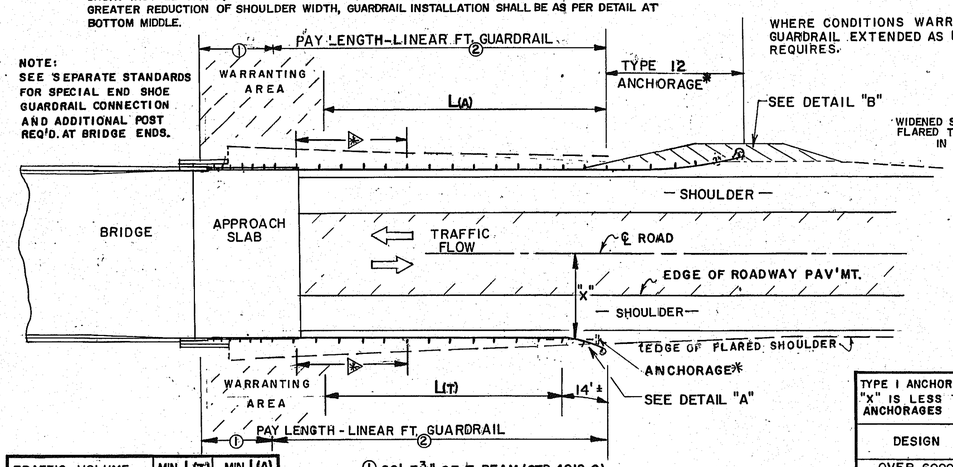
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CSSTP-0006-(869)	298	370

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.

NOTE:
SEE SEPARATE STANDARDS FOR SPECIAL END SHOE GUARDRAIL CONNECTION AND ADDITIONAL POST REQ'D. AT BRIDGE ENDS.

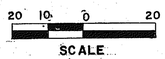


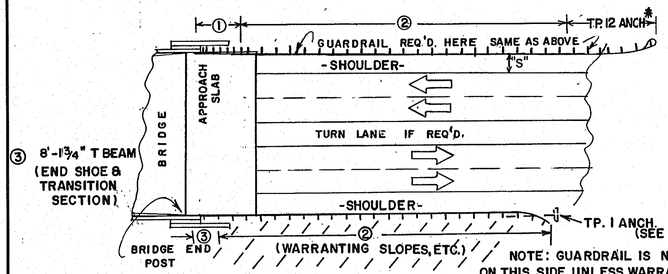
TRAFFIC VOLUME	MIN. L(T)	MIN. L(A)
DHV OVER 400	100'-0"	137'-6"
DHV 200 - 400	87'-6"	125'-0"
DHV 100 - 200	75'-0"	112'-6"
ADT 400 & OVER	62'-6"	100'-0"
ADT UNDER 400	50'-0"	87'-6"

NOTE: THESE MINIMUM LENGTHS ARE FOR STRAIGHT ALIGNMENTS IN ADVANCE OF WARRANTING AREA.

① 20'-7¾" OF 'T' BEAM (STD. 4012-C)
② VARIABLE LENGTH OF W BEAM (6'-3" POST SPA.)

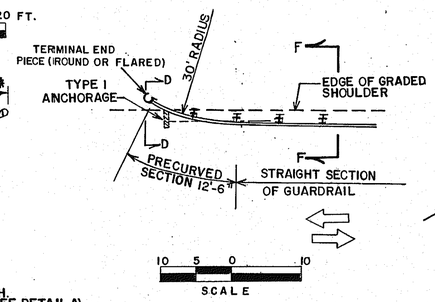
GUARDRAIL LOCATION AT BRIDGE ENDS





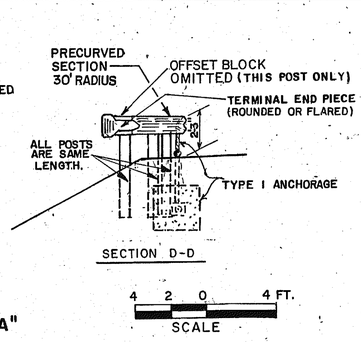
GUARDRAIL AT BRIDGE END OF MULTI-LANE UNDIVIDED HIGHWAY

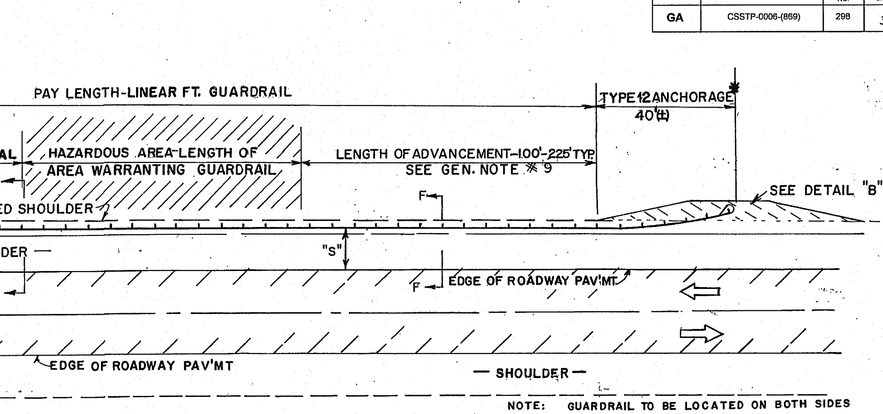
NO SCALE



DETAIL "A"

NOTE:
DETAIL "A" IS FOR USE ONLY WHERE TYPE 1 ANCHORAGES ARE PERMITTED AS SHOWN ABOVE. OTHERWISE, SEE DETAIL "B" FOR PROPER INSTALLATION OF TYPE 12 ANCHORAGE.*





NOTE: GUARDRAIL TO BE LOCATED ON BOTH SIDES OF ROAD IF CONDITIONS WARRANT.

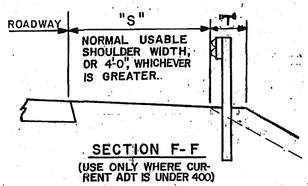
GUARDRAIL LOCATION ALONG ROADWAY

20 10 0 20 FT.
SCALE

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
OVER 6000	A. D. T.	14'	18'	22'	30'
1500 - 6000	A. D. T.	12'	16'	20'	26'
750 - 1500	A. D. T.	10'	12'	16'	20'
UNDER 750.	A. D. T.	7'	10'	12'	16'

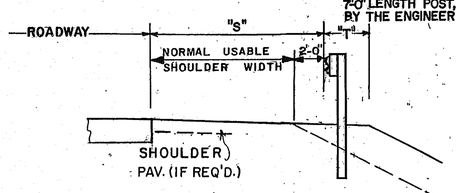
"S" IS THE OFFSET TO THE FACE OF THE GUARDRAIL, THIS WILL BE TWO(2) FEET GREATER THAN THE USABLE SHOULDER WIDTH (PER AASHTO MINIMUM SHOULDER REQUIREMENTS) EXCEPT WHERE THE CURRENT A.D.T. IS UNDER 400, IN WHICH CASE "S" MAY BE EQUAL TO THE USABLE OR GRADED SHOULDER WIDTH (NOT LESS THAN 4).



SECTION F-F

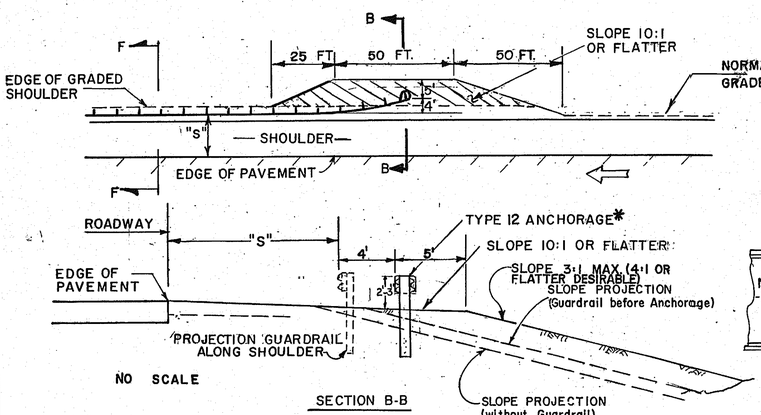
(USE ONLY WHERE CURRENT ADT IS UNDER 400)

"T" = 3'-6" FOR NORMAL LENGTH POST, MAY BE REDUCED TO 2'-6" WITH 7'-0" LENGTH POST, AS DIRECTED BY THE ENGINEER.



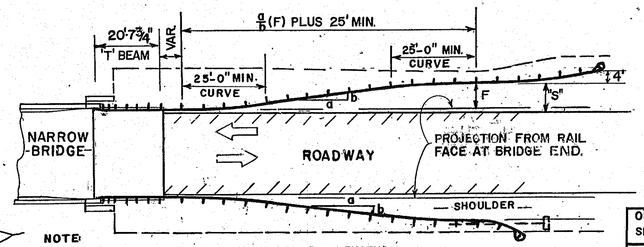
SECTION FF

(USE FOR ALL CONDITIONS, EXCEPT WHERE CURRENT ADT IS UNDER 400)



DETAIL "B"

WHERE SHOWN ON THE PLANS OR APPROVED BY THE ENGINEER, THE EMBANKMENT FLARE SHOWN ABOVE FOR TYPE 1 ANCHORAGE MAY BE MODIFIED, PROVIDED 10:1 OR FLATTER SLOPES ARE PROVIDED IN FRONT OF THE RAIL & A CONSTANT 27 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 POSTS OFFSET BLOCKS, GUARDRAIL ANCHORAGES, TYPE 1, 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 SLOPES 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 THE 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'-3" 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 VEHICLE 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 GA. D.O.T. "GUIDELINES FOR DETERMINING GUARDRAIL NEED, LOCATION AND STANDARDS" OR 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 NCHRP 350 REQUIREMENTS

BY	REVISION	DATE
R.M.U.	REV. ANCH. TYPE	10-2-97
R.M.U.	CHG. TP. 9 TO TP. 11	12-15-94
R.M.U.	REV. DET. NARROW BR.	4-22-90
R.M.U.	ADD. ADDL. SEC. F-F	8-20-833
R.M.U.	ADD. "S" CHART	6-2-86
R.M.U.	SHOULDER WIDTHS	11-9-84
R.M.U.	ADD. DET. MULTI-LANE	4-19-84
R.M.U.	ADD. DET. NARROW BR.	3-31-82

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

GUARDRAIL LOCATION DETAILS
FOR UNDIVIDED HIGHWAYS AND ROADS
(WITH SHOULDERS ADJACENT TO ROADWAY)

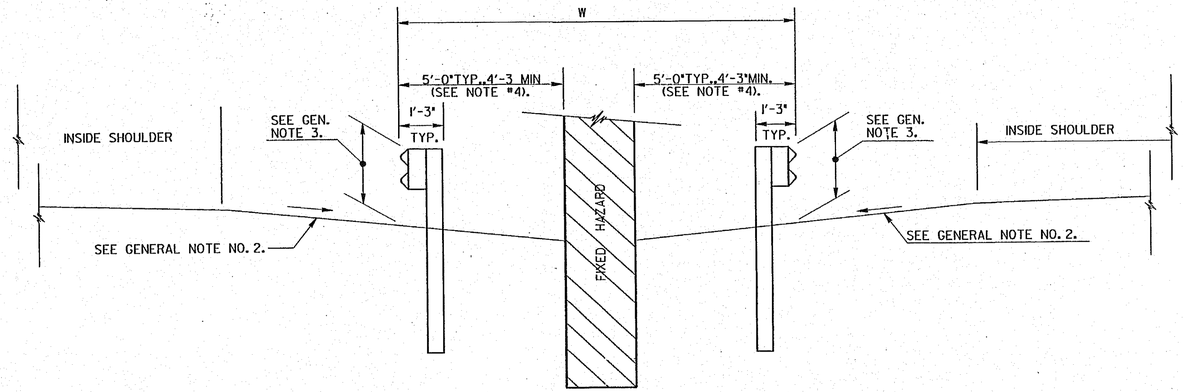
SCALE AS SHOWN REV. & REDR. DECEMBER, 1980

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

(SUBMITTED) Hoyt E. Hardy
STATE & AIRPORT DESIGN ENGR.
(APPROVED) Thomas D. Moreland
STATE HIGHWAY ENGINEER

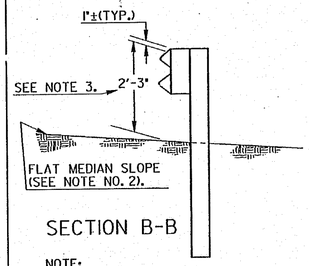
NUMBER 4052

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	299	370



SECTION A-A

(NO SCALE)



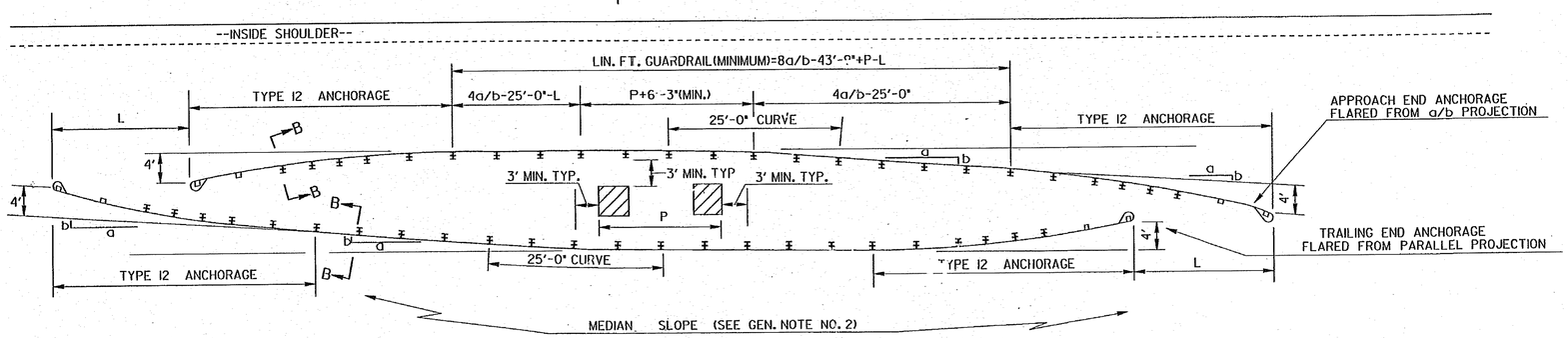
SECTION B-B

NOTE:
SECTION B-B IS APPLICABLE FOR ENTIRE INSTALLATION.

TABLE A	
W	L
12'-0"	14'-0"
13'-0"	16'-0"
14'-0"	18'-0"
15'-0"	20'-0"

TABLE B	
DESIGN SPEED (mph)	MAX.FLARE RATE (a/b)
70	15
60	14
55	12
50	11
40	9
30	7

DO NOT USE THIS STANDARD FOR GORE AREAS.



PLAN VIEW

GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION, AND SUPPLEMENTS THERETO.
2. ALL MEDIAN SLOPES SHALL BE 10:1, OR FLATTER, FOR THE ENTIRE INSTALLATION AND FOR AT LEAST 50 FT. IN ADVANCE ON BOTH SIDES.
3. THE HEIGHT OF "W"-BEAM RAIL TOP SHALL BE 2'-3", AS MEASURED TO THE GROUND LINE BELOW THE FACE OF RAIL AT ALL POINTS.
4. WHERE AN OFFSET OF AT LEAST 4'-3" CANNOT BE OBTAINED FROM RAIL FACE TO OBJECT FACE, DOUBLE POST SPACING(3'-1½" o.c.) IN FRONT OF OBJECT PLUS A MINIMUM OF SEVEN SUCH SPACINGS IN ADVANCE OF OBJECT IS REQUIRED WITH A 3 FOOT (MIN.) OFFSET FROM RAIL FACE TO OBJECT FACE.

USER'S GUIDE:

a) DETERMINE VALUE FOR 'W' FROM DEPTH OF OBJECT AND OFFSETS, THEN SELECT 'L' VALUE FROM TABLE A AT LEFT.

b) FIND a/b FROM TABLE B AT LEFT.

c) ESTABLISH "P"(OUTSIDE TO OUTSIDE OF OBJECT) AND ROUND TO MULTIPLE OF 6'-3" OR 12'-6".

d) MINIMUM LINEAR FEET OF GUARDRAIL IS THEN EQUAL TO: (16)(a/b)-87'-6"+2P-2L.

ALSO: FOUR TYPE 12 ANCHORAGES IN ADDITION TO THE ABOVE.

SPECIAL NOTE:

STANDARD NO. 4055 IS APPLICABLE AT FIXED OBJECTS WHERE DOUBLE FACED GUARDRAIL IS NOT REQUIRED AND MEDIAN SLOPES ARE 10:1 OR FLATTER. DO NOT USE IN GORES.

STANDARD NO. 4055 SUPERSEDES "DESIGN B" ON STD. NO. 4022A.

REVISED AND REDRAWN	7-22-98
GEN. REVISION	4- 4-96
REV. ANCH. TO TP. II	12-15-94
REVISION	DATE

G.J.P. R.M.U. R.M.U. BY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD GUARDRAIL LOCATION AT FIXED OBJECTS IN MEDIAN

SCALE AS SHOWN

DEC., 1993

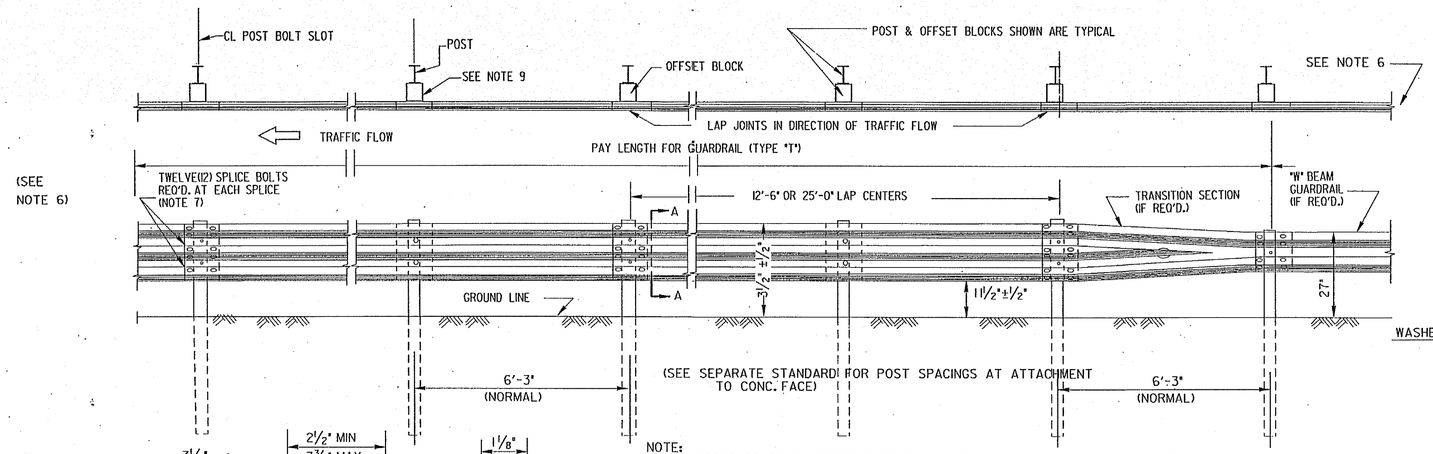
DES. ____ DRW. ____ TRA. ____ CHK. ____

(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGR.

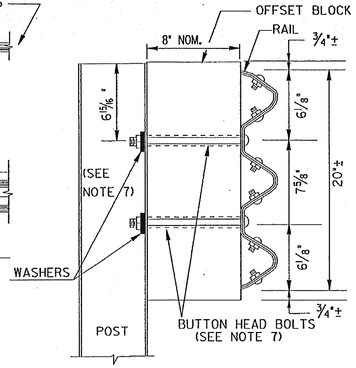
(APPROVED) STATE HIGHWAY ENGINEER

NUMBER 4055

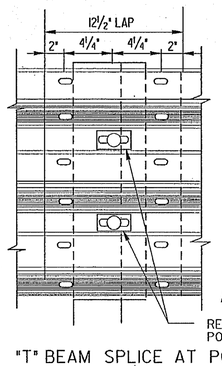
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	300	370



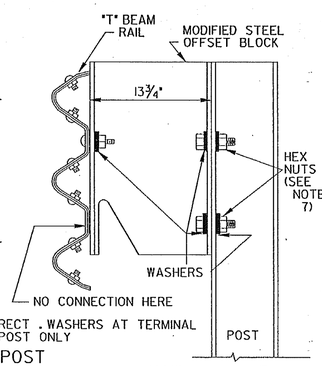
NOTE:
WHERE ATTACHED TO CONCRETE BARRIER, BRIDGE END POST OR OTHER CONCRETE FACE, PAYMENT FOR T BEAM GUARDRAIL SHALL INCLUDE ADDITIONAL POSTS, OFFSET BLOCKS AND DOUBLE THICKNESS (ONE RAIL NESTED INSIDE ANOTHER) SECTION OF T BEAM GUARDRAIL AS SPECIFIED.



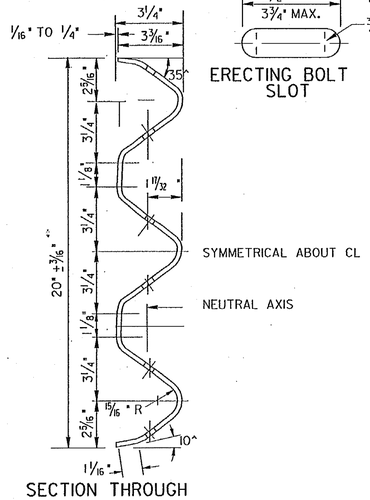
SECTIONAL VIEW
(GUARDRAIL TP. T-LIN. FT.)



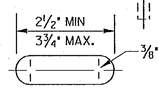
"T" BEAM SPLICE AT POST



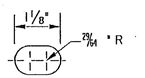
SECTIONAL VIEW
(GUARDRAIL TP. T, MODIFIED OFFSET BLOCKS -LIN. FT.)



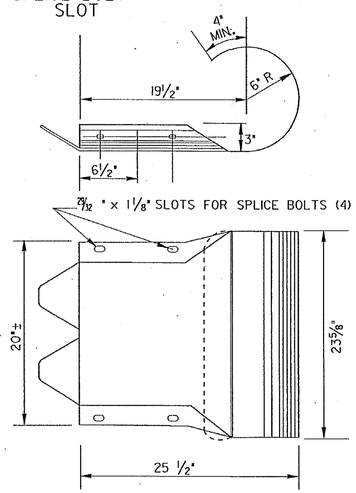
SECTION THROUGH RAIL ELEMENT (SEC. A-A)



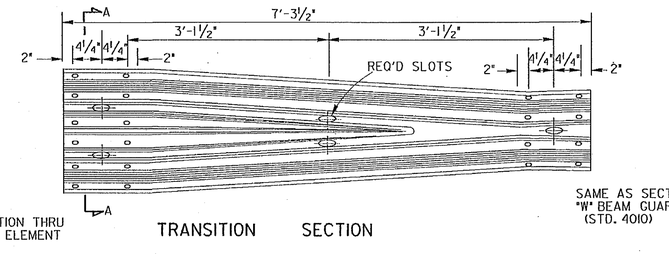
ERECTING BOLT SLOT



SPLICE BOLT SLOT



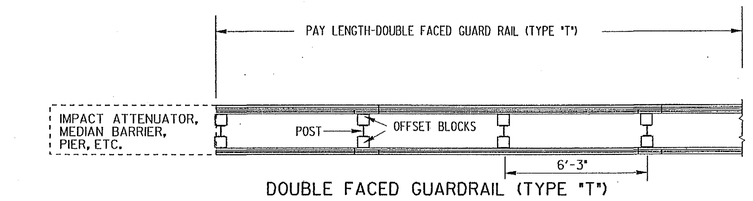
ROUNDED TERMINAL SECTION
TO BE LAPPPED ON TRAFFIC FACE OF RAIL WHERE TYPE I ANCHORAGE IS REQUIRED



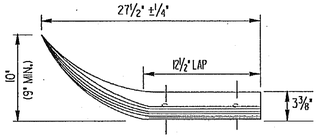
SAME AS SECTION THRU "T" BEAM RAIL ELEMENT

TRANSITION SECTION

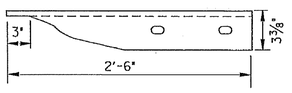
SAME AS SECTION THRU "W" BEAM GUARDRAIL (STD. 4010)

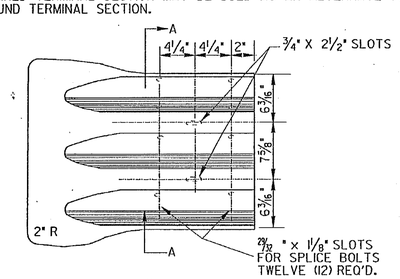


DOUBLE FACED GUARDRAIL (TYPE "T")

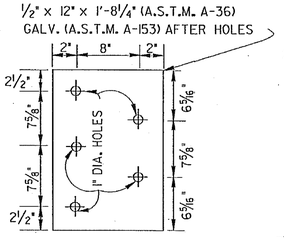


THE FLARED TERMINAL SECTION MAY BE USED AS AN ALTERNATE TO THE ROUND TERMINAL SECTION.

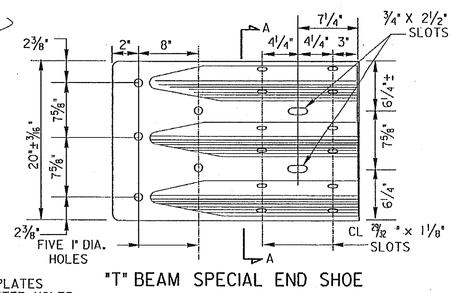




FLARED TERMINAL SECTION

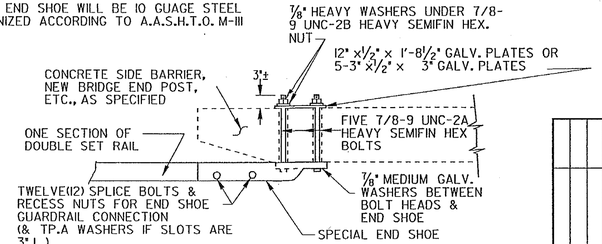


½" GALVANIZED STEEL PLATE
(FOR USE WITH END SHOE CONN.)
ALTERNATE: FIVE 3" x ½" x 3" GALV. PLATES WITH 1" DIA. HOLE CENTERED, GALV. AFTER HOLES.



"T" BEAM SPECIAL END SHOE

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



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 4010.
8. SEE SEPARATE STANDARDS AS APPLICABLE FOR ANCHORAGES, POSTS, OFFSET BLOCKS, CONNECTIONS TO CONCRETE FACE, W BEAM GUARDRAIL, ETC.
9. SEE STANDARD 4011-A 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.

REVISION	DATE	BY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

"T" BEAM GUARDRAIL

NO SCALE — REV. & REDR. NOV., 1999

DES. & REV. ____ REDR. ____ CHK. ____

(SUBMITTED) James A. Kessel
STATE ROAD & AIRPORT DESIGN ENGR.

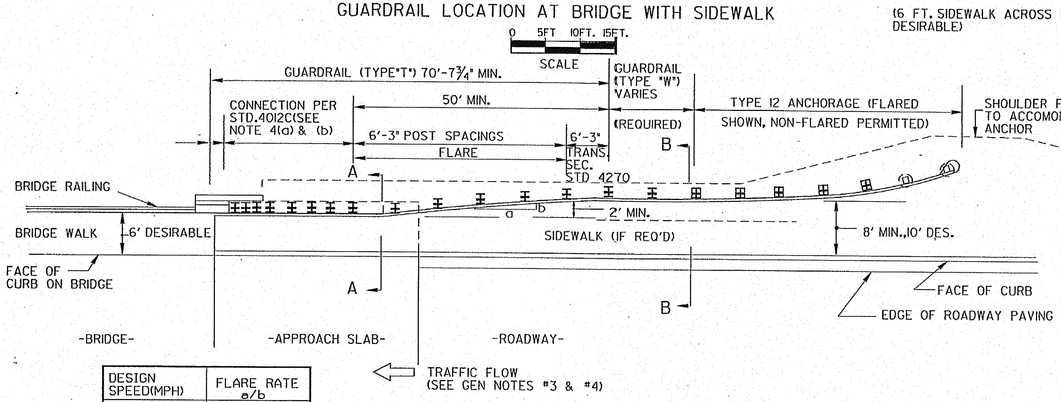
(APPROVED) Vinod L. Gadhia
CHIEF ENGINEER

NUMBER 4270

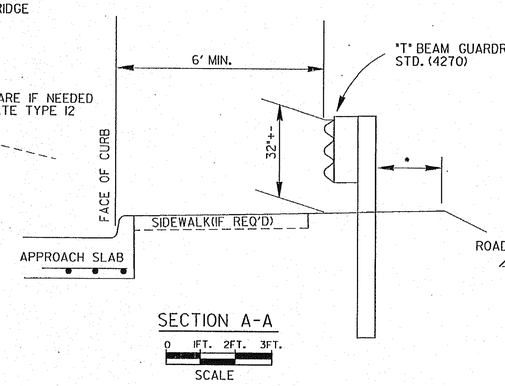
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	301	370

GUARDRAIL LOCATION AT BRIDGE WITH SIDEWALK

(6 FT. SIDEWALK ACROSS BRIDGE DESIRABLE)

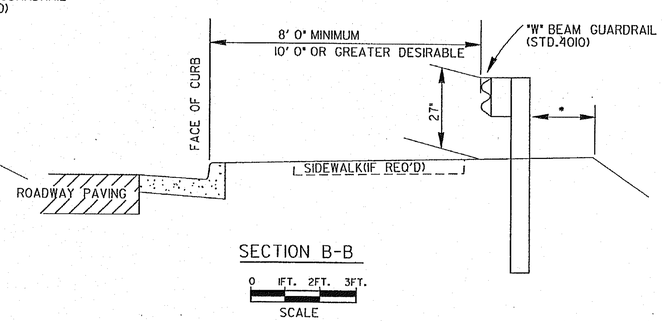


DESIGN SPEED(MPH)	FLARE RATE a/b
60	13:1 MIN.
55	12:1 MIN.
50	11:1 MIN.
40 OR LESS	9:1 MIN.



SECTION A-A

0 1FT. 2FT. 3FT.
SCALE

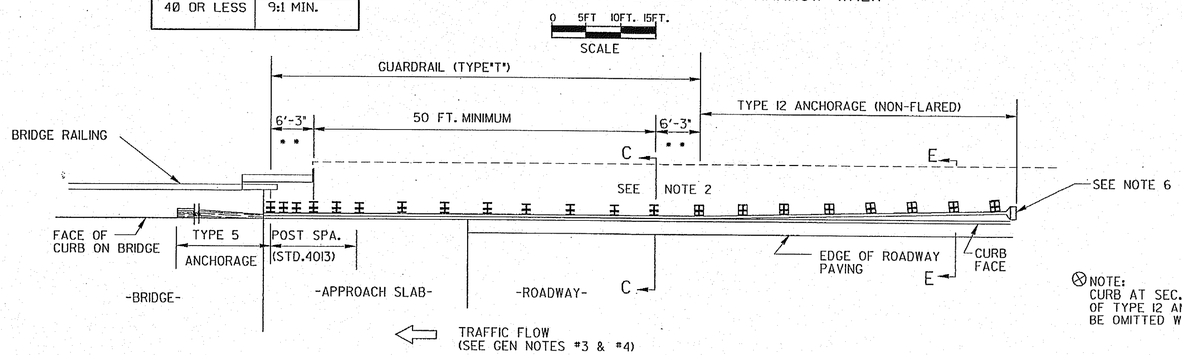


SECTION B-B

0 1FT. 2FT. 3FT.
SCALE

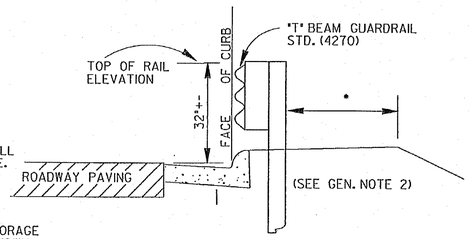
• DISTANCE FROM BACK OF POST TO EDGE OF GRADED SHOULDER SHALL NOT BE LESS THAN 2 FEET WITH NORMAL LENGTH POST AND NOT LESS THAN 1 FOOT WITH ADDITIONAL LENGTH POST.(STD. 4011A)

GUARDRAIL LOCATION AT BRIDGE WITH NARROW WALK



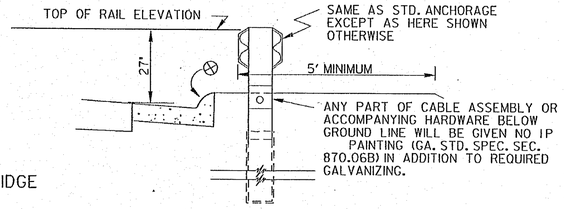
•• SEE STD. 4270 FOR TRANSITION PIECE BETWEEN "T"-BEAM AND ANCHORAGES, WHERE REQUIRED.

⊗NOTE: CURB AT SEC. E.E. IN FRONT OF TYPE 12 ANCHORAGE SHALL BE OMITTED WHERE FEASIBLE.

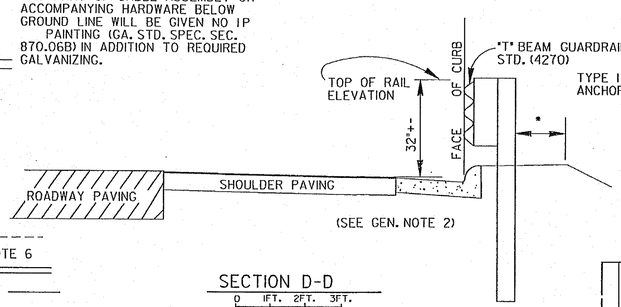


SECTION C-C

0 1FT. 2FT. 3FT.
SCALE

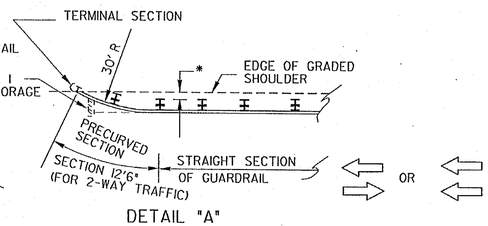


SEC. E-E



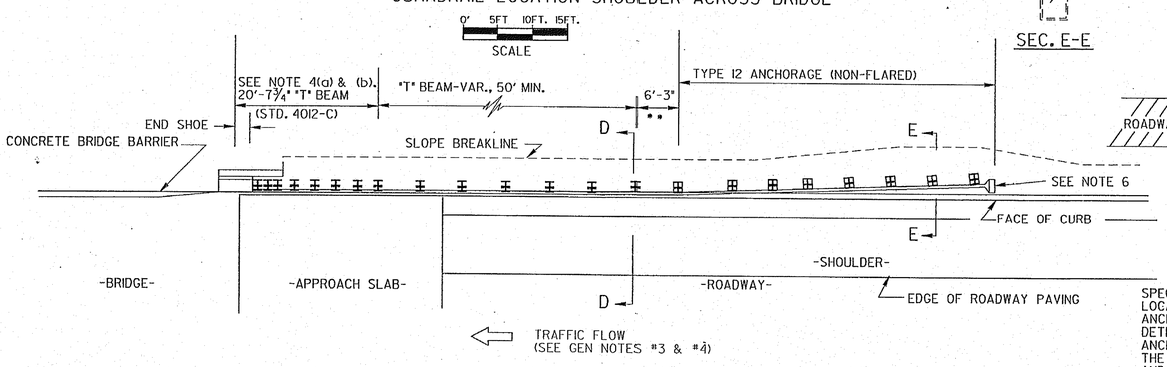
SECTION D-D

0 1FT. 2FT. 3FT.
SCALE



DETAIL "A"

GUARDRAIL LOCATION SHOULDER ACROSS BRIDGE



GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION, AND SUPPLEMENTS THERETO.
2. IF GUARDRAIL IS DIRECTLY ABOVE CURB, DO NOT USE STD. 1033D, 1033G, 1034D, 1034G CATCH BASINS AT SAME LOCATION. EITHER USE OTHER DRAINAGE STRUCTURES OR ADJUST LOCATION OF CATCH BASINS TO MISS GUARDRAIL.
3. (a) TYPE 12 ANCHORAGES ARE REQUIRED AT ALL APPROACH ENDS OF GUARDRAIL AND AT TRAILING ENDS THAT FALL WITHIN THE C.Z.W. OF THE TWO-WAY TRAFFIC. C.Z.W.=CLEAR ZONE WIDTH.
   (b) TYPE 1 ANCHORAGE WITH A 30' R PRECURVED RAIL SECTION MAY BE USED AT TRAILING ENDS THAT FALL OUTSIDE THE C.Z.W. OF THE TWO-WAY TRAFFIC.
   (c) TYPE 1 ANCHORAGES ARE USED AT THE TRAILING ENDS OF ONE-WAY TRAFFIC.
4. (a) GUARDRAIL PER APPLICABLE DETAIL AT LEFT IS REQUIRED AT BOTH APPROACH BRIDGE END POSTS WITH ONE-WAY TRAFFIC AND AT ALL 4 BRIDGE END POSTS WITH 2-LANES & 2-WAY TRAFFIC.

   (b) BRIDGE END POSTS AT THE TRAILING END OF ONE-WAY TRAFFIC OR AT THE TRAILING END OF TWO-WAY TRAFFIC ON MULTI-LANE(FOUR OR MORE) FACILITIES DOES NOT REQUIRE GUARDRAIL UNLESS STEEP SLOPES OR OTHER CONDITION WARRANTS GUARDRAIL FOR TRAFFIC COMING OFF OF BRIDGE. IF REQUIRED FOR THIS CONDITION, GUARDRAIL TYPE SHALL BE AS WARRANTED & WITHOUT ADDITIONAL POST/DOUBLE THICK RAIL.
5. SKETCHES SHOWN HERE FOR GUARDRAIL AND ANCHORAGES ARE REPRESENTATIVE, SEE SEPARATE STANDARDS OR DETAILS FOR SPECIFIC REQUIREMENTS.
6. NON-FLARED ANCHORAGE SHALL HAVE STRAIGHT TAPER(50:1 TYP.) SO THAT THE EXTRUDER OR IMPACT HEAD WILL NOT PROTRUDE OVER CURB FACE.

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 ANCHORAGE WILL BE MADE BY THE ENGINEER OR A REPRESENTATIVE FROM THE OFFICE OF TRAFFIC OPERATIONS AFTER CONSTRUCTION OF ROADWAY AND CURB. THIS APPLIES TO ALL CONDITIONS SHOWN ON THIS STANDARD.

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

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD GUARDRAIL LOCATION

(ON ROADS WITH CURB & GUTTER, HEADER CURB OR INTEGRAL CURB)

SCALE AS SHOWN — REV. & REDR. OCT., 1999

DES. ____ REDR. ____ BY

DATE / REVISION

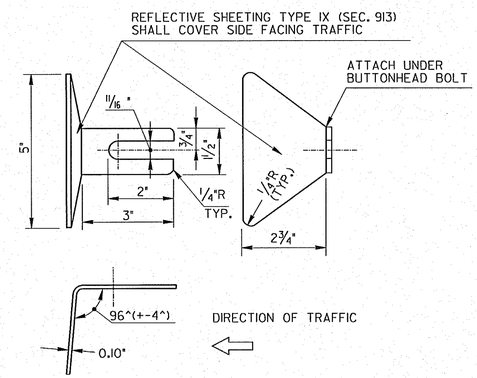
(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGR.

(APPROVED) CHIEF ENGINEER

NUMBER 4280

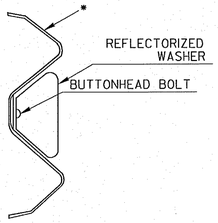
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	302	370

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.

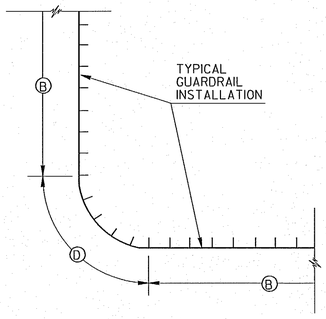
COLORS: YELLOW IN MEDIANS AND WHITE ON OUTSIDE SHOULDERS



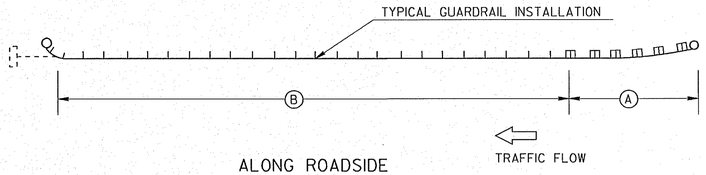
WASHER LOCATION DETAIL

NOTE:
FOR 'T'-BEAM GUARDRAIL, WASHER IS PLACED IN THE TOP INDENTION.

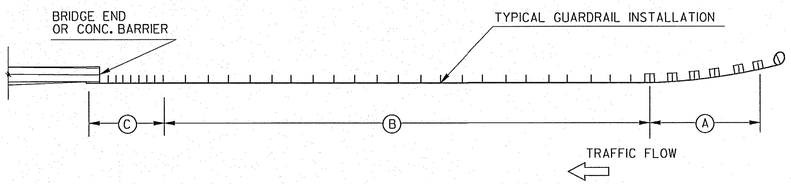
* WHERE BOLT DOES NOT EXTEND THRU RAIL REFLECTORIZED WASHER IS ATTACHED UNDER THE SPLICE BOLT ON THE TOP CORRUGATION, IF REQUIRED.



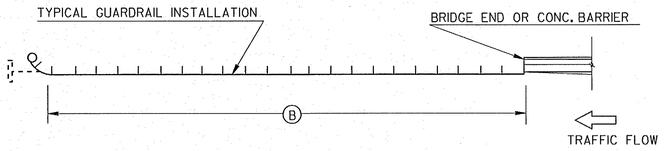
AT TURNOUTS



ALONG ROADSIDE



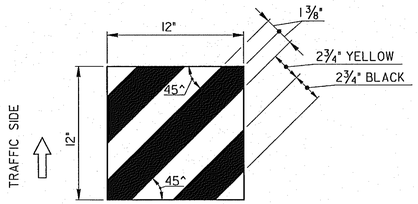
APPROACH END-BRIDGE OR CONCRETE BARRIER



TRAILING END-BRIDGE OR CONCRETE BARRIER

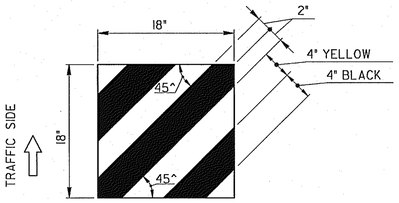
NOSE STRIPING DETAILS

(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.

BY	DATE	REVISION
GLO	4-10-06	REV. REFLECTIVE. SH. TYPE.
RMU	2-1-01	REFLEC. SH. SPEC.
RMU	6-1-99	ADD NOSE STRIPING

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

REFLECTORIZED GUARDRAIL WASHERS AND ANCHORAGE NOSE STRIPING

NO SCALE — REV. & REDR. APRIL, 1999

DES. ____ DRWN. ____ CHK. ____

(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER

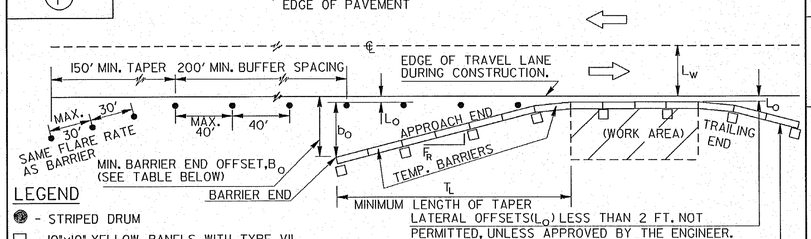
(APPROVED) CHIEF ENGINEER

NUMBER 4360

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	303	370

OPTION ①

BARRIER DELINEATIONS, OFFSETS, & FLARE RATES



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

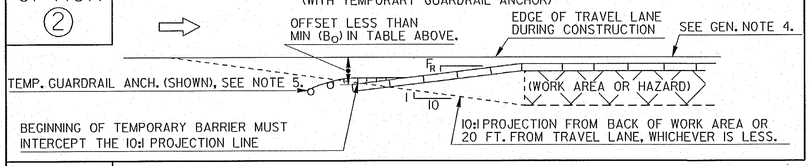
MINIMUM LENGTH OF TAPER REQUIRED
$b_O = B_O - L_O$
$T_L = b_O \times F_R$

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.

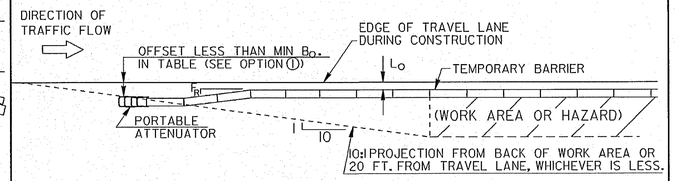
OPTION ②

MINIMUM BARRIER ADVANCEMENT LENGTH
(WITH TEMPORARY GUARDRAIL ANCHOR)



OPTION ③

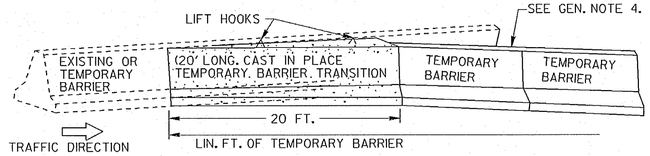
PORTABLE ATTENUATOR TERMINAL



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.

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.

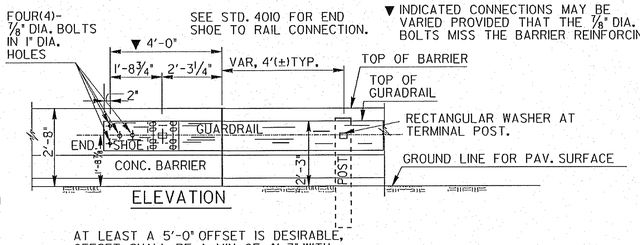
OPTION ⑤

TEMPORARY CONCRETE BARRIER/GUARDRAIL CONNECTIONS & JUNCTIONS

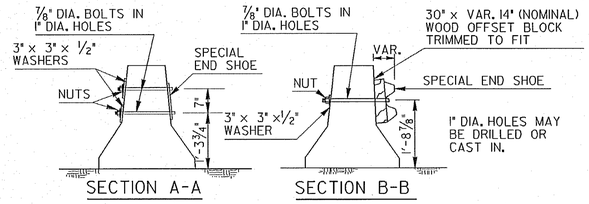
NOTE:
PAYMENT FOR TEMPORARY CONCRETE BARRIER WILL INCLUDE ALL SPECIAL END SHOES, BOLTS, BOLT HOLES, NUTS, WASHERS, ADDITIONAL GUARDRAIL POSTS, ETC., NECESSARY FOR THE CONNECTIONS, AS SHOWN, WHEN REQUIRED.

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.



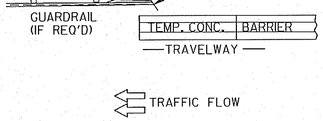
▼ INDICATED CONNECTIONS MAY BE VARIED PROVIDED THAT THE ⅞" DIA. BOLTS MISS THE BARRIER REINFORCING.



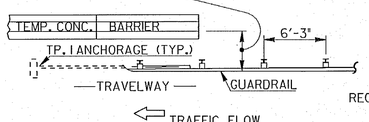
AT LEAST A 5'-0" OFFSET IS DESIRABLE. OFFSET SHALL BE A MIN. OF 4'-3" WITH 6'-3" C. TO C. POST SPACING. WHEN OFFSET IS BETWEEN 4'-3" AND 3' MIN. POST SPACING SHALL BE 3'-1½" C. TO C. FOR 7 CONSECUTIVE SPACING IN ADVANCE OF THE BARRIER.

GUARDRAIL REQ'D. ON TRAILING END ONLY, WHERE CONDITION WARRANTS.

GUARDRAIL ANCHORAGE REQUIRED (SEE GENERAL NOTE 7).



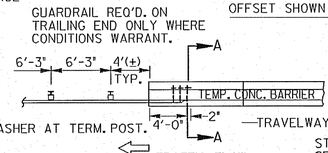
PLAN
ONE-WAY TRAFFIC TRAILING END



PLAN
ONE-WAY TRAFFIC APPROACH END

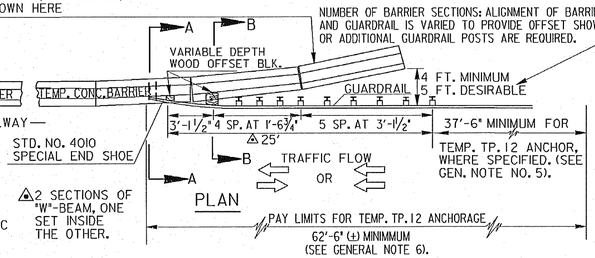
GUARDRAIL REQ'D. ON TRAILING END ONLY WHERE CONDITIONS WARRANT.

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

NUMBER OF BARRIER SECTIONS: ALIGNMENT OF BARRIER AND GUARDRAIL IS VARIED TO PROVIDE OFFSET SHOWN OR ADDITIONAL GUARDRAIL POSTS ARE REQUIRED.



PLAN

DATE	REVISION	BY
2-1-01	O.M. SH. SPEC. TYPE AND GENERAL NOTES.	RMJ
5-10-07	REVISED ALL OPTIONS AND REV. REFLECTIVE SHEETING	GLO

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

TEMPORARY BARRIER (END TREATMENT OPTIONS)

NO SCALE — REV. & REDR. MAY, 1999

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

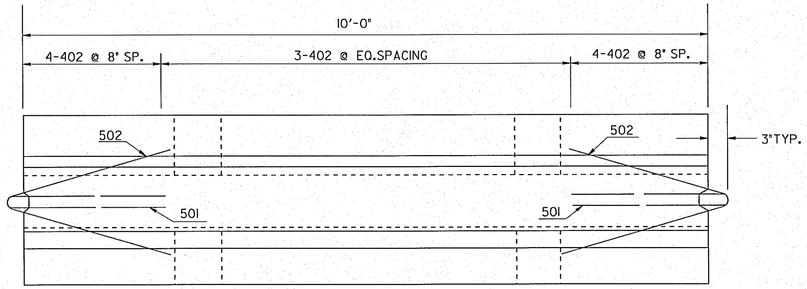
(SUBMITTED) _____ STATE ROAD & AIRPORT DESIGN ENGINEER

(APPROVED) _____ CHIEF ENGINEER

NUMBER 4960

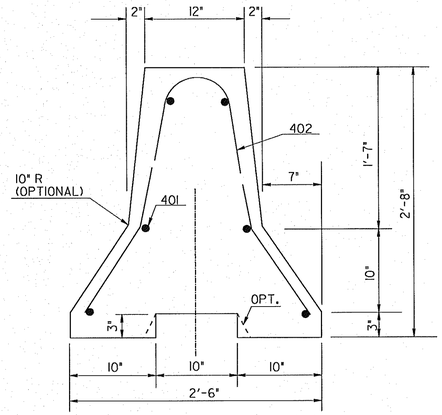
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	304	370

PRECAST CONCRETE BARRIER DETAILS



PLAN

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.



END ELEVATION

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.

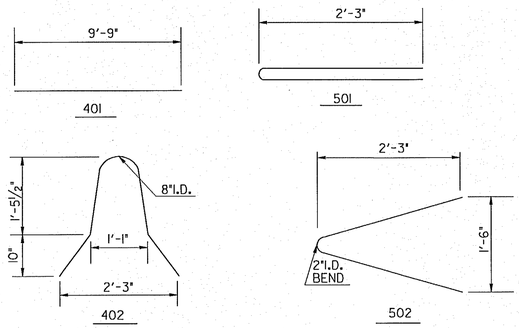
GENERAL NOTES:

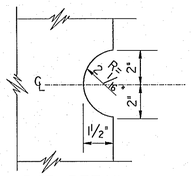
1-MATERIALS: CLASS 'A' CONCRETE AND 40 STEEL.

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

DATE	REVISION	BY
9-8-06	REV. CONNECTION WASHER AND REV. GEN. NOTE NO. 4.	G.L.O.
5-2-01	REV. REBAR & PIN CONN.	
5-10-96	COTTER PIN REQUIREMENT	R.M.U.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
DETAILS OF PRECAST TEMPORARY BARRIERS

NO SCALE — AUG., 1995

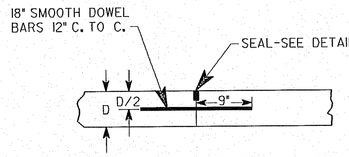
DES. ____ DRW. ____ TRA. ____ CHK. ____

(SUBMITTED) _____ STATE ROAD & AIRPORT DESIGN ENGR.

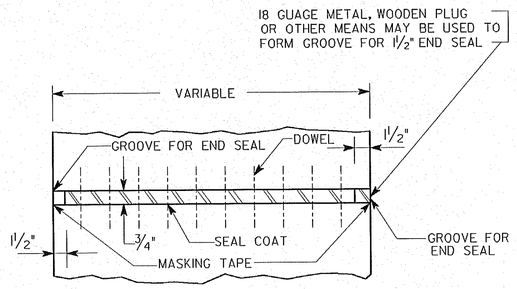
(APPROVED) _____ CHIEF ENGINEER

NUMBER 4961

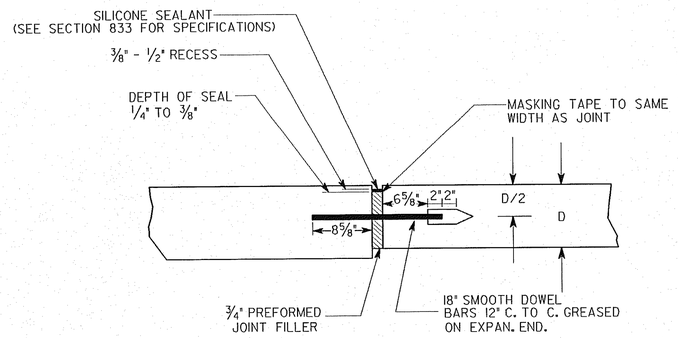
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	305	370



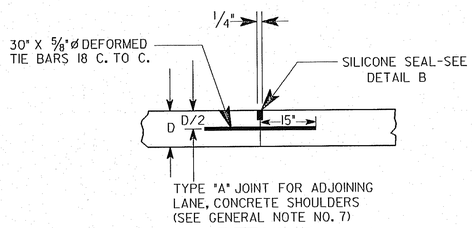
DETAIL A
TRANSVERSE CONSTRUCTION OR SAWED CONTRACTION JOINTS



DETAIL C
PLAN OF TRANSVERSE EXPANSION JOINT BETWEEN PAVEMENT AND BRIDGE APPROACH SLAB

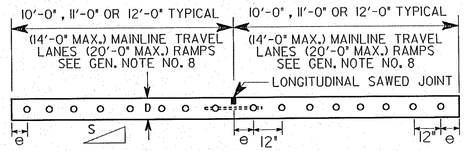


DETAIL D
EXPANSION JOINT



DETAIL E
ADJOINING LANES, CONCRETE SHOULDER, LONGITUDINAL SAWED OR FORMED JOINTS

FOR DETAILS OF SHOULDER SEE PLANS

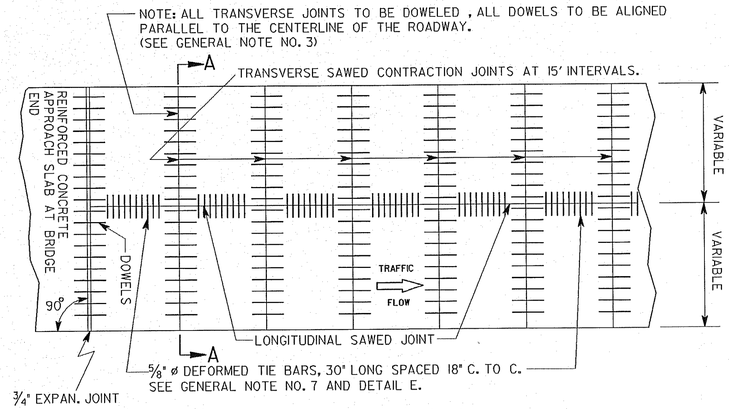


SEE PLANS FOR REQUIRED SLOPE

UNIFORM THICKNESS DOWELED PORTLAND CEMENT CONCRETE PAVING WITH CENTER JOINT AND TIE BARS AND 90° TRANSVERSE CONTRACTION JOINTS AT 15 FT. INTERVALS

e = 6" UNLESS SPECIFIED OTHERWISE

SECTION A-A
SECTION THROUGH TRANSVERSE JOINT

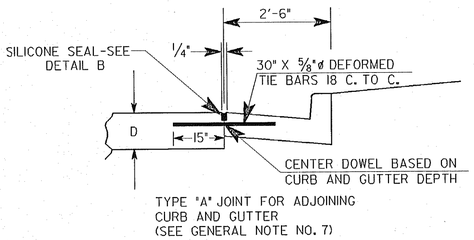


STANDARD JOINT LAYOUT

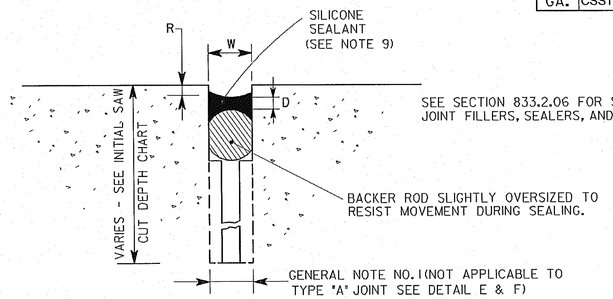
WHERE A NEW LANE WILL BE ADJOINING AN EXISTING P.C. CONCRETE PAVED LANE, THE SPACING FOR THE TRANSVERSE JOINTS IN THE NEW LANE WILL BE VARIED FROM THAT SHOWN ABOVE WHERE NECESSARY TO MATCH THE TRANSVERSE JOINTS IN THE EXISTING LANE. WHEN EXISTING PAVING JOINTS EXCEED 25 FEET IN LENGTH AN INTERMEDIATE TRANSVERSE JOINT WILL BE ESTABLISHED IN THE NEW LANE AT MID-SLAB.

REQUIRED DOWEL BAR DIAMETERS

PAVEMENT THICKNESS (D)	DOWEL BAR DIAMETERS
6"	1¼"
7"	1¼"
8"	1¼"
9"	1¼"
10"	1½"
11"	1½"
12"	1½"



DETAIL F
ADJOINING CURB AND GUTTER



SEE SECTION 833.2.06 FOR SPECIFICATIONS OF JOINT FILLERS, SEALERS, AND BACKER ROD.

DETAIL B
CONTRACTION OR CONSTRUCTION JOINT

JOINT SCHEDULE			
TYPE	W	D	R
TRANSVERSE JOINT	¼"	¼"-⅜"	⅜" TO ½"
℄ LONGITUDINAL SAWED JOINT	¼"	¼"-⅜"	⅜" TO ½"
JOINT FOR ADJOINING LANE FOR TYPE "A" JOINT	¼"	¼"-⅜"	⅜" TO ½"

REQUIRED MINIMUM DEPTH OF INITIAL SAW CUT FOR LONGITUDINAL AND TRANSVERSE JOINTS. ALL INITIAL CUTS TO BE ⅛" IN WIDTH.

DEPTH OF PAVEMENT D	DEPTH OF CUT
6"	1⅞"
7"	2"
8"	2¼"
8½"	2⅜"
9"	2½"
10"	2¾"
11"	3"
12"	3¼"

GENERAL NOTES:

1. THE LOCATION OF THE INITIAL SAW CUT MAY VARY BETWEEN THESE LINES.
2. CONTRACTION JOINT FOR CONCRETE SHOULDERS SHALL CONFORM WITH TRANSVERSE SAWED CONTRACTION JOINT IN MAINLINE PAVEMENT.
3. TRANSVERSE JOINTS SHALL BE PERPENDICULAR TO THE CENTER LINE OF THE LANE BEING PLACED, EXCEPT WHERE NEW LANES ARE PLACED AGAINST EXISTING LANES WITH SKEWED JOINTS. THE NEW JOINTS WILL MATCH THE SKEW OF THE EXISTING PAVEMENT.
4. JOINTS IN ACCELERATION AND DECELERATION LANES ARE TO COINCIDE WITH MAINLINE JOINTS, BUT MAY BE NORMAL TO ACCELERATION OR DECELERATION EDGE.
5. GA. STD. SPECIFICATIONS (SEC. 430) FOR TOLERANCE ON DOWELS.
6. CASES WHERE CONCRETE CURB AND GUTTER IS PLACED ADJACENT TO A CONCRETE ROADWAY SLAB, THE LONGITUDINAL JOINT SHALL BE SAWED AND SEALED OF FORMED AND SEALED AS A LONGITUDINAL JOINT AS SHOWN BY THE STANDARD.
7. NO TIE BAR SHALL BE LOCATED CLOSER THAN 18" TO A TRANSVERSE JOINT. WHERE NEW CONCRETE WILL BE ADJOINING EXISTING CONCRETE, DO NOT TIE NEW CONCRETE TO EXISTING CONCRETE.
8. SPACING BETWEEN LONGITUDINAL JOINTS SHALL NOT EXCEED 14'-0" FOR MAINLINE TRAVEL LANES. RAMP PAVEMENT SECTIONS OVER 14'-0" WIDE SHALL HAVE A LONGITUDINAL SAWED JOINT ALONG THE CENTERLINE AND THE SPACING BETWEEN LONGITUDAL JOINTS SHALL NOT EXCEED 20'-0".
9. WHEN SELF LEVELING SILICONE SEALANT IS USED, TOOLING OF THE SEALANT TO OBTAIN A CONCAVE SURFACE IS NOT REQUIRED IF SEALENT MEETS DIMENSIONS OF DETAIL B.

DATE	REVISION	BY
1-25-07	REV. DOWELS DIA. AND TRANSVERSE JTS. SPACING AND REV. GEN. NOTE 8.	GLO
8-9-02	REV. GEN. NOTE 3, 7 & 8.	
4-3-2000	¼" TRANSVERSE JOINT	RMC

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
JOINT DETAILS FOR
PORTLAND CEMENT CONCRETE PAVING

NO SCALE — REV. & REDRAWN MAY, 1996

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

(SUBMITTED) _____ STATE ROAD & AIRPORT DESIGN ENGINEER

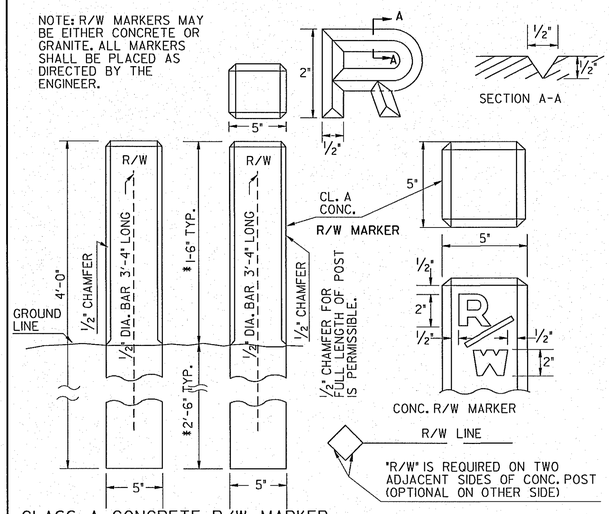
(APPROVED) _____ CHIEF ENGINEER

NUMBER 5046H

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CCSTP-0006-00(869)	306	370

DETAILS OF RIGHT OF WAY MARKERS

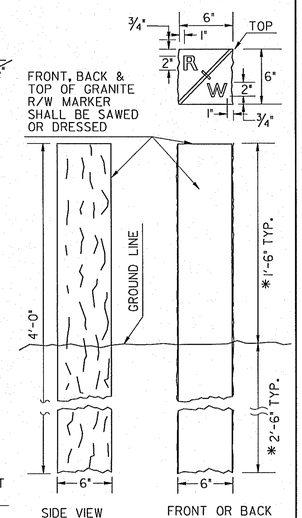
NOTE: R/W MARKERS MAY BE EITHER CONCRETE OR GRANITE. ALL MARKERS SHALL BE PLACED AS DIRECTED BY THE ENGINEER.



CLASS A CONCRETE R/W MARKER

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

FRONT, BACK & TOP OF GRANITE R/W MARKER SHALL BE SAWED OR DRESSED



(ALTERNATE) GRANITE R/W MARKER

BY	REVISION	DATE
G.L.O.	REDRAWN TO MATCH METRIC	4-10-06
	GA. STD. 9003	
G.J.P.	REDRAWN	6-30-98
R.M.U.	REV. F.A.P. - SP. POST ALT.	9-28-90
R.M.U.	VAR. HT. R/W MARKER	10-11-88
R.M.U.	ADD GRANITE R/W M.	5-24-95

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
DETAILS OF MARKERS
FEDERAL AID AND STATE
RIGHT OF WAY MARKERS

NO SCALE — REV. & REDR. DEC., 1981

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

(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER

(APPROVED) CHIEF ENGINEER

NUMBER 9003

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	307	370

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 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.

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

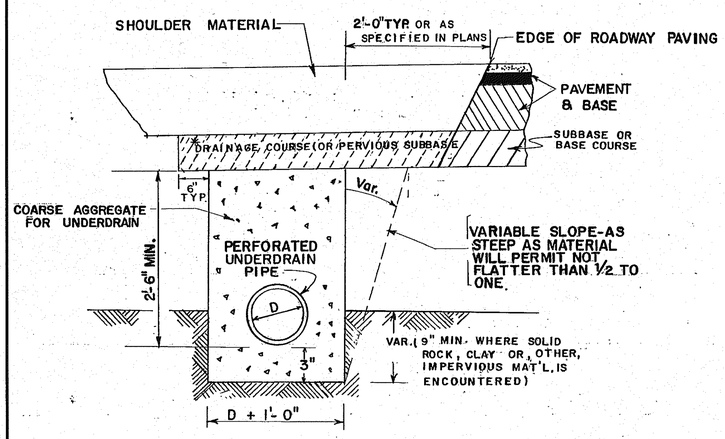
STANDARD
REINFORCED CONCRETE APPROACH SLAB
30 FT. LENGTH
TYPICAL USE : WHERE SHOULDER IS ADJACENT TO ROADWAY AND/OR BRIDGE

SCALE AS SHOWN — JUNE, 1985

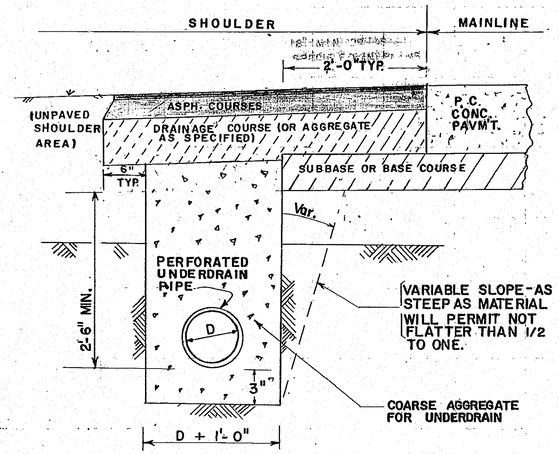
DES. R.M.U. DRW. R.M.U. TRA. G.M.E. CHK. R.K.C.
(SUBMITTED) [signature] STATE ROAD & AIRPORT DESIGN ENGR.
(APPROVED) [signature] STATE HIGHWAY ENGINEER

NUMBER 9017P

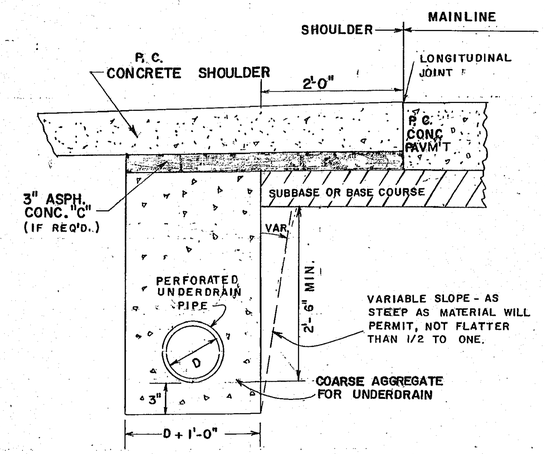
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	308	370



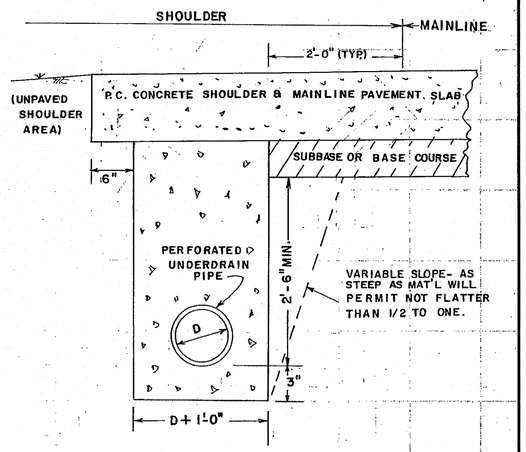
GENERAL DETAIL



ASPHALT SHOULDER - P.C.C. PAVEMENT



UNDER CONCRETE SHOULDER



UNDER CONCRETE SHOULDER*

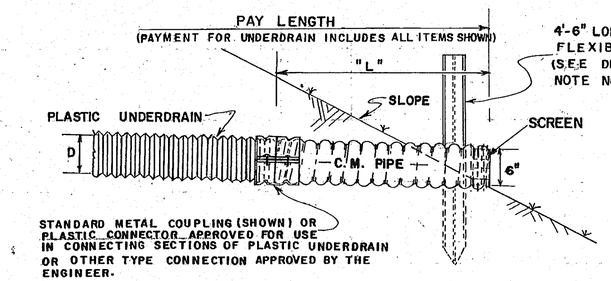
*CONSTRUCTED MONOLITHIC WITH MAINLINE 4'-0" PAVED SHOULDER SHOWN

PERFORATED UNDERDRAIN — TYPICAL INSTALLATIONS

*NOTE: PERFORATED UNDERDRAIN PIPE WILL BE INSTALLED COMPLETE PRIOR TO PLACING PERVIOUS SUB-BASE OR DRAINAGE COURSE.

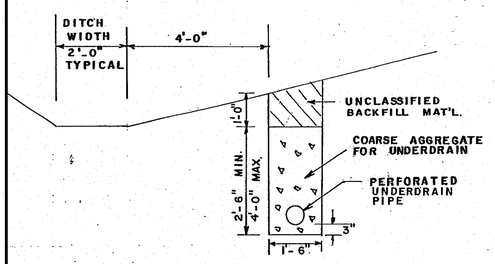
OUTLET DETAIL FOR PLASTIC UNDERDRAIN

(REQUIRED AT ALL OUTLETS WHERE PERFORATED PLASTIC UNDERDRAIN IS TERMINATED ON SLOPES).



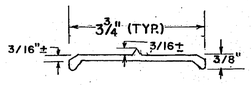
NOTE : "L" = MINIMUM LENGTH OF CORRUGATED METAL PIPE SECTION. THE C.M. OUTLET STUB SECTION MAY BE PERFORATED OR MAY BE NON-PERFORATED.

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

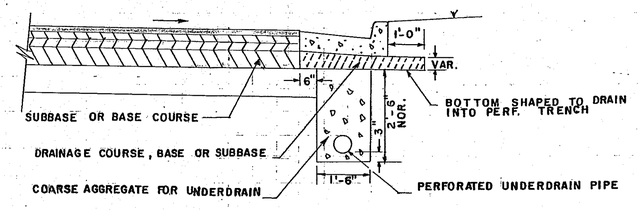
LENGTH: 4'-6" (from top to bottom point)

SPECIFICATION: SEC. 911 (EXCEPT REFLECTIVE SHEETING IS NOT REQUIRED)

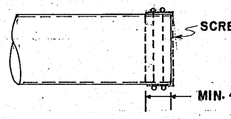
SPECIAL NOTE:

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.

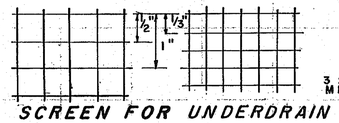
ON CONSTRUCTION, THE TYPICAL SECTIONS IN THE PLANS SHOULD BE USED FOR SPECIFIC DETAILS. IF UNDERDRAIN IS NOT SHOWN ON THE TYPICAL SECTIONS OR ELSEWHERE IN THE PROJECT PLANS, INSTALLATION WILL BE AS SHOWN ABOVE AND AS DIRECTED BY THE ENGINEER.



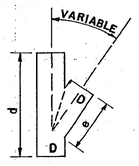
UNDER CURB & GUTTER



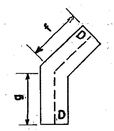
SCREEN TO BE PLACED OVER THE END OF PIPE AS SHOWN AND SECURED FIRMLY IN PLACE BY WRAPPING GALVANIZED WIRE AROUND PIPE AND SCREEN OTHER METHODS FOR SECURING SCREEN FIRMLY OVER END OF PIPE MAY BE USED IF APPROVED BY THE ENGINEER.



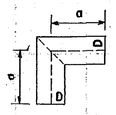
SCREEN FOR UNDERDRAIN



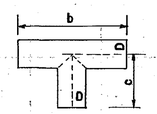
WYE



45° ELL



90° ELL



TEE

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 0.5%.
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 C & G DITCH INSTALL 8-7-83
R.M.U.	Add. Monolithic Conc. Sh. 5-27-81
R.M.U.	FLEXIBLE DELINEATOR 1-20-81

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

PERFORATED UNDERDRAIN

NO SCALE — REV. & REDR. JULY 1980

SUBMITTED: REV. R.M.U. — STATE ROAD AND AIRPORT DESIGN ENGR.

APPROVED: T.H.A. G.M.E. — STATE HIGHWAY ENGINEER

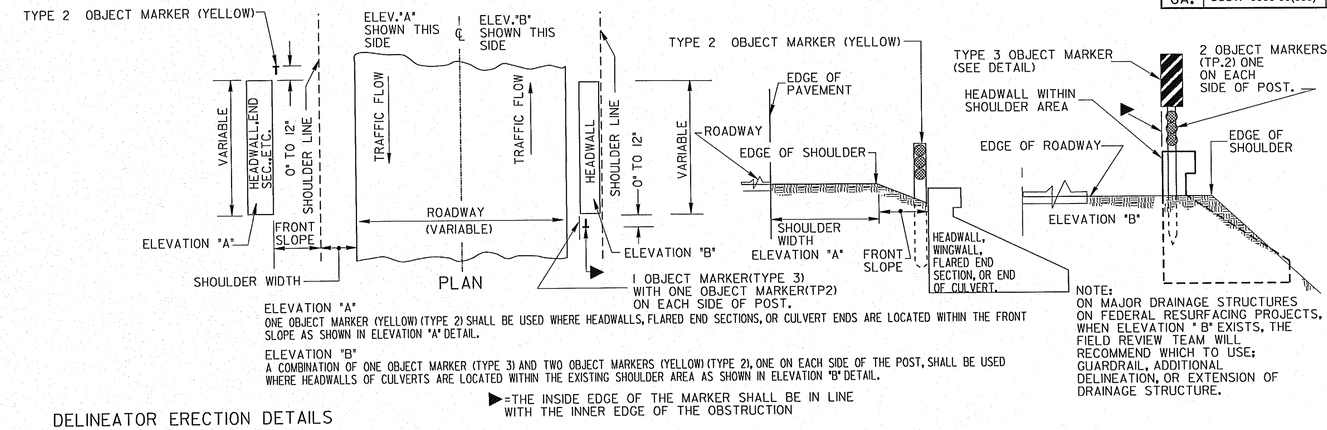
CHK. R.K.C.

NUMBER 9029B

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0008-00(869)	309	370

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

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

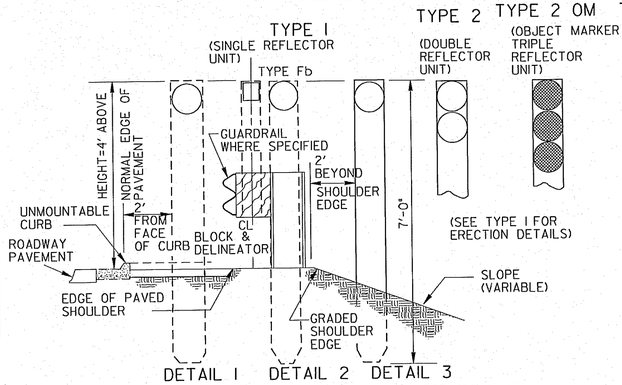
DELINEATORS SHOULD NORMALLY BE SPACED 528' APART. WHERE SUCH IS INTERRRUPTED BY DRIVEWAYS, CROSSROADS, ETC., AND WHERE UNDER THE NORMAL SPACING, A DELINEATOR WOULD FALL WITHIN SUCH AN AREA, THAT DELINEATOR MAY BE MOVED IN EITHER DIRECTION A DISTANCE NOT EXCEEDING ¼ (132') OF THE NORMAL SPACING. IF SUCH 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



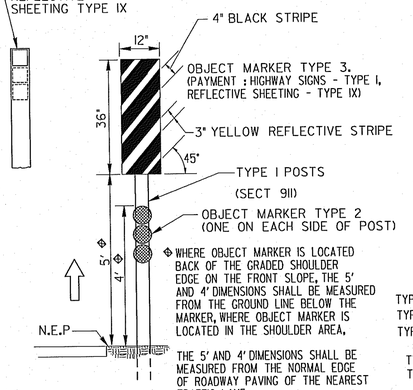
NOTE: ERECTION DETAILS ABOVE ARE TYPICAL FOR ALL TYPES EXCEPT IA, 2A, 3A, & Fb, WHICH ARE MOUNTED ON THE POST OR STRUCTURE ALREADY IN PLACE.

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.

DETAIL OF OBJECT MARKER



TYPES OF DELINEATORS

TYPE I- 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 3¼" 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 3¼" 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 3¼" DIAMETER CENTER MOUNT SEALED PRISMATIC REFLEX REFLECTORS HOUSED IN ALUMINUM BACKING WITH SINGLE GROMMETTED HOLE IN CENTER OF EACH REFLECTOR.

TYPE IA-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 I, 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 I, 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.

GENERAL NOTES:

A- SPECIFICATIONS: GA. STANDARD, CURRENT EDITION, & SUPPLEMENTS THERETO.

B- REFLECTORS FOR TYPES I AND IA 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 ¼" 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.

LOCATION OF DELINEATORS ON FREEWAY & EXPRESSWAY TYPE HIGHWAYS

TYPES OF DELINEATORS, ERECTION LOCATION, AND SPACING SHALL BE AS FOLLOWS.

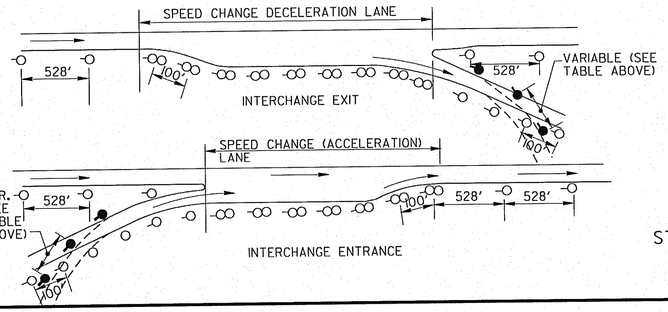
○ SINGLE CRYSTAL(WHITE) REFLECTOR UNITS (TYPE I DELINEATOR) ON RIGHT SIDE OF MAINLINE AT 528 FOOT SPACING & ON RT. SIDE OF RAMP TGT. SECTIONS AT 100 FOOT SPACING FROM PHYSICAL CORE TO RAMP TERMINUS.

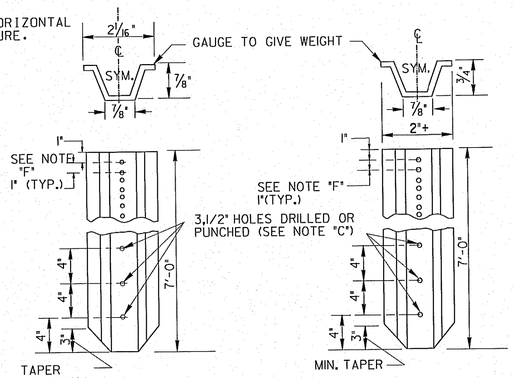
○○ DOUBLE CRYSTAL(WHITE) REFLECTOR UNITS (TYPE 2 DELINEATOR) ON RIGHT SIDE OF SPEED CHANGE (ACCELERATION & DECELERATION) LANES THAT ARE ON RIGHT SIDE OF MAINLINE AT 100 FOOT SPACING FROM TAPER TO PHYSICAL CORE.

●– (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 I 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.

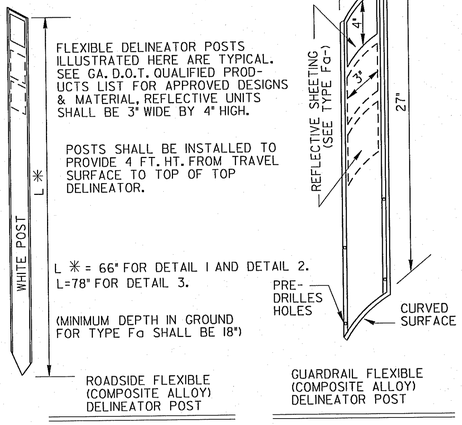




(ALTERNATES ALLOWABLE IF LISTED IN GA. D.O.T. QPL LIST.)

STEEL FLANGED "U" CHANNEL POST (1.12 LBS./FT.) (GALVANIZED)

ALUMINUM FLANGED "U" CHANNEL POST (0.78 LBS/FT.)



DATE	REVISION	BY
4-10-06	REV. OBJECT MARKER TYPE, DELETED DETAIL AND REV. REFLECTIVE SHEETING TYPE.	GLO

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
DELINEATORS & MARKERS AND ALTERNATE POSTS

NO SCALE — REV. & REDR. MAR., 2001

DES. ____ REV. ____ TRA. ____ CHK. ____

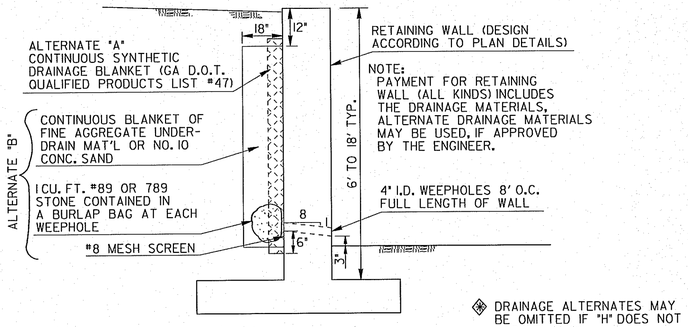
(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER

(APPROVED) CHIEF ENGINEER

NUMBER 9030C

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	310	370

DETAILS OF RETAINING WALL TYPICAL SECTIONS



◈ DRAINAGE ALTERNATES MAY BE OMITTED IF "H" DOES NOT EXCEED 6'-0".

STANDARD DRAINAGE FOR RETAINING WALLS

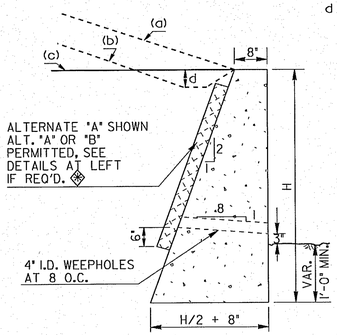
(FOR HEIGHTS FROM 6 FT. TO 18 FT.- SPECIAL DESIGN DRAINAGE REQUIRED FOR RETAINING WALLS OVER 18 FT. IN HEIGHT.)

(a) - SLOPED BACKFILL, NO DITCH

(b) - SLOPED BACKFILL WITH DITCH

(c) - FLAT BACKFILL

d = DITCH DEPTH, 6'-12" TYPICAL SEE PLANS FOR DESIGN



MAXIMUM "H" *		
BACKFILL	PLAIN WALL	W.BARRIER FACE
FLAT	10'-0" **	10'-0"
SLOPE TO 4:1	6'-3"	7'-0"
SLOPE TO 2:1	4'-6"	4'-9"

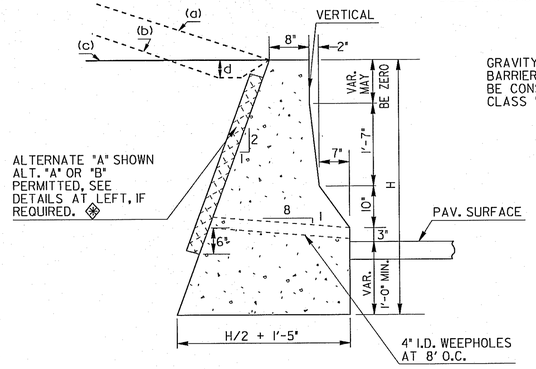
*GREATER "H" PERMITTED IF APPROVED BY BRIDGE DESIGN.

**MAXIMUM "H" OF 7'-3" HERE IF TRAFFIC IS ON BACKFILL.

TYPICAL SECTION FOR GRAVITY TYPE WALL

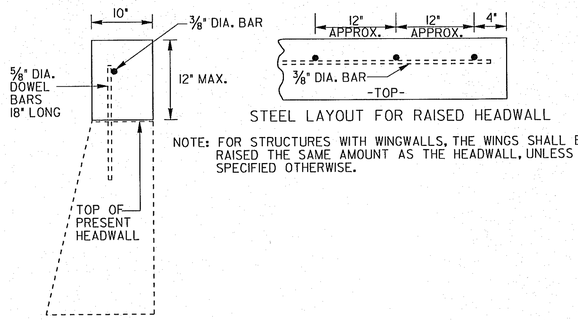
MATERIALS: CLASS "B" CONC. OR MORTAR RUBBLE MASONARY.

NOTE: SEE STANDARD 4948 WHERE CONCRETE SIDE BARRIERS ARE DESIRED.



TYPICAL SECTION FOR GRAVITY WALL WITH BARRIER FACE

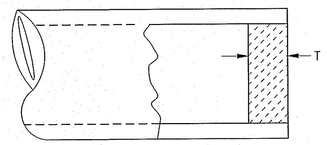
DETAIL FOR RAISING HEADWALL



STEEL LAYOUT FOR RAISED HEADWALL

NOTE: FOR STRUCTURES WITH WINGWALLS, THE WINGS SHALL BE RAISED THE SAME AMOUNT AS THE HEADWALL, UNLESS SPECIFIED OTHERWISE.

TYPICAL PIPE PLUG



SECTION

NOTE: PLAN PAY QUANTITIES ARE TO REFLECT PIPE PLUGS AS CU. YDS. OF CL. A OR CL. B CONCRETE. ON CONSTRUCTION PLUGS MAY BE BUILT WITH BRICK MASONRY, MORTAR RUBBLE MASONRY, CL. A CONC., OR CL. B CONC. WITH NO ADJUSTMENT IN PAYMENT MADE FOR ALTERNATES.

D	T (MIN)	PIPE PLUG (CU. YDS.)
12"	8"	0.0194
15"	8"	0.0303
18"	8"	0.0436
24"	8"	0.0776
30"	8"	0.1212
36"	8"	0.1745
42"	8"	0.2376
48"	8"	0.3103
54"	12"	0.5890
60"	12"	0.7272
66"	12"	0.8799
72"	12"	1.0472

BY	REVISION	DATE
C.J.P.	REDRAWN	6-30-98
R.M.U.	ADD PIPE PLUG DETAILS	4-30-84
R.M.U.	RET. WALL "H" TABLE ADDED	2-15-83

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
RETAINING WALL TYPICAL SECTIONS, RAISING HEADWALL, AND TYPICAL PIPE PLUG.

NO SCALE: REV. & REDR. DECEMBER, 1982

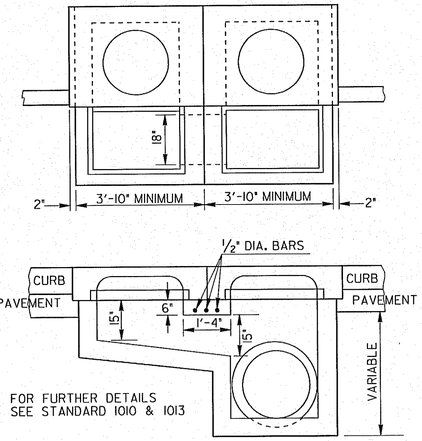
REV. & R.M.U. (SUBMITTED)
REDR. STATE ROAD & AIRPORT DESIGN ENGR.
TRA. G.M.E.
CHK. R.K.C. (APPROVED) STATE HIGHWAY ENGINEER

NUMBER 9031L

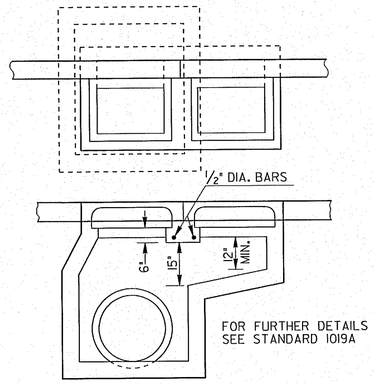
SHEET 1 OF 2

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	311	370

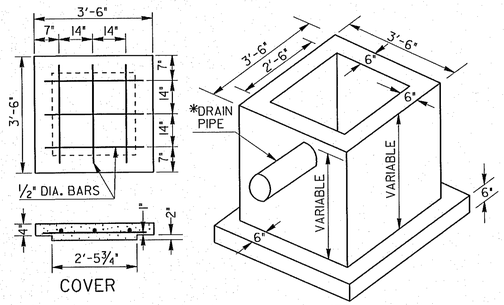
DETAIL OF CATCH BASIN MODIFIED FOR DOUBLE GRATES



DETAIL OF DROP INLET MODIFIED FOR DOUBLE GRATES



DETAIL OF CONCRETE SPRING BOX

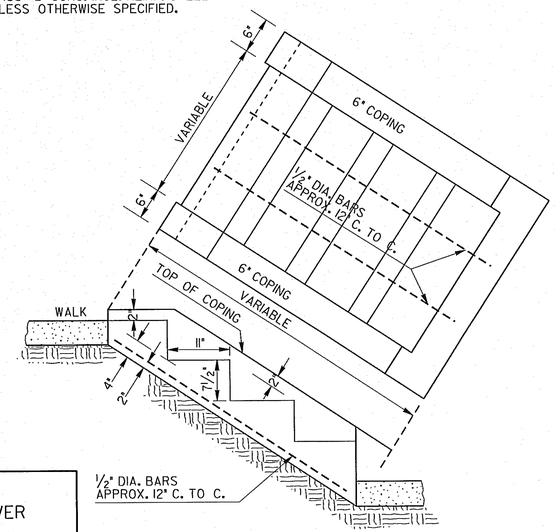


NOTE: SPRING BOX TO BE CONSTRUCTED OF CLASS "A" CONCRETE.

*DRAIN PIPE SHALL BE 6" PERFORATED UNDERDRAIN PIPE, EXCEPT WHERE OTHERWISE SPECIFIED. (2" GALV. PIPE USED ONLY IN SPECIAL CASES.) PAYMENT FOR SPRING BOX INCLUDES 1'-6" MIN. LENGTH OF DRAIN PIPE. ANY ADDITIONAL PIPE REQUIRED SHALL BE PAID FOR SEPARATELY.

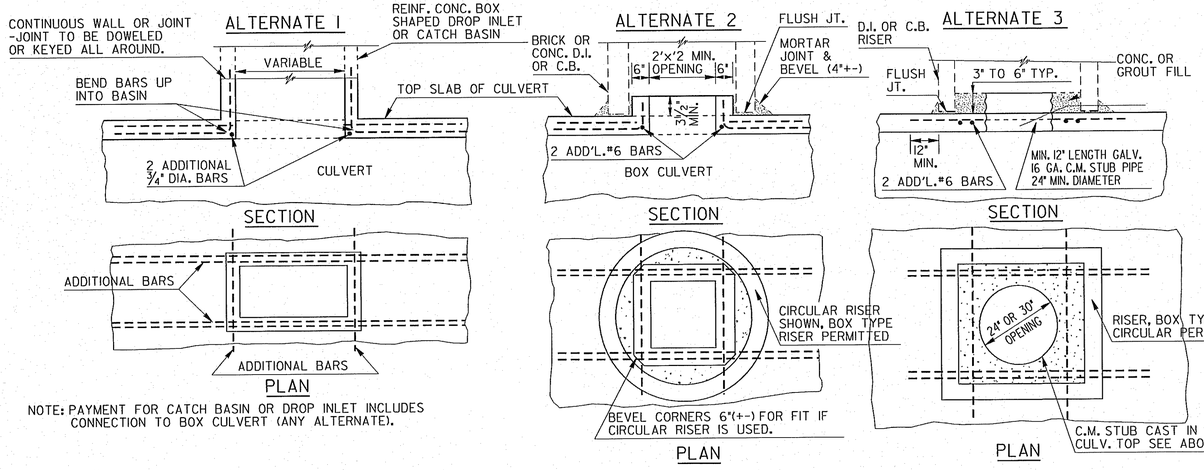
DETAIL OF CONCRETE STEPS

NOTE:
BASIS OF PAYMENT SHALL BE CLASS "B" CONC. INCL. REINF. STEEL UNLESS OTHERWISE SPECIFIED.



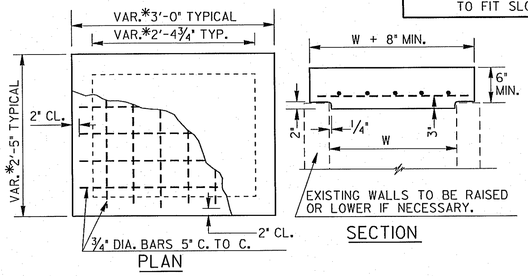
NOTE: RISE AND TREAD ARE TO BE ADJUSTED TO FIT SLOPE. RISE NOT TO EXCEED 8".

DETAILS OF CATCH BASIN OR DROP INLET CONNECTION TO CONCRETE BOX CULVERT



NOTE: PAYMENT FOR CATCH BASIN OR DROP INLET INCLUDES CONNECTION TO BOX CULVERT (ANY ALTERNATE).

DETAILS FOR CAPPING EXISTING DROP INLET WITH CONCRETE COVER



NOTE:
CONCRETE COVER SHOWN IS FOR USE IN CAPPING MINOR STRUCTURE WHERE CONVERSION FROM DROP INLET TO JUNCTION BOX IS DESIRED, SEE STD. 1011A REINFORCED CONCRETE COVER FOR CONVERSION TO MANHOLE.

*DIMENSIONS INDICATED ABOVE ARE TYPICAL FOR APPLICATION WITH STD. 1019A DROP INLET AND WILL VARY ACCORDING TO STRUCTURE; HOWEVER, NO INSIDE DIMENSION SHOULD EXCEED 4'-0" WITHOUT STRUCTURAL REVIEW. INLET DIMENSIONS SHOULD BE DETERMINED PRIOR TO CASTING CONC. COVER.

NOTE: IF STRUCTURE IS TO BE UNDER TRAFFIC AND DOES NOT HAVE ONE FT. MIN. CLEARANCE TO SUBBASE, THE SLAB THICKNESS SHALL BE INCREASED BY 4" AND THE REBARS SIZE INCREASES FROM 3/4" DIA. TO 1" DIA.

DATE	REVISION	BY
6-30-98	REDRAWN	G.J.P.
4-30-84	RET. WALL "H" TABLE ADDED	R.M.U.
2-15-83	ADD PIPE PLUG DETAILS	R.M.U.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
DETAILS OF: CATCH BASIN MODIFIED FOR DOUBLE GRATE, DROP INLET MODIFIED FOR DOUBLE GRATE, CONCRETE SPRING BOX, CONCRETE STEPS, CATCH BASIN OR DROP INLET CONNECTION TO CONCRETE BOX CULVERT CAPPING EXISTING DROP INLET

NO SCALE: REV. & REDR. DECEMBER, 1982

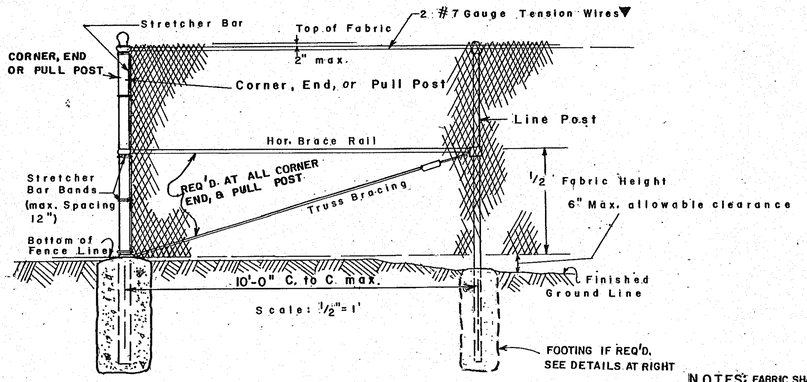
REV. & REDR. R.M.U. (SUBMITTED)
STATE ROAD & AIRPORT DESIGN ENGR.
TRA. G.M.E. (APPROVED)
CHK. R.K.C.
CHIEF ENGINEER

NUMBER 9031L

SHEET 2 OF 2

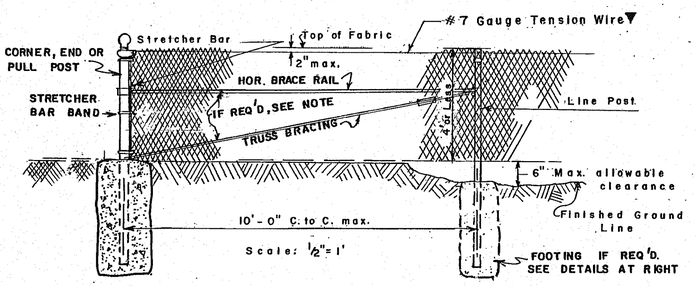
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CSSTP-0006-00(869)	312	370

DETAILS OF CHAIN-LINK WIRE FENCE



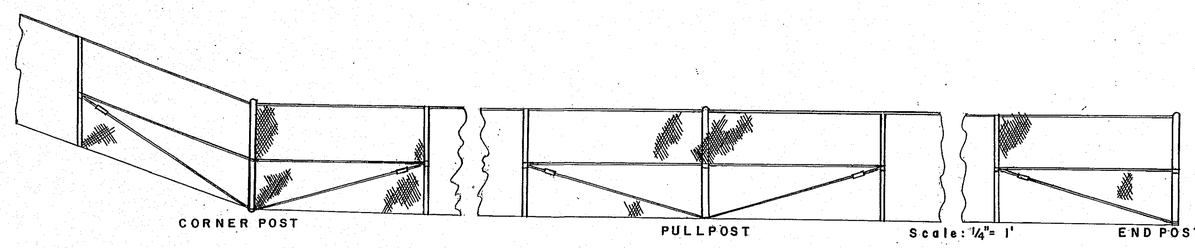
CHAIN LINK WIRE FENCE
(OVER 4 FT HEIGHT)

CONCRETE FOOTINGS ARE REQUIRED AT ALL CORNERS, END AND PULL POST

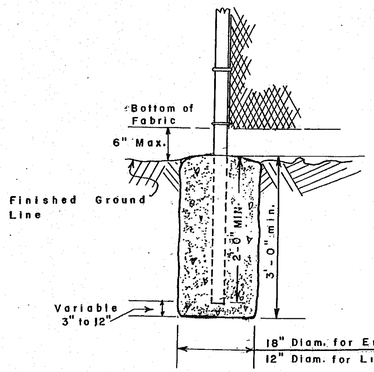


CHAIN LINK WIRE FENCE
(4 FT. OR LESS HEIGHT)

NOTES:
- FABRIC SHALL BE FASTENED TO LINE POST AT INTERVALS NOT GREATER THAN 14".
- TENSION WIRES SHALL BE TIED TO FABRIC WITH 9 GA. WIRE OR 11 GA. HOG RINGS AT 24" C. TO C. MAX. SPACINGS.
- ▼ WHERE A PROPERTY OWNERS CHAIN LINK WIRE FENCE HAS TO BE REPLACED BY THE DEPARTMENT AS PART OF THE CONSTRUCTION PROJECT, AND THE EXISTING FENCE HAD A TOP RAIL, THEN THE NEW REPLACEMENT FENCE SHALL ALSO HAVE A SIMILAR TYPE RAIL INSTEAD OF TENSION WIRES AT THE TOP OF THE FENCE.
- HORIZONTAL BRACE RAILS & TRUSS BRACING SHALL BE REQUIRED AT ALL CORNER, END AND PULL POSTS, EXCEPT WHERE A CONTINUOUS TOP RAIL IS SPECIFIED (SEE NOTE ABOVE) WITH A FENCE 4 FT. OR LESS IN HEIGHT.



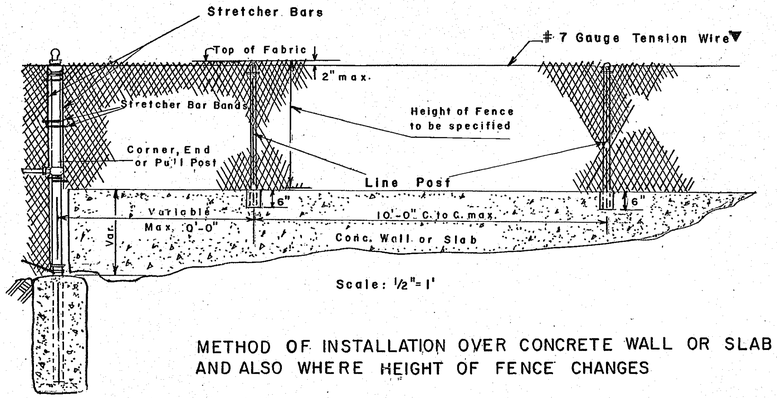
METHOD OF BRACING END, CORNER AND PULL POST



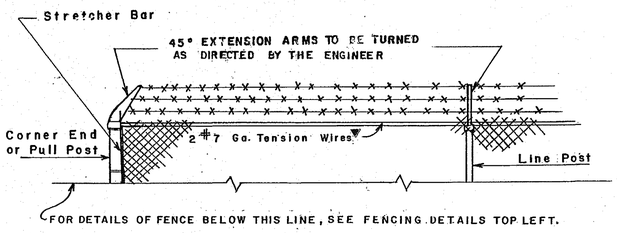
FOOTING DETAIL FOR FENCE POSTS

*ALTERNATE:
TYPE "C" LINE POSTS OR 2 3/8" ϕ TUBE LINE POSTS OR OTHER TYPE LINE POSTS APPROVED BY THE D.O.T. LABORATORY MAY BE DRIVEN TO A MINIMUM DEPTH OF THREE (3) FEET INSTEAD OF THE CONCRETE FOOTING SHOWN, PROVIDED THE SOIL IS EITHER CLASS I, II, III, OR V SOIL. CONCRETE FOOTINGS WILL BE REQUIRED FOR LINE POSTS INSTALLED IN MARSHY OR SWAMPY AREAS. (CLASS IV SOILS).

ALL CORNER, END AND PULL POSTS SHALL HAVE CONCRETE FOOTINGS AS SHOWN.



METHOD OF INSTALLATION OVER CONCRETE WALL OR SLAB AND ALSO WHERE HEIGHT OF FENCE CHANGES



DETAILS OF BARBED WIRE WITH EXTENSION ARMS FOR CHAIN LINK WIRE FENCE

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

CHAIN LINK WIRE FENCE

SCALE AS SHOWN

REV. & REDR. JUNE, 1981

REV. & ADDED NOTES 8-15-85

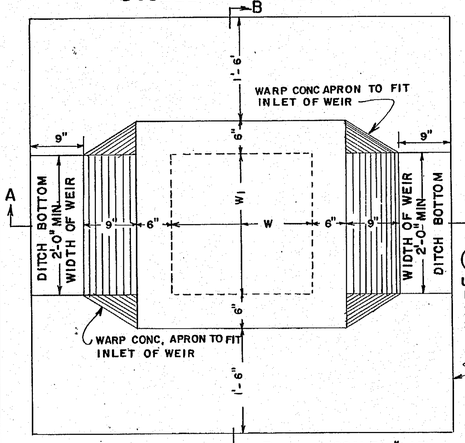
DES. 4-62
REV. RMU
RETR. GME
CHK RKC
R.M.U.

(SUBMITTED) Hoyt E. Hardy
STATE ROAD & AIRPORT DESIGN ENGR.
(APPROVED) Thomas S. Moreland
STATE HIGHWAY ENGINEER

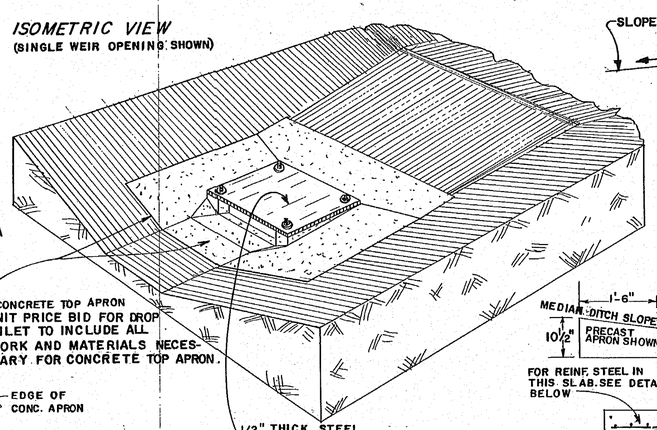
NUMBER 9031N

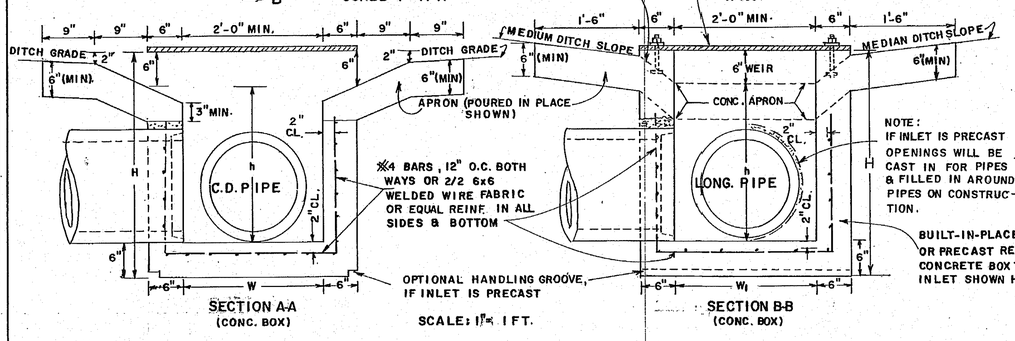
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	313	370

DETAILS OF DROP INLET WITH DOUBLE WEIR OPENING



ISOMETRIC VIEW
(SINGLE WEIR OPENING SHOWN)



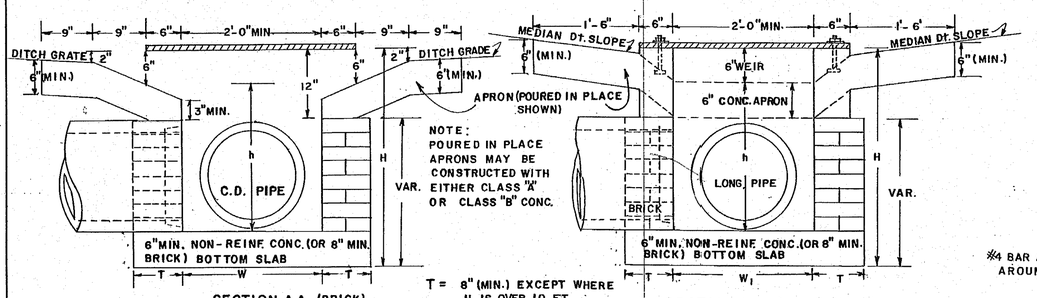


NOTE:
IF INLET IS PRECAST OPENINGS WILL BE CAST IN FOR PIPES & FILLED IN AROUND PIPES ON CONSTRUCTION.

※4 BARS, 12" O.C. BOTH WAYS OR 2/2 6x6 WELDED WIRE FABRIC OR EQUAL REINF. IN ALL SIDES & BOTTOM

BUILT-IN-PLACE OR PRECAST REINF. CONCRETE BOX TYPE INLET SHOWN HERE.

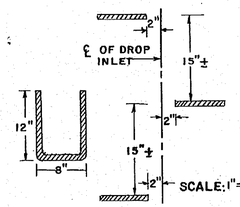
OPTIONAL HANDLING GROOVE, IF INLET IS PRECAST



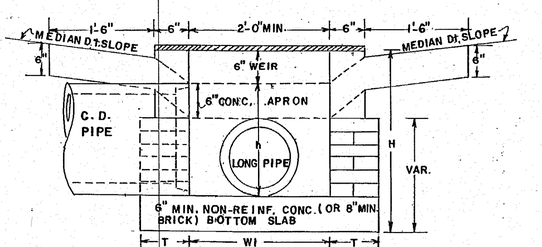
NOTE:
POURED IN PLACE APRONS MAY BE CONSTRUCTED WITH EITHER CLASS "A" OR CLASS "B" CONC.

T = 8" (MIN.) EXCEPT WHERE H IS OVER 10 FT. SEE DETAIL AT RIGHT.

DETAIL AND ARRANGEMENT OF LADDER BARS

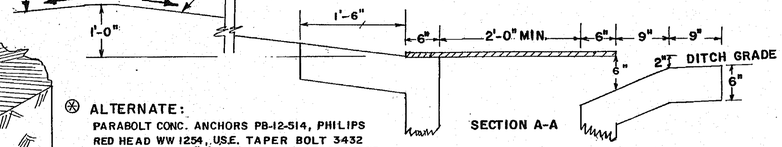


LADDER BARS ARE REQUIRED IN ALL INLETS, WHERE h=OVER 4'-0". NUMBER AND LOCATION OF LADDER BARS TO BE AS DIRECTED BY THE ENGINEER. AN ALTERNATE STEP MAY BE SUBSTITUTED, IF APPROVED BY THE LABORATORY.



(C.D. PIPE IS 6" MIN. LARGER THAN LONG. PIPE)

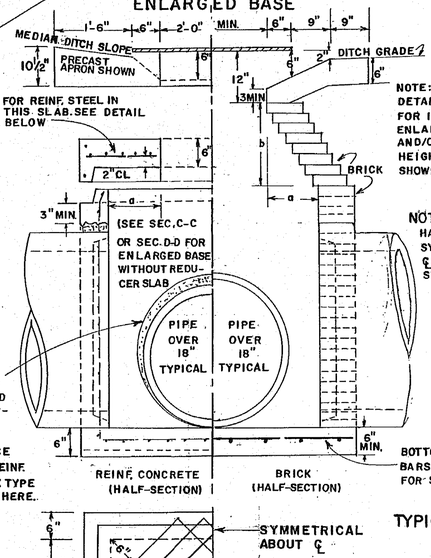
SLOPE 20:1 (REFERENCED TO DITCH GRADE) OR FLATTER



DETAIL OF SINGLE WEIR OPENING

⊛ ALTERNATE:
PARABOLT CONC. ANCHORS PB-12-514, PHILIPS RED HEAD WW 1254, USE. TAPER BOLT 3432 OR AN EQUAL 1/2"ø ANCHOR BOLT MAY BE USED TO SECURE THE STEEL PLATE.

DROP INLET WITH ENLARGED BASE



NOTE:
DETAILS NOT SHOWN FOR INLETS WITH ENLARGED BASES AND/OR ADDITIONAL HEIGHT WILL BE AS SHOWN ELSEWHERE.

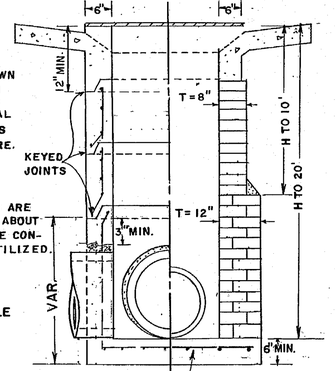
NOTE:
HALF-SECTIONS ARE SYMMETRICAL ABOUT ℄ OF THE TYPE CONSTRUCTION UTILIZED.

NO SCALE

BOTTOM SLAB REINF. NO.4 BARS @ 12" O.C. BOTH WAYS FOR STRUCTURES SHOWN HERE.

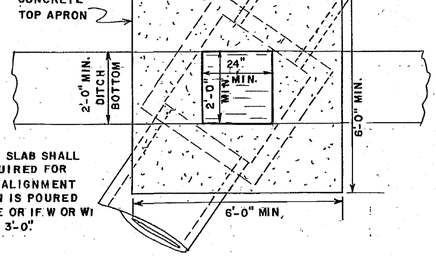
DROP INLET WITH ADDITIONAL HEIGHT

(DETAILS SHOWN ARE TYPICAL BOX ENCLOSURE FOR PIPE MAY BE BRICK MASONRY WITH PRECAST RISERS, ALSO SEE STD. 1040 FOR ADAPTERS USED WITH CIRCULAR ALTERNATES).

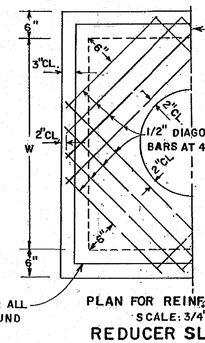


BRICK WALL THICKNESS	
H	T
to 10'	8"
10' to 20'	12"
20' to 30'	16"

TYPICAL PLAN FOR SKEWED PIPE

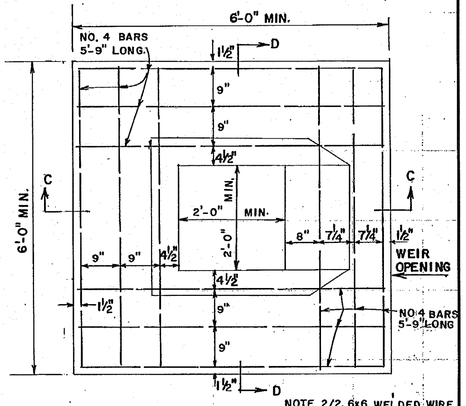


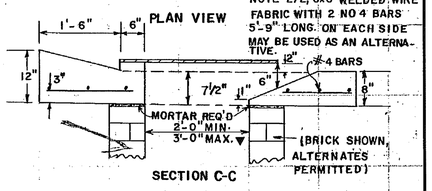
NOTE:
REDUCER SLAB SHALL BE REQUIRED FOR SKEWED ALIGNMENT IF APRON IS POURED IN PLACE OR IF W OR W1 IS OVER 3'-0"



REDUCER SLAB
(HALF-SECTION)

REINFORCING FOR OPTIONAL PRECAST APRON
(MAY BE USED WITH A PRECAST OR BUILT-IN-PLACE INLET)

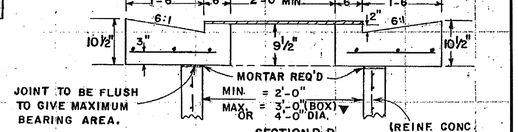




NOTE 2/2, 6x6 WELDED WIRE FABRIC WITH 2 NO 4 BARS 5'-9" LONG. ON EACH SIDE MAY BE USED AS AN ALTERNATIVE.

NOTE: WHEN USING PRECAST APRON, THE PLATE, BOLTS & OTHER REQUIREMENTS SHALL CONFORM TO THAT SHOWN FOR POURED IN PLACE APRON.

▼ MAXIMUM W OR W1 PERMITTED WITH PRECAST APRON WITHOUT REDUCER SLAB.



GENERAL NOTES:

1. SPECIFICATIONS: GA. STANDARD, CURRENT EDITION, & SUPPLEMENTS THERETO.
2. SEE STD. 9031-L FOR ADDITIONAL DETAILS WHERE INLET IS CONSTRUCTED ON BOX CULVERT.
3. SEE STD. 1040 FOR CIRCULAR PRECAST ALTERNATES.
4. PRECAST ON BRICK MASONRY: BRICK CONSTRUCTION SHALL EXTEND 6"± ABOVE TOP OF PIPE. JOINTS BETWEEN PRECAST & BRICK SECTIONS SHALL BE FLUSH OR CONC. FILLED TO GIVE MAX. BEARING AREA.
5. TYPICAL TREATMENT FOR SKEWED PIPES:
   (a) WITH PRECAST APRON — CONSTRUCT BOX WITH WALLS PERPENDICULAR TO PIPE AND SET PRECAST APRON PARALLEL TO DITCH AND SKEWED RELATIVE TO PIPE OR USE CIRCULAR SECTIONS (STD. 1040)
   (b) WITH BUILT-IN-PLACE APRON — CONSTRUCT BOX AS DESCRIBED IN (a) AND USE REDUCER SLAB OR INCREASE W OR W1 DIMENSIONS AS NECESSARY OR USE CIRCULAR SECTIONS (STD. 1040)

TYPICAL DROP INLET DIMENSIONS ※※

PIPE SIZE	BRICK MASONRY					MODIFIED		REINF. CONCRETE ※			
	MIN. W OR W1	MIN. H	MIN. h	a (MAX.)	b (MIN.)	MIN H	MIN. h	MIN. W OR W1	MIN. H	MIN. h	a (MAX)
15"	2'-0"	3'-1"	2'-1"	—	—	2'-1 7/16"	1'-7 1/16"	2'-0"	3'-2"	2'-2"	—
18"	2'-3"	3'-10"	2'-10"	1½"	2 1/16"	2'-11"	1'-11"	2'-3"	3'-5"	2'-5"	—
24"	2'-10"	4'-11"	3'-11"	5"	8 5/8"	3'-6"	2'-6"	3'-0"	4'-10"	3'-10"	6"
30"	3'-5"	6'-0"	5'-0"	8½"	1'-2 11/16"	4'-1"	3'-1"	3'-6"	5'-5"	4'-5"	9"
36"	4'-0"	7'-1"	6'-1"	1'-0"	1'-8 3/4"	—	—	4'-0"	6'-0"	5'-0"	1'-0"
42"	4'-7"	8'-6"	7'-2"	1'-3½"	2'-2 3/4"	—	—	4'-6"	6'-7"	5'-7"	1'-3"
48"	5'-2"	9'-7"	8'-3	1'-7"	2'-8 7/8"	—	—	5'-0"	7'-2"	6'-2"	1'-6"

※ BUILT-IN-PLACE OR PRECAST BOX

※※ DIMENSIONS ARE BASED UPON TYPICAL OUTSIDE DIAMETERS OF CONCRETE PIPE AND MAY BE VARIED IF CONDITIONS PERMIT, AND THE VARIED DIMENSIONS ARE SHOWN IN THE PLANS OR SPECIFIED BY THE ENGINEER. DIMENSIONS "a" ARE BASED UPON 2'-0" WEIR OPENING. MINIMUM H AND h ARE BASED UPON LARGEST PIPE INVOLVED. BOX ENCLOSURE FOR PIPE DOES NOT HAVE TO BE SQUARE. W AND W1 DIMENSIONS MAY DIFFER. (DIMENSIONS HAVE BEEN SPECIFIED FOR BOX SHAPED INLETS. SEE STD. 1040 FOR DIMENSIONS OF CIRCULAR ALTERNATES.)

BY	GEN. REV. - REVISION	DATE
R.M.U.		4-17-96

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD MEDIAN DROP INLET
(PRECAST OR BUILT-IN-PLACE) & CONCRETE APRON

SCALE AS SHOWN — REV. & REDR. AUGUST 26, 1981

DES. 2-67
REV. R.M.U.
TRA. G.M.E.
CHK. R.K.C.

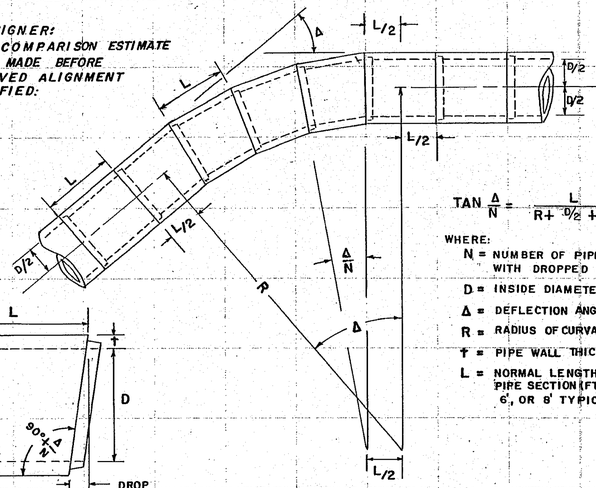
(SUBMITTED) Floyd E. Hardy
STATE ROAD & AIRPORT DESIGN ENGR.
(APPROVED) Thomas D. Moreland
STATE HIGHWAY ENGINEER

NUMBER 9031S

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CSSTP-0006-00(869)	314	370

PIPE CURVED ALIGNMENT USING SECTIONS WITH DROPPED JOINTS

NOTE TO DESIGNER:
A COST COMPARISON ESTIMATE SHALL BE MADE BEFORE PIPE CURVED ALIGNMENT IS SPECIFIED.



$$\tan \frac{\Delta}{N} = \frac{L}{R + D/2 + t}$$

WHERE:

N = NUMBER OF PIPE SECTIONS WITH DROPPED JOINTS

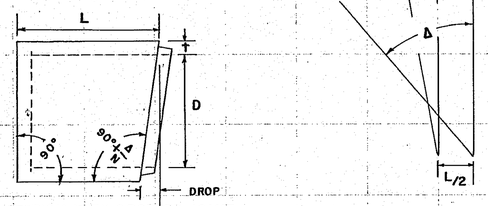
D = INSIDE DIAMETER OF PIPE

Δ = DEFLECTION ANGLE, DEGREES

R = RADIUS OF CURVATURE (FT.)

t = PIPE WALL THICKNESS (FT.)

L = NORMAL LENGTH OF PIPE SECTION (FT.) 4', 6', OR 8' TYPICAL.



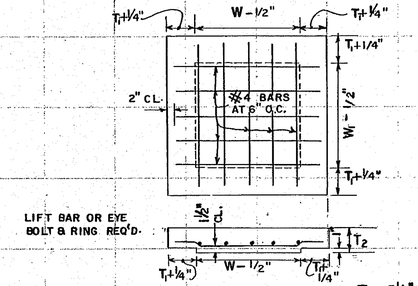
SECTION WITH DROPPED JOINT

NOTES FOR PIPE CURVED ALIGNMENT:

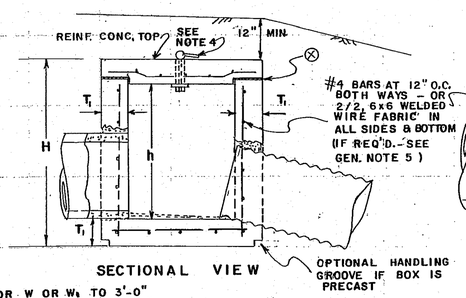
1. PLANS ARE TO SPECIFY ONLY THE PIPE DIAMETER "D", THE ANGLE "Δ", AND THE TANGENT ALIGNMENT.
2. PIPE WALL THICKNESS "t", PIPE SECTION LENGTHS "L", AND DROP IN PIPE JOINT "Δ/N" VARIES ACCORDING TO PIPE PRODUCER AND IS BASED ON FEASIBILITY.
3. THE RADIUS "R" AND THE NUMBER OF DROPPED JOINT PIPE SECTIONS "N" IS DETERMINED BY (1)& (2) ABOVE. MINOR MODIFICATIONS IN THE RADIUS "R" ARE NORMALLY MADE SO THAT "N" WILL BE A WHOLE NUMBER.
4. PIPE SECTIONS SHALL BE ORIENTED SUCH THAT THE PLANE OF THE DROPPED JOINT IS AT RIGHT ANGLES TO THE THEORETICAL CIRCULAR CURVE. THE TOP OF SECTIONS ARE TO BE MARKED SO THAT THE DEFLECTION ANGLE IS PROPERLY ORIENTED.
5. DETAILS ARE SHOWN FOR CONCRETE PIPE. CURVED ALIGNMENT FOR C.M. PIPE SHALL BE AS RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.
6. PAYMENT PER LIN. FT. PIPE INCLUDES PIPE SECTIONS WITH DROPPED JOINTS.

DETAILS OF CONCRETE JUNCTION BOX
(PRECAST OR BUILT IN PLACE)

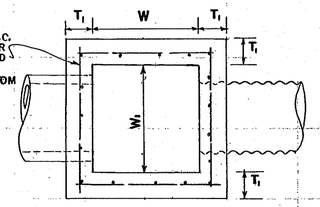
REINFORCED CONCRETE TOP



$T_2 = 5\frac{1}{2}$" FOR W OR W_1 TO 3'-0"
$T_2 = 8$" FOR W OR W_1 OVER 3'-0"



SECTIONAL VIEW



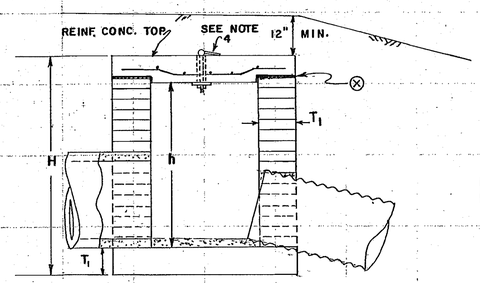
PLAN VIEW
(SHOWN WITHOUT REQ'D. TOP)

T = 6" FOR CONCRETE

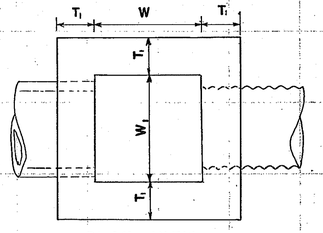
DIMENSIONS FOR BRICK OR REINF. CONC. BOX			
PIPE SIZE	MIN. W OR W	MIN. h	MIN. H
15"	2'-0"	1'-9"	2'-9"
18"	2'-3"	2'-1"	3'-1"
24"	2'-10"	2'-8"	3'-8"
30"	3'-5"	3'-3"	4'-3"
36"	4'-0"	3'-10"	4'-9"
42"	4'-7"	4'-5"	5'-5"
48"	5'-2"	5'-0"	6'-0"

SEE GEN. NOTE NO.3

DETAILS OF BRICK JUNCTION BOX
FOR BRICK T= 8" (MAX. 10 FT. DEPTH)



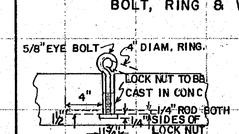
SECTIONAL VIEW



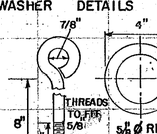
PLAN VIEW
(SHOWN WITHOUT REQ'D. TOP)

⊗ PREVENT BOND WITH EITHER 30 LB. ASPHALT SATURATED FELT OR PREFORMED FOAM JOINT FILLER.

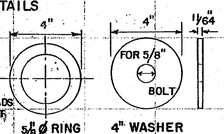
BOLT, RING & WASHER DETAILS



ALTERNATE CONNECTION FOR BOLT & RING



EYE BOLT

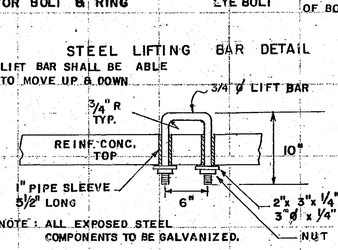


5/8" ø RING — 4" WASHER

WASHER, BOLT & RING TO BE GALV. STEEL OR WROUGHT IRON RING TO BE PLACED IN EYE OF BOLT BEFORE LEAVING SHOP.

STEEL LIFTING BAR DETAIL

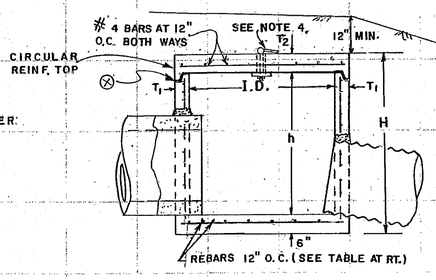
LIFT BAR SHALL BE ABLE TO MOVE UP & DOWN



NOTE: ALL EXPOSED STEEL COMPONENTS TO BE GALVANIZED.

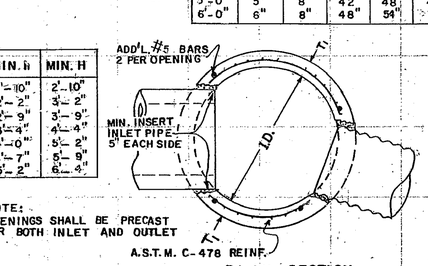
DETAILS OF CIRCULAR PRECAST JUNCTION BOX
(REINFORCING AND DESIGN SHALL COMPLY WITH A.S.T.M. C-478 EXCEPT AS OTHERWISE SHOWN. MATERIALS SHALL COMPLY WITH GA. STD. SPECIFICATIONS FOR PRECAST MANHOLES)

I.D.	T_1 (MIN.)	T_2 (MIN.)	MAX. PIPE CONC.	MAX. PIPE C.M.	REBARS IN BOTTOM
4'-0"	5"	6"	30"	36"	#5
5'-0"	5"	8"	42"	48"	#5
6'-0"	6"	8"	48"	54"	#6



SECTIONAL VIEW

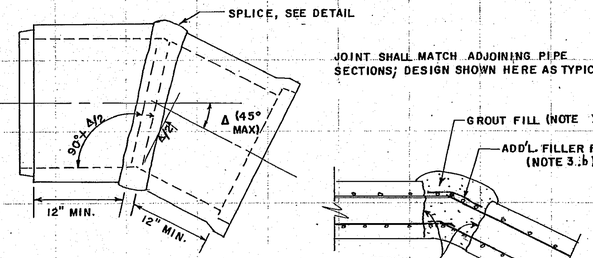
PIPE SIZE	MIN. h	MIN. H
15"	1'-10"	2'-10"
18"	2'-2"	3'-2"
24"	2'-9"	3'-9"
30"	3'-3"	4'-3"
36"	4'-0"	5'-2"
42"	4'-7"	5'-9"
48"	5'-2"	6'-3"



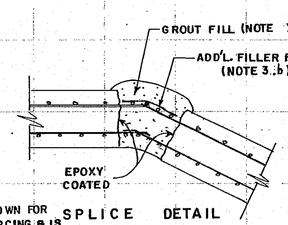
PLAN SECTION

NOTE:
OPENINGS SHALL BE PRECAST FOR BOTH INLET AND OUTLET

PIPE ELBOW SECTION (PRE-FABRICATED)



PLAN VIEW



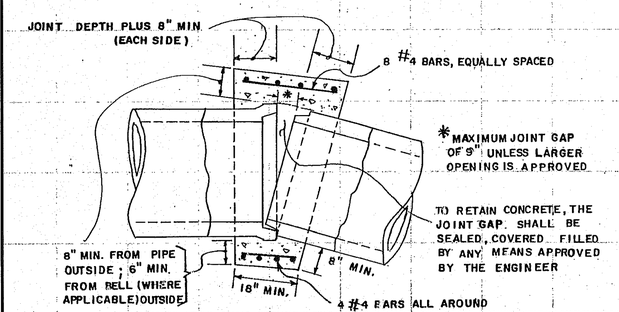
SPLICE DETAIL (TYPICAL)

NOTE: SPLICE DETAIL IS SHOWN FOR DOUBLE CAGE REINFORCING & IS SIMILAR FOR SINGLE GAGE REINFORCING, BUT WITH SINGLE SPLICE ALL AROUND BEING APPLICABLE.

NOTES FOR PIPE ELBOW:

1. PAYMENT FOR LIN. FT. OF PIPE INCLUDES ELBOWS.
2. ELBOW ANGLE Δ SHALL VARY ACCORDING TO NEED, BUT SHALL NOT BE GREATER THAN 45°. THE CONTRACTOR SHALL INFORM PRODUCER AS TO ANGLE REQUIRED.
3. (a) CONCRETE PIPE SHALL BE CUT BEFORE BEING CURED AND STEEL EXPOSED FROM EACH SIDE OF CUT.
   (b) EXPOSED STEEL SHALL BE REJOINED. FILLER RODS AT LEAST EQUAL TO RODS IN PIPE SHALL BE ADDED AS NEEDED FOR HANDLING STRENGTH & TO HOLD GROUT.
   (c) ALL VOID IN SPLICE SHALL BE PACKED WITH GROUT MORTAR RICH ENOUGH TO GIVE STRENGTH AT LEAST EQUAL TO REMOVED CONCRETE WITH INSIDE SMOOTHED OUT.
4. C.M. PIPE ELBOW NOT SHOWN, BUT MAY BE SPECIFIED. SOLID WELD SHALL BE REQUIRED FOR C.M. ELBOW JOINT WITH GALVANIZING AND/OR COATINGS REPAIRED AS REQ'D.

CONCRETE COLLAR FOR DEFLECTING PIPE

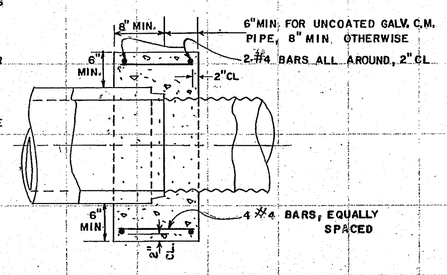


PLAN SECTION

NOTES FOR CONCRETE COLLARS:

1. PERIMETERS OF CONCRETE COLLARS DO NOT HAVE TO BE SMOOTH LINES. COLLARS MAY BE FORMED AGAINST COMPACTED OR UNDISTURED SOIL. DIMENSIONS ARE MINIMUM. COLLAR MAY BE SQUARE, ROUND OR SHAPE MAY VARY SO LONG AS MINIMUM DIMENSIONS ARE OBTAINED.
2. ALL CONCRETE COLLARS ARE TO BE CONSTRUCTED WITH CLASS A CONCRETE.
3. PAYMENT FOR LIN. FT. OF PIPE INCLUDES COLLARS.

CONCRETE COLLAR FOR JOINTING PIPE



PLAN OR SIDE SECTION

GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION & SUPPLEMENTS THERETO.
2. ILLUSTRATED PIPES, PIPE JOINTS, ALIGNMENT, SIZES, ETC. ARE SHOWN AS REPRESENTATIVE, ACTUAL REQUIREMENTS VARY PER LOCATION AS INDICATED IN THE PLANS.
3. JUNCTION BOXES DO NOT HAVE TO BE CONSTRUCTED SQUARE. W & W. DIMENSIONS MAY VARY ACCORDING TO PIPE SIZE.
4. ALL JUNCTION BOX TOPS SHALL BE EQUIPPED WITH EITHER AN EYE BOLT & RING (SHOWN) OR A LIFTING BAR (ALTERNATE).
5. REINFORCING IS REQUIRED FOR ALL PRECAST JUNCTION BOXES. REINFORCING MAY BE OMITTED FOR BUILT IN PLACE CONCRETE BOXES NOT OVER 10 FT. DEEP AND NOT LARGER THAN 3'x 3', CONSTRUCTION JOINTS PERMITTED IF DOWELED OR KEYED. ALL JUNCTION BOX TOPS SHALL BE REINFORCED.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

PRECAST OR BUILT IN PLACE
JUNCTION BOXES
PIPE COLLARS, PIPE ELBOW & PIPE CURVED ALIGNMENT

NO SCALE — REV. & REDR. JULY 1985

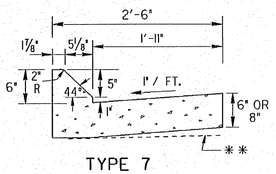
DES. RMU
DRW. RMU
TRA. GME
CHK. RKC

(SUBMITTED) Hayes E. Hardy
STATE ROAD & AIRPORT DESIGN ENGR.
(APPROVED) Hal Rives
STATE HIGHWAY ENGINEER

NUMBER 9031U

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	315	370

CONCRETE CURB & GUTTER

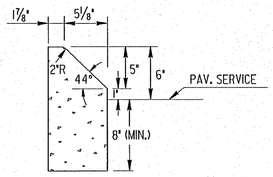


TYPE 7

SCALE 1"= 1FT.

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

CONCRETE HEADER CURB

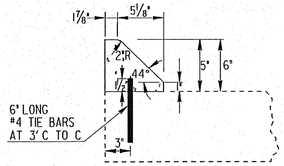


TYPE 7

SCALE: 1½" = 1FT.

THE 8" MIN. DEPTH MAY BE INCREASED AT CONTRACTOR'S OPTION SO BOTTOM OF HEADER CURB ALIGNS WITH PAV. BOTTOM.

CONCRETE DOWELED INTEGRAL CURB

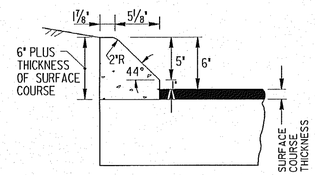


TYPE 7

SCALE: 1½" = 1FT.

TIE BARS WILL BE PLACED AS SOON AS PRACTICAL AFTER FINISHING AND BEFORE INITIAL SET IN PPC PAVEMENT. TIE BARS MAY BE DRIVEN IN OR DRILLED & GROUTED IN ASPHALT PAVING, JOINTS IN CURB SHALL MATCH THOSE IN PCC PAV. OR BE AT 20' SPA. FOR ASPHALT PAVING

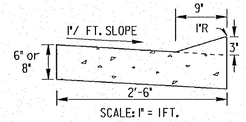
CONCRETE INTEGRAL CURB



TYPE 7

SCALE: 1½" = 1FT.

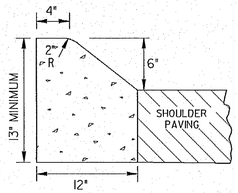
RAISED EDGE WITH CONCRETE GUTTER



SCALE: 1" = 1FT.

RAISED EDGE TO BE CONSTRUCTED WITH SAME CONCRETE MIX AS THE GUTTER AND SHALL BE FORMED IMMEDIATELY AFTER GUTTER HAS BEEN FINISHED OR FORMED MONOLITHIC WITH GUTTER JOINTS IN RAISED EDGE SHALL MATCH THOSE IN THE GUTTER.

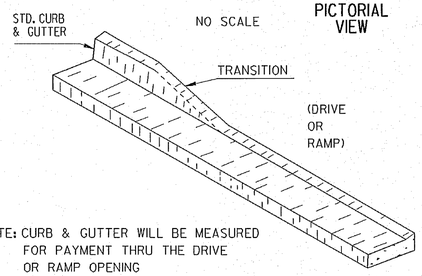
CONCRETE HEADER CURB (TYPE 6)



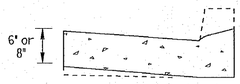
SCALE: 1½" = 1FT.

DETAILS OF RECESSED CURB

TYPICAL USE: AT DRIVEWAYS OR CURB CUT RAMPS



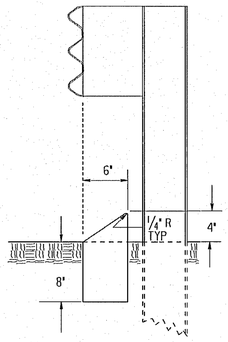
NOTE: CURB & GUTTER WILL BE MEASURED FOR PAYMENT THRU THE DRIVE OR RAMP OPENING



SECTIONAL VIEW

(SEE SEPARATE STANDARD FOR DRIVEWAY OR CURB RAMP FOR ADDITIONAL DETAILS.)

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



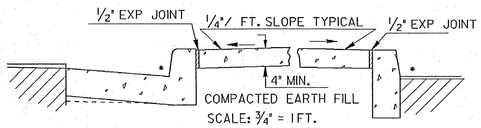
TYPE 8

TYPE 8 CURB IS USED IN CONJUNCTION WITH GUARDRAIL CONNECTIONS TO CONCRETE BARRIER AS NOTED ON GA. STD. 4012C.

NOTE:
IF CONCRETE MEDIAN INTERCEPTS PEDESTRIAN CROSSWALKS, WHEELCHAIR RAMPS (STANDARD 9031-W) WILL BE REQUIRED.

CONCRETE MEDIAN (Between Curbs)

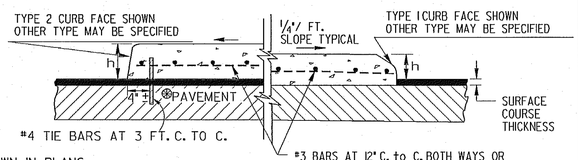
NOTE: CURB TYPES SHOWN ARE TYPICAL. OTHER TYPES MAY BE SPECIFIED.



SCALE: ¾" = 1FT.

CONCRETE MEDIANS (Integral)

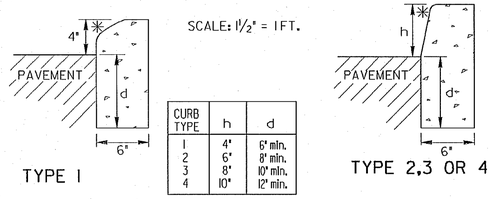
SCALE: 1"=1FT.



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

CONCRETE HEADER CURBS

(STANDARD FACE DESIGNS)



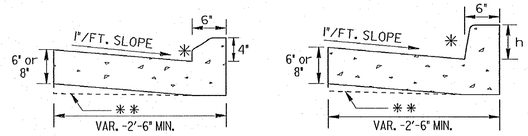
CURB TYPE	h	d
1	4"	6" min.
2	6"	8" min.
3	8"	10" min.
4	10"	12" min.

TYPE 1

TYPE 2,3 OR 4

THE DIMENSION d MAY BE INCREASED AT CONTRACTOR'S OPTION SO BOTTOM OF HEADER CURB WILL ALIGN WITH BOTTOM OF PAVING

CONCRETE CURB & GUTTER



TYPE 1

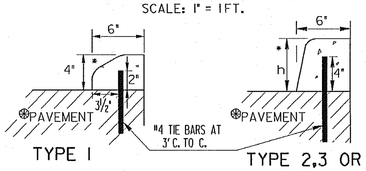
SCALE: 1"= 1FT.

TYPE 2, 3 OR 4

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

CONCRETE DOWELED INTEGRAL CURBS

SCALE: 1" = 1FT.



⊛ P.C. CONCRETE PAVEMENT-
TIE BARS WILL BE PLACED AS SOON AS PRACTICABLE AFTER FINISHING AND BEFORE INITIAL SET HAS TAKEN PLACE. JOINTS IN CURB OR CONC. MEDIAN WILL MATCH THOSE IN PAVEMENT.

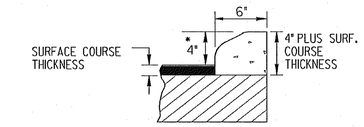
⊛ ASPHALT PAVEMENT-
TIE BARS MAY BE DRIVEN IN OR DRILLED AND GROUTED IN. CONTRACTION JOINTS ARE TO BE CONSTRUCTED IN CURB OR CONCRETE MEDIAN AT 20 FT. SPACINGS.

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

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

CONCRETE INTEGRAL CURB

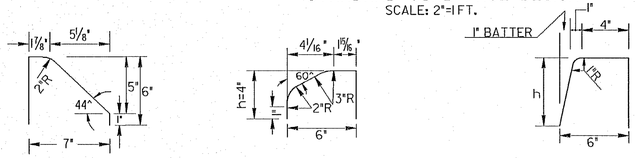
(TYPE I)



SCALE: 1½" = 1FT.

*STANDARD CURB FACE DESIGN

SCALE: 2"=1FT.



TYPE 7

TYPE 1

TYPE 2, 3 OR 4

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

		3-03	DATE
		ADDED TYPE 8 DETAIL	REVISION
			BY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD

CONCRETE CURB & GUTTER CONCRETE CURBS, CONCRETE MEDIANS

SCALE: AS SHOWN — REDRAWN SEPT., 1999

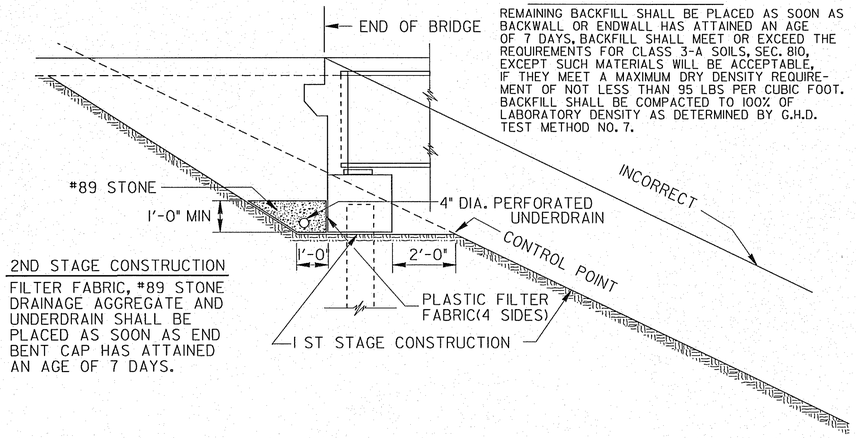
DES. ____ DRW. ____ TRA. ____ CHK. ____

(SUBMITTED) James A. Kaiser
STATE ROAD & AIRPORT DESIGN ENGINEER

(APPROVED) Paul V. Rabbett
CHIEF ENGINEER

NUMBER 9032B

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	316	370



3RD STAGE CONSTRUCTION

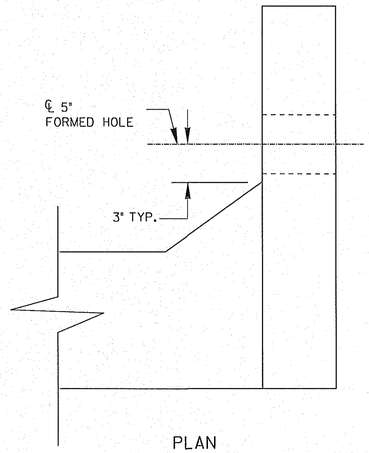
REMAINING BACKFILL SHALL BE PLACED AS SOON AS BACKWALL OR ENDWALL HAS ATTAINED AN AGE OF 7 DAYS. BACKFILL SHALL MEET OR EXCEED THE REQUIREMENTS FOR CLASS 3-A SOILS, SEC. 810, EXCEPT SUCH MATERIALS WILL BE ACCEPTABLE, IF THEY MEET A MAXIMUM DRY DENSITY REQUIREMENT OF NOT LESS THAN 95 LBS PER CUBIC FOOT. BACKFILL SHALL BE COMPACTED TO 100% OF LABORATORY DENSITY AS DETERMINED BY G.H.D. TEST METHOD NO. 7.

2ND STAGE CONSTRUCTION

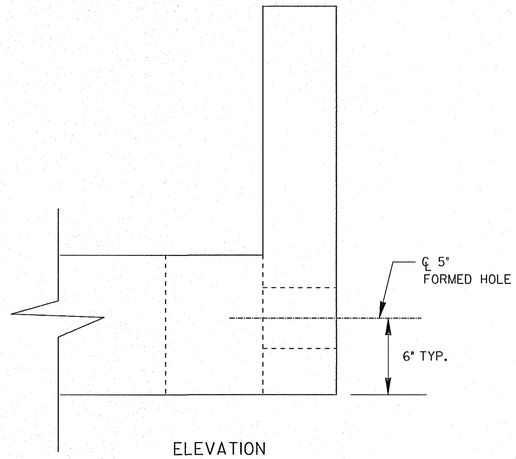
FILTER FABRIC, #89 STONE DRAINAGE AGGREGATE AND UNDERDRAIN SHALL BE PLACED AS SOON AS END BENT CAP HAS ATTAINED AN AGE OF 7 DAYS.

SKETCH SHOWING CONSTRUCTION OF FILLS AT ENDS OF BRIDGES

NO SCALE

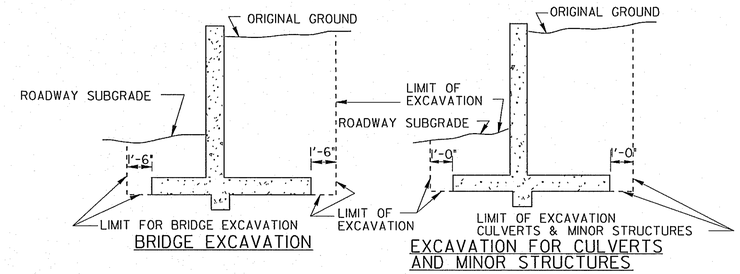


PLAN



ELEVATION

WINGWALL DETAIL



BRIDGE EXCAVATION

EXCAVATION FOR CULVERTS AND MINOR STRUCTURES

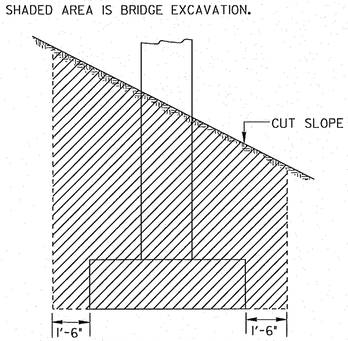
TYPICAL DETAILS OF EXCAVATION AT STRUCTURES

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.

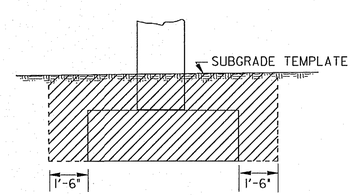
NOTES:

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.

SHADED AREA IS BRIDGE EXCAVATION.



INTERMEDIATE BENT



INTERMEDIATE BENT

TYPICAL EXCAVATION DETAILS AT BRIDGE BENTS IN CUT SECTIONS

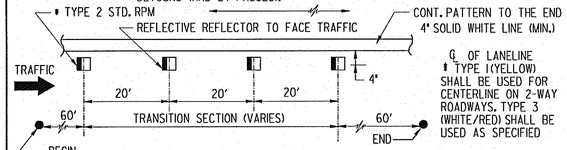
NO SCALE

DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
REVISION	STANDARD TYPICAL FILL DETAIL AT END OF BRIDGE
	NO SCALE — REDRAWN SEPT., 1999
BY	DES. ___ DRW. ___ TRA. ___ CHK. ___ (SUBMITTED) James A. Kennel STATE ROAD & AIRPORT DESIGN ENGR. (APPROVED) Frank L. Paskitz CHIEF ENGINEER — NUMBER 9037

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	317	370

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
GLO	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

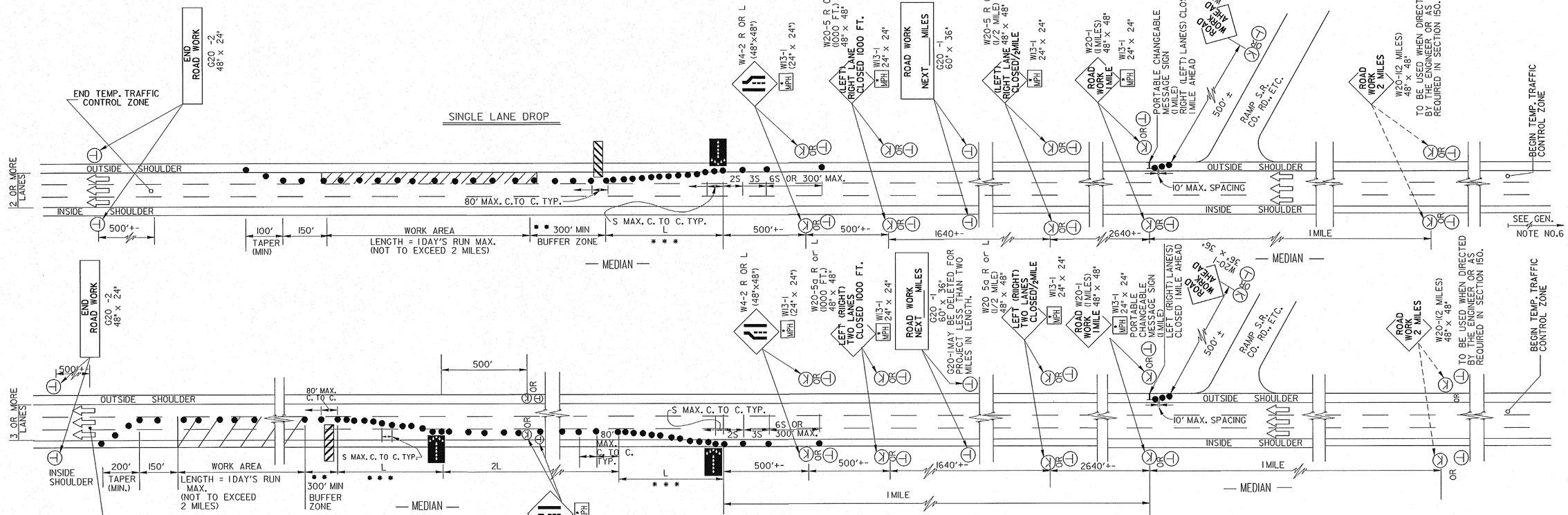
DES. ____ DRW. ____ TRA. ____ CHK. ____

(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER

(APPROVED) CHIEF ENGINEER

NUMBER 9100

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	318	370



POSTED SPEED MPH PRIOR TO WORK	TYPICAL DIMENSIONS (FT.)				
	L (FOR 12' OFFSET)	S	2S	3S	6S or 300'MAX.
25	125	25	50	75	150
30	180	30	60	90	180
35	245	35	70	105	210
40	320	40	80	120	240
45	540	45	90	135	270
50	600	50	100	150	300
55	660	55	110	165	300
60	720	60	120	180	300
65	780	65	130	195	300

(SEE FORMULA FOR OTHER CONDITIONS)

L=WS FOR SPEEDS OF 45 M.P.H. OR GREATER;
L= WS²/60 FOR SPEEDS OF 40 M.P.H. OR LESS
WHERE:

L=MIN. LENGTH OF TAPER FOR LANE CLOSURE
S=POSTED SPEED
W=WIDTH OF OFFSET.

STANDARD LEGEND

- STRIPED DRUM
- TRAFFIC CONE - 28" MIN. (DAYTIME USE ONLY)
- TYPE III BARRICADE (OPTIONAL)
- SEQUENTIAL OR FLASHING ARROW
- TEMPORARY POST MOUNTED SIGN (OFF SHOULDER) --FOR LONG TERM LANE CLOSURE SUCH AS STATIONARY OPERATIONS, BRIDGE WIDENING PROJECTS ETC. - (7' MOUNT HEIGHT)
- PORTABLE MOUNTED SIGN (ON SHOULDER) --FOR SHORT TERM LANE CLOSURE SUCH AS MOVING OPERATIONS, RESURFACING PROJECTS, ETC. (SEE GENERAL NOTE. NO. 3)
- WORK AREA
- PORTABLE CHANGEABLE MESSAGE SIGN

* * * TAPERS REQUIRE THE USE OF SIX (6") INCH TOP STRIPES. IF CONDITIONS EXIST INTO THE NIGHT. SEE GENERAL NOTES NO. 5.

* WHEN TEMPORARY OPERATING SPEEDS ARE LESS THAN THE POSTED SPEED LIMIT, THE ADVISORY SPEED PLATES (W13-1) SHALL BE USED IN 10 M.P.H. INCREMENTS, UNTIL THE SPEED IS REDUCED TO THE TEMPORARY OPERATING SPEED.

** BUFFER ZONES OF 300' MINIMUM, 500' DESIRABLE ARE REQUIRED FOR TANGENT SECTIONS AND SHALL BE INCREASED FOR HORIZONTAL OR VERTICAL CURVES DUE TO SIGHT DISTANCE CONSIDERATIONS.

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. SIGNS SHOWN HERE ARE IN ADDITION TO ALL ADVANCE WARNING SIGNS REQUIRED BY SECTION 150.
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 PERMANENT MOUNTED SHALL BE COVERED WHEN NOT APPLICABLE. SEE SECTION 150.
9. PAYMENT FOR TRAFFIC CONTROL SHALL BE PER SECTION 150.

GENERAL NOTES:

10. (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 TERMINI, AT INTERVALS NOT TO EXCEED ONE 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.
11. IF EXISTING ADVANCE WARNING SIGNS (ROAD WORK, W20-1) ARE IN PLACE, AND ARE IN CONFLICT WITH THE LANE CLOSURE SIGNS SHOWN, THEY SHALL BE RESET IN ADVANCE OF LANE CLOSURE WITH THE MINIMUM SIGN SPACING REQUIRED BY THE STANDARDS AND THE MUTCD MAINTAINED.
12. HIGHWAY WORK ZONE SIGNS (HWZ-2 AND HWZ-3) SHALL BE INSTALLED ON THE TRAVEL WAY AND THE INTERSECTING ROADWAY AS REQUIRED IN SECTION 150.
13. THE G20-1SIGNS SHOULD BE PLACED AT EACH TERMINUS OF THE PROJECT, PREFERABLY BETWEEN THE LAST ADVANCE WARNING SIGN(ROAD WORK- 500 FT.) AND BEFORE THE ADVANCE WARNING SIGNS FOR LANE SHIFTS, LANE CLOSURES, ETC.
14. THE PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) SHALL BE PLACED ONE MILE IN ADVANCE OF A LANE CLOSURE WITH A MESSAGE DENOTING THE APPROPRIATE LANE CLOSURE ONE MILE AHEAD.

BY	REVISION	DATE
GLO	ADDED POTABLE MESSAGE SIGN, ADDED GEN. NOTE #14	9-4-07
GLO	REMOVED FLAGS AND REV.	3-30-06
	GENERAL NOTES, REV. SIGN	
	G20-2A TO G20-2.	

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD TRAFFIC CONTROL DETAIL FOR LANE CLOSURE ON MULTI-LANE DIVIDED HIGHWAY

NO SCALE — REV. & REDR. JULY, 1999

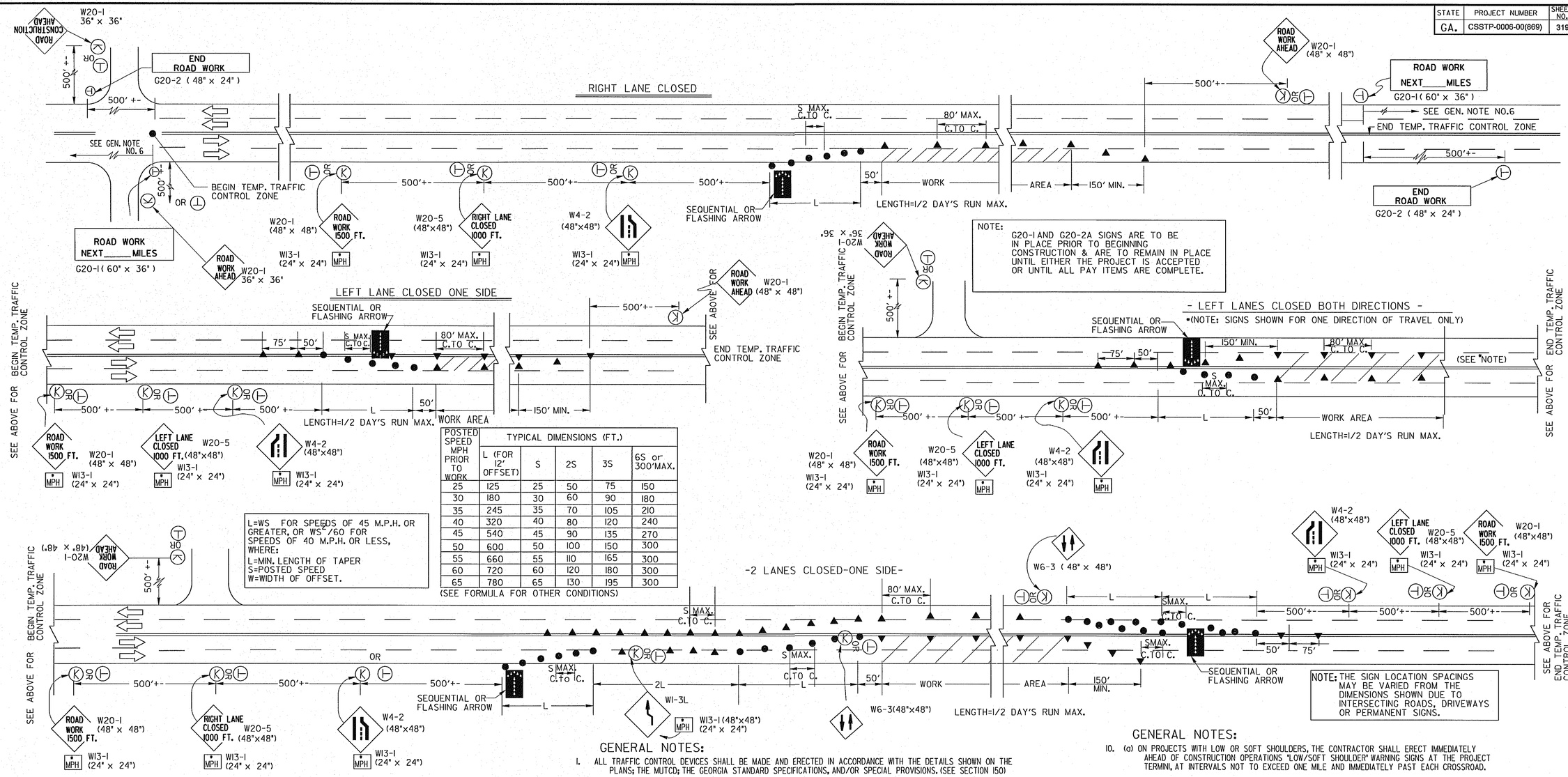
DES. ____ DRW. ____ TRA. ____ CHK. ____

(SUBMITTED) _____ STATE ROAD & AIRPORT DESIGN ENGINEER

(APPROVED) _____ CHIEF ENGINEER

NUMBER 9106

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	319	370



POSTED SPEED MPH PRIOR TO WORK	TYPICAL DIMENSIONS (FT.)				
	L (FOR 12' OFFSET)	S	2S	3S	6S or 300'MAX.
25	125	25	50	75	150
30	180	30	60	90	180
35	245	35	70	105	210
40	320	40	80	120	240
45	540	45	90	135	270
50	600	50	100	150	300
55	660	55	110	165	300
60	720	60	120	180	300
65	780	65	130	195	300

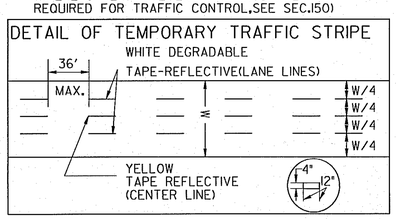
(SEE FORMULA FOR OTHER CONDITIONS)

L=WS FOR SPEEDS OF 45 M.P.H. OR GREATER, OR $WS^2/60$ FOR SPEEDS OF 40 M.P.H. OR LESS, WHERE:
L=MIN. LENGTH OF TAPER
S=POSTED SPEED
W=WIDTH OF OFFSET.

FOR LOCATIONS ON THIS PROJECT INVOLVING ADDED TURN LANES, THE DISTRICT TRAFFIC OPERATIONS OFFICE WILL FURNISH A SCHEMATIC DRAWING OF THE TEMPORARY PAVEMENT MARKINGS AT THE PRE-CONSTRUCTION CONFRENCE.

(WHERE OTHER PAVEMENT MARKINGS ARE REQUIRED FOR TRAFFIC CONTROL.SEE SEC.150)

DETAIL OF TEMPORARY TRAFFIC STRIPE



• WHEN TEMPORARY OPERATING SPEEDS ARE LESS THAN THE POSTED SPEED LIMIT, THE ADVISORY SPEED PLATES (WI3-1) SHALL BE USED IN 10 M.P.H. INCREMENTS, UNTIL THE SPEED IS REDUCED TO THE TEMPORARY OPERATING SPEED.

STANDARD LEGEND

- ● STRIPED DRUM
- Ⓣ TEMPORARY POST MOUNTED SIGN (OFF SHOULDER) --FOR LONG TERM LANE CLOSURE SUCH AS STATIONARY OPERATIONS, BRIDGE WIDENING PROJECTS ETC. - (7' MOUNT HEIGHT)
- Ⓚ PORTABLE MOUNTED SIGN (ON SHOULDER) --FOR SHORT TERM LANE CLOSURE SUCH AS MOVING OPERATIONS, RESURFACING PROJECTS, ETC. (SEE GENERAL NOTE. NO. 3)
- ▲ TRAFFIC CONE - 28" MIN. (DAYTIME USE ONLY)
- SEQUENTIAL OR FLASHING ARROW
- WORK AREA

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. SIGNS SHOWN HERE ARE IN ADDITION TO ALL ADVANCE WARNING SIGNS REQUIRED IN SECTION 150.
7. A PORTABLE SELF-SUSTAINED SEQUENTIAL OR FLASHING ARROW SIGN SHALL BE USED AT THE BEGINNING OF EACH LANE CLOSURE.
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 PERMANENT MOUNTED SHALL BE COVERED WHEN NOT APPLICABLE. SEE SECTION 150.
9. PAYMENT FOR TRAFFIC CONTROL SHALL BE PER SECTION 150.

GENERAL NOTES:

10. (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 TERMINI, AT INTERVALS NOT TO EXCEED ONE 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.
11. HIGHWAY WORK ZONE SIGNS (HWZ-2 AND HWZ-3) SHALL BE INSTALLED ON THE TRAVEL WAY AND THE INTERSECTING ROADWAY AS REQUIRED IN SECTION 150.
12. THE G20-1SIGNS SHOULD BE PLACED AT EACH TERMINUS OF THE PROJECT, PREFERABLY BETWEEN THE LAST ADVANCE WARNING SIGN(ROAD WORK- 500 FT.) AND BEFORE THE ADVANCE WARNING SIGNS FOR LANE SHIFTS, LANE CLOSURES, ETC.

NOTE: THE SIGN LOCATION SPACINGS MAY BE VARIED FROM THE DIMENSIONS SHOWN DUE TO INTERSECTING ROADS, DRIVEWAYS OR PERMANENT SIGNS.

BY	REVISION	DATE
GLO	REMOVED FLAGS AND REV. GENERAL NOTES. REV. SIGN C20-2A TO C20-2.	3-30-06

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD TRAFFIC CONTROL DETAIL

FOR LANE CLOSURE ON MULTI-LANE UNDIVIDED HIGHWAY

NO SCALE — REV. & REDR. JULY, 1999

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

(SUBMITTED) STATE ROAD & AIRPORT DESIGN ENGINEER

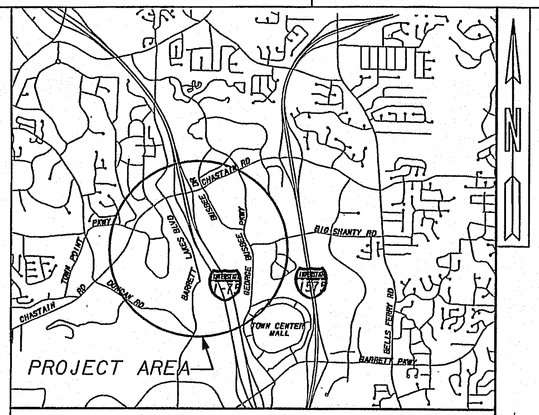
(APPROVED) CHIEF ENGINEER

NUMBER 9107

9/10/2009 USER:dwebb	PRF $$PENTABLE$$	Y:\0313 Big Shanty Conn\Design\006869 Phase 1\DGN\006869EC01.dgn GRWCOV	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
			GA	CSSTP-0006-00(869)	320	370

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

EROSION, SEDIMENTATION, & POLLUTION CONTROL PLAN
BIG SHANTY CONNECTOR PHASE I



LOCATION SKETCH

MID-POINT COORDINATES

STATION= 63+50.00
LAT: 34°01'34.32" N
LONG: 84°34'18.09" W

24 HOUR CONTACT

NAME

PHONE NUMBER

CONTRACTOR SHALL COMPLETE INFORMATION IN THIS BOX

"I certify that this Erosion, Sedimentation and Pollution Control Plan has been prepared in accordance with Part IV, of the General NPDES Permit No.GAR100002.."

"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. GAR100002."

"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 judgement, utilizing the factors required in the General NPDES Permit No. GAR 100002, that the increase in the turbidity of each specific identified sampled receiving water will be representative of the increase in the turbidity of a specific identified un-sampled receiving water."

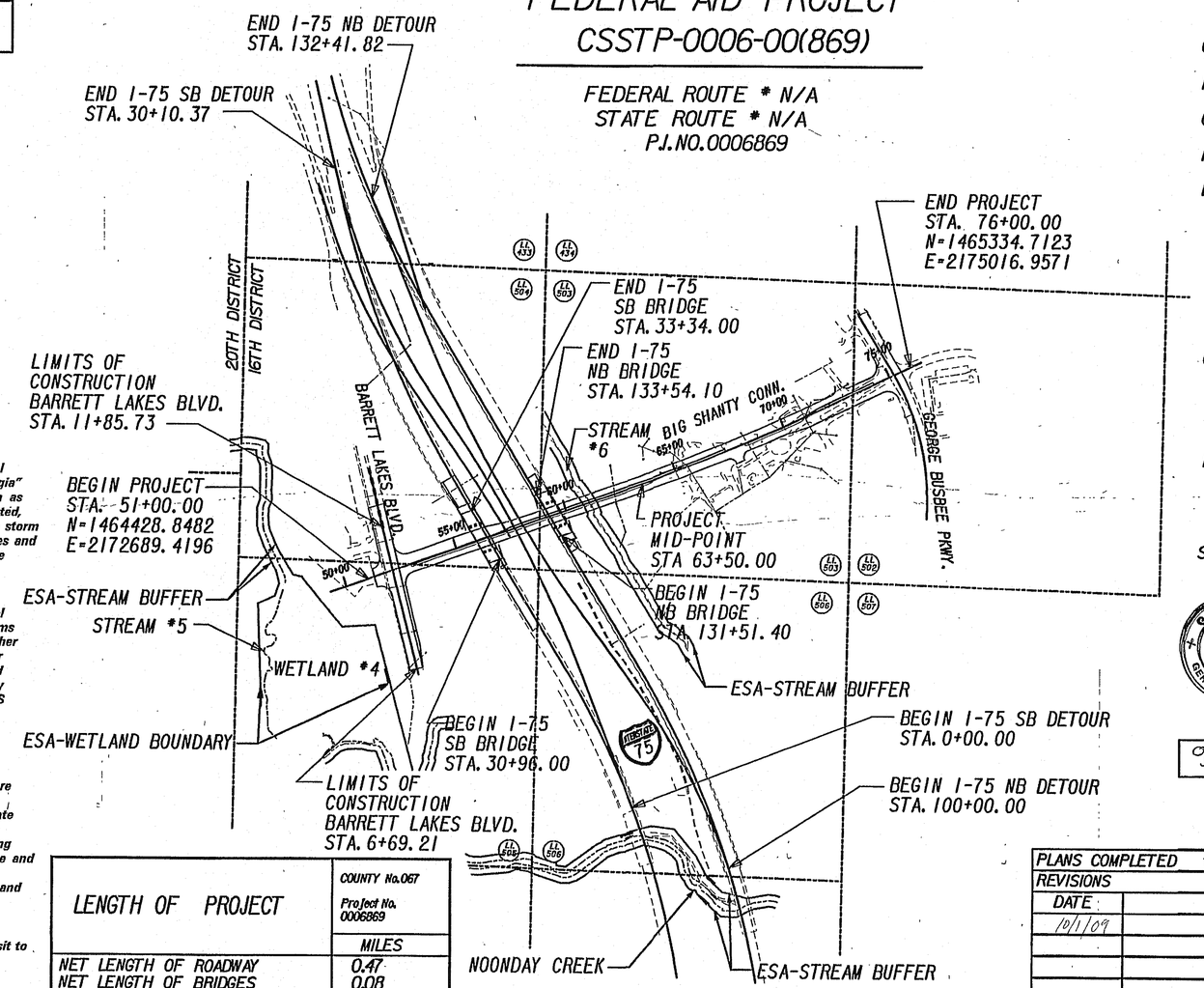
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that the certified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage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

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

SCALE IN FEET
0 300 600 1200

FEDERAL AID PROJECT
CSSTP-0006-00(869)

FEDERAL ROUTE * N/A
STATE ROUTE * N/A
P.I.NO.0006869



THIS PROJECT IS LOCATED IN CONGRESSIONAL DISTRICT II AND 100% IN COBB COUNTY

LENGTH OF PROJECT	COUNTY No.067 Project No. 0006869
	MILES
NET LENGTH OF ROADWAY	0.47
NET LENGTH OF BRIDGES	0.08
NET LENGTH OF PROJECT	0.47
NET LENGTH OF EXCEPTIONS	0.0
GROSS LENGTH OF PROJECT	0.47

OFFICE: DISTRICT 7

PROJECT NUMBER: CSSTP-0006-00(869)

COUNTY: COBB

P.I.NO.: 0006869

LETTING DATE: NOVEMBER 2009

CROY ENGINEERING Engineers Planners Surveyors
200 NORTH COBB PARKWAY, BLDG. 400, SUITE 413
MARIETTA, GA 30062
PHONE: (770) 971-5407 FAX: (770) 971-0620

CONSULTING FIRM:

PREPARED BY: Gregory D Teague (PRINT NAME) TITLE: Director of Transportation

SIGNATURE: DATE: 9/10/2009

GEORGIA REGISTERED NO. 21402 PROFESSIONAL ENGINEER GERALD MARTIN ROSS

GEORGIA REGISTERED No. 029658 PROFESSIONAL ENGINEER GREGORY D. TEAGUE

GSWCC LV II CERTIFICATION NUMBER 14197

9/12/09 (DATE)

GERALD ROSS, PE, CHIEF ENGINEER
GSWCC No. 44443

PLANS COMPLETED 8-28-2009

REVISIONS

DATE	SHEET NO.	SIGNATURE	GSWCC NO.	REQUESTED BY
10/1/09	5301		14197	Mark Lawing

ESPCP GENERAL NOTES:

The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to,or concurrent with,land disturbing activities.
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.

PLAN ALTERATIONS

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

The Contractor,the Certified Design Professional and the WECS shall carefully evaluate this plan prior to commencing land disturbing activities. A major modification or deletion of structural BMP's with a hydraulic component requires a formal revision 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 GAR 100002 states that "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding." - However,the Department typically requires disturbed areas to be stabilized every 7 days The construction documents,special provisions,or specifications may require mulching more often than 7 days.

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.

SEQUENCE OF MAJOR ACTIVITIES

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

ALL PERIMETER STRUCTURAL PRACTICES,E.G.,SILT FENCE,SHALL BE INSTALLED PRIOR TO CLEARING AND GRUBBING.THE INSTALLATION OF PERIMETER FENCING SHALL BE FOLLOWD BY TEMPORARY SEDIMENT BASIN.
INLET SEDIMENT TRAPS AND OTHER BMPs REQUIRED AFTER THE INITIAL WORK SHALL BE INSTALLED AFTER PRILIMINARY GRADDING.IN THE FINAL STAGE,PERMANENT GRASSING SHALL BE INSTALLED AMONG OHTER PERMANENT BMPs.

PETROLEUM STORAGE,SPILLS AND LEAKS

The plans provided herein do not anticipate the storage of petroleum products onsite.The Contractor shall at a minimum provide an action plan and keep the necessary materials on site for the capture and disposal of any petroleum product leaks or spills associated with the servicing,refueling or operation of any equipment utilized in the work.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 this plan. The Contractor shall not park,refuel,or maintain equipment within stream buffers.

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

SOIL SERIES INFORMATION

A project specific soil survey and geotechnical investigation was performed for this project and can be made available upon request. Soil characteristics have been given full consideration in the hydrologic analysis,the design of channels and linings, election of temporary BMP's,design of energy dissipaters,and the In the selection of permanent vegetation and fertilizers.

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

SYMBOL	NAME	EROSION HAZARD
GeB3	Gwinnett Clay Loam 2-6%	Moderate; slope/erodibility (0.50)
GeC3	Gwinnett Clay Loam 6-10%	Moderate; slope/erodibility (0.50)
GeC3	Gwinnett Clay Loam 2-6%	Moderate; slope/erodibility (0.50)
MsD3	Madison and Pacolet	Severe; slope/erodibility (0.95)
Tod	Toccoa Sandy Loam Local Alluvium	Slight

Due to the size and scope of this project and the nature of soil series maps,it is not reasonably possible to identify the precise locations of the above reference soils on the plans.The NRCS soil survey and soil series maps for the project area are available online at http://websoilsurvey.nrcs.usda.gov/.

POST-CONSTRUCTION BMP'S

(As per Part IV D 3 b of GAR 100002,the Designer shall include in this section "a description of measures that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operation have been completed." The following is only an example; the designer shall provide a project specific note in this section.

All permanent,post-construction BMP's are shown in the construction plans and in the ESPCP plan. The post-construction BMP's for this project consist of vegetation,permanent slope drains,rip-rap at pipe outlets for velocity dissipation and outlet sta stabilization,vegetated swales/ditches where practical,rip-rap and concrete ditch lining where necessary. The post-construction BMP's will provide permanent stabilization of the site and prevent accelerated transportation of sediment and pollutants in receiving waters.

SILT FENCE INSTALLATIONS WITH J-HOOKS AND SPURS

Silt fence should never be run continuously. The silt fence should turn back into the fill or slope to create small pockets that trap silt and force stormwater to flow through the silt fence.This technique,or configuration,is commonly referred to as J-hooks or spurs. The J-hooks shall be utilized on all silt fences that are located around the perimeter of the project and along the toe of embankments or slopes. The J-hooks shall be spaced in accordance with the Typical Location Details for silt febces/baled straw. Spacing for J-hooks shall not be less than 50 feet except as noted. Silt fences that are near the outlet of culverts,cross drains,and storm drains shall have a minimum of three (3) J-Hooks on both sides of the structure at spacing not to exceed 30 feet. J-Hooks shall be paid for as silt fence items per foot. All costs and other incidental items are included in cost of installing and maintaining the silt fence.

MAINTENANCE AND STABILIZATION MEASURES

See Special Provision 161 and 700 and other contract documents for maintenance and stabilization measures.

WASTE DISPOSAL

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

INSPECTIONS

All inspections shall be documented on the appropriate Department inspection forms. See 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.

By agreement with Georgia EPD,the Department's Construction Project Engineer will be responsible for the seven day inspections required for new BMP installations.

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REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP GENERAL NOTES

BIG SHANTY CONNECTOR
PHASE I

DRAWING No. 51-01

GPLN

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 contract documents.

DE-WATERING ACTIVITIES AND USE OF PUMPS

Any pumped discharge from an excavation or disturbed area shall be routed through an appropriately sized sediment basin, silt filter bag or shall be treated equivalently with suitable BMP's. The contractor shall ensure the post BMP treated discharge is sheet flowing. Failure to create sheet flow will obligate the contractor to perform water quality sampling of their pumped discharges. The contractor shall prepare sampling plans in accordance with the current GAR100002 NPDES permit utilizing by a Certified Design Professional. No separate payment will be made for water quality sampling of pump discharges. A pumping operation/plan must be approved by a Level II design professional and on file with P.E. before pumping implementations.

OTHER CONTROLS

The Contractor shall follow this ESPCP and ensure and demonstrate compliance with applicable State and/or local waste disposal, sanitary sewer or septic system regulations.
The Contractor shall control dust from the site in accordance with Section 161 of the current edition of the Department's Specifications.

SEDIMENT STORAGE

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 BMPs specified in this table.

Outfall ID	Total Drainage area (acres)	Disturbed area (acres)	Required Sediment storage Volume (yd3)	Total Storage volume provided (yd3)	Sediment Basins		Check Dam (40 yd3 each)		Inlet sediment Traps (25 yd3 each)	
					Pond No.	Total Volume	# of Devices	Total Volume	# of Devices	Total Volume
1	10.63	7.46	712	769	1	363				
					3	406				
2	4.56	4.56	305	658	2	658				
3	2.90	1.71	194	227	4	227				
4	6.32	3.54	423	480			12	480		
5	6.24	3.83	418	425			10	400	1	25

In order to prevent runoff from bypassing inlet sediment traps, a temporary berm shall be installed on the downstream side of all inlet sediment traps that are not located in a low point or an excavated sump. Temporary berms, when necessary, shall be minimum of 18" high and constructed 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.

DISCHARGES INTO, OR WITHIN ONE LINEAR MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED AS, ANY PORTION OF A BIOTA IMPAIRED STREAM SEGMENT

The following is a summary of project outfalls within 1 mile and within the watershed of an identified 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" (nonpoint source) or "UR" (urban runoff).

Outfall Location(s)	Basin Name	Reach Name	Location of the impaired stream segment as indicated in the 305b/303d list	Criteria violated (Bio F or Bio M)	Potential Cause (NP or UR)	Category (4a, 4b or 5)	Numeric waste load allocation for sediment*
1,2	COOSA	NOONDAY CREEK	HEADWATERS TO LITTLE NOODAY CREEK, COBB CO.	BIO F	NP	5	N/A

List the additional BMPs from part III C 2 of GAR 100002 used for this watershed (a minimum of 4 are required) and if part III C 1 is applicable discuss how the waste load allocation for sediment is addressed.
1) Place a large sign (minimum 4 feet x 8 feet) on the site visible from the roadway identifying the construction site, the permittee(s), and the contact person(s) and telephone number(s)
2) Use anionic polyacrylamide (PAM) and/or mulch to stabilize areas left disturbed for more than seven (7) calendar days in accordance with Part III.D.1 of the permit
3) Conduct turbidity and Total Suspended Solids (TSS) sampling after every rain event of 0.5 inch or greater within any 24 hour period, recognizing the exceptions specified in Part IV.D.6.d of the permit.
4) Limit the amount of disturbed area at any one time to no greater than 25 acres or 50% of the total planned site, whichever is less.

* If the TMDL Implementation Plan establishes a specific numeric waste load allocation that applies to the project discharge(s) to the impaired Stream Segment, then the Certified Design Professional must incorporate that allocation into the Erosion, Sedimentation and Pollution Control Plan and implement all necessary measures to meet that allocation.

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:

Name	Location of Buffered Streams and State Waters**			Stream Type (Warm/Cold Water)*	Buffer Impacted?	Buffer Variance Required?
	Alignment	Begin Stat. (LT or RT)	End Sta. (LT or RT)			
	Big Shanty Conn. CL	60+78.91	61+34.09	WARM	YES	NO
Approximately 270 linear feet of stream will be piped and the banks graded within the buffer to accomodate a perpendicular road crossing. The stream will be diverted during construction.						

* 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. MONITORING GENERAL NOTES:

MONITORING GENERAL NOTES:

Representative sampling may be utilized on this project. The characteristics of the individual watersheds along the project corridor have been carefully evaluated and compared on the basis of drainage characteristics, watershed size, land disturbance and earth work. After evaluation of these items as presented in the projects drainage area maps, hydrology and hydraulic studies, construction plans and erosion sedimentation and pollution control plans, it has been determined that the increase in turbidity at the specified locations will be representative of the increase in turbidity for all waters leaving the site. Approved primary and alternate representative monitoring sites are identified in the table:

Monitoring Site	Primary or Alternative Site	Location (Sta. and side)	Name of Receiving Water	Applicable construction stage for monitoring	Sampling Type (Outfall or Receiving Water)	Drainage Area (For Receiving Water)	Disturbed Area	Warm or Cold water stream	Appendix B NTU value (Outfall Monitoring Only)	Allowable NTU Increase (For Receiving Water)	Location Description
OUTFALL 2	PRIMARY	60+90 (BIG SHANTY) 150' RT.	UNNAMED TRIBUTARY NOONDAY CREEK	1	RECEIVING WATER	0.09 SM	4.56	WARM		25	IMMEDIATELY UPSTREAM/DOWNSTREAM OF CONSTRUCTION LIMITS
OUTFALL 1	ALTERNATE	51+69 (BIG SHANTY) 105' RT.	NOONDAY CREEK	1,2	OUTFALL	12.81 SM	7.46	WARM	200		PROPOSED MH EAST OF BARRETT LAKES
OUTFALLS 3,4	PRIMARY	114+00 (I-75 NB) LT.	NOONDAY CREEK	1,2	RECEIVING WATER	12.81 SM	5.25	WARM		25	IMMEDIATELY UPSTREAM/DOWNSTREAM OF CONSTRUCTION LIMITS
OUTFALL 5	ALTERNATE	40+03 (I-75 SB) LT	UNNAMED TRIBUTARY	1,2	OUTFALL	12.81 SM	3.83	WARM	200		EX. HW. FLOWING WEST FROM DETOUR SITE

(According to the EPD, additional monitoring sites may be required depending on significant changes in typical sections)
The primary site specified should be used as the initial sampling location. The alternate sampling sites may be used if additional sampling is required and/or if the primary sampling site is no longer located within the active phase of construction.

MONITORING SAMPLING METHODS & PROCEDURES

See Special Provision 167 and other contract documents for Monitoring Sampling Methods and Procedures.

READY MIX CHUTE WASH-DOWN

The washing of ready-mix concrete drums and dump truck bodies used in the delivery of portland cement concrete is prohibited on this site. In accordance with standard Specification 107 - Legal Regulations and Responsibility to the Public, only the discharge "chute" utilized in portland cement concrete delivery 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 travel way, including shoulders, for a wash/pit area. The pit shall be large enough to store all wash-down water without overtopping the pit. 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 shall be graded to match the elevation of the surrounding areas smoothed out. 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 water pit location that includes the following: (1) the pit is located away from a storm drain, stream or river, (2) the pit is accessible to the vehicle being used for wash-down, (3) the pit has enough volume for wash-down water, and (4) make sure you have permission to use the area for wash-down. On some sites, you may not have permission or access to a location which allows for a wash-down pit. In those cases, the Contractor may have to wash-down into a wheelbarrow or other container and carry the container for transport 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".

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REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP GENERAL NOTES

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 51-02

GPLN

PHASING NARRATIVE

TOTAL DISTURBED AREA: 21J AC.

INITAL PHASE OF CONSTRUCTION:

DURING THE INITIAL PHASE OF ALL STAGES OF CONSTRUCTION ALL PERIMETER CONTROL ARE TO BE INSTALLED PRIOR TO ANY CLEARING,GRUBBING,GRADING OR DEMOLITION OF EXISTING PAVING, DRAINAGE STRUCTURES ETC.THESE BMPs INCLUDE BUT ARE NOT LIMITED TO: SILT FENCE, CONSTRUCTION EXITS,AND INLET SEDIMENT TRAPS FOR EXISTING DRAINAGE STRUCTURES.

* All perimeter structural practices,e.g.,silt fence,shall be installed concurrently with clearing and grubbing

INTERMEDIATE PHASE OF CONSTRUCTION:

SEDIMENT BASINS ARE TO BE INSTALLED DURING THE INTERMEDIATE PHASE OF CONSTRUCTION TO PROVIDE 67 CY/DISTURBED ACRE OF SEDIMENT STORAGE.INLET SEDIMENT TRAPS ARE TO BE INSTALLED AT ALL PROPOSED DRAINAGE INLETS PRIOR TO MASS GRADING.FURTHER BMPs TO BE USED DURING THE INTERMEDIATE PHASE OF CONSTRUCTION INCLUDE TEMPORARY GRASSING AND MULCH AS WELL AS EROSION CONTROL MATTING WHICH SHALL BE USED TO STABILIZE SLOPES GREATER THAN 2.5:1.ALL BMPs INSTALLED DURING THE INITIAL PHASE OF CONSTRUCTION ARE TO REMAIN IN PLACE

FINAL PHASE OF CONSTRUCTION:

BMPs TO BE USED FOR FINAL STABILIZATION INCLUDE PERMANENT GRASSING AS WELL AS ANY OTHER PERMANENT BMPs DEEMED NECESSARY BY THE CONTRATOR OR INSPECTOR.

NOTE:
All Preliminary BMPs are to be installed before other work commences.
Intermediate BMPs are to be installed as the work progresses. Final BMPs are to remain in place at the completion of the project. The sequence of BMP installation is shown in the following Table.

BEST MANAGEMENT PRACTICE (BMP)	EROSION CONTROL PHASE		
	PRELIMINARY	INTERMEDIATE	FINAL
CONSTRUCTION EXIT (Co)	X	X	R
SEDIMENT BARRIER (Sdl)	X	X	R
SEDIMENT BASIN (Sd3)	X	X	R
INLET SEDIMENT TRAP (Sd2)		X	R
EROSION CONTROL MATTING (Mb)		X	X
DISTURBED AREA STABILIZATION WITH MULCH ONLY (Dsl)		X	
DISTURBED AREA STABILIZATION WITH TEMPORARY SEEDING (Ds2)		X	
DISTURBED AREA STABILIZATION WITH PERMANENT VEGETATION (Ds3)			X

R: Remove at end of project.
X: BMP installed in the first indicated phase and maintained through the last indicated phase.

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 portland cement concrete delivery 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 travel way,including shoulders,for a wash/pit area. The pit shall be large enough to store all wash-down water without overtopping the pit.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 shall be graded to match the elevation of the surrounding areas smoothed out. 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 water pit location that includes the following: (1) the pit is located away from a storm drain,stream or river,(2) the pit is accessible to the vehicle being used for wash-down,(3) the pit has enough volume for wash-down water,and (4) make sure you have permission to use the area for wash-down. On some sites,you may not have permission or access to a location which allows for a wash-down pit. In those cases,the Contractor may have to wash-down into a wheelbarrow or other container and carry the container for transport 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".

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
INFRASTRUCTURE CONSTRUCTION PROJECTS

SWCD:

Project Name: BIG SHANTY CONN. PH. I Address: BIG SHANTY ROAD

City/County: KENNESAW, COBB Date on Plans:

TO BE SHOWN ON ES&PC PLAN

Plan Page #	Included Y/N		
51-03	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)
50-01	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)
50-01	Y	3.	The name and phone number of the 24-hour local contact responsible for erosion, sedimentation and pollution controls.
50-01	Y	4.	Provide name, address and phone number of primary permittee.
51-03	Y	5.	Note total and disturbed acreage of the project or phase under construction.
50-01	Y	6.	Provide land lot and district numbers for site location. Describe critical areas and any additional measures that will be utilized for these areas.
50-01	Y	7.	Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
ALL	Y	8.	Graphic scale and north arrow.
53-01	Y	9.	Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following: Existing Contours: USGS 1":2000' Topographical Sheets; Proposed Contours: 1":.400' Centerline Profile
53-01	Y	10.	Delineation and acreage of contributing drainage basins on the project site.
53-01	Y	11.	Delineation of on-site wetlands and all state waters located on and within 200 feet of the project site.
53-01	Y	12.	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.
55-01	Y	13.	Delineate all sampling locations. perennial and intermittent streams and other water bodies into which storm water is discharged.
53-01	Y	14.	Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.
53-01	Y	15.	Soil series for the project site and their delineation.
55-01	Y	16.	Identify the project receiving waters and describe all adjacent areas including streams, lakes, residential areas, wetlands, etc. which may be affected.
51-02	Y	17.	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.
51-02	Y	18.	If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in item 18 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.
55-01	Y	19.	Delineate on-site drainage and off-site watersheds using USGS 1" : 2000' topographical sheets.
50-01	Y	20.	Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
53-01	Y	21.	The limits of disturbance for each phase of construction.
51-02	Y	22.	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 rationale 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. 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.
N/A	N	23.	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.
54-	Y	24.	Best Management Practices to minimize off-site vehicle tracking of sediments and the generation of dust.
51-02	Y	25.	BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout of the drum at the construction site is prohibited.
51-01	Y	26.	Provide BMPs for the remediation of all petroleum spills and leaks.
54-	Y	27.	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.
51-02	Y	28.	Description of the nature of construction activity.
51-03	Y	29.	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.
51-03	Y	30.	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).
51-02	Y	31.	Description of the practices that will be used to reduce the pollutants in storm water discharges.
51-03	Y	32.	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.
50-01	Y	33.	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.
50-01	Y	34.	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 14 of the permit.
50-01	Y	35.	Certification statement and signature of the permittee or the duly authorized representative as stated in section V.G.2.d. of the state general permit.
53-01	Y	36.	An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
51-01	Y	37.	Indication 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.
50-01	Y	38.	Indication that the design professional who prepared the ES&PC Plan is to inspect the installation of the initial sediment storage requirements and perimeter control BMPs within 7 days after installation.
50-01	Y	39.	Indication 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.
51-01	Y	40.	Indication that waste materials shall not be discharged to waters of the State, except as authorized by a Section 404 permit.
51-01	Y	41.	Documentation that the ES&PC Plan is in compliance with waste disposal, sanitary sewer, or septic tank regulations during and after construction activities have been completed.
51-01	Y	42.	Provide complete requirements of inspections and record keeping by the primary permittee.
51-01	Y	43.	Provide complete requirements of sampling frequency and reporting of sampling results.
51-01	Y	44.	Provide complete details for retention of records as per Part IV.F. of the permit.
51-01	Y	45.	Description of analytical methods to be used to collect and analyze the samples from each location.
51-02	Y	46.	Appendix B rationale for outfall sampling points where applicable.
51-01	Y	47.	Cleary note statement in bold letters- "The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to, or concurrent with, land disturbing activities."
51-01	Y	48.	Cleary note maintenance statement in bold letters - "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."
51-01	Y	49.	Clearly note the statement in bold letters - "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."
52	Y	50.	Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia.
51-01	Y	51.	Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of year that seeding will take place and for the appropriate geographic region of Georgia.

Effective January 1, 2009

CROY ENGINEERING
Engineers Planners Surveyors
200 NORTH COBB PARKWAY, BLDG. 400, SUITE 413
MARIETTA, GA 30062
PHONE: (770) 971-5407 FAX: (770) 971-0620

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

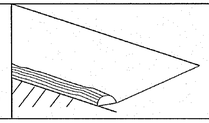
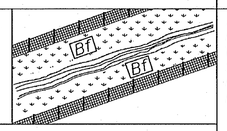
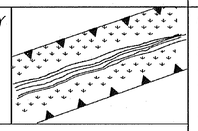
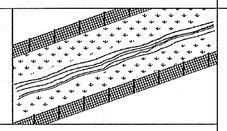
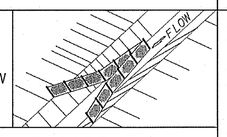
ESPCP GENERAL NOTES

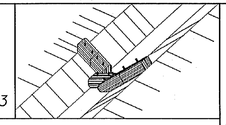
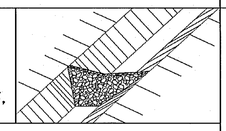
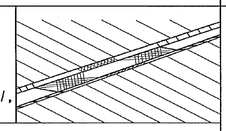
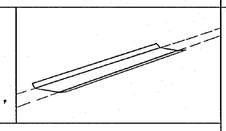
BIG SHANTY CONNECTOR
PHASE I

DRAWING No. 51-03

GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	324	370

	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	Be	EARTH BERM SECTION 161 LINE CODE Be		THIS IS A TEMPORARY EARTH BERM CONSTRUCTED AT THE EDGE OF THE EMBANKMENT DURING THE GRADING OPERATION. THIS BERM WILL PREVENT SLOPE EROSION AND DIRECT RUNOFF TO A DOWN DRAIN "Dnl" OR CATCHMENT AREA. THIS WILL BE USED ON ALL GRADING PROJECTS. THIS ITEM IS TO BE USED ALONG THE TOP OF HIGH FILL SECTIONS TO DIRECT RUNOFF INTO THE TEMPORARY SLOPE DRAINS.
	Bf	BUFFER ZONE SYMBOL Bf		A STRIP OF UNDISTURBED ORIGINAL VEGETATION, ENHANCED OR RESTORED EXISTING VEGETATION, OR THE RE-ESTABLISHMENT OF VEGETATION SURROUNDING AN AREA OF DISTURBANCE OR BORDERING STREAMS, PONDS, WETLANDS, LAKES, AND COASTAL WATERS. THE BOUNDARIES OF THESE AREAS ARE BE DELINEATED BY ORANGE BARRIER FENCE.
	ESA	ENVIRONMENTALLY SENSITIVE AREA LINE CODE ESA-25'(OR 50')STREAM BUFFER, ETC.		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.
		ORANGE BARRIER FENCE LINE CODE ORANGE BARRIER FENCE		ORANGE BARRIER FENCE DELINEATES ESA AREAS WHERE THE CONTRACTOR SHALL NOT CLEAR, GRUB, PLACE CONSTRUCTION MATERIALS OR EQUIPMENT WITHIN THIS AREA.
	Cd-F	FABRIC CHECK DAM CONSTRUCTION DETAIL SECTION 171 LINE CODE Cd-F		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.

	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	Cd-Hb	HAYBALE CHECK DAM SECTION 163 LINE CODE Cd-Hb		HAYBALE CHECK DAMS ARE RECOMMENDED FOR DRAINAGE AREA LESS THAN ONE ACRE.
	Cd-S	STONE OR SANDBAG CHECK DAM SECTION 163, 603 LINE CODE Cd-S		STONE CHECK DAMS ARE USED IN ROADWAY DITCHES. GEOTEXITLE UNDERLINER SHALL BE USED WHEN PLACING STONE CHECK DAMS.
	Ch-Br	BITUMINOUS TREATED ROVING SECTION 161, 715 LINE CODE Ch-Br		THIS ITEM CONSISTS OF PLACING ONE OR MORE LAYERS OF BITUMINOUS TREATED ROVING ON A PLANTED AREA, IN CHANNELS TO STABILIZE VEGETATION AND PREVENT EROSION. BITUMINOUS TREATED ROVING SHALL BE PLACED TO PROTECT THE DITCH FLOWING TO A DEPTH "Dp" RECOMMENDED BY THE GDOT DITCH PROTECTION PROGRAM. ADDITITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED. "Dp" SHALL BE IDENTIFIED IN A TABLE LOCATED ON THE SUMMARY OF QUANTITIES SHEETS
	Ch-C	CHANNEL CONCRETE SECTION 161, 441 LINE CODE 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

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
GLO	REV. Be, ADDED Bf, ESA, OBF AND Ch-F	11-13-07
GLO	REVISED TITLE BLOCK	1-19-07

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. 52-1

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	325	370

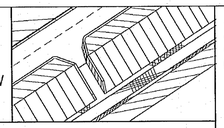
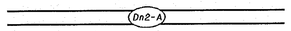
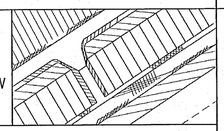
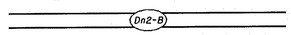
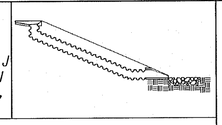
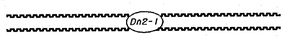
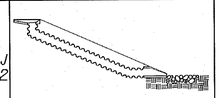
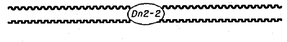
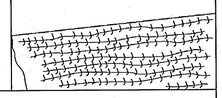
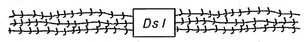
	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	Ch-Rp1	CHANNEL RIP RAP TYPE 1 SECTION 161, 603	LINE CODE Ch-Rp1	THIS ITEM CONSISTS OF LINING A CHANNEL WITH TYPE 1 RIP RAP 24" THICK (UNLESS SPECIFIED OTHERWISE) PLACED ON TOP OF A GEOTEXTILE UNDERLINER. THE RIP RAP SHALL PROTECT THE DITCH FLOWING 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.
	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.

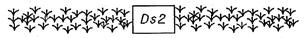
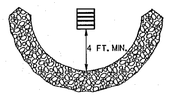
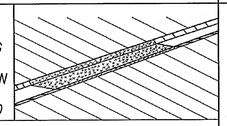
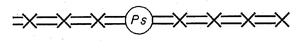
	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	Dc-B	DIVERSION CHANNEL GEOTEXTILE ONLY SECTION163	LINE CODE D D D Dc-B D D D	A DIVERSION CHANNEL IS A TEMPORARY CHANNEL CONSTRUCTED TO CONVEY FLOW AROUND A CONSTRUCTION SITE WHILE A PERMANENT DRAINAGE STRUCTURE IS BEING CONSTRUCTED IN A NATURAL STREAM. 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	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 CONSTRUCTION DETAIL SECTION 205	LINE CODE Di	AN EARTH CHANNEL WITH A COMPACTED SUPPORTING RIDGE ON THE LOWER SIDE, CONSTRUCTED ABOVE, ACROSS OR BELOW A SLOPE TO REDUCE THE LENGTH OF A SLOPE AND TO INTERCEPT RUNOFF AND DIRECT THE RUNOFF TO A STABLE OUTLET. SEE CHAPTHER 6 OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA AND DETAILS.
	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'.

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".

REVISED ORDER	11-13-07	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
REVISED TITLE BLOCK	1-19-07	EROSION CONTROL LEGEND AND UNIFORM CODE SHEET SHEET 2 OF 6
REVISION	DATE	NO SCALE — JANUARY 2007
GLO	GLO	NUMBER EC-L2 — DRAWING No. 52-2
BY		

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	326	370

	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	Dn2-A	PERMANENT DOWN DRAIN STRUCTURE CONCRETE CONSTRUCTION DETAIL SECTION 441	 LINE CODE 	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 	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 TP1, D-26 TP1 SECTION 576, 577.	 LINE CODE 	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).
	Dn2-2	PERMANENT DOWN DRAIN STRUCTURE GA. STD. 9017J TP2, D-26 TP2 SECTION 576, 577.	 LINE CODE 	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 	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.

	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	Ds2	TEMPORARY GRASSING SECTION 163	LINE CODE 	THE SOWING OF A QUICK GROWING SPECIES OF GRASS SUITABLE TO THE AREA AND SEASON IS TO BE USED ON ALL PROJECTS.
	Fr	FILTER RING CONSTRUCTION DETAIL	 LINE CODE	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	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 	THIS THREE DIMENSIONAL EROSION CONTROL MAT IS USED IN DITCHES TO STABILIZE THE SOIL BY REINFORCING THE GRASS ROOTS TO PROVIDE LONG TERM PROTECTION. (THIS IS CALLED "Wt" IN 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 SEE THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION. "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

BY	REVISION	DATE
GLO	DELETED Fe, REVISED ORDER	11-13-07
GLO	REVISED TITLE BLOCK	1-19-07

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

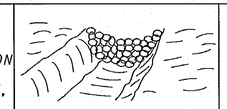
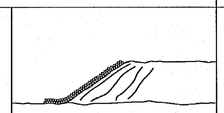
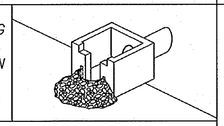
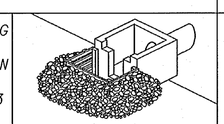
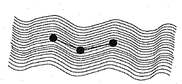
EROSION CONTROL LEGEND AND UNIFORM CODE SHEET
SHEET 3 OF 6

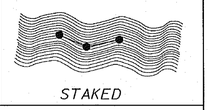
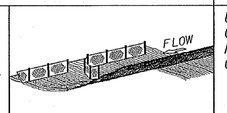
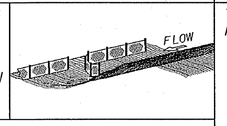
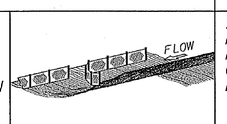
NO SCALE — JANUARY 2007

NUMBER EC-L3

DRAWING No. 52-3

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	327	370

	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION
	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.
	Rp	RIPRAP SECTION 603 PATTERN Rp		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 Rt-P		A PERFORATED HALF-ROUND PIPE WITH STONE FILTER PLACED IN FRONT OF A PERMANENT STORMWATER DETENTION POND OUTLET STRUCTURE TO SERVE AS A TEMPORARY SEDIMENT FILTER. SHOULD BE USED ONLY IN DETENTION PONDS WITH LESS THAN 30 ACRES TOTAL DRAINAGE AREA. SHALL ONLY BE USED IN DETENTION BASINS LARGE ENOUGH TO STORE 67 CUBIC YARDS OF SEDIMENT PER ACRE OF DISTRUBED 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 Rt-B		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 DISTRUBED AREA. THIS ITEM SHOULD BE DESIGNED ACCORDING TO CHAPTER 6 IN THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA"
	Sb-F	SILT RETENTION BARRIER FLOATING SECTION 170 FLOATING LINE CODE Sb-F		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 STAKED LINE CODE Sb-S		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 "Cbl". 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 —A—A—A—Sdl-A—A—A—A—		USED ALONG THE TOE OF FILLS OVER 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 —B—B—B—Sdl-B—B—B—B—		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 —C—C—C—Sdl-C—C—C—C—		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 SEE THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION, "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

BY	REVISED TITLE BLOCK	1-9-07
GLO	REV. Sb-F, Sb-S, Sdl-A, Sdl-B AND Sdl-C.	11-13-07

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

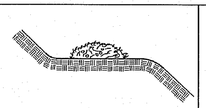
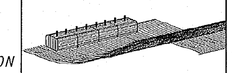
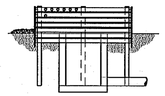
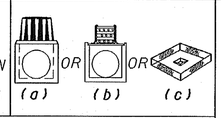
EROSION CONTROL LEGEND AND UNIFORM CODE SHEET
SHEET 4 OF 6

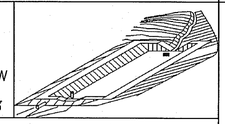
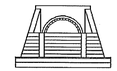
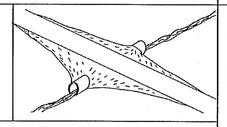
NO SCALE — JANUARY 2007

NUMBER EC-L4

DRAWING No. 52-4

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	328	370

	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 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.
	Sg-1 Sg-2 Sg-3	SILT CONTROL GATES CONSTRUCTION DETAIL D-20 SECTION 163 LINE CODE Sg-1 Sg-2 Sg-3		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. Sg-1=TYPE 1: USED ON BOX CULVERTS Sg-2=TYPE 2: USED ON STRAIGHT HEADWALLS Sg-3=TYPE 3: USED ON FLARED END SECTIONS AND TAPERED HEADWALLS
	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 SEE THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION. "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

BY	REVISION	DATE
GLO	REV. Sg-1, Sg-2 AND Sg-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

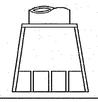
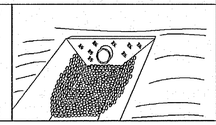
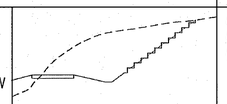
NO SCALE

JANUARY 2007

NUMBER EC-L5

DRAWING No. 52-5

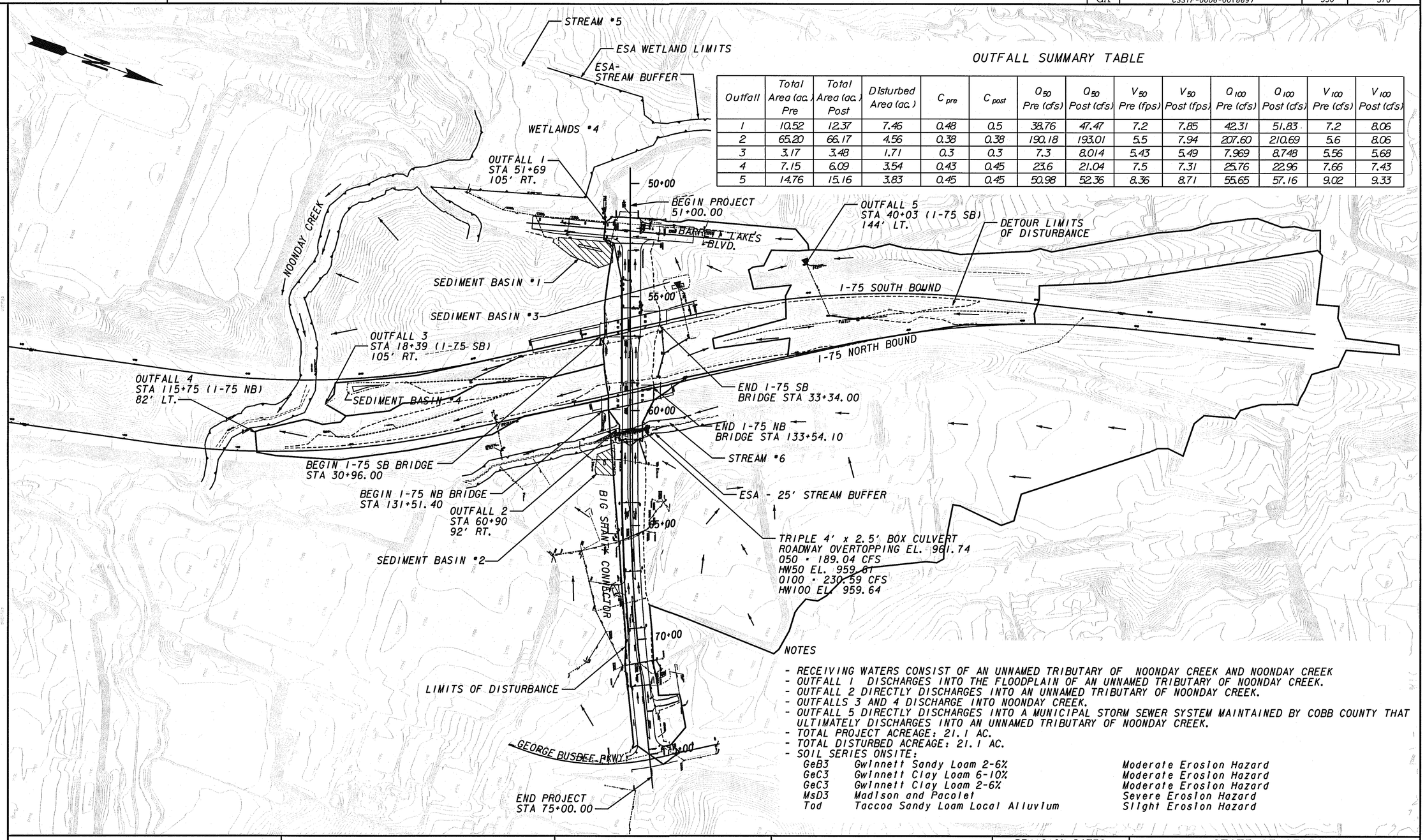
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	329	370

	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.

	CODE	PRACTICE STD :SPC's :SECTION	DETAIL	DESCRIPTION

NOTE:
1. DO NOT USE EROSION CONTROL ITEMS IN A FLOWING STREAM OR IN A TIDAL AREA BELOW HIGH TIDE.
2. FOR ADDITIONAL INFORMATION ON THE DESIGN AND APPLICATION OF EROSION CONTROL MEASURES SEE THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION. "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".

DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA		
REVISION	EROSION CONTROL LEGEND AND UNIFORM CODE SHEET SHEET 6 OF 6		
	NO SCALE		NOV., 2007
BY	NUMBER EC-L6		DRAWING No. 52-6



OUTFALL SUMMARY TABLE

Outfall	Total Area (ac.) Pre	Total Area (ac.) Post	Disturbed Area (ac.)	C_{pre}	C_{post}	Q_{50} Pre (cfs)	Q_{50} Post (cfs)	V_{50} Pre (fps)	V_{50} Post (fps)	Q_{100} Pre (cfs)	Q_{100} Post (cfs)	V_{100} Pre (cfs)	V_{100} Post (cfs)
1	10.52	12.37	7.46	0.48	0.5	38.76	47.47	7.2	7.85	42.31	51.83	7.2	8.06
2	65.20	66.17	4.56	0.38	0.38	190.18	193.01	5.5	7.94	207.60	210.69	5.6	8.06
3	3.17	3.48	1.71	0.3	0.3	7.3	8.014	5.43	5.49	7.969	8.748	5.56	5.68
4	7.15	6.09	3.54	0.43	0.45	23.6	21.04	7.5	7.31	25.76	22.96	7.66	7.43
5	14.76	15.16	3.83	0.45	0.45	50.98	52.36	8.36	8.71	55.65	57.16	9.02	9.33

NOTES

- RECEIVING WATERS CONSIST OF AN UNNAMED TRIBUTARY OF NOONDAY CREEK AND NOONDAY CREEK
- OUTFALL 1 DISCHARGES INTO THE FLOODPLAIN OF AN UNNAMED TRIBUTARY OF NOONDAY CREEK.
- OUTFALL 2 DIRECTLY DISCHARGES INTO AN UNNAMED TRIBUTARY OF NOONDAY CREEK.
- OUTFALLS 3 AND 4 DISCHARGE INTO NOONDAY CREEK.
- OUTFALL 5 DIRECTLY DISCHARGES INTO A MUNICIPAL STORM SEWER SYSTEM MAINTAINED BY COBB COUNTY THAT ULTIMATELY DISCHARGES INTO AN UNNAMED TRIBUTARY OF NOONDAY CREEK.
- TOTAL PROJECT ACREAGE: 21.1 AC.
- TOTAL DISTURBED ACREAGE: 21.1 AC.
- SOIL SERIES ONSITE:

GeB3	Gwinnett Sandy Loam 2-6%	Moderate Erosion Hazard
GeC3	Gwinnett Clay Loam 6-10%	Moderate Erosion Hazard
GeC3	Gwinnett Clay Loam 2-6%	Moderate Erosion Hazard
MsD3	Madison and Pacolet	Severe Erosion Hazard
Tod	Taccoa Sandy Loam Local Alluvium	Slight Erosion Hazard

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SCALE IN FEET
0 200 400 800

REVISION DATES		
10/01/09		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

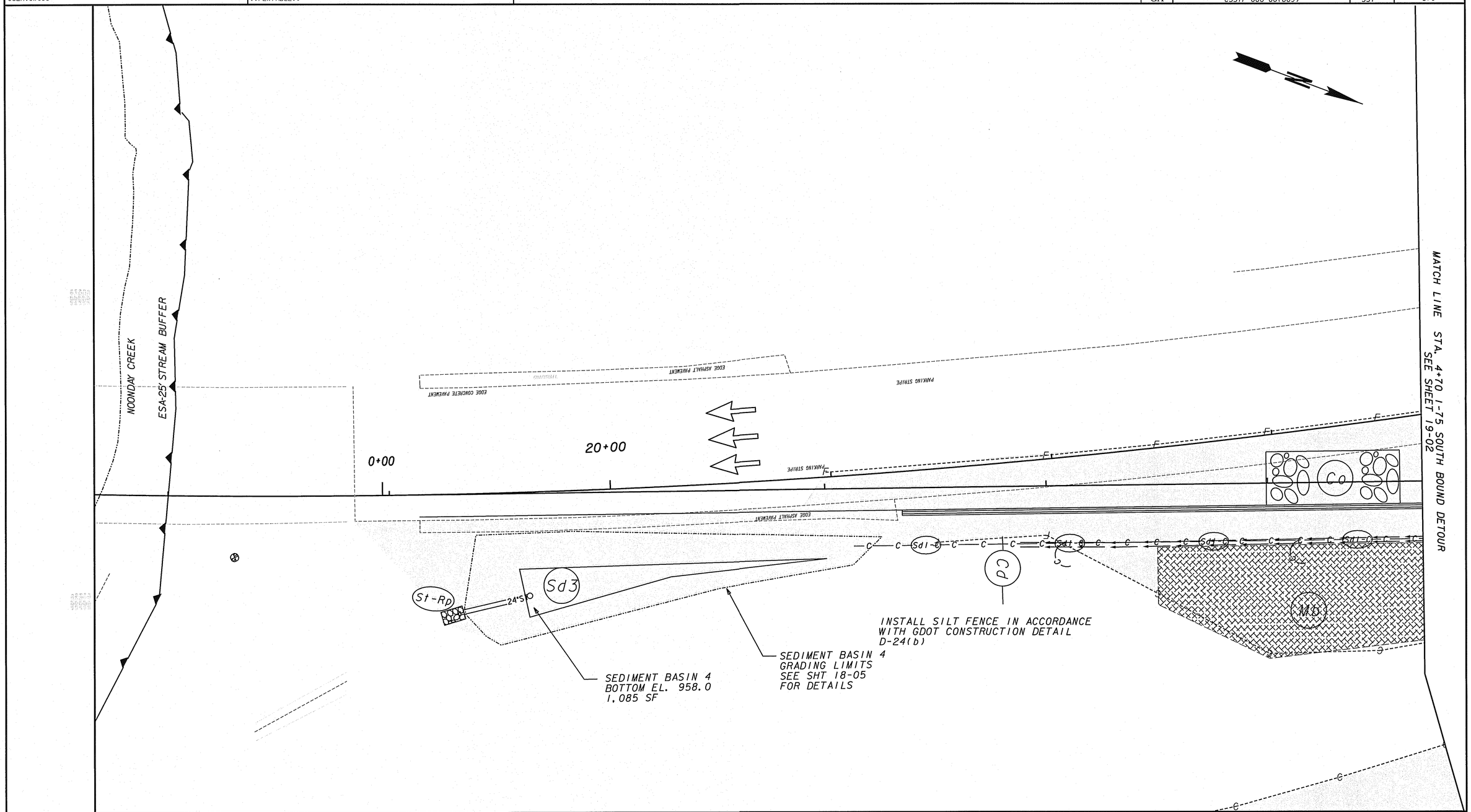
EROSION CONTROL DRAINAGE AREA MAP

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 53-01

GPUN

9/16/2009 5:18:22 PM	PRF	y:\0313 big shanty conn\design\006869 phase 1\dgn\006869er01.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
USER:dwebb	$$PENTABLE$$		GA	CSSTP-006-00(869)	331	370



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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 1

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-01

GPLN

9/16/2009	5:18:25 PM	PRF	y:\0313 blg shanty conn\design\006869 phase 1\dgn\006869er02.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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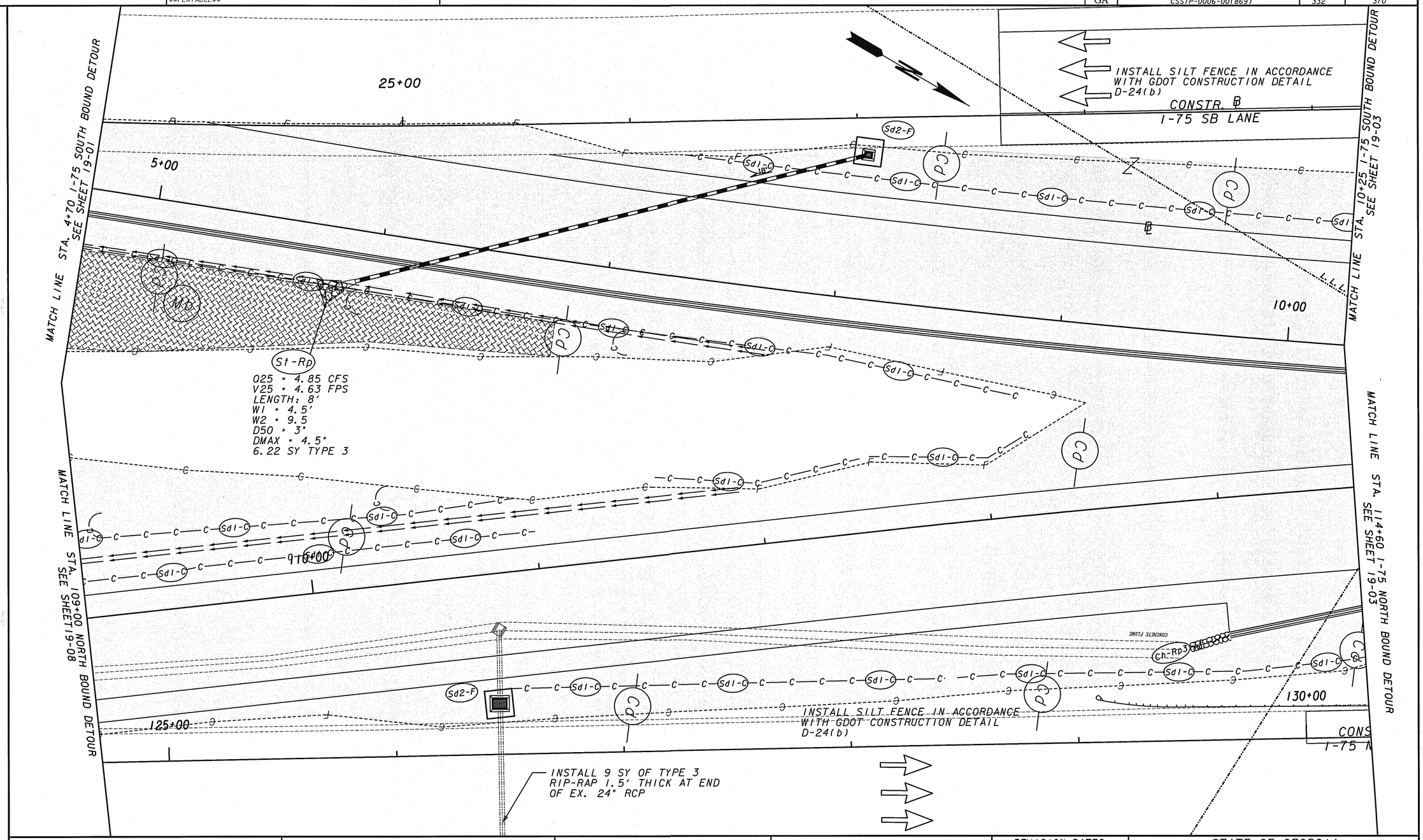

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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 1

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-02

GPLN

9/16/2009 5:18:32 PM PRF
USER:dwebb $$PENTABLE$$

y:\0313 big shanty conn\design\006869 phase 1\dgn\006869er03.dgn

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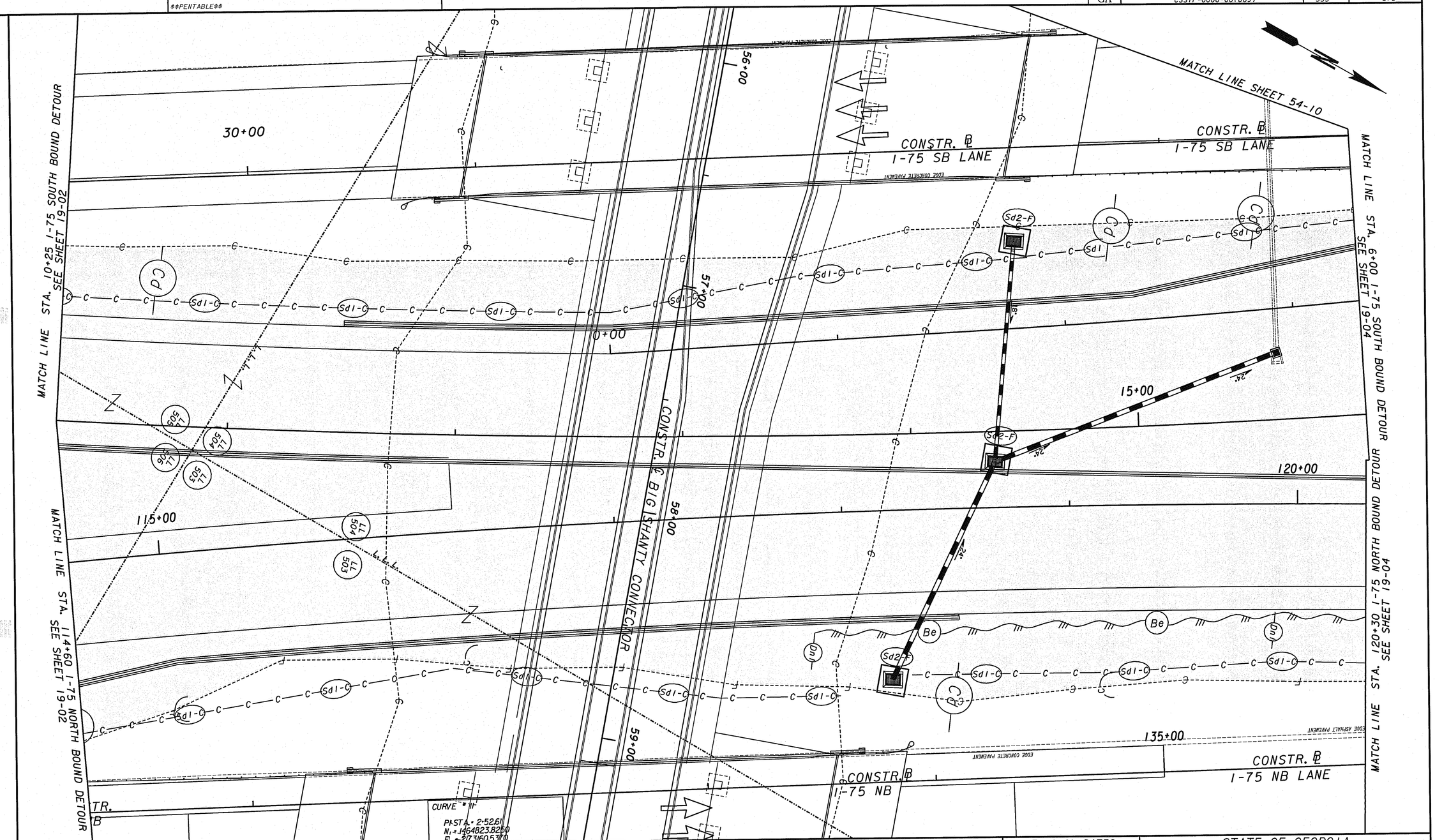

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SCALE IN FEET
0 20 40 80

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE I

BIG SHANTY CONNECTOR
PHASE I

DRAWING No. 54-03

GPLN

9/16/2009	5:18:39 PM	PRF	y:\0313 big shanty conn\design\006869 phase 1\dgn\006869er04.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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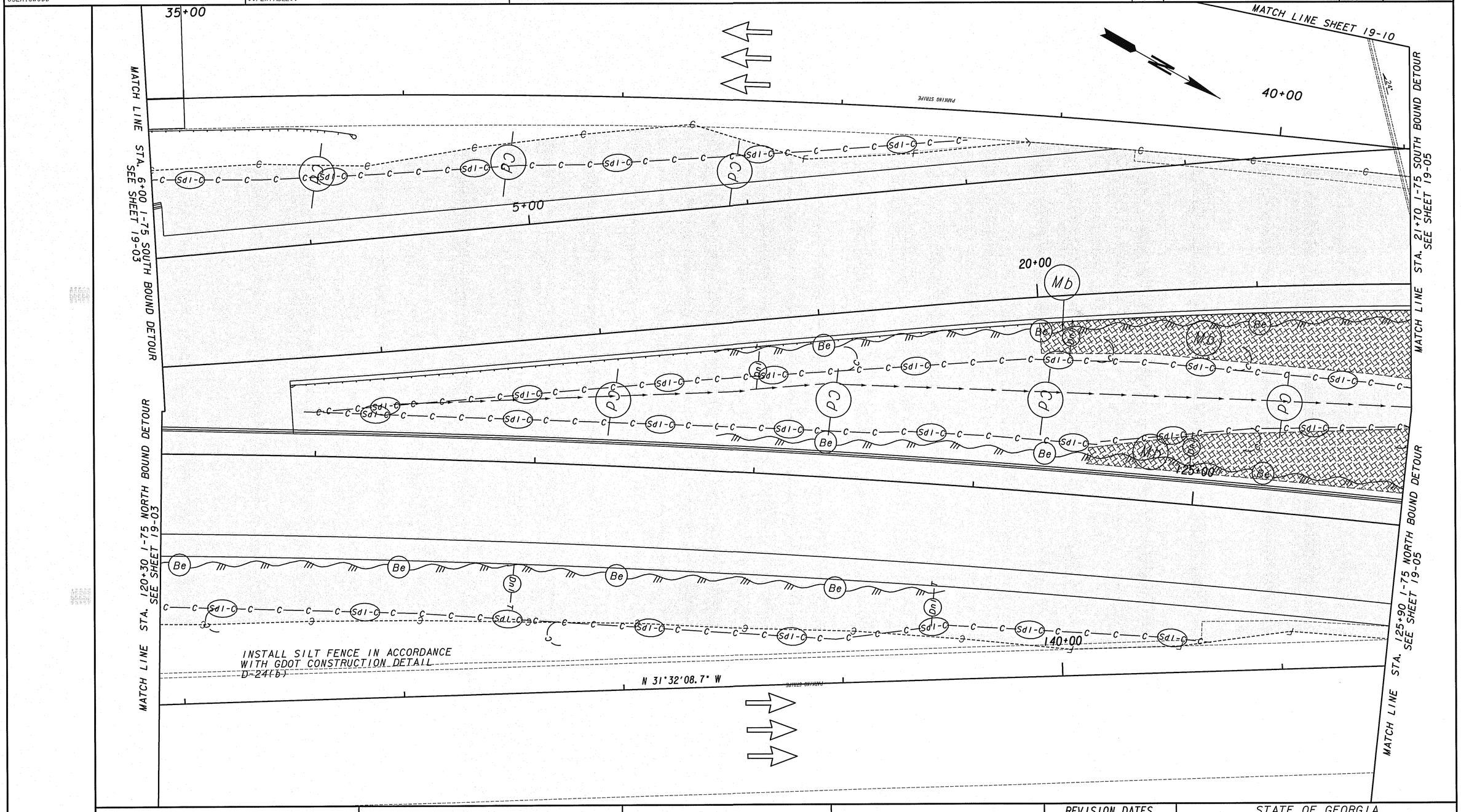

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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 1

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-04

GPLN

9/16/2009	5:18:46 PM	PRF	y:\0313 big shanty conn\design\006869 phase I\dgn\006869er05.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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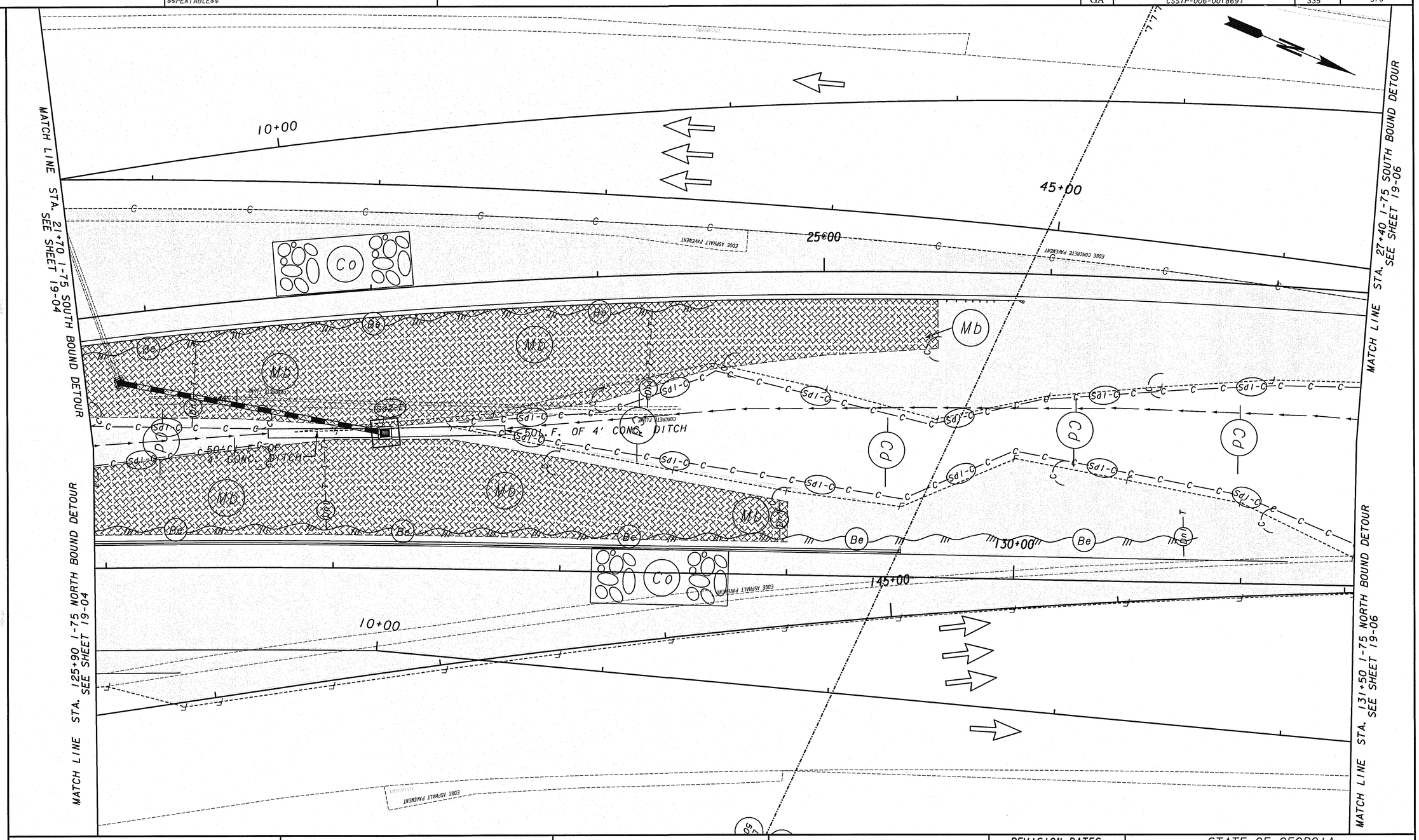

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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE I

BIG SHANTY CONNECTOR
PHASE I

DRAWING No. 54-05

GPLN

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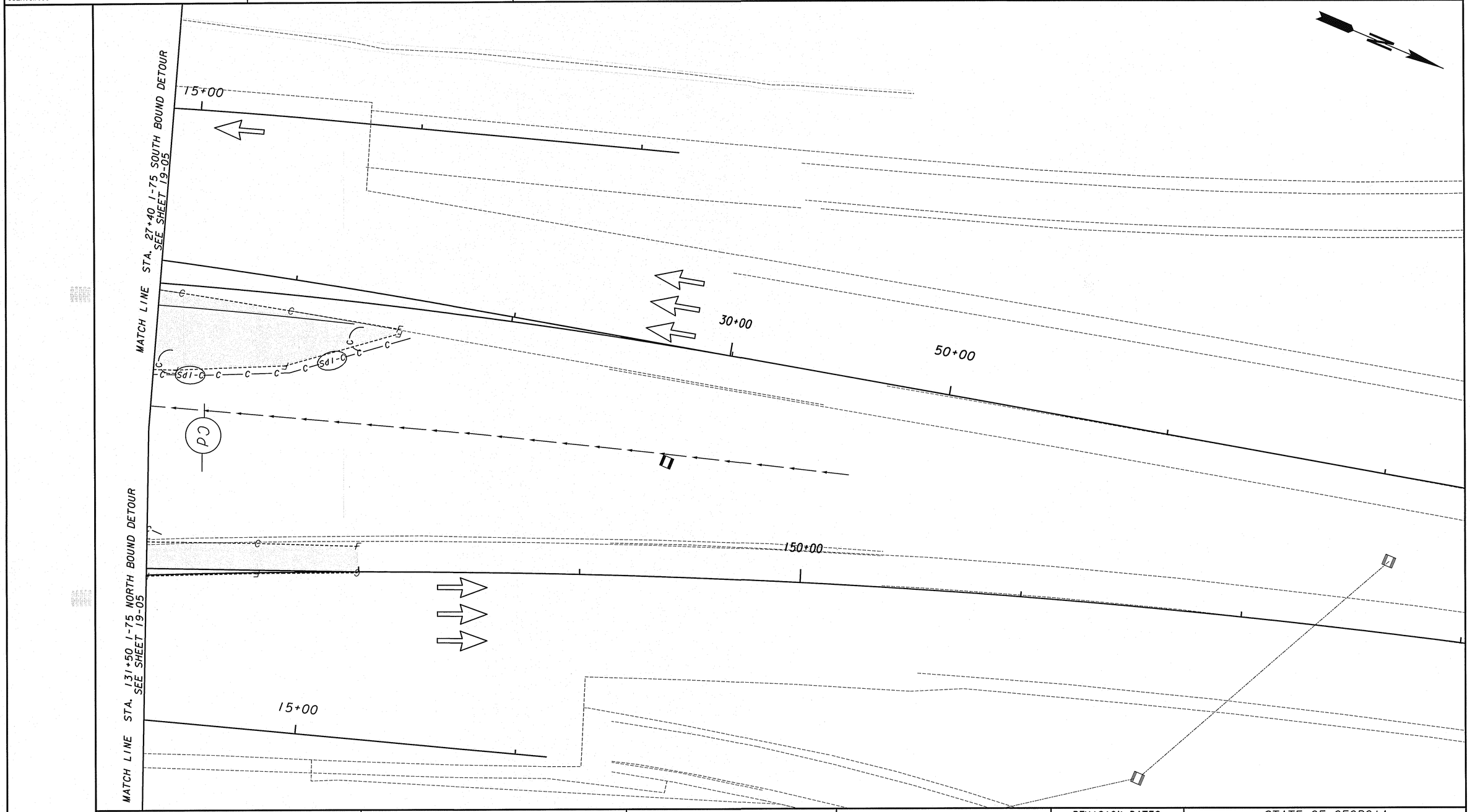

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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 1

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-06

GPLN

9/16/2009 5:19:06 PM PRF	y:\0313 big shanty conn\design\006869 phase 1\dgn\006869er07.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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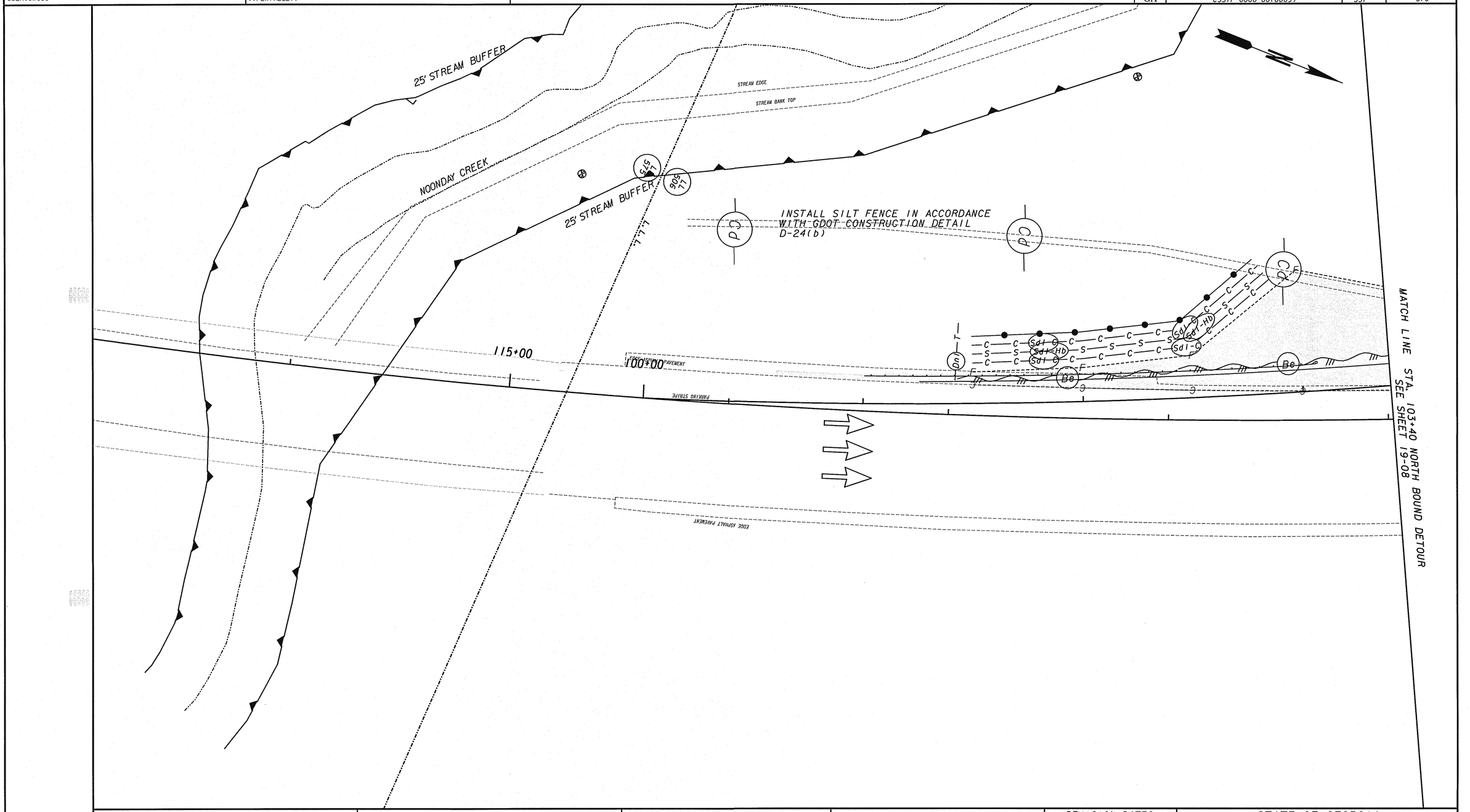

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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 1

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-07

9/16/2009	5:19:12 PM	PRF	y:\0313 big shanty conn\design\006869 phase 1\dgn\006869er08.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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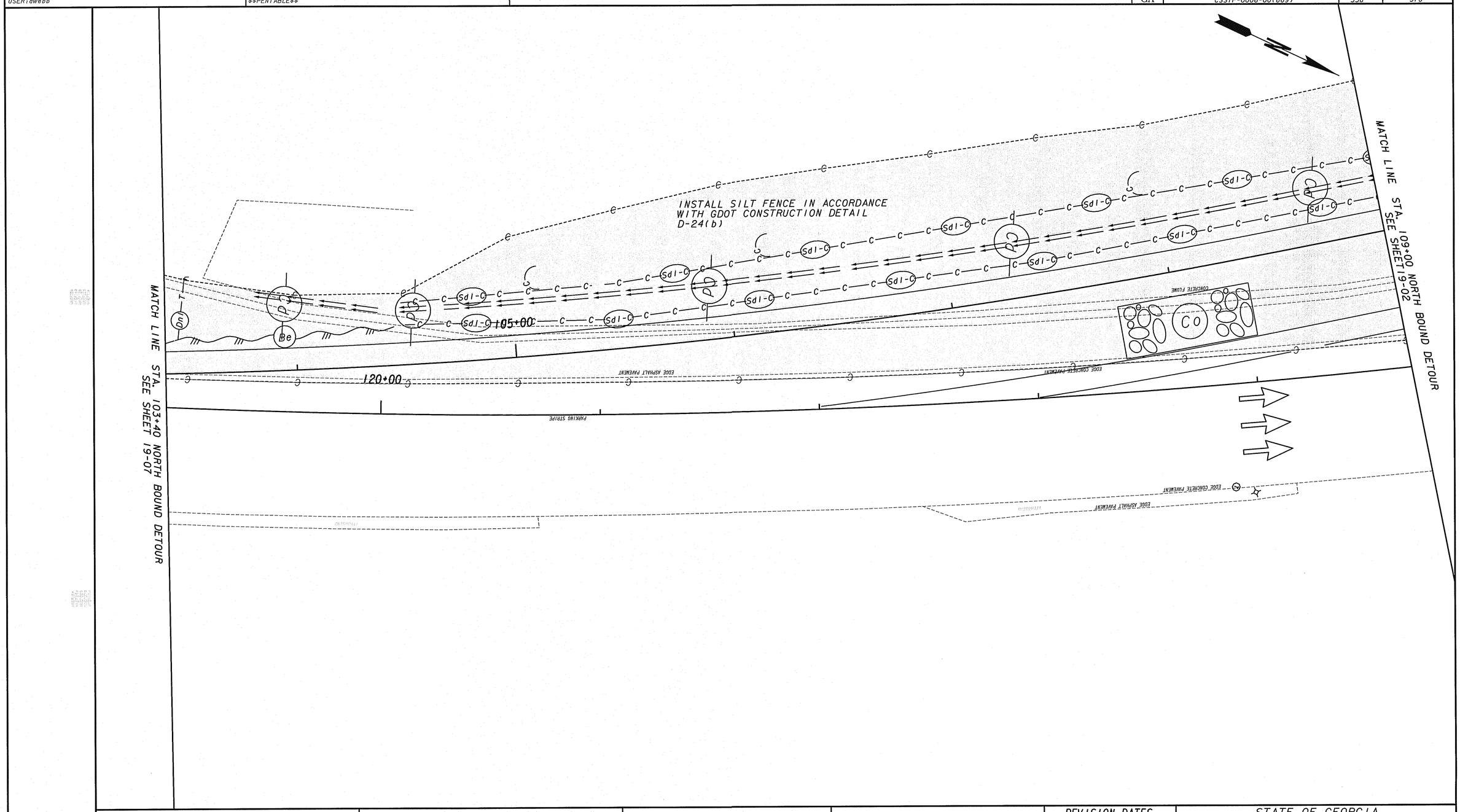

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SCALE IN FEET
0 20 40 80

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 1

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-08

GPLN

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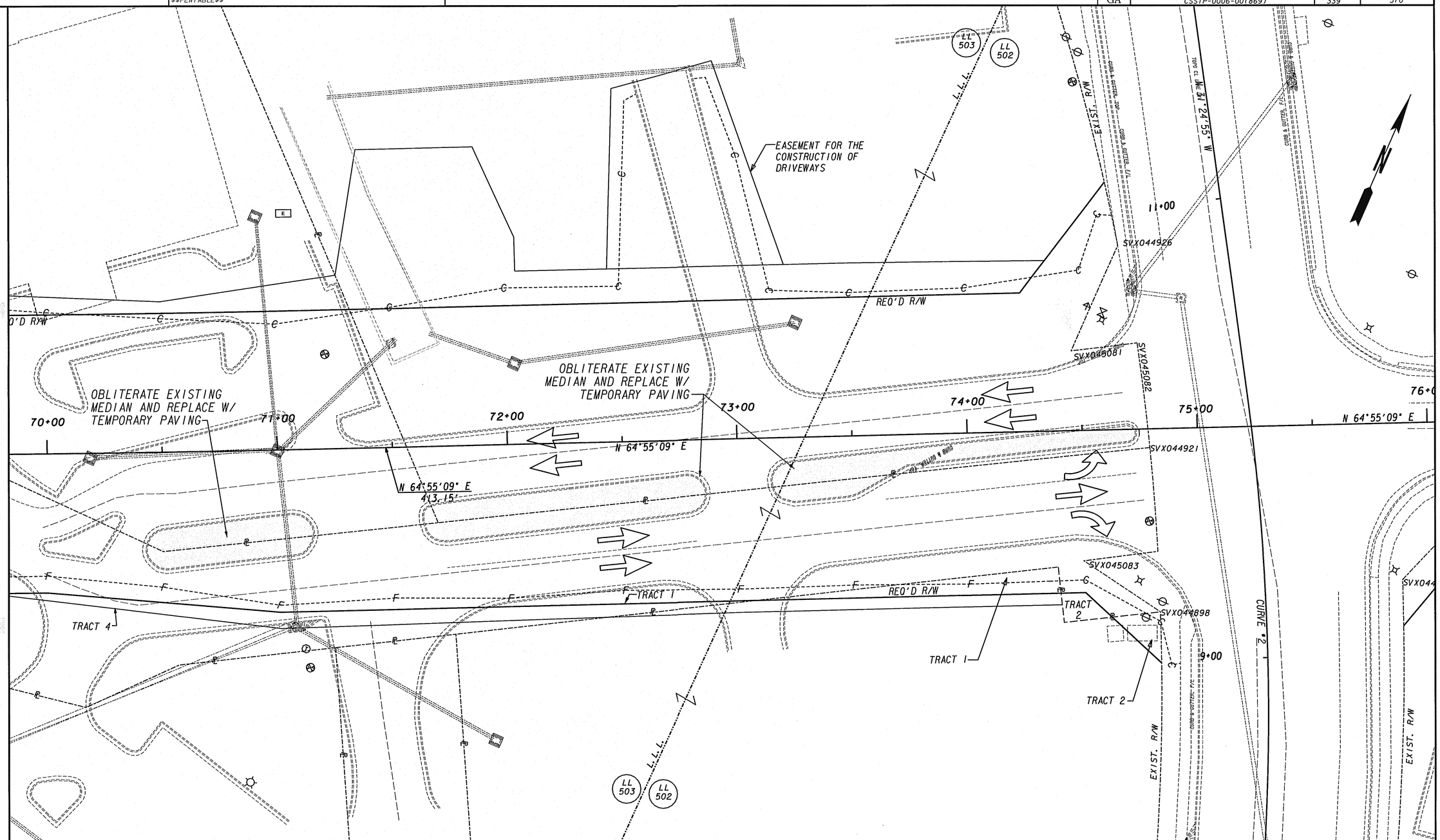

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SCALE IN FEET
0 20 40 80

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 1

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-09

GPLN

9/16/2009 5:19:22 PM	PRF	y:\0313 big shanty conn\design\006869 phase 1\dgn\006869er10.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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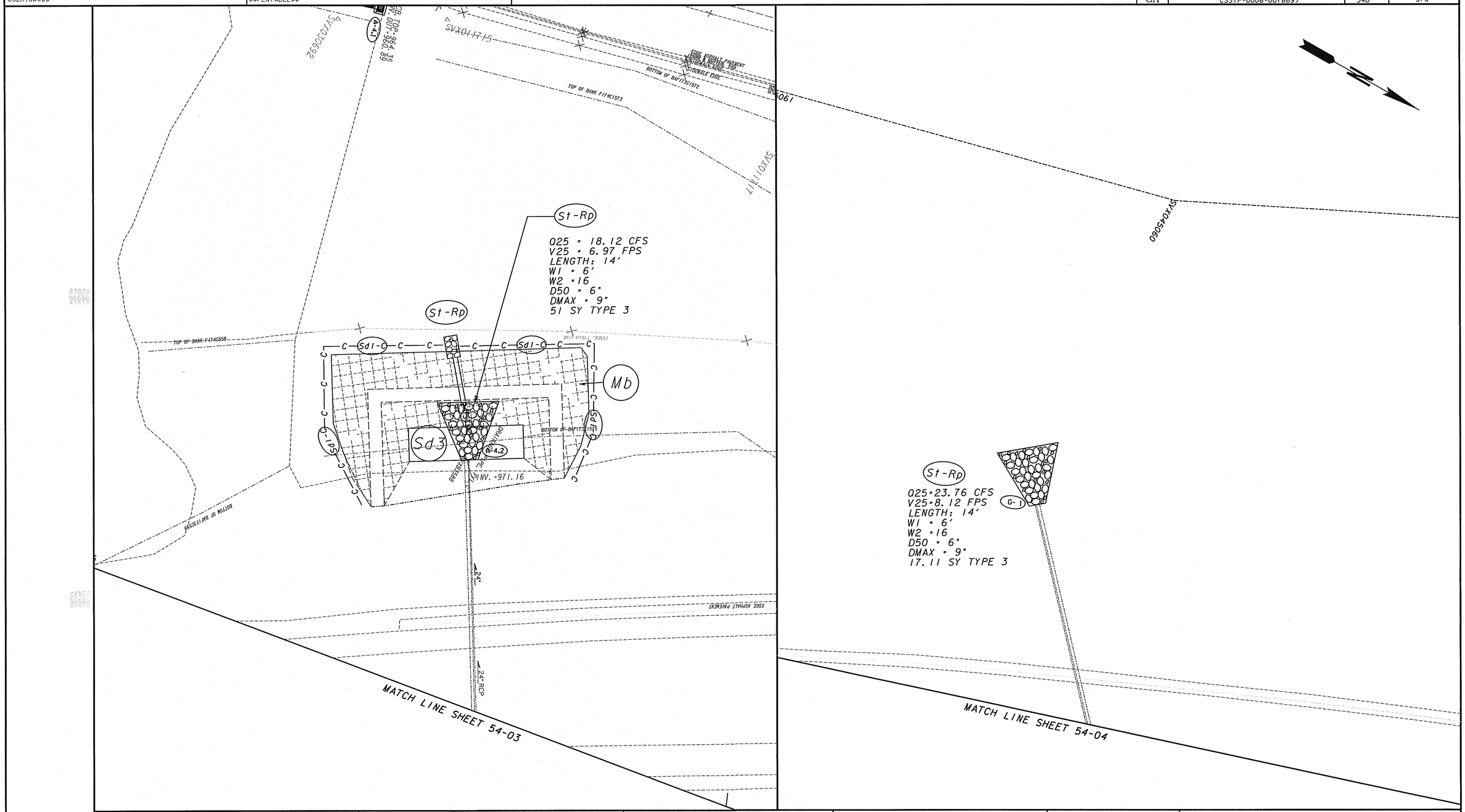

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SCALE IN FEET
0 20 40 80

REVISION DATES		

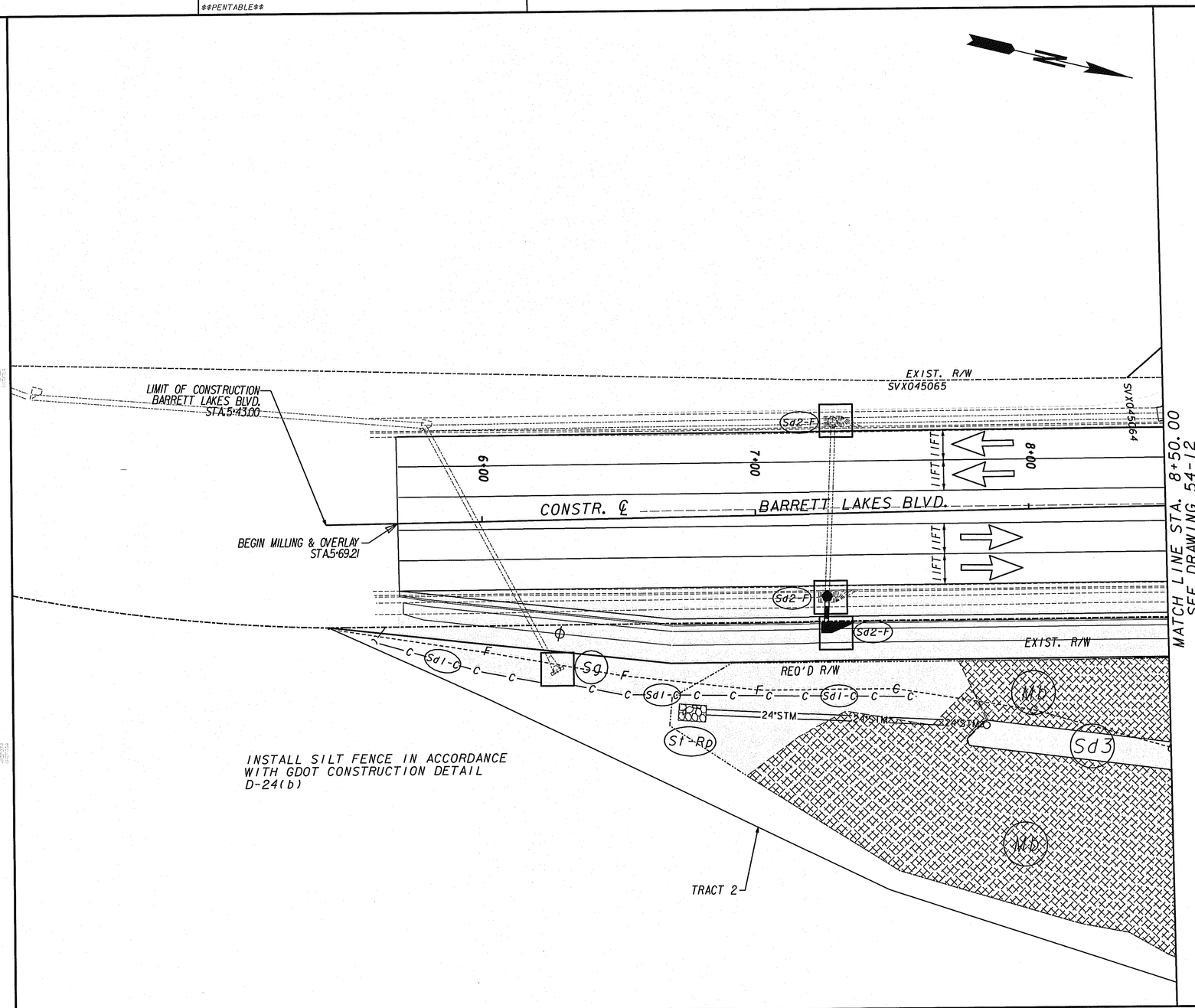
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 1

RIDGEWALK INTERCHANGE
PHASE 1

DRAWING No. 54-10

GPLN



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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 2

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-11

GPLN

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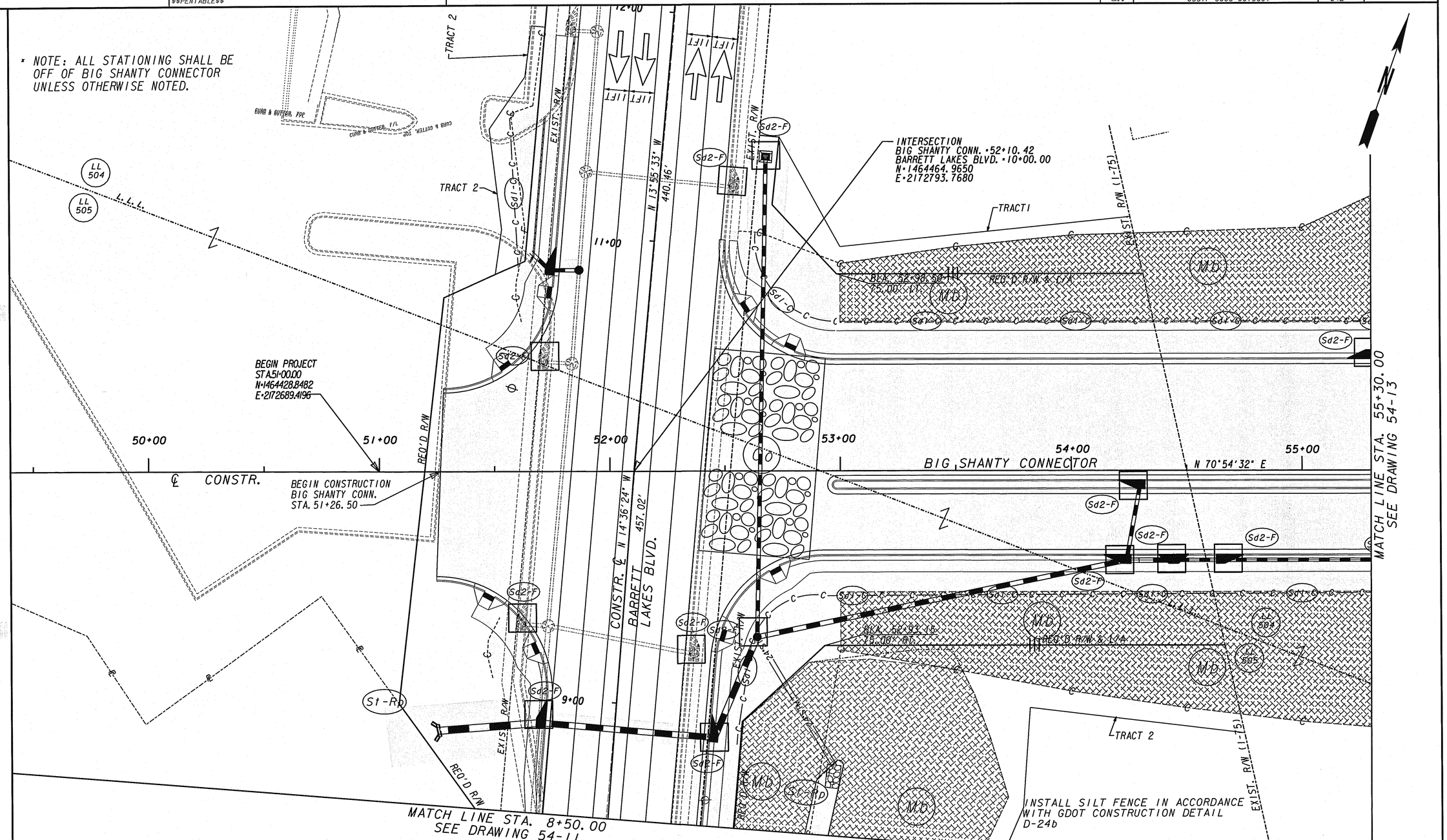
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CSSTP-0006-00(869)	342	370



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SCALE IN FEET
0 20 40 80

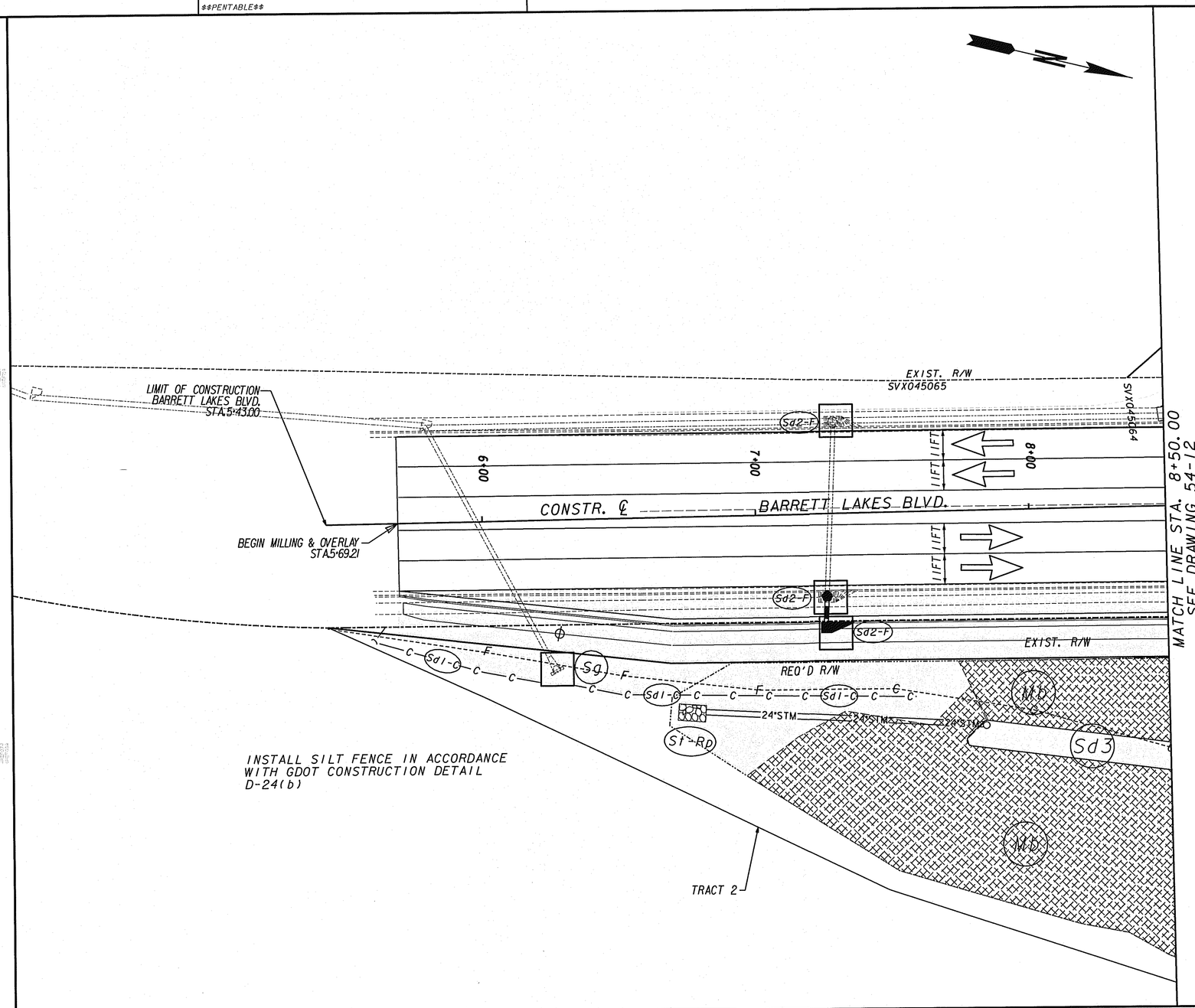
REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 2

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-12



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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 2

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-11

GPLN

9/16/2009 5:19:33 PM PRF
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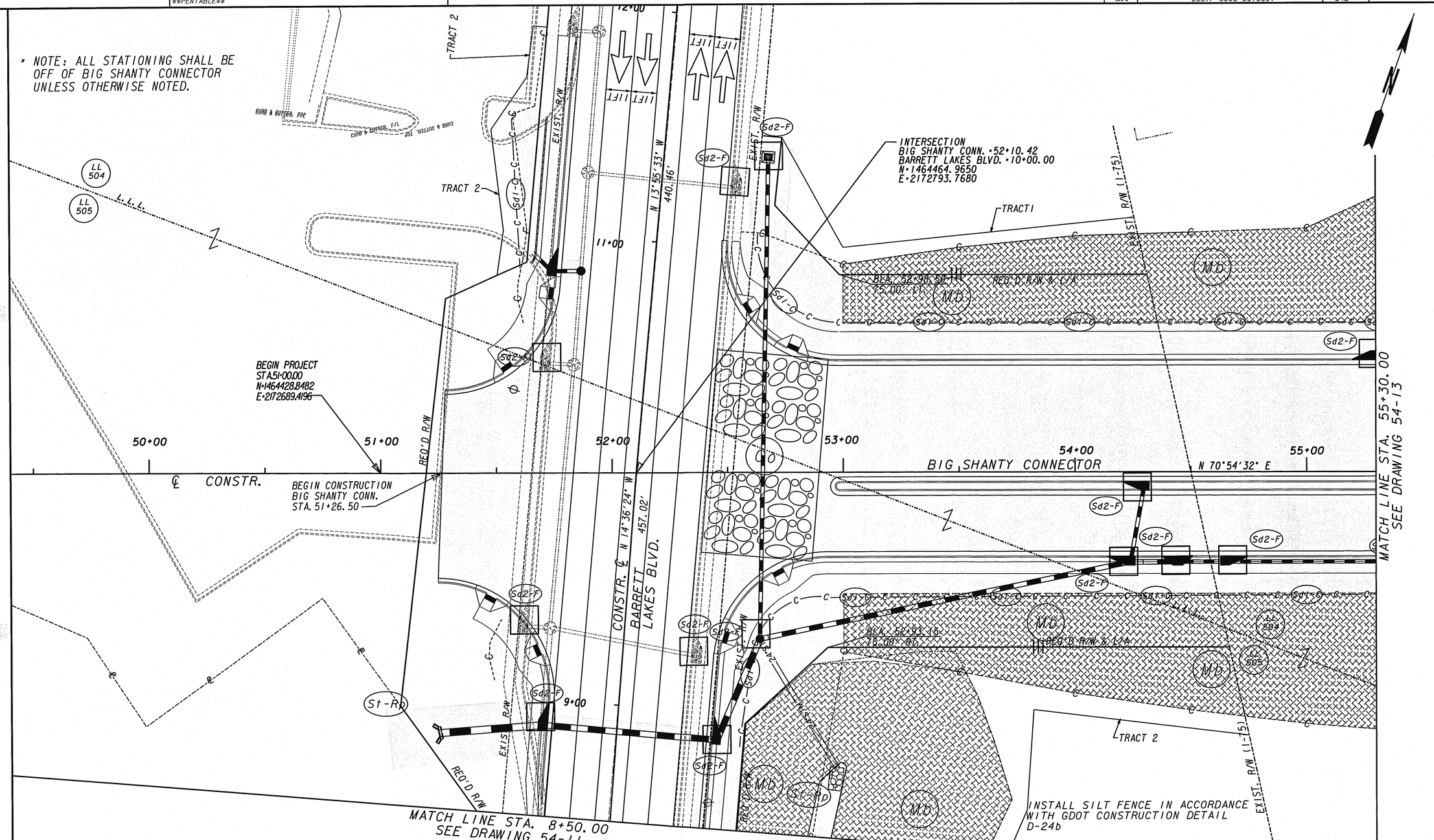
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CSSTP-0006-00(869)	342	370



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SCALE IN FEET
0 20 40 80

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 2

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-12

9/16/2009	5:19:37 PM	PRF	y:\0313 big shanty conn\design\006869 phase 1\dgn\006869er13.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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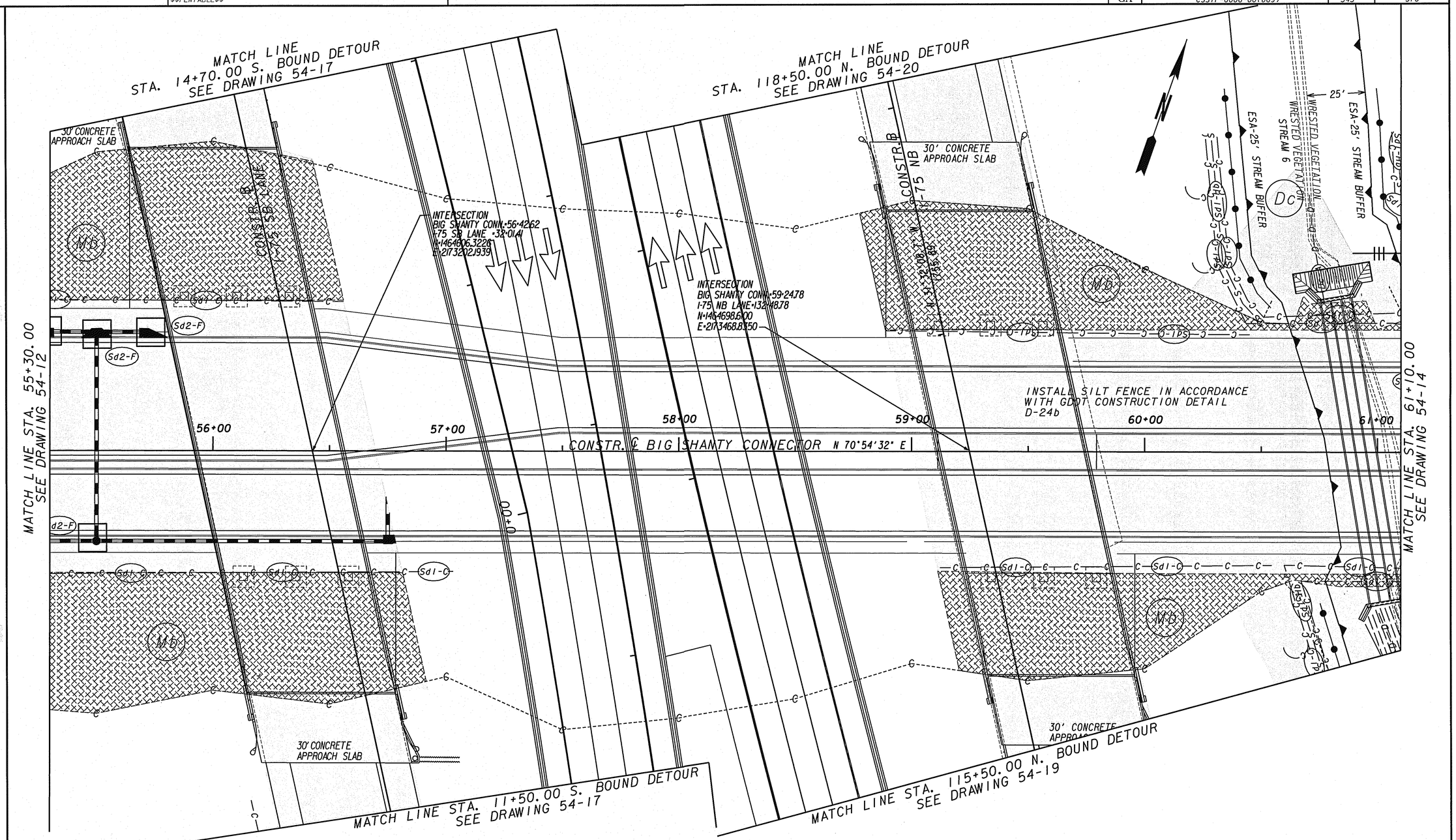

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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 2

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-13

GPLN

9/16/2009 5:19:48 PM PRF
USER:dwebb $$PENTABLE$$
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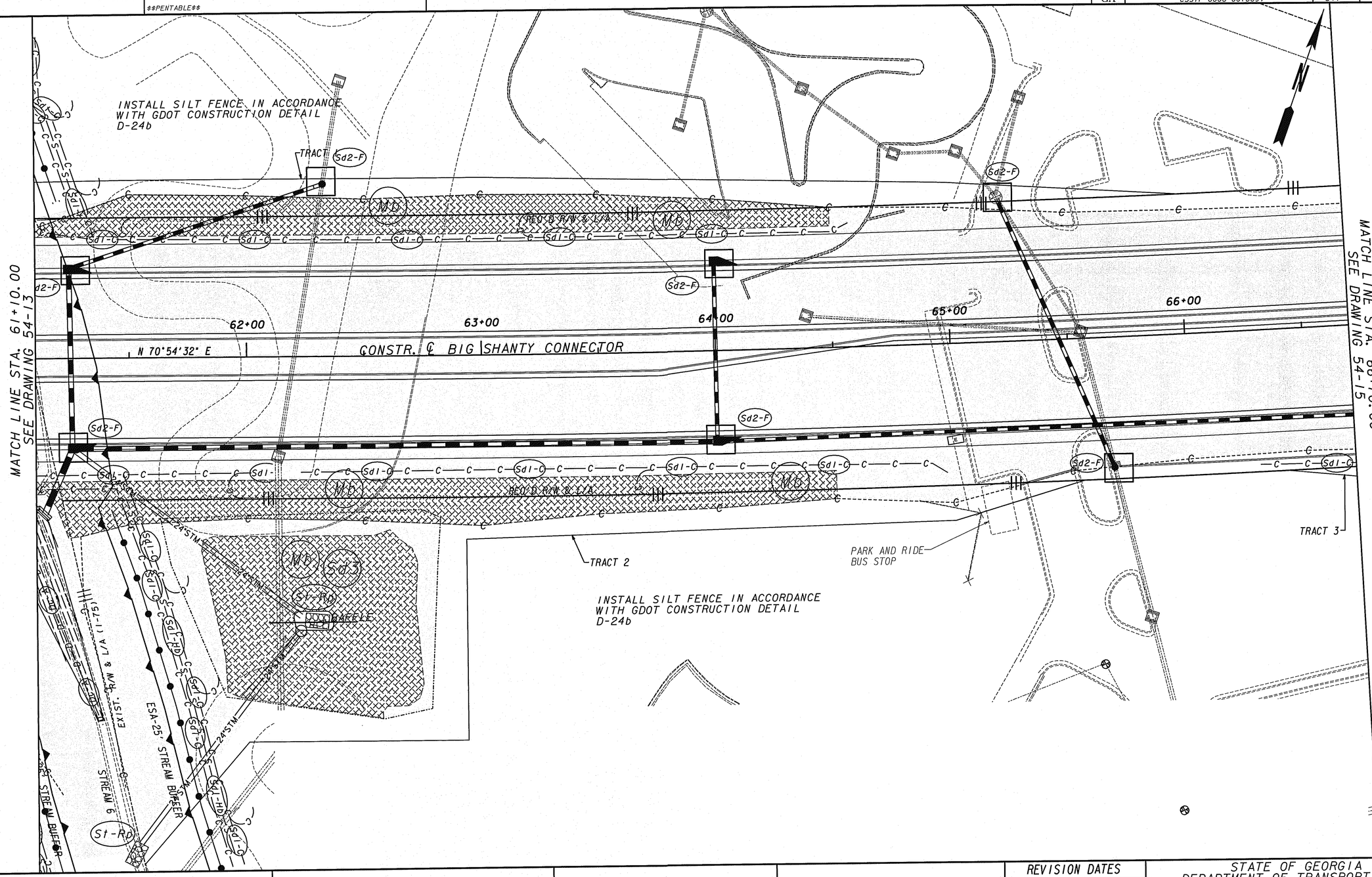
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CSSTP-0006-00(869)	344	370



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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 2

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-14

GPLN

9/16/2009
USER:dwebb

5:20:02 PM
PRF
$$PENTABLE$$

y:\0313 big shanty conn\design\006869 phase 1\dgn\006869er15.dgn

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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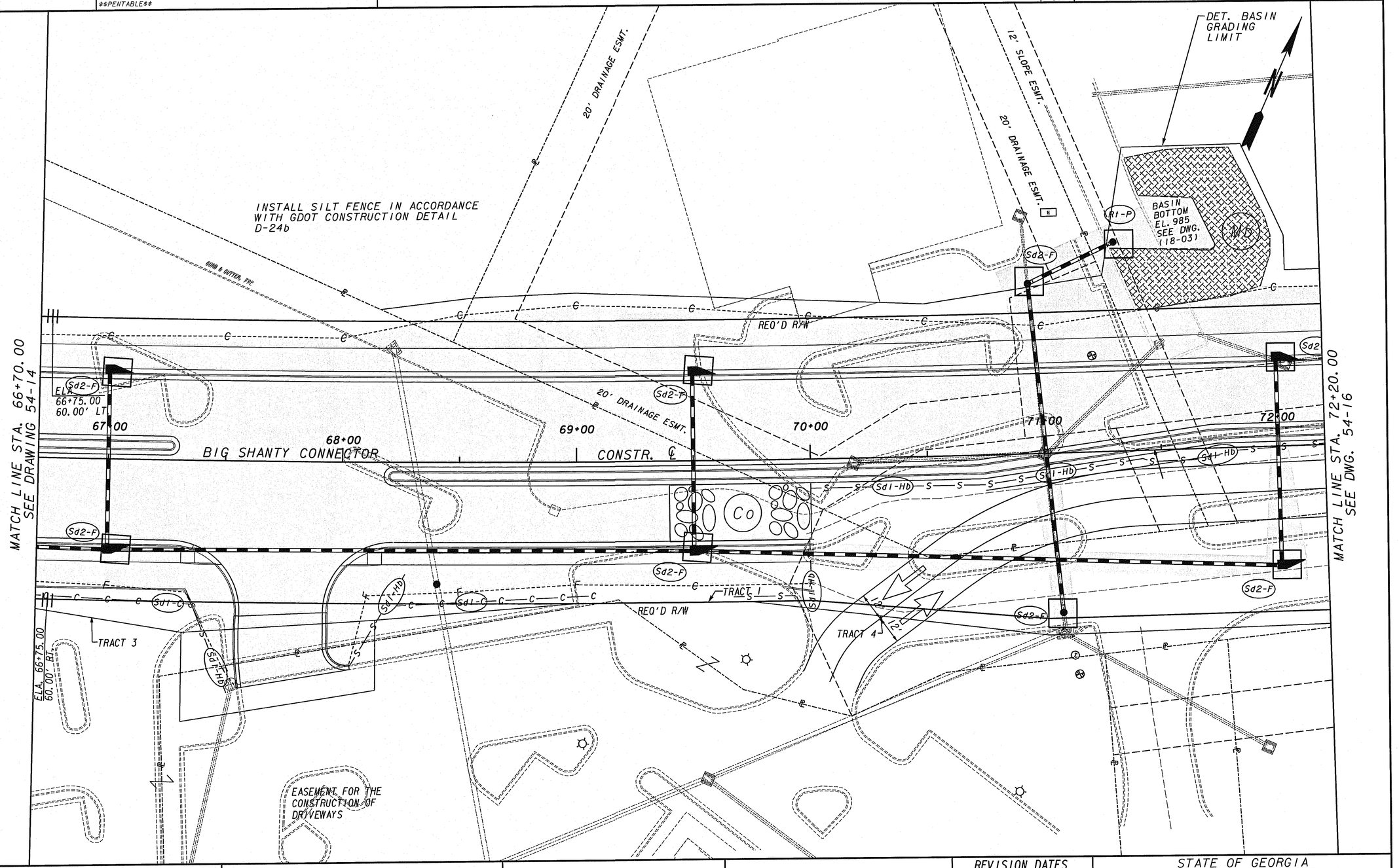

GPLN

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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 2

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-15

9/16/2009 5:20:12 PM	PRF	y:\0313 big shanty conn\design\006869 phase 1\dgn\006869er17.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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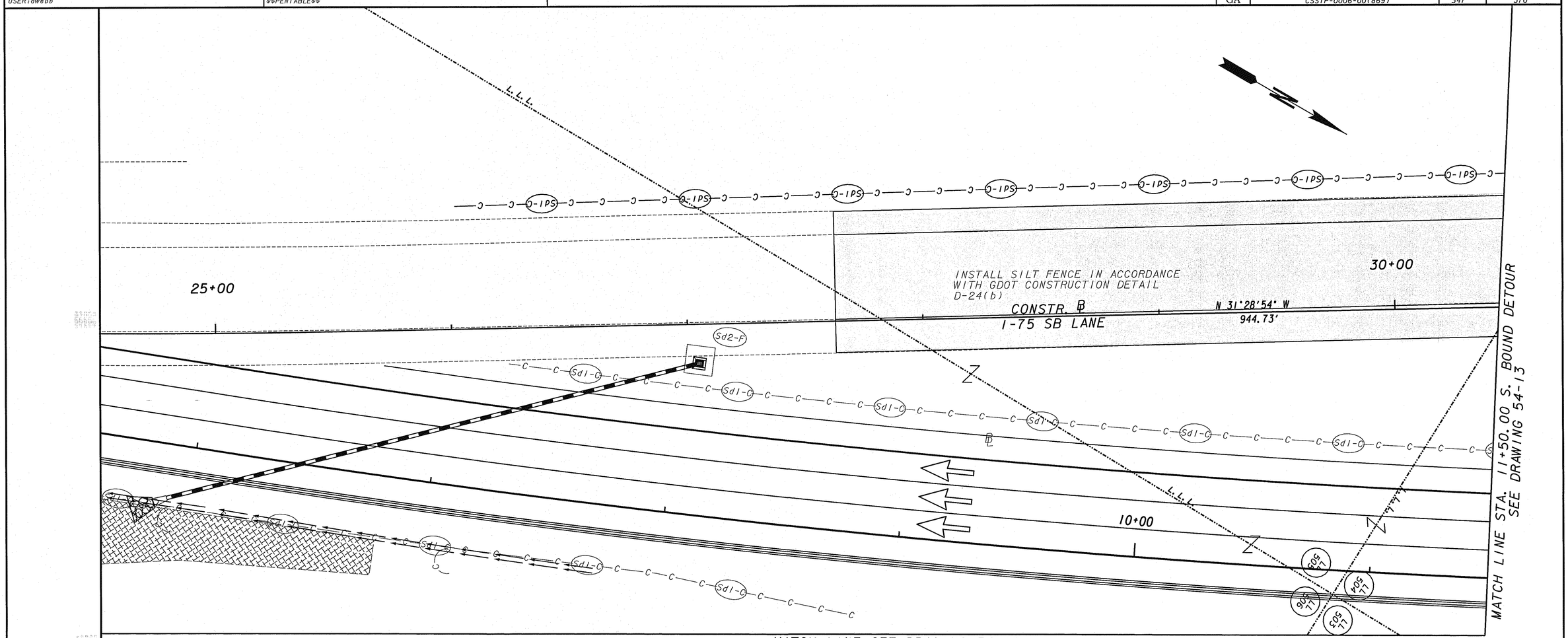

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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 2

BIG SHANTY CONNECTOR
PHASE I

DRAWING No. 54-17

GPLN

9/16/2009 5:20:21 PM
USER:dwebb

PRF
$$PENTABLE$$

y:\0313 big shanty conn\design\006869 phase 1\dgn\006869er18.dgn

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CSSTP-0006-00(869)	348	370

LENGTH: 14'
W1 = 6'
W2 = 16
D50 = 6"
DMAX = 9"
51 SY TYPE 3

St-Rp

Sd1-C

Mb

Sd3

MATCH LINE
SEE DRAWING 54-12

SEDIMENT BASIN 3
BOTTOM EL. 970
784 SF

SEDIMENT BASIN 3
GRADING LIMITS
SEE SHT 18-04 FOR
DETAILS

CURVE # 11

PI STA. = 2+52.61
N = 1464823.8250
E = 2173160.5370
DELTA = 2°07'50.3"CCW
R = 5000.00'
e = 2.6%
T = 92.98'
L = 185.93'
E = 0.86'

INSTALL SILT FENCE IN ACCORDANCE
WITH GDOT CONSTRUCTION DETAIL
D-24(b)

35+00

CONSTR. ℄
I-75 SB LANE

MATCH LINE STA. 14+70.00 S. BOUND DETOUR
SEE DRAWING 54-13

5+00

20+00

15+00

Be

GPLN

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0 20 40 80

REVISION DATES		

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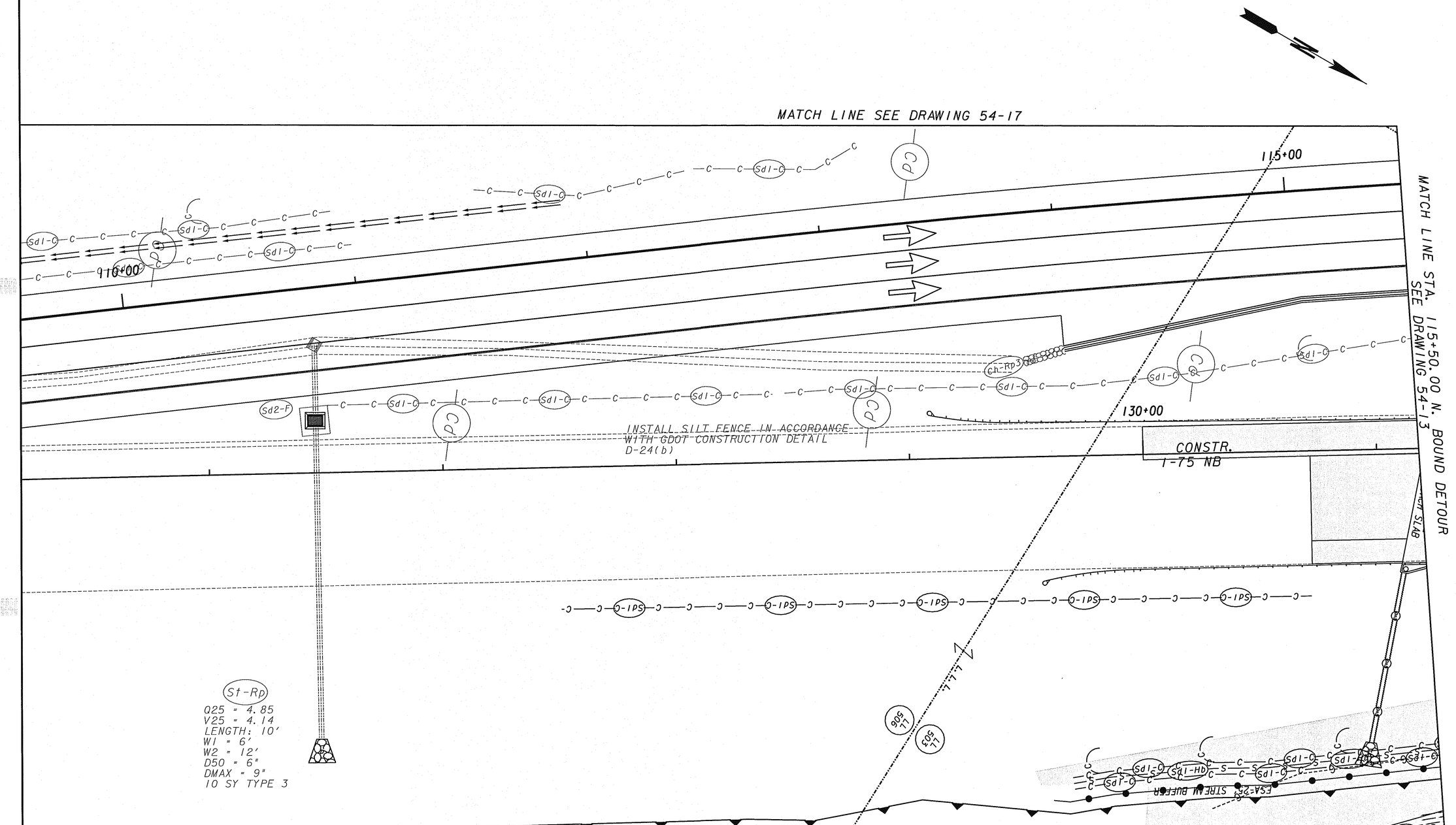
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 2

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-18



CROY ENGINEERING Engineers Planners Surveyors

200 NORTH COBB PARKWAY, BLDG. 400, SUITE 413
MARIETTA, GA 30062
PHONE: (770) 971-5407 FAX: (770) 971-0620

SCALE IN FEET
0 20 40 80

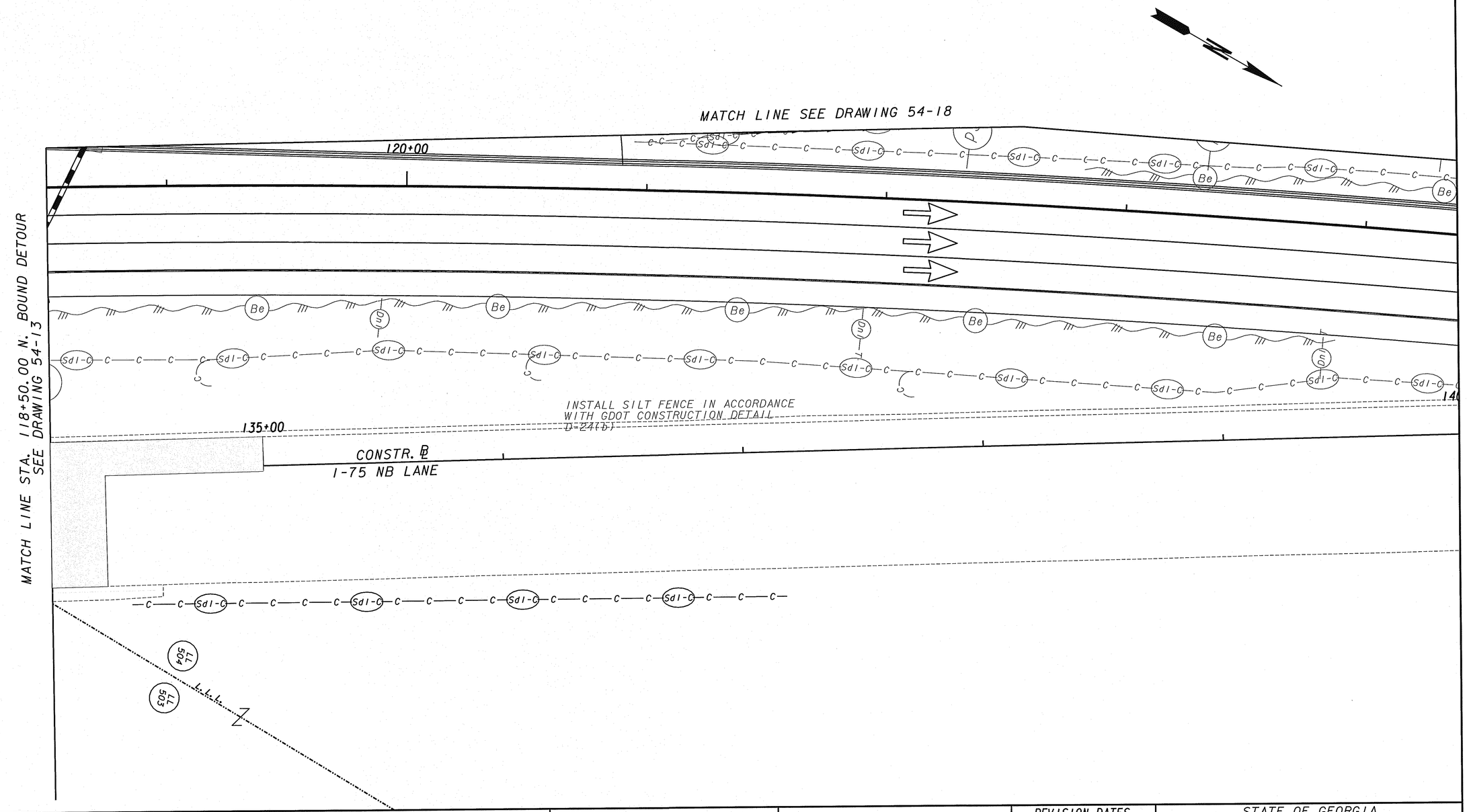
REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS
STAGE 2

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-19



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0 20 40 80

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 2

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-20

GPLN

9/16/2009 5:20:44 PM	PRF	y:\0313 big shanty conn\design\006869 phase 1\dgn\006869er21.dgn	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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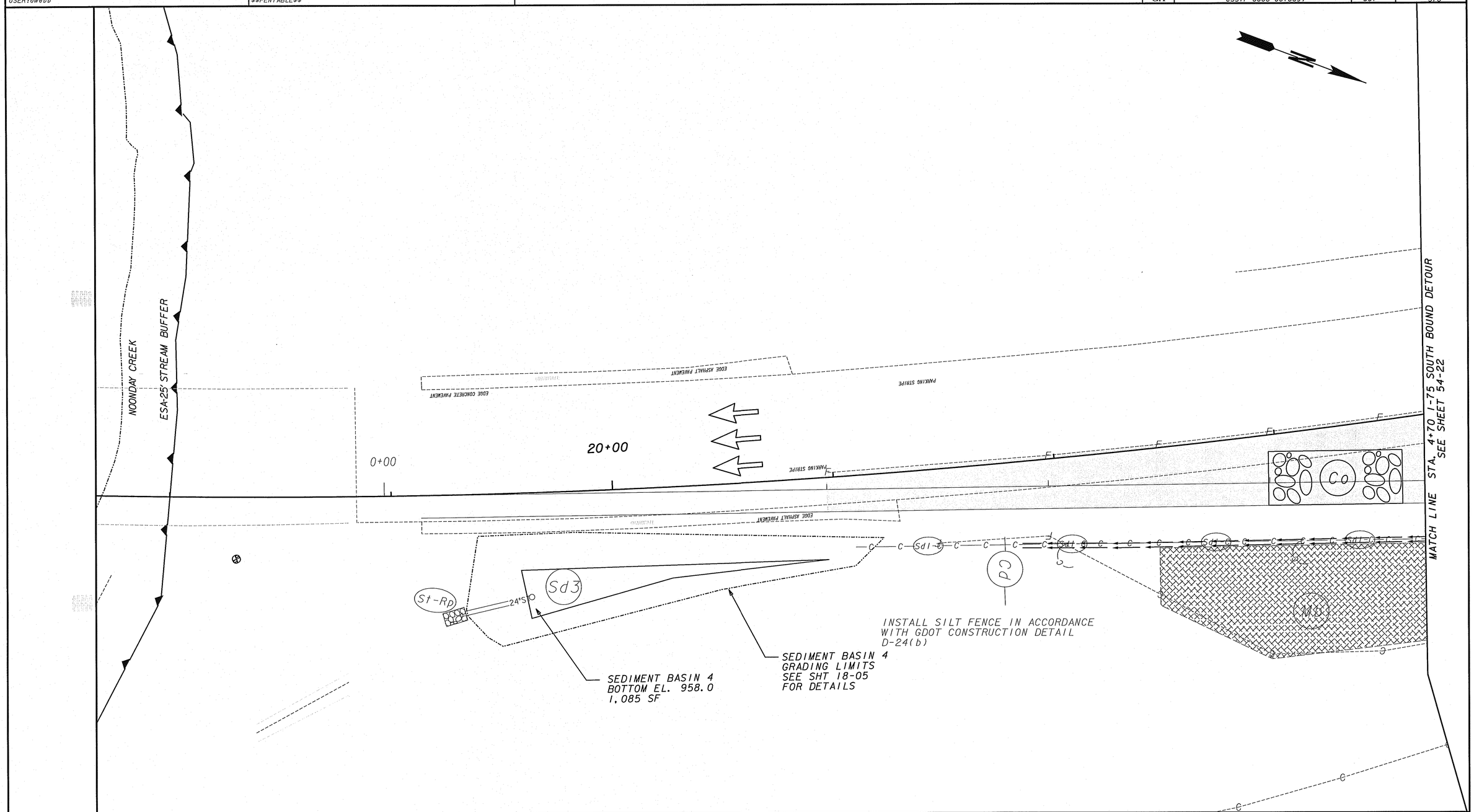

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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 3

BIG SHANTY CONNNECTOR
PHASE 1

DRAWING No. 54-21

GPLN

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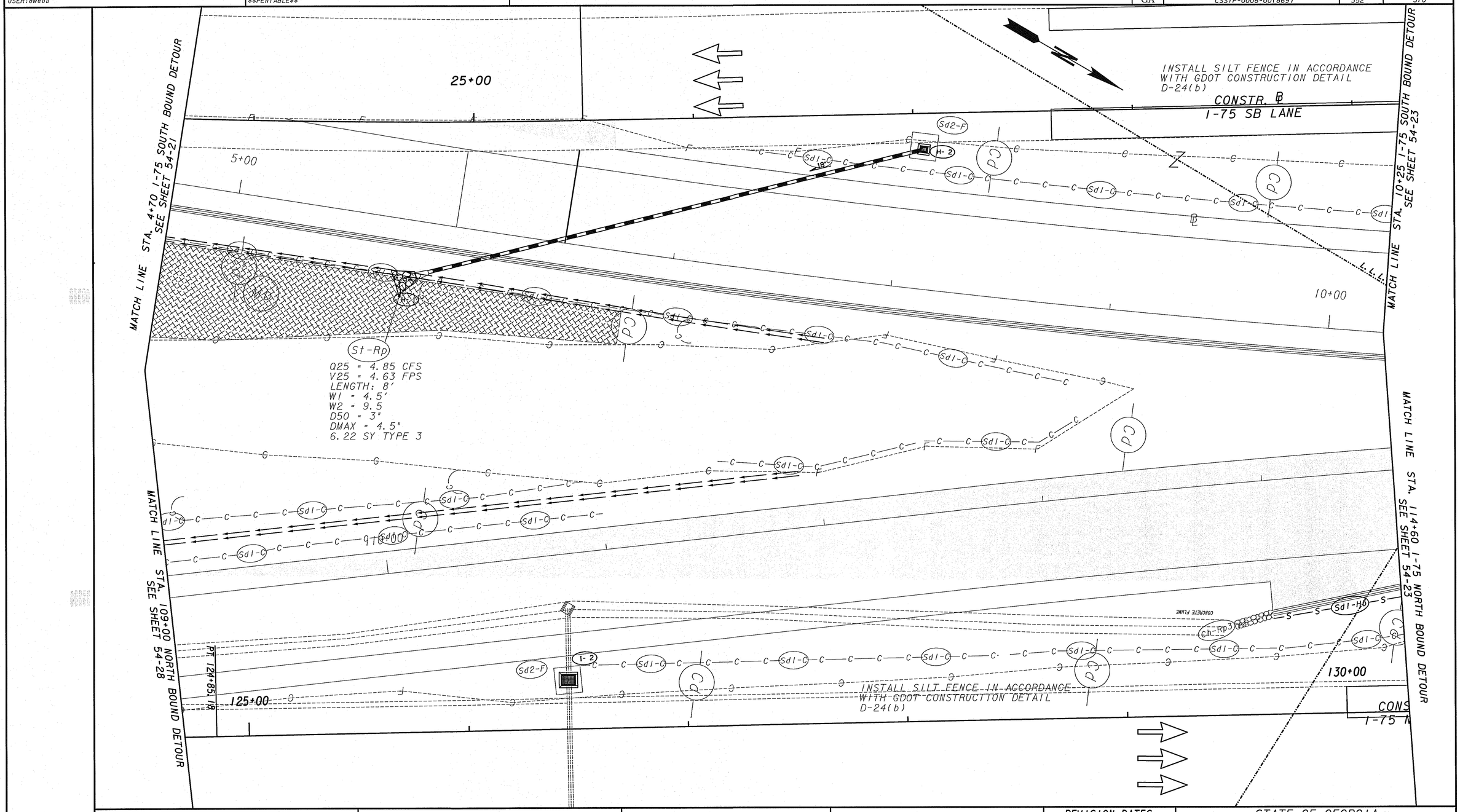

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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 3

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-22

GPLN

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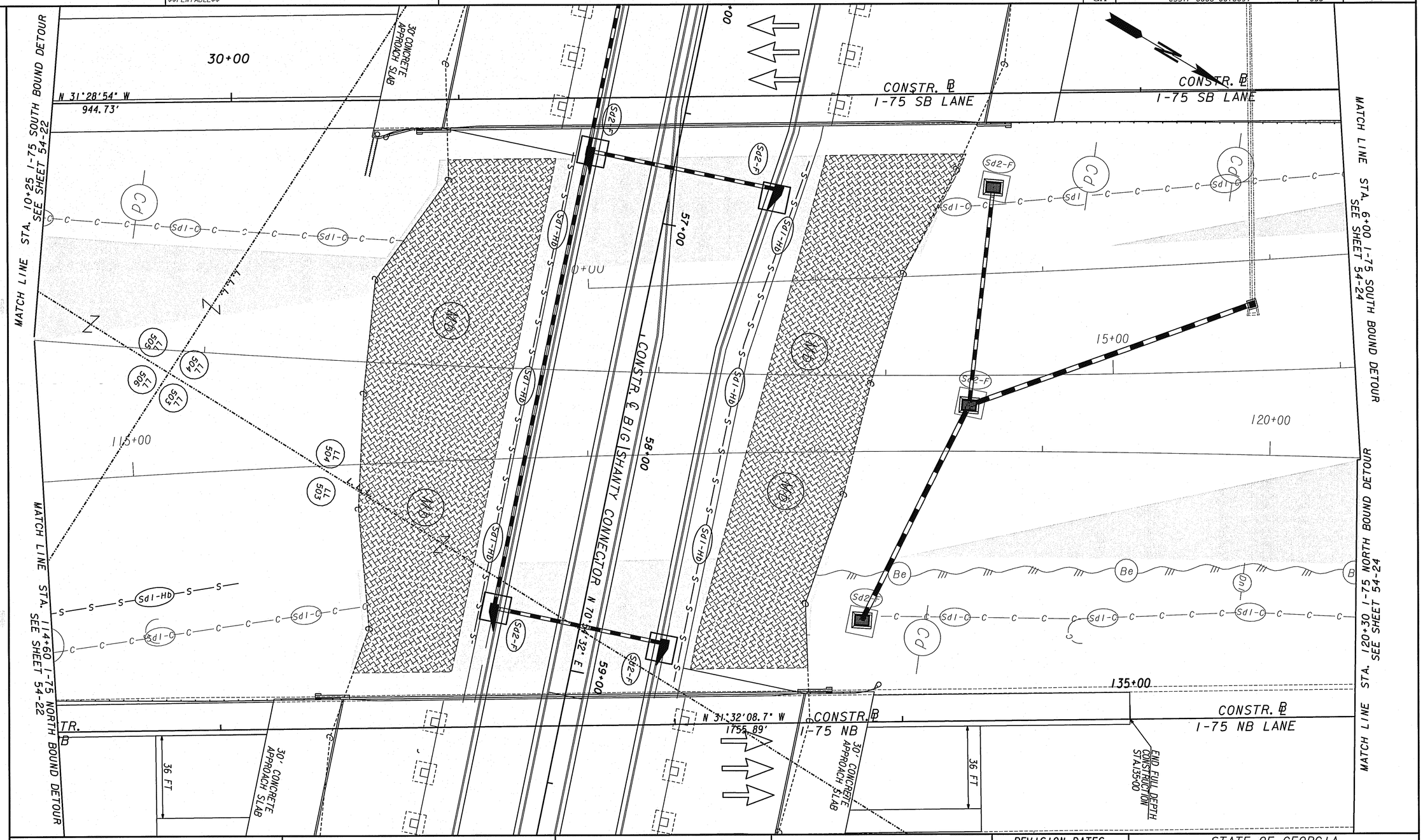

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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 3

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-23

GPLN

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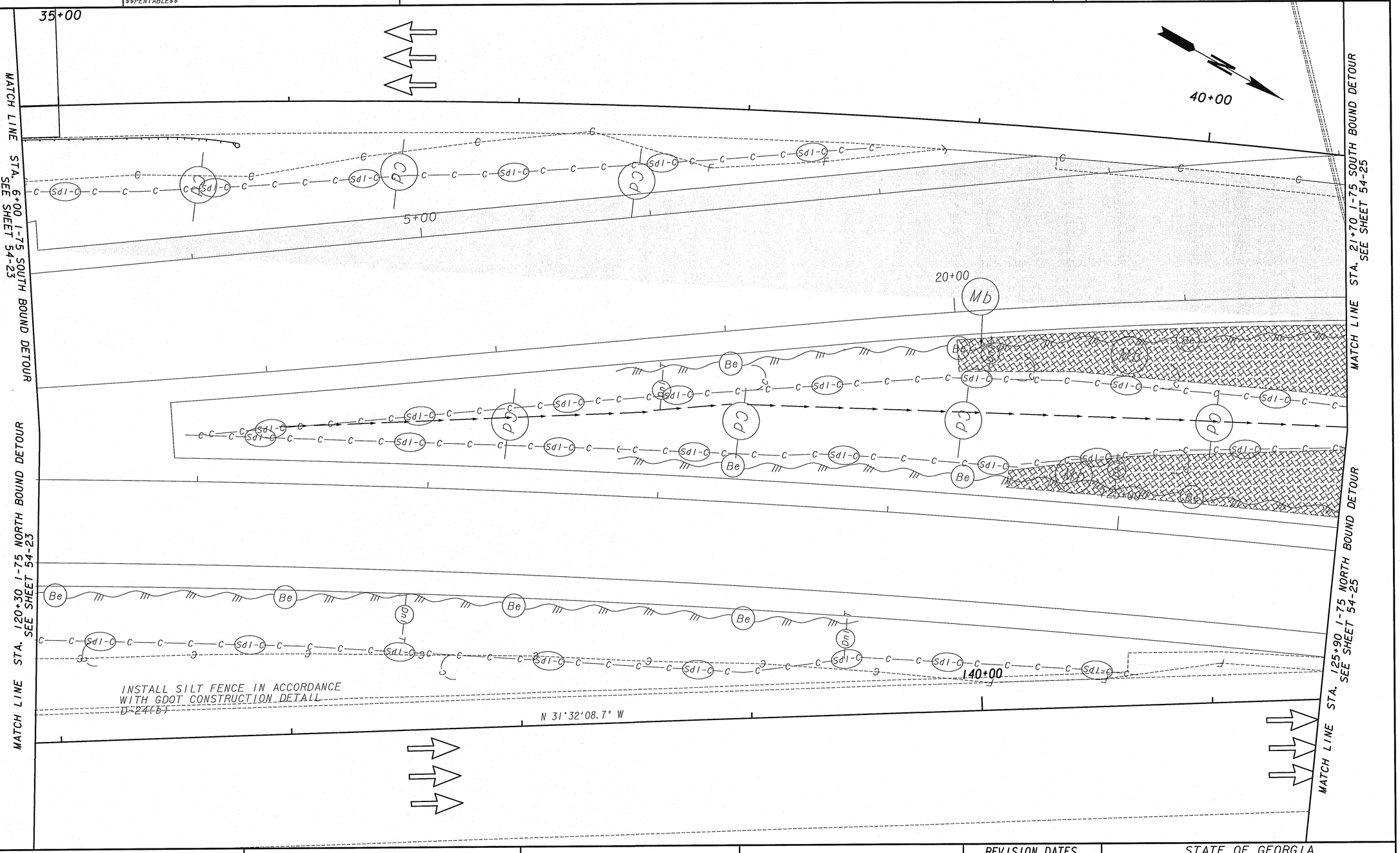

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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 3

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-24

GPLN

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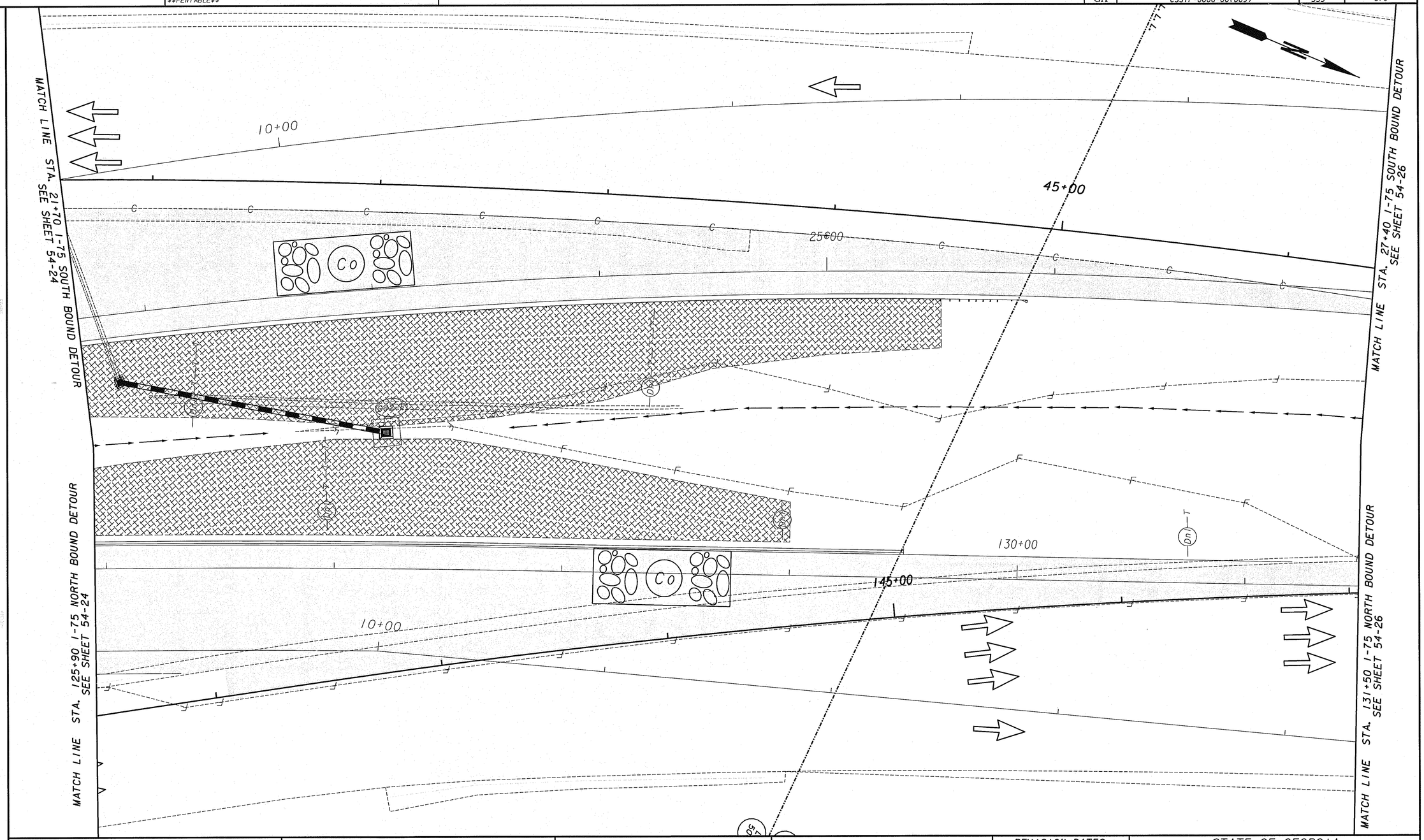

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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 3

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-25

GPLN

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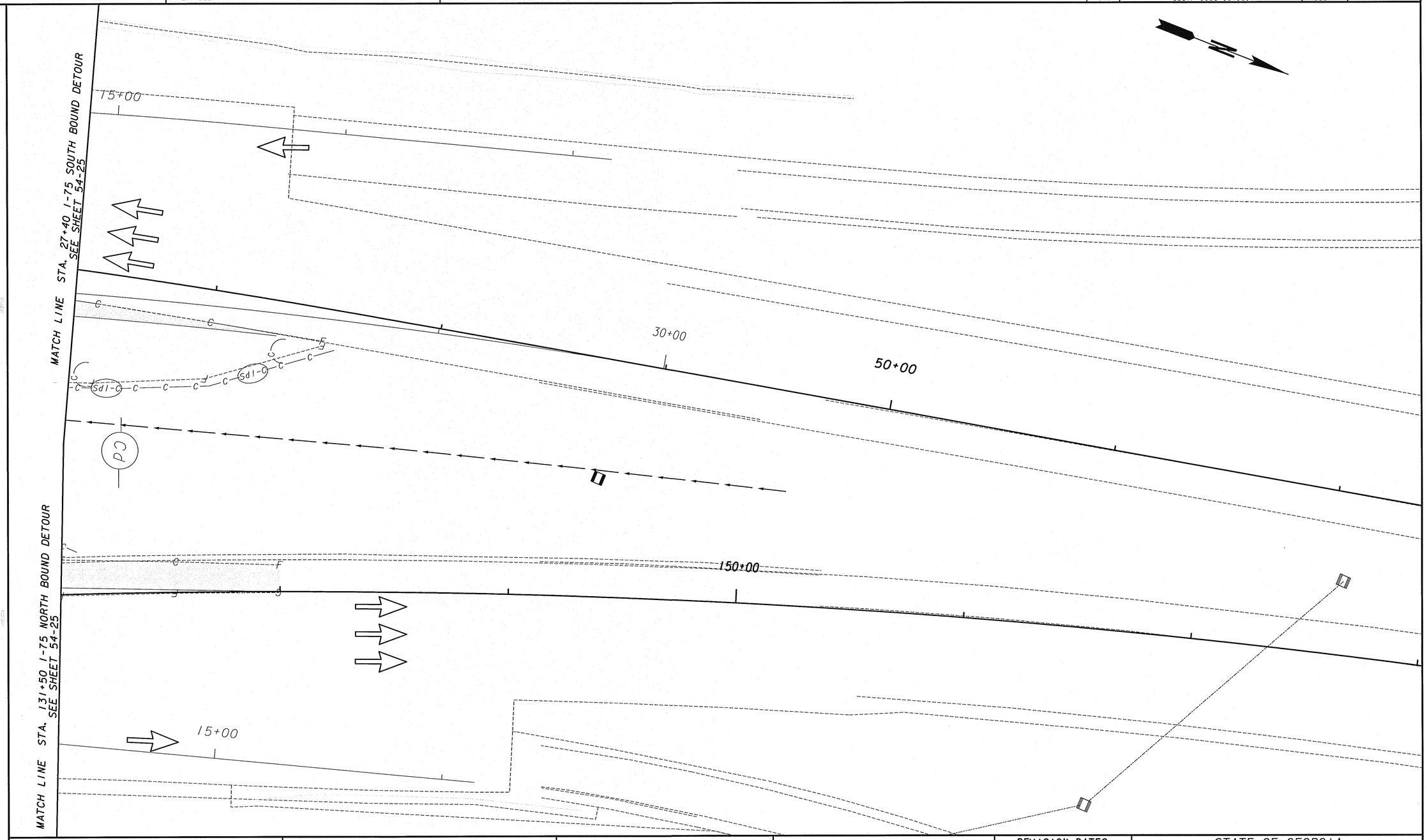

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SCALE IN FEET
0 20 40 80

REVISION DATES		

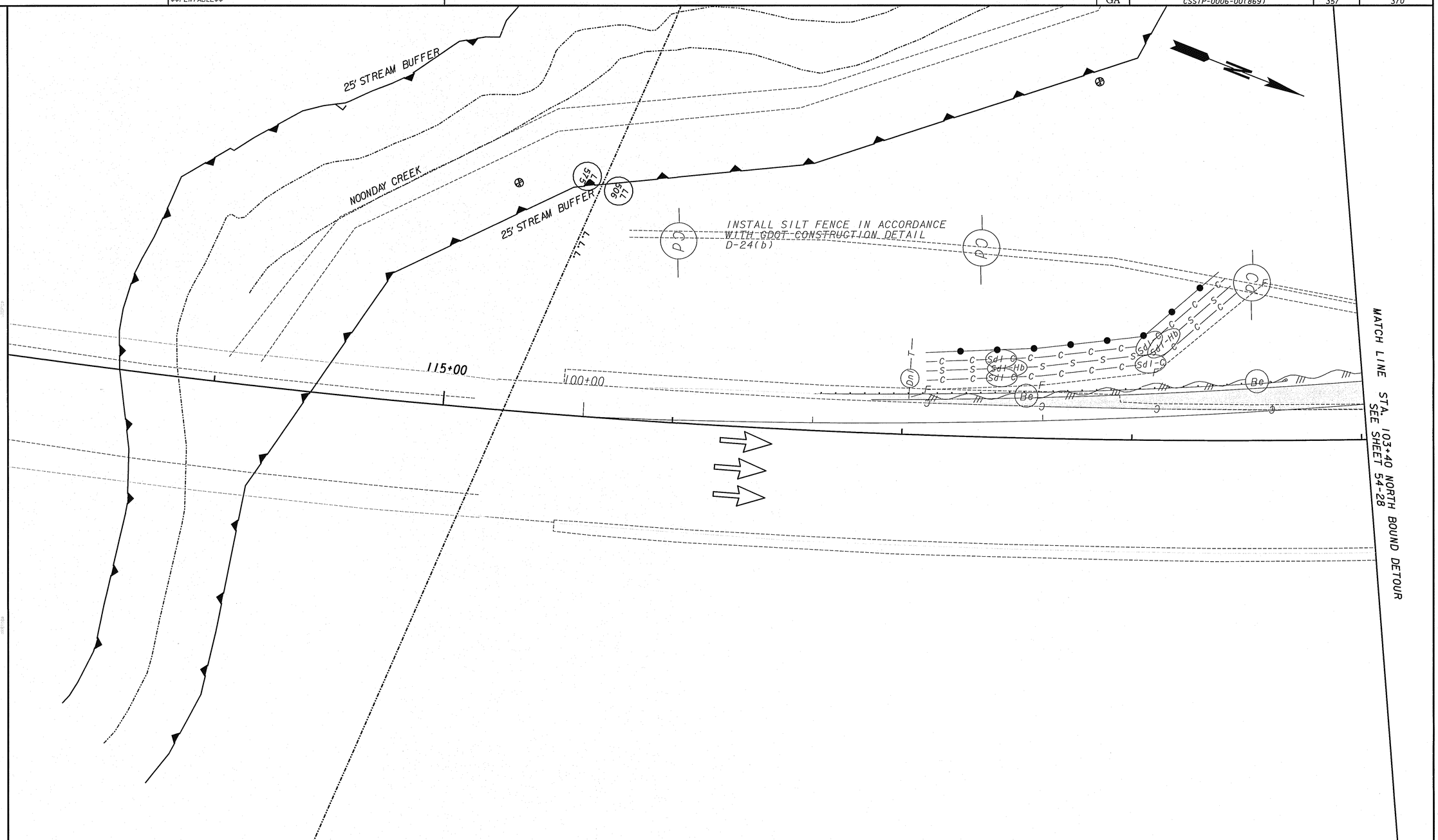
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 3

BIG SHANTY CONNECTOR
PHASE I

DRAWING No. 54-26

GPLN



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SCALE IN FEET
0 20 40 80

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS
STAGE 3

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No.
54-27

GPLN

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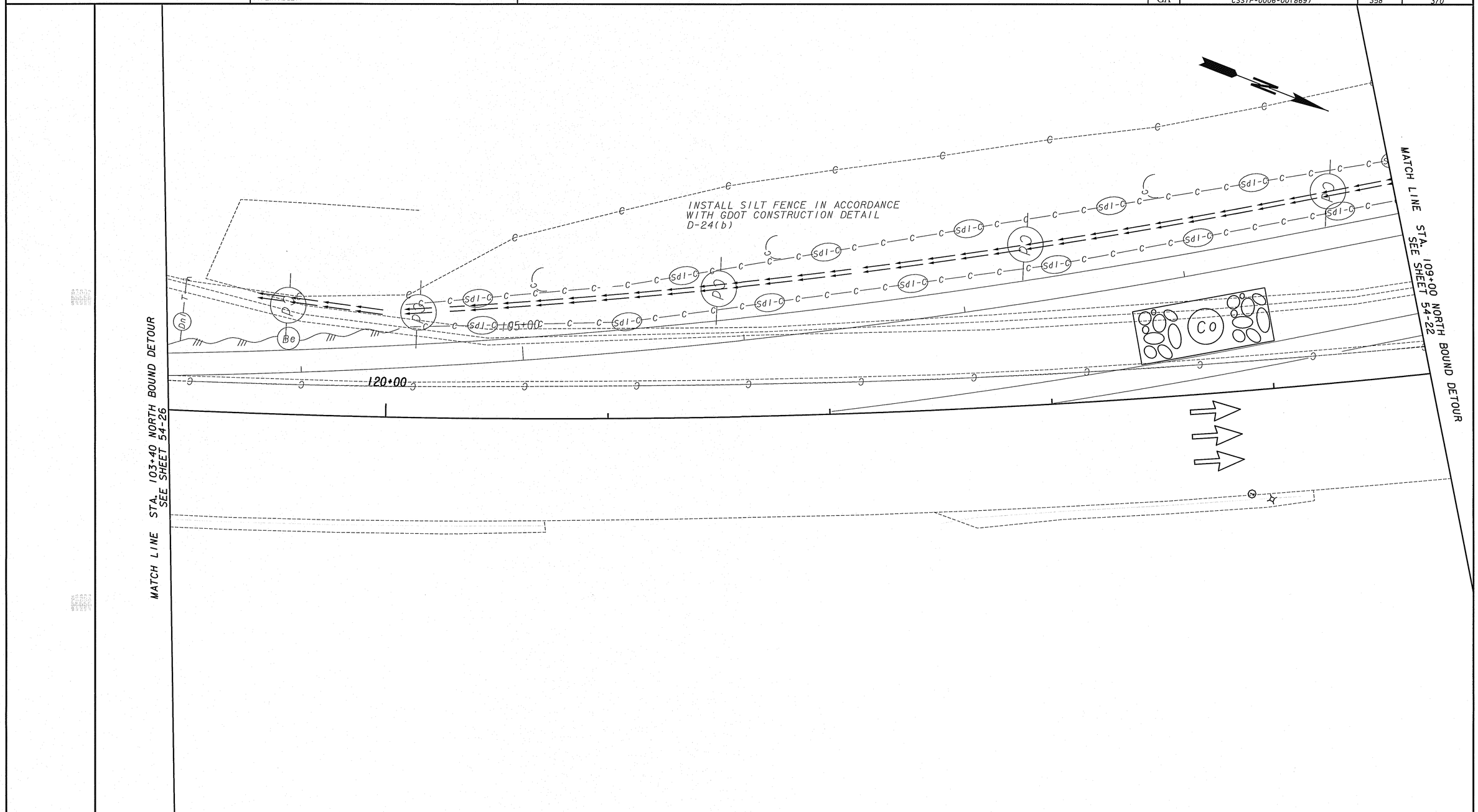

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SCALE IN FEET
0 20 40 80

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 3

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-28

GPLN

9/16/2009 5:21:17 PM PRF
USER:dwebb $$PENTABLE$$

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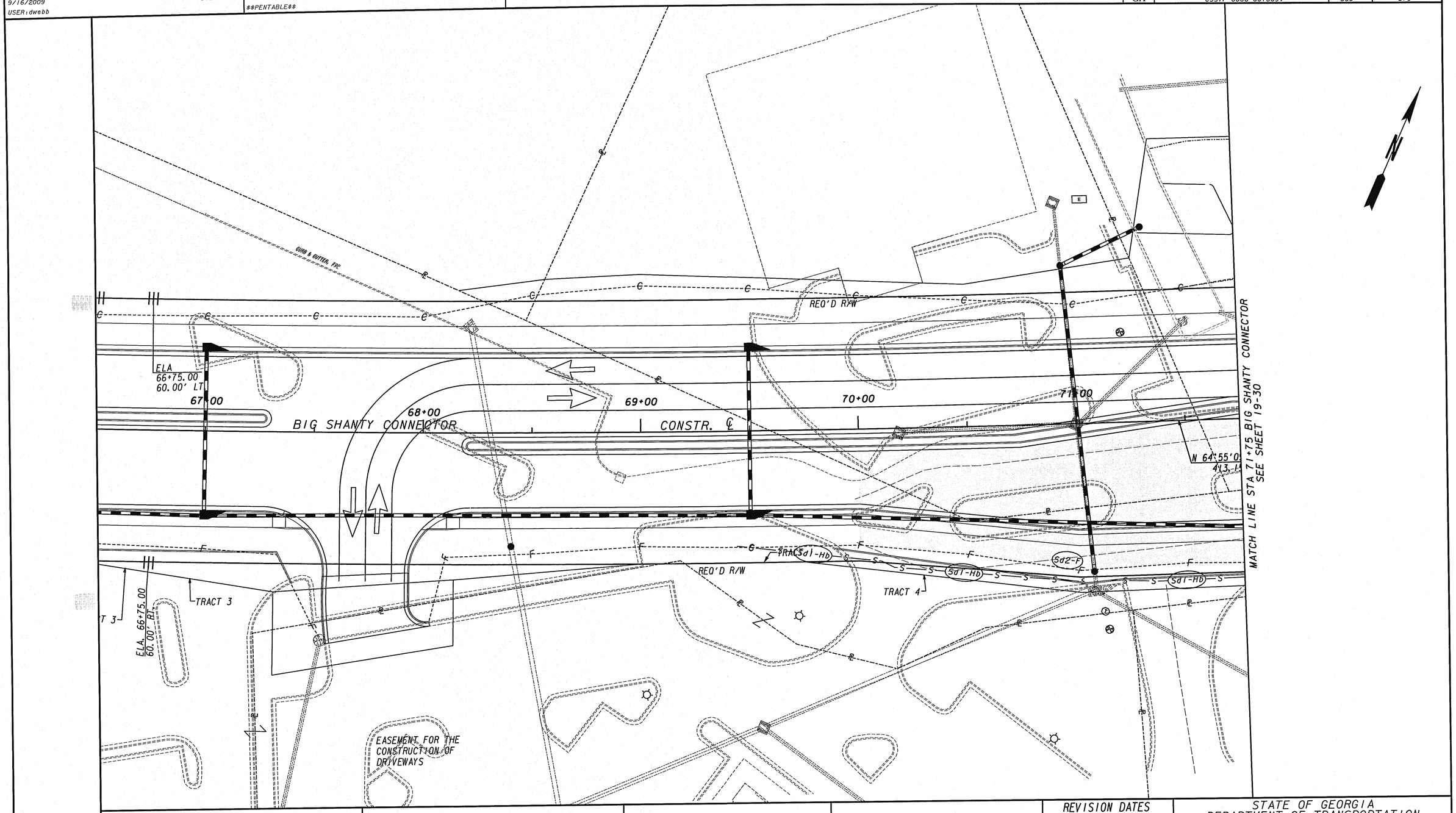
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CSSTP-0006-00(869)	359	370



GPLN

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SCALE IN FEET
0 20 40 80

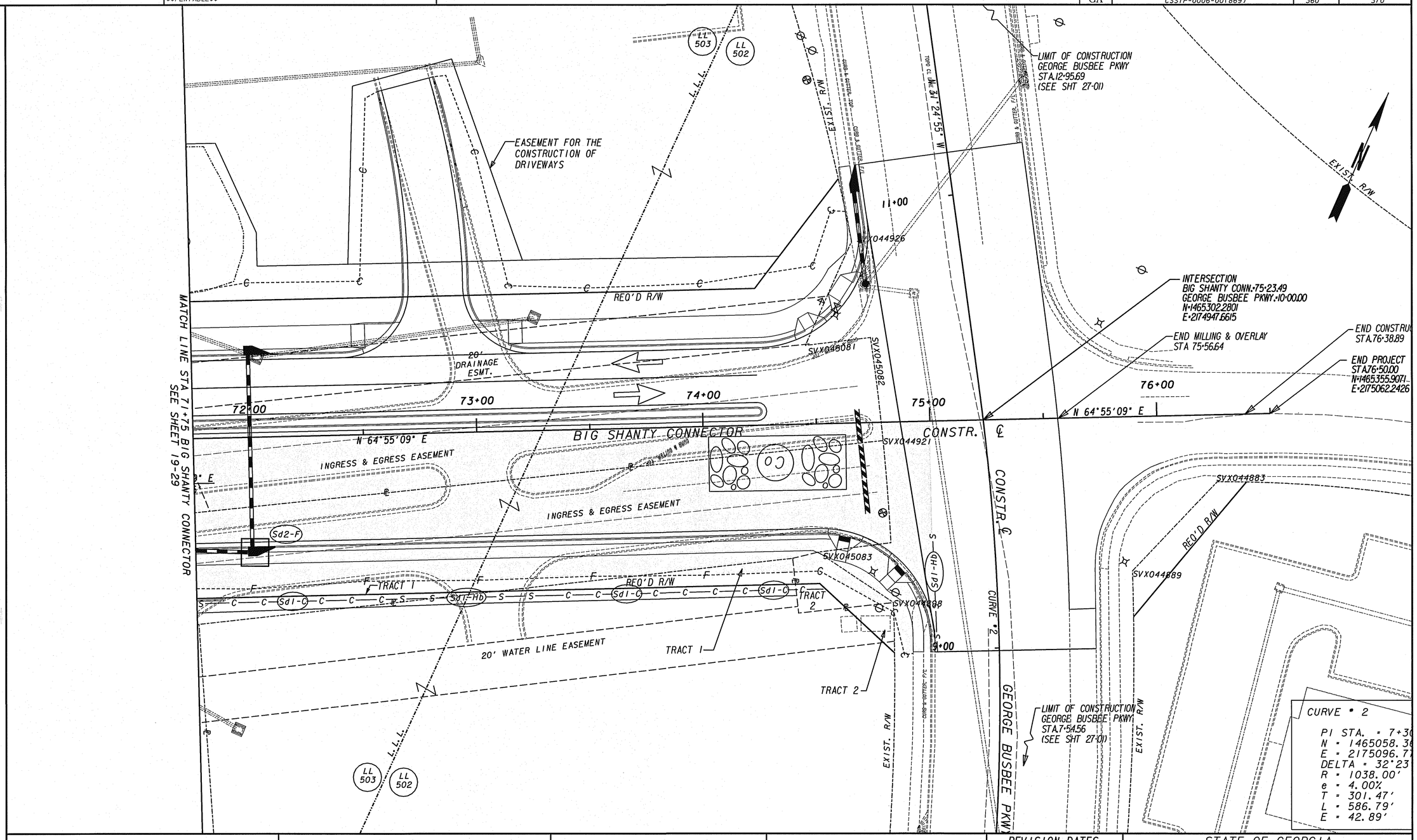
REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 3

BIG SHANTY CONNECTOR
PHASE 1

DRAWING No. 54-29



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SCALE IN FEET
0 20 40 80

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

BMP LOCATION DETAILS STAGE 3

BIG SHANTY CONNECTOR
PHASE 1

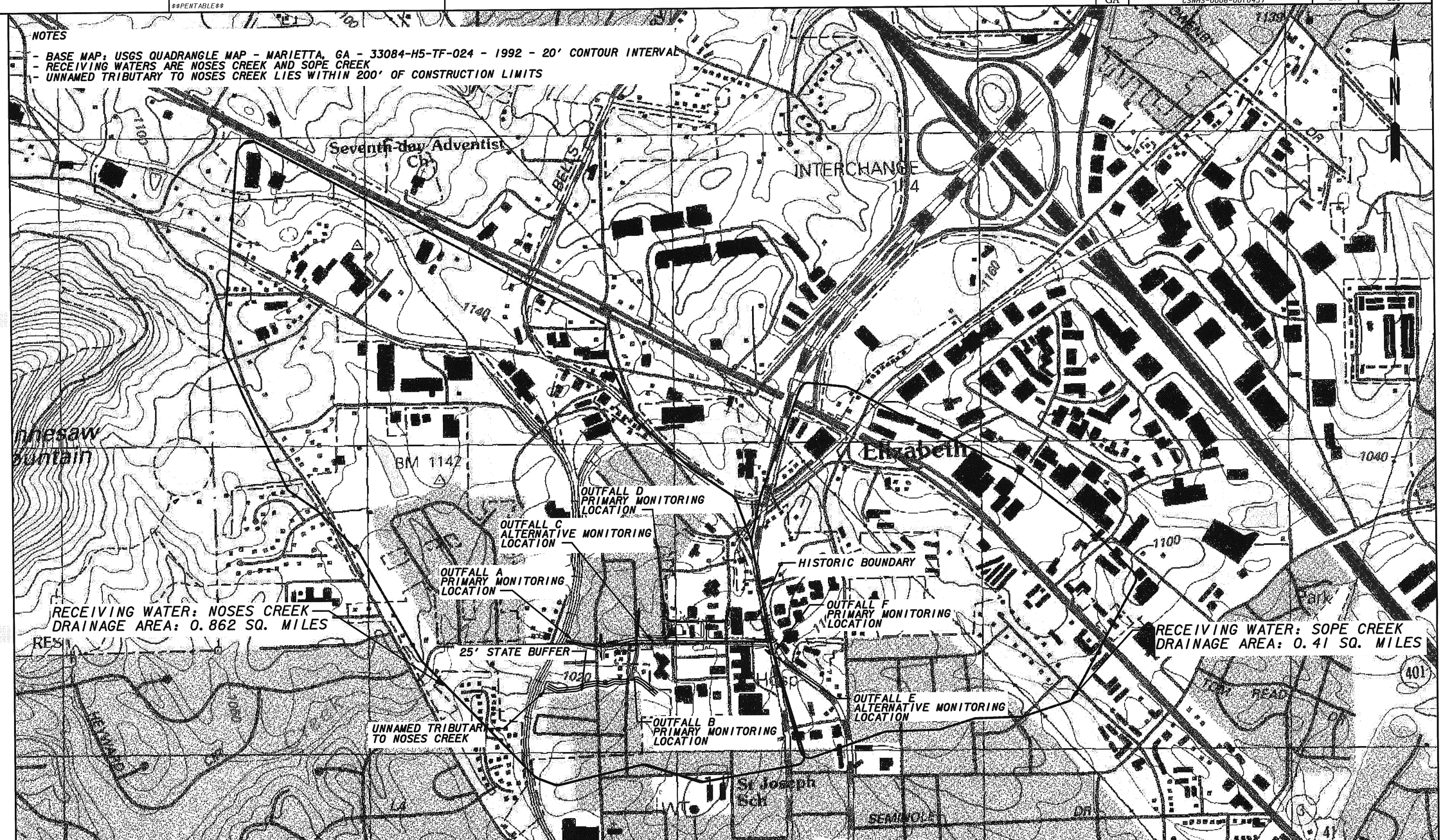
DRAWING No. 54-30

GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CSNHS-0006-00(043)	232	236

NOTES

- BASE MAP: USGS QUADRANGLE MAP - MARIETTA, GA - 33084-H5-TF-024 - 1992 - 20' CONTOUR INTERVAL
- RECEIVING WATERS ARE NOSES CREEK AND SOPE CREEK
- UNNAMED TRIBUTARY TO NOSES CREEK LIES WITHIN 200' OF CONSTRUCTION LIMITS



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SCALE IN FEET
0 500 1000 2000

REVISION DATES		
09-04-09		

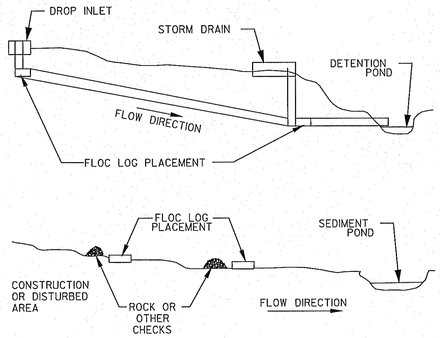
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: DISTRICT 7

WATERSHED MAP
SITE MONITORING PLAN

S.R. 5 AT TOWER ROAD
ESPCP

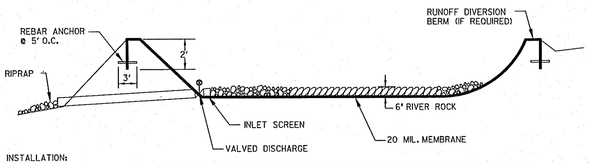
DRAWING No. 55-01

GPLN



1. ONLY THE ANIONIC FORM OF PAM SHALL BE USED. CATIONIC PAM IS TOXIC AND SHALL NOT BE USED.
2. PAM AND PAM MIXTURES SHALL BE ENVIRONMENTALLY BENIGN, HARMLESS TO FISH, WILDLIFE AND PLANTS. PAM AND PAM MIXTURES SHALL BE NON-COMBUSTIBLE.
3. ANIONIC PAM, IN PURE FORM, SHALL HAVE LESS THAN OR EQUAL TO 0.05 % ACRYLAMIDE MONOMER BY WEIGHT, AS ESTABLISHED BY THE FOOD AND DRUG ADMINISTRATION AND THE ENVIRONMENTAL PROTECTION AGENCY.
4. TO MAINTAIN LESS THAN OR EQUAL TO 0.05 % OF ACRYLAMIDE MONOMER, THE MAXIMUM APPLICATION RATE OF PAM, IN THE PURE FORM, SHALL NOT EXCEED 200 POUNDS/ACRE/YEAR. DO NOT OVER APPLY PAM. EXCESSIVE APPLICATION OF PAM CAN LOWER INFILTRATION RATES OR SUSPEND SOLIDS IN WATER, RATHER THAN PROMOTING SETTLING.
5. USERS OF ANIONIC PAM SHALL OBTAIN AND FOLLOW ALL MATERIAL SAFETY DATA SHEET REQUIREMENTS AND MANUFACTURERS RECOMMENDATIONS.
6. ADDITIVES SUCH AS FERTILIZERS, SOLUBILITY PROMOTERS OR INHIBITORS, TO PAM SHALL BE TOXIC.
7. THE MANUFACTURERS OR SUPPLIERS SHALL PROVIDE WRITTEN INSTRUCTIONS TO INSURE PROPER SAFETY, STORAGE, AND MIX OF THE PRODUCT.
8. GELBARS OR LOGS OF ANIONIC PAM MIXTURES MAY BE USED IN DITCH SYSTEMS. THIS APPLICATION SHALL MEET THE SAME TESTING REQUIREMENTS AS ANIONIC PAM EMULSIONS AND POWDERS.
9. TO PREVENT EXCEEDING THE ACRYLAMIDE MONOMER LIMIT IN THE EVENT OF A SPILL, THE ANIONIC PAM IN PURE FORM SHALL NOT EXCEED 200 POUNDS/BATCH AT 0.05% ACRYLAMIDE MONOMER (AMD) OR 400 POUNDS/BATCH AT 0.025 % AMD.

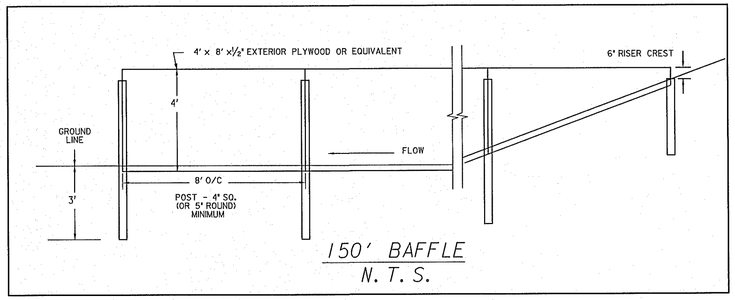
Pm POLYACRYLAMIDE (PAM)
N.T.S.



INSTALLATION:
CONTRACTOR SHALL ESTABLISH A TEMPORARY PETROLEUM HANDLING AREA (PHA) IF VEHICLES ARE TO BE REFUELED OR MAINTAINED ONSITE. THE PHA IS A LINED GRAVEL PAD INSIDE A BERM SIZED TO CONTAIN THE MAXIMUM QUANTITY OF FUEL OR OTHER PETROLEUM STORED ONSITE WITH 1 FOOT OF FREEBOARD. THE FOLLOWING GENERALLY DESCRIBES THE REQUIREMENTS OF PHA:
1. SELECT A LOCATION CONVENIENT TO NORMAL TRAFFIC ROUTES WHERE THE PHA WILL NOT INTERFERE WITH ROUTINE ACTIVITIES. THE LOCATION SHOULD BE WHERE RUNOFF FROM ADJACENT LAND DOES NOT CROSS THE PHA. IF NECESSARY, CREATE DIVERSION CHANNELS TO ROUTE STORMWATER RUNOFF AROUND THE PHA.
2. CREATE A SHALLOW PARKING PAD SLOPING TO ONE CORNER ALIGNED WITH THE GENERAL GRADE OF THE AREA.
3. FORM A BERM AROUND THE PAD. CREATE A SMOOTH TRANSITION (APPROX. 12-INCH RADIUS) FROM THE PAD FLAT BOTTOM TO THE BERM.
4. LINE THE PAD AND BERM WITH A 20 MIL PETROLEUM-RESISTANT LINER, EXTENDING PAST THE CREST OF THE BERM ON ALL SIDES.
5. AT THE LOW CORNER OF THE PAD, CREATE AN OUTLET DRAIN WITH AN ISOLATION VALVE. THE VALVE SHALL BE CLOSED DURING NORMAL OPERATION.
6. COVER THE LINER WITH 6-INCHES OF RIVER ROCK (NO SHARP EDGES) TO PROVIDE A WORKING SURFACE FOR VEHICLE MOVEMENT AND PARKING. INCLUDE A SCREEN TO KEEP THE PIPE INLET FREE OF STONE.

MAINTENANCE:
1. FOLLOWING EACH RAINFALL EVENT, INSPECT WATER IN BERM. OPEN VALVE TO DISCHARGE CLEAR WATER.
2. FOLLOWING INSTRUCTIONS IN THE ES & PCP GENERAL NOTES 4.2.C(4) TO DETECT AND RESPOND TO THE PRESENCE OF PETROLEUM PRODUCTS.

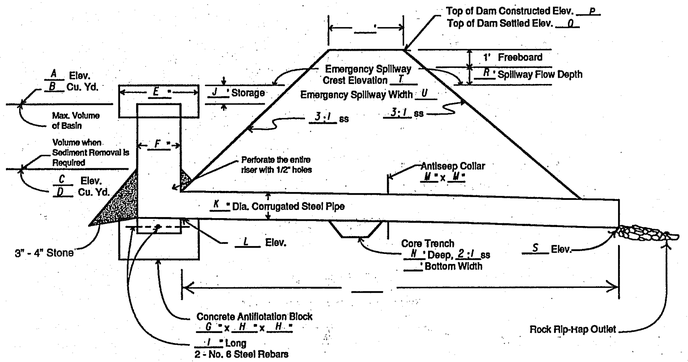
PHA PETROLEUM HANDLING AREA
N.T.S.



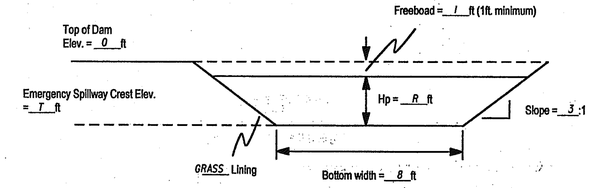
150' BAFFLE
N. T. S.

SEDIMENT POND DATA	BASIN 1	BASIN 2	BASIN 3	BASIN 4
A Sediment Storage Elevation (ft)	954.00	967.50	974.84	960.66
B Sediment Storage Volume (CF)	9042	16479	7992	5238
C Cleanout Elevation (ft)	951.50	961.00	972.25	958.98
D Clean out Volume (CF)	3123	2520	2625	1701
E Trash Rack Diameter (In)	48	36	42	24
F Riser Diameter (In)	36	24	30	18
G Antiflotation Block Depth (In)	18	18	18	18
H Antiflotation Block Width (In)	26	26	48	24
I Rebar Length (In)	26	26	48	24
J Principal Spillway Head (ft)	1.00	1.00	0.8	0.4
K Principal Spillway Diameter (In)	24	24	18	12
L Principal Spillway Inlet Elevation (ft)	948.50	966.00	970.0	958.00
M Antiseep Collar Width (In)	60x60	60+60	60x60	n/a
N Core Trench Depth (ft)	2	2	2	2
O Core Trench Bottom Width (ft)	4	4	4	4
P Constructed Top of Dam Elevation (ft)	966.00	972.00	976.14	962.56
Q Settled Top of Dam Elevation (ft)	955.50	971.00	976.00	962.00
R Emergency Spillway Flow Depth (ft)	0.50	0.50	0.50	0.50
S Outfall Elevation	948.00	955.50	969.67	960.26
T Emergency Spillway Crest Elevation (ft)	952.50	969.00	975.64	961.06
U Emergency Spill Width (ft)	8	5	8	8

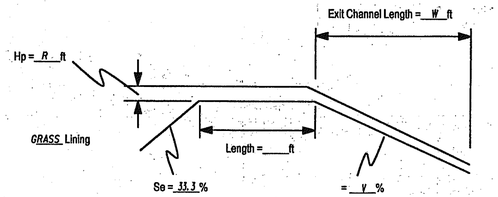
OUTLET PROTECTION DATA	BASIN 1 (In & out)	BASIN 2 (In & out)	A-1	DT-A1	DT-B1	DT-D1
Pipe Diameter, Do (In)	24	24	30	24	18	24
Pipe Capacity (cfs)	9.04	10.15	44.43	16.31	7.05	49.72
Flow Velocity at Capacity (fps)	2.88	3.23	9.05	5.19	3.99	15.83
Tailway Condition	>D/2	>D/2	<D/2	<D/2	<D/2	<D/2
Apron Length, La (ft)	10	10	22	12	10	23
Apron Width at Headwall, W1 (ft)	6	6	11.5	14	12	25
Apron Downstream Width, W2 (ft)	6	6	7.5	6	4.5	6
Average Stone Diameter, d50 (ft)	0.40	0.40	0.75	0.40	0.35	1.00
Apron Depth, D (ft)	0.90	0.90	1.7	0.90	0.80	2.30



Sd3 SEDIMENT BASIN DETAIL



CROSS SECTION OF EMERGENCY SPILLWAY



PROFILE ALONG EMERGENCY SPILLWAY CENTERLINE

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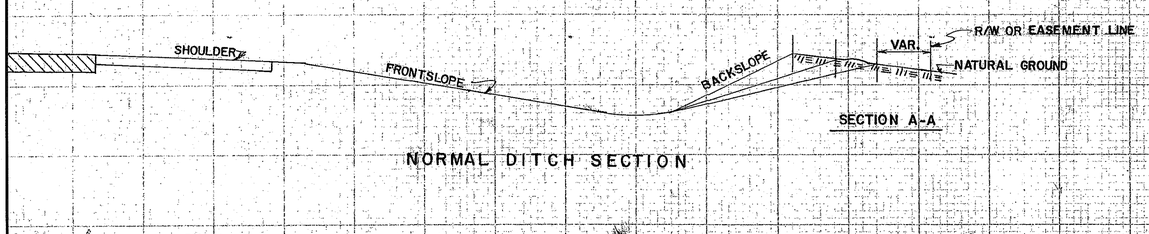
REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE:
EROSION CONSTRUCTION DETAIL
BIG SHANTY CONNECTOR
PPHASE I
DRAWING No. 56-01

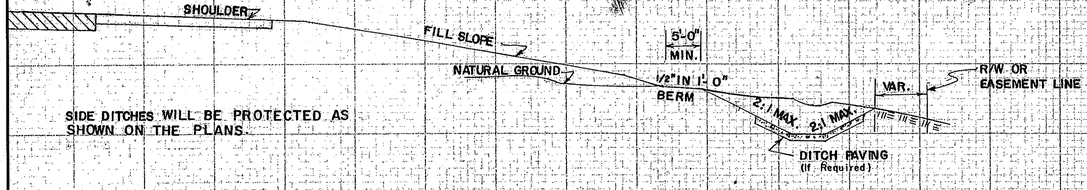
GPLN

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CSSTP-0006-00(869)	363	370



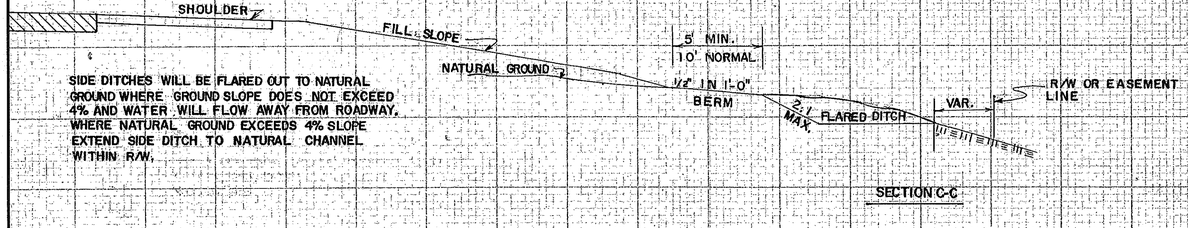
SECTION A-A

NORMAL DITCH SECTION



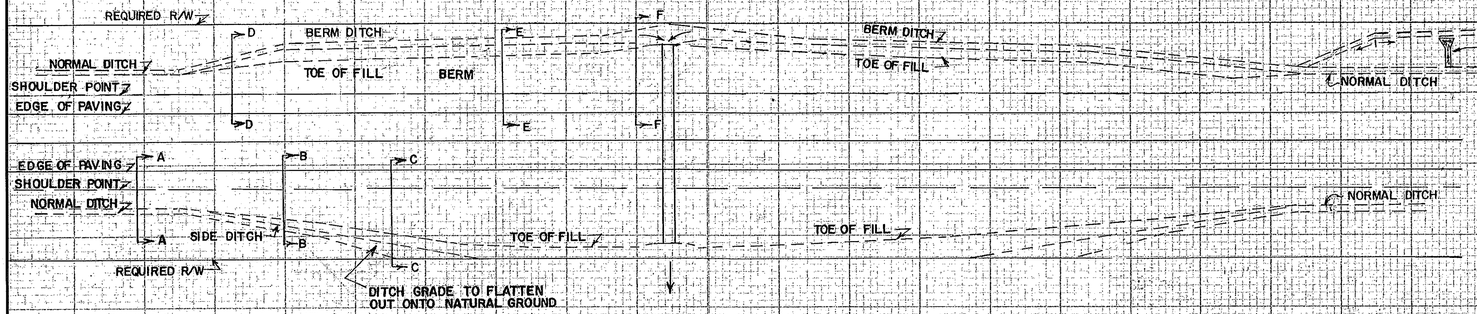
SIDE DITCHES WILL BE PROTECTED AS SHOWN ON THE PLANS.

SECTION B-B

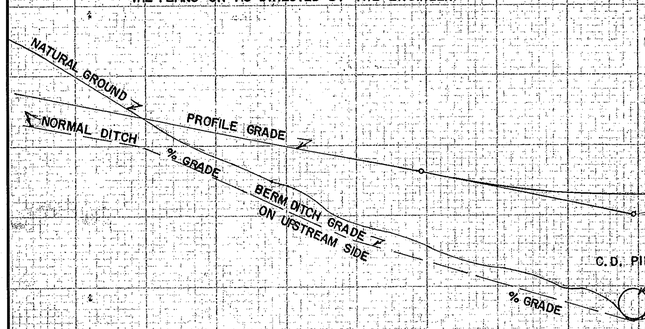


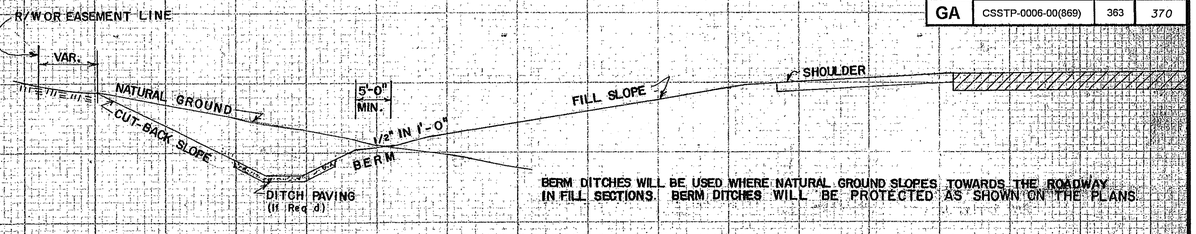
SIDE DITCHES WILL BE FLARED OUT TO NATURAL GROUND WHERE GROUND SLOPE DOES NOT EXCEED 4% AND WATER WILL FLOW AWAY FROM ROADWAY. WHERE NATURAL GROUND EXCEEDS 4% SLOPE EXTEND SIDE DITCH TO NATURAL CHANNEL WITHIN R/W.

SECTION C-C



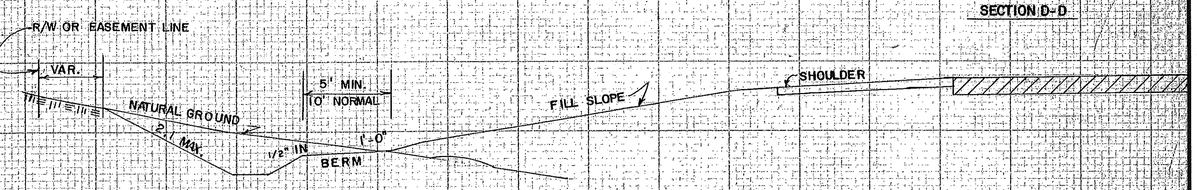
SIDE DITCHES TO TAIL OUT WATER FROM LONG CUT SECTIONS WILL BE PROTECTED AS DESIGNATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.





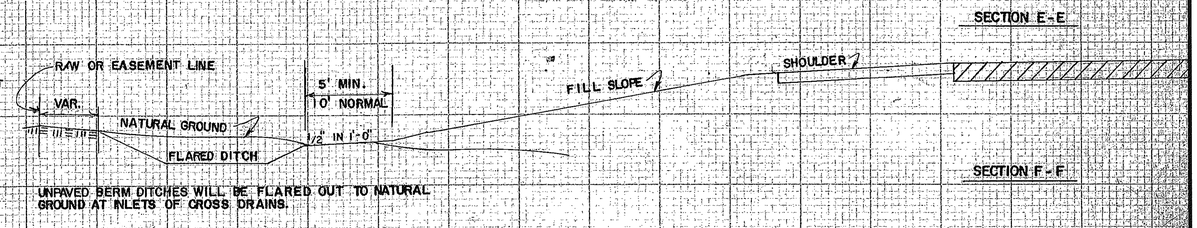
BERM DITCHES WILL BE USED WHERE NATURAL GROUND SLOPES TOWARDS THE ROADWAY IN FILL SECTIONS. BERM DITCHES WILL BE PROTECTED AS SHOWN ON THE PLANS.

SECTION D-D



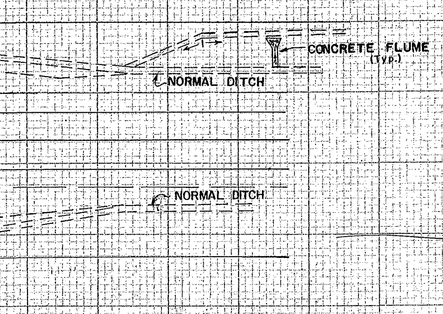
SOD DITCH CHECKS WILL BE USED IN BERM DITCHES ON GRADES OF 2.1% OR OVER AS SHOWN ON THE PLANS

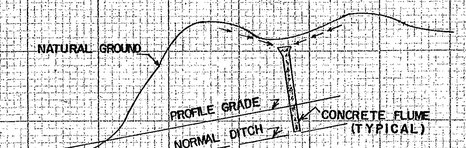
SECTION E-E

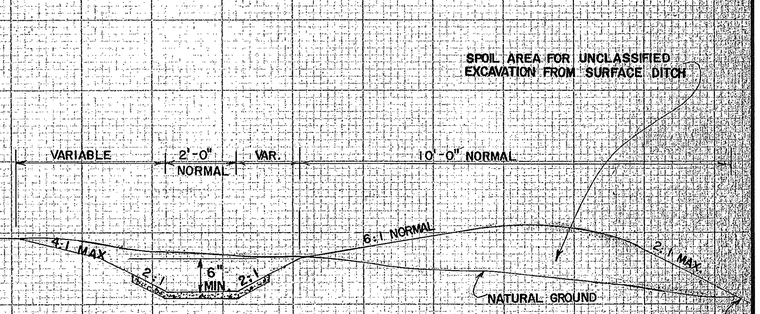


UNPAVED BERM DITCHES WILL BE FLARED OUT TO NATURAL GROUND AT INLETS OF CROSS DRAINS.

SECTION F-F







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

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	364	370

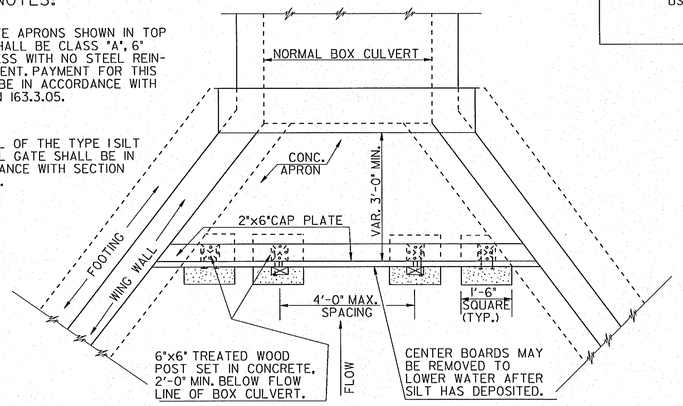
USES: A silt control gate is a structure placed on a pipe, small box culvert, or drop inlet to form a basin to catch silt and prevent it from leaving the construction site.

NOTES:

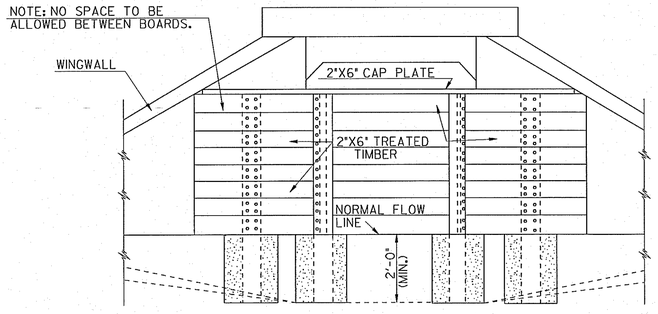
1. CONCRETE APRONS SHOWN IN TOP VIEW SHALL BE CLASS 'A', 6" THICKNESS WITH NO STEEL REINFORCEMENT. PAYMENT FOR THIS SHALL BE IN ACCORDANCE WITH SECTION 163.3.05.

2. REMOVAL OF THE TYPE I SILT CONTROL GATE SHALL BE IN ACCORDANCE WITH SECTION 163.3.05.

TYPE 1- FOR BOX CULVERTS

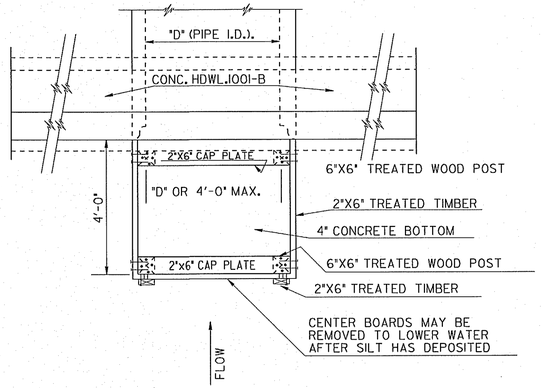


TOP VIEW

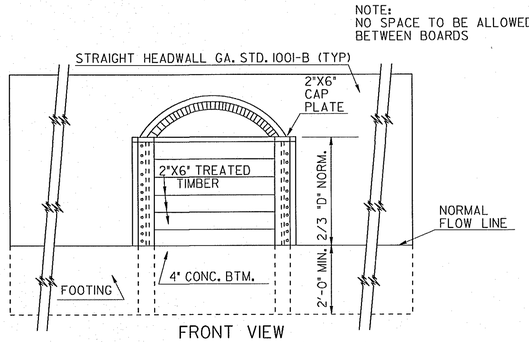


FRONT VIEW

TYPE 2 - FOR STRAIGHT HEADWALLS

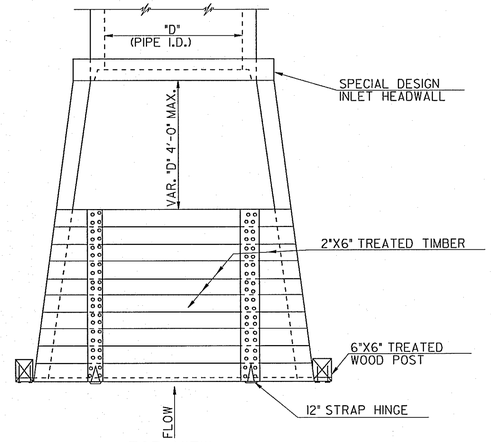


TOP VIEW

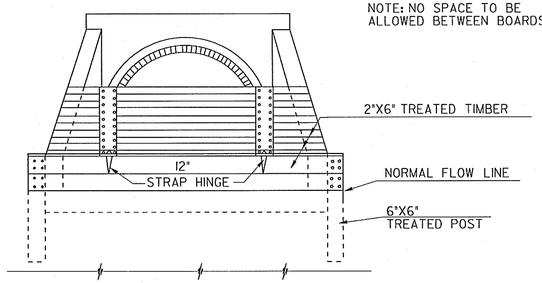


FRONT VIEW

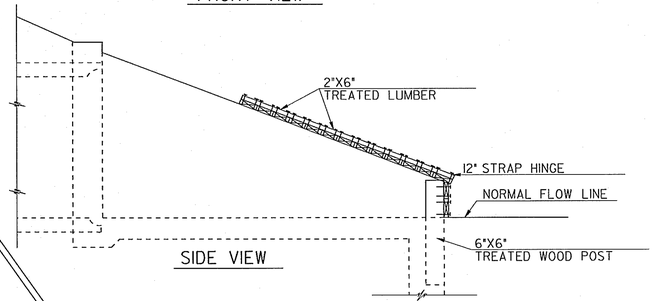
TYPE 3 - FOR FLARED END SECTIONS AND TAPERED HEADWALLS



TOP VIEW



FRONT VIEW



SIDE VIEW

NOTE:
THE DRAINAGE AREA ENTERING THE INLET SEDIMENT TRAP SHALL BE NO GREATER THAN ONE ACRE.

TYPICAL CONSTRUCTION SEQUENCE FOR INLET SEDIMENT TRAP ALTERNATE

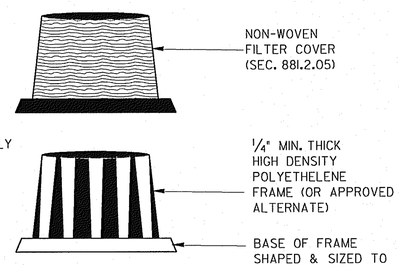
1. EXCAVATE APPROXIMATELY 4" TO 6" BELOW THE TOP OF THE INLET STRUCTURE.
2. PLACE THE FRAME ONTO THE INLET STRUCTURE, ENSURING PROPER SEATING OF FRAME TO STRUCTURE.
3. SLIDE THE FILTER OVER THE FRAME.
4. FILL THE FILTER POCKETS WITH SOIL, #57 GRAVEL OR EQUIVALENT. THE FILTER POCKETS SHOULD BE COMPLETELY 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.

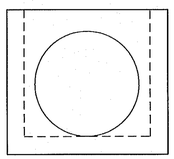
NOTE:
INLET SEDIMENT TRAP ALTERNATE SHALL BE AS APPROVED BY THE GA. D.O.T. OFFICE OF MATERIALS & RESEARCH. DETAILS & SPECIFICATIONS NOT SHOWN ARE PER THE MANUFACTURER'S REQUIREMENTS.

NOTE:
IF RUNOFF MAY BYPASS THE PROTECTED INLET, A TEMPORARY DIKE SHOULD BE CONSTRUCTED ON THE DOWN SLOPE SIDE OF THE STRUCTURE.

INLET SEDIMENT TRAP - FOR DROP INLETS

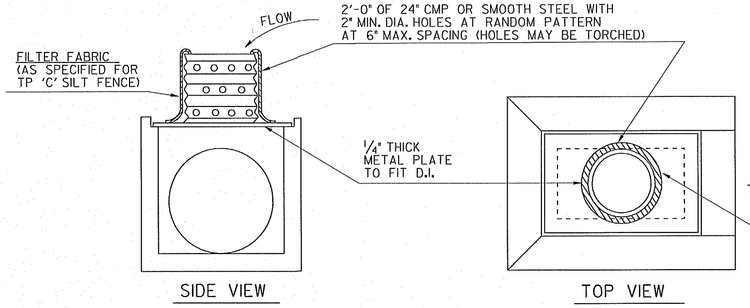
(PLASTIC ALTERNATE)





SIDE VIEW

(METAL ALTERNATE)



SIDE VIEW

TOP VIEW

NOTE: SEE SEPARATE DETAILS FOR SILT FENCE AROUND DROP INLETS.

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

BY	REVISION	DATE
GLO	REV. SPECIFICATION	3-21-05
MGR	ADDED PAYMENT NOTE	10-22-02

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAILS
SILT CONTROL GATES
FOR STRUCTURES
TYPE- 1, 2, 3:
INLET SEDIMENT TRAP

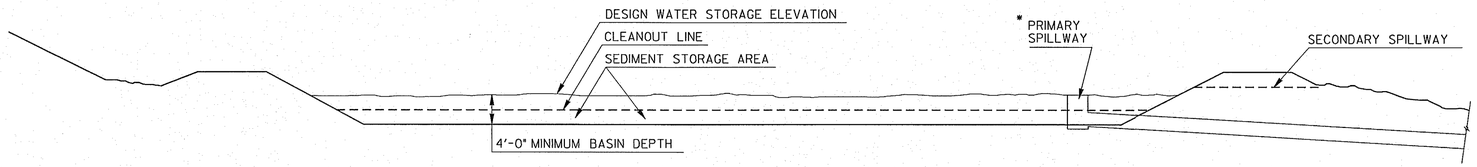
REV. & REDR. DEC., 2000

Designed ____
Drawn ____
Traced ____
Checked 8-72

NUMBER D-20

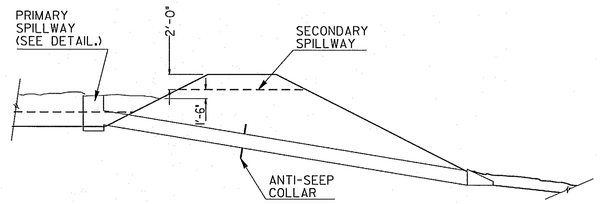
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	365	370

USES:
THIS IS A BASIN THAT IS EXCAVATED OR AN AREA THAT IS DAMMED. THE BASIN WILL BE DESIGNED TO HOLD A SEDIMENT LOAD OF 1815 CUBIC FEET OF VOLUME PER ACRE OF DRAINAGE AREA. IT IS USED FOR DRAINAGE AREAS OF 3 TO 5 ACRES OR WHERE A ROADWAY CUT DITCH EXCEEDS 1,000 CONSECUTIVE FEET IN LENGTH. LARGER DRAINAGE AREAS OR LONGER CUT DITCHES SHOULD BE BROKEN INTO SMALLER AREAS IF POSSIBLE. IF A SEDIMENT BASIN IS USED ON AN AREA LARGER THAN 5 ACRES, THE SIZE WILL BECOME VERY LARGE. THIS REQUIRES SPECIAL CONSIDERATION FOR CLEANOUT ACCESS SUCH AS THE ADDITION OF A CLEANOUT PENINSULA. SUFFICIENT EASEMENT IS NEEDED FOR THE BASIN AND ACCESS FOR CLEANOUT VIA A ROUTE WITH 3:1 SLOPE OR LESS.



SECTION A-A

NOTE:
ALLOWABLE SEDIMENT DEPTH SHALL NOT EXCEED 1/3 TOTAL BASIN DEPTH.



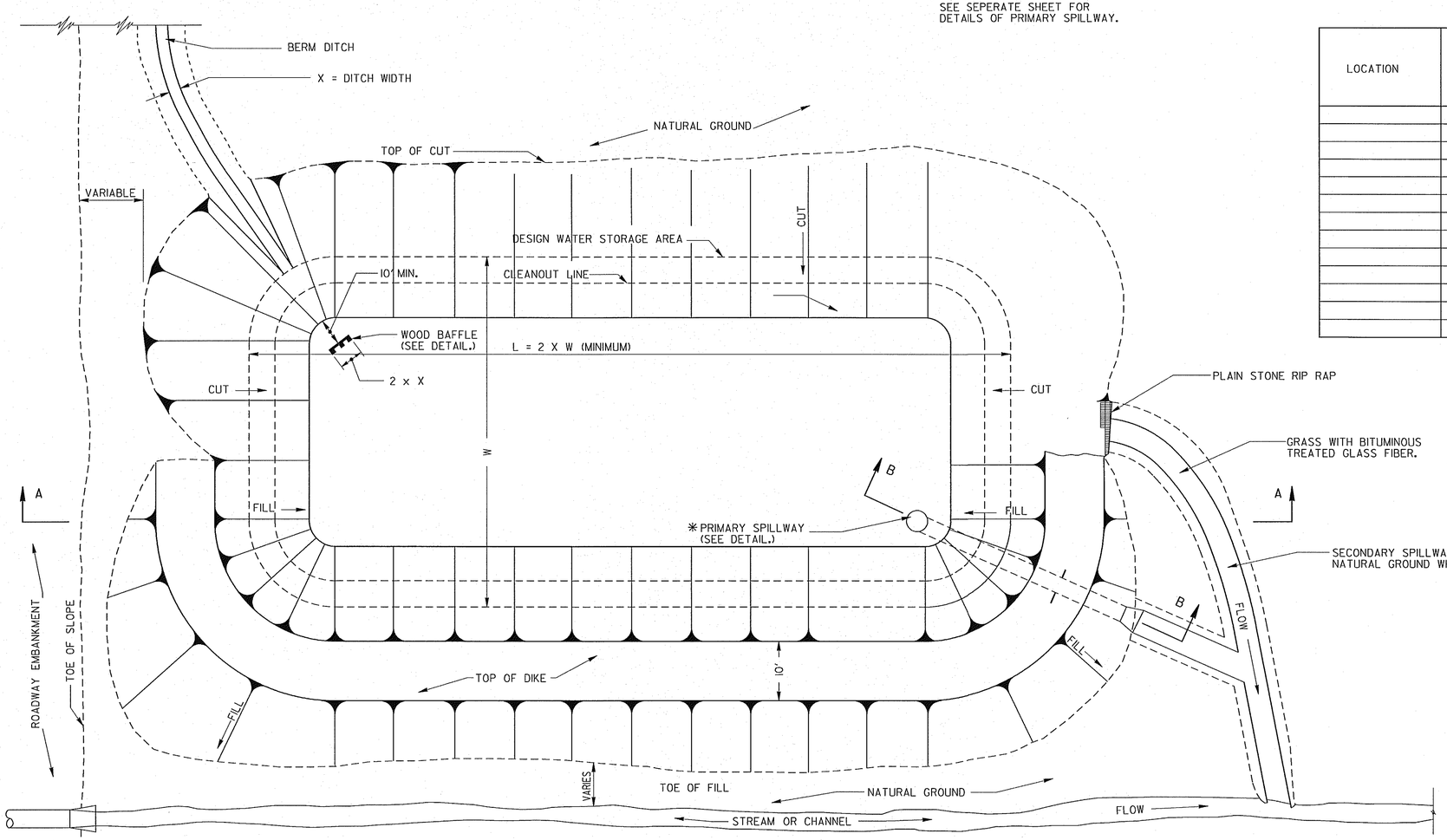
SECTION B-B

NOTE: RUNOFF FROM UNDISTURBED, ADJACENT LAND SHOULD BE ROUTED TO BYPASS SEDIMENT BASINS.

* SEE SEPERATE SHEET FOR DETAILS OF PRIMARY SPILLWAY.

LOCATION	SIDE	REQUIRED VOLUME	BASIN DEPTH	W	L	PRIMARY SPILLWAY		SECONDARY SPILLWAY WIDTH
				AT DEPTH SHOWN		D_S	D_O	
		CU. FT.	FT.	FT.	FT.	IN.	IN.	FT.

NOTE:
BASIN DEPTH 4'-0" MINIMUM, W & L MAY VARY TO CONFORM TO SITE CONDITIONS, PROVIDED REQUIRE VOLUME IS MAINTAINED, MINIMUM L = 2W.



BY	REVISION	DATE
J.M.W.	RELOC. WOOD BAFFLE	10-15-01
	ADDED RUNOFF NOTE	4-2-01
J.M.W.	GEN. REV.	2-24-95
J.M.W.	ADDED "USES" GUIDE	5-14-93
J.M.W.	GEN. REV.	5-19-89
J.M.W.	REVISED SEDIMENT	11-19-73

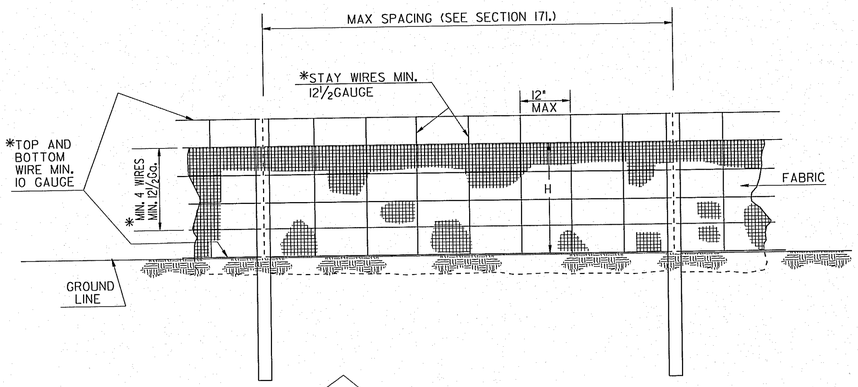
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SEDIMENT BASIN TYPE - I
FOR USE OUTSIDE NATURAL CHANNELS

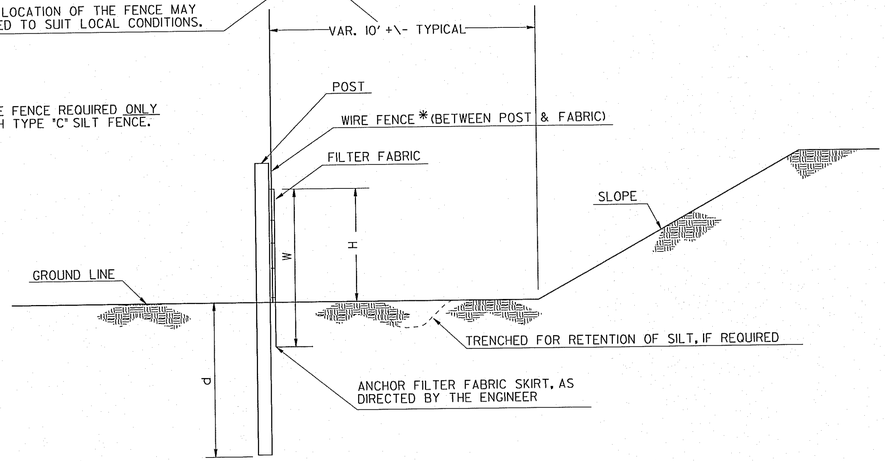
D-22

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	366	370

TEMPORARY SILT FENCE DETAILS



NOTE:
ACTUAL LOCATION OF THE FENCE MAY BE VARIED TO SUIT LOCAL CONDITIONS.



ELEVATION

TEMPORARY SILT FENCES ARE FOR USE WHERE IT HAS BEEN DETERMINED THAT BALED STRAW EROSION CHECKS ARE INADEQUATE OR THAT SILT FENCES CAN BE JUSTIFIED ON A COST EFFECTIVE BASIS.

TEMPORARY SILT FENCES ARE NOT TO BE CONFUSED WITH SILT RETENTION BARRIERS.

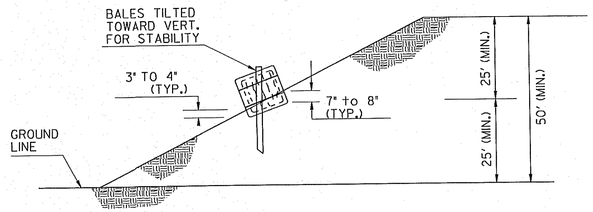
SEE SECTION 171 FOR SILT FENCE SPECIFICATIONS.

FENCE TYPE	POST LENGTH	H	D	W	TYPICAL USES
TYPE "A"	4 FT.	2'-2"	1'-6"	3'-0"	WHERE FILL EXEEDS 10 FT. HEIGHT;
TYPE "B"	3 FT.	1'-4"±	1'-6"	1'-10"	WHERE FILL HEIGHTS ARE UNDER 10 FT.;
TYPE "C"	4 FT.	2'-2"	1'-6"	3'-0"	& AT BRIDGE END ROLLS, DITCH CHECKS, & AT GRADES OVER 8% AT 25 FT. SPACING.

(SEE SHEET 2 OF 2 FOR ADDITIONAL APPLICATIONS.)

BALED STRAW EROSION CHECK DETAILS

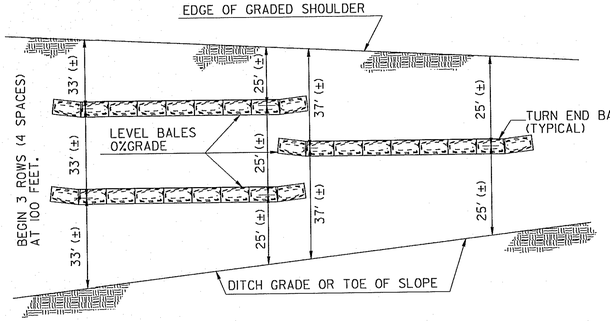
BALED STRAW ON FILL SLOPE



ELEVATION

(ONE ROW OF BALES SHOWN-2 OR MORE MAY BE SPECIFIED)

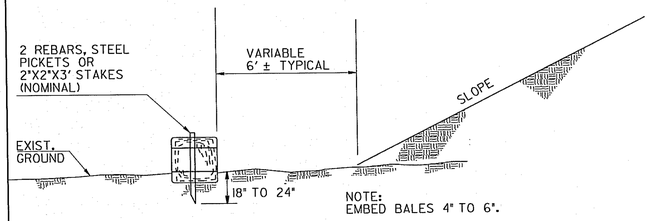
NOTE: FOR BALED STRAW OR SILT FENCE AT TOE OF SLOPE, SEE DETAILS AT LEFT OR RIGHT AND ALSO SHEET 2 OF 2.



LONGITUDINAL VIEW

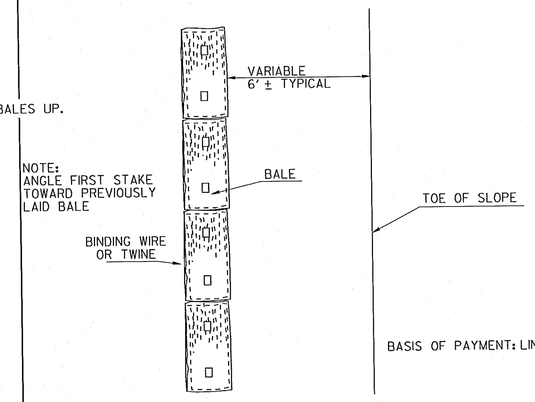
(DIMENSIONS ARE MEASURED VERTICALLY.)

BALED STRAW AT TOE OF SLOPE



ELEVATION

NOTE:
THE 6' ± OFFSET MAY BE VARIED TO SUIT LOCAL CONDITIONS.



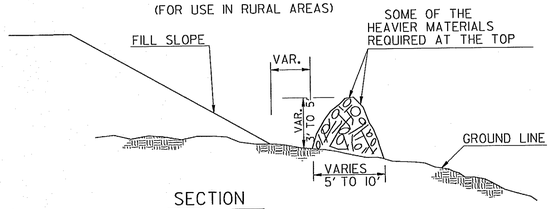
PLAN

NOTE:
BALED STRAW IS USED IN TYPICAL RURAL AREAS WHERE FILLS ARE FROM 5 FT. TO 10 FT. HIGH, FOR DITCH CHECKS, AND AS SPECIFIED ELSEWHERE. (See Sh. 2 of 2)

SYNTHETIC HAY BALES OF TYPE WHICH HAVE BEEN CLASSIFIED AS "ACCEPTED" BY THE D.O.T. OFFICE OF MATERIALS & RESEARCH MAY BE USED AS AN ALTERNATE TO BALED STRAW AS APPROVED BY THE ENGINEER.

BRUSH BARRIER DETAILS

(FOR USE IN RURAL AREAS)



SECTION

NOTE: INTERMINGLE BRUSH, LOGS, ETC. SO AS NOT TO FORM A SOLID DAM.

FRONT VIEW

NOTE: BRUSH BARRIER(S) WILL BE INCLUDED IN PAYMENT FOR CLEARING & GRUBBING.

BY	REV. & REDR. REVISION	9-01 DATE

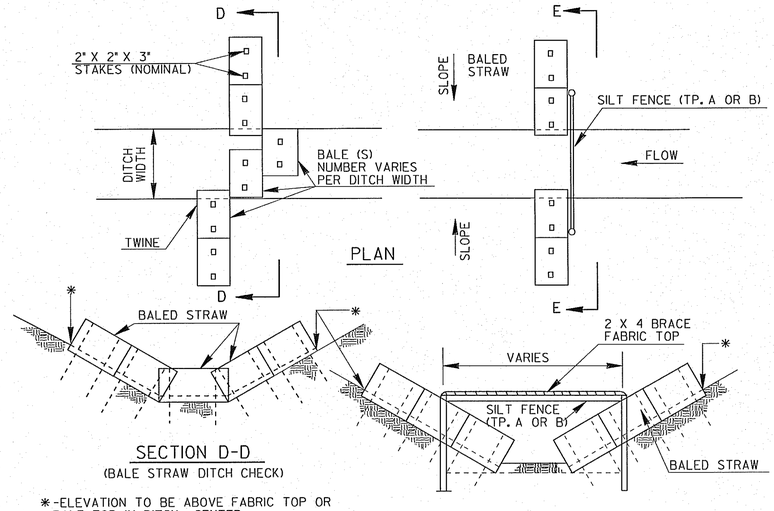
TEMPORARY SILT FENCE BALED STRAW EROSION CHECK BRUSH BARRIER DETAILS

(SHEET 1 OF 2)

D-24(a)

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	367	370

TYPICAL LOCATIONS IN DITCHES

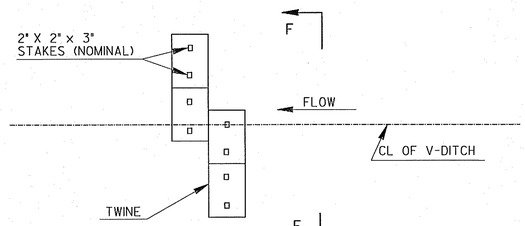


SECTION D-D
(BALE STRAW DITCH CHECK)

SECTION E-E
(SILT FENCE DITCH CHECK)

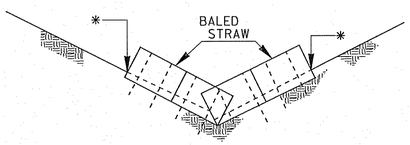
*-ELEVATION TO BE ABOVE FABRIC TOP OR BALE TOP IN DITCH CENTER.

NOTE:
BALED STRAW DITCH CHECKS ARE FOR USE ON GRADES OF 1PERCENT OR LESS AT SPACINGS OF 100 FEET + -.



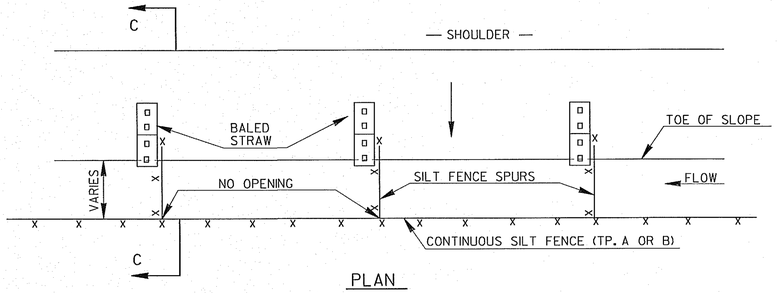
PLAN

NOTE:
EMBED BALES 4" TO 6".



SECTION F-F

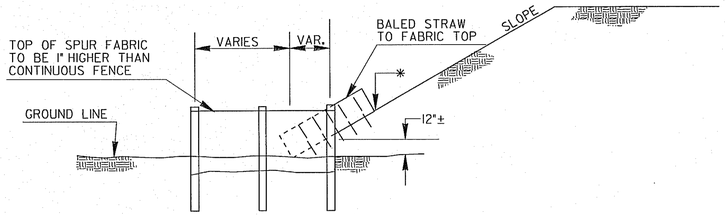
TYPICAL LOCATIONS AT TOE OF SLOPES



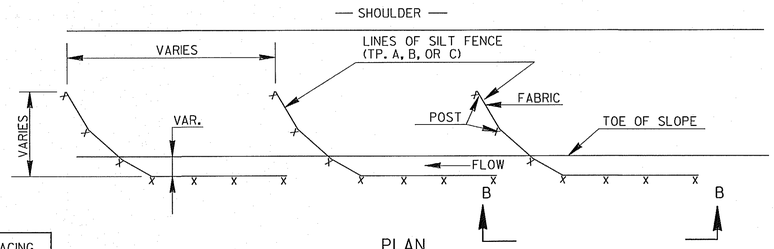
PLAN

NOTE:
EMBED BALES 4" TO 6".

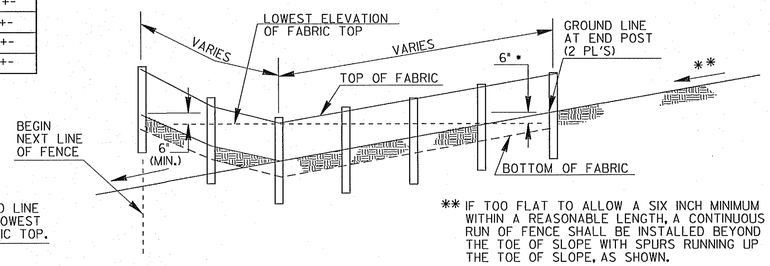
GRADE OF DITCH OR SLOPE	TYPE OF SILT FENCE	SPACING (FEET)
LESS THAN 1%	TYPE B	100' +-
1% TO 2%	TYPE A	100' +-
2% TO 3%	TYPE A	50' +-
3% TO 4%	TYPE C	50' +-
4% TO 5%	TYPE C	25' +-



SECTION C-C



PLAN

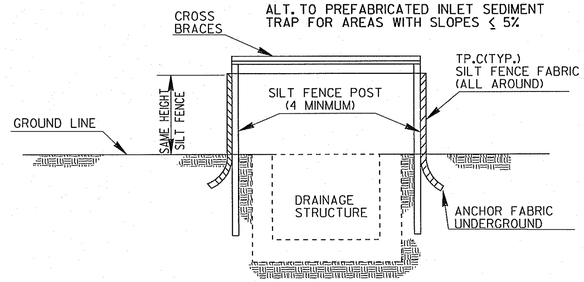


** IF TOO FLAT TO ALLOW A SIX INCH MINIMUM WITHIN A REASONABLE LENGTH, A CONTINUOUS RUN OF FENCE SHALL BE INSTALLED BEYOND THE TOE OF SLOPE WITH SPURS RUNNING UP THE TOE OF SLOPE, AS SHOWN.

SECTION B-B

TYPICAL LOCATION AROUND DROP INLETS

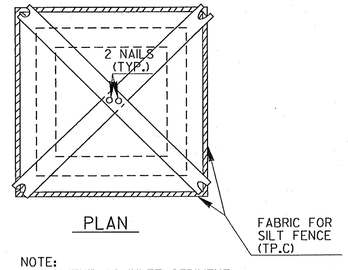
ALT. TO PREFABRICATED INLET SEDIMENT TRAP FOR AREAS WITH SLOPES ≤ 5%



ELEVATION

CROSS BRACES:

TWO - 2 X 4's WITH ENDS TO FIT POST, PROVIDING STURDY SUPPORT, OR AN APPROVED ALTERNATE

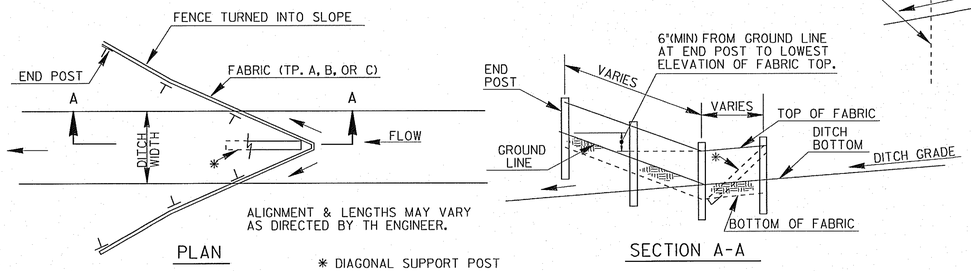


PLAN

NOTE:
PAYMENT AS INLET SEDIMENT TRAP PER EACH.

NOTE:

SEE SEPARATE SHEET ENTITLED 'TEMPORARY SILT FENCE, BALED STRAW EROSION CHECK, BRUSH BARRIER DETAILS' FOR BALED STRAW AT TOE OF SLOPE, FOR SILT FENCE ERECTION DETAILS, OR FOR BRUSH BARRIERS, WHERE REQUIRED.



PLAN

* DIAGONAL SUPPORT POST

SECTION A-A

BY	REVISION	DATE
J.M.W.	ADD 'USES' GUIDE	5-14-93
RMD	REV. & REDR.	9-01
MGR	REV. SILT FENCE REQ.	10-22-02

CONSTRUCTION DETAILS
TYPICAL LOCATION DETAILS FOR SILT FENCES / BALED STRAW

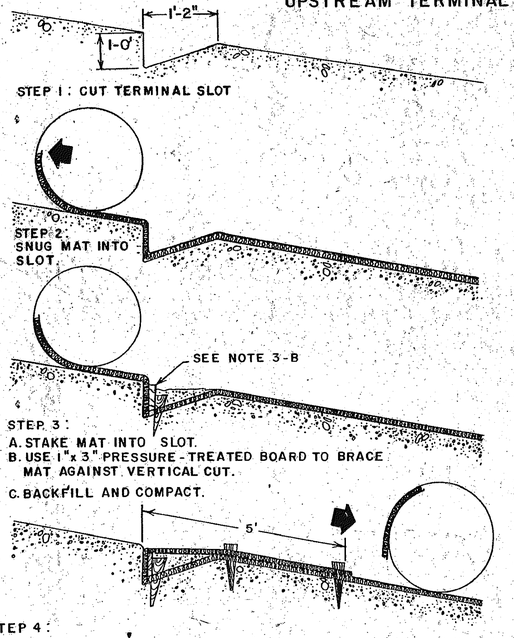
(SHEET 2 OF 2)
NO SCALE

AUGUST 1989

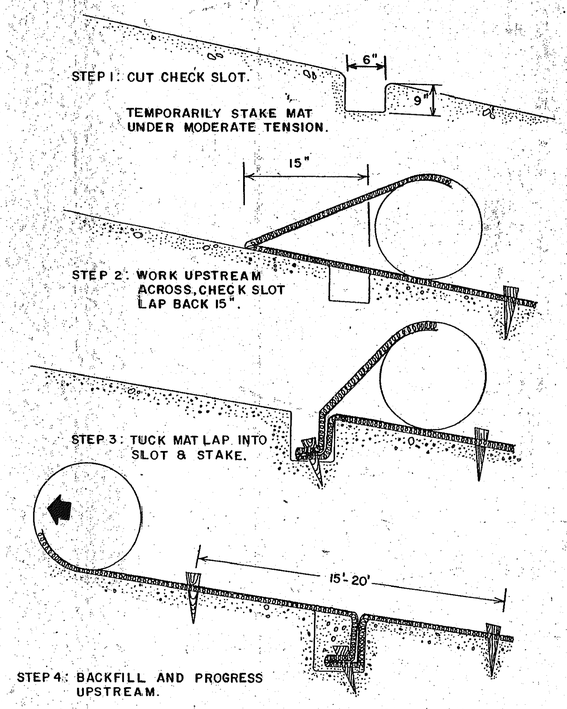
D-24(b)

STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
GA	CSSTP-0006-00(869)	368	370

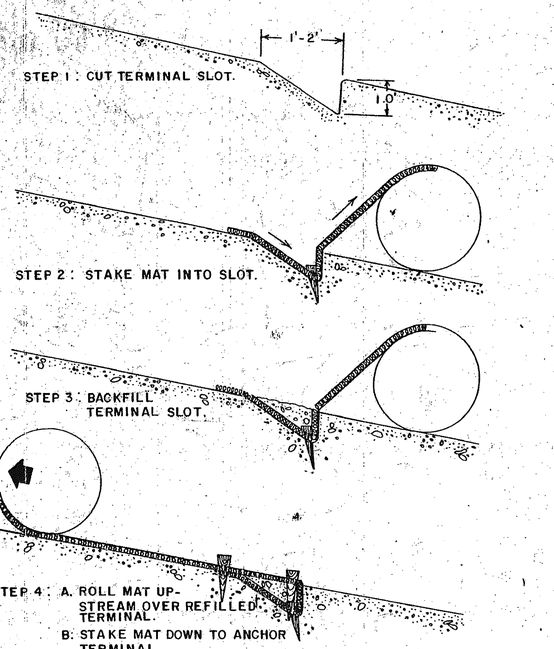
UPSTREAM TERMINAL

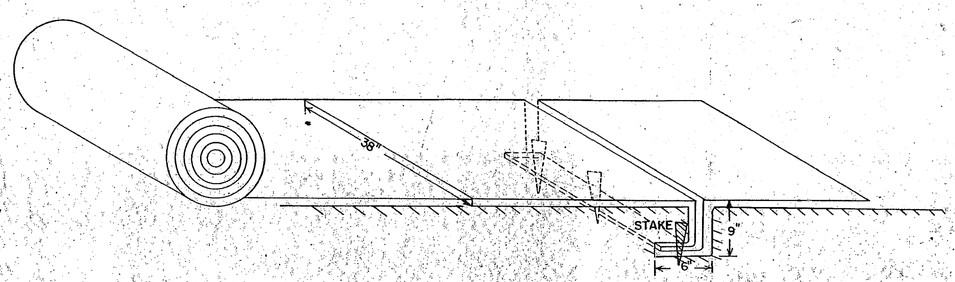


TRANSVERSE CHECK SLOT



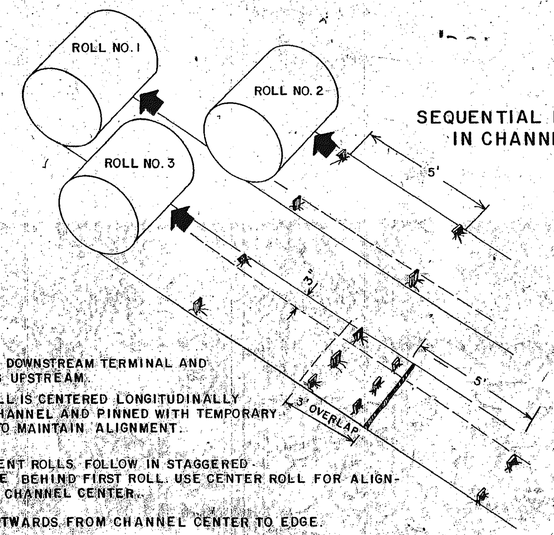
DOWNSTREAM TERMINAL





PICTORIAL VIEW OF TRANSVERSE SLOT

SEQUENTIAL ROLL RUN OUT IN CHANNELS



1. START AT DOWNSTREAM TERMINAL AND PROGRESS UPSTREAM.
2. FIRST ROLL IS CENTERED LONGITUDINALLY IN MID CHANNEL AND PINNED WITH TEMPORARY STAKES TO MAINTAIN ALIGNMENT.
3. SUBSEQUENT ROLLS FOLLOW IN STAGGERED SEQUENCE BEHIND FIRST ROLL. USE CENTER ROLL FOR ALIGNMENT TO CHANNEL CENTER.
4. WORK OUTWARDS FROM CHANNEL CENTER TO EDGE.
5. USE 3" OVERLAP AND STAKE AT 5' INTERVAL ALONG SEAMS.
6. USE 3" OVERLAPS AND SHINGLE DOWNSTREAM TO CONNECT LINING AT ROLL ENDS.

CONSTRUCTION DETAILS

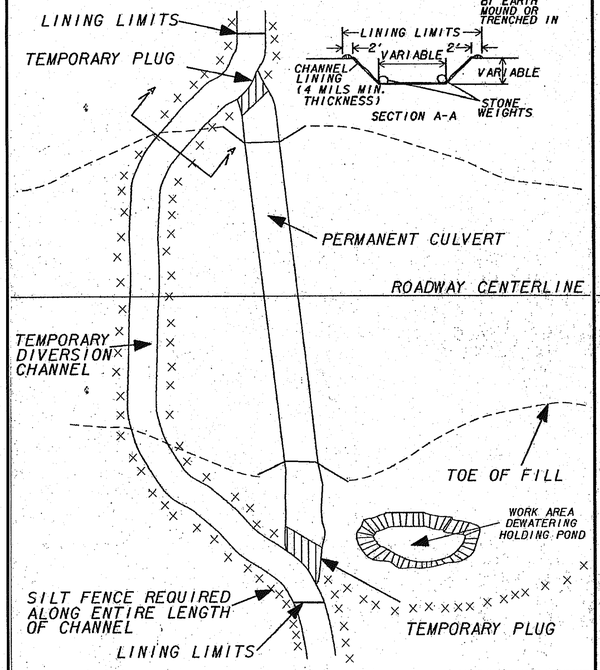
PERMANENT SOIL REINFORCING MAT

DRAWN BY: K.L.J. AUG. 1988

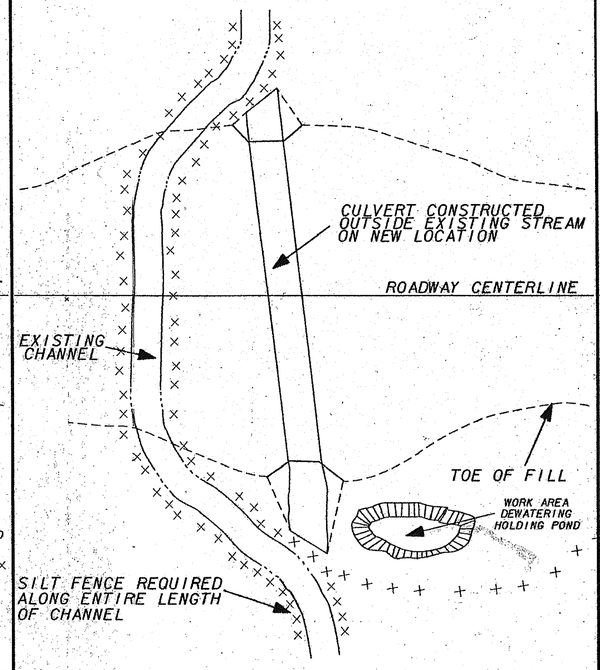
D-35

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CSSTP-0006-00(869)	369	370

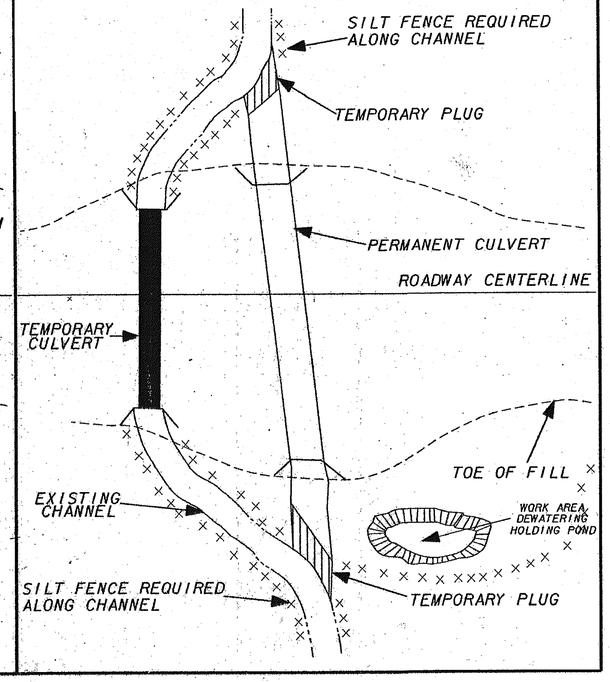
TEMPORARY DIVERSION CHANNEL PLASTIC LINING



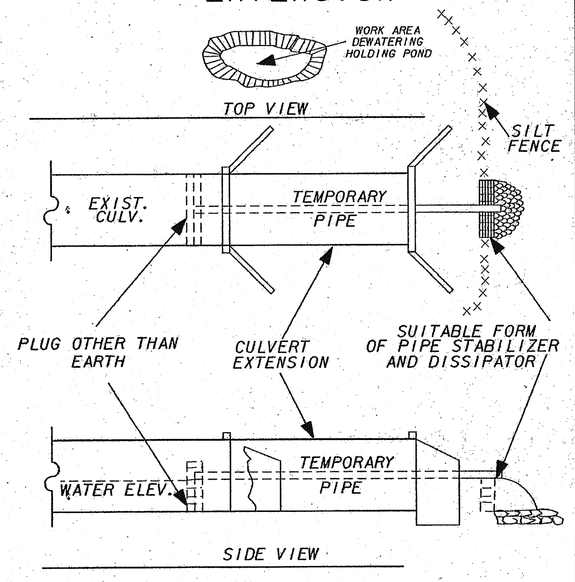
CULVERT CONSTRUCTED OUTSIDE EXISTING STREAM



TEMPORARY CULVERT FOR STREAM DIVERSION



PIPE OR BOX CULVERT EXTENSION



1. THESE DETAILS ARE NOT CONSTRUCTION DRAWINGS. THEY ARE ROUGH SKETCHES OF IDEAS. ALTERNATES MAY BE SUBMITTED BY THE CONTRACTOR IN THE EROSION CONTROL PLAN.
2. DIVERSION CHANNELS TO BE INCLUDED IN THE COST OF CULVERT, WHEN REQUIRED.
3. THE PLASTIC LINING SHALL BE PVC OR PE MATERIAL WITH A MINIMUM THICKNESS OF 6 MILS.
4. THE LAP OF THE SHEETS OF PLASTIC LINING SHALL BE A MINIMUM OF 2 FEET.
5. THE DIVERSION CHANNEL SHOULD BE THE SAME WIDTH AND DEPTH AS THE EXISTING CHANNEL.

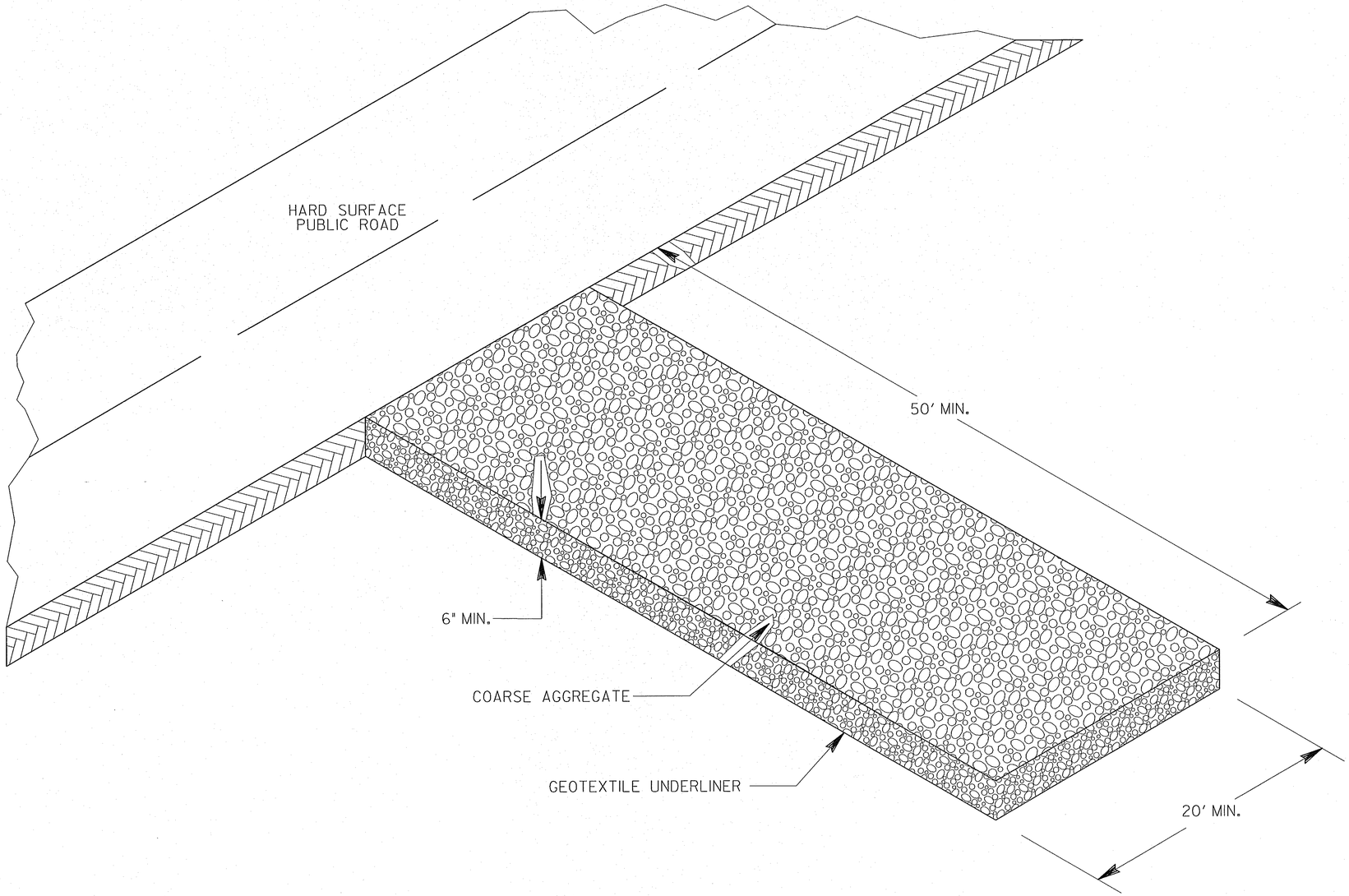
BY	REVISION DATE
M.W.	JUNE 28, 1993
M.W.	MAY 14, 1993
M.W.	OCTOBER 23, 1992
M.W.	JUNE 28, 1989

GEORGIA DEPARTMENT OF TRANSPORTATION

EXAMPLES OF DIVERSION CHANNELS

D-38

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0006-00(869)	370	370



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 1.5 - 3.5 INCH STONE, AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES OR SITE ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

ITEM: 163-0300__CONSTRUCTION EXIT___EACH

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAIL

CONSTRUCTION EXIT

NO SCALE

FEB., 2001

NUMBER
D-41

DATE | REVISION | BY