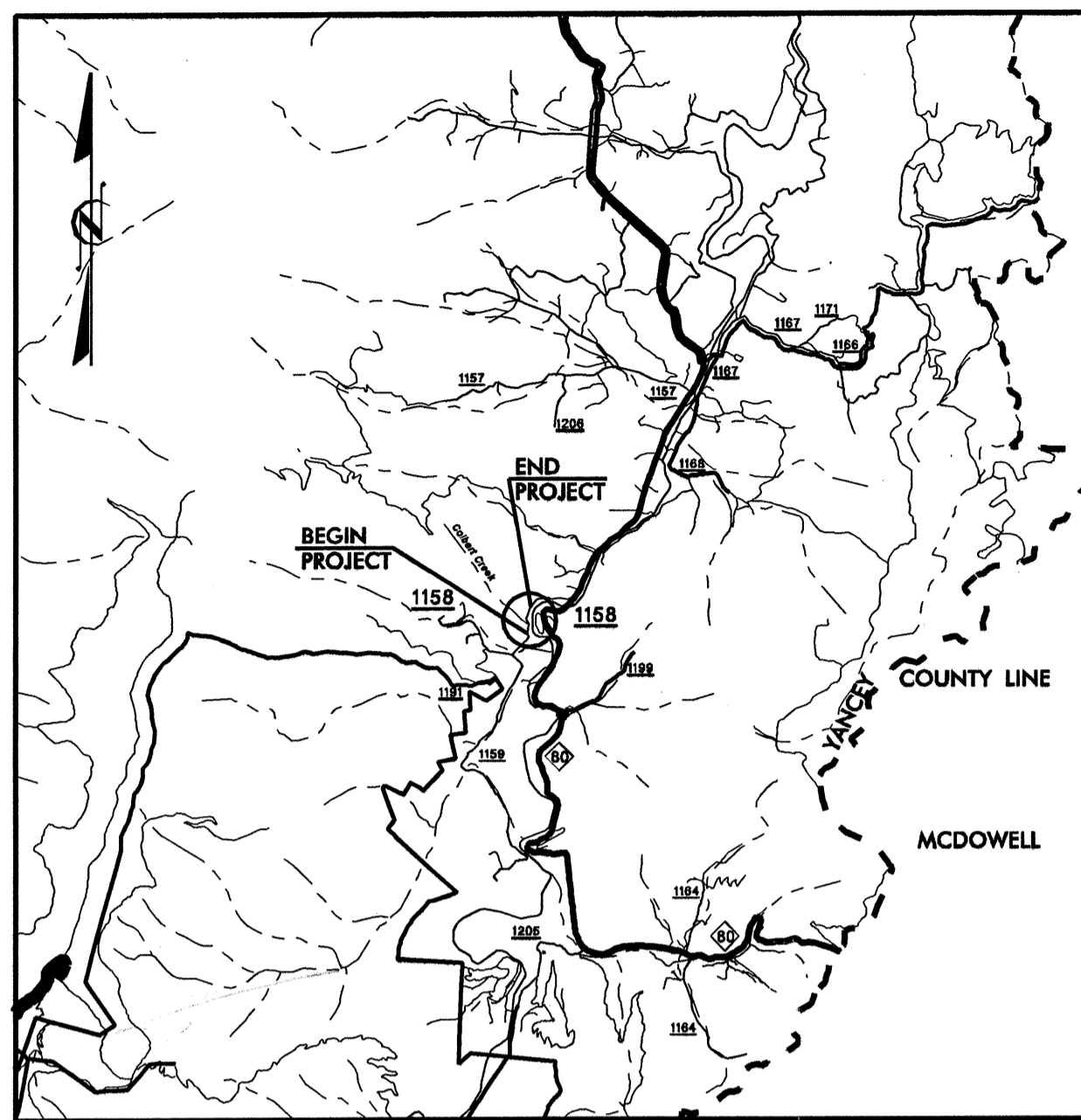


09/08/09

TIP PROJECT: B-4330

CONTRACT: C201764

See Sheet 1-A For Index of Sheets



VICINITY MAP

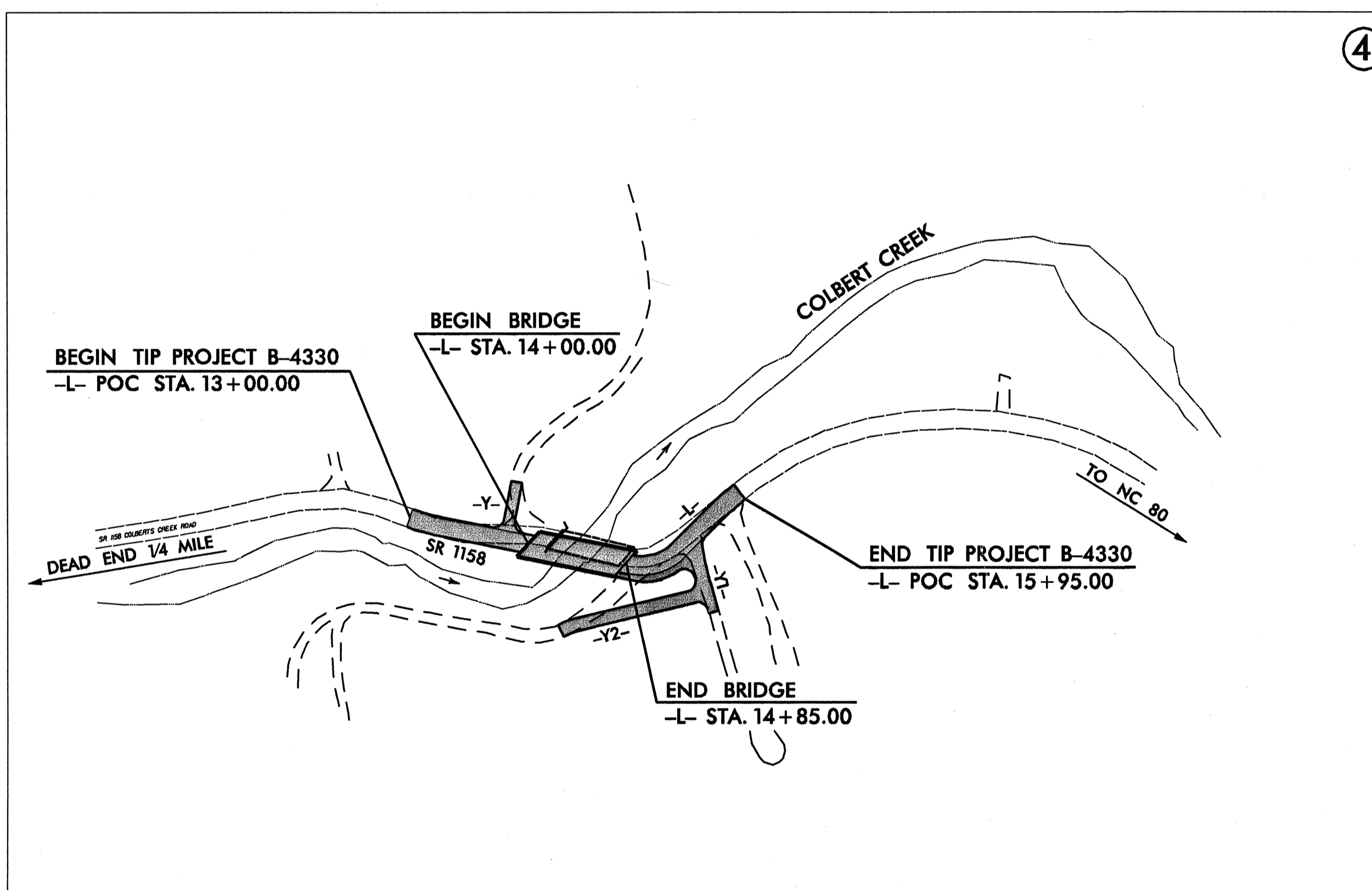
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

YANCEY COUNTY

**LOCATION: BRIDGE NO. 289 AND APPROACHES
ON SR 1158 OVER COLBERT CREEK**

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

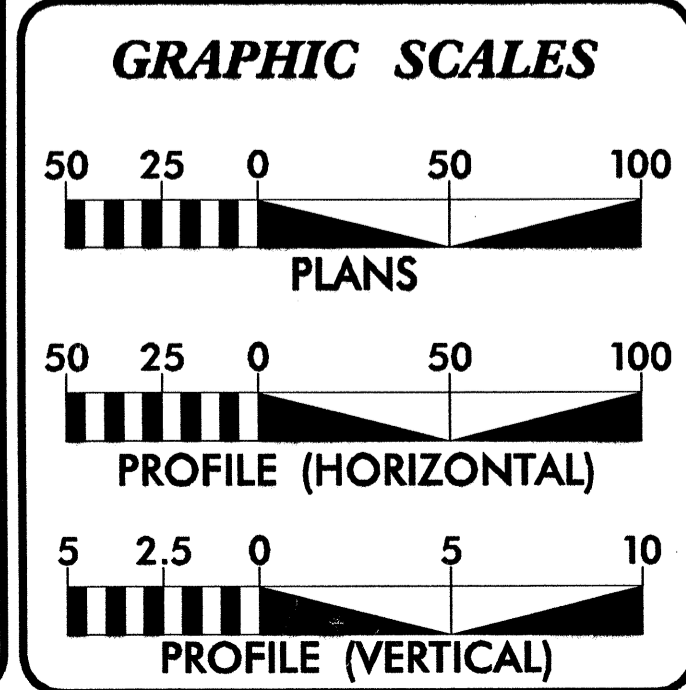
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4330	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33667.1.1	BRZ-1158(3)	P.E.	
33667.2.1	BRZ-1158(3)	RAW & UTIL.	
33667.3.1	BRZ-1158(3)	CONST.	



NAD 83 NC GRID

** DESIGN EXCEPTION FOR DESIGN SPEED AND SAG VERTICAL K REQUIRED

NCDOT CONTACT: CATHY S. HOUSER, P.E



DESIGN DATA

ADT 2008 =	129
ADT 2028 =	212
DHV =	NA %
D =	NA %
T =	3 % *
**V =	60 MPH
* TTST 1 %	DUAL 2 %
FUNC CLASS =	RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY F.A. PROJECT BRZ-1158(3)	=	0.040 mi
LENGTH STRUCTURE F.A. PROJECT BRZ-1158(3)	=	0.016 mi
TOTAL LENGTH OF STATE PROJECT 33667.1.1	=	0.056 mi

Plans prepared in the office of:

RAMEY KEMP ASSOCIATES, INC.

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY 19, 2007

LETTING DATE:
JANUARY 15, 2008

SCOTT CLARK, P.E.
PROJECT ENGINEER

MATTHEW COPPLE, P.E.
PROJECT DESIGN ENGINEER

HYDRAULIC ENGINEER

11/08/07

W. HENRY WELLS, JR.
P.E.

ROADWAY DESIGN ENGINEER

11/08/07

M. SCOTT CLARK
P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

Out m. miller
P.E.
STATE HIGHWAY DESIGN ENGINEER

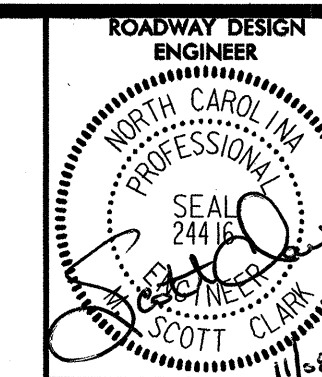
ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
<u>DIVISION 2 - EARTHWORK</u>	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
<u>DIVISION 3 - PIPE CULVERTS</u>	
300.01	Method of Pipe Installation - Method 'A'
310.10	Driveway Pipe Construction
<u>DIVISION 4 - MAJOR STRUCTURES</u>	
422.10	Reinforced Bridge Approach Fills
<u>DIVISION 5 - SUBGRADE, BASES AND SHOULDERS</u>	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
<u>DIVISION 6 - ASPHALT BASES AND PAVEMENTS</u>	
654.01	Pavement Repairs
<u>DIVISION 8 - INCIDENTALS</u>	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
815.03	Pipe Underdrain and Blind Drain
816.01	Concrete Pads - for Shoulder Drain Installation
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.66	Drainage Structure Steps
848.02	Driveway Turnout - Radius Type
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

INDEX OF SHEETS

<u>SHEET NUMBER</u>	<u>SHEET</u>
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARDS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, & TYPICAL SECTIONS
2-A	STAGED CONSTRUCTION TYPICALS
2-B	DETAIL GUARDRAIL ANCHOR UNIT TEMPORARY RETRO-FIT
2-C	DETAIL OF TEMPORARY SHORING
2-D	GUARDRAIL ANCHOR UNIT TYPE III SHOP CURVED
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF EARTHWORK, GUARDRAIL PAVEMENT REMOVAL & DRAINAGE
4	PLAN SHEET
5	PROFILE SHEET
TCP-1 THRU TCP-5	TRAFFIC CONTROL PLANS
PM-1	PAVEMENT MARKING PLAN
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION PLAN
UO-1	UTILITY PLANS BY OTHERS
X-1	CROSS-SECTION SUMMARY
X-2 THRU X-6	CROSS-SECTIONS
S-1 THRU S-27	STRUCTURE PLANS



PROJECT REFERENCE NO.	SHEET NO.
B-4330	1-A

GENERAL NOTES - 18-06 2006 SPECIFICATIONS

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 II.

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.

UNDERDRAINS

UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3' RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS 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 NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING" OR "TEMPORARY SHORING - BARRIER SUPPORTED" DEPENDING UPON THE LOCATION OF THE SHORING.

SUBSURFACE PLANS:

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

END BENTS:

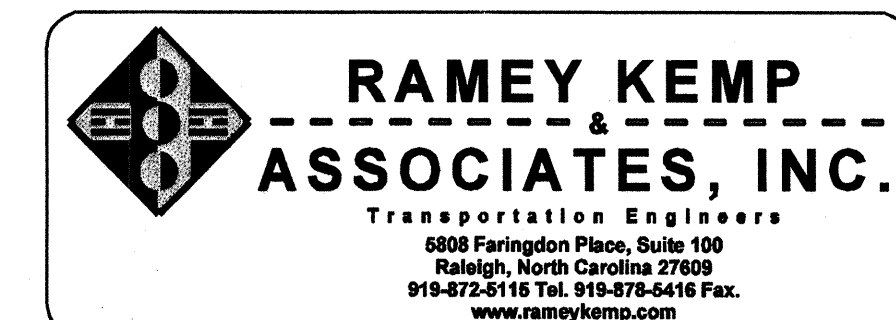
THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE FRENCH BROAD ELECTRIC, VERIZON AND COUNTRY CABLE.
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 CONTRACT.



3.15/06

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. B-4330	SHEET NO. 1-B
---------------------------------	------------------

RAMEY KEMP ASSOCIATES, INC.
TRANSPORTATION ENGINEERS
5000 Fortson Place, Suite 100
Raleigh, North Carolina 27606
919-876-7200
www.rameykemp.com

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	----- X
Property Monument	□ ECM
Parcel/Sequence Number	① 23
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	○ S
Well	○ W
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	○ 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	○ CA
Proposed Control of Access	○ CA
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
Proposed Wheel Chair Ramp Curb Cut	WCC
Curb Cut for Future Wheel Chair Ramp	CCFR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----

VEGETATION:

Equality Symbol	⊕
Pavement Removal	▭
Single Tree	☼
Single Shrub	☼
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	▭ 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	-----

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	----- 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	⊕
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	----- W
Designated U/G Water Line (S.U.E.*)	----- W
Above Ground Water Line	----- A/G Water

TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	⊕
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

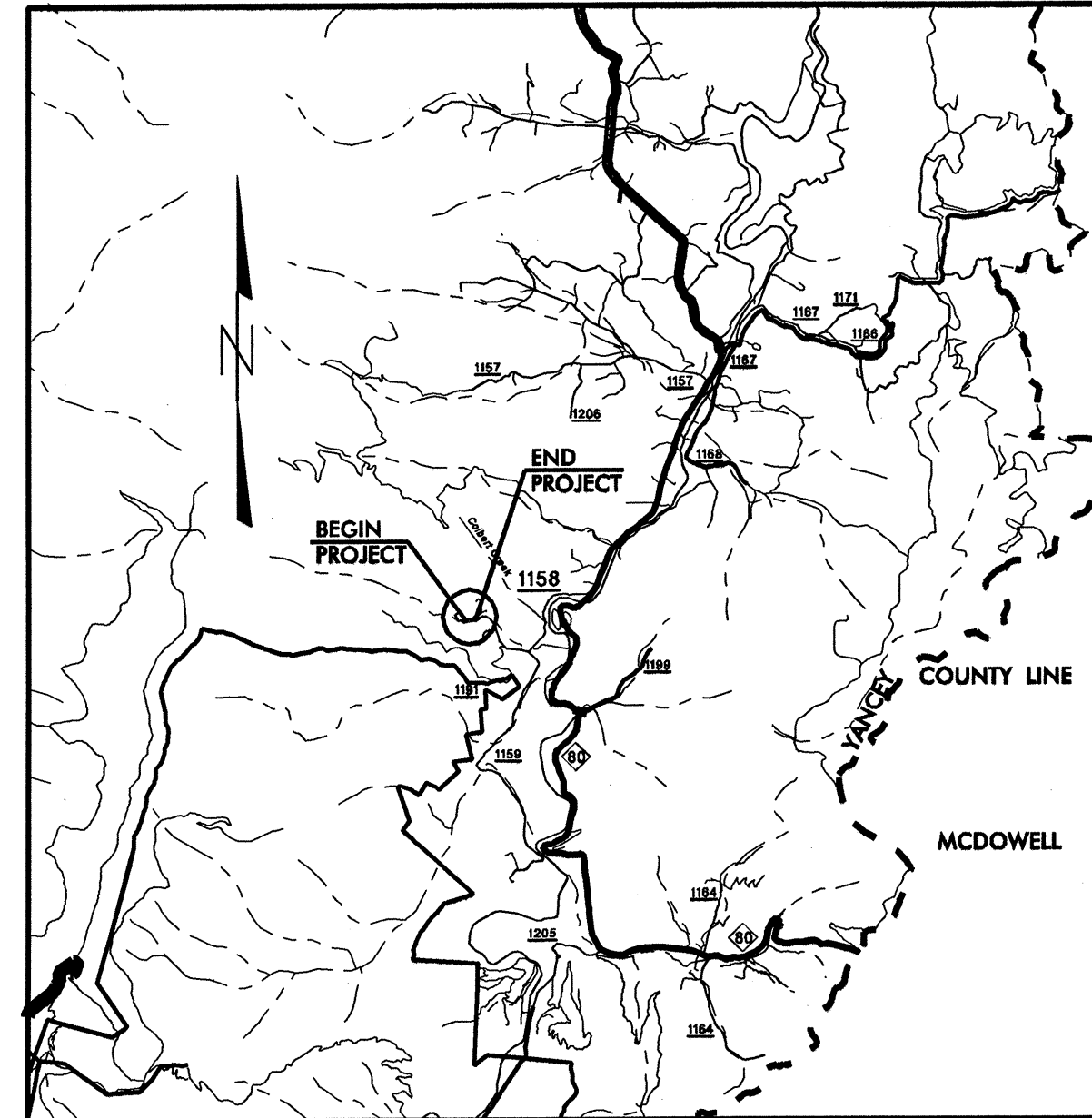
SANITARY SEWER:

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	----- ?UTL
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.

SURVEY CONTROL SHEET B-4330



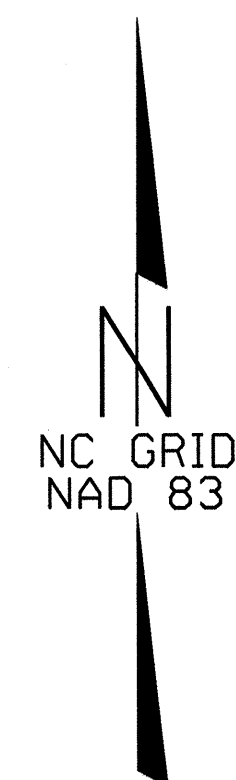
VICINITY MAP

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1		762971.1940	1046214.8490	2951.47	OUTSIDE PROJECT LIMITS	
2	BL-2		763039.8640	1046551.0980	2921.92	11+53.95	11.76 LT
3	B4330-1		762945.2520	1046900.4580	2899.47	15+07.82	16.64 RT
4	BL-4		763099.7100	1047102.0940	2880.80	17+53.24	14.13 LT
5	BL-5		763080.8110	1047323.2460	2870.27	19+69.15	16.50 LT
6	B4330-2		762856.8330	1047503.3040	2862.29	22+55.27	14.49 RT

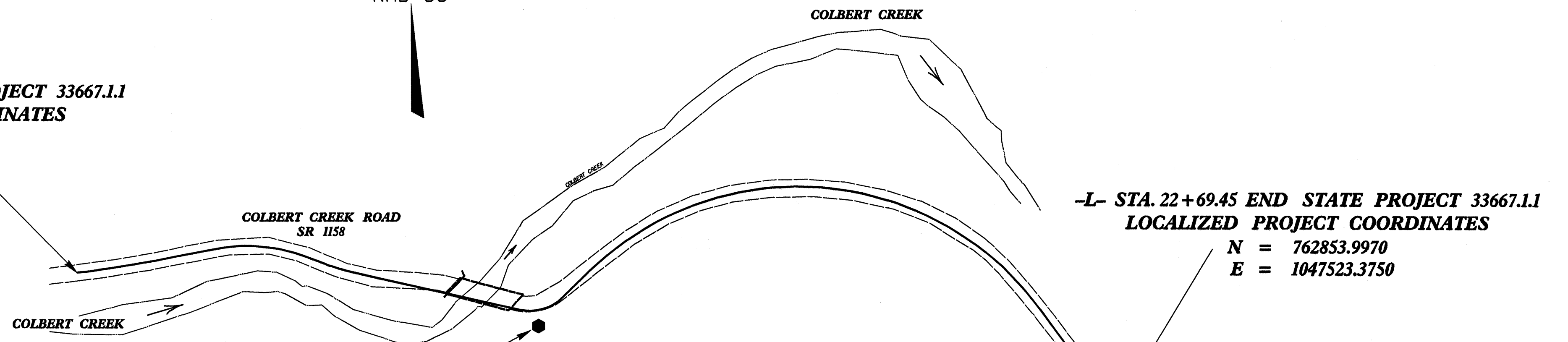
```

.....
BM1      ELEVATION = 2932.58
N 763035      E 1046466
L STATION 10+69 23 LEFT
RR SPIKE IN 30" MAPLE
.....
BM2      ELEVATION = 2900.35
N 762904      E 1046929
L STATION 15+18 63 RIGHT
RR SPIKE IN POWER POLE
.....
BM3      ELEVATION = 2863.14
N 762868      E 1047534
L STATION 22+64 17 LEFT
RR SPIKE IN 20" HEMLOCK
.....

```



**-L- STA. 10+00.00 BEGIN STATE PROJECT 33667.1.1
LOCALIZED PROJECT COORDINATES**
 N = 763002.3318
 E = 1046401.4715



**-L- STA. 22+69.45 END STATE PROJECT 33667.1.1
LOCALIZED PROJECT COORDINATES**
 N = 762853.9970
 E = 1047523.3750

**NCDOT GPS STA. "B4330-1"
LOCALIZED PROJECT COORDINATES**
 N = 762945.2520
 E = 1046900.4580

**NCDOT GPS STA. "B4330-2"
LOCALIZED PROJECT COORDINATES**
 N = 762856.8330
 E = 1047503.3040

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/PRECONSTRUCT/HIGHWAY/LOCATIONPROJECT/](http://www.ncdot.org/preconstruct/highway/locationproject/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4330_LS_CONTROL_060531.TXT

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

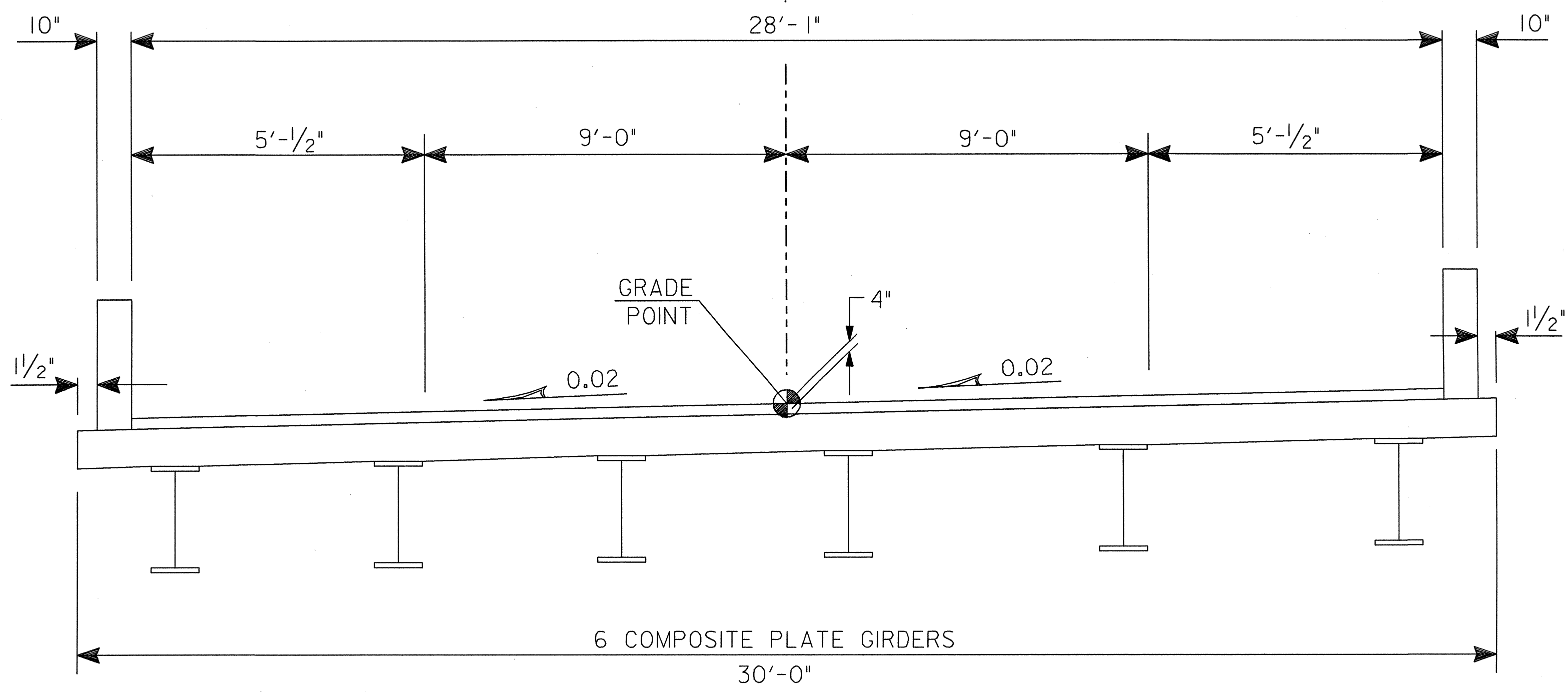
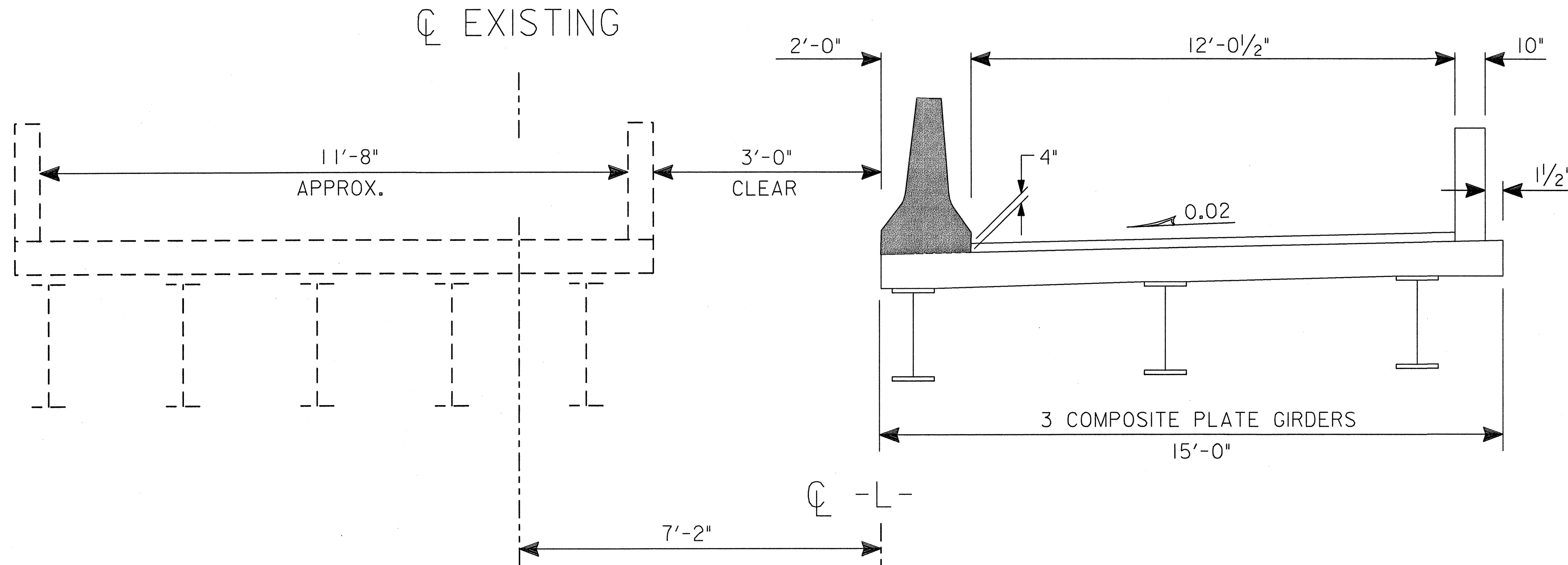
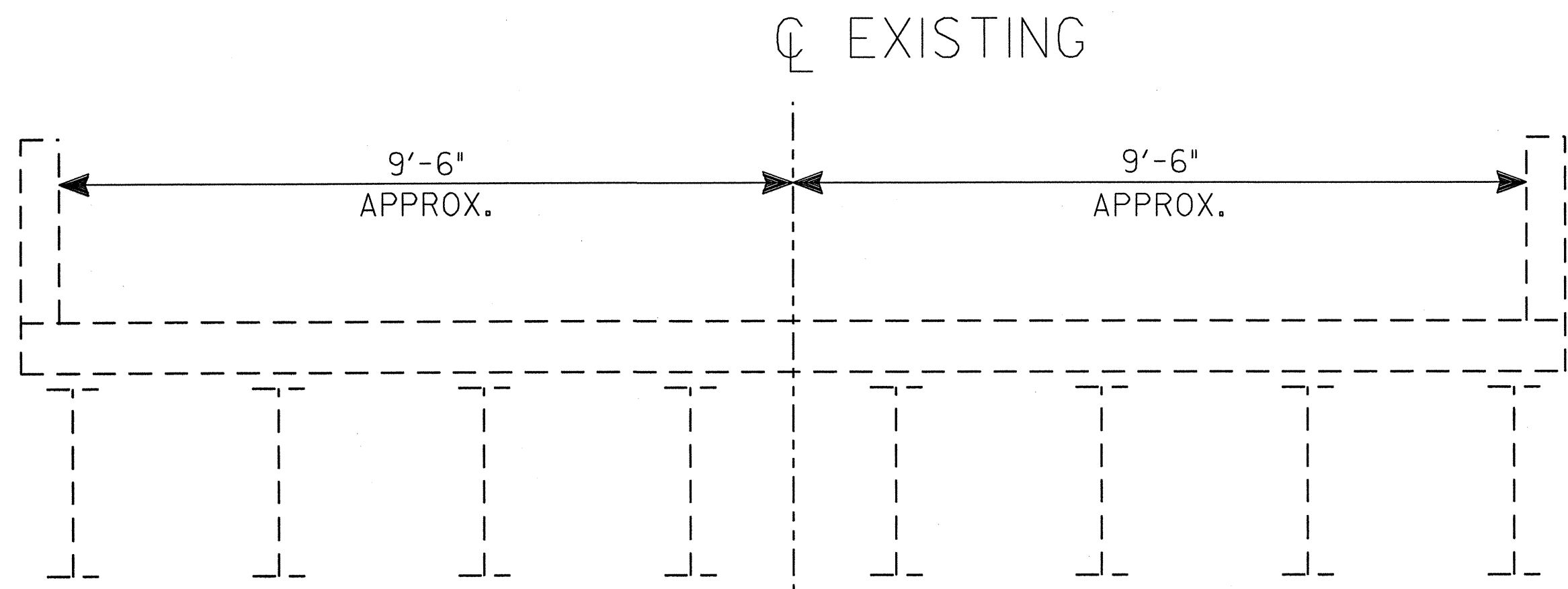
- INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4330-1" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 762945.252(ft) EASTING: 1046900.458(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99966847 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4330-1" TO -L- STATION 10+00.00 IS N 83°28'27" W 502.24' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

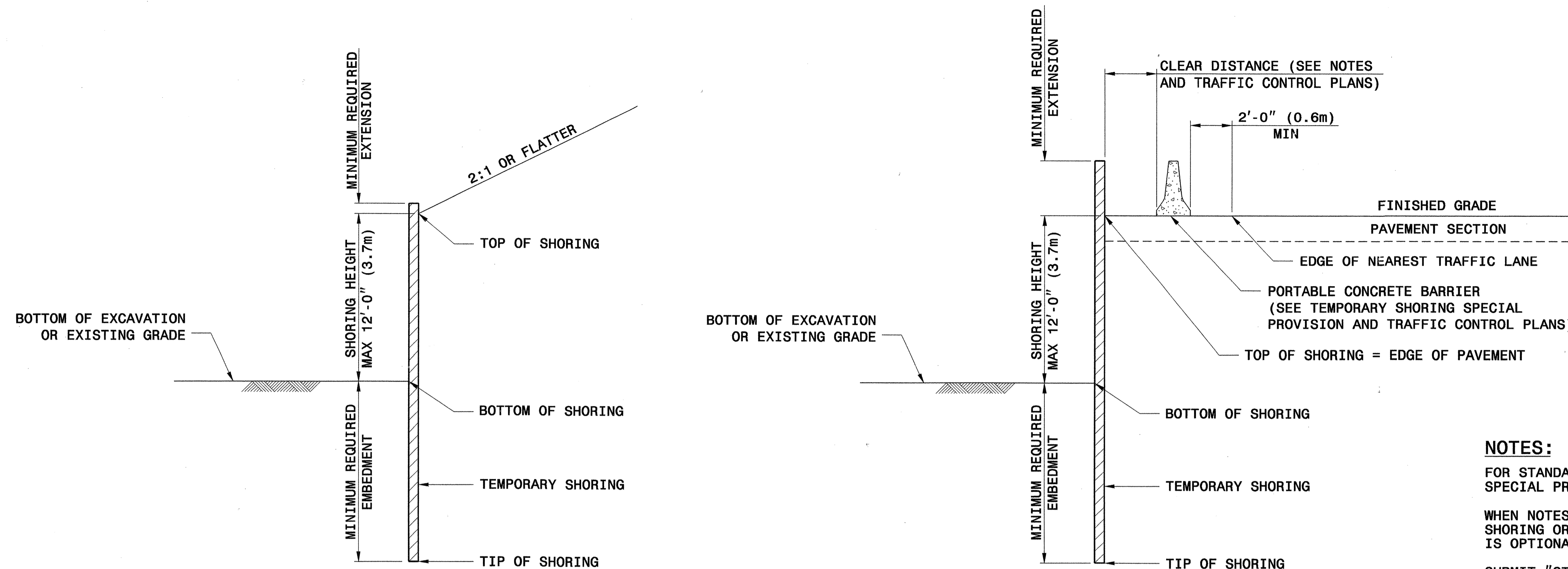
PROJECT REFERENCE NO. B-4330	SHEET NO. 2-A
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 24416 SCOTT CLARK	PAVEMENT DESIGN ENGINEER



RAMEY KEMP & ASSOCIATES, INC.
 Transportation Engineers
 6808 Faringdon Place, Suite 100
 Raleigh, North Carolina 27609
 919-872-5115 Tel. 919-878-6416 Fax.
 www.rameykemp.com



Signature: Scott A. Shidden 3/29/07
Date: 3/29/07



SLOPE CASE

SURCHARGE CASE

NOTES:

FOR STANDARD TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

WHEN NOTES ON PLANS DO NOT PROHIBIT STANDARD TEMPORARY SHORING OR STANDARD SHORING, STANDARD TEMPORARY SHORING IS OPTIONAL.

SUBMIT "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 14 DAYS BEFORE BEGINNING SHORING CONSTRUCTION. UP TO THREE LOCATIONS MAY BE INCLUDED ON EACH SELECTION FORM.

STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING CONDITIONS:

- 1) MAXIMUM SHORING HEIGHT IS 12'-0" (3.7m).
- 2) TRAFFIC SURCHARGE IS 240 PSF (11.5 KPA) MAXIMUM OR BACKSLOPE IS 2:1 (H:V) OR FLATTER.
- 3) BOTTOM OF EXCAVATION OR EXISTING GRADE IN FRONT OF SHORING IS 6:1 (H:V) SLOPE OR FLATTER.
- 4) H PILE SPACING IS 6'-0" (1.8m).
- 5) H PILE EMBEDMENT DEPTHS ARE FOR DRIVEN PILES.
- 6) TIMBER LAGGING IS A MINIMUM OF 3" (75mm) THICK.

STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
TOTAL UNIT WEIGHT = 120 PCF (18.8 KN/m³)
FRICTION ANGLE = 30 DEGREES
COHESION = 0 PSF (0 KPA)
GROUNDWATER IS ASSUMED TO BE BELOW BOTTOM OF SHORING.

DO NOT USE STANDARD TEMPORARY SHORING WHEN THE ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR GROUNDWATER IS ABOVE THE BOTTOM OF SHORING.

DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS PRESENT WITHIN THE EMBEDMENT DEPTH.

VERIFY GROUNDWATER ELEVATION BEFORE BEGINNING SHORING CONSTRUCTION.

IF THE CLEAR DISTANCE AVAILABLE IS LESS THAN THE MINIMUM REQUIRED IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS, SET THE BARRIER AGAINST THE TRAFFIC SIDE OF THE SHORING AND USE THE "SURCHARGE CASE WITH TRAFFIC IMPACT".

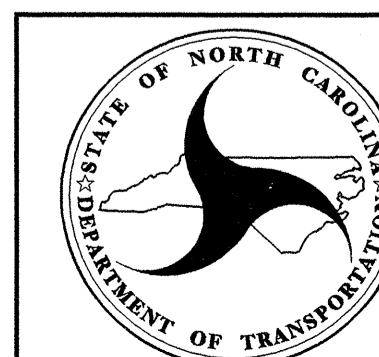
AT THE CONTRACTOR'S OPTION, H PILE EMBEDMENT DEPTHS FOR PILES SET IN DRILLED HOLES MAY BE REDUCED BY 25%. FOR PILE EXCAVATION, SEE TEMPORARY SHORING SPECIAL PROVISION.

CONTROL DRAINAGE DURING CONSTRUCTION IN THE VICINITY OF THE SHORING. COLLECT AND DIRECT RUNOFF AWAY FROM SHORING.

CONTACT THE ENGINEER IF MINIMUM REQUIRED EMBEDMENT IS NOT ACHIEVED.

GROUNDWATER CONDITION	SHORING HEIGHT FT (m)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H PILES WITH TIMBER LAGGING			SHEET PILES		H PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT FT (m)	MINIMUM REQUIRED SECTION MODULUS IN ³ /FT (cm ³ /m)	MINIMUM REQUIRED EMBEDMENT FT (m)			MINIMUM REQUIRED EMBEDMENT FT (m)	MINIMUM REQUIRED SECTION MODULUS IN ³ /FT (cm ³ /m)	MINIMUM REQUIRED EMBEDMENT FT (m)		
			HP 10x42 (HP 250x62)	HP 12x53 (HP 310x79)	HP 14x73 (HP 360x108)			HP 10x42 (HP 250x62)	HP 12x53 (HP 310x79)	HP 14x73 (HP 360x108)	
GROUNDWATER ELEVATION BELOW TIP OF SHORING	< 6 (1.8)	7.5 (2.3)	3.0 (161)	8.0 (2.4)	8.0 (2.4)	8.0 (2.4)	11.0 (3.4)	10.0 (538)	9.5 (2.9)	9.5 (2.9)	9.5 (2.9)
	7 (2.1)	8.5 (2.6)	4.5 (242)	9.5 (2.9)	9.5 (2.9)	9.5 (2.9)	12.0 (3.7)	12.0 (645)	10.5 (3.2)	10.5 (3.2)	10.5 (3.2)
	8 (2.4)	10.0 (3.0)	6.5 (349)	10.5 (3.2)	10.5 (3.2)	10.5 (3.2)	12.5 (3.8)	14.0 (753)	11.5 (3.5)	11.5 (3.5)	11.5 (3.5)
	9 (2.7)	11.0 (3.4)	9.5 (511)	--	12.0 (3.7)	12.0 (3.7)	13.5 (4.1)	16.5 (887)	--	12.5 (3.8)	12.5 (3.8)
	10 (3.0)	12.5 (3.8)	13.0 (699)	--	--	13.5 (4.1)	14.0 (4.3)	19.5 (1048)	--	13.5 (4.1)	13.5 (4.1)
	11 (3.4)	13.5 (4.1)	17.0 (914)	--	--	14.5 (4.4)	15.0 (4.6)	22.5 (1210)	--	--	14.5 (4.4)
	12 (3.7)	15.0 (4.6)	21.5 (1156)	--	--	16.0 (4.9)	16.0 (4.9)	25.5 (1371)	--	--	15.5 (4.7)
GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND TIP OF SHORING	< 6 (1.8)	11.5 (3.5)	4.5 (242)	11.5 (3.5)	11.5 (3.5)	11.5 (3.5)	16.0 (4.9)	12.0 (645)	13.0 (4.0)	13.0 (4.0)	13.0 (4.0)
	7 (2.1)	13.0 (4.0)	7.0 (376)	13.0 (4.0)	13.0 (4.0)	13.0 (4.0)	17.0 (5.2)	14.5 (780)	14.5 (4.4)	14.5 (4.4)	14.5 (4.4)
	8 (2.4)	15.0 (4.6)	10.0 (538)	--	15.0 (4.6)	15.0 (4.6)	18.0 (5.5)	17.0 (914)	--	15.5 (4.7)	15.5 (4.7)
	9 (2.7)	17.0 (5.2)	14.0 (753)	--	17.0 (5.2)	17.0 (5.2)	19.0 (5.8)	20.0 (1075)	--	17.0 (5.2)	17.0 (5.2)
	10 (3.0)	18.5 (5.6)	19.5 (1048)	--	--	18.5 (5.6)	20.0 (6.1)	23.5 (1263)	--	--	18.5 (5.6)
	11 (3.4)	20.5 (6.3)	26.0 (1398)	--	--	--	21.0 (6.4)	28.0 (1505)	--	--	20.0 (6.1)
	12 (3.7)	22.5 (6.9)	33.0 (1774)	--	--	--	22.0 (6.7)	33.0 (1774)	--	--	21.5 (6.6)

NOTE: MINIMUM REQUIRED EXTENSION IS 6" (150mm) FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32" (800 mm) FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".



GEOTECHNICAL ENGINEERING UNIT
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD DRAWING NO. 1801.01

STANDARD TEMPORARY SHORING

DATE: 2-20-07

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201764

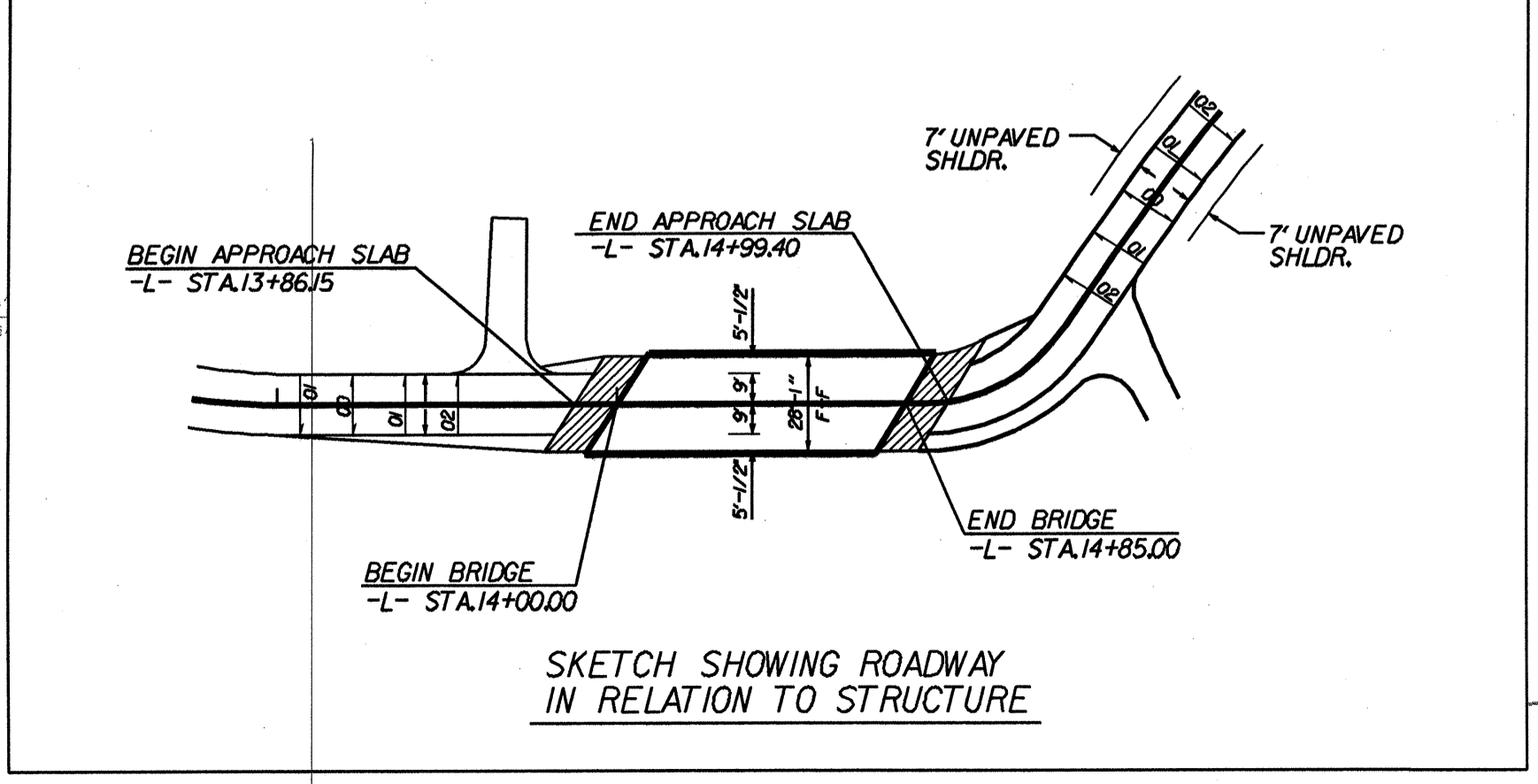
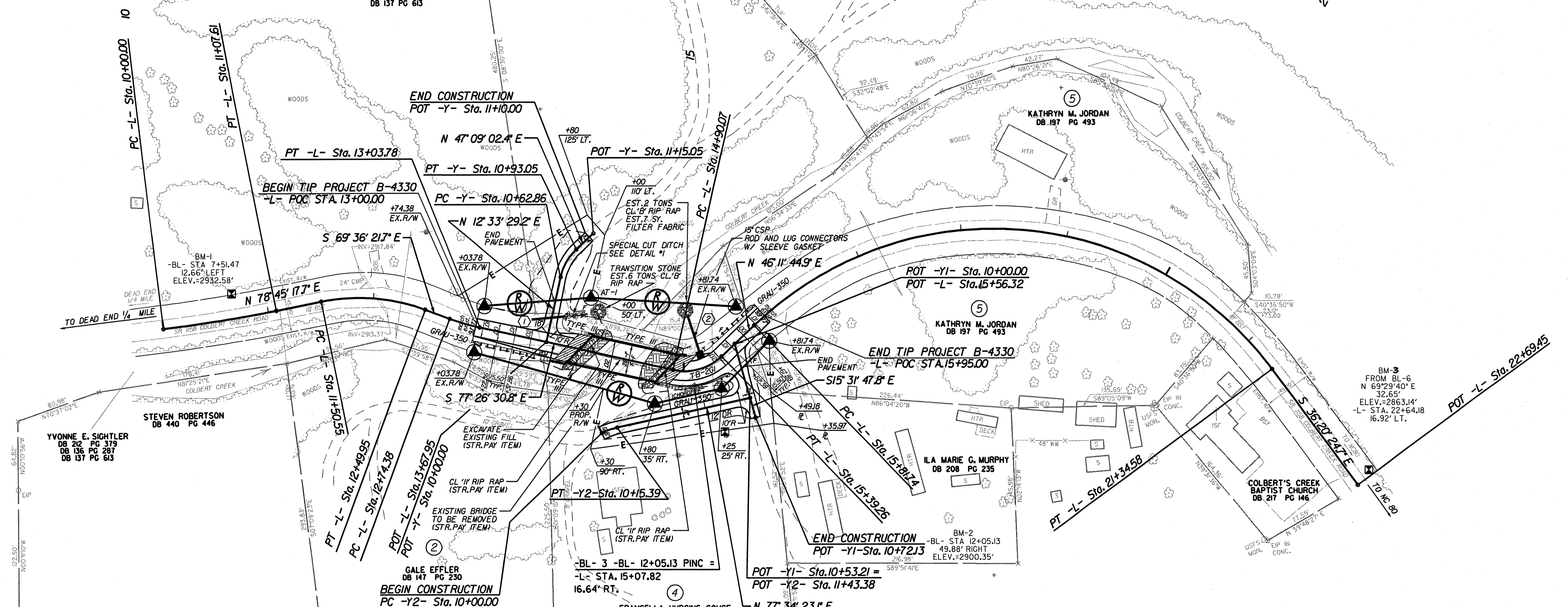
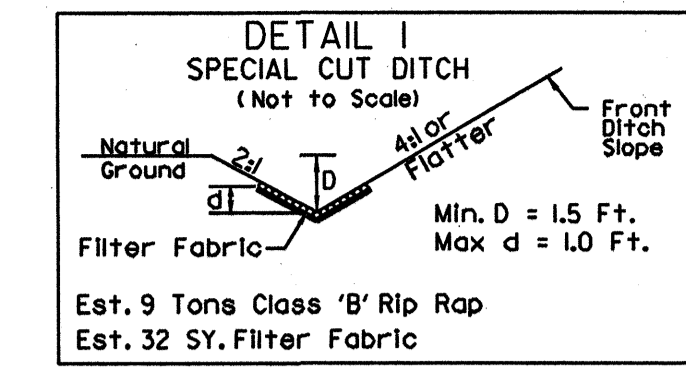
ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION
002900000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (14+42.50)
004300000-N	226	Lump Sum		GRADING
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
005700000-E	226	50	CY	UNDERCUT EXCAVATION
008000000-E	SP	50	TON	CLASS IV SUBGRADE STABILIZATION
019500000-E	265	50	CY	SELECT GRANULAR MATERIAL
019600000-E	270	50	SY	FABRIC FOR SOIL STABILIZATION
019900000-E	SP	285	SF	TEMPORARY SHORING
031800000-E	300	8	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STKS
034400000-E	310	28	LF	18" SIDE DRAIN PIPE
070800000-E	310	40	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK
112100000-E	520	123	TON	AGGREGATE BASE COURSE
122000000-E	545	25	TON	INCIDENTAL STONE BASE
148900000-E	610	135	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
152500000-E	610	80	TON	ASPHALT CONC SURFACE COURSE, TYPE SP9.5A
156000000-E	620	11	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
169300000-E	654	25	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
200000000-N	806	7	EA	RIGHT OF WAY MARKERS
202200000-E	815	9	CY	SUBDRAIN EXCAVATION
203300000-E	815	9	CY	SUBDRAIN FINE AGGREGATE
204400000-E	815	50	LF	6" PERFORATED SUBDRAIN PIPE
205500000-E	815	2	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
303000000-E	862	25	LF	STEEL BM GUARDRAIL
304500000-E	862	100	LF	STEEL BM GUARDRAIL, SHOP CURVED
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
319500000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1
321500000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III
327000000-N	SP	3	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
338700000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** TEMPORARY (RETROFIT)
338910000-N	SP	2	EA	GUARDRAIL ANCHOR UNITS, TYPE 350 TEMPORARY
364900000-E	876	20	TON	RIP RAP, CLASS B
365600000-E	876	265	SY	FILTER FABRIC FOR DRAINAGE
440000000-E	1110	162	SF	WORK ZONE SIGNS (STATIONARY)
440500000-E	1110	128	SF	WORK ZONE SIGNS (PORTABLE)
441000000-E	1110	40	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
443000000-N	1130	10	EA	DRUMS
443500000-N	1135	10	EA	CONES
444500000-E	1145	32	LF	BARRICADES (TYPE III)
445500000-N	1150	60	MD	FLAGGER
446500000-N	1160	2	EA	TEMPORARY CRASH CUSHIONS
448000000-N	1165	1	EA	TMIA
448500000-E	1170	60	LF	PORTABLE CONCRETE BARRIER
449000000-E	1170	80	LF	PORTABLE CONCRETE BARRIER (ANCHORED)

ItemNumber	Sec #	Quantity	Unit	Description
477000000-E	1205	300	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (III)
477000000-E	1205	250	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (IV)
481000000-E	1205	4,427	LF	PAINT PAVEMENT MARKING LINES (4")
485000000-E	1205	600	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
600000000-E	1605	765	LF	TEMPORARY SILT FENCE
600600000-E	1610	130	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	135	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	50	TON	SEDIMENT CONTROL STONE
601500000-E	1615	0.5	ACR	TEMPORARY MULCHING
601800000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	0.25	TON	FERTILIZER FOR TEMPORARY SEEDING
602900000-E	SP	200	LF	SAFETY FENCE
603000000-E	1630	380	CY	SILT EXCAVATION
603600000-E	1631	170	SY	MATTING FOR EROSION CONTROL
603800000-E	SP	135	SY	PERMANENT SOIL REINFORCEMENT MAT
604200000-E	1632	20	LF	1/4" HARDWARE CLOTH
607103000-E	SP	120	LF	COIR FIBER BAFFLES
608400000-E	1660	0.5	ACR	SEEDING & MULCHING
608700000-E	1660	0.5	ACR	MOWING
609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	0.25	TON	FERTILIZER TOPDRESSING
611400000-N	SP	2	HR	SPECIALIZED HAND MOWING
611700000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
612300000-E	1670	0.1	ACR	REFORESTATION

NOTES:

1. NO DECK DRAINAGE REQUIRED.
2. NO RIP RAP ON BEGIN BRIDGE SPILL THROUGH.
3. POLICY OF 10' SETBACK FROM TOP OF BANK HAS BEEN WAIVED BY NCDOT HYDRAULICS FOR CONSTRUCTABILITY.



-L-	-L-	-L-
PI Sta 12+89.11	PI Sta 15+16.86	PI Sta 19+52.09
$\Delta = 7^{\circ} 50' 09.1^{\circ}$ (LT)	$\Delta = 56^{\circ} 21' 44.3^{\circ}$ (LT)	$\Delta = 97^{\circ} 27' 50.4^{\circ}$ (RT)
D = 26' 38' 57.1"	D = 114' 35' 29.6"	D = 17' 37' 46.1"
L = 29.40'	L = 49.19'	L = 552.85'
T = 14.72'	T = 26.79'	T = 370.36'
R = 215.00'	R = 50.00'	R = 325.00'
E = 0.02	E = 0.02	E = 0.02
RUN OFF = SEE PLANS	RUN OFF = SEE PLANS	RUNOFF = SEE PLANS

** DESIGN EXCEPTION FOR DESIGN SPEED AND SAG VERTICAL K REQUIRED

DENOTES APPROACH SLAB

FOR -L-, -Y-, -Y1-, & -Y2- PROFILES SEE SHEET NO.5

SEE SHEETS S-1 THRU S-27 FOR STRUCTURE PLANS

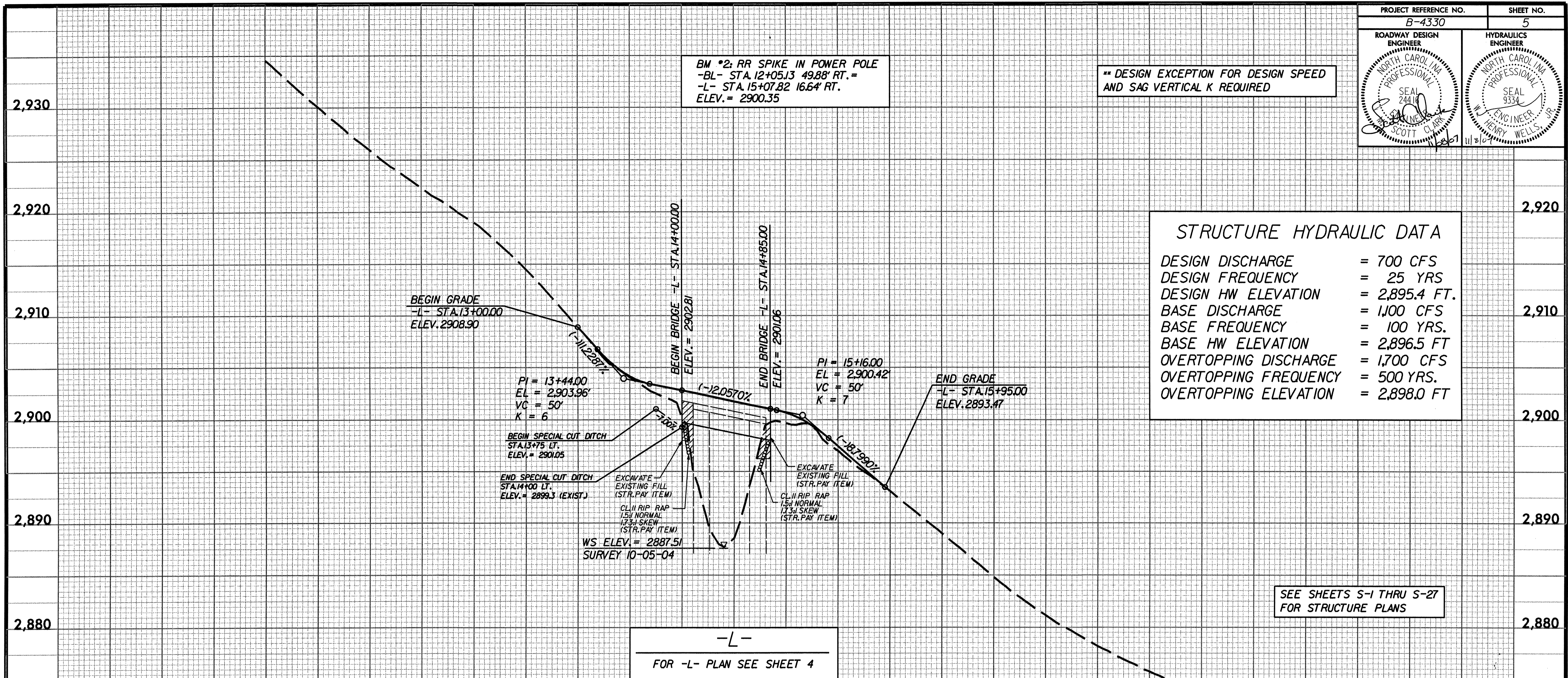
SEE TRAFFIC CONTROL PLANS TCP-1 THRU TCP-5 FOR TEMPORARY GUARDRAIL AND SHORING LOCATIONS



** DESIGN EXCEPTION FOR DESIGN SPEED AND SAG VERTICAL K REQUIRED

BM #2: RR SPIKE IN POWER POLE
-BL- STA. 12+05.13 49.88' RT. =
-L- STA. 15+07.82 16.64' RT. =
ELEV. = 2900.35

STRUCTURE HYDRAULIC DATA	
DESIGN DISCHARGE	= 700 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 2,895.4 FT.
BASE DISCHARGE	= 1,100 CFS
BASE FREQUENCY	= 100 YRS.
BASE HW ELEVATION	= 2,896.5 FT
OVERTOPPING DISCHARGE	= 1,700 CFS
OVERTOPPING FREQUENCY	= 500 YRS.
OVERTOPPING ELEVATION	= 2,898.0 FT



SEE SHEETS S-1 THRU S-27 FOR STRUCTURE PLANS

-Y-
FOR -Y- PLAN SEE SHEET 4

-Y1-
FOR -Y1- PLAN SEE SHEET 4

-Y2-
FOR -Y2- PLAN SEE SHEET 4

