ORIGINAL TO GENERAL FILES

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

OFFICE OF DESIGN POLICY & SUPPORT
INTERDEPARTMENTAL CORRESPONDENCE

FILE P.I. #0008429
CSNHS-0008-00(429)
Barrow County
GDOT District 1 - Gainesville
SR 316/US 29 @ SR 81
Interchange for Grade Separation

OFFICE Design Policy & Support

DATE 6/30/2015

Kim Phillips

FROM for Brent Story, State Design Policy Engineer

TO SEE DISTRIBUTION

SUBJECT **APPROVED LOCATION & DESIGN REPORT**

Attached is the approved Location and Design Report with Notice of Location & Design Approval for the above subject project.

Attachment

DISTRIBUTION:

Glenn Bowman, Director of Engineering
Joe Carpenter, Director of P3/Program Delivery
Genetha Rice-Singleton, Assistant Director of P3/Program Delivery
Albert Shelby, State Program Delivery Engineer
Darryl VanMeter, State Innovative Delivery Engineer
Bobby Hilliard, Program Control Administrator
Cindy VanDyke, State Transportation Planning Administrator
Hiral Patel, State Environmental Administrator
Ben Rabun, State Bridge Engineer
Andrew Heath, State Traffic Engineer
Angela Robinson, Financial Management Administrator
Lisa Myers, State Project Review Engineer
Andy Casey, State Roadway Design Engineer
Attn: Robert Elam, Design Group Manager
Richard Cobb, Location Bureau Chief
Brent Cook, District Engineer
Brandon Kirby, District Preconstruction Engineer
Kim Coley, District Planning & Programming Engineer
Shannon Giles, Area Engineer - D1, A2
Dylan Curtis, Project Manager
BOARD MEMBER - 10th Congressional District

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE	CSNHS-0008-00(429) Barrow County P.I. No. 0008429 SR 316/US 29 @ SR 81	OFFICE	Program Delivery
		DATE	June 8, 2015
FROM	Albert V. Shelby III, State Program Delivery Engineer		
TO	Brent Story, P.E., State Design Policy and Support Engineer Attn: Dave Peters, P.E. State Conceptual Design Group Manager		
SUBJECT	Request for Location and Design Approval		

Description and Project Proposal

Project CSNHS-0008-00(429) is located approximately four miles south of the City of Winder in Barrow County. The project proposes to grade separate the existing at-grade intersection of SR 316 at SR 81. The project proposes to raise SR 81 over SR 316, which would include provisions for a full interchange. The proposed interchange would not preclude the future widening of SR 316.

On SR 81, the project is proposed to begin approximately 0.22 miles south of the existing SR 316/SR 81 intersection and continue north along SR 81 for a total length of 0.54 miles. The proposed work along SR 316 would be limited to tying in the entrance/exit ramps and erecting guardrail to protect the bridge columns in the median. On SR 316, the project is proposed to begin approximately 0.53 miles to the west of the existing SR 316/SR 81 intersection and continue east along SR 316 for a total length of approximately 1 mile.

Concept Approval Date: June 18, 2012

Concept Update: N/A

Environmental Document Type, Approval Date & any Reevaluations:
Document Type: Categorical Exclusion approved June 4, 2015

Temporary State Route Needed: ☐ No ☒ Yes ☐ Undetermined
The proposed 30 day detour utilizes Carl Bethlehem Rd (on the south side of SR 316 - approximately 1 mile) from SR 316 to SR 81 for the following traffic movements during staged construction:

- SR 316 Eastbound to SR 81
- SR 81 to SR 316 Westbound

This allows for the construction of the SR 316 Eastbound Exit Ramp & SR 316 Westbound Entrance Ramp.

Project Number: CSNHS-0008-00(429)
County: Barrow
P. I. Number: 0008429

Public Involvement:
Public Information Open House summary:

- *Project No. & County:* CSNHS-0008-00(429) *Barrow*
- *Project Description:* SR 316/US 29 @ SR 81
- *Date: February 4, 2010*
- *Number In Attendance: 149*
- *For: 33*
- *Conditional: 4*
- *Uncommitted: 4*
- *Against: 1*
- *Officials In Attendance: Eva Elder, Barrow County District 2 Commissioner; Ron Griffith, Auburn City METR; David Hawthorne, Auburn Director of Public Works; Larry Lucas, Auburn City Planner; Steve Worley, Barrow County Commissioner; Dan Yearwood Jr., Barrow County Chairman*

Consistency with Approved Planning:
The design description as presented herein and submitted for approval is consistent with the approved Concept Report.

Recommendations: It is recommended that the location and design for the project be approved and that the attached Notice be approved for advertising.

CONCUR: _____
Director of Engineering

APPROVE: Margaret B. Pickle _____ 6.25.15
Chief Engineer Date

DATE OF LOCATION AND DESIGN APPROVAL: June 30, 2015
(To be entered by the State Conceptual Design Group Manager)

AVS: KWN:DMB:DKC

Attachments:

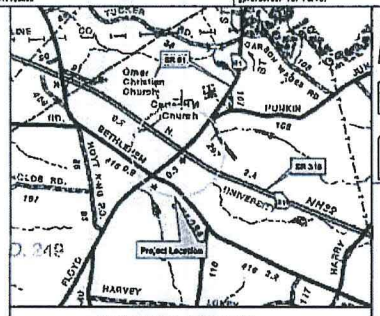
- Sketch Map
- Cost Estimate
- Typical Sections
- Notice of Location and Design Approval

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CSNHS-0008-00(429)		

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PLAN AND PROFILE OF PROPOSED INTERCHANGE CONSTRUCTION SR 316/US 29 AT SR 81 BARROW COUNTY

FEDERAL AID PROJECT
CSNHS-0008-00(429)



LOCATION SKETCH

DESIGN DATA:	SR 316	SR 81
TRAFFIC A.D.T.:	32600 (2020)	19100
TRAFFIC A.D.T.:	48350 (2040)	28300
TRAFFIC D.H.V.:	1835 ONE WAY	1135
DIRECTIONAL DIST:	57%	56%
% TRUCKS:	14.0%	4.5%
24 HR.TRUCKS %:	9.25%	5.0%
SPEED DESIGN:	65 MPH	45 MPH

LOCATION & DESIGN APPROVAL DATE:

FUNCTIONAL CLASS:
RURAL PRINCIPAL ARTERIAL (SR 316)
RURAL MAJOR COLLECTOR (SR 81)

THIS PROJECT IS 100% IN BARROW COUNTY AND IS 100% IN CONG. DIST. NO. 10.

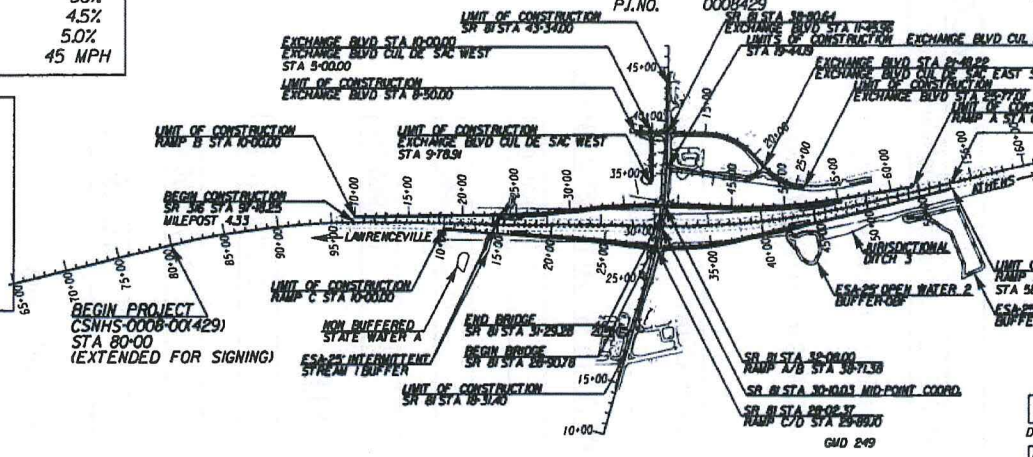
PROJECT DESIGNATION: EXEMPT

THIS PROJECT HAS BEEN PREPARED USING THE HORIZONTAL GEORGIA COORDINATE SYSTEM OF 1984 (NAD 1983/94 WEST ZONE, AND THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

MID-POINT COORDINATES
STA 30+10.03 S.R.81
N 1435682.427
E 2421649.002

THE DATA TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS OR IN ANYWAY INDICATED THEREBY, WHETHER BY DRAWINGS OR NOTES, OR IN ANY OTHER MANNER, ARE BASED UPON FIELD INVESTIGATIONS AND ARE BELIEVED TO BE INDICATIVE OF ACTUAL CONDITIONS. HOWEVER, THE SAME ARE SHOWN AS INFORMATION ONLY, ARE NOT GUARANTEED, AND DO NOT BIND THE DEPARTMENT OF TRANSPORTATION IN ANY WAY. THE ATTENTION OF BIDDER IS SPECIFICALLY DIRECTED TO SUBSECTIONS 102.04, 102.05, AND 104.03 OF THE SPECIFICATIONS.

FEDERAL ROUTE • 29
STATE ROUTE • 316, 81
P.I.NO. 0008429



NOTE:
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PLANS PREPARED BY: TERESA LANNON, P.E.
DESIGN ENGINEER

RECOMMENDED FOR SUBMISSION BY: JAN HILLIARD
DESIGN ENGINEER GROUP MANAGER

RECOMMENDED FOR APPROVAL BY:
STATE ROADWAY DESIGN ENGINEER

DATE CHIEF ENGINEER

LENGTH OF PROJECT	BARROW COUNTY COUNTY No. 013 Project No. CSNHS-0008-00(429) MILES SR 316	SR 81
NET LENGTH OF ROADWAY	0.424	1.780
NET LENGTH OF BRIDGES	0.045	0.000
NET LENGTH OF PROJECT	0.469	1.780
NET LENGTH OF EXCEPTIONS	0.000	0.000
GROSS LENGTH OF PROJECT	0.469	1.780

SCALE IN FEET
0 500 1000 2000

PLANS COMPLETED	- -
REVISIONS	

DRAWING No. 01-0001

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P.I. No. 0008429

OFFICE Office of Program Delivery

PROJECT DESCRIPTION

SR 316/US 29 @ SR 81

DATE April 29, 2015

Albert Shelby

From: Albert Shelby, III, P.E., State Program Delivery Engineer

To: Lisa L. Myers, State Project Review Engineer

Subject: REVISIONS TO PROGRAMMED COSTS

PROJECT MANAGER Dylan Curtis

MGMT LET DATE 11/15/2016

MGMT ROW DATE 6/19/2015

PROGRAMMED COSTS (TPro W/OUT INFLATION)			**LAST ESTIMATE UPDATE**	
CONSTRUCTION	$	17,771,630.00	DATE	10/4/2013
RIGHT OF WAY	$	2,462,280.00	DATE	10/23/2013
UTILITIES	$	171,965.00	DATE	3/19/2013

REVISED COST ESTIMATES

CONSTRUCTION*	$	19,227,620.87
RIGHT OF WAY	$	8,170,000.00
UTILITIES	$	169,497.00

*Cost Contains 7 % Contingency

REASONS FOR COST INCREASE AND CONTINGENCY JUSTIFICATION:

ROW increased from 18 parcels to 28. Land improvements, valuation services, legal services, relocation, demolition and in-house costs all increased per ROW cost estimate prepared 4/15/15. CST slight increase in cost of materials. 7% contingency due to Bridge Replacement and new construction, project between PFPR and FFPR.

CONTINGENCY SUMMARY

A. CONSTRUCTION COST ESTIMATE:	$ 16,904,209.07	Base Estimate From CES		
B. ENGINEERING AND INSPECTION (E & I):	$ 845,210.45	Base Estimate (A) x	5	%
C. CONTINGENCY:	$ 1,242,459.37	Base Estimate (A) + E & I (B) x See % Table in "Risk Based Cost Estimation" Memo	7	%
D. TOTAL LIQUID AC ADJUSTMENT:	$ 235,741.98	Total From Liquid AC Spreadsheet		
E. CONSTRUCTION TOTAL:	$ **19,227,620.87**	(A + B + C + D = E)		

REIMBURSABLE UTILTY COSTS

UTILITY OWNER	REIMBURSABLE COST
Jackson EMC	$ 148,740.00
Windstream	$ 20,757.00
TOTAL	**$ 169,497.00**

ATTACHMENTS:

Liquid AC adjustments, ROW cost estimate, Utility cost estimate

PROJ. NO.		CALL NO.	9/29/2009
P.I. NO.	0008429		
DATE	4/29/2015		

INDEX (TYPE)	DATE	INDEX
REG. UNLEADED	Apr-15	$ 2.214
DIESEL		$ 2.788
LIQUID AC		$ 485.00

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)				230617.5	$ 230,617.50
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$	776.00	
Monthly Asphalt Cement Price month project let (APL)			$	485.00	
Total Monthly Tonnage of asphalt cement (TMT)				792.5	

ASPHALT	Tons	%AC	AC ton
Leveling	1750	5.0%	87.5
12.5 OGFC		5.0%	0
12.5 mm	3300	5.0%	165
9.5 mm SP		5.0%	0
25 mm SP	7000	5.0%	350
19 mm SP	3800	5.0%	190
	15850		792.5

BITUMINOUS TACK COAT

Price Adjustment (PA)			$	5,124.48	$ 5,124.48
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$	776.00	
Monthly Asphalt Cement Price month project let (APL)			$	485.00	
Total Monthly Tonnage of asphalt cement (TMT)				17.60991378	

Bitum Tack Gals	gals/ton	tons
4100	232.8234	17.6099138

BITUMINOUS TACK COAT (surface treatment)

Price Adjustment (PA)				0	$ -
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$	776.00	
Monthly Asphalt Cement Price month project let (APL)			$	485.00	
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	0.71	0	232.8234	0
					0

TOTAL LIQUID AC ADJUSTMENT $ 235,741.98

DETAILED COST ESTIMATE

Georgia Department of Transportation

Job: 0008429-01

JOB NUMBER *0008429-01* **FED/STATE PROJECT NUMBER** *CSNHS-0008-00(429)*

SPEC YEAR: *13*

DESCRIPTION: *SR 316/US 129 AT SR 81 INTERCHANGE - BARROW COUNTY*

ITEMS FOR JOB 0008429-01

0010 - ROADWAY

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0005	150-1000	1.000	LS	$1,500,000.00000	TRAFFIC CONTROL - SR 81	$1,500,000.00
0010	150-5010	14.000	EA	$7,674.51377	TRAF CTRL,PORTABLE IMPACT ATTN	$107,443.19
0015	153-1300	1.000	EA	$83,619.18398	FIELD ENGINEERS OFFICE TP 3	$83,619.18
0020	201-1500	1.000	LS	$1,900,000.00000	CLEARING & GRUBBING - SR 81	$1,900,000.00
0135	205-0001	56100.000	CY	$11.27577	UNCLASS EXCAV	$632,570.70
0140	206-0002	527400.000	CY	$4.60154	BORROW EXCAV, INCL MATL	$2,426,852.20
0025	310-1101	45700.000	TN	$17.66625	GR AGGR BASE CRS, INCL MATL	$807,347.63
0030	402-1812	1750.000	TN	$84.20293	RECYL AC LEVELING,INC BM&HL	$147,355.13
0035	402-3121	7000.000	TN	$72.31720	RECYL AC 25MM SP,GP1/2,BM&HL	$506,220.40
0040	402-3130	3300.000	TN	$81.10021	RECYL AC 12.5MM SP,GP2,BM&HL	$267,630.69
0045	402-3190	3800.000	TN	$73.95584	RECYL AC 19 MM SP,GP 1 OR 2 ,INC BM&HL	$281,032.19
0050	413-1000	4100.000	GL	$2.96122	BITUM TACK COAT	$12,141.00
0055	433-1100	355.000	SY	$171.93267	REF CONC APPR SL/INCL CURB	$61,036.10
0060	439-0022	39000.000	SY	$60.97761	PLN PC CONC PVMT CL3 10 THK	$2,378,126.79
0065	441-0104	2530.000	SY	$32.59787	CONC SIDEWALK, 4 IN	$82,472.61
0070	441-0740	40.000	SY	$39.26175	CONC MEDIAN, 4 IN	$1,570.47
0075	441-0754	70.000	SY	$62.96914	CONC MEDIAN, 7 1/2 IN	$4,407.84
0080	441-6222	8275.000	LF	$15.20668	CONC CURB & GUTTER/ 8X30TP2	$125,835.28
0085	441-6740	145.000	LF	$18.01410	CONC CURB & GUTTER/ 8X30 TP7	$2,612.04
0090	446-1100	650.000	LF	$6.46202	PVMT REF FAB STRIPS, TP2,18 INCH WIDTH	$4,200.31
0095	456-2015	3.000	GLM	$2,099.89199	INDENT. RUMB. STRIPS - GRND-IN-PL (SKIP)	$6,299.68
0100	500-9999	35.000	CY	$176.46934	CL B CONC,BASE OR PVMT WIDEN	$6,176.43
0105	620-0100	3100.000	LF	$31.07557	TEMP BARRIER, METHOD NO. 1	$96,334.27
0110	634-1200	40.000	EA	$117.71916	RIGHT OF WAY MARKERS	$4,708.77
0115	641-1100	135.000	LF	$64.29611	GUARDRAIL, TP T	$8,679.97
0120	641-1200	7350.000	LF	$17.69063	GUARDRAIL, TP W	$130,026.13
0125	641-5001	10.000	EA	$825.72596	GUARDRAIL ANCHORAGE, TP 1	$8,257.26
0130	641-5012	9.000	EA	$2,053.30753	GUARDRAIL ANCHORAGE, TP 12	$18,479.77
					SUBTOTAL FOR ROADWAY:	**$11,611,436.03**

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DETAILED COST ESTIMATE

Georgia Department of Transportation

Job: 0008429-01

0020 - DRAINAGE

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0145	207-0203	35.000	CY	$47.75855	FOUND BKFILL MATL, TP II	$1,671.55
0150	441-0204	410.000	SY	$35.82158	PLAIN CONC DITCH PAVING, 4 IN	$14,686.85
0155	500-3101	81.000	CY	$855.84051	CLASS A CONCRETE	$69,323.08
0160	511-1000	8036.000	LB	$1.18420	BAR REINF STEEL	$9,516.23
0165	550-1180	3498.000	LF	$36.05807	STM DR PIPE 18,H 1-10	$126,131.13
0170	550-1240	1253.000	LF	$44.43358	STM DR PIPE 24,H 1-10	$55,675.28
0175	550-1300	629.000	LF	$48.70100	STM DR PIPE 30,H 1-10	$30,632.93
0180	550-1360	52.000	LF	$70.50370	STM DR PIPE 36,H 1-10	$3,666.19
0185	550-4218	10.000	EA	$582.85679	FLARED END SECT 18 IN, ST DR	$5,828.57
0190	550-4224	2.000	EA	$671.66589	FLARED END SECT 24 IN, ST DR	$1,343.33
0195	550-4230	2.000	EA	$790.32642	FLARED END SECT 30 IN, ST DR	$1,580.65
0200	550-4236	1.000	EA	$1,103.29249	FLARED END SECT 36 IN, ST DR	$1,103.29
0205	603-2024	188.000	SY	$52.17794	STN DUMPED RIP RAP, TP 1, 24	$9,809.45
0210	603-2181	20.000	SY	$42.33923	STN DUMPED RIP RAP, TP 3, 18	$846.78
0215	603-7000	208.000	SY	$3.76390	PLASTIC FILTER FABRIC	$782.89
0220	668-1100	34.000	EA	$2,328.93524	CATCH BASIN, GP 1	$79,183.80
0225	668-1110	8.000	LF	$198.26496	CATCH BASIN, GP 1, ADDL DEPTH	$1,586.12
0230	668-2100	9.000	EA	$1,875.16706	DROP INLET, GP 1	$16,876.50
0235	668-2105	1.000	EA	$2,500.00000	DROP INLET, GP 1, SPCL DES	$2,500.00
0240	668-2110	5.000	LF	$180.32027	DROP INLET, GP 1, ADDL DEPTH	$901.60
0245	668-2115	4.000	LF	$220.00000	DROP INLET,GP 1,A DEP,SPC DES	$880.00
0250	668-2231	2.000	EA	$3,396.44000	DROP INLET,GP 1,MOD TP M-1	$6,792.88
0255	668-4300	2.000	EA	$1,910.66771	STORM SEW MANHOLE, TP 1	$3,821.34
0260	668-4311	4.000	LF	$203.20570	ST SEW MANHOLE,TP 1,A DEP,CL 1	$812.82
0265	668-4312	5.000	LF	$202.44328	ST SEW MANHOLE,TP 1,A DEP,CL 2	$1,012.22
					SUBTOTAL FOR DRAINAGE:	**$446,965.48**

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DETAILED COST ESTIMATE

Georgia Department of Transportation

Job: 0008429-01

0030 - ERONSION CONTROL-TEMPORARY

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0270	163-0232	30.000	AC	$167.50484	TEMPORARY GRASSING	$5,025.15
0275	163-0240	820.000	TN	$163.01162	MULCH	$133,669.53
0280	163-0300	6.000	EA	$1,302.04580	CONSTRUCTION EXIT	$7,812.27
0285	163-0501	2.000	EA	$402.25559	CONSTR AND REMOVE SILT CONTROL GATE,TP 1	$804.51
0290	163-0503	10.000	EA	$397.98741	CONSTR AND REMOVE SILT CONTROL GATE,TP 3	$3,979.87
0295	163-0527	40.000	EA	$267.80582	CNST/REM RIP RAP CKDM,STN P RIPRAP/SN BG	$10,712.23
0300	163-0528	12600.000	LF	$2.57724	CONSTR AND REM FAB CK DAM -TP C SLT FN	$32,473.22
0305	163-0550	60.000	EA	$117.12772	CONS & REM INLET SEDIMENT TRAP	$7,027.66
0310	165-0010	325.000	LF	$0.86987	MAINT OF TEMP SILT FENCE, TP A	$282.71
0315	165-0030	1250.000	LF	$0.79810	MAINT OF TEMP SILT FENCE, TP C	$997.63
0320	165-0041	6700.000	LF	$0.77974	MAINT OF CHECK DAMS - ALL TYPES	$5,224.26
0325	165-0085	2.000	EA	$157.82370	MAINT OF SILT CONTROL GATE, TP 1	$315.65
0330	165-0087	10.000	EA	$64.21307	MAINT OF SILT CONTROL GATE, TP 3	$642.13
0335	165-0101	6.000	EA	$652.47256	MAINT OF CONST EXIT	$3,914.84
0340	165-0105	60.000	EA	$27.84725	MAINT OF INLET SEDIMENT TRAP	$1,670.84
0345	167-1000	4.000	EA	$204.77202	WATER QUALITY MONITORING AND SAMPLING	$819.09
0350	167-1500	24.000	MO	$402.09143	WATER QUALITY INSPECTIONS	$9,650.19
0355	171-0010	650.000	LF	$2.29104	TEMPORARY SILT FENCE, TYPE A	$1,489.18
0360	171-0030	2500.000	LF	$2.98305	TEMPORARY SILT FENCE, TYPE C	$7,457.63
0365	643-8200	600.000	LF	$1.33516	BARRIER FENCE (ORANGE), 4 FT	$801.10
0370	700-8000	6.000	TN	$586.98138	FERTILIZER MIXED GRADE	$3,521.89
					SUBTOTAL FOR ERONSION CONTROL-TEMPORARY:	**$238,291.58**

0040 - EROSION CONTROL-PERMANENT

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0375	163-0240	180.000	TN	$209.07196	MULCH	$37,632.95
0380	700-6910	60.000	AC	$686.78576	PERMANENT GRASSING	$41,207.15
0385	700-7000	180.000	TN	$103.46838	AGRICULTURAL LIME	$18,624.31
0390	700-8000	36.000	TN	$547.63555	FERTILIZER MIXED GRADE	$19,714.88
0395	700-8100	3000.000	LB	$1.67021	FERTILIZER NITROGEN CONTENT	$5,010.63
0400	711-0100	15200.000	SY	$3.90000	TURF REINFORCING MATTING, TP 1	$59,280.00
0405	716-2000	2000.000	SY	$1.14118	EROSION CONTROL MATS, SLOPES	$2,282.36
					SUBTOTAL FOR EROSION CONTROL-PERMANENT:	**$183,752.28**

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DETAILED COST ESTIMATE

Georgia Department of Transportation

Job: 0008429-01

0050 - SIGNING & MARKING

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0410	636-1020	151.000	SF	$16.08198	HWY SGN,TP1MAT,REFL SH TP3	$2,428.38
0415	636-1029	650.000	SF	$15.27912	HWY SGN,TP2 MATL,REFL SH TP 3	$9,931.43
0420	636-1033	62.000	SF	$19.25446	HWY SIGNS, TP1MAT,REFL SH TP 9	$1,193.78
0425	636-1036	84.000	SF	$22.00000	HWY SGN,TP1MAT,REFL SH TP 11	$1,848.00
0430	636-2070	463.000	LF	$8.72512	GALV STEEL POSTS, TP 7	$4,039.73
0435	636-2080	378.000	LF	$9.44589	GALV STEEL POSTS, TP 8	$3,570.55
0440	636-2090	160.000	LF	$7.16454	GALV STEEL POSTS, TP 9	$1,146.33
0445	639-2002	356.000	LF	$4.09172	STEEL WIRE STRAND CABLE, 3/8	$1,456.65
0450	639-4002	4.000	EA	$5,460.98000	STRAIN POLE, TP II	$21,843.92
0455	653-0120	29.000	EA	$86.19360	THERM PVMT MARK, ARROW, TP 2	$2,499.61
0460	653-0130	620.000	EA	$85.76792	THERM PVMT MARK, ARROW, TP 3	$53,176.11
0465	653-1501	11800.000	LF	$0.51495	THERMO SOLID TRAF ST 5 IN, WHI	$6,076.41
0470	653-1502	2400.000	LF	$0.63738	THERMO SOLID TRAF ST, 5 IN YEL	$1,529.71
0480	653-1704	90.000	LF	$6.93881	THERM SOLID TRAF STRIPE,24,WH	$624.49
0475	653-3501	1560.000	GLF	$0.44856	THERMO SKIP TRAF ST, 5 IN, WHI	$699.75
0485	653-6004	184.000	SY	$4.60727	THERM TRAF STRIPING, WHITE	$847.74
0490	653-6006	3306.000	SY	$3.63526	THERM TRAF STRIPING, YELLOW	$12,018.17
0495	654-1001	220.000	EA	$5.27994	RAISED PVMT MARKERS TP 1	$1,161.59
0500	654-1003	250.000	EA	$5.82049	RAISED PVMT MARKERS TP 3	$1,455.12
0505	657-1085	17500.000	LF	$5.12895	PRF PL SD PVT MKG,8,B/W,TP PB	$89,756.63
0510	657-1110	1150.000	LF	$10.67000	PRF PL SD PVMT MKG, 11,B/W,TPPB	$12,270.50
0515	657-1244	120.000	LF	$21.04136	PRF PL SD PVMT MKG,24,WH,TPPB	$2,524.96
0520	657-3085	360.000	GLF	$3.28027	PRF PL SK PVMT MKG,8,B/W,TPPB	$1,180.90
0525	657-5001	124.000	SY	$19.92905	PREFORMED PLASTIC PVMT MKG, WHITE, TP PB	$2,471.20
0530	657-5002	156.000	SY	$20.37925	PREFORMED PLASTIC PVMT MKG, YE, TP PB	$3,179.16
0535	657-5017	14.000	EA	$487.52807	PRF PL PVT MKG,ARW TP2,WH,TPPB	$6,825.39
0540	657-6085	6075.000	LF	$5.51998	PRF PL SD PVMT MKG,8,B/Y,TPPB	$33,533.88
					SUBTOTAL FOR SIGNING & MARKING:	**$279,290.09**

0060 - ATMS

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0545	639-2001	645.000	LF	$2.36431	STEEL WIRE STRAND CABLE, 1/4	$1,524.98
0570	647-2150	2.000	EA	$2,150.00000	PULL BOX, PB-5	$4,300.00
0582	935-1112	300.000	LF	$2.00000	OUT PLANT FBR OPTC CBL,LOOSE TB,SM,12 FB	$600.00
0550	935-1113	1095.000	LF	$2.15000	OUT PLNT FBR OPT CBL,LOOSE TB,SM,24 FBR	$2,354.25
0565	935-1512	60.000	LF	$1.38000	OUT PLNT FBR OPT CBL,DROP,SM,12 FBR	$82.80
0583	935-3103	2.000	EA	$673.29000	FIBER OPTIC CLOSURE,UNDRGRD,24 FBR	$1,346.58
0584	935-3402	2.000	EA	$579.49000	FBR OPTIC CLOSURE,FDC(RACK MTD),12 FBR	$1,158.98
0575	935-4010	48.000	EA	$47.89717	FIBER OPTIC SPLICE, FUSION	$2,299.06
0555	935-8000	1.000	LS	$1,700.00000	TESTING	$1,700.00
0560	935-8500	1.000	LS	$1,325.00000	TRAINING	$1,325.00
0580	939-2305	2.000	EA	$1,805.25067	FIELD SWITCH, TYPE C	$3,610.50
					SUBTOTAL FOR ATMS:	**$20,302.15**

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DETAILED COST ESTIMATE

Georgia Department of Transportation

Job: 0008429-01

0070 - BRIDGE AND WALL STRUCTURE

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0585	543-9000	1.000	LS	$1,584,000.00000	CONSTR OF BRIDGE COMPLETE - 15840 SF @ 100 $/SF	$1,584,000.00
0615	621-4086	840.000	LF	$62.80000	CONCRETE SIDE BARRIER, TP 7WS	$52,752.00
0590	621-6004	26.000	LF	$750.00000	CONC BARRIER, TP S-3A	$19,500.00
0595	621-6005	14.000	LF	$1,000.00000	CONC BARRIER, TP S-3B	$14,000.00
0600	621-6010	14.000	LF	$750.00000	CONC SIDE BARRIER, TP 7-S	$10,500.00
0605	621-6013	36.000	LF	$260.07000	CONC SIDE BARRIER, TP 7-TS	$9,362.52
0620	627-1000	190.000	SF	$51.60325	MSE WALL FACE, 0 - 10 FT HT, WALL NO - 1	$9,804.62
0640	627-1000	65.000	SF	$56.20602	MSE WALL FACE, 0 - 10 FT HT, WALL NO - 2	$3,653.39
0625	627-1010	1915.000	SF	$44.68596	MSE WALL FACE, 10 - 20 FT HT, WALL NO - 1	$85,573.61
0645	627-1010	1660.000	SF	$45.29536	MSE WALL FACE, 10 - 20 FT HT, WALL NO - 2	$75,190.30
0630	627-1020	575.000	SF	$46.56133	MSE WALL FACE, 20 - 30 FT HT, WALL NO - 1	$26,772.76
0650	627-1020	6115.000	SF	$47.44821	MSE WALL FACE, 20 - 30 FT HT, WALL NO - 2	$290,145.80
0655	627-1030	20030.000	SF	$49.85491	MSE WALL FACE, GTR 30 FT HT, WALL NO - 2	$998,593.85
0635	627-1100	165.000	LF	$93.89527	COPING A, WALL NO - 1	$15,492.72
0660	627-1100	926.000	LF	$78.64347	COPING A, WALL NO - 2	$72,823.85
0665	627-1120	692.000	LF	$232.41781	COPING B, WALL NO - 2	$160,833.12
0670	627-1180	11320.000	CY	$34.87725	ADDITIONAL MSE BACKFILL	$394,810.47
0610	648-1350	1.000	EA	$19,506.18250	IMPACT ATT UNIT, TP-P- TBD	$19,506.18
					SUBTOTAL FOR BRIDGE AND WALL STRUCTURE:	**$3,843,316.19**

0080 - TRAFFIC SIGNAL

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0705	636-1041	120.000	SF	$36.04076	HWY SIGNS,TP 2MAT,REFL SH TP 9	$4,324.89
0675	639-3004	8.000	EA	$11,573.83716	STEEL STRAIN POLE, TP IV	$92,590.70
0680	647-1000	1.000	LS	$75,000.00000	TRAF SIGNAL INSTALLATION NO - RAMP AB	$75,000.00
0685	647-1000	1.000	LS	$75,000.00000	TRAF SIGNAL INSTALLATION NO - RAMP CD	$75,000.00
0690	682-6233	65.000	LF	$5.60000	CONDUIT, NONMETL, TP 3, 2 IN	$364.00
0695	682-9950	65.000	LF	$10.37000	DIRECTIONAL BORE - 3 IN	$674.05
0700	937-6050	6.000	EA	$5,483.77116	INT VIDEO DET SYS ASMBLY, TP A	$32,902.63
					SUBTOTAL FOR TRAFFIC SIGNAL:	**$280,856.27**

TOTALS FOR JOB 0008429-01

ITEMS COST:	**$16,904,209.07**
COST GROUP COST:	**$0.00**
ESTIMATED COST:	**$16,904,209.07**
CONTINGENCY PERCENT:	**0.07**
ENGINEERING AND INSPECTION:	**0.05**
ESTIMATED COST WITH CONTINGENCY AND E&I:	**$18,932,714.16**

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GEORGIA DEPARTMENT OF TRANSPORTATION
DETAILED ROW COST ESTIMATE SUMMARY

Date (MM/YYYY): April-15 Project: CSNHS-0008-00(429)
Revised: County: Barrow
PI: #0008429
Description: SR 316/US 29 @ SR 81
Parcels: 28 R/W Plan Date: TBD

CONTRACT

Land and Improvements	$7,486,541.80
Valuation Services	$123,613.75
Legal Services	$206,400.00
Relocation	$27,000.00
Demolition	$23,000.00
TOTAL CONTRACT	**$7,866,555.55**

INHOUSE

TOTAL INHOUSE	**$293,750.00**
TOTAL ESTIMATED COSTS	$8,160,305.55
TOTAL ESTIMATED COSTS (ROUNDED)	***$8,170,000.00***

Preparation Credits	Hours	Signature

CG#: 272564 (DATE) 4/16/15
CG#: (DATE)

Attachment(s): **Project Location Map; Subject/Comp Location Map; Comparable Sales Data**

DEPARTMENT OF TRANSPORTATION

INTERDEPARTMENT CORRESPONDENCE

FILE	CSNHS-0008-00(429), Barrow PI No. 0008429 SR 316 at SR 81	OFFICE	GAINESVILLE
FROM	Neil Kantner, P.E., Distr. Utilities Eng.	DATE	4/6/2015

TO Albert Shelby, P.E., State Program Delivery Engineer
ATTEN Dylan Curtis, Project Manager

SUBJECT UPDATED PRELIMINARY UTILITY COST ESTIMATE

the subject project.

FACILITY OWNER		NON-REIMBURSABLE		REIMBURSBLE
Jackson EMC		$0		$148,740
Comcast CATV		$47,730		$0
Windstream Telephone		$56,610		$20,757
City of Winder-Water/Gas**		$266,400		$0
Barrow County**		$204,240		$0
TOTALS		$574,980		$169,497
Total Non-Reimbursable Cost		$574,980		
Total Reimbursabe Cost				$169,497

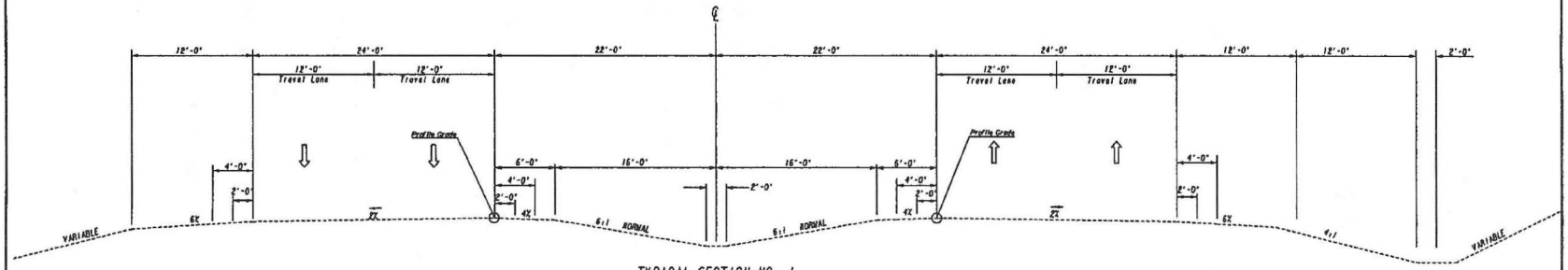
** If the local gov't is granted utility aid, $470,640 will need to be added to the reimbursable cost.

If you have any questions, please contact Neil Kantner at 770-532-5510.

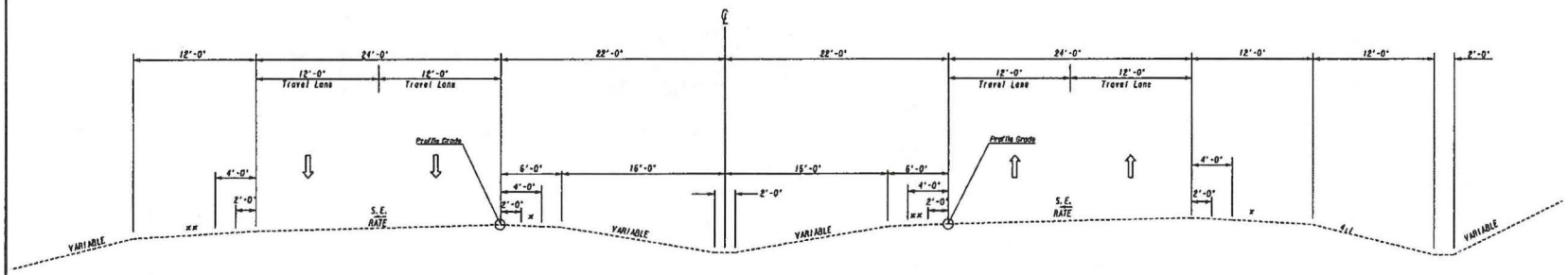
NAK

C: Mike Bolden, State Utilities Engineer
Dana Garrison, Area Engineer
File

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
QA	CSNHS-0008-0014291		



TYPICAL SECTION NO. 1
S.R. 316 EXISTING
STA 94+00.00 TO 174+00.00
TANGENT SECTION



TYPICAL SECTION NO. 2
S.R. 316 EXISTING
SUPERELEVATED SECTION

* SHOULDER TO SLOPE AT NORMAL RATE. HOWEVER, THE ALGEBRAIC DIFFERENCE IN PAVING SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 8%. MINIMUM SHOULDER SLOPE TO BE 2%.

** SHOULDER TO SLOPE AT NORMAL RATE OR SUPERELEVATION RATE, WHICHEVER IS GREATER.

EXISTING PAVEMENT
BUILT UNDER
PROJECT NUMBER F-003-2(46)
P.I. NO. 121210
LET 1989

PLAIN P.C. CONCRETE PAVEMENT (CLASS I), 10"X24'
WITH DOWELS IN BASKETS AT 20' SKEWED JOINT SPACING

P.C. CONCRETE SUBBASE, 5" OR ASPHALTIC CONCRETE BASE, 5"X28'

GRADED AGGREGATE BASE AND SHOULDER COURSE, 6"X32'

PLAIN P.C. CONCRETE SHOULDER, TYPE 5X4'

MAINTAIN EXISTING S.R. 316 MAINLINE
REMOVE EXISTING RIGHT AND LEFT TURN BAYS
AT S.R. 81 INTERSECTION
AND GRADE TO MATCH EXISTING TYPICAL SECTION
INCLUDING INDENTATION RUMBLE STRIPS - GROUND-IN-PLACE (SKIP)

GEORGIA
DEPARTMENT
OF
TRANSPORTATION

NO SCALE

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: ROADWAY DESIGN
TYPICAL SECTIONS
S.R. 316

DRAWING No. 05-0001

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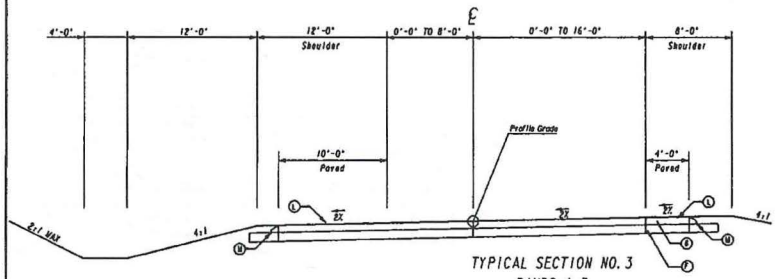
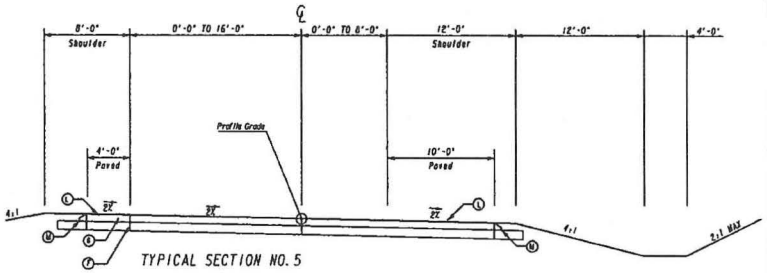
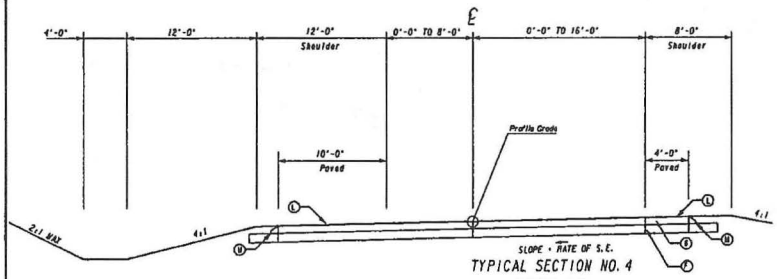


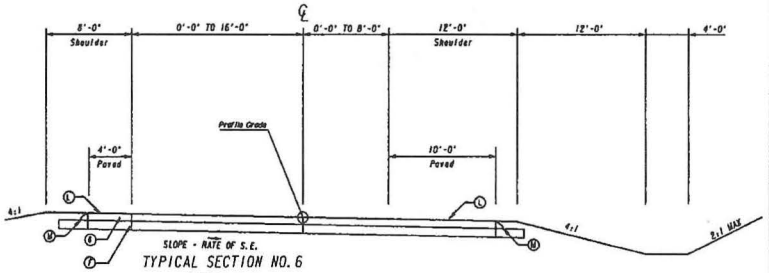
TYPICAL SECTION NO. 3
RAMPS A, B
TANGENT SECTION
FULL DEPTH
STA. 10+00.00 TO STA. 62+08.18



TYPICAL SECTION NO. 5
RAMPS C, D
TANGENT SECTION
FULL DEPTH
STA. 10+00.00 TO STA. 58+12.59



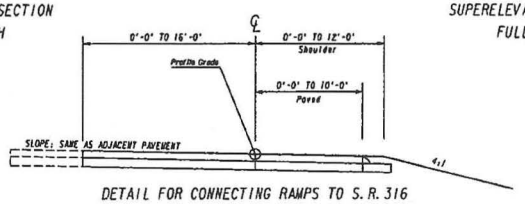
SLOPE - RATE OF S.E.
TYPICAL SECTION NO. 4
RAMPS A, B
SUPERELEVATED SECTION
FULL DEPTH



SLOPE - RATE OF S.E.
TYPICAL SECTION NO. 6
RAMPS C, D
SUPERELEVATED SECTION
FULL DEPTH

NOTE: SEE ROADWAY PLANS FOR SUPERELEVATION RATES AND TRANSITIONS

SYMBOL	PAVEMENT SYMBOLS LEGEND DESCRIPTION	
A	RECYCLED ASPH CONC 12.5mm SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	165 LB/SY
B	RECYCLED ASPH CONC 19mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	220 LB/SY
C	RECYCLED ASPH CONC 25mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	330 LB/SY
D	RECYCLED ASPH CONC 25mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	660 LB/SY
E	GR AGGR BASE CRS, INCL MATL	6 IN
F	GR AGGR BASE CRS, INCL MATL	10 IN
G	PLAIN PC CONC PVMT, CL 3 CONC, 10 INCH THK	
H	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	AS REQUIRED
I	MILL ASPH CONC PVMT, VARIABLE DEPTH	
J	CONC CURB & GUTTER, 8 IN X 30 IN, TP2	
K	PVMT REINF FABRIC STRPS, TP2, 18 INCH WIDTH	
L	INDENTATION RUMBLE STRPS - GROUND-IN-PLACE (SAMP)	
M	SAFETY EDGE, SEE CONSTRUCTION DETAIL P-7	



DETAIL FOR CONNECTING RAMPS TO S.R. 316
SEE PLAN FOR LOCATION

GEORGIA
DEPARTMENT OF TRANSPORTATION

NO SCALE

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: ROADWAY DESIGN

TYPICAL SECTIONS

S.R. 316 RAMPS

DRAWING No. 05-0002

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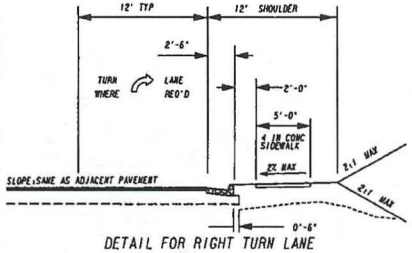
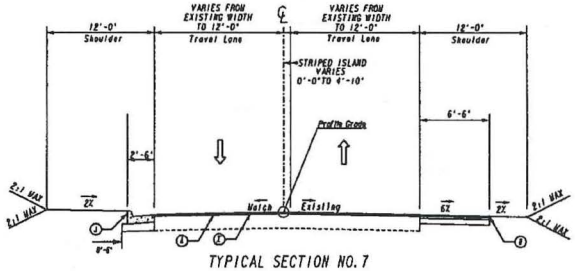


DETAIL FOR RIGHT TURN LANE

SEE PLAN FOR LOCATION

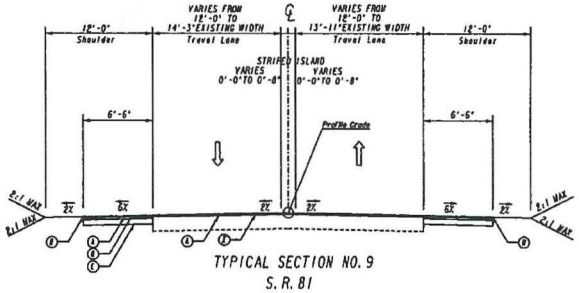


TYPICAL SECTION NO. 7

S.R. 81

STA. 18+59.68 TO STA. 19+14.25

MILL & INLAY

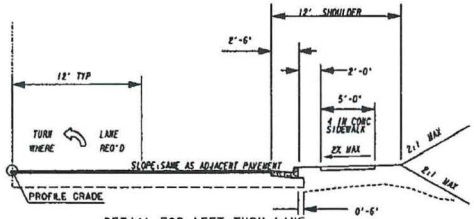


TYPICAL SECTION NO. 9

S.R. 81

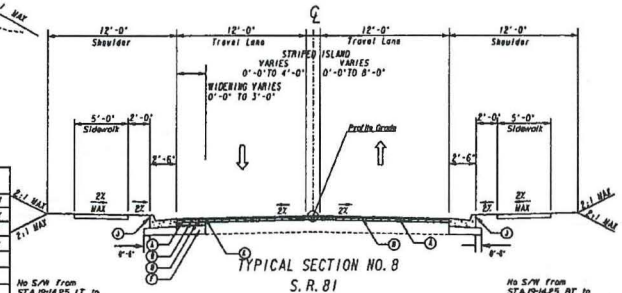
STA. 43+00.00 TO STA. 43+34.00

MILL & INLAY



DETAIL FOR LEFT TURN LANE

SEE PLAN FOR LOCATION



No S/W from STA.19+14.25 LT to STA.19+58 LT to match existing conditions.

No S/W from STA.19+14.25 RT to STA.20+38 RT to match existing conditions.

No S/W from STA.41+30 RT to STA.42+05 RT to match existing conditions.

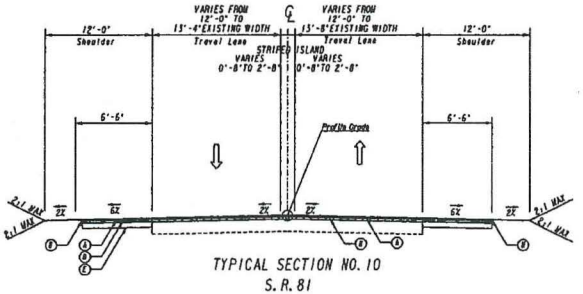
TYPICAL SECTION NO. 8

S.R. 81

STA. 19+14.25 TO 20+63.00

STA. 40+50.00 TO 42+05.00

OVERLAY & WIDENING



TYPICAL SECTION NO. 10

S.R. 81

STA. 42+05.00 TO 43+00.00

OVERLAY

SYMBOL	PAVEMENT SYMBOLS LEGEND DESCRIPTION	
A	RECYCLED ASPH CONC 12.5mm SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	165 LB/SY
B	RECYCLED ASPH CONC 19mm SUPERPAVE, GP 1OR 2, INCL BITUM MATL & H LIME	220 LB/SY
C	RECYCLED ASPH CONC 25mm SUPERPAVE, GP 1OR 2, INCL BITUM MATL & H LIME	330 LB/SY
D	RECYCLED ASPH CONC 25mm SUPERPAVE, GP 1OR 2, INCL BITUM MATL & H LIME	660 LB/SY
E	GR AGGR BASE CRS, INCL MATL	6 IN
F	GR AGGR BASE CRS, INCL MATL	10 IN
G	PLAIN PC CONC PVMT, CL 3 CONC, 10 INCH THK	
H	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	AS REQUIRED
I	MILL ASPH CONC PVMT, VARIABLE DEPTH	
J	CONC CURB & GUTTER, 8 IN K 30 IN, TP2	
K	PVMT REINF FABRIC STRIPS, TP2, 18 INCH WIDTH	
L	INDENTATION RUMBLE STRIPS - GROUND-IN-PLACE (SKIP)	
M	SAFETY EDGE, SEE CONSTRUCTION DETAIL P-7	

GEORGIA
DEPARTMENT OF TRANSPORTATION

NO SCALE

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE: ROADWAY DESIGN

TYPICAL SECTIONS

S.R. 81

DRAWING No. 05-0003

12/17/2014	8:43:50 AM	OPLOT-V8	0003429.05-001.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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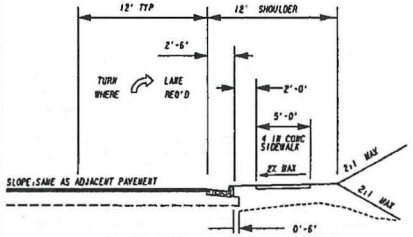
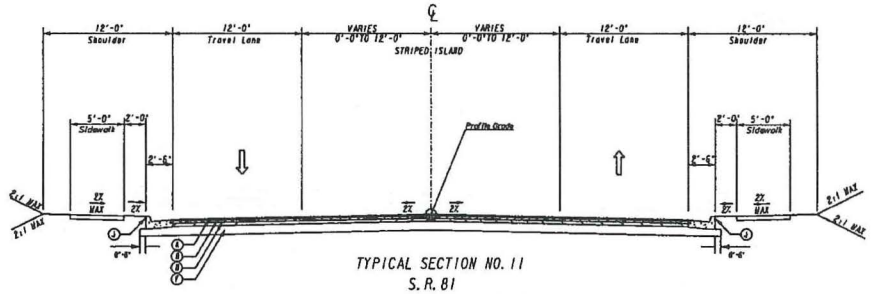


DETAIL FOR RIGHT TURN LANE

SEE PLAN FOR LOCATION



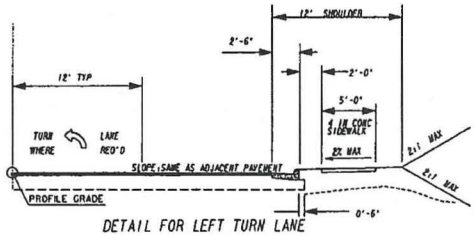
TYPICAL SECTION NO. 11

S.R. 81

STA. 20+63.00 TO STA. 27+43.70

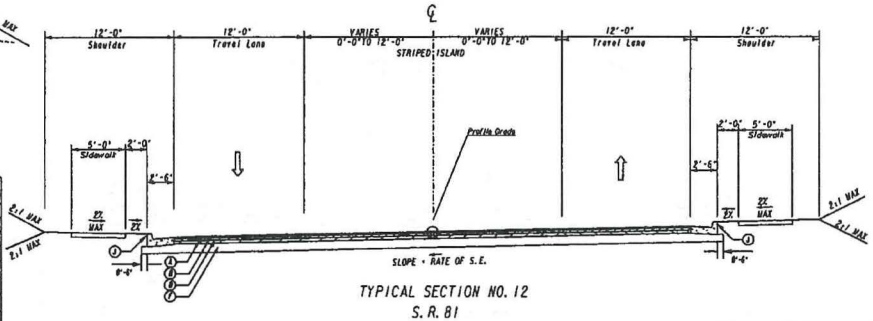
STA. 32+77.75 TO STA. 40+50.00

FULL DEPTH



DETAIL FOR LEFT TURN LANE

SEE PLAN FOR LOCATION



TYPICAL SECTION NO. 12

S.R. 81

SUPERELEVATED SECTION

FULL DEPTH

NOTE: SEE ROADWAY PLANS FOR SUPERELEVATION RATES AND TRANSITIONS

SYMBOL	PAVEMENT SYMBOLS LEGEND DESCRIPTION	
A	RECYCLED ASPH CONC 12.5mm SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	165 LB/SY
B	RECYCLED ASPH CONC 19mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	220 LB/SY
C	RECYCLED ASPH CONC 25mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	330 LB/SY
D	RECYCLED ASPH CONC 25mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	660 LB/SY
E	GR AGGR BASE CRS, INCL MATL	6 IN
F	GR AGGR BASE CRS, INCL MATL	10 IN
G	PLAIN PC CONC PVMT, CL 3 CONC, 10 INCH THK	
H	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	AS REQUIRED
I	MILL ASPH CONC PVMT, VARIABLE DEPTH	
J	CONC CURB & GUTTER, 8 IN X 30 IN, TP2	
K	PVMT REINF FABRIC STRIPS, TP2, 18 INCH WIDTH	
L	INDENTATION RUMBLE STRIPS - GROUND-IN-PLACE (SKP)	
M	SAFETY EDGE, SEE CONSTRUCTION DETAIL P-7	

GEORGIA
DEPARTMENT
OF
TRANSPORTATION

NO SCALE

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE: ROADWAY DESIGN

TYPICAL SECTIONS

S.R. 81

DRAWING No. 05-0004

12/17/2014 8:45:50 AM	GPLOT-V8	0000429_05-001.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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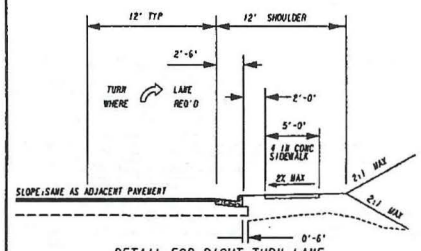
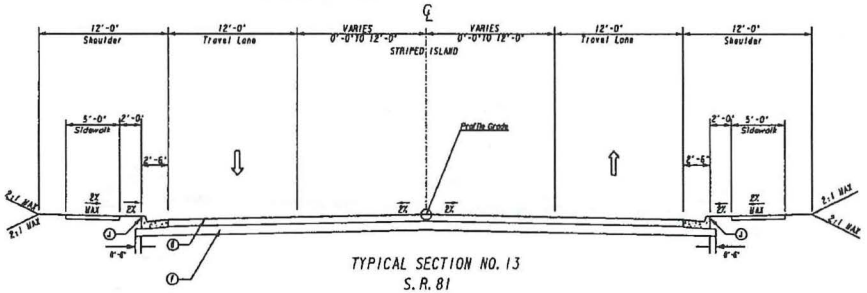


DETAIL FOR RIGHT TURN LANE

SEE PLAN FOR LOCATION



TYPICAL SECTION NO. 13

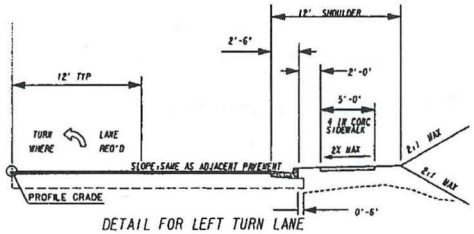
S.R. 81

STA. 27+43.70 TO STA. 32+77.75

FULL DEPTH

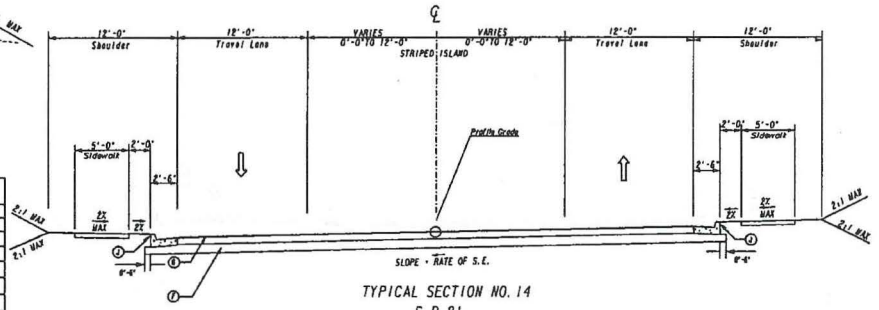
SEE TYPICAL SECTION NO. 22 FOR BRIDGE

(5.5' S/W TRANSITION FROM RAMP TERMINALS TO BRIDGE)



DETAIL FOR LEFT TURN LANE

SEE PLAN FOR LOCATION



TYPICAL SECTION NO. 14

S.R. 81

SUPERELEVATED SECTION

FULL DEPTH

NOTE: SEE ROADWAY PLANS FOR SUPERELEVATION RATES AND TRANSITIONS

SYMBOL	PAVEMENT SYMBOLS LEGEND DESCRIPTION	
A	RECYCLED ASPH CONC 12.5mm SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	165 LB/SY
B	RECYCLED ASPH CONC 19mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	220 LB/SY
C	RECYCLED ASPH CONC 25mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	330 LB/SY
D	RECYCLED ASPH CONC 25mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	660 LB/SY
E	GR AGGR BASE CRS, INCL MATL	6 IN
F	GR AGGR BASE CRS, INCL MATL	10 IN
G	PLAIN PC CONC PVMT, CL 3 CONC, 10 INCH THK	
H	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	AS REQUIRED
I	MILL ASPH CONC PVMT, VARIABLE DEPTH	
J	CONC CURB & GUTTER, 8 IN X 30 IN, TP2	
K	PVMT REINF FABRIC STRIPS, TP2, 18 INCH WIDTH	
L	INDENTATION RUMBLE STRIPS - GROUND-IN-PLACE (SAP)	
M	SAFETY EDGE, SEE CONSTRUCTION DETAIL P-7	

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE: ROADWAY DESIGN

TYPICAL SECTIONS

S.R. 81

DRAWING No. 05-0005

12/17/2014 MPW

12/17/2014	8:46:00 AM	GPLOT-V8	0006429_05-001.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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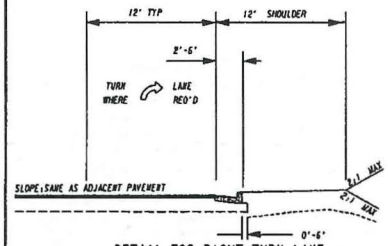
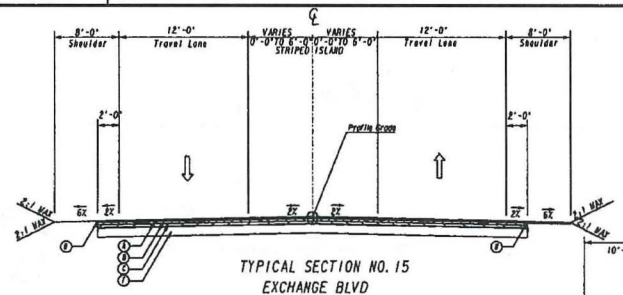
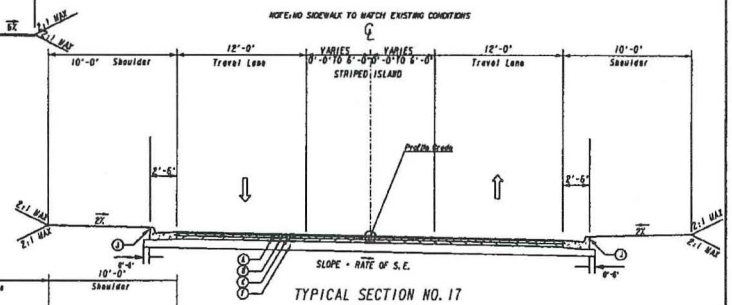


DETAIL FOR RIGHT TURN LANE
SEE PLAN FOR LOCATION

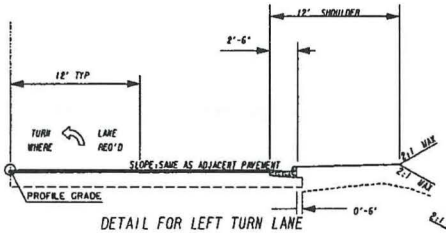


TYPICAL SECTION NO. 15
EXCHANGE BLVD
STA. 8+50.00 TO STA. 10+92.00
FULL DEPTH

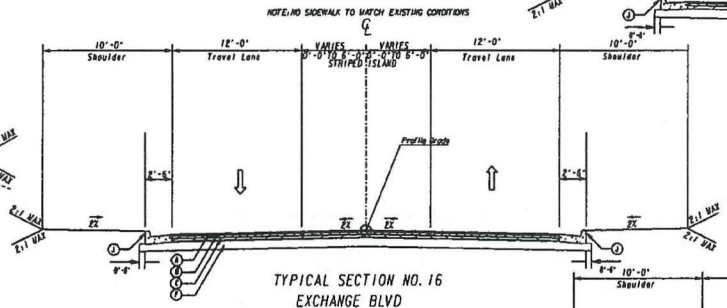


TYPICAL SECTION NO. 17
EXCHANGE BLVD
SUPERELEVATED SECTION
FULL DEPTH

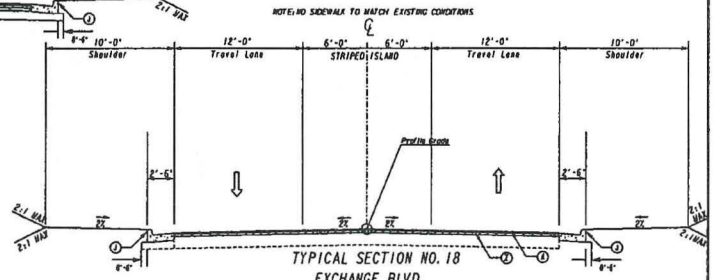
NOTE: SEE ROADWAY PLANS FOR SUPERELEVATION RATES AND TRANSITIONS



DETAIL FOR LEFT TURN LANE
SEE PLAN FOR LOCATION



TYPICAL SECTION NO. 16
EXCHANGE BLVD
STA. 10+92.00 TO STA. 25+08.00
FULL DEPTH



TYPICAL SECTION NO. 18
EXCHANGE BLVD
STA. 25+08.00 TO STA. 25+77.01
MILL & INLAY

SYMBOL	PAVEMENT SYMBOLS LEGEND DESCRIPTION	
A	RECYCLED ASPH CONC 12.5mm SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	165 LB/SY
B	RECYCLED ASPH CONC 19mm SUPERPAVE, GP 1OR 2, INCL BITUM MATL & H LIME	220 LB/SY
C	RECYCLED ASPH CONC 25mm SUPERPAVE, GP 1OR 2, INCL BITUM MATL & H LIME	330 LB/SY
D	RECYCLED ASPH CONC 25mm SUPERPAVE, GP 1OR 2, INCL BITUM MATL & H LIME	660 LB/SY
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F	GR AGGR BASE CRS, INCL MATL	10 IN
G	PLAIN PC CONC PVMT, CL 3 CONC, 10 INCH THK	
H	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	AS REQUIRED
I	MILL ASPH CONC PVMT, VARIABLE DEPTH	
J	CONC CURB & GUTTER, 8 IN X 30 IN, TP2	
K	PVMT REINF FABRIC STRIPS, TP2, 18 INCH WIDTH	
L	INDENTATION RUMBLE STRIPS - GROUND-IN-PLACE (SKIP)	
M	SAFETY EDGE, SEE CONSTRUCTION DETAIL P-7	

GEORGIA
DEPARTMENT OF TRANSPORTATION

NO SCALE

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: ROADWAY DESIGN
TYPICAL SECTIONS
EXCHANGE BLVD

DRAWING No. 05-0006

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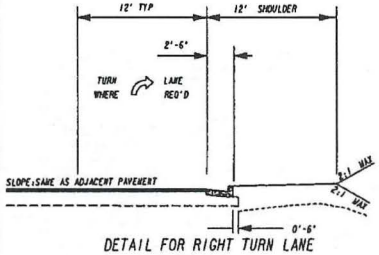
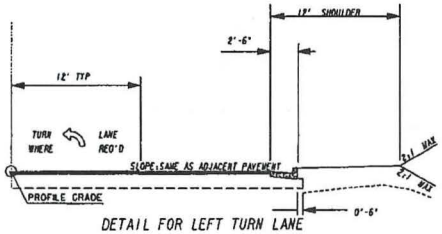
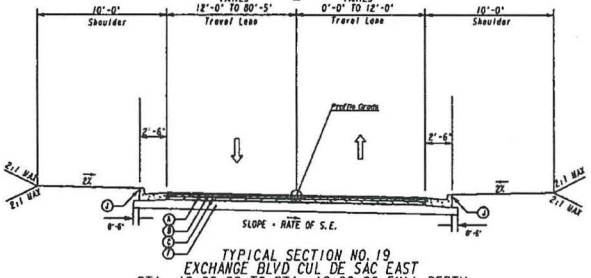


DETAIL FOR RIGHT TURN LANE
SEE PLAN FOR LOCATION



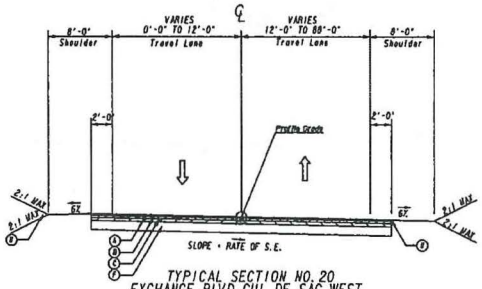
DETAIL FOR LEFT TURN LANE
SEE PLAN FOR LOCATION

NOTE: NO SIDEWALK TO MATCH EXISTING CONDITIONS



TYPICAL SECTION NO. 19
EXCHANGE BLVD CUL DE SAC EAST
STA. 10+00.00 TO STA. 12+00.00 FULL DEPTH
STA. 12+00.00 TO STA. 12+50.00 MILL & INLAY TIE TO EXISTING ⓐⓓ
STA. 15+80.00 TO STA. 16+50.00 MILL & INLAY TIE TO EXISTING ⓐⓓ
STA. 16+50.00 TO STA. 17+50.00 OVERLAY & WIDENING ⓐⓑ
STA. 17+50.00 TO STA. 18+46.00 FULL DEPTH

NOTE: SEE ROADWAY PLANS FOR SUPERELEVATION RATES AND TRANSITIONS



TYPICAL SECTION NO. 20
EXCHANGE BLVD CUL DE SAC WEST
STA. 5+00.00 TO STA. 9+78.91 FULL DEPTH

NOTE: SEE ROADWAY PLANS FOR SUPERELEVATION RATES AND TRANSITIONS

SYMBOL	PAVEMENT SYMBOLS LEGEND DESCRIPTION	
A	RECYCLED ASPH CONC 12.5mm SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	165 LB/SY
B	RECYCLED ASPH CONC 19mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	220 LB/SY
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G	PLAIN PC CONC PVMT, CL 3 CONC, 10 INCH THK	
H	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	AS REQUIRED
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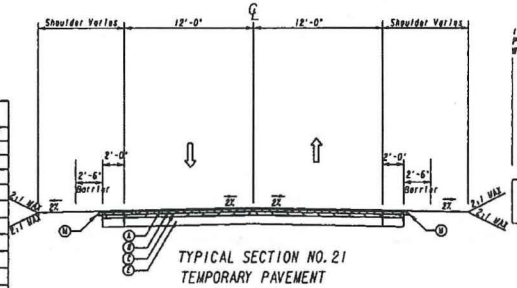
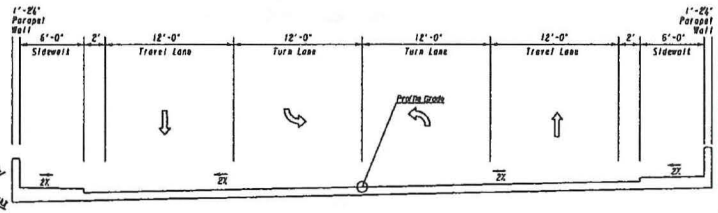
J	CONC CURB & GUTTER, 8 IN X 30 IN, TP2	
K	PVMT REINF FABRIC STRIPS, TP2, 18 INCH WIDTH	
L	INDENTATION RUMBLE STRIPS - GROUND-IN-PLACE (SKIP)	
M	SAFETY EDGE, SEE CONSTRUCTION DETAIL P-7	



TYPICAL SECTION NO. 21
TEMPORARY PAVEMENT
FULL DEPTH



TYPICAL SECTION NO. 22
S.R. 81 BRIDGE 1
STA. 28+90.78 TO STA. 31+29.28

GEORGIA
DEPARTMENT OF TRANSPORTATION

NO SCALE

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: ROADWAY DESIGN
TYPICAL SECTIONS
EXCHANGE BLVD CUL DE SACS
TEMPORARY PAVEMENT & BRIDGE

DRAWING No. 05-0007

12/17/2014 8:46:51 AM GPLOT-V8 0006429_05-001.dgn
USER:illenaa gplotbrear-V8T-PO.tbl

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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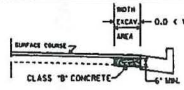


NO SCALE
CLASS "B" CONCRETE BASE OR PAVEMENT WIDENING
Item Code 500-5999 - Cu. Yds.

In excavated areas between the existing paving and new curb and gutter that are 5'-0" or less in width, Class "B" concrete shall be placed in lieu of the base and paving specified by the typical section. Payment will be made under "Class B Concrete Base and Pavement Widening".

In excavated areas greater than 5'-0" in width, the Contractor shall place base and paving as specified on the typical section.

See plans for details of curb and gutter construction.

CLASS "B" CONCRETE BASE OR WIDENING DETAIL

ALLOWABLE RANGES TABLE

FOR THIS PROJECT, CROSS SLOPES THAT ARE ADJUSTED TO "BEST FIT" EXISTING PAVEMENT SLOPES ARE SUBJECT TO THE FOLLOWING LIMITS:

A. NORMAL CROWN

SECTION WITH GRADES 0.5% OR GREATER	SECTION WITH GRADES LESS THAN 0.5%
0.0150 FT/FT - MINIMUM	0.0156 FT/FT - MINIMUM
0.0208 FT/FT - DESIRABLE	0.0208 FT/FT - DESIRABLE
0.0250 FT/FT - MAXIMUM	0.0300 FT/FT - MAXIMUM

B. SUPERELEVATION RATE
S.E. RATE SHOWN ON PLANS OR SE RATE EXISTING IN FIELD, WHICHEVER IS GREATER.

C. SUPERELEVATION TRANSITION LENGTH (LENGTH FROM FLAT POINT TO FULL SE)

	RATE OF CHANGE	CORRESPONDING DIFFERENCE IN GRADE BETWEEN PIVOT POINT AND EDGE OF PAVEMENT
MINIMUM	1:150	0.67%
DESIRABLE	1:200	0.50%
MAXIMUM	1:300	0.33%

LENGTH SHALL BE SET TO AVOID CREATING A FLAT GUTTER GRADE ON LOW SIDE AND TO AVOID FLAT CROSS SLOPES AT OR NEAR THE LOW POINT OF VERTICAL CURVES.

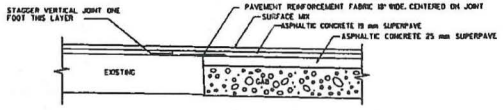
D. POSITIONING OF SUPERELEVATION TRANSITION LENGTH ON SIMPLE CURVES

50% OF TRANSITION INSIDE CURVE - MAXIMUM
33% OF TRANSITION INSIDE CURVE - DESIRABLE
20% OF TRANSITION INSIDE CURVE - MINIMUM

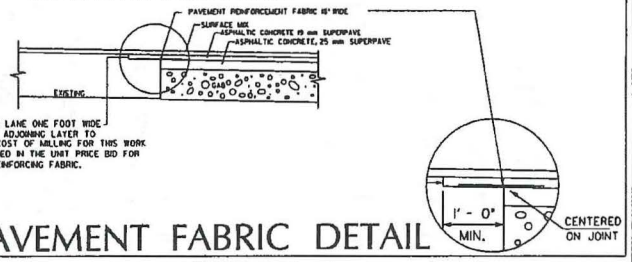
NOTE: CROWN WIPE-OUT SHALL BE AT THE SAME RATE AS THE SE TRANSITION.

E. SMOOTHING OF BREAKS IN EDGE PROFILE AT BEGIN AND END OF TRANSITION SHALL BE ACCOMPLISHED BY VERTICAL CURVE WITH A MINIMUM LENGTH (IN FEET) EQUAL TO THE SPEED DESIGN (IN MPH).

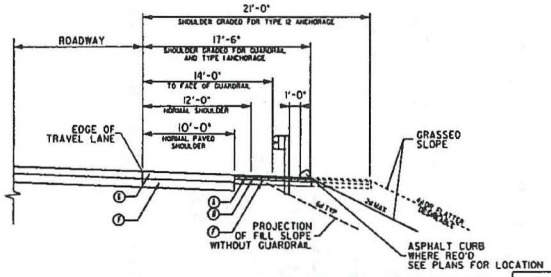
TYPICAL SECTION DETAIL TO BE USED WHEN EXISTING PAVEMENT IS TO BE RESURFACED WITH TWO INCHES OR MORE OF ASPHALTIC CORNER



TYPICAL SECTION DETAIL TO BE USED WHEN EXISTING PAVEMENT IS TO BE RESURFACED WITH LESS THAN TWO INCHES OF ASPHALTIC CONCRETE



PAVEMENT FABRIC DETAIL

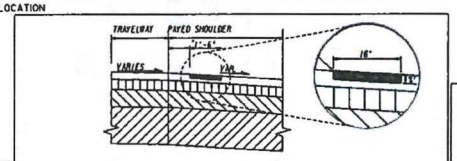


TYPICAL SHOULDER DETAIL FOR GUARDRAIL

FOR RAMPS WITH CONCRETE SHOULDER
SEE PLANS FOR LOCATIONS
SEE CONSTRUCTION DETAIL S-4

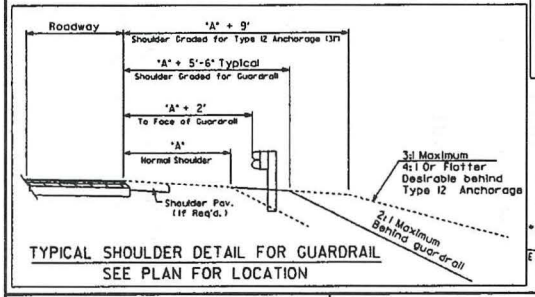
*H	SLOPE
0' - 3'	6:1
3' - 6'	4:1
over 6'	2:1
over 10'	see guardrail section

Guardrail shall be required on 2:1 fill slopes.

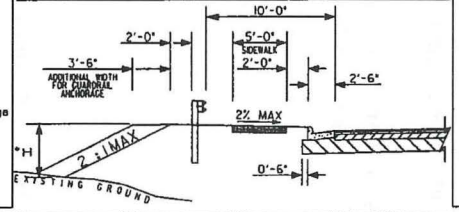


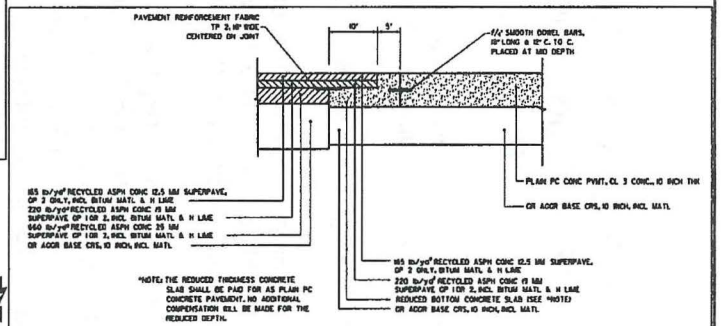
*RUMBLE STRIPS TO BE PLACED 18 INCHES FROM EDGE OF TRAVELED ROADWAY

DETAIL OF CONTINUOUS GROUND-IN-PLACE RUMBLE STRIPS
N.T.S.



TYPICAL SHOULDER DETAIL FOR GUARDRAIL
SEE PLAN FOR LOCATION





JOINTED PLAIN CONCRETE PAVEMENT TO ASPHALT PAVEMENT TRANSITION DETAIL
N.T.S.

GEORGIA
DEPARTMENT OF TRANSPORTATION

NO SCALE

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: ROADWAY DESIGN
TYPICAL SECTIONS

DRAWING No. 05-0008

NOTICE OF LOCATION AND DESIGN APPROVAL
CSNHS-0008-00(429) Barrow County
P. I. NUMBER 0008429

Notice is hereby given in compliance with Georgia Code 22-2-109 and 32-3-5 that the Georgia Department of Transportation has approved the Location and Design of this project.

The date of location and design approval is: June 30, 2015.

The project proposes to grade separate the existing at-grade intersection of SR 316 at SR 81. The project proposes to raise SR 81 over SR 316, which would include provisions for a full interchange. The proposed interchange would not preclude the future widening of SR 316.

On SR 81, the project is proposed to begin approximately 0.22 miles south of the existing SR 316/SR 81 intersection and continue north along SR 81 for a total length of 0.54 miles. The proposed work along SR 316 would be limited to tying in the entrance/exit ramps and erecting guardrail to protect the bridge columns in the median. On SR 316, the project is proposed to begin approximately 0.53 miles to the west of the existing SR 316/SR 81 intersection and continue east along SR 316 for a total length of approximately 1 mile. The project is located in Georgia Militia District 249, in Barrow County Georgia.

Drawings or maps or plats of the proposed project, as approved, are on file and are available for public inspection at the Georgia Department of Transportation:

Shannon Giles, Area Engineer
Georgia Department of Transportation
District 1, Area 2 Office
sgiles@dot.ga.gov
450 Old Hull Road
Athens, Georgia 30601
(706) 583-2644

Any interested party may obtain a copy of the drawings or maps or plats or portions thereof by paying a nominal fee and requesting in writing to:

Albert V. Shelby III, State Program Delivery Engineer
Office of Program Delivery
Attn: Dylan Curtis
dcurtis@dot.ga.gov
One Georgia Center
600 West Peachtree Street, NW
Atlanta, Georgia 30308
(404) 631-1606

Any written request or communication in reference to this project or notice SHOULD include the Project and P. I. Numbers as noted at the top of this notice.