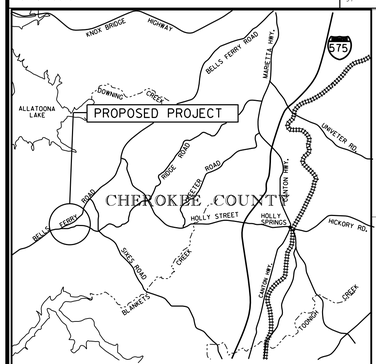
1/29/2018 travis.mcclam	Jversion gplotborder-v8i-PO.tbl	0343_01-001.dgn	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
			CHEROKEE	CTSAP-770-407(057)CI		

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED
BELLS FERRY ROAD - RIDGE ROAD INTERSECTION IMPROVEMENTS

PROJECT NUMBER
CTSAP-770-407(057)CI



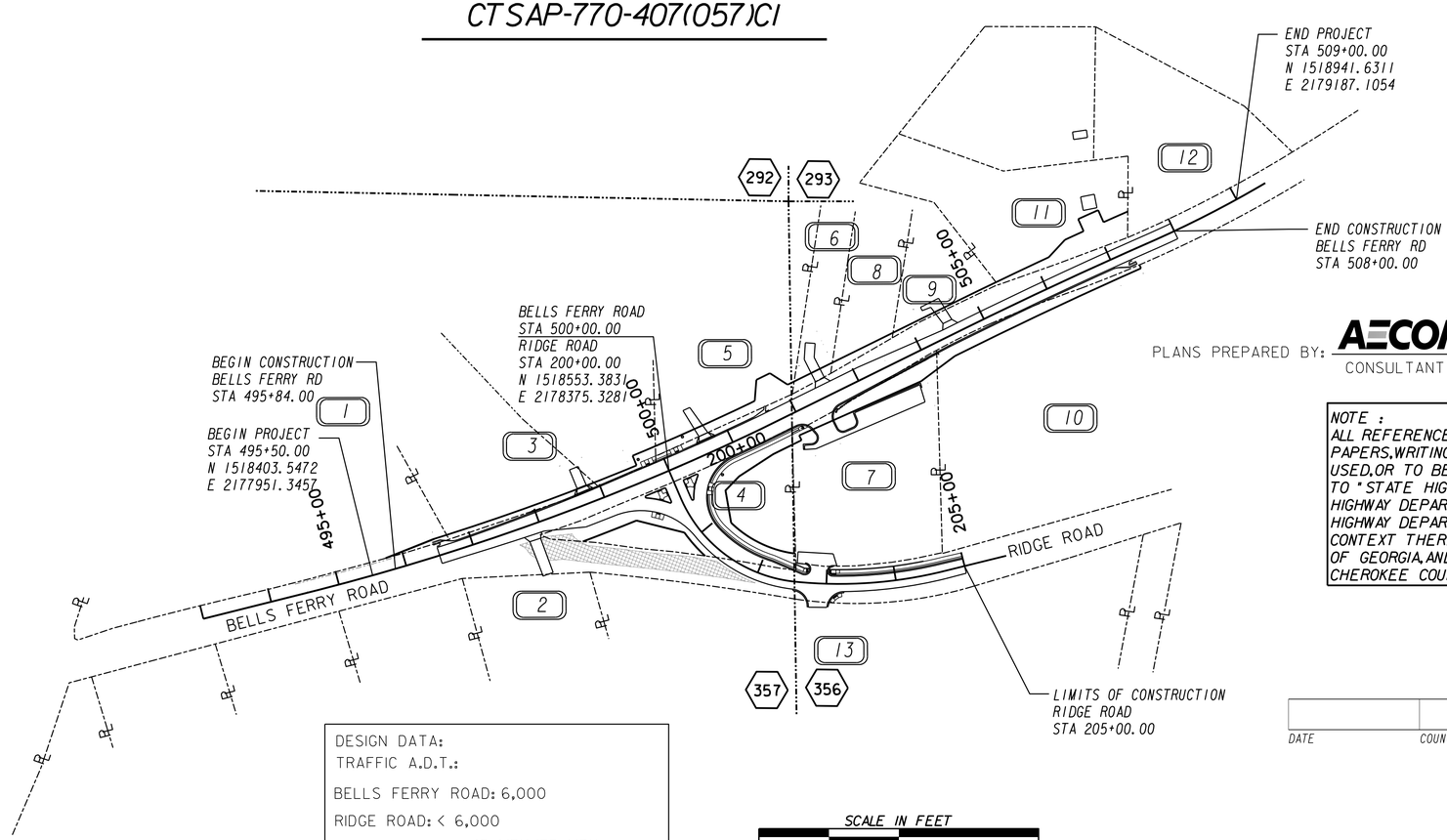
LOCATION SKETCH

MIDPOINT COORDINATE
BELLS FERRY ROAD STATION 502+25.00 N 1518648.6884 E 2178579.1056

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.

THIS PROJECT IS LOCATED 100 % IN CHEROKEE COUNTY
PROJECT DESIGNATION : EXEMPT

FUNCTIONAL CLASSIFICATION :
RURAL PRIN. ARTERIAL (BELLS FERRY ROAD)
LOCAL ROAD (RIDGE ROAD)



PLANS PREPARED BY: AECOM CONSULTANT
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

GEORGIA REGISTERED PROFESSIONAL ENGINEER TRAVIS MCCLAM 1-29-2018

NOTE :
ALL REFERENCES IN THIS DOCUMENT, WHICH INCLUDES ALL PAPERS, WRITINGS, DOCUMENTS, DRAWINGS, OR PHOTOGRAPHS USED, OR TO BE USED IN CONNECTION WITH THIS DOCUMENT, TO "STATE HIGHWAY DEPARTMENT OF GEORGIA", "STATE HIGHWAY DEPARTMENT", GEORGIA STATE HIGHWAY DEPARTMENT HIGHWAY DEPARTMENT", OR "DEPARTMENT" WHEN THE CONTEXT THEREOF MEANS THE STATE HIGHWAY DEPARTMENT OF GEORGIA, AND SHALL BE DEEMED TO MEAN THE CHEROKEE COUNTY DEPARTMENT OF TRANSPORTATION.

DESIGN DATA:
TRAFFIC A.D.T.:
BELLS FERRY ROAD: 6,000
RIDGE ROAD: < 6,000
SPEED DESIGN: 45 MPH/35 MPH

SCALE IN FEET
0 100 200 400

DATE	COUNTY DESIGN ENGINEER

PLANS COMPLETED DATE 01-29-2018

REVISION DATES:

NOTE:

THE DATA, TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS, OR IN ANY WAY 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 THE BIDDER IS SPECIFICALLY DIRECTED TO ARTICLES 102.04, 102.05, AND 104.03 OF THE SPECIFICATIONS OF THE DEPARTMENT OF TRANSPORTATION, STATE OF GEORGIA, FOR THE CONSTRUCTION OF ROADS AND BRIDGES, CURRENT EDITION, AND ANY MODIFICATIONS THEREOF, WHICH WILL BE A PART OF THIS CONTRACT.

ALL WORK TO BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS OF THE DEPARTMENT OF TRANSPORTATION OF GEORGIA, CURRENT EDITION, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.

LENGTH OF PROJECT	BELLS FERRY ROAD	RIDGE ROAD
	MILES	MILES
NET LENGTH OF ROADWAY	0.256	0.095
NET LENGTH OF BRIDGES	NA	NA
NET LENGTH OF PROJECT	0.256	0.095
NET LENGTH OF EXCEPTIONS	0.000	0.000
GROSS LENGTH OF PROJECT	0.256	0.095

COVERS

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

INDEX

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 02-001

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CTSAP-770-4091057(C)		

DATE	SHEET NO.	REVISION

DATE	SHEET NO.	REVISION

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

REVISION SUMMARY

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
03-001

A. GUARDRAIL

(1) No guardrail is to be installed until site inspection is made by the Engineer.

(2) Any existing guardrail removed and not relocated on the project will be stockpiled at a location desginated by the Engineer for pickup by Cherokee County Department of Transportation maintenance. The Contractor shall be responsible for stockpiled guardrail as denoted by Standard Specification Section 610. The Cherokee County Department of Transportation shall be notified to reclaim guardrail.

(3) All guardrail shall have type "D" steel posts with 4" X 6" steel offset blocks.

(4) In areas where guardrail will be required in front of a fixed hazard with less than 5' of offset distance, post spacing will be as required in GA. Std. 4387. Cost for additional posts shall be included in the over-all-price bid for linear foot of guardrail.

B. REMOVALS

(1) All items to be removed that do not have a specific pay item shall be removed under Grading Complete unless shown otherwise in the plans. Miscellaneous removal shall include, but is not limited to, existing pavement, drainage structures, curbs, concrete slabs, sign footings, etc. Incombustible materials that cannot be placed in embankments shall be disposed of in accordance with Standard Specifications, except that waste areas shall be provided off the Right of Way at the Contractor's expense as a part of the pay item.

(2) Where partial pavement removal is required and remaining pavement is not to be overlaid, the pavement shall be sawed to neat lines. Only those joints sawed in concrete will be paid for under the pay item - Sawed Joints - per linear foot.

(3) Any existing pavement not required for the proposed roadway or detour shall be removed as directed by the Engineer and the cost of the removal shall be included in price bid for Grading Complete, unless otherwise shown on the plans.

(4) The roadway contractor will remove sections of pipes & culverts as indicated on the plans. No separate payment will be made. Costs will be included in price bid for Grading Complete. The Engineer shall determine if the removal items can be utilized during construction.

C. UTILITIES

(1) The Contractor's attention is called to Article 105.06 "Cooperation With Utilities". Utility work coordination will be a part of this contract.

(2) The following utility owners have facitities which may conflict with construction on this project:

NAME OF UTILITY	SERVICE	CONTACT	PHONE NO.
AGL/Southern Company Gas	Gas Mains	Chesleigh Charles	404-584-3257
Windstream	Phone	Drace Ferrell	770-720-9537
Cherokee County Water and Sewage Authority	Water Mains	Dwayne Fowler	770-479-1813
Cobb E.M.C.	O'hd. & U'gnd. Power Lines	Terry Terrell	678-355-3457
Comcast	Comcast	John Pierno	770-351-8041
Sunesys/UC Synergetic	School Interconnect	Clint Deck	770-984-6832

(3) The Contractor will not be paid for any delays or extra expense caused by utility facilities, obstructions, or any other items not being removed or relocated to clear construction in advance of his work.

(4) The Standard Specifications, Current Edition, Section 107.21-Contractors Responsibility for Utility Property and Services, is modified by adding the following:

All Known utility facilities are shown schematically on highway plans and are not necessarily accurate in location as to plan or elevation. Utility facilities such as service lines or unknown facilities not shown on highway plans will not relieve the Contractor of his responsibility under this requirement except as noted below. "Existing utility facility" means any utility facility that exists on the highway project in its original, relocated, or newly installed position.

The Contractor will not be held responsible for the cost of repairs to damaged underground utility facilities other than service lines from street mains to abutting property when such facilities are not shown on the highway plans and their existence is unknown to the Contractor prior to damages occurring, providing the Engineer determines that the Contractor has otherwise fully complied with the specifications.

D. EXCAVATION, EMBANKMENT, EROSION CONTROL

(1) Soil erosion measures will be required. The Contractor shall either plant temporary grass, mulch, or permanent grass as soon as possible to prevent the erosion of slopes.

(2) Cherokee County will not approve of any Contractor-optioned borrow pit until that site has received a Cultural Resources Site Clearance.

(3) All outfall ditches, inlets, berms, etc. shall be excavated as directed be the Engineer and paid for as Grading Complete, unless otherwise indicated on plans.

E. DRAINAGE

(1) The Contractor will observe all applicable local, state, and federal safety regulations regarding pipe installation in trenches. No separate payment will be made for any cost incurred to comply with this requirement.

(2) The Contractor will insure that positive and adequate drainage is maintained at all times within the project limits. This may include, but is not limited to, replacement or reconstruction of existing drainage structures that have been damaged or removed, or regrading as required by the Engineer. Except for those drainage items shown at specific locations in the plans and having pay items in the detailed estimate, no seperate payment will be made for any costs incurred to comply with this requirement.

(3) The following items shall be considered incidental to the cost of the project and their cost shall be included in other items bid on this project: Cleaning of drop inlets, culverts, and pipes (existing and proposed).

(4) The locations and elevations of drainage structures will be verified by the Contractor for best fit of field conditions. Elevations not shown on the plans are to be set in the field. Payment is to be included in other drainage items.

(5) All existing drainage pipe located beneath the existing pavement, not to be used in final drainage and determined by the Engineer to be sound condition, may be left in place and shall be plugged with flowable fill unless otherwise indicated in the plans. The cost of pipe plugs shall be included in the total price bid for new pipe, unless otherwise indicated on the plans. All existing drainage pipe not to remain for drainage purposes and not located beneath the existing pavement are to be removed. All cost for the removal of these pipes are to be included in the price bid for Grading Complete.

(6) All catch basins or drop inlets to be stage constructed shall be paid for one time only, regardless of intermediate activities of construction.

(7) All pipes to be RCP. Pipes on Parcel 11 shall be RCP or HDPE.

F. MISCELLANEOUS

(1) Where existing pavement markings and lines are in conflict with the traffic pattern being used on construction, the Contractor shall remove or overlay the markings and lines to the satisfaction of the Engineer such that they do not confuse the traveling public. All remaining lines or markings shall be in conformance with the "Manual of Uniform Traffic Control Devices" or as directed by the Engineer. Traffic shall not be allowed on any pavement not properly striped.

(2) The total acres shown on the plans for grassing is for information only. The Cherokee County Department of Transportation assumes no responsibility for its accuracy. The Contractor shall bid on Grassing-Complete, and it shall be his responsibility to determine the actual area to be grassed. No claims will be considered for extra compensation if the contractor relies on the area shown on the plans.

(3) Price bid per linear foot for storm or sanitary sewers shall include all costs of pipe connections and cut-ins to existing manholes or existing lines.

(4) When new or modified sign structures are called for, the necessary work shall be constructed as soon as possible to minimize the time temporary signs are in place or to eliminate the need for temporary signs.

(5) All temporary fence shall be field fence woven wire, or as called for in the plans. Temporary fence shall be removed when no longer required.

(6) The cost of detour grading and earthwork operations required solely for detours shall be included in the price bid for Grading Complete.

(7) The Contractor shall be responsible for all temporary striping and signing which shall be included in the unit price bid for "Traffic Control".

(8) Cherokee County retains ownership of existing traffic signal equipment. Signal Contractor is required to deliver the equipment to Cherokee County Traffic Division.

(9) This project has a total of 2.94 acres and the expected disturbed area is 2.8 acres. An NOI is required for this project.

(10) All drives that are to be reconstructed shall be replaced in kind i.e. ashpalt for asphalt, concrete for concrete, and aggregate surface course for earth. Where required, drives shall be constructed as follows, unless otherwise noted on the driveway summary:

ASPHALT DRIVES	Residential :	1 1/2"	Recycled Asph Conc 12.5 MM Superpave, GP 2 Only, Incl Bitum Matl & H Lime
		6"	Graded Aggregate Base
	Commercial :	1 1/2"	Recycled Asph Conc 12.5 MM Superpave, GP 2 Only, Incl Bitum Matl & H Lime
		2"	Recycled Asph Conc 19 MM Superpave, GP 1 or 2, Incl Bitum Matl & H Lime
		6"	Graded Aggregate Base
CONCRETE DRIVES	Residential :	6"	Driveway Concrete and 6" Concrete Valley Gutter
	Commercial :	8"	Driveway Concrete and 8" Concrete Valley Gutter
EARTH DRIVES	All Types :	1 1/2"	Recycled Asph Conc 12.5 MM Superpave, GP 2 Only, Incl Bitum Matl & H Lime
		6"	Graded Aggregate Base

(11) Reduced Speed Work Zone to be implemented on Bells Ferry road. Cost to be included in Traffic Control.

(12) Contractor shall follow Georgia DOT standard 9031H for all abandoned wells along the project. Cost to be included in Grading Complete.

(13) All Rectangular Rapid Flashing Beacons shall be mounted on a pedestrian pole and solar powered. All poles, brackets, and hardware shall be black powder coated.

GEORGIA811
Utilities Protection Center, Inc.
Know what's **below.**
Call before you dig.

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

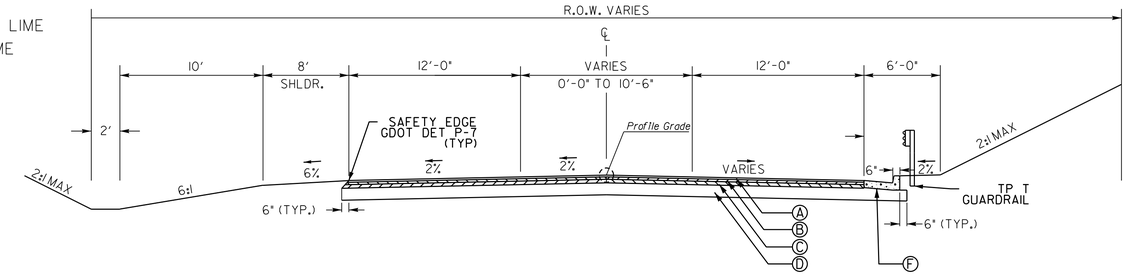
GENERAL NOTES

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 04-001

REQUIRED PAVEMENT

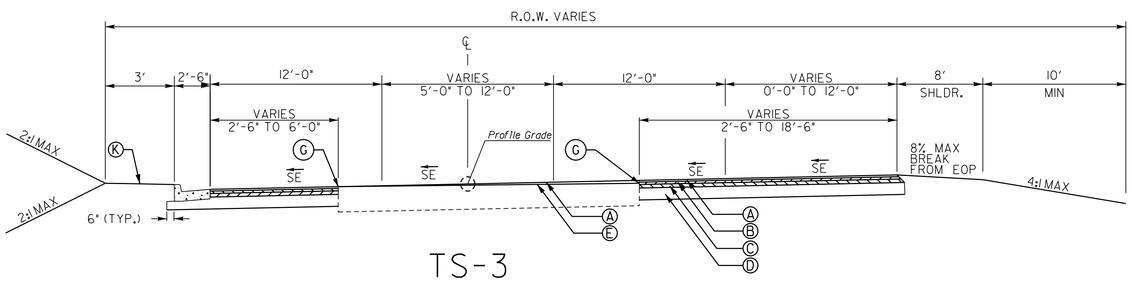
- Ⓐ 165 LB/SQ YD - 1.5" RECY ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME
- Ⓑ 220 LB/SQ YD - 2" RECY ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME
- Ⓒ 440 LB/SQ YD - 4" RECY ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL
- Ⓓ 10" GRADED AGGREGATE BASE
- Ⓔ ASPHALT LEVELING (AS REQUIRED)
- Ⓕ 6" X 24" CONC. CURB & GUTTER, GA. STD. 9032 B. TP 2
- Ⓖ PAVEMENT REINF FABRIC STRIPS, TP 2, 18 IN WIDTH
- Ⓗ CONC SIDEWALK, 4 IN (8" AT INTERSECTION RADIUS RETURNS)
- Ⓙ MILL AND INLAY, VARIABLE DEPTH
- Ⓚ SOD



TS-5

BELLS FERRY ROAD

APPLIES TO STA:
501+67 TO 504+39

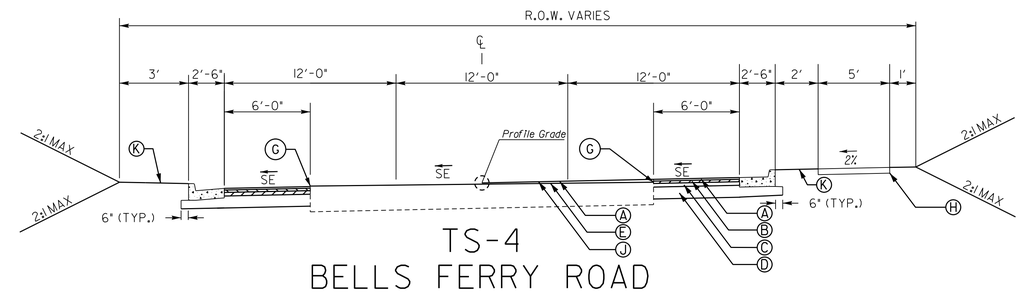


TS-3

BELLS FERRY ROAD

SUPERELEVATION

APPLIES TO STA:
498+00 TO 500+92

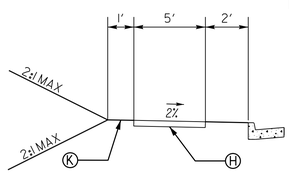


TS-4

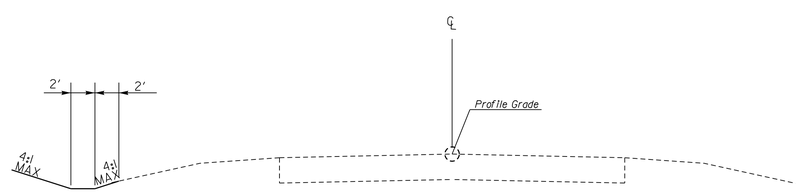
BELLS FERRY ROAD

SUPERELEVATION

APPLIES TO STA:
500+92 TO 501+67



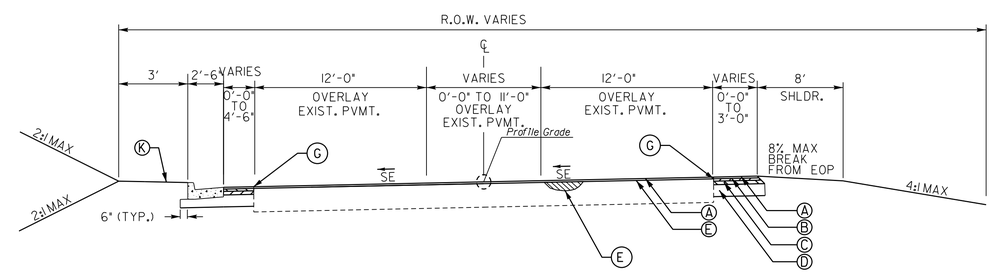
APPLIES TO STA:
499+67 TO 500+18



TS-1

BELLS FERRY ROAD

APPLIES TO STA:
495+84 TO 496+50



TS-2

BELLS FERRY ROAD

SUPERELEVATION
APPLIES TO STA:
496+50 TO 498+00

AECOM

ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

NTS

REVISION DATES		

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

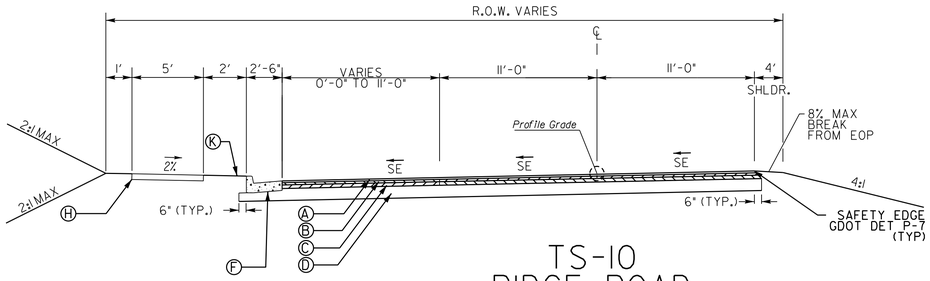
OFFICE:

TYPICAL SECTIONS

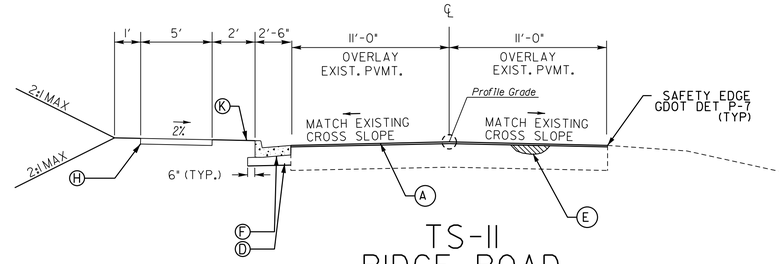
BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 05-001

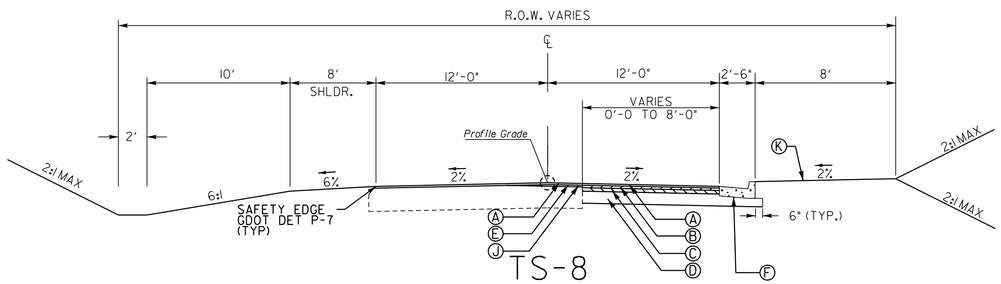
01/26/2015 GPLNOLD



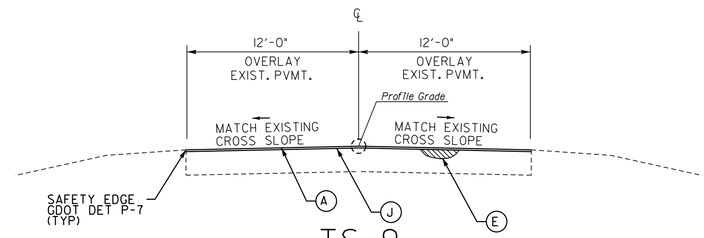
TS-10
RIDGE ROAD
SUPERELEVATION
APPLIES TO STA:
200+50 TO 203+50



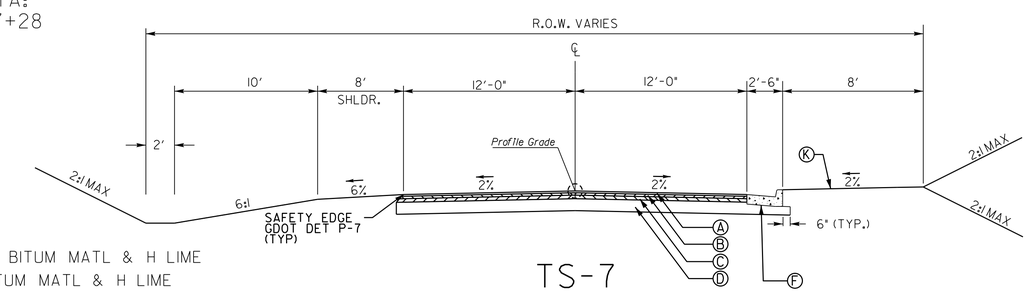
TS-11
RIDGE ROAD
APPLIES TO STA:
203+50 TO 205+00



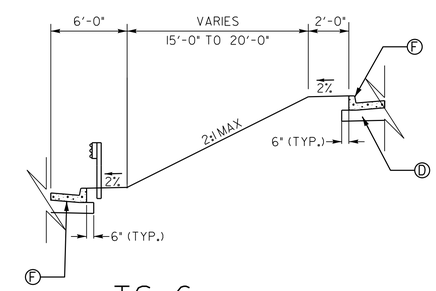
TS-8
BELLS FERRY ROAD
TANGENT
APPLIES TO STA:
506+00 TO 507+28



TS-9
BELLS FERRY ROAD
APPLIES TO STA:
507+28 TO 508+00



TS-7
BELLS FERRY ROAD
TANGENT
APPLIES TO STA:
504+39 TO 506+00



TS-6
BELLS FERRY ROAD
ADJACENT PARKING LOT DETAIL
APPLIES TO STA:
502+74 TO 503+76

REQUIRED PAVEMENT

- Ⓐ 165 LB/SQ YD - 1.5" RECY ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME
- Ⓑ 220 LB/SQ YD - 2" RECY ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME
- Ⓒ 440 LB/SQ YD - 4" RECY ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL
- Ⓓ 10" GRADED AGGREGATE BASE
- Ⓔ ASPHALT LEVELING (AS REQUIRED)
- Ⓕ 6" X 24" CONC. CURB & GUTTER, GA. STD. 9032 B. TP 2
- Ⓖ PAVEMENT REINF FABRIC STRIPS, TP 2, 18 IN WIDTH
- Ⓗ CONC SIDEWALK, 4 IN (8" AT INTERSECTION RADIUS RETURNS)
- Ⓙ MILL AND INLAY, VARIABLE DEPTH
- Ⓚ SOD

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

NTS

REVISION DATES		

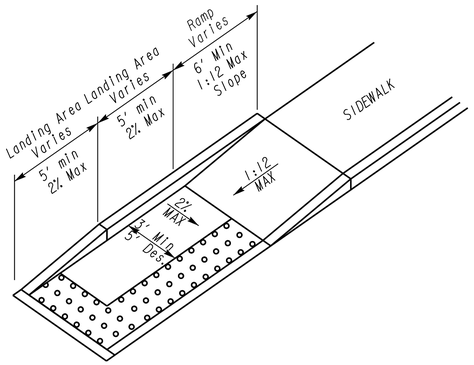
CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

TYPICAL SECTIONS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 05-002



SPECIAL CURB CUT (WHEELCHAIR) RAMP

APPLIES TO RIDGE RD
STA. 203+10.00

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
0.0200 FT/FT - DESIRABLE	0.0200 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.

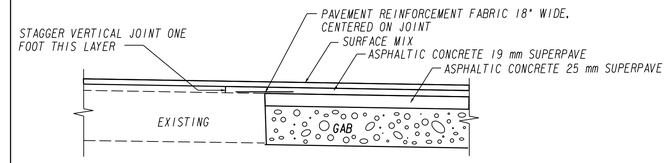
D. POSITIONING OF SUPERELEVATION TRANSITION LENGTH ON SIMPLE CURVES

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

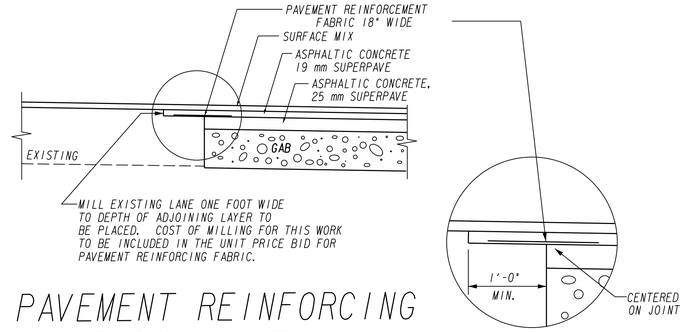
NOTE: CROWN WIPE-OUT SHALL BE AT THE SAME RATE AS THE SE TRANSITION.

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).

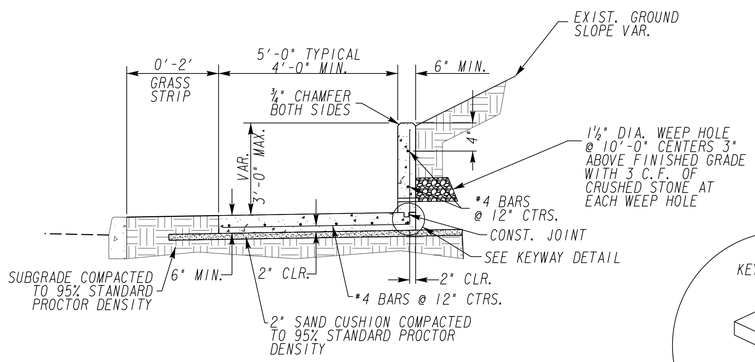
TYPICAL SECTION DETAIL TO BE USED WHEN EXISTING PAVEMENT IS TO BE RESURFACED WITH TWO INCHES OR MORE OF ASPHALTIC CONCRETE

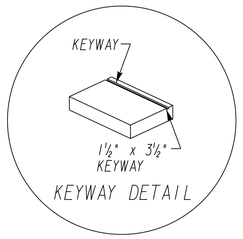


TYPICAL SECTION DETAIL TO BE USED WHEN EXISTING PAVEMENT IS TO BE RESURFACED WITH LESS THAN TWO INCHES OF ASPHALTIC CONCRETE



PAVEMENT REINFORCING FABRIC DETAIL

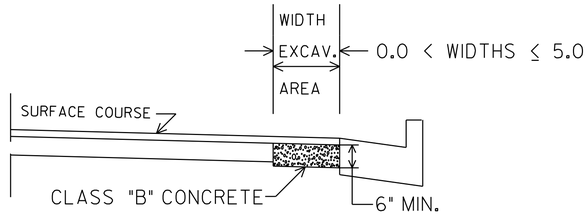




KEYWAY DETAIL

INTEGRAL SIDEWALK & RETAINING WALL

APPLIES TO RIDGE RD
STA. 202+53.00 TO 202+74.11
STA. 203+03.38 TO 204+44.00



NO SCALE
CLASS "B" CONCRETE BASE OR PAVEMENT WIDENING
Item Code 500-9999 - 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

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

NTS

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

TYPICAL SECTIONS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 05-003

SUMMARY OF QUANTITIES

SUMMARY OF PAVING QUANTITIES

LOCATION	GRADED AGGREGATE BASE COURSE INCL. MAT'L, 10 IN	RECYCLED ASPHALTIC CONC. 12.5 mm SUPERPAVE, GP 2 ONLY INCL. BITUM. MAT'L & H. LIME	RECYCLED ASPHALTIC CONC. 19 mm SUPERPAVE, GP 1 OR 2 INCL. BITUM. MAT'L & H. LIME	RECYCLED ASPHALTIC CONC. 25 mm SUPERPAVE, GP 1 OR 2 INCL. BITUM. MAT'L & H. LIME	RECYCLED ASPH CONC. LEVELING, INCL BITUM MAT'L & H LIME	RECYCLED ASPH CONC. PATCHING, INCL BITUM MATL	CLASS B BASE OR PVMT WIDENING	PVMT. REINF. FABRIC STRIPS, TP. 2, 18 IN WIDTH	TACK COAT	CONC. CURB & GUTTER 6 IN X 24 IN, TP 2	CONC. MEDAIN, 6 IN	CONC. SIDEWALK, 8 IN	CONC. SIDEWALK, 4 IN	MILL ASPH CONC PVMT, VARIABLE DEPTH	INTEGRAL SIDEWALK (CLASS "A" CON. INCL STEEL)
	SY	TN	TN	TN	TN	TN	CY	LF	GL	LF	SY	SY	SY	SY	CY
BELLS FERRY RD.	2950	330	240	475	300	100	18	204	207	1325	93	84	88		
RIDGE RD.	1430	148	150	300	40				92	550			212	500	20
AS REQUIRED	435	47	40	75	20		2	26	31	185	7	6	30		
TOTAL	4815	525	430	850	360	100	20	270	330	2060	100	90	330	500	20

SUMMARY OF PAVEMENT MARKINGS

LOCATION	TRAFFIC STRIPE					ARROWS	TRAFFIC STRIPING			
	THERMOPLASTIC SOLID TRAF. STRIPE, 5 IN, WHITE	THERMOPLASTIC SOLID TRAF. STRIPE, 5 IN, YELLOW	THERMOPLASTIC SKIP TRAF. STRIPE, 5 IN, WHITE	THERMOPLASTIC SOLID TRAF. STRIPE, 8 IN, WHITE	THERMOPLASTIC SOLID TRAF. STRIPE, 24 IN, WHITE	THERMOPLASTIC PVMT MARKING ARROW, TYPE 2	THERMOPLASTIC TRAF. STRIPE, WHITE	THERMOPLASTIC TRAF. STRIPE, YELLOW	RAISED PVMT MARKERS TP 1	RAISED PVMT MARKERS TP 3
	LF	LF	GLF	LF	LF	EACH	SY	SY	EACH	EACH
BELLS FERRY RD.	2530	530	145	380	36	4	157	246	28	42
RIDGE RD.	800	330	50	490	24	4			24	8
TOTAL	3330	860	195	870	60	8	157	246	52	50

CONCRETE R/W MARKERS

GA STD 9003

LOCATION	UNIT	QTY
BELLS FERRY RD.	EA	29
RIDGE RD.	EA	4
TOTAL	EA	33

TEMPORARY EROSION CONTROL

	UNIT	TOTAL
TEMPORARY SILT FENCE TYPE C	LF	3300
MAINTENANCE OF TEMPORARY SILT FENCE TYPE C	LF	1650
CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	EA	8
MAINTENANCE OF INLET SEDIMENT TRAP	EA	8
CONSTRUCT AND REMOVE BALED STRAW CHECK DAM	LF	75
MAINTENANCE OF SEDIMENT BARRIER-BALED STRAW	LF	75
CONSTRUCTION EXITS	EA	2
MAINTENANCE OF CONSTRUCTION EXITS	EA	2
CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 2	EA	10
MAINTENANCE OF SILT CONTROL GATE, TP 2	EA	10
EROSION CONTROL MATS, SLOPE	SY	485
WATER QUALITY MONITORING AND SAMPLING	EA	3
WATER QUALITY INSPECTIONS	MO	12

SUMMARY OF DRIVEWAY QUANTITIES

LOCATION		GRADED AGGREGATE BASE COURSE, INCL. MAT'L	RECYCLED ASPHALTIC CONC. 12.5 mm SUPERPAVE, GP 2 ONLY INCL. BITUM. MAT'L & H. LIME	RECYCLED ASPHALTIC CONC. 19 mm SUPERPAVE, GP 1 OR 2 INCL. BITUM. MAT'L & H. LIME	CONC. VALLEY GUTTER, 6 IN	TACK COAT	DRIVEWAY CONCRETE, 6 IN TK	AGGREGATE SURFACE COURSE	SIDE DRAIN PIPE, 18 IN, H 1-10	SAFETY END SECTION 18 IN, SIDE DRAIN, 6:1 SLOPE
		TN	TN	TN	SY	GL	SY	TN	LF	EA
LOCATION	SIDE									
BELLS FERRY RD.										
STA. 497+86	RT						91	10		
STA. 498+76	LT				17		44	10		
STA. 500+70	LT				17		60	10		
STA. 502+28	RT	34	40	16		17				
STA. 502+51	LT	30	8					10		
STA. 504+52	LT						70	10	40	2
STA. 507+00	LT						45		60	4
STA. 507+32	LT							4	44	4
RIDGE RD.										
STA. 202+88	LT	49	12	16		4				
STA. 202+90	RT		8			4				
TOTAL		113	68	32	34	25	310	55	144	10

GRASSING

ITEM	UNIT	QUANTITY	AGRICULTURAL LIME	FERTILIZER MIXED GRADE	FERTILIZER NIRTOGEN CONTENT
			TON	TON	LB
PERMANENT GRASSING	AC	2	5	2	72
TEMPORARY GRASSING	AC	1			
MULCH	TON	30			
SCD	SY	650			

GUARDRAIL QUANTITIES

GA. STDS. 4380, 4383, 4385, & 4391

GUARDRAIL "T" BEAM		ANCHORAGES		
LOCATION & SIDE	LIN FT	TP 1	TP 5	TP 12A
503+88 TO 504+04 RT	117	1		1
TOTALS	117	1		1

NOTE: THE ACTUAL BEGINNING AND ENDING OF GUARDRAIL MAY BE ADJUSTED TO MEET FIELD CONDITION, AS DIRECTED BY THE ENGINEER.

CONCRETE SPILLWAY-GA. STD. 9013-TP. 3

LOCATION	SIDE	EACH
496+50	LT	1
501+50	LT	1
507+00	RT	1
TOTALS		3

TRAFFIC CONTROL

CTSAP-770-407(057)C1

LUMP SUM

GRADING COMPLETE

CTSAP-770-407(057)C1

LUMP SUM

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

SUMMARY QUANTITIES

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 06-001

SUMMARY OF QUANTITIES

STORM DRAIN QUANTITIES

				PIPES			FLARED END SECTION			INLETS & MISC. DRAINAGE ITEMS							
							GA. STD. 1120										
				LF		HEIGHT OF FILL	EACH			CATCH BASIN, GA. STD. 1033D	CATCH BASIN, GP 1, GA. STD. 1034 D	CATCH BASIN, GP 1, GA. STD. 1034 D ADDITIONAL DEPTH	DROP INLET, GP 1 GA STD. 1019A	MANHOLE GA. STD. 1011-A	STONE DUMPED RIP-RAP, TYPE 3, 18 IN THICK	PLASTIC FILTER FABRIC	
STR. No.	LOCATION	SIDE	SKEW	18 IN	24 IN	FT	18 IN	24 IN		EA.	EA.	LF	EA.	EA.	SY	SY	REMARKS
	496+50.00	RT													3	3	
A-01	501+78.63	LT					1								9	9	
A-02	501+65.17	RT		63		2.5				1							
A-03	200+66.55	LT		138		3.9				1							
	501+50.00	LT													3	3	
B-01	506+80.76	LT						1							16	16	
B-02	506+76.25	RT			58	4.5				1							
B-03	505+00.00	RT		175		2.8				1							
B-04	503+54.07	RT		147		2.9								1			
B-4.1	503+69.97	RT		24		6.8					1	2.9					
B-05	502+43.47	RT		111		3.9							1				
B-06	502+10.19	RT		34		2.5							1				
	507+32.45	RT													3	3	
	SUBTOTAL			692	58		1	1		4	1	2.9	2	1	34	34	
	(1FT - 10FT)			692	58												

SUMMARY OF SIGN QUANTITIES

STATION	CODE	SIGNS - TYPE 9 REFLECTIVE SHEETING (SQUARE FEET) TYPE I (.08 in)			SIGNS - TYPE II REFLECTIVE SHEETING (SQUARE FEET) TYPE I (.08 in)			RESET SIGN	POSTS (LINEAR FEET) TYPE 7		
		SIZE IN x IN	QUANTITY	ft^2	SIZE in x in	QUANTITY	ft^2	EACH	LENGTH	QUANTITY	ft
BELLS FERRY RD.											
496+70	W3-3	30 X 30	1	6.25					13	1	13
496+70	W16-8P	36 X 12	1	3.00							
499+50	R560-5	18 X 24	1	3.00					13	1	13
500+60	R1-2				36 X 36	1	9.00		13	1	13
502+05								1			
502+50	R1-1				30 X 30	1	6.25		13	1	13
505+20	W3-3	30 X 30	1	6.25					13	1	13
505+20	W16-8P	36 X 12	1	3.00							
RIDGE RD.											
200+62	R560-5	18 X 24	1	3.00					13	1	13
200+70	R1-2				36 X 36	1	9.00		13	1	13
210+13	R2-1	24 X 30	1	5.00					13	1	13
202+00	R3-7R	30 X 30	1	6.25					13	1	13
202+15	W3-3	30 X 30	1	6.25					13	1	13
202+15	W16-8P	48 X 12	1	4.00							
202+00	R560-5	18 X 24	1	3.00					13	1	13
202+45	S5-2	24 X 30	1	5.00					13	1	13
202+70								1			
202+71	R1-1				30 X 30	1	6.25		13	1	13
203+05	R1-1				30 X 30	1	6.25		13	1	13
203+20	W11-2	30 X 30	2	12.50					13	1	13
203+20	W16-7	24 X 12	2	4.00							
203+23	W11-2	30 X 30	2	12.50					13	1	13
203+23	W16-7	24 X 12	2	4.00							
204+00	R560-5	18 X 24	1	3.00					13	1	13
208+23	W11-2	30 X 30	1	6.25					13	1	13
208+23	W16-2P	24 X 18	1	3.00							
TOTAL				100			37	2			234

RECTANGULAR RAPID BEACON ASSEMBLY

LOCATION	UNIT	QTY
STA 203+20	EA	2
STA 203+23	EA	2
TOTAL	EA	4

NOTE: ALL POLES, BRACKETS, AND HARDWARE SHALL BE BLACK POWDER COATED. SHALL BE PEDESTRIAN POLE MOUNTED AND SOLAR POWERED.

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

SUMMARY QUANTITIES

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 06-002

ITEM NO	DESCRIPTION	UNIT	QUANTITY
	CONSTRUCTION ITEMS		
150-1000	TRAFFIC CONTROL	LS	LUMP SUM
163-0232	TEMPORARY GRASSING	AC	1
163-0240	MULCH	TN	30
163-0300	CONSTRUCTION EXIT	EA	2
163-0502	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 2	EA	10
163-0529	CONSTRUCT AND REMOVE TEMPORARY SEDIMENT BARRIER OR BALED STRAW CHECK DAM	LF	75
163-0550	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	EA	8
165-0030	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	LF	1650
165-0071	MAINTENANCE OF SEDIMENT BARRIER-BALED STRAW	LF	75
165-0086	MAINTENANCE OF SILT CONTROL GATE, TP 2	EA	10
165-0101	MAINTENANCE OF CONSTRUCTION EXIT	EA	2
165-0105	MAINTENANCE OF INLET SEDIMENT TRAP	EA	8
167-1000	WATER QUALITY MONITORING AND SAMPLING	EA	3
167-1500	WATER QUALITY INSPECTIONS	MO	12
171-0030	TEMPORARY SILT FENCE, TYPE C	LF	3300
210-0100	GRADING COMPLETE	LS	LUMP SUM
310-1101	GRADDED AGGR BASE COURSE, INCL MATL	TN	113
310-5100	GRADDED AGGR BASE COURSE, 10 IN, INCL MATL	SY	4815
318-3000	AGGREGATE SURFACE COURSE	TN	55
402-1801	RECYCLED ASPH CONC PATCHING, INCL BUTUM MATL	TN	100
402-1812	RECYCKED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	TN	360
402-3129	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	TN	593
402-3143	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL	TN	850
402-3190	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	TN	462
413-0750	TACK COAT	GAL	355
432-5010	MILL ASPH CONC PVMT, VARIABLE DEPTH	SY	500
441-0016	DRIVEWAY CONCRETE, 6 IN THICK	SY	310
441-0104	CONCRETE SIDEWALK, 4 IN	SY	330
441-0108	CONCRETE SIDEWALK, 8 IN	SY	90
441-0303	CONC SPILLWAY, TP 3	EA	3
441-0748	CONCRETE MEDIAN, 6 IN	SY	100
441-4020	CONC VALLEY GUTTER, 6 IN	SY	34
441-6012	CONCRETE CURB & GUTTER, 6 IN X 24 IN, TP 2	LF	2060
446-1100	PAVEMENT REINF FABRIC STRIPS, TP 2, 18 INCH WIDTH	LF	270
500-3800	CLASS A CONCRETE, INCL REINF STEEL	CY	20
500-9999	CLASS B CONC, BASE OR PVMT WIDENING	CY	20
550-1180	STORM DRAIN PIPE, 18 IN, H 1-10	LF	692
550-1240	STORM DRAIN PIPE, 24 IN, H 1-10	LF	58
550-2180	SIDE DRAIN PIPE, 18 IN, H 1-10	LF	144
550-3618	SAFETY END SECTION 18 IN, SIDE DRAIN, 6:1 SLOPE	EA	10
550-4218	FLARED END SECTION 18 IN, STORM DRAIN	EA	1
550-4224	FLARED END SECTION 24 IN, STORM DRAIN	EA	1
603-2181	STONE DUMPED RIP RAP, TP 3, 18 IN	SY	34
603-7000	PLASTIC FILTER FABRIC	SY	34
634-1200	RIGHT OF WAY MARKERS	EA	33
641-1100	GUARDRAIL, TP T	LF	117
641-5001	GUARDRAIL ANCHORAGE, TP 1	EA	1
641-5015	GUARDRAIL TERMINAL, TP 12A, 31 IN TANGENT ENERGY-ABSORBING	EA	1
668-1100	CATCH BASIN, GP 1	EA	5
668-1110	CATCH BASIN, GP 1, ADDL DEPTH	LF	2.9
668-2100	DROP INLET, GP 1	EA	2
668-4300	STORM SEWER MANHOLE, TP 1	EA	1
700-6910	PERMANENT GRASSING	AC	2
700-7000	AGRICULTURAL LIME	TN	5
700-8000	FERTILIZER MIXED GRADE	TN	2
700-8100	FERTILIZER NITROGEN CONTENT	LB	72
700-9300	SOD	SY	650
716-2000	EROSION CONTROL MATS, SLOPES	SY	485
	SIGNING AND MARKING ITEMS		
611-5551	RESET SIGN	EA	2
636-1033	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 9	SF	100
636-1036	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 11	SF	37
636-2070	GALV STEEL POLE, TP 7	LF	234
653-0120	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	EA	8
653-1501	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	LF	3330
653-1502	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	LF	860
653-1704	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	LF	60
653-1804	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	LF	870
653-3501	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	GLF	195
653-6004	THERMOPLASTIC TRAF STRIPING, WHITE	SY	157
653-6006	THERMOPLASTIC TRAF STRIPING, YELLOW	SY	246
654-1001	RAISED PVMT MARKERS, TP 1	EA	52
654-1003	RAISED PVMT MARKERS, TP 3	EA	50
999-3800	RECTANGULAR RAPID BEACON ASSEMBLY	EA	4
	TRAFFIC SIGNAL ITEM		
636-1041	HIGHWAY SIGNS, TP 2 MATL-REFL SHEETING, TP 9	SF	28
639-3004	STEEL STRAIN POLE TP IV, WITH 35' MAST ARM (BLACK POWDER COATED)	EA	2
639-3004	STEEL STRAIN POLE TP IV, WITH 40' MAST ARM (BLACK POWDER COATED)	EA	1
647-1000	TRAFFIC SIGNAL INSTALLATION NO. 1	LS	LUMP SUM
682-6233	CONDUIT, NONMETAL, TYPE 3, 2 IN	LF	1260
682-9950	DIRECTIONAL BORE, 3 IN	LF	668
682-9950	DIRECTIONAL BORE, 5 IN	LF	95
682-9950	DIRECTIONAL BORE, 7 IN	LF	76

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

DETAILED ESTIMATE

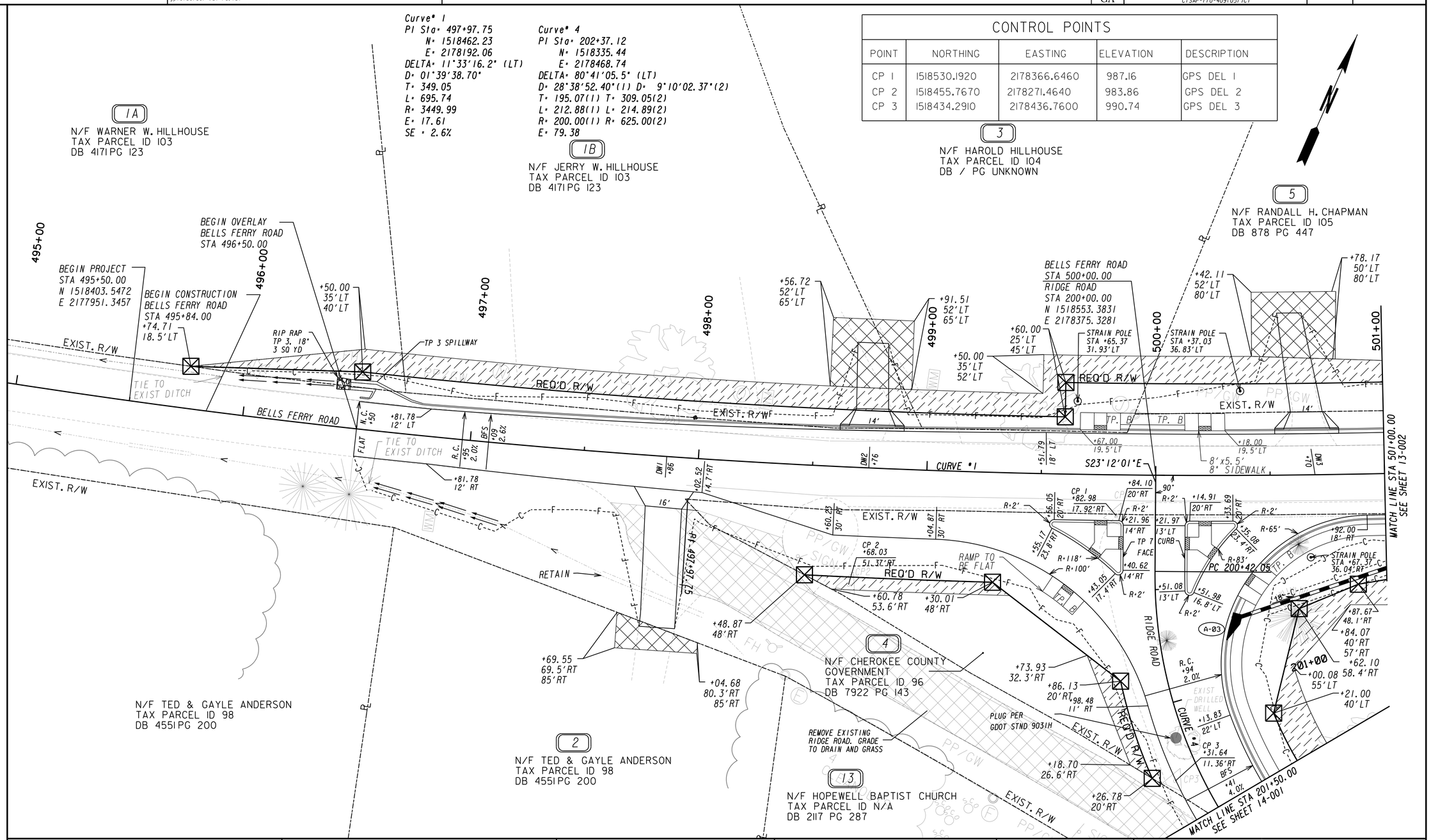
BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 09-001

01/26/2015 GPLNOLD

1/29/2018 travis.mcclam 8:21:09 AM GPLOT-V8 gplotborder-V8I-PO.tbl 0343_09-001.dgn

STATE GA | PROJECT NUMBER CTSAP-770-4091057(C) | SHEET NO. | TOTAL SHEETS



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

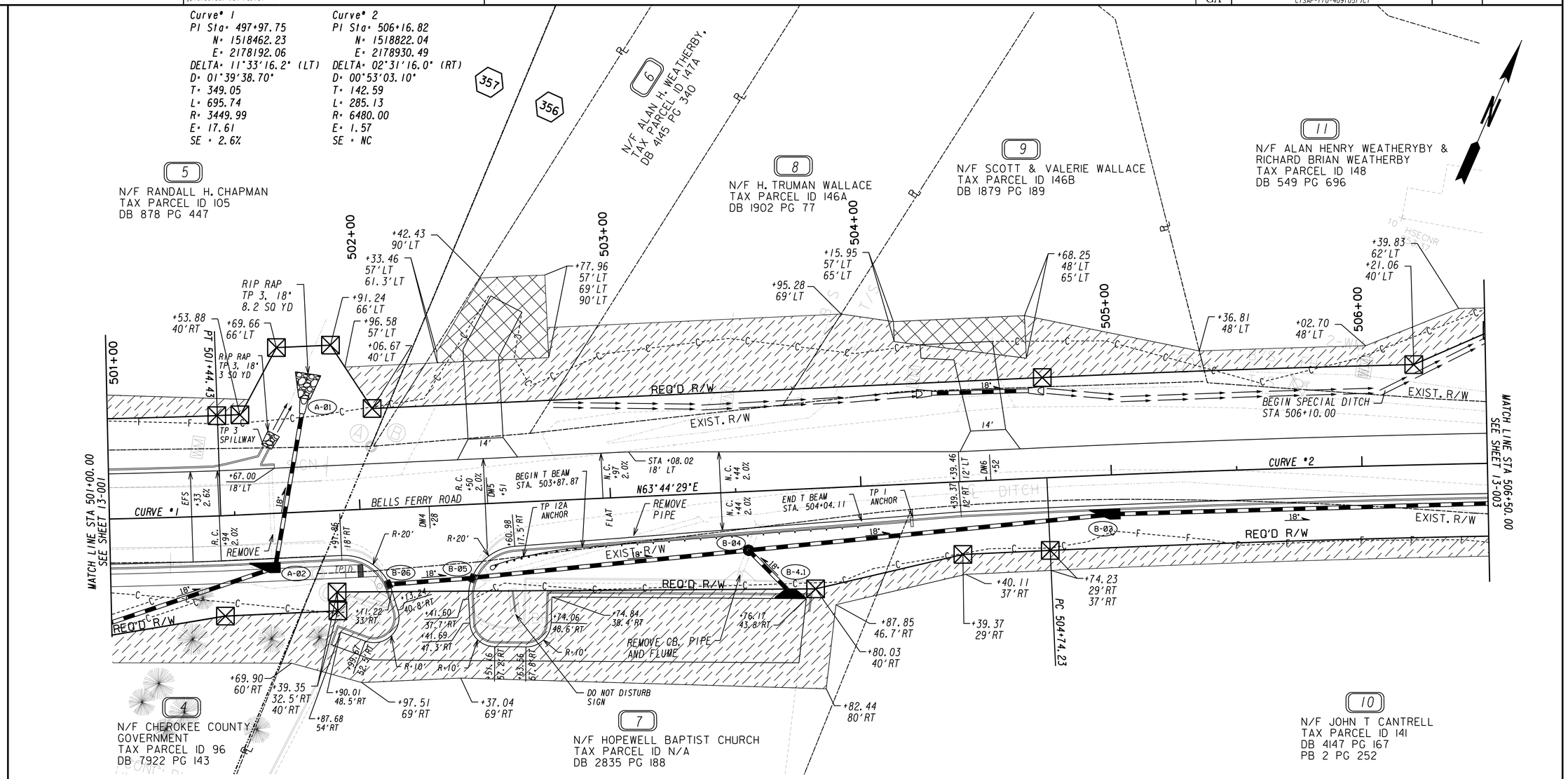
OFFICE:

MAINLINE PLAN

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 13-001

01/26/2015 GPLNOLD



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

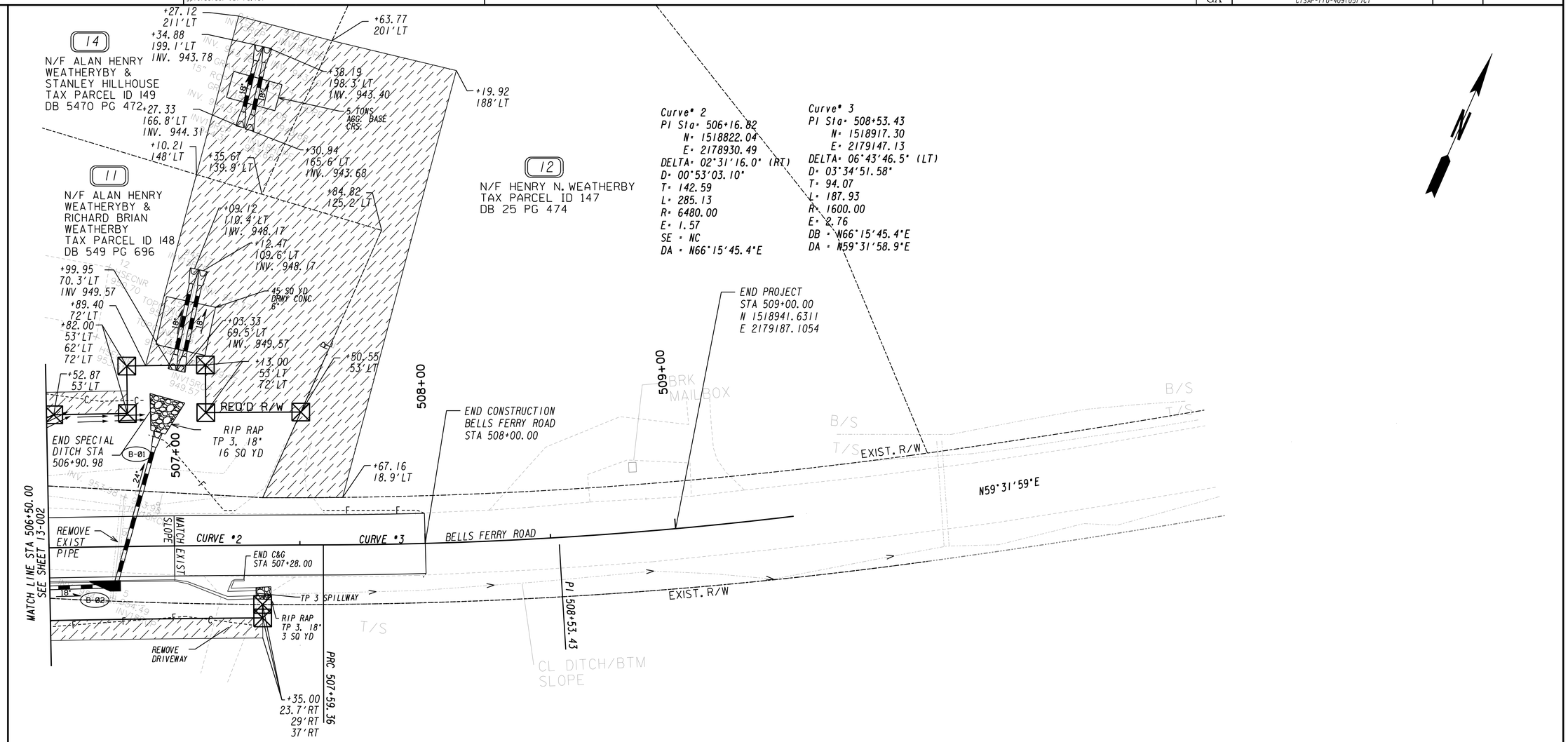
CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

MAINLINE PLAN

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
13-002



NOTE: PARTS OF DRIVEWAY DESTROYED BY CROSS PIPE REPLACEMENT TO BE REPLACED IN KIND MATCHING EXISTING SLOPE

PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	C F
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

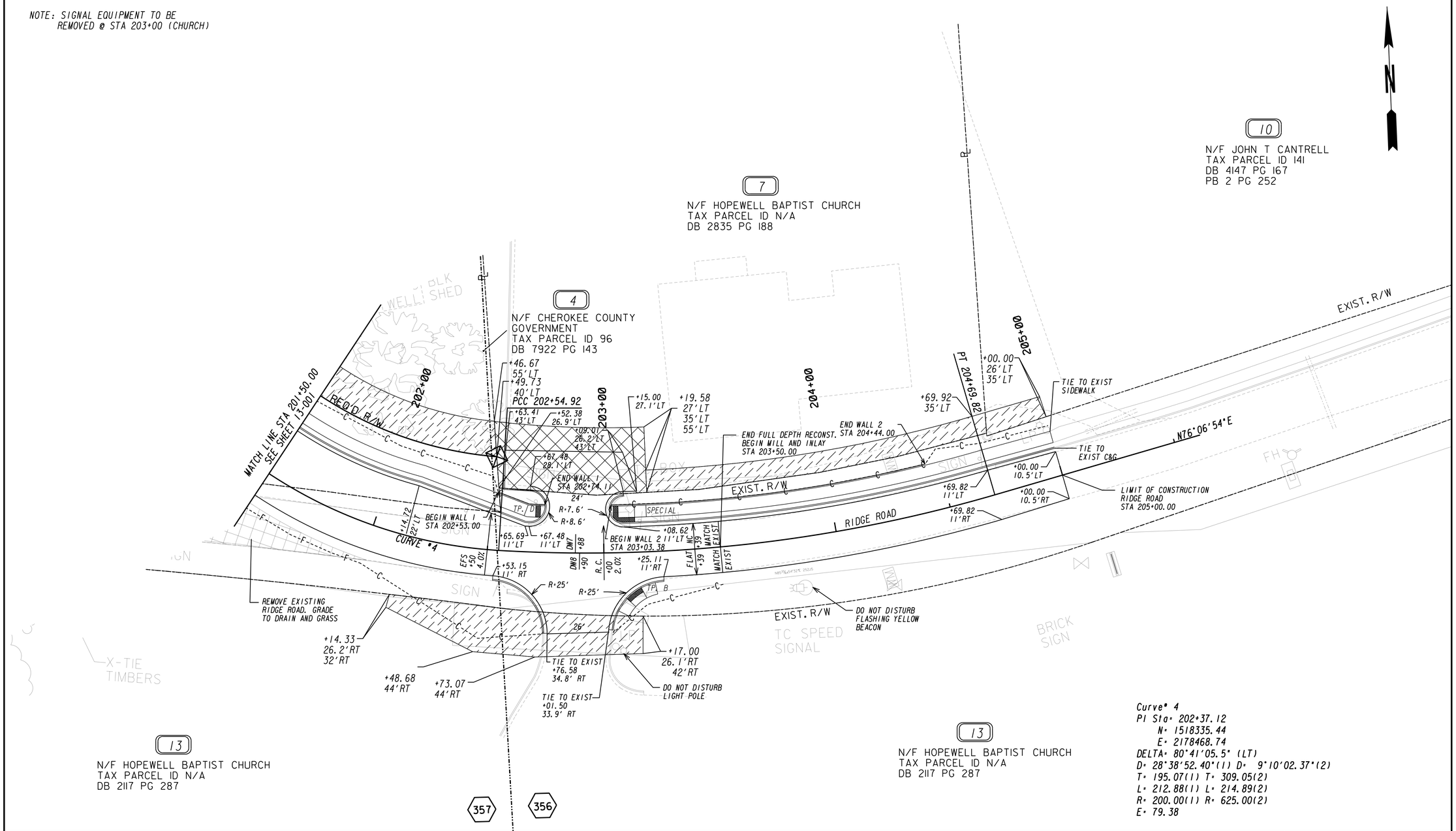
MAINLINE PLAN

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 13-003

01/26/2015 GPLNOLD

NOTE: SIGNAL EQUIPMENT TO BE REMOVED @ STA 203+00 (CHURCH)



Curve# 4
PI Sta= 202+37.12
N= 1518335.44
E= 2178468.74
DELTA= 80°41'05.5" (LT)
D= 28°38'52.40"(1) D= 9°10'02.37"(2)
T= 195.07(1) T= 309.05(2)
L= 212.88(1) L= 214.89(2)
R= 200.00(1) R= 625.00(2)
E= 79.38

PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

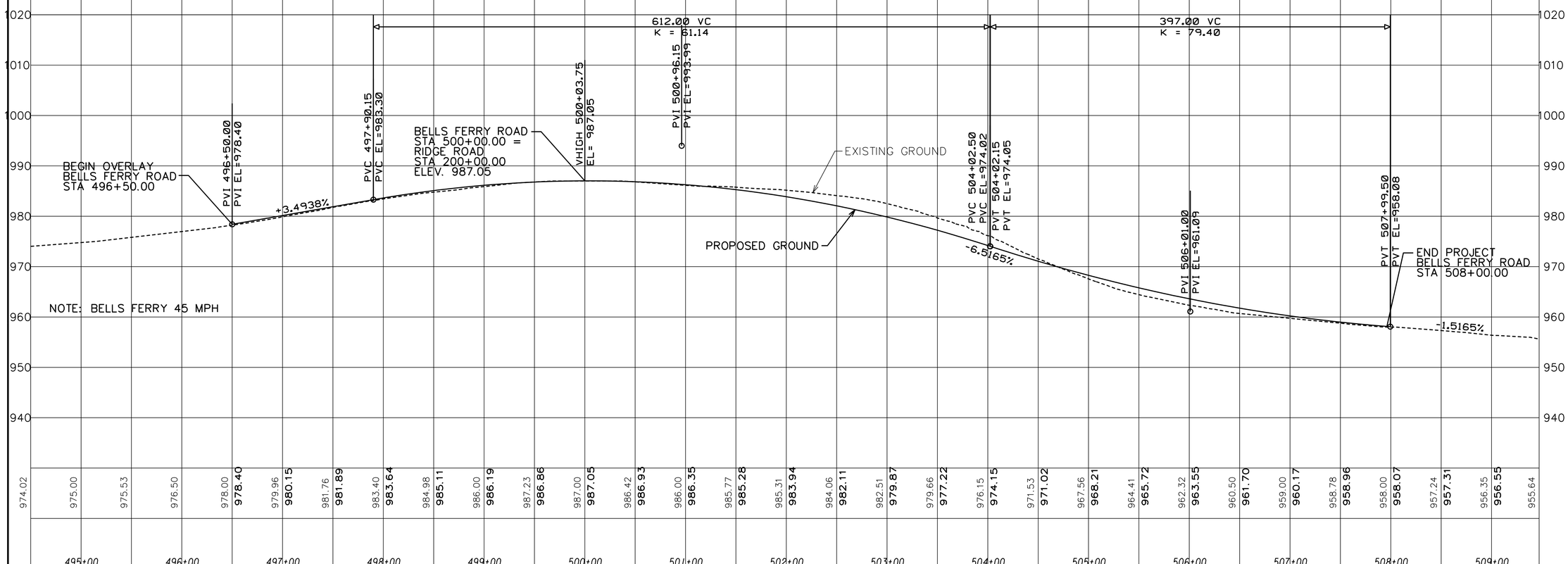
CROSSROAD PLAN

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 14-001

01/26/2015 GPLNOLD

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CTSAP-770-4091057(C)		



AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 10'

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

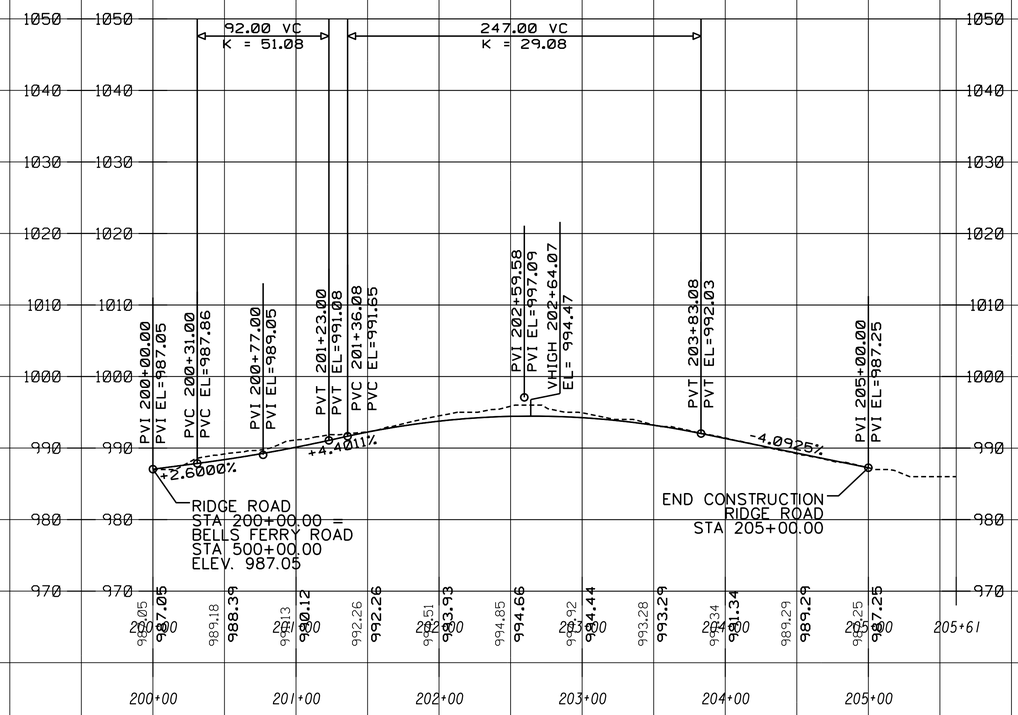
OFFICE:

MAINLINE PROFILE

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
15-001

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CTSAP-770-4091057(C)		



NOTE: RIDGE ROAD 35 MPH

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 10'

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

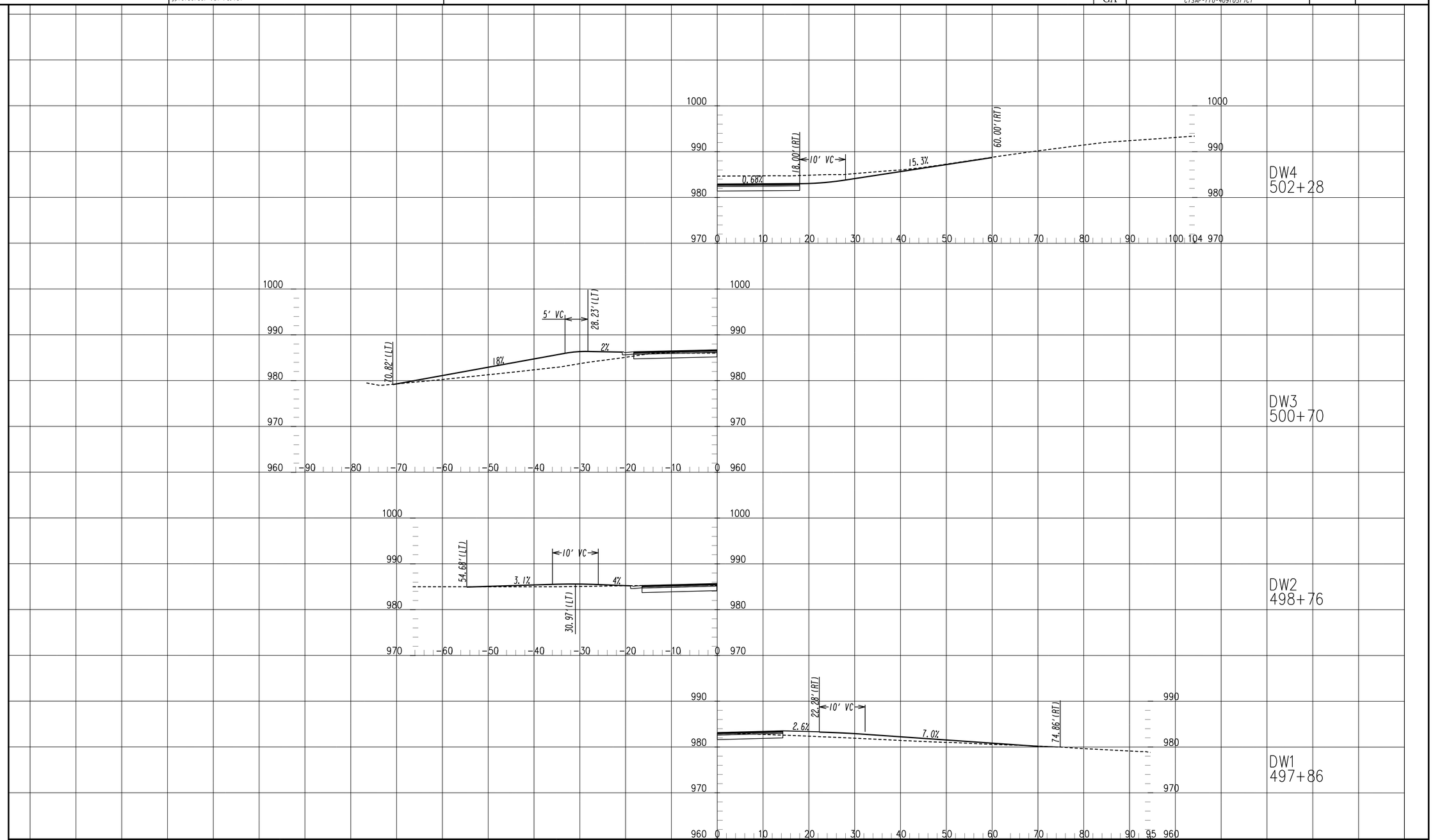
OFFICE:

CROSSROAD PROFILE

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 16-001

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CTSAP-770-4091057(C)		



AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 10 20 40

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

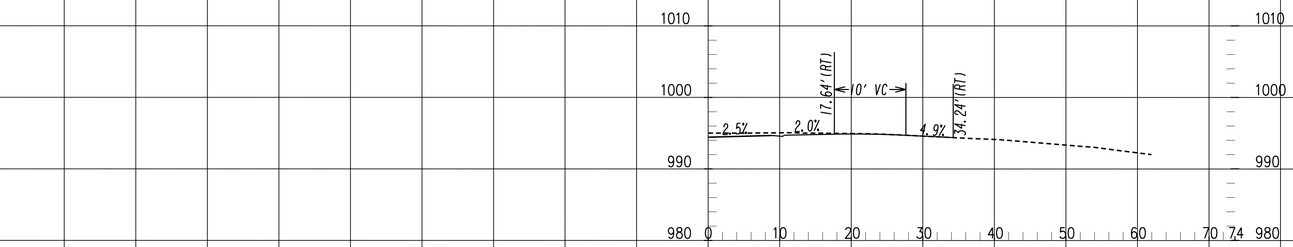
OFFICE:

DRIVEWAY PROFILE

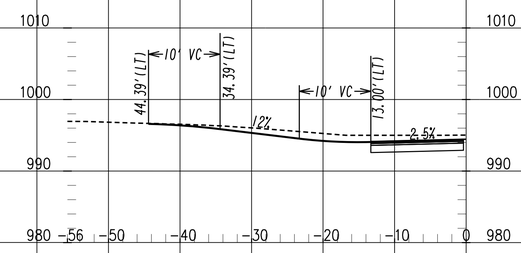
BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
17-001

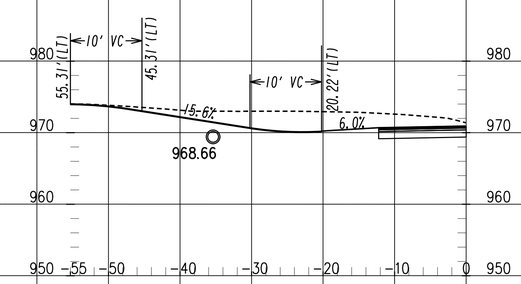
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CTSAP-770-4091057)C1		



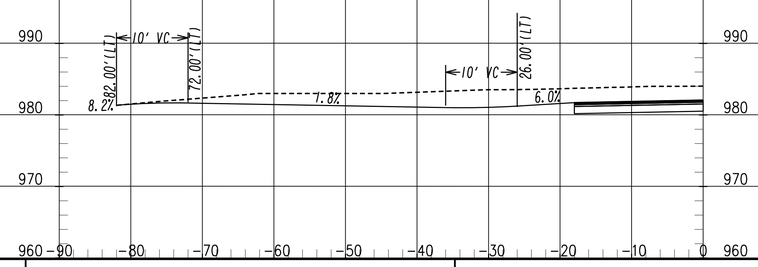
DW8
202+90



DW7
202+88



DW6
504+52



DW5
502+51

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 10 20 40

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

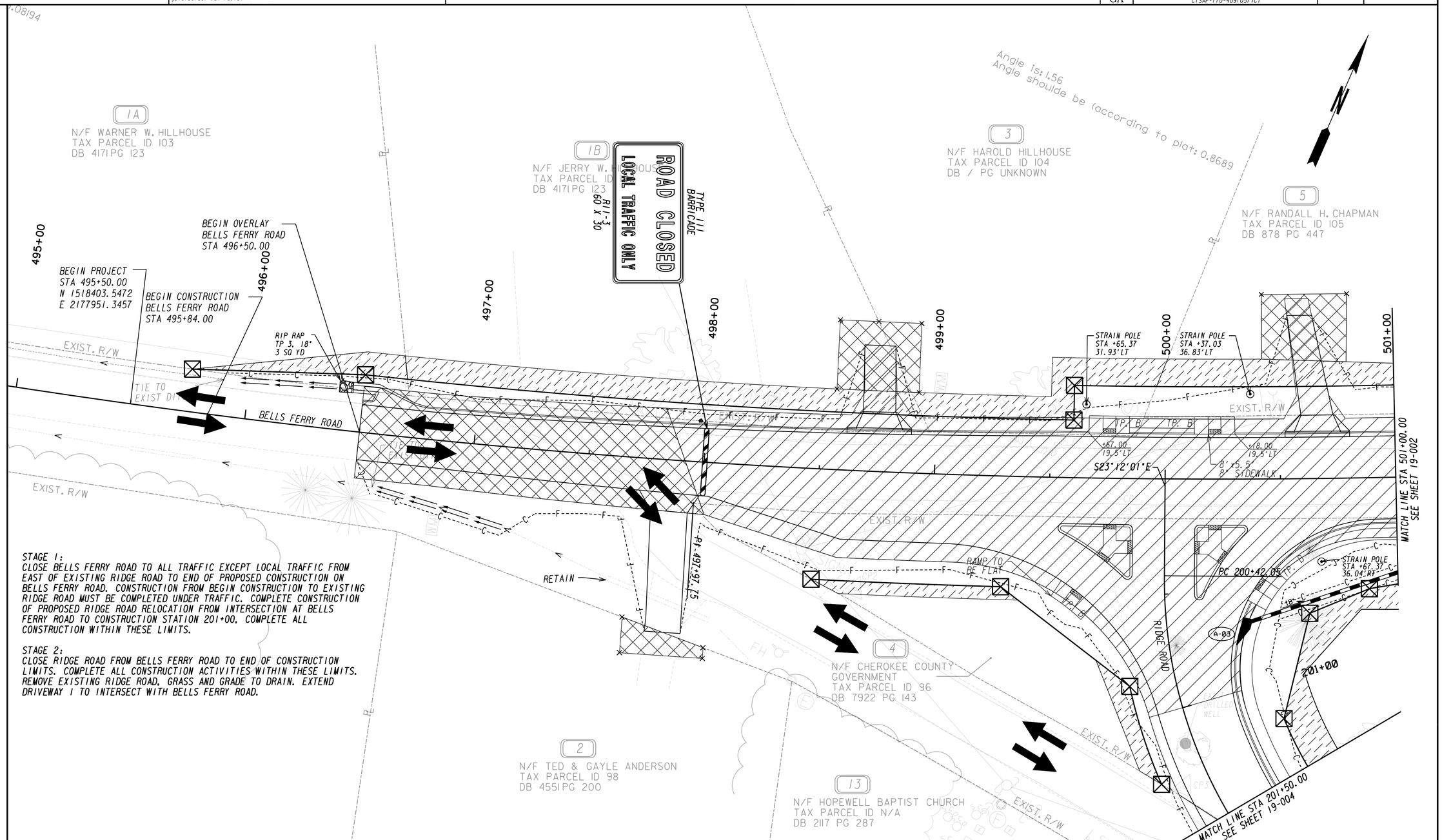
OFFICE:

DRIVEWAY PROFILE

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
17-002

1/29/2018 8:22:46 AM travis.mcclam	GPLOT-V8 gplotborder-V8I-PO.tbl	0343_19-001.dgn	STATE GA	PROJECT NUMBER CTSAP-770-4091057ICI	SHEET NO.	TOTAL SHEETS



STAGE 1:
CLOSE BELLS FERRY ROAD TO ALL TRAFFIC EXCEPT LOCAL TRAFFIC FROM EAST OF EXISTING RIDGE ROAD TO END OF PROPOSED CONSTRUCTION ON BELLS FERRY ROAD. CONSTRUCTION FROM BEGIN CONSTRUCTION TO EXISTING RIDGE ROAD MUST BE COMPLETED UNDER TRAFFIC. COMPLETE CONSTRUCTION OF PROPOSED RIDGE ROAD RELOCATION FROM INTERSECTION AT BELLS FERRY ROAD TO CONSTRUCTION STATION 201+00. COMPLETE ALL CONSTRUCTION WITHIN THESE LIMITS.

STAGE 2:
CLOSE RIDGE ROAD FROM BELLS FERRY ROAD TO END OF CONSTRUCTION LIMITS. COMPLETE ALL CONSTRUCTION ACTIVITIES WITHIN THESE LIMITS. REMOVE EXISTING RIDGE ROAD, GRASS AND GRADE TO DRAIN. EXTEND DRIVEWAY 1 TO INTERSECT WITH BELLS FERRY ROAD.

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
CONSTR UNDER TRAFFIC
STAGE 1 CONSTR
TRAFFIC DIRECTION DURING CONSTR

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA
(SEE ERIT TABLE)

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

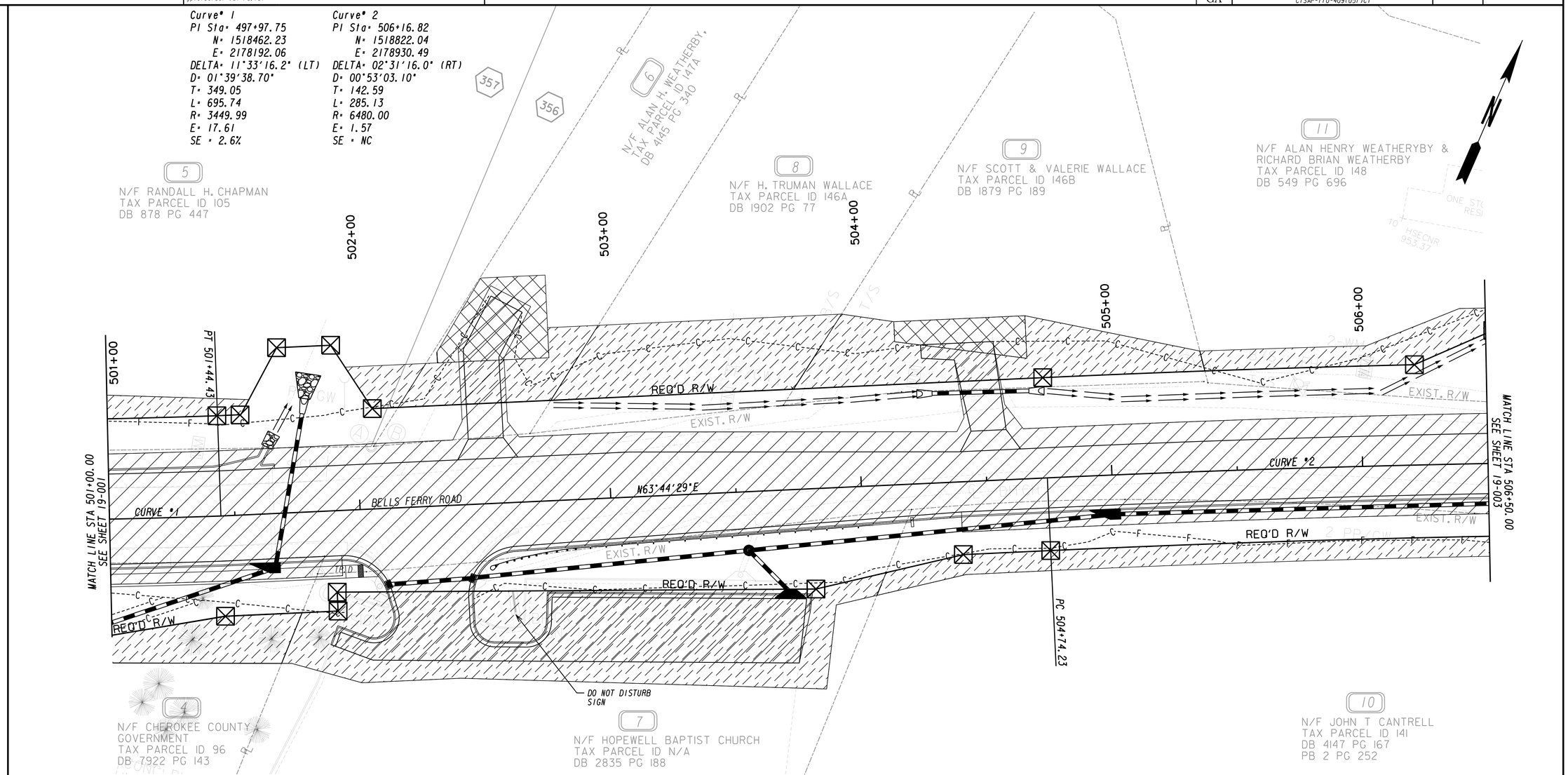
OFFICE:

STAGING PLAN
STAGE 1

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 19-001

01/26/2015 GPLNOLD



PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
CONSTR UNDER TRAFFIC
STAGE 1 CONSTR
TRAFFIC DIRECTION DURING CONSTR

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA
(SEE ERIT TABLE)

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

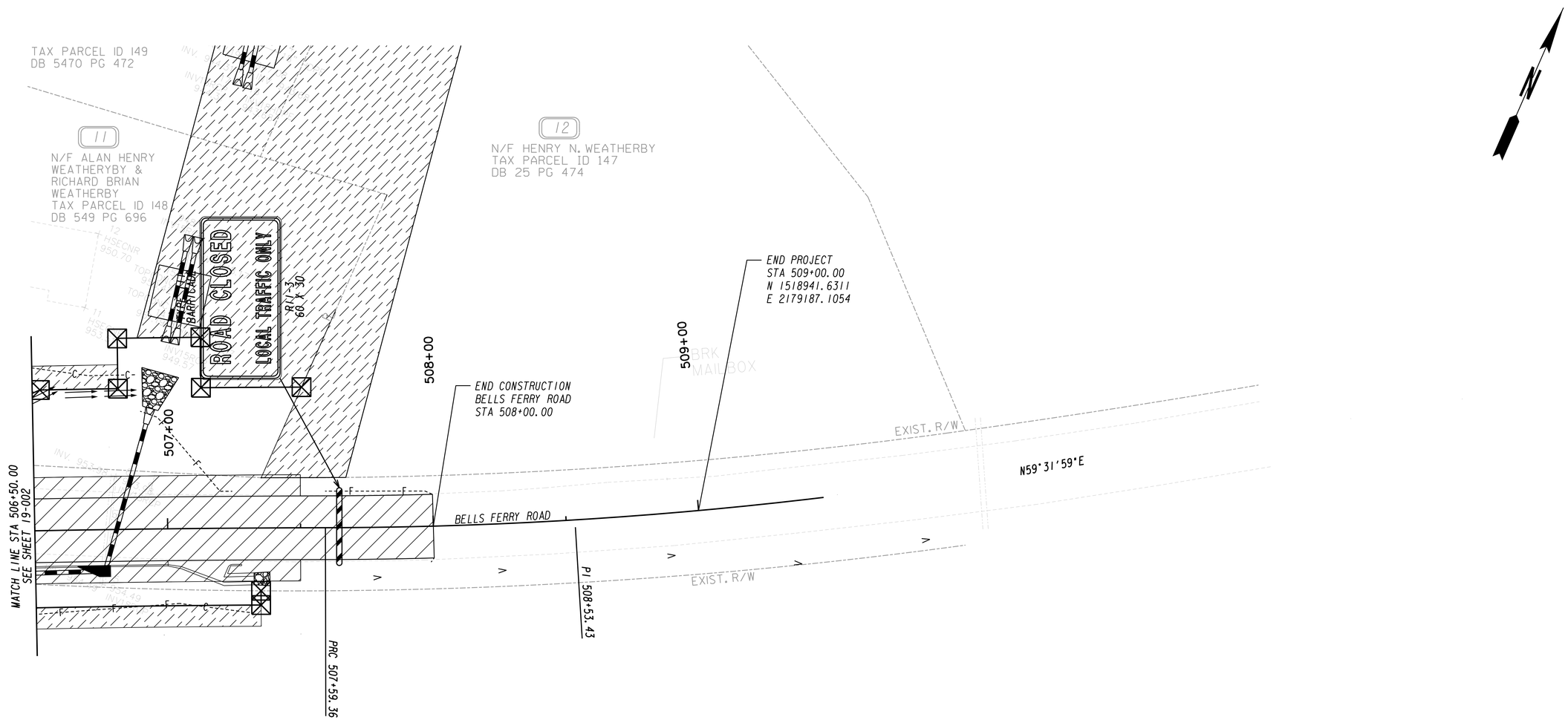
OFFICE:

STAGING PLAN
STAGE 1

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 19-002

01/26/2015 GPLNOLD



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
CONSTR UNDER TRAFFIC	
STAGE 1 CONSTR	
TRAFFIC DIRECTION DURING CONSTR	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

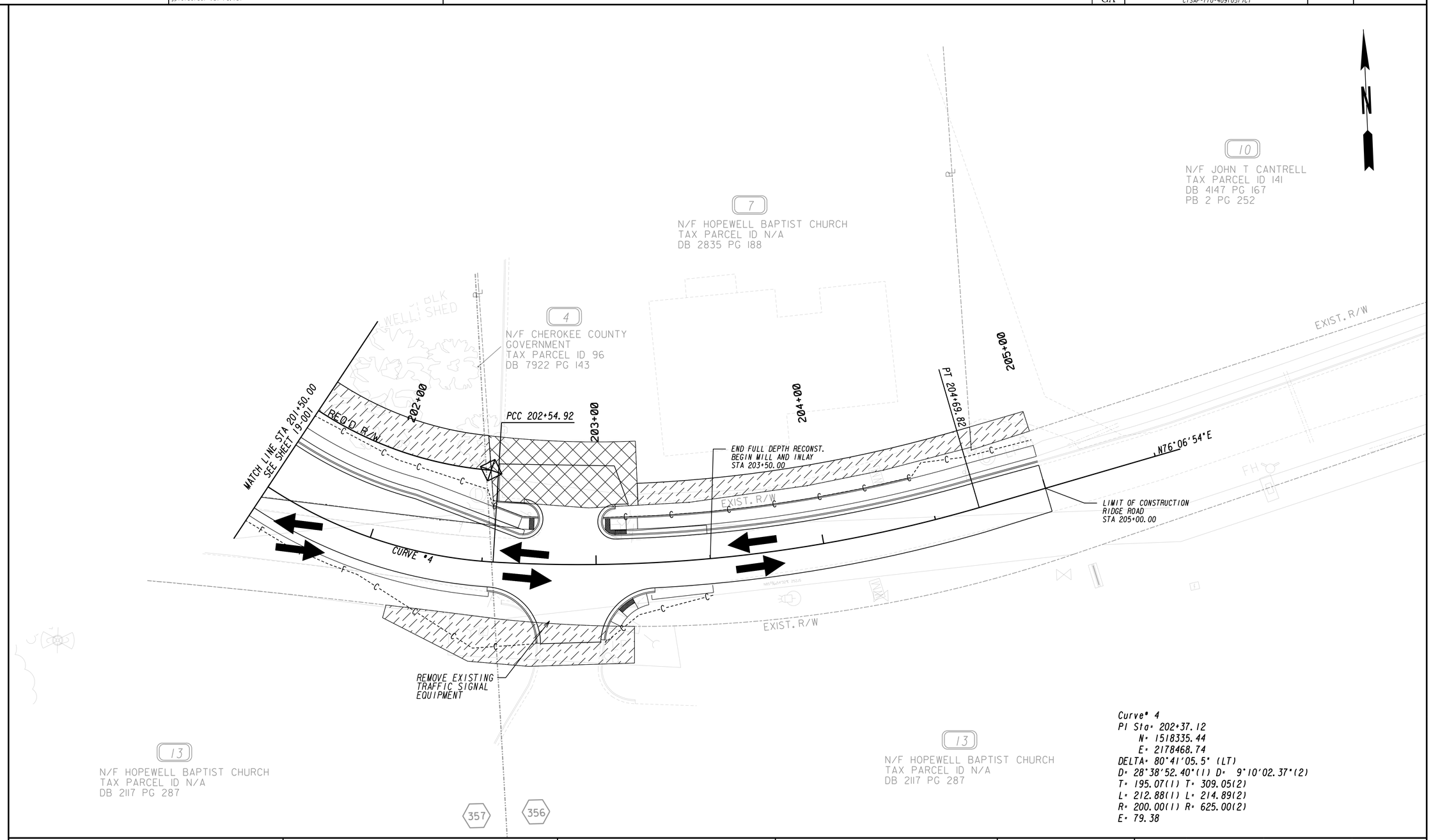
STAGING PLAN
STAGE 1

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 19-003

01/26/2015 GPLNOLD

1/29/2018 8:23:34 AM	GPLOT-V8	0343_19-004.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
travis.mcclam	gplotborder-V8I-PO.tbl		GA	CTSAP-770-4091057(C)		



Curve# 4
PI Sta= 202+37.12
N= 1518335.44
E= 2178468.74
DELTA= 80°41'05.5" (LT)
D= 28°38'52.40"(1) D= 9°10'02.37"(2)
T= 195.07(1) T= 309.05(2)
L= 212.88(1) L= 214.89(2)
R= 200.00(1) R= 625.00(2)
E= 79.38

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
CONSTR UNDER TRAFFIC
STAGE 1 CONSTR
TRAFFIC DIRECTION DURING CONSTR

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA
(SEE ERIT TABLE)

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

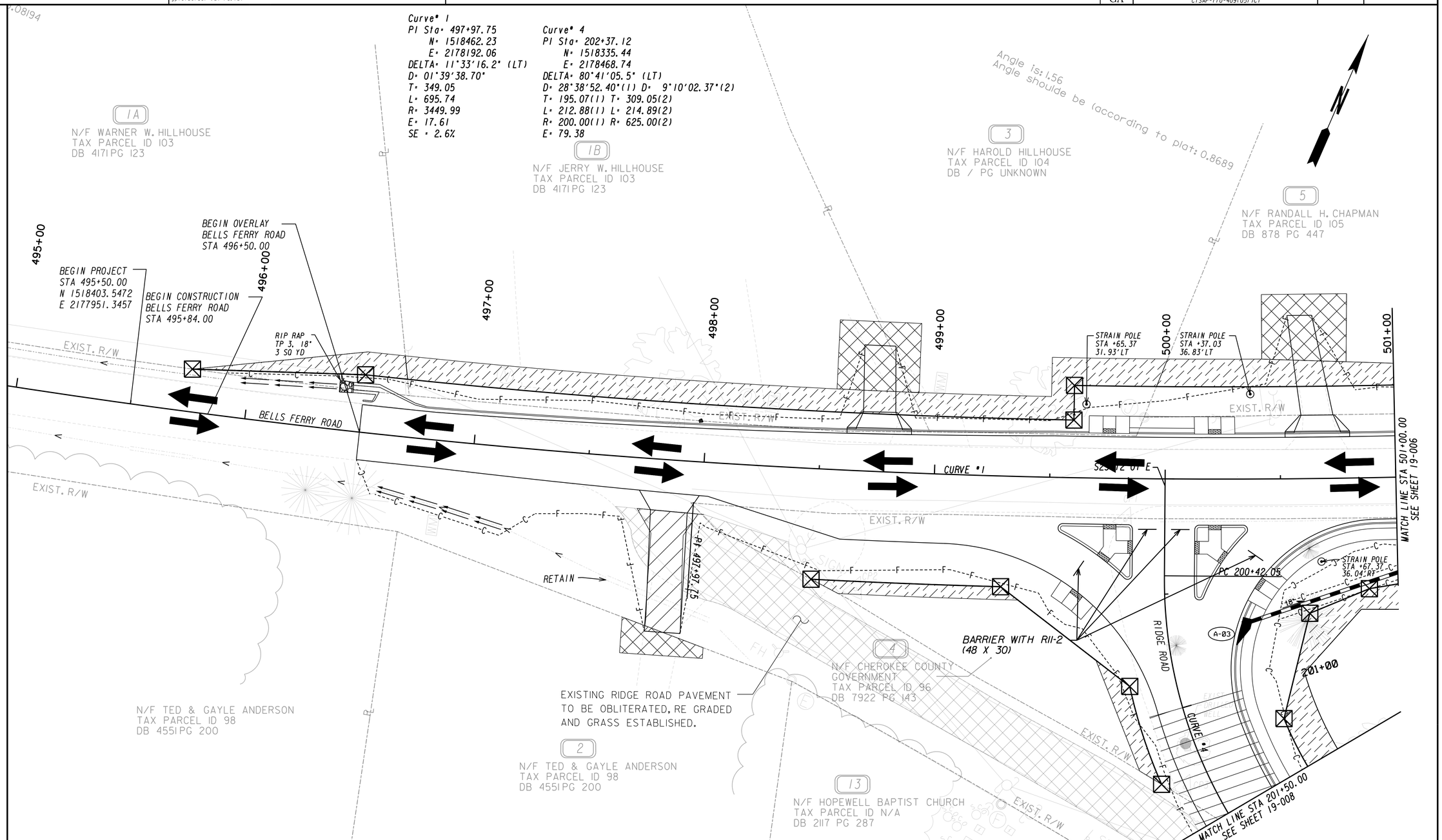
CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

STAGING PLAN
STAGE 1
BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
19-004

01/26/2015 GPLNOLD



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
CONSTR UNDER TRAFFIC	
STAGE 1 CONSTR	
TRAFFIC DIRECTION DURING CONSTR	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

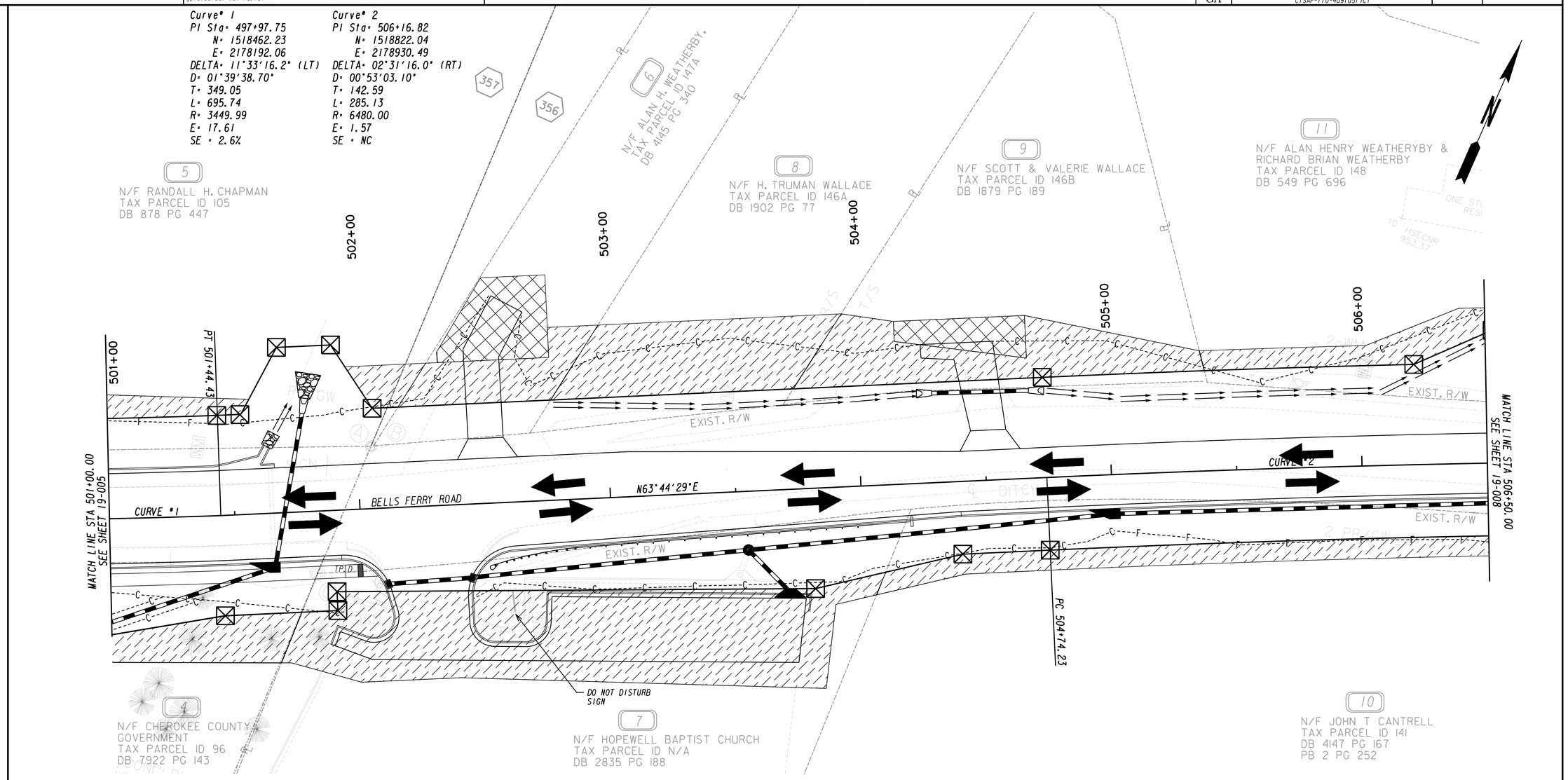
OFFICE:

STAGING PLAN
STAGE 2

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 19-005

01/26/2015 GPLNOLD



PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
CONSTR UNDER TRAFFIC
STAGE 1 CONSTR
TRAFFIC DIRECTION DURING CONSTR

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA
(SEE ERIT TABLE)

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

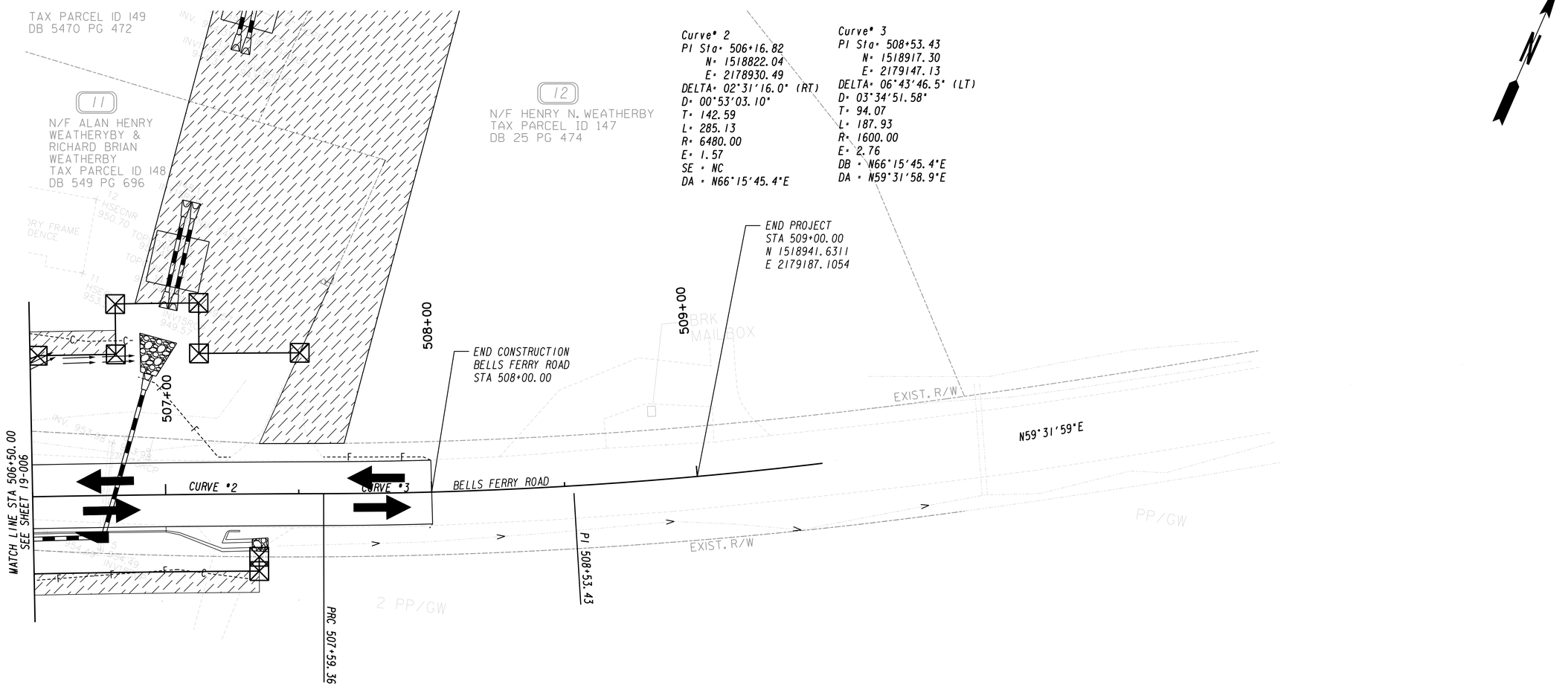
REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

STAGING PLAN
STAGE 2
BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 19-006



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	C F
CONSTR UNDER TRAFFIC	
STAGE 1 CONSTR	
TRAFFIC DIRECTION DURING CONSTR	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

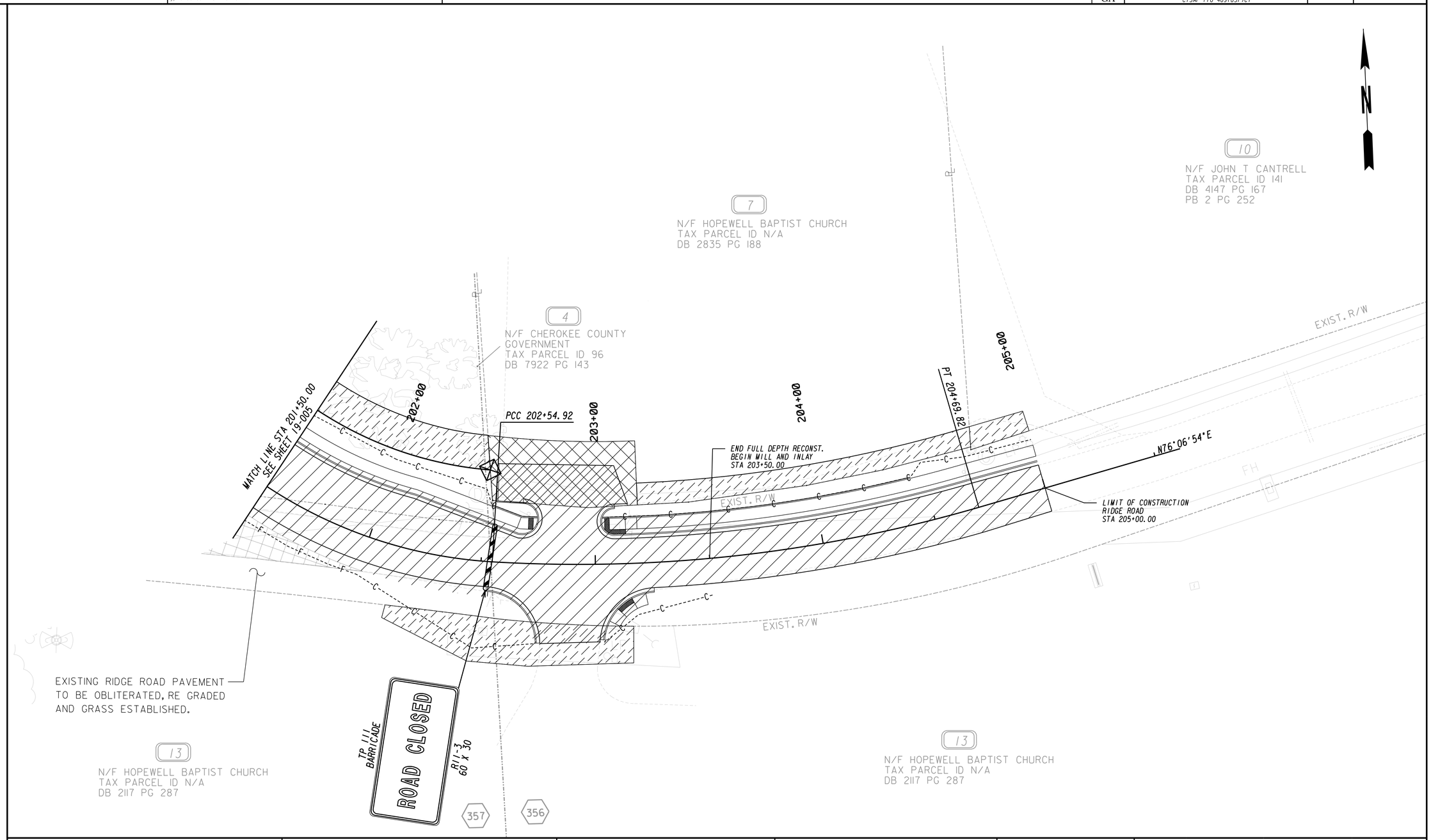
STAGING PLAN
STAGE 2

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 19-007

01/26/2015 GPLNOLD

1/29/2018 8:24:37 AM travis.mcclam	GPLOT-V8 gplotborder-V8I-PO.tbl	0343_19-008.dgn	STATE GA	PROJECT NUMBER CTSAP-770-4091057(C)	SHEET NO.	TOTAL SHEETS



PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
CONSTR UNDER TRAFFIC
STAGE 1 CONSTR
TRAFFIC DIRECTION DURING CONSTR

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA
(SEE ERIT TABLE)

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

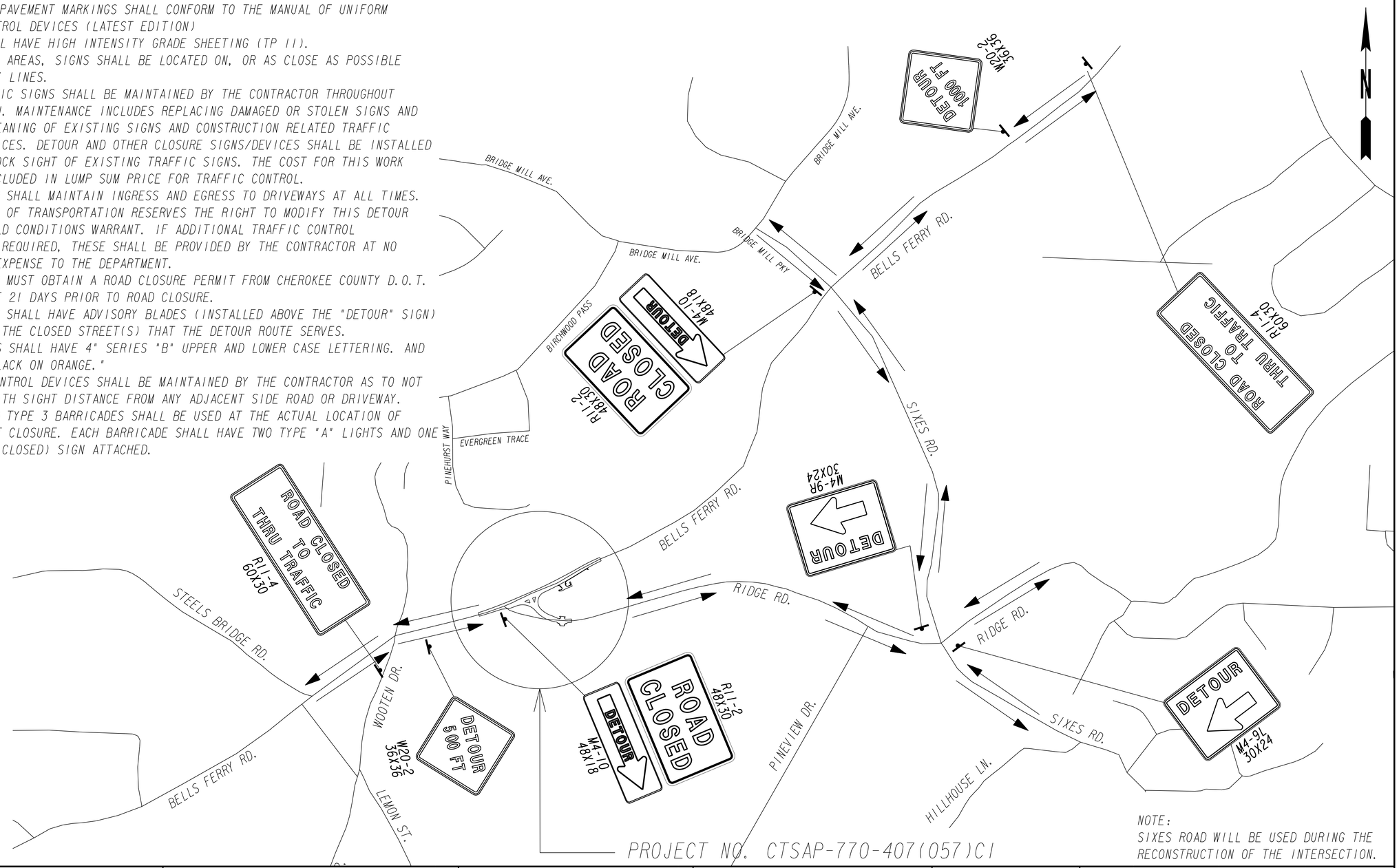
STAGING PLAN
STAGE 2
BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
19-008

01/26/2015 GPLNOLD

DETOUR GENERAL NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION)
2. ALL SIGNS SHALL HAVE HIGH INTENSITY GRADE SHEETING (TP 11).
3. IN RESIDENTIAL AREAS, SIGNS SHALL BE LOCATED ON, OR AS CLOSE AS POSSIBLE TO, PROPERTY LINES.
4. EXISTING TRAFFIC SIGNS SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION. MAINTENANCE INCLUDES REPLACING DAMAGED OR STOLEN SIGNS AND PERIODIC CLEANING OF EXISTING SIGNS AND CONSTRUCTION RELATED TRAFFIC CONTROL DEVICES. DETOUR AND OTHER CLOSURE SIGNS/DEVICES SHALL BE INSTALLED SO AS TO BLOCK SIGHT OF EXISTING TRAFFIC SIGNS. THE COST FOR THIS WORK SHALL BE INCLUDED IN LUMP SUM PRICE FOR TRAFFIC CONTROL.
5. THE CONTRACTOR SHALL MAINTAIN INGRESS AND EGRESS TO DRIVEWAYS AT ALL TIMES.
6. THE DEPARTMENT OF TRANSPORTATION RESERVES THE RIGHT TO MODIFY THIS DETOUR PLAN AS FIELD CONDITIONS WARRANT. IF ADDITIONAL TRAFFIC CONTROL DEVICES ARE REQUIRED, THESE SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE DEPARTMENT.
7. THE CONTRACTOR MUST OBTAIN A ROAD CLOSURE PERMIT FROM CHEROKEE COUNTY D.O.T. A MINIMUM OF 21 DAYS PRIOR TO ROAD CLOSURE.
8. ALL M4-9 SIGNS SHALL HAVE ADVISORY BLADES (INSTALLED ABOVE THE "DETOUR" SIGN) IDENTIFYING THE CLOSED STREET(S) THAT THE DETOUR ROUTE SERVES. THESE BLADES SHALL HAVE 4" SERIES "B" UPPER AND LOWER CASE LETTERING. AND SHALL BE "BLACK ON ORANGE."
9. ALL TRAFFIC CONTROL DEVICES SHALL BE MAINTAINED BY THE CONTRACTOR AS TO NOT INTERFERE WITH SIGHT DISTANCE FROM ANY ADJACENT SIDE ROAD OR DRIVEWAY.
10. REFLECTORIZED TYPE 3 BARRICADES SHALL BE USED AT THE ACTUAL LOCATION OF TOTAL STREET CLOSURE. EACH BARRICADE SHALL HAVE TWO TYPE "A" LIGHTS AND ONE R11-2 (ROAD CLOSED) SIGN ATTACHED.



PROJECT NO. CTSAP-770-407(057)C1

NOTE:
SIXES ROAD WILL BE USED DURING THE RECONSTRUCTION OF THE INTERSECTION.

PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	C F
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

NTS

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

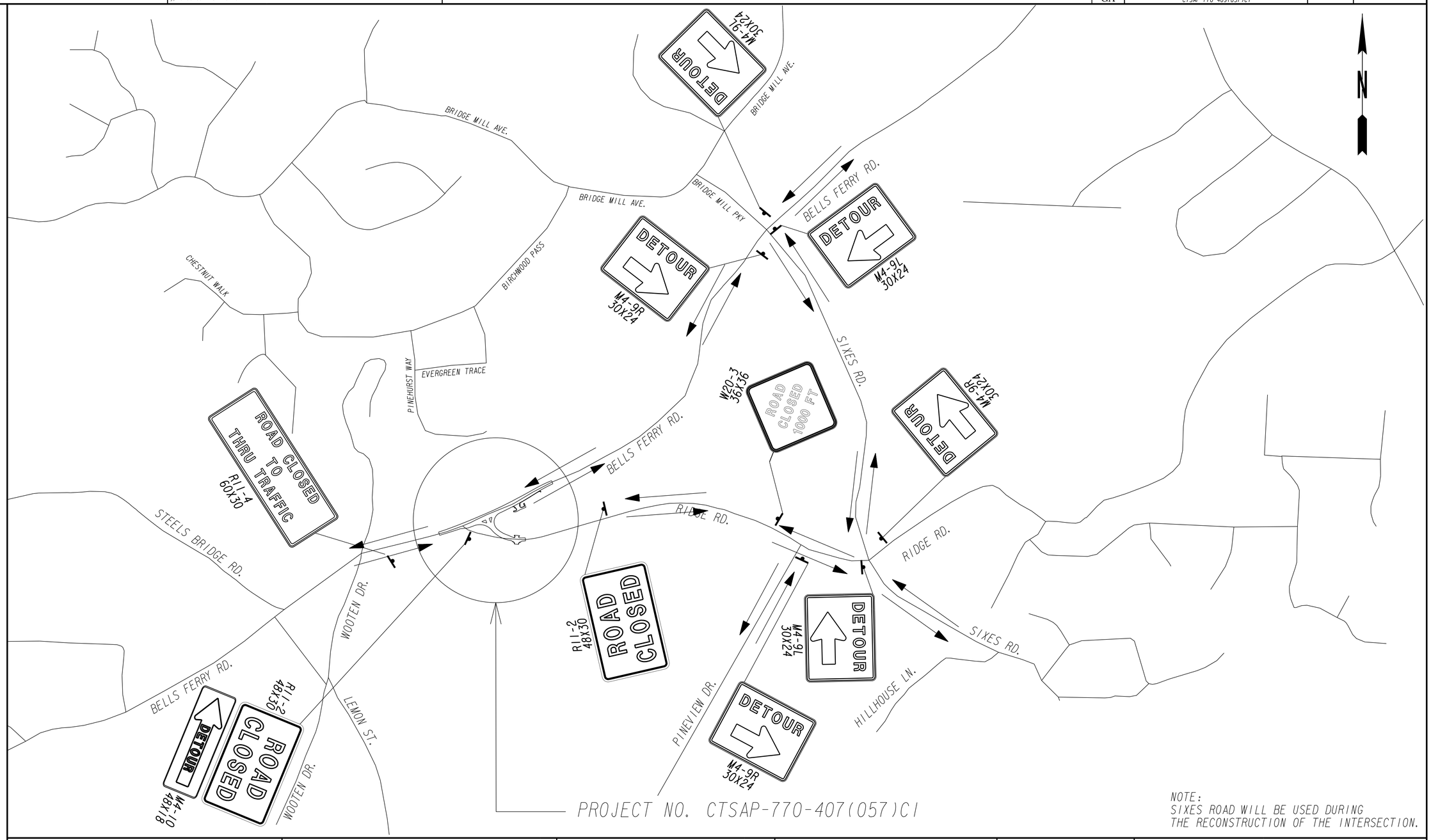
OFFICE:

DETOUR PLAN
STAGE 1
BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 20-001

01/26/2015 GPLNOLD

1/29/2018 8:24:51 AM	GPLOT-V8	0343_20-002.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
travis.mcclam	gplotborder-V8I-PO.tbl		GA	CTSAP-770-409(057)CI		



NOTE:
SIXES ROAD WILL BE USED DURING
THE RECONSTRUCTION OF THE INTERSECTION.

PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

NTS

REVISION DATES

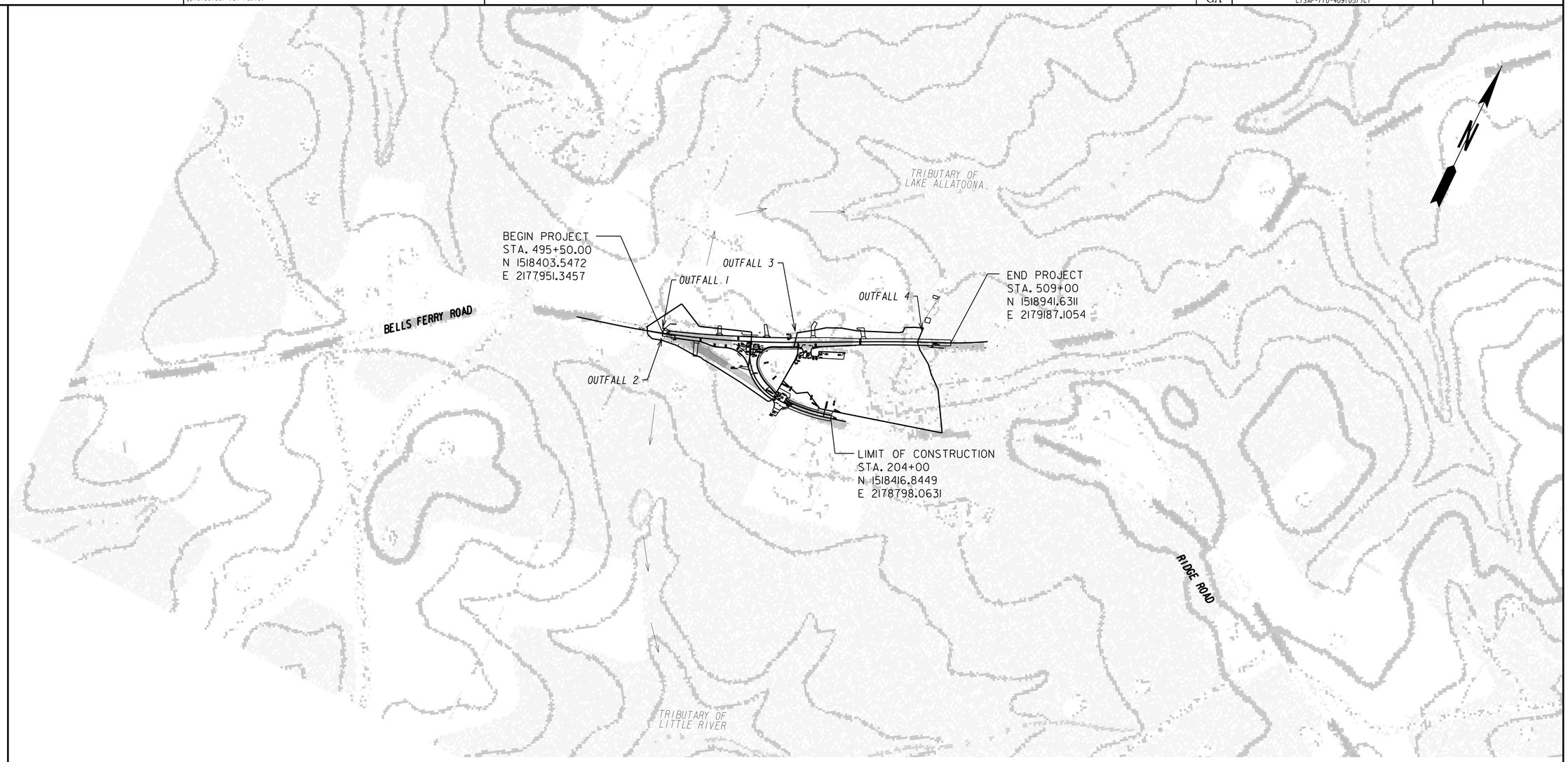
CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

DETOUR PLAN
STAGE 2
BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 20-002

01/26/2015 GPLNOLD



OUTFALL	STRUCTURE	STA	OFFSET	EXISTING Q50/Q100 (CFS)	FUTURE Q50/Q100 (CFS)	EXISTING V50/V100 (FPS)	FUTURE V50/V100 (FPS)	EXISTING "C"	FUTURE "C"	DRAINAGE AREA	DISTURBED AREA	RECEIVING WATERS	CHANNEL SLOPE
1	CHANNEL 1	496+50	24' LT	3.20/3.48	3.47/3.77	4.10/4.46	4.44/4.84	0.53	0.58	0.78 AC	0.51	LAKE ALLATOONA	3.4%
2	EX. CHANNEL	496+50	23' RT	3.98/4.33	2.85/3.10	5.38/5.86	3.86/4.20	0.70	0.50	0.74 AC	0.62	LAKE ALLATOONA	2.0%
3	A-1	501+80	45' LT	3.20/3.48	2.99/3.25	4.44/4.84	4.79/5.21	0.58	0.62	0.62 AC	0.62	LAKE ALLATOONA	3.5%
4	C-1	506+83	48' LT	16.54/17.99	16.54/17.99	4.44/4.84	4.44/4.84	0.58	0.58	3.72 AC	1.05	LAKE ALLATOONA	1.3%

PROJECT SIZE = 2.94 AC
DISTURBED AREA = 2.8 AC

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 200 400 800

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

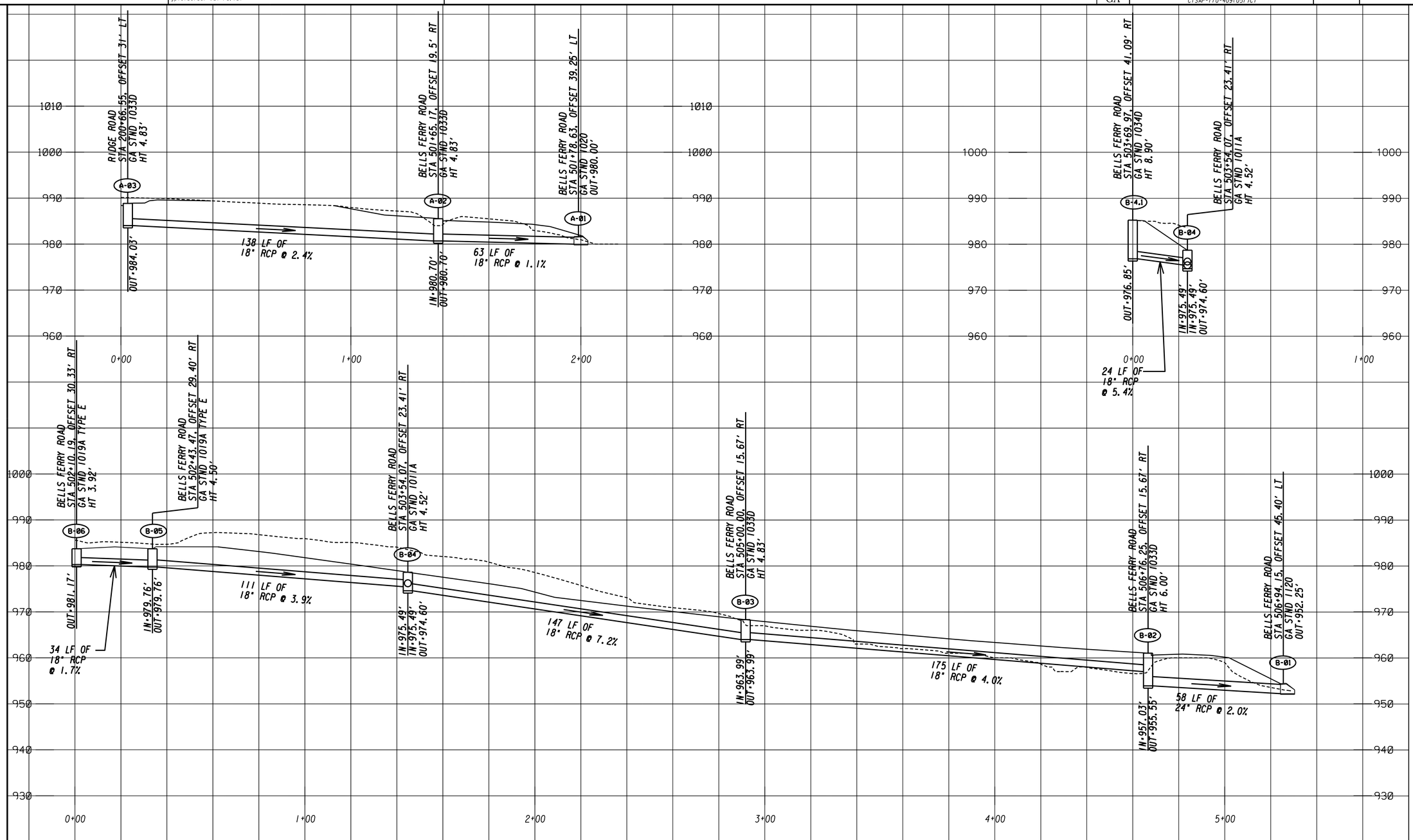
OFFICE:

DRAINAGE AREA MAP

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 21-001

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CTSAP-770-4091057(C)		



AECOM

ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
HOR 0 20 40 80
VERT 0 10 20 40

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

DRAINAGE PROFILES

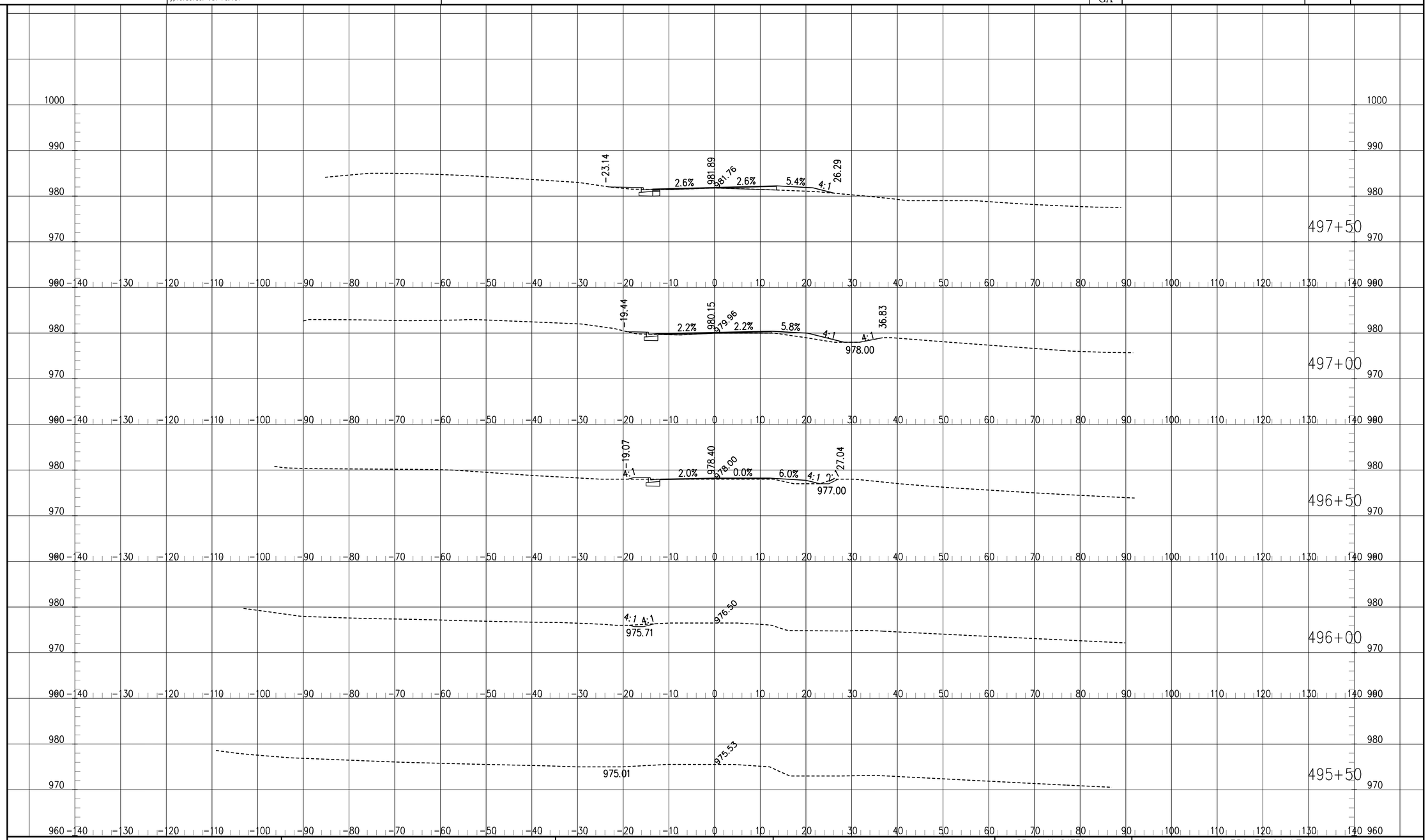
BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
22-001

1/29/2018 8:26:35 AM GPLOT-V8 0343_23-001.dgn

travis.mcclam gplotborder-V8I-PO.tbl

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA			



AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 10 20 40

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

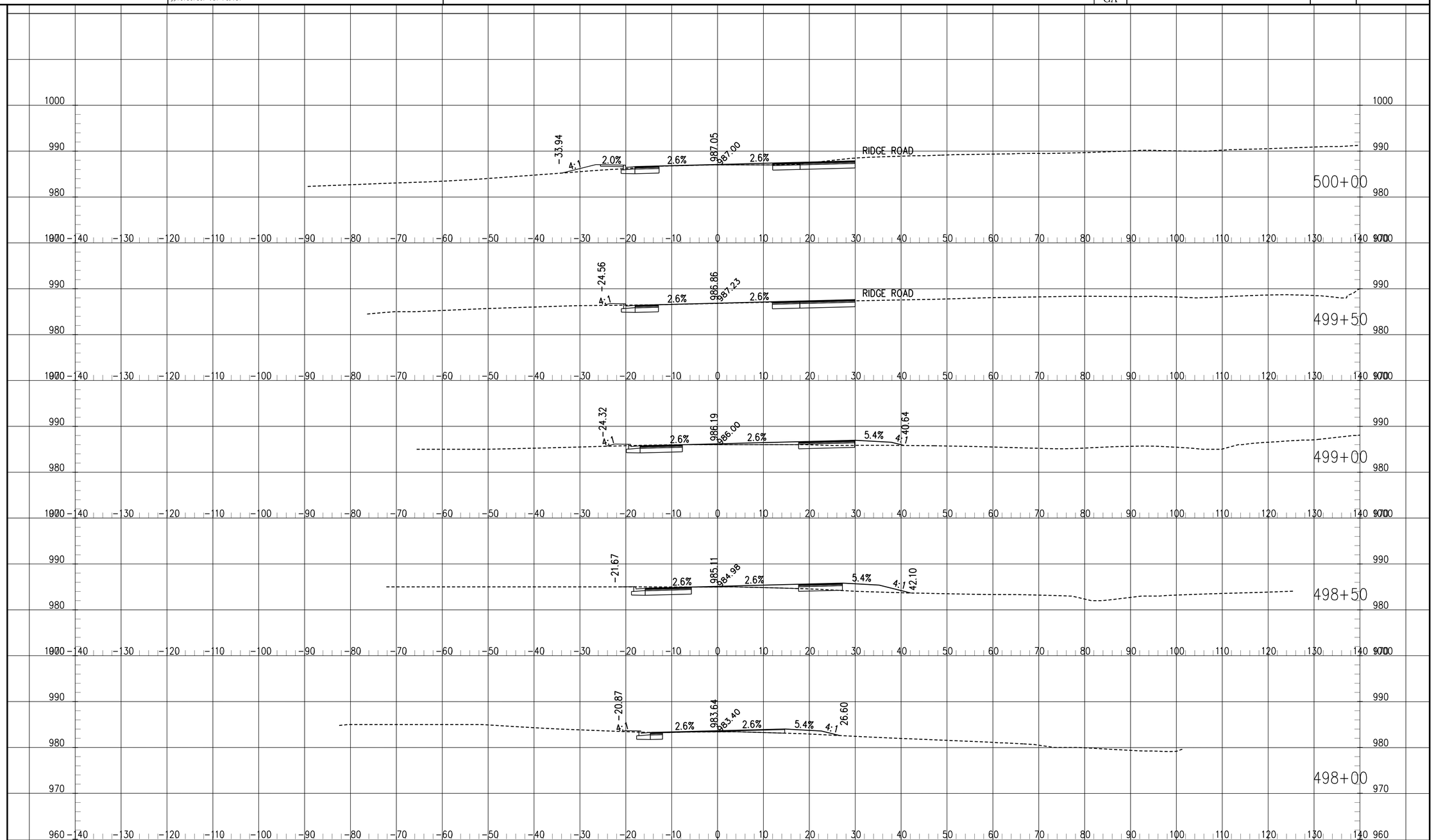
CROSS SECTIONS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
23-001

06/18/14 SUXSEW

1/29/2018 8:26:11 AM travis.mcclam	GPLOT-V8 gplotborder-V8I-PO.tbl	0343_23-001.dgn	STATE GA	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS



AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 10 20 40

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

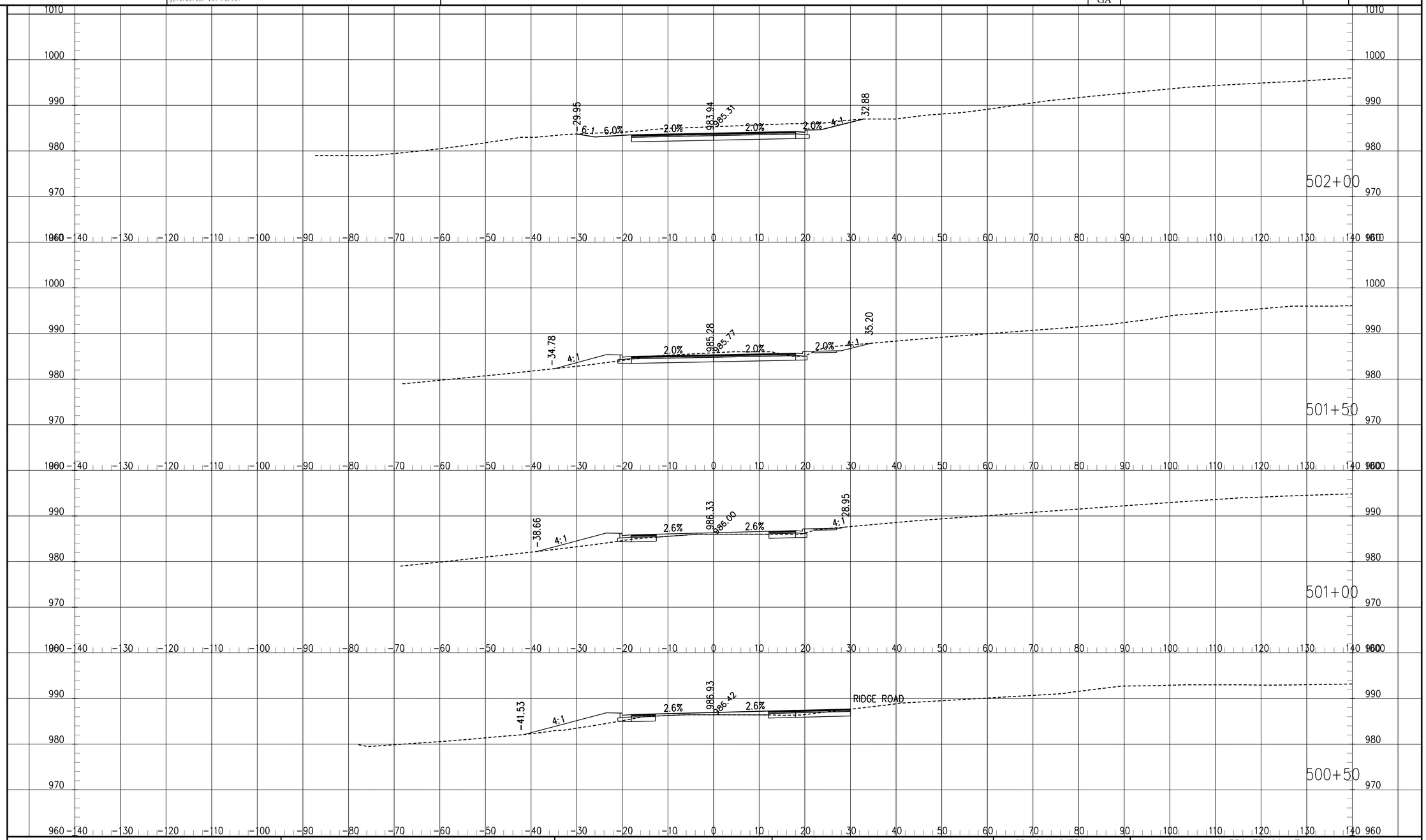
CROSS SECTIONS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
23-002

06/18/14 SUXSEW

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA			



AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 10 20 40

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

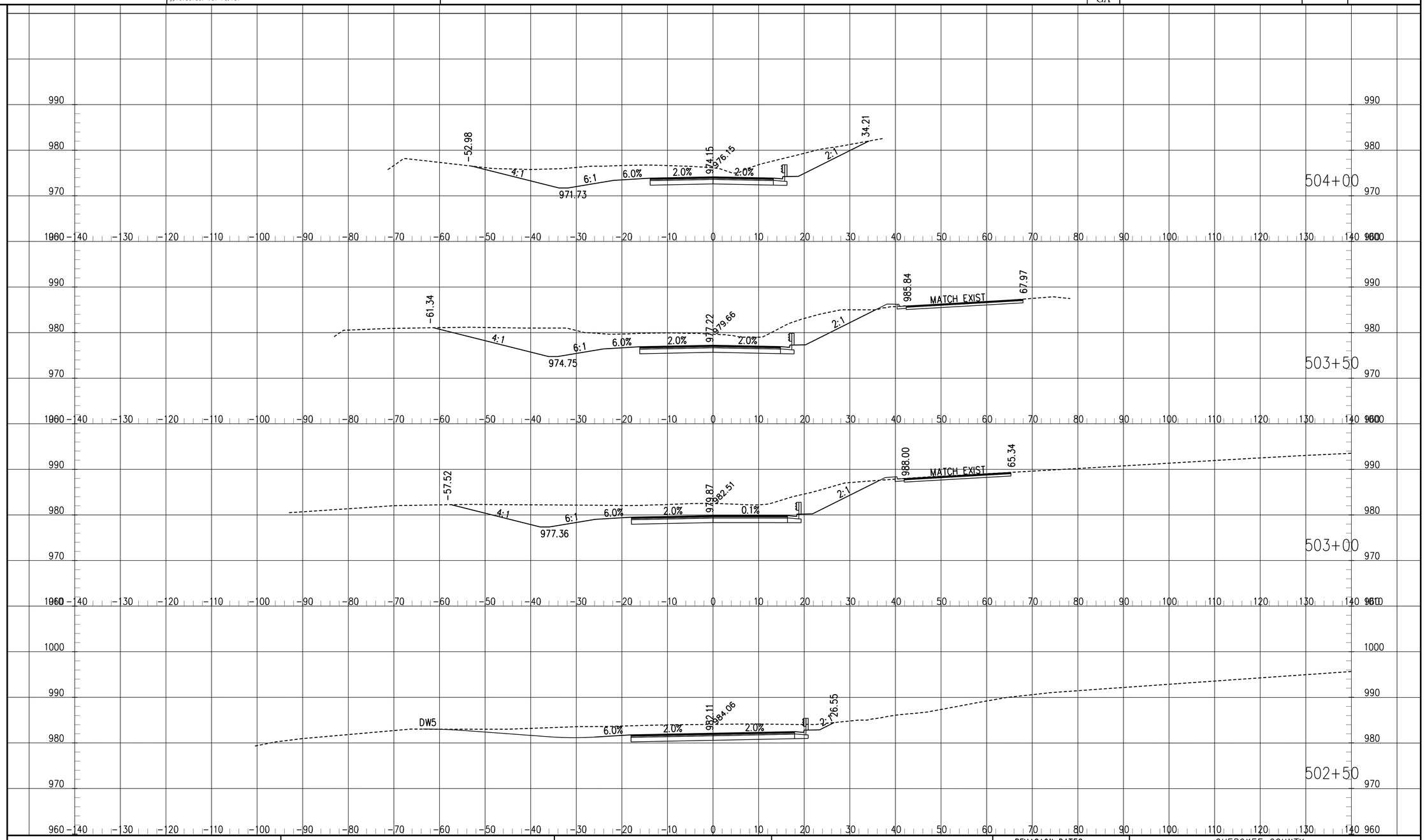
CROSS SECTIONS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
23-003

06/18/14 SUXSEW

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA			



AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 10 20 40

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

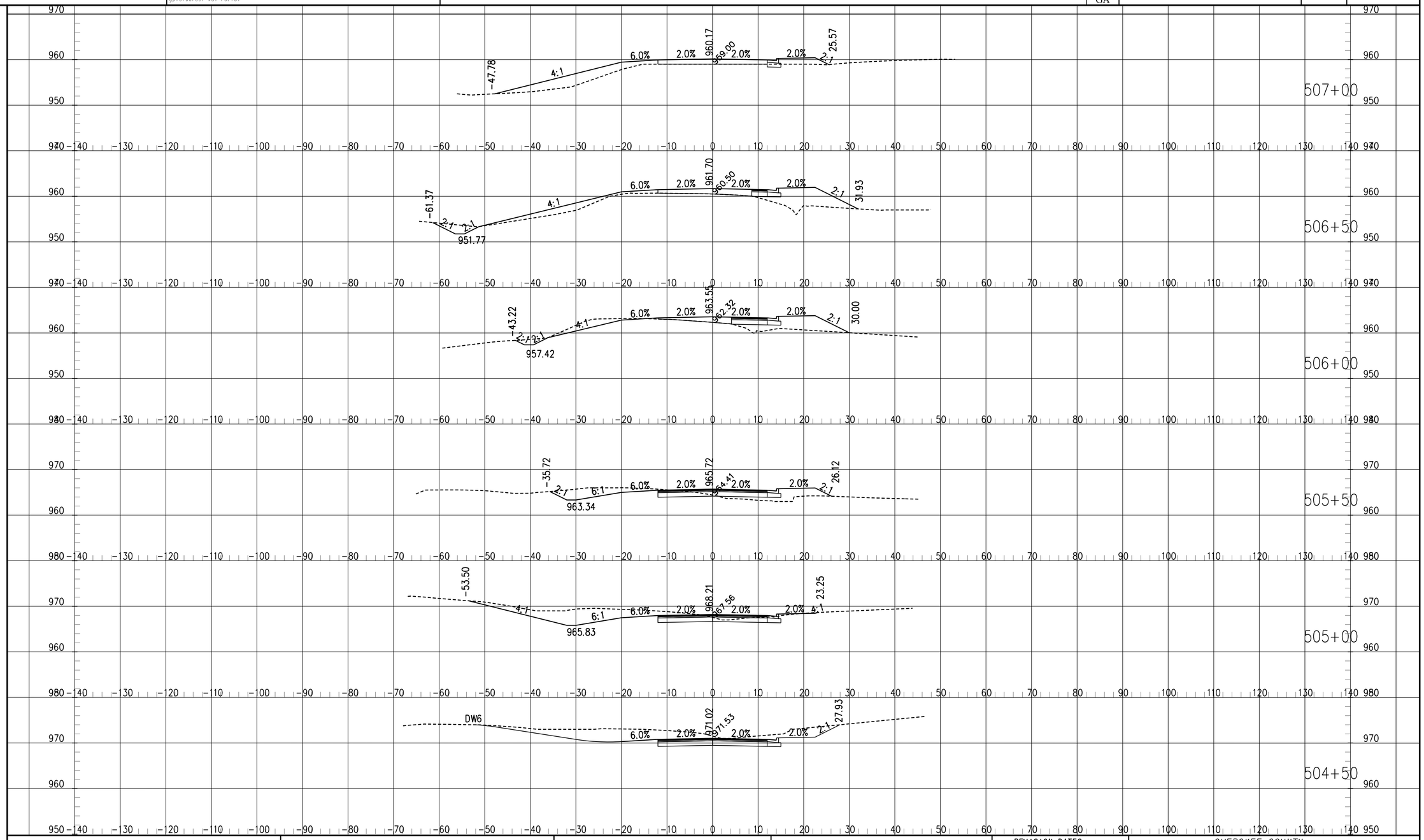
CROSS SECTIONS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
23-004

06/18/14 SUXSEW

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA			



AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 10 20 40

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

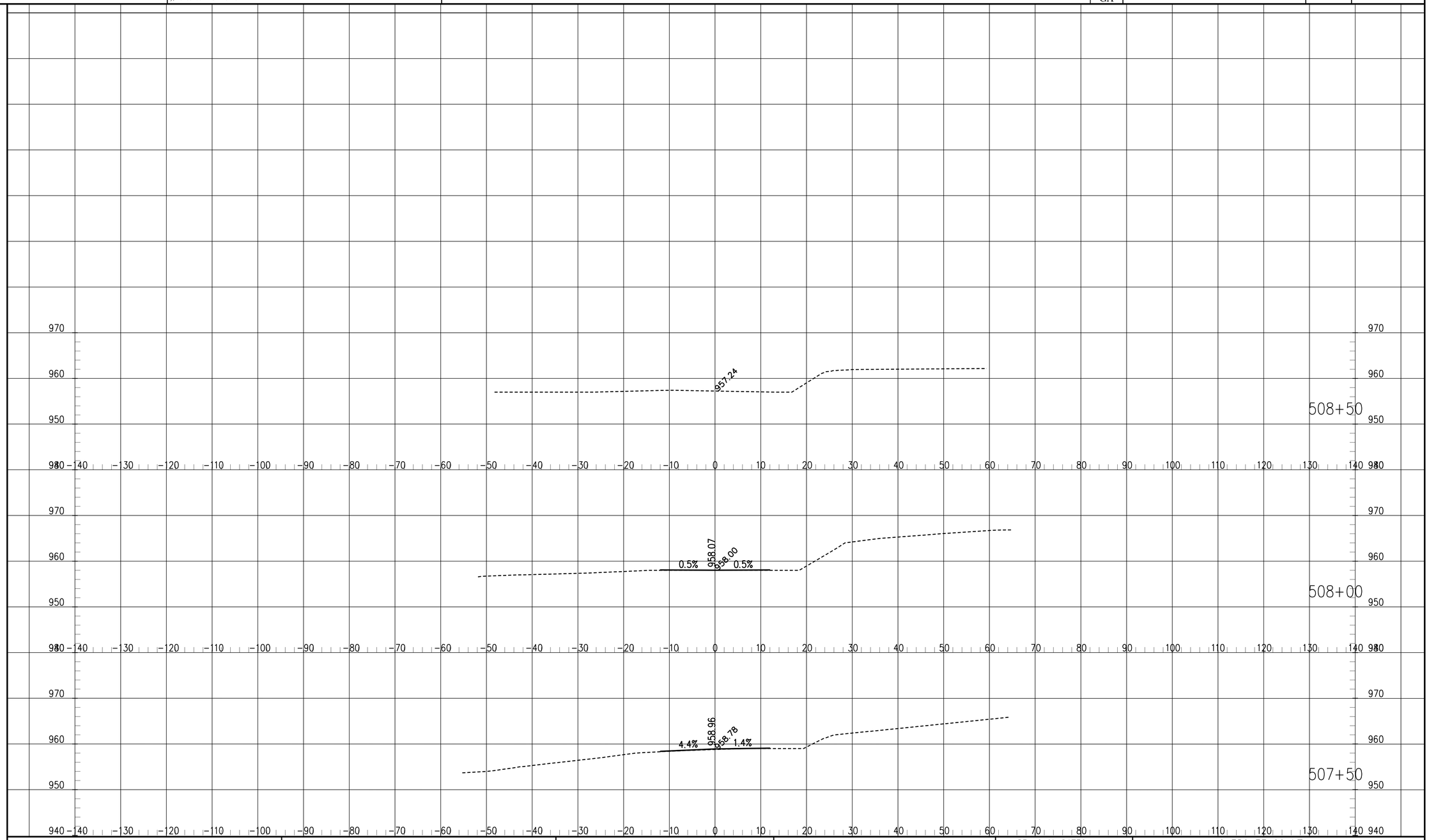
OFFICE:

CROSS SECTIONS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
23-005

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA			



AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 10 20 40

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

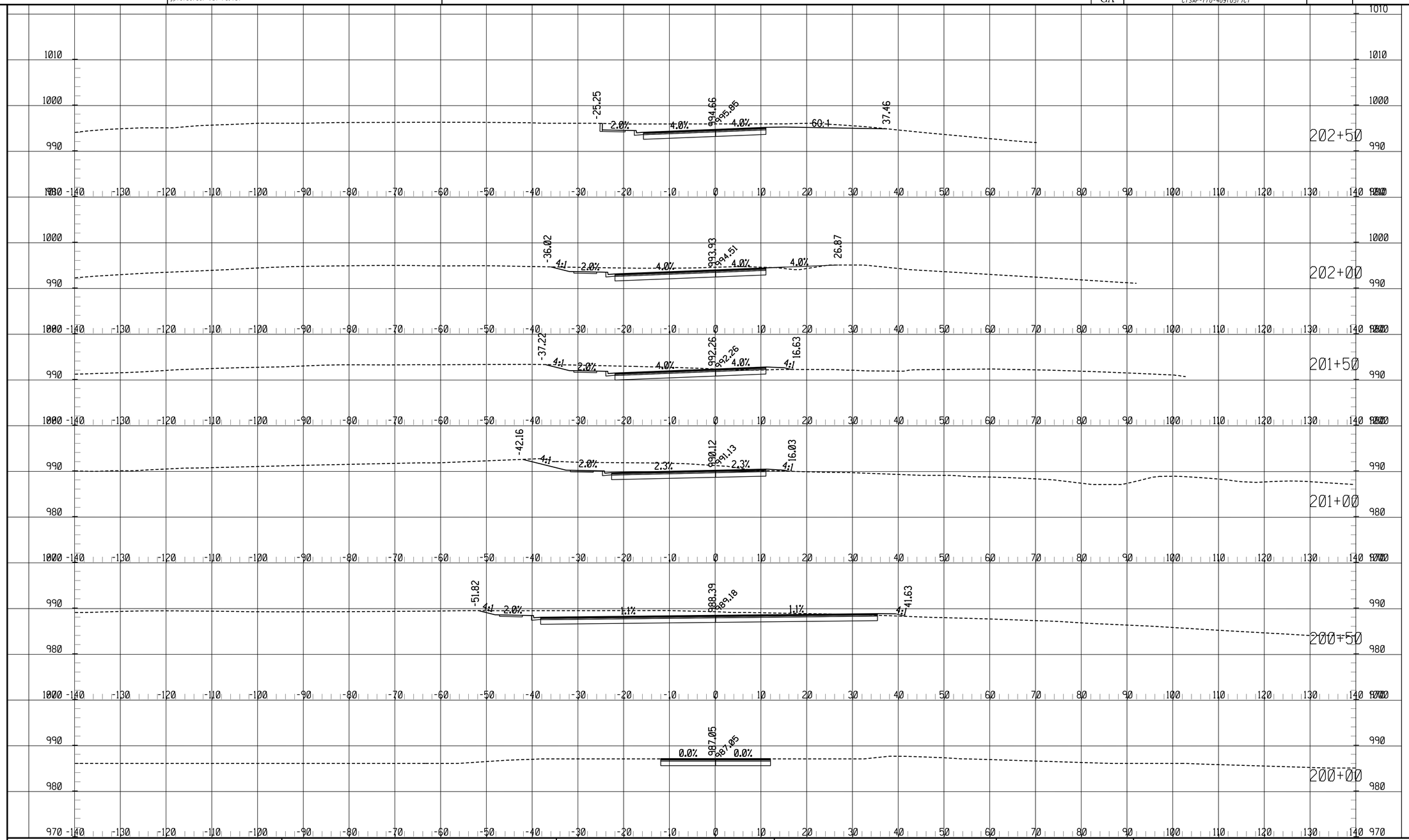
OFFICE:

CROSS SECTIONS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
23-006

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CTSAP-770-4091057(C)		



AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 10 20 40

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

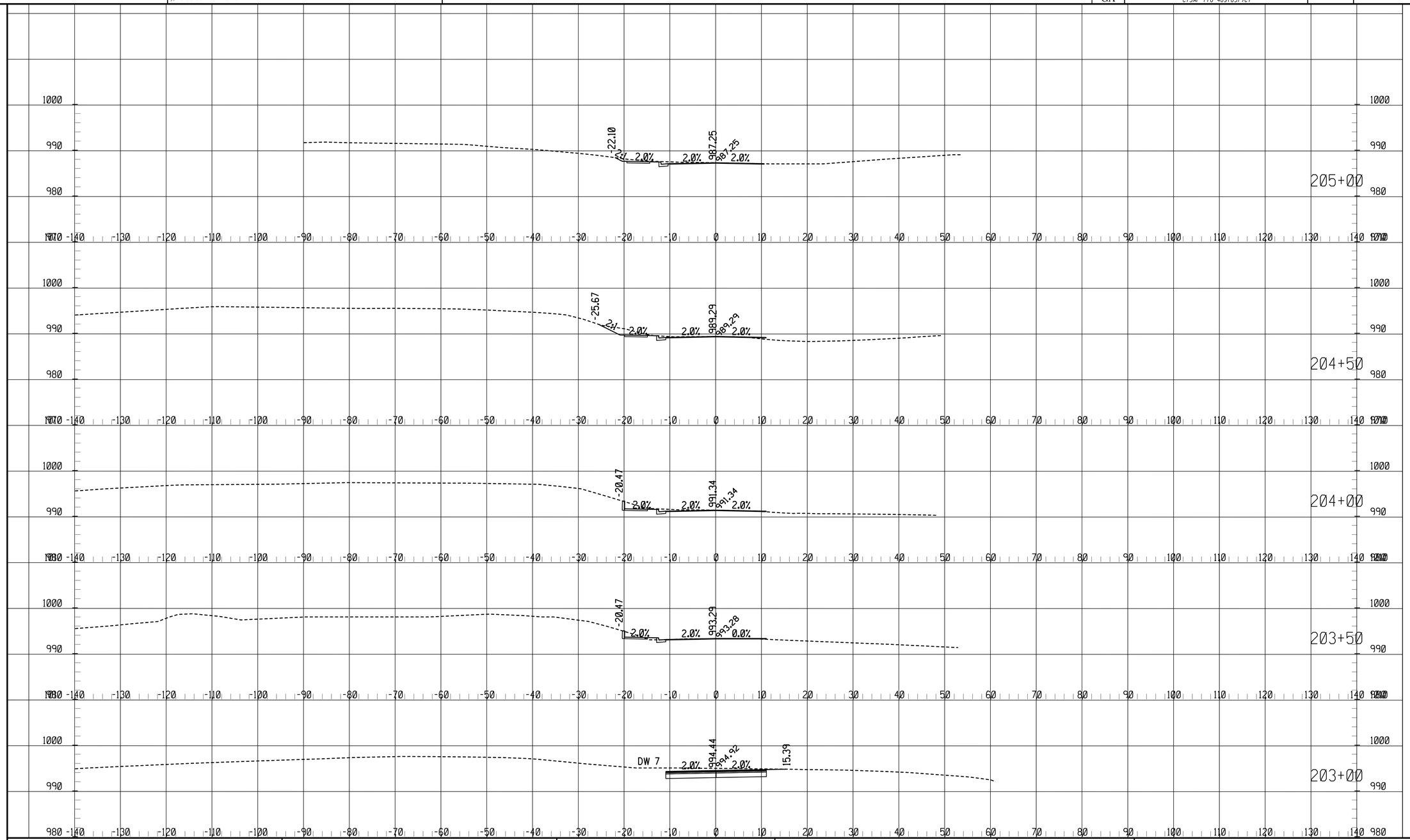
OFFICE:

CROSS SECTIONS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
23-007

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CTSAP-770-4091057(C)		



AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 10 20 40

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

CROSS SECTIONS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
23-008

EXISTING OVERHEAD	OVERHEAD TO BE REMOVED	PROPOSED OVERHEAD	TYPE OF UTILITY
E	E	E	ELECTRIC
E-T	E-T	E-T	ELECTRIC/TELECOMMUNICATIONS
E-TV	E-TV	E-TV	ELECTRIC/CABLE TV
E-TC	E-TC	E-TC	ELECTRIC/TRAFFIC CONTROL
E-T-TV	E-T-TV	E-T-TV	ELECTRIC/TELECOMMUNICATIONS/CABLE TV
E-T-TV-TC	E-T-TV-TC	E-T-TV-TC	ELECTRIC/TELECOMMUNICATIONS/CABLE TV/TRAFFIC CONTROL
E-TV-TC	E-TV-TC	E-TV-TC	ELECTRIC/CABLE TV/TRAFFIC CONTROL
E-T-TC	E-T-TC	E-T-TC	ELECTRIC/TELECOMMUNICATIONS/TRAFFIC CONTROL
GW	GW	GW	GUY WIRE
T	T	T	TELECOMMUNICATIONS
T-TC	T-TC	T-TC	TELECOMMUNICATIONS/TRAFFIC CONTROL
T-TV-TC	T-TV-TC	T-TV-TC	TELECOMMUNICATIONS/CABLE TV/TRAFFIC CONTROL
T-TV	T-TV	T-TV	TELECOMUNICATIONS/CABLE TV
TV	TV	TV	CABLE TV
TV-TC	TV-TC	TV-TC	CABLE TV/TRAFFIC CONTROL
TC	TC	TC	TRAFFIC CONTROL

EXISTING UNDERGROUND	UNDERGROUND TO BE REMOVED	PROPOSED UNDERGROUND	TYPE OF UTILITY
E	E	E	ELECTRIC (QL-D)
E(C)	E(C)		ELECTRIC (QL-C)
E(B)	E(B)		ELECTRIC (QL-B)
T	T	T	TELECOMMUNICATIONS (QL-D)
T(C)	T(C)		TELECOMMUNICATIONS (QL-C)
T(B)	T(B)		TELECOMMUNICATIONS (QL-B)
TV	TV	TV	CABLE TV (QL-D)
TV(C)	TV(C)		CABLE TV (QL-C)
TV(B)	TV(B)		CABLE TV (QL-B)
W	W	W	WATER (QL-D)
W(C)	W(C)		WATER (QL-C)
W(B)	W(B)		WATER (QL-B)
**W	**W	**W	WATER FOR LABELED PIPE SIZES (QL-D)
**W(C)	**W(C)		WATER FOR LABELED PIPE SIZES (QL-C)
**W(B)	**W(B)		WATER FOR LABELED PIPE SIZES (QL-B)
NW	NW	NW	NON-POTABLE WATER (QL-D)
NW(C)	NW(C)		NON-POTABLE WATER (QL-C)
NW(B)	NW(B)		NON-POTABLE WATER (QL-B)
**NW	**NW	**NW	NON-POTABLE WATER FOR LABELED PIPE SIZES (QL-D)
**NW(C)	**NW(C)		NON-POTABLE WATER FOR LABELED PIPE SIZES (QL-C)
**NW(B)	**NW(B)		NON-POTABLE WATER FOR LABELED PIPE SIZES (QL-B)
STM	STM	STM	STEAM (QL-D)
STM(C)	STM(C)		STEAM (QL-C)
STM(B)	STM(B)		STEAM (QL-B)
**STM	**STM	**STM	STEAM FOR LABELED PIPE SIZES (QL-D)
**STM(C)	**STM(C)		STEAM FOR LABELED PIPE SIZES (QL-C)
**STM(B)	**STM(B)		STEAM FOR LABELED PIPE SIZES (QL-B)
SS	SS	SS	SANITARY SEWER WITH FLOW DIRECTION (QL-D)
SS(C)	SS(C)		SANITARY SEWER WITH FLOW DIRECTION (QL-C)
SS(B)	SS(B)		SANITARY SEWER WITH FLOW DIRECTION (QL-B)
Σ**SS	Σ**SS	Σ**SS	SANITARY SEWER WITH FLOW DIRECTION FOR LABELED PIPE SIZES (QL-D)
Σ**SS(C)	Σ**SS(C)		SANITARY SEWER WITH FLOW DIRECTION FOR LABELED PIPE SIZES (QL-C)
Σ**SS(B)	Σ**SS(B)		SANITARY SEWER WITH FLOW DIRECTION FOR LABELED PIPE SIZES (QL-B)
SFM	SFM	SFM	SANITARY SEWER FORCE MAIN WITH FLOW DIRECTION (QL-D)
SFM(C)	SFM(C)		SANITARY SEWER FORCE MAIN WITH FLOW DIRECTION (QL-C)
SFM(B)	SFM(B)		SANITARY SEWER FORCE MAIN WITH FLOW DIRECTION (QL-B)
G	G	G	GAS (QL-D)
G(C)	G(C)		GAS (QL-C)
G(B)	G(B)		GAS (QL-B)
**G	**G	**G	GAS FOR LABELED PIPE SIZES (QL-D)
**G(C)	**G(C)		GAS FOR LABELED PIPE SIZES (QL-C)
**G(B)	**G(B)		GAS FOR LABELED PIPE SIZES (QL-B)
P	P	P	PETROLEUM (QL-D)
P(C)	P(C)		PETROLEUM (QL-C)
P(B)	P(B)		PETROLEUM (QL-B)
**P	**P	**P	PETROLEUM FOR LABELED PIPE SIZES (QL-D)
**P(C)	**P(C)		PETROLEUM FOR LABELED PIPE SIZES (QL-C)
**P(B)	**P(B)		PETROLEUM FOR LABELED PIPE SIZES (QL-B)
TC	TC	TC	TRAFFIC CONTROL (QL-D)
TC(C)	TC(C)		TRAFFIC CONTROL (QL-C)
TC(B)	TC(B)		TRAFFIC CONTROL (QL-B)
UNK(B)	UNK(B)		

UTILITY LEGEND

UTILITY CELLS

EXISTING	PROPOSED	TEMPORARY	
E	E	E	ELECTRIC MANHOLE
H	H	H	HAND HOLE
E	E	E	TRANSFORMER
E	E	E	ELECTRIC METER
			UTILITY POLE/GUY POLE
			LIGHT POLE
			GUY ANCHOR
E	E	E	ELECTRIC BOX
M	M	M	MARKER
T	T	T	TELECOMMUNICATIONS MANHOLE
T	T	T	TELECOMMUNICATIONS PEDESTAL
X	X	X	SPLICE BOX
SLC	SLC	SLC	SUBCRIBER LOOP CARRIER (aka "SLICK")
			CABINET
			PHONE BOOTH
			CABLE TV PEDESTAL
TV	TV	TV	CABLE TV MANHOLE
W	W	W	WATER VALVE
W	W	W	WATER METER
W	W	W	WATER MANHOLE
			FIRE HYDRANT ASSEMBLY (INCLUDES ASSOCIATED VALVE)
BFP	BFP	BFP	BACKFLOW PREVENTER
PIV	PIV	PIV	PRESSURE INDICATOR VALVE
ARV	ARV	ARV	AIR RELEASE VALVE

EXISTING	PROPOSED	TEMPORARY	
W	W	W	WELL
W	W	W	WATER VAULT
W	W	W	WATER VALVE MARKER
			STAND PIPE
			CLEANOUT
SS	SS	SS	SANITARY SEWER MANHOLE
ARV	ARV	ARV	AIR RELEASE VALVE
GT	GT	GT	GREASE TRAP
S	S	S	SANITARY SEWER FORCE MAIN VALVE
			VENT
G	G	G	GAS VALVE
G	G	G	GAS METER
G	G	G	GAS MANHOLE
GPR	GPR	GPR	GAS PRESSURE REGULATOR
G	G	G	GAS VAULT
GTS	GTS	GTS	GAS TEST STATION
P	P	P	PETROLEUM VALVE

TELEPHONE PAIR SIZE TABLE

TELEPHONE PAIR SIZE	TELEPHONE CABLE DIAMETER
5 - 100	0.50 TO 2.00 IN
101 - 2400	UP TO 3.50 IN

GEORGIA811 Utilities Protection Center, Inc.
Know what's **below.**
Call before you dig.

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

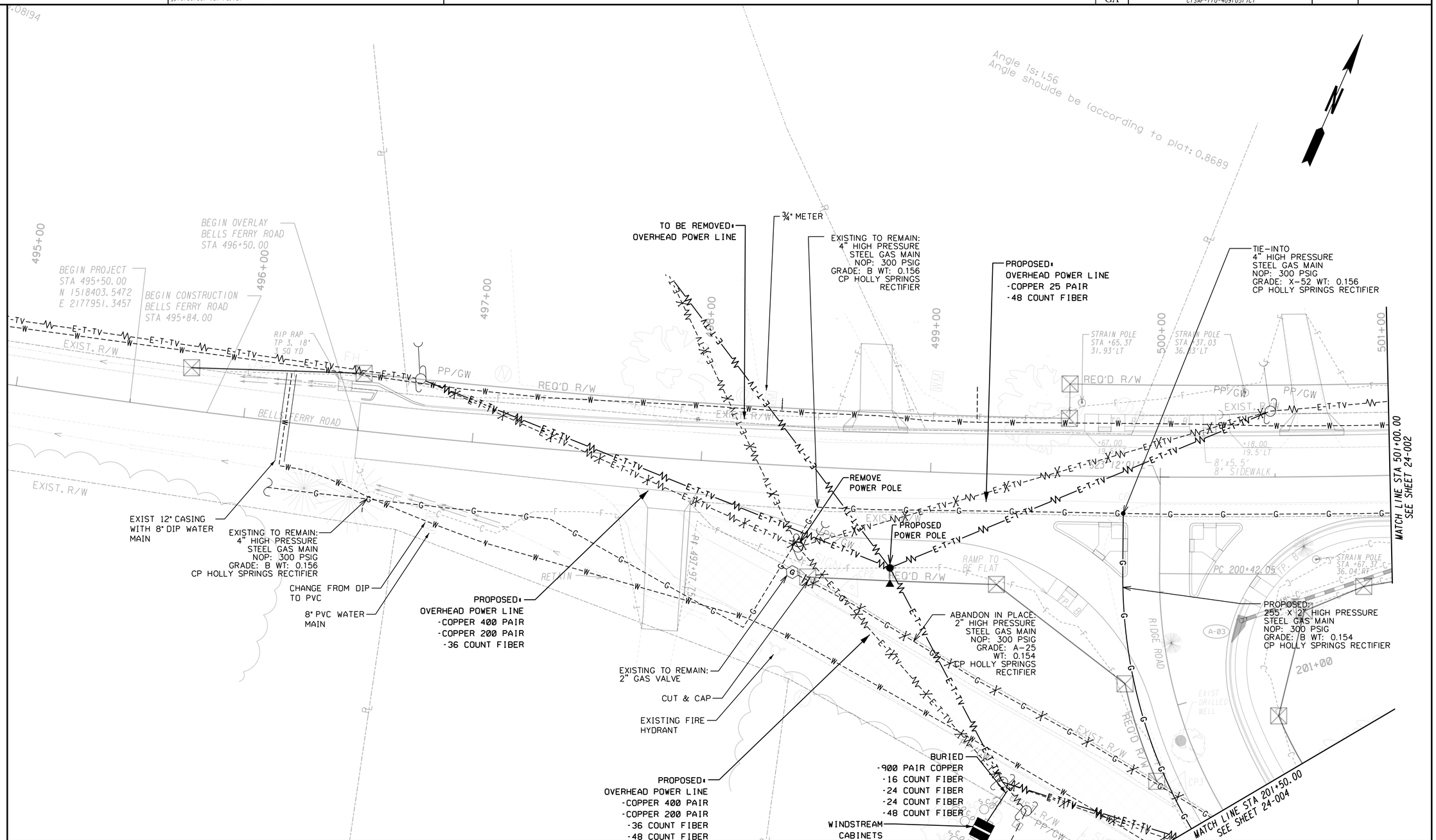
OFFICE:

UTILITY PLANS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 24-000

1/31/2018 10:22:01 AM travis.mcclam	GPLOT-V8 gplotborder-v8I-PO.tbl	0343_24-001.dgn	STATE GA	PROJECT NUMBER CTSAP-770-4091057(C)	SHEET NO.	TOTAL SHEETS



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	
BEGIN LIMIT OF ACCESS.....BLA	
END LIMIT OF ACCESS.....ELA	
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

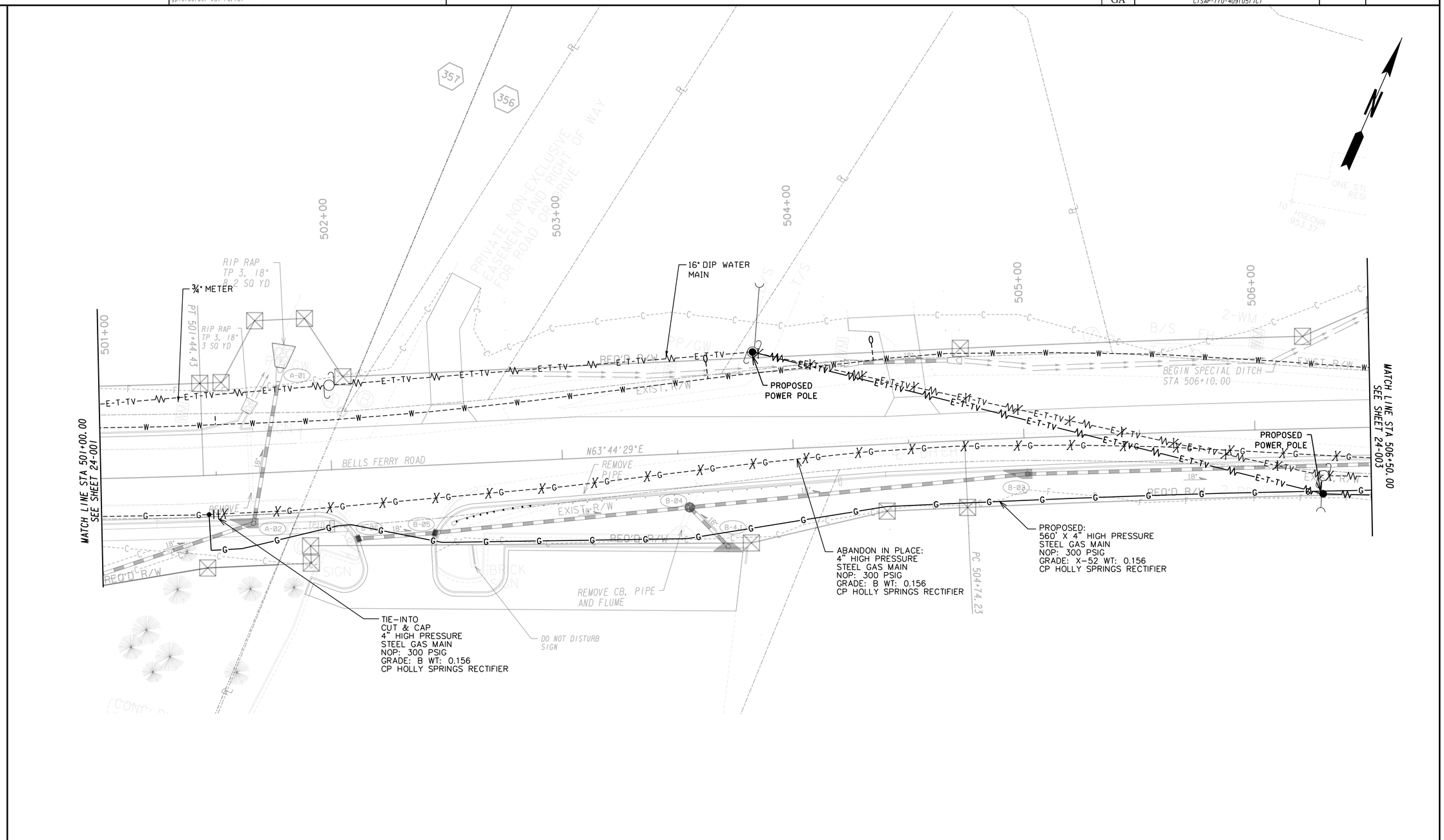
OFFICE:

UTILITY PLANS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 24-001

01/26/2015 GPLNOLD



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	C F
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

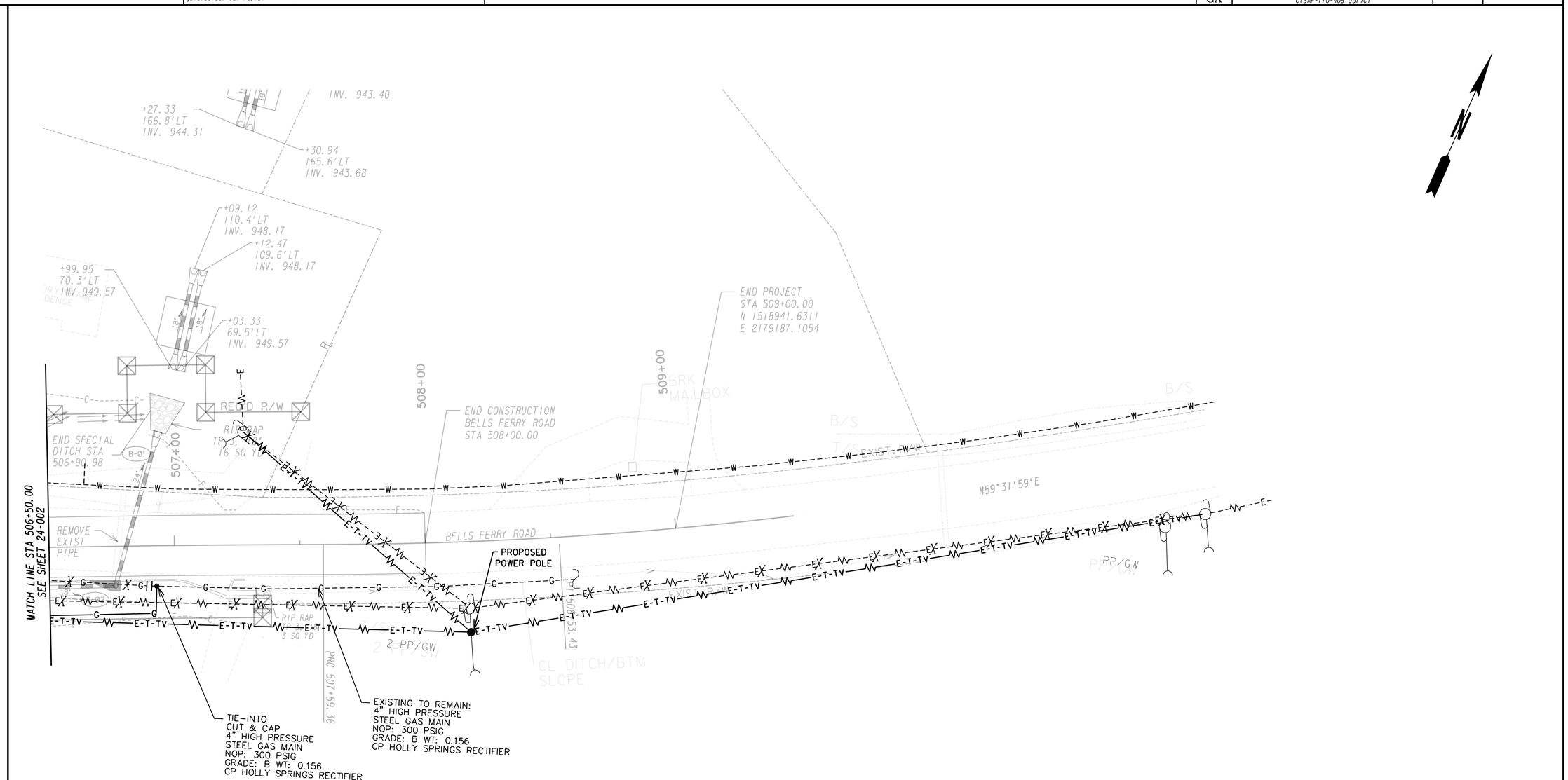
UTILITY PLANS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 24-002

01/26/2015 GPLNOLD

1/29/2018 8:27:34 AM travis.mcclam	GPLOT-V8 gplotborder-V8I-PO.tbl	0343_24-003.dgn	STATE GA	PROJECT NUMBER CTSAP-770-4091057(C)	SHEET NO.	TOTAL SHEETS



PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

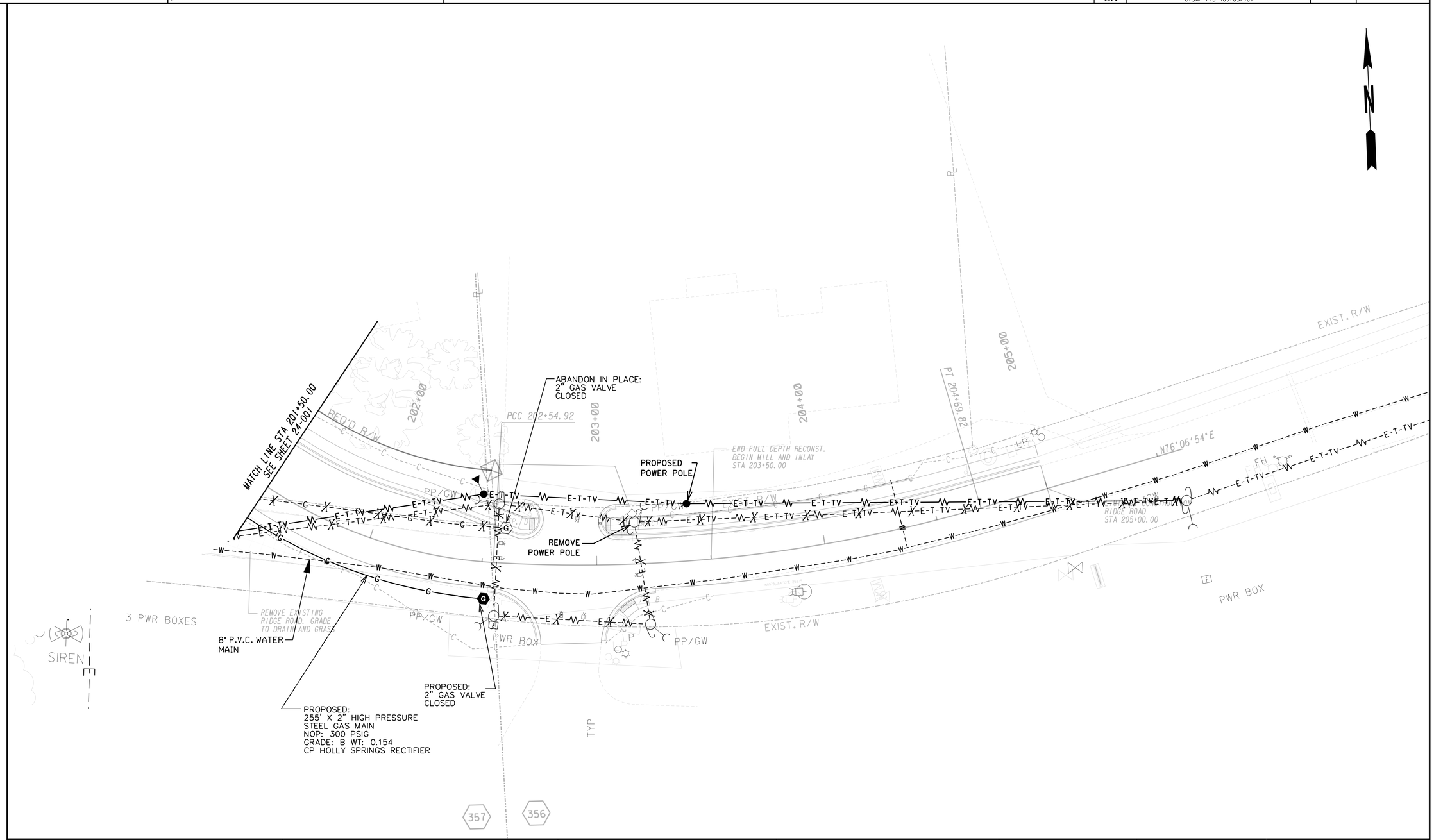
UTILITY PLANS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 24-003

01/26/2015 GPLNOLD

1/29/2018 8:27:51 AM	GPLOT-V8	0343_24-004.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
travis.mcclam	gplotborder-V8I-PO.tbl		GA	CTSAP-770-4091057(C)		



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

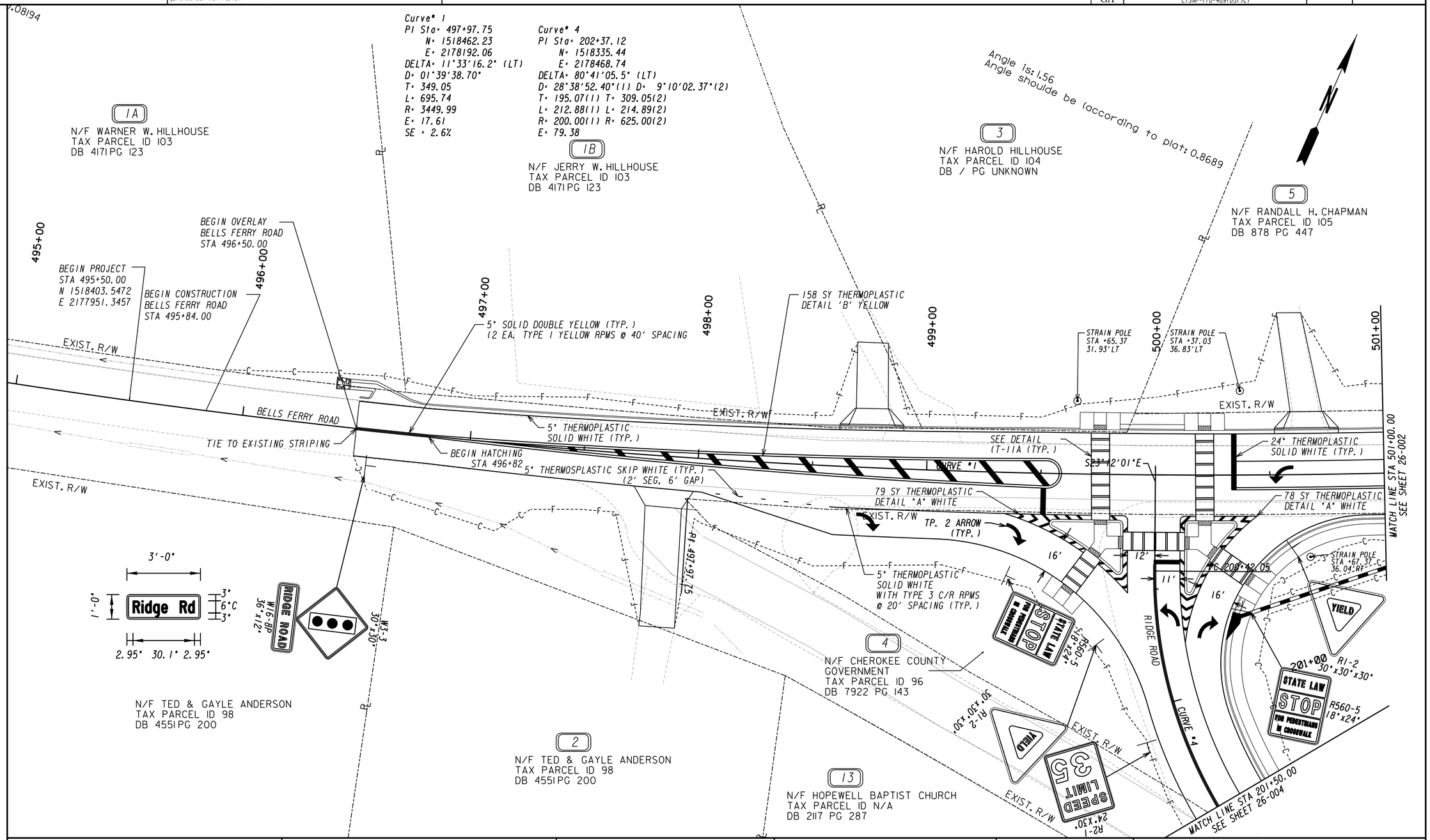
OFFICE:

UTILITY PLANS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
24-004

01/26/2015 GPLNOLD



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	C F
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA
(SEE ERIT TABLE)

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

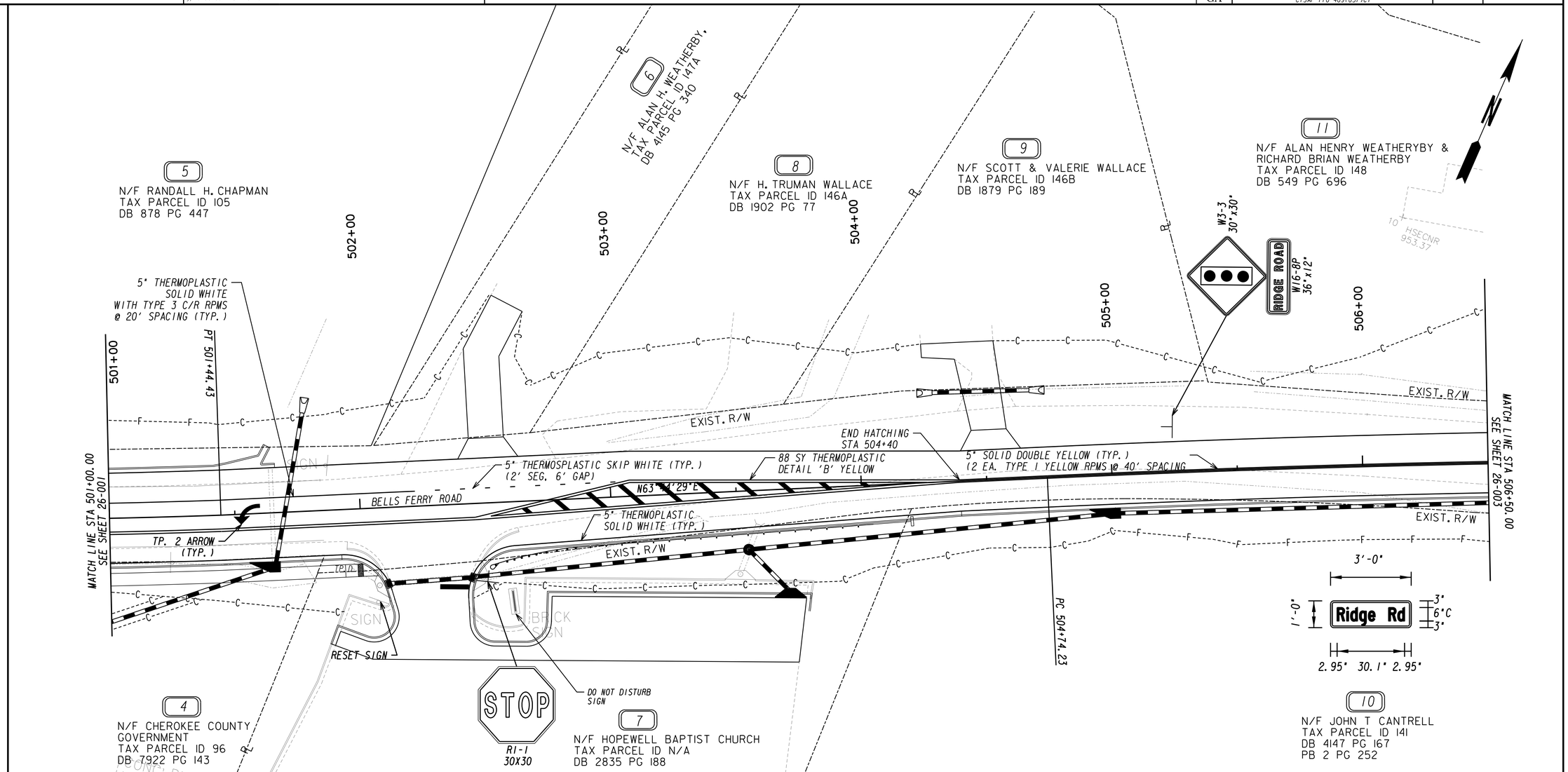
CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

SIGNING AND MARKING PLANS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
26-001



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA
(SEE ERIT TABLE)

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

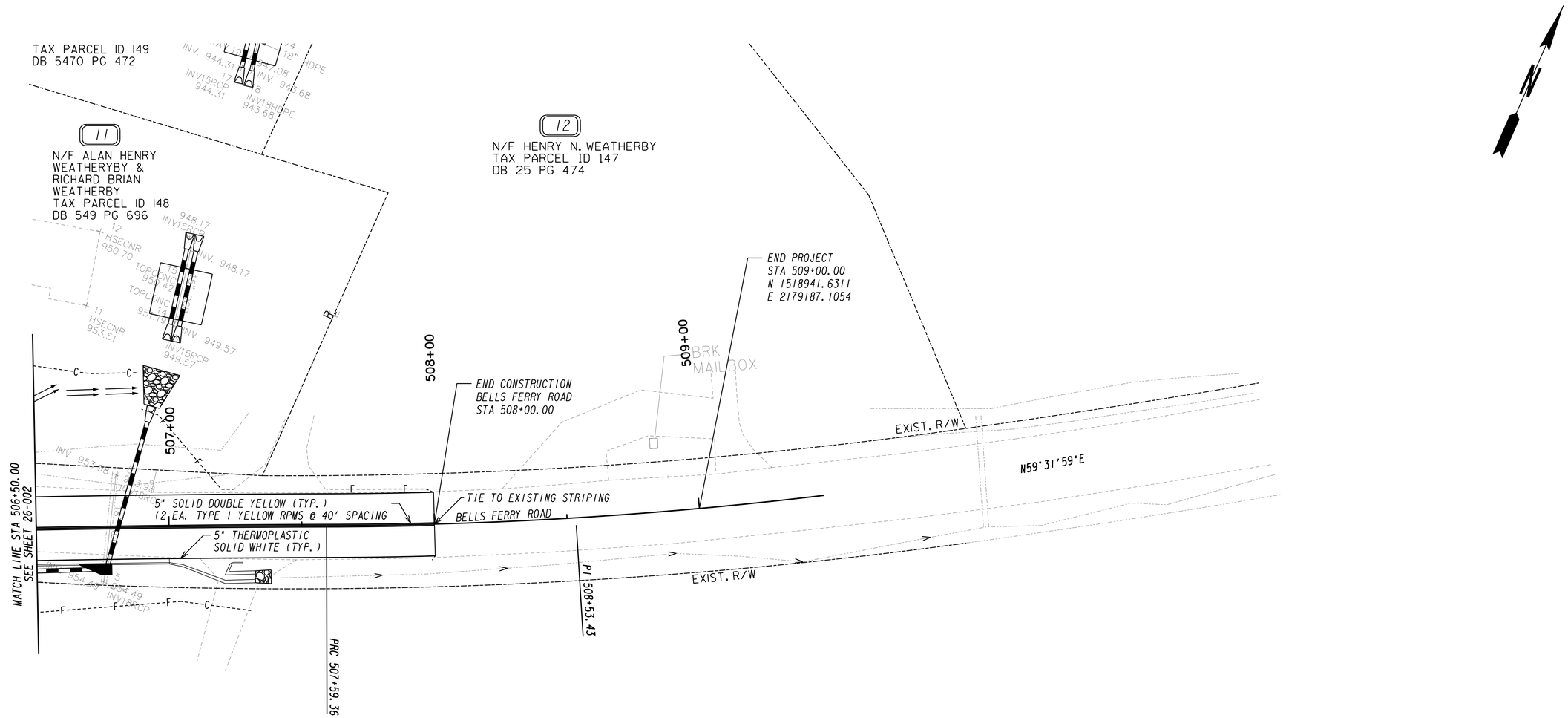
CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

SIGNING AND MARKING PLANS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 26-002



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

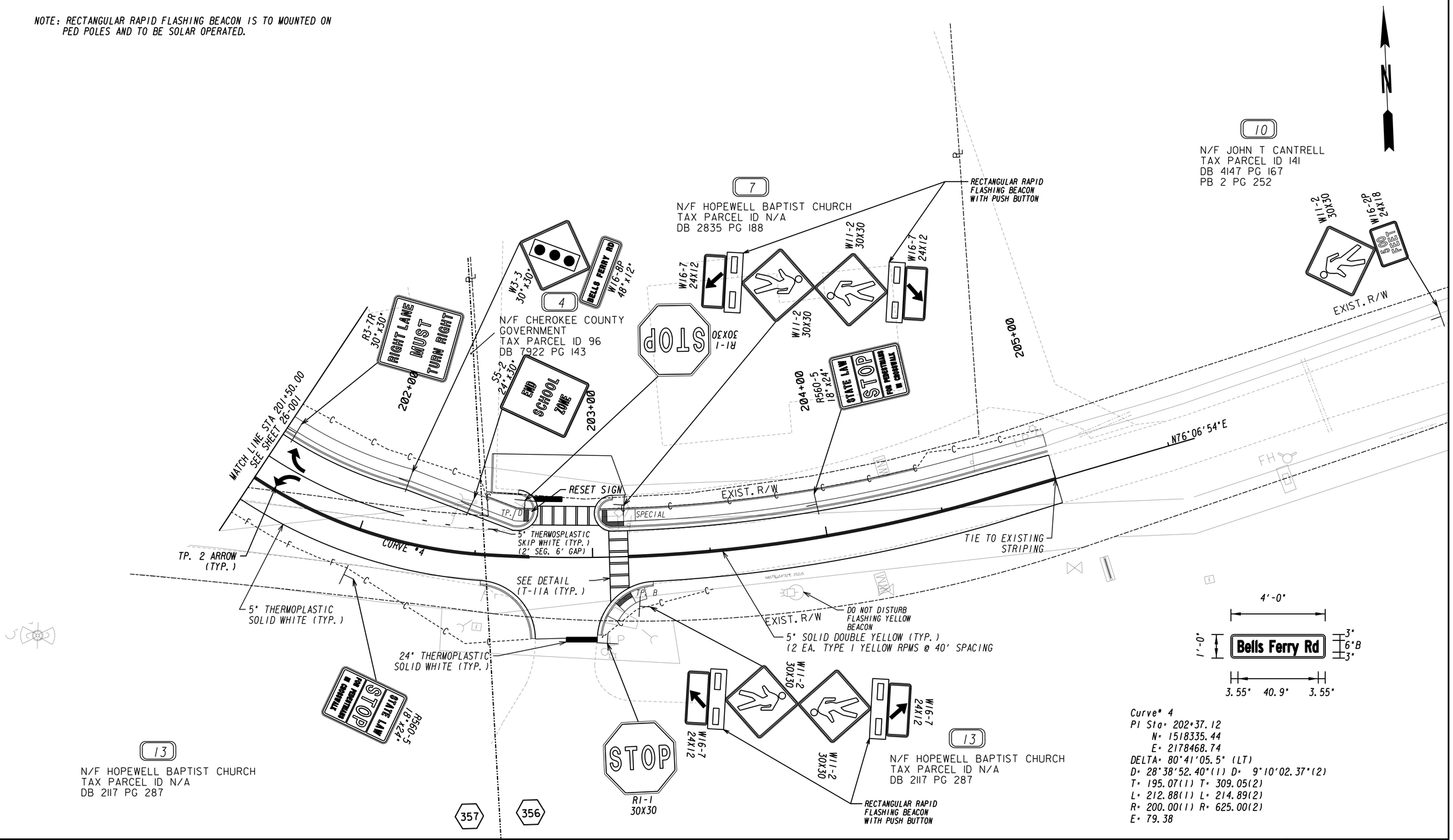
SIGNING AND MARKING PLANS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 26-003

01/26/2015 GPLNOLD

NOTE: RECTANGULAR RAPID FLASHING BEACON IS TO MOUNTED ON PED POLES AND TO BE SOLAR OPERATED.



Curve# 4
PI Sta= 202+37.12
N= 1518335.44
E= 2178468.74
DELTA= 80°41'05.5" (LT)
D= 28°38'52.40"(1) D= 9°10'02.37"(2)
T= 195.07(1) T= 309.05(2)
L= 212.88(1) L= 214.89(2)
R= 200.00(1) R= 625.00(2)
E= 79.38

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

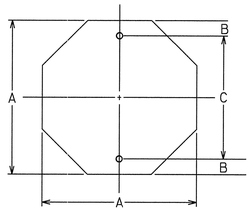
SIGNING AND MARKING PLANS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 26-004

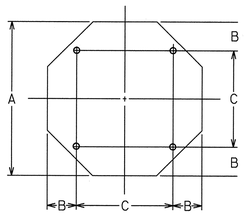
01/26/2015 GPLNOLD

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

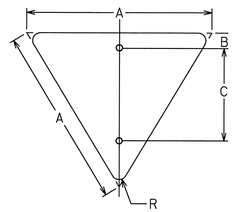


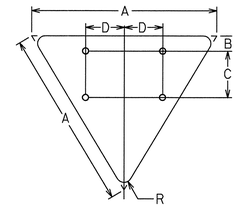
OCTAGON

A	B	C
24	3	18
30	3	24
36	3	30



A	B	C
48	9	30

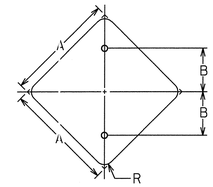




EQUILATERAL TRIANGLE

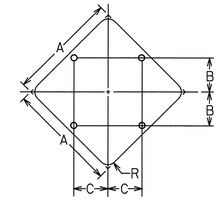
A	B	C	R
30	3	18	1 1/2
36	3	21	2
48	3	27	3

A	B	C	D	R
60	3	18	15	3



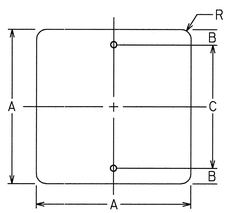
DIAMOND

A	B	R
24	12	1 1/2
30	15	1 7/8
36	18	2 1/4



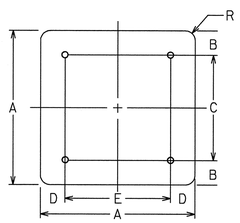
A	B	C	R
*36	10	10	2 1/4
48	15	15	3
60	18	18	3 3/4

* FOR TWO POST ERECTION

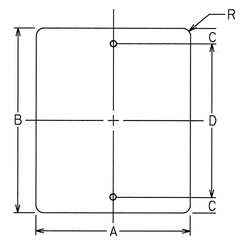


SQUARE

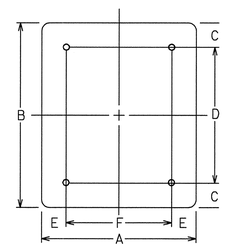
A	B	C	R
18	3	12	1 1/2
24	3	18	1 1/2
30	3	24	1 7/8



A	B	C	D	E	R
36	6	24	6	24	2 1/4
48	6	36	6	36	3

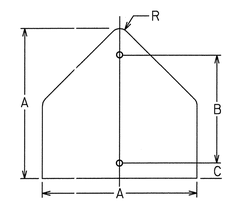


A	B	C	D	R
12	18	1 1/2	15	1 1/2
18	24	3	18	1 1/2
24	30	3	24	1 1/2
30	36	3	30	1 7/8



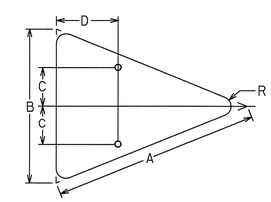
VERTICAL RECTANGLE

A	B	C	D	E	F	R
36	48	6	36	6	24	2 1/4
48	60	6	48	9	30	3



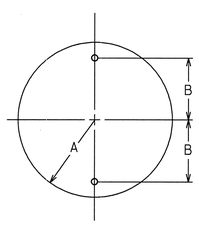
PENTAGON

A	B	C	R
30	21	3	1 7/8
36	24	3	2 1/4



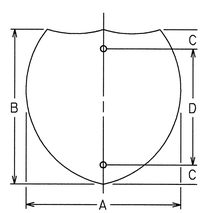
ISOSCELES TRIANGLE

A	B	C	D	R
40	30	7 1/2	12	1 7/8
48	36	9	15	2 1/4



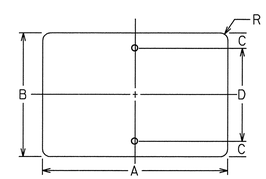
CIRCLE

A	B
15	12
18	15

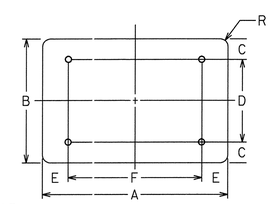


INTERSTATE SHIELD

A	B	C	D
24	24	3	18
30	24	3	18
36	36	6	24
45	36	6	24



A	B	C	D	R
21	15	1 1/2	12	1 1/2
24	12	1 1/2	9	1 1/2
24	18	3	12	1 1/2
30	15	1 1/2	12	1 1/2
30	24	3	18	1 1/2
36	12	1 1/2	9	1 1/2
36	24	3	18	1 1/2
48	12	1 1/2	9	1 1/2
48	24	3	18	1 7/8



HORIZONTAL RECTANGLE

A	B	C	D	E	F	R
48	36	6	24	9	30	2 1/4
60	24	3	18	12	36	1 1/2
60	36	6	24	12	36	2 1/4

DATE	REVISIONS

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY & DESIGN

DETAILS OF
SIGN PLATES

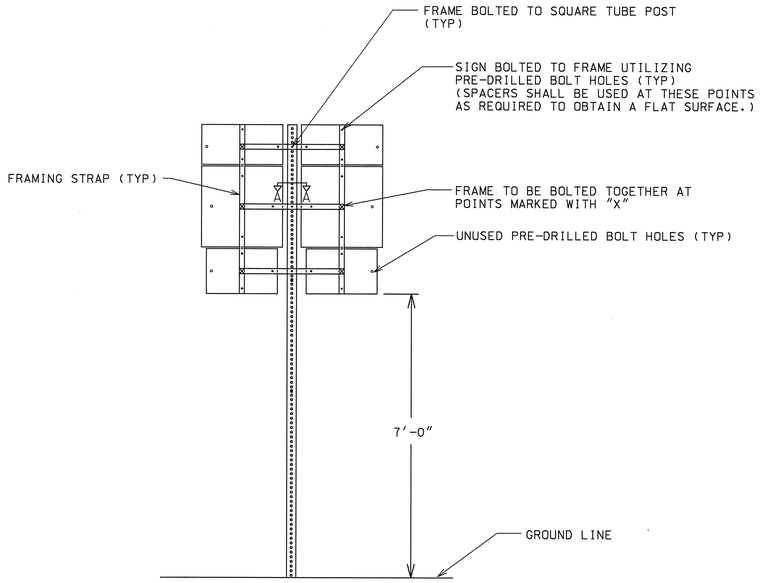
NO SCALE JANUARY 2000

PCBDTB

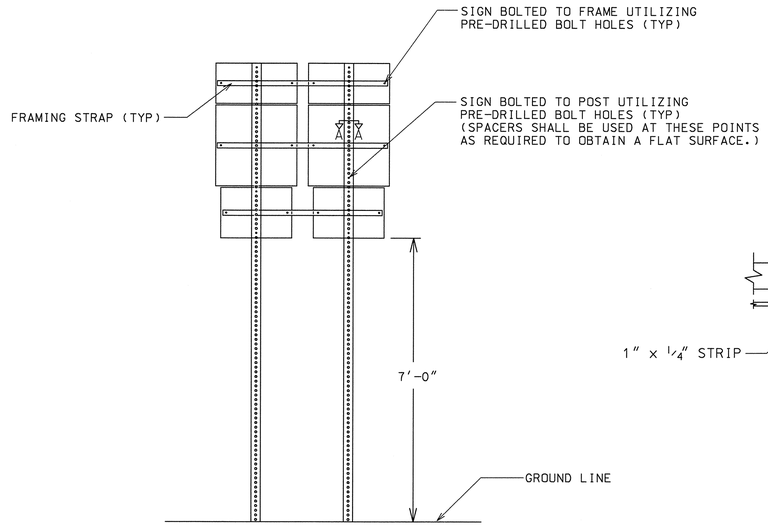
T-1

...\10\sign plates.dgn Jul. 03, 2007 16:10:10

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

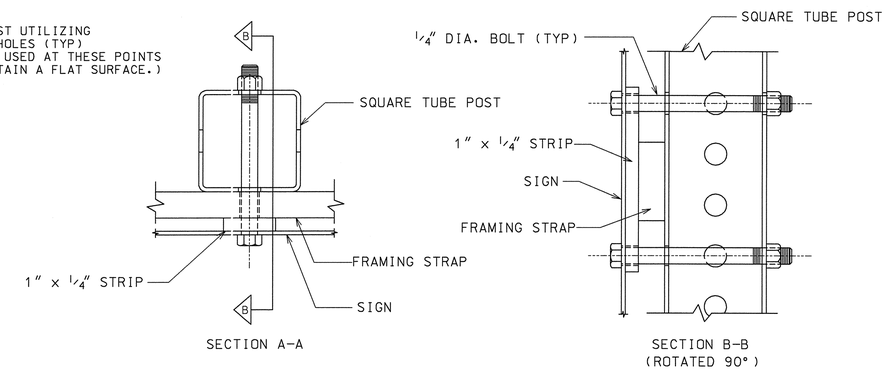


SINGLE POST ERECTION



DUAL POST ERECTION

TYPICAL ASSEMBLY UNIT (BACK VIEW)

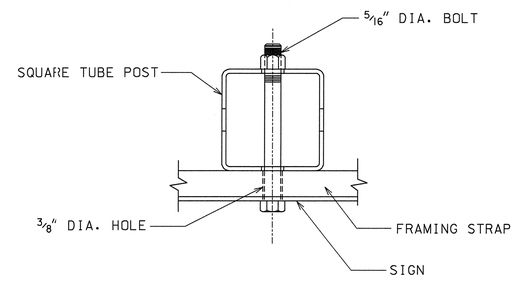


SECTION A-A

SECTION B-B
(ROTATED 90°)

OPTION #1 - FRAMING STRAP WITHOUT MOUNTING HOLE

(ALL FRAMING STRAPS SHALL BE 1 1/2" x 1/2" x REQUIRED LENGTH)



OPTION #2 - FRAMING STRAP WITH MOUNTING HOLE

(ALL FRAMING STRAPS SHALL BE 2" x 1/2" x REQUIRED LENGTH)

GENERAL NOTES:

1. STYLE OF FRAMING IS OPTIONAL. ALTERNATE DESIGNS ARE ACCEPTABLE UPON APPROVAL OF THE ENGINEER. FRAME SHALL BE DESIGNED SO AS TO HOLD THE ASSEMBLY IN A FIXED, RIGID POSITION.
2. FRAMING STRAPS SHALL BE GALVANIZED STEEL OR ALUMINUM.
3. STEEL SHALL BE A.S.T.M. DESIGNATION A-283, GRADE D, GALVANIZED IN ACCORDANCE WITH A.S.T.M. DESIGNATION A-123.
4. ALUMINUM SHALL BE ALLOY 6061-T6.
5. BOLTS, NUTS, WASHERS, AND SPACERS SHALL CONFORM TO THE STANDARD SPECIFICATIONS AND/OR SPECIAL PROVISIONS.
6. FRAMING STRAPS ON A DUAL POST ERECTION SHALL NOT BE BOLTED TO THE POST.

DATE	REVISIONS
3/31/00	CHANGED U-CHANNEL POST TO SQUARE TUBE POST

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC OPERATIONS

DETAILS FOR
TYPICAL FRAMING

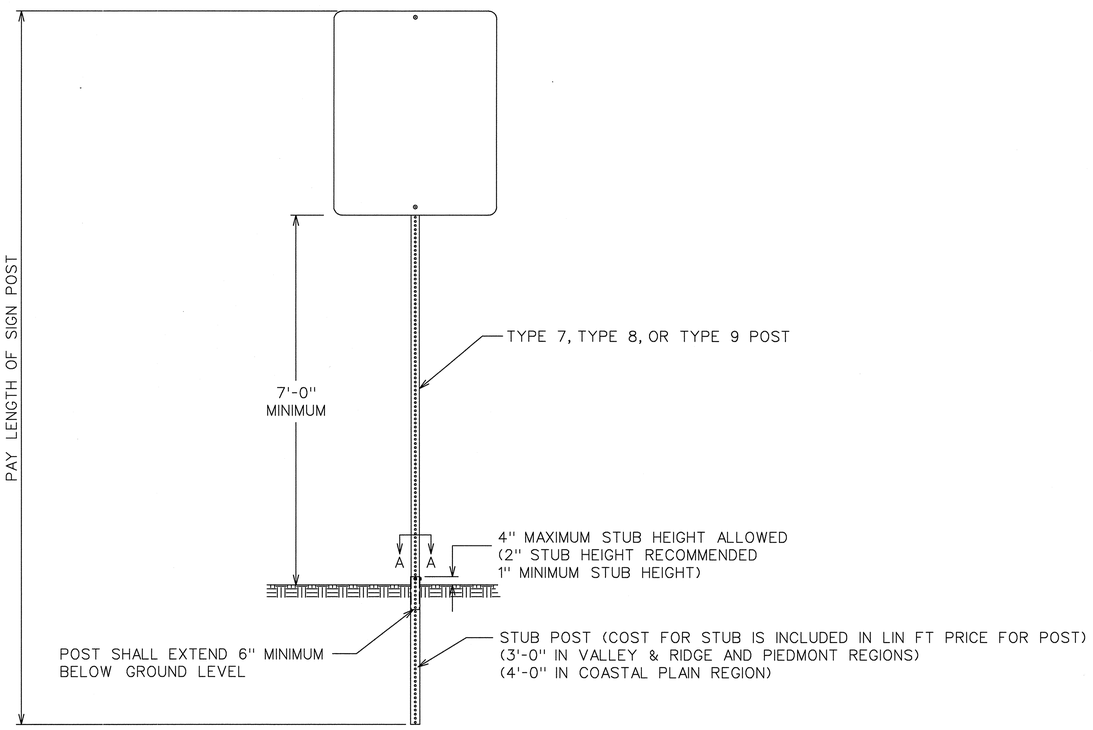
NO SCALE JANUARY 2000

PCBDTB

T-2

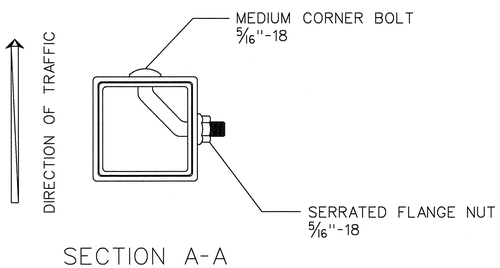
\1102typical framing.dgn Jul 03, 2003 16:10:10

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



FRONT VIEW

POST	STUB SIZE
TYPE 7	2¼" x 2¼"
TYPE 8	2¾" x 2¾"
TYPE 9	2½" x 2½"



SECTION A-A

SIGN POST SELECTION CHART

70 MPH Wind Load Chart + 15% Gust Factor

Sign Centroid	SLIP BASE NOT REQUIRED				GROUND MOUNTED BREAKAWAY SIGN SUPPORT REQUIRED				
	TYPE 7 2" 14 ga.		TYPE 9 2-1/4" 14 ga	TYPE 8 2-1/2" 12 ga.	TYPE 8 2-1/2" 12 ga.		TYPE 8 w/TYPE 9 Insert* 2-1/2" 12 ga. W/2-1/4" 14 ga.		
	1 Post	2 Post	1 Post	1 Post	2 Post	3 Post	1 Post	2 Post	3 Post
	SQUARE FOOTAGE				SQUARE FOOTAGE				
6'	13.50	27.00	19.25	30.00	60.00	90.00	49.25	98.50	147.75
7'	11.60	23.20	16.50	25.75	51.50	77.25	42.25	84.50	126.75
8'	10.15	20.30	14.45	22.55	45.10	67.65	37.00	74.00	111.00
9'	9.00	18.00	12.85	20.00	40.00	60.00	32.85	65.70	98.55
10'	8.10	16.20	11.55	18.00	36.00	54.00	29.55	59.10	88.65
11'	7.40	14.80	10.50	16.40	32.80	49.20	26.90	53.80	80.70
12'	6.80	13.60	9.65	15.00	30.00	45.00	24.65	49.30	73.95
13'	6.25	12.50	8.90	13.85	27.70	41.55	22.75	45.50	68.25
14'	5.80	11.60	8.25	12.90	25.80	38.70	21.15	42.30	63.45
15'	5.00	10.00	6.45	10.10	20.20	30.30	16.55	33.10	49.65
16'	4.70	9.40	6.05	9.45	18.90	28.35	15.50	31.00	46.50
17'	4.40	8.80	5.70	8.90	17.80	26.70	14.60	29.20	43.80
18'	4.15	8.30	5.40	8.40	16.80	25.20	13.80	27.60	41.40
19'	3.95	7.90	5.10	7.95	15.90	23.85	13.05	26.10	39.15
20'	3.75	7.50	4.85	7.55	15.10	22.65	12.40	24.80	37.20

SIGN CENTROID IS DISTANCE FROM GROUND LEVEL TO BOTTOM OF SIGN *PLUS* HALF THE HEIGHT OF SIGN.
EXAMPLE: 24" X 48" SIGN THAT IS 7 FEET FROM GROUND TO BOTTOM OF SIGN. ADD HALF OF 48" (24" OR 2 FT) *PLUS* 7 FT. = 9' CENTROID.

SIGN PLATE SHALL NOT EXCEED 48" IN WIDTH ON A SINGLE POST.

* TYPE 9 INSERT SHALL BE A CONTINOUS POST INSERTED INTO THE TYPE 8 POST WHERE REQUIRED. THE INSERT POST SHALL EXTEND FROM THE BOTTOM OF THE SLIP BASE UPPER ASSEMBLY TO 4" BELOW THE BOTTOM OF THE SIGN. THE INSERT POST SHALL NOT EXTEND ABOVE THE BOTTOM OF THE SIGN. PAYMENT FOR THE INSERT POST SHALL BE PER LINEAR FOOT OF TYPE 9 POST.

GROUND MOUNTED BREAKAWAY SIGN SUPPORT WILL BE MEASURED AND PAID FOR SEPARATELY. THE COST FOR THIS WORK SHALL INCLUDE THE UPPER AND LOWER ASSEMBLY, STUB POST, CLASS "A" CONCRETE, ALL HARDWARE NECESSARY TO COMPLETE THE INSTALLATION, AND BE INCLUDED IN THE BID PRICE SUBMITTED FOR ITEM 636-3010.

DATE	REVISIONS

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY & DESIGN

TYPE 7, 8, AND 9
SQUARE TUBE POST
INSTALLATION DETAIL

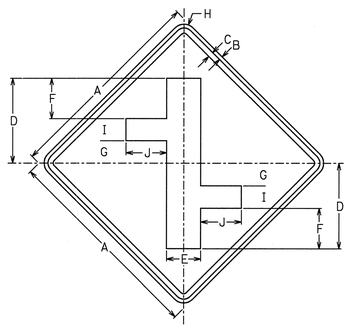
NO SCALE JULY 2002

T-3A

PCBOTB

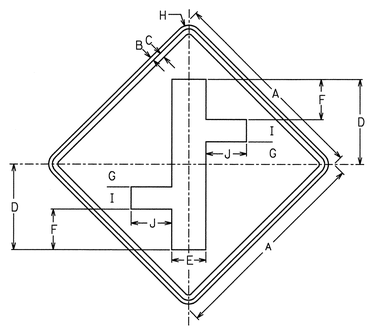
...\103spost2789.dgn Jul 03, 2003 16:10:11

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



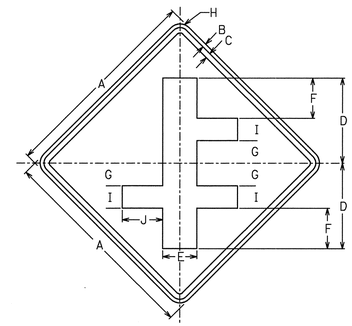
W552-1

SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	I	J
STD & MIN	30	1/2	3/4	12 1/2	5	6	3 1/4	1 7/8	3 1/4	6
EXPWY	36	5/8	7/8	15	6	7	4	2 1/4	4	7
FWY	48	7/8	1 1/4	20	8	9 1/2	5 1/4	3	5 1/4	9 1/2



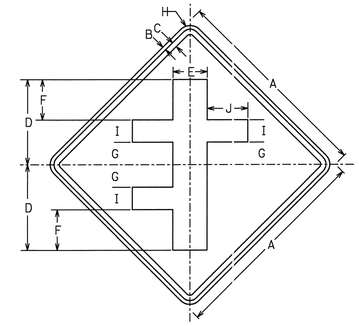
W552-2

SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	I	J
STD & MIN	30	1/2	3/4	12 1/2	5	6	3 1/4	1 7/8	3 1/4	6
EXPWY	36	5/8	7/8	15	6	7	4	2 1/4	4	7
FWY	48	7/8	1 1/4	20	8	9 1/2	5 1/4	3	5 1/4	9 1/2



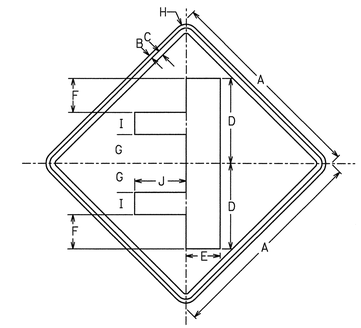
W552-3

SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	I	J
STD & MIN	30	1/2	3/4	12 1/2	5	6	3 1/4	1 7/8	3 1/4	6
EXPWY	36	5/8	7/8	15	6	7	4	2 1/4	4	7
FWY	48	7/8	1 1/4	20	8	9 1/2	5 1/4	3	5 1/4	9 1/2



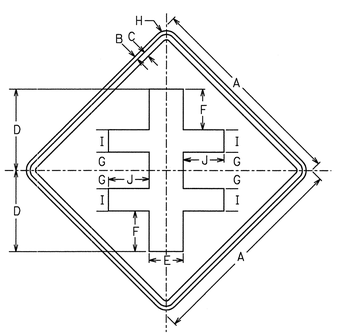
W552-4

SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	I	J
STD & MIN	30	1/2	3/4	12 1/2	5	6	3 1/4	1 7/8	3 1/4	6
EXPWY	36	5/8	7/8	15	6	7	4	2 1/4	4	7
FWY	48	7/8	1 1/4	20	8	9 1/2	5 1/4	3	5 1/4	9 1/2



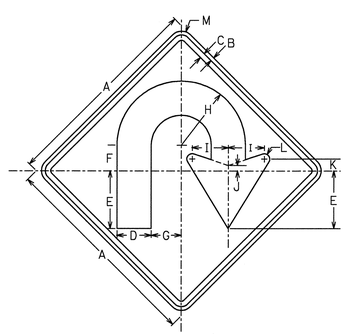
W552-5

SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	I	J
STD & MIN	30	1/2	3/4	12 1/2	5	5	4 1/4	1 7/8	3 1/4	8
EXPWY	36	5/8	7/8	15	6	6	5	2 1/4	4	10
FWY	48	7/8	1 1/4	20	8	8	6 3/4	3	5 1/4	12



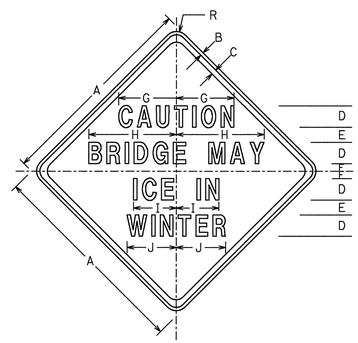
W552-6

SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	I	J
STD & MIN	30	1/2	3/4	12 1/2	5	5	3 1/4	1 7/8	3 1/4	6
EXPWY	36	5/8	7/8	15	6	7	4	2 1/4	4	7
FWY	48	7/8	1 1/4	20	8	9 1/2	5 1/4	3	5 1/4	9 1/2



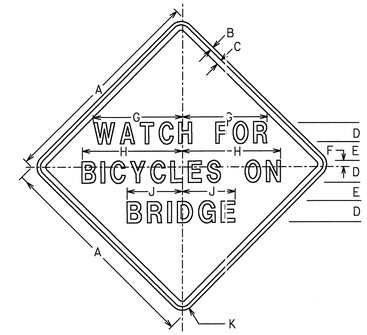
W551-1

SIGN	DIMENSIONS (INCHES)												
	A	B	C	D	E	F	G	H	I	J	K	L	M
STD & MIN	30	1/2	3/4	5	8 1/2	3 3/4	4 3/8	9 3/8	5 3/4	3/4	1 5/8	3/4	1 7/8
EXPWY	36	5/8	7/8	6	10	4 1/2	5 1/4	11 1/4	6 7/8	15/16	2 3/16	15/16	2 1/4
FWY	48	7/8	1 1/4	8	13 1/2	6	7	15	8 7/16	1 1/4	2 3/4	1 1/4	3



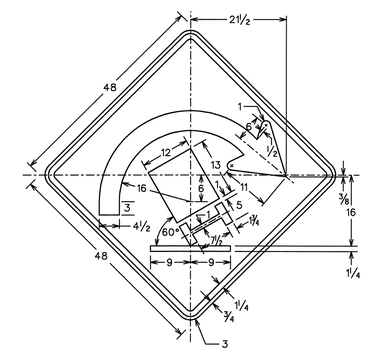
W560-1

SIGN	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	I	J	R
MIN & STD	30	1/2	3/4	3D	2 3/16	1 3/32	8	12 1/2	6	7	1 7/8
EXPWY	36	5/8	7/8	4D	2 5/8	1 5/16	11	16 1/2	8	9	2 1/4
FWY	48	3/4	1 1/4	5D	3 1/2	1 3/4	13 1/2	20 1/2	10	11 1/2	3



W560-2

SIGN	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	J	K	
MIN & STD	30	1/2	3/4	3C	1 1/2	1 3/32	9 1/2	11 1/2	6	1 7/8	
EXPWY	36	5/8	7/8	4C	3 1/4	2	13	15	7 1/2	2 1/4	



W560-3

SIGNS SHALL HAVE YELLOW REFLECTORIZED BACKGROUNDS
WITH BLACK LEGENDS, BORDERS, AND SYMBOLS.

DATE	REVISIONS

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY & DESIGN

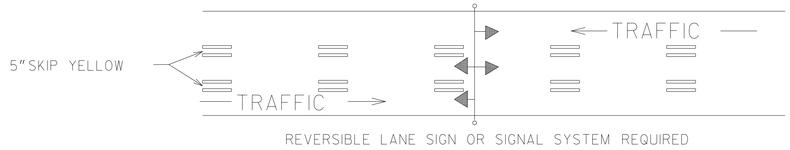
DETAILS OF
WARNING SIGNS

NO SCALE JANUARY 2000

PCBDTB

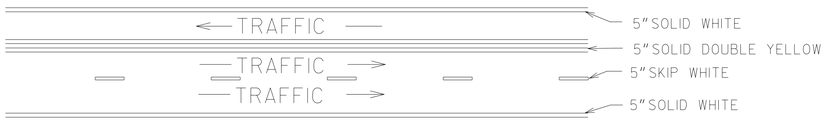
...\tdocwarning signs.dgn Jul 03, 2003 16:10:13

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



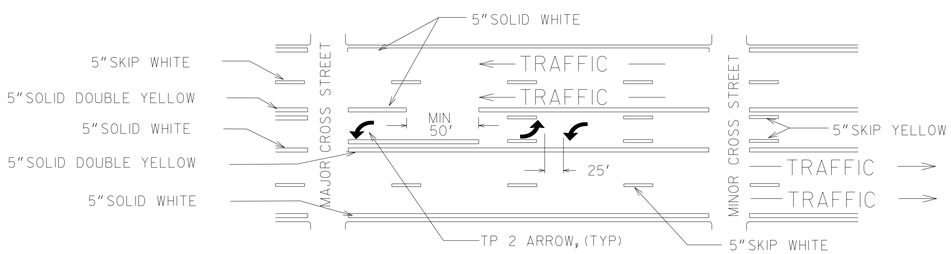
TWO-WAY TRAFFIC WITH A REVERSIBLE CENTER LANE

TWO-WAY TRAFFIC WHERE MOTORISTS IN A SINGLE LANE ARE PERMITTED TO PASS

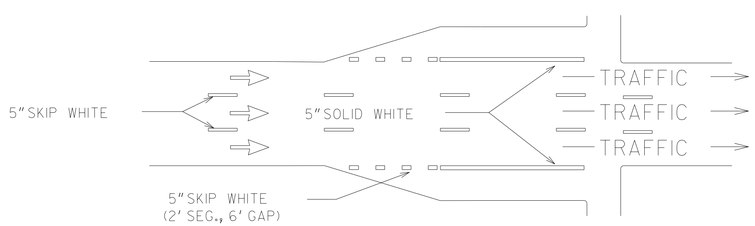


TWO-WAY TRAFFIC WHERE MOTORISTS IN A SINGLE LANE ARE NOT PERMITTED TO PASS

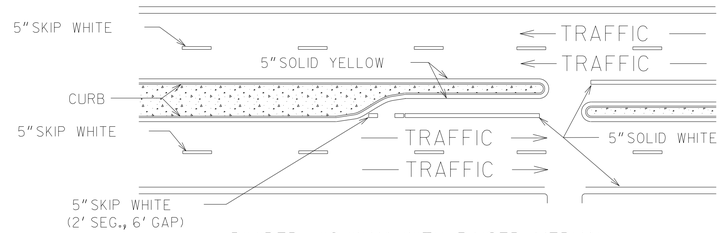
TWO-LANE, TWO-WAY TRAFFIC WITH PASSING PERMITTED



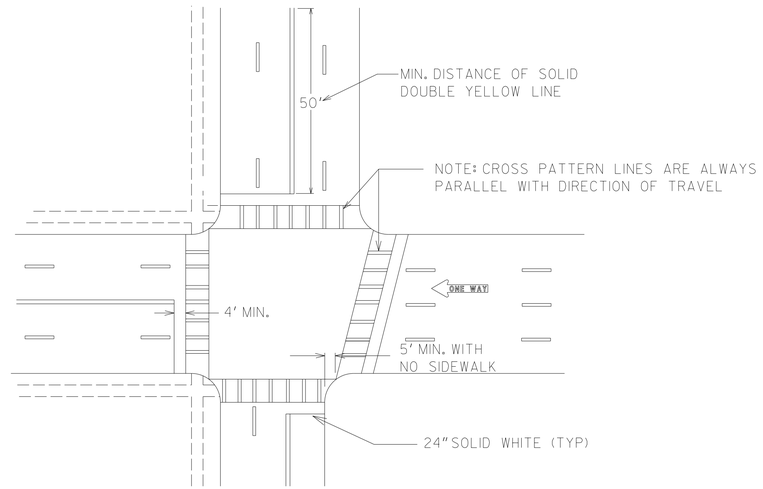
MULTI-LANE, TWO-WAY TRAFFIC WITH SINGLE LANE, TWO-WAY LEFT TURN CHANNELIZATION



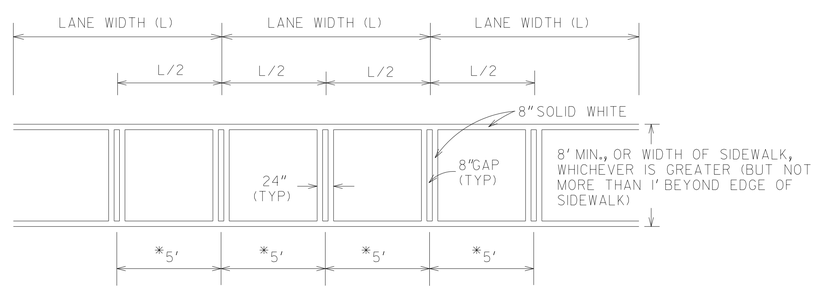
ONE-WAY TRAFFIC WITH ADDED TURN LANES



DIVIDED HIGHWAY WITH RAISED MEDIAN



TYPICAL LOCATION OF CROSSWALKS AND STOP BARS



*USE WHERE THE LANE WIDTH EXCEEDS 12' OR WHERE LANE LINES HAVE BEEN OMITTED

CROSSWALK DETAIL

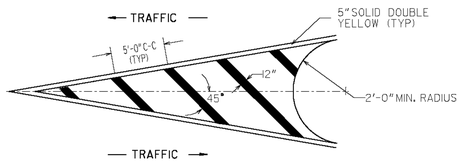
GENERAL NOTES:

1. SPACING BETWEEEN DOUBLE LINES SHALL BE EQUAL TO THE LINE WIDTH.
2. EDGE LINES SHALL BE PLACED A MINIMUM OF 4 INCHES FROM THE NORMAL EDGE OF PAVEMENT.
3. CONTRAST MARKINGS FOR SKIP STRIPING SHALL BE AS SHOWN IN DETAIL T-IIB.

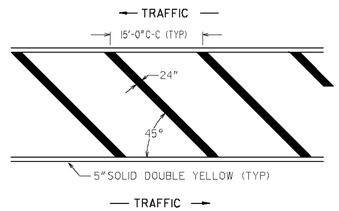
	9-5-16	DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
	ADDED GENERAL NOTE 3	REVISION	CONSTRUCTION DETAILS PAVEMENT MARKING PLACEMENT NON-LIMITED ACCESS ROADWAY
			NO SCALE — JANUARY 2000
	CDR	BY	DESIGNED ____ DRAWN ____ TRACED ____ CHECKED ____ — NUMBER T-IIA

COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS

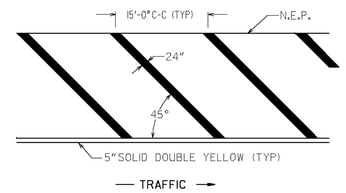
DETAIL "A" (YELLOW)



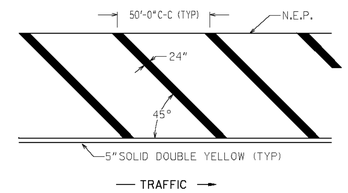
DETAIL "B" (YELLOW)



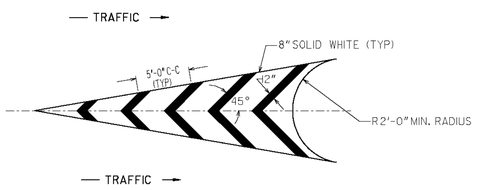
DETAIL "C" (YELLOW)



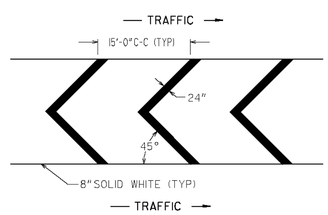
DETAIL "D" (YELLOW)



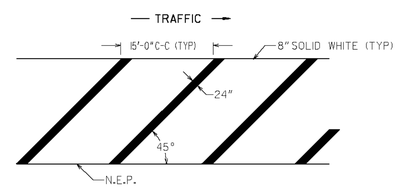
DETAIL "A" (WHITE)



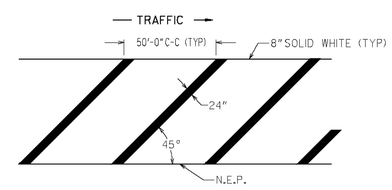
DETAIL "B" (WHITE)



DETAIL "C" (WHITE)



DETAIL "D" (WHITE)



GENERAL NOTES:

1. FOR YELLOW STRIPING, THE SQUARE YARDS SHOWN ON PLAN, SUMMARY AND DETAILED ESTIMATE SHEETS INCLUDE THE AREA WITHIN THE BORDERS AND THE 5" SOLID DOUBLE YELLOW BORDER.
2. FOR WHITE STRIPING, THE SQUARE YARDS SHOWN ON PLAN, SUMMARY AND DETAILED ESTIMATE SHEETS INCLUDES THE AREA WITHIN THE BORDERS AS WELL AS THE 8" SOLID WHITE BORDER.

GEORGIA
DEPARTMENT OF TRANSPORTATION

- NO SCALE -

DATE	REVISIONS
6/25/04	Modified general note 1
1/18/05	CHANGED BORDER
11/21/08	Modified general note 1

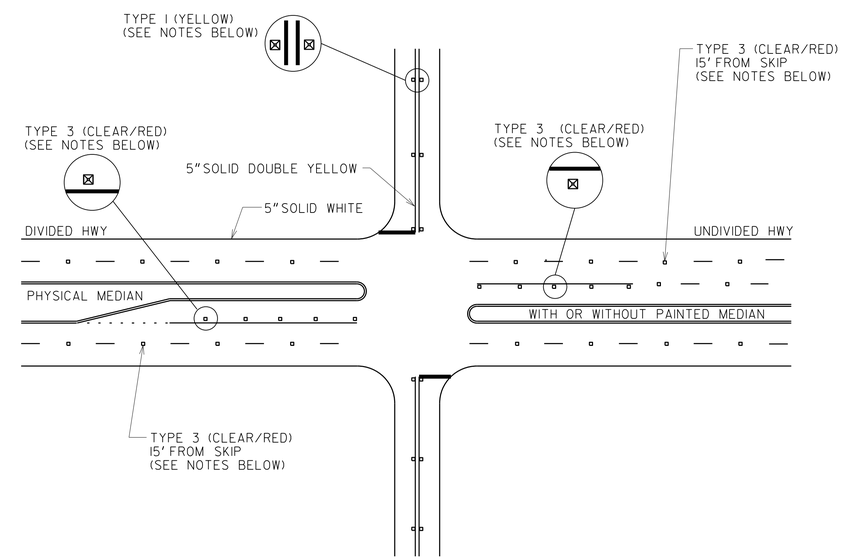
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: TRAFFIC OPERATIONS
SIGNING AND MARKING PLANS

DETAIL OF PAVEMENT MARKING HATCHING
JANUARY 2000

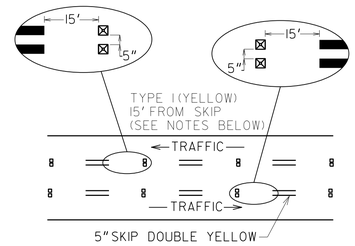
T-14
NUMBER
T -14

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

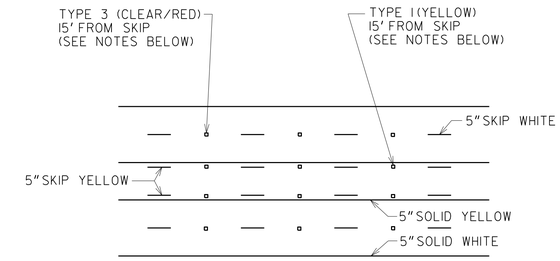
DIVIDED / UNDIVIDED HIGHWAY



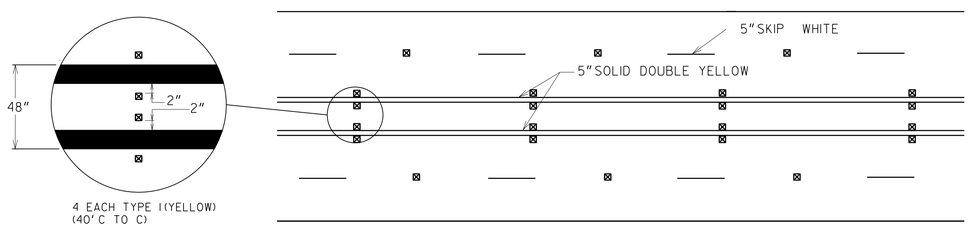
REVERSIBLE LANE



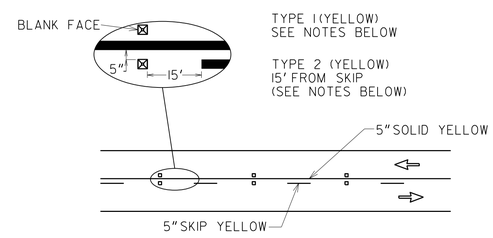
TWO WAY LEFT TURN LANE



4'-0" STRIPED FLUSH MEDIAN



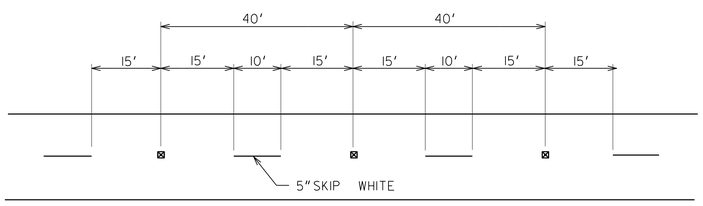
NO PASSING ZONE



GENERAL NOTES:

1. RAISED PAVEMENT MARKERS SHALL BE SPACED EVERY 40 FT UNLESS OTHERWISE SPECIFIED.
2. ON SOLID WHITE TURN BAY LINES, SPACING SHALL BE 20 FT.
3. RAISED PAVEMENT MARKERS SHALL BE OFFSET 5 INCHES FROM SOLID LANE LINES.
4. CLEAR FACE OF TYPE 3 RAISED PAVEMENT MARKERS SHALL BE ORIENTED TOWARD ONCOMING TRAFFIC.

TYPICAL RPM/STRIPE SPACING



CDR	BY	REV. RPM SPACING TO 40'	9-15-2016
		REVISION	DATE

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAILS

RAISED PAVEMENT MARKER LOCATION
NON-LIMITED ACCESS ROADWAY

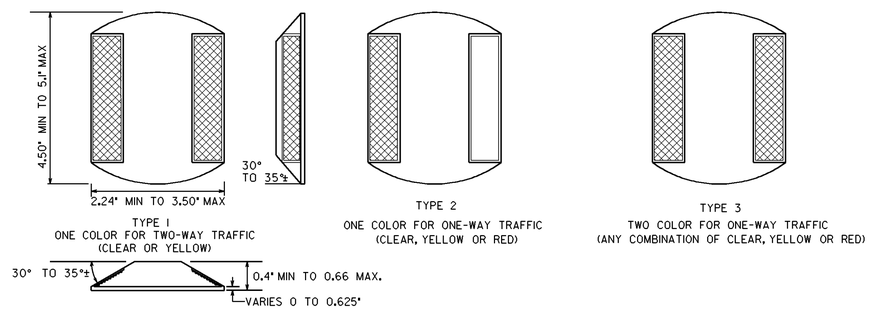
NO SCALE

REV. AND REDRAWN, JUNE 2015

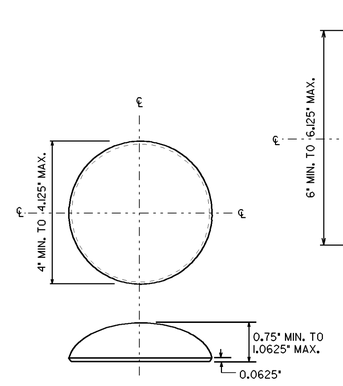
DESIGNED ____
DRAWN ____
TRACED ____
CHECKED ____

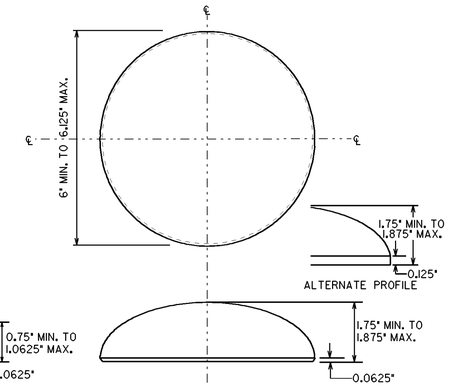
NUMBER
T-15A

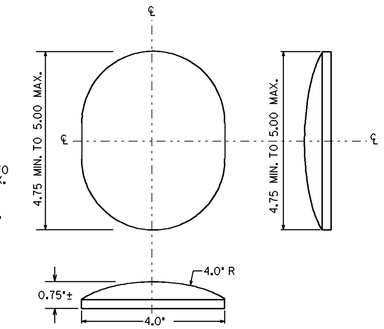
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

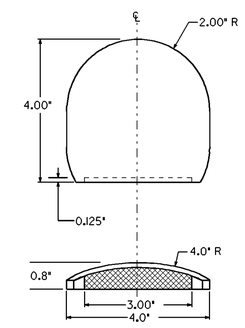


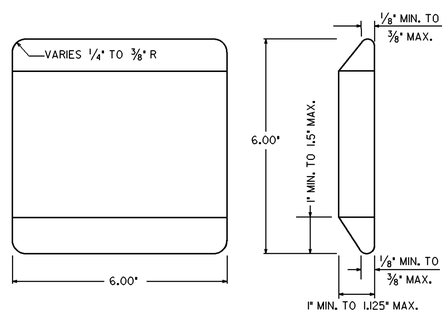
RAISED REFLECTIVE MARKERS

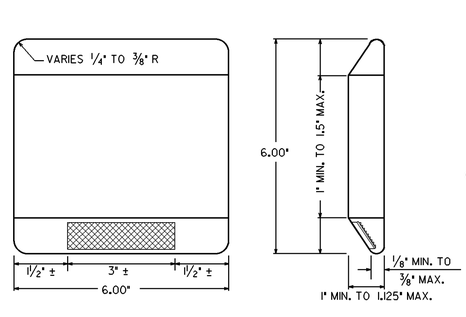




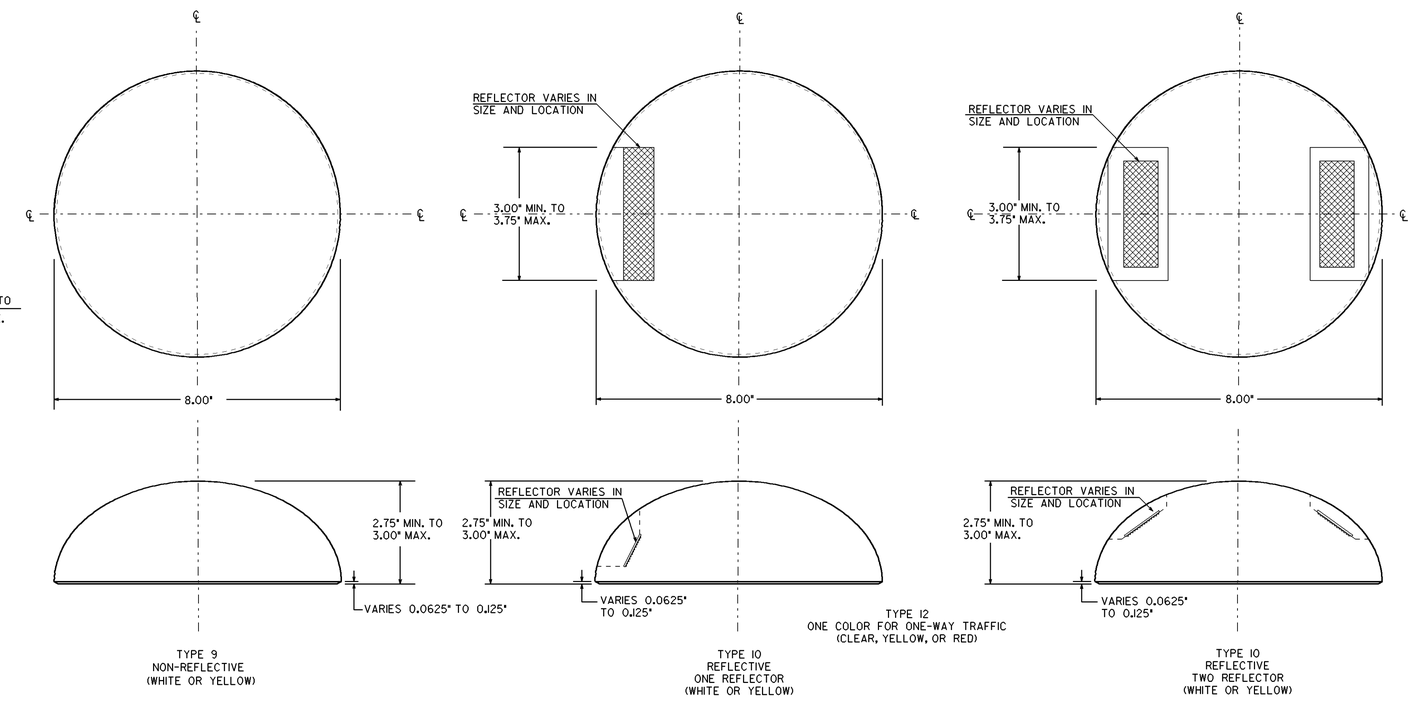




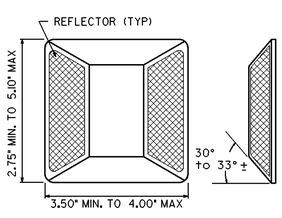


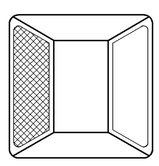


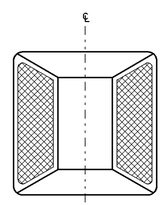
CERAMIC JIGGLE BAR MARKER

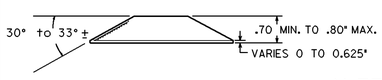


CERAMIC CHANNEL MARKER









ALTERNATE RAISED REFLECTIVE MARKERS

GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION, AND SUPPLEMENTS THERE TO.
2. THE CONTRACTOR SHALL USE RAISED PAVEMNT MAKER SOURCES AS LISTED IN OPL 76.
3. COLORS FOR REFLECTIVE ELEMENTS SHALL BE EITHER CLEAR, YELLOW, OR RED AS SPECIFIED.
4. THE SHELL OF THE REFLECTIVE MARKERS SHALL BE OF ONE COLOR OR OF A COMBINATION OF TWO COLORS, WHICH SHALL BE THE SAME AS THE REFLECTIVE ELEMENT.
5. THE SURFACE OF OPAQUE CERAMIC MARKERS SHALL BE GLAZED AND OF THE COLOR SPECIFIED IN THE PLANS WITH A WHITE, VITREOUS, CERAMIC BASE.
6. COLORS FOR ALL RAISED PAVEMENT MARKERS SHALL BE AS SPECIFIED IN THE PLANS.

DATE	REVISIONS
9-22-11	REV. DIMENSIONS, ADDED
	NOTES TO MARKERS
	AND REV. GEN. NOTES.

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY & DESIGN

DETAILS OF
RAISED PAVEMENT MARKERS

NO SCALE JANUARY 2000

PCPRSM

PCBDTB

TRAFFIC SIGNAL GENERAL NOTES

1. THE COMPLETE SIGNAL INSTALLATION SHALL CONFORM TO ALL APPROPRIATE PARTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, INCLUDING SUBSEQUENT PUBLISHED RULINGS.

2. ALL MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH THE GEORGIA DEPARTMENT OF TRANSPORTATION CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS AND STANDARD DETAILS FOR TRAFFIC SIGNAL INSTALLATION (WITH EXCEPTIONS AS DIRECTED BY THESE PLANS OR CHEROKEE COUNTY D.O.T.). INSTALLATION SHALL MEET CURRENT NFPA NATIONAL ELECTRICAL CODE AND ANSI NATIONAL ELECTRICAL SAFETY CODE.

3. MATERIAL CERTIFICATION IS REQUIRED PRIOR TO BEGINNING ANY SIGNAL INSTALLATION WORK. THE CONTRACTOR SHALL FOLLOW PROCEDURES OUTLINED IN THE SPECIAL PROVISIONS.

4. CONTRACTOR SHALL SUBMIT LOAD CALCULATIONS, SHOP DRAWINGS AND FOUNDATION DIMENSIONS OF POLES AND CATALOG CUTS OF PROPOSED SIGNAL EQUIPMENT AND ELECTRICAL/LINE HARDWARE MATERIALS TO THE PROJECT ENGINEER FOR APPROVAL.

5. FOR STRAIN POLE FOUNDATION SIZE AND REINFORCEMENT, SEE STRAIN POLE AND MAST ARM POLE FOUNDATION SHEET.

6. THE CONTRACTOR SHALL LOCATE UNDERGROUND UTILITIES IN THE VICINITY OF NEW TRAFFIC SIGNAL POLES BEFORE INSTALLATION. MINOR SHIFTS (UP TO A MAXIMUM OF 10 FEET) IN LOCATION OF NEW SIGNAL POLES, AT THE DISCRETION OF THE ENGINEER, ARE ACCEPTABLE TO AVOID UNDERGROUND UTILITIES. MINIMUM CLEARANCES FROM EDGE OF PAVEMENT SHALL BE MAINTAINED. PLACEMENT OF THE SIGNAL HEADS MUST BE RETAINED AS SHOWN ON THE PLANS.

7. SIGNAL HEADS SHALL BE ERECTED TO PROVIDE AT LEAST 17 FEET BUT NO MORE THAN 19 FEET CLEARANCE FROM BOTTOM OF SIGNAL HEADS TO TOP OF ROAD SURFACE AND A MINIMUM OF 8 FEET MEASURED HORIZONTALLY BETWEEN CENTERS OF SIGNAL FACES.

8. THE CONTRACTOR SHALL MAINTAIN EXISTING TRAFFIC SIGNALS DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC SIGNAL AND/OR CONTROL SYSTEM ADJUSTMENTS, INCLUDING TEMPORARY SUPPORT POLE LOCATION(S) REQUIRED BY THE PROJECT DURING THE INTERIM PERIOD THROUGH INSTALLATION OF NEW SIGNAL EQUIPMENT. AT NO TIME SHALL THE CONTRACTOR CAUSE ANY PART OF THE SIGNAL OPERATION TO BE INOPERABLE.

9. WHEN APPLICABLE TO THE PLANS, THE CONTRACTOR SHALL INSTALL AND TEST ALL NEW SIGNAL ITEMS PRIOR TO REMOVING EXISTING SIGNALS FROM SERVICE.

10. WHEN APPLICABLE TO THE PLANS, CONTRACTOR SHALL BE REQUIRED TO PROVIDE A NEW RISER, CONDUIT, CONDUCTORS AND DISCONNECT TO PROVIDE POWER SERVICE INTO THE CONTROLLER CABINET.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NEW GUYS ON EXISTING POLES WHEN ATTACHING SPAN WIRE OR FIBER OPTIC INTERCONNECT CABLE TO THE POLES, WHEN REQUIRED, AS DIRECTED BY THE ENGINEER.

12. SHIELDED CABLE SHALL BE USED FOR DETECTOR RUNS, AS SHOWN ON THE DETAIL SHEET. DETECTORS SHALL HAVE SEPARATE LEAD-INS TO THE CONTROLLER CABINET. LOOP AND PEDESTRIAN DETECTOR CABLES SHALL BE 14 AWG IMSA 50-2 3-PAIR EQUIVALENT CABLE.

13. ENSURE DETECTION LOOPS ARE INSTALLED PROMPTLY. FAILURE TO DO SO SHALL RESULT IN ASSESSMENT OF LIQUIDATED DAMAGES IN ACCORDANCE WITH SECTION 150.08 OF THE SPECIFICATIONS.

14. CONDUIT UNDER DRIVEWAYS AND ROADWAYS SHALL BE TYPE 3 (HDPE). ALL CONDUIT RUNS GREATER THAN 50 FEET IN LENGTH SHALL BE BURIED TO A DEPTH OF 48 INCHES.

15. WHEN APPLICABLE TO THE PLANS, DETECTABLE MARKING TAPE LABELED "CHEROKEE COUNTY CALL 678-493-6077 SHALL BE INSTALLED DIRECTLY ABOVE ALL UNDERGROUND CONDUIT CONTAINING FIBER OPTIC INTERCONNECT CABLE. AN INSULATED TRACING WIRE, GROUNDED ON ONE END, SHALL BE INSTALLED INSIDE A CONDUIT SEPARATE FROM THE FIBER OPTIC INTERCONNECT CABLE.

16. VEHICLE AND PEDESTRIAN SIGNAL HEADS AND HARDWARE SHALL BE ALL BLACK IN COLOR. VEHICLE SIGNAL HEADS SHALL HAVE TUNNEL VISORS AND SHALL BE MADE OF POLYCARBONATE MATERIAL VEHICLE SIGNAL HEADS SHALL BE EQUIPPED WITH EXPANDED VIEW PIXELATED DISPLAY 5 MM LED MODULES. PEDESTRIAN SIGNAL HEADS SHALL BE EQUIPPED WITH UNIFORM DISPLAY FULL HAND/MAN COUNTDOWN LED MODULES.

17. PEDESTRIAN SIGNAL HEADS ATTACHED TO PEDESTAL POLES AND STEEL STRAIN POLES SHALL BE MOUNTED WITH "CLAMSHELL" TYPE BRACKET ASSEMBLIES. ALL PEDESTRIAN SIGNAL HEADS ATTACHED TO CONCRETE STRAIN POLES SHALL BE MOUNTED WITH ONE-WAY SIDE-OF-POLE ALUMINUM BRACKETS.

18. PUSHBUTTON STATIONS THAT ARE INSTALLED ON A PEDESTAL POLE FOR TWO PERPENDICULAR CROSSINGS SHALL BE MOUNTED ON A "DOUBLE PUSHBUTTON STATION ADAPTER". PEDESTRIAN PUSHBUTTONS SHALL BE INSTALLED WITHIN 10" OF SIDEWALK WITH SIGN ARROW INDICATING THE CROSSING DIRECTION. PEDESTRIAN PUSHBUTTONS AND SIGNS SHALL BE VANDAL RESISTANT WITH A PIEZO SWITCH, LED INDICATION AND AUDIBLE FEEDBACK.

19. ONLY THE MODELS OF VEHICLE SIGNAL MODULES, PEDESTRIAN SIGNAL MODULES, AND PUSHBUTTONS THAT HAVE BEEN TESTED AND PRE-APPROVED BY CHEROKEE COUNTY DOT SHALL BE USED. CONTACT HENRY COUNTY DOT FOR A LIST OF APPROVED ITEMS OR SUBMIT ITEMS FOR TESTING APPROVAL. CONTACT CHEROKEE COUNTY DOT AT 678-493-6077.

20. ONE 7- OR 5-CONDUCTOR, 14 AWG, STRANDED CABLE AND TWO DETECTOR CABLES FOR PROPOSED AND FUTURE PEDESTRIAN SIGNALS SHALL BE INSTALLED AT EACH STRAIN POLE. A MINIMUM OF ONE 7-CONDUCTOR, 14 AWG, STRANDED SIGNAL CABLE FOR PROPOSED AND FUTURE VEHICLE SIGNALS SHALL BE INSTALLED ON ALL FOUR SIDES OF THE INSTALLATION.

21. LOOP DETECTOR UNIT SHALL ENERGIZE ITS INDIVIDUAL LOOP CHANNELS NONCONCURRENTLY. DETECTOR UNIT SHALL BE FAIL SAFE (PROVIDE A CONSTANT CALL TO THE CONTROLLER IF LOOP FAILURE OCCURS).

22. CONTROLLER SHALL INCLUDE 5-VOLT 2 MB DATA KEY AND SHALL HAVE THE CURRENT GDOT LICENSE INTERSECTION SOFTWARE INSTALLED AND OPERATIONAL.

23. HOT DIP GALVANIZED WELDLESS RINGS SHALL BE USED FOR SPAN WIRE JUNCTIONS. GUY ANCHORS SHALL BE GALVANIZED.

24. REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE PAID FOR IN GRADING COMPLETE PAY ITEM.

25. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND AVOID ANY INTERFERENCE WITH UNDERGROUND UTILITIES OR CHEROKEE DOT COMMUNICATIONS. ANY DAMAGE TO UTILITIES OR CHEROKEE COUNTY DOT COMMUNICATIONS CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL CALL GEORGIA 811 AND CONTACT THE CHEROKEE DOT TRAFFIC ENGINEER PRIOR TO ANY DIGGING. CALLS SHALL BE PLACED AT LEAST 48 HOURS IN ADVANCE FOR LOCATES.

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

SIGNAL PLANS
GENERAL NOTES

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
27-001

EXISTING UTILITIES

- EXISTING GUY WIRE
- EX.OH ELECTRIC
- EX POWER POLE
- EX TRANSFORMER
- EX.UG ELECTRIC
- EX GAS LINE
- EX GAS METER
- EX GAS VALVE
- EX WATER LINE
- EX FIRE HYDRANT
- EX WATER METER
- EX WATER VALVE
- EX SANITARY SEWER
- EX SS MANHOLE
- EX TELEPHONE MH
- EX OH TELEPHONE
- EX TELEPHONE POLE
- EX UG TELEPHONE
- EX OH CABLE TV
- EX UG CABLE TV

EXISTING SIGNAL

- CONTROLLER CABINET
- STRAIN POLE
- TIMBER POLE
- DOWN GUY
- MAST ARM
- STREET LIGHT
- 3 SECTION HEAD
- 5 SECTION HEAD
- OVERHEAD SIGN
- PEDESTAL POLE
- PED SIGNAL HEAD
- CURB CUT RAMP
- PULLBOX
- 6x6 PULSE LOOP
- 6x18 CALL LOOP
- 6x40 PRESENCE LOOP (DIPOLE)
- 6x40 PRESENCE LOOP (QUADRUPOLE)
- CONDUIT
- RAILROAD CONTROLLER
- SIGN POST

PROPOSED SIGNAL

- CONTROLLER CABINET
- STRAIN POLE
- TIMBER POLE
- DOWN GUY
- MAST ARM
- STREET LIGHT
- 3 SECTION HEAD
- 3 SECTION HEAD W/ BACKPLATE
- 4 SECTION HEAD W/ BACKPLATE
- 5 SECTION HEAD
- 5 SECTION HEAD W/ BACKPLATE
- OVERHEAD SIGN
- PEDESTAL POLE
- PED SIGNAL HEAD
- CURB CUT RAMP - (See ADA Detail)
- PULLBOX, TYPE 2
- PULLBOX, TYPE 3
- PULLBOX, TYPE 4
- PULLBOX, TYPE 7
- 6x6 PULSE LOOP
- 6x6 VIDEO DETECTION ZONE
- 6x40 VIDEO DETECTION ZONE
- 6x40 PRESENCE LOOP (QUADRUPOLE)
- CONDUIT, BORED
- WIRELESS MAGNETOMETER
- SIGN POST
- IVDS CAMERA
- RIGHT OF WAY MARKER
- CCTV CAMERA

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

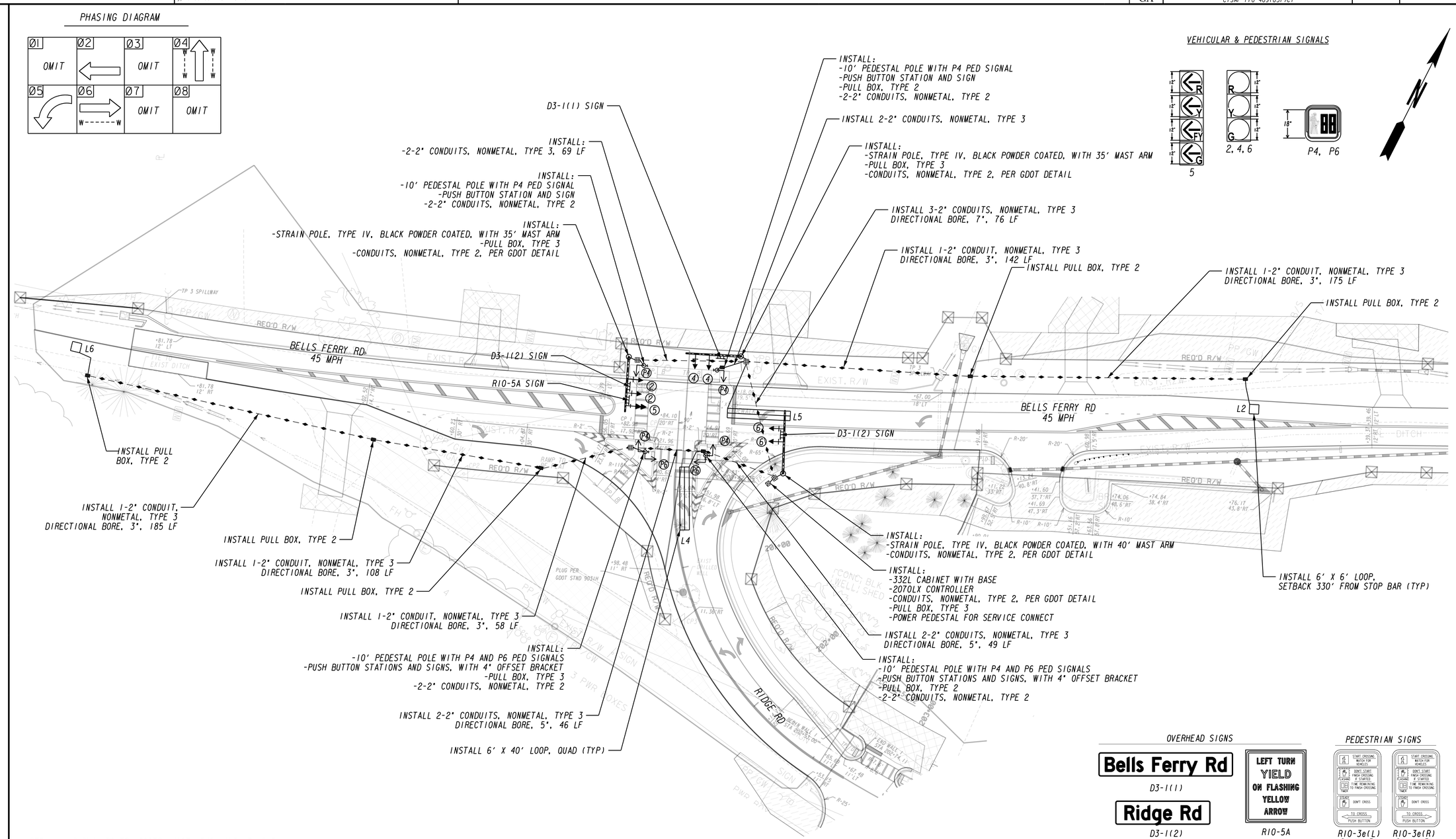
SIGNAL PLANS
LEGEND

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 27-002

PHASING DIAGRAM

VEHICULAR & PEDESTRIAN SIGNALS



NOTE: ALL SIGNAL POLES, POSTS, MAST ARMS, AND VEHICLE AND PEDESTRIAN SIGNAL HEADS AND HARDWARE SHALL BE BLACK.

OVERHEAD SIGNS

SIGNAL LEGEND

- PROPOSED SIGNAL HEAD
- EXISTING SIGNAL HEAD
- RELOCATED SIGNAL HEAD
- PROPOSED 4-SECTION SIGNAL HEAD
- PROPOSED 5-SECTION (CLUSTER) SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD

DETECTION LEGEND

- PROPOSED VIRTUAL DETECTION ZONE
- PROPOSED INDUCTIVE LOOP
- PROPOSED VIDEO DETECTION CAMERA
- PROPOSED MAGNETOMETER
- PROPOSED RADAR

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 30 60 120

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

SIGNAL PLANS
INSTALLATION PLANS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
27-003

332 DEFAULT INPUT FILES ASSIGNMENT

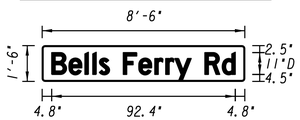
UPPER INPUT FILE (I)	SLOT		1	2	3	4	5	6	7	8	9	10	11	12	13	14
	TYPE			DET				DET					DC	DC	DC	DC
	CHANNEL 1	CI PIN	56	39	63	47	58	41	65	49	60		80	67	68	81
		FUNCTION		L2				L4					INT ADV		PH 6 PED	FLASH
		FIELD TERM	TB-2 1,2	TB-2 5,6	TB-2 9,10	TB-4 1,2	TB-4 5,6	TB-4 9,10	TB-6 1,2	TB-6 5,6	TB-6 9,10		NC	TB-8 4,6	TB-8 7,9	NC
	CHANNEL 2	CI PIN	56	43	76	47	58	45	78	49	62		53	69	70	82
		FUNCTION											MCE	PH 4 PED		STOP TIME
		FIELD TERM	TB-2 3,4	TB-2 7,8	TB-2 11,12	TB-4 3,4	TB-4 7,8	TB-4 11,12	TB-6 3,4	TB-6 7,8	TB-6 11,12		NC	TB-8 4,6	TB-8 7,9	NC
LOWER INPUT FILE (J)	SLOT		1	2	3	4	5	6	7	8	9	10	11	12	13	14
	TYPE		DET	DET												
	CHANNEL 1	CI PIN	55	40	64	48	57	42	66	50	59		54	71	72	51
		FUNCTION	L5	L6												
		FIELD TERM	TB-3 1,2	TB-3 5,6	TB-3 9,10	TB-5 1,2	TB-5 5,6	TB-5 9,10	TB-7 1,2	TB-7 5,6	TB-7 9,10			TB-9 4,6	TB-9 7,9	TB-9 10,12
	CHANNEL 2	CI PIN	55	44	77	48	57	46	79	50	61		75	73	74	52
		FUNCTION														
		FIELD TERM	TB-3 3,4	TB-3 7,8	TB-3 11,12	TB-5 3,4	TB-5 7,8	TB-5 11,12	TB-7 3,4	TB-7 7,8	TB-7 11,12			TB-9 4,6	TB-9 7,9	TB-9 11,12

LIST OF MATERIALS

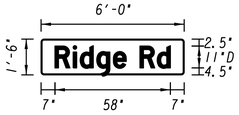
LIST OF MATERIALS	UNIT	QUANTITY
CONTROLLER CABINET ASSEMBLIES		
A. CONTROLLER UNIT, MODEL 2070LX	EA	1
D. CABINET ASSEMBLY, MODEL 332L	EA	1
E. SWITCH PACK	EA	7
F. DC ISOLATOR	EA	4
G. LOOP DETECTOR, 2 CHANNEL	EA	4
J. 2010 CONFLICT MONITOR, EXTENDED FEATURES	EA	1
K. AUXILIARY OUTPUT FILE	EA	1
332L PREFABRICATED CONTROLLER CABINET BASE	EA	1
LOOP/PED LEAD-IN WIRE (SHIELDED, TWISTED/1000 FT); 3 PAIR, 18 AWG	REEL	2
SIGNAL CABLE (14 AWG); 7 CONDUCTOR, PER 1000 FT.	REEL	2
LOOP DETECTOR WIRE (14 AWG, STRANDED/1000 FT)	REEL	1
3-SECTION, 12" SIGNAL HEAD w/(5mm) LED - "INCANDESCENT LOOK" - PLASTIC	EA	6
4-SECTION, 12" SIGNAL HEAD w/(5mm) LED - "INCANDESCENT LOOK" - PLASTIC	EA	1
1-SECTION, 18" LED COUNTDOWN PEDESTRIAN SIGNAL HEAD, FULL HAND/MAN OVERLAP		
9" HIGH, Numbers & 12" Symbols	EA	6
PEDESTRIAN PUSHBUTTON STATION ADAPTERS (ONLY)		
9" x 15", Double Push Button Station Adapter for 4" Dia Pedestrian Pole, Adjustable	EA	2
PEDESTRIAN PUSHBUTTONS STATIONS, w/BUTTONS and SIGNS:		
9" x 15", R10-3e, (L)eft or (R)ight, Countdown	EA	6
BACK PLATE FOR ONE-WAY, 3-SECTION, 12" SIGNAL HEAD, ABS PLASTIC, BLACK	EA	6
BACK PLATE FOR ONE-WAY, 4-SECTION, 12" SIGNAL HEAD, ABS PLASTIC, BLACK	EA	1
HARDWARE FOR MAST ARM MOUNTING	EA	7
HARDWARE FOR PEDESTAL POLE, TOP POST MOUNTING, ONE-WAY BRACKET ASSEMBLY	EA	2
HARDWARE FOR PEDESTAL POLE, TOP POST MOUNTING, TWO-WAY BRACKET ASSEMBLY	EA	2
PEDESTAL POLE & SQUARE BASE	EA	4
PULL BOX, PB-2	EA	7
PULL BOX, PB-3	EA	4
LOOP SAW CUT	LF	410
CONDUIT, 1"	LF	55
CONDUIT, 2"	LF	115
R10-5A, LEFT TURN YIELD ON FLASHING YELLOW ARROW SIGN	EA	1
MISCELLANEOUS MATERIALS NEEDED TO COMPLETE INSTALLATION	LUMP	LUMP

ITEM #	PAY ITEM DESCRIPTION	UNIT	QUANTITY
636-1041	HIGHWAY SIGNS, TP 2 MATL, REFL SHEETING, TP 9	SF	28
639-3004	STEEL STRAIN POLE, TP IV, WITH 35' MAST ARM (BLACK POWDER COATED)	EA	2
639-3004	STEEL STRAIN POLE, TP IV, WITH 40' MAST ARM (BLACK POWDER COATED)	EA	1
647-1000	TRAFFIC SIGNAL INSTALLATION #1	LUMP	LUMP
682-6233	CONDUIT, NONMETAL, TYPE 3, 2 IN	LF	1260
682-9950	DIRECTIONAL BORE, 3 IN	LF	668
682-9950	DIRECTIONAL BORE, 5 IN	LF	95
682-9950	DIRECTIONAL BORE, 7 IN	LF	76

STREET NAME SIGNS



D3-1(1)
1 EA REQ'D

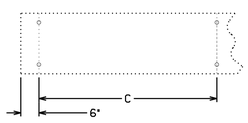


D3-1(2)
2 EA REQ'D

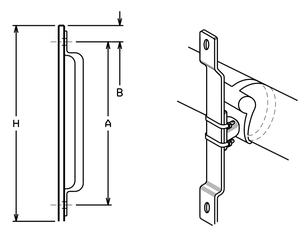
GENERAL SIGN NOTES:

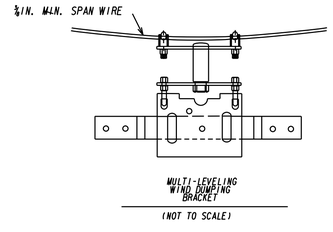
1. EACH SIGN SHALL CONTAIN A MINIMUM OF TWO (2) HANGERS OR BRACKETS.
2. SIGN LEGEND SHALL BE 11-IN. UPPER CASE & 8.25-IN. LOWER CASE SERIES "D" LETTERS ALL ARROWS SHALL BE 10-IN. TALL & 12-IN. LONG
3. EACH SIGN SHALL CONTAIN 1 1/2-IN RADII.
4. EACH SIGN SHALL BE MADE OF ONE CONTINUOUS PIECE OF ALUMINUM.
5. SIGNS SHALL HAVE STANDARD REFLECTORIZED INTERSTATE GREEN BACKGROUND WITH WHITE REFLECTORIZED LEGENDS, BORDERS AND ARROWS.

MOUNTING DIMENSIONS			
H	A	B	C
12"	9"	1½"	36"
18"	15"	1½"	24"
24"	18"	1½"	18"
30"	24"	3"	12"



FOR MOUNTING TO MAST ARMS STRUCTURES.
(NOT TO SCALE)
NOTE: USE ASTRO MINI SIGN BRAC AND CLAMP OR EQUIVALENT





MULTI-LEVELING WIND DAMPING BRACKET
(NOT TO SCALE)

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

SIGNAL PLANS
INPUT ASSIGNMENTS AND MATERIALS

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

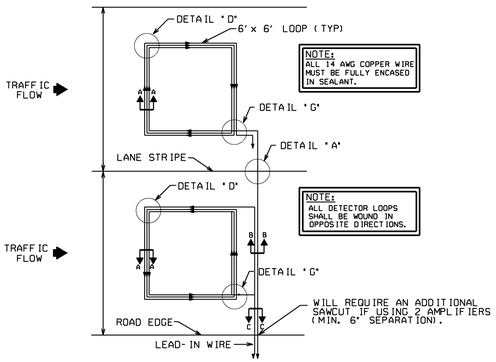
DRAWING No. 27-004

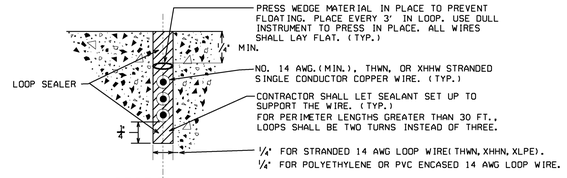
STATE	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.				

INDUCTIVE LOOP VEHICLE DETECTOR DETAILS

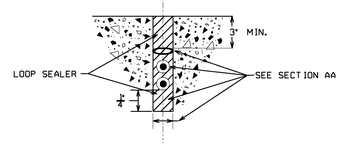
USING STRANDED COPPER WIRE

PLAN VIEW OF STANDARD LOOP SAW CUTS

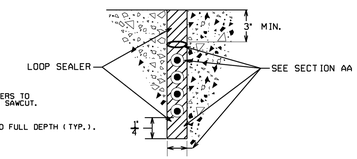




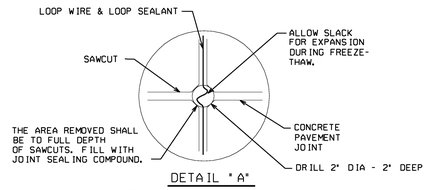
SECTION AA



SECTION BB

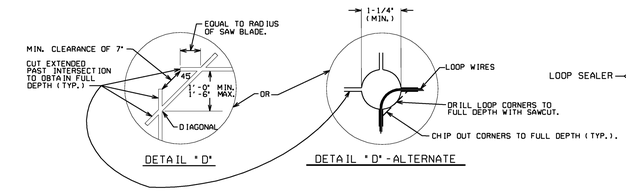


SECTION CC

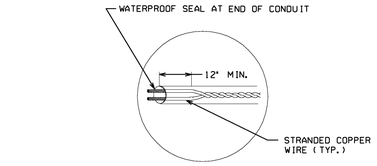


DETAIL "A"

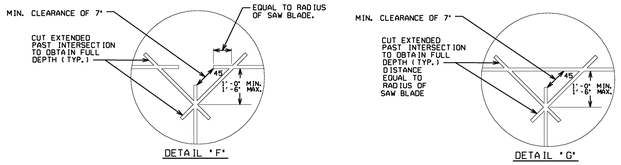
NOTE: USE FOR CONCRETE PAVEMENT ONLY.



DETAIL "D" DETAIL "D"-ALTERNATE

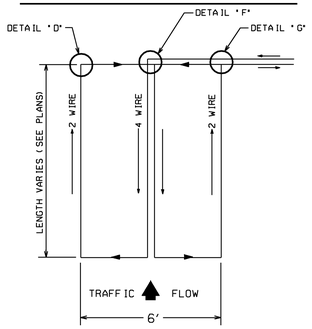


DETAIL "E"



DETAIL "F" DETAIL "G"

PLAN VIEW OF QUADRUPOLE

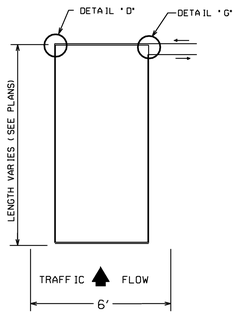


NO SCALE

LOOP WIRE CONFIGURATION

THE DOUBLE LAYER CONFIGURATION (2-4-2) SHOWN IS A MINIMUM DESIGN FOR NORMAL INSTALLATIONS WHEN REQUIRED BY THE PLANS.

PLAN VIEW OF STANDARD LOOP



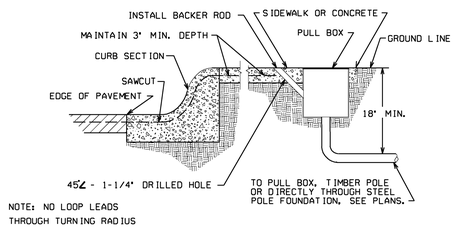
NO SCALE

LOOP WIRE CONFIGURATION

THE DOUBLE LAYER CONFIGURATION (2-2) SHOWN IS A MINIMUM DESIGN FOR NORMAL INSTALLATIONS WHEN REQUIRED BY THE PLANS.

TYPICAL CURB DETAIL

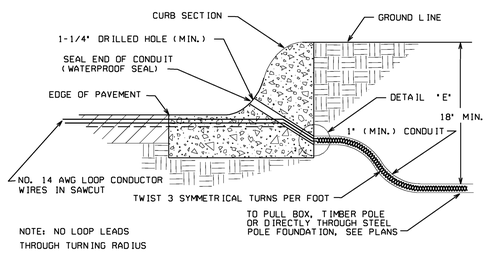
(WITH SIDEWALK)



NOTE: NO LOOP LEADS THROUGH TURNING RADIUS

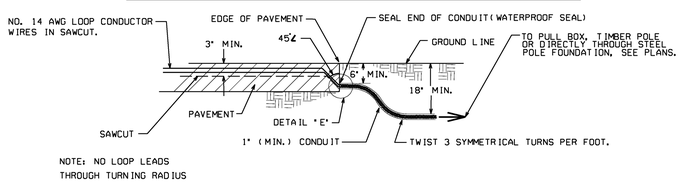
TYPICAL CURB DETAIL

(WITHOUT SIDEWALK)



NOTE: NO LOOP LEADS THROUGH TURNING RADIUS

DETAIL WHERE NO CURB EXISTS



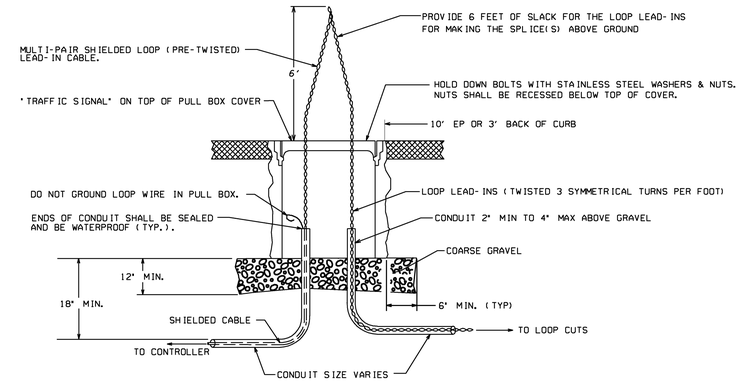
NOTE: NO LOOP LEADS THROUGH TURNING RADIUS

NOTE:
INDUCTIVE LOOPS SHALL NOT BE INSTALLED IN A BRIDGE DECK.
LOOPS MAY BE INSTALLED IN AN APPROACH SLAB.

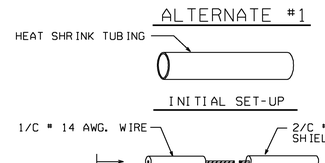
Guidelines For Usage On Metric Projects

When these details are incorporated into plans and or projects that are being prepared or constructed in metric units, exact or precise conversion to metric units is not required. The dimensions shown that are in feet and inches may be converted to corresponding metric units using the following "Rounded-Off" conversion factors: 1"=25mm, 4"=100mm, and 12" or 1'=300mm. All measurement notes that refer to linear feet and square yards shall be interpreted to mean linear meters and square meters.

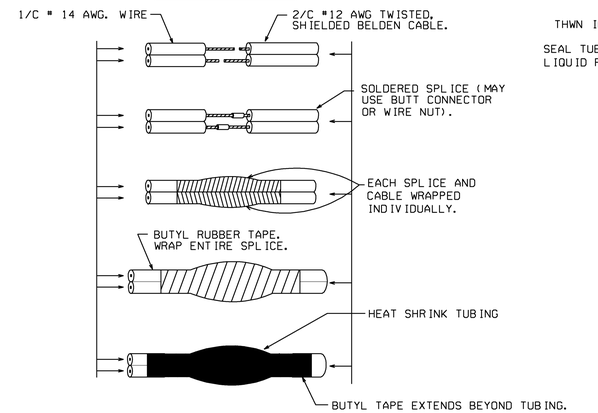
PULL BOX-SPLICE DETAILS

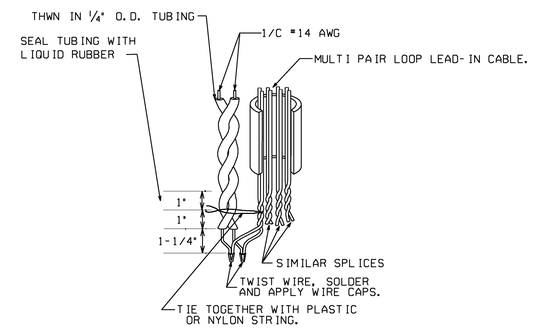


SPLICE DETAILS



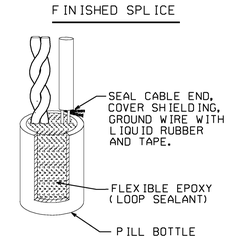
ALTERNATE #2





NOTE:
FINISHED SPLICE MUST BE WATERPROOF.

FINISHED SPLICE



REV. BY:	REVISION DESCRIPTION	DATE

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

TRAFFIC SIGNAL DETAIL

INDUCTIVE-LOOP

DETECTOR INSTALLATION

APRIL 2010

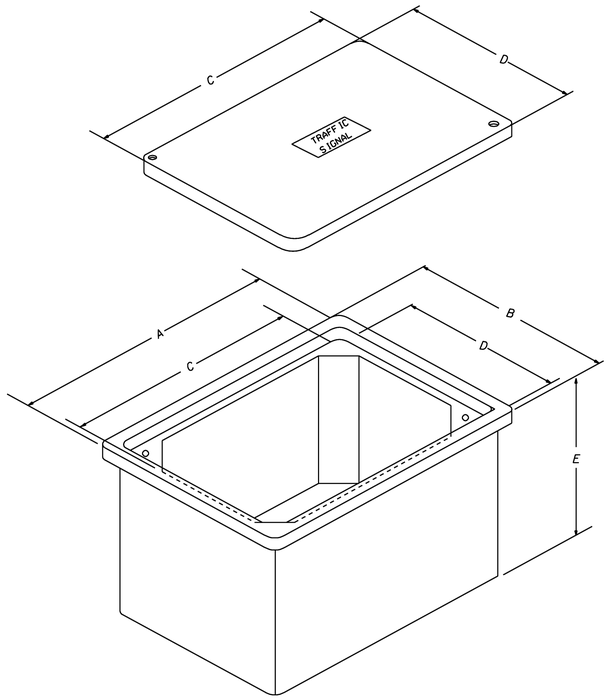
NOT TO SCALE - REPORT ERRORS

DETAIL NUMBER

TS-01

STATE	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.				

PULLBOX TYPES 1, 2 AND 3



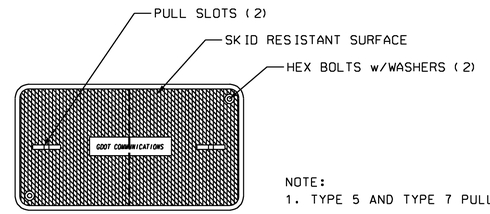
PULL BOX TYPE	* SIZE (IN.)				
	A	B	C	D	E
1	14	14	12	12	12
2	21	14	18	11	12
3	33	20	30	17	12
4S	38	26	36	24	18
4	38	26	36	24	36
5S	50	32	48	30	18
5	50	32	48	30	36
6	38	26	36	24	36
7	50	32	48	30	36

NOTES:
1. SIZES SHOWN ARE MINIMUM TRADE SIZES.
2. DIMENSIONS "C" AND "D" ARE MINIMUM REQUIREMENTS WITH A TOLERANCE OF NO MORE THAN (-.050 IN/ + 2 IN)
3. EXTEND COARSE GRAVEL 6" BEYOND BASE OF PULL BOX
4. PULL BOXES TYPE 4, 4S, 5, 5S, 6 & 7 SHALL HAVE 1° (DEGREE) FLARES FOR MAXIMUM STRENGTH
5. DESIGN PULL BOXES TO MEET OR EXCEED THE TIER LOADING SET FORTH IN SPECIFICATIONS 647.

Guidelines For Usage On Metric Projects

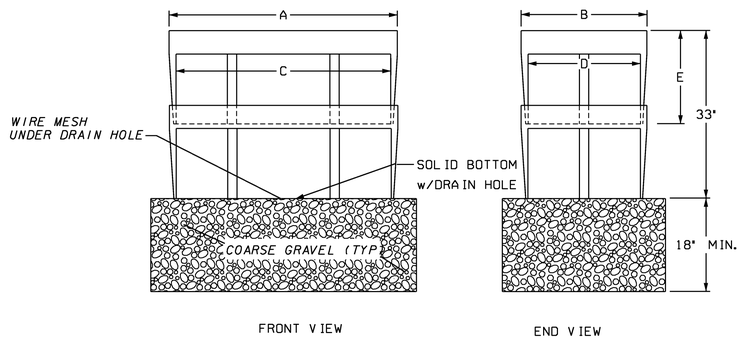
When these details are incorporated into plans and or projects that are being prepared or constructed in metric units, exact or precise conversion to metric units is not required. The dimensions shown that are in feet and inches may be converted to corresponding metric units using the following "Rounded-Off" conversion factors: 1" =25mm, 4"=100mm, and 12" or 1' =300mm. All measurement notes that refer to linear feet and square yards shall be interpreted to mean linear meters and square meters.

TYPE 4, 5, 4S, 5S, 6, AND 7 PULLBOX ASSEMBLIES



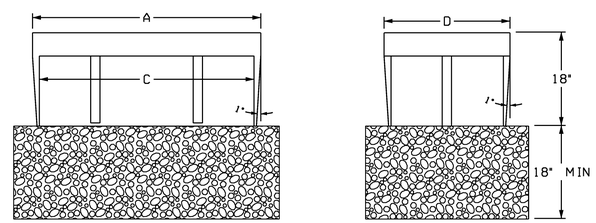
TOP VIEW

NOTE:
1. TYPE 5 AND TYPE 7 PULL BOXES SHALL HAVE SPLIT LID

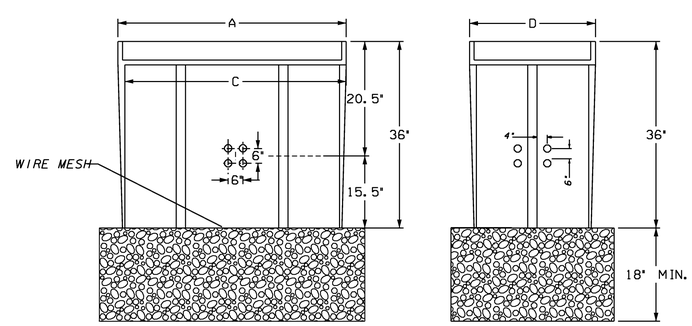


FRONT VIEW END VIEW

TYPE 4 AND 5 STACKABLE ASSEMBLY

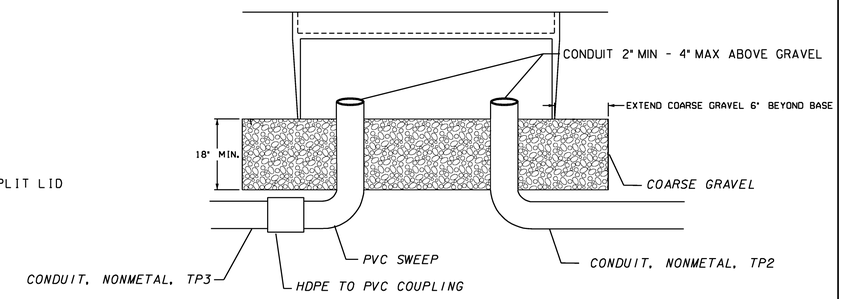


TYPE 4S AND 5S



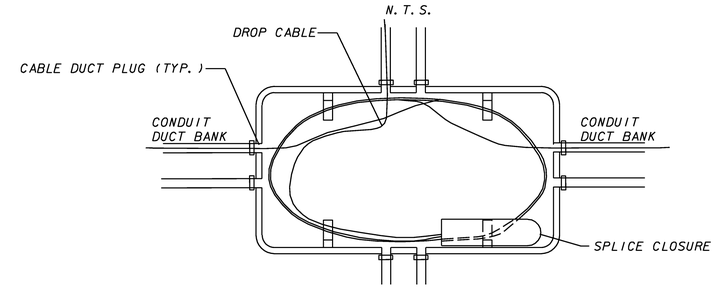
TYPE 6 AND 7

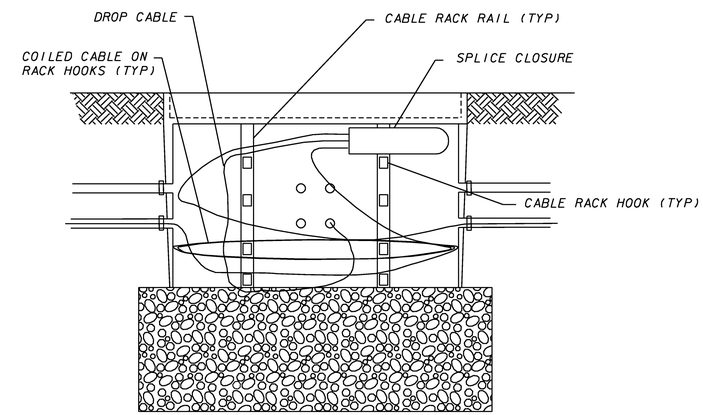
TYPICAL CONDUIT ENTRANCE DETAILS
TYPE 1,2,3,4S & 5S



FIBER OPTIC CABLE MANAGEMENT IN TYPE 4,5,6 & 7 PULL BOX

N. T. S.





FIBER TRUNK AND DROP CABLE IN CLOSURE SHALL BE COILED TOGETHER. SEPARATE FIBER CABLES SHALL BE COILED SEPARATELY AND SUPPORTED ON SEPARATE RACK HOOKS.

DATE	REVISION	BY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

TRAFFIC SIGNAL DETAIL

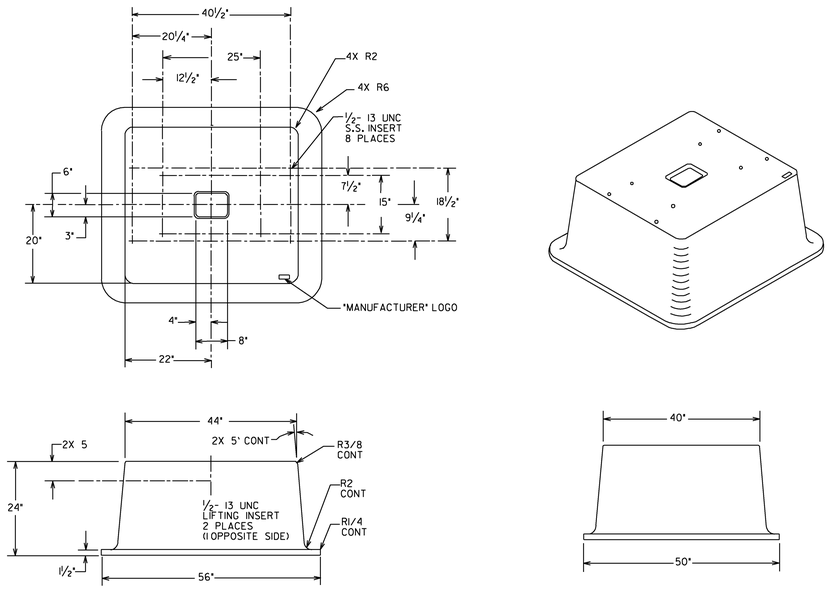
PULLBOX ASSEMBLY AND INSTALLATION

APRIL 2010

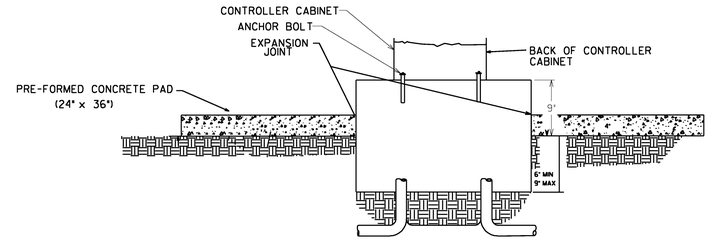
NOT TO SCALE - REPORT ERRORS

DETAIL NUMBER
TS-02

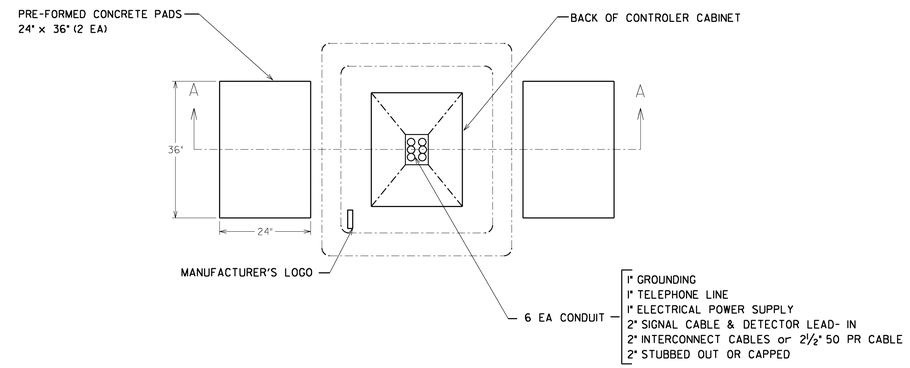
STATE	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.				

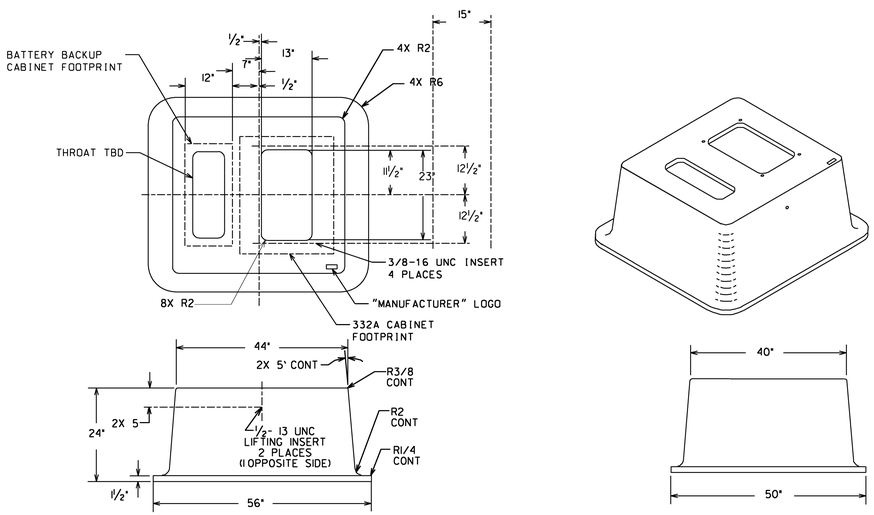


PREFABRICATED 332 CONTROLLER BASE

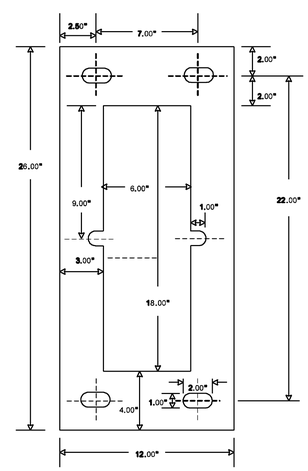


SECTION A-A



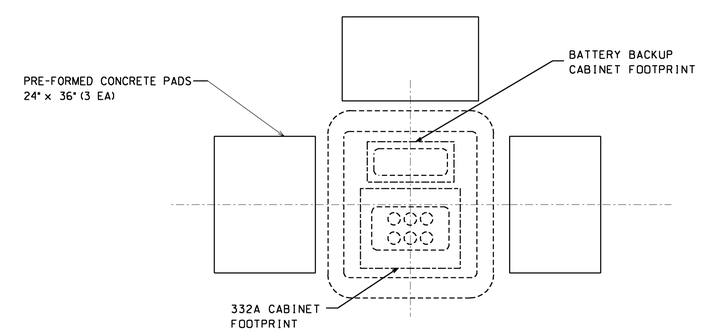


PREFABRICATED CONTROLLER BASE
WITH BATTERY BACKUP BASE MOUNT EXTENSION



BATTERY BACKUP BASE MOUNT
CABINET ANCHOR BOLT PATTERN

NOTE: MODEL 332 CONTROLLER CABINETS
WITH BATTERY BACKUPS REQUIRES THREE PADS



Guidelines For Usage On Metric Projects

When these details are incorporated into plans and or projects that are being prepared or constructed in metric units, exact or precise conversion to metric units is not required. The dimensions shown that are in feet and inches may be converted to corresponding metric units using the following "Rounded-Off" conversion factors: 1" =25mm, 4"=100mm, and 12" or 1' =300mm. All measurement notes that refer to linear feet and square yards shall be interpreted to mean linear meters and square meters.

REV. BY:	REVISION DESCRIPTION	DATE

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

TRAFFIC SIGNAL DETAIL

CABINET BASE DETAIL

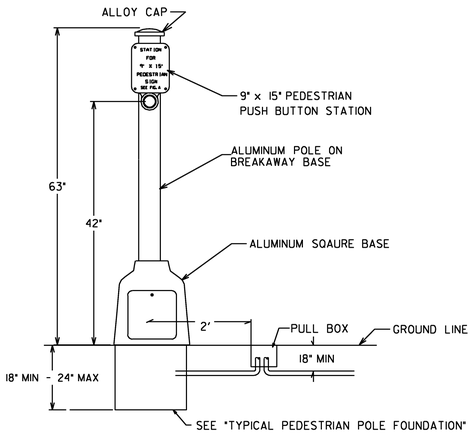
APRIL 2010

NOT TO SCALE - REPORT ERRORS

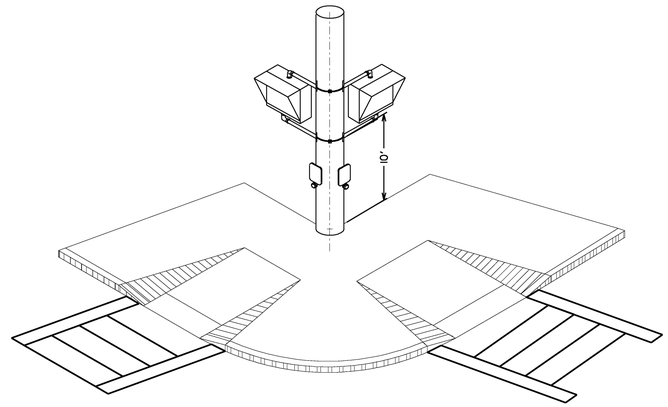
DETAIL NUMBER

TS-03

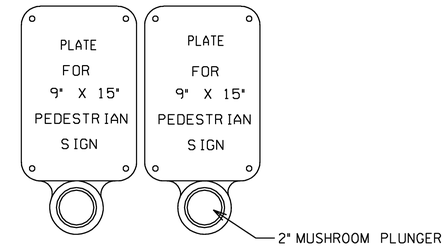
STATE	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.				



PEDESTRIAN PUSH BUTTON POST

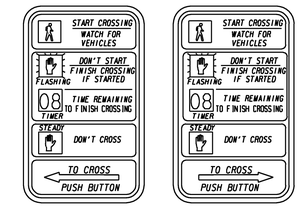


PEDESTRIAN SIGNAL HEAD ORIENTATION FOR SIDE OF POLE MOUNTING

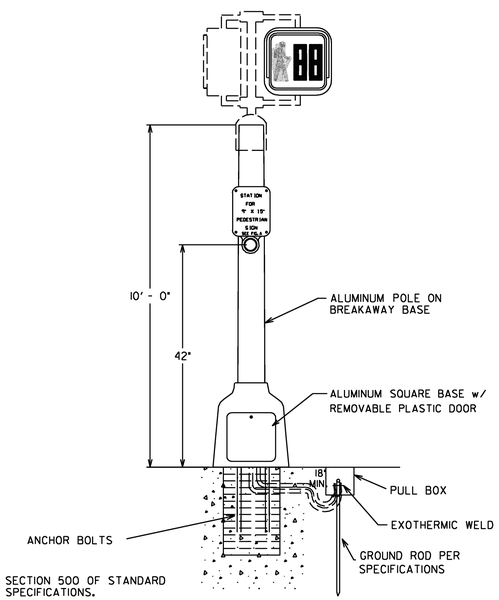


A "PUSH BUTTON STATION" IS THAT PIECE OF EQUIPMENT THAT CONTAINS THE PEDESTRIAN INSTRUCTIONAL SIGN PLATE AND THE PUSH BUTTON

PEDESTRIAN PUSH BUTTON STATION

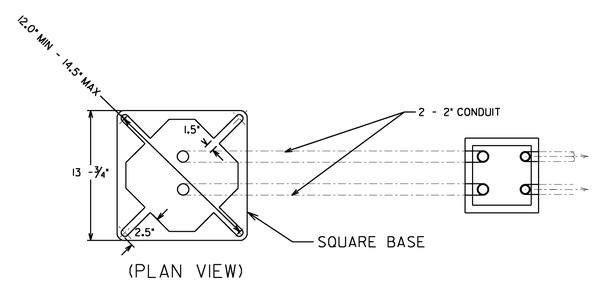


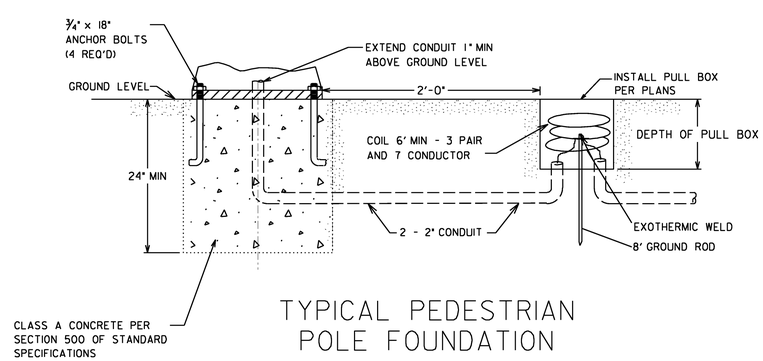
PEDESTRIAN SIGNS



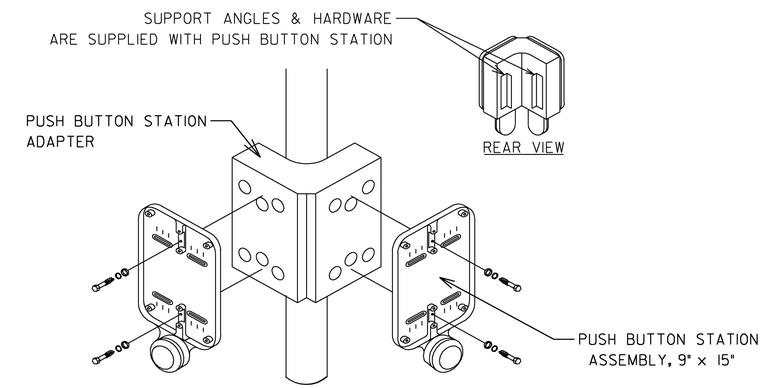
DETAIL FOR PEDESTRIAN SIGNAL POLES

INSTALL PEDESTRIAN SIGNAL HEADS SO THAT VEHICLES MAKING TURNS WILL NOT DAMAGE THE EQUIPMENT





TYPICAL PEDESTRIAN POLE FOUNDATION



DOUBLE PUSH BUTTON STATION ADAPTER FOR 4" DIA. PEDESTRIAN POLE

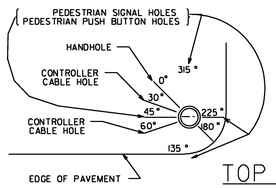
NOTE:
DETAILS SHOWN IS FOR TOP POST MOUNTING ASSEMBLY ON 10 FEET PEDESTRIAN POLE.
A CLAMSHELL MOUNTING ASSEMBLY (NOT SHOWN) MAY BE USED AS APPROVED BY THE DEPARTMENT.
THE CLAMSHELL MOUNTING HARDWARE ASSEMBLY SHALL MEET THE SAME GDOT STANDARDS AS THE PEDESTRIAN SIGNAL HOUSING IN PAINT AND MATERIAL.

Guidelines For Usage On Metric Projects

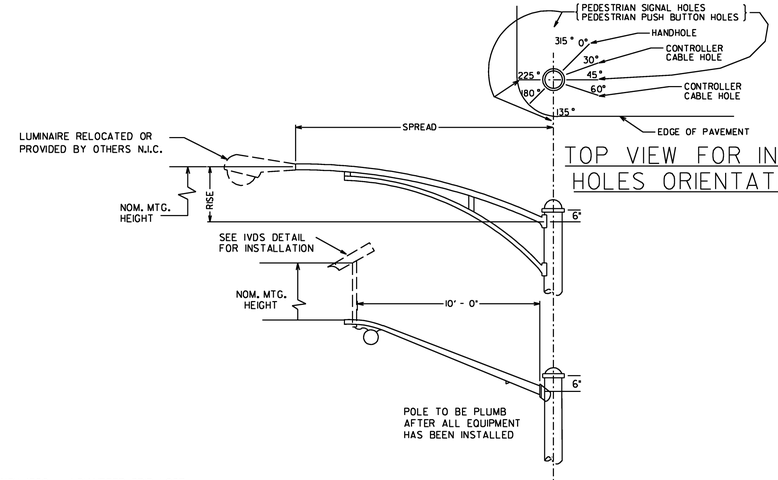
When these details are incorporated into plans and or projects that are being prepared or constructed in metric units, exact or precise conversion to metric units is not required. The dimensions shown that are in feet and inches may be converted to corresponding metric units using the following "Rounded-Off" conversion factors: 1" =25mm, 4"=100mm, and 12" or 1' =300mm. All measurement notes that refer to linear feet and square yards shall be interpreted to mean linear meters and square meters.

REV. BY:	REVISION DESCRIPTION	DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
			TRAFFIC SIGNAL DETAIL *PEDESTRIAN FACILITIES INSTALLATION DETAILS*
			APRIL 2010 NOT TO SCALE - REPORT ERRORS
			DETAIL NUMBER TS-03A

STATE	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.				



TOP VIEW FOR INLET HOLES ORIENTATION



TOP VIEW FOR INLET HOLES ORIENTATION

NOTES:

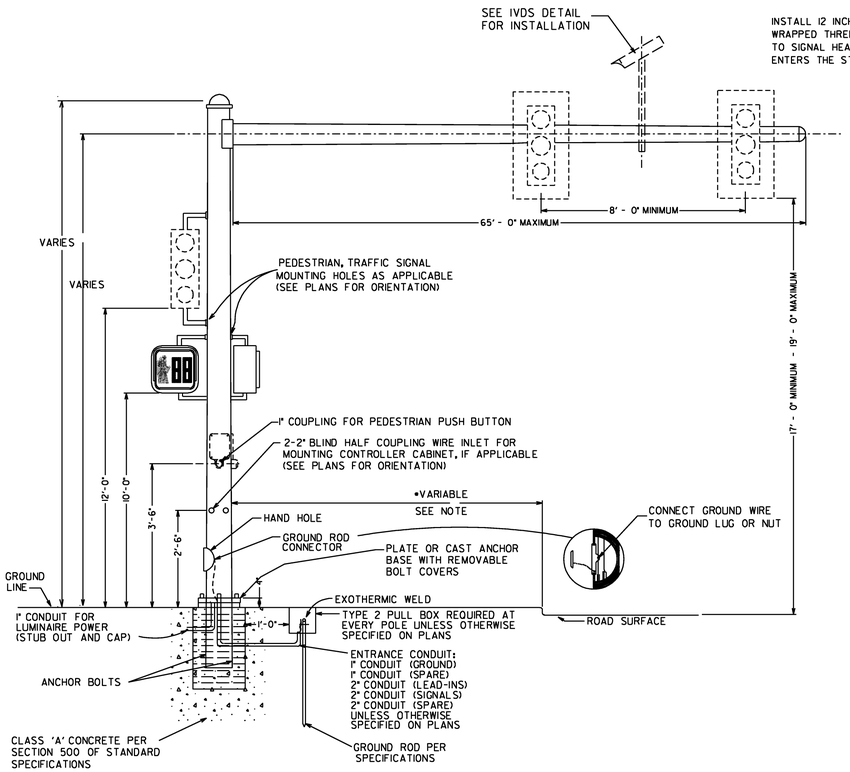
DRAWINGS AND OTHER DATA INDICATING POLE DIMENSIONS AND DESIGN TOGETHER WITH DESIGN OF BASE SHALL BE PREPARED BY THE CONTRACTOR AND APPROVED BY THE DEPT. ENGINEER, PER SPECIFICATIONS AND DETAILS.

FOUNDATION SIZE AND REINFORCING SHALL BE DETERMINED FROM THE "STRAIN POLE FOUNDATIONS" SHEET WITH THE USE OF THE BENDING MOMENT AT YIELD PROVIDED BY POLE MANUFACTURER.

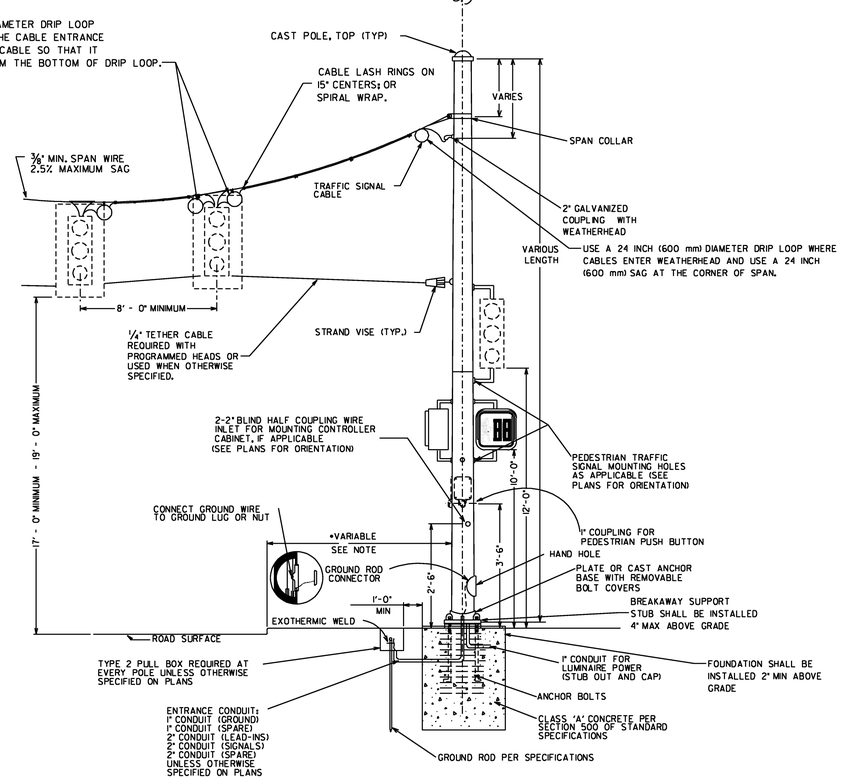
ALL HOLES IN MAST ARMS MUST BE FABRICATED BY THE MANUFACTURER. SEE SECTION 925 OF STANDARD SPECIFICATIONS REGARDING RIGID MOUNTING HARDWARE FOR SIGNAL HEADS.

WHEN POLES ARE LOCATED ON ALL CORNERS, LUMNARIES ARE TO BE INSTALLED PERPENDICULAR TO THE FAR SIDE APPROACHING TRAFFIC.

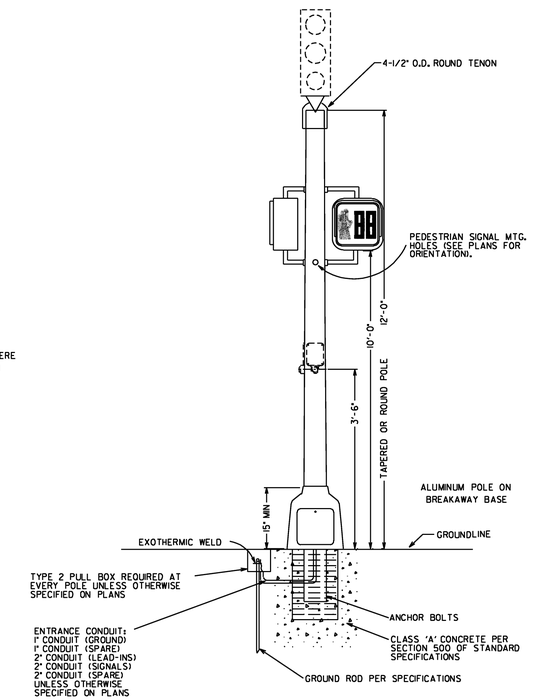
WHEN LUMINARIES ARE ONLY BEING INSTALLED ON TWO CORNERS, THEY SHOULD BE INSTALLED PERPENDICULAR TO THE FAR SIDE APPROACHING TRAFFIC ON THE MAJOR APPROACH.



TYPICAL MAST ARM POLE DETAIL



TYPICAL STEEL STRAIN POLE DETAIL



PEDESTAL POLE MOUNTED SIGNAL HEAD

*NOTE:

CLEAR-ZONE WIDTH REQUIREMENTS ARE BASED ON AVERAGE DAILY TRAFFIC AND VEHICLE SPEEDS. SEE THE AASHTO "ROADSIDE DESIGN GUIDE" FOR GUIDANCE ON DESIGN OF CLEAR-ZONE AREAS.

FOUNDATIONS SHALL BE INSTALLED ABOVE GRADE, BUT NOT EXCEED 4" MAXIMUM STUB HEIGHT TO LESSEN SNAGGING OF THE UNDERCARRIAGE OF A VEHICLE

Guidelines For Usage On Metric Projects

When these details are incorporated into plans and or projects that are being prepared or constructed in metric units, exact or precise conversion to metric units is not required. The dimensions shown that are in feet and inches may be converted to corresponding metric units using the following "Rounded-Off" conversion factors: 1" =25mm, 4"=100mm and 12" or 1' =300mm. All measurement notes that refer to linear feet and square yards shall be interpreted to mean linear meters and square meters.

DATE	REVISION DESCRIPTION	REV. BY:

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

TRAFFIC SIGNAL DETAIL

DETAILS OF METAL TRAFFIC SIGNAL SUPPORT STRUCTURES

APRIL 2010

NOT TO SCALE - REPORT ERRORS

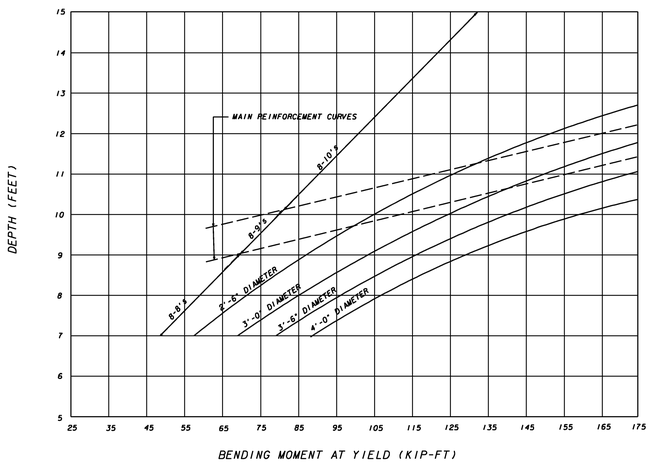
DETAIL NUMBER

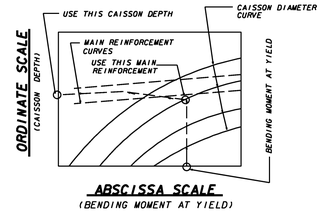
TS-04

STATE	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.				

PIEDMONT

γ = 120 PCF
ϕ = 25 DEGREES
C = 300 PCF



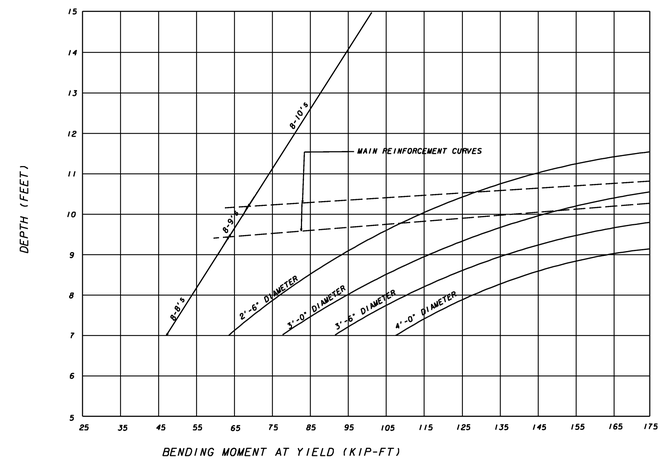


PROCEDURE TO FIND FOOTING SIZE

1. DETERMINE "BENDING MOMENT AT YIELD" FROM APPROVED SHOP DRAWINGS
2. SELECT DIAMETER OF CAISSON.
3. READ "BENDING MOMENT AT YIELD" ON ABSCISSA SCALE. PROJECT A VERTICAL LINE UPWARD UNTIL THE DESIRED "CAISSON DIAMETER CURVE" IS INTERSECTED. TURN 90 DEGREES AND PROJECT A HORIZONTAL LINE UNTIL THE ORDINATE SCALE IS INTERSECTED.
4. READ THE REQUIRED " CAISSON DEPTH" FROM THE INTERSECTION POINT ON THE ORDINATE SCALE DEPTH SHALL BE INTERPOLATED TO THE NEAREST 3 INCH INCREMENT.
5. READ THE REQUIRED "MAIN REINFORCEMENT SIZE" FROM THE INTERSECTION POINT ON THE CAISSON DIAMETER CURVE.

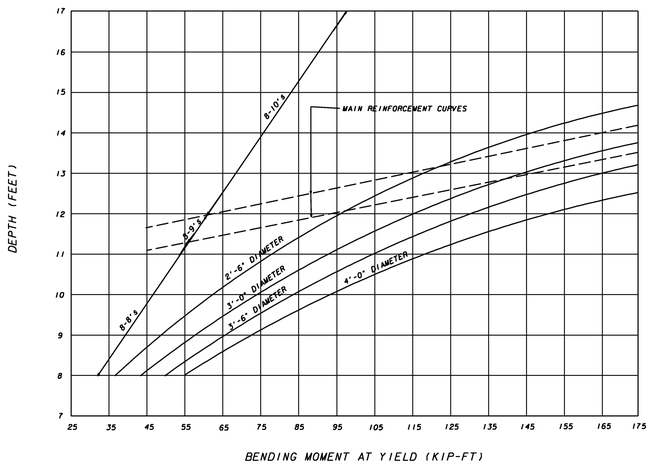
VALLEY & RIDGE

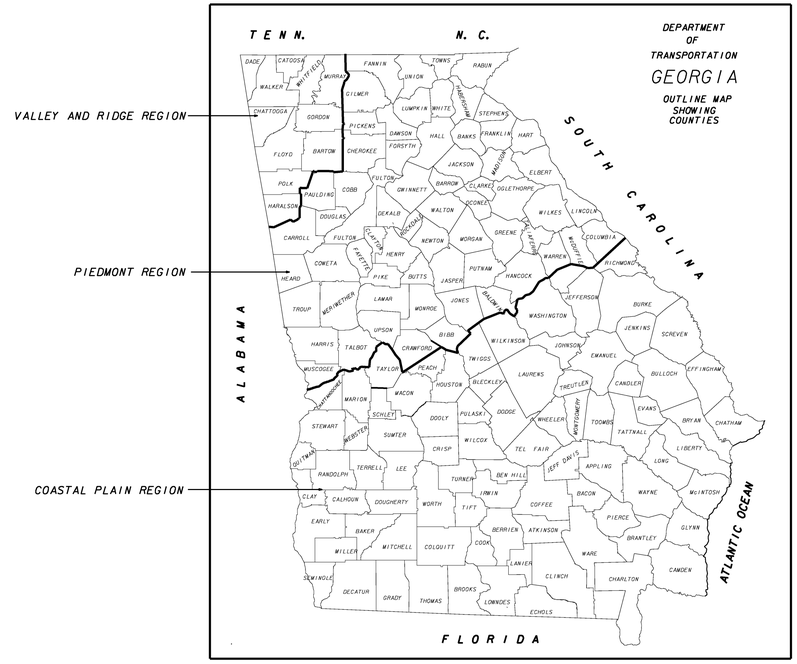
γ = 115 PCF
ϕ = 18 DEGREES
C = 750 PSF



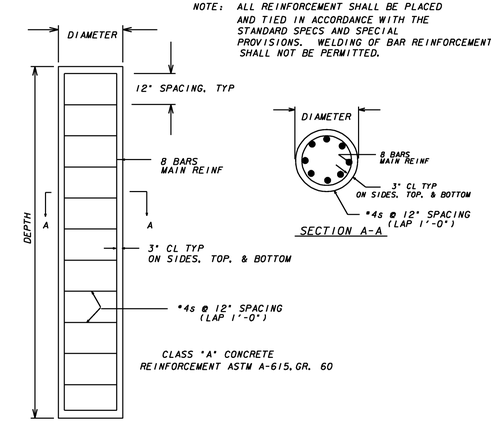
COASTAL PLAIN

γ = 120 PCF
ϕ = 32 DEGREES
C = 0 PCF





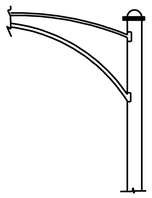
NOTE: ALL REINFORCEMENT SHALL BE PLACED AND TIED IN ACCORDANCE WITH THE STANDARD SPECS AND SPECIAL PROVISIONS. WELDING OF BAR REINFORCEMENT. SHALL NOT BE PERMITTED.

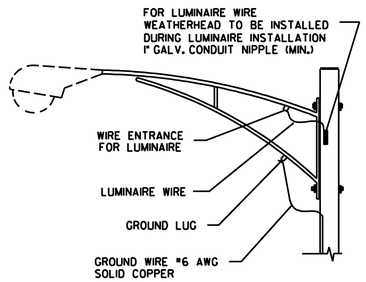


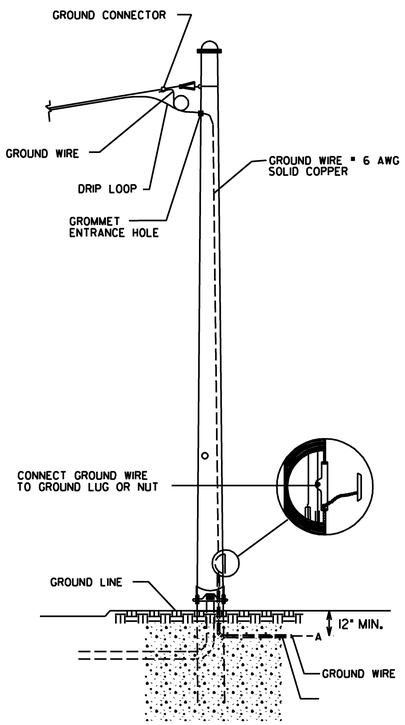
CAISSON DETAIL

REV. BY:	REVISION DESCRIPTION	DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
			TRAFFIC SIGNAL DETAIL DETAILS OF STRAIN POLE AND MAST ARM FOUNDATIONS
			APRIL 2010 NOT TO SCALE - REPORT ERRORS
			DETAIL NUMBER TS-06

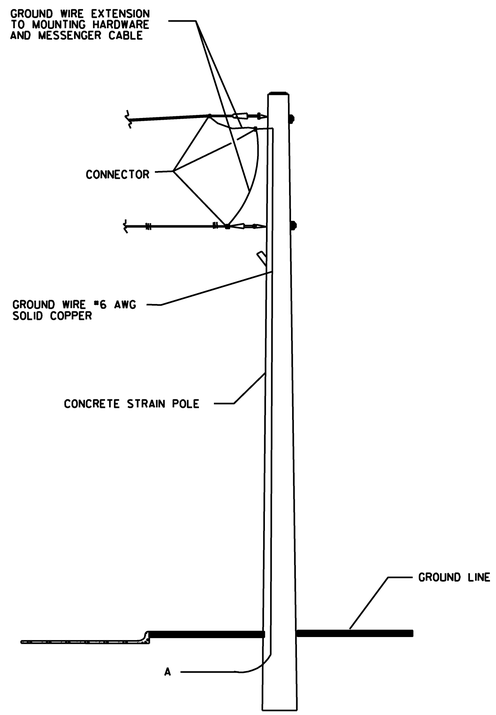
STATE	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.				





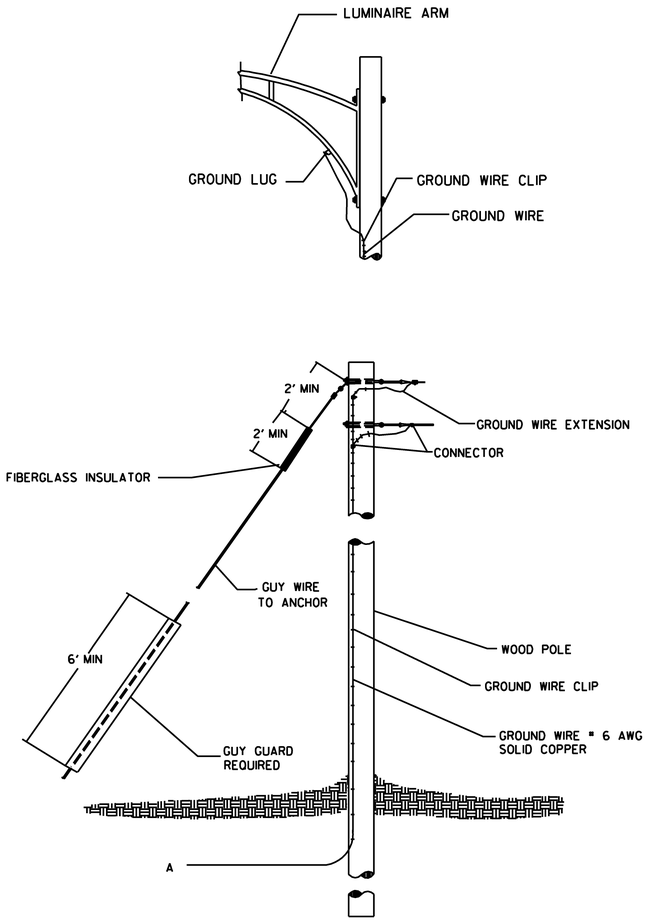


STEEL STRAIN POLE

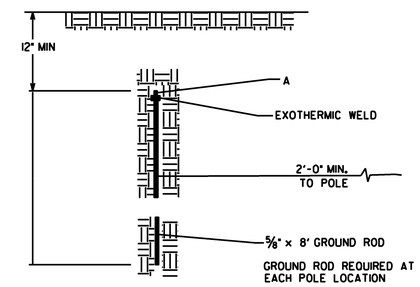


CONCRETE STRAIN POLE

OVERHEAD SIGN GROUNDING SYSTEM SHALL CONFORM TO SECTION 647



TIMBER POLE



GROUNDING DETAIL

Guidelines For Usage On Metric Projects

When these details are incorporated into plans and or projects that are being prepared or constructed in metric units, exact or precise conversion to metric units is not required. The dimensions shown that are in feet and inches may be converted to corresponding metric units using the following "Rounded-Off" conversion factors: 1"=25mm, 4"=100mm, and 12" or 1'=300mm. All measurement notes that refer to linear feet and square yards shall be interpreted to mean linear meters and square meters.

DATE	REVISION DESCRIPTION	REV. BY:

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

TRAFFIC SIGNAL DETAIL

GROUNDING DETAILS FOR TRAFFIC SIGNAL SUPPORT STRUCTURES 1

APRIL 2010

NOT TO SCALE - REPORT ERRORS

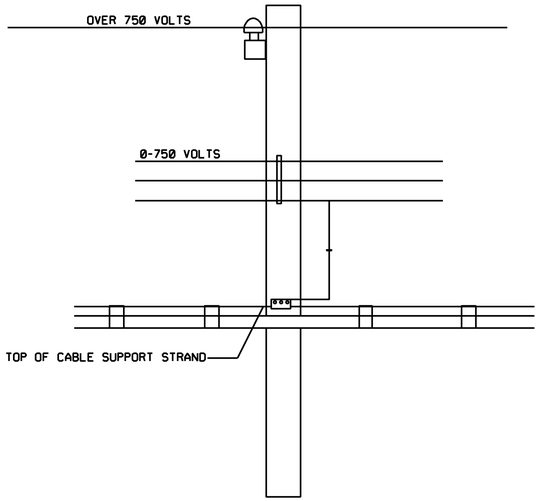
DETAIL NUMBER

TS-07

STATE	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.				

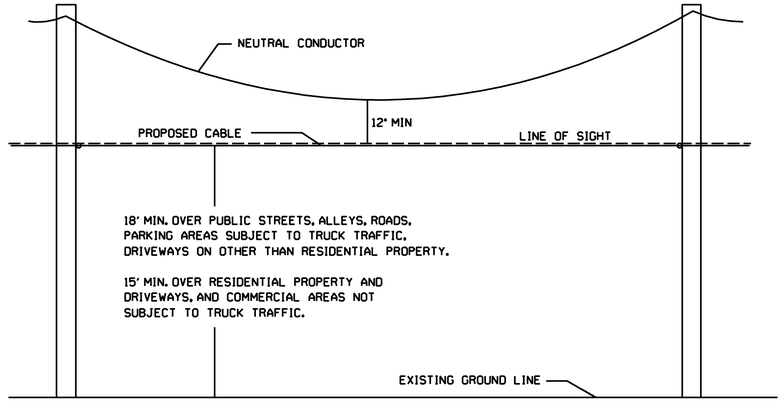
TYPICAL DETAIL "A"

TYPICAL POWER SEPARATION AT POLE



TYPICAL DETAIL "B"

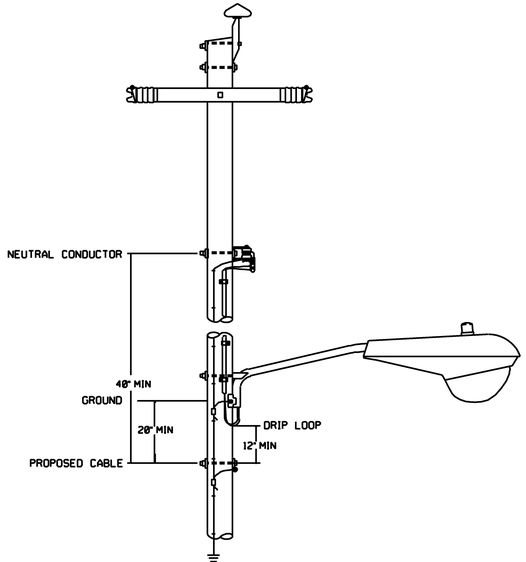
SEPARATION REQUIREMENTS FOR MID-SPAN AND AT CROSSINGS



THE VERTICAL SEPARATION FROM NEUTRAL CONDUCTORS SHALL BE INCREASED SO THAT THE LOWEST POINT OF THE NEUTRAL CONDUCTOR (IN THE SPAN OR AT THE CROSSING) WILL BE AT LEAST 12 INCHES ABOVE THE COMMUNICATION CABLE ATTACHMENT LEVEL (LINE OF SIGHT) AS ILLUSTRATED ABOVE.

TYPICAL DETAIL "C"

STREET LIGHT BRACKET SEPARATION
NOTE: SEE TABLE BELOW



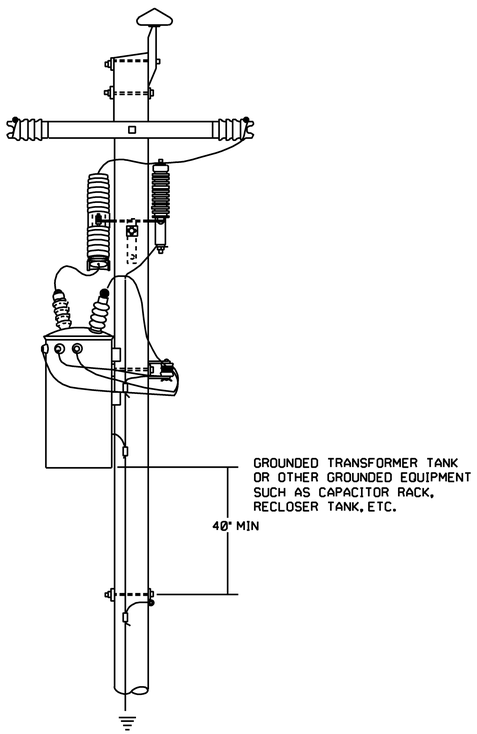
VERTICAL CLEARANCES AT THE POLE FOR SPAN WIRES AND BRACKETS FOR STREET LIGHTS (RULE 238C)

TYPE OF CLEARANCE	CLEARANCE (IN.)			
	IF EFFECTIVELY GROUNDED	IF NOT EFFECTIVELY GROUNDED		
		FOR LUMINAIRES		FOR TROLLEY CONDUCTORS
		UP TO 150V	OVER 150V	
ABOVE COMMUNICATION CROSS ARMS	20 (A)	20 (A)	20 (A)	20 (A)
BELOW COMMUNICATION CROSS ARMS	24	24	40	24
ABOVE COMMUNICATION CABLES	4	20 (A)	20 (A)	12
BELOW COMMUNICATION CABLES	4	20	40	12
FROM COMMUNICATION TERMINAL BOXES	4	20 (A)	20 (A)	12 (B)
FROM COMMUNICATION BRACKETS BRIDLE WIRE RINGS, AND DRIVE HOOKS	4	16 (A)	16 (A)	4

NOTES A. MAY BE REDUCED TO 12 IN. FOR WIRES OR PARTS OF BRACKETS 40 IN. OR MORE FROM SURFACE OF POLE
B. IF OBTAINABLE IF NOT, MAXIMUM OBTAINABLE

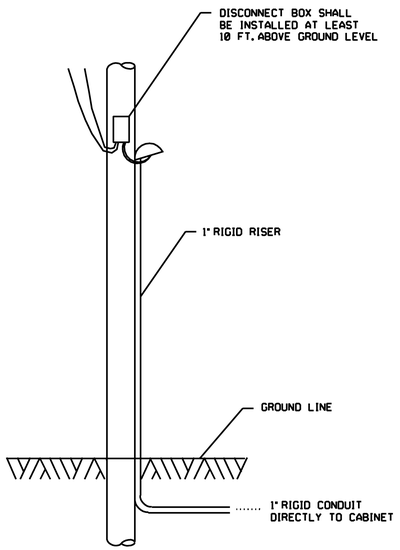
TYPICAL DETAIL "D"

TYPICAL TRANSFORMER AND POWER RISER SEPARATION WITHOUT GUARD ARM



TYPICAL DETAIL "E"

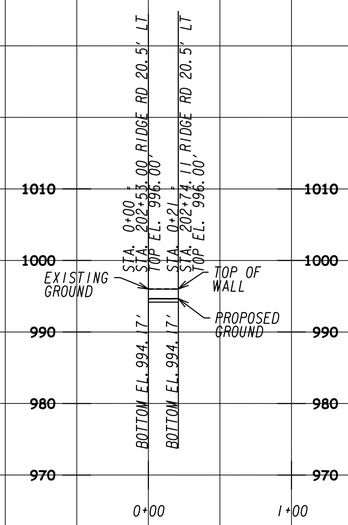
TYPICAL DISCONNECT BOX INSTALLATION



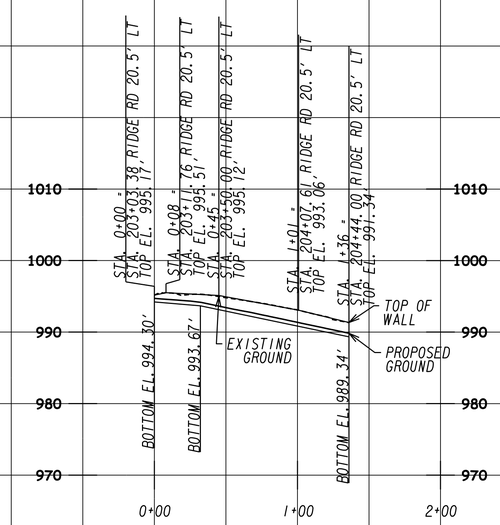
Guidelines For Usage On Metric Projects

When these details are incorporated into plans and or projects that are being prepared or constructed in metric units, exact or precise conversion to metric units is not required. The dimensions shown that are in feet and inches may be converted to corresponding metric units using the following "Rounded-Off" conversion factors: 1" =25mm, 4"=100mm, and 12" or 1' =300mm. All measurement notes that refer to linear feet and square yards shall be interpreted to mean linear meters and square meters.

DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
REVISION DESCRIPTION	TRAFFIC SIGNAL DETAIL *UTILITY CLEARANCE DETAIL*
REV. BY:	*APRIL 2010* NOT TO SCALE - REPORT ERRORS
	DETAIL NUMBER TS-08



RETAINING WALL #1
SEE DETAIL SHEET 5-003



RETAINING WALL #2
SEE DETAIL SHEET 5-003

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

HORIZONTAL SCALE 1"=50'
VERTICAL SCALE 1"=10'

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

RETAINING WALL ENVELOPES

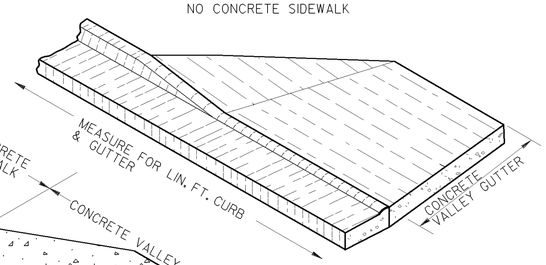
BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No.
31-001

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

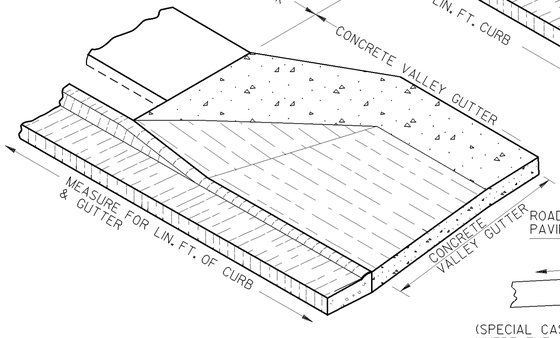
PICTORIAL SECTION

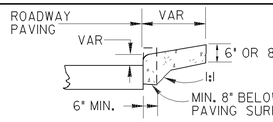
NO CONCRETE SIDEWALK



PICTORIAL SECTION

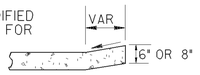
DRIVEWAY & CONRETE SIDEWALK





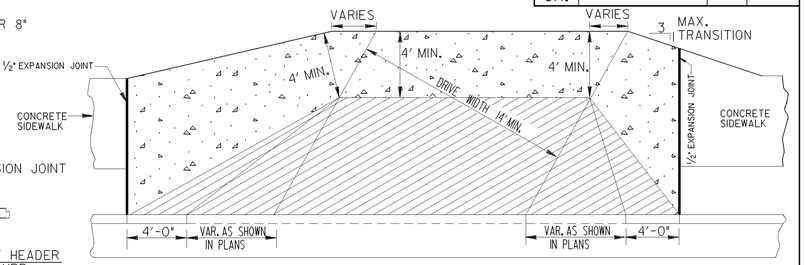
SECTION E-E

NOTE:
PLAN VIEW DETAILS NOT SHOWN FOR MODIFIED DRIVES WILL BE SIMILAR TO THAT SHOWN FOR STANDARD DRIVEWYS AT BOTTOM.

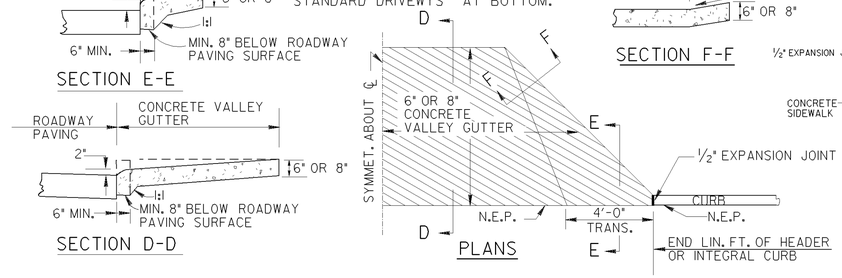


SECTION F-F

NOTE: DRIVEWAYS WILL NOT BE SKEWED EXCEPT WHERE PERPENDICULAR ALIGNMENT IS NOT FEASIBLE.



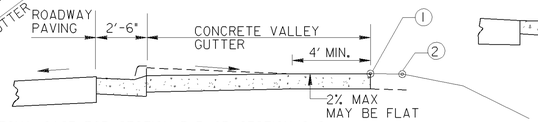
DRIVE ENTRANCE MODIFIED FOR SKEW



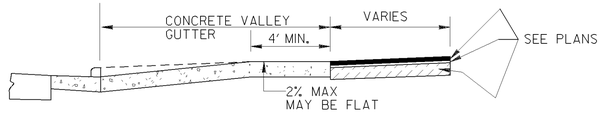
SECTION D-D

PLANS

DRIVE MODIFIED FOR HEADER OR INTEGRAL CURB ALONG ROADWAY



(SPECIAL CASE FOR SECTION B-B OR SECTION C-C: WHERE THE SHOULDER OR SIDEWALK IS SLOPED AWAY FROM THE ROAD)

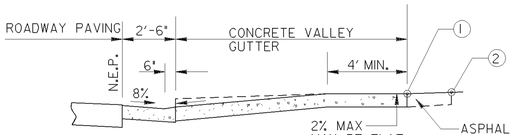


SECTION WITH ASPHALT PAVING

① IS THE BACK OF SIDEWALK SURFACE GRADE OR THE SHOULDER SURFACE GRADE 10'-0" BACK OF THE CURB, SLOPE OF THE CONCRETE VALLEY GUTTER WILL BE SUCH THAT THE BACK OF THE DRIVEWAY TAPER WILL BE THE SAME ELEVATION.

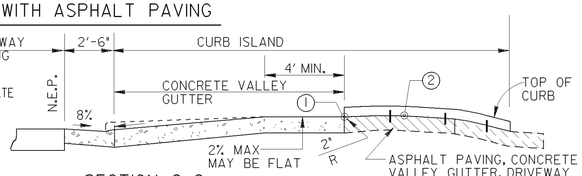
② IS BEGINNING OF DRIVEWAY TIE-IN.

NOTE: ① AND ② MAY COINCIDE



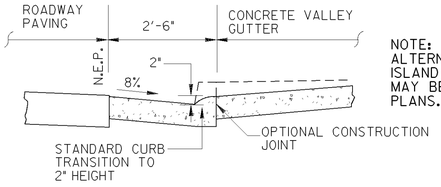
SECTION B-B

ASPHALT PAVING, DRIVEWAY CONCRETE, OR EXISTING PAVEMENT, AS SPECIFIED IN THE PLANS. ALL DRIVEWAYS WITHIN THE RIGHT OF WAY SHALL BE PAVED.

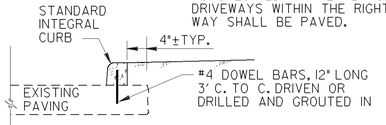


SECTION C-C

ASPHALT PAVING, CONCRETE VALLEY GUTTER, DRIVEWAY CONCRETE, OR EXISTING PAVEMENT, AS SPECIFIED IN THE PLANS. ALL DRIVEWAYS WITHIN THE RIGHT OF WAY SHALL BE PAVED.



NOTE:
ALTERNATES TO THE CURB ISLAND DESIGN SHOWN HERE MAY BE SPECIFIED IN THE PLANS.



DOWELED CURB DETAIL

GENERAL NOTES:

1. QUANTITIES SHALL BE MEASURED AS FOLLOWS:
   (A) CONCRETE CURB & GUTTER ALONG ROADWAY---
   LIN. FT. OF CURB & GUTTER SHALL BE MEASURED FOR PAYMENT CONTINUOUS THRU THE DRIVE ENTRANCES. PAYMENT FOR CURB & GUTTER SHALL INCLUDE DAPPING DOWN THE TOP PORTION OF THE CURB. SQ. YDS. OF CONCRETE VALLEY GUTTER SHALL BE MEASURED FOR PAYMENT TO THE BACK OF THE CURB LINE.
   (B) HEADER (OR INTEGRAL) CURB ALONG ROADWAY---
   LIN. FT. OF CURB SHALL BE MEASURED FOR PAYMENT TO THE BEGINNING OF DRIVE WAY. SQ. YDS. OF CONCRETE VALLEY GUTTER SHALL BE MEASURED FOR PAYMENT TO THE EDGE OF THE ROADWAY PAVING.
2. N.E.P. IS DEFINED AS THE POINT WHERE THE ROADWAY PAVING MEETS THE CURB & GUTTER, OR HEADER CURB, OR FACE OR THE INTEGRAL CURB.
3. DRIVES RECONSTRUCTED SHALL BE REPLACED IN KIND, I.E, ASPHALT FOR ASPHALT, CONCRETE FOR CONCRETE, AND PAVED TO THE RIGHT OF WAY LINE.
4. SEE STANDARD 9032-B FOR DETAILS OF CONCRETE CURB & GUTTER, HEADER CURBS AND DOWELED INTEGRAL CURBS.
5. WIDTHS OF COMMERCIAL DRIVEWAYS SHALL COMPLY WITH CURRENT "RULES AND REGULATIONS FOR DRIVEWAY AND ENCROACHMENT CONTROL". WIDTHS OF RESIDENTIAL NON-COMMERCIAL DRIVEWAYS SHALL BE AS SPECIFIED IN THE PLANS.
6. THE SLOPE OF THE "TRANSITION AREA" OF THE CONCRETE VALLEY GUTTER SHALL NOT BE STEEPER THAN 8% (12:1) WHERE SIDEWALKS ARE LOCATED.
7. MAXIMUM DRIVEWAY GRADES SHOWN BELOW ARE INTENDED FOR RESIDENTIAL DRIVEWAYS WHERE FLATTER GRADES ARE NOT FEASIBLE. GRADES FOR COMMERCIAL DRIVEWAYS OR FOR TRUCKS SHALL NOT BE GREATER THAN 11% UNLESS SPECIFIED OTHERWISE.

Guidelines For Usage On Metric Projects

When these details are incorporated into plans and or projects that are being prepared or constructed in metric units, exact or precise conversion to metric units is not required. The dimensions shown that are in feet and inches may be converted to corresponding metric units using the following "Rounded-Off" conversion factors: 1" =25mm, 4"=100mm, and 12" or 1' =300mm. All measurement notes that refer to linear feet and square yards shall be interpreted to mean linear meters and square meters.

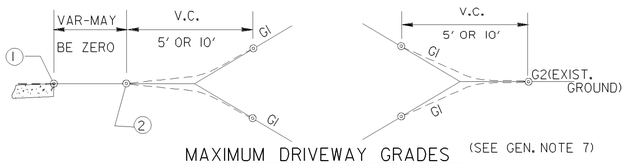
① IS THE BACK OF SIDEWALK SURFACE GRADE OR THE SHOULDER SURFACE GRADE 10'-0" BACK OF THE CURB, SLOPE OF THE CONCRETE VALLEY GUTTER WILL BE SUCH THAT THE BACK OF THE DRIVEWAY TAPER WILL BE THE SAME ELEVATION.

② IS BEGINNING OF DRIVEWAY TIE-IN.

NOTE: ① AND ② MAY COINCIDE

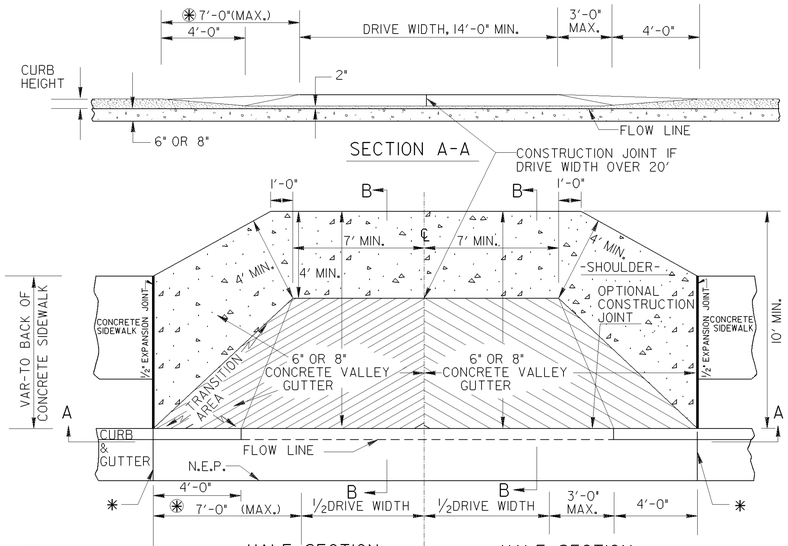
V.C.	MAXIMUM GI	
	CUT	FILL
5'	27%	16.67%
10'	28%	27%

V.C.	GI-G2 (MAX. ALGEBRAIC GRADE CHANGE)	
	SAG	CREST
5'	21%	25%
10'	25%	36%



MAXIMUM DRIVEWAY GRADES (SEE GEN. NOTE 7)

This Detail Replaces Ga Standard 6050



✱ CONSTRUCTION JOINT NOT REQUIRED IF THE OPTIONAL CONSTRUCTION JOINT IS PROVIDED AT BACK OF THE CURB.

HALF SECTION

SYMMETRICAL ABOUT THIS SIDE OF CENTERLINE WHERE CONCRETE SIDEWALK OCCURS.

PLAN

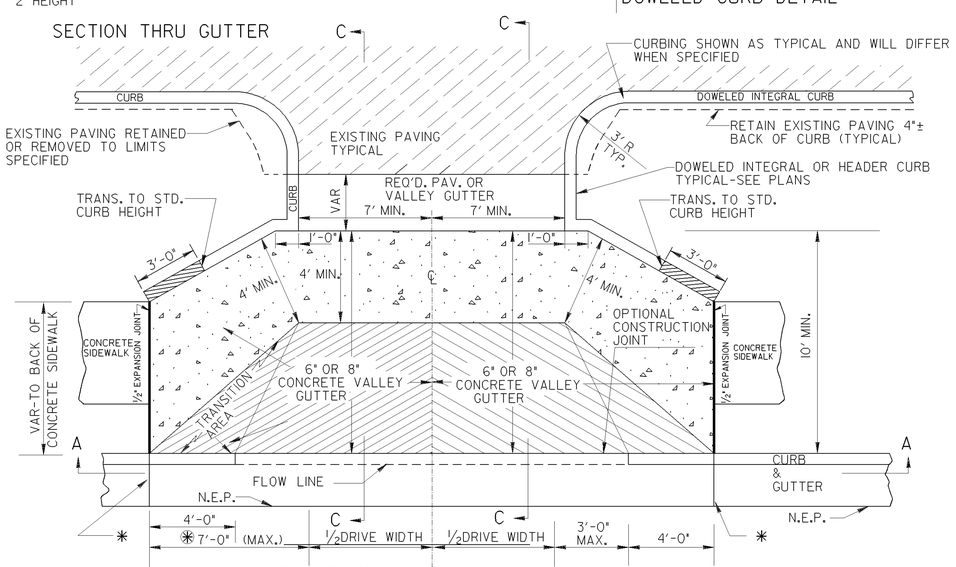
HALF SECTION

PLAN

RESIDENTIAL, COMMERCIAL OR NON-COMMERCIAL DRIVE

✱ 7'-0" OR DISTANCE EQUAL TO THAT FROM BACK OF CURB TO BACK OF SIDEWALK, WHICHEVER IS LESSER

SECTION THRU GUTTER



HALF SECTION

SYMMETRICAL ABOUT THIS SIDE OF CENTERLINE WHERE CONCRETE SIDEWALK OCCURS.

PLAN

HALF SECTION

PLAN

(SHOWN ADJACENT TO EXISTING PAVED PARKING AREA)

✱ CONSTRUCTION JOINT NOT REQUIRED IF THE OPTIONAL CONSTRUCTION JOINT IS PROVIDED BACK OF CURB.

DRIVEWAY WITH CURB ISLAND

REVISION	BY	DATE
REV. PAVEMENT NOTES, REV. 12" TO 14' MIN., REV. SWALK	GLO	7-21-11
REVISED		4-11-02
REVISED		4-3-02

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

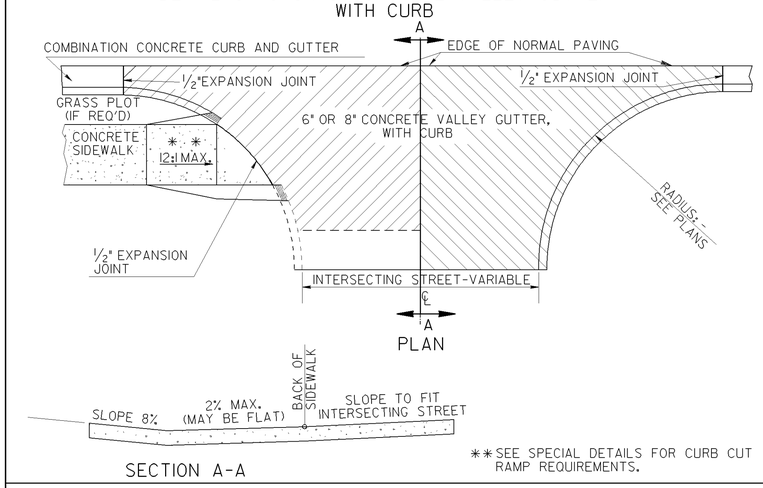
CONSTRUCTION DETAIL
DRIVEWAYS WITH TAPERED ENTRANCES CONCRETE VALLEY GUTTERS

NO SCALE — MARCH 12, 2002

NUMBER A1

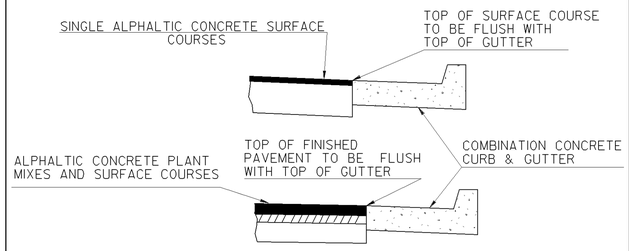
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DETAIL OF 6" OR 8" CONCRETE VALLEY GUTTER WITH CURB

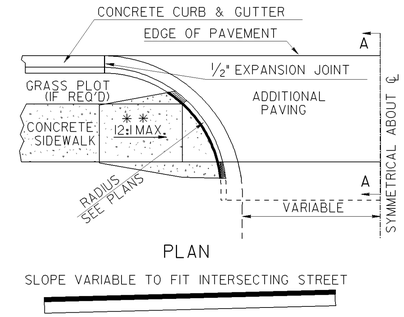


**SEE SPECIAL DETAILS FOR CURB CUT RAMP REQUIREMENTS.

DETAIL OF PLACING PAVEMENT ADJACENT TO GUTTER



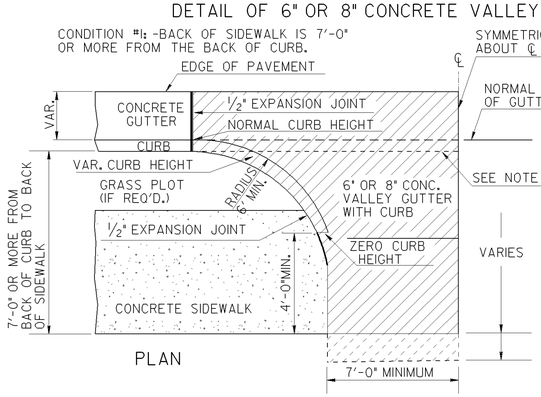
DETAIL OF ADDITIONAL PAVING AT STREET INTERSECTION



NOTE:
ADDITIONAL PAVING TO EXTEND TO END OF RETURN WHEN NO CONCRETE SIDEWALK IS SET UP.

**SEE SPECIAL DETAILS FOR CURB CUT RAMP REQUIREMENTS.

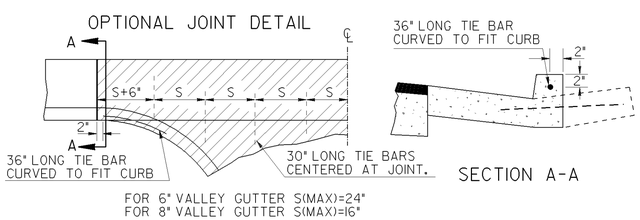
DETAIL OF 6" OR 8" CONCRETE VALLEY GUTTER WITHOUT CURB

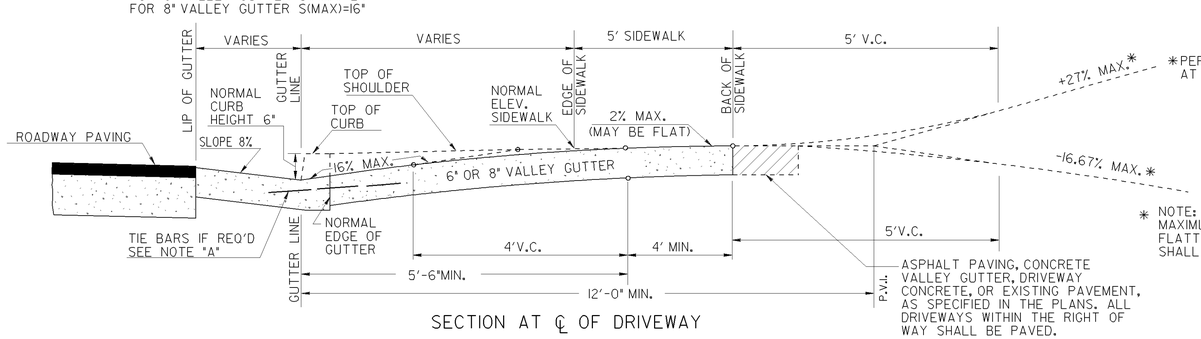


CONDITION #1-BACK OF SIDEWALK IS 7'-0" OR MORE FROM BACK OF CURB.

ZERO CURB HT. TO BE A MINIMUM OF 3'-2" FROM GUTTER LINE. IF CURB TRANSITION EXTENDS PAST EDGE OF SIDEWALK. THE TOP OF THE VARIABLE HEIGHT CURB IS TO REMAIN FLUSH WITH THE TOP OF THE SIDEWALK THROUGHT OUT TRANSITION. ZERO CURB HEIGHT WILL BE A MINIMUM OF 4'-0" FROM BACK OF SIDEWALK.

NOTE: "A"
CONSTRUCTION JOINT OPTIONAL: -WHEN IMPLEMENTED #4 TIE BARS WILL BE REQUIRED AS SHOWN BELOW TO BE INCLUDED IN UNIT PRICE FOR VALLEY GUTTER. IF CURB IS POURED THROUGH VALLEY GUTTER, THE TOP PORTION WILL BE REMOVED BEFORE SETTING TO MATCH GRADE OF VALLEY GUTTER.





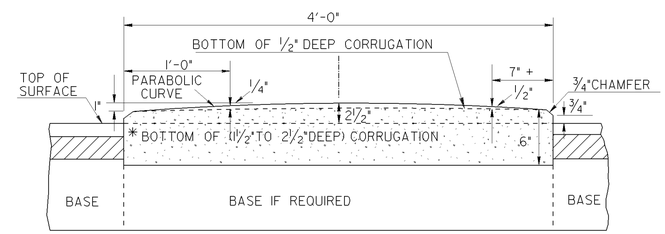
*PERCENTAGE OF ASCENDING GRADE MAY BE INCREASED AT A DISTANCE OF 23' FROM THE GUTTER LINE.

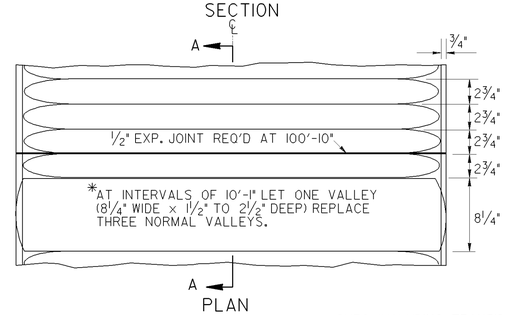
*PERCENTAGE DESCENDING GRADE MAY BE INCREASED AT A DISTANCE 18' FROM THE GUTTER LINE.

* NOTE:
MAXIMUM DRIVEWAY GRADES SHOWN ABOVE ARE INTENDED FOR RESIDENTIAL DRIVEWAYS WHERE FLATTER GRADES ARE NOT FEASIBLE. GRADES FOR COMMERCIAL DRIVEWAYS OR FOR TRUCKS SHALL NOT BE GREATER THAN 11% UNLESS SPECIFIED OTHERWISE.

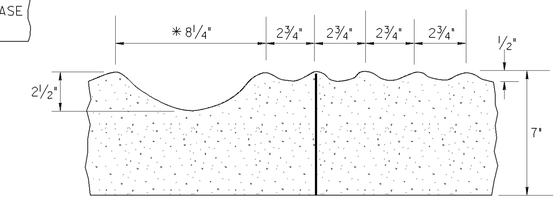
ASPHALT PAVING, CONCRETE VALLEY GUTTER, DRIVEWAY CONCRETE, OR EXISTING PAVEMENT, AS SPECIFIED IN THE PLANS. ALL DRIVEWAYS WITHIN THE RIGHT OF WAY SHALL BE PAVED.

DETAIL OF 4' CORRUGATED CONCRETE MEDIAN





*APPLIES ONLY TO SUPERELEVATED CURVES, INCLUDING TRANSITIONS.



SEE SPECIAL DETAILS FOR DETAILS OF CONCRETE SIDEWALK.

This Detail Replaces Ga Standard 9031J

Guidelines For Usage On Metric Projects

When these details are incorporated into plans and or projects that are being prepared or constructed in metric units, exact or precise conversion to metric units is not required. The dimensions shown that are in feet and inches may be converted to corresponding metric units using the following "Rounded-Off" conversion factors: 1" =25mm, 4"=100mm, and 12" or 1' =300mm. All measurement notes that refer to linear feet and square yards shall be interpreted to mean linear meters and square meters.

BY	REVISION	DATE
GLO	ADDED PAVEMENT NOTE, REV. DRIVEWAY SECTION	7-21-11
GLO	REV. PAVEMENT NOTES	2-21-03
	REVISED	4-11-02
	REVISED	4-3-02

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAIL

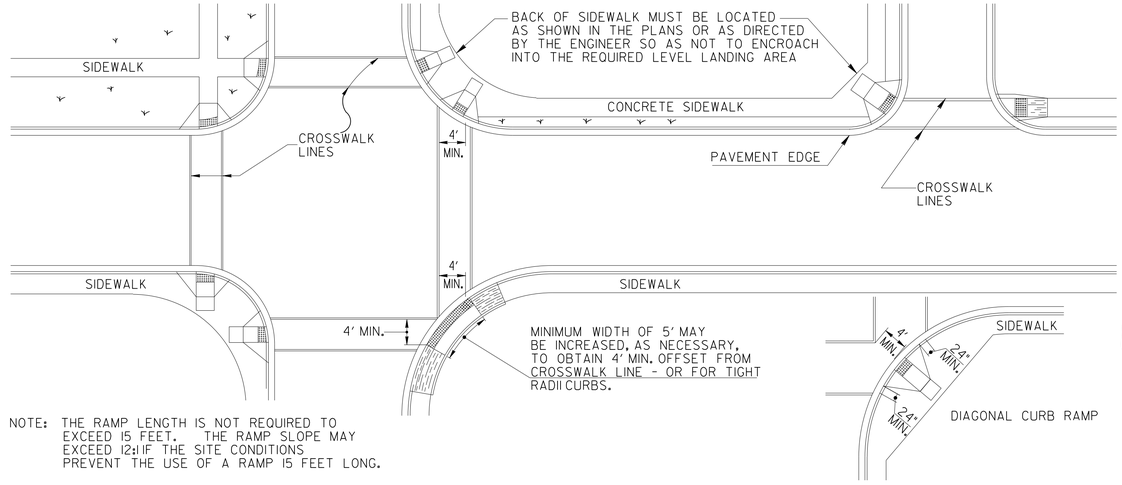
CONCRETE VALLEY GUTTER AT STREET INTERSECTION
6" OR 8" CONCRETE VALLEY GUTTER AT DRIVE
PLACING PAVEMENT ADJACENT TO GUTTER
ADDITIONAL PAVING AT STREET INTERSECTION
4' CORRUGATED CONCRETE MEDIAN

NO SCALE — MARCH 12, 2002

NUMBER A2

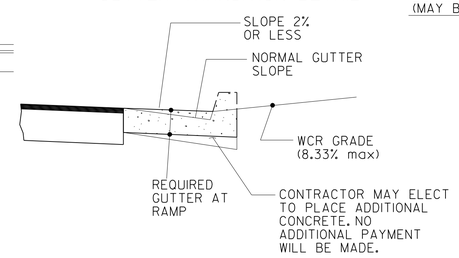
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

TYPICAL LOCATIONS FOR CURB CUT RAMPS - PLAN VIEW

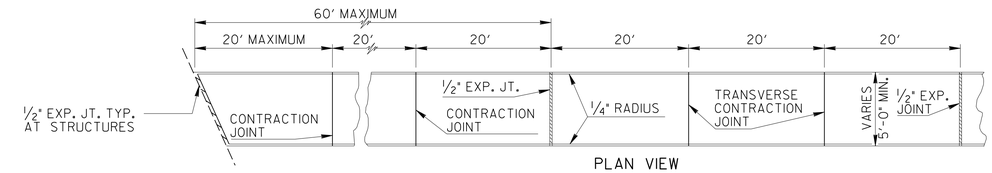


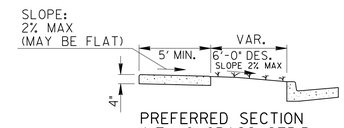
NOTE: THE RAMP LENGTH IS NOT REQUIRED TO EXCEED 15 FEET. THE RAMP SLOPE MAY EXCEED 12:1 IF THE SITE CONDITIONS PREVENT THE USE OF A RAMP 15 FEET LONG.

GUTTER TRANSITION DETAIL



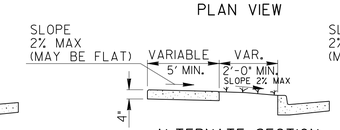
CONCRETE SIDEWALK DETAILS



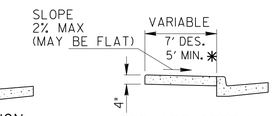


PREFERRED SECTION WITH 6' GRASS STRIP

✱16' SHOULDER RECOMMENDED WITH THIS INSTALLATION



ALTERNATE SECTION WITH GRASS STRIP



ALTERNATE SECTION WITHOUT GRASS STRIP

✱5' MIN WIDTH WITH NO OBSTRUCTIONS (MAILBOXS, SIGNS, ETC)

7' PREFERRED WIDTH WITH A 2' AREA OF CONTRASTING COLOR & TEXTURE ADJACENT TO THE CURB. (COST OF TEXTURE, COLORING & HOLES REQUIRED FOR MAILBOX AND SIGN POST SHALL BE INCLUDED IN THE PRICE BID FOR SIDEWALK)

NOTES FOR CONCRETE SIDEWALK:

A. CONCRETE TO BE PLACED 4" THICK AND FINISHED WITH TAMPS, WOOD FLOATS AND STIFF-BRISTLE BROOMS.
B. TRANSVERSE CONTRACTION JOINTS SHALL BE PLACED AT 20 FT. INTERVALS. ALL EDGES TO BE ROUNDED TO 1/4" RADIUS.
C. 1/2" EXPANSION JOINTS SHALL BE PLACED, WHERE SIDEWALK TIE INTO A STRUCTURE OR TERMINATE AT CURB, RAMPS OR DRIVEWAYS AND AT 60' INTERVALS.

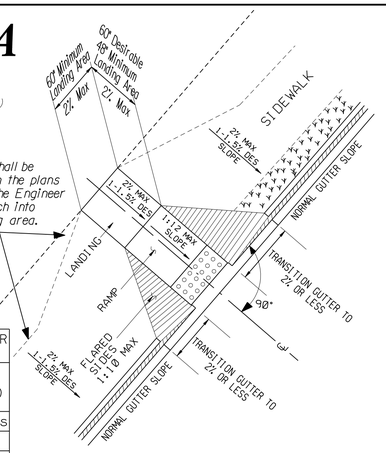
NOTES FOR CURB CUT RAMPS:

1. CURB CUT RAMPS WILL BE LOCATED AS FOLLOWS UNLESS PLANS OR CONTRACT SPECIFY OTHERWISE.
   a) AT ALL PEDESTRIAN CROSSWALKS WHERE CURB IS CONSTRUCTED OR REPLACED.
   b) WHERE THE SIDEWALK, CONCRETE OR UNPAVED, IS INTERRUPTED BY THE CURB AT TURNOUTS OR AT INTERSECTIONS.
   c) AT OTHER LOCATIONS SUCH AS HOSPITALS, NURSING HOMES, REST AREAS, ETC.. WHERE THE CURB WOULD OTHERWISE BE AN OBSTRUCTION TO THE PHYSICALLY DISABLED.
2. RAMPS WILL BE CONSTRUCTED FROM CONCRETE. SPECIFICATIONS FOR RAMPS WILL BE THE SAME AS FOR CONCRETE SIDEWALK. RAMPS SHALL HAVE EITHER A ROUGH OR A TEXTURED FINISH.
3. DROP INLETS ARE NOT TO BE LOCATED DIRECTLY IN FRONT OF RAMPS. CATCH BASINS SHOULD BE LOCATED AT LEAST 10 FT. FROM RAMPS WHEN FEASIBLE.
4. WHERE RAMPS ARE LOCATED IN RADII, THE DIMENSIONS SHOWN FOR RAMP WIDTHS AND TAPERS ARE MEASURED PERPENDICULAR TO THE RAMP AND NOT ALONG THE CURVE.
5. WHERE UTILITY STRUCTURES CONFLICT, WHERE SIDEWALK GEOMETRY VARIES, AT SKEWED INTERSECTIONS, OR IN OTHER SPECIAL CASES, THE RAMP DESIGNS MAY BE MODIFIED BY THE DESIGNER OR ENGINEER, PROVIDED THAT THE WIDTH REMAINS A MINIMUM OF 48 INCHES, AND NO SLOPE ON THE ACCESSIBLE PART OF THE RAMP IS STEEPER THAN 12:1.
6. LIN. FT. OF CURB AND GUTTER WILL INCLUDE THE TRANSITIONED CURB IN FRONT OF RAMPS. SQ. YDS. OF CONCRETE SIDEWALK AND CONCRETE MEDIAN PAVING WILL INCLUDE RAMPS. NO ADDITIONAL PAYMENT WILL BE MADE FOR CURB RAMPS. NO ADDITIONAL PAYMENT WILL BE MADE FOR SAWING AND REMOVING EXISTING SIDEWALK OR CURB WHERE NECESSARY FOR RAMP CONSTRUCTION.
7. WHEN A CURB RAMP IS PLACED ON EXISTING PAVEMENT. THE PAVEMENT SHALL BE REMOVED TO PROVIDE A MINIMUM THICKNESS OF 3 INCHES OF CONCRETE AT ALL LOCATIONS. NO SEPARATE PAYMENT WILL BE MADE FOR REMOVAL OF THE PAVEMENT.
8. DETECTABLE WARNING SURFACES ARE REQUIRED ON ALL INTERSECTIONS WITH PUBLIC STREETS, SIGNALIZED COMMERCIAL DRIVEWAYS, AND COMMERCIAL DRIVEWAYS WITH AN AADT OF 25 VPD.

Type A

(Perpendicular)

(The Preferred Ramp)

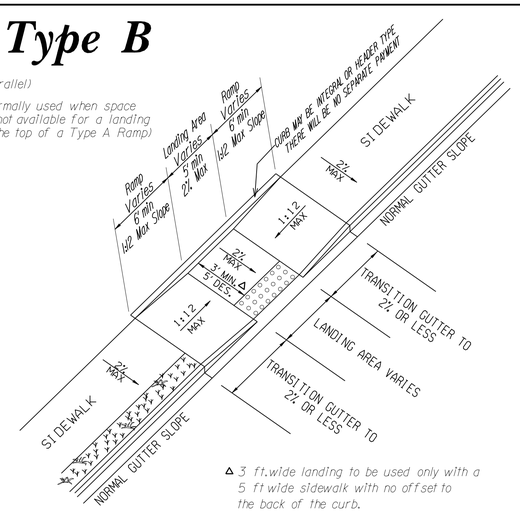


LENGHT REQUIRED FOR A 1:10 SLOPE	
DIFFERENCE IN HEIGHT	LENGTH REQUIRED
1 inch	10 inches
2 inches	1'-8"
3 inches	2'-6"
4 inches	3'-4"
5 inches	4'-2"
6 inches	5 feet

Type B

(Parallel)

(Normally used when space is not available for a landing at the top of a Type A Ramp)

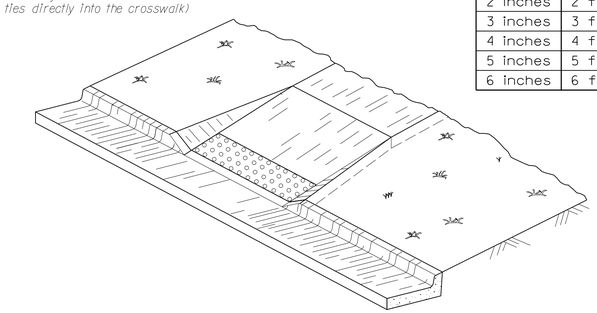


Δ 3 ft. wide landing to be used only with a 5 ft wide sidewalk with no offset to the back of the curb.

Type D

(Perpendicular)

(Normally used when the sidewalk ties directly into the crosswalk)

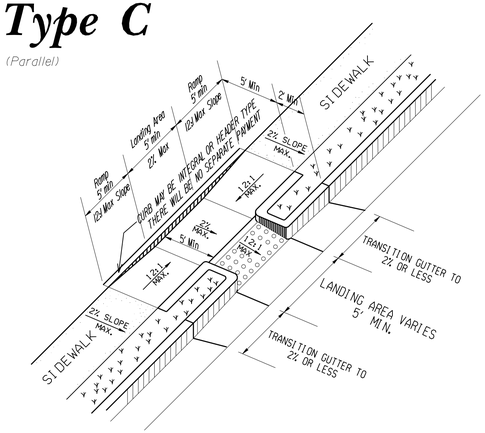


LENGHT REQUIRED FOR A 1:12 SLOPE	
DIFFERENCE IN HEIGHT	LENGTH REQUIRED
1 inch	1 foot
2 inches	2 feet
3 inches	3 feet
4 inches	4 feet
5 inches	5 feet
6 inches	6 feet

IN AREAS WHERE THE GUTTER HAS A SLOPE 1" IN 1' END NORMAL GUTTER SLOPE AT A DISTANCE OF 6 TO 10 FEET FROM THE RAMP AND BEGIN TRANSITION TO A FLAT GUTTER SLOPE. NORMAL GUTTER SLOPE SHALL BE RESUMED AT A SIMILAR DISTANCE BEYOND THE RAMP.

Type C

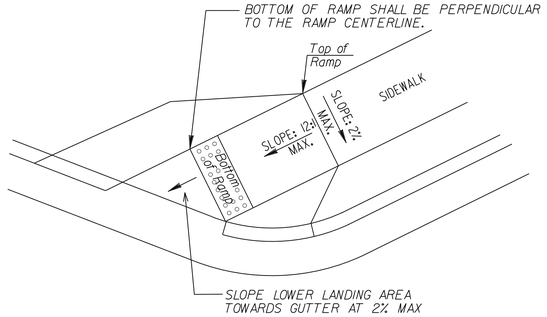
(Parallel)

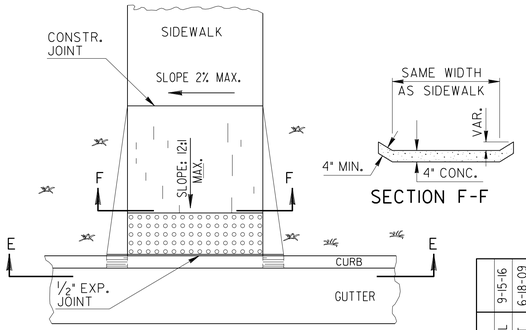


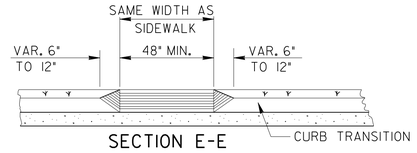
Skewed Ramp Details

(Applies to Type A Type D Ramps Only)

WHEN THE RAMP CENTERLINE IS NOT PERPENDICULAR TO THE CURB A LEVEL LANDING AREA WITH SLOPES LESS THAN 2% MUST BE PROVIDED AT THE BOTTOM OF THE RAMP.







This Detail Replaces Ga Standard 9031W

Guidelines For Usage On Metric Projects

When these details are incorporated into plans and or projects that are being prepared or constructed in metric units, exact or precise conversion to metric units is not required. The dimensions shown that are in feet and inches may be converted to corresponding metric units using the following "Rounded-Off" conversion factors: 1" =25mm, 4"=100mm, and 12" or 1' =300mm. All measurement notes that refer to linear feet and square yards shall be interpreted to mean linear meters and square meters.

REVISION	DATE
ADDED PERP. OR PARALLEL	9-15-16
REV. SLOPES TO PERCENT	6-18-09
AND ADDED 12:1 & 10:1 CHART.	
ADDED GEN. NOTE NO. 8.	
REV. TRUNCATED DOMES	5-10-06
REVISED	2-21-03
REVISED	2-10-03
REVISED	7-29-02
REVISED	5-29-02
REVISED	5-23-02
REVISED	5-13-02
REVISED	4-29-02
REVISED	4-11-02
REVISED	4-3-02
REVISED	3-28-02

C.JB
G.L.O

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

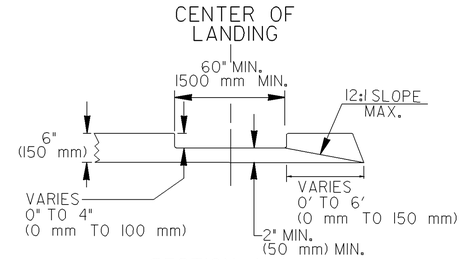
SPECIAL DETAIL
CONCRETE SIDEWALK DETAILS
CURB CUT (WHEELCHAIR) RAMPS

NO SCALE

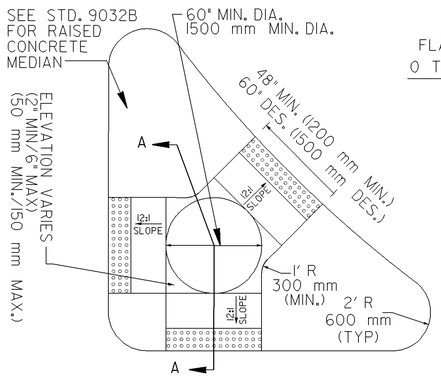
MARCH 12, 2002

NUMBER
A3

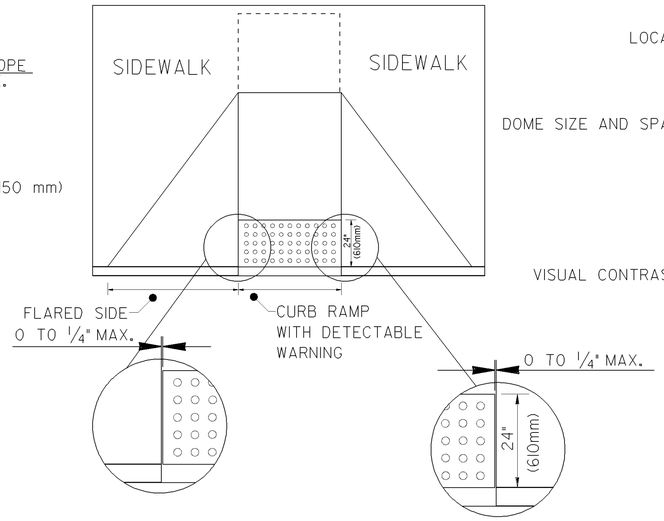
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



SECTION A-A



CONCRETE ISLAND WITH ELEVATED CUT THROUGH

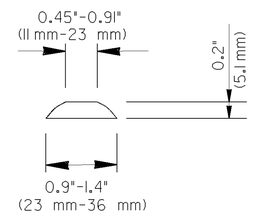


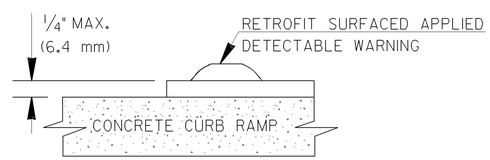
SIZE: DETECTABLE WARNINGS SHALL BE 24 INCHES (610 mm) IN THE DIRECTION OF PEDESTRAIN TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.

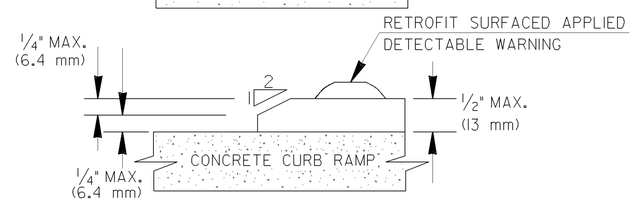
LOCATION: THE DETECTABLE WARNING SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE OR OTHER POTENTIAL HAZARD IS 6 TO 8 INCHES (150 mm to 180mm) FROM THE CURB LINE OR OTHER POTENTIAL HAZARD, SUSH AS A REFLECTIVE POOL EDGE OR THE DYNAMIC ENVELOPE OF RAIL OPERATIONS.

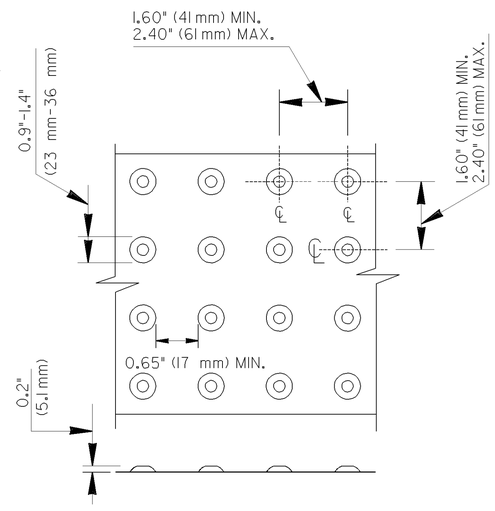
DOME SIZE AND SPACING: TRUNCATED DOMES SHALL HAVE A BASE DIAMETER OF 0.9 INCH TO 1.4 INCH (23mm-36mm) AT THE BOTTOM, A DIAMETER OF 0.45 INCH TO 0.91 INCH (11mm-23mm) AT THE TOP, THE TOP DIAMETER SHALL BE A MINIMUM OF 50% AND A MAXIMUM OF 65% OF THE BASE DIAMENTER, A HEIGHT OF 0.2 INCH (5.1mm) AND A CENTER-TO-CENTER SPACING OF 2.40 INCHES (61mm) DESIRABLE 1.60 INCHES (41mm) MINIMUM MEASURED ALONG ONE SIDE OF A SQUARE ARRANGEMENT. DOMES SHALL HAVE A SQUARE ARRANGEMENT. DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.

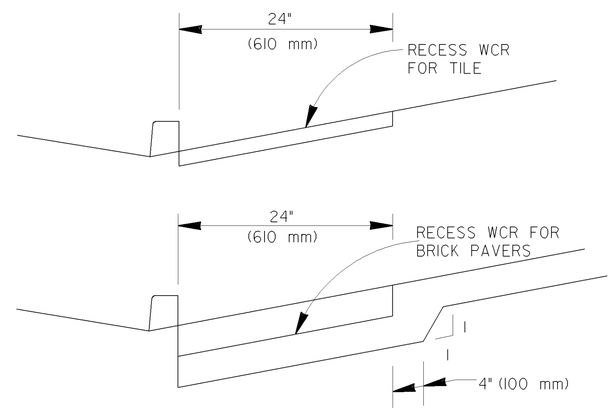
VISUAL CONTRAST: DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH THE ADJACENT WALKING SURFACE EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE VISUAL CONTRACT SHALL BE AN INTEGRAL PART OF THE DETECTABLE WARNING SURFACE.











FOR TILE OR BRICK PAVERS NO VERTICAL LIP OVER 1/8" (3 mm) IS ALLOWED

MATERIALS:

NEW CONSTRUCTION

THE DETECTABLE WARNINGS SHALL BE MADE OF MATERIALS SPECIFIED ON QPL 87.

RETROFIT OF EXISTING RAMPS

SURFACED APPLIED MATERIALS WILL ONLY BE APPROVED TO BE USED ON EXISTING WHEELCHAIR RAMPS.

INSTALLATION:

BRICK PAVERS SHALL BE SET IN A WET MORTAR BED. THE BED SHALL BE PLACED ON CONCRETE. THE CONCRETE SHALL BE A MINIMUM OF 4" THICK.

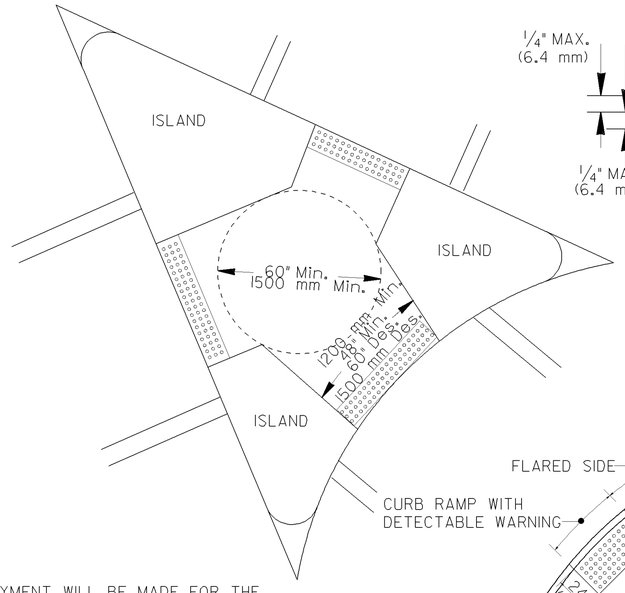
CERAMIC TILE SHALL BE EPOXIED IN PLACE OR SET IN A WET MORTAR BED. MANUFACTURER RECOMMEND ADHESIVE OR FASTENER SHALL BE USED IN THE INSTALLATION.

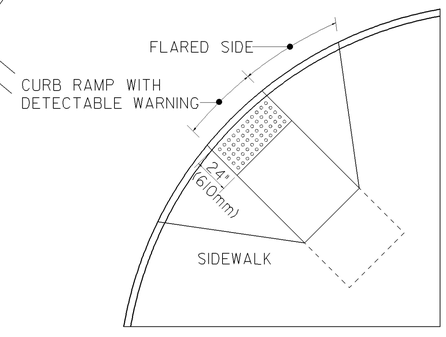
ALL OTHER MATERIALS SHALL BE INSTALLED ACCORDING TO MANUFACTURES DETAILS OR INSTRUCTION.

GENERAL NOTES:

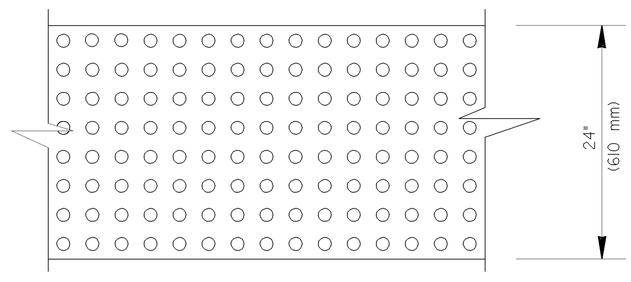
RETROFIT SURFACED APPLIED MATERIALS ONLY:

1. CHANGES IN LEVEL OF 1/4" (6.4 mm) HIGH MAXIMUM SHALL BE PERMITTED VERTICALLY ON SURFACED APPLIED MATERIALS.
2. CHANGES IN LEVEL BETWEEN 1/4" (6.4 mm) HIGH MINIMUM AND 1/2" (13mm) HIGH MAXIMUM SHALL BE BELEVELED WITH A SLOPE NOT STEEPER THAN 2:1.





DETAIL FOR DETECTABLE WARNING AT CUT-THRU CONCRETE ISLAND



NO SEPARATE PAYMENT WILL BE MADE FOR THE DETECTABLE WARNINGS. THE COST SHALL BE INCLUDED IN THE PRICE BID FOR SIDEWALK (OR CURB CUT RAMP IF THE ITEM IS INCLUDED IN THE PROPOSAL).

FOR CUT-THRU ISLANDS AND EXISTING RAMPS, WHERE NO SIDEWALK OR CURB CUT RAMPS ARE IN THE PROPOSAL. THE COST OF THE DETECTABLE WARINGS SHALL BE INCLUDED IN THE OVERALL BID PRICE SUBMITTED.

BY	REVISION	DATE
GLO	ADDED RETROFIT DETAIL AND ADDED ALT. RAMP DETAIL AND GEN. NOTES	6-18-09
GLO	ADDED TOLERANCE TO DTL.	10-2-06
GLO	REVISED TUNCATED DOMES AND NOTES.	5-10-06
	REVISED	11-14-02
	REVISED	7-29-02

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL DETAIL

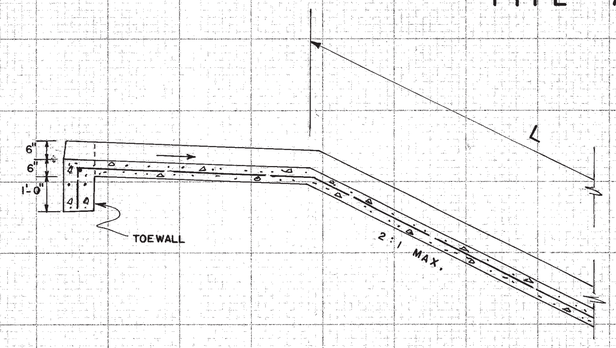
DETECTABLE WARNING SURFACE TRUNCATED DOME SIZE, SPACING AND ALIGNMENT REQUIREMENTS

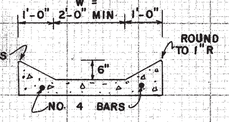
NO SCALE — MARCH 12, 2002

NUMBER A4

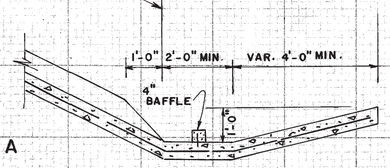
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

TYPE "A"

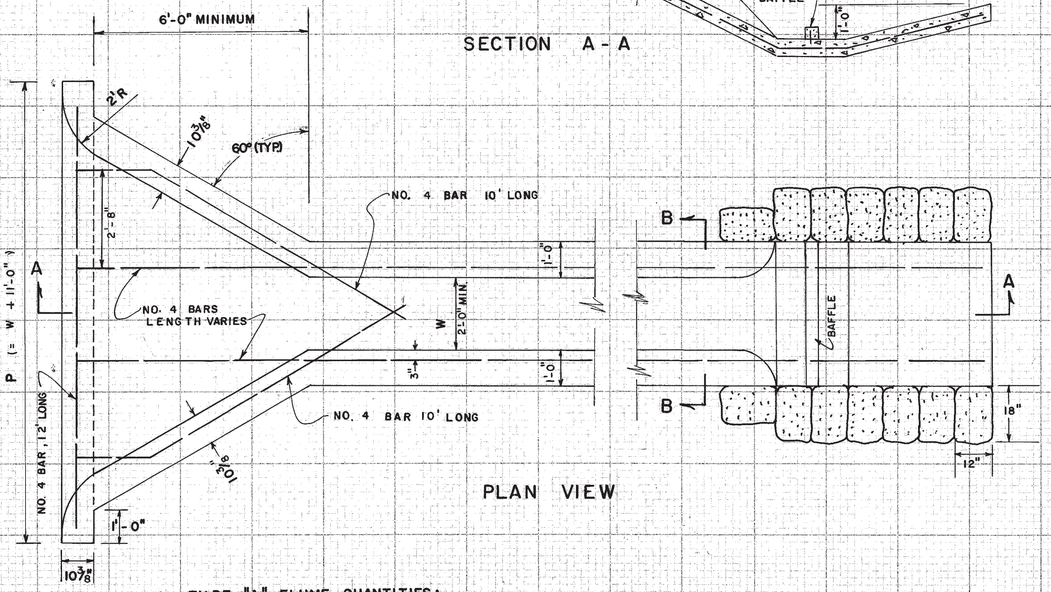




SECTION B-B

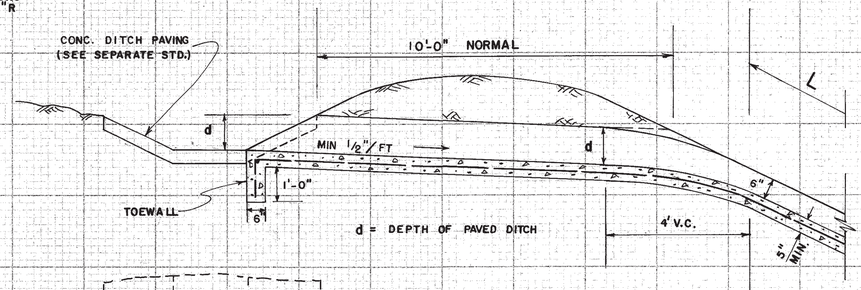


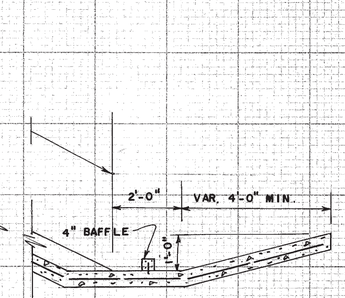
SECTION A-A



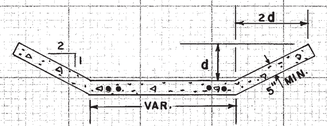
PLAN VIEW

TYPE "B"

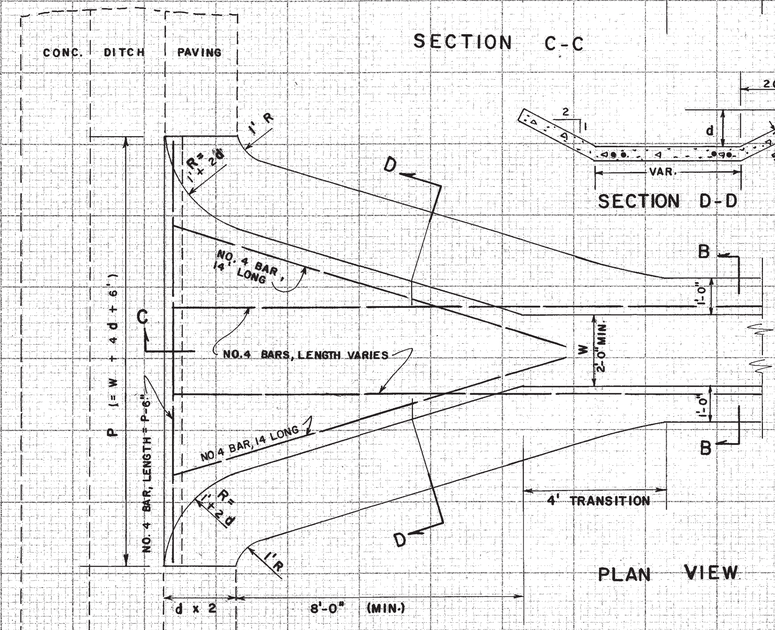


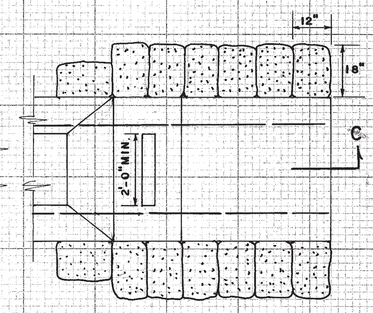


SECTION C-C



SECTION D-D





PLAN VIEW

	W = 2'-0"		W = 4'-0"	
d	P	K (cu. yds)	P	K (cu. yds)
6"	10'	1.94	12'	2.36
9"	11'	2.24	13"	2.68
1'-0"	12'	2.58	14"	3.05
1'-3"	13'	2.98	15'	3.43
1'-6"	14'	3.36	16'	3.84
1'-9"	15'	3.84	17'	4.32
2'-0"	16'	4.35	18'	4.86
2'-3"	17'	4.92	19'	5.45
2'-6"	18'	5.56	20'	6.10

NOTE: P = FLUME OPENING
K = CONCRETE CONSTANT (SEE FORMULAS)

TYPE "A" FLUME QUANTITIES:

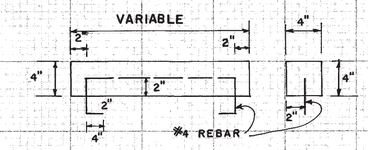
(FOR W = 2'-0") CU. YDS. CONCRETE = 2.41 + 0.0926 (L)
(FOR W = 4'-0") CU. YDS. CONCRETE = 2.59 + 0.1306 (L)
(FOR EITHER W) LBS. STEEL = 41 LBS. + (1.336)(L)
SAND CEMENT BAG RIP RAP: 14 BAGS x 0.1667 SQ. YDS/BAG = 2.333 SQ. YDS.

TYPE "B" FLUME QUANTITIES:

(FOR W = 2'-0") CU. YDS. CONC. = K + 0.0926 (L)
(FOR W = 4'-0") CU. YDS. CONC. = K + 0.1306 (L)
(FOR EITHER W) LBS. STEEL = 55 + 0.667 (P) + 1.336 (L)
SAND CEMENT BAG RIP RAP: 14 BAGS x 0.1667 SQ. YDS/BAG = 2.333 SQ. YDS.

GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION, AND SUPPLEMENTS THERETO.
2. SIZE AND DIMENSIONS OF TYPE A OR TYPE B FLUMES MAY BE ADJUSTED FOR AN INDIVIDUAL SITE WHERE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.
3. AT LOCATIONS WHERE FLUME OUTLETS INTO AN INLET STRUCTURE, OMIT BAFFLE AND DOWNTURN END AND CONNECT FLUME TO THE INLET STRUCTURE.
4. SAND CEMENT BAG RIP RAP SHALL BE OMITTED IN PAVED DITCHES OR WHERE OTHER APPROVED EROSION CONTROL MATERIALS ARE USED.
5. POURED IN PLACE CONCRETE SHALL BE CLASS B MINIMUM. CLASS A CONCRETE SHALL BE USED FOR BAFFLES IF PRECAST.
6. BASIS OF PAYMENT:
   CLASS B CONCRETE — — — CU. YD.
   BAR REINFORCEMENT STEEL — — — LB.
   SAND CEMENT BAG RIP RAP, 6 IN. OR 8 IN. — — — SQ. YDS.



DETAILS OF 4" CONCRETE BAFFLE

CONCRETE FLUMES TYPES "A" & "B"

NO SCALE

REV. & REDR. OCT. 1983

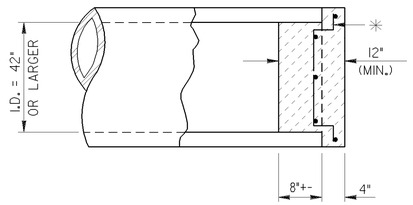
D-9

FORM EF3

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

PLUGS FOR BOX CULVERTS

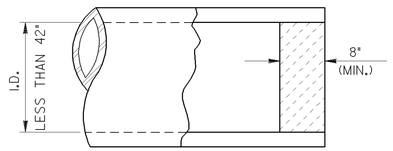
PLUGS FOR PIPE CULVERTS



SECTION
(FOR PIPE I.D. 42" TO 72")

(NOM. - MIN.) DIAMETER (in.)	CU. YARDS CL."A" CONCRETE (INCL. REINF.) *
42"	0.41
48"	0.53
54"	0.67
60"	0.83
66"	1.00
62"	1.19

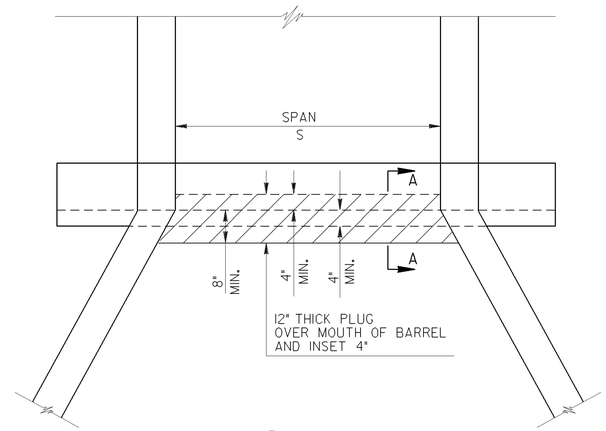
*REINFORCING SHALL BE SIMILAR TO THAT SHOWN FOR BOX CULVERTS AT RIGHT.



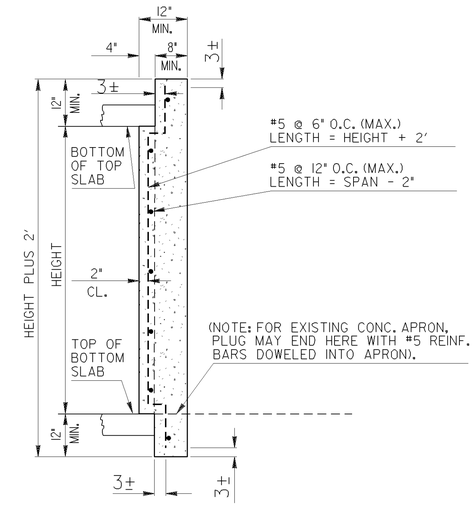
SECTION
(FOR PIPE I.D. TO 36")

(NOM. - MIN.) DIAMETER (in.)	CU. YARDS CL."A" OR CL."B" CONCRETE **
12"	0.02
15"	0.03
18"	0.04
24"	0.08
30"	0.12
36"	0.18

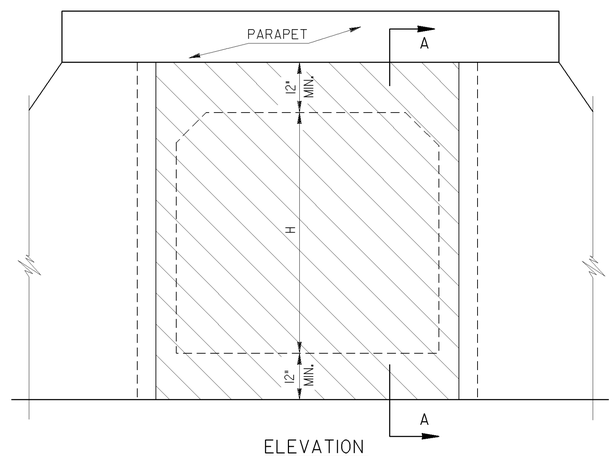
**BRICK MASONRY OR RUBBLE MASONRY (MIN. 8" THICK) MAY BE SUBSTITUTED FOR NON-REINFORCED CONCRETE WITH NO CHANGE IN PAYMENT.



PLAN



SECTION A-A



ELEVATION

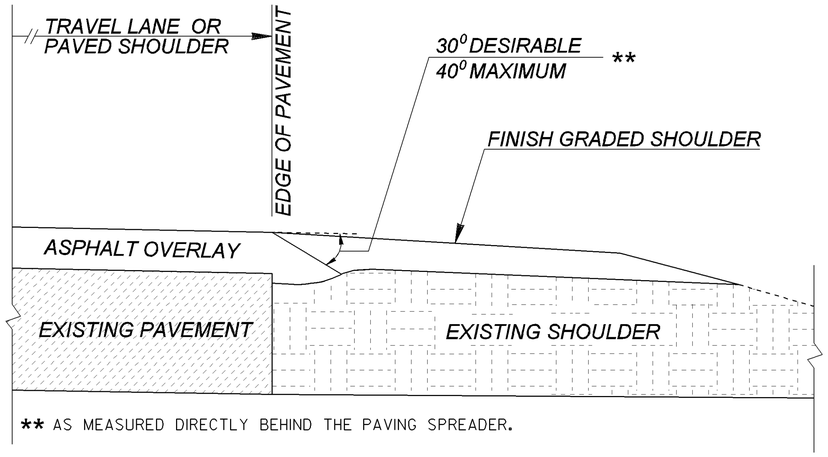
PAY ITEM: CU. YARDS CL. "A" CONC. INCL. REINF. STEEL.

CU. YARDS = (H + 2') (S) (1')

		DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
		REVISION	CONSTRUCTION DETAILS CULVERT PLUGS MARCH 17, 2008
		BY	NUMBER D-40

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

ASPHALT PAVEMENT - OVERLAY

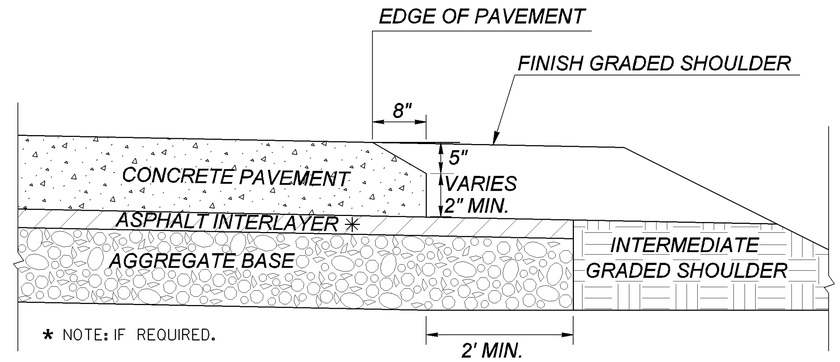


** AS MEASURED DIRECTLY BEHIND THE PAVING SPREADER.

ADDITIONAL QUANTITIES:
DEPTH OF OVERLAY (T), NO RUTTING
$(T)^2$ (IN.) X 0.000441 TN/IN.-FT X LENGTH (FT) = _____TN

DEPTH OF OVERLAY (T), WITH 1 IN. RUTTING
$(T)^2$ (IN.) X 0.000441 TN/IN.-FT X LENGTH (FT) + (T) (IN.) X 0.000882 TN/IN.-FT X LENGTH (FT) = _____TN

PLAIN PC CONCRETE PAVEMENT OR ROLLER COMPACTED CONCRETE PAVEMENT



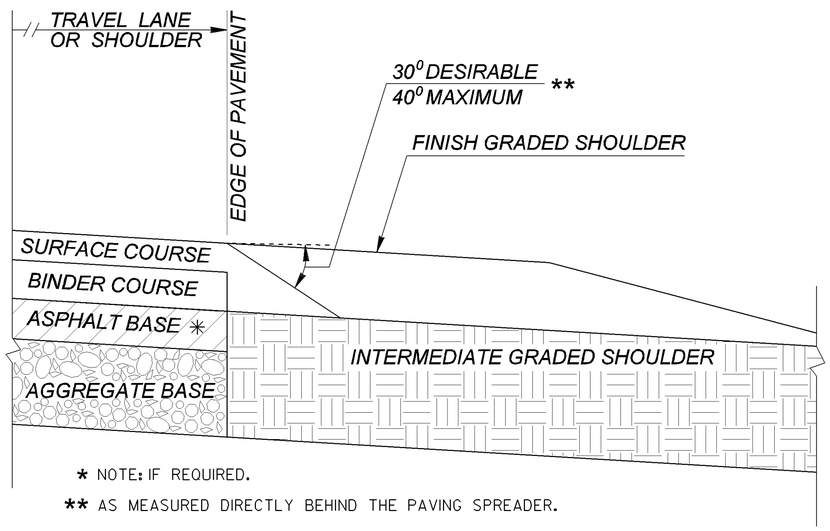
* NOTE: IF REQUIRED.

ADDITIONAL QUANTITIES:
CONCRETE
0.07407 SY/FT X LENGTH (FT) = _____SY

ASPHALT INTERLAYER, IF REQUIRED
(T) IN. X LENGTH (FT) X 0.004074 TN/IN.-FT = _____TN

AGGREGATE BASE (BASED ON 2.07 TN/CY)
(T) IN. X LENGTH (FT) X 0.0042592 TN/IN.-FT = _____TN

ASPHALT PAVEMENT - NEW



* NOTE: IF REQUIRED.

** AS MEASURED DIRECTLY BEHIND THE PAVING SPREADER.

ADDITIONAL QUANTITIES:
SURFACE COURSE PAVING DEPTH (T)
$(T)^2$ (IN.) X 0.000441 TN/IN.-FT X LENGTH (FT) = _____TN

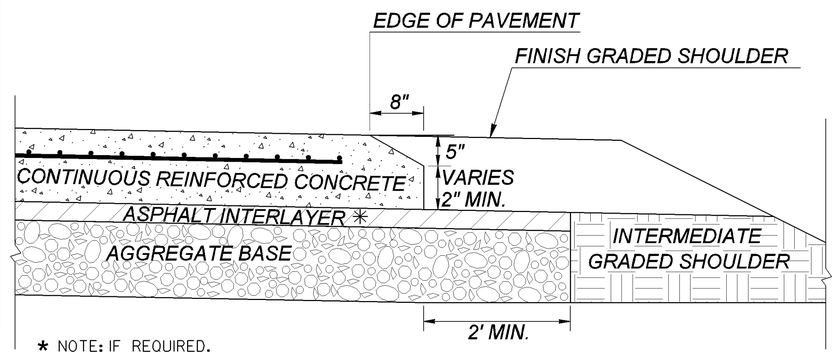
GENERAL NOTES:

1. THE SAFETY EDGE SHALL BE CONSTRUCTED AS AN INTEGRAL OPERATION OF THE ROADWAY PAVEMENT PLACEMENT PROCESS.

(ASPHALT PAVEMENT)

2. USE AN APPROVED MECHANICAL DEVICE THAT WILL:
   1. APPLY COMPACTIVE EFFORT TO THE ASPHALT MIXTURE TO ELIMINATE OBJECTABLE VOIDS AS THE MIXTURE PASSES THROUGH THE WEDGE DEVICE.
   2. PRODUCE A WEDGE WITH A UNIFORM TEXTURE, SHAPE, AND DENSITY WHILE AUTOMATICALLY ADJUSTING TO VARYING HEIGHTS ENCOUNTERED ALONG THE ROADWAY SHOULDER.
3. A SINGLE-PLATE STRIKE-OFF METHOD SHALL NOT BE USED FOR BITUMINOUS PAVING, AS THE SINGLE-PLATE STRIKE-OFF METHOD HAS BEEN FOUND TO PRODUCE A NON-DURABLE EDGE.
4. COMPACTION OF THE EDGE SHOULD NOT BE DONE WITH THE FIRST PASS OF THE ROLLER; WITH THE ROLLER STAYING OFF THE EDGE AT LEAST 6 INCHES. THIS IS IN ORDER TO ALLOW THE EDGE MIX TO SLIGHTLY COOL PRIOR TO COMPACTION.
5. SHORT SECTIONS OF HANDWORK ARE ALLOWED, WHEN NECESSARY, FOR TRANSITIONS AND TURNOUTS.

CONTINUOUS REINFORCED CONCRETE PAVEMENT



* NOTE: IF REQUIRED.

ADDITIONAL QUANTITIES:
CONCRETE
0.07407 SY/FT X LENGTH (FT) = _____SY

ASPHALT INTERLAYER, IF REQUIRED
(T) IN. X LENGTH (FT) X 0.004074 TN/IN.-FT = _____TN

AGGREGATE BASE (BASED ON 2.07 TN/CY)
(T) IN. X LENGTH (FT) X 0.0042592 TN/IN.-FT = _____TN

TC	BY	REVISION	DATE
REVISED ANGLE TOLERANCE			11-15-11
ANGLE & ADDED NOTE.			

DES. B.A.S.
DRW. G.L.O.
CHK. D.G.P.
REVIEW B.A.S.

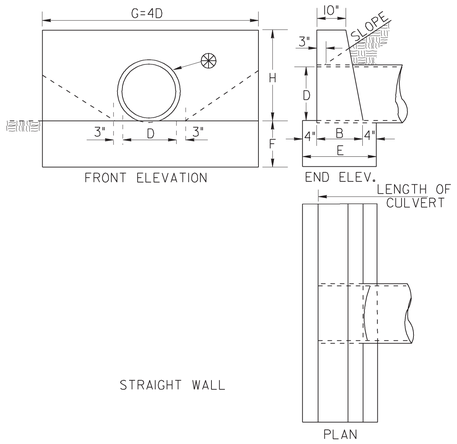
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

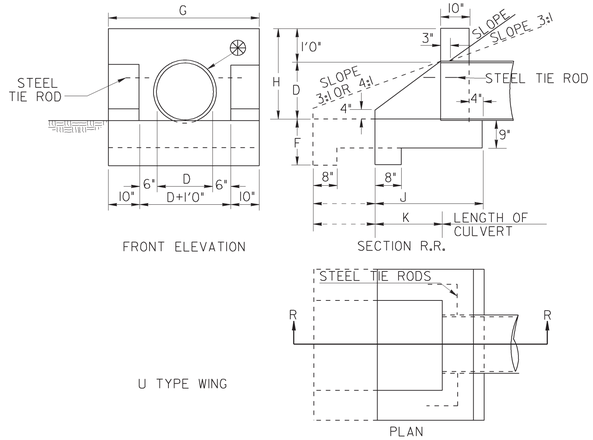
CONSTRUCTION DETAIL
PAVEMENT EDGE TREATMENT
ASPHALT AND CONCRETE PAVEMENT

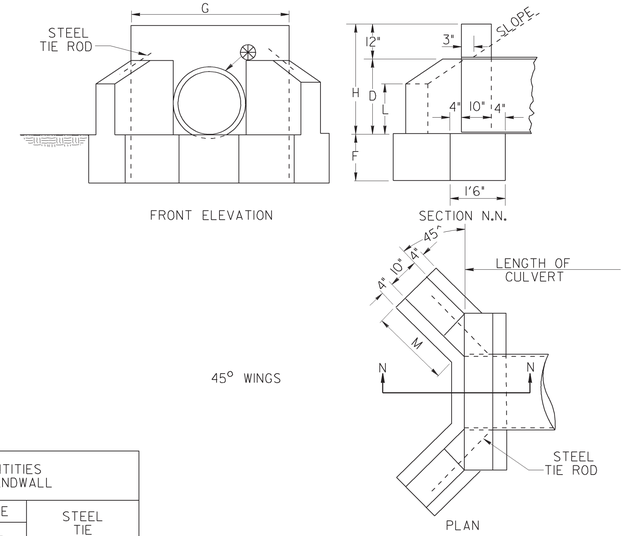
NO SCALE — SEPTEMBER 2011

NUMBER P-7

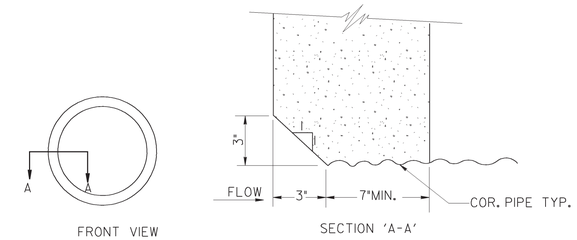
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			







INLET BEVEL DETAIL



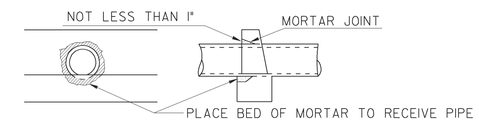
DIMENSIONS							QUANTITIES ONE STRAIGHT ENDWALL				CONC. IN WALL & FTG. FOR EACH ADDL. PIPE LINE
OPENING		WALL			FOOTING		CLASS "B" CONCRETE				
D	AREA SQ. FT.	G	H	B	E	F	CUBIC FEET WALL	CUBIC FEET FOOT	TOTAL CU. FT.	TOTAL CU.YD.	CU.YD.
12"	0.8	4'0"	2'0"	1'2"	1'10"	1'0"	7.2	7.3	14.5	0.54	0.25
15"	1.2	5'0"	2'3"	1'2"	1'10"	1'2"	9.9	10.7	20.6	0.76	0.36
18"	1.8	6'0"	2'6"	1'3"	1'11"	1'3"	13.6	14.4	28.0	1.04	0.48
24"	3.1	8'0"	3'0"	1'4"	2'0"	1'4"	22.3	21.3	43.6	1.62	0.74
30"	4.9	10'0"	3'6"	1'6"	2'2"	1'6"	34.7	32.5	67.2	2.49	1.13
36"	7.1	12'0"	4'0"	1'8"	2'4"	1'8"	50.5	46.7	97.2	3.60	1.62
42"	9.6	14'0"	4'6"	1'10"	2'6"	2'0"	70.3	70.0	140.3	5.20	2.13
48"	12.6	16'0"	5'0"	2'1"	2'9"	2'0"	96.9	88.0	184.9	6.85	2.58
54"	16.0	18'0"	5'6"	2'4"	3'0"	2'0"	129.4	108.0	237.4	8.79	3.07
60"	19.6	20'0"	6'0"	2'6"	3'2"	2'0"	164.6	126.7	291.3	10.79	3.53

FOR EACH ADDITIONAL PIPE LINE, ADD TO G: OD+(1D OR 3 FEET, WHICHEVER IS SMALLER)

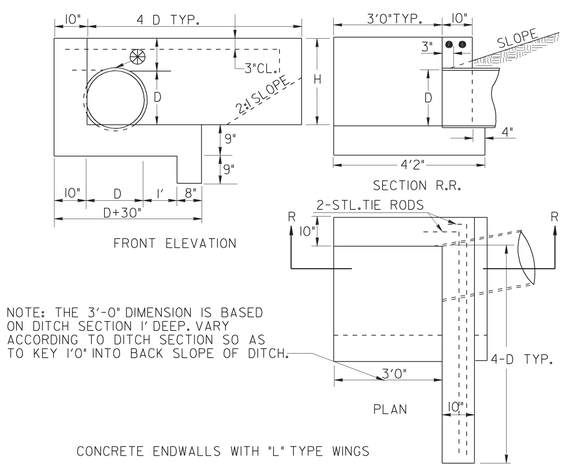
DIMENSIONS							QUANTITIES ONE "U" ENDWALL				
OPENING		WALL			FOOTING		CLASS "B" CONCRETE				STEEL TIE RODS
D	AREA SQ.FT	G	H	K	F	J	CUBIC FEET WALL	CUBIC FEET FOOT	TOTAL CU.FT.	TOTAL CU.YD.	
2:1 FILL SLOPES											
12"	0.8	3'8"	2'0"	1'0"	1'3"	2'2"	6.6	7.3	13.9	0.52	NONE
15"	1.2	3'11"	2'3"	1'5"	1'3"	2'7"	8.3	9.1	17.4	0.64	NONE
18"	1.8	4'2"	2'6"	1'9"	1'3"	2'11"	9.9	10.7	20.6	0.76	NONE
24"	3.1	4'8"	3'0"	2'6"	1'6"	3'8"	13.9	15.5	29.4	1.09	2-¾"DIA.x2'0"
30"	4.9	5'2"	3'6"	3'3"	1'6"	4'5"	18.7	20.0	38.7	1.43	2-¾"DIA.x2'0"
36"	7.1	5'8"	4'0"	4'0"	1'9"	5'2"	21.2	26.2	50.4	1.87	2-¾"DIA.x2'0"
42"	9.6	6'2"	4'6"	4'9"	2'0"	5'11"	30.3	33.2	63.5	2.35	2-¾"DIA.x2'6"
48"	12.6	6'8"	5'0"	5'6"	2'0"	6'8"	37.3	39.6	76.9	2.85	2-¾"DIA.x3'0"
54"	16.0	7'2"	5'6"	6'3"	2'0"	7'5"	44.2	45.9	90.1	3.33	2-¾"DIA.x3'6"
60"	19.6	7'8"	6'0"	7'0"	2'0"	8'2"	51.1	49.1	100.2	3.71	2-¾"DIA.x4'0"
3:1 FILL SLOPES											
12"	0.8	3'8"	2'0"	2'0"	1'3"	3'2"	7.7	9.9	17.6	0.65	NONE
15"	1.2	3'11"	2'3"	2'9"	1'3"	3'11"	10.0	12.8	22.8	0.84	NONE
18"	1.8	4'2"	2'6"	3'6"	1'3"	4'8"	12.5	16.0	28.5	1.06	NONE
24"	3.1	4'8"	3'0"	5'0"	1'6"	6'2"	18.8	24.0	42.8	1.58	2-¾"DIA.x2'0"
30"	4.9	5'2"	3'6"	6'6"	1'6"	7'8"	26.3	32.3	58.6	2.17	2-¾"DIA.x2'0"
36"	7.1	5'8"	4'0"	8'0"	1'9"	9'2"	35.1	42.8	77.9	2.89	2-¾"DIA.x2'0"
42"	9.6	6'2"	4'6"	9'6"	2'0"	10'8"	45.4	54.5	99.9	3.70	2-¾"DIA.x2'6"
48"	12.6	6'8"	5'0"	11'0"	2'0"	12'2"	56.9	66.5	123.4	4.57	2-¾"DIA.x3'0"
54"	16.0	7'2"	5'6"	12'6"	2'0"	13'8"	66.7	79.5	146.2	5.41	2-¾"DIA.x3'6"
60"	19.6	7'8"	6'0"	13'4"	2'0"	17'2"	81.0	87.9	168.9	6.25	2-¾"DIA.x4'0"
4:1 FILL SLOPES											
12"	0.8	3'8"	2'0"	2'8"	1'3"	3'10"	8.4	11.8	20.2	0.75	NONE
15"	1.2	3'11"	2'3"	3'8"	1'3"	4'10"	11.2	15.5	26.6	0.98	NONE
18"	1.8	4'2"	2'6"	4'8"	1'3"	5'10"	14.3	19.6	33.9	1.26	NONE
24"	3.1	4'8"	3'0"	6'8"	1'6"	7'10"	22.0	29.8	51.8	1.92	2-¾"DIA.x2'0"
30"	4.9	5'2"	3'6"	8'8"	1'6"	9'10"	31.3	40.7	72.0	2.67	2-¾"DIA.x2'0"
36"	7.1	5'8"	4'0"	10'8"	1'9"	11'10"	42.5	54.1	96.6	3.58	2-¾"DIA.x2'0"
42"	9.6	6'2"	4'6"	12'8"	2'0"	13'10"	55.4	69.2	124.6	4.61	2-¾"DIA.x2'6"
48"	12.6	6'8"	5'0"	14'8"	2'0"	15'10"	70.0	84.8	154.8	5.73	2-¾"DIA.x3'0"
54"	16.0	7'2"	5'6"	16'8"	2'0"	17'10"	86.4	101.9	188.3	6.97	2-¾"DIA.x3'6"
60"	19.6	7'8"	6'0"	18'8"	2'0"	19'10"	104.7	120.5	225.2	8.34	2-¾"DIA.x4'0"

DIMENSIONS							QUANTITIES ONE ENDWALL WITH 45° WING WALLS				
OPENING		WALL			FOOTING		CLASS "B" CONCRETE				STEEL TIE RODS
D	AREA SQ. FT.	H	G	L	M	F	CUBIC FEET WALL	CUBIC FEET FOOT	TOTAL CU.FT.	TOTAL CU.YD.	
2:1 SLOPES											
18"	1.8	2'6"	3'10"	1'2"	1'7"	1'3"	9.3	10.7	20.0	0.74	NONE
24"	3.1	3'0"	4'4"	1'5"	2'1"	1'4"	13.1	14.4	27.5	1.02	2-¾"DIA.x2'0"
30"	4.9	3'6"	4'10"	1'9"	2'5"	1'6"	17.4	18.8	36.7	1.34	2-¾"DIA.x2'0"
36"	7.1	4'0"	5'4"	2'0"	2'11"	1'8"	22.6	24.6	47.2	1.75	2-¾"DIA.x3'0"
42"	9.6	4'6"	5'10"	2'3"	3'6"	2'0"	29.1	34.6	63.7	2.36	2-¾"DIA.x3'0"
48"	12.6	5'0"	6'4"	2'6"	4'0"	2'0"	35.9	39.1	75.0	2.78	2-¾"DIA.x3'0"
54"	16.0	5'6"	6'10"	2'9"	4'6¼"	2'0"	42.9	46.6	89.5	3.31	2-¾"DIA.x3'0"
60"	19.6	6'0"	7'4"	3'0"	5'0½"	2'0"	51.8	51.1	102.9	3.81	2-¾"DIA.x3'0"
3:1 SLOPES											
18"	1.8	2'6"	3'10"	1'2"	1'9"	1'3"	10.7	14.5	25.2	0.93	NONE
24"	3.1	3'0"	4'4"	1'5"	2'10"	1'4"	16.6	17.8	34.4	1.27	2-¾"DIA.x2'0"
30"	4.9	3'6"	4'10"	1'9"	3'6"	1'6"	22.9	24.4	47.3	1.71	2-¾"DIA.x2'0"
36"	7.1	4'0"	5'4"	2'1"	4'3"	1'8"	30.2	32.0	62.2	2.30	2-¾"DIA.x3'0"
42"	9.6	4'6"	5'10"	2'5"	4'11"	2'0"	38.8	44.0	82.8	3.07	2-¾"DIA.x3'0"
48"	12.6	5'0"	6'4"	2'8"	5'6"	2'0"	47.5	48.6	96.1	3.56	2-¾"DIA.x3'0"
54"	16.0	5'6"	6'10"	3'2"	6'1"	2'0"	57.0	53.4	110.4	4.09	2-¾"DIA.x3'0"
60"	19.6	6'0"	7'4"	3'6"	6'9"	2'0"	68.5	59.1	127.6	4.73	2-¾"DIA.x3'0"

METHOD OF EXTENDING PIPE AND RETAINING EXISTING HEADWALL



CONCRETE WITHIN THE HATCHED AREA TO BE REMOVED BY CHIPPING OR IN A MANNER APPROVED BY THE ENGINEER, FORMING A RECESS NO LESS THAN 1" LARGER THAN THE OUTSIDE DIMENSION OF THE PIPE.



NOTE: THE 3'-0" DIMENSION IS BASED ON DITCH SECTION 1' DEEP. VARY ACCORDING TO DITCH SECTION SO AS TO KEY 1'0" INTO BACK SLOPE OF DITCH.

CONCRETE ENDWALLS WITH "L" TYPE WINGS

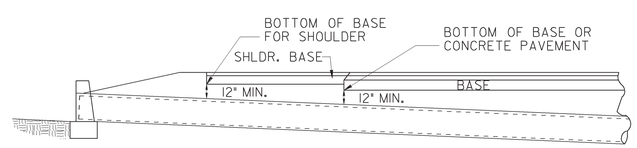
NOTE: THESE QUANTITIES WILL VARY ACCORDING TO DITCH SECTION AND ARE TO BE USED FOR ESTIMATING PURPOSES ONLY. PAYMENT TO BE MADE ACCORDING TO QUANTITIES MEASURED AS ACTUALLY PLACED.

DIMENSIONS					QUANTITIES ONE "L" ENDWALL	
D	AREA SQ.FT.	H MIN.	4D TYP.	D+30 TYP.	CU. YD. CONC.	STEEL TIE RODS
15"	1.2	2'3"	5'0"	3'9"	1.08	2-¾"DIA.x5'0"
18"	1.8	2'6"	6'0"	4'0"	1.24	2-¾"DIA.x6'0"
24"	3.1	3'0"	8'0"	4'6"	1.59	2-¾"DIA.x8'0"
30"	4.9	3'6"	10'0"	5'0"	2.00	2-¾"DIA.x10'0"
36"	7.1	4'0"	12'0"	5'6"	2.46	2-¾"DIA.x12'0"
42"	9.6	4'6"	14'0"	6'0"	2.98	2-¾"DIA.x14'0"
48"	12.6	5'0"	16'0"	6'6"	3.53	2-¾"DIA.x16'0"
54"	16.0	5'6"	18'0"	7'0"	4.13	2-¾"DIA.x18'0"
60"	19.6	6'0"	20'0"	7'6"	4.85	2-¾"DIA.x20'0"

3:1 FILL SLOPES

NOTE:
QUANTITIES OF CONCRETE ARE BASED ON INSIDE DIAMETER OF PIPE. NO DEDUCTIONS SHALL BE MADE FOR SHELL THICKNESS OR SKEW OF PIPE IN COMPUTING PAY QUANTITIES.

SECTION SHOWING MINIMUM COVER OVER CULVERTS



NOTE: GRADE GENERALLY TO FOLLOW SLOPE OF STREAM.

⊛ IF PIPE HAS NEITHER A GROOVE NOR A SPIGOT AT ITS INLET, AN INLET BEVEL WILL BE REQ'D.

NOTE TO DESIGNER

THIS STANDARD IS LIMITED FOR USE ONLY AT SPECIAL CONDITIONS, OTHERWISE, SEE CURRENT STANDARDS 1120 & 1125.

HEADWALLS ARE NOT TO BE PLACED INSIDE THE CLEAR ZONE.

DATE	REVISION	BY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
PIPE CULVERT
CONCRETE HEADWALL

NO SCALE

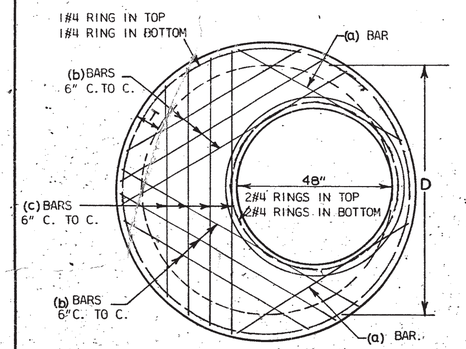
REV. & REDR. AUG. 1999

DESIGNED
TRACED
CHECKED

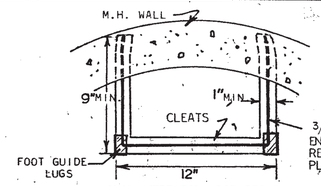
(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER
(APPROVED) CHIEF ENGINEER

NUMBER 1001-B

STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
GA.			



PLAN OF STEEL REINFORCEMENT



STEP SHALL BE OF TYPE APPROVED BY GA. D.O.T. OFFICE OF MATERIALS AND RESEARCH.

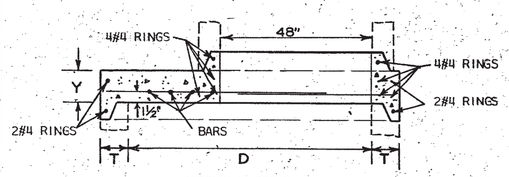
3/8" Ø REINFORCING ROD (MIN) ENCASED IN A CORROSION-RESISTANT RUBBER OR PLASTIC

MIN. VERTICAL LOAD RESISTANCE = 400 LBS.
MIN. PULLOUT RESISTANCE = 700 LBS.

STEP DETAIL

D	Y MIN.	(a) BARS No.	(a) BARS SIZE	(b) BARS No.	(b) BARS SIZE	(c) BARS No.	(c) BARS SIZE
60"	8"	2	#6	4	#6	2	#6
72"	9"	2	#6	6	#6	4	#6

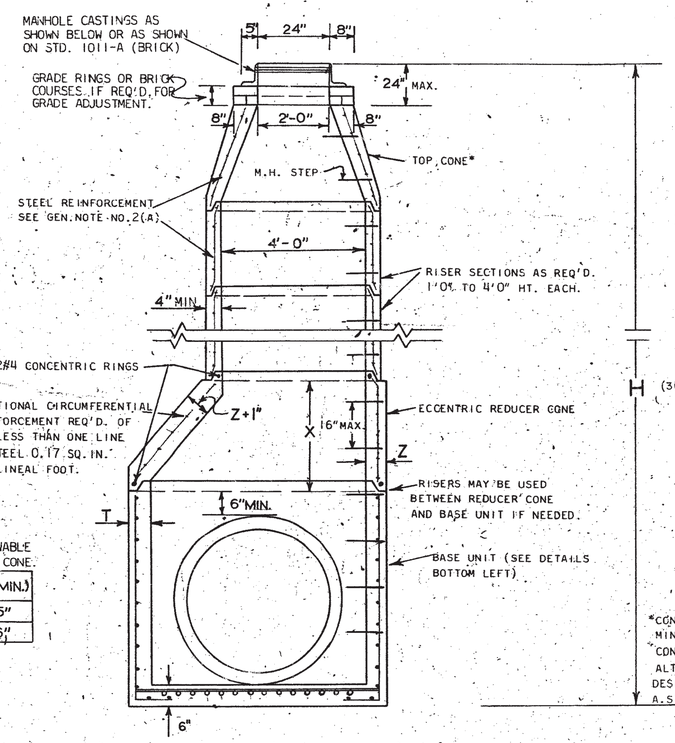
NOTE: 10 FT. MAXIMUM ALLOWANCE COVER ABOVE TOP OF REDUCER SLABS. REDUCER CONES TO BE USED WHERE REDUCER SLABS NOT PERMITTED.



SECTIONAL DETAIL
REDUCER SLAB

D = INSIDE DIAMETER OF BASE UNIT

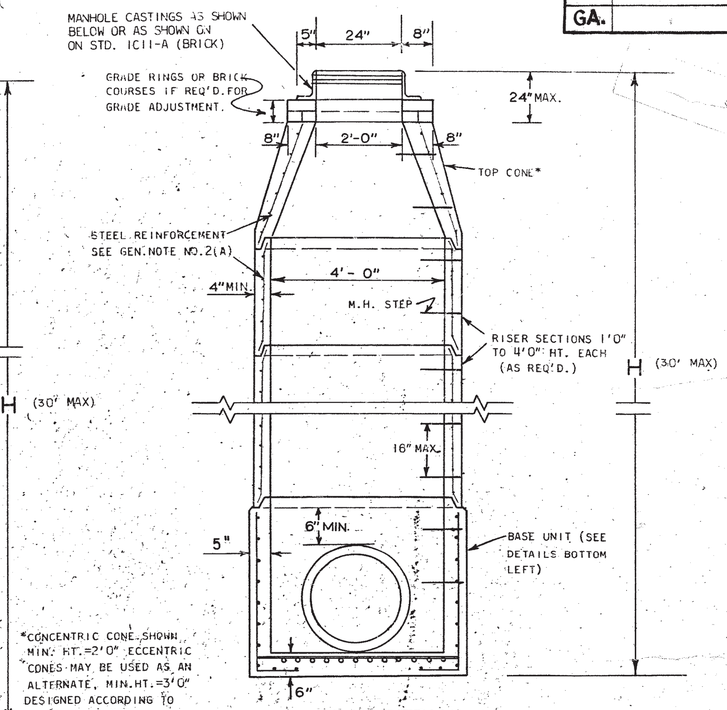
STEPS ARE REQUIRED IN ALL MANHOLES OVER 4 FT. IN HEIGHT.



NOTE:
25 FT. MAXIMUM ALLOWABLE COVER ABOVE REDUCER CONE.

D	X (MIN.)	Z (MIN.)
60"	1'-6"	5"
72"	3'-0"	6"

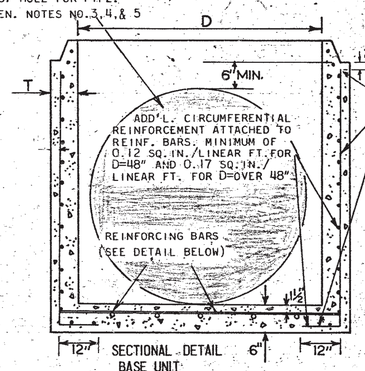
SECTIONAL DETAIL
(MANHOLE WITH BASE UNIT OF D=OVER 48")



*CONCENTRIC CONE SHOWN, MIN. HT. = 2'0". ECCENTRIC CONES MAY BE USED AS AN ALTERNATE, MIN. HT. = 3'0" DESIGNED ACCORDING TO A.S.T.M. C-478

SECTIONAL DETAIL
(MANHOLE WITH BASE UNIT OF D=48")

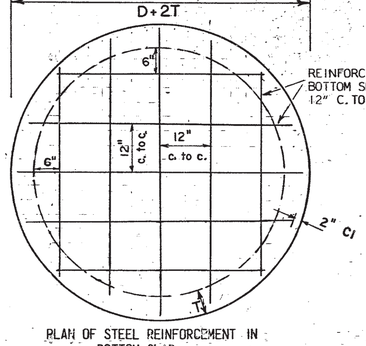
PRECAST HOLE FOR PIPE.
SEE GEN. NOTES NO. 3, 4, & 5



BASE UNIT SHALL CONTAIN IN ADDITION TO A.S.T.M. C-478 REINFORCEMENT, TWO NO. 5 VERTICAL BARS AT EACH OPENING EXTENDING FROM WITHIN 2" OF JOINT DOWN WALL INTO BOTTOM SLAB AS SHOWN MINIMUM 2" CLEARANCE ALL AROUND.

D	T (MIN)
48"	5"
60"	5"
72"	6"

SECTIONAL DETAIL
BASE UNIT

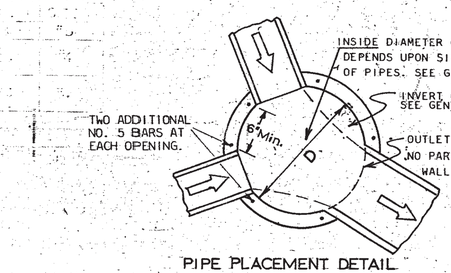


REINFORCING BARS IN TOP OF BOTTOM SLAB MAXIMUM SPACING 12" C. TO C. BOTH WAYS

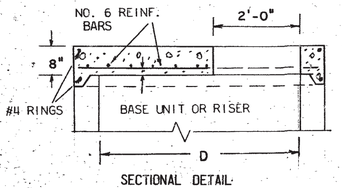
D	BAR SIZE
48"	#5
60"	#6
72"	#6

PLAN OF STEEL REINFORCEMENT IN BOTTOM SLAB

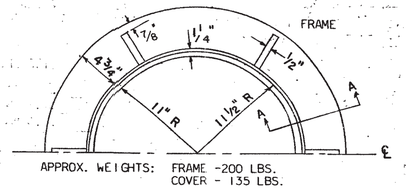
BASE UNIT

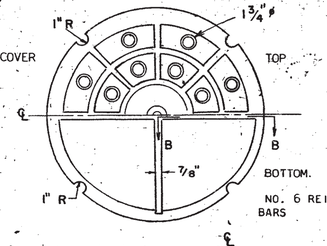


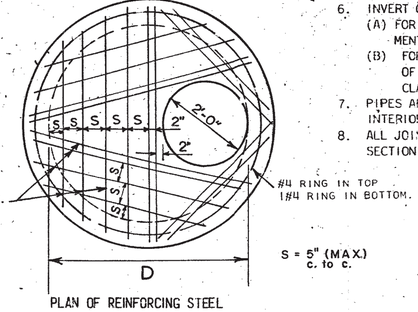
PIPE PLACEMENT DETAIL



SECTIONAL DETAIL





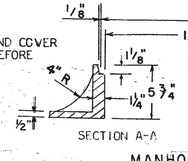


PLAN OF REINFORCING STEEL

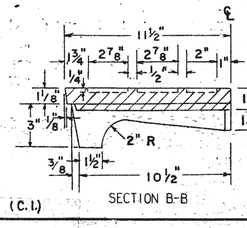
FLAT TOP SLAB IS FOR USE IN AREA OF MINIMUM COVER ONLY. MAXIMUM HEIGHT OF MANHOLE WITH FLAT TOP SLAB SHALL BE 4 FT. ABOVE TOP OF HIGHEST ENTERING PIPE.

FLAT TOP SLAB

NOTE: FRAME AND COVER TO BE FITTED BEFORE LEAVING SHOP.



SECTION A-A



SECTION B-B

MANHOLE CASTINGS (C.I.)

GENERAL NOTES.

1. MATERIALS: ALL CONCRETE, STEEL BARS AND STEEL WIRE REINFORCEMENT SHALL COMPLY WITH SECTION 866.02 OF GEORGIA STANDARD SPECIFICATIONS AND SPECIAL PROVISION WHICH MODIFY SECTION 866.02.
2. REINFORCEMENT:
   (A) PLACEMENT AND DESIGN OF STEEL REINFORCEMENT IN RISER UNITS, CONE SECTIONS, GRADE RINGS AND JOINTS SHALL BE IN COMPLIANCE WITH A.S.T.M. C-478 UNLESS OTHERWISE NOTED.
   (B) BASE UNITS, REDUCER SLABS AND FLAT TOP SLABS SHALL HAVE STEEL REINFORCEMENT AS SHOWN IN DETAILS AT LEFT.
3. OPENINGS FOR PIPES LARGER THAN 6 INCHES IN DIAMETER ARE TO BE PRECAST. A MINIMUM OF 6" ALONG THE INTERCIRCUMFERENCE IS TO REMAIN BETWEEN THE EXTREMITIES OF HOLE FOR ADJACENT PIPE IN ANY SINGLE UNIT. A MINIMUM OF TWO REINF. BARS SHALL REMAIN IN WALL BETWEEN ANY TWO OPENINGS.
4. THE CONTRACTOR WILL FURNISH THE FABRICATOR WITH THE ANGLE OF ALINEMENT AND SIZE OF ALL PIPES TO ENTER MANHOLE AND THE HEIGHT OF STRUCTURE.
5. BASE UNITS SHALL HAVE SUFFICIENT HEIGHT TO ALLOW FOR MINIMUM OF 6" OF WALL BETWEEN TOP OF HIGHEST OPENING FOR PIPES AND BOTTOM OF JOINT.
6. INVERT CHANNELS:
   (A) FOR SANITARY SEWER MANHOLES SEE GEORGIA STANDARD SPECIFICATIONS FOR CHANNEL REQUIREMENTS.
   (B) FOR STORM SEWER MANHOLES, CHANNELS BUILT TO SUIT PIPE SIZES AND LOCATION. HEIGHT OF CHANNEL EQUAL TO 1/2 DIAMETER OF OUTLET PIPE. CHANNEL BUILT FROM GROUT OR CLASS "A" CONCRETE.
7. PIPES ARE TO BE EXTENDED INTO STRUCTURE WALL A MINIMUM OF 4" BUT SHOULD NOT EXTEND BEYOND INTERIOR WALL OF STRUCTURE.
8. ALL JOINTS, EXCEPT FOR GRADE RINGS AND TOP OF TOP CONE, SHALL HAVE TONGUE AND GROOVE SECTION.

BY	REVISIONS	DATE
R M U	CASTINGS & BASE U.	6-1-75

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
PRECAST REINFORCED CONCRETE MANHOLE

NO SCALE — AUGUST, 1973

DESIGNED: GCL / RMU
DRAWN: RMU
CHECKED: JEC

SUBMITTED: J. S. Kratzer
STATE ROAD DESIGN ENGINEER

APPROVED:
STATE HIGHWAY ENGINEER

NUMBER 1011-A
PRECAST

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

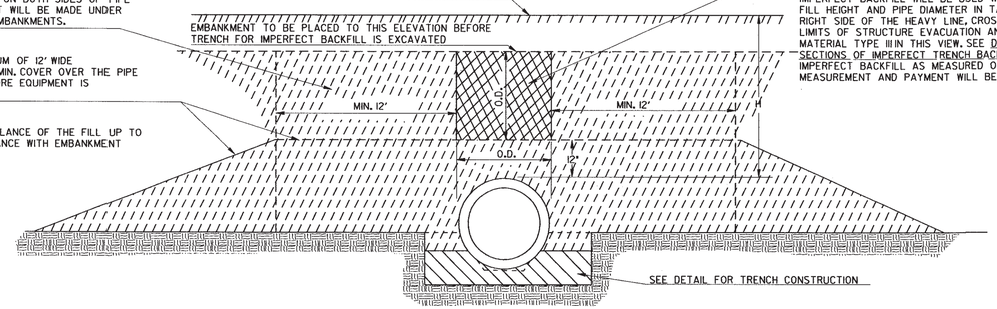
NORMAL BACKFILL

BACKFILL, AS SHOWN BY THE BROKEN LINE SECTIONS, SHALL CONSIST OF PLACING COMPACTABLE SOIL IN 6" (LOOSE) LAYERS AND COMPACTING EACH LAYER (ACCORDING TO GEORGIA STANDARD SPECIFICATIONS) ON BOTH SIDES OF PIPE FOR ITS FULL LENGTH. MEASUREMENT AND PAYMENT WILL BE MADE UNDER ROADWAY EXCAVATION ITEMS FOR FORMATION OF EMBANKMENTS.

NORMAL EMBANKMENT SHALL BE PLACED A MINIMUM OF 12' WIDE ON EACH SIDE OF THE PIPE AND AT LEAST THE MIN. COVER OVER THE PIPE AND COMPACTED TO THE REQUIRED DENSITY BEFORE EQUIPMENT IS ALLOWED TO CROSS.

AFTER BACKFILL HAS BEEN COMPACTED, THE BALANCE OF THE FILL UP TO GRADE LINE SHALL BE CONSTUCTED IN ACCORDANCE WITH EMBANKMENT SPECIFICATIONS

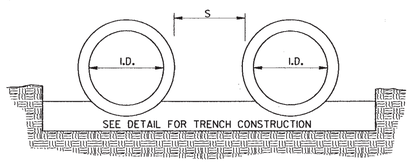
LONGITUDINAL SECTION OF IMPERFECT TRENCH BACKFILL AND BACKFILL METHODS



IMPERFECT BACKFILL

IMPERFECT BACKFILL WILL BE USED WITH CONCRETE PIPE IF FILL HEIGHT AND PIPE DIAMETER IN TABLE NO. I FALLS ON THE RIGHT SIDE OF THE HEAVY LINE, CROSS HATCHED AREA SHOWS LIMITS OF STRUCTURE EVACUATION AND IMPERFECT BACKFILL MATERIAL TYPE III IN THIS VIEW. SEE DETAILS BELOW CROSS SECTIONS OF IMPERFECT TRENCH BACKFILL FOR LIMITS OF IMPERFECT BACKFILL AS MEASURED OVER THE PIPE LENGTHWISE. MEASUREMENT AND PAYMENT WILL BE CONFINED TO THESE LIMITS.

MULTIPLE PIPE CULVERT SPACING

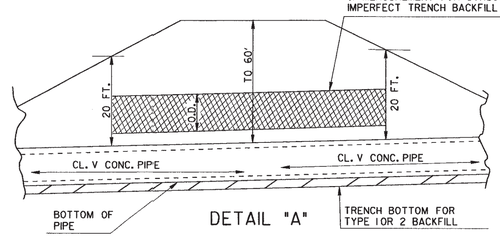


S=ONE INSIDE DIAMETER OF PIPE, OR 3 FEET, WHICHEVER IS SMALLER.
FOR PIPE ARCH CULVERTS, SUBSTITUTE SPAN FOR INSIDE DIAMETER.

NOTE:
FOR MULTIPLE LINES OF C.M. PIPE WITH METAL FLARED END SECTIONS, S MAY BE INCREASED ENOUGH TO AVOID OVERLAP OF END SECTION WINGTIPS. LOCATION OF METAL END SECTION SHOULD BE DETERMINED BEFORE PLACEMENT OF PIPE.

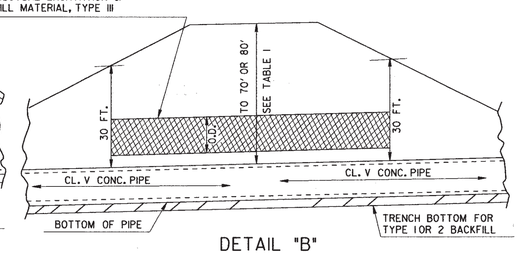
CROSS SECTIONS OF IMPERFECT TRENCH BACKFILL

CROSS HATCHED AREAS SHOW LIMITS OF CONSTRUCTION & MEASUREMENT FOR STRUCTURE EXCAVATION & IMPERFECT TRENCH BACKFILL MATERIAL, TYPE III



DETAIL "A"

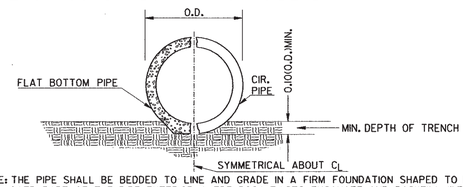
(FOR CONCRETE PIPE DIAMETERS 78" & 84", WITH FILL HEIGHTS OVER 20 FT.)



DETAIL "B"

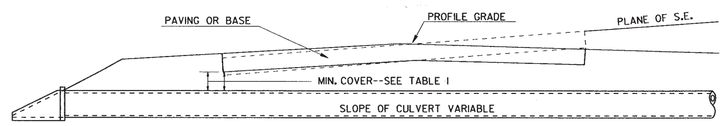
(FOR CONCRETE PIPE DIAMETERS 72" AND LESS WITH FILL HEIGHTS OVER 30 FT.)

TRENCH CONSTRUCTION FOR SIDE DRAIN



NOTE: THE PIPE SHALL BE BEDDED TO LINE AND GRADE IN A FIRM FOUNDATION SHAPED TO FIT THE LOWER PART OF THE PIPE EXTERIOR. WHERE ROCK EXISTS, EXCAVATE AND BACKFILL WITH COMPRESSABLE MATERIAL (UNCLASSIFIED EXCAVATION) A MINIMUM OF 6" BELOW THE PIPE.

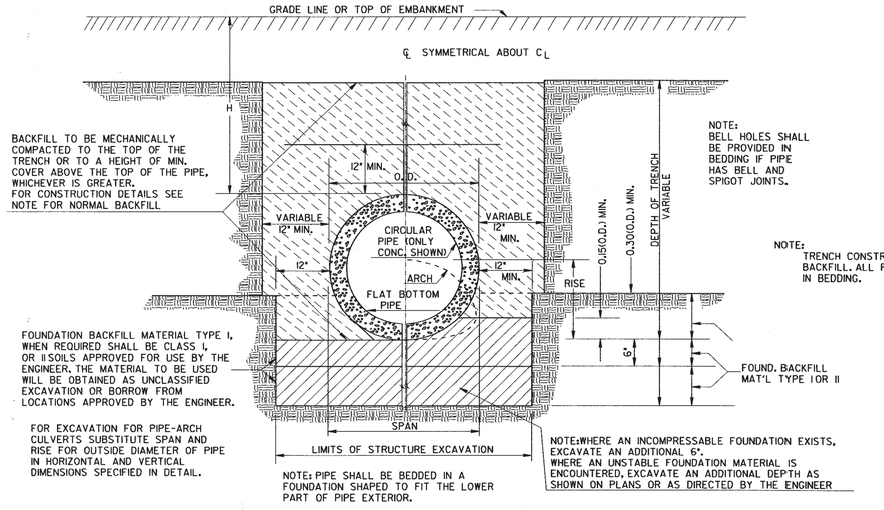
DETAIL SHOWING MINIMUM COVER FOR PIPE CULVERTS



NOTE:

1. FOR FILL HEIGHT TABLES SEE SHEET 2 OF 3 AND SHEET 3 OF 3.
2. ONLY ONE CLASS OR THICKNESS OF PIPE WILL BE SPECIFIED FOR EACH INDIVIDUAL LOCATION. THE CLASS OR THICKNESS WILL BE DETERMINED BY THE MAXIMUM HEIGHT OF FILL.

TRENCH CONSTRUCTION FOR STORM DRAIN.



BACKFILL TO BE MECHANICALLY COMPACTED TO THE TOP OF THE TRENCH OR TO A HEIGHT OF MIN. COVER ABOVE THE TOP OF THE PIPE, WHICHEVER IS GREATER. FOR CONSTRUCTION DETAILS SEE NOTE FOR NORMAL BACKFILL

FOUNDATION BACKFILL MATERIAL TYPE I, WHEN REQUIRED SHALL BE CLASS I, OR II SOILS APPROVED FOR USE BY THE ENGINEER. THE MATERIAL TO BE USED WILL BE OBTAINED AS UNCLASSIFIED EXCAVATION OR BORROW FROM LOCATIONS APPROVED BY THE ENGINEER.

FOR EXCAVATION FOR PIPE-ARCH CULVERTS SUBSTITUTE SPAN AND RISE FOR OUTSIDE DIAMETER OF PIPE IN HORIZONTAL AND VERTICAL DIMENSIONS SPECIFIED IN DETAIL.

NOTE: PIPE SHALL BE BEDDED IN A FOUNDATION SHAPED TO FIT THE LOWER PART OF PIPE EXTERIOR.

NOTE: WHERE AN INCOMPRESSABLE FOUNDATION EXISTS, EXCAVATE AN ADDITIONAL 6". WHERE AN UNSTABLE FOUNDATION MATERIAL IS ENCOUNTERED, EXCAVATE AN ADDITIONAL DEPTH AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER

NOTE:
BELL HOLES SHALL BE PROVIDED IN BEDDING IF PIPE HAS BELL AND SPIGOT JOINTS.

NOTE:
TRENCH CONSTRUCTION IS REQUIRED FOR BOTH NORMAL OR IMPERFECT BACKFILL. ALL PIPES WITH BELL & SPIGOT JOINTS SHALL HAVE BELL HOLES IN BEDDING.

				DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
				REVISION	STANDARD CONCRETE & METAL PIPE CULVERTS SHEET 1 OF 3 (TRENCH CONSTRUCTION, BEDDING, BACKFILLING)
					NO SCALE — REV. & REDR.: SEPT., 2001
				BY	DES. ____ (SUBMITTED) James A. Bennett DRW. ____ STATE ROAD & AIRPORT DESIGN ENGR. TRA. ____ (APPROVED) Vernon L. Foddrell CHK. ____ CHIEF ENGINEER

NUMBER 1030D

TABLE NO. 1 ROUND PIPE - CONCRETE - CORRUGATED STEEL - CORRUGATED ALUMINUM

MINIMUM CLASS OF CONCRETE OR MINIMUM THICKNESS OF STEEL AND ALUMINUM

PIPE DIAMETER (INCHES)	TYPE	MINIMUM COVER (INCHES)	HEIGHT OF FILL IN FEET ABOVE TOP OF PIPE												PIPE DIAMETER (INCHES)
			1 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 50	50 - 60	60 - 70	70 - 80	80 - 90	
12	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		12
	STEEL 1	12	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	
	ALUM 1	12	.060	.060	.060	.060	.075	.075	.075	.075	.075	.075	.075	.075	
15	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		15
	STEEL 1	12	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	
	ALUM 1	12	.060	.060	.060	.060	.075	.075	.075	.075	.075	.075	.075	.105	
18	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		18
	STEEL 1	12	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	
	ALUM 1	12	.060	.060	.060	.060	.075	.075	.075	.075	.105	.105	.105	.105	
24	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		24
	STEEL 1	12	.064	.064	.064	.064	.064	.064	.064	.064	.064	.064	.079	.079	
	ALUM 1	12	.060	.060	.060	.075	.075	.075	.075	.105	.105	.105	.105		
30	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		30
	STEEL 1	12	.064	.064	.064	.064	.064	.064	.064	.064	.079	.079	.109	.109	
	ALUM 1	12	.075	.075	.075	.075	.075	.105	.105	.105	.135	.135			
36	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		36
	STEEL 1	12	.064	.064	.064	.064	.064	.064	.064	.079	.079	.109	.109	.138	
	STEEL 2	12	.064	.064	.064	.064	.064	.064	.064	.064	.079	.079	.109	.109	
	ALUM 1	12	.075	.105	.105	.105	.105	.105	.135	.135	.135	.135			
	ALUM 2	12	.060	.060	.060	.060	.075	.075	.105	.105	.105	.135			
42	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		42
	STEEL 1	12	.064	.064	.064	.064	.064	.064	.064	.079	.109	.109	.138	.138	
	STEEL 2	12	.064	.064	.064	.064	.064	.064	.064	.079	.109	.109	.109	.138	
	ALUM 1	12	.105	.105	.135	.135	.164	.164							
	ALUM 2	12	.060	.060	.060	.075	.075	.105	.105	.105	.135	.135			
48	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		48
	STEEL 1	12	.064	.064	.064	.064	.064	.064	.079	.109	.109	.138	.138	.168	
	STEEL 2	12	.064	.064	.064	.064	.064	.064	.064	.079	.109	.109	.138	.138	
	ALUM 1	12	.105	.105	.135	.164	.164	.164							
	ALUM 2	12	.060	.060	.060	.075	.075	.105	.105	.135	.135	.164	.164		
54	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		54
	STEEL 1	12	.079	.079	.079	.079	.079	.079	.079	.109	.138	.138	.168		
	STEEL 2	12	.064	.064	.064	.064	.064	.064	.079	.109	.109	.138	.138	.168	
	ALUM 1	15	.105	.105	.135	.164	.164	.164							
	ALUM 2	15	.060	.060	.060	.075	.075	.105	.135	.135	.164	.164			
60	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V	V		60
	STEEL 1	12	.109	.109	.109	.109	.109	.109	.109	.109	.138	.168			
	STEEL 2	12	.064	.064	.064	.064	.064	.079	.079	.109	.138	.138	.168	.168	
	ALUM 1	15	.135	.135	.164	.164	.164	.164							
	ALUM 2	15	.060	.060	.075	.105	.105	.135	.135	.164	.164				
66	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V			66
	STEEL 1	12	.138	.138	.138	.138	.138	.138	.138	.138	.168	.168			
	STEEL 2	12	.064	.064	.064	.064	.064	.079	.109	.109	.138	.168	.168		
	ALUM 1	18	.164	.164	.164	.164	.164								
	ALUM 2	18	.075	.075	.105	.105	.135	.135	.164	.164					
72	CONCRETE	12	III	III	IV	V	V	V	V	V	V	V			72
	STEEL 1	12	.138	.138	.138	.138	.138	.138	.138	.138	.168				
	STEEL 2	12	.064	.064	.064	.064	.079	.109	.109	.138	.138	.168			
	ALUM 1	18	.164	.164	.164	.164	.164								
	ALUM 2	18	.075	.075	.105	.105	.135	.164	.164	.164					
78	CONCRETE	12	III	III	IV	V	V	V	V	V	V				78
	STEEL 1	15	.168	.168	.168	.168	.168	.168	.168	.168					
	STEEL 2	15	.064	.064	.064	.064	.079	.109	.109	.138	.168	.168			
	ALUM 2	21	.075	.075	.105	.105	.135	.164	.164						
84	CONCRETE	12	III	III	IV	V	V	V	V	V	V				84
	STEEL 1	15	.168	.168	.168	.168	.168	.168	.168	.168					
	STEEL 2	15	.064	.064	.064	.079	.079	.109	.109	.138	.168				
	ALUM 2	21	.105	.105	.105	.135	.135	.164	.164						
90	CONCRETE	12	III	III											90
	STEEL 2	18	.064	.064	.064	.079	.109	.109	.138	.138	.168				
	ALUM 2	24	.105	.105	.135	.135	.164								
96	CONCRETE	12	III	III											96
	STEEL 2	18	.079	.079	.079	.079	.109	.109	.138	.168					
	ALUM 2	24	.105	.105	.135	.135	.164								
102	CONCRETE	12	III	III											102
	STEEL 2	24	.079	.079	.079	.109	.109	.138	.138	.168					
	ALUM 2	24	.135	.164	.164										
108	CONCRETE	12	III	III											108
	STEEL 2	24	.109	.109	.109	.109	.109	.138	.138	.168					
	ALUM 2	24	.135	.164											
114	CONCRETE														114
	STEEL 2	24	.109	.109	.109	.109	.109	.138	.168						
	ALUM 2	24	.164	.164											
120	CONCRETE														120
	STEEL 2	24	.109	.109	.109	.109	.138	.138	.168						
	ALUM 2	24	.164	.164											

IMPERFECT BACKFILL IS NOT REQUIRED FOR CONDTIONS SHOWN ON THE LEFT SIDE OF THE HEAVY LINE. USE NORMAL BACKFILL.

FOR CONDITIONS TO THE RIGHT OF THE HEAVY LINE, CLASS V CONCRETE PIPE REQUIRES IMPERFECT BACKFILL ACCORDING TO DETAIL "A" OR "B" ON SHEET 1 OF 3.

TABLE NO.3-(INFORMATION ONLY)		
	COR. METAL THICKNESS	EQUIVALENT GAGE
STEEL	.064	16
	0.079	14
	0.109	12
	0.138	10
	0.168	8
ALUMINUM	0.060	16
	0.075	14
	0.105	12
	0.135	10
	0.164	8

STEEL 1 OR ALUM 1 DENOTES CORRUGATION PROFILE 2 2/3" X 1/2"

STEEL 2 OR ALUM 2 DENOTES CORRUGATION PROFILE 3" X 1" (OR 5" X 1" FOR STEEL PIPE ONLY)

ALL STEEL AND ALUMINUM PIPE SHALL BE LOCK-SEAM OR WELDED-SEAM (HELICAL) CONSTRUCTION.

MINIMUM COVER VALUES APPLY TO HS-20 LIVE LOAD. MINIMUM COVER NEEDED FOR CONSTRUCTION VEHICLES MAY BE GREATER AND IS THE RESPONSIBILITY OF THE CONTRACTOR.

TRENCH CONSTRUCTION IS REQUIRED FOR CONDITIONS ON BOTH SIDES OF HEAVY LINE. SEE SHEET 1 OF 3.

FOR CONDITIONS TO RIGHT OF HEAVY LINE, CONCRETE PIPE REQUIRES IMPERFECT BACKFILL ACCORDING TO SPECIFICATIONS AND THIS STANDARD.

TABLE VALUES FOR ALUMINUM CORRUGATED PIPE (OR ALUMINUM SPIRAL RIB PIPE) ARE COMPUTED BASED UPON ALCLAD ALLOY 3004-H34 HAVING MINIMUM YIELD STRENGTH, fy=24,000 PSI. IF ALUMINUM PIPE IS OTHERWISE FURNISHED AS 3004-H32 (fy=20,000 PSI), THE TABLE NO. 1 ALLOWABLE FILL HEIGHTS SHALL BE ADJUSTED AS FOLLOWS:

A. ALL MINIMUM COVER VALUES SHALL BE INCREASED BY 15 PERCENT. (EXAMPLE: 12 INCHES BECOMES 13.8 INCHES)
B. ALL HEIGHT OF FILL VALUES SHALL BE DECREASED BY 15 PERCENT. (EXAMPLE: 35-40 FEET BECOMES 29.7-34.0 FEET)

BY	REVISION	DATE
GJP	GEN. REV. NOTES	9-26-01
	ADDED SEAM CONST. NOTE	3-9-99

DES. ___ DRW. ___ TRA. ___ CHK. ___

NO SCALE

(SUBMITTED) STATE TRANSP. ADMIN.

(APPROVED) ASST. DIR. OF PROJ. DEV.

CHIEF ENGINEER

OCTOBER 21, 1998

NUMBER 1030D

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
CONCRETE & METAL PIPE CULVERTS
SHEET 2 OF 3
(FILL HEIGHTS FOR CONCRETE & CORRUGATED METAL PIPE)

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

TABLE NO. 1 R ROUND PIPE - SPIRAL RIB STEEL - SPIRAL RIB ALUMINUM
MINIMUM THICKNESS OF STEEL AND ALUMINUM

PIPE DIAMETER (INCHES)	TYPE	MINIMUM COVER (INCHES)	HEIGHT OF FILL (FEET) ABOVE TOP OF PIPE												PIPE DIAMETER (INCHES)
			1 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 50	50 - 60	60 - 70	70 - 80	80 - 90	
12															12
15															15
18	STEEL R	12	.064	.064	.064	.064	.064	.064	.064	.064	.064	.079	.079		18
	ALUM R	12	.060	.060	.060	.060	.060	.060	.075	.075					
24	STEEL R	12	.064	.064	.064	.064	.064	.064	.064	.079	.079	.109	.109		24
	ALUM R	12	.060	.060	.060	.060	.075	.075	.105	.105	.105				
30	STEEL R	12	.064	.064	.064	.064	.064	.064	.079	.079	.109	.109	.109		30
	ALUM R	15	.060	.060	.060	.075	.075	.105	.105	.105					
36	STEEL R	12	.064	.064	.064	.064	.064	.079	.079	.109	.109	.109			36
	ALUM R	18	.060	.060	.075	.075	.105	.105	.105	.135	.135				
42	STEEL R	12	.064	.064	.064	.064	.079	.079	.109	.109	.109				42
	ALUM R	21	.075	.075	.075	.105	.105	.105	.135	.135					
48	STEEL R	12	.064	.064	.064	.079	.079	.109	.109	.109					48
	ALUM R	24	.105	.105	.105	.105	.105	.135	.135						
54	STEEL R	15	.064	.064	.064	.079	.079	.109	.109						54
	ALUM R	24	.105	.105	.105	.105	.135	.135	.135						
60	STEEL R	15	.079	.079	.079	.079	.109	.109	.109						60
	ALUM R	24	.105	.105	.105	.105	.135	.135							
66	STEEL R	18	.079	.079	.079	.109	.109	.109	.109						66
	ALUM R	24	.135	.135	.135	.135	.135								
72	STEEL R	18	.109	.109	.109	.109	.109	.109							72
	ALUM R	27	.135	.135	.135	.135	.135								
78	STEEL R	21	.109	.109	.109	.109	.109								78
84	STEEL R	21	.109	.109	.109	.109	.109								84
90															90
96															96
102															102
108															108
114															114
120															120

R DENOTES SPIRAL RIB PROFILE 3/4" X 3/4" X 7-1/2"

TABLE VALUES FOR ALUMINUM SPIRAL RIB PIPE ARE COMPUTED BASED UPON ALCLAD ALLOY 3004-H34 HAVING MINIMUM YIELD STRENGTH, f_y=24,000 PSI. IF ALUMINUM PIPE IS OTHERWISE FURNISHED AS 3004-H32 (f_y=20,000 PSI), ALLOWABLE FILL HEIGHTS SHALL BE ADJUSTED AS FOLLOWS:

A. ALL MINIMUM COVER VALUES SHALL BE INCREASED BY 15 PERCENT. (EXAMPLE: 12 IN. BECOMES 13.8 IN.)

B. ALL HEIGHT OF FILL VALUES SHALL BE DECREASED BY 15 PERCENT. (EXAMPLE: 35-40 FT. BECOMES 29.7-34.0 FT.)

MINIMUM COVER VALUES APPLY TO HS-20 LIVE LOAD. MINIMUM COVER NEEDED FOR CONSTRUCTION VEHICLES MAY BE GREATER AND IS THE RESPONSIBILITY OF THE CONTRACTOR.

TRENCH CONSTRUCTION IS REQUIRED FOR ALL INSTALLATIONS.

TABLE NO. 2 (PIPE-ARCH)

TABLE SHOWING MINIMUM THICKNESS IN INCHES OF CORRUGATED STEEL AND CORRUGATED ALUMINUM PIPE-ARCH AND MAXIMUM HEIGHTS OF FILL IN FEET ABOVE THE TOP OF THE PIPE-ARCH.

DIAMETER OF PIPE OF EQUAL PERIPHERY INCH	NOM.-MIN. SPAN INCH	NOM.-MIN. RISE INCH	MIN. THICKNESS (INCHES) COR. STEEL ①	COR. STEEL ②	COR. ALUMINUM	MIN. COVER (INCHES)	MAX. HT. FILL (FEET)
15	17	13	.064			18	13
					.060	18	15
18	21	15	.064			18	12
					.060	18	14
21	24	18	.064			18	10
					.060	18	13
24	28	20	.064			18	9
					.075	18	11
30	35	24	.064			18	9
					.075	18	9
36	42	29	.064			18	7
					.105	18	7
	40	31		.079		18	12
42	49	33	.079			18	7
					.105	18	7
	46	36	.079	.079		18	12
48	57	38	.109			18	7
					.135	18	7
	53	41		.079		18	12
54	64	43	.109			18	7
					.135	18	7
	60	46		.079		18	12
60	71	47	.138			18	7
					.164	18	7
	66	51		.079		18	12
66	77	52	.168			18	7
	73	55		.079		18	15
77	83	57	.168			18	8
	81	59		.079		18	15
78	87	63		.079		18	14
84	95	67		.109		18	12
90	103	71		.109		24	11

NOTE FOR TABLE NO. 2.
ALTERNATE SPAN-RISE COMBINATIONS FOR PIPE-ARCHES, HAVING EQUAL PERIPHERY TO THAT SHOWN, MAY BE SUBSTITUED IF LISTED IN AASHTO SPECIFICATION.

BY	REVISION	DATE

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
CONCRETE & METAL PIPE CULVERTS
SHEET 3 OF 3
(FILL HEIGHTS FOR SPIRAL RIB METAL PIPE & FOR PIPE ARCH)

NO SCALE

DESIGNED ____ (SUBMITTED) STATE ROAD & TRANSPORT. DESIGN ENGINEER
TRACED ____
CHECKED ____ (APPROVED) CHIEF ENGINEER
REVISED ____

SEPT., 2001

NUMBER 1030D

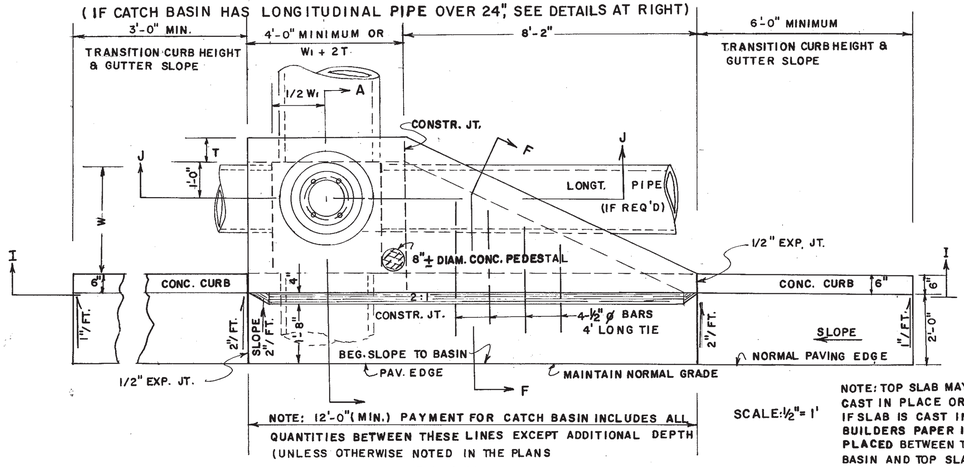
STATE GA. | PROJECT NUMBER | SHEET NO. | TOTAL SHEETS

AF 21868

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

CATCH BASIN

(IF CATCH BASIN HAS LONGITUDINAL PIPE OVER 24", SEE DETAILS AT RIGHT)

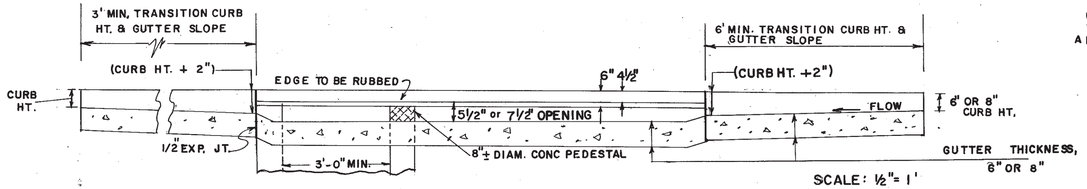


NOTE: 12'-0" (MIN.) PAYMENT FOR CATCH BASIN INCLUDES ALL QUANTITIES BETWEEN THESE LINES EXCEPT ADDITIONAL DEPTH (UNLESS OTHERWISE NOTED IN THE PLANS

SCALE: 1/2" = 1'

NOTE: TOP SLAB MAY BE CAST IN PLACE OR PRECAST. IF SLAB IS CAST IN PLACE, BUILDERS PAPER IS TO BE PLACED BETWEEN THE CATCH BASIN AND TOP SLAB.

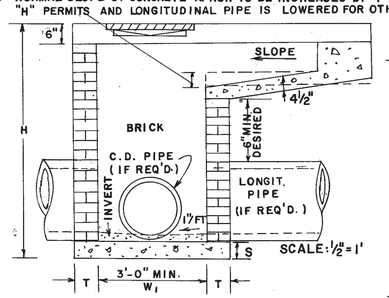
PLAN



SCALE: 1/2" = 1'

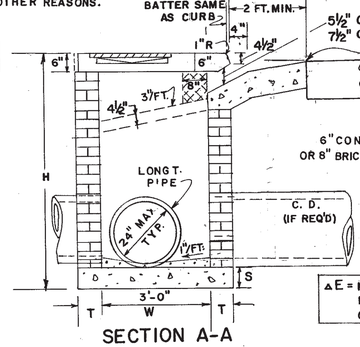
SECTION I-I

NOTE: NORMAL SLOPE OF CONCRETE APRON TO BE INCREASED BY 4" TO 8" WHERE "H" PERMITS AND LONGITUDINAL PIPE IS LOWERED FOR OTHER REASONS.

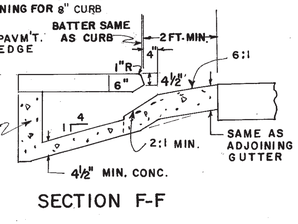


SCALE: 1/2" = 1'

SECTION J-J



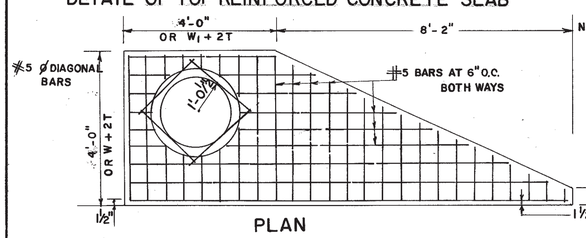
SECTION A-A



SECTION F-F

ΔE = MINIMUM DIFFERENCE IN ELEVATION FROM PAVEMENT EDGE TO FLOW LINE OF OUTLET PIPE.

DETAIL OF TOP REINFORCED CONCRETE SLAB

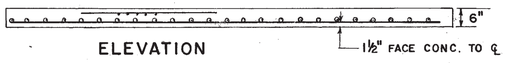


NOTE: ALL CATCH BASINS WILL HAVE STEPS OR LADDER BARS, NUMBER & LOCATION TO BE AS DIRECTED BY THE ENGINEER.

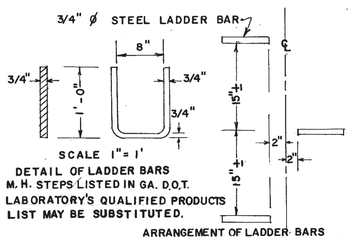
PLAN

NOTE: ALL BARS IN PLAN VIEW ARE SPACED AT 6" O.C.

NOTE: FOR PLAN DETAIL OF REINFORCING STEEL IN TOP PORTION OF SLAB, SEE PART PLAN AT TOP RIGHT.



ELEVATION



SCALE 1" = 1'

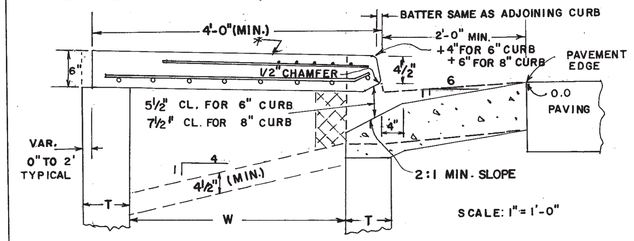
DETAIL OF LADDER BARS

NOTE: M.H. STEPS LISTED IN GA. D.O.T. LABORATORY'S QUALIFIED PRODUCTS LIST MAY BE SUBSTITUTED.

ARRANGEMENT OF LADDER BARS

W OR W1 (MAX.)	BOTTOM SLAB MATERIALS	S
TO 4'-6"	NON-REINF. CONCRETE	6"
	OR BRICK	8"
OVER 4'-6"	CONC. REINF. W1 #4 BARS 12" O.C. BOTH WAYS 2" CL. FROM SLAB TOP	8"

DETAIL OF TOP SLAB, REINF. STEEL & CLEARANCES REQ'D.

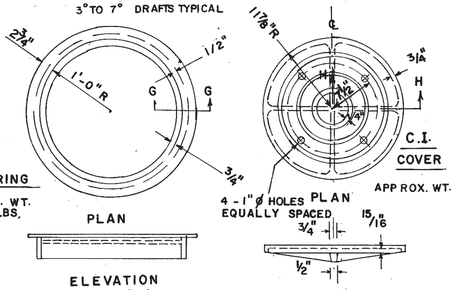


SCALE: 1" = 1'-0"

* SLOPE TOP TO MATCH ADJACENT SURFACES

CASTING DETAILS

3° TO 7° DRAFTS TYPICAL



C.I. RING APPROX. WT. = 78 LBS.

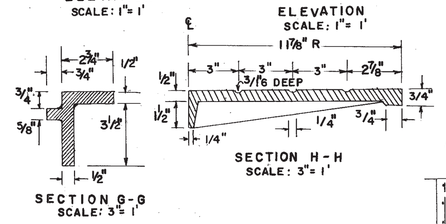
PLAN

APPROX. WT. = 63 LBS.

PLAN

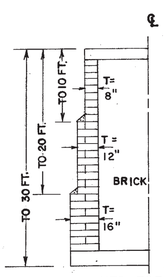
ELEVATION SCALE: 1" = 1'

ELEVATION SCALE: 1" = 1'



SECTION G-G SCALE: 3" = 1'

SECTION H-H SCALE: 1" = 1'



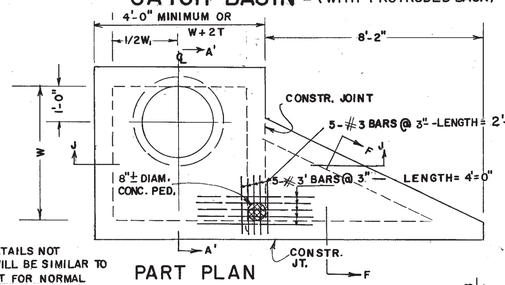
DEPTH LIMITS FOR INCREASING "T"

TYPICAL MIN. DIMENSIONS			
PIPE DIA.	H (MIN.)	W or W1	ΔE (MIN)
12	4'-4"	3'-0"	3'-3"
15	4'-7"	3'-0"	3'-6"
18	4'-10"	3'-0"	3'-9"
24	5'-6"	3'-0"	4'-4"
30	6'-2"	3'-7"	5'-0"
36	6'-10"	4'-6"	5'-7"
42	7'-4"	5'-3"	5'-11"
48	8'-0"	6'-0"	6'-6"
54	8'-6"	6'-8"	7'-0"
60	9'-2"	7'-4"	7'-7"

NOTE: THE MIN. H & MIN. ΔE GIVEN IN ABOVE TABLE ARE BASED UPON TYPICAL OUTSIDE DIAMETERS OF CONC. PIPE AND MAY BE VARIED IF CONDITIONS PERMIT WITH VARIED DIMENSIONS SPECIFIED IN THE PLANS OR DIRECTED BY THE ENGINEER. W. & W. DIMENSIONS DO NOT HAVE TO BE EQUAL.

(TYPICAL FOR CATCH BASIN WITH LARGE LONGITUDINAL PIPE OR RECESSED BOX)

CATCH BASIN - (WITH PROTRUDED BACK)

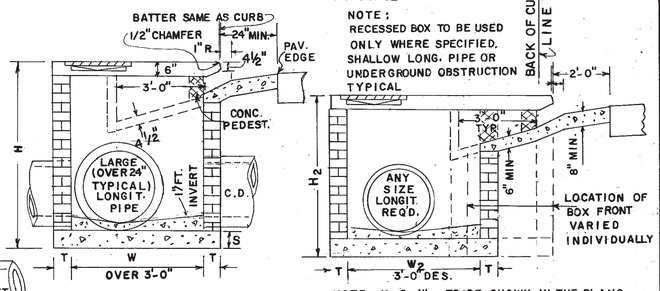


NOTE: CATCH BASIN DETAILS NOT SHOWN HERE WILL BE SIMILAR TO THOSE AT LEFT FOR NORMAL CATCH BASIN.

PART PLAN

NO SCALE

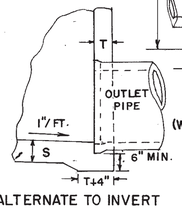
NOTE: RECESSED BOX TO BE USED ONLY WHERE SPECIFIED. SHALLOW LONG. PIPE OR UNDERGROUND OBSTRUCTION TYPICAL



NOTE: H_2 & W_2 TO BE SHOWN IN THE PLANS

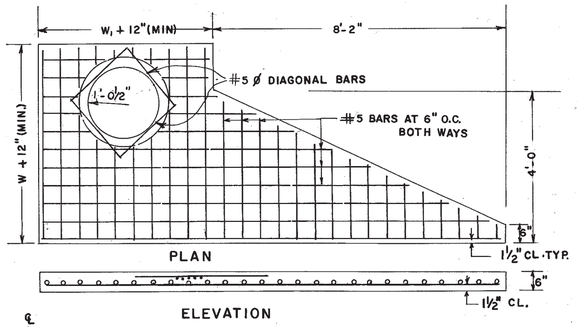
SECTION A'-A' (WITH LARGE LONGITUDINAL PIPE)

SECTION A'-A' (WITH RECESSED BOX)



ALTERNATE TO INVERT

DETAIL OF TOP REINFORCED CONCRETE SLAB

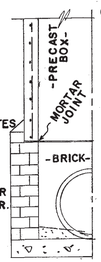


PLAN

ELEVATION

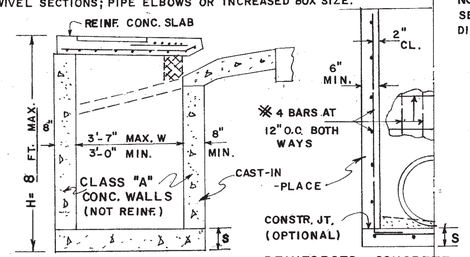
NOTE: PIPE SIZES, NUMBER, ALIGNMENT, AND INVERT SHOWN ARE ILLUSTRATIVE. SEE PLANS FOR SPECIFICS. INVERTS TO BE FORMED WITH GROUT OR CONCRETE AS DIRECTED BY THE ENGINEER OR AS SHOWN IN THE PLANS.

NOTE: SEE SEPARATE STDS. FOR PRECAST ALTERNATES ADAPTERS (STD. 1040) WILL BE REQUIRED WITH CIRCULAR PRECAST UNITS. PRECAST BOX, CIRCULAR, AND/OR BUILT-IN-PLACE CONSTR. MAY BE USED IN COMBINATIONS.



PRECAST BOX ON BRICK (HALF-SECTION)

NOTE: TYPICAL TREATMENT FOR SKEWED PIPE ARE: CIRCULAR PRECAST SWIVEL SECTIONS; PIPE ELBOWS OR INCREASED BOX SIZE.



NON-REINFORCED SMALL BASIN (W1 NOT OVER 3'-7")

REINFORCED CONCRETE (HALF-SECTION)

CONSTRUCTION ALTERNATES

NOTE: DETAILS NOT SHOWN ABOVE FOR CONSTRUCTION ALTERNATES WILL BE SIMILAR TO BRICK CATCH BASIN DETAILS.

SEE SEPARATE STANDARDS FOR PRECAST ALTERNATES.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD CATCH BASINS

FOR USE WITH CURB (6" HT. OR 8" HT.) & GUTTER

SCALE AS SHOWN

RED. & REDR. AUGUST, 1982

REV. & REDR.	R.M.U.	(SUBMITTED) Floyd E. Hardy STATE ROAD & AIRPORT DESIGN ENGR.	NUMBER
TRA.	G.M.E.		1033 D
CHK.	RKC	(APPROVED) Thomas D. Moreland STATE HIGHWAY ENGINEER	

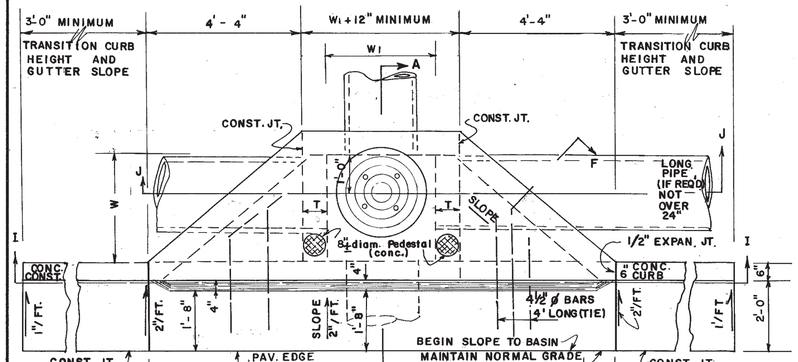
FORM EF3

AF 21868

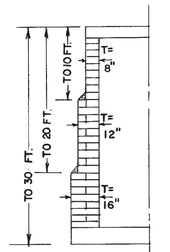
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

CATCH BASIN

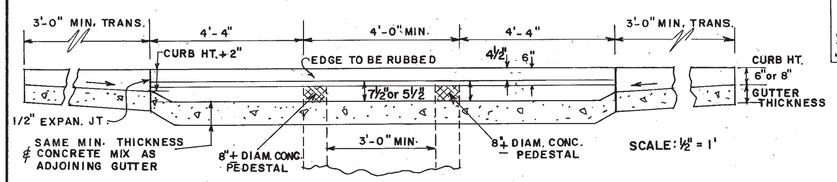
(FOR CATCH BASIN WITH LONGIT. PIPE OVER 24", SEE DETAILS AT RIGHT.)



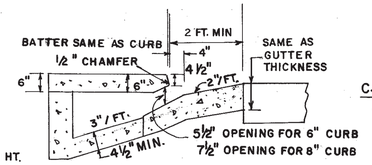
NOTE: 12'-8" (MIN.) - PAYMENT FOR CATCH BASIN INCLUDES ALL QUANTITIES BETWEEN THESE LINES EXCEPT ADDITIONAL DEPTH FOR BASIN (UNLESS OTHERWISE NOTED IN THE PLANS)



DEPTH LIMITS FOR INCREASING "T"

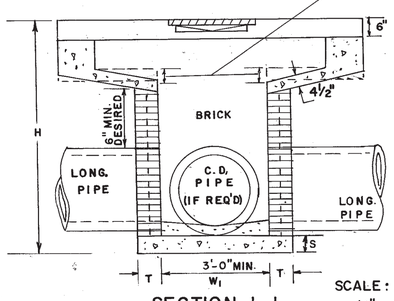


SECTION I-I



SECTION F-F

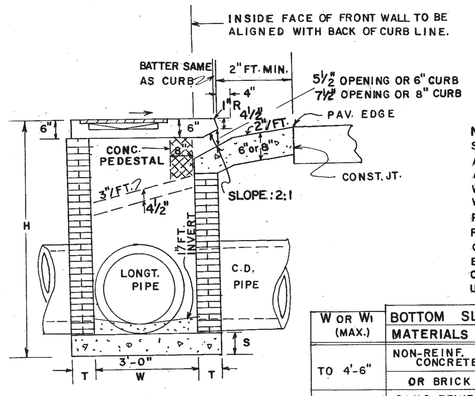
NOTE: NORMAL SLOPE OF CONCRETE APRON TO BE INCREASED UP TO 8" TOTAL WHERE "H" PERMITS AND LONGITUDINAL PIPE IS LOWERED FOR OTHER REASONS.



SECTION J-J

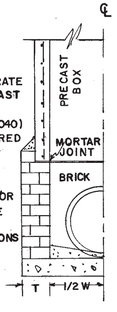
SCALE: 1/2" = 1'

NOTE: PIPE SIZES, NUMBER, ALIGNMENT AND INVERTS SHOWN ARE ILLUSTRATIVE. SEE PLANS FOR SPECIFICS. INVERTS TO BE FORMED WITH GROUT OR CONC. AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.



SECTION A-A

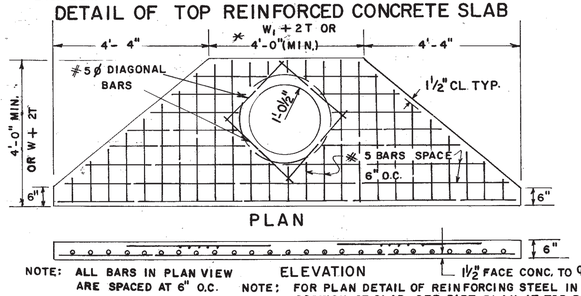
NOTE: SEE SEPARATE STDS. FOR PRECAST ALTERNATES. ADAPTERS (STD. 1040) WILL BE REQUIRED WITH CIRCULAR PRECAST UNITS. PRECAST BOX, CIRCULAR, AND/OR BUILT-IN-PLACE CONSTR. MAY BE USED IN COMBINATIONS



PRECAST BOX ON BRICK (HALF-SECTION)

W OR W1 (MAX.)	BOTTOM SLAB MATERIALS	"S"
TO 4'-6"	NON-REINF. CONCRETE	6"
	OR BRICK	8"
OVER 4'-6"	CONC. REINF. W1 4 BARS 12" O.C. BOTH WAYS 2" CL. FROM SLAB TOP	8"

DETAIL OF TOP REINFORCED CONCRETE SLAB



PLAN

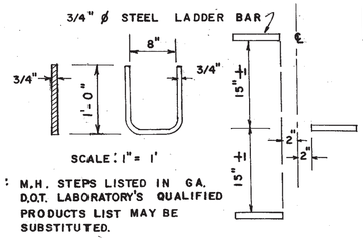
ELEVATION

NOTE: ALL BARS IN PLAN VIEW ARE SPACED AT 6" O.C.

NOTE: FOR PLAN DETAIL OF REINFORCING STEEL IN TOP PORTION OF SLAB. SEE PART PLAN AT TOP RIGHT.

1½" FACE CONC. TO ℄ REINF.

NOTE: TOP SLAB MAY BE CAST IN PLACE OR PRECAST. IF CAST IN PLACE, BUILDER'S PAPER IS TO BE PLACED BETWEEN THE CATCH BASIN AND TOP SLAB.



NOTE: M.H. STEPS LISTED IN GA. D.O.T. LABORATORY'S QUALIFIED PRODUCTS LIST MAY BE SUBSTITUTED.

ALL CATCH BASINS WILL HAVE STEPS OR LADDER BARS. NUMBER & LOCATION TO BE AS DIRECTED BY THE ENGINEER.

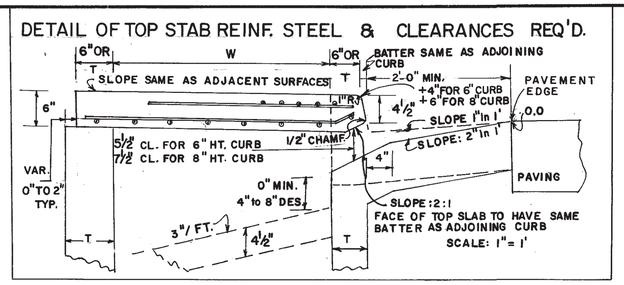
DETAIL OF LADDER BARS

ΔE = MINIMUM DIFFERENCE IN ELEVATION FROM PAVEMENT EDGE TO FLOW LINE OF OUTLET PIPE.

TYPICAL MIN. DIMENSIONS			
PIPE DIA.	H (MIN.)	W or W1	MIN. ΔE
12	4'-4"	3'-0"	3'-3"
15	4'-7"	3'-0"	3'-6"
18	4'-10"	3'-0"	3'-9"
24	5'-6"	3'-0"	4'-4"
30	6'-2"	3'-7"	5'-0"
36	6'-10"	4'-6"	5'-7"
42	7'-4"	5'-3"	5'-11"
48	8'-0"	6'-0"	6'-6"
54	8'-6"	6'-8"	7'-0"
60	9'-2"	7'-4"	7'-7"

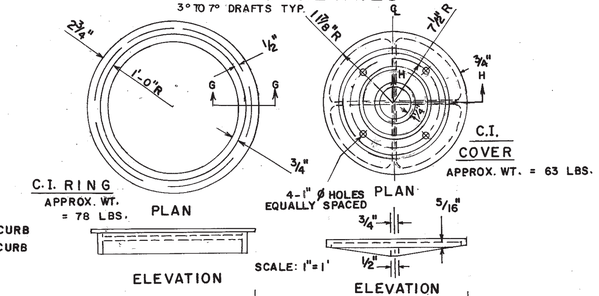
NOTE: THE MIN. H & MIN. ΔE GIVEN IN ABOVE TABLE ARE BASED UPON TYPICAL OUTSIDE DIAMETERS OF CONC. PIPE AND MAY BE VARIED, IF CONDITIONS PERMIT WITH VARIED DIMENSIONS SPECIFIED IN THE PLANS OR DIRECTED BY THE ENGINEER. W & W1 DIMENSIONS DO NOT HAVE TO BE EQUAL.

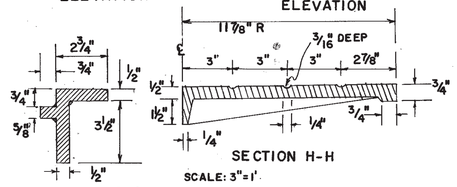
DETAIL OF TOP STAB REINF. STEEL & CLEARANCES REQ'D.



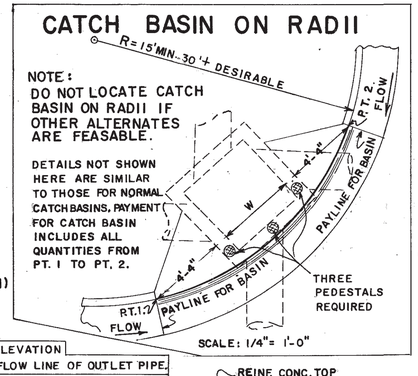
CASTING DETAILS

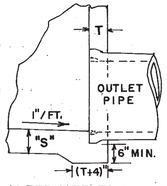
3° TO 7° DRAFTS TYP.



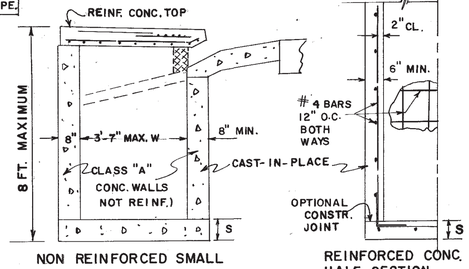


CATCH BASIN ON RADII





ALTERNATE TO INVERT



NON REINFORCED SMALL BASIN (W1 NOT OVER 3'-7")

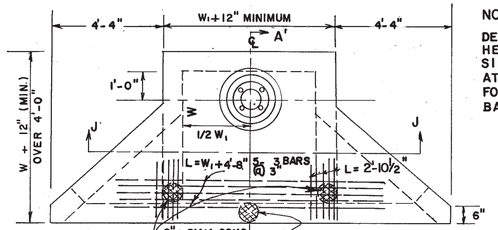
REINFORCED CONC. HALF-SECTION.

NOTE: DETAILS NOT SHOWN ABOVE FOR CONSTRUCTION ALTERNATES WILL BE SIMILAR TO BRICK CATCH BASIN DETAILS.

CONSTRUCTION ALTERNATES

CATCH BASIN (WITH PROTUDED BACK)

FOR USE WITH LONGITUDINAL PIPE OVER 24" OR FOR USE WITH RECESSED BOX

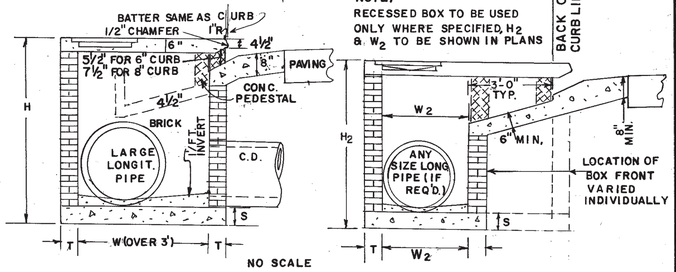


NO SCALE

PART PLAN

NOTE: DETAILS NOT SHOWN HERE WILL BE SIMILAR TO THOSE AT FAR LEFT FOR NORMAL CATCH BASINS.

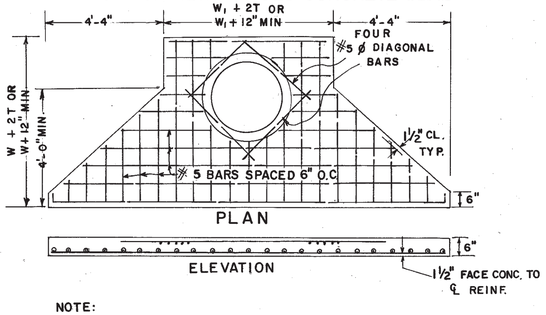
NOTE: RECESSED BOX TO BE USED ONLY WHERE SPECIFIED. H2 & W2 TO BE SHOWN IN PLANS



SECTION A'-A' (FOR LONGIT. PIPE OVER 24")

SECTION A'-A' (FOR RECESSED BOX)

DETAIL OF TOP REINFORCED CONCRETE SLAB



PLAN

ELEVATION

NOTE: TYPICAL TREATMENT FOR SKEWED PIPES ARE: CIRCULAR PRECAST UNITS; PRECAST SWIVEL SECTIONS; PIPE ELBOWS OR INCREASED BOX SIZES TO ACCOMODATE THE SKEWS.

SEE SEPARATE STANDARDS FOR PRECAST ALTERNATES.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

CATCH BASINS

FOR USE WITH CURB (6" OR 8" HT.) & GUTTER (IN SAGS OR LOW POINTS)

SCALE AS SHOWN — REV. & RED. AUGUST, 1982

REV. & REDR. R.M.U. — TRA G.M.E. — CHK. R.K.C.

(SUBMITTED) Floyd E. Hardy — STATE ROAD & AIRPORT DESIGN ENGR.

(APPROVED) Thomas D. Wilson — STATE HIGHWAY ENGINEER

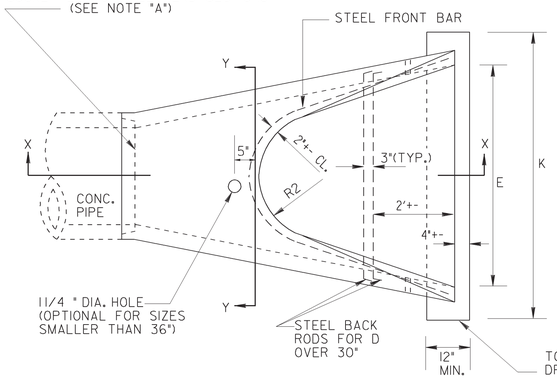
NUMBER 1034D

FORM EF3

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

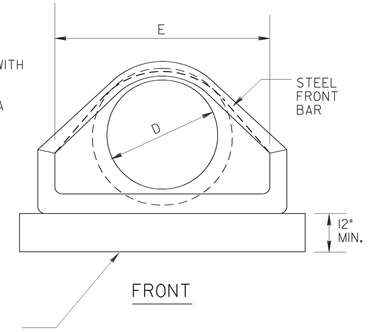
CONCRETE FLARED END SECTION

END SECTION TO PIPE JOINT SHOWN AS TYPICAL:
HUB END ON OUTLET END SECTIONS;
SOCKET END ON INLET END SECTIONS
(SEE NOTE "A")



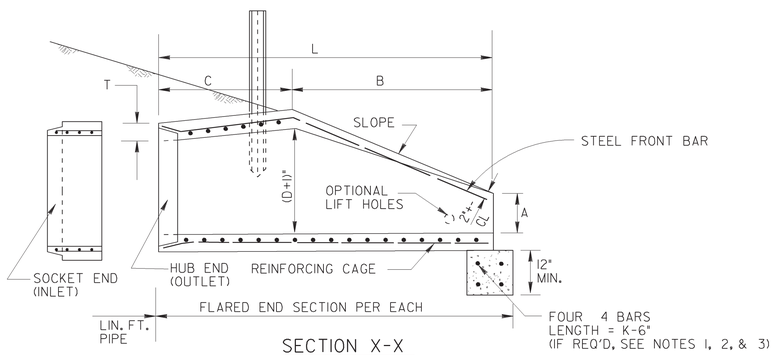
PLAN

INSTALLATION: (D OVER 30") CABLE, CHAIN, OR LIFTING PIN WILL EXTEND THRU 1 1/4 " HOLE WITH A PLATE OR REBAR CONNECTED INSIDE THE CONC. SECTION TO PROVIDE ADEQUATE BEARING AREA OR A LIFTING ASSEMBLY DEVICE MAY BE USED TO GIVE 3 LIFT POINTS. HOOKS CONNECTED DIRECTLY TO CONCRETE IS NOT PERMITTED. DAMAGE FROM IMPROPER HANDLING SHALL BE CAUSE FOR REJECTION.

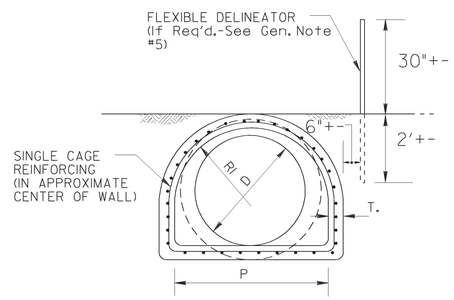


FRONT

NOTE: DO NOT CUT CONCRETE PIPE. USE FULL LENGTH SECTIONS ONLY. WARP SLOPE TO CONFORM WITH PIPE LENGTH AND END SECTION.



SECTION X-X



SECTION Y-Y

REINFORCING CAGE:

(1.) WIRE FABRIC HAVING EQUAL STEEL AREA AS INNER CAGE FOR CLASS II PIPE, AASHTO M-170.
(2.) ALTERNATE: # 3 BARS SPACED 12"+- LONGITUDINALLY WITH # 2 BARS TRANVERSELY AT 6" O.C. MAX. SPACING, SPOT WELDED OR TIED TO FORM CAGE. (BACK RODS MAY BE OMITTED.)

NOTE "A":

CONTRACTOR WILL INFORM PRODUCER IF CONCRETE FLARED END SECTION IS FOR INLET OR FOR OUTLET END. SOCKET (TONGUE OR SPIGOT) END IS REQUIRED FOR INLETS. HUB (GROOVE OR BELL) END IS REQUIRED FOR OUTLETS. SOCKET TO SOCKET OR HUB TO HUB JOINT WILL NOT BE ACCEPTED UNLESS A REINFORCED CONCRETE COLLAR IS BUILT AROUND THE JOINT WITH NO PAYMENT BEING MADE FOR THE COLLAR.

FLARED END SECTIONS SHALL BE JOINTED TO PIPE WITH ALL SPACE IN THE JOINT FILLED WITH EITHER BITUMINOUS PLASTIC CEMENT OR PREFORMED PLASTIC GASKET (SEC. 848).

WALL THICKNESS (T) IS SHOWN AS NOMINAL AND MAY BE INCREASED AT PRODUCER'S OPTION FOR DESIRED JOINT DESIGN OR TO ALLOW A FLAT OUTSIDE BOTTOM ON THE FLARE, WITH INSIDE DIMENSIONS OF FLARE RETAINED AS SHOWN.

T = PIPE WALL THICKNESS (0.0833D + 1"+- TYPICAL)

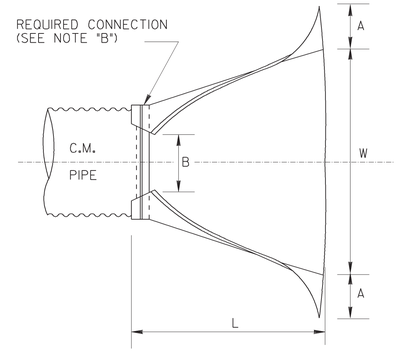
DIMENSIONS AND REINFORCING FOR CONCRETE FLARED END SECTIONS (+- 1" TOLERANCE)												OUTLET TOEWALL (IF REQ'D)	
PIPE DIA	FRONT BAR	BACK RODS	SLOPE +-	A	B	C *	L *	E	P	R1	R2	K= E + 2'	CU.YDS. CONC.
12"	1-#3 x 5' 4"	NOT REQ'D.	2.2:1	4"	2'0"	4' 1"	6'1"	2'0"	1'8"	10"	9"	4'-0"	.148
15"	1-#3 x 6' 0"	NOT REQ'D.	2.2:1	6"	2'3"	3'10"	6'1"	2'6"	2'0"	1'0"	11"	4'-6"	.167
18"	1-#3 x 7' 2"	NOT REQ'D.	2.2:1	9"	2'3"	3'10"	6'1"	3'0"	2'5"	1'4"	1'0"	5'-0"	.185
24"	1-#3 x 9' 10"	NOT REQ'D.	2.4:1	10"	3'8"	2' 6"	6'2"	4'0"	2'9"	1'5"	1'2"	6'-0"	.222
30"	1-#4 x 11' 8"	NOT REQ'D.	2.4:1	12"	4'6"	1' 8"	6'2"	5'0"	3'1"	1'6"	1'3"	7'-0"	.259
36"	1-#4 x 13' 10"	2-#4 x 6'3"	2.4:1	15"	5'3"	2'11"	8'2"	6'0"	4'0"	2'0"	1'8"	8'-0"	.296
42"	1-#4 x 13' 10"	2-#4 x 7'4"	2.4:1	21"	5'3"	2'11"	8'2"	6'6"	4'6"	2'4"	1'10"	8'-6"	.315

NOTE: SPECIFIED REINFORCING IS MINIMAL AND MAY BE INCREASED AT PRODUCERS OPTION TO AID CASTING & HANDLING. ALTERNATE REINFORCEMENT PERMITTED IF APPROVED.

* NOTE: "C" AND "L" DIMENSION MAY BE MEASURED TO EITHER END OF JOINT CONNECTION AT PIPE.

METAL FLARED END SECTION

(USE ONLY WITH COR. METAL PIPE)



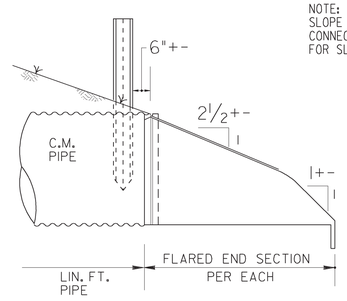
PLAN

NOTE: GALVANIZED STEEL FLARED END SECTIONS ARE TO BE USED ONLY WITH CORRUGATED STEEL PIPE AND ALUMINUM FLARED END SECTIONS ARE TO BE USED ONLY WITH CORRUGATED ALUMINUM PIPE UNLESS OTHERWISE APPROVED BY D.O.T. OFFICE OF MATERIALS AND TESTS.

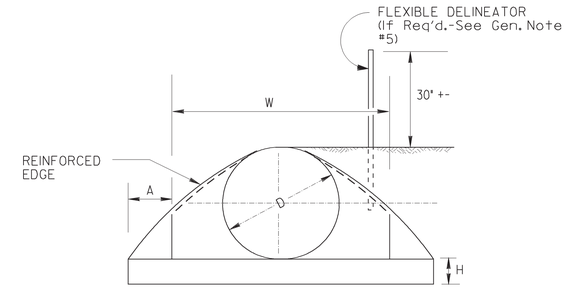
FLARED END SECTION DIMENSIONS							
PIPE SIZE "D"	THICKNESS		A	B	H	L	W
	GALV. STEEL	ALUM.	A= 0.4D +- 1"	B=0.5 D +- 1"	H=0.25D +- 1" (MIN.6")	L=1.67D +- 1 1/2'	W=2.0D +- 2"
12"	.064"	.060"	5"	6"	6"	1'8"	2'0"
15"	.064"	.060"	6"	7"	6"	2'3"	2'6"
18"	.064"	.060"	7"	9"	6"	2'6"	3'0"
24"	.064"	.060"	9"	1'0"	6"	3'4"	4'0"
30"	.079"	.105"	1'0"	1'3"	7"	4'2"	5'0"
36"	.079"	.105"	1'2"	1'6"	9"	5'0"	6'0"
42"	.109"	.164"	1'5"	1'9"	10"	5'10"	7'0"

NOTE: WHERE METAL FLARED END SECTIONS ARE USED WITH MULTIPLE PIPE LINES, THE STANDARD SPACING BETWEEN PIPES (S=D OR 3 FT.) MAY HAVE TO BE INCREASED (S=1.75 D TYPICAL). TO PREVENT OVER-LAP OF END SECTION WINGTIPS. SEE ALSO STD. 1030D.

NOTE:
SLOPE DRAIN PIPES WILL REQUIRE AN ELBOW FOR CONNECTION TO THE FLARED END SECTION. PAYMENT FOR SLOPE DRAIN PIPE WILL INCLUDE THIS ELBOW.



SIDE



FRONT

NOTE "B":

THE CONNECTION BETWEEN METAL FLARED END SECTION AND C.M. PIPE WILL BE ONE OF THE FOLLOWING:

(a) A STRAP BAND OR THREADED ROD PROVIDED BY THE MANUFACTURER WILL LOCK END SECTION ONTO PIPE. A CORRUGATION AT THE PIPE AND WILL BE NON-SPIRALED (PERPENDICULAR TO CL OF PIPE)

(b) A DIMPLE BAND COLLAR WILL BE SHOP BOLTED TO END SECTION. PIPE WILL BE INSERTED INTO BAND COLLAR TO MEET THE END SECTION.

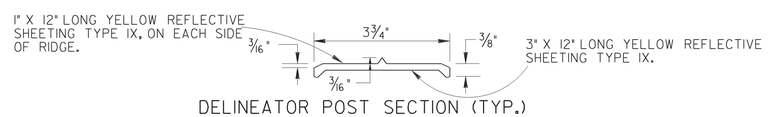
(c) A STUB PIPE WILL BE RIVITED TO THE END SECTION AND THE MAIN PIPE CONNECTED TO THE STUB WITH A NORMAL CONNECTING BAND.

(d) OTHER TYPE CONNECTION IF RECOMMENDED BY MANUFACTURER AND APPROVED BY THE D.O.T.

SPECIAL NOTE:
FLARED END SECTIONS ARE NORMALLY LIMITED TO USE OUTSIDE THE CLEAR ZONE OR BEHIND BARRIER AND WHERE HYDRAULICS PERMIT. SEE OTHER STANDARDS OR DETAILS FOR TAPERED HEADWALLS, SAFETY SLOPE END SECTIONS OR OTHER PIPE END STRUCTURES.

GENERAL NOTES :

1. TOEWALLS ARE REQ'D. FOR OUTLETS OF CONC. STORM DRAINS, EXCEPT WHERE DITCH PAVING OR OTHER EROSION PROTECTION IS PROVIDED OR WHERE THE OUTLET VELOCITY IS LESS THAN 8 FT/SEC. TOEWALLS ARE NOT REQUIRED FOR SIDE DRAINS, SLOPE DRAINS OR INLETS OF STORM DRAINS THIS CRITERIA MAY BE VARIED WHERE SPECIFIED BY THE DESIGNER OR THE ENGINEER.
2. TOEWALLS WILL BE PAID FOR AS CU. YDS. OF CLASS "A" OR "B" CONCRETE. CONTRACTOR MAY ELECT TO CONSTRUCT TOE WALL WITH SAND CEMENT BAG RIPRAP OR STONE RIPRAP TO SAME MINIMUM DIMENSIONS WITH NO ADDITIONAL PAYMENT.
3. PRECAST TOEWALLS SHALL BE CL. "A" CONCRETE; CAST-IN-PLACE TOEWALLS MAY BE CL "A" OR "B" CONCRETE AND MAY BE TRENCH FORMED. WHERE PLANS ITEMIZE ONE CLASS OF CONCRETE AND CONTRACTOR ELECTS TO USE OTHER CLASS, NO ADDITIONAL PAYMENT IS MADE. NO PAYMENT IS MADE FOR STEEL IN TOEWALL.
4. CENTERLINE OF FLARED END SECTION WILL ALIGN WITH CENTERLINE OF PIPE, IF PIPE IS SKEWED, THE EMBANKMENT SLOPE WILL BE WARPED TO CONFORM WITH END SECTION.
5. FLEXIBLE DELINEATORS SHALL BE REQUIRED AT CROSS DRAIN FLARED END SECTIONS, BOTH INLET AND OUTLET. PAYMENT FOR FLARED END SECTION WILL INCLUDE DELINEATORS, SEE DETAIL AND NOTES BELOW. DELINEATORS NOT REQ'D. FOR SIDE DRAIN, SLOPE DRAIN, OR LONG PIPE.



DELINEATOR POST SECTION (TYP.)

NOTE:
DELINEATOR POST SHALL CONFORM TO SEC. 911 FOR FLEXIBLE DELINEATOR POST EXCEPT REFLECTIVE SHEETING IS NOT REQUIRED AND LENGTH IS 4'-6" FROM TOP TO BOTTOM POINT. ALTERNATES PERMITTED IF APPROVED BY D.O.T. LABORATORY.

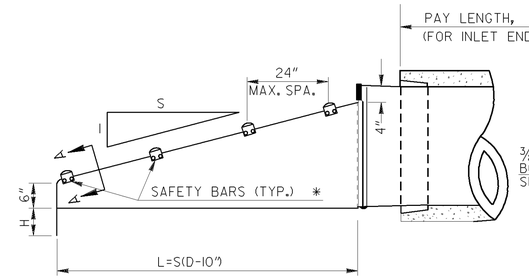
SPECIAL NOTE :
PIPE SIZES (D) ARE "NOMINAL-MINIMUM" INSIDE DIAMETERS IN ACCORDANCE WITH GEORGIA STANDARD FOR PIPE CULVERTS. "D" DIMENSION FOR FLARED END SECTION SHALL EQUAL THE "D" DIMENSION FOR CONNECTING PIPE CULVERT.

		6-9-06	DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
		REV. REFLECTIVE SHEETING	REVISION	STANDARD FLARED END SECTIONS FOR PIPES NO SCALE — REV. & REDR. SEPT., 1999
		CLD	BY	DES. ____ (SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER REV. ____ RETR. ____ (APPROVED) CHIEF ENGINEER CHK. ____

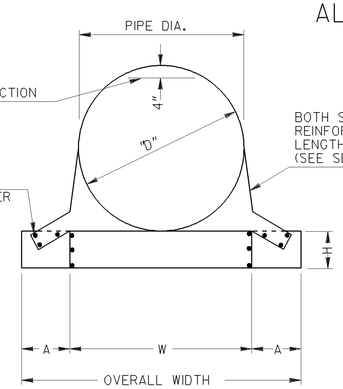
NUMBER 1120

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

ALTERNATE I

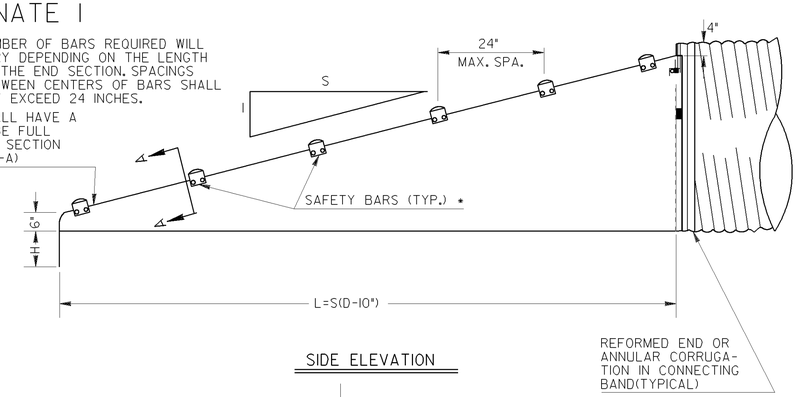


SIDE ELEVATION



FRONT VIEW

* NUMBER OF BARS REQUIRED WILL VARY DEPENDING ON THE LENGTH OF THE END SECTION. SPACINGS BETWEEN CENTERS OF BARS SHALL NOT EXCEED 24 INCHES.



SIDE ELEVATION

GENERAL NOTES
ALTERNATE I

GALVANIZED STEEL SHEET

USE GALVANIZED STEEL SHEET CONFORMING TO AASHTO M 218.

CONNECTORS

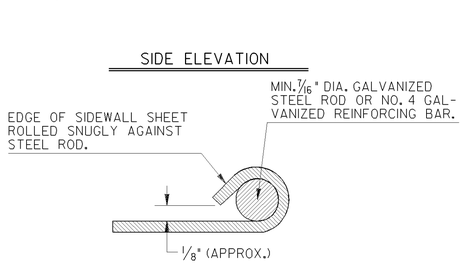
PAYMENT FOR END SECTION SHALL INCLUDE CONNECTION OF THE TYPE REQUIRED FOR THE SIDE DRAIN USED.

SAFETY BARS

SHALL BE 3" SCHEDULE 40 GALVANIZED STEEL PIPE. PIPE TO BE GALVANIZED AFTER FORMING. SAFETY BAR(S) SHALL BE REQUIRED FOR ALL SAFETY END SECTIONS.

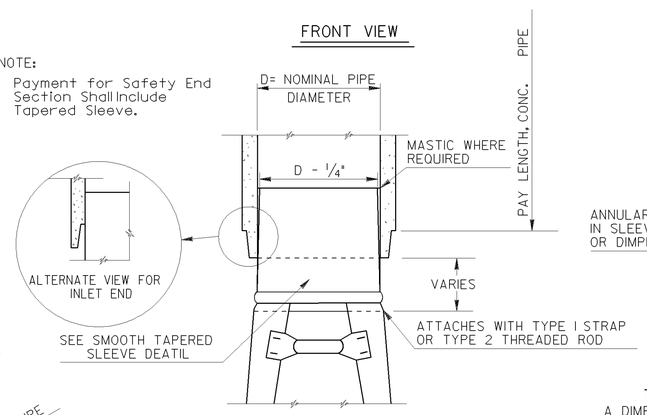
MISCELLANEOUS DETAILS

DETAILS OF CONSTRUCTION MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE MANUFACTURER'S REQUIREMENTS, SUBJECT TO APPROVAL BY THE D.O.T.'S LABORATORY. A SAMPLE MUST BE SUBMITTED TO PRE-QUALIFY THE PRODUCT.

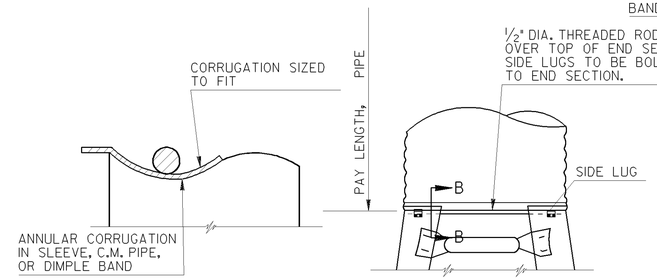


SECTION A-A

NOTE:
Payment for Safety End Section Shall Include Tapered Sleeve.



TAPERED SLEEVE FOR ATTACHING STEEL END SECTIONS TO SMOOTH PIPE



SECTION B-B

TYPE #2 CONNECTOR DETAILS

FOR 30" AND LARGER

TYPE 3 ALTERNATE CONNECTOR (NOT SHOWN)
A DIMPLE BAND COLLAR MAY BE SHOP BOLTED TO THE END SECTION

SIZES, DIMENSIONS, AND THICKNESSES										
PIPE DIA. (IN.)	MIN. THICK.		DIMENSIONS (INCHES)				✳ L DIMENSION			
	IN.	GAGE	A	H	W (D+6")	OVERALL WIDTH	SLOPE (S:1)	LENGTH (IN.)	SLOPE (S:1)	LENGTH (IN.)
15	.064	16	8	6	21	37	4:1	20	6:1	30
18	.064	16	8	6	24	40	4:1	32	6:1	48
24	.064	16	8	6	30	43	4:1	56	6:1	84
30	.109	12	12	9	36	60	4:1	80	6:1	120
36	.109	12	12	9	42	66	4:1	104	6:1	156
42	.109	12	16	12	48	80	4:1	128	6:1	192
48	.109	12	16	12	54	86	4:1	152	6:1	228

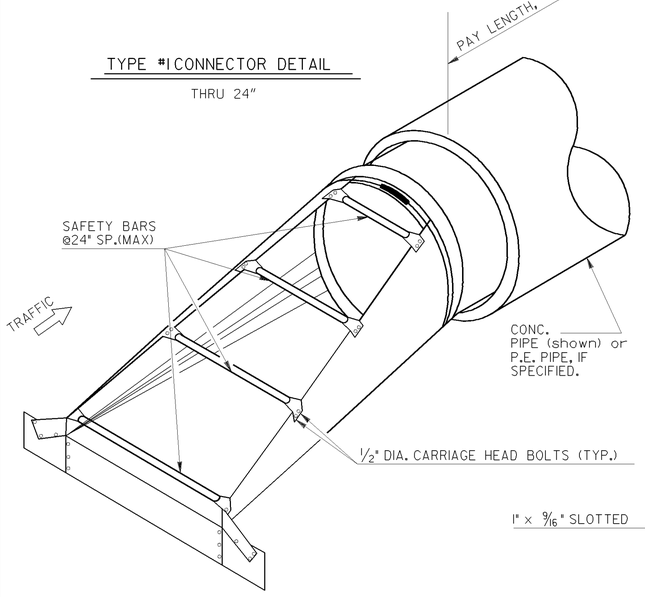
*SEE STD. NO. 903IT FOR SLOPES AT SIDE ROAD OR AT DRIVES.

SPECIAL NOTE:

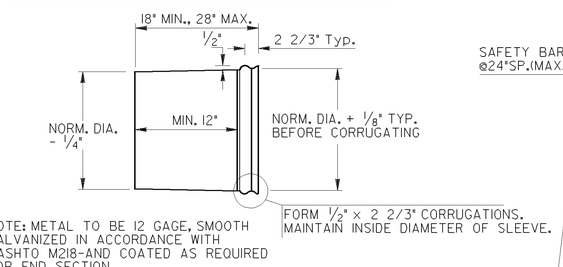
WHERE THE LENGTH OF DITCH OR THE DISTANCE BETWEEN TOE POINTS OF END SECTIONS ON SEPARATE INSTALLATIONS WOULD BE LESS THAN 30 FT., CONTINUED S.D. PIPE WITH AN INTERMEDIATE INLET OR OTHER ALTERNATE MAY BE SPECIFIED INSTEAD.

TYPE #1 CONNECTOR DETAIL

THRU 24"

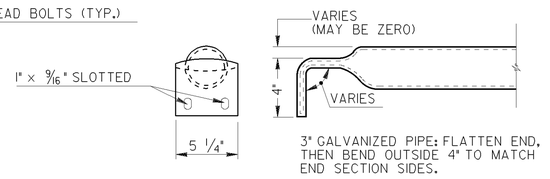


TYPICAL PICTORAL VIEW
(WITH CONCRETE PIPE)

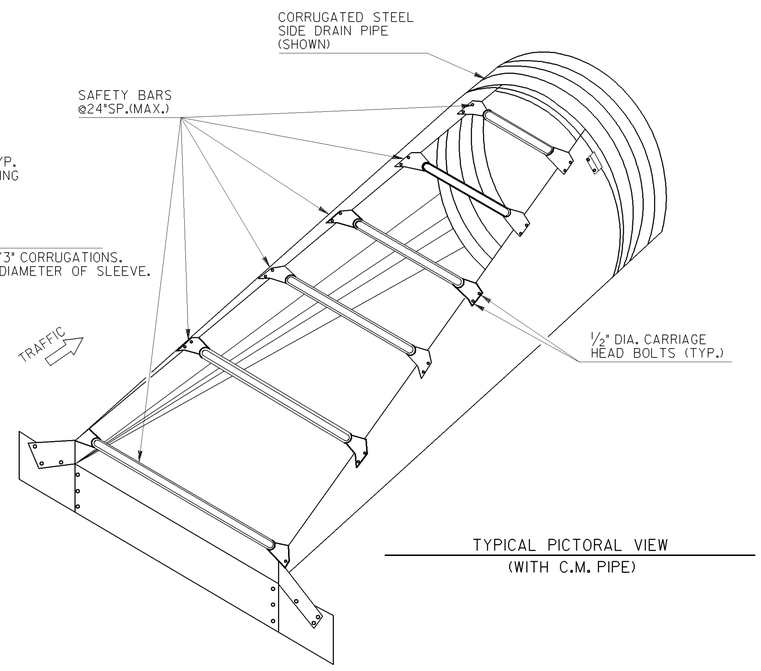


NOTE: METAL TO BE 12 GAGE, SMOOTH GALVANIZED IN ACCORDANCE WITH AASHTO M218-AND COATED AS REQUIRED FOR END SECTION.

TYPE 4 CONNECTOR
SMOOTH TAPERED SLEEVE DETAIL



TYPICAL DETAIL OF SAFETY BARS



TYPICAL PICTORAL VIEW
(WITH C.M. PIPE)

BY	REVISION	DATE
G.L.O.	REVISED GENERAL NOTES	1-28-05
	CONVERTED TO STANDARD	
R.M.U.	PAY ITEMREVISION	12-14-94
R.M.U.	GEN. REVISION	11-18-94
R.M.U.	REFER TO STD. 903I-T	12-20-93

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
SAFETY END SECTION
(METAL)
(FOR SIDE DRAIN PIPE-OR FOR STORM DRAIN PIPE PARALLEL TO MAINLINE)
ALTERNATE I

NO SCALE — SEPT., 1993

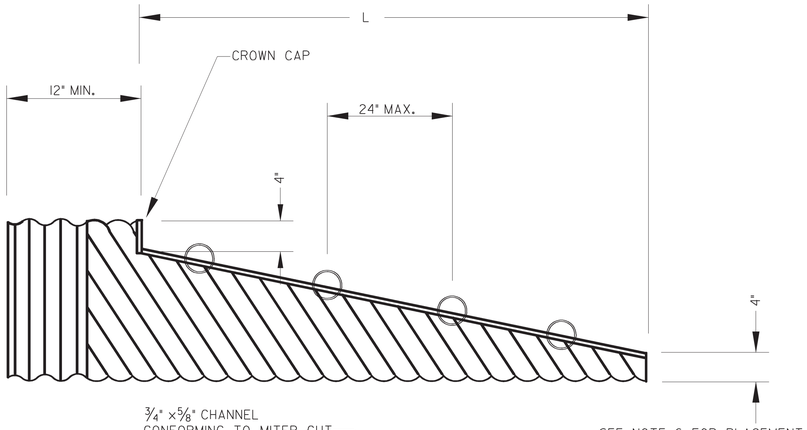
DESIGNED ____
DRAWN ____
TRACED ____
CHECKED ____

(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER
(APPROVED) CHIEF ENGINEER

NUMBER 1122
SHEET 1 OF 3

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS

ALTERNATE 2



END TREATMENT DIMENSIONS FOR ARCHED METAL PIPE				
PIPE DIA. (INCHES)	GAGE	SHEET THICKNESS (INCHES)	* 4:1 SLOPE L DIMENSION	* 6:1 SLOPE L DIMENSION
17"x13"	16	.064"	1'-8"	2'-6"
21"x15"	16	.064"	2'-4"	3'-6"
24"x18"	16	.064"	3'-4"	5'-0"
28"x20"	16	.064"	4'-0"	6'-0"
35"x24"	14	.079"	5'-4"	8'-0"
42"x29"	14	.079"	7'-0"	10'-6"
49"x33"	14	.079"	8'-4"	12'-6"
57"x38"	12	.109"	10'-0"	15'-0"
64"x43"	12	.109"	11'-8"	17'-6"
71"x47"	10	.138"	13'-0"	19'-6"

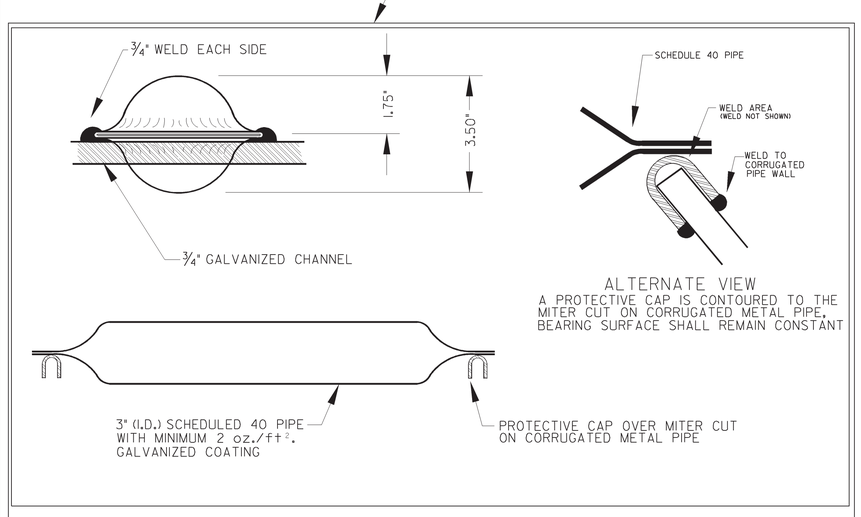
* SEE STD. NO. 903IT FOR SLOPES AT SIDE ROAD OR AT DRIVES.

END TREATMENT DIMENSIONS FOR CIRCULAR METAL AND CIRCULAR CONCRETE PIPES				
PIPE DIA. (INCHES)	GAGE	SHEET THICKNESS (INCHES)	* 4:1 SLOPE L DIMENSION	* 6:1 SLOPE L DIMENSION
15"	16	.064"	2'-4"	3'-6"
18"	16	.064"	3'-4"	5'-0"
21"	16	.064"	4'-4"	6'-6"
24"	16	.064"	5'-4"	8'-0"
30"	16	.064"	7'-4"	11-0"
36"	16	.064"	9'-4"	14'-0"
42"	14	.079"	11'-4"	17'-0"
48"	14	.079"	13'-4"	20'-0"
54"	14	.079"	15'-4"	23'-0"
60"	12	.109"	17'-4"	26'-0"

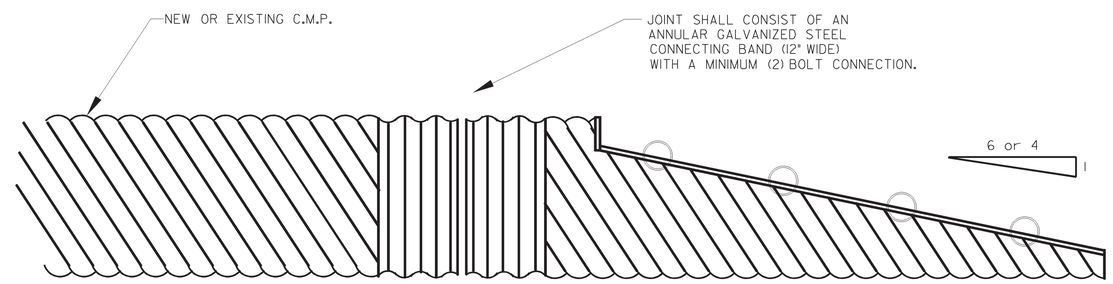
* SEE STD. NO. 903IT FOR SLOPES AT SIDE ROAD OR AT DRIVES.

GENERAL NOTE ALTERNATE 2:

1. THE MATERIAL USED IN FABRICATION OF SLOPED END SECTION SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M 218 (GALVANIZED STEEL)
2. SLOPED END SECTIONS SHALL BE FORMED FROM FULL CIRCLE PIPE, MAY BE FORMED INTO PIPE ARCHES, WHERE SPECIFIED, AND SHALL MEET ALL REQUIREMENTS FOR CORRUGATION, GAGE, AND OTHER FABRICATION REQUIREMENTS.
3. THE EXPOSED EDGE CUT ON THE TOP SHALL BE COVERED WITH A PROTECTIVE CAP OVERLAPPING THE TOP OF THE ARCH BY NOT LESS THAN 5/8INCH. THE 4 TO 1OR 6 TO 1 BEVEL SHALL BE ENCASED WITH A PROTECTIVE CAP OVERLAPPING EACH SIDE OF THE CUT BY NOT LESS THAN 5/8INCH. THE PROTECTIVE CAP IS TO BE THE SAME MATERIAL AS THE PIPE AND MINIMUM 14 GAGE (.079"). PROTECTIVE CAPS SHALL BE WELDED WITH 1/2INCH WELDS ALTERNATING FROM SIDE TO SIDE OF THE CAP AT 12 INCH INTERVALS. WELDS SHALL BE AT THE ENDS OF ALL CAPS, REGARDLESS OF SPACING. REPAIR DAMAGED GALVANIZED COATINGS IN ACCORDANCE WITH GDOT STANDARD SPECIFICATIONS SECTION 645.
4. CONNECTIONS OF GALVANIZED STEEL END TREATMENTS TO CORRUGATED ALUMINUM OR ALUMINIZED STEEL PIPE MUST UTILIZED A POLYMER COATED GALVANIZED STEEL BAND MEETING THE REQUIREMENTS OF AASHTO M 256 84.
5. ADAPTER SLEEVE IS TO BE CONSTRUCTED OF GALVANIZED STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M 218, MINIMUM 12 GAGE (.109") MATERIAL.
6. BOTTOM SAFETY BAR SHALL HAVE A MAXIMUM CLEARANCE OF 5" WHEN MEASURED FROM THE BOTTOM OF THE INSTALLED BAR TO INSIDE CREST OF PIPE CORRUGATION.

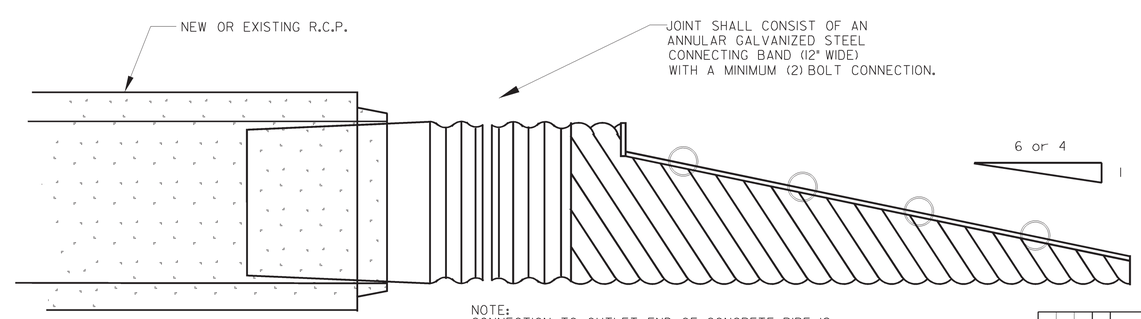


NOTE: ENDS OF BARS SHALL BE WELDED SOLID TO PREVENT SOIL AND WATER INFLITRATION

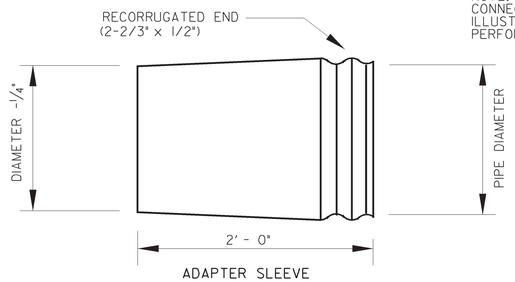


SPECIAL NOTE:

WHERE THE LENGTH OF DITCH OR THE DISTANCE BETWEEN TOE POINTS OF THE END SECTION ON SEPARATE INSTALLATIONS WOULD BE LESS THAN 30 FT., CONTINUED S.D. PIPE WITH AN INTERMEDIATE INLET OR OTHER ALTERANTE MAY BE SPECIFIED INSTEAD.



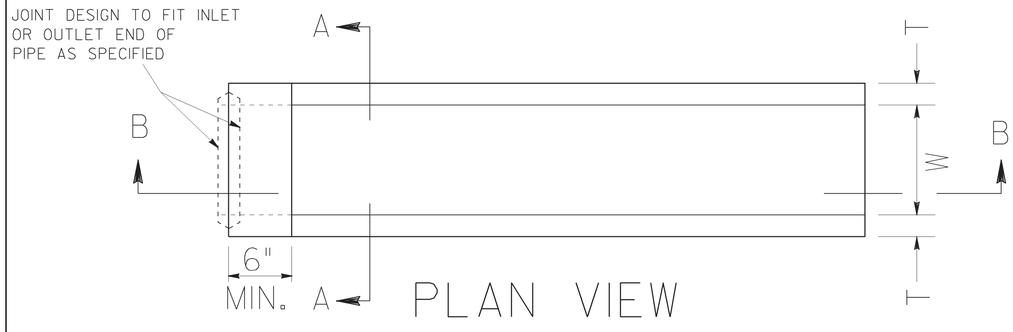
NOTE:
CONNECTION TO OUTLET END OF CONCRETE PIPE IS ILLUSTRATED. CONNECTION TO INLET END WILL BE PERFORMED IN THE SAME MANNER.



ADAPTER SLEEVE

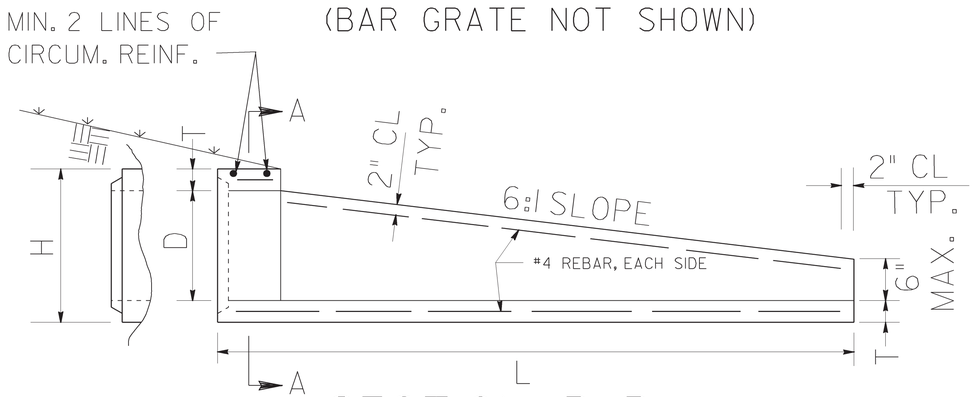
DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA	
REVISION	STANDARD SAFETY END SECTION (METAL) (FOR SIDE DRAIN PIPE-OR FOR STORM DRAIN PIPE PARALLEL TO MAINLINE) ALTERNATE 2 NO SCALE — JAN. 2005	
BY	DESIGNED ____ DRAWN ____ TRACED ____ CHECKED ____ (SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER (APPROVED) CHIEF ENGINEER	NUMBER 1122 SHEET 2 OF 3

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



PLAN VIEW

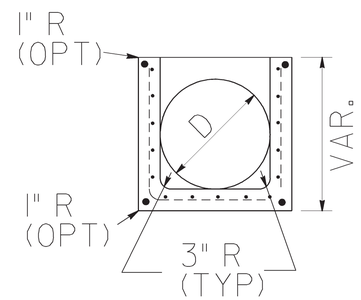
(BAR GRATE NOT SHOWN)



SECTION B-B

ALTERNATE 3

PIPE DIA	T (MIN)	D	H	L
15"	3"	15"	21"	4'-6"
18"	3"	18"	24"	6'-0"
24"	3"	24"	30"	9'-0"
30"	4"	30"	38"	12'-6"
36"	4"	36"	44"	15'-6"
42"	4"	42"	50"	18'-6"
48"	5"	48"	58"	22'-0"



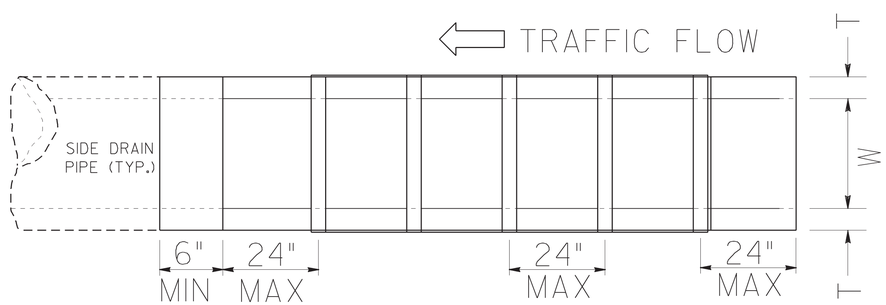
SECTION A-A

GENERAL NOTES:

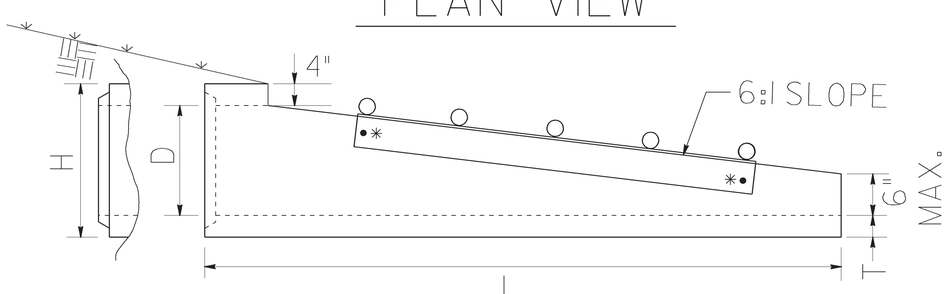
1. CONCRETE STRENGTH SHALL BE 4000 PSI MINIMUM
2. REINFORCING SHALL BE PER AASHTO M170, CLASS II REINFORCED CONCRETE PIPE, PLUS ONE #4 BAR TOP AND BOTTOM, EACH SIDE.
3. WALLS MAY HAVE 1/4" TAPER. WALL THICKNESSES SHOWN ARE THE MINIMUM.
4. LIFT HOLES MAY BE PROVIDED IN THE SIDE WALLS FOR HANDLING.
5. END SECTION JOINT WILL BE A MATCHED FIT TO THE ADJOINING PIPE JOINT AT ALL INLET AND OUTLET ENDS. NON-FITTING JOINTS WILL REQUIRE A BUILT-IN-PLACE REINFORCED COLLAR CONNECTION WITH NO ADDITIONAL PAYMENT.
6. ALL END SECTIONS FOR PIPES WITH "D" OVER 24" ON SINGLE LINES WILL HAVE GALV. SAFETY BARS, SPACED NOT MORE THAN 24" ON CENTERS, AND INSTALLED PERPENDICULAR TO THE MAINLINE TRAFFIC FLOW. ALL END SECTIONS FOR MULTIPLE LINE PIPES WILL HAVE GRATES.
7. TYPICAL USE OF SAFETY END SECTIONS IS AT THE ENDS OF PIPES UNDER DRIVEWAYS OR SIDEROADS WHERE THE PIPE CULVERT IS PARALLEL TO THE MAINLINE AND FALLS INSIDE THE MAINLINE CLEAR ZONE WIDTH.

D	(MIN) GRATE LENGTH	GRATE WIDTH (TYP) #
15"	2'-4"	1'-9 5/8"
18"	2'-4"	2'-0 5/8"
24"	6'-4"	2'-6 5/8"
30"	8'-6"	3'-2 5/8"
36"	12'-4"	3'-8 5/8"
42"	14'-6"	4'-2 5/8"
48"	18'-4"	4'-10 5/8"

TYPICAL GRATE WIDTHS SHOWN ARE MEASURED FROM INSIDE TO INSIDE OF THE 3/8" THICK ANGLE IRON. GRATE FIT WITH END SECTION SHALL BE CHECKED BEFORE DELIVERY.

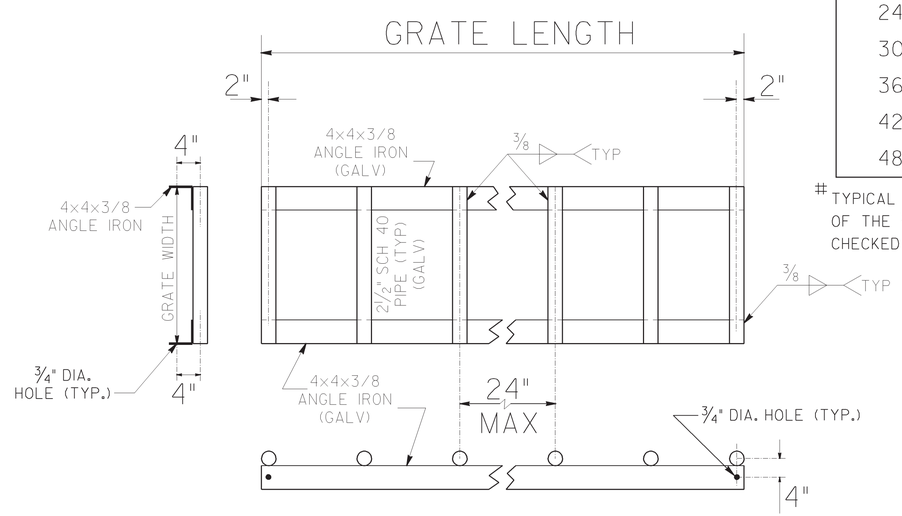


PLAN VIEW



SIDE VIEW

* 5/8" GALV. HEX HEAD BOLT, WASHER & NUT (FOUR) CONNECTIONS

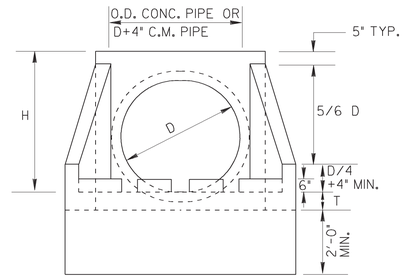


GALVANIZED SAFETY GRATE DETAIL

	1-28-05	DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
	REVISED TO 1122 PAGE 3	REVISION	STANDARD SAFETY END SECTION (CONCRETE) (FOR SIDE DRAIN PIPE-OR FOR STORM DRAIN PIPE PARALLEL TO MAINLINE) ALTERNATE 3
			NO SCALE — OCT., 2000
G.L.O.	BY	DESIGNED DRAWN TRACED CHECKED	(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER (APPROVED) CHIEF ENGINEER
			NUMBER 1122 SHEET 3 OF 3

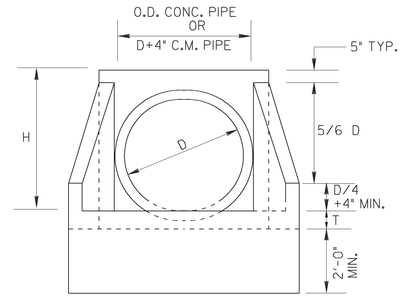
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

OUTLET HEADWALL

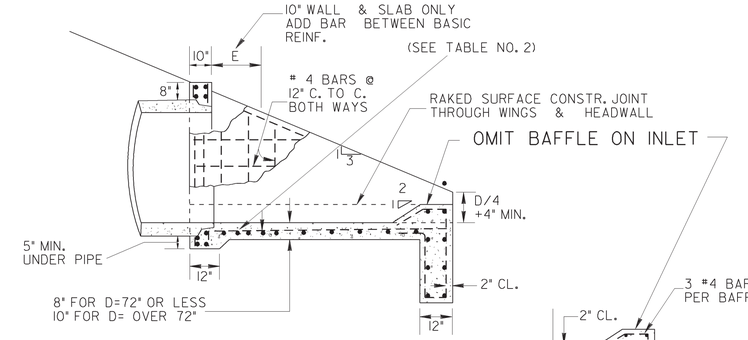


FRONT ELEVATION

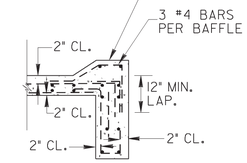
INLET HEADWALL



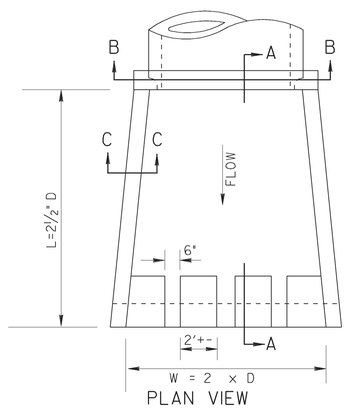
FRONT ELEVATION



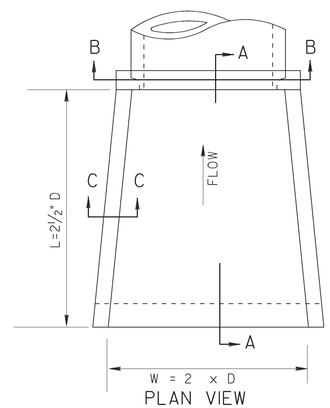
SECTION A-A



10" SLAB

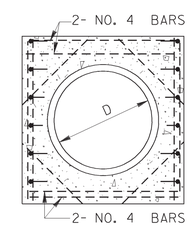


PLAN VIEW

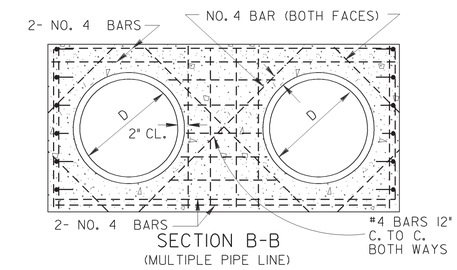


PLAN VIEW

D = INSIDE DIAMETER OF PIPE



SECTION B-B
(SINGLE PIPE LINE)



SECTION B-B
(MULTIPLE PIPE LINE)

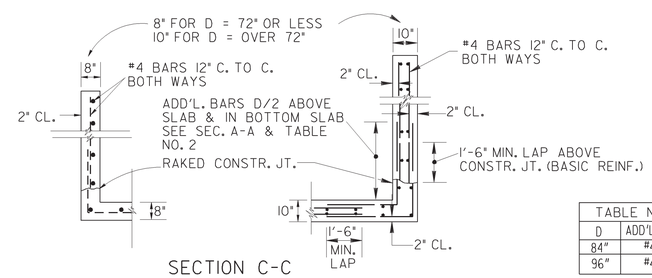
TABLE NO. 1 - QUANTITIES FOR HEADWALLS												
	CU. YDS. CONCRETE (PAY QUANTITIES) ✳						LBS. STEEL (GIVEN FOR INFORMATION ONLY)					
	FOR SINGLE LINE			ADD FOR ADD'L LINE			FOR SINGLE LINE			ADD FOR EACH ADD'L LINE		
D	INLET	OUTLET		INLET	OUTLET		INLET	OUTLET		INLET	OUTLET	
15"	0.87	0.93		0.60	0.66		102	113		73	83	
18"	1.10	1.16		0.85	0.93		106	117		93	104	
24"	1.61	1.69		1.29	1.37		127	138		124	134	
30"	2.21	2.32		1.83	1.96		170	180		154	164	
36"	2.92	3.05		2.49	2.63		238	254		196	212	
42"	3.73	3.87		3.00	3.17		290	306		231	247	
48"	4.62	4.80		3.58	3.74		335	351		265	281	
54"	5.63	5.83		4.17	4.38		407	428		319	340	
60"	6.72	6.95		4.82	5.01		456	477		360	391	
72"	9.22	9.48		6.24	6.46		623	649		475	494	
84"	14.84	15.19		9.05	9.29		1517	1539		1017	1044	
96"	18.88	19.27		11.13	11.41		2118	2150		1323	1350	

✳NOTE:
QUANTITIES SHOWN WILL BE ACTUAL PAY QUANTITIES FOR CLASS "A" CONCRETE, INCLUDING REINFORCED STEEL. NO ADJUSTMENT WILL BE MADE FOR AS BUILT QUANTITIES.

D - INSIDE DIAMETER OF PIPE CULVERT

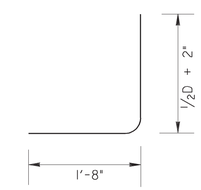
H = D + 10" MIN. FOR C.M. PIPE
H = D + PIPE WALL THICKNESS + 8" FOR CONC. PIPE
(13/12 D + 9" TYP.)

T = 8" FOR D = 72" OR LESS
T = 10" FOR D = OVER 72"



SECTION C-C

TABLE NO. 2		
D	ADD'L.BAR	E
84"	#4	5'
96"	#4	8'



ADDITIONAL BAR DETAIL

DATE	REVISION	BY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
TAPERED
INLET HEADWALL - OUTLET HEADWALL
(BUILT-IN-PLACE)

NO SCALE — REV. & REDR. OCT., 1999

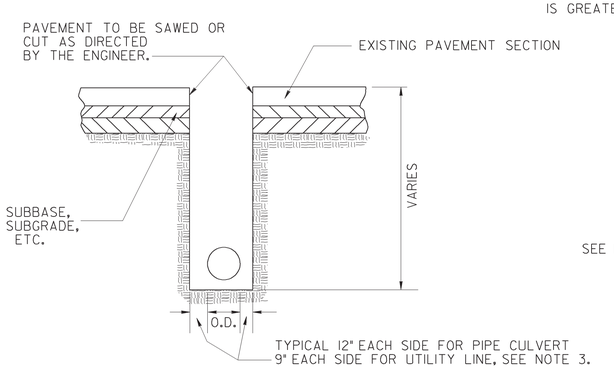
DES. ____ DRW. ____ TRA. ____ CHK. ____

(SUBMITTED) James A. Keane — STATE ROAD & AIRPORT DESIGN ENGR.
(APPROVED) Paul L. Liddy — CHIEF ENGINEER

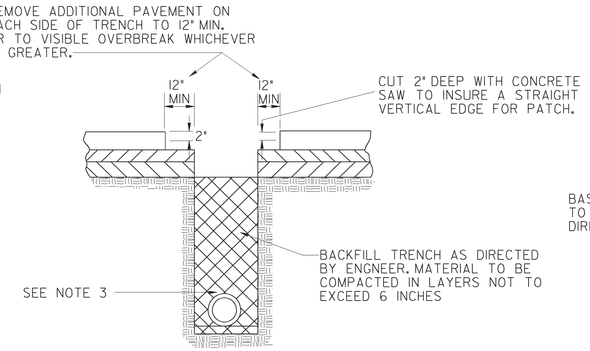
NUMBER 1125

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

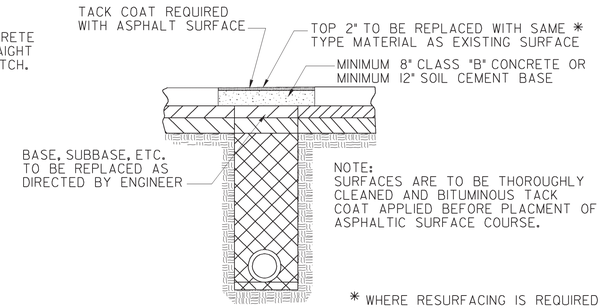
STORM DRAIN AND UTILITY INSTALLATION BY OPEN CUT - GENERAL



STAGE 1



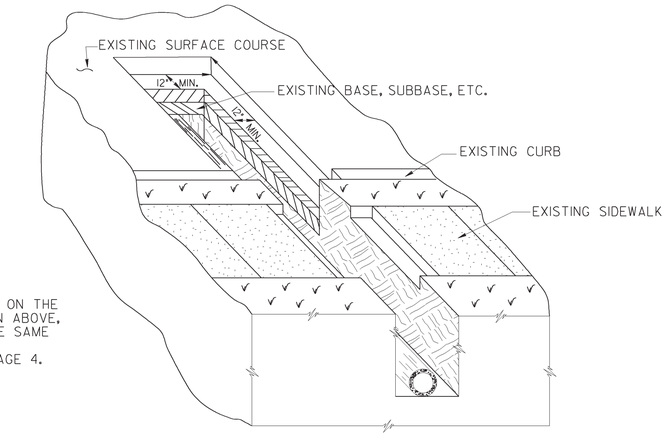
STAGE 2



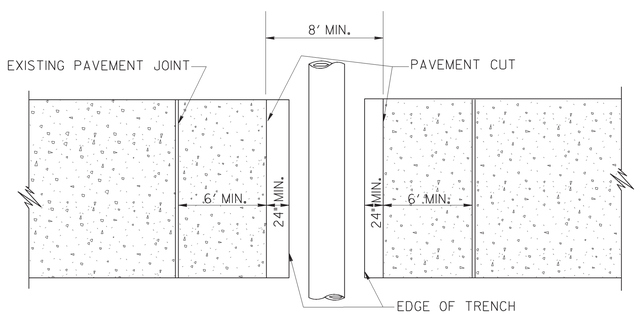
NOTE:
SURFACES ARE TO BE THOROUGHLY CLEANED AND BITUMINOUS TACK COAT APPLIED BEFORE PLACMENT OF ASPHALTIC SURFACE COURSE.

* WHERE RESURFACING IS REQUIRED ON THE PROJECT OMIT THE TOP 2" SHOWN ABOVE, GRADE CONCRETE PATCH SURFACE SAME AS EXISTING SURFACE, WITH THE RESURFACING OVERLAY BEING STAGE 4.

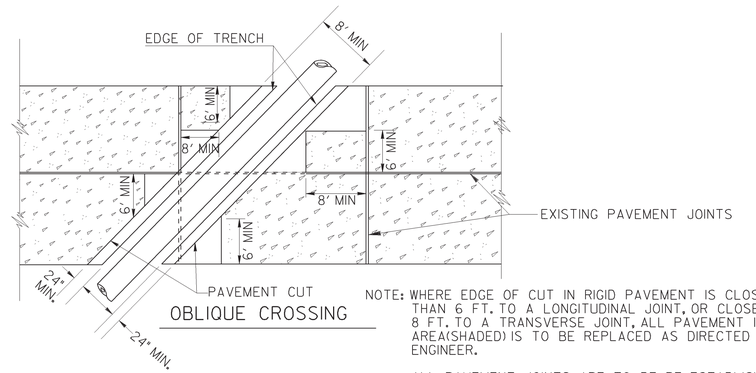
STAGE 3



STORM DRAIN AND UTILITY INSTALLATION BY OPEN CUT ACROSS P.C. CONCRETE PAVING



NORMAL CROSSING



OBLIQUE CROSSING

NOTE: WHERE EDGE OF CUT IN RIGID PAVEMENT IS CLOSER THAN 6 FT. TO A LONGITUDINAL JOINT, OR CLOSER THAN 8 FT. TO A TRANSVERSE JOINT, ALL PAVEMENT IN THAT AREA(SHADED) IS TO BE REPLACED AS DIRECTED BY THE ENGINEER.

ALL PAVEMENT JOINTS ARE TO BE RE-ESTABLISHED.

DOWELS AND TIE-BARS ARE TO BE REPLACED.

GENERAL NOTES:

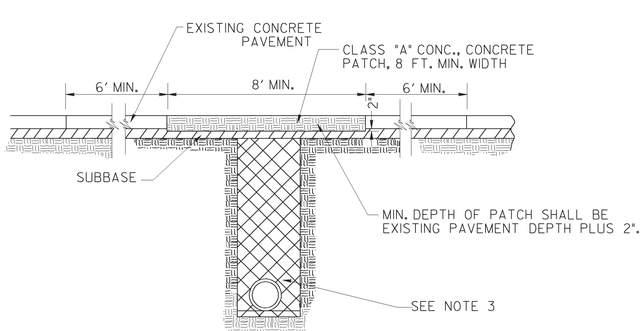
1. SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION & SUPPLEMENTS THERETO.

2. (a)OTHER PAVEMENT REPLACEMENT MATERIALS, SUCH AS HIGH EARLY STRENGTH CONCRETE, MAY BE SUBSTITUTED FOR MATERIALS SHOWN WHEN CALLED FOR IN THE PLANS OR BY THE ENGINEER.
   (b)PAYMENT FOR PIPE CULVERT OR UTILITY SHALL INCLUDE SAWING AND/OR CUTTING AND REMOVING EXISTING PAVEMENT AND REPLACING THE PAVEMENT AS SPECIFIED. PAYMENT FOR PIPE OR UTILITY INCLUDES THIS PAVEMENT REPLACEMENT MATERIAL. REGARDLESS OF WHERE MATERIALS SHOWN ARE USED OR WHERE OTHER MATERIALS SUCH AS HIGH EARLY STRENGTH CONCRETE ARE USED.
   (c)PAYMENT FOR PIPE CULVERT OR UTILITY INSTALLATION SHALL INCLUDE REPLACING IN KIND ANY PORTIONS OF SIDEWALK, CURB, CURB & GUTTER, MEDIAN PAVING, DRIVEWAYS, ETC., WHICH ARE DISTURBED DUE TO THE INSTALLATION.

3. TRENCH DETAIL SHOWN IS GENERAL, SEE STANDARD 1030D FOR DETAILS REQUIRED FOR PIPE CULVERT INSTALLATIONS. SEE THE UTILITIES MANUAL FOR UTILITY INSTALLATION REQUIREMENTS.

4. AFTER REMOVING EXISTING PAVEMENT, THE SUBBASE AND VERTICAL FACE OF EXISTING PAVING SHALL BE DAMPED (BUT NOT WET), ADDITIONALLY, THE VERTICAL FACE OF THE EXISTING PAVEMENT SHALL BE PAINTED WITH A SOLUTION OF PORTLAND CEMENT AND WATER MIXED TO THE CONSISTENCY OF HEAVY PAINT. THE CONCRETE MIX SHALL THEN BE POURED BEFORE THIS SURFACE DRIES OUT. AFTER CONCRETE IS POURED, IT SHALL BE WORKED INTO ALL CORNERS AND INTO ALL ROUGH SURFACES OF THE EXISTING PAVEMENT.

5. WHERE PIPE IS REMOVED, BUT NOT REPLACED, PAYMENT FOR PIPE REMOVAL INCLUDES ALL ITEMS DESCRIBED IN GENERAL NOTE 2., WITH ALL OTHER NOTES AND DETAILS ALSO BEING APPLICABLE.



NOTE:
WHEN THE CONCRETE IS POURED, IT SHALL BE STRUCK OFF AT AN ELEVATION SLIGHTLY HIGHER THAN THE INTENDED SURFACE AND TAMPED TO OFFSET SHRINKAGE. MECHANICAL VIBRATING EQUIPMENT SHALL BE USED TO CONSOLIDATE THE PLACED CONCRETE, ESPECIALLY AT THE EDGES AND AROUND THE STEEL AT JOINTS. THE CONCRETE SHALL THEN BE TAMPED A SECOND TIME, THEN SCREEDED AND CHECKED WITH A STRAIGHT EDGE TO GIVE THE SAME SURFACE GRADE AS THE EXISTING PAVMENT.

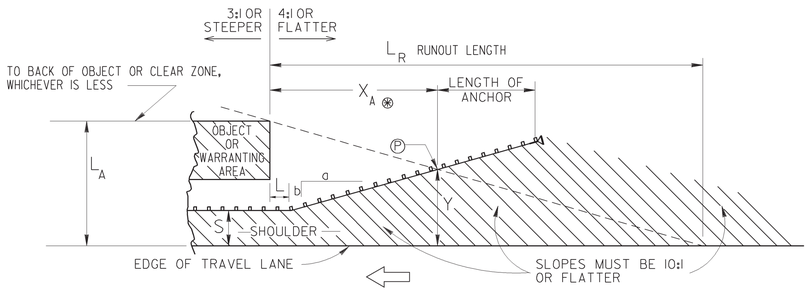
NOTE:
THIS STANDARD IS FOR USE WHERE PERMANENT PAVEMENT PATCHING IS REQUIRED. TEMPORARY PATCHING, IF REQUIRED, SHALL BE ACCORDING TO OTHER DETAILS, SPECIFICATIONS, AND/OR AS DIRECTED BY THE ENGINEER.

		DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA	
		REVISION	STANDARD PAVEMENT PATCHING DETAILS (STORM DRAIN OR UTILITY INSTALLATIONS BY OPEN CUT ACROSS EXISTING PAVEMENT) NO SCALE — REV. & REDR., AUG. 1999	
		BY	REV. ____ TRA. ____ CHK. ____ (SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGR. (APPROVED) CHIEF ENGINEER	NUMBER 1401

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

LENGTH OF GUARDRAIL ADVANCEMENT AT FIXED OBJECTS OR AT WARRANTING FILL SLOPES (TYPICAL)

FLARED

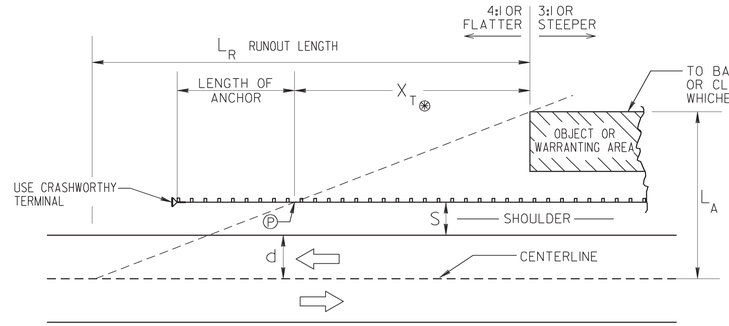


FLARE RATE			
DESIGN SPEED (mph)	SHY-LINE OFFSET (ft)	(a/b) BARRIER INSIDE SHY-LINE	(a/b) BARRIER AT OR BEYOND SHY-LINE
70	9	30	15
60	8	26	14
55	7	24	12
50	6.5	21	11
45	6	18	10
40	5	16	8
30	4	13	7

WHERE 'S' IS LESS THAN THE SHY-LINE OFFSET, USE FLATTER RATES GIVEN IN TABLE.

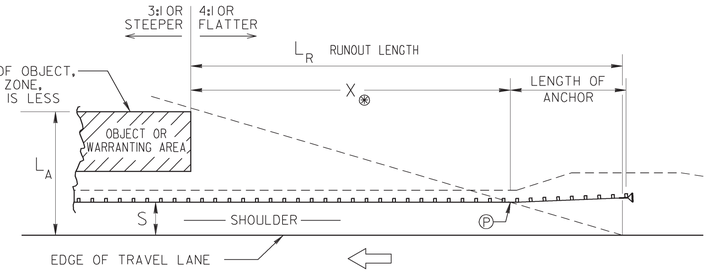
$$Y = L_A - \frac{L_A}{L_R}(X_A) \qquad X_A = \frac{L_A + (b/a)L - S}{b/a + (L_A/L_R)}$$

STANDARD



$$X_T = L_R \times \frac{L_A - (S+d)}{L_A}$$

(TRAILING END)



$$X = L_R \times \frac{L_A - S}{L_A}$$

(APPROACH END)

DESIGN SPEED (MPH)	L_R Runout Length in feet: OVER 10000 (A.D.T.)	5000-10000 (A.D.T.)	1000-5000 (A.D.T.)	UNDER 1000 (A.D.T.)
80	470	430	380	330
70	360	330	290	250
60	300	250	210	200
50	230	190	160	150
40	160	130	110	100
30	110	90	80	70

S = NORMAL WIDTH OF USUABLE SHOULDER PLUS 2 FT (TYP.)

Ⓟ = BEGINNING OF TERMINAL (TYP.)

⊛ X_A, X_T, AND X MEASURED TO THE END OF W-BEAM, WHERE TERMINAL BEGINS

CLEAR ZONE DISTANCES

CLEAR ZONE DISTANCES (FT) CHART

DESIGN SPEED	DESIGN ADT	FORESLOPES IV:6H OR FLATTER	FORESLOPES IV:5H TO IV:4H	FORESLOPES IV:3H	BACKSLOPES IV:3H	BACKSLOPES IV:5H TO IV:4H	BACKSLOPES IV:6H OR FLATTER
40 M.P.H. OR LESS	UNDER 750	7-10	7-10	* *	7-10	7-10	7-10
	750-1500	10-12	12-14	* *	12-14	12-14	12-14
	1500-6000	12-14	14-16	* *	14-16	14-16	14-16
	OVER 6000	14-16	16-18	* *	16-18	16-18	16-18
45-50 M.P.H.	UNDER 750	10-12	12-14	* *	8-10	8-10	10-12
	750-1500	14-16	16-20	* *	10-12	12-14	14-16
	1500-6000	16-18	20-26	* *	12-14	14-16	16-18
	OVER 6000	20-22	24-28	* *	14-16	18-20	20-22
55 M.P.H.	UNDER 750	12-14	14-18	* *	8-10	10-12	10-12
	750-1500	16-18	20-24	* *	10-12	14-16	16-18
	1500-6000	20-22	24-30	* *	14-16	16-18	20-22
	OVER 6000	22-24	26-32*	* *	16-18	20-22	22-24
60 M.P.H.	UNDER 750	16-18	20-24	* *	10-12	12-14	14-16
	750-1500	20-24	26-32*	* *	12-14	16-18	20-22
	1500-6000	26-30	32-40*	* *	14-18	18-22	24-26
	OVER 6000	30-32*	36-44*	* *	20-22	24-26	26-28
65-70 M.P.H.	UNDER 750	18-20	20-26	* *	10-12	14-16	14-16
	750-1500	24-26	28-36*	* *	12-16	18-20	20-22
	1500-6000	28-32*	34-42*	* *	16-20	22-24	26-28
	OVER 6000	30-34*	38-46*	* *	22-24	26-30	28-30

* WHEN A SITE-SPECIFIC INVESTIGATION INDICATES A HIGH PROBABILITY OF CONTINUING CRASHES OR WHEN SUCH OCCURRENCES ARE INDICATED BY CRASH HISTORY, THE DESIGNER MAY PROVIDE CLEAR-ZONE DISTANCES GREATER THAN THE CLEAR ZONE SHOWN ABOVE. CLEAR ZONES MAY BE LIMITED TO 30 FT. FOR PRACTICALITY AND TO PROVIDE A CONSISTENT ROADWAY TEMPLATE IF PREVIOUS EXPERIENCE WITH SIMILAR PROJECTS OR DESIGNS INDICATES SATISFACTORY PERFORMANCE.

* * BECAUSE RECOVERY IS LESS LIKELY ON THE UNSHIELDED, TRAVERSABLE IV:3H FILL SLOPES, FIXED OBJECTS SHOULD NOT BE PRESENT IN THE VICINITY OF THE TOE OF THESE SLOPES. RECOVERY OF HIGH-SPEED VEHICLES THAT ENCROACH BEYOND THE EDGE OF THE SHOULDER MAY BE EXPECTED TO OCCUR BEYOND THE TOE OF SLOPE. DETERMINATION OF THE WIDTH OF THE RECOVERY AREA AT THE TOE OF SLOPE SHOULD CONSIDER RIGHT-OF-WAY AVAILABILITY, ENVIRONMENTAL CONCERNS, ECONOMIC FACTORS, SAFETY NEEDS, AND CRASH HISTORIES. ALSO, THE DISTANCE BETWEEN THE EDGE OF THE THROUGH TRAVELED LAND AND THE BEGINNING OF THE IV:3H SLOPE SHOULD INFLUENCE THE RECOVERY AREA PROVIDED AT THE TOE OF SLOPE. A 10-FT RECOVERY AREA AT THE TOE OF SLOPE SHOULD BE PROVIDED FOR ALL TRAVERSABLE, NON RECOVERABLE FILL SLOPES.

HORIZONTAL CURVE ADJUSTMENTS

RADIUS (FEET)	K_{CZ} (CURVE CORRECTION FACTOR) DESIGN SPEED (MPH) 40	45	50	55	65	70
2950	1.1	1.1	1.1	1.2	1.2	1.2
2300	1.1	1.1	1.2	1.2	1.2	1.3
1970	1.1	1.2	1.2	1.2	1.3	1.4
1640	1.1	1.2	1.2	1.3	1.3	1.4
1475	1.2	1.2	1.3	1.3	1.4	1.5
1315	1.2	1.2	1.3	1.3	1.4	
1150	1.2	1.2	1.3	1.4	1.5	
985	1.2	1.3	1.4	1.5	1.5	
820	1.3	1.3	1.4	1.5		
660	1.3	1.4	1.5			
495	1.4	1.5				
330	1.5					

$CZ_C = (L_C)(K_{CZ})$

Where:

CZ_C = CLEAR ZONE ON OUTSIDE OF CURVATURE, FEET

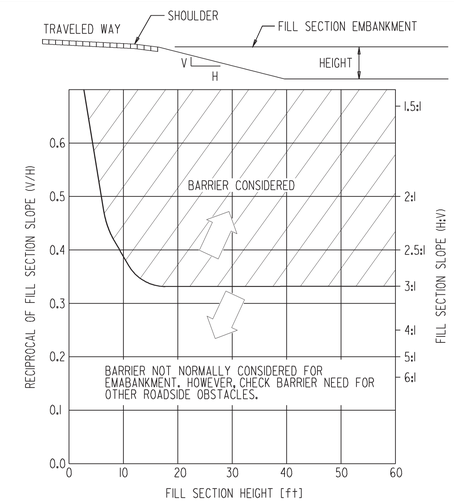
L_C = CLEAR ZONES DISTANCE, FEET (SEE CHART AT LEFT)

K_{CZ} = CURVE CORRECTION FACTOR

NOTE:

THE CURVE CORRECTION FACTOR IS APPLIED TO THE OUTSIDE OF CURVES ONLY. CORRECTIONS ARE TYPICALLY MADE ONLY TO CURVES LESS THAN 2,950-FT RADIUS.

COMPARATIVE BARRIER CONSIDERATION FOR EMBANKMENTS



REVISION	BY	DATE
REV. ANCH. LOC.; UPDATED FLARE TBL; ADDED CHART	F.B.F.	1-29-16
REVISED TO 2011RDG	B.J.Q.	4-16-15
REMOVED SLOPE WARRENTS		
REVISED GUARDRAIL AND CLEAR ZONE	G.L.O.	9-4-07

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
GUARDRAIL WARRANT GUIDES
LENGTHS OF ADVANCEMENT
CLEAR ZONE DISTANCES
FILL HEIGHT EMBANKMENTS

NOT TO SCALE — DEC., 1999

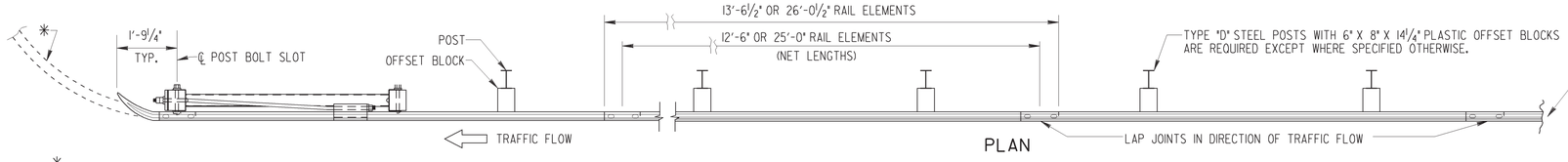
DES. ____ DRW. ____ TRA. ____ CHK. ____

(SUBMITTED) STATE DESIGN POLICY ENGINEER

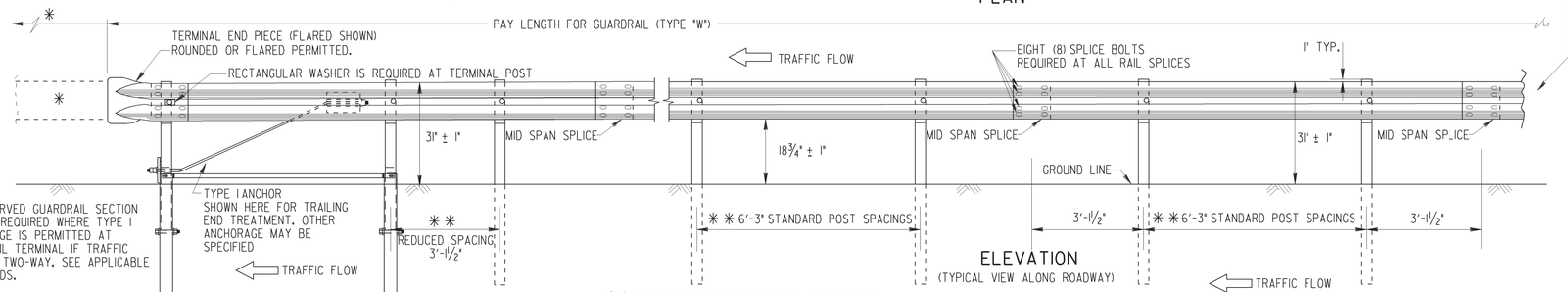
(APPROVED) Margaret B Pirkle CHIEF ENGINEER

NUMBER 4000W

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



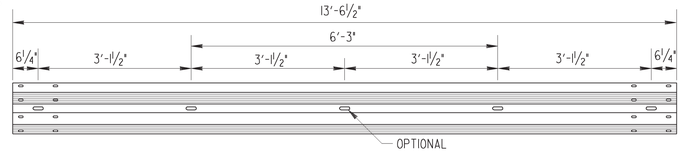
PLAN



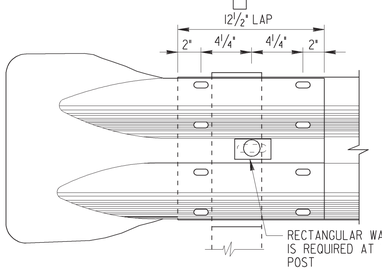
✱ NOTE:
A PRECURVED GUARDRAIL SECTION WILL BE REQUIRED WHERE TYPE I ANCHORAGE IS PERMITTED AT GUARDRAIL TERMINAL IF TRAFFIC FLOW IS TWO-WAY. SEE APPLICABLE STANDARDS.

✱✱ REDUCED POST SPACINGS WILL BE REQUIRED AT TURNOUTS AROUND RADII, AT REDUCED OFFSETS TO FACE OF FIXED OBJECTS OR AT OTHER SPECIFIED LOCATIONS. SEE PLAN DETAILS OR APPLICABLE STANDARDS. PAYMENT FOR GUARDRAIL WILL INCLUDE THE ADDITIONAL POSTS REQUIRED.

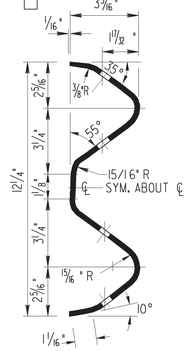
ELEVATION
(TYPICAL VIEW ALONG ROADWAY)



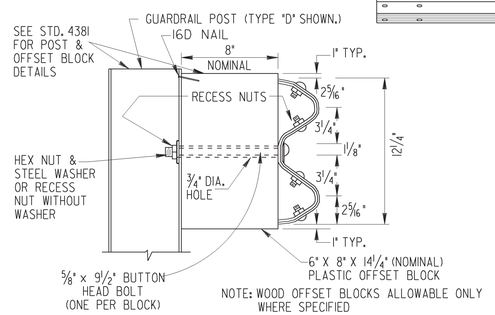
12'-6" W-BEAM SECTION



TERMINAL END PIECE (FLARED)

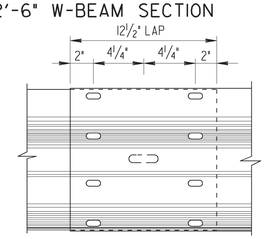


SECTION THROUGH RAIL ELEMENT

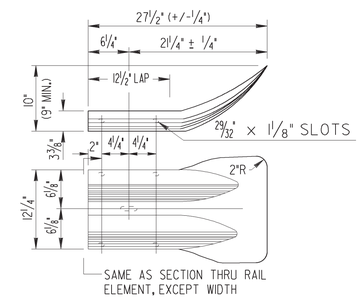


NOTE: WOOD OFFSET BLOCKS ALLOWABLE ONLY WHERE SPECIFIED

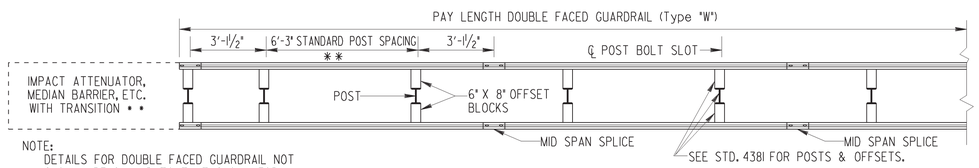
"W" BEAM OFFSET BLOCK DETAIL
NOTE: OFFSET BLOCKS FOR "W" BEAM GUARDRAIL WILL BE PLASTIC EXCEPT WHERE SPECIFIED OTHERWISE.



"W" BEAM SPLICE MID SPAN
NOTE:
EIGHT (8) SPLICE BOLTS REQUIRED AT ALL RAIL SPLICES

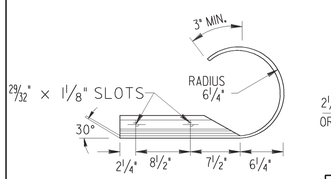


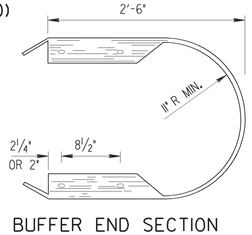
TERMINAL END PIECE (FLARED)



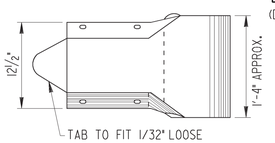
NOTE:
DETAILS FOR DOUBLE FACED GUARDRAIL NOT SHOWN ARE SIMILAR TO THAT SHOWN FOR SINGLE FACED RAIL.

DOUBLE FACED GUARDRAIL (Type "W")

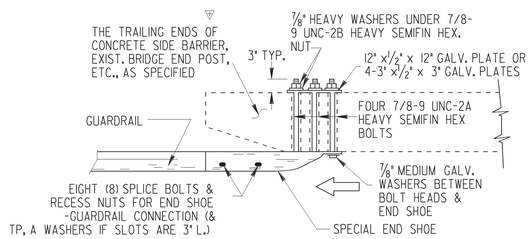




BUFFER END SECTION
(DETAILS NOT SHOWN ARE SIMILAR TO ROUNDED TERMINAL END PIECE.)

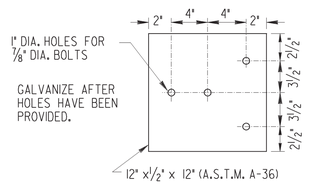


TERMINAL END PIECE (ROUNDED)

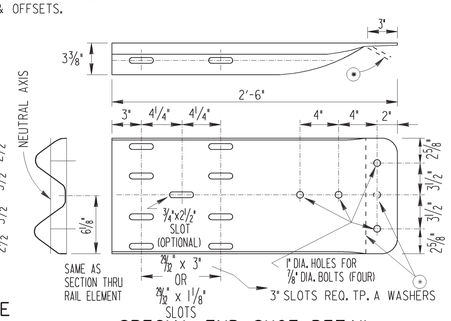


TYPICAL END SHOE CONNECTION
NOTE: THE "W" BEAM RAIL ELEMENT/END SHOE SPLICE SHALL BE LAPPED IN THE DIRECTION OF THE NEAREST TRAFFIC.

▽ "W" BEAM END CONNECTIONS ARE NOT PERMITTED AT APPROACHES TO CONCRETE STRUCTURES. SEE SEPARATE STANDARDS FOR REQUIRED "T" BEAM CONNECTIONS.

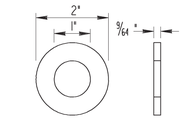


1/2" GALVANIZED STEEL PLATE
(TO BE USED WITH SPECIAL END SHOE CONNECTION UNDER NUTS & WASHERS ON BACK OF BRIDGE END POST OR BACK OF CONCRETE SIDE BARRIER) (FOUR 3" x½" x 3" GALV. PLATES WITH 1" DIA. HOLE CENTERED, MAY BE USED AS AN ALTERNATE)

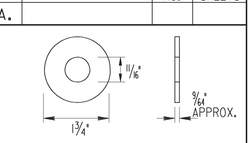


SPECIAL END SHOE DETAIL
(FOR USE IN CONNECTING GUARDRAIL TO BRIDGE END POST, CONCRETE BARRIERS, ETC.)
SPECIAL END SHOE WILL BE 10 GAUGE STEEL GALVANIZED ACCORDING TO A.A.S.H.T.O. M-111

⊙ APPLIES ONLY TO END SHOE WITH BUFFERED END ASSEMBLY OF ANCHORAGE.



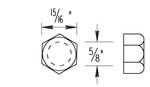
TYPE A WASHER (GALV.)
IF SLOTS IN SPECIAL END SHOE ARE 3" LONG TP. A WASHERS ARE REQ'D UNDER SPLICE BOLT HEADS & UNDER NUTS WITH 2" LONG SPLICE BOLTS. IF END SHOE SLOTS ARE 1⅛" LONG, USE NORMAL SPLICE CONNECTIONS



STEEL WASHER (GALV.)
(REQ'D. UNDER ⅝" HEX NUTS AND AS SPECIFIED)

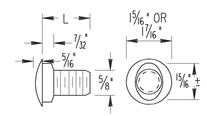
SPECIAL NOTE:
ALL GUARDRAIL SPLICES WILL BE PROPERLY SECURED WITH EIGHT SPLICE BOLT CONNECTIONS. ALL NUTS WILL BE TIGHTENED. LOOSE NUTS, OMITTED BOLTS, OR OMITTED NUTS WILL BE CAUSE FOR REJECTION.

GUARDRAIL NOT ERECTED AT A 31" TOP OF RAIL HEIGHT MAY BE CAUSE FOR REJECTION.

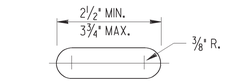


⅝" DIA. HEX NUT

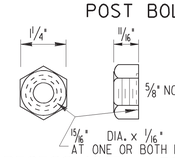
L	THREAD LENGTH
1¼"	FULL LENGTH
2"	1½" MIN.
9½"	1¾" MIN.



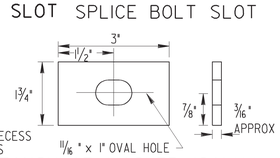
BUTTON HEAD (OR SPLICE) BOLT
(8 REQ'D PER SPLICE)



POST BOLT SLOT SPLICE BOLT SLOT



RECESS NUT



RECTANGULAR WASHER (GALV.)
(FOR USE AT TERMINAL POST OR WHERE SPECIFIED)

GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD CURRENT EDITION, AND SUPPLEMENTS THERETO.
2. NUTS, BOLTS, WASHERS, RAIL, TERMINAL SECTIONS, END SHOES, BACK-UP PLATES, END SECTIONS AND OTHER GUARDRAIL HARDWARE ARE IN ACCORDANCE WITH THE CURRENT ARTBA TECHNICAL BULLETIN NO. 268 -- UNLESS SPECIFIED OTHERWISE. DIMENSIONS FOR POSTS AND OFFSET BLOCKS WILL BE ACCORDING TO GA. STANDARD 4381.
3. FOR DETAILS OF GUARDRAIL ANCHORAGES, SEE APPLICABLE STANDARDS AND/OR CONSTRUCTION DETAILS.
4. FOR LOCATION OF GUARDRAIL SEE APPLICABLE LOCATION STANDARDS.
5. ALL STEEL HARDWARE COMPONENTS WILL BE GALVANIZED AFTER FABRICATION. GALVANIZING REPAIR COMPOUND (SEC. 645) WILL BE FIELD APPLIED TO ANY COATINGS DAMAGED.
6. WHEN GUARDRAIL IS REQUIRED ON CURVES WITH RADII LESS THAN 150', PRECURVED RAIL WILL BE REQUIRED.
7. PAYMENT FOR GUARDRAIL (Type "W") TO INCLUDE OFFSET BLOCKS, POST, BACK-UP PLATES WHERE REQUIRED, BOLTS, NUTS, WASHERS, TERMINAL SECTIONS, ADDITIONAL POST WHERE REQUIRED, LEAVE-OUTS INCLUDING GROUT WHERE REQUIRED, & REMOVAL AND REPLACEMENT OF PORTIONS OF MEDIAN PAVING, SPILLWAYS, OR CATCH BASINS WHERE NECESSARY.
8. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
9. STANDARD NET LENGTH OF RAIL ELEMENTS MAY BE EITHER 12'-6" OR 25'-0". THESE LENGTHS SHALL BE ARRANGED TO PROVIDE AS NEARLY AS POSSIBLE THE REQUIRED LENGTH FOR EACH INSTALLATION.

BY	REVISION	DATE
FBF	REV. W-BM BLOCK TO 8" DEPTH	1-29-16

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

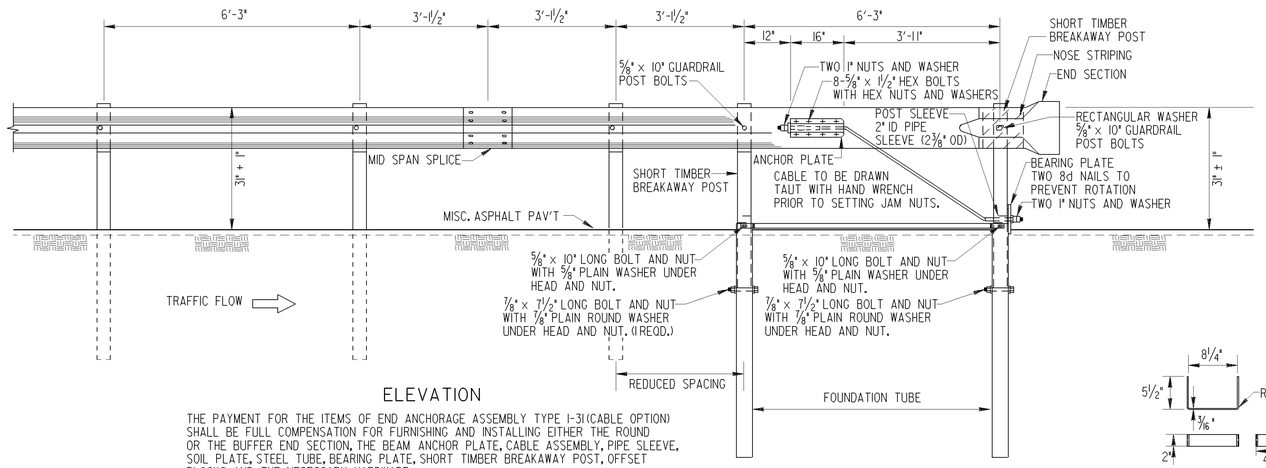
STANDARD
"W" BEAM GUARDRAIL
31 INCH GUARDRAIL HEIGHT

NO SCALE — AUGUST 2011

DES. G.L.O. (SUBMITTED) STATE DESIGN POLICY ENGINEER
DRW. G.L.O.
CHK. B.R.E. (APPROVED) CHIEF ENGINEER
REVIEW B.A.S.

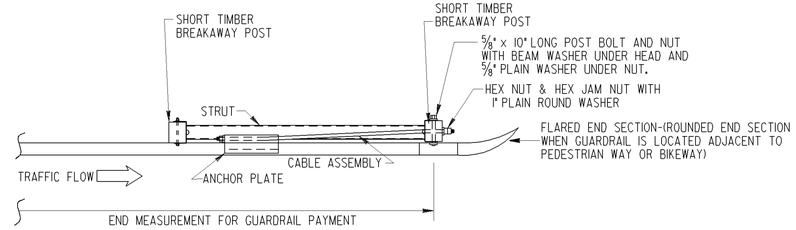
NUMBER 4380

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

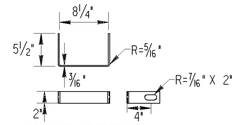


ELEVATION

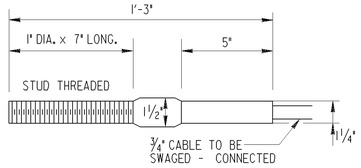
THE PAYMENT FOR THE ITEMS OF END ANCHORAGE ASSEMBLY TYPE 1-31 (CABLE OPTION) SHALL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING EITHER THE ROUND OR THE BUFFER END SECTION, THE BEAM ANCHOR PLATE, CABLE ASSEMBLY, PIPE SLEEVE, SOIL PLATE, STEEL TUBE, BEARING PLATE, SHORT TIMBER BREAKAWAY POST, OFFSET BLOCKS AND THE NECESSARY HARDWARE.



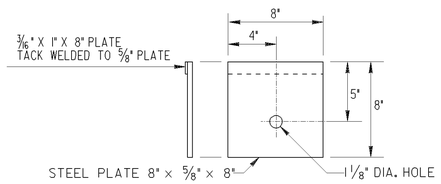
CABLE ANCHOR



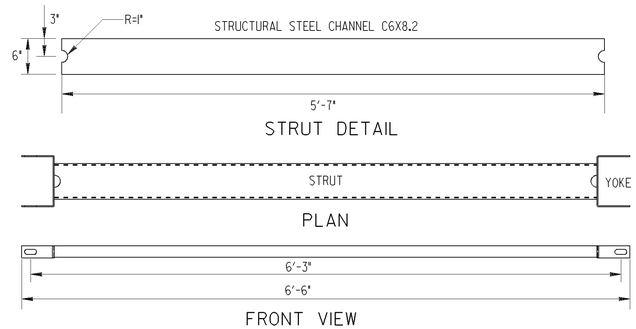
YOKE DETAIL

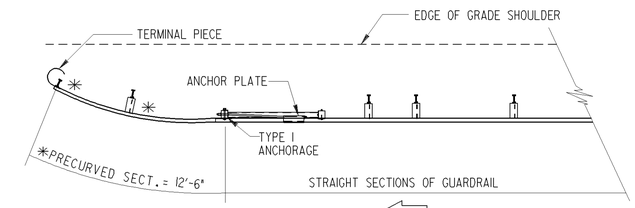


SWAGED FITTING AND STUD



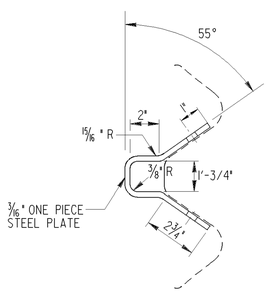
BEARING PLATE



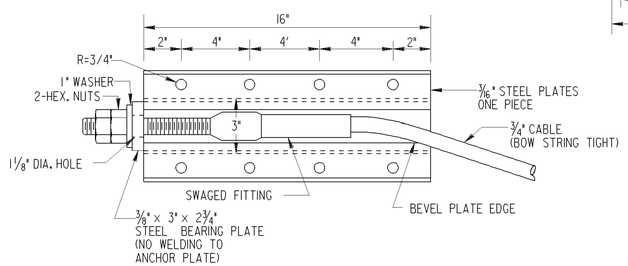


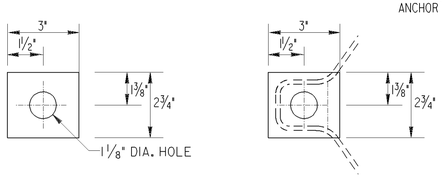
* PRECURVED SECTION SHALL UTILIZE POST OF THE SAME LENGTH AS REQUIRED FOR THE ADJOINING STRAIGHT SECTIONS, REGARDLESS OF DISTANCE TO GRADED SHOULDER EDGE.

AT TRAILING END OF TWO-WAY TRAFFIC (WHICH FALLS OUTSIDE CLEAR ZONE OF OPPOSING TRAFFIC)



ANCHOR PLATE DETAIL

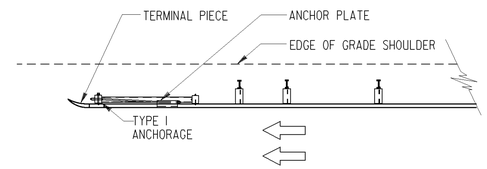




NOTE:
ANCHOR PLATES SHOWN HERE WITH GUARDRAIL (TYPE "W") ATTACHMENT TO GUARDRAIL (TYPE "T") WILL BE THE SAME EXCEPT THAT THE ANCHOR PLATE WILL BE LOCATED BETWEEN THE BOTTOM AND MIDDLE CORRUGATIONS.

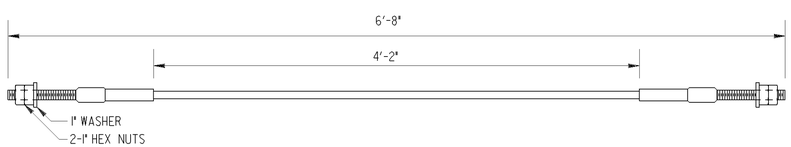
ANCHOR PLATE BEARING PLATE DETAIL

STANDARD ANCHOR PLATE DETAILS

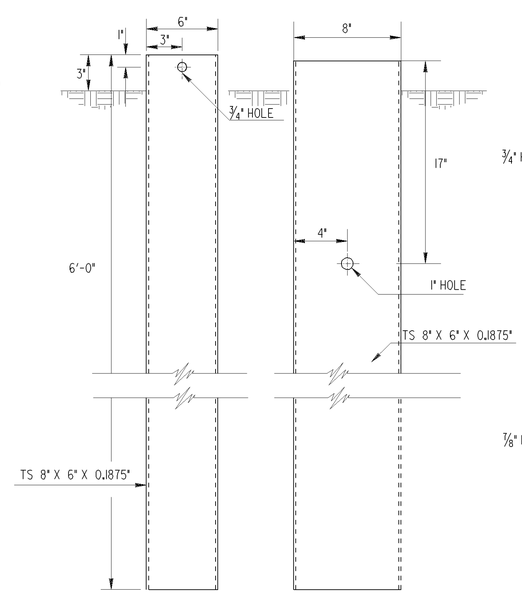


AT TRAILING END OF ONE-WAY TRAFFIC

NOTE:
SEE STD. 4388 OR OTHER APPLICABLE DETAILS FOR REQUIREMENT FOR TYPE 12 ANCHORAGE ON THE TRAILING END.

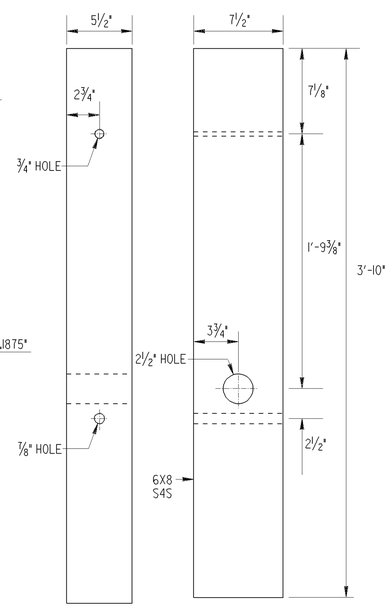


ANCHOR CABLE



FOUNDATION TUBE

NOTE: SEE STANDARD 4382 FOR GUARDRAIL CONNECTION TO CONCRETE FACE.



SHORT TIMBER BREAKAWAY POST

GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION & SUPPLEMENTS THERE TO.
2. FOR DETAILS OF GUARDRAIL HARDWARE, POST, OTHER TYPE ANCHORAGE, LOCATION, ETC. SEE SEPARATE STANDARDS AS APPLICABLE.
3. GUARDRAIL INSTALLATIONS, INCLUDING ANCHORAGES AND CONNECTIONS, ARE TO BE COMPLETED BEFORE BEING SUBJECT TO TRAFFIC UNLESS OTHERWISE APPROVED.
4. PAYMENT FOR ANCHORAGE INCLUDES ANCHOR PLATE; ¾" CABLE; BREAKAWAY POSTS; FOUNDATION TUBES; STRUT AND ALL ACCOMPANYING HARDWARE.

DATE	REVISION	BY		
		DES.	G.L.O.	(SUBMITTED) STATE DESIGN POLICY ENGINEER
		DRW.	G.L.O.	
		CHK.	B.R.E.	(APPROVED) CHIEF ENGINEER
		REVIEW	B.A.S.	

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

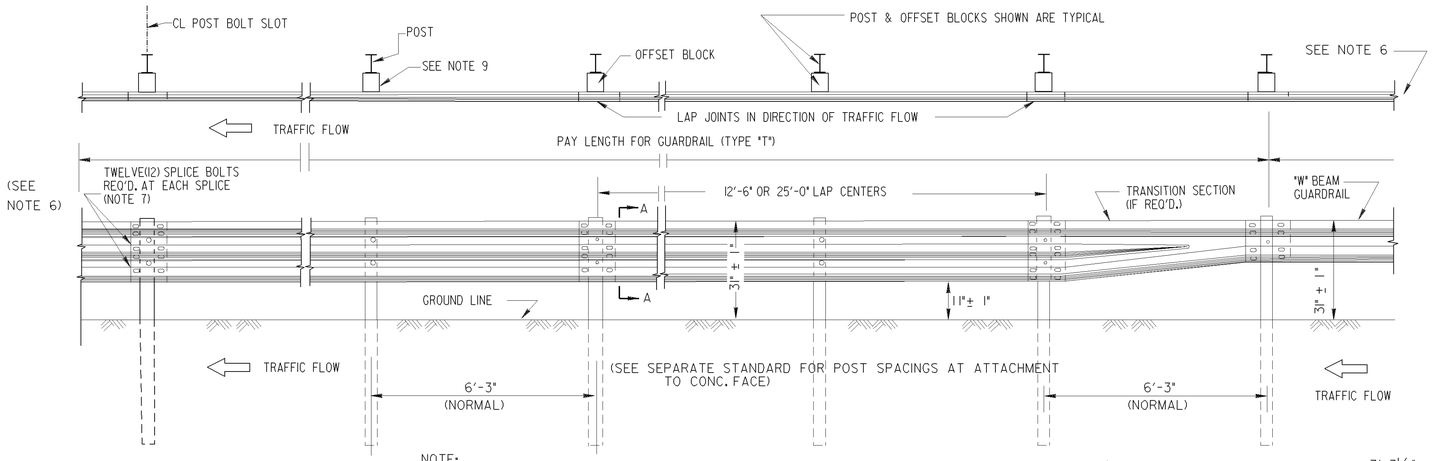
STANDARD

GUARDRAIL ANCHORAGE TYPE 1
31 INCH GUARDRAIL HEIGHT

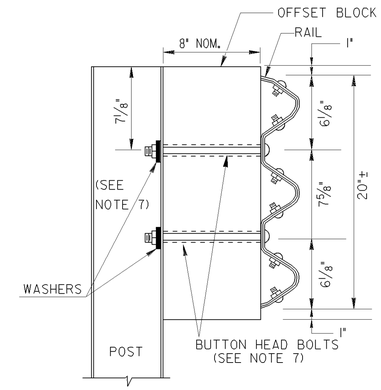
NO SCALE — AUGUST 2011

NUMBER 4383

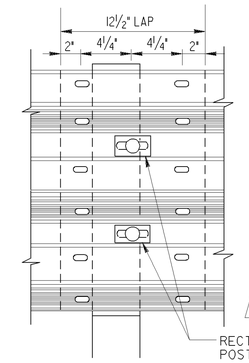
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



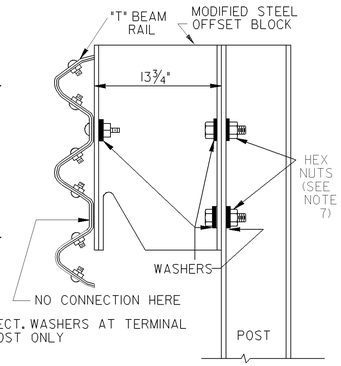
NOTE:
WHERE ATTACHED TO CONCRETE BARRIER, BRIDGE END POST OR OTHER CONCRETE FACE, PAYMENT FOR T BEAM GUARDRAIL SHALL INCLUDE ADDITIONAL POSTS, OFFSET BLOCKS AND DOUBLE THICKNESS (ONE RAIL NESTED INSIDE ANOTHER) SECTION OF T BEAM GUARDRAIL AS SPECIFIED.



SECTIONAL VIEW
(GUARDRAIL TP. T-LIN. FT.)

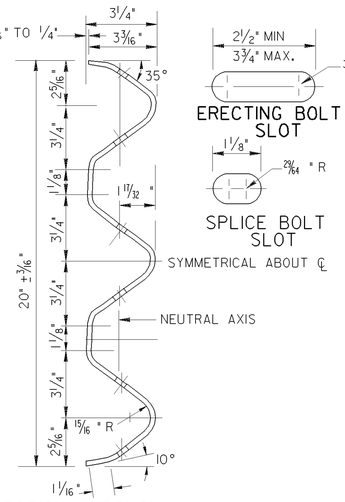


"T" BEAM SPLICE AT POST

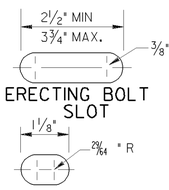


SECTIONAL VIEW
(GUARDRAIL TP. T, MODIFIED OFFSET BLOCK)

NOTE:
13 3/4" DEPTH MODIFIED STEEL OFFSETS BLOCKS MAY BE SPECIFIED WHERE JUSTIFIED FOR MORE SEVERE CONDITIONS. PAY ITEM IS --GUARDRAIL, TP T, MODIFIED OFFSET BLOCK---PER LIN. FT.

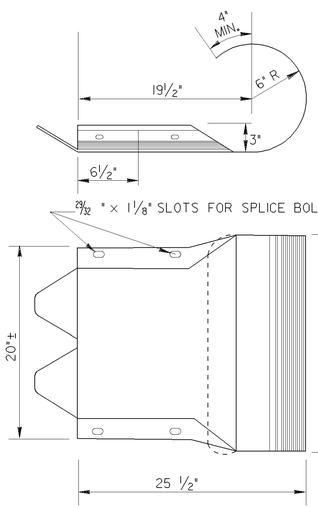


SECTION THROUGH RAIL ELEMENT (SEC. A-A)

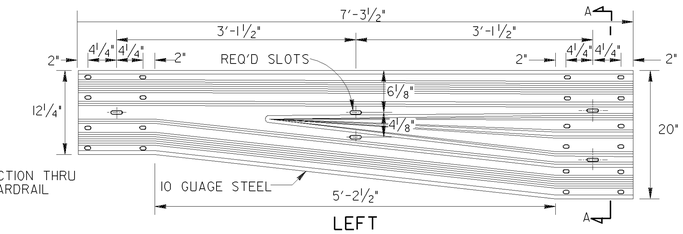


ERECTING BOLT SLOT

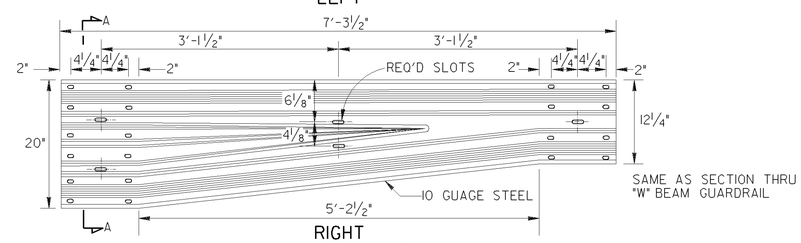
SPLICE BOLT SLOT



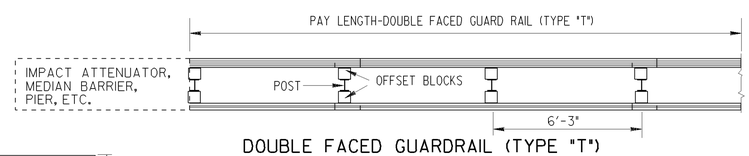
ROUNDED TERMINAL SECTION
TO BE LAPPPED ON TRAFFIC FACE OF RAIL WHERE TYPE I ANCHORAGE IS REQUIRED



LEFT



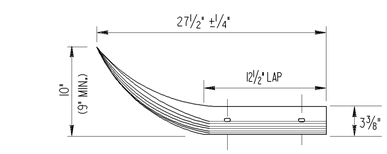
RIGHT
TRANSITION SECTION



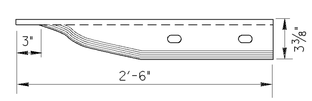
DOUBLE FACED GUARDRAIL (TYPE "T")

GENERAL NOTES:

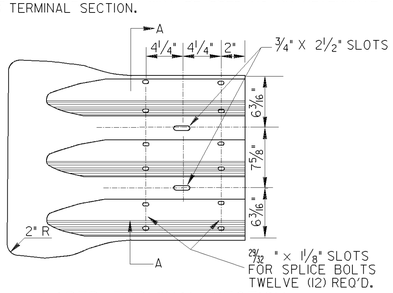
1. SPECIFICATIONS: GA. STANDARD CURRENT EDITION & SUPPLEMENTS THERETO
2. DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
3. NET LENGTH OF RAIL ELEMENTS MAY BE EITHER 12'-6" OR 25'-0".
4. RAIL ELEMENTS ON CURVES OF RADII LESS THAN 150' WILL BE PRECURVED.
5. PAYMENT FOR GUARDRAIL (TYPE "T") WILL INCLUDE ALL POSTS, BLOCKS, HARDEWARE ACCESSORIES AND WHERE REQUIRED ALL ADDITIONAL POSTS, END SHOES, TERMINAL SECTIONS, TRANSITION SECTIONS, BACK-UP PLATES AND REMOVAL AND REPLACEMENT OF PORTIONS OF MEDIAN PAVING, SPILLWAYS OR CATCH BASINS WHERE NECESSARY.
6. ALL GUARDRAIL TERMINALS SHALL REQUIRE AN APPROVED ANCHORAGE AS SPECIFIED IN IN THE PLANS OR APPROVED BY THE ENGINEER EXCEPT WHERE CONNECTED TO A BRIDGE END OR OTHER CONCRETE FACE.
7. NUTS, BOLTS AND WASHERS WHICH ARE NOT DETAILED ON THIS STANDARD, SHALL BE AS SHOWN FOR W BEAM GUARDRAIL ON STANDARD 4380.
8. SEE SEPARATE STANDARDS AS APPLICABLE FOR ANCHORAGES, POSTS, OFFSET BLOCKS, CONNECTIONS TO CONCRETE FACE, W BEAM GUARDRAIL, ETC.
9. SEE STANDARD 4381 FOR DETAILS AND REQUIREMENTS OF BACK-UP PLATES, WHERE STEEL OFFSET BLOCKS ARE ALLOWED OR SPECIFIED.
10. OFFSET BLOCKS SHALL BE PLASTIC UNLESS OTHERWISE APPROVED OR SPECIFIED.



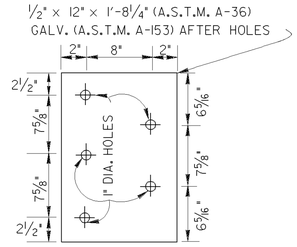
THE FLARED TERMINAL SECTION MAY BE USED AS AN ALTERNATE TO THE ROUND TERMINAL SECTION.



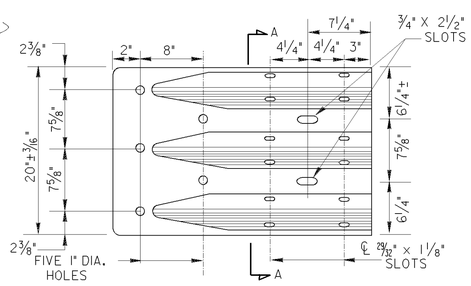
SPECIAL END SHOE WILL BE 10 GUAGE STEEL GALVANIZED ACCORDING TO A.A.S.H.T.O. M-111



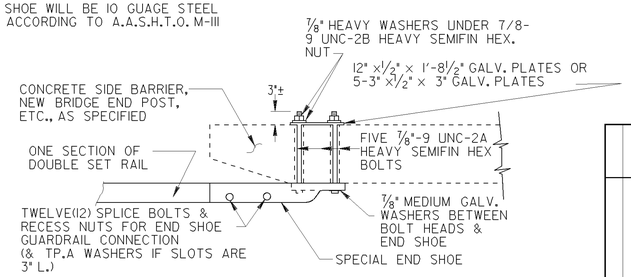
FLARED TERMINAL SECTION



1/2" GALVANIZED STEEL PLATE
(FOR USE WITH END SHOE CONN.)
ALTERNATE: FIVE 3" × 1/2" × 3" GALV. PLATES WITH 1" DIA. HOLE CENTERED, GALV. AFTER HOLES.



"T" BEAM SPECIAL END SHOE



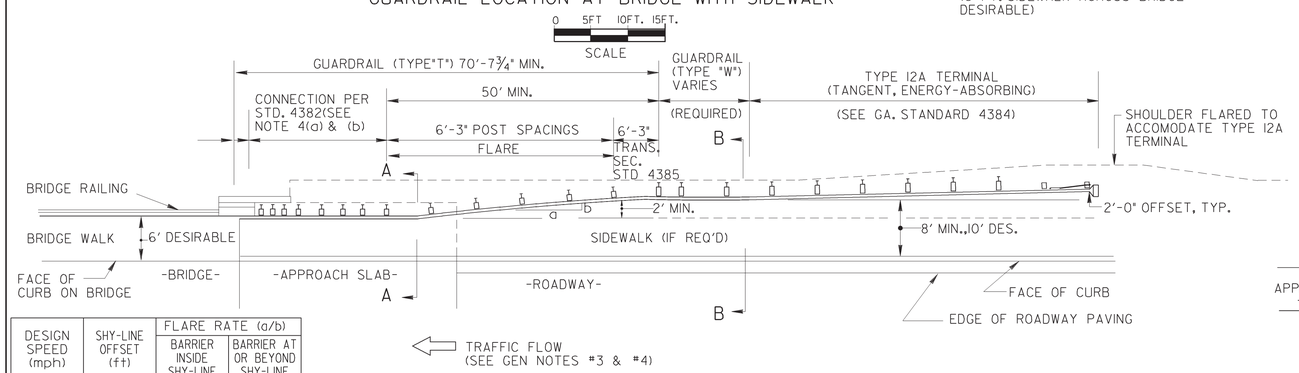
TYPICAL SPECIAL END SHOE CONNECTION
NOTE: THE "T" BEAM RAIL ELEMENT/END SHOE SPLICE SHALL BE LAPPED IN THE DIRECTION OF THE NEAREST TRAFFIC.

DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA	
REVISION	STANDARD "T" BEAM GUARDRAIL CONNECTION TO 31 INCH HEIGHT "W" BEAM	
	NO SCALE	AUGUST 2011
BY	DES. G.L.O. (SUBMITTED) STATE DESIGN POLICY ENGINEER DRW. G.L.O. CHK. B.R.E. (APPROVED) CHIEF ENGINEER REVIEW B.A.S.	NUMBER 4385

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

GUARDRAIL LOCATION AT BRIDGE WITH SIDEWALK

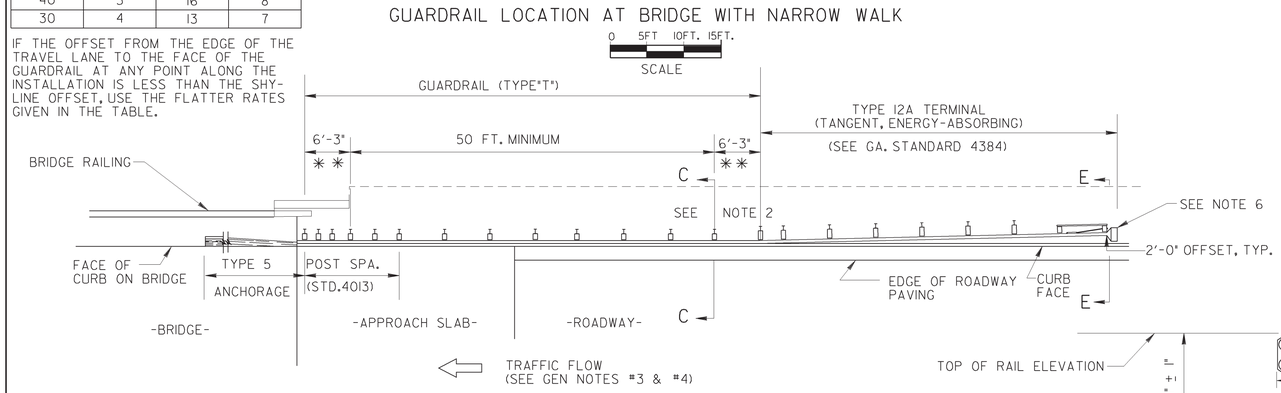
(6 FT. SIDEWALK ACROSS BRIDGE DESIRABLE)



DESIGN SPEED (mph)	SHY-LINE OFFSET (ft)	FLARE RATE (a/b) BARRIER INSIDE SHY-LINE	FLARE RATE (a/b) BARRIER AT OR BEYOND SHY-LINE
70	9	30	15
60	8	26	14
55	7	24	12
50	6.5	21	11
45	6	18	10
40	5	16	8
30	4	13	7

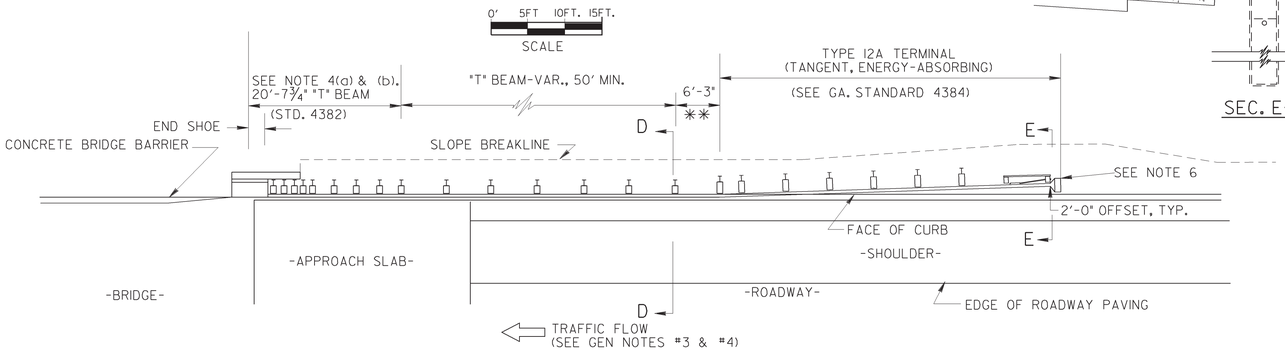
IF THE OFFSET FROM THE EDGE OF THE TRAVEL LANE TO THE FACE OF THE GUARDRAIL AT ANY POINT ALONG THE INSTALLATION IS LESS THAN THE SHY-LINE OFFSET, USE THE FLATTER RATES GIVEN IN THE TABLE.

GUARDRAIL LOCATION AT BRIDGE WITH NARROW WALK

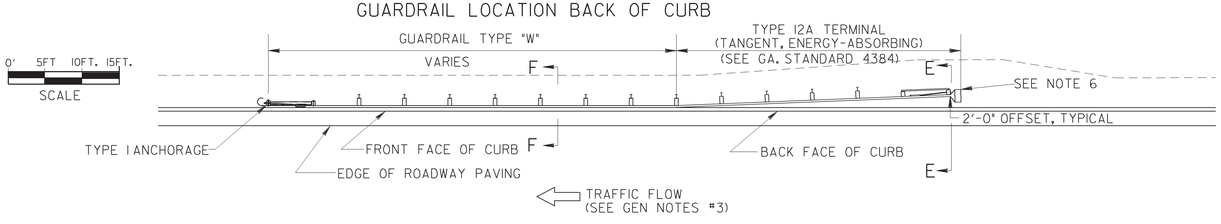


✳SEE STD. 4385 FOR TRANSITION PIECE BETWEEN "T"-BEAM AND ANCHORAGES,WHERE REQUIRED.

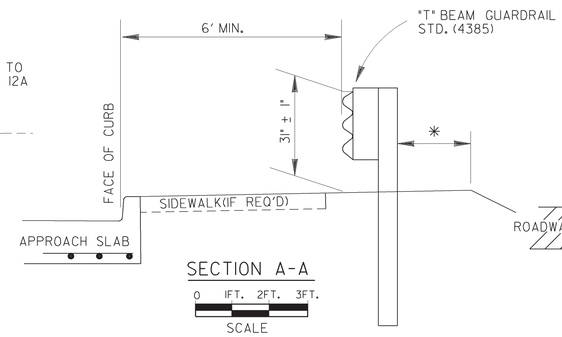
GUARDRAIL LOCATION SHOULDER ACROSS BRIDGE



GUARDRAIL LOCATION BACK OF CURB

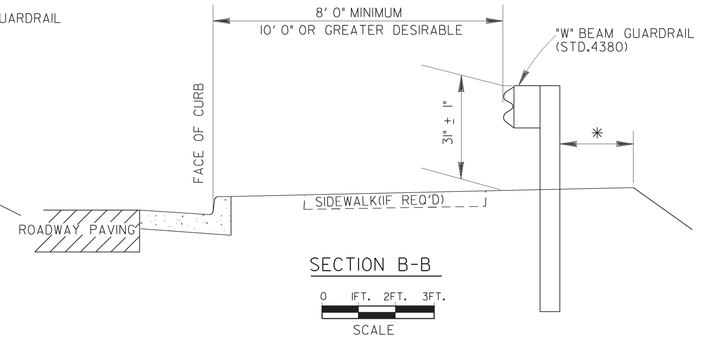


NOTE: APPLICATION OF ABOVE DETAILS IS TYPICAL FOR URBAN TYPE FACILITIES WITH CONTINOUS CONCRETE CURB & GUTTER ADJACENT TO THE PAVEMENT. SEE SEPARATE DETAILS WHERE SECTIONS OF ASPHALT CURB ARE LOCATED UNDER GUARDRAIL ON SHOULDERS OF RURAL TYPE FACILITIES.

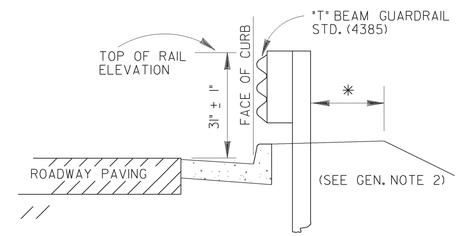


SECTION A-A

✳ DISTANCE FROM BACK OF POST TO EDGE OF GRADED SHOULDER SHALL NOT BE LESS THAN 2 FEET WITH NORMAL LENGTH POST AND NOT LESS THAN 1 FOOT WITH ADDITIONAL LENGTH POST.(STD. 4381)



SECTION B-B

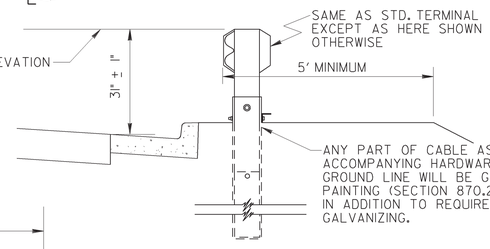


SECTION C-C

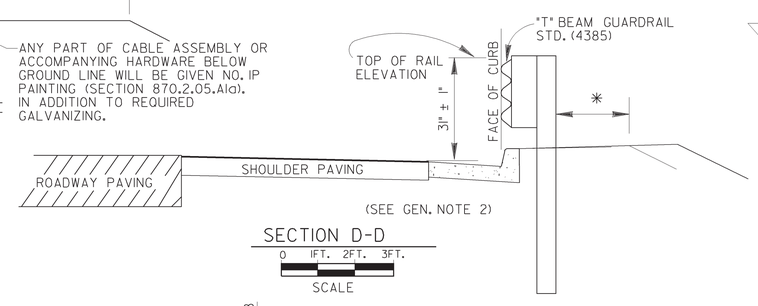
0 1FT. 2FT. 3FT.
SCALE

GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD,CURRENT EDITION, AND SUPPLEMENTS THERETO.
2. IF GUARDRAIL IS DIRECTLY ABOVE CURB, DO NOT USE STD. 1033D,1033G,1034D, 1034G CATCH BASINS AT SAME LOCATION. EITHER USE OTHER DRAINAGE STRUCTURES OR ADJUST LOCATION OF CATCH BASINS TO MISS GUARDRAIL.
3. (a) TYPE 12A, 12B, OR 12C TERMINALS ARE REQUIRED AT ALL APPROACH ENDS OF GUARDRAIL AND AT TRAILING ENDS THAT FALL WITHIN THE C.Z.W. OF THE TWO-WAY TRAFFIC. C.Z.W.=CLEAR ZONE WIDTH.
   (b) TYPE 1 ANCHORAGE WITH A 30' R PRECURVED RAIL SECTION MAY BE USED AT TRAILING ENDS THAT FALL OUTSIDE THE C.Z.W. OF THE TWO-WAY TRAFFIC.
   (c) TYPE 1 ANCHORAGES ARE USED AT THE TRAILING ENDS OF ONE-WAY TRAFFIC.
4. (a) GUARDRAIL PER APPLICABLE DETAIL AT LEFT IS REQUIRED AT BOTH APPROACH BRIDGE END POSTS WITH ONE-WAY TRAFFIC AND AT ALL 4 BRIDGE END POSTS WITH 2-LANES & 2-WAY TRAFFIC.
   (b) BRIDGE END POSTS AT THE TRAILING END OF ONE-WAY TRAFFIC OR AT THE TRAILING END OF TWO-WAY TRAFFIC ON MULTI-LANE(FOUR OR MORE) FACILITIES DOES NOT REQUIRE GUARDRAIL UNLESS STEEP SLOPES OR OTHER CONDITION WARRANTS GUARDRAIL FOR TRAFFIC COMING OFF OF BRIDGE. IF REQUIRED FOR THIS CONDITION,GUARDRAIL TYPE SHALL BE AS WARRANTED & WITHOUT ADDITIONAL POST/DOUBLE THICK RAIL.
5. SKETCHES SHOWN HERE FOR GUARDRAIL, TERMINALS, AND ANCHORAGES ARE REPRESENTATIVE. SEE SEPERATE STANDARDS OR DETAILS FOR SPECIFIC REQUIREMENTS.
6. TYPE 12A TERMINALS SHALL BE TAPERED PER MANUFACTURER'S SPECIFICATIONS SO THAT THE EXTRUDER/IMPACT HEAD WILL NOT PROTRUDE OVER CURB FACE.

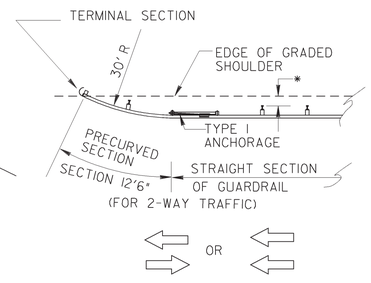


SEC. E-E

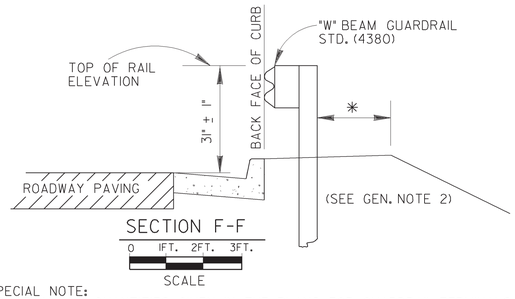


SECTION D-D

0 1FT. 2FT. 3FT.
SCALE



DETAIL "A"



SECTION F-F

0 1FT. 2FT. 3FT.
SCALE

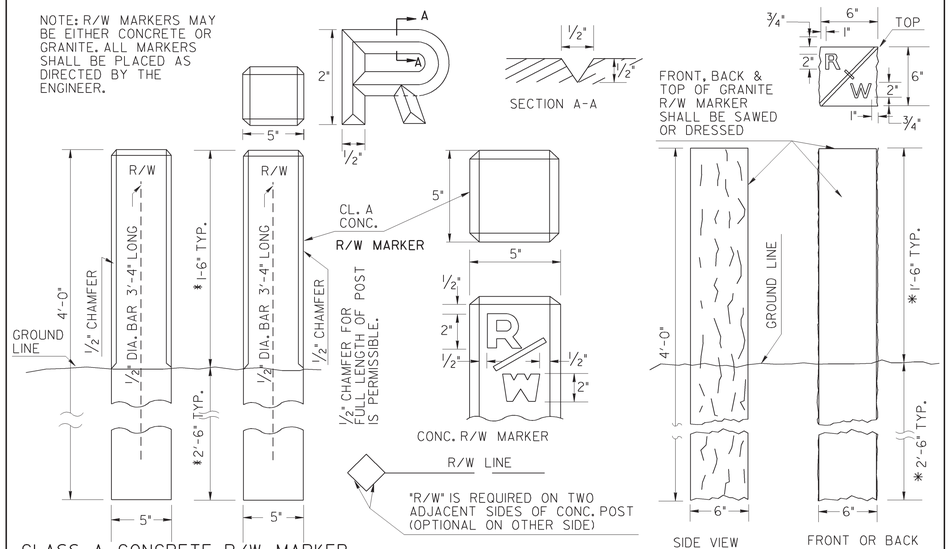
SPECIAL NOTE:
LOCATION AND QUANTITIES GIVEN IN THE PLANS FOR GUARDRAIL,TERMINALS, AND ANCHORAGES ARE ESTIMATES MADE FROM OFFICE COMPUTATIONS. A FINAL DETERMINATION AS TO LOCATIONS AND QUANTITIES OF GUARDRAIL, TERMINALS, AND ANCHORAGES WILL BE MADE BY THE ENGINEER OR A REPRESENTATIVE FROM THE OFFICE OF TRAFFIC OPERATIONS AFTER CONSTRUCTION OF ROADWAY AND CURB. THIS APPLIES TO ALL CONDITIONS SHOWN ON THIS STANDARD.

1-29-16	DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
REV TP12 TO TP12A & NOTE 6	REVISION	STANDARD GUARDRAIL LOCATION (ON ROADS WITH CURB & GUTTER, HEADER CURB OR INTEGRAL CURB) 31 INCH GUARDRAIL HEIGHT
		SCALE AS SHOWN — AUGUST 2011
FBF	BY	DES. G.L.O. (SUBMITTED) — STATE DESIGN POLICY ENGINEER DRW. G.L.O. CHK. B.R.E. (APPROVED) Margaret B Pirkle — CHIEF ENGINEER REVIEW B.A.S.
		NUMBER 4391

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DETAILS OF RIGHT OF WAY MARKERS

NOTE: R/W MARKERS MAY BE EITHER CONCRETE OR GRANITE. ALL MARKERS SHALL BE PLACED AS DIRECTED BY THE ENGINEER.



CLASS A CONCRETE R/W MARKER

* NOTE: WHERE DIRECTED BY THE ENGINEER, THE ABOVE GROUND HEIGHT OF ANY R/W MARKER SHALL BE REDUCED BY INCREASING THE DEPTH AS NEEDED WITH NO ADDITIONAL PAYMENT.

(ALTERNATE) GRANITE R/W MARKER

G.L.O.	REDRAWN TO MATCH METRIC	4-10-06	
	GA. STD. 9003		
G.J.P.	REDRAWN	6-30-98	
R.M.U.	REV. F.A.P. - SP. POST ALT.	9-28-90	
R.M.U.	VAR. HT. R/W MARKER	10-11-88	
R.M.U.	ADD GRANITE R/W M.	5-24-85	
BY	REVISION	DATE	

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
DETAILS OF MARKERS

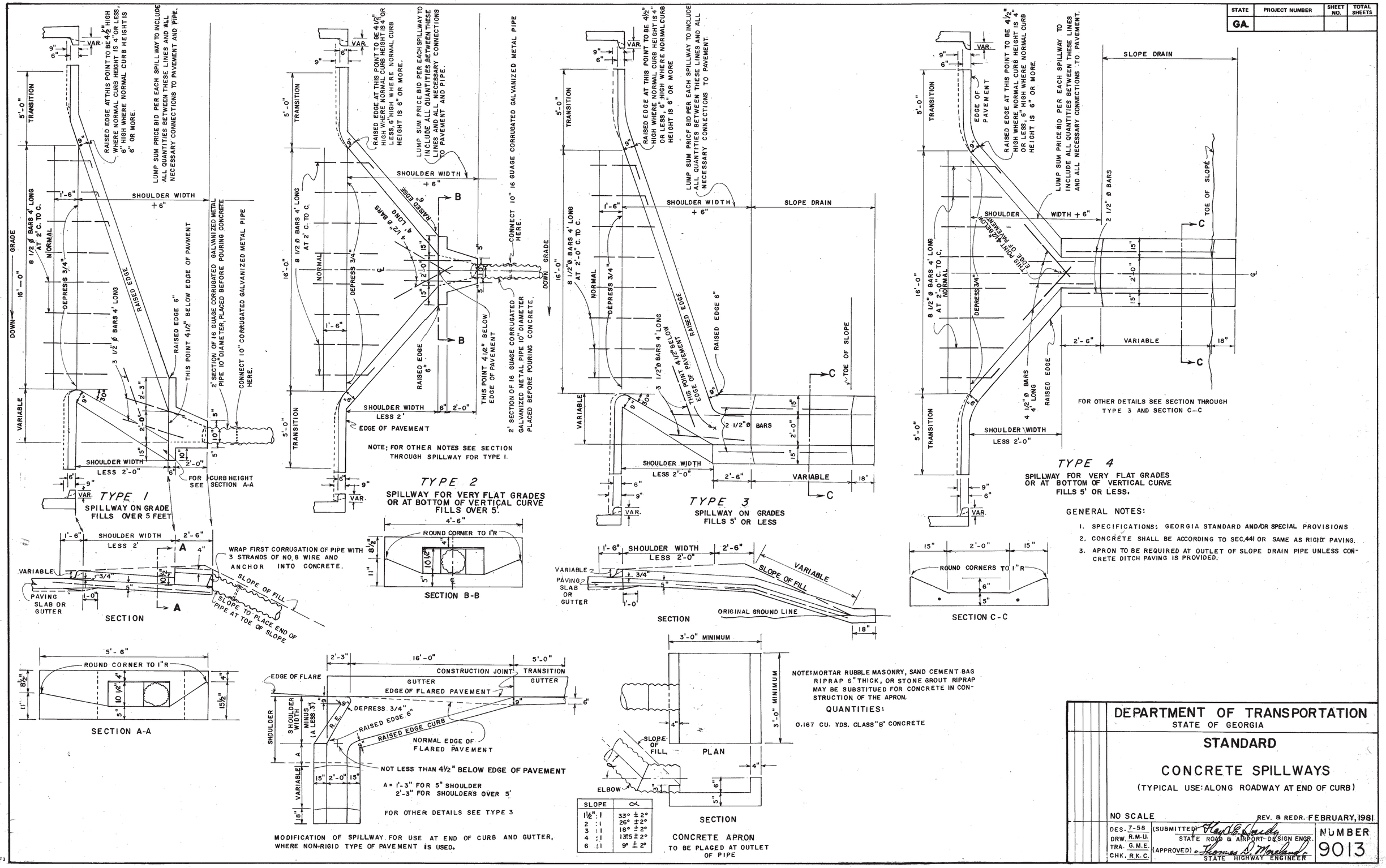
FEDERAL AID AND STATE
RIGHT OF WAY MARKERS

NO SCALE — REV. & REDR. DEC., 1981

DES. ____
DRW. R.M.U.
TRA. G.M.E.
CHK. R.K.C.

(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER
(APPROVED) CHIEF ENGINEER

NUMBER 9003



STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD AND/OR SPECIAL PROVISIONS
2. CONCRETE SHALL BE ACCORDING TO SEC. 441 OR SAME AS RIGID PAVING.
3. APRON TO BE REQUIRED AT OUTLET OF SLOPE DRAIN PIPE UNLESS CONCRETE DITCH PAVING IS PROVIDED.

NOTE: MORTAR RUBBLE MASONRY, SAND CEMENT BAG RIPRAP 6" THICK, OR STONE GROUT RIPRAP MAY BE SUBSTITUED FOR CONCRETE IN CONSTRUCTION OF THE APRON.

QUANTITIES:

0.167 CU. YDS. CLASS "B" CONCRETE

SLOPE	α
1½":1	33° ± 2°
2 :1	26° ± 2°
3 :1	18° ± 2°
4 :1	13.5 ± 2°
6 :1	9° ± 2°

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

CONCRETE SPILLWAYS

(TYPICAL USE: ALONG ROADWAY AT END OF CURB)

NO SCALE — REV. & REDR. FEBRUARY, 1981

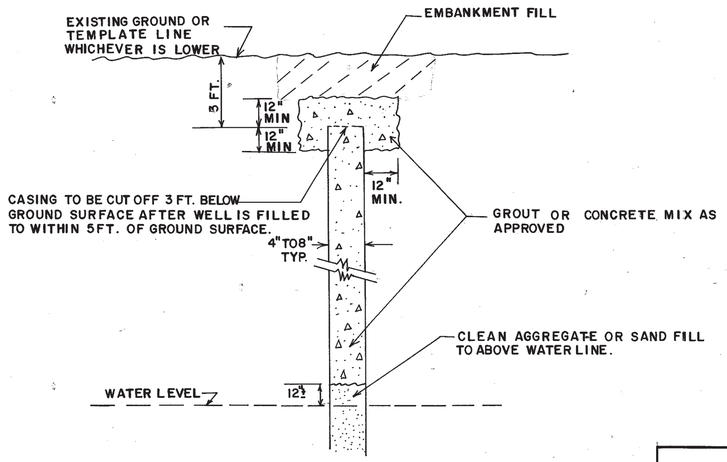
DES. 7-58 (SUBMITTED) Hal E. Hardy — STATE ROAD & AIRPORT DESIGN ENGR.
DRW. R.M.U.
TRA. G.M.E.
CHK. R.K.C. (APPROVED) Thomas D. Moreland — STATE HIGHWAY ENGINEER

NUMBER 9013

FORM EF3

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DETAIL FOR PLUGGING DRILLED WELL



NOTES:

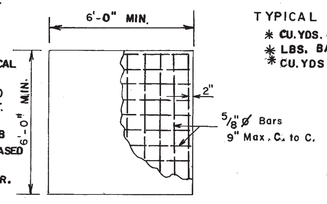
ALL ABANDON WELLS WITHIN THE RIGHT OF WAY OR CONSTRUCTION EASEMENTS SHALL BE PLUGGED BEFORE ANY OTHER ACTIVITY BEGINS.

ALL COSTS FOR FILLING AND PLUGGING WELLS SHALL BE INCLUDED IN PAYMENT FOR OTHER ITEMS.

DETAIL OF CONCRETE SLAB WELL COVER

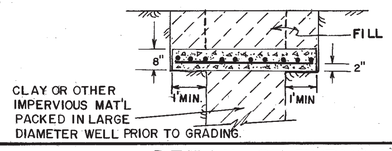
NOTE: ALL ABANDONED WELLS WITHIN THE R/W AND CONSTRUCTION EASEMENTS SHALL BE FILLED.

NOTE:
DETAILS SHOWN ARE APPLICABLE FOR TYPICAL SIZE DUG WELLS, IF WELL OPENING IS TOO LARGE TO ALLOW 1 FT. MIN. BEARING AREA, ALL AROUND, THE SLAB SIZE SHALL BE INCREASED PER PLANS OR AS DIRECTED BY ENGINEER.



TYPICAL QUANTITIES:
* CU. YDS. CL. A CONC. – 0.89
* LBS. BAR REINF. STEEL – 107
* CU. YDS. EMBANKMENT – (VARIES)

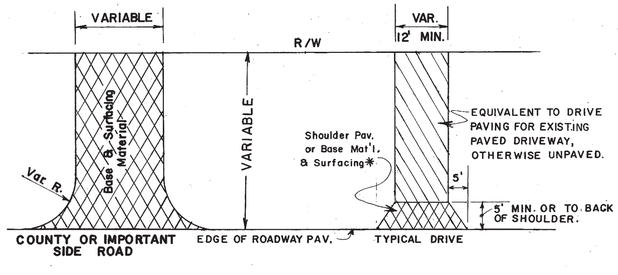
* ALL COSTS FOR FILLING & COVERING WELL SHALL BE INCLUDED IN PAYMENT FOR OTHER ITEMS.



NOTE: CONCRETE SLAB REQ'D OVER WELL SHALL BE PLACED TO A MINIMUM DEPTH OF 2'-6" BELOW SUBGRADE

CONCRETE SLAB SHALL BE CENTERED OVER WELL.

DETAIL OF TURNOUTS - RURAL

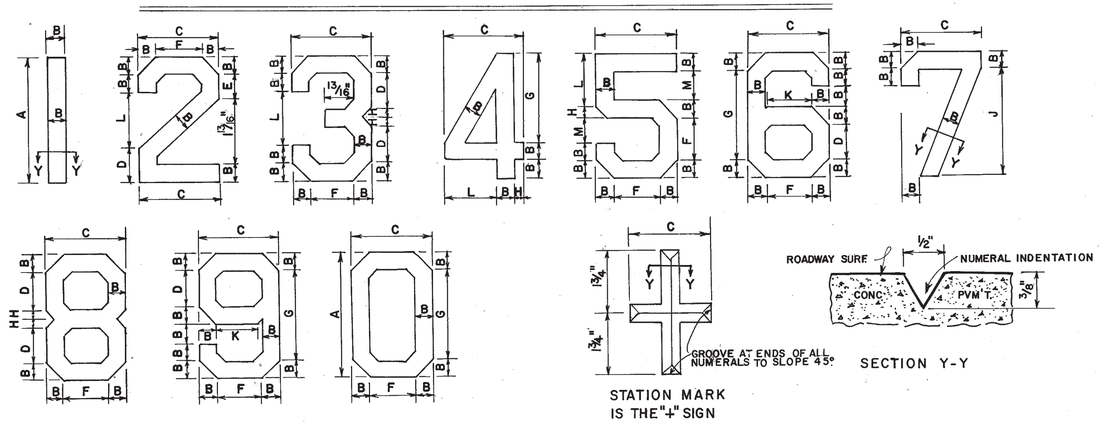


All turnouts are to be constructed as directed by the Engineer.

In general, 30' radii are to be used for County Roads and may be increased up to 50' on important County Roads where necessary to take care of turning movements.

* Driveway Paving may be omitted on lower class Roads.

STATIONING OF CONCRETE PAVEMENT



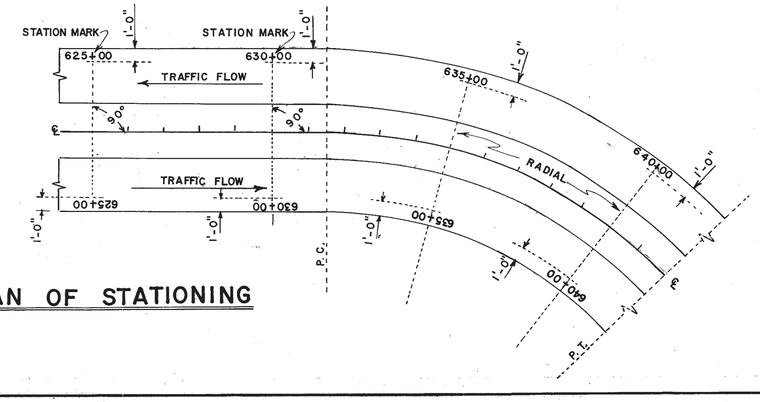
DIMENSIONS FOR NUMERALS (Inches)											
A	B	C	D	E	F	G	H	J	K	L	M
3 1/2	1/2	2 1/4	1	11/16	1 1/4	2 1/2	1/4	3	1 1/8	1/2	3/4

DETAILS OF NUMERALS AND STATION MARK "+"

NOTE: Every fifth station shall be stamped in concrete pavement with dies just before the initial set.

Undivided Highways – Stationing shall be placed within a one foot strip along the edge of pavement, right of the ℄.

Divided Highways – Stationing shall be placed within a one foot strip along the outer edge of pavement, right and left of the ℄.



PLAN OF STATIONING

R.M.U.	MIN. 30' R. FOR CO. RD.	11-16-83
RMU	ADD NOTES WELL COVER	8-1-85
R.M.U.	DES. DRILL WELL PLUG	10-7-87

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
DETAIL FOR PLUGGING DRILLED WELL
STATIONING OF CONCRETE PAVEMENT
CONCRETE SLAB WELL COVER
DETAIL OF TURNOUTS-RURAL

NO SCALE — REV. & REDR. NOVEMBER, 1979

DES. DEC.'57
RETRACED
G.M.E.
NOV.'79

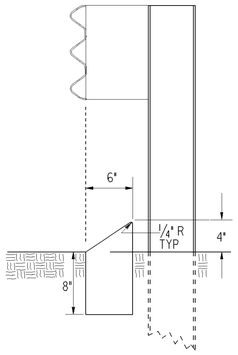
(SUBMITTED) Hoyt E. Lively
STATE ROAD & AIRPORT DESIGN ENGR.
(APPROVED) Thomas H. Moorhead
STATE HIGHWAY ENGINEER.

NUMBER 9031H

FORM EF3

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

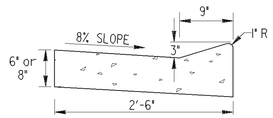
FACE OF CURB MUST ALIGN WITH BACK EDGE OF GUARDRAIL AND THE FACE OF THE OFFSET BLOCK.



TYPE 8

TYPE 8 CURB IS USED IN CONJUNCTION WITH GUARDRAIL CONNECTIONS TO CONCRETE BARRIER AS NOTED ON GA. STD. 401 2C.

RAISED EDGE WITH CONCRETE GUTTER



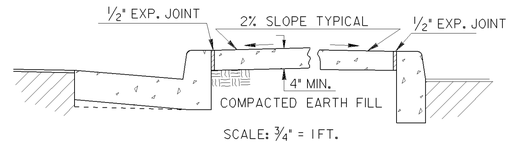
SCALE: 1" = 1FT.

RAISED EDGE TO BE CONSTRUCTED WITH SAME CONCRETE MIX AS THE GUTTER AND SHALL BE FORMED MONOLITHIC WITH GUTTER. JOINTS IN RAISED EDGE SHALL MATCH THOSE IN THE GUTTER.

NOTE:
IF CONCRETE MEDIAN INTERCEPTS PEDESTRIAN CROSSWALKS, WHEELCHAIR RAMPS (CONSTRUCTION DETAIL A-3 AND A-4) WILL BE REQUIRED.

CONCRETE MEDIAN (Between Curbs)

NOTE: CURB TYPES SHOWN ARE TYPICAL. OTHER TYPES MAY BE SPECIFIED.

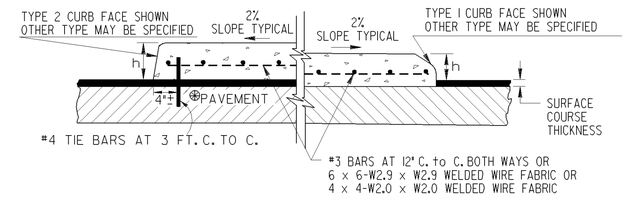


SCALE: 3/4" = 1FT.

NOTE: WIDTH OF CONCRETE MEDIAN WILL BE AS SHOWN IN PLANS

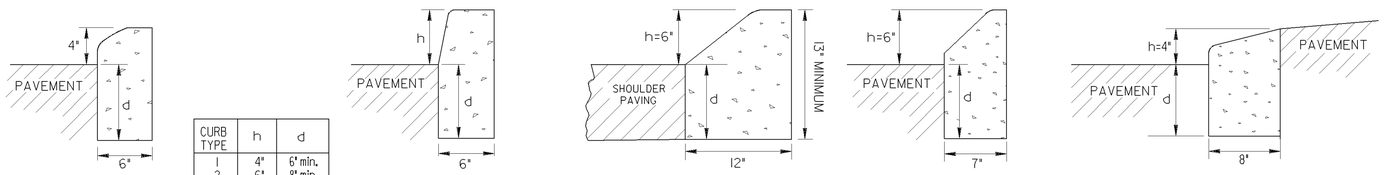
CONCRETE MEDIANS (Integral)

SCALE: 1"=1FT.



NOTE:
IF FINAL SURFACE COURSE IN PRESENT OR MUST BE INSTALLED BEFORE THE CONCRETE MEDIAN CAN BE INSTALLED, THEN DOWELED IN CONCRETE MEDIAN IS REQUIRED.

CONCRETE HEADER CURBS



TYPE 1 | TYPE 2, 3 OR 4 | TYPE 6 | TYPE 7 | TYPE 9 TRUCK APRON IN ROUNDABOUTS

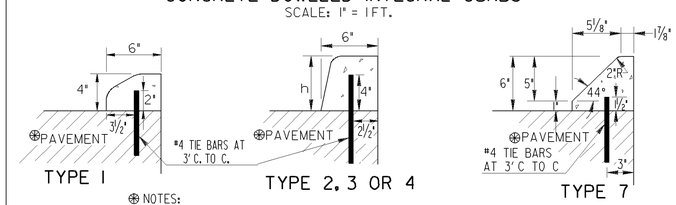
CURB TYPE	h	d
1	4"	6" min.
2	6"	8" min.
3	8"	10" min.
4	10"	12" min.
6	6"	7" min.
7	6"	8" min.
9	4"	8" min.

THE DIMENSION d MAY BE INCREASED AT CONTRACTOR'S OPTION SO BOTTOM OF HEADER CURB WILL ALIGN WITH BOTTOM OF PAVEMENT TYPICAL SECTION.

SCALE: 1 1/2" = 1FT.

CONCRETE DOWELED INTEGRAL CURBS

SCALE: 1" = 1FT.



NOTES:
1. CONCRETE CURB CAN BE INSTALLED AFTER INTIAL SET AS LONG AS TIE BARS ARE DRILLED INTO UNDERLAYING CONCRETE PAVEMENT.
2. CONCRETE CURB CAN BE INSTALLED BEFORE INITIAL SET WITH DOWELS THAT ARE DRIVEN INTO UNDERLYING CONCRETE PAVMENT.
3. JOINTS IN CURB AND CONCRETE MEDIAN WILL MATCH THOSE IN THE CONCRETE PAVEMENT.
4. ALL TYPES OF CONCRETE CURB CAN BE PLACED ON ASPHALT PAVEMENTS WHERE TIE BARS MAY BE EITHER DRIVEN OR DRILLED INTO THE UNDERLYING PAVEMENT. CONTRACTION JOINTS SHALL BE CONSTRUCTED IN CURB OR CONCRETE MEDAIN AT 20 FT. SPACING.

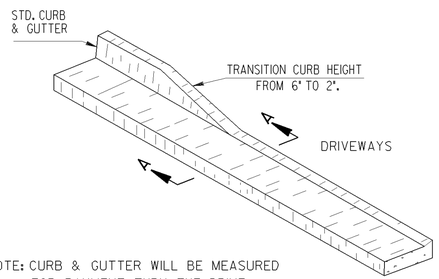
MINIMUM TIE BAR LENGTHS (FOR CONC. DOWELED CURBS OR CONC. MEDIAN)		
CURB TYPE	P.C. CONC. PAV.	ASPHALT PAV.
1	6"	8"
2, 3 or 4	8"	12"
7	6"	8"

NOTE:
TIE BARS FOR DOWELED CURBS MAY BE UNCOATED PLAIN OR DEFORMED BILLET-STEEL BARS (GRADE 40) AS USED FOR CONCRETE REINFORCEMENT. (AASHTO M-31)

DETAILS OF RECESSED CURB FOR DRIVEWAYS

NO SCALE

PICTORIAL VIEW

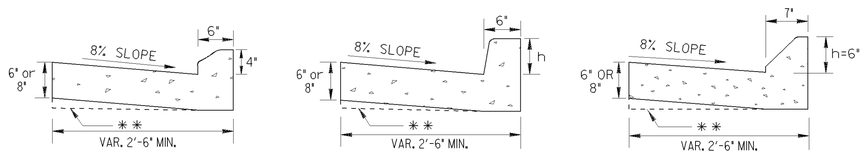


NOTE: CURB & GUTTER WILL BE MEASURED FOR PAYMENT THRU THE DRIVE

SECTIONAL VIEW
SECTION A-A

(SEE SEPARATE CONSTRUCTION DETAILS FOR DRIVEWAYS)

CONCRETE CURB & GUTTER

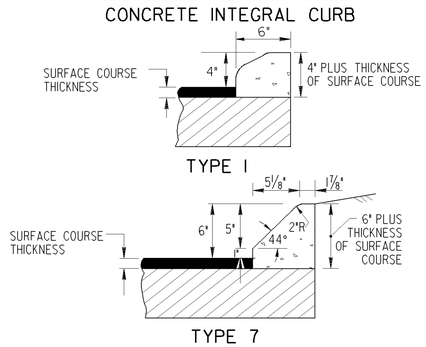


SCALE: 1"= 1FT.

TYPE 1 | TYPE 2, 3 OR 4 | TYPE 7

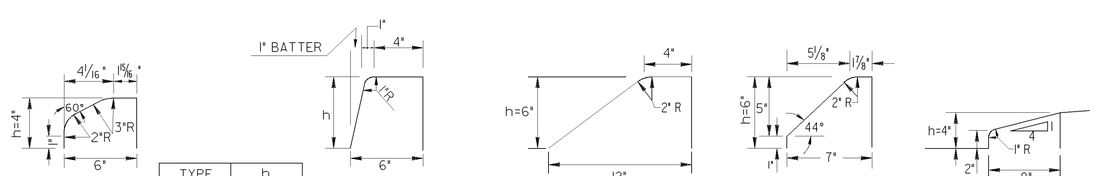
** AT CONTRACTOR'S OPTION THE GUTTER THICKNESS MAY BE INCREASED AT EDGE OF PAVEMENT TO MAKE BOTTOM OF GUTTER PARALLEL WITH PAVING OF BASE COURSE, BUT THE GUTTER THICKNESS MUST NOT BE LESS THAN THE SPECIFIED 6" OR 8" AT ANY POINT.

CONCRETE INTEGRAL CURB



SCALE: 1 1/2" = 1FT.

CURB FACE DESIGN



TYPE 1 | TYPE 2, 3 OR 4 | TYPE 6 | TYPE 7 | TYPE 9

TYPE	h
1	4"
2	6"
3	8"
4	10"
6	6"
7	6"
9	4"

SCALE: 2"=1FT.

TC	REV. TYPE 9 CURB DETAIL & REV. OVERALL LAYOUT	11-15-11		
GLO	REV. MEDIAN NOTE AND ADDED TYPE 9 CURB DETAIL	1-27-11		
	ADDED TYPE 9 DETAIL	3-03		
BY	REVISION	DATE		

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
CONCRETE CURB & GUTTER
CONCRETE CURBS, CONCRETE MEDIANS

SCALE: AS SHOWN REVISED AND REDRAWN OCT. 2011

DES. ____
DRW. ____
TRA. ____
CHK. ____

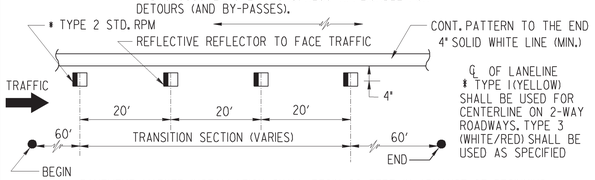
(SUBMITTED) STATE DESIGN POLICY ENGINEER
(APPROVED) CHIEF ENGINEER

NUMBER 9032B

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

TEMPORARY RAISED PAVEMENT MARKER DETAIL

INSTALLATION PATTERN FOR LATERAL MAINLINE SHIFTS AND CROSSOVER OPERATIONS. ALSO APPLICABLE FOR DETOURS (AND BY-PASSES).



PAVEMENT MARKER INSTALLATION SHALL BEGIN 60 FEET IN ADVANCE OF BEGINNING OF THE SHIFT OR TRANSITION ALIGNMENT, CONTINUE THRU THE TRANSITION AREA, & EXTEND 60 FEET BEYOND THE INTERSECTION WITH THE TEMPORARY ALIGNMENT. TEMPORARY RAISED PAVEMENT MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND THE GA. STD. SPECIFICATIONS.

STANDARD LEGEND

- STRIPED DRUM
- TYPE III BARRICADES
- SPECIAL BARRICADE WITH BI-DIRECTIONAL, TYPE "C" STEADY BURNING LIGHT OR HIGHWAY SIGN AS SPECIFIED (SEE DETAIL)
- SEQUENTIAL OR FLASHING ARROW
- PORTABLE CHANGEABLE MESSAGE SIGN
- PERMANENT TYPE POST MOUNTED SIGN
- TEMPORARY POST MOUNTED SIGN
- PORTABLE MOUNTED SIGN - FLAGS NOT REQUIRED
- WORK AREA
- TRAFFIC CONE - 28" MIN. - (DAYTIME USE ONLY)
- FLAGGER WITH STOP-SLOW PADDLE
- TRAFFIC IMPACT ATTENUATOR (CRASH CUSHION)
- TYPE I CLEAR (WHITE) DELINEATOR - SINGLE FACE
- TYPE I YELLOW DELINEATOR - SINGLE FACE
- TYPE I CLEAR (WHITE) DELINEATOR DOUBLE FACE
- TYPE I YELLOW DELINEATOR DOUBLE FACE

GENERAL NOTES :

1. ALL TRAFFIC CONTROL DEVICES SHALL BE MADE AND ERECTED IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS; THE MUTCD; THE GEORGIA STANDARD SPECIFICATIONS, AND/OR SPECIAL PROVISIONS. (SEE SECTION 150)
2. ALL TRAFFIC CONTROL DEVICES SHALL BE AS SHOWN, OR AS DIRECTED BY THE ENGINEER. ADDITIONAL DEVICES MAY BE REQUIRED AS DIRECTED BY THE ENGINEER.
3. ALL PORTABLE SIGNS SHALL BE MOUNTED A MINIMUM OF 1FOOT ABOVE THE LEVEL OF PAVEMENT EDGE FOR DIRECTIONAL TRAFFIC OF TWO (2) LANES OR LESS AND A MINIMUM OF 7 FEET FOR DIRECTIONAL OF THREE (3) OR MORE LANES. ALL PORTABLE SIGNS AND SIGN MOUNTING DEVICES UTILIZED IN THE WORK SHALL BE NCHRP 350 COMPLIANT. PORTABLE SIGNS MAY BE USED WHEN THE DURATION OF THE WORK IS LESS THAN 3 DAYS.
4. WHEN THE CONSTRUCTION AREA HAS ENTRANCE/EXIT RAMPS OR INTERSECTIONS, WORK WILL BE PERFORMED IN SUCH A MANNER TO PERMIT TRAFFIC TO OPERATE WITH THE LEAST AMOUNT OF INCONVENIENCE AS POSSIBLE. ADDITIONAL CHANNELIZATION AND SIGNING SHALL BE INSTALLED, AS REQUIRED, TO ALLOW TRAFFIC TO REMAIN AS OPERATIONAL AS POSSIBLE. WHEN ENTRANCE RAMPS/INTERSECTIONS ARE INOPERABLE, FLAGGERS WILL BE UTILIZED TO CONTROL AND PROHIBIT MOVEMENT INTO THE PROJECT AT THAT POINT UNTIL CONSTRUCTION HAS CLEARED THE RESTRICTION SUFFICIENT TO RETURN TO OPERATIONAL STATUS.
5. FOR NIGHT TIME OPERATIONS, DRUMS SHALL HAVE, FOR THE LENGTH OF THE TAPER ONLY, A SIX (6") INCH ORANGE REFLECTIZED TOP STRIPE ON EACH DRUM IN THE TAPER AS REQUIRED IN SECTION 150. SPACING OF DEVICES SHALL BE AS SHOWN. DURING DAYLIGHT HOURS, CONES (28" MIN.) MAY BE USED IN ADVANCE OF AND THROUGHOUT WORK AREA.
6. SIGN LOCATIONS ARE APPROXIMATE AND MAY BE ADJUSTED TO MEET FIELD CONDITIONS BUT MUST BE WITHIN THE LIMITATIONS SET FORTH IN THE MUTCD.
7. A PORTABLE SELF-SUSTAINED SEQUENTIAL OR FLASHING ARROW SIGN SHALL BE USED AT THE BEGINNING OF EACH LANE CLOSURE ON MULTI-LANE HIGHWAYS. ARROW PANELS SHALL NOT BE USED ON TWO-LANE TWO-WAY HIGHWAYS EXCEPT IN CAUTION MODE.
8. WHEN NOT IN USE, PORTABLE SIGNS SHALL BE REMOVED FROM THE TRAVELWAY SO THAT THE MESSAGE IS NOT VISIBLE TO THE MOTORIST. INTERIM SIGNS THAT ARE PERMANENTLY MOUNTED SHALL BE COVERED WHEN NOT APPLICABLE. SEE SECTION 150.
9. PROJECT SIGNS W20-1, G20-1 & G20-2 FOR THIS PROJECT SHALL BE COORDINATED WITH ADJACENT CONSTRUCTION PROJECTS. ONLY ONE SET OF SIGNS IS REQUIRED IN EACH DIRECTION FOR THE TOTAL LENGTH OF ALL PROJECTS- AT THE BEGINNING OF THE FIRST PROJECT AND AT THE ENDING OF THE LAST PROJECT. ADVANCE CONSTRUCTION SIGNS ARE NOT REQUIRED ON INTERMEDIATE PROJECTS, UNLESS CONSTRUCTION ON THE ADJACENT PROJECTS IS COMPLETED BEFOREHAND, THEN PROJECT CONSTRUCTION SIGNS WILL BE ADDED AS NECESSARY.
10. ALL THE COST OF THE MATERIALS, LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE PRICE BID FOR TRAFFIC CONTROL SECTION 150, LUMP SUM, WHEN SHOWN AS A PAYMENT ITEM IN THE PROPOSAL. OTHERWISE, ALL THE COST WILL BE INCLUDED IN THE OVER-ALL BID SUBMITTED, EXCEPT ON CERTAIN PROJECTS SOME ITEMS MAY BE PAID FOR SEPARATELY BY THE UNIT WHEN SPECIFIED ON THE PLANS AND IN THE PROPOSAL.
11. FOR FREEWAY CONSTRUCTION THE CONTRACTOR SHALL ARRANGE HIS WORK SO THAT THERE IS AN EXIT GORE SIGN AND AN EXIT DIRECTION SIGN IN PLACE FOR ALL EXIT RAMPS AT ALL TIMES.
12. ALL CROSSROADS, SIDEROADS, RAMPS OR OTHER ENTRANCES TO MAINLINE CONSTRUCTION SHALL REQUIRE W20-1 SIGNS LOCATED AS SHOWN IN THE PLANS, OR AS DIRECTED BY THE ENGINEER.
13. MARKINGS AND/OR SIGNS IN CONFLICT WITH INTERIM TRAFFIC CONTROL SHALL BE REMOVED, RELOCATED OR COVERED; APPLICABLE EXISTING AND INTERIM MARKINGS AND/OR SIGNING SHALL BE MAINTAINED PER SECTION 150.
14. ANY CHANNELIZING DEVICES (DRUMS OR BARRICADES) IN CONFLICT WITH CONCRETE BARRIERS SHALL BE OMITTED.
15. CONTRACTOR SHALL PROVIDE THE NECESSARY TRAFFIC CONTROL DURING THE TIE-IN OPERATION.
16. THE TRAFFIC CONTROL DEVICES SHOWN FOR ANY STAGE CONSTRUCTION SHALL REMAIN IN PLACE AND BE UTILIZED SO LONG AS NECESSARY FOR THE FOLLOWING STAGES AND SHALL BE REMOVED IMMEDIATELY WHEN NO LONGER REQUIRED. THE DEVICES MAY OR MAY NOT BE SHOWN ON THE PLANS FOR THESE FOLLOWING STAGES, REFER TO THE PLAN SHEET FOR THE INITIAL STAGE FOR THESE TRAFFIC CONTROLS.
17. EXISTING GUIDE SIGNS SHALL REMAIN IN PLACE SO LONG AS THEY DO NOT CONFLICT WITH THE CONSTRUCTION OF THIS PROJECT. WHEN IN CONFLICT, THEY SHALL BE RELOCATED ON TEMPORARY POSTS AT THE LOCATION AS DIRECTED BY THE ENGINEER. ANY DISTANCE SHOWN ON THE SIGN SHALL BE ADJUSTED ACCORDINGLY. IF THE SIGNS CANNOT BE RELOCATED, THEN THE SIGN SHALL BE REMOVED AND STORED AT A PLACE DESIGNATED BY THE ENGINEER. IF NEITHER OF THE ABOVE CAN BE DONE, THEN THE CONTRACTOR SHALL PROVIDE INTERIM GUIDE SIGNS AS COVERED IN SECTION 150.
18. (a) ON PROJECTS WITH LOW OR SOFT SHOULDERS, THE CONTRACTOR SHALL ERECT IMMEDIATELY AHEAD OF CONSTRUCTION OPERATIONS "LOW/SOFT SHOULDER" WARNING SIGNS AT THE PROJECT TERMINII, AT INTERVALS NOT TO EXCEED 1 MILE AND IMMEDIATELY PAST EACH CROSSROAD.

    (b) WHERE THE CONTRACTOR IS NOT RESPONSIBLE FOR SHOULDER CONSTRUCTION, THE DEPARTMENT WILL FURNISH THESE SIGNS FOR THE CONTRACTOR TO PICK UP, TRANSPORT, AND ERECT. THE DEPARTMENT WILL LATER REMOVE AND RETAIN THE SIGNS.

BY	REVISION	DATE
GLO	REVISED GENERAL NOTES AND LEGEND. DELETED TWO DETAILS. SPEC. BAR. SH. SPEC.	3-30-06 4-24-01

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
TRAFFIC CONTROL
GENERAL NOTES, STANDARD LEGEND, MISCELLANEOUS DETAILS

NO SCALE — AUG., 1999

DES. ____ DRW. ____ TRA. ____ CHK. ____

(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER

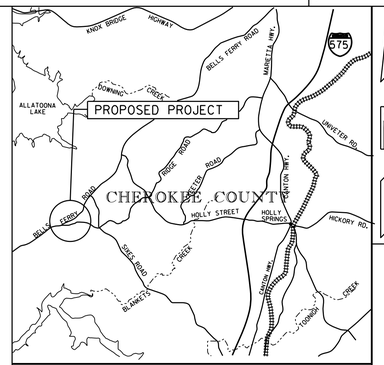
(APPROVED) CHIEF ENGINEER

NUMBER 9100

CHEROKEE COUNTY DEPARTMENT OF TRANSPORTATION

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN

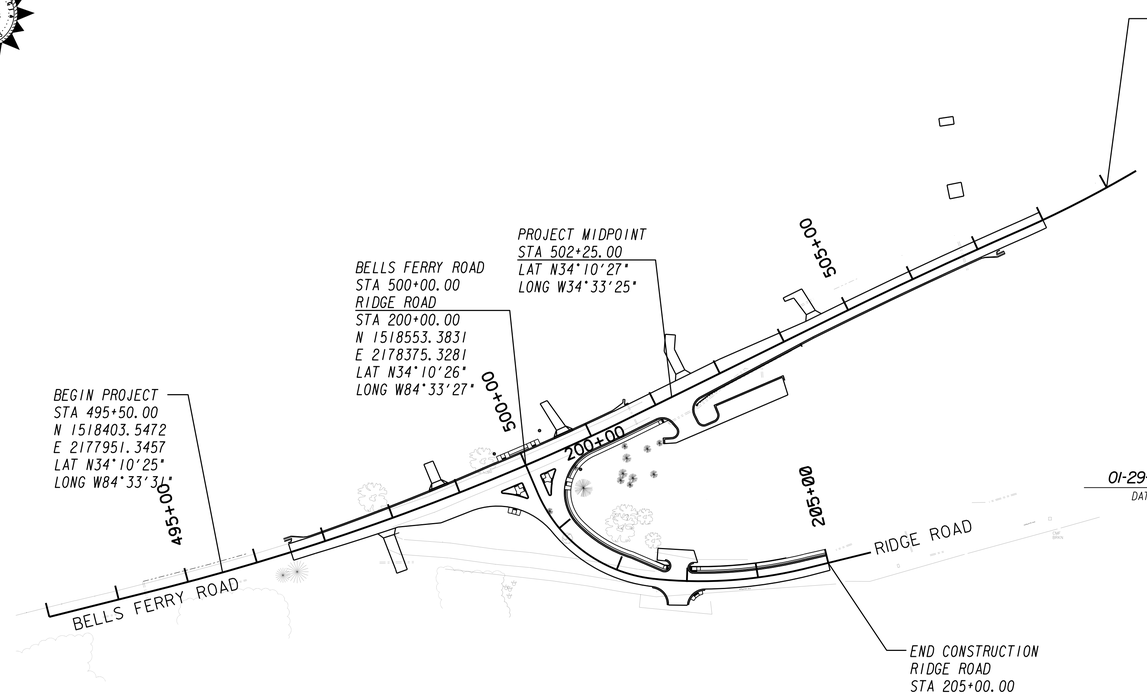
BELLS FERRY ROAD - RIDGE ROAD INTERSECTION IMPROVEMENTS



LOCATION SKETCH

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.

COUNTY NO: 057
LAND DISTRICT: II
LAND LOT: 356 & 357



"I certify that this Erosion, Sedimentation and Pollution Control Plan has been prepared in accordance with part IV GAR 100002."

"I certify that the permittee's Erosion, Sedimentation and Pollution Control Plan provides for an appropriate and comprehensive system of best management practices required by the Georgia Water Quality Control Act and the document "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land disturbing activity was permitted, provides for the sampling of the receiving water(s) or the sampling of the storm water outfalls and that the designed system of best management practices and sampling methods is expected to meet the requirements contained in the General NPDES Permit No. GAR 100002."

"I certify that the permittee's Erosion, Sedimentation and Pollution Control Plan provides for the monitoring of: (a) all perennial and intermittent streams and other water bodies shown on the USGS topographic map and all other field verified perennial and intermittent streams and other water bodies, or (b) where any such specific identified perennial or intermittent stream and other water body is not proposed to be sampled, I have determined in my professional judgment, utilizing the factors required in the General NPDES Permit No. GAR 100002, that the increase in the turbidity of each specific identified sampled receiving water will be representative of the increase in the turbidity of a specific identified un-sampled receiving water."

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that the qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

I certify under penalty of law that this plan was prepared after a site visit to the location described herein by myself or my authorized agent under

01-29-2018
DATE

TRAVIS MCCLAM GSWCC LEVEL II CERTIFICATION #0000081422

PLANS PREPARED BY:

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

GEORGIA REGISTERED PROFESSIONAL ENGINEER TRAVIS MCCLAM
1-29-2018

PRIMARY PERMITTEE

CHEROKEE COUNTY DEPARTMENT OF TRANSPORTATION
1130 BLUFFS PARKWAY
CANTON, GA 30114
PHONE: (678) 493-6077

24 HOUR CONTACT:

Name

Street Address

City, State Zip

Phone Number

Email Address

Contractor shall complete the information in this box.

SCALE IN FEET
0 100 200 400

LENGTH OF PROJECT	BELLS FERRY ROAD	RIDGE ROAD
	MILES	MILES
NET LENGTH OF ROADWAY	0.256	0.095
NET LENGTH OF BRIDGES	N/A	N/A
NET LENGTH OF PROJECT	0.256	0.095
NET LENGTH OF EXCEPTIONS	0.000	0.000
GROSS LENGTH OF PROJECT	0.332	

PLANS COMPLETED 01-29-2018

REVISIONS

DATE	ENTITY REQUESTING REVISION(S)	DRAWING NUMBER(S)	SIGNATURE	GSWCC LEVEL II CERT.#
- -				
- -				
- -				
- -				
- -				
- -				
- -				

DRAWING No.
50-001

ESPCP GENERAL NOTES:

The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to land-disturbing activities. Erosion and sedimentation control measures will be maintained at all times. If full implementation of the approved plan does not provide for effective control, additional erosion and sedimentation control measures shall be implemented to control or treat the sediment source.

A NOI is required for this project.

PLAN ALTERATIONS

This Erosion, Sedimentation, and Pollution Control Plan (ESPCP) is provided by the Department. It addresses the staged construction of the project on the basis of common construction methods and techniques. If the Contractor elects to alter the staged construction from that shown in the plans or utilize construction techniques that render this plan ineffective, the Contractor shall revise the plans in accordance to Special Provision 161 of the contract.

The Contractor, the Certified Design Professional, and the WECS shall carefully evaluate this plan prior to commencing land-disturbing activities. A major modification or deletion of structural BMPs with a hydraulic component requires a formal revision of the ESPCP and the signature of a GSWCC level-II-certified design professional. Additional BMP's/32 s may be added per Special Provision 161, Control of Soil Erosion and Sedimentation.

TEMPORARY MULCHING

EPD General Permit GAR 100002 states that any disturbed area where construction activities have temporarily or permanently ceased shall be stabilized within 14 days of such cessation as soon as practicable with a suitable material listed in Standard Specification (or Special Provision) Sections 163, 700, or 711. However in special cases, the Project Engineer may require the contractor to perform stabilization more often than 14 days.

VEGETATION AND PLANTING SCHEDULE

All temporary and permanent vegetative practices including plant species, planting dates, seeding, fertilizing, liming, and mulching for this project can be found in Section 700 of the current edition of the Department's Standard Specifications (or special provisions) and other applicable contract documents, or landscaping plans.

SEQUENCE OF MAJOR ACTIVITIES

The Contractor is responsible for developing the construction schedule for the project. The construction schedule for this project shall be submitted after the project is awarded along with the NOI. A copy of the construction schedule shall be maintained at the project site.

STAGED CONSTRUCTION

INITIAL BMP'S (STAGE 1)-
Prior to the start of land disturbing activities, the contractor shall install erosion control BMP's as shown on the erosion control plans. This includes construction exits, silt fence, inlet sediment traps, and silt gates. Construction exits shall be provided prior to the start of clearing and grubbing. Stripping of vegetation and other development activities shall be conducted in such a manner so as to minimize sediment loss.

INTERMEDIATE BMP'S (STAGE 2)-
Maintain silt fence and use inlet sediment traps to catch sediment on inlets.

FINAL STABILIZATION-
Permanent grassing shall be installed immediately upon completion of slope grading and erosion control mat installation.

PETROLEUM STORAGE, SPILLS, AND LEAKS

These plans expressly delegate the responsibility of proper on-site hazardous material management to the Contractor. The Contractor shall at a minimum provide an action plan and keep the necessary materials on site for the capture, clean up, and disposal of any petroleum product, or other hazardous material, leaks or spills associated with the servicing, refueling or operation of any equipment utilized at the site. A copy of the action plan shall be submitted to the Project Engineer and maintained on the project site. All personnel operating or servicing equipment shall be familiar with the action plan. The Contractor shall not park, refuel, or maintain equipment within stream buffers.

If the Contractor elects to store petroleum products on site, the Contractor shall prepare an ESPCP addendum that addresses the additional BMPs needed for onsite storage and spill prevention for petroleum products. This plan shall be prepared by a Certified Design Professional as required by GAR100002 for inclusion with these plans. The Contractor's attention is specifically directed to Standard Specification 107-Legal Regulations and Responsibility to the public for additional requirements.

SOIL SERIES INFORMATION

The following is a summary of the soils that are expected to be found on the project site:

Map Unit Symbol	Map Unit Name	Rating	Component Name (%)	Rating Reasons	Acre in AOI	Percent in AOI
AmB2	APPLING SANDY LOAM, 2 TO 6 PERCENT SLOPES ERODED	Not Rated	APPLING (100%)		0.5	12.2%
HIC	HAYESVILLE FINE SANDY LOAM, 6 TO 10 PERCENT SLOPES	Not Rated	HAYESVILLE (100%)		3.9	87.8%

Due to the size and scope of this project and the nature of soil series maps, it is not reasonably practical to delineate the precise locations of the above listed soils on the construction plans. The NRCS soil survey and soil series maps for the project site are also available online at http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

POST-CONSTRUCTION BMP'S

All permanent, post-construction BMP's are shown in the construction plans and in the ESPCP plan. The post-construction BMP's for this project consist of permanent vegetation and in some areas sod will be used that will help stabilize slopes. The post-construction BMP's will provide permanent stabilization of the site and prevent abnormal transportation of sediment and pollutants into receiving waters.

SILT FENCE INSTALLATIONS WITH J-HOOKS AND SPURS

Silt fence should never be run continuously. The silt fence should turn back into the fill or slope to create small pockets that trap silt and force stormwater to flow through the silt fence. This technique is called using J hooks (or spurs). The J hooks shall be utilized on all silt fences that are located around the perimeter of the project and along the toe of embankments or slopes. The J hooks shall be spaced in accordance with GDOT Construction Detail D-24C. The maximum J-hook spacing is reached when the top of the J hook is at the same elevation as the bottom of the immediately upgradient J hook. J Hooks shall be paid for as silt fence items per linear foot. All costs and other incidental items are included in cost of installing and maintaining the silt fence.

SITE STABILIZATION AND BMP MAINTENANCE MEASURES

See the Department's Standard Specifications (or Special Provisions) 161, 163, 165, 700, 711, and other contract documents for stabilization and maintenance measures.

WASTE DISPOSAL

Where attainable, locate waste collection areas, dumpsters, trash cans and portable toilets at least 50 feet away from streets, gutters, watercourses and storm drains. Secondary containment shall be provided around liquid waste collection areas to minimize the likelihood of contaminated discharges. The Contractor shall comply with applicable state and local waste storage and disposal regulations and obtain all necessary permits. Solid materials, including building materials, shall not be discharged to Waters of the State, unless authorized by a Section 404 Permit.

INSPECTIONS

The primary permittee (Cherokee County) must retain the design professional who prepared the ESPCP, or an alternative design professional approved by EPD in writing, to inspect the installation of the initial sediment storage requirements and perimeter control BMPs within seven (7) days of installation over the entire infrastructure project. Alternatively, for linear infrastructure projects, the permittee must retain either of these personnel to inspect the initial sediment storage requirements and perimeter control BMPs for the initial segment, as defined by Part IV.A.5. of the current GAR100002 Permit, within seven (7) days of installation and all sediment basins within the entire linear infrastructure project within seven (7) days of installation. The inspecting design professional shall report the results to the primary permittee within seven (7) days, and the permittee must correct all deficiencies within two (2) business days of receipt of the inspection report, unless on-site weather conditions are such that more time is required. Additionally, the Department's Construction Project Engineer will be responsible for all subsequent seven-day inspections for all new BMP installations.

All other inspections shall be documented on the appropriate Department inspection forms. See Standard Specification (or Special Provision) 167 and other contract documents for inspection requirements. These inspections shall continue until the Notice of Termination (NOT) is submitted.

Failure to perform inspections as required by the contract documents and the NPDES permit shall result in the cessation of all construction activities with the exception of Traffic Control and Erosion Control. Continued failure to perform inspections shall result in non-refundable deductions as specified in the contract documents.

NON-STORM WATER DISCHARGES

Nonstormwater discharges defined in Part III.A.2 of the NPDES Permit will be identified after construction has commenced. These discharges shall be subject to the same requirements as storm water discharges required by the Georgia Erosion and Sedimentation Control Act, the NPDES Permit, the Clean Water Act, the Manual for Erosion and Sediment Control in Georgia, Department Standards, and other contract documents. The NPDES does not authorize the discharge of soaps or solvents used in vehicle and equipment washing or the discharge of wastewater containing stucco, paint, oils, curing compounds, and other construction materials.

DE-WATERING ACTIVITIES AND USE OF PUMPS

Any pumped discharge from an excavation or disturbed area shall be routed through an appropriately sized sediment basin, silt filter bag, or shall be treated equivalently with suitable BMP's. The contractor shall ensure the post BMP treated discharge is sheet flowing. Failure to create sheet flow will obligate the contractor to perform water quality sampling of pumped discharges. The contractor shall prepare sampling plans in accordance with the current GAR100002 NPDES permit by utilizing a Certified Design Professional. No separate payment will be made for water quality sampling of pump discharges.

OTHER CONTROLS

The Contractor shall follow this ESPCP and ensure and demonstrate compliance with all applicable State and/or local regulations for waste disposal, sanitary sewer and septic systems, and petroleum storage.

The Contractor shall control dust from the site in accordance with Section 161 of the current edition of the Department's Standard Specifications.

RETENTION OF RECORDS

The Department will retain all records related to the implementation of this ESPCP in accordance with Part IV.F of the General Permit GAR100002.

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

ESPCP GENERAL NOTES

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 51-001

SEDIMENT STORAGE

The site has a total disturbed area of 2.8 acres. The following table summarizes the required and available sediment storage for every outfall on this project. The Contractor shall provide and maintain the storage volumes for the BMP's specified in this table.

						Sediment Basins		Check Dams		Inlet Sediment Traps ((3-6) CY/EA)		Silt Fence (0.26 CY/LF)	
Outfall ID	Concentrated/ Sheet Flow	Area Drained (AC)	Area Disturbed (AC)	Req'd Sediment Storage (CY)	Total Storage Volume Provided (CY)	Pond ID	Total Pond Volume (CY)	# Devices	Total Volume (CY)	# Devices	Total Volume (CY)	Length of Silt Fence (LF)	Total Volume (CY)
STA 496+50, 24' LT	CONCENTRATED	2.25	0.51	150.75	192.90			5	22.5			568	170
STA 496+50, 23' RT	CONCENTRATED	0.74	0.62	49.58	133.50			5	22.5			370	111
STA 501+80, 45' LT	CONCENTRATED	0.62	0.62	41.54	73.50			5	22.5			170	51
STA 506+83, 48' LT	CONCENTRATED	3.72	0.62	49.24	252.60			8	36.0	3	16.5	667	200

SAMPLING GENERAL NOTES:

Representative sampling may be utilized on this project as explained here. The individual outfall drainage basins along the project corridor have been carefully evaluated and compared on the basis of four characteristics: the type of construction activity, the disturbed acreage, the average slope about the outfall, and the soil erosion index 0-10, 10 being the most erodible soil. The construction activity types are new road on fill, new road in cut, road widening, and maintenance/safety. The disturbed area classes are less than or equal to 1 acre, greater than 1 acre to less than 2 acres, and equal to or greater than 2 acres. The average outfall slope is mild if it is equal to or less than 0.03, and steep if it is greater than 0.03. The soil erosion index is low if it is less than or equal to 5 and high if it is greater than 5. After evaluation of these characteristics as presented in the project's drainage area map, hydrology and hydraulic studies, construction plans, geotechnical soil survey, and erosion sedimentation and pollution control plans, the Department has determined that the representative sampling scheme shown below is valid for the duration of the project. The table shows the groups of similar outfall drainage basins.

The increase in turbidity at the specified locations in the table below will be representative of the alternate outfall drainage basins when similar outfall drainage basins exist. Approved primary and alternate representative sampled features are identified in the table below.

The total site area is 2.94 acres										Representative Sampling Scheme				
SAMPLING INFORMATION										OUTFALL CHARACTERISTICS				
Primary Sampled Feature	Location (Station & Offset)	Name of Receiving Water	Applicable Construction Stage for Monitoring	Sampling Type (Outfall or Receiving Water)	Drainage Area for Receiving Water (sq mi)	Warm or Cold water Stream	Appendix B NTU value (outfall Sampling Only)	Allowable NTU Increase (receiving Water Sampling Only)	Location Description	Construction Type	Disturbed Area (acres)	Avg. Outfall Slope (rise/run)	Soil Erosion Index	Alternate Outfall Drainage Basins
C-1	STA 506+83 48'LT	LAKE ALLATOONA	ALL	OUTFALL	0.006	WARM	75	N/A	NEW STRUCTURE	NEW PIPES	1.05	0.013	LOW	N/A

USE OF ALTERNATIVE AND/OR ADDITIONAL BMPS

No alternative or additional BMPs will be used on this project.

STATE-WATER BUFFER LOCATIONS

State-water buffers, as defined by O.C.G.A. 12-7-1, are not impacted by this project.

"Non-exempt activities shall not be conducted within the 25- or 50-foot undisturbed state-water buffers as measured from the point of wrested vegetation without first acquiring the necessary variances and permits."

WATER QUALITY INSPECTING AND SAMPLING PROCEDURES

See Special Provision 167 and other contract documents for the inspecting and sampling procedures.

READY MIX CHUTE WASH-DOWN

The washing of ready-mix concrete drums and dump truck bodies used in the delivery of Portland cement concrete is prohibited on this site.

In accordance with Standard Specification 107: Legal Regulations and Responsibility to the Public, only the discharge chute utilized in the delivery of Portland cement concrete may be rinsed free of fresh concrete remains. The Contractor shall excavate a pit outside of State water buffers, at least 25 feet from any storm drain and outside of the travelled way, including shoulders, for a wash-down pit. The pit shall be large enough to store all wash-down water without overtopping. Immediately after the wash-down operations are completed and after the wash-down water has soaked into the ground, the pit shall be filled in, and the ground above it shall be graded to match the elevation of the surrounding areas. Alternate wash-down plans must be approved by the Project Engineer.

Wash-down plans describe procedures that prevent wash-down water from entering streams and rivers. Never dispose of wash-down water down a storm drain. Establish a wash-down pit that includes the following: (1) a location away from any storm drain, stream, or river, (2) access to the vehicle being used for wash down, (3) sufficient volume for wash-down water, and (4) permission to use the area for wash down.

On sites where permission or access to excavate a wash-down pit is unavailable, the Contractor may have to wash-down into a sealable 55-gallon drum or other suitable container and then transport the container to a proper disposal site. For additional information, refer to the Georgia Small Business Environmental Assistance Program's "A Guide for Ready Mix Chute/Hopper Wash-down".

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

ESPCP GENERAL NOTES

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 51-002

GSWCC

Georgia Soil and Water Conservation Commission
EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
INFRASTRUCTURE CONSTRUCTION PROJECTS

SWCD: Limestone Valley SWCD
Project Name: Bells Ferry Rd @ Ride Rd **Address:**
City/County: Cherokee **Date on Plans:**

TO BE SHOWN ON ES&PC PLAN

Plan Page #	Included Y/N	
51-003	Y	1 The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted.
50-001	Y	2 Level II certification number issued by the Commission, signature and seal of the certified design professional.
50-001	Y	3 The name and phone number of the 24-hour local contact responsible for erosion, sedimentation and pollution controls.
50-001	Y	4 Provide the name, address and phone number of primary permittee.
53-001	Y	5 Note total and disturbed acreage of the project or phase under construction.
50-001	Y	6 Provide the GPS locations of the beginning and end of the Infrastructure project. Give the Latitude and Longitude in decimal degrees.
50-001	Y	7 Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
51-001	Y	8 Description of the nature of construction activity.
55-001	Y	9 Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
53-001	Y	10 Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, marshlands, etc. which may be affected.
ALL	Y	11 Design professional's certification statement and signature that the site was visited prior to development of the ES&PC Plan as stated on page 15 of the permit.
50-001	Y	12 Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on page 15 of the permit.*
55-001	Y	13 Design professional certification statement and signature that the permittee's ES&PC Plan provides for representative sampling as stated on page 26 of permit as applicable.*
50-001	Y	14 Clearly note the statement that "The design professional who prepared the ES&PC Plan is to inspect the installation of the initial sediment storage requirements, perimeter control BMPs, and sediment basins in accordance with part IV.A.5. within 7 days after installation."*
51-002	Y	15 Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of wrested vegetation or within 25-feet of the coastal marshland buffer as measured from the Jurisdictional Determination Line without first acquiring the necessary variances and permits."
51-002	Y	16 Provide a description of any buffer encroachments and indicate whether a buffer variance is required.
51-001	Y	17 Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional."*
51-001	Y	18 Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a section 404 permit."*
51-001	Y	19 Clearly note statement that "The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to land disturbing activities."
51-001	Y	20 Clearly note statement that "Erosion control measures will be maintained at all times. If full implementation of the approved Plan does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source."
51-001	Y	21 Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."
	N/A	22 Any construction activity which discharges storm water into an Impaired Stream Segment, or within 1 linear mile upstream of and within the same watershed as, any portion of an Biota Impaired Stream Segment must comply with Part III. C. of the Permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment.*
	N/A	23 If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in item 22 above) at least six months prior to submittal of NOI, the ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan.*
51-002	Y	24 BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout of the drum at the construction site is prohibited.*
51-001	Y	25 Provide BMPs for the remediation of all petroleum spills and leaks.
51-001	Y	26 Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed.*
51-001	Y	27 Description of the practices that will be used to reduce the pollutants in storm water discharges.*
51-001	Y	28 Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization).

TO BE SHOWN ON ES&PC PLAN

Plan Page #	Included Y/N	
51-001	Y	29 Provide complete requirements of inspections and record keeping by the primary permittee.*
51-002	Y	30 Provide complete requirements of sampling frequency and reporting of sampling results.*
51-001	Y	31 Provide complete details for retention of records as per Part IV.F. of the permit.*
51-002	Y	32 Description of analytical methods to be used to collect and analyze the samples from each location.*
51-002	Y	33 Appendix B rationale for NTU values at all outfall sampling points where applicable.*
55-001	Y	34 Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged also provide a summary chart of the justification and analysis for the representative sampling as applicable.*
51-001	Y	35 A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the plan may combine all of the BMPs into a single phase.*
ALL	Y	36 Graphic scale and North arrow.
55-001	Y	37 Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following: Existing Contours: USGS 1": 2000' Topographical Sheets; Proposed Contours: 1" : 400' Centerline Profile
	N	38 Use of alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs as certified by a Design Professional (unless disapproved by EPD or the Georgia Soil and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at www.gaswcc.org.
	N	39 Use of alternative BMP for application to the Equivalent BMP List. Please refer to Appendix A-2 of the Manual for Erosion & Sediment Control in Georgia 2016 Edition.*
ALL	Y	40 Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to State waters and any additional buffers required by the Local Issuing Authority. Clearly note and delineate all areas of impact.
ALL	Y	41 Delineation of on-site wetlands and all State waters located on and within 200 feet of the project site.
53-001	Y	42 Delineation and acreage of contributing drainage basins on the project site.
53-001	Y	43 Delineate on-site drainage and off-site watersheds using USGS 1" :2000' topographical sheets.
53-001	Y	44 An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
53-001	Y	45 Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.
51-001	Y	46 Soil series for the project site and their delineation.
54 SERIES	Y	47 The limits of disturbance for each phase of construction.
51-002	Y	48 Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual must be included for structural BMPs and all calculations used by the design professional to obtain the required sediment storage when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasable, a written justification explaining this decision must be included in the plan.
54 SERIES	Y	49 Location of Best Management Practices that are consistent with and no less stringent than the Manual for Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with legend.
52 SERIES	Y	50 Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia.
51-001	Y	51 Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of year that seeding will take place and for the appropriate geographic region of Georgia.

*If using this checklist for a project that is less than 1 acre and not part of a common development but within 200 ft of a perennial stream the * checklist items would be **Effective January 1, 2017**

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

REVISION DATES

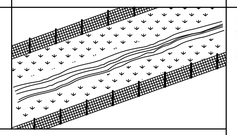
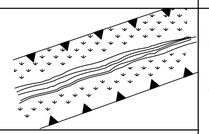
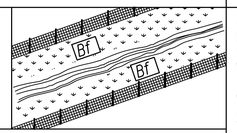
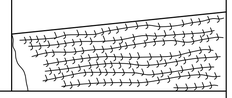
CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

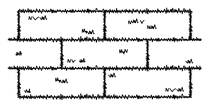
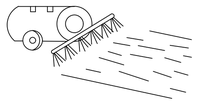
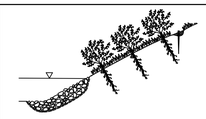
OFFICE:

ESPCP GENERAL NOTES

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 51-003

CODE	PRACTICE STD OR DETAIL SPEC. SECT.	DETAIL	DESCRIPTION
	ORANGE BARRIER FENCE LINE CODE ORANGE BARRIER FENCE		ORANGE BARRIER FENCE DELINEATES ENVIRONMENTALLY SENSITIVE AREAS WHERE THE CONTRACTOR SHALL NOT CLEAR, GRUB, OR PLACE CONSTRUCTION MATERIALS OR EQUIPMENT WITHIN THIS AREA.
ESA	ENVIRONMENTALLY SENSITIVE AREA LINE CODE ESA-25'(OR 50')STREAM BUFFER, ETC.		AN ENVIRONMENTALLY SENSITIVE AREA (ESA) CONTAINS RESOURCES THAT ARE ENVIRONMENTALLY, CULTURALLY, OR HISTORICALLY SENSITIVE. ESAs INCLUDE, BUT ARE NOT LIMITED TO: STATE WATER BUFFERS, HISTORIC SITES, ARCHAEOLOGICAL SITES, AND PROTECTED ANIMAL AND PLANT SPECIES HABITATS. IF WORK IS AUTHORIZED IN THIS AREA, THE WORK MUST BE PERFORMED IN ACCORDANCE WITH SECTION 107 AND ANY OTHER APPLICABLE SPECIAL PROVISIONS AND APPLICABLE PLAN NOTES.
Bf	BUFFER ZONE SYMBOL Bf		A STRIP OF UNDISTURBED ORIGINAL VEGETATION, ENHANCED OR RESTORED EXISTING VEGETATION, OR THE RE-ESTABLISHMENT OF VEGETATION SURROUNDING AN AREA OF DISTURBANCE OR BORDERING STREAMS, PONDS, WETLANDS, LAKES, AND COASTAL WATERS. WHEN NECESSARY, BUFFER ZONES ARE TO BE PROTECTED BY ORANGE BARRIER FENCE.
Ds1	MULCH SECTION 163 SYMBOL Ds1		THIS IS AN APPLICATION OF STRAW MULCH USED TO REDUCE SOIL EROSION AND STABILIZE THE SOIL. IT IS USED TO CONTROL EROSION IN AREAS WHERE PERMANENT VEGETATION IS OUT OF SEASON OR TO TEMPORARILY STABILIZE AREAS PRIOR TO FINAL GRADING. MULCHING REQUIREMENTS ARE ADDRESSED BY STANDARD SPECIFICATIONS AND/OR THE PROJECT ENGINEER. THE BMP SYMBOL FOR APPLICABLE AREAS AND/OR A NOTE SHALL BE INCLUDED ON APPLICABLE SHEETS IN SECTION 54.
Ds2	TEMPORARY GRASSING SECTION 163,700 SYMBOL Ds2		THE SOWING OF A QUICK GROWING SPECIES OF GRASS SUITABLE TO THE AREA AND SEASON. IT IS TYPICALLY USED TO CONTROL EROSION IN AREAS LONGER THAN MULCHING IS EXPECTED TO LAST. TEMPORARY GRASSING SHOULD BE USED ON ALL PROJECTS ACCORDING TO THE STANDARD SPECIFICATIONS. THE BMP SYMBOL FOR APPLICABLE AREAS AND/OR A NOTE SHALL BE INCLUDED ON APPLICABLE SHEETS IN SECTION 54.

CODE	PRACTICE STD OR DETAIL SPEC. SECT.	DETAIL	DESCRIPTION
Ds3	PERMANENT GRASSING SECTION 700 SYMBOL Ds3		THE SOWING OF PERMANENT VEGETATION, SUCH AS GRASS, SUITABLE TO THE AREA AND SEASON. PERMANENT VEGETATION SHALL BE USED ON ALL PROJECTS ACCORDING TO THE STANDARD SPECIFICATION. THE BMP SYMBOL FOR APPLICABLE AREAS AND/OR A NOTE SHALL BE INCLUDED ON APPLICABLE SHEETS IN SECTION 54.
Ds4	SODDING CONSTRUCTION DETAIL D-54 SECTION 700,890 PATTERN Ds4		THE INSTALLATION OF A SPECIES OF GRASS SODDING SUITABLE TO THE AREA AND SEASON TO PROVIDE IMMEDIATE PERMANENT VEGETATION. SODDING MAY BE SHOWN FOR HIGHLY SENSITIVE AREAS, TO IMPROVE AESTHETICS, OR FOR SPECIAL PLANTING REQUIREMENTS ON THE BASIS OF ENVIRONMENTAL COMMITMENTS OR LANDSCAPING REQUIREMENTS. THE BMP PATTERN FOR APPLICABLE AREAS AND/OR A NOTE SHALL BE INCLUDED ON APPLICABLE SHEETS IN SECTION 54.
Fl-Co	FLOCCULANTS COAGULANTS SECTION 163,700, 895 SYMBOL Fl-Co POLYACRYLAMIDE		FLOCCULANTS AND COAGULANTS ARE USED TO SETTLE SUSPENDED SEDIMENT, HEAVY METALS, AND HYDROCARBONS (TSS) IN SLOW MOVING RUNOFF FROM CONSTRUCTION SITES FOR WATER CLARIFICATION. ANIONIC POLYACRYLAMIDES (PAM) MAY BE USED IN CONJUNCTION WITH BMPs WITHIN CHANNELS UPSTREAM OF A POST-CONSTRUCTION POND, TEMPORARY SEDIMENT BASIN, OR TEMPORARY SEDIMENT TRAP. FLOCCULANTS SHALL NOT BE USED DOWNSTREAM OF AFOREMENTIONED BMPs! FLOCCULANTS/COAGULANTS ARE TO BE SHOWN ON PLANS WITH APPLICABLE BMP IF NEEDED. PAYMENT FOR PAM AS A FLOCCULANT WILL BE INCLUDED IN THE PRICE FOR THE INSTALLATION AND/OR MAINTENANCE OF THE BMP IT IS USED IN CONJUNCTION WITH. NO SEPARATE PAYMENT WILL BE MADE.
Sb	STREAMBANK STABILIZATION SECTION 702 PATTERN Sb		STREAMBANK STABILIZATION IS THE USE OF READILY AVAILABLE NATIVE PLANT MATERIALS TO MAINTAIN AND ENHANCE STREAMBANKS, OR TO PREVENT, OR RESTORE AND REPAIR SMALL STREAMBANK EROSION PROBLEMS. STREAMBANK STABILIZATION AREAS SHOULD BE SHOWN ON THE PLANS WHEN APPLICABLE TO THE PROJECT. REFER TO THE PROJECT'S STREAM AND STREAM BUFFER MITIGATION PLANS FOR PLANT SPECIES, LOCATIONS, AND OTHER PLANTING DETAILS.

NOTE:

1. DO NOT USE EROSION CONTROL ITEMS IN A FLOWING STREAM OR IN A TIDAL AREA BELOW HIGH TIDE.
2. FOR ADDITIONAL INFORMATION ON THE DESIGN AND APPLICATION OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs), REFER TO THE LATEST EDITION OF THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION'S, "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

GDOT

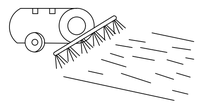
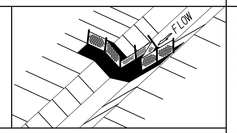
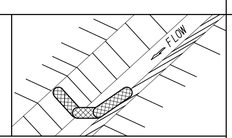
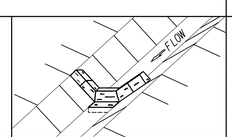
NO SCALE

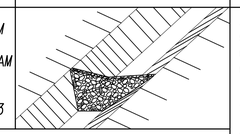
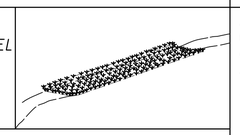
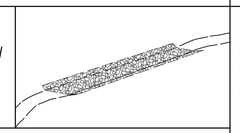
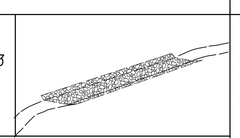
REVISION DATES
3/2/2017

EROSION CONTROL LEGEND
UNIFORM CODE SHEET
SHEET 1 OF 7

CHECKED:	D. EAGLETON	DATE:	01/01/16
BACKCHECKED:		DATE:	
CORRECTED:		DATE:	
VERIFIED:		DATE:	

DRAWING No. 52-0001

CODE	PRACTICE STD OR DETAIL SPEC. SECT.	DETAIL	DESCRIPTION
Ss	SLOPE STABILIZATION CONSTRUCTION DETAIL D-35 SECTION 716 PATTERN	 	SLOPE STABILIZATION (EROSION CONTROL MATTING) IS A PROTECTIVE COVERING USED TO PREVENT EROSION AND ESTABLISH TEMPORARY OR PERMANENT VEGETATION ON STEEP SLOPES, SHORE LINES, OR CHANNELS. SLOPE STABILIZATION MAY BE A ROLLED EROSION CONTROL PRODUCT (RECP) OR A HYDRAULIC EROSION CONTROL PRODUCT (HECP). SLOPE STABILIZATION SHALL BE USED ON ALL CUT OR FILL SLOPES OF 2.5:1 OR STEEPER AND WITHIN 50 FEET OF ALL CROSS DRAINS AND CULVERTS. NOTE: ONLY COCONUT FIBER BLANKET OR WOOD FIBER BLANKET SHALL BE USED AS SLOPE STABILIZATION WITHIN BUFFERED AREAS.
Tac	TACKIFIERS SECTION 163, 700, 895 SYMBOL Tac POLYACRYLAMIDE		TACKIFIERS HYDRATE IN WATER AND READILY BLEND WITH OTHER SLURRY MATERIALS AND ARE USED TO TIE-DOWN FOR SOIL, COMPOST, SEED, STRAW, HAY OR MULCH. TACKIFIERS REQUIREMENTS, SUCH AS ANIONIC POLYACRYLAMIDES (PAM) ARE ADDRESSED BY STANDARD SPECIFICATIONS AND ARE NOT TYPICALLY SHOWN ON THE PLANS. PAM IS TYPICALLY USED BY THE CONTRACTOR FOR TEMPORARY OR PERMANENT GRASSING. REFER TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR CRITERIA.
Cd-F	FABRIC CHECK DAM CONSTRUCTION DETAIL D-24D SECTION 171 SYMBOL Cd-F		A CHECK DAM COMPOSED OF SYNTHETIC FIBER FABRIC, WIRE REINFORCED, POST, OVERFLOW WEIR, AND TURF REINFORCEMENT MATTING (TRM) SPLASHPAD PLACED IN DITCHES IN A SPECIAL CONFIGURATION WHICH CONTROLS ENERGY DISSIPATION AND FILTRATION OF STORM WATER. SEE CONSTRUCTION DETAIL D-24D FOR ADDITIONAL INFORMATION AND SPACING REQUIREMENTS. THIS ITEM IS SUITABLE FOR USE IN ROADSIDE DITCHES THAT ARE PART OF INFRASTRUCTURE CONSTRUCTION PROJECTS AND WITHIN THE CLEAR ZONE. IF THIS ITEM IS USED IN AN AREA WITH FLOWS GREATER THAN 2.0-CFS OR WITHOUT A SEDIMENT BASIN, A MINIMUM OF ONE ROCK FILTER DAM SHALL BE USED AT THE DOWNSTREAM DISCHARGE POINT.
Cd-Fs	COMPOST FILTER SOCK CHECK DAM CONSTRUCTION DETAIL D-52 SECTION 163 SYMBOL Cd-Fs		A COMPOST FILTER SOCK CHECK DAM IS COMPOSED OF A PHOTODEGRADABLE OR BIODEGRADABLE KNITTED MESH MATERIAL CONTAINING A WEED FREE FILLER MATERIAL DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER. THEY SHALL BE PROPERLY STAKED FOR DITCH APPLICATIONS. REFER TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR MATERIAL SPECIFICATIONS. IF THIS ITEM IS USED IN AN AREA WITH FLOWS GREATER THAN 2.0-CFS OR WITHOUT A SEDIMENT BASIN, A MINIMUM OF ONE ROCK FILTER DAM SHALL BE USED AT THE DOWNSTREAM DISCHARGE POINT.
Cd-Hb	BALED STRAW CHECK DAM CONSTRUCTION DETAIL D-52 SECTION 163 SYMBOL Cd-Hb		A BALE STRAW CHECK DAM IS COMPOSED OF BALES PREFERABLY BOUND WITH WIRE OR NYLON INSTEAD OF TWINE. BALES SHOULD BE PLACED IN ROWS WITH BALE ENDS TIGHTLY ABUTTING ADJACENT BALES. THE DOWNSTREAM ROW OF BALES SHALL BE PLACED IN A TRENCH TO ALLOW THE TOP OF THE BALE'S LONG, WIDE SIDE TO BE LEVEL WITH THE GROUND AS A NON-ERODIBLE SPLASH PAD. PROPER STAKING IS ALSO REQUIRED FOR DITCH APPLICATIONS. IF THIS ITEM IS USED IN AN AREA WITH FLOWS GREATER THAN 2.0-CFS OR WITHOUT A SEDIMENT BASIN, A MINIMUM OF ONE ROCK FILTER DAM SHALL BE USED AT THE DOWNSTREAM DISCHARGE POINT.

CODE	PRACTICE STD OR DETAIL SPEC. SECT.	DETAIL	DESCRIPTION
Cd-S	STONE CHECK DAM OR SANDBAG CHECK DAM GA. STD 1031 SECTION 163, 603 SYMBOL Cd-S		STONE CHECK DAMS ARE CONSTRUCTED OF TYPE-3 RIP-RAP WITH GEOTEXTILE UNDERLINER. STONE CHECK DAMS ARE PREFERRED IN ROADWAY DITCHES OUTSIDE THE CLEAR ZONE. CONSIDERATION SHOULD BE GIVEN TO USING OTHER APPROPRIATE CHECK DAMS AND/OR BMPs WITHIN THE CLEAR ZONE. SANDBAG CHECK DAMS ARE RECOMMENDED IN CONCRETE LINED CHANNELS FOR TEMPORARY VELOCITY CONTROL ONLY. ENSURE DISCHARGE POINT IS PROPERLY STABILIZED AND INCLUDE APPROPRIATE BMPs FOR SEDIMENT STORAGE UPSTREAM AND/OR DOWNSTREAM OF CONCRETE LINED CHANNELS. IF THIS ITEM IS USED IN AN AREA WITH FLOWS GREATER THAN 2.0-CFS OR WITHOUT A SEDIMENT BASIN, A MINIMUM OF ONE ROCK FILTER DAM SHALL BE USED AT THE DOWNSTREAM DISCHARGE POINT.
Ch-1	VEGETATED CHANNEL STABILIZATION SECTION 700 LINE CODE		A NEW OR EXISTING CHANNEL MAY BE LINED WITH PERMANENT VEGETATION ONLY FOR VELOCITIES UP TO 5.0 fps. THIS MEASURE SHALL BE DESIGNED IN ACCORDANCE WITH THE GDOT CHANNEL LINING DESIGN PROGRAM. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED. TYPICALLY NOT SHOWN IN PLANS.
Ch-2R1	CHANNEL STABILIZATION RIP-RAP, TYPE 1 CONSTRUCTION DETAIL D-49 SECTION 603 LINE CODE		THIS ITEM CONSISTS OF LINING A CHANNEL WITH TYPE 1 RIP-RAP 24" THICK (UNLESS SPECIFIED OTHERWISE) PLACED ON TOP OF A GEOTEXTILE UNDERLINER. THE RIP-RAP SHALL PROTECT THE CHANNEL FLOWING TO A DEPTH "Dp" RECOMMENDED BY THE GDOT CHANNEL LINING PROGRAM. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED. "Dp" SHALL BE IDENTIFIED IN A TABLE LOCATED ON THE SUMMARY OF QUANTITIES SHEETS AND IN THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
Ch-2R3	CHANNEL STABILIZATION RIP-RAP, TYPE 3 CONSTRUCTION DETAIL D-49 SECTION 603 LINE CODE		THIS ITEM CONSISTS OF LINING A CHANNEL WITH TYPE 3 RIP-RAP 24" THICK (UNLESS SPECIFIED OTHERWISE) PLACED ON TOP OF A GEOTEXTILE UNDERLINER. THE RIP-RAP SHALL PROTECT THE CHANNEL FLOWING TO A DEPTH "Dp" RECOMMENDED BY THE GDOT CHANNEL LINING PROGRAM. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED. "Dp" SHALL BE IDENTIFIED IN A TABLE LOCATED ON THE SUMMARY OF QUANTITIES SHEETS AND IN THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

NOTE:

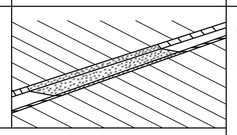
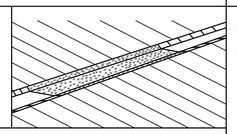
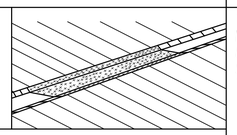
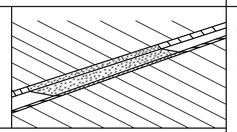
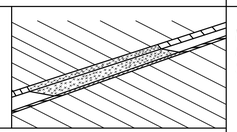
1. DO NOT USE EROSION CONTROL ITEMS IN A FLOWING STREAM OR IN A TIDAL AREA BELOW HIGH TIDE.
2. FOR ADDITIONAL INFORMATION ON THE DESIGN AND APPLICATION OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs), REFER TO THE LATEST EDITION OF THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION'S, "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

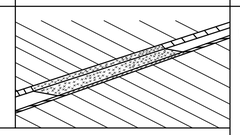
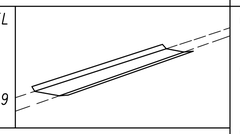
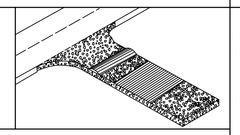
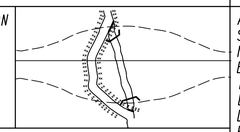
NO SCALE

REVISION DATES
3/2/2017

EROSION CONTROL LEGEND
UNIFORM CODE SHEET
SHEET 2 OF 7

CHECKED:	D. EAGLETON	DATE: 01/01/16	DRAWING No.
BACKCHECKED:		DATE:	52-0002
CORRECTED:		DATE:	
VERIFIED:		DATE:	

CODE	PRACTICE STD OR DETAIL SPEC. SECT.	DETAIL	DESCRIPTION
Ch-2T1	TURF REINFORCEMENT MAT (TRM) CONSTRUCTION DETAIL D-35 SECTION 711 LINE CODE Ch-2T1		THIS THREE DIMENSIONAL EROSION CONTROL MAT IS USED IN CONJUNCTION WITH PERMANENT VEGETATION IN CHANNELS TO STABILIZE THE SOIL BY REINFORCING THE GRASS ROOTS TO PROVIDE LONG-TERM PROTECTION FOR SHEAR STRESSES 0-2 psf. THE TRM SHALL PROTECT THE CHANNEL FLOWING TO A DEPTH "Dp" RECOMMENDED BY THE GDOT CHANNEL LINING PROGRAM. "Dp" SHALL BE IDENTIFIED IN A TABLE LOCATED ON THE SUMMARY OF QUANTITIES SHEETS AND IN THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
Ch-2T2	TURF REINFORCEMENT MAT (TRM) CONSTRUCTION DETAIL D-35 SECTION 711 LINE CODE Ch-2T2		THIS THREE DIMENSIONAL EROSION CONTROL MAT IS USED IN CONJUNCTION WITH PERMANENT VEGETATION IN CHANNELS TO STABILIZE THE SOIL BY REINFORCING THE GRASS ROOTS TO PROVIDE LONG-TERM PROTECTION FOR SHEAR STRESSES 0-4 psf. THE TRM SHALL PROTECT THE CHANNEL FLOWING TO A DEPTH "Dp" RECOMMENDED BY THE GDOT CHANNEL LINING PROGRAM. "Dp" SHALL BE IDENTIFIED IN A TABLE LOCATED ON THE SUMMARY OF QUANTITIES SHEETS AND IN THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
Ch-2T3	TURF REINFORCEMENT MAT (TRM) CONSTRUCTION DETAIL D-35 SECTION 711 LINE CODE Ch-2T3		THIS THREE DIMENSIONAL EROSION CONTROL MAT IS USED IN CONJUNCTION WITH PERMANENT VEGETATION IN CHANNELS TO STABILIZE THE SOIL BY REINFORCING THE GRASS ROOTS TO PROVIDE LONG-TERM PROTECTION FOR SHEAR STRESSES 0-6 psf. THE TRM SHALL PROTECT THE CHANNEL FLOWING TO A DEPTH "Dp" RECOMMENDED BY THE GDOT CHANNEL LINING PROGRAM. "Dp" SHALL BE IDENTIFIED IN A TABLE LOCATED ON THE SUMMARY OF QUANTITIES SHEETS AND IN THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
Ch-2T4	TURF REINFORCEMENT MAT (TRM) CONSTRUCTION DETAIL D-35 SECTION 711 LINE CODE Ch-2T4		THIS THREE DIMENSIONAL EROSION CONTROL MAT IS USED IN CONJUNCTION WITH PERMANENT VEGETATION IN CHANNELS TO STABILIZE THE SOIL BY REINFORCING THE GRASS ROOTS TO PROVIDE LONG-TERM PROTECTION FOR SHEAR STRESSES 0-8 psf. THE TRM SHALL PROTECT THE CHANNEL FLOWING TO A DEPTH "Dp" RECOMMENDED BY THE GDOT CHANNEL LINING PROGRAM. "Dp" SHALL BE IDENTIFIED IN A TABLE LOCATED ON THE SUMMARY OF QUANTITIES SHEETS AND IN THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
Ch-2T5	TURF REINFORCEMENT MAT (TRM) CONSTRUCTION DETAIL D-35 SECTION 711 LINE CODE Ch-2T5		THIS THREE DIMENSIONAL EROSION CONTROL MAT IS USED IN CONJUNCTION WITH PERMANENT VEGETATION IN CHANNELS TO STABILIZE THE SOIL BY REINFORCING THE GRASS ROOTS TO PROVIDE LONG-TERM PROTECTION FOR SHEAR STRESSES 0-10 psf. THE TRM SHALL PROTECT THE CHANNEL FLOWING TO A DEPTH "Dp" RECOMMENDED BY THE GDOT CHANNEL LINING PROGRAM. "Dp" SHALL BE IDENTIFIED IN A TABLE LOCATED ON THE SUMMARY OF QUANTITIES SHEETS AND IN THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

CODE	PRACTICE STD OR DETAIL SPEC. SECT.	DETAIL	DESCRIPTION
Ch-2T6	TURF REINFORCEMENT MAT (TRM) CONSTRUCTION DETAIL D-35 SECTION 711 LINE CODE Ch-2T6		THIS THREE DIMENSIONAL EROSION CONTROL MAT IS USED IN CONJUNCTION WITH PERMANENT VEGETATION IN CHANNELS TO STABILIZE THE SOIL BY REINFORCING THE GRASS ROOTS TO PROVIDE LONG-TERM PROTECTION FOR SHEAR STRESSES 0-12 psf. THE TRM SHALL PROTECT THE CHANNEL FLOWING TO A DEPTH "Dp" RECOMMENDED BY THE GDOT CHANNEL LINING PROGRAM. "Dp" SHALL BE IDENTIFIED IN A TABLE LOCATED ON THE SUMMARY OF QUANTITIES SHEETS AND IN THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
Ch-3	CONCRETE CHANNEL STABILIZATION CONSTRUCTION DETAIL D-10, D-49 SECTION 441 LINE CODE Ch-3		CHANNELS ARE LINED WITH CONCRETE FOR VELOCITIES >/= 10 fps. THIS ITEM CONSISTS OF CONSTRUCTING A 4" THICK CONCRETE CHANNEL. THE CONCRETE SHALL PROTECT THE CHANNEL FLOWING TO A DEPTH "Dp" RECOMMENDED BY THE GDOT CHANNEL LINING PROGRAM. "Dp" SHALL BE IDENTIFIED IN A TABLE LOCATED ON THE SUMMARY OF QUANTITIES SHEETS AND IN THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN. RIP-RAP SHOULD BE USED TO DISSIPATE ENERGY DOWNSTREAM OF CONCRETE LINED CHANNELS.
Co	CONSTRUCTION EXIT CONSTRUCTION DETAIL D-41 SECTION 163, 800 SYMBOL Co		A CONSTRUCTION EXIT IS A STONE STABILIZED PAD THAT REDUCES OR ELIMINATES THE TRANSPORT OF MUD FROM CONSTRUCTION AREAS ONTO PUBLIC ROADS BY EQUIPMENT OR RUNOFF. BEST USED AT ACCESS POINTS, I.e. NEW LOCATION PROJECTS, BORROW PITS, WASTE PITS, ACCESS ROADS, ETC. SHOULD BE MINIMUM 20' WIDE, 50' LONG, 6" THICK, AND REQUIRES A GEOTEXTILE UNDERLINER. ON SITES WHERE THE GRADE TOWARD A PAVED AREA IS GREATER THAN 2%, A FULL WIDTH DIVERSION RIDGE 6" TO 8" HIGH WITH 3:1 SLOPES SHALL BE CONSTRUCTED APPROXIMATELY 15' UPSTREAM OF PAVED AREA. A TIRE WASHING AREA TO REMOVE MUD MAY ALSO BE REQUIRED PRIOR TO ENTRANCE ONTO PUBLIC ROADWAYS. ALL CONSTRUCTION EXIT REQUIREMENTS ARE INCLUDED IN THE PRICE OF THE CONSTRUCTION EXIT.
Dc-A	STREAM DIVERSION CHANNEL GEOTEXTILE, POLYETHYLENE FILM SECTION 163 LINE CODE D D D Dc-A D D D		A TEMPORARY CHANNEL CONSTRUCTED TO CONVEY FLOW AROUND A CONSTRUCTION SITE WHILE A PERMANENT DRAINAGE STRUCTURE IS BEING CONSTRUCTED IN A NATURAL STREAM. THIS IS A MEASURE USED TO PROTECT STREAM BEDS FROM EROSION. LINE THE CHANNEL WITH GEOTEXTILE OR POLYETHYLENE FILM. INSTALL TWO ROWS OF Sd1-S PARALLEL TO THE CHANNEL TO PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING THE STREAM. THE SIZE OF THE CHANNEL WILL DEPEND ON THE DISCHARGE, CHANNEL GEOMETRY, CHANNEL SLOPE AND ROUGHNESS. IT IS ACCEPTABLE FOR VELOCITIES BETWEEN 0 - 2.5 fps. THE DRAINAGE AREA SHALL BE NOT GREATER THAN 1 SQUARE MILE. CONSTRUCTION OF THE DIVERSION CHANNEL IS INCLUDED IN THE COST OF THE STRUCTURE.

NOTE:

1. DO NOT USE EROSION CONTROL ITEMS IN A FLOWING STREAM OR IN A TIDAL AREA BELOW HIGH TIDE.
2. FOR ADDITIONAL INFORMATION ON THE DESIGN AND APPLICATION OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs), REFER TO THE LATEST EDITION OF THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION'S, "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

GDOT

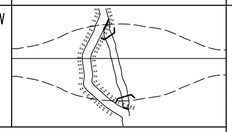
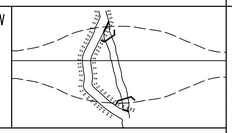
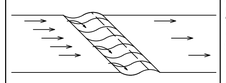
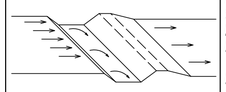
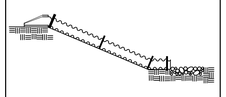
NO SCALE

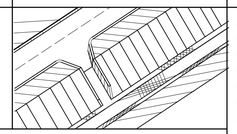
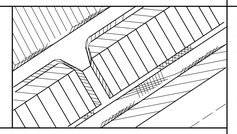
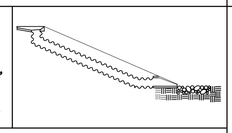
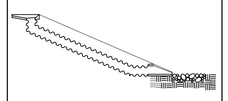
REVISION DATES
3/2/2017

EROSION CONTROL LEGEND
UNIFORM CODE SHEET
SHEET 3 OF 7

CHECKED:	D. EAGLETON	DATE:	01/01/16
BACKCHECKED:		DATE:	
CORRECTED:		DATE:	
VERIFIED:		DATE:	

DRAWING No. 52-0003

CODE	PRACTICE STD OR DETAIL SPEC. SECT.	DETAIL	DESCRIPTION
Dc-B	STREAM DIVERSION CHANNEL GEOTEXTILE ONLY SECTION 163		A TEMPORARY CHANNEL CONSTRUCTED TO CONVEY FLOW AROUND A CONSTRUCTION SITE WHILE A PERMANENT DRAINAGE STRUCTURE IS BEING CONSTRUCTED IN A NATURAL STREAM. THIS IS A MEASURE USED TO PROTECT STREAM BEDS FROM EROSION. LINE THE CHANNEL WITH GEOTEXTILE ONLY. INSTALL TWO ROWS OF Sd1-S PARALLEL TO THE CHANNEL TO PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING THE STREAM. THE SIZE OF THE CHANNEL WILL DEPEND ON THE DISCHARGE, CHANNEL GEOMETRY, CHANNEL SLOPE AND ROUGHNESS. IT IS ACCEPTABLE FOR VELOCITIES BETWEEN 2.5 - 9.0 fps. THE DRAINAGE AREA SHALL BE NOT GREATER THAN 1 SQUARE MILE. CONSTRUCTION OF THE DIVERSION CHANNEL IS INCLUDED IN THE COST OF THE STRUCTURE.
	LINE CODE —D——D——D—(Dc-B)—D——D——D—		
Dc-C	STREAM DIVERSION CHANNEL RIP-RAP & GEOTEXTILE SECTION 163		A TEMPORARY CHANNEL CONSTRUCTED TO CONVEY FLOW AROUND A CONSTRUCTION SITE WHILE A PERMANENT DRAINAGE STRUCTURE IS BEING CONSTRUCTED IN A NATURAL STREAM. THIS IS A MEASURE USED TO PROTECT STREAM BEDS FROM EROSION. LINE THE CHANNEL WITH RIP-RAP AND GEOTEXTILE. INSTALL TWO ROWS OF Sd1-S PARALLEL TO THE CHANNEL TO PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING THE STREAM. THE SIZE OF THE CHANNEL WILL DEPEND ON THE DISCHARGE, CHANNEL GEOMETRY, CHANNEL SLOPE AND ROUGHNESS. IT IS ACCEPTABLE FOR VELOCITIES BETWEEN 9.0 - 13.0 fps. THE DRAINAGE AREA SHALL BE NOT GREATER THAN 1 SQUARE MILE. CONSTRUCTION OF THE DIVERSION CHANNEL IS INCLUDED IN THE COST OF THE STRUCTURE.
	LINE CODE —D——D——D—(Dc-C)—D——D——D—		
D1-1	DIVERSION BERM CONSTRUCTION DETAIL D-47 SECTION 205		A NON-DESIGNED TEMPORARY EARTHEN BERM WITH A COMPACTED SUPPORTING RIDGE ON THE LOWER SIDE TO BE USED AT THE EDGE OF EMBANKMENT DURING THE GRADING OPERATION. THE BERMS ARE ALSO CONSTRUCTED ABOVE, ACROSS OR BELOW A SLOPE TO REDUCE THE LENGTH OF A SLOPE. THEY ARE USED TO INTERCEPT RUNOFF, PREVENTING SLOPE EROSION AND TO DIRECT THE RUNOFF TO A STABLE OUTLET, DOWN DRAINS "Dn1"OR CATCHMENT AREAS AND ON ALL GRADING PROJECTS.
	LINE CODE (D1-1)		
D1-2	DIVERSION CHANNEL SECTION 205		A DESIGNED TEMPORARY OR PERMANENT CHANNEL WITH A COMPACTED SUPPORTING RIDGE ON THE LOWER SIDE TO DIVERT OFFSITE RUNOFF AWAY FROM DISTURBED AREAS WITHIN THE PROJECT AREA. CHANNEL FOR OFFSITE RUNOFF SHALL BE STABILIZED WITH APPROPRIATE CHANNEL STABILIZATION. REFER TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR DESIGN CRITERIA. A DIVERSION CHANNEL DETAIL MUST ALSO BE PROVIDED IN THE ESPCP. RUNOFF FROM DISTURBED AREAS WITHIN THE PROJECT AREA SHALL NOT BE ALLOWED TO CONVERGE WITH OFFSITE RUNOFF WITHIN THIS DIVERSION.
	LINE CODE (D1-2)		
Dn1	TEMPORARY DOWNDRAIN STRUCTURE FLEXIBLE CONSTRUCTION DETAIL D-19 SECTION 163		A TEMPORARY PIPE SLOPE DRAIN IS A PLASTIC FLEXIBLE PIPE TO CARRY WATER FROM THE WORK AREA TO A LOWER ELEVATION. TEMPORARY SLOPE DRAINS SHOULD BE PLACED AT INTERVALS OF 350 FEET ON 0% - 2% GRADES, 200 FEET ON STEEPER GRADES AND MORE FREQUENTLY AS DICTATED BY FIELD CONDITIONS. THE TYPICAL PIPE SIZE IS A CORRUGATED 10". THE PIPE WILL BE ANCHORED WITH STAKES AT INTERVALS NOT TO EXCEED 10'. THE OUTLET AREA SHALL BE STABILIZED FOR VELOCITY DISSIPATION AND EROSION CONTROL.
	LINE CODE —T——T——T—(Dn1)—T——T——T—		

CODE	PRACTICE STD OR DETAIL SPEC. SECT.	DETAIL	DESCRIPTION
Dn2-A	PERMANENT DOWNDRAIN STRUCTURE CONCRETE CONSTRUCTION DETAIL D-9 SECTION 441		A CONCRETE FLUME TYPE "A" IS USED TO DIRECT SURFACE RUNOFF DOWN A ROADWAY SLOPE INTO ANOTHER FORM OF CONTROL. IT IS USED IN ALL DEPRESSED AREAS WHERE WATER WILL FLOW DOWN THE SLOPE. IT IS DESIGNED FOR A 25-YEAR STORM AND MUST HAVE SOME FORM OF OUTLET PROTECTION. ADDITIONAL LABELING IS NOT REQUIRED IF SHOWN AS A PERMANENT DRAINAGE STRUCTURE ON THE CONSTRUCTION PLANS. INLETS SHALL BE SPACED ACCORDING TO GDOT GUIDELINES (REGARDING GUTTER SPREAD AND OTHER CRITERIA).
	LINE CODE (Dn2-A)		
Dn2-B	PERMANENT DOWNDRAIN STRUCTURE CONCRETE CONSTRUCTION DETAIL D-9 SECTION 441		A CONCRETE FLUME TYPE "B" IS USED TO DIRECT SURFACE DITCH RUNOFF DOWN A BACK SLOPE INTO ANOTHER FORM OF CONTROL. IT IS USED IN DEPRESSED AREAS WHERE CONCENTRATED OFFSITE WATER REACHES THE CUT SLOPE. IT IS DESIGNED TO SAFELY CONVEY WATER DOWN THE CUT SLOPE. IT IS DESIGNED FOR A 25-YEAR STORM AND MUST HAVE SOME FORM OF OUTLET PROTECTION. ADDITIONAL LABELING IS NOT REQUIRED IF SHOWN AS A PERMANENT DRAINAGE STRUCTURE ON THE CONSTRUCTION PLANS. INLETS SHALL BE SPACED ACCORDING TO GDOT GUIDELINES (REGARDING GUTTER SPREAD AND OR OTHER CRITERIA).
	LINE CODE (Dn2-B)		
Dn2-1	PERMANENT DOWNDRAIN STRUCTURE GA. STD 9013 TP1, 9017J TP1, DETAIL D-26 TP1 SECTION 576, 577		CONCRETE DRAIN INLET WITH METAL PIPE IS USED TO DRAIN CURBS, ON A GRADE, DOWN TO A LOWER ELEVATION. THIS IS A PERMANENT STRUCTURE, REQUIRING OUTLET PROTECTION, TEMPORARY AND PERMANENT. INLETS SHALL BE SPACED ACCORDING TO GDOT GUIDELINES (REGARDING GUTTER SPREAD AND OR OTHER CRITERIA).
	LINE CODE (Dn2-1)		
Dn2-2	PERMANENT DOWNDRAIN STRUCTURE GA. STD 9013 TP2, 9017J TP2, DETAIL D-26 TP2 SECTION 576, 577		CONCRETE DRAIN INLET AND METAL PIPE IS USED TO DRAIN CURB, IN A SAG, DOWN TO A LOWER ELEVATION. THIS IS A PERMANENT STRUCTURE, REQUIRING OUTLET PROTECTION, TEMPORARY AND PERMANENT. INLETS SHALL BE SPACED ACCORDING TO GDOT GUIDELINES (REGARDING GUTTER SPREAD AND OR OTHER CRITERIA).
	LINE CODE (Dn2-2)		

NOTE:

1. DO NOT USE EROSION CONTROL ITEMS IN A FLOWING STREAM OR IN A TIDAL AREA BELOW HIGH TIDE.
2. FOR ADDITIONAL INFORMATION ON THE DESIGN AND APPLICATION OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs), REFER TO THE LATEST EDITION OF THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION'S, "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

GDOT

NO SCALE

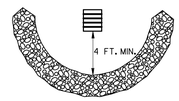
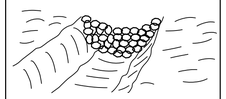
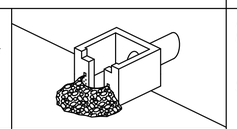
REVISION DATES		
3/2/2017		

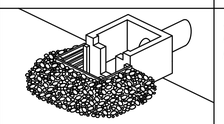
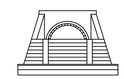
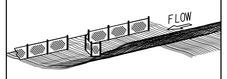
EROSION CONTROL LEGEND

UNIFORM CODE SHEET

SHEET 4 OF 7

CHECKED:	D. EAGLETON	DATE:	01/01/16	DRAWING No.
BACKCHECKED:		DATE:		52-0004
CORRECTED:		DATE:		
VERIFIED:		DATE:		

CODE	PRACTICE STD OR DETAIL SPEC. SECT.	DETAIL	DESCRIPTION
Fr	FILTER RING CONSTRUCTION DETAIL D-46 SECTION 163 SYMBOL: Fr		A TEMPORARY STONE BARRIER CONSTRUCTED AT DRAINAGE STRUCTURE INLETS AND POST-CONSTRUCTION POND OUTLETS. IT REDUCES RUNOFF VELOCITY AND HELPS PREVENT SEDIMENT FROM LEAVING SITE PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA. REFER TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR ADDITIONAL INFORMATION ON USAGE.
Rd	ROCK FILTER DAM CONSTRUCTION DETAIL D-43 SECTION 163, 603 SYMBOL: Rd		ROCK FILTER DAMS ARE CONSTRUCTED OF TYPE 3 STONE RIP-RAP FACED WITH #57 STONE ON THE UPSTREAM SIDE. THEY ARE PLACED ACROSS DRAINAGEWAYS WHICH DRAIN 50 ACRES OR LESS. GEOTEXTILE UNDERLINER SHALL BE USED WHEN PLACING ROCK FILTER DAMS. THE DAM SHOULD NOT BE HIGHER THAN THE CHANNEL BANKS. ROCK FILTER DAMS SHOULD BE USED IN DITCHES PRIOR TO DISCHARGING INTO STREAMS, WETLANDS, OPEN-WATERS, OR OTHER ESAs.
Rd-B	STONE FILTER BERM CONSTRUCTION DETAIL D-50 SECTION 163, 603 LINE CODE: Rd-B		STONE FILTER BERMS ARE CONSTRUCTED SIMILAR TO ROCK FILTER DAMS FOR A LINEAR APPLICATION. THEY ARE CONSTRUCTED OF TYPE-3 STONE RIP-RAP FACED WITH #57 STONE ON THE UPSTREAM SIDE. GEOTEXTILE UNDERLINER SHALL BE USED WHEN PLACING STONE FILTER BERMS. STONE FILTER BERMS ARE IDEAL ALONG THE PERIMETER FOR SHEET FLOW AND/OR SHALLOW CONCENTRATED FLOW TO A COMMON LOW AREA WHERE PERIMETER SILT FENCE ALONE MAY BE INSUFFICIENT, THERE IS NO WELL-DEFINED CHANNEL FOR A STANDARD ROCK FILTER DAM, AND/OR CONSTRUCTING A ROCK OUTLET TEMPORARY SEDIMENT TRAP IS NOT APPLICABLE.
Rp	RIP-RAP SECTION 603 PATTERN: Rp		RIP-RAP IS A FLEXIBLE PERMANENT BLANKET FOR PROTECTION OF FILL SLOPES AND BRIDGE END ROLLS. RIP-RAP TYPE-I SHOULD BE PLACED ON TOP OF A GEOTEXTILE UNDERLINER AT A MINIMUM 24" THICKNESS OR AS INDICATED ON THE PLANS. RIP-RAP MAY ALSO BE USED AT DRAINAGE STRUCTURE OUTLETS WITHIN THE RIGHT-OF-WAY. HOWEVER, APPROPRIATE OUTLET PROTECTION SHOULD BE PROVIDED AT OUTFALLS. REFER TO STORM DRAIN OUTLET PROTECTION FOR ADDITIONAL INFORMATION ON USING RIP-RAP AT OUTFALLS.
Rt-P	RETROFITTING PERFORATED HALF-ROUND PIPE CONSTRUCTION DETAIL D-44 SECTION 163 SYMBOL: Rt-P		A PERFORATED HALF-ROUND PIPE WITH STONE FILTER PLACED IN FRONT OF A PERMANENT STORMWATER DETENTION POND OUTLET STRUCTURE TO SERVE AS A TEMPORARY SEDIMENT FILTER. SHOULD BE USED ONLY IN DETENTION PONDS WITH LESS THAN 30 ACRES TOTAL DRAINAGE AREA. SHALL ONLY BE USED IN DETENTION BASINS LARGE ENOUGH TO STORE 67 CUBIC YARDS OF SEDIMENT PER ACRE OF DISTURBED AREA. REFER TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR DESIGN CRITERIA.

CODE	PRACTICE STD OR DETAIL SPEC. SECT.	DETAIL	DESCRIPTION
Rt-B	RETROFITTING SLOTTED BOARD DAM CONSTRUCTION DETAIL D-45 SECTION 163 SYMBOL: Rt-B		A SLOTTED BOARD DAM CONSISTS OF STONE AND/OR FILTER FABRIC AND BOARDS WITH 0.5" - 1.0" SPACING TO SERVE AS A TEMPORARY SEDIMENT FILTER. PERMANENT STORMWATER DETENTION POND OUTLET: -DRAINAGE AREA UP TO 100 ACRES -DETENTION BASINS LARGE ENOUGH TO STORE 67 CUBIC YARDS OF SEDIMENT PER ACRE OF DISTURBED AREA ROADWAY DRAINAGE STRUCTURE: -OPEN END PIPES, WINGED HEADWALLS, OR CONCRETE WEIR OUTLETS WITH DRAINAGE AREA LESS THAN 30 ACRES REFER TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR DESIGN CRITERIA.
Rt-Sg1 Rt-Sg2 Rt-Sg3	RETROFITTING SILT CONTROL GATES CONSTRUCTION DETAIL D-20 SECTION 163 SYMBOL: Rt-Sg1 Rt-Sg2 Rt-Sg3		A SILT CONTROL GATE CONSISTS OF BOARDS WITHOUT SPACING AND FILTER FABRIC TO BE USED FOR TEMPORARY SEDIMENT STORAGE ON ROADWAY PROJECTS AT THE INLET OF STRUCTURES WITH A DRAINAGE AREA UP TO 50 ACRES. THE DISTURBED AREA WITHIN THE DRAINAGE AREA SHALL NOT EXCEED 5 ACRES. SILT CONTROL GATES SHOULD NOT BE USED ALONE, BUT WITH ANOTHER BMP DOWNSTREAM PRIOR TO DISCHARGE LEAVING PROJECT AREA. DO NOT USE SILT GATES IN STATE WATERS. Rt-Sg1=TYPE 1: USED ON BOX CULVERTS Rt-Sg2=TYPE 2: USED ON STRAIGHT HEADWALLS Rt-Sg3=TYPE 3: USED ON FLARED END SECTIONS AND TAPERED HEADWALLS
Sdi-NS	SEDIMENT BARRIER (NON-SENSITIVE) SILT FENCE TYPE A CONSTRUCTION DETAIL D-24 SECTION 171 LINE CODE: —A——A——A—Sdi-NS—A——A——A—		SEDIMENT BARRIERS MINIMIZE AND PREVENT SEDIMENT CARRIED BY SHEET FLOW FROM LEAVING THE PROJECT AREA BY CAUSING DEPOSITION AND/OR FILTRATION OF SEDIMENT. SILT FENCE USED AS PERIMETER CONTROL SHALL NOT BE INSTALLED ACROSS CONCENTRATED FLOW. TYPE-A SILT FENCE IS TYPICALLY USED IN NON-ENVIRONMENTALLY SENSITIVE AREAS (ESAs) OR IN AREAS WITH FILLS LESS THAN 10'. IT SHOULD BE PLACED A MINIMUM OF 10' FROM CONSTRUCTION LIMITS OR ALONG THE RIGHT-OF-WAY LINE.
Sdi-S	SEDIMENT BARRIER (SENSITIVE) SILT FENCE TYPE C CONSTRUCTION DETAIL D-24 SECTION 171 LINE CODE: —C——C——C—Sdi-S—C——C——C—		SEDIMENT BARRIERS MINIMIZE AND PREVENT SEDIMENT CARRIED BY SHEET FLOW FROM LEAVING THE PROJECT AREA BY CAUSING DEPOSITION AND/OR FILTRATION OF SEDIMENT. SILT FENCE USED AS PERIMETER CONTROL SHALL NOT BE INSTALLED ACROSS CONCENTRATED FLOW. TYPE-C SILT FENCE IS TYPICALLY USED IN ENVIRONMENTALLY SENSITIVE AREAS (ESAs) OR IN AREAS WITH FILLS 10' AND GREATER. ALL ENVIRONMENTALLY SENSITIVE AREAS (ESAs) SHALL BE PROTECTED WITH A DOUBLE-ROW OF TYPE-C SILT FENCE REGARDLESS OF FILL HEIGHT. A SINGLE-ROW MAY BE USED FOR OTHER APPLICATIONS. IT SHOULD BE PLACED A MINIMUM OF 10' FROM CONSTRUCTION LIMITS OR ALONG THE RIGHT-OF-WAY LINE.

NOTE:

1. DO NOT USE EROSION CONTROL ITEMS IN A FLOWING STREAM OR IN A TIDAL AREA BELOW HIGH TIDE.
2. FOR ADDITIONAL INFORMATION ON THE DESIGN AND APPLICATION OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs), REFER TO THE LATEST EDITION OF THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION'S, "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

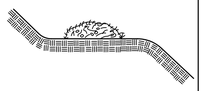
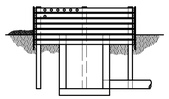
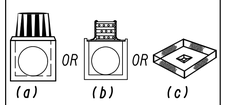
GDOT

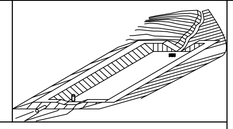
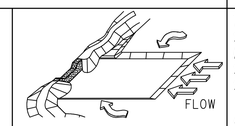
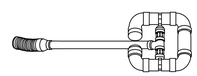
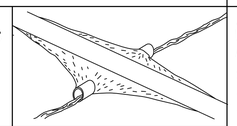
NO SCALE

REVISION DATES
3/2/2017

EROSION CONTROL LEGEND
UNIFORM CODE SHEET
SHEET 5 OF 7

CHECKED:	D. EAGLETON	DATE: 01/01/16	DRAWING No.
BACKCHECKED:		DATE:	52-0005
CORRECTED:		DATE:	
VERIFIED:		DATE:	

CODE	PRACTICE STD OR DETAIL SPEC. SECT.	DETAIL	DESCRIPTION
Sd1-BB	SEDIMENT BARRIER BRUSH BARRIER CONSTRUCTION DETAIL D-24B SECTION 201 LINE CODE ✳ ✳ ✳ Sd1-BB ✳ ✳ ✳		THIS ITEM CONSISTS OF INTERMINGLED BRUSH, LOGS, ETC. SO AS NOT TO FORM A SOLID DAM. CONSTRUCTED AT THE TOE OF FILL SLOPES ONLY DURING THE CLEARING AND GRUBBING OPERATION. THE BARRIER SHOULD BE USED AT THE TOE OF FILL SLOPES ON GRADING PROJECTS IN RURAL AREAS WHERE SUFFICIENT RIGHT OF WAY OR EASEMENT IS AVAILABLE (10 FEET OR MORE). THE BARRIER SHOULD RUN ROUGHLY PERPENDICULAR TO THE FLOW OF WATER WHERE THIS DOES NOT CONFLICT WITH RIGHT-OF-WAY OR EASEMENT LIMITS. THEY WILL NOT BE PLACED IN WETLANDS. TYPICALLY NOT SHOWN ON PLANS. PAYMENT FOR THIS ITEM IS INCLUDED IN THE CLEARING AND GRUBBING COST. NO SEPARATE PAYMENT SHALL BE MADE.
Sd2-B	INLET SEDIMENT TRAP (BAFFLE BOX) CONSTRUCTION DETAIL D-42 SECTION 163 SYMBOL Sd2-B		BAFFLE BOX INLET SEDIMENT TRAP USED FOR INLETS RECEIVING HIGH FLOW RATE AND/OR VELOCITY. A GUIDE FOR USE WILL BE FOR AN INLET RECEIVING FLOW RATES 7 cfs AND GREATER.
Sd2-Bg	INLET SEDIMENT TRAP (BLOCK & GRAVEL) CONSTRUCTION DETAIL D-42 SECTION 163 SYMBOL Sd2-Bg		BLOCK AND GRAVEL DROP INLET PROTECTION USED FOR WHERE HEAVY FLOWS ARE EXPECTED AND WHERE OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE. CAN BE USED AT CULVERT INLETS. A GUIDE FOR USE WILL BE FOR AN INLET RECEIVING FLOW RATES THAT RANGE FROM 5 - 7 cfs.
Sd2-F	INLET SEDIMENT TRAP (FILTER FABRIC) CONSTRUCTION DETAIL D-42 SECTION 163 SYMBOL Sd2-F		(a) A SEDIMENT BARRIER CONSISTING OF A PREFABRICATED FRAME WITH FILTER FABRIC USED AROUND A DROP INLET OR CATCH BASIN. (b) A SEDIMENT BARRIER CONSISTING OF A PERFORATED METAL STAND PIPE WITH FILTER FABRIC USED AROUND A DROP INLET OR CATCH BASIN. (c) TYPE C SILT FENCE WITH SUPPORTING FRAME CAN BE USED AS AN ALTERNATE TO INLET SEDIMENT TRAP FOR AREAS WITH SLOPES < 5%. THIS ITEM IS USED TO PREVENT SILT FROM ENTERING THE PIPE SYSTEM. SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS. RECOMMENDED FOR INLET RECEIVING FLOW RATES THAT RANGE FROM 0 - 4 cfs.
Sd2-G	INLET SEDIMENT TRAP (GRAVEL) CONSTRUCTION DETAIL D42 SECTION 163 SYMBOL Sd2-G		GRAVEL DROP INLET PROTECTION USED WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED. STONE AND GRAVEL ARE USED TO TRAP SEDIMENT. THE SLOPE TOWARD THE INLET SHALL BE NO MORE THAN 3:1. A GUIDE FOR USE WILL BE FOR AN INLET RECEIVING FLOW RATES THAT RANGE FROM 3 - 5 cfs.

CODE	PRACTICE STD OR DETAIL SPEC. SECT.	DETAIL	DESCRIPTION
Sd3	TEMPORARY SEDIMENT BASIN CONSTRUCTION DETAIL D-22A, D-22B SECTION 163 SYMBOL Sd3		A BASIN CREATED BY EXCAVATING AN AREA, DAMMING CONCENTRATED FLOW, OR A COMBINATION OF BOTH. THE BASIN IS DESIGNED TO STORE 67 CUBIC YARDS OF SEDIMENT PER ACRE OF DRAINAGE AREA. THE DRAINAGE AREA SHOULD NOT EXCEED 150 ACRES. BASINS TYPICALLY CONSISTS OF A DAM, PRINCIPAL SPILLWAY, AND AN EMERGENCY SPILLWAY. A FLOATING SURFACE SKIMMER SHALL BE REQUIRED AS PART OF THE PRINCIPAL SPILLWAY UNLESS INFEASIBLE. SUFFICIENT RIGHT-OF-WAY OR EASEMENT IS NEEDED FOR BASIN CONSTRUCTION AND MAINTENANCE ACCESS. SEDIMENT BASINS SHALL BE CONSIDERED ON ALL PROJECTS, BUT MAY NOT BE PRACTICAL. BASINS SHOULD BE LOCATED TO MINIMIZE INTERFERENCE WITH CONSTRUCTION ACTIVITIES AND UTILITIES. REFER TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR DESIGN CRITERIA.
Sd4-C	ROCK OUTLET TEMPORARY SEDIMENT TRAP CONSTRUCTION DETAIL D-53 SECTION 163 SYMBOL Sd4-C		TEMPORARY POND WITH ROCK OUTLET DESIGNED TO STORE 67 CUBIC YARDS OF SEDIMENT PER DRAINAGE AREA. DRAINAGE AREA SHALL NOT EXCEED 5 ACRES. DISTINGUISHED FROM TEMPORARY SEDIMENT BASIN BY LACK OF PRINCIPAL SPILLWAY. MAXIMUM POND DEPTH FROM BOTTOM OF POND TO EMERGENCY SPILLWAY IS 4 FEET. A TEMPORARY SEDIMENT BASIN SHALL BE EVALUATED PRIOR TO CONSIDERING A TEMPORARY SEDIMENT TRAP. A TEMPORARY SEDIMENT TRAP IS IDEAL FOR SMALL AREAS WITH NO UNUSUAL DRAINAGE FEATURES AND EFFECTIVE AGAINST COARSE SEDIMENT, BUT NOT AGAINST SILT OR CLAY PARTICLES THAT REMAIN SUSPENDED. REFER TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR DESIGN CRITERIA.
Sk	FLOATING SURFACE SKIMMER CONSTRUCTION DETAIL D-22A, D-22B SECTION 163 SYMBOL Sk		A BUOYANT DEVICE THAT DRAINS WATER FROM THE SURFACE OF A TEMPORARY SEDIMENT BASIN AT A CONTROLLED FLOW RATE. THE INLET/ORIFICE SIZE IS DESIGNED TO DRAIN THE BASIN WITHIN 24 - 48 HOURS. THE SKIMMER INFORMATION SHALL BE PROVIDED IN CONJUNCTION WITH THE SEDIMENT BASIN INFORMATION IN PLANS. IF A SKIMMER IS INFEASIBLE, THE DESIGNER SHALL PROVIDE A WRITTEN JUSTIFICATION IN THE PLANS. SKIMMERS ARE ATTACHED TO A RISER WITHOUT PERFORATIONS AND ACTS AS THE PRIMARY SPILLWAY. THE SKIMMER BMP SYMBOL SHALL BE SHOWN IN CONJUNCTION WITH THE TEMPORARY SEDIMENT BASIN BMP SYMBOL WHEN APPLICABLE. REFER TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR ADDITIONAL INFORMATION.
Sr	TEMPORARY STREAM CROSSING SECTION 107 SYMBOL Sr		A TEMPORARY STRUCTURE INSTALLED ACROSS A FLOWING STREAM OR WATERCOURSE FOR USE BY CONSTRUCTION EQUIPMENT. THIS BMP PROVIDES A MEANS TO CROSS STREAMS OR WATERCOURSES WITHOUT MOVING SEDIMENT INTO STREAMS, DAMAGING THE STREAM BED OR CHANNEL, OR CAUSING FLOODING. THIS BMP SHOULD NOT BE USED ON STREAMS WITH DRAINAGE AREAS GREATER THAN ONE SQUARE MILE, UNLESS SPECIFICALLY DESIGNED TO ACCOMMODATE THE ADDITIONAL DRAINAGE AREA BY THE DESIGN PROFESSIONAL. A CERTIFICATION STATEMENT AND SIGNATURE SHALL ACCOMPANY THE DESIGN. THIS BMP SHALL BE DESIGNED ACCORDING TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA". FOR CONTRACTOR'S USE ONLY!

NOTE:

1. DO NOT USE EROSION CONTROL ITEMS IN A FLOWING STREAM OR IN A TIDAL AREA BELOW HIGH TIDE.
2. FOR ADDITIONAL INFORMATION ON THE DESIGN AND APPLICATION OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs), REFER TO THE LATEST EDITION OF THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION'S, "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

GDOT

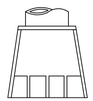
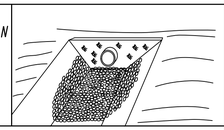
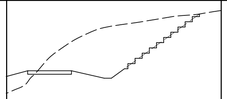
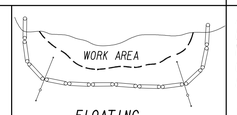
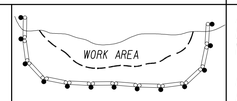
NO SCALE

REVISION DATES
3/2/2017

EROSION CONTROL LEGEND
UNIFORM CODE SHEET
SHEET 6 OF 7

CHECKED:	D. EAGLETON	DATE:	01/01/16
BACKCHECKED:		DATE:	
CORRECTED:		DATE:	
VERIFIED:		DATE:	

DRAWING No. 52-0006

CODE	PRACTICE STD OR DETAIL SPEC. SECT.	DETAIL	DESCRIPTION
St	STORM DRAIN OUTLET PROTECTION GA. STD. 1125 & 2332		A PIPE OR BOX CULVERT OUTLET HEADWALL WITH AN APRON AND DISSIPATOR BLOCKS IS USED TO REDUCE VELOCITY AT THE OUTLET OF A PIPE PRIOR TO ENTERING AN EXISTING STREAM OR PUBLICLY MAINTAINED DRAINAGE SYSTEM. IT IS USED ON THE OUTLET OF ALL BOX CULVERTS AND ON 48" AND LARGER PIPES. MAY BE USED ON INLET FOR FLOWING STREAMS. USE ON SMALL PIPES WHEN OUTLET VELOCITY OF THE 25-YEAR STORM IS 12 fps AND GREATER.
	SYMBOL St		
St-Rp	STORM DRAIN OUTLET PROTECTION (RIP-RAP) CONSTRUCTION DETAIL D-55 SECTION 603		RIP-RAP OUTLET PROTECTION IS USED TO REDUCE VELOCITY AT THE OUTLET OF A PIPE, CHANNEL, OR STRUCTURE PRIOR TO ENTERING AN EXISTING STREAM OR PUBLICLY MAINTAINED DRAINAGE SYSTEM. THE MINIMUM DESIGN OF RIP-RAP OUTLET PROTECTION SHALL BE THE 25-YEAR STORM PEAK FLOW, BUT LARGER STORMS ARE RECOMMENDED. TYPE-1 RIP-RAP AT A DEPTH OF 36" AND PLACED ON FILTER FABRIC IS PREFERRED FOR ALL d50 <= 1.2 FEET. TYPE-3 RIP-RAP AT A DEPTH OF 18" AND PLACED ON FILTER FABRIC MAY BE USED FOR d50 <= 0.7 FEET. REFER TO THE LATEST EDITION OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR REQUIRED DESIGN DIMENSIONS AND OTHER INFORMATION TO BE INCLUDED IN THE PLANS.
	PATTERN FLAT AREA  OR  WELL-DEFINED CHANNEL		
Su	SURFACE ROUGHENING SERRATED SLOPES CONSTRUCTION DETAIL S-7 SECTION 205		PROVIDING A ROUGH SOIL SURFACE WITH HORIZONTAL DEPRESSIONS, BY OPERATING A CLEATED DOZER ON THE SLOPE IN A VERTICAL DIRECTION. CREATING SERRATED SLOPES IN THE GRADING PROCESS TO CONSTRUCT BENCHES WILL REDUCE RUNOFF VELOCITY AND INCREASE INFILTRATION OF WATER. IN MOST CASES THIS BMP IS NOT REQUIRED TO BE SHOWN ON THE PLANS, BUT REQUIRED TO BE COMPLETED BY THE CONTRACTOR UNDER ALL PROJECTS. IF SERRATED SLOPES ARE SPECIFIED BY THE SOIL SURVEY, THEN THIS BMP SHALL BE SHOWN ON THE PLANS WHERE SERRATED SLOPES ARE TO BE USED.
	LINE CODE Su		
Tc-F	TURBIDITY CURTAIN FLOATING CONSTRUCTION DETAIL D-51 SECTION 170	 FLOATING	A FLOATING TURBIDITY CURTAIN IS USED TO PREVENT SEDIMENT FROM MOVING IN WATER BY ALLOWING IT TO DROP OUT OF SUSPENSION AND REMAIN WITHIN THE CONSTRUCTION AREA. IT IS TYPICALLY USED WHERE CONSTRUCTION IS REQUIRED IN A LARGE BODY OF WATER SUCH AS LAKES AND RIVERS. IT SHOULD BE USED AS DIRECTED BY THE ENGINEER. THIS BMP IS ONLY TO BE USED WHEN PERMITTED FILL IS BEING PLACED INTO A STATE WATER, OR AS A SUPPLEMENT TO ADEQUATELY PLACED PERIMETER BMPs. IT MAY ALSO BE REFERRED TO AS A FLOATING BOOM, SILT BARRIER, OR SILT CURTAIN.
	LINE CODE Tc-F		
Tc-S	TURBIDITY CURTAIN STAKED CONSTRUCTION DETAIL D-51 SECTION 170	 STAKED	A STAKED TURBIDITY CURTAIN IS USED TO PREVENT SEDIMENT FROM MOVING IN WATER BY ALLOWING IT TO DROP OUT OF SUSPENSION AND REMAIN WITHIN THE CONSTRUCTION AREA. IT IS TYPICALLY USED IN SHALLOW INUNDATED AREAS. IT MAY BE USED TO PROTECT A SMALL STREAM BEING REALIGNED OR RESTORED. IN THIS CASE, CURTAIN SHOULD EXTEND TO BOTTOM OF STREAMBED. THE HEIGHT SHOULD BE LIMITED TO 5 FEET UNLESS DIRECTED AND EXTEND 2 FEET ABOVE NORMAL WATER ELEVATION. IT SHOULD BE USED AS DIRECTED BY THE ENGINEER. THIS BMP IS ONLY TO BE USED WHEN PERMITTED FILL IS BEING PLACED INTO A STATE WATER, OR AS A SUPPLEMENT TO ADEQUATELY PLACED PERIMETER BMPs. IT MAY BE REFERRED TO AS A SILT BARRIER OR SILT CURTAIN.
	LINE CODE Tc-S		

CODE	PRACTICE STD OR DETAIL SPEC. SECT.	DETAIL	DESCRIPTION

NOTE:

1. DO NOT USE EROSION CONTROL ITEMS IN A FLOWING STREAM OR IN A TIDAL AREA BELOW HIGH TIDE.
2. FOR ADDITIONAL INFORMATION ON THE DESIGN AND APPLICATION OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs), REFER TO THE LATEST EDITION OF THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION'S, "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

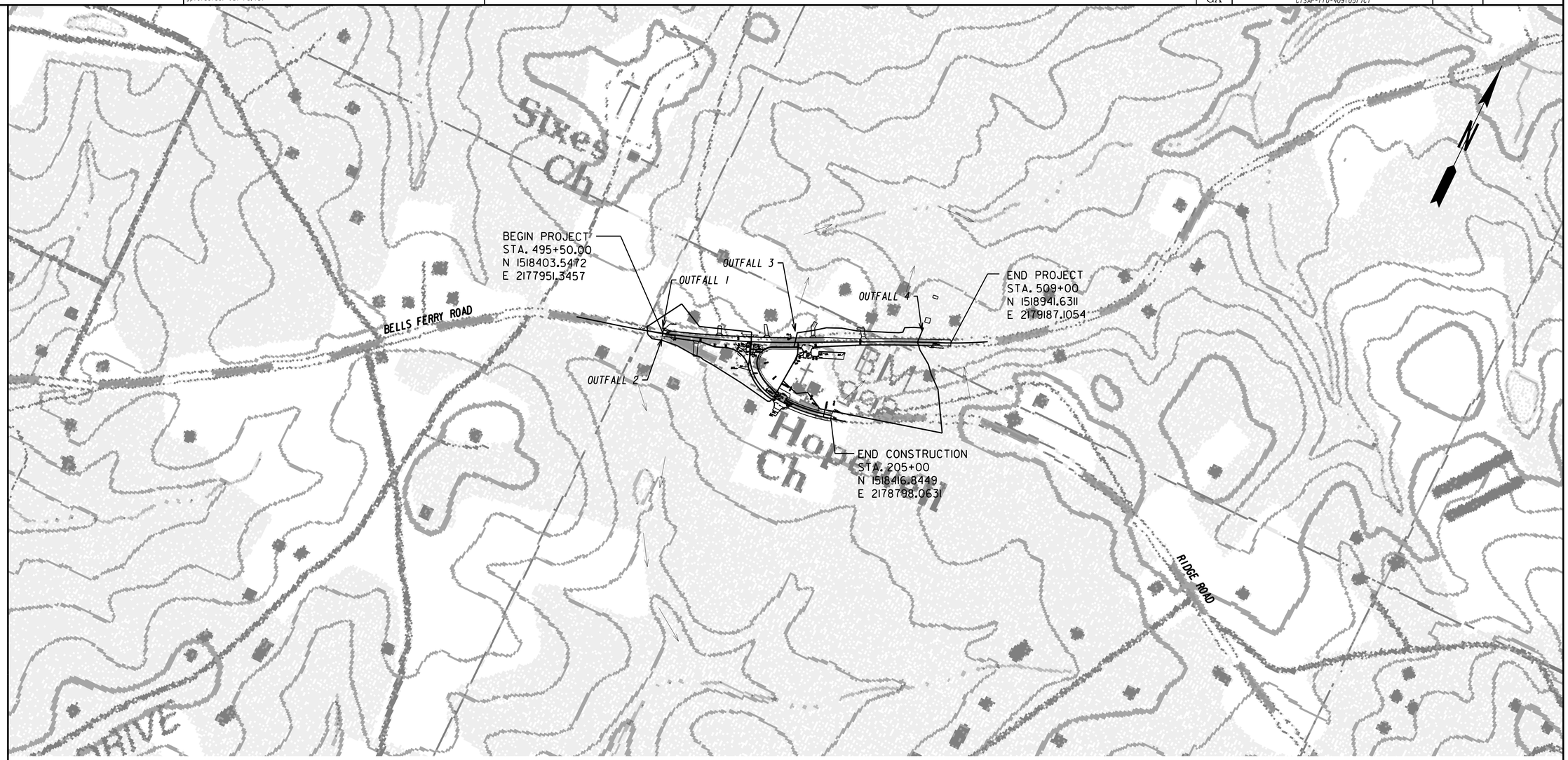
NO SCALE

REVISION DATES
3/2/2017

EROSION CONTROL LEGEND
UNIFORM CODE SHEET
SHEET 7 OF 7

CHECKED:	D. EAGLETON	DATE:	01/01/16
BACKCHECKED:		DATE:	
CORRECTED:		DATE:	
VERIFIED:		DATE:	

DRAWING No. 52-0007



OUTFALL	STRUCTURE	STA	OFFSET	EXISTING Q50/Q100 (CFS)	FUTURE Q50/Q100 (CFS)	EXISTING V50/V100 (FPS)	FUTURE V50/V100 (FPS)	EXISTING "C"	FUTURE "C"	DRAINAGE AREA	DISTURBED AREA	RECEIVING WATERS	CHANNEL SLOPE
1	CHANNEL 1	496+50	24' LT	9.22/10.03	10.00/10.88	4.10/4.46	4.44/4.84	0.53	0.58	2.25 AC	0.51	LAKE ALLATOONA	3.4%
2	EX. CHANNEL	496+50	23' RT	3.98/4.33	2.85/3.10	5.38/5.86	3.86/4.20	0.70	0.50	0.74 AC	0.62	LAKE ALLATOONA	2.0%
3	A-1	501+80	45' LT	3.20/3.48	2.99/3.25	4.44/4.84	4.79/5.21	0.58	0.62	0.62 AC	0.62	LAKE ALLATOONA	3.5%
4	C-1	506+83	48' LT	16.54/17.99	16.54/17.99	4.44/4.84	4.44/4.84	0.58	0.58	3.72 AC	1.05	LAKE ALLATOONA	1.3%

PROJECT SIZE = 2.94 AC
DISTURBED AREA = 2.8 AC

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 200 400 800

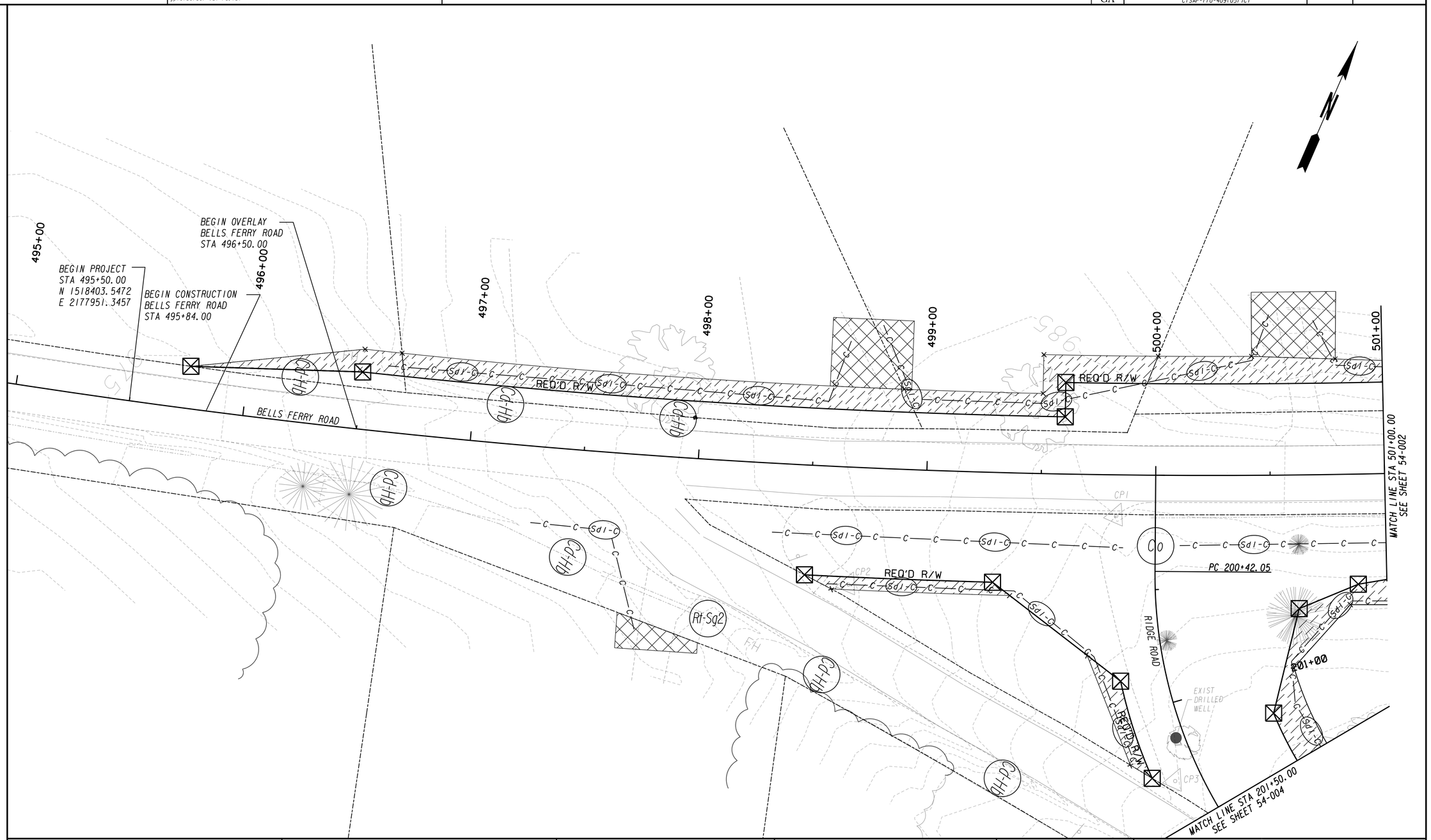
REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

EROSION CONTROL
DRAINAGE AREA MAP
BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 53-001



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

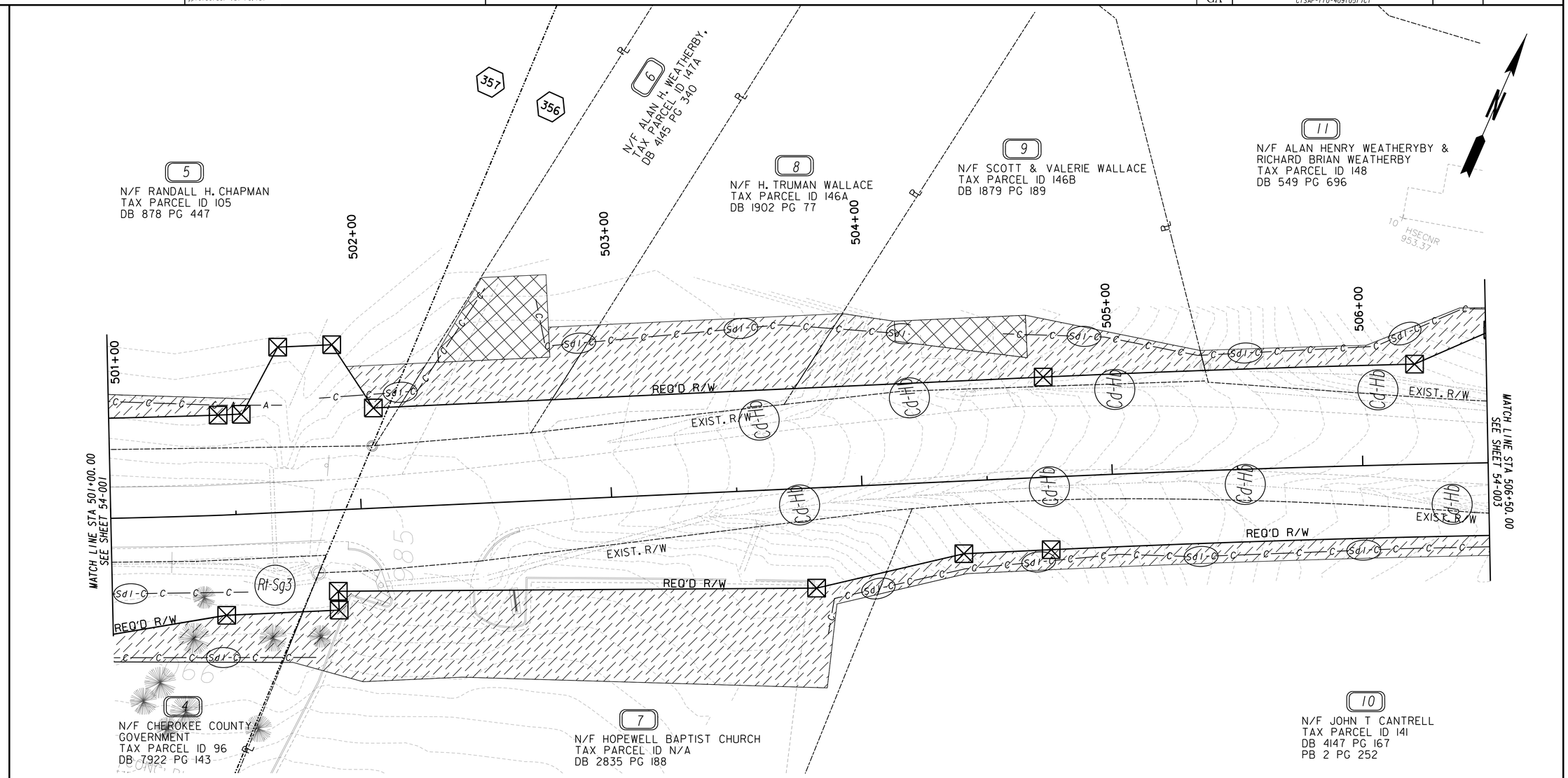
OFFICE:

BMP LOCATION DETAILS
STAGE 1A

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 54-001

01/26/2015 GPLNOLD



PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

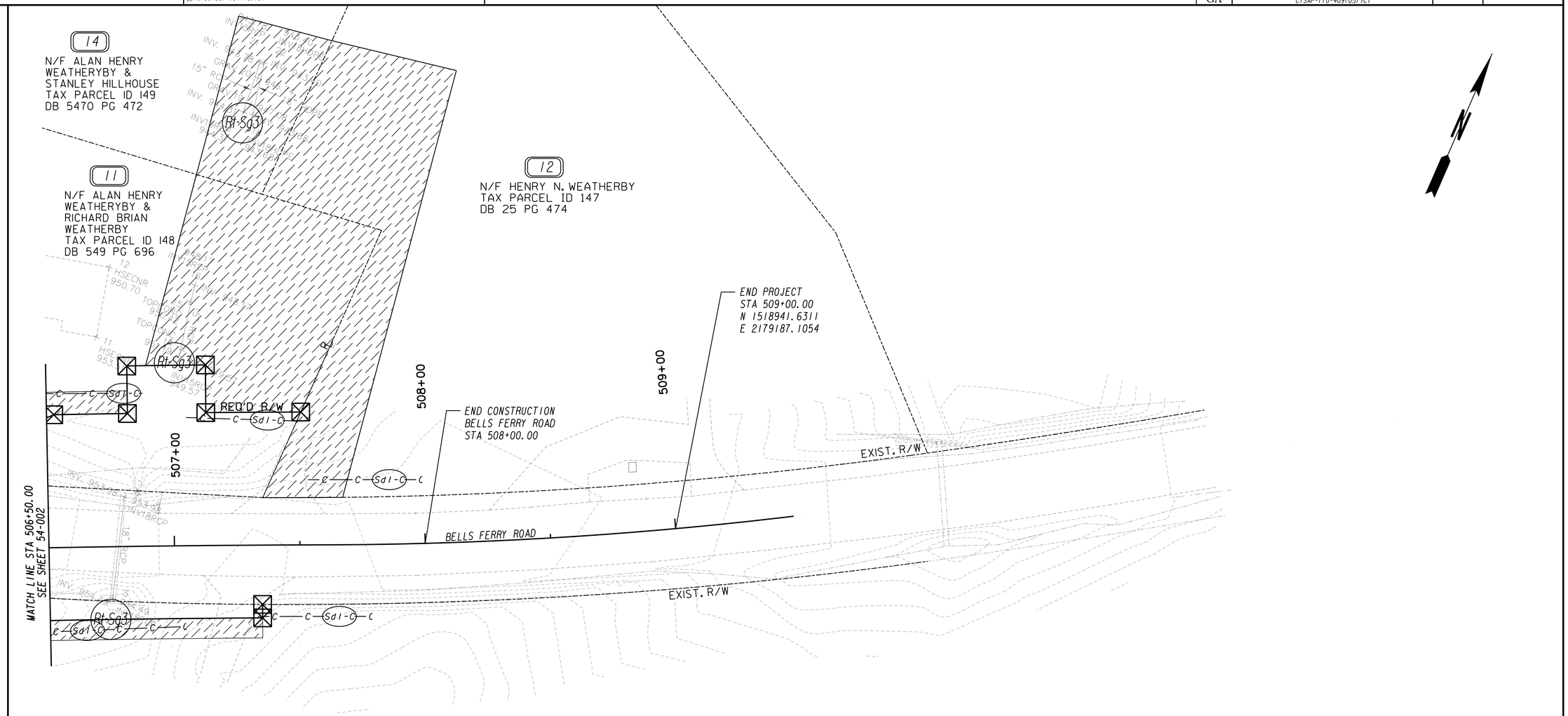
OFFICE:

BMP LOCATION DETAILS
STAGE 1A

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 54-002

01/26/2015 GPLNOLD



PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

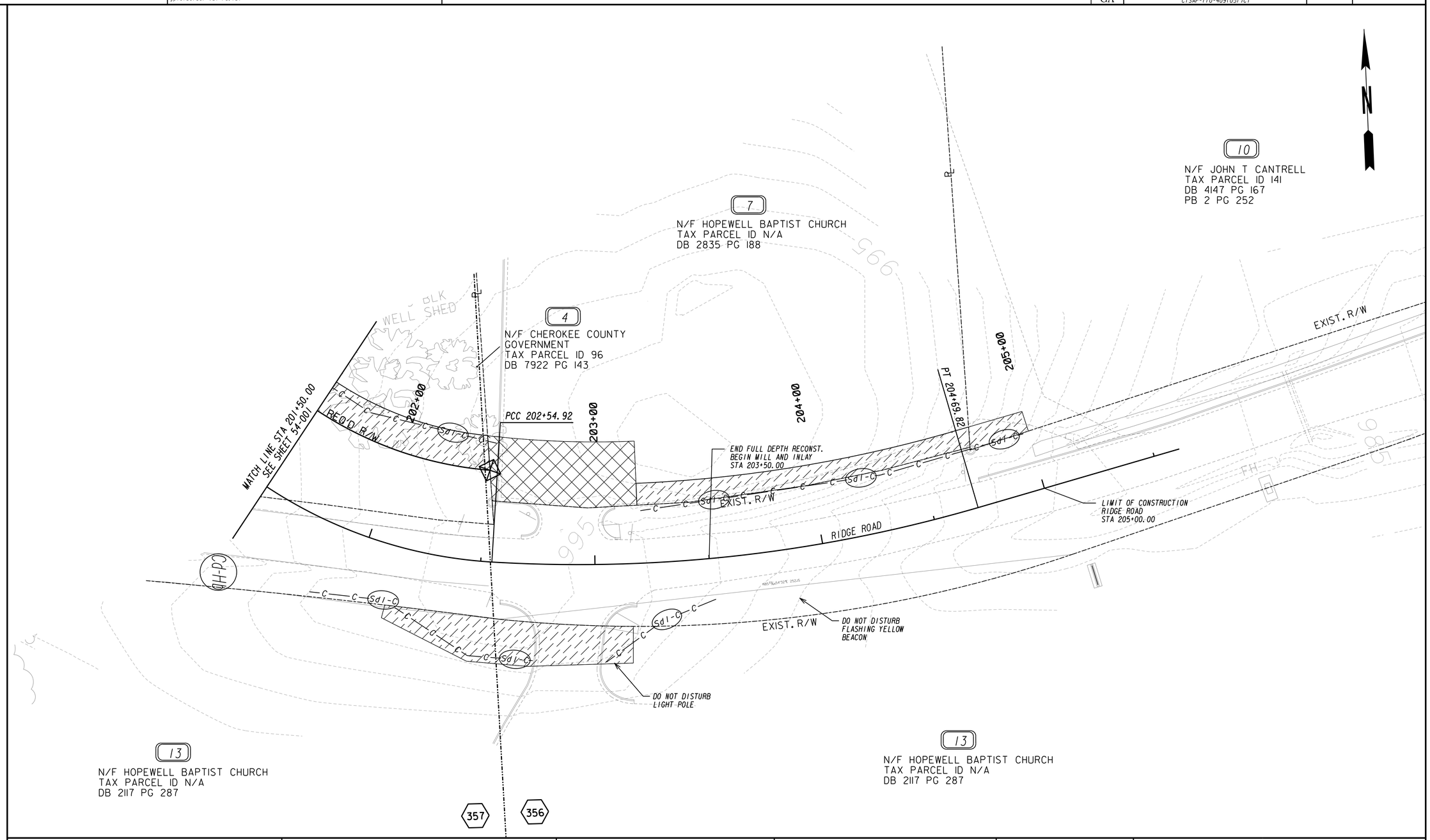
OFFICE:

BMP LOCATION DETAILS
STAGE 1A

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 54-003

01/26/2015 GPLNOLD



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	
BEGIN LIMIT OF ACCESS.....BLA	
END LIMIT OF ACCESS.....ELA	
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

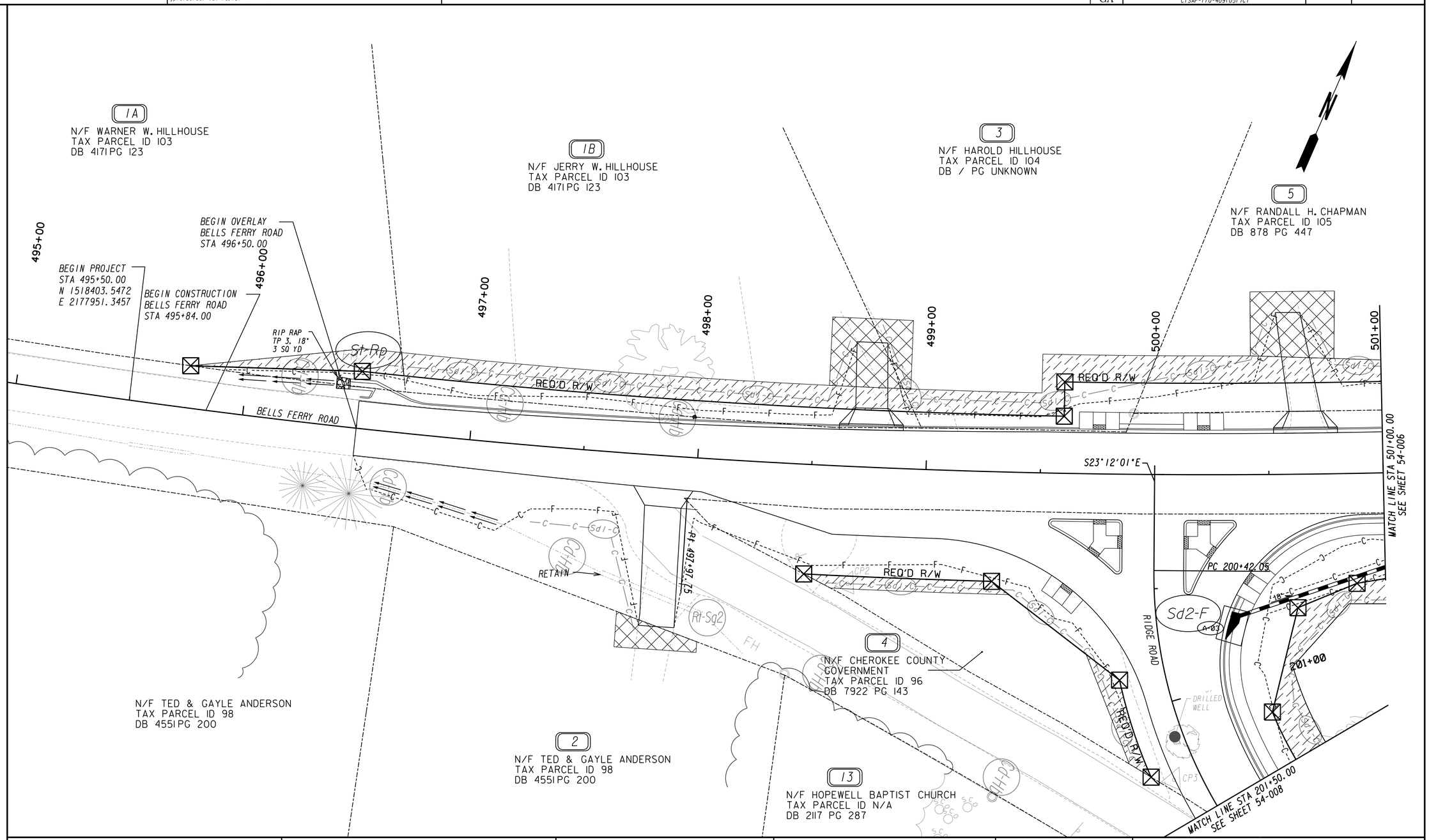
OFFICE:

BMP LOCATION DETAILS
STAGE 1A

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 54-004

01/26/2015 GPLNOLD



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

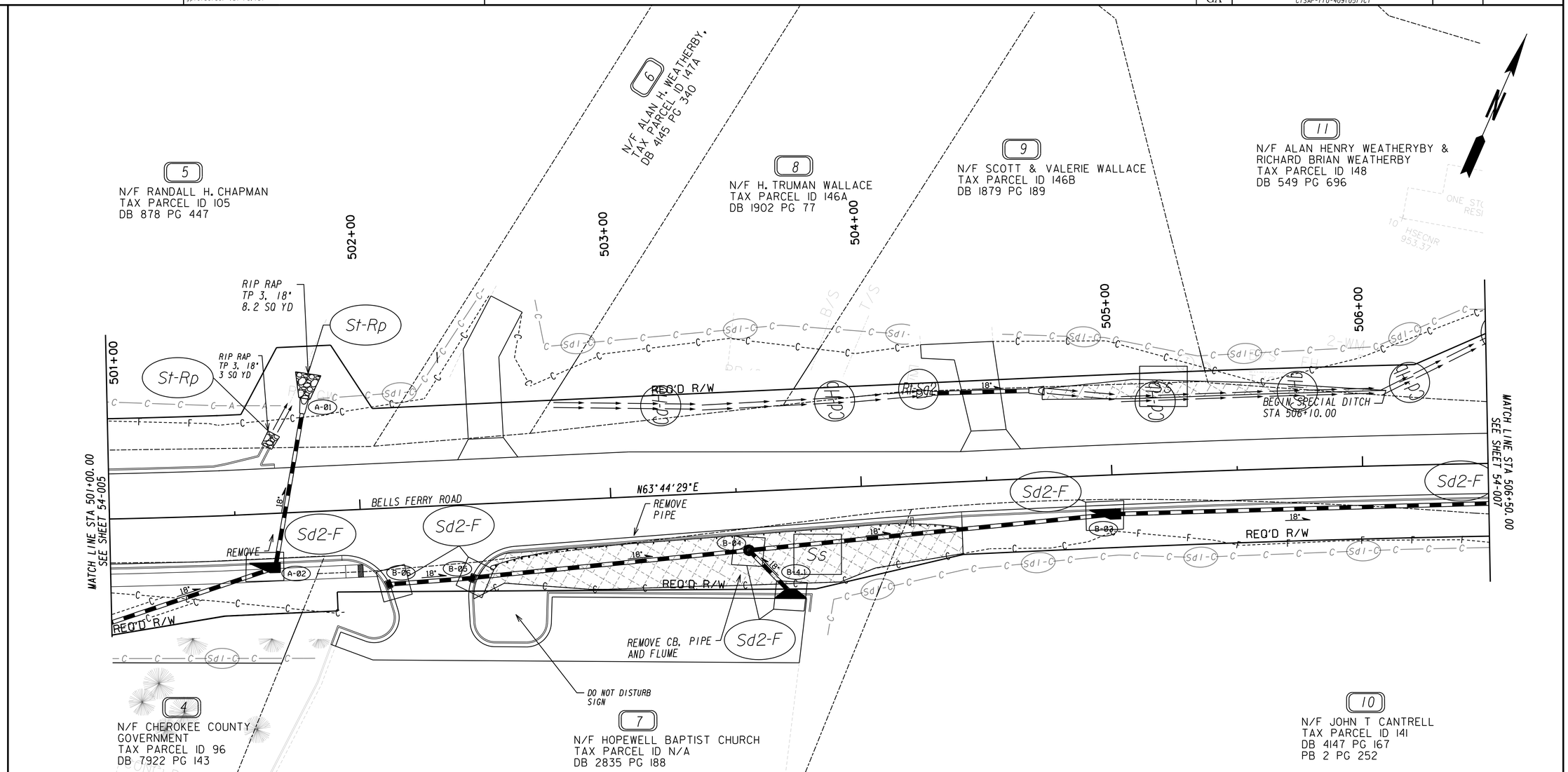
OFFICE:

BMP LOCATION DETAILS
STAGE 1

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 54-005

01/26/2015 GPLNOLD



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

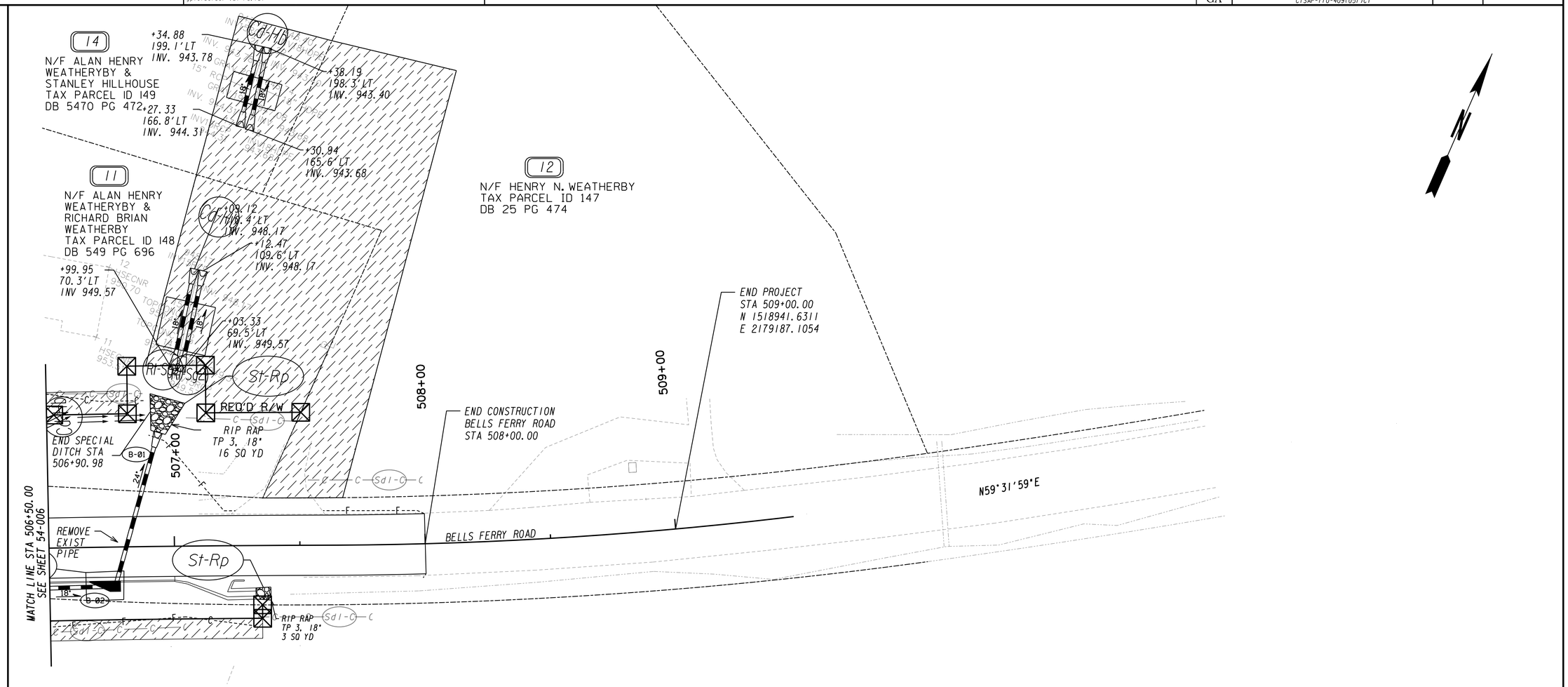
OFFICE:

BMP LOCATION DETAILS
STAGE I

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 54-006

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CTSAP-770-4091057(C)		



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

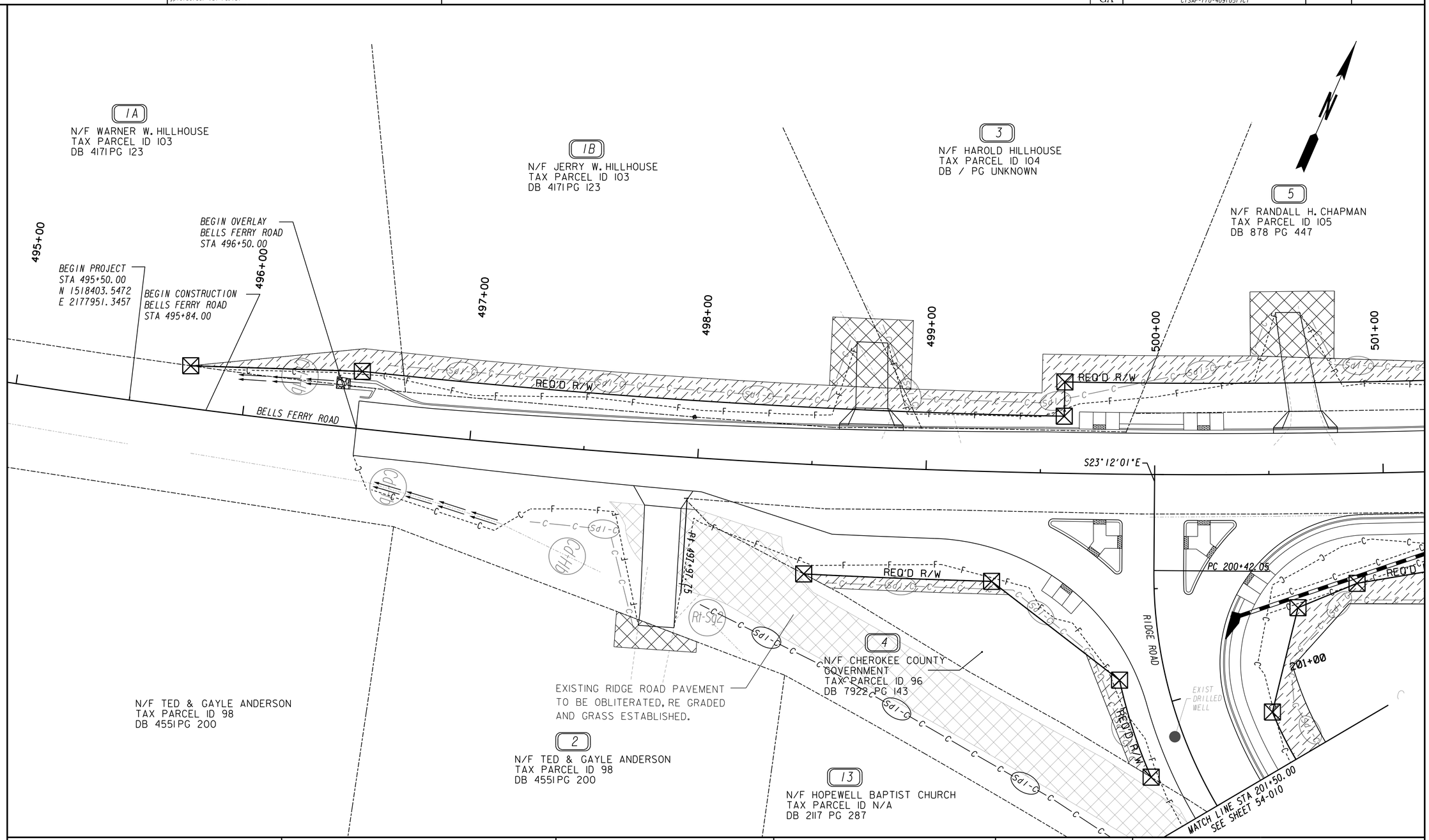
CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

BMP LOCATION DETAILS
STAGE I
BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 54-007

01/26/2015 GPLNOLD



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

BEGIN LIMIT OF ACCESS	BLA
END LIMIT OF ACCESS	ELA
LIMIT OF ACCESS	
REQ'D R/W & LIMIT OF ACCESS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

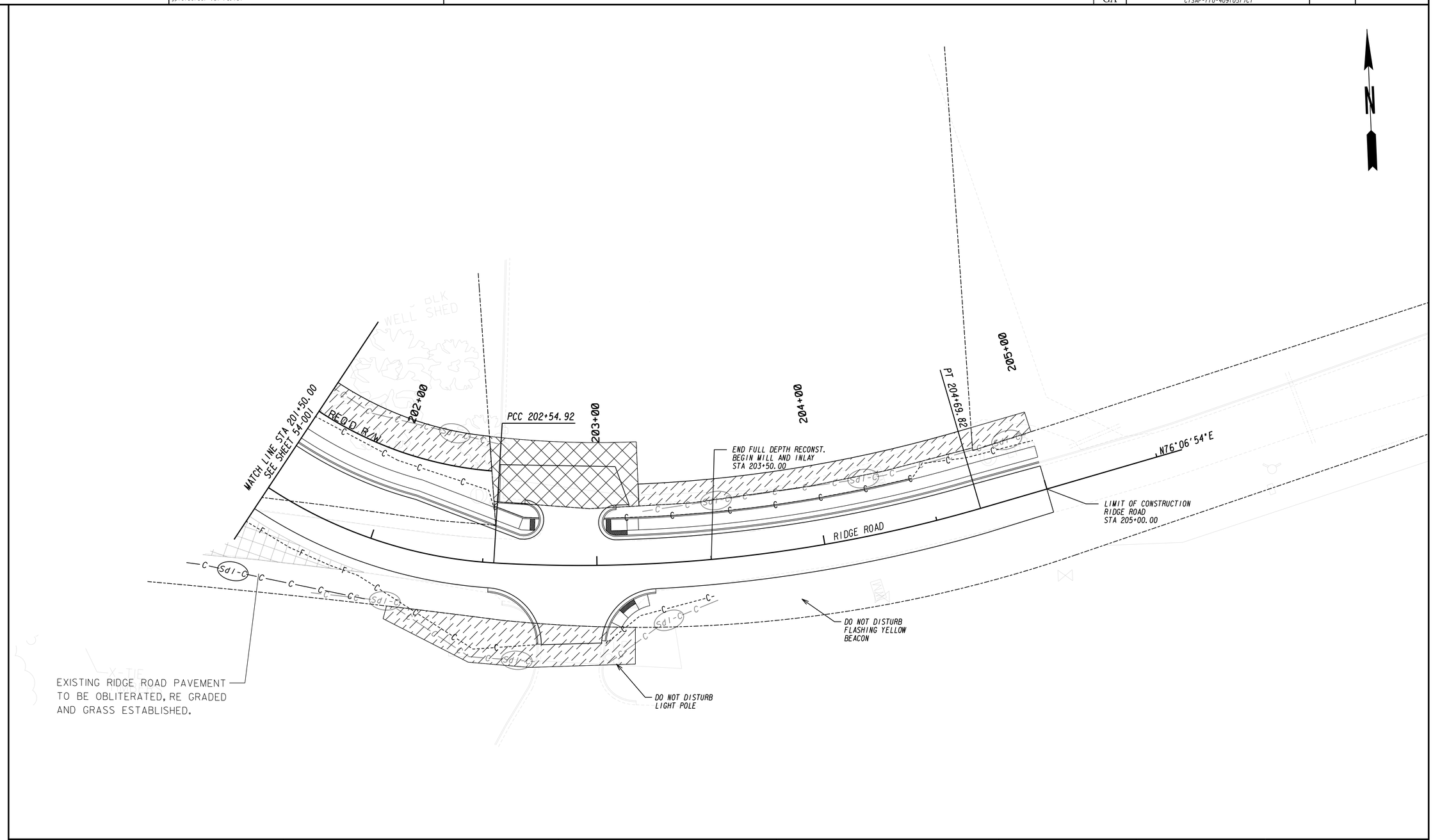
OFFICE:

BMP LOCATION DETAILS
STAGE 2

BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 54-008

01/26/2015 GPLNOLD



PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS
ORANGE BARRIER FENCE
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 20 40 80

REVISION DATES

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

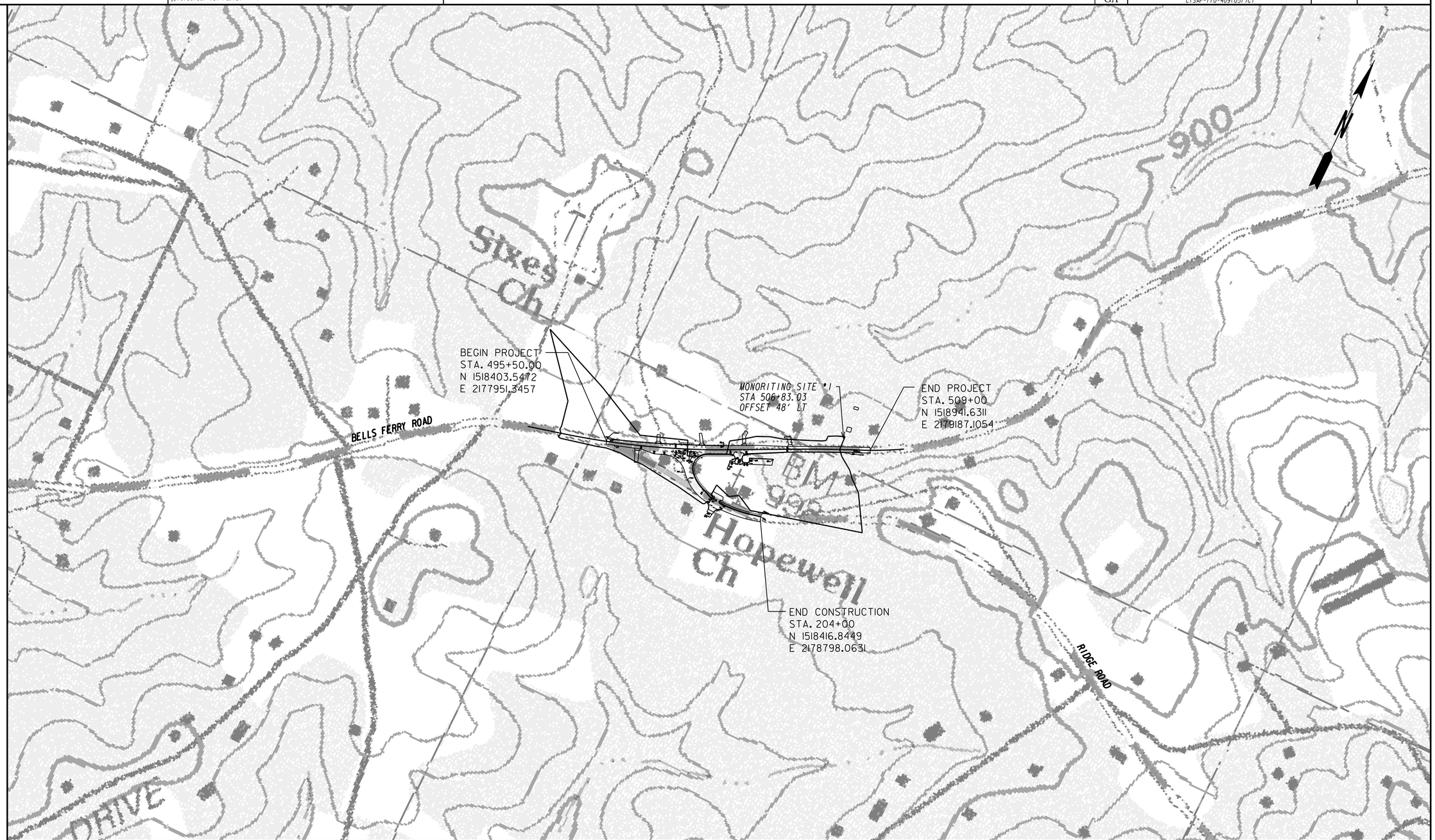
OFFICE:

BMP LOCATION DETAILS
STAGE 2
BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 54-009

01/26/2015 GPLNOLD

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CTSAP-770-4091057(C)		



AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

SCALE IN FEET
0 200 400 800

REVISION DATES		

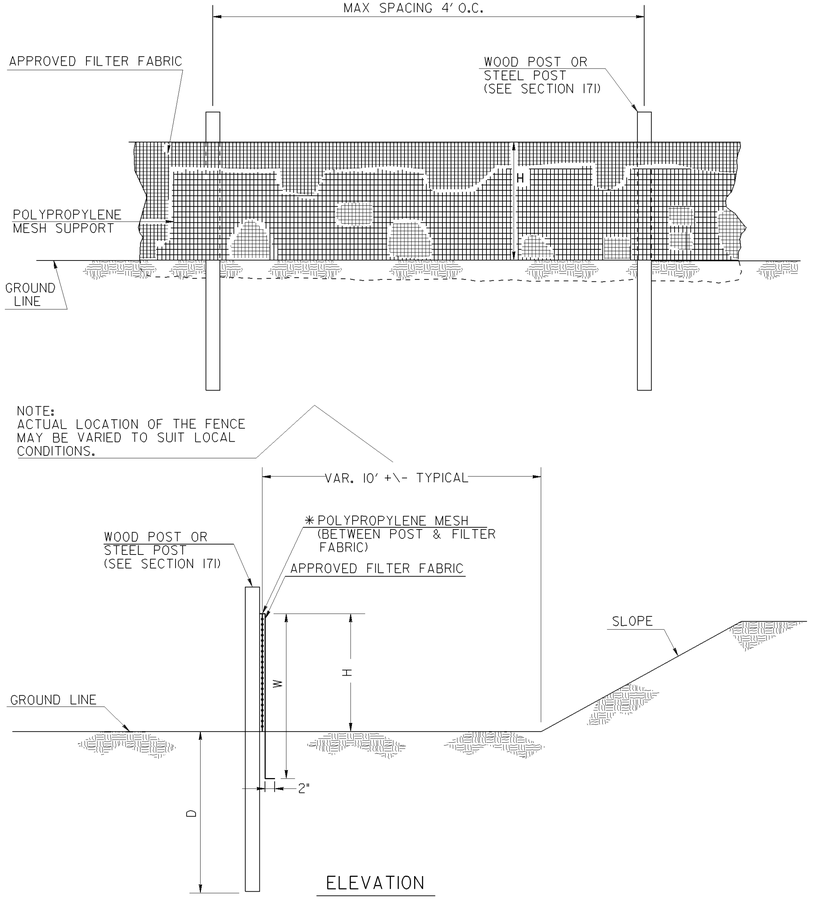
CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

OFFICE:

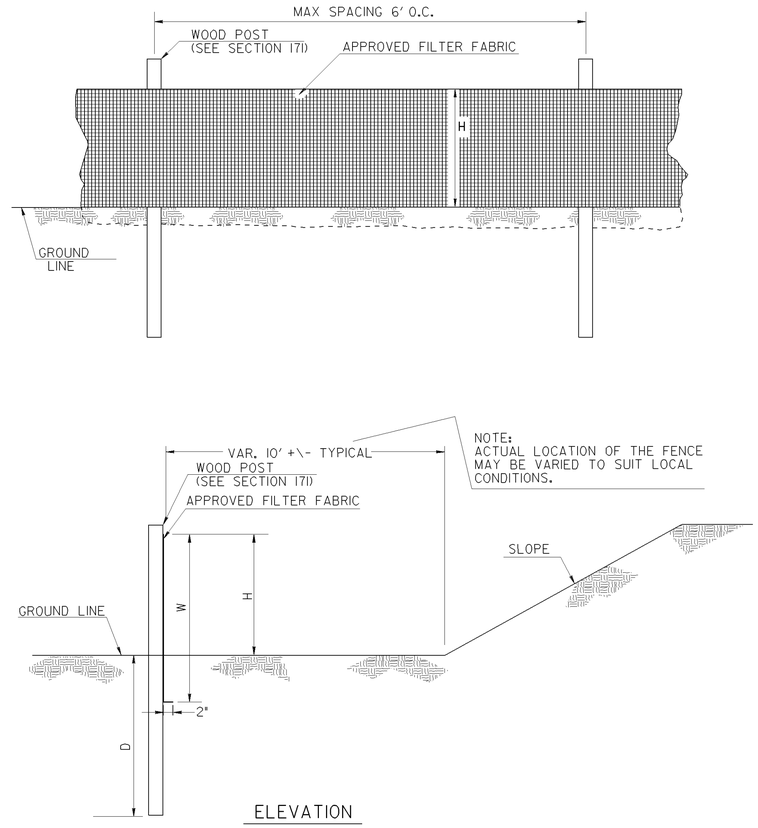
WATERSHED MAP
SITE MONITORING PLAN
BELLS FERRY AT RIDGE ROAD
INTERSECTION IMPROVEMENT

DRAWING No. 55-001

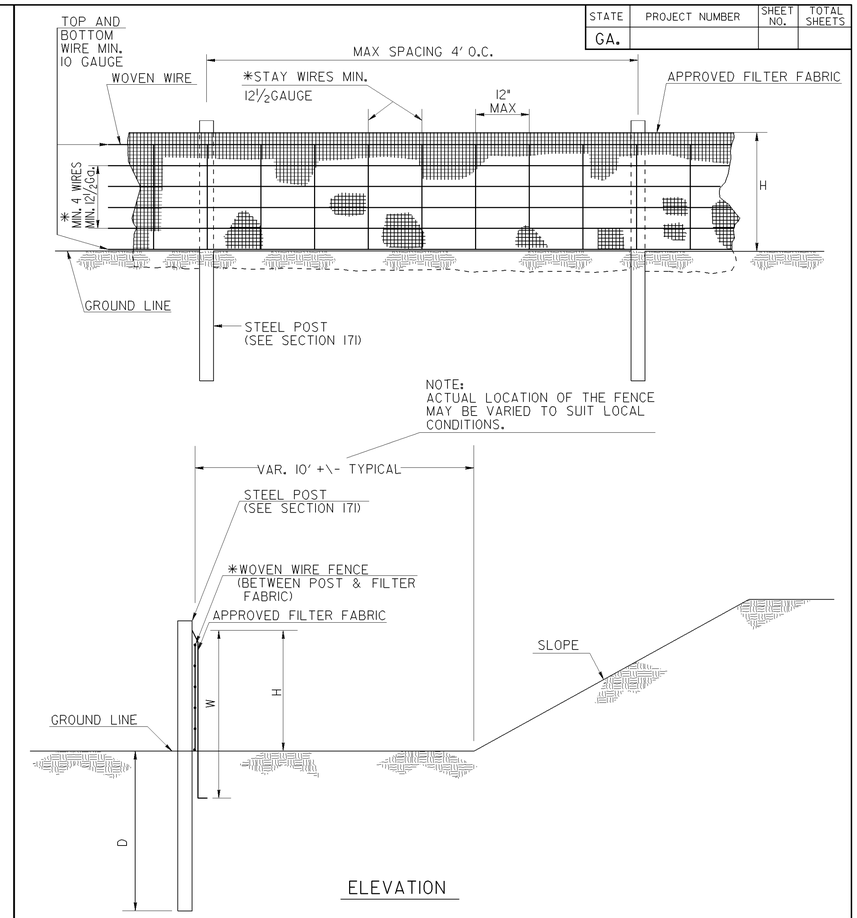
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



SINGLE ROW TYPE C SILT FENCE WITH POLYPROPYLENE MESH SUPPORT



SINGLE ROW TYPE A SILT FENCE



SINGLE ROW TYPE C SILT FENCE WITH WOVEN WIRE SUPPORT

FENCE TYPE	POST LENGTH	H	D	W	TYPICAL USES
TYPE "A"	4 FT.	2'-4"	1'-6"	3'-0"	
TYPE "C"	4 FT.	2'-4"	1'-6"	3'-0"	AT BRIDGE END ROLLS. DOUBLE ROW ALONG STREAMS, WETLANDS AND ENVIRONMENTALLY SENSITIVE AREAS FOR USE OF THIS MATERIAL IN FABRIC CHECKDAMS SEE D-24D.

NOTES:

1. WIRE STAPLES SHALL BE AT LEAST 17 GAUGE, WITH LEGS AT LEAST ½ INCHES LONG AND A CROWN AT LEAST ¾INCHES WIDE. NAILS SHALL BE AT LEAST 14 GAUGE, 1INCH LONG , WITH BUTTON HEADS AT LEAST ¾ INCHES WIDE.
2. NAILS OR STAPLES SHALL BE EVENLY PLACED WITH AT LEAST 5 PER POST FOR TYPE A FENCE AND 4 PER POST FOR TYPE C FENCE.
3. THE VERTICAL WIRES FOR THE WOVEN WIRE SUPPORT FENCE SHALL HAVE A MAXIMUM SPACING OF 12 INCHES. THE TOP AND BOTTOM WIRES SHALL BE AT LEAST 10 GAUGE AND ALL OTHER WIRES SHALL BE AT LEAST 12½ GAUGE.
4. TEMPORARY SILT FENCE INSTALLATION IS DIFFERENT THAN THE SILT RETENTION BARRIER INSTALLATION.
5. SEE SECTION 171 FOR SILT FENCE SPECIFICATIONS.
6. SEE SECTION 894 FOR FENCING SPECIFICATIONS.
7. SEE QPL-36 FOR A LIST APPROVED SILT FENCE FABRIC.
8. TEMPORARY SILT FENCE SHALL NOT BE PLACED WITHIN STATE WATERS UNLESS PERMITTED.

DATE	REVISION	BY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAILS

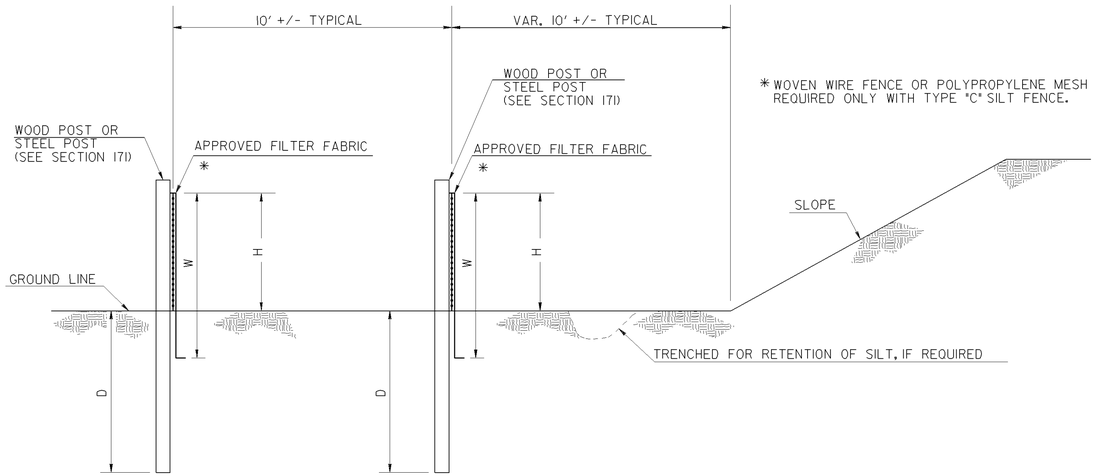
TEMPORARY SILT FENCE

NO SCALE

REV. AND REDRAWN JAN. 2011

NUMBER
D-24A
(SHEET 1 OF 4)

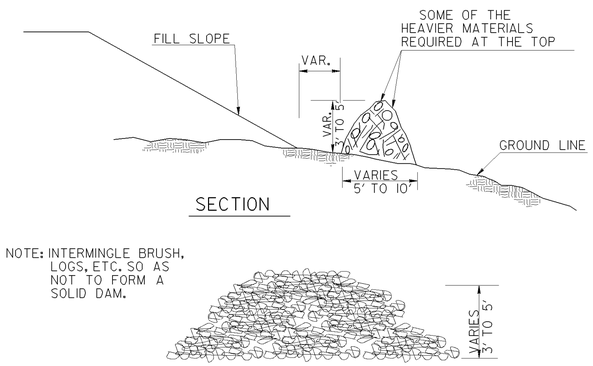
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS



ELEVATION

DOUBLE ROW SILT FENCE

FENCE TYPE	POST LENGTH	H	D	W	TYPICAL USES
TYPE "A"	4 FT.	2'-4"	1'-6"	3'-0"	
TYPE "C"	4 FT.	2'-4"	1'-6"	3'-0"	AT BRIDGE END ROLLS, DOUBLE ROW ALONG STREAMS, WETLANDS AND ENVIRONMENTALLY SENSITIVE AREAS FOR USE OF THIS MATERIAL IN FABRIC CHECKDAMS SEE D-24D.



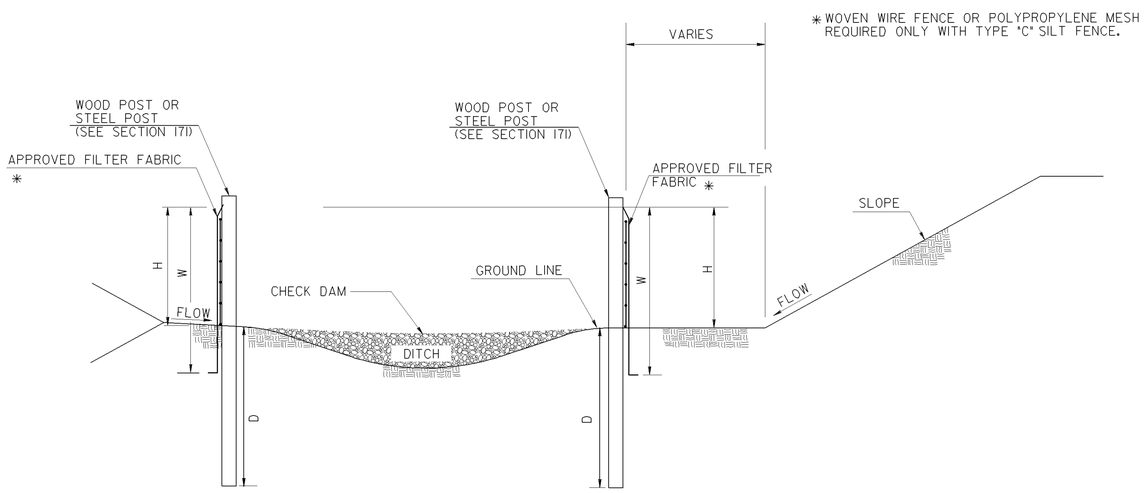
SECTION

FRONT VIEW

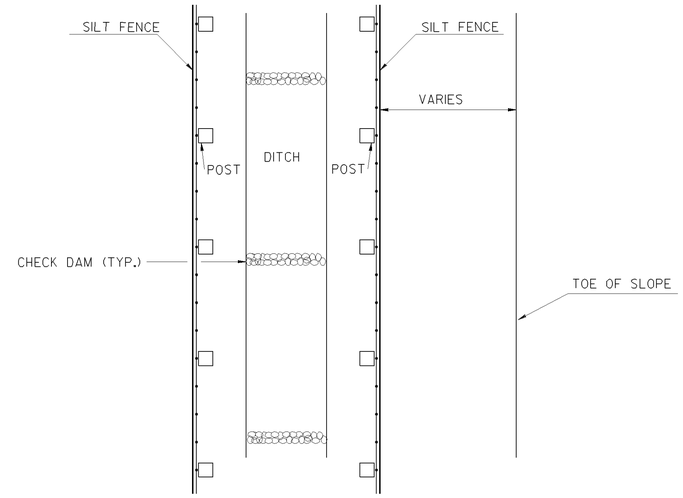
NOTE: BRUSH BARRIER(S) WILL BE INCLUDED IN PAYMENT FOR CLEARING & GRUBBING.

BRUSH BARRIER DETAILS

(FOR USE IN RURAL AREAS)



ELEVATION



PLAN

NOTE: TEMPORARY SILT FENCE SHALL NOT BE PLACED WITHIN STATE WATERS.

SILT FENCE
PERIMETER INSTALLATION ALONG DITCH SECTION

FENCE TYPE	POST LENGTH	H	D	W	TYPICAL USES
TYPE "A"	4 FT.	2'-4"	1'-6"	3'-0"	
TYPE "C"	4 FT.	2'-4"	1'-6"	3'-0"	AT BRIDGE END ROLLS, DOUBLE ROW ALONG STREAMS, WETLANDS AND ENVIRONMENTALLY SENSITIVE AREAS FOR USE OF THIS MATERIAL IN FABRIC CHECKDAMS SEE D-24D.

DATE	REVISION	BY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAILS

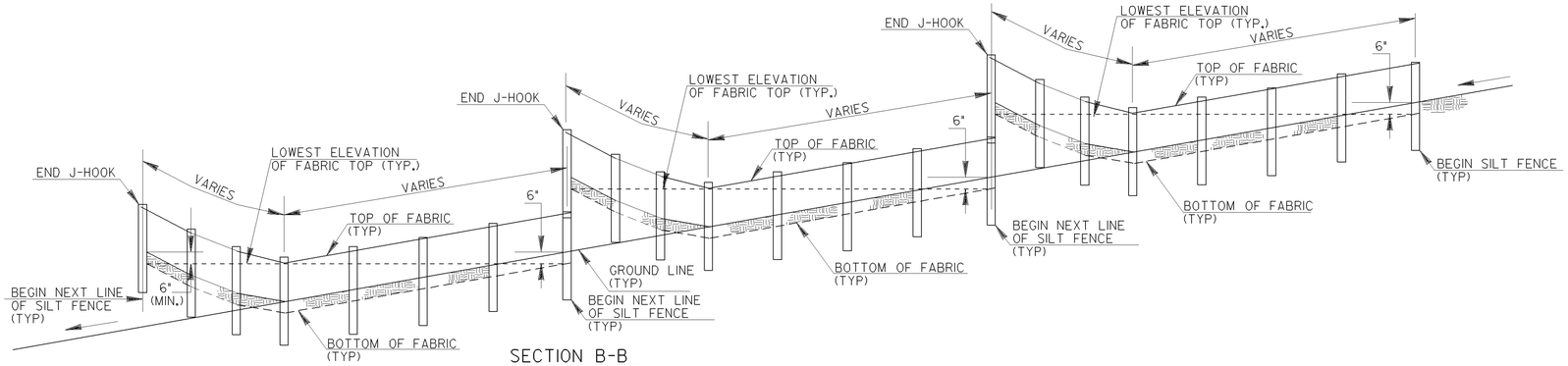
TEMPORARY SILT FENCE

BERM DITCH, INSTALLATION, BRUSH BARRIER

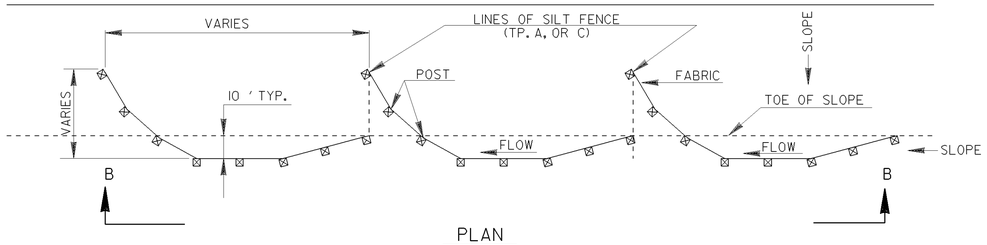
NO SCALE — REV. AND REDRAWN JAN. 2011

NUMBER D-24B (SHEET 2 OF 4)

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

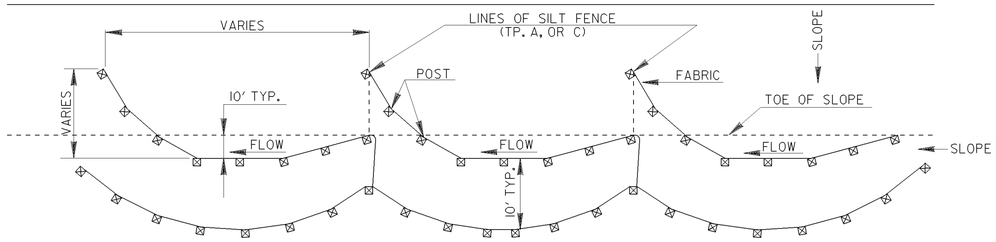


SECTION B-B



PLAN

SINGLE ROW SILT FENCE



PLAN

DOUBLE ROW SILT FENCE

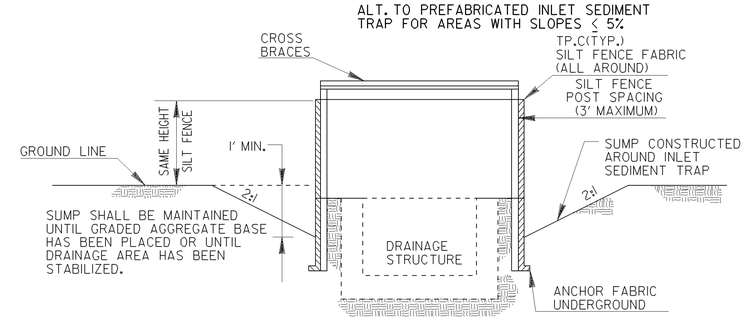
TYPICAL J HOOK SPACING		
SLOPE PERCENT	TYPE OF SILT FENCE	MINIMUM SPACING (FEET)
1% TO 2%	TYPE A	100' ±
2% TO 3%	TYPE A	50' ±
3% TO 4%	TYPE C	50' ±
4% TO 5%	TYPE C	25' ±

NOTE:

1. IF THE GRADE IS BETWEEN 0 TO 1 PERCENT, THE SILT FENCE SHALL BE PLACED ACROSS THE DITCH.
2. TEMPORARY SILT FENCE SHALL NOT BE PLACED WITHIN STATE WATERS.

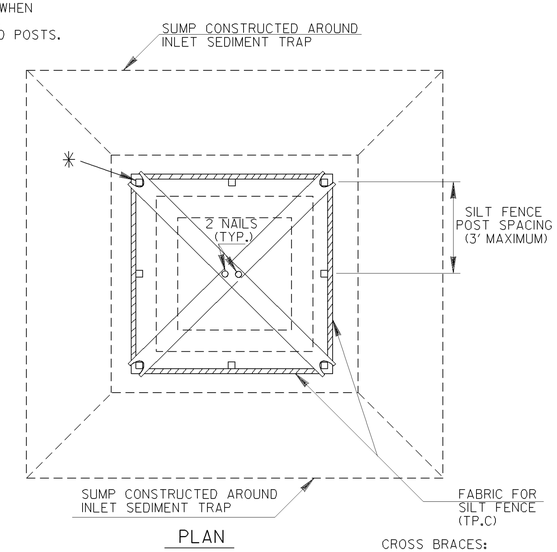
TYPICAL LOCATION AROUND DROP INLETS

ALT. TO PREFABRICATED INLET SEDIMENT TRAP FOR AREAS WITH SLOPES ≤ 5%



ELEVATION

✳ CROSS BRACING REQUIRED WHEN USING "ALTERNATE" TYPE C PRODUCTS WHICH USE WOOD POSTS.



PLAN

CROSS BRACES:

TWO - 2 X 4's WITH ENDS TO FIT POST, PROVIDING STURDY SUPPORT, OR AN APPROVED ALTERNATE

NOTE:
PAYMENT AS INLET SEDIMENT TRAP PER EACH.

NOTE:
SEE SEPARATE SHEET ENTITLED "TEMPORARY SILT FENCE DETAILS" FOR SILT FENCE ERECTION DETAILS.

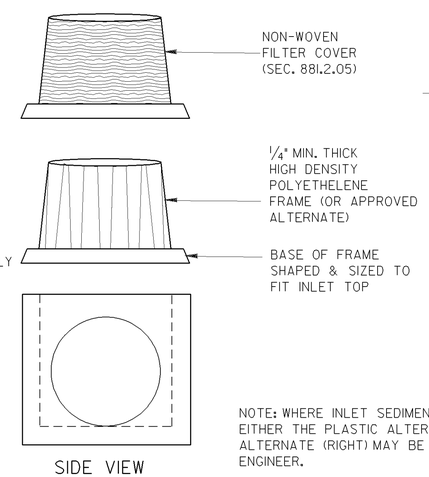
NOTE:
THE DRAINAGE AREA ENTERING THE INLET SEDIMENT TRAP SHALL BE NO GREATER THAN ONE ACRE.

TYPICAL CONSTRUCTION SEQUENCE FOR INLET SEDIMENT TRAP ALTERNATE

1. EXCAVATE APPROXIMATELY 4" TO 6" BELOW THE TOP OF THE INLET STRUCTURE.
2. PLACE THE FRAME ONTO THE INLET STRUCTURE, ENSURING PROPER SEATING OF FRAME TO STRUCTURE.
3. SLIDE THE FILTER OVER THE FRAME.
4. FILL THE FILTER POCKETS WITH SOIL, #57 GRAVEL OR EQUIVALENT. THE FILTER POCKETS SHOULD BE COMPLETELY FILLED TO ENSURE A GOOD SEAL BETWEEN THE GROUND AND INLET STRUCTURE.
5. BACK FILL AROUND THE FRAME AND FILTER ASSEMBLY IS NOT REQUIRED TO COMPLETE INSTALLATION; HOWEVER, BACK FILLING MAY BE NECESSARY TO COMPLETE EXCAVATION REQUIREMENTS FOR THE SITE.

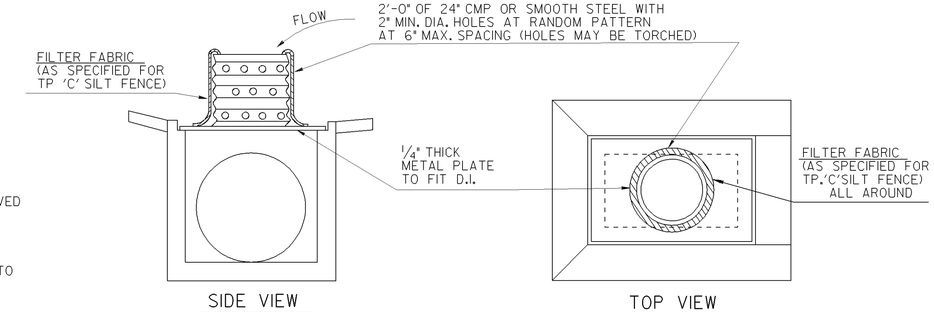
NOTE:
INLET SEDIMENT TRAP ALTERNATE SHALL BE AS APPROVED BY THE GA. D.O.T. OFFICE OF MATERIALS & RESEARCH. DETAILS & SPECIFICATIONS NOT SHOWN ARE PER THE MANUFACTURER'S REQUIREMENTS.

(PLASTIC ALTERNATE)



SIDE VIEW

(METAL ALTERNATE)



SIDE VIEW

TOP VIEW

NOTE: WHERE INLET SEDIMENT TRAPS ARE SPECIFIED, EITHER THE PLASTIC ALTERNATE (LEFT) OR THE METAL ALTERNATE (RIGHT) MAY BE USED AS APPROVED BY THE ENGINEER.

NOTE:
INLET SEDIMENT TRAP AND INLET TO BE BUILT CONTINUOUS WITH PIPE

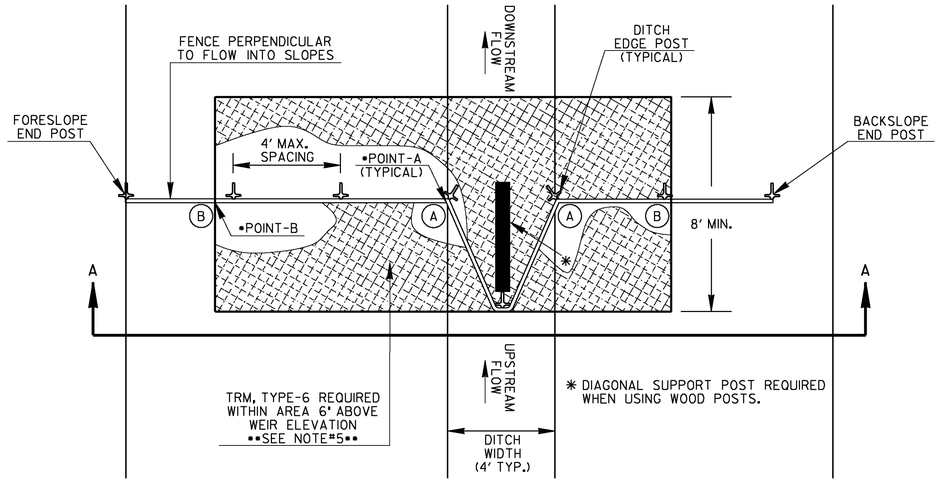
NOTE:
PAYMENT AS INLET SEDIMENT TRAP PER EACH

NOTE: SEE SEPARATE DETAILS FOR SILT FENCE AROUND DROP INLETS.

INLET SEDIMENT TRAP - FOR DROP INLETS

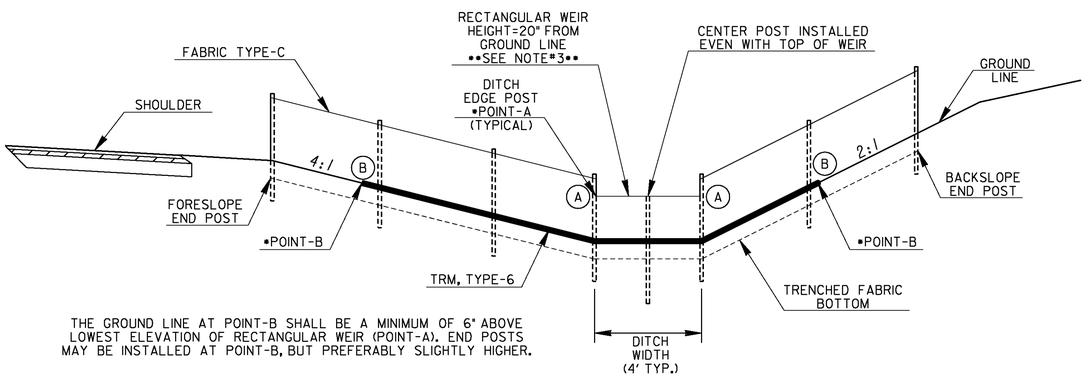
DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
REVISION	CONSTRUCTION DETAILS TEMPORARY SILT FENCE J-HOOK, INLET SEDIMENT TRAPS
	NO SCALE — JANUARY 2011
BY	NUMBER D-24C (SHEET 3 OF 4)

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



PLAN VIEW

TYPICAL FABRIC CHECK DAM SPACING	
GRADE OF DITCH	MINIMUM SPACING (FEET)
LESS THAN 1%	100' ±
1% TO 3%	75' ±
3% TO 6%	50' ±
6% TO 8%	25' ±



THE GROUND LINE AT POINT-B SHALL BE A MINIMUM OF 6" ABOVE LOWEST ELEVATION OF RECTANGULAR WEIR (POINT-A). END POSTS MAY BE INSTALLED AT POINT-B, BUT PREFERABLY SLIGHTLY HIGHER.

SECTION A-A

NOTE: CROSS-SECTION SHOWN IS AN EXAMPLE OF A TYPICAL CUT SECTION WITH A 4-FT FLAT BOTTOM DITCH. ACTUAL FABRIC CHECK DAMS SHALL BE INSTALLED SIMILARLY ACCORDING TO ROADWAY CROSS-SECTIONS.

NOTES:

1. FABRIC CHECK DAMS MAY BE USED FOR FLOWS UP TO 2.0-CFS. A ROCK FILTER DAM SHALL BE USED AT THE DOWNSTREAM POINT FOR FLOWS GREATER THAN 2.0-CFS.

2. FABRIC CHECK DAMS SHALL NOT BE PLACED WITHIN FLOWING STATE WATERS.

3. FABRIC CHECK DAMS MAY BE USED IN DITCHES WITH DEPTHS AT LEAST 26-IN. IF DITCH DEPTH IS LESS THAN 26-IN, THE WEIR INVERT MAY BE LOWERED SLIGHTLY IN THE FIELD TO PROVIDE 6-IN MINIMUM FREEBOARD ABOVE POINT-A OR TO MATCH SPACING OF WIRE SUPPORT. THE WEIR HEIGHT SHALL BE NO LESS THAN 15-IN. THE DESIGNER SHALL CONSIDER OTHER APPROPRIATE BMPs FOR CONCENTRATED FLOW FOR DITCH DEPTHS LESS THAN 26-IN.

4. THE FOLLOWING STEPS ARE RECOMMENDED FOR PROPER FABRIC CHECK DAM INSTALLATION:

   A) DETERMINE DITCH CENTERLINE AND USE A LINE LEVEL OR OTHER MEANS TO FIND POINT-B WITHIN THE DITCH FORESLOPE AND BACKSLOPE TO PROVIDE 6-IN MINIMUM FREEBOARD ABOVE POINT-A.

   B) CREATE TRENCH 6-IN BELOW DITCH GRADE TO FIT LAYOUT FROM STEP-A WITH MINIMAL SOIL DISTURBANCE.

   C) LAYOUT TURF REINFORCEMENT MATTING (TRM), TYPE-6 TO PROVIDE PROTECTION A MINIMUM LENGTH OF 8-FT DOWNSTREAM OF CENTER POST TO FUNCTION AS A SPLASH PAD TO PREVENT SCOURING. ADDITIONAL NECESSARY TRM SHALL BE OVERLAPPED 3-FT. THE WIDTH SHALL BE THE DISTANCE BETWEEN POINT-B ON THE DITCH FORESLOPE AND POINT-B ON BACKSLOPE.

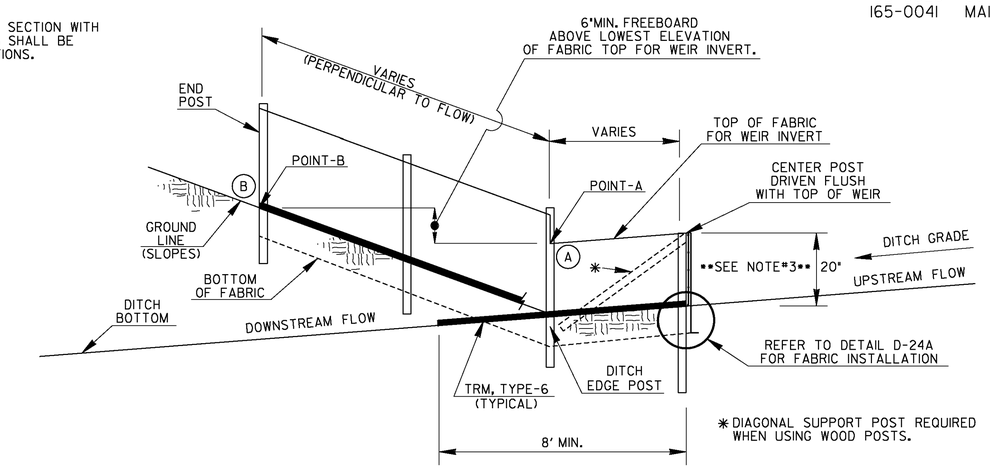
   D) INSTALL FENCE POSTS THROUGH TRM WITHIN TRENCH. CENTER POST AND POSTS WITHIN WEIR AREA SHALL BE INSTALLED FLUSH WITH WEIR. CUT TRM WITHIN TRENCH FOLLOWING CHECK DAM LAYOUT AND SAVE UPSTREAM PORTION OF TRM FOR FURTHER USE.

   E) PROPERLY INSTALL TYPE-C SILT FENCE. TRENCH BACKFILL SHALL BE COMPACTED WITH A HAND TAMPER, JUMPING JACK COMPACTOR, OR PLATE COMPACTOR TO PREVENT UNDERMINING.

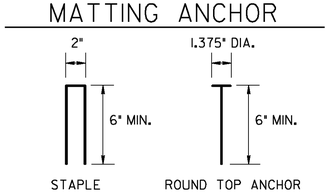
   F) INSTALL PREVIOUSLY CUT TRM FROM STEP-D UPSTREAM AGAINST CHECK DAM. INSTALLING UPSTREAM AND DOWNSTREAM TRM ACCORDING TO DETAIL D-35 FOR THIS TEMPORARY APPLICATION IS NOT REQUIRED. HOWEVER, TRM SHALL HAVE PROPER CONTACT WITH GROUND SURFACE, ANCHORED 6-IN MAXIMUM SPACING ALONG THE EDGES, AND ADEQUATELY WITHIN THE MATTED AREA.

5. TEMPORARY INSTALLATION OF TRM WITH FABRIC CHECK DAMS SHALL BE INCLUDED IN THE LINEAR COST OF THE CONSTRUCTION, REMOVAL, AND MAINTENANCE OF EACH FABRIC CHECK DAM. NO ADDITIONAL PAYMENT WILL BE MADE.

PAY ITEMS:
163-0528 CONSTRUCT & REMOVE FABRIC CHECK DAM, TYPE-C SILT FENCE (LF)
165-0041 MAINTENANCE OF CHECK DAMS - ALL TYPES (LF)



TURF REINFORCEMENT MATTING ANCHOR



NOTE: TURF REINFORCEMENT MATTING SHALL BE ANCHORED WITH 8-GAUGE METAL STAPLES OR ROUND TOP ANCHORS. ANCHORS SHALL BE LONG ENOUGH TO PROVIDE SUFFICIENT GROUND PENETRATION TO RESIST PULL OUT.

DATE	REVISION	BY

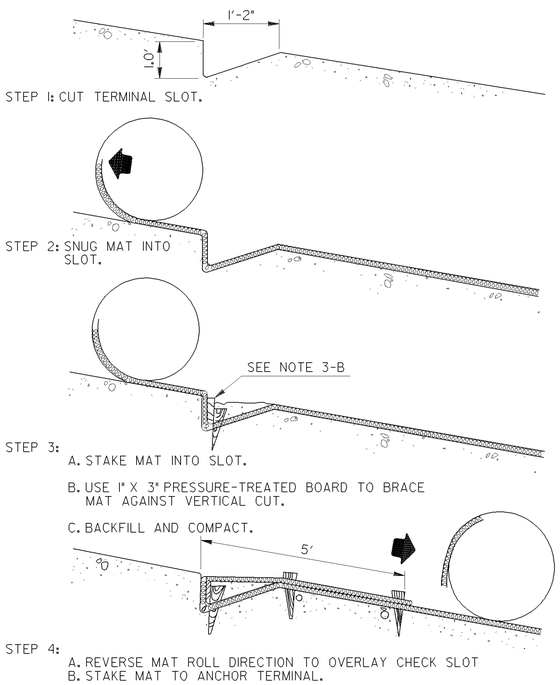
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAILS
TEMPORARY SILT FENCE
FABRIC CHECK DAM

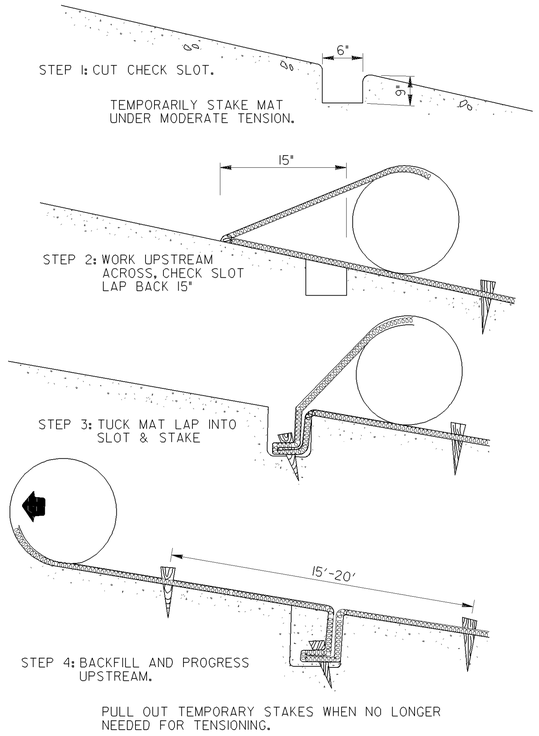
NO SCALE — REV. AND REDRAWN, JULY 2015

NUMBER D-24D (SHEET 4 OF 4)

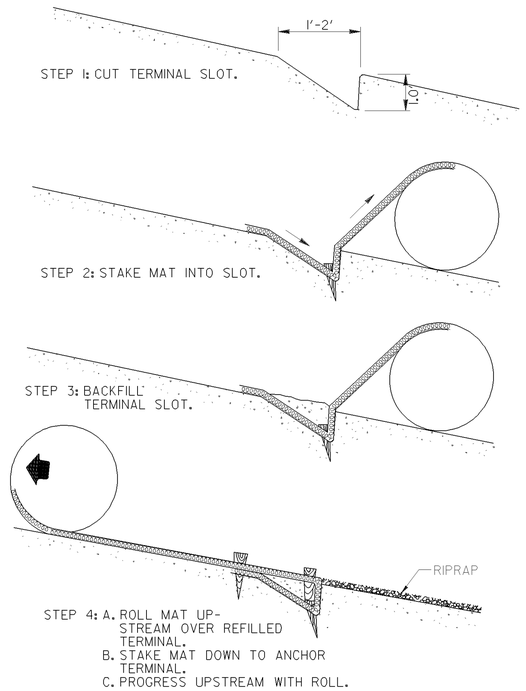
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



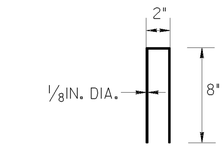
UPSTREAM TERMINAL



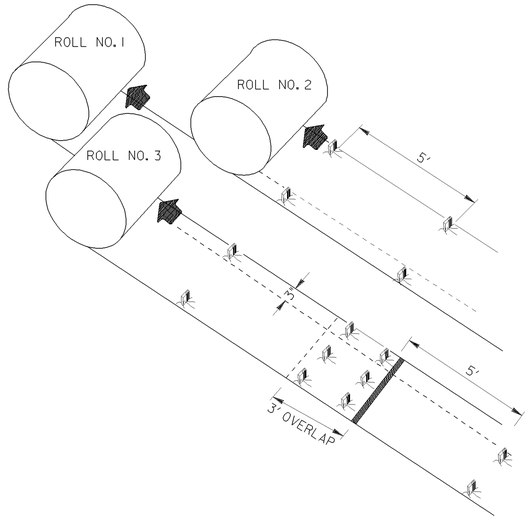
TRANSVERSE CHECK SLOT



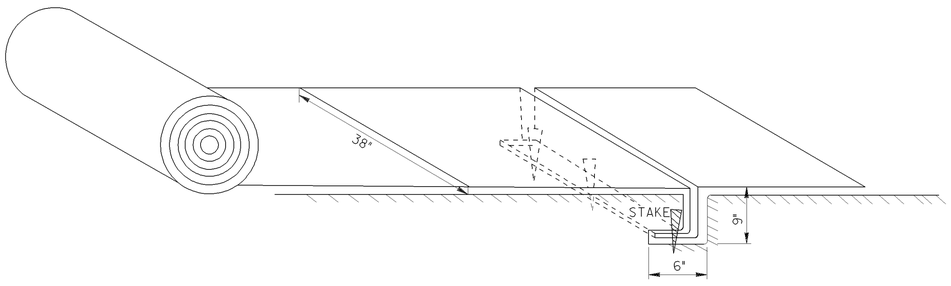
DOWNSTREAM TERMINAL



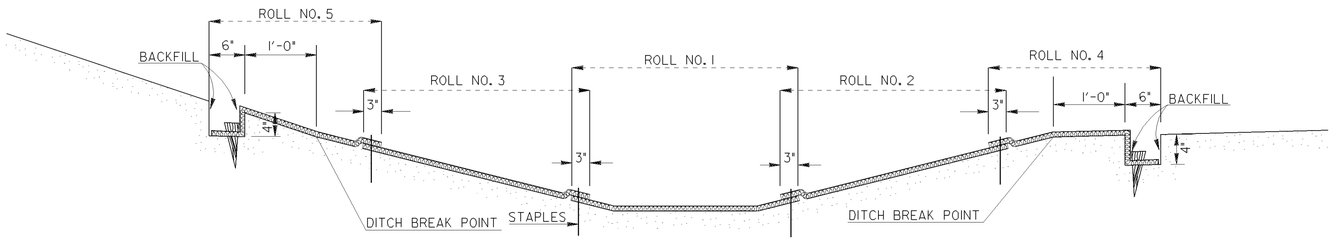
METAL MATTING - BLANKET STAPLE



SEQUENTIAL ROLL RUN OUT IN CHANNELS



PICTORAL VIEW OF TRANSVERSE SLOT



DITCH SECTION

NOTE: MAT TO BE PLACED ONE FEET ABOVE DITCH BREAK POINT OR ONE FOOT ABOVE THE 25 YEAR STORM.

GENERAL NOTES

1. INSTALLATION TO BE DONE AS PER MANUFACTURER'S RECOMMENDATIONS.
2. START AT DOWNSTREAM TERMINAL AND PROGRESS UPSTREAM.
3. FIRST ROLL IS CENTERED LONGITUDINALLY IN MID CHANNEL AND PINNED WITH TEMPORARY STAKES TO MAINTAIN ALIGNMENT.
4. SUBSEQUENT ROLLS FOLLOW IN STAGGERED SEQUENCE BEHIND FIRST ROLL. USE CENTER ROLL FOR ALIGNMENT TO CHANNEL CENTER.
5. WORK OUTWARDS FROM CHANNEL CENTER TO EDGE.
6. USE 3" OVERLAP AND STAKE AT 5' INTERVAL ALONG SEAMS.
7. USE 3' OVERLAPS AND SHINGLE DOWNSTREAM TO CONNECT LINING AT ROLL ENDS.
8. METAL STAPLES MAY BE USED IN LIEU OF WOODEN STAKES.

BY	REVISION	DATE
T.P.C.	REVISED SHEET LAYOUT & ADDED DITCH SECTION. ADDED METAL STAPLE.	1-19-11

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

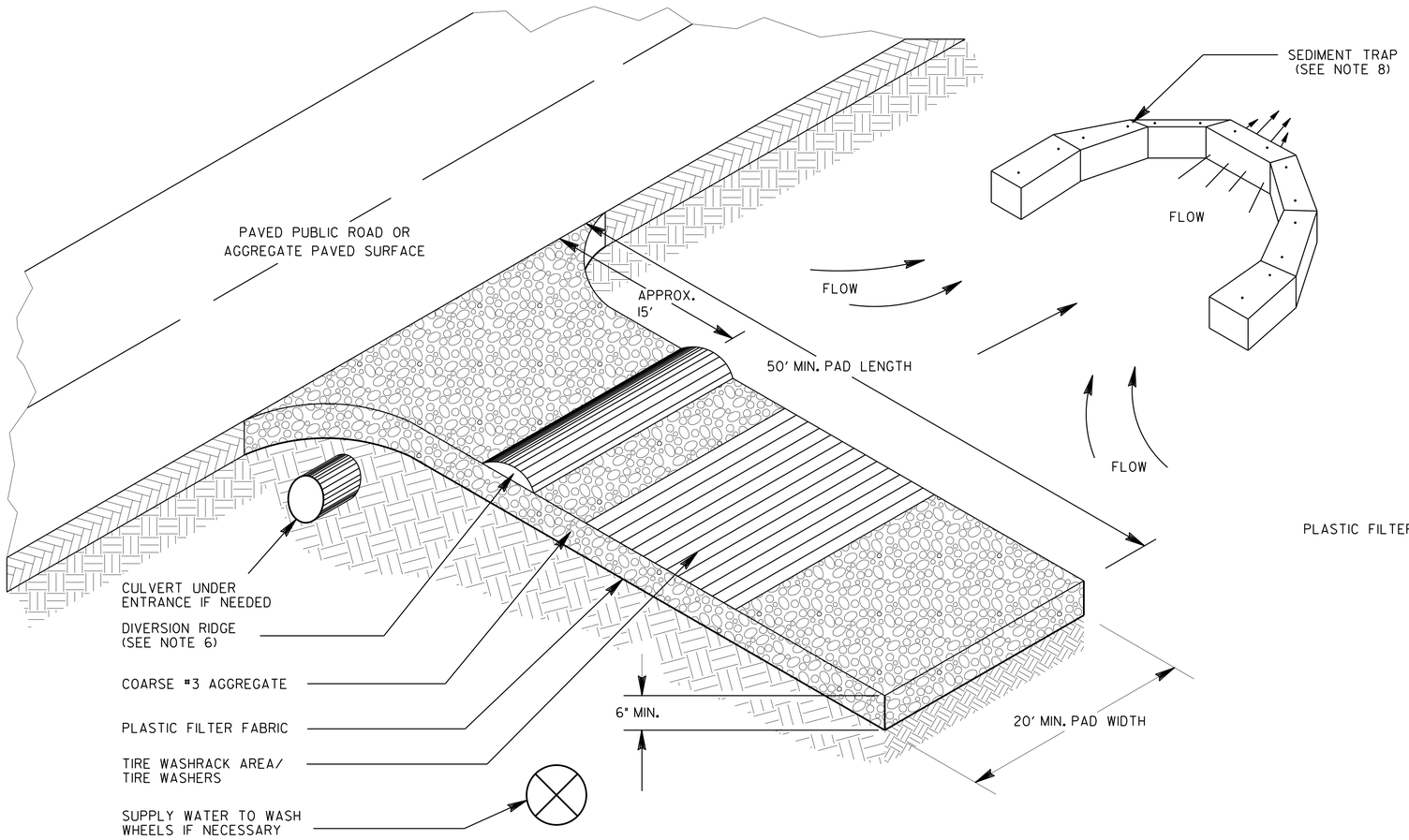
CONSTRUCTION DETAILS
PERMANENT SOIL REINFORCING MAT
(TURF REINFORCING MATS)
INSTALLATION ON DITCHES

NO SCALE — AUGUST 1988

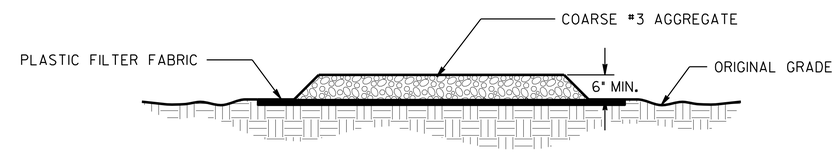
Designed ____
Drawn K.L.J.
Traced ____
Checked ____

NUMBER D-35

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



ENTRANCE ELEVATION



GENERAL NOTES:

1. AVOID LOCATING CONSTRUCTION EXITS ON STEEP SLOPES OR AT SHARP CURVES ON PUBLIC ROADS. CONSTRUCTION EXITS ARE NOT REQUIRED FOR DIRT PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE COARSE #3 AGGREGATE WITH 0.0% PASSING THE 1" U.S. STANDARD SIEVE.
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. GRAVEL PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED 6" TO 8" HIGH WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
8. IF THE ACTION OF THE VEHICLE TRAVELING OVER THE GRAVEL PAD DOES NOT SUFFICIENTLY REMOVE THE MUD, THE TIRES SHALL BE WASHED PRIOR TO ENTERING PUBLIC ROADS. THE WASHING SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
10. AGGREGATE SHALL BE KEPT LOOSE OR SCARIFIED WHEN AGGREGATE BECOMES CONSOLIDATED.
11. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR, AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL MUD AND DEBRIS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES OR SITE ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

PAY ITEM:

163-0300	CONSTRUCTION EXIT	(EA)
165-0101	MAINTENANCE OF CONSTRUCTION EXIT	(EA)

BY	REVISION	DATE
DLE	REV. GSWCC 2016 MANUAL	4-22-2016
TPC	REV. CONSTR. EXIT LABELS	01-19-11

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAILS

CONSTRUCTION EXIT

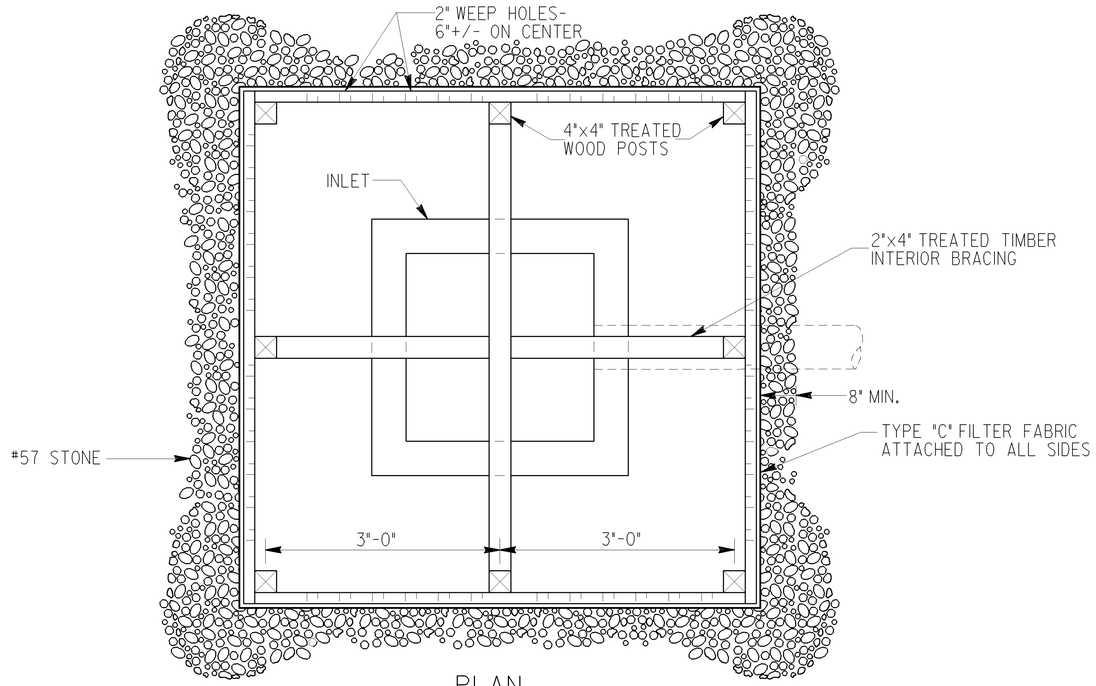
NO SCALE

FEBRUARY 2001

DESIGNED ____
DRAWN DLE
TRACED ____
CHECKED ____

NUMBER
D-41

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

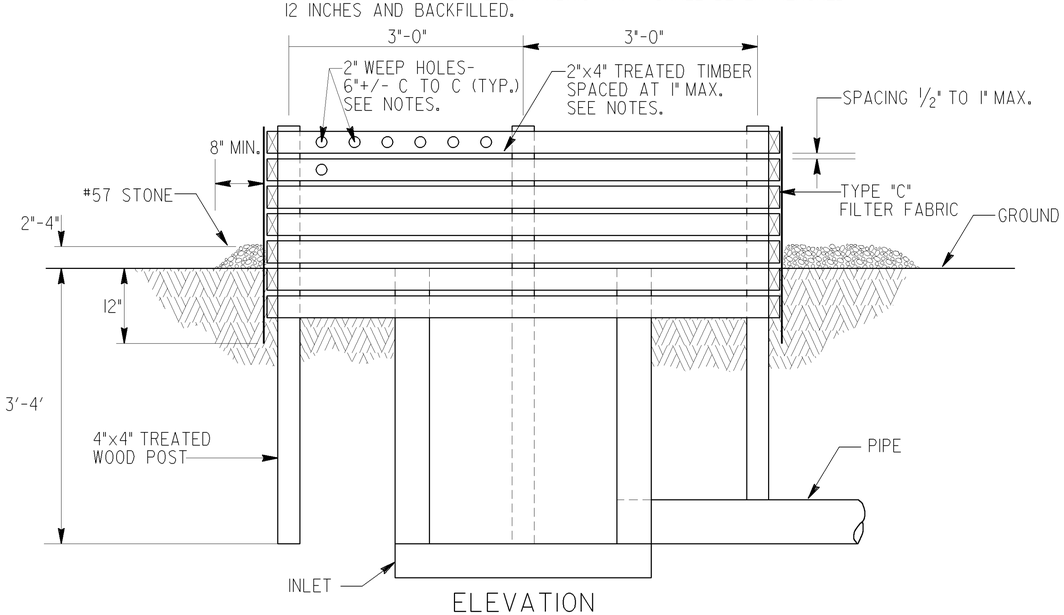


PLAN

NOTES:

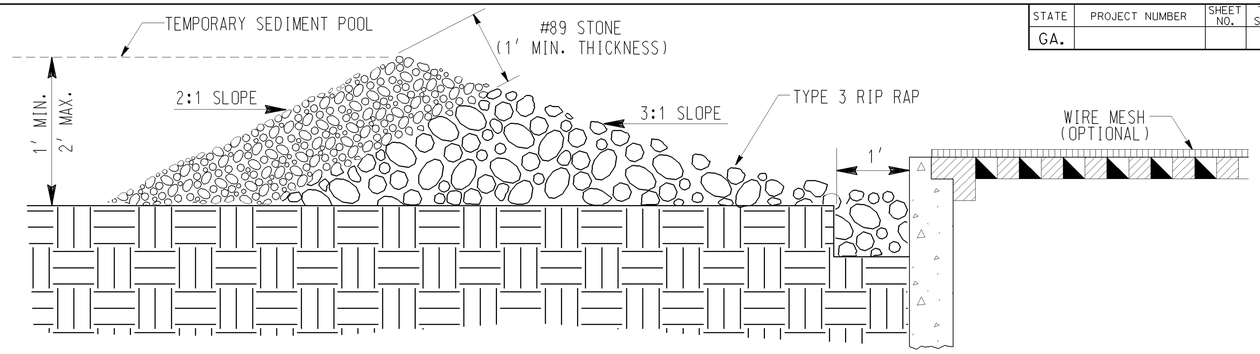
BAFFLE BOX SHALL BE CONSTRUCTED OF 2"x4" TREATED TIMBER SPACED A MAXIMUM OF 1" APART OR OF PLYWOOD WITH WEEP HOLES 2" IN DIAMETER PLACED APPROXIMATELY 6" ON CENTER VERTICALLY AND HORIZONTALLY.

GRAVEL SHALL BE PLACED OUTSIDE THE BOX, ALL AROUND THE INLET, TO A DEPTH OF 2 TO 4 INCHES. THE ENTIRE BOX SHALL BE WRAPPED IN TYPE "C" FILTER FABRIC THAT SHALL BE ENTRENCHED 12 INCHES AND BACKFILLED.

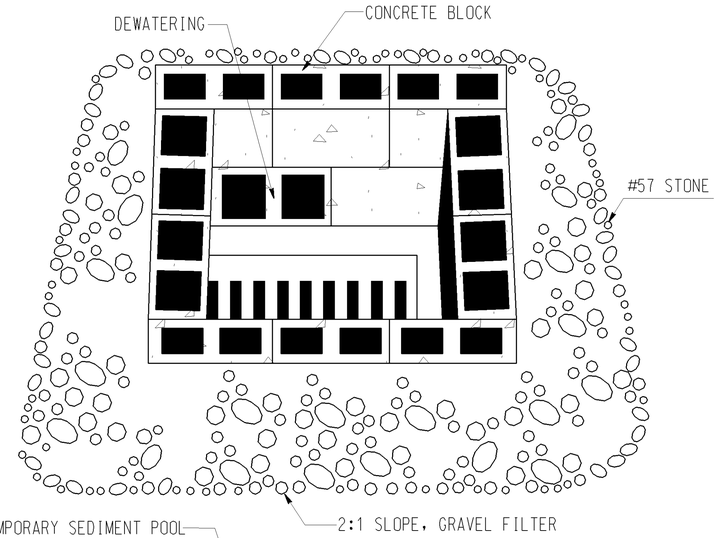


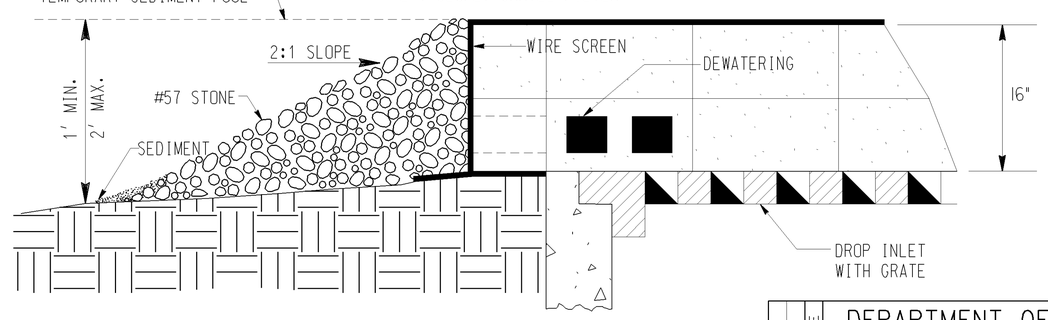
ELEVATION

BAFFLE BOX (Sd2-B)



GRAVEL DROP INLET PROTECTION (GRAVEL DONUT) Sd2-G





BLOCK & GRAVEL DROP INLET PROTECTION (Sd2-Bg)

BASIS OF PAYMENT:
CONSTRUCT AND REMOVE INLET SEDIMENT TRAP _____ EACH

DATE	REVISION	BY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

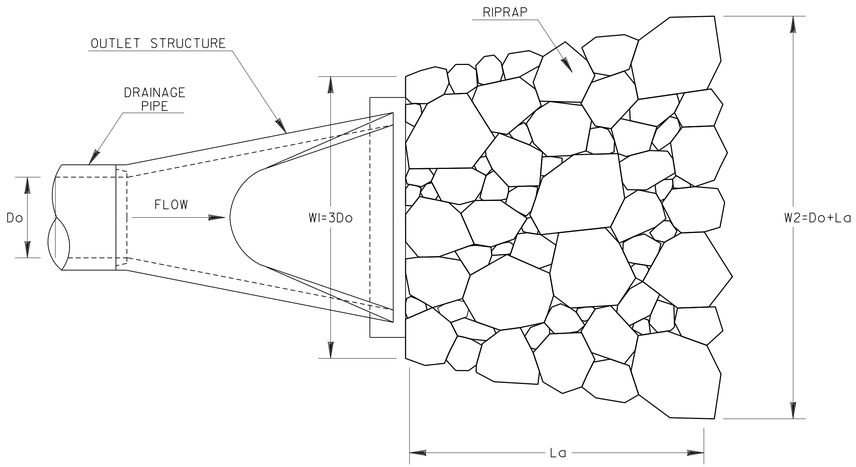
CONSTRUCTION DETAIL
INLET SEDIMENT TRAPS
BAFFLE BOX Sd2-B
BLOCK AND GRAVEL DROP INLET PROTECTION Sd2-Bg
GRAVEL DROP INLET PROTECTION Sd2-G

NO SCALE — MAY 2008

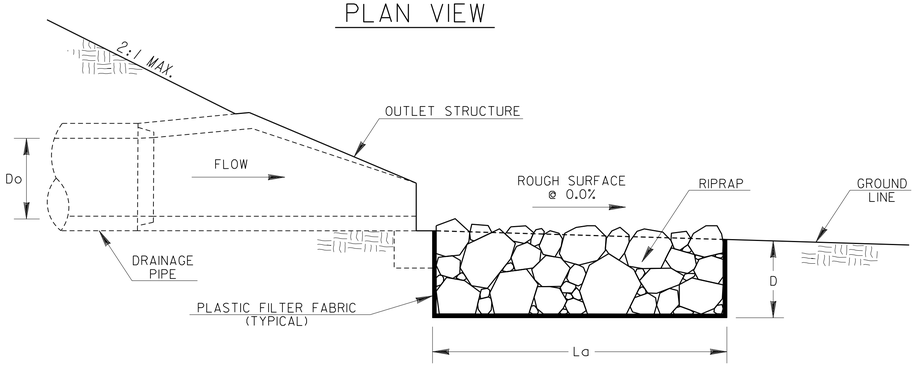
NUMBER D-42

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

OUTLET TO FLAT AREA

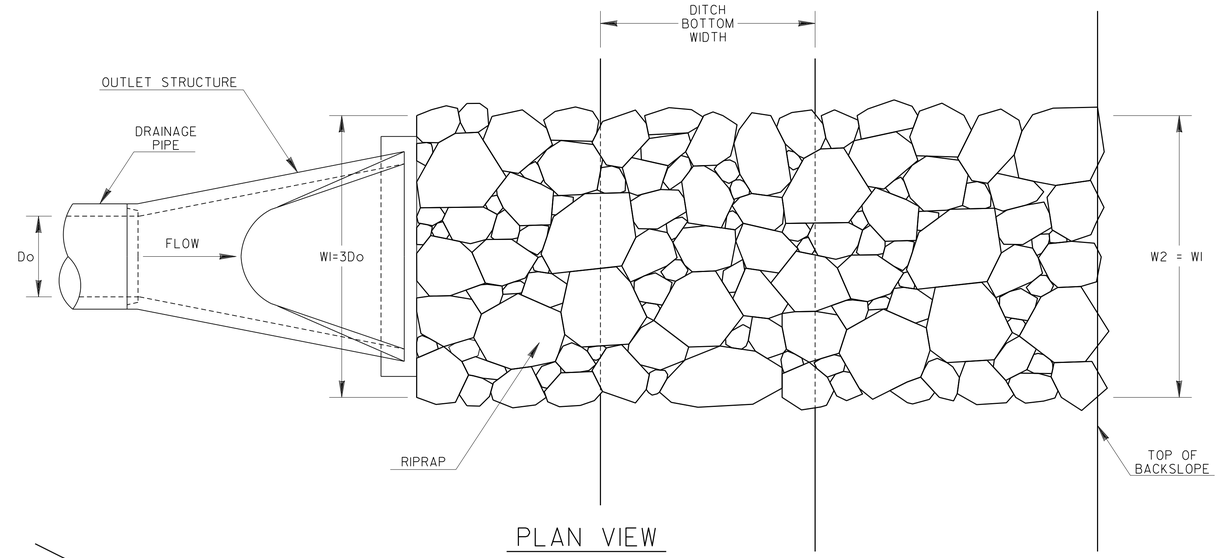


PLAN VIEW

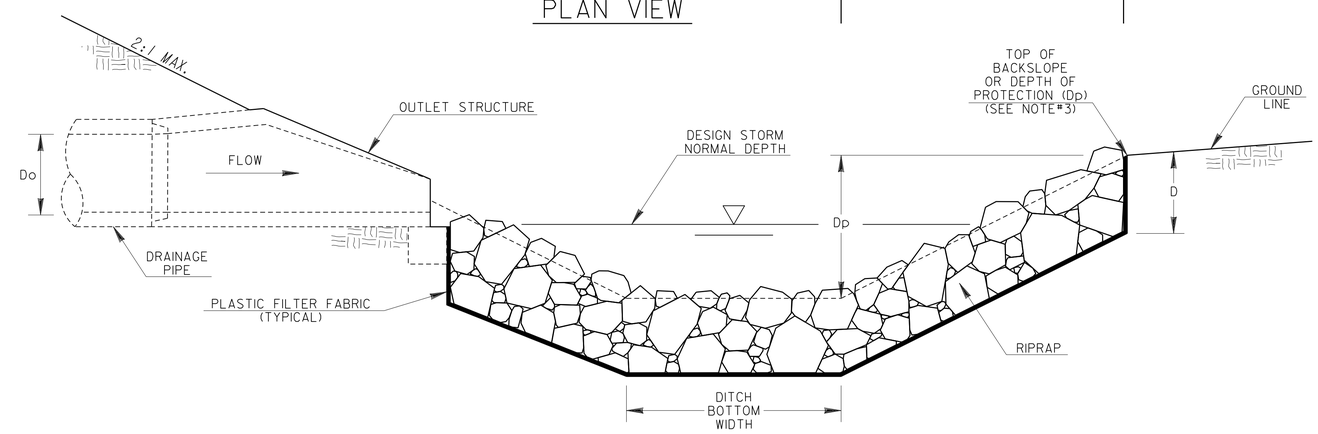


PROFILE VIEW

OUTLET PERPENDICULAR TO WELL-DEFINED CHANNEL



PLAN VIEW



PROFILE VIEW

GENERAL NOTES:

1. RIPRAP OUTLET PROTECTION SHOULD BE USED TO REDUCE A DRAINAGE STRUCTURE'S DISCHARGE VELOCITY. RIPRAP OUTLET PROTECTION IS SHOWN FOR GEORGIA STANDARD 1120, BUT IS INSTALLED SIMILARLY FOR OTHER DRAINAGE OUTLET STRUCTURES.

2. RIPRAP OUTLET PROTECTION SHALL BE DESIGNED IN ACCORDANCE WITH THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA". THE DESIGNER SHALL PROVIDE THE FOLLOWING IN THE PLANS: PIPE DIAMETER (Do), FLOW RATE OF DESIGN STORM (Q), VELOCITY (V), TAILWATER CONDITION (Tw), APRON LENGTH (La), APRON WIDTH AT DRAINAGE STRUCTURE (W1), APRON WIDTH DOWNSTREAM (W2), AVERAGE STONE DIAMETER (d50), INSTALLATION DEPTH (D), AND TYPE OF RIPRAP WITH QUANTITY.

   THE MINIMUM DESIGN FOR RIPRAP OUTLET PROTECTION SHALL BE THE 25-YEAR STORM EVENT, BUT LARGER STORMS ARE RECOMMENDED.

3. THE APRON WIDTHS SHALL BE THE SAME WHEN THE DRAINAGE STRUCTURE DISCHARGES PERPENDICULAR INTO A WELL-DEFINED CHANNEL. THE LENGTH SHALL EXTEND ACROSS THE CHANNEL AND UP TO THE TOP OF THE CHANNEL BACKSLOPE OR 1-FOOT ABOVE THE NORMAL DEPTH OF THE CHANNEL'S DESIGN STORM (WHICHEVER IS LESS). THE DESIGNER SHALL PROVIDE THE DEPTH OF PROTECTION (Dp) IF THE APRON DOES NOT EXTEND TO THE TOP OF THE BACKSLOPE.

4. IF THE OUTLET HYDRAULICS REQUIRE A d50<=0.70 FEET, TYPE-3 RIPRAP MAY BE USED.
   IF THE OUTLET HYDRAULICS REQUIRE A d50<=1.20 FEET, TYPE-1 RIPRAP SHOULD BE USED.
   IF THE OUTLET HYDRAULICS REQUIRE A d50>1.20 FEET, THE DESIGNER SHALL DESIGN AND PROVIDE A SPECIAL DETAIL FOR APPROPRIATE OUTLET PROTECTION.

5. PLASTIC FILTER FABRIC IS REQUIRED UNDERNEATH RIPRAP APRON.

6. PAYMENT FOR RIPRAP SHALL BE MEASURED IN SQUARE YARDS FOR SPECIFIED INSTALLATION DEPTH. PAYMENT FOR PLASTIC FILTER FABRIC SHALL BE MEASURED IN SQUARE YARDS CONSISTENT WITH RIPRAP QUANTITY AND PAID FOR SEPARATELY.

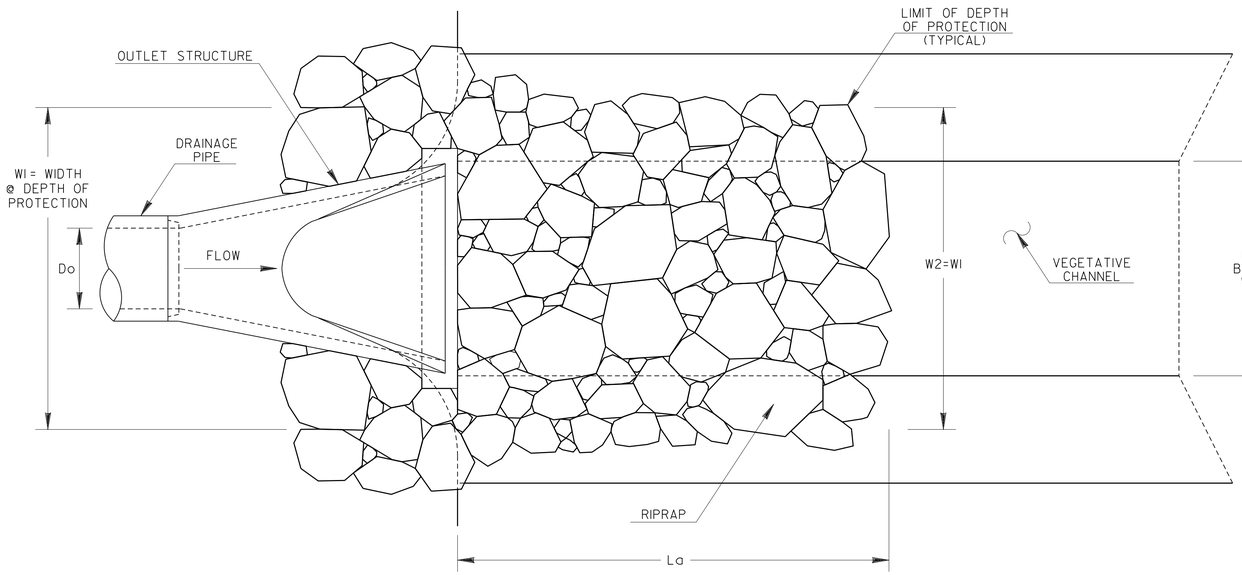
Do = PIPE DIAMETER
Q = DESIGN STORM FLOW RATE
V = DESIGN STORM VELOCITY
Tw = TAILWATER CONDITION/DESIGN STORM NORMAL DEPTH
La = APRON LENGTH
W1 = APRON WIDTH UPSTREAM
W2 = APRON WIDTH DOWNSTREAM
d50 = AVERAGE STONE DIAMETER
D = INSTALLATION DEPTH
Dp = DEPTH OF PROTECTION

RIPRAP TYPE	REQUIRED d50 (FT)	MIN. DEPTH "D" (IN)
1	≤1.20	36
3	≤0.67	18

DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA	
REVISION	CONSTRUCTION DETAILS RIPRAP OUTLET PROTECTION (SHEET 1 OF 2)	
	NO SCALE	4-22-2016
BY	DESIGNED DLE DRAWN DLE TRACED CHECKED	NUMBER D-55A

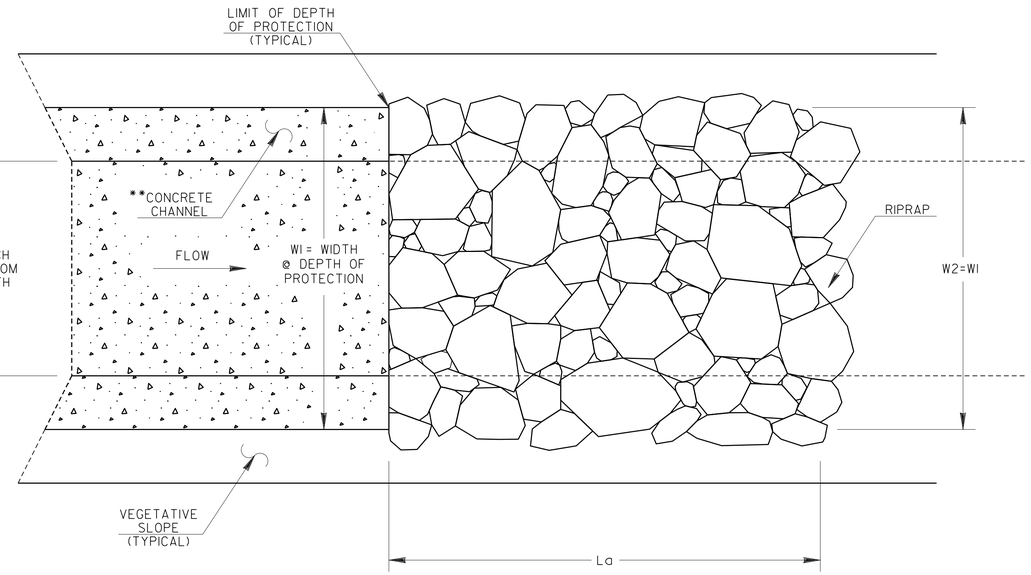
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

OUTLET PARALLEL TO WELL-DEFINED CHANNEL



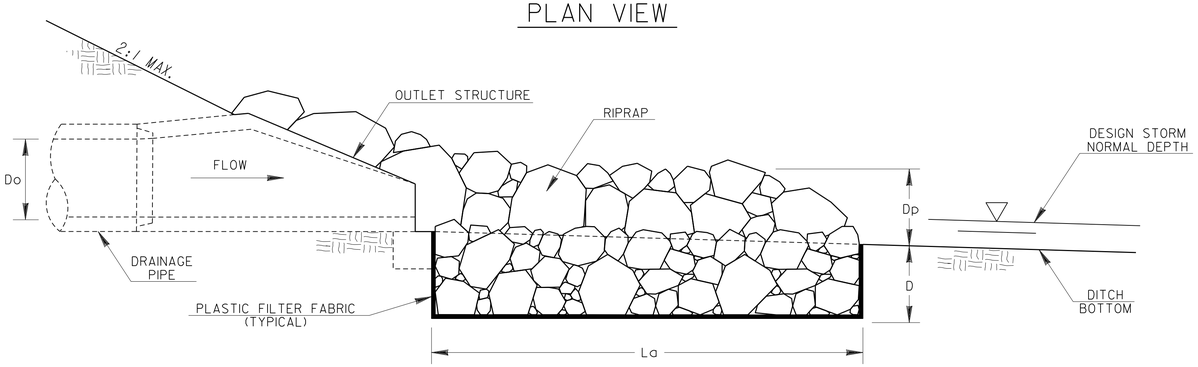
PLAN VIEW

CONCRETE CHANNEL TO RIPRAP TRANSITION

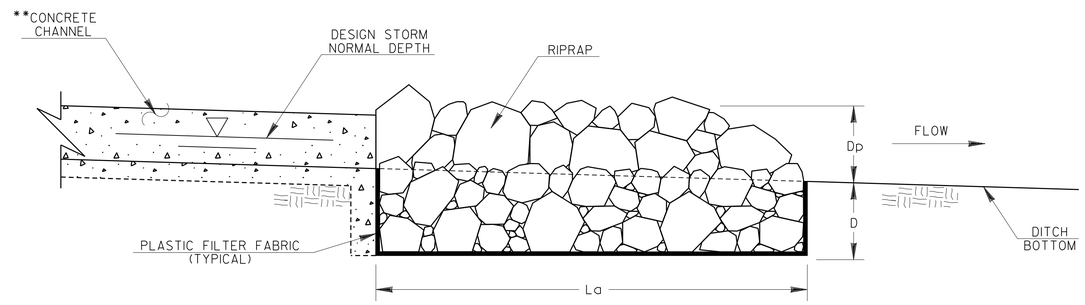


**REFER TO CONSTRUCTION DETAIL D-10 FOR CONCRETE DITCH PAVING INFORMATION

PLAN VIEW



PROFILE VIEW



PROFILE VIEW

GENERAL NOTES:

1. RIPRAP OUTLET PROTECTION SHOULD BE USED TO REDUCE A DRAINAGE STRUCTURE'S DISCHARGE VELOCITY.
   RIPRAP OUTLET PROTECTION IS SHOWN FOR GEORGIA STANDARD 1120, BUT IS INSTALLED SIMILARLY FOR OTHER DRAINAGE OUTLET STRUCTURES.
   RIPRAP OUTLET PROTECTION IS SHOWN FOR A CONCRETE DITCH, BUT IS INSTALLED SIMILARLY TO TRANSITION FROM OTHER CHANNEL LININGS.

2. RIPRAP OUTLET PROTECTION SHALL BE DESIGNED IN ACCORDANCE WITH THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".
   THE DESIGNER SHALL PROVIDE THE FOLLOWING IN THE PLANS: PIPE DIAMETER (Do), FLOW RATE OF DESIGN STORM (Q), VELOCITY (V), TAILWATER CONDITION (Tw), APRON LENGTH (La), APRON WIDTH AT DRAINAGE STRUCTURE (WI), APRON WIDTH DOWNSTREAM (W2), AVERAGE STONE DIAMETER (d50), INSTALLATION DEPTH (D), AND TYPE OF RIPRAP WITH QUANTITY.

   THE MINIMUM DESIGN FOR RIPRAP OUTLET PROTECTION SHALL BE THE 25-YEAR STORM EVENT, BUT LARGER STORMS ARE RECOMMENDED.

3. THE APRON WIDTHS SHALL BE THE SAME WHEN THE DRAINAGE STRUCTURE DISCHARGES PARALLEL INTO A WELL-DEFINED CHANNEL. THE APRON WIDTHS IN THIS CASE SHALL REPRESENT THE WIDTH AT THE DEPTH OF PROTECTION. THE RIPRAP SHALL BE INSTALLED TO THE TOP OF CHANNEL OR 1-FOOT ABOVE THE NORMAL DEPTH OF THE CHANNEL'S DESIGN STORM (WHICHEVER IS LESS). THE DESIGNER SHALL PROVIDE THE DEPTH OF PROTECTION (Dp) IF THE RIPRAP SHOULD NOT BE INSTALLED TO THE TOP OF THE CHANNEL. RIPRAP SHOULD ALSO BE INSTALLED TO ARMOR CHANNEL CORNER AT THE OUTLET STRUCTURE.

4. IF THE OUTLET HYDRAULICS REQUIRE A d50<=0.70 FEET, TYPE-3 RIPRAP MAY BE USED.
   IF THE OUTLET HYDRAULICS REQUIRE A d50<=1.20 FEET, TYPE-1 RIPRAP SHOULD BE USED.
   IF THE OUTLET HYDRAULICS REQUIRE A d50>1.20 FEET, THE DESIGNER SHALL DESIGN AND PROVIDE A SPECIAL DETAIL FOR APPROPRIATE OUTLET PROTECTION.

5. PLASTIC FILTER FABRIC IS REQUIRED UNDERNEATH RIPRAP APRON.

6. PAYMENT FOR RIPRAP SHALL BE MEASURED IN SQUARE YARDS FOR SPECIFIED INSTALLATION DEPTH. PAYMENT FOR PLASTIC FILTER FABRIC SHALL BE MEASURED IN SQUARE YARDS CONSISTENT WITH RIPRAP QUANTITY AND PAID FOR SEPARATELY.

Do = PIPE DIAMETER
Q = DESIGN STORM FLOW RATE
V = DESIGN STORM VELOCITY
Tw = TAILWATER CONDITION/DESIGN STORM NORMAL DEPTH
La = APRON LENGTH
WI = APRON WIDTH UPSTREAM AT DEPTH OF PROTECTION
W2 = APRON WIDTH DOWNSTREAM AT DEPTH OF PROTECTION
d50 = AVERAGE STONE DIAMETER
D = INSTALLATION DEPTH
Dp = DEPTH OF PROTECTION

RIPRAP TYPE	REQUIRED d50 (FT)	MIN. DEPTH "D" (IN)
1	≤1.20	36
3	≤0.67	18

REVISION	DATE	BY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAILS

RIPRAP OUTLET PROTECTION
(SHEET 2 OF 2)

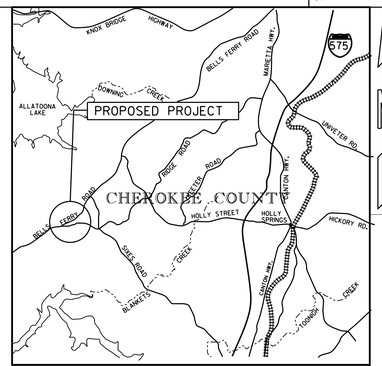
NO SCALE 4-22-2016

DESIGNED DLE
DRAWN DLE
TRACED
CHECKED

NUMBER
D-55B

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY OF PROPOSED
BELLS FERRY ROAD - RIDGE ROAD
INTERSECTION IMPROVEMENTS
PROJECT NUMBER
CTSAP-770-407(057)CI

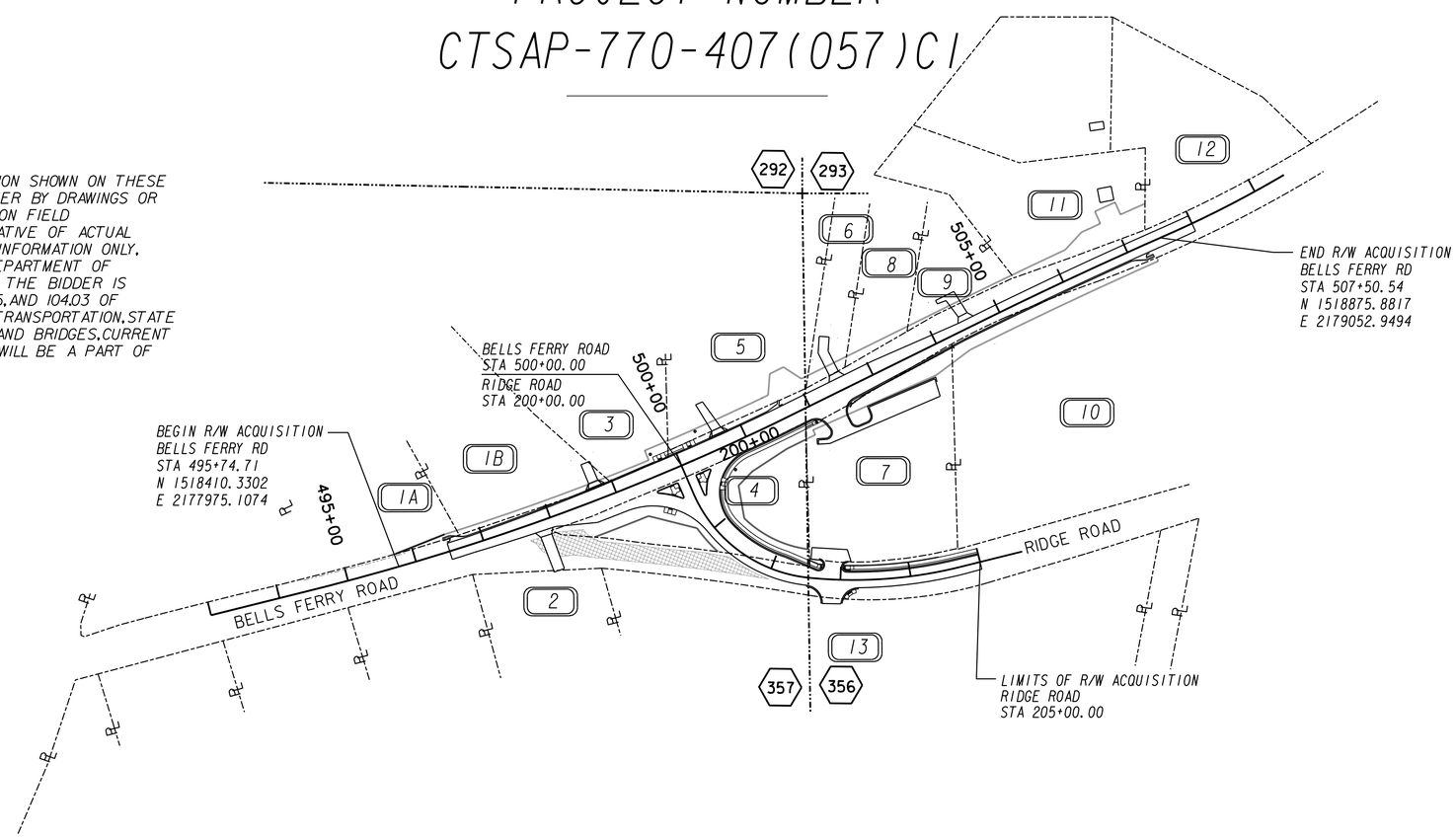


LOCATION SKETCH

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.

NOTE:
THE DATA, TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS, OR IN ANY WAY 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 THE BIDDER IS SPECIFICALLY DIRECTED TO ARTICLES 102.04, 102.05, AND 104.03 OF THE SPECIFICATIONS OF THE DEPARTMENT OF TRANSPORTATION, STATE OF GEORGIA, FOR THE CONSTRUCTION OF ROADS AND BRIDGES, CURRENT EDITION, AND ANY MODIFICATIONS THEREOF, WHICH WILL BE A PART OF THIS CONTRACT.

GMD: 1019
LAND DISTRICTS: 11TH
LAND LOTS: 356 & 357
FUNCTIONAL CLASSIFICATION:
RURAL PRIN. ARTERIAL (BELLS FERRY ROAD)
LOCAL ROAD (RIDGE ROAD)



CONVENTIONAL SIGNS

STATE OR COUNTY LINE
CITY LIMIT LINE
LAND LOT LINE
PROPERTY LINE
SURVEY OR BASE LINE
RIGHT OF WAY LINE
- EXISTING
- REQUIRED
- LIMIT OF ACCESS
- REOD R/W & LIMIT OF ACCESS
- R/W MARKERS

FENCE
RAILROAD
POWER LINE
TELEPHONE LINE
POWER/UTILITY POLES
LIGHT POLES

PLANS PREPARED BY
AECOM

PROJECT NUMBER CTSAP-770-407(057)CI
COUNTY CHEROKEE

SCALE IN FEET
0 100 200 400

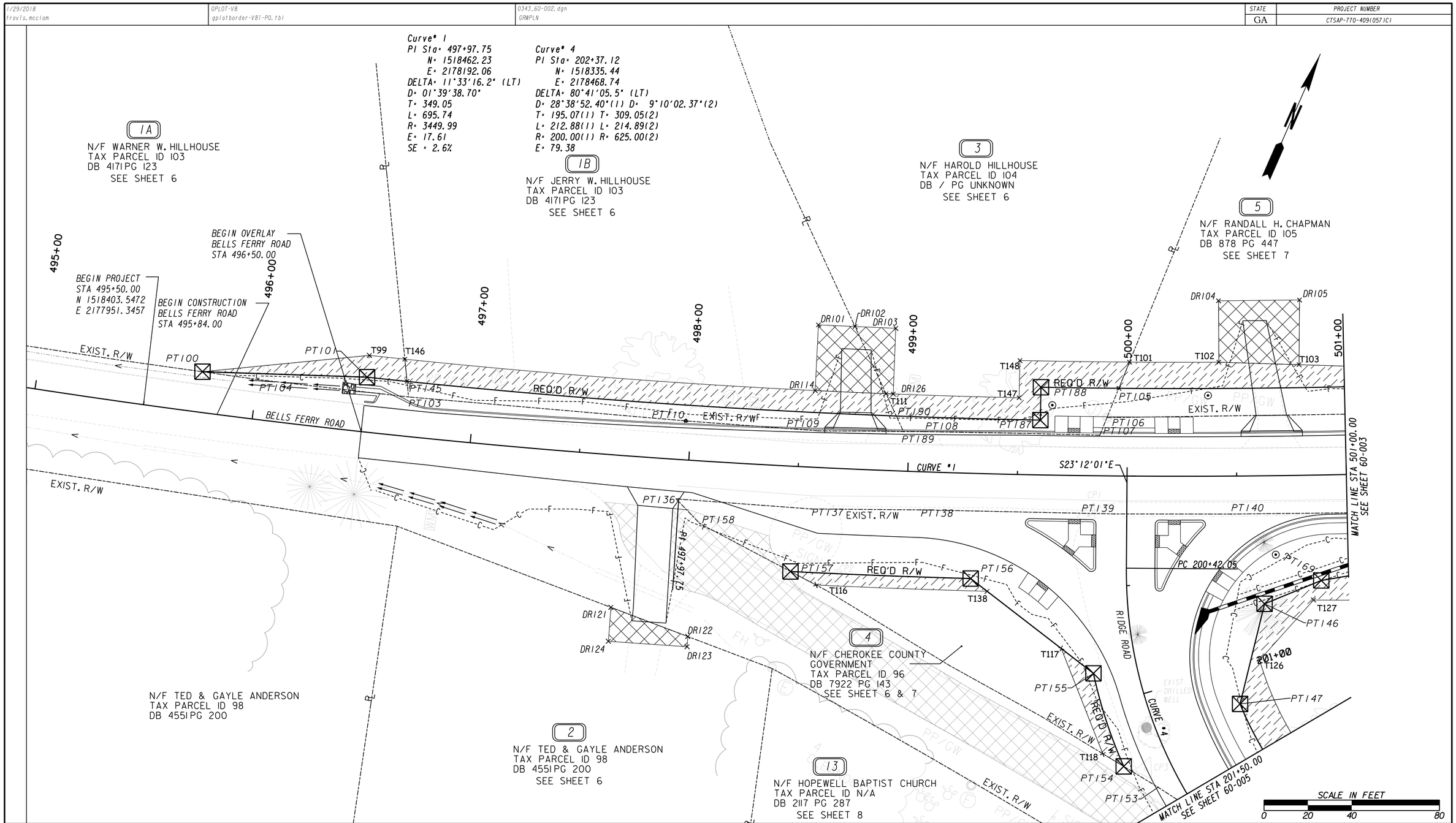
LENGTH OF RIGHT OF WAY PROJECT	COUNTY NO. 057
	MILES
NET LENGTH OF RIGHT OF WAY	0.317
NET LENGTH OF BRIDGES	--
NET LENGTH OF EXCEPTIONS	--
GROSS LENGTH OF RIGHT OF WAY	0.317

AECOM

THIS PROJECT IS LOCATED 100% IN CHEROKEE COUNTY AND CONGRESSIONAL DISTRICT 11.

PLANS COMPLETED DATE:
REVISIONS:

DRAWING No.
60-001



PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

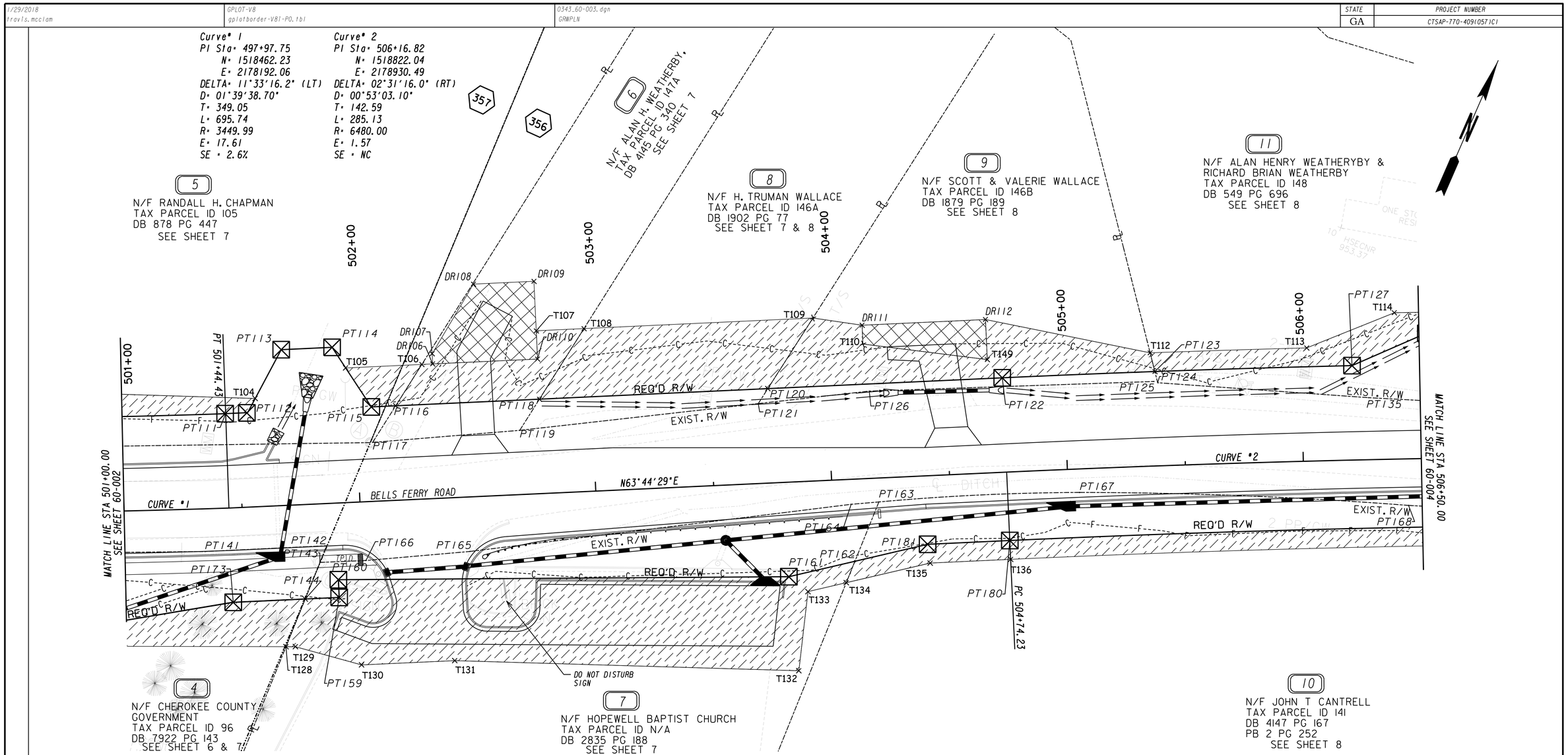
DATE	REVISIONS	DATE	REVISIONS

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

PROJECT NO: CTSAP-770-407(057)CI
COUNTY: CHEROKEE
LAND LOTS: 356 & 357
LAND DISTRICT: 11TH
GMD 1019
DATE 3/15/2016 SH 2 OF 8

60-002



PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

DATE	REVISIONS	DATE	REVISIONS

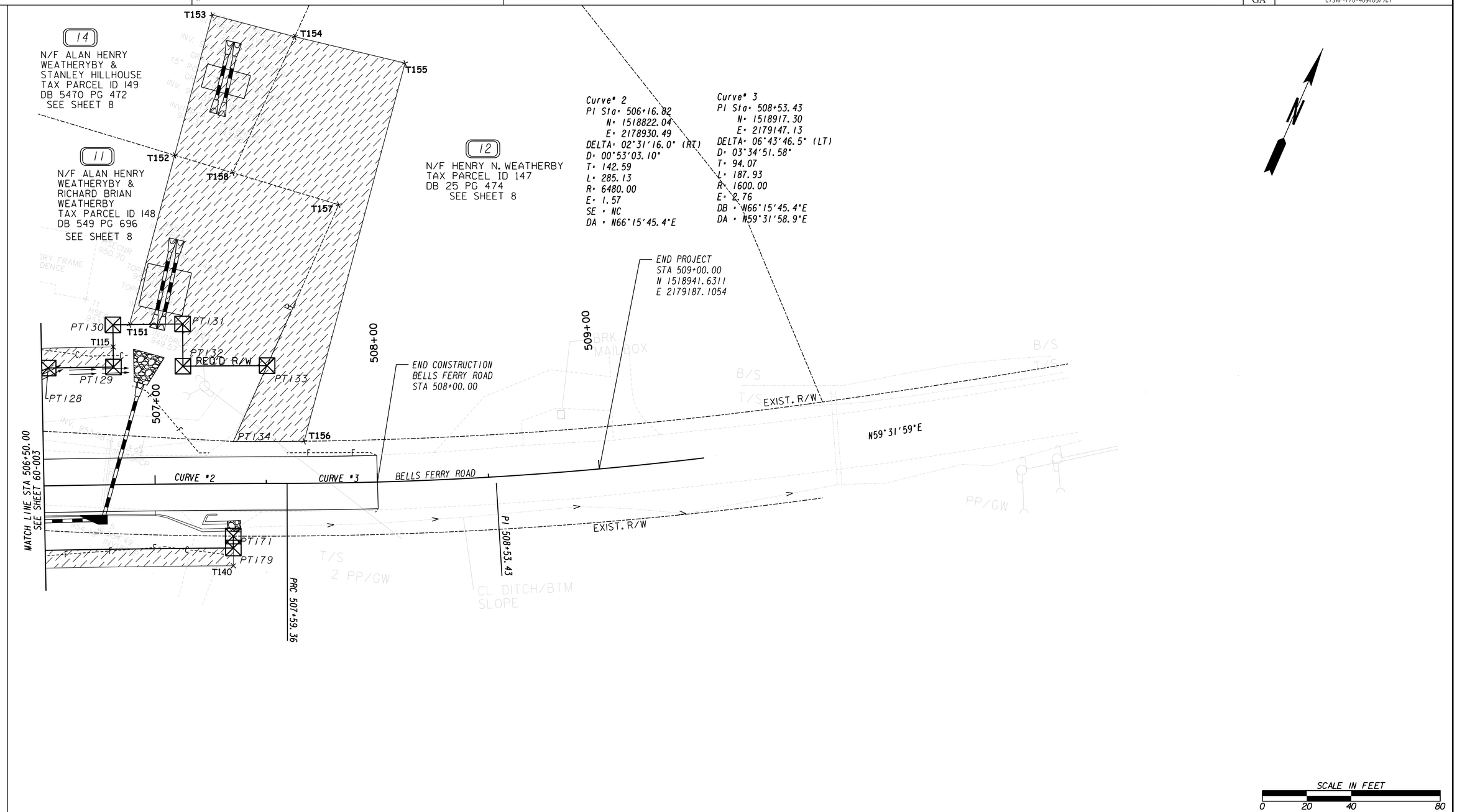
CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

PROJECT NO: CTSAP-770-407(057)CI
COUNTY: CHEROKEE
LAND LOTS: 356 & 357
LAND DISTRICT: 11TH
GMD 1019
DATE 3/15/2016 SH 3 OF 8

60-003

STATE	PROJECT NUMBER
GA	CTSAP-770-409(057)C1



PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

DATE	REVISIONS	DATE	REVISIONS

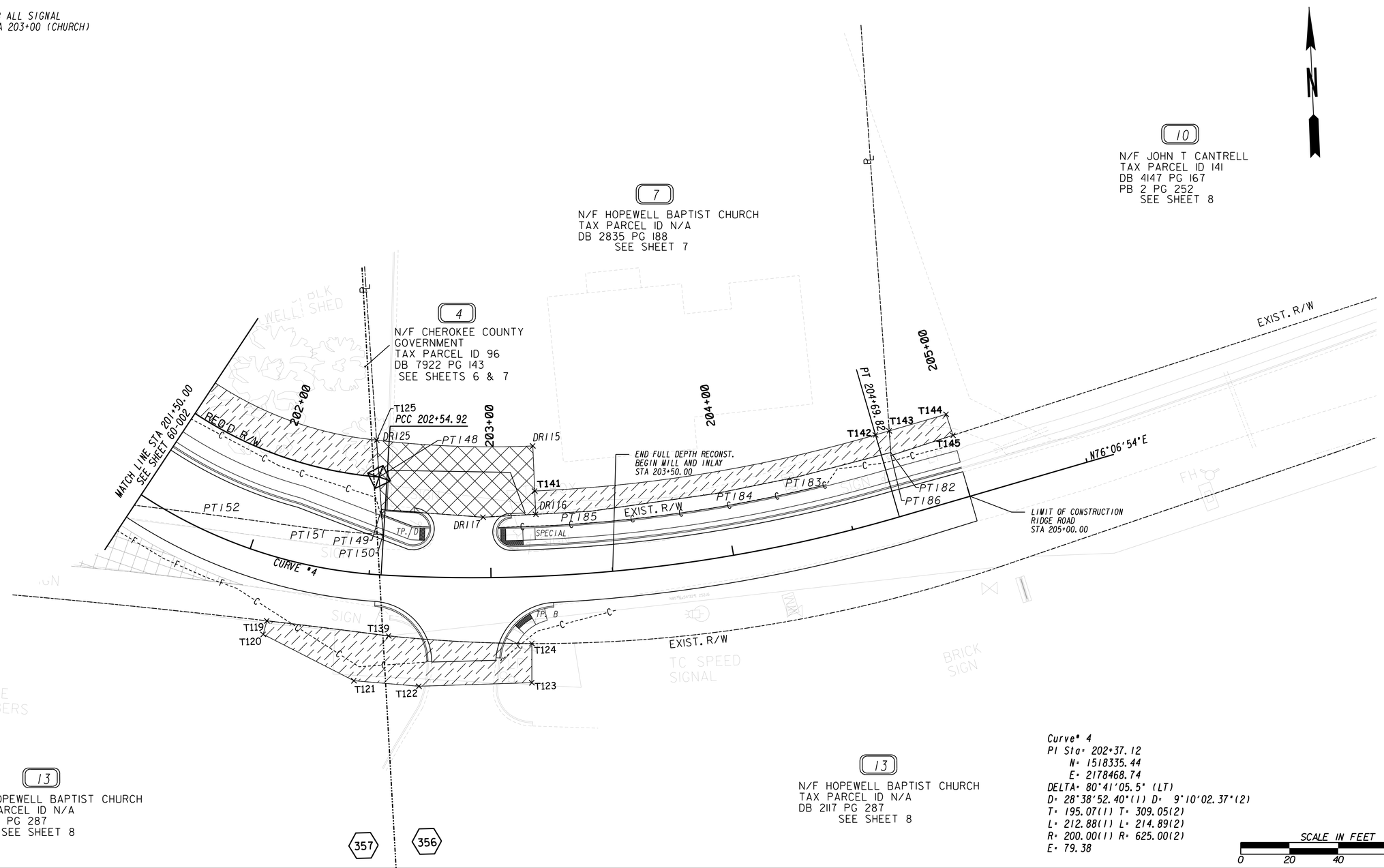
CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

PROJECT NO: CTSAP-770-407(057)C1
COUNTY: CHEROKEE
LAND LOTS: 356 & 357
LAND DISTRICT: 11TH
GMD 1019
DATE 3/15/2016 SH 4 OF 8

60-004

NOTE: DO NOT DISTURB ALL SIGNAL EQUIPMENT @ STA 203+00 (CHURCH)



Curve# 4
PI Sta= 202+37.12
N= 1518335.44
E= 2178468.74
DELTA= 80°41'05.5" (LT)
D= 28°38'52.40"(1) D= 9°10'02.37"(2)
T= 195.07(1) T= 309.05(2)
L= 212.88(1) L= 214.89(2)
R= 200.00(1) R= 625.00(2)
E= 79.38

SCALE IN FEET
0 20 40 80

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

DATE	REVISIONS	DATE	REVISIONS

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP
PROJECT NO: CTSAP-770-407(057)CI
COUNTY: CHEROKEE
LAND LOTS: 356 & 357
LAND DISTRICT: 11TH
GMD 1019
DATE 3/15/2016 SH 5 OF 8

60-005

****

PARCEL 1A REQ'D REQ'D R/W DE100

****

PNT	OFFSET/ DIST		STATION/ BEARING	ALIGNMENT
PT100	18.50	L	495+74.71	BELLS FERRY RD
	75.09		N 68°16'31.4" E	
PT101	25.00	L	496+50.00	BELLS FERRY RD

ARC LENGTH = 18.31
CHORD BEAR = N 72°27'33.6" E
LNTH CHORD = 18.31
RADIUS = 3424.99
DEGREE = 1°40'22.3"

PT145	25.00	L	496+68.44	BELLS FERRY RD
	7.14		S 29°10'15.2" E	
PT103	18.00	L	496+69.87	BELLS FERRY RD
	67.48		S 72°58'27.8" W	
PT104	18.15	L	496+02.04	BELLS FERRY RD
	27.18		S 74°22'58.4" W	
PT100	18.50	L	495+74.7	BELLS FERRY RD

REQD R/W = 402.582 SF
REQD R/W = 0.009 ACRES
REMAINDER = +/- 2.71 ACRES

****

PARCEL 1A TESMT REQ'D TEMP. EASM'T. DE110

****

PNT	OFFSET/		STATION/	ALIGNMENT
PT100	18.50	L	495+74.71	BELLS FERRY RD
T99	35.00	L	496+50.00	BELLS FERRY RD

ARC LENGTH = 16.22
CHORD BEAR = N 72°28'34.9" E
LNTH CHORD = 16.22
RADIUS = 3414.99
DEGREE = 1°40'40.0"

T146	35.00	L	496+66.39	BELLS FERRY RD
PT145	25.00	L	496+68.44	BELLS FERRY RD

ARC LENGTH = 18.31
CHORD BEAR = S 72°27'33.6" W
LNTH CHORD = 18.31
RADIUS = 3424.99
DEGREE = 1°40'22.3"

PT101	25.00	L	496+50.00	BELLS FERRY RD
PT100	18.50	L	495+74.71	BELLS FERRY RD

REQD EASMT AREA = 547.040 SF

****

PARCEL 1B REQ'D REQ'D R/W DE101

****

PNT	OFFSET/ DIST		STATION/ BEARING	ALIGNMENT
PT103	18.00	L	496+69.87	BELLS FERRY RD
	7.14		N 29°10'15.2" W	
PT145	25.00	L	496+68.44	BELLS FERRY RD

ARC LENGTH = 223.73
CHORD BEAR = N 70°26'05.4" E
LNTH CHORD = 223.69
RADIUS = 3424.99
DEGREE = 1°40'22.3"

PT190	25.00	L	498+93.81	BELLS FERRY RD
	7.76		S 48°21'46.0" E	
PT189	18.08	L	498+97.34	BELLS FERRY RD
	38.74		S 66°48'55.4" W	
PT109	16.72	L	498+58.43	BELLS FERRY RD
	60.71		S 70°39'46.4" W	
PT110	17.78	L	497+97.42	BELLS FERRY RD
	126.88		S 71°19'10.7" W	
PT103	18.00	L	496+69.9	BELLS FERRY RD

REQD R/W = 1601.129 SF
REQD R/W = 0.037 ACRES
REMAINDER = +/- 2.21 ACRES

****

PARCEL 1B TESMT REQ'D TEMP. EASM'T. DE111

****

PNT	OFFSET/		STATION/	ALIGNMENT
PT145	25.00	L	496+68.44	BELLS FERRY RD
T146	35.00	L	496+66.39	BELLS FERRY RD

ARC LENGTH = 220.03
CHORD BEAR = N 70°29'40.2" E
LNTH CHORD = 219.99
RADIUS = 3414.99
DEGREE = 1°40'40.0"

T111	35.00	L	498+88.67	BELLS FERRY RD
PT190	25.00	L	498+93.81	BELLS FERRY RD

ARC LENGTH = 223.73
CHORD BEAR = S 70°26'05.4" W
LNTH CHORD = 223.69
RADIUS = 3424.99
DEGREE = 1°40'22.3"

PT145	25.00	L	496+68.44	BELLS FERRY RD

REQD EASMT AREA = 2218.816 SF

****

PARCEL 1B DWESMT REQ'D DRWY. EASM'T. DE125

****

PNT	OFFSET/		STATION/	ALIGNMENT
DR114	35.00	L	498+56.00	BELLS FERRY RD
DR101	65.00	L	498+56.00	BELLS FERRY RD
DR102	65.04	L	498+73.05	BELLS FERRY RD
T111	35.00	L	498+88.67	BELLS FERRY RD

ARC LENGTH = 32.34
CHORD BEAR = S 68°55'12.0" W
LNTH CHORD = 32.34
RADIUS = 3414.99
DEGREE = 1°40'40.0"

DR114	35.00	L	498+56.00	BELLS FERRY RD

****

PARCEL 2 DWESMT REQ'D DRWY. EASM'T. DE124

****

PNT	OFFSET/		STATION/	ALIGNMENT
DR121	69.46	R	497+69.55	BELLS FERRY RD
DR122	80.33	R	498+04.68	BELLS FERRY RD
DR123	85.00	R	498+04.68	BELLS FERRY RD
DR124	85.00	R	497+69.55	BELLS FERRY RD
DR121	69.46	R	497+69.55	BELLS FERRY RD

****

PARCEL 3 DWESMT REQ'D DRWY. EASM'T. DE137

****

PNT	OFFSET/		STATION/	ALIGNMENT
T111	35.00	L	498+88.67	BELLS FERRY RD
DR102	65.04	L	498+73.05	BELLS FERRY RD
DR103	64.99	L	498+92.00	BELLS FERRY RD
DR126	35.00	L	498+92.00	BELLS FERRY RD
T111	35.00	L	498+88.67	BELLS FERRY RD

****

PARCEL 3 REQ'D REQ'D R/W DE135

****

PNT	OFFSET/ DIST		STATION/ BEARING	ALIGNMENT
PT189	18.08	L	498+97.34	BELLS FERRY RD
	7.76		N 48°21'46.0" W	
PT190	25.00	L	498+93.81	BELLS FERRY RD

ARC LENGTH = 65.71
CHORD BEAR = N 68°00'49.6" E
LNTH CHORD = 65.71
RADIUS = 3424.99
DEGREE = 1°40'22.3"

PT187	25.00	L	499+60.00	BELLS FERRY RD
	15.00		N 22°32'09.1" W	
PT188	40.00	L	499+60.00	BELLS FERRY RD
	35.50		N 67°09'57.2" E	
PT105	40.00	L	499+95.92	BELLS FERRY RD
	14.42		S 1°33'29.9" E	
PT106	26.59	L	499+90.58	BELLS FERRY RD
	8.67		S 1°33'29.9" E	
PT107	18.52	L	499+87.38	BELLS FERRY RD
	79.54		S 67°33'31.3" W	
PT108	18.36	L	499+07.41	BELLS FERRY RD
	10.02		S 66°48'55.4" W	
PT189	18.08	L	498+97.3	BELLS FERRY RD

REQD R/W = 1087.541 SF
REQD R/W = 0.025 ACRES
REMAINDER = +/- 2.075 ACRES

****

PARCEL 3 TESMT REQ'D TEMP. EASM'T. DE136

****

PNT	OFFSET/		STATION/	ALIGNMENT
PT190	25.00	L	498+93.81	BELLS FERRY RD
T111	35.00	L	498+88.67	BELLS FERRY RD

ARC LENGTH = 60.70
CHORD BEAR = N 68°08'22.0" E
LNTH CHORD = 60.70
RADIUS = 3414.99
DEGREE = 1°40'40.0"

T147	35.00	L	499+50.00	BELLS FERRY RD
T148	52.00	L	499+50.00	BELLS FERRY RD

ARC LENGTH = 49.97
CHORD BEAR = N 67°12'32.1" E
LNTH CHORD = 49.97
RADIUS = 3397.99
DEGREE = 1°41'10.2"

T101	52.00	L	500+00.74	BELLS FERRY RD
PT105	40.00	L	499+95.92	BELLS FERRY RD

ARC LENGTH = 35.50
CHORD BEAR = S 67°09'57.2" W
LNTH CHORD = 35.50
RADIUS = 3409.99
DEGREE = 1°40'48.8"

PT188	40.00	L	499+60.00	BELLS FERRY RD
PT187	25.00	L	499+60.00	BELLS FERRY RD

ARC LENGTH = 65.71
CHORD BEAR = S 68°00'49.6" W
LNTH CHORD = 65.71
RADIUS = 3424.99
DEGREE = 1°40'22.3"

PT190	25.00	L	498+93.81	BELLS FERRY RD

REQD EASMT AREA = 1303.174 SF

****

REQ'D ROW PAR 4 REQ'D R/W DE102

****

PNT	OFFSET/ DIST		STATION/ BEARING	ALIGNMENT
PT136	18.00	R	497+95.45	BELLS FERRY ROAD
	61.92		N 70°40'36.0" E	
PT137	19.07	R	498+57.03	BELLS FERRY ROAD
	49.79		N 66°49'45.0" E	
PT138	17.39	R	499+06.53	BELLS FERRY ROAD
	88.43		N 67°35'39.0" E	
PT139	17.35	R	499+94.52	BELLS FERRY ROAD
	53.13		N 66°25'11.0" E	
PT140	17.32	R	500+47.38	BELLS FERRY ROAD
	86.76		N 65°47'51.0" E	
PT141	18.08	R	501+33.70	BELLS FERRY ROAD
	51.58		N 63°40'21.0" E	
PT142	17.87	R	501+85.01	BELLS FERRY ROAD
	7.62		S 1°37'52.9" E	
PT143	24.80	R	501+81.84	BELLS FERRY ROAD
	16.68		S 1°57'34.7" E	
PT144	40.00	R	501+74.98	BELLS FERRY ROAD
	31.00		S 63°44'46.9" W	
PT173	40.00	R	501+44.43	BELLS FERRY ROAD
	58.05		S 56°49'24.7" W	
PT169	48.13	R	500+87.68	BELLS FERRY ROAD
	27.94		S 43°58'11.5" W	
PT146	58.41	R	500+62.09	BELLS FERRY ROAD
	47.01		S 9°52'06.8" E	
PT147	40.00	L	201+21.00	RIDGE ROAD

ARC LENGTH = 103.90
CHORD BEAR = S 64°25'09.7" E
LNTH CHORD = 102.09
RADIUS = 160.00
DEGREE = 35°48'35.5"

PT148	39.99	L	202+50.88	RIDGE ROAD
	13.44		S 1°34'23.2" E	
PT149	26.69	L	202+53.18	RIDGE ROAD
	10.32		S 1°37'40.0" E	
PT150	16.46	L	202+54.73	RIDGE ROAD
	24.15		N 82°59'41.0" W	
PT151	15.36	L	202+28.51	RIDGE ROAD
	50.20		N 79°55'28.0" W	
PT152	5.88	L	201+76.28	RIDGE ROAD
	38.86		N 80°42'22.0" W	
PT153	10.04	R	201+41.12	RIDGE ROAD
	18.36		N 82°22'28.0" W	
PT154	20.00	R	201+26.77	RIDGE ROAD

ARC LENGTH = 44.71
CHORD BEAR = N 41°38'53.2" W
LNTH CHORD = 44.63
RADIUS = 220.00
DEGREE = 26°02'36.7"

PT155	20.00	R	200+86.13	RIDGE ROAD
	70.75		N 75°54'21.6" W	
PT156	48.00	R	499+30.01	BELLS FERRY ROAD

ARC LENGTH = 82.26
CHORD BEAR = S 68°38'09.5" W
LNTH CHORD = 82.26
RADIUS = 3497.99
DEGREE = 1°38'16.7"

PT157	48.00	R	498+48.87	BELLS FERRY ROAD
	46.86		N 85°44'56.0" W	
PT158	28.50	R	498+06.73	BELLS FERRY ROAD
	15.47		N 67°09'17.7" W	
PT136	18.00	R	497+95.4	BELLS FERRY ROAD

REQD R/W = 20839.057 SF
REQD R/W = 0.478 ACRES
REMAINDER = +/- 0.20 ACRES

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

DATE	REVISIONS	DATE	REVISIONS

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

PROJECT NO: CTSAP-770-407(057)CI
COUNTY: CHEROKEE
LAND LOTS: 356 & 357
LAND DISTRICT: 11TH
GMD 1019
DATE 3/15/2016 SH 6 OF 8

60-006

****
PARCEL 4 TESMT REQ'D TEMP. EASM'T. DE112
****

PNT	OFFSET/		STATION/	ALIGNMENT
PT157	48.00	R	498+48.87	BELLS FERRY RD

ARC LENGTH = 82.26
CHORD BEAR = N 68°38'09.5" E
LNTH CHORD = 82.26
RADIUS = 3497.99
DEGREE = 1°38'16.7"

PT156	48.00	R	499+30.01	BELLS FERRY RD
T138	53.60	R	499+37.55	BELLS FERRY RD

ARC LENGTH = 78.05
CHORD BEAR = S 68°28'30.8" W
LNTH CHORD = 78.05
RADIUS = 3503.59
DEGREE = 1°38'07.2"

T116	53.60	R	498+60.69	BELLS FERRY RD
PT157	48.00	R	498+48.87	BELLS FERRY RD

REQD EASMT AREA = 448.84 SF

****
PARCEL 4 TESMT REQ'D TEMP. EASM'T. DE113
****

PNT	OFFSET/		STATION/	ALIGNMENT
PT155	20.00	R	200+86.13	RIDGE ROAD

ARC LENGTH = 44.71
CHORD BEAR = S 41°38'53.2" E
LNTH CHORD = 44.63
RADIUS = 220.00
DEGREE = 26°02'36.7"

PT154	20.00	R	201+26.78	RIDGE ROAD
T118	26.57	R	201+18.70	RIDGE ROAD
T117	32.35	R	200+73.93	RIDGE ROAD
PT155	20.00	R	200+86.13	RIDGE ROAD

REQD EASMT AREA = 372.77 SF

****
TEMP ESMT PAR 4 REQ'D TEMP. EASM'T. DE114
****

PNT	OFFSET/		STATION/	ALIGNMENT
PT148	39.99	L	202+50.88	RIDGE ROAD

ARC LENGTH = 103.90
CHORD BEAR = N 64°25'09.7" W
LNTH CHORD = 102.09
RADIUS = 160.00
DEGREE = 35°48'35.5"

PT147	40.00	L	201+21.00	RIDGE ROAD
PT146	58.41	R	500+62.09	BELLS FERRY ROAD
PT169	48.13	R	500+87.68	BELLS FERRY ROAD
PT173	40.00	R	501+44.43	BELLS FERRY ROAD
PT144	40.00	R	501+74.98	BELLS FERRY ROAD
T128	59.80	R	501+65.88	BELLS FERRY ROAD
T127	57.00	R	500+84.07	BELLS FERRY ROAD
T126	55.00	L	201+00.08	RIDGE ROAD

ARC LENGTH = 107.07
CHORD BEAR = S 60°58'31.8" E
LNTH CHORD = 104.65
RADIUS = 145.00
DEGREE = 39°30'51.6"

T125	54.99	L	202+47.75	RIDGE ROAD
PT148	39.99	L	202+50.88	RIDGE ROAD

REQD EASMT AREA = 3381.185 SF

****
PARCEL 5 REQ'D REQ'D R/W DE103
****

PNT	OFFSET/ DIST		STATION/ BEARING	ALIGNMENT
PT106	26.59	L	499+90.58	BELLS FERRY RD
	14.42		N 1°33'29.9" W	
PT105	40.00	L	499+95.92	BELLS FERRY RD

ARC LENGTH = 146.79
CHORD BEAR = N 65°38'03.9" E
LNTH CHORD = 146.78
RADIUS = 3409.99
DEGREE = 1°40'48.8"

PT111	40.00	L	501+44.89	BELLS FERRY RD
	8.99		N 64°19'32.4" E	
PT112	39.91	L	501+53.88	BELLS FERRY RD
	30.49		N 4°54'01.2" E	
PT113	66.00	L	501+69.66	BELLS FERRY RD
	21.58		N 63°44'29.3" E	
PT114	66.00	L	501+91.24	BELLS FERRY RD
	30.23		S 56°56'37.7" E	
PT115	40.00	L	502+06.67	BELLS FERRY RD
	10.33		N 63°44'29.3" E	
PT116	40.00	L	502+17.01	BELLS FERRY RD
	18.34		S 8°38'17.7" W	
PT117	24.96	L	502+06.51	BELLS FERRY RD
	214.45		S 65°33'20.4" W	
PT106	26.59	L	499+90.58	BELLS FERRY RD

REQD R/W = 3808.35 SF
REQD R/W = 0.087 ACRES
REMAINDER = +/- 1.513 ACRES

****
PARCEL 5 TESMT REQ'D TEMP. EASM'T. DE115
****

PNT	OFFSET/		STATION/	ALIGNMENT
PT105	40.00	L	499+95.92	BELLS FERRY RD
T101	52.00	L	500+00.74	BELLS FERRY RD

ARC LENGTH = 40.76
CHORD BEAR = N 66°26'38.3" E
LNTH CHORD = 40.76
RADIUS = 3397.99
DEGREE = 1°41'10.2"

T102	52.00	L	500+42.12	BELLS FERRY RD
T103	50.48	L	500+79.24	BELLS FERRY RD
T104	45.85	L	501+57.70	BELLS FERRY RD
PT112	39.91	L	501+53.88	BELLS FERRY RD

ARC LENGTH = 155.78
CHORD BEAR = S 65°33'32.0" W
LNTH CHORD = 155.77
RADIUS = 3409.99
DEGREE = 1°40'48.8"

PT105	40.00	L	499+95.92	BELLS FERRY RD

REQD EASMT AREA = 1565.51 SF

****
PARCEL 5 TESMT REQ'D TEMP. EASM'T. DE116
****

PNT	OFFSET/		STATION/	ALIGNMENT
PT115	40.00	L	502+06.67	BELLS FERRY RD
T105	57.00	L	501+96.58	BELLS FERRY RD
T106	57.00	L	502+28.86	BELLS FERRY RD
PT116	40.00	L	502+17.01	BELLS FERRY RD
PT115	40.00	L	502+06.67	BELLS FERRY RD

REQD EASMT AREA = 362.22 SF

****
PARCEL 5 DWESMT REQ'D DRWY. EASM'T. DE126
****

PNT	OFFSET/		STATION/	ALIGNMENT
T102	52.00	L	500+42.12	BELLS FERRY RD
DR104	80.00	L	500+42.11	BELLS FERRY RD
DR105	80.00	L	500+79.93	BELLS FERRY RD
T103	50.48	L	500+79.24	BELLS FERRY RD
T102	52.00	L	500+42.12	BELLS FERRY RD

****
PARCEL 6 REQ'D REQ'D R/W DE104
****

PNT	OFFSET/ DIST		STATION/ BEARING	ALIGNMENT
PT117	24.96	L	502+06.51	BELLS FERRY RD
	18.34		N 8°38'17.7" E	
PT116	40.00	L	502+17.01	BELLS FERRY RD
	60.93		N 63°44'29.3" E	
PT118	40.00	L	502+77.94	BELLS FERRY RD
	15.61		S 8°38'31.7" W	
PT119	27.19	L	502+69.00	BELLS FERRY RD
	62.53		S 61°41'38.8" W	
PT117	24.96	L	502+06.51	BELLS FERRY RD

REQD R/W = 848.34 SF
REQD R/W = 0.019 ACRES
REMAINDER = +/- 0.671 ACRES

****
PARCEL 6 TESMT REQ'D TEMP. EASM'T. DE117
****

PNT	OFFSET/		STATION/	ALIGNMENT
PT116	40.00	L	502+17.01	BELLS FERRY RD
T106	57.00	L	502+28.86	BELLS FERRY RD
DR110	57.00	L	502+77.96	BELLS FERRY RD
T107	69.00	L	502+77.96	BELLS FERRY RD
T108	69.00	L	502+98.17	BELLS FERRY RD
PT118	40.00	L	502+77.94	BELLS FERRY RD
PT116	40.00	L	502+17.01	BELLS FERRY RD

REQD EASMT AREA = 1228.141 SF

****
PARCEL 6 DWESMT REQ'D DRWY. EASM'T. DE127
****

PNT	OFFSET/		STATION/	ALIGNMENT
DR106	57.00	L	502+33.46	BELLS FERRY RD
DR107	61.32	L	502+33.46	BELLS FERRY RD
DR108	75.00	L	502+42.43	BELLS FERRY RD
DR109	75.00	L	502+77.96	BELLS FERRY RD
DR110	57.00	L	502+77.96	BELLS FERRY RD
DR106	57.00	L	502+33.46	BELLS FERRY RD

****
PARCEL 7 REQ'D REQ'D R/W DE105
****

PNT	OFFSET/ DIST		STATION/ BEARING	ALIGNMENT
PT143	24.80	R	501+81.84	
	19.54		N 63°58'32.3" E	
PT166	24.88	R	502+01.38	
	44.23		N 61°25'14.4" E	
PT165	23.09	R	502+45.57	
	162.70		N 59°20'05.7" E	
PT164	10.59	R	504+07.79	
	11.80		N 61°27'34.4" E	
PT163	10.12	R	504+19.58	
	27.11		S 1°37'40.6" E	
PT162	34.76	R	504+08.29	
	28.74		S 53°14'25.1" W	
PT161	40.00	R	503+80.03	
	190.83		S 66°00'07.2" W	
PT160	32.47	R	501+89.35	
	7.53		S 26°15'30.7" E	
PT159	40.00	R	501+89.35	
	14.37		S 63°44'29.3" W	
PT144	40.00	R	501+74.98	
	16.68		N 1°57'34.7" W	
PT143	24.80	R	501+81.8	

REQD R/W = 4173.157 SF
REQD R/W = 0.096 ACRES
REMAINDER = +/- 1.135 ACRES

****
PARCEL 7 TESMT REQ'D TEMP. EASM'T. DE118
****

PNT	OFFSET/		STATION/	ALIGNMENT
PT144	40.00	R	501+74.98	
T128	59.80	R	501+65.88	
T129	60.00	R	501+69.90	
T130	69.00	R	501+97.50	
T131	69.00	R	502+37.04	
T132	80.00	R	503+82.44	
T133	46.69	R	503+87.85	
T134	43.65	R	504+04.21	
PT162	34.76	R	504+08.29	
PT161	40.00	R	503+80.03	
PT160	32.47	R	501+89.35	
PT159	40.00	R	501+89.35	
PT144	40.00	R	501+74.98	

REQD EASMT AREA = 7828.307 SF

****
DRWY ESMT PAR 7 REQ'D DRWY. EASM'T. DE128
****

PNT	OFFSET/		STATION/	ALIGNMENT
PT149	26.69	L	202+53.18	RIDGE ROAD
DR125	54.94	L	202+47.84	RIDGE ROAD

ARC LENGTH = 64.13
CHORD BEAR = S 85°32'30.4" E
LNTH CHORD = 64.06
RADIUS = 404.52
DEGREE = 14°09'50.0"

DR115	53.51	L	203+19.45	RIDGE ROAD
DR116	25.44	L	203+19.44	RIDGE ROAD
DR117	24.78	L	202+96.95	RIDGE ROAD
PT149	26.69	L	202+53.18	RIDGE ROAD

****
TEMP ESMT PAR 7 REQ'D TEMP. EASM'T. DE133
****

PNT	OFFSET/		STATION/	ALIGNMENT
PT182	26.33	L	204+73.81	RIDGE ROAD
PT183	26.36	L	204+32.58	RIDGE ROAD
PT184	26.18	L	203+97.13	RIDGE ROAD
PT185	25.31	L	203+42.74	RIDGE ROAD
DR116	25.44	L	203+19.44	RIDGE ROAD
T141	35.00	L	203+19.45	RIDGE ROAD

ARC LENGTH = 141.95
CHORD BEAR = N 83°00'26.7" E
LNTH CHORD = 141.61
RADIUS = 590.00
DEGREE = 9°42'40.1"

T142	35.00	L	204+69.82	RIDGE ROAD
T143	35.00	L	204+75.69	RIDGE ROAD
PT182	26.33	L	204+73.81	RIDGE ROAD

REQD EASMT AREA = 1300.557 SF

****
PARCEL 8 REQ'D REQ'D R/W DE106
****

PNT	OFFSET/ DIST		STATION/ BEARING	ALIGNMENT
PT119	27.19	L	502+69.00	BELLS FERRY RD
	15.61		N 8°38'31.7" E	
PT118	40.00	L	502+77.94	BELLS FERRY RD
	96.87		N 63°44'29.3" E	
PT120	40.00	L	503+74.81	BELLS FERRY RD
	7.52		S 8°57'25.1" W	
PT121	33.86	L	503+70.47	BELLS FERRY RD
	101.68		S 59°59'03.0" W	
PT119	27.19	L	502+69.00	BELLS FERRY RD

REQD R/W = 917.40 SF
REQD R/W = 0.021 ACRES
REMAINDER = +/- 0.419 ACRES

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

DATE	REVISIONS	DATE	REVISIONS

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

PROJECT NO: CTSAP-770-407(057)CI
COUNTY: CHEROKEE
LAND LOTS: 356 & 357
LAND DISTRICT: 11TH
GMD 1019
DATE 3/15/2016 SH 7 OF 8

60-007

PARCEL 8 TESMT REQ'D TEMP. EASM'T. DE119

PNT	OFFSET/		STATION/	ALIGNMENT
PT118	40.00	L	502+77.94	BELLS FERRY RD
T108	69.00	L	502+98.17	BELLS FERRY RD
T109	69.00	L	503+95.28	BELLS FERRY RD
PT120	40.00	L	503+74.81	BELLS FERRY RD
PT118	40.00	L	502+77.94	BELLS FERRY RD

REQD EASMT AREA = 2812.614 SF

PARCEL 9 REQD REQ'D R/W DE107

PNT	OFFSET/ DIST		STATION/ BEARING	ALIGNMENT
PT121	33.86	L	503+70.47	BELLS FERRY RD
	7.52		N 8°57'25.1" E	
PT120	40.00	L	503+74.81	BELLS FERRY RD
	99.42		N 63°44'29.3" E	
PT122	40.00	L	504+74.23	BELLS FERRY RD

ARC LENGTH = 64.69
CHORD BEAR = N 64°01'32.6" E
LNTH CHORD = 64.69
RADIUS = 6520.00
DEGREE = 0°52'43.6"

PT123	40.00	L	505+38.52	BELLS FERRY RD
	4.89		S 37°49'58.3" E	
PT124	35.22	L	505+39.54	BELLS FERRY RD
	122.23		S 64°42'36.5" W	
PT126	36.96	L	504+17.68	BELLS FERRY RD
	47.31		S 59°59'07.7" W	
PT121	33.86	L	503+70.47	BELLS FERRY RD

REQD R/W = 692.09 SF
REQD R/W = 0.016 ACRES
REMAINDER = +/- 0.344 ACRES

PARCEL 9 TESMT REQ'D TEMP. EASM'T. DE120

PNT	OFFSET/		STATION/	ALIGNMENT
PT120	40.00	L	503+74.81	BELLS FERRY RD
T109	69.00	L	503+95.28	BELLS FERRY RD
DR111	65.00	L	504+15.95	BELLS FERRY RD
T110	57.00	L	504+15.95	BELLS FERRY RD
T149	48.00	L	504+68.25	BELLS FERRY RD
DR112	65.00	L	504+68.25	BELLS FERRY RD
T112	48.00	L	505+36.81	BELLS FERRY RD
PT123	40.00	L	505+38.52	BELLS FERRY RD

ARC LENGTH = 64.69
CHORD BEAR = S 64°01'32.6" W
LNTH CHORD = 64.69
RADIUS = 6520.00
DEGREE = 0°52'43.6"

PT122	40.00	L	504+74.23	BELLS FERRY RD
PT120	40.00	L	503+74.81	BELLS FERRY RD

REQD EASMT AREA = 2650.042 SF

PARCEL 9 DWESMT REQ'D DRWY. EASM'T. DE129

PNT	OFFSET/		STATION/	ALIGNMENT
T110	57.00	L	504+15.95	BELLS FERRY RD
DR111	65.00	L	504+15.95	BELLS FERRY RD
DR112	65.00	L	504+68.25	BELLS FERRY RD
T149	48.00	L	504+68.25	BELLS FERRY RD
T110	57.00	L	504+15.95	BELLS FERRY RD

PARCEL 10 REQ'D REQ'D R/W DE108

PNT	OFFSET/ DIST		STATION/ BEARING	ALIGNMENT
PT163	10.12	R	504+19.58	

ARC LENGTH = 85.19
CHORD BEAR = N 63°41'17.1" E
LNTH CHORD = 85.16
RADIUS = 967.86
DEGREE = 5°55'11.5"

PT167	9.97	R	505+04.79	

ARC LENGTH = 139.47
CHORD BEAR = N 68°38'31.6" E
LNTH CHORD = 139.44
RADIUS = 1826.47
DEGREE = 3°08'13.1"

PT168	19.73	R	506+44.21	

ARC LENGTH = 90.58
CHORD BEAR = N 68°07'43.5" E
LNTH CHORD = 90.57
RADIUS = 1871.94
DEGREE = 3°03'38.8"

PT171	23.65	R	507+35.00	
	5.35		S 23°57'10.0" E	
PT179	29.00	R	507+35.00	

ARC LENGTH = 259.60
CHORD BEAR = S 64°53'39.7" W
LNTH CHORD = 259.59
RADIUS = 6451.00
DEGREE = 0°53'17.4"

PT180	29.00	R	504+74.23	
	34.85		S 63°44'29.3" W	
PT181	29.00	R	504+39.37	
	31.62		S 53°14'25.1" W	
PT162	34.76	R	504+08.29	
	27.11		N 1°37'40.6" W	
PT163	10.12	R	504+19.6	

REQD R/W = 4501.990 SF
REQD R/W = 0.103 ACRES
REMAINDER = +/- 7.556 ACRES

PARCEL 10 TESMT REQ'D TEMP. EASM'T. DE121

PNT	OFFSET/		STATION/	ALIGNMENT
PT162	34.76	R	504+08.29	
PT181	29.00	R	504+39.37	
PT180	29.00	R	504+74.23	

ARC LENGTH = 259.60
CHORD BEAR = N 64°53'39.7" E
LNTH CHORD = 259.59
RADIUS = 6451.00
DEGREE = 0°53'17.4"

PT179	29.00	R	507+35.00	
T140	37.00	R	507+35.00	

ARC LENGTH = 259.28
CHORD BEAR = S 64°53'39.7" W
LNTH CHORD = 259.27
RADIUS = 6443.00
DEGREE = 0°53'21.4"

T136	37.00	R	504+74.23	
T135	37.00	R	504+40.11	
T134	43.65	R	504+04.21	
PT162	34.76	R	504+08.29	

REQD EASMT AREA = 2623.963 SF

TEMP ESMT PAR 10 REQ'D TEMP. EASM'T. DE134

PNT	OFFSET/		STATION/	ALIGNMENT
T145	25.96	L	205+00.28	REVISED DIRECTION
PT186	25.14	L	204+73.55	REVISED DIRECTION
T143	35.00	L	204+75.69	REVISED DIRECTION
T144	35.00	L	205+00.00	REVISED DIRECTION
T145	25.96	L	205+00.28	REVISED DIRECTION

REQD EASMT AREA = 240.849 SF

PARCEL 11 REQD REQ'D R/W DE109

PNT	OFFSET/ DIST		STATION/ BEARING	ALIGNMENT
PT124	35.22	L	505+39.54	
	4.89		N 37°49'58.3" W	
PT123	40.00	L	505+38.52	
	83.56		N 64°40'37.6" E	
PT127	40.00	L	506+21.57	
	34.10		N 42°46'25.1" E	
PT128	53.00	L	506+52.87	
	29.37		N 65°26'59.3" E	
PT129	53.00	L	506+82.00	
	19.00		N 24°25'17.1" W	
PT130	72.00	L	506+82.00	
	31.34		N 65°42'56.3" E	
PT131	72.00	L	507+13.00	
	19.00		S 24°08'50.3" E	
PT132	53.00	L	507+13.00	
	37.85		N 66°01'07.2" E	
PT133	53.00	L	507+50.55	
	37.35		S 0°21'00.7" W	
PT134	18.94	L	507+35.30	
	107.63		S 69°28'44.7" W	
PT135	26.27	L	506+28.29	
	89.62		S 70°26'41.7" W	
PT124	35.22	L	505+39.5	

REQD R/W = 4855.031 SF
REQD R/W = 0.111 ACRES
REMAINDER = +/- 7.199 ACRES

PARCEL 11 TESMT REQ'D TEMP. EASM'T. DE122

PNT	OFFSET/		STATION/	ALIGNMENT
PT123	40.00	L	505+38.52	
T112	48.00	L	505+36.81	

ARC LENGTH = 66.38
CHORD BEAR = N 64°35'10.1" E
LNTH CHORD = 66.38
RADIUS = 6528.00
DEGREE = 0°52'39.7"

T113	48.00	L	506+02.70	
T114	62.00	L	506+39.83	
T115	62.04	L	506+82.00	
PT129	53.00	L	506+82.00	
PT128	53.00	L	506+52.87	
PT127	40.00	L	506+21.57	

ARC LENGTH = 83.56
CHORD BEAR = S 64°40'37.6" W
LNTH CHORD = 83.56
RADIUS = 6520.00
DEGREE = 0°52'43.6"

PT123	40.00	L	505+38.52	

REQD EASMT AREA = 1433.541 SF

PARCEL 11 TESMT 2 REQ'D TEMP. EASM'T. DE138

PNT	OFFSET/		STATION/	ALIGNMENT
T151	72.00	L	506+89.40	
T152	147.97	L	507+10.22	
T158	139.90	L	507+35.67	
T157	125.18	L	507+84.82	
PT133	53.00	L	507+50.55	

ARC LENGTH = 37.85
CHORD BEAR = S 66°01'07.2" W
LNTH CHORD = 37.85
RADIUS = 6533.00
DEGREE = 0°52'37.3"

PT132	53.00	L	507+13.00	
PT131	72.00	L	507+13.00	

ARC LENGTH = 23.86
CHORD BEAR = S 65°44'54.1" W
LNTH CHORD = 23.86
RADIUS = 6552.00
DEGREE = 0°52'28.1"

T151	72.00	L	506+89.40	

REQD EASMT AREA = 5706.411 SF

PARCEL 12 TESMT REQ'D TEMP. EASM'T. DE139

PNT	OFFSET/		STATION/	ALIGNMENT
PT134	18.94	L	507+35.30	
T157	125.18	L	507+84.82	
T158	139.90	L	507+35.67	
T154	201.00	L	507+63.77	
T155	188.00	L	508+19.92	
T156	18.90	L	507+67.16	
PT134	18.94	L	507+35.30	

REQD EASMT AREA = 6205.080 SF

PARCEL 13 TESMT REQ'D TEMP. EASM'T. DE123

PNT	OFFSET/		STATION/	ALIGNMENT
T119	214.09	R	500+49.54	

ARC LENGTH = 50.29
CHORD BEAR = S 80°34'20.6" E
LNTH CHORD = 50.29
RADIUS = 3594.17
DEGREE = 1°35'38.9"

T139	242.05	R	500+88.75	

ARC LENGTH = 58.86
CHORD BEAR = S 84°35'12.4" E
LNTH CHORD = 58.84
RADIUS = 588.54
DEGREE = 9°44'07.0"

T124	271.90	R	501+35.94	
T123	286.09	R	501+29.03	
T122	266.09	R	500+90.31	
T121	252.01	R	500+69.16	
T120	218.40	R	500+45.96	
T119	214.09	R	500+49.54	

REQD EASMT AREA = 1813.65 SF

PARCEL 14 TESMT REQ'D TEMP. EASM'T. DE140

PNT	OFFSET/		STATION/	ALIGNMENT
T152	147.97	L	507+10.22	
T153	211.00	L	507+27.12	
T154	201.00	L	507+63.77	
T158	139.90	L	507+35.67	
T152	147.97	L	507+10.22	

REQD EASMT AREA = 2164.964 SF

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS

AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE STREET, SUITE 500
ATLANTA, GA. 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

DATE	REVISIONS	DATE	REVISIONS

CHEROKEE COUNTY
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP
PROJECT NO: CTSAP-770-407(057)CI
COUNTY: CHEROKEE
LAND LOTS: 356 & 357
LAND DISTRICT: 11TH
GMD 1019
DATE 3/15/2016 SH 8 OF 8

60-008