

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Symbology

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STANLY COUNTY

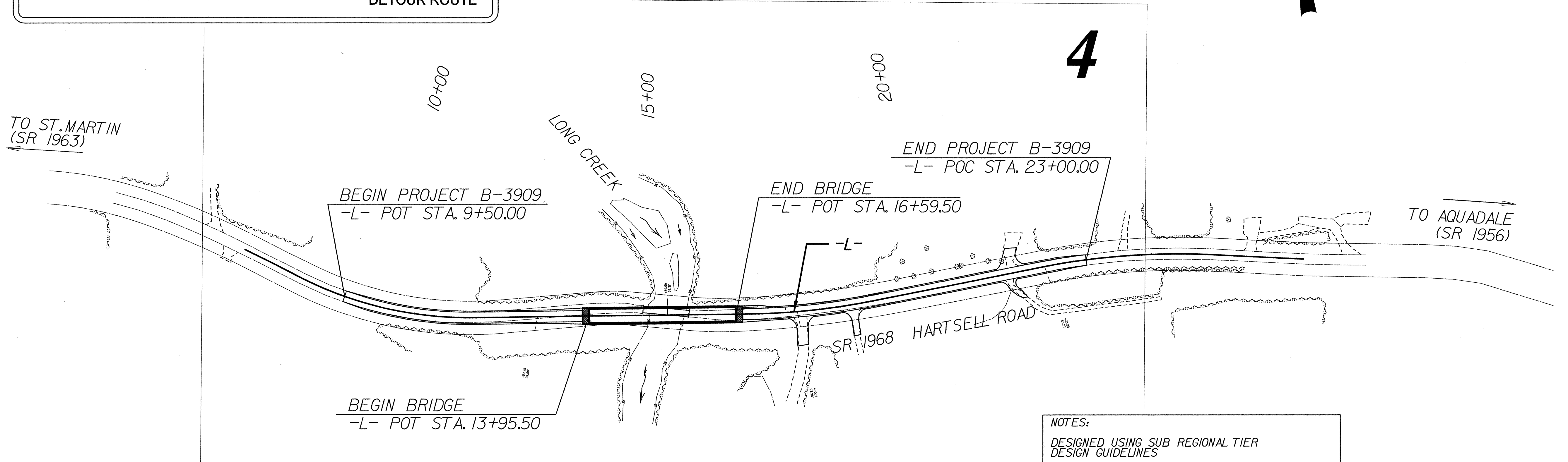
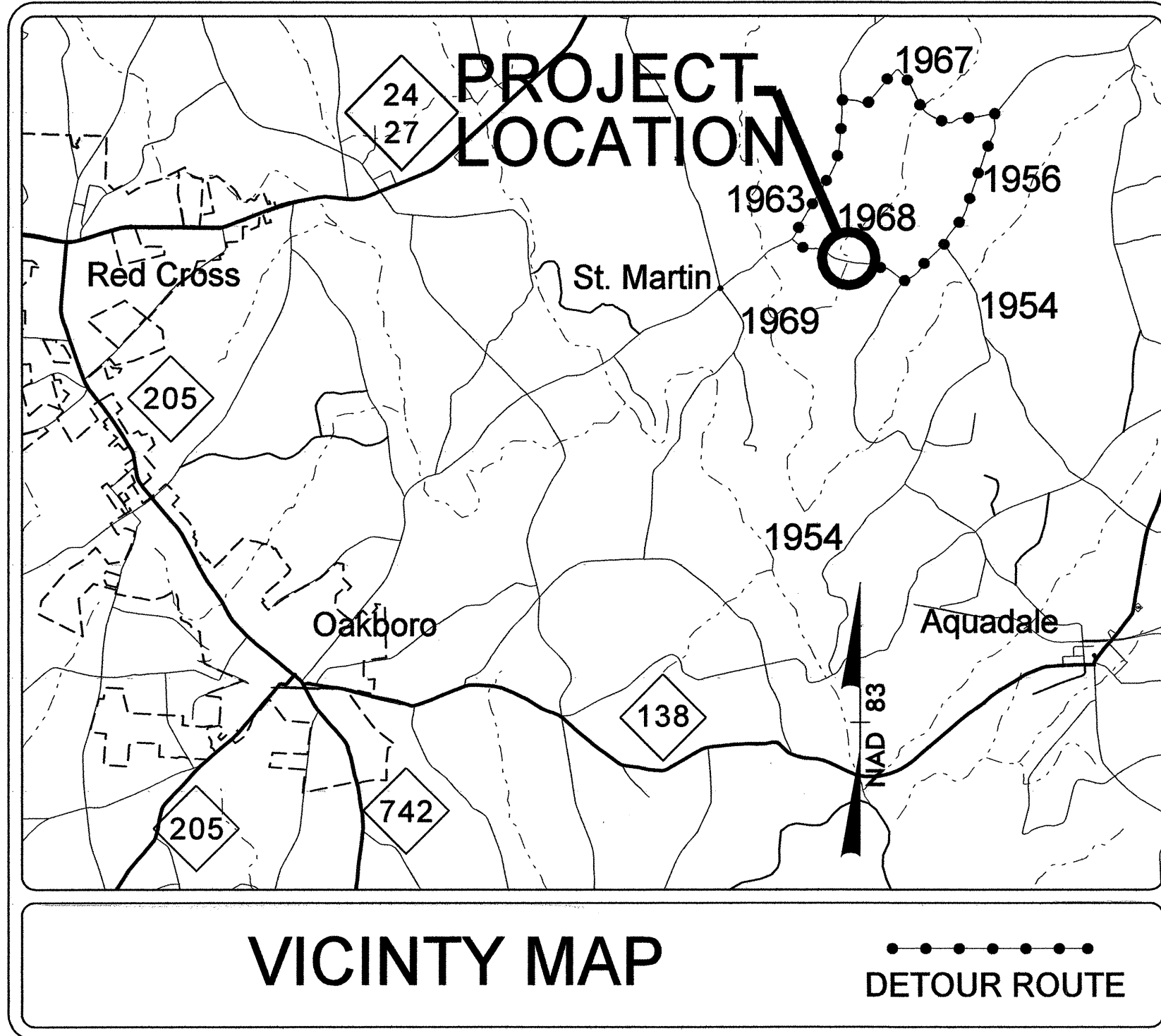
**LOCATION: BRIDGE NO. 99 OVER LONG CREEK
ON SR 1968 (HARTSELL RD)**

TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3909	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33344.1.1	BRZ-1968(1)	P.E.	
33344.2.1	BRZ-1968(1)	ROW /UTILITIES	
33344.3.ST1	STM-1968(3)	CONSTRUCTION	

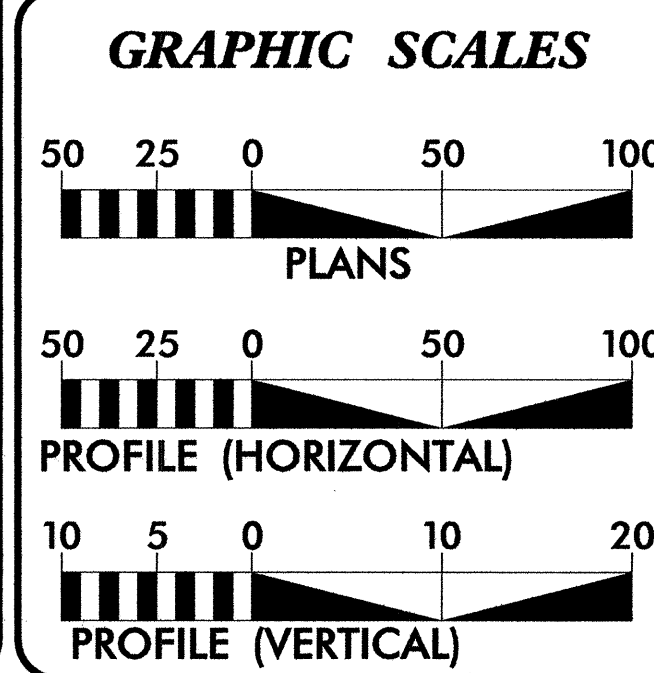
TIP PROJECT: B-3909

CONTRACT: C202166



NCDOT CONTACT: B. DOUG TAYLOR, P.E. - ROADWAY DESIGN - ENGINEERING COORDINATION

NOTES:
DESIGNED USING SUB REGIONAL TIER
DESIGN GUIDELINES



DESIGN DATA

ADT 2009 = 740
ADT 2030 = 1,080
DHV = 11 %
D = 60 %
T = 3 % *
V = 50 MPH
FUNC. CLASS = RURAL LOCAL
*TTST 1% DUAL 2%

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-3909 = 0.206 MILES
LENGTH OF STRUCTURE TIP PROJECT B-3909 = 0.050 MILES
TOTAL LENGTH OF TIP PROJECT B-3909 = 0.256 MILES

Prepared In the Office of:
WILBUR SMITH ASSOCIATES
421 FAYETTEVILLE STREET, RALEIGH NC, 27601

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: AUGUST 29, 2008	DAVID L. WILVER, P.E. PROJECT ENGINEER
LETTING DATE: FEBRUARY 16, 2010	BENJAMIN R. CRAWFORD, P.E. PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

12/09/09
SIGNATURE: [Signature]
ROADWAY DESIGN ENGINEER

12/09/09
SIGNATURE: [Signature]
ROADWAY DESIGN ENGINEER

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER

09/08/09 FILE: C:\ncdot\139090\mch\proj\B3909_BD_T54L01.dwg DATE: 12/22/09 11:42:55 AM

PROJECT REFERENCE NO.		SHEET NO.	
B-3909		1A	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

INDEX OF SHEETS

SHEET NUMBER SHEET

1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2A	DETAIL SHEET FOR BRIDGE APPROACH FILL - SUBREGIONAL TIER
2B THRU 2C	METHOD OF PIPE INSTALLATION
2D	ANCHORAGE OF FRAMES DETAIL
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE QUANTITIES
3B	GUARDRAIL SUMMARY, ASPHALT PAVEMENT REMOVAL SUMMARY, EARTHWORK SUMMARY
4 THRU 5	PLAN AND PROFILE SHEETS
TCP1 THRU TCP3	TRAFFIC CONTROL PLANS
EC1 THRU EC5	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITY BY OTHERS
X-1	CROSS-SECTION SUMMARY
X-2 THRU X-7	CROSS-SECTIONS
S1 THRU S34	STRUCTURE PLANS

2006 ROADWAY STANDARD DRAWINGS

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.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superlevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
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
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

EFF. 07-18-06

GENERAL NOTES:

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

GRADE LINE:
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL 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 BENT 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 Union Power Cooperative (Power) and Windstream (Telephone)
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

REVISIONS

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	⑩②③
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 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	□
Jurisdictional Stream	-JS-
Buffer Zone 1	-BZ 1-
Buffer Zone 2	-BZ 2-
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	□
Proposed Lateral, Tail, Head Ditch	_____
False Sump	□

RAILROADS:

Standard Gauge	_____
RR Signal Milepost	○
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-
Proposed Temporary Utility Easement	-TUE-
Proposed Permanent Easement with Iron Pin and Cap Marker	_____

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	_____
Existing Curb	_____
Proposed Slope Stakes Cut	-C-
Proposed Slope Stakes Fill	-F-
Proposed Wheel Chair Ramp	□
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	_____
Bridge Wing Wall, Head Wall and End Wall	_____
MINOR:	
Head and End Wall	_____
Pipe Culvert	_____
Footbridge	_____
Drainage Box: Catch Basin, DI or JB	□
Paved Ditch Gutter	_____
Storm Sewer Manhole	○
Storm Sewer	_____

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	□
H-Frame Pole	●
Recorded U/G Power Line	_____
Designated U/G Power Line (S.U.E.*)	_____

TELEPHONE:

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

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	_____

TV:

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

GAS:

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

SANITARY SEWER:

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

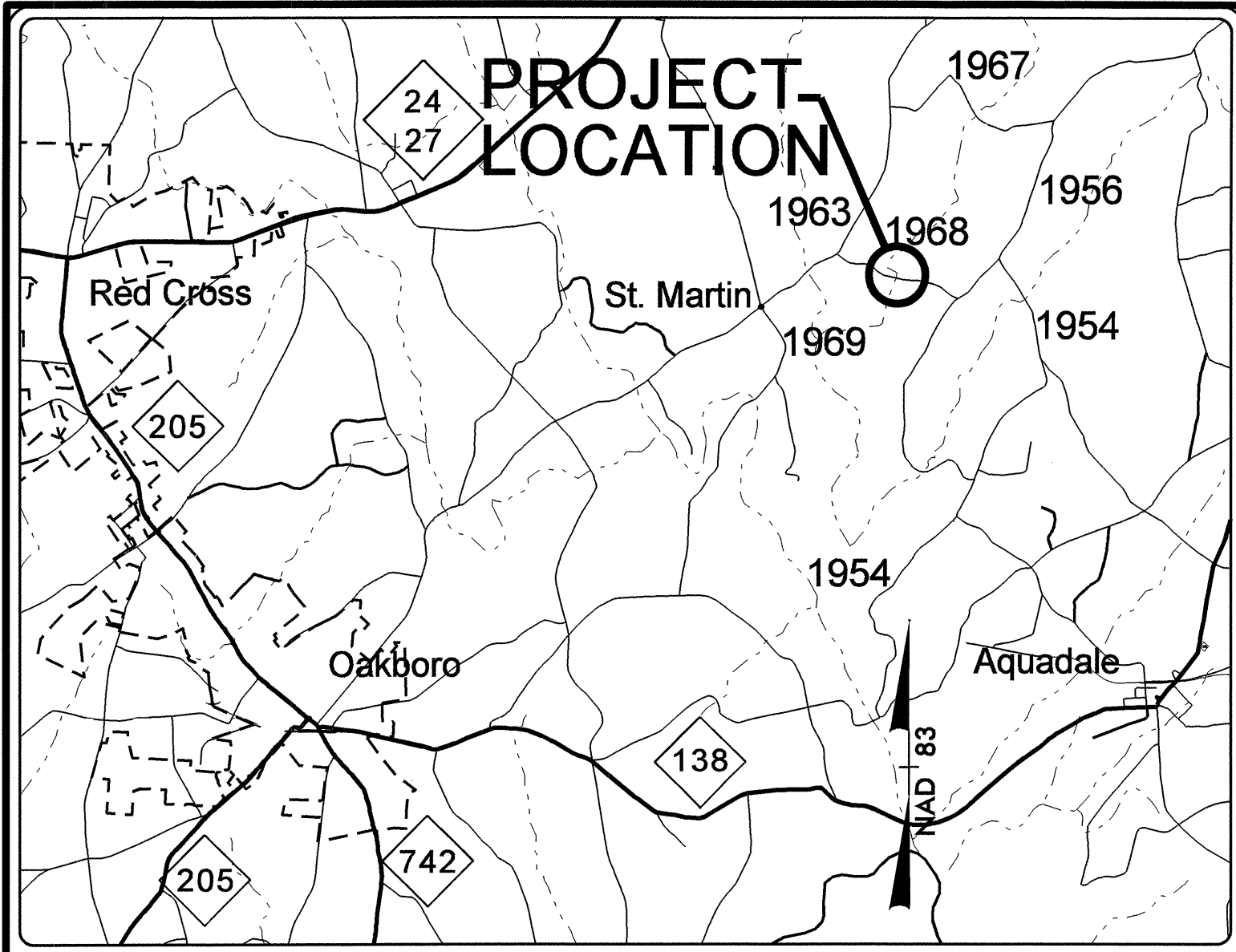
MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown U/G Line	_____
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.

REVISIONS

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SURVEY CONTROL SHEET B-3909



VICINITY MAP

BLREV POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
8	BL-8	554833.9620	1623791.6710	387.35	OUTSIDE PROJECT LIMITS	
9	BL-9	554683.2950	1624103.7000	396.74	OUTSIDE PROJECT LIMITS	
1	B3909-1	554475.0100	1624294.5210	375.54	9+75.13	16.47 RT
3	BL-3	554345.1000	1624795.4400	337.97	14+90.63	2.98 RT
2	B3909-2	554270.4610	1625150.0160	347.05	18+51.77	12.54 RT
10	BL-10	554270.9210	1625680.9050	392.30	23+80.24	16.22 LT
11	BL-11	554135.9500	1626060.4530	415.64	OUTSIDE PROJECT LIMITS	

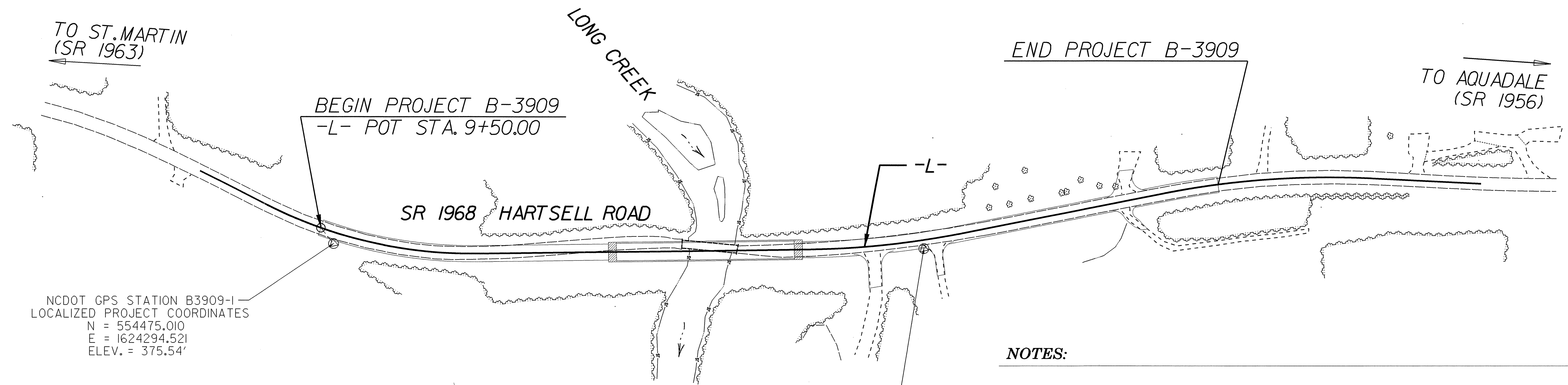
T0 POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
7	T-7	554544.9360	1624764.2780	335.65	14+17.87	185.73 LT
4	T-4	554447.3240	1624812.7830	336.17	14+85.94	100.59 LT
T3	BL-3	554345.1000	1624795.4400	337.97	14+90.63	2.98 RT
5	T-5	554238.7240	1624810.2030	333.77	15+27.58	103.82 RT
6	T-6	554153.3050	1624776.1570	332.80	15+12.38	194.51 RT

.....
 BM1 ELEVATION = 360.39
 N 554383 E 1624461
 L STATION 11+58 38 RIGHT
 RR SPIKE IN BASE OF 8' OAK

 BM2 ELEVATION = 337.11
 N 554295 E 1624756
 L STATION 14+63 60 RIGHT
 RR SPIKE IN BASE OF 22' WATER OAK

 BM3 ELEVATION = 389.11
 N 554838 E 1623840
 L STATION 7+51
 N 53° 24' 01.5" W DIST 355.58
 RR SPIKE IN BASE OF POWER POLE

 BM4 ELEVATION = 410.64
 N 554056 E 1625164
 L STATION 26+93
 S 56° 17' 12.9" E DIST 219.93
 RR SPIKE IN BASE OF 24' OAK



NCDOT GPS STATION B3909-1
 LOCALIZED PROJECT COORDINATES
 N = 554475.010
 E = 1624294.521
 ELEV. = 375.54'

NCDOT GPS STATION B3909-2
 LOCALIZED PROJECT COORDINATES
 N = 554270.461
 E = 1625150.016
 ELEV. = 347.05'

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B3909-1"
 WITH NAD 83 STATE PLANE GRID COORDINATES OF
 NORTHING: 554475.010(ft) EASTING: 1624294.521(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998600
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B3909-1" TO -L- STATION 9+50 IS
 N 25°38'08.4" W 30.301'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

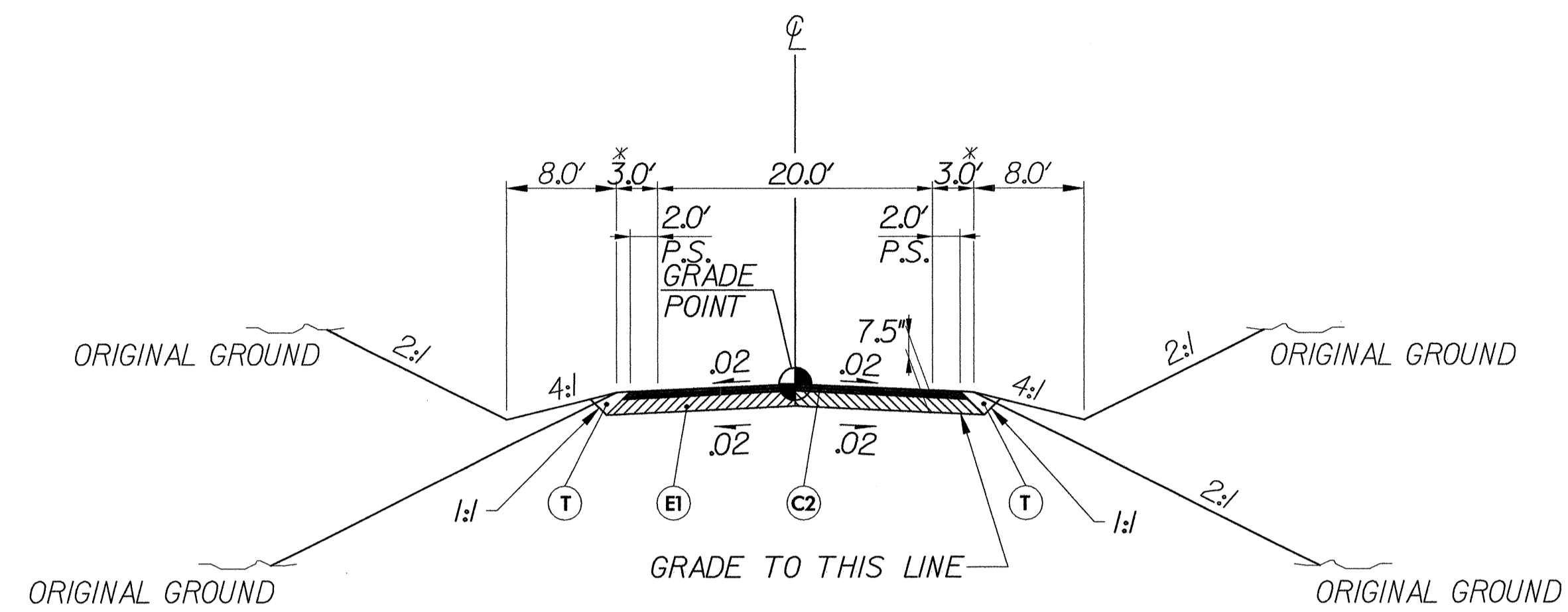


NOTES:

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/doh/preconstruct/highway/location/project/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
B3909_LS_CONTROL_080825.TXT
 SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
 ⊕ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

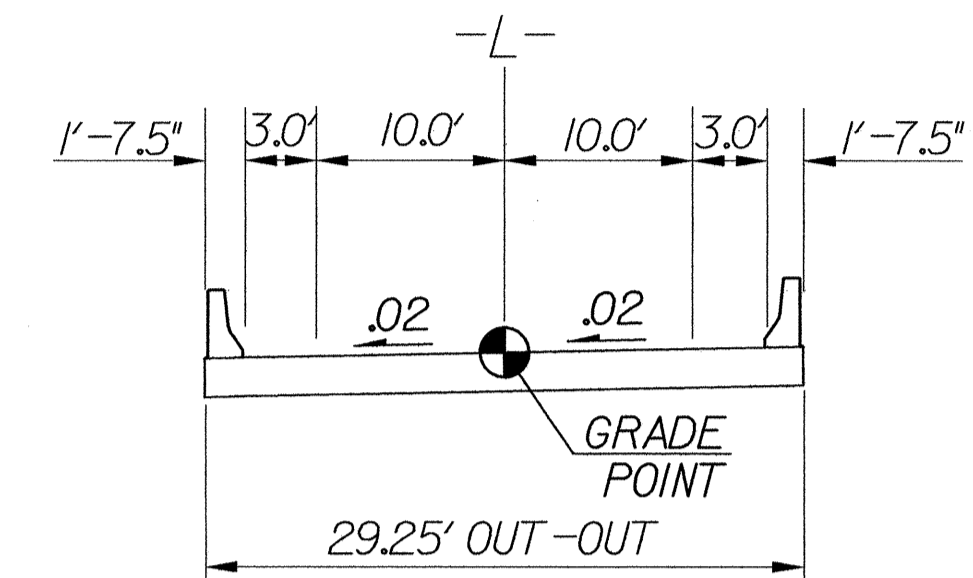
NOTE: DRAWING NOT TO SCALE

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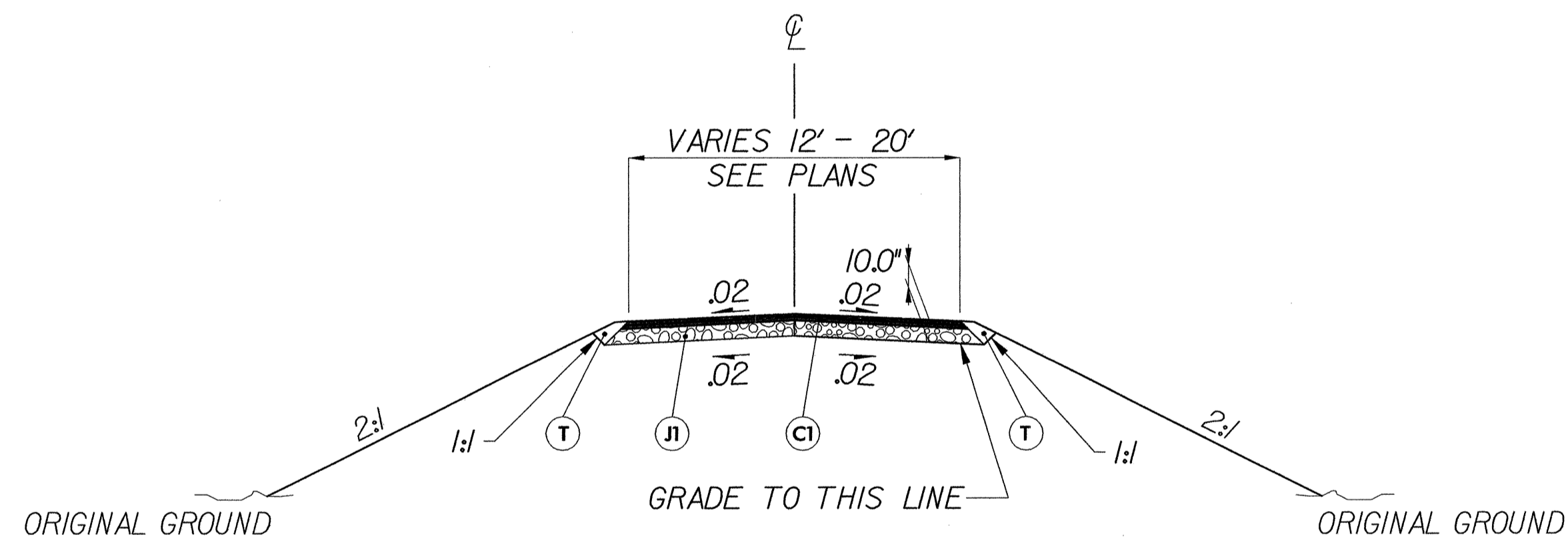
TYPICAL SECTION NO.1

USE ON: -L- Sta. 9+50.00 to Sta. 13+95.50 (BEGIN BRIDGE)
 -L- Sta. 16+59.50 (END BRIDGE) to Sta. 23+00.00



TYPICAL SECTION ON STRUCTURE

USE ON: -L- Sta. 13+95.50 (BEGIN BRIDGE) to
 Sta. 16+59.50 (END BRIDGE)



TYPICAL SECTION NO.2

USE ON: DRIVEWAYS OVER 7% GRADE TO LIMITS OF CONSTRUCTION

PAVEMENT SCHEDULE

ITEM	DESCRIPTION
C1	PROP. APPROX. 2.0 IN. ASPHALT SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110.0 LBS/SY IN EACH OF TWO LAYERS
C2	PROP. APPROX. 2.5 IN. ASPHALT SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS/SY IN EACH OF TWO LAYERS
E1	PROP. APPROX. 5 IN. ASPHALT BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS/SY
J1	PROP. APPROX. 8 IN. OF AGGREGATE BASE COURSE
T	EARTH MATERIAL

NOTE:

ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.

SHOULDER ROLLOVER NOT TO EXCEED 0.06 (TYP)

SHOULDER SLOPES ARE 0.08 (TYP)

* 6' WHERE GUARDRAIL IS USED

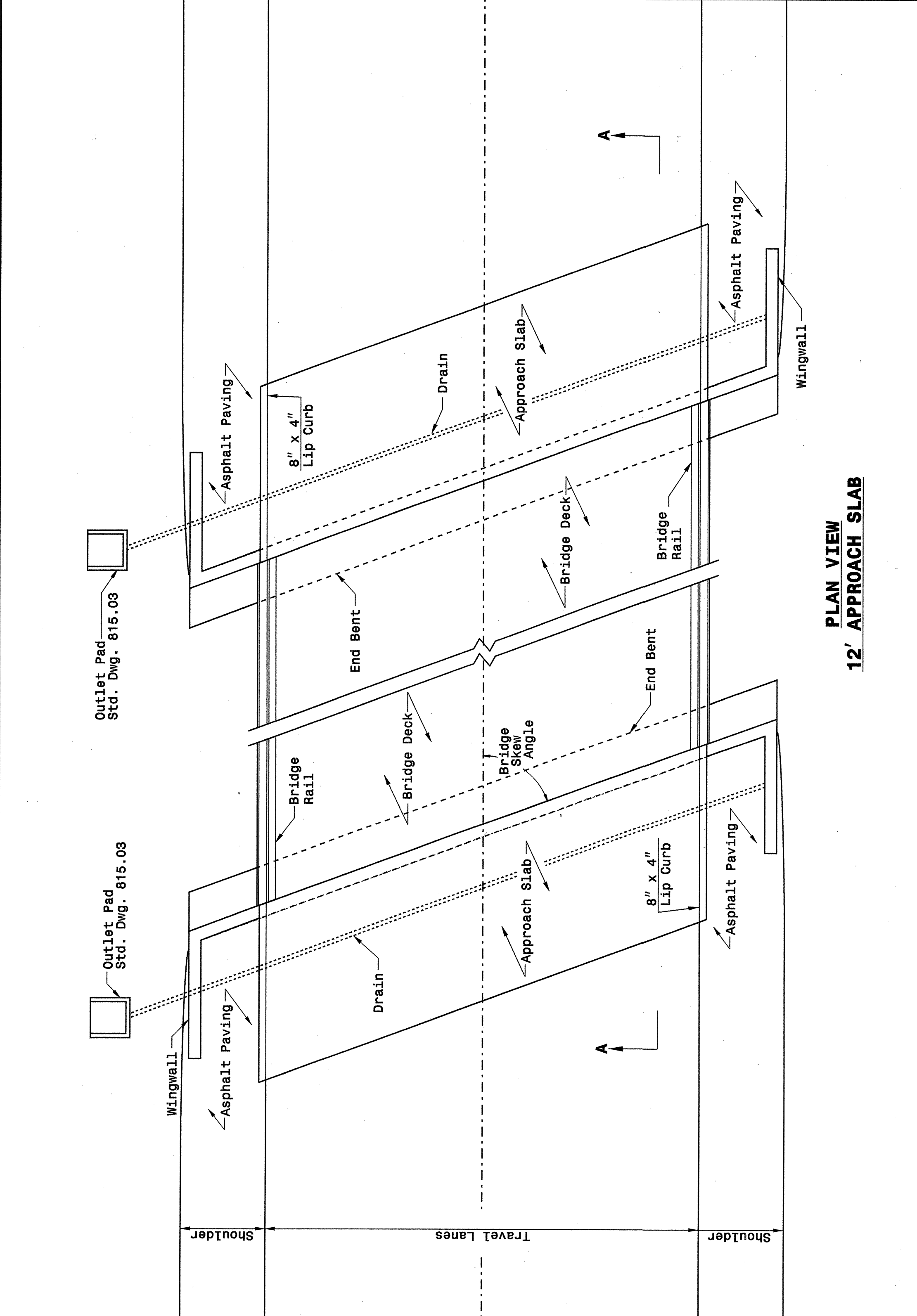
** EXISTING PAVEMENT IS APPROXIMATELY 20' WIDE

REVISIONS

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

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
SUB REGIONAL TIER

SHEET 1 OF 2
422D11



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

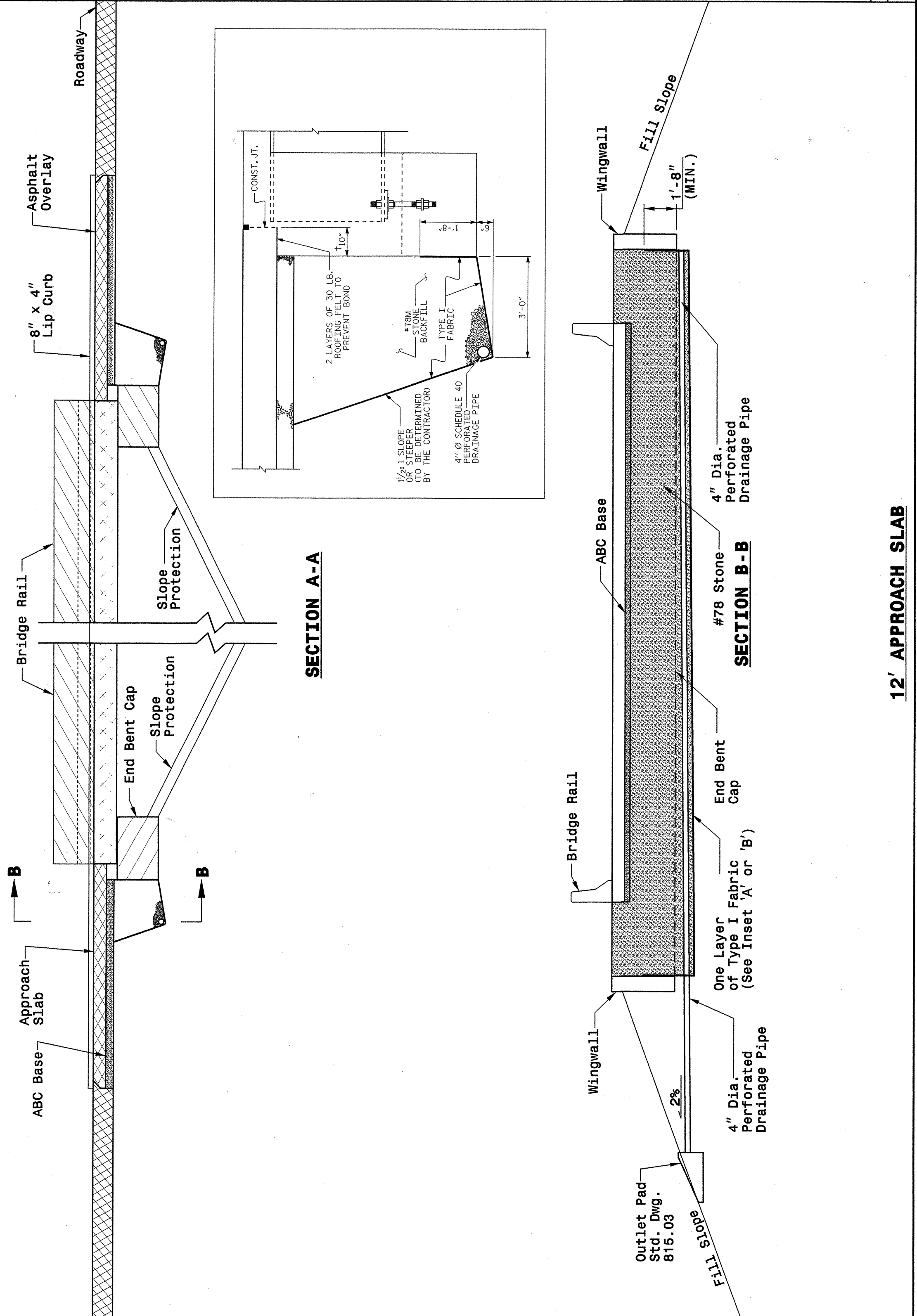
ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
SUB REGIONAL TIER

SHEET 1 OF 2
422D11

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

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
SUB REGIONAL TIER

SHEET 2 OF 2
422D11



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

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
SUB REGIONAL TIER

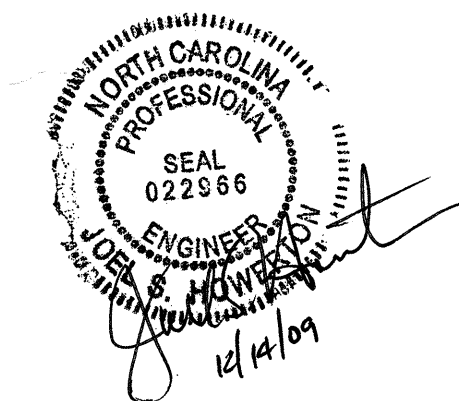
SHEET 2 OF 2
422D11

**PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN**
Office 919-250-4128 FAX 919-250-4119

BRIDGE APPROACH FILLS

SUB REGIONAL TIER

ORIGINAL BY: K. A. Kempf DATE: 6-10-08
 MODIFIED BY: DATE:
 CHECKED BY: DATE:
 FILE SPEC.: kkempf\english\bridge approach fills.gdn



\$\$\$\$\$SYTIME\$\$\$\$\$
 \$\$\$DONOR\$\$\$\$\$
 \$\$\$SERNAME\$\$\$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202166

ItemNumber	Sec #	Quantity	Unit	Description
000010000-N	800	Lump Sum		MOBILIZATION
003000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (15+27.50)
003600000-E	225	500	CY	UNDERCUT EXCAVATION
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
006300000-N	SP	Lump Sum		GRADING
010600000-E	230	8,500	CY	BORROW EXCAVATION
013400000-E	240	60	CY	DRAINAGE DITCH EXCAVATION
019600000-E	270	500	SY	FABRIC FOR SOIL STABILIZATION
032000000-E	SP	80	SY	FOUNDATION CONDITIONING FABRIC
033000000-E	SP	30	TON	GENERIC DRAINAGE ITEM FOUNDATION CONDITIONING MATERIAL, MINOR STRS
033520000-E	SP	144	LF	15" DRAINAGE PIPE
033585000-E	SP	2	EA	*** DRAINAGE PIPE ELBOWS (15")
037200000-E	310	76	LF	18" RC PIPE CULVERTS, CLASS III
099500000-E	340	86	LF	PIPE REMOVAL
112100000-E	520	170	TON	AGGREGATE BASE COURSE
122000000-E	545	300	TON	INCIDENTAL STONE BASE
148900000-E	610	870	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
152500000-E	610	450	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
156000000-E	620	70	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
202200000-E	815	56	CY	SUBDRAIN EXCAVATION
203300000-E	815	42	CY	SUBDRAIN FINE AGGREGATE
204400000-E	815	250	LF	6" PERFORATED SUBDRAIN PIPE
205500000-E	815	8	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS
206600000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET

ItemNumber	Sec #	Quantity	Unit	Description
207700000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)
228600000-N	840	1	EA	MASONRY DRAINAGE STRUCTURES
236700000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.29
255600000-E	846	41	LF	SHOULDER BERM GUTTER
303000000-E	862	50	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
364900000-E	876	544	TON	RIP RAP, CLASS B
365600000-E	876	1,815	SY	FILTER FABRIC FOR DRAINAGE
440000000-E	1110	192	SF	WORK ZONE SIGNS (STATIONARY)
441000000-E	1110	40	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
444500000-E	1145	96	LF	BARRICADES (TYPE III)
600000000-E	1605	1,350	LF	TEMPORARY SILT FENCE
600600000-E	1610	300	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	300	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	350	TON	SEDIMENT CONTROL STONE
601500000-E	1615	4	ACR	TEMPORARY MULCHING
601800000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	2	TON	FERTILIZER FOR TEMPORARY SEEDING
602400000-E	1622	200	LF	TEMPORARY SLOPE DRAINS
602700000-N	1622	4	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
602900000-E	SP	1,000	LF	SAFETY FENCE
603000000-E	1630	715	CY	SILT EXCAVATION
603600000-E	1631	9,700	SY	MATting FOR EROSION CONTROL
603700000-E	SP	65	SY	COIR FIBER MAT

ItemNumber	Sec #	Quantity	Unit	Description
603800000-E	SP	350	SY	PERMANENT SOIL REINFORCEMENT MAT
604200000-E	1632	460	LF	1/4" HARDWARE CLOTH
607000000-N	SP	8	EA	SPECIAL STILLING BASINS
607101000-E	SP	425	LF	WATTLE
607102000-E	SP	110	LB	POLYACRYLAMIDE (PAM)
607103000-E	SP	625	LF	COIR FIBER BAFFLES
607105000-E	SP	4	EA	*** SKIMMER (1-1/2")
608400000-E	1660	8	ACR	SEEDING & MULCHING
608700000-E	1660	2	ACR	MOWING
609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	75	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	2	TON	FERTILIZER TOPDRESSING
611450000-N	SP	15	MHR	SPECIALIZED HAND MOWING
611700000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL

REVISIONS

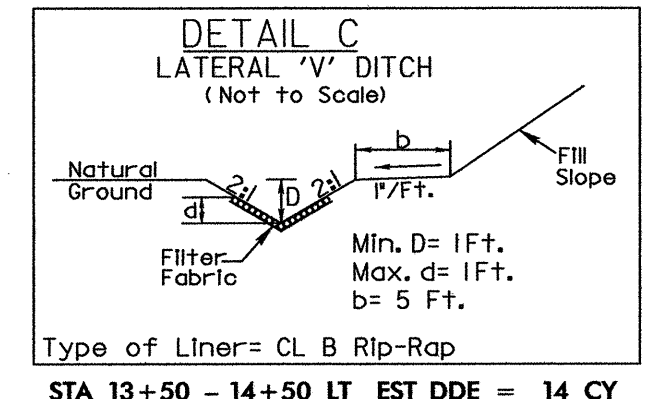
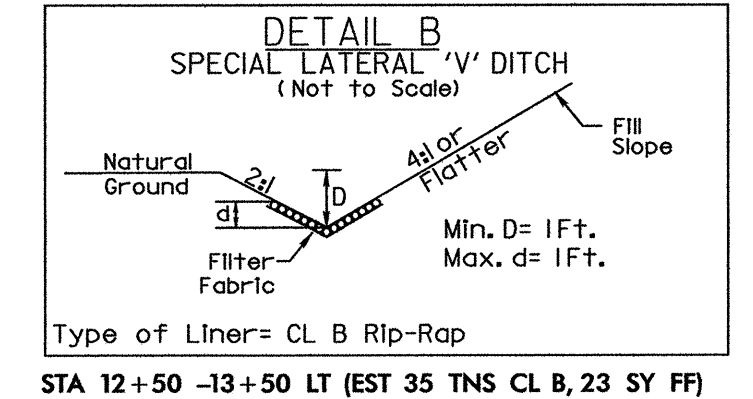
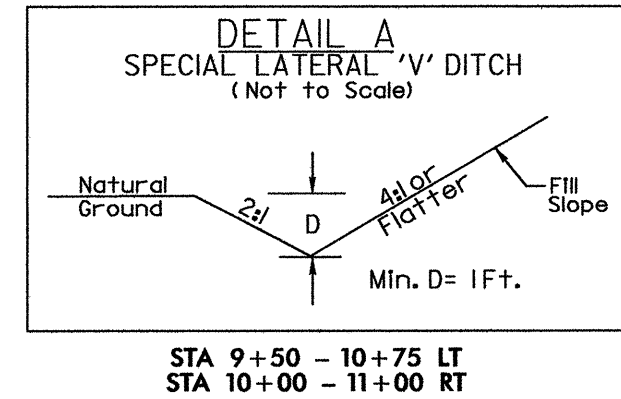
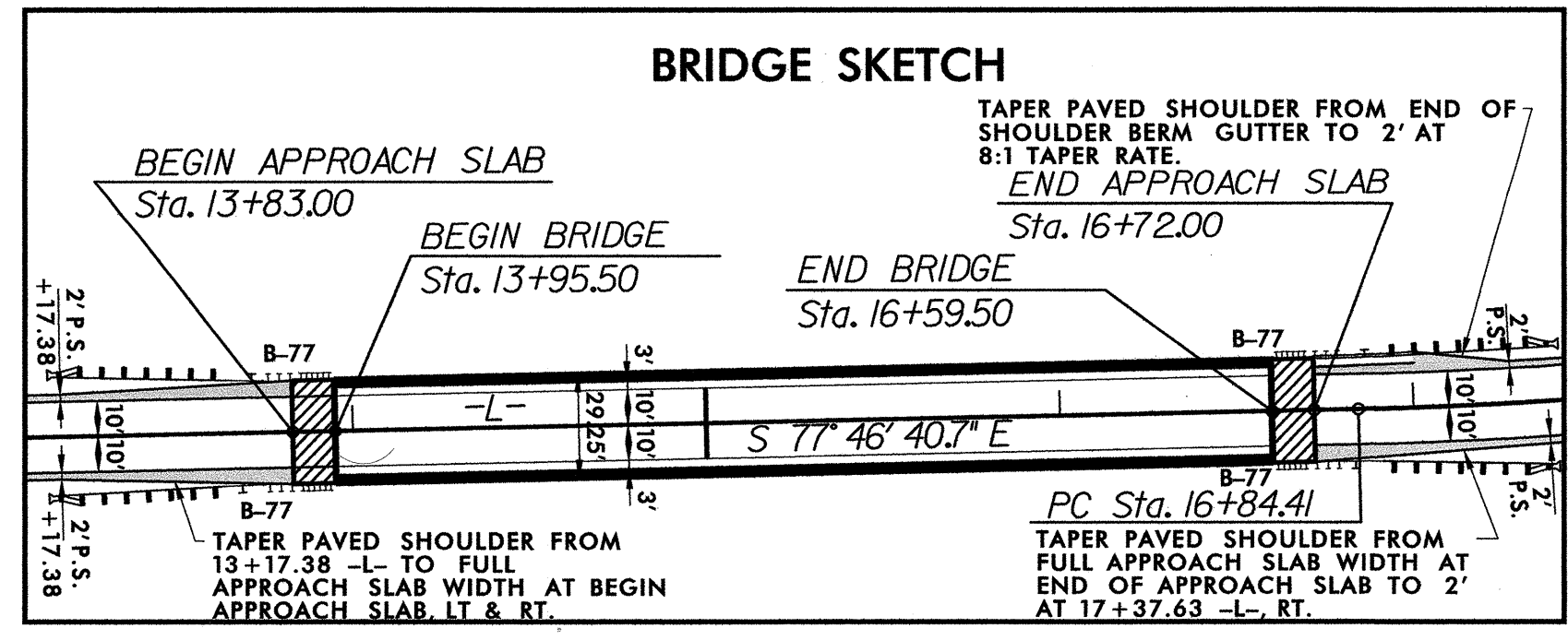
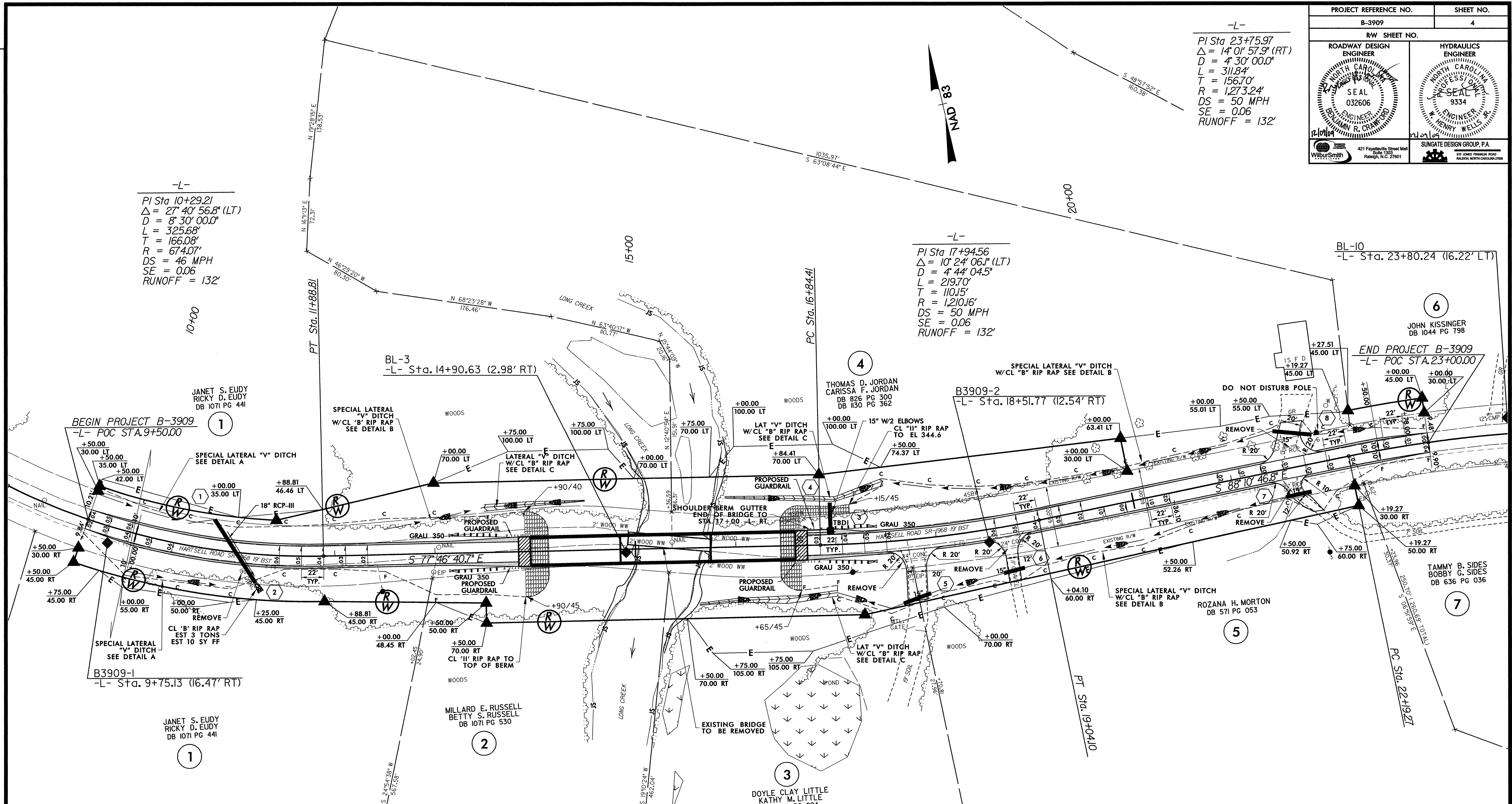
-L-
 PI Sta 23+75.97
 $\Delta = 14' 01' 57.9''$ (RT)
 $D = 4' 30' 00.0''$
 $L = 311.84'$
 $T = 156.70'$
 $R = 1,273.24'$
 $DS = 50$ MPH
 $SE = 0.06$
 $RUNOFF = 132'$

-L-
 PI Sta 10+29.21
 $\Delta = 27' 40' 56.8''$ (LT)
 $D = 8' 30' 00.0''$
 $L = 325.68'$
 $T = 166.08'$
 $R = 674.07'$
 $DS = 46$ MPH
 $SE = 0.06$
 $RUNOFF = 132'$

-L-
 PI Sta 17+94.56
 $\Delta = 10' 24' 06.1''$ (LT)
 $D = 4' 44' 04.5''$
 $L = 219.70'$
 $T = 110.15'$
 $R = 1,210.16'$
 $DS = 50$ MPH
 $SE = 0.06$
 $RUNOFF = 132'$

BL-10
 -L- Sta. 23+80.24 (16.22' LT)

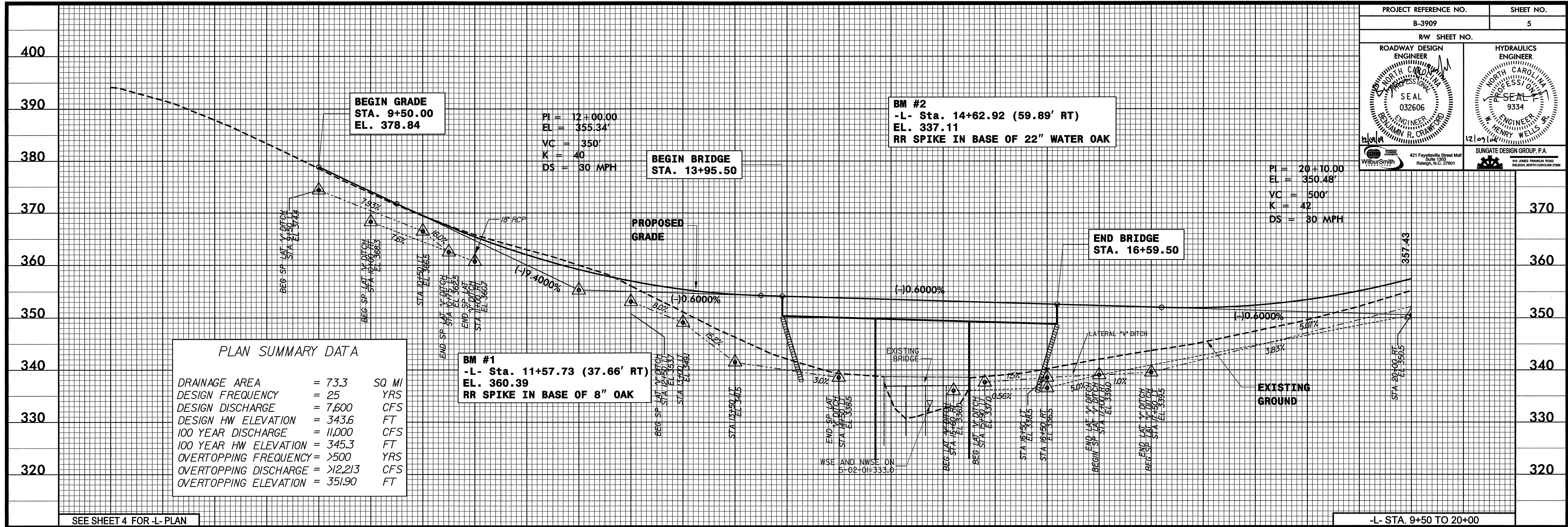
REVISIONS



STA 12+50 - 13+50 LT (EST 35 TNS CL B, 23 SY FF)
 STA 17+50 - 22+50 LT (EST 174 TNS CL B, 112 SY FF)
 STA 17+00 - 22+00 RT (EST 174 TNS CL B, 112 SY FF)
 STA 15+90 - 17+50 LT (EST DDE = 22 CY)
 STA 15+60 - 17+00 RT (EST DDE = 24 CY)
 (EST 49 TNS CL B, 156 SY FF)

SEE SHEET 5 FOR -L- PROFILE
 SEE SHEETS X-2 THRU X-7 FOR X-SECTIONS
 SEE SHEET S1 THRU S34 FOR STRUCTURE PLANS

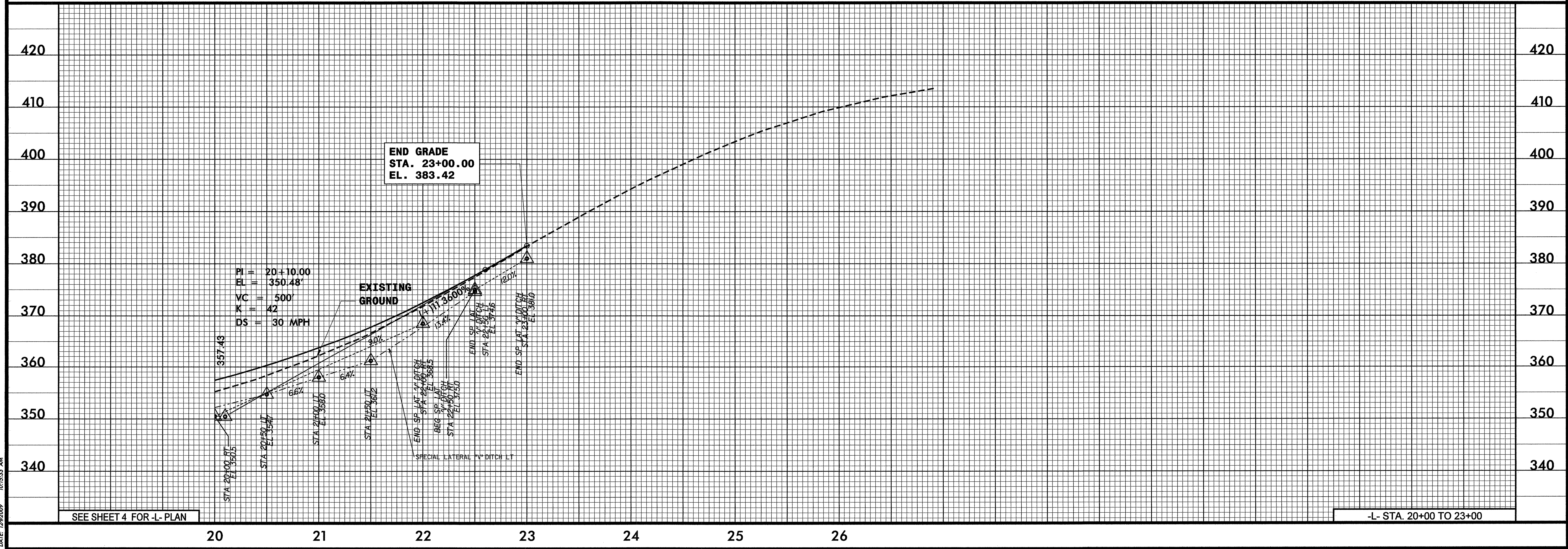
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PLAN SUMMARY DATA	
DRAINAGE AREA	= 73.3 SQ MI
DESIGN FREQUENCY	= 25 YRS
DESIGN DISCHARGE	= 7,600 CFS
DESIGN HW ELEVATION	= 343.6 FT
100 YEAR DISCHARGE	= 11,000 CFS
100 YEAR HW ELEVATION	= 345.3 FT
OVERTOPPING FREQUENCY	= >500 YRS
OVERTOPPING DISCHARGE	= >12,213 CFS
OVERTOPPING ELEVATION	= 351.90 FT

SEE SHEET 4 FOR L-PLAN

-L- STA. 9+50 TO 20+00



SEE SHEET 4 FOR L-PLAN

-L- STA. 20+00 TO 23+00