

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: CSSTP-0005-00(958), Forsyth County
P.I. No.: 0005958
SR 9/20 at Mary Alice/Baldrige/Meadow Road

OFFICE: Traffic Safety and Design

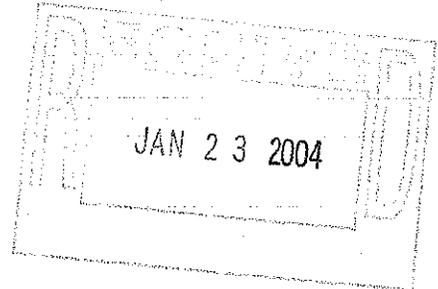
DATE: January 22, 2004

Phillip M. Allen ^{KB}

FROM: Phillip M. Allen, State Traffic Safety & Design Engineer

TO: Todd Long, District Engineer - Gainesville

SUBJECT: APPROVED CONCEPT REPORT



Attached is a copy of the approved concept report on the above listed project for your use and further handling.

This project consists of realigning Mary Alice Park Road and Bald Ridge Road so that the two are on the same alignment and offset approximately 350' east of SR 9/20. County Road 526/Meadow Drive will be extended to the intersection of the new alignment of Mary Alice Park Road/Bald Ridge Road. A left turn lane will be added on the northbound approach of Mary Alice and a right turn will be added to the southbound approach of Bald Ridge. County Road 528/Meadow Drive will be reconstructed to accommodate a left turn lane and a right turn lane on the eastbound approach of the Mary Alice Park/Bald Ridge Road intersection and a through-left lane and right turn lane on the westbound approach of the SR 9/20 intersection. A traffic signal will be installed at the intersection of SR 9/20 and CR 526/Meadow Drive. The intersection of CR 526/Meadow Drive and Mary Alice/Bald Ridge will be stop controlled on CR 526/Meadow Drive.

By copy of this letter, this office is requesting for this project be assigned to Kathy Bailey as Project Manager. The design of this project will be handled under our Consultant Design Contract, STP-0001-00(853).

Should you have any questions, please contact Kathy Bailey at 404-635-8134 or Kevin Stefanik of this office at 404-635-8125.

PMA:KMS

Attachments

cc: Paul Mullins, letter only
Tom Turner
David Mulling
Meg Pirkle
Percy Middlebrooks
Harvey Keepler
Joe Garland
General Files

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

PROJECT CONCEPT REPORT

FORSYTH COUNTY

FEDERAL ROUTE NO: ST-541
STATE ROUTE NO: S.R. 9/20
GADOT P.I. NO: 0005958

**SEE ATTACHED
LOCATION SKETCH**

Date of Report: December 16, 2003

RECOMMENDED: 12/19/03
DATE

Phillip M. Allen
STATE TRAFFIC SAFETY AND DESIGN ENGINEER

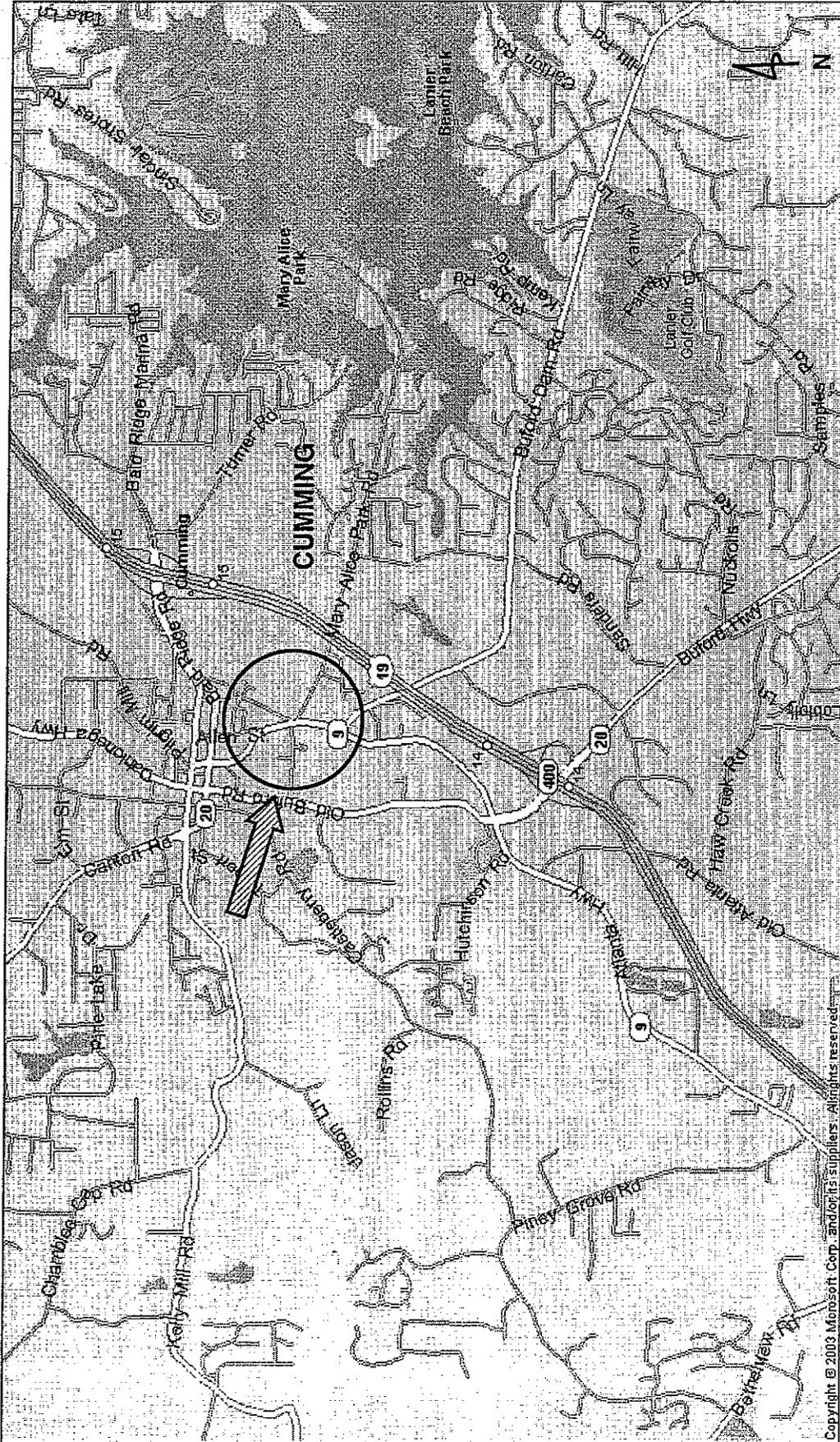
RECOMMENDED: 12/23/03
DATE

[Signature]
DISTRICT ENGINEER

APPROVED: 1/13/04
DATE

[Signature]
CHIEF ENGINEER

Project Concept Report Page 2
Project Number: CSSTP-0005-00(958)
P.I. Number: 005958
County: Forsyth



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Location Map
Project: CSSTP-0005-00(958) P.I. No.: 005958
Description: SR 9/20 at Mary Alice Park Road (CR 81); 1.5 miles west of Cumming

Project Concept Report Page 3
Project Number: CSSTP-0005-00(958)
P.I. Number: 0005958
County: Forsyth

Need and Purpose: Accident history for this intersection shows 12 accidents for the 13-month period from February 2000 to March 2001, including seven angle intersecting, four rear end, and one incident of striking a deer accidents. The current traffic movements at this intersection are causing the efficiency of the intersection to fail, thus causing increased vehicle delay and erratic movements. The realigning of Mary Alice Park Road (CR 87) and Bald Ridge Road, the additions of left and right turn lanes, and the lengthening of Meadow Drive to create two separate intersections will distribute the traffic efficiently, improve sight distance, and reduce accidents at this intersection. To improve the safety and orderly progression of traffic through the intersection, the improvements discussed in this report are recommended.

Description of the proposed project: Mary Alice Park Road (CR 87) and Bald Ridge Road will be realigned so that the two are on the same alignment and offset approximately 350' east of S.R. 9/20. Meadow Drive (CS 526) will be extended to the intersection of the new alignment of Mary Alice Park Road (CR 87)/Bald Ridge Road. A left turn lane will be added on the northbound approach of Mary Alice and a right turn lane will be added to the southbound approach of Bald Ridge. Meadow Drive Extension (CS 526) will be constructed to accommodate a left turn lane and a right turn lane on the eastbound approach of the Mary Alice Park/Bald Ridge Road Intersection and a through-left lane and right turn lane on the westbound approach of the SR 9/20 Intersection. A traffic signal will be installed at the intersection of S.R. 9/20 and Meadow Drive (CS 526). The intersection of Meadow Drive (CS 526) and Mary Alice/Bald Ridge will be stop controlled on Meadow Drive (CS 526).

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

PDP Classification: Major _____ Minor

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

Functional Classification:

S.R.9/20 – Rural Minor Arterial Mary Alice Park Road/Bald Ridge Road – Rural Local
Meadow Drive (CS 526) – Rural Local

U.S. Route Number(s): N/A State Route Number(s): S.R. 9/20

Traffic – Current (AADT):

	Current Year (2003)	Base Year (2006)	Design Year (2026)
SR 9/20	25780	28020	50730
Mary Alice Park Road (CR 87)	4970	5400	9780
Meadow Drive (CS 526)	5840	6350	11490

Project Concept Report Page 5
 Project Number: CSSTP-0005-00(958)
 P.I. Number: 0005958
 County: Forsyth

- Right of way

- ◊ Width: Varies from 105-ft to 170-ft
- ◊ Easements: Temporary (), Permanent (X), Utility (), Other ().
- ◊ Type of access control: Full (), Partial By Permit (X), Other ().
- ◊ Number of parcels: 11 Number of displacements:
 - ◊ Business: 5
 - ◊ Residences: 0
 - ◊ Mobile homes: 0
 - ◊ Other: N/A

- Structures: None
- Major intersections and interchanges: SR 9/20, Mary Alice Park (CR 87), Bald Ridge Road, Meadow Drive (CS 526)
- Traffic control during construction: Bald Ridge will be closed during construction; traffic will be detoured offsite. All other traffic will remain as existing.
- Design Exceptions to controlling criteria anticipated:

	<u>UNDETERMINED</u>	<u>YES</u>	<u>NO</u>
HORIZONTAL ALIGNMENT:	()	()	(x)
ROADWAY WIDTH:	()	()	(x)
SHOULDER WIDTH:	()	()	(x)
VERTICAL GRADES:	()	()	(x)
CROSS SLOPES:	()	()	(x)
STOPPING SIGHT DISTANCE:	()	()	(x)
SUPERELEVATION RATES:	()	()	(x)
HORIZONTAL CLEARANCE:	()	()	(x)
SPEED DESIGN:	()	()	(x)
VERTICAL CLEARANCE:	()	()	(x)

- Design Variances: None
- Environmental concerns: None anticipated
- Level of environmental analysis:
 - ◊ Are Time Saving Procedures appropriate? Yes (X), No ()
 - ◊ Categorical exclusion anticipated (X),
 - ◊ Environmental Assessment/Finding of No Significant Impact (FONSI) (),or
 - ◊ Environmental Impact Statement (EIS) ().
- Utility involvement: The department shall be responsible for all public and private utility adjustments.

Project Concept Report Page 6
Project Number: STP-0001-00(853)
P.I. Number: 0001853
County: Forsyth

Project responsibilities:

- ◇ Design, Georgia Department of Transportation - Office of Traffic Safety and Design
- ◇ Right of Way Acquisition, Georgia Department of Transportation with participation from the City of Cumming
- ◇ Relocation of Utilities, Georgia Department of Transportation
- ◇ Letting to contract, Georgia Department of Transportation
- ◇ Supervision of construction, Georgia Department of Transportation

Coordination

- Initial OTS&D/District 1 coordination meeting on 12/13/02 and brief summary. Attached.
- Concept meeting date and brief summary.
- P. A. R. meetings, dates and results: None anticipated
- FEMA, USCG, and/or TVA: N/A
- Public involvement: N/A
- Local Government comments: The County is in support of the project with a verbal commitment of \$1.5 million for right of way acquisition.
- Other projects in the area: None
- Railroads: None
- Other coordination to date: None

Alternates considered:

- (1) Relocate Mary Alice Park Road (CR 87) to intersect SR 9/20 opposite existing Meadow Drive (CS 526) and relocate Bald Ridge Road to intersect Mary Alice Park Road (CR 87) approximately 300' from SR 9/20.
- (2) Extend Meadow Road approximately 350' east of SR 9/20 to intersect a new alignment of Mary Alice Park Road (CR 87)/Bald Ridge Road. The new alignment will encompass both Mary Alice Park Road (CR 87) and Bald Ridge Road.
- (3) Relocate Bald Ridge Road to intersect SR 9/20 opposite existing Meadow Drive (CS 526) and relocate Mary Alice Park Road (CR 87) to intersect Bald Ridge Road 300' from SR 9/20.
- (4) Relocate Meadow to intersect SR 9/20 opposite existing Mary Alice Park Road (CR 87) and relocate Bald Ridge Road to intersect SR 9/20 approximately 400' to the north.
- (5) Relocate Meadow Drive (CS 526) and Bald Ridge Road to intersect SR 9/20 approximately 400' to the north and relocate Mary Alice Park Road (CR 87) to intersect Bald Ridge Road approximately 400' east of SR 9/20.
- (6) Install a signal at the intersection of existing SR 9/20, Mary Alice Park Road, and Bald Ridge Road.

Comments: None

Project Concept Report Page 7
Project Number: STP-0001-00(853)
P.I. Number: 0001853
County: Forsyth

Comparison Summary of Concepts 1 – 6

Alternate (2) is selected for this concept.

Alternate (1) was eliminated due to cost in right-of-way.

Alternate (3) was eliminated due to cost in right-of-way.

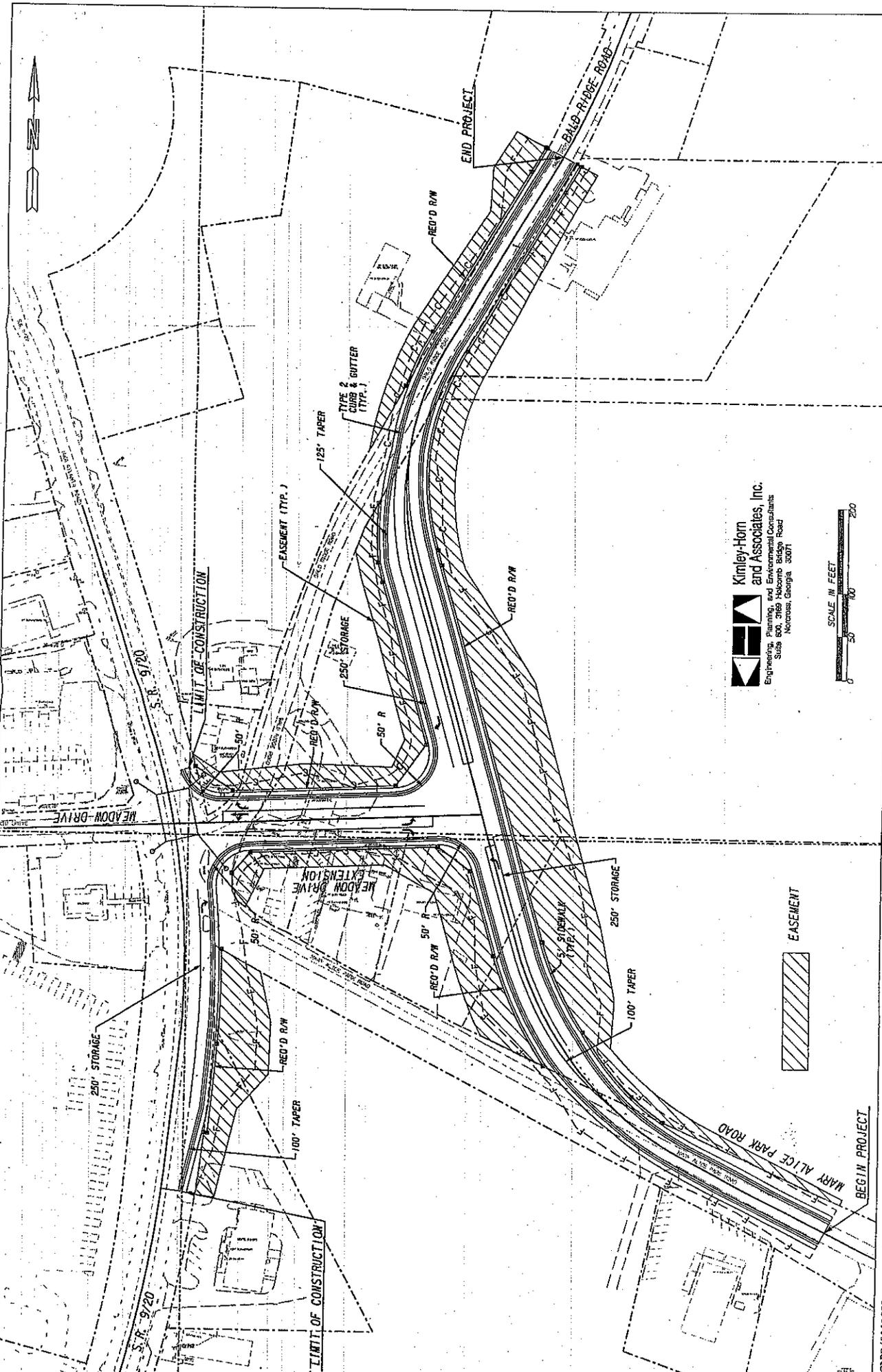
Alternate (4) was eliminated due to traffic between Mary Alice Park Road and Bald Ridge Road having to enter SR9/20 for a short distance.

Alternate (5) was eliminated due to cost of right-of-way and construction.

Alternate (6) was eliminated because the intersection would have operated at LOS F due to extreme delays for all approaches.

Attachments:

1. Cost Estimates:
 - a. Construction including E&C: Attached
 - b. Right of Way: Attached
 - c. Utilities: Requested
2. Concept Layout: Attached
3. Typical sections: Attached
4. Capacity Analysis: Attached
5. Bridge Inventory: N/A
6. Minutes of Preconcept Meeting: Attached



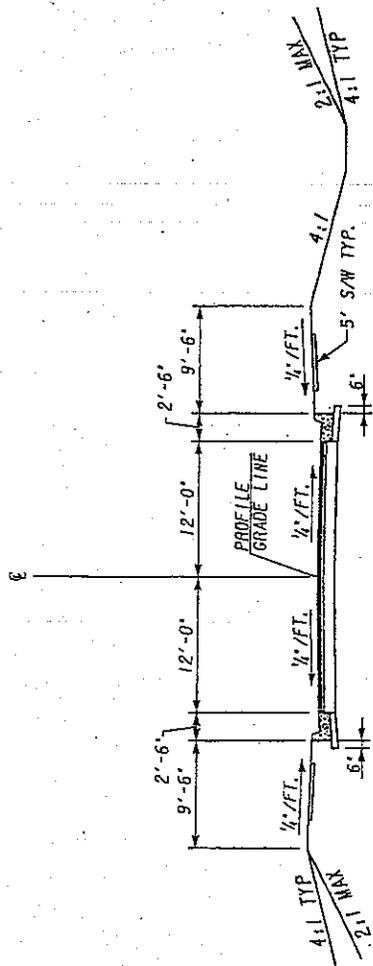

Kimley-Horn and Associates, Inc.
 Engineering, Planning, and Environmental Consultants
 600 3889 Hobson Bridge Road
 Norcross, Georgia 30071



1/2" = 1' (AS SHOWN)

ESTIMATE SUMMARY		
A. RIGHT-OF-WAY		\$0
B. REIMBURSEABLE UTILITIES		\$0
C. CONSTRUCTION		
1. MAJOR STRUCTURES		\$0
2. GRADING AND DRAINAGE		\$405,000
3. BASE AND PAVING		\$164,000
4. LUMP ITEMS		\$311,000
5. MISCELLANEOUS		\$64,000
6. SPECIAL FEATURES		\$0
SUBTOTAL CONSTRUCTION COST		\$944,000
E. & C. (10%):		\$94,400
INFLATION (5% PER YEAR)		
NUMBER OF YEARS	2	\$2,596
TOTAL CONSTRUCTION COST		\$1,040,996
GRAND TOTAL PROJECT COST		\$1,040,996

STATE PROJECT NUMBER
 G.A. CSSTP-0005-0019581



TYPICAL SECTION
 MARY ALICE PARK ROAD/BALD RIDGE ROAD

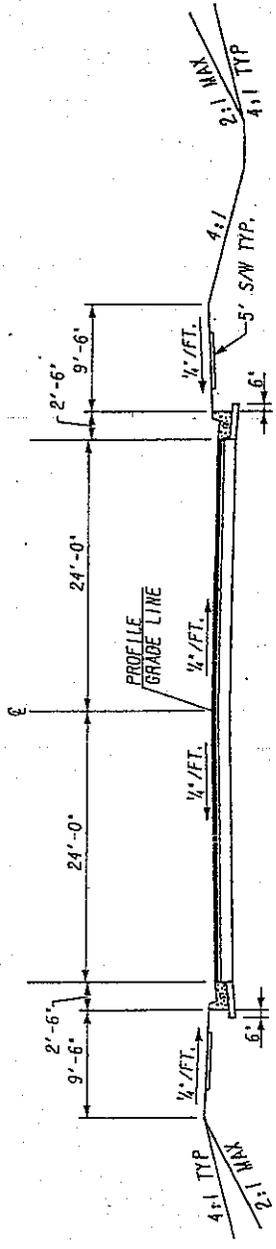
GEORGIA
 DEPARTMENT OF TRANSPORTATION
 TYPICAL SECTIONS
 PROJECT CSSTP-0005-0019581
 COUNTY FORSYTH OF
 SH
 DATE

DATE	REVISIONS	DATE	REVISIONS	LAND LOT NO.
				LAND DISTRICT
				END

**Kinley-Horn
 and Associates, Inc.**
 Engineering, Planning, and Environmental Consultants
 Suite 200, 3150 Redwood Bridge Road
 Norcross, Georgia 30071

STATE PROJECT NUMBER
G.A. CSSTP-0005-001958

DATE
REVISED



TYPICAL SECTION
MEADOW DRIVE

GEORGIA
DEPARTMENT OF TRANSPORTATION
TYPICAL SECTIONS
PROJECT CSSTP-0005-001958
COUNTY FORSTH OF
SH

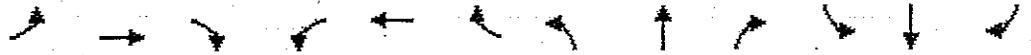
DATE
LAND LOT NO.
LAND DISTRICT
GHD

DATE	REVISIONS	DATE	REVISIONS

Kimley-Horn
and Associates, Inc.
Engineers, Planners, and Environmental Consultants
Suite 600, 3185 Holcomb Bridge Road
Norcross, Georgia 30071



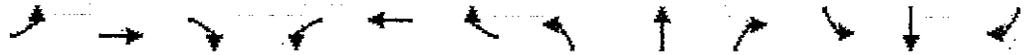
Movement	EBL	EBR	NBL	NBT	SEB	SEB
Lane Configurations	↙	↘	↙	↑	↑	↘
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	260	135	140	80	100	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	260	135	140	80	100	100
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)	12					
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	460	100	200			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu; unblocked vol	460	100	200			
c, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
f (s)	3.5	3.3	2.2			
p0 queue free %	48	86	90			
cM capacity (veh/h)	502	956	1372			
Direction/Lane #						
	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	395	140	80	100	100	
Volume Left	260	140	0	0	0	
Volume Right	135	0	0	0	100	
cSH	763	1372	1700	1700	1700	
Volume to Capacity	0.52	0.10	0.05	0.06	0.06	
Queue Length (ft)	76	9	0	0	0	
Control Delay (s)	16.1	7.9	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	16.1	5.0		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay	9.2					
Intersection Capacity Utilization	35.5%					
ICU Level of Service	A					



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕		↕	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frts	0.97			1.00		0.85	1.00	1.00	0.85	1.00	1.00	1.00
Flt Protected	0.99			0.96		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1778			1784		1583	1770	1827	1583	1770	1822	1822
Flt Permitted	0.71			0.63		1.00	0.26	1.00	1.00	0.04	1.00	1.00
Satd. Flow (perm)	1282			1178		1583	479	1827	1583	76	1822	1822
Volume (vph)	20	40	20	150	20	70	28	1402	255	100	947	20
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%
Adj. Flow (vph)	20	40	20	150	20	70	28	1402	255	100	947	20
Lane Group Flow (vph)	30	80	0	0	170	70	28	1402	255	100	967	30
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Phase Type	Perm			Perm		Perm	Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	4			8				2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	16.0			16.0		16.0	92.0	92.0	92.0	102.0	102.0	
Effective Green, g (s)	18.0			18.0		18.0	94.0	94.0	94.0	104.0	104.0	
Actuated g/C Ratio	0.14			0.14		0.14	0.72	0.72	0.72	0.80	0.80	
Clearance Time (s)	6.0			6.0		6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	178			163		219	316	1321	1145	139	1458	
v/s Ratio Prot								c0.77		0.03	c0.53	
v/s Ratio Perm	0.06			c0.14		0.04	0.06		0.16	0.51		
v/c Ratio	0.45			1.04		0.32	0.08	1.06	0.22	0.72	0.66	
Uniform Delay, d1	51.4			56.0		50.5	5.3	18.6	5.9	62.7	5.5	
Progression Factor	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.8			82.3		0.8	0.1	42.8	0.1	16.3	1.1	
Delay (s)	53.3			138.3		51.3	5.4	60.8	6.0	79.0	6.7	
Level of Service	D			F		D	A	E	A	E	A	
Approach Delay (s)	53.3			112.9				51.6		13.5		
Approach LOS	D			F				D		B		
Intersection Summary												
HCM Average Control Delay	43.2			HCM Level of Service		D						
HCM Volume to Capacity ratio	1.05											
Actuated Cycle Length (s)	130.0			Sum of Lost time (s)		120						
Intersection Capacity Utilization	105.4%			ICU Level of Service		F						
Critical Lane Group												



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	260	135	140	80	100	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	283	147	152	87	109	109
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)	12					
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	500	109	217			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	500	109	217			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tCS	3.5	3.3	2.2			
p0 queue free %	40	84	89			
cM capacity (veh/h)	471	915	1352			
Direction Lane #						
	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	429	152	87	109	109	
Volume Left	283	152	0	0	0	
Volume Right	147	0	0	0	109	
cSH	715	1352	1700	1700	1700	
Volume to Capacity	0.60	0.11	0.05	0.06	0.06	
Queue Length (ft)	101	9	0	0	0	
Control Delay (s)	18.7	3.0	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	18.7	5.1		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay	10.4					
Intersection Capacity Utilization	37.4%					
ICU Level of Service	A					



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Fr _t		0.97			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Fr _t Protected		0.99			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1777			1784	1583	1770	1827	1583	1770	1822	
Fr _t Permitted		0.83			0.67	1.00	0.19	1.00	1.00	0.06	1.00	
Satd. Flow (perm)		1494			1255	1583	354	1827	1583	109	1822	
Volume (vph)	20	40	20	150	20	70	28	1462	255	100	947	20
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	43	22	163	22	76	30	1524	277	109	1029	22
Lane Group Flow (vph)	0	87	0	0	185	76	30	1524	277	109	1051	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type		Perm		Perm	pm+ov	Perm		Perm	pm+pt			
Protected Phases		4			8	1		2			6	
Permitted Phases		4		8	8	2		2		2	6	
Actuated Green, G (s)		15.4			15.4	19.1		62.2		62.2	72.2	
Effective Green, g (s)		17.4			17.4	23.4		64.2		64.2	74.2	
Actuated g/C Ratio		0.17			0.17	0.23		0.64		0.64	0.74	
Clearance Time (s)		6.0			6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		261			219	435		228		1178	1020	
v/s Ratio Prot						0.01		0.83		0.04	0.58	
v/s Ratio Perm		0.06			0.15	0.04		0.08		0.17	0.41	
w/c Ratio		0.33			0.34	0.17		0.13		0.27	0.60	
Uniform Delay, d1		36.0			39.8	30.4		6.9		17.7	7.6	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.8			24.6	0.2		0.3		138.6	0.1	
Delay (s)		36.8			64.4	30.6		7.1		156.3	7.8	
Level of Service		D			E	C		A		F	A	
Approach Delay (s)		36.8			64.6			131.4			74.7	
Approach LOS		D			D			F			B	
Intersection Summary												
HCM Average Control Delay		82.3			HCM Level of Service			F				
HCM Volume to Capacity ratio		1.18										
Actuated Cycle Length (s)		99.6			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		113.1%			ICU Level of Service			G				

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↶	↶	↶
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	260	135	140	80	100	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	283	147	152	87	109	109
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)	12					
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	500	109	217			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	500	109	217			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tE (s)	3.5	3.3	2.2			
p0 queue free %	40	84	89			
cM capacity (veh/h)	471	945	1352			
Direction/Lane #						
	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	429	152	87	109	109	
Volume Left	283	152	0	0	0	
Volume Right	147	0	0	0	109	
cSH	715	1352	1700	1700	1700	
Volume to Capacity	0.60	0.11	0.05	0.06	0.06	
Queue Length (ft)	101	9	0	0	0	
Control Delay (s)	18.7	8.0	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	18.7	5.1		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay	10.4					
Intersection Capacity Utilization	37.4%					
ICU Level of Service	A					



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↕			↕			↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0			4.0			4.0		
Lane Util. Factor	1.00			1.00			1.00			1.00		
Frt	0.97			1.00			0.85			1.00		
Flt Protected	0.99			0.96			1.00			0.95		
Satd. Flow (prot)	1777			1784			1583			1770		
Flt Permitted	0.83			0.67			1.00			0.06		
Satd. Flow (perm)	1494			1255			1583			354		
Volume (vph)	20	40	20	150	20	70	28	1402	255	109	947	120
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	43	22	168	22	76	30	1524	277	109	1029	22
Lane Group Flow (vph)	0	87	0	0	185	76	30	1524	277	109	1051	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Perm			Perm			pm+ov			Perm pm+pt		
Protected Phases	4			8			1			2		
Permitted Phases	4			8			8			2		
Actuated Green, G (s)	15.4			15.4			19.4			62.2		
Effective Green, g (s)	17.4			17.4			23.4			64.2		
Actuated g/C Ratio	0.17			0.17			0.23			0.64		
Clearance Time (s)	6.0			6.0			6.0			6.0		
Vehicle Extension (s)	3.0			3.0			3.0			3.0		
Lane Grp Cap (vph)	261			219			435			228		
v/s Ratio Prot							0.01			0.83		
v/s Ratio Perm	0.06			0.15			0.04			0.08		
v/c Ratio	0.33			0.84			0.17			0.13		
Uniform Delay, d1	36.0			39.8			30.4			6.9		
Progression Factor	1.00			1.00			1.00			1.00		
Incremental Delay, d2	0.8			24.6			0.2			0.3		
Delay (s)	36.8			64.4			30.6			7.1		
Level of Service	D			E			C			A		
Approach Delay (s)	36.8			54.6						131.4		
Approach LOS	D			D						F		

Intersection Summary			
HCM Average Control Delay	82.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	99.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	113.1%	ICU Level of Service	G

c Critical Lane Group

PRECONCEPT REVIEW MEETING

December 13, 2002

SR 9/20 @ Mary Alice Park Road/Bald Ridge Road/Meadow Drive

A meeting was held at the intersection of SR 9/20 at Mary Alice Park Road in the City of Cumming in Forsyth County to discuss the referenced project. The following persons were in attendance:

Todd Long	GDOT – District 1 Preconstruction Engineer
Joe Garland	GDOT – District 1 Traffic Engineer
Chuck Hasty	GDOT – Traffic Safety & Design
Mike Holt	Gresham, Smith and Partners
Erik Hammarlund	W.R. Toole Engineers
Andy Pittman	Edwards Pittman
Bryon Letourneau	Kimley-Horn and Associates

This project is located within the city limits of Cumming. The project will realign Mary Alice Park Road and Bald Ridge Road to a common alignment approximately 300' east of SR 9/20 and extend Meadow Drive to connect the new alignment to SR 9/20.

Comments received during the meeting are noted below:

- The project must not affect the west side of SR 9/20 in the area of the Mr. Swiss and the adjacent shopping mall.
- A preliminary concept layout on aerial photography was presented by Chuck Hasty as the general idea GDOT had in mind for the project.
- It was agreed that there should be some more information gathered for concept development than normal to get a better estimate of cost, especially regarding the amount of earthwork needed.
- It was decided that Erik Hammarlund would provide the group with survey limits on the aerial of the project for comment.
- After the survey limits were agreed on, Erik and Bryon Letourneau would submit fee proposals to do survey and concept development, including setting of concept level alignments, profiles, and cross sections, to GDOT.
- The intersection of the Meadow Drive extension with SR 9/20 would be signalized, while the new intersection of Meadow and Mary Alice Park/Bald Ridge would be stop controlled.
- There did not seem to be any environmental resources that would be affected by the project, this will be verified by Edwards Pittman.
- The power substation east of the intersection along Mary Alice Park Road will need to be missed.

This is Kimley-Horn and Associates understanding of events that occurred at this meeting. If there are any changes, corrections, or additions required please contact Bryon Letourneau at 770-825-0074 or Bryon.Letourneau@Kimley-Horn.com as soon as possible.