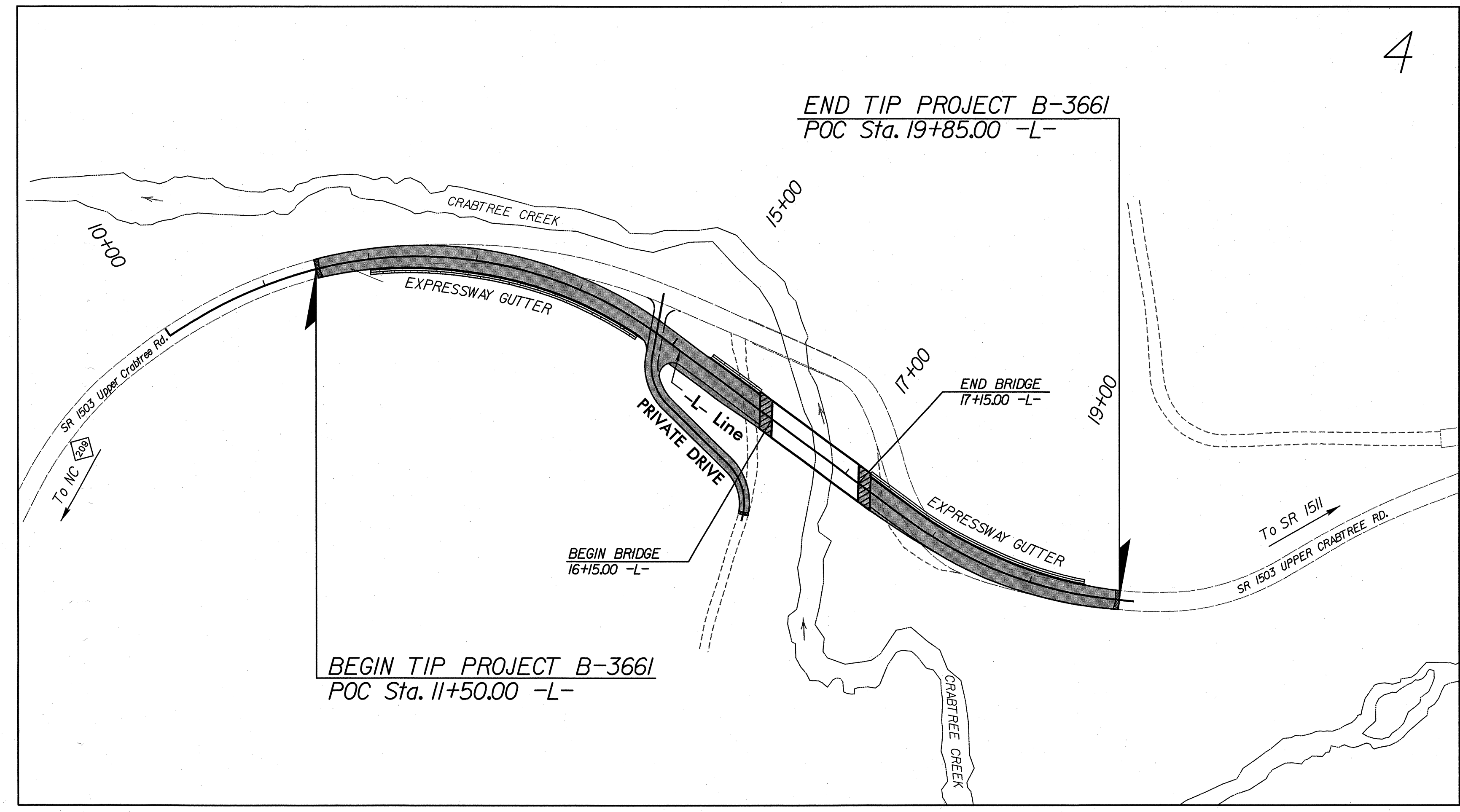
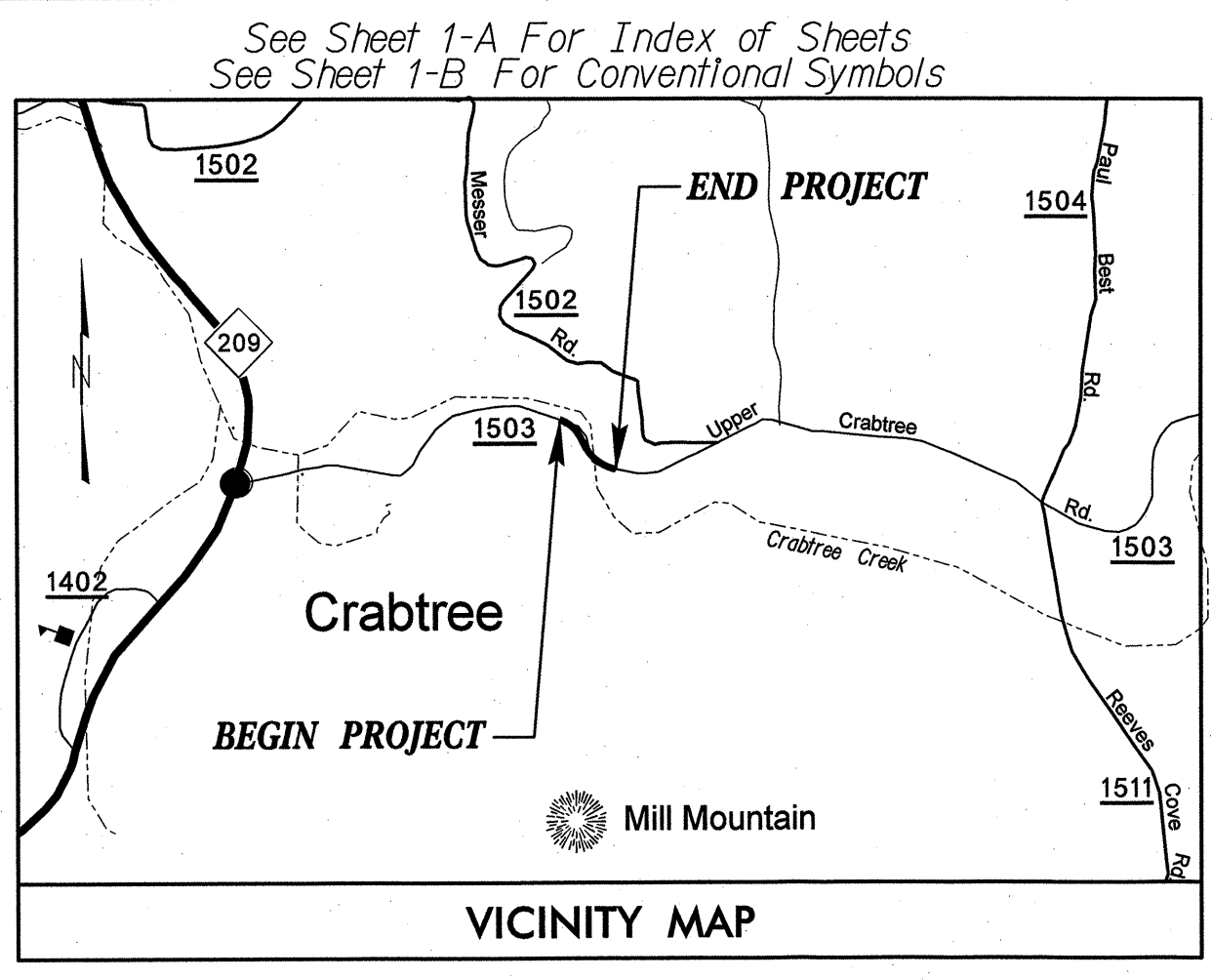


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3661	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33206.1.1	BRZ-1503 (4)	PE	
33206.2.1	BRZ-1503 (4)	RW & UTIL	
33206.3.1	BRZ-1503 (4)	CONSTR	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
HAYWOOD COUNTY

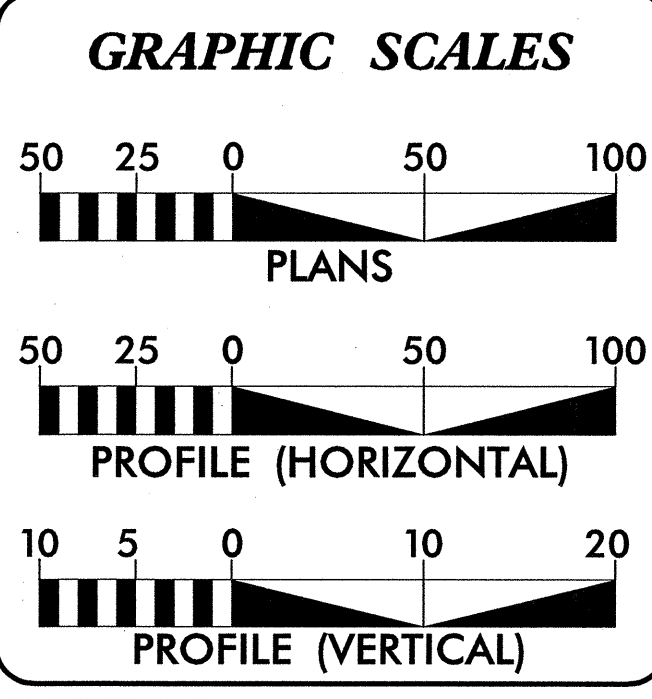
**LOCATION: REPLACEMENT OF BRIDGE No. 36
ON SR 1503 (UPPER CRABTREE RD.) OVER CRABTREE CREEK**

TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURES



CONTRACT: C201839 TIP PROJECT: B-3661

* DESIGN EXCEPTION FOR LANE WIDTH, SHOULDER WIDTH AND BRIDGE WIDTH.



DESIGN DATA

ADT 2008 =	1500
ADT 2028 =	2225
DHV =	12 %
D =	60 %
T =	4 % *
V =	35 MPH
* TTST 1 %	DUAL 3 %
RURAL MINOR COLLECTOR	

PROJECT LENGTH

LENGTH OF ROADWAY	F.A. PROJECT BRZ-1503 (4)	=	0.139 MI.
LENGTH OF STRUCTURE	F.A. PROJECT BRZ-1503 (4)	=	0.019 MI.
TOTAL LENGTH OF TIP PROJECT	B-3661	=	0.158 MI.

Prepared In the Office of:

Stantec Consulting Inc.
Suite 300, 801 Jones Franklin Road
Raleigh, NC U.S.A. 27606
Tel. 919.851.6866 Fax. 919.851.7024
www.stantec.com

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DEC. 15, 2006

LETTING DATE: MAY 20, 2008

NCDOT CONTACT: CATHY S. HOUSER, PE
PROJECT ENGINEER - DESIGN SERVICES

ROBERT WILLIAMS, PE
PROJECT ENGINEER

KEITH F. HUDSON
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

James C. Davis
SIGNATURE: P.E. 2/22/08

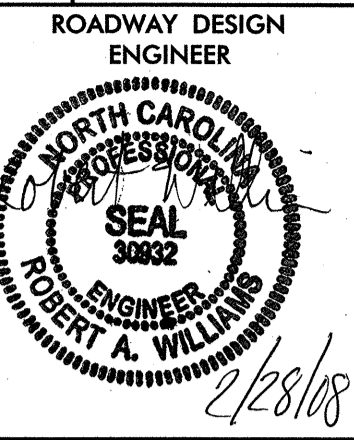
ROADWAY DESIGN ENGINEER

Robert Williams
SIGNATURE: P.E. 2/25/08

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS



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, WEDGING DETAILS, AND ROCK PLATING DETAILS
2A	ANCHORAGE FOR FRAMES DETAIL
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE QUANTITIES
3B	SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TCP-1 THRU TCP-7	TRAFFIC CONTROL PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS
X-1	CROSS SECTION SUMMARY SHEET
X-2 THRU X-15	CROSS-SECTIONS
S-1 THRU S-22	STRUCTURE PLANS

GENERAL NOTES

GENERAL NOTES: 2006 SPECIFICATIONS
EFFECTIVE: 07-18-06
REVISED: 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 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.

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.

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 Haywood Electric Membership Corp., AT&T (Formerly Southern Bell Telephone)
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

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

ROADWAY STANDARD DRAWINGS

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	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.22	Frames and Wide Slot Sag Grates
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
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
846.02	Drop Inlet Installation in Expressway Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
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

EFF. 07-18-06
REV. 01-02-07

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

Table listing symbols for boundaries and property: State Line, County Line, Township Line, City Line, Reservation Line, Property Line, Existing Iron Pin, Property Corner, Property Monument, Parcel/Sequence Number, Existing Fence Line, Proposed Woven Wire Fence, Proposed Chain Link Fence, Proposed Barbed Wire Fence, Existing Wetland Boundary, Proposed Wetland Boundary, Existing Endangered Animal Boundary, Existing Endangered Plant Boundary.

BUILDINGS AND OTHER CULTURE:

Table listing symbols for buildings and other culture: Gas Pump Vent or U/G Tank Cap, Sign, Well, Small Mine, Foundation, Area Outline, Cemetery, Building, School, Church, Dam.

HYDROLOGY:

Table listing symbols for hydrology: Stream or Body of Water, Hydro, Pool or Reservoir, Jurisdictional Stream, Buffer Zone 1, Buffer Zone 2, Flow Arrow, Disappearing Stream, Spring, Wetland, Proposed Lateral, Tail, Head Ditch, False Sump.

RAILROADS:

Table listing symbols for railroads: Standard Gauge, RR Signal Milepost, Switch, RR Abandoned, RR Dismantled.

RIGHT OF WAY:

Table listing symbols for 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 Utility Easement.

ROADS AND RELATED FEATURES:

Table listing symbols for roads and related features: Existing Edge of Pavement, Existing Curb, Proposed Slope Stakes Cut, Proposed Slope Stakes Fill, Proposed Wheel Chair Ramp, Proposed Wheel Chair Ramp Curb Cut, Curb Cut for Future Wheel Chair Ramp, Existing Metal Guardrail, Proposed Guardrail, Existing Cable Guiderail, Proposed Cable Guiderail, Equality Symbol, Pavement Removal.

VEGETATION:

Table listing symbols for vegetation: Single Tree, Single Shrub, Hedge, Woods Line, Orchard, Vineyard.

EXISTING STRUCTURES:

Table listing symbols for existing structures: Bridge, Tunnel or Box Culvert, Bridge Wing Wall, Head Wall and End Wall, Pipe Culvert, Footbridge, Drainage Box: Catch Basin, DI or JB, Paved Ditch Gutter, Storm Sewer Manhole, Storm Sewer.

UTILITIES:

Table listing symbols for utilities: 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:

Table listing symbols for 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:

Table listing symbols for 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:

Table listing symbols for 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:

Table listing symbols for gas: Gas Valve, Gas Meter, Recorded U/G Gas Line, Designated U/G Gas Line (S.U.E.*), Above Ground Gas Line.

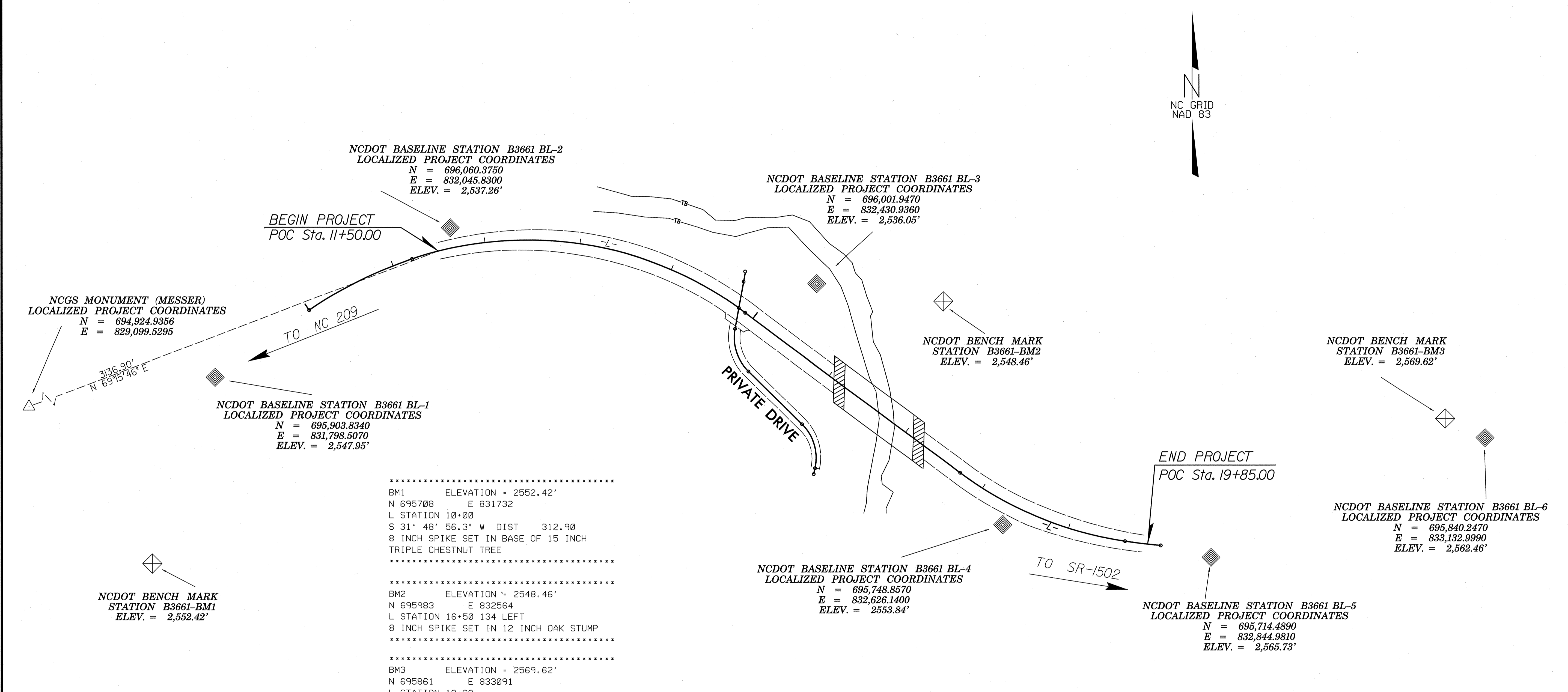
SANITARY SEWER:

Table listing symbols for 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:

Table listing symbols for miscellaneous: Utility Pole, Utility Pole with Base, Utility Located Object, Utility Traffic Signal Box, Utility Unknown U/G Line, U/G Tank; Water, Gas, Oil, A/G Tank; Water, Gas, Oil, U/G Test Hole (S.U.E.*), Abandoned According to Utility Records, End of Information.

SURVEY CONTROL SHEET B-3661



NCGS MONUMENT (MESSER)
LOCALIZED PROJECT COORDINATES
 N = 694,924.9356
 E = 829,099.5295

NCDOT BASELINE STATION B3661 BL-2
LOCALIZED PROJECT COORDINATES
 N = 696,060.3750
 E = 832,045.8300
 ELEV. = 2,537.26'

NCDOT BASELINE STATION B3661 BL-3
LOCALIZED PROJECT COORDINATES
 N = 696,001.9470
 E = 832,430.9360
 ELEV. = 2,536.05'

BEGIN PROJECT
 POC Sta. 11+50.00

NCDOT BENCH MARK
STATION B3661-BM2
 ELEV. = 2,548.46'

NCDOT BENCH MARK
STATION B3661-BM3
 ELEV. = 2,569.62'

NCDOT BASELINE STATION B3661 BL-1
LOCALIZED PROJECT COORDINATES
 N = 695,903.8340
 E = 831,798.5070
 ELEV. = 2,547.95'

END PROJECT
 POC Sta. 19+85.00

NCDOT BASELINE STATION B3661 BL-6
LOCALIZED PROJECT COORDINATES
 N = 695,840.2470
 E = 833,132.9990
 ELEV. = 2,562.46'

 BM1 ELEVATION = 2552.42'
 N 695708 E 831732
 L STATION 10+00
 S 31° 48' 56.3" W DIST 312.90
 8 INCH SPIKE SET IN BASE OF 15 INCH
 TRIPLE CHESTNUT TREE

NCDOT BENCH MARK
STATION B3661-BM1
 ELEV. = 2,552.42'

NCDOT BASELINE STATION B3661 BL-4
LOCALIZED PROJECT COORDINATES
 N = 695,748.8570
 E = 832,626.1400
 ELEV. = 2,553.84'

 BM2 ELEVATION = 2548.46'
 N 695983 E 832564
 L STATION 16+50 134 LEFT
 8 INCH SPIKE SET IN 12 INCH OAK STUMP

NCDOT BASELINE STATION B3661 BL-5
LOCALIZED PROJECT COORDINATES
 N = 695,714.4890
 E = 832,844.9810
 ELEV. = 2,565.73'

 BM3 ELEVATION = 2569.62'
 N 695861 E 833091
 L STATION 19+99
 N 65° 56' 46.6" E DIST 327.34
 8 INCH SPIKE SET IN BASE OF 12 INCH
 WILD CHERRY TREE

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1		695903.8340	831798.5070	2547.95	OUTSIDE PROJECT LIMITS	
2	BL-2		696060.3750	832045.8300	2537.26	11+67.37	21.25 LT
3	BL-3		696001.9470	832430.9360	2536.05	15+32.10	69.26 LT
4	BL-4		695748.8570	832626.1400	2553.84	18+36.35	22.74 RT
5	BL-5		695714.4890	832844.9810	2565.73	OUTSIDE PROJECT LIMITS	
6	BL-6		695840.2470	833132.9990	2562.46	OUTSIDE PROJECT LIMITS	

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "MESSER"
 WITH NAD 83 STATE PLANE GRID COORDINATES OF
 NORTHING: 694924.9356(ft) EASTING: 829099.5295(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999765277
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "MESSER" TO -L- STATION 11+50.00 IS
 N 69°15'46" E 3,136.90'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NGVD 29

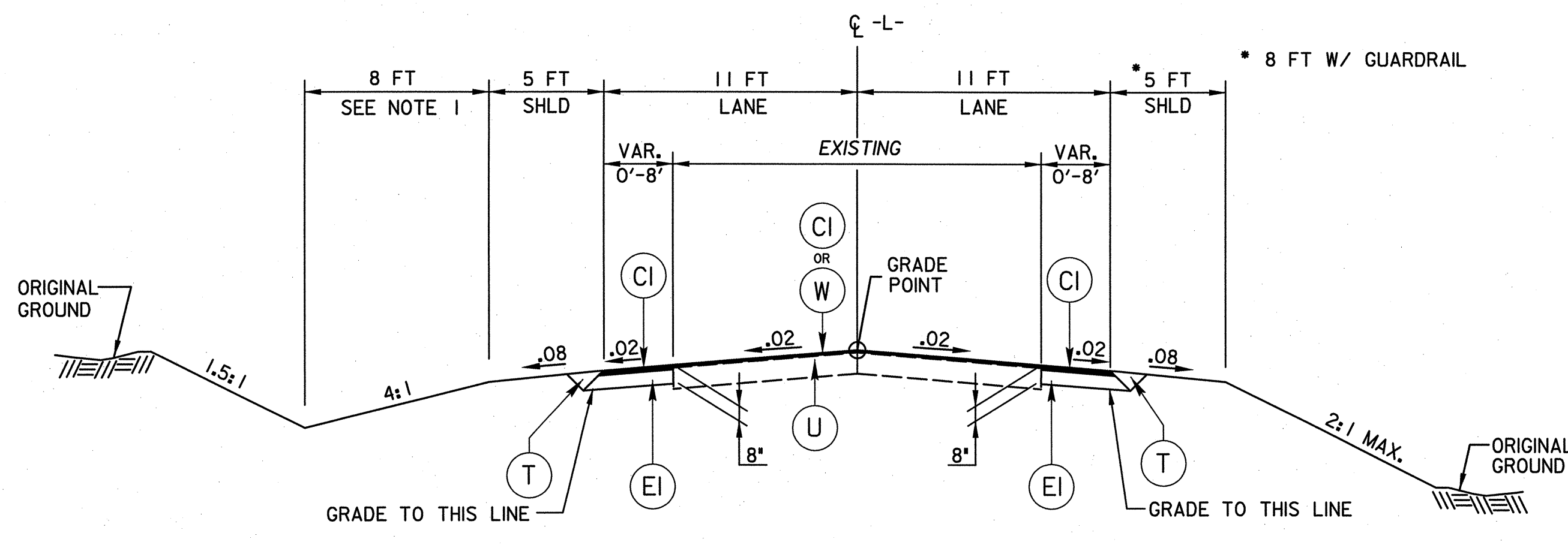
- NOTES:**
- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/PRECONSTRUCTION/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/preconstruction/highway/location/project/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 TIP B3661_LS_CONTROL_060705.TXT
 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.
- ◇ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR VERTICAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

NOTE: DRAWING NOT TO SCALE

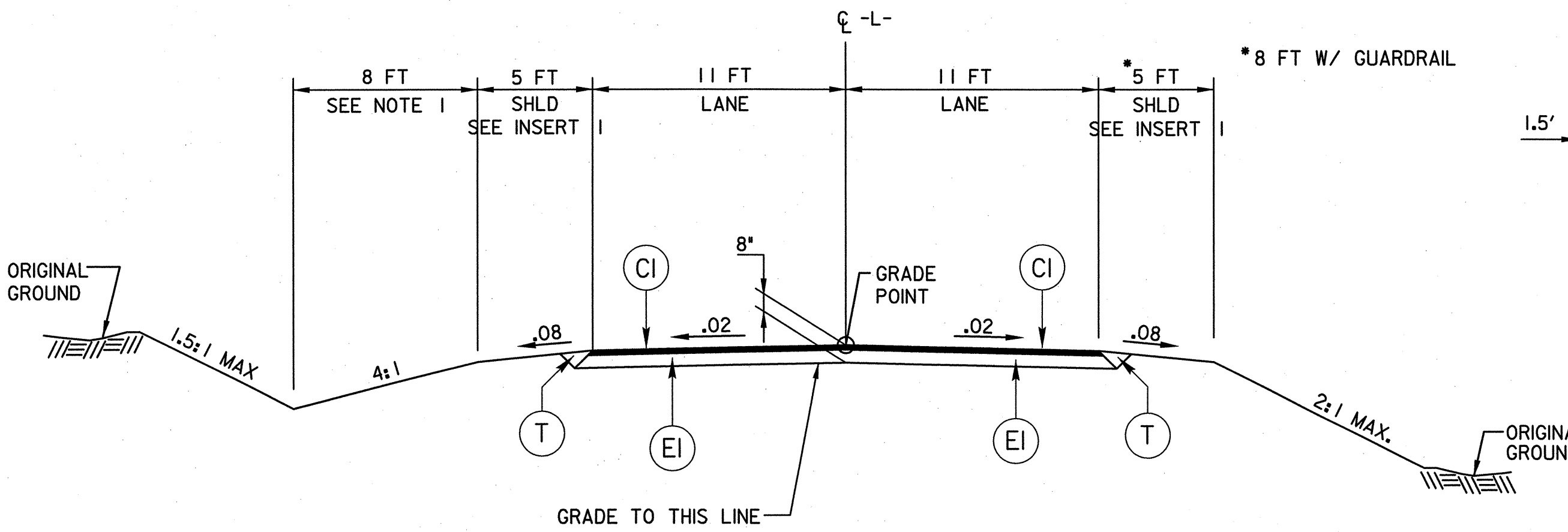
6/2/99
 U:\Location\Surveys\SurveyControl\B3661_1s_1c_060705.dgn
 2/4/2008

PAVEMENT SCHEDULE

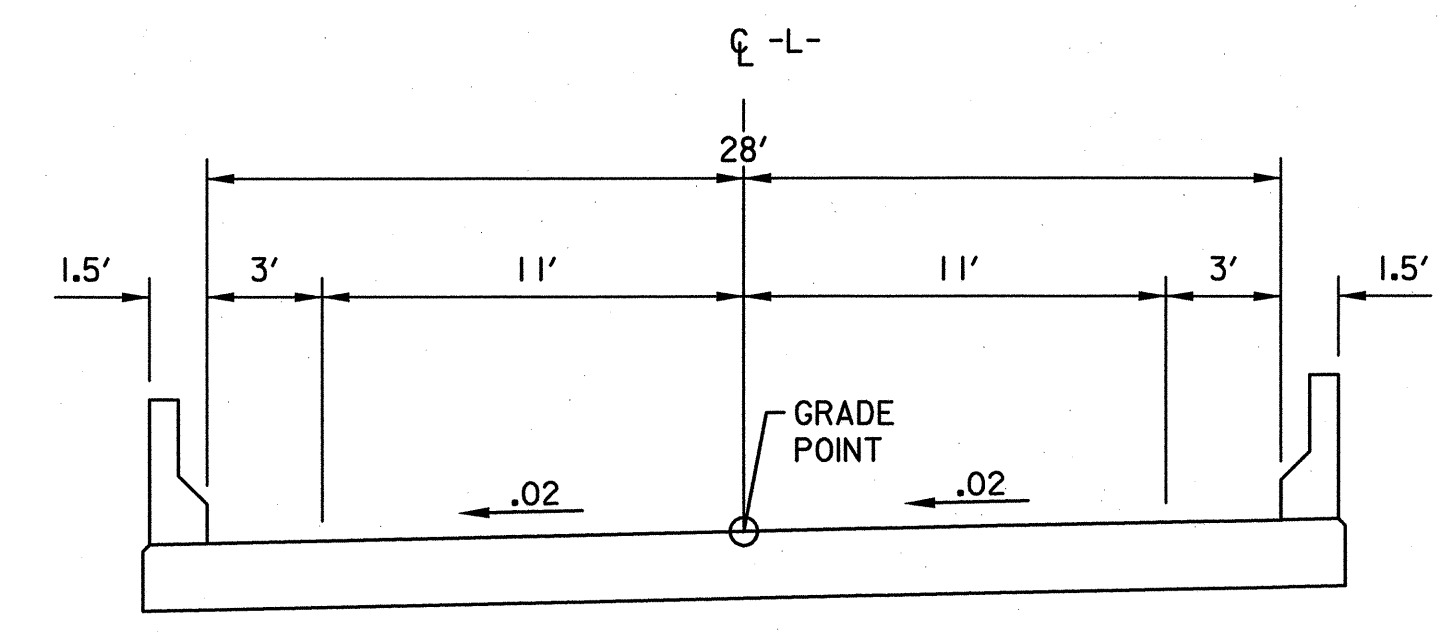
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1.5".
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 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 BE PLACED IN LAYERS NOT GREATER THAN 5.5" IN DEPTH OR LESS THAN 3" IN DEPTH.
J	PROPOSED 6" AGGREGATE BASE COURSE
P	PRIME COAT
R	CONCRETE EXPRESSWAY GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING (SEE DETAIL THIS SHEET)



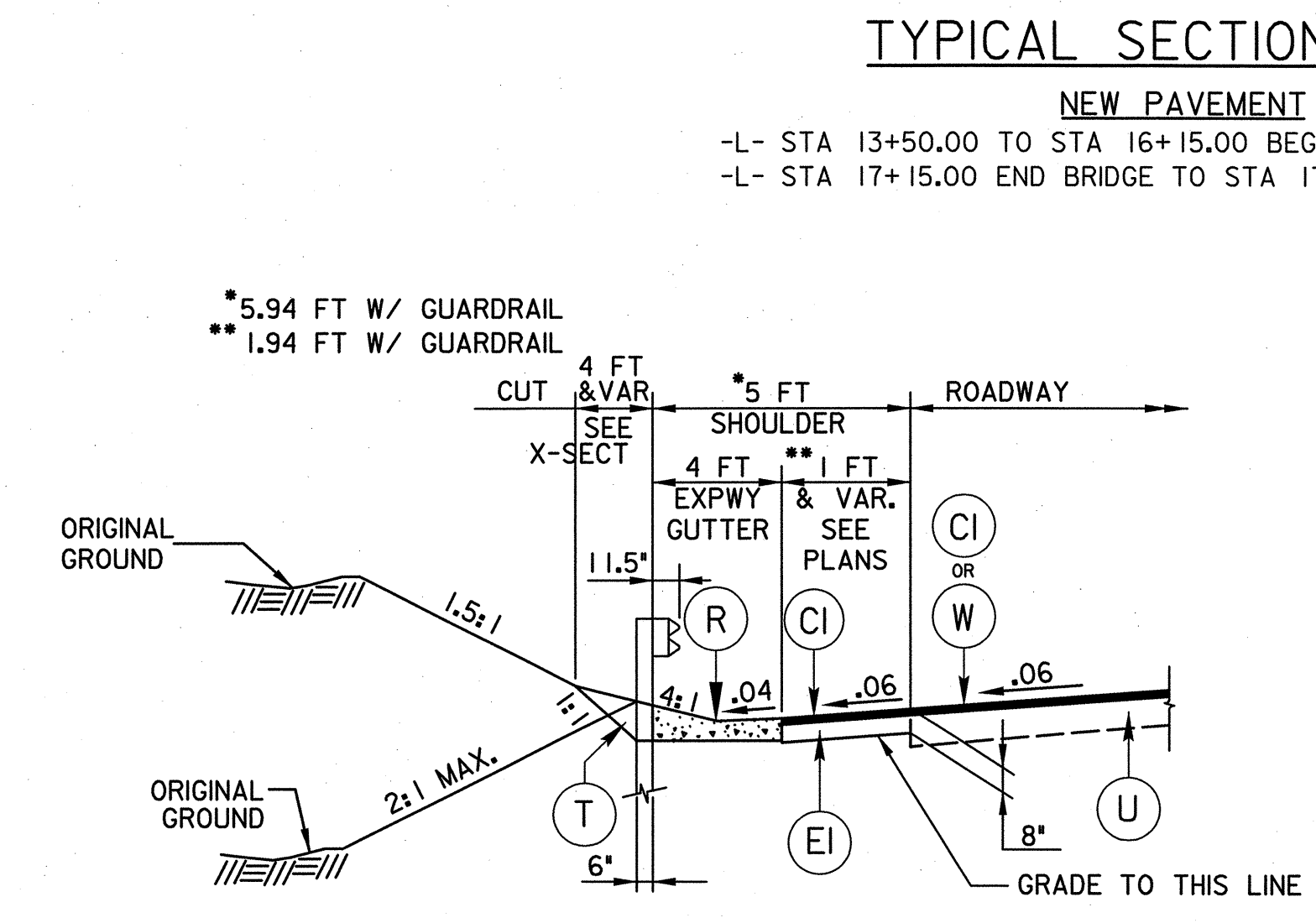
TYPICAL SECTION NO. 1
WIDENING & RESURFACING
 -L- STA 11+50.00 TO STA 13+50.00, SEE INSERT NO. 1
 -L- STA 17+50.00 TO STA 19+85.00, SEE INSERT NO. 1



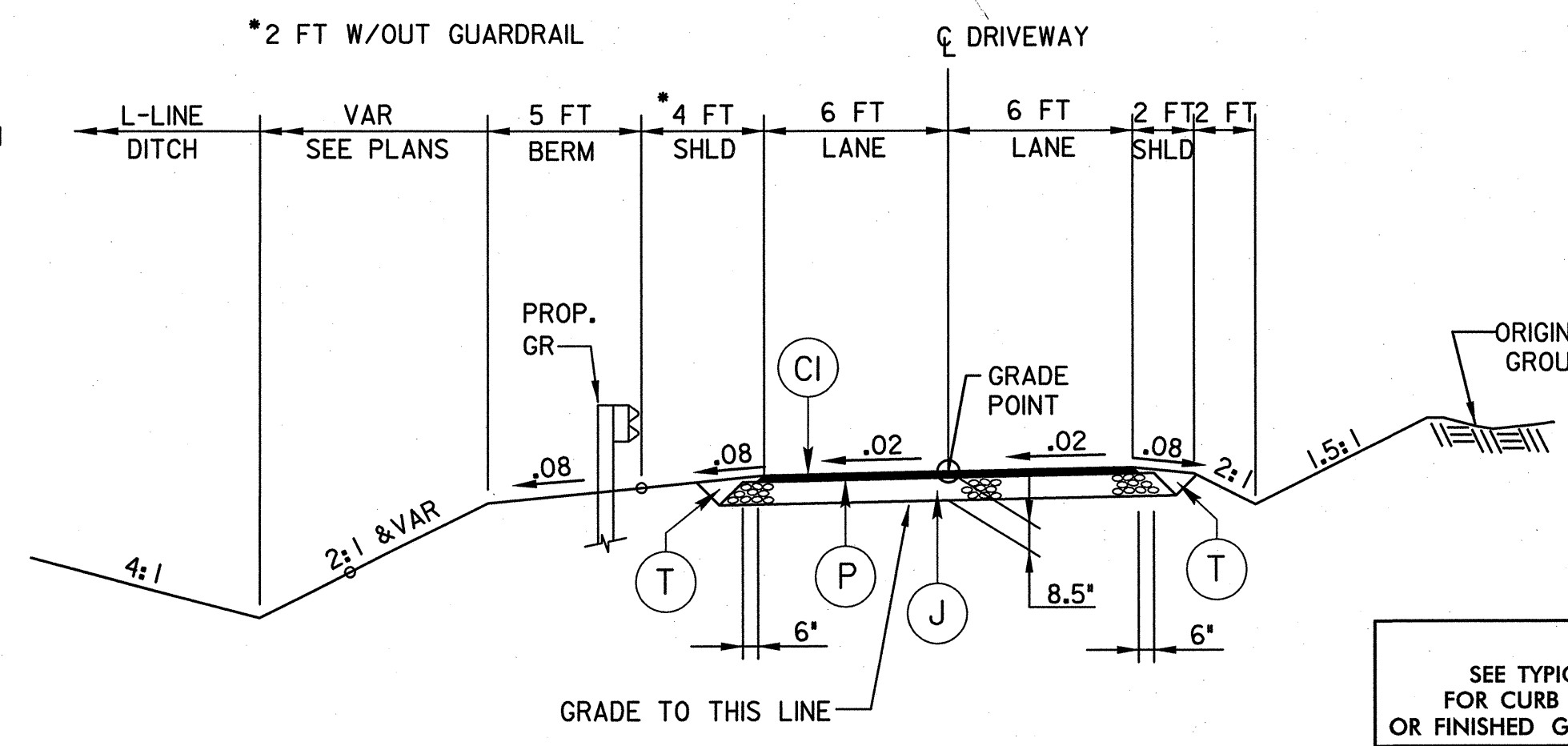
TYPICAL SECTION NO. 2
NEW PAVEMENT
 -L- STA 13+50.00 TO STA 16+15.00 BEG. BRIDGE, SEE INSERTS NO. 1
 -L- STA 17+15.00 END BRIDGE TO STA 17+50.00



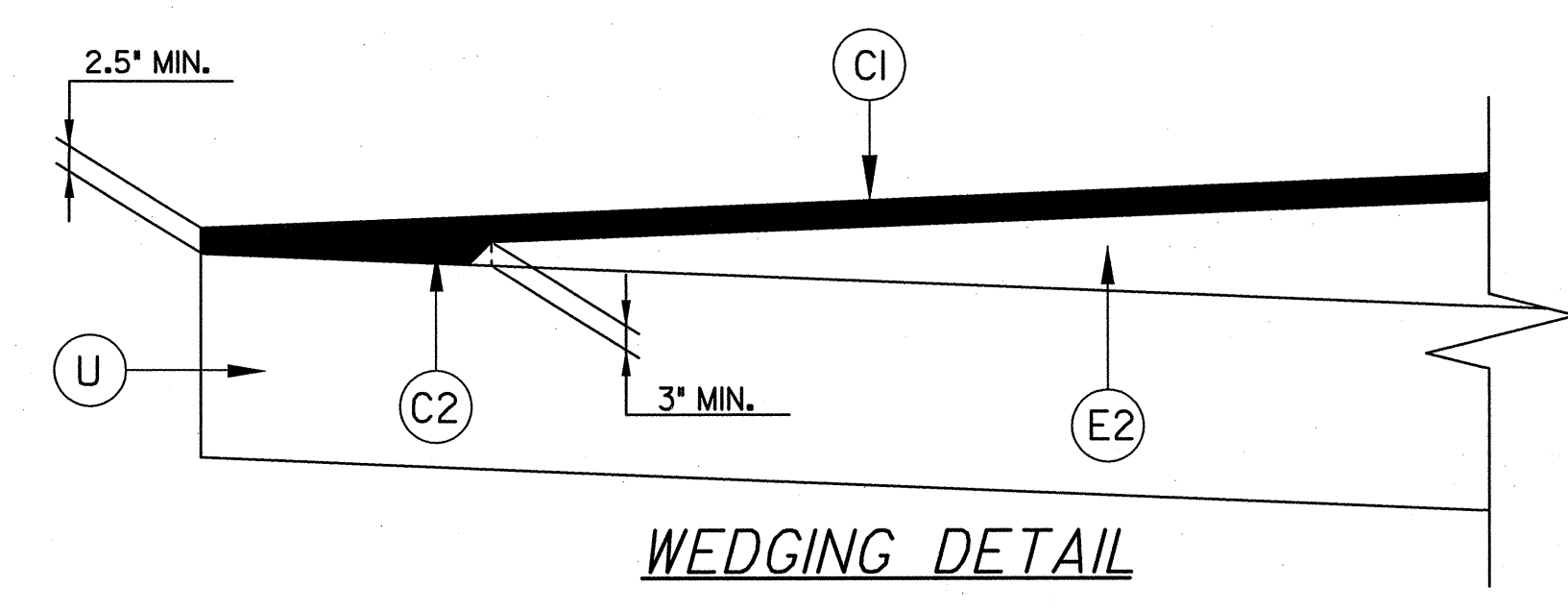
STRUCTURE TYPICAL SECTION
 -L- STA. 16+15.00 TO STA. 17+15.00



INSERT 1
 -L- STA 12+00.00 TO STA 14+71.00 RT.
 -L- STA 17+50.00 TO STA 19+50.00 LT.
 W/GUARDRAIL
 -L- STA 17+08.50 TO STA 18+96.00 LT.

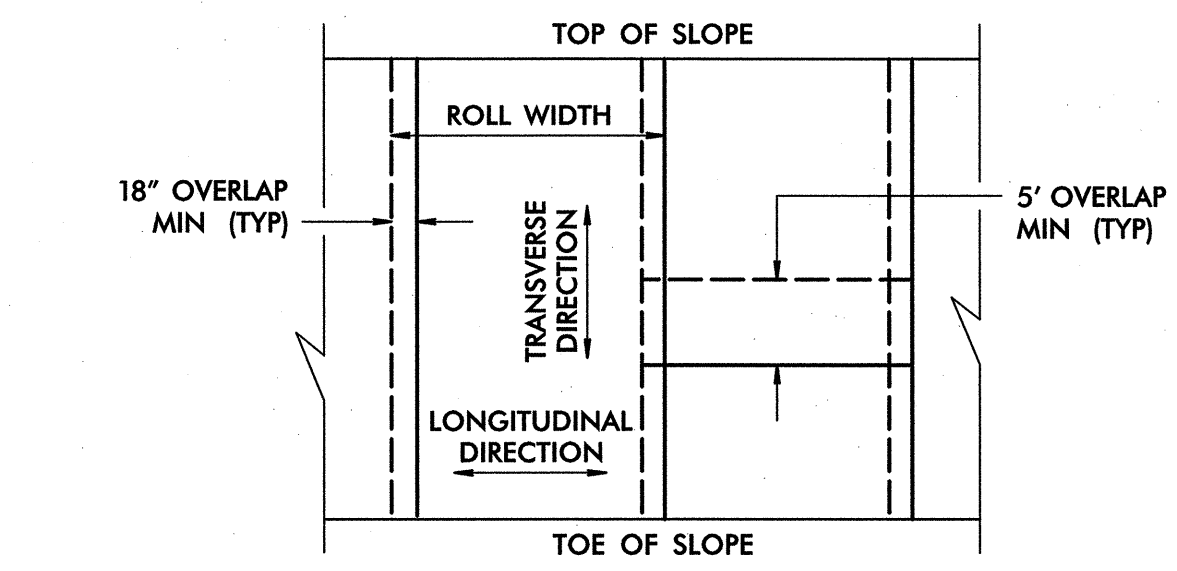
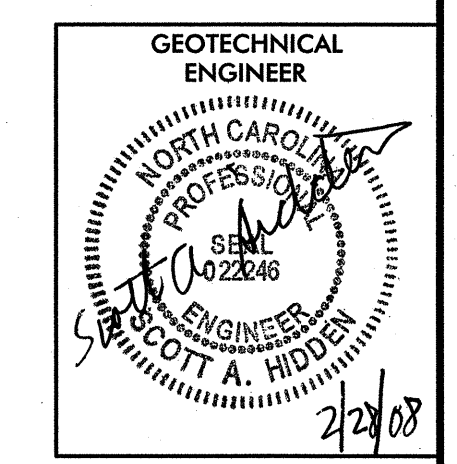


TYPICAL SECTION NO. 3
PRIVATE DRIVEWAY
 PVT DRIVE STA 10+27+/- TO STA 12+00.34

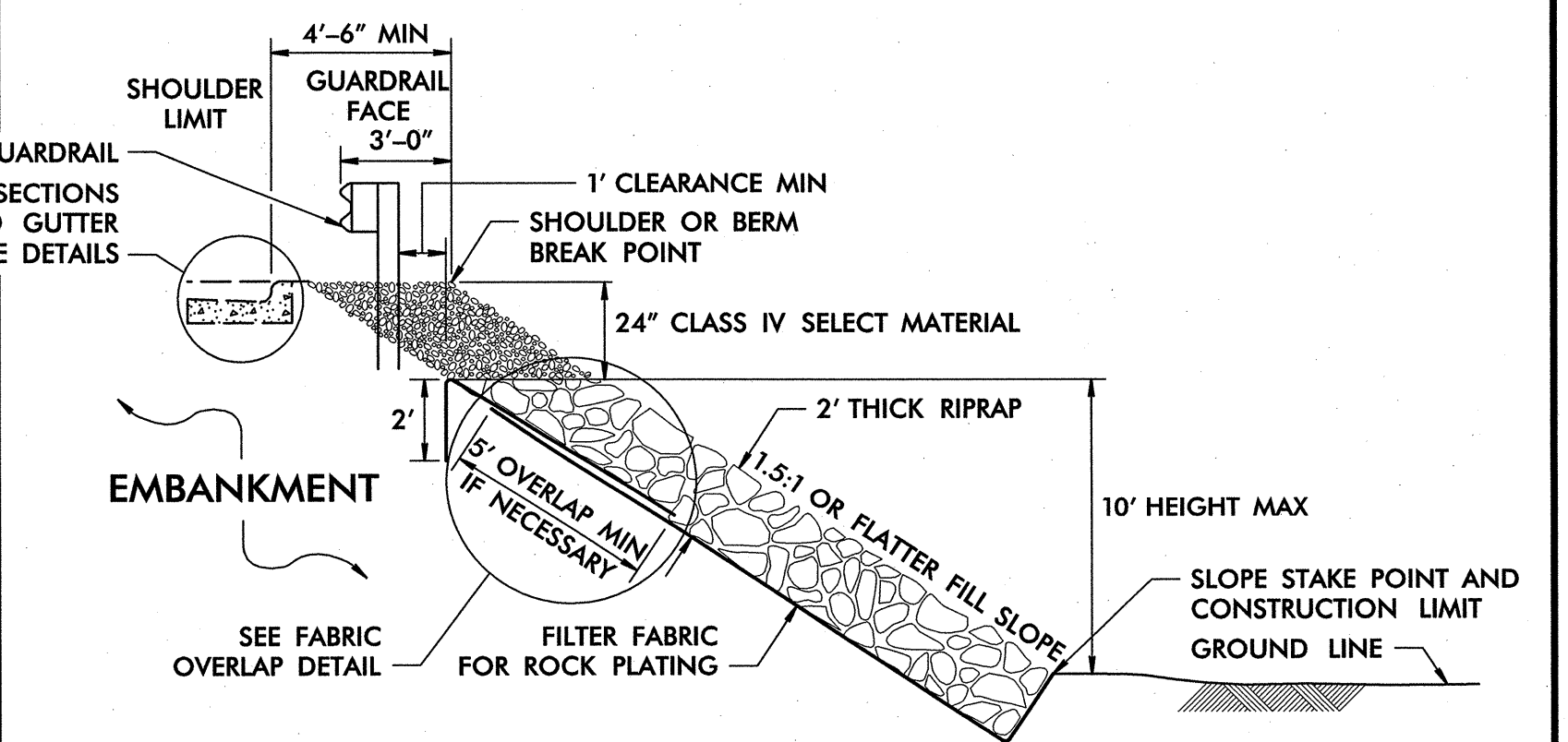


WEDGING DETAIL

ESTIMATED QUANTITIES:
 ROCK PLATING ----- 275 SQ. YD.



FABRIC OVERLAP DETAIL
(PLAN VIEW)



ROCK PLATING DETAIL NO. 1

USE ROCK PLATING DETAIL NO. 1 AT THE FOLLOWING LOCATIONS:

-L- STA 11+25 ± TO -L- STA 13+25 ±
 EXTEND ROCK PLATING LIMITS TO EXISTING SLOPES.
 SEE NOTE 3

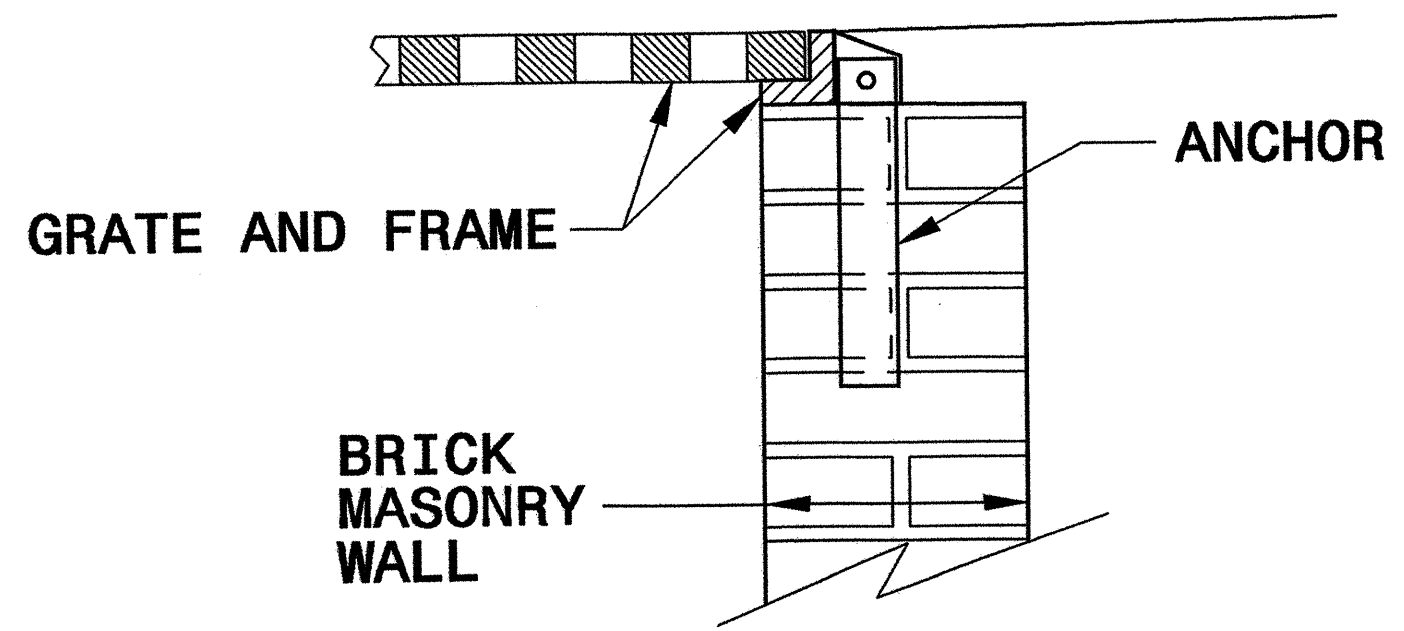
- NOTES:
- DISTANCE WILL VARY TO REACH THE DESIRED ELEVATION AS ESTABLISHED BY THE DITCH GRADE. (SEE PROFILES AND X-SECTIONS)
 - ALL PAVEMENT STRUCTURE SLOPES ARE 1:1 UNLESS OTHERWISE SPECIFIED.
 - FOR ROCK PLATING, SEE ROCK PLATING SPECIAL PROVISION.

8/17/99
 2/28/2008 10:25:17 AM
 U:\Roadway\Pro\153661.rdy-1.rdy.dgn

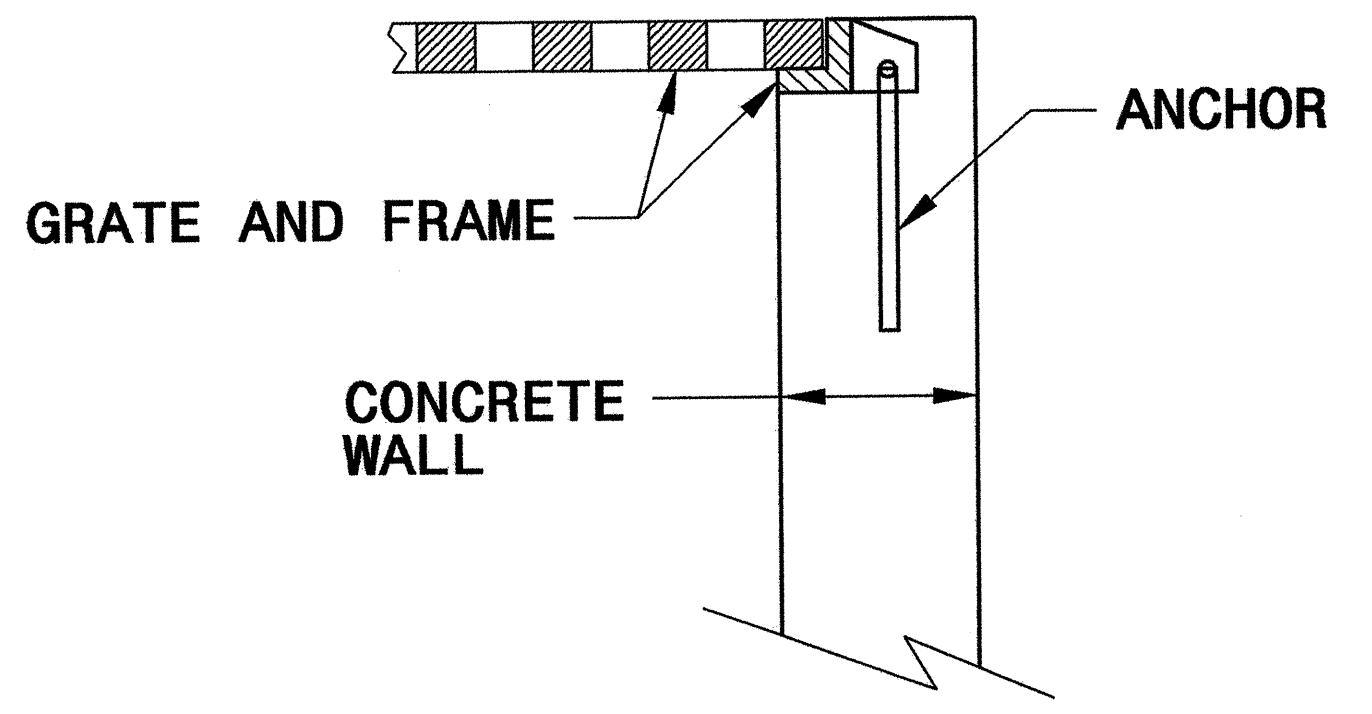
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE

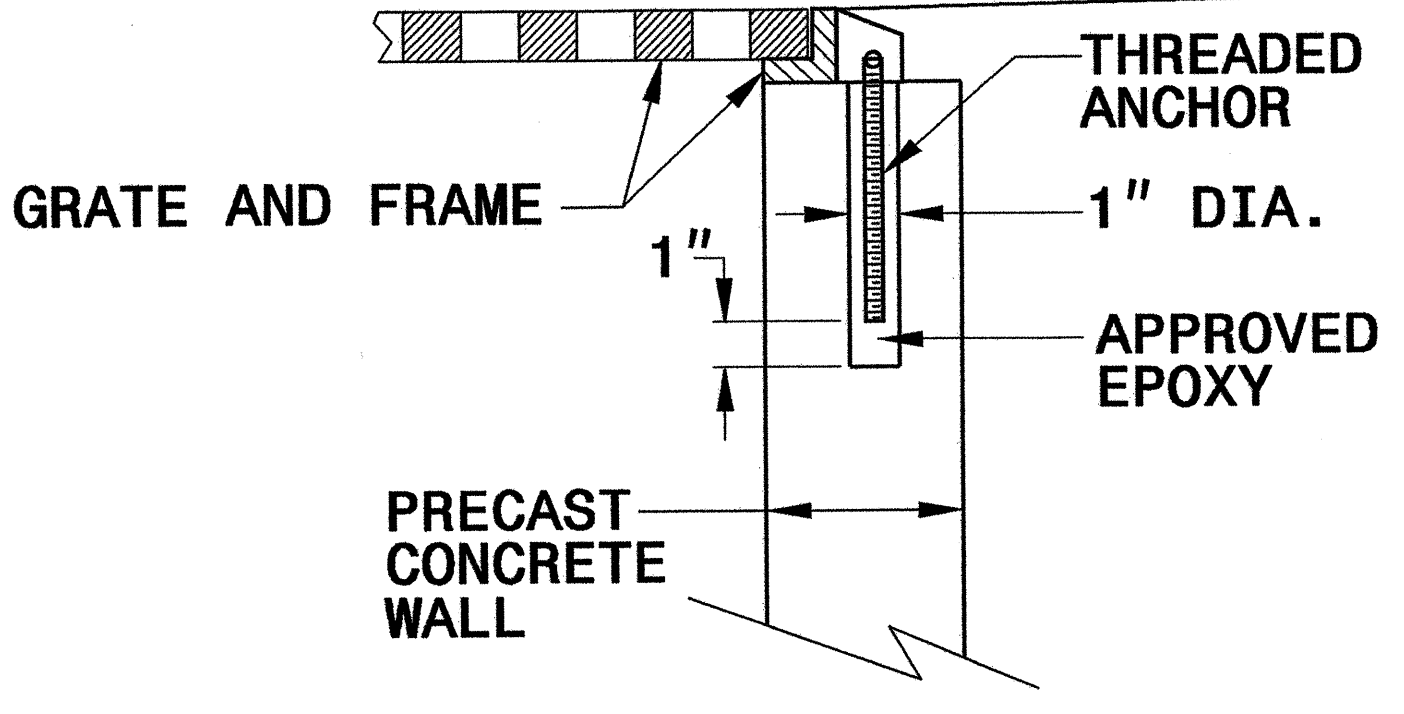
SHEET 1 OF 1
840D25



BRICK MASONRY CONSTRUCTION



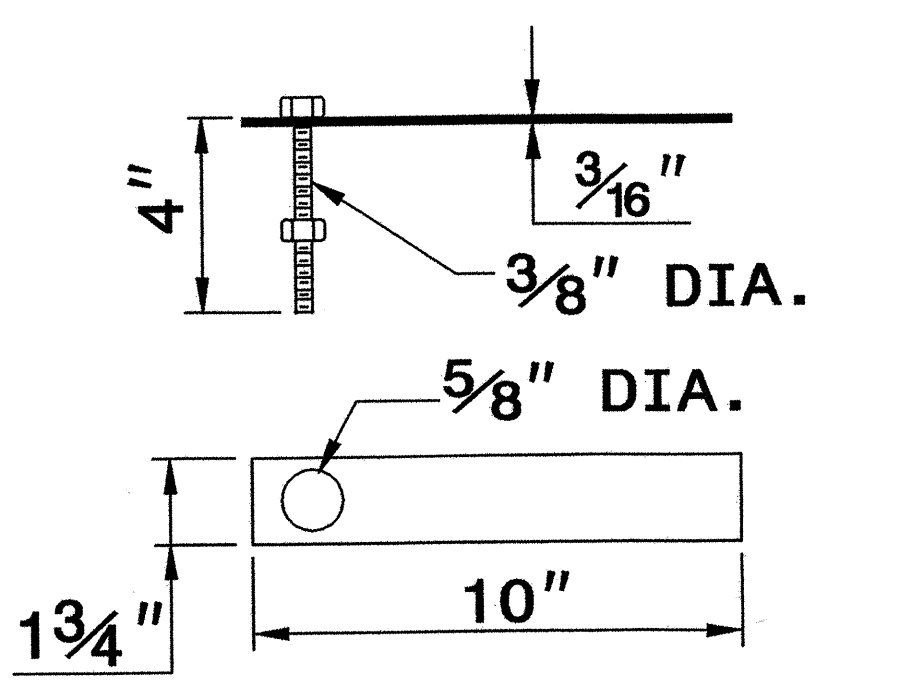
CONCRETE CONSTRUCTION



PRECAST CONCRETE CONSTRUCTION

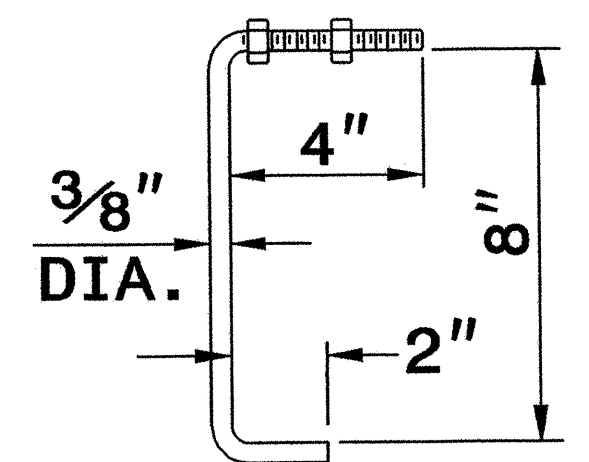
DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



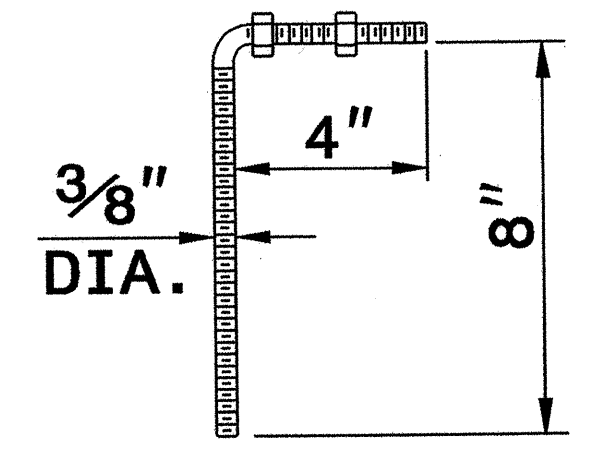
MASONRY ANCHOR

3/8" DIA. BOLT WITH PLATE



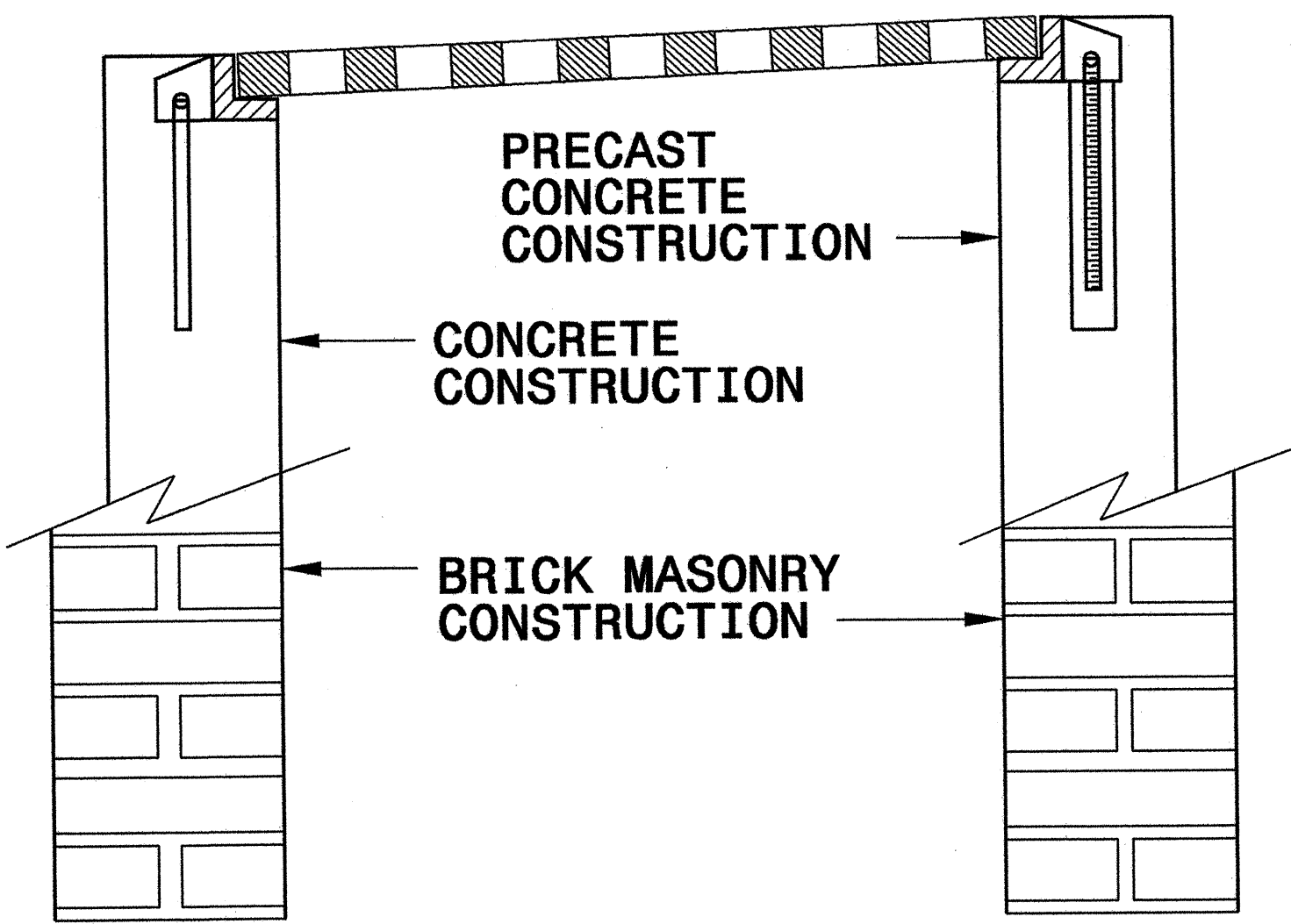
CONCRETE ANCHOR

3/8" DIA. BENT BAR



PRECAST CONCRETE ANCHOR

3/8" DIA. BENT BAR

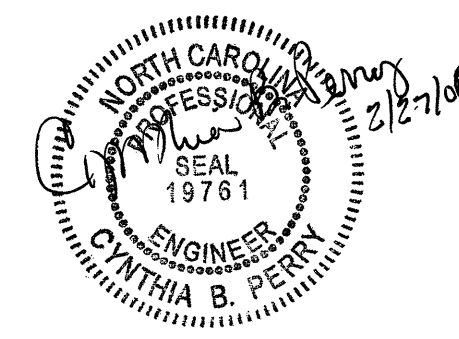


FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

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

ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1
840D25



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

SEE PLATE FOR TITLE

ORIGINAL BY: 2006 STD 840.25 DATE: 07/18/06
MODIFIED BY: E.E. WARD DATE: 9/25/06
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

27-SEP-2006 09:59
S:\Contracts\840D25\Special Details\enrcward\stds\06\Std840D25 Anchoage for Frames\0840D25.dgn
enrcward A1 PC22233

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201839

ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION
002200000-E	225	20,000	CY	UNCLASSIFIED EXCAVATION
002900000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (16+65.00)
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
005700000-E	226	570	CY	UNDERCUT EXCAVATION
006300000-N	SP	Lump Sum		GRADING
008000000-E	SP	500	TON	CLASS IV SUBGRADE STABILIZATION
013400000-E	240	20	CY	DRAINAGE DITCH EXCAVATION
019500000-E	265	500	CY	SELECT GRANULAR MATERIAL
019600000-E	270	500	SY	FABRIC FOR SOIL STABILIZATION
024100000-E	SP	275	SY	GENERIC GRADING ITEM ROCK PLATING
031800000-E	300	90	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
036600000-E	310	572	LF	15" RC PIPE CULVERTS, CLASS III
037200000-E	310	184	LF	18" RC PIPE CULVERTS, CLASS III
099500000-E	340	30	LF	PIPE REMOVAL
112100000-E	520	96	TON	AGGREGATE BASE COURSE
122000000-E	545	100	TON	INCIDENTAL STONE BASE
127500000-E	600	88	GAL	PRIME COAT
148900000-E	610	920	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
152500000-E	610	315	TON	ASPHALT CONC SURFACE COURSE, TYPE SP9.5A
156000000-E	620	65	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
202200000-E	815	115	CY	SUBDRAIN EXCAVATION
203300000-E	815	85	CY	SUBDRAIN FINE AGGREGATE
204400000-E	815	500	LF	6" PERFORATED SUBDRAIN PIPE

ItemNumber	Sec #	Quantity	Unit	Description
205500000-E	815	15	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS
206600000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET
207700000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)
228600000-N	840	10	EA	MASONRY DRAINAGE STRUCTURES
236500000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.22
236700000-N	840	9	EA	FRAME WITH TWO GRATES, STD 840.29
257700000-E	846	530	LF	CONCRETE EXPRESSWAY GUTTER
303000000-E	862	575	LF	STEEL BM GUARDRAIL
304500000-E	862	40	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
327000000-N	SP	6	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
331700000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
355700000-E	866	100	LF	ADDITIONAL BARBED WIRE
355900000-E	866	900	LF	** STRAND BARBED WIRE FENCE WITH POSTS (4)
364900000-E	876	20	TON	RIP RAP, CLASS B
365600000-E	876	225	SY	FILTER FABRIC FOR DRAINAGE
440000000-E	1110	174	SF	WORK ZONE SIGNS (STATIONARY)
440500000-E	1110	186	SF	WORK ZONE SIGNS (PORTABLE)
441000000-E	1110	56	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
443000000-N	1130	60	EA	DRUMS
443500000-N	1135	20	EA	CONES
444500000-E	1145	96	LF	BARRICADES (TYPE III)
445000000-N	1150	236	HR	FLAGGER
451600000-N	1180	10	EA	SKINNY DRUM

ItemNumber	Sec #	Quantity	Unit	Description
481000000-E	1205	21,000	LF	PAINT PAVEMENT MARKING LINES (4")
600000000-E	1605	930	LF	TEMPORARY SILT FENCE
600600000-E	1610	90	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	285	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	240	TON	SEDIMENT CONTROL STONE
601500000-E	1615	3	ACR	TEMPORARY MULCHING
601800000-E	1620	150	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	1.5	TON	FERTILIZER FOR TEMPORARY SEEDING
602900000-E	SP	350	LF	SAFETY FENCE
603000000-E	1630	540	CY	SILT EXCAVATION
603600000-E	1631	850	SY	MATTING FOR EROSION CONTROL
603700000-E	SP	10	SY	COIR FIBER MAT
603800000-E	SP	125	SY	PERMANENT SOIL REINFORCEMENT MAT
604200000-E	1632	515	LF	1/4" HARDWARE CLOTH
607103000-E	SP	25	LF	COIR FIBER BAFFLES
607105000-E	SP	1	EA	*** SKIMMER (1-1/2")
608400000-E	1660	4.5	ACR	SEEDING & MULCHING
608700000-E	1660	2.5	ACR	MOWING
609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	100	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	3	TON	FERTILIZER TOPDRESSING
611400000-N	SP	2	HR	SPECIALIZED HAND MOWING
611700000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
612300000-E	1670	0.3	ACR	REFORESTATION

5/28/99

8/27/2007
U:\Roadway\Proj\3661\rdy_psh_3.dgn
Pawilliams

WILLIAMSRA-SP2

COMPUTED BY: <u>RAW</u>	DATE: <u>Jul 07</u>
CHECKED BY: <u>KFH</u>	DATE: <u>Jul 07</u>

PROJECT NO.	SHEET NO.
B-3661	3B

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
SUMMARY NO. 1					
11+50.00	16+20.58	21,004	242		20,762
TOTAL SUMMARY NO. 1:		21,004	242		20,762
SUMMARY NO. 2					
17+09.04	19+80.00	785	285		500
TOTAL SUMMARY NO. 2		785	285		500
SUBTOTALS:					
		21,789	527		21,262
ADJUSTMENT DUE TO:					
Est. Loss Due to Clearing and Grubbing		-1,980			-1,980
Rock Waste to Replace Earth			-87		87
Adjustment For Rock Waste					1,425
PROJECT TOTALS:		19,809	440		20,794
GRAND TOTALS:					
		19,809			20,794
SAY:		20,000			21,000

SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL

LINE	Station	Station	LOC LT/RT/CL	YD ²
L-Line	13+10+/-	15+50+/-	LT	204.1
L-Line	16+40+/-	17+80+/-	LT	255.3
L-Line	17+95+/-	19+00+/-	RT	43.9
Detour (Temp.)	14+75+/-		LT	26.7
TOTAL:				530
SAY:				550

Est. Undercut Contingency Item = 500 CY
 Est. Undercut Grade Point = 70 Cu. Yd.
 Est. Select Granular Material = 500 Cu. Yd.
 Est. Fabric for Soil Stabilization Contingency = 500 Sq. Yd.
 Est. CL, IV Subgrade Stabilization Contingency = 500 Tons
 Est. DDE = 20 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.

Approximate quantities only. fine grading, clearing and grubbing, 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

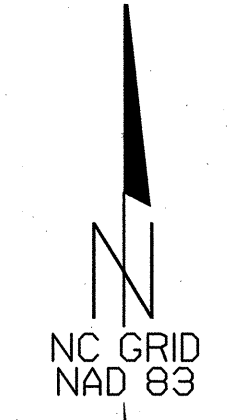
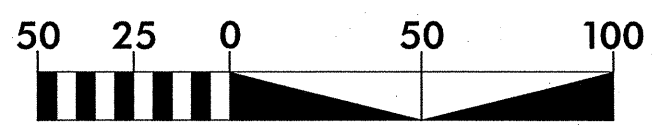
GUARDRAIL SUMMARY

LINE	BEG. STA.	END STA.	LOC.	LENGTH			WARRANT POINT		"N" DIST FROM E.O.L.	TOTAL SHLDR WIDTH	FLARE LENGTH		W		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	TYPE B-77	GRAU 350	AT-1	EA	G	NG					
-L-	11+60.00	13+85.00	LT	225			13+85.00		5	8	100		2												
-L-	15+17.70	16+05.20	LT	87.5				16+05.20	5	8	62.5		1.7												
-L-	15+12.30	16+24.80	RT	112.5				16+24.80	4	9															
Pvt. Ent.	10+50.00	11+90.00	LT	100	40																				
-L-	17+05.20	18+92.70	LT	187.5				17+05.20	5	8	100		2												
-L-	17+24.80	19+62.30	RT	237.5				19+62.30	5	8	100		2												
SUBTOTAL				950	40										4	6				2					
DEDUCT FOR ANCHOR UNITS:																									
TYPE B-77= 4 @ 18.75				75																					
GRAU 350= 6 @ 50.00				300																					
AT-1= 2 @ 6.25				12.5																					
GRAND TOTAL=				562.5																					
SAY=				575	40										4	6				2					

(5 Additional Guardrail Posts)

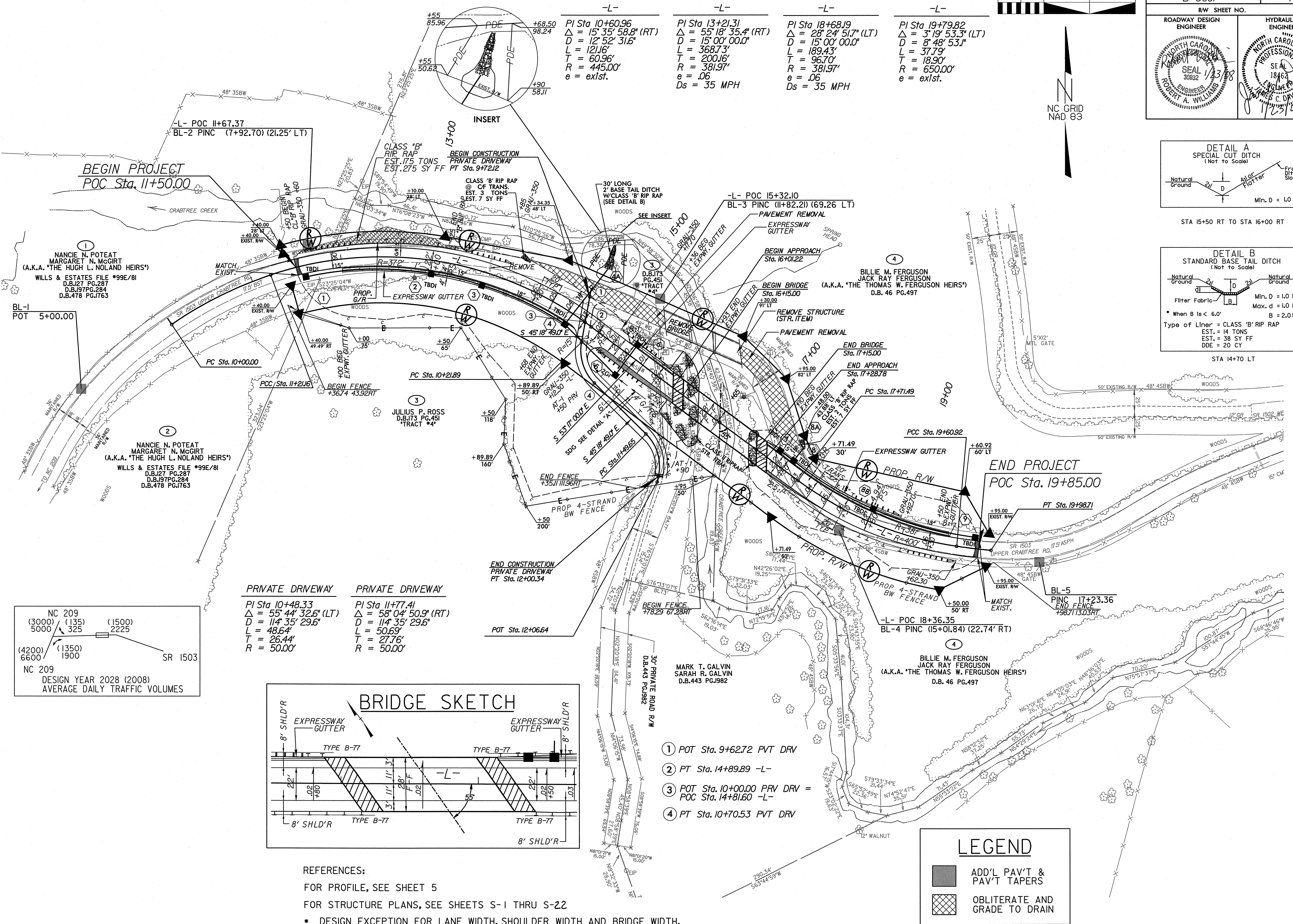
8/17/99

U:\Roadway\Pro\153661.rdy-psh.dgn
cauth@nc.com



PROJECT REFERENCE NO. B-3661		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER ROBERT A. WILLIAMS SEAL 30832		HYDRAULICS ENGINEER JAMES C. DAVIS SEAL 18463	

-L-	-L-	-L-	-L-
PI Sta. 10+60.96 Δ = 15° 35' 58.8" (RT) D = 12° 52' 31.6" L = 121.6' T = 60.96' R = 445.00' e = exlst.	PI Sta. 13+21.31 Δ = 55° 18' 35.4" (RT) D = 15° 00' 00.0" L = 368.73' T = 200.16' R = 381.97' e = .06 Ds = 35 MPH	PI Sta. 18+68.19 Δ = 28° 24' 51.7" (LT) D = 15° 00' 00.0" L = 189.43' T = 96.70' R = 381.97' e = .06 Ds = 35 MPH	PI Sta. 19+79.82 Δ = 3° 19' 53.3" (LT) D = 8° 48' 53.1" L = 37.79' T = 18.90' R = 650.00' e = exlst.



1
NANCIE N. POTEAT
MARGARET N. MCGIRT
(A.K.A. "THE HUGH L. NOLAND HEIRS")
WILLS & ESTATES FILE #99E/81
D.B.127 PG.287
D.B.197 PG.284
D.B.478 PG.1763

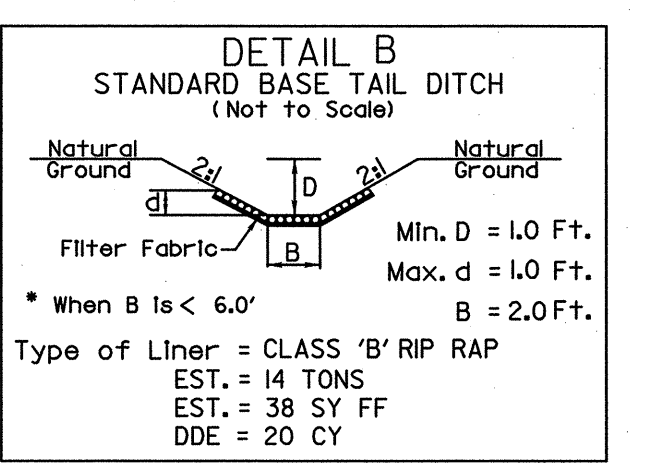
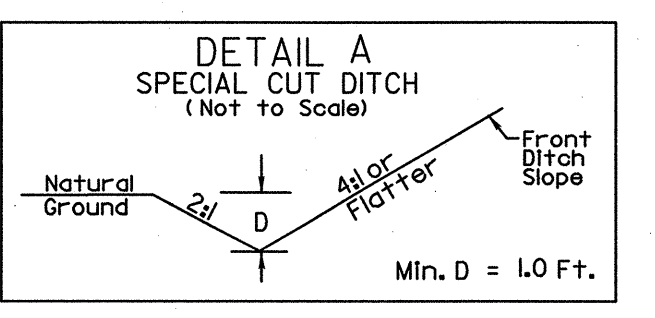
2
NANCIE N. POTEAT
MARGARET N. MCGIRT
(A.K.A. "THE HUGH L. NOLAND HEIRS")
WILLS & ESTATES FILE #99E/81
D.B.127 PG.287
D.B.197 PG.284
D.B.478 PG.1763

3
JULIUS P. ROSS
D.B.173 PG.451
TRACT #4

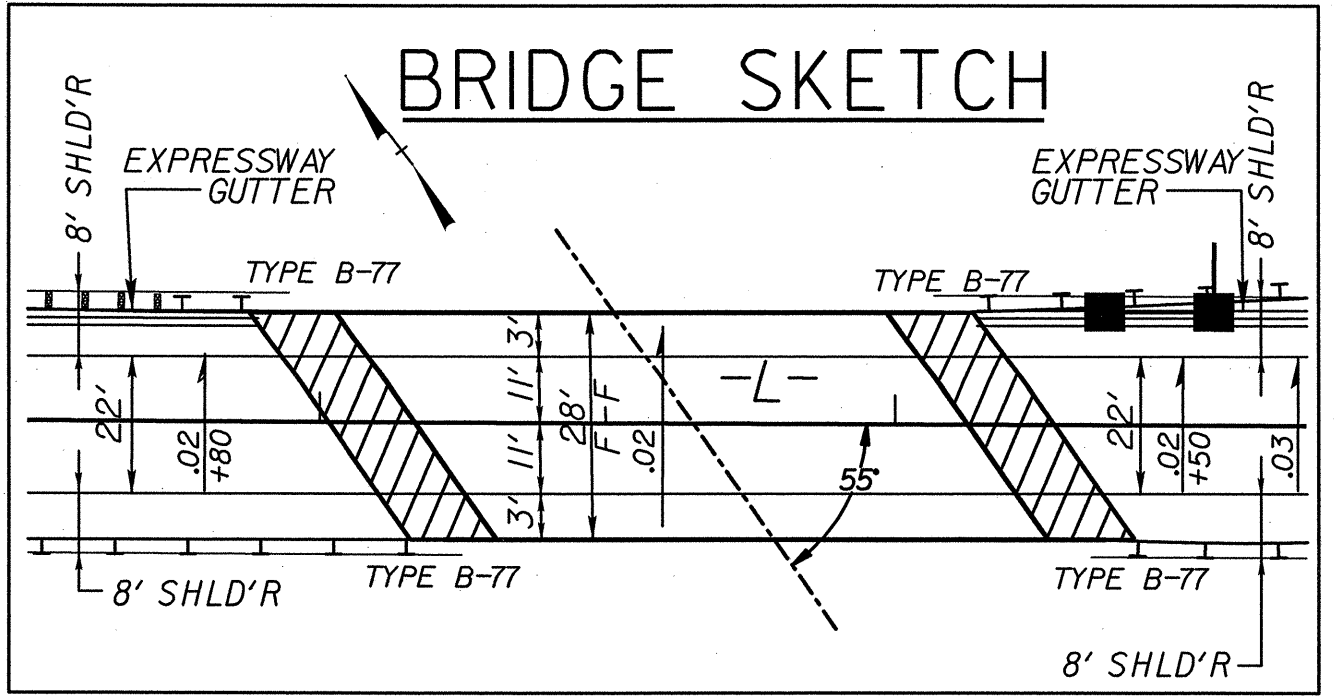
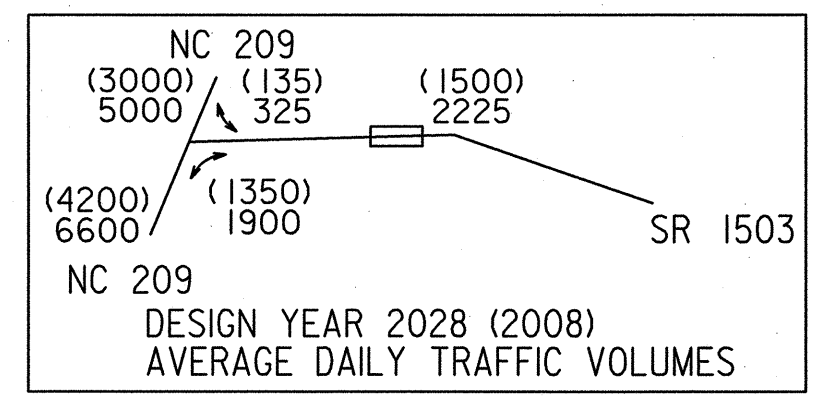
4
BILLIE M. FERGUSON
JACK RAY FERGUSON
(A.K.A. "THE THOMAS W. FERGUSON HEIRS")
D.B. 46 PG.497

MARK T. GALVIN
SARAH R. GALVIN
D.B.443 PG.1982

4
BILLIE M. FERGUSON
JACK RAY FERGUSON
(A.K.A. "THE THOMAS W. FERGUSON HEIRS")
D.B. 46 PG.497



PRIVATE DRIVEWAY	PRIVATE DRIVEWAY
PI Sta. 10+48.33 Δ = 55° 44' 32.6" (LT) D = 114° 35' 29.6" L = 48.64' T = 26.44' R = 50.00'	PI Sta. 11+77.41 Δ = 58° 04' 50.9" (RT) D = 114° 35' 29.6" L = 50.69' T = 27.76' R = 50.00'



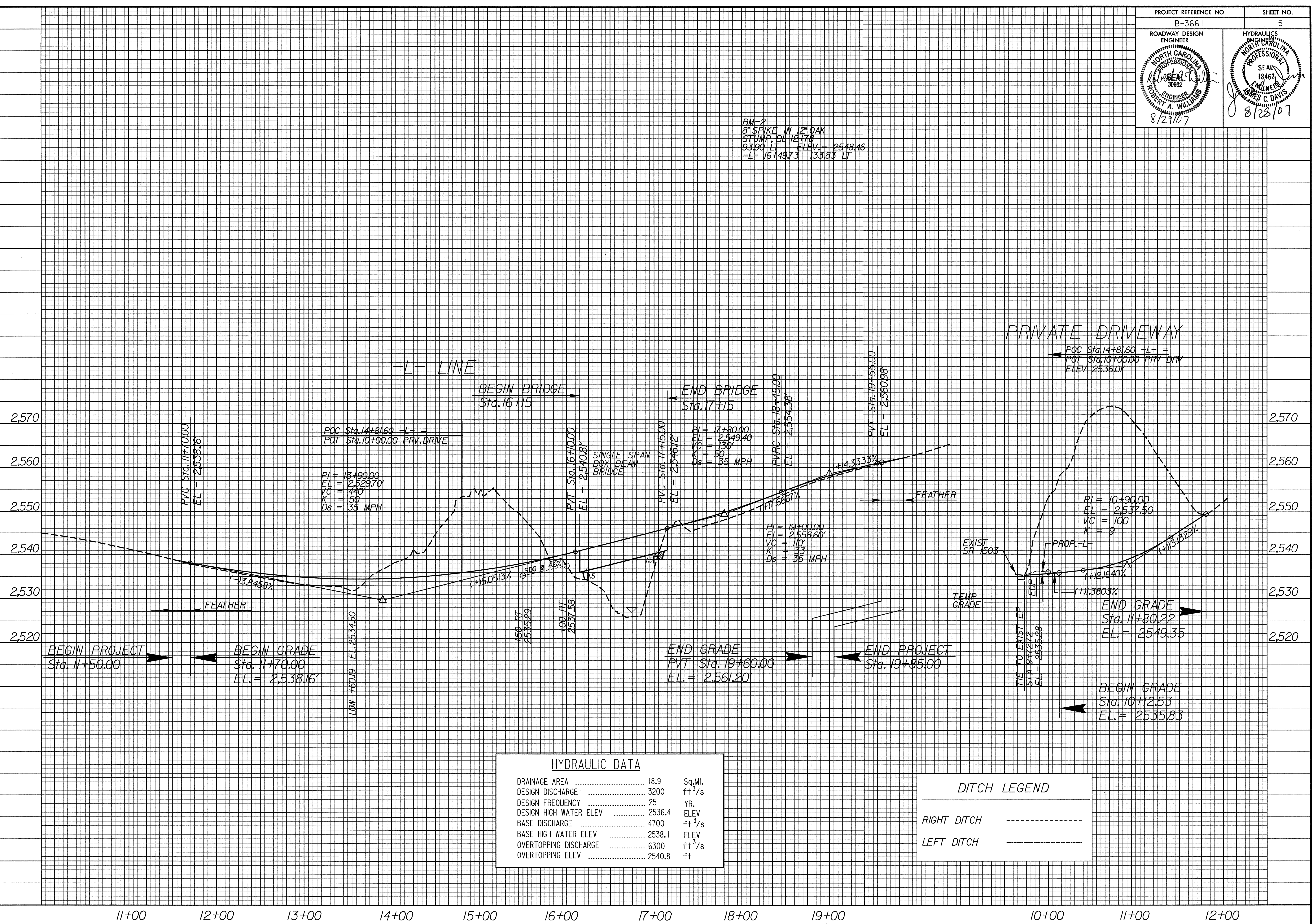
- 1 POT Sta. 9+62.72 PVT DRV
- 2 PT Sta. 14+89.89 -L-
- 3 POT Sta. 10+00.00 PRV DRV =
POT Sta. 14+81.60 -L-
- 4 PT Sta. 10+70.53 PVT DRV

REFERENCES:
FOR PROFILE, SEE SHEET 5
FOR STRUCTURE PLANS, SEE SHEETS S-1 THRU S-22
* DESIGN EXCEPTION FOR LANE WIDTH, SHOULDER WIDTH AND BRIDGE WIDTH.

LEGEND

	ADD'L PAV'T & PAV'T TAPERS
	OBLITERATE AND GRADE TO DRAIN

BM-2
8" SPIKE IN 12" OAK
STUMP DL 12+78
93.90 LT ELEV. = 2548.46
+L = 16+49.73 133.83 LT



HYDRAULIC DATA		
DRAINAGE AREA	18.9	Sq.Mi.
DESIGN DISCHARGE	3200	ft ³ /s
DESIGN FREQUENCY	25	YR.
DESIGN HIGH WATER ELEV	2536.4	ELEV
BASE DISCHARGE	4700	ft ³ /s
BASE HIGH WATER ELEV	2538.1	ELEV
OVERTOPPING DISCHARGE	6300	ft ³ /s
OVERTOPPING ELEV	2540.8	ft

DITCH LEGEND	
RIGHT DITCH	-----
LEFT DITCH	-----

8/27/2007 8:41:06 AM \\Prcj\B3661\rdj\pfl.dgn