03-NOV-2014 13:21 bgowen	GPBEB$0_01-001 8825Full.pen	Y:\Roadways\138973\232310\Dgn\0232310_01-001.dgn GRWCOV	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
				GA	BRSTO-0076-01(036)	1	267

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PLAN AND PROFILE OF PROPOSED
STATE ROUTE 47 BRIDGE REPLACEMENT
OVER LITTLE RIVER

FEDERAL AID PROJECT

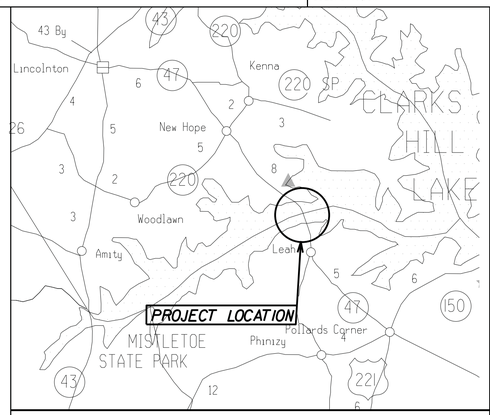
BRSTO-0076-01(036)

LINCOLN/COLUMBIA COUNTIES

FEDERAL ROUTE * N/A

STATE ROUTE * 47

P.I.NO. 232310-



LOCATION SKETCH

DESIGN DATA:
TRAFFIC A.D.T.: 5,850 (2014)
TRAFFIC A.D.T.: 9,000 (2034)
DIRECTIONAL DIST: 60%
K : 9 %
TRUCKS: 8.5 %
24 HR.TRUCKS %: 7.5 %
S.U.: 4 %
COMB.: 3.5 %
SPEED DESIGN: 55 MPH

LOCATION & DESIGN
APPROVAL DATE: 9/1/2006

FUNCTIONAL CLASS:
RURAL MINOR ARTERIAL

THIS PROJECT IS 36 % IN LINCOLN COUNTY 64% IN COLUMBIA COUNTY AND IS 100% IN CONG.DIST.NO. 10 .

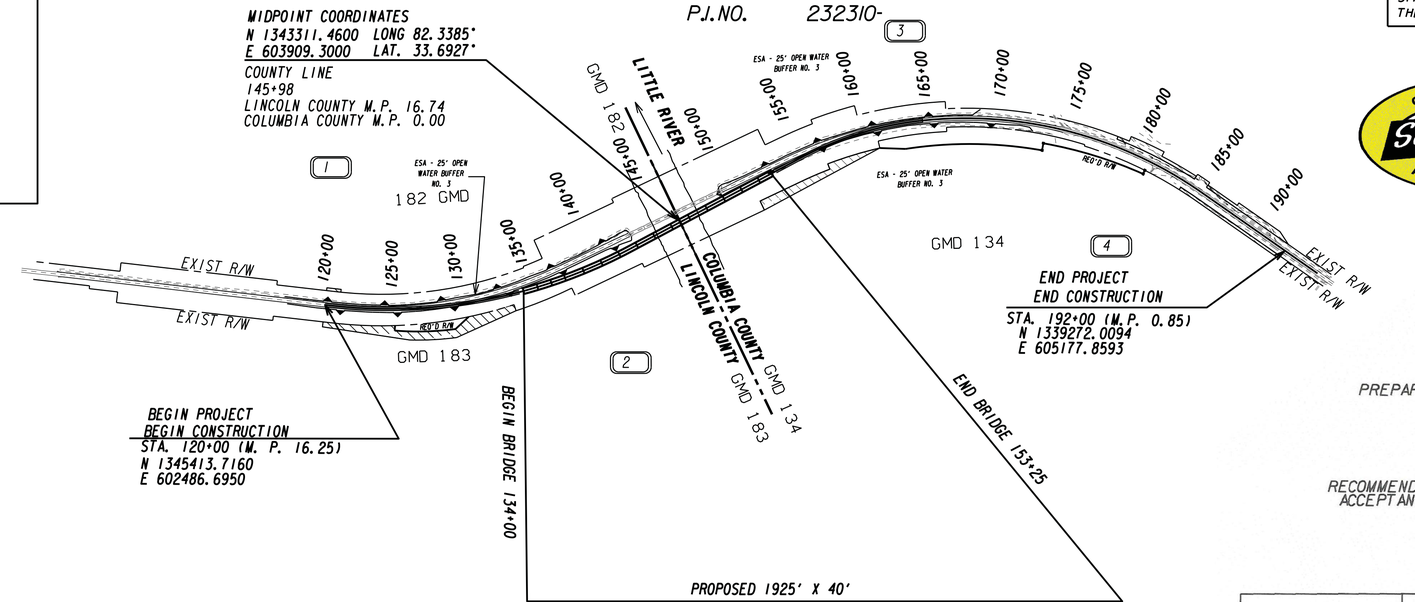
PROJECT DESIGNATION: FULL OVERSIGHT

PDP CLASSIFICATION: MINOR

THIS PROJECT HAS BEEN PREPARED USING ASSUMED HORIZONTAL CONTROL OF THE EAST ZONE AND THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

MIDPOINT COORDINATES
N 1343311.4600 LONG 82.3385°
E 603909.3000 LAT. 33.6927°

COUNTY LINE
145+98
LINCOLN COUNTY M.P. 16.74
COLUMBIA COUNTY M.P. 0.00



NOTE: ESA - SEE ENVIRONMENTAL RESOURCES IMPACT TABLE IN GENERAL NOTES FOR CONSTRUCTION RESTRICTIONS.

LENGTH OF PROJECT	COUNTY Nos.181/073 Project No. BRSTO-0076-01(036) MILES
NET LENGTH OF ROADWAY	0.999
NET LENGTH OF BRIDGES	0.365
NET LENGTH OF PROJECT	1.364
NET LENGTH OF EXCEPTIONS	0.000
GROSS LENGTH OF PROJECT	1.364

SCALE IN FEET
0 500 1000 2000

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

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 DEPARTMENT OF TRANSPORTATION.

OPELIKA Scott Bridge COMPANY ALABAMA

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

10-27-2014
GEORGIA REGISTERED NO. 032702 PROFESSIONAL ENGINEER BRADLEY T GOWEN

PREPARED BY: DESIGN

RECOMMENDED FOR ACCEPTANCE BY: Darryl O. Van Meter
STATE INNOVATIVE DELIVERY ENGINEER

10-30-2014 DATE — Russell R McMurry CHIEF ENGINEER

PLANS COMPLETED 10-27-2014	
REVISIONS	

DRAWING No. 01-001

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	2	267

SHEET NO.	DWG NO.	DESCRIPTION
		CONSTRUCTION PLANS
1	1-001	COVER SHEET
2	2-001	INDEX SHEET
3	3-001	REVISION SUMMARY SHEET
4-6	4-001 TO 4-003	GENERAL NOTES
7-8	5-001 TO 5-002	TYPICAL SECTIONS
9-10	11-001 TO 11-002	CONSTRUCTION LAYOUT SHEET/STAKEOUT SHEET
11-17	13-001 TO 13-007	MAINLINE ROADWAY PLAN SHEETS
18-22	15-001 TO 15-005	MAINLINE ROADWAY PROFILE SHEETS
23-24	17-001 TO 17-002	DRIVEWAY PROFILE SHEET
25-45	19-001 TO 19-021	CONSTRUCTION STAGING PLAN SHEETS
46	21-001	DRAINAGE AREA MAP
47	22-001	DRAINAGE PROFILES
48-124	23-001 TO 23-077	CROSS-SECTIONS
125-132	24-00A TO 24-007	UTILITY PLANS
133-139	26-001 TO 26-007	SIGNING AND MARKING PLANS AND DETAILS
140-148	31-001 TO 31-009	RETAINING WALL ENVELOPES, PLANS AND DETAILS
149-181	35-001 TO 35-033	BRIDGE PLANS
182-183	38-001 TO 38-002	SPECIAL CONSTRUCTION DETAILS
		GEORGIA CONSTRUCTION DETAILS REV. DATE
184	40-001 D-7	BERM DITCHES, SIDE DITCHES, SURFACE DITCHES 7-80
185	40-002 D-9	CONCRETE FLUMES TYPES "A" AND "B" 10-83
186	40-003 M-2	SUBBASES FOR APPROACH SLABS 3-06
187	40-004 P-7	PAVEMENT EDGE TREATMENT ASPHALT AND CONCRETE PAVEMENT 11-11
188	40-005 S-4A	CONSTRUCTION DETAILS SHOULDER PAVING AND SURFACING UNER GUARDRAIL 9-02
189	40-006 S-7	SERRATED SLOPE DETAIL/BENCHING DETAIL 6-09
190	40-007 S-8	MILLED RUMBLE STRIPS AND BICYCLE ACCOMODATION DETAILS 3-01
191	40-008 T-3A	TYPE 7, 8 AND 9 SQUARE TUBE POST INSTALLATION DETAIL 7-02
192	40-009 T-3B	DETAILS OF SQUARE TUBE POST (BREAKAWAY SUPPORT) 7-02
193	40-010 T-5A	DETAILS OF REGULATORY SIGNS (SHEET 1 OF 2) 1-03
194	40-011 T-5B	DETAILS OF REGULATORY SIGNS (SHEET 2 OF 2) 1-00
195	40-012 T-5C	DETAILS OF WARNING SIGNS 1-00
196	40-013 T-15A	DETAILS OF RAISED PAVEMENT MARKER LOCATION NON-LIMITED ACCESS ROADWAY 1-04
197	40-014 T-15C	DETAILS OF RAISED PAVEMENT MARKERS 9-11
		GEORGIA CONSTRUCTION STANDARDS REV. DATE
198	41-001 1011A	BRICK MANHOLES 10-81
199	41-002 1120	FLARED END SECTIONS FOR PIPES 6-06
200	41-003 1122	SAFETY END SECTION (CONCRETE) (FOR SIDE DRAIN PIPE-OR STORM DRAIN PIPE 1-05
		PARALLEL TO MAINLINE) (SHEET 3 OF 3)

SHEET NO.	DWG NO.	DESCRIPTION
		GEORGIA CONSTRUCTION STANDARDS (CONT) REV. DATE
201	41-004 3054	END POST AND END POST GUARDRAIL ATTACHMENT DETAIL 9-02
202	41-005 3215	SQUARE PRESTRESSED CONCRETE PILES 2-84
203	41-006 3901	BAR BENDING DETAILS 8-69
204	41-007 4000W	GUARDRAIL WARRANT GUIDES 9-07
205	41-008 4360	REFLECTORIZED GUARDRAIL WASHERS AND ANCHORAGE NOSE STRIPING 4-06
206	41-009 4380	"W" BEAM GUARDRAIL 31 INCH GUARDRAIL HEIGHT 8-11
207	41-010 4381	POST AND OFFSET BLOCKS FOR "W" AND "T" BEAM GUARDRAIL 8-11
		31 INCH GUARDRAIL HEIGHT
208	41-011 4382	GUARDRAIL CONNECTION AT BRIDGE END OR AT CONCRETE BARRIER END 8-11
		31 INCH GUARDRAIL HEIGHT
209	41-012 4383	GUARDRAIL ANCHORAGE TYPE 1 31 INCH GUARDRAIL HEIGHT 8-11
210	41-013 4384	TYPE 12 31 INCH GUARDRAIL HEIGHT 8-11
211	41-014 4385	"T" BEAM GUARDRAIL CONNECTION TO 31 INCH HEIGHT "W" BEAM 8-11
212	41-015 4388	GUARDRAIL LOCATION DETAILS FOR UNDIVIDED HIGHWAYS AND ROADS 8-11
		(WITH SHOULDERS ADJACENT TO THE ROADWAY) 31 INCH GUARDRAIL HEIGHT
213	41-016 4390	"W" BEAM GUARDRAIL TRANSITION 27 INCH GUARDRAIL TO 31 INCH GUARDRAIL HEIGHT 8-11
214	41-017 4948B	CONCRETE SIDE BARRIER TYPES 2, 2-A, 2-B, AND 2-C 1-07
215	41-018 4960	CONCRETE BARRIER - TEMPORARY (END TREATMENT OPTIONS) 5-07
216	41-019 4961	DETAILS OF PRECAST TEMPORARY BARRIER 9-06
217	41-020 5001M	DROP INLETS TYPES M-1 AND M-2 ADJACENT TO CONCRETE BARRIER (SHEET 1 OF 2) 6-10
218	41-021 5001M	DROP INLETS TYPES M-1 AND M-2 ADJACENT TO CONCRETE BARRIER (SHEET 2 OF 2) 6-10
219	41-022 9003	FEDERAL AID AND STATE PROJECT MARKERS; RIGHT OF WAY MARKERS; COUNTY LINE MARKER 4-06
220	41-023 9017P	REINFORCED CONCRETE APPROACH SLAB 30 FT. LENGTH (TYPICAL USE: WHERE 9-02
		SHOULDER IS ADJACENT TO ROADWAY AND/OR ACROSS BRIDGE)
221	41-024 9029B	PERFORATED UNDERDRAIN 8-83
222	41-025 9030C	DELINEATORS & OBJECT MARKERS AND ALTERNATE POST 4-06
223	41-026 9031T	ISOMETRIC VIEWS OF SIDE ROAD OR DRIVE FLARE DETAIL AT BRIDGE ENDS 8-95
224	41-027 9033	MILEPOSTS 3-06
225	41-028 9037	TYPICAL FILL DETAIL AT END OF BRIDGE 9-99
226	41-029 9100	TRAFFIC CONTROL GENERAL NOTES, STANDARD LEGEND, AND MISCELLANEOUS DETAILS 3-06
		EROSION CONTROL PLANS
227	50-001	EROSION CONTROL PLANS - COVER SHEET
228-231	51-001 TO 51-004	EROSION CONTROL PLANS - EROSION, SEDIMENTATION AND POLLUTION CONTROL GENERAL NOTES SHEET
232-237	52-001 TO 52-006	EROSION CONTROL PLANS - EROSION CONTROL LEGEND AND UNIFORM CODE SHEET
238	53-001	EROSION CONTROL PLANS - DRAINAGE AREA MAP
239-259	54-001 TO 54-021	EROSION CONTROL PLANS - BEST MANAGEMENT PRACTICES (BMP) LOCATION DETAILS
260	55-001	EROSION CONTROL PLANS - EROSION CONTROL WATERSHED MAP AND SITE MONITORING LOCATION
		EROSION CONTROL CONSTRUCTION DETAILS
261	56-001 D-19	TEMPORARY PIPE SLOPE DRAIN WITH DRAIN INLET 2-00
262	56-002 D-20	SILT CONTROL GATES FOR STRUCTURES TYPE - 1, 2, AND 3 1-11
263	56-003 D-24A	TEMPORARY SILT FENCE (SHEET 1 OF 4) 1-11
264	56-004 D-24C	TEMPORARY SILT FENCE J-HOOKS, INLET SEDIMENT TRAPS (SHEET 3 OF 4) 1-11
265	56-005 D-24D	TEMPORARY SILT FENCE FABRIC CHECK DAM (SHEET 4 OF 4) 7-14
266	56-006 D-41	CONSTRUCTION EXIT 1-11
267	56-007 D-42	INLET SEDIMENT TRAPS 5-08

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(770) 263-9118

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

INDEX

STATE ROUTE 47

DRAWING No. 02-001

12/14/2012 GPLN

03-NOV-2014 13:21 TIME$$$	$PRFB$	Y:\Roadways\138973\232310\Dgn\0232310_03-001.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen	8825Full.pen			GA	BRSTO-0076-01(036)	3	267

DATE	SHEET NO.	REVISION

DATE	SHEET NO.	REVISION

REVISION DATES		

Baker

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NORCROSS, GEORGIA 30092
(770) 263-9118

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE: INNOVATIVE PROGRAM DELIVERY

REVISION SUMMARY

STATE ROUTE 47

DRAWING No. 03-001

12/14/2012 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRST0-0076-01(036)	4	267

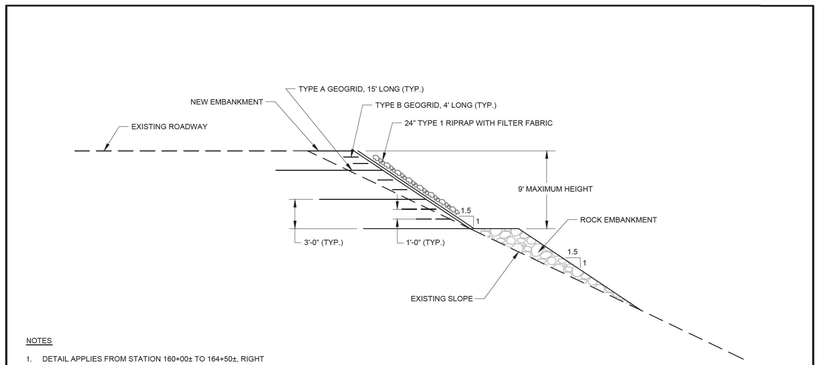
GENERAL NOTES

PROJECT SPECIFIC NOTES

THE FOLLOWING UTILITY OWNERS HAVE FACILITIES WITHIN THE PROJECT LIMITS:

UTILITY NAME	TYPE OF UTILITIES
GEORGIA POWER TRANSMISSION	POWER
COLUMBIA COUNTY BROADBAND FIBER OPTIC CABLE	TELEPHONE

1. A PROJECT NOTICE OF INTENT WILL BE REQUIRED.
2. ALL BORROW AND WASTE SITES FOR THIS PROJECT SHALL BE ENVIRONMENTALLY APPROVED PRIOR TO CONSTRUCTION ACTIVITIES OCCURRING IN THEM. ALL COMMON FILL OR EXCESS MATERIAL DISPOSED OUTSIDE THE PROJECT RIGHT OF WAY SHALL BE PLACED IN EITHER A PERMITTED SOLID WASTE FACILITY, PERMITTED INERT WASTE LANDFILL OR IN A ENGINEERED FILL. SEE SECTION 201 OF THE STANDARD SPECIFICATION AND SUPPLEMENTS THERETO FOR ADDITIONAL INFORMATION.
3. THERE IS NO SUITABLE PLACE TO BURY THE EXISTING BRIDGE / CONSTRUCTION DEBRIS WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL PROVIDE AN ENVIRONMENTALLY APPROVED SITE TO DISPOSE OF THE EXISTING BRIDGE / CONSTRUCTION DEBRIS AT NO ADDITIONAL COST TO THE DEPARTMENT.
4. TEMPORARY STRIPING IS REQUIRED IN ACCORDANCE WITH SECTION 150.04 OF THE GEORGIA SPECIFICATIONS. PLACEMENT OF PERMANENT PAVEMENT MARKINGS SHALL BE COMPLETED NO SOONER THAN 30 DAYS AND NO LATER THAN 45 DAYS AFTER PLACEMENT OF THE FINAL SURFACE COURSE.
5. THE FINAL SURFACE MIX IS TO BE PLACED UNDER TRAFFIC AFTER TRAFFIC HAS BEEN PLACED IN ITS FINAL CONFIGURATION.
6. THE CONTRACTOR WILL ADHERE TO SPECIAL PROVISION 107.23G FOR THE PROTECTION OF MIGRATORY BIRDS.
7. THE DISTRICT 2 TRAFFIC ENGINEER SHALL BE CONTACTED AT 478-552-4619 AT LEAST TWO WEEKS PRIOR TO INSTALLING FINAL PAVEMENT MARKINGS.
8. EXISTING PAVEMENT FROM STA. 127+20 TO STA. 142+40 AND STA. 149+62 TO STA. 159+32 IS TO BE REMOVED FROM SITE AND EXISTING ROADBED SHALL BE GRADED TO DRAIN AND GRASSED.
9. THE EXISTING GUARDRAIL WILL BE SALVAGED. THE CONTRACTOR WILL DELIVER THE SALVAGED GUARDRAIL TO THE LINCOLN COUNTY MAINTENANCE BARN.
10. TWO 16' WIDE BY 6' TALL STEEL PIPE GATES SHALL BE INSTALLED AT DRIVEWAYS STA. 132+64 LT. AND STA. 155+09 LT.



NOTES

1. DETAIL APPLIES FROM STATION 160+00± TO 164+50±, RIGHT SIDE.
2. THREE LAYERS OF TYPE A GEOGRID, 13'-0" LONG, SHOULD BE PLACED AT 3'-0" VERTICAL SPACINGS.
3. TYPE B GEOGRID, 4'-0" LONG, SHOULD BE PLACED IN BETWEEN TYPE A GEOGRID AT 1'-0" VERTICAL SPACINGS.
4. GDOT STANDARD BENCHING DETAIL (ATTACHED) SHALL BE USED TO BENCH INTO EXISTING SLOPES.
5. 24" OF TYPE 1 RIPRAP WITH FILTER FABRIC SHOULD BE PLACED ON THE FACE OF THE 1.5:1 SLOPE AS SHOWN.

GEOGRID-REINFORCED SLOPE DETAIL

SCALE: NTS	WILLMER ENGINEERING INC. WE	GEOTECHNICAL ENGINEERING = CONSTRUCTION SERVICES ENVIRONMENTAL SERVICES AND ENGINEERING 3772 PLEASANTDALE ROAD - SUITE 165 ATLANTA, GA 30340-4270	GDOT PROJECT NUMBER BRST0-0076-01(036) PI No. 232310 GEOGRID-REINFORCED SLOPE DETAIL SOIL SURVEY REPORT SR 47 OVER LITTLE RIVER BRIDGE REPLACEMENT LINCOLN AND COLUMBIA COUNTIES, GEORGIA WILLMER PROJECT No. 71.3921
DATE: 6/5/2014			
DRAWN BY: ZMH			
REVIEWED BY: TS			

P:\SR47 SR 47 over Little River\CADD\Reinforced Slope Details.dwg

pH 6.01
Resistivity 10001

Project No.: BRST0-0076-01(036) **County:** Lincoln-Columbia **P.I. No.:** 0232310

Pipe Culvert Material Alternates
For Piedmont/Blue Ridge Region

TYPE OF PIPE INSTALLATION				CONCRETE	CORRUGATED STEEL AASHTO M-36		CORRUGATED ALUMINUM AASHTO M-196	PLASTIC			
					ALUMINUM COATED (TYPE 2) CORR. STEEL	PLAIN ZINC COATED	PLAIN UNCOATED ALUMINUM	CORR. POLY-ETHYLENE AASHTO M-252	CORR. POLY-ETHYLENE SMOOTHED LINED AASHTO M-294 TYPE "S"	POLY VINYL CHLORIDE (PVC) PROFILE WALL AASHTO M-304	POLY VINYL CHLORIDE (PVC) CORRUGATED SMOOTH INTERIOR ASTM F-949
STORM DRAIN	LONGITUDINAL INTERSTATE AND TRAVEL BEARING			X							
	LONGITUDINAL NON-INTERSTATE AND NON-TRAVEL BEARING			X	X		X		X	X	X
	CROSS DRAIN	GRADE ≤ 10%	ADT < 250	X	X	X	X		X	X	X
			250 < ADT < 1,500	X	X*		X		X	X	X
			1,500 < ADT < 15,000	X					X	X	X
			ADT > 15,000	X							
		GRADE > 10%	ADT < 250		X	X	X		X	X	X
			ADT > 250				X		X	X	X
SIDE DRAIN				X	X	X	X		X	X	X
PERMANENT SLOPE DRAIN					X	X	X		X	X	X
PERFORATED UNDERDRAIN					X	X	X	X	X		X

* This type pipe can be used if the addition of Type "B" Coating (AASHTO M-190, Half Bituminous Coated with Paved Invert) is utilized.

NOTES:

1 Allowable materials are indicated by an "X".

2 Structural requirements of storm drain pipe will be in accordance with Georgia Standard 1030-D or 1030-P, whichever is applicable, and the Standard Specifications.

3 Graded aggregate backfill shall be used in cross drain applications for all plastic pipes (AASHTO M-294, HDPE pipe; AASHTO M-304, PVC pipe; ASTM F-949, PVC pipe).

4 The Contractor shall provide additional storm sewer capacity calculations if a pipe material other than concrete is selected.

5 Pipe used under mechanically stabilized earth (MSE) walls, within MSE wall backfill, or within five feet of an MSE wall face shall be Class V Concrete Pipe.

6 Project specific pH and Resistivity values are entered into the respective boxes above to determine allowable pipe materials.

Rev. 03-22-10

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

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3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

REVISION DATES		

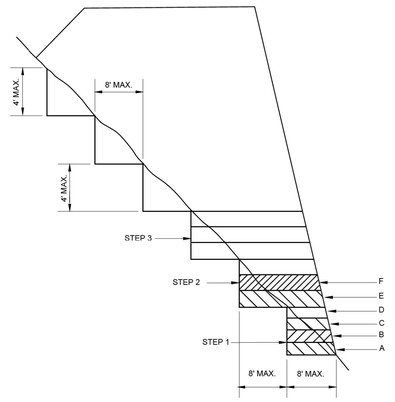
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GENERAL NOTES
STATE ROUTE 47
DRAWING No. 04-001

12/14/2012 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRST0-0076-01(036)	5	267

REVISED 9/29/2008



1. WHERE THE EMBANKMENT IS TO BE PLACED ON A HILLSIDE OR ANOTHER EXISTING EMBANKMENT HAVING A SLOPE OF 3 TO 1 OR STEEPER, THE FOUNDATION MUST BE BENCHED WHILE THE EMBANKMENT IS BEING CONSTRUCTED. (SEE DIAGRAM AT LEFT)

2. THE DIAGRAM SHOWS THAT BEFORE LAYER "A" IS PLACED, THE FIRST STEP (1) IS TO CUT INTO THE SLOPE A MAXIMUM DISTANCE OF ABOUT 8' (ABOUT 3/4 THE WIDTH OF THE TYPICAL D-8 BULLDOZER BLADE). SUCCESSIVE LAYERS B, C, AND D ARE THEN PLACED. BEFORE LAYER "E" IS PLACED, THE SECOND STEP IS TO CUT 8 FEET INTO THE SLOPE AND SUCCESSIVE LAYERS ARE AGAIN PLACED. IF IT IS ANTICIPATED THAT THE VERTICAL PART OF THE STEP WILL EXCEED 4' IF AN 8' HORIZONTAL CUT IS MADE, THEN THE ACTUAL CUT STOPS WHEN THE VERTICAL PART REACHES A MAXIMUM OF 4' ALLOWING THE HORIZONTAL DISTANCE TO VARY.

3. THE PROCESS OF BENCHING IS CONSIDERED INCIDENTAL TO THE ITEM OF UNCLASSIFIED EXCAVATION AND BORROW OR GRADING COMPLETE IN CONSTRUCTION OF THE EMBANKMENT AND NO ADDITIONAL MEASUREMENT OF QUANTITIY OR PAYMENT WILL BE MADE FOR BENCHING.

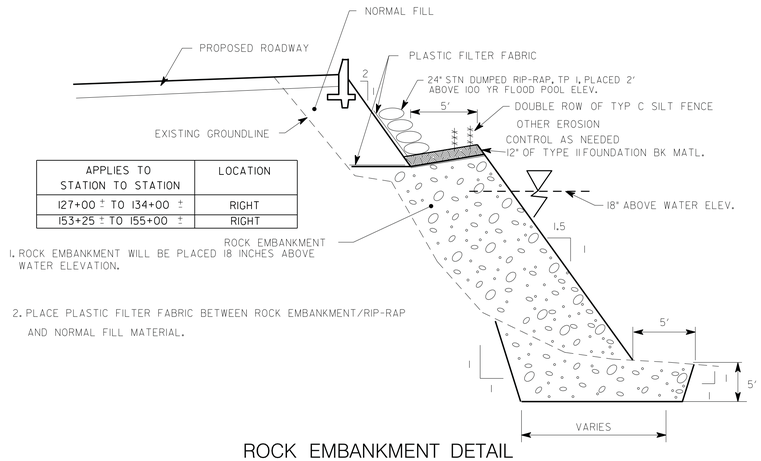
BENCHING DETAIL

SCALE: NTS	GDOT PROJECT NUMBER
	BRST0-0076-01(036)
DATE: 10/1/2014	PI No. 232310
DRAWN BY: AC	BENCHING DETAIL
REVIEWED BY: TS	SOIL SURVEY REPORT SR 47 OVER LITTLE RIVER BRIDGE REPLACEMENT LINCOLN AND COLUMBIA COUNTIES, GEORGIA WILLMER PROJECT No. 71.3921

WILLMER ENGINEERING INC. — GEOTECHNICAL ENGINEERING + CONSTRUCTION SERVICES, ENVIRONMENTAL SERVICES AND ENGINEERING, 3772 PLEASANTDALE ROAD - SUITE 165, ATLANTA, GA 30340-4270

P:\3921 SR 47 over Little River\CADD\BENCHING_DETAIL.dwg

BRST0–0076–01(036) LINCOLN CO.



APPLIES TO STATION TO STATION	LOCATION
127+00 ± TO 134+00 ±	RIGHT
153+25 ± TO 155+00 ±	RIGHT

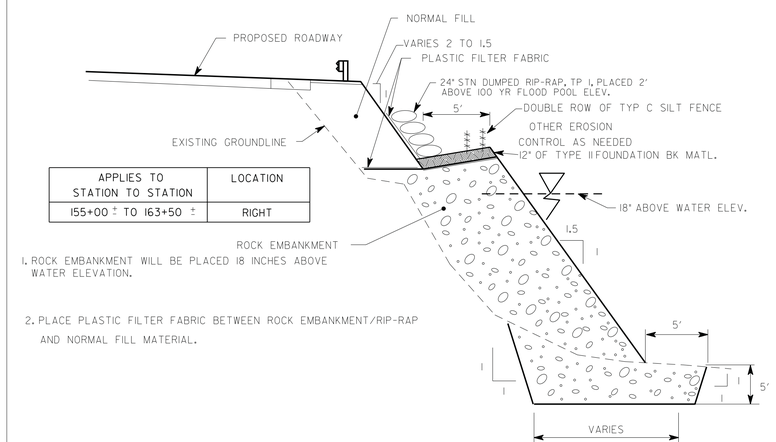
1. ROCK EMBANKMENT WILL BE PLACED 18 INCHES ABOVE WATER ELEVATION.

2. PLACE PLASTIC FILTER FABRIC BETWEEN ROCK EMBANKMENT/RIP-RAP AND NORMAL FILL MATERIAL.

ROCK EMBANKMENT DETAIL

NO SCALE

BRST0–0076–01(036) LINCOLN CO.



APPLIES TO STATION TO STATION	LOCATION
155+00 ± TO 163+50 ±	RIGHT

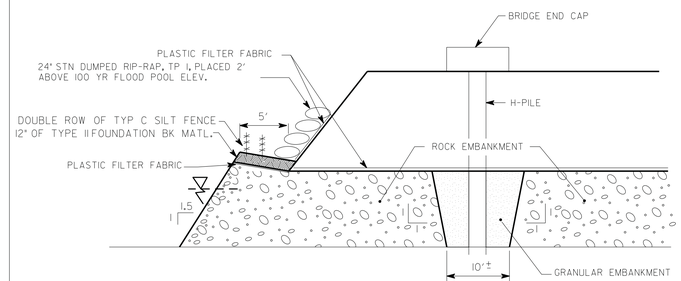
1. ROCK EMBANKMENT WILL BE PLACED 18 INCHES ABOVE WATER ELEVATION.

2. PLACE PLASTIC FILTER FABRIC BETWEEN ROCK EMBANKMENT/RIP-RAP AND NORMAL FILL MATERIAL.

ROCK EMBANKMENT DETAIL

NO SCALE

BRST0–0076–01(036) LINCOLN CO.



1. MATERIAL TO BE PLACED TO 18" ABOVE WATER LEVEL SHOULD BE ROCK EMBANKMENT, EXCEPT FOR THE AREAS IMMEDIATELY BENEATH THE ENDCAPS WHERE H-PILES WILL BE DRIVEN. AT THESE AREAS, GRANULAR EMBANKMENT SHOULD BE USED AS SHOWN.

ROCK EMBANKMENT AT ENDCAP DETAIL

NO SCALE

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(770) 263-9118

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

GENERAL NOTES

STATE ROUTE 47

DRAWING No. 04-002

12/14/2012 GPLN

ENVIRONMENTAL RESOURCES IMPACT TABLE

RESOURCE NAME/TYPE		LOCATION BEGINING STA	LOCATION ENDING STA	SIDE	CONSTRUCTION ACTIVITY	PERMITTED ACTIVITY	CONTROLLING CRITERIA	SPECIAL PROVISION	COMMENTS INCLUDING ANY PERMIT EXPIRATION DATES
A-3	Open Water OW3 / Clarks Hill Lake	120+00	192+00	Both	Placement of Fill/Rock Embankment Construction of Proposed Bridge and Removal of Existing Bridge	2.639 Acres Permanent Impact / 0.023 Acres Temporary Impact	Section 404 of the CWA - REGIONAL PERMIT 96		Any additional fill or modifications to the open water other than what is shown on the plans will require a permit modification or a new permit prior to commencement of the activity. Permit expires
A-1	Ditch 1	184+05	191+00	Left	Removal of Existing Drivway and Parking Area. Grass and Grade to Drain.	None	Section 404 of the CWA - REGIONAL PERMIT 96		
A-2	Ditch 2	178+02	184+04	Left	Construction of Proposed Parking Area and Driveway.	None	Section 404 of the CWA - REGIONAL PERMIT 96		
A-4	Open Water OW3 Buffer	120+00	192+00	Both	Placement of Fill/Rock Embankment Construction of Proposed Bridge and Removal of Existing Bridge	84,707 SF of Buffer Impacts	Georgia Erosion & Sedimentation Control Act		
A-5	Existing Historic Bridge (GDOT Bridge No. 181-0017-0)	142+40	149+62	N/A	Removal of Existing Bridge	Refer to Commitment E-1 (Green Sheet)			
A-6	Clarks Hill Lake (USACE recreational property)	120+00	192+00	Both		Refer to Commitment C-2 (Green Sheet)			

NOTE:

THE CONTRACTOR SHALL ENSURE THAT NO CONSTRUCTION RELATED ACTIVITIES OTHER THAN THOSE SHOWN ON THE APPROVED PLANS, INCLUDING THE USE OF EASEMENTS, STAGING, CONSTRUCTION, VEHICULAR USE, BORROW, OR WASTE ACTIVITIES, AND TRAILER PLACEMENT OCCUR WITHIN THE ELIGIBLE NATIONAL REGISTER RESOURCE BOUNDARIES.

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

GENERAL NOTES

STATE ROUTE 47

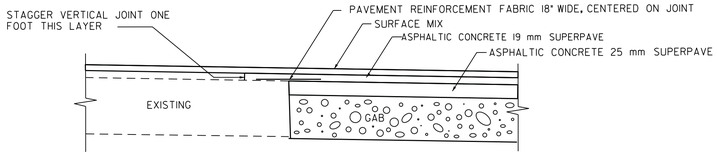
DRAWING No. 04-003

12/14/2012 GPLN

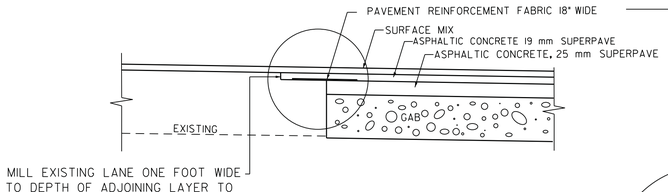
RELEASED FOR CONSTRUCTION 10-31-2014

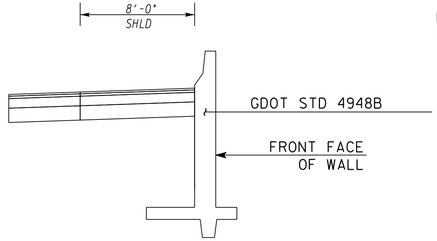
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	7	267

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

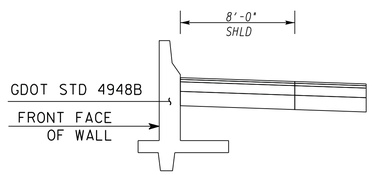


TYPICAL SECTION DETAIL TO BE USED WHEN
EXISTING PAVEMENT IS TO BE RESURFACED WITH
LESS THAN TWO INCHES OF ASPHALTIC CONCRETE

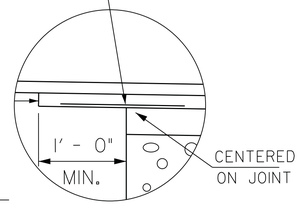


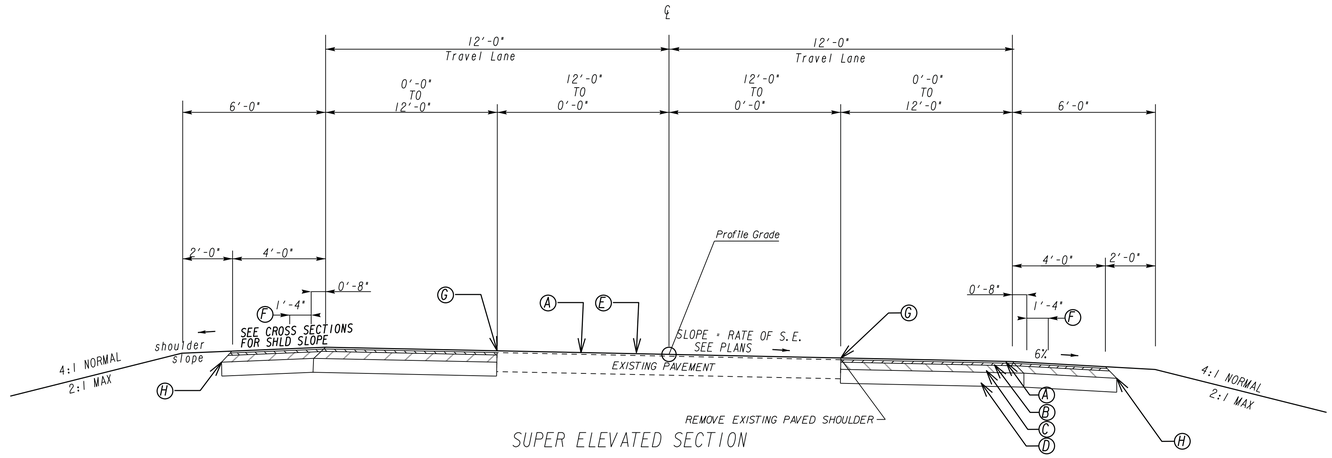


RETAINING WALL SECTIONS
STA. 121+00 - STA. 134+00 RT
STA. 153+25 - STA. 155+00 RT



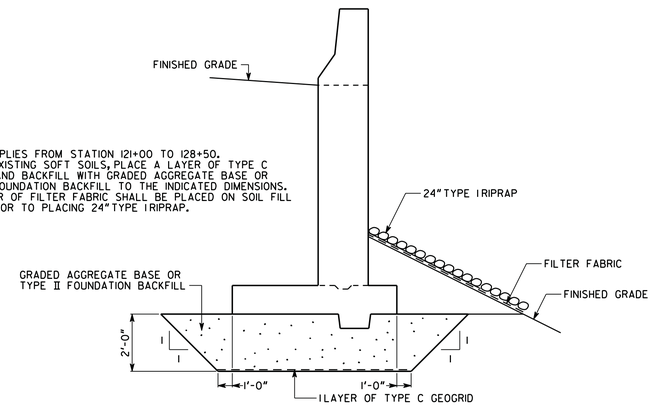
RETAINING WALL SECTIONS
STA. 162+50 - STA. 164+50 LT





SUPER ELEVATED SECTION
STA. 120+00 - STA. 134+00
STA. 153+25 - STA. 164+50

NOTES:
1. DETAIL APPLIES FROM STATION 121+00 TO 128+50.
2. REMOVE EXISTING SOFT SOILS, PLACE A LAYER OF TYPE C GEOGRID, AND BACKFILL WITH GRADED AGGREGATE BASE OR TYPE II FOUNDATION BACKFILL TO THE INDICATED DIMENSIONS.
3. ONE LAYER OF FILTER FABRIC SHALL BE PLACED ON SOIL FILL SLOPE PRIOR TO PLACING 24" TYPE 1 RIPRAP.



UNDERCUT AND REPLACEMENT DETAIL

REQUIRED PAVEMENT
- (A) RECYCLED ASPH CONC 9.5 MM SUPERPAVE, TYPE II, GP 2 ONLY, INCL BITUM MATL & H LIME(135 LBS/SY)
- (B) RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME(220 LBS/SY)
- (C) RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME(880 LBS/SY)
- (D) GR AGGR BASE CRS, INCL MATL(12 INCHES)
- (E) RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME(AS REQ'D)
- (F) INDENTATION RUMBLE STRIPS - GROUND-IN-PLACE (SKIP)(SEE DETAIL S-8)
- (G) PVMT REINF FABRIC STRIPS, TP 2, 18 INCH WIDTH
- (H) PAVEMENT SAFETY EDGE TREATMENT (SEE GA. DETAIL P-7) IF APPLICABLE

Baker
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REVISION DATES		

STATE OF GEORGIA
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OFFICE: INNOVATIVE PROGRAM DELIVERY

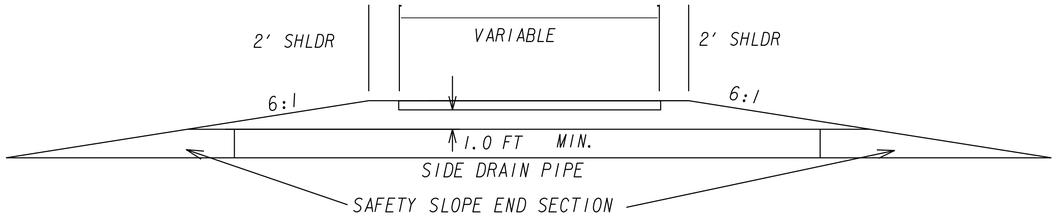
TYPICAL SECTIONS

STATE ROUTE 47

DRAWING No. 05-001

3/1/2007 GPLN

DRIVEWAY TYPICAL SECTION



NOTE: ALL DRIVES ARE TO BE PAVED TO THE R/W OR TIE-IN POINT, WHICHER IS FURTHER.

NOTE: DRIVEWAYS THAT ARE TO BE RECONSTRUCTED SHALL BE REPLACED WITH, CONCRETE FOR CONCRETE, AND ASPHALT FOR ALL OTHER SURFACES.

RESIDENTIAL DRIVEWAYS

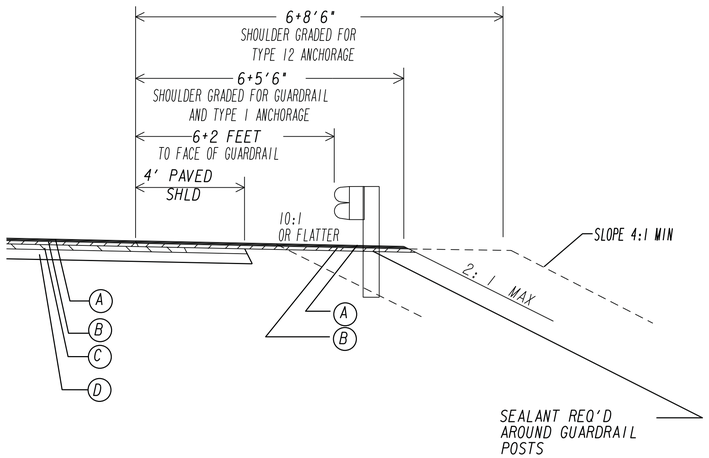
ASPHALT DRIVES WILL BE PAVED WITH THE FOLLOWING:
RECYCLED ASPH CONC 9.5 MM SUPERPAVE, TYPE II, GP 2 ONLY, INCL BITUM MATL & H LIME(135 LBS/SY)
RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME(220 LBS/SY)

COMMERCIAL DRIVEWAYS

ASPHALT DRIVES WILL BE PAVED WITH THE FOLLOWING:
RECYCLED ASPH CONC 9.5 MM SUPERPAVE, TYPE II, GP 2 ONLY, INCL BITUM MATL & H LIME(135 LBS/SY)
RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME(220 LBS/SY)
GR AGGR BASE CRS, INCL MATL(6 INCHES)

CONCRETE DRIVEWAYS

COMMERCIAL DRIVES - 8" CONCRETE
RESIDENTIAL DRIVES - 6" CONCRETE



SHOULDER DETAIL FOR GUARDRAIL

SEE PLAN FOR LOCATION

(A) SAME AS TYPICAL SECTION
(B) SAME AS TYPICAL SECTION
(C) SAME AS TYPICAL SECTION
(D) SAME AS TYPICAL SECTION

ALLOWABLE RANGES TABLE

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

A. NORMAL CROWN

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

B. SUPERELEVATION RATE

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

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

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

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

D. POSITIONING OF SUPERELEVATION TRANSITION LENGTH ON SIMPLE CURVES

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

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

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

REQUIRED PAVEMENT

(A) RECYCLED ASPH CONC 9.5 MM SUPERPAVE, TYPE II, GP 2 ONLY, INCL BITUM MATL & H LIME(135 LBS/SY)
(B) RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME(220 LBS/SY)
(C) RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME(880 LBS/SY)
(D) GR AGGR BASE CRS, INCL MATL(12 INCHES)
(E) RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME(AS REQ'D)
(F) INDENTATION RUMBLE STRIPS - GROUND-IN-PLACE (SKIP)(SEE DETAIL S-8)
(G) PVMT REINF FABRIC STRIPS, TP 2, 18 INCH WIDTH
(H) PAVEMENT SAFETY EDGE TREATMENT (SEE GA. DETAIL P-7) IF APPLICABLE

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REVISION DATES

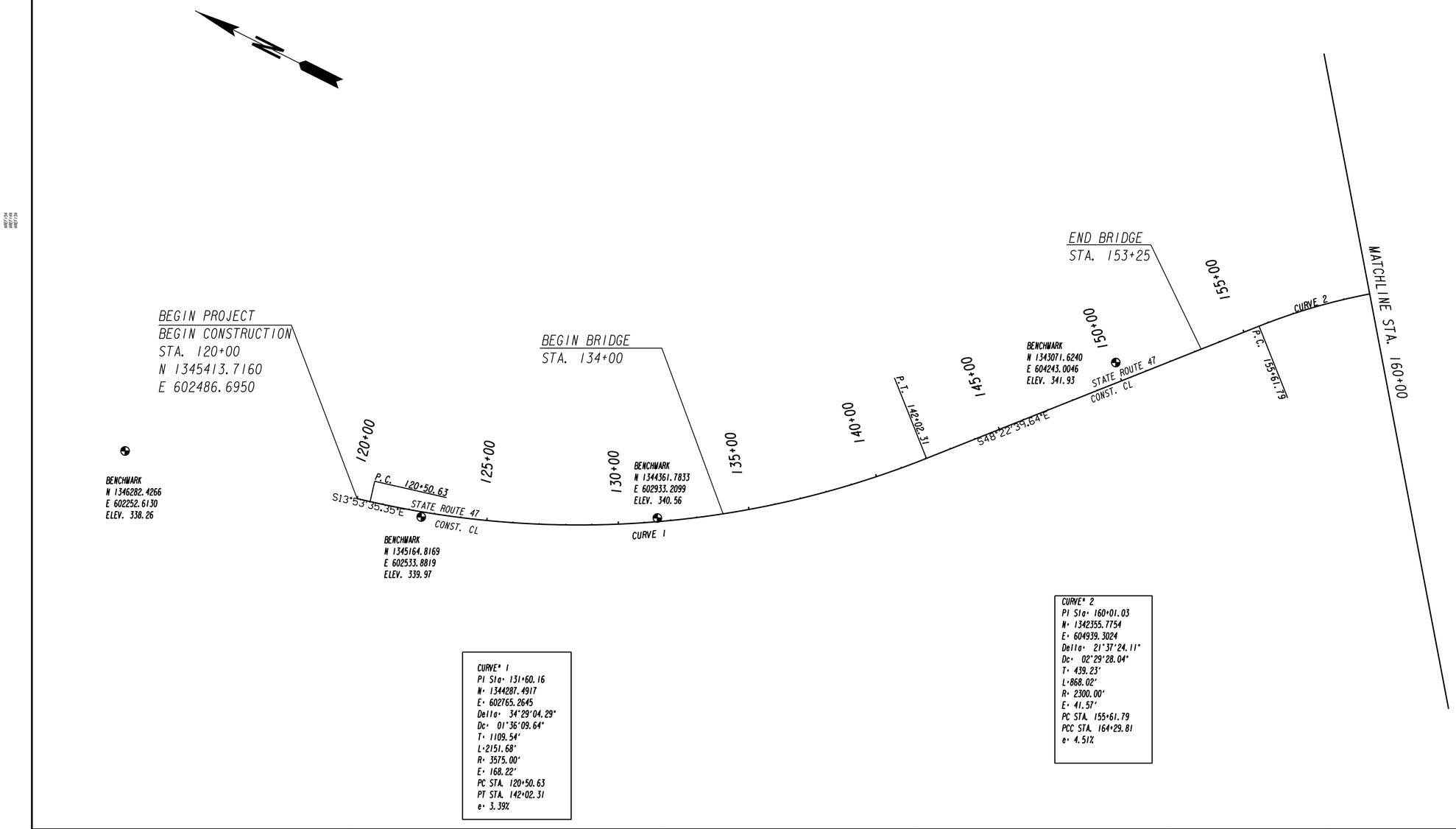
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

TYPICAL SECTIONS

STATE ROUTE 47

DRAWING No. 05-002

3/1/2007 GPLN



CURVE* 1
PI Sta. 131+60.16
N. 1344287.4917
E. 602765.2645
Delta. 34°29'04.29"
Dc. 01°36'09.64"
T. 1109.54'
L. 2151.68'
R. 3575.00'
E. 168.22'
PC STA. 120+50.63
PT STA. 142+02.31
e. 3.39%

CURVE* 2
PI Sta. 160+01.03
N. 1342355.7754
E. 604939.3024
Delta. 21°37'24.11"
Dc. 02°29'28.04"
T. 439.23'
L. 868.02'
R. 2300.00'
E. 41.57'
PC STA. 155+61.79
PCC STA. 164+29.81
e. 4.51%

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SCALE IN FEET
0 200 400 800

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

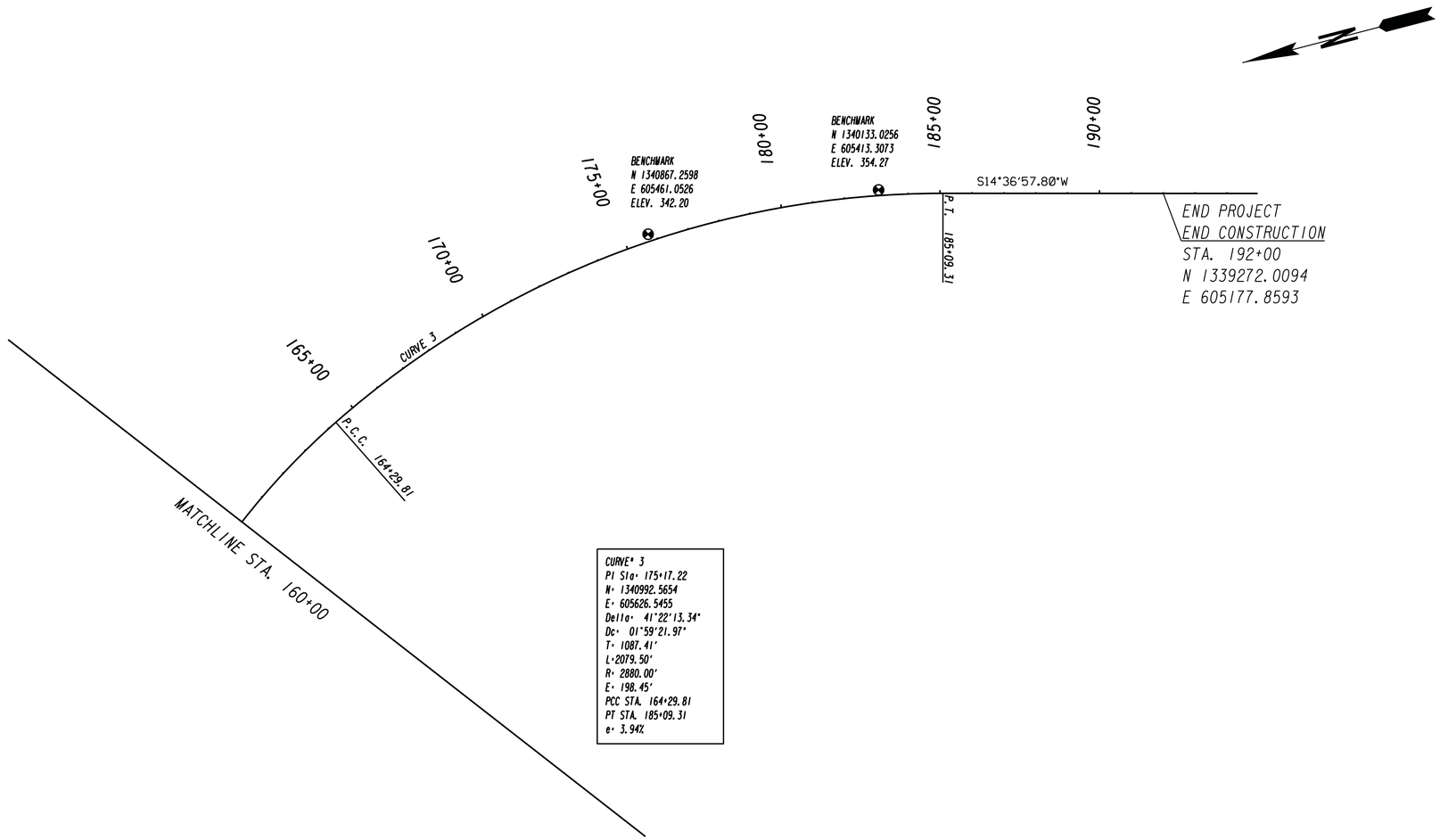
CONSTRUCTION LAYOUT

STATE ROUTE 47

DRAWING No. 11-001

12/14/2012 GPLN

03-NOV-2014 13:21	TIME$$$	$PRFB$	Y:\Roadways\138973\232310\Dgn\0232310_11-002.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(036)	10	267



12/14/2012 GPLN

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 200 400 800

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

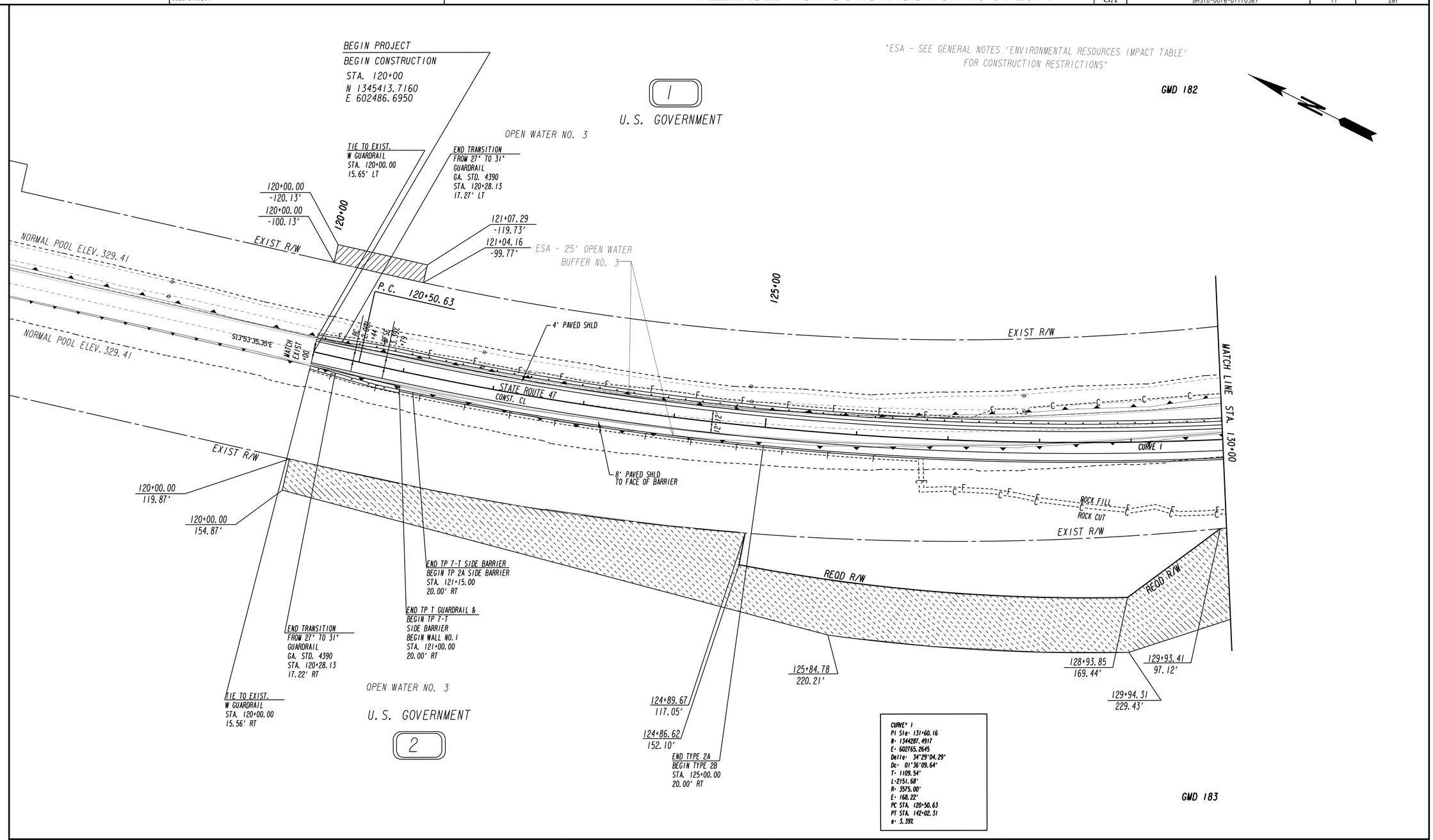
CONSTRUCTION LAYOUT

STATE ROUTE 47

DRAWING No. 11-002

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-011(036)	11	267



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
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

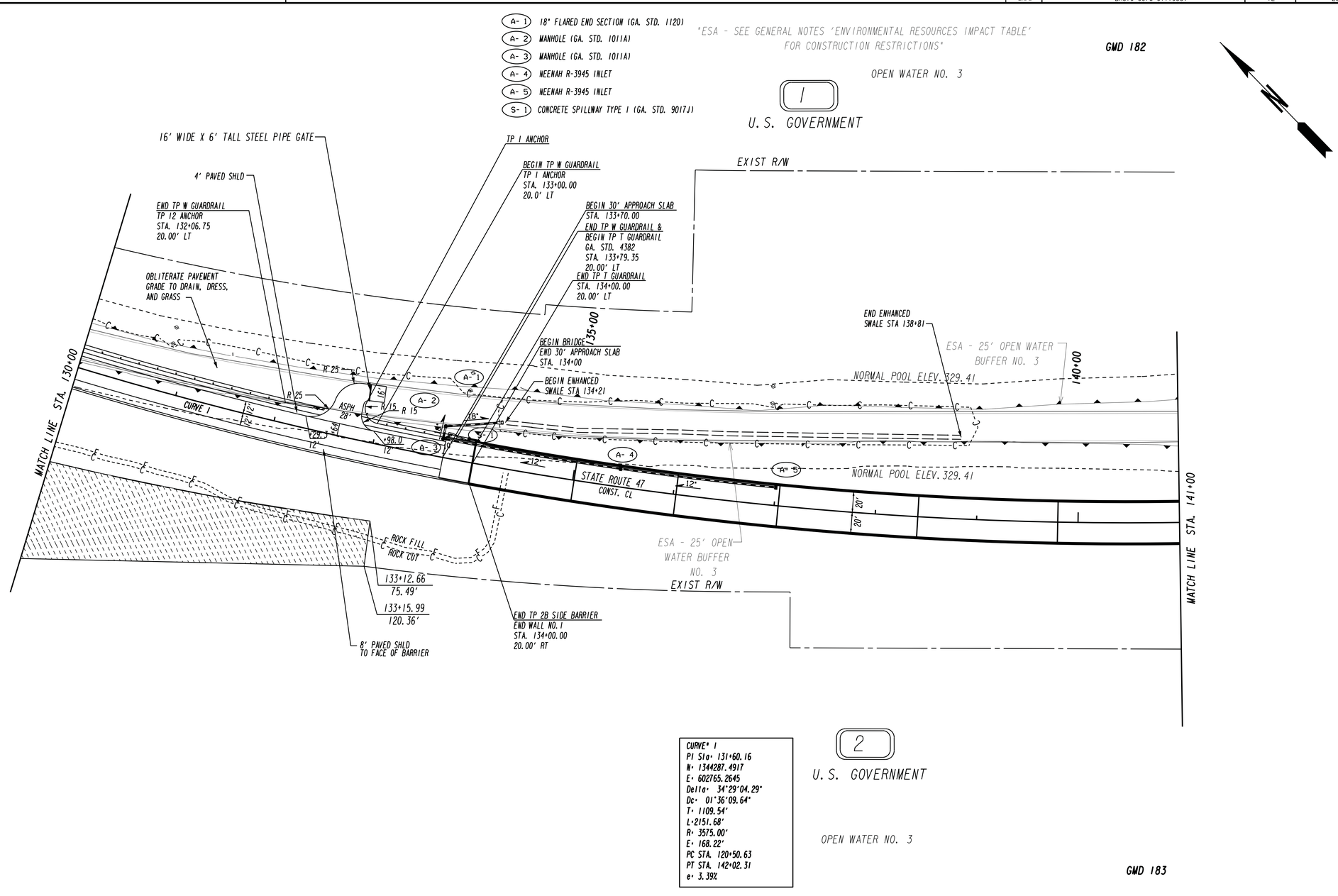
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

MAINLINE PLAN

LINCOLN/COLUMBIA COUNTY
STA. 120+00 TO STA. 130+00

DRAWING No. 13-001

12/14/2012 GPLN



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
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

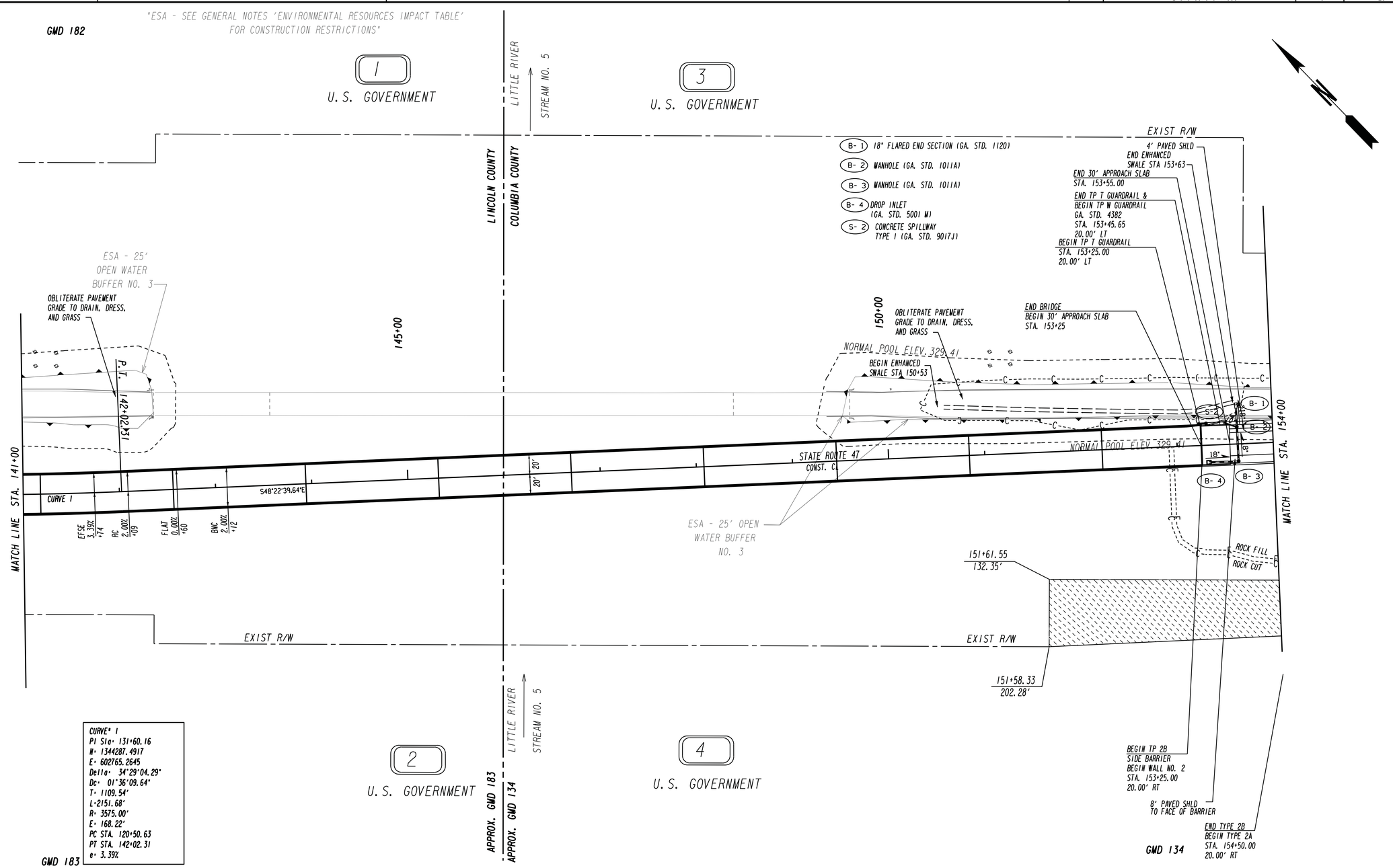
MAINLINE PLAN

LINCOLN/COLUMBIA COUNTY
STA. 130+00 TO STA. 141+00

DRAWING No: 13-002

12/14/2012 GPLN

03-NOV-2014 13:21	TIME$$$	$PRFB$	Y:\Roadways\138973\232310\Dgn\0232310_13-003.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	13	267



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
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE

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NORCROSS, GEORGIA 30092
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SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

MAINLINE PLAN

LINCOLN/COLUMBIA COUNTY
STA. 141+00 TO STA. 154+00

DRAWING No. 13-003

12/14/2012 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	14	267

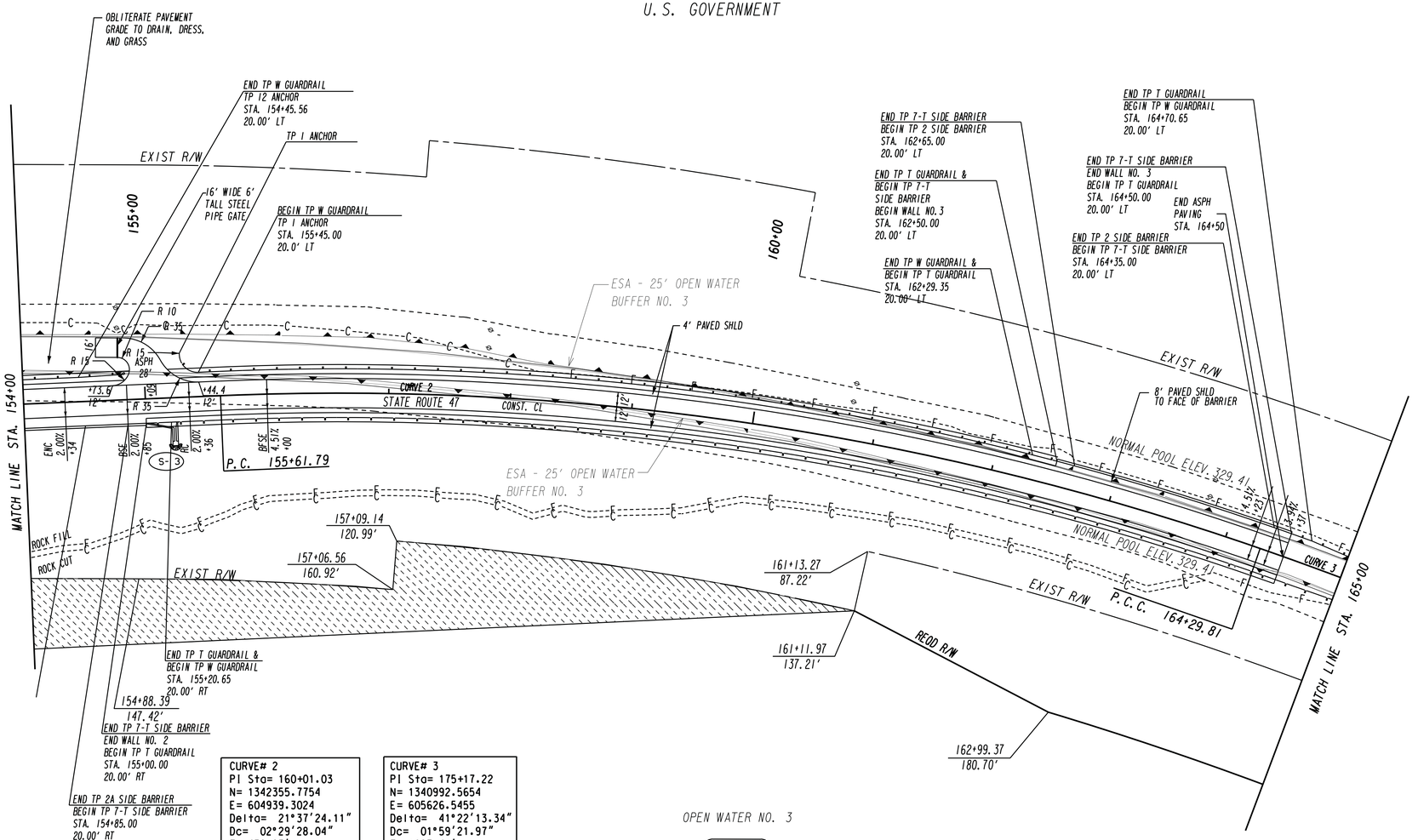
"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

S-3 CONCRETE SPILLWAY TYPE 3 (GA. STD. 9013) WITH ROCK FILTER DAM

OPEN WATER NO. 3

3

U.S. GOVERNMENT



CURVE# 2
PI Sta= 160+01.03
N= 1342355.7754
E= 604939.3024
Delta= 21°37'24.11"
Dc= 02°29'28.04"
T= 439.23'
L=868.02'
R= 2300.00'
E= 41.57'
PC STA. 155+61.79
PCC STA. 164+29.81
e= 4.51%

CURVE# 3
PI Sta= 175+17.22
N= 1340992.5654
E= 605626.5455
Delta= 41°22'13.34"
Dc= 01°59'21.97"
T= 1087.41'
L=2079.50'
R= 2880.00'
E= 198.45'
PCC STA. 164+29.81
PT STA. 185+09.31
e= 3.94%

OPEN WATER NO. 3

4

U.S. GOVERNMENT

GMD 134

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
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

MAINLINE PLAN

LINCOLN/COLUMBIA COUNTY
STA. 154+00 TO STA. 165+00

DRAWING No. 13-004

12/14/2012 GPLN

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

3

U. S. GOVERNMENT
OPEN WATER NO. 3

ESA - 25' OPEN WATER BUFFER NO. 3

170+00

175+00

END TRANSITION
FROM 31" TO 27"
GUARDRAIL
GA. STD. 4390
STA. 165+69.03
15.84' LT

TIE TO EXIST.
W GUARDRAIL
STA. 165+98.13
15.30' LT

EXIST R/W

NORMAL POOL ELEV. 329.41

STATE ROUTE 47 CONST. CL

CURVE 3

EXIST R/W

MATCH LINE STA. 165+00

TIE TO EXIST.
W GUARDRAIL
STA. 165+97.17
15.48' RT

166+15.56
59.97'

166+15.62
89.97'

END TRANSITION
FROM 31" TO 27"
GUARDRAIL
GA. STD. 4390
STA. 165+69.03
16.94' RT

REOD R/W

4

U. S. GOVERNMENT
OPEN WATER NO. 3

ESA - 25' OPEN WATER BUFFER NO. 3

173+22.47
121.29'

173+23.70
171.27'

CURVE# 3
PI Sta= 175+17.22
N= 1340992.5654
E= 605626.5455
Delta= 41°22'13.34"
Dc= 01°59'21.97"
T= 1087.41'
L=2079.50'
R= 2880.00'
E= 198.45'
PCC STA. 164+29.81
PT STA. 185+09.31
e= 3.94%

EXIST R/W

MATCH LINE STA. 177+00

BEGIN ENHANCED SWALE STA 174+50

176+15.10
59.09'

176+15.09
69.09'

GMD 134

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
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE

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SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

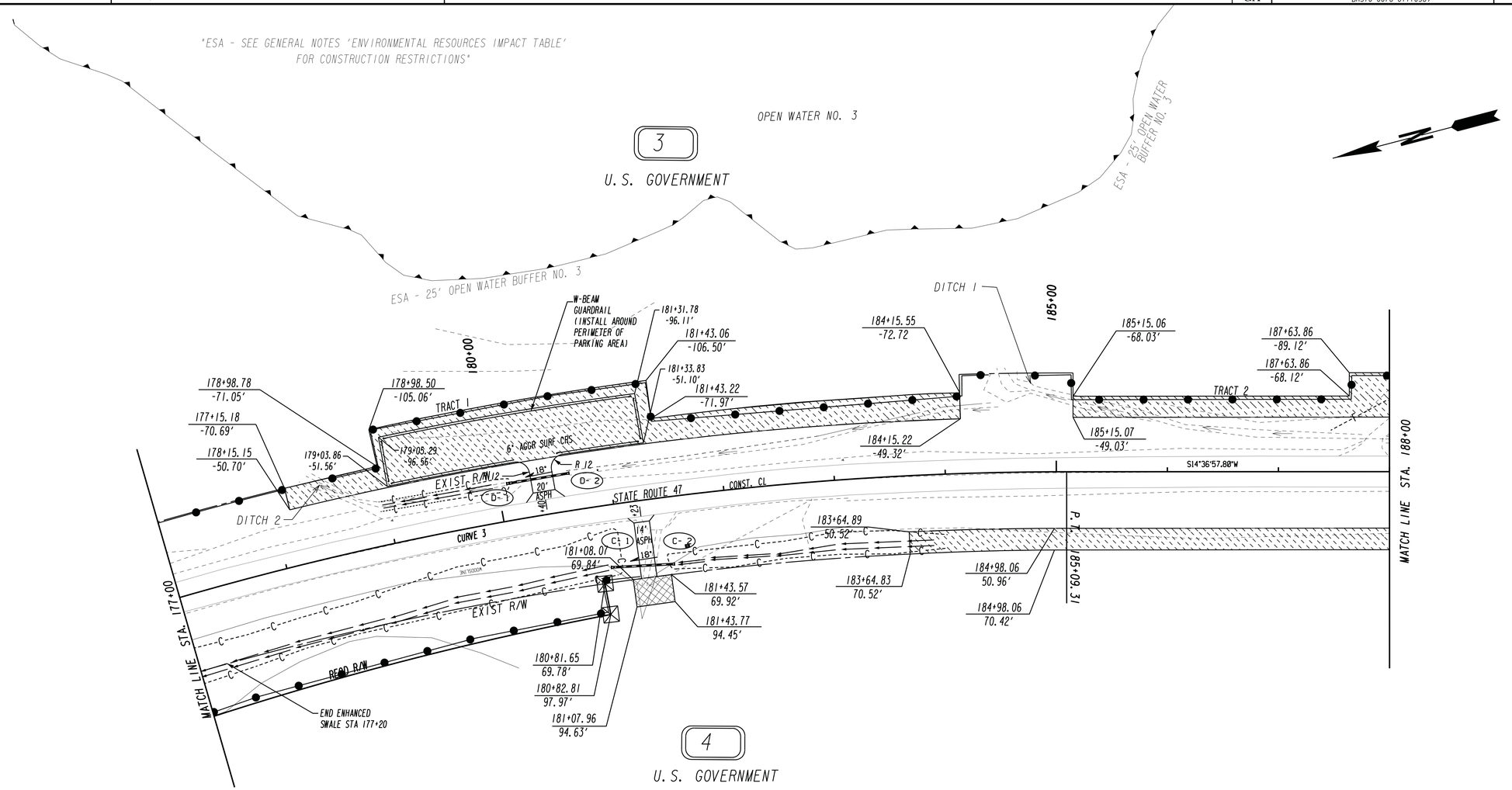
MAINLINE PLAN

LINCOLN/COLUMBIA COUNTY
STA. 165+00 TO STA. 177+00

DRAWING No. 13-005

12/14/2012 GPLN

03-NOV-2014 13:21	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_13-006.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
dgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	16	267



CURVE# 3
PI Sta= 175+17.22
N= 1340992.5654
E= 605626.5455
Delta= 41°22'13.34"
Dc= 01°59'21.97"
T= 1087.41'
L=2079.50'
R= 2880.00'
E= 198.45'
PCC STA. 164+29.81
PT STA. 185+09.31
e= 3.94%

GMD 134

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
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

MAINLINE PLAN

LINCOLN/COLUMBIA COUNTY
STA. 177+00 TO STA. 188+00

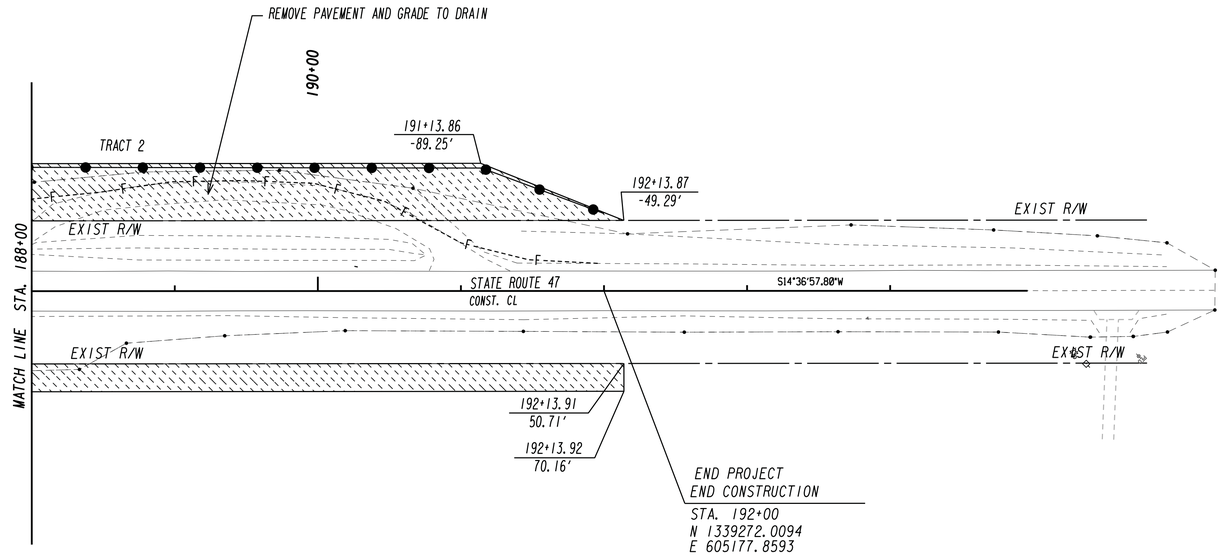
DRAWING NO. 13-006

12/14/2012 GPLN

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

3

U. S. GOVERNMENT



4

U. S. GOVERNMENT

GMD 134

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
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

MAINLINE PLAN

LINCOLN/COLUMBIA COUNTY
STA. 188+00 TO STA. 192+00

DRAWING No. 13-007

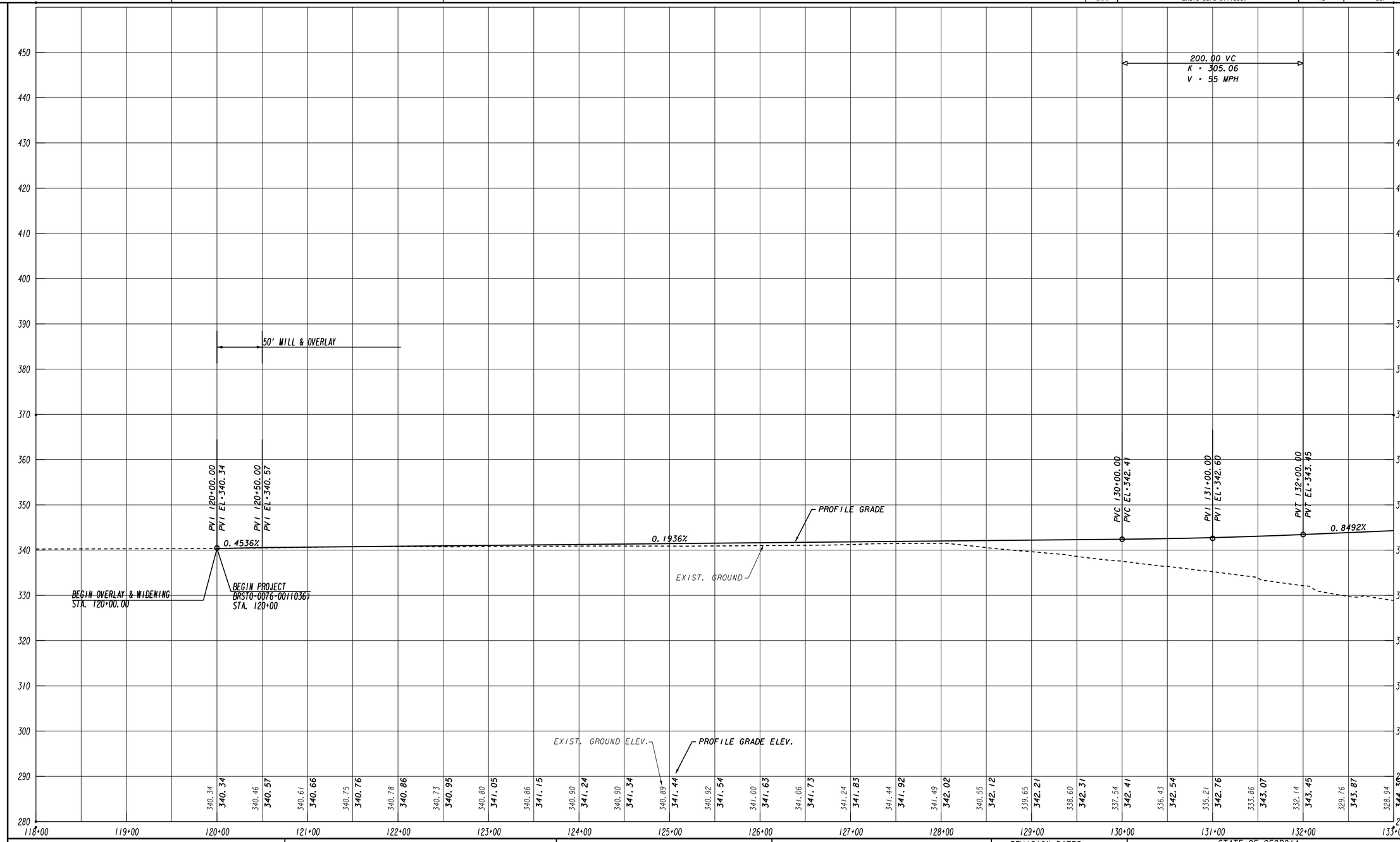
12/14/2012 GPLN

03-NOV-2014 13:21 TIME$$$ $PRF8$ Y:\Roadways\138973\232310\Dgn\0232310_15.dgn

dgowen 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	18	267



		Baker 3595 ENGINEERING DRIVE NORCROSS, GEORGIA 30092 (770) 263-9118	SCALE : 1" = 50' HORIZ. 1" = 10' VERT.

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

MAINLINE PROFILE

LINCOLN/COLUMBIA COUNTY

DRAWING No. 15-001

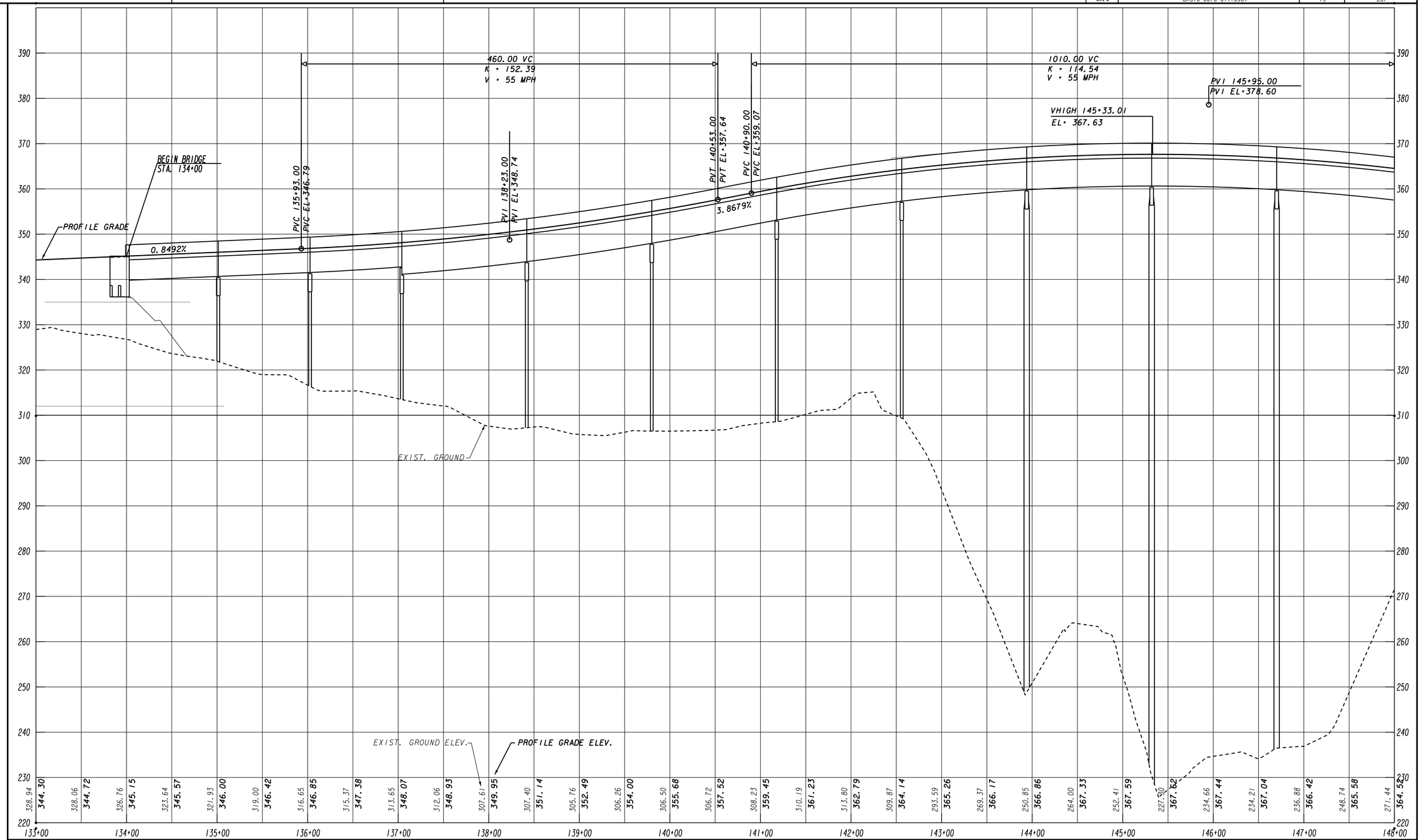
11/30/2011 GRIEDG

03-NOV-2014 13:21 TIME$$ $PRF8$
bgowen 8825Full.pen

Y:\Roadways\138973\232310\Dgn\0232310_15.dgn

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01I(036)	19	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE : 1" = 50' HORIZ.
1" = 10' VERT.

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE: INNOVATIVE PROGRAM DELIVERY

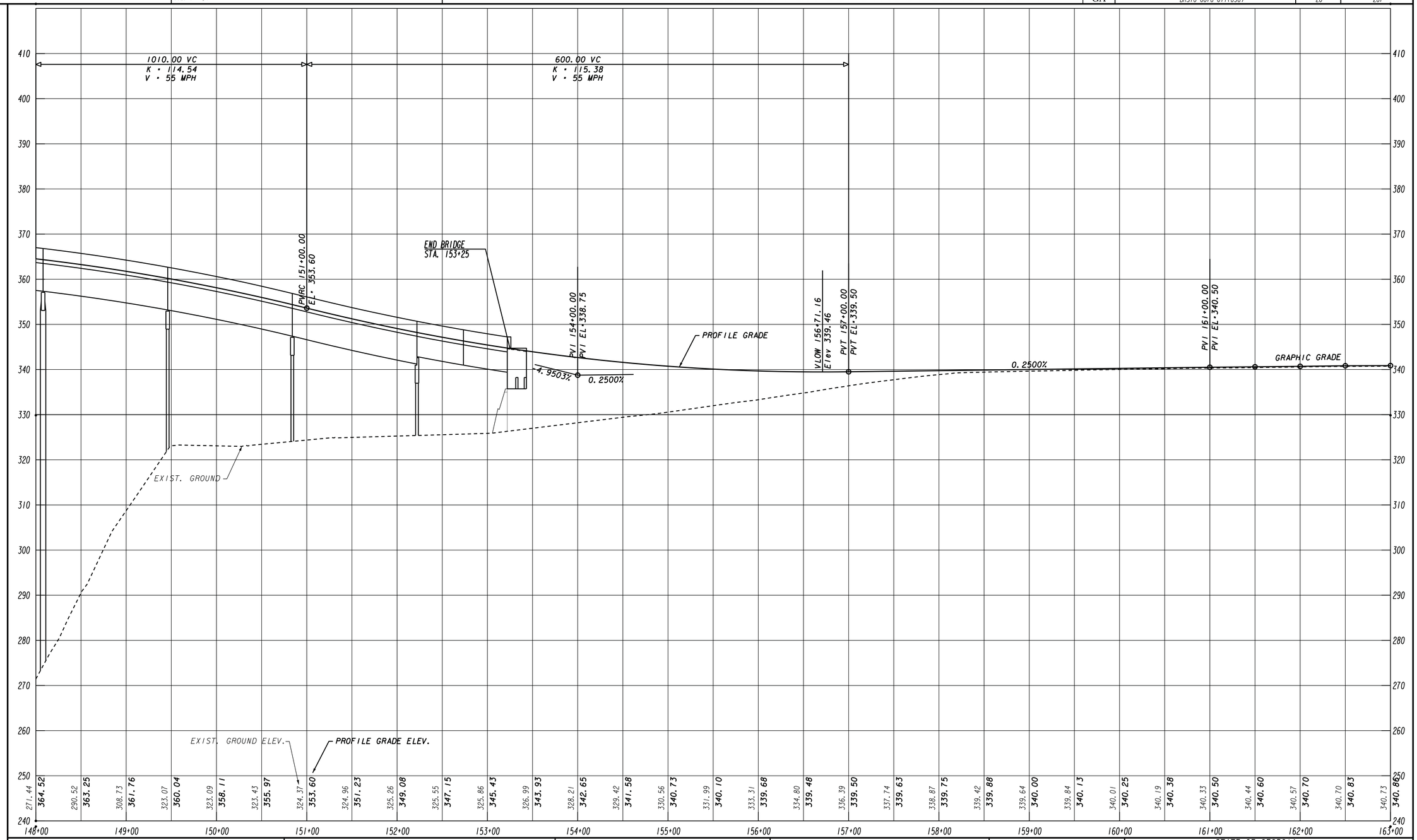
MAINLINE PROFILE

LINCOLN/COLUMBIA COUNTY

DRAWING No. 15-002

11/30/2011 GRIEDG

03-NOV-2014 13:21	TIME$$$	$PRFB$	Y:\Roadways\138973\232310\Dgn\0232310_15.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	20	267



		Baker 3595 ENGINEERING DRIVE NORCROSS, GEORGIA 30092 (770) 263-9118	SCALE : 1" = 50' HORIZ. 1" = 10' VERT.	REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

MAINLINE PROFILE

LINCOLN/COLUMBIA COUNTY

DRAWING No. 15-003

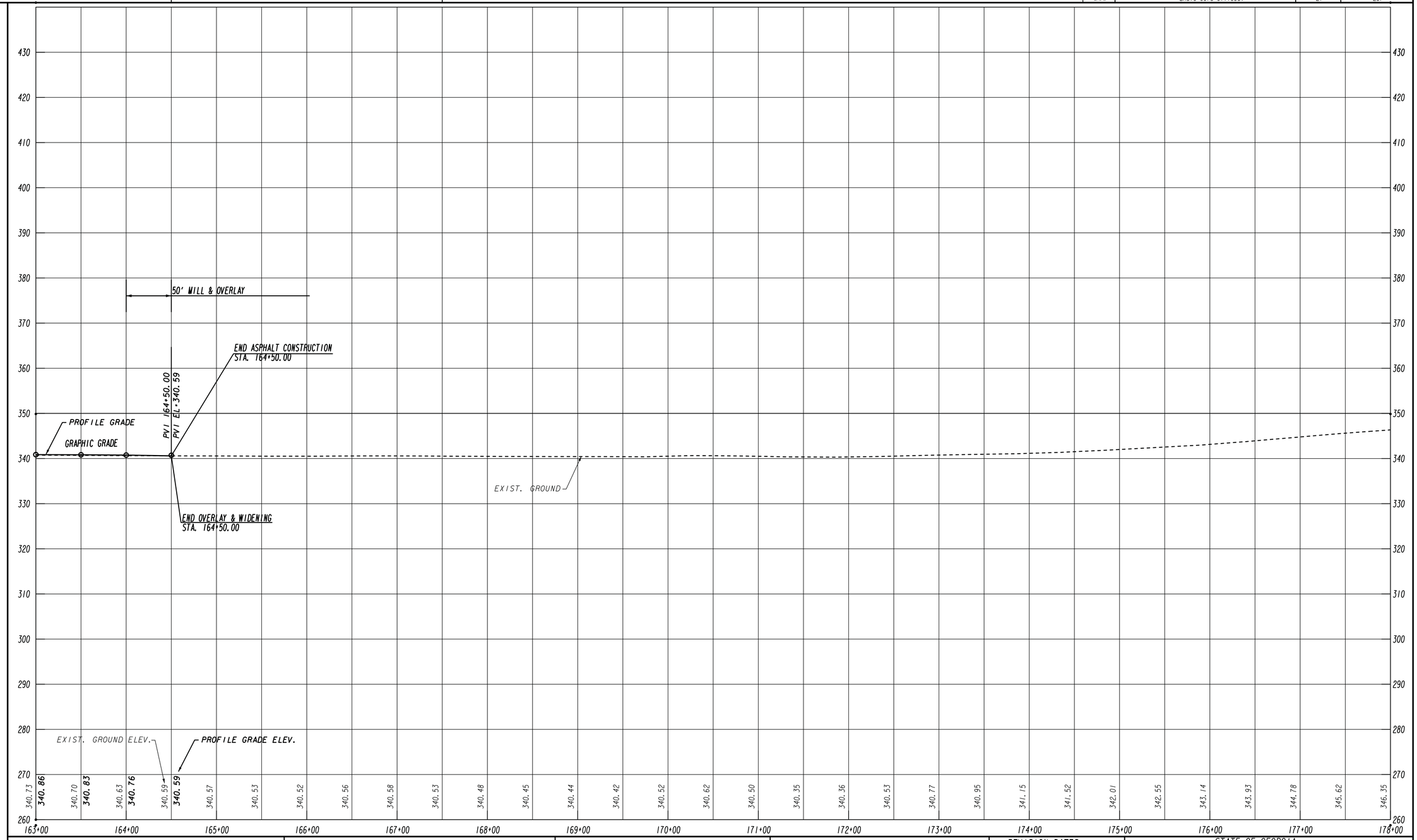
11/30/2011 GRIEDG

03-NOV-2014 13:21 TIME$$$ $PRF8$ Y:\Roadways\138973\232310\Dgn\0232310_15.dgn

dgowen 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	21	267



11/30/2011 GRIEDG

Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE : 1" = 50' HORIZ.
1" = 10' VERT.

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE: INNOVATIVE PROGRAM DELIVERY

MAINLINE PROFILE

LINCOLN/COLUMBIA COUNTY

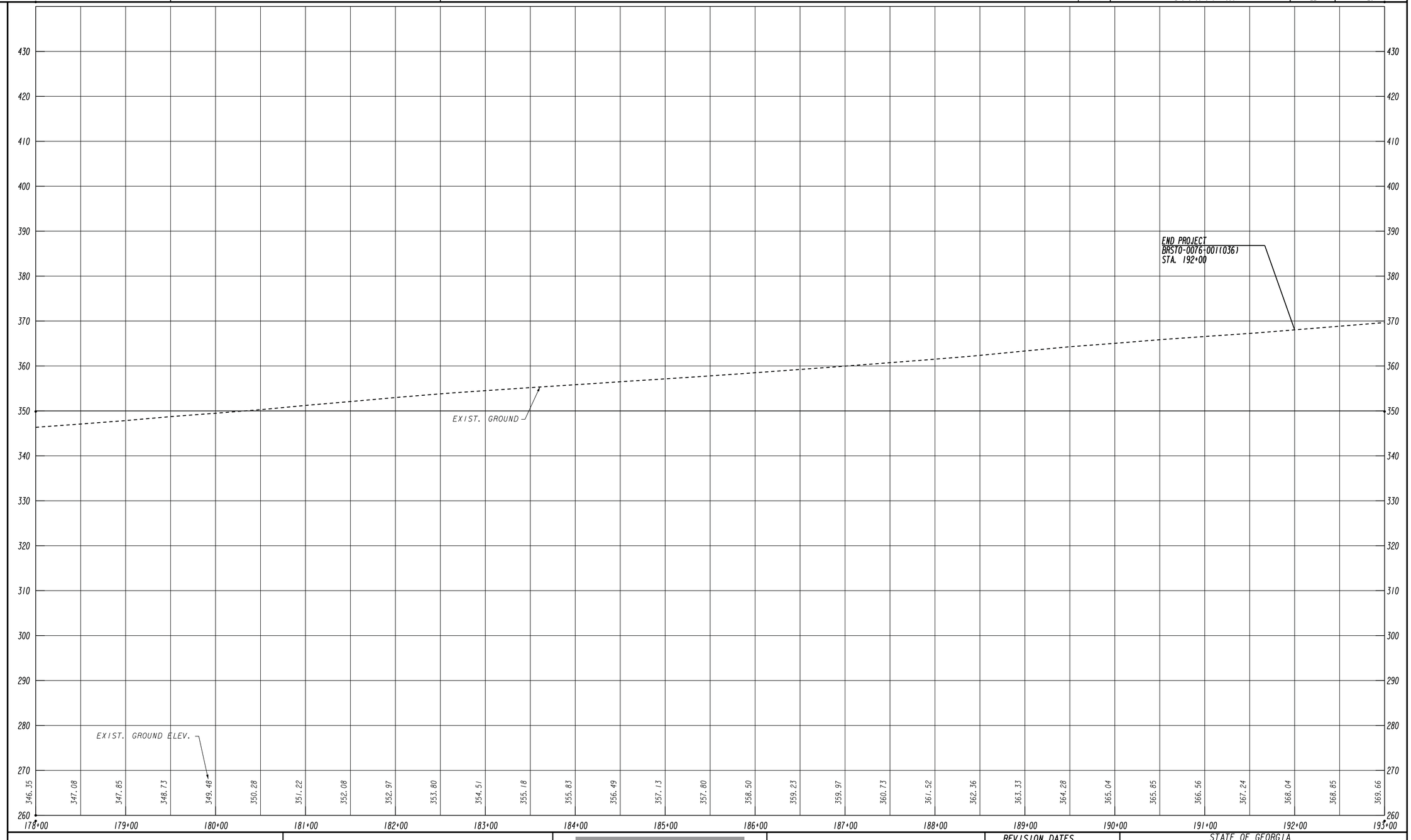
DRAWING No. 15-004

03-NOV-2014 13:21 TIME$$ $PRF8$
bgowen 8825Full.pen

Y:\Roadways\138973\232310\Dgn\0232310_15.dgn

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01I(036)	22	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE : 1" = 50' HORIZ.
1" = 10' VERT.

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

MAINLINE PROFILE

LINCOLN/COLUMBIA COUNTY

DRAWING No. 15-005

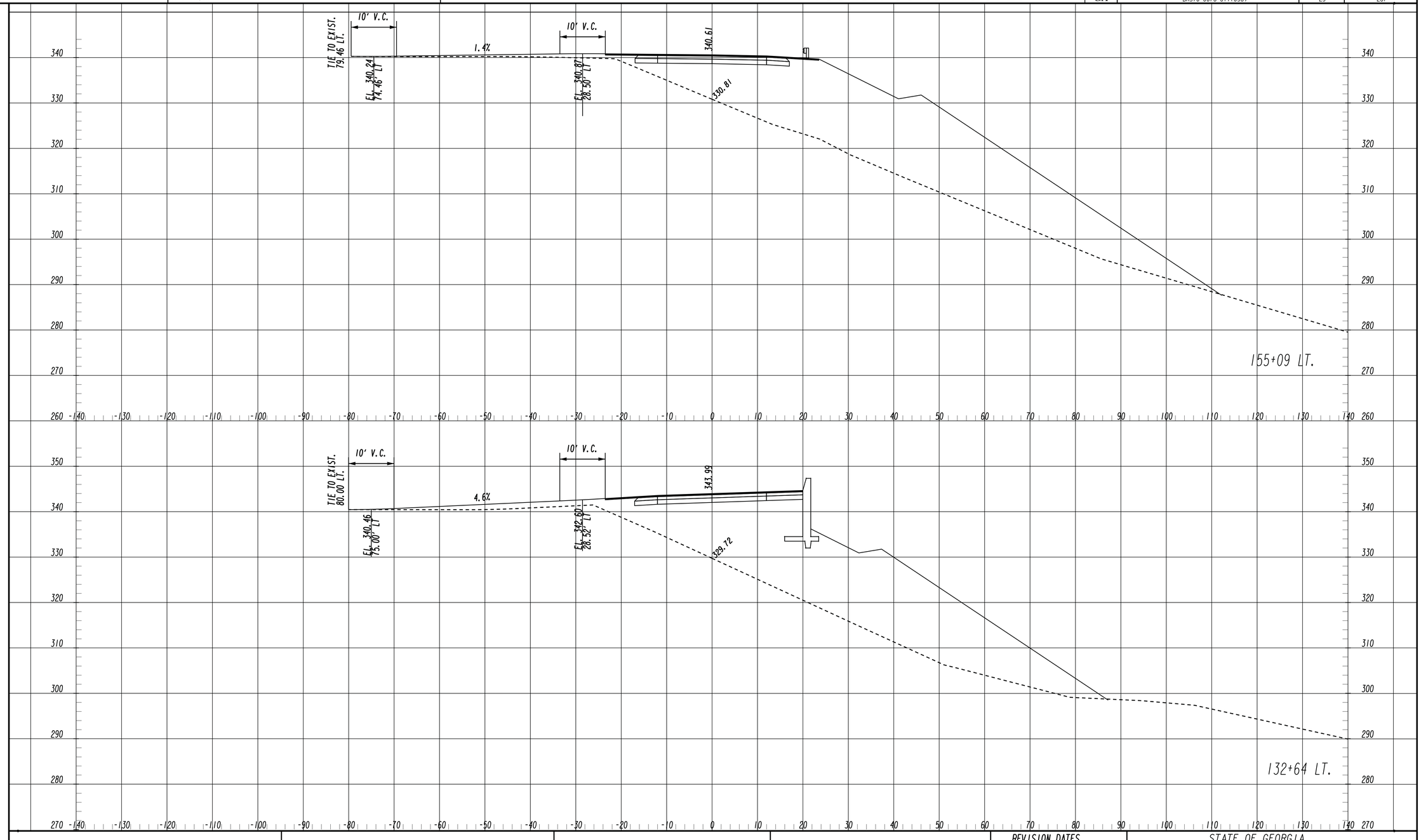
11/30/2011 GRIEDG

03-NOV-2014 13:21 TIME$$ $PRF8$ Y:\Roadways\138973\232310\Dgn\0232310_17.dgn

bgowen 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	23	267



11/30/2011 SUYSEW

Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE: INNOVATIVE PROGRAM DELIVERY

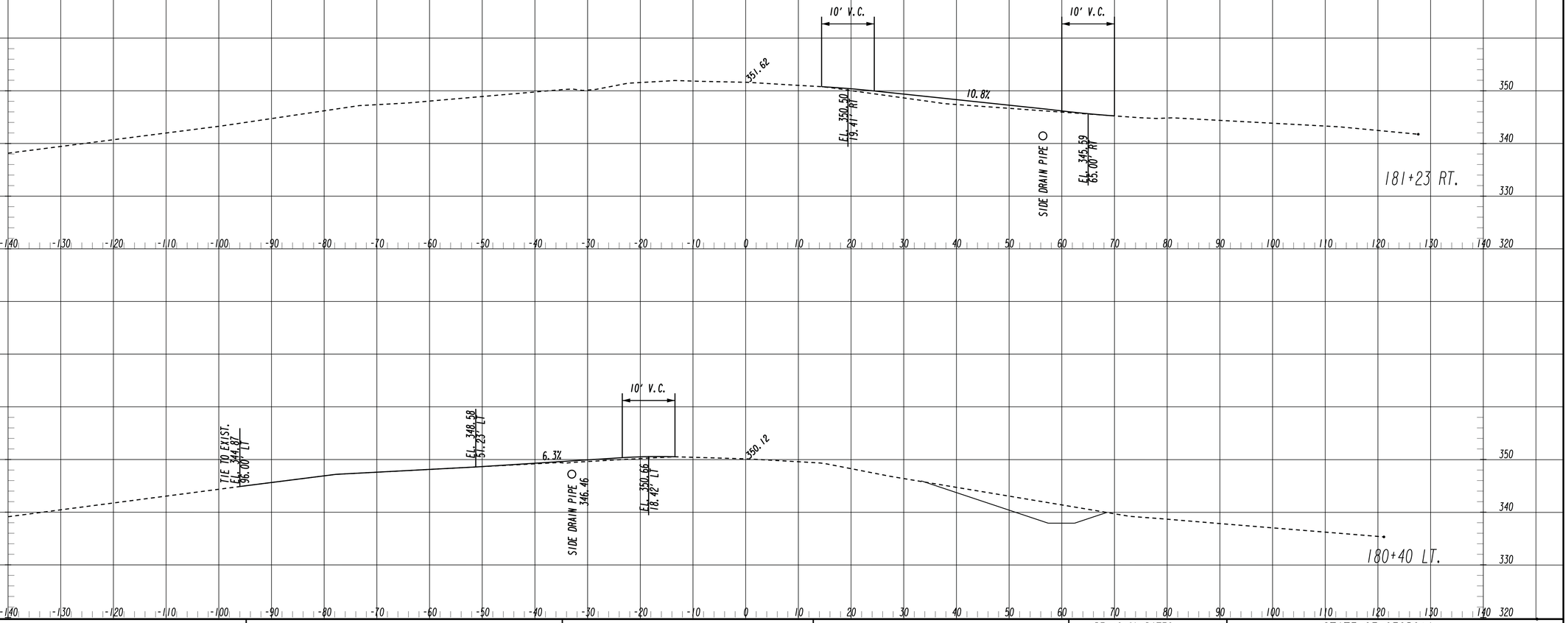
DRIVEWAY PROFILES

STATE ROUTE 47

DRAWING No. 17-001

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	24	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

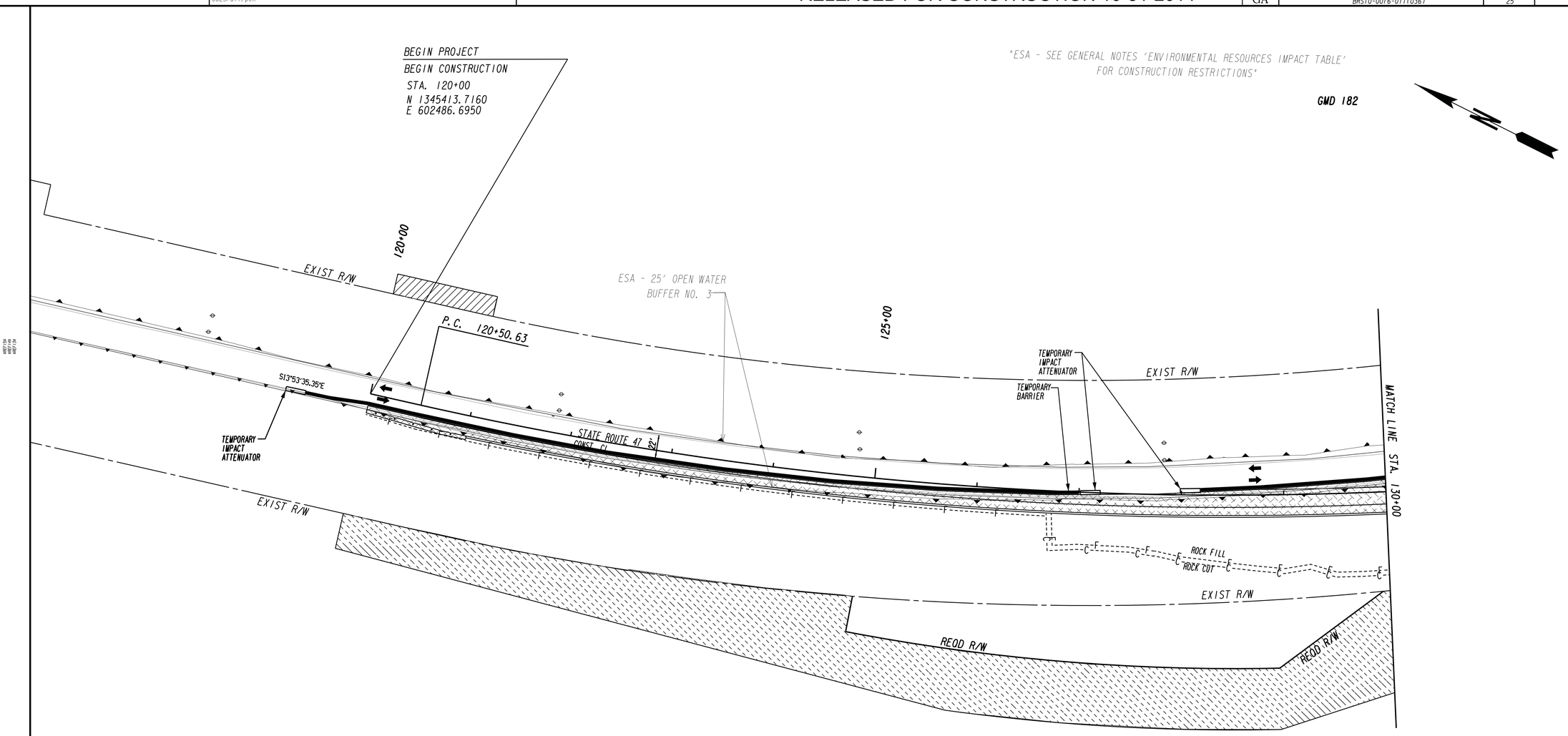
DRIVEWAY PROFILES

STATE ROUTE 47

DRAWING NO. 17-002

11/30/2011 SUXSEW

03-NOV-2014 13:21	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_19-001.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	25	267



STAGE 1
1. INSTALL ADVANCE WARNING SIGNS IN ACCORDANCE WITH GDOT SPECIAL PROVISION SECTION 150 AND MOST CURRENT EDITION OF MUTCD.

2. REDUCE SPEED LIMIT TO 45 MPH FOR DURATION OF CONSTRUCTION PERIOD.

3. STRIPE TEMPORARY TRAFFIC LANES, INSTALL TEMPORARY BARRIER ON SR 47 AND SHIFT TRAFFIC TO ACCOMMODATE STAGE 1 CONSTRUCTION AS SHOWN IN THE PLANS.

4. CONSTRUCT BRIDGE WEST OF EXISTING SR 47.

5. CONSTRUCT PROPOSED PAVEMENT UP TO BINDER COURSE ON THE WEST SIDE OF EXISTING SR 47 AS SHOWN IN THE PLANS.

GMD 183

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 1

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

LINCOLN/COLUMBIA COUNTY
STA. 120+00 TO STA. 130+00

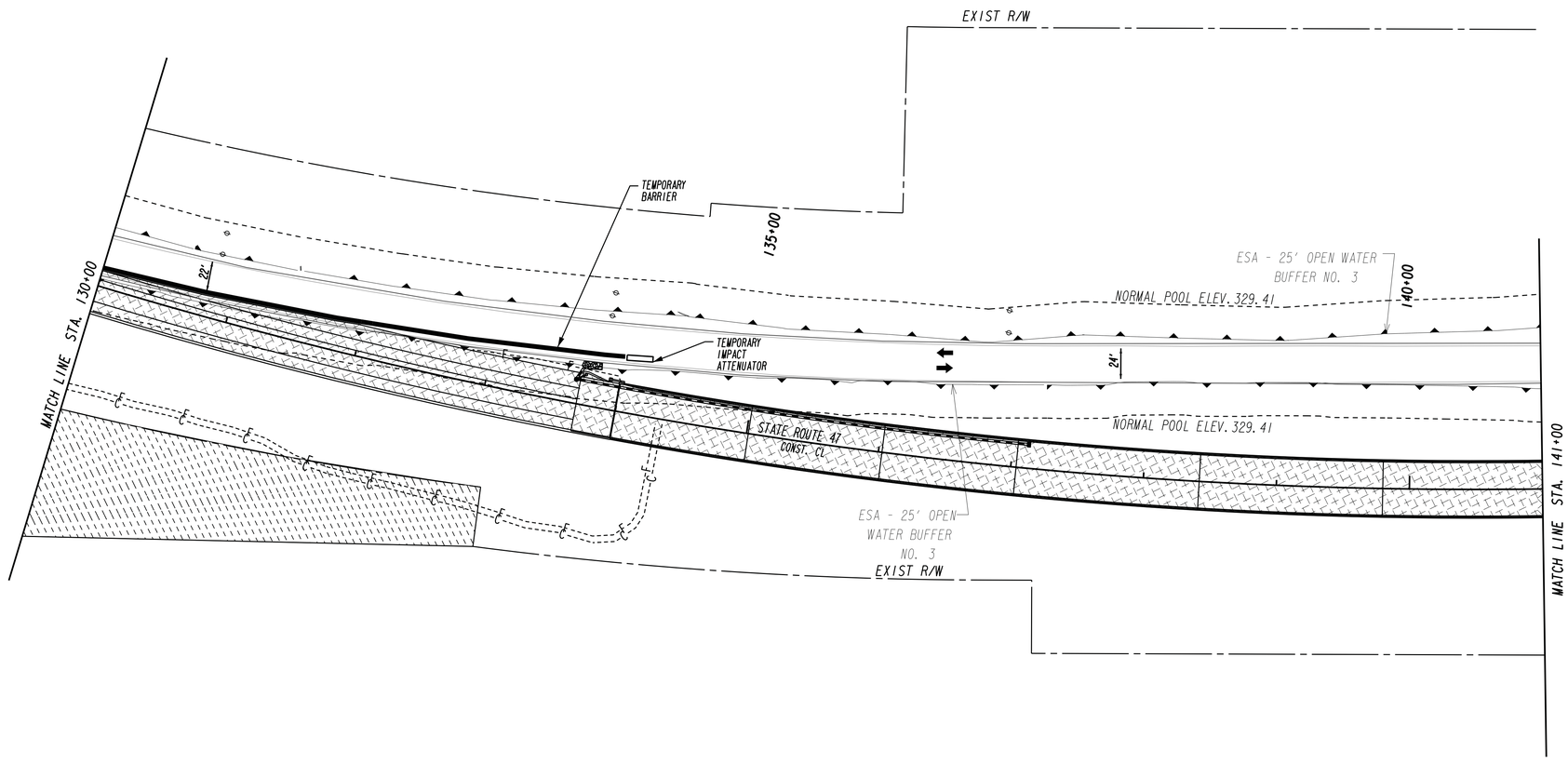
DRAWING No. 19-001

12/14/2012 GPLN

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

GMD 182

OPEN WATER NO. 3



OPEN WATER NO. 3

GMD 183

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

12/14/2012 GPLN

STAGE 1

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

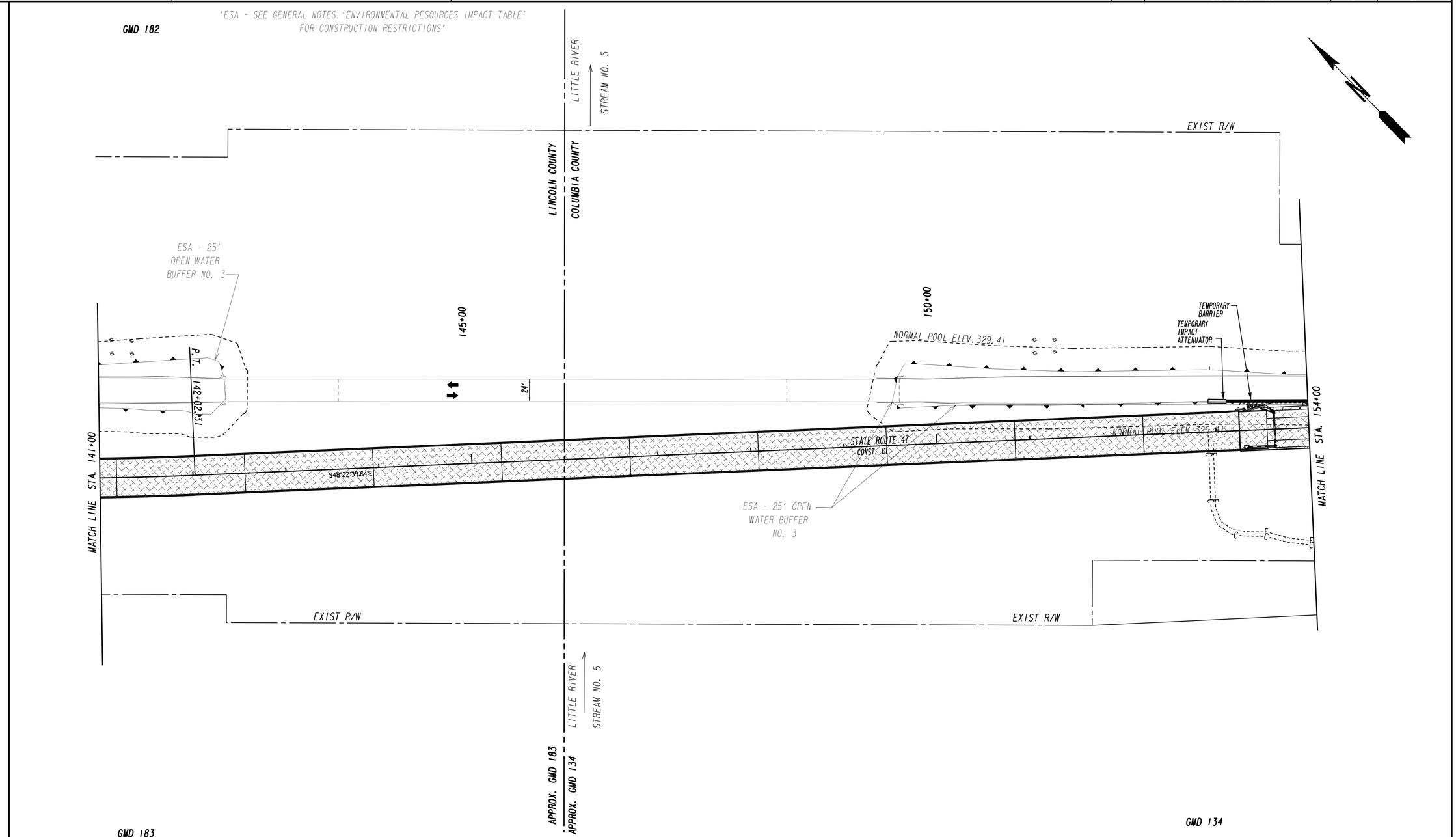
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

LINCOLN/COLUMBIA COUNTY
STA. 130+00 TO STA. 141+00

DRAWING No: 19-002

03-NOV-2014 13:21	TIME$$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_19-003.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	27	267



LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 1

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

LINCOLN/COLUMBIA COUNTY
STA. 141+00 TO STA. 154+00

DRAWING No. 19-003

12/14/2012 GPLN

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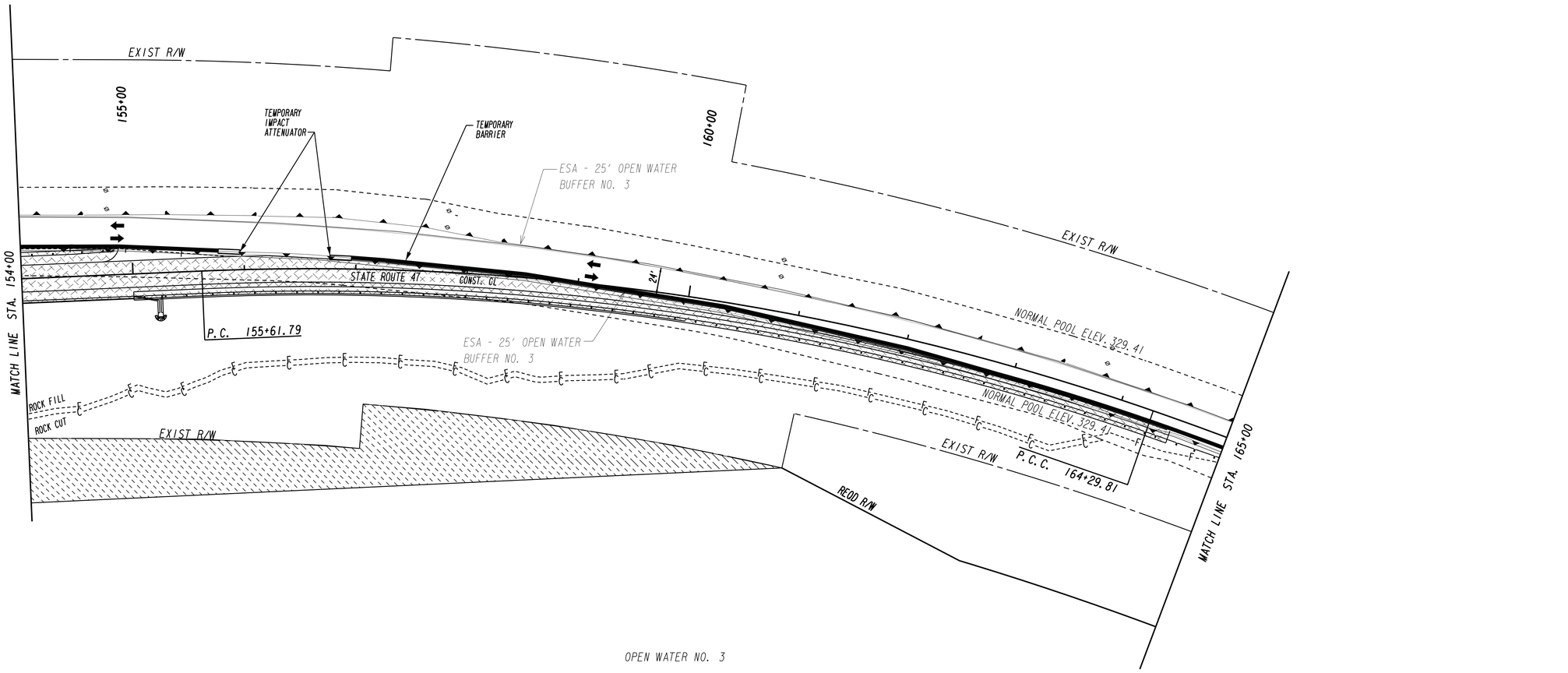
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	28	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

OPEN WATER NO. 3



OPEN WATER NO. 3

GMD 134

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 1

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

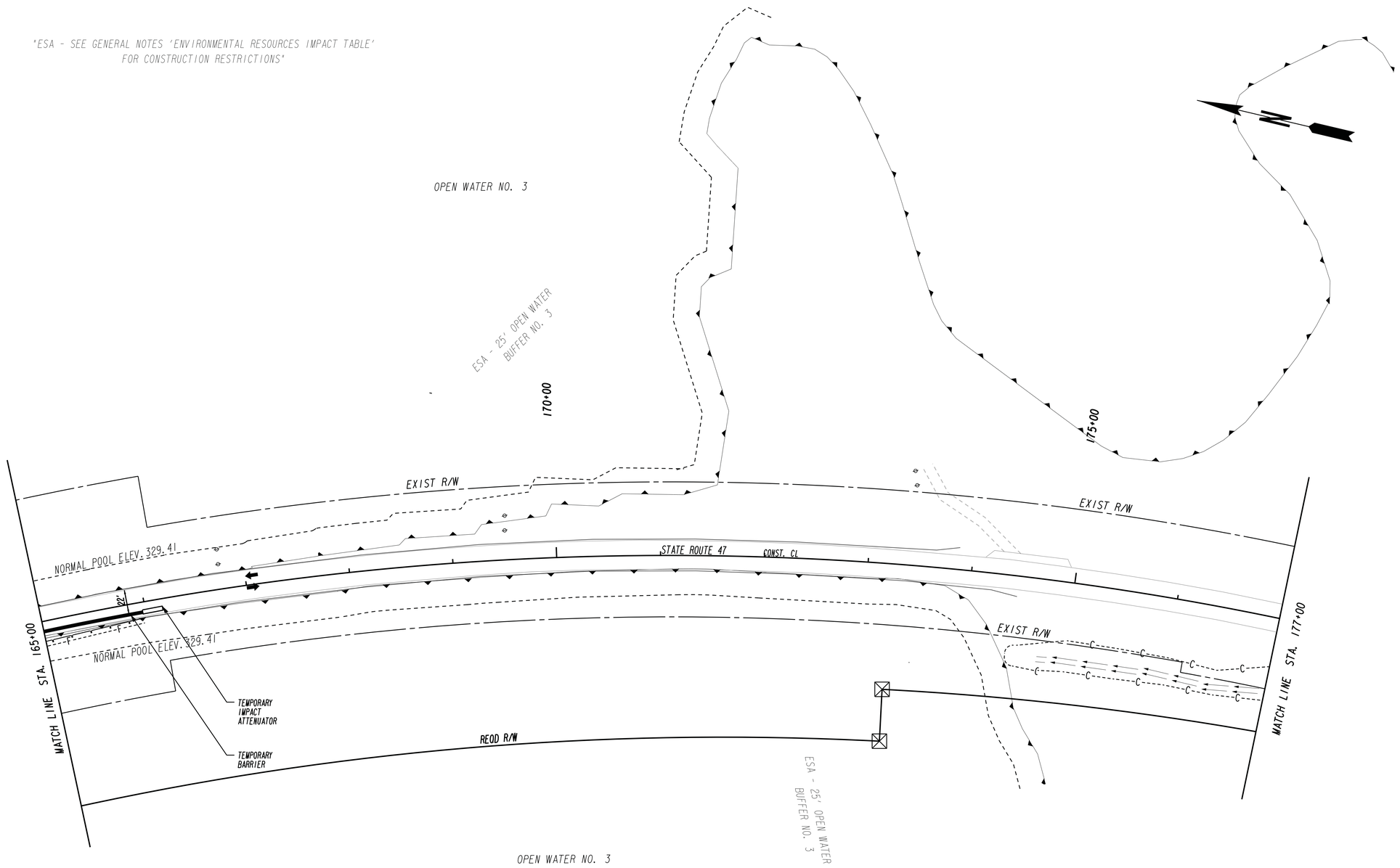
CONSTRUCTION STAGING PLAN

LINCOLN/COLUMBIA COUNTY
STA. 154+00 TO STA. 165+00

DRAWING No. 19-004

12/14/2012 GPLN

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"



GMD 134

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 1

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

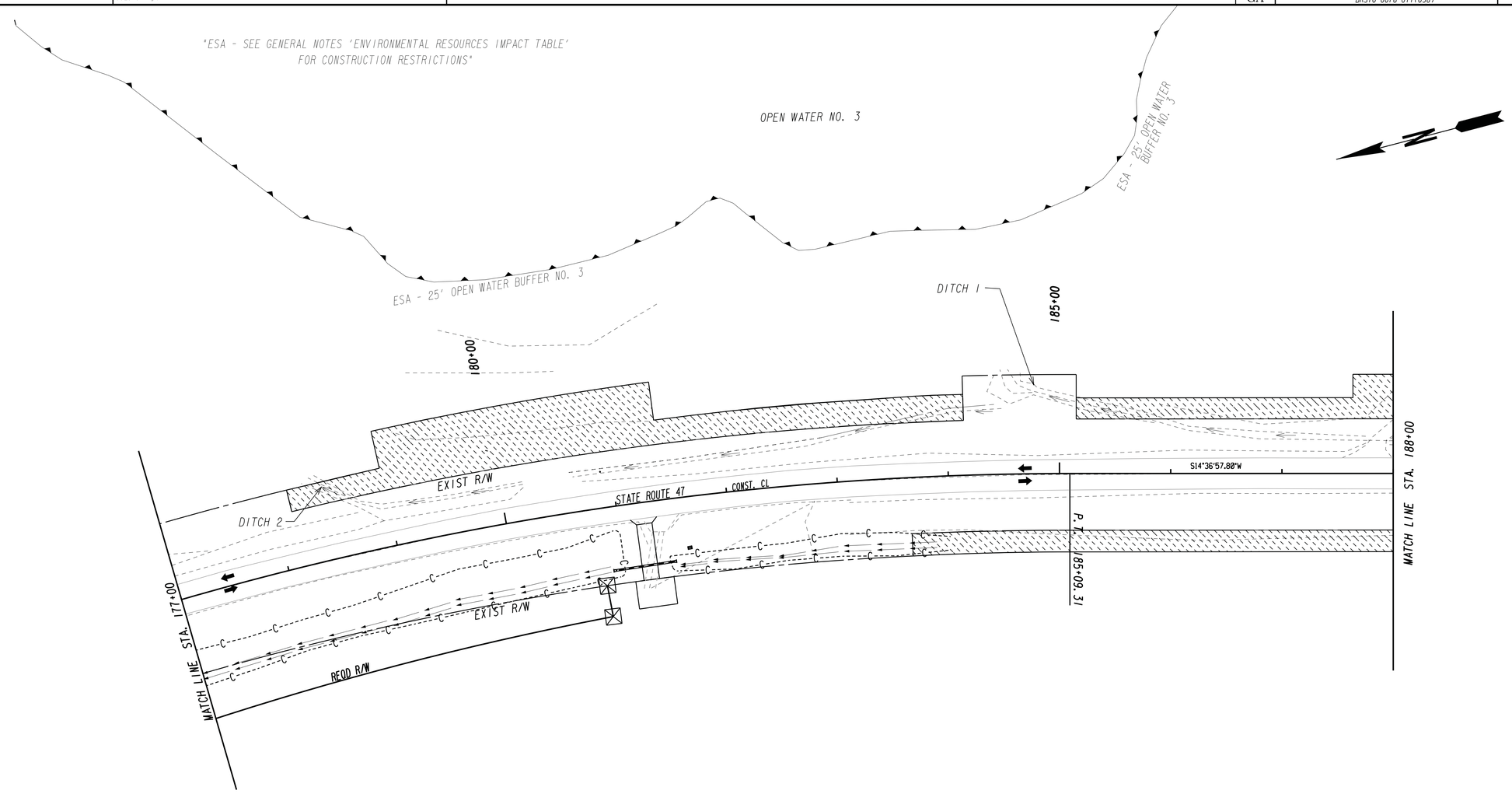
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

LINCOLN/COLUMBIA COUNTY
STA. 165+00 TO STA. 177+00

DRAWING NO. 19-005

12/14/2012 GPLN



GMD 134

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

12/14/2012 GPLN

STAGE 1

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

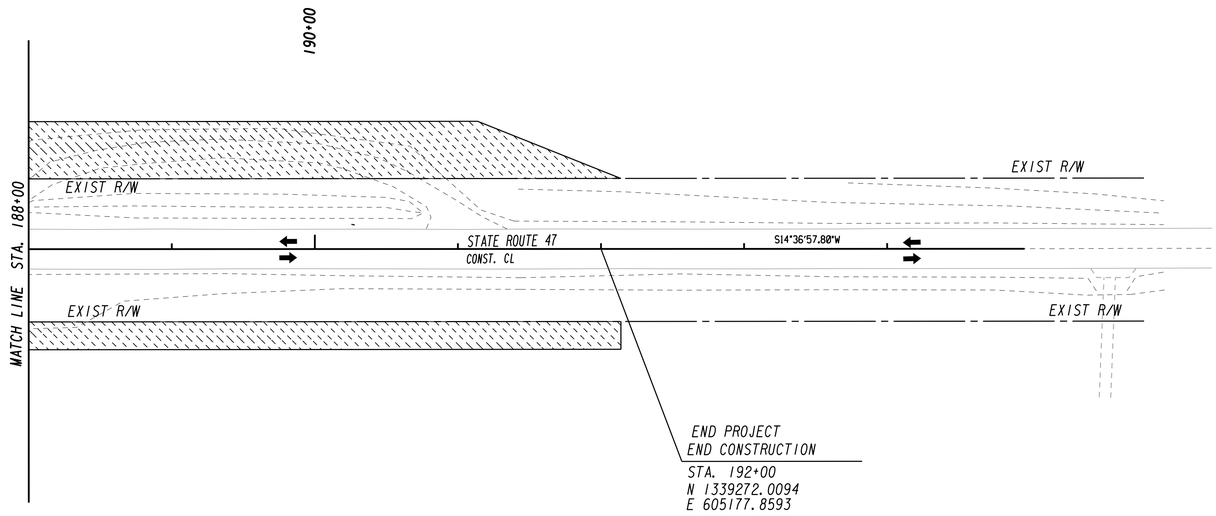
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

LINCOLN/COLUMBIA COUNTY
STA. 177+00 TO STA. 188+00

DRAWING No. 19-006

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"



GMD 134

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 1

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

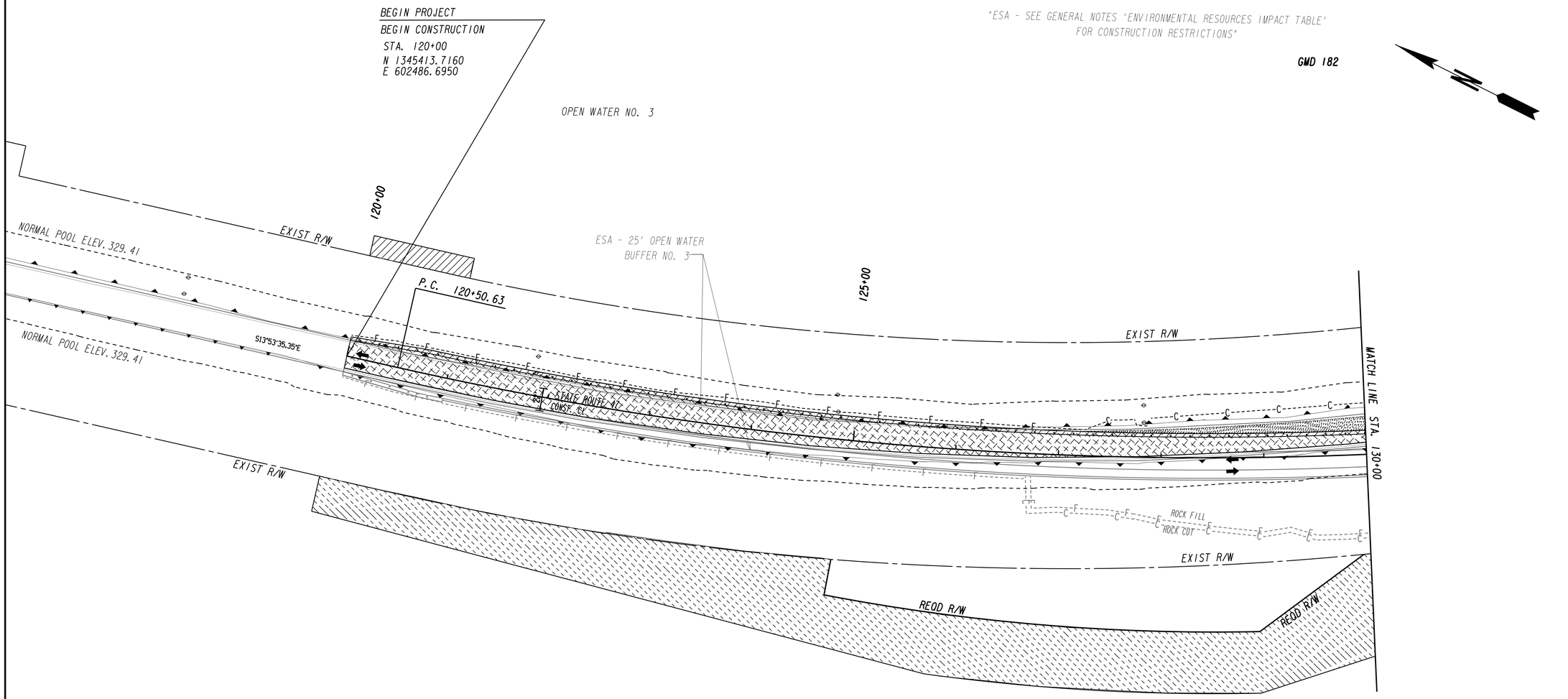
CONSTRUCTION STAGING PLAN

LINCOLN/COLUMBIA COUNTY
STA. 188+00 TO STA. 192+00

DRAWING No. 19-007

12/14/2012 GPLN

03-NOV-2014 13:22	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_19-008.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	32	267



STAGE 2
1. SHIFT TRAFFIC TO THE WEST SIDE OF NEWLY CONSTRUCTED PORTION OF S.R. 47.
2. CONSTRUCT EAST SIDE OF PROPOSED TIE IN LOCATIONS THROUGH LEVELING COURSE ON S.R 47 AS SHOWN ON THE PLANS.
3. CONSTRUCT PARK AREA AT APPROXIMATE STA. 180+40 LT.
4. REMOVE EXISTING BRIDGE.
5. REMOVE EXISTING ROADBED.

GWD 183

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

12/14/2012 GPLN

STAGE 2

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

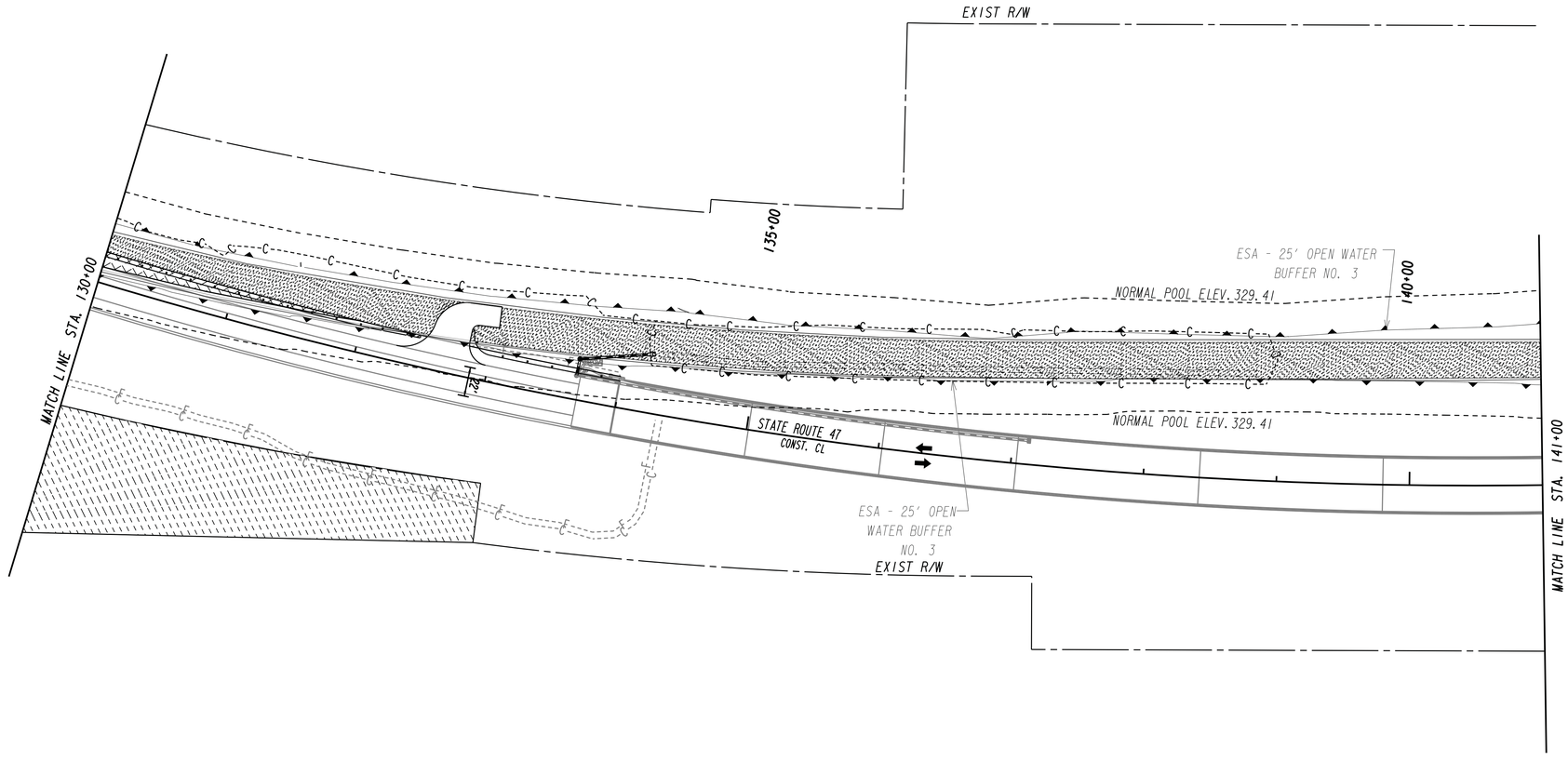
LINCOLN/COLUMBIA COUNTY
STA. 120+00 TO STA. 130+00

DRAWING No. 19-008

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

GMD 182

OPEN WATER NO. 3



OPEN WATER NO. 3

GMD 183

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 2

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

LINCOLN/COLUMBIA COUNTY
STA. 130+00 TO STA. 141+00

DRAWING No. 19-009

12/14/2012 GPLN

03-NOV-2014 13:22	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_19-010.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	34	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

GMD 182

LITTLE RIVER

STREAM NO. 5

EXIST R/W

LINCOLN COUNTY

COLUMBIA COUNTY

ESA - 25' OPEN WATER BUFFER NO. 3

145+00

150+00

NORMAL POOL ELEV. 329.41

P.I. 142+20.31

STATE ROUTE 47

CONST. CL

NORMAL POOL ELEV. 329.41

S48°22'39.64"E

24'

MATCH LINE STA. 141+00

MATCH LINE STA. 154+00

ESA - 25' OPEN WATER BUFFER NO. 3

EXIST R/W

EXIST R/W

LITTLE RIVER

STREAM NO. 5

APPROX. GMD 183

APPROX. GMD 134

GMD 183

GMD 134

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 2

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET

0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

LINCOLN/COLUMBIA COUNTY
STA. 141+00 TO STA. 154+00

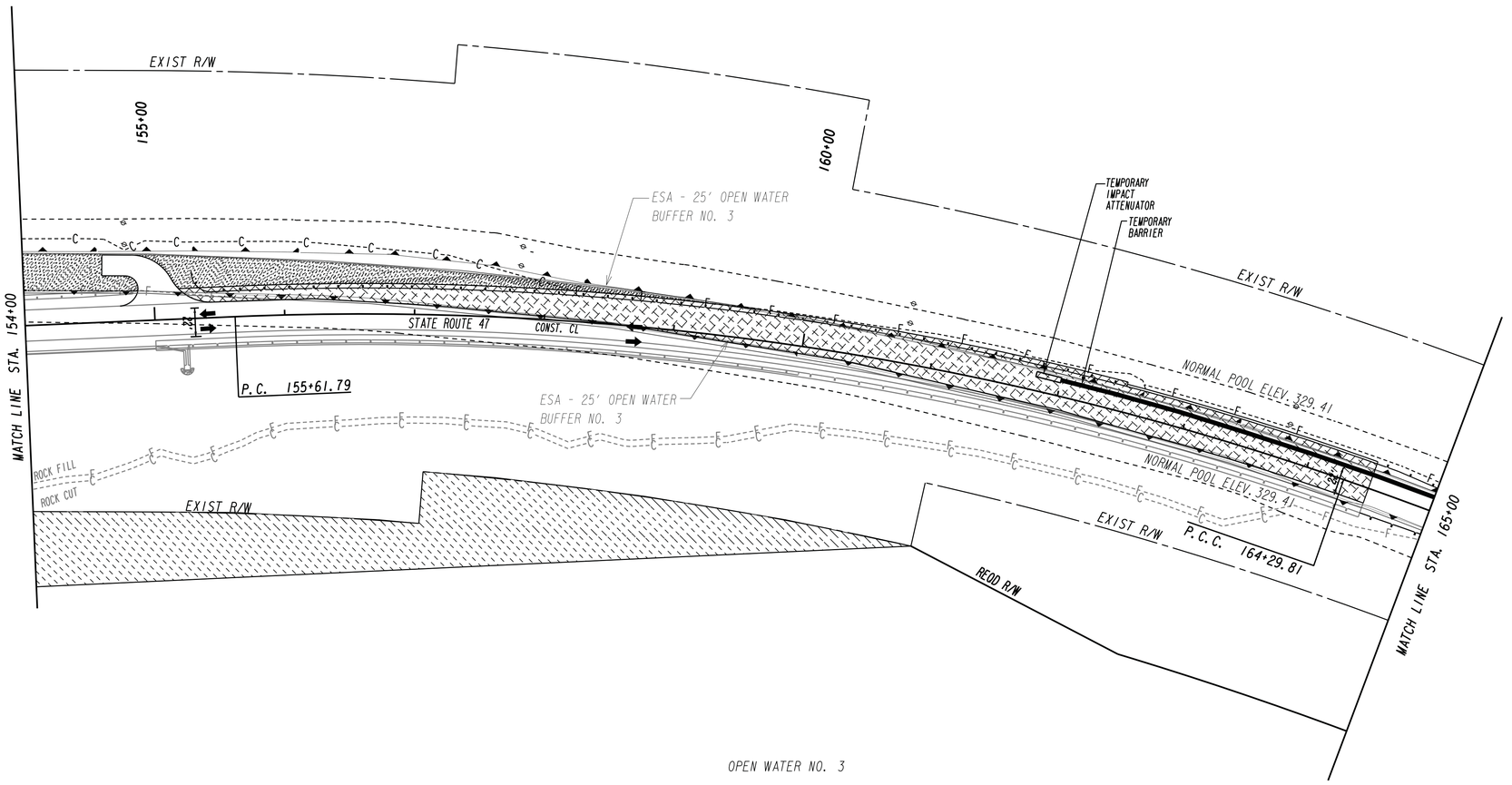
DRAWING No. 19-010

12/14/2012 GPLN

03-NOV-2014 13:22	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_19-011.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(036)	35	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

OPEN WATER NO. 3



OPEN WATER NO. 3

GMD 134

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

12/14/2012 GPLN

STAGE 2

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

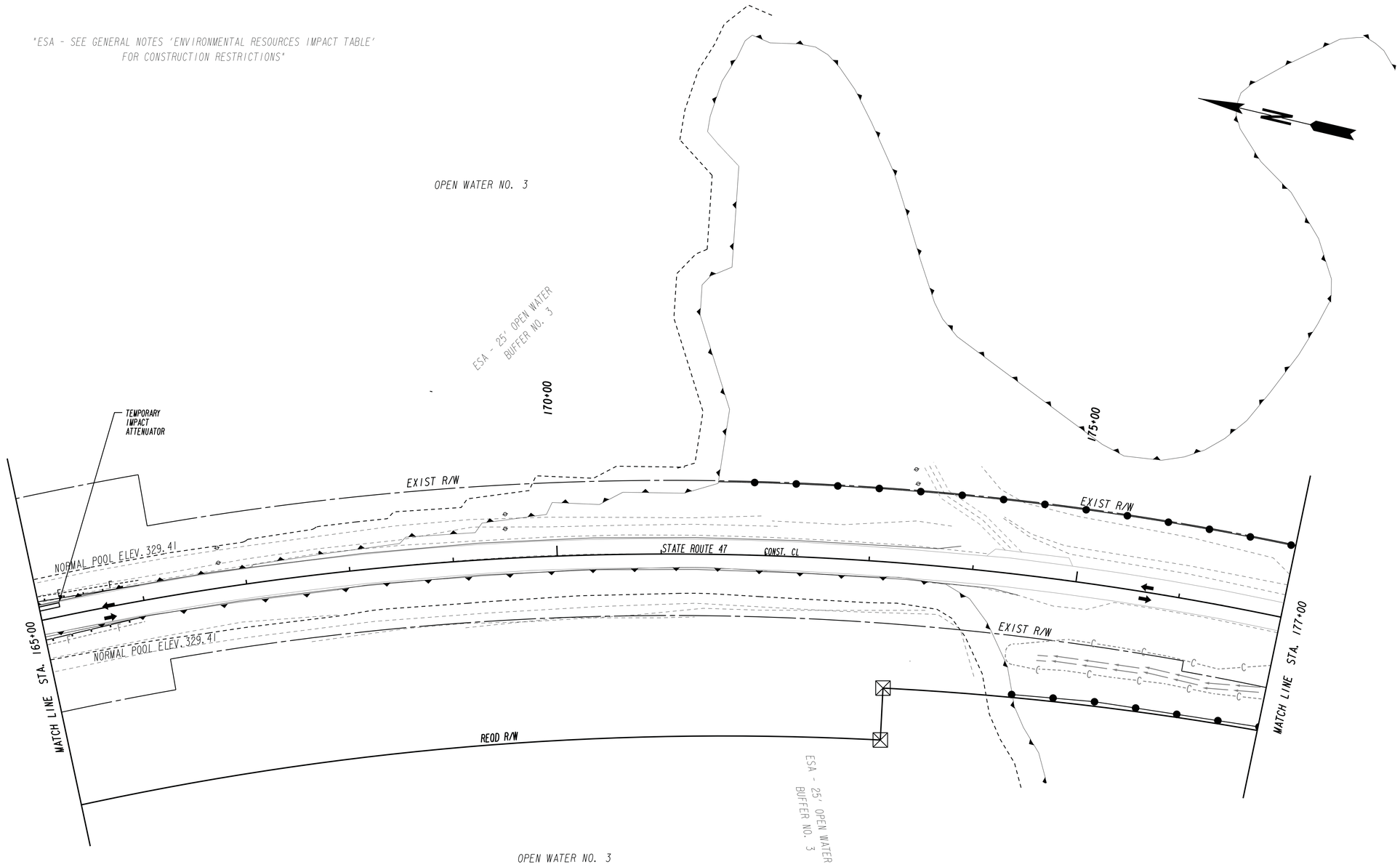
LINCOLN/COLUMBIA COUNTY
STA. 154+00 TO STA. 165+00

DRAWING No. 19-011

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	36	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"



GMD 134

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 2

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

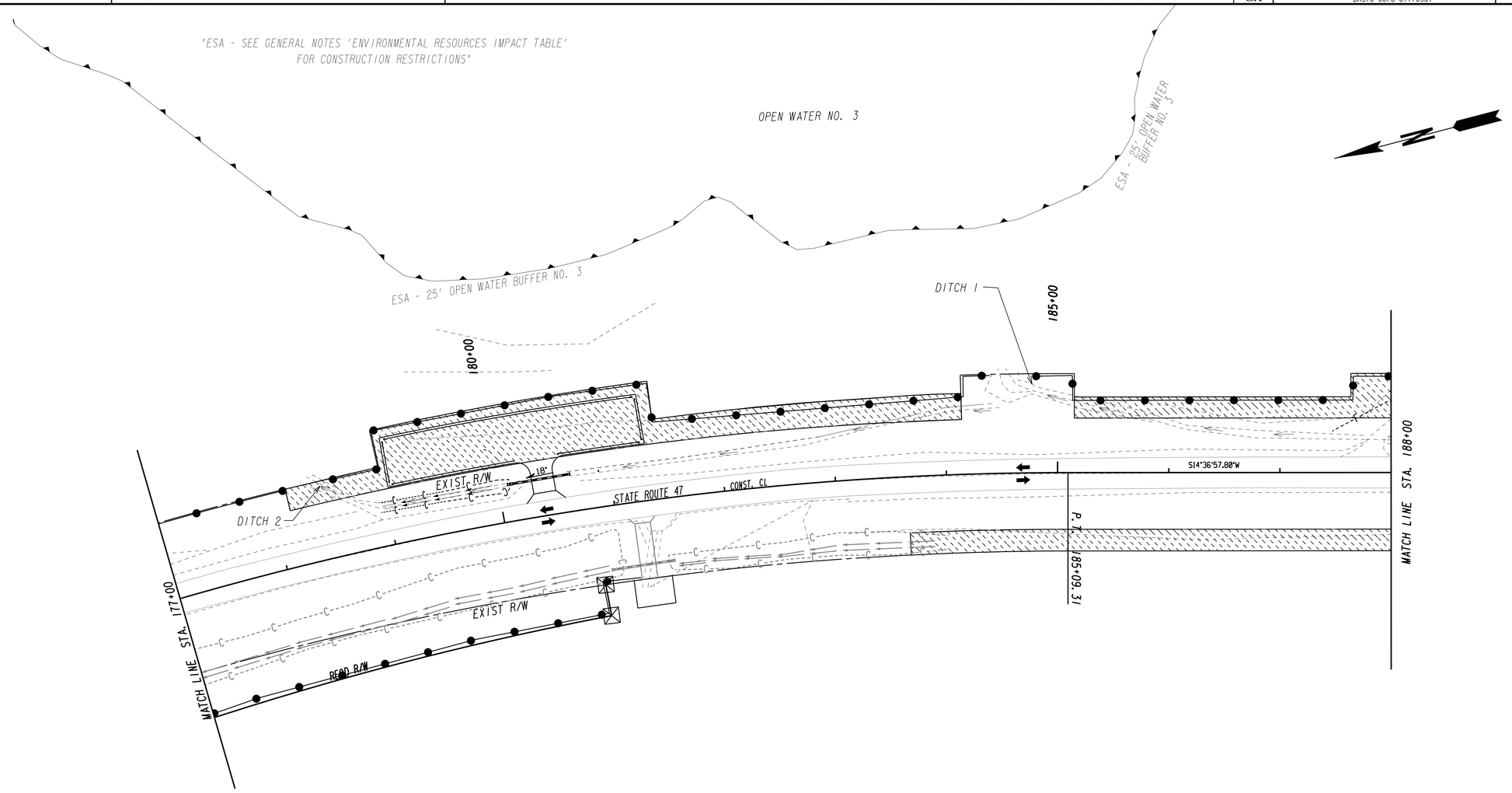
CONSTRUCTION STAGING PLAN

LINCOLN/COLUMBIA COUNTY
STA. 165+00 TO STA. 177+00

DRAWING NO. 19-012

12/14/2012 GPLN

03-NOV-2014 13:22	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_19-013.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	37	267



GMD 134

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

12/14/2012 GPLN

STAGE 2

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

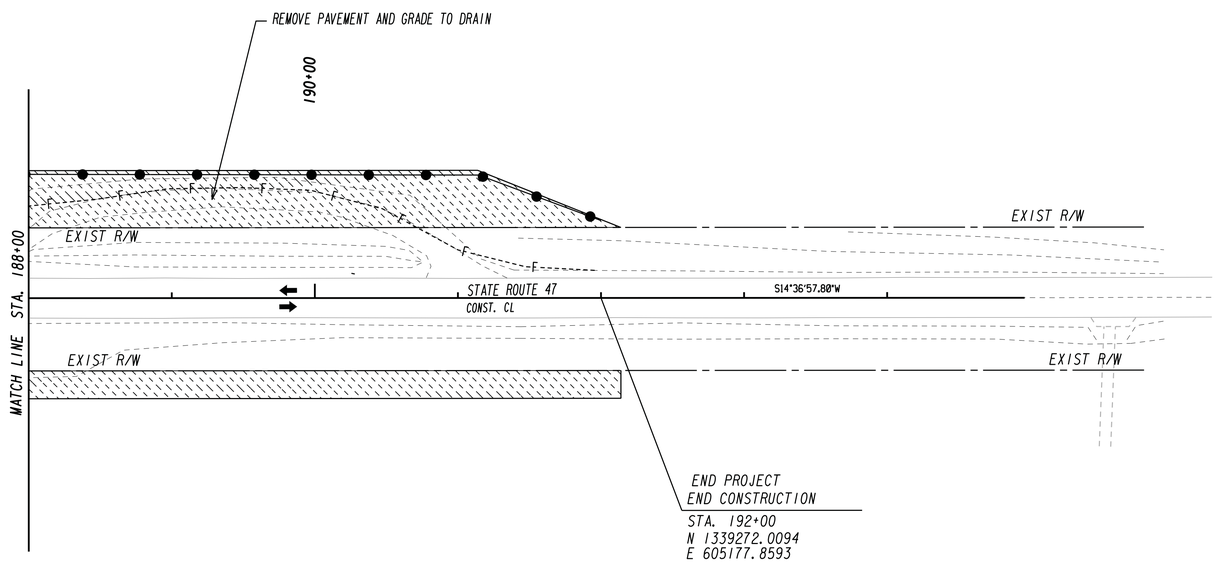
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

LINCOLN/COLUMBIA COUNTY
STA. 177+00 TO STA. 188+00

DRAWING No: 19-013

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"



GMD 134

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 2

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

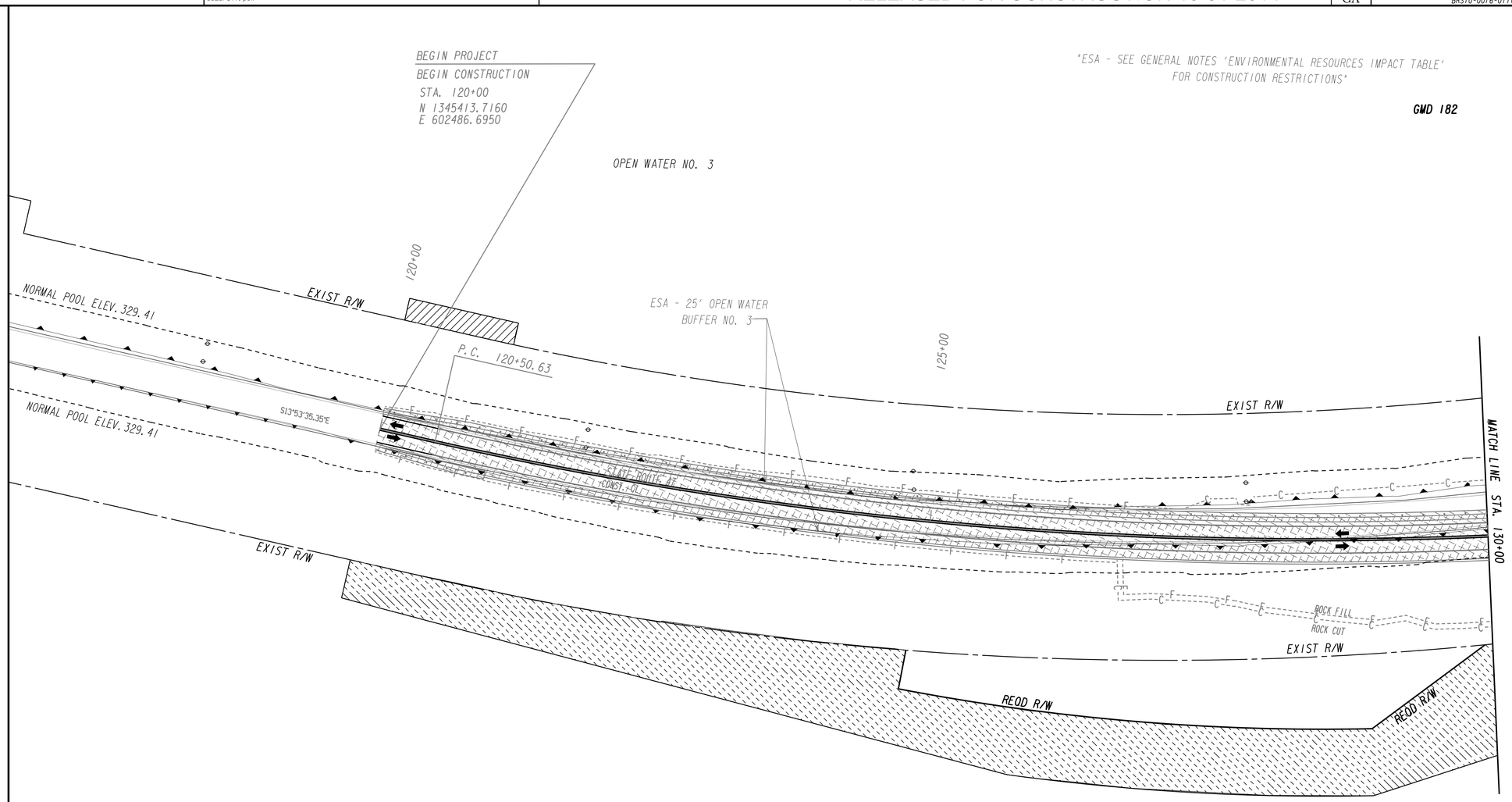
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

LINCOLN/COLUMBIA COUNTY
STA. 188+00 TO STA. 192+00

DRAWING No. 19-014

12/14/2012 GPLN



STAGE 3

1. CONSTRUCT FINAL SURFACE COURSE UNDER TRAFFIC.
2. INSTALL FINAL SIGNING AND STRIPING.

GMD 183

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

12/14/2012 GPLN

STAGE 3

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

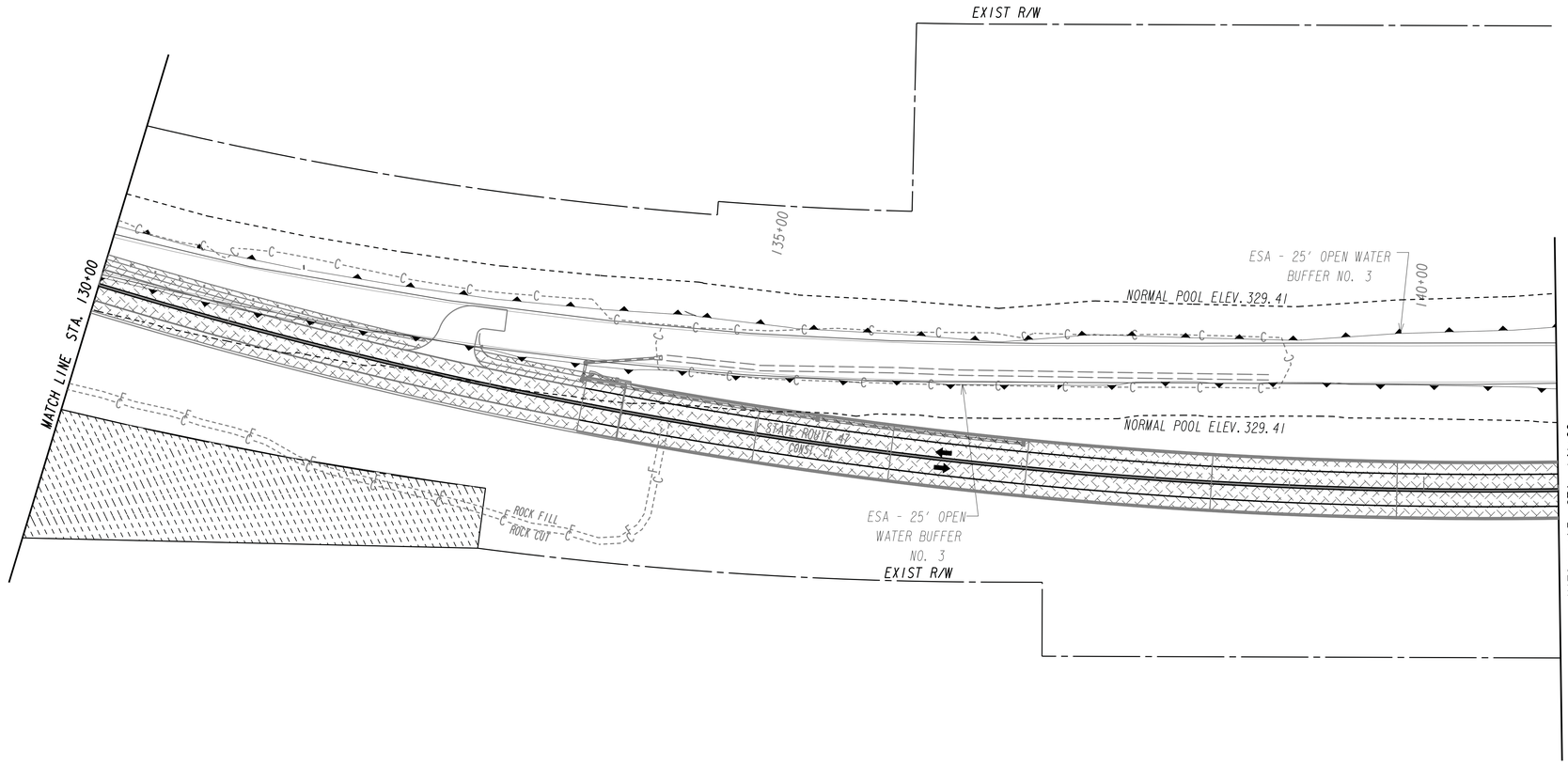
LINCOLN/COLUMBIA COUNTY
STA. 120+00 TO STA. 130+00

DRAWING No.: 19-015

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

GMD 182

OPEN WATER NO. 3



OPEN WATER NO. 3

GMD 183

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 3

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

LINCOLN/COLUMBIA COUNTY
STA. 130+00 TO STA. 141+00

DRAWING No. 19-016

12/14/2012 GPLN

03-NOV-2014 13:22	TIME$$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_19-017.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	41	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

GMD 182

LITTLE RIVER

STREAM NO. 5

EXIST R/W

LINCOLN COUNTY

COLUMBIA COUNTY

ESA - 25' OPEN WATER BUFFER NO. 3

145+00

150+00

P.I. 142+02.31

NORMAL POOL ELEV. 329.41

NORMAL POOL ELEV. 329.41

STATE ROUTE 47 CONST. ℄

S48°22'39.64"E

ESA - 25' OPEN WATER BUFFER NO. 3

ROCK FILL

ROCK CUT

MATCH LINE STA. 141+00

MATCH LINE STA. 154+00

EXIST R/W

EXIST R/W

LITTLE RIVER

STREAM NO. 5

APPROX. GMD 183

APPROX. GMD 134

GMD 183

GMD 134

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 3

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

LINCOLN/COLUMBIA COUNTY
STA. 141+00 TO STA. 154+00

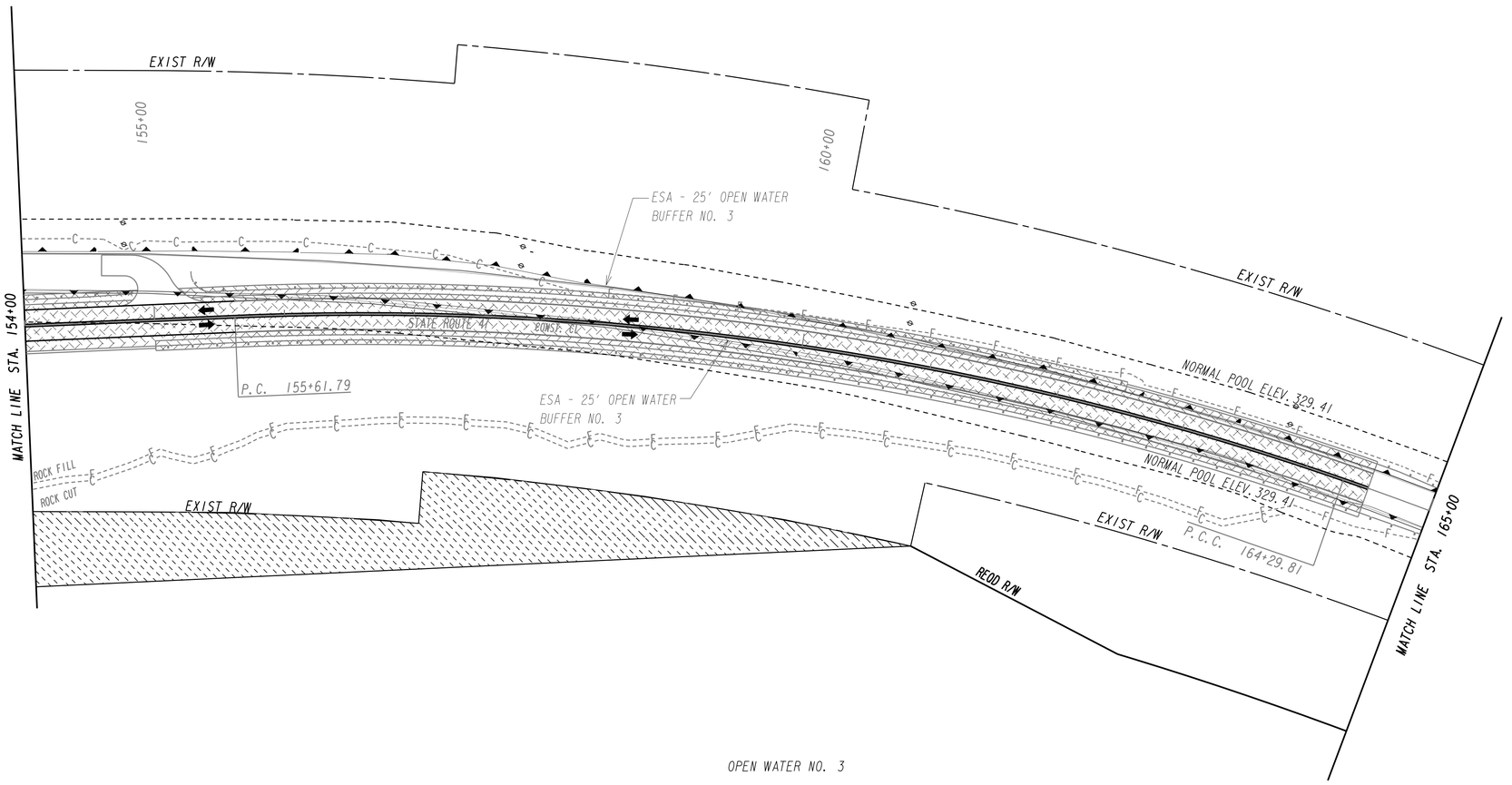
DRAWING No. 19-017

12/14/2012 GPLN

03-NOV-2014 13:22	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_19-018.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	42	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

OPEN WATER NO. 3



OPEN WATER NO. 3

GMD 134

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 3

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

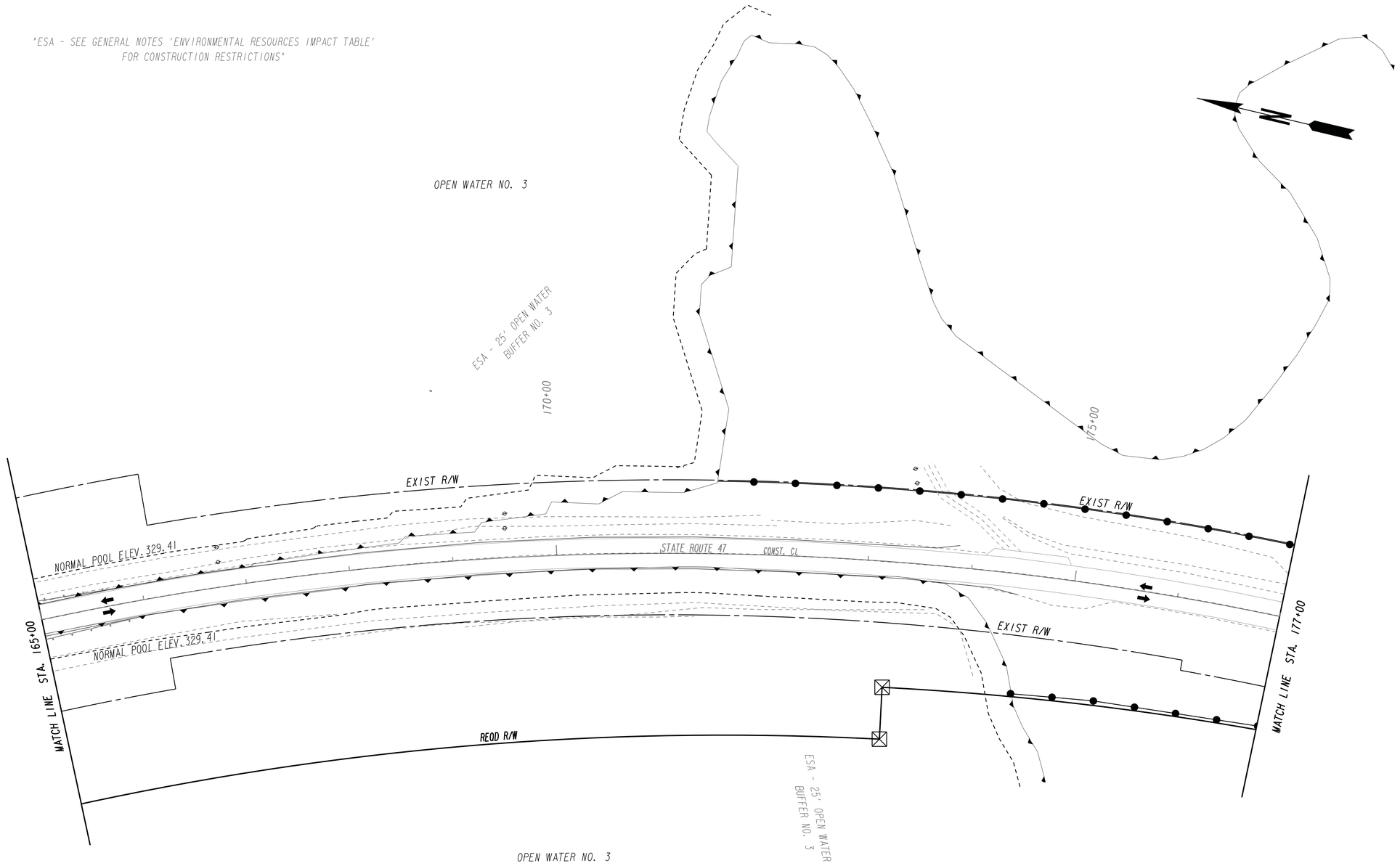
LINCOLN/COLUMBIA COUNTY
STA. 154+00 TO STA. 165+00

DRAWING No. 19-018

12/14/2012 GPLN

03-NOV-2014 13:22	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_19-019.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	43	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"



GMD 134

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 3

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

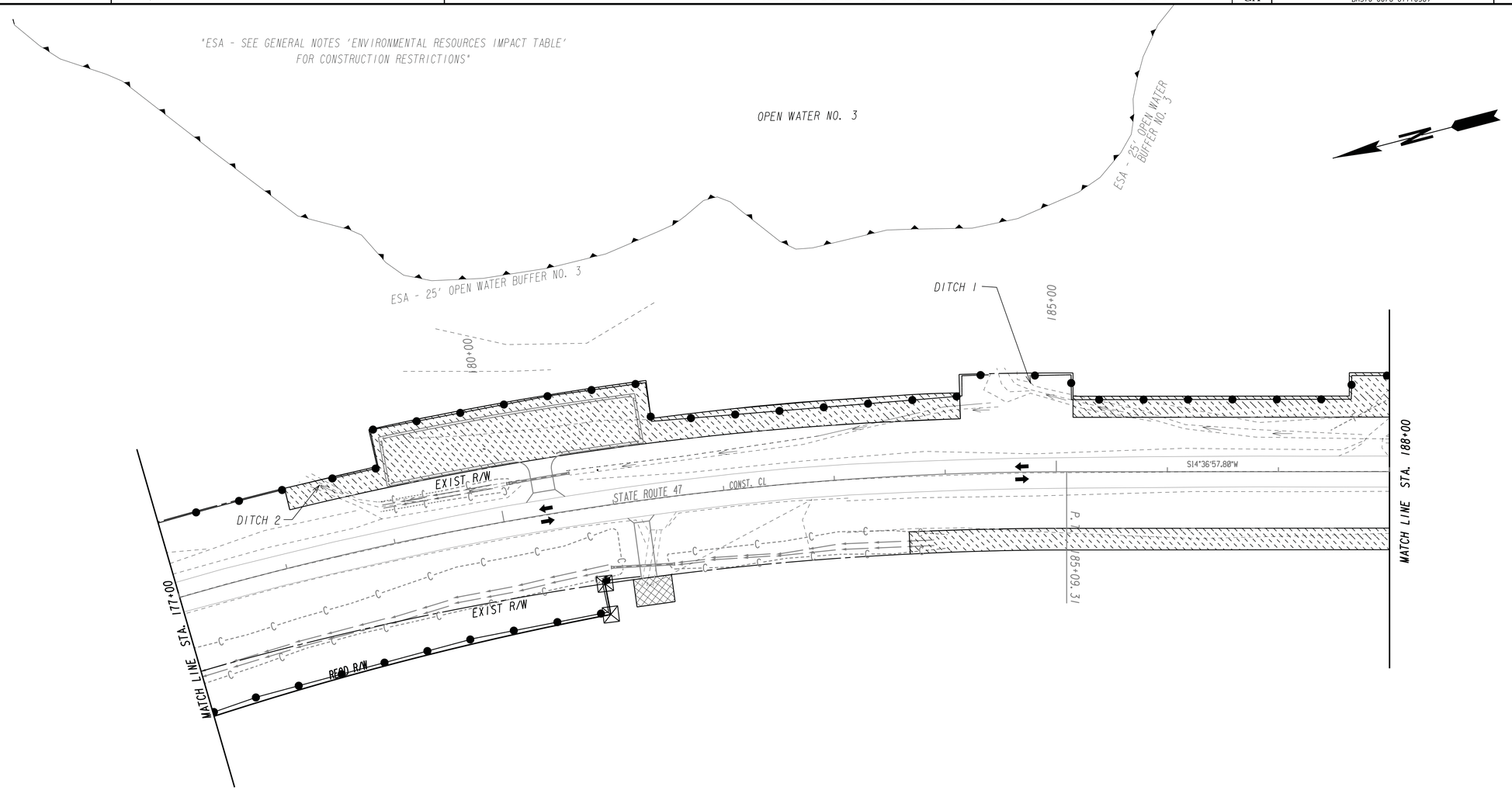
CONSTRUCTION STAGING PLAN

LINCOLN/COLUMBIA COUNTY
STA. 165+00 TO STA. 177+00

DRAWING NO. 19-019

12/14/2012 GPLN

03-NOV-2014 13:22	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_19-020.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
dgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	44	267



GMD 134

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 3

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

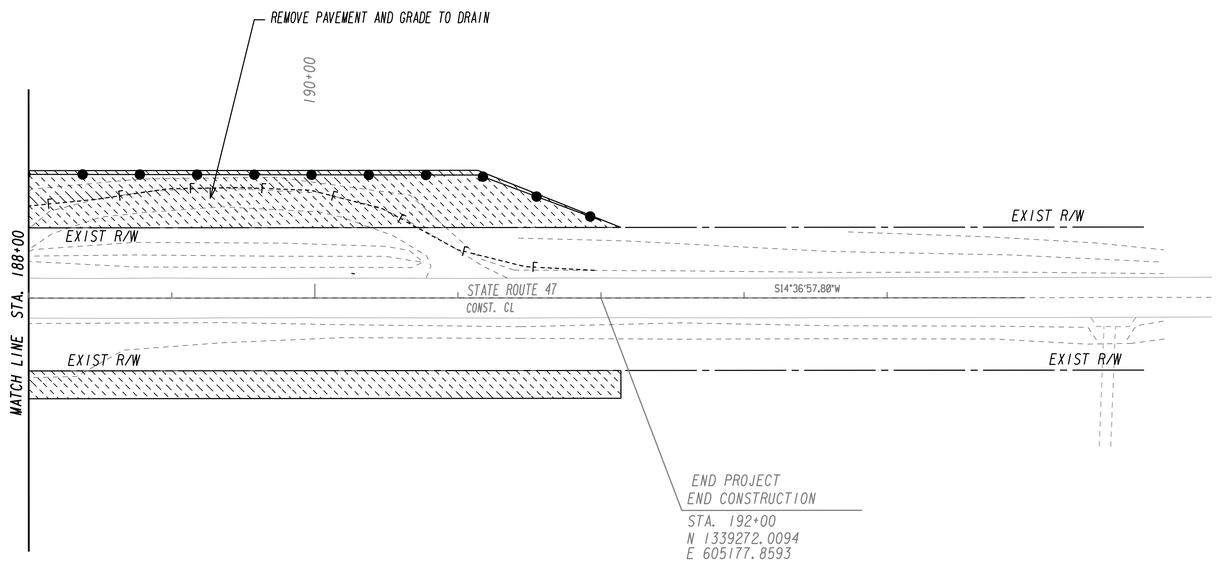
LINCOLN/COLUMBIA COUNTY
STA. 177+00 TO STA. 188+00

DRAWING NO. 19-020

12/14/2012 GPLN

03-NOV-2014 13:22	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_19-021.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	45	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"



GMD 134

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 3

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION STAGING PLAN

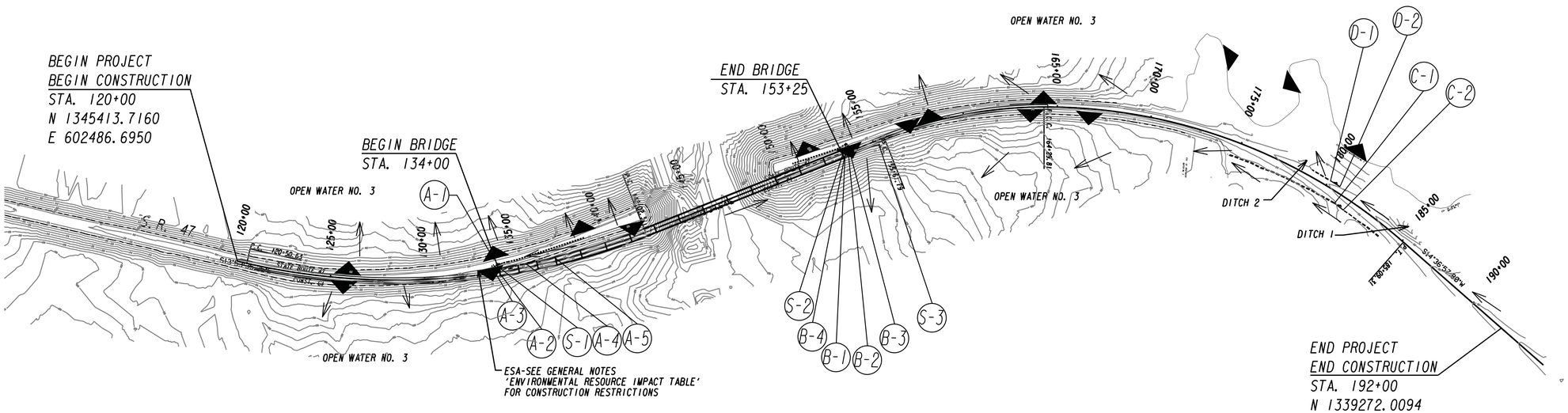
LINCOLN/COLUMBIA COUNTY
STA. 188+00 TO STA. 192+00

DRAWING No. 19-021

12/14/2012 GPLN

RIP RAP DATA

STRUCTURE NO.	STATION	Do (IN)	Q (CFS)	THICKNESS (IN)	Tw	La (FT)	3Do (FT)	d50 (FT)	AREA (SY)
A-1	134+23	18	8.96	24	< 0.5Do	9	4.50	0.30	8
B-1	153+63	18	6.21	24	< 0.5Do	9	4.50	0.30	8
Outfall 3	174+50	60	12.44	24	< 0.5Do	9	13.00	0.64	13
Outfall 4	178+65	24	3.46	24	< 0.5Do	9	8.00	0.64	8
Outfall 5	184+54	48	3.97	24	< 0.5Do	9	10.00	0.64	10



Structure	STATION	OFFSET	PIPE SIZE	POST C	POST Q25 (cfs)	POST VEL25 (ft/s)	DRAINAGE AREA (AC)
A-1	134+23	44.7' LT	18"	0.95	7.47	7.43	1.15
B-1	153+63	54.0' LT	18"	0.95	5.22	8.69	0.77

TOTAL PROJECT AREA = 52.2 AC
TOTAL DISTURBED AREA = 7.33 AC

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 300 600 1200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

DRAINAGE AREA MAP

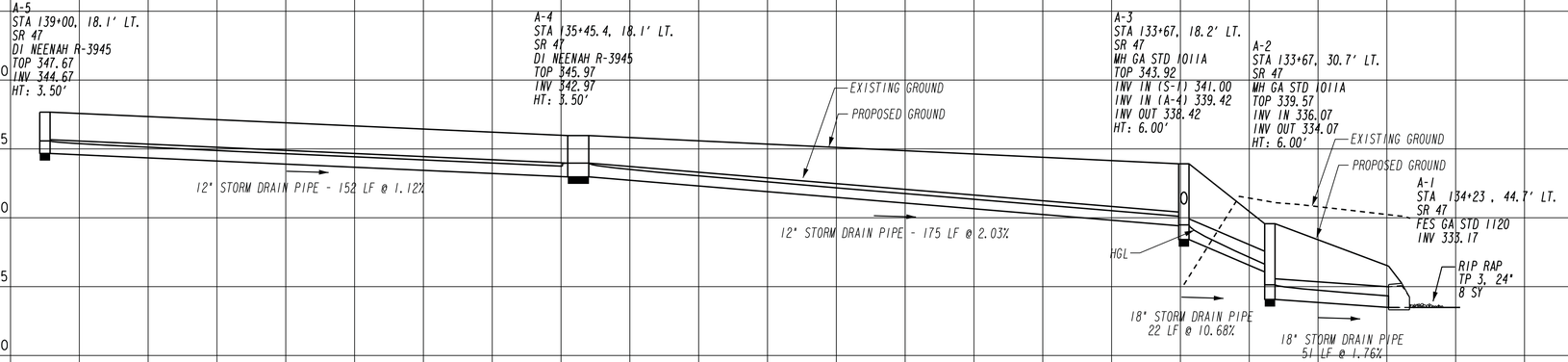
STATE ROUTE 47

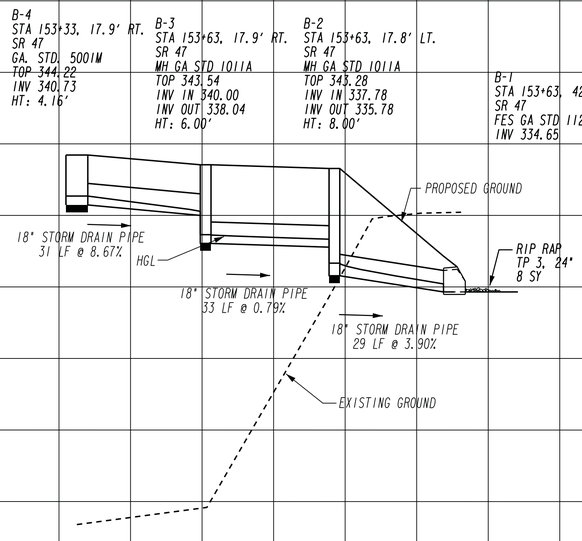
DRAWING No. 21-001

12/14/2012 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRST0-0076-01I(036)	47	267





Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

HORZ. 1" = 20'
VERT. 1" = 5'

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

DRAINAGE PROFILES
S.R. 47

DRAWING No. 22-001

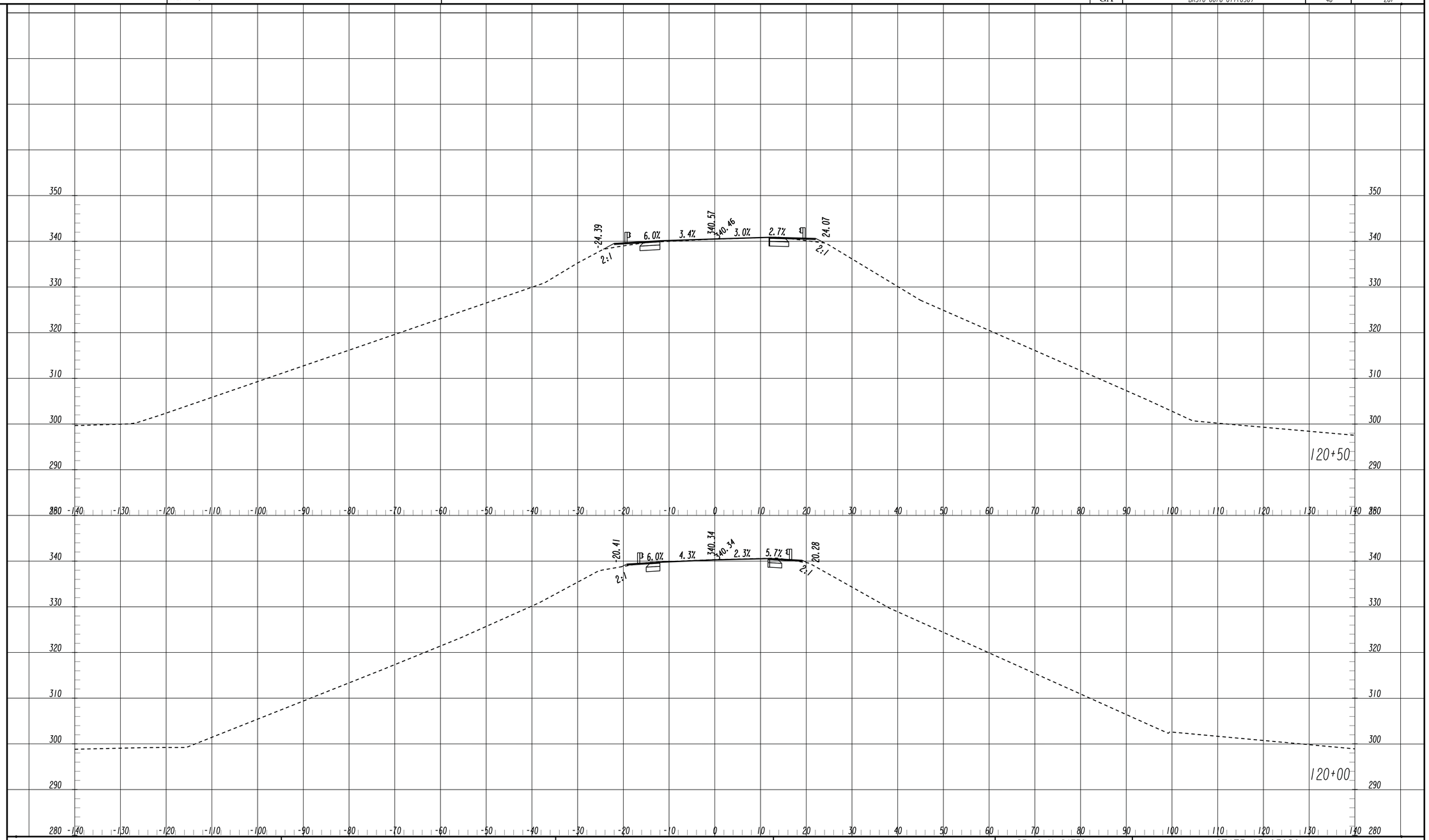
3/1/2007 SUXSEW

03-NOV-2014 13:22 TIME$$ | $PRF8$ | Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

dgowen | 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	48	267



11/30/2011 SUXSEW

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

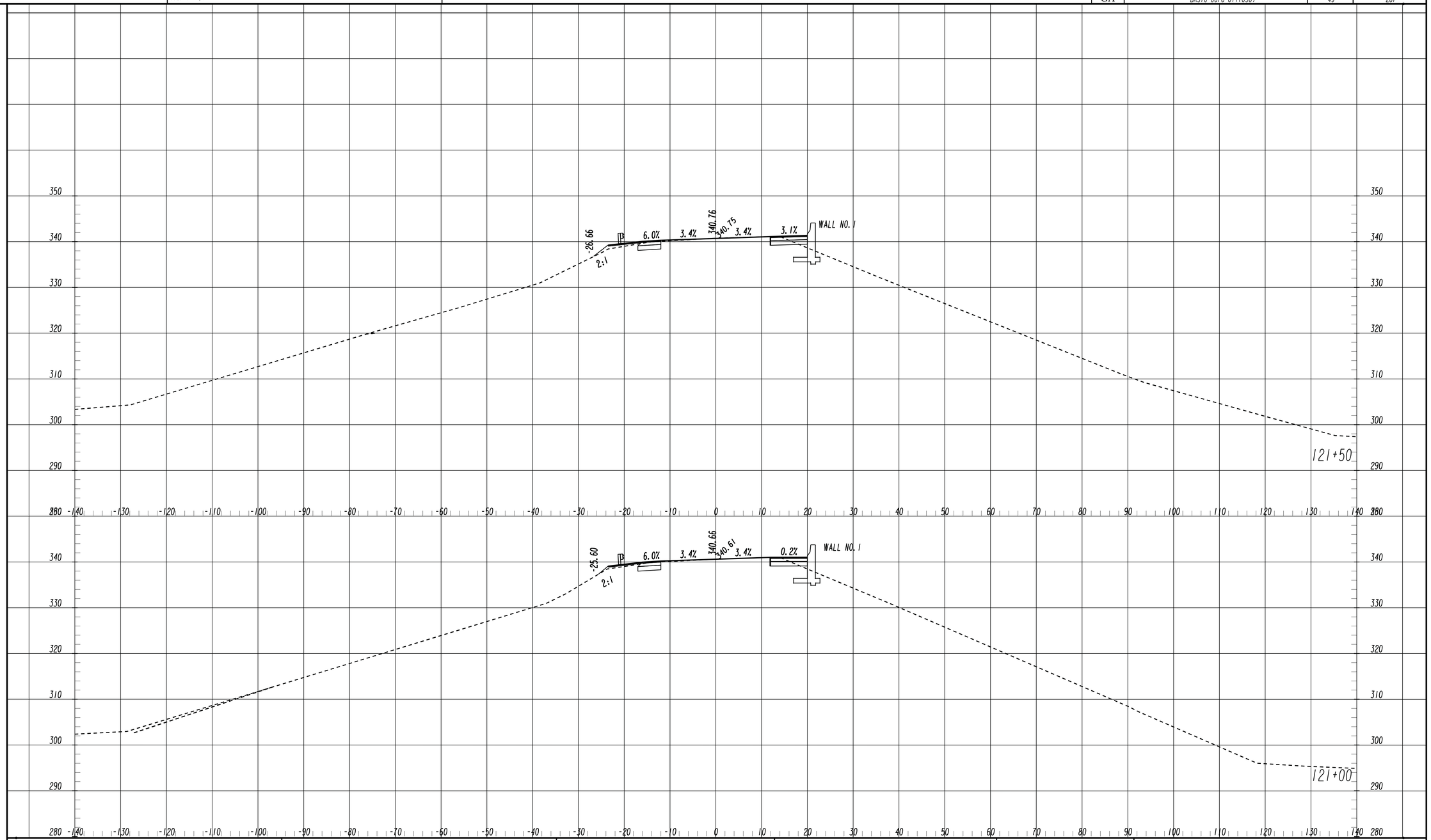
STATE ROUTE 47

DRAWING NO. 23-001

03-NOV-2014 13:22 TIME$$ $PRF8$
bgowen 8825Full.pen
Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	49	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING NO. 23-002

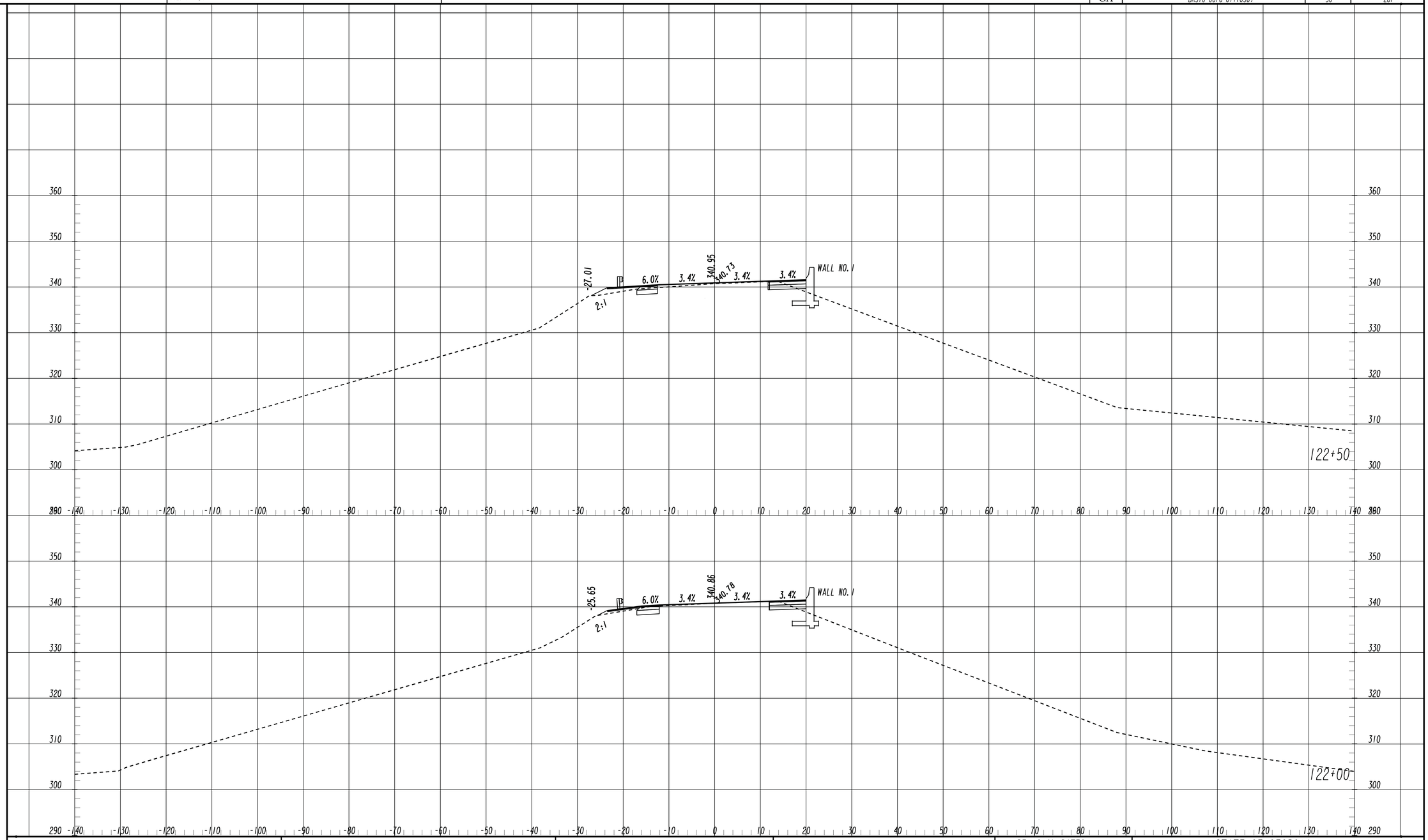
11/30/2011 SUXSEW

03-NOV-2014 13:22 TIME$$$ | $PRF8$ | Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

dgowen | 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	50	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

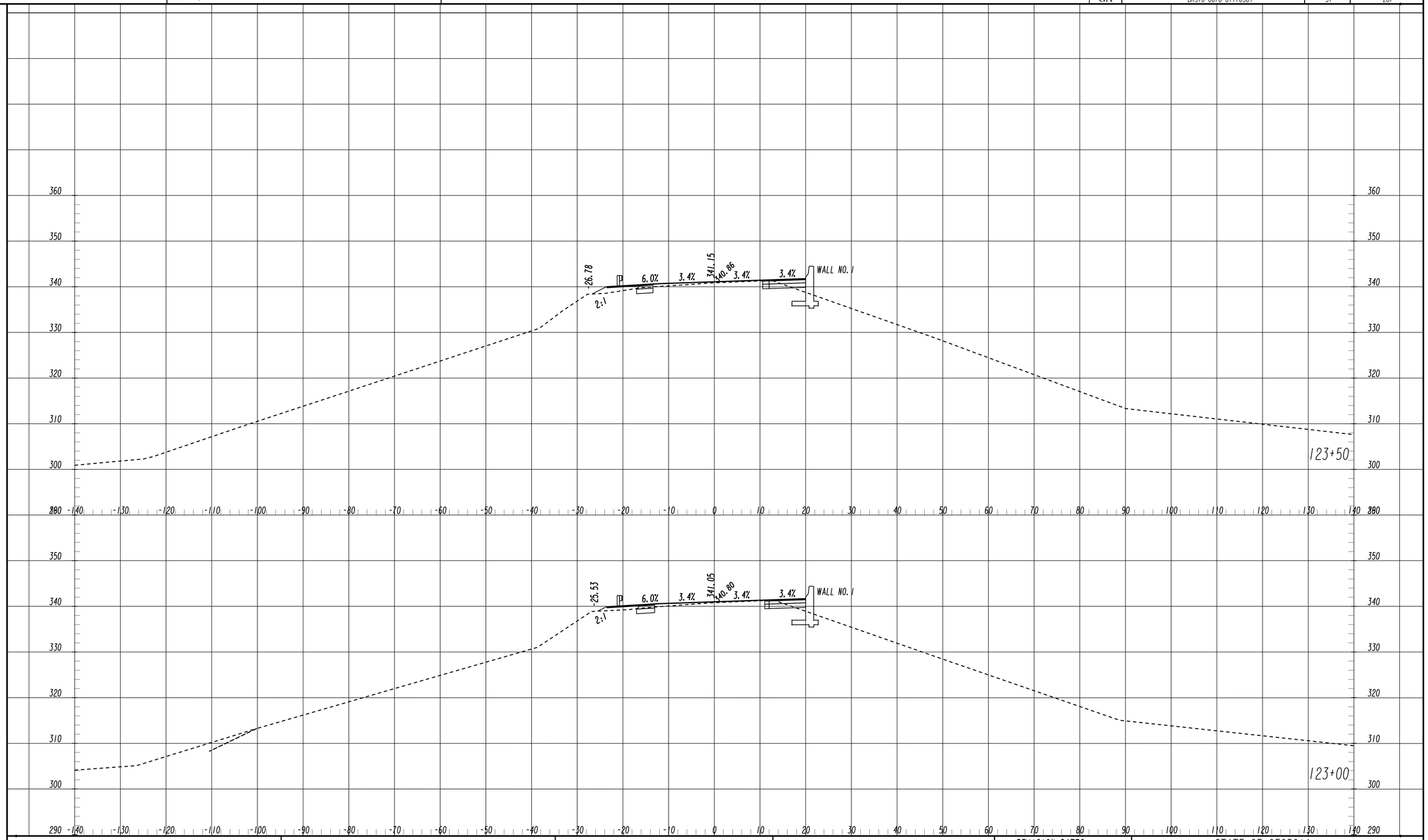
DRAWING No. 23-003

11/30/2011 SUXSEW

03-NOV-2014 13:22 TIME$$ $PRF8$
bgowen 8825Full.pen
Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	51	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

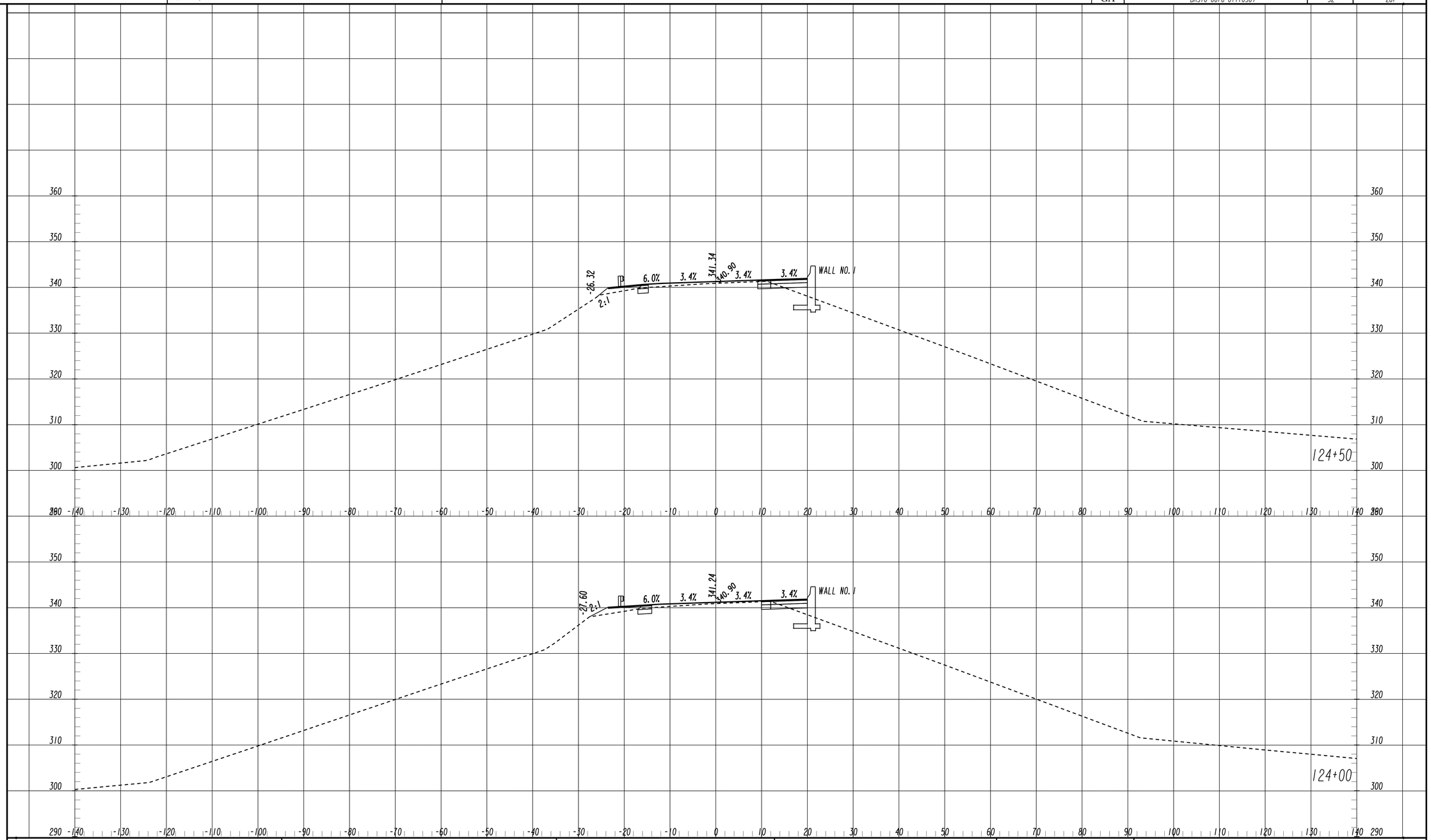
DRAWING No. 23-004

11/30/2011 SUXSEW

03-NOV-2014 13:22 TIME$$ $PRF8$
bgowen 8825Full.pen
Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	52	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING NO. 23-005

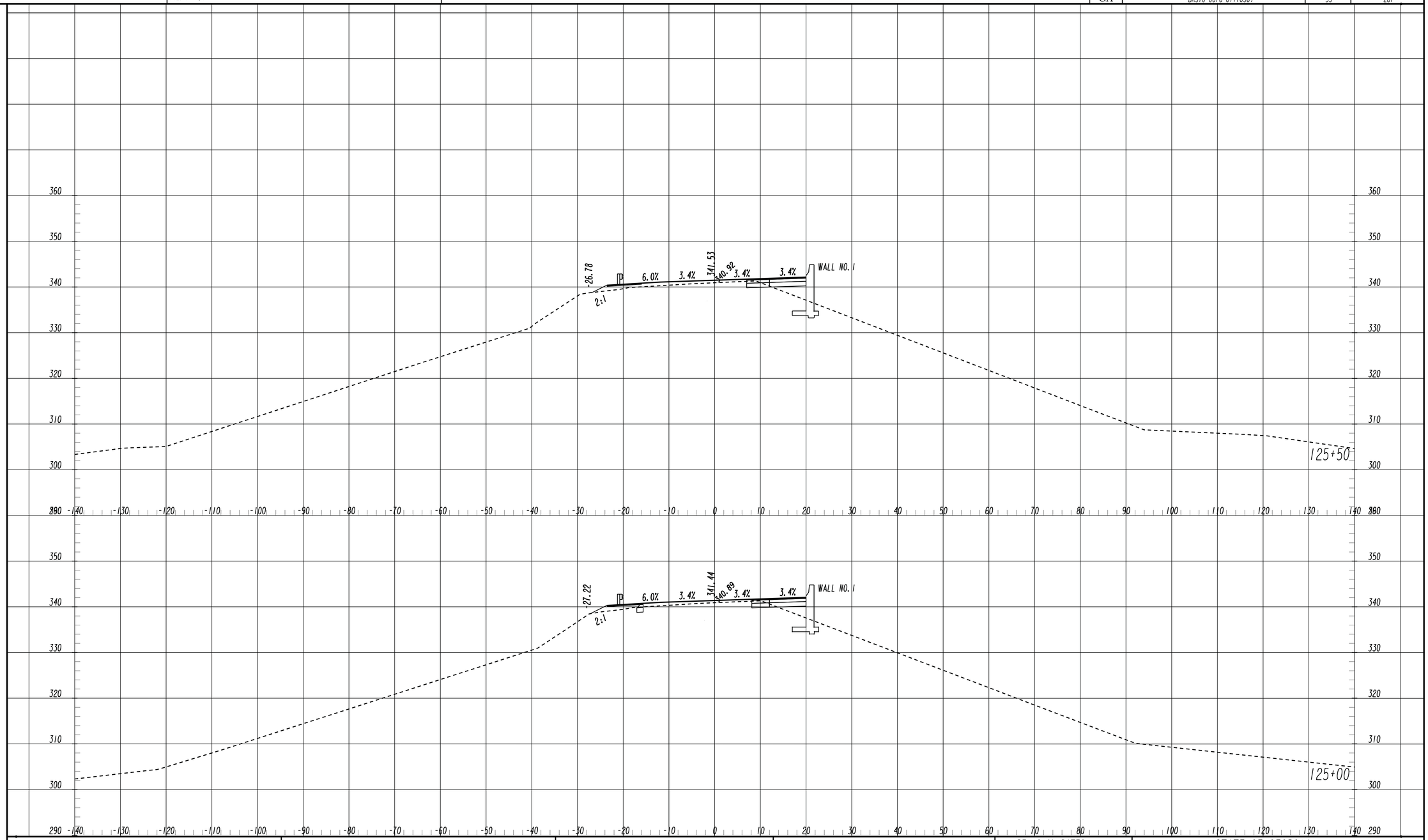
11/30/2011 SUXSEW

03-NOV-2014 13:22 TIME$$$ | $PRF8$ | Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

dgowen | 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	53	267



11/30/2011 SUXSEW

Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING NO.
23-006

03-NOV-2014 13:22 TIME$$ $PRF8$
bgowen 8825Full.pen
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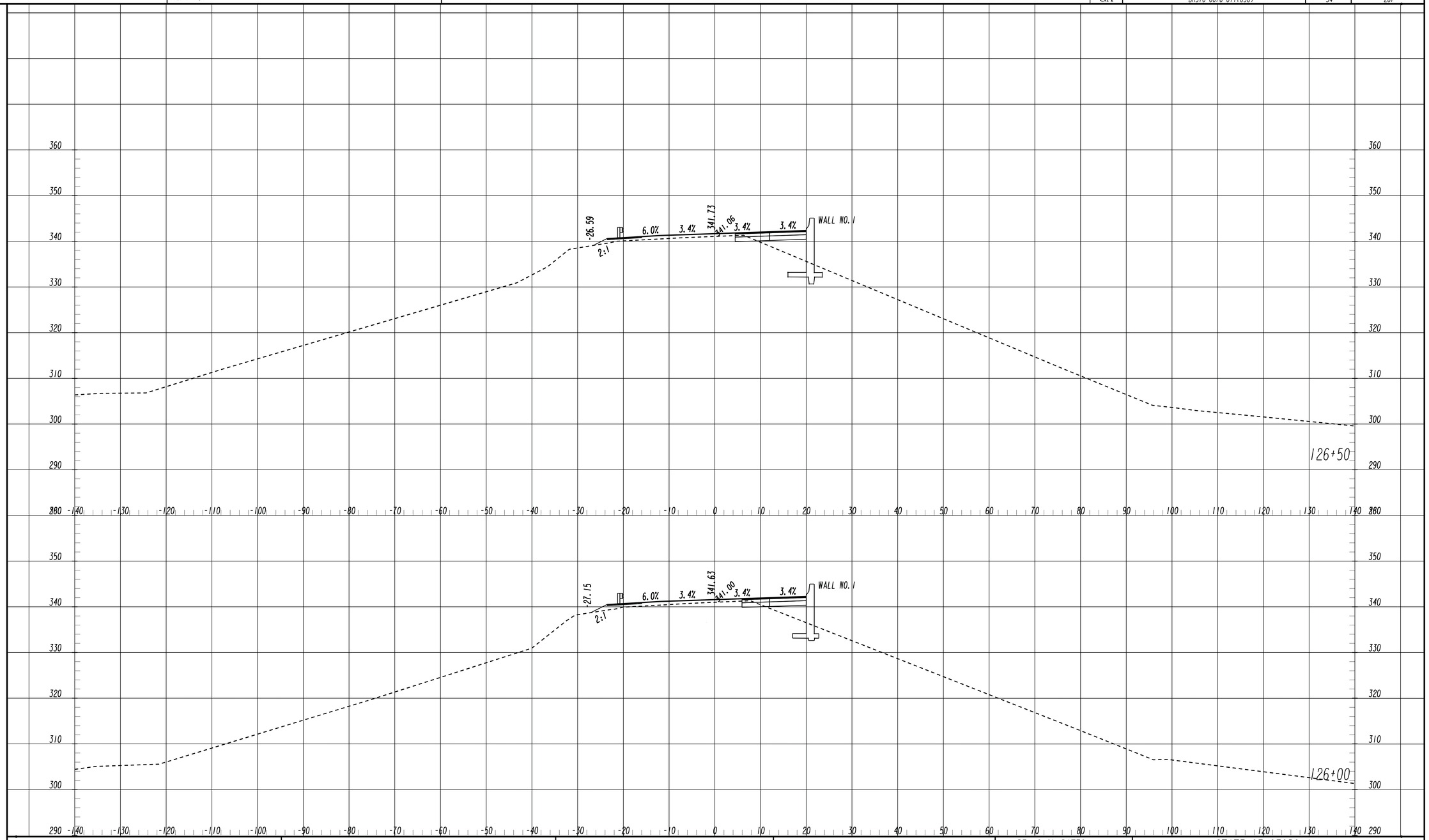
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	54	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-007

11/30/2011 SUXSEW

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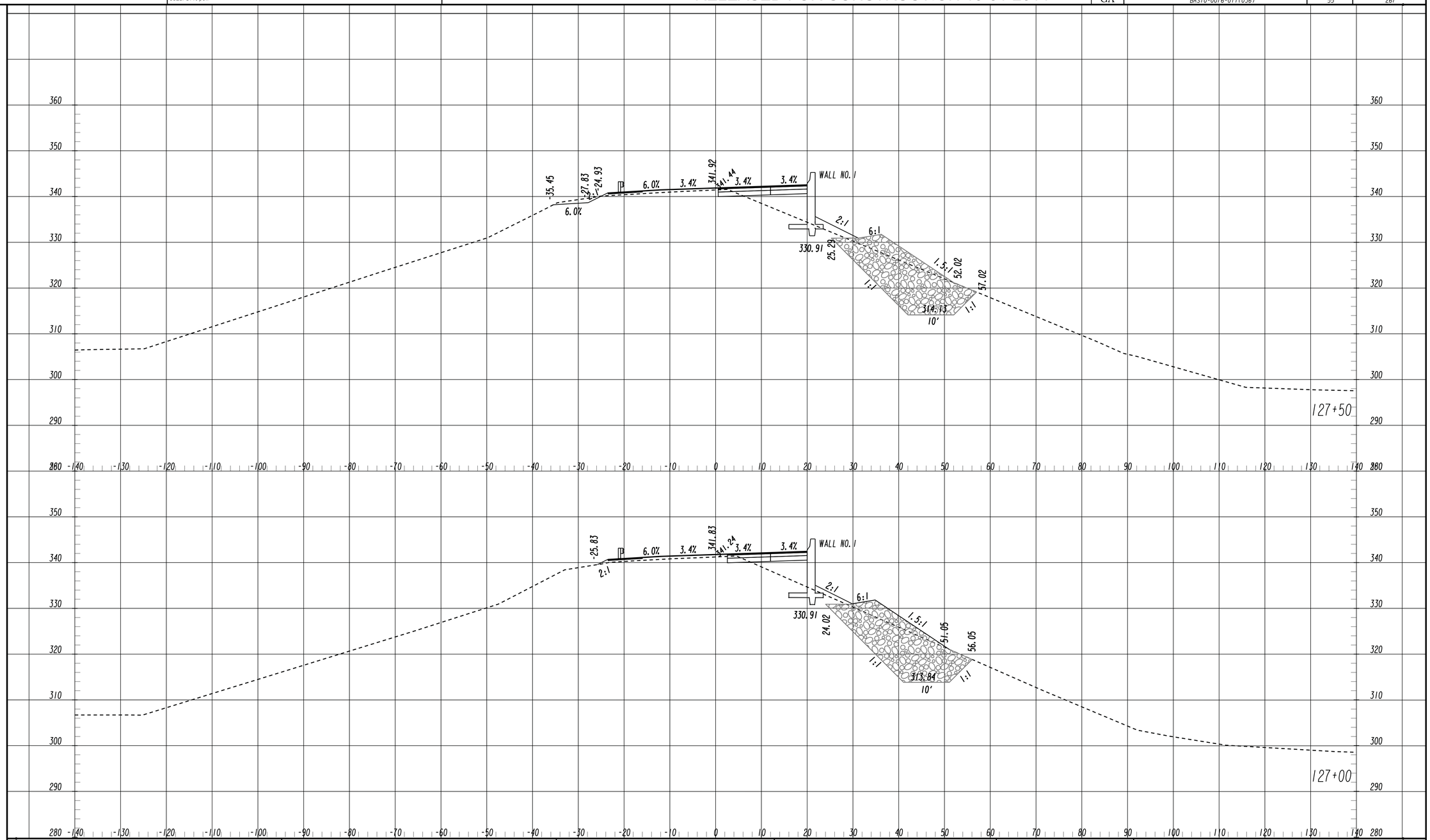
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	55	267



11/30/2011 SUXSEW

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

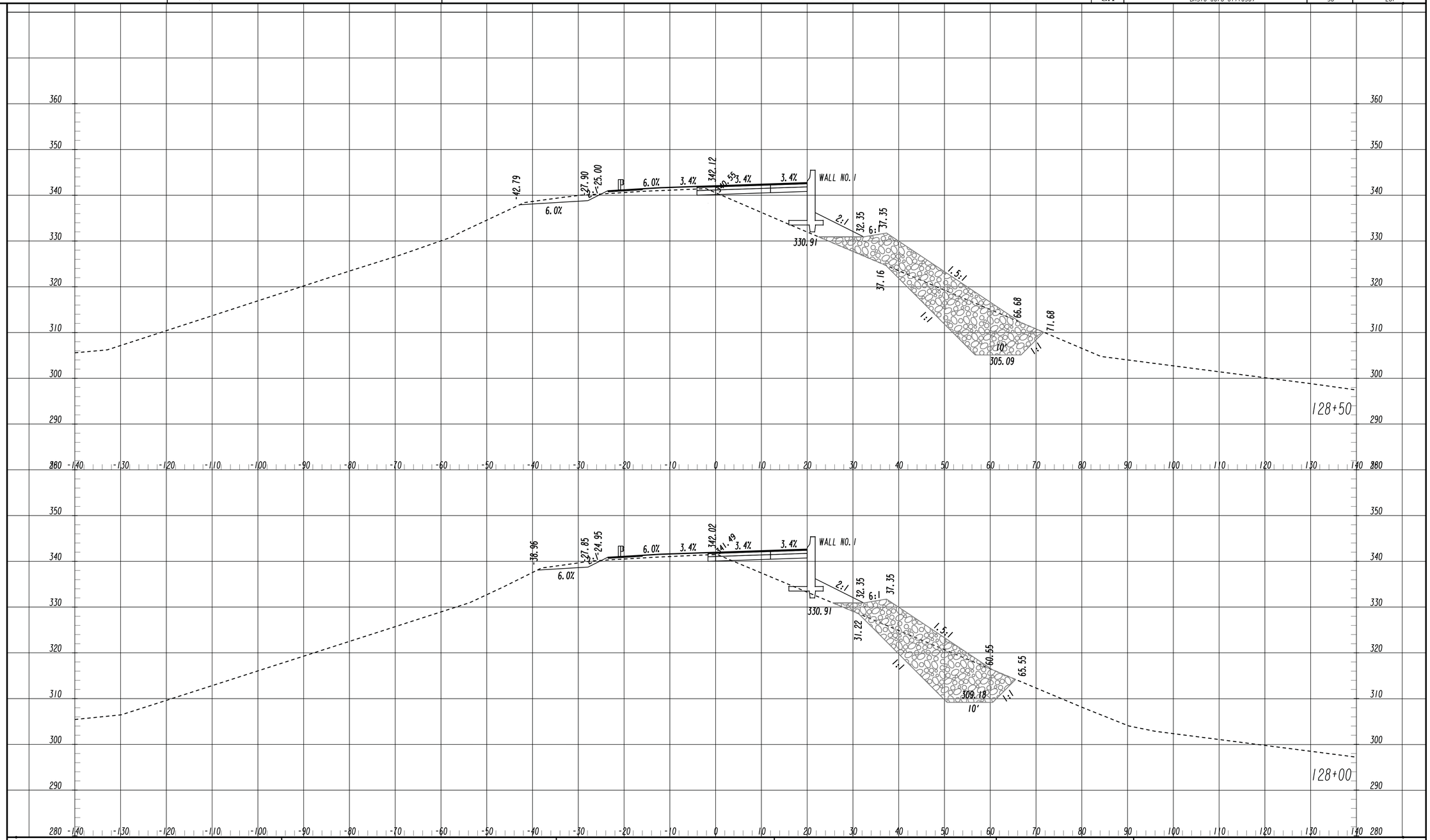
CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-008

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	56	267



REVISION DATES		

Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-009

11/30/2011 SUXSEW

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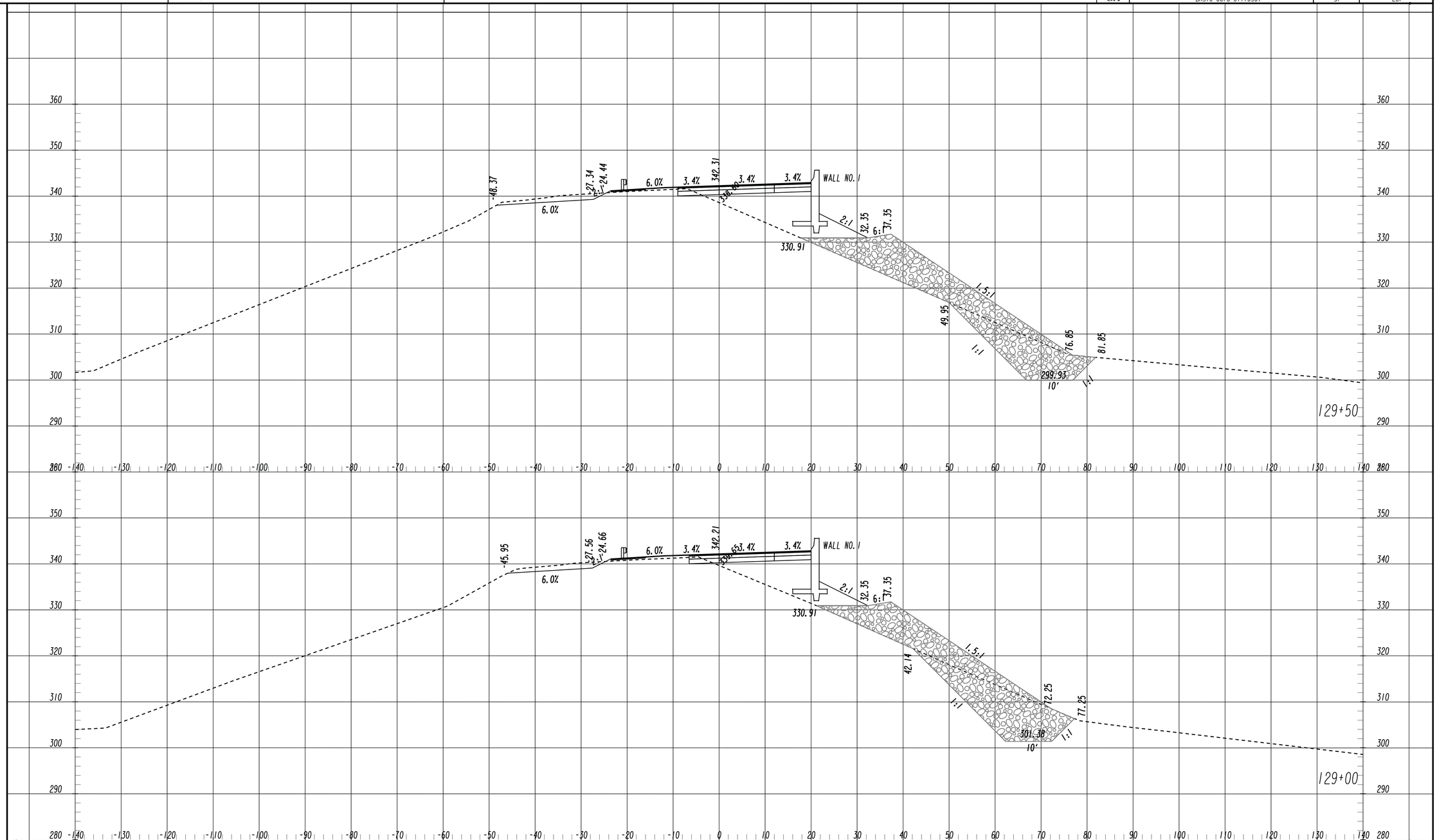
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	57	267



11/30/2011 SUXSEW

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-010

03-NOV-2014 13:22 TIME$$ $PRF8$
bgowen 8825Full.pen

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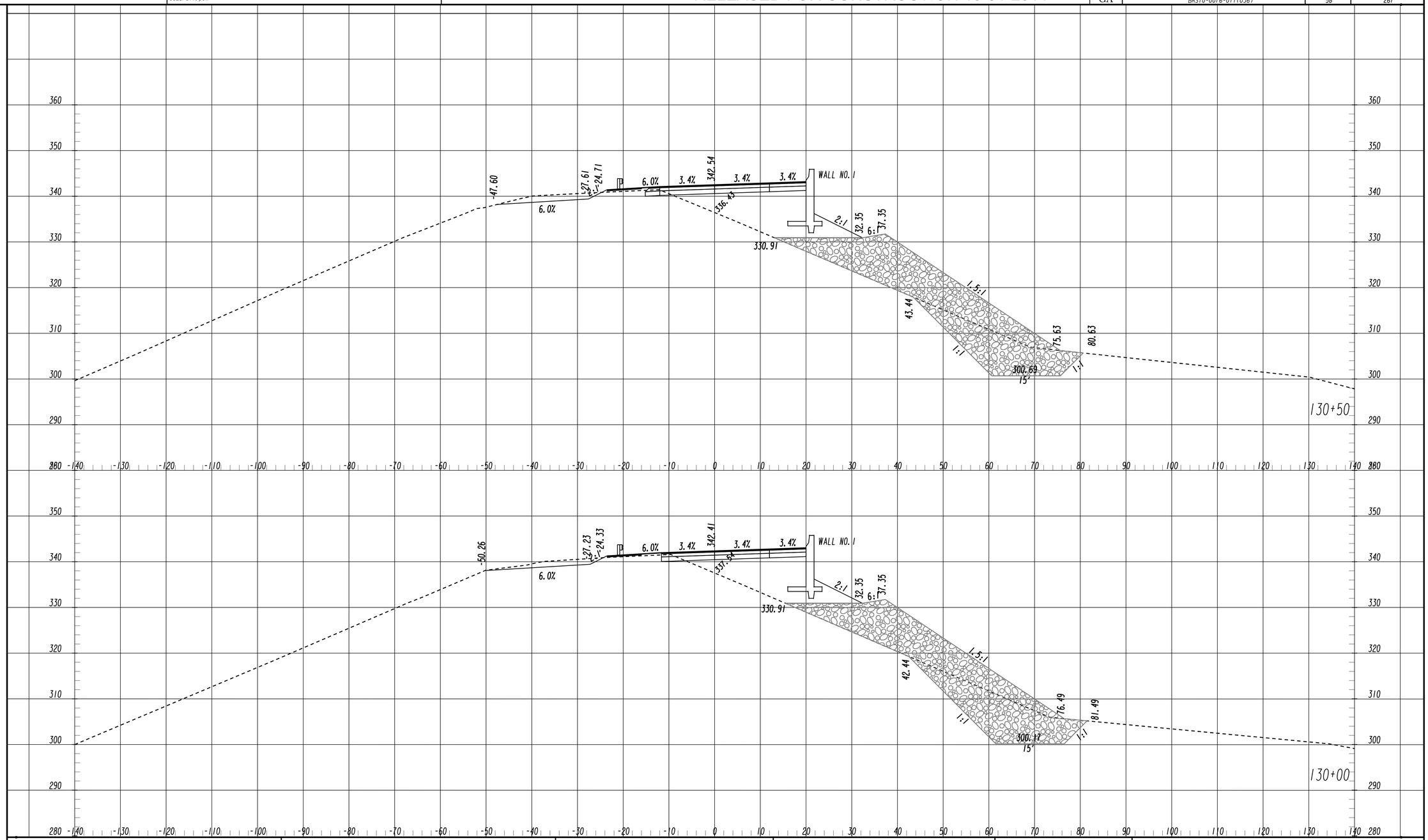
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	58	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-011

11/30/2011 SUXSEW

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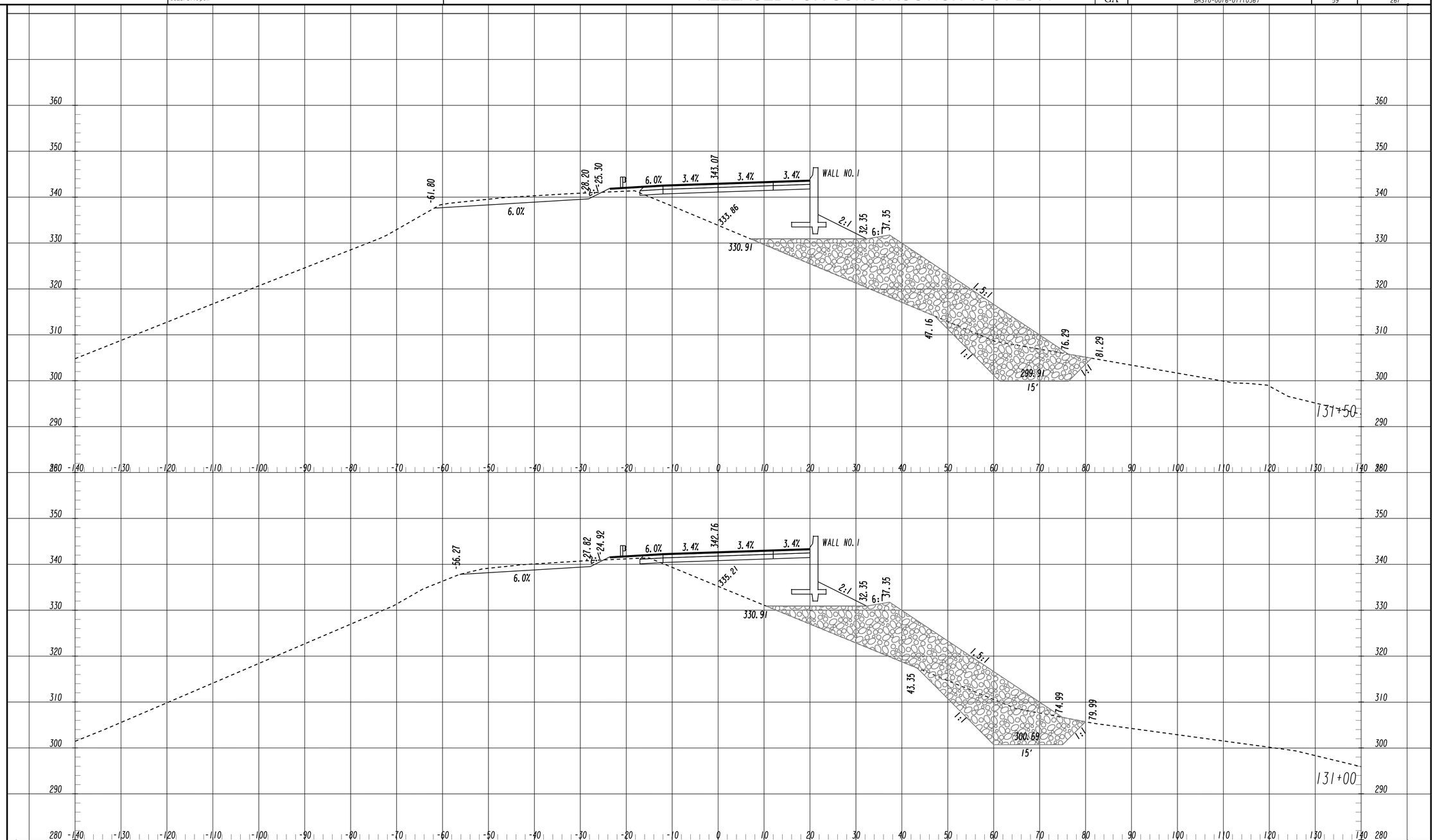
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	59	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-012

11/30/2011 SUXSEW

03-NOV-2014 13:22 TIME$$ $PRF8$
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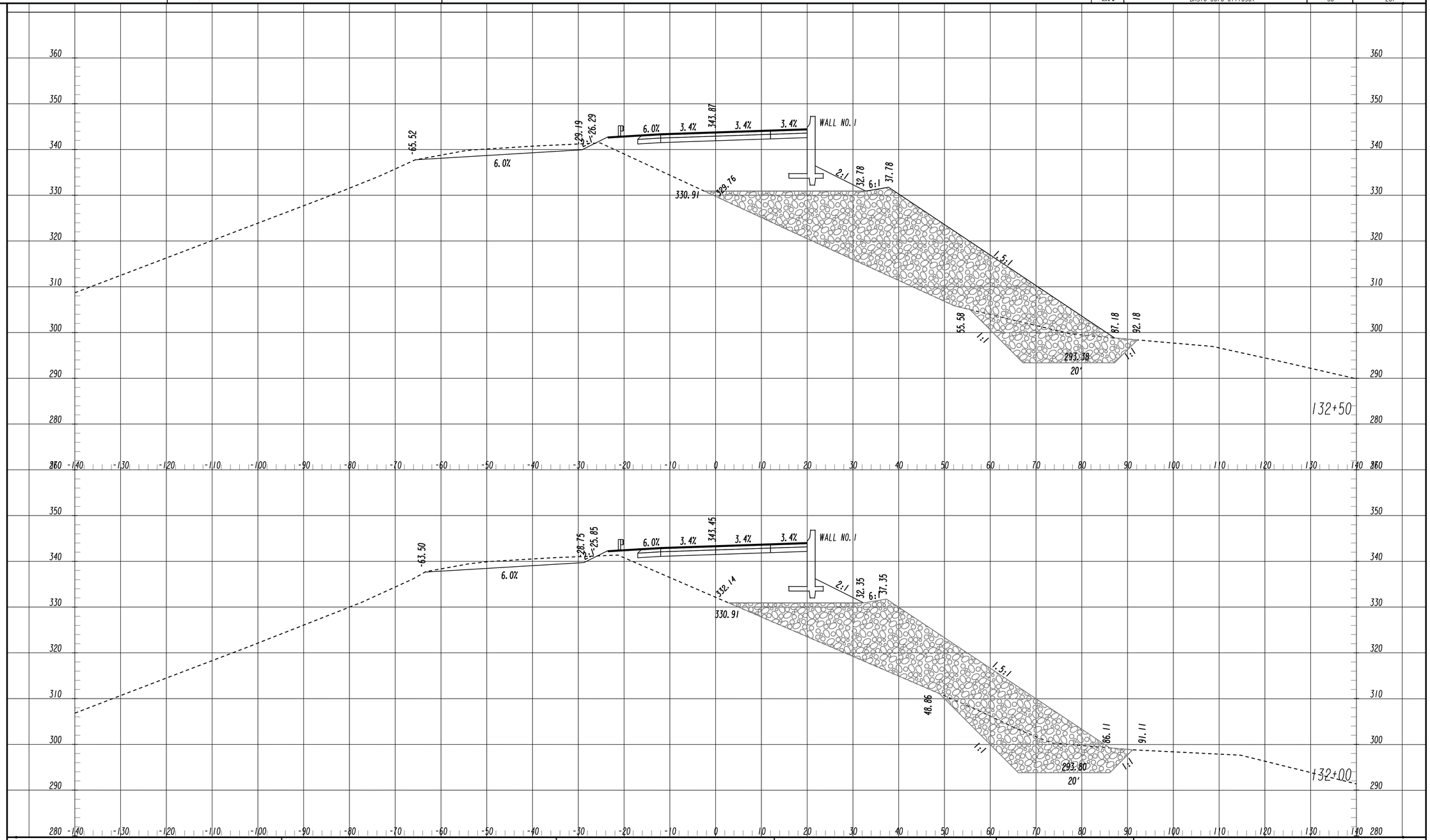
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	60	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

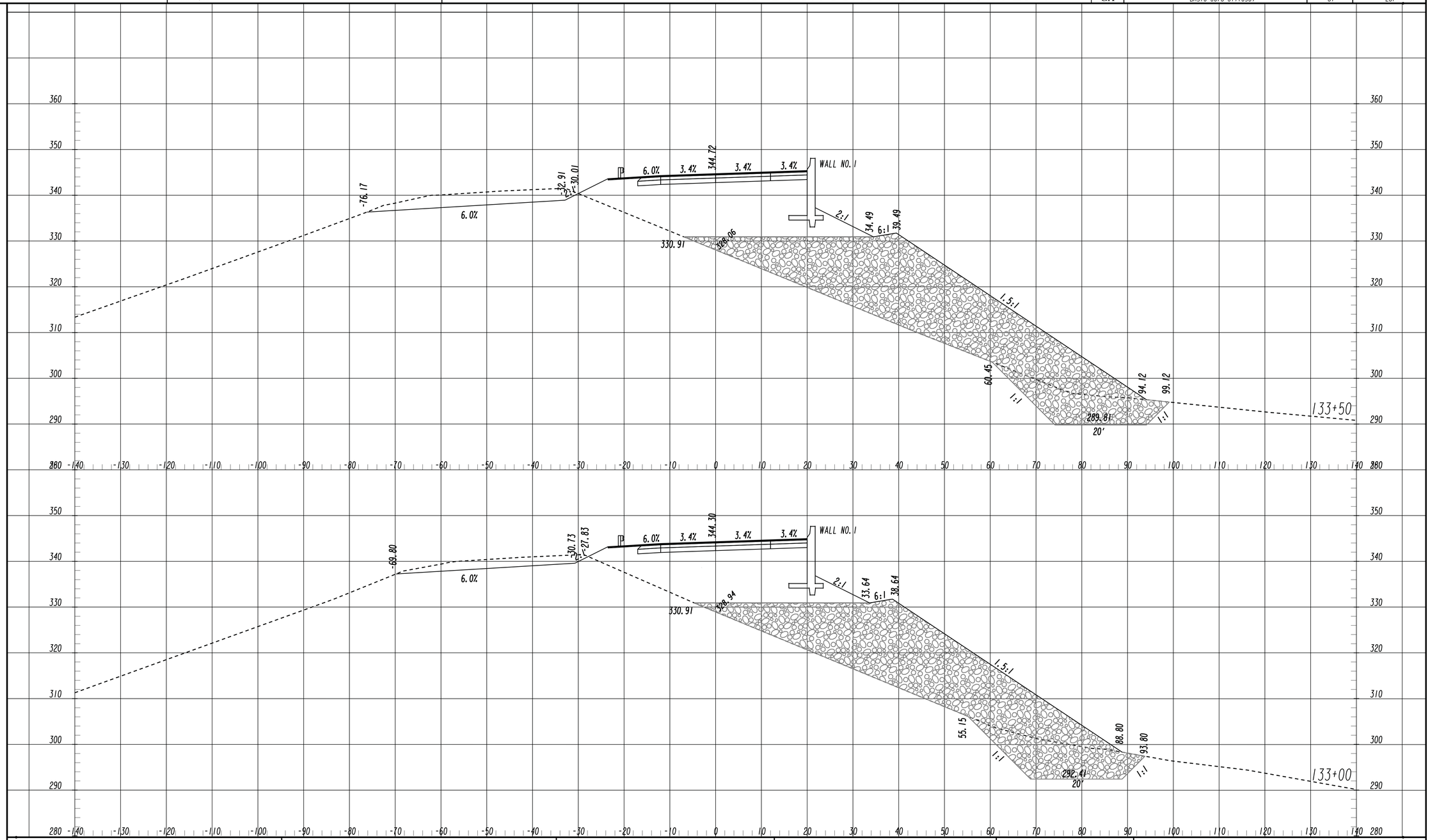
STATE ROUTE 47

DRAWING No.
23-013

11/30/2011 SUXSEW

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	61	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-014

11/30/2011 SUXSEW

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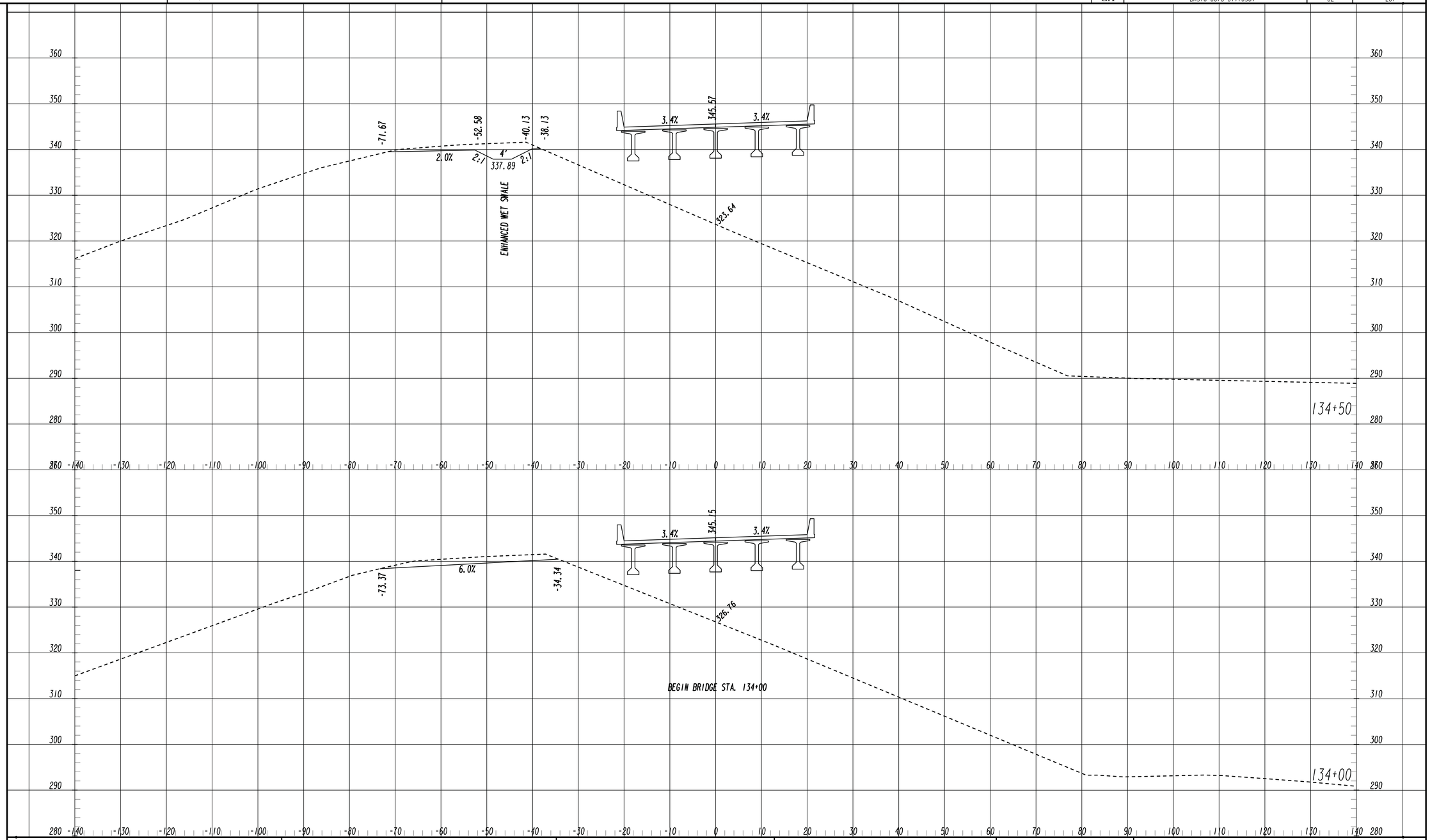
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	62	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-015

11/30/2011 SUXSEW

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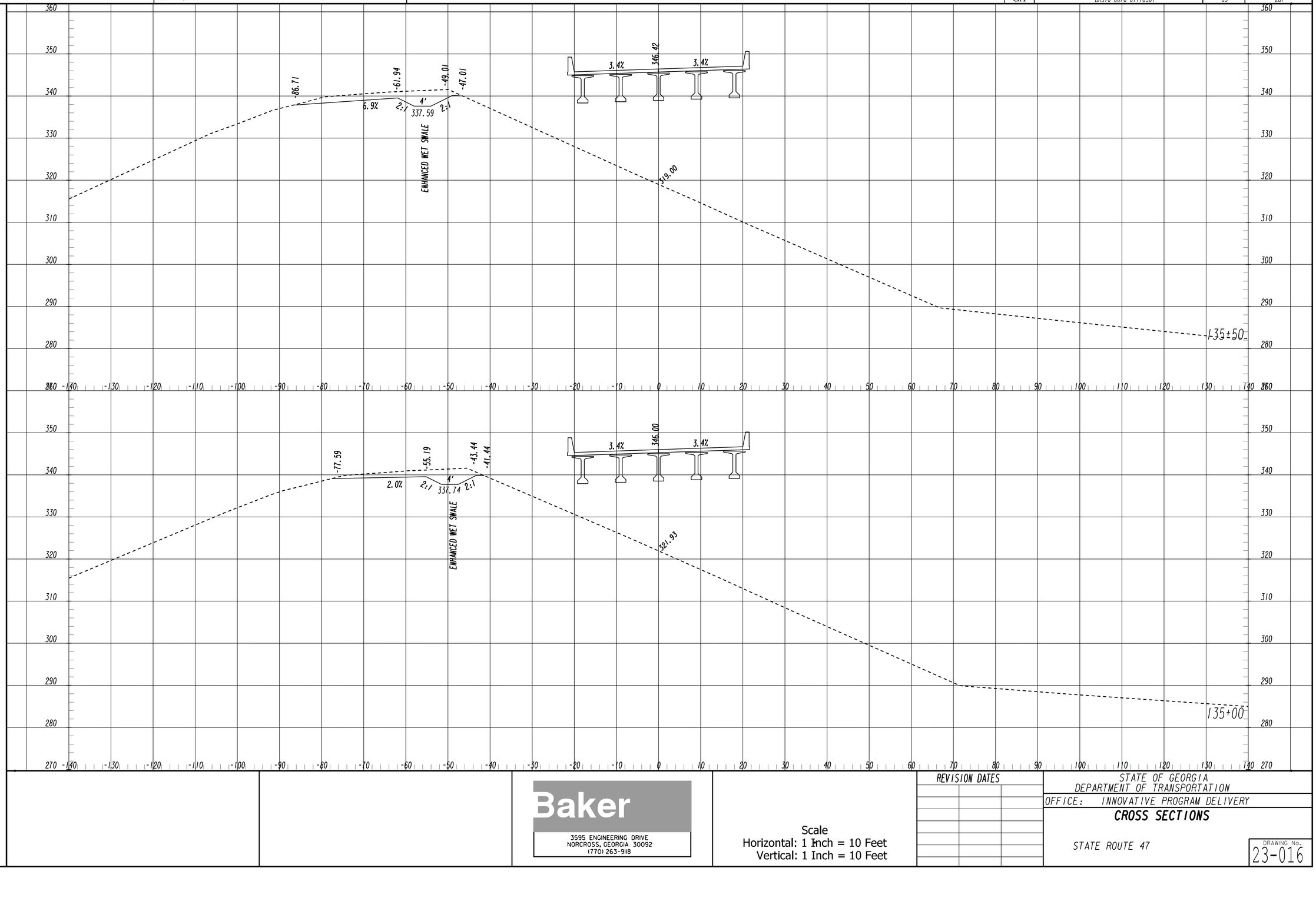
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	63	267



Baker
3595 ENGINEERING DRIVE
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(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-016

11/30/2011 SUYSEW

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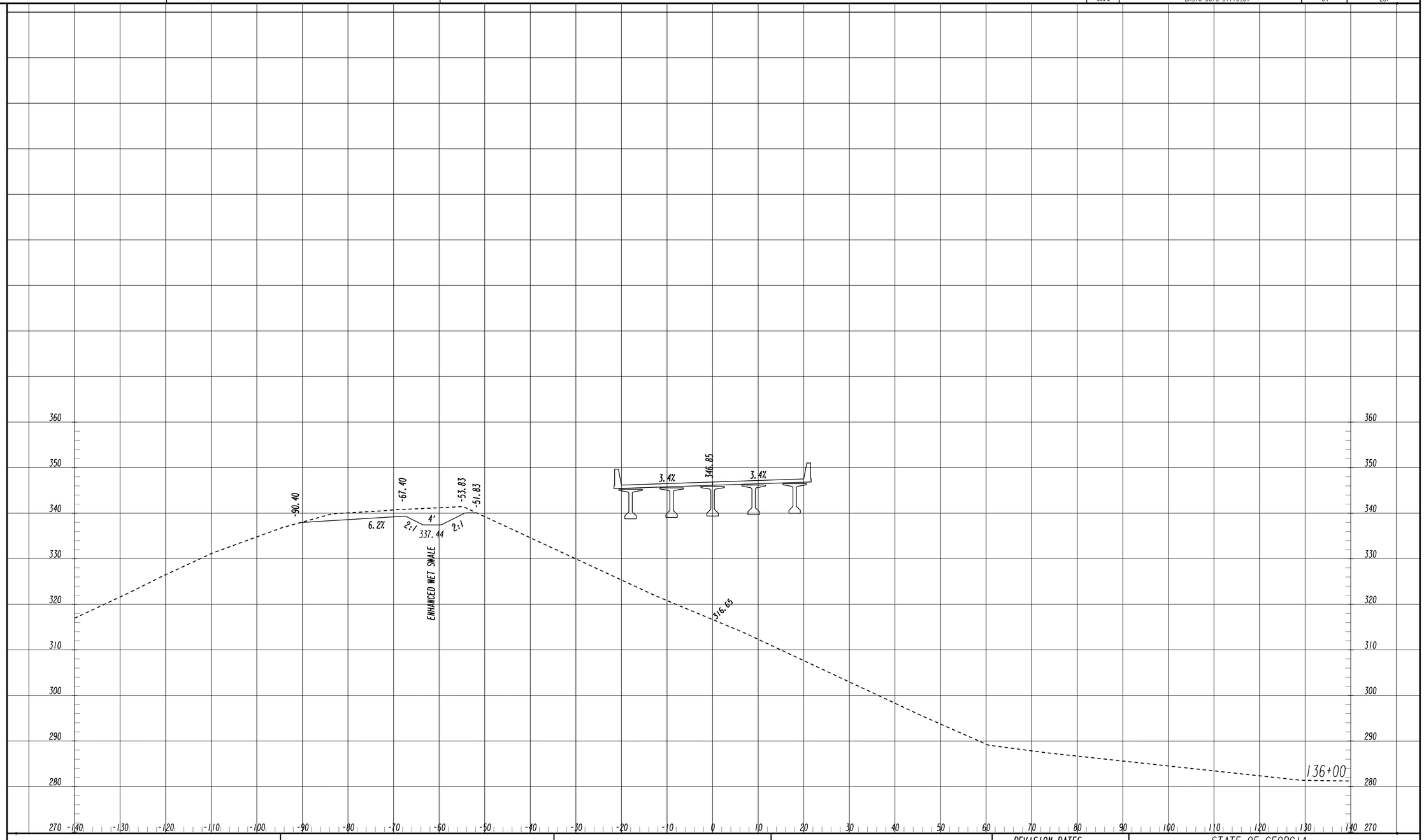
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	64	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

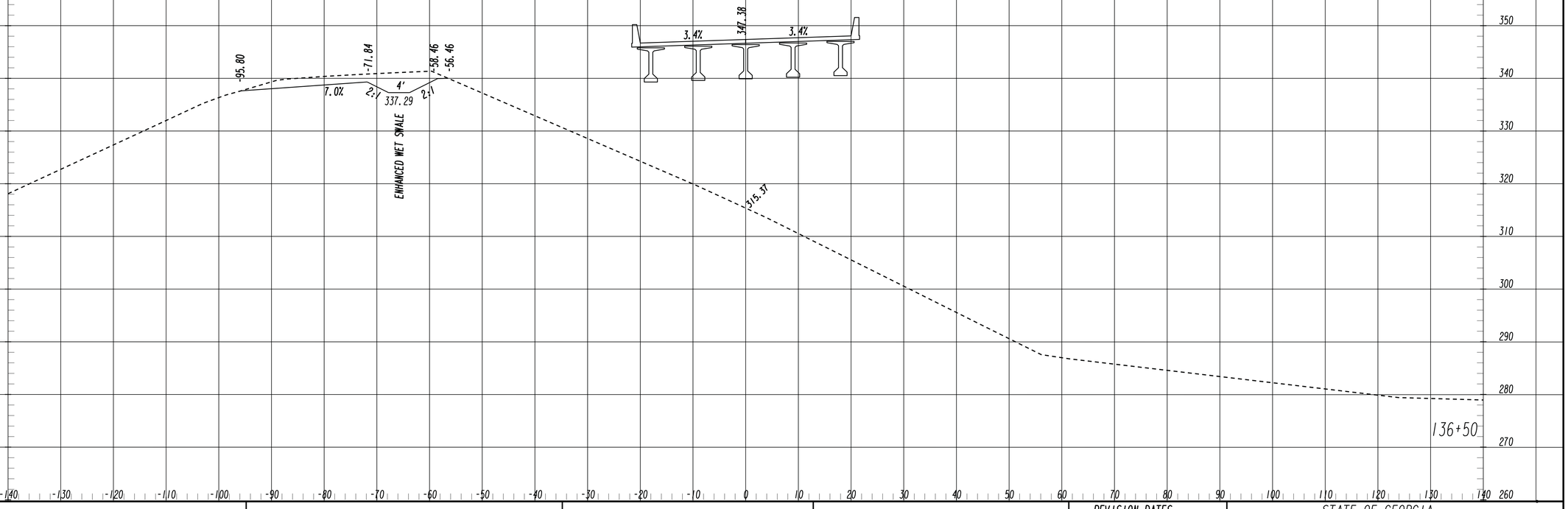
STATE ROUTE 47

DRAWING No. 23-017

11/30/2011 SUYSEW

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	65	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-018

11/30/2011 SUXSEW

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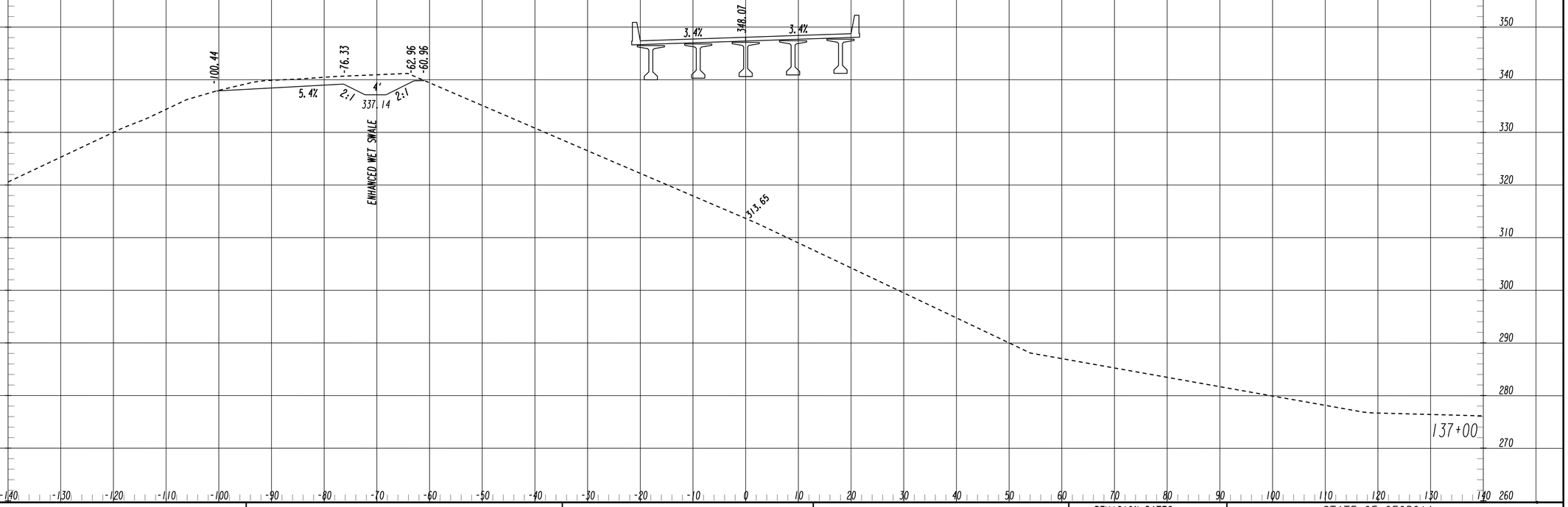
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	66	267



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Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
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REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-019

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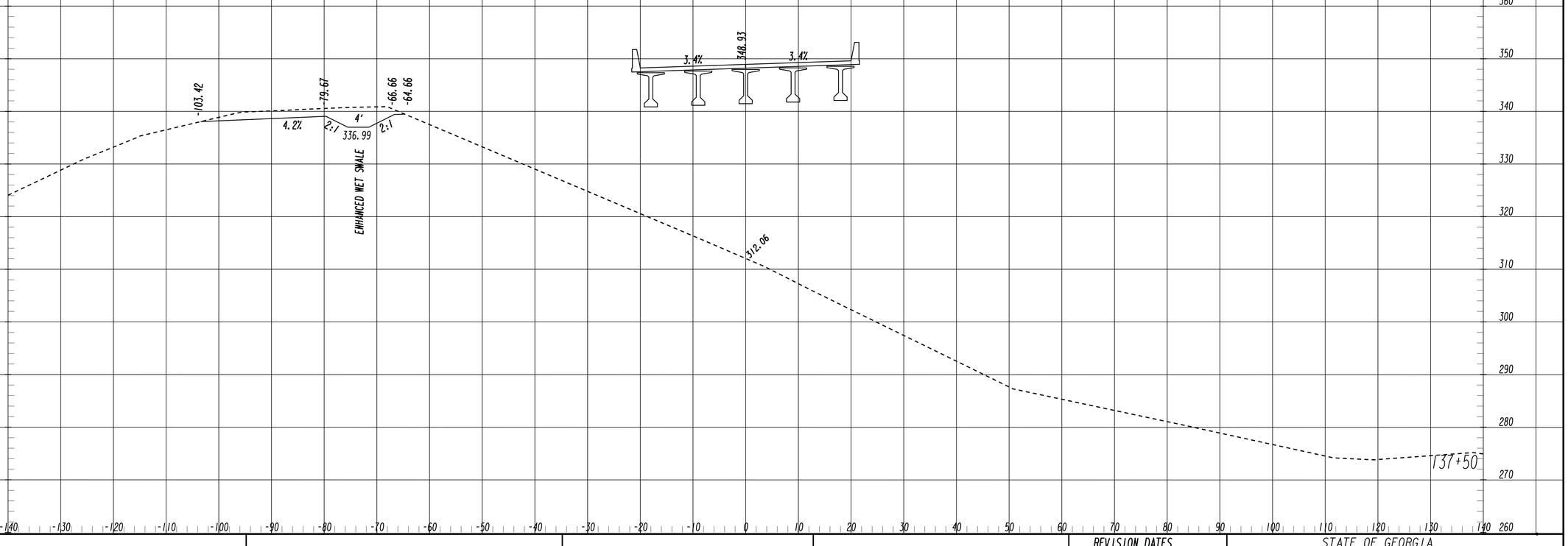
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	67	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-020

11/30/2011 SUXSEW

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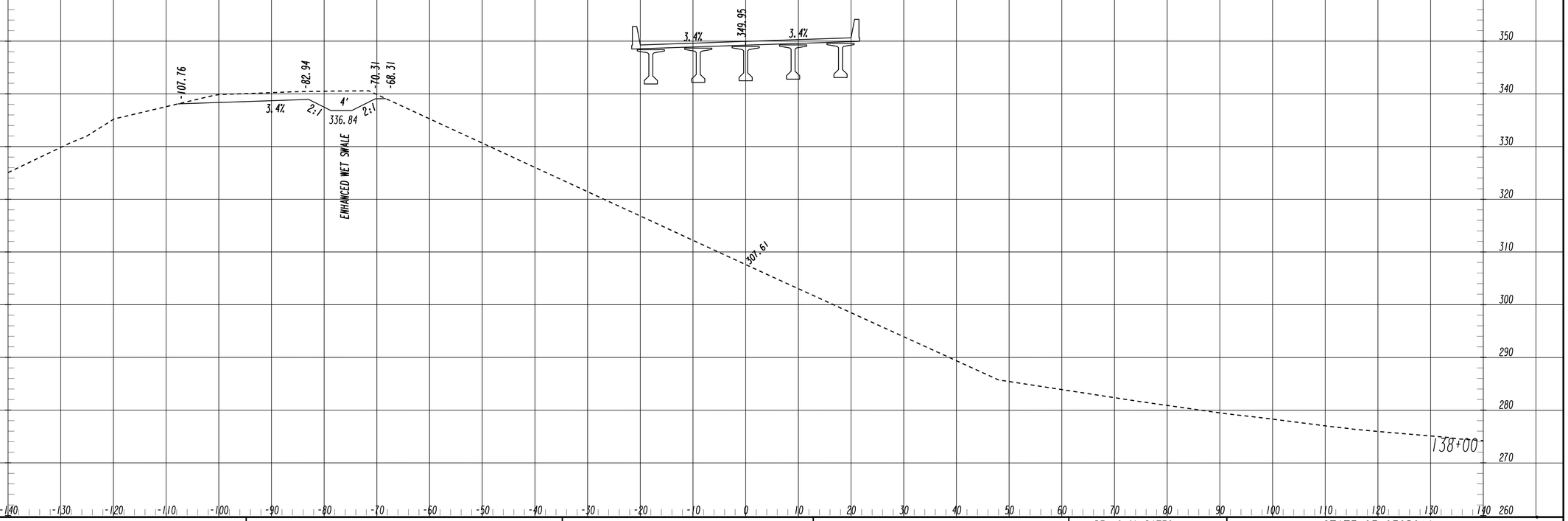
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	68	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

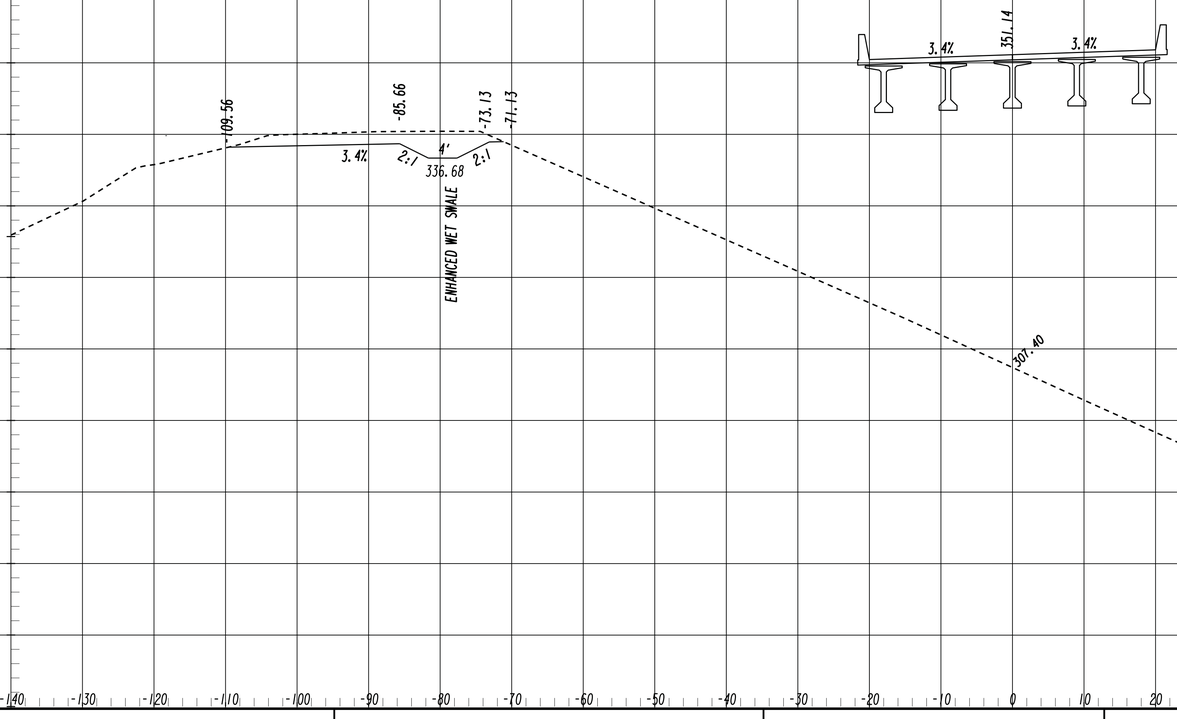
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-021

11/30/2011 SUXSEW



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-022

11/30/2011 SUYSEW

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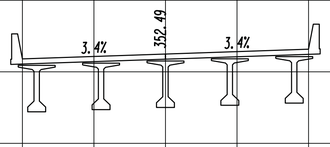
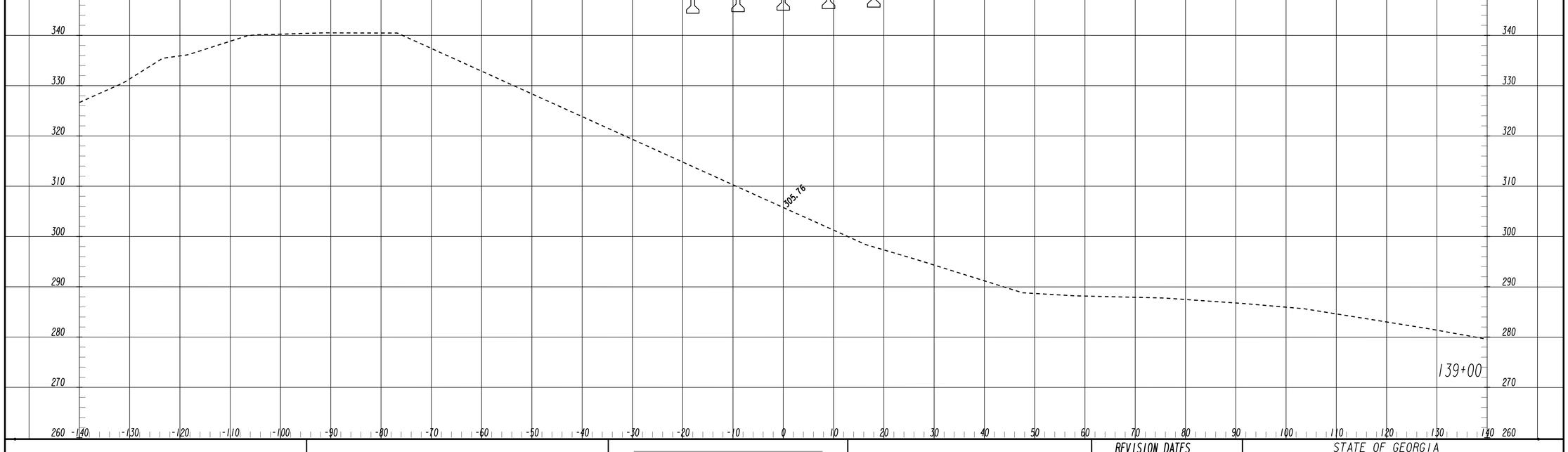
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	70	267





Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING NO.
23-023

11/30/2011 SUXSEW

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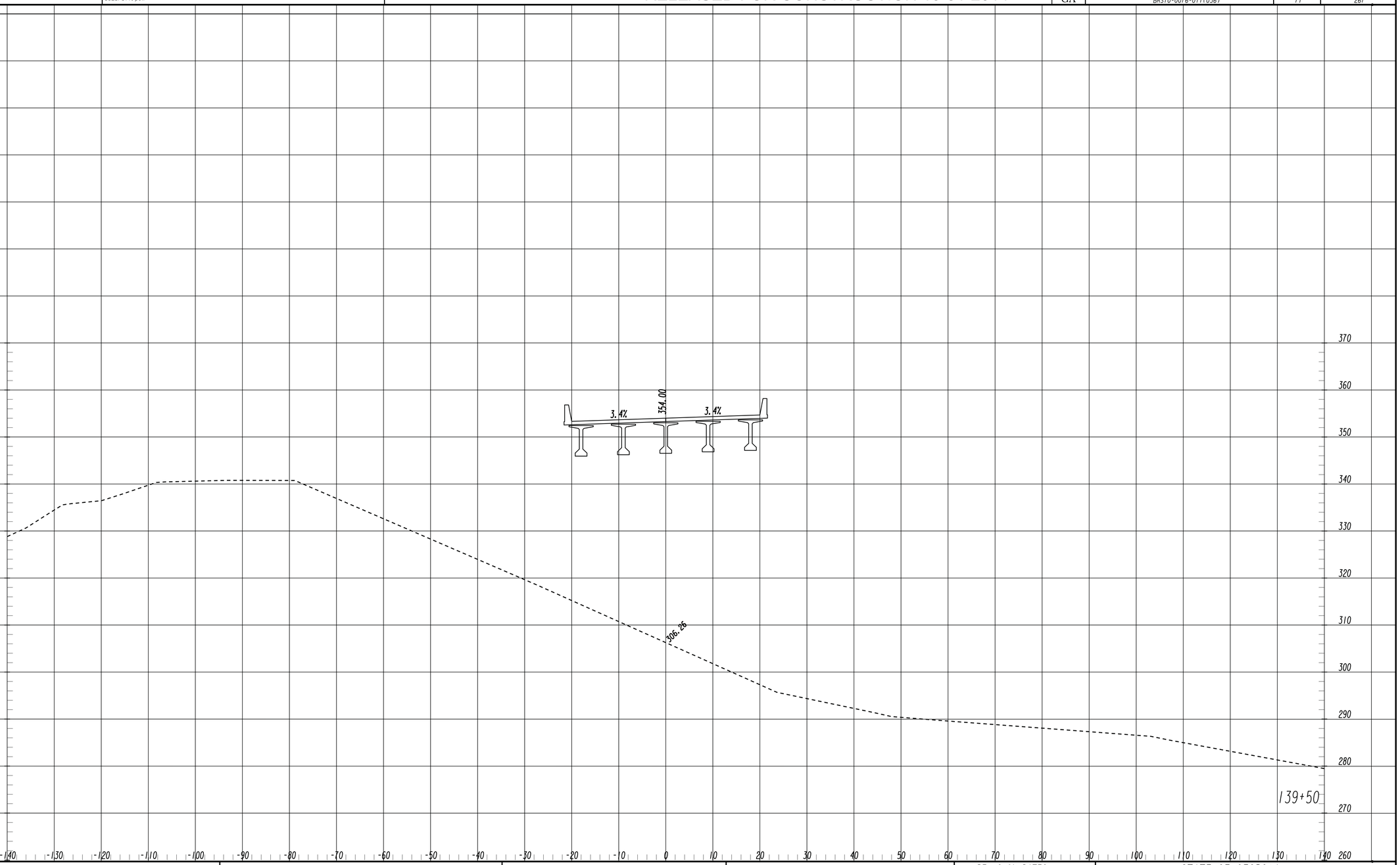
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	71	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-024

11/30/2011 SUXSEW

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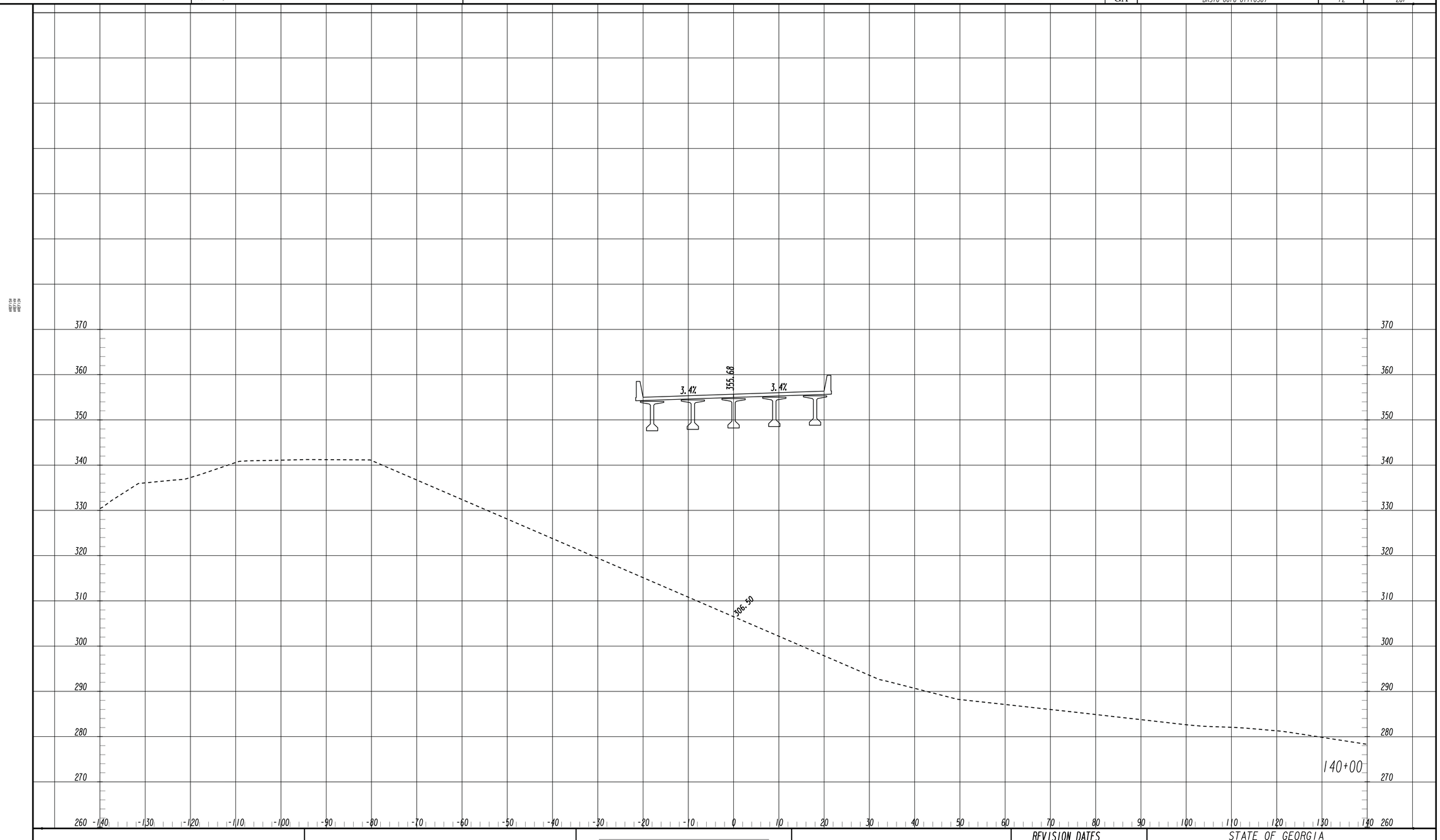
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	72	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

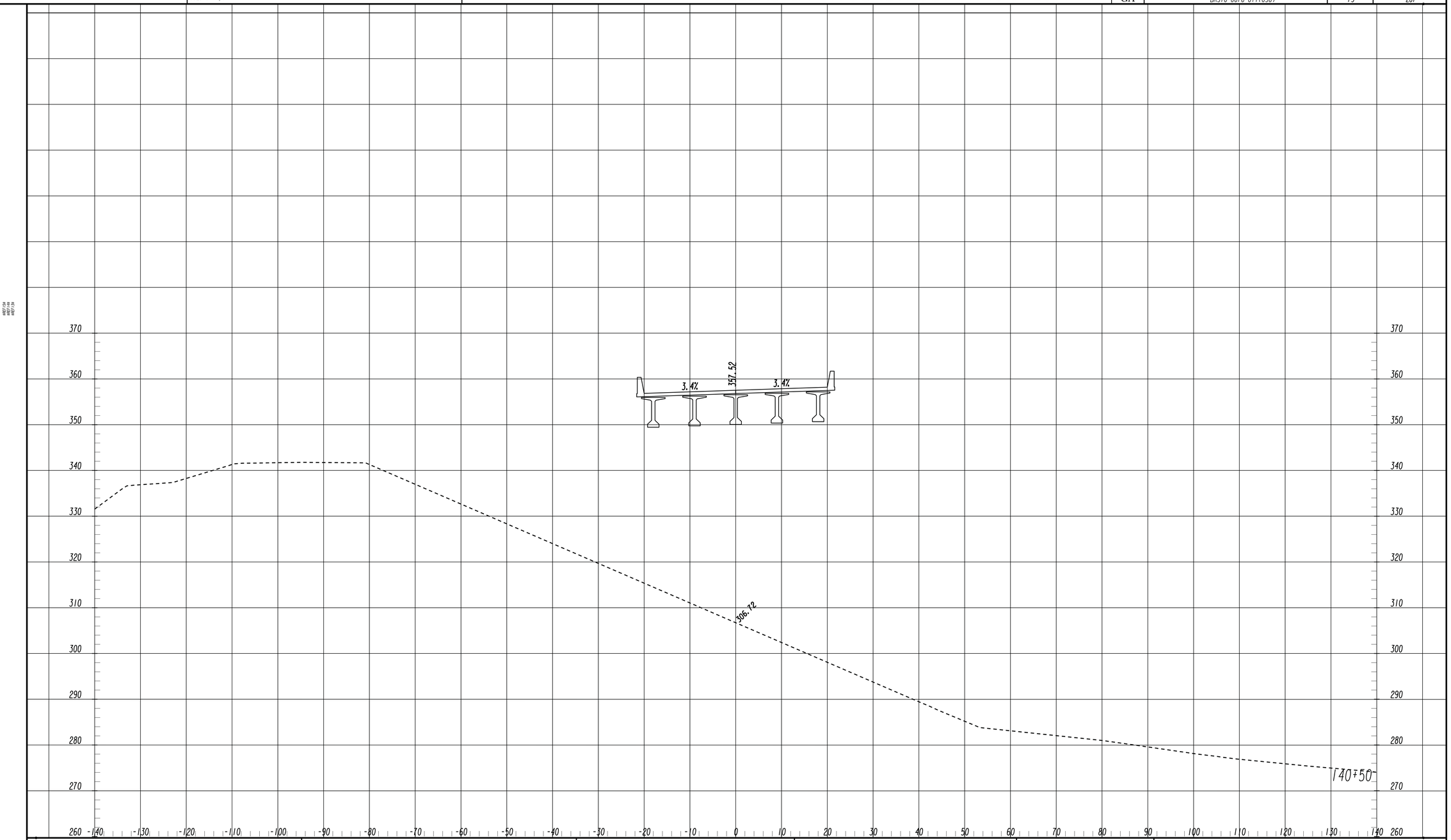
CROSS SECTIONS

STATE ROUTE 47

DRAWING NO. 23-025

11/30/2011 SUXSEW

03-NOV-2014 13:22	TIME$$$	$PRFB$	Y:\Roadways\138973\232310\Dgn\0232310_23.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	73	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING NO.
23-026

11/30/2011 SUXSEW

03-NOV-2014 13:22 TIME$$ $PRFB$
bgowen 8825Full.pen

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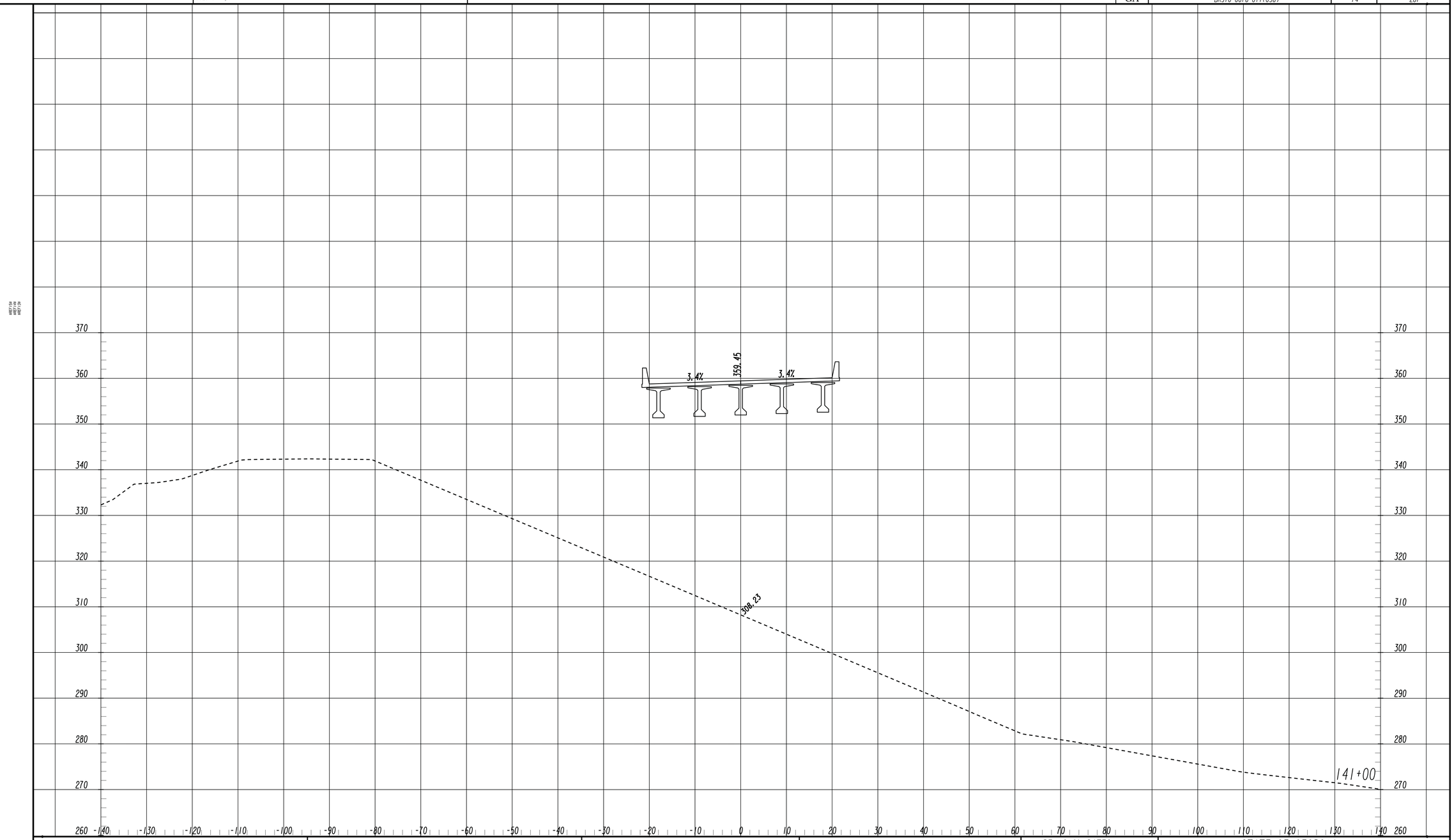
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	74	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-027

11/30/2011 SUXSEW

03-NOV-2014 13:22 TIME$$ $PRF8$
bgowen 8825Full.pen
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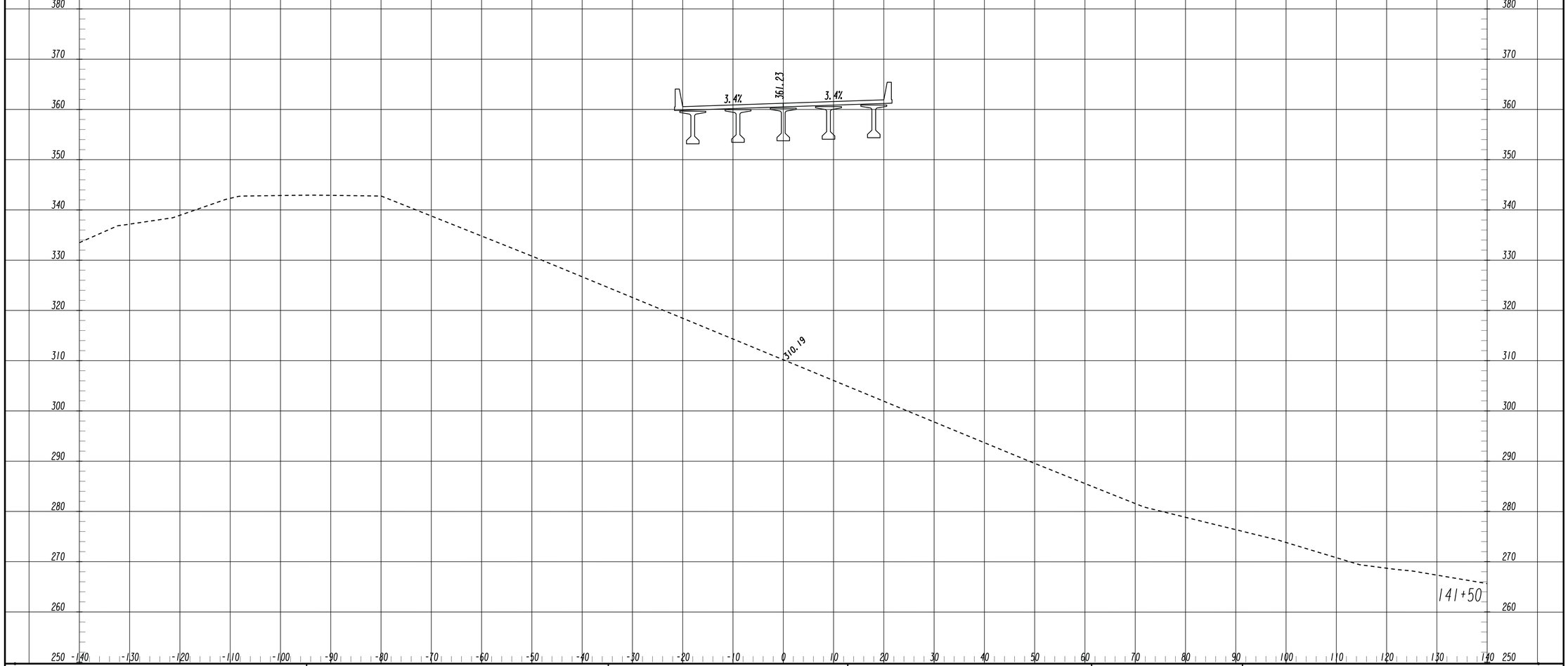
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	75	267



11/30/2011 SUXSEW

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-028

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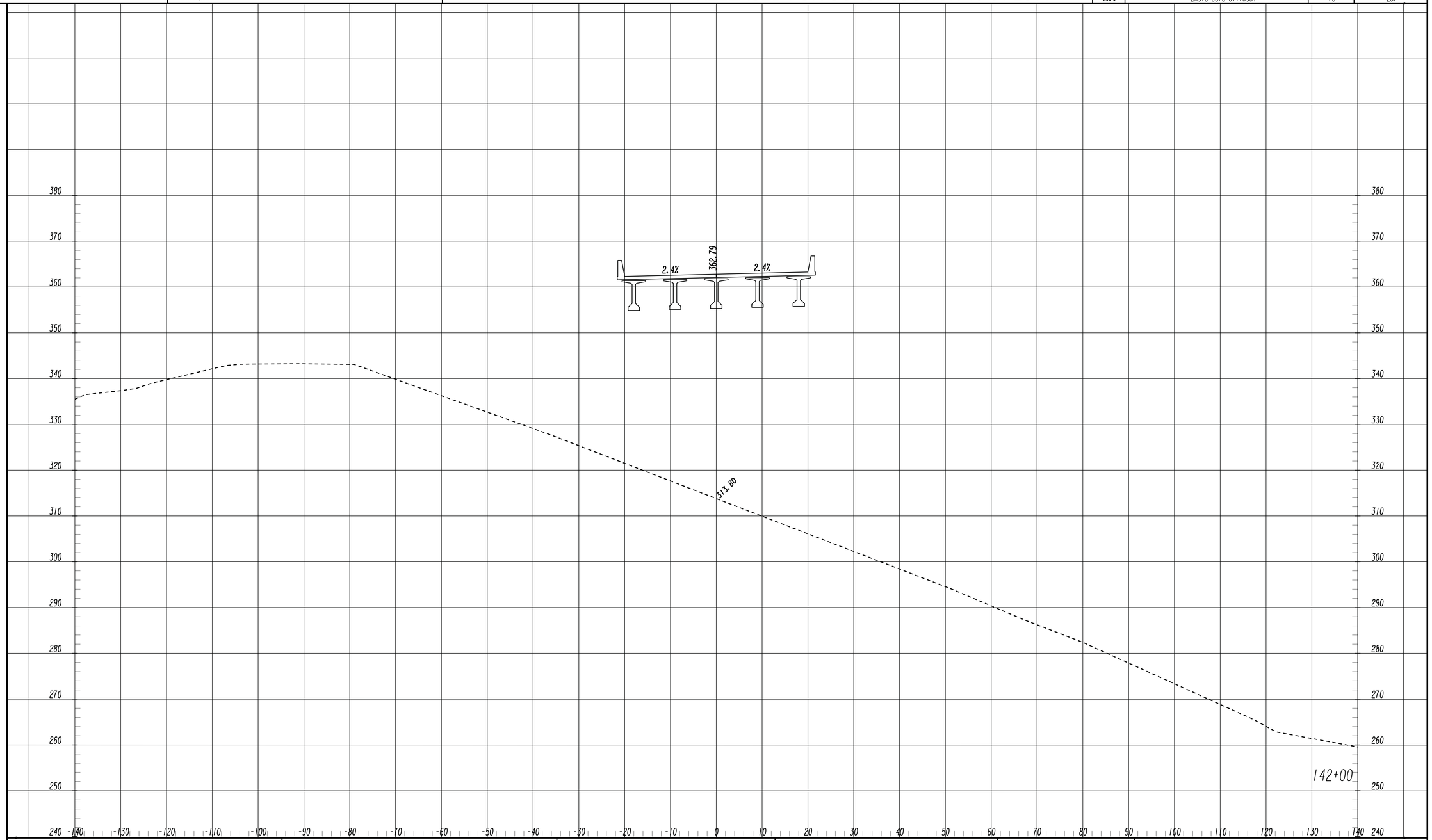
dgowen | 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	76	267



11/30/2011 SUXSEW

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

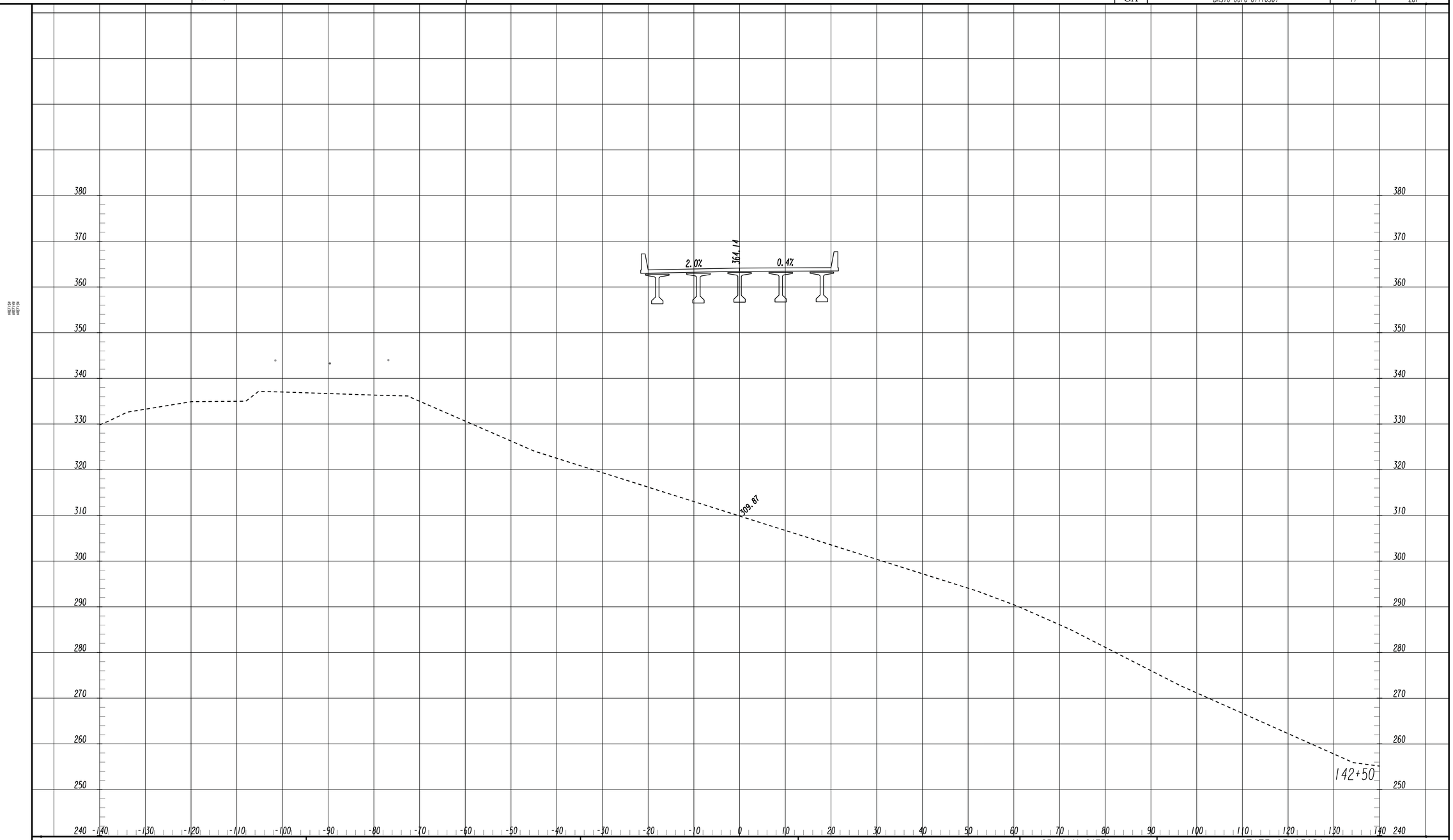
DRAWING NO. 23-029

03-NOV-2014 13:22 TIME$$$ | $PRF8$ | Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

dgowen | 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	77	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING NO. 23-030

11/30/2011 SUXSEW

03-NOV-2014 13:22 TIME$$
bgowen

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8825Full.pen

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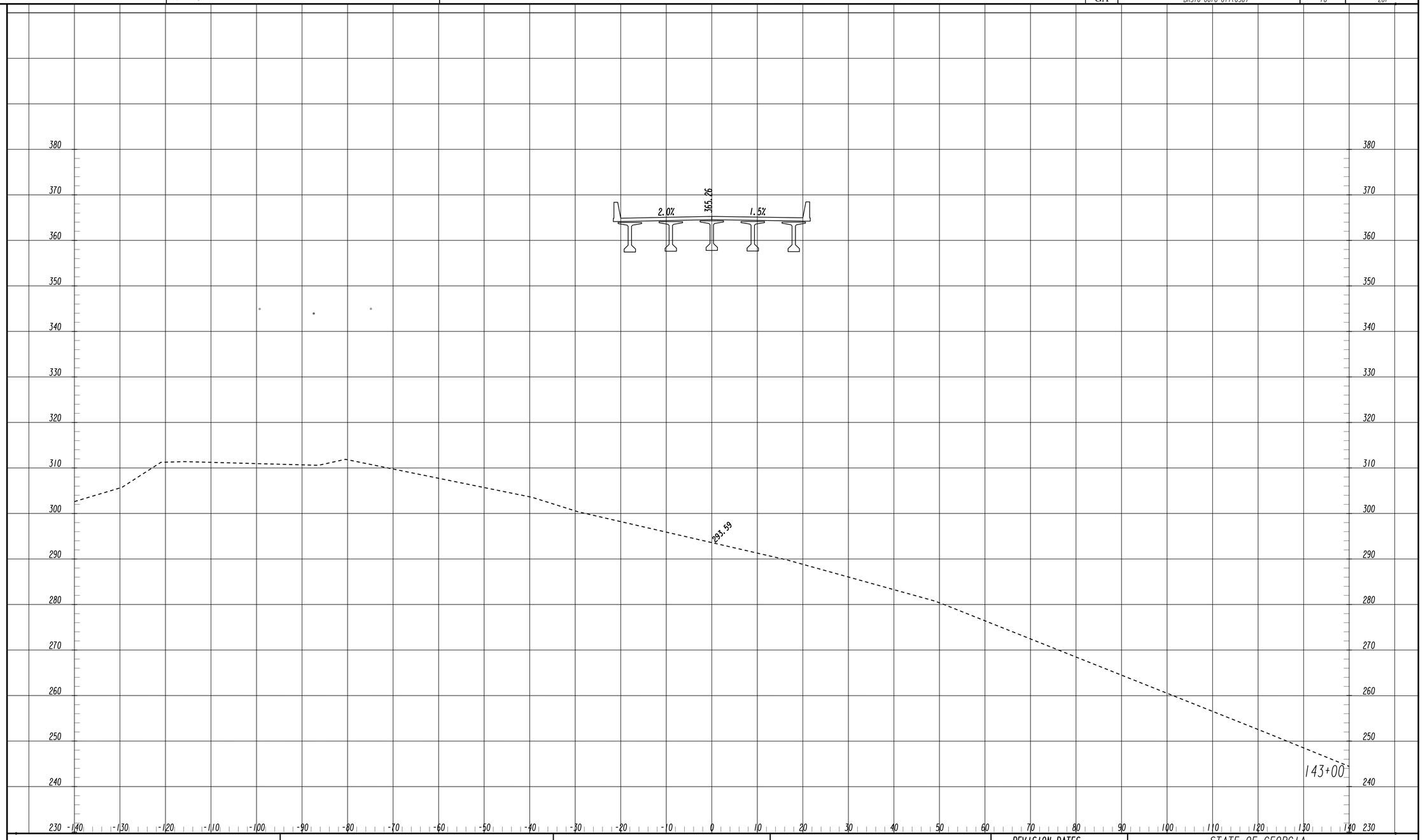
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	78	267



11/30/2011 SUXSEW

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

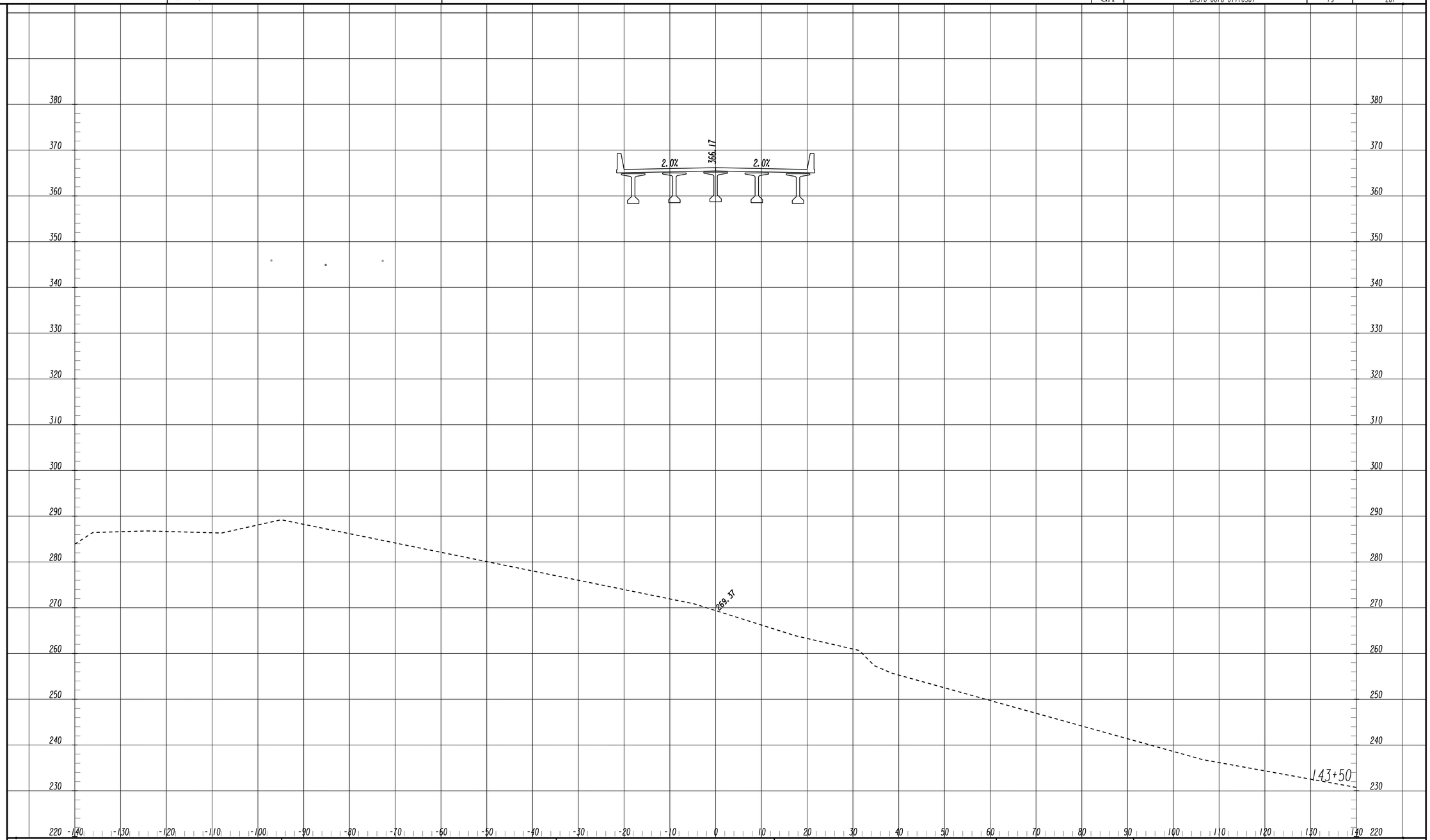
DRAWING No.
23-031

03-NOV-2014 13:22 TIME$$$ | $PRF8$ | Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

bgowen | 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	79	267



11/30/2011 SUXSEW

Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

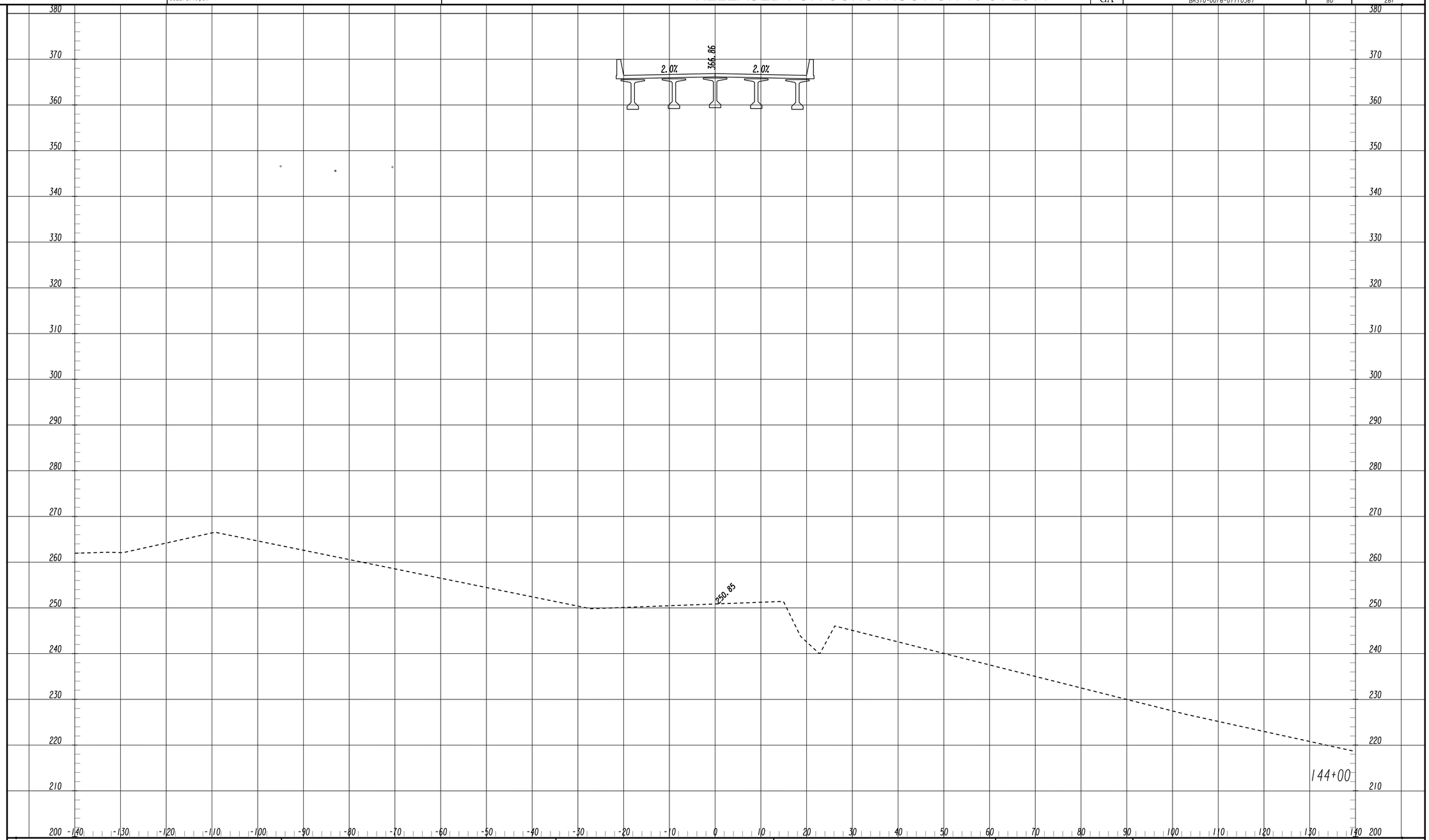
DRAWING NO. 23-032

03-NOV-2014 13:22 TIME$$$ | $PRF8$ | Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

dgowen | 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	80	267



11/30/2011 SUXSEW

Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

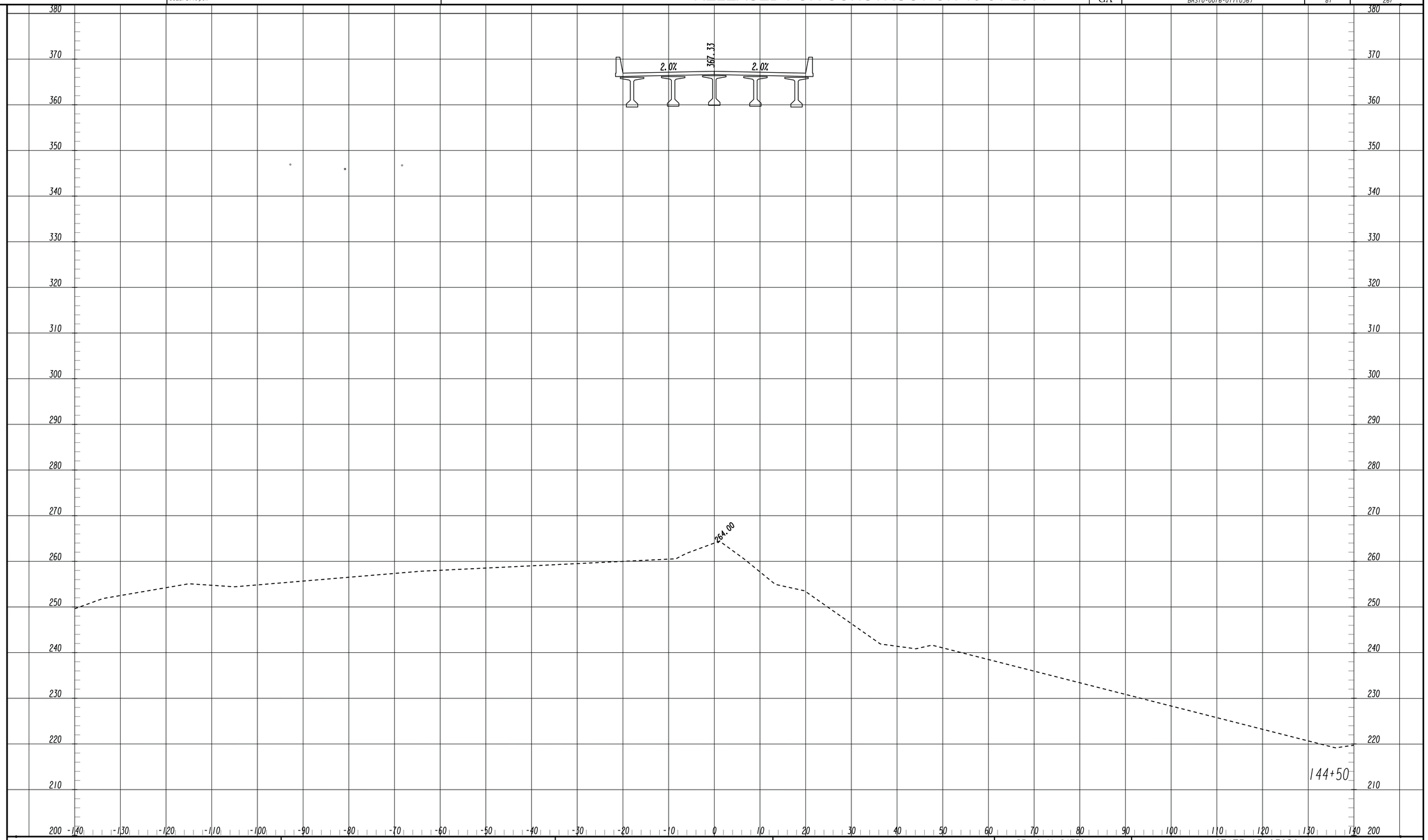
DRAWING No.
23-033

03-NOV-2014 13:22 TIME$$ $PRF8$ Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

bgowen 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	81	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

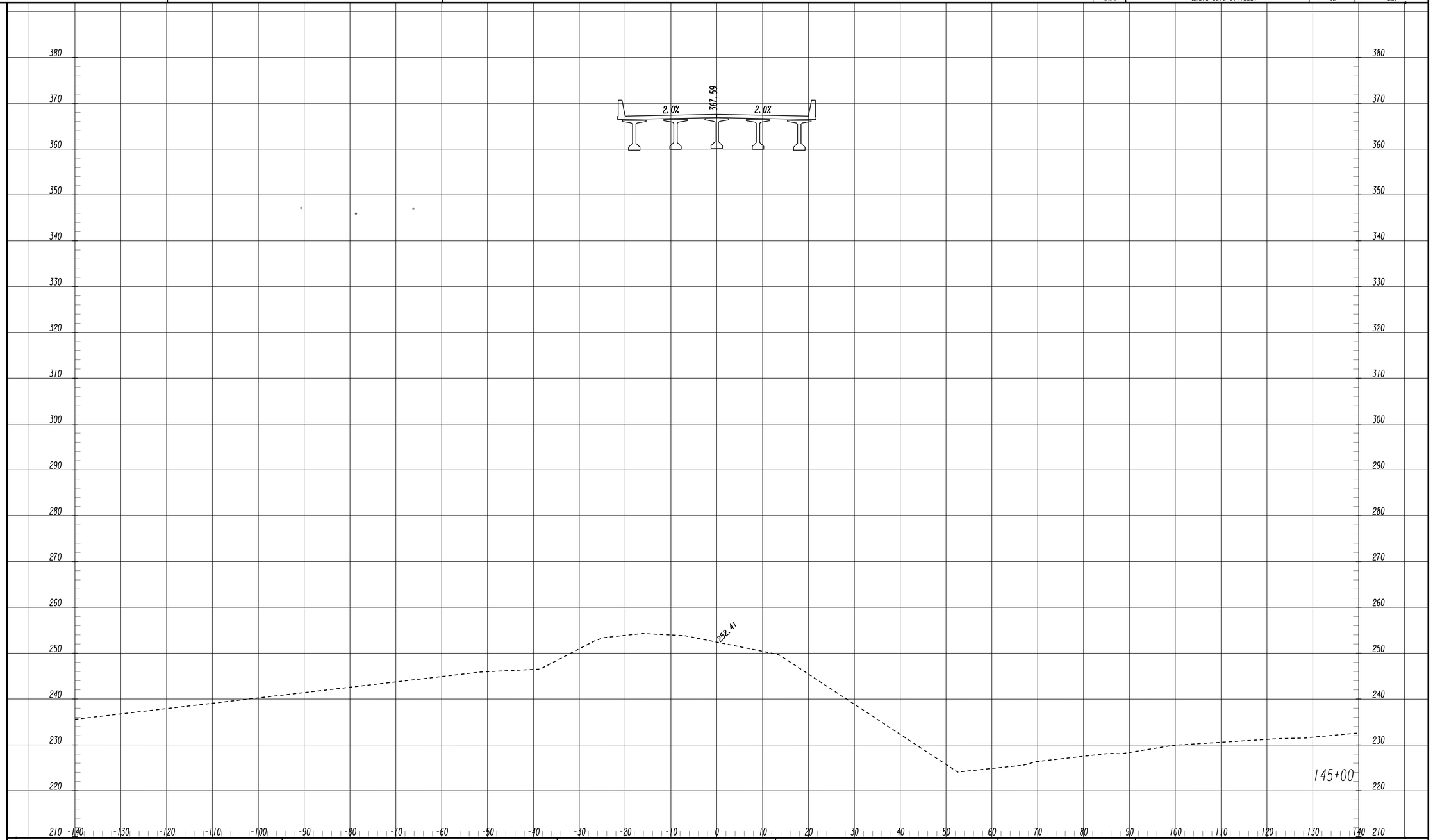
CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-034

11/30/2011 SUXSEW

03-NOV-2014 13:22 TIME$$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_23.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO. / TOTAL SHEETS
bgowen	8825Full.pen			GA	BRSTO-0076-01(1036)	82 / 267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING NO. 23-035

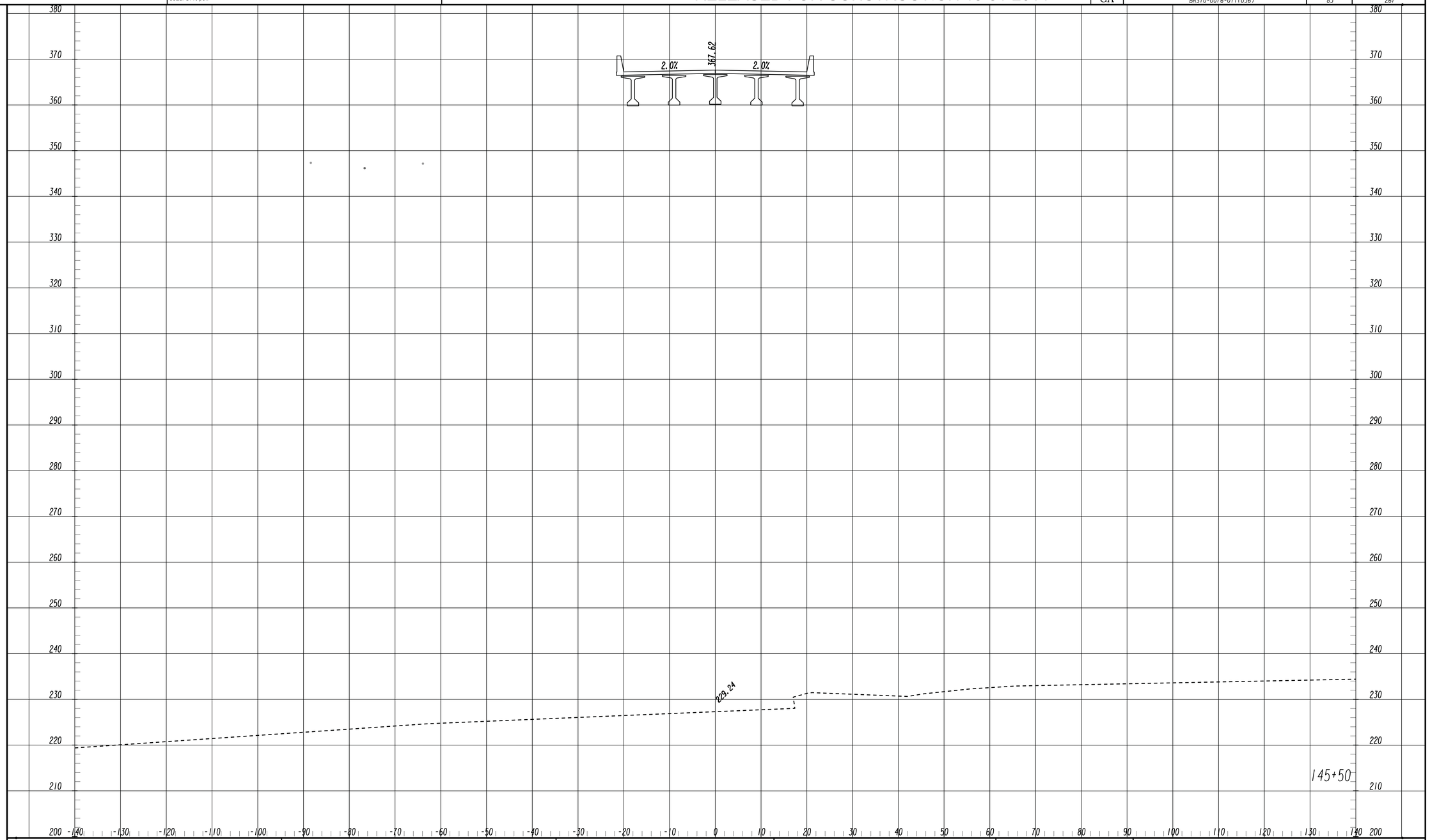
11/30/2011 SUXSEW

03-NOV-2014 13:22 TIME$$$ | $PRF8$ | Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

dgowen | 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	83	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING NO. 23-036

11/30/2011 SUXSEW

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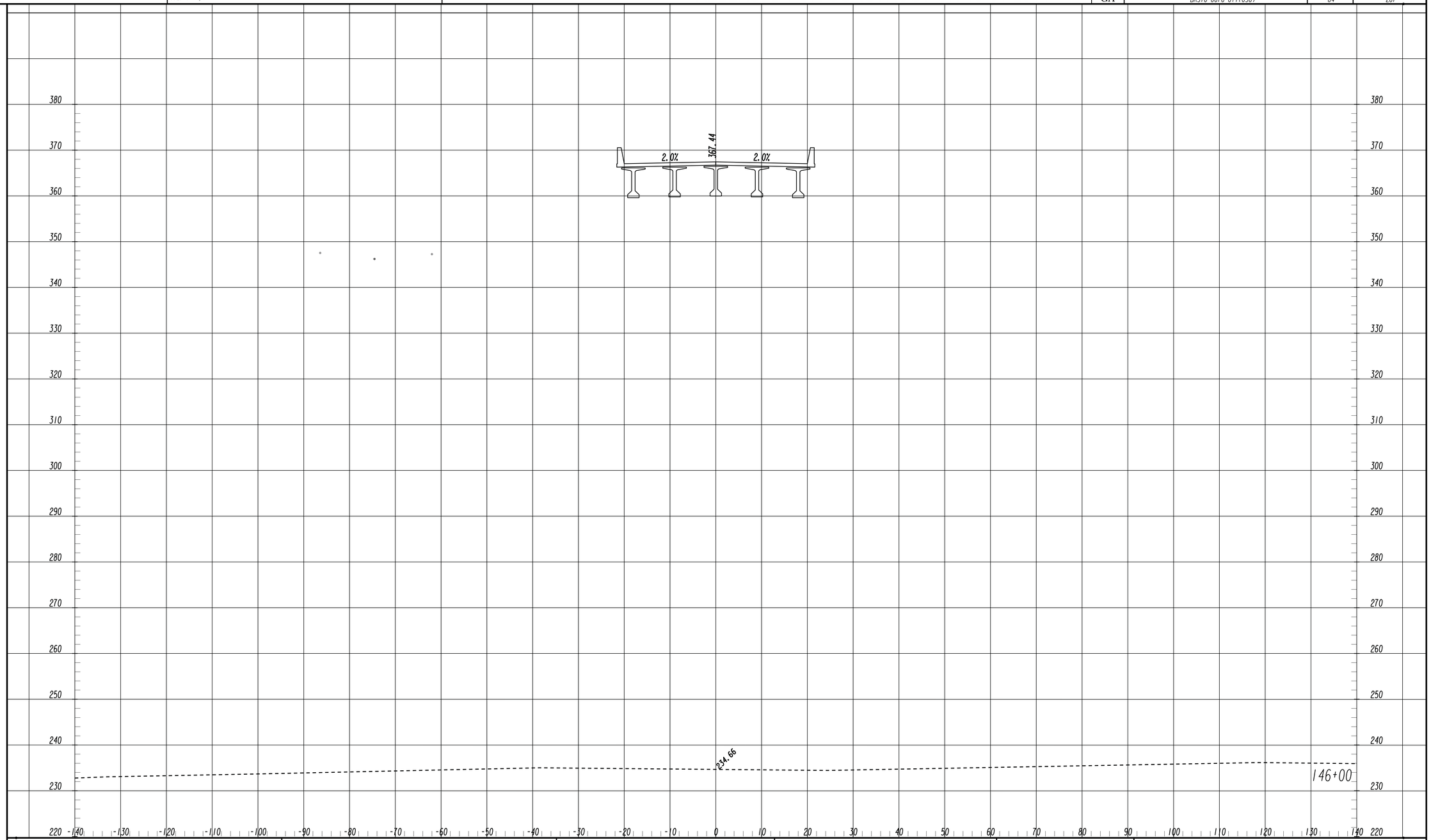
bgowen | 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	84	267



11/30/2011 SUXSEW

Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

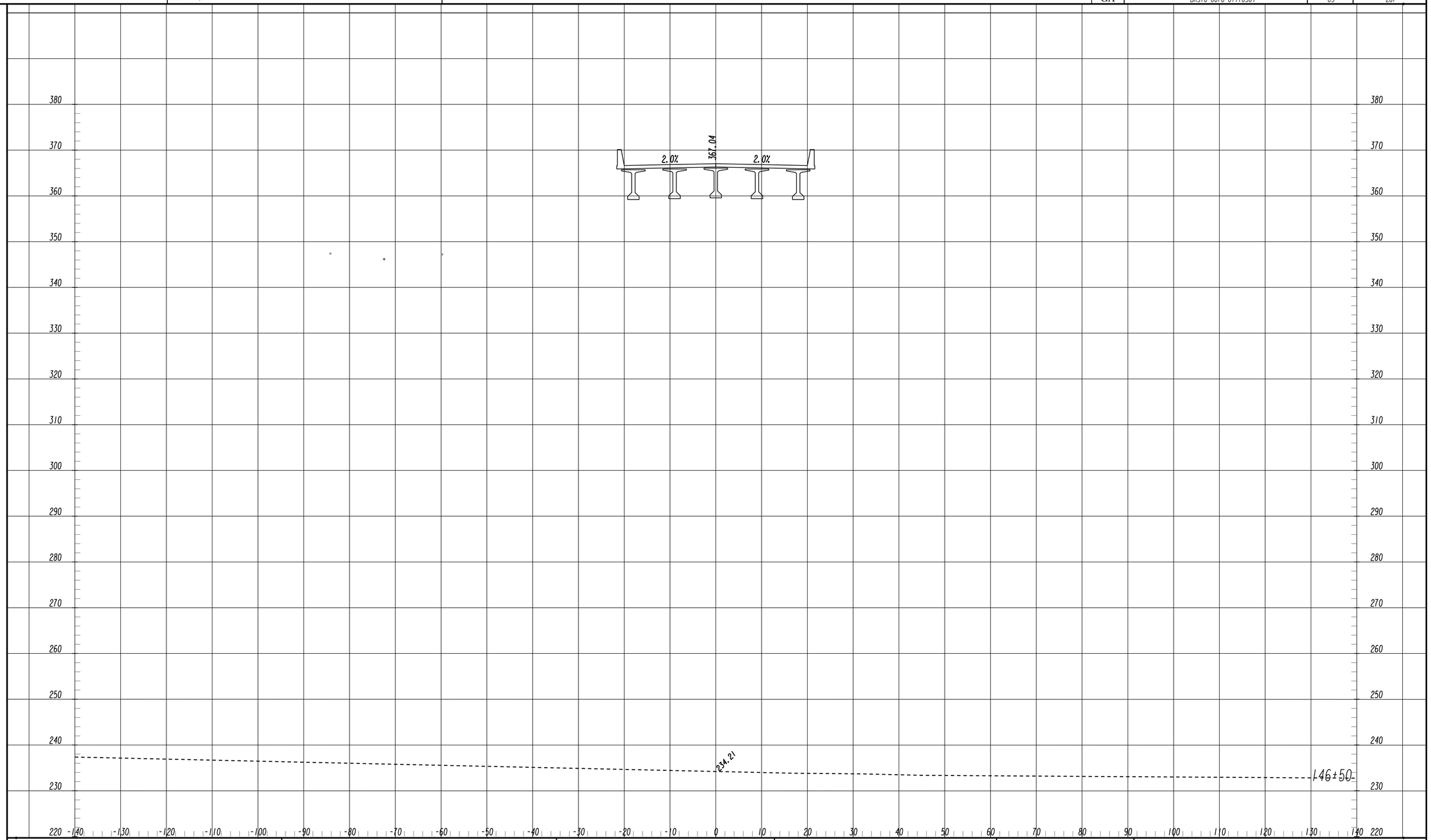
CROSS SECTIONS

STATE ROUTE 47

DRAWING NO. 23-037

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-011(036)	85	267



Baker
3595 ENGINEERING DRIVE
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(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-038

11/30/2011 SUXSEW

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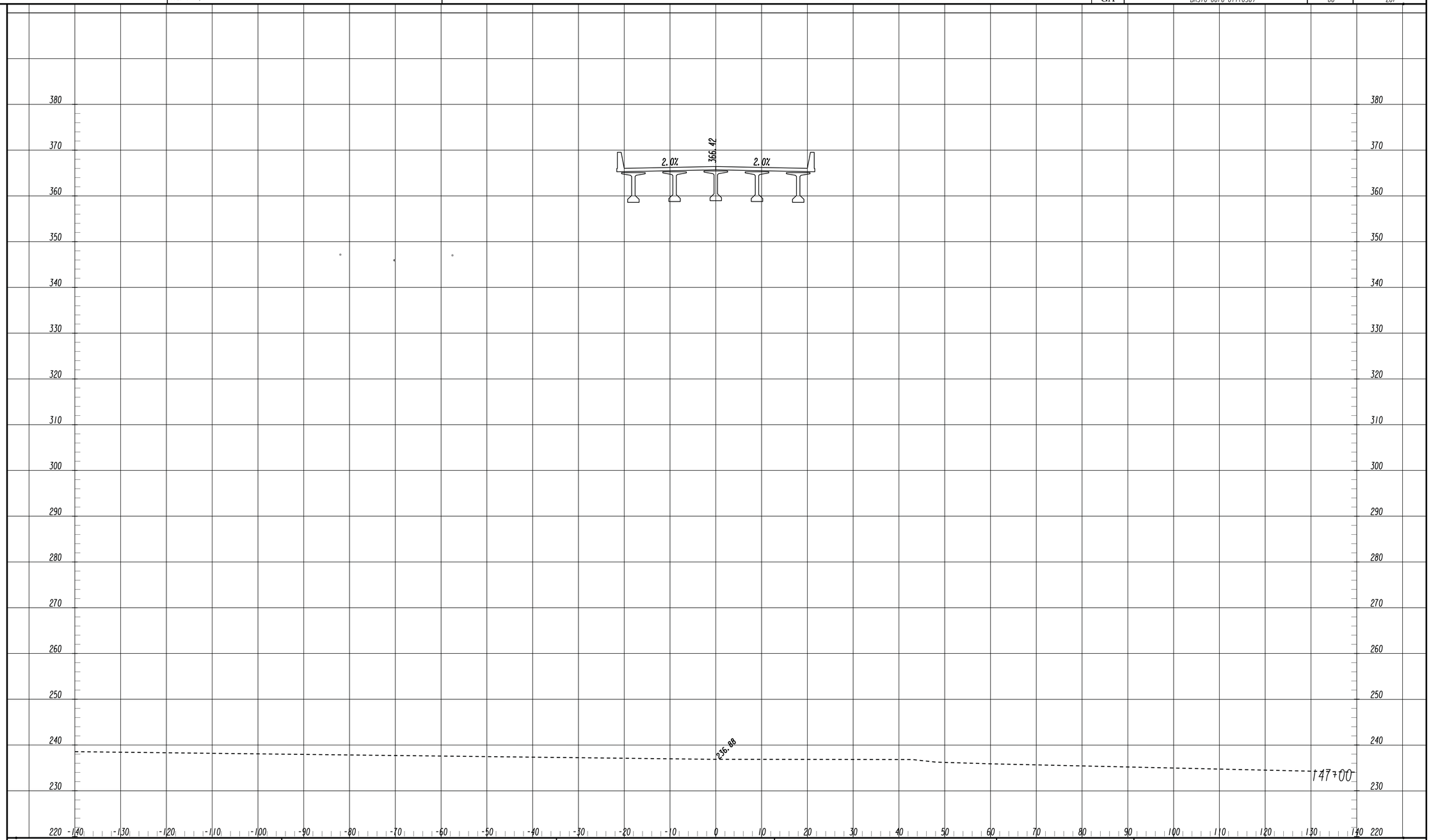
bgowen | 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	86	267



11/30/2011 SUXSEW

Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING NO. 23-039

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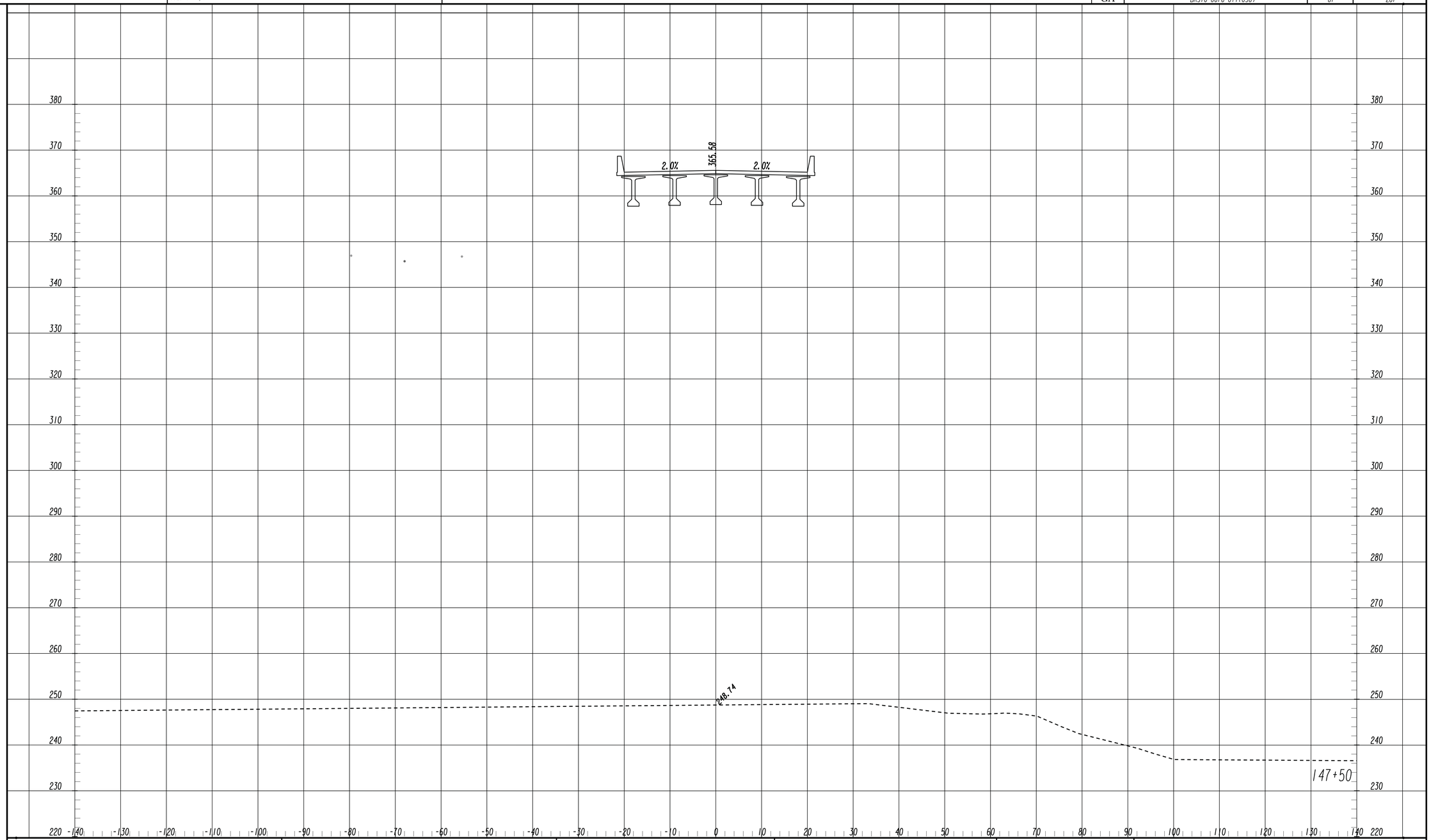
bgowen | 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	87	267



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Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-040

03-NOV-2014 13:22 TIME$$$ | $PRF8$ | Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

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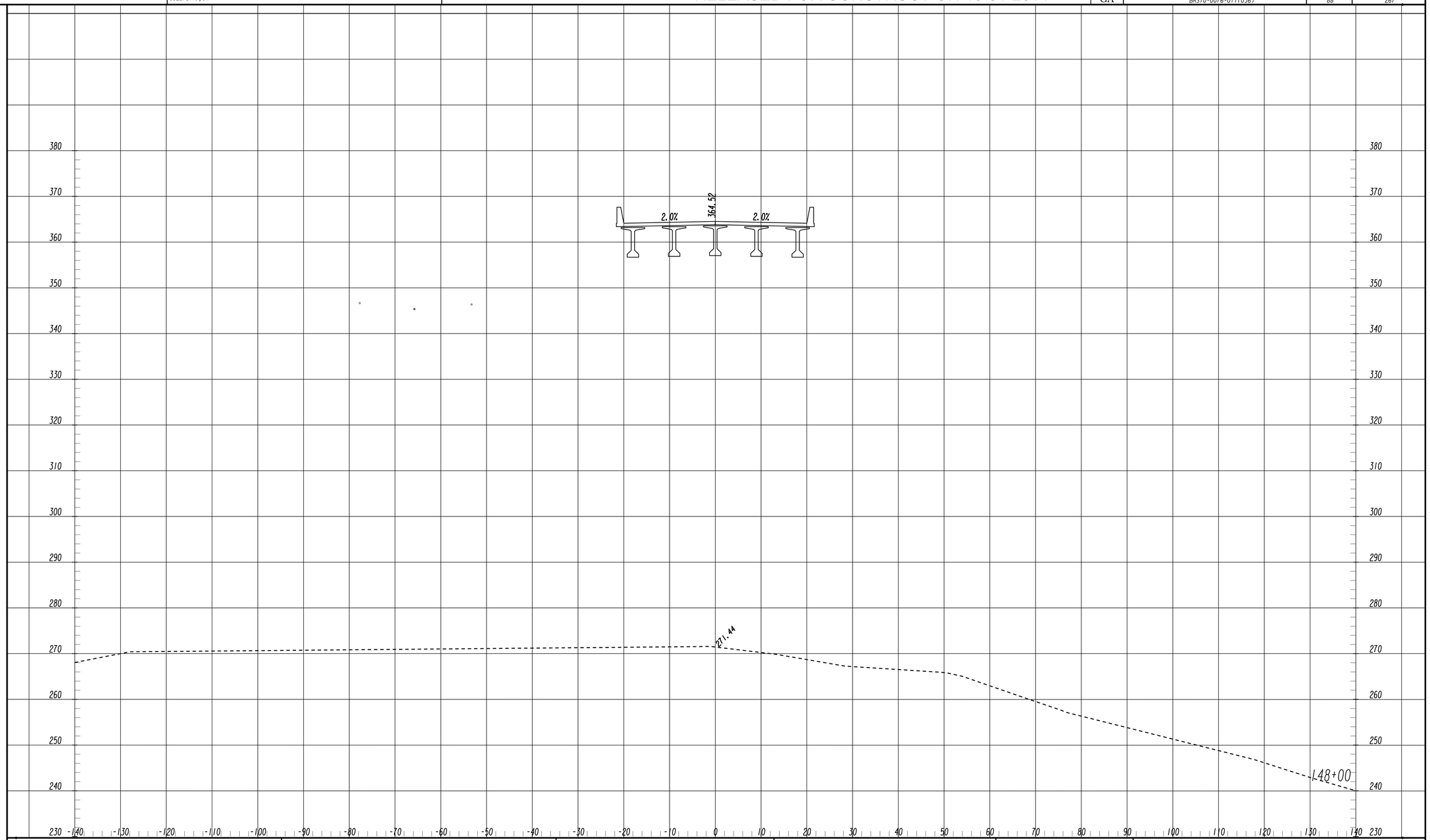
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	88	267



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3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-041

03-NOV-2014 13:23 TIME$$ $PRF8$
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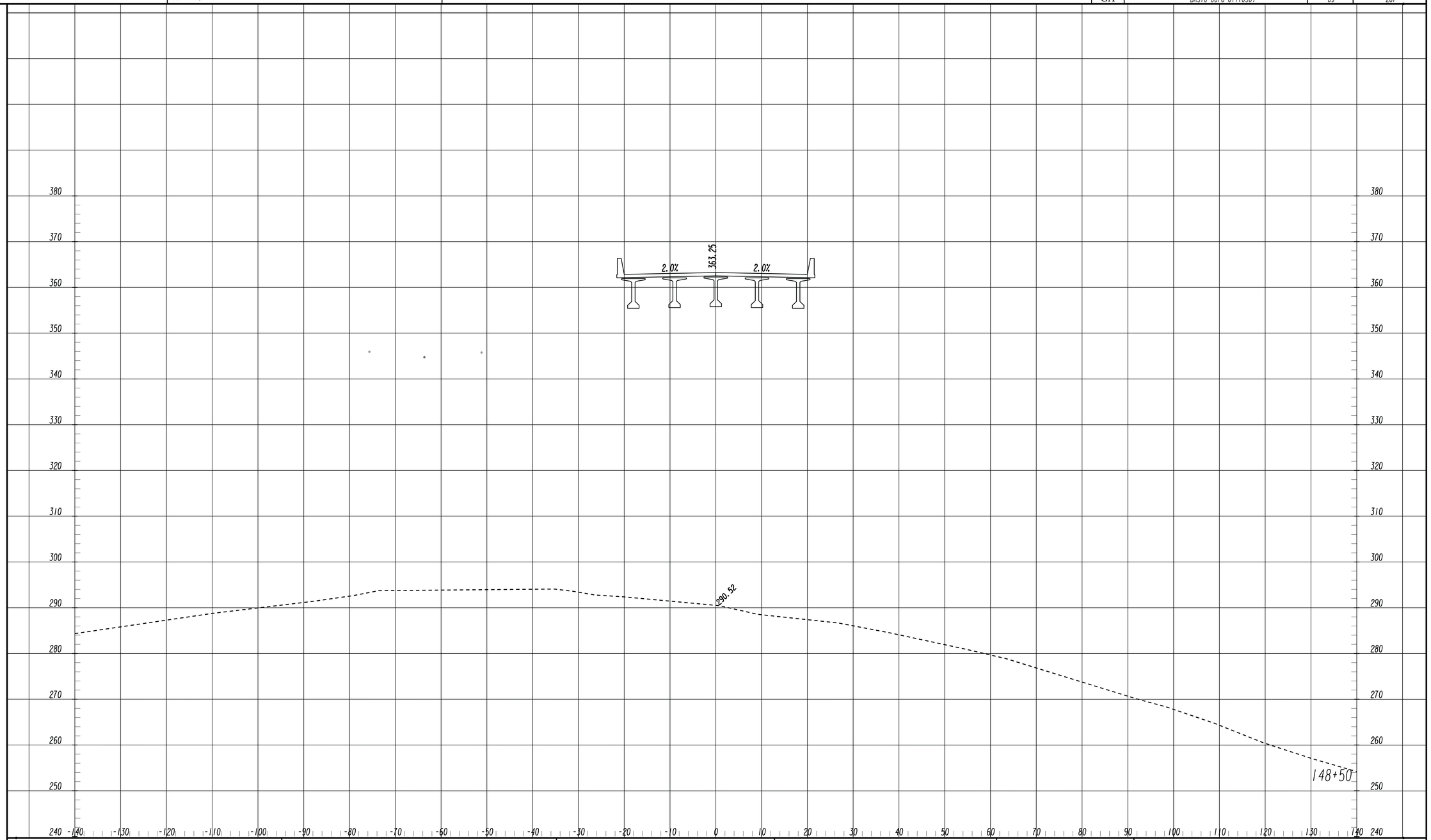
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	89	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-042

11/30/2011 SUXSEW

03-NOV-2014 13:23 TIME$$ $PRF8$
bgowen 8825Full.pen

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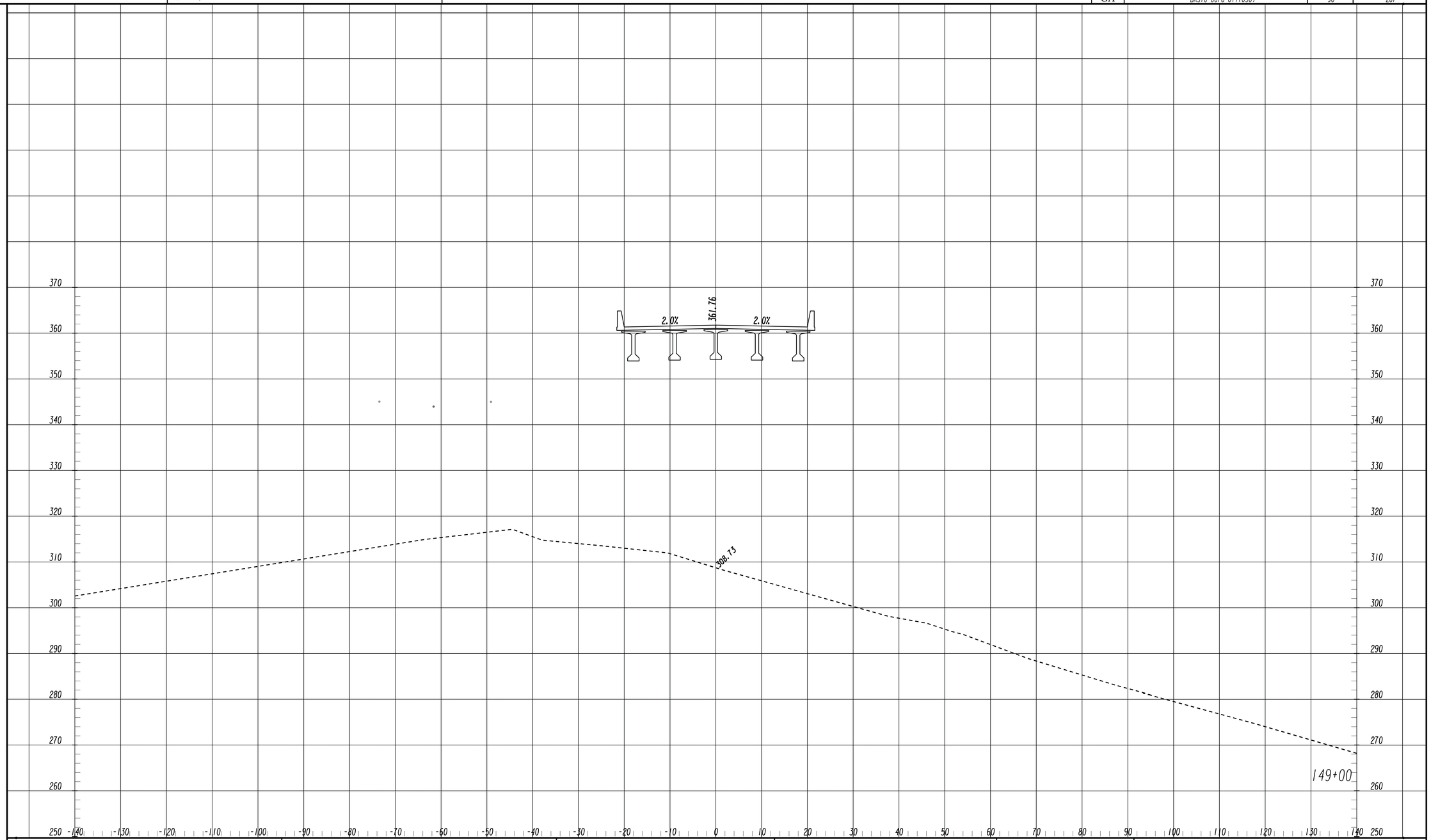
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	90	267



11/30/2011 SUXSEW

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-043

03-NOV-2014 13:23 TIME$$ $PRFB$
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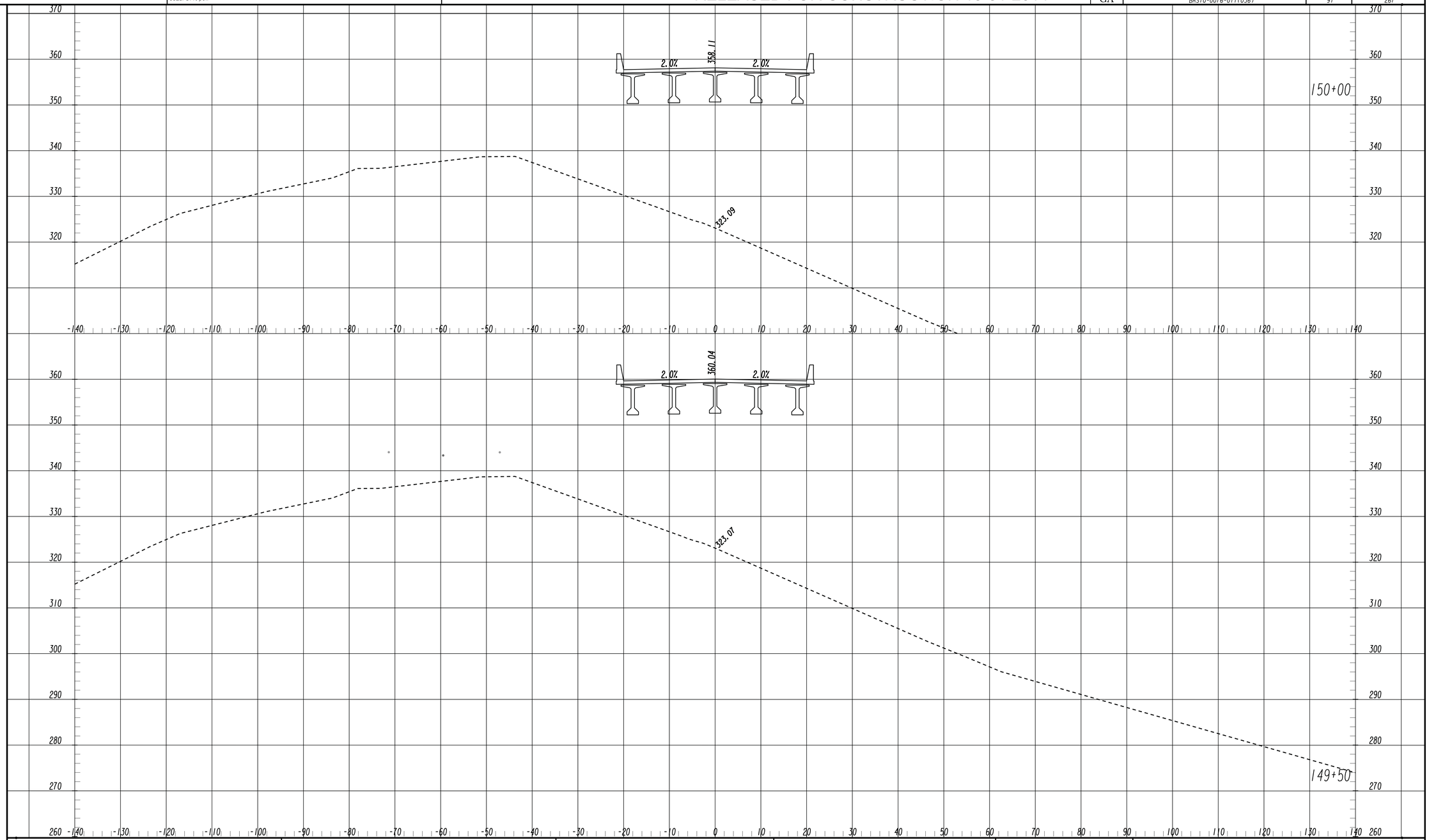
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	91	267



11/30/2011 SUXSEW

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-044

03-NOV-2014 13:23 TIME$$ $PRF8$
bgowen 8825Full.pen
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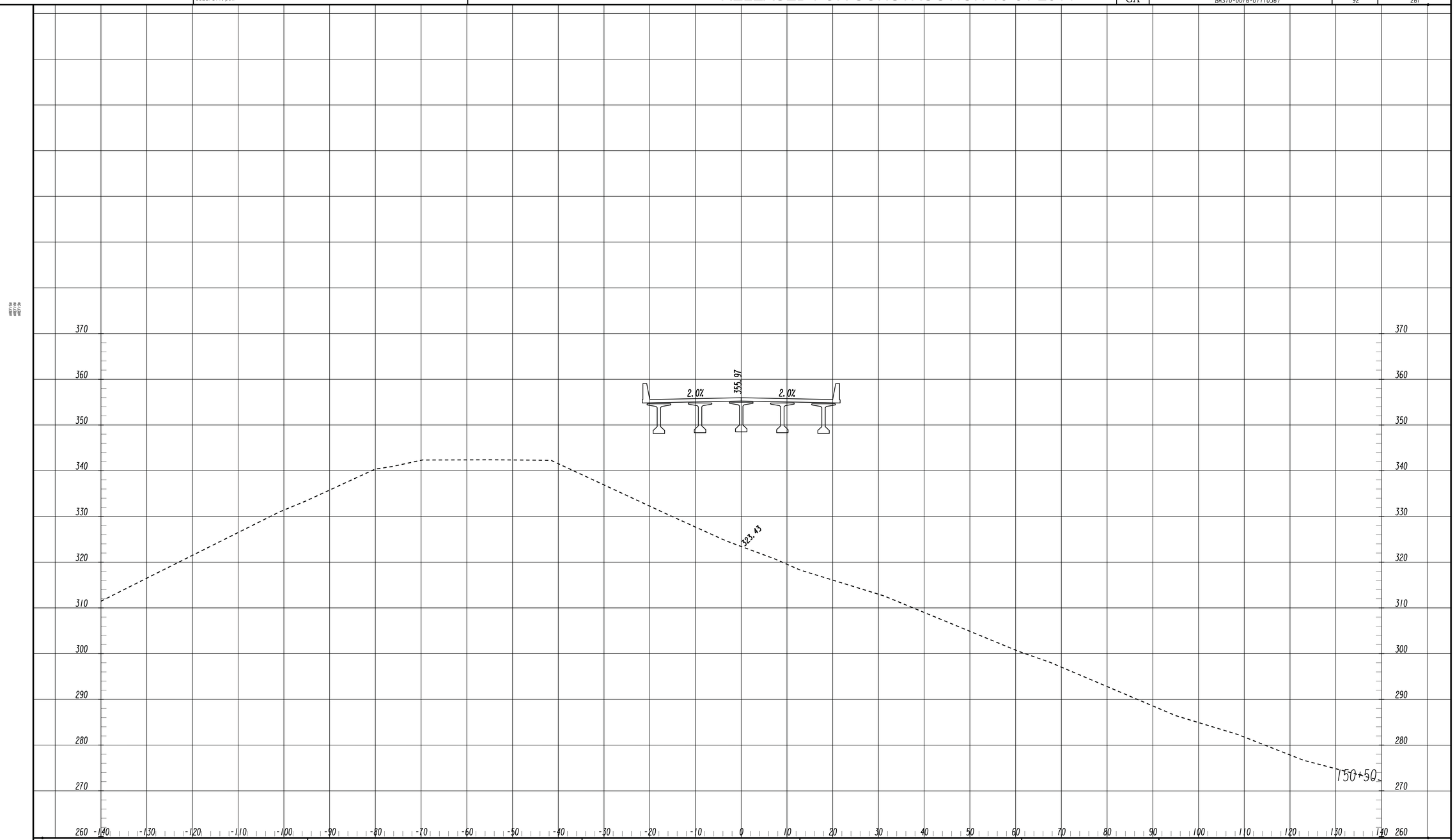
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	92	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

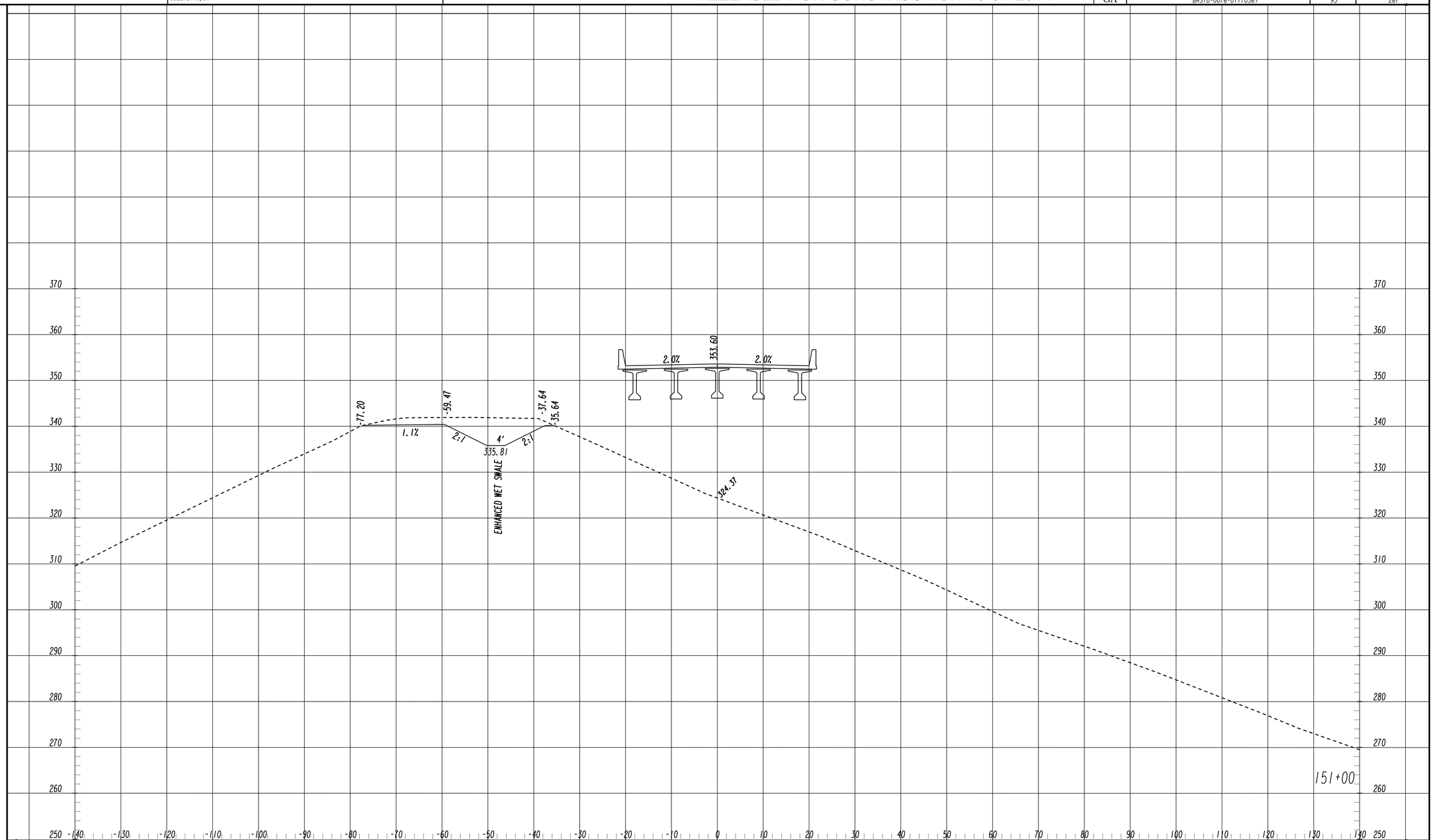
STATE ROUTE 47

DRAWING No. 23-045

11/30/2011 SUXSEW

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-011(036)	93	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-046

11/30/2011 SUXSEW

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bgowen 8825Full.pen
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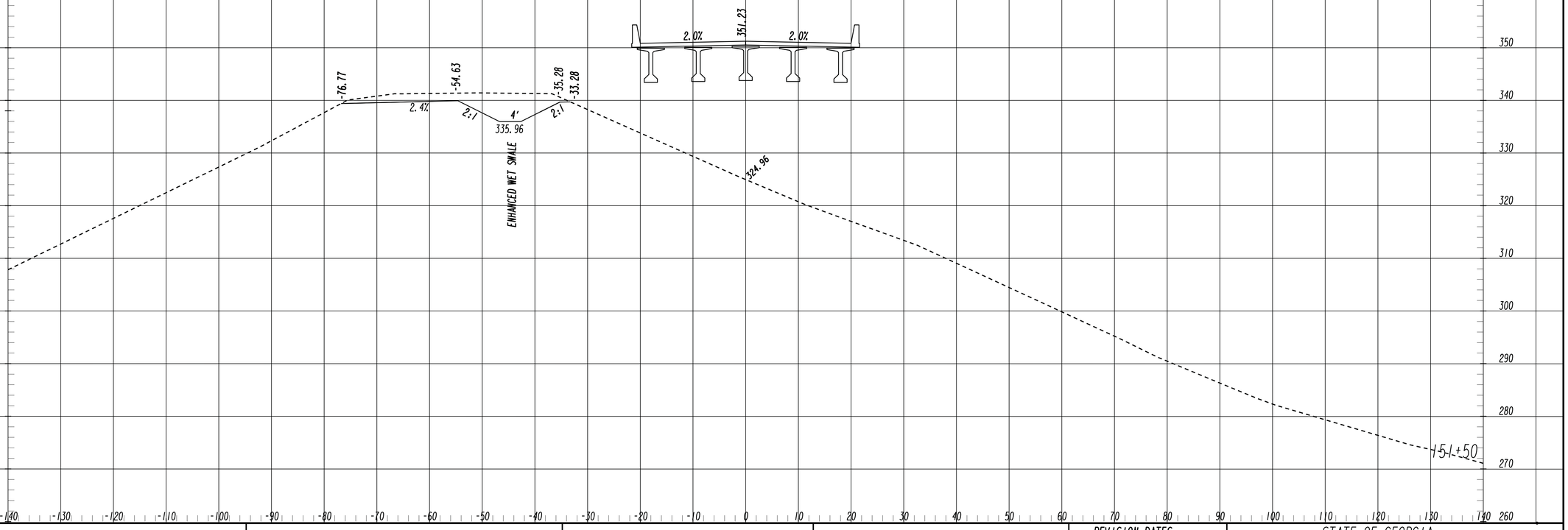
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	94	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-047

11/30/2011 SUXSEW

03-NOV-2014 13:23 TIME$$$ | $PRF8$ | Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

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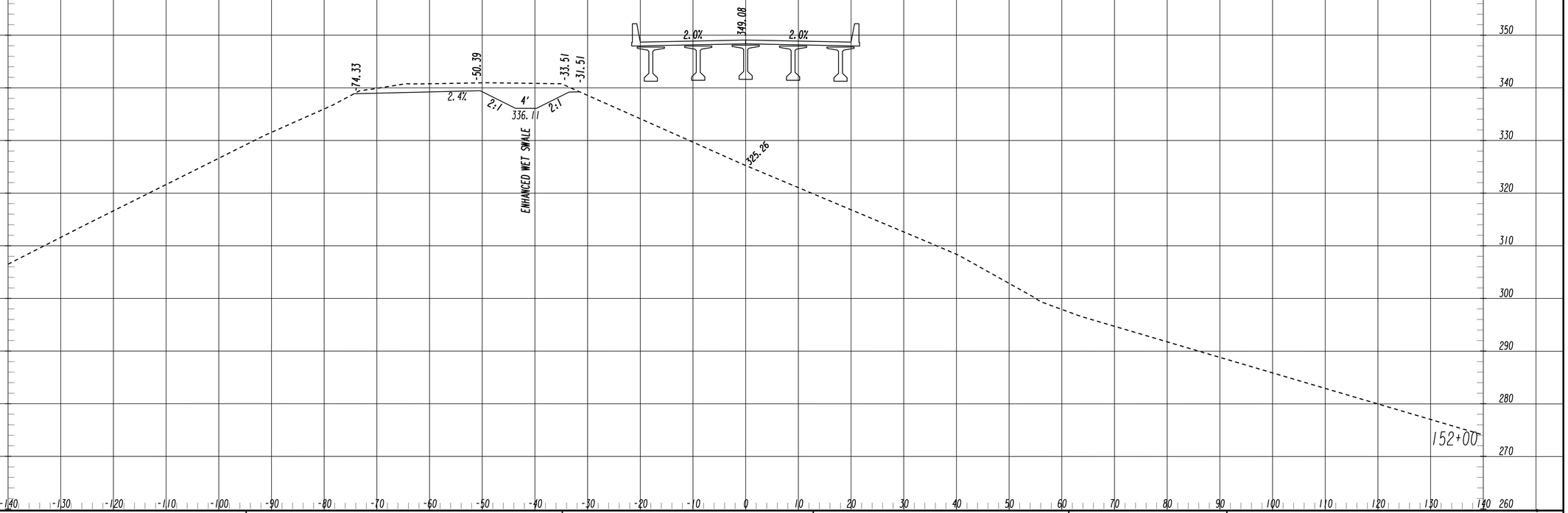
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	95	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-048

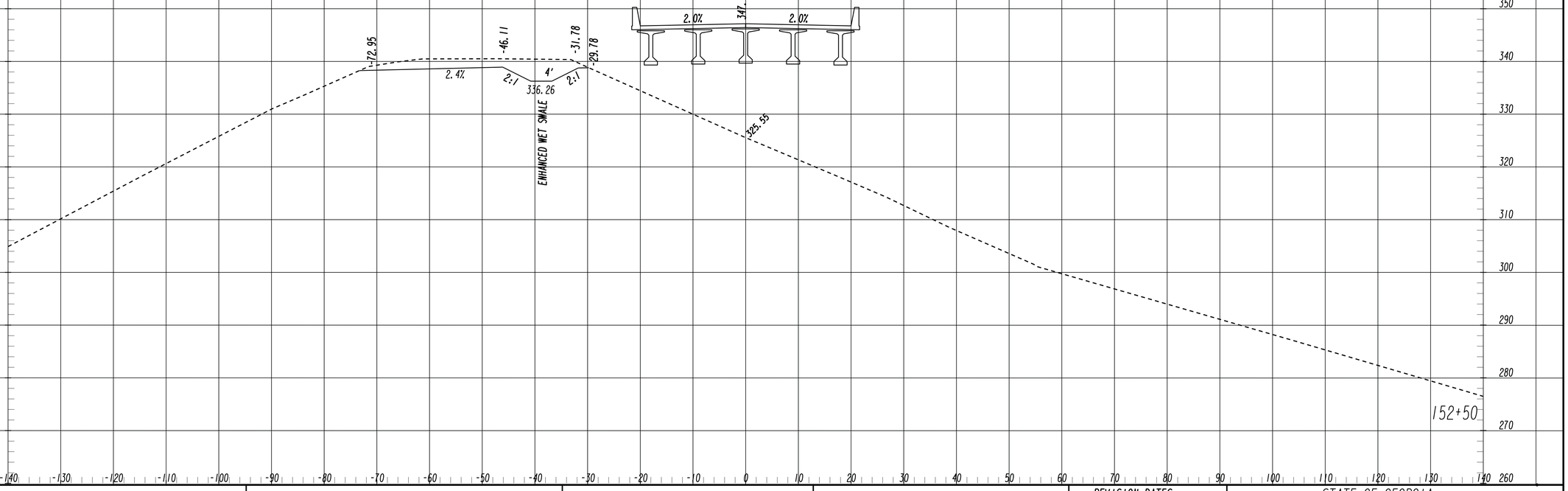
11/30/2011 SUXSEW

03-NOV-2014 13:23 TIME$$ | $PRF8$ | Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

bgowen | 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	96	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-049

11/30/2011 SUXSEW

03-NOV-2014 13:23 TIME$$ $PRFB$
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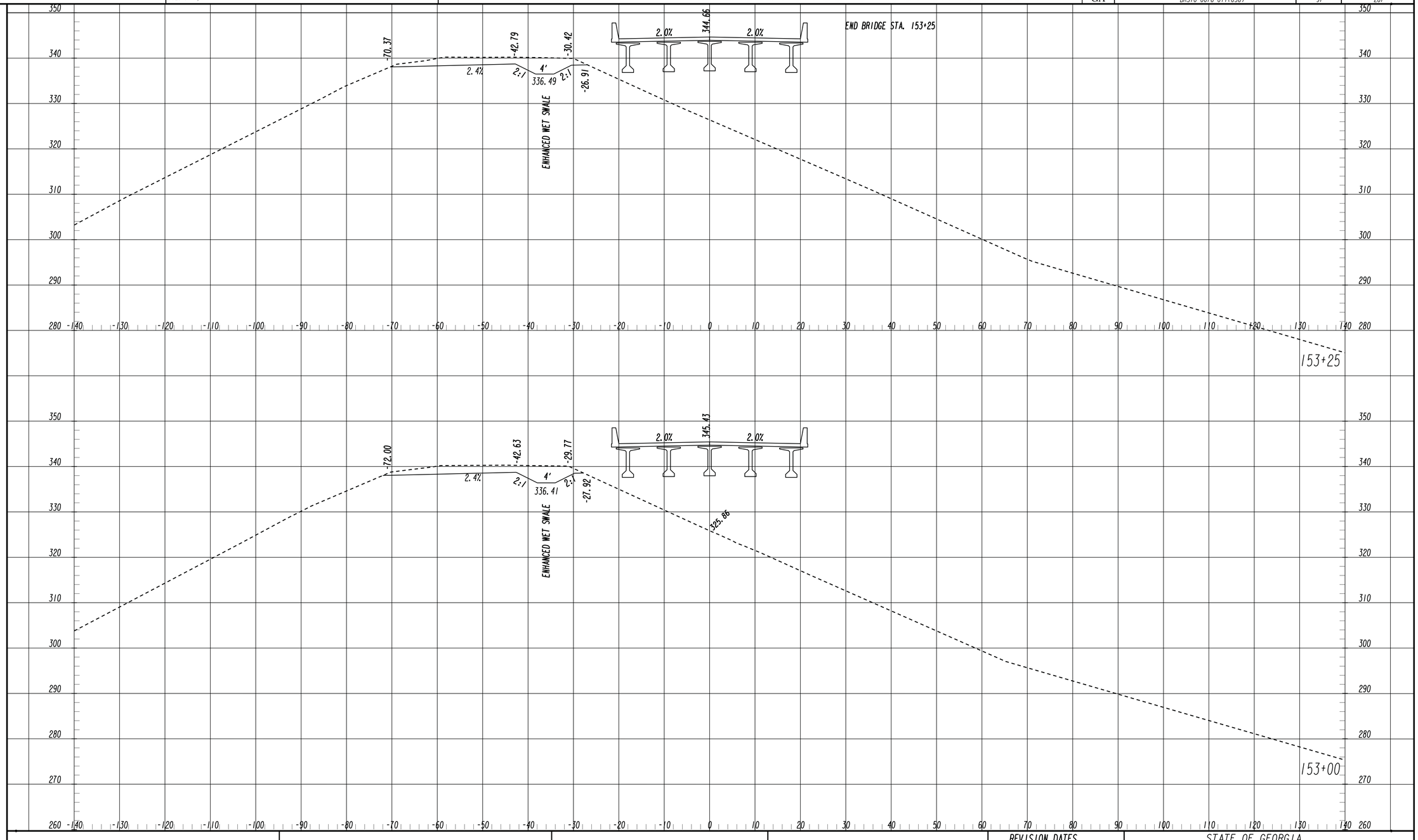
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	97	267



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Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-050

03-NOV-2014 13:23 TIME$$ $PRF8$
bgowen 8825Full.pen

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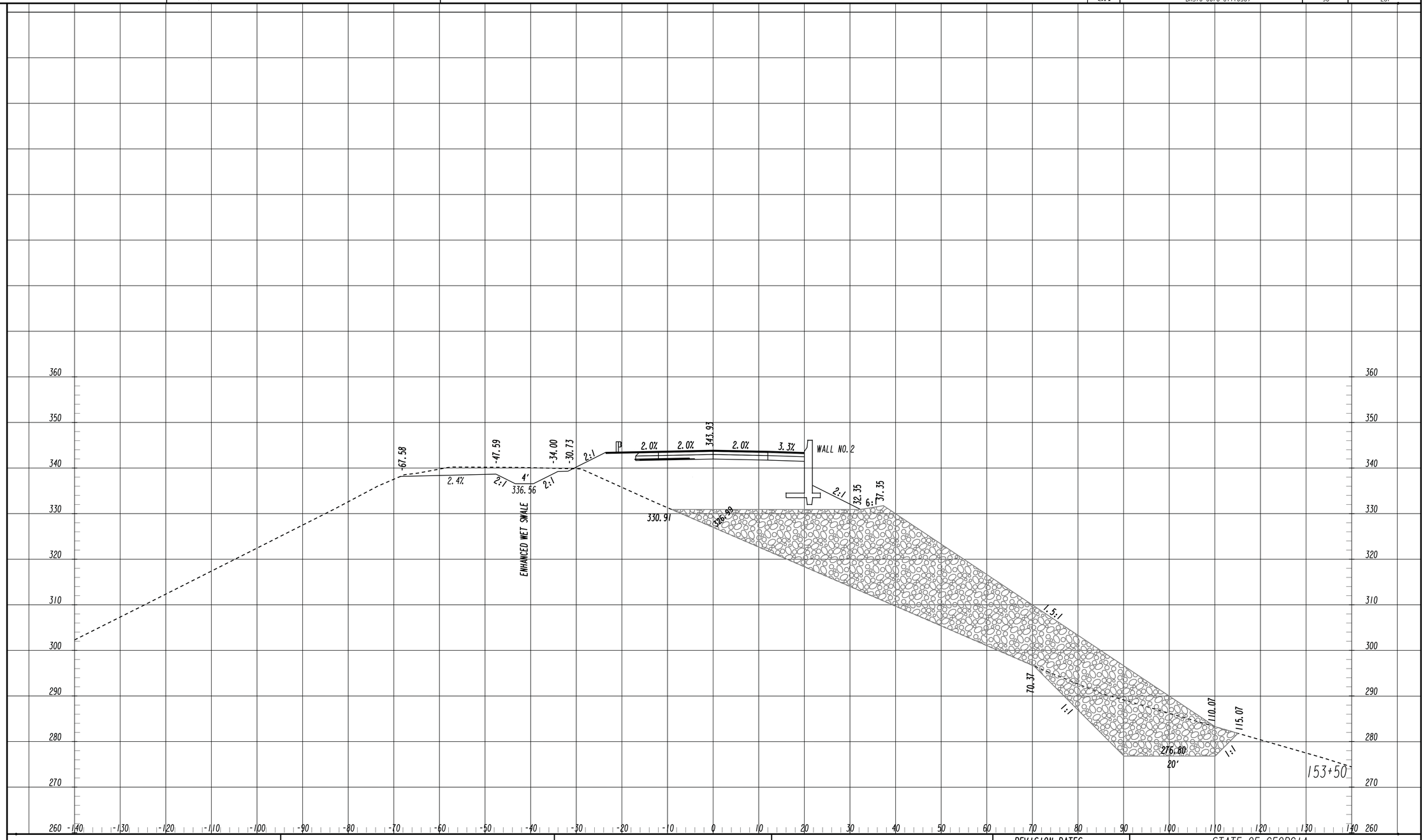
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	98	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

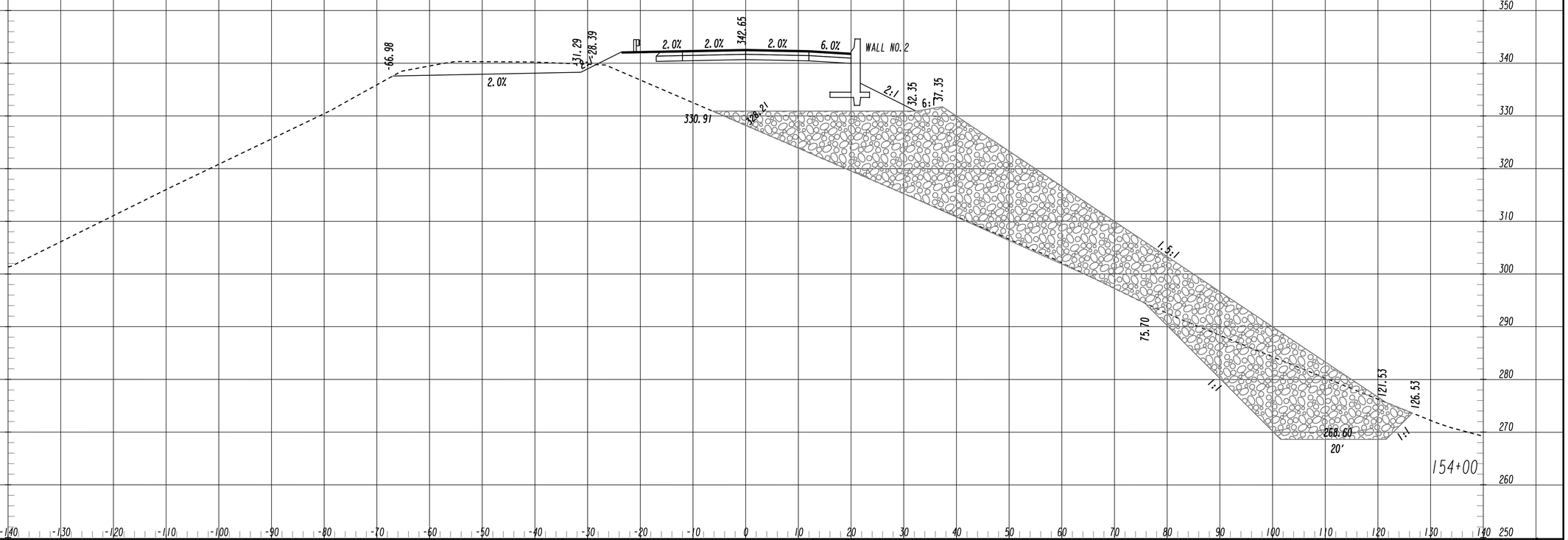
STATE ROUTE 47

DRAWING No. 23-051

11/30/2011 SUXSEW

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	99	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-052

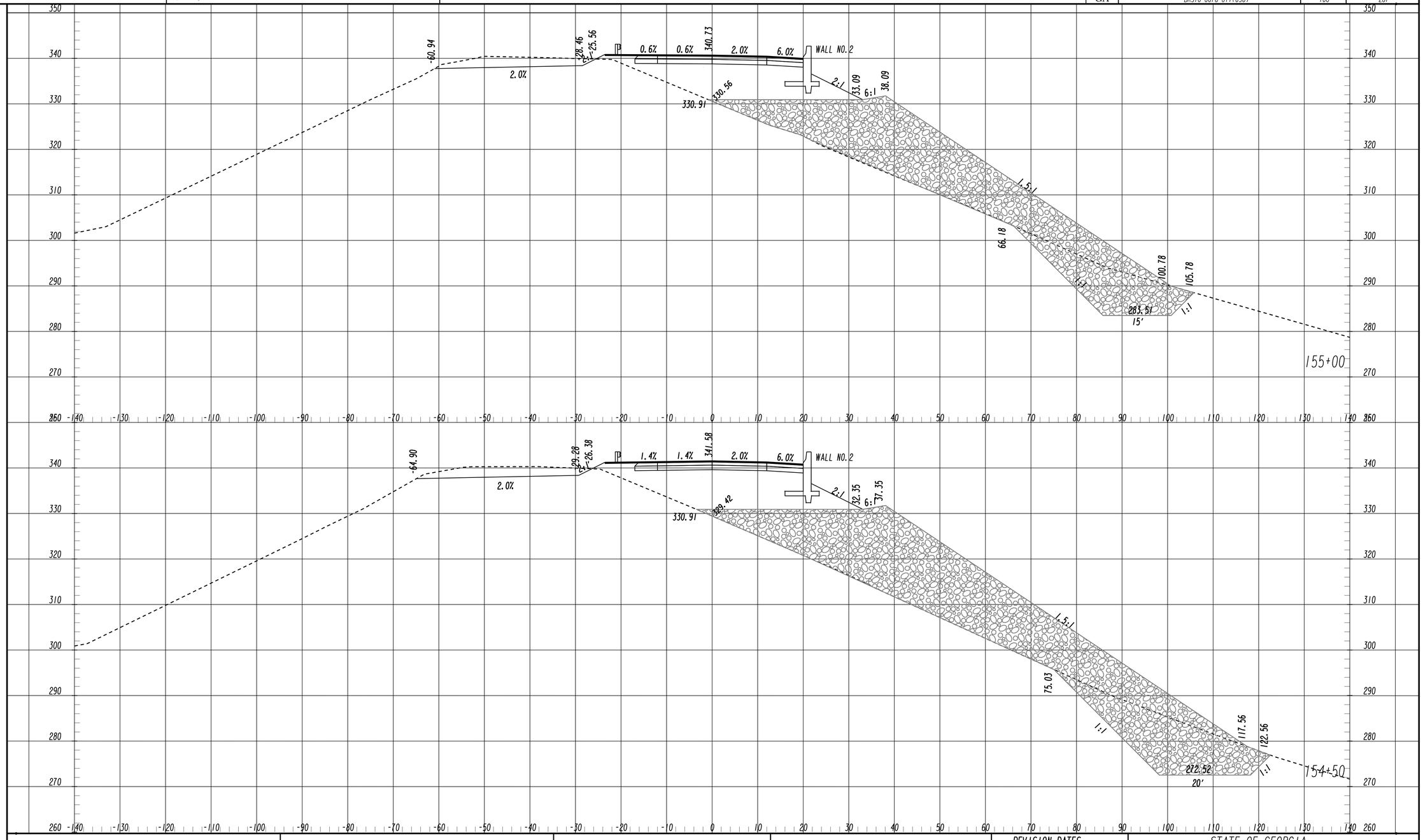
11/30/2011 SUXSEW

03-NOV-2014 13:23 TIME$$$ $PRF8$ Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

bgowen 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-011(036)	100	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-053

11/30/2011 SUXSEW

03-NOV-2014 13:23 TIME$$ $PRF8$
bgowen 8825Full.pen

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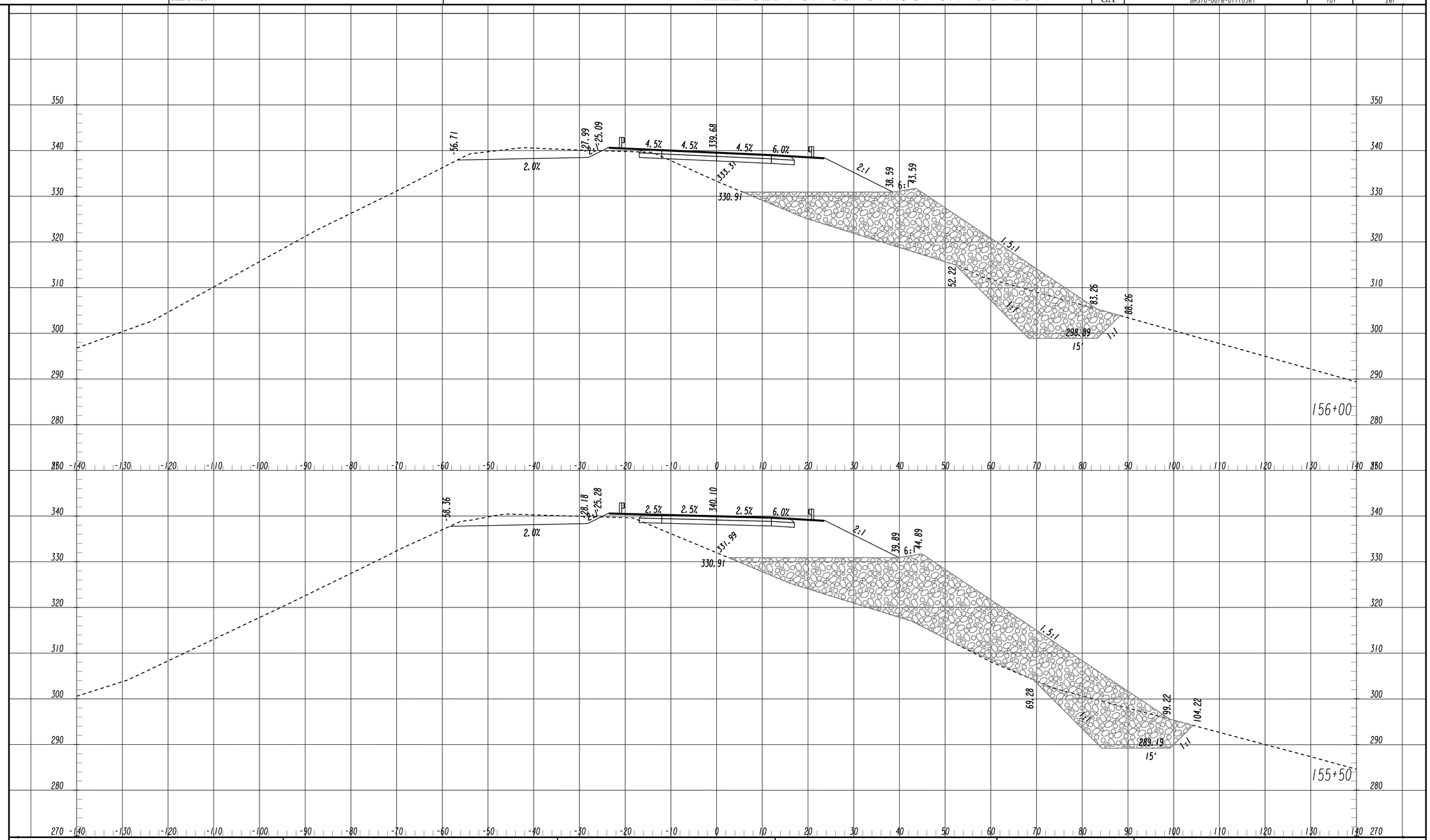
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	101	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

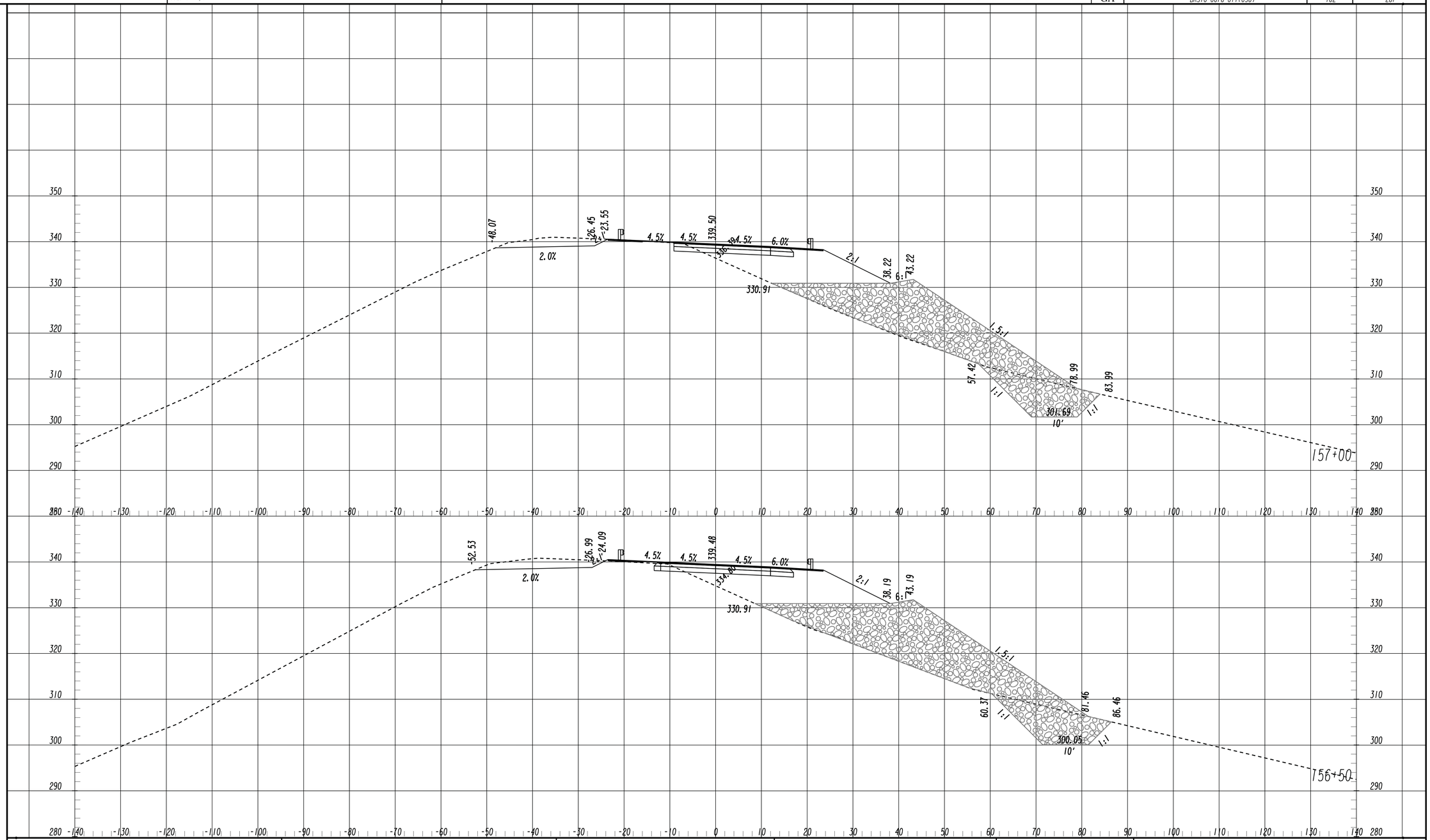
CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-054

11/30/2011 SUXSEW

03-NOV-2014 13:23	TIME$$	$PRFB$	Y:\Roadways\138973\232310\Dgn\0232310_23.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(036)	102	267



REVISION DATES		

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-055

11/30/2011 SUXSEW

03-NOV-2014 13:23 TIME$$ $PRF8$
bgowen 8825Full.pen
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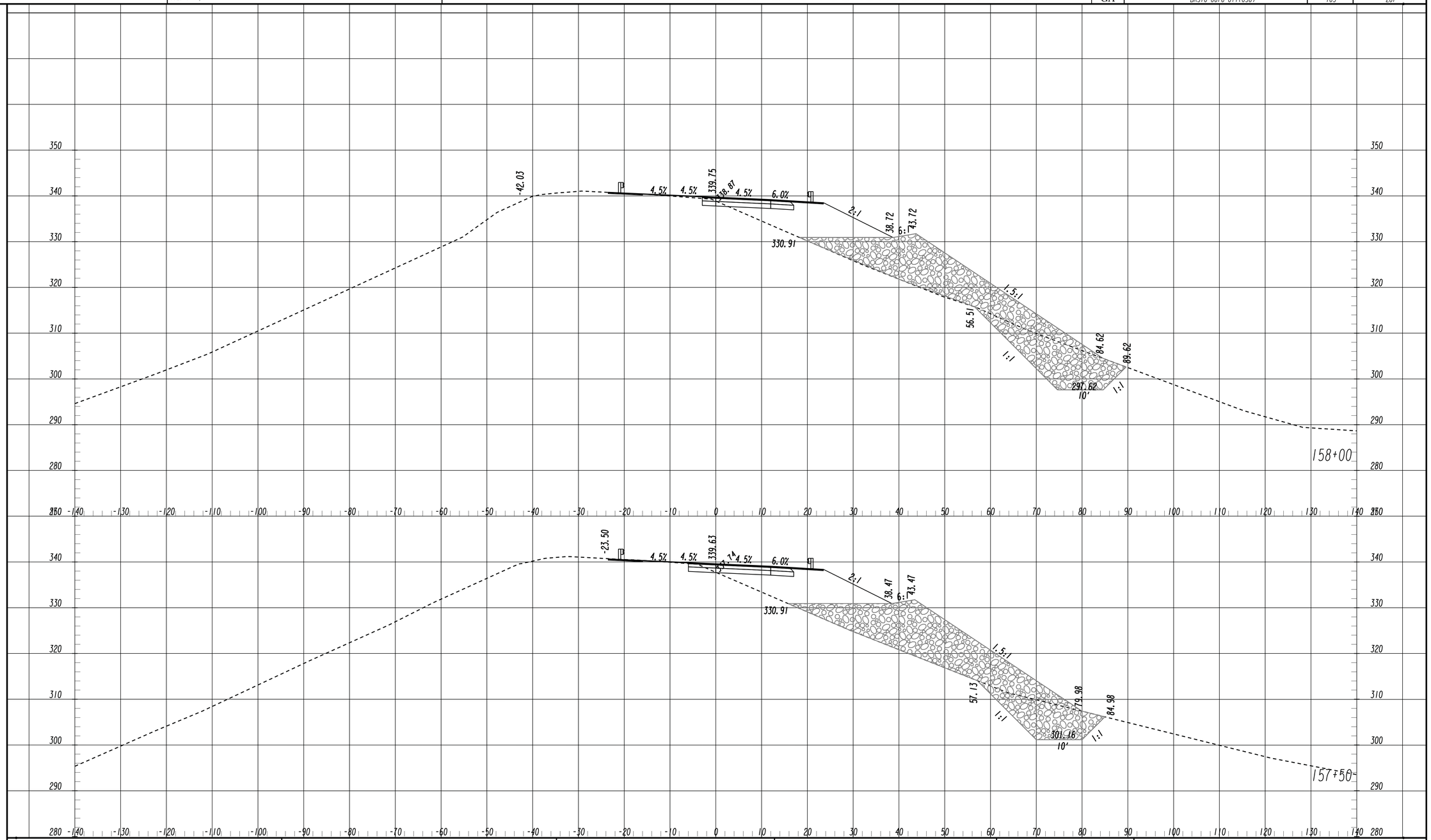
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	103	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-056

11/30/2011 SUXSEW

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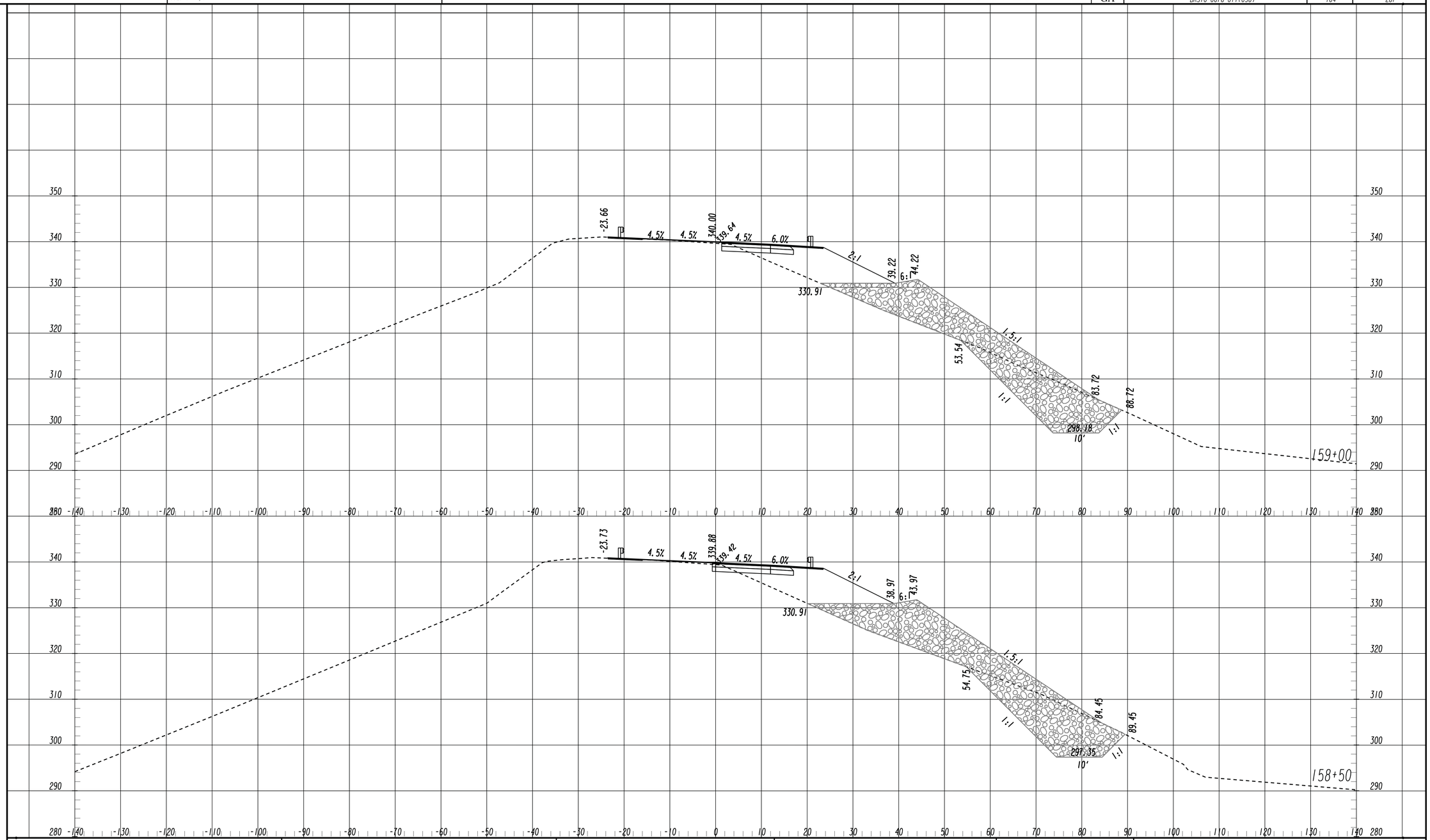
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	104	267



REVISION DATES		

Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-057

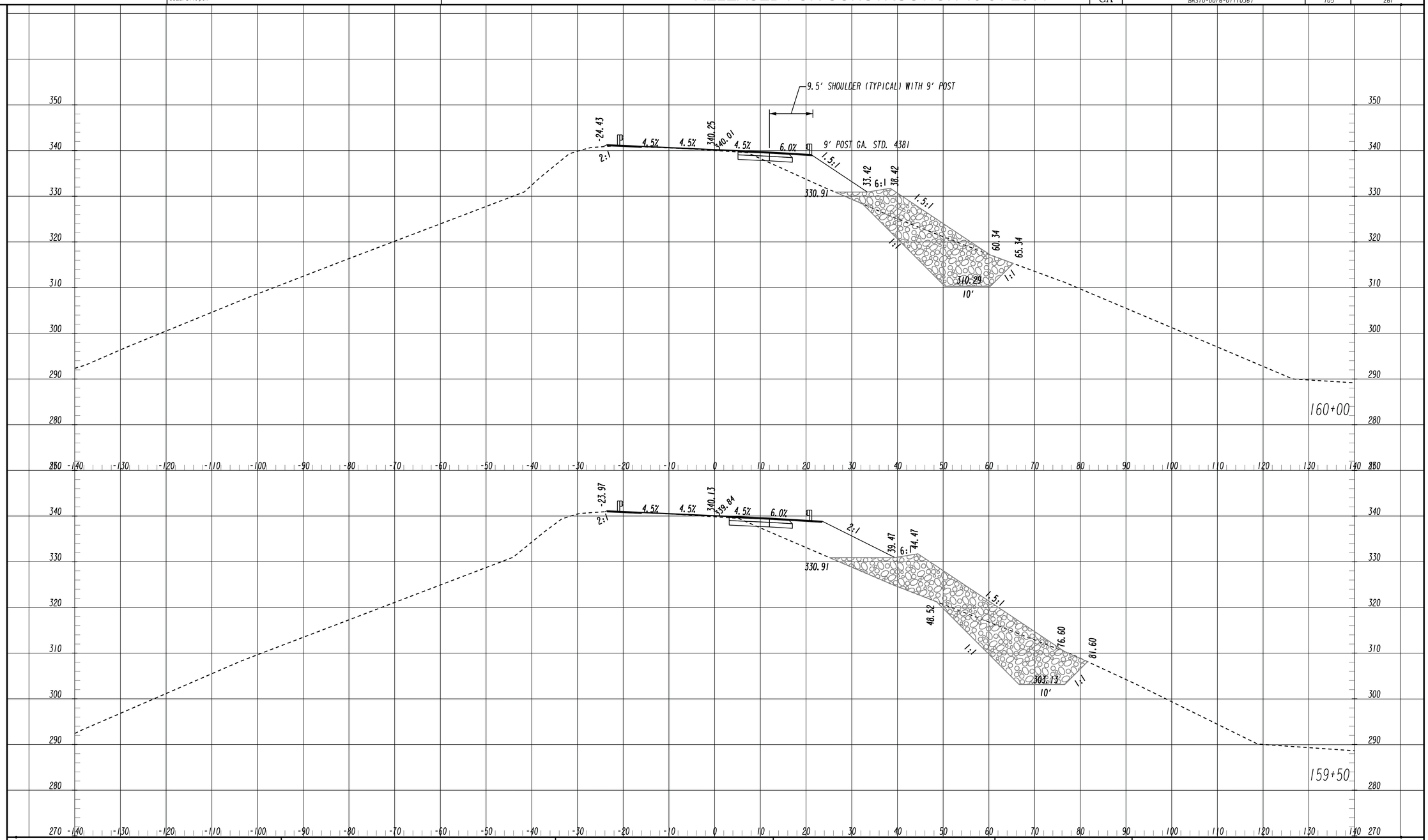
11/30/2011 SUXSEW

03-NOV-2014 13:23 TIME$$ $PRFB$ Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

bgowen 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	105	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-058

11/30/2011 SUXSEW

03-NOV-2014 13:23 TIME$$ $PRFB$
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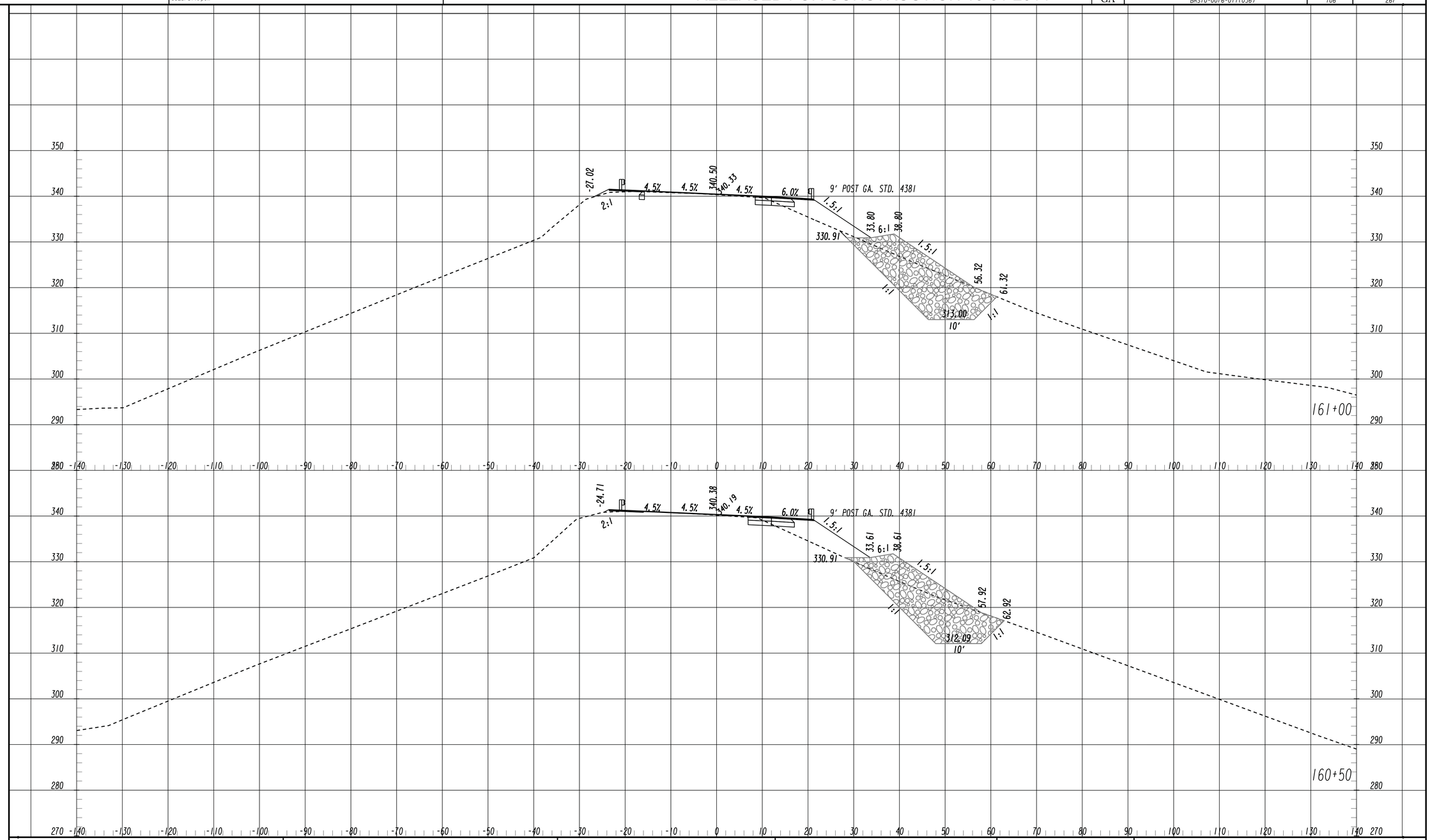
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	106	267



REVISION DATES		

Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-059

11/30/2011 SUXSEW

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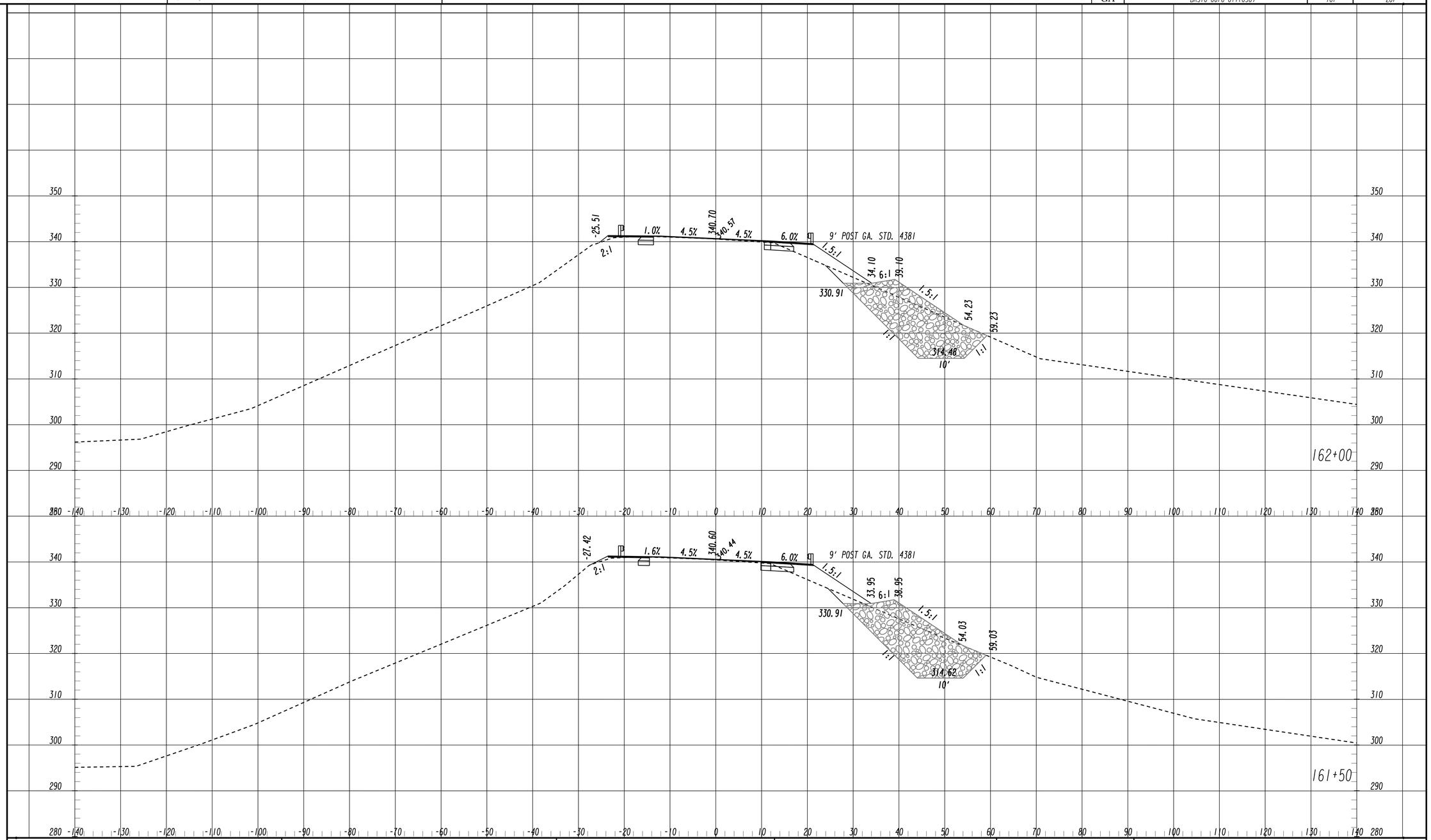
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	107	267



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Baker

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NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-060

03-NOV-2014 13:23 TIME$$ $PRF8$
bgowen 8825Full.pen
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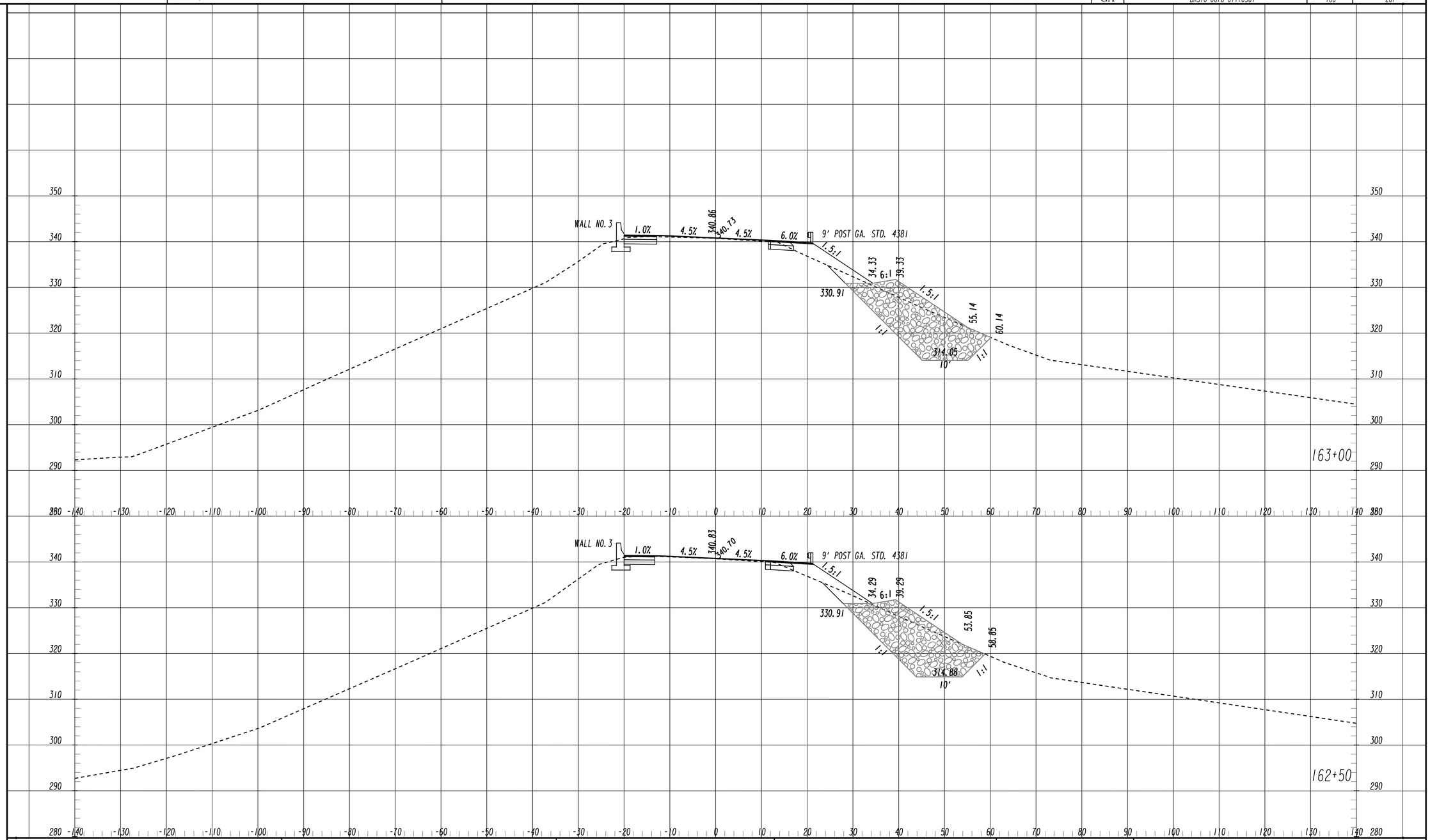
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	108	267



11/30/2011 SUXSEW

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-061

03-NOV-2014 13:23 TIME$$ $PRF8$
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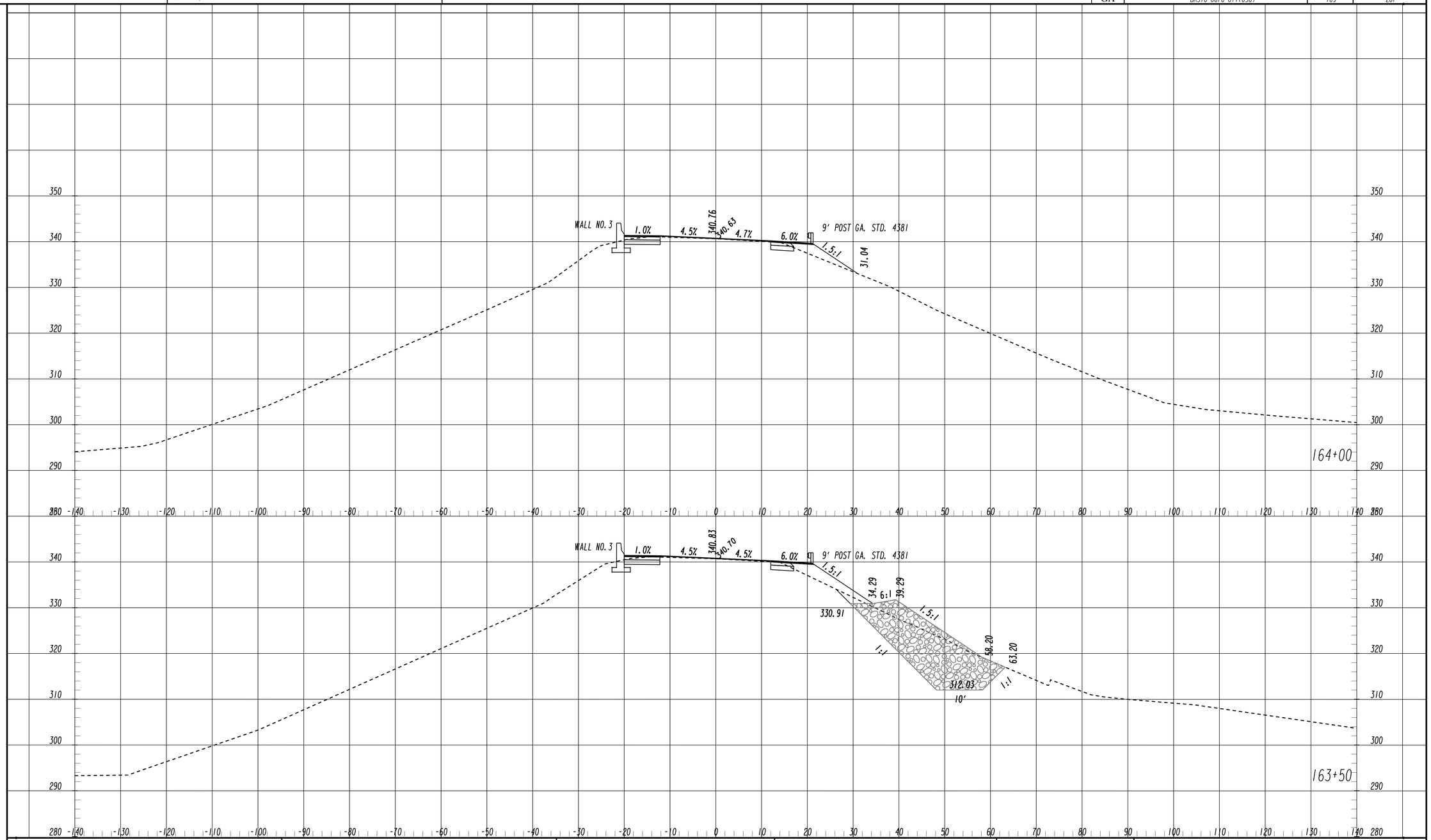
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	109	267



11/30/2011 SUXSEW

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-062

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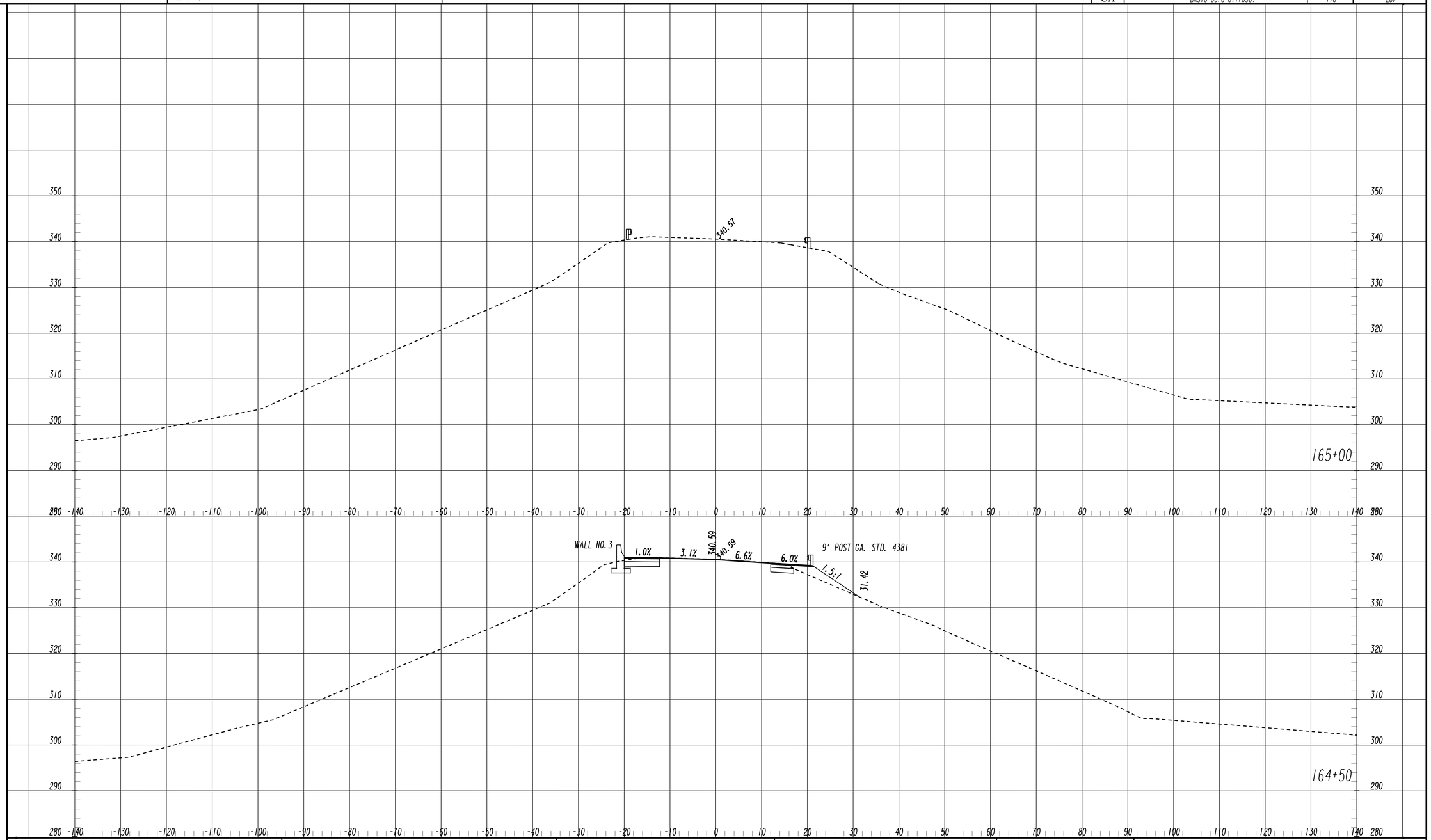
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	110	267



11/30/2011 SUXSEW

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-063

03-NOV-2014 13:23 TIME$$ $PRF8$
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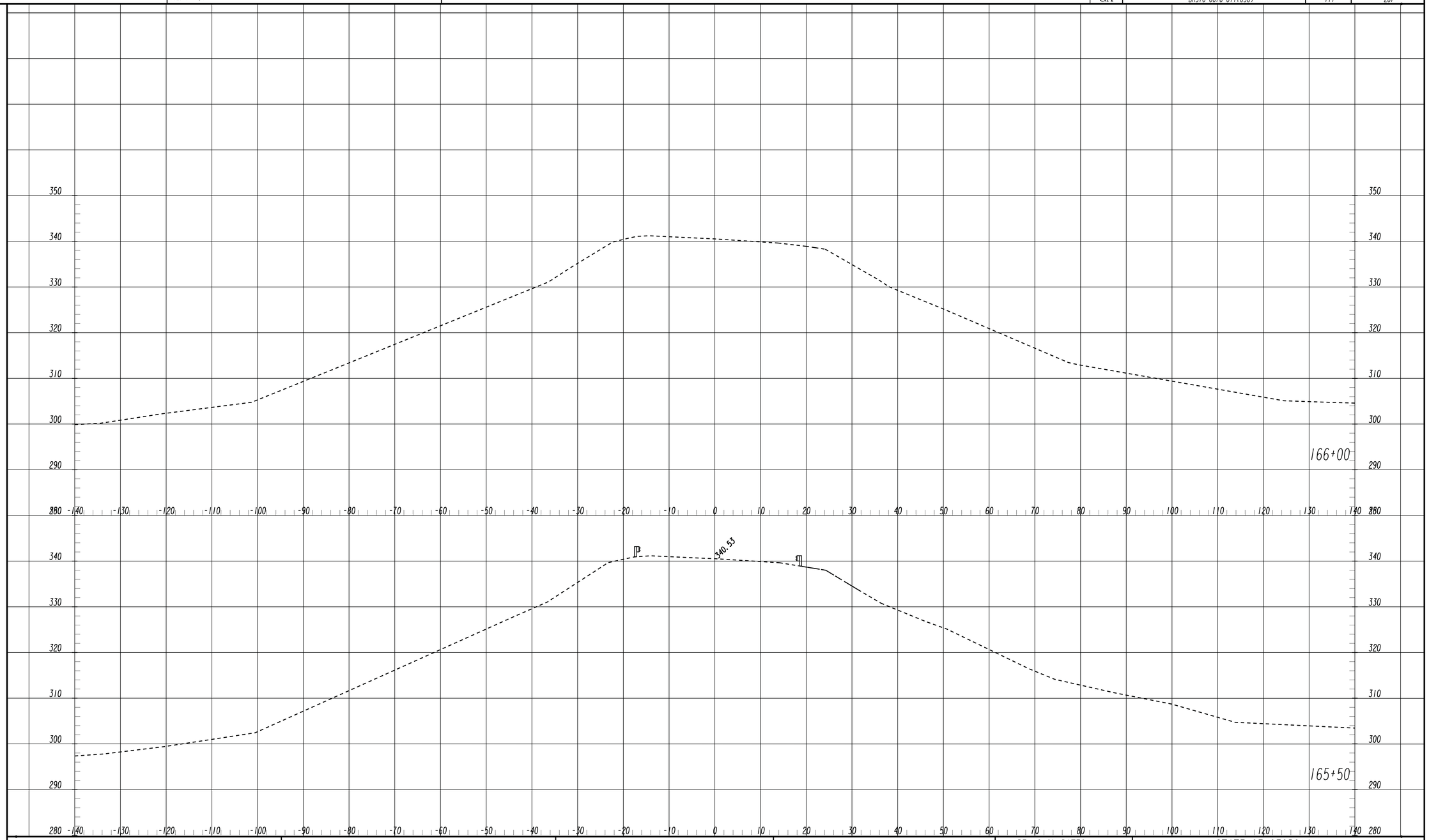
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	111	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
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REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-064

11/30/2011 SUXSEW

03-NOV-2014 13:23 TIME$$ $PRF8$
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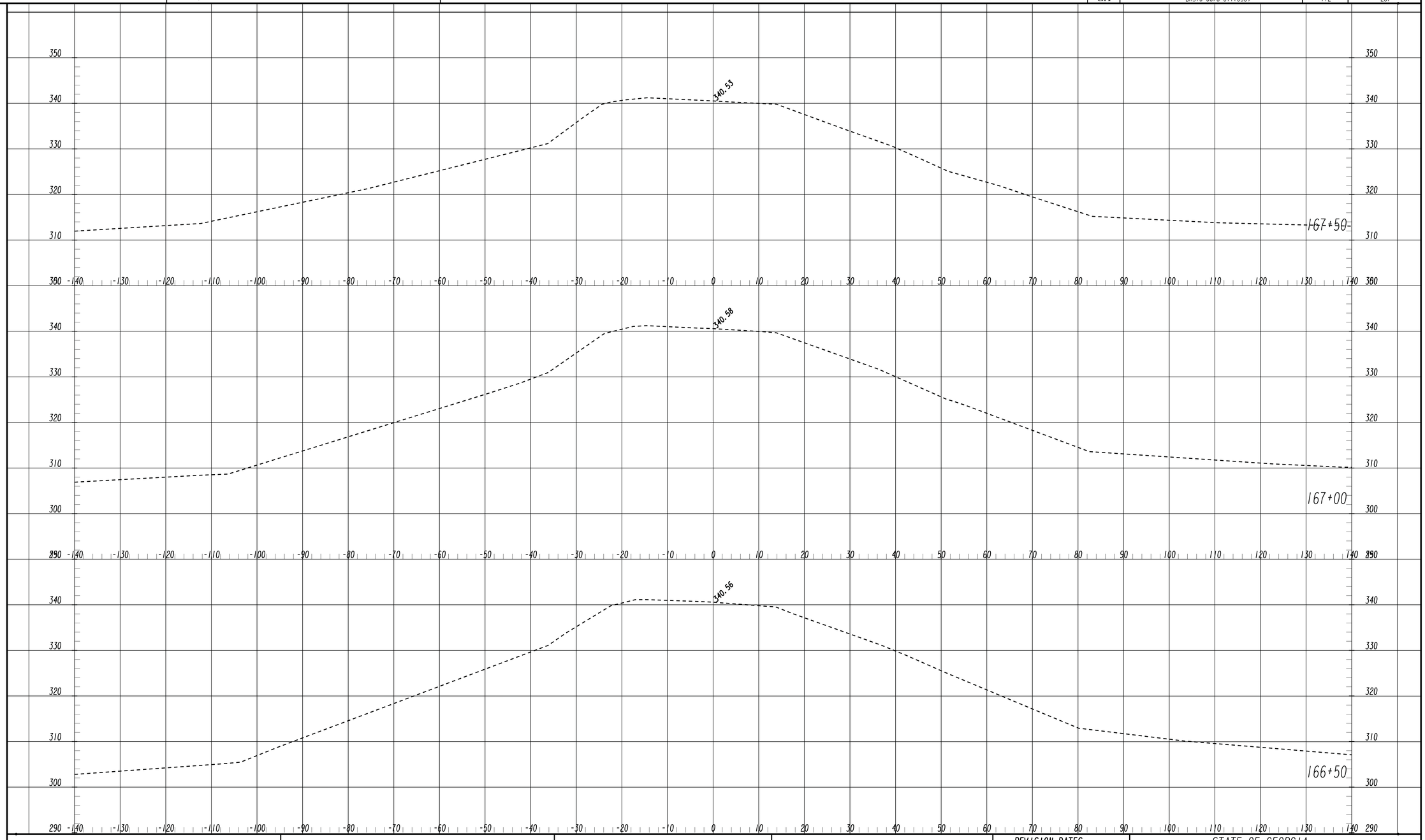
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	112	267



11/30/2011 SUYSEW

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

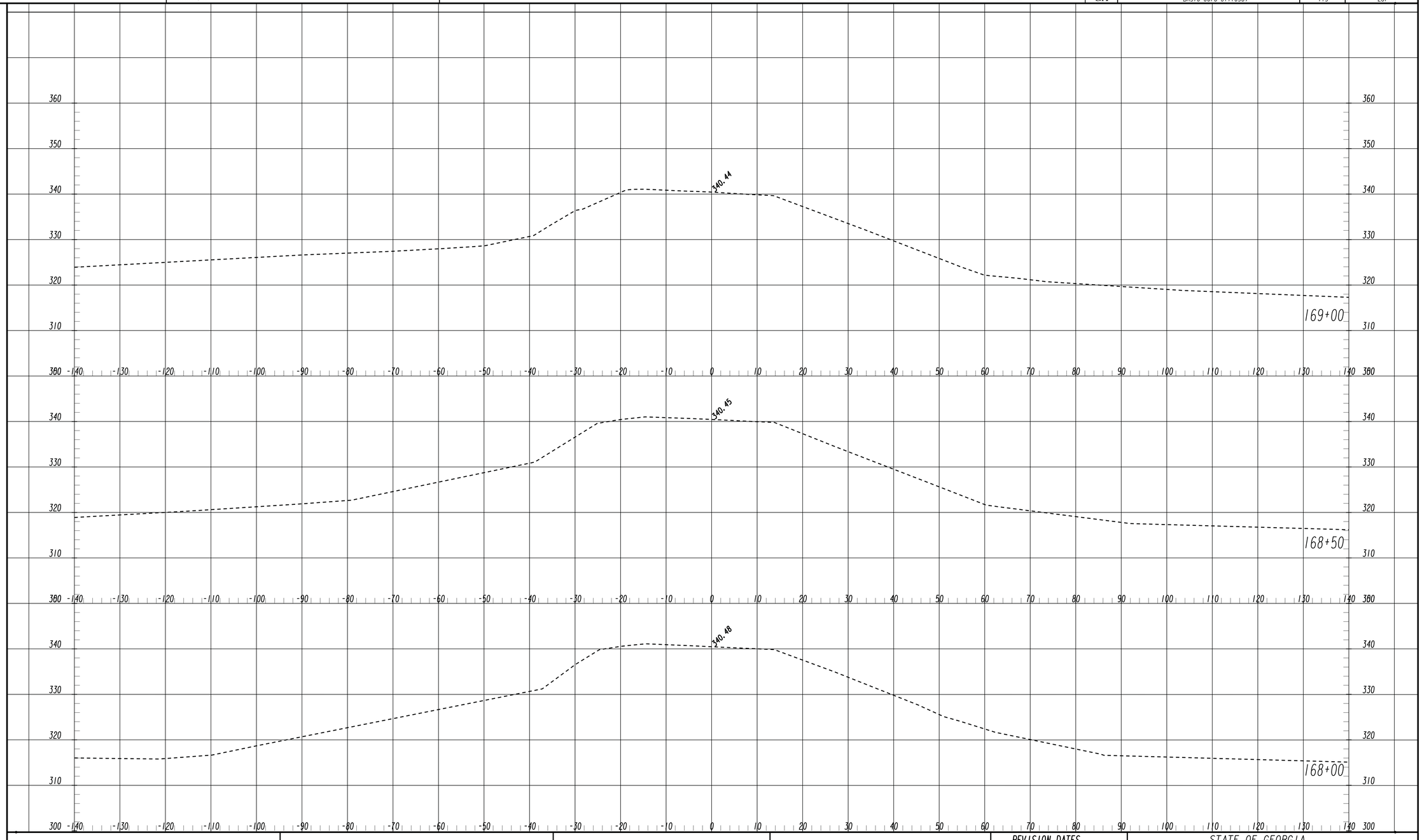
DRAWING No.
23-065

03-NOV-2014 13:23 TIME$$$ $PRF8$ Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

bgowen 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	113	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-066

11/30/2011 SUXSEW

03-NOV-2014 13:23 TIME$$ $PRF8$
bgowen 8825Full.pen

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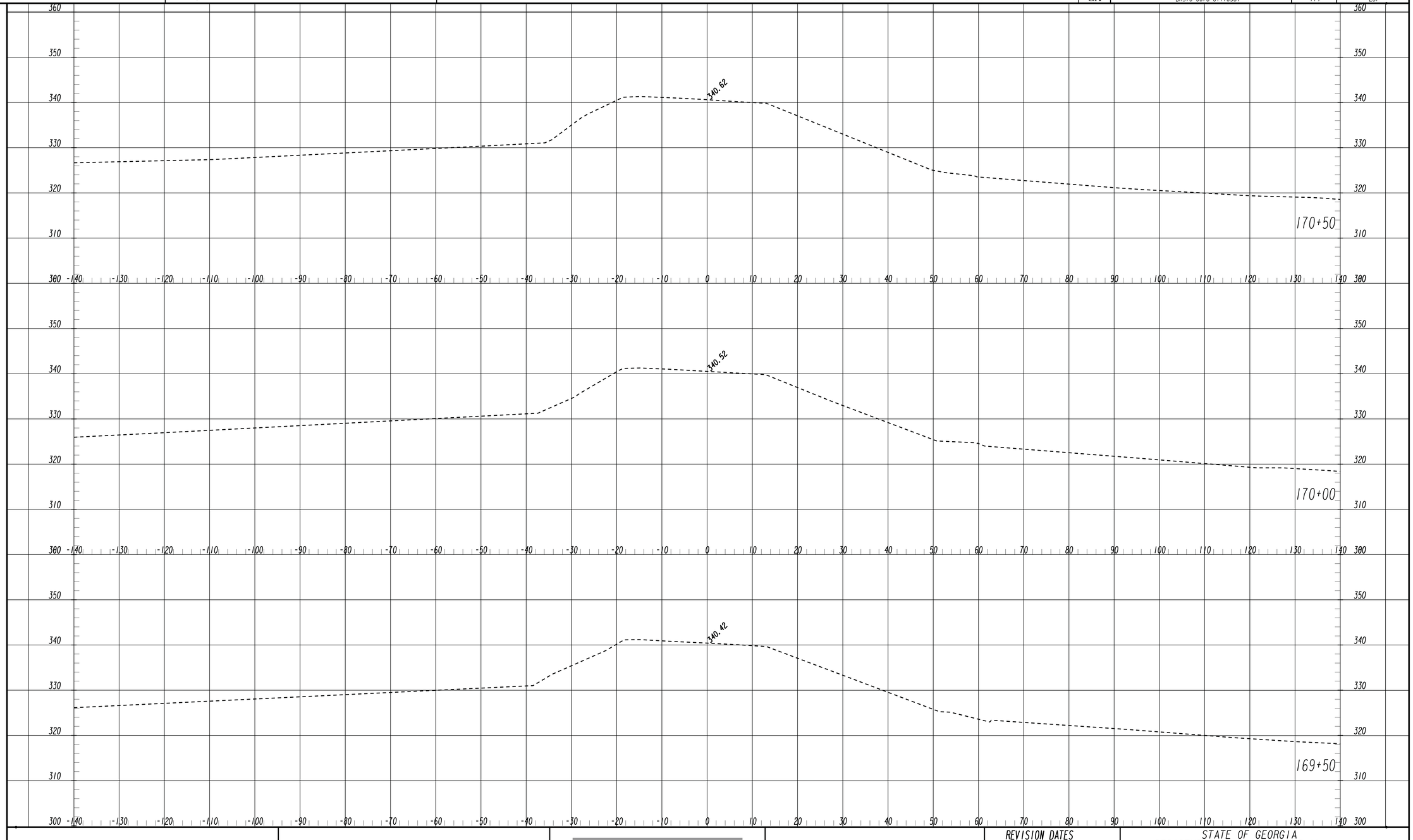
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	114	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-067

11/30/2011 SUYSEW

03-NOV-2014 13:23 TIME$$$ | $PRF8$ | Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

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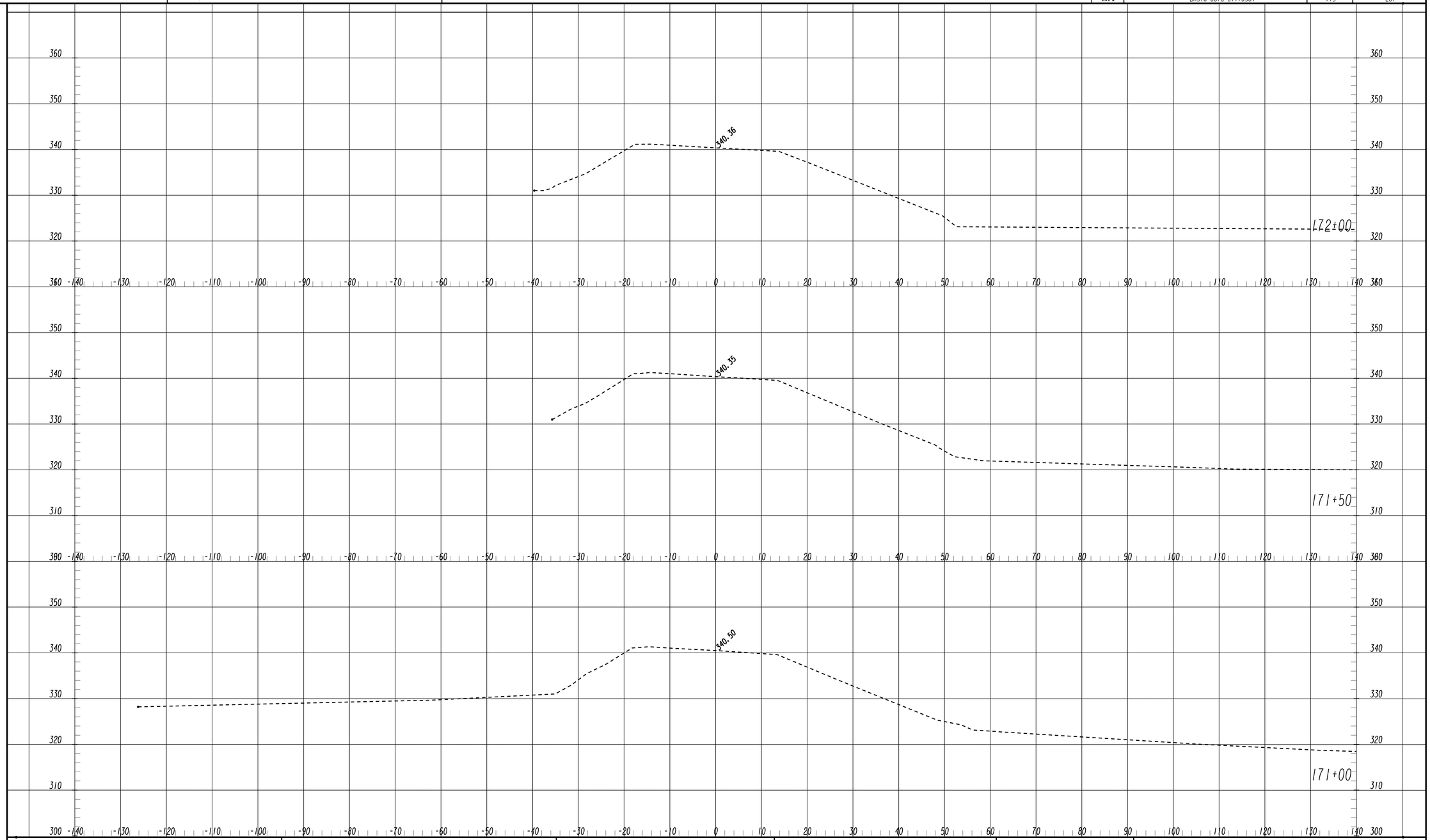
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	115	267



		Baker 3595 ENGINEERING DRIVE NORCROSS, GEORGIA 30092 (770) 263-9118	Scale Horizontal: 1 Inch = 10 Feet Vertical: 1 Inch = 10 Feet	REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-068

11/30/2011 SUXSEW

03-NOV-2014 13:23 TIME$$ $PRF8$
bgowen 8825Full.pen
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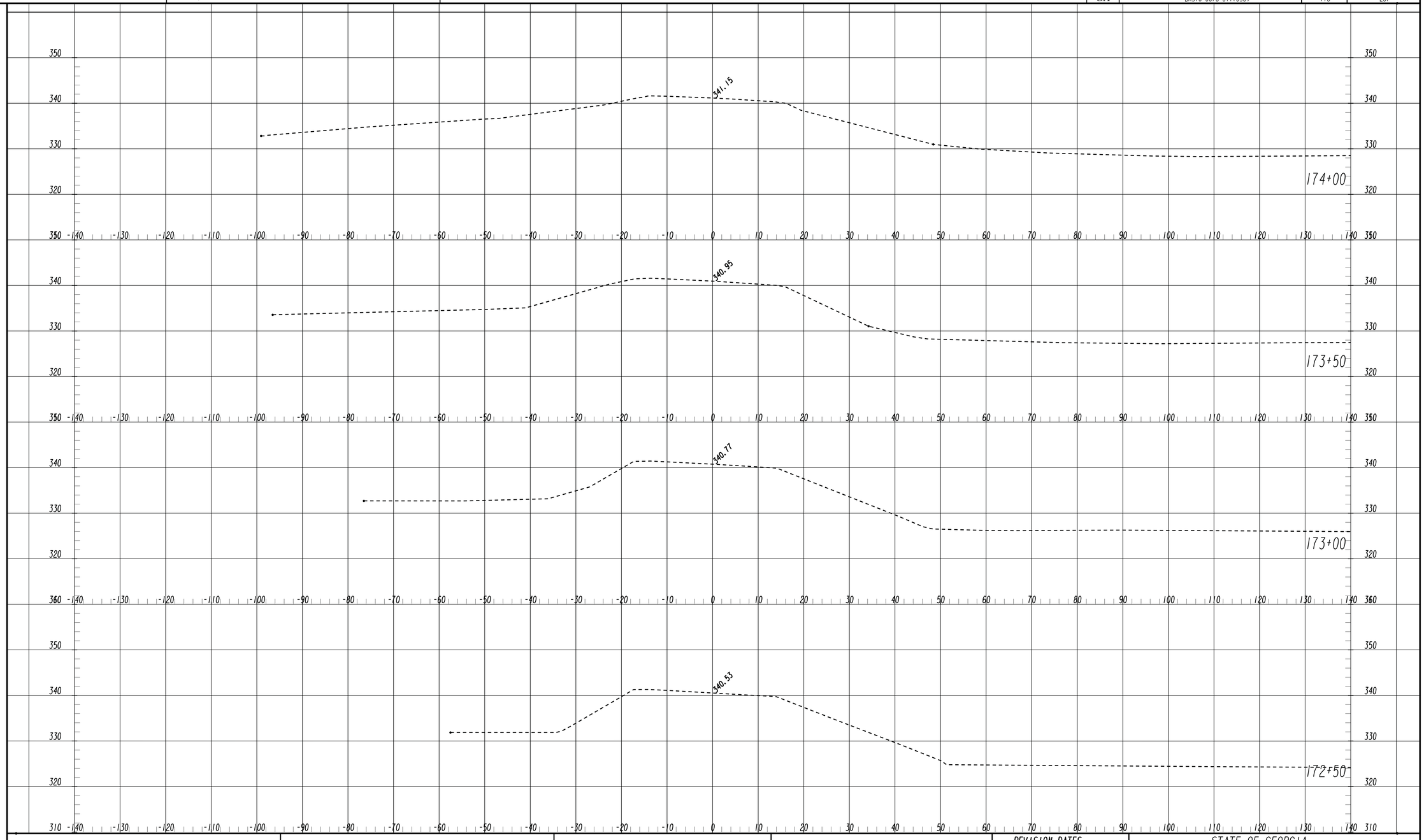
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	116	267



11/30/2011 SUXSEW

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-069

03-NOV-2014 13:23 TIME$$ $PRF8$
bgowen 8825Full.pen

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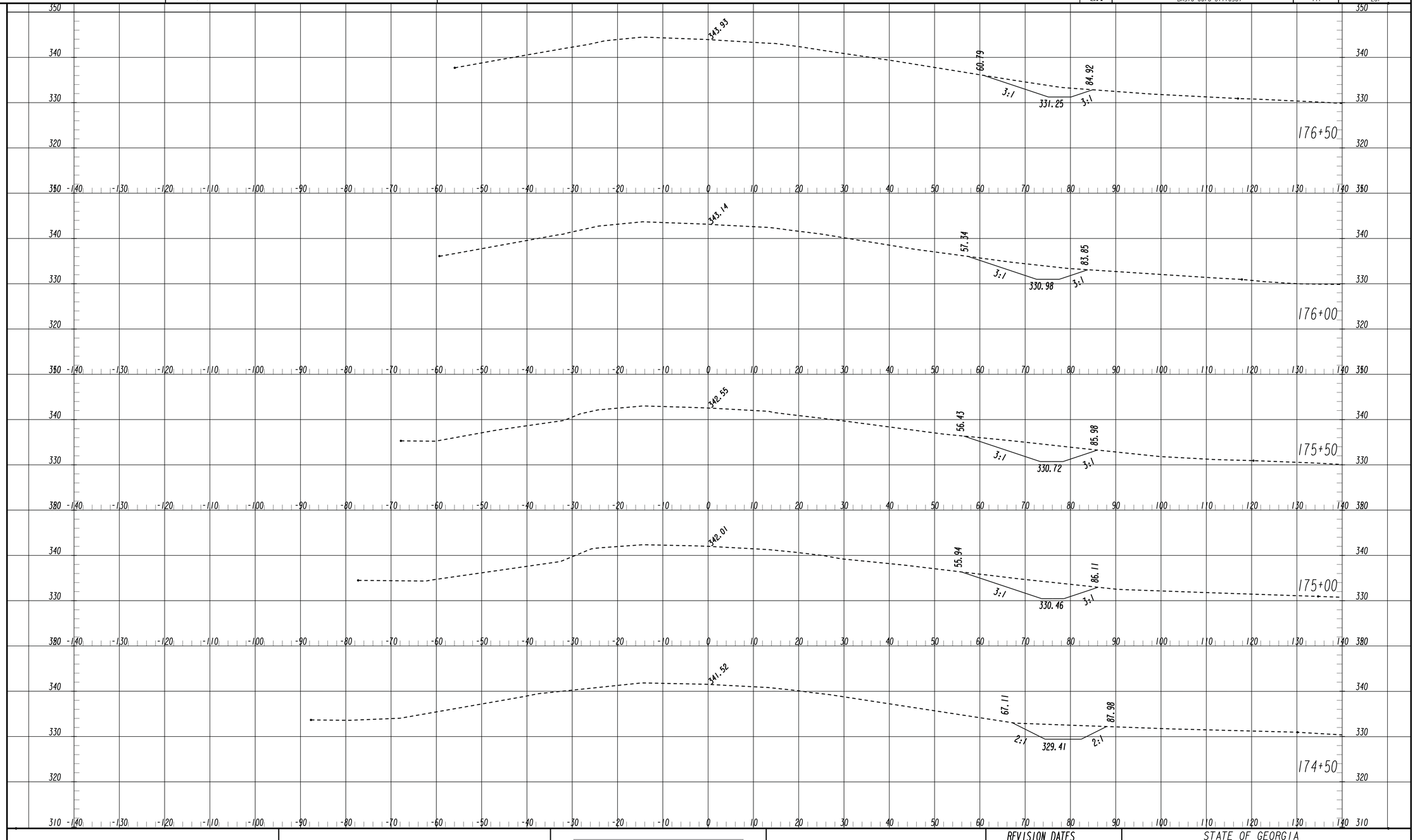
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	117	267



11/30/2011 SUYSEW

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING NO.
23-070

03-NOV-2014 13:23 TIME$$ $PRF8$
bgowen 8825Full.pen

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RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	118	267

Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-071

11/30/2011 SUXSEW

03-NOV-2014 13:23 TIME$$ $PRF8$
bgowen 8825Full.pen

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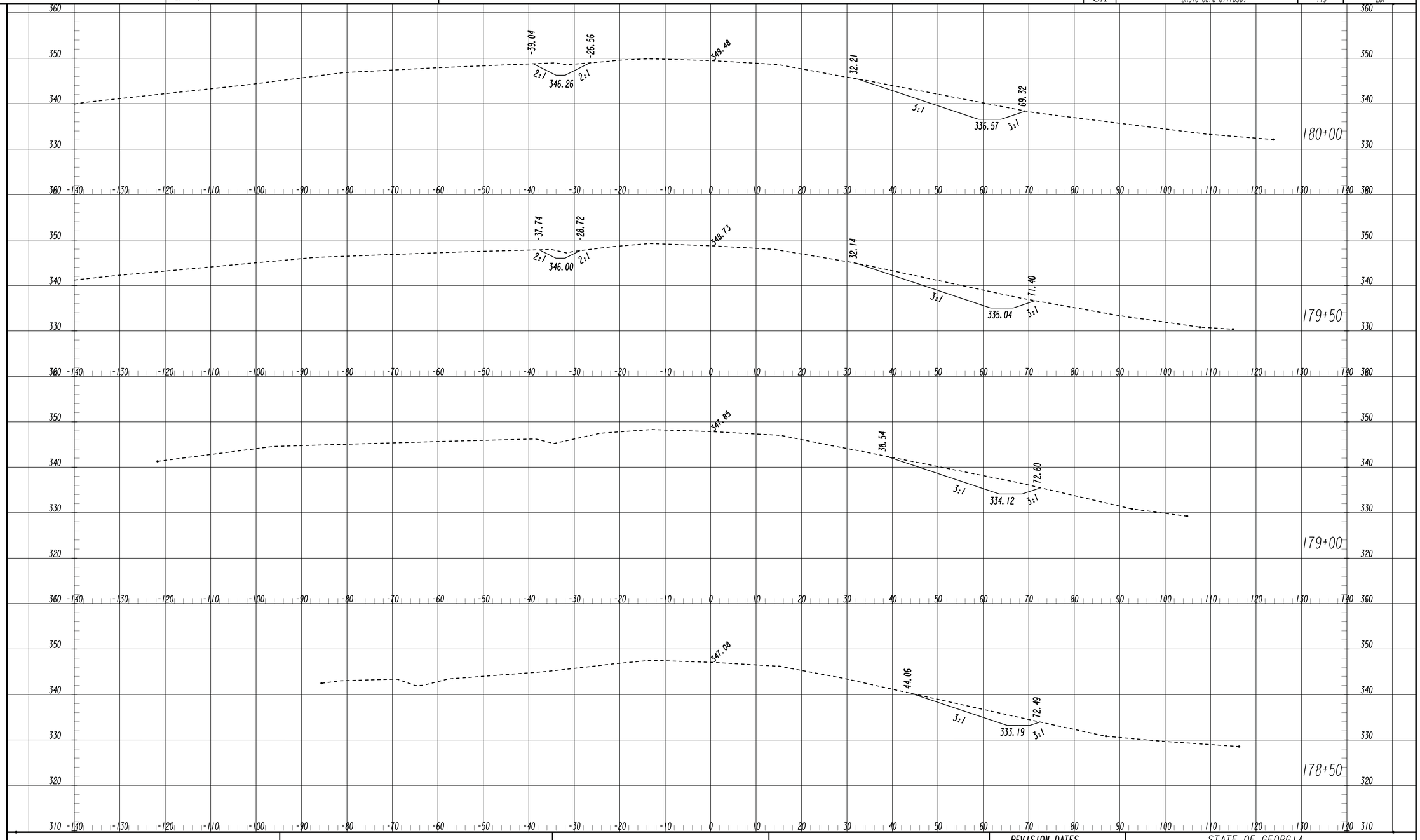
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	119	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-072

11/30/2011 SUYSEW

03-NOV-2014 13:23 TIME$$ $PRF8$
bgowen 8825Full.pen

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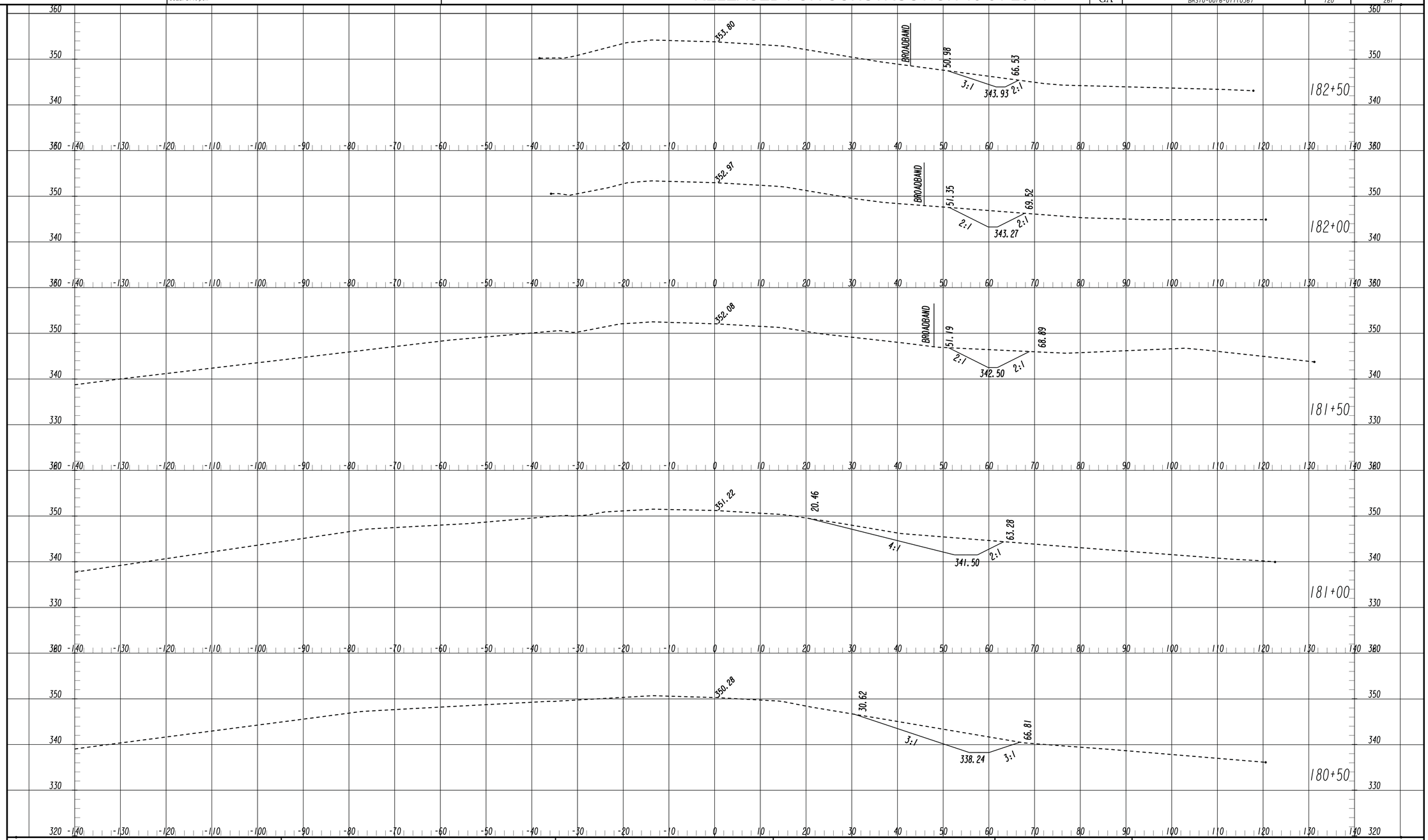
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	120	267



Baker

3595 ENGINEERING DRIVE
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(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-073

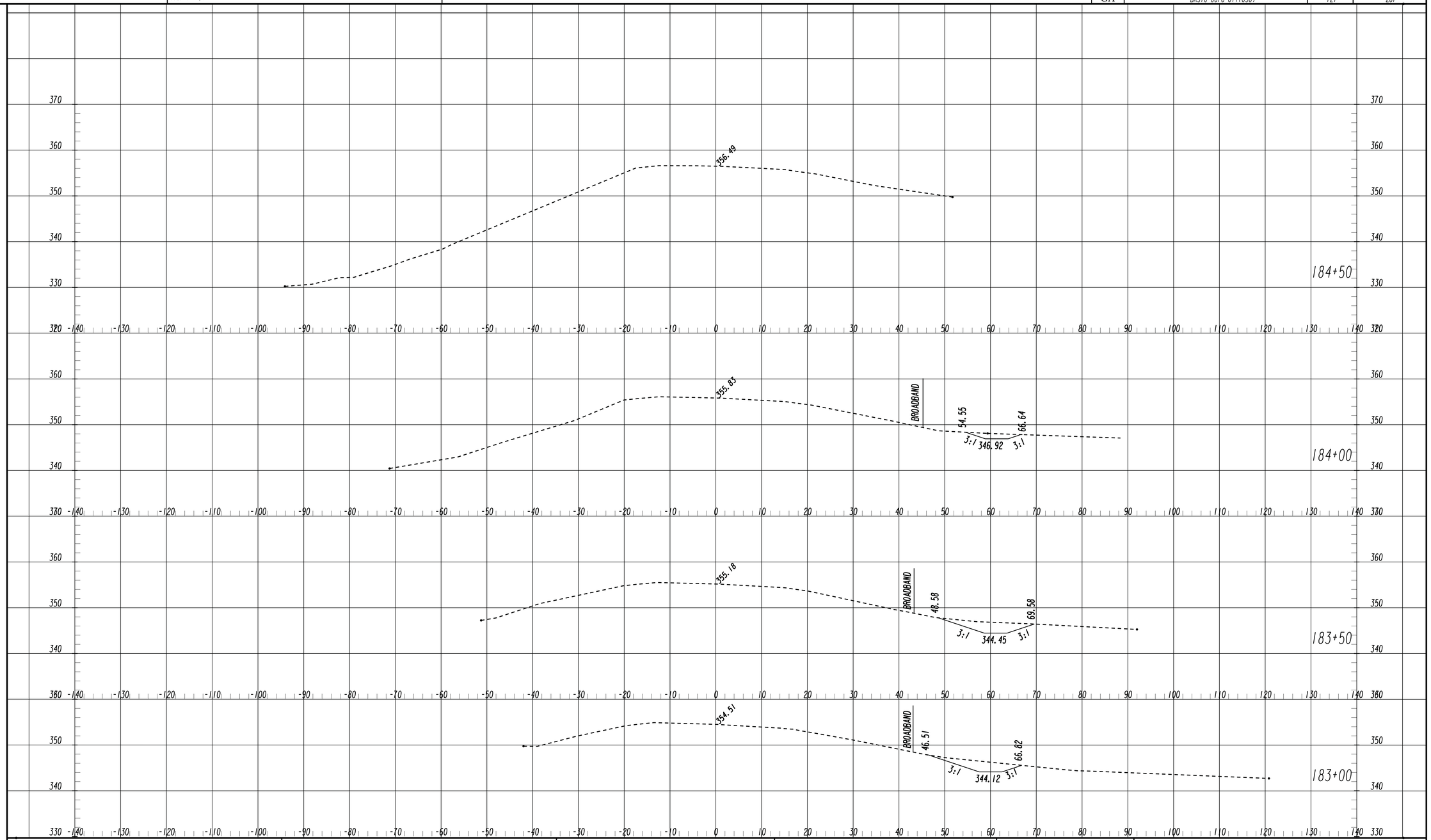
11/30/2011 SUXSEW

03-NOV-2014 13:23 TIME$$ | $PRF8$ | Y:\Roadways\138973\232310\Dgn\0232310_23.dgn

bgowen | 8825Full.pen

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	121	267



11/30/2011 SUXSEW

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-074

03-NOV-2014 13:23 TIME$$ $PRF8$
bgowen 8825Full.pen
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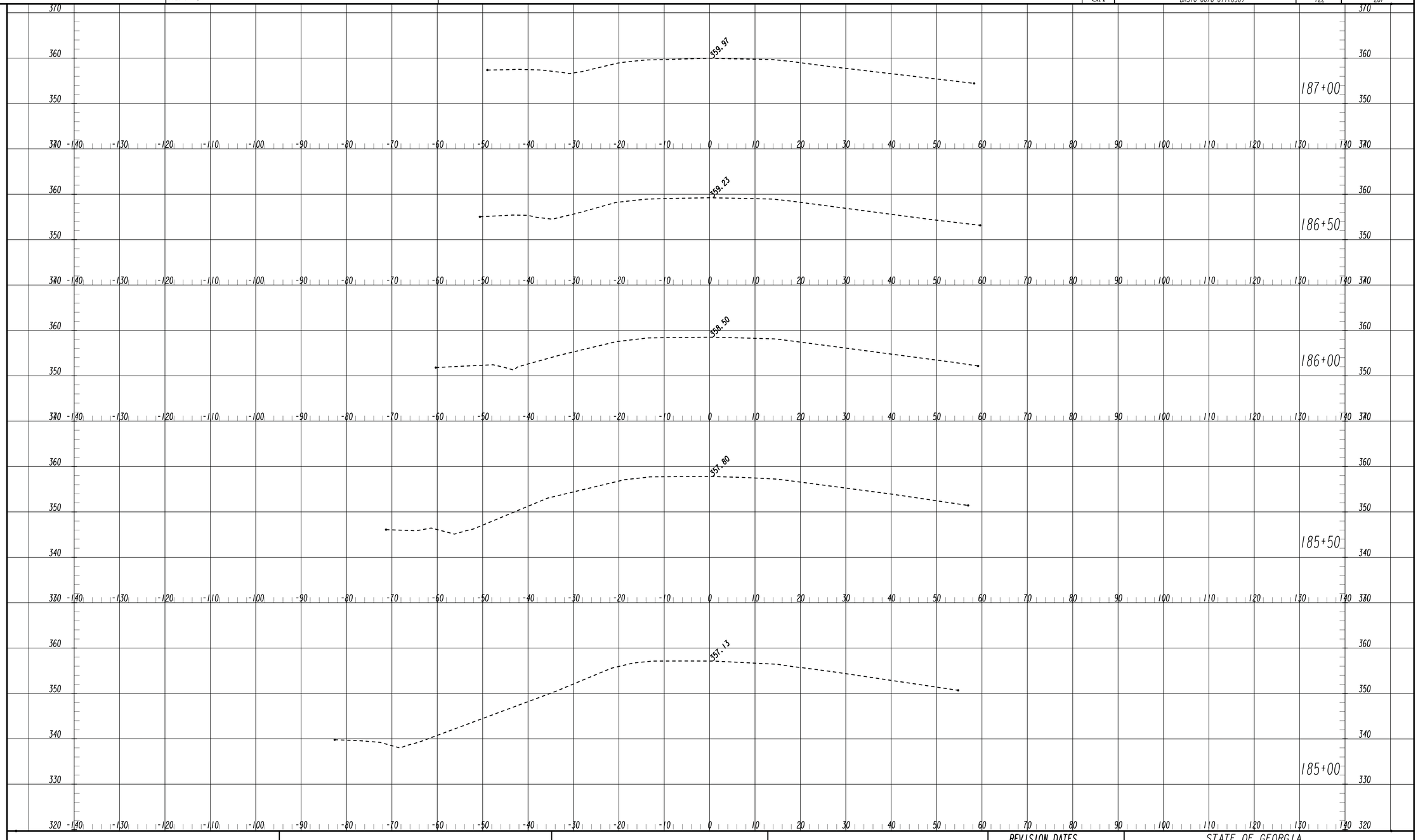
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	122	267



Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No. 23-075

11/30/2011 SUYSEW

03-NOV-2014 13:23 TIME$$ $PRF8$
bgowen 8825Full.pen

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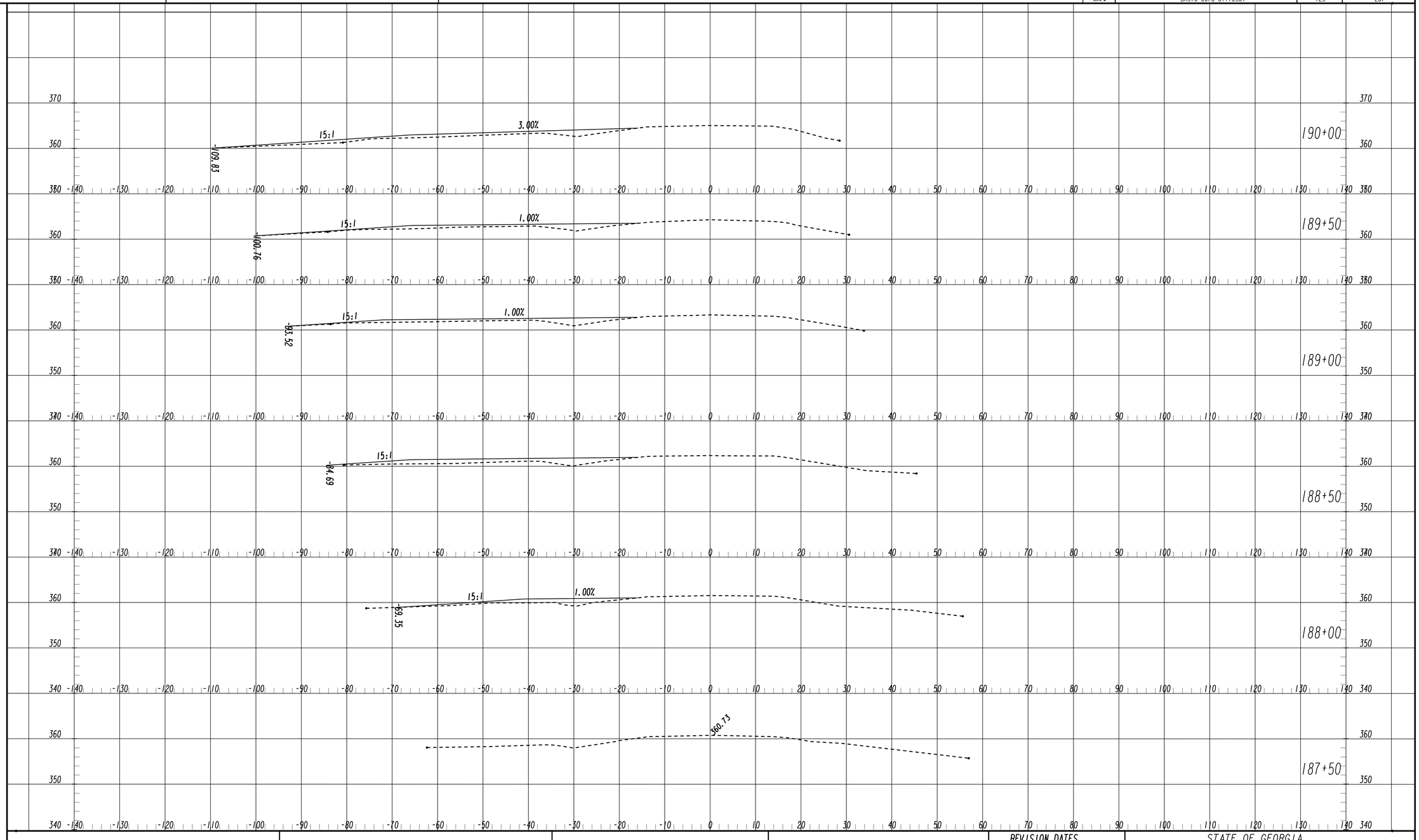
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	123	267



Baker

3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-076

11/30/2011 SUXSEW

03-NOV-2014 13:23 TIME$$ $PRF8$
bgowen 8825Full.pen

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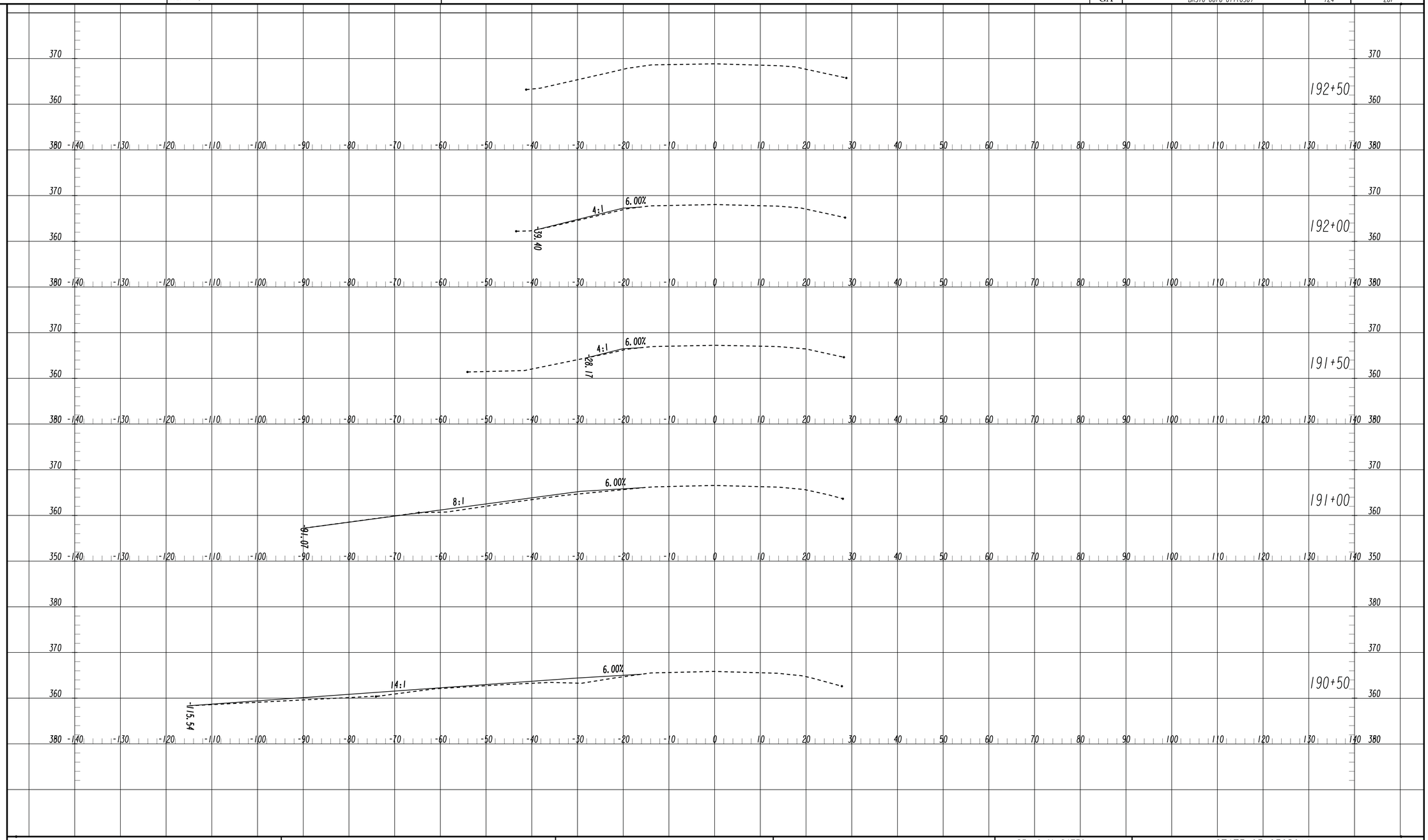
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	124	267



11/30/2011 SUXSEW

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

Scale
Horizontal: 1 Inch = 10 Feet
Vertical: 1 Inch = 10 Feet

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CROSS SECTIONS

STATE ROUTE 47

DRAWING No.
23-077

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRST0-0076-01(036)	125	267

UTILITY LINECODES

	EXISTING	TO BE REMOVED	PROPOSED	TYPE OF UTILITY
OVERHEAD	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	T-TV-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	TELECOMMUNICATIONS/CABLE TV
	TV	TV	TV	CABLE TV
	TV-TC	TV-TC	TV-TC	CABLE TV/TRAFFIC CONTROL
	TC	TC	TC	TRAFFIC CONTROL
UNDERGROUND	E	E	E	ELECTRIC (OL-D)
	E(C)	E(C)		ELECTRIC (OL-C)
	E(B)	E(B)		ELECTRIC (OL-B)
	T	T	T	TELECOMMUNICATIONS (OL-D)
	T(C)	T(C)		TELECOMMUNICATIONS (OL-C)
	T(B)	T(B)		TELECOMMUNICATIONS (OL-B)
	TV	TV	TV	CABLE TV (OL-D)
	TV(C)	TV(C)		CABLE TV (OL-C)
	TV(B)	TV(B)		CABLE TV (OL-B)
	W	W	W	WATER (OL-D)
	W(C)	W(C)		WATER (OL-C)
	W(B)	W(B)		WATER (OL-B)
	**W	**W	**W	WATER FOR LABELED PIPE SIZES (OL-D)
	**W(C)	**W(C)		WATER FOR LABELED PIPE SIZES (OL-C)
	**W(B)	**W(B)		WATER FOR LABELED PIPE SIZES (OL-B)
	NW	NW	NW	NON-POTABLE WATER (OL-D)
	NW(C)	NW(C)		NON-POTABLE WATER (OL-C)
	NW(B)	NW(B)		NON-POTABLE WATER (OL-B)
	**NW	**NW	**NW	NON-POTABLE WATER FOR LABELED PIPE SIZES (OL-D)
	**NW(C)	**NW(C)		NON-POTABLE WATER FOR LABELED PIPE SIZES (OL-C)
	**NW(B)	**NW(B)		NON-POTABLE WATER FOR LABELED PIPE SIZES (OL-B)
	STM	STM	STM	STEAM (OL-D)
	STM(C)	STM(C)		STEAM (OL-C)
	STM(B)	STM(B)		STEAM (OL-B)
	**STM	**STM	**STM	STEAM FOR LABELED PIPE SIZES (OL-D)
	**STM(C)	**STM(C)		STEAM FOR LABELED PIPE SIZES (OL-C)
	**STM(B)	**STM(B)		STEAM FOR LABELED PIPE SIZES (OL-B)
	SS	SS	SS	SANITARY SEWER WITH FLOW DIRECTION (OL-D)
	SS(C)	SS(C)		SANITARY SEWER WITH FLOW DIRECTION (OL-C)
	SS(B)	SS(B)		SANITARY SEWER WITH FLOW DIRECTION (OL-B)
	Σ**SS	Σ**SS	Σ**SS	SANITARY SEWER WITH FLOW DIRECTION FOR LABELED PIPE SIZES (OL-D)
	Σ**SS(C)	Σ**SS(C)		SANITARY SEWER WITH FLOW DIRECTION FOR LABELED PIPE SIZES (OL-C)
	Σ**SS(B)	Σ**SS(B)		SANITARY SEWER WITH FLOW DIRECTION FOR LABELED PIPE SIZES (OL-B)
	SFM	SFM	SFM	SANITARY SEWER FORCE MAIN WITH FLOW DIRECTION (OL-D)
	SFM(C)	SFM(C)		SANITARY SEWER FORCE MAIN WITH FLOW DIRECTION (OL-C)
	SFM(B)	SFM(B)		SANITARY SEWER FORCE MAIN WITH FLOW DIRECTION (OL-B)
	G	G	G	GAS (OL-D)
	G(C)	G(C)		GAS (OL-C)
	G(B)	G(B)		GAS (OL-B)
	**G	**G	**G	GAS FOR LABELED PIPE SIZES (OL-D)
	**G(C)	**G(C)		GAS FOR LABELED PIPE SIZES (OL-C)
	**G(B)	**G(B)		GAS FOR LABELED PIPE SIZES (OL-B)
	P	P	P	PETROLEUM (OL-D)
	P(C)	P(C)		PETROLEUM (OL-C)
	P(B)	P(B)		PETROLEUM (OL-B)
	**P	**P	**P	PETROLEUM FOR LABELED PIPE SIZES (OL-D)
	**P(C)	**P(C)		PETROLEUM FOR LABELED PIPE SIZES (OL-C)
	**P(B)	**P(B)		PETROLEUM FOR LABELED PIPE SIZES (OL-B)
	TC	FOR PROPOSED/TEMPORARY TRAFFIC CONTROL INFORMATION REFER TO TRAFFIC SIGNAL PLANS		TRAFFIC CONTROL (OL-D)
	TC(C)			TRAFFIC CONTROL (OL-C)
	TC(B)			TRAFFIC CONTROL (OL-B)
	UNK(B)	UNK(B)		UNKNOWN UTILITY FOUND IN SUE INVESTIGATION (OL-B)

UTILITY SYMBOLS

EXISTING	PROPOSED	TEMPORARY	
			UTILITY POLE/GUY POLE
			LIGHT POLE
			GUY ANCHOR
M	M	M	MARKER
X	X	X	SPLICE BOX
			CABINET
			VENT
E	E	E	ELECTRIC MANHOLE
H	H	H	HAND HOLE
E	E	E	TRANSFORMER
E	E	E	ELECTRIC METER
E	E	E	ELECTRIC BOX
T	T	T	TELECOMMUNICATIONS MANHOLE
T	T	T	TELECOMMUNICATIONS PEDESTAL
SLC	SLC	SLC	SUBCRIBER LOOP CARRIER (aka "SLICK")
			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
W	W	W	WELL
W	W	W	WATER VAULT
W	W	W	WATER VALVE MARKER
			STAND PIPE

EXISTING	PROPOSED	TEMPORARY	
			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
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
P			PETROLEUM MANHOLE
TC	FOR PROPOSED/TEMPORARY TRAFFIC CONTROL INFORMATION REFER TO TRAFFIC SIGNAL PLANS		TRAFFIC CONTROL MANHOLE/ ELECTRIC COMMUNICATIONS BOX
			TRAFFIC CONTROL PEDESTRIAN SIGNAL/BUTTON POST

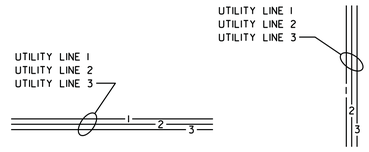
MISCELLANEOUS

LOS TH	LIMITS OF OVERHEAD AND SUBSURFACE UTILITY INVESTIGATION
	TEST HOLE (QL-A ONLY)
EOI	END OF INFORMATION
	QUALITY LEVEL (QL) DELINEATION
123	POLE ID
A01	SANITARY SEWER MANHOLE (SSMH) ID
C123	CONFLICT LOCATION (UTILITY IMPACT ANALYSIS (UIA) ONLY)
	END OF UTILITY

ABBREVIATIONS

MANHOLE	= LENGTH x WIDTH x DEPTH	PVC	POLY VINYL CHLORIDE
PR	TELEPHONE PAIR SIZE	STR	FIBER STRAND SIZE
UNK	UNKNOWN SIZE/TYPE	TCP	TERRA COTTA PIPE
MTD	MULTIPLE TILE DUCT	ACP	ASBESTOS CONCRETE PIPE
MCD	MULTIPLE CONCRETE DUCT	VCP	VITRIFIED CLAY PIPE
DIP	DUCTILE IRON PIPE	STD	SINGLE TILE DUCT
TRD	TRANSITE (ASBESTOS) DUCT	SCPD	SINGLE CREOSOTE PINE DUCT
FOC	FIBER OPTIC CABLE	SD	SPLIT DUCT
CIP	CAST IRON PIPE		

MULTI-UTILITY IDENTIFICATION



GEORGIA811 Utilities Protection Center, Inc.

Know what's **below.** **Call** before you dig.

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

UTILITY PLANS

SR 47 OVER LITTLE RIVER

DRAWING No. 24-00A

1/5/2009 GPLN

03-NOV-2014 13:23	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_24-001.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	126	267

BEGIN PROJECT
BEGIN CONSTRUCTION
STA. 120+00
N 1345413.7160
E 602486.6950

ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS

GMD 182

1
U.S. GOVERNMENT

OPEN WATER NO. 3

120+00

ESA - 25' OPEN WATER BUFFER NO. 3

125+00

NORMAL POOL ELEV. 329.41

GPC TRANS H-FRAME

THURMOND DAM 448 - LINCOLNTON PRIMARY 115 KV

*739

*740

*741

STATE ROUTE 47
CONST. CL

ROCK FILL
ROCK CUT

REOD R/W

MATCH LINE STA. 130+00

OPEN WATER NO. 3

2
U.S. GOVERNMENT

GMD 183

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
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

UTILITY PLANS

LINCOLN/COLUMBIA COUNTY
STA. 120+00 TO STA. 130+00

DRAWING No. 24-001

12/14/2012 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	127	267

(A-1) 18" FLARED END SECTION (GA. STD. 1120)
(A-2) MANHOLE (GA. STD. 1011A)
(A-3) MANHOLE (GA. STD. 1011A)
(A-4) NEENAH R-3945 INLET
(A-5) NEENAH R-3945 INLET
(S-1) CONCRETE SPILLWAY TYPE 1 (GA. STD. 9017J)

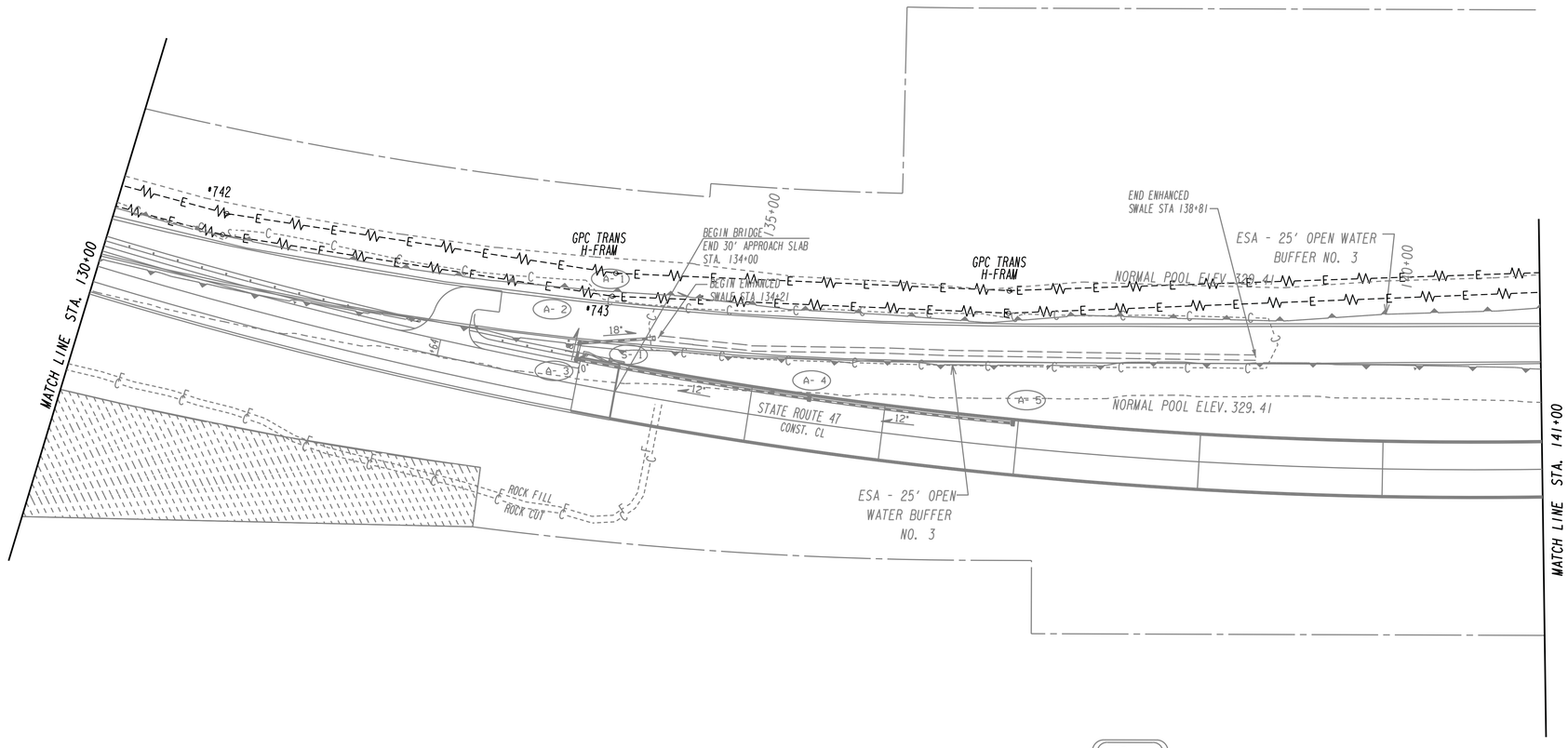
"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

GMD 182

OPEN WATER NO. 3

1

U. S. GOVERNMENT



2

U. S. GOVERNMENT

OPEN WATER NO. 3

GMD 183

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
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

UTILITY PLANS

LINCOLN/COLUMBIA COUNTY
STA. 130+00 TO STA. 141+00

DRAWING No. 24-002

12/14/2012 GPLN

03-NOV-2014 13:23	TIME$$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_24-003.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	128	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

GMD 182

1
U.S. GOVERNMENT

3
U.S. GOVERNMENT

LITTLE RIVER
STREAM NO. 5

LINCOLN COUNTY
COLUMBIA COUNTY

B-1 18" FLARED END SECTION (GA. STD. 1120)
B-2 MANHOLE (GA. STD. 1011A)
B-3 MANHOLE (GA. STD. 1011A)
B-4 DROP INLET (GA. STD. 5001 M)
S-2 CONCRETE SPILLWAY TYPE 1 (GA. STD. 9017J)

END ENHANCED SWALE STA 153+63

ESA - 25' OPEN WATER BUFFER NO. 3

GPC TRANS STEEL #745

THURMOND DAM 448 - LINCOLNTON PRIMARY 115 KV

150+00

GPC TRANS STEEL #746

END BRIDGE
BEGIN 30' APPROACH SLAB
STA. 153+25

NORMAL POOL ELEV. 329.41

BEGIN ENHANCED SWALE STA 150+53

STATE ROUTE 47
CONST. CL

NORMAL POOL ELEV. 329.41

18"

ESA - 25' OPEN WATER BUFFER NO. 3

ROCK FILL
ROCK CUT

MATCH LINE STA. 141+00

MATCH LINE STA. 154+00

2
U.S. GOVERNMENT

4
U.S. GOVERNMENT

APPROX. GMD 183
APPROX. GMD 134

GMD 183

GMD 134

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
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

UTILITY PLANS

LINCOLN/COLUMBIA COUNTY
STA. 141+00 TO STA. 154+00

DRAWING NO. 24-003

12/14/2012 GPLN

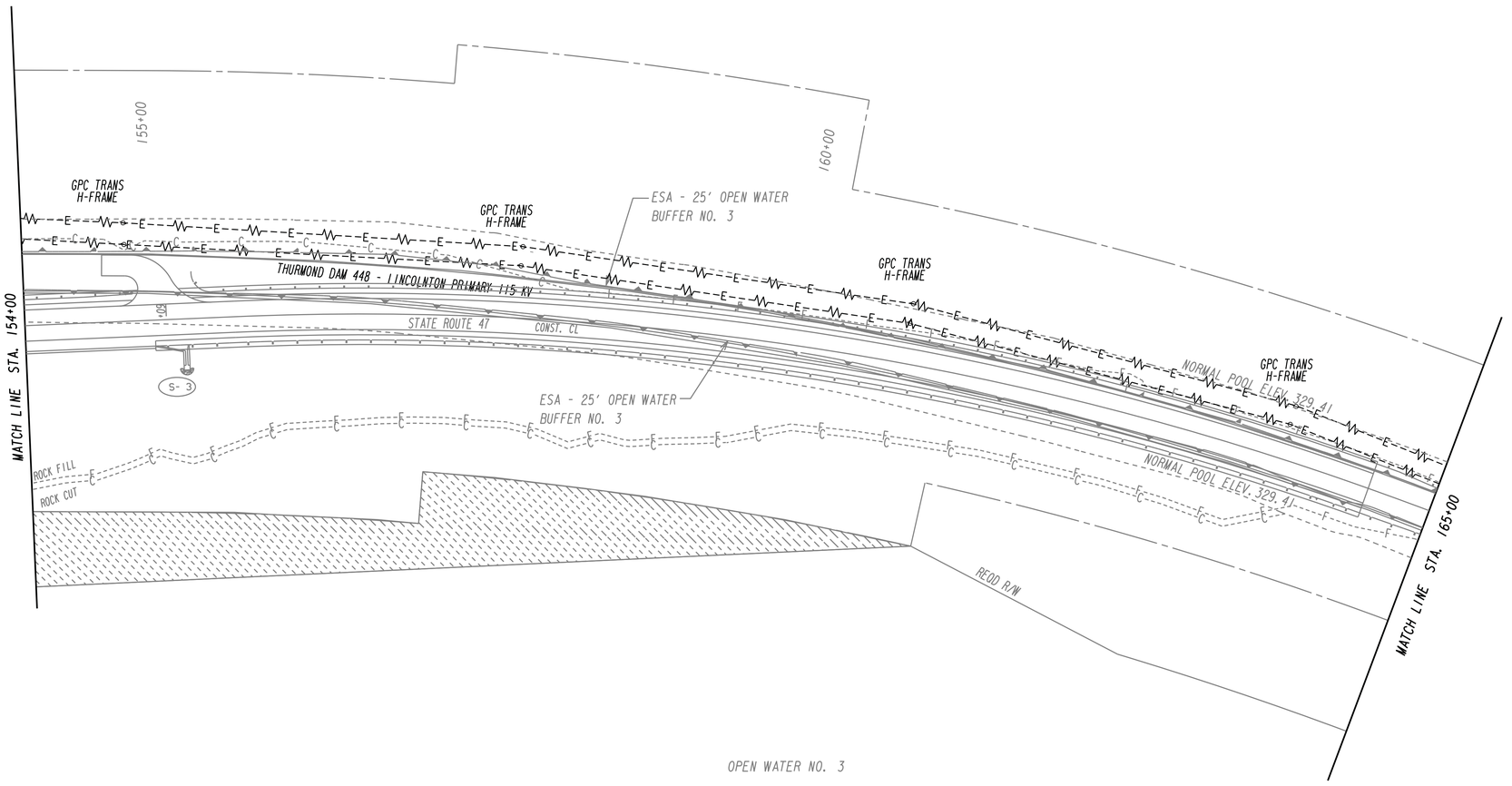
"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

S-3 CONCRETE SPILLWAY TYPE 3 (GA. STD. 9013) WITH ROCK FILTER DAM

OPEN WATER NO. 3

3

U.S. GOVERNMENT



OPEN WATER NO. 3

4

U.S. GOVERNMENT

GMD 134

PROPERTY AND EXISTING R/W LINE	℄	BEGIN LIMIT OF ACCESS.....BLA	
REQUIRED R/W LINE		END LIMIT OF ACCESS.....ELA	
CONSTRUCTION LIMITS	C F	LIMIT OF ACCESS	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES		REQ'D R/W & LIMIT OF ACCESS	
EASEMENT FOR CONSTR OF SLOPES		EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE	
EASEMENT FOR CONSTR OF DRIVES			

Baker
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(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

UTILITY PLANS

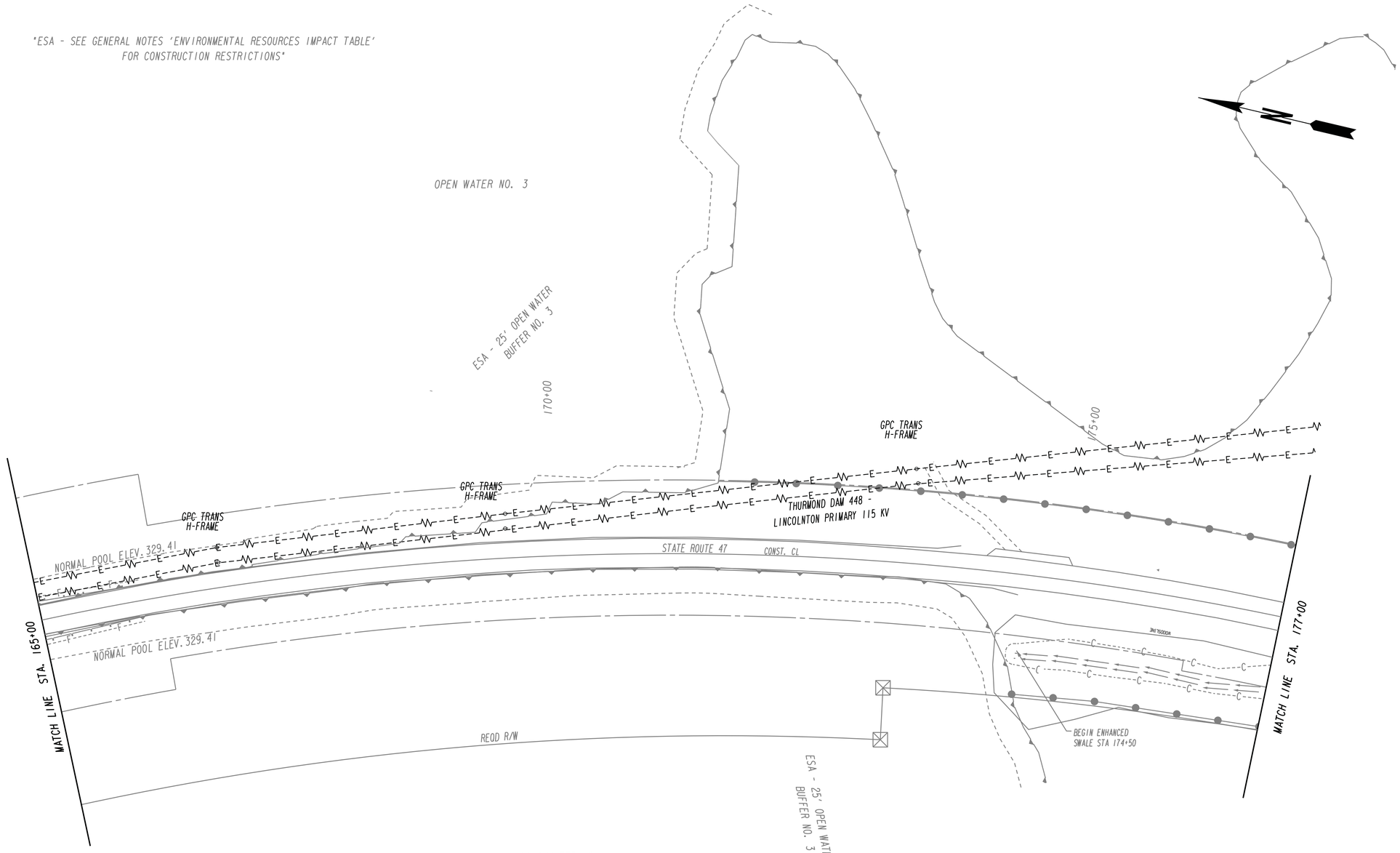
LINCOLN/COLUMBIA COUNTY
STA. 154+00 TO STA. 165+00

DRAWING No. 24-004

12/14/2012 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	130	267



GMD 134

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
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

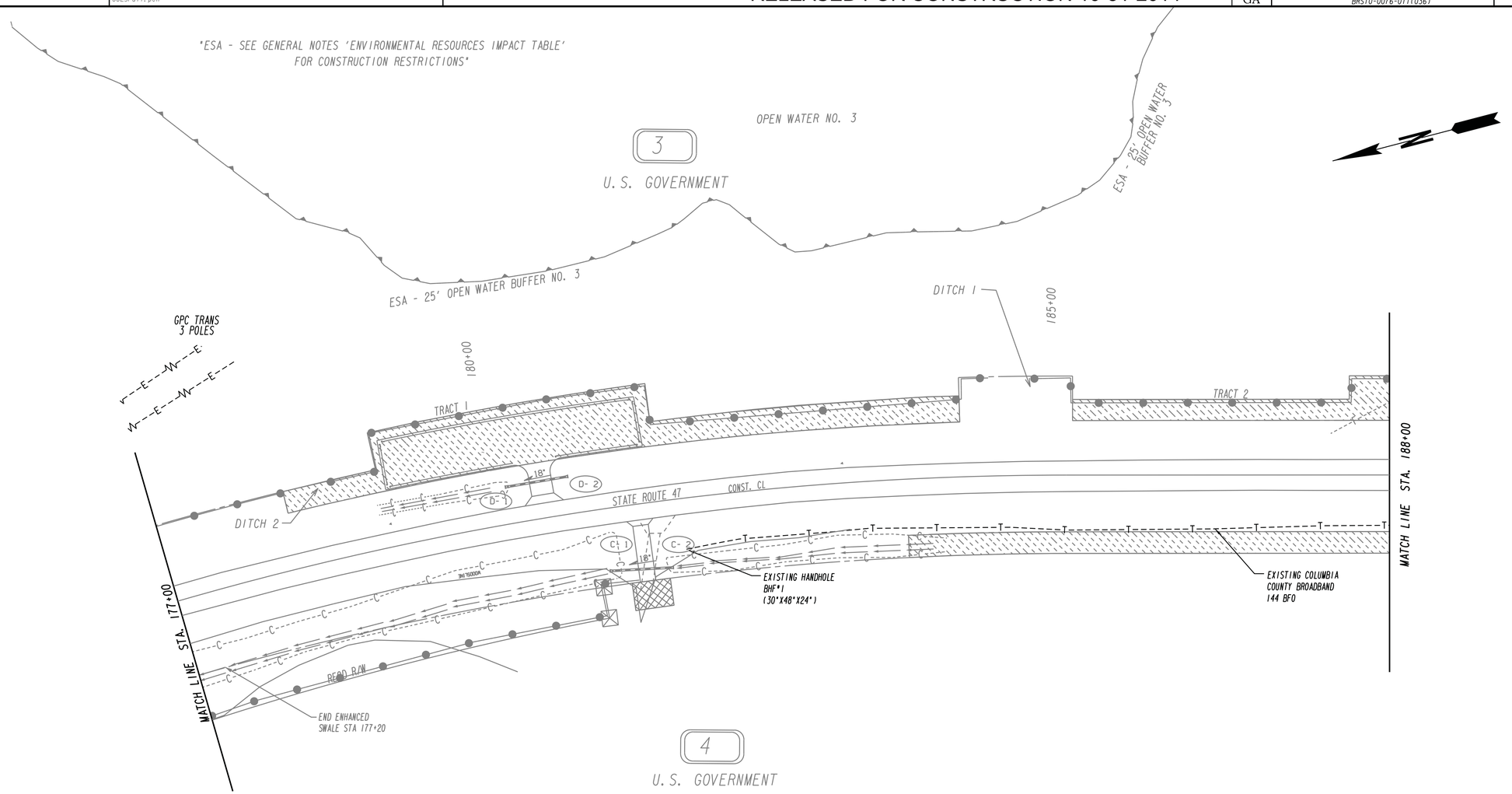
UTILITY PLANS

LINCOLN/COLUMBIA COUNTY
STA. 165+00 TO STA. 177+00

DRAWING No. 24-005

12/14/2012 GPLN

03-NOV-2014 13:23	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_24-006.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	131	267



GMD 134

PROPERTY AND EXISTING R/W LINE	BEGIN LIMIT OF ACCESS.....BLA	Baker	SCALE IN FEET
REQUIRED R/W LINE	END LIMIT OF ACCESS.....ELA	3595 ENGINEERING DRIVE	0 50 100 200
CONSTRUCTION LIMITS	LIMIT OF ACCESS	NORCROSS, GEORGIA 30092	
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	REQ'D R/W & LIMIT OF ACCESS	(770) 263-9118	
EASEMENT FOR CONSTR OF SLOPES	EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE		
EASEMENT FOR CONSTR OF DRIVES			

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

UTILITY PLANS

LINCOLN/COLUMBIA COUNTY
STA. 177+00 TO STA. 188+00

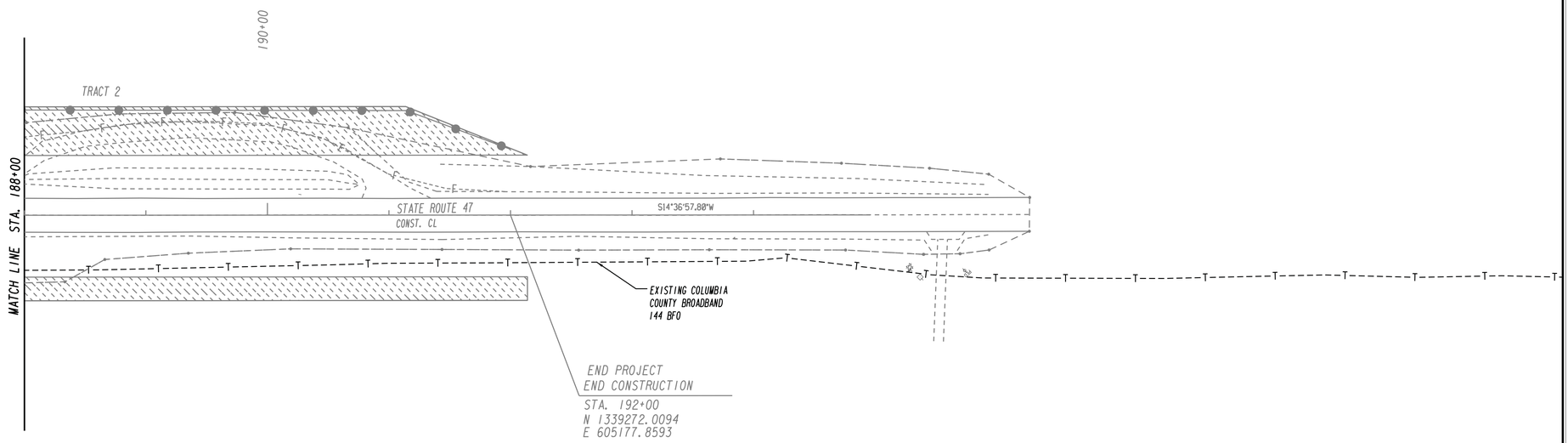
DRAWING No. 24-006

12/14/2012 GPLN

ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS

3

U.S. GOVERNMENT



4

U.S. GOVERNMENT

GMD 134

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
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

UTILITY PLANS

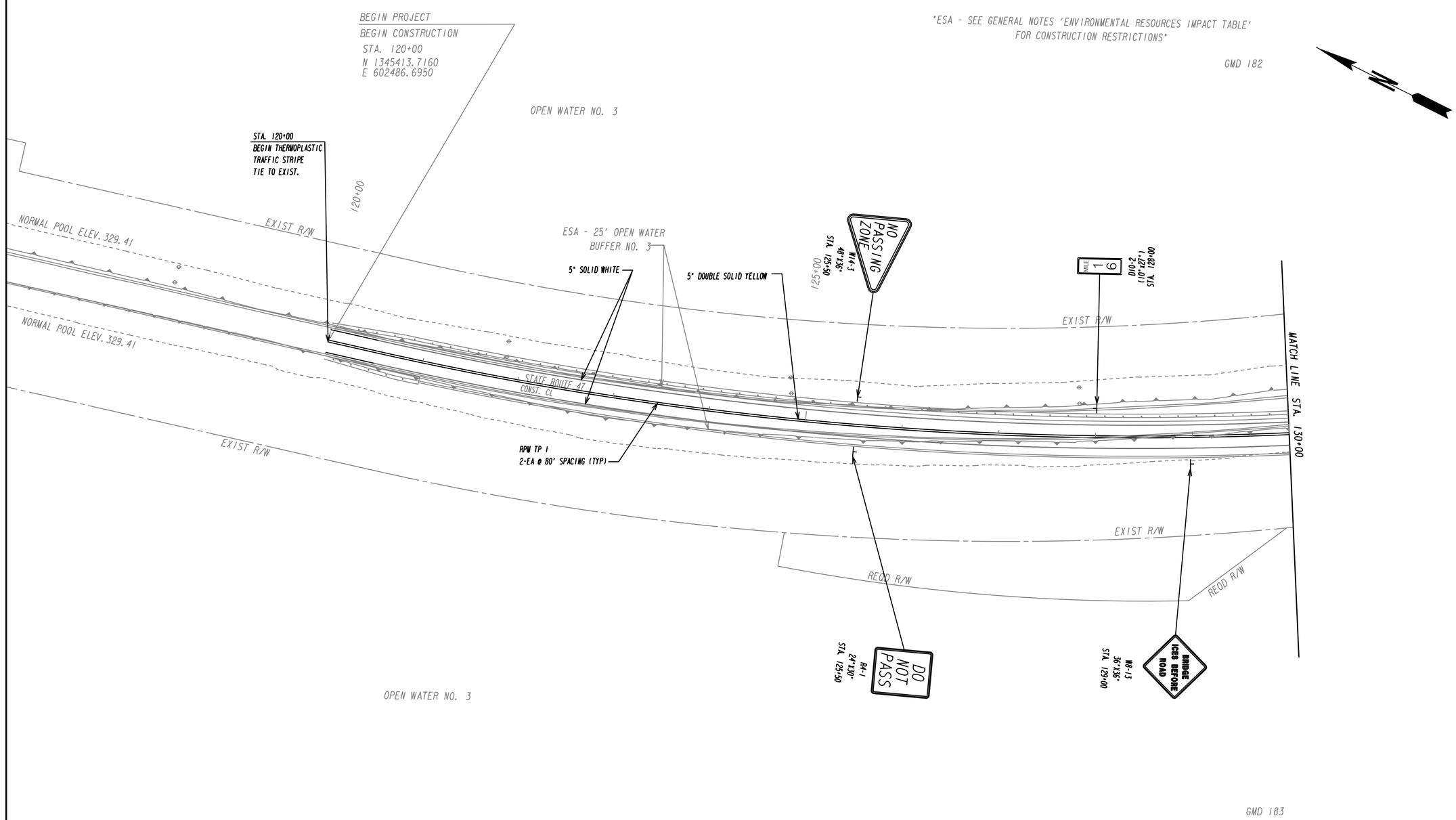
LINCOLN/COLUMBIA COUNTY
STA. 188+00 TO STA. 192+00

DRAWING NO. 24-007

12/14/2012 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-011(036)	133	267



NOTE: ALL STRIPING IS THERMOPLASTIC UNLESS OTHERWISE NOTED.

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
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

SIGNING AND MARKING PLANS

LINCOLN/COLUMBIA COUNTY
STA. 120+00 TO STA. 130+00

DRAWING No. 26-001

12/14/2012 GPLN

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

GMD 182

OPEN WATER NO. 3

EXIST R/W

5" SOLID WHITE

5" DOUBLE SOLID YELLOW

133+70
BEGIN PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST (BLACK-WHITE), TP PB

RPM TP 1
2-EA @ 80' SPACING (TYP)

PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST DOUBLE (BLACK-YELLOW), TP PB

END ENHANCED SWALE STA 138+81

ESA - 25' OPEN WATER BUFFER NO. 3

135+00

140+00

BEGIN BRIDGE END 30' APPROACH SLAB STA. 134+00

BEGIN ENHANCED SWALE STA 134+21

NORMAL POOL ELEV. 329.41

NORMAL POOL ELEV. 329.41

STATE ROUTE 47
CONST. CL

MATCH LINE STA. 130+00

MATCH LINE STA. 141+00

133+70
BEGIN PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST DOUBLE (BLACK-YELLOW), TP PB

ESA - 25' OPEN WATER BUFFER NO. 3 EXIST R/W

PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST (BLACK-WHITE), TP PB

133+70
BEGIN PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST (BLACK-WHITE), TP PB

LITTLE RIVER
STA 145+00
I-1,580'
85°29'

Columbia County
STA 134+00
I-2,160'
48°29'

JACK EUBANK MEMORIAL HIGHWAY
SPECIAL 1
STA 134+00
60°24'

OPEN WATER NO. 3

GMD 183

NOTE: ALL STRIPING IS THERMOPLASTIC UNLESS OTHERWISE NOTED.

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	
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE	

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

SIGNING AND MARKING PLANS

LINCOLN/COLUMBIA COUNTY
STA. 130+00 TO STA. 141+00

DRAWING No. 26-002

12/14/2012 GPLN

03-NOV-2014 13:23	TIME$$	$PRFB$	Y:\Roadways\138973\232310\Dgn\0232310_26-003.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	135	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

GMD 182

LITTLE RIVER
STREAM NO. 5

LINCOLN COUNTY
COLUMBIA COUNTY

EXIST R/W

W1-2R
36"X36"
STA. 141+82

ESA - 25' OPEN WATER BUFFER NO. 3

Lincoln County
1-2(42)
42"X24"
STA. 153+25

LITTLE RIVER
1-3(42)
42"X24"
STA. 153+25

153+55
END PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST (BLACK-WHITE), TP PB

END BRIDGE
BEGIN 30' APPROACH SLAB
STA. 153+25

145+00

150+00

NORMAL POOL ELEV. 329.41

PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST DOUBLE (BLACK-YELLOW), TP PB

BRIDGE ℄

STATE ROUTE 47
CONST. ℄

NORMAL POOL ELEV. 329.41

MATCH LINE STA. 141+00

MATCH LINE STA. 154+00

RPM TP 1
2-EA @ 80' SPACING (TYP)

PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST (BLACK-WHITE), TP PB

ESA - 25' OPEN WATER BUFFER NO. 3

W1-2R
36"X36"
STA. 150+30

153+55
END PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST (BLACK-WHITE), TP

153+55
END PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST DOUBLE (BLACK-YELLOW), TP PB

EXIST R/W

EXIST R/W

LITTLE RIVER
STREAM NO. 5

APPROX. GMD 183

APPROX. GMD 134

NOTE: ALL STRIPING IS THERMOPLASTIC UNLESS OTHERWISE NOTED.

GMD 183

GMD 134

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	
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE	

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

SIGNING AND MARKING PLANS

LINCOLN/COLUMBIA COUNTY
STA. 141+00 TO STA. 154+00

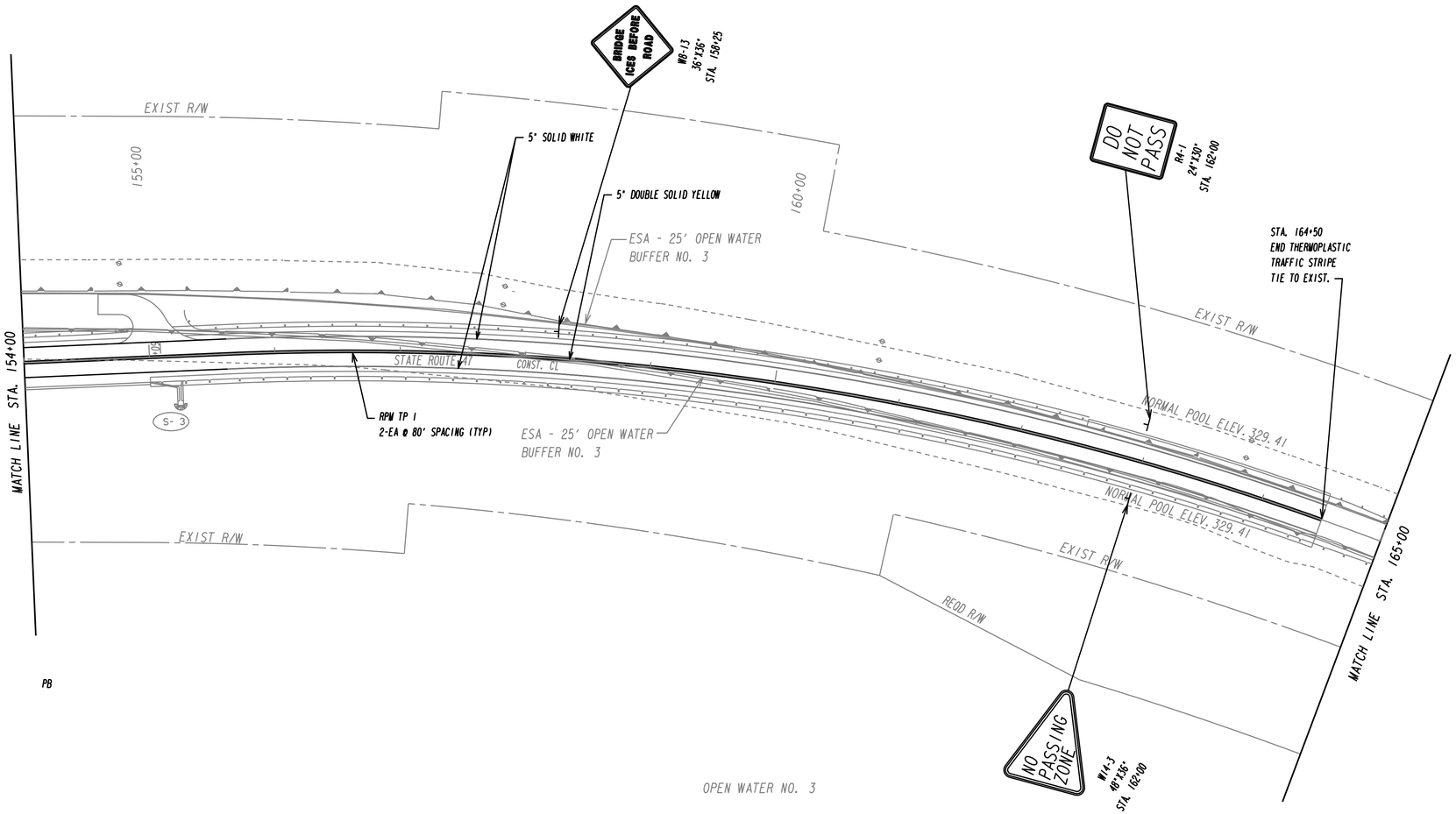
DRAWING NO. 26-003

12/14/2012 GPLN

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

(S-3) CONCRETE SPILLWAY TYPE 3 (GA. STD. 9013) WITH ROCK FILTER DAM

OPEN WATER NO. 3



NOTE: ALL STRIPING IS THERMOPLASTIC UNLESS OTHERWISE NOTED.

GMD 134

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	
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE	

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SCALE IN FEET
0 50 100 200

REVISION DATES

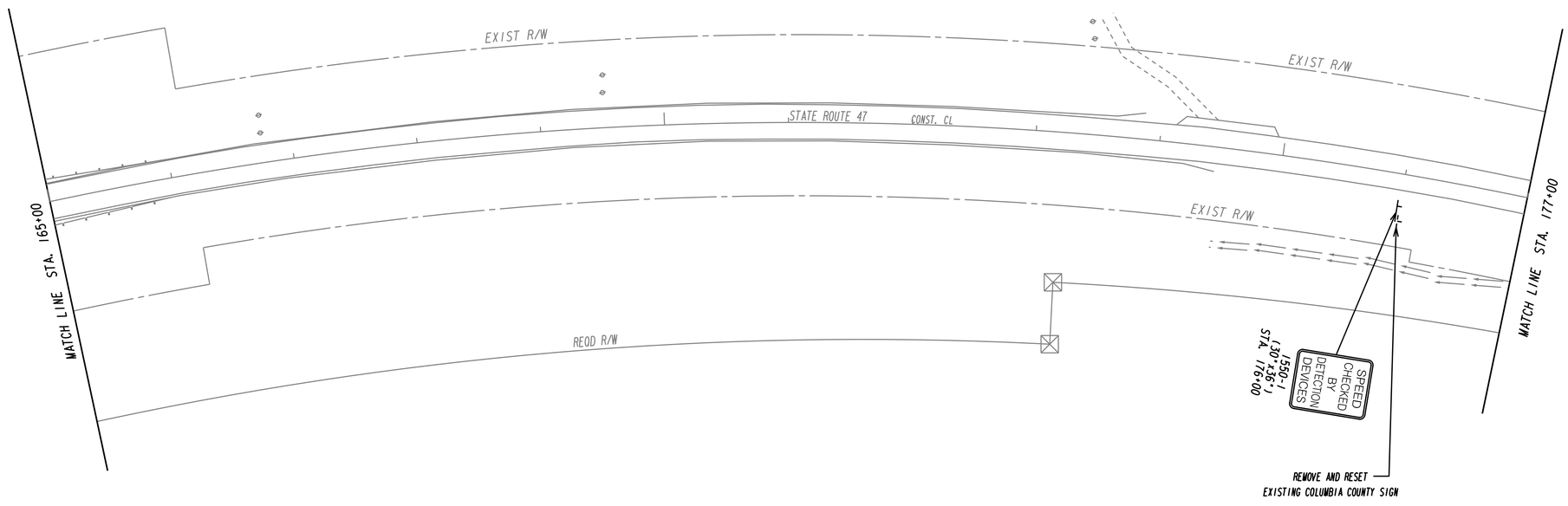
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

SIGNING AND MARKING PLANS

LINCOLN/COLUMBIA COUNTY
STA. 154+00 TO STA. 165+00

DRAWING No. 26-004

12/14/2012 GPLN



NOTE: ALL STRIPING IS THERMOPLASTIC UNLESS OTHERWISE NOTED.

GMD 134

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
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE

Baker
3595 ENGINEERING DRIVE
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(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

SIGNING AND MARKING PLANS

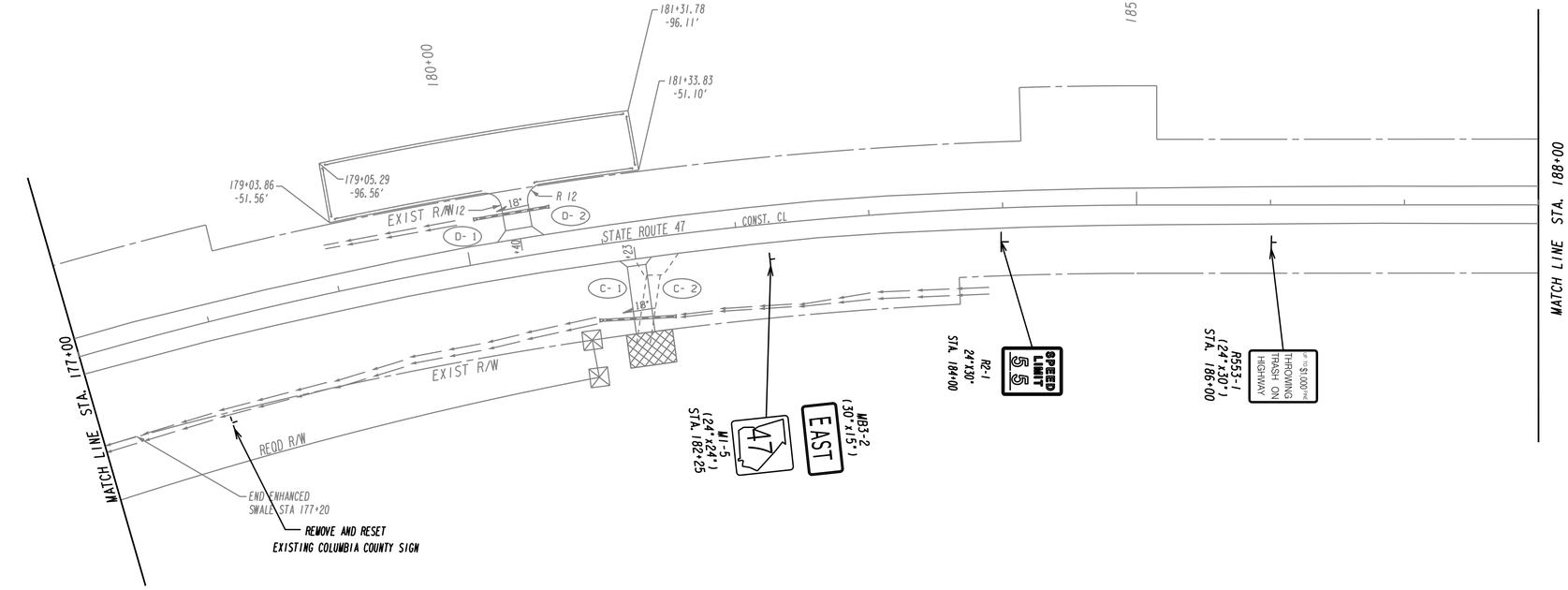
LINCOLN/COLUMBIA COUNTY
STA. 165+00 TO STA. 177+00

DRAWING No. 26-005

12/14/2012 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	138	267



NOTE: ALL STRIPING IS THERMOPLASTIC UNLESS OTHERWISE NOTED.

GMD 134

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
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE

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SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

SIGNING AND MARKING PLANS

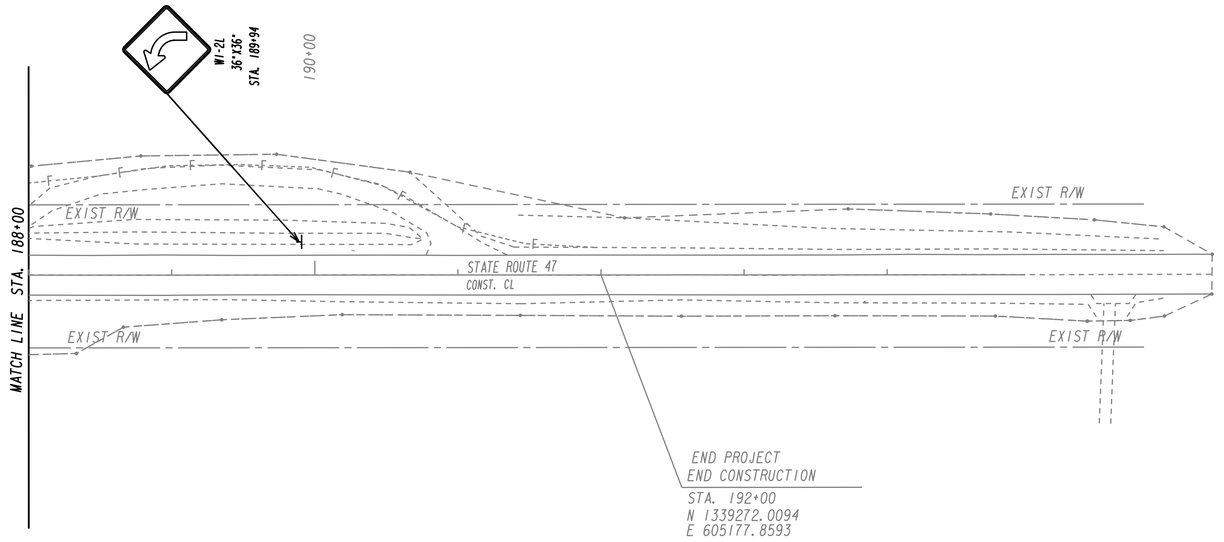
LINCOLN/COLUMBIA COUNTY
STA. 177+00 TO STA. 188+00

DRAWING NO. 26-006

12/14/2012 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	139	267



NOTE: ALL STRIPING IS THERMOPLASTIC UNLESS OTHERWISE NOTED.

GMD 134

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
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE

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3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

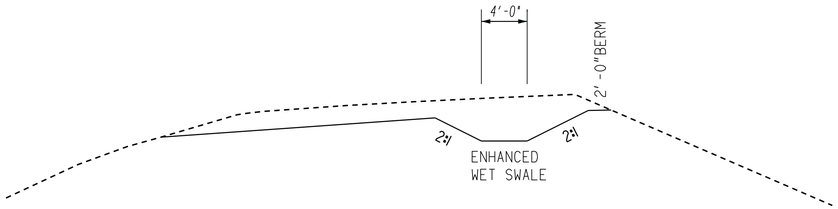
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

SIGNING AND MARKING PLANS

LINCOLN/COLUMBIA COUNTY
STA. 188+00 TO STA. 192+00

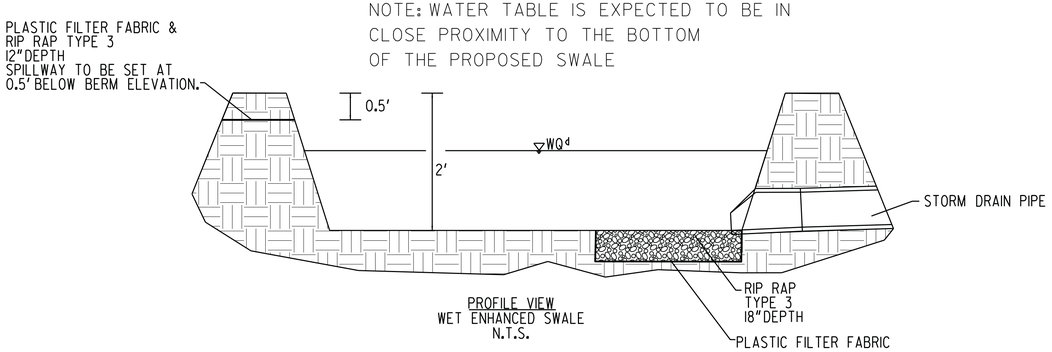
DRAWING No.
26-007

12/14/2012 GPLN

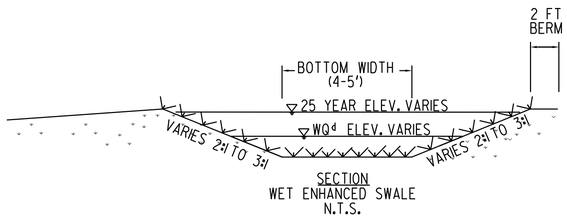


ENHANCED WET SWALE DETAIL #1

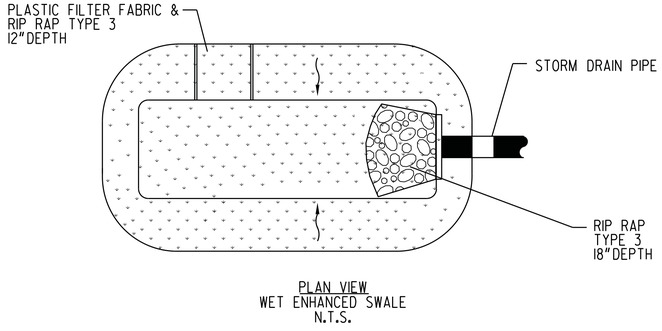
APPLIES TO STA. 134+21 LT. TO STA. 138+81 LT.
APPLIES TO STA. 150+53 LT. TO STA. 153+63 LT.
NOTE: WATER TABLE IS EXPECTED TO BE IN CLOSE PROXIMITY TO THE BOTTOM OF THE PROPOSED SWALE



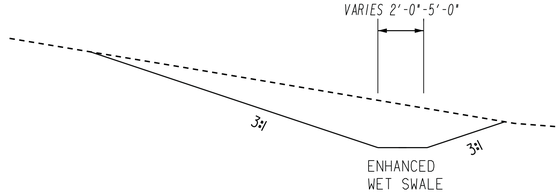
PROFILE VIEW
WET ENHANCED SWALE
N.T.S.



SECTION
WET ENHANCED SWALE
N.T.S.

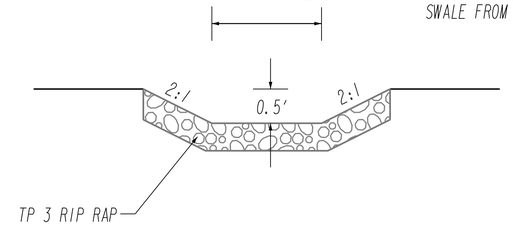


PLAN VIEW
WET ENHANCED SWALE
N.T.S.



ENHANCED WET SWALE DETAIL #2

APPLIES TO STA. 174+50 RT. TO STA. 177+20 RT.
NOTE: WATER TABLE IS EXPECTED TO BE IN CLOSE PROXIMITY TO THE BOTTOM OF THE PROPOSED SWALE



SWALE FROM STA. 134+21 LT. TO STA. 138+81 LT. (SPILLWAY WIDTH = 6')
SWALE FROM STA. 150+53 LT. TO STA. 153+63 LT. (SPILLWAY WIDTH = 4')
SWALE FROM STA. 174+50 RT. TO STA. 177+20 RT. (SPILLWAY WIDTH = 10')

RIPARIAN SEEDING CHART	
COMMON NAME	BOTANICAL NAME
Creeping Bentgrass	Agrostis palustris
Switch Grass	Panicum virgatum
Reed Canary Grass	Phalaris arundinacea
Redtop	Agrostis alba
Limestone Meadow Sedge	Carex granularis
Pennsylvania Sedge	Carex pennsylvanica
Tussock Sedge	Carex stricta

APPLY A VARIETY OF SEED MIXTURE FROM THE ABOVE LIST AT THE SPECIFIED RATE PER THE STANDARD SPECIFICATIONS

ADDITINAL CHOOSES MAYBE FOUND IN THE SECTION 700 OF THE STANDARD SPECIFICATIONS

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

NOT TO SCALE

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

SPECIAL CONSTRUCTION DETAIL

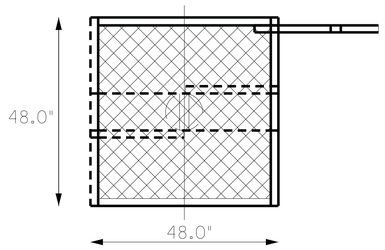
LINCOLN/COLUMBIA COUNTY

DRAWING No. 38-001

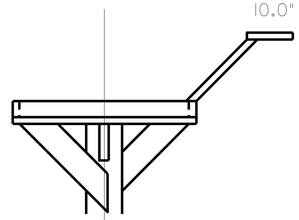
12/14/2012 GPLN

OSPREY PLATFORM
WOOD POLE MOUNT

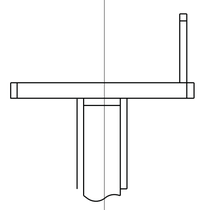
TOP

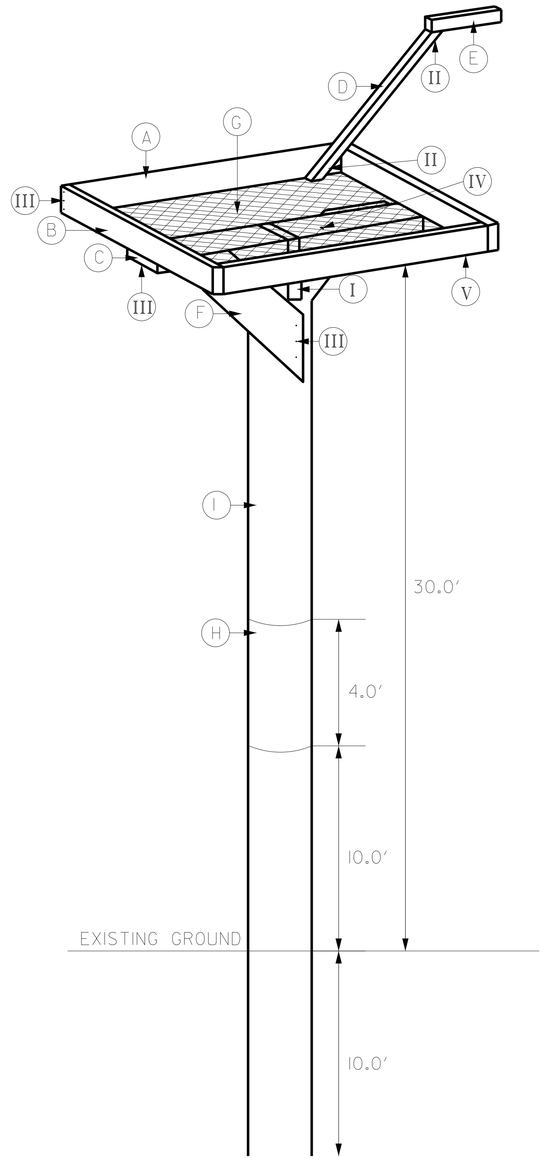


SIDE



FRONT





LIST OF MATERIALS (SHOWN FOR SINGLE INSTALLATION):

A) 2 EA. 45" x 2" x4" PRESSURE TREATED LUMBER
B) 2 EA. 48" x 2" x 4" PRESSURE TREATED LUMBER
C) 1 EA. 48" x 2" x (8") PRESSURE TREATED LUMBER
D) 1 EA. 24" x 2" x 2" PRESSURE TREATED LUMBER
E) 1 EA. 10" x 2" x 2" PRESSURE TREATED LUMBER
F) 2 EA. 22" (LONG SIDE) 5/4" BRACES CUT AT 45 DEGREE ANGLES
G) 1 EA. 48" SQUARE OF CHAIN LINK FENCE
H) 1 EA. 4' x 18 GAUGE ALUMINUM FLASHING
I) 1EA. TREATED TIMBER POLE, CL 2, 40 FT

I) 1 EA. 24" GALVANIZED STEEL STRAP
II) 4 EA. GALVANIZED SCREWS (3 1/2") OR DECK SCREWS (PRE-DRILLED WITH 9/64 " TO PREVENT SPLITTING)
III) 32 EA. 16 PENNY GALVANIZED RING SHANK NAILS (PRE-DRILL WITH 9/64 " TO PREVENT SPLITTING)
IV) 20 EA. 1 7/8" GALVANIZED FENCE STAPLES
V) 10 EA. 1 1/4" GALVANIZED STRAPPING NAILS

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(770) 263-9118

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

SPECIAL CONSTRUCTION DETAIL

SR 47

DRAWING No. 38-002

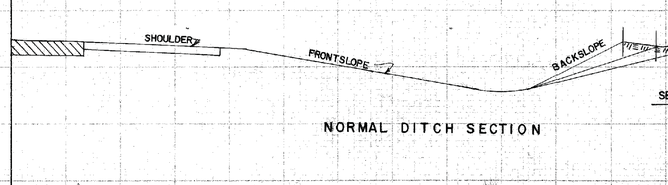
3/1/2007 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

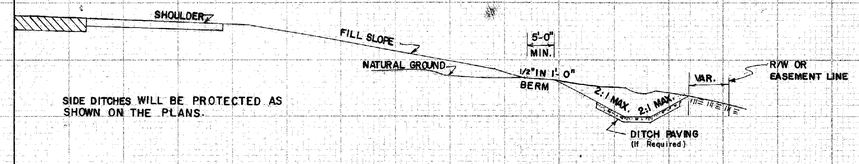
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	184	267

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

NORMAL DITCH SECTION

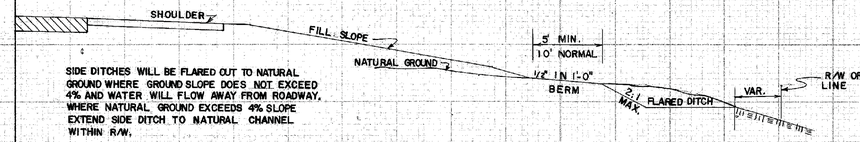


SECTION A-A



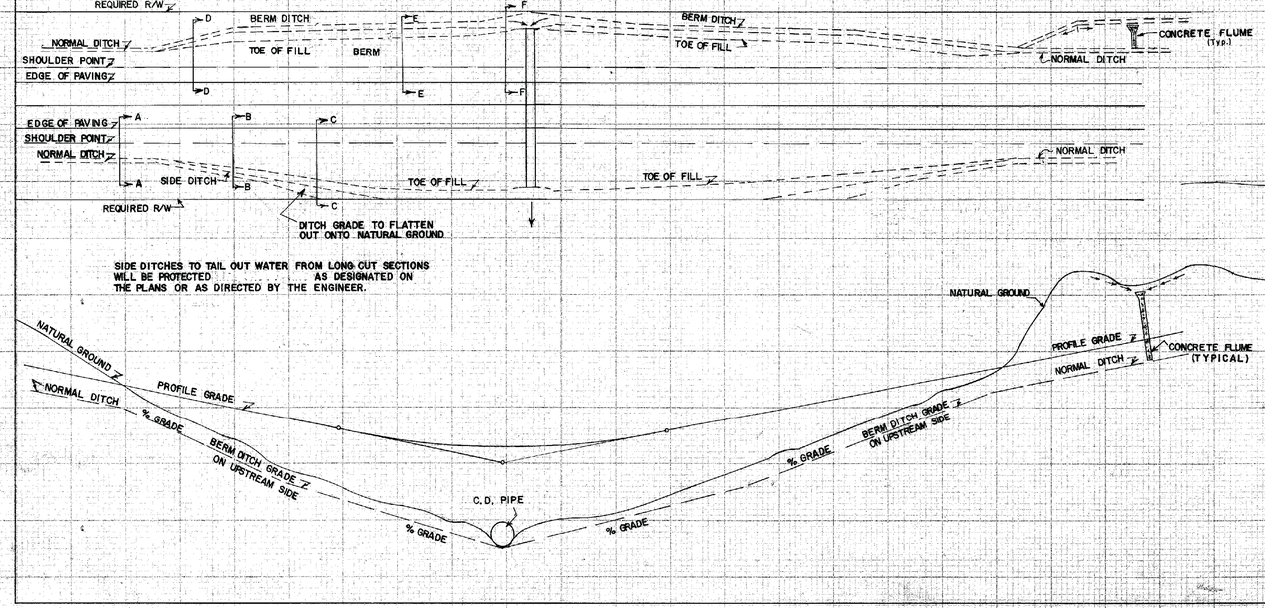
SIDE DITCHES WILL BE PROTECTED AS SHOWN ON THE PLANS.

SECTION B-B



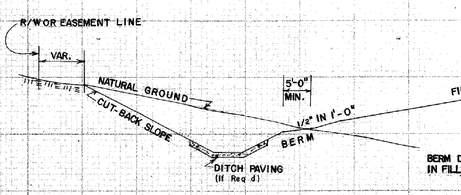
SIDE DITCHES WILL BE FLARED OUT TO NATURAL GROUND WHERE GROUND SLOPE DOES NOT EXCEED 4% AND WATER WILL FLOW AWAY FROM ROADWAY, WHERE NATURAL GROUND EXCEEDS 4% SLOPE EXTEND SIDE DITCH TO NATURAL CHANNEL WITHIN R/W.

SECTION C-C



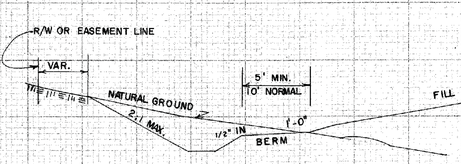
SIDE DITCHES TO TAIL OUT WATER FROM LONG CUT SECTIONS WILL BE PROTECTED AS DESIGNATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

R/W OR EASEMENT LINE



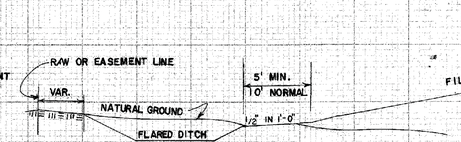
BERM DITCHES WILL BE USED WHERE NATURAL GROUND SLOPES TOWARDS THE ROADWAY IN FILL SECTIONS. BERM DITCHES WILL BE PROTECTED AS SHOWN ON THE PLANS.

SECTION D-D



SOD DITCH CHECKS WILL BE USED IN BERM DITCHES ON GRADES OF 2.1% OR OVER AS SHOWN ON THE PLANS

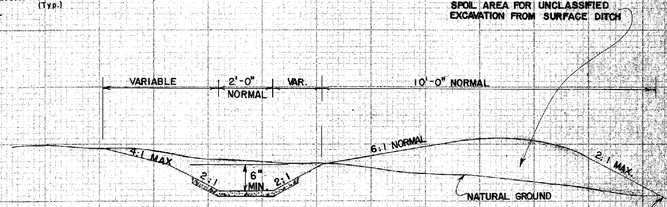
SECTION E-E



UNPAVED BERM DITCHES WILL BE FLARED OUT TO NATURAL GROUND AT INLETS OF CROSS DRAINS.

SECTION F-F

SPOIL AREA FOR UNCLASSIFIED EXCAVATION FROM SURFACE DITCH



DETAIL OF SURFACE DITCHES

NOTE: SURFACE DITCHES WILL BE REQUIRED AT THE TOP OF CUT SLOPES WHERE SHOWN ON THE PLANS OR WHERE IT IS DETERMINED BY THE ENGINEER ON CONSTRUCTION THAT THEIR USE IS ESSENTIAL. IN GENERAL, SURFACE DITCHES WILL BE REQUIRED WHERE THE SLOPE OF THE NATURAL GROUND AT THE TOP OF THE CUT DRAINS TOWARDS THE ROADWAY AND THE MATERIAL IN THE BACK SLOPE IS SUBJECT TO EROSION. SURFACE DITCHES ARE TO BE PROTECTED AS SHOWN ON THE PLANS.

CONSTRUCTION DETAILS

BERM DITCHES
SIDE DITCHES
SURFACE DITCHES

REV. & REDR. JULY, 1980

NO SCALE

D-7

FORM EF3

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

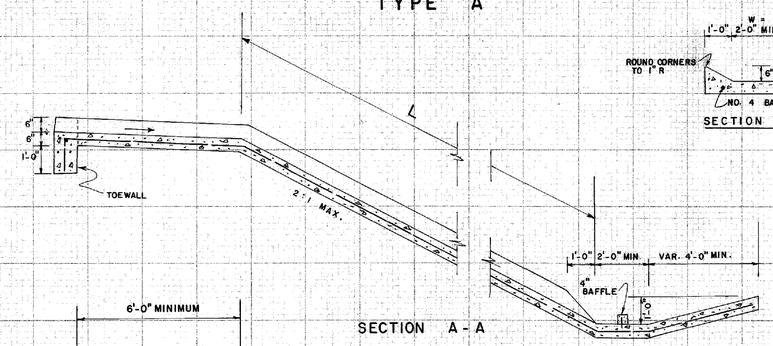
CONSTRUCTION DETAILS

DRAWING No. 40-001

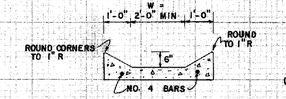
3/1/2007 GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

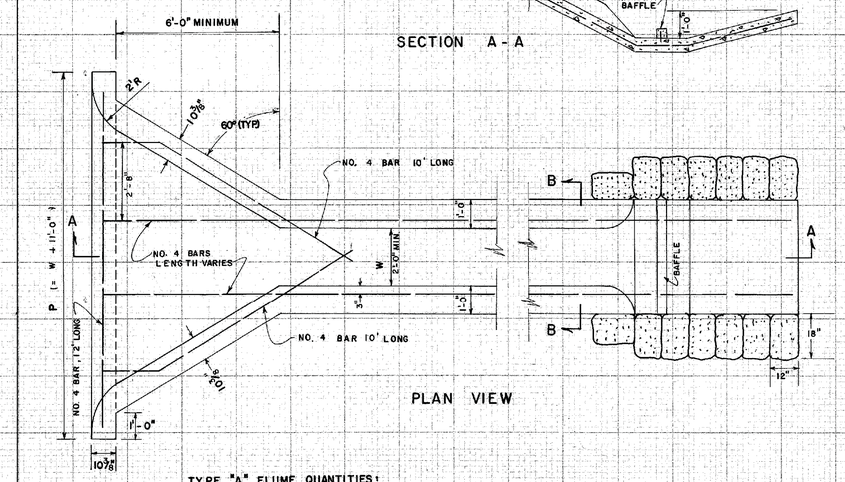
TYPE "A"



SECTION A-A



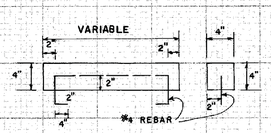
SECTION B-B



PLAN VIEW

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.



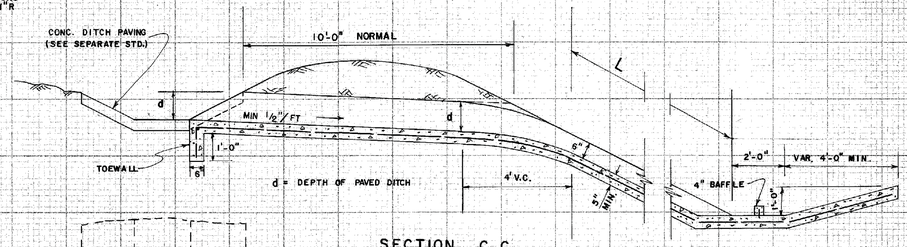
DETAILS OF 4" CONCRETE BAFFLE

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:

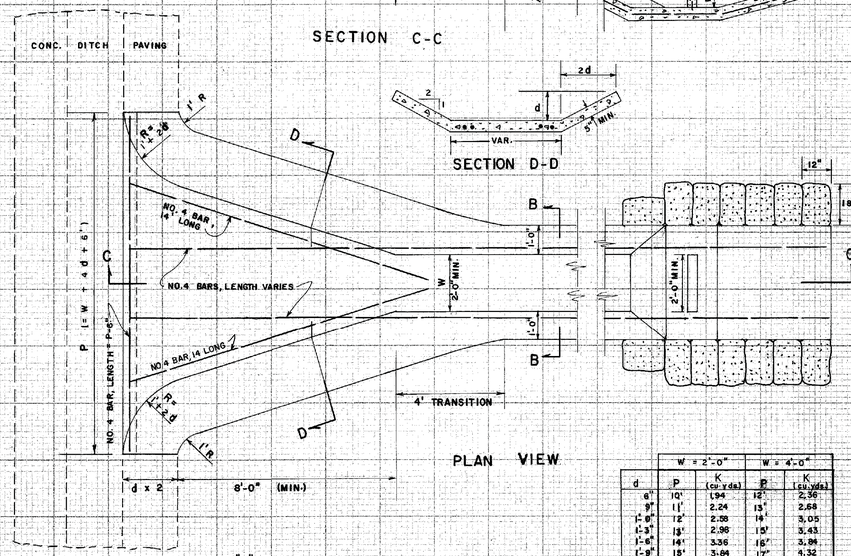
CLASS B CONCRETE	___ CU.YD.
BAR REINFORCEMENT STEEL	___ LB.
SAND CEMENT BAG RIP RAP, 6 IN OR 8 IN.	___ SQ.YDS.

TYPE "B"



SECTION C-C

SECTION D-D



PLAN VIEW

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 = 35 + 0.667 (P) + 1.336 (L)
SAND CEMENT BAG RIP RAP: 14 BAGS x 0.1667 SQ.YDS./BAG = 2.333 SQ.YDS.

d	W = 2'-0" P	W = 2'-0" K (cu.yds)	W = 4'-0" P	W = 4'-0" K (cu.yds)
6"	10'	1.94	12'	2.56
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)

CONCRETE FLUMES TYPES "A" & "B"

NO SCALE REV. & REDR. OCT. 1983

D-9

FORM EF3

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
CONSTRUCTION DETAILS

DRAWING NO. 40-002

3/1/2007 GPLN

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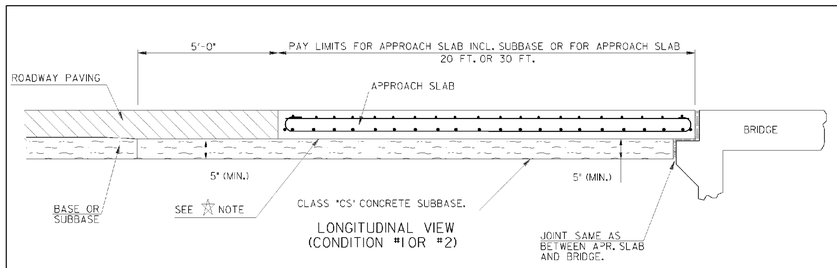
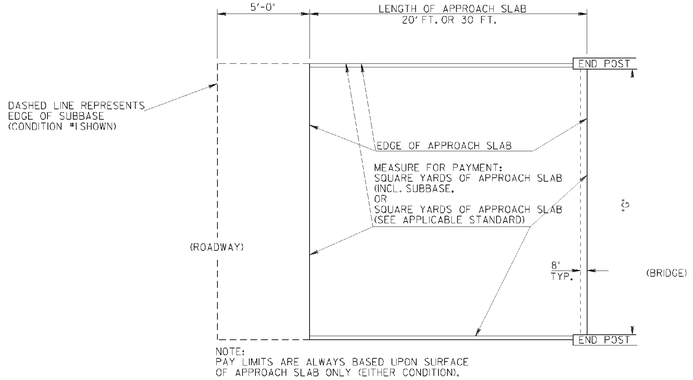


LONGITUDINAL VIEW
(CONDITION #1 OR #2)



NOTE:
PAY LIMITS ARE ALWAYS BASED UPON SURFACE OF APPROACH SLAB ONLY (EITHER CONDITION).

PLAN VIEW

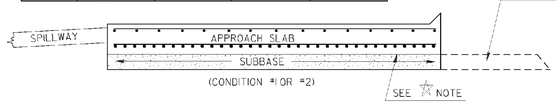
"L"	⊗ CUBIC YARDS OF SUBBASE FOR APPROACH SLAB			
	STD. 9017K	STD. 9017L	STD. 9017P	STD. 9017Q
28'-0"	15.63	11.08		
29'-6"			16.47	11.67
30'-0"				
31'6"			17.54	12.43
32'-0"	17.75	12.58		
33'-6"			18.60	13.18
34'-0"				
35'-6"			19.67	13.94
36'-0"	19.87	14.08		
37'-6"			20.74	14.70
38'-0"				
39'-6"			21.81	15.46
40'-0"	21.99	15.59		
41'-6"			22.88	16.21
42'-0"	23.05	16.34		
43'-6'			23.94	16.97
44'-0"				
45'-6"			25.01	17.73
46'-0"		17.84		
47'-6"			26.08	
48'-0"	26.23	18.59		
49'-6"			27.15	
50'-0"				
51'-6"			28.22	
52'-0"	28.35			
53'-6"			29.29	
54'-0"				
55'-6"			30.35	
56'-0"				
57'-6"			31.42	
58'-0"	31.53			
59'-6"			32.49	
60'-0"	32.59			
61'-6"			35.56	
62'-0"	33.65			
63'-6"			34.63	
64'-0"	34.71			
65'-6"			35.70	
66'-0"	35.77			

⊗ QUANTITES GIVEN IN THE TABLE ARE BASED UPON MINIMUM DIMENSIONS AND ARE GIVEN FOR INFORMATION ONLY.

CUBIC YARDS OF SUBBASE FOR USE WITH STD. 9017M, STD. 9017N OR FOR USE WITH SLAB SIZES NOT GIVEN IN TABLE, MAY BE ESTIMATED WITH THE FOLLOWING FORMULAE:

FOR 30' APPROACH SLABS:
CU. YARDS = 0.5298 TIMES SLAB WIDTH (IN FEET)

FOR 20' APPROACH SLABS:
CUBIC YARDS = 0.3755 TIMES SLAB WIDTH (IN FEET)

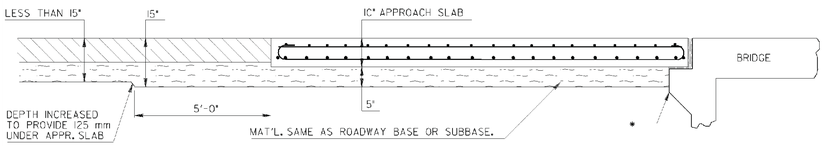


CROSS SECTIONAL VIEW

IF MAT'L. UNDER APPROACH SLAB IS FLEXIBLE ENOUGH TO ALLOW DRIVING OF GUARDRAIL POST, THE LIMITS SHALL BE EXTENDED SIMILARLY TO THAT ON THE ROADWAY.

☆ NOTE:
IF "CS" CONCRETE OR P.C. CONC. SUBBASE IS USED, CLEAR POLYETHYLENE SHEETING 8 MILS. MIN. THICKNESS, WITH A 6" OVERLAP, UNIFORMALLY LAYED, SHALL BE REQUIRED UNDER THE APPROACH SLAB TO PREVENT BONDING. POLYETHYLENE SHEETING SHALL BE NEW, UNUSED AND FREE OF HOLES, RIPS AND TEARS.

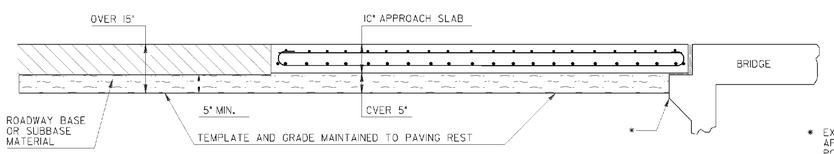
NOTE: SUBBASE SHOWN ABOVE FOR APPROACH SLAB WITH SPILLWAY ON ONE SIDE AND SLOPED EDGE ON OTHER SIDE. SUBBASE DETAILS SIMILAR FOR APPROACH SLAB WITH TRANSITION CURB OR OTHER DRAINAGE STRUCTURES.



LONGITUDINAL VIEW
(CONDITION #2)

CONDITION #1:
WHERE THE CONTRACT FOR THE BRIDGE AND APPROACH SLABS IS LET SEPARATE FROM THE ROADWAY PAVING CONTRACT, THE SUBBASE FOR THE APPROACH SLAB WILL BE CLASS "CS" CONCRETE ACCORDING TO SECTION 500. IN THIS CASE, PAYMENT FOR THE SUBBASE WILL BE INCLUDED IN THE PAYMENT FOR THE APPROACH SLAB.

CONDITION #2:
WHERE THE ROADWAY PAVING AND THE BRIDGE ARE LET UNDER THE SAME CONTRACT, THE APPROACH SLAB SUBBASE MAY BE EITHER CLASS "CS" CONCRETE OR MAY BE THE SAME MATERIAL AS REQUIRED FOR THE ROADWAY BASE OR SUBBASE SUCH AS GRADED AGGREGATE, P.C. CONC. SUBBASE, ETC. IN THIS CASE, PAYMENT FOR THE SUBBASE WILL BE INCLUDED IN THE PAYMENT FOR THE APPROACH SLAB.



LONGITUDINAL VIEW
(CONDITION #2)

* EXPANSION JOINT REQ'D. SAME AS BETWEEN APPROACH SLAB & BRIDGE, IF SUBBASE IS PORTLANT CEMENT CONCRETE OR CLASS "CS" CONCRETE.

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

3-28-06	6-14-88	DATE
REVISED NOTES	PAY ITEM - COND. #2	REVISION
G.L.O.		BY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAIL

SUBBASES FOR APPROACH SLABS

NO SCALE — REV. & REDRAWN OCT. 1985

NUMBER M-2

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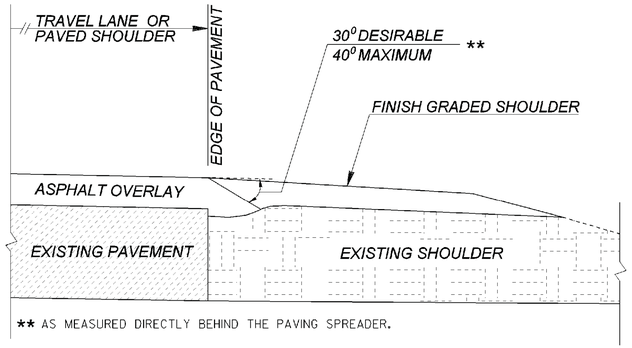
REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
CONSTRUCTION DETAILS

DRAWING No. 40-003

3/1/2007 GPLN

ASPHALT PAVEMENT - OVERLAY



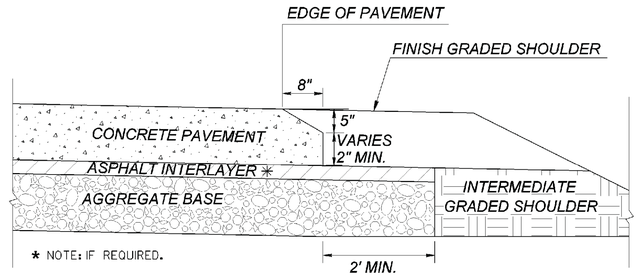
** AS MEASURED DIRECTLY BEHIND THE PAVING SPREADER.

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

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

PLAIN PC CONCRETE PAVEMENT OR ROLLER COMPACTED CONCRETE PAVEMENT



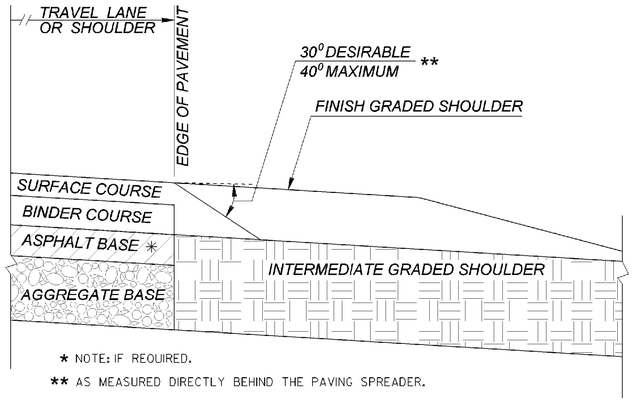
* NOTE: IF REQUIRED.

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.

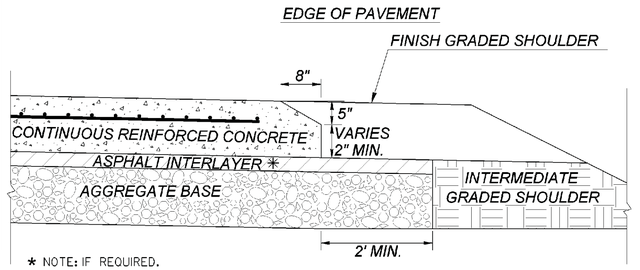
ADDITIONAL QUANTITIES:
SURFACE COURSE PAVING DEPTH (T)
$(T)^2$ (IN.) X 0.000441 TN/IN.-FT X LENGTH (FT) = _____TN

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	REVISED ANGLE TOLERANCE & ADDED NOTE.	11-5-14 DATE
BY	DES. B.A.S. DRW. G.J.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

11/17/2014 2:02:21 PM \\GDOT-DSKTOPFLOT\P23\GG_K196009.plt tecx W:\IPC\Roadway P-7\P-7.prt

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
CONSTRUCTION DETAILS

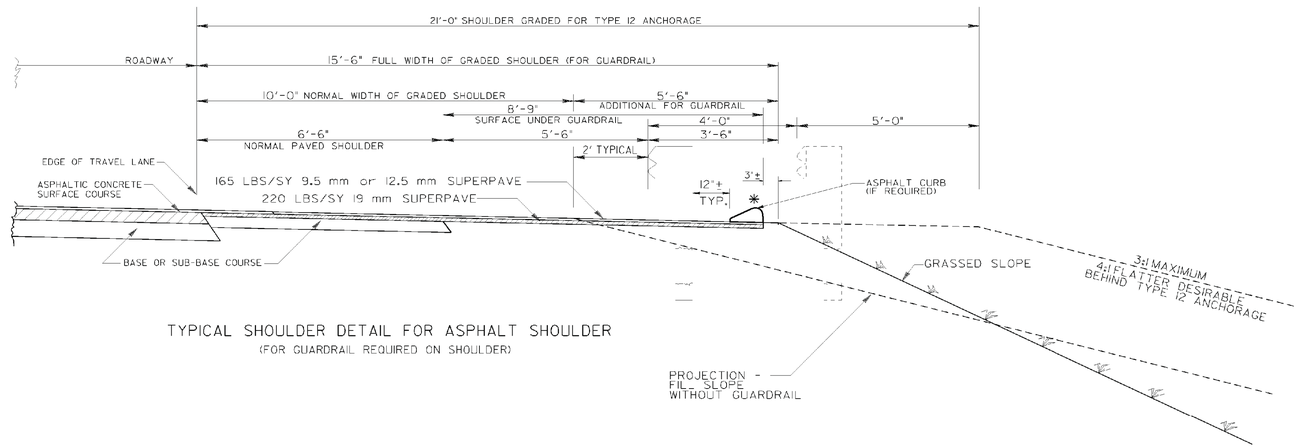
DRAWING No. 40-004

3/1/2007 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	188	267

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



TYPICAL SHOULDER DETAIL FOR ASPHALT SHOULDER
(FOR GUARDRAIL REQUIRED ON SHOULDER)

* ASPHALT CONCRETE CURB PER SECTION 436 SHALL BE REQUIRED WHERE SPECIFIED. TYPICAL USE FOR EROSION PREVENTION OF HIGH FILL SLOPES, WHERE SPILLWAYS ARE REQUIRED. ASPHALT CONCRETE CURB SHALL NOT BE USED WITHIN THE LIMITS OF THE TYPE 12 ANCHORAGE.

PROPOSED SHOULDER PAVING AND SURFACING UNDER GUARDRAIL
4 Lane Roadways
Other Than
Interstates & Freeways

RE-DRAWN 9-30-02
Sheet 1 of 2
S-4

SHOWDATETIME$$$$$$
DGN$SPECIFICATION$$$$$$$$$$$$$$$$$$$$$$

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
CONSTRUCTION DETAILS

DRAWING No.
40-005

3/1/2007 GPLN

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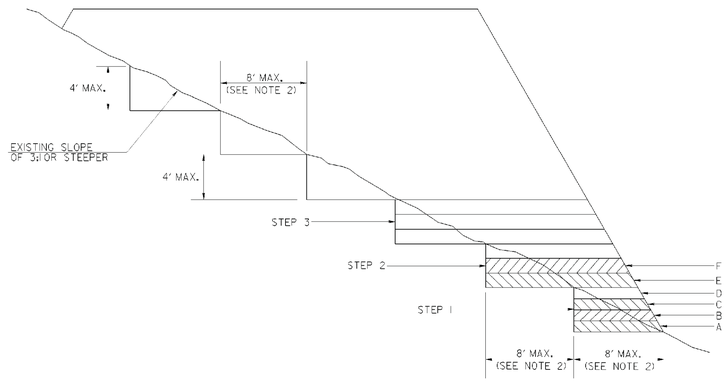
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

BENCHING DETAIL



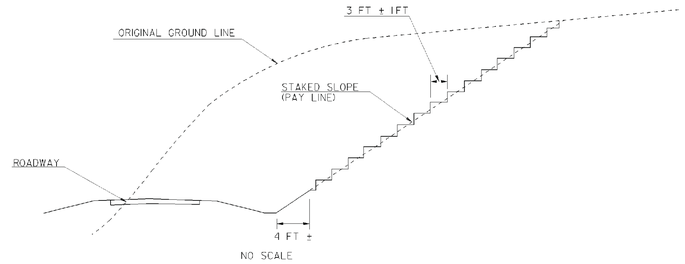
NOTES :

1. WHERE THE EMBANKMENT IS TO BE PLACED ON A HILLSIDE OR ANOTHER EXISTING EMBANKMENT HAVING A SLOPE OF 3 TO 1 OR STEEPER, THE FOUNDATION MUST BE BENCHED WHILE THE EMBANKMENT IS BEING MADE.(SEE DIAGRAM ABOVE)

2. THE DIAGRAM SHOWS THAT BEFORE LAYER 'A' IS PLACED THE FIRST STEP (I) IS CUT INTO THE SLOPE A MAXIMUM DISTANCE OF ABOUT 8 FEET (ABOUT ¾ THE WIDTH OF THE TYPICIAL D-8 BULLDOZER BLADE). SUCCESSIVE LAYERS B, C, AND D ARE THEN PLACED BEFORE LAYER 'E' IS PLACED. THE SECOND STEP IS CUT 8 FEET INTO THE SLOPE AND SUCCESSIVE LAYERS ARE AGAIN PLACED. IF IT IS ANTICIPATED THAT THE VERTICAL PART OF THE STEP WILL EXCEED 4 FEET IF A 8 FEET HORIZONTAL CUT IS MADE, THEN THE ACTUAL CUT STOPS WHEN THE VERTICAL PART REACHES A MAXIMUM OF 4 FEET ALLOWING THE HORIZONTAL DISTANCE TO VARY.

3. THE PROCESS OF BENCHING IS CONSIDERED INCIDENTAL TO THE ITEM OF UNCLASSIFIED EXCAVATION AND BORROW OR GRADING COMPLETE IN CONSTRUCTION OF THE EMBANKMENT AND NO ADDITIONAL MEASUREMENT OF QUANTITY OR PAYMENT WILL BE MADE FOR BENCHING.

SERRATED SLOPE DETAIL



NO SCALE

NOTES :

1. SLOPES STEEPER THAN 3:1 SHALL BE SERRATED.

2. WIDTH OF STEP SHALL BE 3 FT \ 1FT.

3. HEIGHT OF STEP IS A FUNCTION OF WIDTH AND STAKED SLOPE.

4. TREAD OF STEP SHALL BE APPROXIMATELY HORIZONTAL.

5. SERRATED SLOPES SHALL BE USED ON ALL PROJECTS IN DISTRICTS 1, 6, AND 7, EXCEPT WHERE SPECIFICALLY EXCEPTED BY THE GEOTECHNICAL BUREAU IN THE SOIL SURVEY REPORT. SERRATED SLOPES SHALL NOT BE USED IN DISTRICTS 2, 3, 4, AND 5, UNLESS REQUIRED BY THE SOIL SURVEY.

BY	REVISION	DATE
C.L.D.	REVISED BENCHING DETAIL &	6-18-09
R.M.U.	REVISED TITLE BLOCK.	
	GEN. REVISION	1-28-82

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAIL

SERRATED SLOPE DETAIL
BENCHING DETAIL

NO SCALE — JULY, 1981

NUMBER S-7

6/18/2008 1:28:27 PM \\GDOT-DSNTGGPLOT\GEF\35_11FF_output.cet pltname Y:\GARY\REVISED S-7\S-7.prt

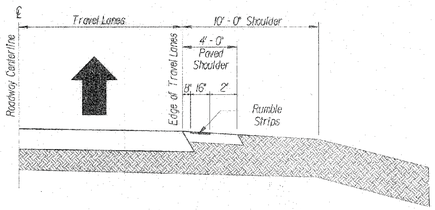
3/1/2007 GPLN

REVISION DATES

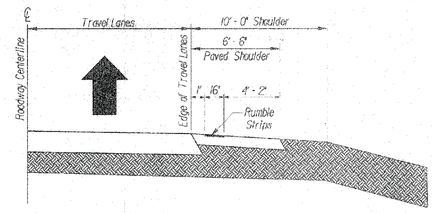
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
CONSTRUCTION DETAILS

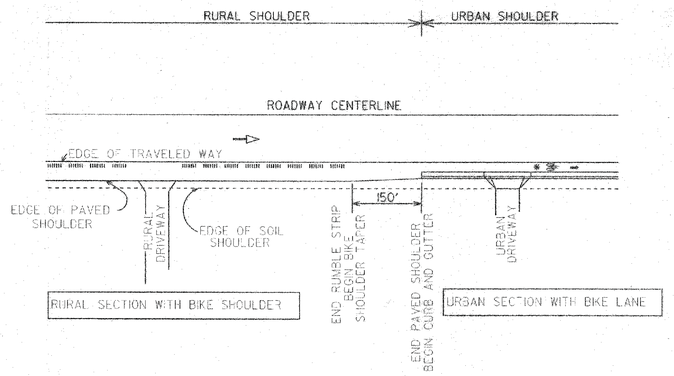
DRAWING No. 40-006

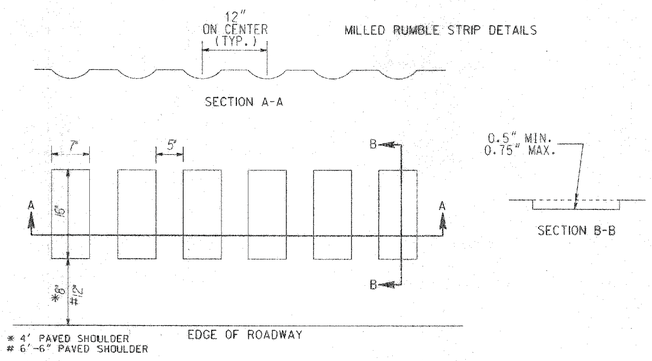
4' PAVED SHOULDER WITH 16" MILLED RUMBLE STRIPS



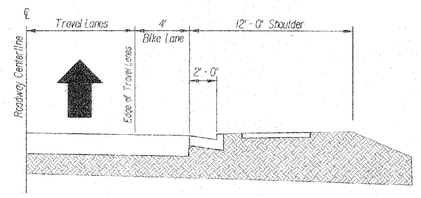
6'-6" PAVED SHOULDER WITH 16" MILLED RUMBLE STRIPS



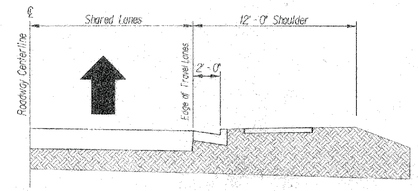




4' Urban Bike Lane

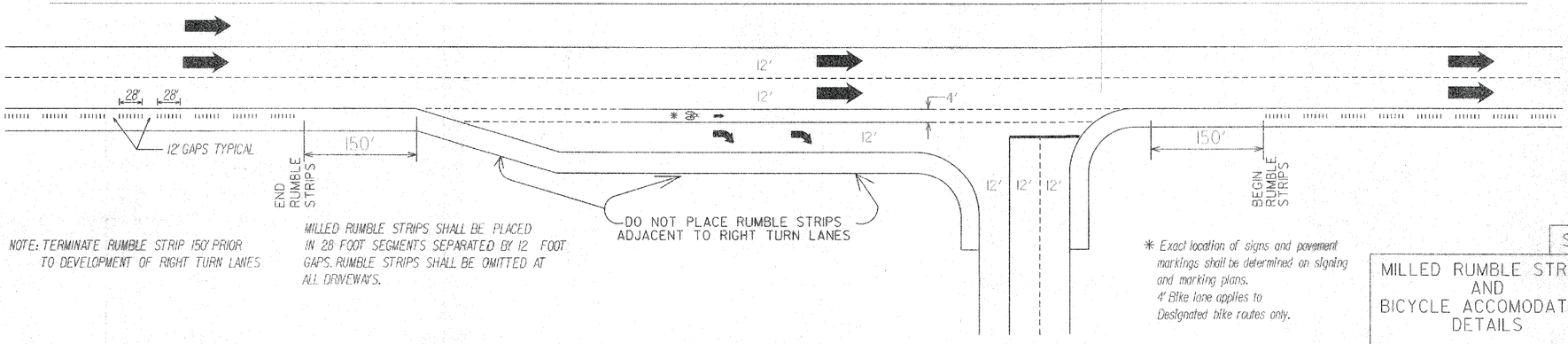


Shared Lane



Note: Outside lane width should be 12' minimum, 14' desirable.

ROADWAY CENTERLINE



NOTE: TERMINATE RUMBLE STRIP 150' PRIOR TO DEVELOPMENT OF RIGHT TURN LANES.

MILLED RUMBLE STRIPS SHALL BE PLACED IN 28 FOOT SEGMENTS SEPARATED BY 12 FOOT GAPS. RUMBLE STRIPS SHALL BE OMITTED AT ALL DRIVEWAYS.

* Exact location of signs and pavement markings shall be determined on signing and marking plans.
4' Bike lane applies to Designated bike routes only.

S-8

MILLED RUMBLE STRIPS AND BICYCLE ACCOMODATION DETAILS

MAR. 2, 2001

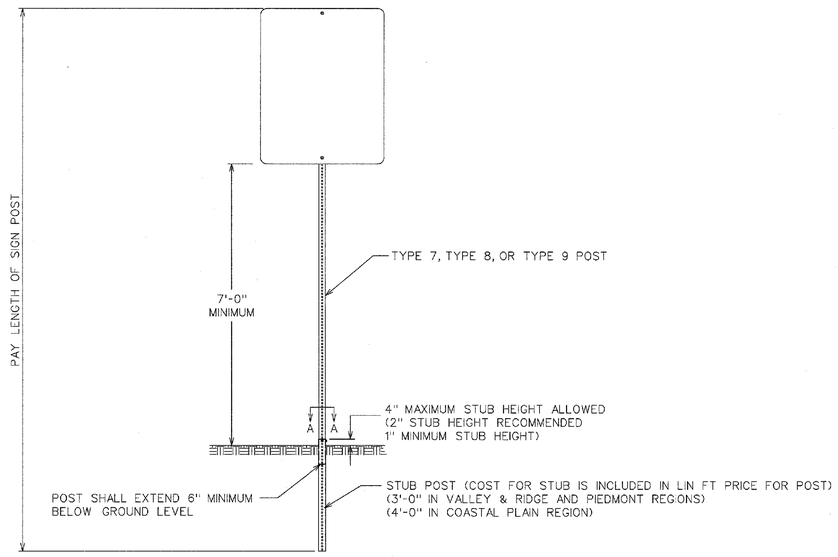
REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
CONSTRUCTION DETAILS

DRAWING No. 40-007

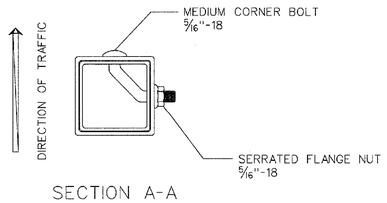
3/1/2007 GPLN

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

	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.		
Sign Centroid	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 CONTINUOUS 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

Construction dgn Jan 21, 2003 16:01:11

MCB2/18

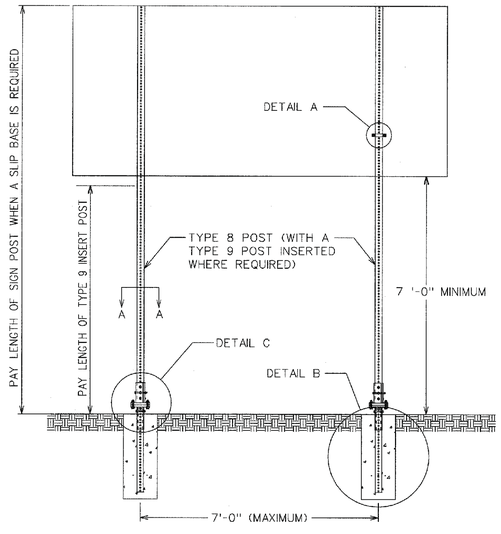
3/1/2007 GPLN

REVISION DATES

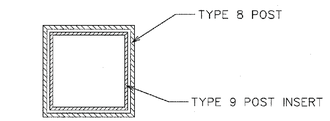
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
CONSTRUCTION DETAILS

DRAWING No. 40-008

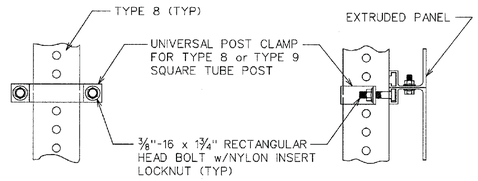
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



BACK VIEW

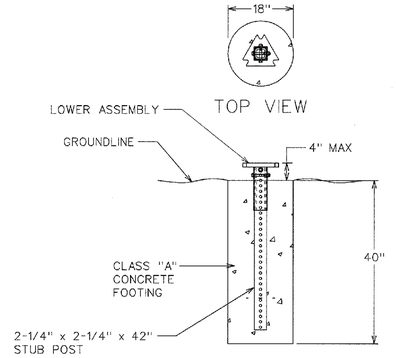


SECTION A-A



BACK VIEW SIDE VIEW

DETAIL A



DETAIL B

GROUND MOUNTED BREAKAWAY SIGN SUPPORT

SIGN POST SELECTION CHART

70MPH Wind Load Chart - 15% Gust Factor

	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.		
Sign Centroid	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

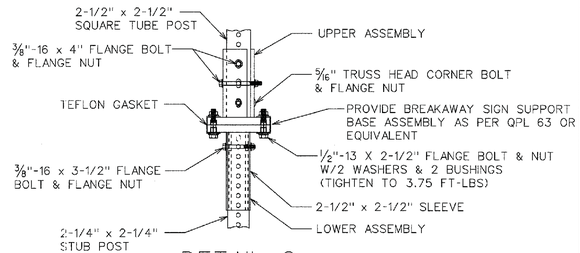
SIGN CENTROID IS DISTANCE FROM GROUND LEVEL TO BOTTOM OF SIGN *PLUS* HALF THE HEIGHT OF SIGN.
EXAMPLE: 24" X 48" SIGN THAT IS 7 FEET FROM GROUND TO BOTTOM OF SIGN. ADD HALF OF 48" (24" OR 2 FT) *PLUS* 7 FT. = 9' CENTROID.

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.

TOP VIEW



DETAIL C

(CONCRETE NOT SHOWN)

DATE	REVISIONS

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY & DESIGN

DETAILS OF
SQUARE TUBE POST
(BREAKAWAY SIGN SUPPORT)

NO SCALE July 2002

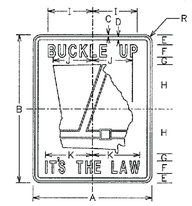
T-3B

PCDOT6

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	193	267

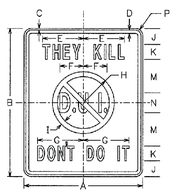
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



R560-1

SIGN	DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	I	J	K	R
MIN & STD	30	36	1/2	3/4	2 1/2	3C	1 1/2	11	8 1/2	10	11	1 7/8
FWY	48	60	3/4	1 1/4	4	5C	3	18	15 1/2	16	18	3

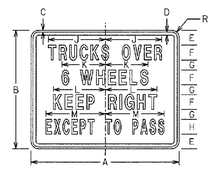
COLORS
STATE SHIELD & BORDER – RED (REFL)
LEGEND & BELT – BLACK (NON-REFL)
BACKGROUND – WHITE (REFL)



R560-2

SIGN	DIMENSIONS (INCHES)														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P
MIN & STD	30	36	3/4	1 1/4	11	5	12 1/2	7 1/2	1 1/4	4	4C	3	4 1/2	5C	1 7/8
FWY	48	60	3/4	1 1/4	16 1/2	9 1/2	18 1/2	12 1/2	2	6 1/2	6C	5	8 1/2	8C	3

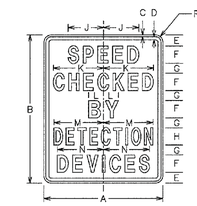
COLORS
CIRCLE & DIAGONAL – RED (REFL)
LEGEND & BORDER – BLACK (NON-REFL)
BACKGROUND – WHITE (REFL)



R560-3

SIGN	DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	L	M	R
MIN & STD	36	30	1/2	3/4	3 1/2	3 1/2	3	3 1/2	8	14	10	11 1/2	4 1/2	1 7/8
FWY	60	48	3/4	1 1/4	6	6C	4	6B	23	17 1/2	21	24	3

COLORS
LEGEND & BORDER – BLACK (NON-REFL)
BACKGROUND – WHITE (REFL)



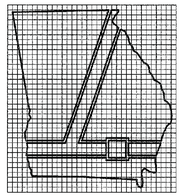
I550-1

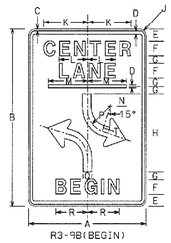
SIGN	DIMENSIONS (INCHES)														
	A	B	C	D	E	F	G	H	J	K	L	M	N	R	
MIN & STD	30	36	1/2	3/4	4	4D	2	4C	6 5/16	11 5/8	3 1/8	11 1/16	10 5/8	1 1/8	
FWY	48	60	3/4	1 1/4	4 1/2	7D	4	7C	14 5/8	20 5/8	6	20	18 5/8	3	

COLORS
LEGEND & BORDER – BLACK (NON-REFL)
BACKGROUND – WHITE (REFL)

THE I550-1 SIGN SHALL BE ERECTED:

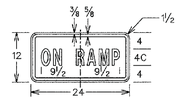
1. ON EVERY HIGHWAY THAT COMPRISES A PART OF THE STATE HIGHWAY SYSTEM AT THAT POINT ON THE HIGHWAY WHICH INTERSECTS THE STATE LINE.
2. AT THE TERMINI OF EVERY HIGHWAY THAT COMPRISES A PART OF THE STATE HIGHWAY SYSTEM WHICH BEGINS OR ENDS WITHIN THE STATE BOUNDARIES.
3. ON EVERY HIGHWAY THAT COMPRISES A PART OF THE STATE HIGHWAY SYSTEM AT THAT POINT ON THE HIGHWAY WHERE TRAFFIC FROM OUTSIDE THE COUNTY FIRST ENTERS A COUNTY THAT HAS A PERMIT TO OPERATE SPEED DETERCTION DEVICES, AND
4. ON EVERY HIGHWAY THAT COMPRISES A PART OF THE STATE HIGHWAY SYSTEM AT THAT POINT ON THE HIGHWAY WHERE TRAFFIC FIRST ENTERS THE CORPORATE LIMITS OF ANY MUNICIPALITY THAT HAS A PERMIT TO OPERATE SPEED DETECTION DEVICES.





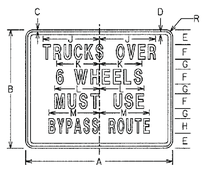
R3-9B(BEGIN)

R3-9B(END)

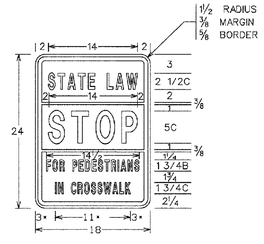


R8-3aP

COLORS
LEGEND & BORDER – RED (REFL)
BACKGROUND – WHITE (REFL)



R560-4



R560-5

COLORS
LEGEND & BORDER–BLACK (NON-REFL)
WORD "STOP" –RED (REFL)
BACKGROUND –WHITE (REFL)

SIGN	DIMENSIONS (INCHES)																
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
STD & MIN	24	36	3/8	5/8	2 1/2	3E	1 1/2	16	1 1/2	8 1/16	5 3/16	8	2 1/2	6	2	6 5/16	4 3/16	1 1/2
SPECIAL	36	48	5/8	7/8	3 1/2	5E	1 1/2	20	2 1/2	14 1/16	9 1/2	12	3	8	3	7 11/16	4 15/16	2

COLORS
LEGEND & BORDER – BLACK (NON-REFL)
BACKGROUND –WHITE (REFL)

SIGN	DIMENSIONS (INCHES)												
	A	B	C	D	E	F	G	H	J	K	L	M	R
MIN & STD	36	30	1/2	3/4	3 1/2	3 1/2	3	3 1/2	8	14	10	12 1/2	1 7/8
FWY	60	48	3/4	1 1/4	6	6C	4	6C	23	17 1/2	17 1/2	25 1/2	3

COLORS
LEGEND & BORDER – BLACK (NON-REFL)
BACKGROUND –WHITE (REFL)

DATE	REVISIONS
5-24-00	ADDED R9-8 DETAIL
1-21-03	DELETED R1-4 SIGNS
1-21-03	REV SIGN CODES FOR R3-9 SIGNS

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY & DESIGN

DETAILS OF
REGULATORY SIGNS
SHEET 1 OF 2

NO SCALE JANUARY 2000

T-5A

PC0073

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REVISION DATES		

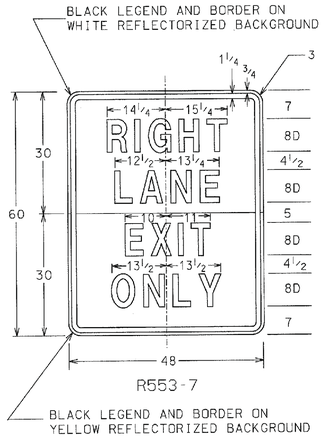
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION DETAILS

DRAWING No. 40-010

3//2007 GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

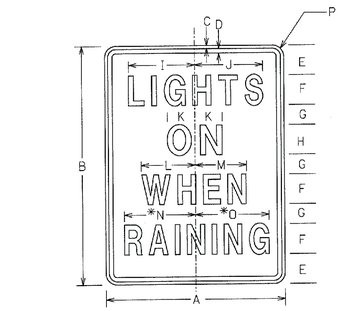


R553-7

R553-1

* REDUCE SPACING 20%

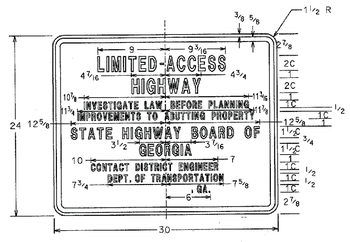
SIGN	DIMENSIONS (INCHES)																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	R	S	T	U	V	W
STD & MIN	24	30	3/8	5/8	3 1/2	2B	4C	3 1/2	4C	2	3	1 1/2	10	10 1/2	10 1/4	10 3/4	10 1/8	9 3/8	9 1/2
EXPWY	36	48	3/8	7/8	6	3B	6C	6	6C	3	6	2 1/4	15	15 3/8	15 3/8	16 7/8	15 3/8	14 1/16	14 1/4
FWY	48	60	3/4	1 1/4	7	4B	7C	8	8C	4	6	3	20	21	20 1/2	21 1/2	20 1/4	18 3/4	19



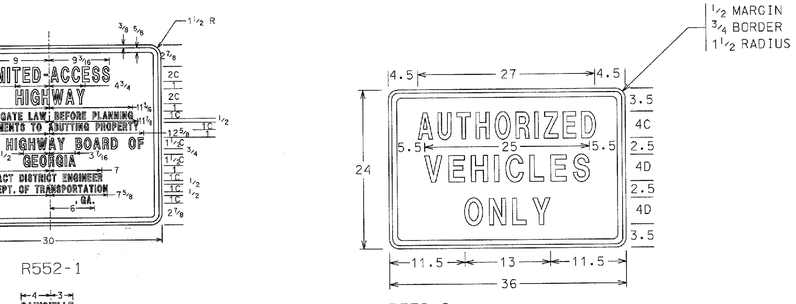
R554-1

* REDUCE SPACING 30%

SIGN	DIMENSIONS (INCHES)													
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
STD & MIN	24	30	3/8	5/8	3 5/8	4D	2 1/4	4E	8 3/4	9 1/4	4	6 3/4	7 1/4	9 1/4	9 3/4	1 1/2
EXPWY	36	48	5/8	7/8	6	6D	4	6E	13 1/4	13 7/8	5 1/2	10 3/4	10 1/4	14 1/4	14 3/8	2 1/4
FWY	48	60	3/4	1 1/4	7 1/4	8D	4 1/2	8E	17 1/8	17 7/8	7	14 3/8	13 5/8	18 3/8	19 3/8	3



R552-1



R552-2

DATE	REVISIONS

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY & DESIGN

DETAILS OF
REGULATORY SIGNS
SHEET 2 OF 2

NO SCALE JANUARY 2000

T-5B

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

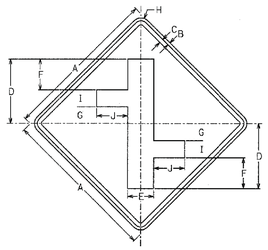
CONSTRUCTION DETAILS

DRAWING No. 40-011

RELEASED FOR CONSTRUCTION 10-31-2014

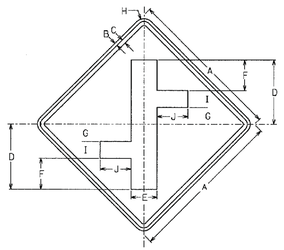
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	195	267

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



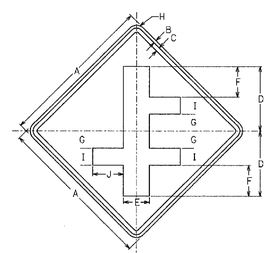
W552-1

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



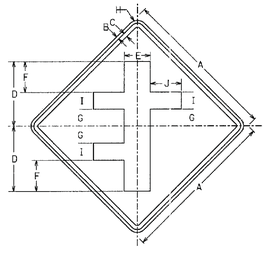
W552-2

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



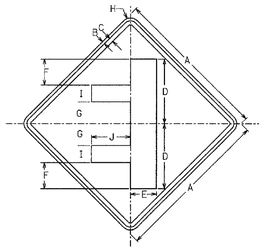
W552-3

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



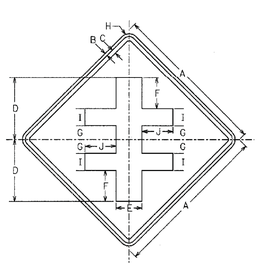
W552-4

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



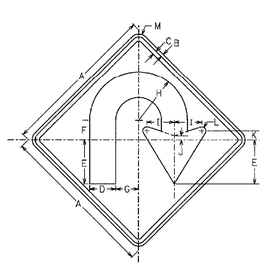
W552-5

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



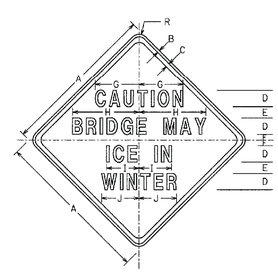
W552-6

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



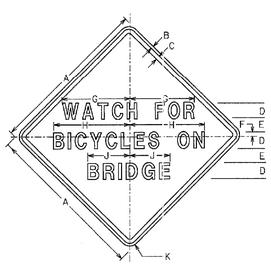
W551-1

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 5/16	15/16	2 1/4
FWY	48	7/8	1 1/4	8	13 1/2	6	7	15	8 1/16	1 1/4	2 3/4	1 1/4	3



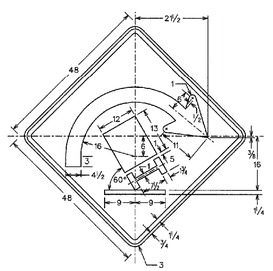
W560-1

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

T-5C

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

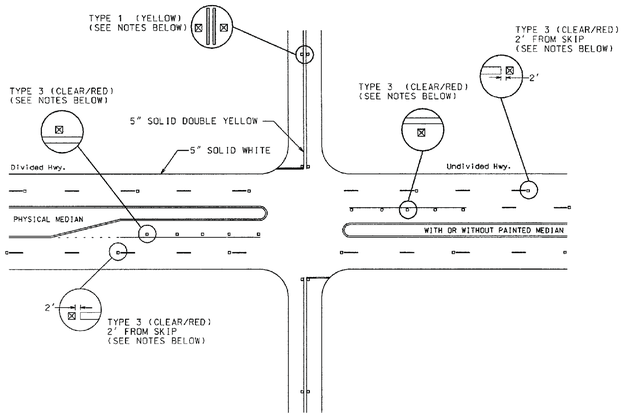
CONSTRUCTION DETAILS

DRAWING No. 40-012

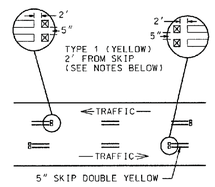
3/1/2007 GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	196	267

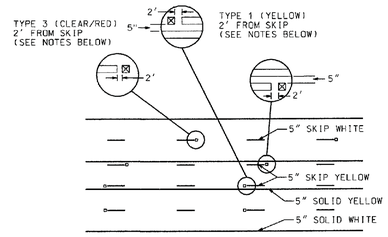
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



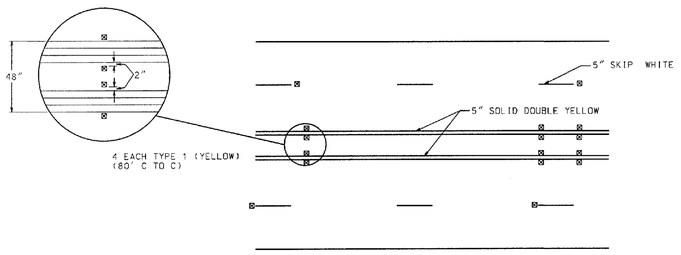
DIVIDED / UNDIVIDED HIGHWAY



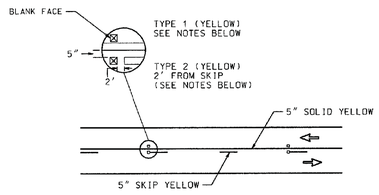
REVERSIBLE LANE



TWO WAY LEFT TURN LANE



4'-0" STRIPED FLUSH MEDIAN



NO PASSING ZONE

GENERAL NOTES:

1. RAISED PAVEMENT MARKERS SHALL BE SPACED EVERY 80 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.
5. ON HORIZONTAL CURVES WHERE AT LEAST 3 MARKERS CANNOT BE SEEN AT ONE TIME USING NORMAL SPACING, MARKERS SHALL BE PLACED 40 FT.

DATE	REVISIONS
9-4-03	NO PASSING ZONE RPM's
1-13-04	NO PASSING ZONE RPM's

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY & DESIGN

DETAILS OF
RAISED PAVEMENT MARKER LOCATION
NON-LIMITED ACCESS ROADWAY

NO SCALE JANUARY 2000

T-15A

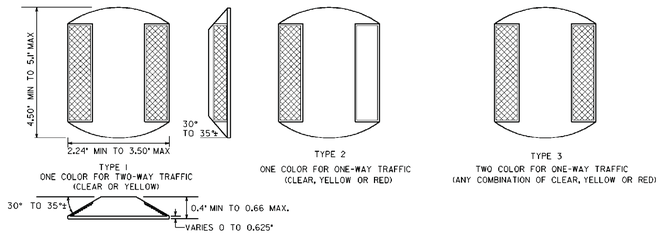
REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
CONSTRUCTION DETAILS

DRAWING No.
40-013

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

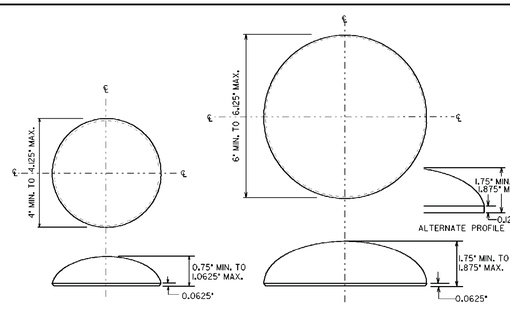
RAISED REFLECTIVE MARKERS



TYPE 1
ONE COLOR FOR TWO-WAY TRAFFIC
(CLEAR OR YELLOW)

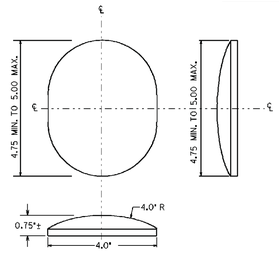
TYPE 2
ONE COLOR FOR ONE-WAY TRAFFIC
(CLEAR, YELLOW OR RED)

TYPE 3
TWO COLOR FOR ONE-WAY TRAFFIC
(ANY COMBINATION OF CLEAR, YELLOW OR RED)

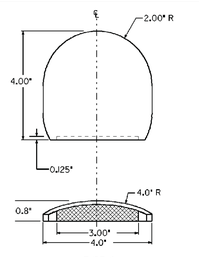


TYPE 4
OPAQUE CERAMIC MARKER
(WHITE, YELLOW OR BLACK)

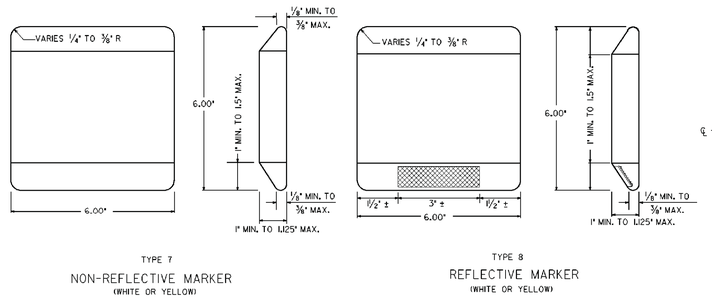
TYPE 4
OPAQUE CERAMIC MARKER
(WHITE, YELLOW OR BLACK)



TYPE 5
OVAL CERAMIC MARKER
(NON-REFLECTIVE WHITE, YELLOW OR BLACK)



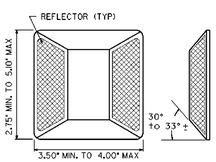
TYPE 6
REFLECTIVE CERAMIC MARKER
(REFLECTIVE WHITE, YELLOW OR BLACK)



TYPE 7
NON-REFLECTIVE MARKER
(WHITE OR YELLOW)

TYPE 8
REFLECTIVE MARKER
(WHITE OR YELLOW)

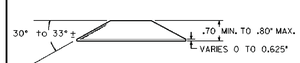
CERAMIC JIGGLE BAR MARKER



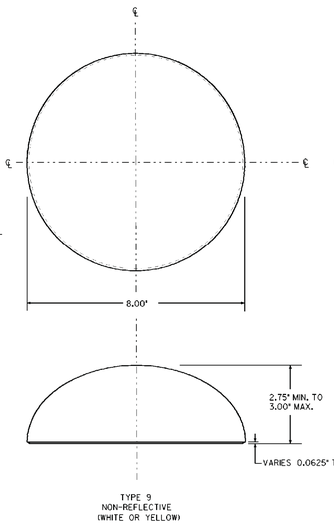
TYPE 11
ONE COLOR FOR TWO-WAY TRAFFIC
(CLEAR OR YELLOW)

TYPE 12
ONE COLOR FOR ONE-WAY TRAFFIC
(CLEAR, YELLOW, OR RED)

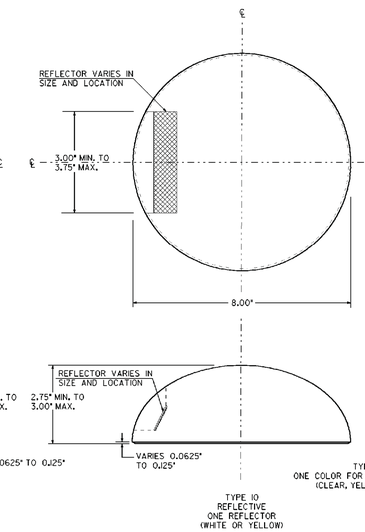
TYPE 13
TWO COLOR FOR ONE-WAY TRAFFIC
(ANY COMBINATION OF CLEAR, YELLOW, OR RED)



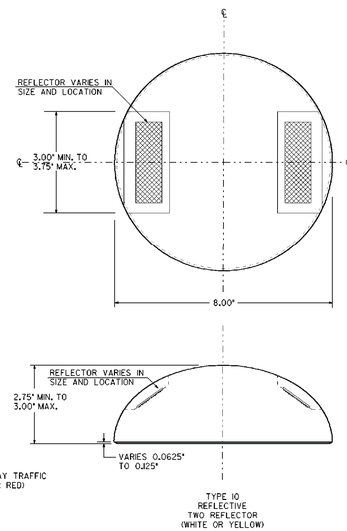
ALTERNATE RAISED REFLECTIVE MARKERS



TYPE 9
NON-REFLECTIVE
(WHITE OR YELLOW)



TYPE 10
REFLECTIVE
ONE REFLECTOR
(WHITE OR YELLOW)



TYPE 10
REFLECTIVE
TWO REFLECTOR
(WHITE OR YELLOW)

CERAMIC CHANNEL MARKER

TYPE 12
ONE COLOR FOR ONE-WAY TRAFFIC
(CLEAR, YELLOW, OR RED)

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

T-15C

REVISION DATES		

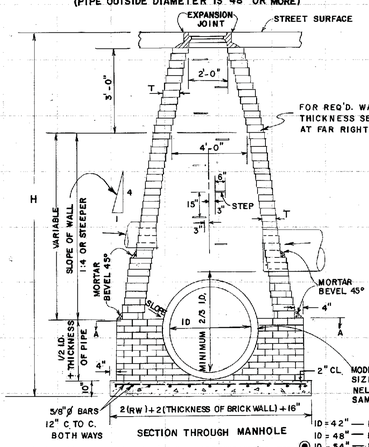
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION DETAILS

DRAWING No.
40-014

3/1/2007 GPLN

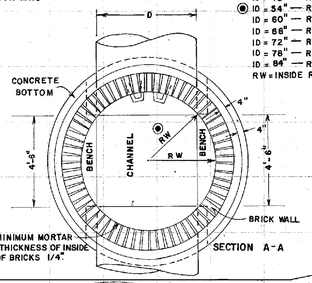
BRICK MANHOLE SECTION
(PIPE OUTSIDE DIAMETER IS 48" OR MORE)



SECTION THROUGH MANHOLE

- ID = 42" — RW = 2'-8"
- ID = 48" — RW = 3'-0"
- ID = 54" — RW = 3'-2"
- ID = 60" — RW = 3'-4"
- ID = 66" — RW = 3'-7"
- ID = 72" — RW = 3'-9"
- ID = 78" — RW = 3'-11"
- ID = 84" — RW = 4'-2"

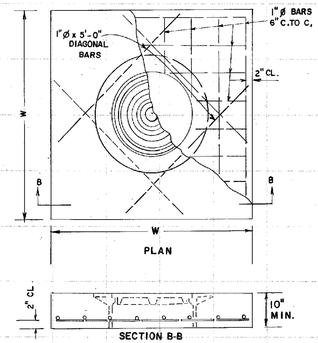
RW = INSIDE RADIUS OF WALL



NOTE: MINIMUM MORTAR JOINT THICKNESS OF INSIDE EDGE OF BRICKS 1/4"

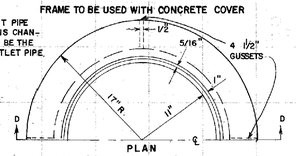
SECTION A-A

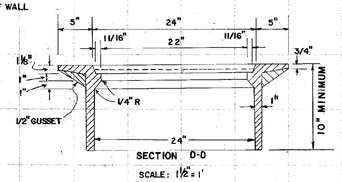
REINFORCED CONCRETE COVER



SECTION B-B

FRAME TO BE USED WITH CONCRETE COVER

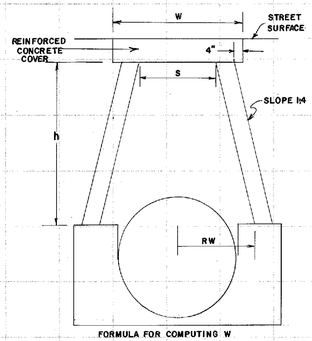




SECTION D-D

SCALE: 1½" = 1'

PLACEMENT FOR CONCRETE COVER



FORMULA FOR COMPUTING W
RW = INSIDE RADIUS OF WALL
S = 2RW − 1/2
W = S + 24"

NOTE: USE CONCRETE COVER WITH MANHOLE CASTINGS IF FILL FROM TOP OF PIPE TO FINISHED SURFACE IS LESS THAN:

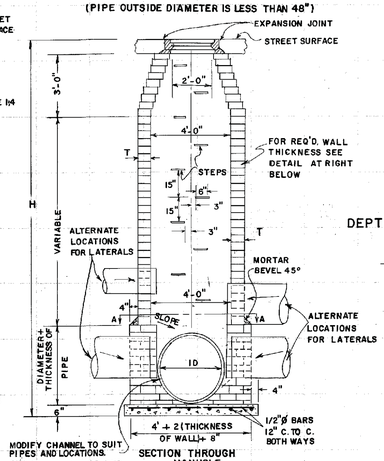
- 4'-6" FOR 42" PIPE
- 5'-0" FOR 48" PIPE
- 5'-6" FOR 54" PIPE
- 6'-0" FOR 60" PIPE
- 6'-6" FOR 66" PIPE
- 7'-0" FOR 72" PIPE
- 7'-6" FOR 78" PIPE
- 8'-0" FOR 84" PIPE

THICKNESS OF BRICK WALL
(SEE DETAIL AT FAR RIGHT)

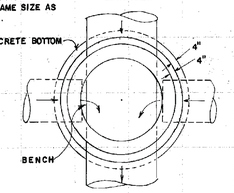
DEPTH	THICKNESS (T)
0' TO 10'	*8" MIN.
10' TO 20'	12" MIN.
20' TO 30'	16" MIN.

*FOR COMBINATION BRICK & PRECAST M.H. (SEE BELOW) ONLY 12" OR 16" BRICK WALL THICKNESS IS TO BE USED FOR BASE.

BRICK MANHOLE SECTION
(PIPE OUTSIDE DIAMETER IS LESS THAN 48")

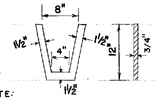


SECTION THROUGH MANHOLE



SECTION A-A

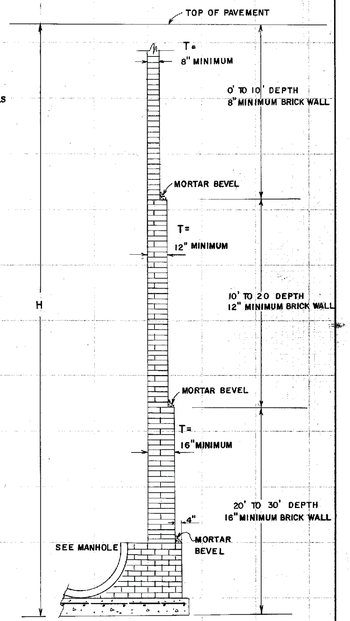
CAST IRON STEP



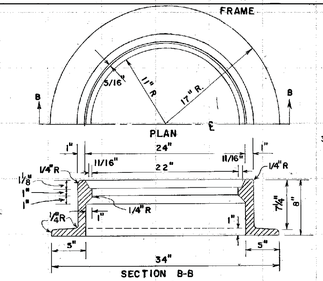
SCALE: 1½" = 1'

NOTE:
STEPS ARE REQUIRED IN ALL MANHOLES WHERE "H" IS GREATER THAN 4'-0" NUMBER AND LOCATION OF STEPS TO BE AS DIRECTED BY THE ENGINEER. PLASTIC OR RUBBER COATED STEPS LISTED IN THE GA. D.O.T. QUALIFIED PRODUCTS MANUAL MAY BE SUBSTITUTED.

DEPTH LIMITS FOR INCREASING WALL THICKNESS

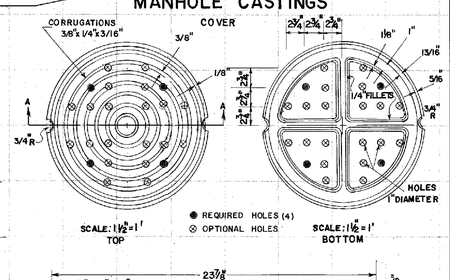


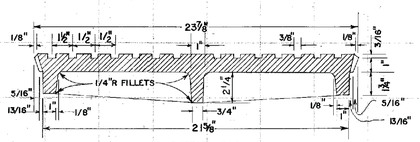
MANHOLE CASTINGS



SECTION B-B
SCALE: 1½" = 1"

APPROXIMATE WEIGHTS
C.I. FRAME 282 LBS.
C.I. COVER 178 LBS.





SECTION A-A
SCALE 3" = 1'

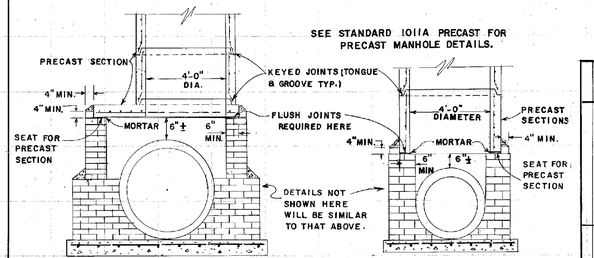
NOTE: COVER AND FRAME MUST BE FITTED BEFORE LEAVING SHOP. PAINT ACTUAL WEIGHT OF EACH CASTING ON ITS FACE.

MANHOLE FRAME & COVER SHOWN ON STD. 1011A PRECAST MAY BE USED AN ALTERNATE TO CASTINGS SHOWN HERE.

ALTERNATE - COMBINATION BRICK & PRECAST MANHOLES

NOTES FOR COMBINATION MANHOLE:
- BRICK PORTION OF MANHOLE WILL BE CONSTRUCTED WITH SEAT TO GIVE BEST POSSIBLE FIT FOR PRECAST UNIT. MINIMUM THICKNESS FOR BRICK WALL WILL BE 12" FOR H TO 20 FT. AND 16" FOR H=20FT. TO 30 FT.
- PRECAST UNIT WITHOUT TONGUE OR GROOVE AT BOTTOM SHALL BE PLACED IN BRICK SEAT WITH MORTAR IN JOINT ALL ROUND. BRICK BASE SHALL SET FOR 24 HOURS MIN. BEFORE PRECAST SECTIONS ARE INSTALLED.
- STEPS IN THE BRICK PORTION OF MANHOLE WILL BE IN ALIGNMENT WITH AND MATCH THE STEPS IN THE PRECAST SECTIONS RATHER THAN AS SHOWN FOR THE ALL BRICK MANHOLES.

SEE STANDARD 1011A PRECAST FOR PRECAST MANHOLE DETAILS.



DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
BRICK MANHOLES

SCALE AS SHOWN — REV. & R.E.D.R. OCTOBER, 1981

DES. 8-58
DRW. R.M.U.
TRA. G.M.E.
CHK. R.K.C.

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

(APPROVED) Thomas D. Moreland
STATE HIGHWAY ENGINEER

NUMBER 1011A

FORM EF6

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-001

3/1/2007 GPLN

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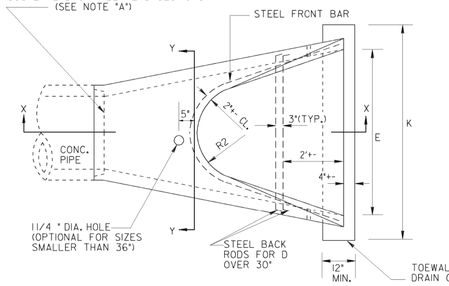
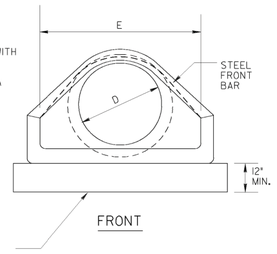
CONCRETE FLARED END SECTION

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



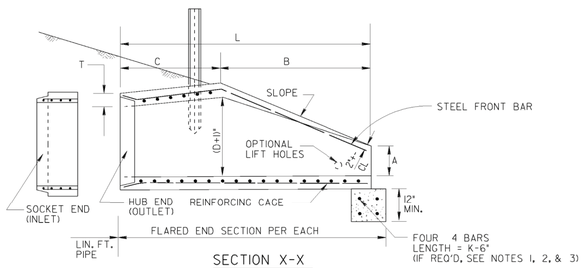
PLAN

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.

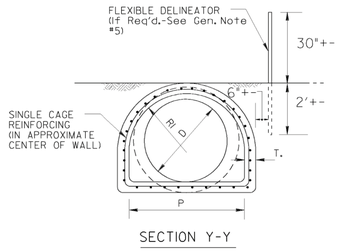


FRONT

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 (0.083D + 1"+- TYPICAL)

DIMENSIONS AND REINFORCING FOR CONCRETE FLARED END SECTIONS (+- 1" TOLERANCE)

PIPE DIA	FRONT BAR	BACK RODS	SLOPE +-	A	B	C *	L *	E	P	RI	R2	OUTLET TOEWALL (IF REQ'D) 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.

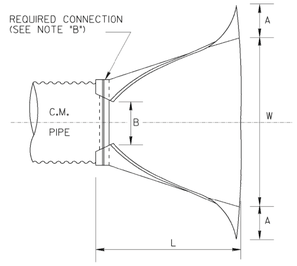
* NOTE: "C" AND "L" DIMENSION MAY BE MEASURED TO EITHER END OF JOINT CONNECTION AT PIPE.

METAL FLARED END SECTION

(USE ONLY WITH COR. METAL PIPE)

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

REQUIRED CONNECTION (SEE NOTE "B")



PLAN

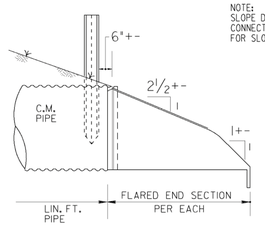
NOTE: GALVANIZED STEEL FLARED END SECTIONS ARE TO BE USED ONLY WITH CORRUGATED STEEL PIPE AND ALUMINUM FLARED END SECTIONS ARE TO BE USED ONLY WITH CORRUGATED ALUMINUM PIPE UNLESS OTHERWISE APPROVED BY D.O.T. OFFICE OF MATERIALS AND TESTS.

FLARED END SECTION DIMENSIONS

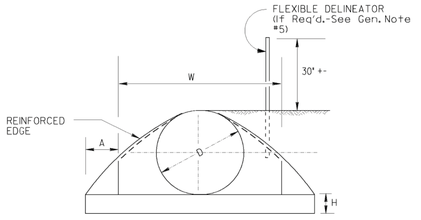
PIPE SIZE "D"	THICKNESS GALV. STEEL	THICKNESS ALUM.	A A= 0.4D +- 1"	B B=0.5 D +- 1"	H H=0.25D +- 1" (MIN.6")	L L=1.67D +- 1/2"	W W=2.0D +- 2"
12"	.064"	.060"	5"	6"	6"	1'8"	2'0"
15"	.064"	.060"	6"	7"	6"	2'3"	2'6"
18"	.064"	.060"	7"	9"	6"	2'6"	3'0"
24"	.064"	.060"	9"	1'0"	6"	3'4"	4'0"
30"	.079"	.105"	1'0"	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 IS=D OR 3 FT.) MAY HAVE TO BE INCREASED IS=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.

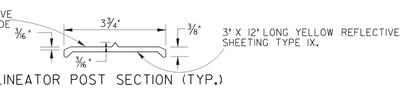
(d) OTHER TYPE CONNECTION IF RECOMMENDED BY MANUFACTURER AND APPROVED BY THE D.O.T.

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.

1" X 12" LONG YELLOW REFLECTIVE SHEETING TYPE IX, ON EACH SIDE OF RIDGE.



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.

REV. REFLECTIVE SHEETING REVISION	DATE
	6-9-06

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
FLARED END SECTIONS
FOR PIPES

NO SCALE — REV. & REDR. SEPT., 1999

BY	
DES.	(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER
REV.	
RETR.	(APPROVED) CHIEF ENGINEER
CHK.	

NUMBER 1120

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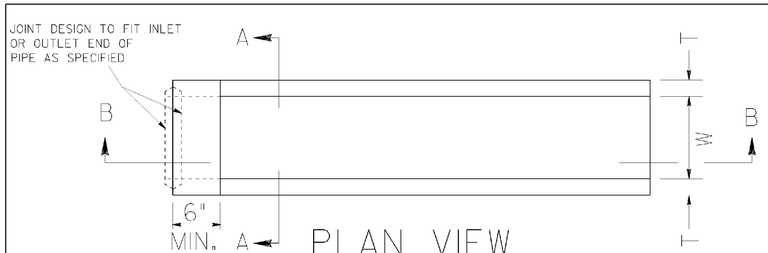
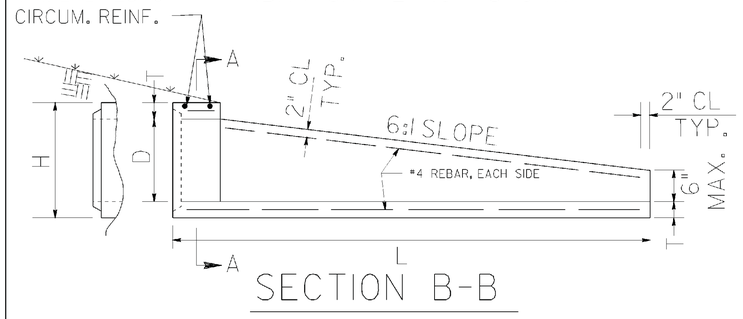
3/1/2007 GPLN

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

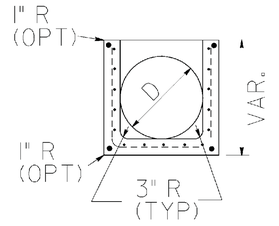
DRAWING No. 41-002





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"

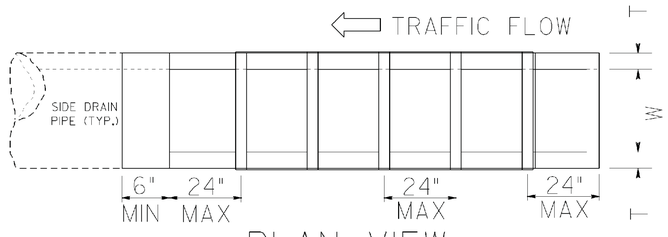


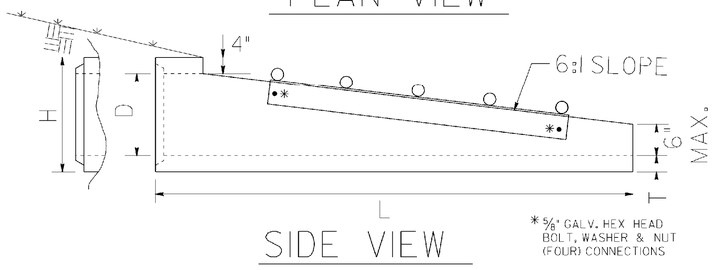
GENERAL NOTES:

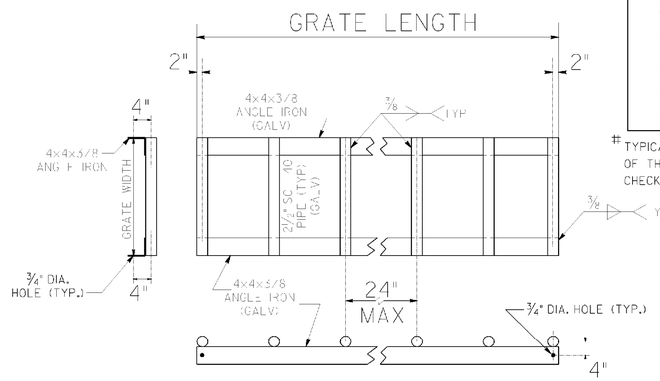
1. CONCRETE STRENGTH SHALL BE 4000 PSI MINIMUM
2. REINFORCING SHALL BE PER AASHTO M170, CLASS II REINFORCED CONCRETE PIPE, PLUS ONE #4 BAR TOP AND BOTTOM, EACH SIDE.
3. WALLS MAY HAVE 1/4" TAPER. WALL THICKNESSES SHOWN ARE THE MINIMUM.
4. LIFT HOLES MAY BE PROVIDED IN THE SIDE WALLS FOR HANDLING.
5. 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.







REVISED TO 1122 PAGE 3	1-28-05

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

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.C. BY | DESIGNED | DRAWN | TRACED | CHECKED

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

NUMBER 1122
SHEET 3 OF 3

3/23/2005 9:59:40 AM \\CDOT-DSN1\GOPLOT\GOF\CO_TIFF_DLT_T.OGF GOWENS M:\GARY\REVISED 1122 AND 1122P\1:223.PRF

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

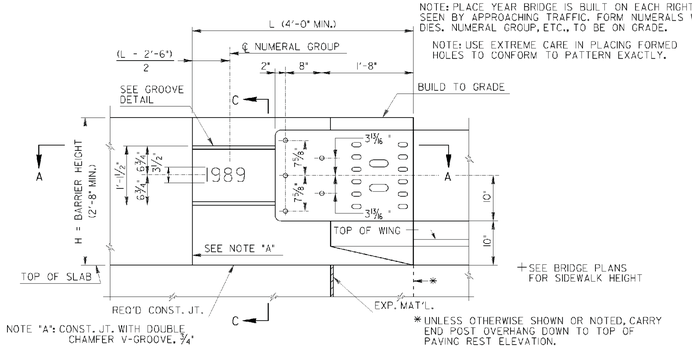
DRAWING NO. 41-003

3/1/2007 GPLN

2/26/03 11:18:26 AM \\SUGI-DSN1\GOPLOT\DGN\gp_tiff_output.dgn standard M:\standards\english\3054.prf GD-MOE

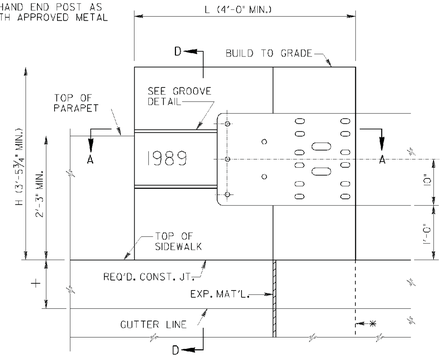
NOTE: PLACE YEAR BRIDGE IS BUILT ON EACH RIGHT-HAND END POST AS SEEN BY APPROACHING TRAFFIC. FORM NUMERALS WITH APPROVED METAL DIES. NUMERAL GROUP, ETC., TO BE ON GRADE.

NOTE: USE EXTREME CARE IN PLACING FORMED HOLES TO CONFORM TO PATTERN EXACTLY.

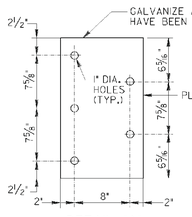


NOTE "A": CONST. JT. WITH DOUBLE CHAMFER V-GROOVE, ¾"

FRONT ELEVATION - END POST
BARRIER
SCALE: 1"=1'-0"



FRONT ELEVATION - END POST
SIDEWALK AND PARAPET
SCALE: 1" = 1'-0"

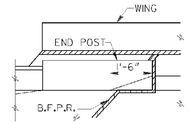


DETAIL "A"
NO SCALE

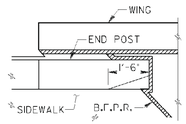
DETAIL "B"
NO SCALE

LIMIT OF GROOVES ON ALL POSTS (L - 2'-6")

MATERIALS	
ITEM	SPECIFICATIONS
GUARDRAIL	A.A.S.T.H.O. SPECIFICATION M 180
½" PLATE	A.S.T.M. DESIGNATIONS A-36
NUTS & BOLTS	A.S.T.M. DESIGNATION A-307
WASHERS	MEDIUM STEEL
GALVANIZING	A.S.T.M. A-153

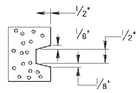


BARRIER



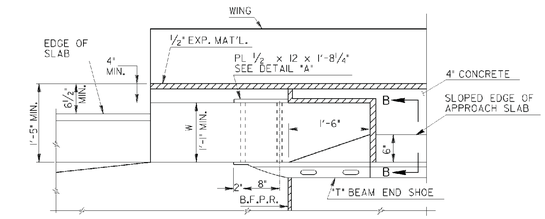
SIDEWALK AND PARAPET

TYPICAL SKEWED END DETAIL
SCALE: ½" = 1'-0"



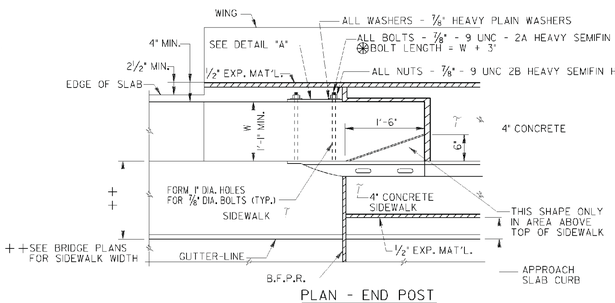
SEE DETAIL "B" FOR LIMITS OF GROOVE

GROOVE DETAIL
HALF SCALE



PLAN - END POST
BARRIER
SCALE: 1"=1'-0"

⊛ BOLT LENGTH SHALL BE OF SUFFICIENT LENGTH TO PROVIDE FOR FULL NUT ATTACHMENT. W + 3" DIMENSION SHALL BE FIELD VERIFIED PRIOR TO ORDERING BOLTS TO INSURE PROPER LENGTH.



PLAN - END POST
SIDEWALK AND PARAPET
SCALE: 1" = 1'-0"

GENERAL NOTES

SPECIFICATIONS - GEORGIA STANDARD.

LOCATION - ALL END POSTS UNLESS NOTED ON BRIDGE PLANS.

CHAMFER - CHAMFER ALL EXPOSED EDGES ¾".

GALVANIZING - ALL METAL PARTS SHALL BE GALVANIZED AFTER FABRICATION.

PAYMENT FOR MISCELLANEOUS HARDWARE - COST OF ½" PLATE AND MISCELLANEOUS HARDWARE SHALL BE INCLUDED IN THE PRICES BID FOR CONTRACT ITEMS.

PAYMENT FOR THE END POST - IF END POST IS A PORTION OF THE SUBSTRUCTURE, CONCRETE AND REINFORCEMENT ARE COMPUTED AND INCLUDED IN THE END BENT QUANTITIES.
IF END POST IS A PORTION OF THE SUPERSTRUCTURE, CONCRETE AND REINFORCEMENT ARE COMPUTED AND INCLUDED IN THE END SPAN QUANTITIES.

RESPONSIBILITY - WHEN THE BRIDGE CONTRACT IS SEPARATE FROM THE CONTRACT CONTAINING THE APPROACHING GUARDRAIL, THE BRIDGE CONTRACTOR SHALL ONLY BE RESPONSIBLE FOR THE CONSTRUCTION OF THE END POSTS AND FORMING OF THE 1" DIAMETER BOLT HOLES. THE CONTRACT CONTAINING THE APPROACHING GUARDRAIL SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING THE SPECIAL END SHOE, PLATE, NUTS, WASHERS, AND BOLTS.

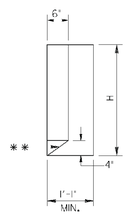
DIMENSIONS - FOR DIMENSIONS "L", "H", AND "W" AND OTHER DIMENSIONS, SEE BRIDGE PLANS.

END POST - END POST TO BE CONSTRUCTED AFTER HANDRAIL IS IN PLACE.
END POST TO BE CONSTRUCTED AFTER BARRIER IS CONSTRUCTED WHEN NO HANDRAIL IS USED.

7-P40IEQ. SP.
2" CL. ALL SIDES
P50I
7-P70IEQ. SP.

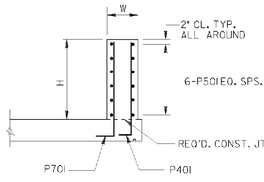
SECTION A-A
SCALE: ¾" = 1'-0"

NOTE: IF END POST IS ON SUBSTRUCTURE, SEE BRIDGE PLANS FOR BARS THAT DOWEL FROM BELOW.

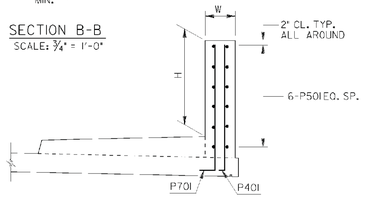


**SLOPED PORTION OF END POST TO BE POURED MONOLITHIC WITH END POST

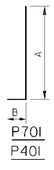
SECTION B-B
SCALE: ¾" = 1'-0"



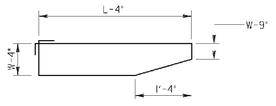
SECTION C-C
SCALE: ½" = 1'-0"



SECTION D-D
SCALE: ½" = 1'-0"



P70I
P40I



P50I

NO. BARS REQ'D		
MARK	BARRIER	SIDEWALK
P40I	7	7
P50I	6	6
P70I	7	7

FOR END POST ON SUPERSTRUCTURE:
A = H - 4" + SLAB DEPTH (FOR BARRIER)
A = H - 4" + SIDEWALK DEPTH + SLAB DEPTH (FOR SIDEWALK AND PARAPET)
B = 1'-0"

FOR END POST ON SUBSTRUCTURE:
A = H - 2"
B = 0"

NOTE: ROTATE P70I AND P40I AS NECESSARY TO MAINTAIN 2" MIN. CL. IN CONCRETE.

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
END POST AND
END POST GUARDRAIL ATTACHMENT DETAILS

SCALE: AS SHOWN — MAY 1989

DESIGNED H.W.C.
DRAWN E.R.M.
CHECKED H.W.C.

(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER

(APPROVED) CHIEF ENGINEER

NUMBER 3054

REVISION — REV. TRANSITION — 9-30-02 DATE

3/1/2007 GPLN

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING NO. 41-004

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRST0-0076-01(036)	202	267

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	STATE AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	GA.					

E.S. = EQUAL SPACES
NOTE "A": NO. 5 BIRMINGHAM GAGE WIRE SPIRAL.
NOTE "B": NO. 3 BIRMINGHAM GAGE WIRE SPIRAL.

270K STRAND PILE CROSS SECTIONS
SCALE: 1"=1'-0"

PILE SIZE	AREA IN²	WEIGHT LBS/FT.	S IN³	N P.S.I.	PICK-UP POINTS MAX. L: END	0.293L	0.207L	0.153L	PILE LENGTH (L)/BOLSTER SPACING (B.S.) IN FEET: 25	30	35	40	45	50	55	60	65	70	75	80	85	90*	95	L
12 X 12	144.00	150	288.00	940	28'	49'	70'	95'	13-25	16-28	21-29	26-30	30-33	35	---	---	---	---	---	---	---	---	---	B.S.
14 X 14	196.00	204	457.33	1036	30'	52'	73'	100'	16-25	19-30	22-31	25-32	30-34	35-36	---	---	---	---	---	---	---	---	---	
16 X 16	256.00	287	682.67	793	34'	58'	83'	112'	16-25	19-30	22-34	25-35	29-36	33-38	38-40	---	---	---	---	---	---	---	---	
18 X 18	324.00	338	972.00	627	33'	57'	80'	109'	16-25	19-30	22-33	25-34	29-35	34-37	39	---	---	---	---	---	---	---	---	
20 X 20	400.00	417	1333.33	677	36'	61'	87'	118'	16-25	19-30	22-35	25-36	29-37	32-39	37-41	42-43	---	---	---	---	---	---	---	
24 X 24	462.90	483	2219.17	731	44'	76'	107'	146'	16-25	19-30	22-35	25-40	29-44	32-45	35-46	38-47	43-49	48-51	53	---	---	---	---	
**	576.00	600	2304.00	588	37'	64'	91'	123'	16-25	19-30	22-35	25-37	29-38	32-40	37-42	42-44	---	---	---	---	---	---	---	
30 X 30	67[illegible]	708	4242.40	697	50'	85'	121'	164'	16-25	19-30	22-35	25-40	29-45	32-50	35-50	38-51	41-53	45-54	50-56	55-58	60	---	---	
36 X 36	885.03	922	7029.31	689	56'	96'	136'	184'	16-25	19-30	22-35	25-40	29-45	32-50	35-55	38-56	41-57	44-58	47-60	52-61	57-63	62-65	67-68	

N = EFFECTIVE PRESTRESS.
VALUES GIVEN IN THIS TABLE APPLY ONLY TO PILE SECTIONS USING 270K STRANDS.
** VALUES GIVEN ARE FOR 24" SQ. SOLID PILE WITH SAME NUMBER OF STRANDS, STRAND ARRANGEMENT AND INITIAL PRETENSION FORCE AS REQ'D. FOR 24" SQ. WITH 12" Φ VOID PILE.

FOR A GIVEN PILE LENGTH "L", THE MINIMUM AND MAXIMUM BOLSTER SPACINGS ARE TABULATED ASSUMING ONLY ONE OVERHANG. WHEN LONGER PILES ARE INVOLVED, HAULING WILL BE LIMITED AS FOLLOWS:

1. UNEQUAL OVERHANGS
THE MAXIMUM PERMITTED PILE LENGTH SHALL BE EQUAL TO TWICE THE [TABULATED PILE LENGTH MINUS BOLSTER SPACING] PLUS THE BOLSTER SPACING USED IN THIS EQUATION. THE MAXIMUM OVERHANG SHALL BE 0.293 TIMES THE LENGTH TABULATED IN THE COLUMN HEADED "0.293 L".
*EXAMPLE: FOR 36" PILE [90-62]2 + 62 = 118', BOLSTER SPACING = 62'
MAXIMUM OVERHANG = 0.293 X 96' = 28.1'

2. EQUAL OVERHANGS
THE MAXIMUM PERMITTED PILE LENGTH SHALL BE BASED UPON THE DOUBLE POINT PICK-UP SYSTEM AND THE BOLSTER SPACING SHALL BE EQUAL TO 0.586L. THE MAXIMUM PILE LENGTH HAULED SHALL BE THAT TABULATED IN THE COLUMN HEADED "0.207 L"
EXAMPLE: FOR 36" PILE 135' LONG
EACH OVERHANG 0.207 X 135' = 27.945'
B.S. 0.586 X 135' = 79.11'
MAXIMUM LENGTH = 136' > 135'

HAULING DIAGRAM
NO SCALE

PICK-UP SKETCHES
NO SCALE

24" SQ. THRU 36" SQ. PILE EXTENSION
NO SCALE

FOR 24" SQ. SOLID PILE, HOLES FOR NO.8 BARS SHALL BE DRILLED 24" INTO PRESTRESSED CONCRETE AND BARS DEVELOPED WITH AN APPROVED EPOXY BONDING COMPOUND.

SECTION A-A
NO SCALE

TO BE USED WHEN REQUIRED BY SPECIAL PLANS. TEST PILE LENGTHS GIVEN ON SPECIAL PLANS DO NOT INCLUDE STEEL H-PILE IN TIP OF COMPOSITE PILES.

COMPOSITE PILE DETAILS
NO SCALE

14" SQ. THRU 20" SQ. PILE EXTENSION
NO SCALE

VOIDS SHALL BE LOCATED WITHIN 1/2" OF POSITION SHOWN.

NOTE C: NO. 5 BARS FOR PILES 12" THRU 24". NO. 6 BARS FOR 30" & 36" PILES. PLACE ONE BAR AT EACH PRETENSIONED STRAND. SEE INDIVIDUAL PILE CROSS SECTION FOR NUMBER OF STRANDS.

NOTE: 1" Φ HOLES SHALL BE FORMED IN ONE FACE (AT 5 FT. ON CENTER) IN VOID-TYPE PILE. IN PILING CAST FOR A SPECIFIC PROJECT, THESE HOLES WILL BE REQUIRED ONLY FOR THAT PORTION EXPECTED TO REMAIN ABOVE GROUND.

GENERAL DETAILS
250K OR 270K PILING

HOLLOW PILE SHOWN-SOLID PILE SAME, EXCEPT FOR VOID

TYPICAL PILE DETAILS
NO SCALE

D = SIZE.
1" CHAMFERS NOT SHOWN.

ALTERNATE PILE CROSS SECTION
NO SCALE

DESIGN DATA
CONCRETE.....5,000 P.S.I.-CLASS AAA
PRETENSIONED STRANDS.....250K OR 270K
TOTAL LOSSES.....22 % OF INITIAL PRETENSION FORCE
WIRE SPIRALS.....A.S.T.M. A82 OR A.A.S.H.O. M32

• 3/8" Φ 250K STRANDS SHALL BE PRETENSIONED TO 14,000 LBS. EACH, AND 7/16" Φ 250K STRANDS TO 18,900 LBS. EACH.

WIRE SPIRALS SHALL BE NO. 5 BIRMINGHAM GAGE.

250K STRAND PILE CROSS SECTIONS
SCALE: 1"=1'-0"

MAX. PILE LENGTH	PILE SIZE
30 FT.	14" X 14"
38 FT.	16" X 16"
34 FT.	18" X 18"
39 FT.	20" X 20"
46 FT.	24" X 24"
27 FT.	12 X 12

SINGLE POINT PICKUP

DOUBLE POINT PICKUP

NOTES
1. PILES SHALL BE PLAINLY MARKED TO INDICATE PROPER PICK-UP POINTS FOR ATTACHING HANDLING LINES.
2. THE TWO POINT PICK-UP SHALL BE USED FOR HANDLING AND TRANSPORTING PILES FROM CASTING YARD TO JOB SITE IN ALL CASES, AND FOR UNLOADING AND STORING AT JOB SITE.

	DATE	REVISIONS	BY
1	12-18-74	CORRECTED 16" X 16" PILES	J.E.T.
2	2-4-81	14" SQ. PILES	J.E.T.
3	2-22-84	ADDED 12" SQ. PILES	J.E.T.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD SQUARE PRESTRESSED CONCRETE PILES

SCALE: AS SHOWN
OCTOBER 1974

DESIGNED W.B.L.-J.E.T.
DRAWN J.E.T.
TRACED M.V.W.
CHECKED J.W.P.

SUBMITTED C. L. Chapman Jr. BRIDGE ENGINEER
APPROVED Thomas D. Moreland STATE HIGHWAY ENGINEER

NUMBER 3215

REVISION DATES

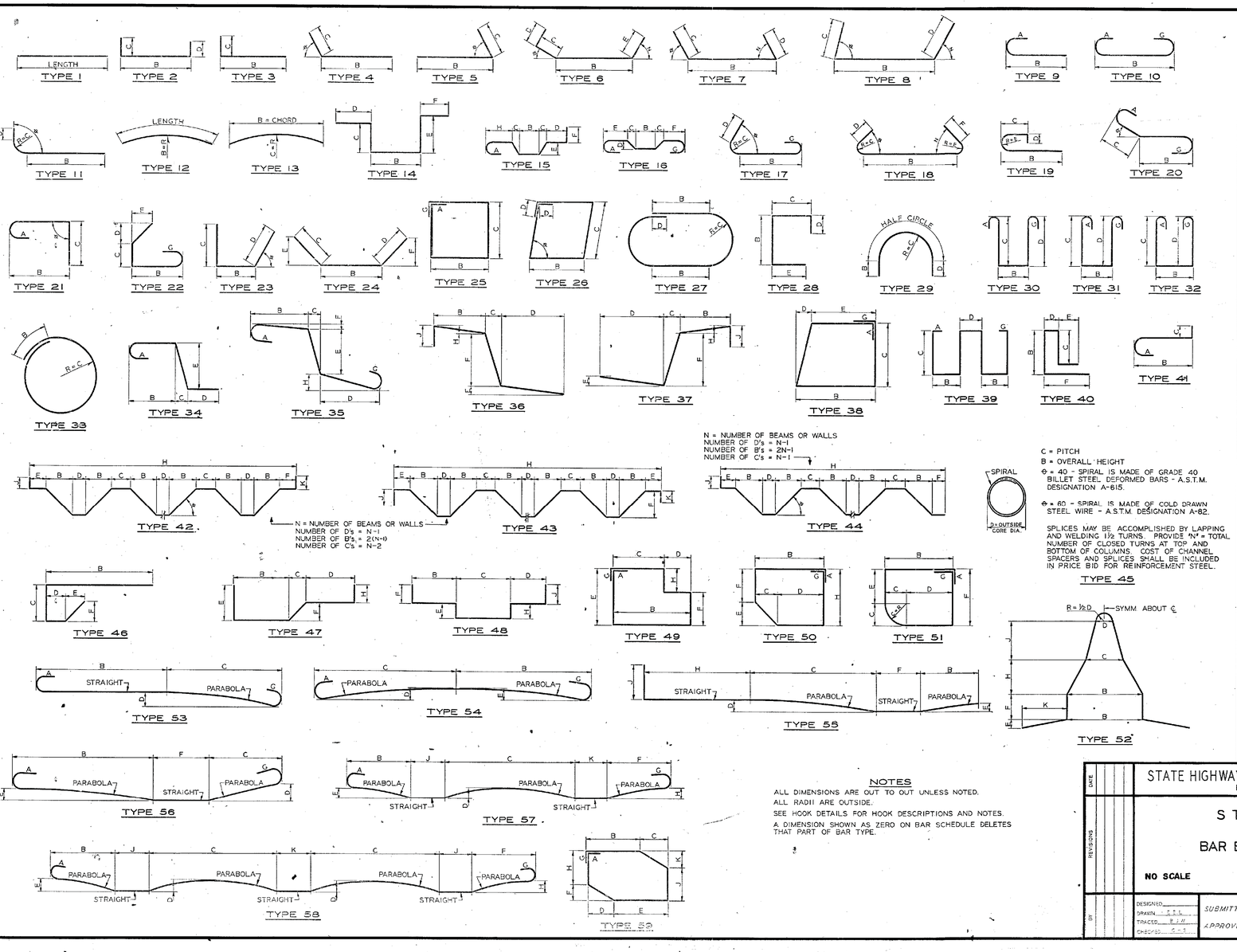
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-005

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	203	267

FED ROAD DIV. NO.	STATE	FED AID PROJ. NO.	STATE AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	GA.					



HOOK DETAILS

RECOMMENDED 180° HOOKS

GRADE 40 ksi
D = 5d for #3 through #11
D = 10d for #14 and #18

GRADES 50-60-75 ksi
D = 6d for #3 through # 8
D = 8d for #9, #10, and #11
D = 10d for #14 and #18

DETAILING DIMENSION

RECOMMENDED 180° END HOOK DIMENSIONS

BAR SIZE	GRADES 50-60-75 ksi		GRADE 40 ksi	
	A or G	J	A or G	J
#3	5	3	5	2¾
#4	6	4	6	3½
#5	7	5	7	4½
#6	8	6	8	5½
#7	10	7	9	6¼
#8	11	8	10	7
#9	1-3	1-1¼	1-0	8
#10	1-5	1-0¾	1-1	9
#11	1-7	1-2¼	1-2	10
#14	2-8	1-8½	2-2	1-8½
#18	2-11	2-3	2-11	2-3
STYLE	1		2	

RECOMMENDED 90° END HOOK DIMENSIONS

ALL GRADES
D = 6d for #3 through #8
D = 8d for #9, #10, and #11
D = 10d for #14 and #18

DETAILING DIMENSION

BAR SIZE	HOOK A or G
#3	6
#4	8
#5	10
#6	1-0
#7	1-2
#8	1-4
#9	1-7
#10	1-10
#11	2-0
#14	2-7
#18	3-5
HOOK STYLE 3	

STIRRUP AND TIE HOOK

DETAILING DIMENSION

STIRRUPS (TIES SIMILAR)

STIRRUP AND TIE HOOK DIMENSIONS
GRADES 40-50-60 ksi

BAR SIZE	D (in.)	90° HOOK	135° HOOK	
		HOOK A or G	HOOK A or G	N Approx.
#3	1½	4	4	2⅞
#4	2	4½	4½	3
#5	2½	5	5½	3⅜
#6	3	6½	6½	4½
STYLE		4	5	

STYLE 6 = NO HOOK

HOOK STYLES DETAILED ON THIS SHEET ARE FOR ILLUSTRATION ONLY. ACTUAL HOOK STYLE FOR ANY PARTICULAR BAR WILL BE SHOWN UNDER A or G HEADING ON BAR SCHEDULE.

C = PITCH
B = OVERALL HEIGHT
Φ = 40 - SPIRAL IS MADE OF GRADE 40 BILLET STEEL DEFORMED BARS - A.S.T.M. DESIGNATION A-615.
Φ = 60 - SPIRAL IS MADE OF COLD DRAWN STEEL WIRE - A.S.T.M. DESIGNATION A-82.

SPLICES MAY BE ACCOMPLISHED BY LAPPING AND WELDING 1½ TURNS. PROVIDE 'N' = TOTAL NUMBER OF CLOSED TURNS AT TOP AND BOTTOM OF COLUMNS. COST OF CHANNEL SPACERS AND SPLICES SHALL BE INCLUDED IN PRICE BID FOR REINFORCEMENT STEEL.

NOTES

ALL DIMENSIONS ARE OUT TO OUT UNLESS NOTED.
ALL RADII ARE OUTSIDE.
SEE HOOK DETAILS FOR HOOK DESCRIPTIONS AND NOTES.
A DIMENSION SHOWN AS ZERO ON BAR SCHEDULE DELETES THAT PART OF BAR TYPE.

STATE HIGHWAY DEPARTMENT OF GEORGIA
BRIDGE DIVISION

STANDARD

BAR BENDING DETAILS

NO SCALE — AUGUST 1969

DESIGNED
DRAWN S.T.L.
TRACED R.J.H.
CHECKED C.T.J.

SUBMITTED R.T. Clairmont Jr. BRIDGE ENGINEER
APPROVED STATE HIGHWAY ENGINEER

NUMBER 3901

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

GEORGIA STANDARDS

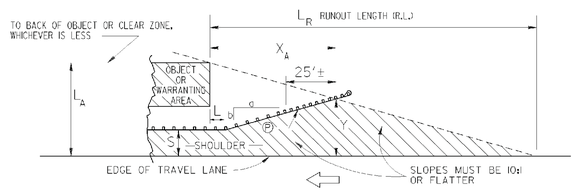
DRAWING No. 41-006

3/1/2007 GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

GUARDRAIL LENGTHS OF ADVANCEMENT AT FIXED OBJECTS OR AT WARRANTING FILL SLOPES TYPICAL

(FLARED)



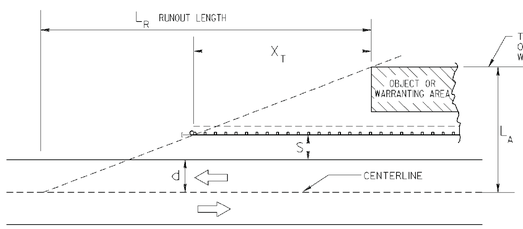
S = USUABLE SHOULDER WIDTH PLUS 2 FT. (TYP.)

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

$$Y = L_A - \frac{L_A}{L_R}(X_A)$$

DESIGN SPEED (MPH)	FLARE RATE a:b
70	15:1
60	14:1
55	12:1
50	11:1
45	10:1
40	8:1
30	7:1

(STANDARD)

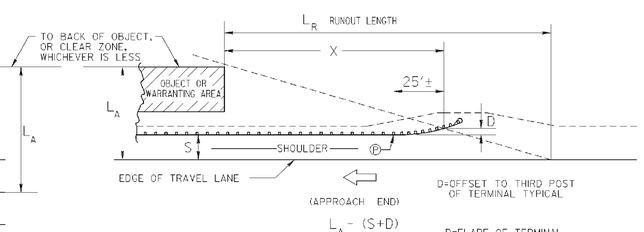


DESIGN SPEED (MPH)	L_R Runout Length in feet			
	OVER 6000 (A.D.T.)	2000-6000 (A.D.T.)	800-2000 (A.D.T.)	UNDER 800 (A.D.T.)
70	475	445	395	360
60	425	400	345	330
55	360	345	315	280
50	330	300	260	245
45	260	245	215	200
40	230	200	180	165
30	165	165	150	130

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

(TRAILING END)

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

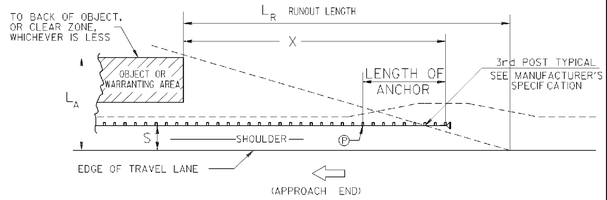


Ⓟ = POINT OF BEGINNING TERMINAL (TYP.)

D=OFFSET TO THIRD POST OF TERMINAL TYPICAL

$$X = L_R \times \frac{L_A - (S+D)}{L_A}$$

D=FLARE OF TERMINAL
D=0 FOR NON-FLARED TERMINALS



CLEAR ZONE DISTANCES

CLEAR ZONE DISTANCES (FT) CHART

DESIGN SPEED	DESIGN ADT	FORESLOPES			BACKSLOPES		
		1V:6H OR FLATTER	1V:5H TO 1V:4H	1V:3H	1V:3H	1V:5H TO 1V:4H	1V: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	* *	10-12	10-12	10-12
	1500-6000	12-14	14-16	* *	12-14	12-14	12-14
	OVER 6000	14-16	16-18	* *	14-16	14-16	14-16
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	16-20	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

* WHERE A SITE SPECIFIC INVESTIGATION INDICATES A HIGH PROBABILITY OF CONTINUING CRASHES, OR 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 LIMIT TO 30 FT. FOR PRACTICALITY AND TO PROVIDE A CONSISTENT ROADWAY TEMPLETE IF PREVIOUS EXPERIENCE WITH SIMILAR PROJECTS OR DESIGNS INDICATES SATISFACTORY PERFORMANCE.

* * SINCE RECOVERY IS LESS LIKELY ON THE UNSHIELDED, TRAVERSABLE 1V:3H 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 RECOVERY AREA AT THE TOE OF SLOPE SHOULD TAKE INTO CONSIDERATION RIGHT-OF-WAY AVAILABILITY, ENVIRONMENTAL CONCERNS, ECONOMIC FACTORS, SAFETY NEEDS AND CRASH HISTORIES. ALSO, THE DISTANCE BETWEEN THE EDGE OF THE THROUGH TRAVELED LANE AND THE BEGINNING OF THE 1V:3H SLOPE SHOULD INFLUENCE THE RECOVERY AREA PROVIDED AT THE TOE OF THE SLOPE.

HORIZONTAL CURVE ADJUSTMENTS

RADIUS (FEET)	K_{CZ} (CURVE CORRECTION FACTOR) DESIGN SPEED (MPH)						
	40	45	50	55	60	65	70
2860	1.1	1.1	1.1	1.2	1.2	1.2	1.3
2290	1.1	1.1	1.2	1.2	1.2	1.3	1.3
1910	1.1	1.2	1.2	1.2	1.3	1.3	1.4
1640	1.1	1.2	1.2	1.3	1.3	1.4	1.5
1430	1.2	1.2	1.3	1.3	1.4	1.4	
1270	1.2	1.2	1.3	1.3	1.4	1.5	
1150	1.2	1.2	1.3	1.4	1.5		
950	1.2	1.3	1.4	1.5	1.5		
820	1.3	1.3	1.4	1.5			
720	1.3	1.4	1.5				
640	1.3	1.4	1.5				
570	1.4	1.5					
380	1.5						

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

Where:

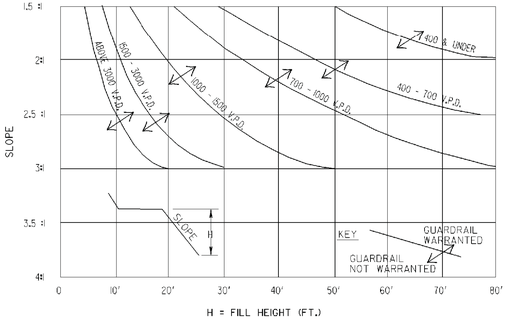
CZ_C = CLEAR ZONE ON OUTSIDE OF CURVATURE, FEET

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

K_{CZ} = CURVE CORRECTION FACTOR

NOTE:
THE CURVE CORRECTION FACTOR IS APPLIED TO THE OUTSIDE OF CURVES ONLY. CURVES FLATTER THAN 2860 FEET DO NOT REQUIRE AN ADJUSTED CLEAR ZONE.

FILL HEIGHT / SLOPE WARRANTS



NOTE:
FILL HEIGHT/SLOPE EXTRAPOLATIONS WHICH FALL ABOVE AND TO THE RIGHT OF CURVE INDICATES GUARDRAIL IS WARRANTED FOR THE FILL EMBANKMENT.

G.J.D.	REVISED GUARDRAIL AND CLEAR ZONE	9-1-07	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
			STANDARD GUARDRAIL WARRANT GUIDES LENGTHS OF ADVANCEMENT CLEAR ZONE DISTANCES FILL HEIGHT EMBANKMENTS
			NOT TO SCALE — DEC., 1999
	BY	DES. ___ DRW. ___ TRA. ___ CHK. ___	(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER (APPROVED) CHIEF ENGINEER — NUMBER 4000W

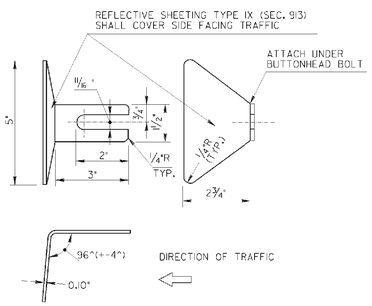
3/1/2007 GPLN

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

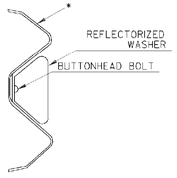
DRAWING NO. 41-007

REFLECTORIZED WASHER DETAILS



MATERIALS: ALUMINUM (ASTM B 209 ALLOY 5052 H-32 OR 12 GA. STEEL (ASTM A 526 GALV. M-111) WITH REFLECTIVE SHEETING, AS APROVED BY THE DEPT. OF TRANSPORTATION LABORATORY.

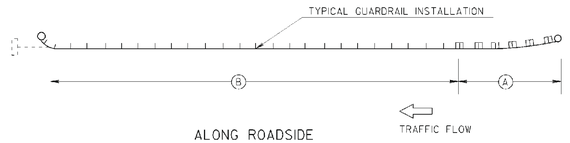
COLORS: YELLOW IN MEDIANS AND WHITE ON OUTSIDE SHOULDERS



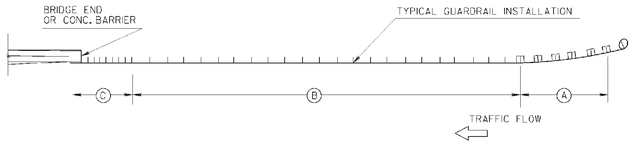
WASHER LOCATION DETAIL

NOTE:
FOR 'I'-BEAM GUARDRAIL, WASHER IS PLACED IN THE TOP INDENTION.

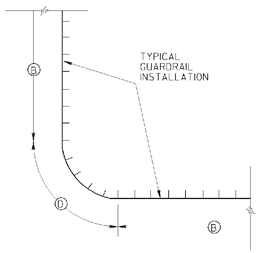
* WHERE BOLT DOES NOT EXTEND THRU RAIL REFLECTORIZED WASHER IS ATTACHED UNDER THE SPLICE BOLT ON THE TOP CORRUCATION, IF REQUIRED.



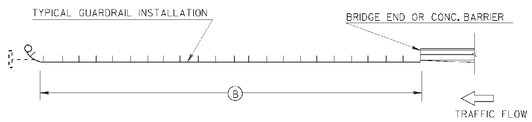
ALONG ROADSIDE



APPROACH END-BRIDGE OR CONCRETE BARRIER



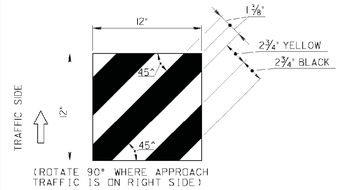
AT TURNOUTS



TRAILING END-BRIDGE OR CONCRETE BARRIER

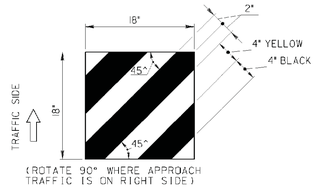
NOSE STRIPING DETAILS

(REQUIRED FOR ANCHORAGE WITH ROUNDED NOSE)



(ROTATE 90° WHERE APPROACH TRAFFIC IS ON RIGHT SIDE)

(REQUIRED WITH ANCHORAGE WITH EXTRUDER OR IMPACT HEADS)



(ROTATE 90° WHERE APPROACH TRAFFIC IS ON RIGHT SIDE)

BLACK GLOSS DURABLE INK PRINTED ON TYPE IX REFLECTIVE SHEETING (SEE CURRENT SEC. 913 AND 917)

SPACING OF REFLECTORIZED WASHERS

(A) AT ANCHORAGES:
- TWO (2) REFLECTORIZES WASHERS ARE REQUIRED ON THE RAIL UNDER SPLICE BOLTS AS DIRECTED BY THE ENGINEER FOR ELLIPTICALLY FLARED ANCHORAGES WITH ROUNDED END PIECES;
- NO REFLECTORIZED WASHERS WILL BE USED FOR TANGENTIALLY ALIGNED OR STRAIGHT TAPERED ANCHORAGE WITH EXTRUDER OR IMPACT HEADS

(B) -AT 75 FT. SPACINGS FOR INTERMEDIATE SECTIONS;

(C) -THREE WASHERS AT 6'-3" SPACING AT CONNECTIONS TO CONCRETE FACE ON THE APPROACH END;

(D) -AT 12'-6" SPACINGS AROUND RADII TURNS.

GENERAL NOTES:

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

2-SEE SEPARATE STANDARDS FOR DETAILS OF GUARDRAIL INSTALLATIONS, CONNECTING HARDWARE, AND ANCHORAGES.

3-PAYMENT FOR GUARDRAIL AND ANCHORAGES INCLUDES ALL REFLECTORIZED WASHERS AND NOSE STRIPING REQUIRED.

4-ADJUSTMENTS OF SPACINGS AND/OR REQUIREMENTS FOR REFLECTIVE WASHERS MAY BE DIRECTED BY THE ENGINEER TO SUIT INDIVIDUAL LOCATIONS.

5-WHERE DOUBLE FACED GUARDRAIL IS LOCATED ON THE INSIDE SHOULDER OF MEDIANS, REFLECTORIZED WASHERS SHALL BE REQUIRED ONLY ON THE SIDE WHICH IS NEAREST TO TRAFFIC, UNLESS SPECIFIED OTHERWISE.

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

REFLECTORIZED GUARDRAIL WASHERS AND ANCHORAGE NOSE STRIPING

NO SCALE — REV. & REDR. APRIL, 1999

REVISION	BY	DATE
REV. REFLECTIVE SH. TYPE. REFLEC. SH. SPEC.	CLC	4-10-06
ADD NOSE STRIPING	RMJ	2-1-01
	RMJ	5-1-96

DES. ____ (SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER
DRWN. ____
CHK. ____ (APPROVED) CHIEF ENGINEER

NUMBER 4360

9/6/2006 11:22:27 AM \\SDOT-DS81\GGFL01\GCF\gc_ttff_output.gcf powens M:\GADY\REVISED 4360\4360.prf

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

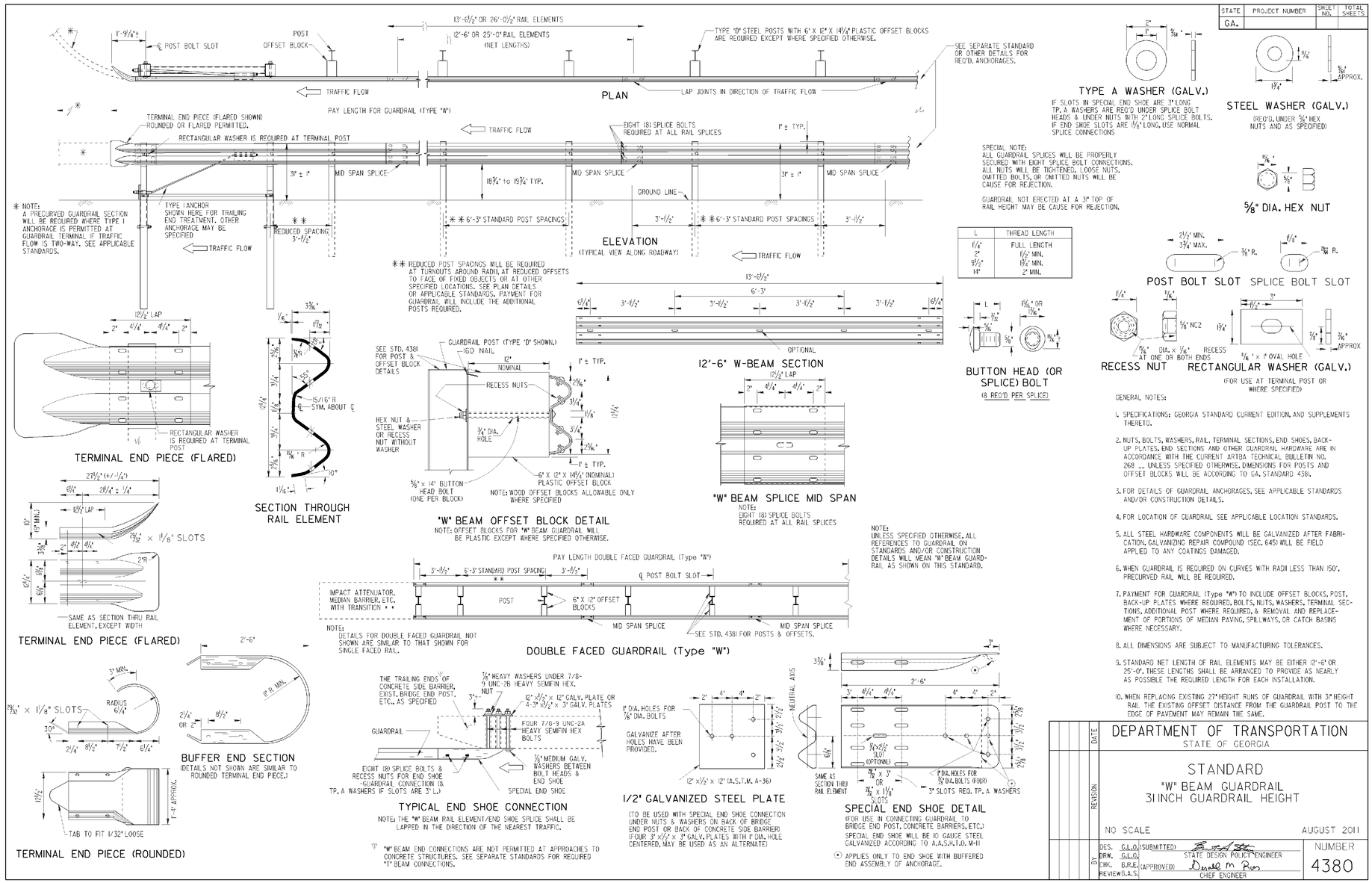
DRAWING No. 41-008

3/1/2007 GPLN

03-NOV-2014 13:25	TIME$$$	4380	Y:\Roadways\138973\232310\Dgn\Const Standards\4380.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(036)	206	267

12/7/2011 8:05:18 AM \\GDOT-DSN1\GOPLOT\GCF\GO_Klp8000.gcf tcsx C:\tpc\31inch guardrail\new 31 inch guardrail files\4380.pdf GO-RDS

9/21/2011 7:46:54 AM \\GDOT-DSN1\GOPLOT\GCF\GO_Klp8000.gcf gowens V:\GARY\31 inch guardrail standards\4010 rev 4380.prf



L	THREAD LENGTH
1 1/4"	FULL LENGTH
2"	1 1/2" MIN.
9 1/2"	1 3/4" MIN.
14"	2" MIN.

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, & 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.
10. WHEN REPLACING EXISTING 27" HEIGHT RUNS OF GUARDRAIL WITH 31" HEIGHT RAIL THE EXISTING OFFSET DISTANCE FROM THE GUARDRAIL POST TO THE EDGE OF PAVEMENT MAY REMAIN THE SAME.

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

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

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-009

3/1/2007 GPLN

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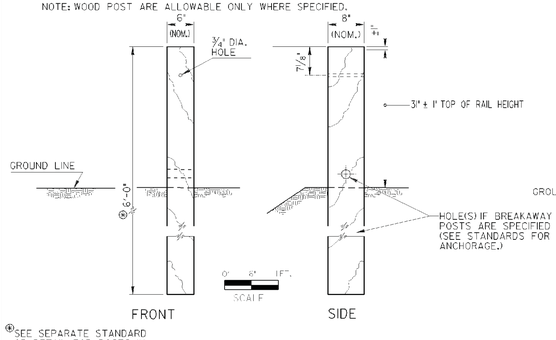
9/21/2011 8:13:49 AM \\GDOT-DSN1\GOPLOT\GCT\GG_K1p8006.gpf dgowens V:\GAATV\31 inch guardrail standards\401A rev 4381.prf

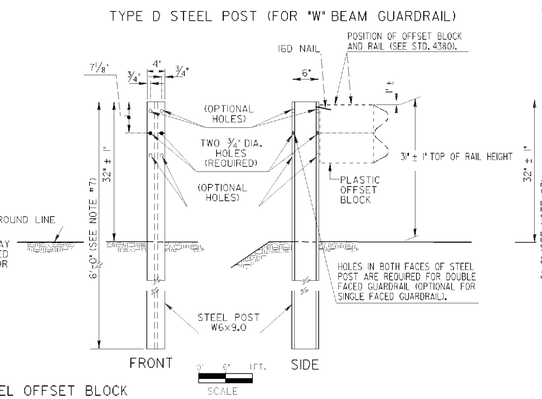
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

TYPE A WOOD POST (FOR "W" BEAM GUARDRAIL)

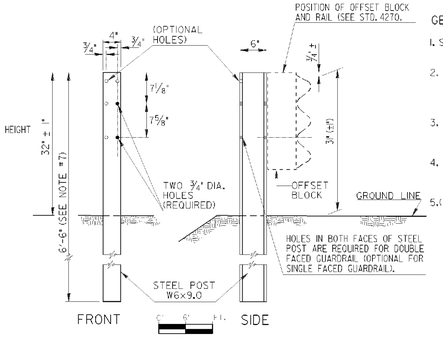
NOTE: WOOD POST ARE ALLOWABLE ONLY WHERE SPECIFIED.



TYPE D STEEL POST (FOR "W" BEAM GUARDRAIL)



TYPE D-T STEEL POST (FOR "T" BEAM GUARDRAIL)



GENERAL NOTES:

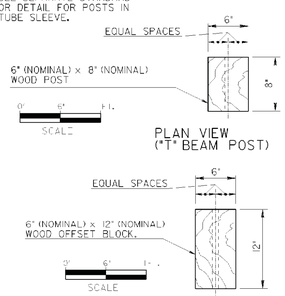
1. SPECIFICATIONS GEORGIA STANDARD, CURRENT EDITION AND SUPPLEMENTS THERETO.
2. STEEL POSTS MAY BE EITHER ROLLED OR WELDED STRUCTURAL SHAPES. STEEL OFFSET BLOCKS SHALL BE ROLLED. WELDED POSTS SHALL BE SEAL WELDED BETWEEN WEB AND FLANGE BEFORE GALVANIZING.
3. WHERE WOOD POST OR WOOD OFFSET BLOCKS ARE PERMITTED, THE WOOD SHALL BE TREATED IN ACCORDANCE WITH GEORGIA STANDARD SPECIFICATIONS.
4. ALL BOLTS USED FOR FASTENING THE RAIL AND OFFSET BLOCKS TO WOOD POSTS SHALL HAVE SUFFICIENT LENGTH TO EXTEND AT LEAST ¼" BEYOND THE FULL NUT, UP TO 3" BEYOND.
5. (a) "W" BEAM GUARDRAIL: ALL OFFSET BLOCKS SHALL BE 12" DEPTH PLASTIC BLOCKS EXCEPT FOR (d) BELOW.

   (b) "T" BEAM GUARDRAIL: STANDARD INSTALLATION WILL USE 8" DEPTH PLASTIC BLOCKS UNLESS OTHERWISE APPROVED.

   (c) 13¾" DEPTH MODIFIED STEEL OFFSETS MAY BE SPECIFIED WHERE JUSTIFIED FOR MORE SEVERE CONDITIONS. PAY ITEM IS ---GUARDRAIL, TP 1, MODIFIED OFFSET BLOCK---PER LIN. FT.

   (d) WOOD OFFSET BLOCKS MAY BE USED ONLY AT AN ISOLATED LOCATION WITHIN A RUN OF GUARDRAIL, WHERE OTHER BLOCK TYPES WOULD NOT PROVIDE PROPER FIT, AS DETERMINED BY THE ENGINEER OR SHOWN IN THE PLANS.
6. POSTS WILL BE SPACED AT 6'-3" C. TO C., UNLESS OTHERWISE NOTED.
7. ADDITIONAL LENGTH POSTS, WHERE SPECIFIED, SHALL BE 7'-0" AND 7'-6" LONG FOR "W" BEAM AND "T" BEAM GUARDRAILS RESPECTIVELY, WITH HOLES DIMENSIONED FROM THE POST-TOP THE SAME AS SHOWN.
8. 9'-0" POST REQUIRED IF GUARDRAIL INSTALLED ON A 2:1 SLOPE.

SEE SEPARATE STANDARD OR DETAIL FOR POSTS IN TUBE SLEEVE.

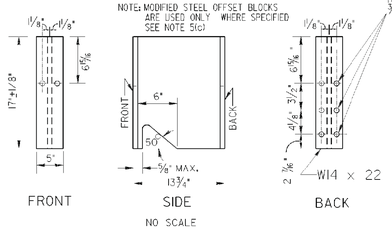


PLAN VIEW ("T" BEAM POST)

PLAN VIEW (FOR "W" BEAM OFFSET BLOCK)

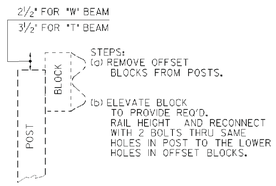
MODIFIED STEEL OFFSET BLOCK FOR " T " BEAM GUARDRAIL

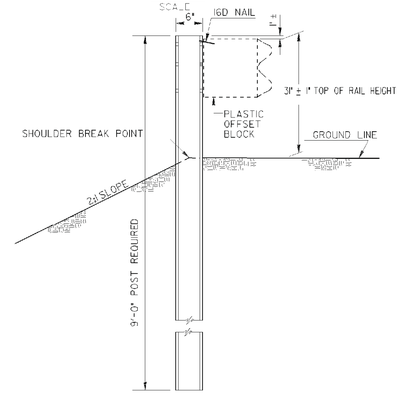
NOTE: MODIFIED STEEL OFFSET BLOCKS ARE USED ONLY WHERE SPECIFIED SEE NOTE 5(c)



NO SCALE

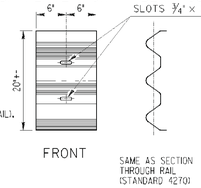
HEIGHT CORRECTION IF NEEDED FOR RESURFACED PROJECTS





2:1 SLOPE DETAIL

BACK-UP PLATE (FOR "T" BEAM GUARDRAIL)



SAME AS SECTION THROUGH RAIL (STANDARD 4270)

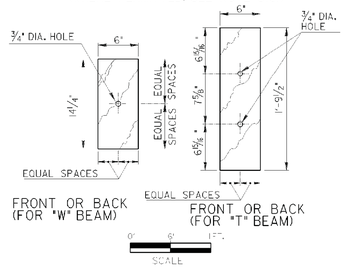
NOTE: BACK-UP PLATES ARE REQUIRED WITH ALL STEEL OFFSET BLOCKS EXCEPT AT RAIL SPLICES OR WHERE ONE RAIL SECTION IS NESTED INSIDE ANOTHER RAIL SECTION. BACK-UP PLATE WILL BE LOCATED BACK OF RAIL ADJACENT TO OFFSET BLOCKS INSIDE MAIN RAIL).

WOOD POSTS AND WOOD OFFSET BLOCKS MAY BE ROUGH OR SURFACED.

DIMENSIONS FOR WOOD POSTS AND WOOD OFFSET BLOCKS ARE NOMINAL IN ACCORDANCE WITH ACCEPTED LUMBER INDUSTRY STANDARDS.

NOTE: WHERE WOOD OFFSET BLOCK ON STEEL POST IS PERMITTED IN "W" BEAM INSTALLATION, A NAIL OR SCREW FROM POST TO WOOD IS REQUIRED TO PREVENT ROTATION OF THE BLOCK.

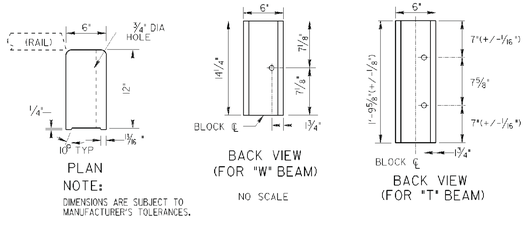
WOOD OFFSET BLOCKS (WHERE PERMITTED, SEE NOTE 5(d))



(PLAN VIEW IS SAME AS SHOWN FOR WOOD POST ABOVE)

STANDARD PLASTIC OFFSET BLOCKS

NOTE: PLASTIC OFFSET BLOCKS SHALL BE OF TYPE LISTED IN GA. DOT QPL OF APPROVED PRODUCTS OR PER STANDARD SPECIFICATIONS.

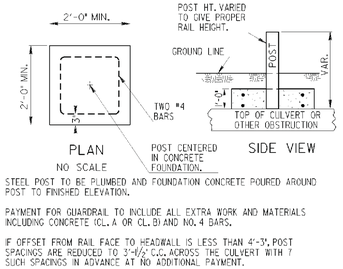


NOTE: DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES.

NO SCALE

CONCRETE FOUNDATION FOR POST IN SHALLOW FILLS OVER CULVERTS OR OTHER OBSTRUCTIONS

(NOTE: PLATE MOUNTED POST MAY BE USED AS AN ALTERNATE, SEE SEPARATE SHEET).

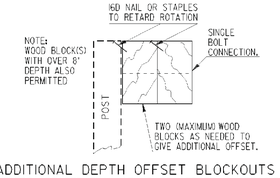


NO SCALE

STEEL POST TO BE PLUMBED AND FOUNDATION CONCRETE POURED AROUND POST TO FINISHED ELEVATION.

PAYMENT FOR GUARDRAIL TO INCLUDE ALL EXTRA WORK AND MATERIALS INCLUDING CONCRETE (CL. A OR CL. B) AND NO. 4 BARS.

IF OFFSET FROM RAIL FACE TO HEADWALL IS LESS THAN 4'-3", POST SPACINGS ARE REDUCED TO 3'-1½" C.C. ACROSS THE CULVERT WITH 7 SUCH SPACINGS IN ADVANCE AT NO ADDITIONAL PAYMENT.



ADDITIONAL DEPTH OFFSET BLOCKOUTS

(FOR USE WHERE GREATER THAN STANDARD OFFSET IS SPECIFIED)

NOTE: ADDITIONAL DEPTH OFFSETS BELOW ARE SHOWN FOR "W" BEAM. SIMILAR OFFSETS MAY BE APPLIED FOR "T" BEAM GUARDRAIL.

NOTE: ADDITIONAL DEPTH OFFSETS ARE PERMITTED ONLY WHERE AN ISOLATED POST MUST BE PLACED AT A GREATER THAN NORMAL OFFSET.

NOTE: FOR BLOCK CONNECTION TO POST AND TO RAIL SEE STD. 4380 OR 4385.

REVISION	DATE	BY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
POSTS AND OFFSET BLOCKS FOR "W" & "T" BEAM GUARDRAIL 31 INCH GUARDRAIL HEIGHT

SCALE: AS SHOWN — AUGUST 2011

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

NUMBER 4381

3/1/2007 GPLN

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-010

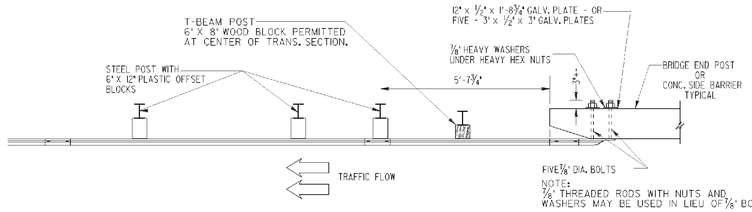
12/7/2011 8:05:16 AM \\GDOT-DSRI\GOPLOT\GCF\GG_K1p8000.gpf tsx C:\tpc\31inch guardrail\new 31 inch guardrail files\4382.pdf 99-HDS

9/21/2011 8:13:53 AM \\GDOT-DSRI\GOPLOT\GCT\GG_K1p8000.gpf dgowens V:\GATr\31 inch guardrail standards\10120 rev 4382.prt

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

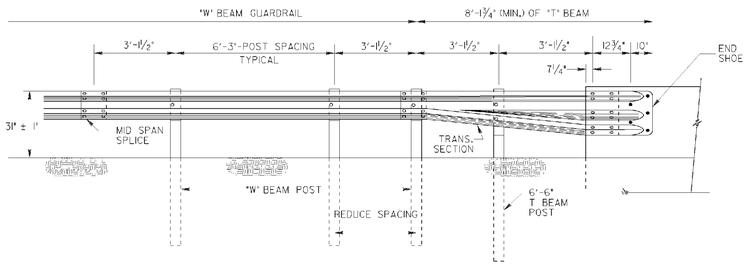
31 INCH HEIGH GUARDRAIL CONNECTION AT TRAILING ENDS

(SEE NOTE AT BOTTOM LEFT)



NOTE:
7/8" THREADED RODS WITH NUTS AND WASHERS MAY BE USED IN LIEU OF 7/8" BOLTS.

PLAN



ELEVATION

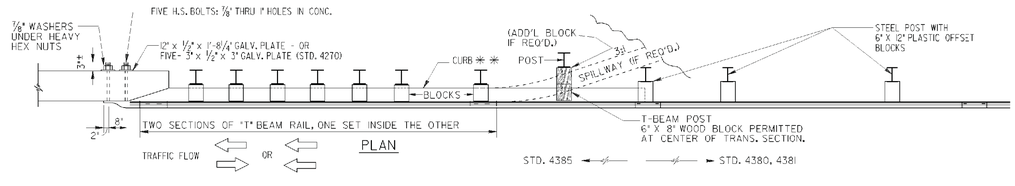
NOTE:
DETAILS AT TOP LEFT ARE APPLICABLE FOR CONNECTIONS AT THE TRAILING ENDS OF ONE-WAY TRAFFIC OR AT THE TRAILING END OF MULTI-LANE (4 OR MORE) FACILITIES.

NOTE:
DETAILS AT TOP RIGHT ARE APPLICABLE FOR CONNECTIONS AT THE APPROACH ENDS OF BRIDGES OR CONCRETE SIDE BARRIERS OR AT ALL FOUR ENDS FOR TWO-LANE, TWO WAY TRAFFIC.

GUARDRAIL CONNECTION AT BRIDGE END (OR CONCRETE BARRIER)

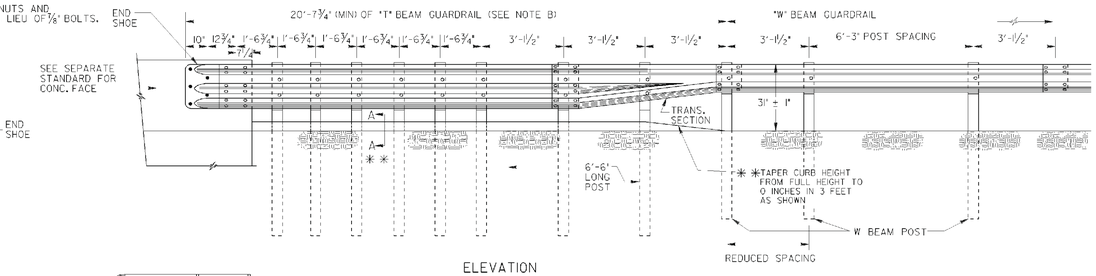
(DETAILS ARE ILLUSTRATED WITH APPROACH SLAB, SPILLWAY, ETC. FOR TYPICAL BRIDGE END, POST SPACINGS AND END SHOE CONNECTION APPLIES TO ROADWAY CONCRETE BARRIER AS WELL AS BRIDGE ENDS.)

NOTE:
7/8" THREADED RODS WITH NUTS AND WASHERS MAY BE USED IN LIEU OF 7/8" BOLTS.

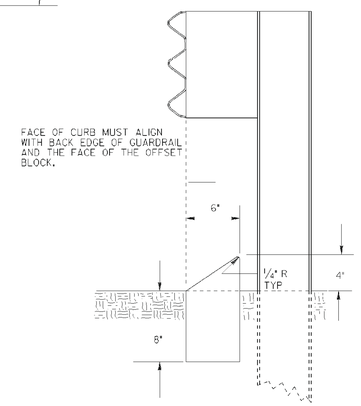


PLAN

STD. 4385 — STD. 4380, 4381



ELEVATION



SECTION A-A * *

NOTES FOR GUARDRAIL CONNECTION:

A. WHERE GREATER THAN THE MINIMUM LENGTH OF T-BEAM GUARDRAIL IS REQUIRED, ADDITIONAL POST REMAIN AS SHOWN WITHIN THE FIRST 20'-7¾" LENGTH, WITH NORMAL (6'-3" C. TO C.) SPACINGS FOR THE REMAINDER OF THE INSTALLATION (STD. 4385) UNLESS SPECIFIED OTHERWISE.

B. PAYMENT FOR GUARDRAIL TYPE T INCLUDES ALL ADDITIONAL POST, ALL ADDITIONAL OFFSET BLOCKS, THE SPECIAL END SHOE CONNECTION WITH ACCOMPANY HARDWARE, THE EXTRA SECTION OF "T" BEAM RAIL NESTED INSIDE THE OTHER, AND THE "T" BEAM TO "W" BEAM TRANSITION SECTION.

C. WHERE GUARDRAIL POST ARE ERECTED THRU SPILLWAY, CONCRETE CAP OR PAVING UNDER GUARDRAIL, PAYMENT FOR GUARDRAIL OF ANY TYPE SHALL INCLUDE REPLACING THE BLOCKED OUT CONCRETE AND/OR REMOVING AND REPLACING PORTIONS OF SPILLWAY, CONCRETE, OR GROUT AS NECESSARY FOR POST INSTALLATIONS.

* * FOR CURB DETAILS ASSOCIATED WITH APPROACH SLAB, SEE APPROACH SLAB STANDARD. FOR GUARDRAIL INSTALLATION LOCATIONS WHERE AN APPROACH SLAB IS NOT USED, PROVIDE A CONCRETE CURB IN ACCORDANCE WITH SECTION "A-A". CONCRETE CURB SHALL BE PAID FOR PER LINEAR FOOT.

NOTE: POST SPACINGS SHOWN ARE TYPICAL AVERAGE WITH NORMAL CONSTRUCTION TOLERANCES ALLOWED.

GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION & SUPPLEMENTS THERETO.
2. FOR DETAILS OF GUARDRAIL HARDWARE, POST, OFFSET BLOCKS, END SHOE, TRANSITION SECTION, 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. OFFSET BLOCKS SHALL BE PLASTIC UNLESS SPECIFIED OTHERWISE. OFFSET BLOCKS ARE REQUIRED AT ALL POSTS.
5. THE COST FOR DRILLING HOLES FOR THE END SHOE CONNECTION SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE GUARDRAIL.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

GUARDRAIL CONNECTION AT BRIDGE END OR AT CONCRETE BARRIER END FOR 31 INCH HIGH GUARDRAIL

NO SCALE — AUGUST 2011

DES. G.L.O. (SUBMITTED) STATE DESIGN POLICY ENGINEER
DRN. G.L.O.
CHK. B.P.E. (APPROVED) CHIEF ENGINEER
REVIEWED A.S.

NUMBER 4382

DATE / REVISION / BY

12/7/2011 8:05:16 AM \\GDOT-DSRI\GOPLOT\GCF\GG_K1p8000.gpf tsx C:\tpc\31inch guardrail\new 31 inch guardrail files\4382.pdf

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-011

3/1/2007 GPLN

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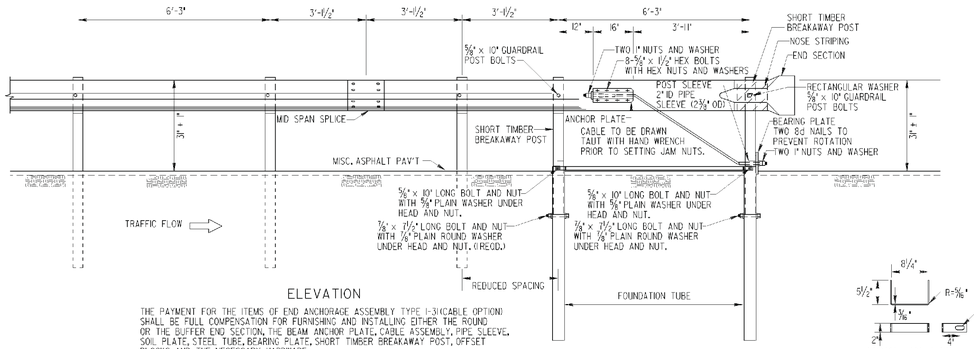
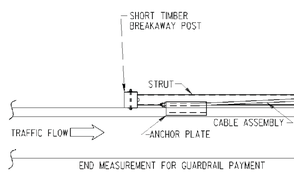
9/21/2011 8:13:55 AM \\GDOT-DSN1\GOPLOT\GCT\GG_K1p8006.gpf dgowen V:\GATY\31 inch guardrail standards\4012D rev 4383.prf

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

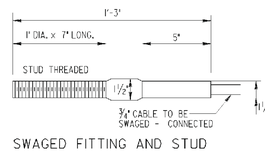


ELEVATION

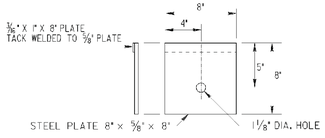
THE PAYMENT FOR THE ITEMS OF END ANCHORAGE ASSEMBLY TYPE I-31(CABLE OPTION) SHALL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING EITHER THE ROUND OR THE BUFFER END SECTION, THE BEAM ANCHOR PLATE, CABLE ASSEMBLY, PIPE SLEEVE, SOIL PLATE, STEEL TUBE, BEARING PLATE, SHORT TIMBER BREAKAWAY POST, OFFSET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



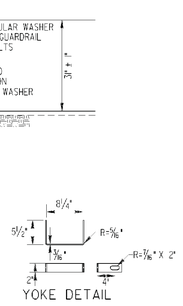
CABLE ANCHOR



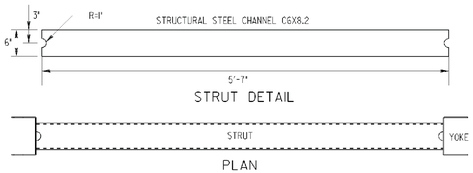
SWAGED FITTING AND STUD



BEARING PLATE

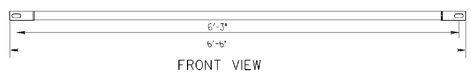


YOKE DETAIL

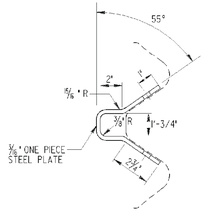


STRUT DETAIL

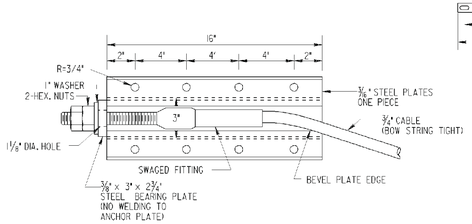
PLAN

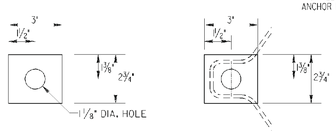


FRONT VIEW



ANCHOR PLATE DETAIL

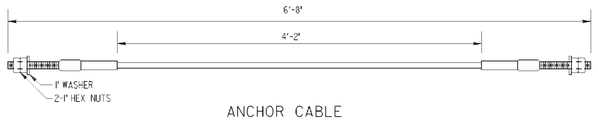




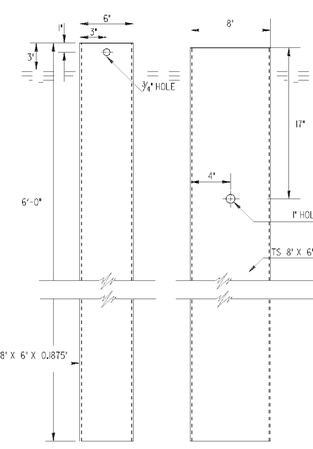
ANCHOR PLATE BEARING PLATE DETAIL

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.

STANDARD ANCHOR PLATE DETAILS



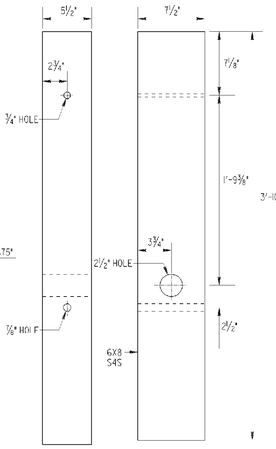
ANCHOR CABLE



FRONT VIEW SIDE VIEW

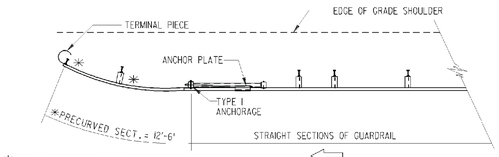
FOUNDATION TUBE

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



FRONT VIEW SIDE VIEW

SHORT TIMBER BREAKAWAY POST



* 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)

AT TRAILING END OF ONE-WAY TRAFFIC

NOTE:
SEE STD. 4388 OR OTHER APPLICABLE DETAILS FOR REQUIREMENT FOR TYPE I2 ANCHORAGE ON THE TRAILING END.

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.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

GUARDRAIL ANCHORAGE TYPE I
31 INCH GUARDRAIL HEIGHT

NO SCALE — AUGUST 2011

BY		DATE	REVISION
DES.	G.L.O.		
DRW.	G.L.O.		
CHK.	B.B.E.		
REVIEW	B.A.S.		

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

NUMBER 4383

12/7/2011 8:05:15 AM \\GDOT-DSN1\GOPLOT\GCF\GG_K1p8000.gpf tex Output\31inch guardrail\new 31 inch guardrail fillet\4383.pdf

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

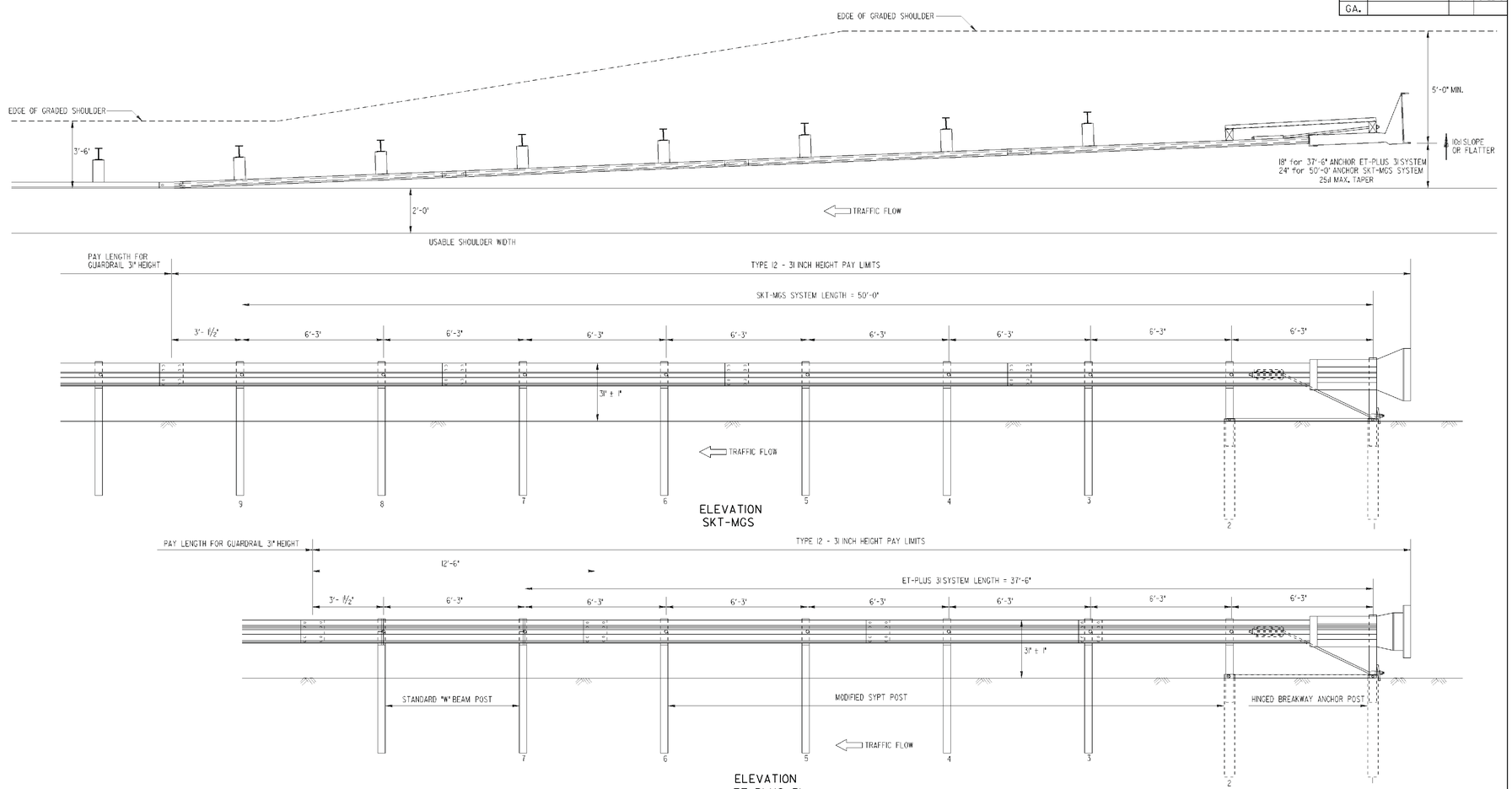
DRAWING No. 41-012

3/1/2007 GPLN

12/7/2011 8:05:14 AM \\GDOT-DSN1\GOPLOT\GCF\GO_Kip8000.gcf tcox C:\tpc\31inch guardrail\new 31 inch guardrail files\4384.pdf GO-RDS

9/21/2011 8:14:13 AM \\GDOT-DSN1\GOPLOT\GCF\GO_Kip8000.gcf gowens V:\GARY\31 inch guardrail standards\Type 12 4040 rev 4384.prf

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD CURRENT EDITION, AND SUPPLEMENTS THERETO.
2. GUARDRAIL ANCHORAGE TYPE 12, 31 INCH HEIGHT SHALL BE AN ET-PLUS 31 AS MANUFACTURED BY TRINITY INDUSTRIES, INC. OR AN SKT-MGS AS MANUFACTURED BY ROAD SYSTEMS, INC. AND SHALL BE INSTALLED ACCORDING TO MANUTACTURER'S RECOMMENDATIONS.
3. A MAXIMUM FLARE OF 25:1 OVER THE SYSTEM LENGTH OF THE TERMINAL IS REQUIRED FOR EITHER THE ET-PLUS 31 OR THE SKT-MGS.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

TYPE 12
31 INCH GUARDRAIL HEIGHT

NO SCALE — AUGUST 2011

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.

NUMBER 4384

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REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-013

3/1/2007 GPLN

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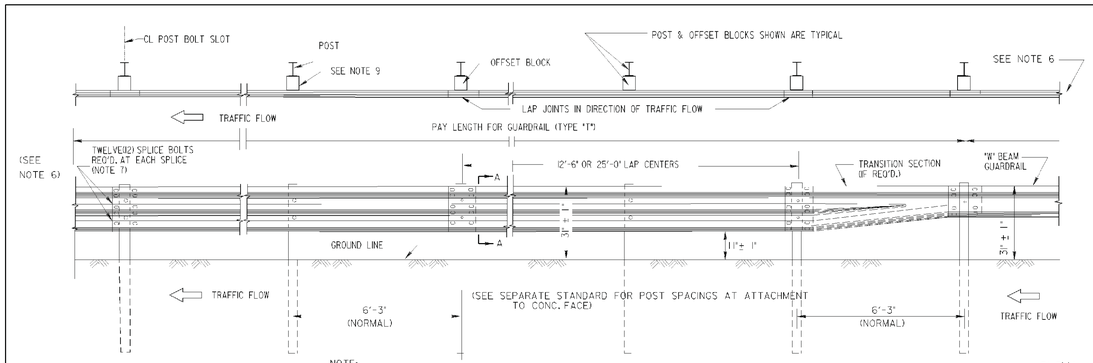
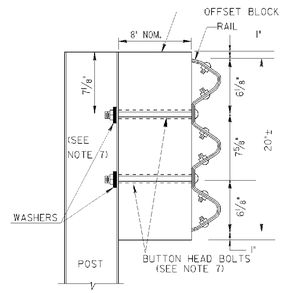
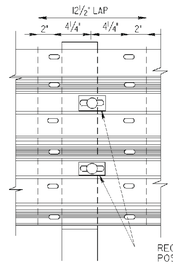


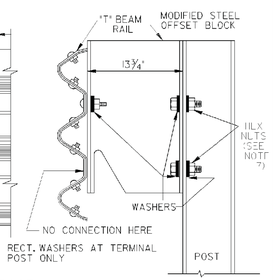
NOTE:
WHERE ATTACHED TO CONCRETE BARRIER, BRIDGE END POST OR OTHER CONCRETE FACE, PAYMENT FOR T BEAM GUARDRAIL SHALL INCLUDE ADDITIONAL POSTS, OFFSET BLOCKS AND DOUBLE THICKNESS (ONE RAIL NESTED INSIDE ANOTHER) SECTION OF T BEAM GUARDRAIL AS SPECIFIED.



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

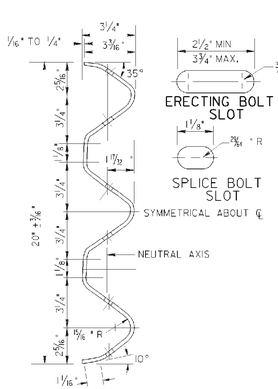


"T" BEAM SPLICE AT POST

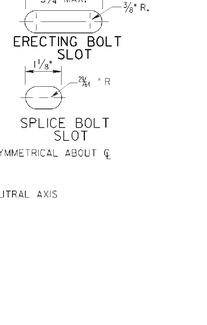


SECTIONAL VIEW
(GUARDRAIL TP. T, MODIFIED OFFSET BLOCK)

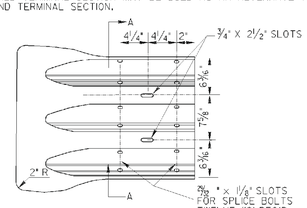
NOTE:
13¾" DEPTH MODIFIED STEEL OFFSETS BLOCKS MAY BE SPECIFIED WHERE JUSTIFIED FOR MORE SEVERE CONDITIONS. PAY ITEM IS --GUARDRAIL, TP T, MODIFIED OFFSET BLOCK---PER LIN. FT.



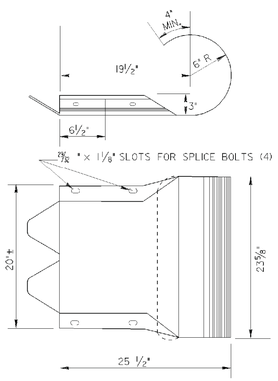
SECTION THROUGH RAIL ELEMENT (SEC. A-A)



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



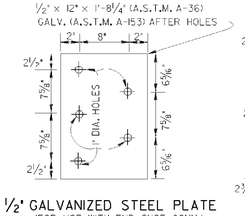
FLARED TERMINAL SECTION



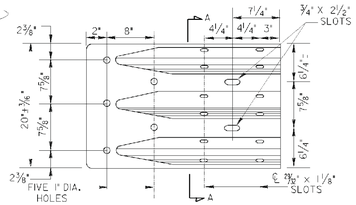
ROUNDED TERMINAL SECTION
TO BE LAPPPED ON TRAFFIC FACE OF RAIL WHERE TYPE I ANCHORAGE IS REQUIRED

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

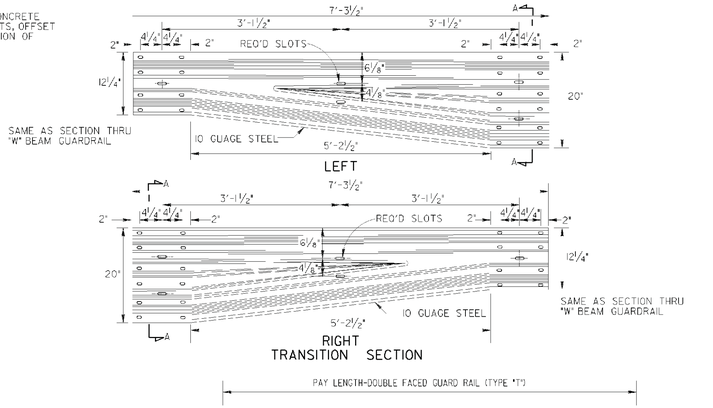
½" × 12" × 1'-8¼" (A.S.T.M. A-36) GALV. (A.S.T.M. A-153) AFTER HOLES

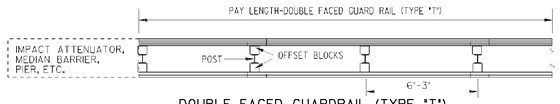


½" GALVANIZED STEEL PLATE
(FOR USE WITH END SHOE CONN.)
ALTERNATE: FIVE 3" x 2½" x 3" GALV. PLATES WITH 1" DIA. HOLE CENTERED, GALV. AFTER HOLES.

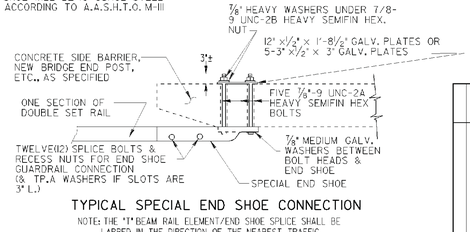


"T" BEAM SPECIAL END SHOE





DOUBLE FACED GUARDRAIL (TYPE "T")



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

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, HARDWARE 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.

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
"T" BEAM GUARDRAIL
CONNECTION TO 31INCH HEIGHT "W" BEAM

NO SCALE — AUGUST 2011

BY	DATE	REVISION
DES. G.L.O.		
DRW. G.L.O.		
CHK. B.R.E.		
REVIEW B.A.S.		

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

NUMBER 4385

12/7/2011 8:05:13 AM \\GDOT-DSN1\GOPLOT\GOF\GO_Kip8000.gpf tesk C:\tpc\3.1inch guardrail\new 31 inch guardrail fillet\4385.pdf

3/1/2007 GPLN

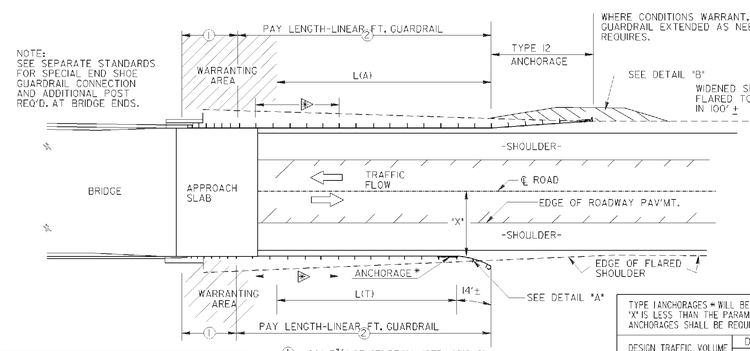
REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

NOTE:
FOR MINIMAL REDUCTION (TO 2') OF SHOULDER ACROSS BRIDGE, ALIGNMENT SHALL BE STRAIGHT FOR SHORT INSTALLATIONS (LESS THAN 200' TOTAL) AS SHOWN HEREON. FOR LONGER INSTALLATIONS, OR GREATER REDUCTION OF SHOULDER WIDTH, GUARDRAIL INSTALLATION SHALL BE AS PER DETAIL AT BOTTOM MIDDLE.



GUARDRAIL LOCATION AT BRIDGE ENDS

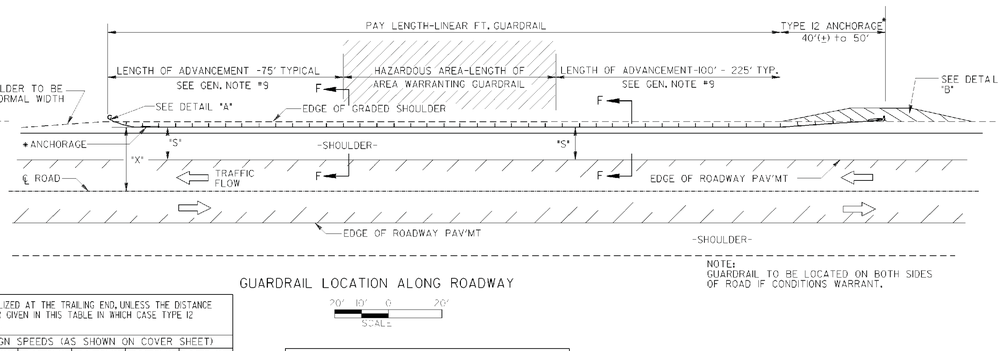
SCALE 20' 10' 0 20'

TRAFFIC VOLUME	MIN. L(T)	MIN. L(A)
DHV OVER 400	100'-0"	137'-6"
DHV 200-400	87'-6"	125'-0"
DHV 100-200	75'-0"	112'-6"
ADT 400 & OVER	62'-6"	100'-0"
ADT UNDER 400	50'-0"	87'-6"

NOTE: THESE MINIMUM LENGTHS ARE FOR STRAIGHT ALIGNMENTS IN ADVANCE OF WARRANTING AREA.

TYPE I ANCHORAGES WILL BE UTILIZED AT THE TRAILING END, UNLESS THE DISTANCE "X" IS LESS THAN THE PARAMETER GIVEN IN THIS TABLE IN WHICH CASE TYPE 12 ANCHORAGES SHALL BE REQUIRED.

DESIGN TRAFFIC VOLUME	DESIGN SPEEDS (AS SHOWN ON COVER SHEET)				
	40 MPH	50 MPH	55 MPH	60 MPH	70 MPH
OVER 6000 A.D.T.	14'	18'	22'	30'	30'
1500 - 6000 A.D.T.	12'	16'	20'	26'	28'
750 - 1500 A.D.T.	10'	12'	16'	20'	24'
UNDER 750 A.D.T.	7'	10'	12'	16'	20'

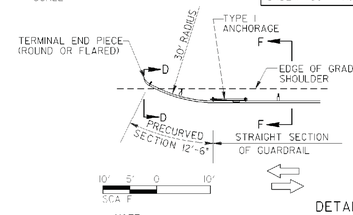


GUARDRAIL LOCATION ALONG ROADWAY

SCALE 20' 10' 0 20'

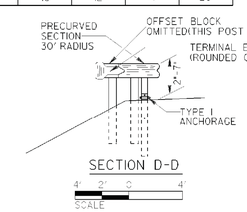
"S" IS THE OFFSET TO THE FACE OF THE GUARDRAIL; THIS WILL BE TWO(2) FEET GREATER THAN THE USABLE SHOULDER WIDTH (PER AASHTO MINIMUM SHOULDER REQUIREMENTS) EXCEPT WHERE THE CURRENT A.D.T. IS UNDER 400, IN WHICH CASE "S" MAY BE EQUAL TO THE USABLE OR GRADED SHOULDER WIDTH (NOT LESS THAN 4).

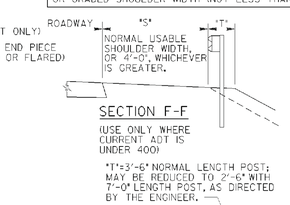
NOTE:
GUARDRAIL TO BE LOCATED ON BOTH SIDES OF ROAD IF CONDITIONS WARRANT.

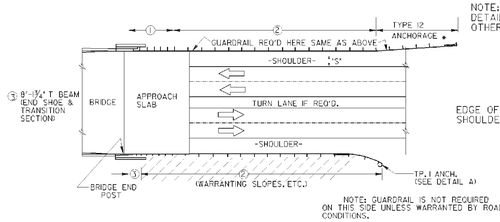


DETAIL "A"

NOTE:
DETAIL "A" IS FOR USE ONLY WHERE TYPE I ANCHORAGES ARE PERMITTED AS SHOWN ABOVE OTHERWISE, SEE DETAIL "B" FOR PROPER INSTALLATION OF TYPE 12 ANCHORAGE.



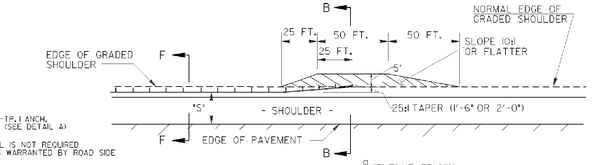


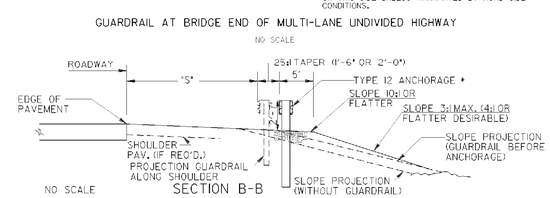


NOTE: GUARDRAIL IS NOT REQUIRED ON THIS SIDE UNLESS WARRANTED BY ROAD SIDE CONDITIONS.

GUARDRAIL AT BRIDGE END OF MULTI-LANE UNDIVIDED HIGHWAY

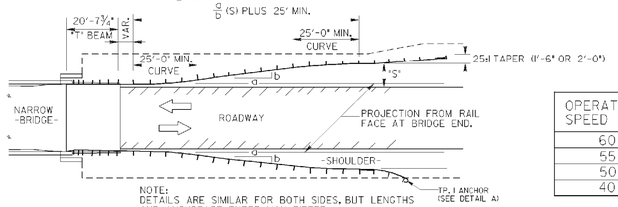
NO SCALE





DETAIL "B"

WHERE SHOWN ON THE PLANS OR APPROVED BY THE ENGINEER, THE EMBANKMENT FLARE SHOWN ABOVE FOR TYPE I ANCHORAGE MAY BE MODIFIED, PROVIDED 10:1 OR FLATTER SLOPES ARE PROVIDED IN FRONT OF THE RAIL & A CONSTANT 31 INCH RAIL HEIGHT IS MAINTAINED.



NOTE:
DETAILS ARE SIMILAR FOR BOTH SIDES, BUT LENGTHS AND ANCHORAGE TYPES MAY DIFFER.

GUARDRAIL LOCATION AT END OF NARROW BRIDGE

(NOTE: DETAILS NOT SHOWN HERE ARE SIMILAR TO THOSE AT TOP LEFT.)

OPERATING SPEED (MPH)	FLARE RATE a/b
60	13:1 MIN.
55	12:1 MIN.
50	11:1 MIN.
40	9:1 MIN.

GENERAL NOTES:

1. GUARDRAIL, ITS FITTINGS, PARTS, ETC. ARE TO BE IN ACCORDANCE WITH GEORGIA STANDARD SPECIFICATIONS AND/OR SPECIAL PROVISIONS.
2. FOR DETAILS OF BEAM TYPE GUARDRAIL, ACCESSORIES, GUARDRAIL POST, OFFSET BLOCKS, GUARDRAIL ANCHORAGES TYPE I AND TYPE 12, & BRIDGE END CONNECTION DETAILS, SEE APPLICABLE GEORGIA STANDARD PLANS AND/OR CONSTRUCTION DETAILS.
3. ALL OFFSET AND LENGTHS HERE SHOWN ARE APPLIED TO FACE OF GUARDRAIL.
4. POST SPACING SHALL BE 6'3" C. TO C., UNLESS OTHERWISE NOTED.
5. TYPE 12 ANCHORAGES SHOULD BE TERMINATED ON SLOPES 10:1 OR FLATTER. WHERE NORMAL SLOPE IS STEEPER, A 10:1 OR FLATTER SLOPE SHOULD BE CONSTRUCTED AT LOCATIONS WHERE TYPE 12 ANCHOR FLARES BACK OF SHOULDER.
6. GUARDRAIL SHALL NOT BE ERECTED ON SLOPES WHICH ARE STEEPER THAN 10:1, EXCEPT FOR THE PORTION OF PRECURVED (SHOP CURVED) SECTION THAT EXTENDS BACK OF THE SHOULDER AS SHOWN IN DETAIL "A" WHICH IS ERECTED ON NORMAL SLOPES OR EXCEPT WHERE SHOWN OTHERWISE IN PLANS.
7. PAY LENGTH SHALL BE MEASURED ALONG FACE OF GUARDRAIL.
8. W BEAM GUARDRAIL WILL HAVE A CONSTANT TOP OF RAIL HT. OF 2'-7" THRU OUT INSTALLATION EXCEPT WHERE A PORTION OF THE PRECURVED SECTION SHOWN IN DETAIL "A" EXTENDS BACK OF THE GRADED SHOULDER.
9. GUARDRAIL WILL EXTEND PAST HAZARD ON BOTH THE APPROACH & TRAILING ENDS TO PREVENT VECHICLE PENETRATION BEHIND THE RAIL INTO THE HAZARDOUS AREA. THE TYPICAL LENGTHS OF ADVANCEMENT SHOWN MAY BE INCREASED OR DECREASED WHEN SHOWN IN THE PLANS, OR WHERE DIRECTED BY THE ENGINEER BECAUSE OF SPEED DESIGN, ROADSIDE GEOMETRY, SIZE OF HAZARD, OR OTHER CONDITIONS. IF FURTHER INFORMATION IS DESIRED; SEE THE AASHTO "ROADSIDE DESIGN GUIDE".

SPECIAL NOTE:
LOCATION AND QUANTITIES GIVEN IN THE PLANS FOR GUARDRAIL AND ANCHORAGES ARE ESTIMATES MADE FROM OFFICE COMPUTATIONS. A FINAL DETERMINATION AS TO LOCATIONS AND QUANTITIES OF GUARDRAIL AND ANCHORAGES WILL BE MADE BY THE ENGINEER OR A REPRESENTATIVE FROM THE OFFICE OF TRAFFIC OPERATIONS AFTER CONSTRUCTION OF ROADWAY.

*OR APPROVED ALTERNATE, MEETING MANUAL FOR ASSESSING SAFETY HARDWARE(MASH) REQUIREMENTS

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
GUARDRAIL LOCATION DETAILS FOR UNDIVIDED HIGHWAYS AND ROADS (WITH SHOULDERS ADJACENT TO THE ROADWAY)
31 INCH GUARDRAIL HEIGHT

SCALE AS SHOWN — AUGUST 2011

REVISION	DATE	BY

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

NUMBER 4388

REVISION DATES		

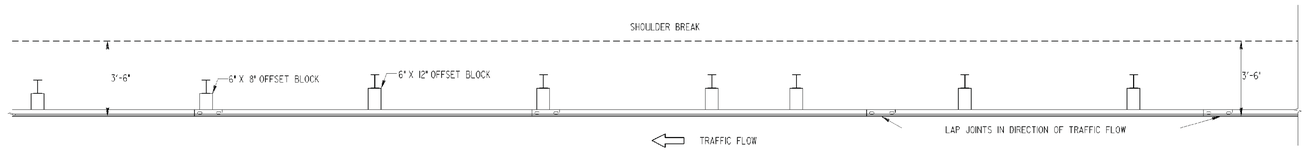
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-015

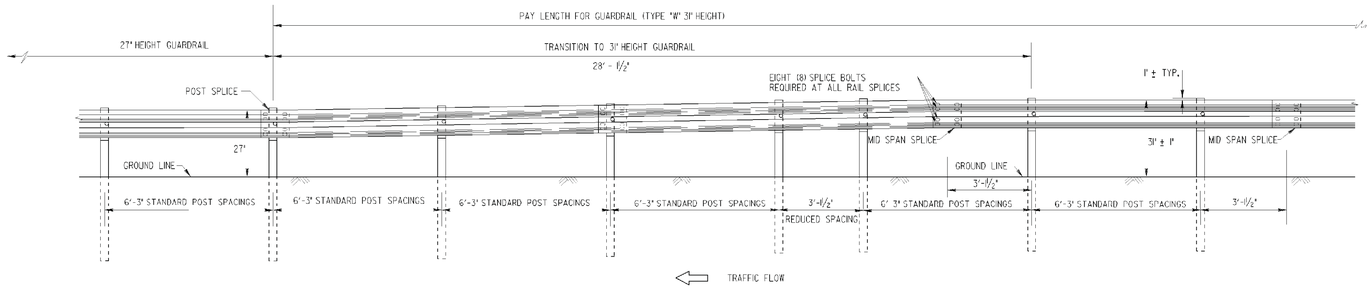
3/1/2007 GPLN

12/7/2011 8:05:07 AM \\GDOT-DSN1\GOPLOT\GCF\GO_Kip8000.gcf tcox C:\tpc\31inch guardrail\new 31 inch guardrail files\4390.pdf GO-RDS
9/21/2011 8:14:11 AM \\GDOT-DSN1\GOPLOT\GCF\GO_Kip8000.gcf gowens V:\GARY\31 inch guardrail standards\Transistion 27 to 31 4390.prf

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



PLAN



ELEVATION

(TYPICAL VIEW ALONG ROADWAY)

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 4011A.
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, & 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.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
"W" BEAM GUARDRAIL
TRANSITION 27 INCH GUARDRAIL TO 31INCH GUARDRAIL HEIGHT

NO SCALE | AUGUST 2011

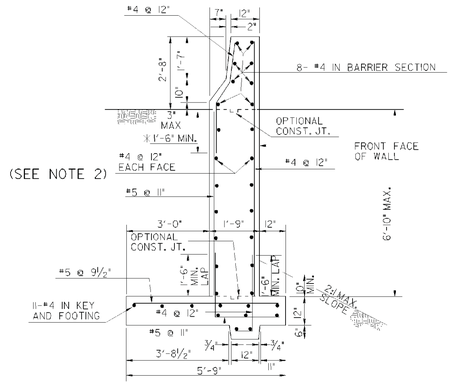
DES. G.L.O. (SUBMITTED) STATE DESIGN POLICY ENGINEER
DRW. G.L.O.
CHK. B.R.E. (APPROVED) Donald M Ross
REVIEW B.A.S. CHIEF ENGINEER

NUMBER 4390

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

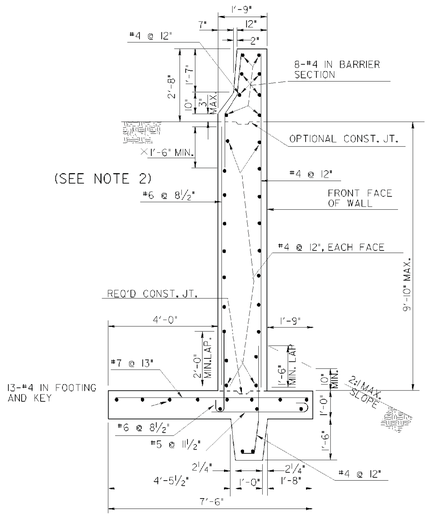
DRAWING No. 41-016



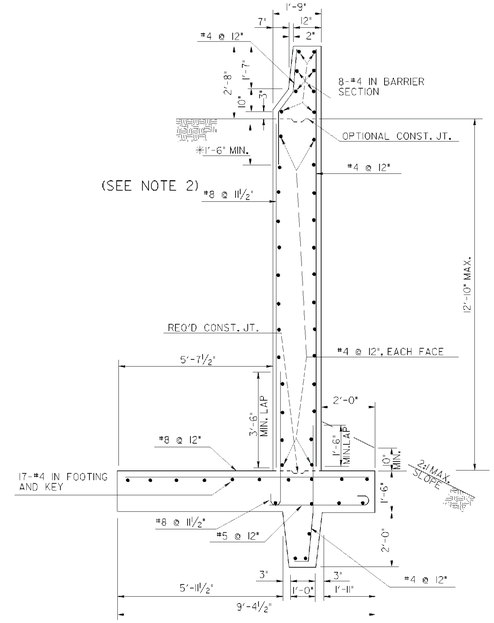
* NON-CONTACT LAPS ARE ACCEPTABLE

TYPE 2-A SIDE BARRIER

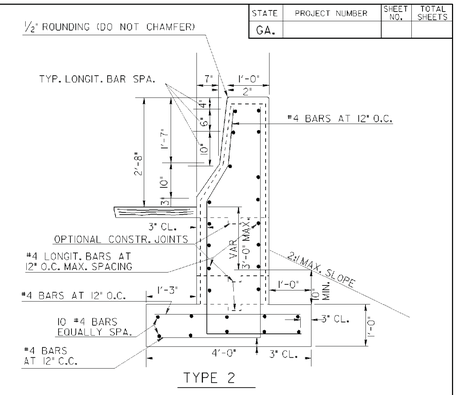
RED'D SOIL BEARING CAPACITY	
TYPE	CAPACITY, TONS/SF
2-A	1.25
2-B	1.25
2-C	1.5
2	1.0



TYPE 2-B SIDE BARRIER



TYPE 2-C SIDE BARRIER



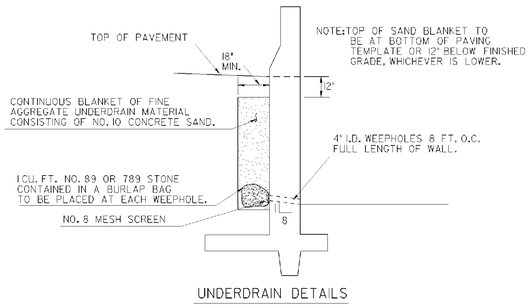
TYPE 2

GENERAL NOTES:

1. AT CONTRACTOR'S OPTION, SIDES OF FOOTING KEY MAY BE VERTICAL. MAINTAIN WIDTH SHOWN AT TOP OF KEY. BACKFILL FRONT FACE OF WALL FIRST.
2. UNDERDRAIN SYSTEM PER DETAILS AT BOTTOM LEFT AND/OR NOTE 9 IS REQUIRED FOR TYPES 2-A, 2-B, AND 2-C.
3. EXPOSED CONCRETE SURFACES SHALL RECEIVE A TYPE III FINISH.
4. 1" EXPANSION JOINTS SHALL BE PROVIDED IN WALL, FOOTING AND KEY AT A MAXIMUM SPACING OF 100 FT. EXPANSION JOINTS SHALL BE SPACED UNIFORMLY.
5. CONTRACTION JOINTS SHALL BE AS SPECIFIED FOR SIDE BARRIER, GA. STD. 4948A.
6. EXPANSION AND CONTRACTION JOINTS IN TYPES 2-A, 2-B, AND 2-C SIDE BARRIER SHALL BE WATERPROOFED ON THE BACK SIDE. WATERPROOFING SHALL BE 3-PLY AND EXTEND FROM TOP OF SAND BLANKET TO TOP OF FOOTING FOR 1'-6" MIN. EACH SIDE OF JOINT.
7. TYPES 2, 2-A, 2-B, AND 2-C SIDE BARRIER SHALL BE PAID FOR PER LIN. FT. AS CONCRETE SIDE BARRIER. TYPE 2, 2A, 2B, OR 2C PRICE BID TO INCLUDE COST OF WATERPROOFING AND ALL INCIDENTALS AS SPECIFIED IN SECTION 621 OF THE STD. SPEC.
8. SIDE BARRIER DESIGNED FOR THE FOLLOWING SOIL PROPERTIES:

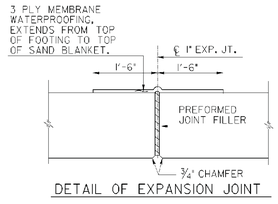
   θ = ANGLE OF INTERNAL FRICTION 28°
   ɣ = UNIT WEIGHT = 110 PCF
   A = COEFF. OF SLIDING FRICTION = .45

9. A SYNTHETIC DRAINAGE BLANKET SELECTED FROM THE DEPARTMENT'S QUALIFIED PRODUCTS LIST IS AN ACCEPTABLE SUBSTITUTE FOR THE SAND BLANKET, BAG OF STONE, AND MESH SCREEN SHOWN IN THE UNDERDRAIN DETAILS.

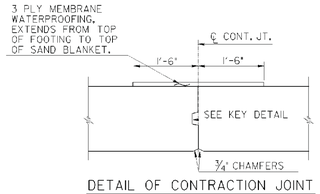


UNDERDRAIN DETAILS

SEE GEN. NOTE 9 FOR ALTERNATE

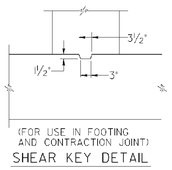


DETAIL OF EXPANSION JOINT



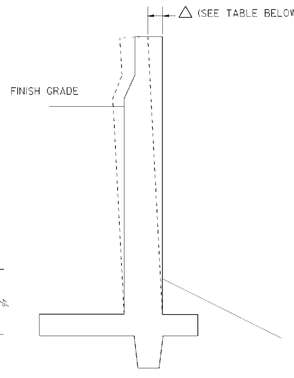
DETAIL OF CONTRACTION JOINT

△ (INCHES)	
WALL TYPE	DIMENSION
2-A	0
2-B	0
2-C	3/16



(FOR USE IN FOOTING AND CONTRACTION JOINT)

SHEAR KEY DETAIL



WALL BATTER DETAIL

DATE	REVISION	BY
11-25-07	ADDED BAR LAP NOTE AND WALL BATTER DETAIL.	GLO

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

CONCRETE SIDE BARRIER
TYPES 2, 2A, 2B & 2C

NO SCALE — DEC., 1999

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

(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER

(APPROVED) CHIEF ENGINEER

NUMBER 4948B

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-017

3/1/2007 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRST0-0076-01(036)	215	267

5/21/2007 11:14:50 AM \\GDOT DSN1\GOPLOT\QCF\gs_tiff_output.qcf gowens M:\GARY\REVISED 4960 E&W\4960.prf GO RD6

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

OPTION ① BARRIER DELINEATIONS, OFFSETS, & FLARE RATES

LATERAL OFFSETS(L_O) LESS THAN 2 FT. NOT PERMITTED, UNLESS APPROVED BY THE ENGINEER.

FOR A TWO-LANE TWO-WAY ROADWAY THE LANE WIDTH(L_W) PLUS THE LATERAL OFFSET(L_O) MUST BE GREATER THAN THE MINIMUM BARRIER END OFFSET(B_O), OR THE TRAILING END SHALL BE TAPERED SAME AS APPROACH.

IF L_W+ L_O IS LESS THAN 20 FT. FOR THE WORK AREA OR THE TRAILING END, THEN THE 10"x10" PANELS SHALL BE REFLECTORIZED ON BOTH SIDES.

LEGEND

- ● - STRIPED DRUM
- □ - 10"x10" YELLOW PANELS WITH TYPE VII SHEETING- MAX. 40' SPACING-LONGITUDINAL SECTION-MAX. 20' SPACING IN TAPER
- T_L - MINIMUM TAPER LENGTH OF TEMPORARY BARRIER MEASURED FROM THE SECTION OF TEMPORARY BARRIER RUNNING PARALLEL WITH THE TRAVEL LANE TO THE BARRIER END IN FEET
- B_O - MINIMUM BARRIER END OFFSET DISTANCE IN FEET
- L_O - DESIRABLE MINIMUM LATERAL OFFSET DISTANCE FROM THE EDGE OF THE TRAVEL LANE TO THE TOE OF THE TEMPORARY BARRIER IN FEET
- b_O- MINIMUM BARRIER END OFFSET(B_O)MINUS THE DESIRABLE MINIMUM LATERAL OFFSET(L_O)
- F_R - MINIMUM FLARE RATE OF THE TEMPORARY BARRIER IN THE TAPER SECTION
- L_W- LANE WIDTH IN FEET

MINIMUM LENGTH OF TAPER REQUIRED

$$b_O = B_O - L_O$$
$$T_L = b_O \times F_R$$

POSTED SPEED ON THE ROADWAY	DESIRABLE MINIMUM LATERAL OFFSET (FT.) L_O	FLARE RATE F_R	B_O MINIMUM OFFSET TO BARRIER END (FEET)
30-40 MPH	2	5:1	13
45-50 MPH	2	6:1	16
55 MPH	2	8:1	23
60-70 MPH	2	8:1	30

NOTE: INTERMEDIATE SPEEDS MAY UTILIZE AVERAGE VALUES.

OPTION ② MINIMUM BARRIER ADVANCEMENT LENGTH
(WITH TEMPORARY GUARDRAIL ANCHOR)

OPTION ③ PORTABLE ATTENUATOR TERMINAL

NOTES:
1. SEE SPECIFICATION SECTIONS 648 AND 150.
2. SEE CONSTRUCTION DETAIL G-11 FOR NON-GATING ATTENUATORS.
3. SEE GENERAL NOTE NO. 4.

OPTION ④ TEMPORARY BARRIER TRANSITION - CAST - IN - PLACE
(REQUIRED WHERE TEMPORARY BARRIER BUTTS AGAINST PERMANENT BARRIER)

NOTES:
1. COVER PERMANENT BARRIER, PAVEMENT, & PRECAST SECTIONS WITH POLYETHYLENE AS A BOND BREAKER.
2. PLACE BARRIER SIDE FORMS AGAINST PERMANENT & TEMP. BARRIER TO FORM SMOOTH TRANSITION.
3. USE CLASS "A" CONCRETE, A TYPE I FINISH IS SUFFICIENT.
4. TRANSITION SHALL BE COMPLETED BEFORE TEMPORARY BARRIER IS EXPOSED TO ON-COMING TRAFFIC.
5. TRANSITION IS NOT REQ'D. AT TRAILING END OF ONEWAY TRAFFIC FLOW.
6. TRANSITION WILL BE PAID FOR AS TEMPORARY BARRIER. PAYMENT INCLUDES REUSE, REMOVE AND DISPOSAL. TEMPORARY MEDIAN TRANSITION WILL BE PROVIDED BY THE CONTRACTOR WITH PAYMENT MADE AT THE PRICE BID FOR BARRIER AS SPECIFIED IN THE PLANS.

END TREATMENT FOR BARRIER TERMINAL

WHERE BARRIER END OFFSETS REQUIRED IN OPTION ① CAN NOT BE OBTAINED THEN, A TEMPORARY GUARDRAIL ANCHORAGE AT THE BARRIER END WILL BE REQUIRED AS PER OPTION ②. IF INSTALLATION OF GUARDRAIL ANCHORAGE IS NOT PRACTICAL DUE TO LOCAL CONDITIONS, A TEMPORARY PORTABLE IMPACT ATTENUATOR SHOULD BE USED AT THE BARRIER END AS PER OPTION ③.

① = FIRST OPTION, MINIMUM OFFSET IS OBTAINED.

② = SECOND OPTION, TEMPORARY GUARDRAIL ANCHORAGE, AS SPECIFIED.

③ = THIRD OPTION, PORTABLE ATTENUATOR.

④ = FOURTH OPTION, TERMINATE WITH A CAST-IN-PLACE TRANSITION.

⑤ = FIFTH OPTION, CONNECT TO GUARDRAIL.

OPTION ⑤ TEMPORARY CONCRETE BARRIER/GUARDRAIL CONNECTIONS & JUNCTIONS

NOTE:
PAYMENT FOR TEMPORARY CONCRETE BARRIER WILL INCLUDE ALL SPECIAL END SHOES, BOLTS, BOLT HOLES, NUTS, WASHERS, ADDITIONAL GUARDRAIL POSTS, ETC., NECESSARY FOR THE CONNECTIONS, AS SHOWN, WHEN REQUIRED.

ALL SPECIAL END SHOES WILL BE CONNECTED TO CONCRETE BARRIER WITH FOUR ⅞" DIA. BOLTS (A.S.T.M. A-307). LOCATION OF THE BOLTS MAY BE VARIED AT THE DIRECTION OF THE ENGINEER. REMOVABLE TYPE ⅞" DIA. CONCRETE ANCHOR BOLTS, INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS, MAY BE USED INSTEAD OF THE BOLTS CONNECTION SYSTEM SHOWN. ANY BOLTS BROKEN OR IMPROPERLY INSTALLED WILL BE CAUSE FOR REJECTION.

⅞" THREADED RODS WITH NUTS AND WASHERS MAY BE USED IN LIEU OF ⅞" BOLTS.

AT LEAST A 5'-0" OFFSET IS DESIRABLE. OFFSET SHALL BE A MIN. OF 4'-3" WITH 6'-3" C. TO C. POST SPACING. WHEN OFFSET IS BETWEEN 4'-3" AND 3' MIN. POST SPACING SHALL BE 3'-1½" C. TO C. FOR 7 CONSECUTIVE SPACING IN ADVANCE OF THE BARRIER.

FOR BARRIER SECTIONS BEHIND GUARDRAIL, THE FLARE RATE(F_R) MAY BE ALTERED, AS NEEDED, TO PROVIDE THE 4' OR 5' OFFSET SHOWN HERE

PLAN

ONE-WAY TRAFFIC TRAILING END

PLAN

ONE-WAY TRAFFIC APPROACH END

PLAN

ONE-WAY TRAFFIC TRAILING END

⚠2 SECTIONS OF "W"-BEAM, ONE SET INSIDE THE OTHER.

PLAN

GENERAL NOTES:

1. BARRIERS SHALL BE PLACED SUCH THAT OPENINGS BETWEEN INDIVIDUAL SECTIONS SHALL BE KEPT TO A MAXIMUM. ALL JOINTS BETWEEN PRECAST SECTIONS SHALL BE CONNECTED AS REQUIRED BY GA. STANDARD 4961 AND/OR MANUFACTURERS RECOMMENDATIONS.
2. THE BARRIER IS NOT TO BE CONNECTED TO THE BRIDGE DECK BY CONNECTING PINS OR REBAR UNLESS AN APPROVED METHOD FOR CONNECTION IS REQUIRED.
3. PRECAST BARRIER SECTIONS SHALL CONFORM TO THE DIMENSIONAL REQUIREMENTS IN GA. STANDARD 4961 AND/OR MANUFACTURERS RECOMMENDATIONS.
4. TRAFFIC CONTROL NOT SHOWN ON THIS STANDARD SHALL BE IN ACCORDANCE WITH CURRENT EDITION OF SECTION 150, STANDARDS, CONSTRUCTION DETAILS AND/OR PLAN SHEETS. DRUMS, ETC. SHOWN FOR OPTION① SHALL BE APPLICABLE FOR THE OTHER OPTIONS AS WELL. DRUMS SHALL BE PROVIDED IN ADVANCE OF TEMPORARY BARRIERS INSTALLATION AND SHALL BE IN PLACE BEFORE THE BARRIER IS INSTALLED AND REMOVED AFTER THE BARRIER IS REMOVED.
5. WHERE TEMPORARY GUARDRAIL ANCHORAGE IS SPECIFIED, THE FIRST BREAKAWAY SHALL BE 37'-6" MINIMUM IN ADVANCE OF BEGINNING THE TEMPORARY BARRIER INSTALLATION.
6. PAYMENT FOR TEMORARY GUARDRAIL ANCHORS INCLUDES END SHOE, CONNECTING BOLTS, NUTS AND WASHERS, ADDITIONAL POSTS AND OFFSETS BLOCKS, 25 FT. ADDITIONAL "W"-BEAM WITH THE DOUBLE NESTED SECTION PLUS STANDARD ANCHORAGE COMPONENTS. (TOTAL LENGTH=62'-6"(±) MIN.
7. UNACCEPTABLE OR NON-STANDARD END TREATMENT WILL NOT BE LEFT IN PLACE AFTER REMOVAL OF THE TEMPORARY BARRIER, ALL GUARDRAIL AND ALL ANCHORAGES LEFT IN PLACE WILL BE TREATED AS NECESSARY TO CONFORM WITH CURRENT STANDARDS IMMEDIATELY AFTER REMOVAL OF THE TEMPORARY BARRIER.

DATE	REVISION	BY
5-10-07	REVISED ALL OPTIONS AND REV. REFLECTIVE SHEETING TYPE AND GENERAL NOTES.	GLO
2-1-01	O.M. SH. SPEC.	RMU

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
TEMPORARY BARRIER (END TREATMENT OPTIONS)

NO SCALE — REV. & REDR. MAY, 1999

DES. / DRW. / TRA. / CHK.

(SUBMITTED) [signature] STATE ROAD & AIRPORT DESIGN ENGINEER
(APPROVED) [signature] CHIEF ENGINEER

NUMBER 4960

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REVISION DATES

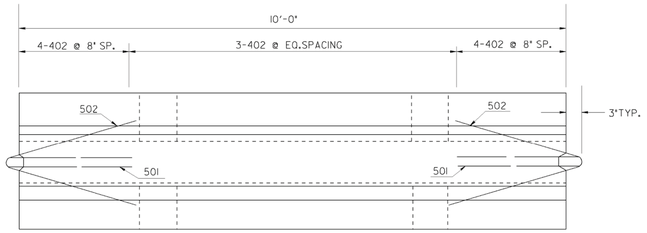
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-018

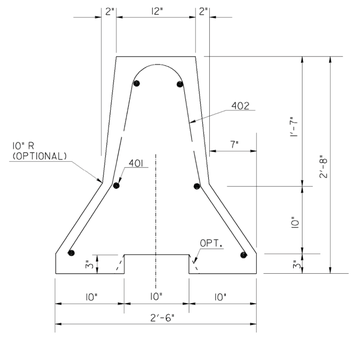
9/29/2006 2:02:38 PM \\GDOT-DSN1\GOPLOT\QCF\ps_tiff_output.qcf gowens M:\GARY\revised 4961\4961.prf GO-RD6

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

PRECAST CONCRETE BARRIER DETAILS

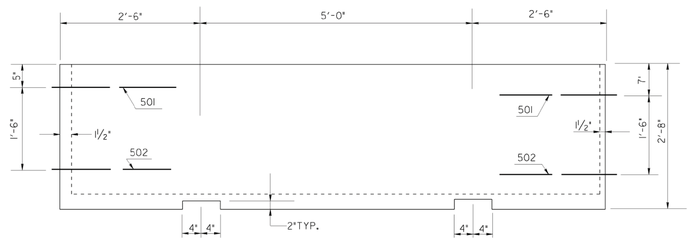


PLAN

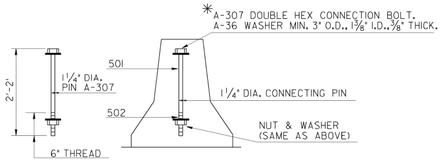


END ELEVATION

NOTE:
BARRIER SECTIONS SHALL BE CONNECTED TOGETHER WITH THE 1¼" DIA. A-307 DOUBLE HEX CONNECTION BOLT. THE BOTTOM NUT & WASHER SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF THE BARRIER INSTALLATION.



SIDE VIEW



PIN CONNECTION

*AN ALTERNATE CONNECTING PIN WITH A FUSED NUT ON THE TOP THREADED PORTION AND NUT AND WASHER AS SPECIFIED ON THE BOTTOM MAY ALSO BE USED.

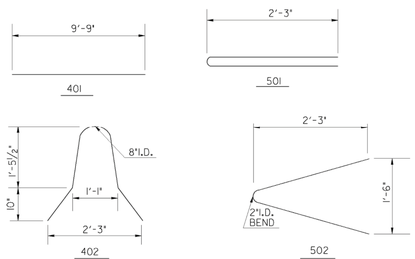
GENERAL NOTES:

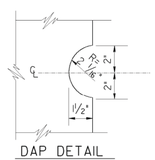
1-MATERIALS: CLASS 'A' CONCRETE AND 40 STEEL.

2-SEE GA. SPECIFICATIONS FOR BASIS OF PAYMENT AND METHOD NO.___.

3-REINFORCEMENT, HAVING AN AREA AT LEAST EQUAL TO REBARS SHOWN, MAY BE USED AS AN ALTERNATE.

4-BARRIERS SHALL BE PLACED SUCH THAT OPENINGS BETWEEN INDIVIDUAL SECTIONS SHALL BE KEPT TO A MAXIMUM.





DAP DETAIL

G.L.O.	REV. CONNECTION WASHER AND REV. GEN. NOTE NO. 4.	9-8-06	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
	REV. REBAR & PIN CONN.	5-2-01	STANDARD DETAILS OF PRECAST TEMPORARY BARRIERS
R.M.U.	COTTER PIN REQUIREMENT	5-10-96	NO SCALE — AUG., 1995
BY	REVISION	DATE	(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGR. (APPROVED) CHIEF ENGINEER — NUMBER 4961

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

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REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-019

3/1/2007 GPLN

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NOTES:
STEPS ARE REQ'D. ON ALL STRUCTURES WHERE H IS GREATER THAN 4'-0".
THE NUMBER AND LOCATION OF STEPS WILL BE AS DIRECTED BY THE ENGINEER.
AN ALTERNATE STEP MAY BE SUBSTITUTED, IF APPROVED BY THE GA. D.O.T. OFFICE OF MATERIALS & RESEARCH.

STEEL LADDER BAR STEPS

DETAIL A

DETAIL B

DETAIL "C"

DOUBLE GRATE
DROP INLET TYPE M-2

SINGLE GRATE
DROP INLET TYPE M-1

BRICK WALL THICKNESS FOR ADD'L HEIGHTS

NOTE:
DETAILS NOT SHOWN HERE WILL BE SIMILAR TO THOSE AT THE LEFT.

DROP INLET WITH ADDITIONAL HEIGHT OR OVER EXISTING INLET
(TYPE M-2 INLET SHOWN; CONSTRUCTION SIMILAR FOR TYPE M-1)

DROP INLET TYPE M-1 WITH TYPE 6 OR TYPE 22 CONCRETE BARRIER (TYP.)

SECTION A-A

SECTION B-B

ALTERNATE TO INVERT

FRAME

GRATE

GENERAL NOTES

1. SPECIFICATION : GEORGIA STANDARD CURRENT EDITION, AND SUPPLEMENTS THERETO.
2. INLETS SHALL BE DESIGNATED AS GROUP I(SEC. 668) UNLESS A CROSS DRAIN PIPE OVER 36" CONNECTS TO A REQUIRED PART OF THE INLET.
3. INVERTS AND PIPES SHOWN ARE ILLUSTRATIVE. SEE PLANS FOR SPECIFICS. INVERTS SHALL BE FORMED WITH GROUT OR CONCRETE AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.
4. FOR CONCRETE BARRIER DETAILS NOT SHOWN, SEE SEPARATE STANDARDS OR PLAN DETAILS. IF THE ROADWAY BARRIER HAS REINFORCING STEEL, THE REINFORCING SHALL BE CONTINUED IN BARRIER SECTION ACROSS THE INLET. ADDITIONAL REINFORCING REQUIRED WHERE SHOWN.
5. BOTH THE GRATE AND THE FRAME SHALL BE EITHER A-36 STEEL; HOT-DIPPED GALVANIZED, A-123, AFTER FABRICATION OR A-568 STEEL; NOT GALVANIZED DRILL 1/4" DIA HOLE IN ONE FRAME CORNER FOR A-36 STEEL TO PREVENT BUILD-UP OF GALVANZING MATERIAL.
6. IF BARRIER (OR WALL) FOOTING PREVENTS NORMAL LOCATION OF LOGITUDINAL PIPE, W2 MAY BE ENLARGED TO RECEIVE AN OFFSET LONGITUDINAL OR 18"DIA. 60° WYE CONNECTION MAY BE USED TO DRAIN NORMAL SIZE INLET INTO THE OFFSET LOGITUDINAL. WHERE WYE CONNECTIONS ARE USED, MANHOLES SHALL BE SPACED AT 600'+- INTERVALS IN PLACE OF WYE CONNECTION. IF DRAINAGE PERMITS, AND STRUCTURAL APPROVAL IS MADE, LONGITUDINAL PIPE MAY BE LOCATED UNDER THE FOOTING.

SPECIAL NOTE:
STANDARD 5001-M INLET GRATES ARE FOR USE ONLY ON LIMITED ACCESS TYPE FACILITIES.

MINIMUM DIMENSIONS: INLET WITH CROSS DRAIN PIPE

PIPE SIZE	W1	a	℄	MIN. H
15"	3'-0"	—	—	3'-10"
18"	3'-0"	—	—	4'-2"
24"	3'-0"	—	—	4'-9"
30"	3'-6"	1"	3"	5'-4"
36"	4'-0"	4"	1'-0"	6'-4"
42"	4'-6"	7"	1'-9"	7'-8"
48"	5'-0"	10"	2'-6"	9'-0"
54"	5'-6"	1'-1"	3'-3"	10'-4"
60"	6'-0"	1'-4"	4'-0"	11'-8"

MINIMUM DIMENSIONS: INLET WITH LONGITUDINAL PIPE

PIPE SIZE	T+M-1 W2	T+M-2 W2	MIN. H
15"	4'-3"	10'-2"	3'-10"
18"	4'-3"	10'-2"	4'-2"
24"	4'-3"	10'-2"	4'-9"
30"	4'-3"	10'-2"	5'-4"
36"	4'-3"	10'-2"	5'-10"
42"	4'-10"	10'-2"	6'-6"
48"	5'-8"	10'-2"	7'-1"

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DATE	REVISION
6-14-10	REV. GEN. NOTES NO. 5 & 6
6-20-08	REDRAWN
8-15-97	ADD SPECIAL NOTE
5-18-94	ADD NOTE 6
BY	
G.L.G.	
G.J.P.	
R.M.U.	
R.M.U.	

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
DROP INLET TYPES M-1 & M-2
ADJACENT TO CONCRETE BARRIER

NO SCALE — MAY 1996

DES. W.W.S. (SUBMITTED) STATE DESIGN POLICY ENGINEER
DRW. L.G.S.
TRA. R.M.U. (APPROVED) CHIEF ENGINEER
CHK. R.K.C.

NUMBER 5001M
SHEET 1 OF 2

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3/1/2007 GPLN

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-020

3/31/2014 11:27:02 AM \\GDOT-DSN1\GOPLOT\QCF\QGC_qcf_bquarles_P:\Policy\Lighting\Standards\GA Standards\5001M\5001m-2.prf

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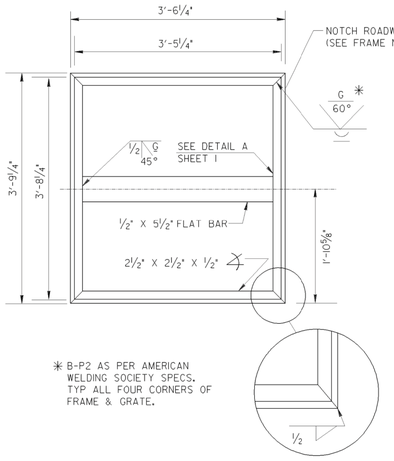
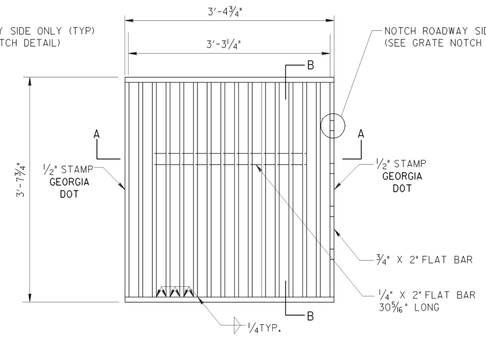
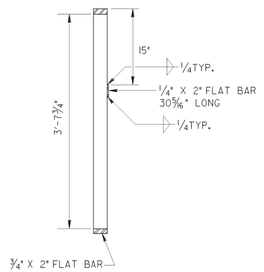


✳ B-P2 AS PER AMERICAN WELDING SOCIETY SPECS. TYP ALL FOUR CORNERS OF FRAME & GRATE.

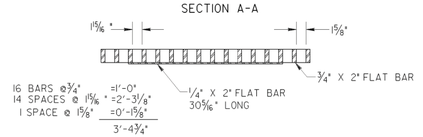
GRATE



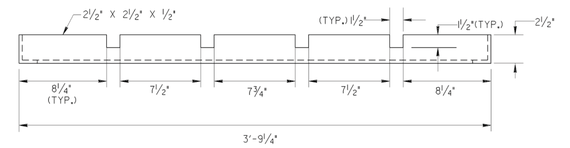
SECTION B-B



SECTION A-A

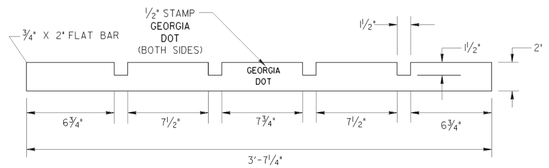


FRAME NOTCH DETAIL

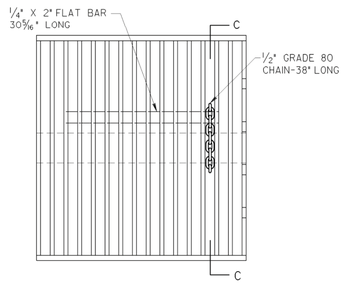


GRATE NOTCH DETAIL

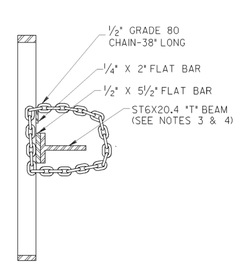
¾" X 2" FLAT BAR (ONE REQ'D)



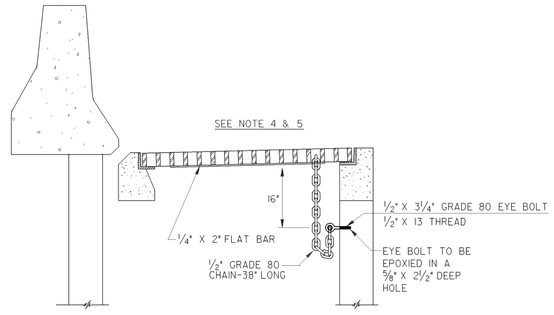
SECURITY CHAIN



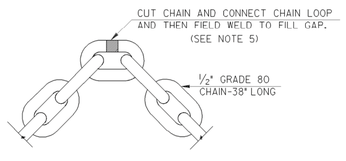
PLAN



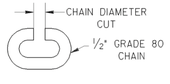
SECTION C-C



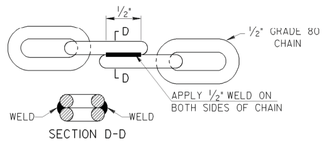
CHAIN LOOP CONNECTION DETAILS



CHAIN LOOP CONNECTION DETAIL



CUT CHAIN LINK DETAIL



SECTION D-D

ALTERNATE WELDED CONNECTION DETAIL

GENERAL NOTES:

1. SPECIFICATION: GEORGIA STANDARD CURRENT EDITION, AND SUPPLEMENTS THERETO.
2. NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THE FABRICATION AND INSTALLATION OF THE SECURITY CHAIN.
3. LOOP CHAIN AROUND FIRST LADDER STEP IF ST6X20.4 "T"BEAM IS NOT PRESENT.
4. IF NEITHER ST6X20.4 "T"BEAM OR STEP IS AVAILABLE, THEN SECURE CHAIN TO INLET WITH EYE BOLT.
5. WELD NUT TO THE BOLT, IF CHAIN IS SECURED TO INLET OR GRATE WITH BOLT AND NUT.

REV.	DATE	REVISION
B.H.D.	2-18-14	ADDED GEN. NOTES 3, 4, & 5
G.L.C.	6-14-10	ADDED CHAIN DETAILS
G.L.C.	6-30-98	REVISION
R.M.U.	8-6-97	ADD SPECIAL NOTE
R.M.U.	9-19-94	ADD NOTE 6

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
DROP INLET TYPES M-1 & M-2
ADJACENT TO CONCRETE BARRIER

NO SCALE — MAY 1996

DES. W.W.S.
DRW. L.G.S.
TRA. R.M.U.
CHK. R.K.C.

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

NUMBER 5001M
SHEET 2 OF 2

3/31/2014 11:27:02 AM \\GDOT-DSN1\GOPLOT\QCF\QGC_qcf_bquarles_P:\Policy\Lighting\Standards\GA Standards\5001M\5001m-2.prf

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

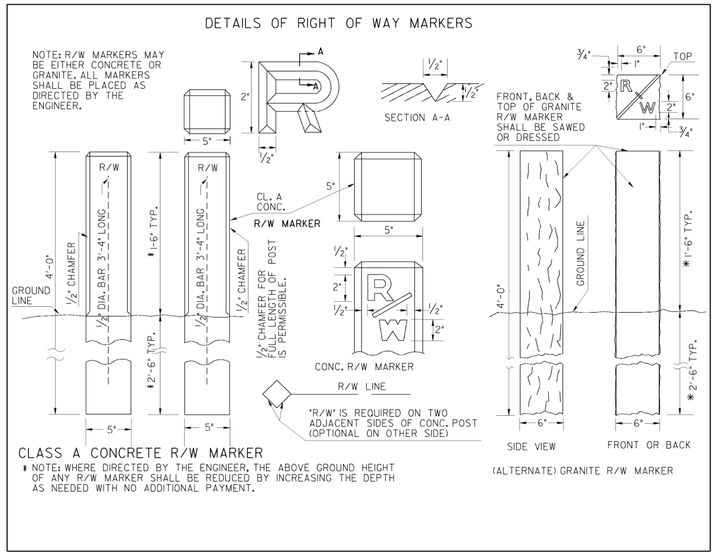
DRAWING No. 41-021

3/1/2007 GPLN

10/3/2006 10:40:43 AM \\GDOT-DSN\GOPLOT\QCF\go_tiff_output.qcf gowens M:\GARY\Revised 9003\9003.prf GO-RD6

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DETAILS OF RIGHT OF WAY MARKERS



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.

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

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

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REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-022

3/1/2007 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	220	267

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STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

SECTION B-B SECTION C-C

NOTE: WHERE END POST INTERSECTS APPROACH SLAB, THE INTERCEPTED REINFORCING, BOTH LONGITUDINAL & TRAVERSE, SHALL BE SHORTENED AS NEEDED TO GIVE 3"+ CLEARANCE TO END POST.

SECTION D-D (SHOWN WHERE SPILLWAY IS NOT REQ'D.)
SECTION E-E (SHOWN WHERE SPILLWAY IS REQ'D.)

NOTE: BLOCKOUTS ARE OMITTED WHERE IT HAS BEEN VERIFIED THAT GUARDRAIL WILL NOT BE REQ'D.

BLOCKOUTS LOCATIONS FOR GUARDRAIL POST

SEE GENERAL NOTE NO. 3

* IF GUARDRAIL IS WARRANTED AT THE TRAILING END OF 4 OR MORE LANES, BLOCKOUTS FLAGED WITH AN ASTERISK ARE OMITTED.

± VARIED TO MISS BRIDGE PAV. REST

NOTE:
PLAN VIEW IS PRESENTED WITH A TYPE I SPILLWAY ON ONE SIDE AND NO DRAINAGE STRUCTURE ON THE OTHER SIDE. SPILLWAY, WHERE REQUIRED, MAY BE TYPE 1,2,3 OR 4 AND ON BOTH SIDES OF APPROACH SLAB, ON JUST ONE SIDE, OR NO SPILLWAY, AS CONDITIONS WARRANT. APPROACH SLAB QUANTITIES AND PAY ITEM WILL NOT BE EFFECTED BY SPILLWAY REQUIREMENTS. SLOPED EDGE IS REQUIRED BOTH WITH AND WITHOUT SPILLWAY.

▼ SLOPED EDGE SHALL BE CONSTRUCTED MONOLITHIC WITH APPROACH SLAB. SLOPED EDGE SHALL BE TAPERED OUT BEYOND WINGWALL, EXCEPT WHERE BRIDGE DRAINAGE MUST BE CARRIED ACROSS SLAB TO ROADWAY STRUCTURE. SLOPED EDGE SHALL THEN RUN FULL LENGTH OF SLAB.

⊛ WITHOUT SPILLWAY, NUIMBER OF BLOCKOUTS VARY ACCORDING TO LENGTH OF WINGWALL

⊛⊛ SLOPED EDGE LENGTH SHALL EXTEND TO END OF WINGWALL OR SHALL BE 12'-0" IN LENGTH, WHICHEVER IS GREATER.

QUANTITIES & REINFORCEMENT FOR TYPICAL SLAB SIZES ✱✱			BOTTOM MAT REINF.		TOP MAT REINF.	
BW	"G" (= BW + 1'-6")	SQ. YDS. OF APPR. SLAB = (G+1')x 30 / 9	31'-2" LONG #7 LONGIT. BARS -NUMBER- (=1.5G + 1.75)	21- # 5 TRAIL BARS -LENGTH- (=G + 6")	29'-6" LONG #5 LONGIT. BARS -NUMBER- =12/19(G+0.5)+1	21- # 5 TRAIL BARS -LENGTH- (=G + 6")
28'-0"	29'-6"	101.67	46	30'-0"	20	30'-0"
30'-0"	31'-6"	108.33	49	32'-0"	22	32'-0"
32'-0"	33'-6"	115.00	52	34'-0"	23	34'-0"
34'-0"	35'-6"	121.67	55	36'-0"	24	36'-0"
36'-0"	37'-6"	128.33	58	38'-0"	25	38'-0"
38'-0"	39'-6"	135.00	61	40'-0"	27	40'-0"
40'-0"	41'-6"	141.67	64	42'-0"	28	42'-0"
42'-0"	43'-6"	148.33	67	44'-0"	29	44'-0"
44'-0"	45'-6"	155.00	70	46'-0"	30	46'-0"
46'-0"	47'-6"	161.67	73	48'-0"	32	48'-0"
48'-0"	49'-6"	168.33	76	50'-0"	33	50'-0"
50'-0"	51'-6"	175.00	79	52'-0"	34	52'-0"
52'-0"	53'-6"	181.67	82	54'-0"	36	54'-0"
54'-0"	55'-6"	188.33	85	56'-0"	37	56'-0"
56'-0"	57'-6"	195.00	88	58'-0"	38	58'-0"
58'-0"	59'-6"	201.67	91	60'-0"	39	60'-0"
60'-0"	61'-6"	208.33	94	62'-0"	40	62'-0"

✱✱ DATA IN ABOVE TABLE ARE BASED UPON COMMON SLAB/ BRIDGE WIDTHS. WHERE OTHER WIDTHS ARE ENCOUNTERED, THE FORMULAE AT COLUMN TOPS MAY BE USED IN DETERMINING ADDITIONAL DATA NEEDED.

GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION, AND SUPPLEMENTS THERETO.
2. WHERE PORTLAND CEMENT CONCRETE PAVEMENT IS TO BE USED FOR ROADWAY PAVING, DOWEL BARS WILL BE INSTALLED IN THE APPROACH SLAB PER STANDARD 5046 H. PAYMENT FOR THE APPROACH SLAB WILL INCLUDE THESE DOWELS, WHEN THE APPROACH SLAB IS CONSTRUCTED BEFORE THE PCC PAVEMENT CONSTRUCTION.
3. THE CONCRETE CAPS ADJACENT TO THE APPROACH SLAB WILL HAVE HOLES APPROXIMATELY 9"39", BLOCKED OUT FOR GUARDRAIL POST INSTALLATIONS (SEE DETAIL). PAYMENT FOR APPROACH SLAB WILL INCLUDE THE ½"EXPANSION MATERIAL & CONCRETE CAPS WITH BLOCKED OUT HOLES. (SEE DETAIL AT FAR LEFT).
4. WIDTH OF APPROACH SLAB IS NORMALLY DETERMINED BY DISTANCE BETWEEN FACES OF BRIDGE END POSTS. DETAILS SHOWN ARE BASED UPON THE BRIDGE BARRIER FACE BEING TRANSITIONED 9" TO FACE OF END POST ON EACH SIDE. SEE BRIDGE PLANS IF BARRIER IS CONTINUED ACROSS APPROACH SLAB INSTEAD, SEE STANDARD 9017-M.
5. COVER OVER TOP MAT OF REINFORCING WILL MATCH THAT OF THE BRIDGE DECK.
6. WHERE APPROACH SLAB IS INTERCEPTED BY THE BRIDGE END POST, EXTERIOR BARS WILL BE SHORTENED AS NEEDED TO GIVE A 3"CLEARANCE TO STRUCTURE.
7. PAY AREA FOR APPROACH SLAB SHALL BE COMPUTED AS A PRODUCT OF THE OVERALL SLAB WIDTH (G+1' 3)TIMES THE LENGTH (30/3) WITH NO DEDUCTIONS MADE FOR AREAS OCCUPIED BY THE END POST & EXPANSION JOINTS OR BY DRAINAGE STRUCTURES, AND NO ADDITIONS MADE FOR SIDEWALKS OR OTHER ITEMS WHEN REQUIRED WITH THE APPROACH SLAB.
8. SEE SEPARATE PLAN DETAILS FOR SUBBASE OR OTHER MATERIALS UNDER THE APPROACH SLAB. IF "CS" CONC. OR P.C. CONC. SUBBASE IS USED, CLEAR POLYETHYLENE SHEETING 8 MILS MIN. THICKNESS, WITH A 6" OVERLAP, UNIFORMLY LAID. SHALL BE REQUIRED UNDER THE APPROACH SLAB TO PREVENT BONDING. POLYETHYLENE SHEETING SHALL BE NEW, UNUSED AND FREE OF HOLES, RIPS AND TEARS.
9. ALL APPROACH SLABS EXCEEDING 42' IN WIDTH WILL CONTAIN A LONGITUDINAL CONSTRUCTION JOINT, SLABS EXCEEDING 60' AND 90' IN WIDTH SHALL CONTAIN 2 AND 3 LONGITUDINAL CONSTRUCTION JOINTS RESPECTIVELY. SECTIONS BETWEEN JOINTS OR BETWEEN A JOINT AND SLAB EDGE SHALL NOT BE LESS THAN 12' OR MORE THAN 30' WIDE. REINFORCEMENT STEEL REMAINS UNCHANGED AND SHALL EXTEND THRU JOINTS. JOINTS SHALL BE LOCATED AT LANE LINES TO PROVIDE OFFSET FROM WHEEL PATHS.
10. IF BRIDGE DECK JOINT SEAL IS USED BETWEEN APPROACH SLAB AND BRIDGE, THE END OF SLAB ADJACENT TO END POST WILL BE SEALED WITH LOW MODULUS SILICONE SEALANT.

NEW TO EXISTING APPROACH SLAB CONNECTION

REMOVE CONCRETE FROM 18" STRIP WITH CARE TO MAKE CUT AS VERTICAL AS POSSIBLE. EXPOSED BARS TO BE CUT AND BENT TO FIT. ALL SCALE AND RUST REMOVED. EPOXY IS REQUIRED BETWEEN NEW AND EXISTING CONCRETE. EXISTING REINFORCING SHALL EXTEND 15" MIN. INTO NEW SECTION. PAYMENT FOR NEW SLAB INCLUDES ALL WORK HEREIN DESCRIBED.

SKEWED SLAB: LONGITUDINAL BARS-NOMINAL LENGTH AND NUMBER REQUIRED SAME AS FOR UNSKEWED SLAB.

TRANSVERSE BARS-NUMBER REQUIRED SAME AS FOR UNSKEWED SLAB. NOMINAL LENGTH OF SKEWED= UNSKEWED NOMINAL LENGTH DIVIDED BY SIN A ROUNDED TO NEAREST INCH.

TYPICAL LONGITUDINAL END VIEW

SECTION F-F

WHERE A =70° OR LESS 5-NO. 6 BARS, 8FT. LONG SHALL BE REQUIRED IN ACUTE CORNERS BELOW TOP MAT OF STEEL.

SKEW MODIFICATION SKETCH

NO SCALE

¾" EXPANSION JOINT DETAIL

THE ¾" EXPANSION JOINT SHOWN ABOVE IS REQUIRED BETWEEN APPROACH SLAB & BRIDGE AT ALL LOCATIONS, EXCEPT WHERE BRIDGE DECK JOINT SEAL (SEPARATE PLAN DETAILS) IS SPECIFIED.

DETAIL "A"

NOTE: THIS STANDARD REPLACES STANDARD 9017 H

DATE	REVISION	BY
9-20-02	DIM. SLOPED EDGE	S.V.M.
4-27-89	BLOCKOUT SPA.	K.L.J.
7-8-96	REDUCED A.S. WIDTH TO G+1	R.M.U.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
REINFORCED CONCRETE APPROACH SLAB
30 FT. LENGTH
TYPICAL USE : WHERE SHOULDER IS ADJACENT TO ROADWAY AND/OR BRIDGE

SCALE AS SHOWN — JUNE, 1985

DES. R.M.U. DRW. R.M.U. TRA. G.M.E. CHK. R.K.C.
(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGR.
(APPROVED) STATE HIGHWAY ENGINEER

NUMBER 9017P

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REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

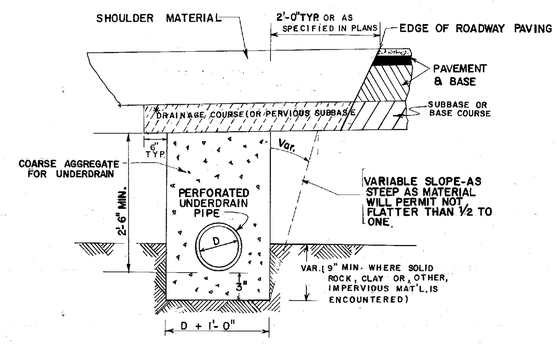
GEORGIA STANDARDS

DRAWING No. 41-023

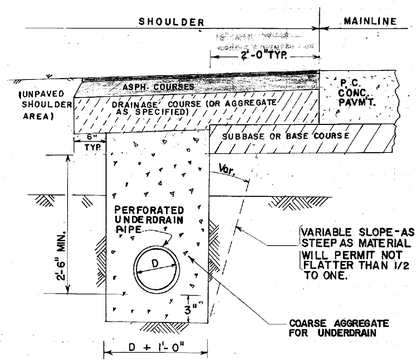
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	221	267

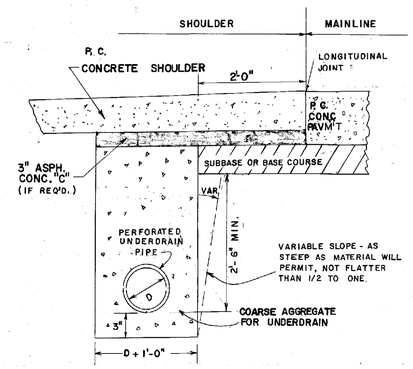
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



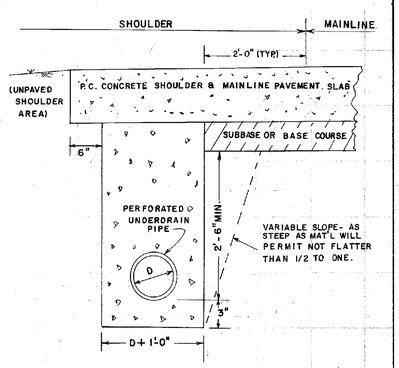
GENERAL DETAIL



ASPHALT SHOULDER - P.C.C. PAVEMENT



UNDER CONCRETE SHOULDER



UNDER CONCRETE SHOULDER*

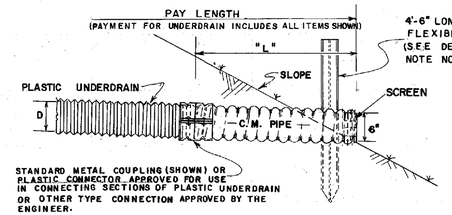
*CONSTRUCTED MONOLITHIC WITH MAINLINE 4'-0" PAVED SHOULDER SHOWN

PERFORATED UNDERDRAIN — TYPICAL INSTALLATIONS

*NOTE: PERFORATED UNDERDRAIN PIPE WILL BE INSTALLED COMPLETE PRIOR TO PLACING PERVIOUS SUB-BASE OR DRAINAGE COURSE.

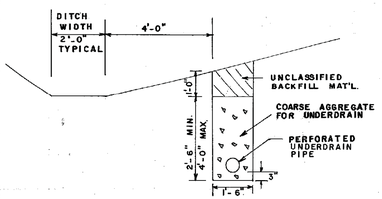
OUTLET DETAIL FOR PLASTIC UNDERDRAIN

(REQUIRED AT ALL OUTLETS WHERE PERFORATED PLASTIC UNDERDRAIN IS TERMINATED ON SLOPES).



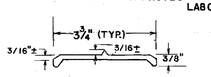
NOTE : "L" = MINIMUM LENGTH OF CORRUGATED METAL PIPE SECTION. THE C.M. OUTLET STUB SECTION MAY BE PERFORATED OR MAY BE NON-PERFORATED.

C.M. OUTLET STUB - MINIMUM LENGTHS	
SLOPE	"L"
2:1 OR STEEPER	2'-10" MIN.
2+:1 TO 4:1	5'-0" MIN.
4+:1 TO 6:1	10'-0" MIN.
FLATTER THAN 6:1	14'-0" MIN.



ADJACENT TO DITCH

NOTE: ALTERNATE FLEXIBLE DELINEATORS PERMITTED IF APPROVED BY THE D.O.T. LABORATORY.



DELINEATOR POST SECTION (TYP.)

COLOR: WHITE

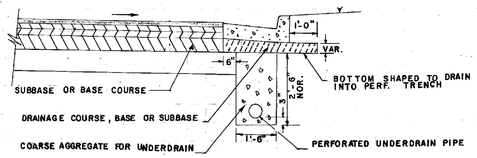
LENGTH: 4'-6" (from top to bottom point)

SPECIFICATION: SEC. 911 (EXCEPT REFLECTIVE SHEETING IS NOT REQUIRED)

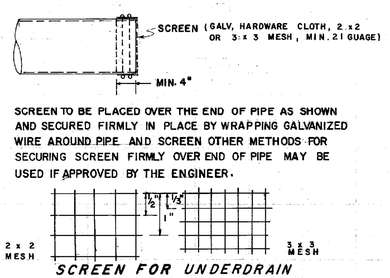
SPECIAL NOTE:

DETAILS SHOWN HERE ARE TYPICAL AND MAY BE USED BY THE DESIGNER AS A GUIDE IN PREPARING TYPICAL SECTIONS. MINIMUM TRENCH DEPTHS & TRENCH WIDTHS SHOULD BE ADHERED TO AS SHOWN HOWEVER. SHOULDER DETAILS, PAVEMENT DESIGNS, DRAINAGE COURSES, ETC., WILL BE AS SHOWN ON THE TYPICAL SECTIONS FOR THE PROJECT AND MAY VARY FROM THE DEPICTIONS ABOVE.

ON CONSTRUCTION, THE TYPICAL SECTIONS IN THE PLANS SHOULD BE USED FOR SPECIFIC DETAILS. IF UNDERDRAIN IS NOT SHOWN ON THE TYPICAL SECTIONS OR ELSEWHERE IN THE PROJECT PLANS, INSTALLATION WILL BE AS SHOWN ABOVE AND AS DIRECTED BY THE ENGINEER.

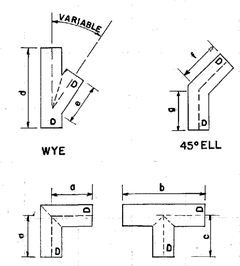


UNDER CURB & GUTTER



SCREEN TO BE PLACED OVER THE END OF PIPE AS SHOWN AND SECURED FIRMLY IN PLACE BY WRAPPING GALVANIZED WIRE AROUND PIPE AND SCREEN OTHER METHODS FOR SECURING SCREEN FIRMLY OVER END OF PIPE MAY BE USED IF APPROVED BY THE ENGINEER.

SCREEN FOR UNDERDRAIN



GENERAL NOTES.

1. UNDERDRAINS MAY BE PLACED IN SHOULDER AREAS OR AS TRANSVERSE DRAINAGE UNDER PAVEMENT. SEE TYPICAL SECTION AND PLAN AND PROFILE SHEETS FOR SPECIAL CONDITIONS.
2. TRENCH SHALL BE SHAPED WITH SIDES AS NEARLY VERTICAL AS IS PRACTICAL AND WITH A FLAT BOTTOM.
3. MINIMUM GRADIENT FOR UNDERDRAIN PIPE SHALL BE 0.15%.
4. MAXIMUM DISTANCE BETWEEN OUTLETS SHALL BE 400' TO 500' WHERE CONDITIONS PERMIT.
5. DEAD ENDS OF PIPE SHALL BE CLOSED WITH METAL OR PLASTIC CAPS OR CONCRETE PLUGS. OUTFALL ENDS OF PIPE SHALL BE EQUIPPED WITH SCREEN.
6. LATERAL CONNECTIONS SHALL BE MADE WITH SUITABLE STANDARD FITTINGS. (ELLS, WYES OR TEES AS DETAILED)
7. THE DIMENSIONS (a thru g) SHOWN ON THE LATERAL CONNECTIONS FOR THE VARIOUS KINDS AND SIZES OF PERFORATED UNDERDRAIN SHALL BE IN AGREEMENT WITH THE MANUFACTURERS' STANDARD PRACTICE.
8. PLAIN WHITE (NO REFLECTIVE SHEETING) FLEXIBLE DELINEATOR POSTS WILL BE REQUIRED AT ALL OUTLETS EXITING ON SLOPES, BUT NOT REQUIRED IF UNDERDRAIN EXITS IN CONC. DITCH PAVING, DROP INLETS, ETC., POSTS WILL BE 2 FT.± IN THE GROUND PLACED AS DIRECTED BY THE ENGINEER, SO AS TO BE MOST VISIBLE TO MOWERS, PAYMENT FOR UNDERDRAIN WILL INCLUDE THE DELINEATORS.

R.M.U. ADD O & G DITCH INSTALL 5-7-85
R.M.U. ADD MONOLITHIC CONC. SH. 5-20-81
R.M.U. FLEXIBLE DELINEATOR 3-20-81

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

PERFORATED UNDERDRAIN

NO SCALE

REV. & REDR. JULY 1980

REV. R.M.U.
TRA G.M.F.
CHK. R.K.C.

SUBMITTED: State Road and Airport Design Engr.
APPROVED: Thomas D. Mosteller
State Highway Engineer

NUMBER 9029B

FORM EF3

3/1/2007 GPLN

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-024

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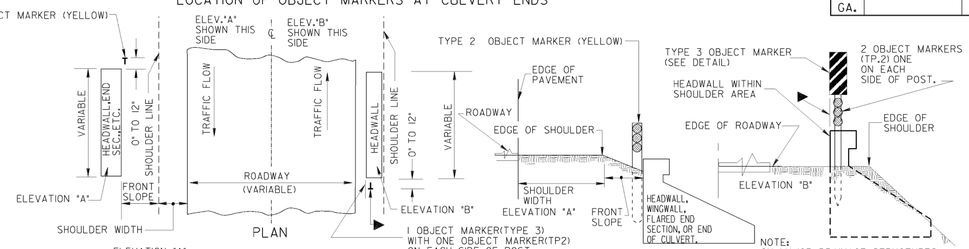
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

SEE T-22A and T-22B FOR BRIDGE DELINEATION DETAILS

LOCATION OF OBJECT MARKERS AT CULVERT ENDS



ELEVATION "A"
ONE OBJECT MARKER (YELLOW) (TYPE 2) SHALL BE USED WHERE HEADWALLS, FLARED END SECTIONS, OR CULVERT ENDS ARE LOCATED WITHIN THE FRONT SLOPE AS SHOWN IN ELEVATION "A" DETAIL.

ELEVATION "B"
A COMBINATION OF ONE OBJECT MARKER (TYPE 3) AND TWO OBJECT MARKERS (YELLOW) (TYPE 2), ONE ON EACH SIDE OF THE POST, SHALL BE USED WHERE HEADWALLS OF CULVERTS ARE LOCATED WITHIN THE EXISTING SHOULDER AREA AS SHOWN IN ELEVATION "B" DETAIL.

▶ = THE INSIDE EDGE OF THE MARKER SHALL BE IN LINE WITH THE INNER EDGE OF THE OBSTRUCTION

1 OBJECT MARKER(TYPE 3) WITH ONE OBJECT MARKER(TP2) ON EACH SIDE OF POST.

NOTE:
ON MAJOR DRAINAGE STRUCTURES ON FEDERAL RESURFACING PROJECTS, WHEN ELEVATION "B" EXISTS, THE FIELD REVIEW TEAM WILL RECOMMEND WHICH TO USE; GUARDRAIL, ADDITIONAL DELINEATION, OR EXTENSION OF DRAINAGE STRUCTURE.

RECOMMENDED SPACING FOR DELINEATORS

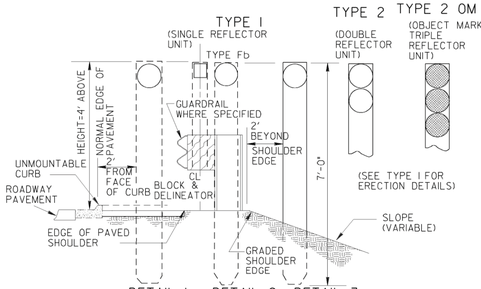
DELINEATORS SHOULD NORMALLY BE SPACED 528' APART, WHERE SUCH IS INTERRUPTED BY DRIVEWAYS, CROSSROADS, ETC., AND WHERE UNDER THE NORMAL SPACING, A DELINEATOR WOULD FALL WITHIN SUCH AN AREA, THAT DELINEATOR MAY BE MOVED IN EITHER DIRECTION A DISTANCE NOT EXCEEDING 1/4 (132') OF THE NORMAL SPACING. IF SUCH DELINEATOR STILL FALLS WITHIN THAT AREA, IT SHOULD BE ELIMINATED. SEE TABLE BELOW FOR RECOMMENDED SPACING OF HORIZONTAL CURVES.

TABLE SPACING (1) FOR DELINEATORS ON HORIZONTAL CURVES

RADIUS OF CURVE (IN FEET)	SPACING ON CURVE (IN FEET)	SPACING IN ADVANCE & BEYOND CURVE (IN FEET) (MAINLINE ONLY)		
		1ST	2ND	3RD
50	20	40	65	125
150	30	60	90	180
200	35	70	110	215
250	40	85	125	250
300	50	95	145	290
400	55	110	170	300
500	65	125	190	300
600	70	140	210	300
700	75	150	230	300
800	80	165	245	300
900	85	175	260	300
1000	90	185	275	300

(1) SPACING, S, FOR SPECIFIC RADII NOT SHOWN MAY BE INTERPOLATED FROM THE TABLE OR COMPUTED FROM THE FORMULA $S = 3\sqrt{R-50}$, WHERE R IS THE RADIUS OF CURVATURE IN FT. AND S IS ROUNDED TO THE NEAREST 5 FT. THE SPACING TO THE FIRST DELINEATOR IN ADVANCE OF THE CURVE IS 2S, TO THE SECOND 3S, AND THE THIRD 6S, BUT NONE TO EXCEED 300 FEET, MINIMUM SPACING IS 20 FEET.

DELINEATOR ERECTION DETAILS

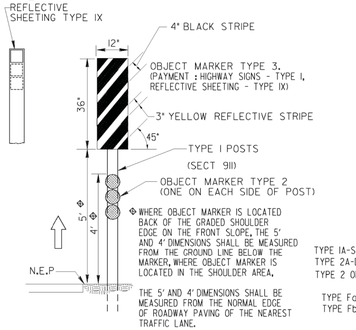


NOTE: ERECTION DETAILS ABOVE ARE TYPICAL FOR ALL TYPES EXCEPT IA, 2A, 3A, & Fb, WHICH ARE MOUNTED ON THE POST OR STRUCTURE ALREADY IN PLACE.

DETAIL 1: ERECTION FOR ROADWAYS HAVING UNMOUNTABLE CURBS.

DETAIL 2: ERECTION FOR ROADWAY WITH GUARDRAIL, DELINEATOR POST SHALL BE IN THE SAME PLANE AS FACE OF GUARDRAIL POSTS, EXCEPT FOR TYPE Fb, AS SHOWN, AND POSSIBLY AT BRIDGE ENDS AS INDICATED ABOVE.

DETAIL 3: ERECTION FOR ROADWAYS HAVING SHOULDERS (WITHOUT CURBS). WITH MOUNTABLE CURBS, ERECTION SHALL BE SAME AS DETAIL 3.



Φ WHERE OBJECT MARKER IS LOCATED BACK OF THE GRADED SHOULDER EDGE ON THE FRONT SLOPE, THE 5' AND 4' DIMENSIONS SHALL BE MEASURED FROM THE GROUND LINE BELOW THE MARKER, WHERE OBJECT MARKER IS LOCATED IN THE SHOULDER AREA.

THE 5' AND 4' DIMENSIONS SHALL BE MEASURED FROM THE NORMAL EDGE OF ROADWAY PAVING OF THE NEAREST TRAFFIC LANE.

DETAIL OF OBJECT MARKER

TYPES OF DELINEATORS

TYPE 1 - ALUMINUM OR GALVANIZED STEEL FLANGED "U" CHANNEL POST WITH SINGLE REFLECTOR UNIT. REFLECTOR UNIT TO CONSIST OF: (A) ONE 3" DIAMETER SEALED PRISMATIC REFLEX REFLECTOR WITH PLATE AND FRAME, OR, (B) ONE 4" X 5" RECTANGULAR TYPE I, LEVEL A REFLECTIVE SHEETING REFLECTOR WITH PLATE AND FRAME, OR (C) ONE 3 1/4" DIAMETER CENTER MOUNT SEALED PRISMATIC REFLEX REFLECTOR HOUSED IN ALUMINUM BACKING WITH SINGLE GROMMETTED HOLE IN CENTER OF REFLECTOR.

TYPE 2 - ALUMINUM OR GALVANIZED STEEL FLANGED "U" CHANNEL POST WITH DOUBLE REFLECTOR UNIT. REFLECTOR UNIT TO CONSIST OF: (A) TWO 3" DIAMETER SEALED PRISMATIC REFLEX REFLECTORS WITH PLATE AND FRAME, OR, (B) TWO 4" X 5" RECTANGULAR TYPE I, LEVEL A REFLECTIVE SHEETING REFLECTORS WITH PLATE AND FRAME, OR (C) TWO 3 1/4" DIAMETER CENTER MOUNT SEALED PRISMATIC REFLEX REFLECTOR HOUSED IN ALUMINUM BACKING WITH SINGLE GROMMETTED HOLE IN CENTER OF EACH REFLECTOR.

TYPE 3 - ALUMINUM OR GALVANIZED STEEL FLANGED "U" CHANNEL POST WITH TRIPLE REFLECTOR UNIT. REFLECTOR UNIT TO CONSIST OF: (A) THREE 3" DIAMETER SEALED PRISMATIC REFLEX REFLECTORS WITH PLATE AND FRAME, OR, (B) THREE 4" X 5" RECTANGULAR TYPE I, LEVEL A REFLECTIVE SHEETING REFLECTORS WITH PLATE AND FRAME, OR (C) THREE 3 1/4" DIAMETER CENTER MOUNT SEALED PRISMATIC REFLEX REFLECTORS HOUSED IN ALUMINUM BACKING WITH SINGLE GROMMETTED HOLE IN CENTER OF EACH REFLECTOR.

TYPE 1A-SINGLE, TYPE 2A-DOUBLE, TYPE 2 OM-TRIPLE: REFLECTOR UNIT ONLY MOUNTED ON POST OR STRUCTURE ALREADY IN PLACE. REFLECTOR UNIT SAME AS FOR TYPE 1, 2, AND 2 OM, RESPECTIVELY.

TYPE Fa, TYPE Fb: FLEXIBLE DELINEATOR POSTS SHALL BE USED AT LOCATIONS WHERE HIGH FREQUENCY OF HITS ARE CONTEMPLATED, SUCH AS GORE AREAS, OUTSIDE OF SHARP CURVES, ETC., AND MAY ALSO BE USED AS ALTERNATIVES TO EITHER TYPE 1, TYPE 2, OR TYPE 3 DELINEATORS WHEN SPECIFIED ON THE PLANS. DIFFERENT DESIGN FLEXIBLE DELINEATORS PERMITTED, IF APPROVED BY THE GA. D.O.T. OFFICE OF MATERIALS AND RESEARCH.

LOCATION OF DELINEATORS ON FREEWAY & EXPRESSWAY TYPE HIGHWAYS

TYPES OF DELINEATORS, ERECTION LOCATION, AND SPACING SHALL BE AS FOLLOWS.

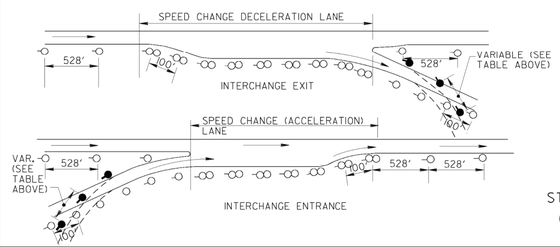
○ SINGLE CRYSTAL (WHITE) REFLECTOR UNITS (TYPE 1 DELINEATOR) ON RIGHT SIDE OF MAINLINE AT 528 FOOT SPACING & ON RT. SIDE OF RAMP TGT. SECTIONS AT 100 FOOT SPACING FROM PHYSICAL CORE TO RAMP TERMINUS.

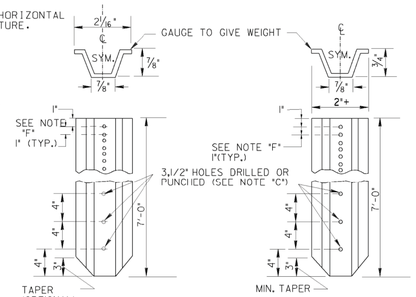
○○ DOUBLE CRYSTAL (WHITE) REFLECTOR UNITS (TYPE 2 DELINEATOR) ON RIGHT SIDE OF SPEED CHANGE (ACCELERATION & DECELERATION) LANES THAT ARE ON RIGHT SIDE OF MAINLINE AT 100 FOOT SPACING FROM TAPER TO PHYSICAL CORE.

● (YELLOW) SINGLE YELLOW REFLECTOR UNITS (TYPE 1 DELINEATOR) ON LEFT SIDE OF RAMP HORIZONTAL CURVES & ON LEFT SIDE OF MAINLINE HORIZONTAL CURVES GREATER THAN 3° CURVATURE.

●● (YELLOW) DOUBLE YELLOW REFLECTOR UNITS (TYPE 2 DELINEATOR) ON LEFT SIDE OF SPEED CHANGE (ACCELERATION & DECELERATION) LANES THAT ARE ON LEFT SIDE OF MAINLINE AT 100 FOOT SPACING FROM TAPER TO PHYSICAL CORE.

● (RED) SINGLE REFLECTOR UNITS (TYPE 1 DELINEATOR) ON LEFT SIDE OF EXIT RAMPS AT 100 FOOT SPACING FROM "WRONG WAY" SIGN TO RAMP TERMINUS. USE TYPE IA RED DELINEATORS ON RIGHT OR LEFT SIDE OF EXIT RAMPS WHERE TYPE I WHITE OR YELLOW DELINEATORS ARE USED FACE OF RED DELINEATORS ORIENTED OPPOSITE TO NORMAL TRAFFIC FLOW.

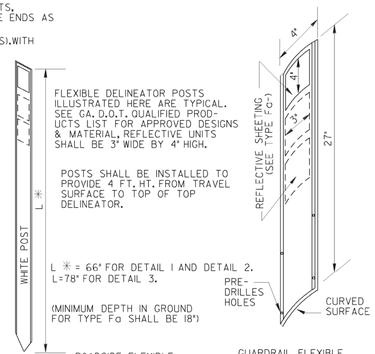




(ALTERNATES ALLOWABLE IF LISTED IN GA. D.O.T. QPL LIST.)

STEEL FLANGED "U" CHANNEL POST (1.12 LBS./FT.) (GALVANIZED)

ALUMINUM FLANGED "U" CHANNEL POST (0.78 LBS/FT.)



ROADSIDE FLEXIBLE (COMPOSITE ALLOY) DELINEATOR POST

GUARDRAIL FLEXIBLE (COMPOSITE ALLOY) DELINEATOR POST

TYPE Fa-1 (ONE REFLECT.)
TYPE Fa-2 (TWO REFLECT.)
TYPE Fa-2 OM (THREE REFLECT.)

TYPE Fb-1 (ONE REFLECT.)
TYPE Fb-2 (TWO REFLECT.)
TYPE Fb-2 OM (THREE REFLECT.)

GENERAL NOTES:

A- SPECIFICATIONS: GA. STANDARD, CURRENT EDITION, & SUPPLEMENTS THERETO.

B- REFLECTORS FOR TYPES 1 AND 1A SHALL BE CRYSTAL (WHITE), YELLOW OR RED, AS SPECIFIED ON THE PLANS. REFLECTORS FOR TYPES 2 AND 2A SHALL BE CRYSTAL (WHITE) OR YELLOW AS SPECIFIED ON THE PLANS. REFLECTORS FOR TYPE 3 AND 3A SHALL BE YELLOW ONLY AS SPECIFIED ON THE PLANS.

C- WHEN POSTS ARE SET IN CONCRETE, METAL RODS SHALL BE INSERTED IN 3 1/2" DIA. HOLES LOCATED AT BOTTOM OF POST. MIN SIZE OF RODS SHALL BE 1/4" DIA. X 3" LONG.

D- MONODIRECTIONAL DELINEATORS SHALL BE USED AND ERECTED AT THE RECOMMENDED SPACING, UNLESS OTHERWISE SPECIFIED ON THE PLANS.

E- FOR ADDITIONAL DATA ON DELINEATORS, REFER TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND ALL SUPPLEMENTS THERETO.

F- DRILL OR PUNCH 17 3/8" DIA. HOLES ON 1" CENTERS FOR A DISTANCE OF 17" MINIMUM FROM TOP POST.

BY	REVISION	DATE
G.O	REV. OBJECT MARKER TYPE, I 4-10-06	
	DELETED DETAIL AND REV.	
	REFLECTIVE SHEETING TYPE	

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
DELINEATORS & MARKERS AND ALTERNATE POSTS

NO SCALE — REV. & REDR. MAR., 2001

DES. ____ REV. ____ TRA. ____ CHK. ____

(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER

(APPROVED) CHIEF ENGINEER

NUMBER 9030C

10/3/2006 3:09:52 PM \\GDOT-DSN1\GOPLOT\QCF\ps_tiff_output.qcf gowens M:\GARY\Revised 9030C\9030C.prf

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

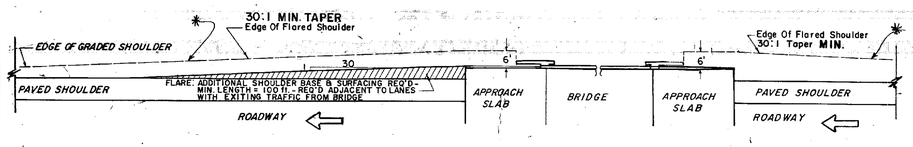
DRAWING No. 41-025

3/1/2007 GPLN

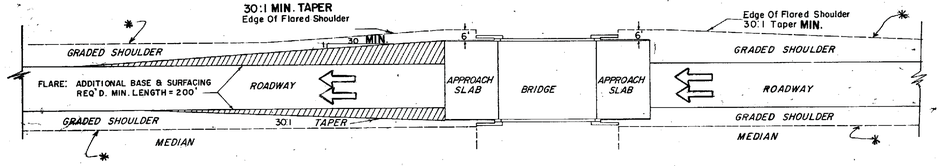
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	223	267

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

FLARE DETAILS AT BRIDGE ENDS

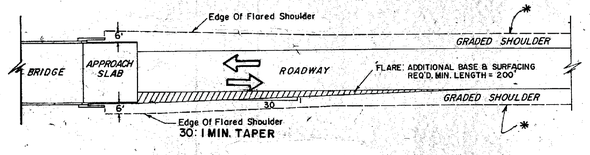


(ROADWAY WITH PAVED SHOULDERS)



(ONE-WAY TRAFFIC— GRADED SHOULDERS)

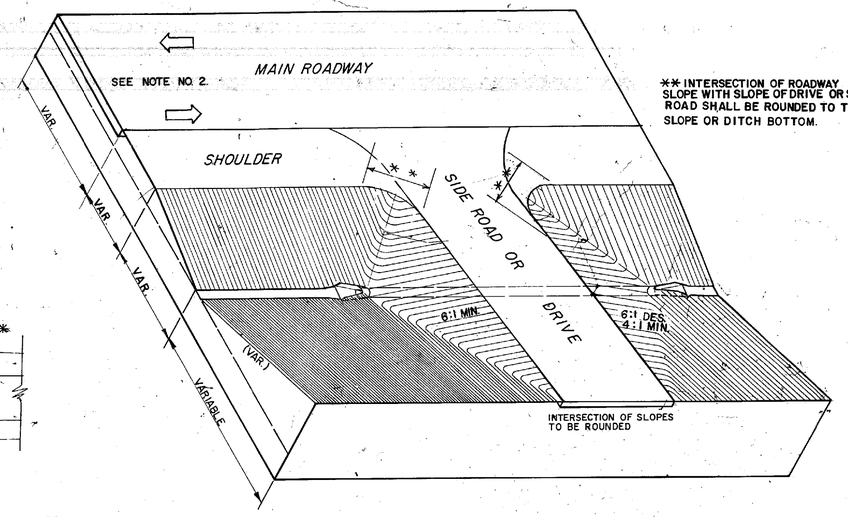
GENERAL NOTE (FLARES)
EARTHWORK QUANTITIES SHALL REFLECT ADDITIONAL MATERIAL REQUIRED FOR CONSTRUCTION OF FLARED SHOULDERS.



(TWO-WAY TRAFFIC— GRADED SHOULDERS)

*WHERE THE WIDENED ROADWAY SHOULDER FOR GUARDRAIL GIVES THE SAME OFFSET AS AT THE APPROACH SLAB, THIS LINE REMAINS STRAIGHT TO THE BRIDGE END. (ALSO, SEE GUARDRAIL STANDARDS OR DETAILS FOR ADDITIONAL FLARE AT ANCHORAGES.)

ISOMETRIC VIEW OF SIDE ROAD OR DRIVE



** INTERSECTION OF ROADWAY SLOPE WITH SLOPE OF DRIVE OR SIDE ROAD SHALL BE ROUNDED TO TOE OF SLOPE OR DITCH BOTTOM.

NOTES:
1. ENDS OF SIDE DRAINS WHICH FALL INSIDE THE CLEAR ZONE WIDTH SHALL REQUIRE SAFETY END SECTIONS FOR SIDE DRAIN PIPE.
2. SIDE SLOPES ON THE APPROACH SIDE OF TRAFFIC SHALL NOT BE STEEPER THAN 6:1.
3. SIDE DRAIN END SECTIONS SHOULD FIT THE SIDE SLOPE TERRAIN AND SHOULD NOT PROTRUDE.
4. SIDE SLOPES FROM SIDE ROAD OR DRIVE ALSO APPLY TO FILL SECTIONS.

BY	REVISION	DATE
R.MU.	GEN. REVISION	8-18-98
R.MU.	ADD METRIC NOTE	10-12-98
R.MU.	ADD ANGLE FOR RWD SH.	5-25-99
R.MU.	ADJ. END SEC. BREAKAWAY	5-25-99
R.MU.	REVISION	10-31-14

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
STANDARD

ISOMETRIC VIEW OF SIDE ROAD OR DRIVE
FLARE DETAILS AT BRIDGE ENDS

NO SCALE — AUG., 1958

DESIGNED: RBS
DRAWN: AVS
TRACED: AVS
CHECKED: RBS

SUBMITTED
STATE [redacted]
APPROVED
STATE HIGHWAY ENGINEER

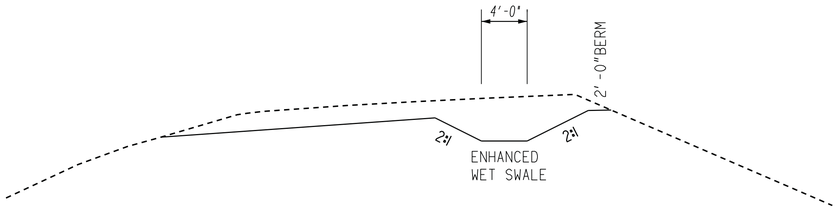
NUMBER 9031T

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

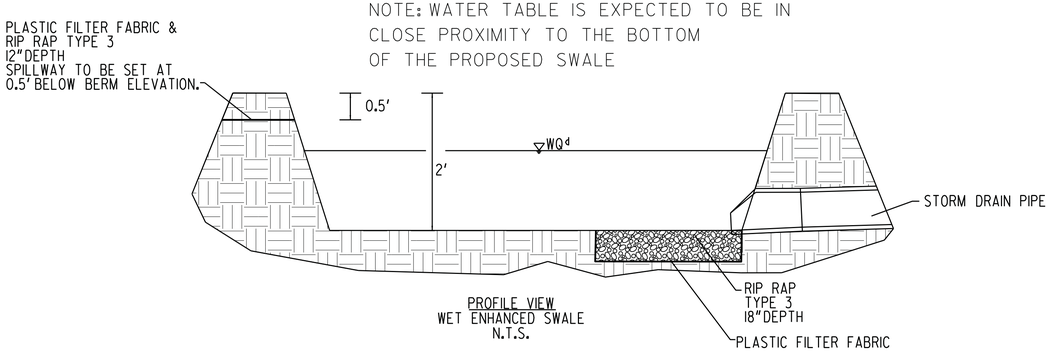
DRAWING NO. 41-026

3/1/2007 GPLN

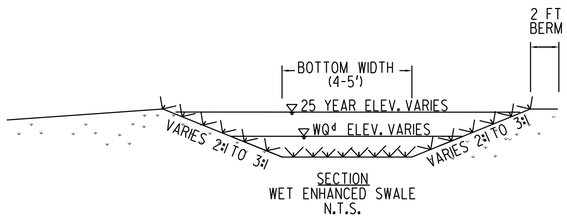


ENHANCED WET SWALE DETAIL #1

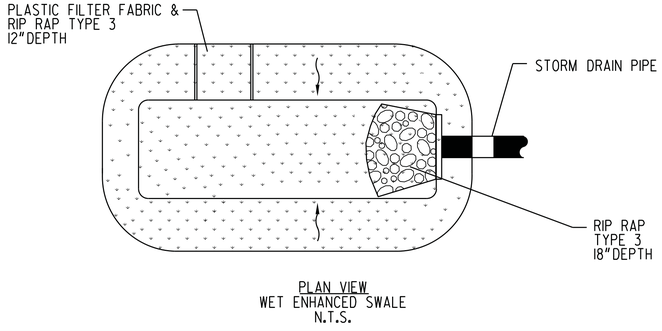
APPLIES TO STA. 134+21 LT. TO STA. 138+81 LT.
APPLIES TO STA. 150+53 LT. TO STA. 153+63 LT.
NOTE: WATER TABLE IS EXPECTED TO BE IN CLOSE PROXIMITY TO THE BOTTOM OF THE PROPOSED SWALE



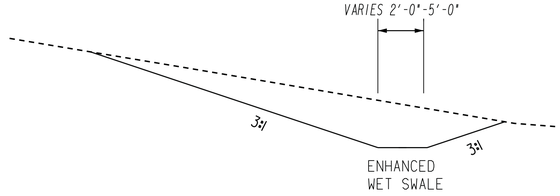
PROFILE VIEW
WET ENHANCED SWALE
N.T.S.



SECTION
WET ENHANCED SWALE
N.T.S.

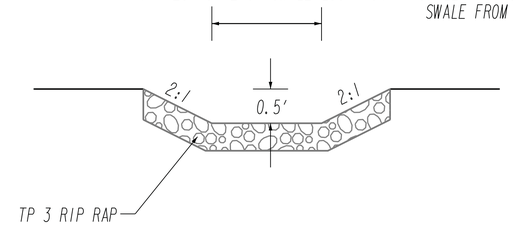


PLAN VIEW
WET ENHANCED SWALE
N.T.S.



ENHANCED WET SWALE DETAIL #2

APPLIES TO STA. 174+50 RT. TO STA. 177+20 RT.
NOTE: WATER TABLE IS EXPECTED TO BE IN CLOSE PROXIMITY TO THE BOTTOM OF THE PROPOSED SWALE



SWALE FROM STA. 134+21 LT. TO STA. 138+81 LT. (SPILLWAY WIDTH = 6')
SWALE FROM STA. 150+53 LT. TO STA. 153+63 LT. (SPILLWAY WIDTH = 4')
SWALE FROM STA. 174+50 RT. TO STA. 177+20 RT. (SPILLWAY WIDTH = 10')

RIPARIAN SEEDING CHART	
COMMON NAME	BOTANICAL NAME
Creeping Bentgrass	Agrostis palustris
Switch Grass	Panicum virgatum
Reed Canary Grass	Phalaris arundinacea
Redtop	Agrostis alba
Limestone Meadow Sedge	Carex granularis
Pennsylvania Sedge	Carex pennsylvanica
Tussock Sedge	Carex stricta

APPLY A VARIETY OF SEED MIXTURE FROM THE ABOVE LIST AT THE SPECIFIED RATE PER THE STANDARD SPECIFICATIONS

ADDITINAL CHOOSES MAYBE FOUND IN THE SECTION 700 OF THE STANDARD SPECIFICATIONS

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

NOT TO SCALE

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

SPECIAL CONSTRUCTION DETAIL

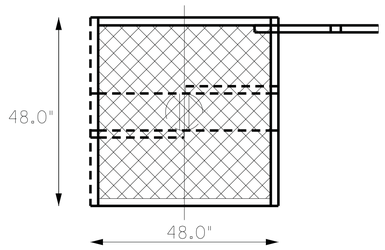
LINCOLN/COLUMBIA COUNTY

DRAWING No. 38-001

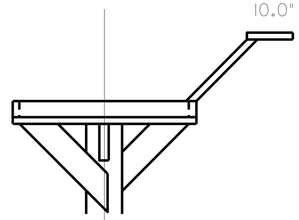
12/14/2012 GPLN

OSPREY PLATFORM
WOOD POLE MOUNT

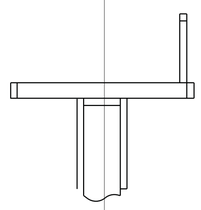
TOP

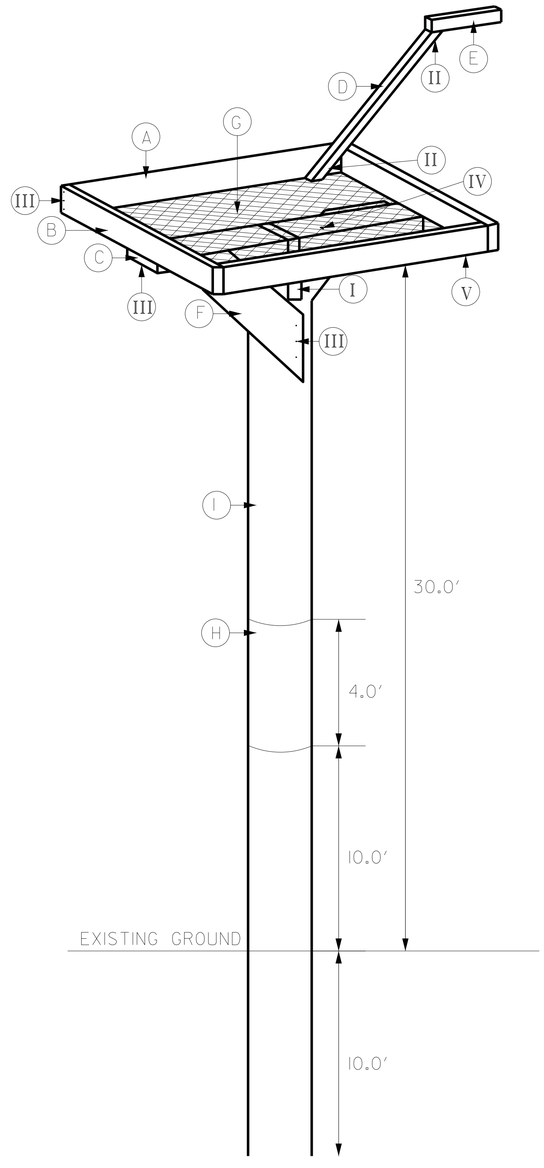


SIDE



FRONT





LIST OF MATERIALS (SHOWN FOR SINGLE INSTALLATION):

A) 2 EA. 45" x 2" x4" PRESSURE TREATED LUMBER
B) 2 EA. 48" x 2" x 4" PRESSURE TREATED LUMBER
C) 1 EA. 48" x 2" x (8") PRESSURE TREATED LUMBER
D) 1 EA. 24" x 2" x 2" PRESSURE TREATED LUMBER
E) 1 EA. 10" x 2" x 2" PRESSURE TREATED LUMBER
F) 2 EA. 22" (LONG SIDE) 5/4" BRACES CUT AT 45 DEGREE ANGLES
G) 1 EA. 48" SQUARE OF CHAIN LINK FENCE
H) 1 EA. 4' x 18 GAUGE ALUMINUM FLASHING
I) 1EA. TREATED TIMBER POLE, CL 2, 40 FT

I) 1 EA. 24" GALVANIZED STEEL STRAP
II) 4 EA. GALVANIZED SCREWS (3 1/2") OR DECK SCREWS (PRE-DRILLED WITH 9/64 " TO PREVENT SPLITTING)
III) 32 EA. 16 PENNY GALVANIZED RING SHANK NAILS (PRE-DRILL WITH 9/64 " TO PREVENT SPLITTING)
IV) 20 EA. 1 7/8" GALVANIZED FENCE STAPLES
V) 10 EA. 1 1/4" GALVANIZED STRAPPING NAILS

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

SPECIAL CONSTRUCTION DETAIL

SR 47

DRAWING No. 38-002

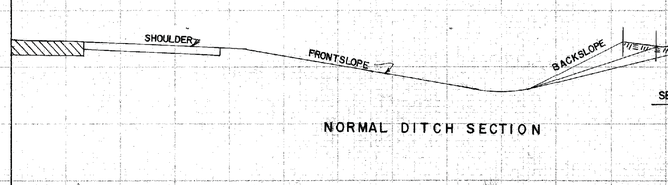
3/1/2007 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

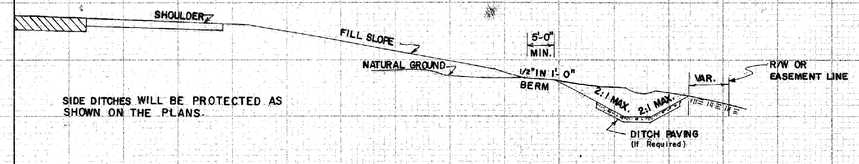
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	184	267

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

NORMAL DITCH SECTION

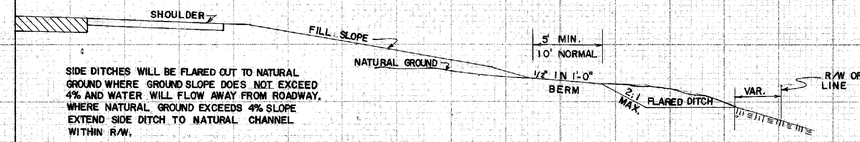


SECTION A-A



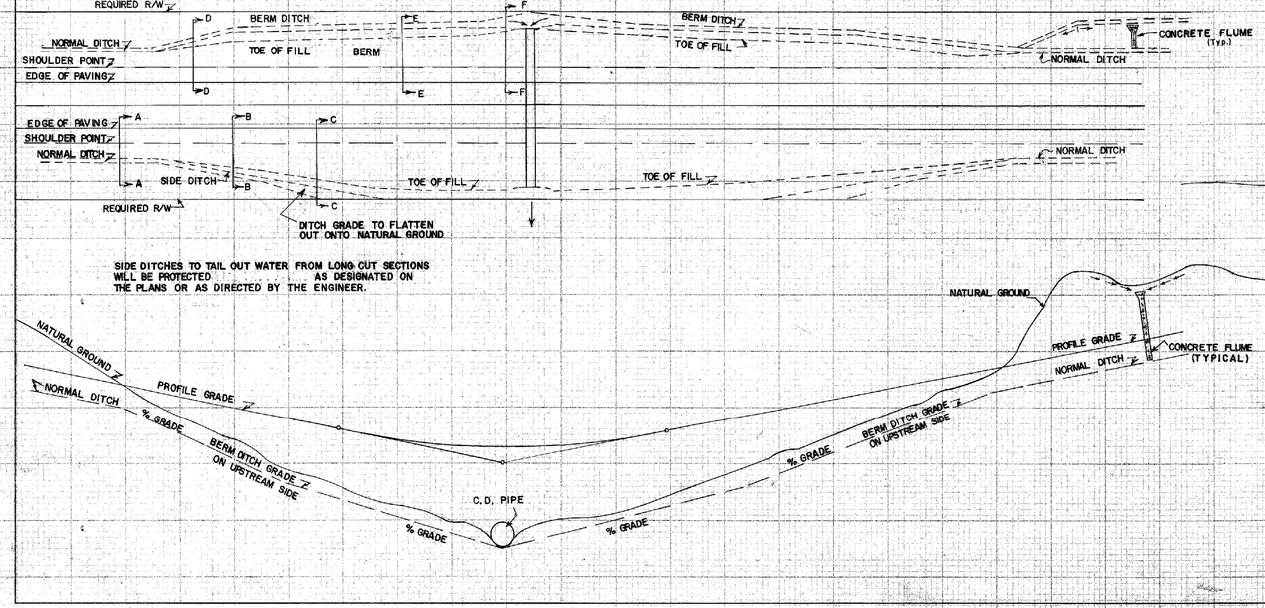
SIDE DITCHES WILL BE PROTECTED AS SHOWN ON THE PLANS.

SECTION B-B



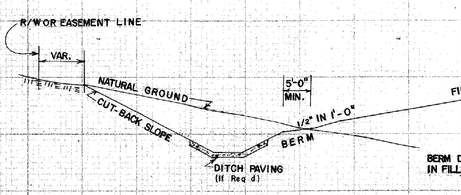
SIDE DITCHES WILL BE FLARED OUT TO NATURAL GROUND WHERE GROUND SLOPE DOES NOT EXCEED 4% AND WATER WILL FLOW AWAY FROM ROADWAY, WHERE NATURAL GROUND EXCEEDS 4% SLOPE EXTEND SIDE DITCH TO NATURAL CHANNEL WITHIN R/W.

SECTION C-C



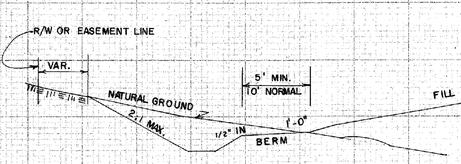
SIDE DITCHES TO TAIL OUT WATER FROM LONG CUT SECTIONS WILL BE PROTECTED AS DESIGNATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

R/W OR EASEMENT LINE



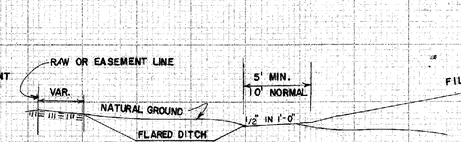
BERM DITCHES WILL BE USED WHERE NATURAL GROUND SLOPES TOWARDS THE ROADWAY IN FILL SECTIONS. BERM DITCHES WILL BE PROTECTED AS SHOWN ON THE PLANS.

SECTION D-D



SOD DITCH CHECKS WILL BE USED IN BERM DITCHES ON GRADES OF 2.1% OR OVER AS SHOWN ON THE PLANS

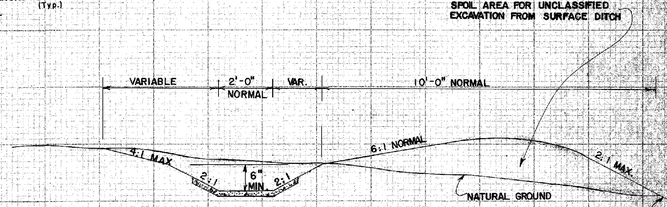
SECTION E-E



UNPAVED BERM DITCHES WILL BE FLARED OUT TO NATURAL GROUND AT INLETS OF CROSS DRAINS.

SECTION F-F

SPOIL AREA FOR UNCLASSIFIED EXCAVATION FROM SURFACE DITCH



DETAIL OF SURFACE DITCHES

NOTE: SURFACE DITCHES WILL BE REQUIRED AT THE TOP OF CUT SLOPES WHERE SHOWN ON THE PLANS OR WHERE IT IS DETERMINED BY THE ENGINEER ON CONSTRUCTION THAT THEIR USE IS ESSENTIAL. IN GENERAL, SURFACE DITCHES WILL BE REQUIRED WHERE THE SLOPE OF THE NATURAL GROUND AT THE TOP OF THE CUT DRAINS TOWARDS THE ROADWAY AND THE MATERIAL IN THE BACK SLOPE IS SUBJECT TO EROSION. SURFACE DITCHES ARE TO BE PROTECTED AS SHOWN ON THE PLANS.

CONSTRUCTION DETAILS

BERM DITCHES
SIDE DITCHES
SURFACE DITCHES

REV. & REDR. JULY, 1980

NO SCALE

D-7

FORM EF3

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

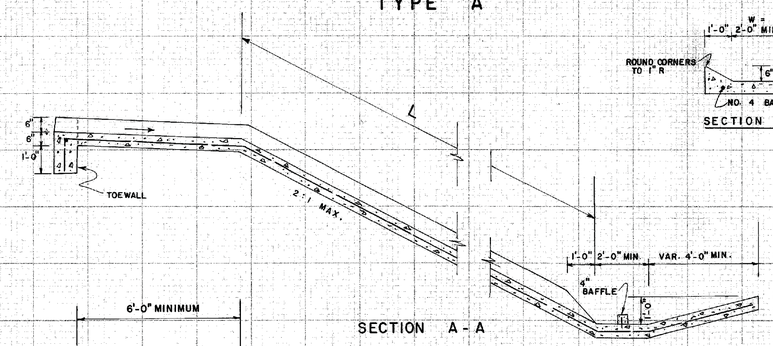
CONSTRUCTION DETAILS

DRAWING No. 40-001

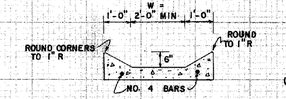
3/1/2007 GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

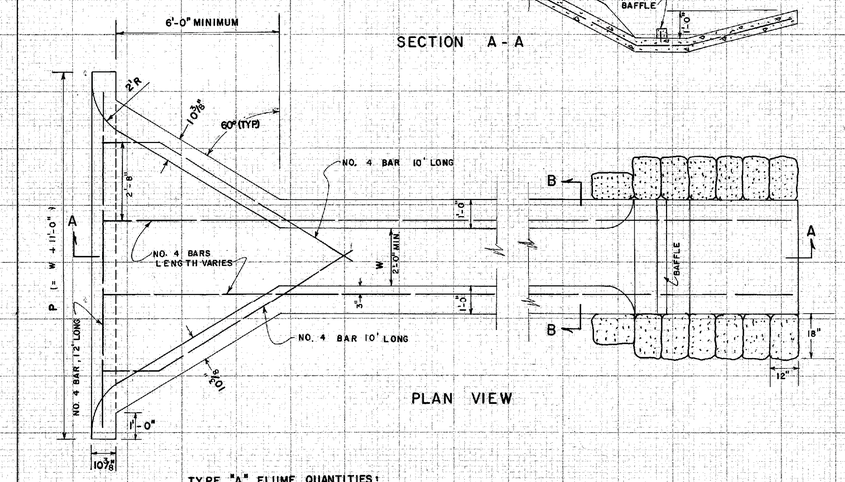
TYPE "A"



SECTION A-A



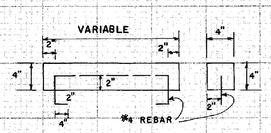
SECTION B-B



PLAN VIEW

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.



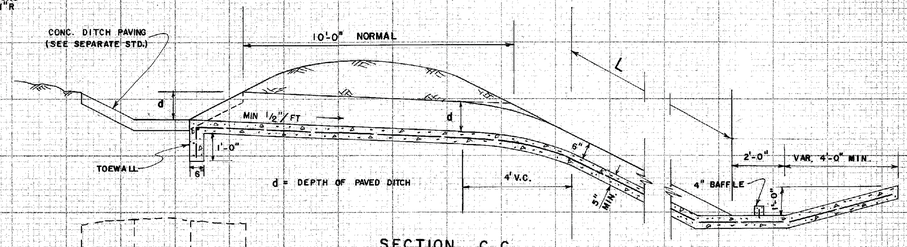
DETAILS OF 4" CONCRETE BAFFLE

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:

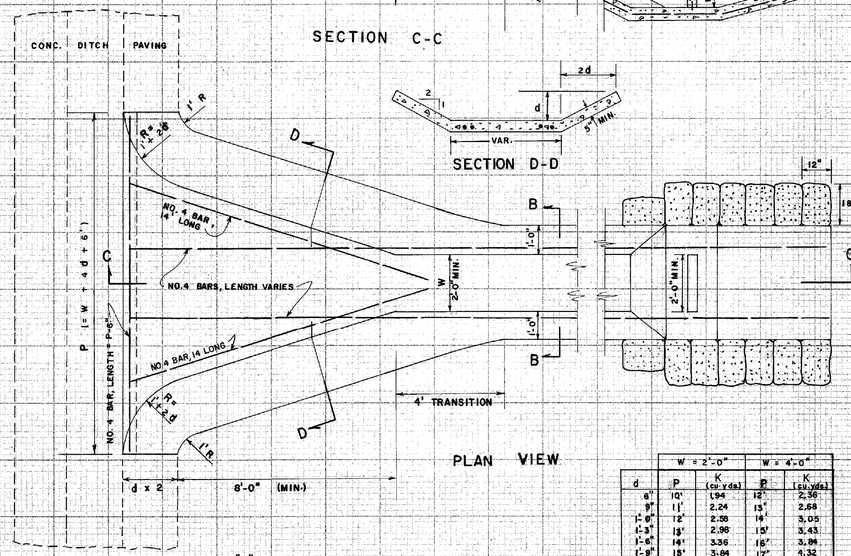
CLASS B CONCRETE	___ CU.YD.
BAR REINFORCEMENT STEEL	___ LB.
SAND CEMENT BAG RIP RAP, 6 IN OR 8 IN.	___ SQ.YDS.

TYPE "B"



SECTION C-C

SECTION D-D



PLAN VIEW

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 = 35 + 0.667 (P) + 1.336 (L)
SAND CEMENT BAG RIP RAP: 14 BAGS x 0.1667 SQ.YDS./BAG = 2.333 SQ.YDS.

d	W = 2'-0" P	W = 2'-0" K (cu.yds)	W = 4'-0" P	W = 4'-0" K (cu.yds)
6"	10'	1.94	12'	2.56
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)

CONCRETE FLUMES TYPES "A" & "B"

NO SCALE REV. & REDR. OCT. 1983

D-9

FORM EF3

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
CONSTRUCTION DETAILS

DRAWING NO. 40-002

3/1/2007 GPLN

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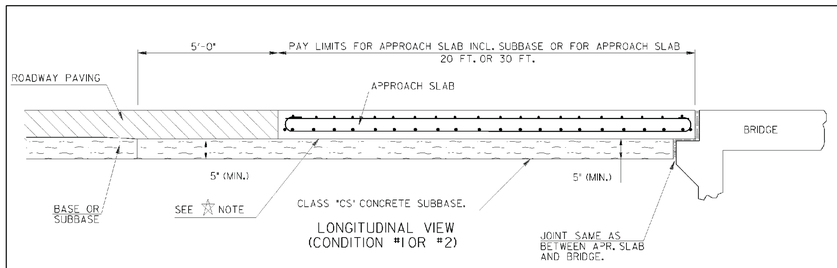
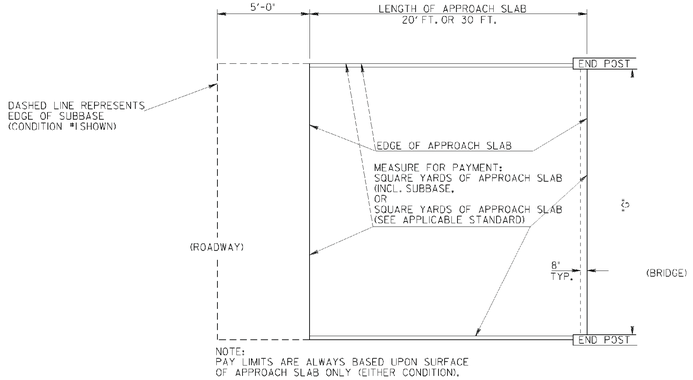


LONGITUDINAL VIEW
(CONDITION #1 OR #2)



NOTE:
PAY LIMITS ARE ALWAYS BASED UPON SURFACE OF APPROACH SLAB ONLY (EITHER CONDITION).

PLAN VIEW

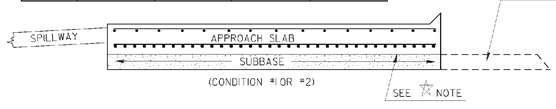
"L"	⊗ CUBIC YARDS OF SUBBASE FOR APPROACH SLAB			
	STD. 9017K	STD. 9017L	STD. 9017P	STD. 9017Q
28'-0"	15.63	11.08		
29'-6"			16.47	11.67
30'-0"				
31'6"			17.54	12.43
32'-0"	17.75	12.58		
33'-6"			18.60	13.18
34'-0"				
35'-6"			19.67	13.94
36'-0"	19.87	14.08		
37'-6"			20.74	14.70
38'-0"				
39'-6"			21.81	15.46
40'-0"	21.99	15.59		
41'-6"			22.88	16.21
42'-0"	23.05	16.34		
43'-6'			23.94	16.97
44'-0"				
45'-6"			25.01	17.73
46'-0"		17.84		
47'-6"			26.08	
48'-0"	26.23	18.59		
49'-6"			27.15	
50'-0"				
51'-6"			28.22	
52'-0"	28.35			
53'-6"			29.29	
54'-0"				
55'-6"			30.35	
56'-0"				
57'-6"			31.42	
58'-0"	31.53			
59'-6"			32.49	
60'-0"	32.59			
61'-6"			35.56	
62'-0"	33.65			
63'-6"			34.63	
64'-0"	34.71			
65'-6"			35.70	
66'-0"	35.77			

⊗ QUANTITES GIVEN IN THE TABLE ARE BASED UPON MINIMUM DIMENSIONS AND ARE GIVEN FOR INFORMATION ONLY.

CUBIC YARDS OF SUBBASE FOR USE WITH STD. 9017M, STD. 9017N OR FOR USE WITH SLAB SIZES NOT GIVEN IN TABLE, MAY BE ESTIMATED WITH THE FOLLOWING FORMULAE:

FOR 30' APPROACH SLABS:
CU. YARDS = 0.5298 TIMES SLAB WIDTH (IN FEET)

FOR 20' APPROACH SLABS:
CUBIC YARDS = 0.3755 TIMES SLAB WIDTH (IN FEET)

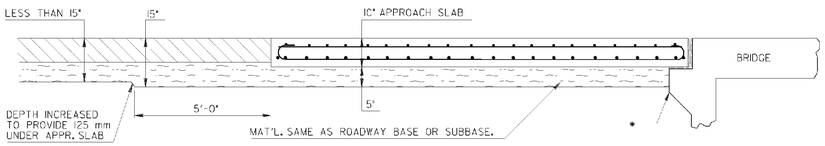


CROSS SECTIONAL VIEW

IF MAT'L. UNDER APPROACH SLAB IS FLEXIBLE ENOUGH TO ALLOW DRIVING OF GUARDRAIL POST, THE LIMITS SHALL BE EXTENDED SIMILARLY TO THAT ON THE ROADWAY.

☆ NOTE:
IF "CS" CONCRETE OR P.C. CONC. SUBBASE IS USED, CLEAR POLYETHYLENE SHEETING 8 MILS. MIN. THICKNESS, WITH A 6" OVERLAP, UNIFORMALLY LAYED, SHALL BE REQUIRED UNDER THE APPROACH SLAB TO PREVENT BONDING. POLYETHYLENE SHEETING SHALL BE NEW, UNUSED AND FREE OF HOLES, RIPS AND TEARS.

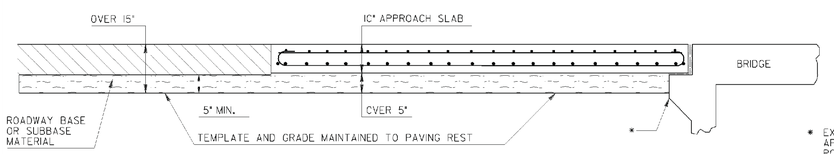
NOTE: SUBBASE SHOWN ABOVE FOR APPROACH SLAB WITH SPILLWAY ON ONE SIDE AND SLOPED EDGE ON OTHER SIDE. SUBBASE DETAILS SIMILAR FOR APPROACH SLAB WITH TRANSITION CURB OR OTHER DRAINAGE STRUCTURES.



LONGITUDINAL VIEW
(CONDITION #2)

CONDITION #1:
WHERE THE CONTRACT FOR THE BRIDGE AND APPROACH SLABS IS LET SEPARATE FROM THE ROADWAY PAVING CONTRACT, THE SUBBASE FOR THE APPROACH SLAB WILL BE CLASS "CS" CONCRETE ACCORDING TO SECTION 500. IN THIS CASE, PAYMENT FOR THE SUBBASE WILL BE INCLUDED IN THE PAYMENT FOR THE APPROACH SLAB.

CONDITION #2:
WHERE THE ROADWAY PAVING AND THE BRIDGE ARE LET UNDER THE SAME CONTRACT, THE APPROACH SLAB SUBBASE MAY BE EITHER CLASS "CS" CONCRETE OR MAY BE THE SAME MATERIAL AS REQUIRED FOR THE ROADWAY BASE OR SUBBASE SUCH AS GRADED AGGREGATE, P.C. CONC. SUBBASE, ETC. IN THIS CASE, PAYMENT FOR THE SUBBASE WILL BE INCLUDED IN THE PAYMENT FOR THE APPROACH SLAB.



LONGITUDINAL VIEW
(CONDITION #2)

* EXPANSION JOINT REQ'D. SAME AS BETWEEN APPROACH SLAB & BRIDGE, IF SUBBASE IS PORTLANT CEMENT CONCRETE OR CLASS "CS" CONCRETE.

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

3-28-06	6-14-88	DATE
REVISED NOTES	PAY ITEM - COND. #2	REVISION
G.L.O.		BY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAIL

SUBBASES FOR APPROACH SLABS

NO SCALE — REV. & REDRAWN OCT. 1985

NUMBER M-2

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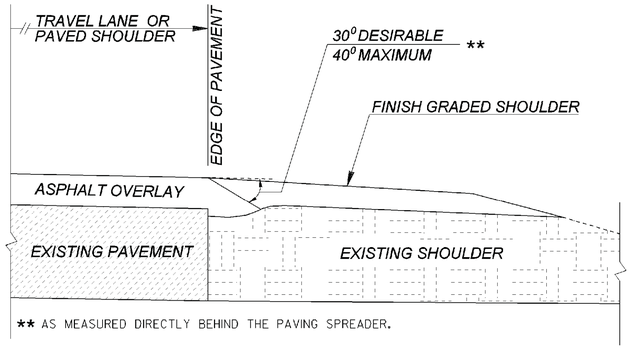
REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
CONSTRUCTION DETAILS

DRAWING No. 40-003

3/1/2007 GPLN

ASPHALT PAVEMENT - OVERLAY



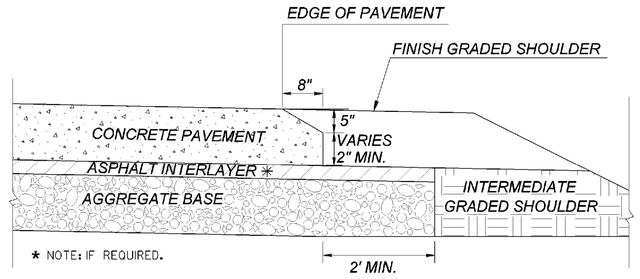
** AS MEASURED DIRECTLY BEHIND THE PAVING SPREADER.

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

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

PLAIN PC CONCRETE PAVEMENT OR ROLLER COMPACTED CONCRETE PAVEMENT



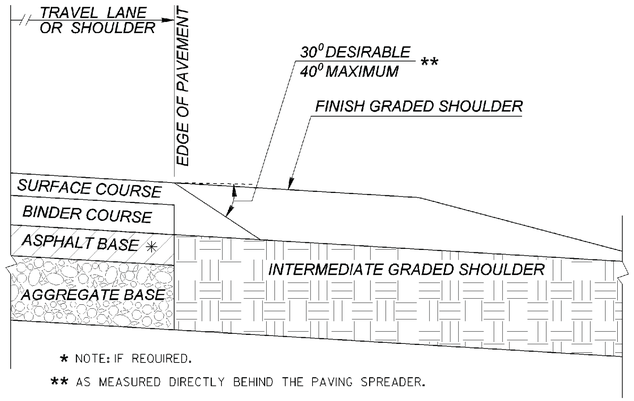
* NOTE: IF REQUIRED.

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.

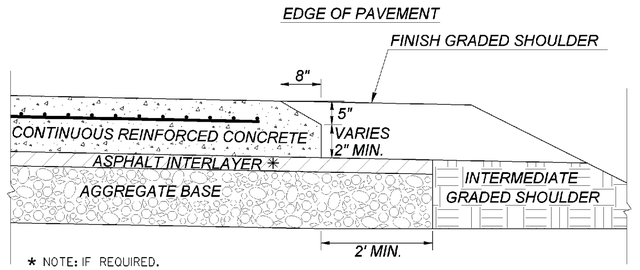
ADDITIONAL QUANTITIES:
SURFACE COURSE PAVING DEPTH (T)
$(T)^2$ (IN.) X 0.000441 TN/IN.-FT X LENGTH (FT) = _____TN

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	REVISED ANGLE TOLERANCE & ADDED NOTE.	11-5-14 DATE
BY	DES. B.A.S. DRW. G.J.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

11/17/2014 2:02:21 PM \\GDOT-DSKTOPFLOT\P23\GG_K196009.plt tecx W:\IPC\Roadway P-7\P-7.prt

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
CONSTRUCTION DETAILS

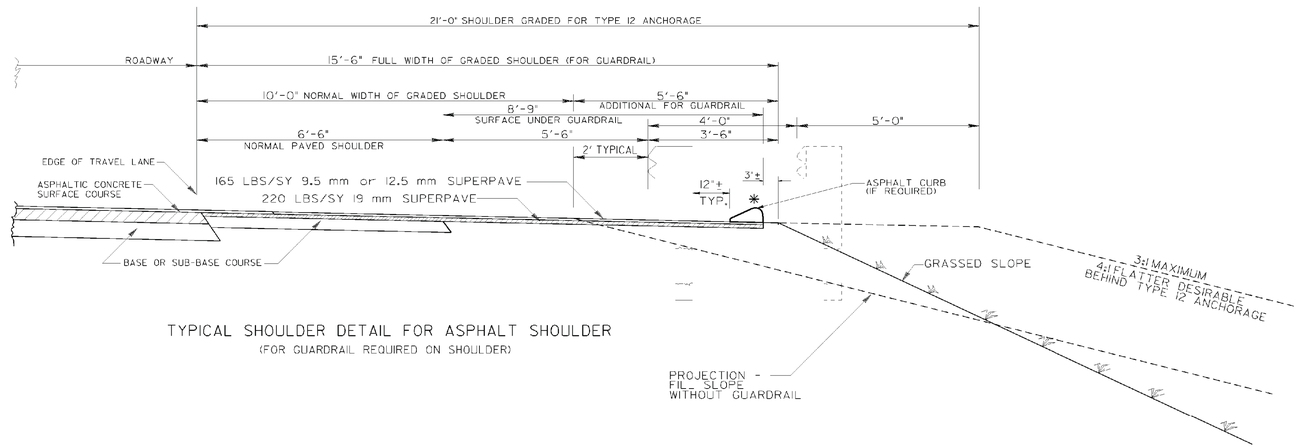
DRAWING No. 40-004

3/1/2007 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	188	267

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



TYPICAL SHOULDER DETAIL FOR ASPHALT SHOULDER
(FOR GUARDRAIL REQUIRED ON SHOULDER)

* ASPHALT CONCRETE CURB PER SECTION 436 SHALL BE REQUIRED WHERE SPECIFIED. TYPICAL USE FOR EROSION PREVENTION OF HIGH FILL SLOPES, WHERE SPILLWAYS ARE REQUIRED. ASPHALT CONCRETE CURB SHALL NOT BE USED WITHIN THE LIMITS OF THE TYPE 12 ANCHORAGE.

PROPOSED SHOULDER PAVING AND SURFACING UNDER GUARDRAIL
4 Lane Roadways
Other Than
Interstates & Freeways

RE-DRAWN 9-30-02
Sheet 1 of 2
S-4

SHOWDATETIME$$$$$$
DGN$SPECIFICATION$$$$$$$$$$$$$$$$$$$$$$

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
CONSTRUCTION DETAILS

DRAWING No.
40-005

3/1/2007 GPLN

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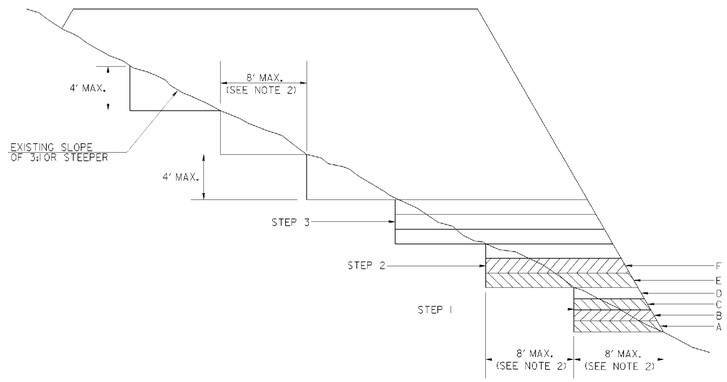
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

BENCHING DETAIL



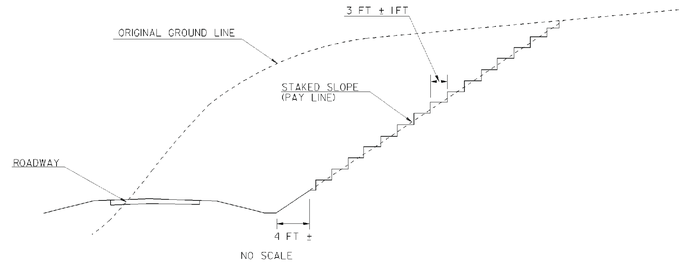
NOTES :

1. WHERE THE EMBANKMENT IS TO BE PLACED ON A HILLSIDE OR ANOTHER EXISTING EMBANKMENT HAVING A SLOPE OF 3 TO 1 OR STEEPER, THE FOUNDATION MUST BE BENCHED WHILE THE EMBANKMENT IS BEING MADE.(SEE DIAGRAM ABOVE)

2. THE DIAGRAM SHOWS THAT BEFORE LAYER 'A' IS PLACED THE FIRST STEP (I) IS CUT INTO THE SLOPE A MAXIMUM DISTANCE OF ABOUT 8 FEET (ABOUT ¾ THE WIDTH OF THE TYPICIAL D-8 BULLDOZER BLADE). SUCCESSIVE LAYERS B, C, AND D ARE THEN PLACED BEFORE LAYER 'E' IS PLACED. THE SECOND STEP IS CUT 8 FEET INTO THE SLOPE AND SUCCESSIVE LAYERS ARE AGAIN PLACED. IF IT IS ANTICIPATED THAT THE VERTICAL PART OF THE STEP WILL EXCEED 4 FEET IF A 8 FEET HORIZONTAL CUT IS MADE, THEN THE ACTUAL CUT STOPS WHEN THE VERTICAL PART REACHES A MAXIMUM OF 4 FEET ALLOWING THE HORIZONTAL DISTANCE TO VARY.

3. THE PROCESS OF BENCHING IS CONSIDERED INCIDENTAL TO THE ITEM OF UNCLASSIFIED EXCAVATION AND BORROW OR GRADING COMPLETE IN CONSTRUCTION OF THE EMBANKMENT AND NO ADDITIONAL MEASUREMENT OF QUANTITY OR PAYMENT WILL BE MADE FOR BENCHING.

SERRATED SLOPE DETAIL



NO SCALE

NOTES :

1. SLOPES STEEPER THAN 3:1 SHALL BE SERRATED.

2. WIDTH OF STEP SHALL BE 3 FT \ 1FT.

3. HEIGHT OF STEP IS A FUNCTION OF WIDTH AND STAKED SLOPE.

4. TREAD OF STEP SHALL BE APPROXIMATELY HORIZONTAL.

5. SERRATED SLOPES SHALL BE USED ON ALL PROJECTS IN DISTRICTS 1, 6, AND 7, EXCEPT WHERE SPECIFICALLY EXCEPTED BY THE GEOTECHNICAL BUREAU IN THE SOIL SURVEY REPORT. SERRATED SLOPES SHALL NOT BE USED IN DISTRICTS 2, 3, 4, AND 5, UNLESS REQUIRED BY THE SOIL SURVEY.

BY	REVISION	DATE
C.L.D.	REVISED BENCHING DETAIL &	6-18-09
R.M.U.	REVISED TITLE BLOCK.	
	GEN. REVISION	1-28-82

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAIL

SERRATED SLOPE DETAIL
BENCHING DETAIL

NO SCALE — JULY, 1981

NUMBER S-7

6/18/2008 1:28:27 PM \\GDOT-DSNTGGPLOT\GEF\35_11FF_output.cet pltname Y:\GARY\REVISED S-7\S-7.prt

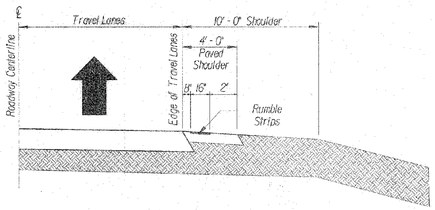
3/1/2007 GPLN

REVISION DATES

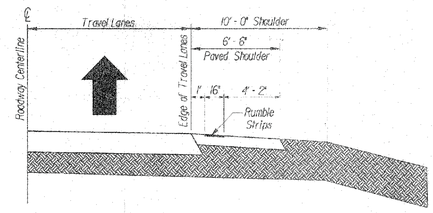
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
CONSTRUCTION DETAILS

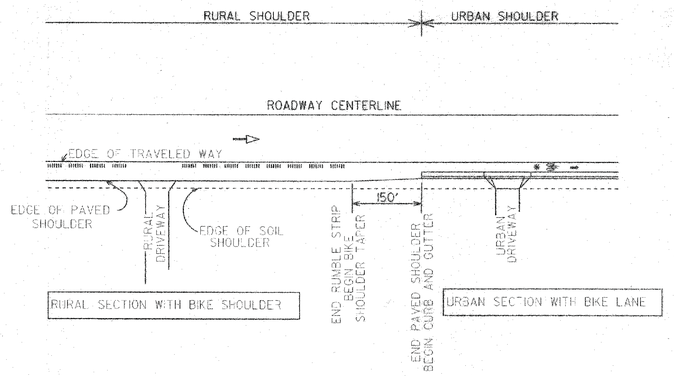
DRAWING No. 40-006

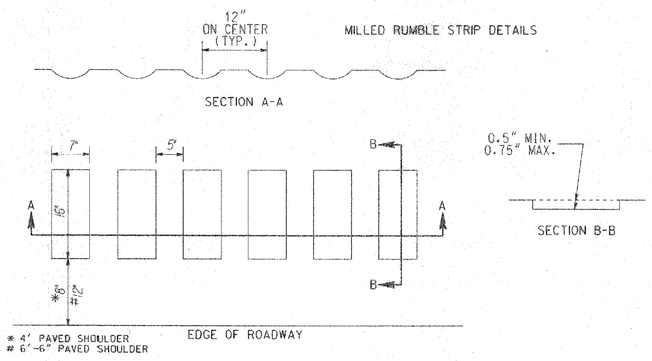
4' PAVED SHOULDER WITH 16" MILLED RUMBLE STRIPS



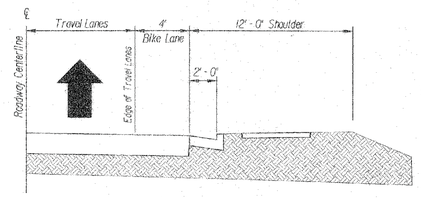
6'-6" PAVED SHOULDER WITH 16" MILLED RUMBLE STRIPS



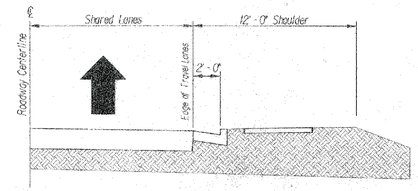




4' Urban Bike Lane

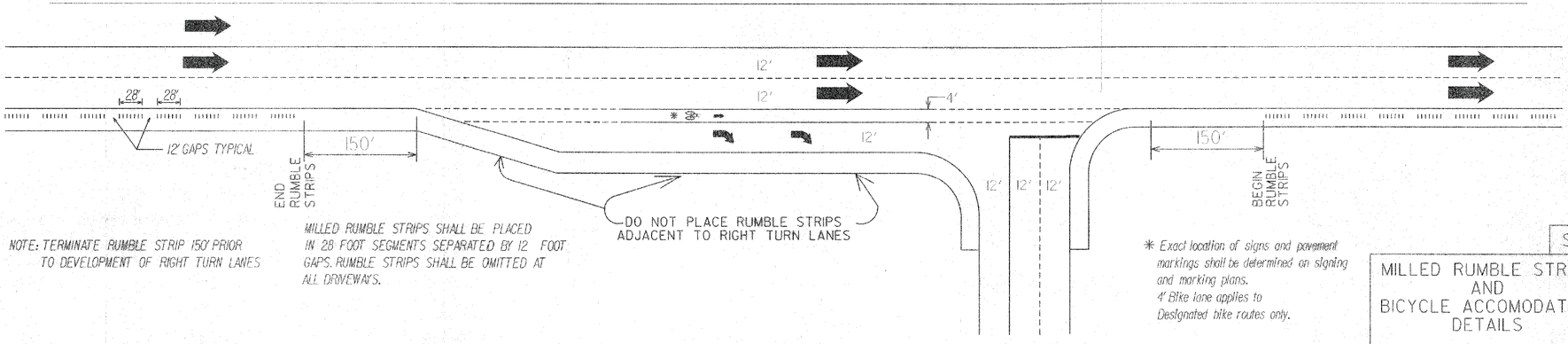


Shared Lane



Note: Outside lane width should be 12' minimum, 14' desirable.

ROADWAY CENTERLINE



NOTE: TERMINATE RUMBLE STRIP 150' PRIOR TO DEVELOPMENT OF RIGHT TURN LANES.

MILLED RUMBLE STRIPS SHALL BE PLACED IN 28 FOOT SEGMENTS SEPARATED BY 12 FOOT GAPS. RUMBLE STRIPS SHALL BE OMITTED AT ALL DRIVEWAYS.

* Exact location of signs and pavement markings shall be determined on signing and marking plans.
4' Bike lane applies to Designated bike routes only.

S-8

MILLED RUMBLE STRIPS AND BICYCLE ACCOMODATION DETAILS

MAR. 2, 2001

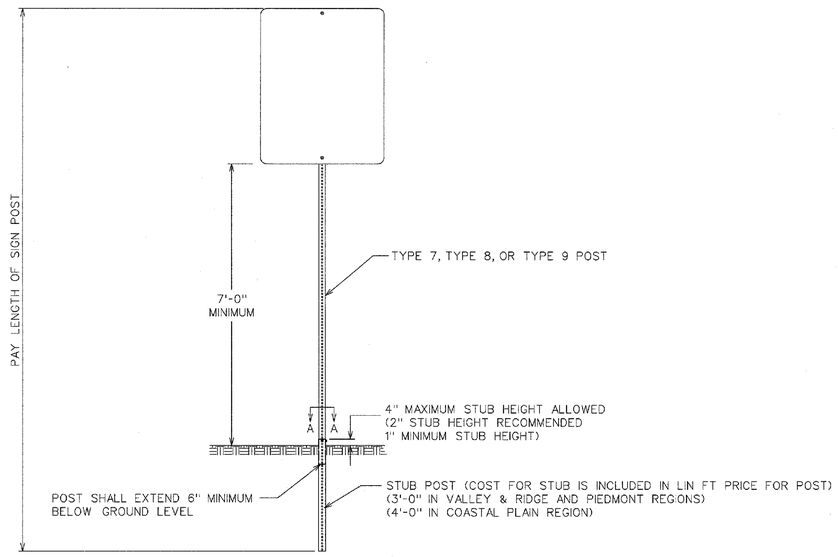
REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
CONSTRUCTION DETAILS

DRAWING No. 40-007

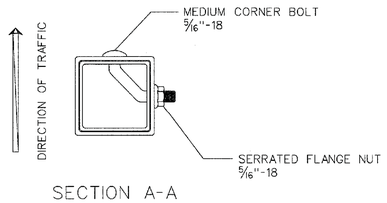
3/1/2007 GPLN

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

	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.		
Sign Centroid	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 CONTINUOUS 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

Construction dgn Jan 21, 2003 16:01:11

MCB2/18

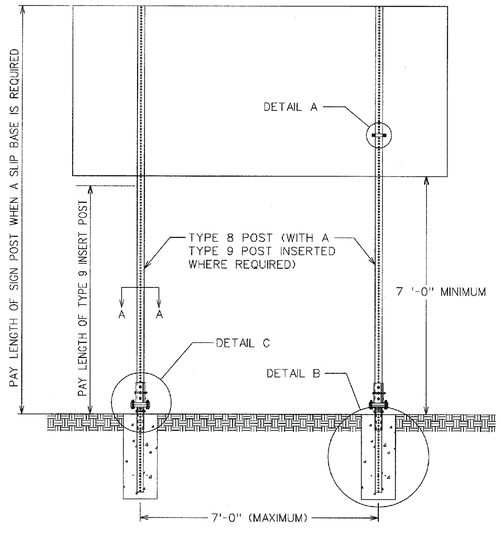
3/1/2007 GPLN

REVISION DATES

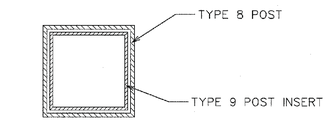
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
CONSTRUCTION DETAILS

DRAWING No. 40-008

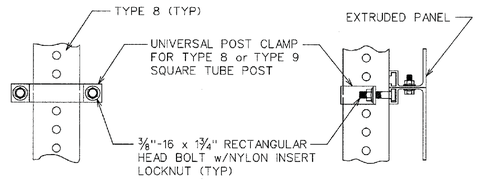
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



BACK VIEW

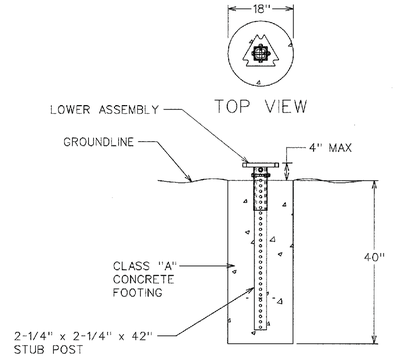


SECTION A-A



BACK VIEW SIDE VIEW

DETAIL A



DETAIL B

GROUND MOUNTED BREAKAWAY SIGN SUPPORT

SIGN POST SELECTION CHART

70MPH Wind Load Chart - 15% Gust Factor

	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.		
Sign Centroid	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

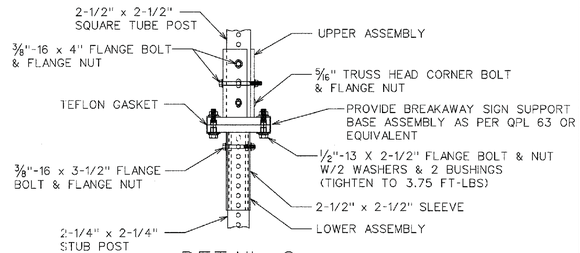
SIGN CENTROID IS DISTANCE FROM GROUND LEVEL TO BOTTOM OF SIGN *PLUS* HALF THE HEIGHT OF SIGN.
EXAMPLE: 24" X 48" SIGN THAT IS 7 FEET FROM GROUND TO BOTTOM OF SIGN. ADD HALF OF 48" (24" OR 2 FT) *PLUS* 7 FT. = 9' CENTROID.

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.

TOP VIEW



DETAIL C

(CONCRETE NOT SHOWN)

DATE	REVISIONS

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY & DESIGN

DETAILS OF
SQUARE TUBE POST
(BREAKAWAY SIGN SUPPORT)

NO SCALE July 2002

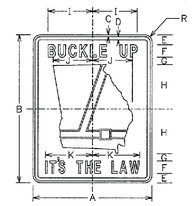
T-3B

PCDOT6

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	193	267

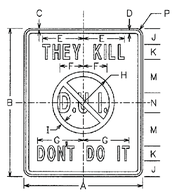
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



R560-1

SIGN	DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	I	J	K	R
MIN & STD	30	36	1/2	3/4	2 1/2	3C	1 1/2	11	8 1/2	10	11	1 7/8
FWY	48	60	3/4	1 1/4	4	5C	3	18	15 1/2	16	18	3

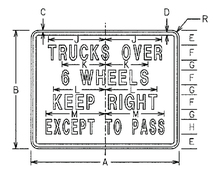
COLORS
STATE SHIELD & BORDER – RED (REFL)
LEGEND & BELT – BLACK (NON-REFL)
BACKGROUND – WHITE (REFL)



R560-2

SIGN	DIMENSIONS (INCHES)														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P
MIN & STD	30	36	3/4	1 1/4	11	5	12 1/2	7 1/2	1 1/4	4	4C	3	4 1/2	5C	1 7/8
FWY	48	60	3/4	1 1/4	16 1/2	9 1/2	18 1/2	12 1/2	2	6 1/2	6C	5	8 1/2	8C	3

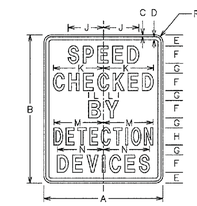
COLORS
CIRCLE & DIAGONAL – RED (REFL)
LEGEND & BORDER – BLACK (NON-REFL)
BACKGROUND – WHITE (REFL)



R560-3

SIGN	DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	L	M	R
MIN & STD	36	30	1/2	3/4	3 1/2	3 1/2	3	3 1/2	8	14	10	11 1/2	4 1/2	1 7/8
FWY	60	48	3/4	1 1/4	6	6C	4	6B	23	17 1/2	21	24	3

COLORS
LEGEND & BORDER – BLACK (NON-REFL)
BACKGROUND – WHITE (REFL)



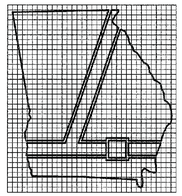
I550-1

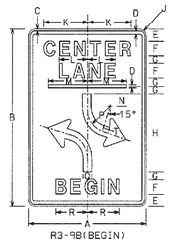
SIGN	DIMENSIONS (INCHES)														
	A	B	C	D	E	F	G	H	J	K	L	M	N	R	
MIN & STD	30	36	1/2	3/4	4	4D	2	4C	6 5/16	11 5/8	3 1/8	11 1/16	10 5/8	1 1/8	
FWY	48	60	3/4	1 1/4	4 1/2	7D	4	7C	14 5/8	20 5/8	6	20	18 5/8	3	

COLORS
LEGEND & BORDER – BLACK (NON-REFL)
BACKGROUND – WHITE (REFL)

THE I550-1 SIGN SHALL BE ERECTED:

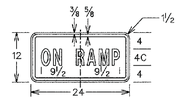
1. ON EVERY HIGHWAY THAT COMPRISES A PART OF THE STATE HIGHWAY SYSTEM AT THAT POINT ON THE HIGHWAY WHICH INTERSECTS THE STATE LINE.
2. AT THE TERMINI OF EVERY HIGHWAY THAT COMPRISES A PART OF THE STATE HIGHWAY SYSTEM WHICH BEGINS OR ENDS WITHIN THE STATE BOUNDARIES.
3. ON EVERY HIGHWAY THAT COMPRISES A PART OF THE STATE HIGHWAY SYSTEM AT THAT POINT ON THE HIGHWAY WHERE TRAFFIC FROM OUTSIDE THE COUNTY FIRST ENTERS A COUNTY THAT HAS A PERMIT TO OPERATE SPEED DETERCTION DEVICES, AND
4. ON EVERY HIGHWAY THAT COMPRISES A PART OF THE STATE HIGHWAY SYSTEM AT THAT POINT ON THE HIGHWAY WHERE TRAFFIC FIRST ENTERS THE CORPORATE LIMITS OF ANY MUNICIPALITY THAT HAS A PERMIT TO OPERATE SPEED DETECTION DEVICES.





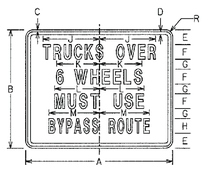
R3-9B(BEGIN)

R3-9B(END)

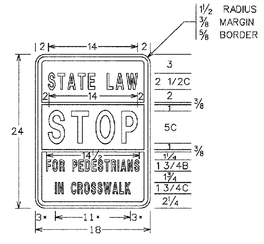


R8-3aP

COLORS
LEGEND & BORDER – RED (REFL)
BACKGROUND – WHITE (REFL)



R560-4



R560-5

COLORS
LEGEND & BORDER–BLACK (NON-REFL)
WORD "STOP" –RED (REFL)
BACKGROUND –WHITE (REFL)

SIGN	DIMENSIONS (INCHES)																
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
STD & MIN	24	36	3/8	5/8	2 1/2	3E	1 1/2	16	1 1/2	8 1/16	5 3/16	8	2 1/2	6	2	6 5/16	4 3/16	1 1/2
SPECIAL	36	48	5/8	7/8	3 1/2	5E	1 1/2	20	2 1/2	14 1/16	9 1/2	12	3	8	3	7 11/16	4 15/16	2

COLORS
LEGEND & BORDER – BLACK (NON-REFL)
BACKGROUND –WHITE (REFL)

SIGN	DIMENSIONS (INCHES)												
	A	B	C	D	E	F	G	H	J	K	L	M	R
MIN & STD	36	30	1/2	3/4	3 1/2	3 1/2	3	3 1/2	8	14	10	12 1/2	1 7/8
FWY	60	48	3/4	1 1/4	6	6C	4	6C	23	17 1/2	17 1/2	25 1/2	3

COLORS
LEGEND & BORDER – BLACK (NON-REFL)
BACKGROUND –WHITE (REFL)

DATE	REVISIONS
5-24-00	ADDED R9-8 DETAIL
1-21-03	DELETED R1-4 SIGNS
1-21-03	REV SIGN CODES FOR R3-9 SIGNS

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY & DESIGN

DETAILS OF
REGULATORY SIGNS
SHEET 1 OF 2

NO SCALE JANUARY 2000

T-5A

PC0073

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REVISION DATES		

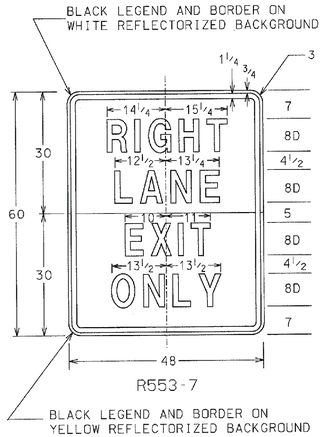
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION DETAILS

DRAWING No. 40-010

3//2007 GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

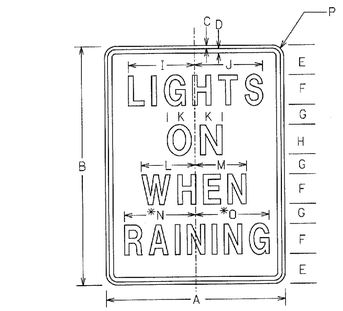


R553-7

R553-1

* REDUCE SPACING 20%

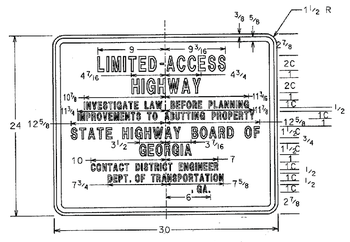
SIGN	DIMENSIONS (INCHES)																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	R	S	T	U	V	W
STD & MIN	24	30	3/8	5/8	3 1/2	2B	4C	3 1/2	4C	2	3	1 1/2	10	10 1/2	10 1/4	10 3/4	10 1/8	9 3/8	9 1/2
EXPWY	36	48	3/8	7/8	6	3B	6C	6	6C	3	6	2 1/4	15	15 3/8	15 3/8	16 7/8	15 3/8	14 1/16	14 1/4
FWY	48	60	3/4	1 1/4	7	4B	7C	8	8C	4	6	3	20	21	20 1/2	21 1/2	20 1/4	18 3/4	19



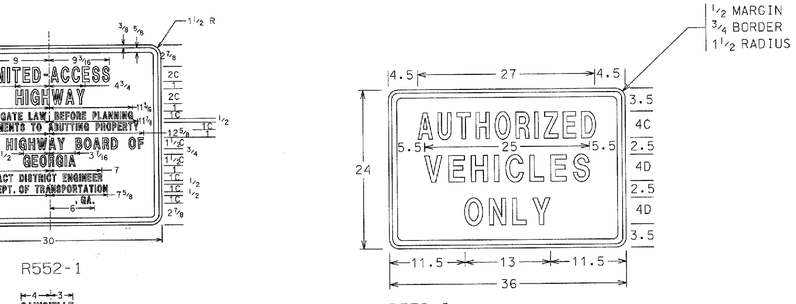
R554-1

* REDUCE SPACING 30%

SIGN	DIMENSIONS (INCHES)													
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
STD & MIN	24	30	3/8	5/8	3 5/8	4D	2 1/4	4E	8 3/4	9 1/4	4	6 3/4	7 1/4	9 1/4	9 3/4	1 1/2
EXPWY	36	48	5/8	7/8	6	6D	4	6E	13 1/4	13 7/8	5 1/2	10 3/4	10 1/4	14 1/4	14 3/8	2 1/4
FWY	48	60	3/4	1 1/4	7 1/4	8D	4 1/2	8E	17 1/8	17 7/8	7	14 3/8	13 5/8	18 3/8	19 3/8	3



R552-1



R552-2

DATE	REVISIONS

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY & DESIGN

DETAILS OF
REGULATORY SIGNS
SHEET 2 OF 2

NO SCALE JANUARY 2000

T-5B

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

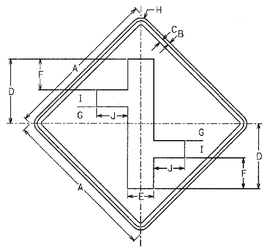
CONSTRUCTION DETAILS

DRAWING No. 40-011

RELEASED FOR CONSTRUCTION 10-31-2014

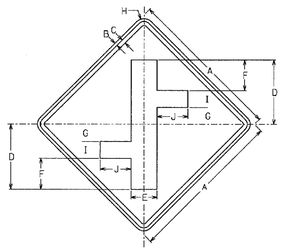
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	195	267

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



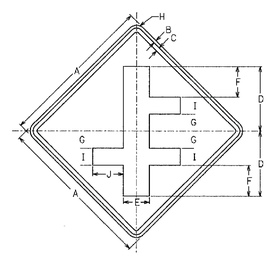
W552-1

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



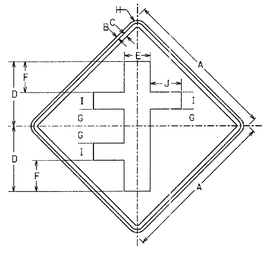
W552-2

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



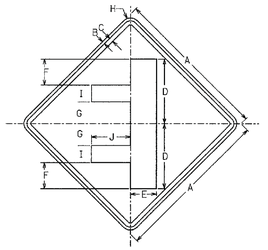
W552-3

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



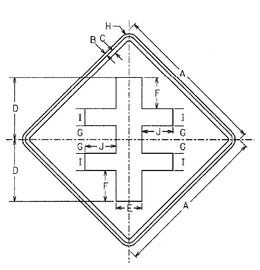
W552-4

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



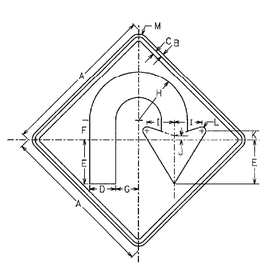
W552-5

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



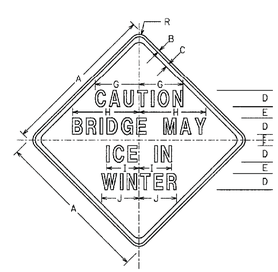
W552-6

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



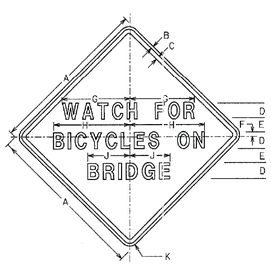
W551-1

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 5/16	15/16	2 1/4
FWY	48	7/8	1 1/4	8	13 1/2	6	7	15	8 1/16	1 1/4	2 3/4	1 1/4	3



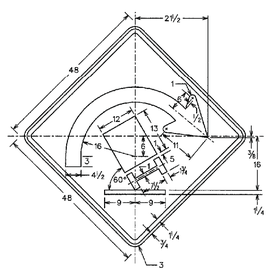
W560-1

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

T-5C

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

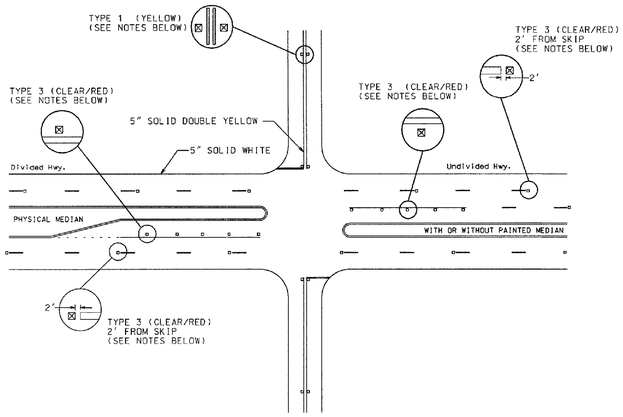
CONSTRUCTION DETAILS

DRAWING No. 40-012

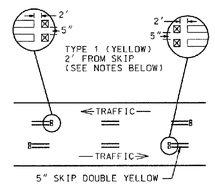
3/1/2007 GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	196	267

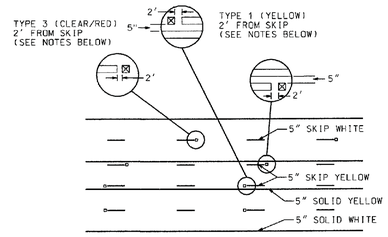
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



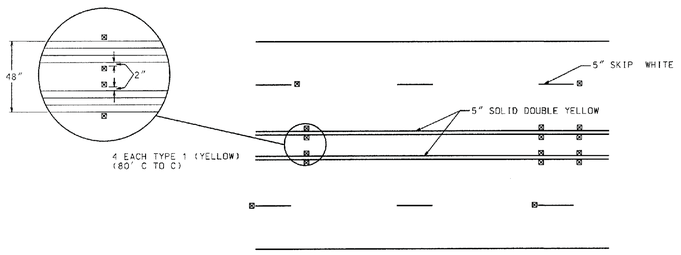
DIVIDED / UNDIVIDED HIGHWAY



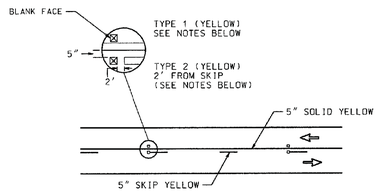
REVERSIBLE LANE



TWO WAY LEFT TURN LANE



4'-0" STRIPED FLUSH MEDIAN



NO PASSING ZONE

GENERAL NOTES:

1. RAISED PAVEMENT MARKERS SHALL BE SPACED EVERY 80 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.
5. ON HORIZONTAL CURVES WHERE AT LEAST 3 MARKERS CANNOT BE SEEN AT ONE TIME USING NORMAL SPACING, MARKERS SHALL BE PLACED 40 FT.

DATE	REVISIONS
9-4-03	NO PASSING ZONE RPM's
1-13-04	NO PASSING ZONE RPM's

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY & DESIGN

DETAILS OF
RAISED PAVEMENT MARKER LOCATION
NON-LIMITED ACCESS ROADWAY

NO SCALE JANUARY 2000

T-15A

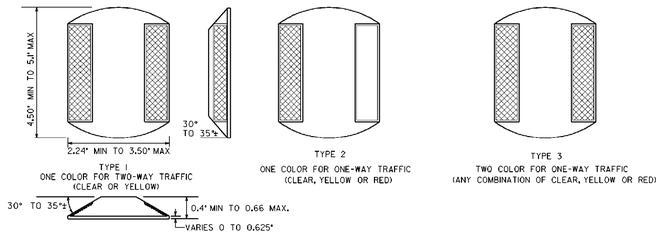
REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
CONSTRUCTION DETAILS

DRAWING No.
40-013

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

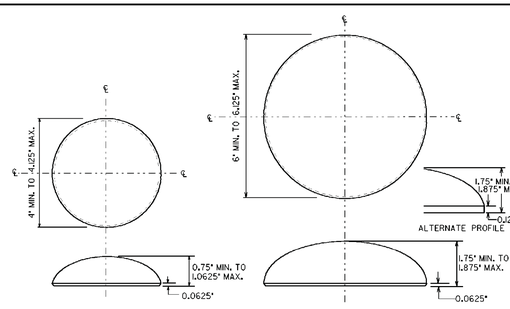
RAISED REFLECTIVE MARKERS



TYPE 1
ONE COLOR FOR TWO-WAY TRAFFIC
(CLEAR OR YELLOW)

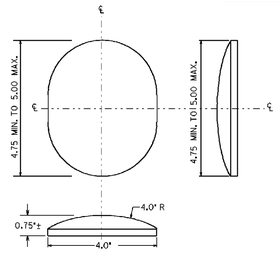
TYPE 2
ONE COLOR FOR ONE-WAY TRAFFIC
(CLEAR, YELLOW OR RED)

TYPE 3
TWO COLOR FOR ONE-WAY TRAFFIC
(ANY COMBINATION OF CLEAR, YELLOW OR RED)

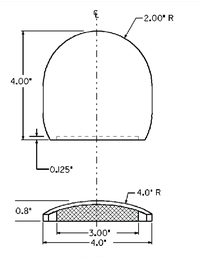


TYPE 4
OPAQUE CERAMIC MARKER
(WHITE, YELLOW OR BLACK)

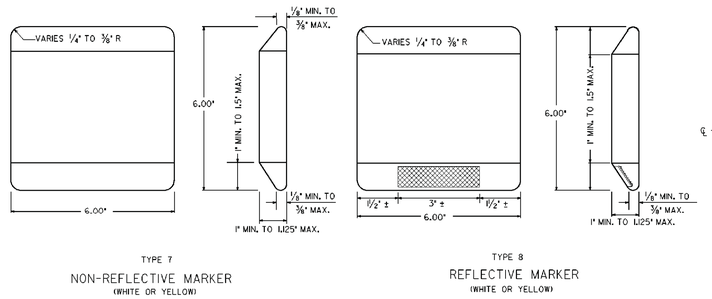
TYPE 4
OPAQUE CERAMIC MARKER
(WHITE, YELLOW OR BLACK)



TYPE 5
OVAL CERAMIC MARKER
(NON-REFLECTIVE WHITE, YELLOW OR BLACK)



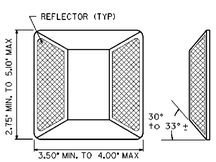
TYPE 6
REFLECTIVE CERAMIC MARKER
(REFLECTIVE WHITE, YELLOW OR BLACK)



TYPE 7
NON-REFLECTIVE MARKER
(WHITE OR YELLOW)

TYPE 8
REFLECTIVE MARKER
(WHITE OR YELLOW)

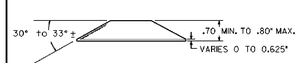
CERAMIC JIGGLE BAR MARKER



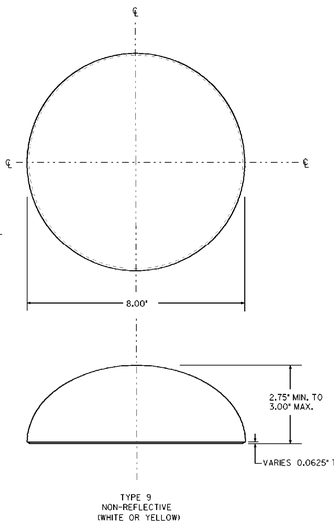
TYPE 11
ONE COLOR FOR TWO-WAY TRAFFIC
(CLEAR OR YELLOW)

TYPE 12
ONE COLOR FOR ONE-WAY TRAFFIC
(CLEAR, YELLOW, OR RED)

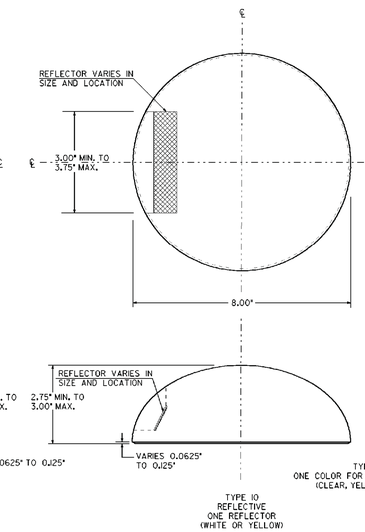
TYPE 13
TWO COLOR FOR ONE-WAY TRAFFIC
(ANY COMBINATION OF CLEAR, YELLOW, OR RED)



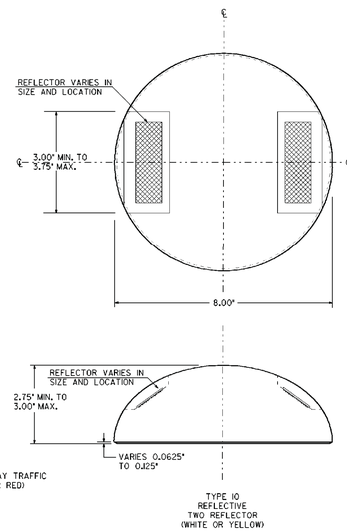
ALTERNATE RAISED REFLECTIVE MARKERS



TYPE 9
NON-REFLECTIVE
(WHITE OR YELLOW)



TYPE 10
REFLECTIVE
ONE REFLECTOR
(WHITE OR YELLOW)



TYPE 10
REFLECTIVE
TWO REFLECTOR
(WHITE OR YELLOW)

CERAMIC CHANNEL MARKER

TYPE 12
ONE COLOR FOR ONE-WAY TRAFFIC
(CLEAR, YELLOW, OR RED)

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

T-15C

REVISION DATES		

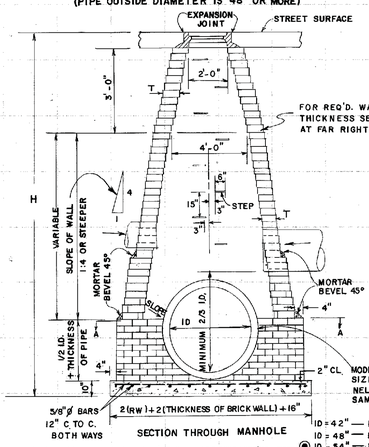
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

CONSTRUCTION DETAILS

DRAWING No.
40-014

3/1/2007 GPLN

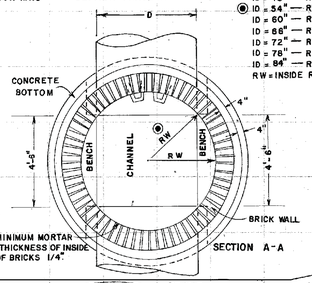
BRICK MANHOLE SECTION
(PIPE OUTSIDE DIAMETER IS 48" OR MORE)



SECTION THROUGH MANHOLE

- ID = 42" — RW = 2'-8"
- ID = 48" — RW = 3'-0"
- ID = 54" — RW = 3'-2"
- ID = 60" — RW = 3'-4"
- ID = 66" — RW = 3'-7"
- ID = 72" — RW = 3'-9"
- ID = 78" — RW = 3'-11"
- ID = 84" — RW = 4'-2"

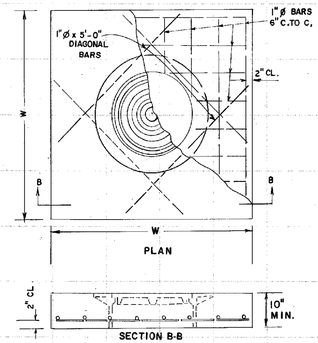
RW = INSIDE RADIUS OF WALL



NOTE: MINIMUM MORTAR JOINT THICKNESS OF INSIDE EDGE OF BRICKS 1/4"

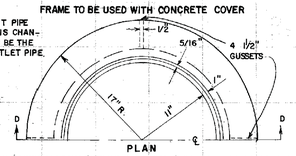
SECTION A-A

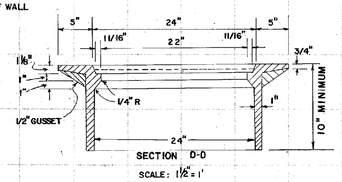
REINFORCED CONCRETE COVER



SECTION B-B

FRAME TO BE USED WITH CONCRETE COVER

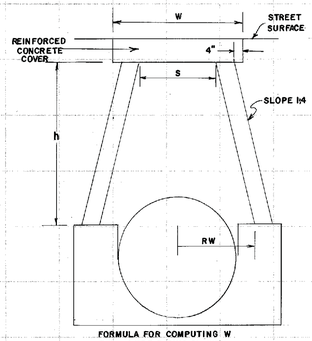




SECTION D-D

SCALE: 1½" = 1'

PLACEMENT FOR CONCRETE COVER



FORMULA FOR COMPUTING W
RW = INSIDE RADIUS OF WALL
S = 2RW − 1/2
W = S + 24"

NOTE: USE CONCRETE COVER WITH MANHOLE CASTINGS IF FILL FROM TOP OF PIPE TO FINISHED SURFACE IS LESS THAN:

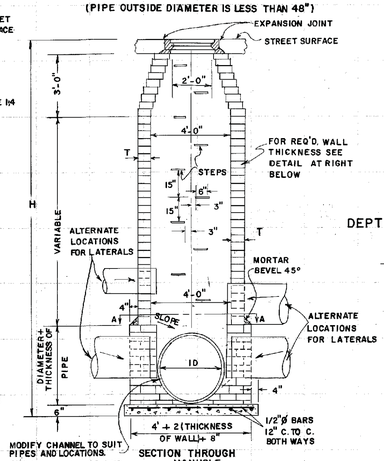
- 4'-6" FOR 42" PIPE
- 5'-0" FOR 48" PIPE
- 5'-6" FOR 54" PIPE
- 6'-0" FOR 60" PIPE
- 6'-6" FOR 66" PIPE
- 7'-0" FOR 72" PIPE
- 7'-6" FOR 78" PIPE
- 8'-0" FOR 84" PIPE

THICKNESS OF BRICK WALL
(SEE DETAIL AT FAR RIGHT)

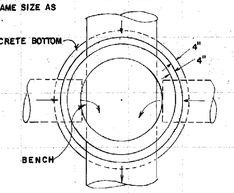
DEPTH	THICKNESS (T)
0' TO 10'	*8" MIN.
10' TO 20'	12" MIN.
20' TO 30'	16" MIN.

*FOR COMBINATION BRICK & PRECAST M.H. (SEE BELOW) ONLY 12" OR 16" BRICK WALL THICKNESS IS TO BE USED FOR BASE.

BRICK MANHOLE SECTION
(PIPE OUTSIDE DIAMETER IS LESS THAN 48")

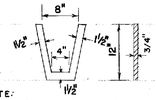


SECTION THROUGH MANHOLE



SECTION A-A

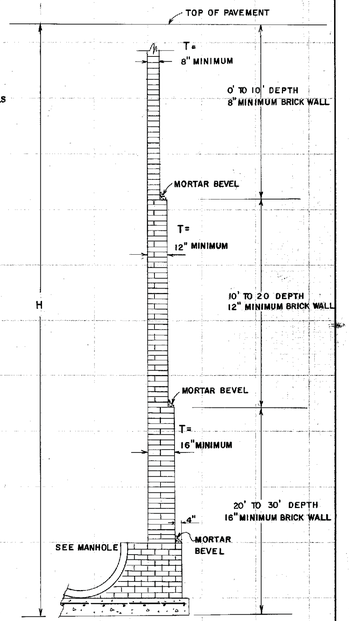
CAST IRON STEP



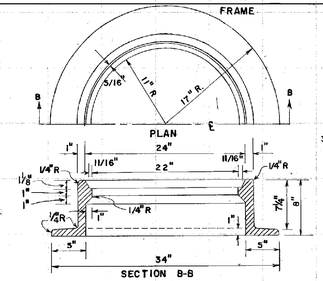
SCALE: 1½" = 1'

NOTE:
STEPS ARE REQUIRED IN ALL MANHOLES WHERE "H" IS GREATER THAN 4'-0" NUMBER AND LOCATION OF STEPS TO BE AS DIRECTED BY THE ENGINEER. PLASTIC OR RUBBER COATED STEPS LISTED IN THE GA. D.O.T. QUALIFIED PRODUCTS MANUAL MAY BE SUBSTITUTED.

DEPTH LIMITS FOR INCREASING WALL THICKNESS

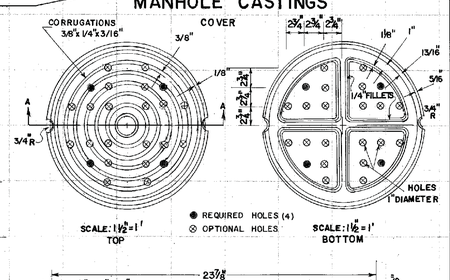


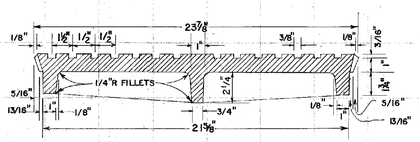
MANHOLE CASTINGS



SECTION B-B
SCALE: 1½" = 1"

APPROXIMATE WEIGHTS
C.I. FRAME 282 LBS.
C.I. COVER 178 LBS.





SECTION A-A
SCALE 3" = 1'

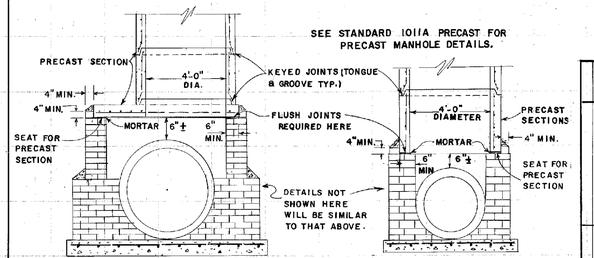
NOTE: COVER AND FRAME MUST BE FITTED BEFORE LEAVING SHOP. PAINT ACTUAL WEIGHT OF EACH CASTING ON ITS FACE.

MANHOLE FRAME & COVER SHOWN ON STD. 1011A PRECAST MAY BE USED AN ALTERNATE TO CASTINGS SHOWN HERE.

ALTERNATE - COMBINATION BRICK & PRECAST MANHOLES

NOTES FOR COMBINATION MANHOLE:
- BRICK PORTION OF MANHOLE WILL BE CONSTRUCTED WITH SEAT TO GIVE BEST POSSIBLE FIT FOR PRECAST UNIT. MINIMUM THICKNESS FOR BRICK WALL WILL BE 12" FOR H TO 20 FT. AND 16" FOR H=20FT. TO 30 FT.
- PRECAST UNIT WITHOUT TONGUE OR GROOVE AT BOTTOM SHALL BE PLACED IN BRICK SEAT WITH MORTAR IN JOINT ALL ROUND. BRICK BASE SHALL SET FOR 24 HOURS MIN. BEFORE PRECAST SECTIONS ARE INSTALLED.
- STEPS IN THE BRICK PORTION OF MANHOLE WILL BE IN ALIGNMENT WITH AND MATCH THE STEPS IN THE PRECAST SECTIONS RATHER THAN AS SHOWN FOR THE ALL BRICK MANHOLES.

SEE STANDARD 1011A PRECAST FOR PRECAST MANHOLE DETAILS.



DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
BRICK MANHOLES

SCALE AS SHOWN — REV. & R.E.D.R. OCTOBER, 1981

DES. 8-58
DRW. R.M.U.
TRA. G.M.E.
CHK. R.K.C.

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

(APPROVED) Thomas D. Moreland
STATE HIGHWAY ENGINEER

NUMBER 1011A

FORM EF6

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-001

3/1/2007 GPLN

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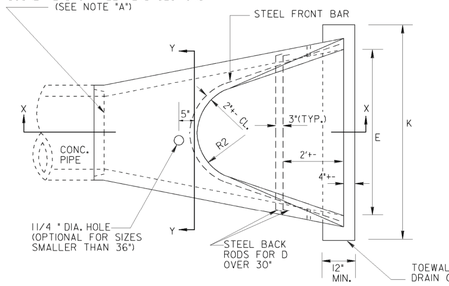
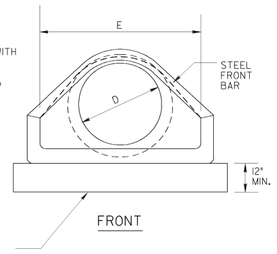
CONCRETE FLARED END SECTION

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



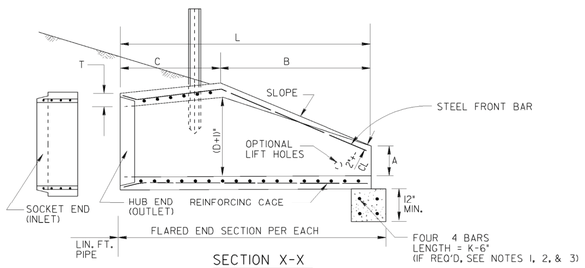
PLAN

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.

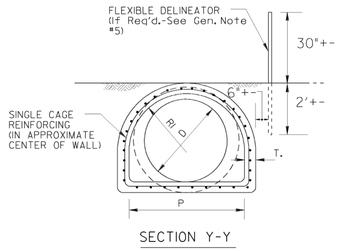


FRONT

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 (0.083D + 1"+- TYPICAL)

DIMENSIONS AND REINFORCING FOR CONCRETE FLARED END SECTIONS (+- 1" TOLERANCE)

PIPE DIA	FRONT BAR	BACK RODS	SLOPE +-	A	B	C *	L *	E	P	RI	R2	OUTLET TOEWALL (IF REQ'D) 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.

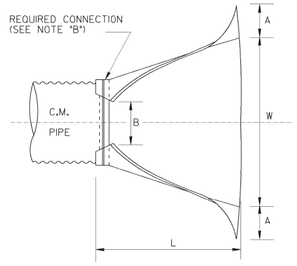
* NOTE: "C" AND "L" DIMENSION MAY BE MEASURED TO EITHER END OF JOINT CONNECTION AT PIPE.

METAL FLARED END SECTION

(USE ONLY WITH COR. METAL PIPE)

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

REQUIRED CONNECTION (SEE NOTE "B")



PLAN

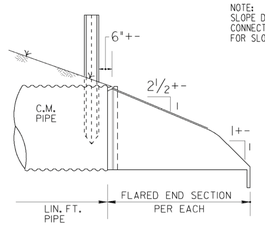
NOTE: GALVANIZED STEEL FLARED END SECTIONS ARE TO BE USED ONLY WITH CORRUGATED STEEL PIPE AND ALUMINUM FLARED END SECTIONS ARE TO BE USED ONLY WITH CORRUGATED ALUMINUM PIPE UNLESS OTHERWISE APPROVED BY D.O.T. OFFICE OF MATERIALS AND TESTS.

FLARED END SECTION DIMENSIONS

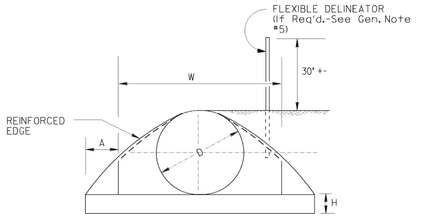
PIPE SIZE "D"	THICKNESS GALV. STEEL	THICKNESS ALUM.	A A= 0.4D +- 1"	B B=0.5 D +- 1"	H H=0.25D +- 1" (MIN.6")	L L=1.67D +- 1/2"	W W=2.0D +- 2"
12"	.064"	.060"	5"	6"	6"	1'8"	2'0"
15"	.064"	.060"	6"	7"	6"	2'3"	2'6"
18"	.064"	.060"	7"	9"	6"	2'6"	3'0"
24"	.064"	.060"	9"	1'0"	6"	3'4"	4'0"
30"	.079"	.105"	1'0"	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 IS=D OR 3 FT.) MAY HAVE TO BE INCREASED IS=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.

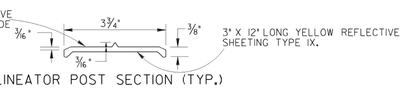
(d) OTHER TYPE CONNECTION IF RECOMMENDED BY MANUFACTURER AND APPROVED BY THE D.O.T.

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.

1" X 12" LONG YELLOW REFLECTIVE SHEETING TYPE IX, ON EACH SIDE OF RIDGE.



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.

REV. REFLECTIVE SHEETING REVISION	DATE
	6-9-06

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
FLARED END SECTIONS
FOR PIPES

NO SCALE — REV. & REDR. SEPT., 1999

BY	
DES.	(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER
REV.	
RETR.	(APPROVED) CHIEF ENGINEER
CHK.	

NUMBER 1120

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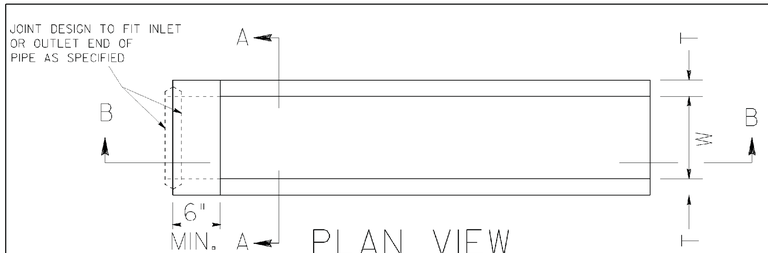
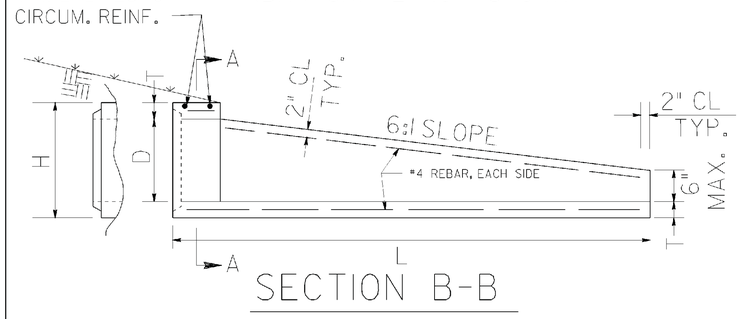
3/1/2007 GPLN

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

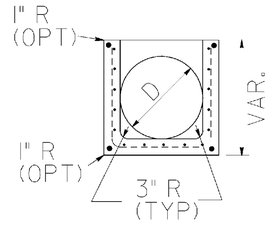
DRAWING No. 41-002





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"

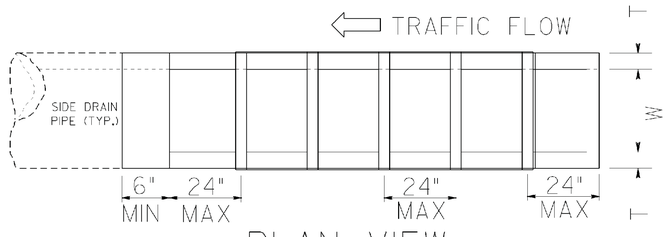


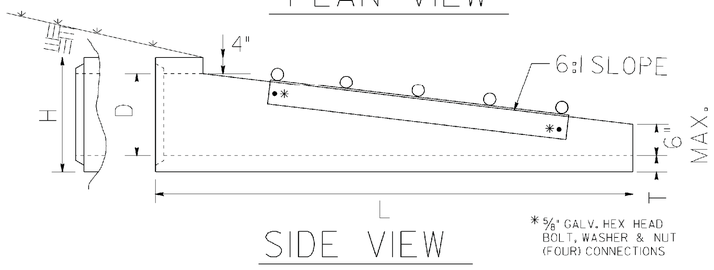
GENERAL NOTES:

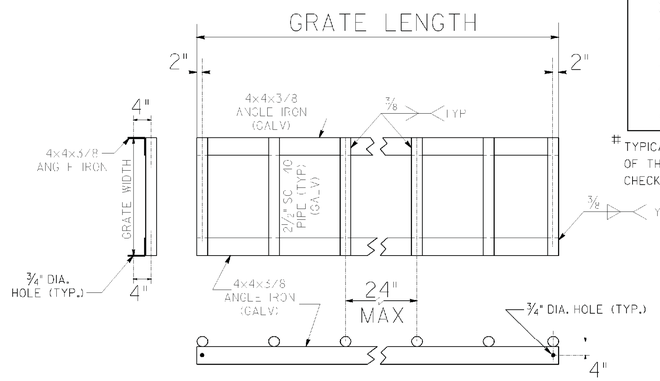
1. CONCRETE STRENGTH SHALL BE 4000 PSI MINIMUM
2. REINFORCING SHALL BE PER AASHTO M170, CLASS II REINFORCED CONCRETE PIPE, PLUS ONE #4 BAR TOP AND BOTTOM, EACH SIDE.
3. WALLS MAY HAVE 1/4" TAPER. WALL THICKNESSES SHOWN ARE THE MINIMUM.
4. LIFT HOLES MAY BE PROVIDED IN THE SIDE WALLS FOR HANDLING.
5. 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.







REVISED TO 1122 PAGE 3	1-28-05

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

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.C. BY | DESIGNED | DRAWN | TRACED | CHECKED

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

NUMBER 1122
SHEET 3 OF 3

3/23/2005 9:59:40 AM \\CDOT-DSN1\GOPLOT\GOF\CO_TIFF_DLT_T.OGF GOWENS M:\GARY\REVISED 1122 AND 1122P\1:223.PRF

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

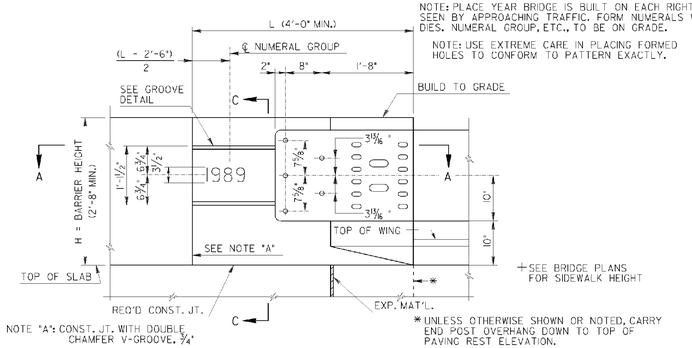
DRAWING NO. 41-003

3/1/2007 GPLN

2/26/03 11:18:26 AM \\SUGI-DSN1\GOPLOT\DGN\gp_tiff_output.dgn standard M:\standards\english\3054.prf GD-MOE

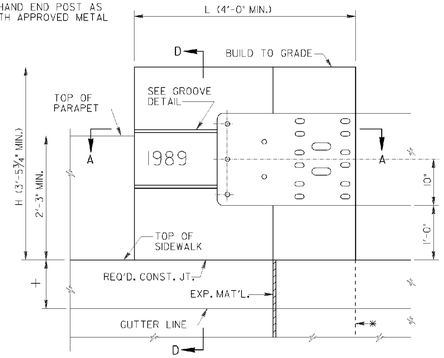
NOTE: PLACE YEAR BRIDGE IS BUILT ON EACH RIGHT-HAND END POST AS SEEN BY APPROACHING TRAFFIC. FORM NUMERALS WITH APPROVED METAL DIES. NUMERAL GROUP, ETC., TO BE ON GRADE.

NOTE: USE EXTREME CARE IN PLACING FORMED HOLES TO CONFORM TO PATTERN EXACTLY.

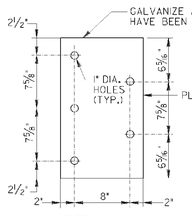


NOTE "A": CONST. JT. WITH DOUBLE CHAMFER V-GROOVE, ¾"

FRONT ELEVATION - END POST
BARRIER
SCALE: 1"=1'-0"



FRONT ELEVATION - END POST
SIDEWALK AND PARAPET
SCALE: 1" = 1'-0"

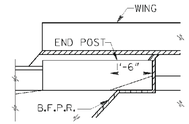


DETAIL "A"
NO SCALE

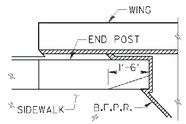
DETAIL "B"
NO SCALE

LIMIT OF GROOVES ON ALL POSTS (L - 2'-6")

MATERIALS	
ITEM	SPECIFICATIONS
GUARDRAIL	A.A.S.T.H.O. SPECIFICATION M 180
½" PLATE	A.S.T.M. DESIGNATIONS A-36
NUTS & BOLTS	A.S.T.M. DESIGNATION A-307
WASHERS	MEDIUM STEEL
GALVANIZING	A.S.T.M. A-153

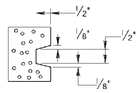


BARRIER



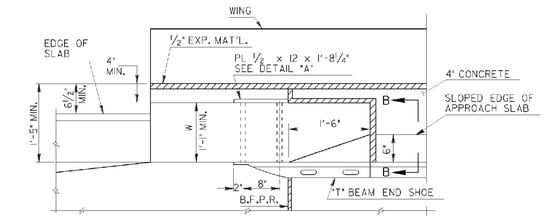
SIDEWALK AND PARAPET

TYPICAL SKEWED END DETAIL
SCALE: ½" = 1'-0"



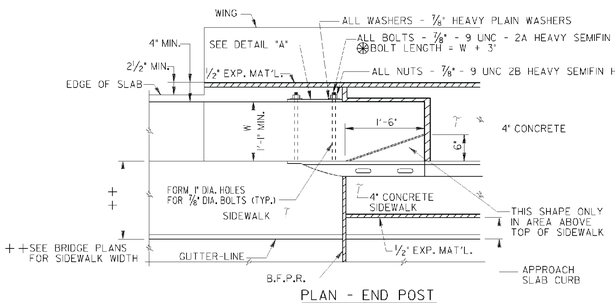
SEE DETAIL "B" FOR LIMITS OF GROOVE

GROOVE DETAIL
HALF SCALE



PLAN - END POST
BARRIER
SCALE: 1"=1'-0"

⊛ BOLT LENGTH SHALL BE OF SUFFICIENT LENGTH TO PROVIDE FOR FULL NUT ATTACHMENT. W + 3" DIMENSION SHALL BE FIELD VERIFIED PRIOR TO ORDERING BOLTS TO INSURE PROPER LENGTH.



PLAN - END POST
SIDEWALK AND PARAPET
SCALE: 1" = 1'-0"

GENERAL NOTES

SPECIFICATIONS - GEORGIA STANDARD.

LOCATION - ALL END POSTS UNLESS NOTED ON BRIDGE PLANS.

CHAMFER - CHAMFER ALL EXPOSED EDGES ¾".

GALVANIZING - ALL METAL PARTS SHALL BE GALVANIZED AFTER FABRICATION.

PAYMENT FOR MISCELLANEOUS HARDWARE - COST OF ½" PLATE AND MISCELLANEOUS HARDWARE SHALL BE INCLUDED IN THE PRICES BID FOR CONTRACT ITEMS.

PAYMENT FOR THE END POST - IF END POST IS A PORTION OF THE SUBSTRUCTURE, CONCRETE AND REINFORCEMENT ARE COMPUTED AND INCLUDED IN THE END BENT QUANTITIES.
IF END POST IS A PORTION OF THE SUPERSTRUCTURE, CONCRETE AND REINFORCEMENT ARE COMPUTED AND INCLUDED IN THE END SPAN QUANTITIES.

RESPONSIBILITY - WHEN THE BRIDGE CONTRACT IS SEPARATE FROM THE CONTRACT CONTAINING THE APPROACHING GUARDRAIL, THE BRIDGE CONTRACTOR SHALL ONLY BE RESPONSIBLE FOR THE CONSTRUCTION OF THE END POSTS AND FORMING OF THE 1" DIAMETER BOLT HOLES. THE CONTRACT CONTAINING THE APPROACHING GUARDRAIL SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING THE SPECIAL END SHOE, PLATE, NUTS, WASHERS, AND BOLTS.

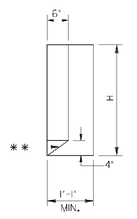
DIMENSIONS - FOR DIMENSIONS "L", "H", AND "W" AND OTHER DIMENSIONS, SEE BRIDGE PLANS.

END POST - END POST TO BE CONSTRUCTED AFTER HANDRAIL IS IN PLACE.
END POST TO BE CONSTRUCTED AFTER BARRIER IS CONSTRUCTED WHEN NO HANDRAIL IS USED.

7-P40IEQ. SP.
2" CL. ALL SIDES
P50I
7-P70IEQ. SP.

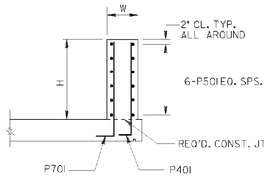
SECTION A-A
SCALE: ¾" = 1'-0"

NOTE: IF END POST IS ON SUBSTRUCTURE, SEE BRIDGE PLANS FOR BARS THAT DOWEL FROM BELOW.

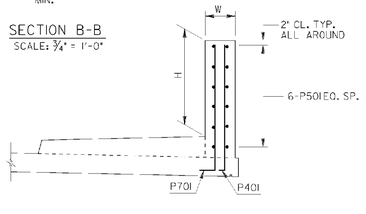


**SLOPED PORTION OF END POST TO BE POURED MONOLITHIC WITH END POST

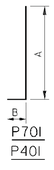
SECTION B-B
SCALE: ¾" = 1'-0"



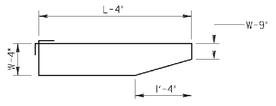
SECTION C-C
SCALE: ½" = 1'-0"



SECTION D-D
SCALE: ½" = 1'-0"



P70I
P40I



P50I

NO. BARS REQ'D		
MARK	BARRIER	SIDEWALK
P40I	7	7
P50I	6	6
P70I	7	7

FOR END POST ON SUPERSTRUCTURE:
A = H - 4" + SLAB DEPTH (FOR BARRIER)
A = H - 4" + SIDEWALK DEPTH + SLAB DEPTH (FOR SIDEWALK AND PARAPET)
B = 1'-0"

FOR END POST ON SUBSTRUCTURE:
A = H - 2"
B = 0"

NOTE: ROTATE P70I AND P40I AS NECESSARY TO MAINTAIN 2" MIN. CL. IN CONCRETE.

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
END POST AND
END POST GUARDRAIL ATTACHMENT DETAILS

SCALE: AS SHOWN — MAY 1989

DESIGNED H.W.C.
DRAWN E.R.M.
CHECKED H.W.C.

(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER

(APPROVED) CHIEF ENGINEER

NUMBER 3054

REVISION — REV. TRANSITION — 9-30-02 DATE

3/1/2007 GPLN

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING NO. 41-004

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	STATE AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	GA.					

E.S.= EQUAL SPACES
NOTE "A": NO.5 BIRMINGHAM GAGE WIRE SPIRAL.
NOTE "B": NO.3 BIRMINGHAM GAGE WIRE SPIRAL.

270K STRAND PILE CROSS SECTIONS

SCALE: 1"=1'-0"

PILE SIZE	AREA IN²	WEIGHT LBS/FT.	S IN³	N P.S.I.	PICK-UP POINTS MAX. L: END	0.293L	0.207L	0.153L	PILE LENGTH (L)/BOLSTER SPACING (B.S.) IN FEET: 25	30	35	40	45	50	55	60	65	70	75	80	85	90*	95	L
12 X 12	144.00	150	288.00	940	28'	49'	70'	95'	13-25	16-28	21-29	26-30	30-33	35	---	---	---	---	---	---	---	---	---	B.S.
14 X 14	196.00	204	457.33	1036	30'	52'	73'	100'	16-25	19-30	22-31	25-32	30-34	35-36	---	---	---	---	---	---	---	---	---	
16 X 16	256.00	287	682.67	793	34'	58'	83'	112'	16-25	19-30	22-34	25-35	29-36	33-38	38-40	---	---	---	---	---	---	---	---	
18 X 18	324.00	338	972.00	627	33'	57'	80'	109'	16-25	19-30	22-33	25-34	29-35	34-37	39	---	---	---	---	---	---	---	---	
20 X 20	400.00	417	1333.33	677	36'	61'	87'	118'	16-25	19-30	22-35	25-36	29-37	32-39	37-41	42-43	---	---	---	---	---	---	---	
24 X 24	462.90	483	2219.17	731	44'	76'	107'	146'	16-25	19-30	22-35	25-40	29-44	32-45	35-46	38-47	43-49	48-51	53	---	---	---	---	
**	576.00	600	2304.00	588	37'	64'	91'	123'	16-25	19-30	22-35	25-37	29-38	32-40	37-42	42-44	---	---	---	---	---	---	---	
30 X 30	67[illegible]	708	4242.40	697	50'	85'	121'	164'	16-25	19-30	22-35	25-40	29-45	32-50	35-50	38-51	41-53	45-54	50-56	55-58	60	---	---	
36 X 36	885.03	922	7029.31	689	56'	96'	136'	184'	16-25	19-30	22-35	25-40	29-45	32-50	35-55	38-56	41-57	44-58	47-60	52-61	57-63	62*-65	67-68	

N= EFFECTIVE PRESTRESS. VALUES GIVEN IN THIS TABLE APPLY ONLY TO PILE SECTIONS USING 270K STRANDS.
** VALUES GIVEN ARE FOR 24" SQ. SOLID PILE WITH SAME NUMBER OF STRANDS, STRAND ARRANGEMENT AND INITIAL PRETENSION FORCE AS REQ'D. FOR 24" SQ. WITH 12" ϕ VOID PILE.

FOR A GIVEN PILE LENGTH "L", THE MINIMUM AND MAXIMUM BOLSTER SPACINGS ARE TABULATED ASSUMING ONLY ONE OVERHANG. WHEN LONGER PILES ARE INVOLVED, HAULING WILL BE LIMITED AS FOLLOWS:

1. UNEQUAL OVERHANGS

THE MAXIMUM PERMITTED PILE LENGTH SHALL BE EQUAL TO TWICE THE [TABULATED PILE LENGTH MINUS BOLSTER SPACING] PLUS THE BOLSTER SPACING USED IN THIS EQUATION. THE MAXIMUM OVERHANG SHALL BE 0.293 TIMES THE LENGTH TABULATED IN THE COLUMN HEADED "0.293 L".
*EXAMPLE: FOR 36" PILE [90-62] [2] + 62=118', BOLSTER SPACING = 62'
MAXIMUM OVERHANG=0.293 X 96' = 28.1'

2. EQUAL OVERHANGS

THE MAXIMUM PERMITTED PILE LENGTH SHALL BE BASED UPON THE DOUBLE POINT PICK-UP SYSTEM AND THE BOLSTER SPACING SHALL BE EQUAL TO 0.586L. THE MAXIMUM PILE LENGTH HAULED SHALL BE THAT TABULATED IN THE COLUMN HEADED "0.207 L"
EXAMPLE: FOR 36" PILE 135' LONG
EACH OVERHANG 0.207 X 135' = 27.945'
B.S. 0.586 X 135' = 79.11'
MAXIMUM LENGTH = 136' > 135'

HAULING DIAGRAM

NO SCALE

PICK-UP SKETCHES

NO SCALE

24" SQ. THRU 36" SQ. PILE EXTENSION

NO SCALE

FOR 24" SQ. SOLID PILE, HOLES FOR NO.8 BARS SHALL BE DRILLED 24" INTO PRESTRESSED CONCRETE AND BARS DEVELOPED WITH AN APPROVED EPOXY BONDING COMPOUND.

SECTION A-A

NO SCALE

TO BE USED WHEN REQUIRED BY SPECIAL PLANS. TEST PILE LENGTHS GIVEN ON SPECIAL PLANS DO NOT INCLUDE STEEL H-PILE IN TIP OF COMPOSITE PILES.

COMPOSITE PILE DETAILS

NO SCALE

14" SQ. THRU 20" SQ. PILE EXTENSION

NO SCALE

VOIDS SHALL BE LOCATED WITHIN ½" OF POSITION SHOWN.

NOTE C: NO. 5 BARS FOR PILES 12" THRU 24". NO.6 BARS FOR 30" & 36" PILES. PLACE ONE BAR AT EACH PRETENSIONED STRAND. SEE INDIVIDUAL PILE CROSS SECTION FOR NUMBER OF STRANDS.

NOTE: 1" ϕ HOLES SHALL BE FORMED IN ONE FACE (AT 5 FT. ON CENTER) IN VOID-TYPE PILE. IN PILING CAST FOR A SPECIFIC PROJECT, THESE HOLES WILL BE REQUIRED ONLY FOR THAT PORTION EXPECTED TO REMAIN ABOVE GROUND.

GENERAL DETAILS 250K OR 270K PILING

HOLLOW PILE SHOWN-SOLID PILE SAME, EXCEPT FOR VOID

TYPICAL PILE DETAILS

NO SCALE

D=SIZE.
1" CHAMFERS NOT SHOWN.

ALTERNATE PILE CROSS SECTION

NO SCALE

DESIGN DATA

CONCRETE.....5,000 P.S.I.-CLASS AAA
PRETENSIONED STRANDS.....250K OR 270K
TOTAL LOSSES.....22 % OF INITIAL PRETENSION FORCE
WIRE SPIRALS.....A.S.T.M. A82 OR A.A.S.H.O. M32

• 3/8" ϕ 250K STRANDS SHALL BE PRETENSIONED TO 14,000 LBS. EACH, AND 7/16" ϕ 250K STRANDS TO 18,900 LBS. EACH.

WIRE SPIRALS SHALL BE NO. 5 BIRMINGHAM GAGE.

250K STRAND PILE CROSS SECTIONS

SCALE: 1"=1'-0"

MAX. PILE LENGTH	PILE SIZE
30 FT.	14"X14"
38 FT.	16"X16"
34 FT.	18"X18"
39 FT.	20"X20"
46 FT.	24"X24"
27 FT.	12 X 12

SINGLE POINT PICKUP

DOUBLE POINT PICKUP

NOTES

1. PILES SHALL BE PLAINLY MARKED TO INDICATE PROPER PICK-UP POINTS FOR ATTACHING HANDLING LINES.
2. THE TWO POINT PICK-UP SHALL BE USED FOR HANDLING AND TRANSPORTING PILES FROM CASTING YARD TO JOB SITE IN ALL CASES, AND FOR UNLOADING AND STORING AT JOB SITE.

	DATE	REVISIONS	BY
1	12-18-74	CORRECTED 16"X16" PILES	J.E.T.
2	2-4-81	14" SQ. PILES	J.E.T.
3	2-22-84	ADDED 12" SQ. PILES	J.E.T.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
SQUARE PRESTRESSED
CONCRETE PILES

SCALE: AS SHOWN OCTOBER 1974

DESIGNED W.B.L.-J.E.T.
DRAWN J.E.T.
TRACED M.V.W.
CHECKED J.W.P.

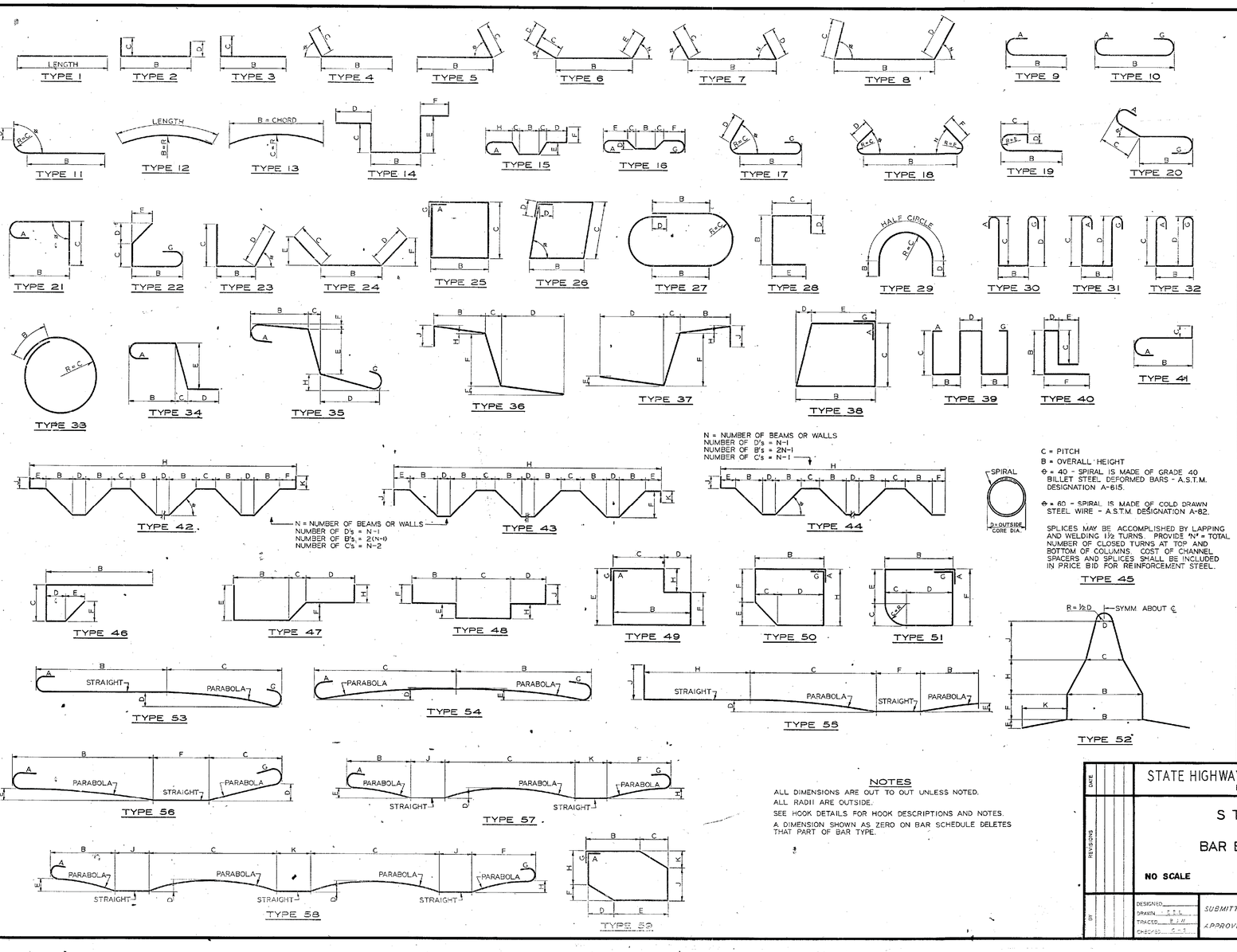
SUBMITTED C. L. Chapman Jr. BRIDGE ENGINEER
APPROVED Thomas D. Moreland STATE HIGHWAY ENGINEER

NUMBER 3215

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	203	267

FED ROAD DIV. NO.	STATE	FED AID PROJ. NO.	STATE AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	GA.					



HOOK DETAILS

RECOMMENDED 180° HOOKS

GRADE 40 ksi
D = 5d for #3 through #11
D = 10d for #14 and #18

GRADES 50-60-75 ksi
D = 6d for #3 through # 8
D = 8d for #9, #10, and #11
D = 10d for #14 and #18

DETAILING DIMENSION

RECOMMENDED 180° END HOOK DIMENSIONS

BAR SIZE	GRADES 50-60-75 ksi		GRADE 40 ksi	
	A or G	J	A or G	J
#3	5	3	5	2¾
#4	6	4	6	3½
#5	7	5	7	4½
#6	8	6	8	5½
#7	10	7	9	6¼
#8	11	8	10	7
#9	1-3	1-1¼	1-0	8
#10	1-5	1-0¾	1-1	9
#11	1-7	1-2¼	1-2	10
#14	2-8	1-8½	2-2	1-8½
#18	2-11	2-3	2-11	2-3
STYLE	1		2	

RECOMMENDED 90° END HOOK DIMENSIONS

ALL GRADES
D = 6d for #3 through #8
D = 8d for #9, #10, and #11
D = 10d for #14 and #18

DETAILING DIMENSION

BAR SIZE	HOOK A or G
#3	6
#4	8
#5	10
#6	1-0
#7	1-2
#8	1-4
#9	1-7
#10	1-10
#11	2-0
#14	2-7
#18	3-5
HOOK STYLE 3	

STIRRUP AND TIE HOOK

DETAILING DIMENSION

STIRRUPS (TIES SIMILAR)

STIRRUP AND TIE HOOK DIMENSIONS
GRADES 40-50-60 ksi

BAR SIZE	D (in.)	90° HOOK	135° HOOK	
		HOOK A or G	HOOK A or G	N Approx.
#3	1½	4	4	2⅞
#4	2	4½	4½	3
#5	2½	5	5½	3⅜
#6	3	6½	6½	4½
STYLE		4	5	

STYLE 6 = NO HOOK

HOOK STYLES DETAILED ON THIS SHEET ARE FOR ILLUSTRATION ONLY. ACTUAL HOOK STYLE FOR ANY PARTICULAR BAR WILL BE SHOWN UNDER A or G HEADING ON BAR SCHEDULE.

C = PITCH
B = OVERALL HEIGHT
Φ = 40 - SPIRAL IS MADE OF GRADE 40 BILLET STEEL DEFORMED BARS - A.S.T.M. DESIGNATION A-615.
Φ = 60 - SPIRAL IS MADE OF COLD DRAWN STEEL WIRE - A.S.T.M. DESIGNATION A-82.

SPLICES MAY BE ACCOMPLISHED BY LAPPING AND WELDING 1½ TURNS. PROVIDE 'N' = TOTAL NUMBER OF CLOSED TURNS AT TOP AND BOTTOM OF COLUMNS. COST OF CHANNEL SPACERS AND SPLICES SHALL BE INCLUDED IN PRICE BID FOR REINFORCEMENT STEEL.

NOTES

ALL DIMENSIONS ARE OUT TO OUT UNLESS NOTED.
ALL RADII ARE OUTSIDE.
SEE HOOK DETAILS FOR HOOK DESCRIPTIONS AND NOTES.
A DIMENSION SHOWN AS ZERO ON BAR SCHEDULE DELETES THAT PART OF BAR TYPE.

STATE HIGHWAY DEPARTMENT OF GEORGIA
BRIDGE DIVISION

STANDARD

BAR BENDING DETAILS

NO SCALE — AUGUST 1969

DESIGNED
DRAWN S.T.L.
TRACED R.J.H.
CHECKED C.T.J.

SUBMITTED R.T. Clairmont Jr. BRIDGE ENGINEER
APPROVED STATE HIGHWAY ENGINEER

NUMBER 3901

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

GEORGIA STANDARDS

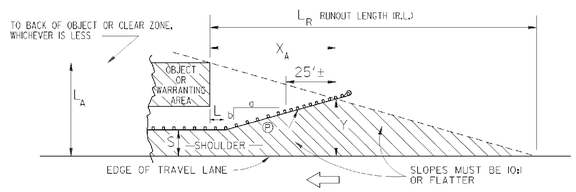
DRAWING No. 41-006

3/1/2007 GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

GUARDRAIL LENGTHS OF ADVANCEMENT AT FIXED OBJECTS OR AT WARRANTING FILL SLOPES TYPICAL

(FLARED)



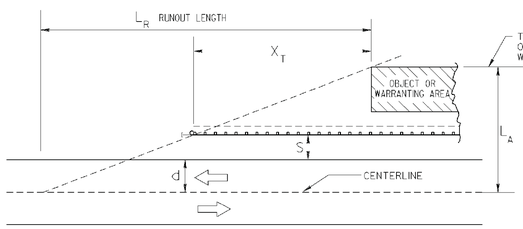
S = USUABLE SHOULDER WIDTH PLUS 2 FT. (TYP.)

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

$$Y = L_A - \frac{L_A}{L_R}(X_A)$$

DESIGN SPEED (MPH)	FLARE RATE a:b
70	15:1
60	14:1
55	12:1
50	11:1
45	10:1
40	8:1
30	7:1

(STANDARD)

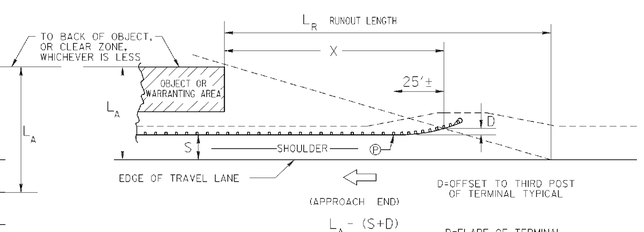


DESIGN SPEED (MPH)	L_R Runout Length in feet			
	OVER 6000 (A.D.T.)	2000-6000 (A.D.T.)	800-2000 (A.D.T.)	UNDER 800 (A.D.T.)
70	475	445	395	360
60	425	400	345	330
55	360	345	315	280
50	330	300	260	245
45	260	245	215	200
40	230	200	180	165
30	165	165	150	130

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

(TRAILING END)

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

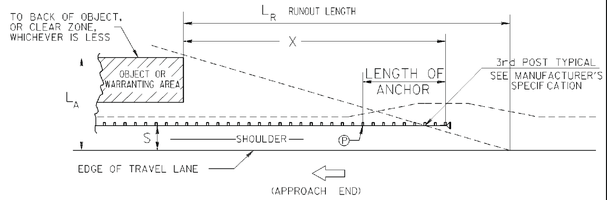


Ⓟ = POINT OF BEGINNING TERMINAL (TYP.)

D=OFFSET TO THIRD POST OF TERMINAL TYPICAL

$$X = L_R \times \frac{L_A - (S+D)}{L_A}$$

D=FLARE OF TERMINAL
D=0 FOR NON-FLARED TERMINALS



CLEAR ZONE DISTANCES

CLEAR ZONE DISTANCES (FT) CHART

DESIGN SPEED	DESIGN ADT	FORESLOPES			BACKSLOPES		
		1V:6H OR FLATTER	1V:5H TO 1V:4H	1V:3H	1V:3H	1V:5H TO 1V:4H	1V: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	* *	10-12	10-12	10-12
	1500-6000	12-14	14-16	* *	12-14	12-14	12-14
	OVER 6000	14-16	16-18	* *	14-16	14-16	14-16
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	16-20	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

* WHERE A SITE SPECIFIC INVESTIGATION INDICATES A HIGH PROBABILITY OF CONTINUING CRASHES, OR 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 LIMIT TO 30 FT. FOR PRACTICALITY AND TO PROVIDE A CONSISTENT ROADWAY TEMPLETE IF PREVIOUS EXPERIENCE WITH SIMILAR PROJECTS OR DESIGNS INDICATES SATISFACTORY PERFORMANCE.

* * SINCE RECOVERY IS LESS LIKELY ON THE UNSHIELDED, TRAVERSABLE 1V:3H 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 RECOVERY AREA AT THE TOE OF SLOPE SHOULD TAKE INTO CONSIDERATION RIGHT-OF-WAY AVAILABILITY, ENVIRONMENTAL CONCERNS, ECONOMIC FACTORS, SAFETY NEEDS AND CRASH HISTORIES. ALSO, THE DISTANCE BETWEEN THE EDGE OF THE THROUGH TRAVELED LANE AND THE BEGINNING OF THE 1V:3H SLOPE SHOULD INFLUENCE THE RECOVERY AREA PROVIDED AT THE TOE OF THE SLOPE.

HORIZONTAL CURVE ADJUSTMENTS

RADIUS (FEET)	K_{CZ} (CURVE CORRECTION FACTOR) DESIGN SPEED (MPH)						
	40	45	50	55	60	65	70
2860	1.1	1.1	1.1	1.2	1.2	1.2	1.3
2290	1.1	1.1	1.2	1.2	1.2	1.3	1.3
1910	1.1	1.2	1.2	1.2	1.3	1.3	1.4
1640	1.1	1.2	1.2	1.3	1.3	1.4	1.5
1430	1.2	1.2	1.3	1.3	1.4	1.4	
1270	1.2	1.2	1.3	1.3	1.4	1.5	
1150	1.2	1.2	1.3	1.4	1.5		
950	1.2	1.3	1.4	1.5	1.5		
820	1.3	1.3	1.4	1.5			
720	1.3	1.4	1.5				
640	1.3	1.4	1.5				
570	1.4	1.5					
380	1.5						

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

Where:

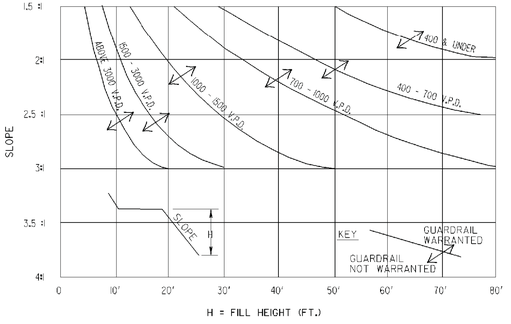
CZ_C = CLEAR ZONE ON OUTSIDE OF CURVATURE, FEET

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

K_{CZ} = CURVE CORRECTION FACTOR

NOTE:
THE CURVE CORRECTION FACTOR IS APPLIED TO THE OUTSIDE OF CURVES ONLY. CURVES FLATTER THAN 2860 FEET DO NOT REQUIRE AN ADJUSTED CLEAR ZONE.

FILL HEIGHT / SLOPE WARRANTS



NOTE:
FILL HEIGHT/SLOPE EXTRAPOLATIONS WHICH FALL ABOVE AND TO THE RIGHT OF CURVE INDICATES GUARDRAIL IS WARRANTED FOR THE FILL EMBANKMENT.

G.J.D.	REVISED GUARDRAIL AND CLEAR ZONE	9-1-07	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
			STANDARD GUARDRAIL WARRANT GUIDES LENGTHS OF ADVANCEMENT CLEAR ZONE DISTANCES FILL HEIGHT EMBANKMENTS
			NOT TO SCALE — DEC., 1999
	BY	DES. ___ DRW. ___ TRA. ___ CHK. ___	(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER (APPROVED) CHIEF ENGINEER — NUMBER 4000W

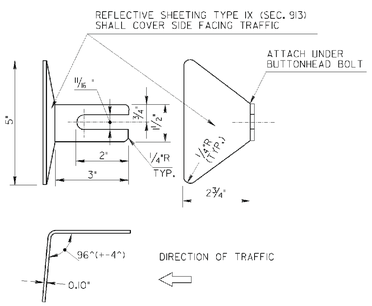
3/1/2007 GPLN

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

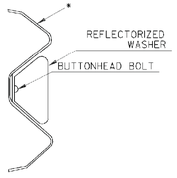
DRAWING NO. 41-007

REFLECTORIZED WASHER DETAILS



MATERIALS: ALUMINUM (ASTM B 209 ALLOY 5052 H-32 OR 12 GA. STEEL (ASTM A 526 GALV. M-111) WITH REFLECTIVE SHEETING, AS APROVED BY THE DEPT. OF TRANSPORTATION LABORATORY.

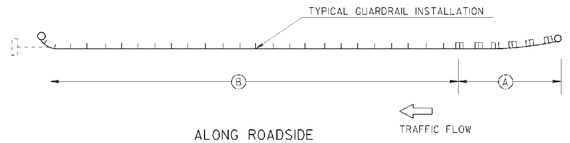
COLORS: YELLOW IN MEDIANS AND WHITE ON OUTSIDE SHOULDERS



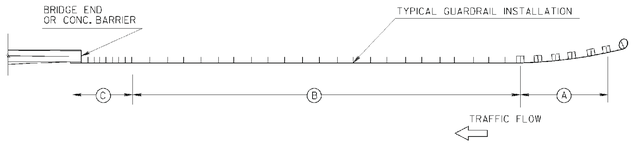
WASHER LOCATION DETAIL

NOTE:
FOR 'I'-BEAM GUARDRAIL, WASHER IS PLACED IN THE TOP INDENTION.

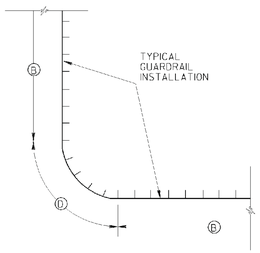
* WHERE BOLT DOES NOT EXTEND THRU RAIL REFLECTORIZED WASHER IS ATTACHED UNDER THE SPLICE BOLT ON THE TOP CORRUCATION, IF REQUIRED.



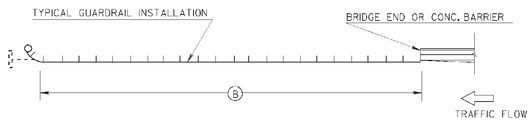
ALONG ROADSIDE



APPROACH END-BRIDGE OR CONCRETE BARRIER



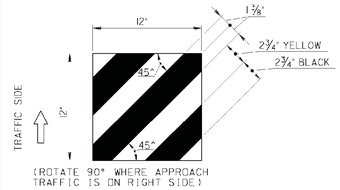
AT TURNOUTS



TRAILING END-BRIDGE OR CONCRETE BARRIER

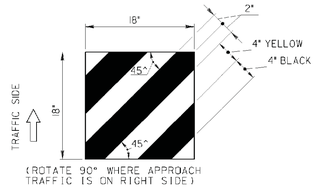
NOSE STRIPING DETAILS

(REQUIRED FOR ANCHORAGE WITH ROUNDED NOSE)



(ROTATE 90° WHERE APPROACH TRAFFIC IS ON RIGHT SIDE)

(REQUIRED WITH ANCHORAGE WITH EXTRUDER OR IMPACT HEADS)



(ROTATE 90° WHERE APPROACH TRAFFIC IS ON RIGHT SIDE)

BLACK GLOSS DURABLE INK PRINTED ON TYPE IX REFLECTIVE SHEETING (SEE CURRENT SEC. 913 AND 917)

SPACING OF REFLECTORIZED WASHERS

(A) AT ANCHORAGES:
- TWO (2) REFLECTORIZES WASHERS ARE REQUIRED ON THE RAIL UNDER SPLICE BOLTS AS DIRECTED BY THE ENGINEER FOR ELLIPTICALLY FLARED ANCHORAGES WITH ROUNDED END PIECES;
- NO REFLECTORIZED WASHERS WILL BE USED FOR TANGENTIALLY ALIGNED OR STRAIGHT TAPERED ANCHORAGE WITH EXTRUDER OR IMPACT HEADS

(B) -AT 75 FT. SPACINGS FOR INTERMEDIATE SECTIONS;

(C) -THREE WASHERS AT 6'-3" SPACING AT CONNECTIONS TO CONCRETE FACE ON THE APPROACH END;

(D) -AT 12'-6" SPACINGS AROUND RADII TURNS.

GENERAL NOTES:

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

2-SEE SEPARATE STANDARDS FOR DETAILS OF GUARDRAIL INSTALLATIONS, CONNECTING HARDWARE, AND ANCHORAGES.

3-PAYMENT FOR GUARDRAIL AND ANCHORAGES INCLUDES ALL REFLECTORIZED WASHERS AND NOSE STRIPING REQUIRED.

4-ADJUSTMENTS OF SPACINGS AND/OR REQUIREMENTS FOR REFLECTIVE WASHERS MAY BE DIRECTED BY THE ENGINEER TO SUIT INDIVIDUAL LOCATIONS.

5-WHERE DOUBLE FACED GUARDRAIL IS LOCATED ON THE INSIDE SHOULDER OF MEDIANS, REFLECTORIZED WASHERS SHALL BE REQUIRED ONLY ON THE SIDE WHICH IS NEAREST TO TRAFFIC, UNLESS SPECIFIED OTHERWISE.

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

REFLECTORIZED GUARDRAIL WASHERS AND ANCHORAGE NOSE STRIPING

NO SCALE — REV. & REDR. APRIL, 1999

REVISION	BY	DATE
REV. REFLECTIVE SH. TYPE. REFLEC. SH. SPEC.	CLC	4-10-06
ADD NOSE STRIPING	RMJ	2-1-01
	RMJ	5-1-96

DES. ____ (SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER
DRWN. ____
CHK. ____ (APPROVED) CHIEF ENGINEER

NUMBER 4360

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REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

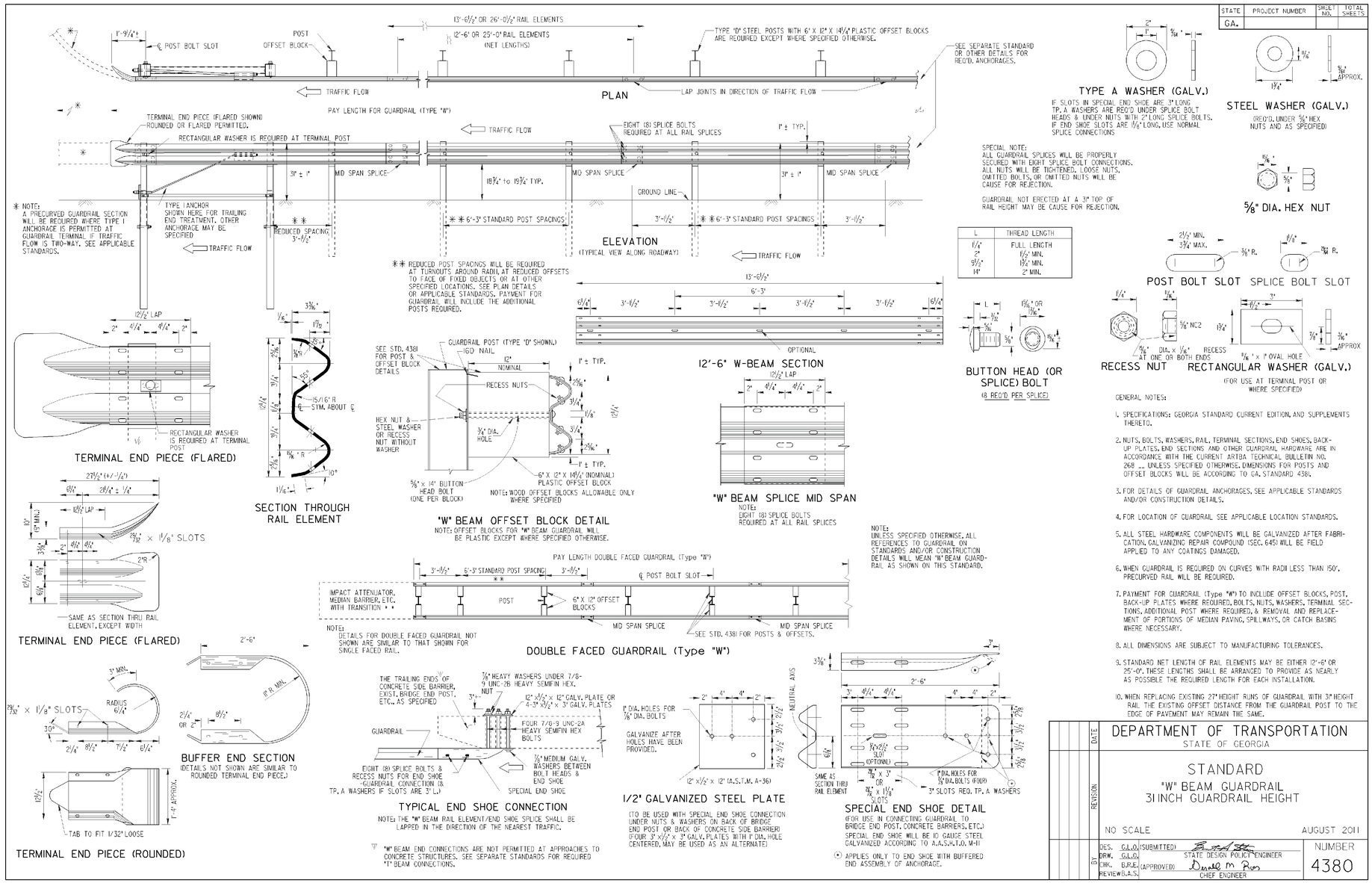
DRAWING No. 41-008

3/1/2007 GPLN

03-NOV-2014 13:25	TIME$$$	4380	Y:\Roadways\138973\232310\Dgn\Const Standards\4380.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(036)	206	267

12/7/2011 8:05:18 AM \\GDOT-DSN1\GOPLOT\GCF\GO_Klp8000.gcf tcsx C:\tpc\31inch guardrail\new 31 inch guardrail files\4380.pdf GO-RDS

9/21/2011 7:46:54 AM \\GDOT-DSN1\GOPLOT\GCF\GO_Klp8000.gcf gowens V:\GARY\31 inch guardrail standards\4010 rev 4380.prf



STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

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, & 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.
10. WHEN REPLACING EXISTING 27" HEIGHT RUNS OF GUARDRAIL WITH 31" HEIGHT RAIL THE EXISTING OFFSET DISTANCE FROM THE GUARDRAIL POST TO THE EDGE OF PAVEMENT MAY REMAIN THE SAME.

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

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REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-009

3/1/2007 GPLN

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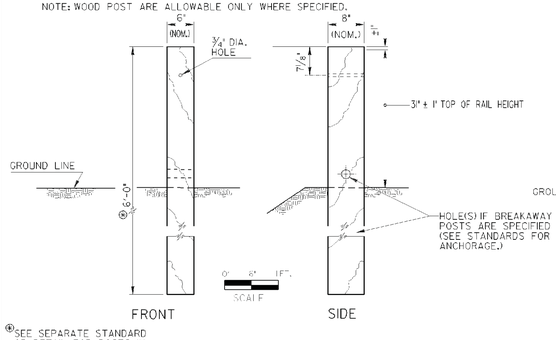
9/21/2011 8:13:49 AM \\GDOT-DSN1\GOPLOT\GCT\GG_K1p8006.gpf dgowens V:\GAATV\31 inch guardrail standards\401A rev 4381.prf

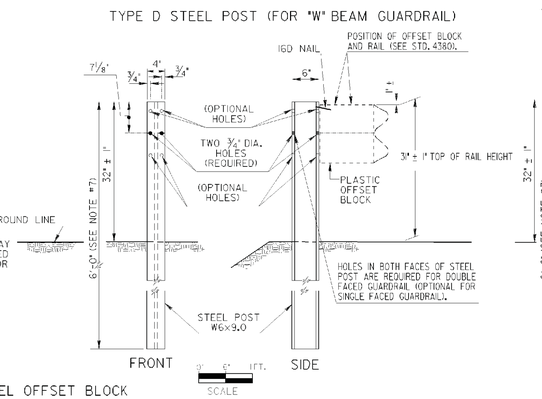
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

TYPE A WOOD POST (FOR "W" BEAM GUARDRAIL)

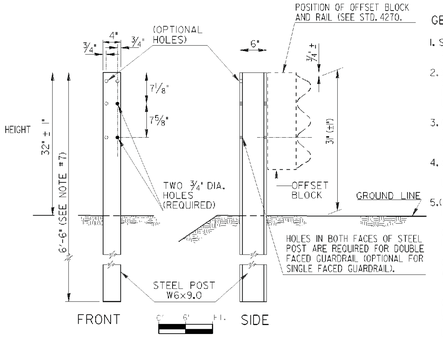
NOTE: WOOD POST ARE ALLOWABLE ONLY WHERE SPECIFIED.



TYPE D STEEL POST (FOR "W" BEAM GUARDRAIL)



TYPE D-T STEEL POST (FOR "T" BEAM GUARDRAIL)



GENERAL NOTES:

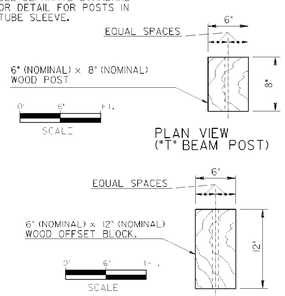
1. SPECIFICATIONS GEORGIA STANDARD, CURRENT EDITION AND SUPPLEMENTS THERETO.
2. STEEL POSTS MAY BE EITHER ROLLED OR WELDED STRUCTURAL SHAPES. STEEL OFFSET BLOCKS SHALL BE ROLLED. WELDED POSTS SHALL BE SEAL WELDED BETWEEN WEB AND FLANGE BEFORE GALVANIZING.
3. WHERE WOOD POST OR WOOD OFFSET BLOCKS ARE PERMITTED, THE WOOD SHALL BE TREATED IN ACCORDANCE WITH GEORGIA STANDARD SPECIFICATIONS.
4. ALL BOLTS USED FOR FASTENING THE RAIL AND OFFSET BLOCKS TO WOOD POSTS SHALL HAVE SUFFICIENT LENGTH TO EXTEND AT LEAST ¼" BEYOND THE FULL NUT, UP TO 3" BEYOND.
5. (a) "W" BEAM GUARDRAIL: ALL OFFSET BLOCKS SHALL BE 12" DEPTH PLASTIC BLOCKS EXCEPT FOR (d) BELOW.

   (b) "T" BEAM GUARDRAIL: STANDARD INSTALLATION WILL USE 8" DEPTH PLASTIC BLOCKS UNLESS OTHERWISE APPROVED.

   (c) 13¾" DEPTH MODIFIED STEEL OFFSETS MAY BE SPECIFIED WHERE JUSTIFIED FOR MORE SEVERE CONDITIONS. PAY ITEM IS ---GUARDRAIL, TP 1, MODIFIED OFFSET BLOCK---PER LIN. FT.

   (d) WOOD OFFSET BLOCKS MAY BE USED ONLY AT AN ISOLATED LOCATION WITHIN A RUN OF GUARDRAIL, WHERE OTHER BLOCK TYPES WOULD NOT PROVIDE PROPER FIT, AS DETERMINED BY THE ENGINEER OR SHOWN IN THE PLANS.
6. POSTS WILL BE SPACED AT 6'-3" C. TO C., UNLESS OTHERWISE NOTED.
7. ADDITIONAL LENGTH POSTS, WHERE SPECIFIED, SHALL BE 7'-0" AND 7'-6" LONG FOR "W" BEAM AND "T" BEAM GUARDRAILS RESPECTIVELY, WITH HOLES DIMENSIONED FROM THE POST-TOP THE SAME AS SHOWN.
8. 9'-0" POST REQUIRED IF GUARDRAIL INSTALLED ON A 2:1 SLOPE.

SEE SEPARATE STANDARD OR DETAIL FOR POSTS IN TUBE SLEEVE.

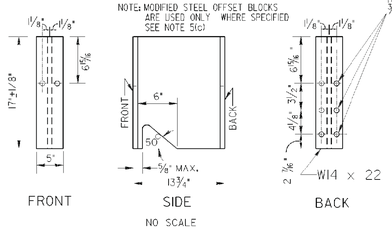


PLAN VIEW ("T" BEAM POST)

PLAN VIEW (FOR "W" BEAM OFFSET BLOCK)

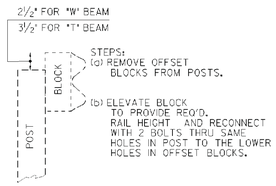
MODIFIED STEEL OFFSET BLOCK FOR " T " BEAM GUARDRAIL

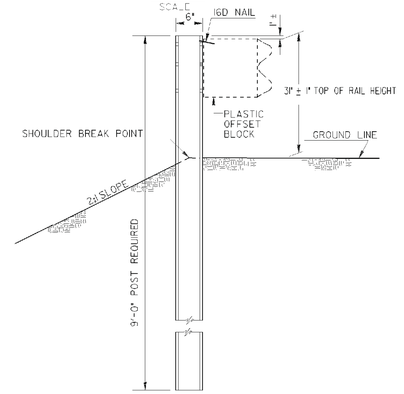
NOTE: MODIFIED STEEL OFFSET BLOCKS ARE USED ONLY WHERE SPECIFIED SEE NOTE 5(c)



NO SCALE

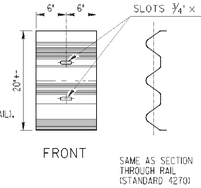
HEIGHT CORRECTION IF NEEDED FOR RESURFACED PROJECTS





2:1 SLOPE DETAIL

BACK-UP PLATE (FOR "T" BEAM GUARDRAIL)



SAME AS SECTION THROUGH RAIL (STANDARD 4270)

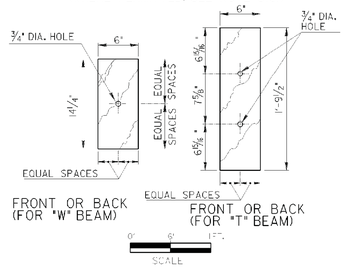
NOTE: BACK-UP PLATES ARE REQUIRED WITH ALL STEEL OFFSET BLOCKS EXCEPT AT RAIL SPLICES OR WHERE ONE RAIL SECTION IS NESTED INSIDE ANOTHER RAIL SECTION. BACK-UP PLATE WILL BE LOCATED BACK OF RAIL ADJACENT TO OFFSET BLOCKS INSIDE MAIN RAIL).

WOOD POSTS AND WOOD OFFSET BLOCKS MAY BE ROUGH OR SURFACED.

DIMENSIONS FOR WOOD POSTS AND WOOD OFFSET BLOCKS ARE NOMINAL IN ACCORDANCE WITH ACCEPTED LUMBER INDUSTRY STANDARDS.

NOTE: WHERE WOOD OFFSET BLOCK ON STEEL POST IS PERMITTED IN "W" BEAM INSTALLATION, A NAIL OR SCREW FROM POST TO WOOD IS REQUIRED TO PREVENT ROTATION OF THE BLOCK.

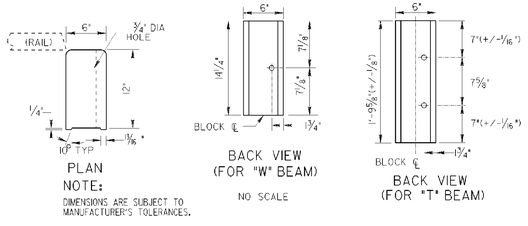
WOOD OFFSET BLOCKS (WHERE PERMITTED, SEE NOTE 5(d))



(PLAN VIEW IS SAME AS SHOWN FOR WOOD POST ABOVE)

STANDARD PLASTIC OFFSET BLOCKS

NOTE: PLASTIC OFFSET BLOCKS SHALL BE OF TYPE LISTED IN GA. DOT QPL OF APPROVED PRODUCTS OR PER STANDARD SPECIFICATIONS.

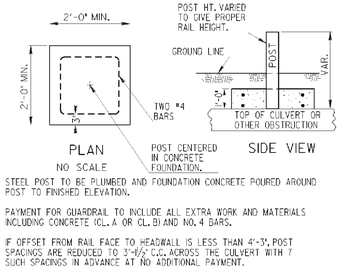


NOTE: DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES.

NO SCALE

CONCRETE FOUNDATION FOR POST IN SHALLOW FILLS OVER CULVERTS OR OTHER OBSTRUCTIONS

(NOTE: PLATE MOUNTED POST MAY BE USED AS AN ALTERNATE, SEE SEPARATE SHEET).

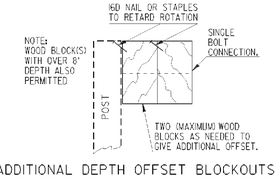


NO SCALE

STEEL POST TO BE PLUMBED AND FOUNDATION CONCRETE POURED AROUND POST TO FINISHED ELEVATION.

PAYMENT FOR GUARDRAIL TO INCLUDE ALL EXTRA WORK AND MATERIALS INCLUDING CONCRETE (CL. A OR CL. B) AND NO. 4 BARS.

IF OFFSET FROM RAIL FACE TO HEADWALL IS LESS THAN 4'-3", POST SPACINGS ARE REDUCED TO 3'-1½" C.C. ACROSS THE CULVERT WITH 7 SUCH SPACINGS IN ADVANCE AT NO ADDITIONAL PAYMENT.



ADDITIONAL DEPTH OFFSET BLOCKOUTS

(FOR USE WHERE GREATER THAN STANDARD OFFSET IS SPECIFIED)

NOTE: ADDITIONAL DEPTH OFFSETS BELOW ARE SHOWN FOR "W" BEAM. SIMILAR OFFSETS MAY BE APPLIED FOR "T" BEAM GUARDRAIL.

NOTE: ADDITIONAL DEPTH OFFSETS ARE PERMITTED ONLY WHERE AN ISOLATED POST MUST BE PLACED AT A GREATER THAN NORMAL OFFSET.

NOTE: FOR BLOCK CONNECTION TO POST AND TO RAIL SEE STD. 4380 OR 4385.

REVISION	DATE	BY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
POSTS AND OFFSET BLOCKS FOR "W" & "T" BEAM GUARDRAIL 31 INCH GUARDRAIL HEIGHT

SCALE: AS SHOWN — AUGUST 2011

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

NUMBER 4381

3/1/2007 GPLN

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-010

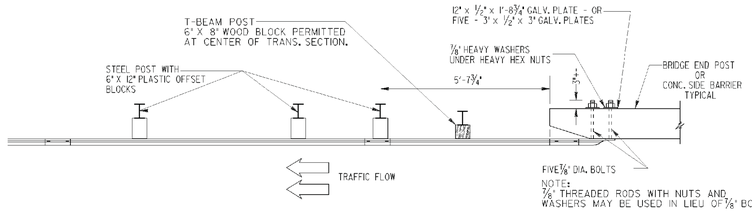
12/7/2011 8:05:16 AM \\GDOT-DSRI\GOPLOT\GCF\GG_K1p8000.gpf tsx C:\tpc\31inch guardrail\new 31 inch guardrail files\4382.pdf 99-HDS

9/21/2011 8:13:53 AM \\GDOT-DSRI\GOPLOT\GCT\GG_K1p8000.gpf dgowens V:\GATr\31 inch guardrail standards\10120 rev 4382.prt

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

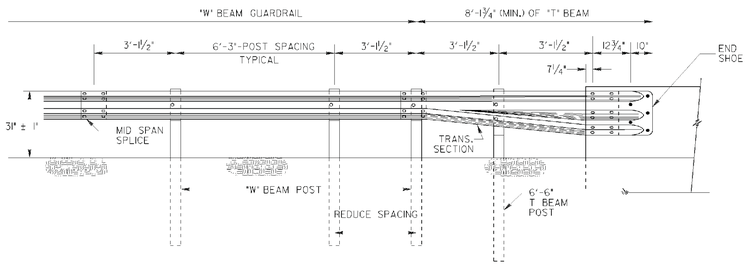
31 INCH HEIGH GUARDRAIL CONNECTION AT TRAILING ENDS

(SEE NOTE AT BOTTOM LEFT)



NOTE:
7/8" THREADED RODS WITH NUTS AND WASHERS MAY BE USED IN LIEU OF 7/8" BOLTS.

PLAN



ELEVATION

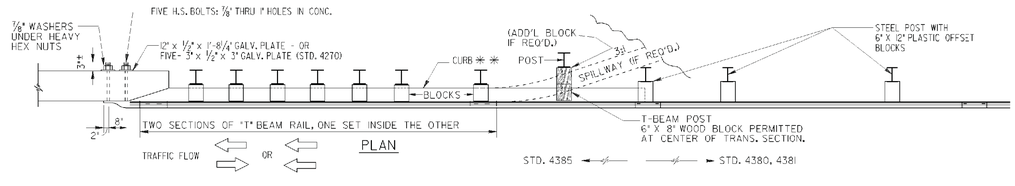
NOTE:
DETAILS AT TOP LEFT ARE APPLICABLE FOR CONNECTIONS AT THE TRAILING ENDS OF ONE-WAY TRAFFIC OR AT THE TRAILING END OF MULTI-LANE (4 OR MORE) FACILITIES.

NOTE:
DETAILS AT TOP RIGHT ARE APPLICABLE FOR CONNECTIONS AT THE APPROACH ENDS OF BRIDGES OR CONCRETE SIDE BARRIERS OR AT ALL FOUR ENDS FOR TWO-LANE, TWO WAY TRAFFIC.

GUARDRAIL CONNECTION AT BRIDGE END (OR CONCRETE BARRIER)

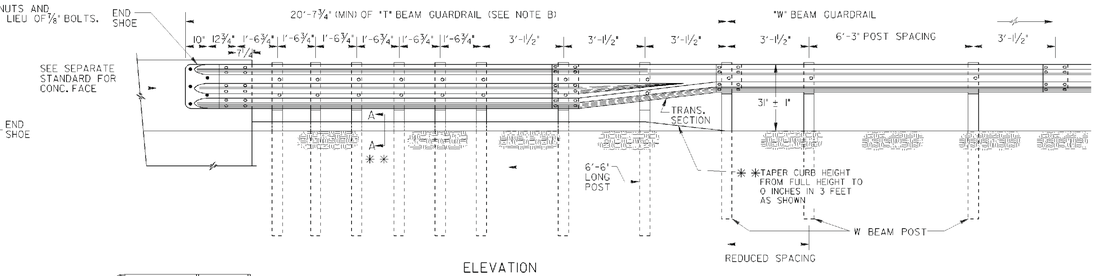
(DETAILS ARE ILLUSTRATED WITH APPROACH SLAB, SPILLWAY, ETC. FOR TYPICAL BRIDGE END, POST SPACINGS AND END SHOE CONNECTION APPLIES TO ROADWAY CONCRETE BARRIER AS WELL AS BRIDGE ENDS.)

NOTE:
7/8" THREADED RODS WITH NUTS AND WASHERS MAY BE USED IN LIEU OF 7/8" BOLTS.

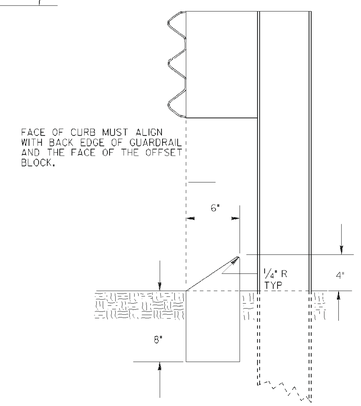


PLAN

STD. 4385 — STD. 4380, 4381



ELEVATION



SECTION A-A * *

NOTES FOR GUARDRAIL CONNECTION:

A. WHERE GREATER THAN THE MINIMUM LENGTH OF T-BEAM GUARDRAIL IS REQUIRED, ADDITIONAL POST REMAIN AS SHOWN WITHIN THE FIRST 20'-7¾" LENGTH, WITH NORMAL (6'-3" C. TO C.) SPACINGS FOR THE REMAINDER OF THE INSTALLATION (STD. 4385) UNLESS SPECIFIED OTHERWISE.

B. PAYMENT FOR GUARDRAIL TYPE T INCLUDES ALL ADDITIONAL POST, ALL ADDITIONAL OFFSET BLOCKS, THE SPECIAL END SHOE CONNECTION WITH ACCOMPANY HARDWARE, THE EXTRA SECTION OF "T" BEAM RAIL NESTED INSIDE THE OTHER, AND THE "T" BEAM TO "W" BEAM TRANSITION SECTION.

C. WHERE GUARDRAIL POST ARE ERECTED THRU SPILLWAY, CONCRETE CAP OR PAVING UNDER GUARDRAIL, PAYMENT FOR GUARDRAIL OF ANY TYPE SHALL INCLUDE REPLACING THE BLOCKED OUT CONCRETE AND/OR REMOVING AND REPLACING PORTIONS OF SPILLWAY, CONCRETE, OR GROUT AS NECESSARY FOR POST INSTALLATIONS.

* * FOR CURB DETAILS ASSOCIATED WITH APPROACH SLAB, SEE APPROACH SLAB STANDARD. FOR GUARDRAIL INSTALLATION LOCATIONS WHERE AN APPROACH SLAB IS NOT USED, PROVIDE A CONCRETE CURB IN ACCORDANCE WITH SECTION "A-A". CONCRETE CURB SHALL BE PAID FOR PER LINEAR FOOT.

NOTE: POST SPACINGS SHOWN ARE TYPICAL AVERAGE WITH NORMAL CONSTRUCTION TOLERANCES ALLOWED.

GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION & SUPPLEMENTS THERETO.
2. FOR DETAILS OF GUARDRAIL HARDWARE, POST, OFFSET BLOCKS, END SHOE, TRANSITION SECTION, 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. OFFSET BLOCKS SHALL BE PLASTIC UNLESS SPECIFIED OTHERWISE. OFFSET BLOCKS ARE REQUIRED AT ALL POSTS.
5. THE COST FOR DRILLING HOLES FOR THE END SHOE CONNECTION SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE GUARDRAIL.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

GUARDRAIL CONNECTION AT BRIDGE END OR AT CONCRETE BARRIER END FOR 31 INCH HIGH GUARDRAIL

NO SCALE — AUGUST 2011

DES. G.L.O. (SUBMITTED) STATE DESIGN POLICY ENGINEER
DRN. G.L.O.
CHK. B.P.E. (APPROVED) CHIEF ENGINEER
REVIEWED A.S.

NUMBER 4382

DATE / REVISION / BY

12/7/2011 8:05:16 AM \\GDOT-DSRI\GOPLOT\GCF\GG_K1p8000.gpf tsx C:\tpc\31inch guardrail\new 31 inch guardrail files\4382.pdf

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-011

3/1/2007 GPLN

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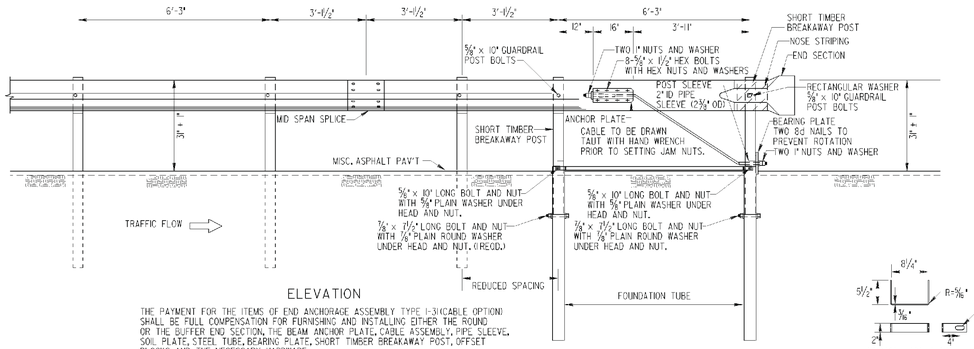
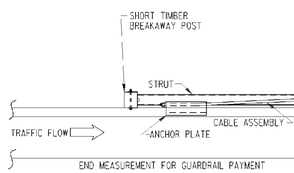
9/21/2011 8:13:55 AM \\GDOT-DSN1\GOPLOT\GCT\GG_K1p8006.gpf dgowen V:\GATY\31 inch guardrail standards\4012D rev 4383.prf

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

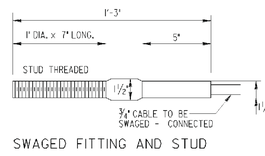


ELEVATION

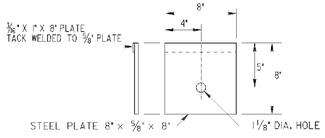
THE PAYMENT FOR THE ITEMS OF END ANCHORAGE ASSEMBLY TYPE I-31(CABLE OPTION) SHALL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING EITHER THE ROUND OR THE BUFFER END SECTION, THE BEAM ANCHOR PLATE, CABLE ASSEMBLY, PIPE SLEEVE, SOIL PLATE, STEEL TUBE, BEARING PLATE, SHORT TIMBER BREAKAWAY POST, OFFSET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



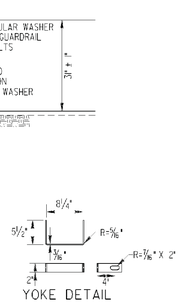
CABLE ANCHOR



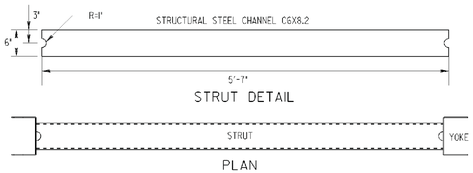
SWAGED FITTING AND STUD



BEARING PLATE

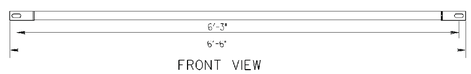


YOKE DETAIL

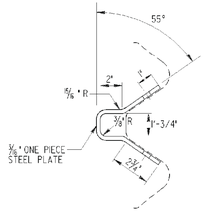


STRUT DETAIL

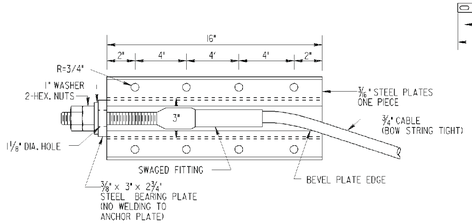
PLAN

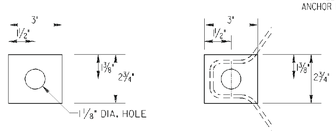


FRONT VIEW



ANCHOR PLATE DETAIL

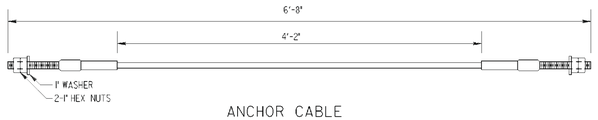




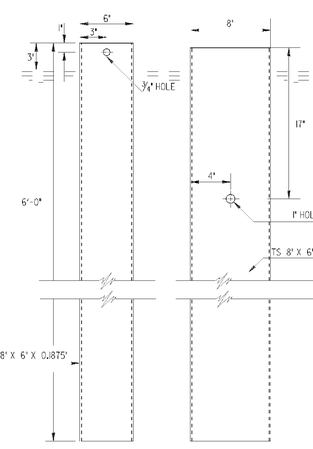
ANCHOR PLATE BEARING PLATE DETAIL

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.

STANDARD ANCHOR PLATE DETAILS



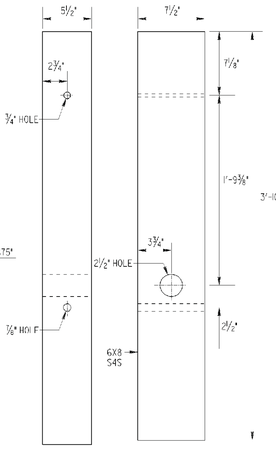
ANCHOR CABLE



FRONT VIEW SIDE VIEW

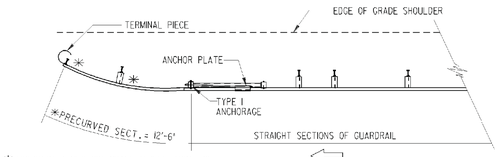
FOUNDATION TUBE

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



FRONT VIEW SIDE VIEW

SHORT TIMBER BREAKAWAY POST



* 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)

AT TRAILING END OF ONE-WAY TRAFFIC

NOTE:
SEE STD. 4388 OR OTHER APPLICABLE DETAILS FOR REQUIREMENT FOR TYPE I2 ANCHORAGE ON THE TRAILING END.

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.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

GUARDRAIL ANCHORAGE TYPE I
31 INCH GUARDRAIL HEIGHT

NO SCALE — AUGUST 2011

BY		DATE	REVISION
DES.	G.L.O.		
DRW.	G.L.O.		
CHK.	B.B.E.		
REVIEW	B.A.S.		

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

NUMBER 4383

12/7/2011 8:05:15 AM \\GDOT-DSN1\GOPLOT\GCF\GG_K1p8000.gpf tex Output\31inch guardrail\new 31 inch guardrail fillet\4383.pdf

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

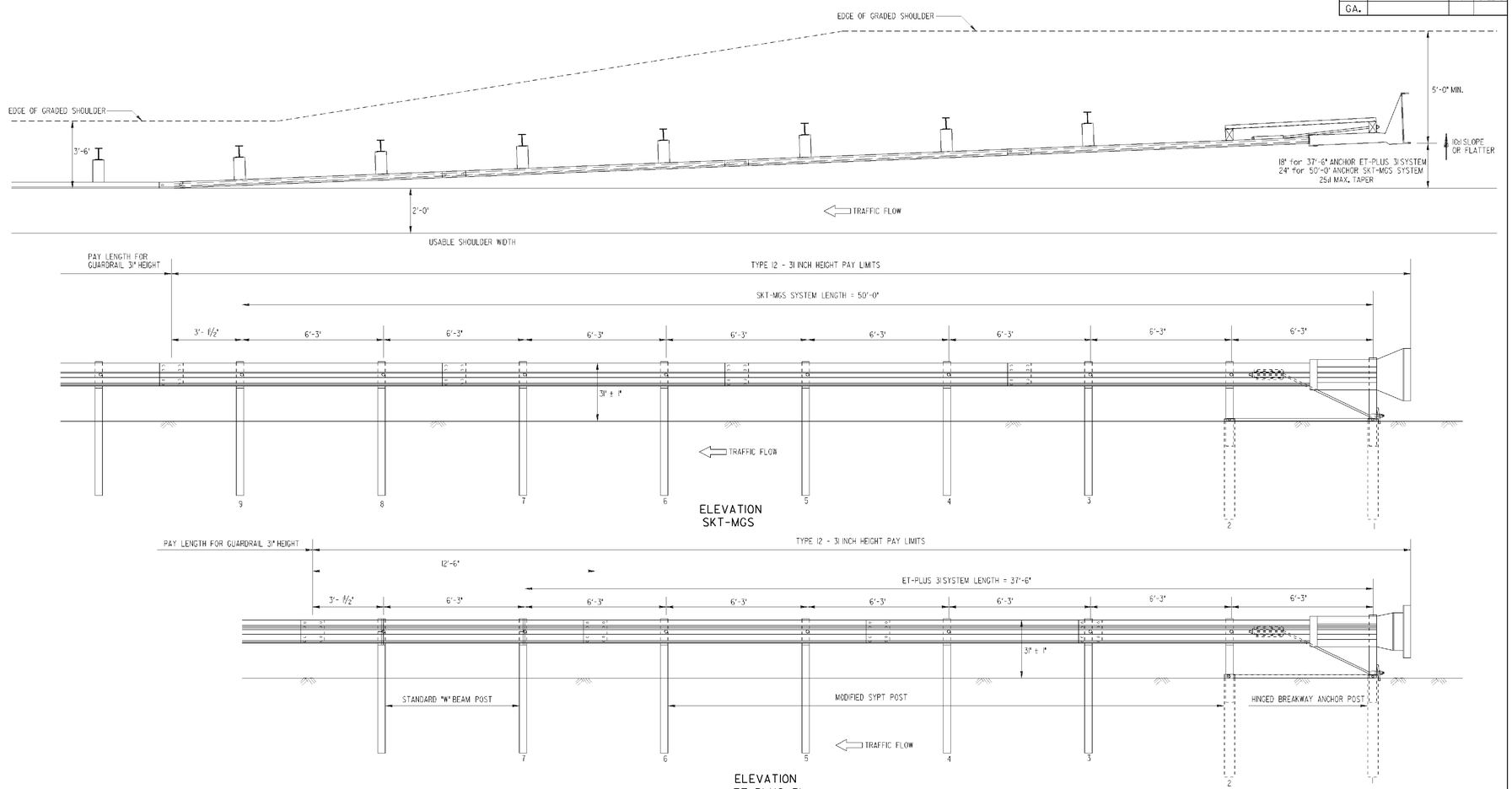
DRAWING No. 41-012

3/1/2007 GPLN

12/7/2011 8:05:14 AM \\GDOT-DSN1\GOPLOT\GCF\GO_Kip8000.gcf tcox C:\tpc\31inch guardrail\new 31 inch guardrail files\4384.pdf GO-RDS

9/21/2011 8:14:13 AM \\GDOT-DSN1\GOPLOT\GCF\GO_Kip8000.gcf gowens V:\GARY\31 inch guardrail standards\Type 12 4040 rev 4384.prf

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD CURRENT EDITION, AND SUPPLEMENTS THERETO.
2. GUARDRAIL ANCHORAGE TYPE 12, 31 INCH HEIGHT SHALL BE AN ET-PLUS 31 AS MANUFACTURED BY TRINITY INDUSTRIES, INC. OR AN SKT-MGS AS MANUFACTURED BY ROAD SYSTEMS, INC. AND SHALL BE INSTALLED ACCORDING TO MANUTACTURER'S RECOMMENDATIONS.
3. A MAXIMUM FLARE OF 25:1 OVER THE SYSTEM LENGTH OF THE TERMINAL IS REQUIRED FOR EITHER THE ET-PLUS 31 OR THE SKT-MGS.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

TYPE 12
31 INCH GUARDRAIL HEIGHT

NO SCALE — AUGUST 2011

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.

NUMBER 4384

12/7/2011 8:05:14 AM \\GDOT-DSN1\GOPLOT\GCF\GO_Kip8000.gcf tcox C:\tpc\31inch guardrail\new 31 inch guardrail files\4384.pdf

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-013

3/1/2007 GPLN

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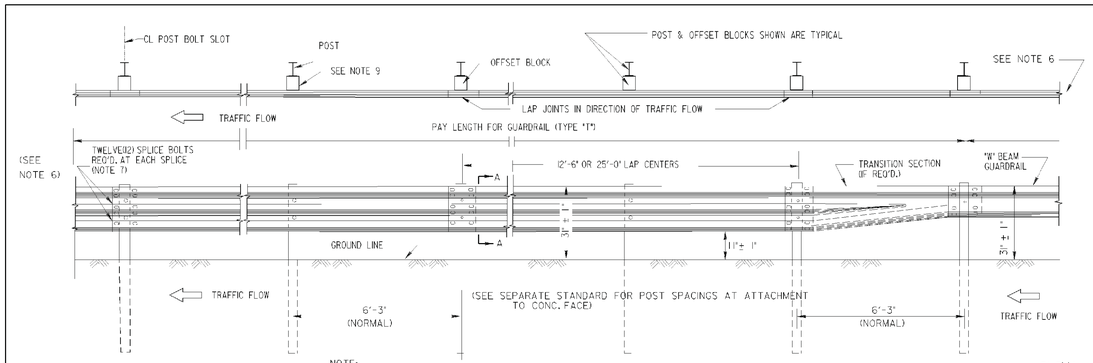
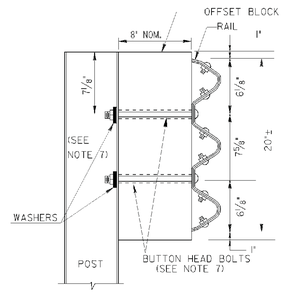
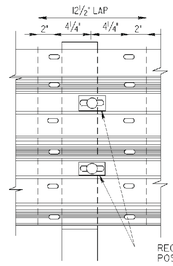


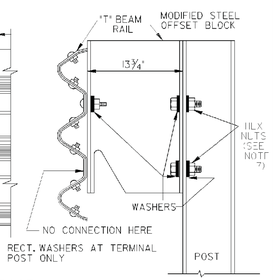
NOTE:
WHERE ATTACHED TO CONCRETE BARRIER, BRIDGE END POST OR OTHER CONCRETE FACE, PAYMENT FOR T BEAM GUARDRAIL SHALL INCLUDE ADDITIONAL POSTS, OFFSET BLOCKS AND DOUBLE THICKNESS (ONE RAIL NESTED INSIDE ANOTHER) SECTION OF T BEAM GUARDRAIL AS SPECIFIED.



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

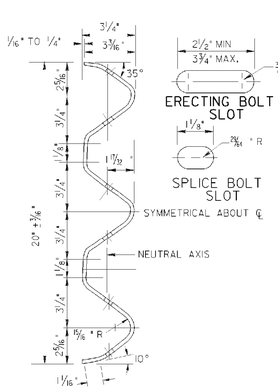


"T" BEAM SPLICE AT POST

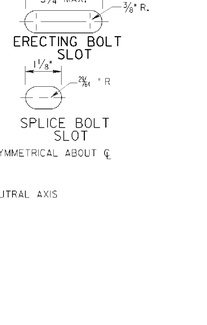


SECTIONAL VIEW
(GUARDRAIL TP. T, MODIFIED OFFSET BLOCK)

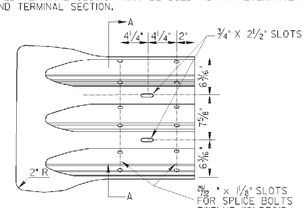
NOTE:
13¾" DEPTH MODIFIED STEEL OFFSETS BLOCKS MAY BE SPECIFIED WHERE JUSTIFIED FOR MORE SEVERE CONDITIONS. PAY ITEM IS --GUARDRAIL, TP T, MODIFIED OFFSET BLOCK---PER LIN. FT.



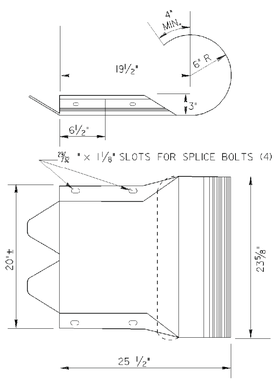
SECTION THROUGH RAIL ELEMENT (SEC. A-A)



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



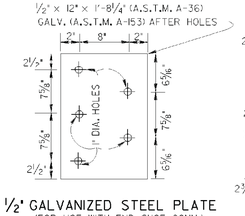
FLARED TERMINAL SECTION



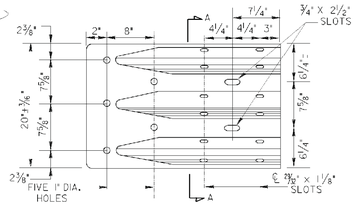
ROUNDED TERMINAL SECTION
TO BE LAPPPED ON TRAFFIC FACE OF RAIL WHERE TYPE I ANCHORAGE IS REQUIRED

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

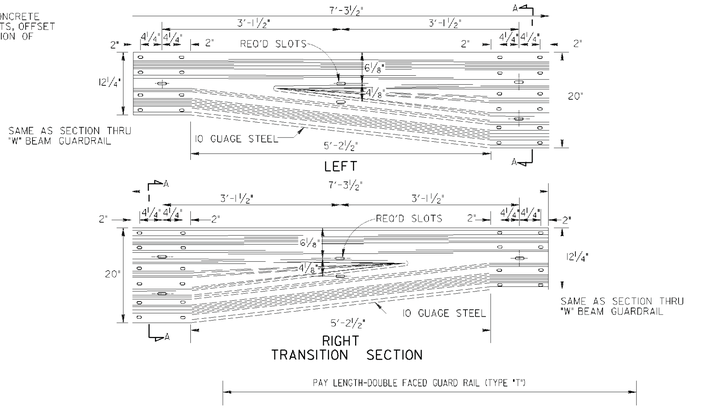
½" × 12" × 1'-8¼" (A.S.T.M. A-36) GALV. (A.S.T.M. A-153) AFTER HOLES

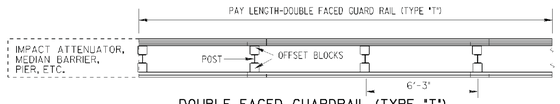


½" GALVANIZED STEEL PLATE
(FOR USE WITH END SHOE CONN.)
ALTERNATE: FIVE 3" x 2½" x 3" GALV. PLATES WITH 1" DIA. HOLE CENTERED, GALV. AFTER HOLES.

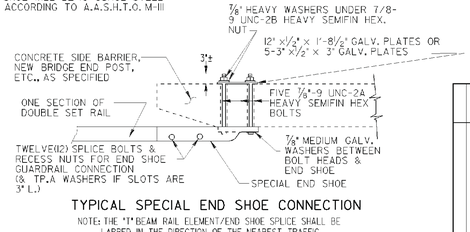


"T" BEAM SPECIAL END SHOE





DOUBLE FACED GUARDRAIL (TYPE "T")



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

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, HARDWARE 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.

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
"T" BEAM GUARDRAIL
CONNECTION TO 31INCH HEIGHT "W" BEAM

NO SCALE — AUGUST 2011

BY	DATE	REVISION
DES. G.L.O.		
DRW. G.L.O.		
CHK. B.R.E.		
REVIEW B.A.S.		

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

NUMBER 4385

12/7/2011 8:05:13 AM \\GDOT-DSN1\GOPLOT\GOF\GO_Kip8000.gpf tesk C:\tpc\3.1inch guardrail\new 31 inch guardrail fillet\4385.pdf

3/1/2007 GPLN

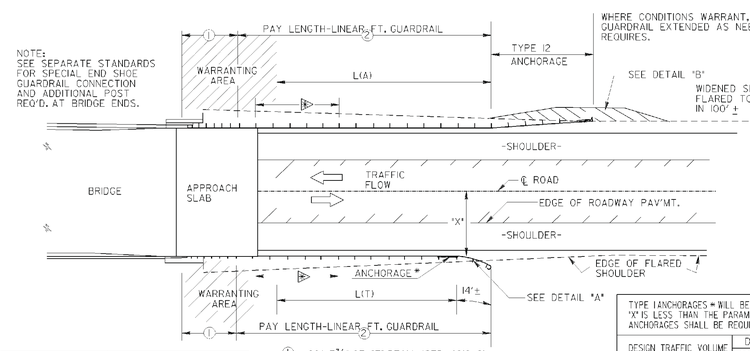
REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

NOTE:
FOR MINIMAL REDUCTION (TO 2') OF SHOULDER ACROSS BRIDGE, ALIGNMENT SHALL BE STRAIGHT FOR SHORT INSTALLATIONS (LESS THAN 200' TOTAL) AS SHOWN HEREON. FOR LONGER INSTALLATIONS, OR GREATER REDUCTION OF SHOULDER WIDTH, GUARDRAIL INSTALLATION SHALL BE AS PER DETAIL AT BOTTOM MIDDLE.



GUARDRAIL LOCATION AT BRIDGE ENDS

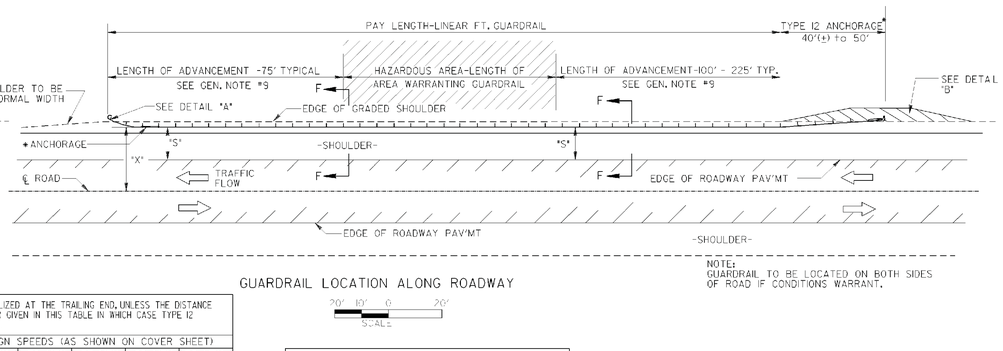
SCALE 20' 10' 0 20'

TRAFFIC VOLUME	MIN. L(T)	MIN. L(A)
DHV OVER 400	100'-0"	137'-6"
DHV 200-400	87'-6"	125'-0"
DHV 100-200	75'-0"	112'-6"
ADT 400 & OVER	62'-6"	100'-0"
ADT UNDER 400	50'-0"	87'-6"

NOTE: THESE MINIMUM LENGTHS ARE FOR STRAIGHT ALIGNMENTS IN ADVANCE OF WARRANTING AREA.

TYPE I ANCHORAGES WILL BE UTILIZED AT THE TRAILING END, UNLESS THE DISTANCE "X" IS LESS THAN THE PARAMETER GIVEN IN THIS TABLE IN WHICH CASE TYPE 12 ANCHORAGES SHALL BE REQUIRED.

DESIGN TRAFFIC VOLUME	DESIGN SPEEDS (AS SHOWN ON COVER SHEET)				
	40 MPH	50 MPH	55 MPH	60 MPH	70 MPH
OVER 6000 A.D.T.	14'	18'	22'	30'	30'
1500 - 6000 A.D.T.	12'	16'	20'	26'	28'
750 - 1500 A.D.T.	10'	12'	16'	20'	24'
UNDER 750 A.D.T.	7'	10'	12'	16'	20'

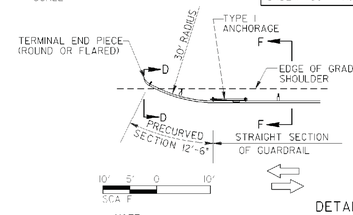


GUARDRAIL LOCATION ALONG ROADWAY

SCALE 20' 10' 0 20'

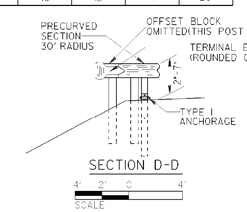
"S" IS THE OFFSET TO THE FACE OF THE GUARDRAIL; THIS WILL BE TWO(2) FEET GREATER THAN THE USABLE SHOULDER WIDTH (PER AASHTO MINIMUM SHOULDER REQUIREMENTS) EXCEPT WHERE THE CURRENT A.D.T. IS UNDER 400, IN WHICH CASE "S" MAY BE EQUAL TO THE USABLE OR GRADED SHOULDER WIDTH (NOT LESS THAN 4).

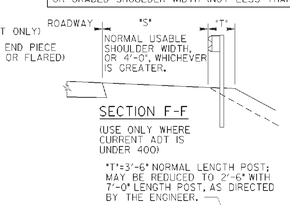
NOTE:
GUARDRAIL TO BE LOCATED ON BOTH SIDES OF ROAD IF CONDITIONS WARRANT.

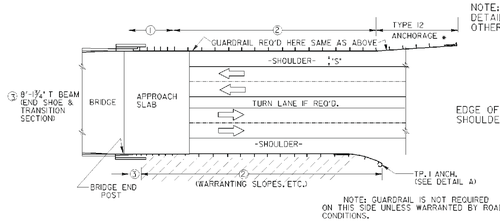


DETAIL "A"

NOTE:
DETAIL "A" IS FOR USE ONLY WHERE TYPE I ANCHORAGES ARE PERMITTED AS SHOWN ABOVE OTHERWISE, SEE DETAIL "B" FOR PROPER INSTALLATION OF TYPE 12 ANCHORAGE.



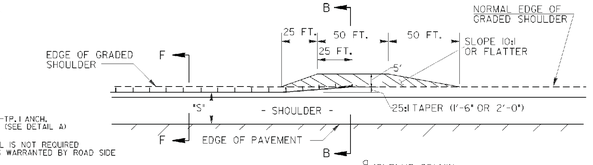


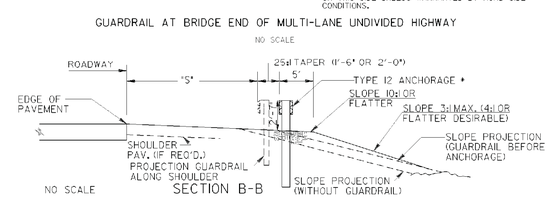


NOTE: GUARDRAIL IS NOT REQUIRED ON THIS SIDE UNLESS WARRANTED BY ROAD SIDE CONDITIONS.

GUARDRAIL AT BRIDGE END OF MULTI-LANE UNDIVIDED HIGHWAY

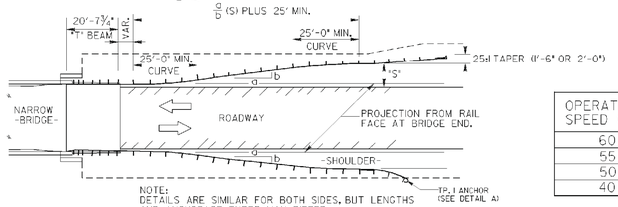
NO SCALE





DETAIL "B"

WHERE SHOWN ON THE PLANS OR APPROVED BY THE ENGINEER, THE EMBANKMENT FLARE SHOWN ABOVE FOR TYPE I ANCHORAGE MAY BE MODIFIED, PROVIDED 10:1 OR FLATTER SLOPES ARE PROVIDED IN FRONT OF THE RAIL & A CONSTANT 31 INCH RAIL HEIGHT IS MAINTAINED.



NOTE:
DETAILS ARE SIMILAR FOR BOTH SIDES, BUT LENGTHS AND ANCHORAGE TYPES MAY DIFFER.

GUARDRAIL LOCATION AT END OF NARROW BRIDGE

(NOTE: DETAILS NOT SHOWN HERE ARE SIMILAR TO THOSE AT TOP LEFT.)

OPERATING SPEED (MPH)	FLARE RATE a/b
60	13:1 MIN.
55	12:1 MIN.
50	11:1 MIN.
40	9:1 MIN.

GENERAL NOTES:

1. GUARDRAIL, ITS FITTINGS, PARTS, ETC. ARE TO BE IN ACCORDANCE WITH GEORGIA STANDARD SPECIFICATIONS AND/OR SPECIAL PROVISIONS.
2. FOR DETAILS OF BEAM TYPE GUARDRAIL, ACCESSORIES, GUARDRAIL POST, OFFSET BLOCKS, GUARDRAIL ANCHORAGES TYPE I AND TYPE 12, & BRIDGE END CONNECTION DETAILS, SEE APPLICABLE GEORGIA STANDARD PLANS AND/OR CONSTRUCTION DETAILS.
3. ALL OFFSET AND LENGTHS HERE SHOWN ARE APPLIED TO FACE OF GUARDRAIL.
4. POST SPACING SHALL BE 6'3" C. TO C., UNLESS OTHERWISE NOTED.
5. TYPE 12 ANCHORAGES SHOULD BE TERMINATED ON SLOPES 10:1 OR FLATTER. WHERE NORMAL SLOPE IS STEEPER, A 10:1 OR FLATTER SLOPE SHOULD BE CONSTRUCTED AT LOCATIONS WHERE TYPE 12 ANCHOR FLARES BACK OF SHOULDER.
6. GUARDRAIL SHALL NOT BE ERECTED ON SLOPES WHICH ARE STEEPER THAN 10:1, EXCEPT FOR THE PORTION OF PRECURVED (SHOP CURVED) SECTION THAT EXTENDS BACK OF THE SHOULDER AS SHOWN IN DETAIL "A" WHICH IS ERECTED ON NORMAL SLOPES OR EXCEPT WHERE SHOWN OTHERWISE IN PLANS.
7. PAY LENGTH SHALL BE MEASURED ALONG FACE OF GUARDRAIL.
8. W BEAM GUARDRAIL WILL HAVE A CONSTANT TOP OF RAIL HT. OF 2'-7" THRU OUT INSTALLATION EXCEPT WHERE A PORTION OF THE PRECURVED SECTION SHOWN IN DETAIL "A" EXTENDS BACK OF THE GRADED SHOULDER.
9. GUARDRAIL WILL EXTEND PAST HAZARD ON BOTH THE APPROACH & TRAILING ENDS TO PREVENT VECHICLE PENETRATION BEHIND THE RAIL INTO THE HAZARDOUS AREA. THE TYPICAL LENGTHS OF ADVANCEMENT SHOWN MAY BE INCREASED OR DECREASED WHEN SHOWN IN THE PLANS, OR WHERE DIRECTED BY THE ENGINEER BECAUSE OF SPEED DESIGN, ROADSIDE GEOMETRY, SIZE OF HAZARD, OR OTHER CONDITIONS. IF FURTHER INFORMATION IS DESIRED; SEE THE AASHTO "ROADSIDE DESIGN GUIDE".

SPECIAL NOTE:
LOCATION AND QUANTITIES GIVEN IN THE PLANS FOR GUARDRAIL AND ANCHORAGES ARE ESTIMATES MADE FROM OFFICE COMPUTATIONS. A FINAL DETERMINATION AS TO LOCATIONS AND QUANTITIES OF GUARDRAIL AND ANCHORAGES WILL BE MADE BY THE ENGINEER OR A REPRESENTATIVE FROM THE OFFICE OF TRAFFIC OPERATIONS AFTER CONSTRUCTION OF ROADWAY.

*OR APPROVED ALTERNATE, MEETING MANUAL FOR ASSESSING SAFETY HARDWARE(MASH) REQUIREMENTS

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
GUARDRAIL LOCATION DETAILS FOR UNDIVIDED HIGHWAYS AND ROADS (WITH SHOULDERS ADJACENT TO THE ROADWAY)
31 INCH GUARDRAIL HEIGHT

SCALE AS SHOWN — AUGUST 2011

REVISION	DATE	BY

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

NUMBER 4388

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-015

3/1/2007 GPLN

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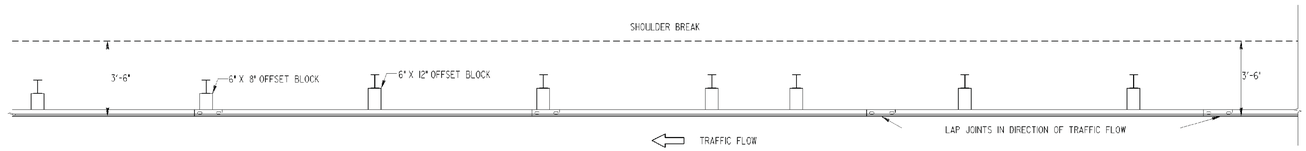
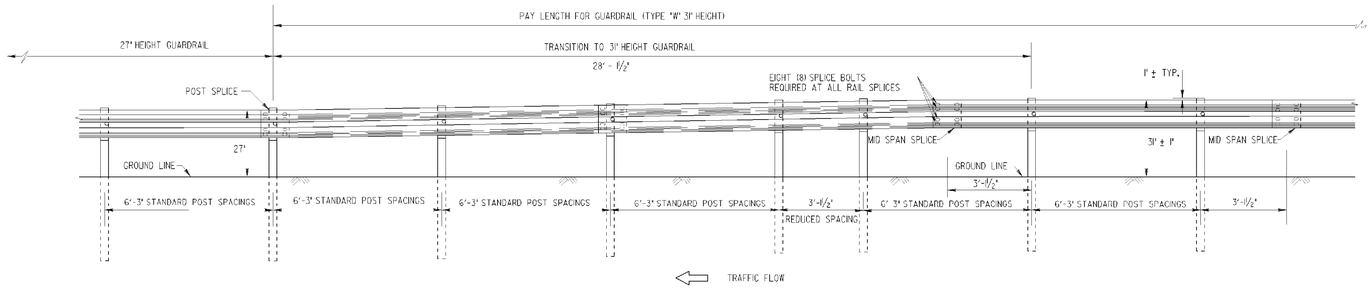
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



PLAN



ELEVATION

(TYPICAL VIEW ALONG ROADWAY)

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 4011A.
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, & 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.

DATE	REVISION	BY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
"W" BEAM GUARDRAIL
TRANSITION 27 INCH GUARDRAIL TO 31INCH GUARDRAIL HEIGHT

NO SCALE — AUGUST 2011

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

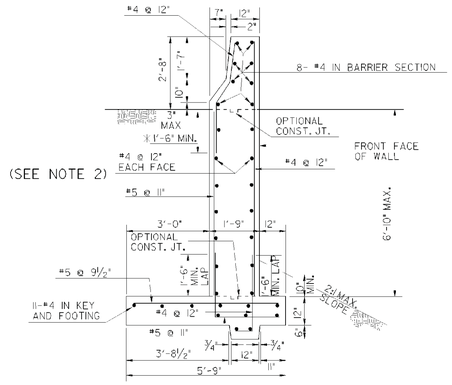
NUMBER 4390

12/7/2011 8:05:07 AM \\GDOT-DSN1\GOPLOT\GCF\GO_Kip8000.gcf tcox C:\tpc\31inch guardrail\new 31 inch guardrail files\4390.pdf

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

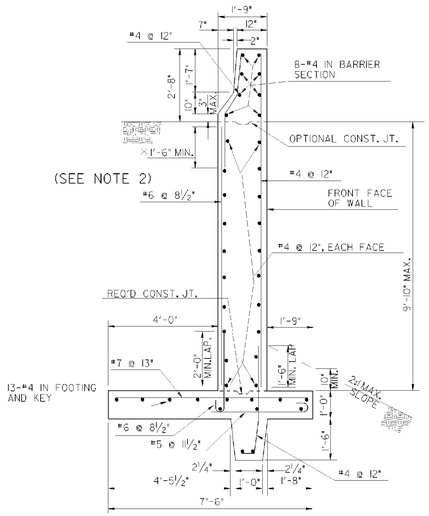
DRAWING No. 41-016



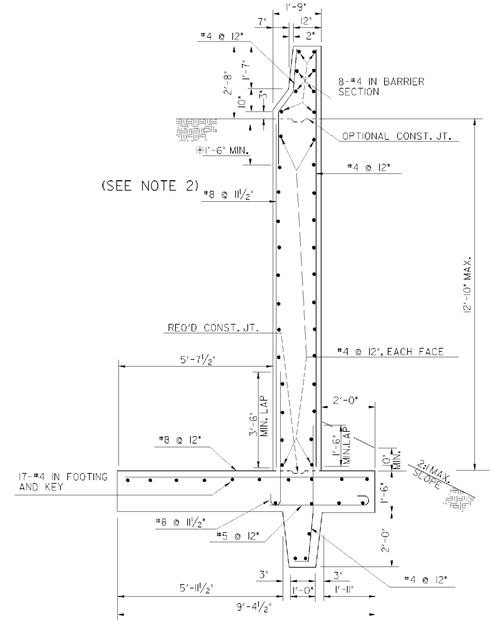
* NON-CONTACT LAPS ARE ACCEPTABLE

TYPE 2-A SIDE BARRIER

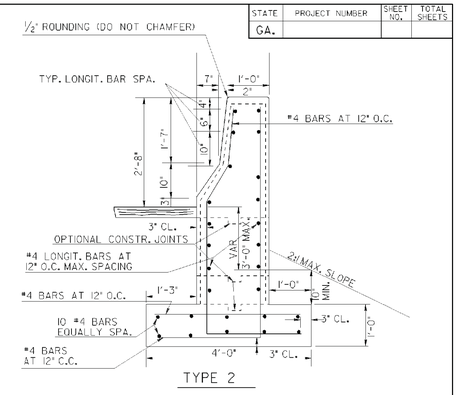
RED'D SOIL BEARING CAPACITY	
TYPE	CAPACITY, TONS/SF
2-A	1.25
2-B	1.25
2-C	1.5
2	1.0



TYPE 2-B SIDE BARRIER



TYPE 2-C SIDE BARRIER



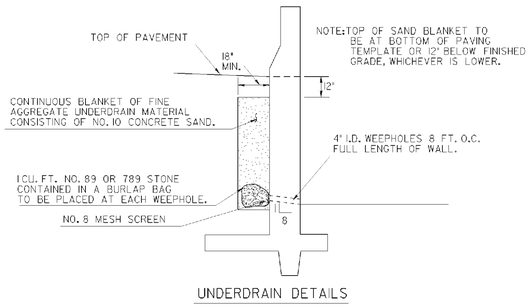
TYPE 2

GENERAL NOTES:

1. AT CONTRACTOR'S OPTION, SIDES OF FOOTING KEY MAY BE VERTICAL. MAINTAIN WIDTH SHOWN AT TOP OF KEY. BACKFILL FRONT FACE OF WALL FIRST.
2. UNDERDRAIN SYSTEM PER DETAILS AT BOTTOM LEFT AND/OR NOTE 9 IS REQUIRED FOR TYPES 2-A, 2-B, AND 2-C.
3. EXPOSED CONCRETE SURFACES SHALL RECEIVE A TYPE III FINISH.
4. 1" EXPANSION JOINTS SHALL BE PROVIDED IN WALL, FOOTING AND KEY AT A MAXIMUM SPACING OF 100 FT. EXPANSION JOINTS SHALL BE SPACED UNIFORMLY.
5. CONTRACTION JOINTS SHALL BE AS SPECIFIED FOR SIDE BARRIER, GA. STD. 4948A.
6. EXPANSION AND CONTRACTION JOINTS IN TYPES 2-A, 2-B, AND 2-C SIDE BARRIER SHALL BE WATERPROOFED ON THE BACK SIDE. WATERPROOFING SHALL BE 3-PLY AND EXTEND FROM TOP OF SAND BLANKET TO TOP OF FOOTING FOR 1'-6" MIN. EACH SIDE OF JOINT.
7. TYPES 2, 2-A, 2-B, AND 2-C SIDE BARRIER SHALL BE PAID FOR PER LIN. FT. AS CONCRETE SIDE BARRIER. TYPE 2, 2A, 2B, OR 2C PRICE BID TO INCLUDE COST OF WATERPROOFING AND ALL INCIDENTALS AS SPECIFIED IN SECTION 621 OF THE STD. SPEC.
8. SIDE BARRIER DESIGNED FOR THE FOLLOWING SOIL PROPERTIES:

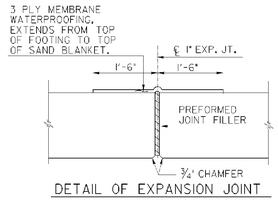
   θ = ANGLE OF INTERNAL FRICTION 28°
   ɣ = UNIT WEIGHT = 110 PCF
   A = COEFF. OF SLIDING FRICTION = .45

9. A SYNTHETIC DRAINAGE BLANKET SELECTED FROM THE DEPARTMENT'S QUALIFIED PRODUCTS LIST IS AN ACCEPTABLE SUBSTITUTE FOR THE SAND BLANKET, BAG OF STONE, AND MESH SCREEN SHOWN IN THE UNDERDRAIN DETAILS.

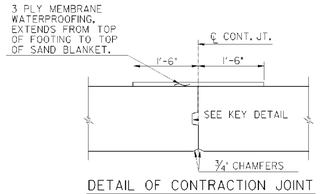


UNDERDRAIN DETAILS

SEE GEN. NOTE 9 FOR ALTERNATE

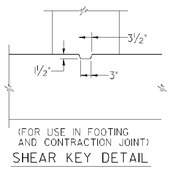


DETAIL OF EXPANSION JOINT



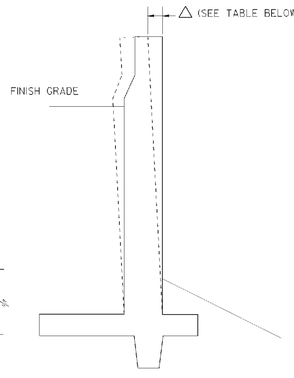
DETAIL OF CONTRACTION JOINT

△ (INCHES)	
WALL TYPE	DIMENSION
2-A	0
2-B	0
2-C	3/16



(FOR USE IN FOOTING AND CONTRACTION JOINT)

SHEAR KEY DETAIL



WALL BATTER DETAIL

DATE	REVISION	BY
11-25-07	ADDED BAR LAP NOTE AND WALL BATTER DETAIL.	GLO

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

CONCRETE SIDE BARRIER
TYPES 2, 2A, 2B & 2C

NO SCALE — DEC., 1999

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

(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER

(APPROVED) CHIEF ENGINEER

NUMBER 4948B

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-017

3/1/2007 GPLN

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STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

OPTION ①

BARRIER DELINEATIONS, OFFSETS, & FLARE RATES

LATERAL OFFSETS(L_O) LESS THAN 2 FT. NOT PERMITTED, UNLESS APPROVED BY THE ENGINEER.

FOR A TWO-LANE TWO-WAY ROADWAY THE LANE WIDTH(L_W) PLUS THE LATERAL OFFSET(L_O) MUST BE GREATER THAN THE MINIMUM BARRIER END OFFSET(B_O), OR THE TRAILING END SHALL BE TAPERED SAME AS APPROACH.

IF L_W+ L_O IS LESS THAN 20 FT. FOR THE WORK AREA OR THE TRAILING END, THEN THE 10"x10" PANELS SHALL BE REFLECTORIZED ON BOTH SIDES.

LEGEND

- ● - STRIPED DRUM
- ☐ - 10"x10" YELLOW PANELS WITH TYPE VII SHEETING- MAX. 40' SPACING-LONGITUDINAL SECTION-MAX. 20' SPACING IN TAPER
- T_L - MINIMUM TAPER LENGTH OF TEMPORARY BARRIER MEASURED FROM THE SECTION OF TEMPORARY BARRIER RUNNING PARALLEL WITH THE TRAVEL LANE TO THE BARRIER END IN FEET
- B_O - MINIMUM BARRIER END OFFSET DISTANCE IN FEET
- L_O - DESIRABLE MINIMUM LATERAL OFFSET DISTANCE FROM THE EDGE OF THE TRAVEL LANE TO THE TOE OF THE TEMPORARY BARRIER IN FEET
- b_O - MINIMUM BARRIER END OFFSET(B_O) MINUS THE DESIRABLE MINIMUM LATERAL OFFSET(L_O)
- F_R - MINIMUM FLARE RATE OF THE TEMPORARY BARRIER IN THE TAPER SECTION
- L_W - LANE WIDTH IN FEET

MINIMUM LENGTH OF TAPER REQUIRED
$b_O = B_O - L_O$
$T_L = b_O \times F_R$

POSTED SPEED ON THE ROADWAY	DESIRABLE MINIMUM LATERAL OFFSET (FT.) L_O	FLARE RATE F_R	B_O MINIMUM OFFSET TO BARRIER END (FEET)
30-40 MPH	2	5:1	13
45-50 MPH	2	6:1	16
55 MPH	2	8:1	23
60-70 MPH	2	8:1	30

NOTE: INTERMEDIATE SPEEDS MAY UTILIZE AVERAGE VALUES.

OPTION ②

MINIMUM BARRIER ADVANCEMENT LENGTH

(WITH TEMPORARY GUARDRAIL ANCHOR)

OPTION ③

PORTABLE ATTENUATOR TERMINAL

NOTES:
1. SEE SPECIFICATION SECTIONS 648 AND 150.
2. SEE CONSTRUCTION DETAIL G-11 FOR NON-GATING ATTENUATORS.
3. SEE GENERAL NOTE NO. 4.

OPTION ④

TEMPORARY BARRIER TRANSITION - CAST - IN - PLACE

(REQUIRED WHERE TEMPORARY BARRIER BUTTS AGAINST PERMANENT BARRIER)

NOTES:
1. COVER PERMANENT BARRIER, PAVEMENT, & PRECAST SECTIONS WITH POLYETHYLENE AS A BOND BREAKER.
2. PLACE BARRIER SIDE FORMS AGAINST PERMANENT & TEMP. BARRIER TO FORM SMOOTH TRANSITION.
3. USE CLASS "A" CONCRETE, A TYPE I FINISH IS SUFFICIENT.
4. TRANSITION SHALL BE COMPLETED BEFORE TEMPORARY BARRIER IS EXPOSED TO ON-COMING TRAFFIC.
5. TRANSITION IS NOT REQ'D. AT TRAILING END OF ONEWAY TRAFFIC FLOW.
6. TRANSITION WILL BE PAID FOR AS TEMPORARY BARRIER. PAYMENT INCLUDES REUSE, REMOVE AND DISPOSAL. TEMPORARY MEDIAN TRANSITION WILL BE PROVIDED BY THE CONTRACTOR WITH PAYMENT MADE AT THE PRICE BID FOR BARRIER AS SPECIFIED IN THE PLANS.

END TREATMENT FOR BARRIER TERMINAL

WHERE BARRIER END OFFSETS REQUIRED IN OPTION ① CAN NOT BE OBTAINED THEN, A TEMPORARY GUARDRAIL ANCHORAGE AT THE BARRIER END WILL BE REQUIRED AS PER OPTION ②. IF INSTALLATION OF GUARDRAIL ANCHORAGE IS NOT PRACTICAL DUE TO LOCAL CONDITIONS, A TEMPORARY PORTABLE IMPACT ATTENUATOR SHOULD BE USED AT THE BARRIER END AS PER OPTION ③.

① = FIRST OPTION, MINIMUM OFFSET IS OBTAINED.

② = SECOND OPTION, TEMPORARY GUARDRAIL ANCHORAGE, AS SPECIFIED.

③ = THIRD OPTION, PORTABLE ATTENUATOR.

④ = FOURTH OPTION, TERMINATE WITH A CAST-IN-PLACE TRANSITION.

⑤ = FIFTH OPTION, CONNECT TO GUARDRAIL.

OPTION ⑤

TEMPORARY CONCRETE BARRIER/GUARDRAIL CONNECTIONS & JUNCTIONS

NOTE:
PAYMENT FOR TEMPORARY CONCRETE BARRIER WILL INCLUDE ALL SPECIAL END SHOES, BOLTS, BOLT HOLES, NUTS, WASHERS, ADDITIONAL GUARDRAIL POSTS, ETC., NECESSARY FOR THE CONNECTIONS, AS SHOWN, WHEN REQUIRED.

ALL SPECIAL END SHOES WILL BE CONNECTED TO CONCRETE BARRIER WITH FOUR ⅞" DIA. BOLTS (A.S.T.M. A-307). LOCATION OF THE BOLTS MAY BE VARIED AT THE DIRECTION OF THE ENGINEER. REMOVABLE TYPE ⅞" DIA. CONCRETE ANCHOR BOLTS, INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS, MAY BE USED INSTEAD OF THE BOLTS CONNECTION SYSTEM SHOWN. ANY BOLTS BROKEN OR IMPROPERLY INSTALLED WILL BE CAUSE FOR REJECTION.

⅞" THREADED RODS WITH NUTS AND WASHERS MAY BE USED IN LIEU OF ⅞" BOLTS.

ELEVATION

SECTION A-A

SECTION B-B

AT LEAST A 5'-0" OFFSET IS DESIRABLE. OFFSET SHALL BE A MIN. OF 4'-3" WITH 6'-3" C. TO C. POST SPACING. WHEN OFFSET IS BETWEEN 4'-3" AND 3' MIN. POST SPACING SHALL BE 3'-1½" C. TO C. FOR 7 CONSECUTIVE SPACING IN ADVANCE OF THE BARRIER.

FOR BARRIER SECTIONS BEHIND GUARDRAIL, THE FLARE RATE(F_R) MAY BE ALTERED, AS NEEDED, TO PROVIDE THE 4' OR 5' OFFSET SHOWN HERE

GENERAL NOTES:
1. BARRIERS SHALL BE PLACED SUCH THAT OPENINGS BETWEEN INDIVIDUAL SECTIONS SHALL BE KEPT TO A MAXIMUM. ALL JOINTS BETWEEN PRECAST SECTIONS SHALL BE CONNECTED AS REQUIRED BY GA. STANDARD 4961 AND/OR MANUFACTURERS RECOMMENDATIONS.
2. THE BARRIER IS NOT TO BE CONNECTED TO THE BRIDGE DECK BY CONNECTING PINS OR REBAR UNLESS AN APPROVED METHOD FOR CONNECTION IS REQUIRED.
3. PRECAST BARRIER SECTIONS SHALL CONFORM TO THE DIMENSIONAL REQUIREMENTS IN GA. STANDARD 4961 AND/OR MANUFACTURERS RECOMMENDATIONS.
4. TRAFFIC CONTROL NOT SHOWN ON THIS STANDARD SHALL BE IN ACCORDANCE WITH CURRENT EDITION OF SECTION 150, STANDARDS, CONSTRUCTION DETAILS AND/OR PLAN SHEETS. DRUMS, ETC. SHOWN FOR OPTION ① SHALL BE APPLICABLE FOR THE OTHER OPTIONS AS WELL. DRUMS SHALL BE PROVIDED IN ADVANCE OF TEMPORARY BARRIERS INSTALLATION AND SHALL BE IN PLACE BEFORE THE BARRIER IS INSTALLED AND REMOVED AFTER THE BARRIER IS REMOVED.
5. WHERE TEMPORARY GUARDRAIL ANCHORAGE IS SPECIFIED, THE FIRST BREAKAWAY SHALL BE 37'-6" MINIMUM IN ADVANCE OF BEGINNING THE TEMPORARY BARRIER INSTALLATION.
6. PAYMENT FOR TEMORARY GUARDRAIL ANCHORS INCLUDES END SHOE, CONNECTING BOLTS, NUTS AND WASHERS, ADDITIONAL POSTS AND OFFSETS BLOCKS, 25 FT. ADDITIONAL "W"-BEAM WITH THE DOUBLE NESTED SECTION PLUS STANDARD ANCHORAGE COMPONENTS. (TOTAL LENGTH=62'-6" (±) MIN.
7. UNACCEPTABLE OR NON-STANDARD END TREATMENT WILL NOT BE LEFT IN PLACE AFTER REMOVAL OF THE TEMPORARY BARRIER, ALL GUARDRAIL AND ALL ANCHORAGES LEFT IN PLACE WILL BE TREATED AS NECESSARY TO CONFORM WITH CURRENT STANDARDS IMMEDIATELY AFTER REMOVAL OF THE TEMPORARY BARRIER.

DATE	REVISION	BY
5-10-07	REVISED ALL OPTIONS AND REV. REFLECTIVE SHEETING TYPE AND GENERAL NOTES.	GLO
2-1-01	O.M. SH. SPEC.	RMU

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

TEMPORARY BARRIER
(END TREATMENT OPTIONS)

NO SCALE — REV. & REDR. MAY, 1999

DES. DRW. TRA. CHK.

(SUBMITTED) [signature] STATE ROAD & AIRPORT DESIGN ENGINEER

(APPROVED) [signature] CHIEF ENGINEER

NUMBER 4960

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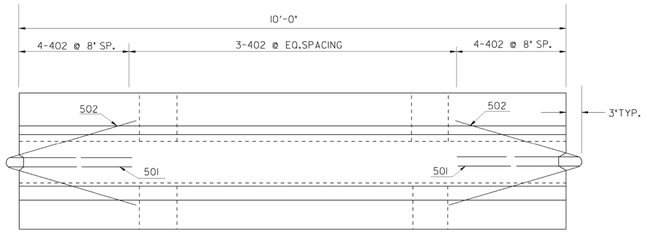
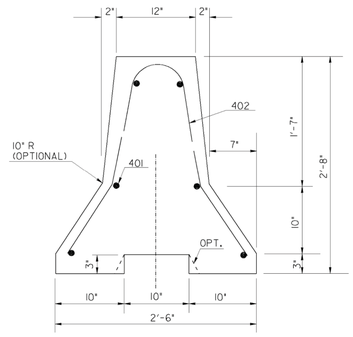
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

PRECAST CONCRETE BARRIER DETAILS

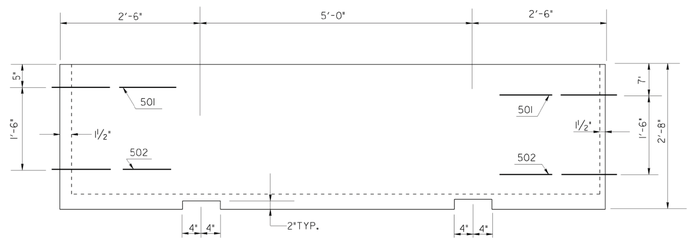


PLAN

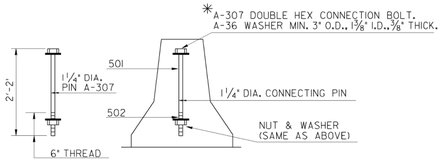


END ELEVATION

NOTE:
BARRIER SECTIONS SHALL BE CONNECTED TOGETHER WITH THE 1¼" DIA. A-307 DOUBLE HEX CONNECTION BOLT. THE BOTTOM NUT & WASHER SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF THE BARRIER INSTALLATION.



SIDE VIEW



PIN CONNECTION

*AN ALTERNATE CONNECTING PIN WITH A FUSED NUT ON THE TOP THREADED PORTION AND NUT AND WASHER AS SPECIFIED ON THE BOTTOM MAY ALSO BE USED.

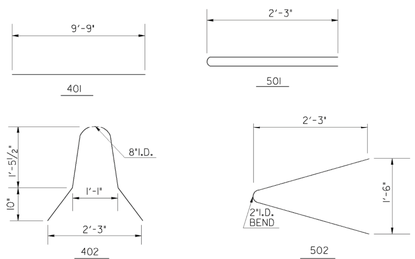
GENERAL NOTES:

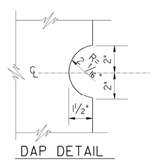
1-MATERIALS: CLASS 'A' CONCRETE AND 40 STEEL.

2-SEE GA. SPECIFICATIONS FOR BASIS OF PAYMENT AND METHOD NO.___.

3-REINFORCEMENT, HAVING AN AREA AT LEAST EQUAL TO REBARS SHOWN, MAY BE USED AS AN ALTERNATE.

4-BARRIERS SHALL BE PLACED SUCH THAT OPENINGS BETWEEN INDIVIDUAL SECTIONS SHALL BE KEPT TO A MAXIMUM.





DAP DETAIL

G.L.O.	REV. CONNECTION WASHER AND REV. GEN. NOTE NO. 4.	9-8-06	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
	REV. REBAR & PIN CONN.	5-2-01	STANDARD DETAILS OF PRECAST TEMPORARY BARRIERS
R.M.U.	COTTER PIN REQUIREMENT	5-10-96	NO SCALE — AUG., 1995
BY	REVISION	DATE	(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGR. (APPROVED) CHIEF ENGINEER — NUMBER 4961

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

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REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-019

3/1/2007 GPLN

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NOTES:
STEPS ARE REQ'D. ON ALL STRUCTURES WHERE H IS GREATER THAN 4'-0".
THE NUMBER AND LOCATION OF STEPS WILL BE AS DIRECTED BY THE ENGINEER.
AN ALTERNATE STEP MAY BE SUBSTITUTED, IF APPROVED BY THE GA. D.O.T. OFFICE OF MATERIALS & RESEARCH.

STEEL LADDER BAR STEPS

DETAIL A

DETAIL B

DETAIL "C"

DOUBLE GRATE
DROP INLET TYPE M-2

SINGLE GRATE
DROP INLET TYPE M-1

BRICK WALL THICKNESS FOR ADD'L HEIGHTS

NOTE:
DETAILS NOT SHOWN HERE WILL BE SIMILAR TO THOSE AT THE LEFT.

DROP INLET WITH ADDITIONAL HEIGHT OR OVER EXISTING INLET
(TYPE M-2 INLET SHOWN; CONSTRUCTION SIMILAR FOR TYPE M-1)

DROP INLET TYPE M-1 WITH TYPE 6 OR TYPE 22 CONCRETE BARRIER (TYP.)

SECTION A-A

SECTION B-B

ALTERNATE TO INVERT

FRAME

GRATE

GENERAL NOTES

1. SPECIFICATION : GEORGIA STANDARD CURRENT EDITION, AND SUPPLEMENTS THERETO.
2. INLETS SHALL BE DESIGNATED AS GROUP I(SEC. 668) UNLESS A CROSS DRAIN PIPE OVER 36" CONNECTS TO A REQUIRED PART OF THE INLET.
3. INVERTS AND PIPES SHOWN ARE ILLUSTRATIVE. SEE PLANS FOR SPECIFICS. INVERTS SHALL BE FORMED WITH GROUT OR CONCRETE AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.
4. FOR CONCRETE BARRIER DETAILS NOT SHOWN, SEE SEPARATE STANDARDS OR PLAN DETAILS. IF THE ROADWAY BARRIER HAS REINFORCING STEEL, THE REINFORCING SHALL BE CONTINUED IN BARRIER SECTION ACROSS THE INLET. ADDITIONAL REINFORCING REQUIRED WHERE SHOWN.
5. BOTH THE GRATE AND THE FRAME SHALL BE EITHER A-36 STEEL; HOT-DIPPED GALVANIZED, A-123, AFTER FABRICATION OR A-568 STEEL; NOT GALVANIZED DRILL 1/4" DIA HOLE IN ONE FRAME CORNER FOR A-36 STEEL TO PREVENT BUILD-UP OF GALVANZING MATERIAL.
6. IF BARRIER (OR WALL) FOOTING PREVENTS NORMAL LOCATION OF LOGITUDINAL PIPE, W2 MAY BE ENLARGED TO RECEIVE AN OFFSET LONGITUDINAL OR 18"DIA. 60° WYE CONNECTION MAY BE USED TO DRAIN NORMAL SIZE INLET INTO THE OFFSET LOGITUDINAL. WHERE WYE CONNECTIONS ARE USED, MANHOLES SHALL BE SPACED AT 600'+- INTERVALS IN PLACE OF WYE CONNECTION. IF DRAINAGE PERMITS, AND STRUCTURAL APPROVAL IS MADE, LONGITUDINAL PIPE MAY BE LOCATED UNDER THE FOOTING.

SPECIAL NOTE:
STANDARD 5001-M INLET GRATES ARE FOR USE ONLY ON LIMITED ACCESS TYPE FACILITIES.

MINIMUM DIMENSIONS: INLET WITH CROSS DRAIN PIPE

PIPE SIZE	W1	a	℄	MIN. H
15"	3'-0"	—	—	3'-10"
18"	3'-0"	—	—	4'-2"
24"	3'-0"	—	—	4'-9"
30"	3'-6"	1"	3"	5'-4"
36"	4'-0"	4"	1'-0"	6'-4"
42"	4'-6"	7"	1'-9"	7'-8"
48"	5'-0"	10"	2'-6"	9'-0"
54"	5'-6"	1'-1"	3'-3"	10'-4"
60"	6'-0"	1'-4"	4'-0"	11'-8"

MINIMUM DIMENSIONS: INLET WITH LONGITUDINAL PIPE

PIPE SIZE	T+M-1 W2	T+M-2 W2	MIN. H
15"	4'-3"	10'-2"	3'-10"
18"	4'-3"	10'-2"	4'-2"
24"	4'-3"	10'-2"	4'-9"
30"	4'-3"	10'-2"	5'-4"
36"	4'-3"	10'-2"	5'-10"
42"	4'-10"	10'-2"	6'-6"
48"	5'-8"	10'-2"	7'-1"

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DATE	REVISION
6-14-10	REV. GEN. NOTES NO. 5 & 6
6-20-08	REDRAWN
8-15-97	ADD SPECIAL NOTE
5-18-94	ADD NOTE 6
BY	
G.L.G.	
G.J.P.	
R.M.U.	
R.M.U.	

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
DROP INLET TYPES M-1 & M-2
ADJACENT TO CONCRETE BARRIER

NO SCALE — MAY 1996

DES. W.W.S. (SUBMITTED) STATE DESIGN POLICY ENGINEER
DRW. L.G.S.
TRA. R.M.U. (APPROVED) CHIEF ENGINEER
CHK. R.K.C.

NUMBER 5001M
SHEET 1 OF 2

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3/1/2007 GPLN

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-020

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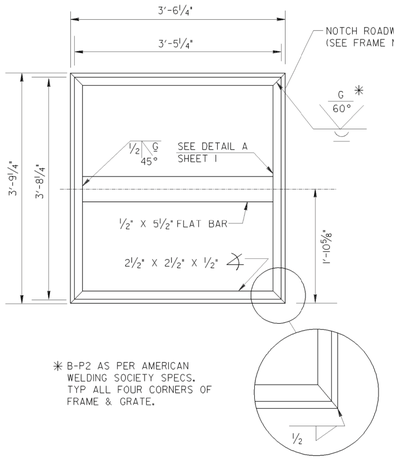
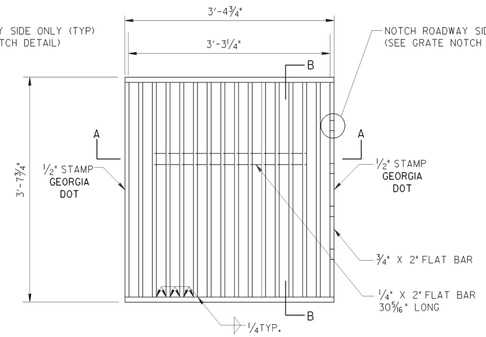
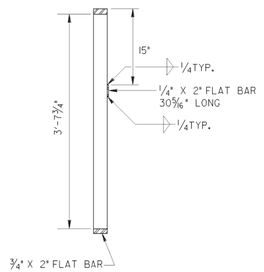


✳ B-P2 AS PER AMERICAN WELDING SOCIETY SPECS. TYP ALL FOUR CORNERS OF FRAME & GRATE.

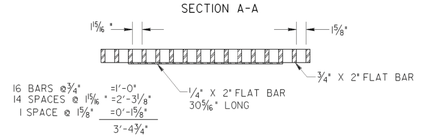
GRATE



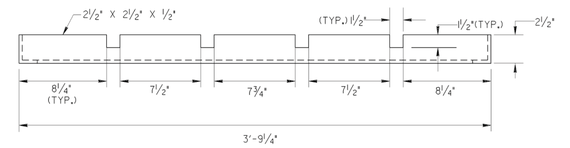
SECTION B-B



SECTION A-A

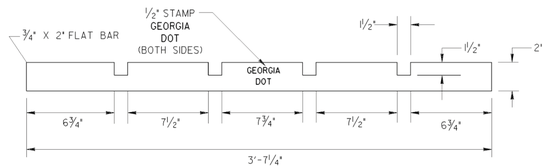


FRAME NOTCH DETAIL

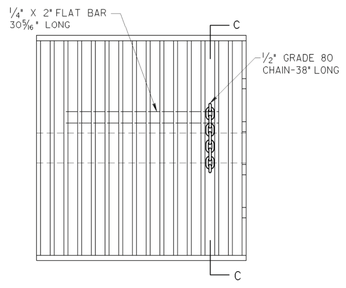


GRATE NOTCH DETAIL

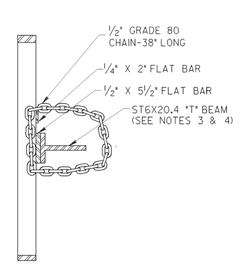
¾" X 2" FLAT BAR (ONE REQ'D)



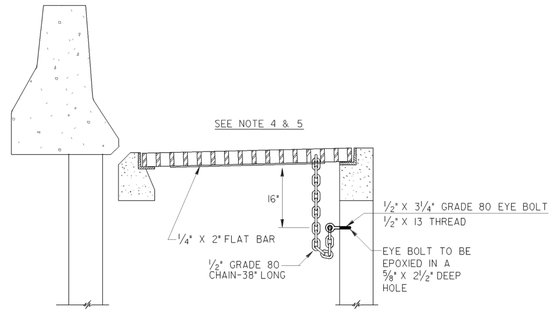
SECURITY CHAIN



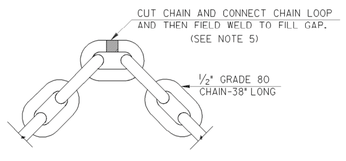
PLAN



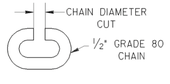
SECTION C-C



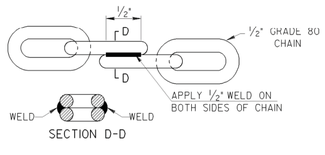
CHAIN LOOP CONNECTION DETAILS



CHAIN LOOP CONNECTION DETAIL



CUT CHAIN LINK DETAIL



SECTION D-D

ALTERNATE WELDED CONNECTION DETAIL

GENERAL NOTES:

1. SPECIFICATION: GEORGIA STANDARD CURRENT EDITION, AND SUPPLEMENTS THERETO.
2. NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THE FABRICATION AND INSTALLATION OF THE SECURITY CHAIN.
3. LOOP CHAIN AROUND FIRST LADDER STEP IF ST6X20.4 "T"BEAM IS NOT PRESENT.
4. IF NEITHER ST6X20.4 "T"BEAM OR STEP IS AVAILABLE, THEN SECURE CHAIN TO INLET WITH EYE BOLT.
5. WELD NUT TO THE BOLT, IF CHAIN IS SECURED TO INLET OR GRATE WITH BOLT AND NUT.

REV.	DATE	REVISION
B.H.D.	2-18-14	ADDED GEN. NOTES 3, 4, & 5
G.L.C.	6-14-10	ADDED CHAIN DETAILS
G.L.C.	6-30-98	REVISION
R.M.U.	8-6-97	ADD SPECIAL NOTE
R.M.U.	9-19-94	ADD NOTE 6

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
DROP INLET TYPES M-1 & M-2
ADJACENT TO CONCRETE BARRIER

NO SCALE — MAY 1996

DES. W.W.S.
DRW. L.G.S.
TRA. R.M.U.
CHK. R.K.C.

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

NUMBER 5001M
SHEET 2 OF 2

3/31/2014 11:27:02 AM \\GDOT-DSN1\GOPLOT\QCF\QGC_qcf_bquarles_P:\Policy\Lighting\Standards\GA Standards\5001M\5001m-2.prf

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-021

3/1/2007 GPLN

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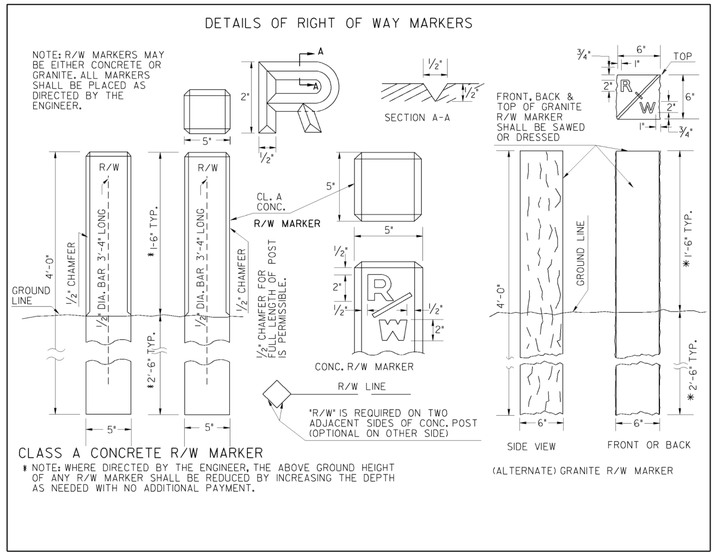
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DETAILS OF RIGHT OF WAY MARKERS



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.

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

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

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REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-022

3/1/2007 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRST0-0076-01(036)	220	267

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STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

SECTION B-B SECTION C-C

NOTE: WHERE END POST INTERSECTS APPROACH SLAB, THE INTERCEPTED REINFORCING, BOTH LONGITUDINAL & TRAVERSE, SHALL BE SHORTENED AS NEEDED TO GIVE 3"+ CLEARANCE TO END POST.

SECTION D-D (SHOWN WHERE SPILLWAY IS NOT REQ'D.)

SECTION E-E (SHOWN WHERE SPILLWAY IS REQ'D.)

NOTE: BLOCKOUTS ARE OMITTED WHERE IT HAS BEEN VERIFIED THAT GUARDRAIL WILL NOT BE REQ'D.

BLOCKOUTS LOCATIONS FOR GUARDRAIL POST

SEE GENERAL NOTE NO. 3

* IF GUARDRAIL IS WARRANTED AT THE TRAILING END OF 4 OR MORE LANES, BLOCKOUTS FLAGED WITH AN ASTERISK ARE OMITTED.

± VARIED TO MISS BRIDGE PAV. REST

NEW TO EXISTING APPROACH SLAB CONNECTION

REMOVE CONCRETE FROM 18" STRIP WITH CARE TO MAKE CUT AS VERTICAL AS POSSIBLE. EXPOSED BARS TO BE CUT AND BENT TO FIT. ALL SCALE AND RUST REMOVED. EPOXY IS REQUIRED BETWEEN NEW AND EXISTING CONCRETE. EXISTING REINFORCING SHALL EXTEND 15" MIN. INTO NEW SECTION. PAYMENT FOR NEW SLAB INCLUDES ALL WORK HEREIN DESCRIBED.

TYPICAL LONGITUDINAL END VIEW

SECTION F-F

LONGITUDINAL ℄ SECTION

PLAN

NOTE:
PLAN VIEW IS PRESENTED WITH A TYPE I SPILLWAY ON ONE SIDE AND NO DRAINAGE STRUCTURE ON THE OTHER SIDE. SPILLWAY, WHERE REQUIRED, MAY BE TYPE 1,2,3 OR 4 AND ON BOTH SIDES OF APPROACH SLAB, ON JUST ONE SIDE, OR NO SPILLWAY, AS CONDITIONS WARRANT. APPROACH SLAB QUANTITIES AND PAY ITEM WILL NOT BE EFFECTED BY SPILLWAY REQUIREMENTS. SLOPED EDGE IS REQUIRED BOTH WITH AND WITHOUT SPILLWAY.

▼ SLOPED EDGE SHALL BE CONSTRUCTED MONOLITHIC WITH APPROACH SLAB. SLOPED EDGE SHALL BE TAPERED OUT BEYOND WINGWALL, EXCEPT WHERE BRIDGE DRAINAGE MUST BE CARRIED ACROSS SLAB TO ROADWAY STRUCTURE, SLOPED EDGE SHALL THEN RUN FULL LENGTH OF SLAB.

⊛ WITHOUT SPILLWAY, NUIMBER OF BLOCKOUTS VARY ACCORDING TO LENGTH OF WINGWALL

⊛⊛ SLOPED EDGE LENGTH SHALL EXTEND TO END OF WINGWALL OR SHALL BE 12'-0" IN LENGTH, WHICHEVER IS GREATER.

SKEWED SLAB: LONGITUDINAL BARS-NOMINAL LENGTH AND NUMBER REQUIRED SAME AS FOR UNSKEWED SLAB.

TRANSVERSE BARS-NUMBER REQUIRED SAME AS FOR UNSKEWED SLAB. NOMINAL LENGTH OF SKEWED= UNSKEWED NOMINAL LENGTH DIVIDED BY SIN A ROUNDED TO NEAREST INCH.

WHERE A =70° OR LESS 5-NO. 6 BARS, 8FT. LONG SHALL BE REQUIRED IN ACUTE CORNERS BELOW TOP MAT OF STEEL.

SKEW MODIFICATION SKETCH

NO SCALE

¾" EXPANSION JOINT DETAIL

THE ¾" EXPANSION JOINT SHOWN ABOVE IS REQUIRED BETWEEN APPROACH SLAB & BRIDGE AT ALL LOCATIONS, EXCEPT WHERE BRIDGE DECK JOINT SEAL (SEPARATE PLAN DETAILS) IS SPECIFIED.

DETAIL "A"

QUANTITIES & REINFORCEMENT FOR TYPICAL SLAB SIZES **

BW	"G" (= BW + 1'-6")	SQ. YDS. OF APPR. SLAB = (G+1')x 30 / 9	BOTTOM MAT REINF. 31'-2" LONG #7 LONGIT. BARS -NUMBER- (=1.5G + 1.75)	BOTTOM MAT REINF. 21- # 5 TRAIL BARS -LENGTH- (=G + 6")	TOP MAT REINF. 29'-6" LONG #5 LONGIT. BARS -NUMBER- =12/19(G+0.5)+1	TOP MAT REINF. 21- # 5 TRAIL BARS -LENGTH- (=G + 6")
28'-0"	29'-6"	101.67	46	30'-0"	20	30'-0"
30'-0"	31'-6"	108.33	49	32'-0"	22	32'-0"
32'-0"	33'-6"	115.00	52	34'-0"	23	34'-0"
34'-0"	35'-6"	121.67	55	36'-0"	24	36'-0"
36'-0"	37'-6"	128.33	58	38'-0"	25	38'-0"
38'-0"	39'-6"	135.00	61	40'-0"	27	40'-0"
40'-0"	41'-6"	141.67	64	42'-0"	28	42'-0"
42'-0"	43'-6"	148.33	67	44'-0"	29	44'-0"
44'-0"	45'-6"	155.00	70	46'-0"	30	46'-0"
46'-0"	47'-6"	161.67	73	48'-0"	32	48'-0"
48'-0"	49'-6"	168.33	76	50'-0"	33	50'-0"
50'-0"	51'-6"	175.00	79	52'-0"	34	52'-0"
52'-0"	53'-6"	181.67	82	54'-0"	36	54'-0"
54'-0"	55'-6"	188.33	85	56'-0"	37	56'-0"
56'-0"	57'-6"	195.00	88	58'-0"	38	58'-0"
58'-0"	59'-6"	201.67	91	60'-0"	39	60'-0"
60'-0"	61'-6"	208.33	94	62'-0"	40	62'-0"

** DATA IN ABOVE TABLE ARE BASED UPON COMMON SLAB/ BRIDGE WIDTHS. WHERE OTHER WIDTHS ARE ENCOUNTERED, THE FORMULAE AT COLUMN TOPS MAY BE USED IN DETERMINING ADDITIONAL DATA NEEDED.

GENERAL NOTES:

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

2. WHERE PORTLAND CEMENT CONCRETE PAVEMENT IS TO BE USED FOR ROADWAY PAVING, DOWEL BARS WILL BE INSTALLED IN THE APPROACH SLAB PER STANDARD 5046 H. PAYMENT FOR THE APPROACH SLAB WILL INCLUDE THESE DOWELS, WHEN THE APPROACH SLAB IS CONSTRUCTED BEFORE THE PCC PAVEMENT CONSTRUCTION.

3. THE CONCRETE CAPS ADJACENT TO THE APPROACH SLAB WILL HAVE HOLES APPROXIMATELY 9"39", BLOCKED OUT FOR GUARDRAIL POST INSTALLATIONS (SEE DETAIL). PAYMENT FOR APPROACH SLAB WILL INCLUDE THE ½"EXPANSION MATERIAL & CONCRETE CAPS WITH BLOCKED OUT HOLES. (SEE DETAIL AT FAR LEFT).

4. WIDTH OF APPROACH SLAB IS NORMALLY DETERMINED BY DISTANCE BETWEEN FACES OF BRIDGE END POSTS. DETAILS SHOWN ARE BASED UPON THE BRIDGE BARRIER FACE BEING TRANSITIONED 9"TO FACE OF END POST ON EACH SIDE. SEE BRIDGE PLANS IF BARRIER IS CONTINUED ACROSS APPROACH SLAB INSTEAD, SEE STANDARD 9017-M.

5. COVER OVER TOP MAT OF REINFORCING WILL MATCH THAT OF THE BRIDGE DECK.

6. WHERE APPROACH SLAB IS INTERCEPTED BY THE BRIDGE END POST, EXTERIOR BARS WILL BE SHORTENED AS NEEDED TO GIVE A 3"CLEARANCE TO STRUCTURE.

7. PAY AREA FOR APPROACH SLAB SHALL BE COMPUTED AS A PRODUCT OF THE OVERALL SLAB WIDTH (G+1' 3)TIMES THE LENGTH (30/3) WITH NO DEDUCTIONS MADE FOR AREAS OCCUPIED BY THE END POST & EXPANSION JOINTS OR BY DRAINAGE STRUCTURES, AND NO ADDITIONS MADE FOR SIDEWALKS OR OTHER ITEMS WHEN REQUIRED WITH THE APPROACH SLAB.

8. SEE SEPARATE PLAN DETAILS FOR SUBBASE OR OTHER MATERIALS UNDER THE APPROACH SLAB. IF "CS"CONC. OR P.C. CONC. SUBBASE IS USED, CLEAR POLYETHYLENE SHEETING 8 MILS MIN. THICKNESS, WITH A 6"OVERLAP, UNIFORMLY LAID. SHALL BE REQUIRED UNDER THE APPROACH SLAB TO PREVENT BONDING. POLYETHYLENE SHEETING SHALL BE NEW, UNUSED AND FREE OF HOLES, RIPS AND TEARS.

9. ALL APPROACH SLABS EXCEEDING 42' IN WIDTH WILL CONTAIN A LONGITUDINAL CONSTRUCTION JOINT, SLABS EXCEEDING 60' AND 90' IN WIDTH SHALL CONTAIN 2 AND 3 LONGITUDINAL CONSTRUCTION JOINTS RESPECTIVELY. SECTIONS BETWEEN JOINTS OR BETWEEN A JOINT AND SLAB EDGE SHALL NOT BE LESS THAN 12' OR MORE THAN 30' WIDE. REINFORCEMENT STEEL REMAINS UNCHANGED AND SHALL EXTEND THRL JOINTS. JOINTS SHALL BE LOCATED AT LANE LINES TO PROVIDE OFFSET FROM WHEEL PATHS.

10. IF BRIDGE DECK JOINT SEAL IS USED BETWEEN APPROACH SLAB AND BRIDGE, THE END OF SLAB ADJACENT TO END POST WILL BE SEALED WITH LOW MODULUS SILICONE SEALANT.

NOTE: THIS STANDARD REPLACES STANDARD 9017 H

DATE	REVISION	BY
9-20-02	DIM. SLOPED EDGE	S.V.M.
4-27-89	BLOCKOUT SPA.	K.L.J.
7-8-96	REDUCED A.S. WIDTH TO G+1	R.M.U.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
REINFORCED CONCRETE APPROACH SLAB
30 FT. LENGTH
TYPICAL USE : WHERE SHOULDER IS ADJACENT TO ROADWAY AND/OR BRIDGE

SCALE AS SHOWN JUNE, 1985

DES. R.M.U. DRW. R.M.U. TRA. G.M.E. CHK. R.K.C.
(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGR.
(APPROVED) STATE HIGHWAY ENGINEER

NUMBER 9017P

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REVISION DATES

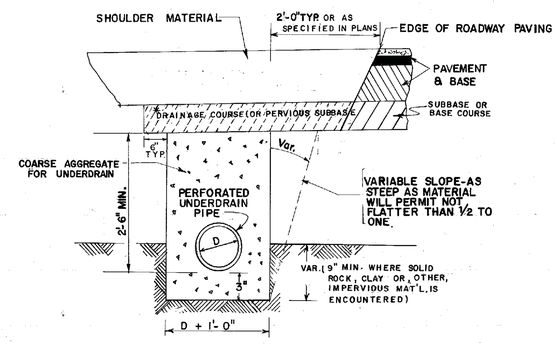
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-023

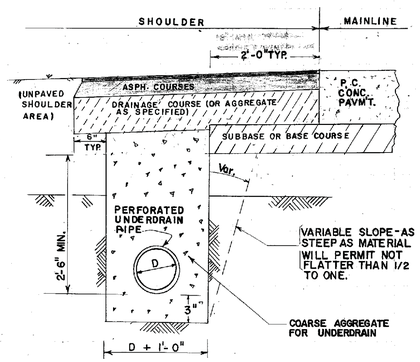
RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	221	267

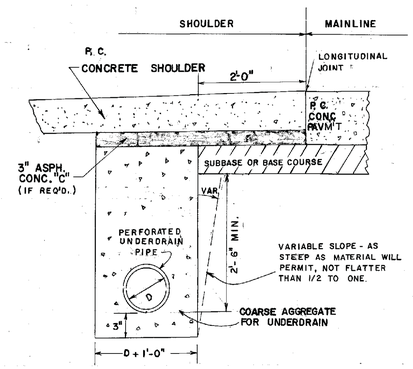
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



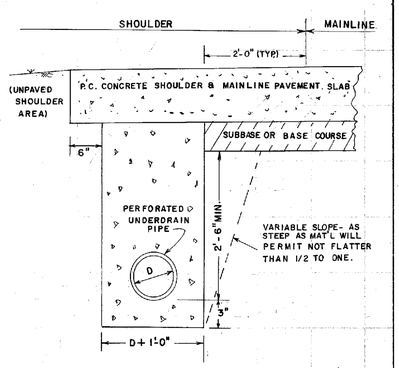
GENERAL DETAIL



ASPHALT SHOULDER - P.C.C. PAVEMENT



UNDER CONCRETE SHOULDER



UNDER CONCRETE SHOULDER*

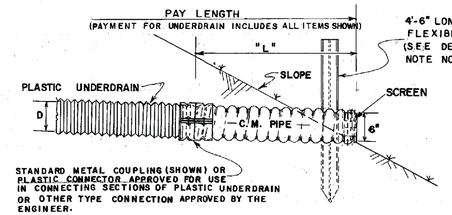
*CONSTRUCTED MONOLITHIC WITH MAINLINE 4'-0" PAVED SHOULDER SHOWN

PERFORATED UNDERDRAIN — TYPICAL INSTALLATIONS

*NOTE: PERFORATED UNDERDRAIN PIPE WILL BE INSTALLED COMPLETE PRIOR TO PLACING PERVIOUS SUB-BASE OR DRAINAGE COURSE.

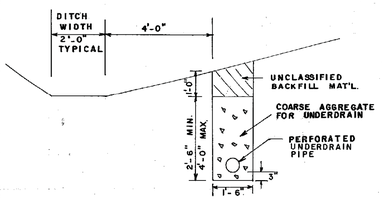
OUTLET DETAIL FOR PLASTIC UNDERDRAIN

(REQUIRED AT ALL OUTLETS WHERE PERFORATED PLASTIC UNDERDRAIN IS TERMINATED ON SLOPES).



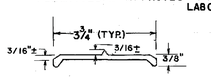
NOTE : "L" = MINIMUM LENGTH OF CORRUGATED METAL PIPE SECTION. THE C.M. OUTLET STUB SECTION MAY BE PERFORATED OR MAY BE NON-PERFORATED.

C.M. OUTLET STUB - MINIMUM LENGTHS	
SLOPE	"L"
2:1 OR STEEPER	2'-10" MIN.
2+:1 TO 4:1	5'-0" MIN.
4+:1 TO 6:1	10'-0" MIN.
FLATTER THAN 6:1	14'-0" MIN.



ADJACENT TO DITCH

NOTE: ALTERNATE FLEXIBLE DELINEATORS PERMITTED IF APPROVED BY THE D.O.T. LABORATORY.



DELINEATOR POST SECTION (TYP.)

COLOR: WHITE

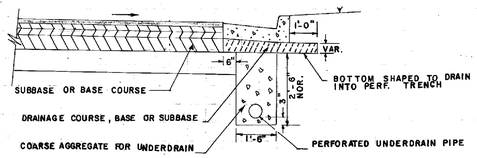
LENGTH: 4'-6" (from top to bottom point)

SPECIFICATION: SEC. 911 (EXCEPT REFLECTIVE SHEETING IS NOT REQUIRED)

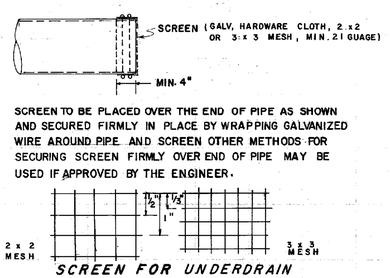
SPECIAL NOTE:

DETAILS SHOWN HERE ARE TYPICAL AND MAY BE USED BY THE DESIGNER AS A GUIDE IN PREPARING TYPICAL SECTIONS. MINIMUM TRENCH DEPTHS & TRENCH WIDTHS SHOULD BE ADHERED TO AS SHOWN HOWEVER. SHOULDER DETAILS, PAVEMENT DESIGNS, DRAINAGE COURSES, ETC., WILL BE AS SHOWN ON THE TYPICAL SECTIONS FOR THE PROJECT AND MAY VARY FROM THE DEPICTIONS ABOVE.

ON CONSTRUCTION, THE TYPICAL SECTIONS IN THE PLANS SHOULD BE USED FOR SPECIFIC DETAILS. IF UNDERDRAIN IS NOT SHOWN ON THE TYPICAL SECTIONS OR ELSEWHERE IN THE PROJECT PLANS, INSTALLATION WILL BE AS SHOWN ABOVE AND AS DIRECTED BY THE ENGINEER.

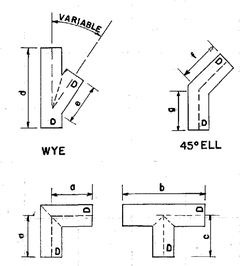


UNDER CURB & GUTTER



SCREEN TO BE PLACED OVER THE END OF PIPE AS SHOWN AND SECURED FIRMLY IN PLACE BY WRAPPING GALVANIZED WIRE AROUND PIPE AND SCREEN OTHER METHODS FOR SECURING SCREEN FIRMLY OVER END OF PIPE MAY BE USED IF APPROVED BY THE ENGINEER.

SCREEN FOR UNDERDRAIN



GENERAL NOTES.

1. UNDERDRAINS MAY BE PLACED IN SHOULDER AREAS OR AS TRANSVERSE DRAINAGE UNDER PAVEMENT. SEE TYPICAL SECTION AND PLAN AND PROFILE SHEETS FOR SPECIAL CONDITIONS.
2. TRENCH SHALL BE SHAPED WITH SIDES AS NEARLY VERTICAL AS IS PRACTICAL AND WITH A FLAT BOTTOM.
3. MINIMUM GRADIENT FOR UNDERDRAIN PIPE SHALL BE 0.15%.
4. MAXIMUM DISTANCE BETWEEN OUTLETS SHALL BE 400' TO 500' WHERE CONDITIONS PERMIT.
5. DEAD ENDS OF PIPE SHALL BE CLOSED WITH METAL OR PLASTIC CAPS OR CONCRETE PLUGS. OUTFALL ENDS OF PIPE SHALL BE EQUIPPED WITH SCREEN.
6. LATERAL CONNECTIONS SHALL BE MADE WITH SUITABLE STANDARD FITTINGS. (ELLS, WYES OR TEES AS DETAILED)
7. THE DIMENSIONS (a thru g) SHOWN ON THE LATERAL CONNECTIONS FOR THE VARIOUS KINDS AND SIZES OF PERFORATED UNDERDRAIN SHALL BE IN AGREEMENT WITH THE MANUFACTURERS' STANDARD PRACTICE.
8. PLAIN WHITE (NO REFLECTIVE SHEETING) FLEXIBLE DELINEATOR POSTS WILL BE REQUIRED AT ALL OUTLETS EXITING ON SLOPES, BUT NOT REQUIRED IF UNDERDRAIN EXITS IN CONC. DITCH PAVING, DROP INLETS, ETC., POSTS WILL BE 2 FT.± IN THE GROUND PLACED AS DIRECTED BY THE ENGINEER, SO AS TO BE MOST VISIBLE TO MOWERS, PAYMENT FOR UNDERDRAIN WILL INCLUDE THE DELINEATORS.

R.M.U. ADD O & G DITCH INSTALL 5-7-85
R.M.U. ADD MONOLITHIC CONC. SH. 5-20-81
R.M.U. FLEXIBLE DELINEATOR 3-20-81

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

PERFORATED UNDERDRAIN

NO SCALE

REV. & REDR. JULY 1980

REV. R.M.U.
TRA G.M.F.
CHK. R.K.C.

SUBMITTED: State Road and Airport Design Engr.
APPROVED: Thomas D. Mosteller
State Highway Engineer

NUMBER 9029B

FORM EF3

3/1/2007 GPLN

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-024

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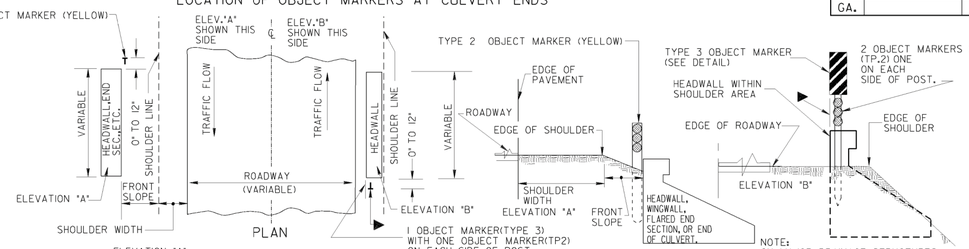
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

SEE T-22A and T-22B FOR BRIDGE DELINEATION DETAILS

LOCATION OF OBJECT MARKERS AT CULVERT ENDS



ELEVATION "A"
ONE OBJECT MARKER (YELLOW) (TYPE 2) SHALL BE USED WHERE HEADWALLS, FLARED END SECTIONS, OR CULVERT ENDS ARE LOCATED WITHIN THE FRONT SLOPE AS SHOWN IN ELEVATION "A" DETAIL.

ELEVATION "B"
A COMBINATION OF ONE OBJECT MARKER (TYPE 3) AND TWO OBJECT MARKERS (YELLOW) (TYPE 2), ONE ON EACH SIDE OF THE POST, SHALL BE USED WHERE HEADWALLS OF CULVERTS ARE LOCATED WITHIN THE EXISTING SHOULDER AREA AS SHOWN IN ELEVATION "B" DETAIL.

▶ = THE INSIDE EDGE OF THE MARKER SHALL BE IN LINE WITH THE INNER EDGE OF THE OBSTRUCTION

1 OBJECT MARKER(TYPE 3) WITH ONE OBJECT MARKER(TP2) ON EACH SIDE OF POST.

NOTE:
ON MAJOR DRAINAGE STRUCTURES ON FEDERAL RESURFACING PROJECTS, WHEN ELEVATION "B" EXISTS, THE FIELD REVIEW TEAM WILL RECOMMEND WHICH TO USE; GUARDRAIL, ADDITIONAL DELINEATION, OR EXTENSION OF DRAINAGE STRUCTURE.

RECOMMENDED SPACING FOR DELINEATORS

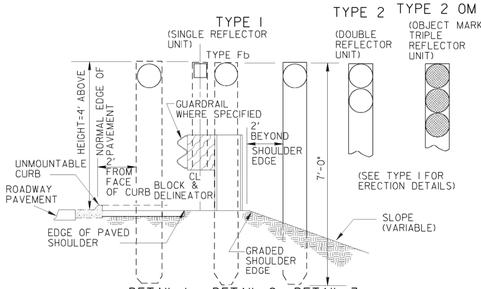
DELINEATORS SHOULD NORMALLY BE SPACED 528' APART, WHERE SUCH IS INTERRUPTED BY DRIVEWAYS, CROSSROADS, ETC., AND WHERE UNDER THE NORMAL SPACING, A DELINEATOR WOULD FALL WITHIN SUCH AN AREA, THAT DELINEATOR MAY BE MOVED IN EITHER DIRECTION A DISTANCE NOT EXCEEDING 1/4 (132') OF THE NORMAL SPACING. IF SUCH DELINEATOR STILL FALLS WITHIN THAT AREA, IT SHOULD BE ELIMINATED. SEE TABLE BELOW FOR RECOMMENDED SPACING OF HORIZONTAL CURVES.

TABLE SPACING (1) FOR DELINEATORS ON HORIZONTAL CURVES

RADIUS OF CURVE (IN FEET)	SPACING ON CURVE (IN FEET)	SPACING IN ADVANCE & BEYOND CURVE (IN FEET) (MAINLINE ONLY)		
		1ST	2ND	3RD
50	20	40	65	125
150	30	60	90	180
200	35	70	110	215
250	40	85	125	250
300	50	95	145	290
400	55	110	170	300
500	65	125	190	300
600	70	140	210	300
700	75	150	230	300
800	80	165	245	300
900	85	175	260	300
1000	90	185	275	300

(1) SPACING, S, FOR SPECIFIC RADII NOT SHOWN MAY BE INTERPOLATED FROM THE TABLE OR COMPUTED FROM THE FORMULA $S = 3\sqrt{R-50}$, WHERE R IS THE RADIUS OF CURVATURE IN FT. AND S IS ROUNDED TO THE NEAREST 5 FT. THE SPACING TO THE FIRST DELINEATOR IN ADVANCE OF THE CURVE IS 2S, TO THE SECOND 3S, AND THE THIRD 6S, BUT NONE TO EXCEED 300 FEET, MINIMUM SPACING IS 20 FEET.

DELINEATOR ERECTION DETAILS

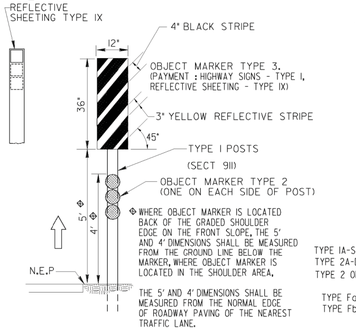


NOTE: ERECTION DETAILS ABOVE ARE TYPICAL FOR ALL TYPES EXCEPT IA, 2A, 3A, & Fb, WHICH ARE MOUNTED ON THE POST OR STRUCTURE ALREADY IN PLACE.

DETAIL 1: ERECTION FOR ROADWAYS HAVING UNMOUNTABLE CURBS.

DETAIL 2: ERECTION FOR ROADWAY WITH GUARDRAIL, DELINEATOR POST SHALL BE IN THE SAME PLANE AS FACE OF GUARDRAIL POSTS, EXCEPT FOR TYPE Fb, AS SHOWN, AND POSSIBLY AT BRIDGE ENDS AS INDICATED ABOVE.

DETAIL 3: ERECTION FOR ROADWAYS HAVING SHOULDERS (WITHOUT CURBS). WITH MOUNTABLE CURBS, ERECTION SHALL BE SAME AS DETAIL 3.



Φ WHERE OBJECT MARKER IS LOCATED BACK OF THE GRADED SHOULDER EDGE ON THE FRONT SLOPE, THE 5' AND 4' DIMENSIONS SHALL BE MEASURED FROM THE GROUND LINE BELOW THE MARKER, WHERE OBJECT MARKER IS LOCATED IN THE SHOULDER AREA.

THE 5' AND 4' DIMENSIONS SHALL BE MEASURED FROM THE NORMAL EDGE OF ROADWAY PAVING OF THE NEAREST TRAFFIC LANE.

DETAIL OF OBJECT MARKER

TYPES OF DELINEATORS

TYPE 1 - ALUMINUM OR GALVANIZED STEEL FLANGED "U" CHANNEL POST WITH SINGLE REFLECTOR UNIT. REFLECTOR UNIT TO CONSIST OF: (A) ONE 3" DIAMETER SEALED PRISMATIC REFLEX REFLECTOR WITH PLATE AND FRAME, OR, (B) ONE 4" X 5" RECTANGULAR TYPE I, LEVEL A REFLECTIVE SHEETING REFLECTOR WITH PLATE AND FRAME, OR (C) ONE 3 1/4" DIAMETER CENTER MOUNT SEALED PRISMATIC REFLEX REFLECTOR HOUSED IN ALUMINUM BACKING WITH SINGLE GROMMETTED HOLE IN CENTER OF REFLECTOR.

TYPE 2 - ALUMINUM OR GALVANIZED STEEL FLANGED "U" CHANNEL POST WITH DOUBLE REFLECTOR UNIT. REFLECTOR UNIT TO CONSIST OF: (A) TWO 3" DIAMETER SEALED PRISMATIC REFLEX REFLECTORS WITH PLATE AND FRAME, OR, (B) TWO 4" X 5" RECTANGULAR TYPE I, LEVEL A REFLECTIVE SHEETING REFLECTORS WITH PLATE AND FRAME, OR (C) TWO 3 1/4" DIAMETER CENTER MOUNT SEALED PRISMATIC REFLEX REFLECTOR HOUSED IN ALUMINUM BACKING WITH SINGLE GROMMETTED HOLE IN CENTER OF EACH REFLECTOR.

TYPE 3 - ALUMINUM OR GALVANIZED STEEL FLANGED "U" CHANNEL POST WITH TRIPLE REFLECTOR UNIT. REFLECTOR UNIT TO CONSIST OF: (A) THREE 3" DIAMETER SEALED PRISMATIC REFLEX REFLECTORS WITH PLATE AND FRAME, OR, (B) THREE 4" X 5" RECTANGULAR TYPE I, LEVEL A REFLECTIVE SHEETING REFLECTORS WITH PLATE AND FRAME, OR (C) THREE 3 1/4" DIAMETER CENTER MOUNT SEALED PRISMATIC REFLEX REFLECTORS HOUSED IN ALUMINUM BACKING WITH SINGLE GROMMETTED HOLE IN CENTER OF EACH REFLECTOR.

TYPE 1A-SINGLE, TYPE 2A-DOUBLE, TYPE 2 OM-TRIPLE: REFLECTOR UNIT ONLY MOUNTED ON POST OR STRUCTURE ALREADY IN PLACE. REFLECTOR UNIT SAME AS FOR TYPE 1, 2, AND 2 OM, RESPECTIVELY.

TYPE Fa, TYPE Fb: FLEXIBLE DELINEATOR POSTS SHALL BE USED AT LOCATIONS WHERE HIGH FREQUENCY OF HITS ARE CONTEMPLATED, SUCH AS GORE AREAS, OUTSIDE OF SHARP CURVES, ETC., AND MAY ALSO BE USED AS ALTERNATIVES TO EITHER TYPE 1, TYPE 2, OR TYPE 3 DELINEATORS WHEN SPECIFIED ON THE PLANS. DIFFERENT DESIGN FLEXIBLE DELINEATORS PERMITTED, IF APPROVED BY THE GA. D.O.T. OFFICE OF MATERIALS AND RESEARCH.

LOCATION OF DELINEATORS ON FREEWAY & EXPRESSWAY TYPE HIGHWAYS

TYPES OF DELINEATORS, ERECTION LOCATION, AND SPACING SHALL BE AS FOLLOWS.

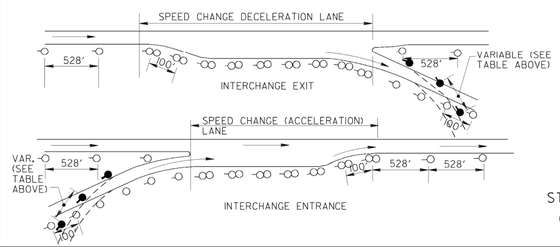
○ SINGLE CRYSTAL (WHITE) REFLECTOR UNITS (TYPE 1 DELINEATOR) ON RIGHT SIDE OF MAINLINE AT 528 FOOT SPACING & ON RT. SIDE OF RAMP TGT. SECTIONS AT 100 FOOT SPACING FROM PHYSICAL CORE TO RAMP TERMINUS.

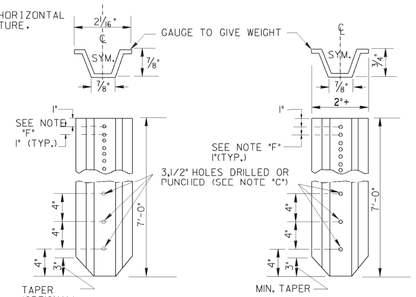
○○ DOUBLE CRYSTAL (WHITE) REFLECTOR UNITS (TYPE 2 DELINEATOR) ON RIGHT SIDE OF SPEED CHANGE (ACCELERATION & DECELERATION) LANES THAT ARE ON RIGHT SIDE OF MAINLINE AT 100 FOOT SPACING FROM TAPER TO PHYSICAL CORE.

● (YELLOW) SINGLE YELLOW REFLECTOR UNITS (TYPE 1 DELINEATOR) ON LEFT SIDE OF RAMP HORIZONTAL CURVES & ON LEFT SIDE OF MAINLINE HORIZONTAL CURVES GREATER THAN 3° CURVATURE.

●● (YELLOW) DOUBLE YELLOW REFLECTOR UNITS (TYPE 2 DELINEATOR) ON LEFT SIDE OF SPEED CHANGE (ACCELERATION & DECELERATION) LANES THAT ARE ON LEFT SIDE OF MAINLINE AT 100 FOOT SPACING FROM TAPER TO PHYSICAL CORE.

● (RED) SINGLE REFLECTOR UNITS (TYPE 1 DELINEATOR) ON LEFT SIDE OF EXIT RAMPS AT 100 FOOT SPACING FROM "WRONG WAY" SIGN TO RAMP TERMINUS. USE TYPE IA RED DELINEATORS ON RIGHT OR LEFT SIDE OF EXIT RAMPS WHERE TYPE I WHITE OR YELLOW DELINEATORS ARE USED FACE OF RED DELINEATORS ORIENTED OPPOSITE TO NORMAL TRAFFIC FLOW.

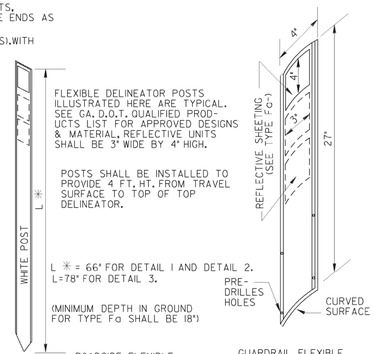




(ALTERNATES ALLOWABLE IF LISTED IN GA. D.O.T. QPL LIST.)

STEEL FLANGED "U" CHANNEL POST (1.12 LBS./FT.) (GALVANIZED)

ALUMINUM FLANGED "U" CHANNEL POST (0.78 LBS/FT.)



ROADSIDE FLEXIBLE (COMPOSITE ALLOY) DELINEATOR POST

GUARDRAIL FLEXIBLE (COMPOSITE ALLOY) DELINEATOR POST

TYPE Fa-1 (ONE REFLECT.)
TYPE Fa-2 (TWO REFLECT.)
TYPE Fa-2 OM (THREE REFLECT.)

TYPE Fb-1 (ONE REFLECT.)
TYPE Fb-2 (TWO REFLECT.)
TYPE Fb-2 OM (THREE REFLECT.)

GENERAL NOTES:

A- SPECIFICATIONS: GA. STANDARD, CURRENT EDITION, & SUPPLEMENTS THERETO.

B- REFLECTORS FOR TYPES 1 AND 1A SHALL BE CRYSTAL (WHITE), YELLOW OR RED, AS SPECIFIED ON THE PLANS. REFLECTORS FOR TYPES 2 AND 2A SHALL BE CRYSTAL (WHITE) OR YELLOW AS SPECIFIED ON THE PLANS. REFLECTORS FOR TYPE 3 AND 3A SHALL BE YELLOW ONLY AS SPECIFIED ON THE PLANS.

C- WHEN POSTS ARE SET IN CONCRETE, METAL RODS SHALL BE INSERTED IN 3 1/2" DIA. HOLES LOCATED AT BOTTOM OF POST. MIN SIZE OF RODS SHALL BE 1/4" DIA. X 3" LONG.

D- MONODIRECTIONAL DELINEATORS SHALL BE USED AND ERECTED AT THE RECOMMENDED SPACING, UNLESS OTHERWISE SPECIFIED ON THE PLANS.

E- FOR ADDITIONAL DATA ON DELINEATORS, REFER TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND ALL SUPPLEMENTS THERETO.

F- DRILL OR PUNCH 17 3/8" DIA. HOLES ON 1" CENTERS FOR A DISTANCE OF 17" MINIMUM FROM TOP POST.

BY	REVISION	DATE
G.O	REV. OBJECT MARKER TYPE, I 4-10-06	
	DELETED DETAIL AND REV.	
	REFLECTIVE SHEETING TYPE	

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
DELINEATORS & MARKERS AND ALTERNATE POSTS

NO SCALE — REV. & REDR. MAR., 2001

DES. ____ REV. ____ TRA. ____ CHK. ____

(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER

(APPROVED) CHIEF ENGINEER

NUMBER 9030C

10/3/2006 3:09:52 PM \\GDOT-DSN1\GOPLOT\QCF\ps_tiff_output.qcf gowens M:\GARY\Revised 9030C\9030C.prf

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

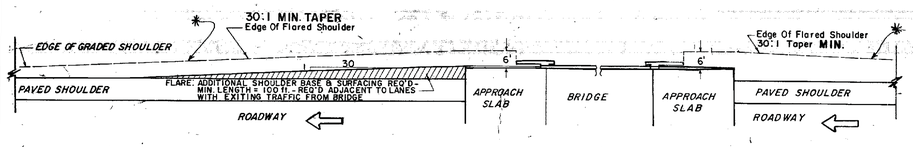
DRAWING No. 41-025

3/1/2007 GPLN

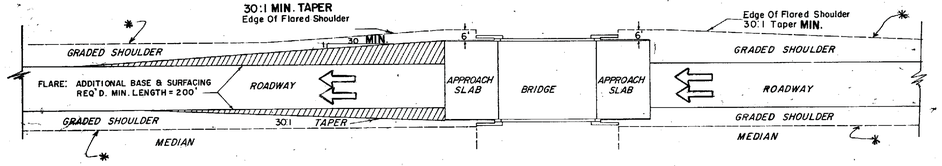
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	223	267

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

FLARE DETAILS AT BRIDGE ENDS

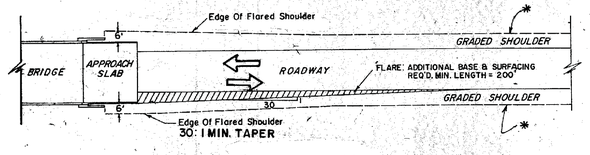


(ROADWAY WITH PAVED SHOULDERS)



(ONE-WAY TRAFFIC— GRADED SHOULDERS)

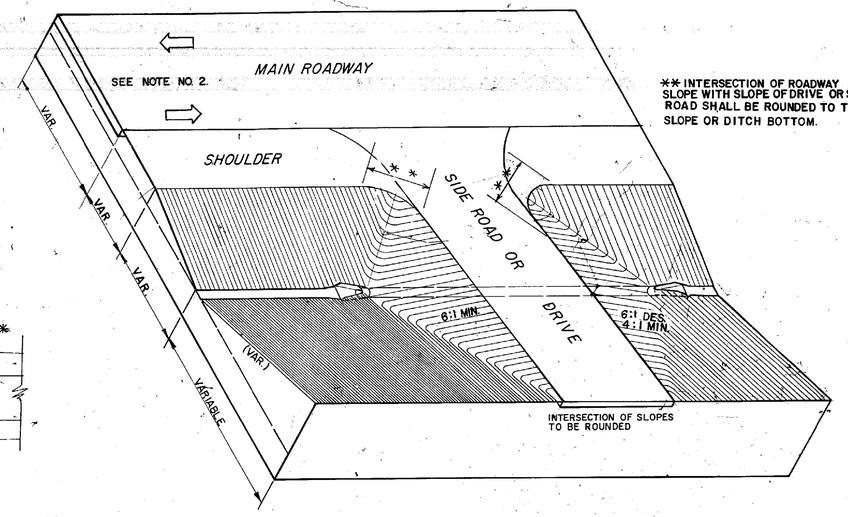
GENERAL NOTE (FLARES)
EARTHWORK QUANTITIES SHALL REFLECT ADDITIONAL MATERIAL REQUIRED FOR CONSTRUCTION OF FLARED SHOULDERS.



(TWO-WAY TRAFFIC— GRADED SHOULDERS)

*WHERE THE WIDENED ROADWAY SHOULDER FOR GUARDRAIL GIVES THE SAME OFFSET AS AT THE APPROACH SLAB, THIS LINE REMAINS STRAIGHT TO THE BRIDGE END. (ALSO, SEE GUARDRAIL STANDARDS OR DETAILS FOR ADDITIONAL FLARE AT ANCHORAGES.)

ISOMETRIC VIEW OF SIDE ROAD OR DRIVE



** INTERSECTION OF ROADWAY SLOPE WITH SLOPE OF DRIVE OR SIDE ROAD SHALL BE ROUNDED TO TOE OF SLOPE OR DITCH BOTTOM.

NOTES:
1. ENDS OF SIDE DRAINS WHICH FALL INSIDE THE CLEAR ZONE WIDTH SHALL REQUIRE SAFETY END SECTIONS FOR SIDE DRAIN PIPE.
2. SIDE SLOPES ON THE APPROACH SIDE OF TRAFFIC SHALL NOT BE STEEPER THAN 6:1.
3. SIDE DRAIN END SECTIONS SHOULD FIT THE SIDE SLOPE TERRAIN AND SHOULD NOT PROTRUDE.
4. SIDE SLOPES FROM SIDE ROAD OR DRIVE ALSO APPLY TO FILL SECTIONS.

BY	REVISION	DATE
R.MU.	GEN. REVISION	8-18-98
R.MU.	ADD METRIC NOTE	10-12-98
R.MU.	ADD ANGLE FOR RWD SH.	5-25-99
R.MU.	ADJ. END SEC. BREAKAWAY	5-25-99
R.MU.	REVISION	10-31-14

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
STANDARD

ISOMETRIC VIEW OF SIDE ROAD OR DRIVE
FLARE DETAILS AT BRIDGE ENDS

NO SCALE — AUG., 1958

DESIGNED: RBS
DRAWN: AVS
TRACED: AVS
CHECKED: RBS

SUBMITTED
STATE [redacted]
APPROVED
STATE HIGHWAY ENGINEER

NUMBER 9031T

REVISION DATES		

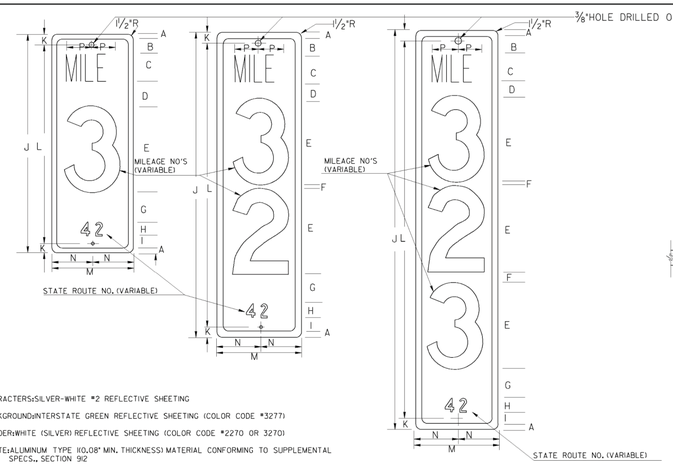
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING NO. 41-026

3/1/2007 GPLN

8/7/2006 3:10:25 PM \\GDOT-DSN1\GOPLOT\QCF\qa_tiff_output.qcf dgowens M:\GARY\Revised 9033\9033.prf QQ-RD6

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



CHARACTERS:SILVER-WHITE *2 REFLECTIVE SHEETING

BACKGROUND:INTERSTATE GREEN REFLECTIVE SHEETING (COLOR CODE *3277)

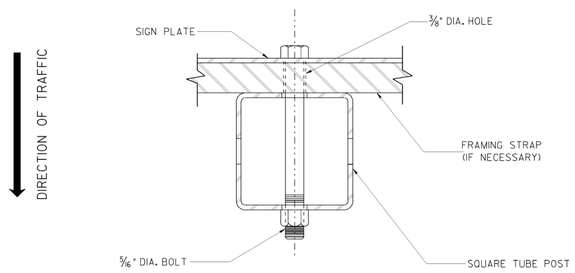
BORDER:WHITE (SILVER) REFLECTIVE SHEETING (COLOR CODE *2770 OR 3270)

PLATE:ALUMINUM TYPE NO.08" MIN. THICKNESS) MATERIAL CONFORMING TO SUPPLEMENTAL SPECS., SECTION 912

TYPICAL MILEPOST SIGN DETAILS

NOTE: INSTALLATION OF MILEPOST SHALL BE WITHHELD UNTIL THE GRASS IS ACCEPTED BY THE STATE.

POST	STUB SIZE
TYPE 7	2¼" × 2¼"

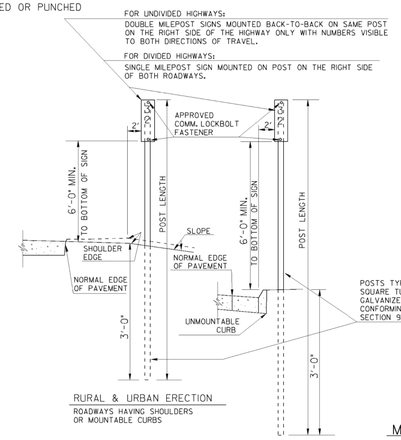


TYPICAL DETAIL

NOTE: SAMPLE OF COMMERCIAL LOCKBOLT FASTENER TO BE USED MUST BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION

MILE POST MARKERS
DIMENSIONS (INCHES)

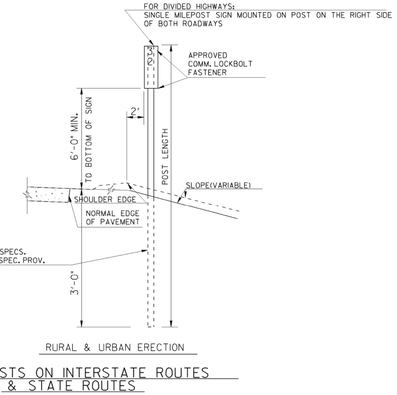
	FREEWAYS AND EXPRESSWAYS			CONVENTIONAL HIGHWAYS		
	1-DIGIT	2-DIGITS	3-DIGITS	1-DIGIT	2-DIGITS	3-DIGITS
A	½	½	½	½	½	½
B	2½	2½	2½	1½	1½	1½
C	4	4	4	4	4	4
D	3	3	3	2	2	2
E	10	10	10	6	6	6
F		3	2½		3	3
G	1¼	¾	¾	1¼	1¼	1¼
H	ID	ID	ID	ID	ID	ID
I	1¼	¾	¾	1¼	1¼	1¼
J	24	36	48	18	27	36
K	1	1	1	1	1	1
L	22	34	46	16	25	34
M	12	12	12	10	10	10
N	6	6	6	5	5	5
P	4¾	4¾	4¾	3¾	3¾	3¾
POST LENGTH (LIN.FT.)	11	12	13	11	12	12



RURAL & URBAN ERECTION
ROADWAYS HAVING SHOULDERS OR MOUNTABLE CURBS

RURAL & URBAN ERECTION
ROADWAYS WITH UNMOUNTABLE CURBS

MILEPOSTS ON STATE ROUTES
(FOR CONVENTIONAL HIGHWAYS ONLY)



RURAL & URBAN ERECTION

MILEPOSTS ON INTERSTATE ROUTES & STATE ROUTES

(FOR FREEWAYS & EXPRESSWAYS) ROADWAYS HAVING GUARDRAIL NOT SHOWN. SEE NOTE BELOW.

TYPICAL MILEPOST ERECTION DETAILS

NOTE: MILEPOSTS SHALL BE LOCATED IN LINE WITH DELINEATOR POST OR, IF APPROPRIATE, IN THE SAME PLANE AS FACE OF GUARDRAIL POST WITH THE BOTTOM OF THE MARKER AT THE SAME HEIGHT AS THE DELINEATOR AS SHOWN IN THE DETAILS ABOVE.

GENERAL NOTES:

1. MILEPOST ARE TO BE LOCATED AND ERECTED ON ACCURATE MILEAGE MEASUREMENTS MADE ON EITHER THE NORTH-BOUND OR EASTBOUND ROADWAY BEGINNING WITH ZERO MILEAGE AT THE SOUTH OR WEST STATE LINES FOR THE INTERSTATE HIGHWAY SYSTEM AND AT THE SOUTH OR WEST COUNTY LINES FOR THE STATE HIGHWAY SYSTEM AND AT JUNCTIONS WHERE ROUTES BEGIN AND RUNNING CONTINUOUS WITHIN THE STATE FOR THE INTERSTATE HIGHWAY SYSTEM AND RUNNING CONTINUOUS WITHIN THE COUNTY FOR THE STATE HIGHWAY SYSTEM. CORRESPONDING MILEPOSTS FOR SB OR WB ROADWAY OF DIVIDED HIGHWAYS ONLY, ARE TO BE LOCATED DIRECTLY OPPOSITE THOSE ON NB OR EB ROADWAYS.
2. WHERE ANY INTERFERENCE PREVENTS INSTALLING THE MILEPOST AT ITS ACCURATE LOCATION, IT MAY BE MOVED IN EITHER DIRECTION A MAXIMUM OF 50'. IF IT CANNOT BE PLACED WITHIN THAT DEGREE OF ACCURACY, IT SHALL BE OMITTED. MEASUREMENT TO THE NEXT MILEPOST LOCATION SHALL BE MADE FROM THE ACCURATELY ESTABLISHED MILE LOCATION AND NOT FROM THE ADJUSTED LOCATION.
3. MILEPOSTS SHALL BE INSTALLED ONLY AFTER IMPROVEMENTS ON EITHER SYSTEM HAVE PROGRESSED SUFFICIENTLY TO PERMIT THE POSTING OF ACCURATE MILEAGE. MILEPOSTS WILL ONLY BE ERECTED ON PAVED ROADS.
4. IT SHALL BE THE RESPONSIBILITY OF THE ENGINEER TO MARK THE LOCATION AND NUMERICAL DESIGNATION OF EACH MILEPOST. DISTANCES WILL BE OBTAINED BY THE USE OF A CERTIFIED ODOMETER IN A VEHICLE TRAVELING IN THE RIGHT HAND LANE IN THE DIRECTION IN WHICH THE MILEAGE INCREASES. NUMERICAL DESIGNATIONS SHALL BE DETERMINED AND COORDINATED FROM OFFICIAL GEORGIA D.O.T. MILEPOST RECORDS. CONTACT THE OFFICE OF TRAFFIC ENGINEERING AND SAFETY FOR CERTIFIED MILEPOST DATA.
5. WHERE TWO ROUTES ARE COMMON, THE MILEAGE WILL ONLY BE CARRIED AS THE LOWER NUMBERED ROUTE, BUT THE CORRECT MILEAGE ON THE OTHER ROUTE WILL BE MEASURED AND AFTER THE ROUTES SEPARATE, MILEPOST SHOWING THE CORRECT MILEAGE WILL BE ERECTED AS USUAL.
6. MATERIALS SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:
   (A) HIGHWAY SIGNS-SECTION 636
   (B) SIGN FABRICATION-SECTION 910, EXCEPT THAT THE MESSAGE SHALL BE OF REFLECTIVE MATERIAL, PRESSURE SENSITIVE.
   (C) SIGN POST-SECTION 911 AND/OR SPEC. PROV.
   (D) SIGN BLANKS- SECTION 912
   (E) REFLECTORIZING MATERIALS-SECTION 913

G.D.O. BY	REVISION	DATE
	REVISED POST TO A TYPE 7	3-30-06

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

MILEPOSTS

NO SCALE — RE-DRAWN SEPT. 1999

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

(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER

(APPROVED) CHIEF ENGINEER

NUMBER 9033

3/1/2007 GPLN

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-027

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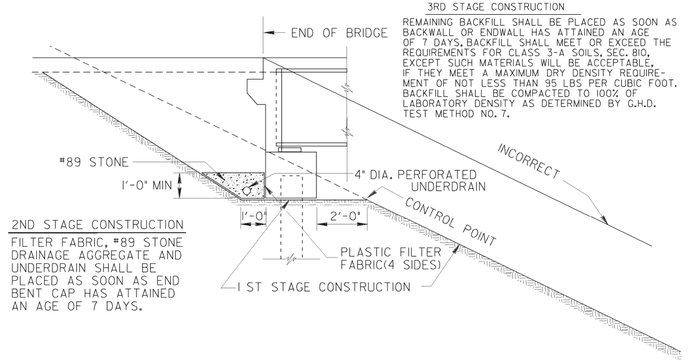
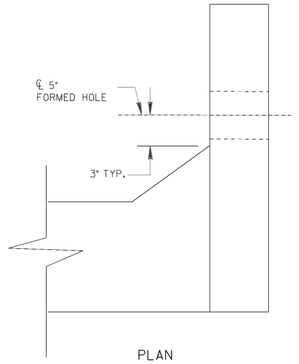
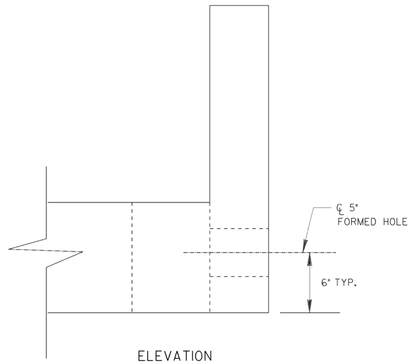


SKETCH SHOWING CONSTRUCTION OF FILLS AT ENDS OF BRIDGES

NO SCALE



PLAN

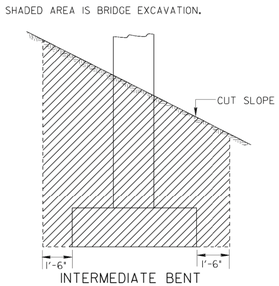


ELEVATION

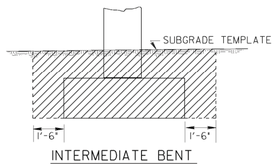
WINGWALL DETAIL

NOTES:

1. PERFORATED UNDERDRAIN SHALL EXTEND TO THE INSIDE FACE OF WING AT THE HIGH END OF THE CAP.
2. AT THE LOW END OF THE CAP, CONNECT PERFORATED UNDERDRAIN TO A COMPATIBLE SOLID PIPE FROM THE INSIDE FACE OF WING UNTIL IT EXITS THE SLOPE. SOLID PIPE SHALL HAVE A MINIMUM SLOPE OF 2%.
3. SOLID PIPE MAY BE PLACED AT EITHER END OF CAPS WITH LEVEL BOTTOM.
4. PERFORATED UNDERDRAIN SHALL BE INSTALLED PARALLEL TO BOTTOM OF CAP. LOW POINTS OR SAGS THAT MAY TRAP WATER WILL NOT BE ALLOWED.
5. FILTER FABRIC SHALL NOT BE ATTACHED TO THE END BENT CAP.
6. COST FOR PROVIDING AND INSTALLING FILTER FABRIC, UNDERDRAIN, AND STONE SHALL BE INCLUDED IN THE PRICE BID FOR CONTRACT ITEMS.



INTERMEDIATE BENT

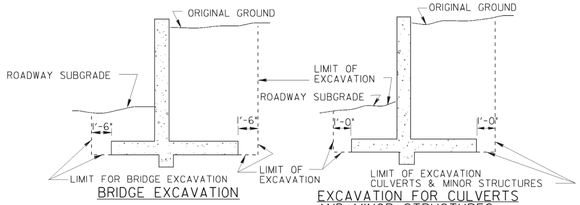


INTERMEDIATE BENT

TYPICAL EXCAVATION DETAILS AT BRIDGE BENTS IN CUT SECTIONS

NO SCALE

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



TYPICAL DETAILS OF EXCAVATION AT STRUCTURES

NOTE: WHERE FILL IS PLACED BEFORE CONSTRUCTION OF STRUCTURES THE COST OF EXCAVATION AND BACKFILL WILL BE INCLUDED IN THE COST OF OTHER ITEMS. THERE WILL BE NO PAYMENT FOR EXCAVATION UNDER THIS CONDITION.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
TYPICAL FILL DETAIL AT END OF BRIDGE

NO SCALE — REDRAWN SEPT., 1999

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

(SUBMITTED) STATE BRDG. & AIRPORT DESIGN ENGR.

(APPROVED) CHIEF ENGINEER

NUMBER 9037

DATE / REVISION / BY

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REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

GEORGIA STANDARDS

DRAWING No. 41-028

3/1/2007 GPLN

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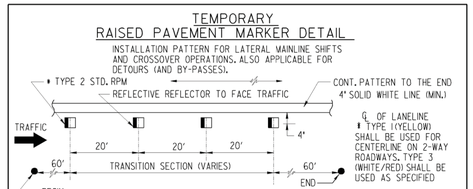
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

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

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

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REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY
GEORGIA STANDARDS

DRAWING No. 41-029

3/1/2007 GPLN

03-NOV-2014 13:27 bgowen	GPBES80_50-001 8825Full.pen	Y:\Roadways\138973\232310\Dgn\0232310_50-001.dgn GRNCOV	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
				GA	BRSTO-0076-01(036)	227	267

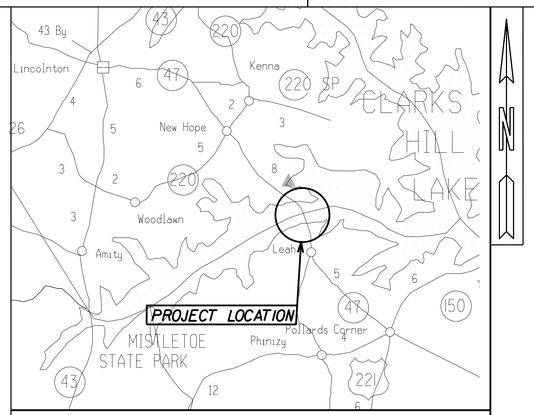
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

EROSION, SEDIMENTATION, & POLLUTION CONTROL PLAN
STATE ROUTE 47 BRIDGE REPLACEMENT OVER LITTLE RIVER
FEDERAL AID PROJECT
BRSTO-0076-01(036)
LINCOLN/COLUMBIA COUNTIES

FEDERAL ROUTE * N/A

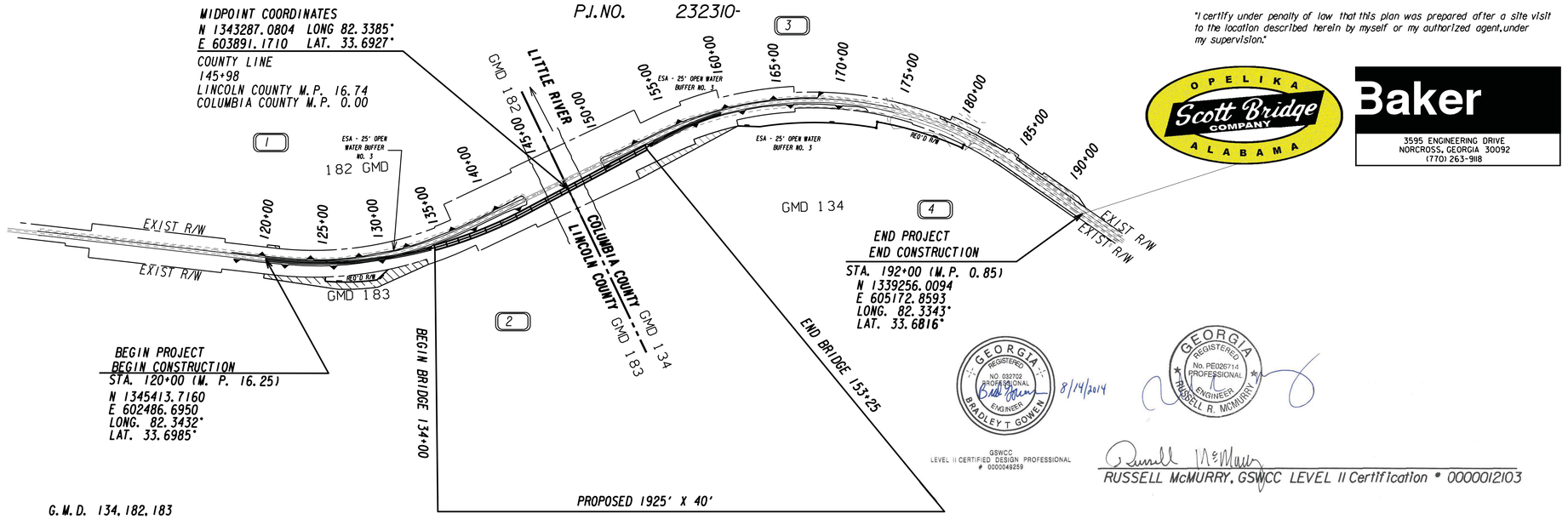
STATE ROUTE * 47

P.I.NO. 232310-



LOCATION SKETCH

PRIMARY PERMITTEE:
GEORGIA DEPARTMENT OF TRANSPORTATION
ONE GA CENTER
600 W PEACHTREE ST. NW
ATLANTA, GA 30308
PHONE NUMBER 404-631-1990



"I certify that this Erosion, Sedimentation and Pollution Control Plan has been prepared in accordance with part IV. of the General NPDES Permit No. 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 plan was prepared after a site visit to the location described herein by myself or my authorized agent, under my supervision."

OPELIKA Scott Bridge COMPANY ALABAMA

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

GEORGIA REGISTERED NO. 032702 PROFESSIONAL ENGINEER BRADLEY T GOWEN — 8/14/2014

GEORGIA REGISTERED No. PE026714 PROFESSIONAL ENGINEER RUSSELL R. MCMURRY

GSWCC LEVEL II CERTIFIED DESIGN PROFESSIONAL # 0000049259

RUSSELL McMURRY, GSWCC LEVEL II Certification * 0000012103

24 Hour Contact
NAME: Ben Miller
NUMBER: 478-299-1750

SCALE IN FEET
0 500 1000 2000

NOTE: ESA - SEE ENVIRONMENTAL RESOURCES IMPACT TABLE IN GENERAL NOTES FOR CONSTRUCTION RESTRICTIONS.

LENGTH OF PROJECT	COUNTY Nos.181/073 Project No. BRSTO-0076-01(036) MILES
NET LENGTH OF ROADWAY	0.999
NET LENGTH OF BRIDGES	0.365
NET LENGTH OF PROJECT	1.364
NET LENGTH OF EXCEPTIONS	0.000
GROSS LENGTH OF PROJECT	1.364

PLANS COMPLETED 8/14/2014

REVISIONS

DATE	REQUESTED BY	PAGE NUMBER	SIGNATURE	GSWCC LEVEL II *

DRAWING No. 50-001

UPDATED 1/16/14

ESPCP GENERAL NOTES

The escape of sediment from the site shall be prevented by the installation of erosion and sedimentation control measures and practices prior to land-disturbing activities.

Erosion and sedimentation control measures will be maintained at all times during this project. If full implementation of this approved plan does not provide effective erosion and sedimentation control, additional erosion and sedimentation control measures shall be implemented to control or treat the sediment source.

PLAN ALTERATIONS

The Erosion, Sedimentation, Pollution Control Plan (ESPCP) is provided by the Designer. 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 with 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 BMP's 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 may be added per Special Provision 161 - Control of Soil Erosion and Sedimentation.

TEMPORARY MULCHING

EPD General Permit GAR100002 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 the project shall be submitted after the project is awarded with the NOI. A copy of the construction schedule shall be maintained at the project site.

The project budget includes sufficient funds for the payment of construction exits. The Contractor is responsible for establishing at least one (1) construction exit per the specifications of the construction exit detail included in this ESPCP. To facilitate project logistics, the Contractor is also responsible for selecting the location(s) of the construction exit(s).

The Initial BMP Installation is shown in the Initial Phase and this includes all perimeter silt fence controls. This silt fence shall be installed prior to clearing and grubbing operations. Intermediate and Final BMP's are shown throughout all phases of Stage 1 and 2. The BMP's to be installed during these stages are additional silt fence due to sediment inlet traps, ditch checks, slope mats, rip rap, construction exits, temporary grassing, mulching, permanent grassing and temporary pipe slope drains. These BMP's shall be installed concurrently with mass grading operations with the exception of ditch checks, inlet traps and filter rings which should be installed prior to mass grading operations. During mass grading operations, runoff from disturbed area must be directed to sediment control BMP's. Sediment basins are not utilized due to adverse impacts of constructing and removing the basin. Final BMP's included in this project are rip rap, grassing, slope mats and enhanced swales. These items are installed during mass grading operations, but are noted on the plans as permanent BMP's for final stabilization of that stage.

During construction of the bridge foundations, in areas where water is encountered, floating silt retention barrier shall be used to supplement adequately placed BMP's.

PETROLEUM STORAGE, SPILLS AND LEAKS

These plans expressly delegate the responsibility of 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 materials leak 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 on-site 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

A project-specific soil survey and geotechnical investigation was performed for this project and can be made available upon request.

POST-CONSTRUCTION BMP'S FOR STORMWATER MANAGEMENT

All permanent, post-construction BMPs are shown in the construction plans and in the ESPCP plan. The post-construction BMPs for this project consist of vegetation, permanent slope drains, rip rap at pipe outlets for dissipation and outlet stabilization, vegetated swales/ditches where practical, and ditch stabilization with turf-reinforcing mats, rip rap, and concrete lining where necessary. The post-construction BMPs will provide permanent stabilization of the site and prevent accelerated transportation of sediment and pollutants into receiving waters.

SILT FENCE INSTALLATION 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 placed 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 J hook immediately upgradient. J hooks shall be paid for as silt fence items per linear foot. All cost and other incidental items are included in the 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, 710 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 all applicable state and local waste storage and disposal regulations and obtain all necessary permits. Solid materials, including building materials, shall not be deposited into Waters of the State, unless authorized by a Section 404 Permit.

INSPECTIONS

The primary permittee (GDOT) 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 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 Specifications (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

Non storm water 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 from washout and cleanout of containers for stucco, paint, concrete-form release oils, curing compounds and other construction materials.

DE-WATERING AND PUMPING ACTIVITIES

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 by 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 applicable State and/or local 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.

SEDIMENT STORAGE

The site has a total disturbed area of 7.33 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.

Location	Total Drainage Area (acres)	Disturbed Area (acres)	Required Sediment Storage Volume (yd^3)	Total Storage Volume Provided (yd^3)	Rock Filter Dam/ Filter Ring (17yd^3)		Check Dam (5-17 yd^3/each)		Inlet sediment (10 yd^3/each)		Silt Fence (0.3 yd^3/ft)	
					# of Devices	Total Volume (yd^3)	# of Devices	Total Volume (yd^3)	# of Devices	Total Volume (yd^3)	Length of Fence (ft)	Volume (yd^3)
Outfall 1 (Stage 1)	**1.15**	**0.05**	77	**20**					2	20	0	0
Outfall 1 (Stage 2)	**1.15**	**0.05**	77	**20**					2	20	0	0
Outfall 2 (Stage 1)	**0.77**	**0.04**	52	**20**					2	20	0	0
Outfall 2 (Stage 2)	**0.77**	**0.04**	52	**20**					2	20	0	0
Outfall 3 (Stage 1)	**2.81**	**0.62**	188	**163**	1	9	16	154			0	0
Outfall 3 (Stage 2)	**2.81**	**0.62**	188	**163**	1	9	16	154			0	0
Outfall 4 (Stage 1)	**0.74**	**0.00**	0	**141**							470	141
Outfall 4 (Stage 2)	**0.74**	**0.36**	49	**175**	1	17	1	17			470	141
Outfall 5 (Stage 1)	**0.97**	**0.00**	0	**165**							550	165
Outfall 5 (Stage 2)	**0.97**	**0.41**	65	**263**			6	98			550	165
Total Sheet Flow (Stage 1)	**6.56**	**5.85**	440	**1320**							4400	1320
Total Sheet Flow (Stage 2)	**6.56**	**5.85**	440	**1320**							4400	1320

** Required storage not met for Outfalls 1, 2 & 3. The areas will be stabilized with mats, silt fence, temporary and permanent grassing to minimize erosion.

In order to prevent runoff from bypassing inlet sediment traps, a temporary sump shall be installed around all inlet sediment traps that are not located in a low point or an excavated sump. Construct temporary sumps in accordance with Construction Detail D-24C Temporary sumps shall be installed in a manner that ensures stormwater does not bypass the inlet. The Contractor may submit alternate temporary containment berm designs to the Project Engineer for approval.

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

ESPCP GENERAL NOTES

SR 47 OVER LITTLE RIVER

DRAWING No. 51-001

12/15/2011 GPLN

UPDATED 1/16/14

USE OF ALTERNATIVE AND/OR ADDITIONAL BMPS:

Alternative BMPs are not used on this project. Silt Gates are not used on this project. Temporary check dams are used in ditches to provide interim stabilization and flow velocity reduction. The stability of the site is maintained with other conventional BMPs as shown on the plans.

DISCHARGES INTO OR WITHIN ONE LINEAR MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED AS, ANY PORTION OF A BIOTA IMPAIRED STREAM SEGMENT

All outfalls are either located further than 1 linear mile upstream or outside of the watershed of an impaired stream segment that has been listed for criteria violated, "Bio F"(impaired fish community) and/or "Bio M"(impaired macro invertebrate community), within Category 4a, 4b or 5, and the potential cause is either "NP"(non point source) or "UR"(urban runoff).

STREAM BUFFER ENCROACHMENT

Stream Buffers are impacted by this project.

The Contractor is not authorized to enter into stream buffers, except as described in the table below:

	Location of Buffered Streams and State Waters**			Stream Type (Warm/Cold Water)*	Buffer Impacted? (Yes/No)	Buffer Variance Required? (Yes/No)
	Stream Alignment	Begin Station and Offset	End Station and Offset			
Open Water #3	SR 47	Sta. 120+00 17.1' LT	Sta. 132+66 121.6' LT	Warm	Yes	Yes
Impacts to buffer include road realignment, and slopes						
Open Water #3	SR 47	Sta. 132+66 121.6' LT	Sta. 154+25 0' LT	Warm	Yes	No
Impacts to buffer include new bridge construction.						
Open Water #3	SR 47	Sta. 154+25 0' LT	Sta. 172+52 88.4' RT	Warm	Yes	Yes
Impacts to buffer include road realignment, and slopes						

Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of wrested vegetation without first acquiring the necessary variances and permits.

Unless noted otherwise, utility companies will be submitting the required permits/variances in conjunction with the impacts caused by their activities. If utility impacts are covered by the Department's stream buffer variance, this shall be noted in the buffer-variance-required column.

* Warm water streams have a 25-foot minimum buffer as measured from the wrested vegetation. Cold Water streams have a 50-foot buffer as measured from the wrested vegetation.
**Locations are approximate, a detailed location of stream buffers and authorized work areas are shown on the individual BMP sheets

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".

SAMPLING GENERAL NOTES:

The total site size is 52.2 acres. Representative sampling may be utilized on this project. 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 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 if it is less than or equal to 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 ESPCP, the Department has determined that representative sampling is valid for the duration of the project. The table below shows the groups of similar outfall drainage basins. The increase in turbidity at the specified locations will be representative of the alternate outfall drainage basins when similar outfall drainage basins exist. Approved primary and alternate representative monitored feature are identified in the table below.

SAMPLING INFORMATION												OUTFALL CHARACTERISTICS				
Primary Monitored Feature	Location (Station and Offset)	Name of Receiving Water	Applicable Construction Stage for Monitoring	Sampling Type (Outfall or Receiving water)	Total Project Area (acres)	Drainage Area for receiving water (mi^2)	Upstream Disturbed Area (acres)	Warm or Cold Water Stream	Appendix B NTU Value (Outfall monitoring only)	Allowable NTU Increase (Receiving water monitoring only)	Location Description	Construction Activity	Disturbed Area (acres)	Average Outfall Slope (Rise/Run)	Soil Erosion Index	Alternate Outfall Drainage Basins
1	Sta 1+44+23, 44.7' LT	Little River	Stages 1,2	Outfall	52.2	712.5	N/A	Warm	600	N/A	FES	New Road on Fill	0.05	0.016	Moderate	2
3	Sta. 1+44+49, 77' RT	Little River	Stage 1	Outfall	52.2	712.5	N/A	Warm	600	N/A	Ditch	New Road on Fill	0.62	0.038	Moderate	4,5

The primary sampled features specified should be used as the initial sampling locations. An alternate sampled feature may be used if additional sampling is required or to replace a primary sampled feature that is no longer located within an active phase of construction.

INSPECTING AND SAMPLING PROCEDURES

See Special Provision 167 and other contract documents for Inspecting and Sampling Procedures.

MANUAL SAMPLING:

Samples will be taken at the appropriate time as stated in the Part IV.D.5.D. of the permit. Sampling will occur at the designated representative outfall, the sample will be taken in the center of the outfall channel, a large mouth, clean, glass or plastic jar/bottle, labeled with the project number and location will be used to collect sample. The sample container will be held such that the opening faces upstream. Once the sample jar/bottle is full and capped, it will be transported to the location where the turbidity testing will be conducted. Samples may be analyzed at the site with properly calibrated portable turbidimeters. All turbidity tests will be conducted immediately but in no case, later than 48 hours after the time the sample was obtained.

AUTOMATIC SAMPLING:

Samples will be taken at the appropriate times as specified in Part IV.D.5.D. of the permit. Automatic sampling can be accomplished by using a sampling device similar to the ISCO Model 3700 or 6700. These devices can be triggered by flow meters or rain gauges to collect the required samples. This determination will be made on a project by project basis. The probe for the automatic sampler will be placed in the center of the outfall channel. Samples will remain in the automatic sampler until the next business day, when they will be collected and tested.

TESTING:

All turbidity tests shall be done in accordance with 40 CFR Part 136 (unless other test procedures have been approved): the guidance document titled "NPDES Storm Water Sampling Guidance Document, EPA 833-B-92-001" and guidance documents that may be prepared by the EPD. Turbidity results will be recorded and reported to EPD in accordance with Part IV.E. of the permit.

VEGETATION AND PLANTING SCHEDULE

ALL TEMPORARY AND PERMANENT VEGETATIVE PRACTICES INCLUDING PLANT SPECIES, PLANTING DATES, SEEDING FERTILIZER, LIME AND MULCHING RATES FOR THIS PROJECT CAN BE FOUND IN SECTION 700 OF THE CURRENT EDITION OF THE DEPARTMENT'S SPECIFICATIONS AND OTHER APPLICABLE CONTRACT DOCUMENTS, SPECIAL PROVISIONS, OR LANDSCAPING PLANS.

THE SEEDING TABLE BELOW SHOULD BE USED IN DETERMINING GRASS SPECIES DEPENDENT ON PLANTING DATES. COLUMBIA/LINCOLN COUNTIES IS IN PLANTING ZONE 2.

APPLY FERTILIZER AS FOLLOWS:

AGRICULTURAL LIME-UNIFORMLY SPREAD AGRICULTURAL LIME ON THE GROUND AT APPROXIMATE RATE DETERMINED BY THE LABORATORY SOIL TEST.

FERTILIZER MIXED GRADE-UNIFORMERLY SPREAD THE FERTILIZER SELECTED OVER THE GROUND AT APPROXIMATELY 1,200 LBS/ACRE. IF USING HIGHER ANALYSIS FERTILIZER WITH HYDROSEEDING, APPLY IT AT THE SAME RATE PER ACRE AS THE STANDARD FERTILIZER.

SELECT FERTILIZER MIXED GRADE SUCH AS 10-10-10, 6-12-12, 5-10-15, OR OTHER ANALYSIS WITHIN THE FOLLOWING LIMITS:
NITROGEN 5 TO 10 PERCENT
PHOSPHORUS 10 TO 15 PERCENT
POTASSIUM 10 TO 15 PERCENT
IF USING MIXED GRADE FERTILIZER FOR HYDROSEEDING, ENSURE IT HAS THE FOLLOWING ANALYSIS:
NITROGEN 5 TO 19 PERCENT
PHOSPHORUS 10 TO 19 PERCENT
POTASSIUM 10 TO 19 PERCENT

MULCHING SCHEDULE

MULCHING MATERIAL	RATE/ACRE
DRY STRAW OR HAY	2.5 TONS
WOOD WASTE, CHIPS	6 TO 9 TONS
SAWDUST, OR BARK	(2 TO 3" DEEP)

SEEDING TABLE

PLANTING ZONES	PLANTING DATES	POUNDS (KG) OF SEED PER ACRE (HECTARE)									REQUIRED PERMANENT PLANTING
		RYE GRASS (ANNUAL) CEREAL GRASS (OATS)	COMMON BERMUDA GRASS (HULLED)	COMMON BERMUDA GRASS (UNHULLED)	TALL FESCUE	WEEPING LOVE GRASS	WHITE OR CRIMSON CLOVER	COMMON VETCH	SCARIFIED INTERSTATE LESPEDEZA	UNSCARIFIED INTERSTATE LESPEDEZA	
1	MARCH 1- MAY 15		10 (11)	10 (11)	50 (56)						COMMON BERMUDA GRASS
1	MAY 1- JULY 31		10 (11)	10 (11)							
1	AUGUST 1 - FEBRUARY 28	15 (17)									
1	NOVEMBER 15 - JANUARY 31						6 (7)				
2, 3, 4	FEBRUARY 25 - AUGUST 31		10 (11)	10 (11)							
2, 3, 4	SEPTEMBER 1 - FEBRUARY 14	15 (17)									COMMON BERMUDA GRASS
2, 3, 4	NOVEMBER 15 - JANUARY 31						6 (7)				

	PLANT THESE COMBINATIONS ON BACK SLOPES, FILL SLOPES AND AREAS WHICH WILL NOT BE SUBJECT TO FREQUENT MOWING										
1, 2	MARCH 1 - JULY 31					4 (5)		50 (56)			INTERSTATE LESPEDEZA OR CROWN VETCH
1, 2	AUGUST 1 - FEBRUARY 28				30 (34)		15 (17)		75 (84)		
3, 4	FEBRUARY 15 - AUGUST 31					4 (5)		50 (56)			INTERSTATE LESPEDEZA
3, 4	SEPTEMBER 1 - FEBRUARY 14	50 (56)							75 (84)		

EROSION/SEDIMENTATION CONTROL OPERATION TIME SCHEDULE
CONTRACTOR TO COMPLETE TABLE WITH THEIR SPECIFIC PROJECT SCHEDULE

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
INSTALLATION OF CONSTRUCTION EXIT, PERIMETER SILT FENCE & TREE PROTECTION FENCE	■	■	■	■	■	■																
BRIDGE SUBSTRUCTURE	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
CLEARING & GRUBBING		■	■	■	■	■																
ROUGH GRADING & DRAINAGE			■	■	■	■	■	■	■													
INSTALLATION OF STORM DRAIN							■	■	■	■												
INSTALL INTERMEDIATE EROSION MEASURES						■	■	■	■	■	■	■	■	■								
BASE AND PAVEMENT														■	■	■	■	■	■	■	■	■
FINAL GRADING														■	■	■	■					
FINAL GRADE & GRASSING																■	■	■	■	■	■	■
REMOVE TEMPORARY EROSION MEASURES AND ORANGE BARRIER FENCE																				■	■	■

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STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
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ESPCP GENERAL NOTES

SR 47 OVER LITTLE RIVER

DRAWING No. 51-002

12/15/2011 GPLN

UPDATED 1/16/14

Inspections.

A. Permittee requirements.

(1). Each day when any type of construction activity has taken place at a primary permittee's site, certified personnel provided by the primary permittee shall inspect: (a) all areas at the primary permittee's site where petroleum products are stored, used, or handled for spills and leaks from vehicles and equipment and (b) all locations at the primary permittee's site where vehicles enter or exit the site for evidence of off-site sediment tracking. These inspections must be conducted until a Notice of Termination is submitted.

(2). Measure rainfall once every 24 hours except any non-working Saturday, non-working Sunday and non-working Federal holiday until a Notice of Termination is submitted. Measurement of rainfall may be suspended if all areas of the site have undergone final stabilization or established a crop of annual vegetation and a seeding of target perennials appropriate for the region.

(3). Certified personnel (provided by the primary permittee) shall inspect the following at least once every fourteen (14) calendar days and within 24 hours of the end of a storm that is 0.5 inches rainfall or greater (unless such storm ends after 5:00 PM on any Friday or on any nonworking Saturday, non-working Sunday or any non-working Federal holiday in which case the inspection shall be completed by the end of the next business day and/or working day, whichever occurs first): (a) disturbed areas of the primary permittee's construction site ; (b) areas used by the primary permittee for storage of materials that are exposed to precipitation ; and (c) structural control measures. Erosion and sediment control measures identified in the Plan applicable to the primary permittee's site shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving water(s). For areas of a site that have undergone final stabilization or established a crop of annual vegetation and a seeding of target perennials appropriate for the region, the permittee must comply with Part IV.D.4.a.(4). These inspections must be conducted until a Notice of Termination is submitted.

(4). Certified personnel (provided by the primary permittee) shall inspect at least once per month during the term of this permit (i.e., until a Notice of Termination is submitted to EPD) the areas of the site that have undergone final stabilization or established a crop of annual vegetation and a seeding of target perennials appropriate for the region. These areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system and the receiving water(s). Erosion and sediment control measures identified in the Plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving water(s).

(5). Based on the results of each inspection, the site description and the pollution prevention and control measures identified in the Erosion, Sedimentation and Pollution Control Plan, the Plan shall be revised as appropriate not later than seven (7) calendar days following each inspection. Implementation of such changes shall be made as soon as practical but in no case later than seven (7) calendar days following each inspection.

(6). A report of each inspection that includes the name(s) of certified personnel making each inspection, the date(s) of each inspection, construction phase (i.e., initial, intermediate or final) , major observations relating to the implementation of the Erosion, Sedimentation and Pollution Control Plan, and actions taken in accordance with Part IV.D.4.a.(5). of the permit shall be made and retained at the site or be readily available at a designated alternate location until the entire site or that portion of a construction project that has been phased has undergone final stabilization and a Notice of Termination is submitted to EPD. Such reports shall be readily available by end of the second business day and/or working day and shall identify all incidents of best management practices that have not been properly installed and/or maintained as described in the Plan. Where the report does not identify any incidents, the inspection report shall contain a statement that the best management practices are in compliance with the Erosion, Sedimentation and Pollution Control Plan. The report shall be signed in accordance with Part V.G.2. of this permit.

B. Sampling Frequency

(1). The primary permittee must sample in accordance with the Plan at least once for each rainfall event described below. For a qualifying event, the permittee shall sample at the beginning of any storm water discharge to a monitored receiving water and/or from a monitored outfall location within forty-five (45) minutes or as soon as possible.

(2). However, where manual and automatic sampling are impossible (as defined in this permit), or are beyond the permittee's control, the permittee shall take samples as soon as possible, but in no case more than twelve (12) hours after the beginning of the storm water discharge.

(3). Sampling by the permittee shall occur for the following qualifying events:

(a). For each area of the site that discharges to a receiving water or from an outfall, the first rain event that reaches or exceeds 0.5 inch with a storm water discharge that occurs during normal business hours as defined in this permit. after all clearing and grubbing operations have been completed, but prior to completion of mass grading operations, in the drainage area of the location selected as the representative sampling location;

(b). In addition to (a) above, for each area of the site that discharges to a receiving water or from an outfall, the first rain event that reaches or exceeds 0.5 inch with a storm water discharge that occurs during normal business hours as defined in this permit either 90 days after the first sampling event or after all mass grading operations have been completed, but prior to submittal of a NOT, in the drainage area of the location selected as the representative sampling location, whichever comes first;

(c). At the time of sampling performed pursuant to (a) and (b) above, if BMPs in any area of the site that discharges to a receiving water or from an outfall are not properly designed, installed and maintained, corrective action shall be defined and implemented within two (2) business days, and turbidity samples shall be taken from discharges from that area of the site for each subsequent rain event that reaches or exceeds 0.5 inch during normal business hours* until the selected turbidity standard is attained, or until post-storm event inspections determine that BMPs are properly designed, installed and maintained;

(d). Where sampling pursuant to (a), (b) or (c) above is required but not possible (or not required because there was no discharge), the permittee, in accordance with Part IV.D.4.a.(6), must include a written justification in the inspection report of why sampling was not performed. Providing this justification does not relieve the permittee of any subsequent sampling obligations under (a), (b) or (c) above; and

(e). Existing construction activities, i.e., those that are occurring on or before the effective date of this permit, that have met the sampling required by (a) above shall sample in accordance with (b). Those existing construction activities that have met the sampling required by (b) above shall not be required to conduct additional sampling other than as required by (c) above.

*Note that the Permittee may choose to meet the requirements of (a) and (b) above by collecting turbidity samples from any rain event that reaches or exceeds 0.5 inch and allows for sampling at any time of the day or week.

C. Reporting

1. The applicable permittees are required to submit the sampling results to the EPD at the address shown in Part II.C. by the fifteenth day of the month following the reporting period. Reporting periods are months during which samples are taken in accordance with this permit. Sampling results shall be in a clearly legible format. Upon written notification, EPD may require the applicable permittee to submit the sampling results on a more frequent basis. Sampling and analysis of any storm water discharge(s) or the receiving water(s) beyond the minimum frequency stated in this permit must be reported in a similar manner to the EPD. The sampling reports must be signed in accordance with Part V.G.2. Sampling reports must be submitted to EPD until such time as a NOT is submitted in accordance with Part VI.

2. All sampling reports shall include the following information:

a. The rainfall amount, date, exact place and time of sampling or measurements;
b. The name(s) of the certified personnel who performed the sampling and measurements;
c. The date(s) analyses were performed;
d. The time(s) analyses were initiated;
e. The name(s) of the certified personnel who performed the analyses;
f. References and written procedures, when available, for the analytical techniques or methods used;
g. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results;
h. Results which exceed 1000 NTU shall be reported as "exceeds 1000 NTU;" and
i. Certification statement that sampling was conducted as per the Plan.

3. All written correspondence required by this permit shall be submitted by return receipt certified mail (or similar service) to the appropriate District Office of the EPD according to the schedule in Appendix A of this permit. The permittee shall retain a copy of the proof of submittal at the construction site or the proof of submittal shall be readily available at a designated location from commencement of construction until such time as a NOT is submitted in accordance with Part VI. If an electronic submittal is provided by EPD then the written correspondence may be submitted electronically; if required, a paper copy must also be submitted by return receipt certified mail or similar service.

D. Retention of Records

1. The primary permittee shall retain the following records at the construction site or the records shall be readily available at a designated alternate location from commencement of construction until such time as a NOT is submitted in accordance with Part VI:

a. A copy of all Notices of Intent submitted to EPD;
b. A copy of the Erosion, Sedimentation and Pollution Control Plan required by this permit;
c. The design professional's report of the results of the inspection conducted in accordance with Part IV.A.5. of this permit;
d. A copy of all sampling information, results, and reports required by this permit;
e. A copy of all inspection reports generated in accordance with Part IV.D.4.a. of this permit;
f. A copy of all violation summaries and violation summary reports generated in accordance with Part III.D.2. of this permit; and
g. Daily rainfall information collected in accordance with Part IV.D.4.a.(2). of this permit.

2. Copies of all Notices of Intent, Notices of Termination, inspection reports, sampling reports (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), or other reports requested by the EPD, Erosion, Sedimentation and Pollution Control Plans, records of all data used to complete the Notice of Intent to be covered by this permit and all other records required by this permit shall be retained by the permittee who either produced or used it for a period of at least three years from the date that the NOT is submitted in accordance with Part VI of this permit. These records must be maintained at the permittee's primary place of business or at a designated alternative location once the construction activity has ceased at the permitted

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ESPCP GENERAL NOTES

SR 47 OVER LITTLE RIVER

DRAWING No. 51-003

12/15/2011 GPLN

INFRASTRUCTURE CONSTRUCTION PROJECTS

SWCD: REGION II CONSERVATION DISTRICT

Project Name: SR 47 OVER LITTLE RIVER **Address:**

City/County: COLUMBIA/LINCOLN **Date on Plans:** 8/14/2014

TO BE SHOWN ON ES&PC PLAN

Plan Page #	Included Y/N		
51-004	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. (The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed)
50-001	Y	2	Level II certification number issued by the Commission, signature and seal of the certified design professional. (Signature, seal and Level II number must be on each sheet pertaining to ES&PC plan or the Plan will not be reviewed)
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.
53-001	Y	8	Description of the nature of construction activity.
50-001	Y	9	Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
55-001	Y	10	Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, etc. which may be affected.
50-001	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.*
50-001	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.
51-001	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 without first acquiring the necessary variances and permits."
51-001	Y	16	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	17	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	18	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	19	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	20	Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."
51-002	Y	21	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	N/A	22	If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in item 21 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	23	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.*

GSWCC

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST

INFRASTRUCTURE CONSTRUCTION PROJECTS

SWCD: REGION II CONSERVATION DISTRICT

Project Name: SR 47 OVER LITTLE RIVER **Address:**

City/County: COLUMBIA/LINCOLN **Date on Plans:** 8/14/2014

51-001	Y	24	Provide BMPs for the remediation of all petroleum spills and leaks.
51-001	Y	25	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	26	Description of the practices that will be used to reduce the pollutants in storm water discharges.*
51-002	Y	27	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).
51-003	Y	28	Provide complete requirements of inspections and record keeping by the primary permittee.*
51-003	Y	29	Provide complete requirements of sampling frequency and reporting of sampling results.*
51-003	Y	30	Provide complete details for retention of records as per Part IV.F. of the permit.*
51-002	Y	31	Description of analytical methods to be used to collect and analyze the samples from each location.*
51-002	Y	32	Appendix B rationale for NTU values at all outfall sampling points where applicable.*
51-002 & 55-001	Y	33	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	34	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	35	Graphic scale and north arrow.
53-001	Y	36	Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following:
51-002	Y	37	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.
53-001	Y	38	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.
53-001	Y	39	Delineation of on-site wetlands and all state waters located on and within 200 feet of the project site.
53-001	Y	40	Delineation and acreage of contributing drainage basins on the project site.
55-001	Y	41	Delineate on-site drainage and off-site watersheds using USGS 1' :2000' topographical sheets.
53-001	Y	42	An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
53-001	Y	43	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	43	Soil series for the project site and their delineation.
ALL	Y	45	The limits of disturbance for each phase of construction.
51-001	Y	46	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	47	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	48	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 & 51-002	Y	49	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.

Existing Contours	USGS 1": 2000' Topographical Sheets
Proposed Contours	1" : 400' Centerline Profile

*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 N/A.

Effective January 1, 2014

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

ESPCP GENERAL NOTES

SR 47 OVER LITTLE RIVER

DRAWING No. 51-004

12/15/2011 GPLN

//30/2013 1:53:39 PM \\GDOT-DSN1\GDPLOT\QCF\QGC.qcf tcox M:\TPC\Erosion control legend and uniform codes sheets\revision to esl and code sheet\ECL52-001.prf

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	Bf	BUFFER ZONE	Bf 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. THE BOUNDARIES OF THESE AREAS ARE BE DELINEATED BY ORANGE BARRIER FENCE.
			SYMBOL Bf	
	ESA	ENVIRONMENTALLY SENSITIVE AREA		ENVIRONMENTALLY SENSITIVE AREA (ESA) CONTAINS RESOURCES THAT ARE ENVIRONMENTALLY. CULTURALLY. OR HISTORICALLY SENSITIVE. ESA AREAS INCLUDE. BUT ARE NOT LIMITED TO: STATE WATER BUFFERS. ARCHAEOLOGICAL SITES. HISTORIC 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.
			LINE CODE ESA-25'(OR 50')STREAM BUFFER, ETC.	
		ORANGE BARRIER FENCE		ORANGE BARRIER FENCE DELINEATES ESA AREAS WHERE THE CONTRACTOR SHALL NOT CLEAR. GRUB. PLACE CONSTRUCTION MATERIALS OR EQUIPMENT WITHIN THIS AREA.
			LINE CODE ORANGE BARRIER FENCE	
	Cd-F	FABRIC CHECK DAM CONSTRUCTION DETAIL SECTION 171	FLOW	A CHECK DAM COMPOSED OF SYNTHETIC FIBER FABRIC. WIRE REINFORCED. POST. AND BRACING PLACED IN DITCHES IN A SPECIAL CONFIGURATION WHICH CONTROLS ENERGY DISSIPATION AND FILTRATION OF STORM WATER. SEE CONSTRUCTION DETAIL D-24b FOR SPACING REQUIREMENT. THIS ITEM IS SUITABLE FOR USE IN ROADSIDE DITCHES THAT ARE PART OF INFRASTRUCTURE CONSTRUCTION PROJECTS. IF THIS ITEM IS USED IN AN AREA WITHOUT A SEDIMENT BASIN CONSIDERATION SHOULD BE GIVEN TO USING TWO OR MORE ROCK FILTER DAMS NEAR THE DISCHARGE POINT.
			LINE CODE Cd-F	
	Cd-S	STONE OR SANDBAG CHECK DAM SECTION 163, 603		STONE CHECK DAMS ARE USED IN ROADWAY DITCHES. GEOTEXITLE UNDERLINER SHALL BE USED WHEN PLACING STONE CHECK DAMS. CONTRACTOR MAY USE SANDBAG CHECK DAMS IN LIEU OF STONE CHECK DAMS. SANDBAG CHECK DAMS MUST BE USED IN CONCRETE LINED CHANNELS.
			LINE CODE Cd-S	

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 CONTROL MEASURES SEE THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION, "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	Ch-C	CHANNEL CONCRETE SECTION 161, 441	Ch-C	THIS ITEM CONSISTS OF CONSTRUCTING A 4" THICK CONCRETE CHANNEL. THE CONCRETE SHALL PROTECT THE DITCH FLOWING TO A DEPTH "Dp" RECOMMENDED BY THE GDOT DITCH PROTECTION PROGRAM "Dp" SHALL BE IDENTIFIED IN A TABLE LOCATED ON THE SUMMARY OF QUANTITIES SHEETS
	Ch-Rp1	CHANNEL RIP RAP TYPE 1 SECTION 161, 603	LINE CODE Ch-Rp1	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 DITCH FLOWING TO A DEPTH "Dp" RECOMMENDED BY THE GDOT DITCH PROTECTION PROGRAM. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED ALONG THIS CHANNEL SUCH AS Sdl-C. Rdc OR Sg. "Dp" SHALL BE IDENTIFIED IN A TABLE LOCATED ON THE SUMMARY OF QUANTITIES SHEETS
	Ch-Rp3	CHANNEL RIP RAP TYPE 3 SECTION 161, 603	LINE CODE Ch-Rp3	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 DITCH FLOWING TO A DEPTH "Dp" RECOMMENDED BY THE GDOT DITCH PROTECTION PROGRAM. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED ALONG THIS CHANNEL SUCH AS Sdl-C. Rdc OR Sg. "Dp" SHALL BE IDENTIFIED IN A TABLE LOCATED ON THE SUMMARY OF QUANTITIES SHEETS
	Ch-V	CHANNEL GRASS SECTION 161, 700	LINE CODE Ch-V	USED TO IMPROVE OR STABILIZE A NEW OR EXISTING CHANNEL. IT IS CONSTRUCTED IN STORMWATER DRAINAGE DITCHES. THIS MEASURE SHALL BE DESIGNED IN ACCORDANCE WITH THE GDOT DITCH PROTECTION PROGRAM ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED. TYPICALLY NOT SHOWN IN PLANS.

BY	REVISION	DATE
TC	UDATED DRAWING NO.	1-24-13
TC	REVISED Cd-S DESCRIPTION.	10-2-12
	REMOVED Be & Ch-Br, AND RELOCATED Ch-Rp1, Ch-RP3 AND Ch-V CODES FROM	
GLO	EC&LUC SHEET 2 OF 6.	11-13-07
GLO	REV. Be ADDED Bf. ESA. OBF AND Ch-F	1-19-07
GLO	REVISED TITLE BLOCK	

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

EROSION CONTROL LEGEND AND UNIFORM CODE SHEET
SHEET 1OF 6

NO SCALE — JANUARY 2007

NUMBER EC-L1 — DRAWING No. 52-001

1/30/2013 1:53:39 PM \\GDOT-DSN1\GDPLOT\QCF\QGC.qcf tcox M:\TPC\Erosion control legend and uniform codes sheets\revision to esl and code sheet\ECL52-001.prf

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE: INNOVATIVE PROGRAM DELIVERY

EROSION CONTROL LEGEND

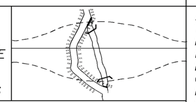
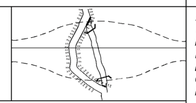
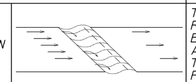
SR 47 OVER LITTLE RIVER

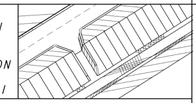
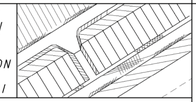
DRAWING No. 52-001

3/1/2007 GPLN

1/30/2013 1:53:38 PM \\GDOT-DSN1\GDPLOT\QCF\QGC_qcf_tcox_M:\TPC\Erosion_control_legend_and_uniform_codes_sheets\revision to cell and code sheet\ECL52-002.prf

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	Co	CONSTRUCTION EXIT CONSTRUCTION DETAIL	LINE CODE Co	A STONE STABILIZED PAD LOCATED AT ANY POINT WHERE TRAFFIC WILL BE EXITING A CONSTRUCTION SITE TO A PUBLIC ROAD. BEST USED AT ACCESS POINTS. I.e. NEW LOCATION PROJECTS. BORROW PITS. WASTE PITS. ACCESS ROADS. ETC. SHOULD BE MIN. 20' WIDE AND 50' LONG. AND 6" THICK. REQUIRES A GEOTEXTILE UNDERLINER. INCLUDED IN THE PRICE FOR THE CONSTRUCTION EXIT.
	Dc-A	DIVERSION CHANNEL GEOTEXTILE, POLYETHYLENE FILM SECTION 163	 LINE CODE —D—D—D—Dc-A—D—D—D—	A DIVERSION CHANNEL IS 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 Sdl-C 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 DESIGNED FOR A TWO YEAR STORM FREQUENCY WITH A FLOW RATE BETWEEN 0-2.5 fps. CONSTRUCTION OF THE DIVERSION CHANNEL IS INCLUDED IN THE COST OF THE STRUCTURE.
	Dc-B	DIVERSION CHANNEL GEOTEXTILE ONLY SECTION163	 LINE CODE —D—D—D—Dc-B—D—D—D—	A DIVERSION CHANNEL IS 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 Sdl-C 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 DESIGNED FOR A TWO YEAR STORM FREQUENCY WITH A FLOW RATE BETWEEN 2.5-9.0 fps. CONSTRUCTION OF THE DIVERSION CHANNEL IS INCLUDED IN THE COST OF THE STRUCTURE.
	Dc-C	DIVERSION CHANNEL RIPRAP AND GEOTEXTILE SECTION 163	 LINE CODE —D—D—D—Dc-C—D—D—D—	A DIVERSION CHANNEL IS 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 RIPRAP AND GEOTEXTILE. INSTALL TWO ROWS OF Sdl-C 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 DESIGNED FOR A TWO YEAR STORM FREQUENCY WITH A FLOW RATE BETWEEN 9.0-13.0 fps. CONSTRUCTION OF THE DIVERSION CHANNEL IS INCLUDED IN THE COST OF THE STRUCTURE.
	Di	DIVERSION BERM CONSTRUCTION DETAIL SECTION 161, 205	 LINE CODE Di	THIS IS A TEMPORARY EARTHEN BERM WITH A COMPACTED SUPPORTING RIDGE ON THE LOWER SIDE TO BE USED AT 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 "Dnl"OR CATCHMENT AREAS AND ON ALL GRADING PROJECTS. SEE CHAPTER 6 OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA FOR DESIGN CRITERIA AND DETAILS.

	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	Dnl	DOWN DRAIN STRUCTURE FLEXIBLE CONSTRUCTION DETAIL SECTION 163	LINE CODE —T—T—T—Dnl—T—T—T—	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 A INTERVALS OF 500 FEET ON A 0 TO 2 PERCENT GRADE. 200 FEET ON STEEPER GRADES AND MORE FREQUENTLY AS DICTATED BY FIELD CONDITIONS. THE USUAL PIPE SIZE IS 10 INCH CORRUGATED. THE OUTLET AREA SHOULD BE STABILIZED WITH SILT FENCE, SUMP HOLE, HAYBALES, ANGLING OUTLET IN UPHILL DIRECTION OR OTHER APPROPRIATE MEANS FOR VELOCITY DISSIPATION AND EROSION CONTROL. THE PIPE WILL BE ANCHORED WITH STAKES AT INTERVALS NOT TO EXCEED 10'.
	Dn2-A	PERMANENT DOWN DRAIN STRUCTURE CONCRETE CONSTRUCTION DETAIL SECTION 441	 LINE CODE Dn2-A	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 OR OTHER CRITERIA).
	Dn2-B	PERMANENT DOWN DRAIN STRUCTURE CONCRETE CONSTRUCTION DETAIL SECTION 441	 LINE CODE Dn2-B	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 SAFETLY 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).
	Dn2-1	PERMANENT DOWNDRAIN STRUCTURE GA.STD. 9017J TPI, D-26 TPI SECTION 576, 577.	 LINE CODE Dn2-1	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).

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 CONTROL MEASURES SEE THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION, "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

BY	REVISION	DATE
TC	UDATED DRAWING No.	1-24-13
TC	REV. DI LABEL&DESCRIPTION.	10-1-12
	RELOCATED Dn2-A, Dn2-B,	
	AND Dn2-CODES FROM	
	ECL&AUC SHEET 3 OF 6.	11-13-07
GLO	REVISED ORDER	1-09-07
GLO	REVISED TITLE BLOCK	

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

EROSION CONTROL LEGEND AND UNIFORM CODE SHEET
SHEET 2 OF 6

NO SCALE JANUARY 2007

NUMBER EC-L2

DRAWING No. 52-002

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

EROSION CONTROL LEGEND

SR 47 OVER LITTLE RIVER

DRAWING No. 52-002

3/1/2007 GPLN

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STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	Dn2-2	PERMANENT DOWN DRAIN STRUCTURE GA.STD. 9017J TP2. D-26 TP2 SECTION 576. 577.	LINE CODE: Dn2-2	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).
	Ds1	MULCH SECTION 163	LINE CODE: 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.
	Ds2	TEMPORARY GRASSING SECTION 163	LINE CODE: Ds2	THE SOWING OF A QUICK GROWING SPECIES OF GRASS SUITABLE TO THE AREA AND SEASON IS TO BE USED ON ALL PROJECTS.
	Ds3	PERMANENT GRASSING SECTION 700	LINE CODE: Ds3	THE SOWING OF PERMANENT VEGETATION. SUCH AS GRASS. SUITABLE TO THE AREA AND SEASON IS TO BE USED ON ALL PROJECTS. PERMANENT VEGETATIVE REQUIREMENTS ARE ADDRESSED BY STANDARD SPECIFICATIONS AND ARE NOT TYPICALLY SHOWN ON THE PLANS: HOWEVER. THEY MAY BE SHOWN ON THE PLANS FOR HIGHLY SENSITIVE AREAS WHERE THESE VEGETATIVE PRACTICES ARE CRITICAL.
	Ds4	SODDING SECTION 700	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.

	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	Fr	FILTER RING CONSTRUCTION DETAIL	4 FT. MIN. LINE CODE: Fr	A TEMPORARY STONE BARRIER CONSTRUCTED AT DRAINAGE STRUCTURE INLETS. THIS REDUCES THE VELOCITY OF THE RUNOFF AND FILTERS SEDIMENT FROM THE RUNOFF. SEE CHAPTER 6 OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA FOR DESIGN CRITERIA AND DETAILS.
	Mb	EROSION CONTROL MATS CONSTRUCTION DETAIL SECTION 716	PATTERN: Mb	ALL CUT OR FILL SLOPES OF 2.5:1 OR STEEPER AND WITHIN 50' OF ALL CROSS DRAINS AND CULVERTS.
	Ps	PERMANENT SOIL REINFORCING MAT CONSTRUCTION DETAIL SECTION 710	LINE CODE: Ps	THIS THREE DIMENSIONAL EROSION CONTROL MAT IS USED IN DITCHES TO STABILIZE THE SOIL BY REINFORCING THE GRASS ROOTS TO PROVIDE LONG-TERM PROTECTION FOR SHEAR STRESSES. (THIS IS ALSO CALLED "Mb" IN THE MANUAL FOR EROSION & SEDIMENT CONTROL IN GEORGIA.)
	Rd	ROCK FILTER DAM CONSTRUCTION DETAIL SECTION 163, 603.	LINE CODE: Rd	ROCK FILTER DAMS ARE CONSTRUCTED OF TYPE 3 STONE RIP RAP AND ARE USED TO PROTECT SMALL STREAMS OR DRAINAGEWAYS. TO BE USED IN SMALL DRAINAGE CHANNELS OF 50 ACRES OR LESS. THE RIP RAP SHOULD BE PLACED ON A GEOTEXITLE UNDERLINER.

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 CONTROL MEASURES. SEEE THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION. "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

BY	DATE	REVISION
TC	1-24-13	UDATED DRAWING NO., ADDED Ds3 & Ds4 CODES, RELOC. Rp & Rf-P CODES to DRAWING NO.52-004.
	10-2-12	RELOCATED Rd, Rp, & Rf-B CODES FROM ECLAUC SHEET 4 OF 6.
TC	11-13-07	DELETED Fe, REVISED ORDER
GLO	1-19-07	REVISED TITLE BLOCK
GLO		

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

EROSION CONTROL LEGEND AND UNIFORM CODE SHEET
SHEET 3 OF 6

NO SCALE — JANUARY 2007

NUMBER EC-L3 — DRAWING No. 52-003

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

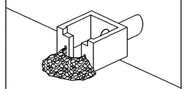
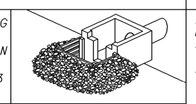
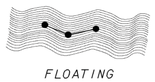
EROSION CONTROL LEGEND

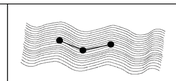
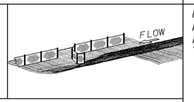
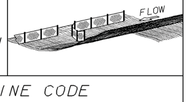
SR 47 OVER LITTLE RIVER — DRAWING No. 52-003

3/1/2007 GPLN

11/30/2013 1:53:36 PM \\GDOT-DSN1\GDPLOT\QCF\QGC_qcf_tcox M:\TPC\Erosion control legend and uniform codes sheets\revision to esl and code sheet\ECL52-004.prf

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	Rp	RIPRAP SECTION 603 PATTERN		RIP RAP IS A FLEXIBLE PERMANENT BLANKET FOR PROTECTION OF FILL SLOPES AND END ROLLS. RIP RAP, TYPE I SHOULD BE PLACED ON TOP OF A GEOTEXITLE UNDERLINER AT A MINIMUM 24" THICKNESS OR AS INDICATED ON THE PLANS.
	Rt-P	RETROFITTING CONSTRUCTION DETAIL SECTION 163 LINE CODE		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. THIS ITEM SHOULD BE DESIGNED ACCORDING TO CHAPTER 6 IN THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA"
	Rt-B	RETROFITTING CONSTRUCTION DETAIL SECTION 163 LINE CODE		A SLOTTED BOARD DAM WITH STONE 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 100 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. THIS ITEM SHOULD BE DESIGNED ACCORDING TO CHAPTER 6 IN THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA"
	Rt-BSg1 Rt-BSg2 Rt-BSg3	SILT CONTROL GATES CONSTRUCTION DETAIL D-20 SECTION 163 LINE CODE		A SILT CONTROL GATE IS A STRUCTURE PLACED ON A PIPE, SMALL BOX CULVERT, OR DROP INLET TO FORM A BASIN TO CATCH SILT AND PREVENT IT FROM LEAVING THE CONSTRUCTION SITE. IT IS EFFECTIVE ON SMALL DRAINAGE AREAS ONLY. DO NOT USE IN STATE WATERS. Rt-BSg1=TYPE 1: USED ON BOX CULVERTS Rt-BSg2=TYPE 2: USED ON STRAIGHT HEADWALLS Rt-BSg3=TYPE 3: USED ON FLARED END SECTIONS AND TAPERED HEADWALLS
	Sb-F	SILT RETENTION BARRIER FLOATING SECTION 170 LINE CODE		A FLOATING BARRIER IS USED TO PREVENT SEDIMENT FROM MOVING IN WATER BY FORCING IT TO DROP OUT OF SUSPENSION BEFORE IT MOVES OUT OF THE CONSTRUCTION AREA. IT IS USUALLY 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 ITEM IS ONLY TO BE USED WHEN PERMITTED FILL IS BEING PLACED INTO A STATE WATER, OR AS A SUPPLEMENT TO ADEQUATELY PLACED BMP'S.

	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	Sb-S	SILT RETENTION BARRIER STAKED SECTION 170 LINE CODE		A STAKED BARRIER IS USED TO PREVENT SEDIMENT FROM MOVING IN WATER BY FORCING IT TO DROP OUT OF SUSPENSION BEFORE IT MOVES OUT OF THE CONSTRUCTION AREA. IT IS USUALLY USED WHERE CONSTRUCTION IS REQUIRED IN SHALLOW INUNDATED AREAS. IT SHOULD BE USED AS DIRECTED BY THE ENGINEER. A STAKED BARRIER MAY BE USED TO PROTECT A SMALL STREAM WHILE IT IS BEING REALIGNED OR WIDENED IN 'CHI'. IN THIS CASE THE BARRIER SHOULD EXTEND TO THE BOTTOM OF THE STREAM. IT SHOULD BE LIMITED TO 5' IN HEIGHT UNLESS OTHERWISE DIRECTED. STAKED BARRIERS IN SMALL STREAMS SHOULD EXTEND 1' ABOVE NORMAL WATER. THIS ITEM IS ONLY TO BE USED WHEN PERMITTED FILL IS BEING PLACED INTO A STATE WATER, OR AS A SUPPLEMENT TO ADEQUATELY PLACED BMP'S.
	Sdl-A	SILT FENCE TYPE A CONSTRUCTION DETAIL SECTION 171 LINE CODE		USED ALONG THE TOE OF FILLS LESS THAN 10' HIGH, ALONG THE RIGHT OF WAY LINE OR PARALLEL TO STREAMS. THE FENCE SHOULD NEVER RUN CONTINUOUS. IT SHOULD TURN BACK INTO THE FILL TO CREATE SMALL POCKETS TO TRAP SILT.
	Sdl-B	SILT FENCE TYPE B CONSTRUCTION DETAIL SECTION 171 LINE CODE		TYPE B MAY BE USED IN LIEU OF BALED STRAW AND AT THE TOE OF FILLS LESS THAN 10 FEET HIGH.
	Sdl-C	SILT FENCE TYPE C CONSTRUCTION DETAIL SECTION 171 LINE CODE		A WOVEN SYNTHETIC FIBER FABRIC PLACED IN FRONT OF A WIRE FENCE. IT CAN BE USED ALONG THE TOE OF THE FILL, ALONG THE RIGHT OF WAY LINE OR PARALLEL TO STREAMS. IT IS USED TO CAPTURE SEDIMENT FROM FILLS OVER 10 FEET HIGH AND UNDER ALL BRIDGES.

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 CONTROL MEASURES, SEEE THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION, "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

BY	DATE	REVISION
TC	1-24-13	
		UDATED DRAWING NO.&
		RELOCATED Sdl-Bb&Sdl-Hb
		CODES TO DRAWING NO.
		52-005.
TC	10-2-12	RELABELED AND RELOCATED
		Sg-1,Sg-2,Sg-3 TO Rt-BSg
		Rt-BSg2,& Rt-BSg3 CODES
		AND Sdl-Bb,Sdl-Hb CODES
		FROM ECLAUC SHT.5 OF 6.
GLO	11-13-07	REV. Sdl-A
GLO		REV. Sb-F, Sb-S, Sdl-A.
		Sbl-B AND Sdl-C.
GLO	1-19-07	REVISED TITLE BLOCK

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

EROSION CONTROL LEGEND
AND UNIFORM CODE SHEET
SHEET 4 OF 6

NO SCALE — JANUARY 2007

NUMBER EC-L4 — DRAWING No. 52-004

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REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

EROSION CONTROL LEGEND

SR 47 OVER LITTLE RIVER

DRAWING No. 52-004

3/1/2007 GPLN

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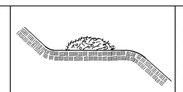
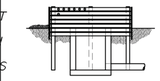
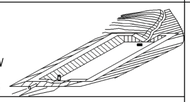
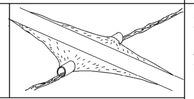
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
Sd1-Bb	BRUSH BARRIER CONSTRUCTION DETAIL 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 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. PAYMENT FOR THIS ITEM IS INCLUDED IN THE CLEARING AND GRUBBING COST. NO SEPERATE PAYMENT SHALL BE MADE.
Sd1-Hb	SEDIMENT BARRIER CONSTRUCTION DETAIL SECTION 163 LINE CODE —S—S—S— Sd1-Hb —S—S—S—		A BARRIER OF BALED STRAW IS USED TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. IT IS USED IN DITCHES AS DITCH CHECKS OR ALONG THE TOE OF SLOPE OR RIGHT OF WAY IN FILLS LESS THAN 10 FEET HIGH. THE BALES SHOULD RUN PARALLEL TO THE SILT YIELDING AREA UNTIL THE TOP OF THE BALE IS 6 INCHES LOWER THAN THE GROUND ELEVATION OF THE BEGINNING BALE. THEY SHOULD THEN TURN INTO THE FILL WITH A LOW POINT FOR THE WATER TO DRAIN OVER THE BALE. IN DITCHES, BALED STRAW SHOULD BE PERPENDICULAR TO THE FLOW. USED FOR SLOPES LESS THAN 1%, USE 100' SPACING. BALED STRAW SHALL BE STAKED SECURELY TO THE GROUND.
Sd2-B	BAFFLE BOX INLET SEDIMENT TRAP CONSTRUCTION DETAIL D42 SPECIFICATIONS SECTION 163 LINE CODE Sd2-B		USED FOR INLETS RECEIVING RUNOFF WITH A HIGHER VOLUME OR VELOCITY. A GUIDE FOR USE WILL BE FOR AN INLET RECEIVING A Q=7cfs.
Sd2-Bg	BLOCK & GRAVEL DROP INLET PROTECTION CONSTRUCTION DETAIL D42 SPECIFICATIONS SECTION 163 LINE CODE Sd2-Bg		USED FOR INLET PROTECTION 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 A Q=5-7 cfs.
Sd2-F	INLET SEDIMENT TRAP CONSTRUCTION DETAILS SECTION 163 (a) OR (b) OR (c) LINE CODE 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 RECIEVING CONCENTRATED FLOWS. RECOMMENDED FOR INLET RECEIVING FLOWS THAT RANGE FROM Q=0-4 cfs.

CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
Sd2-G	GRAVEL DROP INLET PROTECTION CONSTRUCTION DETAIL D42 SPECIFICATIONS SECTION 163 LINE CODE Sd2-G		USED FOR INLET PROTECTION 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 A Q=3-5 cfs.
Sd3	SEDIMENT BASIN CONSTRUCTION DETAIL SECTION 163 LINE CODE Sd3		A BASIN EXCAVATED OR AN AREA THAT IS DAMMED. THE BASIN IS DESIGNED TO HOLD A SEDIMENT LOAD OF 67 CUBIC YARDS OF VOLUME PER ACRE OF DRAINAGE AREA. IT IS USED FOR DRAINAGE AREAS OF 3 TO 5 ACRES OR WHERE A ROADWAY CUTS OR FILLS EXCEEDS 1,000 FEET IN LENGTH. IF A SEDIMENT BASIN IS USED ON AN AREA LARGER THAN 5 ACRES SPECIAL CONSIDERATION FOR CLEAN OUT IS REQUIRED. SUFFICIENT RIGHT OF WAY OR PERMANENT EASEMENT NEEDED FOR THE BASIN AND ACCESS FOR CLEAN OUT VIA A ROUTE WITH 3:1 SLOPES OR LESS. SEDIMENT BASINS SHOULD ALSO BE CONSIDERED WHERE HIGH FILLS OVER 30 FEET DRAIN TO ONE LOCATION.
Sr	STREAM CROSSING SECTION 161 LINE CODE Sr		A TEMPORARY BRIDGE OR PIPE STRUCTURE PROTECTING A STREAM OR WATER COURSE FROM DAMAGE BY CONSTRUCTION EQUIPMENT. THIS AREA MUST BE COMPLETELY STABILIZED. THIS ITEM MUST BE DESIGNED ACCORDING TO CHAPTER 6 OF THE MANUAL FOR EROSION 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 CONTROL MEASURES, SEEE THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION. "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

BY	REVISION	DATE
TC	UDATED DRAWING NO.& RELOCATED St & St-Rp CODES TO DRAWING NO. 52-006.	1-24-13
TC	DEL Sp-1, Sp-2, Sp-3 CODES. RELOCATED St & St-Rp, CODES FROM ECL & UC SHT. 6 OF 6.	10-2-12
GLO	REV. Sp-1, Sp-2 AND Sp-3	11-13-07
GLO	REVISED TITLE BLOCK	1-19-07

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

EROSION CONTROL LEGEND AND UNIFORM CODE SHEET
SHEET 5 OF 6

NO SCALE — JANUARY 2007

NUMBER EC-L5 — DRAWING No. 52-005

3/1/2007 GPLN

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

EROSION CONTROL LEGEND

SR 47 OVER LITTLE RIVER

DRAWING No. 52-005

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	237	267

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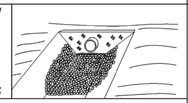
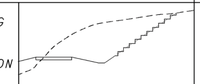
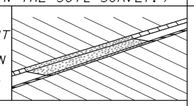
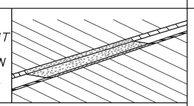
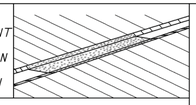
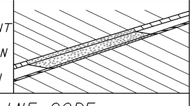
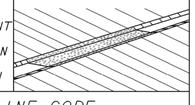
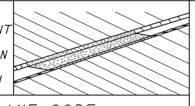
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	St	STORM DRAIN OUTLET PROTECTION GA. STD. 1125 & 2332	 LINE CODE St	A PIPE OR BOX CULVERT OUTLET HEADWALL WITH AN APRON AND DISSIPATOR BLOCKS IS USED TO PREVENT EROSION AND TO SLOW WATER. 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 IS 12 fps AND GREATER.
	St-Rp	STORM DRAIN OUTLET PROTECTION SECTION 603	 PATTERN St-Rp	THIS ITEM IS ADDED TO "St" WHEN ADDITIONAL PROTECTION IS NEEDED. TYPE I RIP RAP PLACED ON FILTER FABRIC SHOULD BE USED AT A 24" THICKNESS. MAY BE USED ON INLETS FOR FLOWING STREAMS. REFER TO CHARTS IN "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR QUANTITIY DETERMINATION.
	Su	SURFACE ROUGHENING SERRATED SLOPES CONSTRUCTION DETAIL SECTION 205	 LINE CODE Su (LINE CODE Su IS SHOWN ON THE PLANS FOR SERRATED SLOPES WHERE SPECIFIED IN THE SOIL SURVEY.)	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 ITEM IS NOT REQUIRTED TO BE SHOWN ON THE PLANS, BUT REQUIRED TO BE COMPLETED BY THE CONTRACTOR UNDER ALL PROJECTS. IF SERRATED SLOPES ARE USED ON THE PROJECT, THEN THIS ITEM SHALL BE SHOWN WHERE SERRATED SLOPES ARE TO BE USED.
	Trm-1	TURF REINFORCEMENT MAT CONSTRUCTION DETAIL SECTION 711	 LINE CODE Trm-1	THIS THREE DIMENSIONAL EROSION CONTROL MAT IS USED IN DITCHES TO STABILIZE THE SOIL BY REINFORCING THE GRASS ROOTS TO PROVIDE LONG-TERM PROTECTION FOR SHEAR STRESSES 0-2 psf. (THIS IS ALSO CALLED "Mb" IN THE MANUAL FOR EROSION & SEDIMENT CONTROL IN GEORGIA.)
	Trm-2	TURF REINFORCEMENT MAT CONSTRUCTION DETAIL SECTION 711	 LINE CODE Trm-2	THIS THREE DIMENSIONAL EROSION CONTROL MAT IS USED IN DITCHES TO STABILIZE THE SOIL BY REINFORCING THE GRASS ROOTS TO PROVIDE LONG-TERM PROTECTION FOR SHEAR STRESSES 0-4 psf. (THIS IS ALSO CALLED "Mb" IN THE MANUAL FOR EROSION & SEDIMENT CONTROL IN GEORGIA.)

	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	Trm-3	TURF REINFORCEMENT MAT CONSTRUCTION DETAIL SECTION 711	 LINE CODE Trm-3	THIS THREE DIMENSIONAL EROSION CONTROL MAT IS USED IN DITCHES TO STABILIZE THE SOIL BY REINFORCING THE GRASS ROOTS TO PROVIDE LONG TERM PROTECTION FOR SHEAR STRESSES 0-6 psf. (THIS IS ALSO CALLED "Mb" IN THE MANUAL FOR EROSION & SEDIMENT CONTROL IN GEORGIA.)
	Trm-4	TURF REINFORCEMENT MAT CONSTRUCTION DETAIL SECTION 711	 LINE CODE Trm-4	THIS THREE DIMENSIONAL EROSION CONTROL MAT IS USED IN DITCHES TO STABILIZE THE SOIL BY REINFORCING THE GRASS ROOTS TO PROVIDE LONG-TERM PROTECTION FOR SHEAR STRESSES 0-8 psf. (THIS IS ALSO CALLED "Mb" IN THE MANUAL FOR EROSION & SEDIMENT CONTROL IN GEORGIA.)
	Trm-5	TURF REINFORCEMENT MAT CONSTRUCTION DETAIL SECTION 711	 LINE CODE Trm-5	THIS THREE DIMENSIONAL EROSION CONTROL MAT IS USED IN DITCHES TO STABILIZE THE SOIL BY REINFORCING THE GRASS ROOTS TO PROVIDE LONG-TERM PROTECTION FOR SHEAR STRESSES 0-10 psf. (THIS IS ALSO CALLED "Mb" IN THE MANUAL FOR EROSION & SEDIMENT CONTROL IN GEORGIA.)
	Trm-6	TURF REINFORCEMENT MAT CONSTRUCTION DETAIL SECTION 711	 LINE CODE Trm-6	THIS THREE DIMENSIONAL EROSION CONTROL MAT IS USED IN DITCHES TO STABILIZE THE SOIL BY REINFORCING THE GRASS ROOTS TO PROVIDE LONG-TERM PROTECTION FOR SHEAR STRESSES 0-12 psf. (THIS IS ALSO CALLED "Mb" IN THE MANUAL FOR EROSION & SEDIMENT CONTROL IN GEORGIA.)

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 CONTROL MEASURES, SEEE THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION. "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

DATE	REVISION	BY
1-24-13	UDATED DRAWING NO.	TC
10-2-12	ADDED Trm-1,Trm-2,Trm-3, Trm-4,Trm-5,AND Trm-6. CODES AND DESCRIPTIONS. RELOCATED St & St-Rp CODES TO ECL & UC SHT. 5 of 6.	TC

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

EROSION CONTROL LEGEND
AND UNIFORM CODE SHEET
SHEET 6 OF 6

NO SCALE NOV., 2007

NUMBER EC-L6

DRAWING No. 52-006

1/30/2013 1:53:33 PM \\GDOT-DSN1\GDPLOT\QCF\QGC_qcf_tcox_M:\TPC\Erosion_control_legend_and_uniform_codes_sheets\revision_to_ecl_and_code_sheet\ECL52-006.prf

3/1/2007 GPLN

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

EROSION CONTROL LEGEND

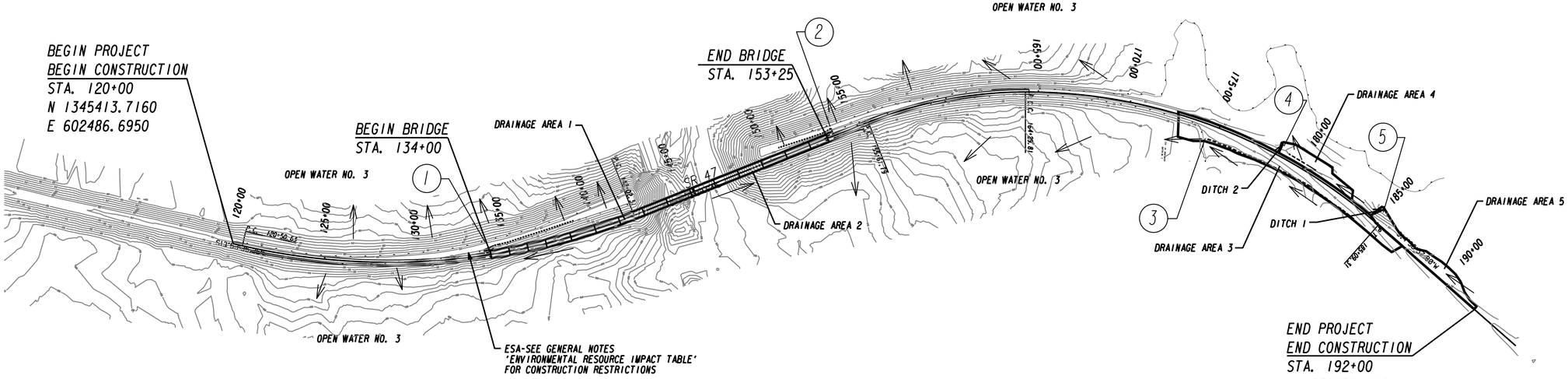
SR 47 OVER LITTLE RIVER

DRAWING No. 52-006

RIP RAP DATA

STRUCTURE NO.	STATION	Do (IN)	Q (CFS)	THICKNESS (IN)	Tw	La (FT)	3Do (FT)	d50 (FT)	AREA (SY)
A-1	134+23	18	8.96	24	< 0.5Do	9	4.50	0.30	8
B-1	153+63	18	6.21	24	< 0.5Do	9	4.50	0.30	8
Outfall 3	174+50	60	12.44	24	< 0.5Do	9	13.00	0.64	13
Outfall 4	178+65	24	3.46	24	< 0.5Do	9	8.00	0.64	8
Outfall 5	184+54	48	3.97	24	< 0.5Do	9	10.00	0.64	10

NOTE:
1. THE TOTAL PROJECT AREA IS 52.2 ACRES
2. THE EXPECTED PROJECT DISTURBED AREA IS 7.33 ACRES
3. CONSTRUCTION ACTIVITIES CONSIST OF RECONSTRUCTING THE SR 47 BRIDGE OVER THE LITTLE RIVER TO THE WEST OF THE EXISTING BRIDGE. THE ROADWAY WILL BE REALIGNED TO THE WEST REMAINING AS A TWO LANE RURAL ROAD.



OUTFALL NO.	STATION	POST DRAIN AREA (AC)	DISTURB AREA (AC)	RECEIVING WATER	Tc	PRE C	POST C	INTENSITY 50 YEAR	PRE Q50 (cfs)	POST Q50 (cfs)	INTENSITY 100 YEAR	PRE Q100 (cfs)	POST Q100 (cfs)	CD PIPE SIZE (in)	SKEW ANGLE	PRE HW50	PRE HW100	POST HW50	POST HW100	PRE VEL50 (ft/s)	PRE VEL100 (ft/s)	POST VEL50 (ft/s)	POST VEL100 (ft/s)	RIP RAP (sy)	POST Q25 (cfs)
1	134+23	1.15	0.05	Little River	10	N/A	0.95	7.69	N/A	8.24	8.35	N/A	8.96	18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.61	7.76	8	7.51
2	153+63	0.77	0.04	Little River	10	N/A	0.95	7.69	N/A	5.72	8.35	N/A	6.21	18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.86	9.01	8	5.22
3	174+50	2.81	0.91	Little River	10	0.53	0.53	7.69	11.4	11.4	8.35	12.44	12.44	N/A	N/A	N/A	N/A	N/A	N/A	2.15	5.04	2.15	5.04	13	10.45
4	178+65	0.74	0.32	Little River	10	0.35	0.56	7.69	2.0	3.2	8.35	2.16	3.46	N/A	N/A	N/A	N/A	N/A	N/A	3.96	4.09	4.81	4.96	8	2.91
5	184+54	0.97	0.56	Little River	10	0.57	0.49	7.69	4.2	3.7	8.35	4.62	3.97	N/A	N/A	N/A	N/A	N/A	N/A	5.43	5.67	5.11	5.28	10	3.33

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 300 600 1200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

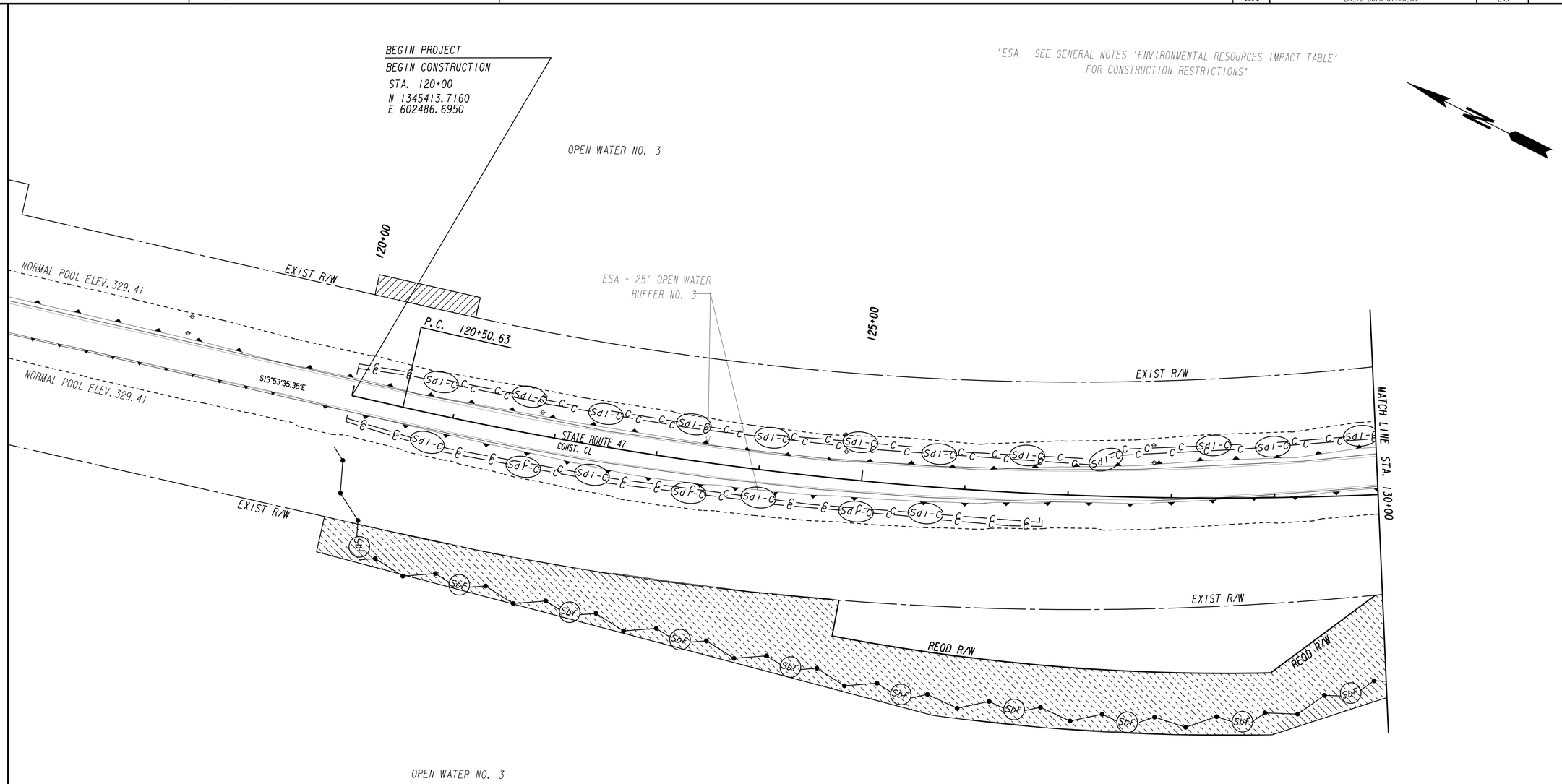
EROSION CONTROL DRAINAGE AREA MAP

STATE ROUTE 47

DRAWING No. 53-001

12/14/2012 GPLN

03-NOV-2014 13:29	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_54-001.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	239	267



LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

INITIAL STAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 120+00 TO STA. 130+00

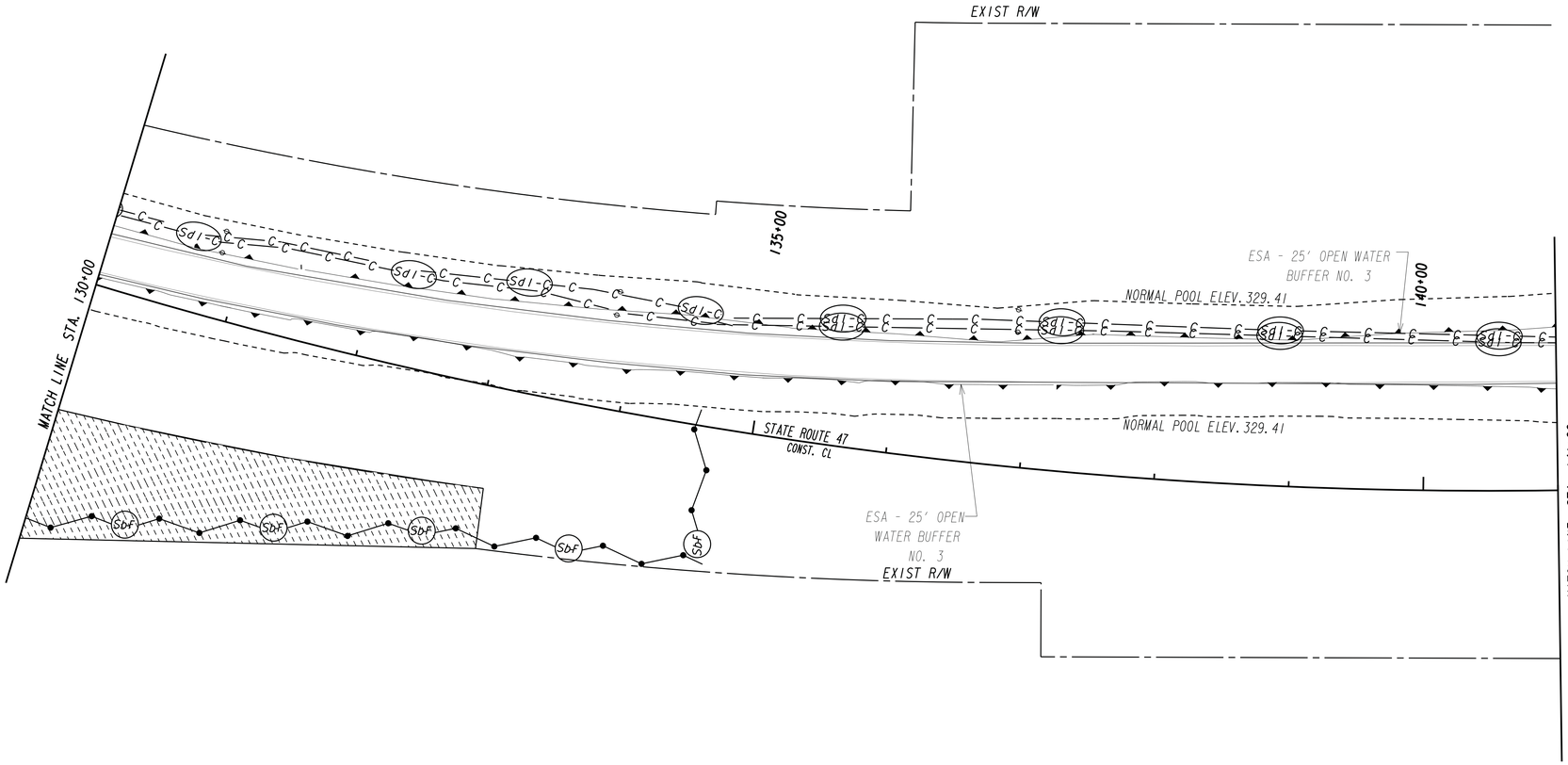
DRAWING No. 54-001

12/14/2012 GPLN

03-NOV-2014 13:29	TIME$$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_54-002.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
dgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	240	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

OPEN WATER NO. 3



OPEN WATER NO. 3

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

INITIAL STAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 130+00 TO STA. 141+00

DRAWING No. 54-002

12/14/2012 GPLN

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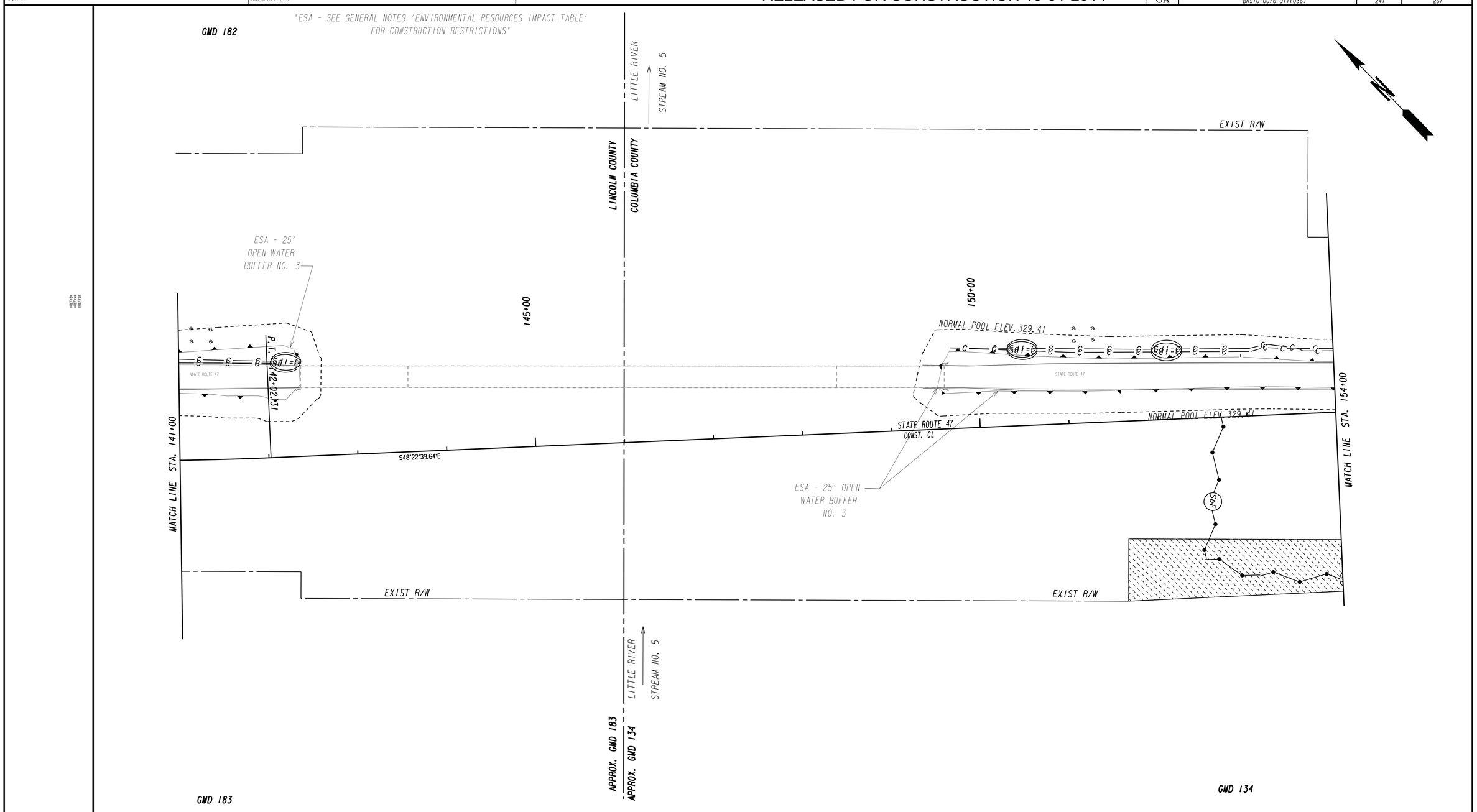


LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

INITIAL STAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 141+00 TO STA. 154+00

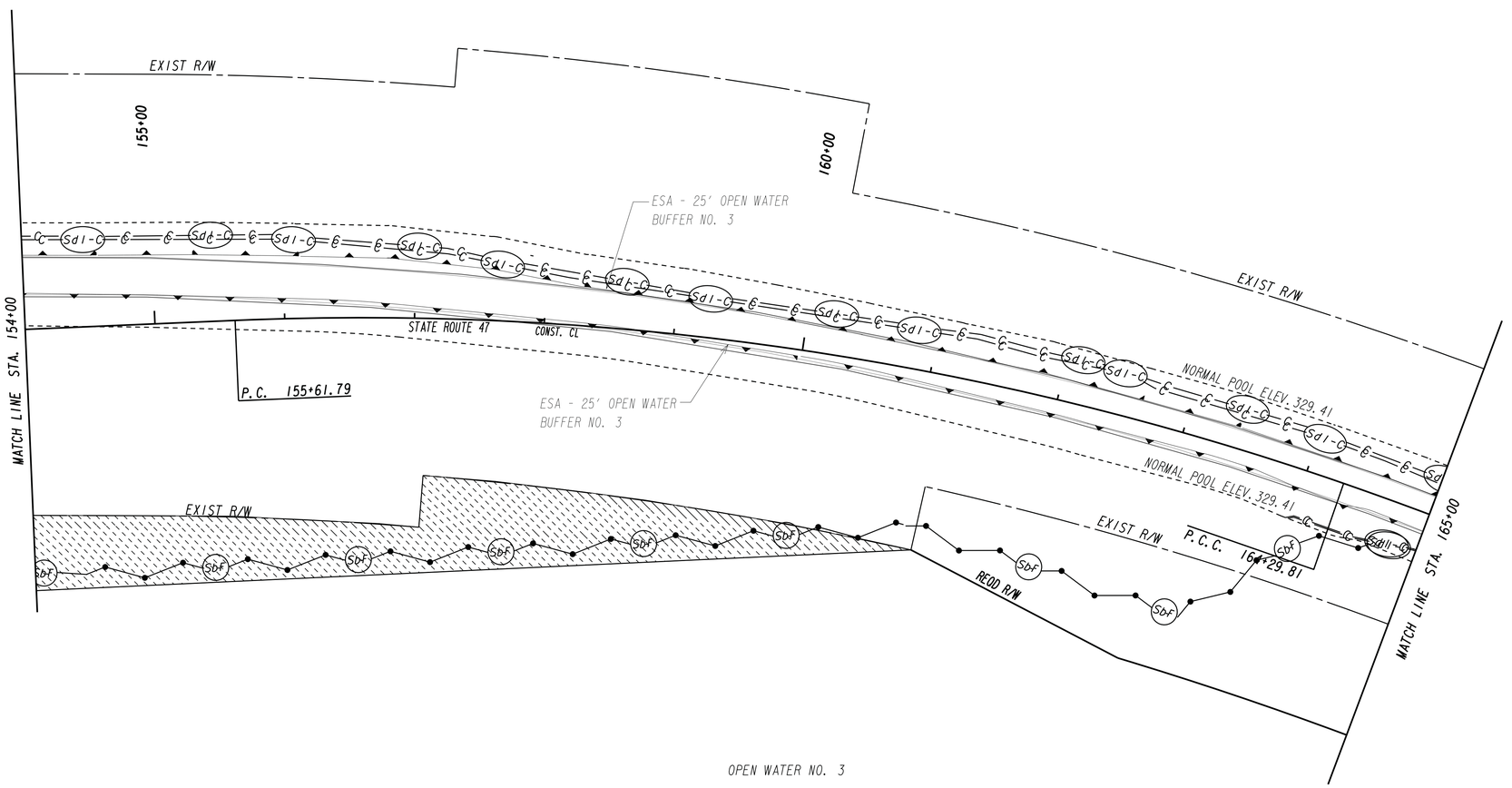
DRAWING No. 54-003

12/14/2012 GPLN

03-NOV-2014 13:29	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_54-004.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	242	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

OPEN WATER NO. 3



OPEN WATER NO. 3

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

INITIAL STAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

BMP LOCATION DETAILS

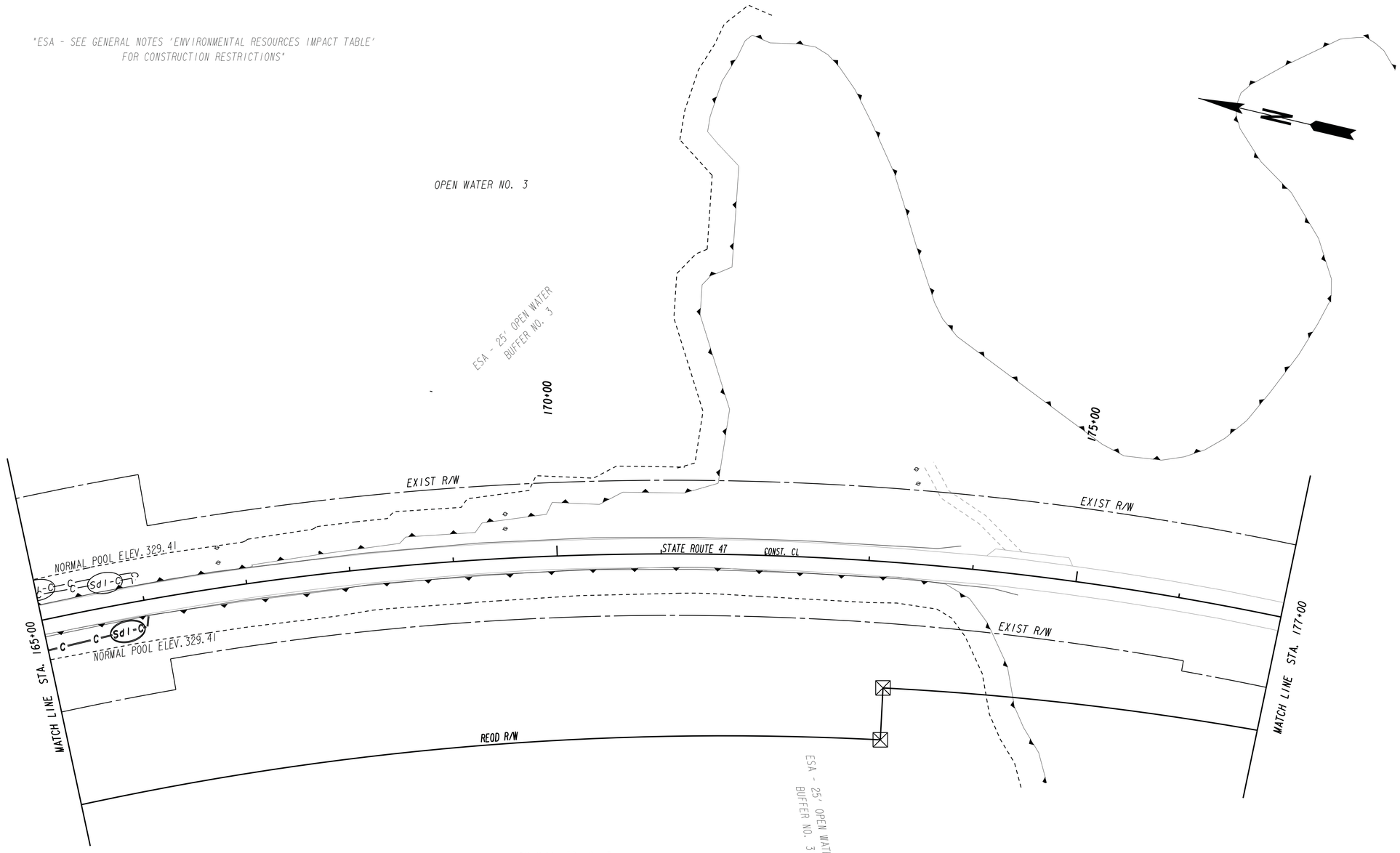
LINCOLN/COLUMBIA COUNTY
STA. 154+00 TO STA. 165+00

DRAWING No. 54-004

12/14/2012 GPLN

03-NOV-2014 13:30	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_54-005.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	243	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"



LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

INITIAL STAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
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SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

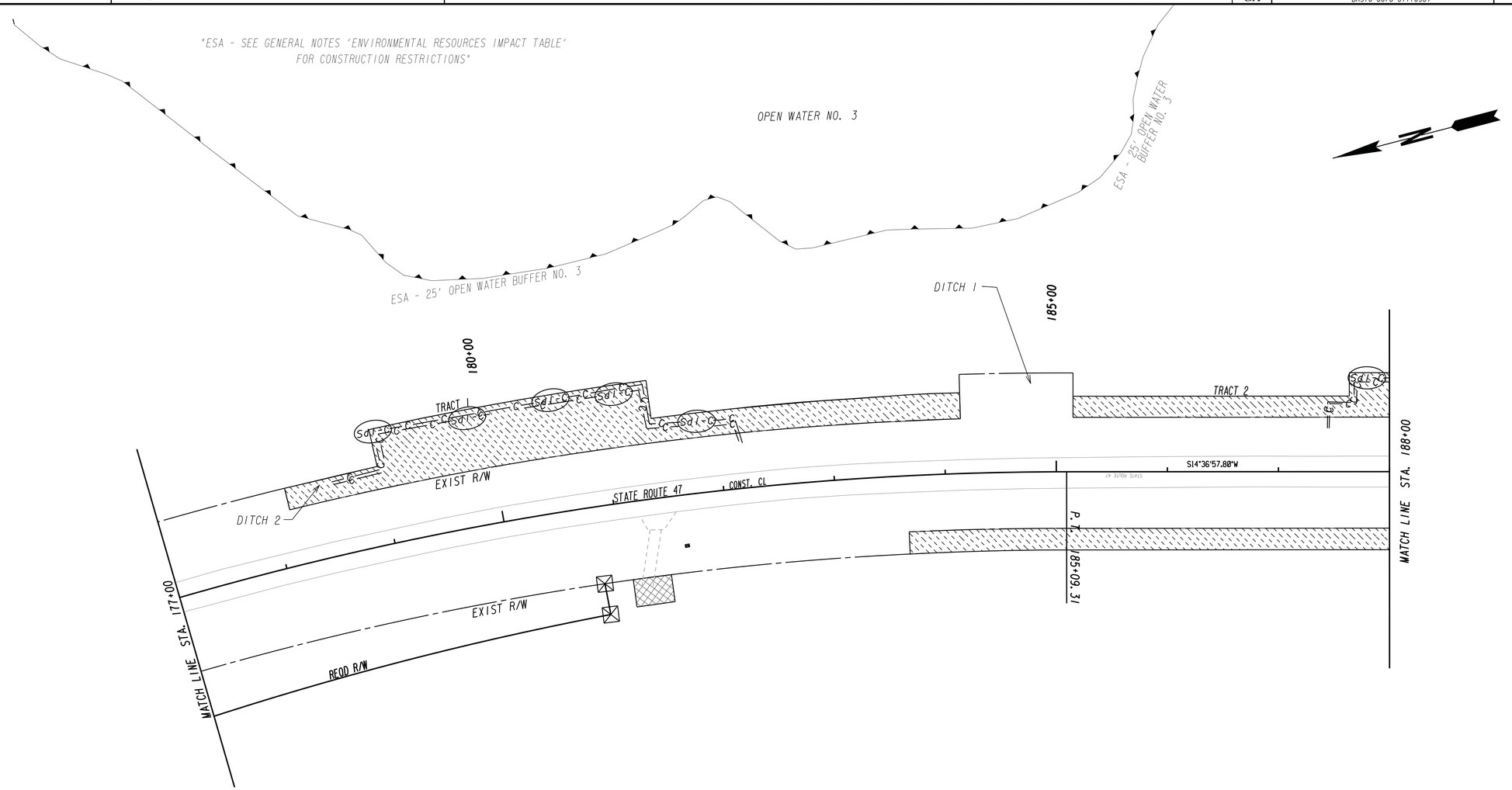
BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 165+00 TO STA. 177+00

DRAWING NO. 54-005

12/14/2012 GPLN

03-NOV-2014 13:30	TIME$$	PRF	Y:\Roadways\138973\232310\Dgn\0232310_54-006.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
dgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	244	267



LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

INITIAL STAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

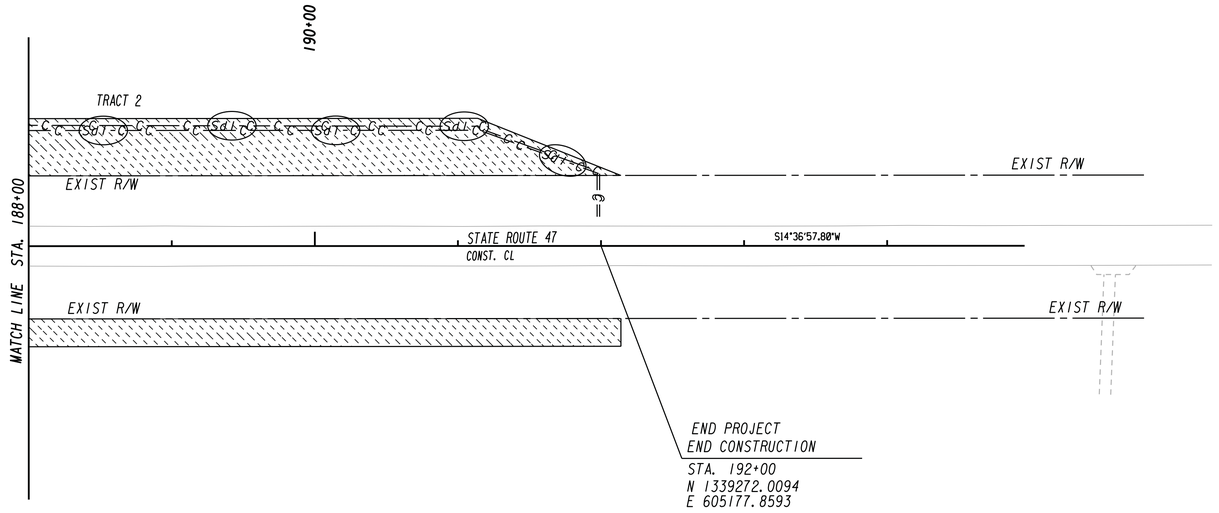
BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 177+00 TO STA. 188+00

DRAWING NO. 54-006

12/14/2012 GPLN

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"



LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

INITIAL STAGE

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

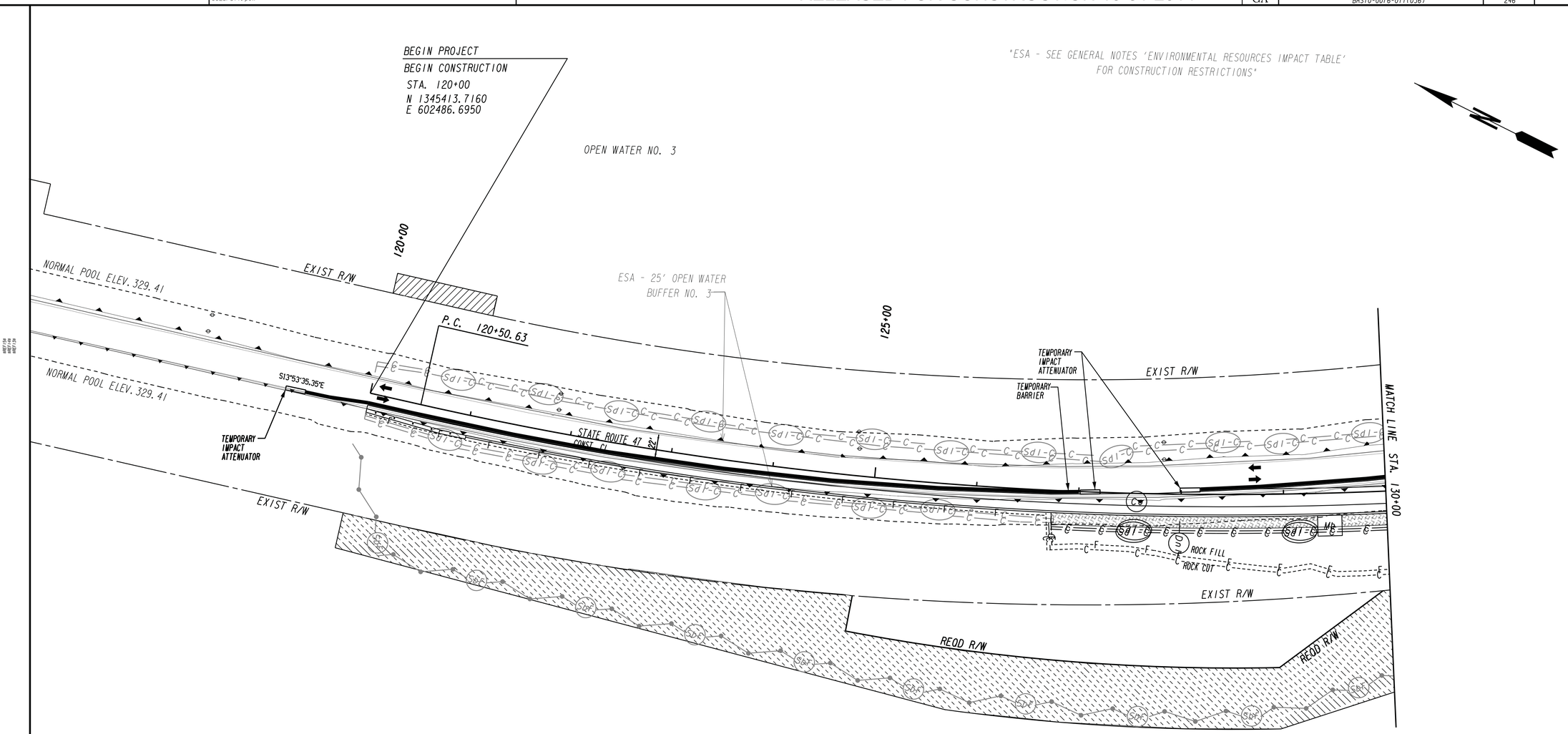
BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 188+00 TO STA. 192+00

DRAWING No. 54-007

12/14/2012 GPLN

03-NOV-2014 13:30	TIME$$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_54-008.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	246	267



STAGE 1
1. INSTALL ADVANCE WARNING SIGNS IN ACCORDANCE WITH GDOT SPECIAL PROVISION SECTION 150 AND MOST CURRENT EDITION OF MUTCD.

2. REDUCE SPEED LIMIT TO 45 MPH FOR DURATION OF CONSTRUCTION PERIOD.

3. STRIPE TEMPORARY TRAFFIC LANES. INSTALL TEMPORARY BARRIER ON SR 47 AND SHIFT TRAFFIC TO ACCOMMODATE STAGE 1 CONSTRUCTION AS SHOWN IN THE PLANS.

4. CONSTRUCT BRIDGE WEST OF EXISTING SR 47.

5. CONSTRUCT PROPOSED PAVEMENT UP TO BINDER COURSE ON THE WEST SIDE OF EXISTING SR 47 AS SHOWN IN THE PLANS.

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 1

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 120+00 TO STA. 130+00

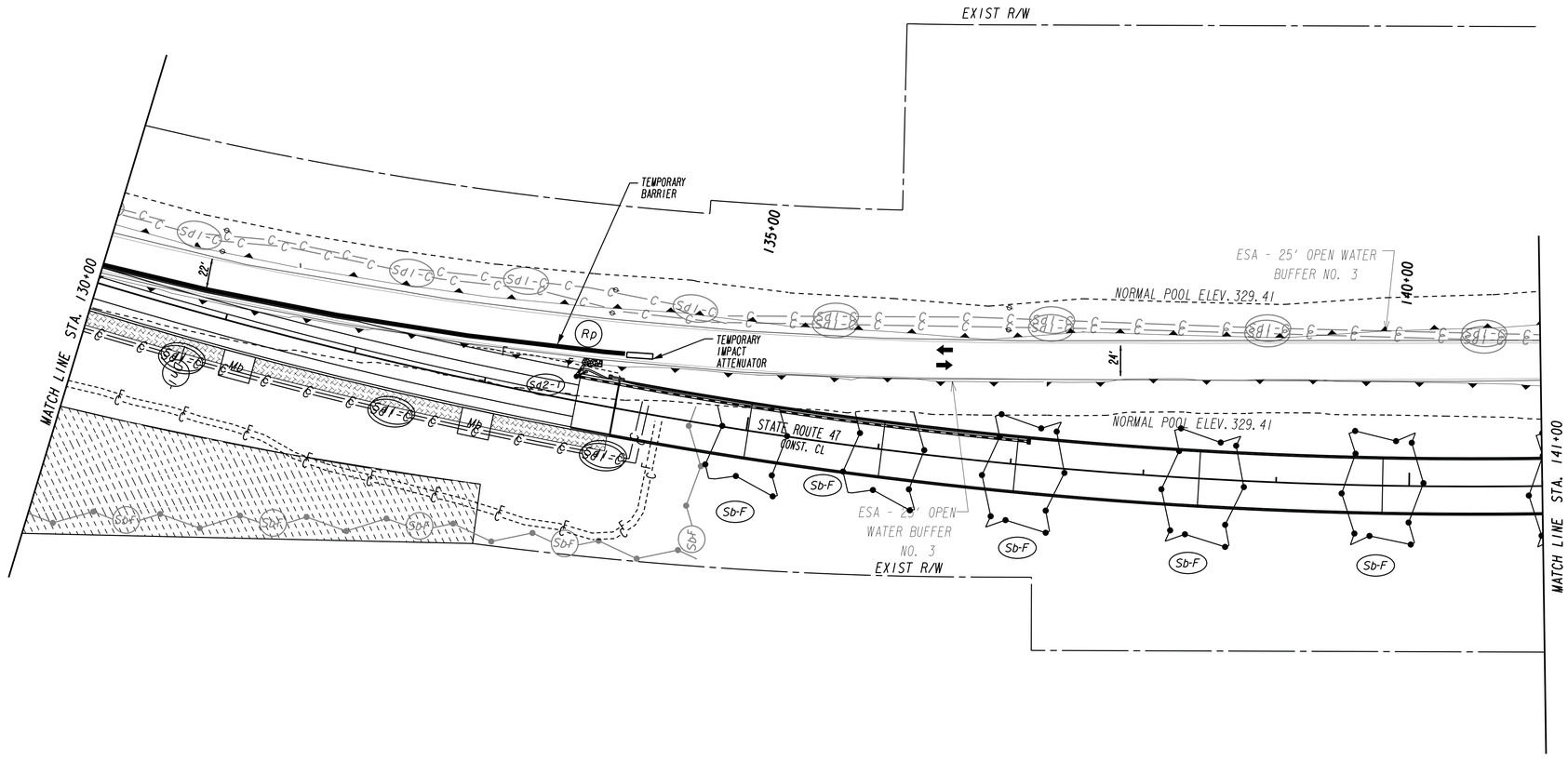
DRAWING No. 54-008

12/14/2012 GPLN

03-NOV-2014 13:30	TIME$$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_54-009.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01I(036)	247	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

OPEN WATER NO. 3



OPEN WATER NO. 3

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 1

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 130+00 TO STA. 141+00

DRAWING No: 54-009

12/14/2012 GPLN

03-NOV-2014 13:30	TIME$$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_54-010.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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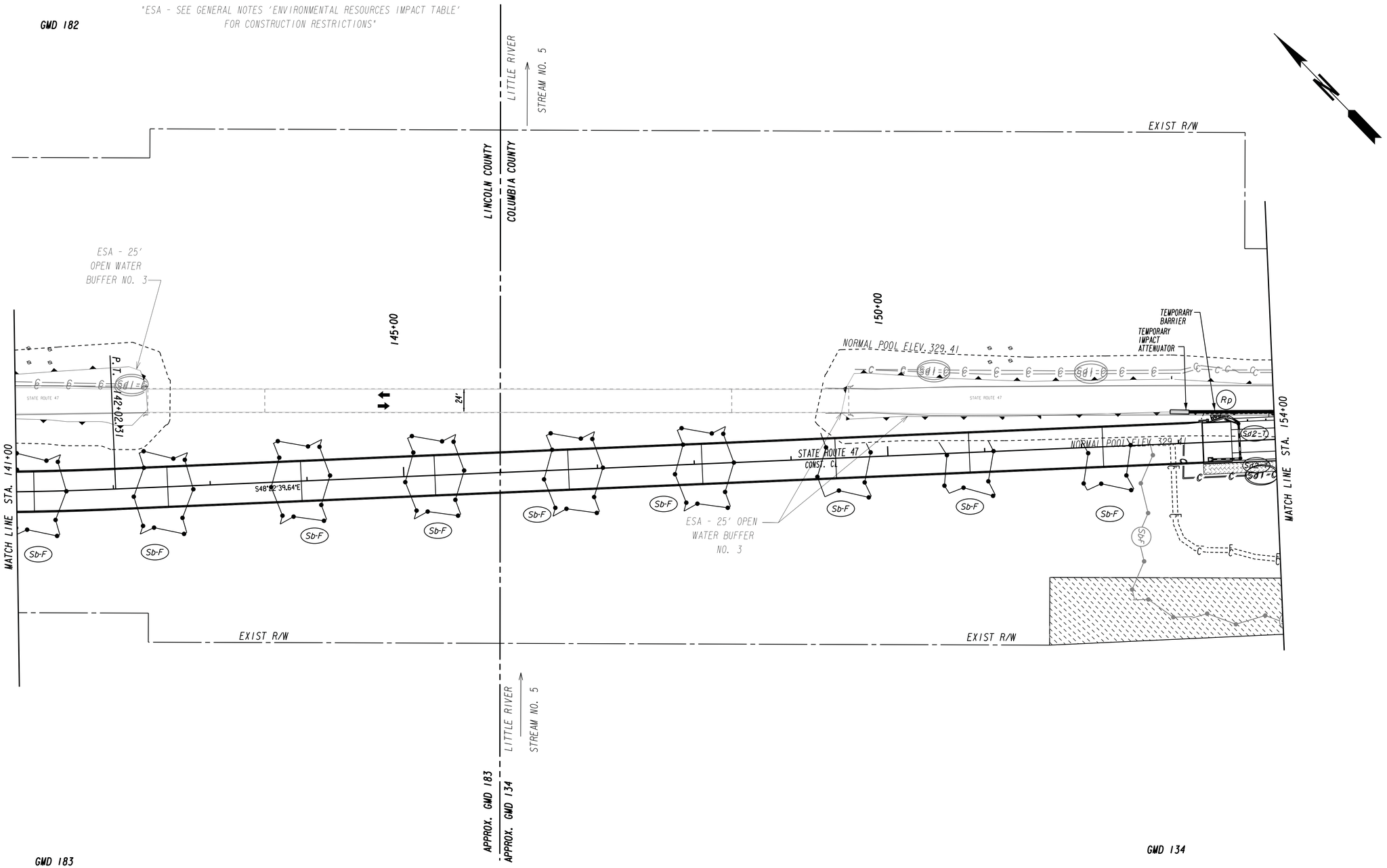


LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 1

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 141+00 TO STA. 154+00

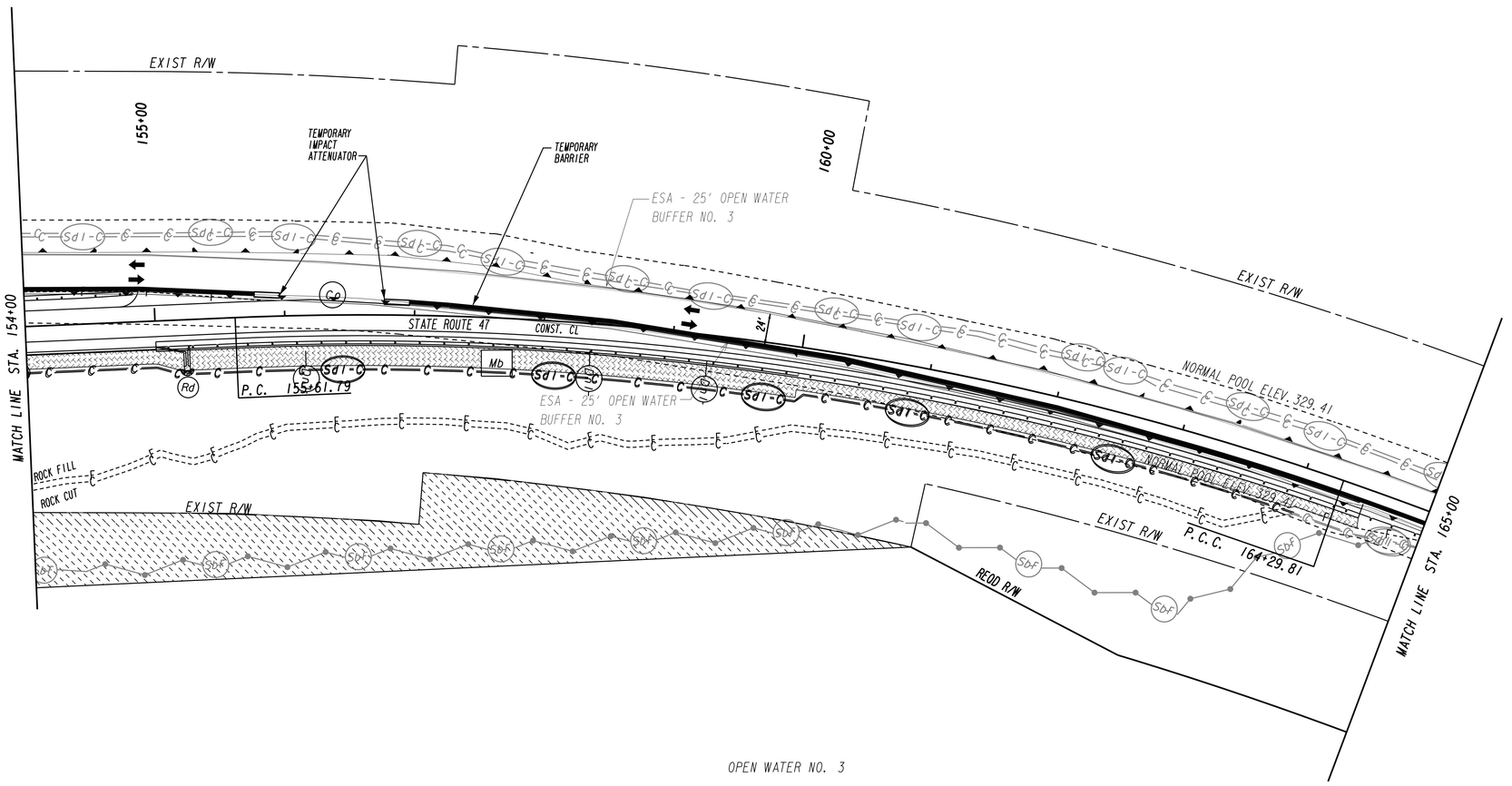
DRAWING No. 54-010

12/14/2012 GPLN

03-NOV-2014 13:30	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_54-011.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(036)	249	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

OPEN WATER NO. 3



OPEN WATER NO. 3

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 1

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

BMP LOCATION DETAILS

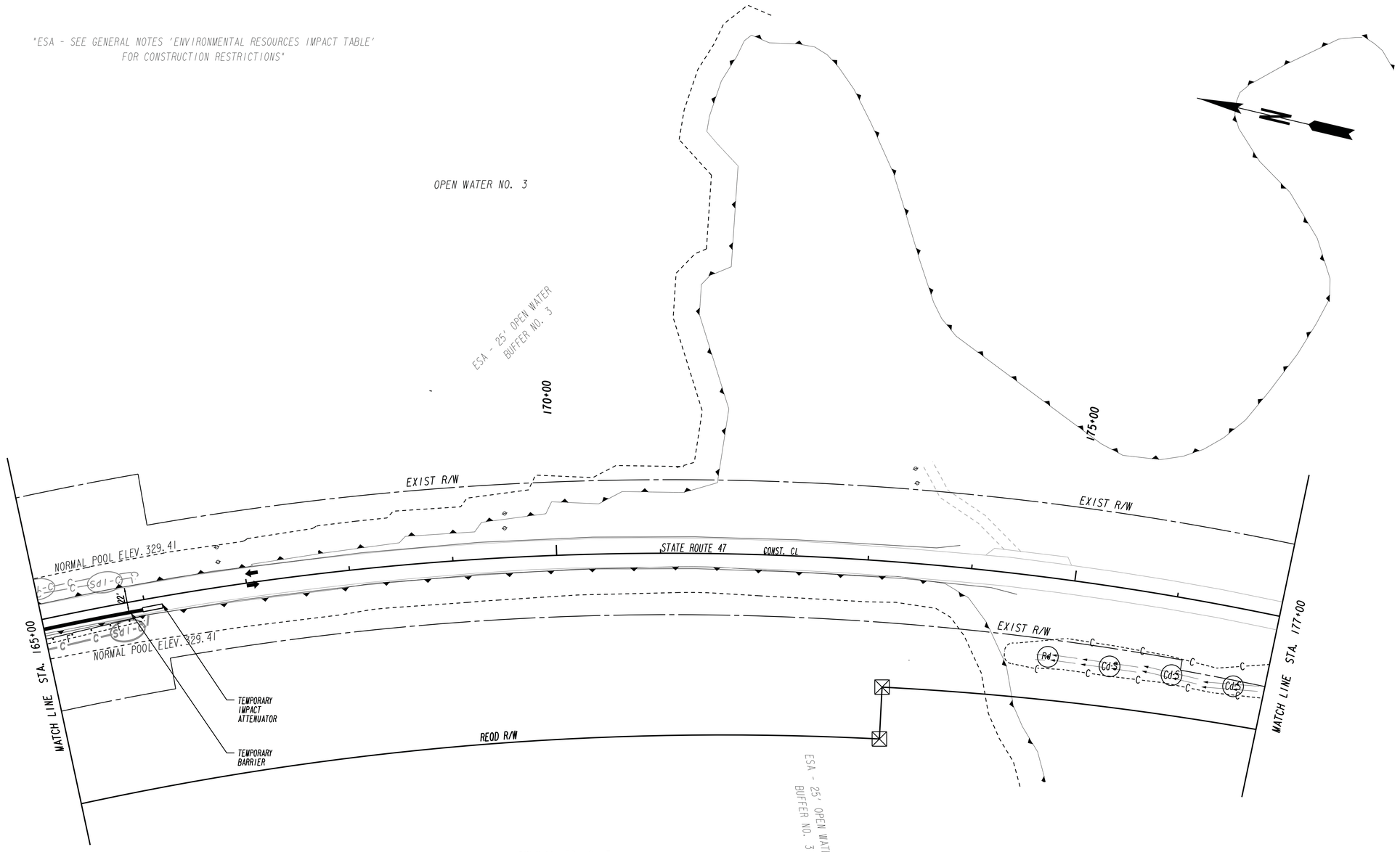
LINCOLN/COLUMBIA COUNTY
STA. 154+00 TO STA. 165+00

DRAWING No. 54-011

12/14/2012 GPLN

03-NOV-2014 13:30	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_54-012.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	250	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"



LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 1

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 165+00 TO STA. 177+00

DRAWING NO. 54-012

12/14/2012 GPLN

03-NOV-2014 13:30	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_54-013.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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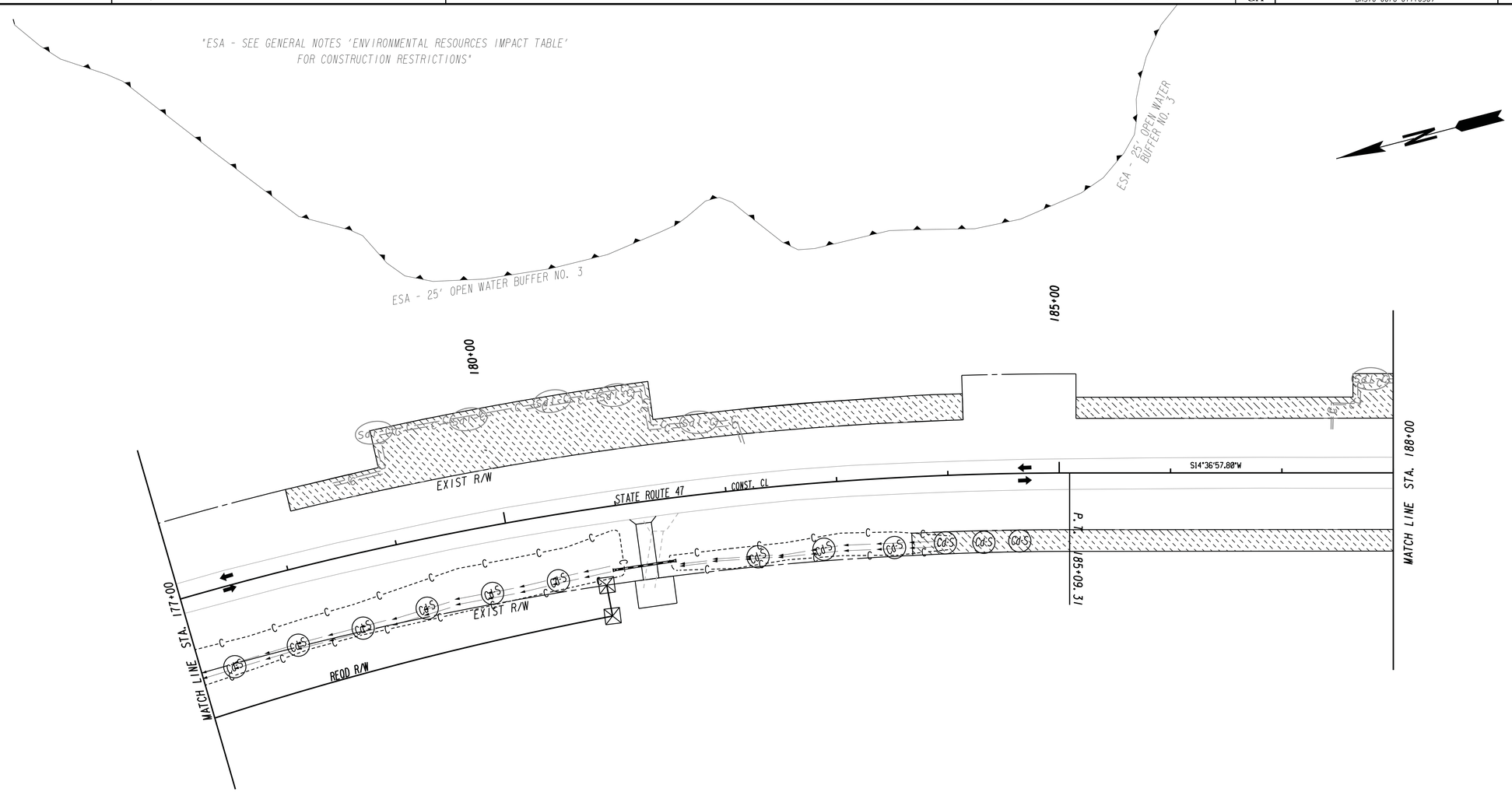


GMD 134

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 1

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

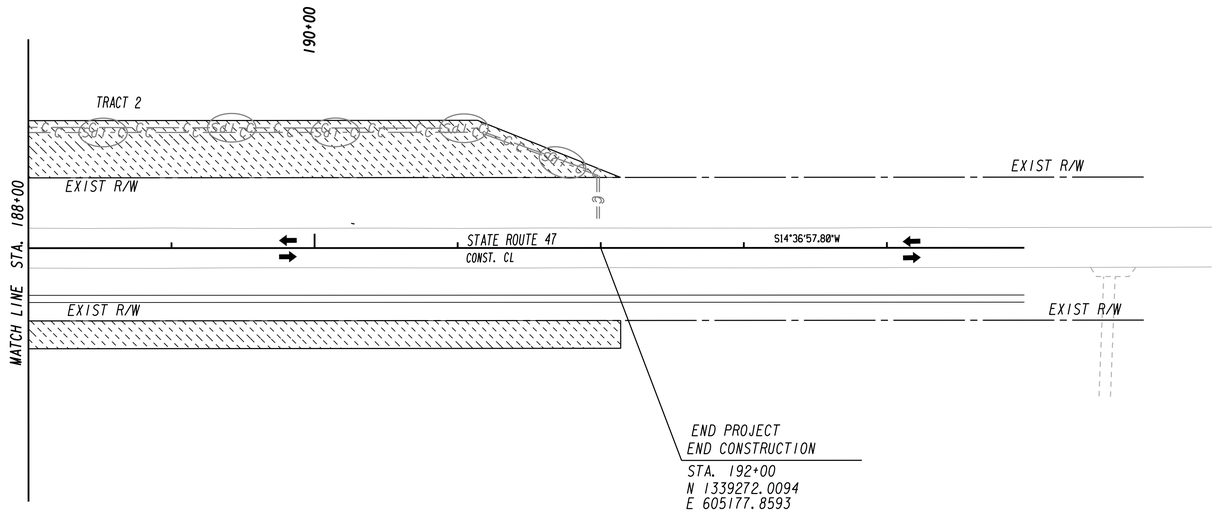
BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 177+00 TO STA. 188+00

DRAWING NO. 54-013

12/14/2012 GPLN

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"



LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 1

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 188+00 TO STA. 192+00

DRAWING No. 54-014

12/14/2012 GPLN

03-NOV-2014 13:30	TIME$$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_54-015.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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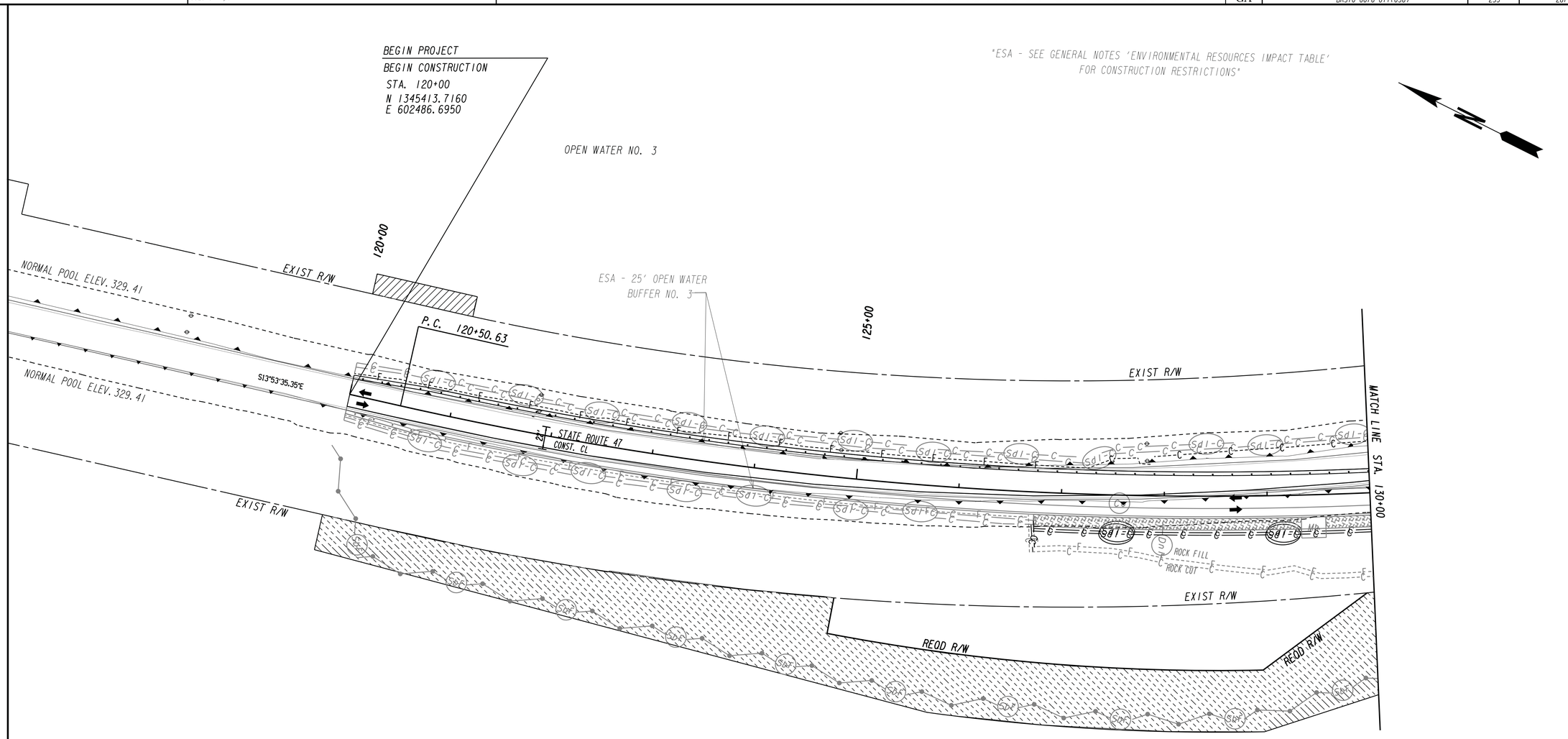


STAGE 2
1. SHIFT TRAFFIC TO THE WEST SIDE OF NEWLY CONSTRUCTED PORTION OF S.R. 47.
2. CONSTRUCT EAST SIDE OF PROPOSED TIE IN LOCATIONS THROUGH LEVELING COURSE ON S.R 47 AS SHOWN ON THE PLANS.
3. CONSTRUCT PARK AREA AT APPROXIMATE STA. 180+40 LT.
4. REMOVE EXISTING BRIDGE.
5. REMOVE EXISTING ROADBED.

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 2

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 120+00 TO STA. 130+00

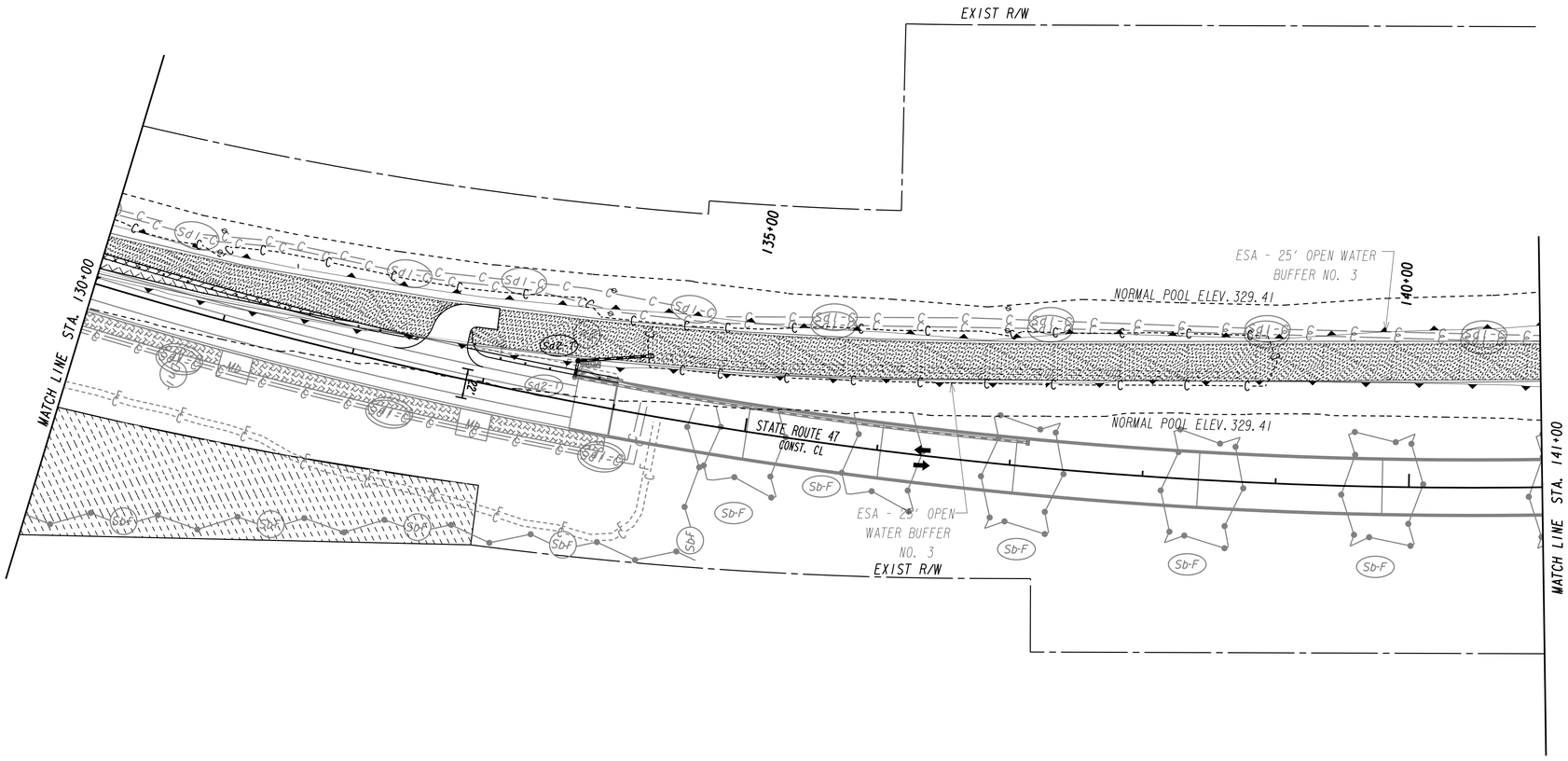
DRAWING No. 54-015

12/14/2012 GPLN

03-NOV-2014 13:30	TIME$$$	$PRFB$	Y:\Roadways\138973\232310\Dgn\0232310_54-016.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
dgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	254	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

OPEN WATER NO. 3



OPEN WATER NO. 3

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

12/14/2012 GPLN

STAGE 2

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

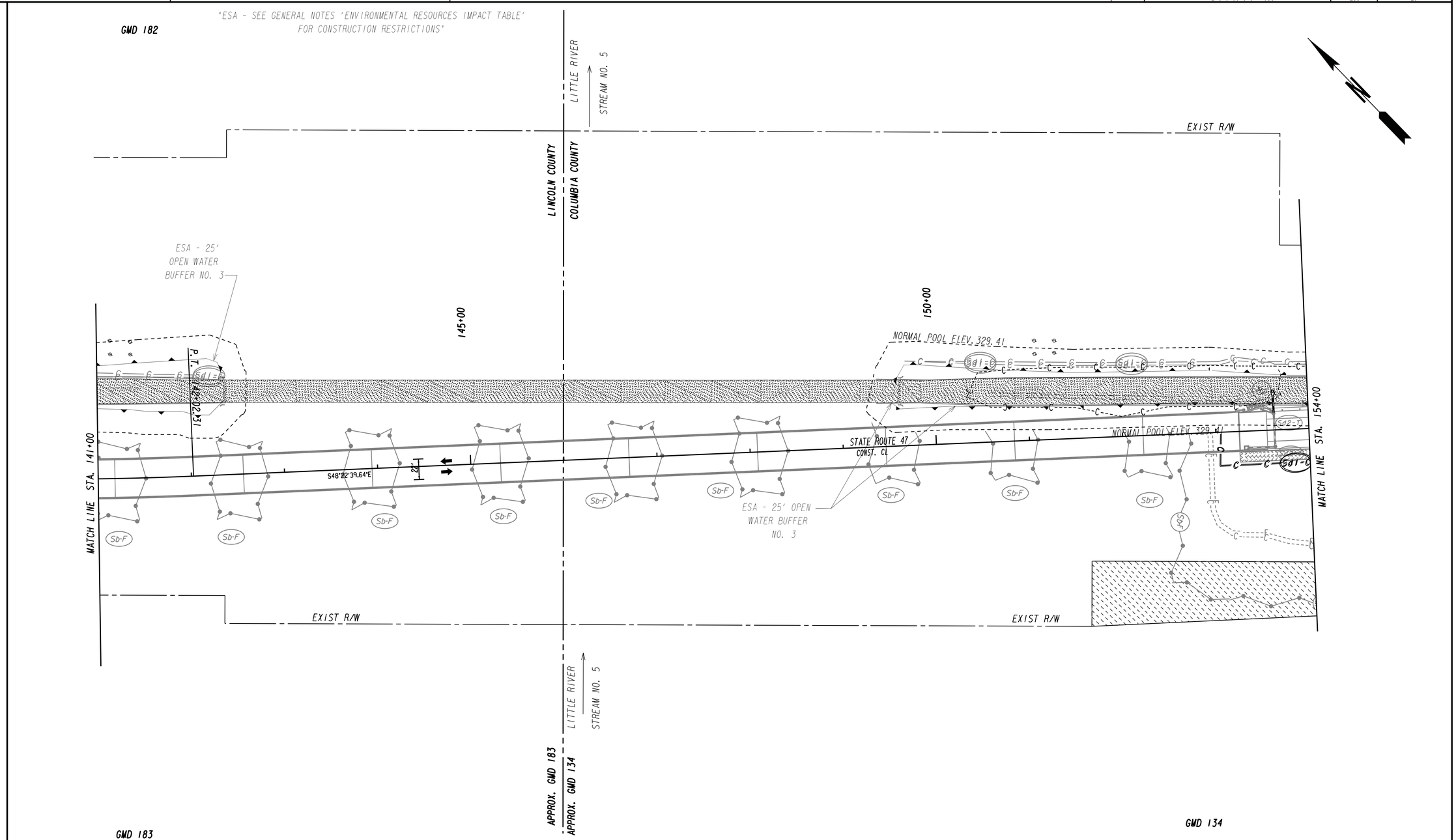
BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 130+00 TO STA. 141+00

DRAWING No. 54-016

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-011(036)	255	267



LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 2

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 141+00 TO STA. 154+00

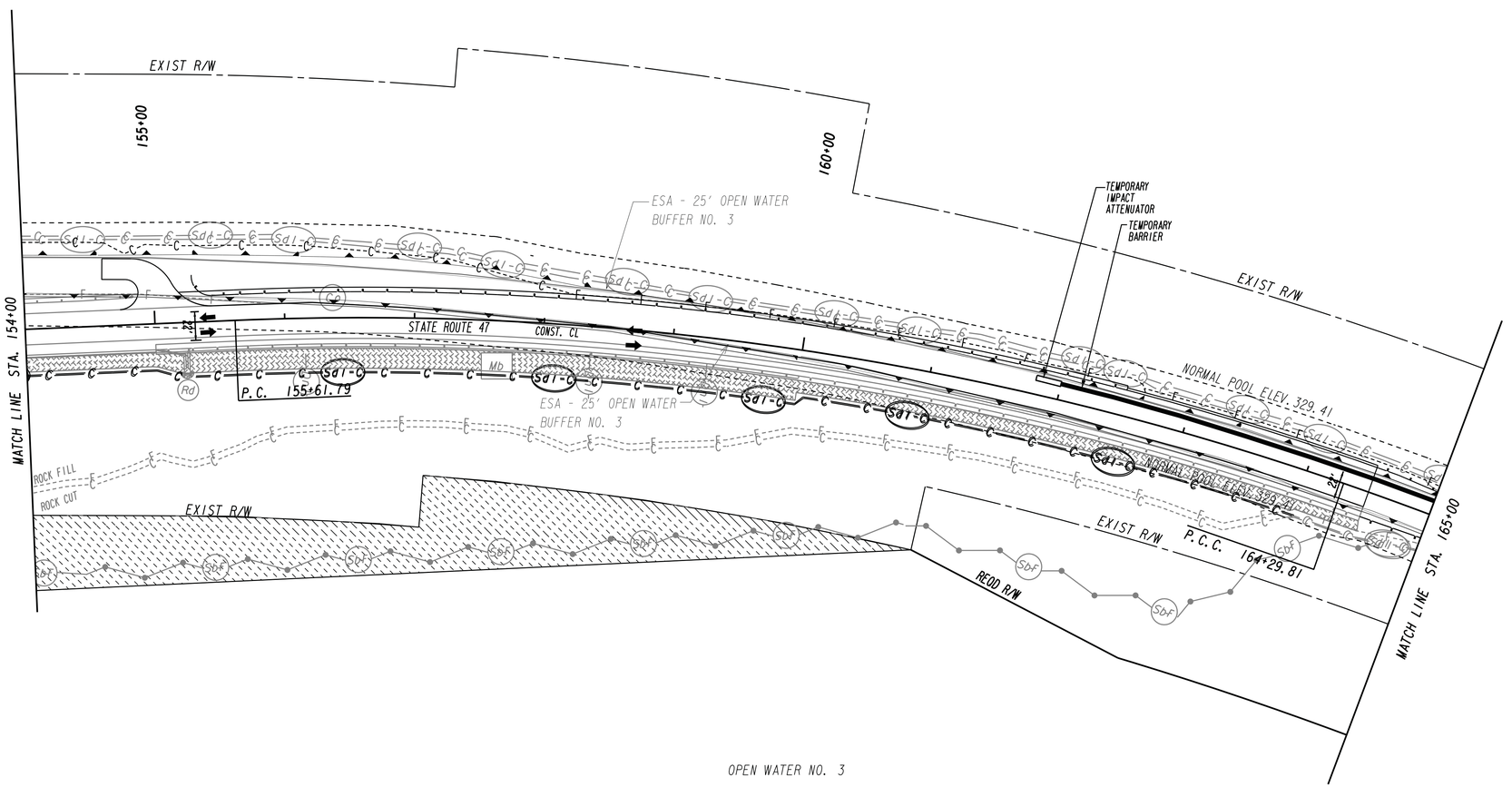
DRAWING No. 54-017

12/14/2012 GPLN

03-NOV-2014 13:30	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_54-018.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	256	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"

OPEN WATER NO. 3



OPEN WATER NO. 3

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 2

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 154+00 TO STA. 165+00

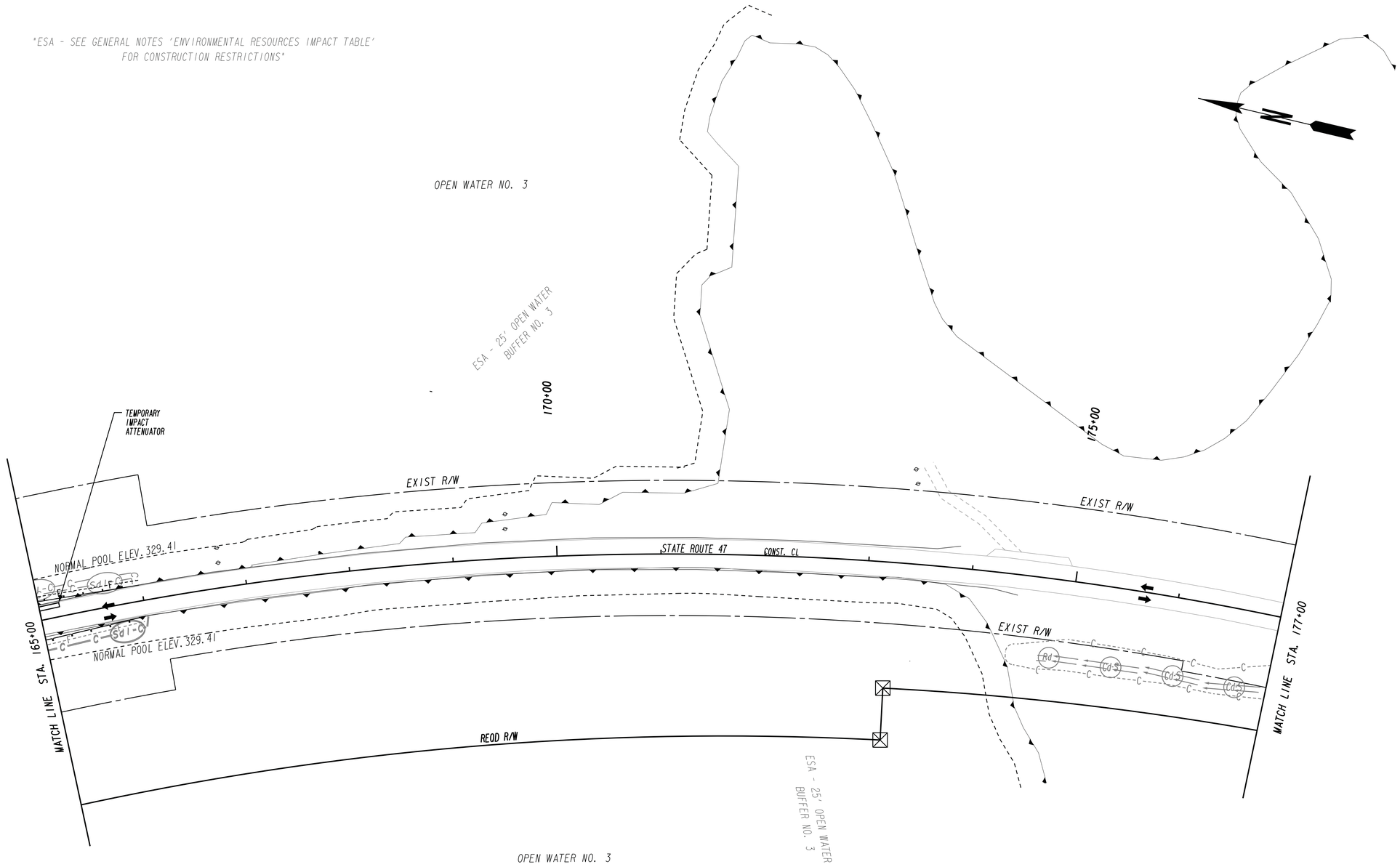
DRAWING NO. 54-018

12/14/2012 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(1036)	257	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"



LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 2

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

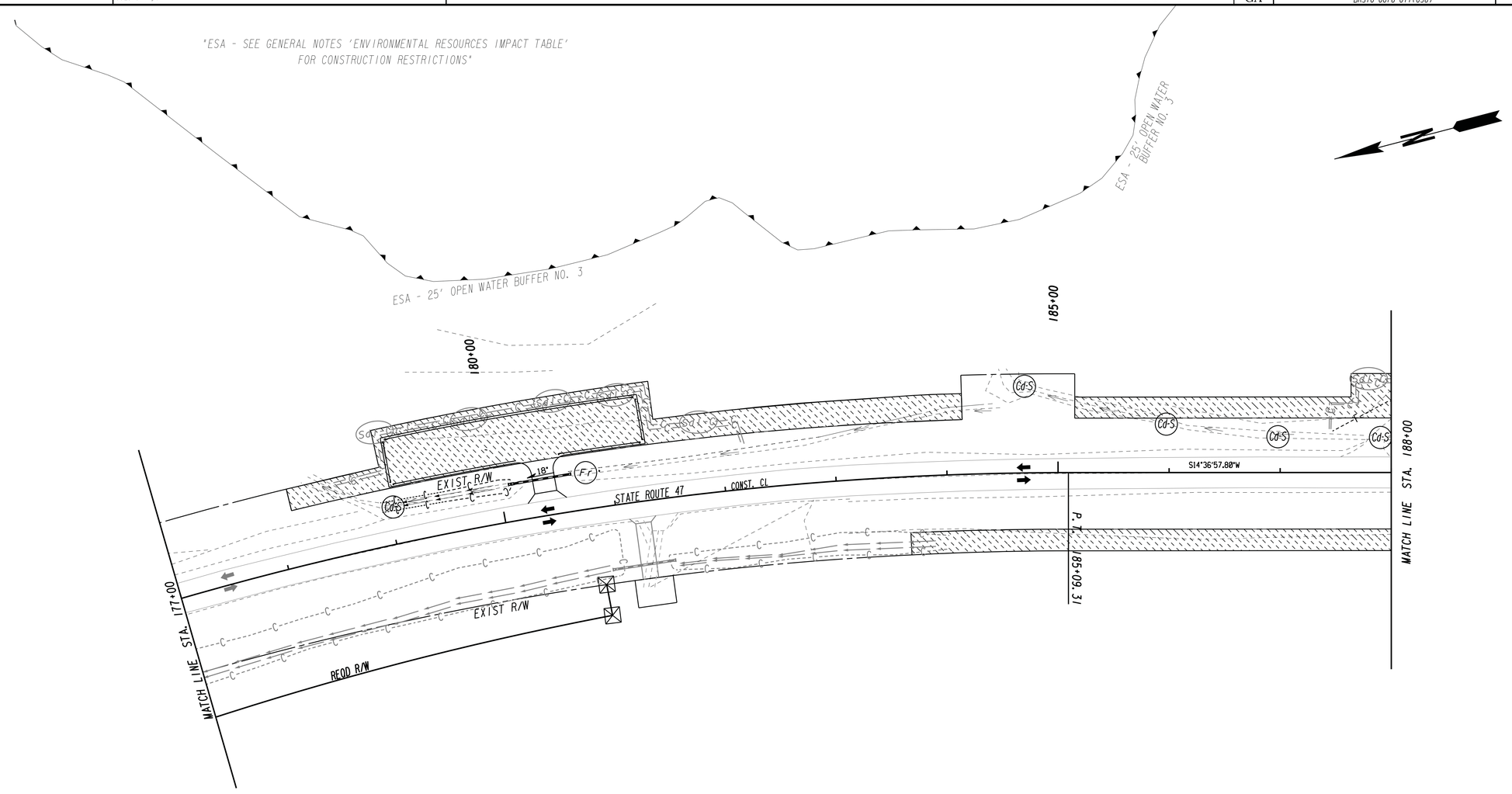
BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 165+00 TO STA. 177+00

DRAWING No. 54-019

12/14/2012 GPLN

03-NOV-2014 13:30	TIME$$	$PRF8$	Y:\Roadways\138973\232310\Dgn\0232310_54-020.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	258	267



GMD 134

LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 2

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 177+00 TO STA. 188+00

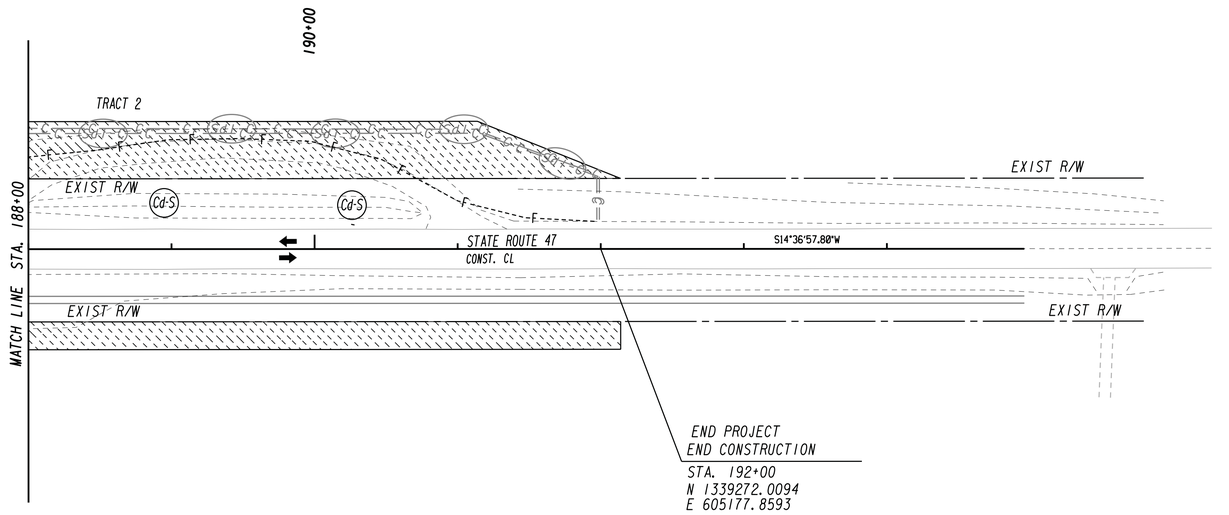
DRAWING No: 54-020

12/14/2012 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01I(036)	259	267

"ESA - SEE GENERAL NOTES 'ENVIRONMENTAL RESOURCES IMPACT TABLE' FOR CONSTRUCTION RESTRICTIONS"



LEGEND

- PAVEMENT REMOVAL
- TEMPORARY CONSTRUCTION PAVEMENT
- PERMANENT CONSTRUCTION
- CONCRETE MEDIAN CONSTRUCTION
- MILL & OVERLAY CONSTRUCTION
- OPEN LANES OF TRAFFIC

STAGE 2

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 50 100 200

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

BMP LOCATION DETAILS

LINCOLN/COLUMBIA COUNTY
STA. 188+00 TO STA. 192+00

DRAWING NO. 54-021

12/14/2012 GPLN

03-NOV-2014 13:30	TIME$$$	$PRFB$	Y:\Roadways\138973\232310\Dgn\0232310_55.dgn	RELEASED FOR CONSTRUCTION 10-31-2014	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
bgowen		8825Full.pen			GA	BRSTO-0076-01(1036)	260	267

RECEIVING WATER DELINEATION

BEGIN PROJECT
BEGIN CONSTRUCTION
STA. 120+00
N 1345413.7160
E 602486.6950

END BRIDGE
STA. 153+25

LITTLE RIVER / CLARKS HILL LAKE
DRAINAGE BASIN = 712.5 SQ MILES

BEGIN BRIDGE
STA. 134+00

OPEN WATER
NO. 3

END PROJECT
END CONSTRUCTION
STA. 192+00
N 1339272.0094
E 605177.8593

1. Sta 134+23, 44.7' LT SAMPLING LOCATION
2. Sta 153+63, 54.0' LT
3. Sta. 174+49, 77' RT SAMPLING LOCATION
4. Sta. 178+65, 50' LT
5. Sta. 184+54, 89.2' LT

Baker
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

SCALE IN FEET
0 2000 4000 8000

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

WATERSHED MAP
SITE MONITORING PLAN
STATE ROUTE 47

DRAWING No. 55-001

12/14/2012 GPLN

RELEASED FOR CONSTRUCTION 10-31-2014

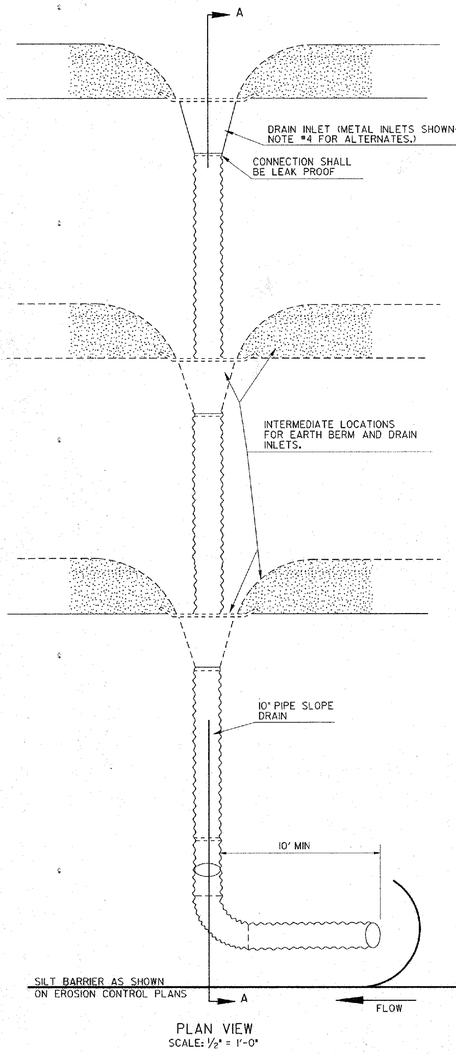
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	261	267

Tue Feb 29 08:32:19 2000 \\DOT1-DSNI\DCE\OSD_Mulberr.dcf 0052d M:\David\workfind\(am)d-19.dcf

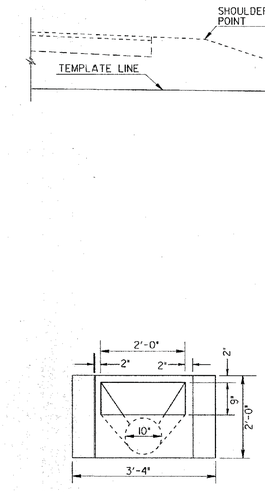
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

USES:

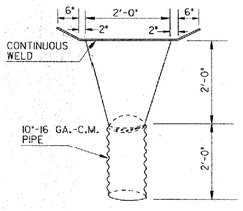
TEMPORARY PIPE SLOPE DRAIN IS USED TO CARRY WATER FROM THE WORK AREA TO A LOWER ELEVATION. TYPICAL SPACING SHALL BE AT INTERVALS OF 500 FEET ON DIAMETER TO 2% GRADES, 200 FEET ON STEEPER GRADES, AND MORE FREQUENTLY AS DICTATED BY EXISTING FIELD CONDITIONS.



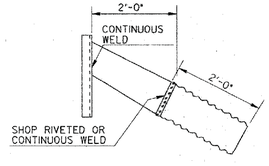
PLAN VIEW
SCALE: ½" = 1'-0"



FRONT VIEW
SCALE: ¾" = 1'-0"

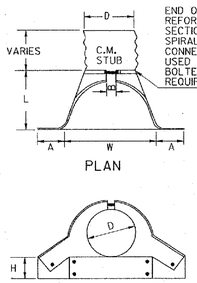


PLAN VIEW
SCALE: ¾" = 1'-0"



SIDE VIEW
SCALE: ¾" = 1'-0"

SECTION A-A
SCALE: ½" = 1'-0"



ALTERNATE DRAIN INLET (METAL)

TYPICAL DIMENSIONS

D	GALV. STEEL	ALUM.	A	B	H	L	W
10"	18 GA	18 GA	7½"	2½"	6"	14½"	21"
12"	16 GA	16 GA	5"	6"	6"	20"	24"

GENERAL NOTES:

1. DRAIN INLETS AND SLOPE DRAIN PIPE USED FOR TEMPORARY EROSION AND POLLUTION CONTROL UNDER SECTION 163 WILL BE RETAINED FOR USE AS INVENTORY ITEMS BY THE CONTRACTOR.
2. EROSION PROTECTION AT PIPE OUTLET WILL BE PROVIDED AS APPROPRIATE. THE PIPE MAY BE EXTENDED TO OUTLET IN A PAVED DITCH OR TEMPORARY DISSIPATORS CONSTRUCTED OF LOOS OR STONE MAY BE USED. NO SEPARATE PAYMENT WILL BE MADE FOR THIS PROTECTION MEASURE.
3. SLOPE DRAIN PIPE MAY BE ANY TYPE ALLOWED BY THE GA. STANDARD SPECIFICATIONS.
4. ALLOWABLE DRAIN INLET ALTERNATES WILL BE:
   (A) IF SLOPE DRAIN IS PLASTIC, A PLASTIC DRAIN INLET OR PLASTIC FLARED END SECTION HAVING SIMILAR DESIGN TO METAL INLETS OR END SECTIONS MAY BE USED FOR THE DRAIN INLET.
   (B) A METAL FLARED END SECTION MAY BE USED WITH EITHER PLASTIC PIPE OR C.M. PIPE, IF THE END SECTION WAS MADE FOR LARGER PIPE THAN THE SLOPE DRAIN PIPE, AN APPROVED MODIFIED CONNECTION WILL BE REQUIRED BETWEEN THE PIPE AND THE END SECTION.
   (C) A SUMP HOLE WITH DIMENSIONS AT LEAST EQUIVALENT TO THE METAL DRAIN AND LINED WITH POLYETHYLENE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER MAY BE USED WITH ANY TYPE OF PIPE.
   (D) THE METAL DRAIN INLET SHOWN MAY BE USED WITH EITHER 10" C.M. PIPE OR PLASTIC PIPE.
5. THE CONTRACTOR MAY ELECT TO USE PIPE LARGER THAN 10" DIAMETER WITH NO ADDITIONAL PAYMENT.

BY	REVISION	DATE
	ADDED ELBOW	2-25-00

CONSTRUCTION DETAILS
TEMPORARY PIPE SLOPE DRAIN WITH DRAIN INLET

SCALE AS SHOWN

D-19

Tue Feb 29 08:32:19 2000 \\DOT1-DSNI\DCE\OSD_Mulberr.dcf posted Microstation working version-7.dgn

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

EROSION CONTROL CONSTRUCTION DETAILS

STATE ROUTE 47

DRAWING NO. 56-001

3/1/2007 GPLN

1/18/2011 8:36:26 AM \\GDOT-DSK1\GDPLOT\GCF\SD_K1y8060.gcf gowens Y:\CADD\Rev. Construction Details\D-20\D-20.prf SD 906

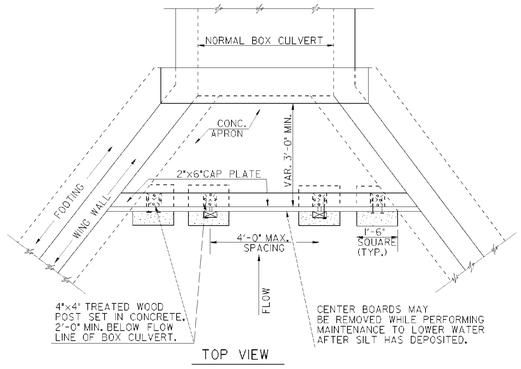
USES: A SILT CONTROL GATE IS A STRUCTURE PLACED ON A PIPE, SINGLE BARREL BOX CULVERT, OR DROP INLET TO FORM A BASIN TO TRAP SILT.

NOTE: SILT CONTROL GATES SHALL NOT BE USED ON STRUCTURES THAT CONVEY STATE WATERS.

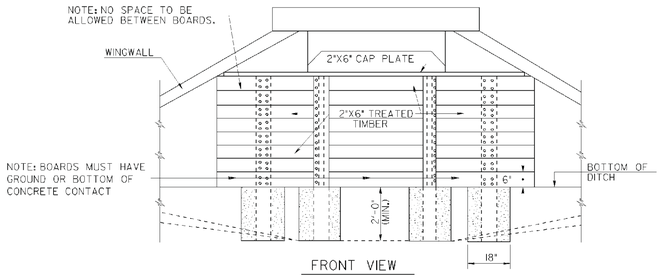
NOTES:

1. REFER TO CONSTRUCTION DETAIL 2332 FOR CONCRETE APRONS.
2. REMOVAL OF TYPE I SILT CONTROL GATE SHALL BE IN ACCORDANCE WITH SECTION 163.3.05.

TYPE 1 - FOR BOX CULVERTS

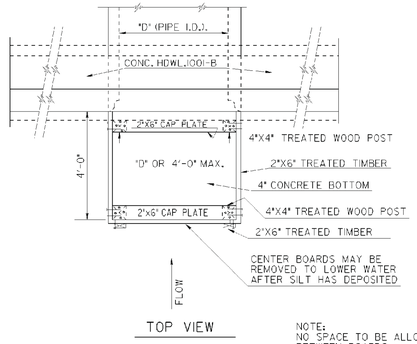


TOP VIEW



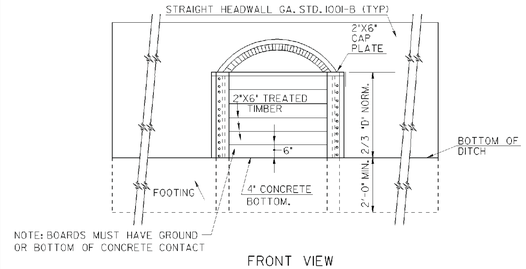
FRONT VIEW

TYPE 2 - FOR STRAIGHT HEADWALLS



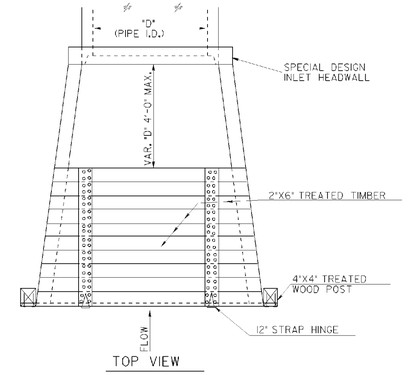
TOP VIEW

NOTE:
NO SPACE TO BE ALLOWED BETWEEN BOARDS

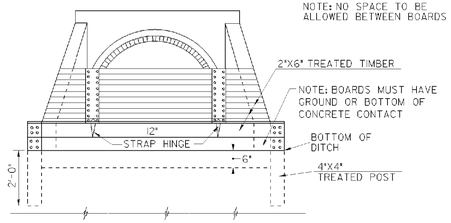


FRONT VIEW

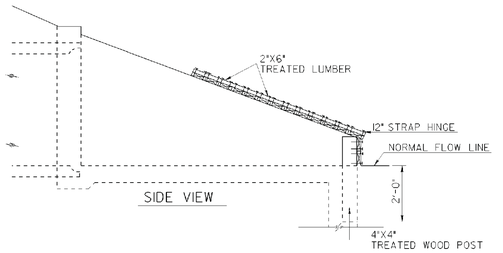
TYPE 3 - FOR FLARED END SECTIONS AND TAPERED HEADWALLS



TOP VIEW



FRONT VIEW



SIDE VIEW

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAILS

SILT CONTROL GATES FOR STRUCTURES TYPE - 1, 2, AND 3

REV. & REDR. DEC., 2000

BY	REVISION	DATE
TPC	ADDED REV SILT GATE NOTES	1-9-11
	REMOVE WET SEDIMENT TRAP	
	REVISE METER SIZES	3-24-05
GLG	REVISE LUMBER SIZE	10-25-02
MKR	ADDED PAYMENT NOTE	

Designed ____
Drawn ____
Traced ____
Checked ____
8-12

NUMBER D-20

3/1/2007 GPLN

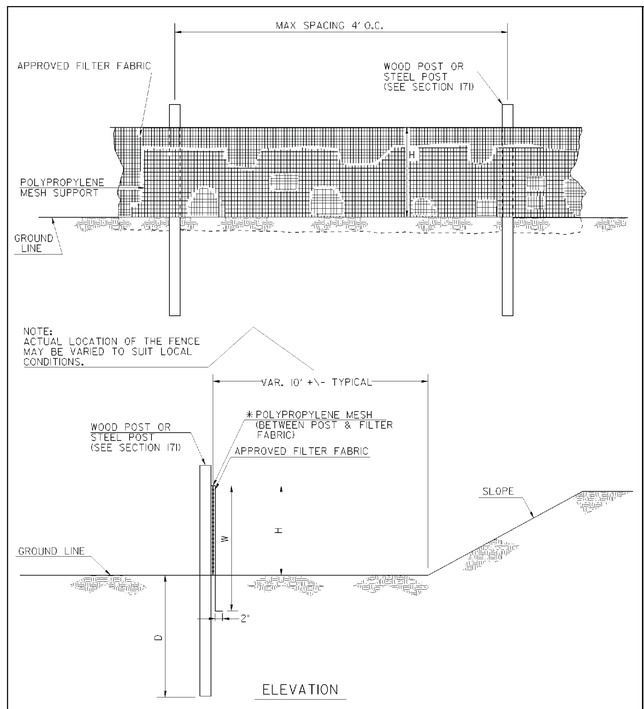
REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

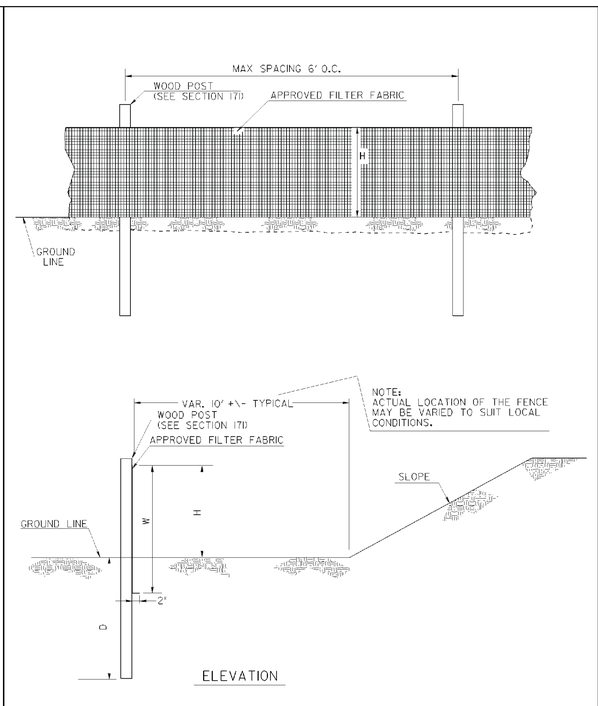
EROSION CONTROL CONSTRUCTION DETAILS

STATE ROUTE 47

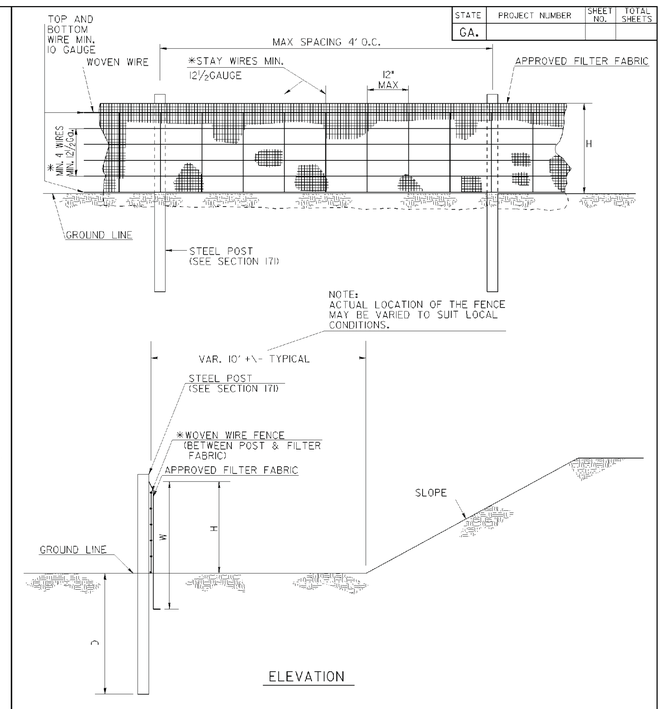
DRAWING No. 56-002



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 ¾ INCHES WIDE. NAILS SHALL BE AT LEAST 14 GAUGE, 1 INCH 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 OPL-36 FOR A LIST APPROVED SILT FENCE FABRIC.
8. TEMPORARY SILT FENCE SHALL NOT BE PLACED WITHIN STATE WATERS UNLESS PERMITTED.

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)

DATE | REVISION | BY

REVISION DATES

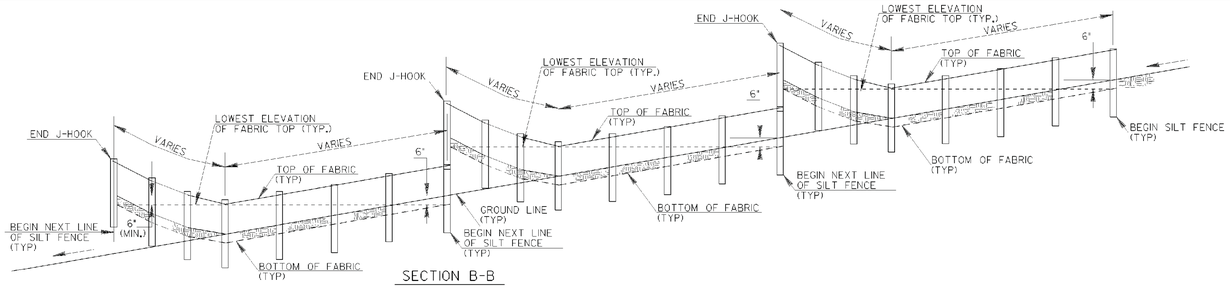
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

EROSION CONTROL CONSTRUCTION DETAILS

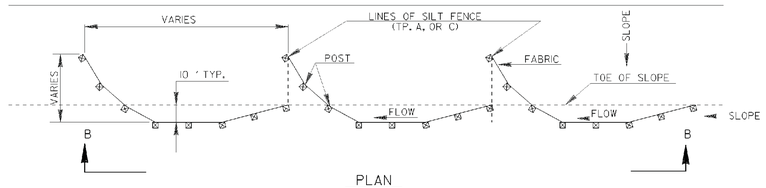
STATE ROUTE 47

DRAWING No. 56-003

3/1/2007 GPLN

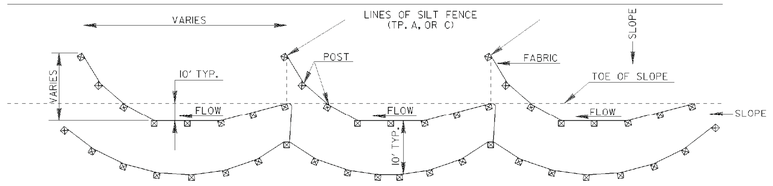


SECTION B-B



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.

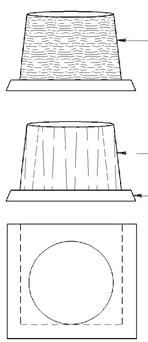
(PLASTIC ALTERNATE)

NOTE:
THE DRAINAGE AREA ENTERING THE INLET SEDIMENT TRAP SHALL BE NO GREATER THAN ONE ACRE.

TYPICAL CONSTRUCTION SEQUENCE FOR INLET SEDIMENT TRAP ALTERNATE

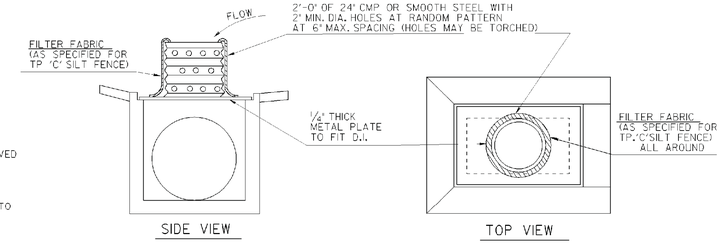
1. EXCAVATE APPROXIMATELY 4" TO 6" BELOW THE TOP OF THE INLET STRUCTURE.
2. PLACE THE FRAME ONTO THE INLET STRUCTURE, ENSURING PROPER SEATING OF FRAME TO STRUCTURE.
3. SLIDE THE FILTER OVER THE FRAME.
4. FILL THE FILTER POCKETS WITH SOIL, #57 GRAVEL OR EQUIVALENT. THE FILTER POCKETS SHOULD BE COMPLETELY 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.



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

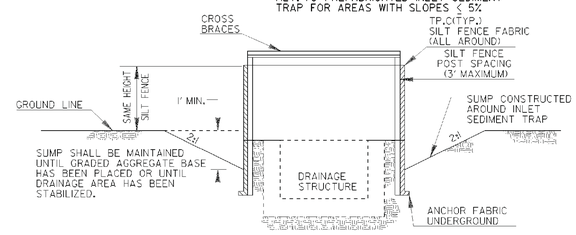
NOTE: SEE SEPARATE DETAILS FOR SILT FENCE AROUND DROP INLETS.

INLET SEDIMENT TRAP - FOR DROP INLETS

STATE	PROJECT NUMBER	SHEE NO.	TOTAL SHEETS
GA.			

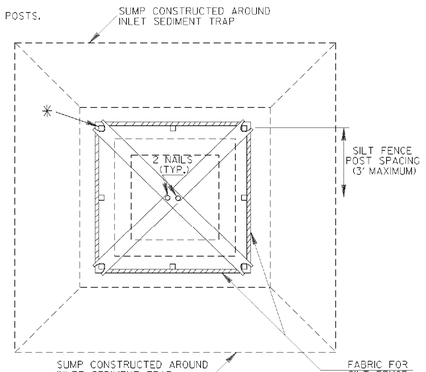
TYPICAL LOCATION AROUND DROP INLETS

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.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAILS
TEMPORARY SILT FENCE
J-HOOK, INLET SEDIMENT TRAPS

NO SCALE | JANUARY 2011

NUMBER D-24C (SHEET 3 OF 4)

DATE | REVISION | BY

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3/1/2007 GPLN

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

EROSION CONTROL CONSTRUCTION DETAILS
STATE ROUTE 47

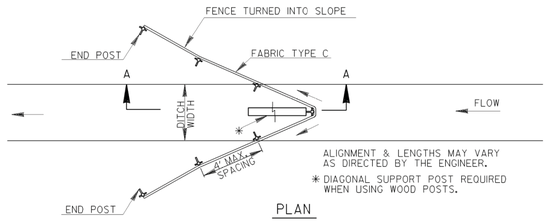
DRAWING No. 56-004

RELEASED FOR CONSTRUCTION 10-31-2014

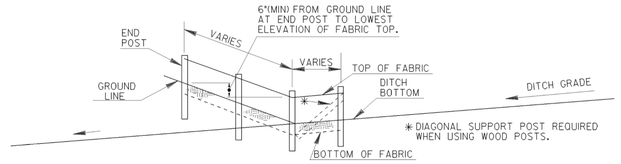
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	BRSTO-0076-01(036)	265	267

7/14/2014 11:18:56 AM \\GDOT-DSN1\GDPLOT\QCF\QGC.qcf bquarles P:\Policy&Lighting\Standards\GA_Details\D-24D\Revision_2014-7-14\D-24D.prf

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



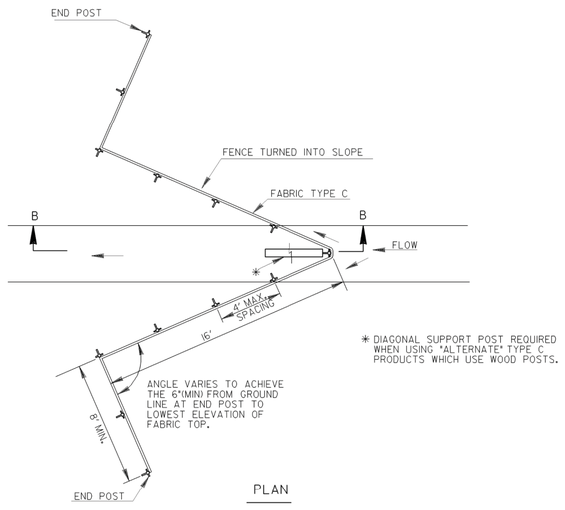
PLAN



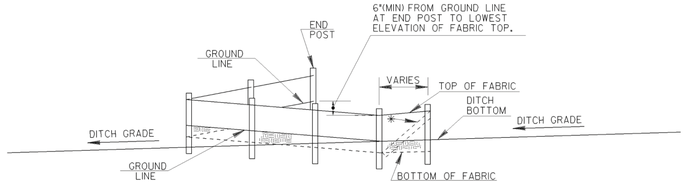
SECTION A-A

FABRIC CHECK DAM
DITCH WITH SIDE SLOPES 6:1 OR GREATER AND DEPTHS OVER 36"

TYPICAL FABRIC CHECK DAM SPACING	
GRADE OF DITCH	MINIMUM SPACING (FEET)
LESS THAN 1%	100' ±
1% TO 2%	100' ±
2% TO 3%	50' ±
3% TO 4%	50' ±
4% TO 5%	25' ±
4% TO <8%	25' ±



PLAN



SECTION B-B

FABRIC CHECK DAM
DITCH WITH SIDE SLOPES FLATTER THAN 6:1 (ALL MEDIANS) OR DEPTHS LESS THAN 36"

NOTE:

1. THE MAXIMUM DRAINAGE AREA FOR FABRIC CHECK DAMS SHALL BE 1 ACRE.
2. TEMPORARY SILT FENCE SHALL NOT BE PLACED WITHIN STATE WATERS.

BY	REVISION	DATE
BJQ	REINSTATED	7-14-14
BJQ	VOIDED SHEET	4-8-14

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAILS
TEMPORARY SILT FENCE
FABRIC CHECK DAM

NO SCALE JANUARY 2011

NUMBER D-24D (SHEET 4 OF 4)

REVISION DATES		

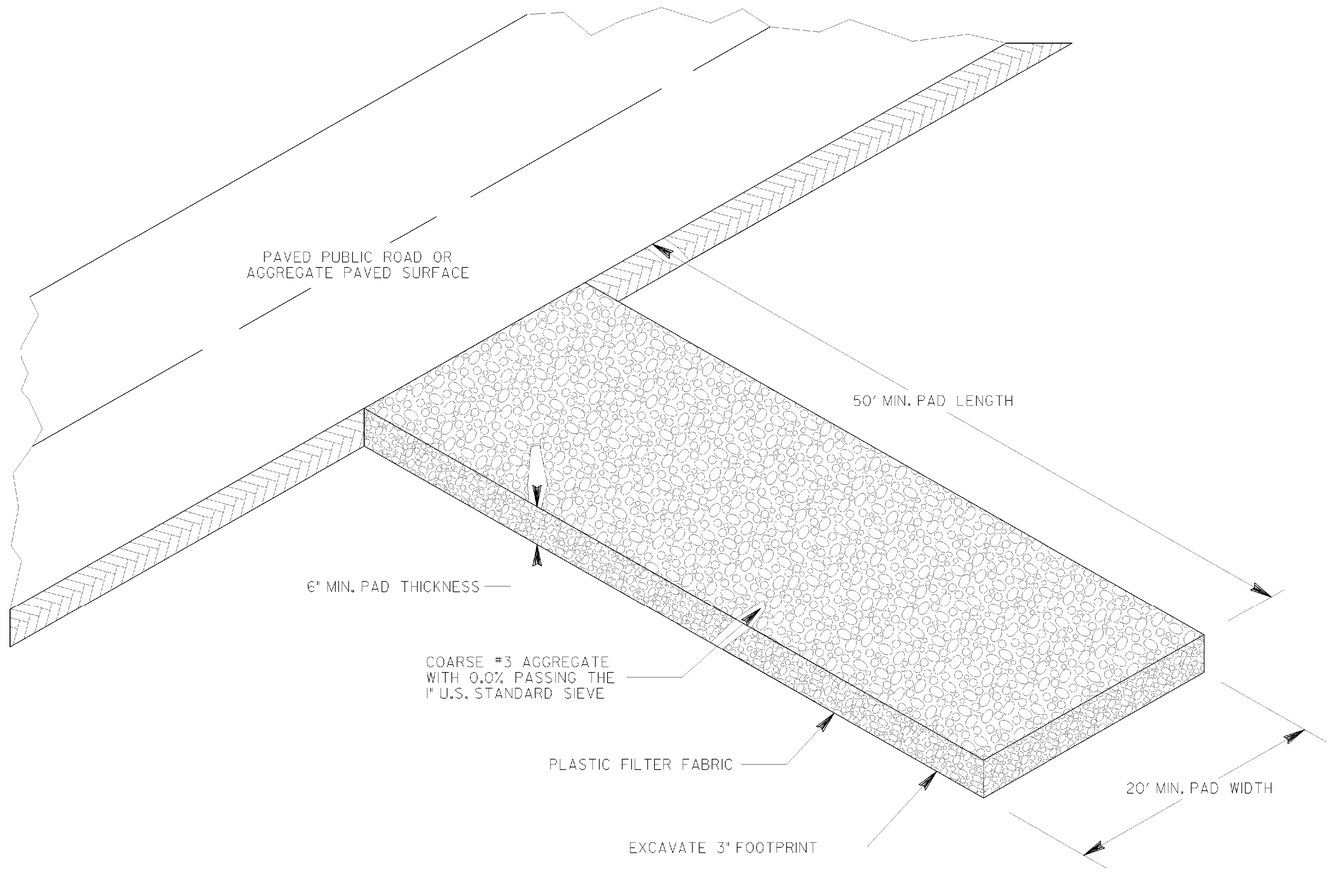
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

EROSION CONTROL CONSTRUCTION DETAILS
STATE ROUTE 47

DRAWING NO. 56-005

3/1/2007 GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



NOTES:
1) STONE AGGREGATE SHALL BE KEPT LOOSE OR SCARIFIED WHEN AGGREGATE BECOMES CONSOLIDATED.
2) CONSTRUCTION EXITS ARE NOT REQUIRED FOR DIRT PUBLIC ROADS.

MAINTENANCE

THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH COARSE #3 AGGREGATE, AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES 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___EACH

DATE	REVISION	BY
1-9-11	REV. CONSTR. EXIT LABELS	TPC

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAILS

CONSTRUCTION EXIT

NO SCALE — FEBRUARY 2001

NUMBER D-41

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REVISION DATES		

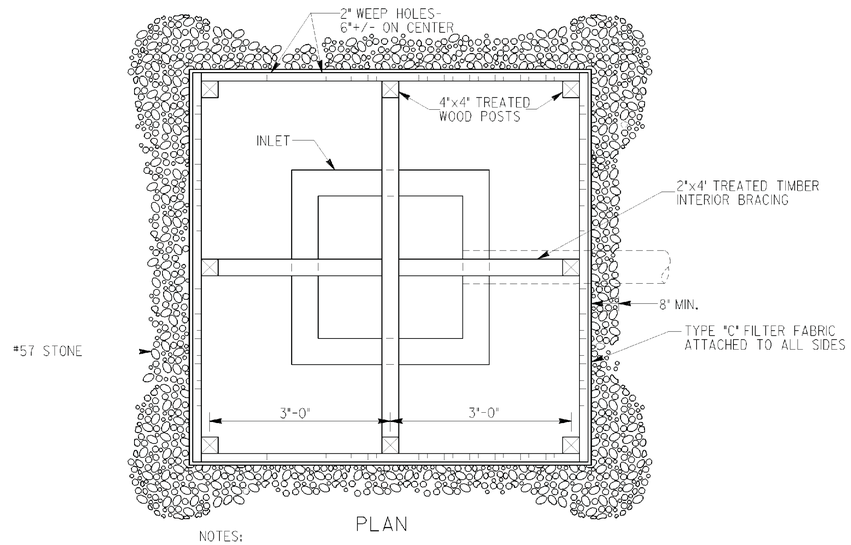
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

EROSION CONTROL CONSTRUCTION DETAILS

STATE ROUTE 47

DRAWING No. 56-006

3/1/2007 GPLN

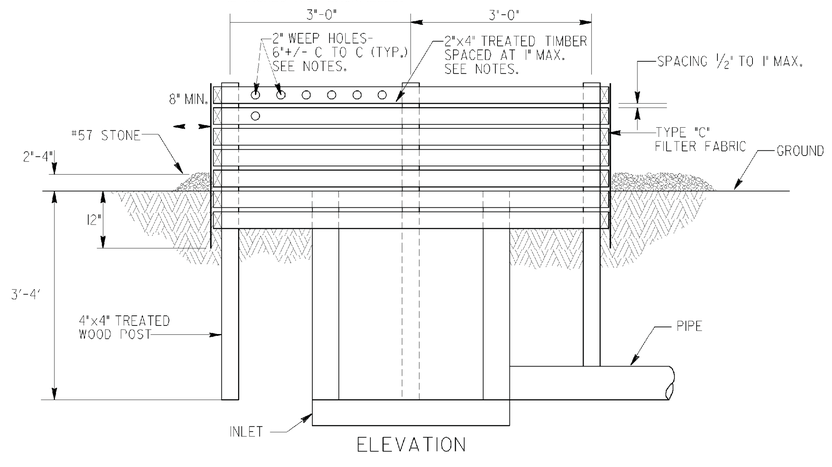


PLAN

NOTES:

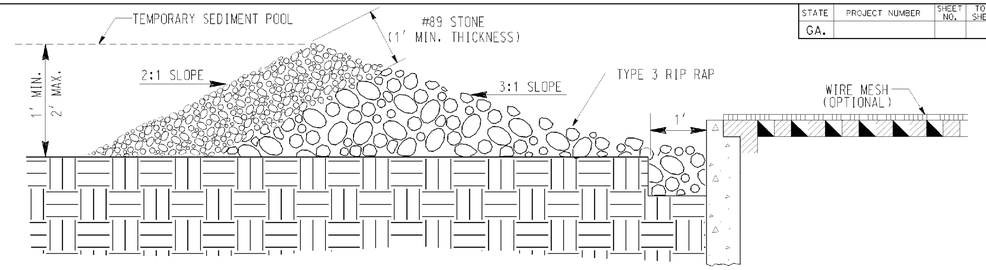
BAFFLE BOX SHALL BE CONSTRUCTED OF 2"x4" TREATED TIMBER SPACED A MAXIMUM OF 1" APART OR OF PLYWOOD WITH WEEP HOLES 2" IN DIAMETER PLACED APPROXIMATELY 6" ON CENTER VERTICALLY AND HORIZONTALLY.

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.

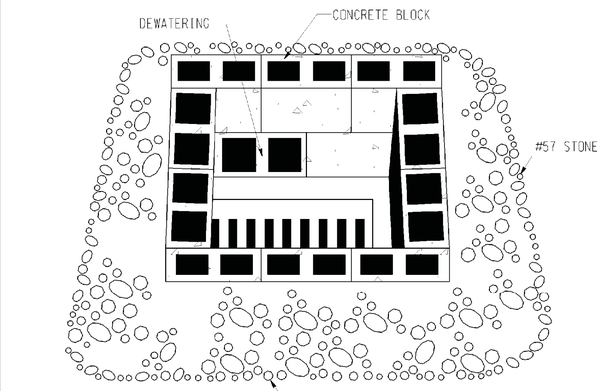


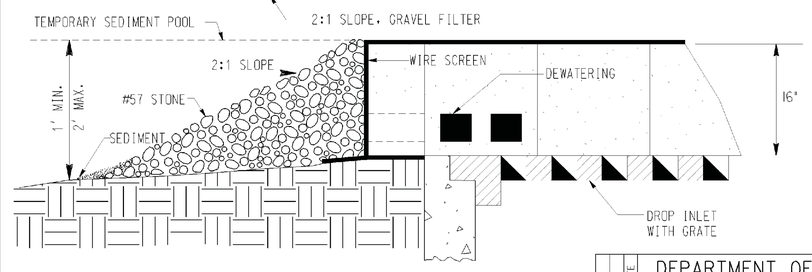
ELEVATION

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

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

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

DATE | REVISION | BY

NUMBER D-42

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: INNOVATIVE PROGRAM DELIVERY

EROSION CONTROL CONSTRUCTION DETAILS
STATE ROUTE 47

DRAWING No. 56-007

3/1/2007 GPLN