

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

Project Type: Intersection Improvement P.I. Number: 0000315
 GDOT District: District 1 County: Dawson
 Federal Route Number: N/A State Route Number: SR 52 and SR 183
 Project Number: STP00-0000-00(315)

The intersection improvement of SR 52 @ SR 183 will increase safety and efficiency at the existing Y-Intersection by replacing it with a roundabout.

Submitted for approval:

<u><i>[Signature]</i></u> District Preconstruction Engineer, District One	<u>5/19/15</u> Date
<u><i>Albert Shelby</i></u> State Program Delivery Engineer	<u>6/8/15</u> Date
<u><i>Stu Heng</i></u> <i>W/Kun</i> GDOT Project Manager	<u>5/26/15</u> Date

Recommendation for approval:

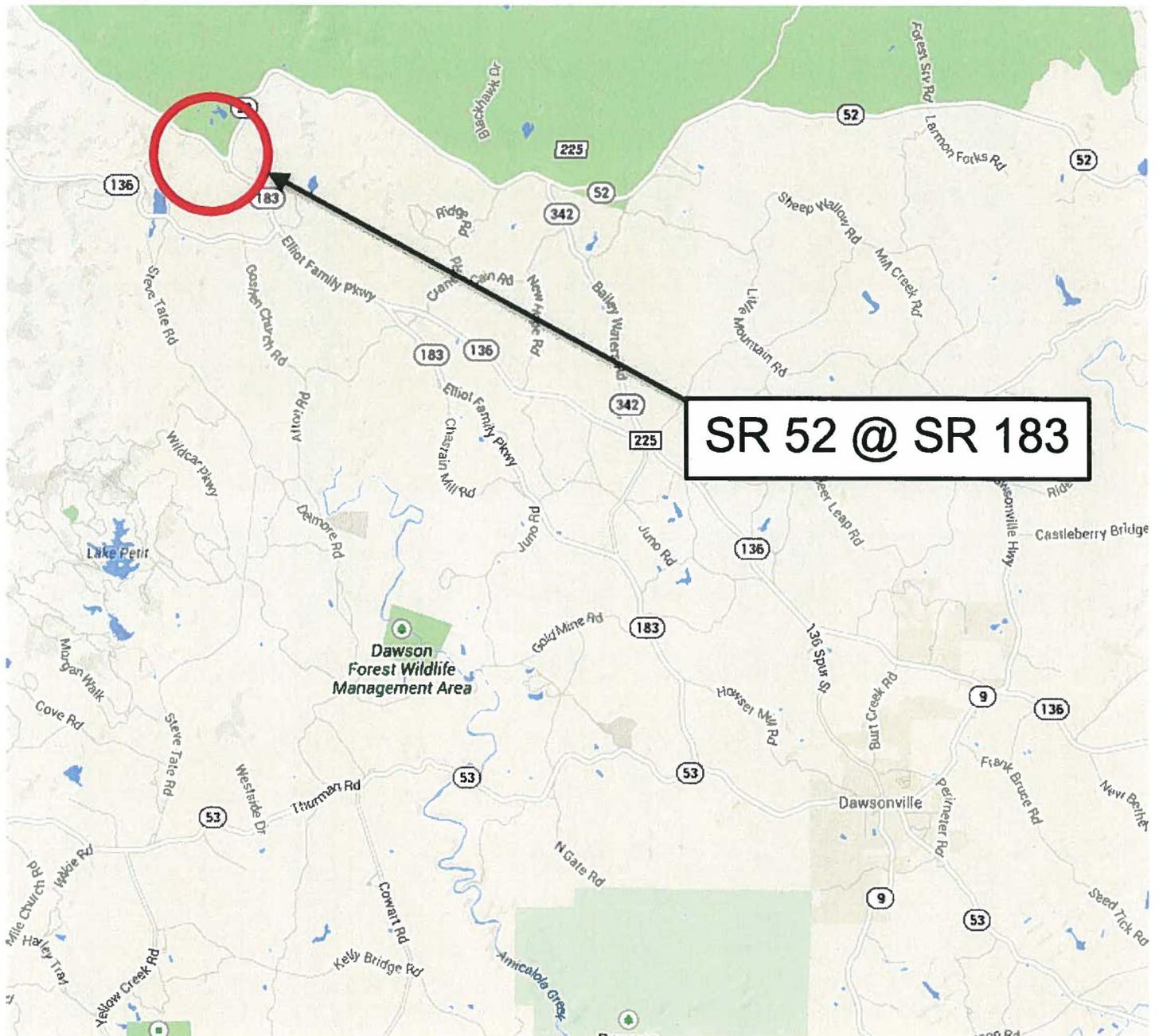
_____ State Environmental Administrator	_____ Date
_____ State Traffic Engineer	_____ Date
* <u>LISA MUERS</u> Project Review Engineer	<u>6/15/2015</u> Date
* <u>JUN BIRNKAMMER</u> State Utilities Engineer	<u>6/18/2015</u> Date
* <u>BRANDON KIRBY</u> District Engineer	<u>6/18/2015</u> Date
* <u>BEN RABUN</u> State Bridge Engineer	<u>6/17/2015</u> Date

- MPO Area: This project is consistent with the MPO adopted Regional Transportation Plan (RTP)/Long Range Transportation Plan (LRTP).
- Rural Area: This project is consistent with the goals outlined in the Statewide Transportation Plan (SWTP) and/or is included in the State Transportation Improvement Program (STIP).

* CYNTHIA L VANDUYKE 6/15/2015
State Transportation Planning Administrator Date

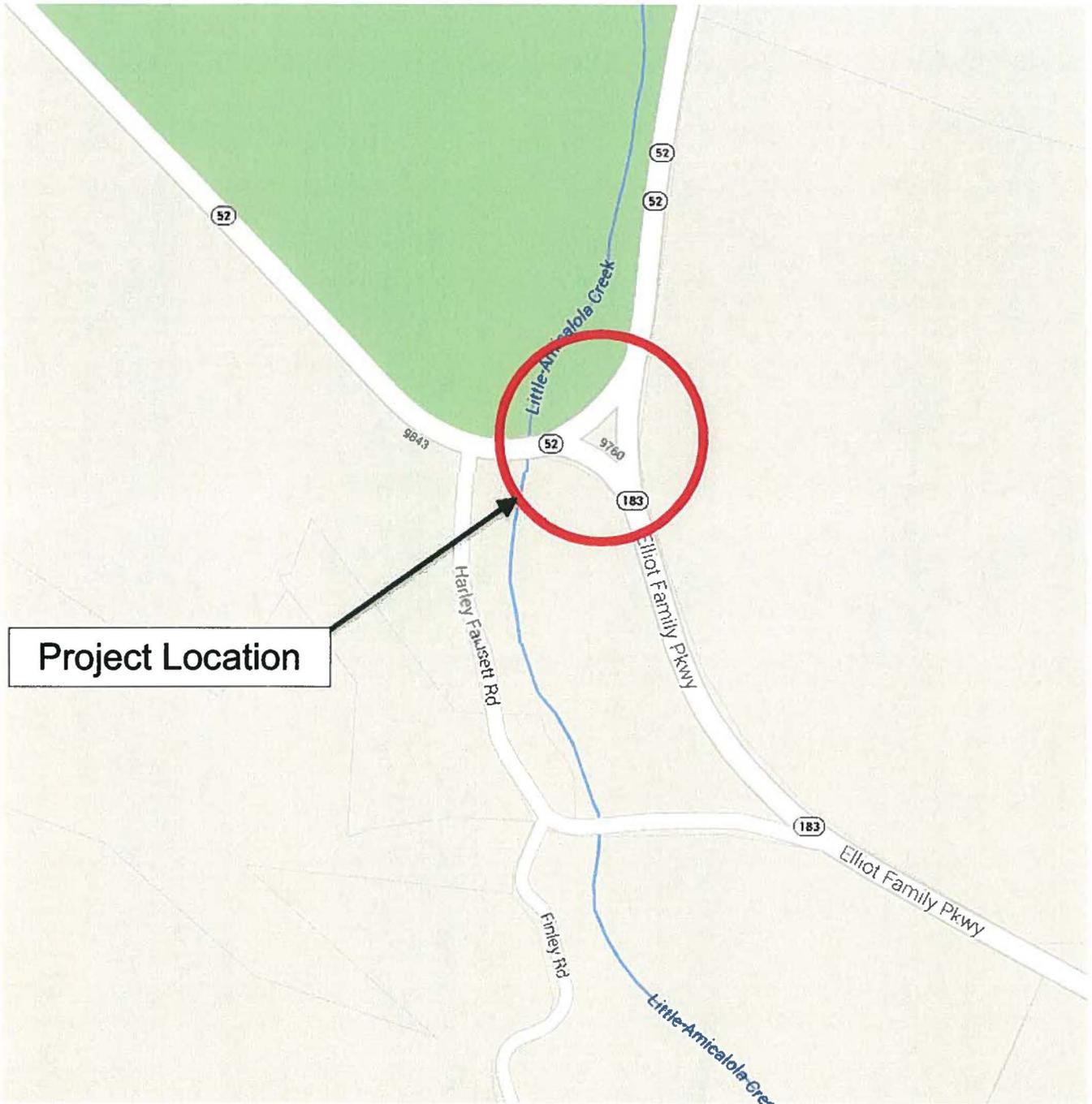
* RECOMMENDATION(S) ON FILE - *[Signature]*

PROJECT LOCATION MAP



Project Location Map

SR 52 at SR 183 Intersection Improvement



P.I.0000315

County: Dawson

Pavement Evaluation and Recommendations

Initial Pavement Evaluation Summary Report Required? No Yes
 Initial Pavement Type Selection Report Required? No Yes
 Feasible Pavement Alternatives: HMA PCC HMA & PCC

DESIGN AND STRUCTURAL

Description of the proposed project: The project is located in Dawson County, 12.5 miles northwest of Dawsonville and approximately 4.2 miles southeast of the Gilmer County line. The .42 mile long intersection improvement will correct issues with the safety of the SR 52 and SR 183 intersection.

Major Structures:

Structure	Existing	Proposed
ID# 085-0003-0	A 72 foot long, 9'x6' triple barrel box culvert is located just west of the Y intersection over the Little Amicalola Creek.	The proposed alternate will extend the existing culvert 27' to the north and 21' to the south.

Mainline Design Features: SR 52/ SR 183 – Rural Major Collector

Feature	Existing	Standard*	Proposed
Typical Section			
- Number of Lanes	2	2	2
- Lane Width(s)	12 ft	12 ft	12 ft/ 20 ft
- Median Width & Type	N/A	N/A	(Varies)
- Outside Shoulder or Border Area Width	10 ft	10 ft	10 ft
- Outside Shoulder Slope	6%	6%	6%/Curb & Gutter
- Inside Shoulder Width	N/A	N/A	N/A
- Sidewalks	N/A	N/A	N/A
- Auxiliary Lanes	N/A	N/A	N/A
- Bike Lanes	N/A	N/A	N/A
Posted Speed	55 MPH		55 MPH
Design Speed	55 MPH	55 MPH	55 MPH/25 MPH
Min Horizontal Curve Radius	297	1060	297
Maximum Superelevation Rate	6%	6%	6%
Maximum Grade	9%	9%	9%
Access Control	PERMITTED	PERMITTED	PERMITTED
Design Vehicle	SU	SU	WB-67
Pavement Type	FLEXIBLE	FLEXIBLE	FLEXIBLE

*According to current GDOT design policy if applicable

Roundabout – SR 52/SR 183

Feature	Existing	Standard*	Proposed
Typical Section			
- Number of Lanes	N/A	1	1
- Lane Width(s)	N/A	16 ft to 20 ft	20-ft
- Inscribed Circle Diameter	N/A	130 ft to 150 ft	130 ft
- Central Island Diameter	N/A	N/A	60 ft
- Inside Shoulder Width/Truck Apron	N/A	Variable-width truck apron w/ header curb	15-ft truck apron w/ header curb
- Outside Shoulder or Border Area Width	N/A	12 ft	10 ft shoulder w/ curb & gutter
- Outside Shoulder Slope	N/A	2%	2%
- Sidewalks/Multi-use Path	N/A	5 ft	N/A
- Auxiliary Lanes	N/A	N/A	N/A
- Bike Lanes	N/A	N/A	N/A
Posted Speed	N/A		N/A
Design Speed	N/A	25 mph	20 mph
Min Horizontal Curve Radius	N/A	N/A	N/A
Maximum Superelevation Rate	N/A	2%	2%
Maximum Grade	N/A	N/A	1.2652%***
Access Control	None	None	None
Design Vehicle	N/A	WB-67**	WB-67**
Pavement Type	Asphaltic Conc.	N/A	Asphaltic Conc.

*According to current GDOT design policy if applicable

**IAW GDOT Design Policy, WB-67 is the design vehicle for roundabout intersections

***See NCHRP Report 672, Chapter 6.8.7.5 (Locating Roundabout on Grades)

Major Interchanges/Intersections: None

Lighting required: No Yes

Dawson County has indicated that they will not sign an agreement due to associated maintenance and lighting costs. A letter has been submitted to the Chief Engineer to determine whether GDOT will fund the lighting and maintenance costs.

Off-site Detours Anticipated: No Yes Undetermined

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	Undetermined	Yes	Appvl Date (if applicable)
1. Design Speed	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Lane Width	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Shoulder Width	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Bridge Width	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Horizontal Alignment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. Superelevation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

P.I.0000315

County: Dawson

7. Vertical Alignment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8. Grade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. Stopping Sight Distance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Cross Slope	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. Vertical Clearance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. Lateral Offset to Obstruction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13. Bridge Structural Capacity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Possible exceptions for Design Speed, Horizontal and Vertical Alignments since the existing conditions/right of way costs may not be standard for existing/design speed limits.

Design Variances to GDOT Standard Criteria anticipated:

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

VE Study anticipated: No Yes Completed – Date:

UTILITY AND PROPERTY

Temporary State Route needed: No Yes Undetermined

Railroad Involvement: N/A

Utility Involvements: Windstream Telephone, and Amicalola EMC

SUE Required: No Yes Undetermined

Public Interest Determination Policy and Procedure recommended? No Yes

Right-of-Way (ROW): Existing width: 100 ft. Proposed width: 200 ft.
 Required Right-of-Way anticipated: None Yes Undetermined
 Easements anticipated: None Temporary Permanent Utility Other

Anticipated total number of impacted parcels: 4
 Displacements anticipated: Businesses: 0
 Residences: 0
 Other: 0
 Total Displacements: 0

P.I.0000315

County: Dawson

Location and Design approval: Not Required Required

Impacts to USACE property anticipated? No Yes Undetermined

ROUNDBABOUTS

Roundabout Lighting Agreement/Commitment Letter received: No Yes

Roundabout Planning Level Assessment: N/A

Roundabout Feasibility Study: The safety benefit of the single lane roundabout will reduce the crash severity of head-on, angle and left turn collisions, as well as the total number of accidents caused by the existing Y-intersection. It is recommended that a single lane roundabout be constructed in place of the existing Y-Intersection. The preferred alternate will improve the safety of the substandard curve and its associated crash history and result in fewer accidents as compared to the No-Build and T-Intersection alternates. It will also have a much less associated cost to construction and right of way as well as a smaller impact on the environmentally sensitive areas than the other improvement alternatives.

Roundabout Peer Review Required: No Yes Completed – 10/24/2014

CONTEXT SENSITIVE SOLUTIONS

Issues of Concern: Approximately 1.8 miles north of the project is Amicalola State Park, and directly adjacent to the SR 52/SR 183 intersection is a potential state forest. Flowing directly to the west of the intersection is the Little Amicalola Creek, which is conveyed by a triple barrel, 9'x6' box culvert. To the southwest of the project is a potential wetland area.

Context Sensitive Solutions Proposed: To avoid building into either the possible state forest or the potential wetland, the preferred alternate, the roundabout, will stay within the existing limits of the SR 52/SR 183 intersection. It will also require minimal comparative earthwork and a small culvert extension rather than constructing a new culvert.

ENVIRONMENTAL & PERMITS

Anticipated Environmental Document:

GEPA: **NEPA:** CE EA/FONSI EIS

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

Environmental Permits/Variations/Commitments/Coordination anticipated:

Permit/ Variance/ Commitment/ Coordination Anticipated	No	Yes	Remarks
1. U.S. Coast Guard Permit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Forest Service/Corps Land	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. CWA Section 404 Permit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4. 33 USC 408 Decision	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Tennessee Valley Authority Permit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. Buffer Variance	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
7. Coastal Zone Management Coordination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8. NPDES	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Greater than 1 acre disturbed
9. FEMA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
10. Cemetery Permit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11. Other Permits	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

County: Dawson

12. Other Commitments	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
13. Other Coordination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Is a PAR required? No Yes Completed – Date:

Environmental Comments and Information:

NEPA/GEPA: The expected level of the document is a Categorical Exclusion.

Ecology: Seasonal Surveys may be required including a strong potential for aquatic survey associated with Little Amicalola Creek. There may be protected species.

History: The possible effects to potential or known historic resources, or need for additional surveys is unknown at this time.

Archeology: The possible effects to potential or known archaeological resources, or need for additional surveys is unknown at this time.

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
- Carbon Monoxide hotspot analysis: Required Not Required TBD

Noise Effects: If the project would result in the closest noise sensitive receptor becoming 50% closer to the travel lane, a full noise analysis is required.

Public Involvement: A PIOH is expected for this project. Additional Public Outreach may be required for Amicalola State Park and a local seasonal business that could be impacted by the project (Burt's Pumpkin Farm).

Major stakeholders: Traveling public, Burt's Pumpkin Farm and Amicalola State Park.

CONSTRUCTION

Issues potentially affecting constructability/construction schedule: An offsite detour would not be feasible due to the length of a detour requiring the use of state routes, so all through traffic would be directed with temporary traffic control during construction.

Offsetting the proposed roundabout from the existing intersection would be easier and quicker to construct, however it would also cause an increase in construction costs, ROW costs and environmental impacts to the environmentally sensitive areas.

Construction should also be coordinated to not occur during the peak season for Burt's Pumpkin Farm due to an increase in traffic.

Early Completion Incentives recommended for consideration: No Yes

COORDINATION, ACTIVITIES, RESPONSIBILITIES, AND COSTS

Initial Concept Meeting: N/A

Concept Meeting: 10/27/2014

The project and its alternatives were presented by District One Design to the attending personnel. After the project presentation, the different alternative were discussed as well as the existing triple barrel box culvert under SR 52. Construction suggested a construction method by using existing roadway as temporary pavement so that an offsite detour would not be necessary. Dawson county requested more information on lighting and landscaping to be able to determine whether a lighting agreement letter could be signed. It was mentioned that during peak season, Burt's Pumpkin Farm would expect significant increases in traffic through

P.I.0000315

County: Dawson

the area. It was decided to move PIOH to January and ROW verified that the land north of the project did not appear to be US Forest Land or belong to Amicalola State Park.

Other coordination to date: N/A

Project Activity	Party Responsible for Performing Task(s)
Concept Development	GDOT District 1 Design
Design	GDOT District 1 Design
Right-of-Way Acquisition	GDOT District 1 ROW
Utility Coordination (Preconstruction)	GDOT District 1
Utility Relocation (Construction)	Utility Companies
Letting to Contract	GDOT
Construction Supervision	GDOT District 1 Construction
Providing Material Pits	Contractor
Providing Detours	N/A
Environmental Studies, Documents, & Permits	GDOT/Contractor
Environmental Mitigation	GDOT
Construction Inspection & Materials Testing	GDOT District 1 Constuction

Project Cost Estimate Summary and Funding Responsibilities:

	Breakdown of PE	ROW	Reimbursable Utility	CST*	Environmental Mitigation	Total Cost
Funded By	GDOT	GDOT	GDOT	GDOT	GDOT	
\$ Amount	\$489,889.48	\$188,000.00	\$0.00	\$1,207,466.70	0	\$1,885,356.18
Date of Estimate	10/1/1999	8/12/2014	9/10/2014	6/1/2015		

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

ALTERNATIVES DISCUSSION

Alternative selection:

Preferred Alternative: Roundabout (Alternate 3)			
Estimated Property Impacts:	4.78 Acres	Estimated Total Cost:	\$1,885,356.18
Estimated ROW Cost:	\$188,000.00	Estimated CST Time:	12 Months
Rationale: This Alternate is preferred because it has the lowest cost, minimal impacts to surrounding area, and has the least amount of required Right of Way.			

No-Build Alternative: Maintain Existing Y-Intersection			
Estimated Property Impacts:	0	Estimated Total Cost:	\$489,889.48 (P.E.)
Estimated ROW Cost:	0	Estimated CST Time:	0

Rationale: No-Build is not a viable alternative because it does not solve the issues and needs presented in the project justification statement.

Alternative 1: T- Intersection to the West (Alternate 1)

Estimated Property Impacts:	7.40 Acres	Estimated Total Cost:	\$3,144,747.73
Estimated ROW Cost:	\$216,000.00	Estimated CST Time:	9 Months

Rationale: While Alternate 1 does solve the issues brought forth by the project justification statement, it is not practical in that the cost associated with earthwork, right of way and a new culvert make it much more expensive than the preferred alternate

Alternative 2: T-Intersection to the North (Alternate 2)

Estimated Property Impacts:	9.27 Acres	Estimated Total Cost:	\$2,877,248.08
Estimated ROW Cost:	\$236,000.00	Estimated CST Time:	9 Months

Rationale: Alternate 2 does solve the problems of the existing intersection, however it is not feasible in that it has a high amount of earth work, more required right of way, need of a new culvert and it is encroaching on a potential state forest/wetland.

Comments: N/A

LIST OF ATTACHMENTS/SUPPORTING DATA

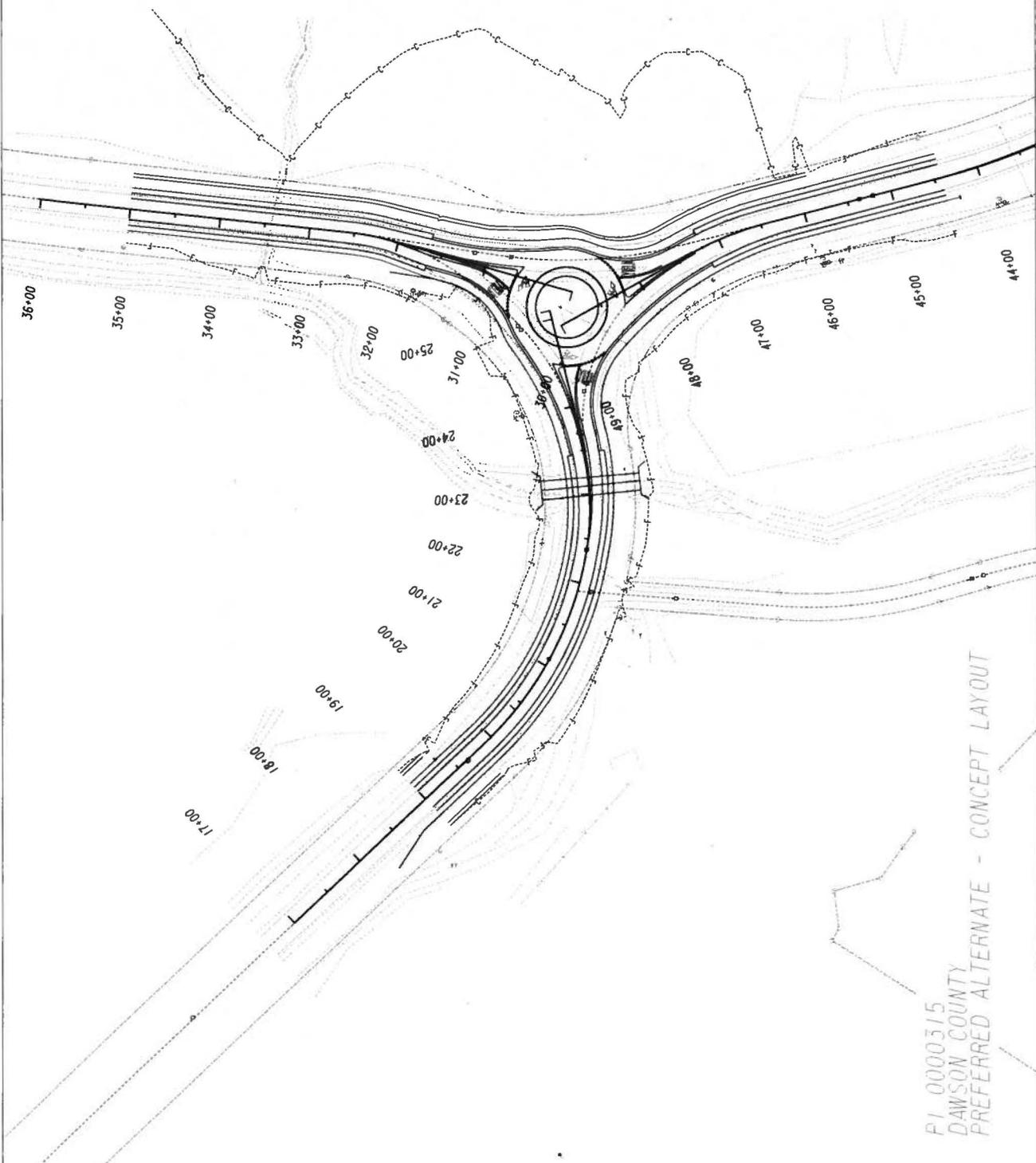
1. Concept Layout
2. Typical sections
3. Detailed Cost Estimates:
 - a. Construction including Engineering and Inspection
 - b. Cost Estimate Revision Spreadsheet
 - c. Completed Fuel & Asphalt Price Adjustment forms
 - d. Right-of-Way
 - e. Utilities
4. Crash summaries
5. Traffic diagrams
6. Capacity analysis summary
7. Summary of TE Study and/or Signal Warrant Analysis
8. Flexible Pavement Pavement Design Selection
9. Roundabout Data
 - a. Roundabout feasibility study
 - b. Lighting commitment letter (In Progress)
 - c. Dawson County lighting agreement communication
 - d. Peer Review and responses
 - e. Sight Distance Diagrams
 - f. Fastest Path Diagrams
 - g. Turning Path Diagrams
10. S I & A Report
11. Highway Safety Manual Crash Reduction Factor Calculations
12. Project Justification Statement
13. Minutes of Concept meetings

APPROVALS

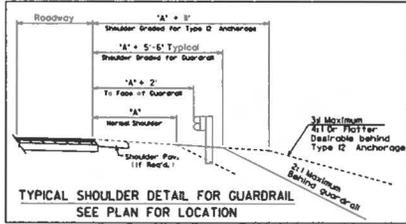
Concur: *John Bonner*
Director of Engineering

Approve: *Margaret B. Pike*
Chief Engineer

7-30-15
Date



P1 0000315
DAWSON COUNTY
PREFERRED ALTERNATE - CONCEPT LAYOUT



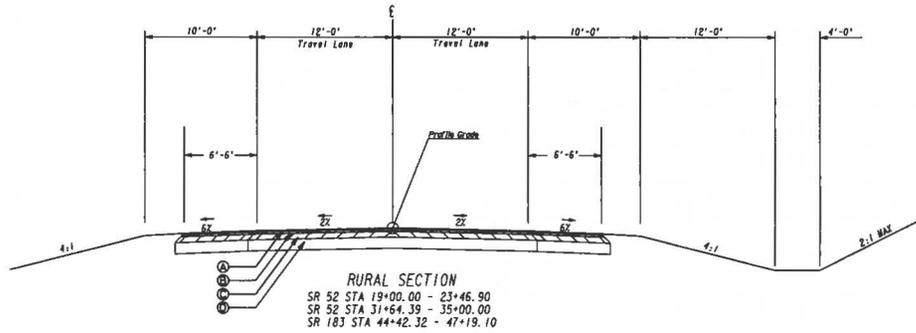
S.E. RATE	shoulder slope
2.0% OR 3.0%	4.0%
4.0% OR 5.0%	2.0%
6.0% OR 7.0%	1.0%
8.0% +	0.0%

SLOPE : SEE ROADWAY PLANS FOR SUPERELEVATION RATES AND TRANSITIONS.

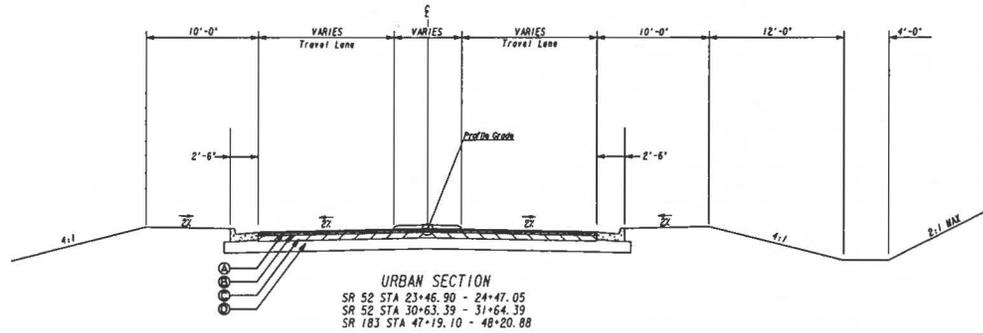
NOTE: FOR METHOD OF SUPERELEVATION SEE CONSTR PLAN & PROFILE SHEETS-CURVE DATA. LOCATIONS OF NORMAL CROWN & FULL S.E. NOTED ON CONSTR CENTERLINE.

* SEE PLAN SHEETS.

SHOULDER MAY BE GRADED AWAY FROM ROADWAY TO FACILITATE THE SLOPE TIE TO EXISTING GROUND.

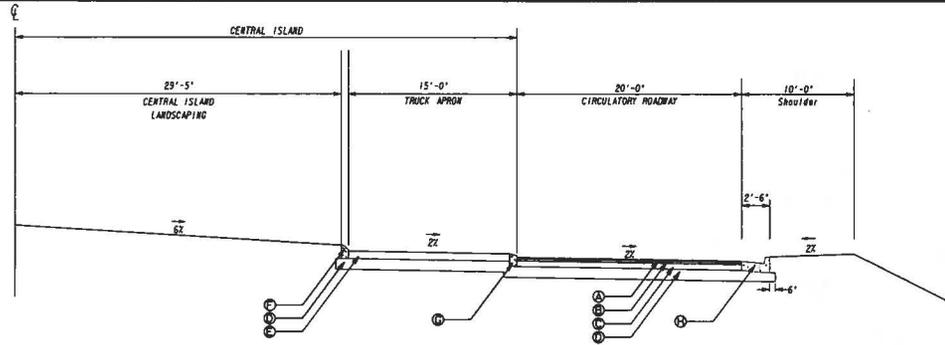


- Ⓐ RECYCLED ASPH CONC 9.5 mm SUPERPAVE, GP 10R 2 ONLY, INCL BITUM MATL & H LME (135 LBS/SY)
- Ⓑ RECYCLED ASPH CONC 19 mm SUPERPAVE, GP 10R 2 ONLY, INCL BITUM MATL & H LME (220 LBS/SY)
- Ⓒ RECYCLED ASPH CONC 25 mm SUPERPAVE, GP 10R 2 ONLY, INCL BITUM MATL & H LME (160 LBS/SY)
- Ⓓ 12" G.A.B.
- Ⓔ 10" STAMPED AND COLORED RED CONCRETE
- Ⓕ CONCRETE HEADER CURB GA. STD. 9032B, 6 INCH, TYPE 7
- Ⓖ CONCRETE HEADER CURB GA. STD. 9032B, 4 INCH, TYPE 9
- Ⓗ 8"x30" CONC. CURB AND CUTTER GA. STD. 9032B TYPE 2



SLOPE CONTROLS		
SLOPE	CUT	FILL
4:1	—	0-10'
2:1	ALL	OVER 10'

REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION
	OFFICE: DISTRICT ONE DESIGN
	TYPICAL SECTIONS
	SR 52 @ 183 DAWSON COUNTY
	DRAWING NO. 05-001



ROUNDBABOUT TYPICAL

- Ⓐ RECYCLED ASPH CONC 9.5 mm SUPERPAVE, GP 1OR 2 ONLY, INCL BITUM MATL & H LIME (135 LBS/SY)
- Ⓑ RECYCLED ASPH CONC 19 mm SUPERPAVE, GP 1OR 2 ONLY, INCL BITUM MATL & H LIME (220 LBS/SY)
- Ⓒ RECYCLED ASPH CONC 25 mm SUPERPAVE, GP 1OR 2 ONLY, INCL BITUM MATL & H LIME (660 LBS/SY)
- Ⓓ 12" G.A.B.
- Ⓔ 10' STAMPED AND COLORED RED CONCRETE
- Ⓕ CONCRETE HEADER CURB GA. STD. 9032B, 6 INCH, TYPE 7
- Ⓖ CONCRETE HEADER CURB GA. STD. 9032B, 4 INCH, TYPE 9
- Ⓗ 8'x30" CONC. CURB AND CUTTER GA. STD. 9032B TYPE 2

				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">REVISION DATES</th> </tr> <tr><td> </td></tr> </table>	REVISION DATES											STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE: DISTRICT ONE DESIGN TYPICAL SECTIONS SR 52 @ 183 DAWSON COUNTY	DRAWING NO. 05-002
REVISION DATES																	

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE P.I. No.

OFFICE

PROJECT DESCRIPTION

DATE

From:

To: Lisa L. Myers, State Project Review Engineer

Subject: REVISIONS TO PROGRAMMED COSTS

PROJECT MANAGER

MGMT LET DATE

MGMT ROW DATE

PROGRAMMED COSTS (TPro W/OUT INFLATION)

LAST ESTIMATE UPDATE

CONSTRUCTION \$

DATE

RIGHT OF WAY \$

DATE

UTILITIES \$

DATE

REVISED COST ESTIMATES

CONSTRUCTION* \$

RIGHT OF WAY \$

UTILITIES \$

*Cost Contains % Contingency

REASONS FOR COST INCREASE AND CONTINGENCY JUSTIFICATION:

There is a huge cost change for Construction because this estimate is based on Roundabout design instead of T-junction improvement. A contingency of 10% is used due to the project type being Reconstruction/Rehabilitation with no added capacity.

CONTINGENCY SUMMARY

A. CONSTRUCTION COST ESTIMATE:	\$	999,708.82	Base Estimate From CES
B. ENGINEERING AND INSPECTION (E & I):	\$	49,985.44	Base Estimate (A) x 5 %
C. CONTINGENCY:	\$	104,969.43	Base Estimate (A) + E & I (B) x 10 % <u>See % Table in "Risk Based Cost Estimation" Memo</u>
D. TOTAL LIQUID AC ADJUSTMENT:	\$	52,802.90	Total From Liquid AC Spreadsheet
E. CONSTRUCTION TOTAL:	\$	1,207,466.59	(A + B + C + D = E)

REIMBURSABLE UTILITY COSTS

UTILITY OWNER	REIMBURSABLE COST
TOTAL	\$ -

ATTACHMENTS:

DETAILED COST ESTIMATE



Job: 0000315

JOB NUMBER 0000315

FED/STATE PROJECT NUMBER

SPEC YEAR: 13

DESCRIPTION: SR 52 @ SR 183 INTERSECTION IMPROVEMENT

ITEMS FOR JOB 0000315

10 - ROADWAY

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
005	150-1000	1.000	LS	\$70,000.00000	TRAFFIC CONTROL - TRAFFIC CONTROL	\$70,000.00
010	153-1300	1.000	EA	\$70,833.77000	FIELD ENGINEERS OFFICE TP 3	\$70,833.77
015	210-0100	1.000	LS	\$133,141.35000	GRADING COMPLETE - GRADING COMPLETE	\$133,141.35
020	310-1101	3978.000	TN	\$21.68399	GR AGGR BASE CRS, INCL MATL	\$86,258.91
025	402-3103	478.000	TN	\$104.38774	REC AC 9.5 MM SP, TPII, GP2, INCL BM & H L	\$49,897.34
035	402-3121	2412.000	TN	\$74.73545	RECYL AC 25MM SP, GP1/2, BM&HL	\$180,261.91
030	402-3190	778.000	TN	\$84.02562	RECYL AC 19 MM SP, GP 1 OR 2 ,INC BM&HL	\$65,371.93
040	413-1000	988.000	GL	\$3.59579	BITUM TACK COAT	\$3,552.64
045	441-0756	482.000	SY	\$50.61000	CONC MEDIAN, 8 IN	\$24,394.02
050	441-5008	220.000	LF	\$12.68660	CONC HEADER CURB, 6 IN, TP 7	\$2,791.05
055	441-5025	283.000	LF	\$12.31000	CONC HEADER CURB, 4, TP 9	\$3,483.73
060	441-6222	853.000	LF	\$19.08984	CONC CURB & GUTTER/ 8X30TP2	\$16,283.63
065	456-2015	0.430	GLM	\$1,233.49844	INDENT. RUMB. STRIPS - GRND-IN-PL (SKIP) REM PORTIONS WINGWALLS & PARAPETS, STA - REMOVE WINGWALL/PARAPET	\$530.40
070	610-9006	1.000	LS	\$5,000.00000	WINGWALL/PARAPET	\$5,000.00
075	634-1200	22.000	EA	\$118.99164	RIGHT OF WAY MARKERS	\$2,617.82
080	641-1200	1644.000	LF	\$18.01421	GUARDRAIL, TP W	\$29,615.36
085	641-5001	2.000	EA	\$783.74801	GUARDRAIL ANCHORAGE, TP 1	\$1,567.50
090	641-5012	2.000	EA	\$2,029.10294	GUARDRAIL ANCHORAGE, TP 12	\$4,058.21
095	643-8200	600.000	LF	\$1.33406	BARRIER FENCE (ORANGE), 4 FT	\$800.44
SUBTOTAL FOR ROADWAY:						\$750,460.01

120 - CULVERT

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
100	500-3101	187.000	CY	\$779.53554	CLASS A CONCRETE	\$145,773.15
105	511-1000	20936.000	LB	\$0.90588	BAR REINF STEEL	\$18,965.50
SUBTOTAL FOR CULVERT:						\$164,738.65

DETAILED COST ESTIMATE



Job: 0000315

30 - SIGNING AND MARKING

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
110	636-1020	126.000	SF	\$14.73619	HWY SGN,TP1MAT,REFL SH TP3	\$1,856.76
115	636-1029	54.000	SF	\$14.49887	HWY SGN,TP2 MATL,REFL SH TP 3	\$782.94
120	636-1033	16.000	SF	\$21.72126	HWY SIGNS, TP1MAT,REFL SH TP 9	\$347.54
125	636-2070	504.000	LF	\$7.34617	GALV STEEL POSTS, TP 7	\$3,702.47
130	636-2080	26.000	LF	\$8.82157	GALV STEEL POSTS, TP 8	\$229.36
135	636-2090	21.000	LF	\$8.21193	GALV STEEL POSTS, TP 9	\$172.45
140	636-3010	2.000	EA	\$467.45859	GROUND-MOUNTED BREAKAWAY SIGN SUPPORT	\$934.92
150	653-0130	3.000	EA	\$100.83924	THERM PVMT MARK, ARROW, TP 3	\$302.52
145	653-0296	3.000	EA	\$176.75000	THERMO PVMT MARKING,WORD,TP 15	\$530.25
155	653-1501	3379.000	LF	\$0.64832	THERMO SOLID TRAF ST 5 IN, WHI	\$2,190.67
160	653-1502	3005.000	LF	\$0.61429	THERMO SOLID TRAF ST, 5 IN YEL	\$1,845.94
165	653-1810	120.000	LF	\$1.21127	THER SLD TRAF STRIPE, 10 IN, W	\$145.35
170	653-4830	90.000	GLF	\$2.02000	THER SKIP TRAF ST, 18 IN, WHT	\$181.80
175	654-1001	40.000	EA	\$5.00814	RAISED PVMT MARKERS TP 1	\$200.33
SUBTOTAL FOR SIGNING AND MARKING:						\$13,423.30

40 - TEMPORARY EROSION CONTROL

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
180	163-0232	3.000	AC	\$258.69939	TEMPORARY GRASSING	\$776.10
185	163-0240	85.000	TN	\$236.57343	MULCH	\$20,108.74
190	163-0300	1.000	EA	\$1,307.64364	CONSTRUCTION EXIT	\$1,307.64
205	163-0527	20.000	EA	\$307.81465	CNST/REM RIP RAP CKDM,STN P RIPRAP/SN BG	\$6,156.29
195	165-0030	6023.000	LF	\$0.58536	MAINT OF TEMP SILT FENCE, TP C	\$3,525.62
200	165-0050	100.000	LF	\$2.61825	MAINT OF SILT RETENTION BARRIER	\$261.83
210	165-0101	1.000	EA	\$560.52732	MAINT OF CONST EXIT	\$560.53
215	167-1000	2.000	EA	\$213.79811	WATER QUALITY MONITORING AND SAMPLING	\$427.60
220	167-1500	12.000	MO	\$529.94990	WATER QUALITY INSPECTIONS	\$6,359.40
225	170-1000	100.000	LF	\$14.19434	FLOAT SILT RETENTION BARRIER	\$1,419.43
230	171-0030	6023.000	LF	\$2.77003	TEMPORARY SILT FENCE, TYPE C	\$16,683.89
235	716-2000	4355.000	SY	\$1.04759	EROSION CONTROL MATS, SLOPES	\$4,562.25
SUBTOTAL FOR TEMPORARY EROSION CONTROL:						\$62,149.32

150 - PERMANENT EROSION CONTROL

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
240	700-6910	6.000	AC	\$720.87668	PERMANENT GRASSING	\$4,325.26
245	700-7000	24.000	TN	\$97.17421	AGRICULTURAL LIME	\$2,332.18
250	700-8000	3.000	TN	\$547.01934	FERTILIZER MIXED GRADE	\$1,641.06
255	700-8100	293.000	LB	\$2.18103	FERTILIZER NITROGEN CONTENT	\$639.04
SUBTOTAL FOR PERMANENT EROSION CONTROL:						\$8,937.54

TOTALS FOR JOB 0000315

DETAILED COST ESTIMATE



Job: 0000315

ITEMS COST:	\$999,708.82
COST GROUP COST:	\$0.00
ESTIMATED COST:	\$999,708.82
CONTINGENCY PERCENT:	0.10
ENGINEERING AND INSPECTION:	0.06
ESTIMATED COST WITH CONTINGENCY AND E&I:	\$1,149,665.14

PROJ. NO.

STP00-0000-00(315)

CALL NO.

9/29/2009

P.I. NO.

0000315

DATE

5/14/2015

INDEX (TYPE)	DATE	INDEX
REG. UNLEADED	May-15	\$ 2.503
DIESEL		\$ 2.809
LIQUID AC		\$ 469.00

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)				51608.76		\$	51,608.76
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	\$	750.40			
Monthly Asphalt Cement Price month project let (APL)			\$	469.00			
Total Monthly Tonnage of asphalt cement (TMT)				183.4			

ASPHALT	Tons	%AC	AC ton
Leveling		5.0%	0
12.5 OGFC		5.0%	0
12.5 mm		5.0%	0
9.5 mm SP	478	5.0%	23.9
25 mm SP	2412	5.0%	120.6
19 mm SP	778	5.0%	38.9
	3668		183.4

BITUMINOUS TACK COAT

Price Adjustment (PA)				\$ 1,194.14		\$	1,194.14
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	\$	750.40			
Monthly Asphalt Cement Price month project let (APL)			\$	469.00			
Total Monthly Tonnage of asphalt cement (TMT)				4.243559711			

Bitum Tack

Gals	gals/ton	tons
988	232.8234	4.24355971

BITUMINOUS TACK COAT (surface treatment)

PROJ. NO.

STP00-0000-00(315)

CALL NO.

9/29/2009

P.I. NO.

0000315

DATE

5/14/2015

Price Adjustment (PA)

0

\$

-

Monthly Asphalt Cement Price month placed (APM)

Max. Cap

60%

\$

750.40

Monthly Asphalt Cement Price month project let (APL)

\$

469.00

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

\$

52,802.90

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

Date: 8/12/2014 Project: 0000315 Alt 3
 Revised: County: Dawson
 PI: 0000315

Description: SR 52 @ SR 183 Intersection Improvement
 Project Termini: SR 52 @ SR 183 Intersection Improvement

Existing ROW: Varies
 Required ROW: Varies
 Parcels: 4

Land and Improvements _____ \$88,350.00

Proximity Damage \$0.00

Consequential Damage \$0.00

Cost to Cures \$0.00

Trade Fixtures \$0.00

Improvements \$35,000.00

Valuation Services _____ \$15,000.00

Legal Services _____ \$40,200.00

Relocation _____ \$8,000.00

Demolition _____ \$0.00

Administrative _____ \$35,500.00

TOTAL ESTIMATED COSTS _____ \$187,050.00

TOTAL ESTIMATED COSTS (ROUNDED) _____ \$188,000.00

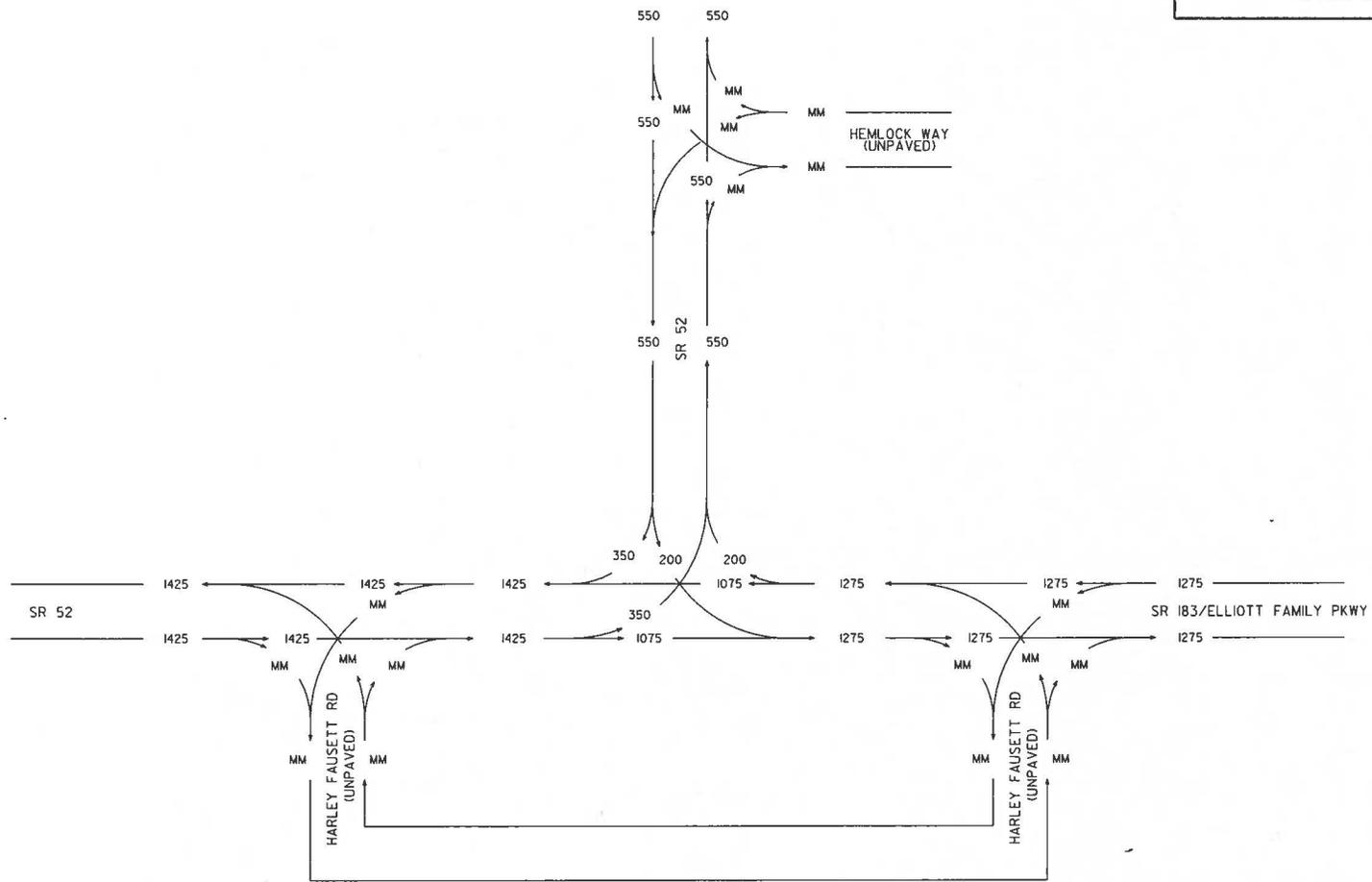
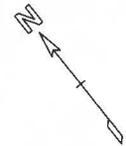
Preparation Credits	Hours	Signature

Prepared By: Wendy Alexander CG#: 286999 08/12/2014
 Approved By: Wendy Alexander CG#: 286999 08/12/2014

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

SR 52 @ SR 183 Crash Data

Year	Accidents	Injuries	Fatalities	Angle	Head On	Non Vehicle	Rear End	Side-Swipe
2009	3	1	0	1	0	0	1	1
2010	3	3	0	0	1	1	1	0
2011	1	0	0	0	0	1	0	0
2012	0	0	0	0	0	0	0	0
2013	2	0	0	0	0	2	0	0
2014	2	0	0	0	0	1	1	0
Total	11	4	0	1	1	5	3	1



STP00-0000-00-(315)
 P.I.# 0000315
 DAWSON COUNTY

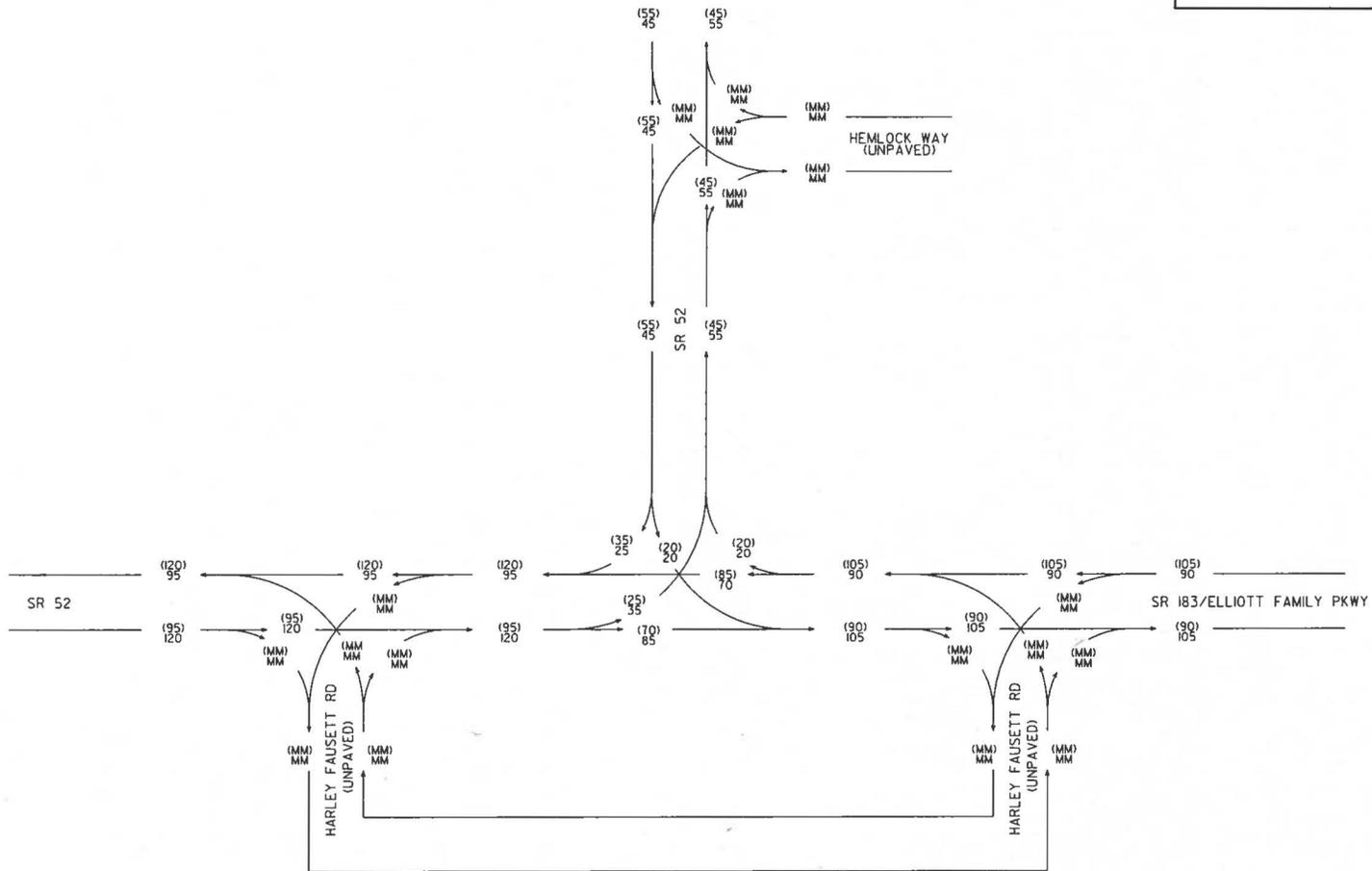
SR 52 RELOCATION @
 SR 183 EXTENSION

2013 ADT = 000

24 HR. T = 12%
 S.U. = 5%
 COMB. = 7%

HF
 6/13





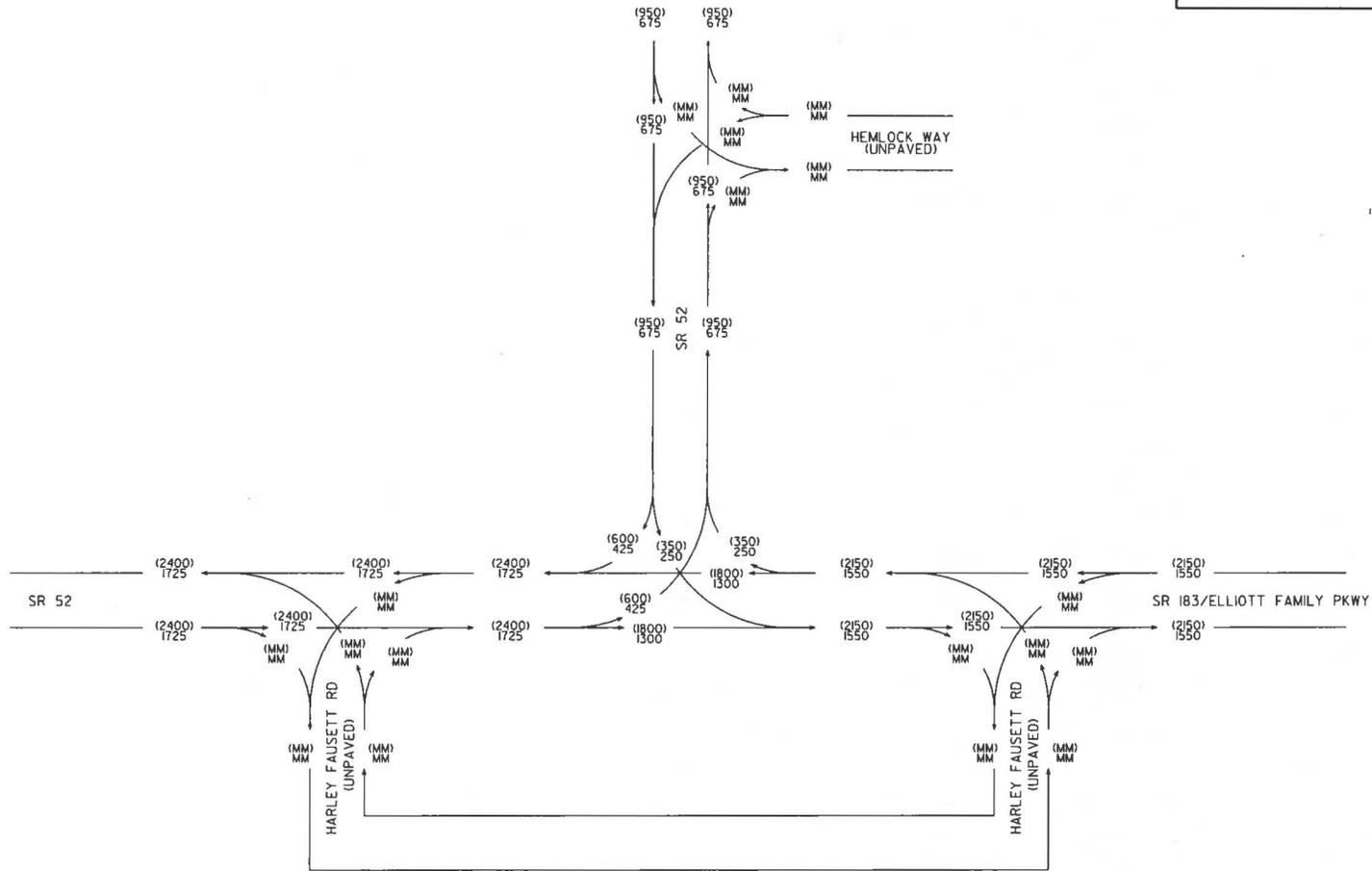
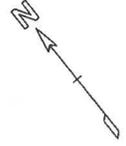
STP00-0000-00-(315)
P.I.# 0000315
DAWSON COUNTY

SR 52 RELOCATION
SR 183 EXTENSION

2013 PM DHV = (000)
2013 AM DHV = 000

T = 14.5%
S.L. = 5.5%
COMB. = 9.0% HF 6/13





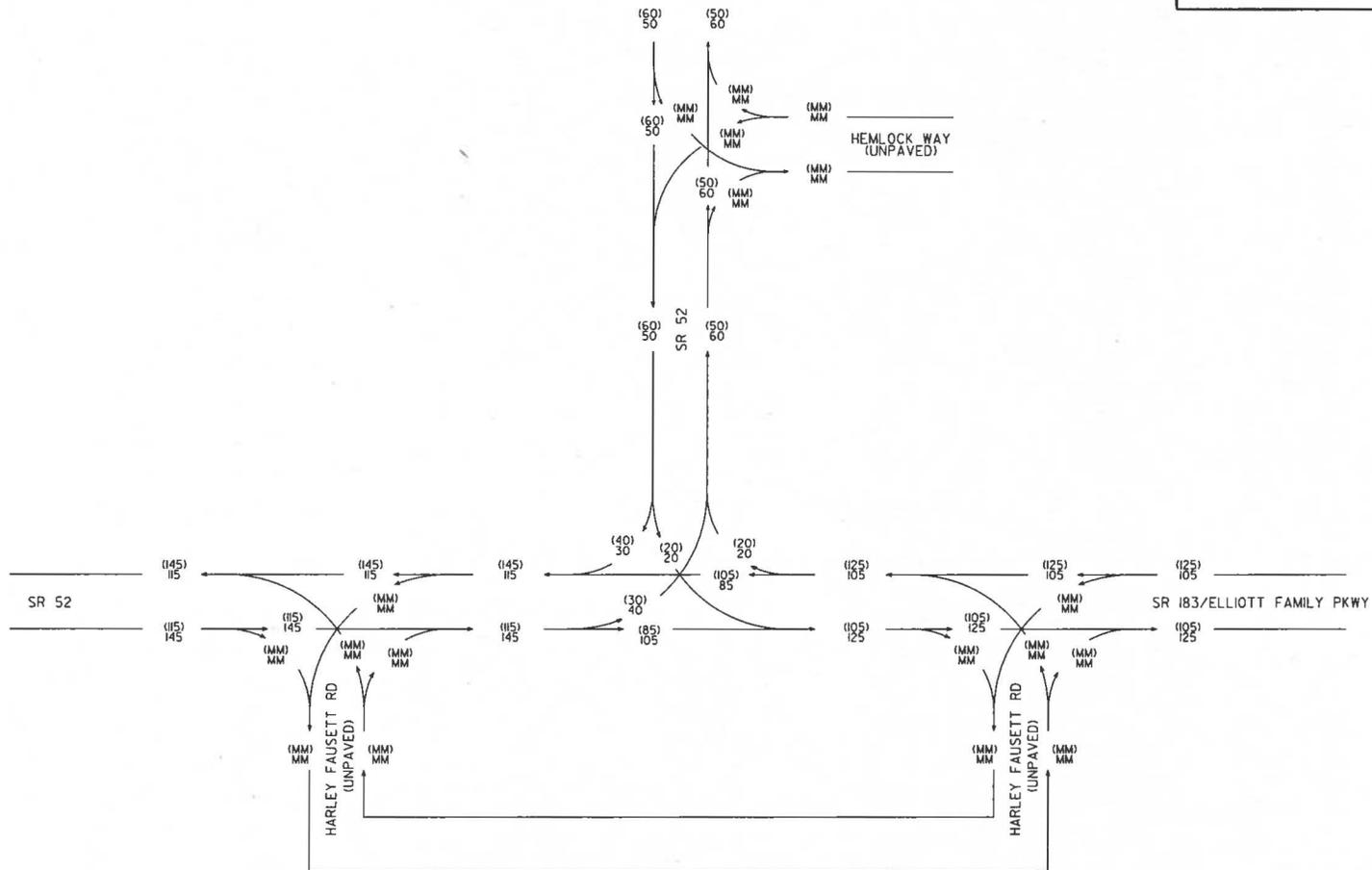
STP00-0000-00-(315)
 P.I.# 0000315
 DAWSON COUNTY

SR 52 RELOCATION
 SR 183 EXTENSION

BUILD/NO BUILD 2042 ADT = 1000
 BUILD/NO BUILD 2022 ADT = 000

24 HR. T = 12%
 S.U. = 5%
 COMB. = 7% HF 6/13





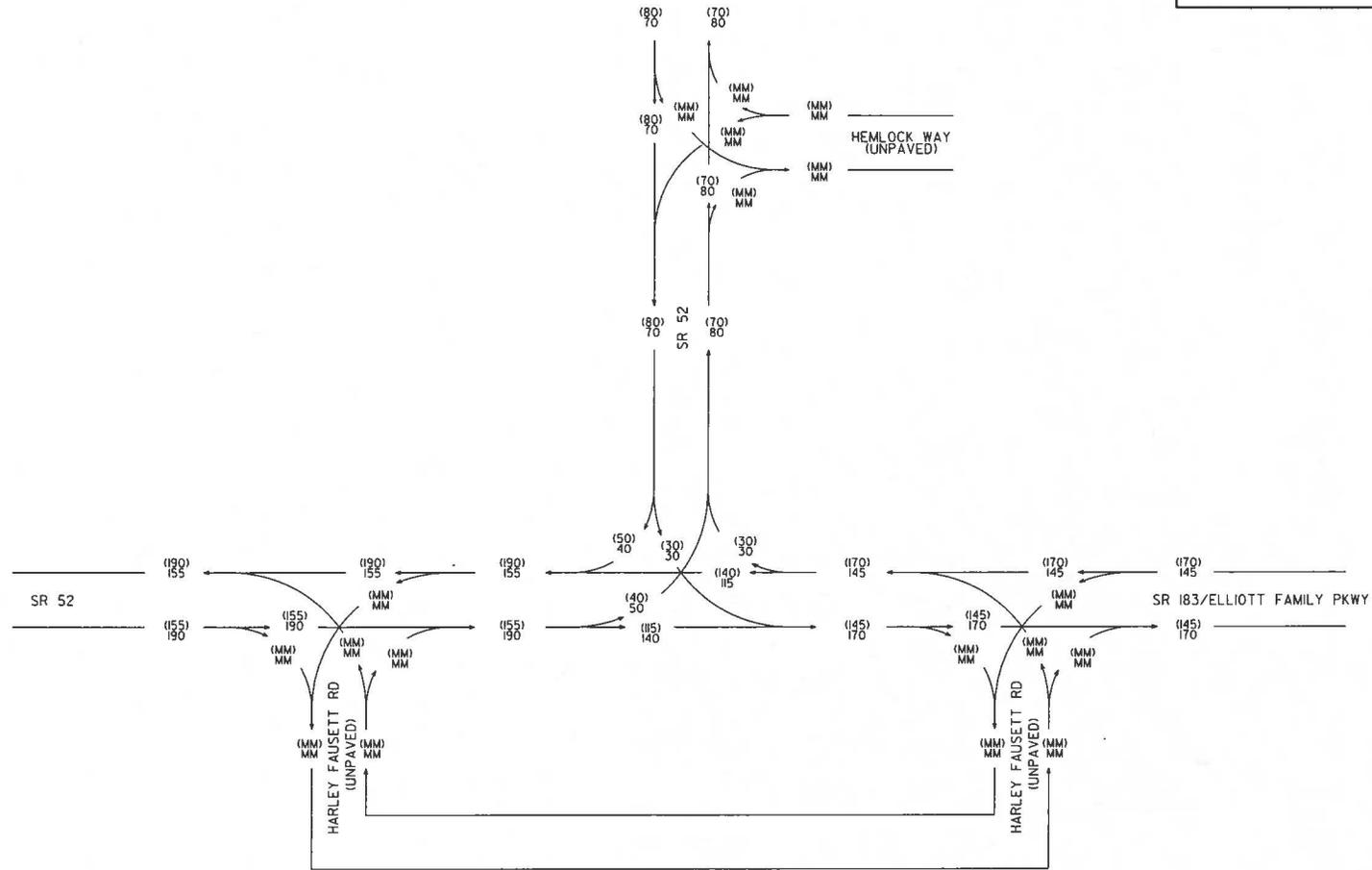
STP00-0000-00-(315)
P.I.# 0000315
DAWSON COUNTY

SR 52 RELOCATION
SR 183 EXTENSION

BUILD/NO BUILD 2022 PM DRY = 1000
BUILD/NO BUILD 2022 AM DRY = 000

T = 14.5% HF
S.U. = 5.5%
COMB. = 9.0% 6/13





STP00-0000-00-(315)
 P.I.# 0000315
 DAWSON COUNTY

SR 52 RELOCATION @
 SR 183 EXTENSION

BUILD/NO BULD 2042 PM DHV = 1000
 BUILD/NO BULD 2042 AM DHV = 000

T = 14.5% HF
 S.U. = 5.5%
 COMB. = 9.0% 6/13



ROUNDBOUT

Base Year (2022)										
Analysis Method	Approach	Movement	AM				PM			
			V/C	Delay (s/veh)	LOS	95 th % Queue (ft)	V/C	Delay (s/veh)	LOS	95 th % Queue (ft)
SIDRA	Northbound (SR 183)	L	0.109	10.7	B	16.2	0.124	10.8	B	18.7
		R	0.109	10.7	B	16.2	0.124	10.8	B	18.7
	Southeast (SR 52)	L	0.059	9.7	A	8.4	0.073	9.6	A	10.4
		R	0.059	9.7	A	8.4	0.073	9.6	A	10.4
	Southwest (SR 52)	L	0.154	7.9	A	24.8	0.122	7.8	A	19.2
		R	0.154	7.9	A	24.8	0.122	7.8	A	19.2
HCS	Northbound (SR 183)	L	0.10	4.8	A	2.75	0.02	4.9	A	11.0
		R	0.02	4.1	A	8.25	0.12	4	A	2.75
	Southeast (SR 52)	L	0.03	4.5	A	2.75	0.03	4.6	A	2.75
		R	0.04	4.7	A	2.75	0.05	4.8	A	5.5
	Southwest (SR 52)	L	0.05	4.2	A	11.0	0.03	4.1	A	2.75
		R	0.12	4.9	A	2.75	0.10	4.6	A	8.25

Design Year (2042)										
Analysis Method	Approach	Movement	AM				PM			
			V/C	Delay (s/veh)	LOS	95 th % Queue (ft)	V/C	Delay (s/veh)	LOS	95 th % Queue (ft)
SIDRA	Northbound (SR 183)	L	0.152	10.8	B	23.7	0.171	10.8	B	27.2
		R	0.152	10.8	B	23.7	0.171	10.8	B	27.2
	Southeast (SR 52)	L	0.087	10.1	B	12.5	0.103	10.2	B	14.9
		R	0.087	10.1	B	12.5	0.103	10.2	B	14.9
	Southwest (SR 52)	L	0.206	7.9	A	35.1	0.168	7.9	A	27.8
		R	0.206	7.9	A	35.1	0.168	7.9	A	27.8
HCS	Northbound (SR 183)	L	0.14	5.2	A	13.75	0.16	5.4	A	16.5
		R	0.04	4.2	A	2.75	0.04	4.2	A	2.75
	Southeast (SR 52)	L	0.04	4.9	A	2.75	0.04	5.0	A	2.75
		R	0.05	5.0	A	5.5	0.07	5.3	A	5.5
	Southwest (SR 52)	L	0.06	4.3	A	5.5	0.05	4.2	A	2.75
		R	0.16	5.3	A	16.5	0.13	5.0	A	13.75

T-INTERSECTION

Base Year (2022)										
Analysis Method	Approach	Movement	AM				PM			
			V/C	Delay (s/veh)	LOS	95 th % Queue (ft)	V/C	Delay (s/veh)	LOS	95 th % Queue (ft)
SIDRA	Northbound (SR 183)	T	0.071	0.0	NA	0.0	0.084	0.0	NA	0.0
		R	0.071	0.0	A	0.0	0.084	0.0	A	0.0
	Southbound (SR 52)	L	0.132	3.7	A	35.1	0.106	3.6	A	28.2
		T	0.132	3.7	NA	35.1	0.106	3.6	NA	28.2
	Westbound (SR 52)	L	0.084	11.1	B	11.2	0.099	11.1	B	13.4
		R	0.084	11.1	B	11.2	0.099	11.1	B	13.4
HCS	Northbound (SR 183)	T	0.03	7.6	A	2.475	0.06	7.8	A	5.5
		R	0.03	7.6	A	2.475	0.06	7.8	A	5.5
	Southbound (SR 52)	L	0.03	7.6	A	2.475	0.06	7.8	A	5.5
		T	0.03	7.6	A	2.475	0.06	7.8	A	5.5
	Westbound (SR 52)	L	0.06	9.8	B	5.50	0.08	10.0	B	6.88
		R	0.06	9.8	B	5.50	0.08	10.0	B	6.88

Design Year (2042)										
Analysis Method	Approach	Movement	AM				PM			
			V/C	Delay (s/veh)	LOS	95 th % Queue (ft)	V/C	Delay (s/veh)	LOS	95 th % Queue (ft)
SIDRA	Northbound (SR 183)	T	0.098	0.0	NA	0.0	0.115	0.0	NA	0.0
		R	0.098	0.0	A	0.0	0.114	0.0	A	0.0
	Southbound (SR 52)	L	0.18	4.0	A	53.0	0.151	4.0	A	44.0
		T	0.18	4.0	NA	53.0	0.151	4.0	NA	44.0
	Westbound (SR 52)	L	0.136	12.4	B	18.1	0.153	12.5	B	20.7
		R	0.136	12.4	B	18.1	0.153	12.5	B	20.7
HCS	Northbound (SR 183)	T	0.04	7.7	A	3.025	0.03	9.8	A	2.475
		R	0.04	7.7	A	3.025	0.03	9.8	A	2.475
	Southbound (SR 52)	L	0.04	7.7	A	3.025	0.03	10.7	B	2.475
		T	0.04	7.7	A	3.025	0.03	10.7	B	2.475
	Westbound (SR 52)	L	0.09	10.3	B	8.525	0.10	10.2	B	9.625
		R	0.09	10.3	B	8.525	0.10	10.2	B	9.625

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

Traffic Engineering Report

Date prepared: September 2, 2014

LOCATION: State Route 52 at State Route 183, Dawson County

REASON FOR INVESTIGATION: Due to a proposed intersection upgrade project, The Department was requested to prepare a Traffic Engineering Report to evaluate the feasibility and operational impact of the installation of a roundabout at the study intersection.

DESCRIPTION OF LOCATION: The intersection of SR 52 at SR 183 is located in the rural northwest corner of Dawson County. Both SR 52 and SR 183 are two lane rural arterials with 12' lanes and paved shoulders. The intersection of these two routes forms a "Y" intersection with stop-controlled left turn movements and free flowing right turn movements. SR 52 composes the eastbound and southbound approaches, and SR 183 / Elliot Family Parkway forms the northbound approach.

TRAFFIC VOLUME HISTORY: The 2013 Average Daily Traffic (AADT) for SR 52 west of the study intersection is 2,850 vehicles and 1,150 vehicles north of the study intersection. The 2013 ADT for SR 183 south of the study intersection is 2,550 vehicles per the traffic diagram provided by The Department's Office of Planning.

EXISTING TRAFFIC CONTROL: The intersection of SR 52 and SR 183 forms a "Y" intersection with stop-controlled left turn movements and free flowing right turn movements.

CRASH HISTORY: There are three crash reports for the intersection of SR 52 at SR 183 from September 2, 2011 to September 2, 2014. Of these three, one was a rear-end type crash while the remaining two were single vehicle incidents in which both vehicles attempted to negotiate the intersection too quickly and overturned. The crash reports for the above intersections are included with this study for additional details.

CONCLUSION: After evaluating this intersection with the GDOT Roundabout Feasibility Tool and the traffic volumes provided from The Department's Office of Planning, the results indicate that the intersection will operate as a roundabout with a Level of Service "A" for all approaches, with an almost negligible control delay and 95th percentile queue.

HCM 2010 Model (build)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	1034	NA	NA	NA	1032	NA	1105	NA
Entry Flow Rates, vph	57	NA	NA	NA	111	NA	180	NA
V/C ratio	0.05				0.11		0.16	
Control Delay, s/veh	4				4		5	
LOS	A				A		A	
95th % Queue (ft)	4				9		14	

RECOMMENDATIONS: District One Traffic Operations recommends that a roundabout be installed at the study intersection.

PREPARED BY: _____ **DATE:** _____
Traffic Engineer I

RECOMMENDED BY: _____ **DATE:** _____
District Traffic Engineer

Flexible Pavement Design Analysis			
PI Number	0000315	County(s)	Dawson (north) & Dawson (south)
Project Number	STP00-0000-00(315)	Design Name	0000315 Initial Pavement Design
Project Description	Intersection Improvement for SR 52 @ SR 183		

Traffic Data (AADTs are one-way)					Miscellaneous Data		
Initial Design Year	2013	Initial AADT, VPD	1,425	24 Hour Truck %	12.00	Lanes in one direction	1
Final Design Year	2042	Final AADT, VPD	2,400	SU Truck %	5.00	Curb & Gutter/Barrier	No
		Mean AADT, VPD	1,913	MU Truck %	7.00		

Design Data					
Lane Distribution Factor (%)	100.00	Soil Support Value	2.50	Single Unit ESAL	0.40
Terminal Serviceability Index	2.50	Regional Factor	2.20	Multiple Unit ESAL	1.50
		User Defined 18-KIP ESAL	1.17	Calculated 18-KIP ESAL	1.04
Non-Standard Value Comment					

Design Loading (User Provided 18-KIP ESAL Factor)					
Mean AADT, VPD	LDF (%)	Vehicle Type	Volume (%)	ESAL Factor	Daily ESAL
1,913	100.00	24 Hour Truck	12.00	1.17	269
Total Design Period ESALs					2,847,365

Proposed Flexible Full Depth Pavement Structure					
Course	Material	Thickness (inches)	Structural Coefficient	Structural Value	
Course 1	9.5 mm Type II Superpave	1.25	0.4400	0.55	
Course 2	19 mm Superpave	2.00	0.4400	0.88	
Course 3	25 mm Superpave	1.25	0.4400	0.55	
		4.75	0.3000	1.43	
Course 4	Graded Aggregate Base	12.00	0.1600	1.92	
Required SN	5.51	Proposed pavement is 3.44% Underdesigned		Proposed SN	5.33

Design Remarks	
----------------	--

Prepared By _____ 5/15/2015 4:08 PM
Jonathan Peevy, Design Engineer III Date

Recommended By _____
State Roadway Design Engineer Date

Approved By _____
State Pavement Engineer Date

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

FEASIBILITY STUDY

P.I. 0000315

**SR 52 @ SR 183
Roundabout
Dawson County**

Date Prepared: 9/2/2014



**Report Prepared by:
Jonathan Peevy
Design Engineer II
GDOT District 1 Design**

SECTION 1: Project Background & Site Conditions

The intersection of SR 52 and SR 183 is located approximately 12.5 miles northwest of Dawsonville in a rural, mountainous area of Dawson County (See Figure 1 for a Vicinity map) just south of Amicalola Falls State Park. The existing intersection is a Y-intersection with all left turn movements stop controlled and all right turns free moving. SR 183 is a two-lane undivided rural major collector with 11-foot lanes and 6-foot unpaved, grass shoulders and a posted speed limit of 55 mph. This highway intersects with SR 52, which is classified as a rural major collector with 12-foot lanes, unpaved grass shoulders and a posted speed limit of 55 mph. SR 52 also crosses Little Amicalola Creek with a 9x6 triple barrel box culvert.

SR 52 intersects with SR 183 in a sharp, substandard horizontal curve which, along with the confusing Y-intersection, has been the cause of several accidents. This awkward geometry and functionality of the intersection (all left turns stop controlled, all right turns free moving) is confusing to drivers unfamiliar with the area. This, along with poor sight distance on SR 52 northeast bound, contributes to many accidents and near accidents at the site.



Figure 1: Vicinity Map: SR 52 @ SR 183 in Dawson County

SECTION 2: Safety Assessment

Crash data for the corridor over a five year period (2009 – 2014) demonstrates that, out of eleven accidents recorded, almost 50% are “not a collision with a motor vehicle”, which could be attributed to the current alignment of the SR 52/SR 183 intersection.

Of the six crashes at the intersection that do involve vehicular collisions, three (50%) are rear-end collisions, which could be attributed to the existing SR 52/SR 183 intersection as well.

The corridor’s average crash rate, injury rate and fatality rate were not over the 2006-2009 statewide average for similar facility types. However, the type and frequency of crashes at this intersection suggest geometric deficiencies and the need for safety/operational improvements.

SR 52 @ SR 183								
Year	Accidents	Injuries	Fatalities	Angle	Head On	Non Vehicle	Rear End	Side Swipe
2009	3	1	0	1	0	0	1	1
2010	3	3	0	0	1	1	1	0
2011	1	0	0	0	0	1	0	0
2012	0	0	0	0	0	0	0	0
2013	2	0	0	0	0	2	0	0
2014	2	0	0	0	0	1	1	0
Total	11	4	0	1	1	5	3	1

Table 1: SR 52 @ SR 183 Crash Data

SECTION 3: Alternate Sketches

Four alternatives were considered, including a no-build option, for operational and safety improvements to the SR 52 and SR 183 intersection. The alternatives that were analyzed include two T-intersections and a single-lane roundabout centered on the existing Y-intersection. The T-intersections considered were given a through movement on SR183 – SR 52 NW while SR 52 NE was stop controlled. Figure 2 shows the T-intersection placed to the west of the existing intersection and Figure 3 shows the proposed T-intersection to the north. Figure 4 shows the preferred roundabout alternative.

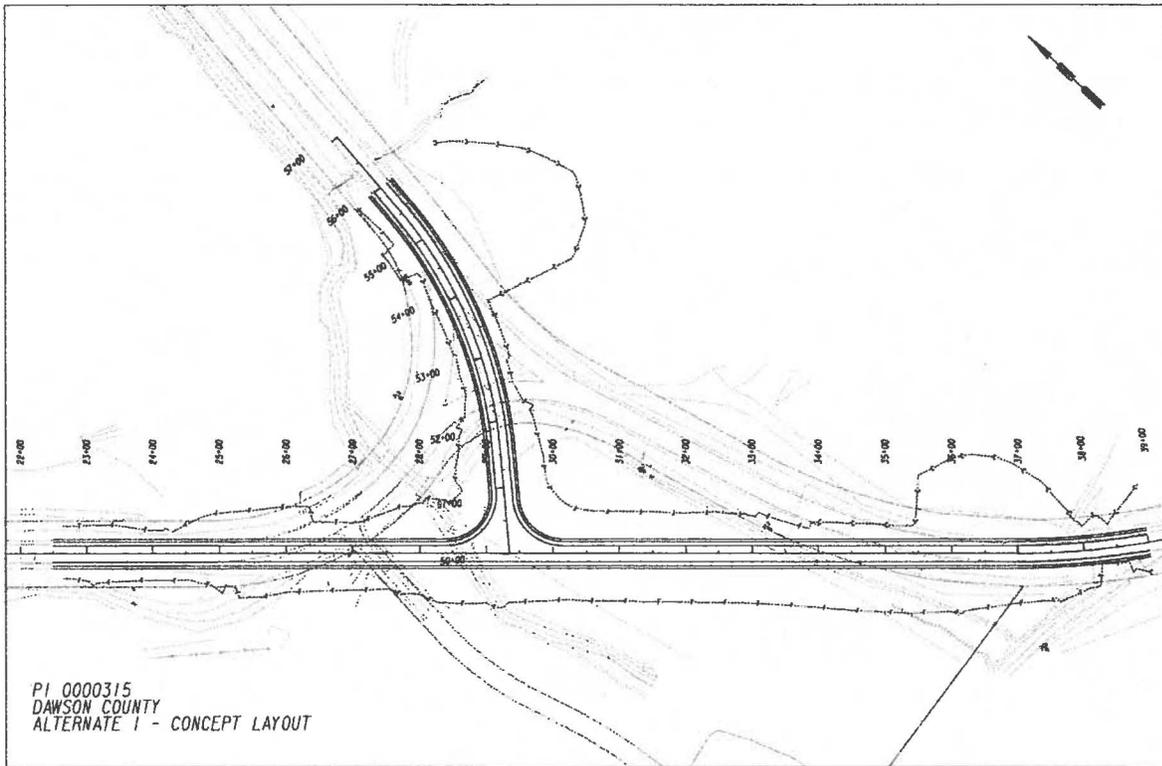


Figure 2: Alternate 1, T-Intersection to West of Existing Y-Intersection

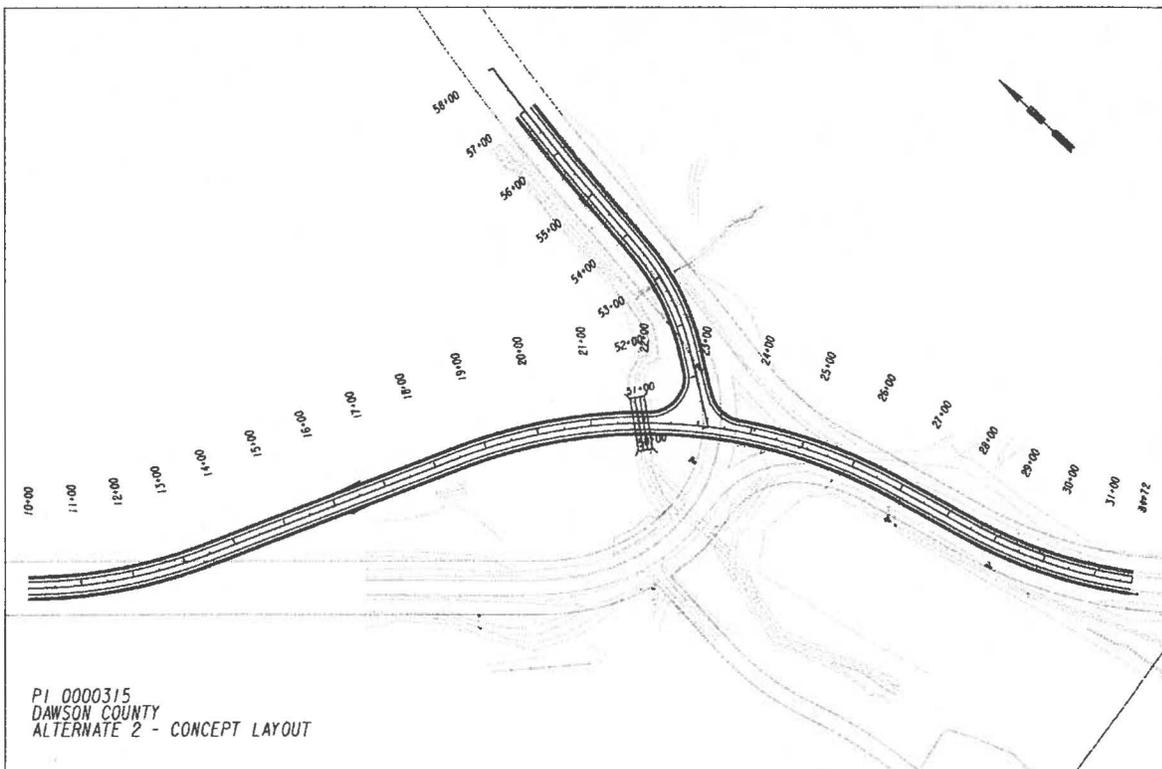


Figure 3: Alternate 2, T-Intersection to North of Existing Y-Intersection

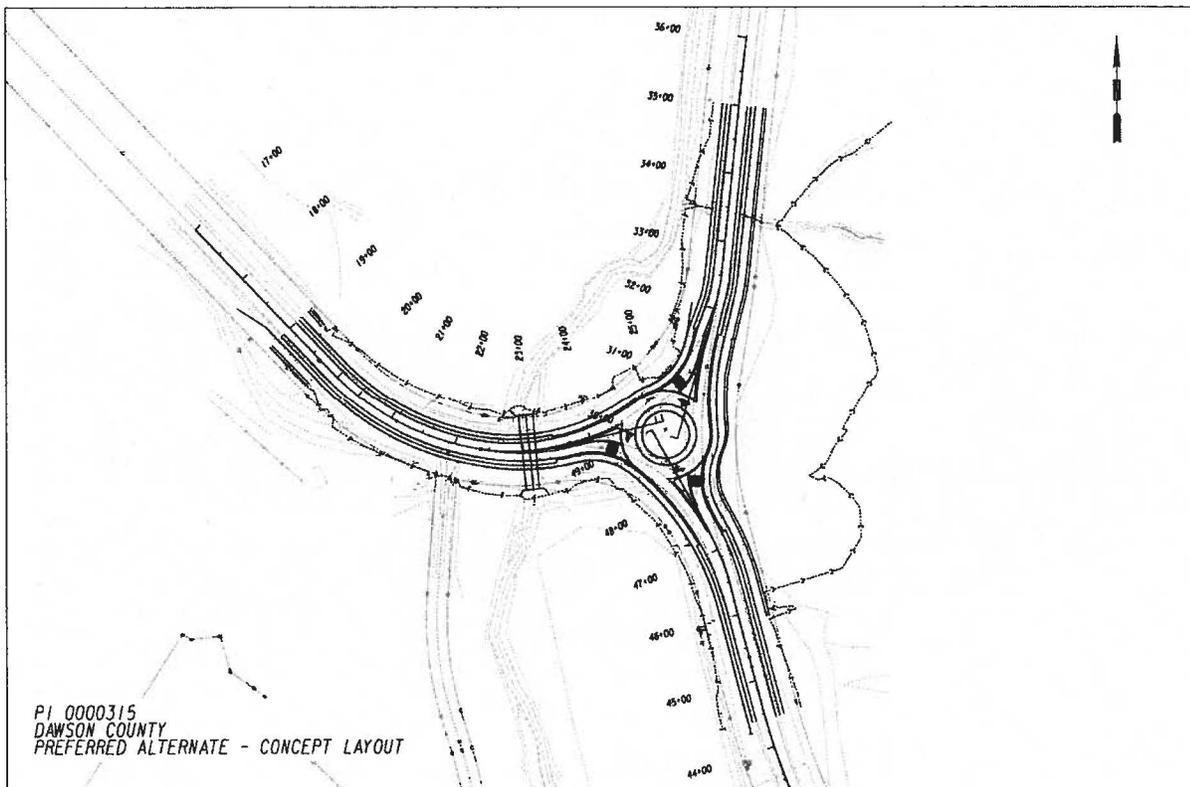


Figure 4: Preferred Alternate, Roundabout

SECTION 4: Operational Analyses

The operation of each alternative was analyzed using HCS 2010 and SIDRA. Tables 2, 3 and 4 summarize the existing, base (2022) and design (2042) peak hour volumes provided by the Office of Planning.

Interval	SR 183 NB		SR 52 SB		SR 52 WB	
	Thr	Rt	Lt	Thr	Lt	Rt
AM	70	20	35	85	20	25
PM	85	20	25	70	20	35

Table 2: SR 52 @ SR 183 (Existing, 2013) Peak Hour Volumes

Interval	SR 183 NB		SR 52 SB		SR 52 WB	
	Thr	Rt	Lt	Thr	Lt	Rt
AM	85	20	40	105	20	30
PM	105	20	30	85	20	40

Table 3: SR 52 @ SR 183 (Base, 2022) Peak Hour Volumes

Interval	SR 183 NB		SR 52 SB		SR 52 WB	
	Thr	Rt	Lt	Thr	Lt	Rt
AM	115	30	50	140	30	40
PM	140	30	40	115	30	50

Table 4: SR 52 @ SR 183 (Design, 2042) Peak Hour Volumes

No Build Alternate:

Operational Analyses were performed for the No Build alternate using the HCS 2010 program. The traffic data used was based on 2022 and 2042 A.M and P.M. volumes provided by the Office of Planning. This alternate would keep the existing intersection as is, with all left turns stop controlled and right turns free moving. The operation of the intersection maintains an excellent level of service and small delays, but does not correct the safety concern of the substandard horizontal alignment.

Base Year (2022)										
Analysis Method	Approach	Movement	AM				PM			
			V/C	Delay (s/veh)	LOS	95 th % Queue (ft)	V/C	Delay (s/veh)	LOS	95 th % Queue (ft)
HCS	Northbound (SR 183)	L	0.06	7.6	A	5	0.07	NA	B	6
		R	NA	7.6	A	5	NA	NA	B	6
	Southbound (SR 52)	L	0.03	7.4	A	2.25	0.02	7.7	B	1.5
		R	NA	7.4	A	2.25	NA	NA	B	1.5
	Westbound (SR 52)	L	0.07	9.8	A	5.25	0.07	0.07	A	5.75
		R	NA	9.8	A	5.25	NA	NA	A	5.75

Table 6: No Build Analysis, Base Year (2022)

Design Year (2042)										
Analysis Method	Approach	Movement	AM				PM			
			V/C	Delay (s/veh)	LOS	95 th % Queue (ft)	V/C	Delay (s/veh)	LOS	95 th % Queue (ft)
HCS	Northbound (SR 183)	L	0.09	10.1	B	7	0.1	10.1	B	8.5
		R	NA	7.7	A	7	NA	7.7	B	8.5
	Southbound (SR 52)	L	0.04	10.4	B	2.75	0.03	10.4	B	2.25
		R	NA	7.5	A	2.75	NA	7.5	B	2.25
	Westbound (SR 52)	L	0.11	10.7	B	9	0.12	10.7	B	10.25
		R	NA	10.7	B	9	NA	10.7	B	10.25

Table 6: No Build Analysis, Design Year (2042)

T-Intersection Alternates:

To evaluate the capacity and operational analysis of the T-intersection alternates, SIDRA and HCS 2010 were used. The results of the evaluation show a decrease in delay from the no build on the through movements as well as a better level of service. The delay on the stop condition did increase from 9.8 sec to 11.1 sec for the Base year projections and 10.7 sec to 12.4 sec for the Design year projections. The safety concern for the horizontal curve on SR 52 would be improved however, significantly improving the safety of the intersection. Overall LOS is A.

Base Year (2022)										
Analysis Method	Approach	Movement	AM				PM			
			V/C	Delay (s/veh)	LOS	95 th % Queue (ft)	V/C	Delay (s/veh)	LOS	95 th % Queue (ft)
SIDRA	Northbound (SR 183)	T	0.071	0.0	NA	0.0	0.084	0.0	NA	0.0
		R	0.071	0.0	A	0.0	0.084	0.0	A	0.0
	Southbound (SR 52)	L	0.132	3.7	A	35.1	0.106	3.6	A	28.2
		T	0.132	3.7	NA	35.1	0.106	3.6	NA	28.2
	Westbound (SR 52)	L	0.084	11.1	B	11.2	0.099	11.1	B	13.4
		R	0.084	11.1	B	11.2	0.099	11.1	B	13.4
HCS	Northbound (SR 183)	T	0.03	7.6	A	2.475	0.06	7.8	A	5.5
		R	0.03	7.6	A	2.475	0.06	7.8	A	5.5
	Southbound (SR 52)	L	0.03	7.6	A	2.475	0.06	7.8	A	5.5
		T	0.03	7.6	A	2.475	0.06	7.8	A	5.5
	Westbound (SR 52)	L	0.06	9.8	B	5.50	0.08	10.0	B	6.88
		R	0.06	9.8	B	5.50	0.08	10.0	B	6.88

Table 7: T-Intersection Analysis, Base Year (2022)

Design Year (2042)										
Analysis Method	Approach	Movement	AM				PM			
			V/C	Delay (s/veh)	LOS	95 th % Queue (ft)	V/C	Delay (s/veh)	LOS	95 th % Queue (ft)
SIDRA	Northbound (SR 183)	T	0.098	0.0	NA	0.0	0.115	0.0	NA	0.0
		R	0.098	0.0	A	0.0	0.114	0.0	A	0.0
	Southbound (SR 52)	L	0.18	4.0	A	53.0	0.151	4.0	A	44.0
		T	0.18	4.0	NA	53.0	0.151	4.0	NA	44.0
	Westbound (SR 52)	L	0.136	12.4	B	18.1	0.153	12.5	B	20.7
		R	0.136	12.4	B	18.1	0.153	12.5	B	20.7

HCS	Northbound (SR 183)	T	0.04	7.7	A	3.025	0.03	9.8	A	2.475
		R	0.04	7.7	A	3.025	0.03	9.8	A	2.475
	Southbound (SR 52)	L	0.04	7.7	A	3.025	0.03	10.7	B	2.475
		T	0.04	7.7	A	3.025	0.03	10.7	B	2.475
	Westbound (SR 52)	L	0.09	10.3	B	8.525	0.10	10.2	B	9.625
		R	0.09	10.3	B	8.525	0.10	10.2	B	9.625

Table 8: T-Intersection Analysis, Design Year (2042)

Roundabout Alternative:

HCS 2010, SIDRA, and the GDOT Roundabout Analysis Tool were utilized in evaluating the operational capacity of the roundabout alternative. The results from HCS 2010 and the GDOT Roundabout Analysis Tool show significant decreases in delays when compared to the no build alternate and the intersection has an overall LOS of A.

Base Year (2022)										
Analysis Method	Approach	Movement	AM				PM			
			V/C	Delay (s/veh)	LOS	95 th % Queue (ft)	V/C	Delay (s/veh)	LOS	95 th % Queue (ft)
			SIDRA	Northbound (SR 183)	L	0.109	10.7	B	16.2	0.124
R	0.109	10.7			B	16.2	0.124	10.8	B	18.7
Southeast (SR 52)	L	0.059		9.7	A	8.4	0.073	9.6	A	10.4
	R	0.059		9.7	A	8.4	0.073	9.6	A	10.4
Southwest (SR 52)	L	0.154		7.9	A	24.8	0.122	7.8	A	19.2
	R	0.154		7.9	A	24.8	0.122	7.8	A	19.2
HCS	Northbound (SR 183)	L	0.10	4.8	A	2.75	0.02	4.9	A	11.0
		R	0.02	4.1	A	8.25	0.12	4	A	2.75
	Southeast (SR 52)	L	0.03	4.5	A	2.75	0.03	4.6	A	2.75
		R	0.04	4.7	A	2.75	0.05	4.8	A	5.5
	Southwest (SR 52)	L	0.05	4.2	A	11.0	0.03	4.1	A	2.75
		R	0.12	4.9	A	2.75	0.10	4.6	A	8.25
Roundabout Analysis Tool	Northbound (SR 183)	L	0.11	4	A	9	0.11	4	A	9.0
		R	0.11	4	A	9	0.11	4	A	9
	Southeast (SR 52)	L	0.05	4	A	4	0.05	4	A	4
		R	0.05	4	A	4	0.05	4	A	4
	Southwest (SR 52)	L	0.16	5	A	14.0	0.16	5	A	14
		R	0.16	5	A	14	0.16	5	A	14

Table 9: Roundabout Analysis, Base Year (2022)

Design Year (2042)										
Analysis Method	Approach	Movement	AM				PM			
			V/C	Delay (s/veh)	LOS	95 th % Queue (ft)	V/C	Delay (s/veh)	LOS	95 th % Queue (ft)
SIDRA	Northbound (SR 183)	L	0.152	10.8	B	23.7	0.171	10.8	B	27.2
		R	0.152	10.8	B	23.7	0.171	10.8	B	27.2
	Southeast (SR 52)	L	0.087	10.1	B	12.5	0.103	10.2	B	14.9
		R	0.087	10.1	B	12.5	0.103	10.2	B	14.9
	Southwest (SR 52)	L	0.206	7.9	A	35.1	0.168	7.9	A	27.8
		R	0.206	7.9	A	35.1	0.168	7.9	A	27.8
HCS	Northbound (SR 183)	L	0.14	5.2	A	13.75	0.16	5.4	A	16.5
		R	0.04	4.2	A	2.75	0.04	4.2	A	2.75
	Southeast (SR 52)	L	0.04	4.9	A	2.75	0.04	5.0	A	2.75
		R	0.05	5.0	A	5.5	0.07	5.3	A	5.5
	Southwest (SR 52)	L	0.06	4.3	A	5.5	0.05	4.2	A	2.75
		R	0.16	5.3	A	16.5	0.13	5.0	A	13.75
Roundabout Analysis Tool	Northbound (SR 183)	L	0.09	4	A	7	0.09	4	A	7.0
		R	0.09	4	A	7	0.09	4	A	7
	Southeast (SR 52)	L	0.05	3	A	4	0.05	3	A	4
		R	0.05	3	A	4	0.05	3	A	4
	Southwest (SR 52)	L	0.14	4	A	12.0	0.14	4	A	12
		R	0.14	4	A	12	0.14	4	A	12

Table 10: Roundabout Analysis, Design Year (2042)

SECTION 5: Cost Comparison

Alternate	Construction	Right of Way	Utility (Non-reimbursable)	PE	Total
No-Build Alternate	\$0	\$0	\$0	\$489,889.48	\$489,889.48
Alternate 1 (T-Intersection)	\$2,291,858.25	\$216,000.00	\$147,000.00	\$489,889.48	\$3,144,747.73
Alternate 2 (T-Intersection)	\$2,004,358.60	\$236,000.00	\$147,000.00	\$489,889.48	\$2,877,248.08
Alternate 3 (Roundabout, Preferred Alternate)	\$1,217,100.66	\$188,000.00	\$147,000.00	\$489,889.48	\$2,041,990.14

Table 11: Cost Estimate Comparison Summary

SECTION 6: Alternate Selection

- **No Build Alternate**
 - **Advantages**
 - Cheapest alternative; no construction costs
 - Maintains excellent level of service (A to B at Design Year)
 - **Disadvantages**
 - Safety of the intersection is the main concern for the intersection. Most accidents that occur within the intersection are a result of the substandard horizontal curve. A No-Build option would not correct the safety concern.
- **T-Intersection Alternate (Offset West)**
 - **Advantages**
 - This option would correct the horizontal curvature to meet a standard curvature for a design speed of 55 MPH.
 - The operation of the T-Intersection also improves from the No-Build option. The delay decreases and the LOS is near perfect.
 - **Disadvantages**
 - The cost to build the T-Intersection to the west would be significant to the No-Build option, and more than twice the construction cost of a roundabout.
 - There would also be potential environmental concerns, due to the need for a new culvert construction over the Little Amicalola River, which may be a cold water stream.
- **T-Intersection Alternate (Offset North)**
 - **Advantages**
 - Building a T-Intersection to the North would also correct the horizontal curvature issue, making the intersection safer than the existing.
 - The LOS for this option operates within the range of LOS A to LOS B through the design year, with optimal efficiency.
 - **Disadvantages**
 - This option has a high construction cost, nearly double the roundabout option, and requires the most right of way for the new alignments construction.
 - There are significant environmental issues with this option. It would require the construction of a new culvert on Little Amicalola (possible trout stream) as well as building into potential national forest land.
- **Roundabout Alternate**
 - **Advantages**
 - The preferred (roundabout) alternate would correct the safety concern of the intersection by requiring a slower entry into the intersection by vehicles, which would make the substandard curvature safer.
 - The operational analysis of the roundabout shows minimal delay and has an overall LOS of A.

- Aside from the No-Build option, the roundabout would have the cheapest construction cost, and the least amount of require right of way due to the new construction being situated within the limits of the existing intersection.
- Disadvantages
 - Though the construction limits are much less than the other alternatives, the limits of construction would require an extension of the existing culvert on SR 52, which would raise environmental concerns.
 - A roundabout would also require a lighting agreement from the local government, so that the intersection would be properly lit.
 - Longer construction time compared to other alternatives.

SECTION 7: Conceptual Roundabout Design

The proposed conceptual layout for the preferred (roundabout) alternate can be seen in Figure 4. It consists of a 130-foot diameter, single lane roundabout with a 20-foot circulating width and a 15-foot adjoining truck apron. It will be centered on the existing Y-Intersection and have three connecting legs, including SR 183 northbound, SR 52 southbound and SR 52 westbound. The legs will have two, undivided 12 foot lanes with 10-foot shoulders, 6.5 feet of which are paved. The culvert under SR 52 will be extended to meet the new foreslopes from the shoulders.

SECTION 8: Recommendations

The safety benefit of the single lane roundabout will reduce the crash severity of head-on, angle and left turn collisions, as well as the total number of accidents caused by the existing Y-Intersection. It is recommended that a single lane roundabout be constructed in place of the existing Y-Intersection. The preferred alternate will improve the safety of the substandard curve and its associated crash history and result in fewer accidents as compared to the No-Build and T-Intersection alternates. It will also have a much less associated cost to construction and right of way as well as a smaller impact on the environmentally sensitive areas than the other improvement alternatives.

Peevy, Jonathan

From: Heng, Khek Wui
Sent: Thursday, April 23, 2015 11:28 AM
To: Peevy, Jonathan
Subject: FW: PI 0000315 - Dawson County Does not Support Lighting & Landscape

Please see email below from David, Director of Public Works & Community Development.

Steven Heng
Project Manager
Office of Program Delivery
Georgia Department of Transportation
600 West Peachtree Street N.W. , 25th Floor
Atlanta, GA 30308
Office: (404) 631-1161
Cell: (404) 640-1746
KhHeng@dot.ga.gov

From: David Headley [<mailto:DHeadley@dawsoncounty.org>]
Sent: Wednesday, March 04, 2015 8:28 AM
To: Heng, Khek Wui
Subject: RE: PI 0009938 Dawson County SR 53 at SR 183 & PI 0000315 Dawson County SR 52 at SR 183 Extension Landscaping & Lighting Agreement

Currently our Board has taken the position not to fund lighting or landscaping for the proposed project's.

David Headley
Director of Public Works & Community Development
Dawson County
25 Justice Way, Suite 2232
Dawsonville, GA 30534
www.dawsoncounty.org
O-706-344-3501
C-706-974-1100
F-706-344-3654
E-dheadley@dawsoncounty.org

From: Heng, Khek Wui [<mailto:KhHeng@dot.ga.gov>]
Sent: Tuesday, March 03, 2015 5:12 PM
To: David Headley; Denise Farr
Subject: RE: PI 0009938 Dawson County SR 53 at SR 183 & PI 0000315 Dawson County SR 52 at SR 183 Extension Landscaping & Lighting Agreement

Good Afternoon David,
I am currently updating our monthly project status and wonder if Board has made any decision regarding on Landscaping Maintenance Agreement and Lighting Agreement for 0009938 & 0000315. Please advise.

Thank you,

Steven Heng
Project Manager
Office of Program Delivery
Georgia Department of Transportation
600 West Peachtree Street N.W. , 25th Floor
Atlanta, GA 30308
Office: (404) 631-1161
Cell: (404) 640-1746
KhHeng@dot.ga.gov

From: Brown, Derrick M.
Sent: Friday, January 16, 2015 10:55 AM
To: David Headley
Cc: Heng, Khek Wui
Subject: RE: Indication of Roundabout Support

David,

Thanks for sending your questions via email. I actually emailed you last night to get your questions. However, I now realize that I sent my email to the wrong email address. I sent it to davidheadley@dawsoncoudy.org instead of dheadley...

I can answer some of your questions below; but not the ones regarding costs for lighting, maintenance, etc.

I'll respond for both roundabout projects in Dawson County. However, I'm fairly certain the letter that you received is for PI 0000315 since we already have the letter signed for PI 0009938. This letter, I believe, came from our Office of Traffic Operations (Christina Barry).

PI 0009938 Dawson County – SR 53 at SR 183

- Time Line of project being requested: ROW authorization - 4/17/15; Let date – 5/15/16
- Project Mgr.: Steven Heng
- Total project cost and estimated cost for the proposed lighting: The latest construction cost estimate is \$2,550,900 of which \$35,000 is attributed to lighting. Please note that this is just a very high level estimate for planning purposes.
- Type of design being recommended: Roundabout
- Est. cost of electricity: Unknown. This would be need to be coordinated with the utility company.
- Who is responsible for cost of lighting and Installation: Per the lighting agreement, GDOT would be responsible for installation costs and the locals would be responsible for the maintenance and energy costs.
- Type of lighting plan: Unknown. Lighting plans have not been developed at this stage of the project.
- Cost of maintain lights: Unknown by Me
- Type of landscaping being proposed and cost of maintaining it: Landscaping plans have not been developed at this stage of the project.
- Who is responsible for initial installation of landscaping: GDOT is responsible for installation costs.
- Is landscaping required and can county determine what goes in: Coordination with the Office of Traffic Operations (Michael Turpeau) and Office of Maintenance is needed for minimum landscaping requirements.

PI 0000315 Dawson County – SR 52 at SR 183 Extension

- Time Line of project being requested: Concept Report Approval was scheduled for 11/17/14 (behind schedule); ROW authorization - 6/16/16; Let date – 7/15/17

- Project Mgr.: Steven Heng
- Total project cost and estimated cost for the proposed lighting: The latest construction cost estimate is \$3,944,000. Please note that this is just a very high level estimate for planning purposes.
- Type of design being recommended: Roundabout
- Est. cost of electricity: Unknown. This would be need to be coordinated with the utility company.
- Who is responsible for cost of lighting and Installation: Per the lighting agreement, GDOT would be responsible for installation costs and the locals would be responsible for the maintenance and energy costs.
- Type of lighting plan: Unknown. Lighting plans have not been developed at this stage of the project.
- Cost of maintain lights: Unknown by Me
- Type of landscaping being proposed and cost of maintaining it: Landscaping plans have not been developed at this stage of the project.
- Who is responsible for initial installation of landscaping: GDOT is responsible for installation costs.
- Is landscaping required and can county determine what goes in: Coordination with the Office of Traffic Operations (Michael Turpeau) and Office of Maintenance is needed for minimum landscaping requirements.

Derrick M. Brown

District 1 Program Manager

Georgia Department of Transportation

Office: (404) 631-1571

Cell: (404) 308-3111

From: David Headley [<mailto:DHeadley@dawsoncounty.org>]

Sent: Friday, January 16, 2015 8:27 AM

To: Brown, Derrick M.

Subject: Indication of Roundabout Support

Good morning Darick, per my phone messages, I thought it might be easier if I just sent my questions. I have received a document titled "Indication of Roundabout Support" upon receiving this document, it has no P.I.# nor description of which roundabout we are referring to. As you may know, SR. 52 & SR.183 are being considered for a roundabout as is SR.53W & SR.183 of which a recent meeting was held on here at the Dawson Courthouse. All that being said, I was asked late yesterday evening to provide an agenda package for the board consideration. In order to do that, I had several questions that will most likely be asked of me.

- Time Line of project being requested
- Project Mgr.
- Total project cost and estimated cost for the proposed lighting
- Type of design being recommended, I know there were three options on SR.52/SR.183
- Est. cost of electricity
- Who is responsible for cost of lighting and Installation
- Type of lighting plan
- Cost of maintain lights
- Type of landscaping being proposed and cost of maintaining it
- Who is responsible for initial installation of landscaping
- Is landscaping required and can county determine what goes in

Any assistance you could provide would be greatly appreciated.

David Headley

Director of Public Works & Community Development

Dawson County

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During inclement winter weather, Georgia DOT commits to achieve and maintain passable road conditions on two lanes of interstates first and then state routes from the most heavily traveled to the least traveled. The Department urges travelers to exercise caution, be patient, and call 511 for updated information on roadway conditions before getting on the road during a winter weather event. Visit us at <http://www.dot.ga.gov/winterweather>; or follow us on <http://www.facebook.com/GeorgiaDOT> and <http://twitter.com/gadepoftrans>

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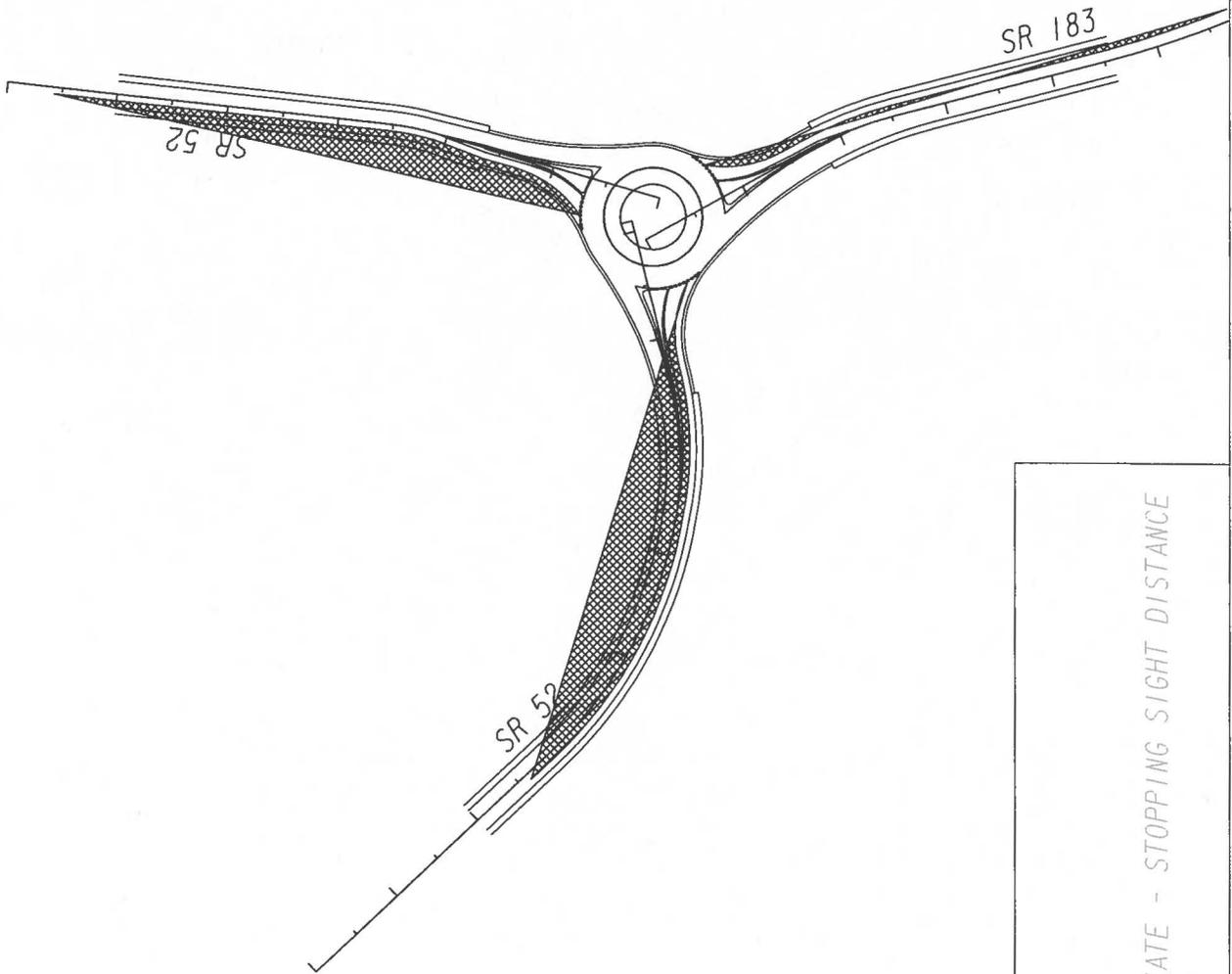
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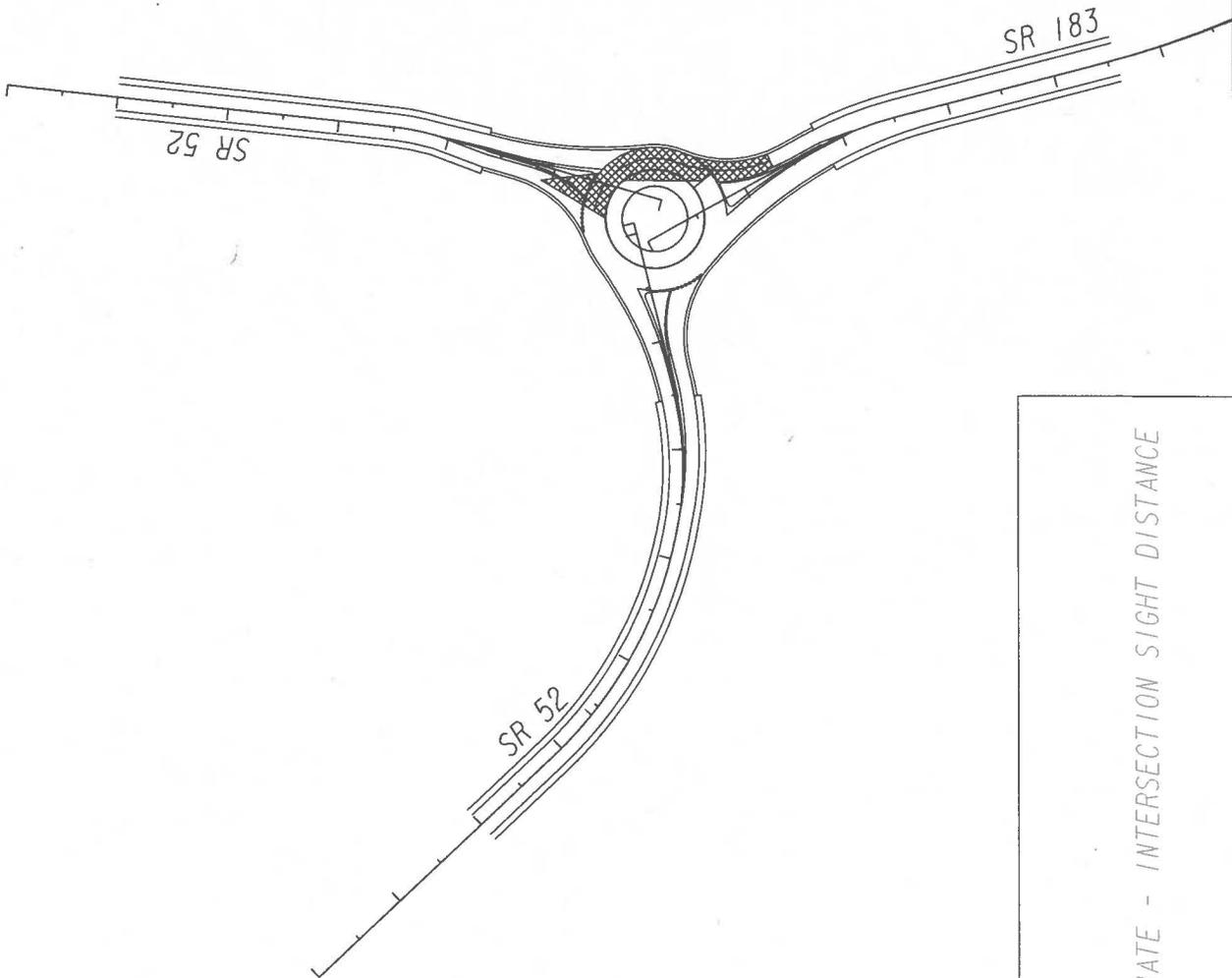
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PEER REVIEW COMMENTS

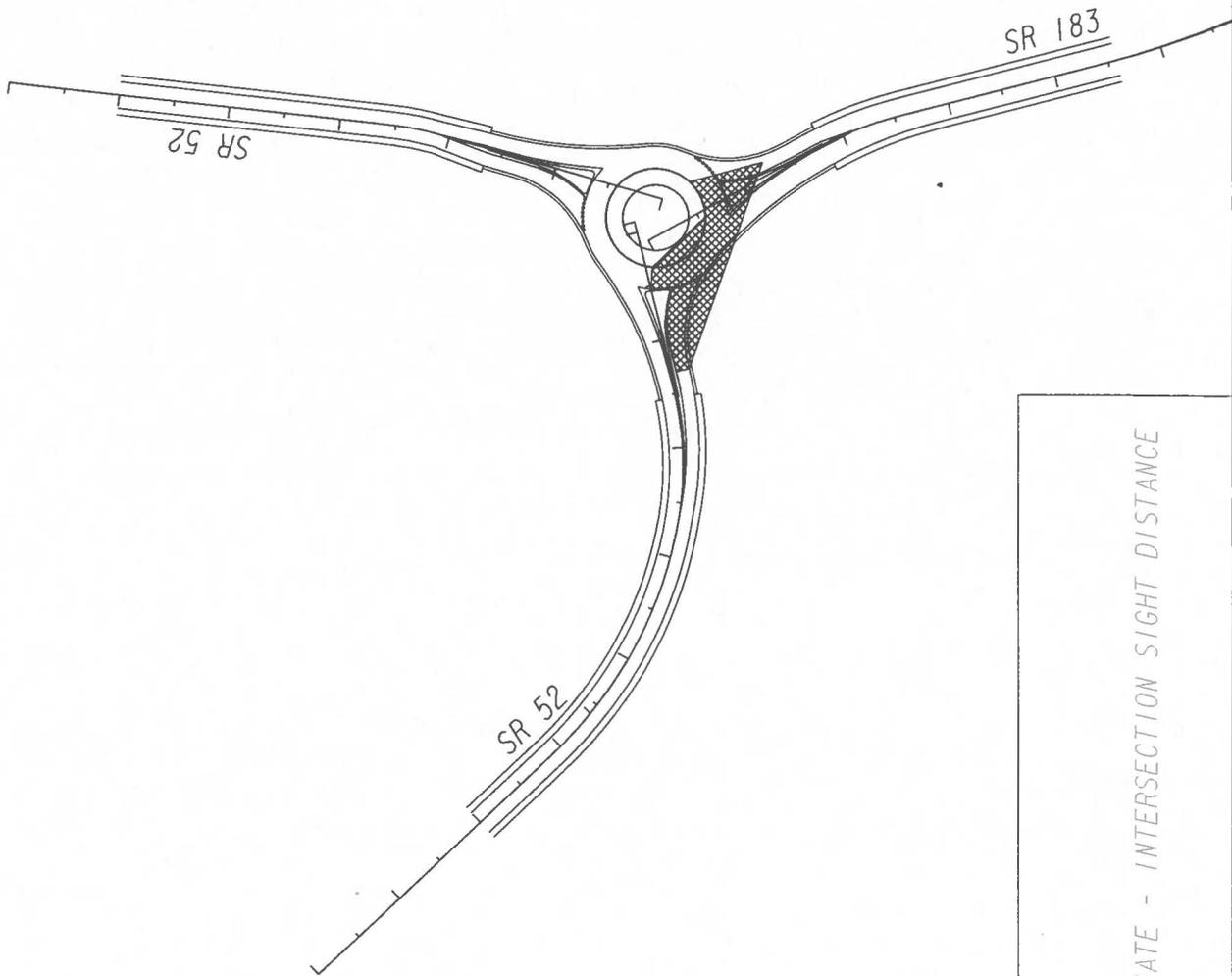
- Staging and Construction is very difficult and sometimes not possible for a Roundabout on an existing location. The need to build the circular roadway, truck apron, and Central Island in one stage makes it very difficult to shift traffic and handle staging of the project. In order to stage the project often temporary pavement is required and by the time you build in the temporary roads for the traffic shifts you can easily build the Roundabout on new location.
 - District Construction was consulted, and it is possible to have a staged construction of the apron/circular roadway/island.
- SR 183 approaches look to have deficient intersection sight distance. Intersection sight distance is one of the determining factors to a successful operation of a Roundabout. By using a new location to the South you can increase the sight distance and improve the operation.
 - Intersection Sight Distance was checked, and found to be sufficient.
- The splitter islands look a little short so be sure to provide longer splitter islands for the high speed approaches.
 - Splitter Islands will be adjusted to accommodate higher speeds.
- Impacts at the current location will require a large cut to the Northeast of the intersection. By shifting to a new location away from this high slope you can bring the limits of impacts closer to the EOPs.
 - A slight shift was made to the inscribed diameter, however we are not able to shift the location too far since it will cause impacts to the existing river/wetland/farm.
- Try a 14 ft wide truck apron to help with the turning movements of the trucks. You can look at increasing the ICD slightly to 140ft to help your deflection and provide more space for the turning movements.
 - Apron was increased to 15 ft wide.
- The entry radius for the SR 52 approach looks a little large may not have enough deflection for proper speed control. One of the main design criteria for safe operation entering, circulating, and exiting a roundabout is to have proper speed control of approximately 20-25mph. Most of the control is accomplished up front before the vehicle enters the roundabout therefore the need to have a proper entry radius. Try a starting point of 75-85ft.
 - Entry radii will be analyzed for all approaches to develop good deflection.
- Just as important as the entry radius is the entry width. For a single lane I would suggest a maximum of 18ft width. This will help to prevent stacking side by side of vehicles.
 - Entry width is approximately 18 ft in the current conceptual layout.



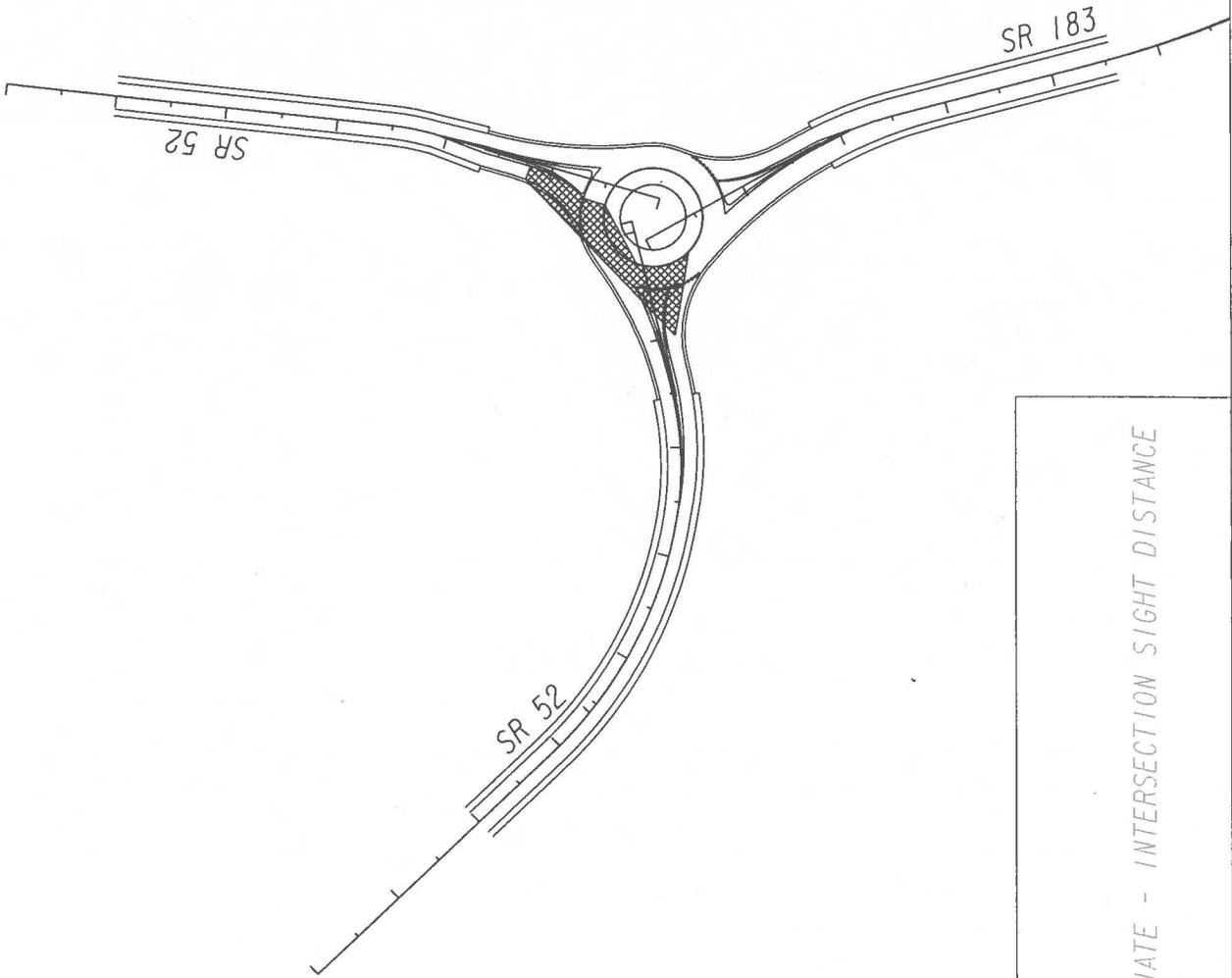
PI 0000315
DAWSON COUNTY
PREFERRED ALTERNATE - STOPPING SIGHT DISTANCE



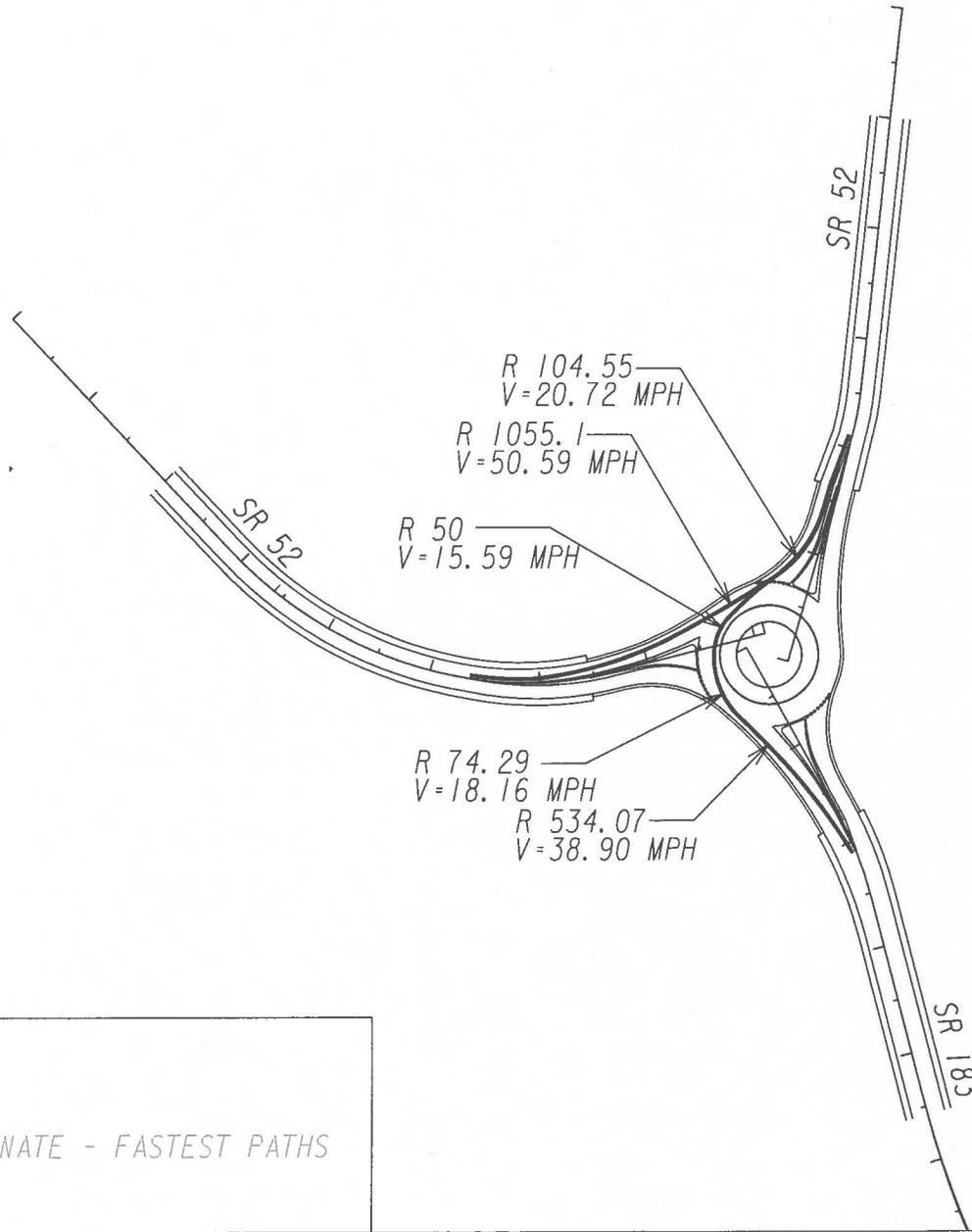
PI 0000315
DAWSON COUNTY
PREFERRED ALTERNATE - INTERSECTION SIGHT DISTANCE
NORTH LEG



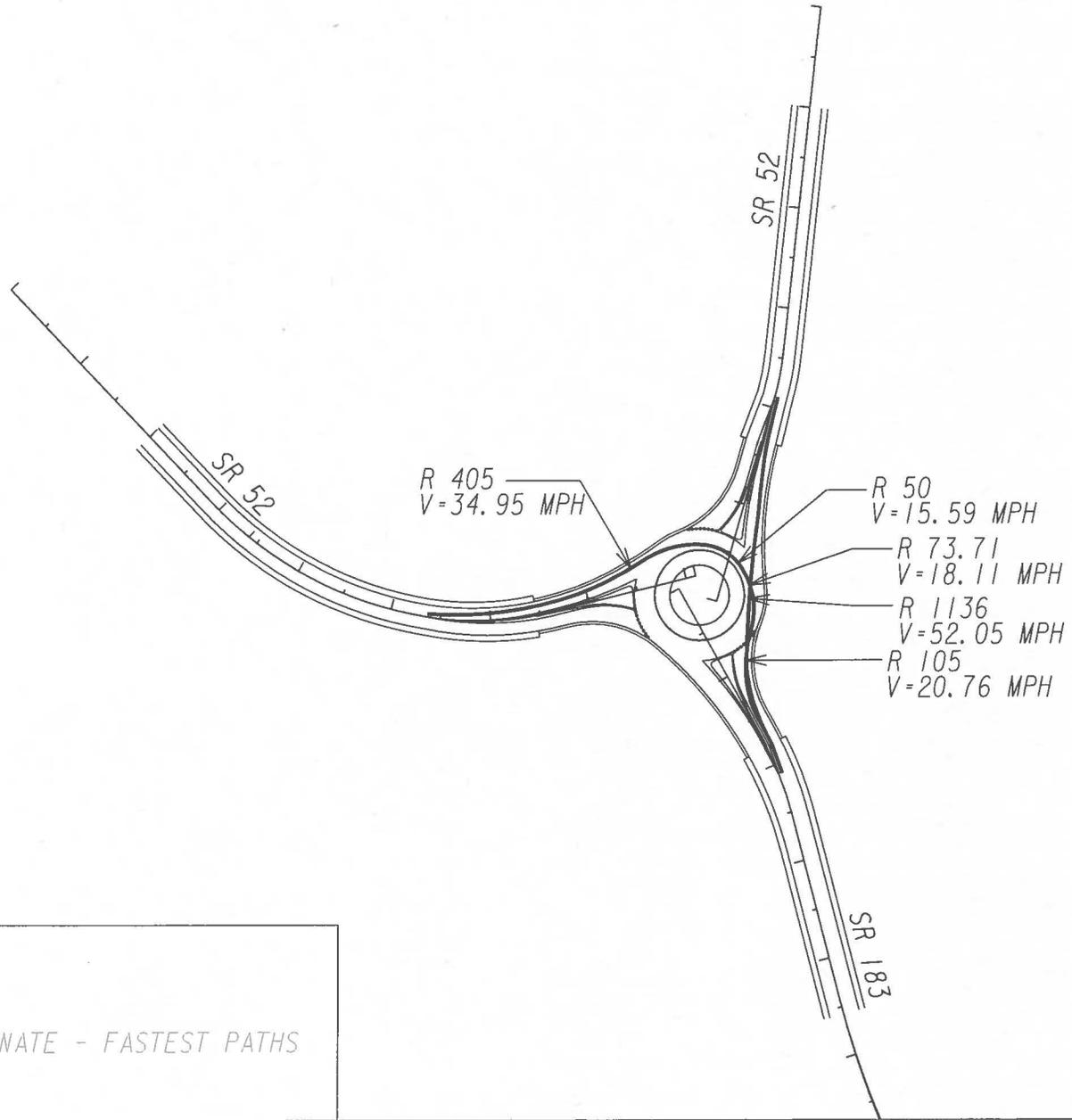
PI 0000315
DAWSON COUNTY
PREFERRED ALTERNATE - INTERSECTION SIGHT DISTANCE
SOUTH LEG



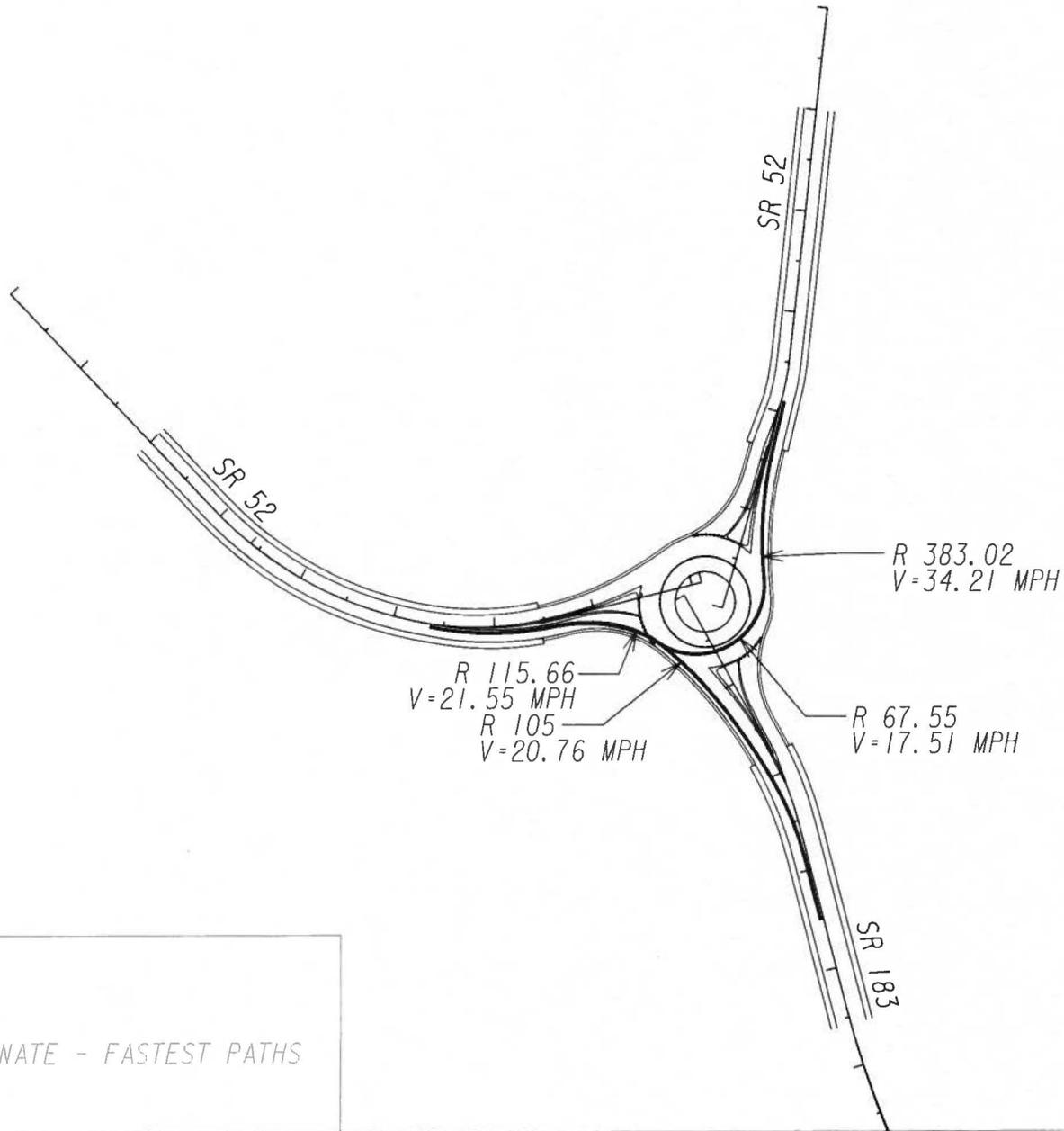
PI 0000315
DAWSON COUNTY
PREFERRED ALTERNATE - INTERSECTION SIGHT DISTANCE
WEST LEG



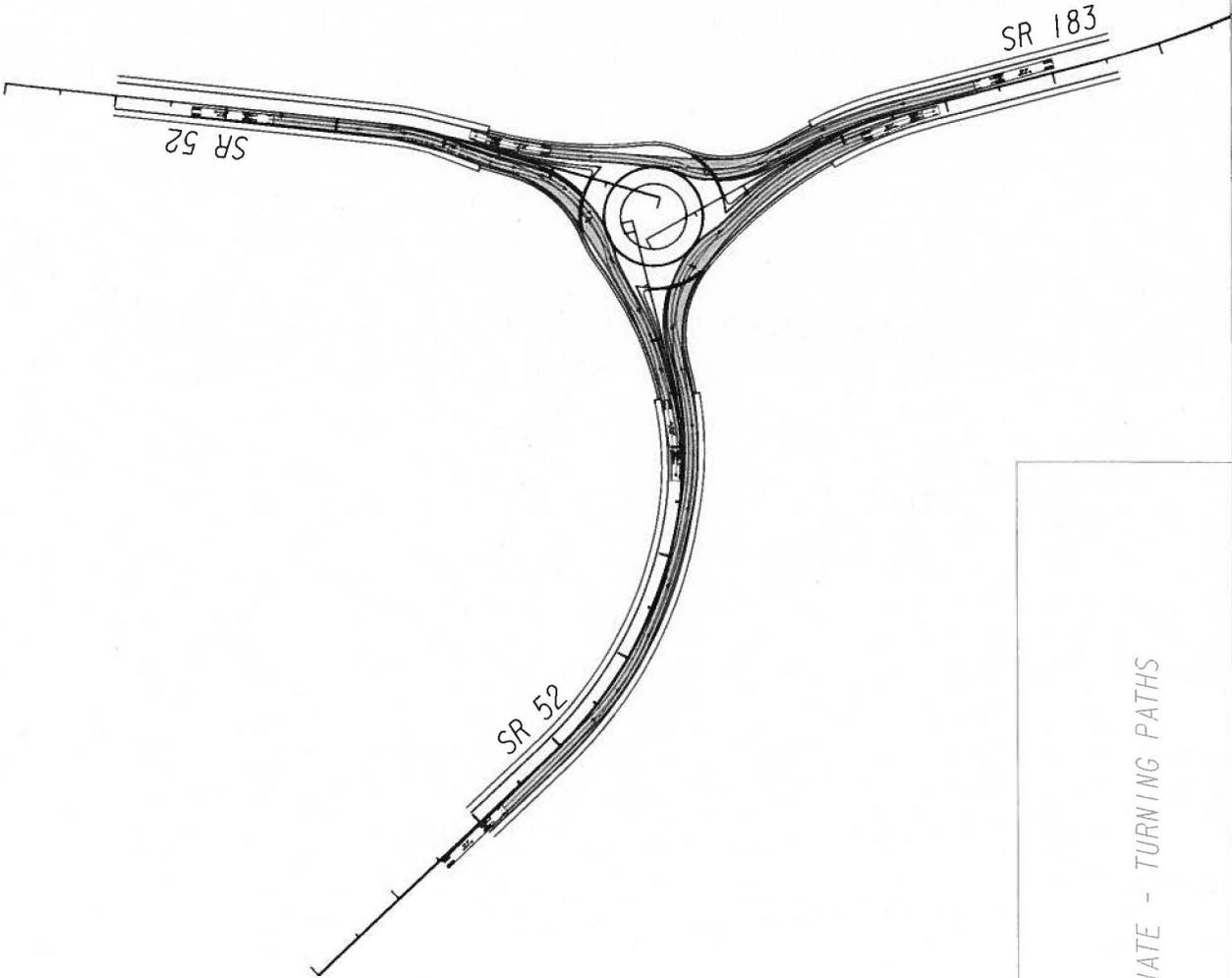
PI 0000315
DAWSON COUNTY
PREFERRED ALTERNATE - FASTEST PATHS
NORTH LEG



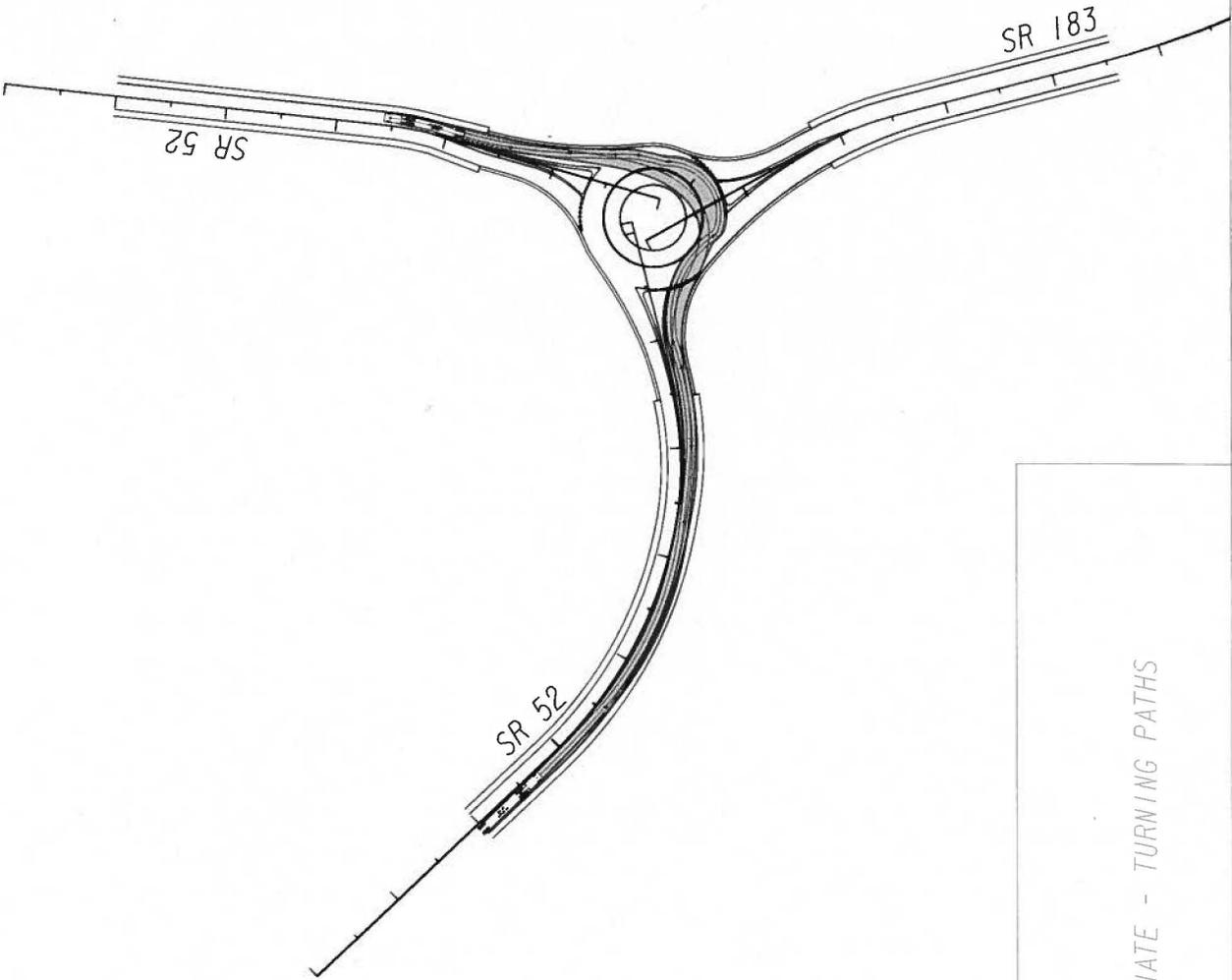
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DAWSON COUNTY
PREFERRED ALTERNATE - FASTEST PATHS
SOUTH LEG



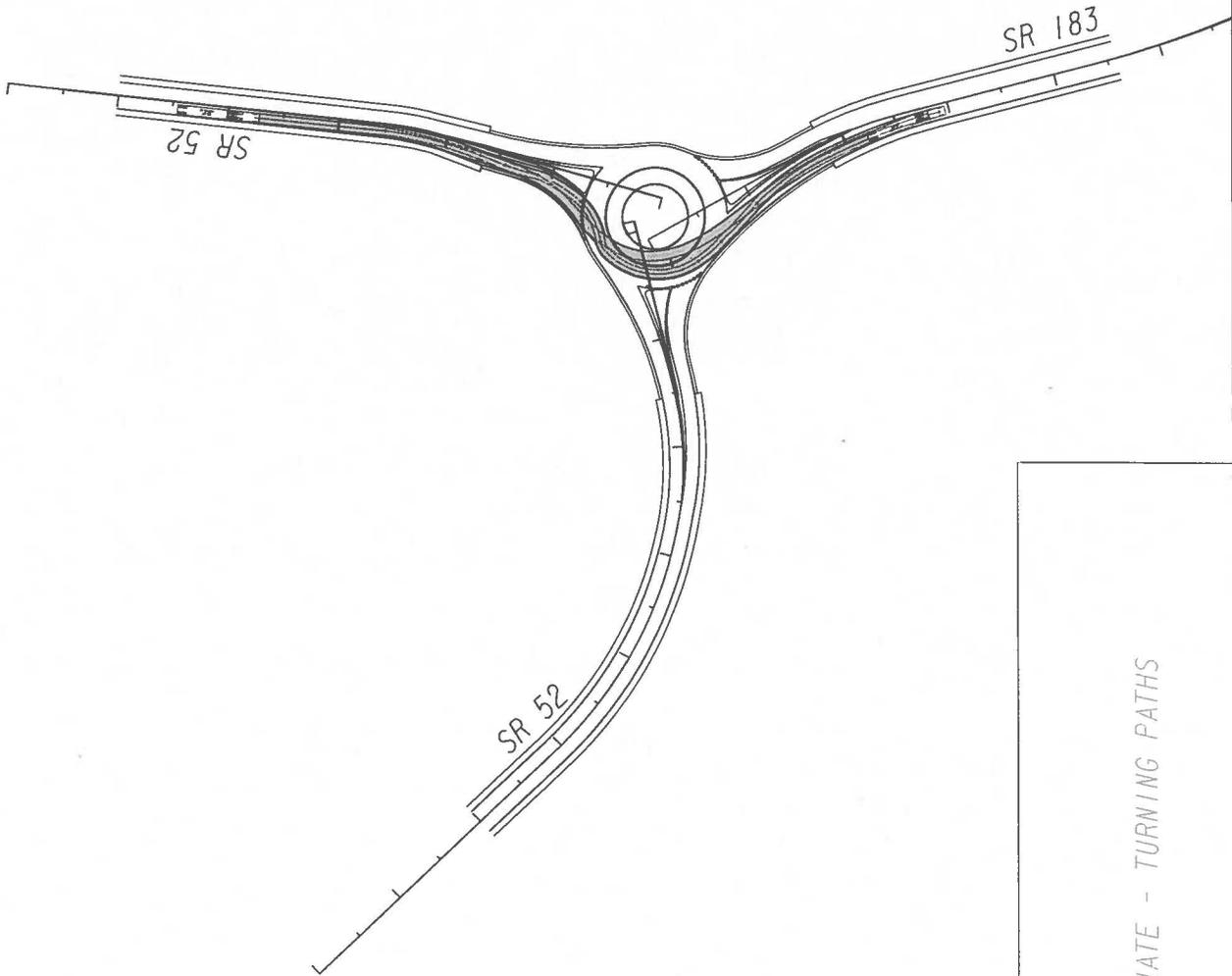
PI 0000315
DAWSON COUNTY
PREFERRED ALTERNATE - FASTEST PATHS
WEST LEG



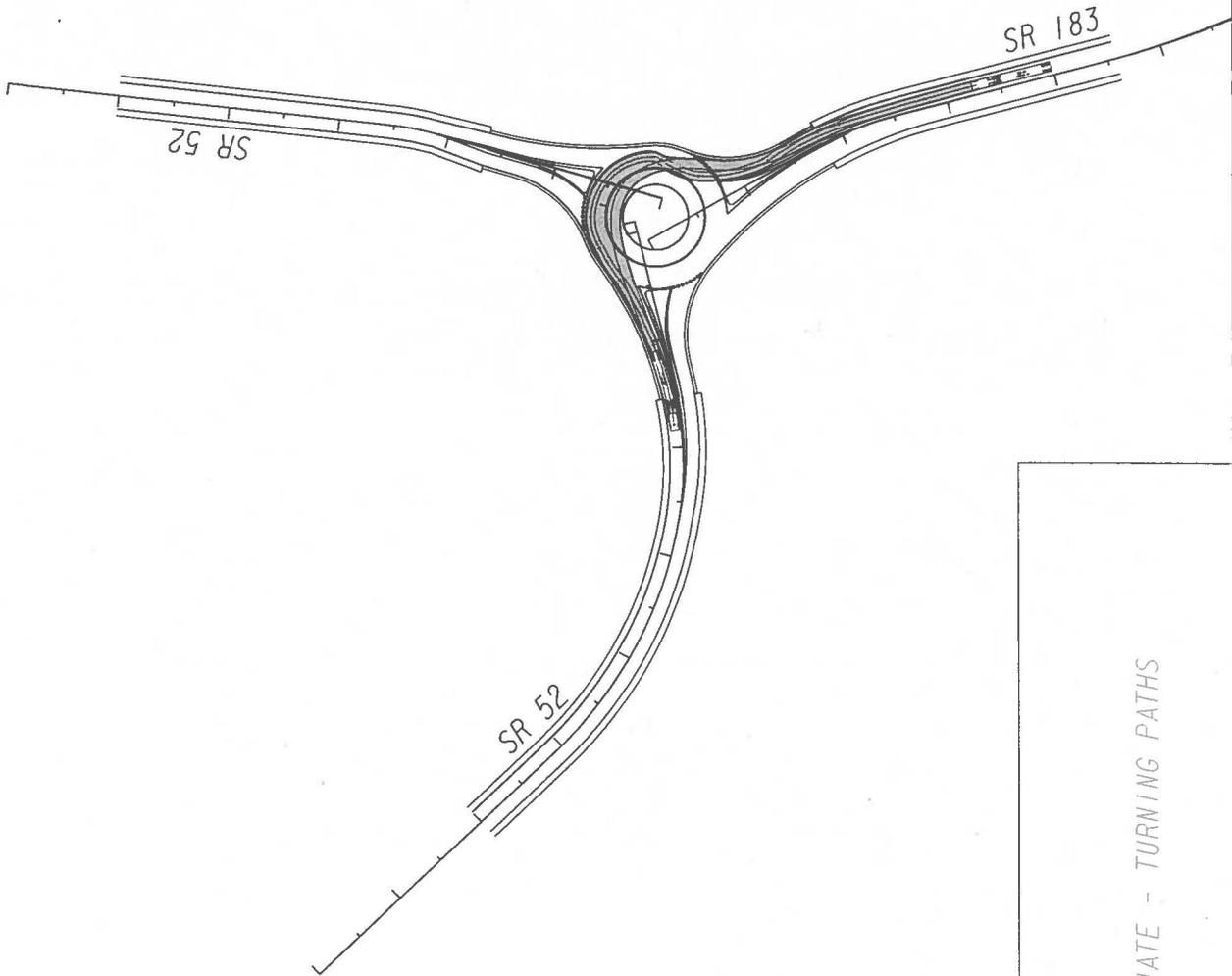
PI 0000315
DAWSON COUNTY
PREFERRED ALTERNATE - TURNING PATHS
RIGHT TURNS



PI 0000315
DAWSON COUNTY
PREFERRED ALTERNATE - TURNING PATHS
NORTH BOUND



PI 0000315
DAWSON COUNTY
PREFERRED ALTERNATE - TURNING PATHS
SOUTH BOUND



PI 0000315
DAWSON COUNTY
PREFERRED ALTERNATE - TURNING PATHS
WEST BOUND

Bridge Inventory Data Listing



Parameters: Bridge Serial Num

Structure ID:085-0003-0		Dawson	SUFF. RATING: 97.65		
Location & Geography					
Structure ID:	085-0003-0	*104 Highway System:	1	Signs & Attachments	
200 Bridge Information:	07	*26 Functional Classification:	07	225 Expansion Joint Type:	00
*6A Feature Int:	LITTLE AMICALOLA CREEK	*204 Federal Route Type:	S No: 00856	242 Deck Drains:	0
*6B Critical Bridge:	0	105 Federal Lands Highway:	0	243 Parapet Location:	0
*7A Route No Carried:	SR00052	*110 Truck Route:	0	Height:	0.00
*7B Facility Carried:	SR 52	206 School Bus Route:	1	Width:	0.00
9 Location:	11.6 MI NW OF DAWSONVILLE	217 Benchmark Elevation:	0000.00	238 Curb Height:	0
2 Dot District:	1	218 Datum:	0	Curb Material:	0
207 Year Photo:	2013	*19 Bypass Length:	07	239 Handrail:	0 0
*91 Inspection Frequency:	24 Date: 06/05/2013	*20 Toll:	3	*240 Median Barrier Rail:	0
92A Fract Crit Insp Freq:	0 Date: 02/01/1901	*21 Maintenance:	01	241 Bridge Median Height:	0
92B Underwater Insp Freq:	0 Date: 02/01/1901	*22 Owner:	01	* Bridge Median Wdth:	0
92C Other Spc. Insp Freq:	0 Date: 02/01/1901	*31 Design Load:	2	230 Guardrail Loc. Dir. Rear:	0
* 4 Place Code:	00000	37 Historical Significance:	5	Fwr:	0
*5 Inventory Route(O/U):	1	205 Congressional District:	09	Oppo. Dir. Rear:	0
Type:	3	27 Year Constructed:	1941	Oppo. Fwr:	0
Designation:	1	106 Year Reconstructed:	0000	244 Approach Slab:	0
Number:	00052	33 Bridge Median:	0	224 Retaining Wall:	0
Direction:	0	34 Skew:	00	233 Posted Speed Limit:	55
*16 Latitude:	34 - 32.3280 HMMS Prefix:SR	35 Structure Flared:	0	236 Warning Sign:	0.00
*17 Longitude:	84 - 15.8680 HMMS Suffix:00	38 Navigation Control:	0	234 Delineator:	0.00
	MP: 4.25	213 Special Steel Design:	0	235 Hazard Boards:	1
98 Border Bridge:	000 % Shared:00	267 Type of Paint:	0	237 Utilities Gas:	00
99 ID Number:	0000000000000000	*42 Type of Service On:	1	Water:	00
*100 STRAHNET:	0	Type of Service Under:	5	Electric:	00
12 Base Highway Network:	1	214 Movable Bridge:	0	Telephone:	00
13A LRS Inventory Route:	851005200	203 Type Bridge:	Q - - -	Sewer:	00
13B Sub Inventory Route:	0	259 Pile Encasement:	3	247 Lighting Street:	0
*101 Parallel Structure:	N	*43 Structure Type Main:	1 19	Navigation:	0
*102 Direction of Traffic:	2	45 No. Spans Main:	003	Aerial:	0
*264 Road Inventory Mile Post:	004.25	44 Structure Type Appr:	0 00	*248 County Continuity No.:	00
*208 Inspection Area:	01 Initials: JBC	46 No Spans Appr:	0000		
Engineer's Initials:	bcn	226 Bridge Curve Horz:	0 Vert: 0.00		
* Location ID No:	085-00052D-004.25E	111 Pier Protection:	0		
		107 Deck Structure Type:	N		
		108 Wearing Structure Type:	N		
		Membrane Type:	N		
		Deck Protection:	N		

Bridge Inventory Data Listing



Parameters: Bridge Serial Num

8

Structure ID:085-0003-0

Programming Data

201 Project No: SP 1051-B
 202 Plans Available: 1
 249 Prop Proj No: 000000000000000000000000
 250 Approval Status: 0000
 251 PI Number: 0000000
 252 Contract Date: 02/01/1901
 260 Seismic No: 00000
 75 Type Work: 00 0
 94 Bridge Imp. Cost: \$113
 95 Roadway Imp. Cost: \$11
 96 Total Imp Cost: \$170
 76 Imp Length: 000000
 97 Imp Year: 2013
 114 Future ADT: 003825 Year:2032

Hydraulic Data

215 Waterway Data:
 High Water Elev: 0000.0 Year:1900
 Flood Elev: 0000.0 Freq:00
 Avg Streambed Elev: 0000.0
 Drainage Area: 00000
 Area of Opening: 000162
 113 Scour Critical: 8
 216 Water Depth: 00.1 Br.Height:05.9
 222 Slope Protection: 0
 221 Spur Dikes Rear: 0 Fwd:0
 219 Fender System: 0
 220 Dolphin: 0
 223 Culvert Cover: 10
 Type: 1
 No. Barrels: 3
 Width: 9.00 Height:6.00
 Length: 72 Apron:0
 *265 U/W Insp Area: 0 Diver:ZZZ
 *Location ID No: 085-00052D-004.25E

Measurements:

*29 ADT: 002550 Year:2012
 109 %Trucks: 15
 * 28 Lanes On: 02 Under:00
 210 No. Tracks On: 00 Under:00
 * 48 Max. Span Length: 0009
 * 49 Structure Length: 29
 51 Br. Rwdy. Width: 0.00
 52 Deck Width: 0.00
 * 47 Tot. Horiz. Cl: 37
 50 Curb / Sidewalk Width: 0.00 / 0.00
 32 Approach Rdwy. Width: 024
 *229 Shoulder Width:
 Rear Lt: 6.00 Type:8 Rt:6.80
 Fwd. Lt: 6.90 Type:8 Rt:6.60
 Pavement Width:
 Rear: 23.70 Type: 2
 23.70 Type: 2
 Intersaction Rear: 1 Fwd: 1
 36 Safety Features Br. Rail: N
 Transition: N
 App. G. Rail: N
 App. Rail End: N
 53 Minimum Cl. Over: 99' 99"
 Under: N 00' 00"
 *228 Minimum Vertical Cl
 Act. Odm Dir.: 99' 99"
 Oppo. Dir: 99' 99"
 Posted Odm. Dir: 00' 00"
 Oppo. Dir: 00' 00"
 55 Lateral Undercl. Rt: N 0.00
 56 Lateral Undercl. Lt: 0.00
 *10 Max Min Vert Cl: 99' 99" Dir:0
 39 Nav Vert Cl: 000 Horiz:0000
 116 Nav Vert Cl Closed: 000
 245 Deck Thickness Main: 0.00
 Deck Thick Approach: 0.00
 246 Overlay Thickness: 0.00
 212 Year Last Painted: Sup:0000 Sub:0000

65 Inventory Rating Method: 0
 63 Operating Rating Method: 0
 66 Inventory Type: 2 Rating: 99
 64 Operating Type: 2 Rating: 99
 231 Calculated Loads:
 H-Modified: 00 0
 HS-Modified: 00 0
 Type 3: 00 0
 Type 3s2: 00 0
 Timber: 00 0
 Piggyback: 00 0
 261 H Inventory Rating: 15
 262 H Operating Rating: 25
 67 Structural Evaluation: 6
 58 Deck Condition: N
 59 Superstructure Condition: N
 * 227 Collision Damage: 0
 60A Substructure Condition: N
 60B Scour Condition: 8
 60C Underwater Condition: N
 71 Waterway Adequacy: 9
 61 Channel Protection Cond.: 8
 68 Deck Geometry: N
 69 UnderClr. Horz/Vert: N
 72 Appr. Alignment: 5
 62 Culvert: 6
Posting Data
 70 Bridge Posting Required: 5
 41 Struct Open, Posted, CL: A
 * 103 Temporary Structure: 0
 232 Posted Loads
 H-Modified: 00
 HS-Modified: 00
 Type 3: 00
 Type 3s2: 00
 Timber: 00
 Piggyback: 00
 253 Notification Date: 02/01/1901
 258 Fed Notify Date: 02/01/1901

CRASH REDUCTION FACTORS

PI 0000315 DAWSON

obtained from Highway Safety Manual, Volume 3, Chapter 14

Treatment	Setting (Intersection Type)	Traffic Volume	Crash Type (Severity)	CMF	Std. Error
Convert intersection with minor-road stop control to modern roundabout	Rural (one lane)	Unspecified	All types (All severities)	0.29	0.04
			All types (Injury)	0.13	0.04

The Crash Reduction Factors (CRFs) for converting an intersection with minor-road stop control to a modern roundabout :

Base Condition (Stop-controlled intersection) Crash Modification Factor (CMF) = 1.00

All Severity Crash Types: Base CMF - Treatment CMF =	1.00 - 0.29 ± 0.04 =	0.71 ± 0.04
All Severity Crash Types with injury: Base CMF - Treatment CMF =	1.00 - 0.13 ± 0.04 =	0.87 ± 0.04

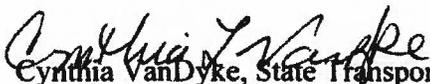
**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENTAL CORRESPONDENCE

FILE: PI 0000315

OFFICE: Planning

DATE: March 04, 2013

FROM: 
Cynthia VanDyke, State Transportation Planning Administrator

TO: Genetha Rice-Singleton, State Program Delivery Engineer
Attn: Brandon Kirby

SUBJECT: Project Justification Statement for STP 00-0000-00(315), DAWSON COUNTY, PI # 0000315--SR 52 RELOCATION @ SR 183 EXTENSION/MP 3.7 to MP 5.3

The Office of Planning is providing this Project Justification Statement for GDOT project PI 0000315 as defined in the Plan Development Process Manual.

If you have any questions, please call Kristina Wright at 404-631-1749.

CLV: kgw

Enclosure

Project Justification Statement
PROJECT STP00-0000-00(315), DAWSON COUNTY
P.I. NO 0000315
SR 52 RELOCATION @ SR 183 EXTENSION / MP 3.7 TO 5.3

Background

The State Route (SR) 52 Relocation at the SR 183 Extension project is programmed as a safety intersection improvement project in Dawson County. The project is identified in the 2013-2016 State Transportation Improvement Program (STIP). The SR 52 Relocation @ SR 183 Extension intersection safety improvement project was recommended by GDOT District One and was initially proposed due to poor sight distance and poor horizontal alignment at the existing intersection. This project was added to the Construction Work Program on October 1, 1999.

Figure 1: Intersection Improvement at SR 52 @ SR 183 Extension



Existing and Projected Traffic Conditions

Both SR 52 and SR 183 are classified as rural major collectors. The truck percentage¹ for SR 52 is 11 % at the intersection. The posted speed limit is 55 mph for both SR 52 and SR 183.

¹ Truck percentage is an estimate based on the Georgia DOT Traffic Count Database System (TCDS).

² Projected traffic volumes based on ten-year historical data with a demonstrated historical average growth rate of - 2.5 %

Table 1 reflects the most current (2010) traffic volumes (not design traffic) and what is projected for 2032.

Both SR 52 and SR 183 have a current and future projected level of service (LOS) of “A” based on historical trend data. This document assumes that this traffic trend will remain constant through 2032.

Table 1: Projected Intersection Traffic Volumes²

Road Name	Current AADT		Future AADT	
	2010		2032	
S R 52	M.P 3.07-M.P. 4.25 (SR 52 east of SR 183 intersection)	2,630	M.P 3.07-M.P. 4.25 (SR 52 east of SR 183 intersection)	2,800
	M.P 4.25-M.P. 5.31 (SR 52 west of SR 183 intersection)	1,180	M.P 4.25-M.P. 5.31 (SR 52 west of SR 183 intersection)	700
SR 183	M.P 2.92-M.P. 4.24 (SR 183 at and just south of SR 52 intersection)	1,720	M.P 2.92-M.P. 4.24 (SR 183 at and just south of SR 52 intersection)	1,200
	M.P 4.24-M.P. 6.13 (SR 183 farther south of SR 52 intersection)	1,220	M.P 4.24-M.P. 6.13 (SR 183 farther south of SR 52 intersection)	1,300

Crash Data

Crash data for the corridor over a ten year period (2000-2009) demonstrates that, out of ten crashes recorded, 50 % are “not a collision with a motor vehicle,” which could be attributed to the current alignment of the SR 52/SR 183 intersection

Of the five crashes at the intersection that do involve vehicular collisions, four (~ 90%) are rear-end collisions, which could be attributed to the existing SR 52/SR 183 intersection as well.

The corridor’s average crash rate, injury rate and fatality rate were not over the 2006-2009 statewide average for similar facility types. However, the type and frequency of crashes at this intersection suggest geometric deficiencies and the need for safety/operational improvements.

Project Justification

Based on observed traffic patterns and crash data, the Office of Planning recommends that operational improvements are made at the SR 52/SR183 intersection.

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

MEETING MINUTES

WHAT: Meeting Minutes for Concept Team Meeting

DATE/TIME: October 27, 2014 10:00am

WHERE: Gainesville, GDOT District 1

PROJECT: Intersection Improvement SR 52 & SR 183, PI 0000315

PERSONNEL PRESENT:

NAME	COMPANY	PHONE #	EMAIL
Steven Heng	GDOT Program Delivery	404-631-1161	KhHeng@dot.ga.gov
Jonathan Peevy	GDOT District 1 Design	770-531-5742	jpeevy@dot.ga.gov
Justin Lott	GDOT District 1 Design	770-531-5745	jlott@dot.ga.gov
Ken Werho	GDOT TMC	404-635-2859	kwerho@dot.ga.gov
Joel Cantoran	GDOT Engineering Service	678-209-9603	jcantoran@dot.ga.gov
Doug Fadool	GDOT Utilities	770-531-5809	dfadool@dot.ga.gov
Jonathan Dills	GDOT ROW	770-531-5791	jdills@dot.ga.gov
Kim Coley	GDOT Plans & Programs	770-532-5530	kcoley@dot.ga.gov
Matt Needham	GDOT Area Engineer	770-535-5759	mneedham@dot.ga.gov
Jason Dykes	GDOT Construction	678-332-8305	jdykes@dot.ga.gov
Shane Giles	GDOT Traffic Operations	770-531-5803	shgiles@dot.ga.gov
Ryan Perry	GDOT Environmental	404-631-1271	vperry@dot.ga.gov
Bobby Dollar	GDOT Environmental	404-631-1920	rdollar@dot.ga.gov
Brent Cook	GDOT District Engineer	770-532-5526	bcook@dot.ga.gov
Denise Farr	Dawson Co. Engineering	678-776-6023	dfarr@dawsoncounty.org
David Headley	Dawson Co. Public Works	706-974-1100	dheadley@dawsoncounty.org
Larry Robinson	Windstream Comm.	706-867-3300	larry.robinson@windstream.com

KEY TOPICS:

- GDOT Design Engineering took time to explain each section in the report.
- Alt 1 – Potential 20-foot fill, high construction cost, and higher right of way cost.
- Alt 2 – Impact State Park wetland and other environmental issues, high construction cost and potential 20-foot fill and higher right of way cost.
- Alt 3 – Preferred alternate. Use existing culvert, cheaper alternate and less cost in right of way acquisition.
- Alt 4 – proposed by Roadway Department. Potential fill, high construction cost and higher right of way cost.
- Discussed about existing 72-foot long, triple barrel box culvert. There is uncertainty whether we can keep this culvert or need to redesign during PFPR. Our goal is to maintain the existing culvert during construction.

- Discussed about temporary pavement during construction of roundabout. Construction suggested using existing roadways as temporary pavement. During meeting, everybody didn't think detour would be necessary.
- Justin mentioned he would email the Lighting group and get an estimate on the amount of lights that would be required at the intersection and sent to Dawson County to determine if they want to sign the lighting agreement letter.
- Denise would require additional information pertaining the Lighting Plan and Landscape Requirement for the roundabout. A copy of Lighting/Landscape agreement would be sent to Dawson County.
- David mentioned that during pumpkin season, Burt's Pumpkin Farm would expect more than 300,000 visitors. Jonathan would check the exact start date and end date of pumpkin season and put a note that restriction construction or no construction during "pumpkin" season when designing the plans in PFPR.
- Dawson County wasn't sure bicycle warrant would be needed at this point.
- Kim & Bobby suggested moving PIOH to the end of January or beginning of February due to school opening. Everyone in the room agreed. Steven would coordinate with Environmental and District Right Of Way Teams end of December.
- ROW verified and confirmed the tract of land at the northern area did not appear to be US Forest Land or Amicalola Park land since the tax map listed as Johnny R Burt and Kinna Ann Burt potential state forest owned by private owner.
- During meeting, Doug told Jonathan that \$147,000 reimbursable utilities cost estimate should change to non-reimbursable.

ATTACHMENT: None

DISTRIBUTION: To above listed personnel present.

Notes by: _____ / Steven Heng (GDOT Project Manager)