (A) = ~ 50 acres (See Preliminary Drainage Area map.)

Rainfall Intensity (i) (Use GDOT Drainage Manual Table 4.6 Albany values for Equation 4.7. Albany is 38 miles southeast of Cordele.)

$n_{50} = 0.7132$, $a_{50} = 83.71$, $b_{50} = 16$

Time of Concentration (t): Assume 10 minutes, which is very conservative.

$i_{50} = a/ (t + b)^n$ = > i = 8.2 in/hr

Runoff Coefficient (C) (Assume Industrial Areas, Light; Flat (0 – 2%); for preliminary estimation, assume the entire area is homogeneous.)

$C_{50} = 0.50 (1.2) = 0.60$

Rational Method Runoff (Q) = C i A, where A < 200 acres

$Q_{50} = (0.60) (8.2) (50) = 246$ cfs (Pre-Developed Runoff)

Project PI 0000481 proposes to add 2 additional travel lanes for approximately 0.25 mile within the main drainage area. The impervious area would increase by 0.73 acre = (2) (12) (0.25) (5280)/43560).

$C_{50} = \{((0.5) (49.27) + (0.95) (0.73)) (1.2)\}/ 50 = 0.61$ (Post-Developed Runoff Coefficient)

$Q_{50} = (0.61) (8.2) (50) = 250$ cfs (Post -Developed Runoff)

For the 50-year storm event, the project would cause an approximate 2% increase in runoff.

Water Quality Volume

Water Quality Volume (WQ_V) (acre-feet) (See Georgia Stormwater Management Manual (GSWMM) Volume 2, Section 2.1.7, p.161)

Volumetric Runoff Coefficient (R_V) = 0.05 + 0.009 (I), where I is percent of impervious cover. I = 100%.

$R_V = 0.05 + 0.009 (100) = 0.95$

A = site area in acres (Off-site existing areas may be excluded from the calculation of WQ_V volume. In other words, only the existing roadway and additional impervious area of the project is considered.)

A = [(0.25) (24 + 14 + 3(1 right turn lane) + 24) + (0.25) (5) (2)] (5280)/43560 = 2.27 acres

$WQ_V = 1.2 R_V A / 12 = 1.2 (0.95) (2.27) / 12 = 0.216$ acre-feet = 9405 cf

Preliminary Hydrology Study for MS4 Permit (continued)

Potential Credits for Site Design Practices

Consideration for the use of Better Site Design Practices (BSDP) # 11 (Reduce Roadway Widths from 12 ft. to 11 ft.) and # 19 (Use Vegetated Swales Instead of Curb and Gutter) may allow the WQ_v volume to be reduced through the subtraction of a site design "credit". Truck volumes (15.5%) may eliminate #11.

Water Quality Peak Flow

Water Quality Volume (Q_{WV}) = 1.2 R_V (inches)

Q_{WV} = 1.2 (0.95) = 1.14 inches

Rainfall (P) = 1.2 inches (for the Water Quality Storm in Georgia)

Curve Number (CN) = $1000 / [10 + 5P + 10Q_{WV} – 10 (Q_{WV}^2 + 1.25Q_{WV}P)^{1/2}]$

CN = $1000 / [10 + 5 (1.2) + 10 (1.14) – 10 ((1.14)^2 + 1.25 (1.14) (1.2))^{1/2}]$ = 99

Simplified SCS Peak Runoff Rate Estimation (GSWMM Volume 2, Section 2.15.7 for Type II Rainfall Distribution (Peaking Factor of 484) in Georgia)

Initial Abstraction (Ia) = 0.2 S (inches), where S = 1000/CN – 10 (GSWMM Equation 2.1.5)

S = 1000 / (99) – 10 = 0.10

Ia = 0.2 (0.10) = 0.02 inches; Ia/P = (0.02) / 1.2 = 0.0167

Time of Concentration (t_C): Assume 10 minutes = 0.167 hour

Unit Peak Discharge (qu) = 825 ($cfs/mi^2/inch$) (GSWMM Volume 2, Figure 2.1.5-6)

Area (A) = 2.27 acres = 0.00355 mi^2

Water Quality Peak Discharge (Qwq) = qu A Q_{WV} (cfs)

Qwq = (825) (0. 00355) (1.14) = 3.34 cfs

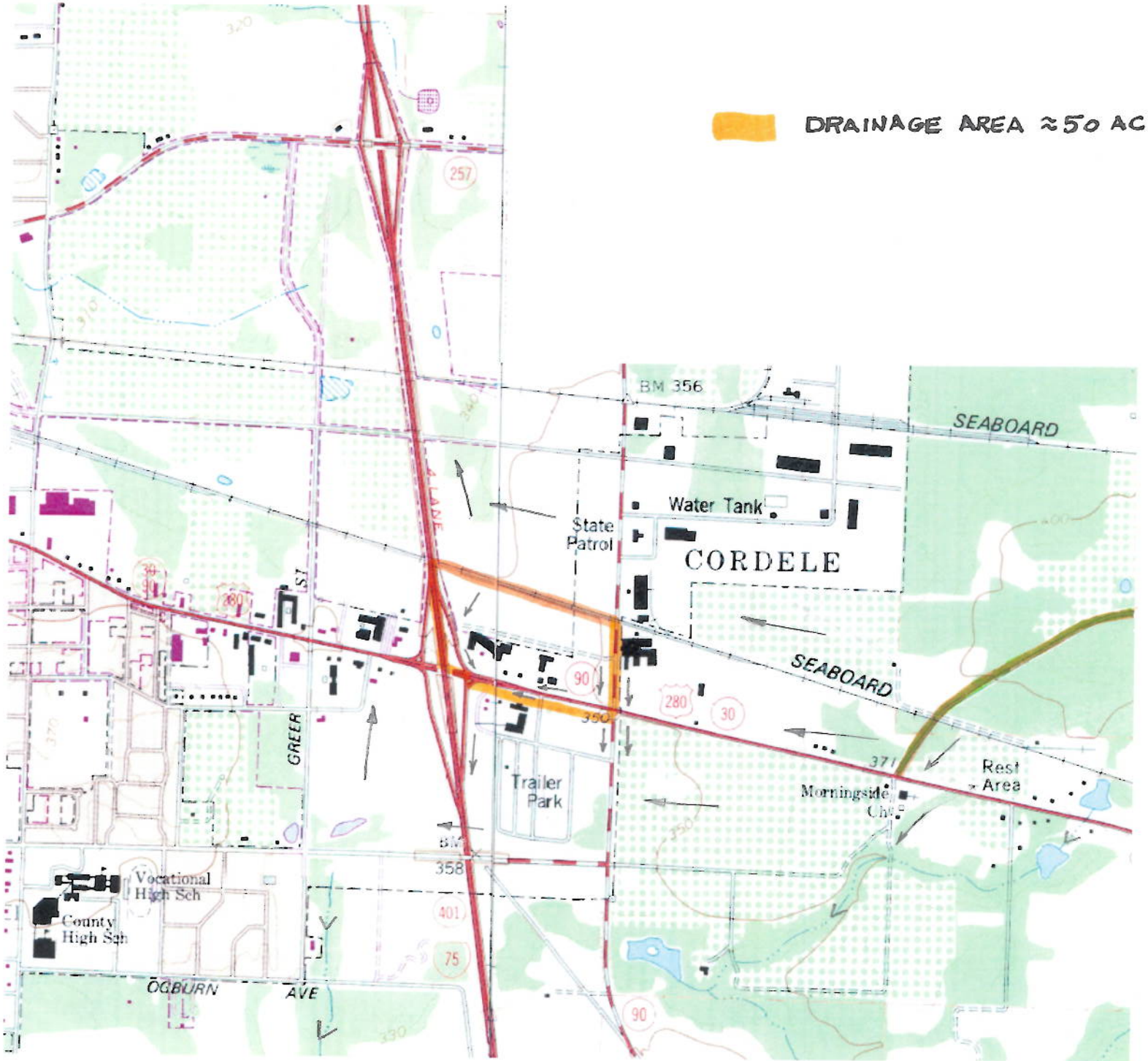
This Preliminary Hydrology Study neglects Water Balance calculations and Downstream Hydrologic assessment. Storage design and detailed hydraulics calculations will be performed during Preliminary design.

One outfall has been identified within the project limits, and is located just east of the I-75 northbound exit ramp. It is proposed to separate the existing roadway and additional project impervious area runoff from the overall drainage area. The separated runoff would be treated by enhanced swales beyond the urban shoulder. Approximately 0.34 acres of right of way would be required, affecting 7 commercial properties. Any additional right of way may cause damages beyond the benefit provided by the BMPs.

PI 0000481 CRISP

PRELIMINARY DRAINAGE AREA ANALYSIS

FCM 7/3/13



CORDELE 669

PENIA 670

HIGHWAY SAFETY MANUAL (HSM) ANALYSIS for CONCEPT REPORTS

This Concept Report includes an HSM predicted average crash frequency analysis for the design year ADT using the Manual's Predictive Method. The HSM uses AADT with the Predictive Method while this analysis uses ADT since AADT is typically not available for GDOT projects. The Predictive Method analysis is based on Safety Performance Functions (SPF) for individual roadway segments and intersections that provide the crash frequency. The HSM often provides information on crash frequency distribution by collision type and severity. Crash severities include Fatality, Incapacitating Injury, Non-Incapacitating Injury, Possible Injury and Property Damage Only. Some SPFs include HSM Crash Modification Factors (CMF) that adjust the SPF crash frequency to account for difference between HSM base conditions that the function is based on and project specific conditions such as geometric design features. The HSM includes local calibration factors to further refine predicted average crash frequency. These local calibration factors have not yet been developed for GDOT.

Two Predictive Method analyses of the proposed Concept design are provided below. One analysis provides the Total predicted average crash frequency which includes all crash severities. The second analysis is for Fatal & Injury severities which includes all crash severities except Property Damage Only.

Project Roadway Segment and Intersection Types analyzed

Roadway Segment				Intersection	
ID #	**Type**	**Sta. Begin**	**Sta. End**	**ID #**	**Type**
1	2-Lane Undivided Urban/Suburban Arterial	100+00	121+07	1	3 Leg Signalized-Urban/Suburban Arterial

The project is located on SR 30/Midway in Crisp County. It is approximately 0.25 miles in length and will be analyzed at the intersection only due to the lack of safety performance factor for TWLTL. The segments and intersections are classified and analyzed by the HSM using the urban/suburban arterial predictive method. The total predicted 0.948 crashes per the HSM proposed condition is crashes per year for 2039 design year. Out of a total of 0.948 crashes per year, 0.366 are fatal and injury crashes.

HSM Predictive Method for Urban/Suburban Arterial Roadway Intersections – Total Crashes

		Urban Intersection Base Crash Frequency – Excluding Vehicle and Pedestrian/Bicycle (total crashes/year)	Left Turn Lanes	Unsignalized – CMF_{2i} = 1.00 Signalized Permissive Left Turn	Right Turn Lanes	Unsignalized – CMF_{4i} = 1.00 Signalized Right Turn On Red	Lighting	Red Light Cameras	Urban Intersection Adjusted Crash frequency – Excluding Vehicle and Pedestrian/Bicycle (total crashes/year)	Vehicle-Pedestrian (total crashes/year)	Vehicle-Bike (total crashes/year)	Total Predicted Average Crash Frequency for Roadway Intersections (total crashes/year)
Intersection ID #	Analysis Condition	$N_{spf\ int}$	CMF_{1i}	CMF_{2i}	CMF_{3i}	CMF_{4i}	CMF_{5i}	CMF_{6i}	N_{bi}	N_{pedi}	N_{bikei}	$N_{predicted\ int}$
1	Proposed	1.205	0.88	0.97	1.00	1.00	1.00	1.00	0.936	0.002	0.010	0.948
	Proposed											
	Proposed											
	Proposed											
	Proposed											
	Proposed											
	Proposed											
Total	Proposed	1.205							0.936	0.002	0.010	0.948

Attachment 8
P.I. Number: 0000481
County: CRISP

State of Georgia
Department of Transportation

HSM Predictive Method for Urban/Suburban Arterial Roadway Intersections – Fatal & Injury Crashes

		Urban Intersection Base Crash Frequency – Excluding Vehicle and Pedestrian/Bicycle (fatal & injury crashes/year)	Left Turn Lanes	Unsignalized – CMF_{2i} = 1.00 Signalized Permissive Left Turn	Right Turn Lanes	Unsignalized – CMF_{4i} = 1.00 Signalized Right Turn On Red	Lighting	Red Light Cameras	Urban Intersection Adjusted Crash frequency – Excluding Vehicle and Pedestrian/Bicycle (fatal & injury crashes/year)	Vehicle-Pedestrian (fatal & injury crashes/year)	Vehicle-Bike (fatal & injury crashes/year)	Total Predicted Average Crash Frequency for Roadway Intersections (fatal & injury crashes/year)
Intersection ID #	Analysis Condition	$N_{spf\ int}$	CMF_{1i}	CMF_{2i}	CMF_{3i}	CMF_{4i}	CMF_{5i}	CMF_{6i}	N_{bi}	N_{pedi}	N_{bikei}	$N_{predicted\ int}$
SR30/Midway Rd	Proposed	0.443	0.80	0.97	1.00	1.00	1.00	1.00	0	0.002	0.010	0.366
Total		0.443							0	0.002	0.010	0.366

Initial Concept Team Meeting Minutes

SR 30/SR 90 from 4-lane @ I-75 to Midway Road in Cordele

STP00-0000-00(481), Crisp

PI No. 0000481

Date: October 2, 2013

Location/Time: GDOT Maintenance Headquarters – Cordele/10:00-11:25 a.m.

Attendees:

- Roger E. Minshew – GDOT, District 4, Area 3
- Wendell A. Davis, Jr. – GDOT, District 4, Area 3
- Randy Rathburn – GDOT District 4 Construction
- Geno Hasty – GDOT District 4 Traffic Operations
- Brent Thomas – GDOT District 4 Preconstruction
- Shane Pridgen – GDOT District 4 Planning & Programming Engineer
- Tim Warren – GDOT District 4 Utilities
- Sean Diehl – GDOT, OES-NEPA Analyst
- Dave Cox – GDOT Planning
- C. Ryan Walker – GDOT Planning
- Fletcher Miller – GDOT Roadway Design
- Tshaya Gilbert – GDOT Roadway Design
- David Acree – GDOT Roadway Design
- Ronnie Musgrove – City of Cordele
- Koby Worley – City of Cordele
- Edward Beach – City of Cordele
- Mike Hughes – City of Cordele
- Randy Morris – Crisp Power
- Tommy Yawn – Crisp Power
- Steve Rentfrow – Crisp Power
- Carl Gamble – Crisp County Public Works
- Kelly Brown – AT&T
- Michelle Wright – GDOT Program Delivery

Minutes By: Michelle Wright

The following items were discussed at the meeting:

- Michelle Wright, GDOT Project Manager, opened the meeting with introductions and an overview of the project. She then turned the meeting over to GDOT Roadway Design.
- GDOT Roadway Design gave the background/history/description of the project and presented a PowerPoint presentation showing the concept, location of the project, each driveway and the proposed modifications to each.

- The meeting then moved onto discussion of the draft concept report. Michelle Wright began discussing the draft concept report. A location sketch description should be added to the location map.
- Michelle Wright mentioned the Project Justification Statement and asked if Ryan Walker had any comments. He stated that the new updated PJS is now complete and includes the most current design traffic.
- Michelle Wright proceeded through the draft concept report.
- Utility involvements were discussed by Tim Warren with each of the utility companies present.
- Michelle Wright asked Tim Warren if he recommends Public Interest Determination Policy and Procedure. He advised no and that it is a minor project.
- SUE was requested for this project (by Tim Warren).
- Michelle Wright asked Sean Diehl for his input on the environmental document on this project. He advised that he is coordinating with FHWA and that a CE is anticipated which should not take more than 24 months to obtain and that there aren't many issues anticipated. No problems anticipated with air and noise. There's a pecan farm that needs to be looked at. He also mentioned a UST Study Request for this project.
- Sean mentioned that a PIOH (maybe more) is needed for Public Involvement.
- Major stakeholders were discussed. GDOT, utility companies, local governments, and Crisp County Cordele Industrial Development Authority (because of the close proximity of the Inland Port) should be added to the list.
- In the PROJECT RESPONSIBILITIES table, change Construction Supervision Responsibility from Contractor to GDOT.
- The issue of whether lighting is required was brought up, and a request was made to extend the lighting throughout the project area.
- Brent Thomas advised that the lighting agreement may need to be redone.
- PI Nos. for other projects in the area should be added to the draft concept report.
- The PI No. for the Gateway Project is needed as well as the plans for this project.
- The project alternatives were discussed.
- Michelle Wright asked if anyone recalled any public meetings on this project. Brent Thomas advised that there was a concept meeting years ago but wasn't sure this project was included.
- Michelle Wright asked the local governments and District Office and General Office representatives if they had any comments/questions.
- Traffic Operations advised that signal upgrades/adjustments should be included in the cost estimates.
- Brent Thomas advised to check with Office of Transportation Data on what type of right-of-way, etc. would be needed on a temporary state route.
- Brent Thomas also advised that the City maintaining the power should be included in the lighting agreement.
- There was a comment about the inland port at Burnett Blvd./Industrial Park. David Acree made a sketch of this location.
- No maintenance issues were noted.
- The meeting was adjourned at 11:25 a.m. There was discussion about this meeting serving as CTM instead of ICTM.