

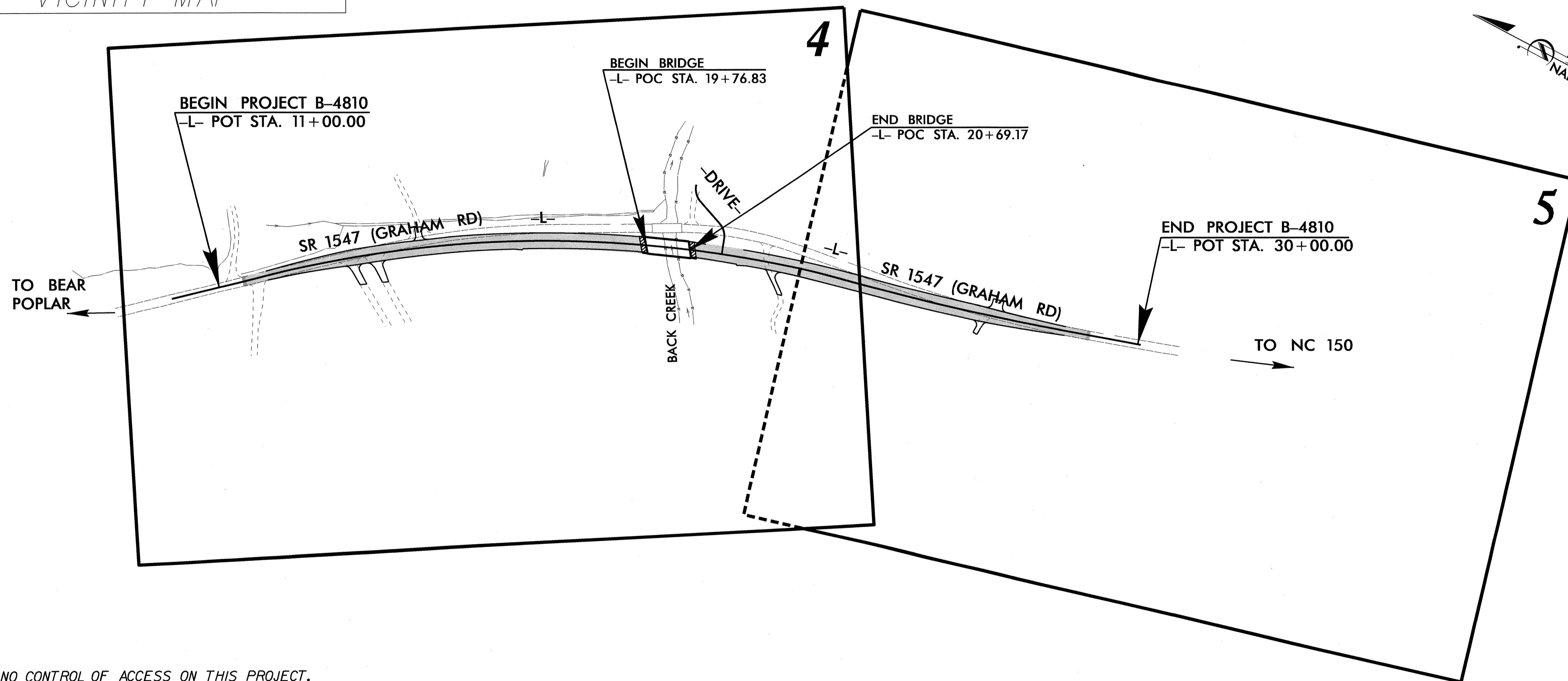
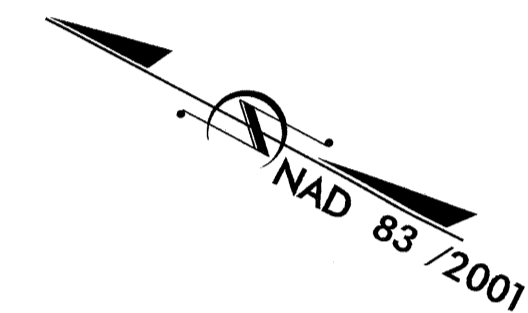
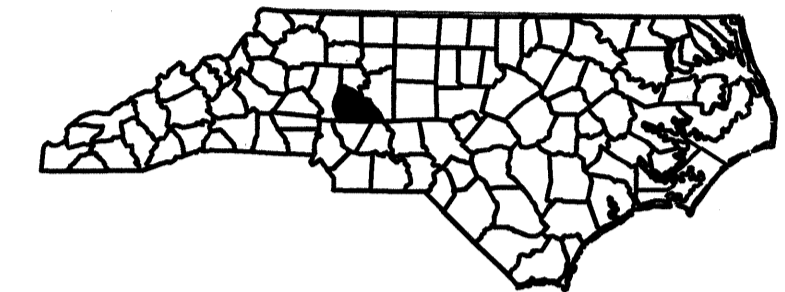
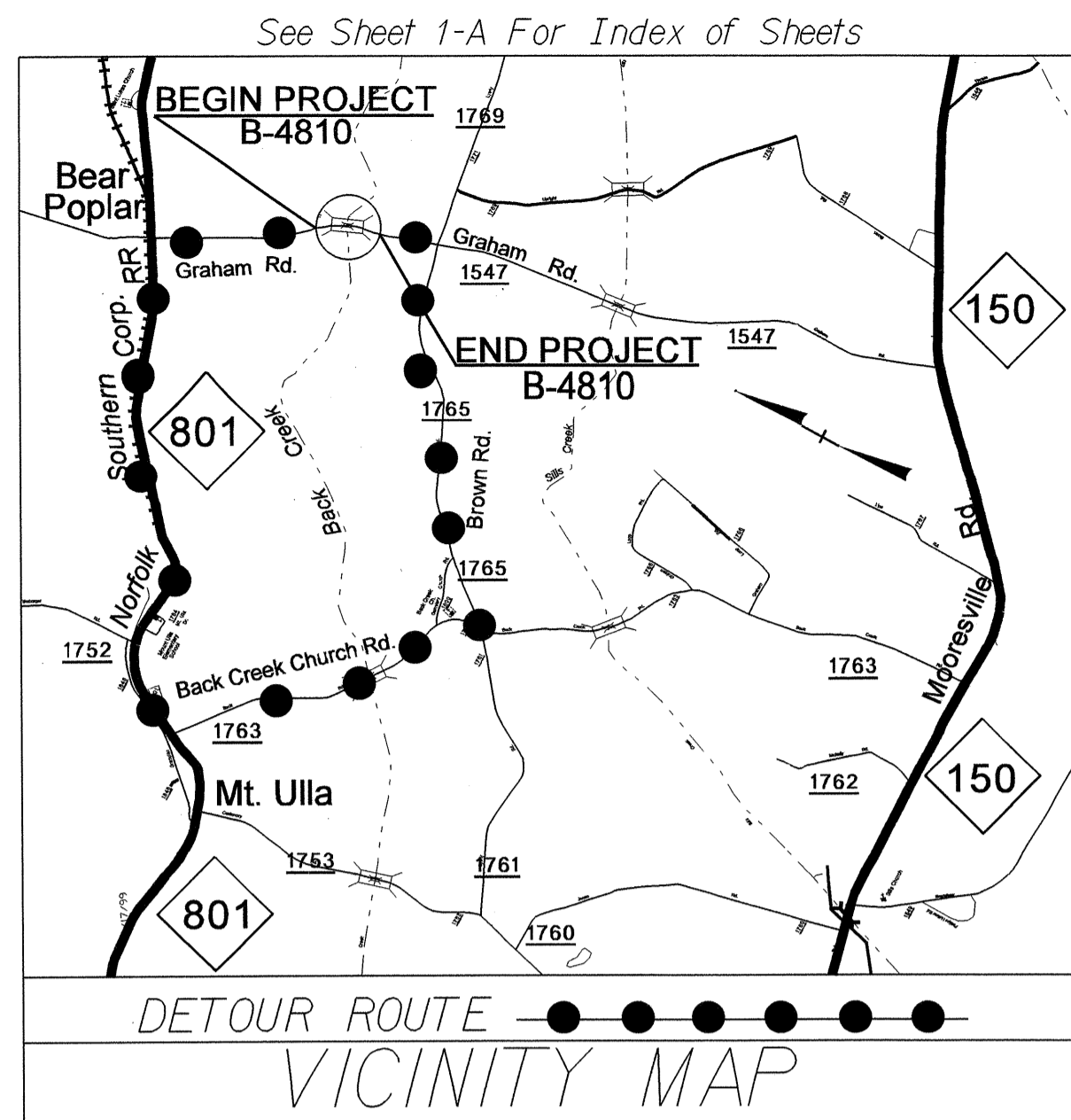
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4810	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38580.1.1	BRZ-1547(7)	P.E.	
38580.2.1	BRZ-1547(7)	RW, UTL	
38580.3.1	BRZ-1547(7)	CONST	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROWAN COUNTY

LOCATION: BRIDGE NO. 12 OVER BACK CREEK ON SR 1547

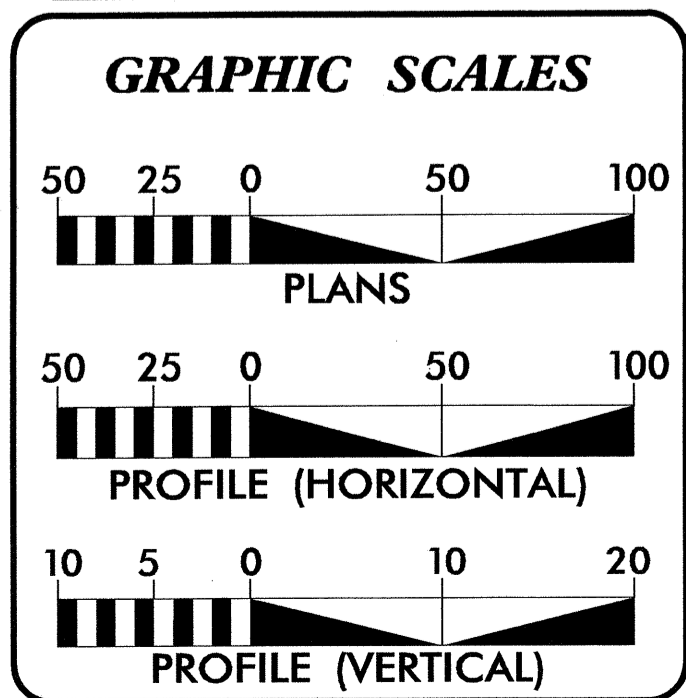
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE



THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

TIP PROJECT: B-4810

CONTRACT: C203032



DESIGN DATA

ADT 2013 =	2329
ADT 2035 =	3900
DHV =	10 %
D =	55 %
T =	12 % *
V =	60 MPH
* TTST =	3 DUAL 9
FUNC CLASS =	RURAL LOCAL
SUB REGIONAL TIER	

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-4810 =	0.343 MILE
LENGTH OF STRUCTURE TIP PROJECT B-4810 =	0.017 MILE
TOTAL LENGTH TIP PROJECT B-4810 =	0.360 MILE

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 29, 2011	TONY A. HOUSER, PE PROJECT ENGINEER
LETTING DATE: MARCH 19, 2013	BRUCE B. PAYNE, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

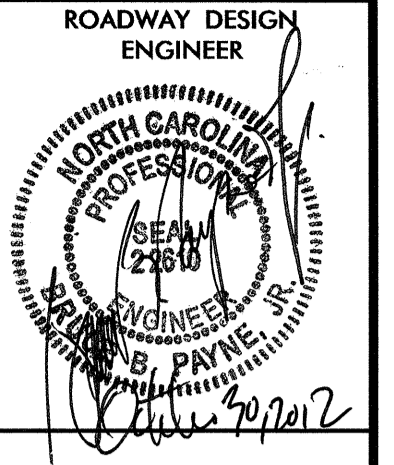
SIGNATURE: *Linda M. Johns* 10-24-12

ROADWAY DESIGN ENGINEER

SIGNATURE: *Bruce B. Payne* Oct 23 2012



22-OCT-2012 11:31 R:\Roadway\Projects\4810_rdy_tsh.dgn \$\$\$USERNAME\$\$\$



CONTRACT: C203032
 TIP PROJECT: B-4810
 COUNTY: ROWAN

INDEX OF SHEETS

SHEET NUMBER	SHEET TITLE SHEET
1	TITLE SHEET
1-A	"INDEX OF SHEETS, GENERAL NOTES," AND LIST OF STANDARDS
1-B	CONVENTIONAL SYMBOLS
1-C THRU 1-D	SURVEY CONTROL SHEETS
2	"PAVEMENT SCHEDULE, DETAIL SHOWING" "METHOD OF WEDGING, AND TYPICAL SECTION" MISC. DETAILS NOT COVERED BY STANDARDS
2-A	DETAIL OF WOVEN WIRE FENCE W/ 1 STRAND ELECTRIC WIRE
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF DRAINAGE QUANTITIES
3-B	SUMMARY OF GUARDRAIL SUMMARY OF PAVEMENT REMOVAL EARTHWORK SUMMARY
3-C	PARCEL INDEX SHEET
4 THRU 5	PLAN SHEETS
6	PROFILE SHEET
TMP-1 THRU TMP-2	TRANSPORTATION MANAGEMENT PLANS
SD-1	WORK ZONE SIGNS
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-7	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL
SIGN-1 THRU SIGN-2	SIGNING PLANS
UO-1 THRU UO-3	UTILITIES BY OTHERS
X-0	CROSS SECTION SUMMARY
X-1 THRU X-10	CROSS SECTIONS
S-1 THRU S-20	STRUCTURE PLANS

GENERAL NOTES:

2012 SPECIFICATIONS
 EFFECTIVE: 01-17-12
 REVISED: 11/01/11

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.

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.

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 - POWER DISTRIBUTION
 AT&T - 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 CONTRACT.

2012 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, 2012 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 Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.11	Reinforced Bridge Approach Fills - Sub Regional Tier
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	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.25	Anchorage for Frames - Brick or Concrete or Precast
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
840.72	Pipe Collar
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
866.02	Woven Wire Fence - with Wood Post
866.04	Barbed Wire Fence with Wood Posts (2 - 7 Strands)
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

8/17/99
 20-OCT-2012 14:49
 C:\P\B\4810\B-4810-rdy-tsh-01a.dgn

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	○ EP
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
Known Soil Contamination: Area or Site	☠
Potential Soil Contamination: Area or Site	☠?

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	○
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 Drainage / Utility Easement	----- DUE
Proposed Permanent Utility Easement	----- PUE
Proposed Temporary Utility Easement	----- TUE
Proposed Aerial Utility Easement	----- AUE

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	----- C
Proposed Slope Stakes Fill	----- F
Proposed Curb Ramp	----- CR
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	-----

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	⊕
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:

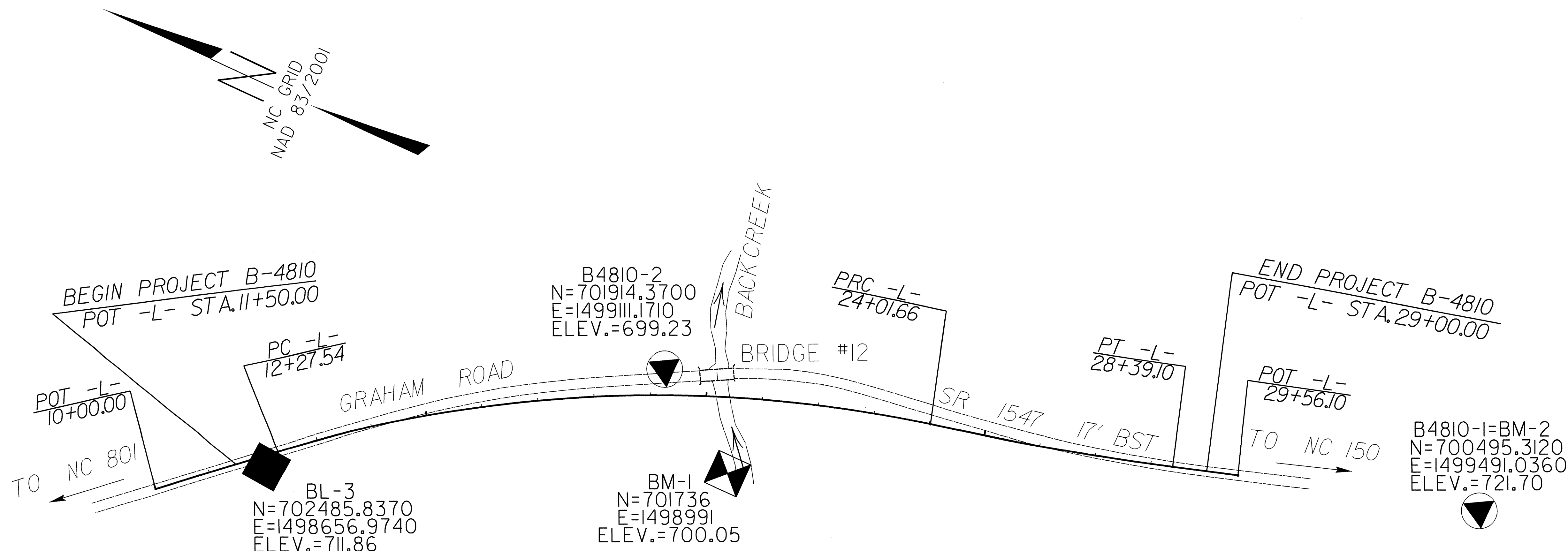
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	----- SS
Above Ground Sanitary Sewer	----- A/G Sanitary Sewer
Recorded SS Forced Main Line	----- FSS
Designated SS Forced Main Line (S.U.E.*)	----- FSS

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	□
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

SURVEY CONTROL SHEET B-4810

PROJECT REFERENCE NO.	SHEET NO.
B-4810	1C
Location and Surveys	



BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
3	BL-3		702485.8370	1498656.9740	711.86	11+99.79	20.10 RT
2	B4810-2		701914.3700	1499111.1710	699.23	19+25.43	46.29 LT
1	B4810-1		700495.3120	1499491.0360	721.70	OUTSIDE PROJECT LIMITS	

```

*****
BM1      ELEVATION = 700.05
N 701736      E 1498991
L STATION 20+45.00 134 RIGHT
R/R SPIKE SET IN BASE OF 18" BIRCH TREE
ON THE NW BANK OF BACK CREEK
APPROXIMATELY 163' WEST OF BRIDGE ON
GRAHAM ROAD (SR 1547).
*****
BM2      ELEVATION = 721.70
N 700495      E 1499491
L STATION 29+56.00
S 16°30'26.41" E DIST 432.89
BM2 EQUALS "B4810-1"
*****
    
```

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B4810-1"

WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF
 NORTHING: 700495.312(ft) EASTING: 1499491.036(ft)
 ELEVATION: 721.70(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99986876

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4810-1" TO -L- STATION 10+00.00 IS
 N23°50'29.2"W 2354.22'

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

NOTES:

1. 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:
B4810_LS_CONTROL.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.

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET B-4810

PROJECT REFERENCE NO. B-4810	SHEET NO. 1D
Location and Surveys	

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	702648.6409	1498539.4441
PC	12+27.54	702478.4130	1498690.4305
PRC	24+01.66	701444.5525	1499220.3008
PT	28+39.10	701022.0901	1499333.3277
POT	29+56.10	700910.3569	1499368.0363

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+25.00	30.37	702534.9716	1498599.6667
L	11+50.00	-29.66	702556.1047	1498661.1686
L	12+27.54	40.00	702451.8706	1498660.5056
L	12+27.54	-29.27	702497.8333	1498712.3257
L	14+50.00	60.00	702269.8436	1498781.4045
L	14+50.00	-39.73	702328.6067	1498861.9843
L	15+90.43	-47.48	702214.9202	1498949.1392
L	17+79.19	-54.29	702051.9233	1499052.3802
L	19+45.00	60.00	701853.0498	1499022.1901
L	19+59.30	-63.10	701889.5378	1499140.6241
L	20+69.00	-73.95	701789.1158	1499193.3807
L	20+98.00	-75.66	701761.6863	1499205.4812
L	21+80.56	-76.40	701681.3937	1499234.1493
L	22+63.00	-71.00	701598.5334	1499254.0240
L	24+01.66	60.00	701431.3618	1499161.7687
L	24+01.66	-55.14	701456.6748	1499274.0931
L	25+00.00	-47.16	701360.0044	1499288.5899
L	25+04.00	45.00	701334.2224	1499200.0199
L	26+00.00	-39.68	701262.0054	1499305.7533
L	26+61.00	39.00	701182.6363	1499245.6582
L	27+13.00	54.00	701128.0945	1499245.3818
L	27+50.00	-32.14	701116.4220	1499338.4343
L	28+39.09	40.66	701010.0338	1499294.4946
L	28+39.10	-29.27	701030.7724	1499361.2779
L	29+54.00	29.94	700903.4759	1499338.8222

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	20+30.00	-175.00	701864.1810	1499272.5256
L	20+44.00	-175.00	701850.1929	1499278.0828
L	26+25.00	-80.00	701248.4734	1499351.0749
L	27+50.00	-40.00	701118.6309	1499345.9741

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B4810-1"

WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF
 NORTHING: 700495.312(++) EASTING: 1499491.036(++)
 ELEVATION: 721.70(++)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99986876

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4810-1" TO -L- STATION 10+00.00 IS
 N23°50'29.2"W 2354.22'

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/)

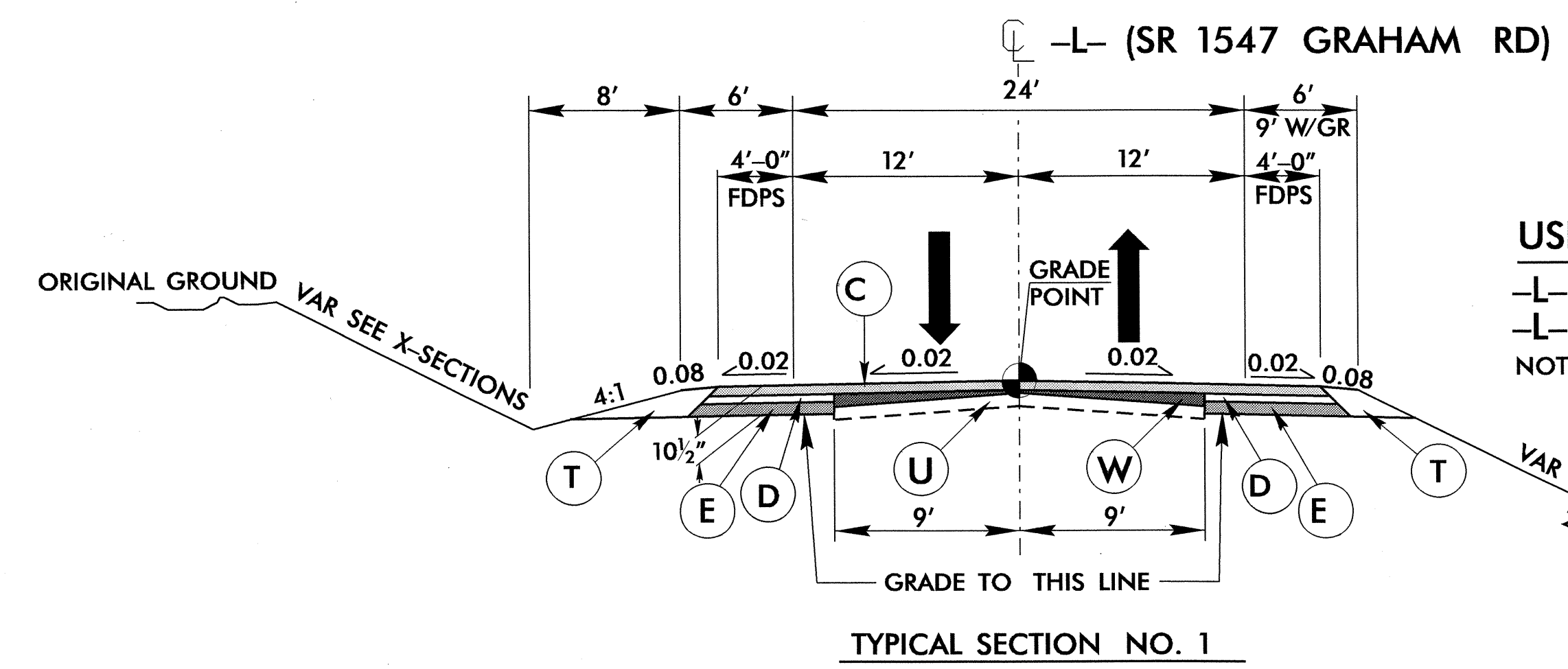
THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4810_LS_CONTROL.TXT

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

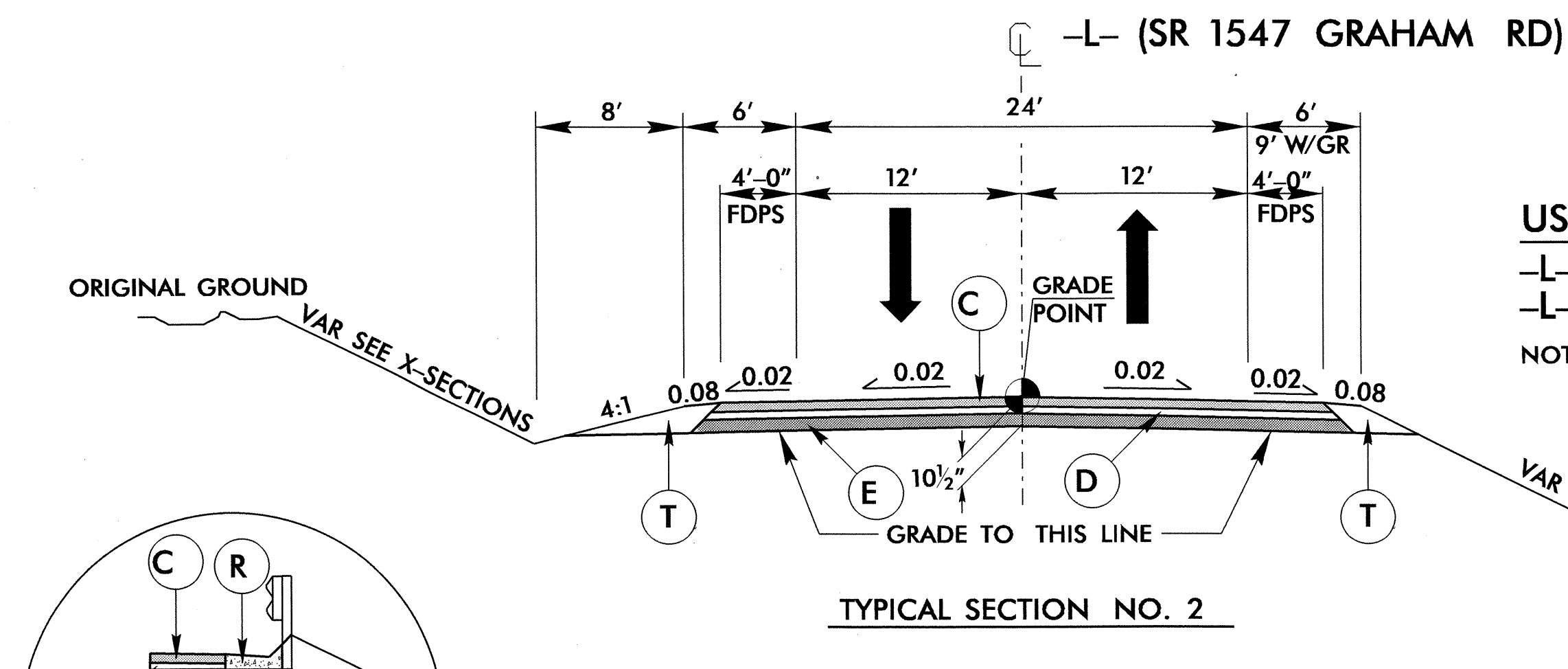


INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

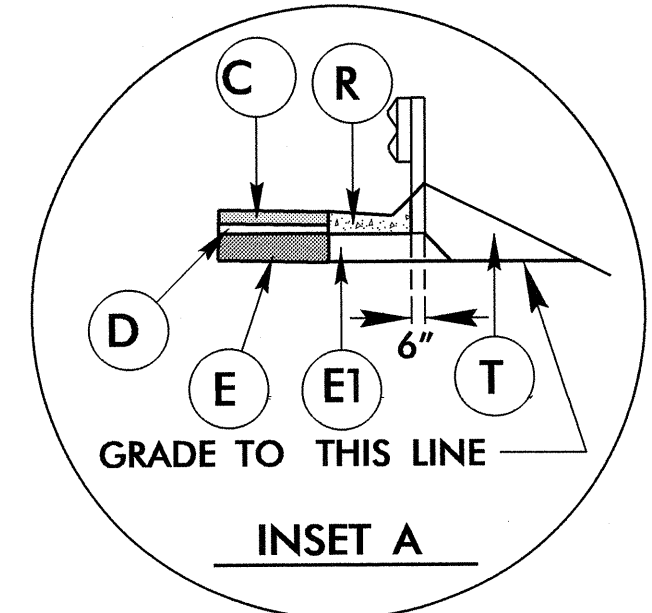
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.



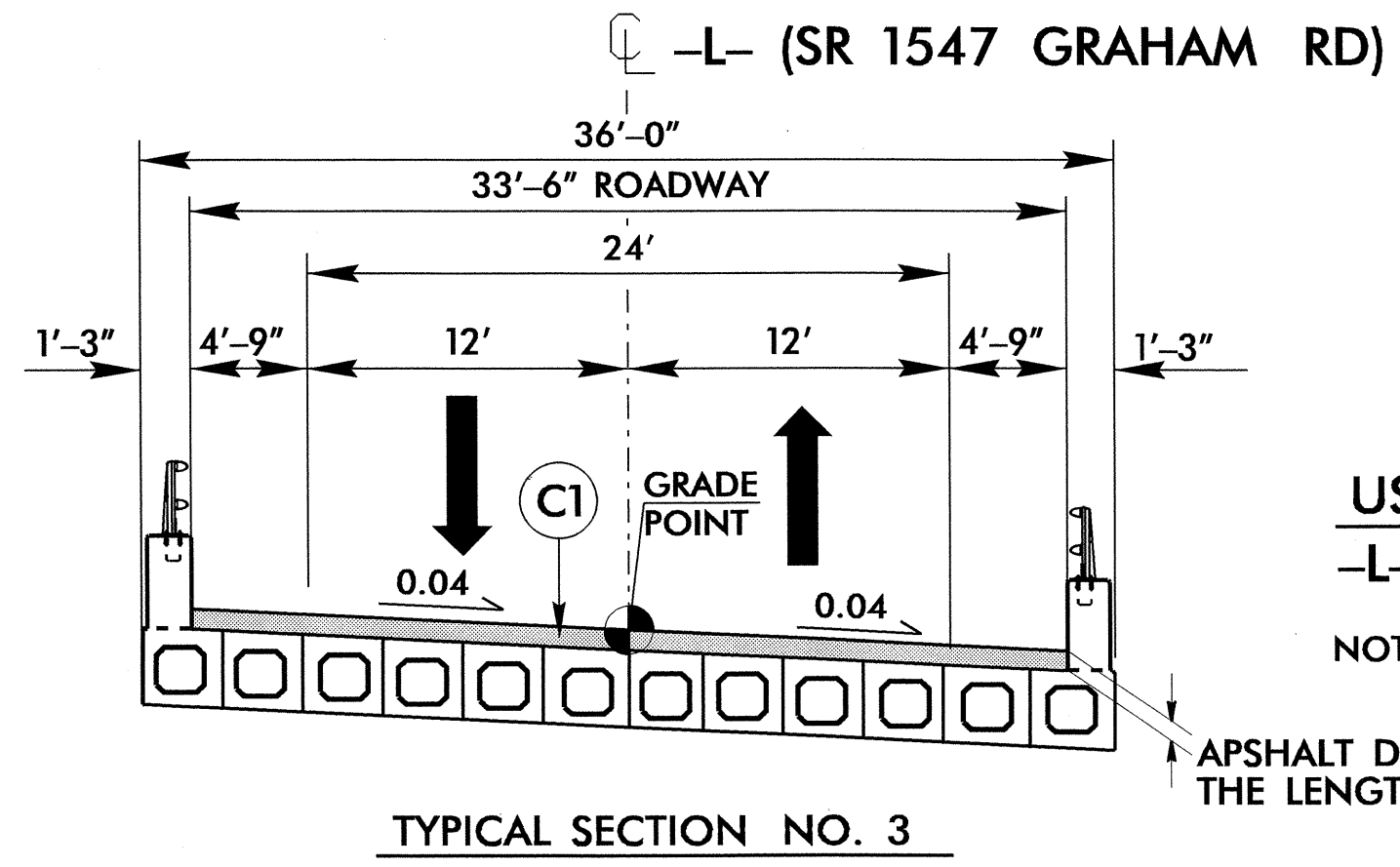
USE TYPICAL SECTION NO. 1
 -L- STA. 12+00.00 TO -L- STA. 14+00.00
 -L- STA. 26+50.00 TO -L- STA. 28+50.00
 NOTE: 4'-0" PAVED SHOULDER USED FOR BIKE ROUTE



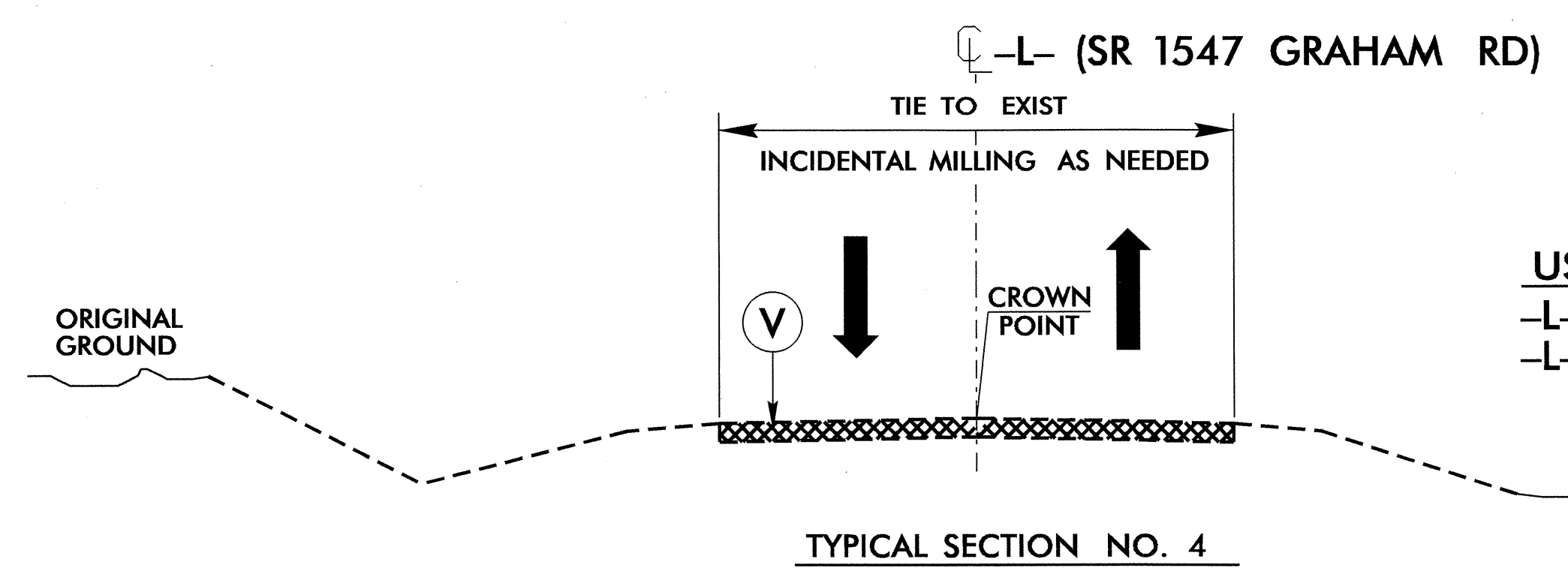
USE TYPICAL SECTION NO. 2
 -L- STA. 14+00.00 TO -L- STA. 19+76.83 (BEGIN BRIDGE)
 -L- STA. 20+69.17 (END BRIDGE) TO -L- STA. 26+50.00
 NOTE: 4'-0" PAVED SHOULDER USED FOR BIKE ROUTE



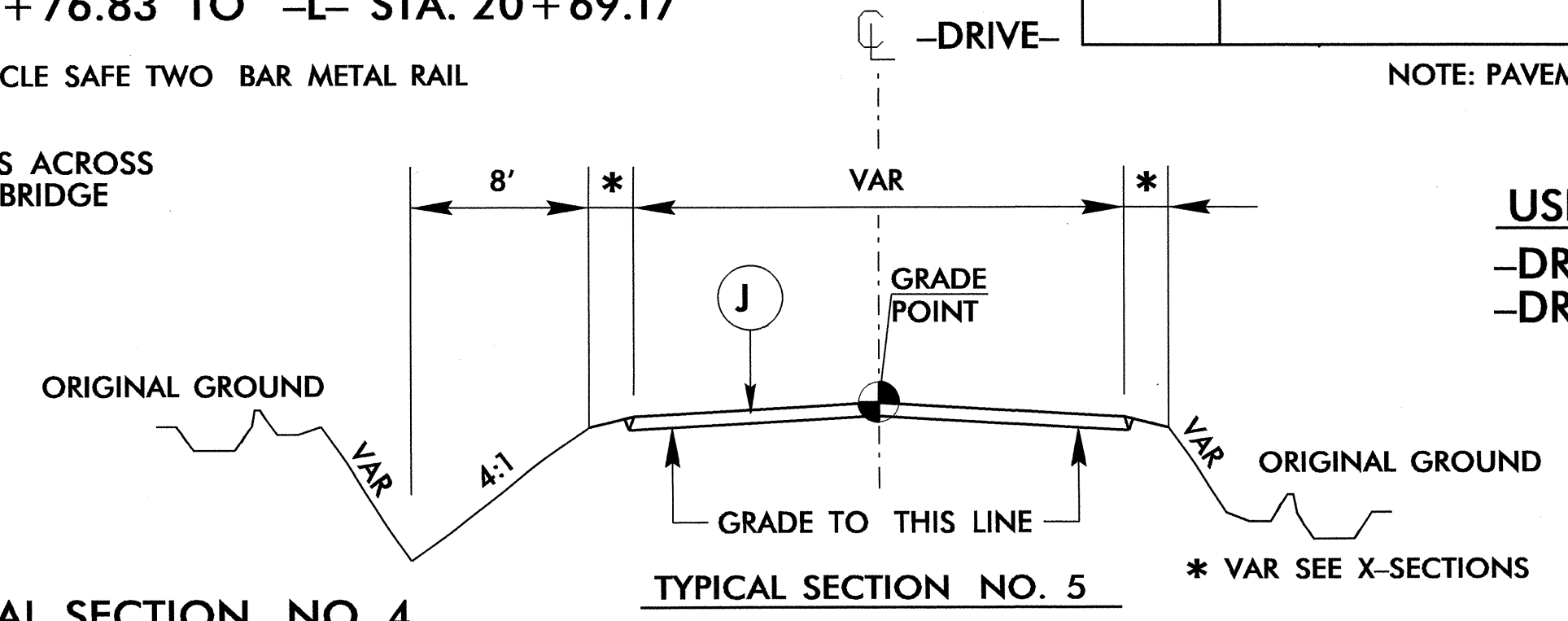
USE INSET A:
 -L- STA. 17+20.00 TO -L- STA. 19+76.83 (RT)
 -L- STA. 20+69.17 TO -L- STA. 21+66.50 (RT)



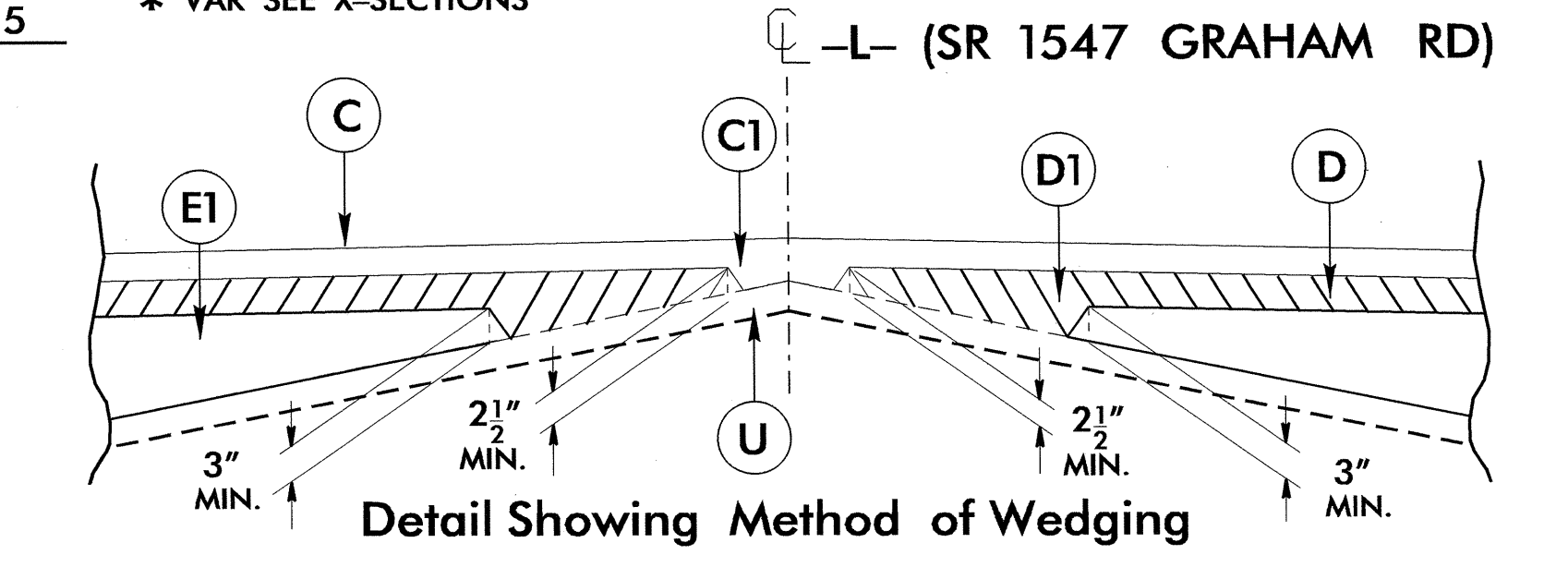
USE TYPICAL SECTION NO. 3
 -L- STA. 19+76.83 TO -L- STA. 20+69.17
 NOTE: USE BICYCLE SAFE TWO BAR METAL RAIL



USE TYPICAL SECTION NO. 4
 -L- STA. 11+50.00 TO -L- STA. 12+00.00
 -L- STA. 28+50.00 TO -L- STA. 29+00.00



USE TYPICAL SECTION NO. 5
 -DRIVE- STA. 10+00.00 TO
 -DRIVE- STA. 11+62.29



C	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C1	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D1	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E1	PROP. 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 5.5" IN DEPTH.
J	PROP. 6" AGGREGATE BASE COURSE.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	INCIDENTAL MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT

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

6/2/09
 23-OCT-2012 14:30
 33480.PAVEMENT.dgn
 33480.PAVEMENT.dgn

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203032

ItemNumber	Sec #	Quantity	Unit	Description
000010000-N	800	Lump Sum		MOBILIZATION
000040000-N	801	Lump Sum		CONSTRUCTION SURVEYING
003000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (20+23)
003600000-E	225	500	CY	UNDERCUT EXCAVATION
004300000-N	226	Lump Sum		GRADING
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
013400000-E	240	10	CY	DRAINAGE DITCH EXCAVATION
019400000-E	SP	1,500	CY	SELECT GRANULAR MATERIAL, CLASS III
019600000-E	270	2,600	SY	GEOTEXTILE FOR SOIL STABILIZATION
031800000-E	300	50	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
032000000-E	300	150	SY	FOUNDATION CONDITIONING GEOTEXTILE
033520000-E	305	108	LF	15" DRAINAGE PIPE
033530000-E	305	120	LF	18" DRAINAGE PIPE
033540000-E	305	52	LF	24" DRAINAGE PIPE
044820000-E	310	108	LF	15" RC PIPE CULVERTS, CLASS IV
059400000-E	310	56	LF	24" CS PIPE CULVERTS, 0.064" THICK
099500000-E	340	205	LF	PIPE REMOVAL
109950000-E	505	250	CY	SHALLOW UNDERCUT
109970000-E	505	500	TON	CLASS IV SUBGRADE STABILIZATION
112100000-E	520	278	TON	AGGREGATE BASE COURSE
122000000-E	545	300	TON	INCIDENTAL STONE BASE
133000000-E	607	205	SY	INCIDENTAL MILLING
148900000-E	610	1,421	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
149800000-E	610	782	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B

ItemNumber	Sec #	Quantity	Unit	Description
151900000-E	610	660	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
157500000-E	620	140	TON	ASPHALT BINDER FOR PLANT MIX
169300000-E	654	5	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
200000000-N	806	18	EA	RIGHT OF WAY MARKERS
202200000-E	815	112	CY	SUBDRAIN EXCAVATION
203300000-E	815	84	CY	SUBDRAIN FINE AGGREGATE
204400000-E	815	500	LF	6" PERFORATED SUBDRAIN PIPE
207000000-N	815	1	EA	SUBDRAIN PIPE OUTLET
207700000-E	815	6	LF	6" OUTLET PIPE
225300000-E	840	1.11	CY	PIPE COLLARS
228600000-N	840	3	EA	MASONRY DRAINAGE STRUCTURES
236700000-N	840	3	EA	FRAME WITH TWO GRATES, STD 840.29
255600000-E	846	355	LF	SHOULDER BERM GUTTER
303000000-E	862	512.5	LF	STEEL BM GUARDRAIL
304500000-E	862	75	LF	STEEL BM GUARDRAIL, SHOP CURVED
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
319500000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1
321500000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III
327000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
350900000-E	866	4	EA	4" TIMBER FENCE POSTS, 7'-6" LONG
351500000-E	866	12	EA	5" TIMBER FENCE POSTS, 8'-0" LONG
355900000-E	866	1,220	LF	** STRAND BARBED WIRE FENCE WITH POSTS (5)
357900000-N	866	2	EA	GENERIC FENCING ITEM 12' CATTLE GATE

ItemNumber	Sec #	Quantity	Unit	Description
358000000-E	866	150	LF	GENERIC FENCING ITEM WOVEN WIRE FENCE WITH 1 STRAND ELECTRIC WIRE
363500000-E	876	80	TON	RIP RAP, CLASS II
364900000-E	876	26	TON	RIP RAP, CLASS B
365600000-E	876	845	SY	GEOTEXTILE FOR DRAINAGE
365900000-N	SP	1	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON
407200000-E	903	61	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
409600000-N	904	2	EA	SIGN ERECTION, TYPE D
415500000-N	907	10	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
440000000-E	1110	297	SF	WORK ZONE SIGNS (STATIONARY)
441000000-E	1110	94	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
444500000-E	1145	80	LF	BARRICADES (TYPE III)
468500000-E	1205	3,500	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
468600000-E	1205	3,500	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
600000000-E	1605	4,000	LF	TEMPORARY SILT FENCE
600600000-E	1610	295	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	560	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	240	TON	SEDIMENT CONTROL STONE
601500000-E	1615	3.5	ACR	TEMPORARY MULCHING
601800000-E	1620	150	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	1.5	TON	FERTILIZER FOR TEMPORARY SEEDING
602400000-E	1622	200	LF	TEMPORARY SLOPE DRAINS
602900000-E	SP	700	LF	SAFETY FENCE
603000000-E	1630	720	CY	SILT EXCAVATION
603600000-E	1631	10,000	SY	MATTING FOR EROSION CONTROL
603700000-E	SP	1,000	SY	COIR FIBER MAT

ItemNumber	Sec #	Quantity	Unit	Description
603800000-E	SP	220	SY	PERMANENT SOIL REINFORCEMENT MAT
604200000-E	1632	360	LF	1/4" HARDWARE CLOTH
607101000-E	SP	140	LF	WATTLE
607102000-E	SP	140	LB	POLYACRYLAMIDE (PAM)
607103000-E	1640	130	LF	COIR FIBER BAFFLE
607105000-E	SP	2	EA	*** SKIMMER (1-1/2")
608400000-E	1660	4.8	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	100	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	2.5	TON	FERTILIZER TOPDRESSING
611450000-N	1667	10	MHR	SPECIALIZED HAND MOWING
611700000-N	SP	25	EA	RESPONSE FOR EROSION CONTROL
612300000-E	1670	0.1	ACR	REFORESTATION

5/28/09

26 JUL 2012 14:39
B:\4810\RDY-SUM_03.dgn

COMPUTED BY: RLC DATE: 9/18/2012
 CHECKED BY: BBP DATE: October 23, 2012

PROJECT NO. B-4810 SHEET NO. 3-B

RD253069

**SUMMARY OF EARTHWORK
CUBIC YARDS**

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L-					
11+00.00	19+76.83	1146	1777	1777	1146
	(BEGIN BRIDGE)				
	BANK STABILIZATION	5	0	0	5
SUBTOTALS:		1151	1777	1777	1151
-L-					
	(END BRIDGE)				
20+69.17	30+00.00	5282	484	484	5282
-DRIVE-					
10+00.00	11+30.23	313	23	23	313
SUBTOTALS:		5595	506	507	5595
TOTAL:		6746	2284	2284	6746
LOSS DUE TO CLEARING & GRUBBING		-225	0	225	
SHOULDER MATERIAL		0	300	300	0
PROJECT TOTALS:		6521	2584	2809	6746
EST. FOR REPL. TOPSOIL ON BOR. PIT				140	
GRAND TOTALS:		6521	2584	2950	6746
SAY:		6550		3000	

**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

**SUMMARY OF EXISTING ASPHALT
PAVEMENT REMOVAL**

LINE	Station	Station	LOC LT/RT/CL	YD ²
-L-	22+20.14	23+34.06	LT	74.34
				TOTAL:
				74.34
				SAY:
				75

UNDERCUT EXCAVATION 500 CY
 SHALLOW UNDERCUT 250 CY
 DRAINAGE DITCH EXCAVATION 10 CY

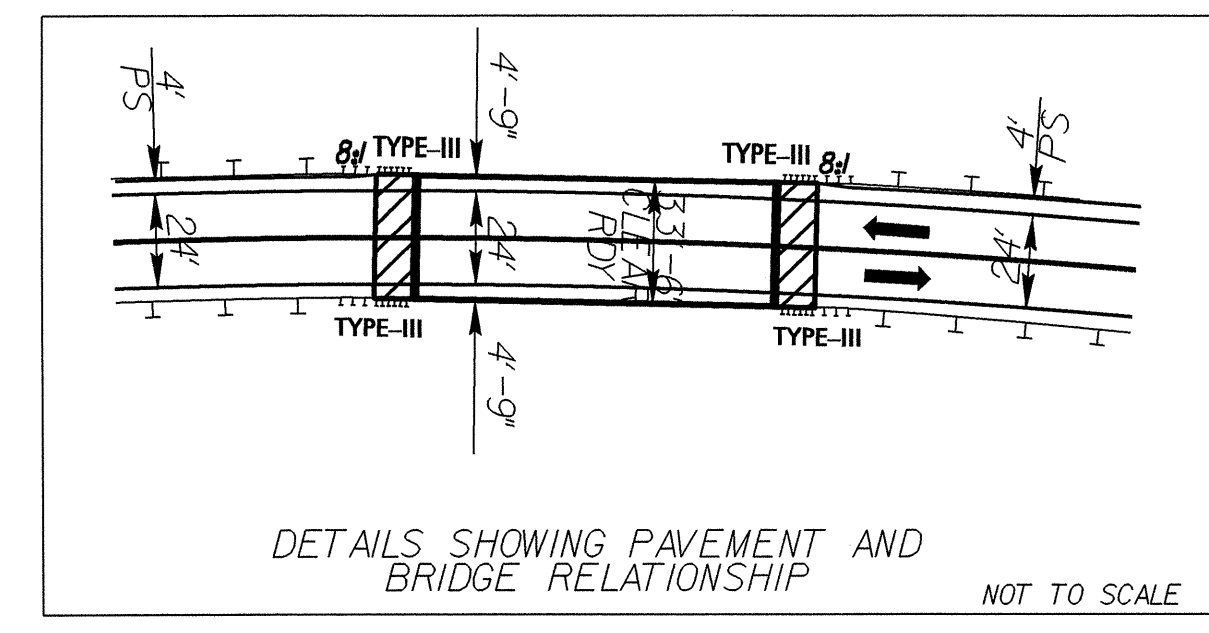
Note: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

Note: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing & Grubbing, Borrow Excavation and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

"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.
 G = GATING IMPACT ATTENUATOR TYPE 350
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

LINE	BEG. STA.	END STA.	LOC.	LENGTH			WARRANT POINT		"N" DIST FROM E.O.L.	TOTAL SHLDR WIDTH	FLAIR LENGTH		W		TYPE III	AT-1	ANCHORS			IMP. ATTEN. TYPE 350			REMOVE EXISTING GRDRAIL	REMARKS		
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPR. END	TRAIL. END			APPR. END	TRAIL. END	APPR. END	TRAIL. END			GRAU 350 TL-3	M-350	EA	G	NG					
-L-	16+76.26	19+82.51	RT	306.25			19+82.51		4.71	7.71			4.29				1									
-L-	20+72.51	22+16.26	RT	143.75				22+16.26	4.71	7.71		74.35		4.29			1									
-L-	18+29.79	19+73.54	LT	143.75				18+29.79	4.71	7.71		75.70		4.29			1									
-L-	20+63.56	-DRIVE- 10+84.50	LT	12.5	50				4.71	7.71			4.29			1	1									
-L-	21+69.36	23+75.61	LT	181.25	25		23+69.81										1	1							BREAK GUARDRAIL FOR -DRIVE-	
PROJECT TOTALS:				787.5													4	2	4							
ANCHOR DEDUCTIONS				-275																						AT-1 ANCHOR LENGTHS NOT INCLUDED IN THE SHOP CURVED TOTAL LENGTH
TOTAL				512.5																						
ADDITIONAL GUARDRAIL POSTS = 5																										
																		ANCHOR UNIT DEDUCTIONS								
																		GRAU-350 TL-3			4 @ 50'					
																		TYPE III			4 @ 18.75'					
																		TOTAL			275					



-L-

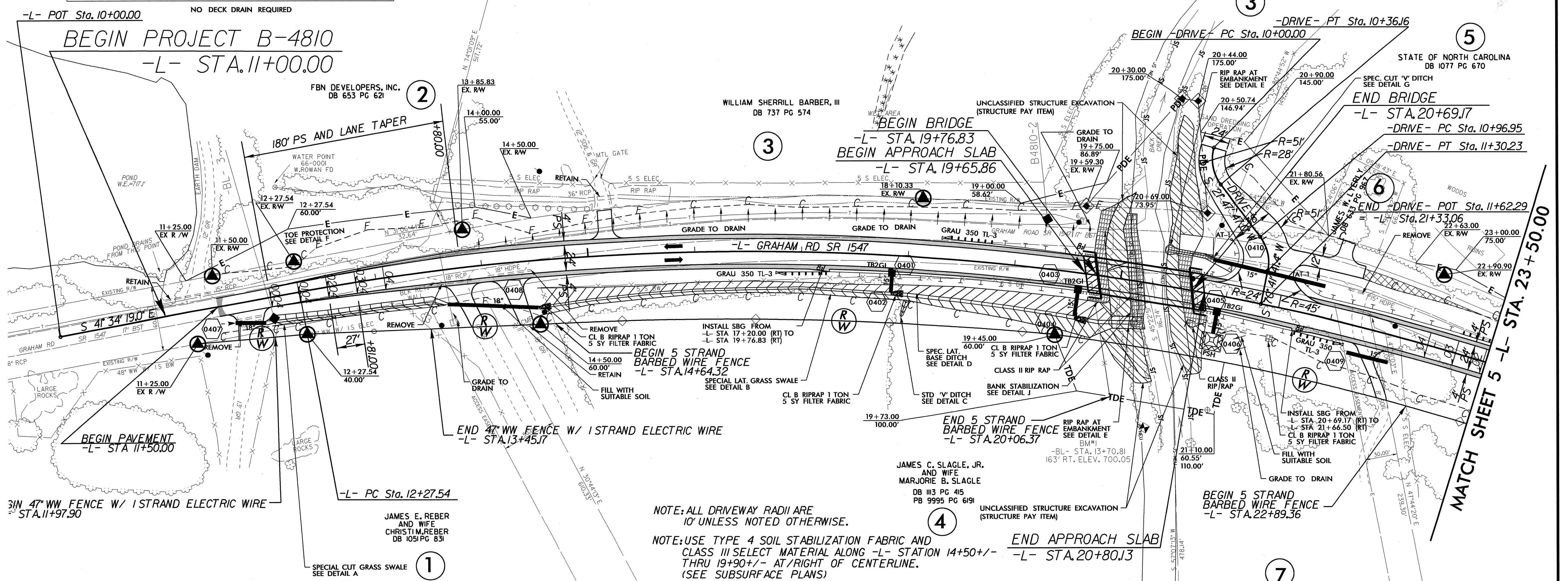
PI Sta 18+27.35
 $\Delta = 28^\circ 52' 19.7''$ (RT)
 $D = 2' 27.326''$
 $L = 1,74.12'$
 $T = 599.8'$
 $R = 2,330.00'$
 $SE = 04$

-DRIVE-

PI Sta 10+19.50
 $\Delta = 53^\circ 07' 36.0''$ (LT)
 $D = 146' 54.44''$
 $L = 36.16'$
 $T = 19.50'$
 $R = 39.00'$

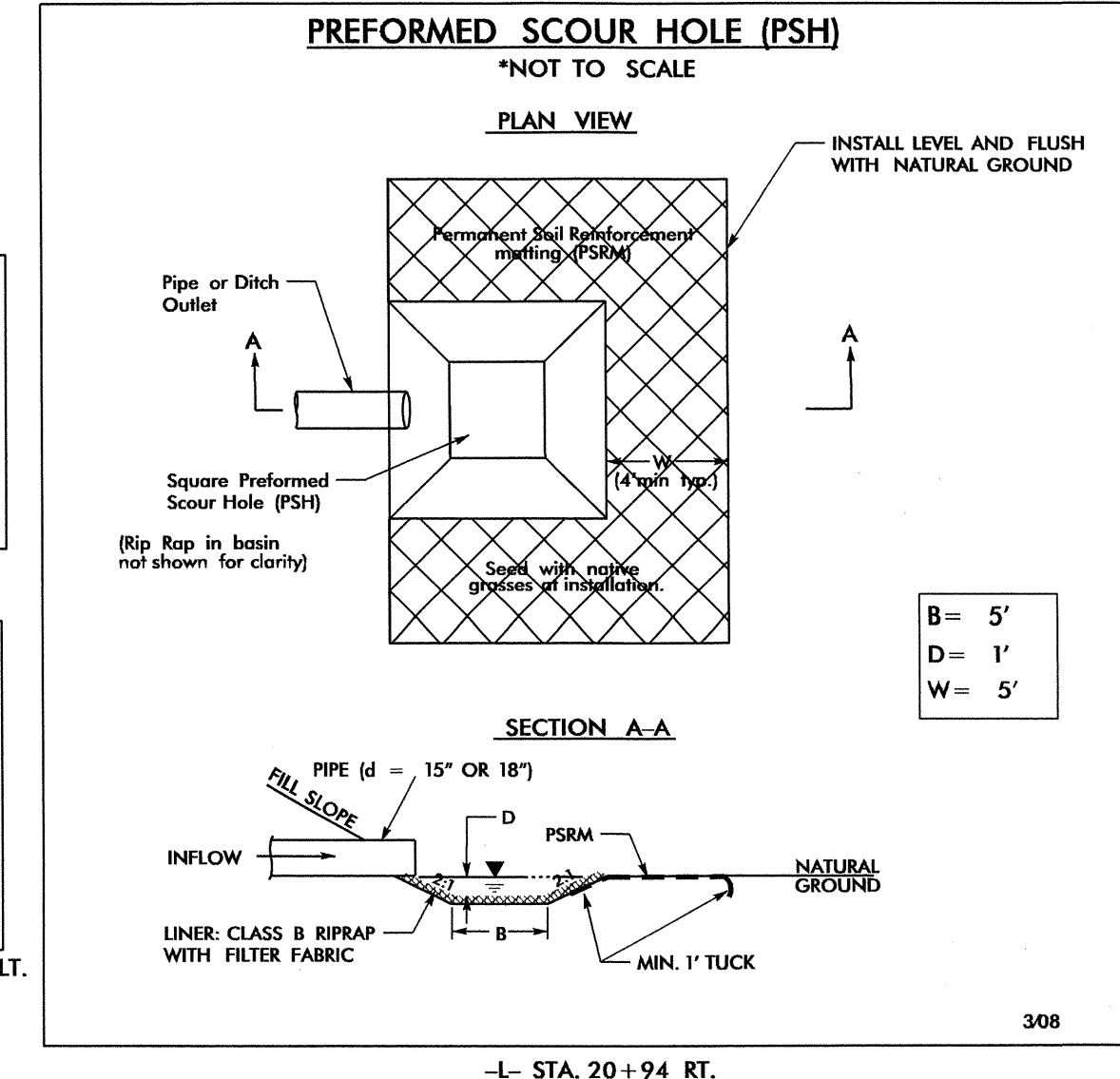
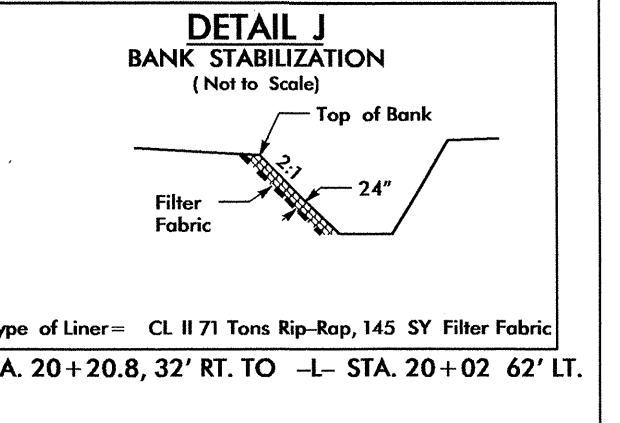
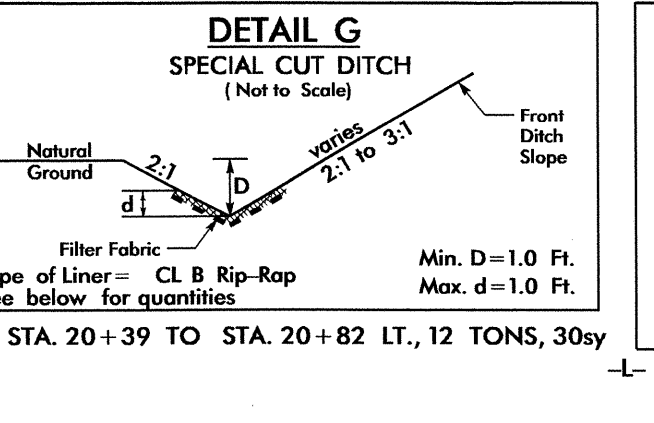
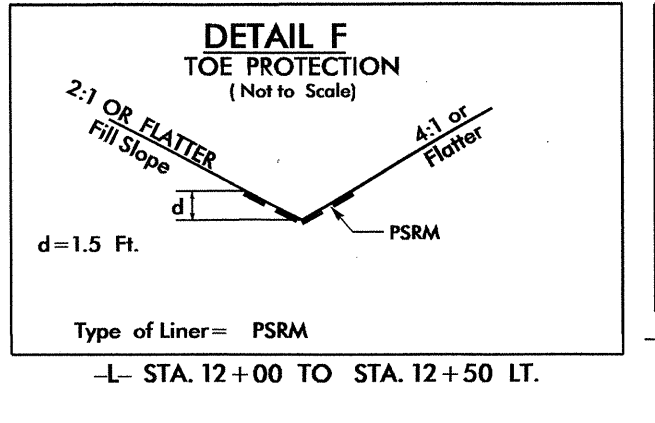
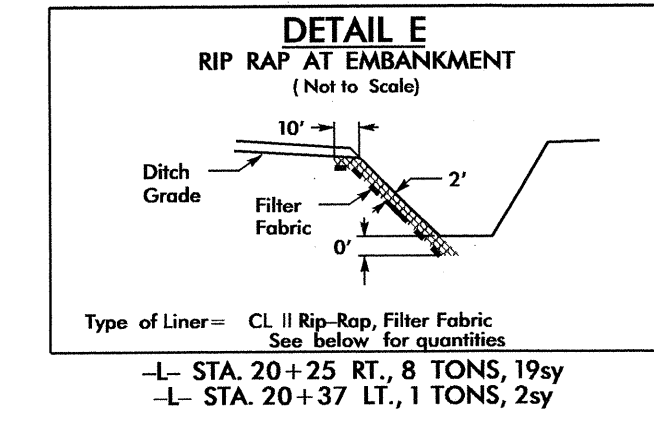
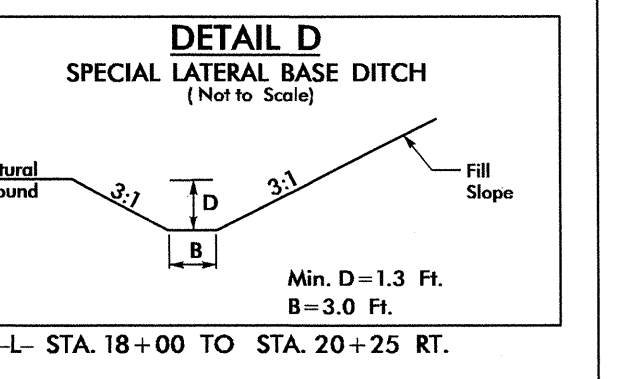
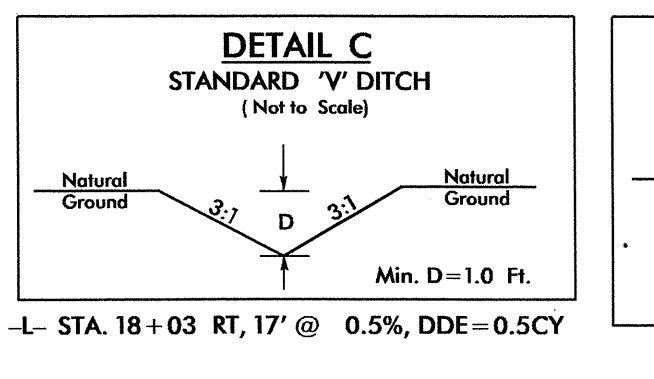
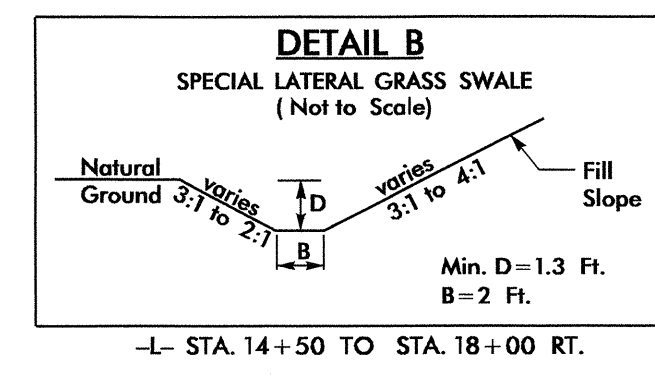
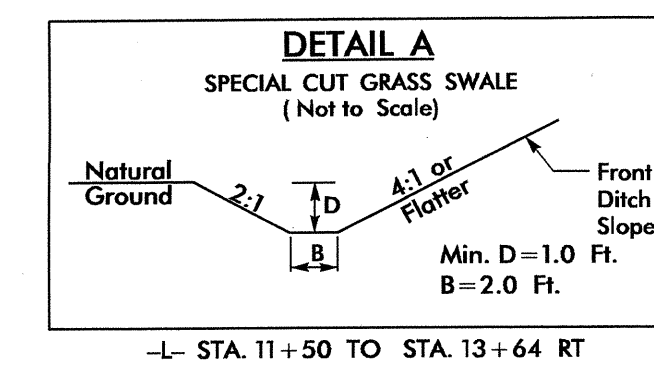
PI Sta 11+14.68
 $\Delta = 48^\circ 53' 54.4''$ (RT)
 $D = 146' 54.44''$
 $L = 33.28'$
 $T = 17.73'$
 $R = 39.00'$

WILLIAM SHERRILL BARBER, III
DB 737 PG 574



NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE.

NOTE: USE TYPE 4 SOIL STABILIZATION FABRIC AND CLASS III SELECT MATERIAL ALONG -L- STATION 14+50+/- THRU 19+90+/- AT/RIGHT OF CENTERLINE. (SEE SUBSURFACE PLANS)



	PAVEMENT REMOVAL
	END BENT EXCAVATION STRUCTURE PAY ITEM
	PAVED SHOULDER

NOTES:
 SEE SHEET 6 FOR -L- PROFILE
 SEE SHEET 6 FOR -DRIVE- PROFILE
 SEE SHEETS S-1 THRU S-20 FOR STRUCTURE PLANS

8/17/99
 22-OCT-2012 11:31
 S:\Roadway\Projects\B-4810-rdy-psh_1_04.dgn
 33:58:15

8/17/99

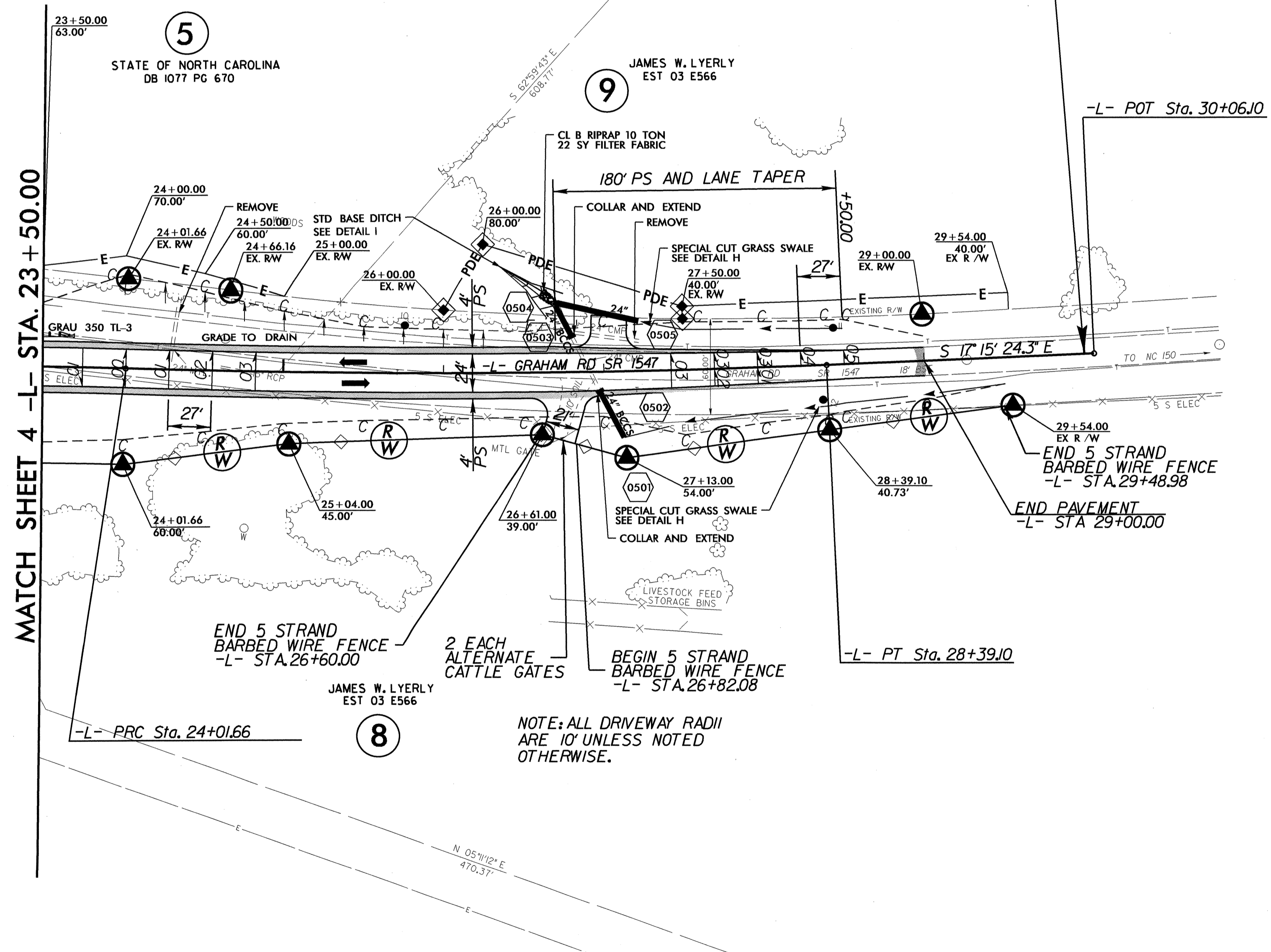
02-NOV-2012 16:26 \\s4010-rdu-psh-1.05.dgn

PROJECT REFERENCE NO. B-4810	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
<i>B. Payne</i> 11-6-12	<i>L. Joins</i> 11-6-12

-L-

PI Sta 18+27.35 $\Delta = 28^{\circ} 52' 19.7"$ (RT) $D = 2^{\circ} 27' 32.6"$ $L = 1,174.12'$ $T = 599.81'$ $R = 2,330.00'$ $SE = 04$	PI Sta 26+20.49 $\Delta = 4^{\circ} 33' 25.0"$ (LT) $D = 1^{\circ} 02' 30.3"$ $L = 437.44'$ $T = 218.83'$ $R = 5,500.00'$ $SE = 03$
--	---

END PROJECT B-4810
-L- STA. 30+00.00



MATCH SHEET 4 -L- STA. 23+50.00

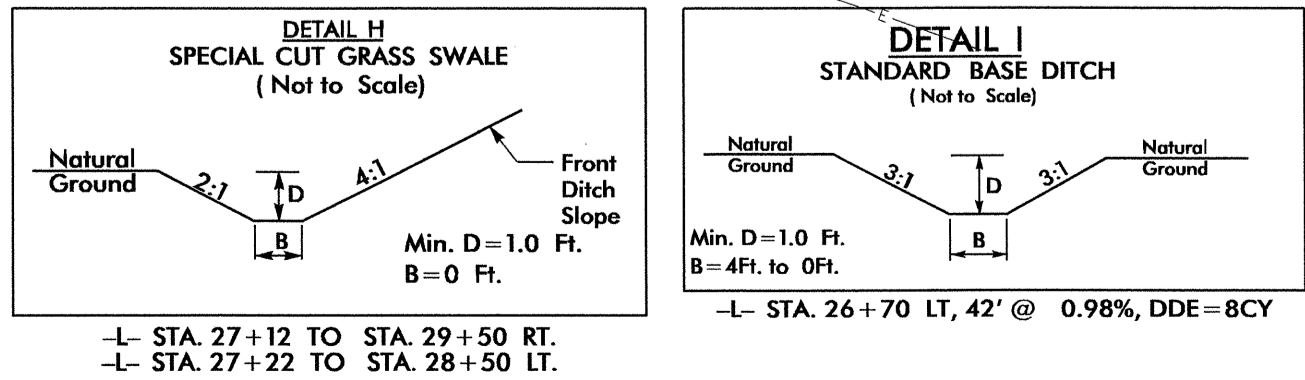
-L- POT Sta. 30+06.10

B4810-1-BM#2

5

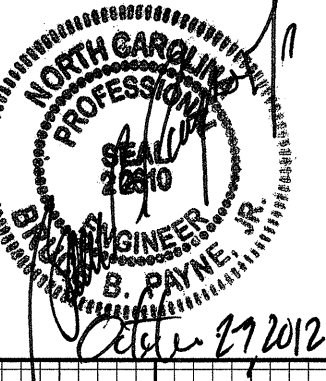
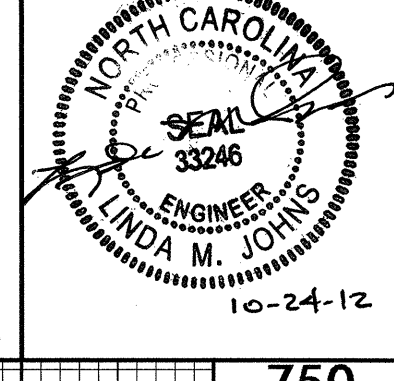
9

8

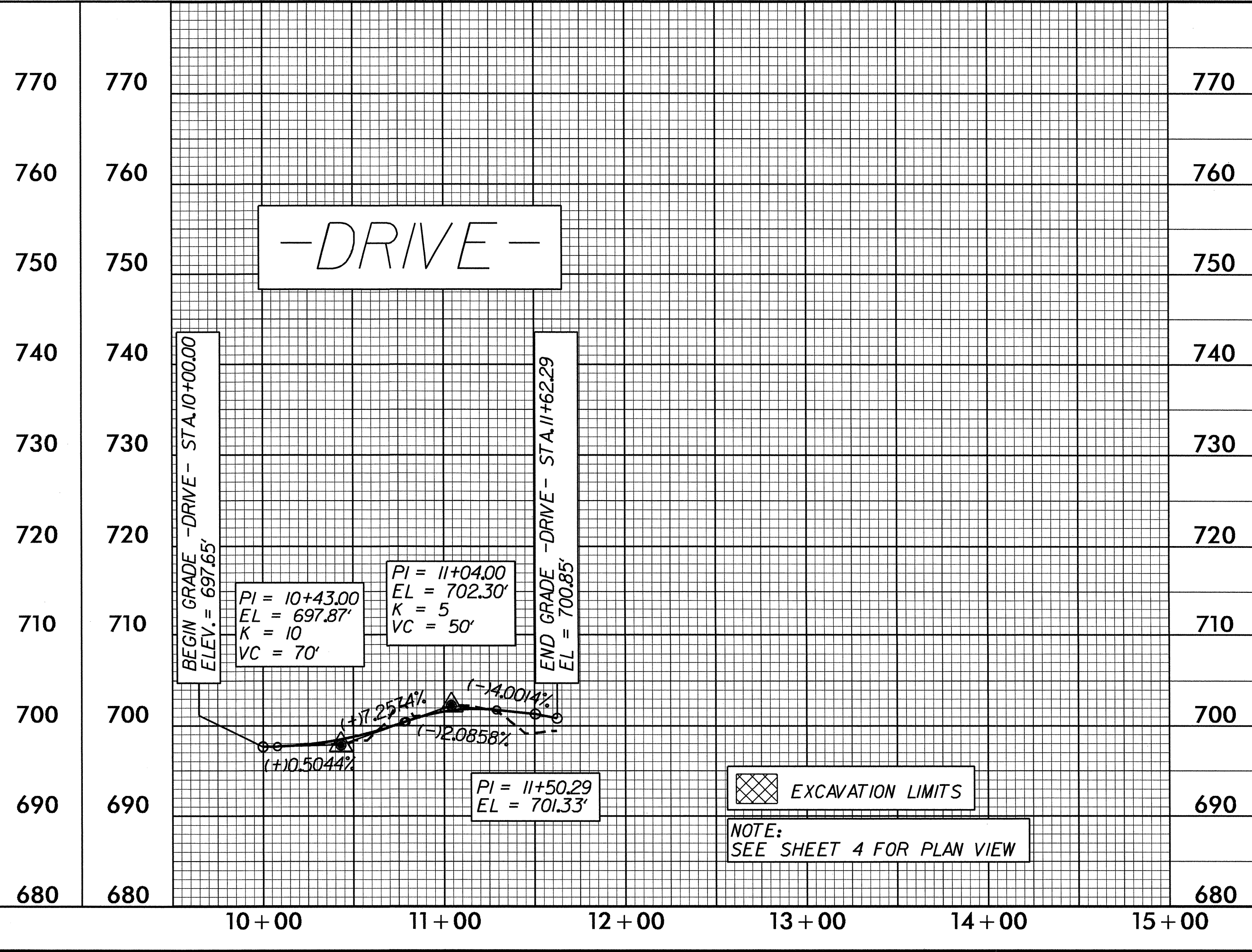
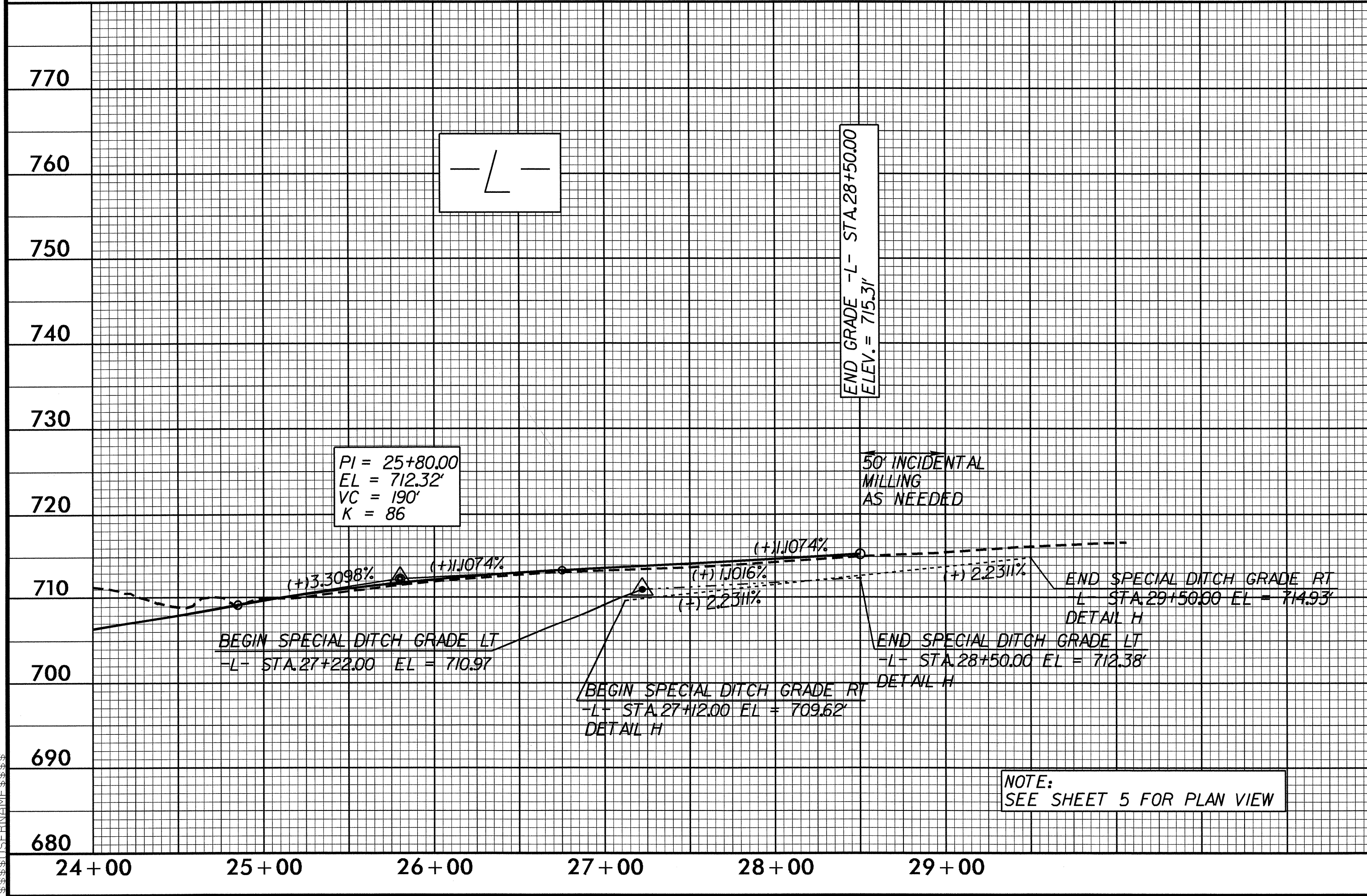
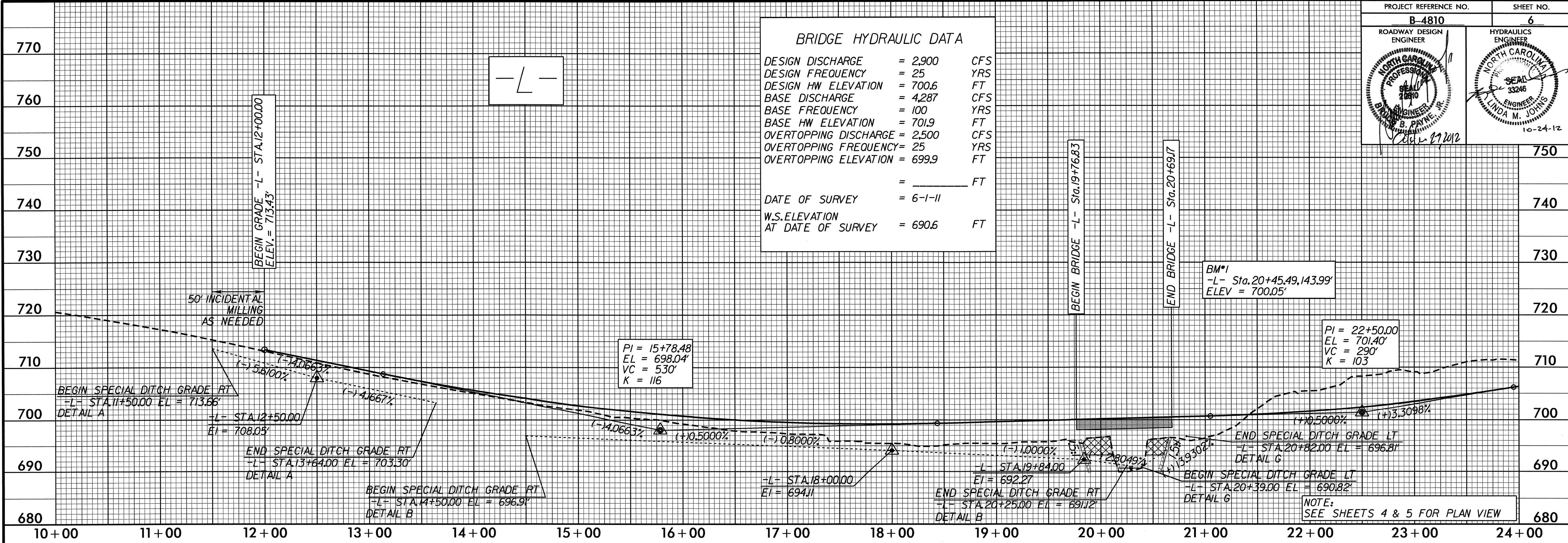


PAVED SHOULDER
NOTE: SEE SHEET 6 FOR PROFILE

5/28/99

PROJECT REFERENCE NO. B-4810	SHEET NO. 6
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 

BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 2,900	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 700.6	FT
BASE DISCHARGE	= 4,287	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 701.9	FT
OVERTOPPING DISCHARGE	= 2,500	CFS
OVERTOPPING FREQUENCY	= 25	YRS
OVERTOPPING ELEVATION	= 699.9	FT
	=	FT
DATE OF SURVEY	= 6-1-11	
W.S. ELEVATION AT DATE OF SURVEY	= 690.6	FT



23-OCT-2012 14:34
C:\Roadway\pco\B4810_rdy_psh.pfl_06.dgn