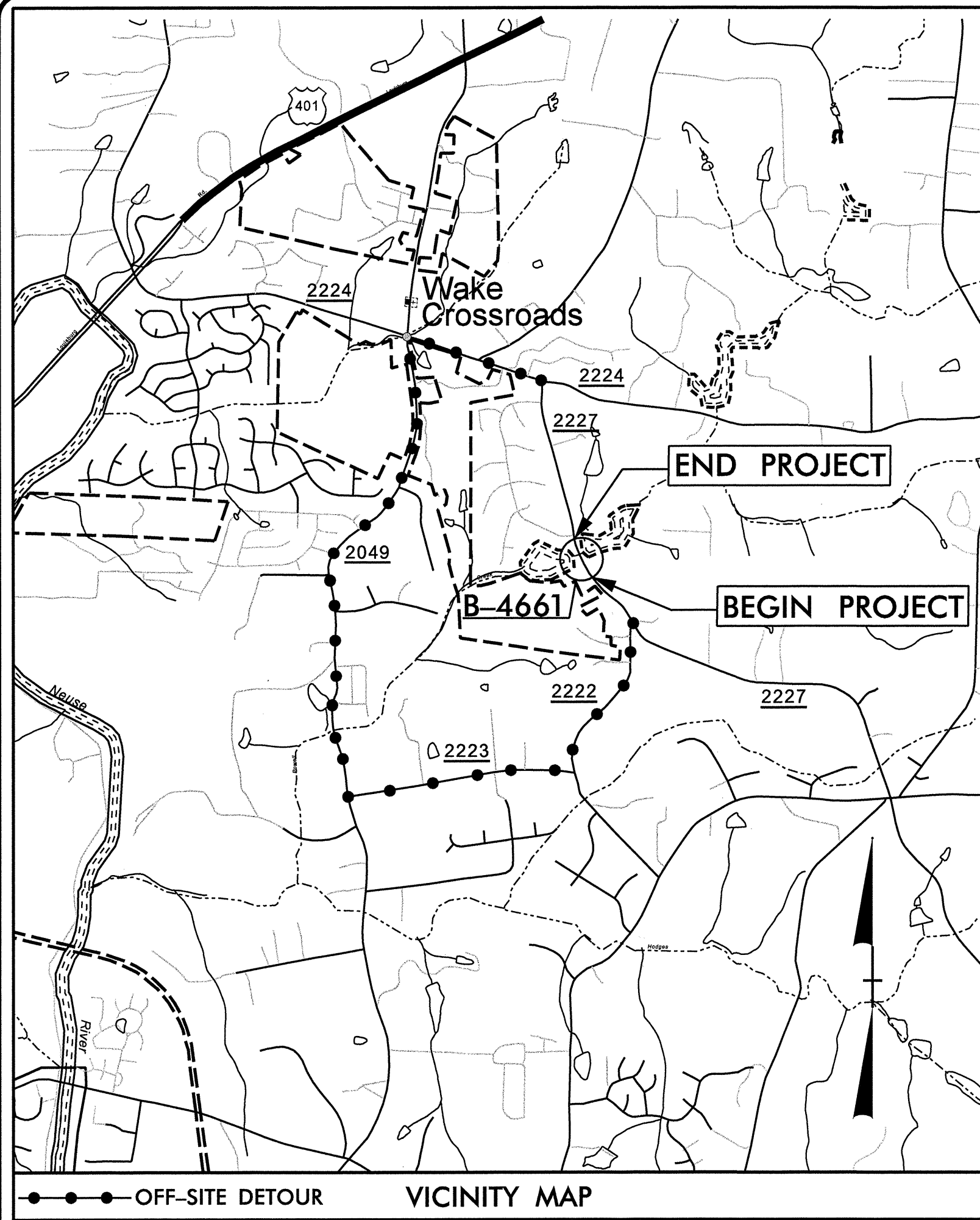


09/08/09

TIP PROJECT: B-4661

CONTRACT: C202751



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

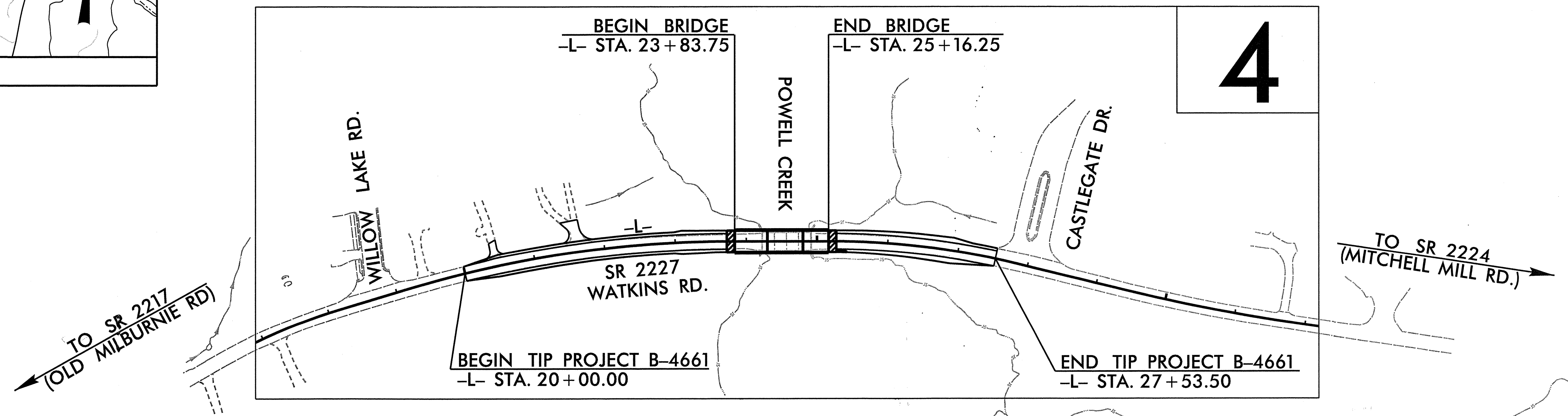
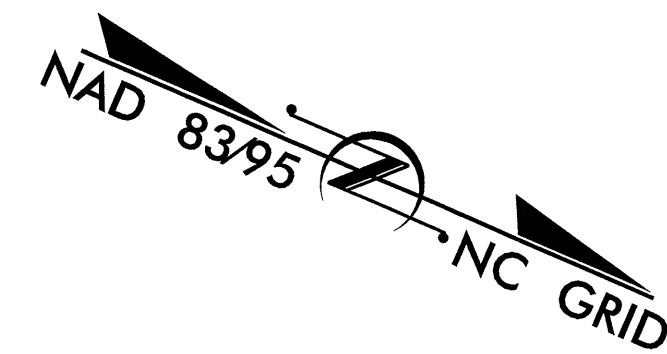
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAKE COUNTY

LOCATION: BRIDGE NO. 151 OVER POWELL CREEK
ON SR 2227 (WATKINS RD.) BETWEEN SR 2224
(MITCHELL MILL RD.) AND SR 2217 (OLD MILBURNIE RD.)

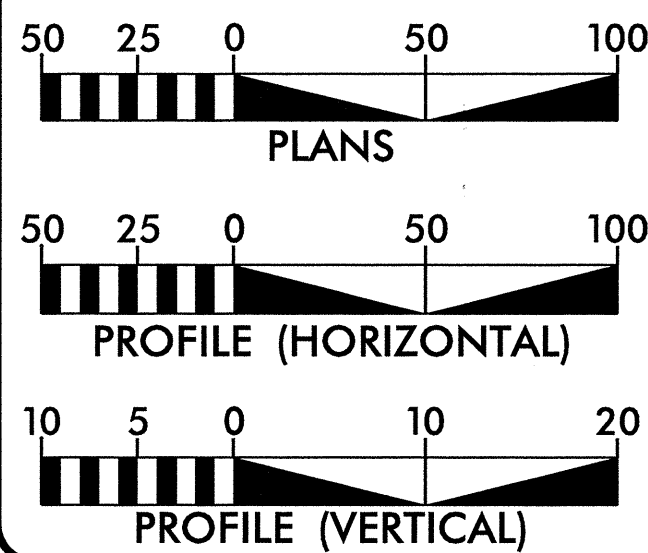
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4661	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33823.1.1	BRZ-2227(1)	PE	
33823.2.1	BRZ-2227(1)	R/W & UTILITIES	
33823.3.1	BRZ-2227(1)	CONST	



NCDOT CONTACT: K. ZAK HAMIDI, PE
ROADWAY DESIGN - ENGINEERING COORDINATION

GRAPHIC SCALES



DESIGN DATA

ADT 2012 = 4900
ADT 2032 = 10100
DHV = 10%
D = 60%
T = 5% *
* (TTST 1% + DUAL 4%)
V = 50 MPH
CLASS = URBAN
MINOR COLLECTOR
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4661 = 0.118 mi.
LENGTH STRUCTURE TIP PROJECT B-4661 = 0.025 mi.
TOTAL LENGTH TIP PROJECT B-4661 = 0.143 mi.



2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
OCTOBER 1, 2010

LETTING DATE:
JANUARY 17, 2012

Prepared in the Office of:
STEWART ENGINEERING

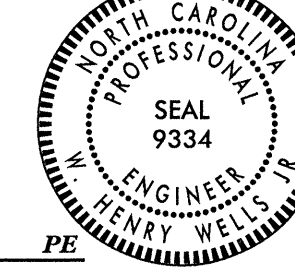
For
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEN CRAWFORD, PE
PROJECT ENGINEER

JONATHAN HEFNER, PE
PROJECT DESIGN ENGINEER

K. ZAK HAMIDI, PE
NCDOT CONTACT

HYDRAULICS ENGINEER



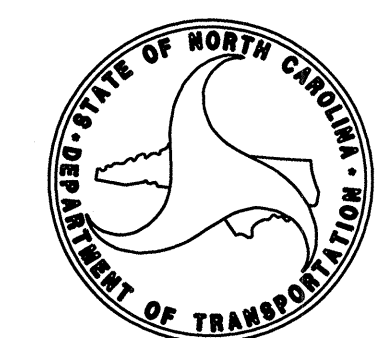
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ROADWAY DESIGN ENGINEER



SIGNATURE: [Signature] 11/1/2011

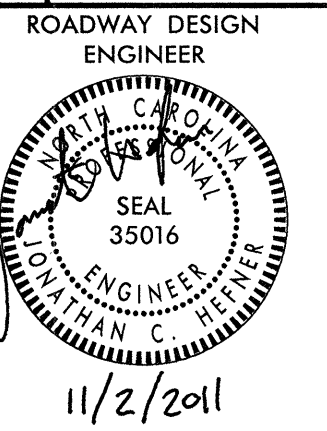
**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**



STATE HIGHWAY DESIGN ENGINEER

11/1/2011
Prj: 01\B4661_RDY_PLANSHEETS.dgn
USER: jhefner

8/17/99



INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-A	ROCK EMBANKMENT AND ROCK PLATING DETAILS
3	SUMMARY OF QUANTITIES
3-A	EARTHWORK, DRAINAGE, GUARDRAIL, SHOULDER BERM GUTTER, AND ASPHALT PAVEMENT REMOVAL SUMMARIES
4	PLAN & PROFILE SHEET
TMP-1 THRU TMP-4	TRANSPORTATION MANAGEMENT PLANS
PMP-1	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
SIGN-1 THRU SIGN-2	SIGNING PLANS
UD-1 THRU UD-2	UTILITIES BY OTHERS PLANS
X-1	CROSS SECTION SUMMARY AND INDEX
X-2 THRU X-4	CROSS-SECTIONS
S-1 THRU S-24	STRUCTURE PLANS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 08/31/11

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.

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

City of Raleigh Public Utilities

Progress Energy

Time Warner Cable

AT&T

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 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
840.00	Concrete Base Pad for Drainage Structures
840.25	Anchorage for Frames - Brick or Concrete
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
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
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

04/16/11

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	□ _{EM}
Parcel/Sequence Number	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-
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	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage / Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----
Proposed Permanent Easement with Iron Pin and Cap Marker	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Curb 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	□ _{CB}
Paved Ditch Gutter	-----
Storm Sewer Manhole	○ _S
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:

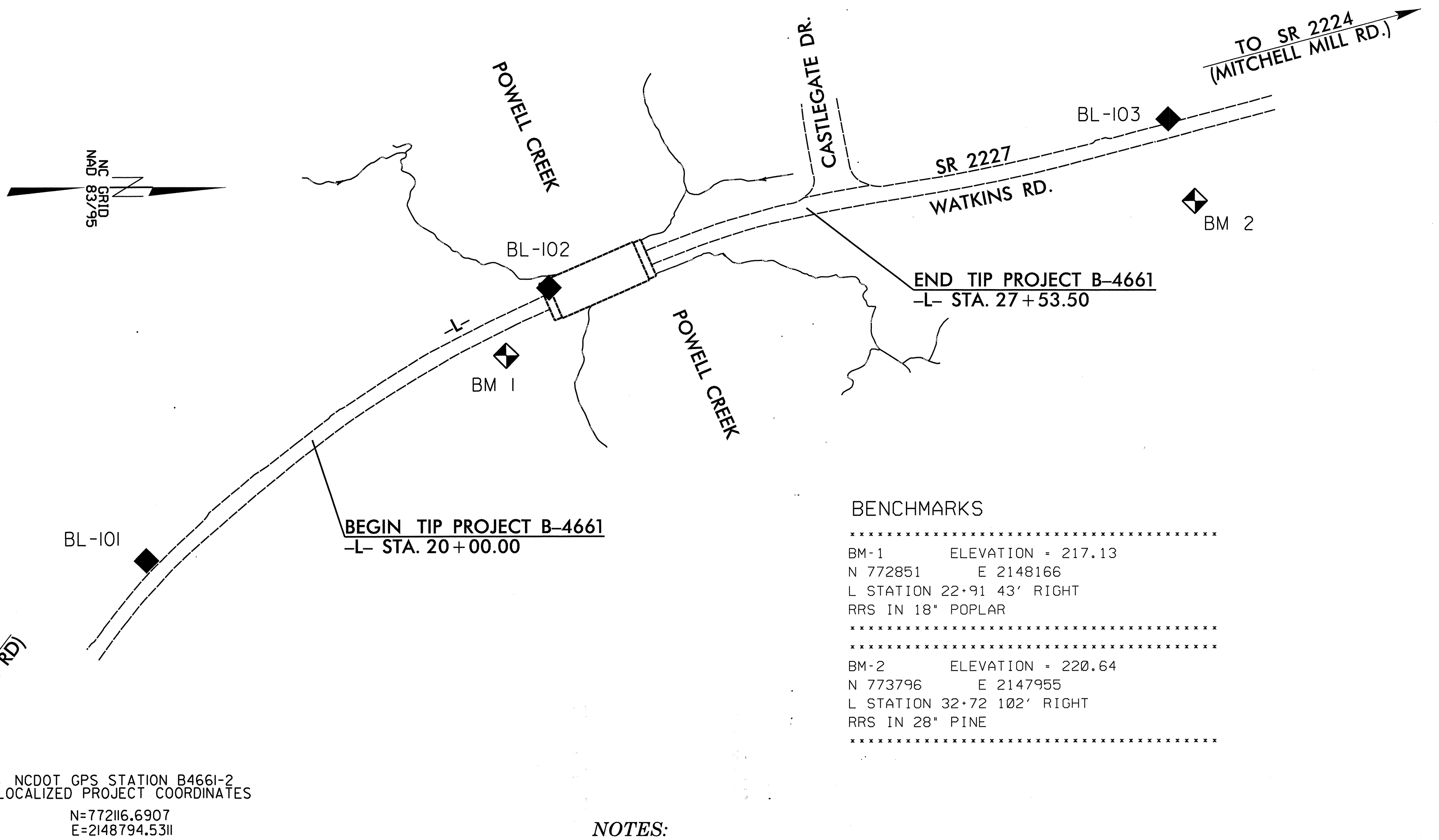
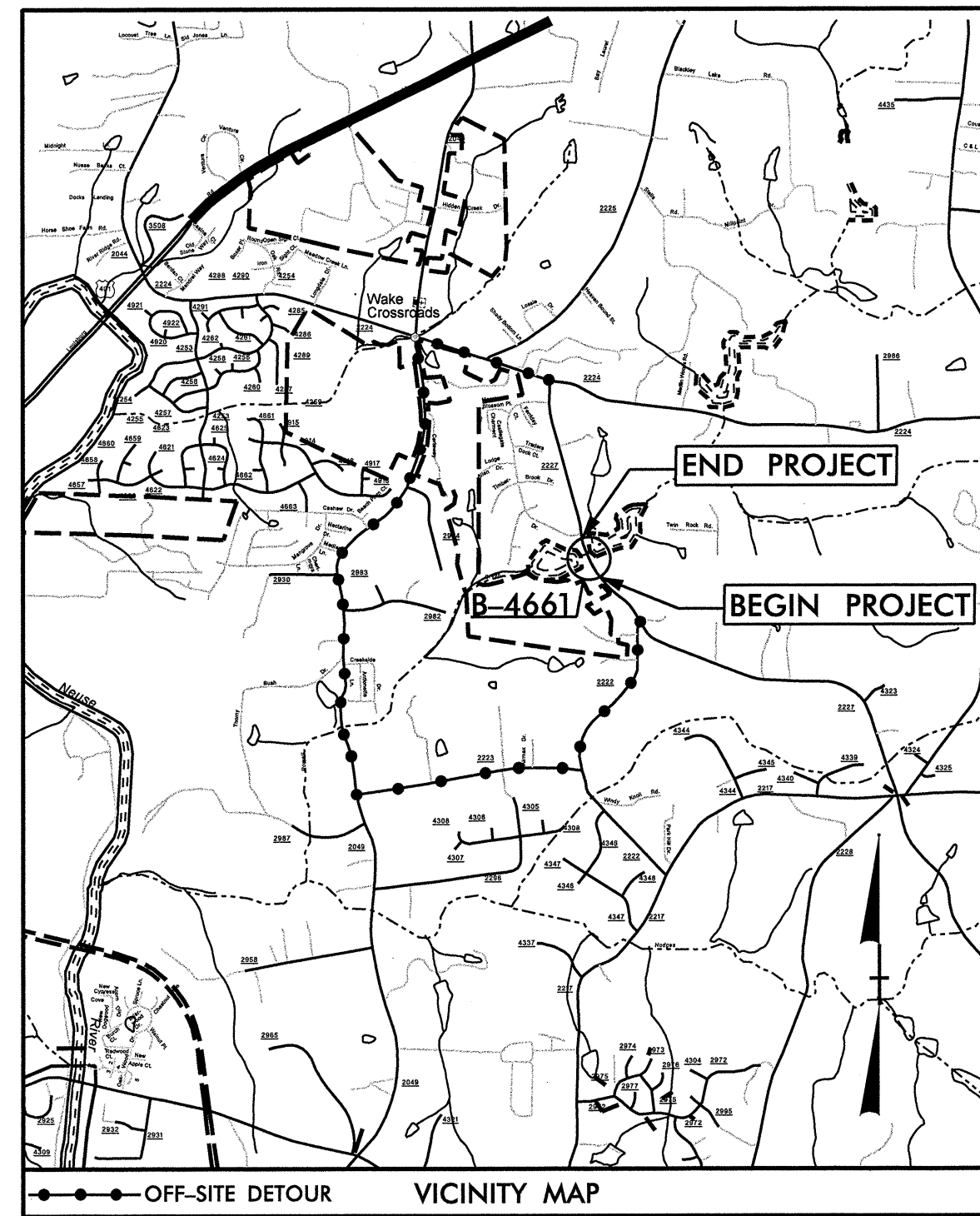
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊗
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility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

SURVEY CONTROL SHEET B-4661

WAKE COUNTY

LOCATION: Bridge No. 151 over Powell Creek on SR 2227

B-4661



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4661-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 772,116.6907(±) EASTING: 2,148,794.5311(±) ELEVATION: 279.25(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99992267

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4661-2" TO -L- STATION 20+00.00 IS
N 47°37'50.1" W 694.66'

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

BENCHMARKS

BM-1 ELEVATION = 217.13
N 772851 E 2148166
L STATION 22+91 43' RIGHT
RRS IN 18" POPLAR

BM-2 ELEVATION = 220.64
N 773796 E 2147955
L STATION 32+72 102' RIGHT
RRS IN 28" PINE

NCDOT GPS STATION B4661-2
LOCALIZED PROJECT COORDINATES
N=772116.6907
E=2148794.5311

CONTROL DATA

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
	101	BL-101	772357.1630	2148445.9970	260.15	17+22.29	24.35 LT
	102	BL-102	772909.5030	2148072.7750	213.42	23+84.42	17.17 LT
	103	BL-103	773759.4100	2147843.0250	222.70	32+65.47	15.40 LT

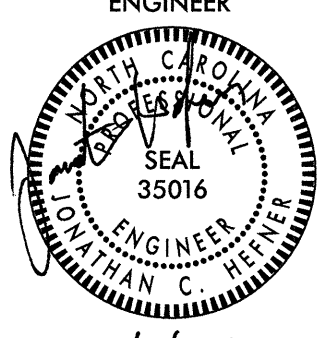

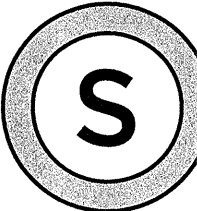
NCDOT GPS STATION B4661-1
LOCALIZED PROJECT COORDINATES
N= 771489.9859
E=2149229.4876

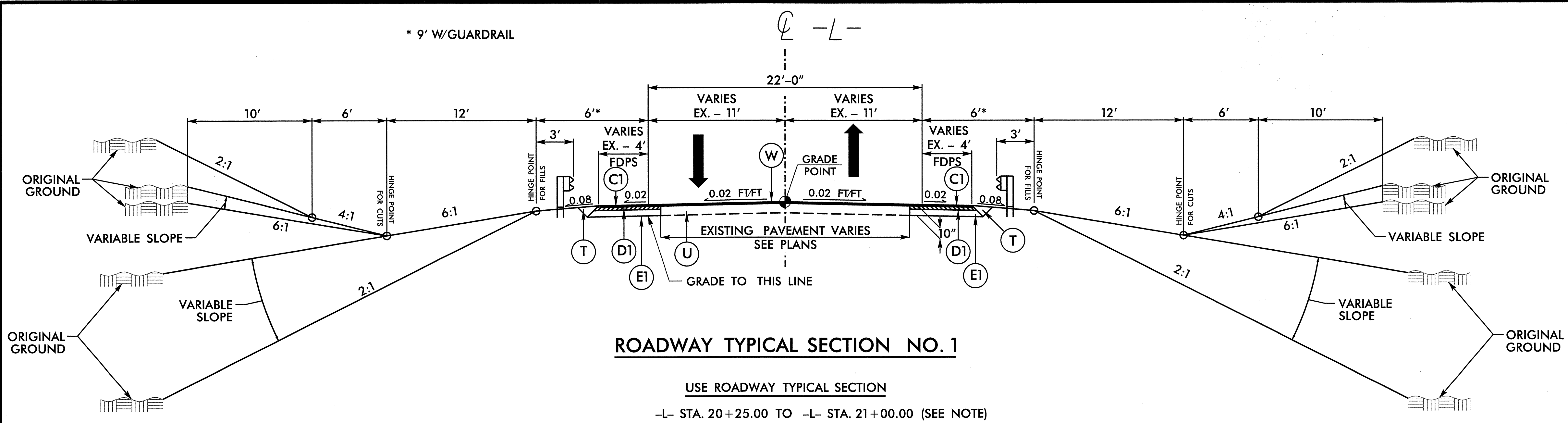
NOTES:

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
<http://www.ncdot.org/do/preconstruct/ig/wa/location/project/>
- THE FILES TO BE FOUND ARE AS FOLLOWS:
B4661_LS_CONTROL_081209.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

12/05/2008 ktp
I:\V2011\B4661-RDY-PLANSHEETS.dgn

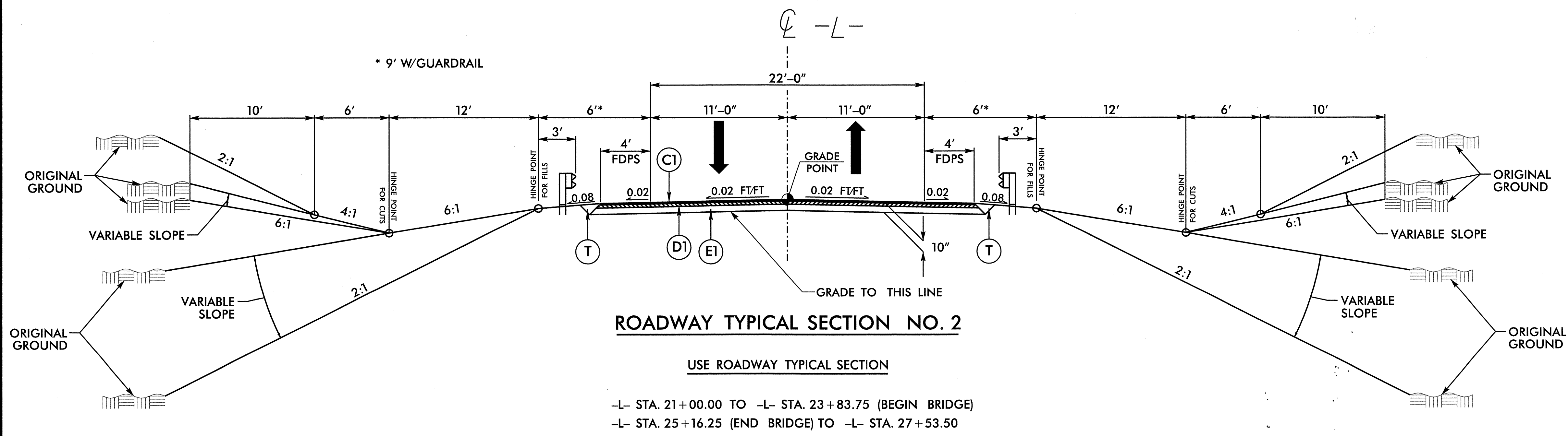
PROJECT REFERENCE NO. B-4661	SHEET NO. 2
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
 421 FAYETTEVILLE ST SUITE 400 RALEIGH, NC 27601 T 919.380.8750 F 919.380.8752 www.stewart-eng.com FIRM NO.: C-1051	



ROADWAY TYPICAL SECTION NO. 1

USE ROADWAY TYPICAL SECTION
 -L- STA. 20+25.00 TO -L- STA. 21+00.00 (SEE NOTE)

NOTE: TRANSITION FROM EXIST TO T.S. # 1
 -L- STA. 20+00.00 TO 20+25.00

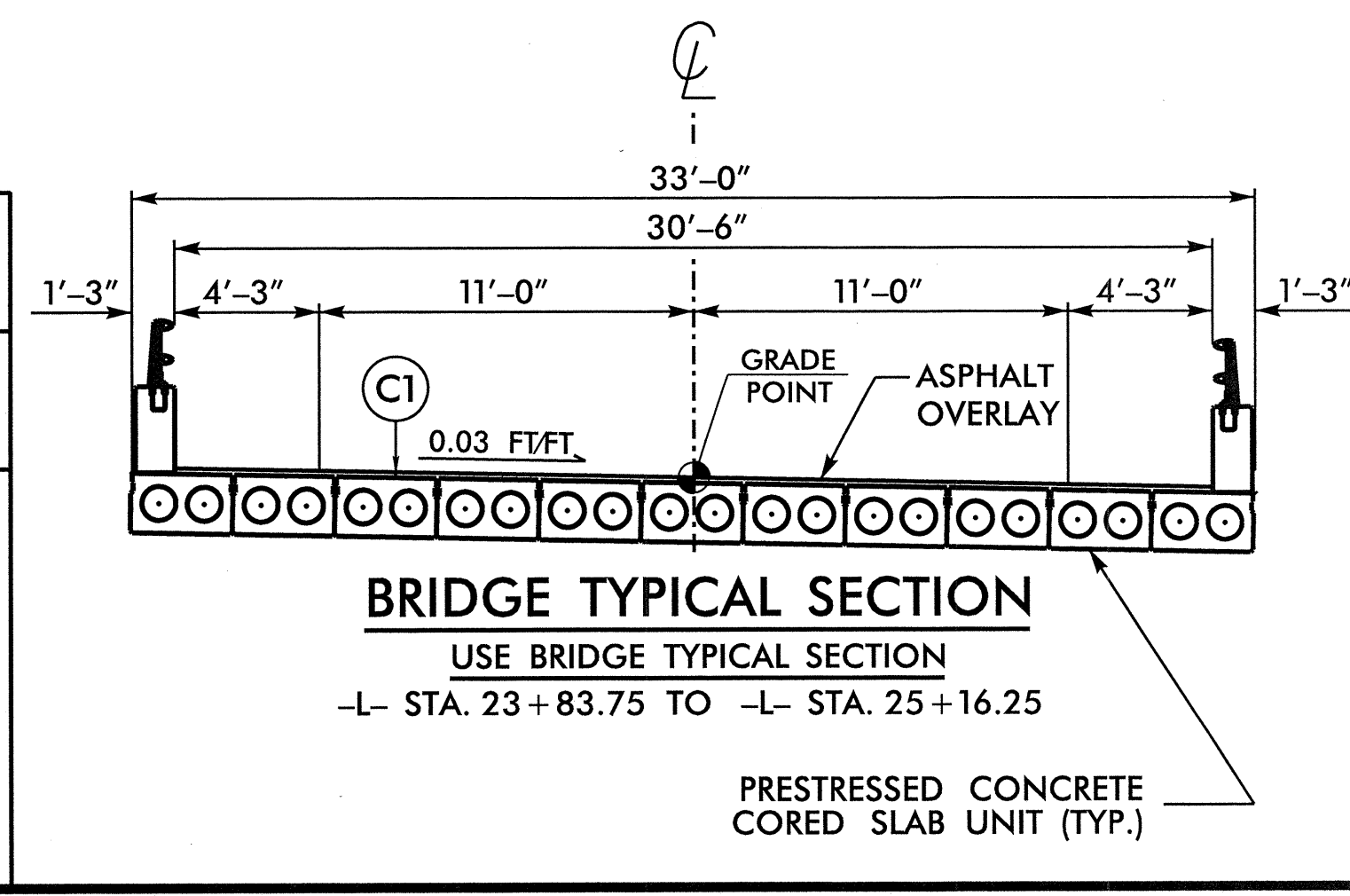
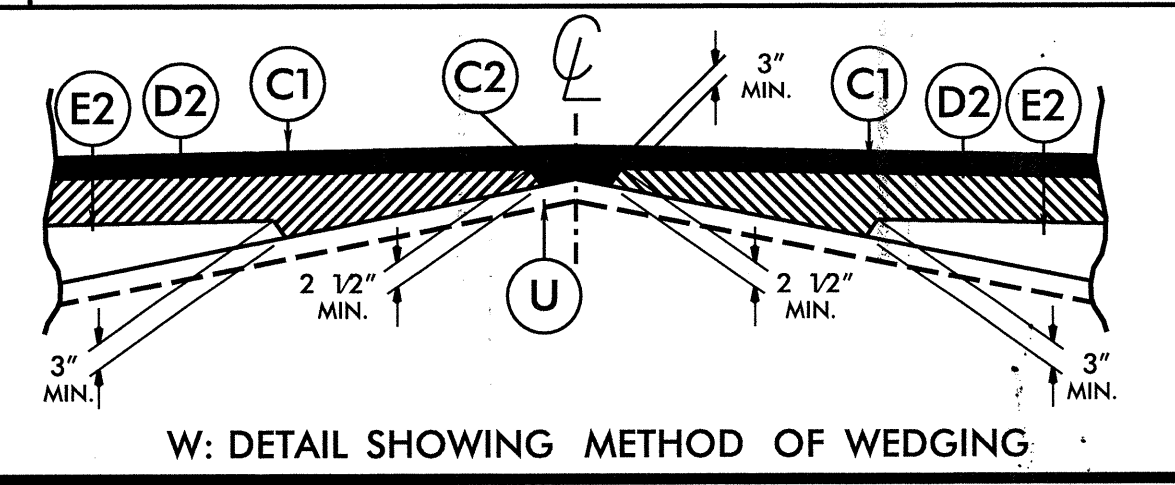


ROADWAY TYPICAL SECTION NO. 2

USE ROADWAY TYPICAL SECTION
 -L- STA. 21+00.00 TO -L- STA. 23+83.75 (BEGIN BRIDGE)
 -L- STA. 25+16.25 (END BRIDGE) TO -L- STA. 27+53.50

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

PAVEMENT SCHEDULE			
FINAL PAVEMENT DESIGN			
C1	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	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
C2	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.	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 BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	T	EARTH MATERIAL.
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 BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.	U	EXISTING PAVEMENT.



BRIDGE TYPICAL SECTION

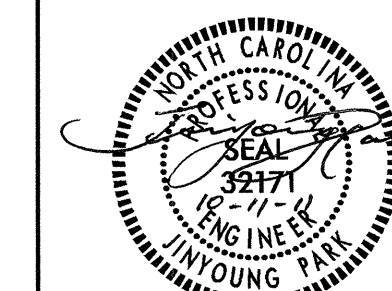
USE BRIDGE TYPICAL SECTION
 -L- STA. 23+83.75 TO -L- STA. 25+16.25

PRESTRESSED CONCRETE
 CORED SLAB UNIT (TYP.)

6/22/99
 I:\2001\AB4661\RDY_PLANS\SHETS.dgn

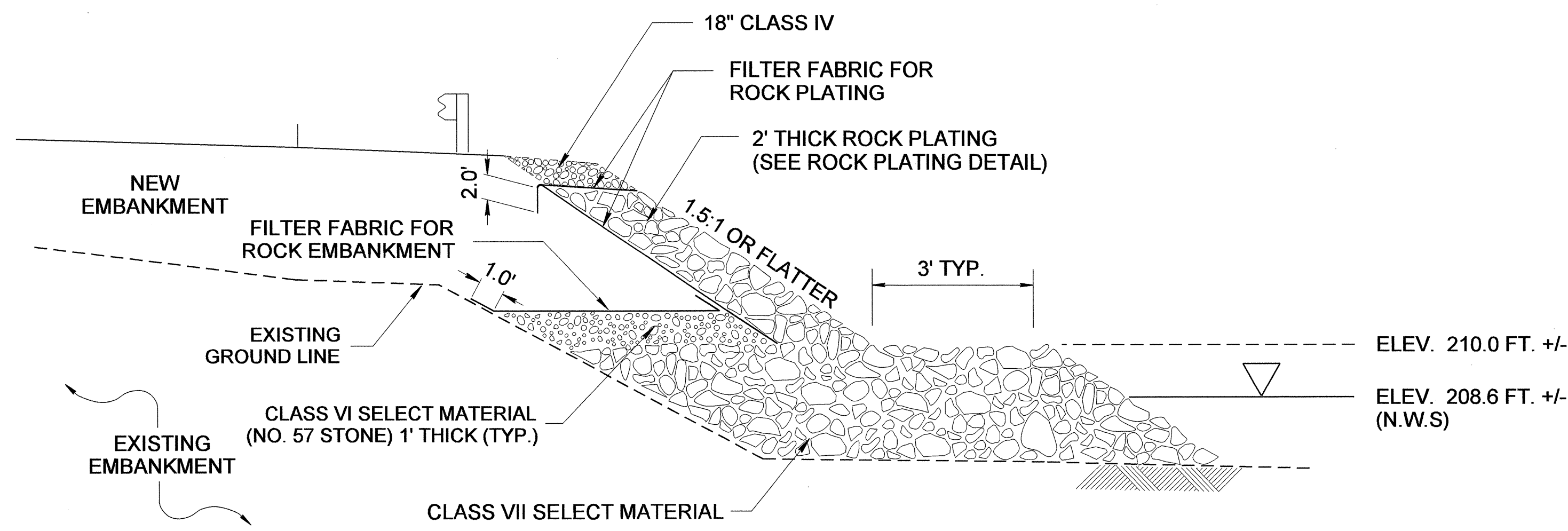
GEOTECHNICAL ENGINEER

ENGINEER



SIGNATURE DATE

SIGNATURE DATE



ROCK EMBANKMENT/ ROCK PLATING DETAIL, N.T.S.

ROCK EMBANKMENT/ ROCK PLATING

USE ROCK EMBANKMENT/ROCK PLATING AT FOLLOWING LOCATIONS:

LOCATION NO.	BEGIN STA.	END STA.	OFFSET
1	23+24.00 ± -L-	23+71.25 ± -L-	LEFT
2*	23+50.00 ± -L-	23+70.25 ± -L-	RIGHT
3	25+00.00 ± -L-	26+48.00 ± -L-	LEFT
4	25+25.00 ± -L-	26+85.00 ± -L-	RIGHT

* ROCK PLATING ONLY AT LOCATION NO. 2 FROM 23+50.00 ± -L- TO 23+70.25 ± -L-

FOR ROCK EMBANKMENT, SEE ROCK EMBANKMENTS SPECIAL PROVISION.

FOR ROCK PLATING, SEE SECTION 275 OF THE STANDARD SPECIFICATIONS.

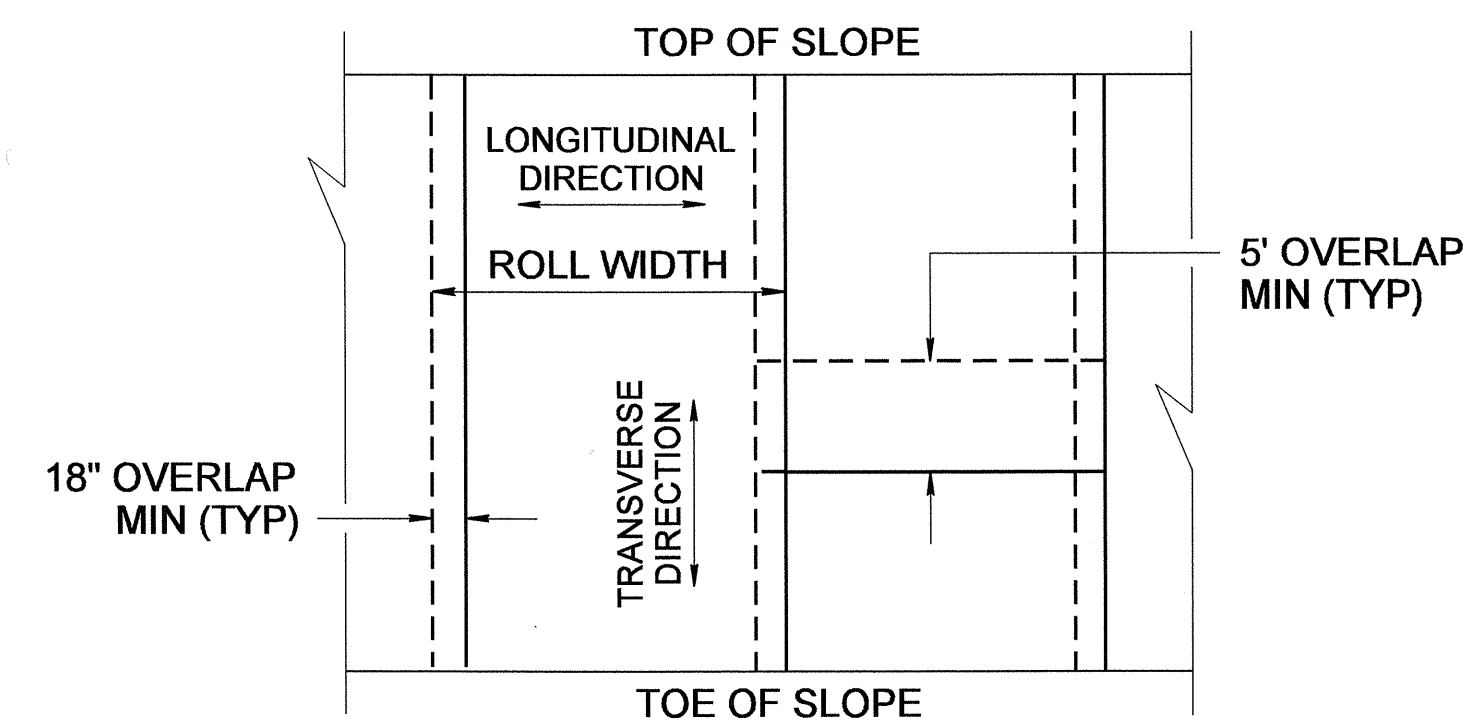
CONSTRUCT ROCK EMBANKMENT TO THE ELEVATION SHOWN IN THE ROCK EMBANKMENT/ROCK PLATING DETAILS OR 1 FT. ABOVE THE NORMAL WATER SURFACE AND ACCORDING TO THE ROCK EMBANKMENT SPECIAL PROVISION.

CONSTRUCT ROCK EMBANKMENT MINIMUM 3 FT. AWAY FROM CAPS AT BOTH END BENT NO. 1 AND END BENT NO. 2.

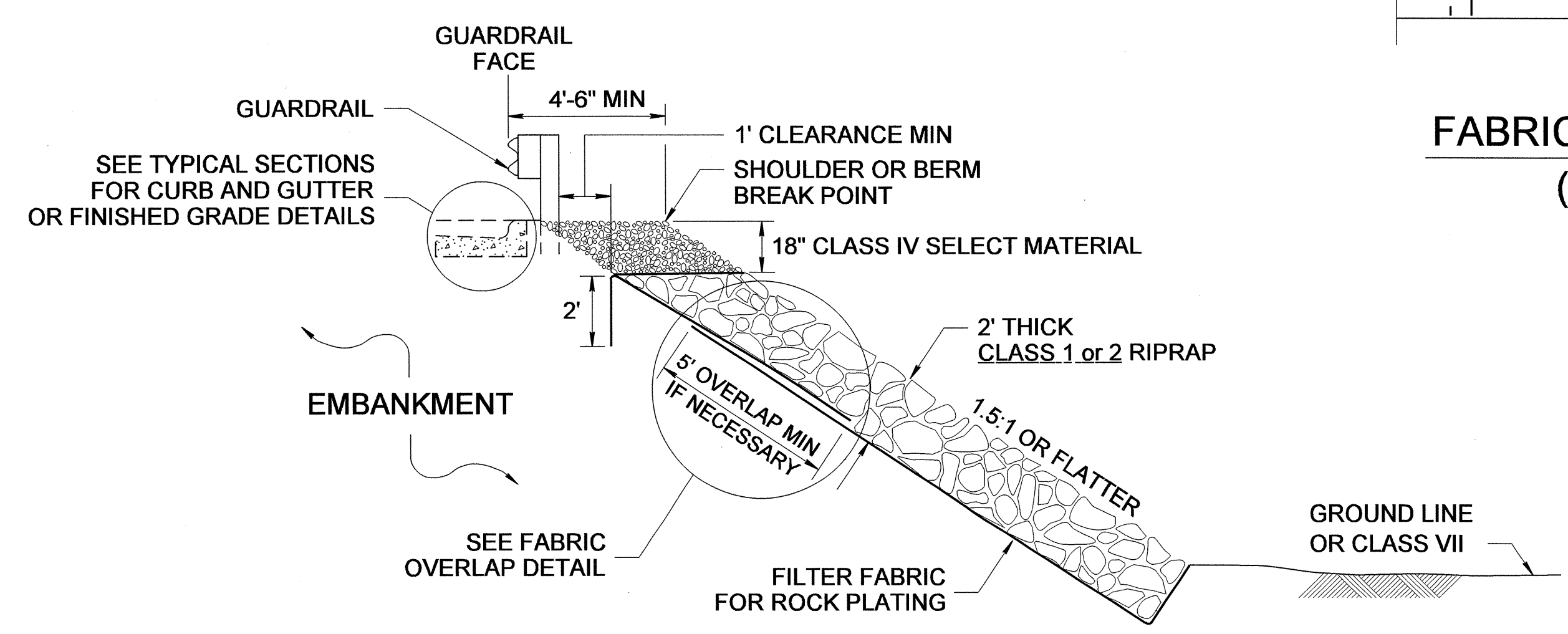
CLASS VII SELECT MATERIAL SHALL MEET THE GRADATION REQUIREMENTS AS INDICATED IN SECTION 1016 OF THE STANDARD SPECIFICATIONS WITH THE EXCEPTION THAT THE MAXIMUM DIAMETER OF THE ROCK DOES NOT EXCEED TWO FEET.

CONSTRUCT ROCK PLATING ABOVE ROCK EMBANKMENT FROM ELEVATION SHOWN IN THE ROCK EMBANKMENT/ ROCK PLATING DETAIL OR 1 FT. ABOVE THE NORMAL WATER SURFACE TO THE SHOULDER HINGE POINT.

EXTEND ROCK PLATING TO 2:1 (H:V) SLOPE.



FABRIC OVERLAP DETAIL (PLAN VIEW)



ROCK PLATING DETAIL, N.T.S.

FROM 23+50.00 ± -L- TO 23+70.25 ± -L-

ESTIMATED QUANTITIES FOR ROCK EMBANKMENT

ROCK EMBANKMENTS (SELECT MATERIAL, CLASS VII) = 340 TONS

NO. 57 STONE (SELECT MATERIAL, CLASS VI) = 80 TONS

FILTER FABRIC FOR ROCK EMBANKMENT = 150 SY

ESTIMATED ROCK PLATING QUANTITY

ROCK PLATING = 330 SY

GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE

WESTERN REGIONAL OFFICE

CONTRACT OFFICE

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ROCK EMBANKMENT & ROCK PLATING DETAILS

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

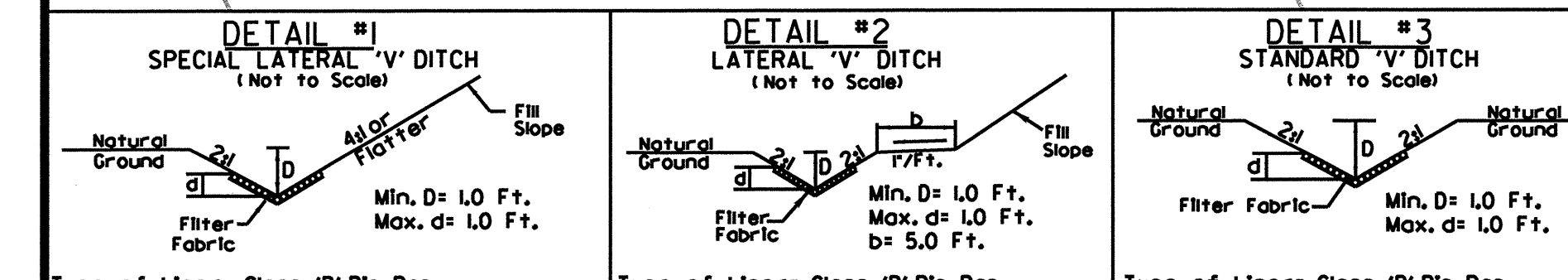
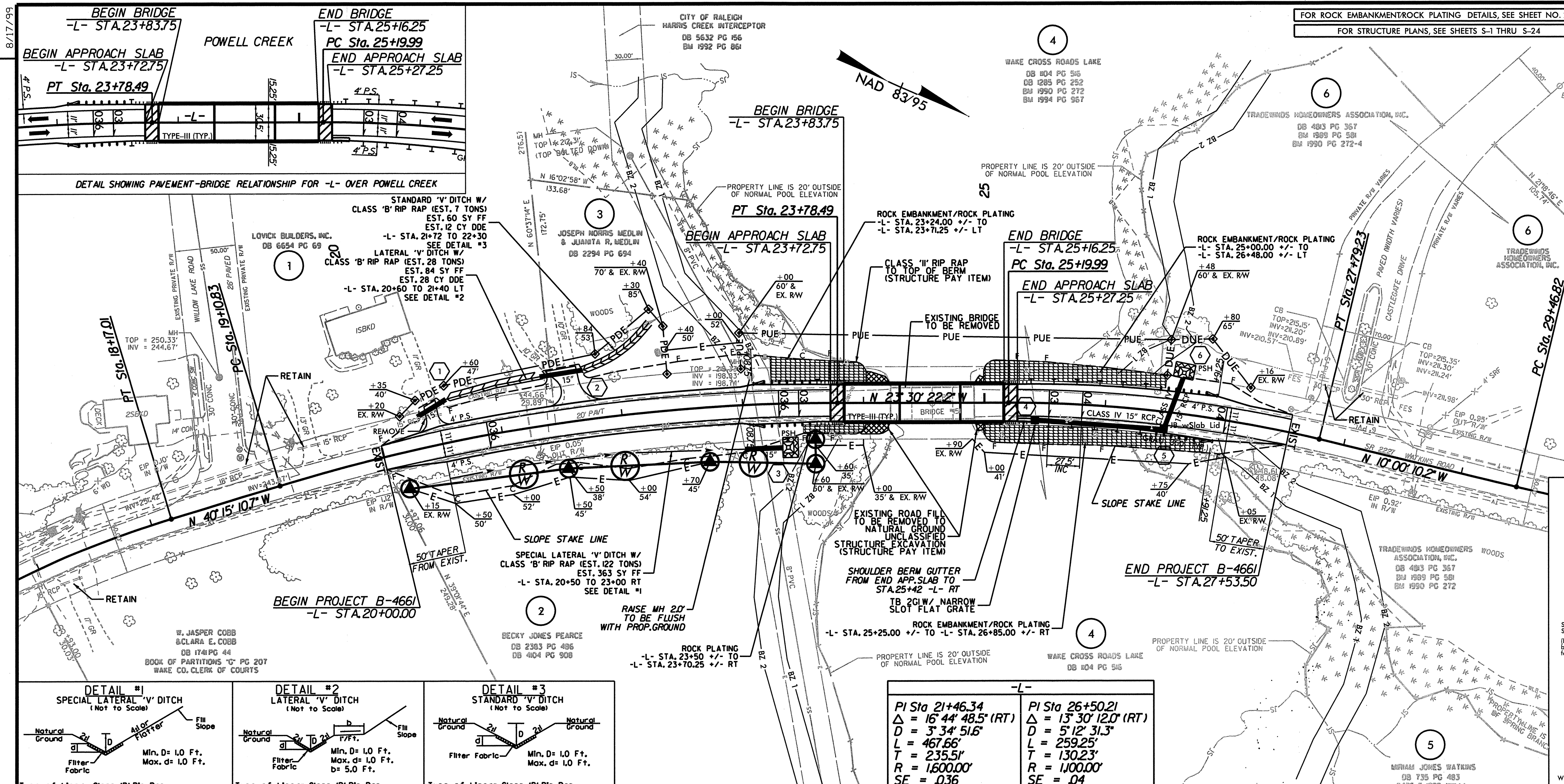
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202751														
ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION	255600000-E	846	16	LF	SHOULDER BERM GUTTER	601800000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
003000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (24+50)	283000000-N	858	1	EA	ADJUSTMENT OF MANHOLES	602100000-E	1620	2.25	TON	FERTILIZER FOR TEMPORARY SEEDING
004300000-N	226	Lump Sum		GRADING	303000000-E	862	225	LF	STEEL BM GUARDRAIL	602400000-E	1622	200	LF	TEMPORARY SLOPE DRAINS
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING	315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	602900000-E	SP	700	LF	SAFETY FENCE
005700000-E	226	200	CY	UNDERCUT EXCAVATION	321500000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III	603000000-E	1630	170	CY	SILT EXCAVATION
013400000-E	240	40	CY	DRAINAGE DITCH EXCAVATION	327000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	603600000-E	1631	3,000	SY	MATTING FOR EROSION CONTROL
019500000-E	265	200	CY	SELECT GRANULAR MATERIAL	364900000-E	876	157	TON	RIP RAP, CLASS B	603700000-E	SP	20	SY	COIR FIBER MAT
019600000-E	270	300	SY	GEOTEXTILE FOR SOIL STABILIZATION	365600000-E	876	972	SY	GEOTEXTILE FOR DRAINAGE	604200000-E	1632	1,300	LF	1/4" HARDWARE CLOTH
022000000-E	SP	340	TON	ROCK EMBANKMENTS	365900000-N	SP	2	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON	604800000-E	SP	655	SY	FLOATING TURBIDITY CURTAIN
022300000-E	275	330	SY	ROCK PLATING	407200000-E	903	77	LF	SUPPORTS, 3-LB STEEL U-CHANNEL	607101000-E	SP	150	LF	WATTLE
024100000-E	SP	150	SY	GENERIC GRADING ITEM FILTER FABRIC FOR ROCK EMBANKMENT	409600000-N	904	2	EA	SIGN ERECTION, TYPE D	607102000-E	SP	50	LB	POLYACRYLAMIDE (PAM)
031800000-E	300	30	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	410200000-N	904	1	EA	SIGN ERECTION, TYPE E	607103000-E	1640	75	LF	COIR FIBER BAFFLE
032000000-E	300	90	SY	FOUNDATION CONDITIONING GEOTEXTILE	415500000-N	907	16	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	607105000-E	SP	2	EA	*** SKIMMER (1-1/2")
034300000-E	310	96	LF	15" SIDE DRAIN PIPE	440000000-E	1110	408	SF	WORK ZONE SIGNS (STATIONARY)	608400000-E	1660	1.5	ACR	SEEDING & MULCHING
044820000-E	310	156	LF	15" RC PIPE CULVERTS, CLASS IV	441000000-E	1110	104	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)	608700000-E	1660	1.5	ACR	MOWING
107700000-E	SP	80	TON	#57 STONE	443000000-N	1130	27	EA	DRUMS	609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
122000000-E	545	100	TON	INCIDENTAL STONE BASE	444500000-E	1145	80	LF	BARRICADES (TYPE III)	609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
148900000-E	610	490	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	468500000-E	1205	754	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	609600000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
149800000-E	610	345	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B	468600000-E	1205	1,508	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)	610800000-E	1665	1	TON	FERTILIZER TOPDRESSING
151900000-E	610	465	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	490000000-N	1251	9	EA	PERMANENT RAISED PAVEMENT MARKERS	611450000-N	1667	10	MHR	SPECIALIZED HAND MOWING
157500000-E	620	66	TON	ASPHALT BINDER FOR PLANT MIX	600000000-E	1605	725	LF	TEMPORARY SILT FENCE	611700000-N	SP	18	EA	RESPONSE FOR EROSION CONTROL
200000000-N	806	5	EA	RIGHT OF WAY MARKERS	600600000-E	1610	225	TON	STONE FOR EROSION CONTROL, CLASS A	612300000-E	1670	0.1	ACR	REFORESTATION
228600000-N	840	2	EA	MASONRY DRAINAGE STRUCTURES	600900000-E	1610	100	TON	STONE FOR EROSION CONTROL, CLASS B					
236700000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.29	601200000-E	1610	275	TON	SEDIMENT CONTROL STONE					
					601500000-E	1615	1.5	ACR	TEMPORARY MULCHING					

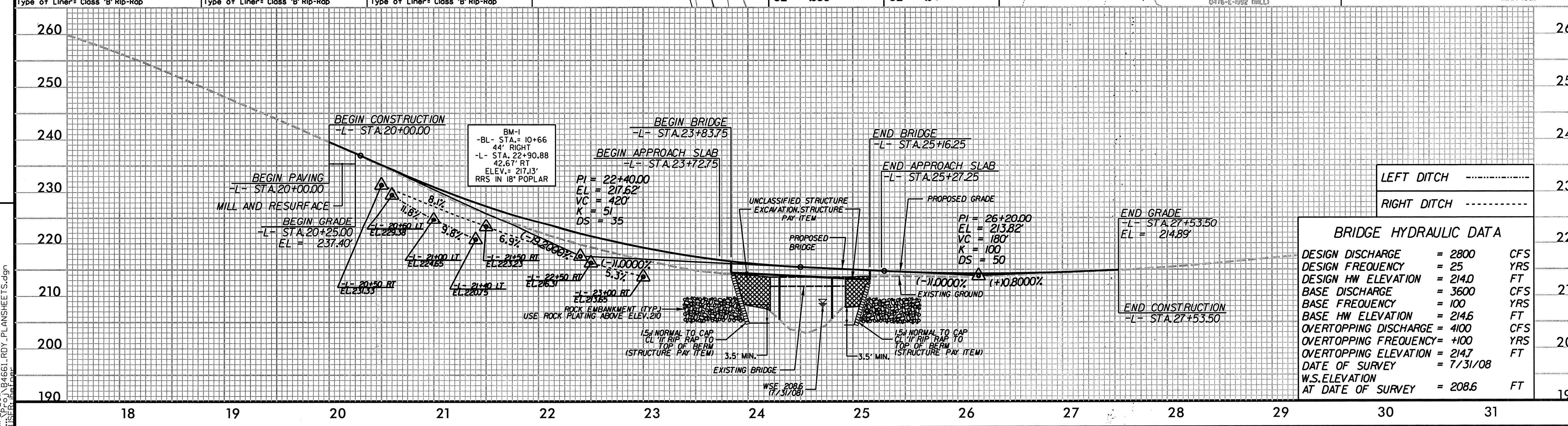
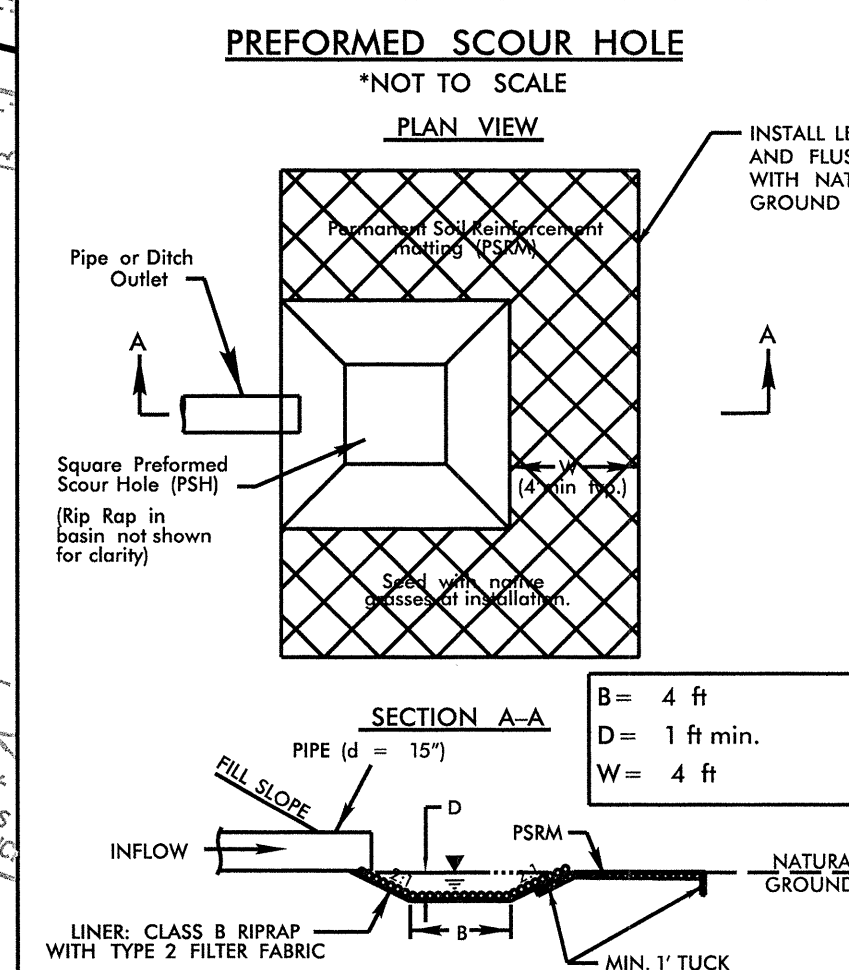
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8/17/99
 11/2/2011 B4661.RDY_PLANSHEETS.dgn
 USER: jefc



PI Sta 21+46.34 $\Delta = 16' 44'' 48.5''$ (RT) $D = 3' 34'' 51.6''$ $L = 467.66'$ $T = 235.51'$ $R = 1,600.00'$ $SE = .036$	PI Sta 26+50.21 $\Delta = 13' 30'' 12.0''$ (RT) $D = 5' 12'' 31.3''$ $L = 259.25'$ $T = 130.23'$ $R = 1,000.00'$ $SE = .04$
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BRIDGE HYDRAULIC DATA	
DESIGN DISCHARGE	= 2800 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 214.0 FT
BASE DISCHARGE	= 3600 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 214.6 FT
OVERTOPPING DISCHARGE	= 400 CFS
OVERTOPPING FREQUENCY	= +100 YRS
OVERTOPPING ELEVATION	= 214.7 FT
DATE OF SURVEY	= 7/31/08
W.S. ELEVATION AT DATE OF SURVEY	= 208.6 FT

PROJECT REFERENCE NO. **B-4661** SHEET NO. **4**

R/W SHEET NO.

ROADWAY DESIGN ENGINEER: [Stamp]

HYDRAULICS ENGINEER: [Stamp]

DATE: 11/2/2011

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