

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4060	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33424.1.1	BRZ-1486(1)	P.E.	
33424.3.1	BRZ-1486(1)	R /W & UTIL.	
33424.2.2	BRZ-1486(1)	CONST.	

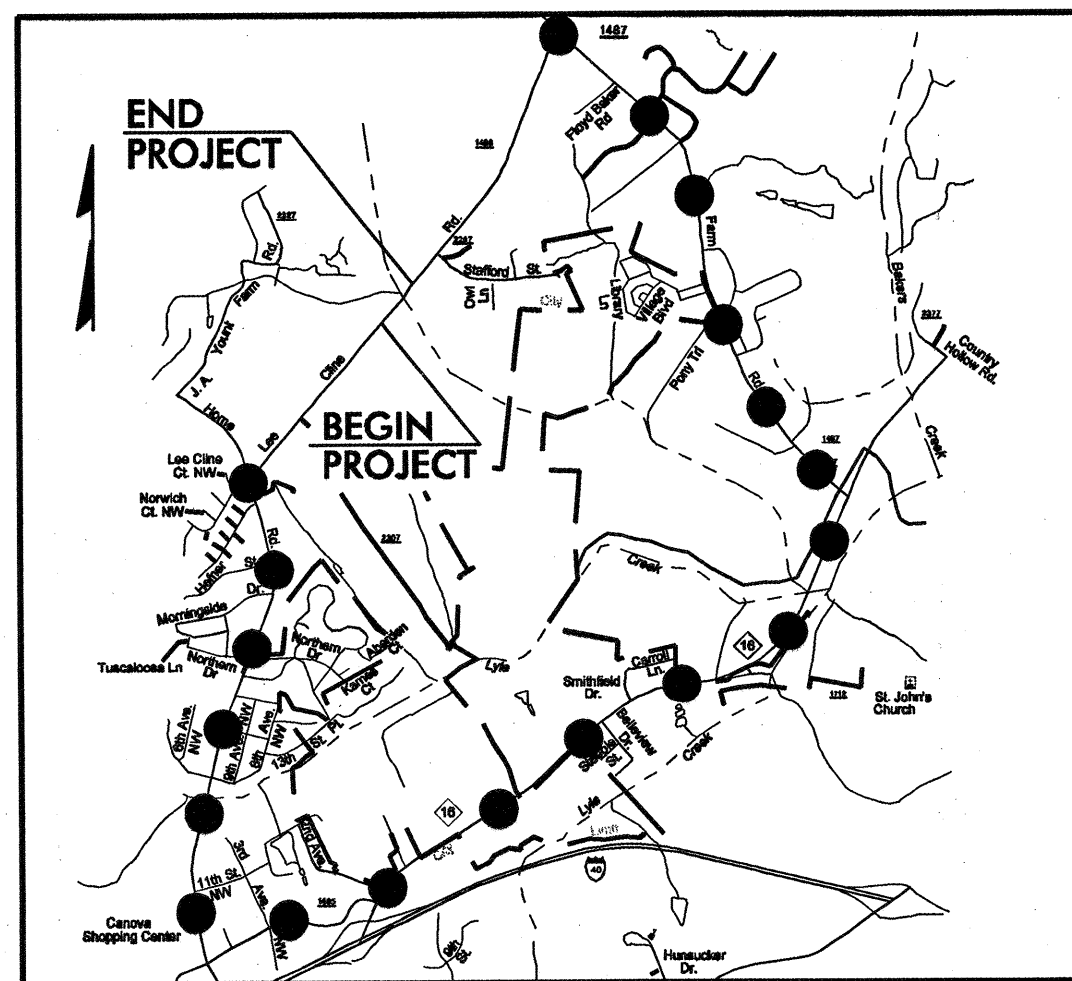
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CATAWBA COUNTY

LOCATION: BRIDGE NO. 17 OVER CLINE CREEK ON SR 1486 (LEE CLINE RD.)

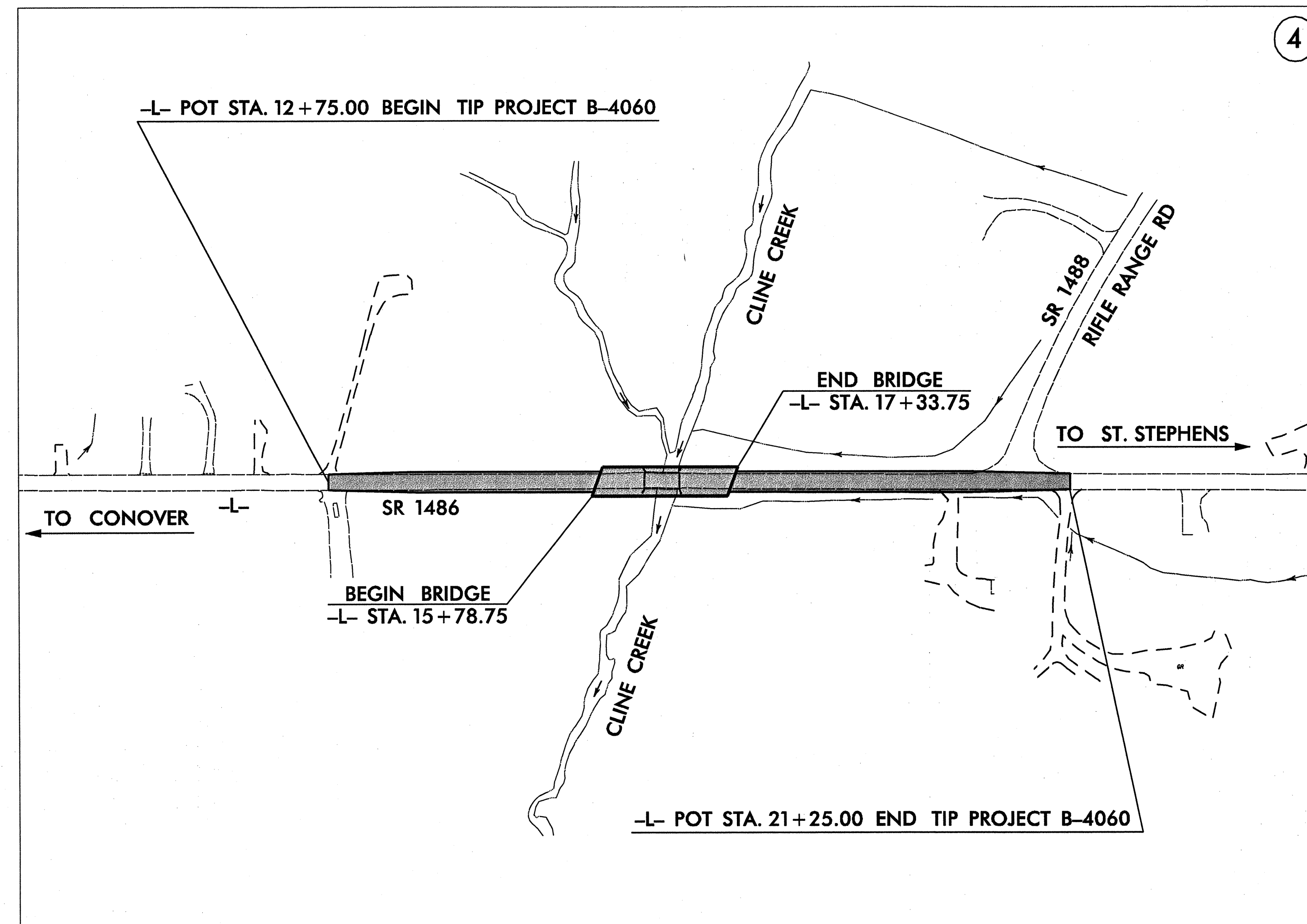
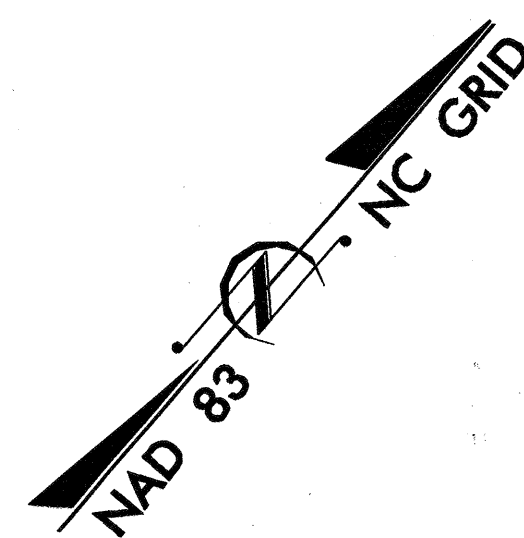
TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

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



VICINITY MAP

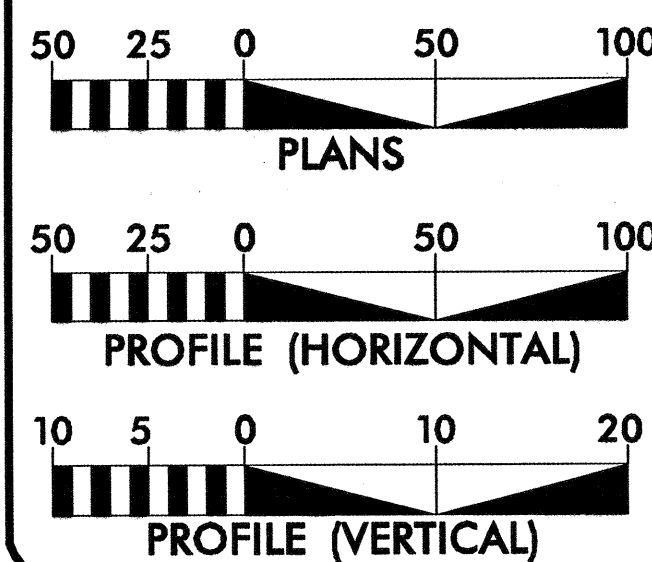
●●●●● DENOTES OFFSITE DETOUR



SUNGATE DESIGN GROUP, P.A.
915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL 919 853-0240 FAX 919 853-4038

** DESIGN EXCEPTION FOR VERTICAL ALIGNMENT & MAXIMUM GRADE

GRAPHIC SCALES



DESIGN DATA

ADT 2006 = 3,870
ADT 2025 = 8,000
DHV = 10%
D = 70%
T = 3% *
** V = 60 MPH
* TTST 1% DUAL 2%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4060 = 0.132 mi
LENGTH STRUCTURE TIP PROJECT B-4060 = 0.029 mi
TOTAL LENGTH TIP PROJECT B-4060 = 0.161 mi

Plans prepared in the office of:

RAMEY KEMP & ASSOCIATES, INC.
TRANSPORTATION ENGINEERS
5508 Forrester Place
Raleigh, North Carolina 27609
919-872-5113 fax 919-872-5118 www.rkeng.com

for the North Carolina Department of Transportation

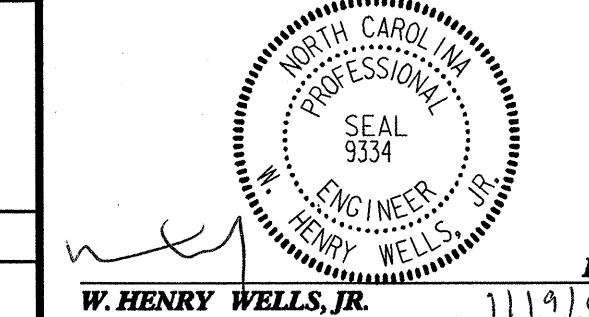
2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY 21, 2005

LETTING DATE:
APRIL 17, 2007

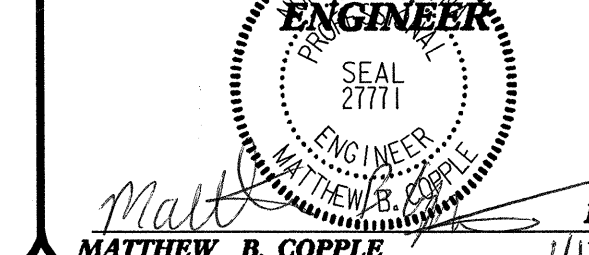
N.C.D.O.T. CONTACT:
CATHY S. HOUSER, PE
PROJECT ENGINEER
ROADWAY DESIGN

HYDRAULICS ENGINEER



W. HENRY WELLS, JR. P.E. 1119107

ROADWAY DESIGN ENGINEER



MATTHEW B. COPPLE P.E. 111707

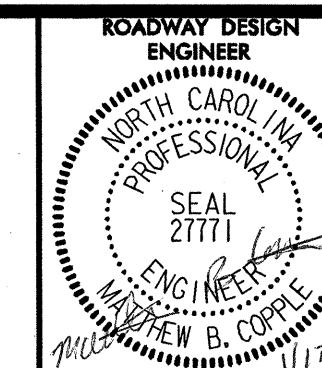
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

Out McMillan P.E.

STATE DESIGN ENGINEER
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED DIVISION ADMINISTRATOR DATE

CONTRACT: C201427 TIP PROJECT: B-4060



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

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 8 - INCIDENTALS

- 840.00 Concrete Base Pad for Drainage Structures
- 840.14 Concrete Drop Inlet - 12" thru 30" Pipe
- 840.15 Brick Drop Inlet - 12" thru 30" Pipe
- 840.16 Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
- 840.25 Anchorage for Frames - Brick or Concrete
- 840.29 Frames and Narrow Slot Flat Grates
- 840.35 Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
- 840.45 Precast Drainage Structure
- 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
- 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 STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C THRU 1-D	SURVEY CONTROL SHEETS
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND METHOD OF WEDGING DETAIL
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF DRAINAGE QUANTITIES SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TCP-1 THRU TCP-5	TRAFFIC CONTROL PLANS
EC-1 THRU EC-4	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-3	SIGNING PLANS
UC-1 THRU UC-2	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-2	UTILITIES BY OTHER PLANS
X-1	CROSS-SECTION SUMMARY
X-2 THRU X-6	CROSS-SECTIONS
S-1 THRU S-25	STRUCTURE PLANS

GENERAL NOTES: 2006 SPECIFICATIONS
EFFECTIVE: 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 PROFILES 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 SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

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.

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 DUKE ENERGY CORPORATION, CHARTER COMMUNICATIONS, BELL SOUTH, AND CITY OF CONOVER.

ANY RELOCATION OF 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 OTHERS.

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	-----
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	○
Swamp Marsh	-----
Proposed Lateral, Tail, Head Ditch	----- FLM
False Sump	-----

RAILROADS:

Standard Gauge	----- CSX TRANSPORTATION
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	-----
Equality Symbol	⊕
Pavement Removal	-----

VEGETATION:

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	○ S
Storm Sewer	----- S

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○ P
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	○ T
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	○ W
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

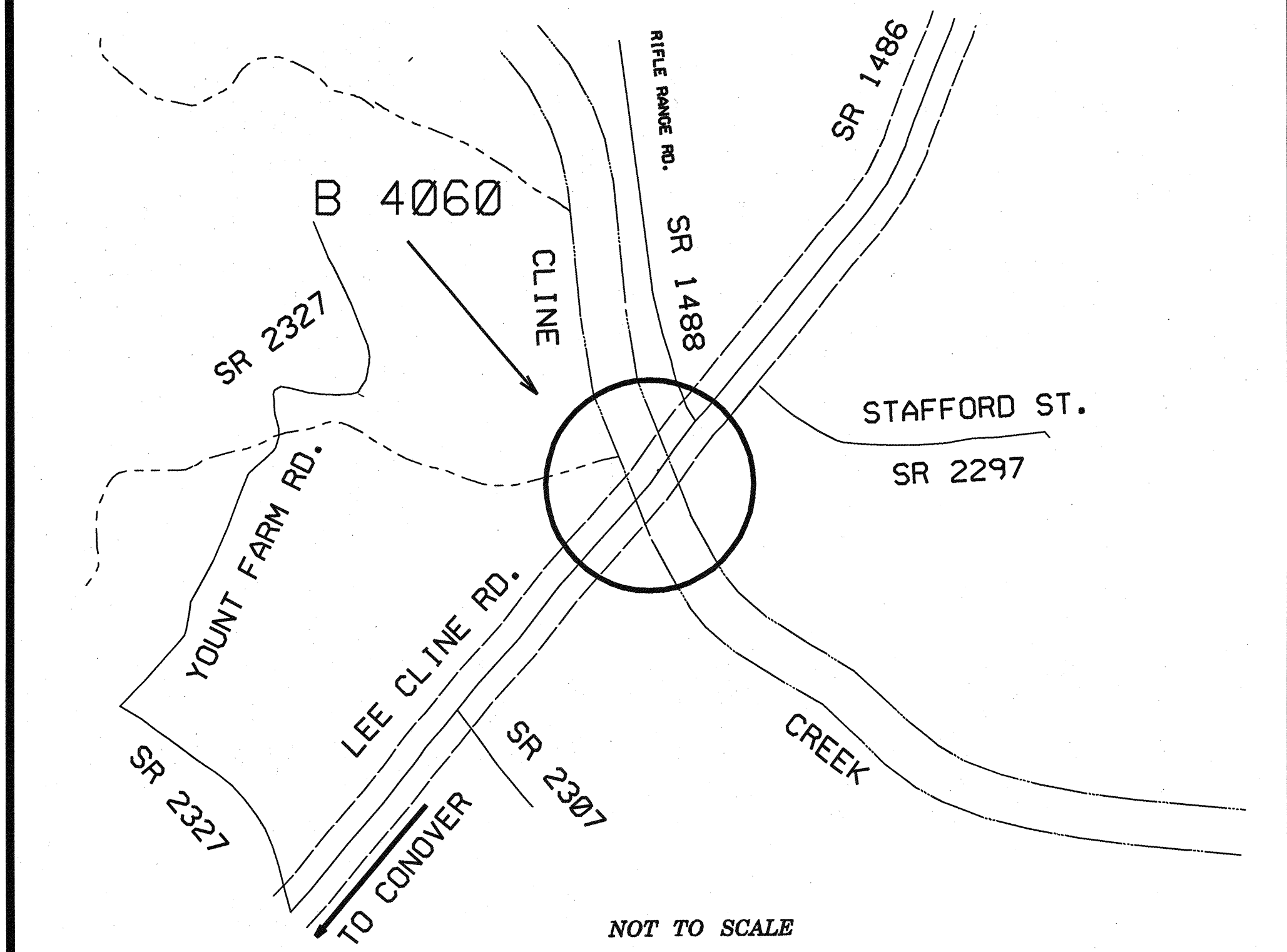
SANITARY SEWER:

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	----- UTIL
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



NCDOT GPS STATION B4060-2
 LOCALIZED PROJECT COORDINATES
 N = 736848.5966
 E = 1344693.7345

NCDOT GPS STATION B4060-1
 LOCALIZED PROJECT COORDINATES
 N = 735974.6648
 E = 1344012.0594



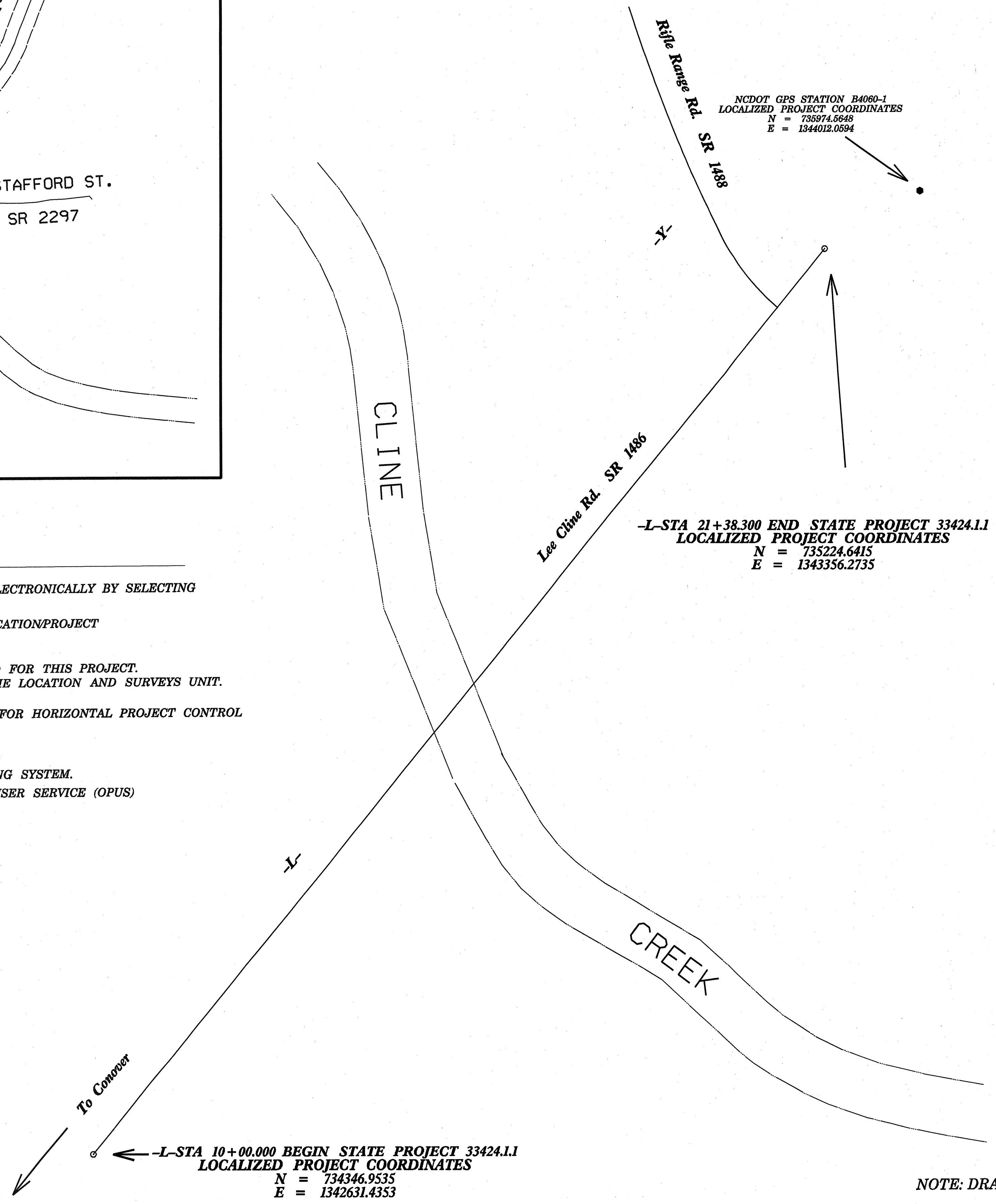
NOTES

NOTES:

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOHDOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/B4060_LS_CONTROL_041021.TXT](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/B4060_LS_CONTROL_041021.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 USER SERVICE (OPUS)

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4060-1" WITH STATE PLANE GRID COORDINATES OF NORTHING: 735975.648711 EASTING: 1344012.05941111 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999468276 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4060-1" TO -L- STATION 10+00.00 IS N 40 18 22.8 E 2134.3012 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88



NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET B-4060

PROJECT REFERENCE NO.	SHEET NO.
B-4060	1-D
Location and Surveys	

```

.....
BM1      ELEVATION = 932.63
N 734303      E 1342620
L STATION 10+00
S 14° 34' 59.4" W DIST 45.42
CHISELED 'X' ON HEADWALL
.....
BM2      ELEVATION = 888.34
N 734704      E 1343040
L STATION 15+35 88 RIGHT
SPIKE IN BASE OF 20' POPLAR
.....
BM3      ELEVATION = 968.85
N 736862      E 1344692
L STATION 21+38
N 39° 12' 24.9" E DIST 2113.08
CHISELED 'X' ON HEADWALL
.....
    
```

BLN	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
	102		733970.9990	1342337.8460	958.5100	OUTSIDE PROJECT LIMITS	
	103		734803.3760	1343024.7010	892.0700	16+02.35	12.59 RT
	104		735156.5575	1343273.5835	896.030	20+33.15	20.40 LT
	105		735507.6520	1343574.1670	917.5500	OUTSIDE PROJECT LIMITS	

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
 IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
 NCDOT FOR MONUMENT "B4060-1"
 WITH STATE PLANE GRID COORDINATES OF
 NORTHING: 735745648(ft) EASTING: 13440120594(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
 (GROUND TO GRID) IS: 0.9994687276
 THE N.C. LAMBERT GRID BEARING AND
 LOCALIZED HORIZONTAL GROUND DISTANCE FROM
 "B4060-1" TO L- STATION 10+00.00 IS
 N 40 18 22.8 E 2134.3012
 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:

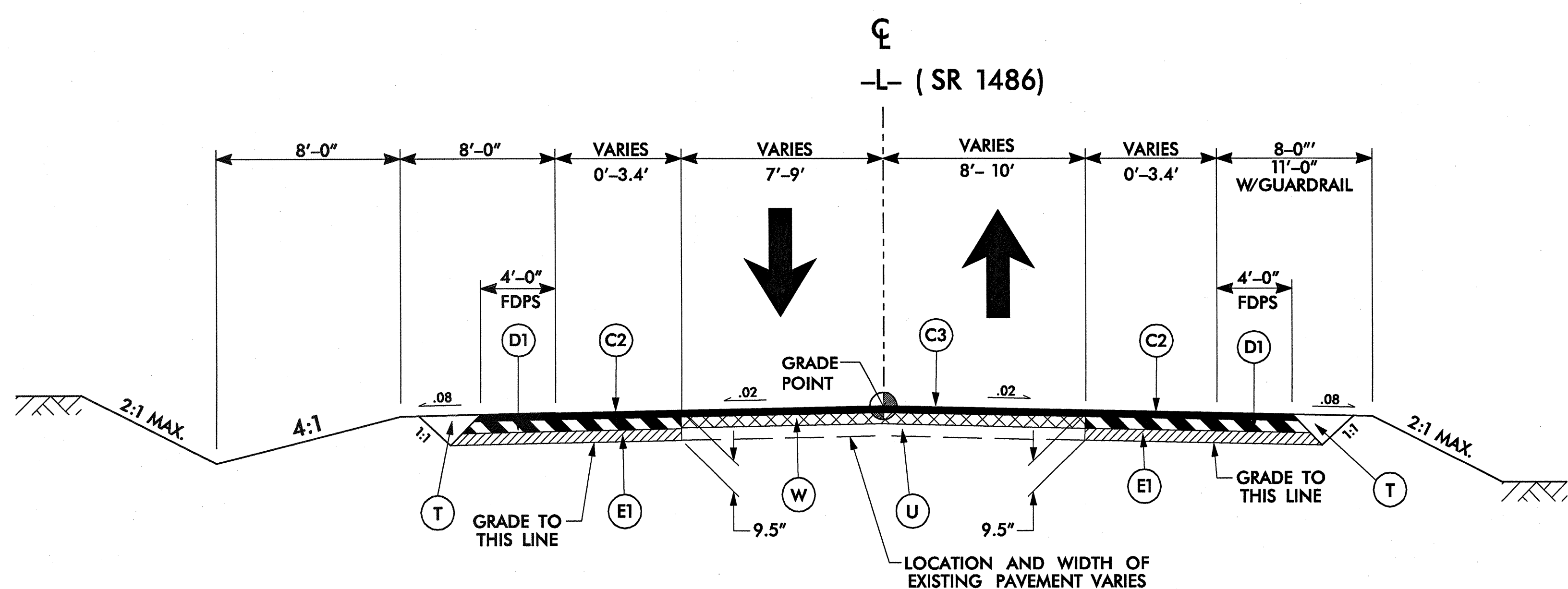
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT
 B4060_LS_CONTROL_041021.TXT](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/B4060_LS_CONTROL_041021.TXT)

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

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING USER SERVICE (OPUS)

BY THE NCDOT LOCATION AND SURVEYS UNIT.



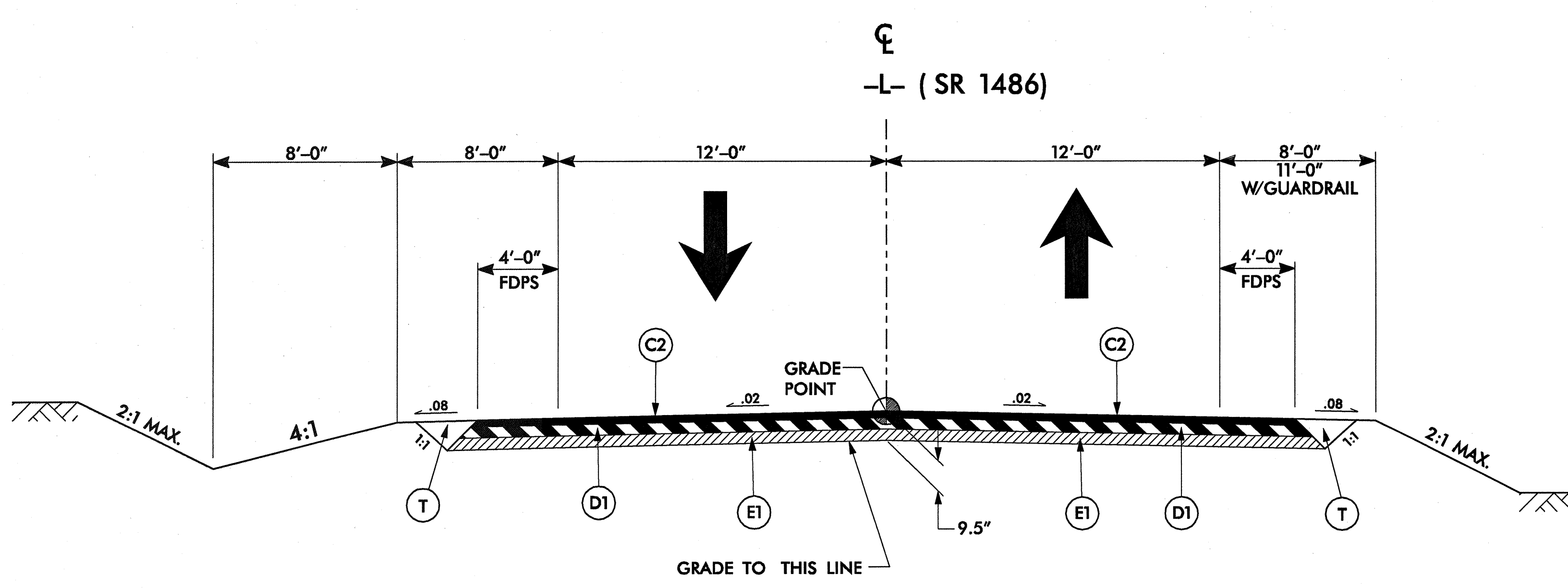
USE TYPICAL SECTION NO. 1
 -L- STA. 13+00.00 TO STA. 14+50.00
 -L- STA. 18+35.00 TO STA. 21+00.00

NOTE:
 FEATHER TO EXISTING PAVEMENT FROM
 -L- STA. 12+75.00 TO STA. 13+00.00 AND
 FROM -L- STA. 21+00.00 TO STA. 21+25.00

TYPICAL SECTION NO. 1

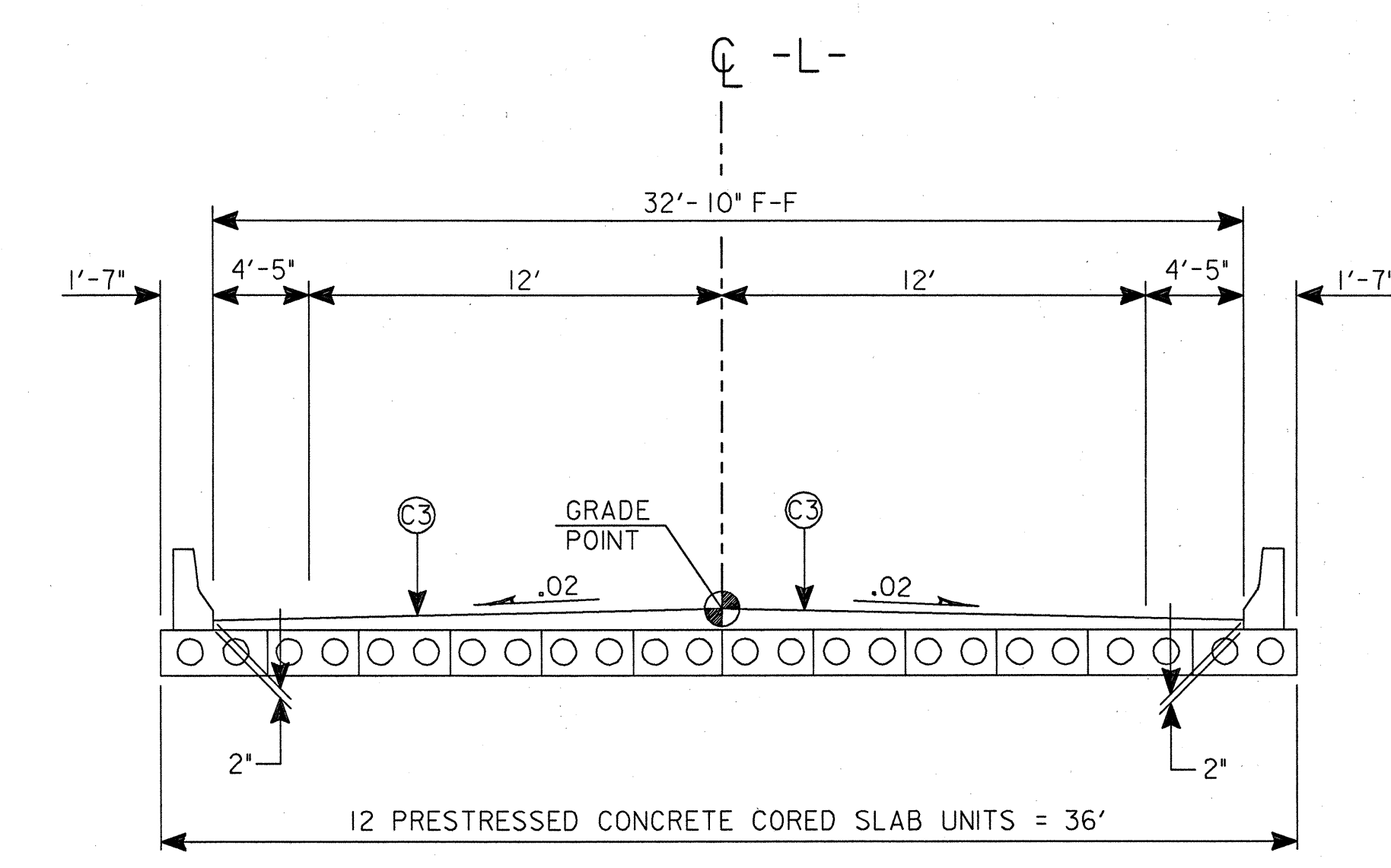
PAVEMENT SCHEDULE	
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL THIS SHEET)

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

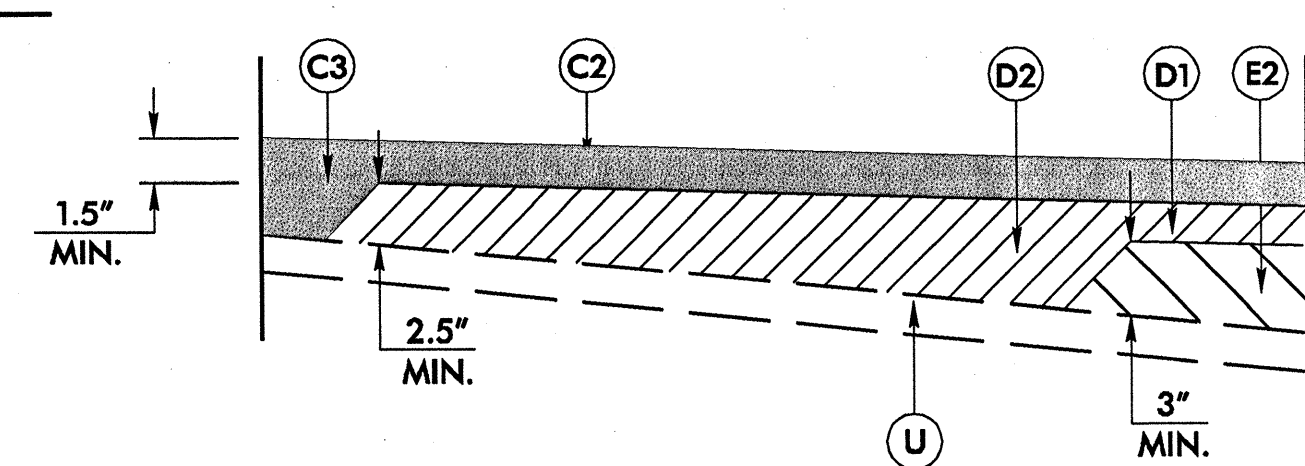


USE TYPICAL SECTION NO. 2
 -L- STA. 14+50.00 TO STA. 15+78.75 (BEGIN BRIDGE)
 -L- STA. 17+33.75 (END BRIDGE) TO STA. 18+35.00

TYPICAL SECTION NO. 2



CORED SLAB DETAIL



Detail Showing Method of Wedging

5/28/99

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201427

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	6024000000-E	1622	120	LF	TEMPORARY SLOPE DRAINS
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING	3317000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77	6027000000-N	1622	3	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (16+56.25)	3649000000-E	876	310	TON	RIP RAP, CLASS B	6029000000-E	SP	200	LF	SAFETY FENCE
0043000000-N	226	Lump Sum		GRADING	3656000000-E	876	990	SY	FILTER FABRIC FOR DRAINAGE	6030000000-E	1630	440	CY	SILT EXCAVATION
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING	4025000000-E	901	22.5	SF	CONTRACTOR FURNISHED, TYPE *** SIGN (E)	6036000000-E	1631	200	SY	MATTING FOR EROSION CONTROL
0057000000-E	226	500	CY	UNDERCUT EXCAVATION	4072000000-E	903	53	LF	SUPPORTS, 3-LB STEEL U-CHANNEL	6042000000-E	1632	80	LF	1/4" HARDWARE CLOTH
0134000000-E	240	150	CY	DRAINAGE DITCH EXCAVATION	4102000000-N	904	4	EA	SIGN ERECTION, TYPE E	6048000000-E	SP	50	SY	FLOATING TURBIDITY CURTAIN
0195000000-E	265	500	CY	SELECT GRANULAR MATERIAL	4155000000-N	907	7	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	6071030000-E	SP	100	LF	COIR FIBER BAFFLES
0196000000-E	270	500	SY	FABRIC FOR SOIL STABILIZATION	4158000000-N	907	2	EA	DISPOSAL OF SIGN SYSTEM, WOOD	6084000000-E	1660	1	ACR	SEEDING & MULCHING
0318000000-E	300	20	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	4400000000-E	1110	381	SF	WORK ZONE SIGNS (STATIONARY)	6087000000-E	1660	0.5	ACR	MOWING
0366000000-E	310	52	LF	15" RC PIPE CULVERTS, CLASS III	4410000000-E	1110	114	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)	6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
0708000000-E	310	16	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK	4445000000-E	1145	100	LF	BARRICADES (TYPE III)	6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
0995000000-E	340	46	LF	PIPE REMOVAL	4810000000-E	1205	7,200	LF	PAINT PAVEMENT MARKING LINES (4")	6096000000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
1220000000-E	545	100	TON	INCIDENTAL STONE BASE	5326200000-E	1510	352	LF	12" WATER LINE	6108000000-E	1665	0.5	TON	FERTILIZER TOPDRESSING
1489000000-E	610	310	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	5558000000-E	1515	1	EA	12" VALVE	6111000000-E	SP	60	LF	IMPERVIOUS DIKE
1498000000-E	610	190	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B	5648000000-N	1515	2	EA	RELOCATE WATER METER	6114000000-N	SP	2	HR	SPECIALIZED HAND MOWING
1519000000-E	610	510	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	5672000000-N	1515	2	EA	RELOCATE FIRE HYDRANT	6117000000-N	SP	8	EA	RESPONSE FOR EROSION CONTROL
1560000000-E	620	53	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	5804000000-E	1530	355	LF	ABANDON 12" UTILITY PIPE	***** BEGIN SCHEDULE AA ***** ***** (3 ALTERNATES) *****				
2286000000-N	840	5	EA	MASONRY DRAINAGE STRUCTURES	6000000000-E	1605	350	LF	TEMPORARY SILT FENCE	0384000000-E	310	112	LF	30" RC PIPE CULVERTS, CLASS III
2364000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.16	6006000000-E	1610	75	TON	STONE FOR EROSION CONTROL, CLASS A	AA1				
2367000000-N	840	3	EA	FRAME WITH TWO GRATES, STD 840.29	6009000000-E	1610	135	TON	STONE FOR EROSION CONTROL, CLASS B	*** OR ***				
2556000000-E	846	40	LF	SHOULDER BERM GUTTER	6012000000-E	1610	60	TON	SEDIMENT CONTROL STONE	0536000000-E	SP	112	LF	**** HDPE PIPE CULVERTS (30")
3030000000-E	862	450	LF	STEEL BM GUARDRAIL	6015000000-E	1615	1	ACR	TEMPORARY MULCHING	AA2				
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	6018000000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING	AA3				
					6021000000-E	1620	0.25	TON	FERTILIZER FOR TEMPORARY SEEDING	*** OR ***				
										***** END SCHEDULE AA *****				

COMPUTED BY: D. PEIRY DATE: 01-05-05
CHECKED BY: M. IRVIN DATE: 01-06-05

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

PROJECT REFERENCE NO. B-4060 SHEET NO. 3-A

ASPHALT PAVEMENT
REMOVAL SUMMARY

Table with 2 columns: STATION TO STATION, SQUARE YARDS. Rows include STA. 14+50 - STA. 16+36, STA. 16+76 - STA. 18+35, PROJECT TOTAL, and SAY.

NOTE: APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

Table with 6 columns: STATION TO STATION, UNCLASSIFIED EXCAVATION (cu. yds), UNDERCUT (cu. yds), ROADWAY EMBANKMENT (cu. yds), BORROW (cu. yds), WASTE (cu. yds). Rows include STA. 13+00.00 to STA. 15+78.75, STA. 17+33.75 to STA. 21+00.00, PROJECT SUBTOTALS, EST. 5% FOR REPLACING TOPSOIL ON BORROW PITS, GRAND TOTAL, and SAY.

ESTIMATED FABRIC FOR SOIL STABILIZATION = 500 SY
ESTIMATED DRAINAGE DITCH EXCAVATION = 150 CY.
ESTIMATED SELECT GRANULAR MATERIAL CL. II & III = 500 CY.
ESTIMATED UNDERCUT = 500 CY.

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.

GUARDRAIL SUMMARY

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.

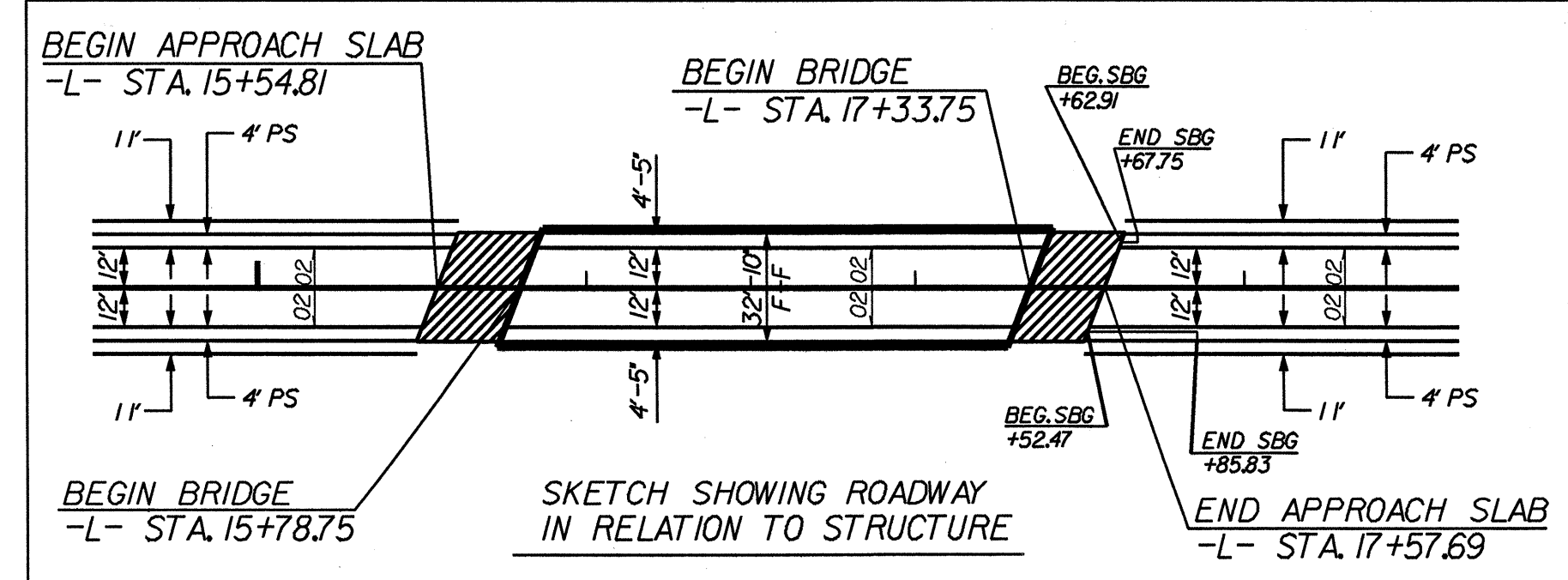
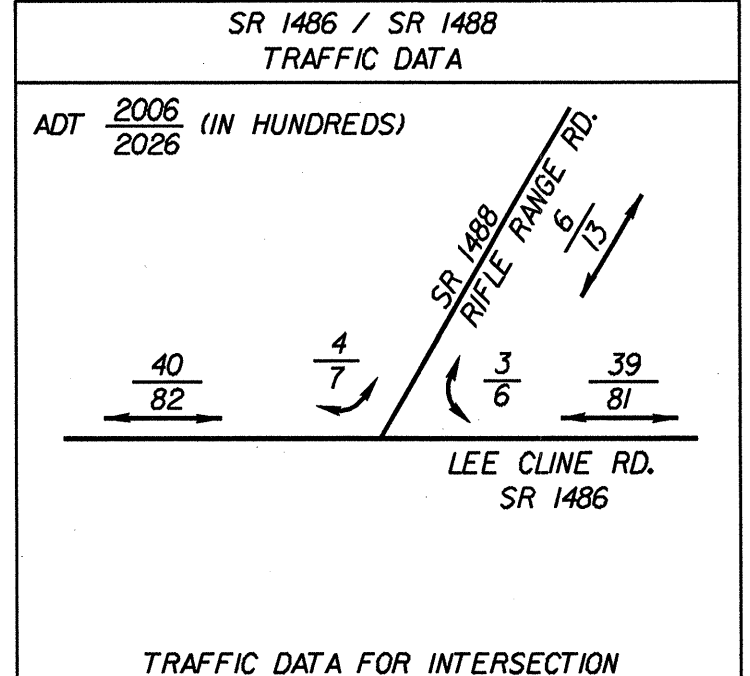
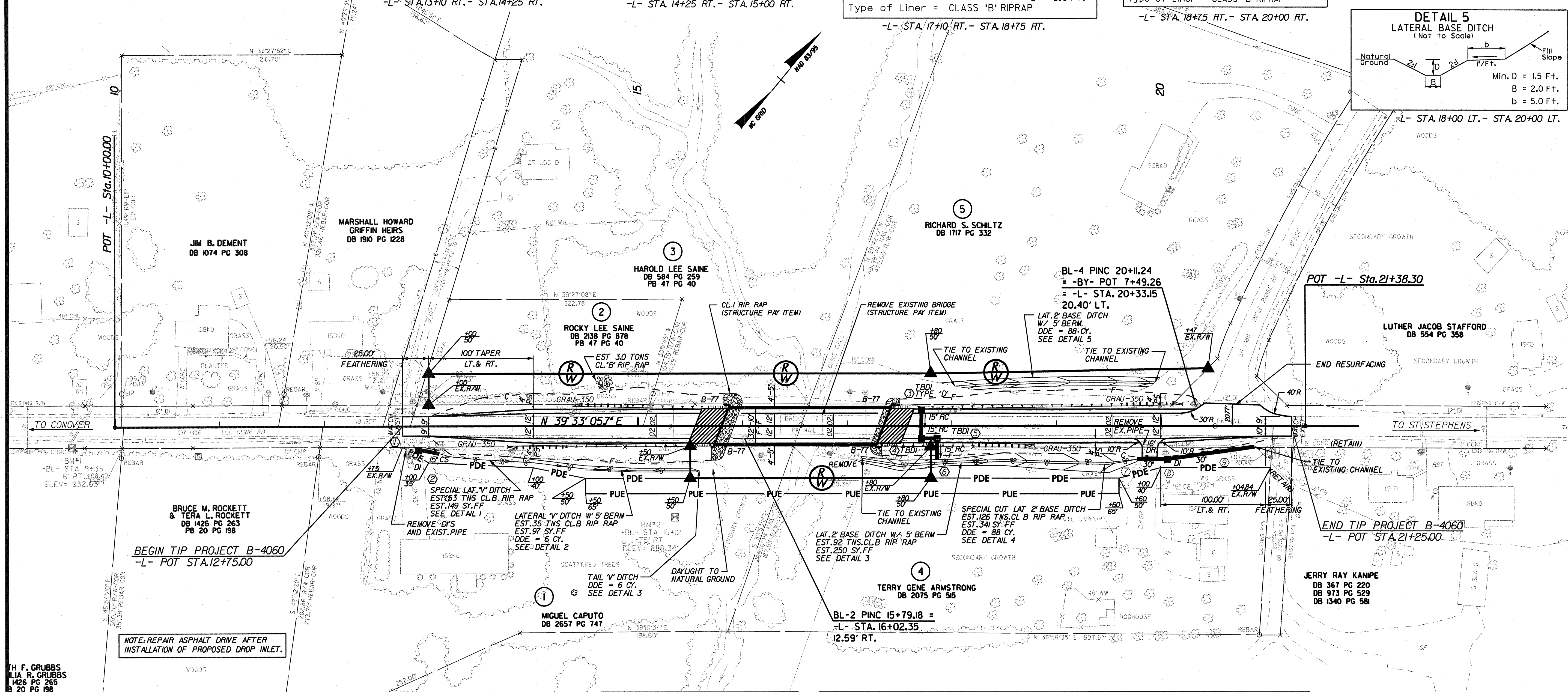
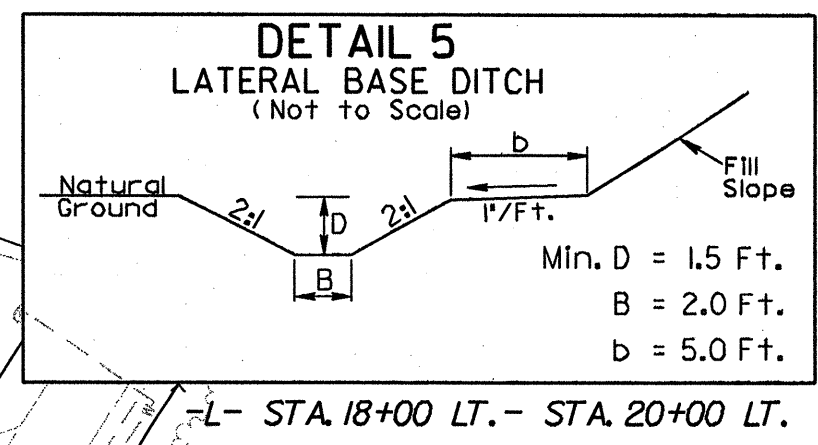
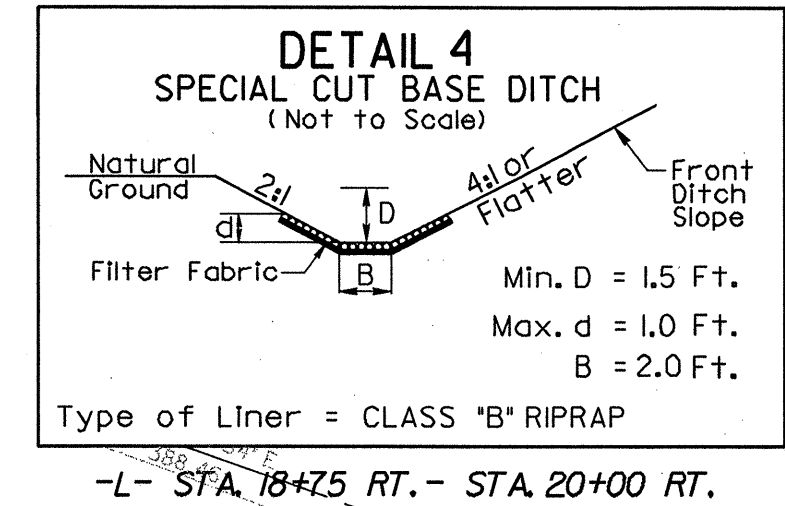
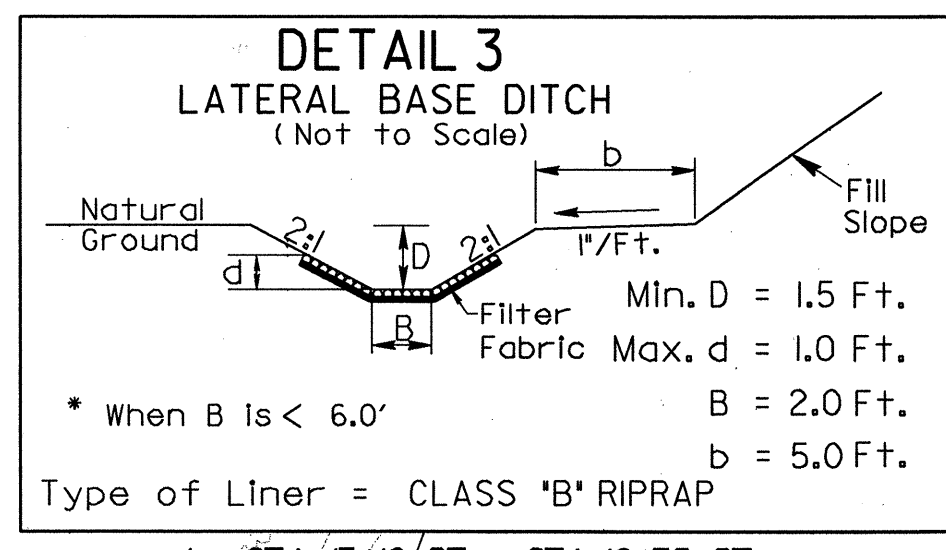
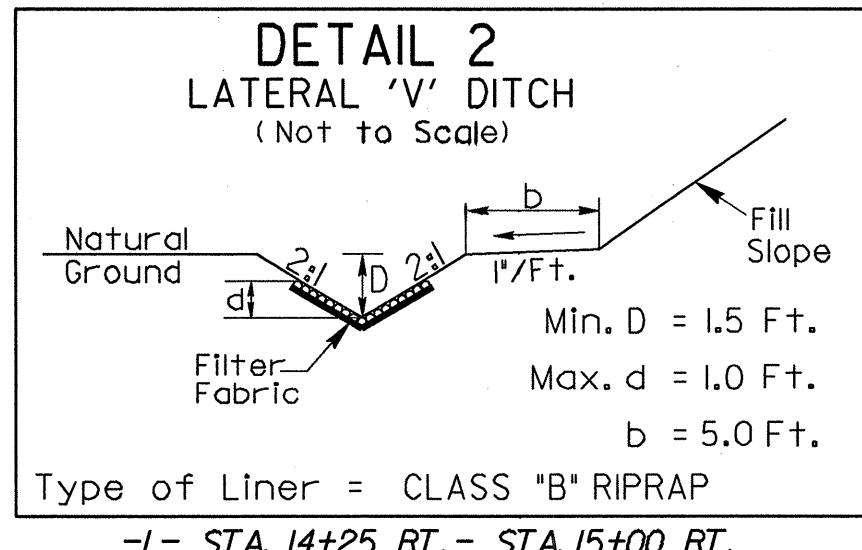
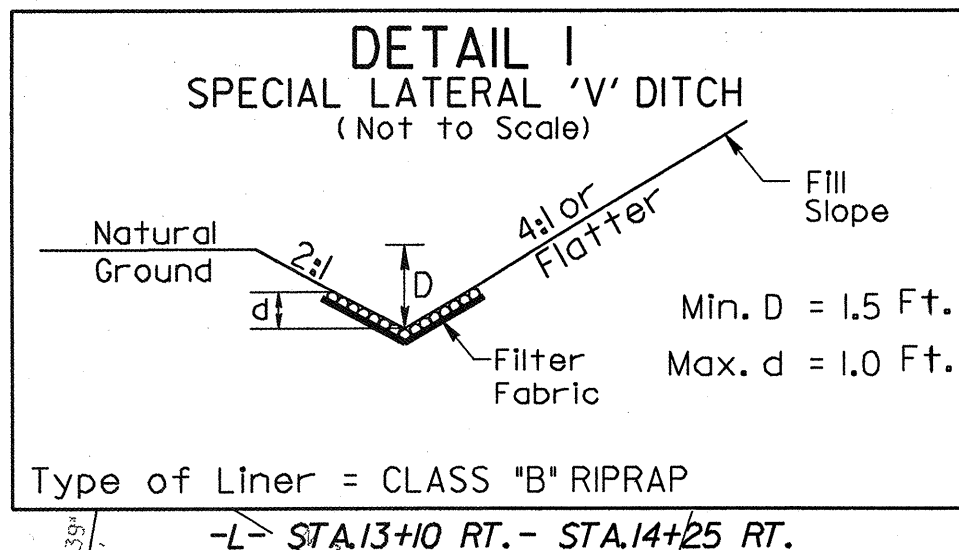
Large table for GUARDRAIL SUMMARY with columns for SURVEY LINE, BEG. STA., END STA., LOCATION, LENGTH (STRAIGHT, SHOP CURVED, DOUBLE FACED), WARRANT POINT (APPROACH END, TRAILING END), "N" DIST. FROM E.O.L., TOTAL SHOUL. WIDTH, FLARE LENGTH (APPROACH END, TRAILING END), W (APPROACH END, TRAILING END), ANCHORS (XI MOD, XI, GRAU 350, M-350, XIII, CAT-A, VI MOD, BIC, B-77), IMPACT ATTENUATOR TYPE 350, SINGLE FACED GUARDRAIL, REMOVE EXISTING GUARDRAIL, REMOVE AND STOCKPILE EXISTING GUARDRAIL, REMARKS. Includes SUBTOTAL and DEDUCTIONS FOR ANCHOR UNITS.

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

Table for LIST OF PIPES, ENDWALLS, ETC. with columns for STATION, LOCATION (L, RT, OR CL), STRUCTURE NO., TOP ELEVATION, INVERT ELEVATION, SLOPE CRITICAL, CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE), BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE), CLASS III R.C. PIPE OR C.S. PIPE, TYPE IR ALUMINIZED OR HDPE PIPE, TYPE S OR D, ENDWALLS (STD. 838.01 OR STD. 838.11), QUANTITIES FOR DRAINAGE STRUCTURES, TYPE OF GRATE, PIPE REMOVAL, and REMARKS. Includes a detailed list of pipe segments and a TOTALS row.

REVISIONS

PROJECT REFERENCE NO. B-4060	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 27771 MAXIM B. COPPLE	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 9334 HENRY WELLS

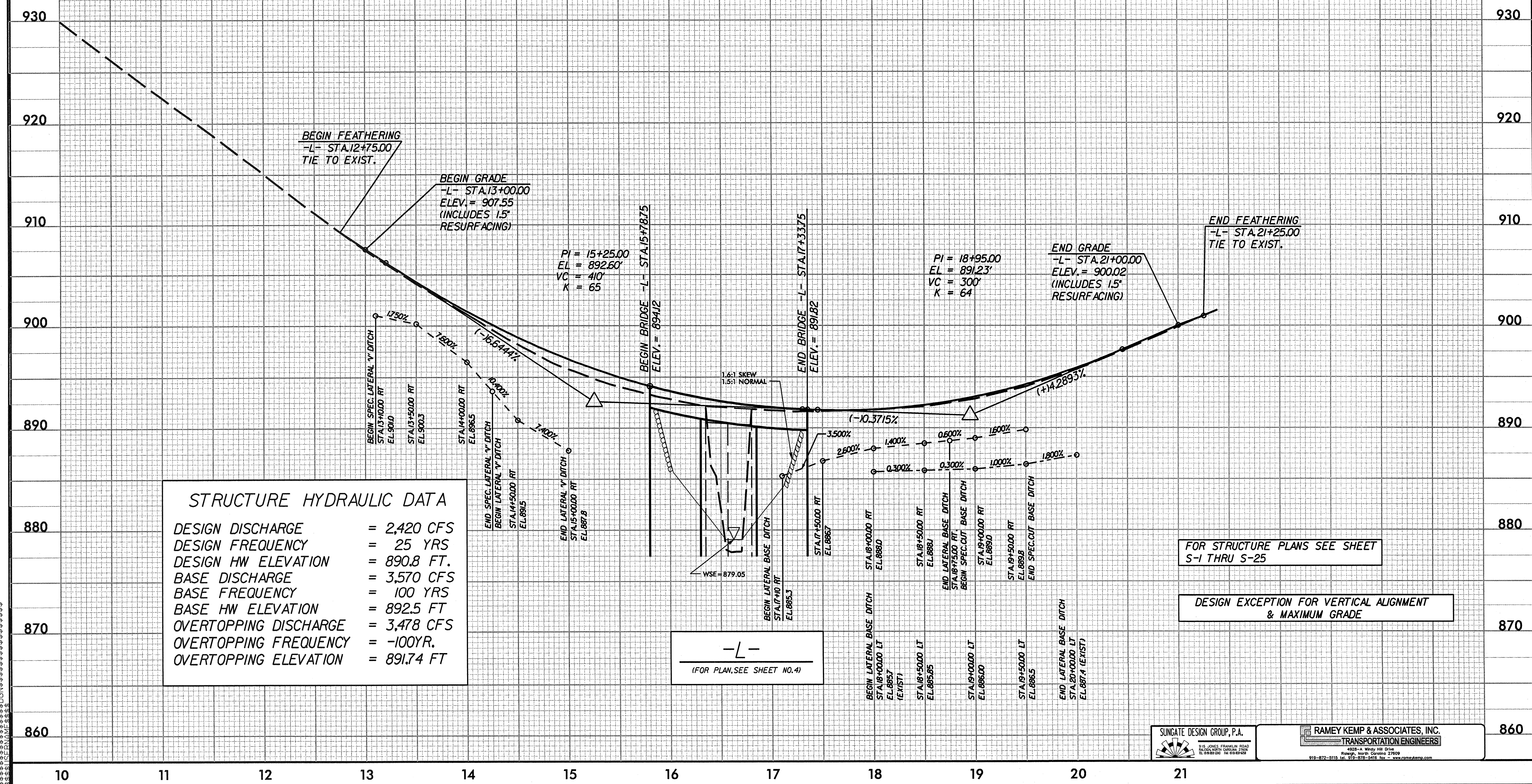


DENOTES APPROACH SLAB

FOR -L- PROFILE SEE SHEET NO.5

SEE SHEETS S-1 THRU S-25 FOR STRUCTURE PLANS

B.M.#2 ELEV. = 888.34
 RR SPIKE IN BASE OF
 20" POPLAR
 75.00' RT. OF -BL- STA. 15+12.00
 86.17' RT. OF -L- STA. 15+35.46



BEGIN FEATHERING
 -L- STA. 12+75.00
 TIE TO EXIST.

BEGIN GRADE
 -L- STA. 13+00.00
 ELEV. = 907.55
 (INCLUDES 1.5" RESURFACING)

PI = 15+25.00
 EL = 892.60'
 VC = 410'
 K = 65

PI = 18+95.00
 EL = 891.23'
 VC = 300'
 K = 64

END GRADE
 -L- STA. 21+00.00
 ELEV. = 900.02
 (INCLUDES 1.5" RESURFACING)

END FEATHERING
 -L- STA. 21+25.00
 TIE TO EXIST.

STRUCTURE HYDRAULIC DATA	
DESIGN DISCHARGE	= 2,420 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 890.8 FT.
BASE DISCHARGE	= 3,570 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 892.5 FT
OVERTOPPING DISCHARGE	= 3,478 CFS
OVERTOPPING FREQUENCY	= -100YR.
OVERTOPPING ELEVATION	= 891.74 FT

FOR STRUCTURE PLANS SEE SHEET
 S-1 THRU S-25

DESIGN EXCEPTION FOR VERTICAL ALIGNMENT
 & MAXIMUM GRADE

-L-
 (FOR PLAN, SEE SHEET NO. 4)