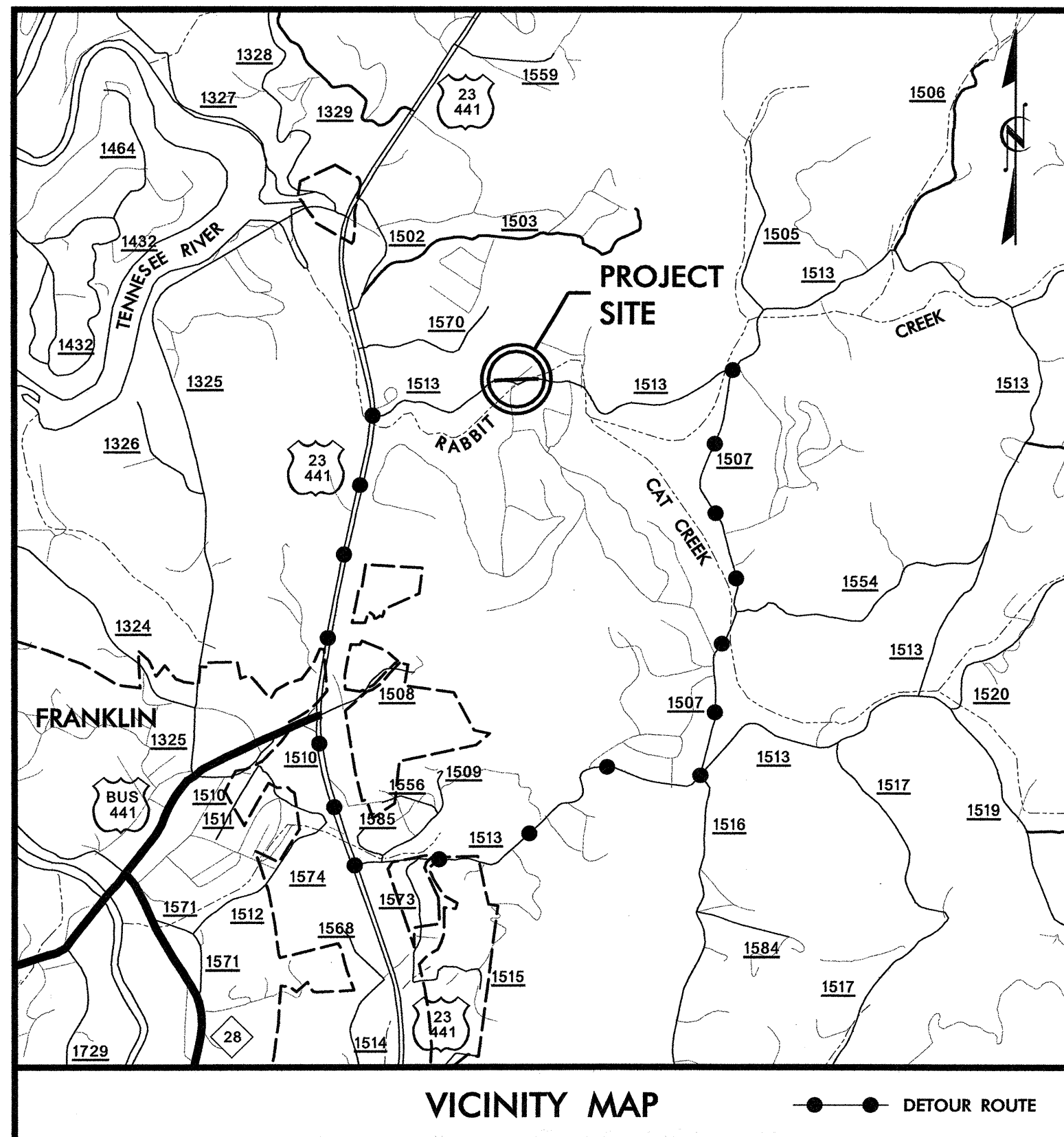


09/08/99

See Sheet 1-A For Index of Sheets



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**MACON COUNTY**

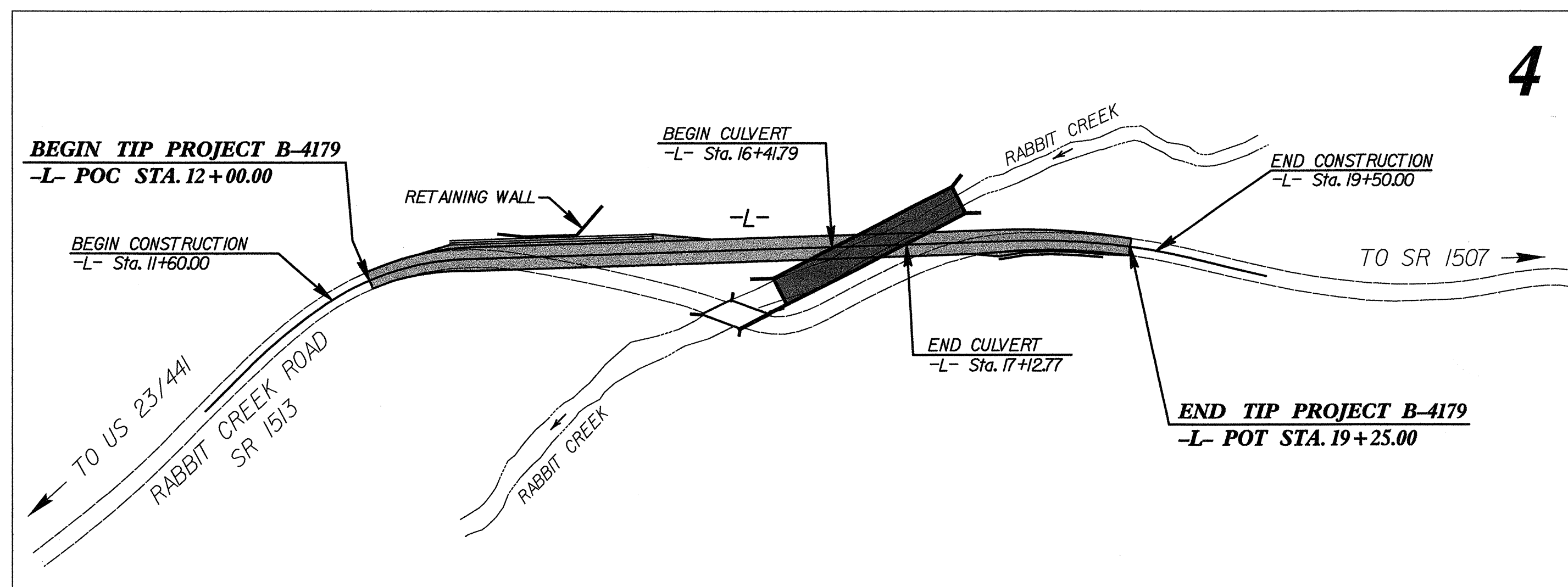
**LOCATION: BRIDGE #65 OVER RABBIT CREEK ON  
SR 1513 (RABBIT CREEK ROAD)**

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

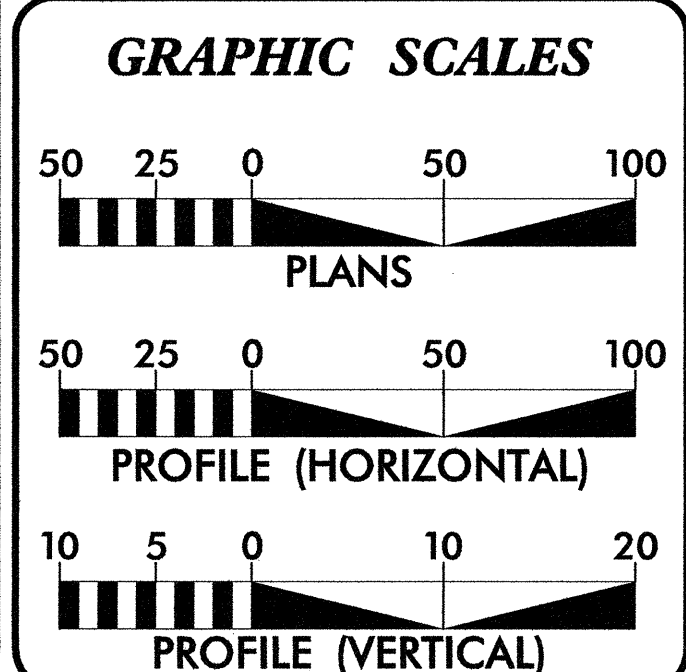
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4179	1	
WBS NO.	F.A. PROJ. NO.	DESCRIPTION	
33526.1.1	BRZ-1513 (2)	PE	
33526.2.2	BRZ-1513 (2)	R/W, UTILITIES	
33526.3.1	BRZ-1513 (3)	CONSTRUCTION	

**TIP PROJECT: B-4179**

**CONTRACT: C202035**



**NCDOT CONTACT:**  
MR. DOUG TAYLOR, PE - ENGINEERING  
COORDINATION - PROJECT ENGINEER -  
ROADWAY DESIGN UNIT



**DESIGN DATA**

ADT 2008 =	935
ADT 2028 =	1600
DHV =	10 %
D =	60 %
T =	3 % *
V =	35 MPH

\* (TTST 1% + DUAL 2%)

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4179	=	0.124 mi
LENGTH STRUCTURE TIP PROJECT B-4179	=	0.013 mi
TOTAL LENGTH TIP PROJECT B-4179	=	0.137 mi

Prepared For:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh, NC 27610

By:  
**MA ENGINEERING CONSULTANTS, INC.**  
598 E. CHATHAM STREET, SUITE 137  
CARY, NORTH CAROLINA 27511  
(919) 297-0220

2006 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
DECEMBER 21, 2007

**LETTING DATE:**  
DECEMBER 16, 2008

**R.W. PORTER JR. PE**  
PROJECT ENGINEER

**K.S. HUTCHENS**  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

*Ray Weath* 9/22/08  
SIGNATURE: P.E.

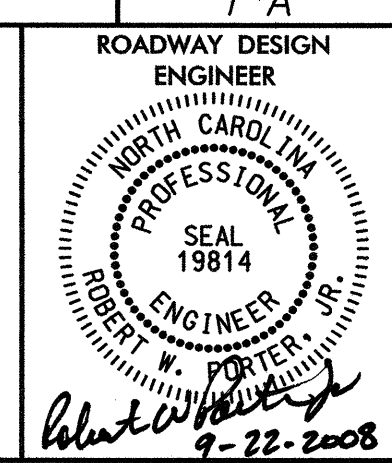

**ROADWAY DESIGN ENGINEER**

9-22-2008  
*K.S. Hutchens*  
SIGNATURE: P.E.

**DIVISION OF HIGHWAYS**  
STATE OF NORTH CAROLINA

*at miller*  
STATE HIGHWAY DESIGN ENGINEER

09/19/2008 P:\Projects\B4179\_rdy\_tsh.dgn

PROJECT REFERENCE NO. B-4179	SHEET NO. 1-A
ROADWAY DESIGN ENGINEER  ROBERT W. PORTER ENGINEER	
 <b>MA Engineering</b> CONSULTANTS, INC. 598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	

GENERAL NOTES: 2006 SPECIFICATIONS  
EFFECTIVE: 07-18-06  
REVISED: 09-12-08

2006 ROADWAY ENGLISH STANDARD DRAWINGS  
EFF. 07-18-06  
REV. 01-02-07

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.

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:

CLEARING:  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

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

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.

DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I

SHOULDER CONSTRUCTION:  
ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs

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.

DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
816.01	Concrete Pads - for Shoulder Drain Installation
816.04	Markers for Drainage Structure and Concrete Pad
840.00	Concrete Base Pad for Drainage Structures
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.24	Frames and Narrow 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
846.01	Concrete Curb, Gutter and Curb & Gutter
846.02	Drop Inlet Installation in Expressway Gutter
857.01	Precast Reinforced Concrete Barrier - 41" Single Faced
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
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

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.

UTILITIES:  
UTILITY OWNERS ON THIS PROJECT ARE  
Telephone - Verizon  
Power - Duke Power  
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.

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	DETAIL OF ANCHORAGE FOR FRAMES - BRICK OR CONCRETE
3	SUMMARY OF QUANTITIES
3-A	SUMMARIES OF EARTHWORK, PAVEMENT REMOVAL, DRAINAGE, AND GUARDRAIL
4	PLAN AND PROFILE SHEET
TCP-1 THRU TCP-3	TRAFFIC CONTROL PLANS
SD-1	SPECIAL SIGN DESIGN
EC-1 THRU EC-6	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1	CROSS-SECTION SUMMARY
X-2 THRU X-14	CROSS-SECTIONS
C-1 THRU C-4	CULVERT PLANS
W-1 THRU W-2	RETAINING WALL PLANS

B-417/99

09/22/2008  
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Note: Not to Scale

\*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# CONVENTIONAL PLAN SHEET SYMBOLS

**BOUNDARIES AND PROPERTY:**

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Property Corner	✕
Property Monument	EDM
Parcel/Sequence Number	123
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	WLB
Proposed Wetland Boundary	WLB
Existing Endangered Animal Boundary	EAB
Existing Endangered Plant Boundary	EPB

**BUILDINGS AND OTHER CULTURE:**

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	+
Building	▭
School	▭
Church	▭
Dam	▭

**HYDROLOGY:**

Stream or Body of Water	~~~~~
Hydro, Pool or Reservoir	▭
Jurisdictional Stream	JS
Buffer Zone 1	BZ 1
Buffer Zone 2	BZ 2
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	WLB
Proposed Lateral, Tail, Head Ditch	▭
False Sump	▽

**RAILROADS:**

Standard Gauge	-----
RR Signal Milepost	CSX TRANSPORTATION 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 Utility Easement	PUE

**ROADS AND RELATED FEATURES:**

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	C
Proposed Slope Stakes Fill	F
Proposed Wheel Chair Ramp	WCR
Proposed Wheel Chair Ramp Curb Cut	WCC
Curb Cut for Future Wheel Chair Ramp	CCFR
Existing Metal Guardrail	T T T T
Proposed Guardrail	T T T T
Existing Cable Guiderail	▭
Proposed Cable Guiderail	▭
Equality Symbol	⊕
Pavement Removal	▭

**VEGETATION:**

Single Tree	⊕
Single Shrub	⊕
Hedge	~~~~~
Woods Line	~~~~~
Orchard	⊕ ⊕ ⊕
Vineyard	Vineyard

**EXISTING STRUCTURES:**

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊕
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	PH
H-Frame Pole	●
Recorded U/G Power Line	P
Designated U/G Power Line (S.U.E.*)	P

**TELEPHONE:**

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Booth	▭
Telephone Pedestal	▭
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	PH
Recorded U/G Telephone Cable	T
Designated U/G Telephone Cable (S.U.E.*)	T
Recorded U/G Telephone Conduit	TC
Designated U/G Telephone Conduit (S.U.E.*)	TC
Recorded U/G Fiber Optics Cable	T FO
Designated U/G Fiber Optics Cable (S.U.E.*)	T FO

**WATER:**

Water Manhole	⊕
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	PH
Recorded U/G TV Cable	TV
Designated U/G TV Cable (S.U.E.*)	TV
Recorded U/G Fiber Optic Cable	TV FO
Designated U/G Fiber Optic Cable (S.U.E.*)	TV FO

**GAS:**

Gas Valve	◇
Gas Meter	⊕
Recorded U/G Gas Line	G
Designated U/G Gas Line (S.U.E.*)	G
Above Ground Gas Line	A/G Gas

**SANITARY SEWER:**

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

**MISCELLANEOUS:**

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

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# SURVEY CONTROL SHEET B-4179

**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT 'GPS-B4179-102' WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 559248.993 (ft) EASTING: 700121.920 (ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: .999775736

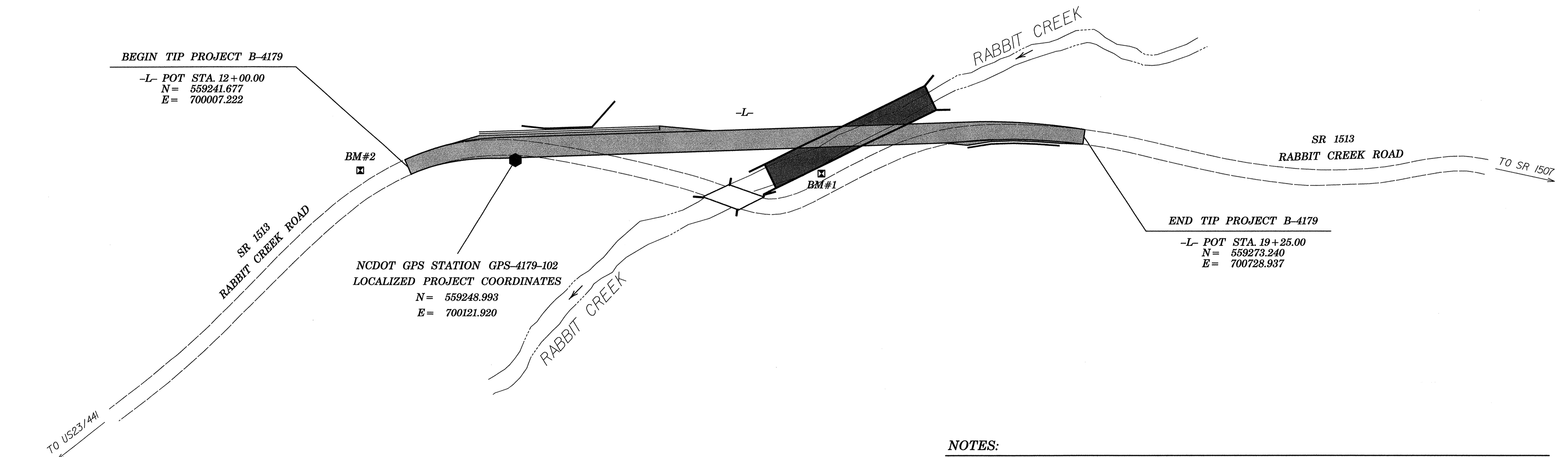
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM 'GPS-B4179-102' TO -L- STATION 10+00.00 IS S 64°12'13.0" W 300.38 (ft)

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

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	550052.7260	699800.7820	2047.42'	OUTSIDE PROJECT LIMITS	
2	BL-2	559203.4460	699961.8170	2040.55'	11+40.54	10.54' RT
102	GPS-B4179-102	559248.9940	700121.9200	2035.63'	13+17.00	13.40' RT
4	BL-4	559212.1120	700399.8900	2030.36'	15+93.60	59.44' RT
5	BL-5	559290.8090	700608.1700	2034.74'	18+04.36	12.34' LT
6	BL-6	559245.7680	700947.8800	2041.22'	OUTSIDE PROJECT LIMITS	

\*\*\*\*\*  
 BM\*1 ELEVATION = 2032.84'  
 N 559234 E 700449  
 -L- STATION 16+43 39' RIGHT  
 RAILROAD SPIKE SET IN UTILITY POLE  
 \*\*\*\*\*

\*\*\*\*\*  
 BM\*2 ELEVATION = 2051.15'  
 N 559238 E 699956  
 -L- STATION 11+55 21' LEFT  
 RAILROAD SPIKE SET IN UTILITY POLE  
 \*\*\*\*\*



NCDOT GPS STATION GPS-B4179-101  
 LOCALIZED PROJECT COORDINATES  
 N = 558890.647  
 E = 699689.828

**NOTES:**

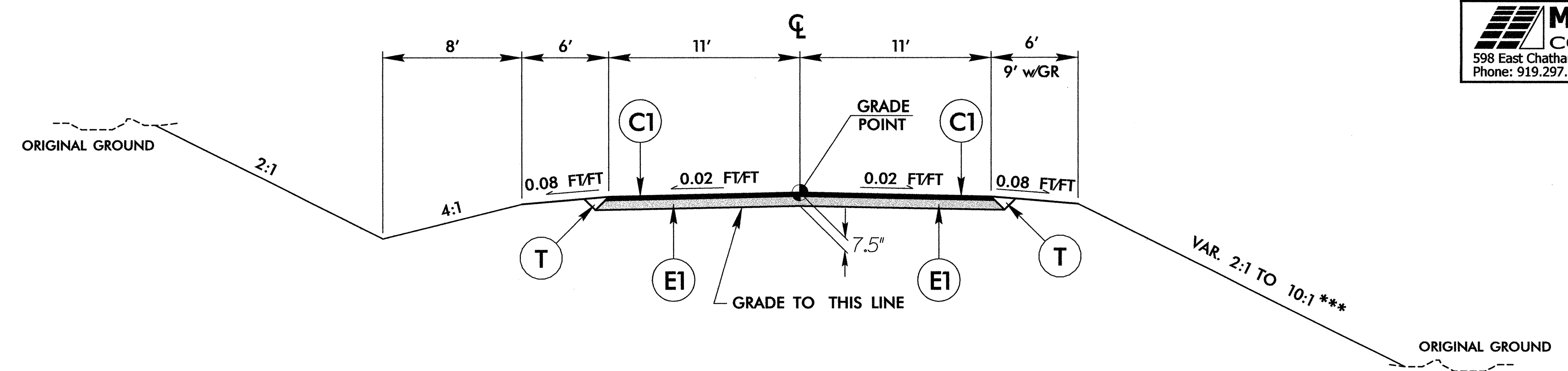
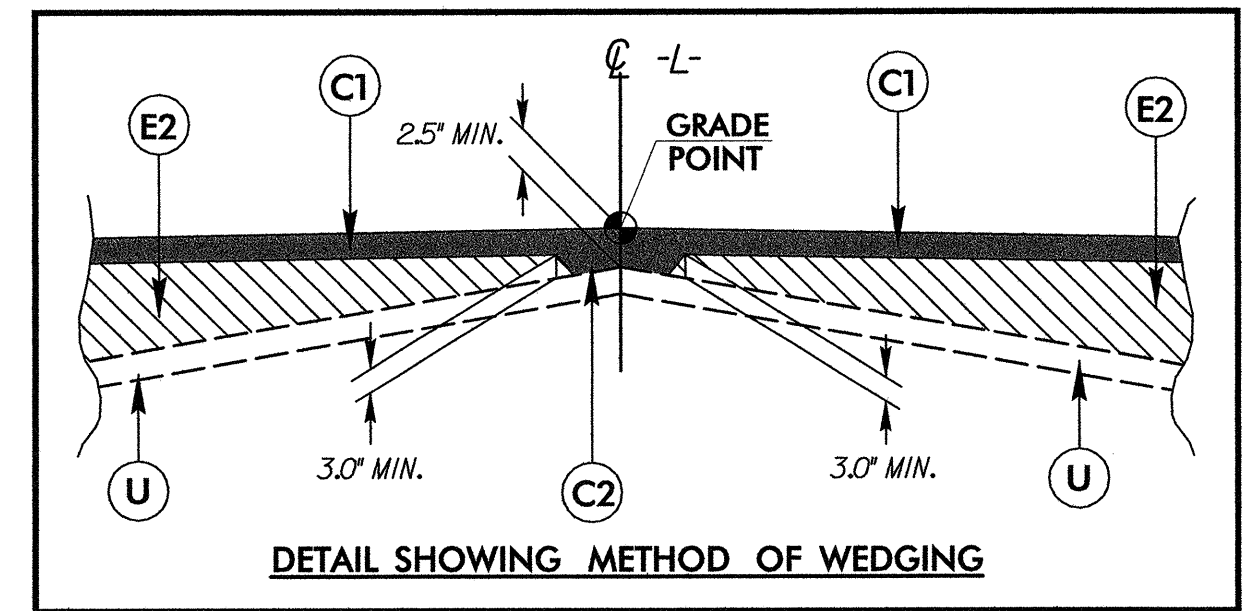
- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCTHIGHWAY/LOCATION/PROJECT](http://www.ncdot.org/doh/preconstructhighway/location/project)  
 THE FILES TO BE FOUND ARE AS FOLLOWS:  
 B4179\_LS\_CONTROL\_071219.TXT  
 SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.  
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.  
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING USER SERVICE (OPUS).  
 SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

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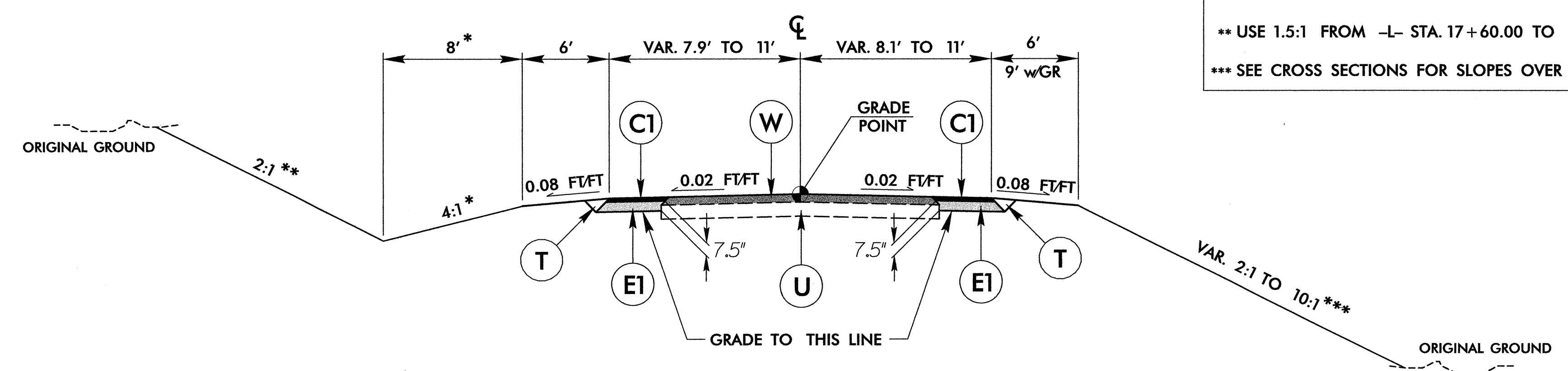
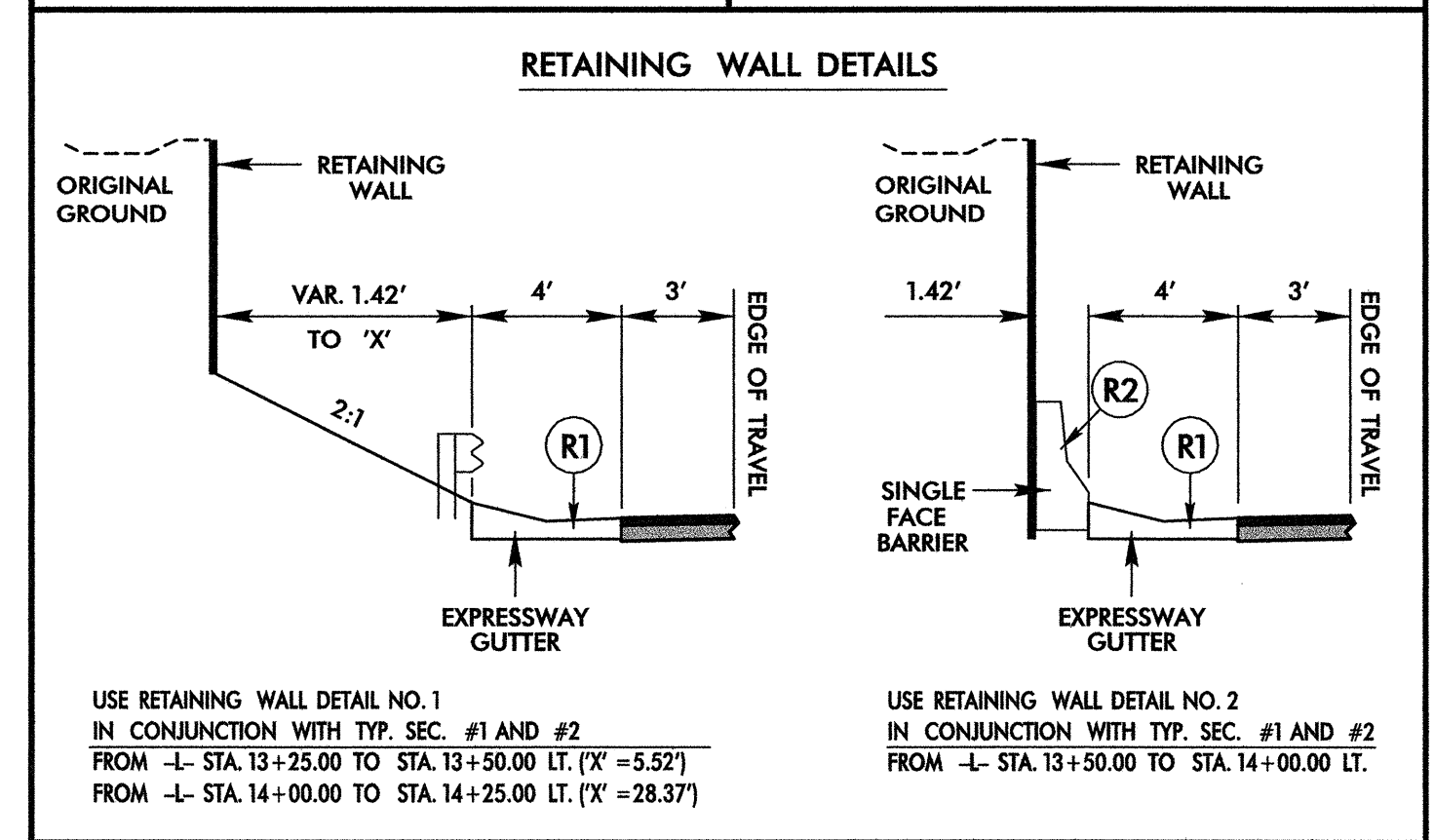
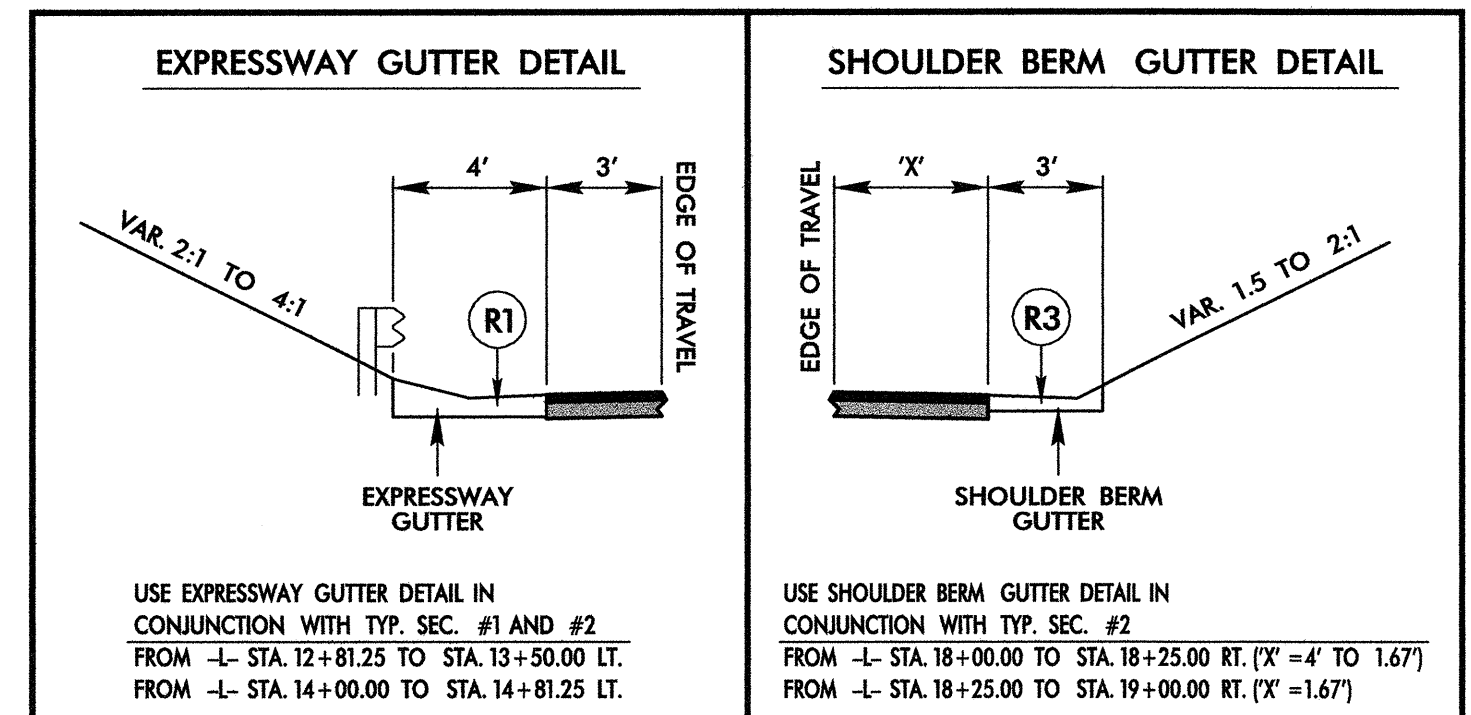
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2.50" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.50 LBS PER SQUARE YARD IN EACH OF TWO LAYERS.
C2	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS PER SQUARE YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.25" OR GREATER THAN 1.5" IN DEPTH.
E1	PROP. APPROX. 5.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS PER SQUARE YARD.
E2	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS PER SQUARE YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3.0" OR GREATER THAN 5.5" IN DEPTH.
T	EARTH MATERIAL
R1	CONCRETE EXPRESSWAY GUTTER
R2	SINGLE FACE CONCRETE BARRIER
R3	SHOULDER BERM GUTTER
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL THIS SHEET)

PAVEMENT EDGE SLOPES AND TRENCH SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



**TYPICAL SECTION NO. 1**  
FROM -L- STA. 13+80.00 TO STA. 17+25.00

- NOTES**
- \* SEE CROSS SECTIONS TO TIE IN SHOULDER AND DITCH FROM -L- STA. 12+25.00 TO 12+80.00 LT. FROM -L- STA. 17+75.00 TO 19+25.00 RT.
  - \*\* USE 1.5:1 FROM -L- STA. 17+60.00 TO 18+35.00 RT.
  - \*\*\* SEE CROSS SECTIONS FOR SLOPES OVER CULVERT



**TYPICAL SECTION NO. 2**  
FROM -L- STA. 12+25.00 TO STA. 13+80.00  
FROM -L- STA. 17+25.00 TO STA. 19+25.00

BLEND TO EXISTING:  
FROM -L- STA. 12+00.00 TO STA. 12+25.00

MILL EXISTING PAVEMENT UP TO 2.5" IN DEPTH IN ORDER TO TIE TO EXISTING GRADE AT -L- STA. 19+25.00:  
FROM -L- STA. 18+90.00 TO STA. 19+25.00

8/17/99  
08/23/2008  
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STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

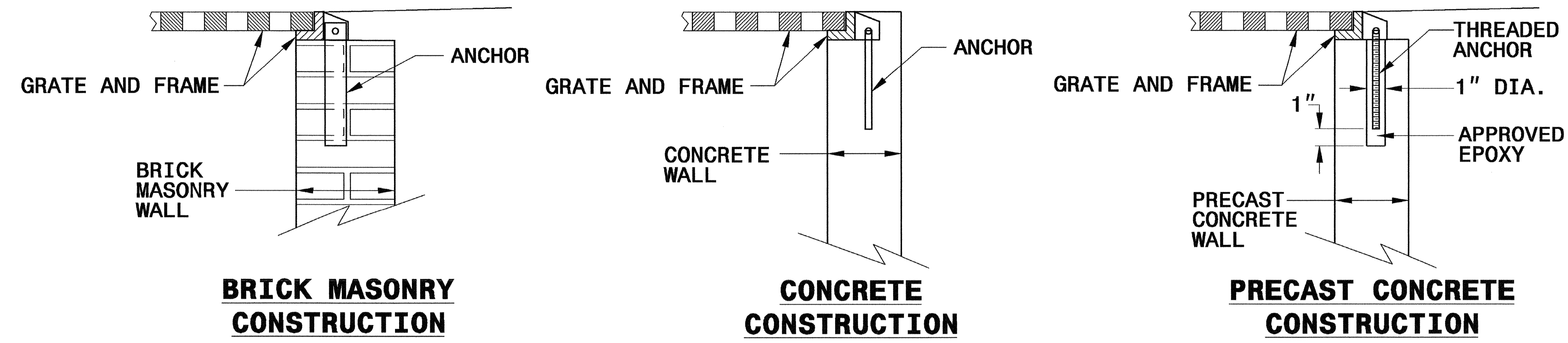
ENGLISH DETAIL DRAWING FOR  
**ANCHORAGE FOR FRAMES**  
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1  
**840D25**

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

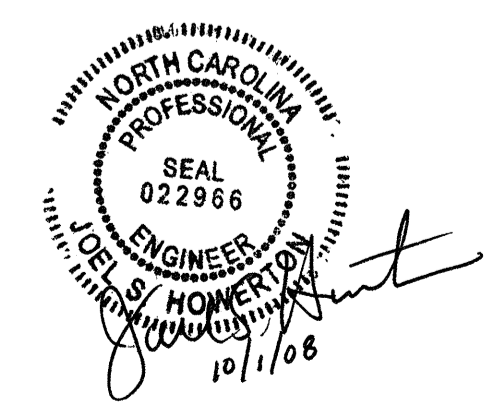
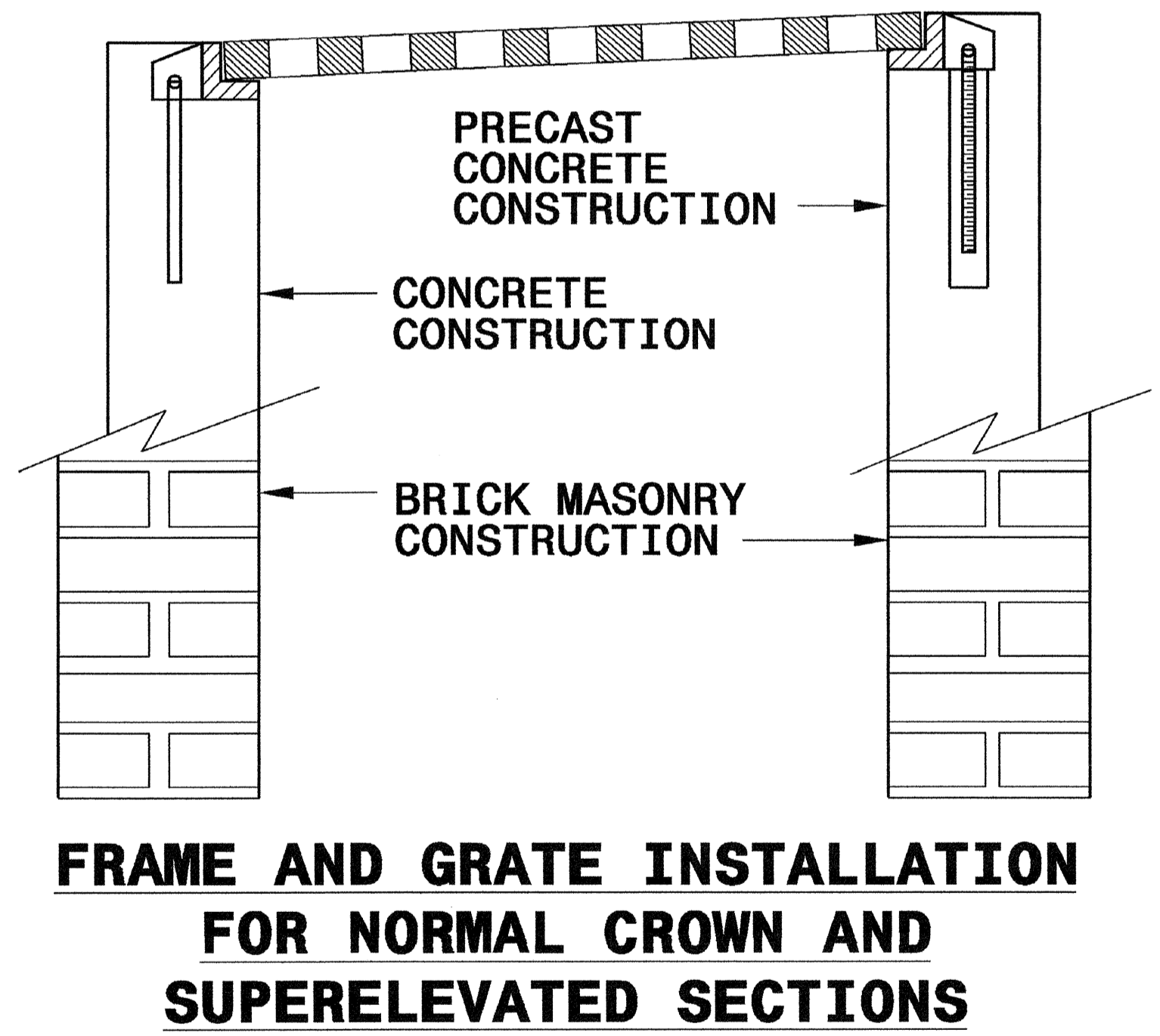
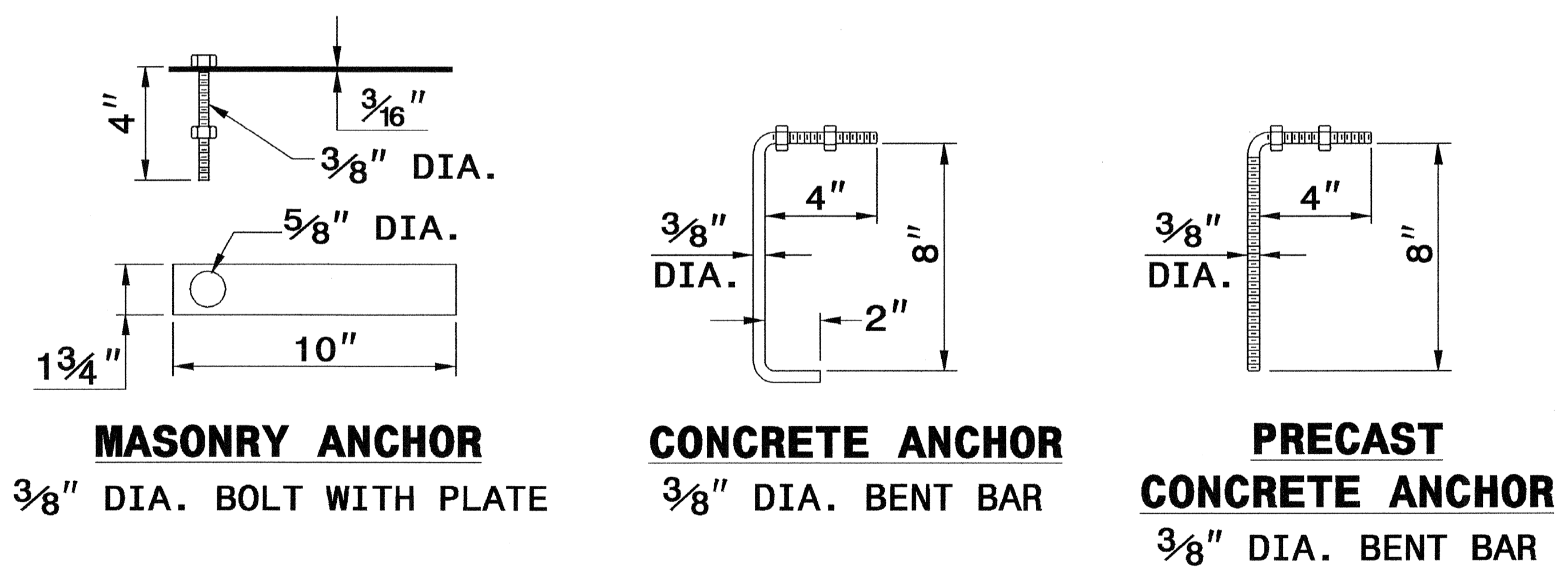
ENGLISH DETAIL DRAWING FOR  
**ANCHORAGE FOR FRAMES**  
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1  
**840D25**



**DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET**

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



**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 08:59  
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 ereward  
 AT P522293

7/2/99

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202035

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0022000000-E	225	4,600	CY	UNCLASSIFIED EXCAVATION
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
0057000000-E	226	600	CY	UNDERCUT EXCAVATION
0063000000-N	SP	Lump Sum		GRADING
0080000000-E	SP	600	TON	CLASS IV SUBGRADE STABILIZATION
0134000000-E	240	20	CY	DRAINAGE DITCH EXCAVATION
0195000000-E	265	500	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	500	SY	FABRIC FOR SOIL STABILIZATION
0318000000-E	300	45	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
0344000000-E	310	40	LF	18" SIDE DRAIN PIPE
0372000000-E	310	96	LF	18" RC PIPE CULVERTS, CLASS III
0378000000-E	310	268	LF	24" RC PIPE CULVERTS, CLASS III
0995000000-E	340	114	LF	PIPE REMOVAL
1220000000-E	545	250	TON	INCIDENTAL STONE BASE
1330000000-E	607	70	SY	INCIDENTAL MILLING
1489000000-E	610	461	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1525000000-E	610	292	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1560000000-E	620	39	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
1693000000-E	654	30	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2022000000-E	815	115	CY	SUBDRAIN EXCAVATION
2033000000-E	815	85	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	500	LF	6" PERFORATED SUBDRAIN PIPE
2055000000-E	815	15	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS
2066000000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET

ItemNumber	Sec #	Quantity	Unit	Description
2077000000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)
2286000000-N	840	4	EA	MASONRY DRAINAGE STRUCTURES
2366000000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.24
2367000000-N	840	3	EA	FRAME WITH TWO GRATES, STD 840.29
2556000000-E	846	100	LF	SHOULDER BERM GUTTER
2577000000-E	846	195	LF	CONCRETE EXPRESSWAY GUTTER
2724000000-E	857	50	LF	PRECAST REINFORCED CONCRETE BARRIER, SINGLE FACED
3030000000-E	862	137.5	LF	STEEL BM GUARDRAIL
3045000000-E	862	62.5	LF	STEEL BM GUARDRAIL, SHOP CURVED
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3270000000-N	SP	6	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3317000000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3628000000-E	876	90	TON	RIP RAP, CLASS I
3649000000-E	876	25	TON	RIP RAP, CLASS B
3656000000-E	876	725	SY	FILTER FABRIC FOR DRAINAGE
4400000000-E	1110	460	SF	WORK ZONE SIGNS (STATIONARY)
4410000000-E	1110	114	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4430000000-N	1130	40	EA	DRUMS
4445000000-E	1145	50	LF	BARRICADES (TYPE III)
4810000000-E	1205	5,800	LF	PAINT PAVEMENT MARKING LINES (4")
6000000000-E	1605	1,900	LF	TEMPORARY SILT FENCE
6006000000-E	1610	160	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	125	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	165	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	3	ACR	TEMPORARY MULCHING

ItemNumber	Sec #	Quantity	Unit	Description
6018000000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	1.5	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	40	LF	TEMPORARY SLOPE DRAINS
6027000000-N	1622	1	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
6029000000-E	SP	750	LF	SAFETY FENCE
6030000000-E	1630	410	CY	SILT EXCAVATION
6036000000-E	1631	1,750	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	15	SY	COIR FIBER MAT
6042000000-E	1632	60	LF	1/4" HARDWARE CLOTH
6070000000-N	SP	4	EA	SPECIAL STILLING BASINS
6071010000-E	SP	25	LF	WATTLE
6071020000-E	SP	9	LB	POLYACRYLAMIDE (PAM)
6071030000-E	SP	120	LF	COIR FIBER BAFFLES
6071050000-E	SP	2	EA	*** SKIMMER (1-1/2")
6084000000-E	1660	4	ACR	SEEDING & MULCHING
6087000000-E	1660	1.5	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	75	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	1.75	TON	FERTILIZER TOPDRESSING
6111000000-E	SP	530	LF	IMPERVIOUS DIKE
6114000000-N	SP	5	HR	SPECIALIZED HAND MOWING
6117000000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	0.1	ACR	REFORESTATION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK
IN CUBIC YARDS

Table with columns: LOCATION, UNCLASSIFIED EXCAVATION, UNDERCUT, EMBT +%, BORROW, WASTE. Includes rows for EST. LOSS DUE TO CLEARING & GRUBBING, PROJECT TOTAL, GRAND TOTAL (CUBIC YARDS), SAY (CUBIC YARDS).

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".

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.

SUMMARY OF PAVEMENT REMOVAL
IN SQUARE YARDS

Table with columns: LOCATION, ASPHALT REMOVAL, ASPHALT BREAK-UP, CONCRETE REMOVAL, CONCRETE BREAK-UP. Includes rows for STA. 13+39 TO 15+40, STA. 15+53 TO 16+10, STA. 16+71 TO 17+91, GRAND TOTAL, SAY.

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

Main table listing pipes with columns for STATION, LOCATION (L, RT, OR CL), STRUCTURE NO., TOP ELEVATION, INVERT ELEVATION, SLOPE CRITICAL, CLASS III R.C. PIPE, BITUMINOUS COATED C.S. PIPE TYPE B, CLASS III R.C. PIPE OR C.S. PIPE, ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, and ABBREVIATIONS.

GUARDRAIL SUMMARY

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

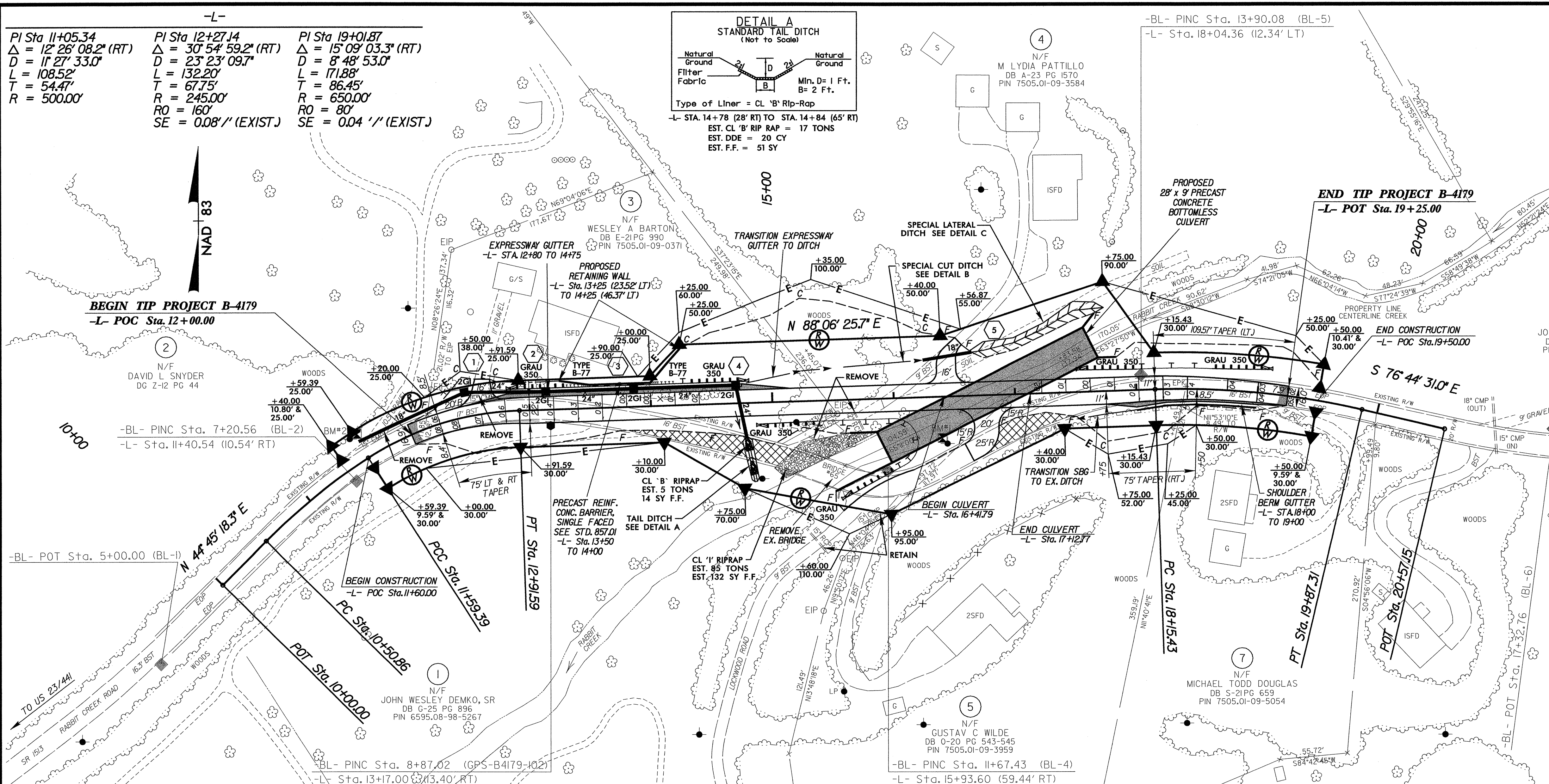
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

Table for GUARDRAIL SUMMARY with columns: SURVEY LINE, BEG. STA., END STA., LOCATION, LENGTH (STRAIGHT, SHOP CURVED, DOUBLE FACED), WARRANT POINT (APPROACH END, TRAILING END), FLARE LENGTH (APPROACH END, TRAILING END), W (APPROACH END, TRAILING END), ANCHORS (B-77, GRAU-350), IMPACT ATTENUATOR TYPE 350 (EA, G, NG), SINGLE FACED CONCRETE BARRIER, REMOVE EXISTING GUARDRAIL, REMARKS.

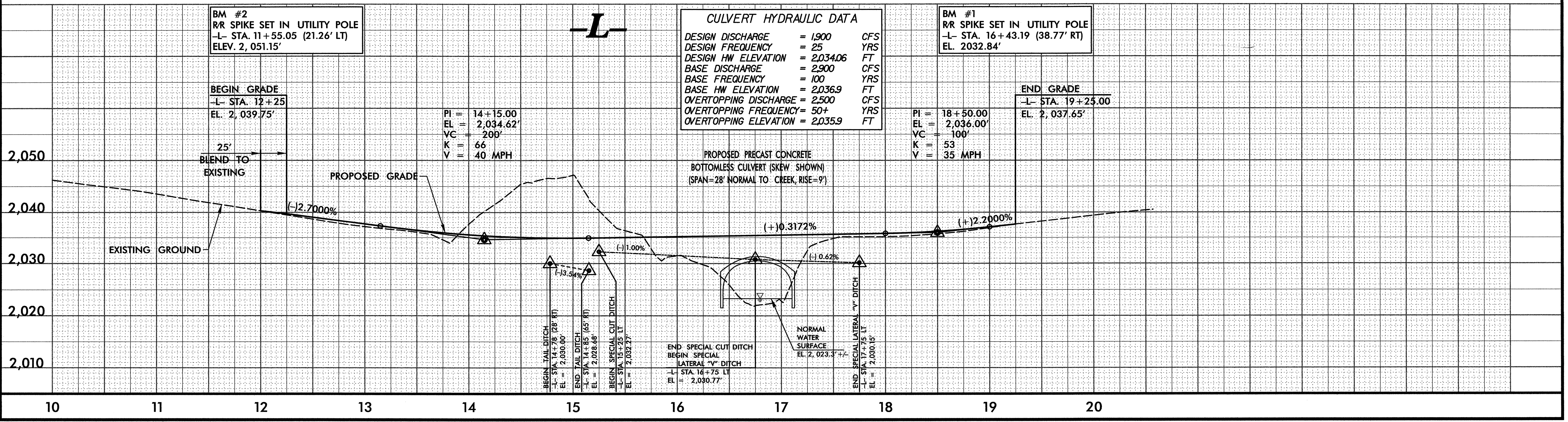
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PROJECT REFERENCE NO. B-4179	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 19814 ROBERT W. PORTER, JR.	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 21656 ROGER S. WEADON
<b>MA Engineering CONSULTANTS, INC.</b> 598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	
ALL DRIVEWAY RADI 10' UNLESS SHOWN OTHERWISE.	
FOR CULVERT PLANS, SEE SHEETS C-1 THRU C-4	
FOR RETAINING WALL PLANS, SEE SHEETS W-1 THRU W-2	



REVISIONS



09/22/2008  
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