

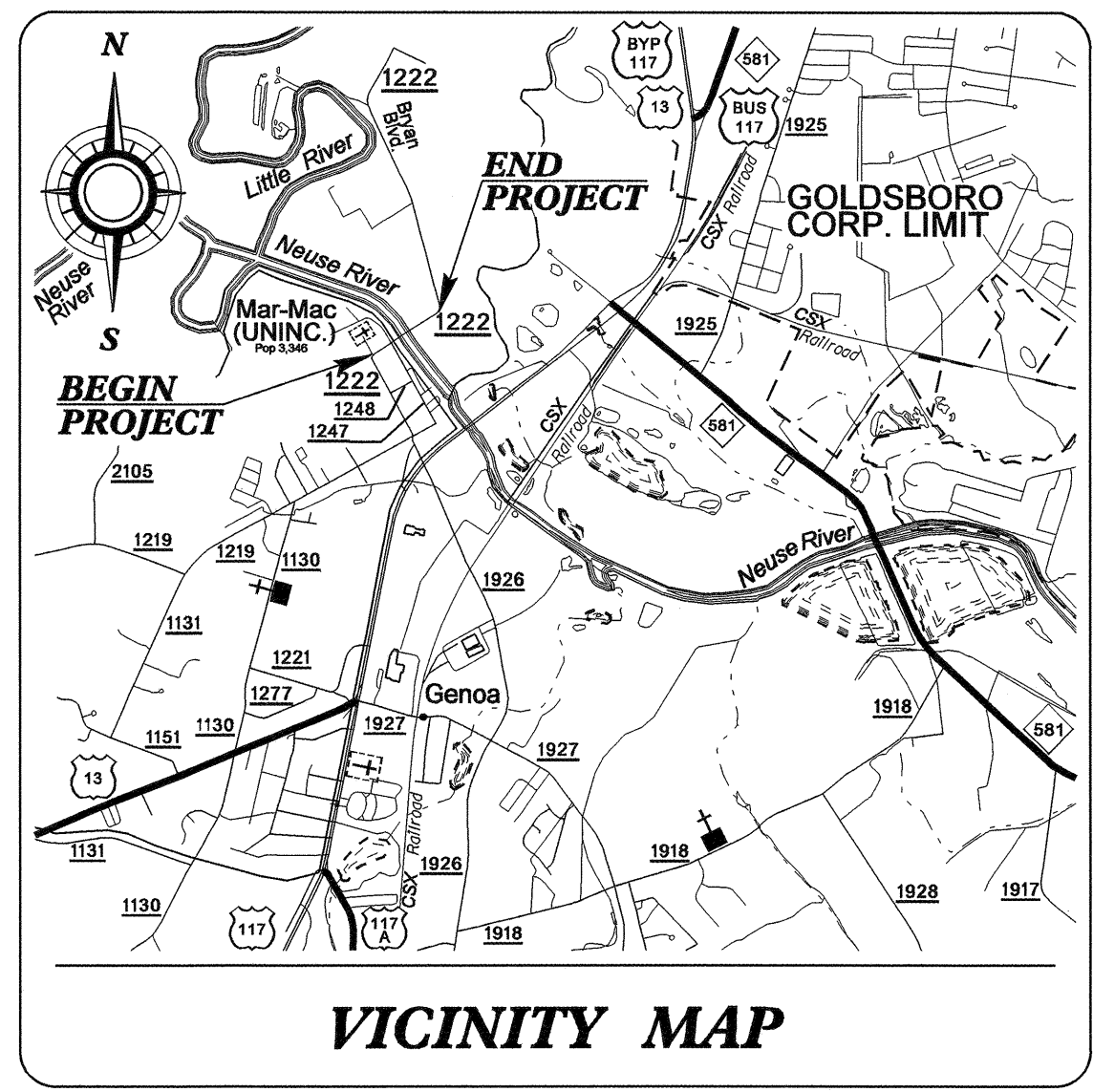
09/05/99

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS WAYNE COUNTY

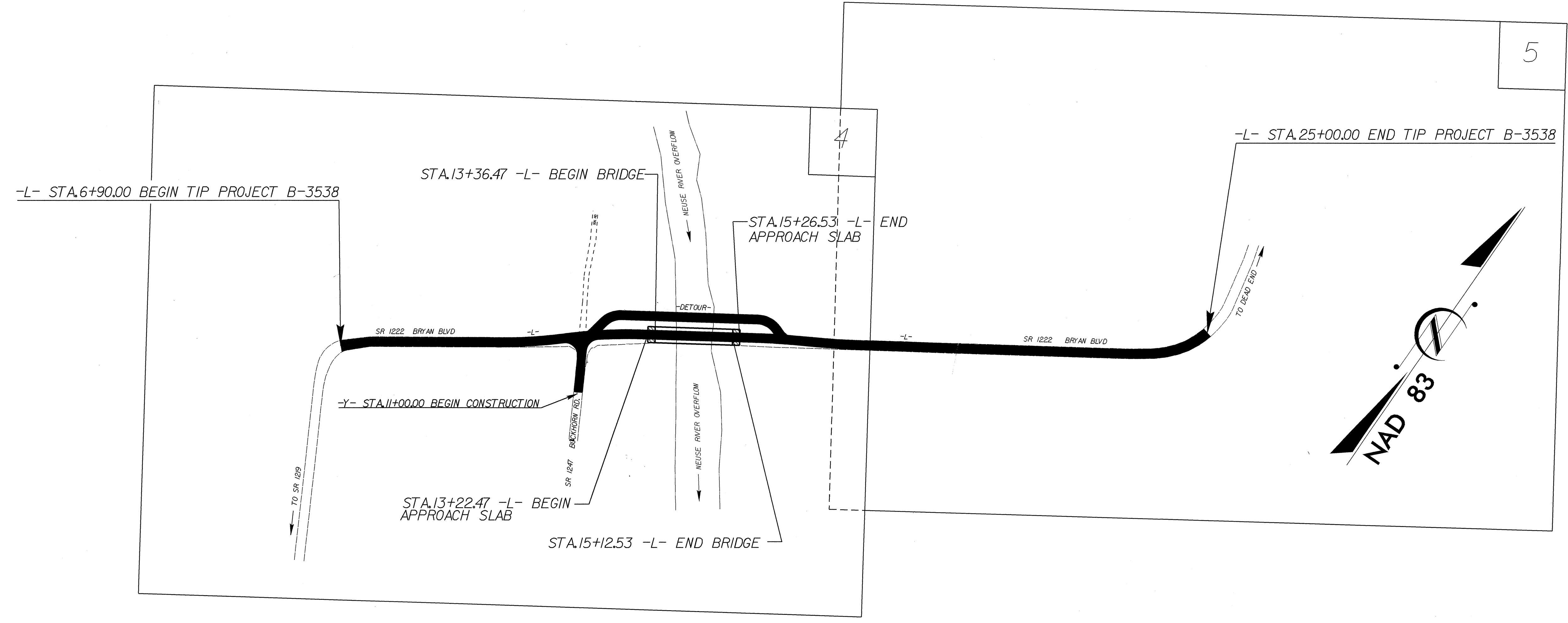
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3538	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33145.1.1	BRZ-1222(4)	PE	
33145.2.2	BRZ-1222(8)	RAW, UTIL	
33145.3.1	BRZ-1222(9)	CONST	

TIP PROJECT: B-3538

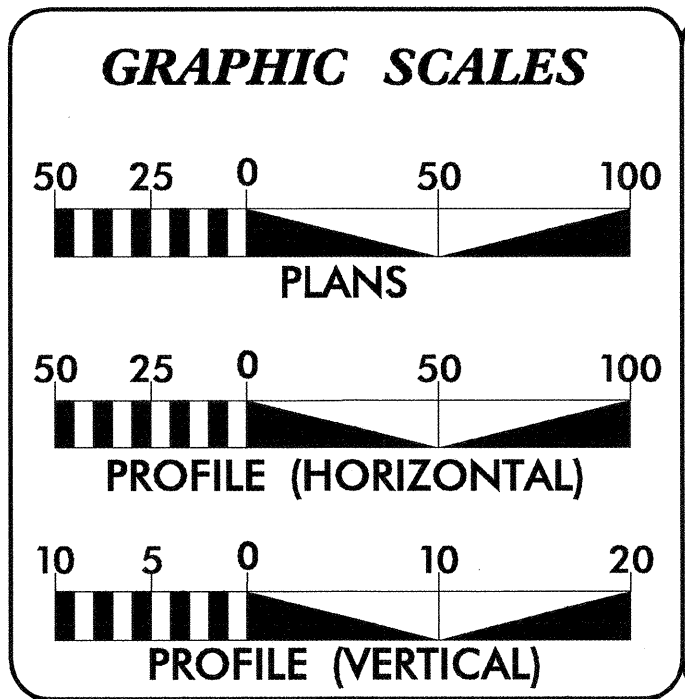


LOCATION: BRIDGE NO. 296 OVER THE NEUSE RIVER OVERFLOW ON SR 1222

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



CONTRACT: C201478



DESIGN DATA

ADT 2007 = 940
ADT 2025 = 1300
DHV = 10 %
D = 60 %
T = 4 % *
V = 25 MPH
* TTST 2% + DUAL 2%
FUNC. CLASS = LOCAL RURAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3538 = 0.310 MILE
LENGTH STRUCTURE TIP PROJECT B-3538 = 0.033 MILE
TOTAL LENGTH STATE TIP PROJECT B-3538 = 0.343 MILE

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 28, 2005

LETTING DATE:
JUNE 19, 2007

G. E. BREW, PE
PROJECT ENGINEER

W. T. BEST
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

PAUL F. FISHER
SEAL 12875
3/26/07

ROADWAY DESIGN ENGINEER

GREGORY E. BREW
SEAL 18903

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

ant m. millan P.E.
STATE DESIGN ENGINEER

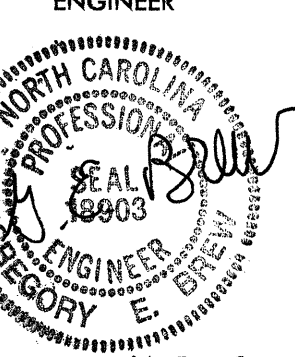
**DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION**

APPROVED
DIVISION ADMINISTRATOR

DATE

15-MAR-2007 08:18
F:\roadway\proj\B3538_rdy_tsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROADWAY DESIGN
ENGINEER

4-3-07

INDEX OF SHEETS

1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
2 THRU 2-B	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAIL
2-C	DETAIL FOR FLAP GATE
2-D	DETAIL FOR MODIFIED CONCRETE FLUME
3	SUMMARY OF QUANTITIES
3-A THRU 3-C	SUMMARY OF DRAINAGE QUANTITIES, SUMMARY OF GUARDRAIL, SUMMARY OF EARTHWORK, SUMMARY OF PAVEMENT REMOVAL, AND INDEX OF PARCELS SHEET
4 THRU 6	PLAN SHEETS
7 THRU 8	PROFILE SHEETS
TCP-1 THRU TCP-11	TRAFFIC CONTROL PLANS
EC-1 THRU EC-7	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIGN-1 THRU SIGN-3	SIGNING PLANS
SIG-1 THRU SIG-3	SIGNAL PLANS
UC-1 THRU UC-3	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-12	CROSS-SECTION SHEETS
S-1 THRU S-24	STRUCTURE PLANS

GENERAL NOTES

GENERAL NOTES:

2006 SPECIFICATIONS
EFFECTIVE 07-18-06
REVISED 07-18-06

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILE SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT WILL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

UNDERDRAINS:

UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENTS PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE SOUTHERN WAYNE SANITARY DISTRICT, PROGRESS ENERGY, BELL SOUTH, AND TIME WARNER CABLE

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT OF WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT.

LIST OF STANDARDS DRAWINGS

2006 ROADWAY STANDARD DRAWINGS

EFF. 07-18-06

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" HIGHWAY DESIGN BRANCH N. C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N. C., DATED JULY 18, 2006 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.

DIVISION 2 - EARTHWORK	
200.03	METHOD OF CLEARING - METHOD III
225.02	GUIDE FOR GRADING SUBGRADE - SECONDARY AND LOCAL
225.04	METHOD OF OBTAINING SUPERELEVATION - TWO LANE PAVEMENT
DIVISION 3 - PIPE CULVERTS	
300.01	METHOD OF PIPE INSTALLATION - METHOD 'A'
310.10	DRIVEWAY PIPE CONSTRUCTION
DIVISION 4 - MAJOR STRUCTURES	
422.10	REINFORCED BRIDGE APPROACH FILLS
DIVISION 5 SUBGRADE, BASES AND SHOULDERS	
560.01	METHOD OF SHOULDER CONSTRUCTION - HIGH SIDE OF SUPERELEVATION CURVE - METHOD I
DIVISION 8 - INCIDENTALS	
806.01	CONCRETE RIGHT-OF-WAY MARKER
806.02	GRANITE RIGHT-OF-WAY MARKERS
815.03	PIPE UNDERDRAIN AND BLIND DRAIN
838.01	CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS - 15" THRU 48" PIPE 90° SKEW
838.11	BRICK ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS - 15" THRU 48" PIPE 90° SKEW
838.80	PRECAST ENDWALLS FOR 12" THRU 72" PIPES 90° SKEW
846.01	CONCRETE CURB, GUTTER AND CURB & GUTTER
850.01	CONCRETE PAVED DITCH
862.01	GUARDRAIL PLACEMENT
862.02	GUARDRAIL INSTALLATION
862.03	STRUCTURE ANCHOR UNITS
862.04	ANCHORING END OF GUARDRAIL - B-77 AND B-83 ANCHOR UNITS
876.01	RIP RAP IN CHANNELS
876.02	GUIDE FOR RIP RAP AT PIPE OUTLETS

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	(123)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○-----
Proposed Chain Link Fence	□-----
Proposed Barbed Wire Fence	◇-----
Existing Wetland Boundary	WLB
Proposed Wetland Boundary	WLB
Existing High Quality Wetland Boundary	HO WLB
Existing Endangered Animal Boundary	EAB
Existing Endangered Plant Boundary	EPB

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○
Small Mine	⚡
Foundation	□
Area Outline	□
Cemetery	⊕
Building	□
School	⚐
Church	⚐
Dam	⚐

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
River Basin Buffer	RBB
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Swamp Marsh	⚡
Proposed Lateral, Tail, Head Ditch	-----
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	○
Proposed Right of Way Line with Iron Pin and Cap Marker	○
Proposed Right of Way Line with Concrete or Granite Marker	○
Existing Control of Access	○
Proposed Control of Access	○
Existing Easement Line	E
Proposed Temporary Construction Easement	E
Proposed Temporary Drainage Easement	TDE
Proposed Permanent Drainage Easement	PDE
Proposed Permanent Utility Easement	PUE

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	C
Proposed Slope Stakes Fill	F
Proposed Wheel Chair Ramp	WCR
Curb Cut for Future Wheel Chair Ramp	CCFR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	⊗

VEGETATION:

Single Tree	○
Single Shrub	○
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○
Storm Sewer	S

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	PH
H-Frame Pole	●
Recorded U/G Power Line	P
Designated U/G Power Line (S.U.E.*)	P

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○
Telephone Booth	⊕
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	PH
Recorded U/G Telephone Cable	T
Designated U/G Telephone Cable (S.U.E.*)	T
Recorded U/G Telephone Conduit	TC
Designated U/G Telephone Conduit (S.U.E.*)	TC
Recorded U/G Fiber Optics Cable	T FO
Designated U/G Fiber Optics Cable (S.U.E.*)	T FO

WATER:

Water Manhole	○
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	A/G Water

TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊕
U/G TV Cable Hand Hole	PH
Recorded U/G TV Cable	TV
Designated U/G TV Cable (S.U.E.*)	TV
Recorded U/G Fiber Optic Cable	TV FO
Designated U/G Fiber Optic Cable (S.U.E.*)	TV FO

GAS:

Gas Valve	◇
Gas Meter	⊕
Recorded U/G Gas Line	G
Designated U/G Gas Line (S.U.E.*)	G
Above Ground Gas Line	A/G Gas

SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	SS
Above Ground Sanitary Sewer	A/G Sanitary Sewer
Recorded SS Forced Main Line	FSS
Designated SS Forced Main Line (S.U.E.*)	FSS

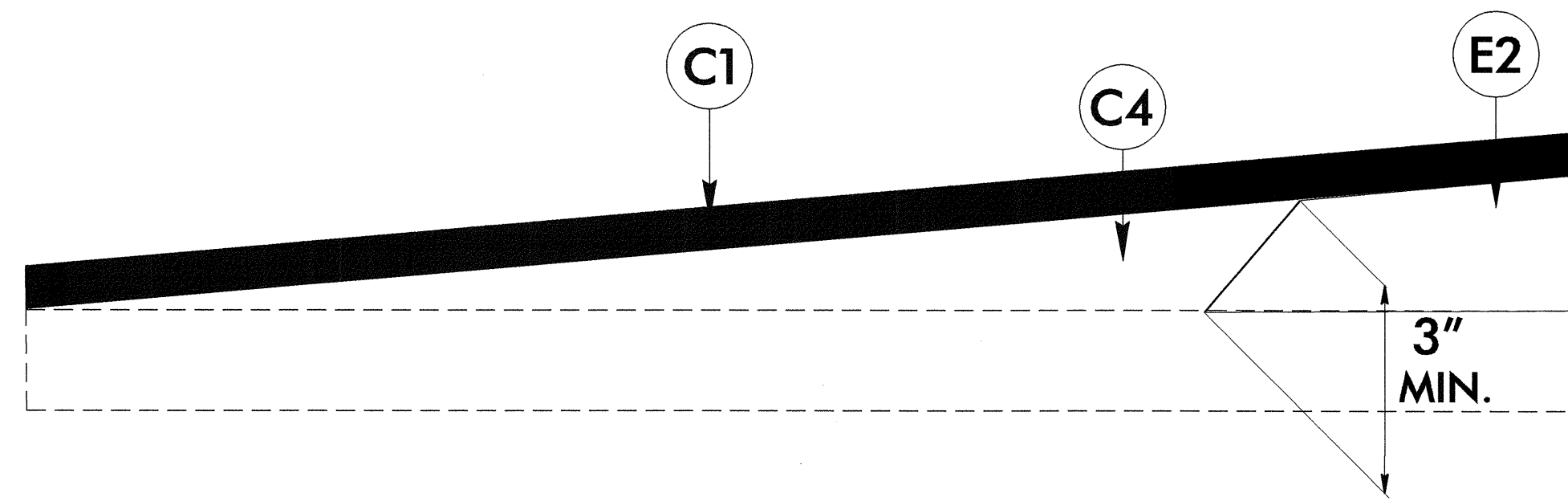
MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	U/L
U/G Tank; Water, Gas, Oil	□
A/G Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

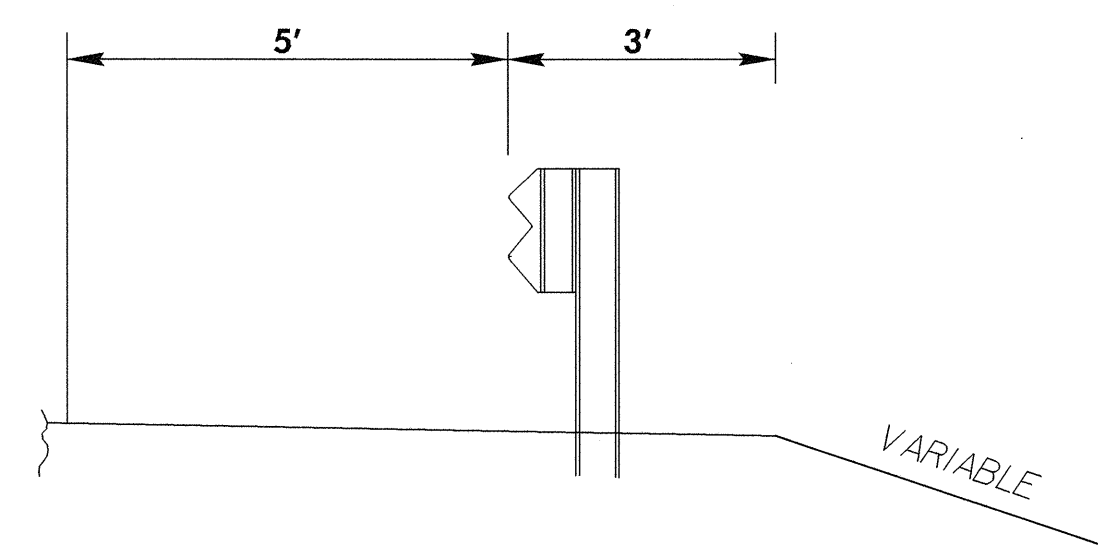
PROJECT REFERENCE NO. B-3538	SHEET NO. 2
ROADWAY DESIGN ENGINEER GREGORY E. CLARK SEAL 19803 3-27-07	PAVEMENT DESIGN ENGINEER SEAL 22896 3-20-07

FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A, AT AN AVERAGE RATE OF 137.50 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C3	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.50 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
J1	6" AGGREGATE BASE COURSE
R1	CONCRETE SHOULDER BERM GUTTER
T1	EARTH MATERIAL
U1	EXISTING PAVEMENT
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

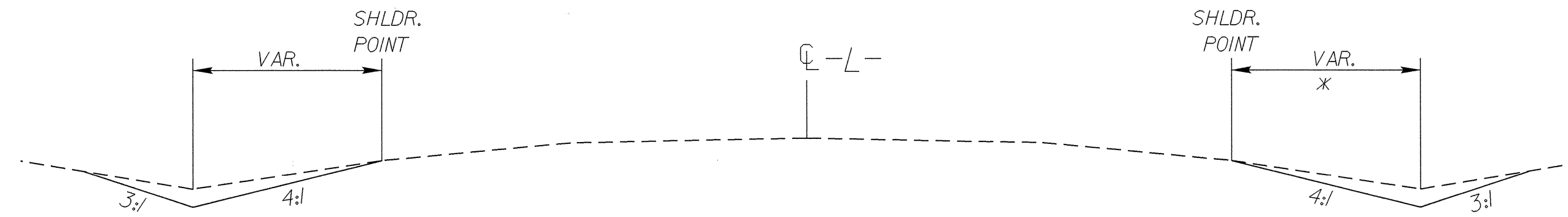


Wedging Detail For Resurfacing



DETAIL SHOWING GUARDRAIL AT 5' OFFSET

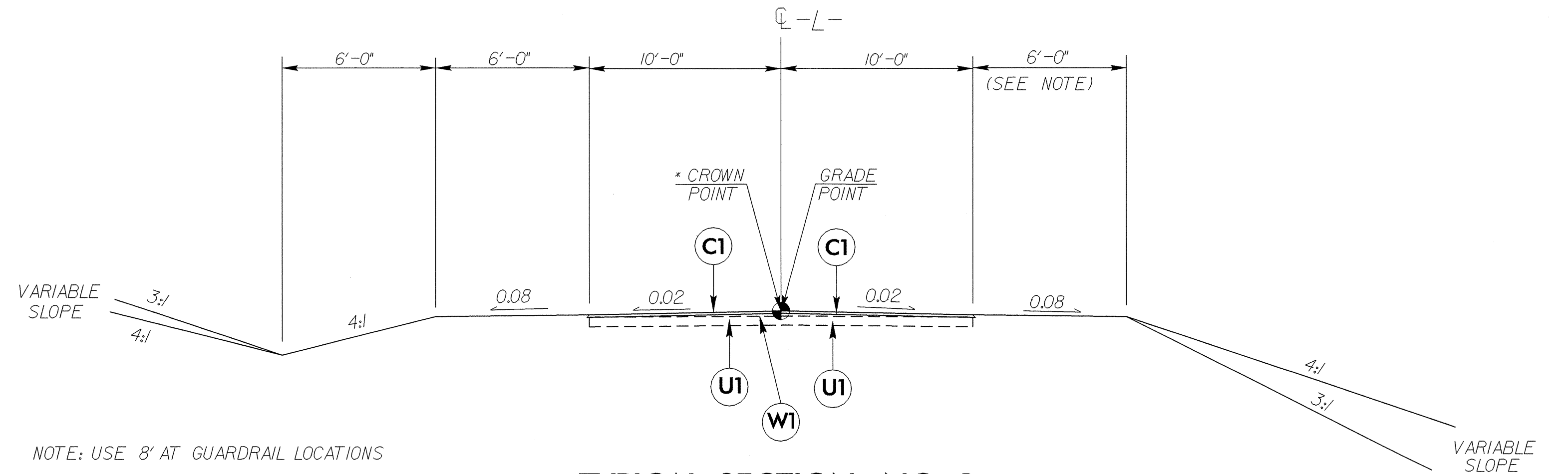
USE WITH TYPICAL SECTION NOS. 3 & 4



TYPICAL SECTION NO. 1
DITCH CLEAN OUT

USE TYPICAL SECTION NO. 1

- * -L- FROM STA.7+08.66 TO STA.10+00.00 RIGHT
- L- FROM STA.19+50.00 TO STA.24+66.83 LEFT

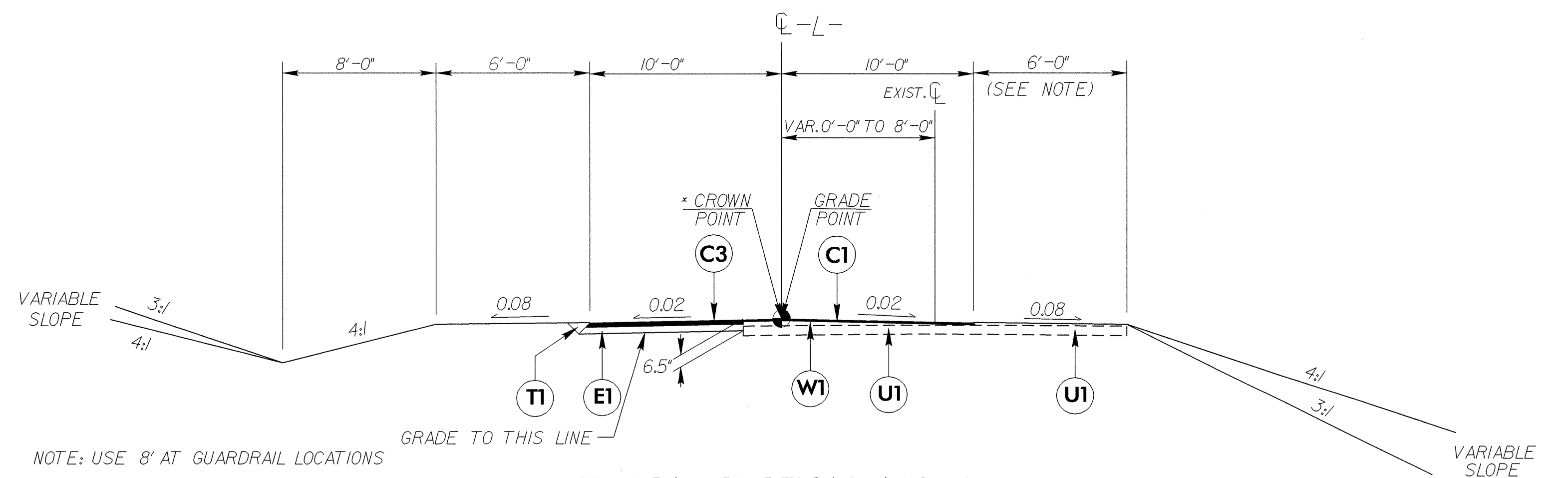


NOTE: USE 8' AT GUARDRAIL LOCATIONS

TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

- * -L- FROM STA.10+00.00 TO STA.10+20.47
- L- FROM STA.17+73.27 TO STA.19+25.00
- * -L- FROM STA.19+25.00 TO STA.19+67.01



NOTE: USE 8' AT GUARDRAIL LOCATIONS

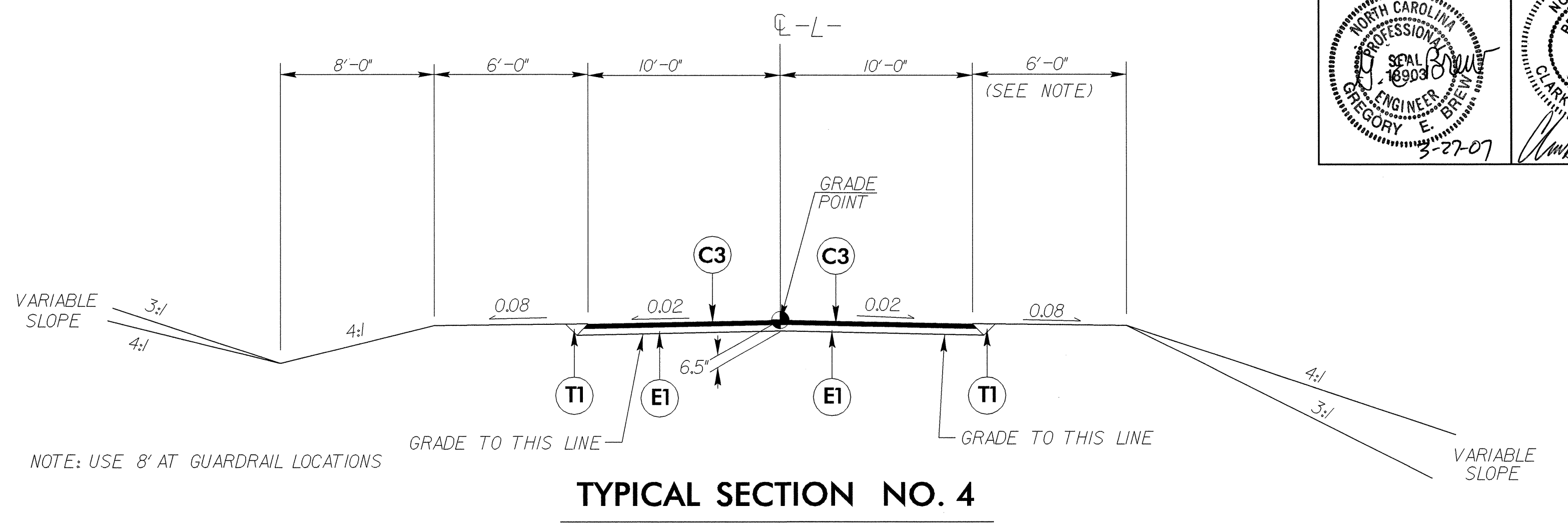
TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

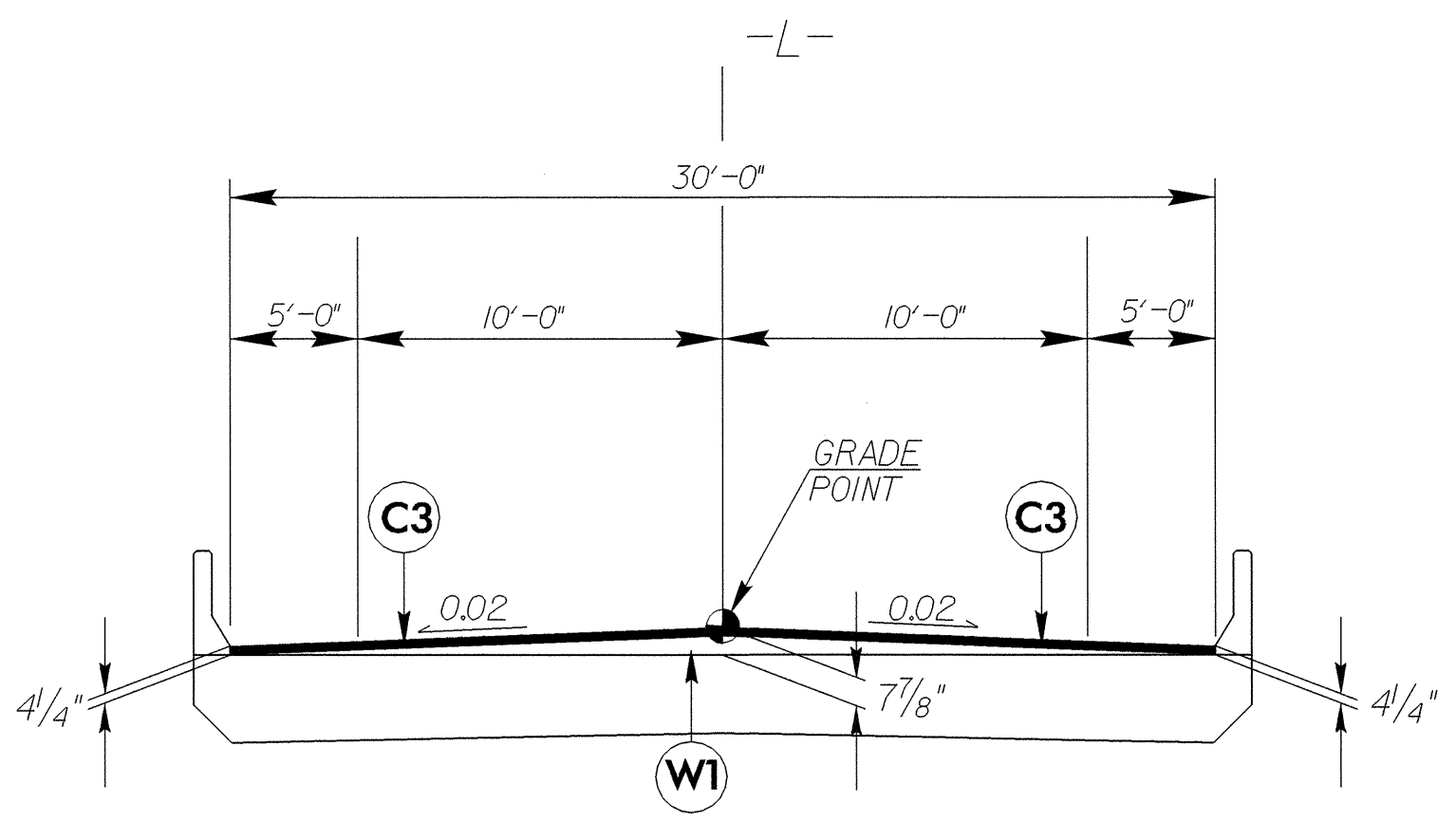
- * -L- FROM STA.10+20.47 TO STA.10+25.00
- L- FROM STA.10+25.00 TO STA.12+68.00
- L- FROM STA.15+54.17 TO STA.17+73.27

PROJECT REFERENCE NO. B-3538	SHEET NO. 2-A
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER

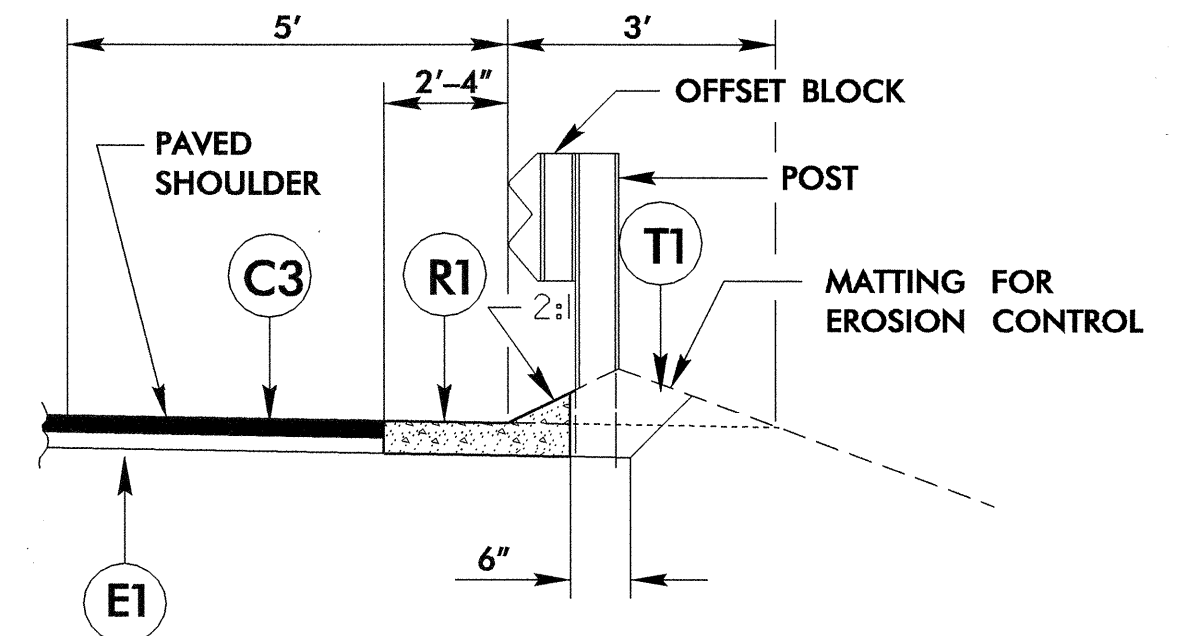
FINAL PAVEMENT SCHEDULE	
C1	1.25" ASPHALT CONCRETE TYPE SF9.5A
C2	1.5" ASPHALT CONCRETE TYPE SF9.5A
C3	2.5" ASPHALT CONCRETE TYPE SF9.5A
C4	VAR. DEPTH ASPHALT CONCRETE TYPE SF9.5A
E1	4" ASPHALT CONCRETE TYPE B25.0B
E2	VAR. DEPTH ASPHALT CONCRETE TYPE B25.0B
J1	6" AGGREGATE BASE COURSE
R1	CONCRETE SHOULDER BERM GUTTER
T1	EARTH MATERIAL
U1	EXISTING PAVEMENT
W1	VARIABLE DEPTH ASPHALT PAVEMENT



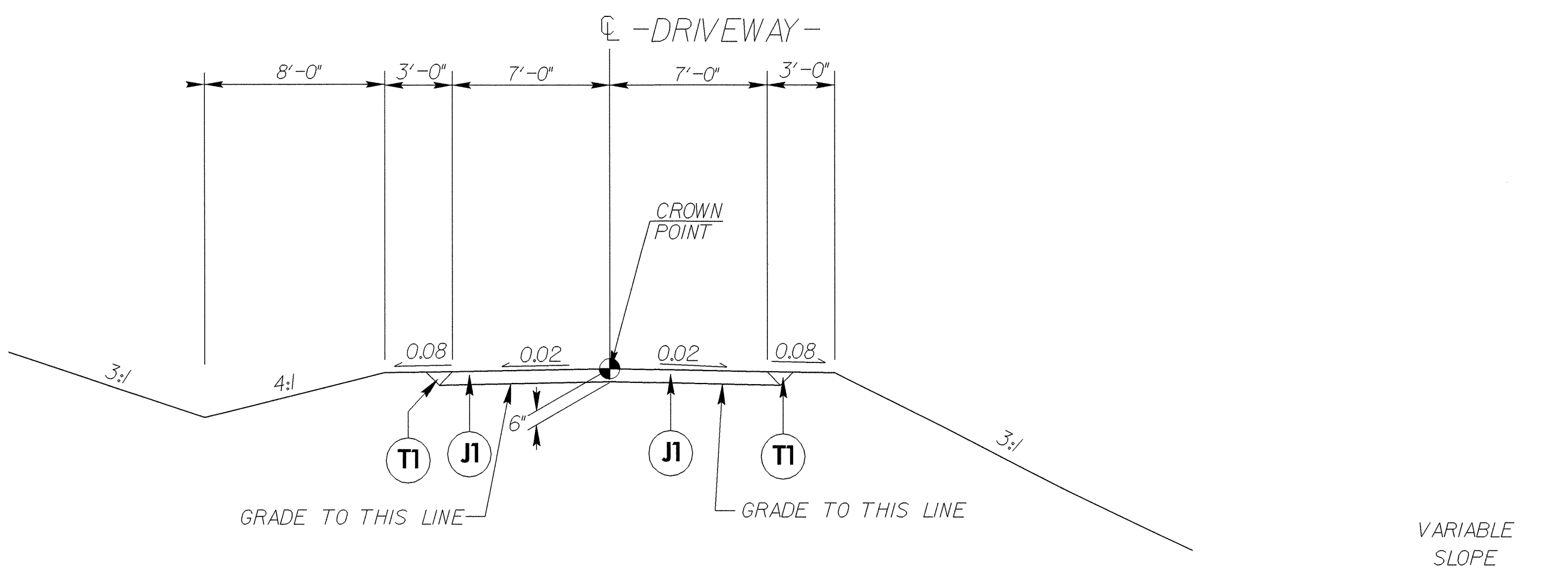
USE TYPICAL SECTION NO. 4
 -L- FROM STA.12+68.00 TO STA.13+36.47 (BEG. BRIDGE)
 -L- FROM STA.15+12.53 (END BRIDGE) TO STA.15+54.17



USE TYPICAL SECTION NO. 5
 -L- FROM STA.13+36.47 (BEGIN BRIDGE) TO STA.15+12.53 (END BRIDGE)



DETAIL SHOWING SHOULDER BERM GUTTER
 USE WITH TYPICAL SECTION NO. 4
 -L- STA. 13+03.62 TO STA. 13+10.29 RIGHT
 -L- STA. 13+03.62 TO STA. 13+10.29 LEFT
 -L- STA. 15+36.67 TO STA. 15+43.42 RIGHT
 -L- STA. 15+36.67 TO STA. 15+43.42 LEFT

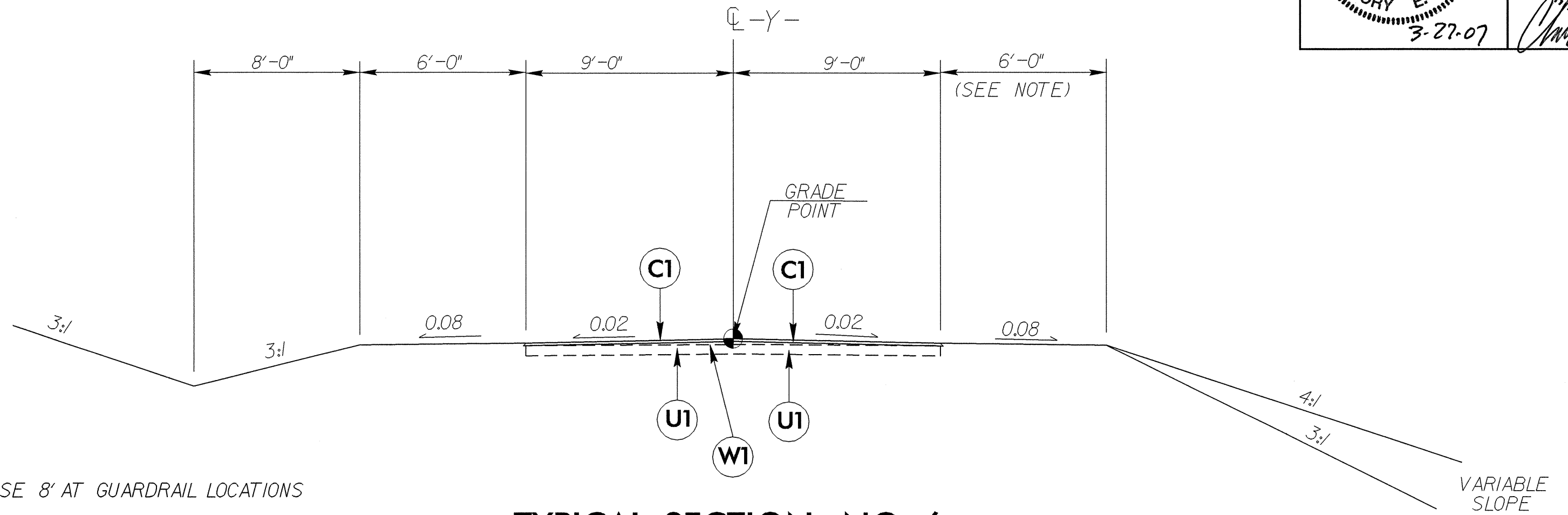


VARIABLE SLOPE

6/2/99

FINAL PAVEMENT SCHEDULE	
C1	1.25" ASPHALT CONCRETE TYPE SF9.5A
C2	1.5" ASPHALT CONCRETE TYPE SF9.5A
C3	2.5" ASPHALT CONCRETE TYPE SF9.5A
C4	VAR. DEPTH ASPHALT CONCRETE TYPE SF9.5A
E1	4" ASPHALT CONCRETE TYPE B25.0B
E2	VAR. DEPTH ASPHALT CONCRETE TYPE B25.0B
T1	EARTH MATERIAL
U1	EXISTING PAVEMENT
W1	VARIABLE DEPTH ASPHALT PAVEMENT

PROJECT REFERENCE NO. B-3538	SHEET NO. 2-B
ROADWAY DESIGN ENGINEER GREGORY E. BREWSTER SEAL 18023 NORTH CAROLINA PROFESSIONAL ENGINEER	PAVEMENT DESIGN ENGINEER CLARK S. MORRISON SEAL 22896 NORTH CAROLINA PROFESSIONAL ENGINEER

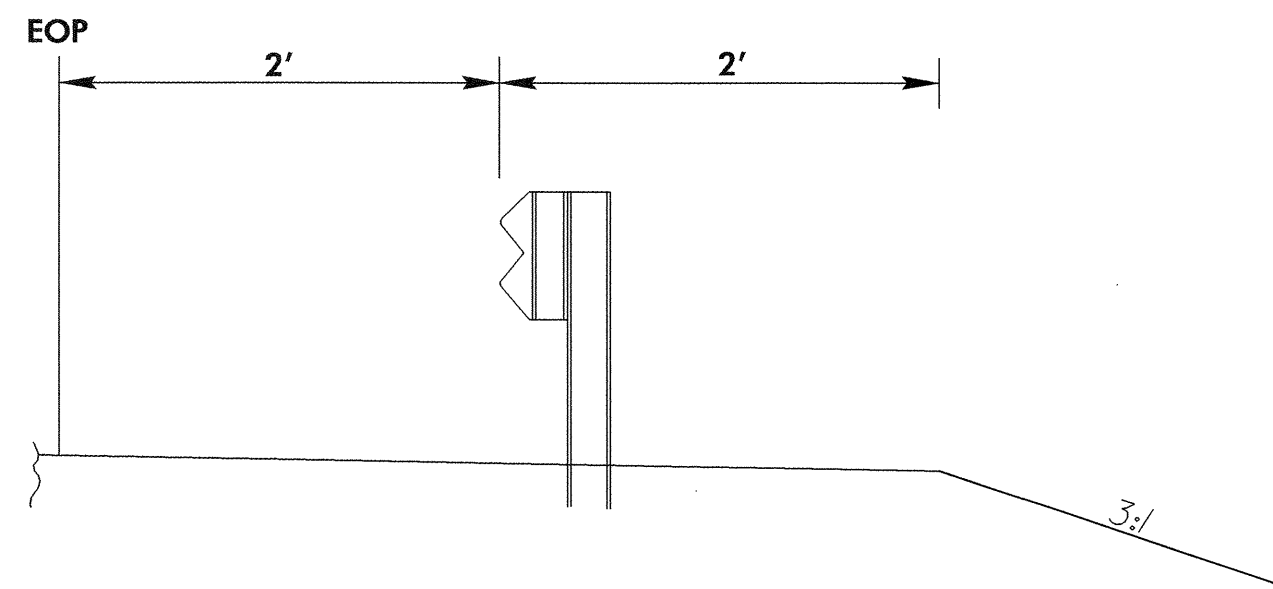


NOTE: USE 8' AT GUARDRAIL LOCATIONS

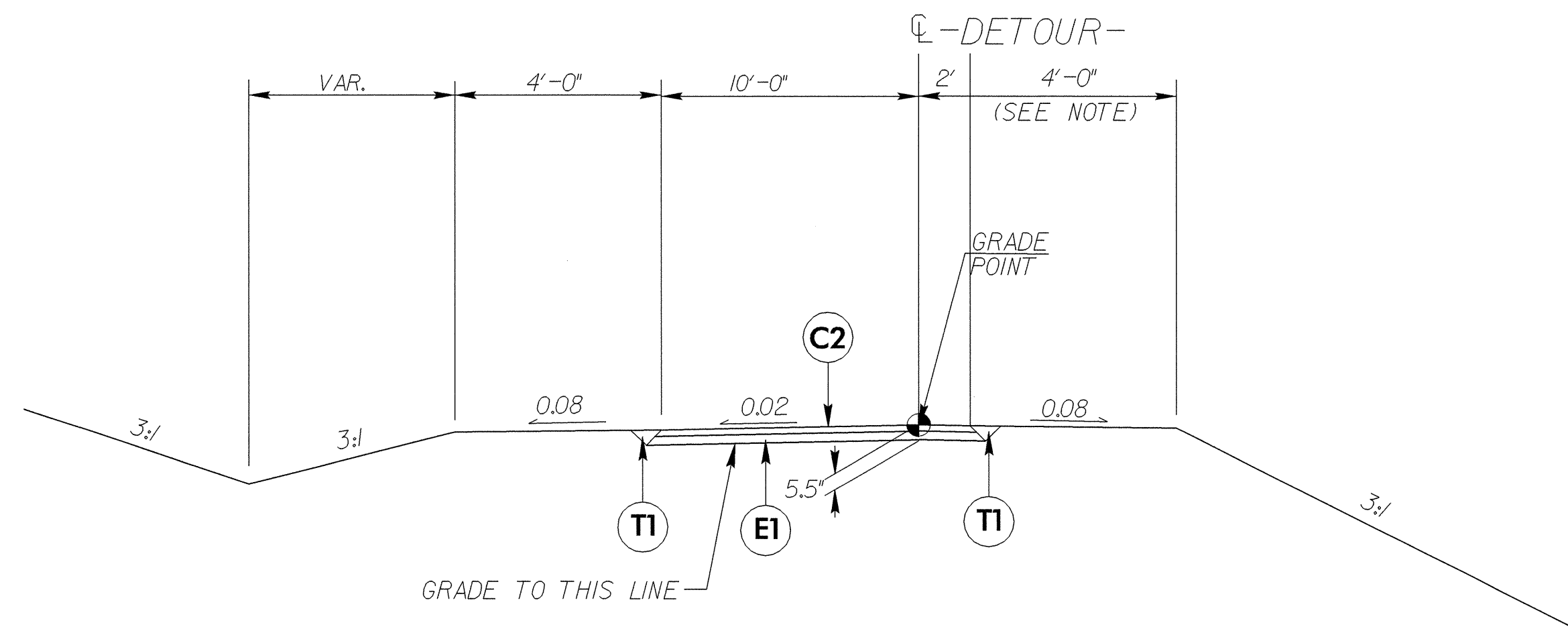
TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6

-Y- FROM STA.11+00.00 TO STA.12+04.479



DETAIL SHOWING GUARDRAIL AT 2' OFFSET
USE WITH TYPICAL SECTION NOS. 7



NOTE: USE 4' AT GUARDRAIL LOCATIONS

TYPICAL SECTION NO. 7

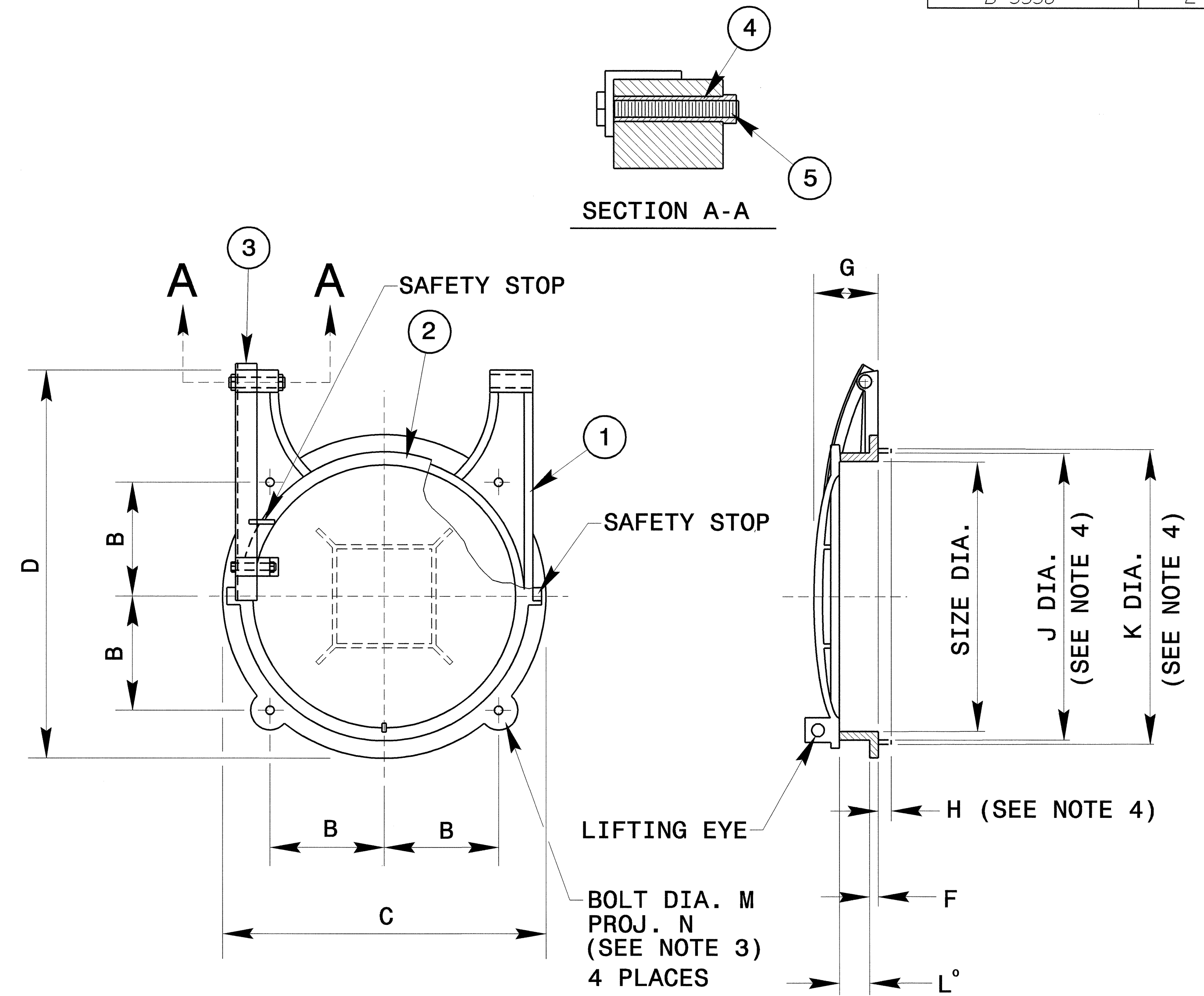
USE TYPICAL SECTION NO. 7

-DETOUR- FROM STA.11+76.37 TO STA.13+34.13(BEG. BRIDGE)
-DETOUR- FROM STA.14+98.01(END BRIDGE) TO STA.16+52.28
-DETOUR- FROM STA.16+52.28 TO STA.16+97.07, TRANSITION FROM TYP. SECT. NO. 7 TO EXISTING

20-MAR-2007 11:38 3538_r.dwg - typ.dgn

GATE DIMENSIONS IN INCHES

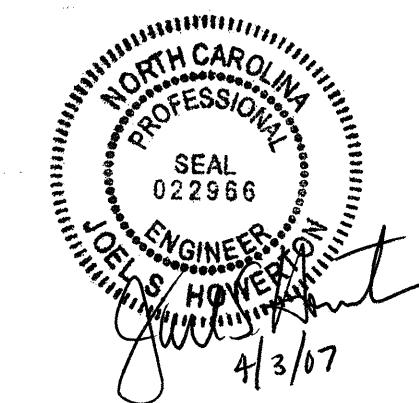
SIZE DIA.	B	C	D	F	G	H	J	K	L°	M	N
4	2 1/4	6 5/16	8 1/2	3/8	4 1/8	2 1/4	5 1/8	5 5/8	5	1 1/2	1 3/8
6	2 13/16	8 1/16	10	3/8	4 1/8	2 1/4	7 1/8	7 9/16	5	1 1/2	1 3/8
8	3 1/2	10	12	3/8	4 1/4	2 3/16	9 1/8	9 5/8	5	1 1/2	1 3/8
10	4 3/4	12 1/4	14 1/2	3/8	4 1/2	2 1/4	11 3/16	11 5/8	5	1 1/2	1 3/8
12	5 1/8	15	17 1/8	3/8	4 1/2	2 1/8	13 1/8	13 5/8	5	1 1/2	1 3/8
14	5 15/16	16 7/8	19 5/8	3/8	4 3/4	2 1/8	15 1/16	15 5/8	5	1 1/2	1 3/8
15	6 1/4	18 1/8	20	3/8	5	2 1/4	16	16 3/4	5	1 1/2	1 3/8
16	6 5/8	18 11/16	21 5/8	7/16	5	2 3/8	17	17 3/4	5	1 1/2	1 3/8
18	7 7/16	21	24 3/8	7/16	5 3/8	2 1/8	19	19 3/4	5	1 1/2	1 3/8
20	8 1/4	23 3/16	26 1/2	1/2	6	2 1/4	21 1/8	21 3/4	5	5/8	1 5/8
21	8 9/16	24 1/8	27 1/2	1/2	7	2 1/4	22	22 3/4	5	5/8	1 5/8
24	9 11/16	27 1/2	32	1/2	7 5/8	2 1/4	25	26 1/2	5	5/8	1 5/8
30	12	34	39 5/8	3/4	6 1/2	2 3/16	31	32	2 1/2	3/4	2
36	14 3/8	40 5/8	46	3/4	8	2 1/8	37	38	2 1/2	3/4	2
42	16 1/16	47 3/8	55 3/4	3/4	8	2 1/2	43 1/8	44 1/8	2 1/2	3/4	2
48	19 5/16	54 1/2	63 3/8	3/4	9 1/8	3	49 7/8	51	2 1/2	3/4	2
54	22 1/8	60 1/4	71	7/8	9 3/4	3	55 1/4	57	2 1/2	1	2 3/4
60	24 13/16	72	80 5/8	1	10 3/4	3	61 1/4	62 3/4	2 1/2	1	2 3/4
72	29	83	95 1/2	1 1/8	11 1/2	3 1/8	74 3/4	76 1/2	2 1/2	1	2 3/4



NOTES:

- FOR USE WITH SEATING HEADS TO 10 FEET.
- NOT RECOMMENDED FOR PUMP DISCHARGE USE.
- ADD GROUT PAD THICKNESS TO ANCHOR BOLT PROJECTION.
- APPLIES TO SPIGOT BACK GATE ONLY. SPIGOT, SHOWN IN PHANTOM, IS OPTIONAL.
- INSTALL AS DIRECTED BY THE ENGINEER.

- ① FRAME
- ② COVER
- ③ HINGE LINK
- ④ HINGE BUSHING
- ⑤ HINGE BOLT & NUT



PROJECT SERVICES UNIT STANDARDS AND SPECIAL DESIGN Office 919-250-4128 FAX 919-250-4119	
FLAP GATE DETAIL	
ORIGINAL BY:	DATE:
MODIFIED BY: rnbritt	DATE: 2-28-07
CHECKED BY:	DATE:
FILE SPEC.: details/rnbritt/english/hydro/flapgate.dgn	

5/14/99
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STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

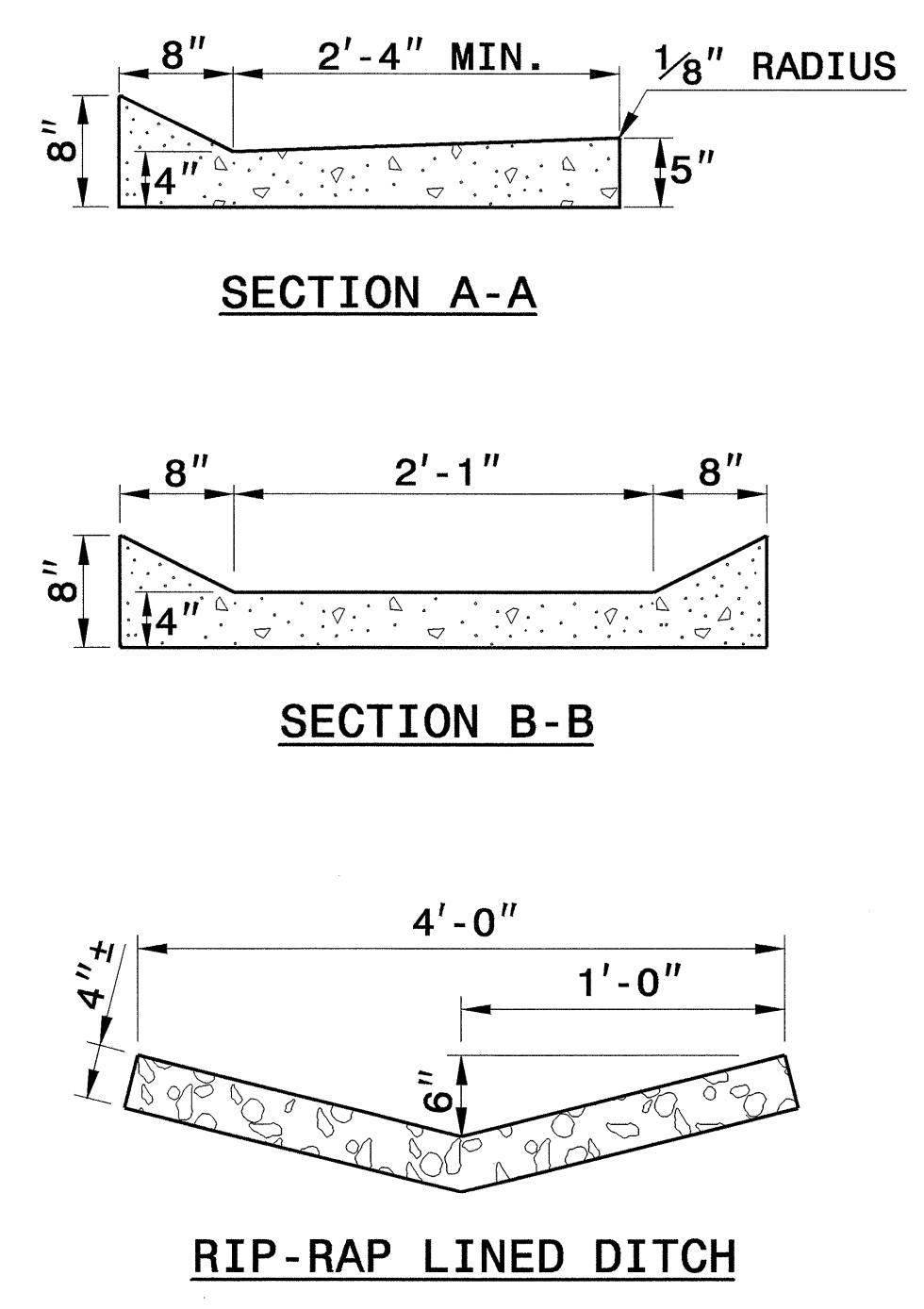
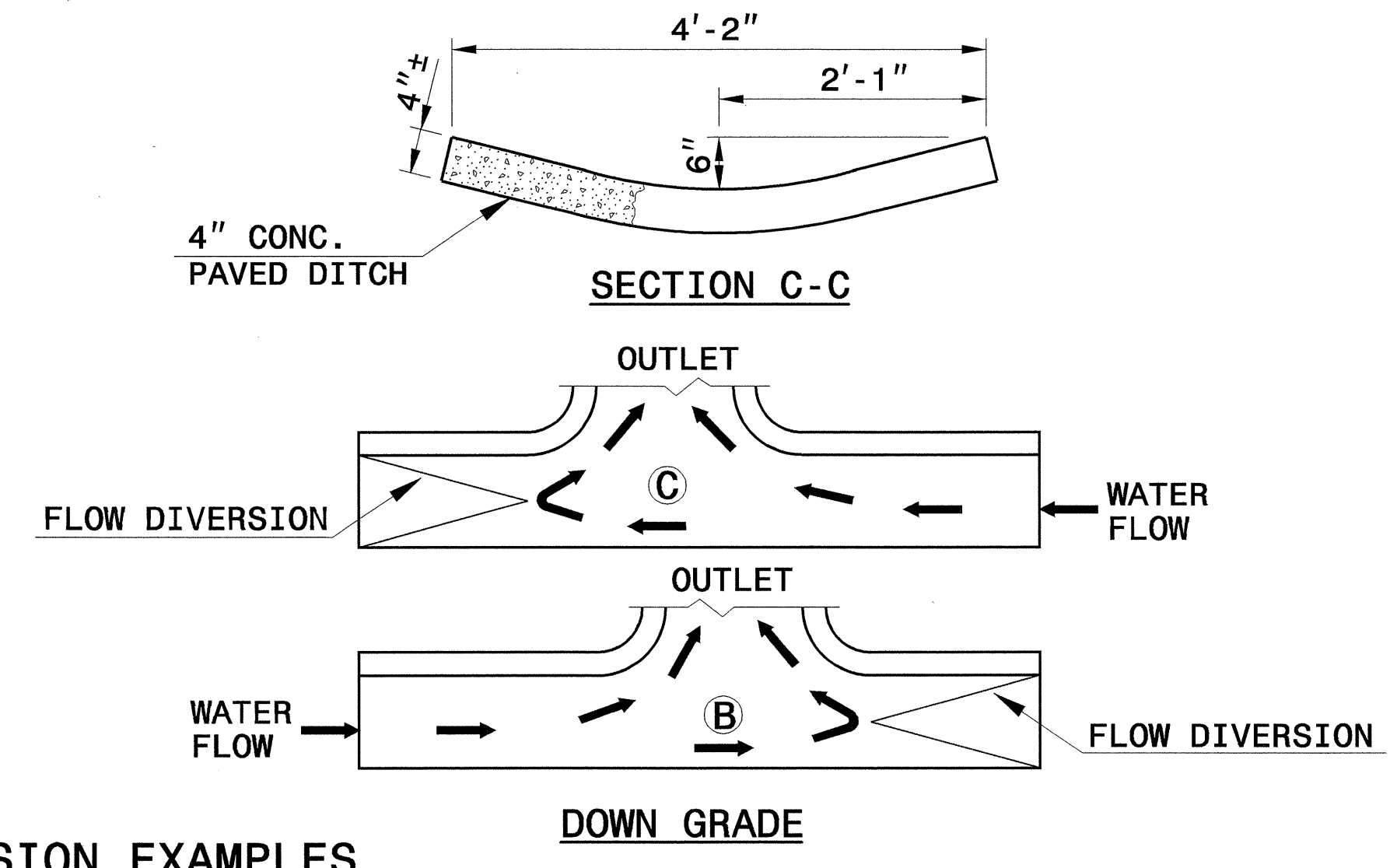
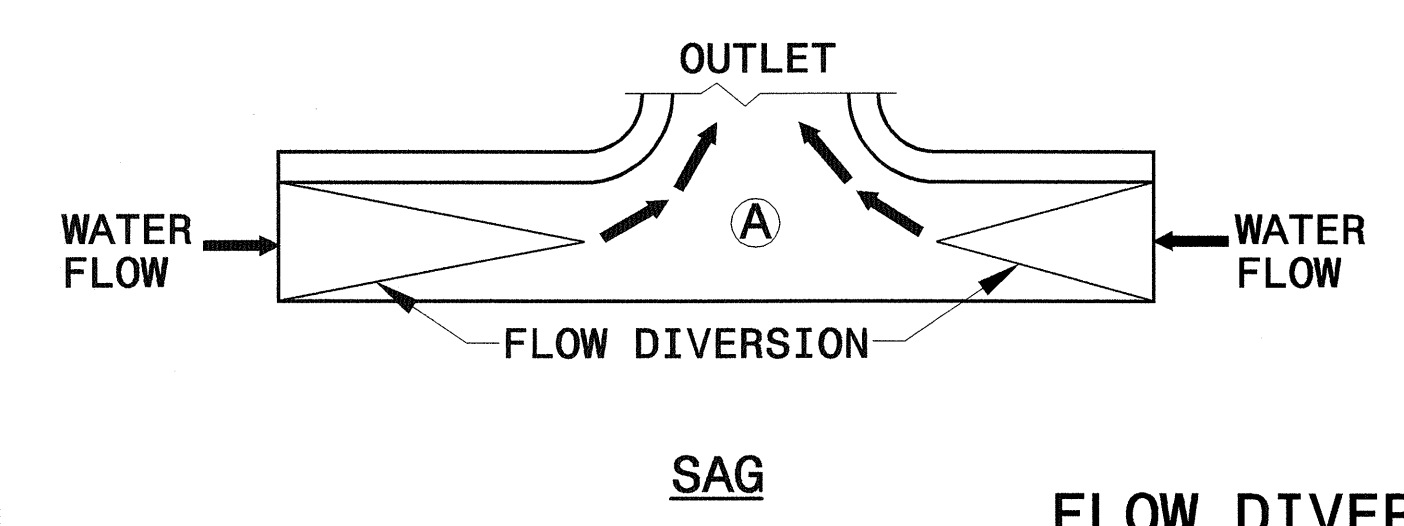
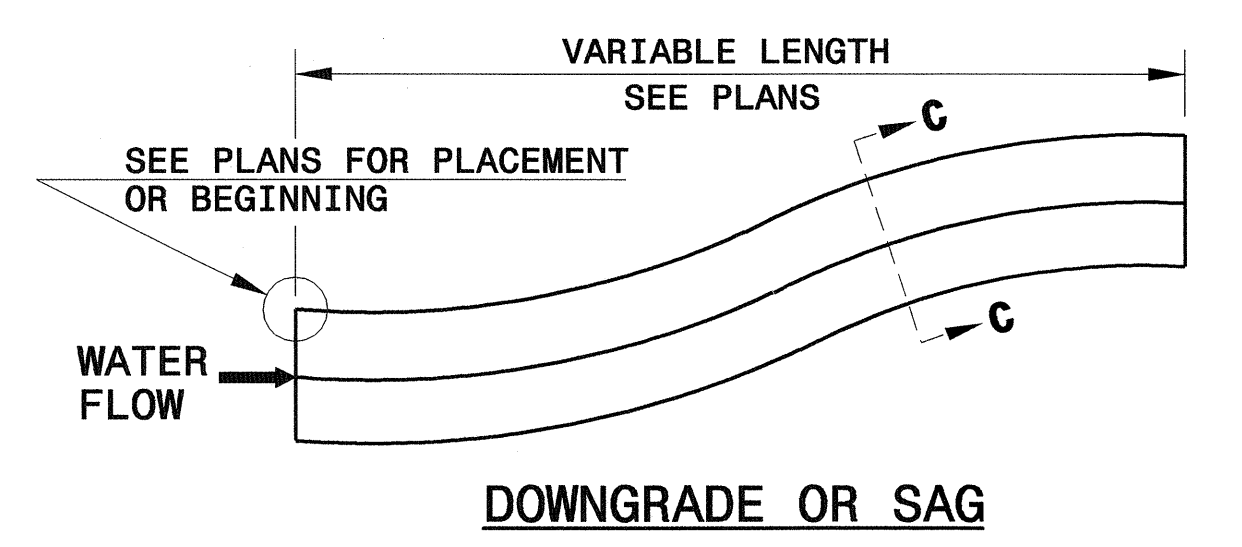
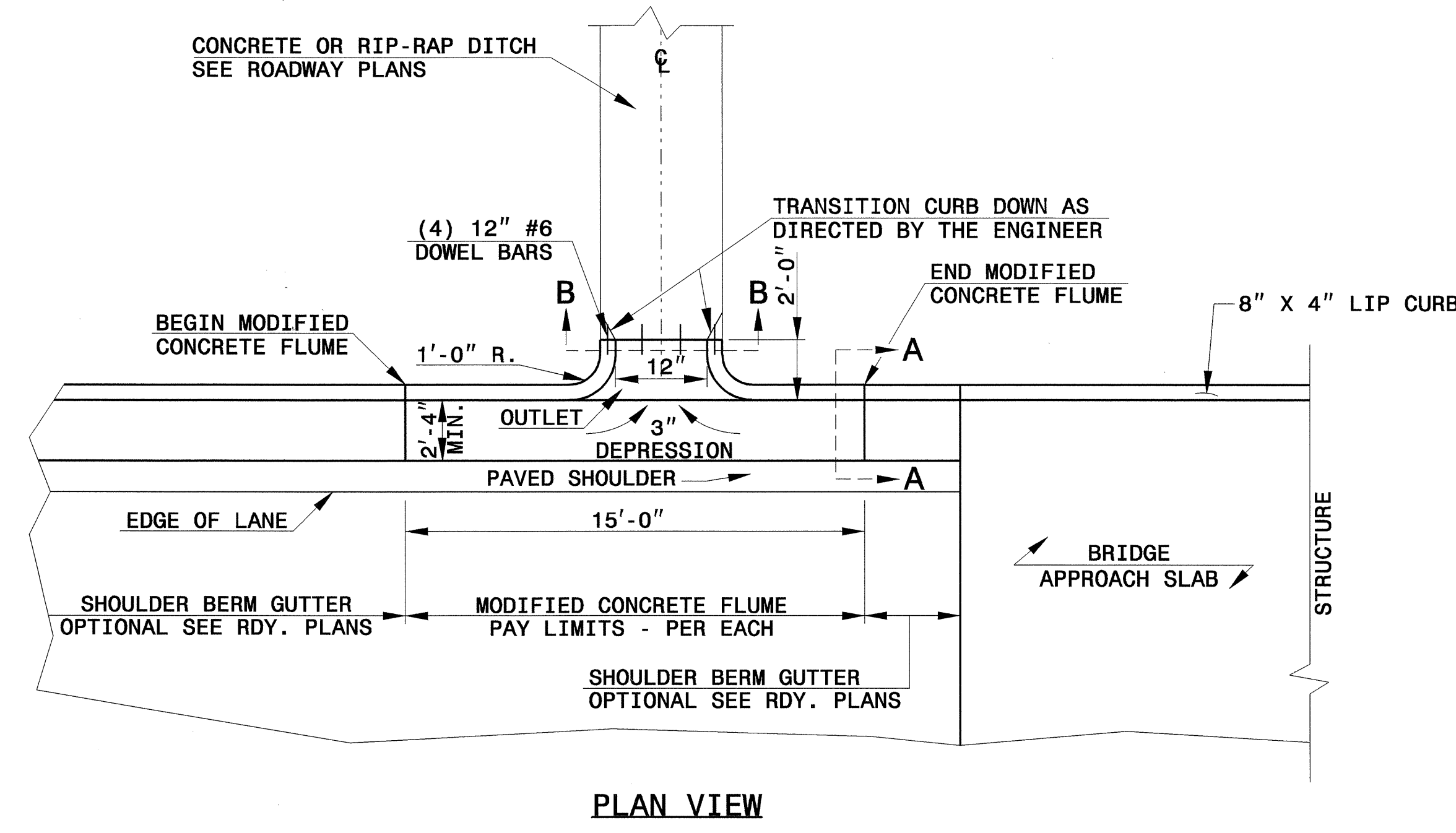
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
MODIFIED CONCRETE FLUME
WITH CONCRETE OR RIP-RAP DITCH

ENGLISH DETAIL DRAWING FOR
MODIFIED CONCRETE FLUME
WITH CONCRETE OR RIP-RAP DITCH

SHEET 1 OF 1
MODFLMDTCH

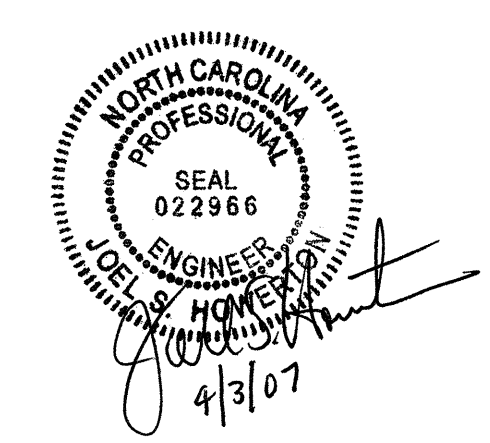
SHEET 1 OF 1
MODFLMDTCH



NOTES:

- CONSTRUCT MODIFIED CONCRETE FLUME AND SHOULDER BERM GUTTER IN ACCORDANCE WITH THIS DETAIL.
- CONSTRUCT CONCRETE DITCH IN ACCORDANCE WITH STD. DWG. NO. 850.01.
- CONSTRUCT RIP RAP LINED DITCH IN ACCORDANCE WITH THIS DETAIL, IF CALLED FOR IN PLANS.
- CONCRETE OR RIP RAP LINED DITCH SHALL BE THE TYPE AND LENGTH SPECIFIED BY THE ROADWAY PLANS. THE DITCH SHALL TERMINATE AS SHOWN ON THE PLANS. IF NO TERMINATION IS INDICATED PLACE RIP-RAP AT THE END OF THE DITCH AS INDICATED BY STD. DWG. 876.02 FOR AN 18" PIPE. TRANSITIONS FROM THE DITCH TO TERMINATION SHALL BE AS DIRECTED BY THE ENGINEER.
- MODIFICATIONS SHALL BE AS DICTATED BY SITE CONDITIONS AND DIRECTED BY THE ENGINEER.

5/14/99
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**PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN**
Office 919-250-4128 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: _____	DATE: _____
MODIFIED BY: rnbritt	DATE: 10-14-05
CHECKED BY: _____	DATE: _____
FILE SPEC.: details/nbritt/english/misc/modifiedflume.dgn	

STATE OF NORTH CAROLINA
SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201478

ItemNumber	Sec #	Quantity	Unit	Description
000010000-N	800	Lump Sum		MOBILIZATION
000040000-N	801	Lump Sum		CONSTRUCTION SURVEYING
002900000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (14+24.50)
004300000-N	226	Lump Sum		GRADING
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
005700000-E	226	100	CY	UNDERCUT EXCAVATION
019500000-E	265	500	CY	SELECT GRANULAR MATERIAL
019600000-E	270	500	SY	FABRIC FOR SOIL STABILIZATION
031800000-E	300	30	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
034300000-E	310	76	LF	15" SIDE DRAIN PIPE
037800000-E	310	100	LF	24" RC PIPE CULVERTS, CLASS III
057600000-E	310	104	LF	*** CS PIPE CULVERTS, ***** THICK (12", 0.064")
099200000-E	SP	1	EA	GENERIC PIPE ITEM 24" FLAP GATE
099500000-E	340	200	LF	PIPE REMOVAL
099600000-N	350	2	EA	PIPE CLEAN-OUT
112100000-E	520	100	TON	AGGREGATE BASE COURSE
122000000-E	545	50	TON	INCIDENTAL STONE BASE
133000000-E	607	130	SY	INCIDENTAL MILLING
148900000-E	610	310	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
152500000-E	610	640	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
156000000-E	620	55	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
200000000-N	806	9	EA	RIGHT OF WAY MARKERS
202200000-E	815	30	CY	SUBDRAIN EXCAVATION
203300000-E	815	20	CY	SUBDRAIN FINE AGGREGATE
204400000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE
205500000-E	815	3	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS
206600000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET
207700000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)
220900000-E	838	2	CY	ENDWALLS
255600000-E	846	50	LF	SHOULDER BERM GUTTER
257000000-N	SP	2	EA	MODIFIED CONCRETE FLUME
261900000-E	850	15	SY	4" CONCRETE PAVED DITCH
303000000-E	862	175	LF	STEEL BM GUARDRAIL
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
327000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
331700000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
338000000-E	862	75	LF	TEMPORARY STEEL BM GUARDRAIL
338200000-E	862	175	LF	TEMPORARY STEEL BM GUARDRAIL (SHOP CURVED)
338700000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** TEMPORARY (AT-1)
338700000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** TEMPORARY (III)
338910000-N	SP	3	EA	GUARDRAIL ANCHOR UNITS, TYPE 350 TEMPORARY
364900000-E	876	15	TON	RIP RAP, CLASS B
365600000-E	876	251	SY	FILTER FABRIC FOR DRAINAGE
402500000-E	901	39.75	SF	CONTRACTOR FURNISHED, TYPE *** SIGN (E)
407200000-E	903	104	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
410200000-N	904	6	EA	SIGN ERECTION, TYPE E
415500000-N	907	9	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
415800000-N	907	1	EA	DISPOSAL OF SIGN SYSTEM, WOOD

ItemNumber	Sec #	Quantity	Unit	Description
423800000-N	907	4	EA	DISPOSAL OF SIGN, D, E OR F
440000000-E	1110	446	SF	WORK ZONE SIGNS (STATIONARY)
440500000-E	1110	224	SF	WORK ZONE SIGNS (PORTABLE)
441000000-E	1110	109	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
443000000-N	1130	40	EA	DRUMS
443500000-N	1135	15	EA	CONES
444500000-E	1145	50	LF	BARRICADES (TYPE III)
445000000-N	1150	160	HR	FLAGGER
451600000-N	1180	30	EA	SKINNY DRUM
465000000-N	1251	30	EA	TEMPORARY RAISED PAVEMENT MARKERS
481000000-E	1205	34,400	LF	PAINT PAVEMENT MARKING LINES (4")
483500000-E	1205	80	LF	PAINT PAVEMENT MARKING LINES (24")
490000000-N	1251	30	EA	PERMANENT RAISED PAVEMENT MARKERS
532520000-E	1510	80	LF	2" WATER LINE
532560000-E	1510	576	LF	6" WATER LINE
553600000-E	1515	1	EA	2" VALVE
554000000-E	1515	2	EA	6" VALVE
564800000-N	1515	6	EA	RELOCATE WATER METER
564900000-N	1515	2	EA	RECONNECT WATER METER
567200000-N	1515	1	EA	RELOCATE FIRE HYDRANT
600000000-E	1605	1,120	LF	TEMPORARY SILT FENCE
600600000-E	1610	150	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	350	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	125	TON	SEDIMENT CONTROL STONE
601500000-E	1615	13	ACR	TEMPORARY MULCHING
601800000-E	1620	450	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	2	TON	FERTILIZER FOR TEMPORARY SEEDING
602400000-E	1622	50	LF	TEMPORARY SLOPE DRAINS
602700000-N	1622	2	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
602900000-E	SP	200	LF	SAFETY FENCE
603000000-E	1630	1,505	CY	SILT EXCAVATION
603600000-E	1631	340	SY	MATTING FOR EROSION CONTROL
604200000-E	1632	20	LF	1/4" HARDWARE CLOTH
607103000-E	SP	295	LF	COIR FIBER BAFFLES
608400000-E	1660	12.5	ACR	SEEDING & MULCHING
608700000-E	1660	7.5	ACR	MOWING
609000000-E	1661	150	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	300	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	9.25	TON	FERTILIZER TOPDRESSING
611400000-N	SP	2	HR	SPECIALIZED HAND MOWING
611700000-N	SP	18	EA	RESPONSE FOR EROSION CONTROL
612300000-E	1670	0.45	ACR	REFORESTATION
706000000-E	1705	755	LF	SIGNAL CABLE
712000000-E	1705	4	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
725200000-E	1710	640	LF	MESSENGER CABLE (1/4")
726400000-E	1710	70	LF	MESSENGER CABLE (3/8")
736000000-N	1720	7	EA	WOOD POLE
737200000-N	1721	6	EA	GUY ASSEMBLY
740800000-E	1722	1	EA	1" RISER WITH WEATHERHEAD
742000000-E	1722	2	EA	2" RISER WITH WEATHERHEAD
744400000-E	1725	280	LF	INDUCTIVE LOOP SAWCUT
745600000-E	1726	810	LF	LEAD-IN CABLE (***** (18-2)

ItemNumber	Sec #	Quantity	Unit	Description
763600000-N	1745	2	EA	SIGN FOR SIGNALS
776800000-N	1751	1	EA	CONTROLLER WITH CABINET (TYPE 2070L, POLE MOUNTED)
778000000-N	1751	1	EA	DETECTOR CARD (TYPE 2070L)

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
SUMMARY NO. 1 (PHASE 1) DETOUR PLACEMENT					
11+75.00 TO 13+34.00 -DETOUR-	1		603	579	
14+98.02 TO 16+97.07 -DETOUR-	8		698	664	1
SUMMARY NO. 1 TOTAL	9		1301	1243	1
SUMMARY NO. 2 (PHASE 2)					
7+00.00 TO 11+75.00 -L- RT. SIDE	694		99		599
10+00.00 TO 12+25.00 -L- LT. SIDE	3		42	38	1
12+25.00 TO 13+36.47 -L-	260		186		81
15+12.53 TO 16+50.00 -L-	700		100		604
16+50.00 TO 19+25.00 -L- RT. SIDE	91		35		57
17+25.00 TO 24+66.83 -L- LT. SIDE	510		70		443
11+00.00 TO 11+75.00 -Y- RT. SIDE	23		36	13	1
11+00.00 TO 11+75.00 -Y- LT. SIDE	23		35	12	1
SUMMARY NO. 2 TOTAL	2304		603	63	1787
SUMMARY NO. 3 (PHASE 3 DETOUR REMOVAL)					
12+25.00 TO 13+34.13 -L- LT. SIDE	455				455
14+98.02 TO 17+25.00 -L- LT. SIDE	489		31		459
SUMMARY NO. 3 TOTAL	944		31		914
SUMMARY TOTALS	3257			1306	2702
WASTE TO BE USED IN LIEU OF BORROW				-63	-63
PROJECT TOTAL	3257			1243	2639
EST. 5% FOR REPLACEMENT OF TOPSOIL AT					
BORROW PIT				62	
GRAND TOTAL	3257			1305	
SAY	3300			1350	
EST. 100 CY UNDERCUT					

SUMMARY OF ASPHALT PAVEMENT REMOVAL

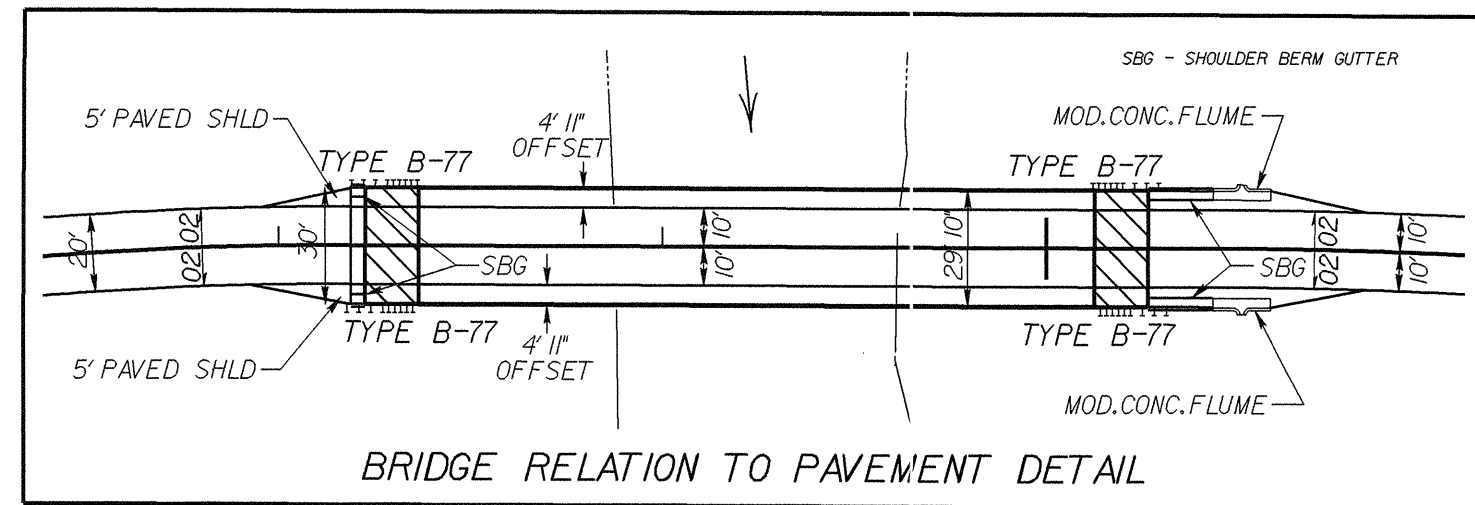
IN SQUARE YARDS

LINE	STATION TO STATION	LOCATION	ASPHALT REMOVAL
-L-	10+38.32 TO 11+77.10	RT. OF -L-	48
-L-	12+24.61 TO 13+43.58	RT. OF -L-	255
-L-	15+08.17 TO 16+51.20	RT. OF -L-	3086
-DETOUR-	11+87.03 TO 13+34.13	CENTERLINE	226
-DETOUR-	14+98.82 TO 16+78.23	CENTERLINE	217
-Y-	11+00.00 TO 12+12.32	RT. OF -Y-	43
		TOTAL	3875
		SAY	3880

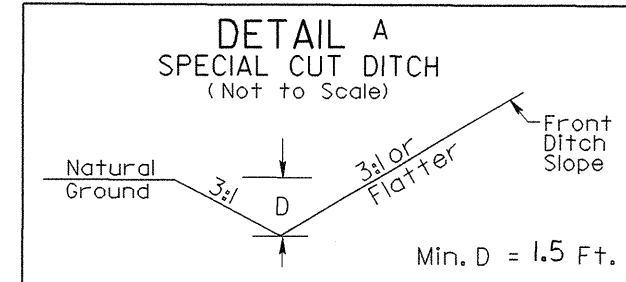
Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the lump sum price for "Grading".

NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

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SEE STRUCTURE PLANS S-1 THRU S-24 FOR STRUCTURE

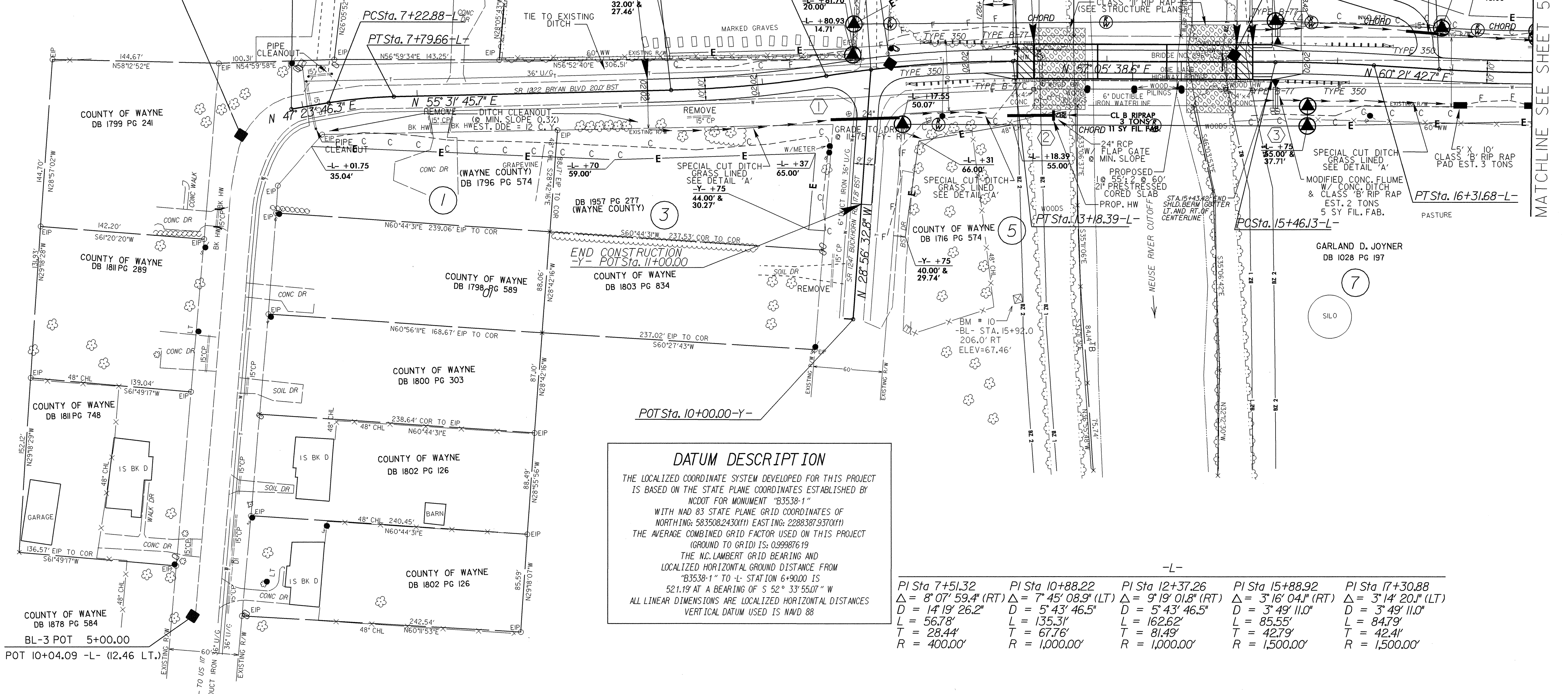


STA. 10+00 TO 13+12 -L- RT
STA. 15+25 TO 17+00 -L- RT
STA. 15+25 TO 17+60 -L- LT

DAVID G. WARREN
DB 1301 PG 722
MB 02 PG 49

-L- POT Sta. 6+90.00 BEGIN TIP PROJECT B-3538

BL-4 PINC 9+20.05
POC 14+16.16 -L- (20.37 LT.)



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B3538-1"

WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 583508.2430(11) EASTING: 2288387.9370(11)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99987619

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B3538-1" TO -L- STATION 6+90.00 IS 521.19' AT A BEARING OF S 52° 33' 55.01" W

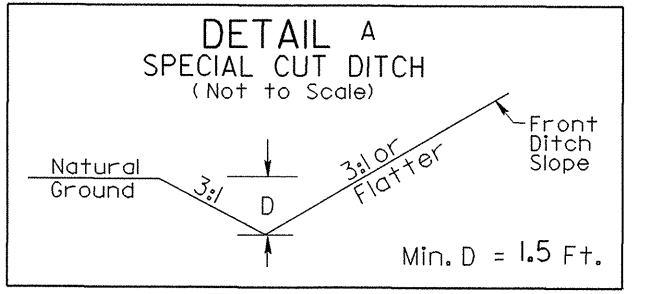
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAD 88

-L-	-L-	-L-	-L-	-L-
PI Sta 7+51.32	PI Sta 10+88.22	PI Sta 12+37.26	PI Sta 15+88.92	PI Sta 17+30.88
$\Delta = 8' 07" 59.4" (RT)$	$\Delta = 7' 45" 08.9" (LT)$	$\Delta = 9' 19" 01.8" (RT)$	$\Delta = 3' 16" 04.1" (RT)$	$\Delta = 3' 14" 20.1" (LT)$
$D = 14' 19" 26.2"$	$D = 5' 43" 46.5"$	$D = 5' 43" 46.5"$	$D = 3' 49" 11.0"$	$D = 3' 49" 11.0"$
$L = 56.78'$	$L = 135.31'$	$L = 162.62'$	$L = 85.55'$	$L = 84.79'$
$T = 28.44'$	$T = 67.76'$	$T = 81.49'$	$T = 42.79'$	$T = 42.41'$
$R = 400.00'$	$R = 1,000.00'$	$R = 1,000.00'$	$R = 1,500.00'$	$R = 1,500.00'$

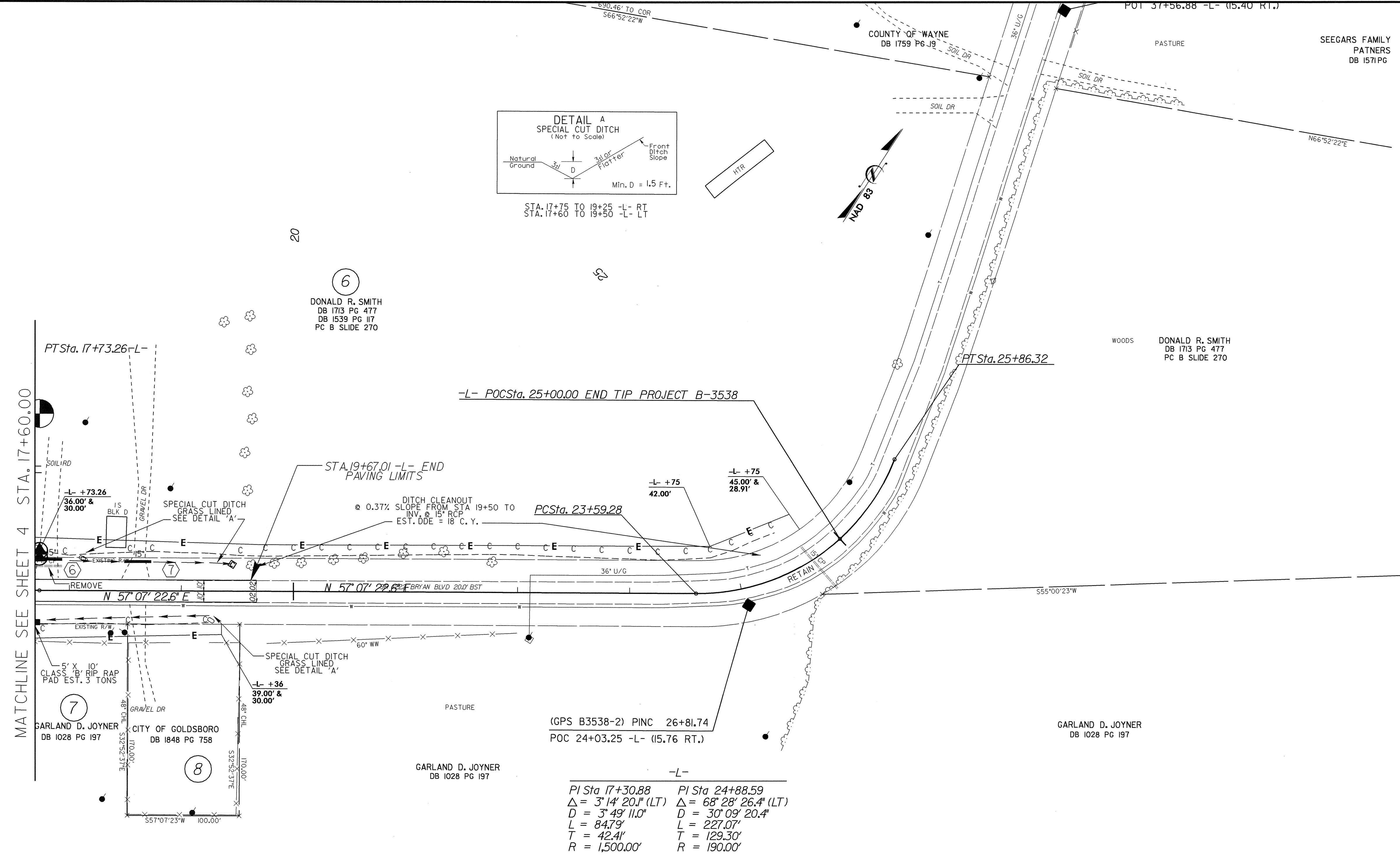
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MATCHLINE SEE SHEET 5 STA. 17+60.00

PROJECT REFERENCE NO. B-3538		SHEET NO. 5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER GREGORY E. BRUN		HYDRAULICS ENGINEER PAUL F. FISHER	
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19903		NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 12576	
3-27-07		3/26/07	



STA. 17+75 TO 19+25 -L- RT
STA. 17+60 TO 19+50 -L- LT



(GPS B3538-2) PINC 26+81.74
POC 24+03.25 -L- (15.76 RT.)

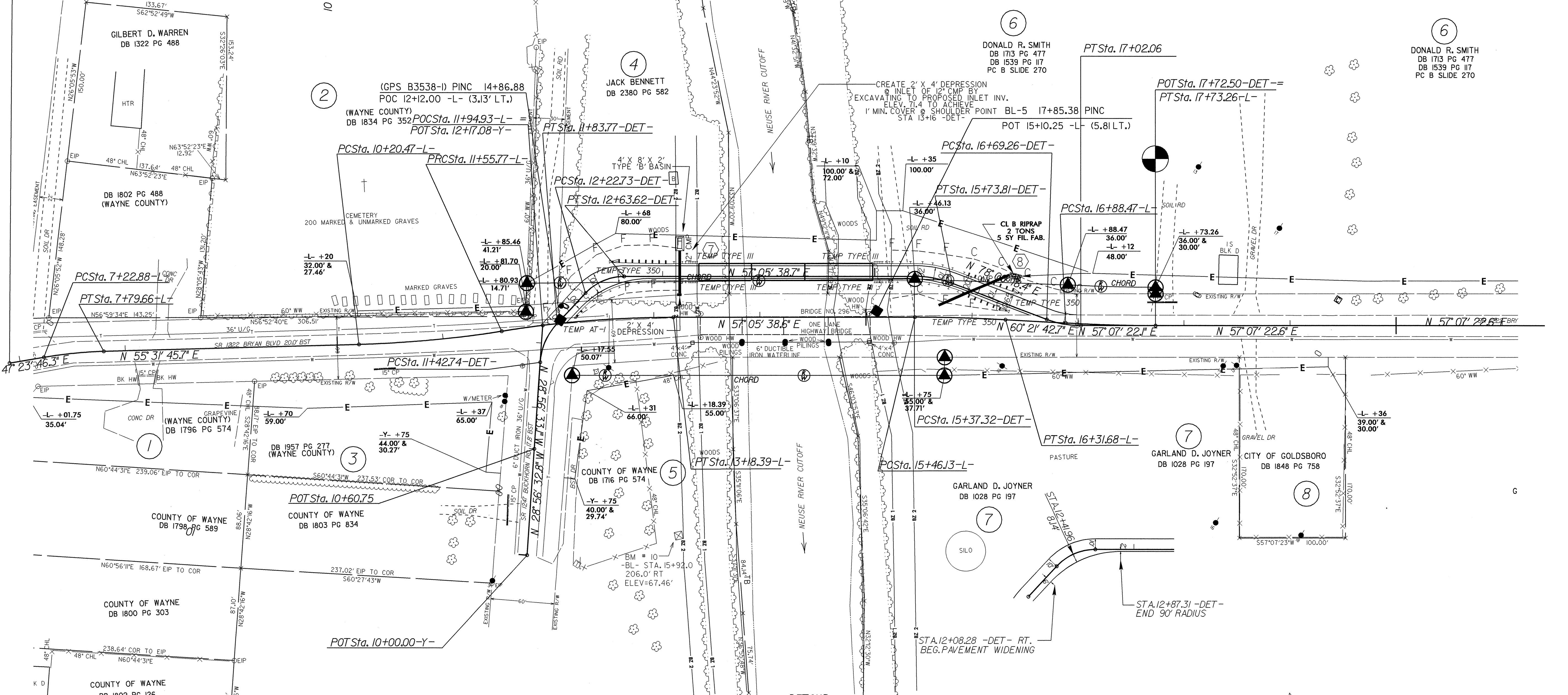
-L-

PI Sta 17+30.88	PI Sta 24+88.59
$\Delta = 3' 14' 20.1''$ (LT)	$\Delta = 68' 28' 26.4''$ (LT)
$D = 3' 49' 11.0''$	$D = 30' 09' 20.4''$
$L = 84.79'$	$L = 227.07'$
$T = 42.41'$	$T = 129.30'$
$R = 1,500.00'$	$R = 190.00'$

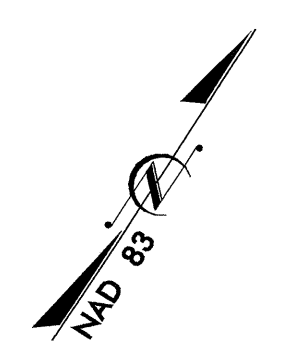
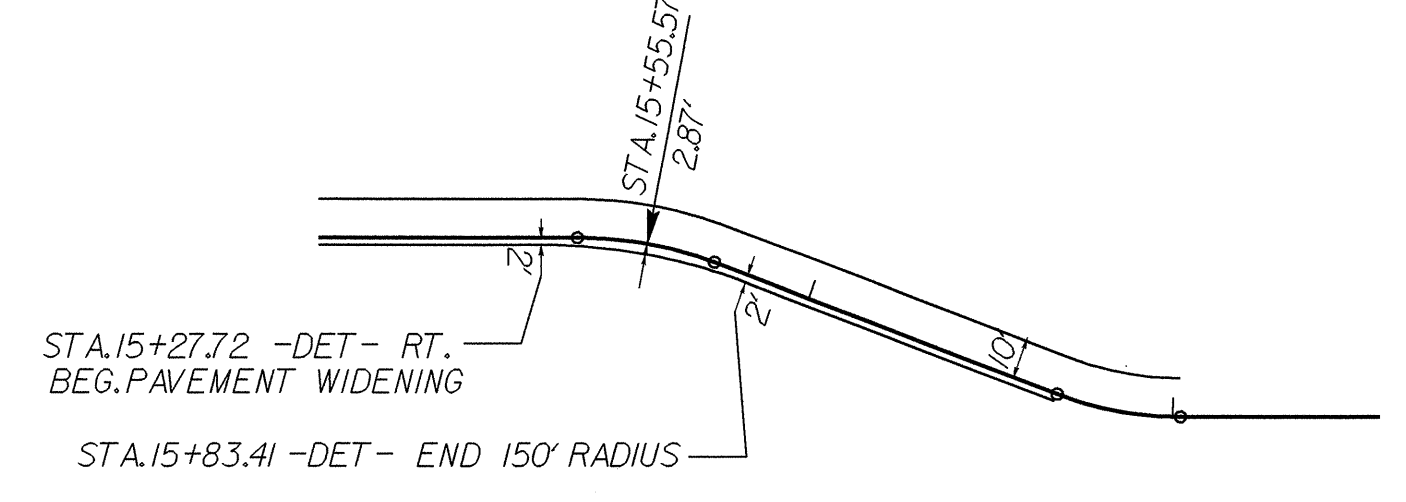
MATCHLINE SEE SHEET 4 STA. 17+60.00

8/17/99
20-MAR-2007 11:38 3538_rdy.psh6.dwt.dgn

-L- POTSta. 6+90.00 BEGIN TIP PROJECT B-3538



PI Sta 12+44.40 Δ = 46° 51' 21.6" (RT) D = 114' 35' 29.6" L = 40.89' T = 21.67' R = 50.00'	PI Sta 11+64.10 Δ = 39° 10' 50.1" (RT) D = 95' 29' 34.7" L = 41.03' T = 21.35' R = 60.00'	PI Sta 15+55.77 Δ = 20° 54' 39.8" (RT) D = 57' 17' 44.8" L = 36.50' T = 18.45' R = 100.00'	PI Sta 16+85.84 Δ = 20° 52' 56.4" (LT) D = 63' 39' 43.1" L = 32.80' T = 16.58' R = 90.00'
PI Sta 7+51.32 Δ = 8° 07' 59.4" (RT) D = 14' 19' 26.2" L = 56.78' T = 28.44' R = 400.00'	PI Sta 10+88.22 Δ = 7° 45' 08.9" (LT) D = 5' 43' 46.5" L = 135.31' T = 67.76' R = 1,000.00'	PI Sta 12+37.26 Δ = 9° 19' 01.8" (RT) D = 5' 43' 46.5" L = 162.62' T = 81.49' R = 1,000.00'	PI Sta 15+88.92 Δ = 3° 16' 04.1" (RT) D = 3' 49' 11.0" L = 85.55' T = 42.79' R = 1,500.00'
PI Sta 17+30.88 Δ = 3° 14' 20.1" (LT) D = 3' 49' 11.0" L = 84.79' T = 42.41' R = 1,500.00'			



5/28/99

BM *10 STA.13+23.16 L- R/R SPIKE SET IN 30' OAK TREE LOCATED 205.66' RIGHT ELEV. = 67.46'

PROJECT REFERENCE NO. B-3538	SHEET NO. 7
ROADWAY DESIGN ENGINEER GREGORY E. BRENNAN SEAL 18308 3-27-07	HYDRAULICS ENGINEER PAUL F. FISHER SEAL 12316 9/26/07

STA.10+25.00 BEGIN GRADE ELEV.73.67
OVERLAY FROM STA.10+00.00 -L- TO STA.10+25.00 -L-

PI = 11+00.00
EL = 73.85'
VC = 100.00'

PI = 12+75.00
EL = 75.11'
VC = 70.00'

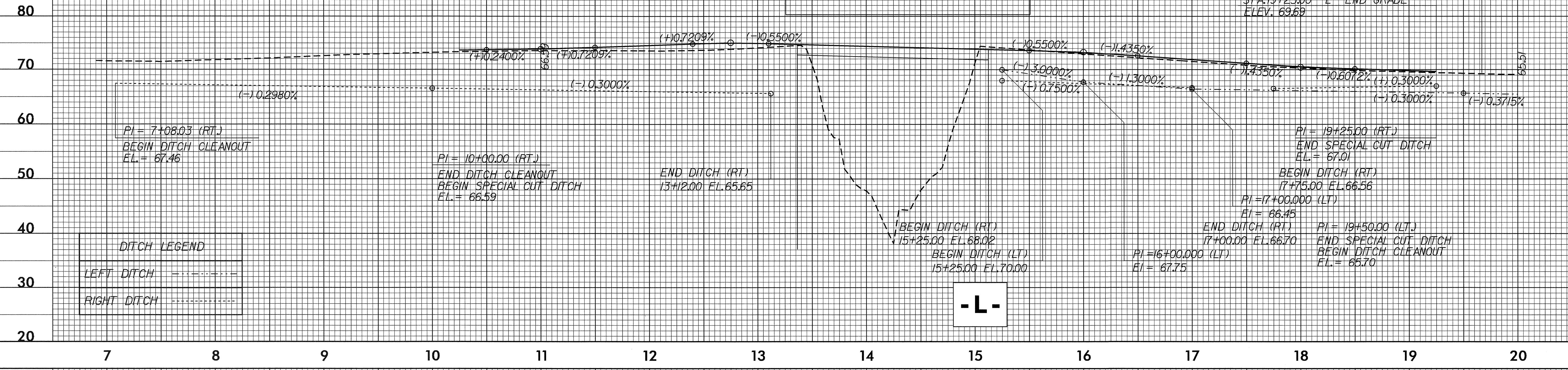
STRUCTURE HYDRAULIC DATA	
DESIGN DISCHARGE	= 28000 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 71.49 FT
BASE DISCHARGE	= 38000 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 74.25 FT
OVERTOPPING DISCHARGE	= 33000 CFS
OVERTOPPING FREQUENCY	= 7-50 YRS
OVERTOPPING ELEVATION	= 72.77 FT

PI = 16+00.00
EL = 73.32'
VC = 100.00'

PI = 18+00.00
EL = 70.45'
VC = 100.00'

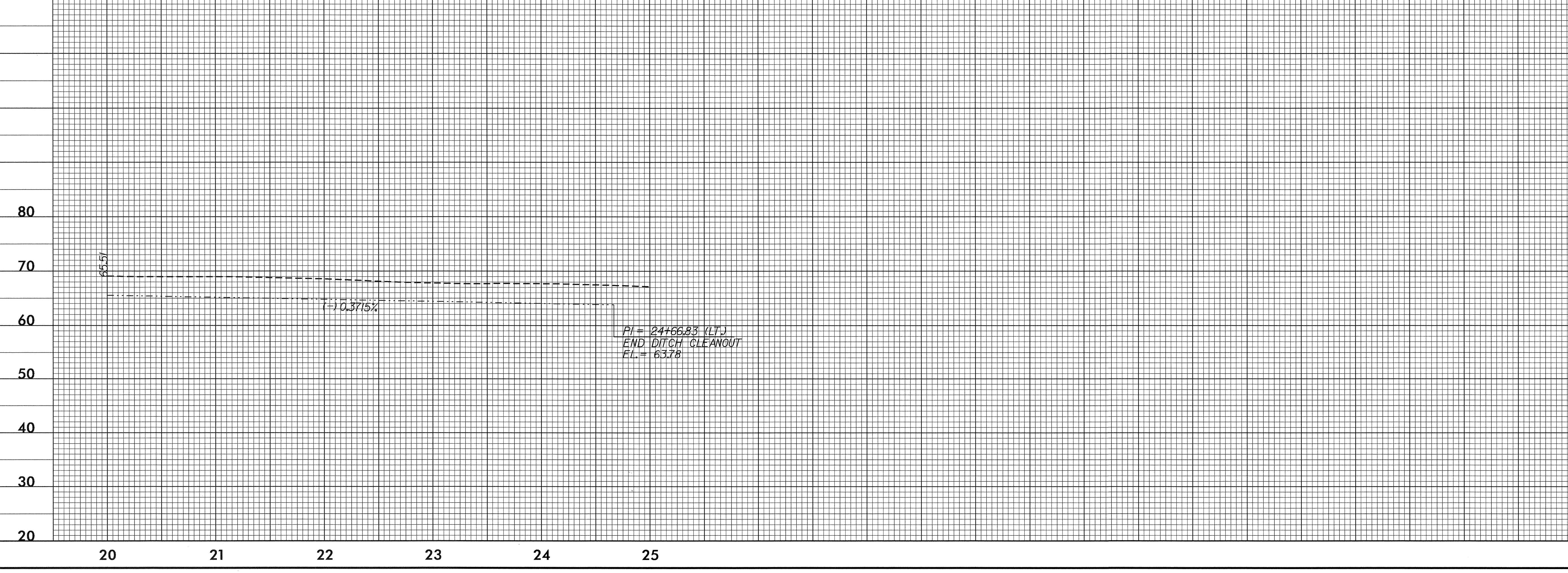
OVERLAY FROM STA.19+25.00 -L- TO STA.19+67.01 -L-

STA.19+25.00 -L- END GRADE ELEV. 69.69



DITCH LEGEND	
LEFT DITCH	-----
RIGHT DITCH	-----

-L-

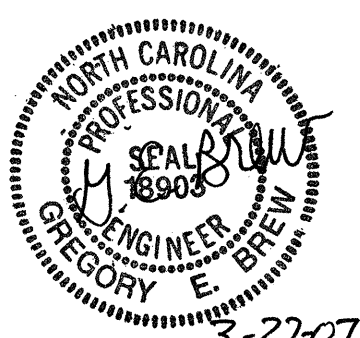
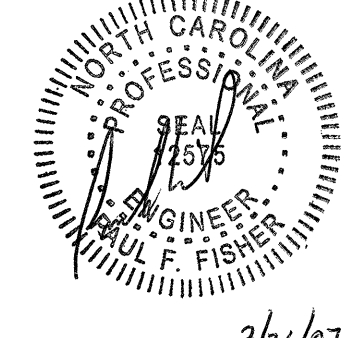


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5/28/99

BM #10 STA.13+23.16 L-R/R SPIKE SET IN
30' OAK TREE LOCATED 205.66' RIGHT
ELEV. = 67.46'

BM #10 STA.13+23.16 L-R/R SPIKE SET IN
30' OAK TREE LOCATED 205.66' RIGHT
ELEV. = 67.46'

PROJECT REFERENCE NO. B-3538	SHEET NO. 8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
3-27-07	3/24/07

PI = 11+90.00
EL = 73.71'
VC = 20.00'

STA.11+82.92 -DETOUR- BEGIN GRADE
ELEV.73.54

STA.16+34.61 -DETOUR- END GRADE
ELEV.72.29

STA.11+00.00 -Y- BEGIN GRADE
ELEV.71.81

PI = 12+35.00 PI = 12+85.00
EL = 73.47' EL = 74.03'
VC = 50.00' VC = 50.00'

PI = 15+75.00
EL = 73.16'
VC = 50.00'

STA.12+06.89 -Y- END GRADE =
STA.11+92.96 -L- (10' RT.)
ELEV.74.32



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44.66T 03/27/07 11:36 AM