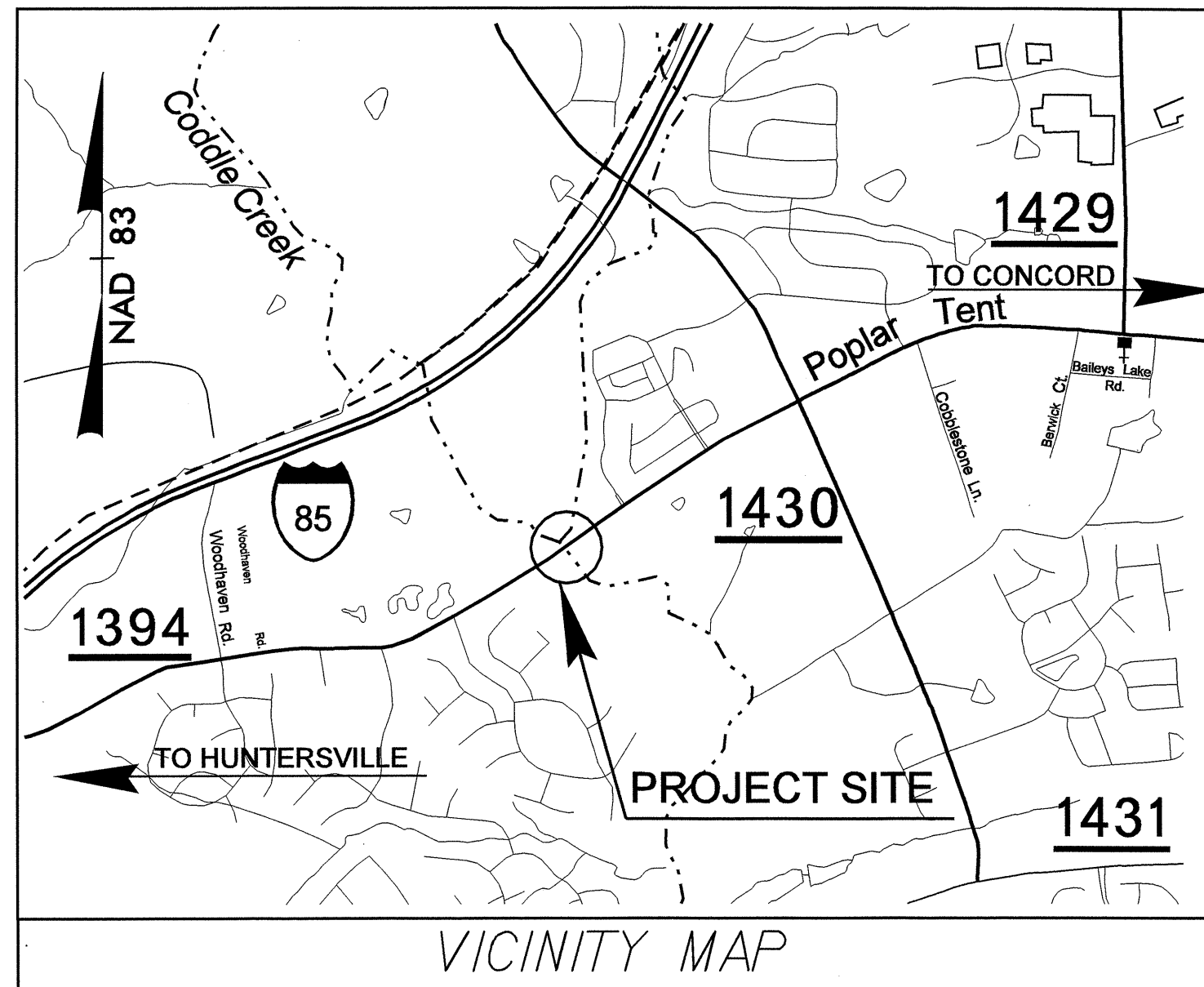


09/08/09

See Sheet 1-A For Index of Sheets



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CABARRUS COUNTY

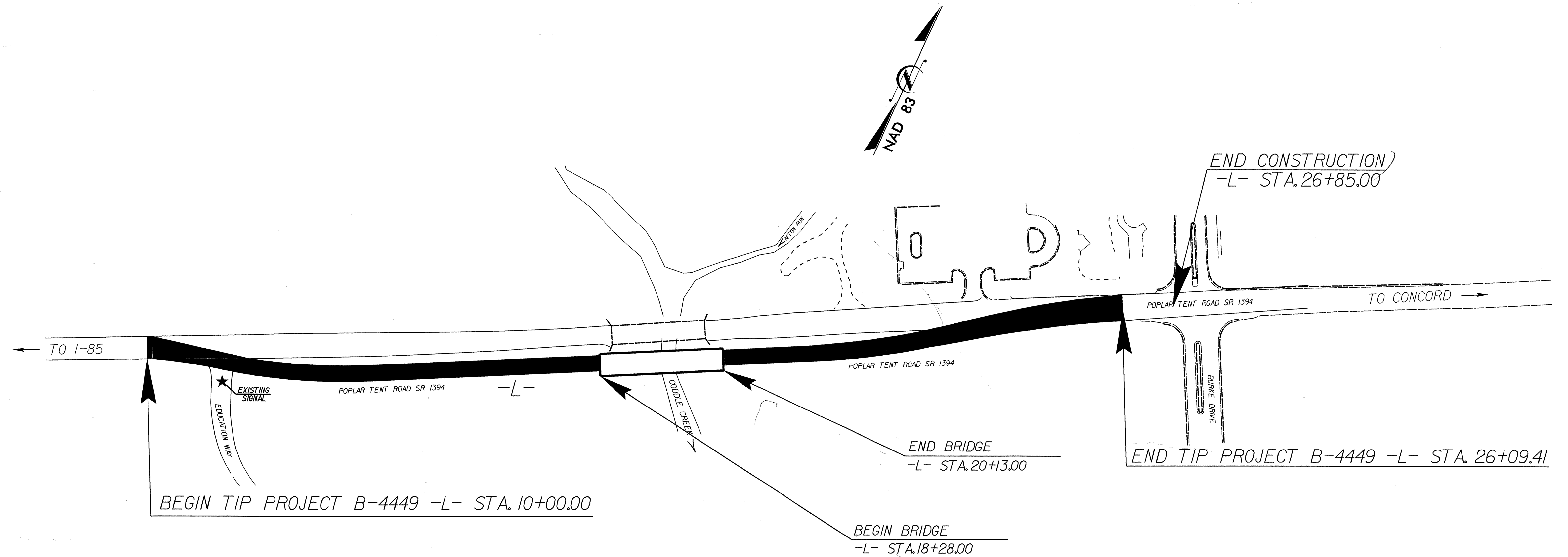
**LOCATION: BRIDGE NO. 2 OVER CODDLE CREEK
ON SR 1394 (POPLAR TENT ROAD)**

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

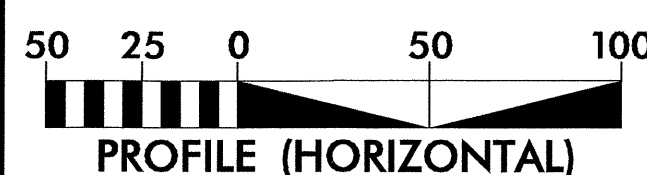
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4449	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33704.1.1	BRSTP-1394(2)	P.E.	
33704.2.1	BRSTP-1394(2)	R/W, UTIL	
33704.3.1	BRSTP-1394(2)	CONST.	

TIP PROJECT: B-4449

CONTRACT: C201898



GRAPHIC SCALES



DESIGN DATA

ADT 2006 = 15,692
ADT 2030 = 29,900
DHV = 10 %
D = 55 %
T = 10 % *
V = 50 MPH
FUNCT. CLASS. = MAJOR RURAL COLLECTOR
* TTST 4% DUAL 6%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4449 = 0.270 Miles
LENGTH STRUCTURE TIP PROJECT B-4449 = 0.035 Miles
TOTAL LENGTH OF TIP PROJECT B-4449 = 0.305 Miles

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

2006 STANDARD SPECIFICATIONS

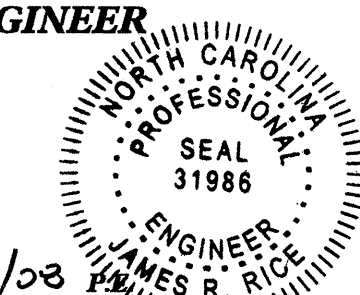
RIGHT OF WAY DATE:
AUGUST 17, 2007

LETTING DATE:
OCTOBER 21, 2008

G.E. BREW PE
PROJECT ENGINEER

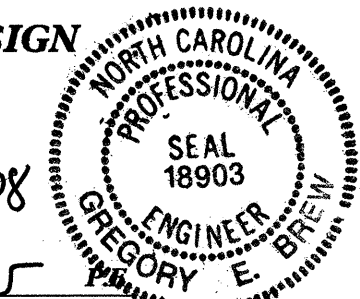
D. WILLIAMS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER



SIGNATURE: *G. Brew* 7/22/08

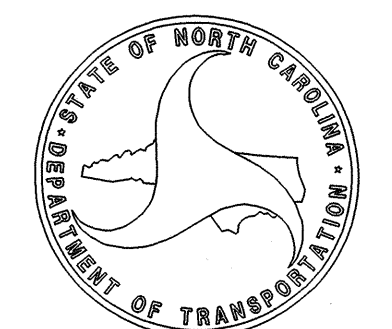
ROADWAY DESIGN
ENGINEER



7-31-08

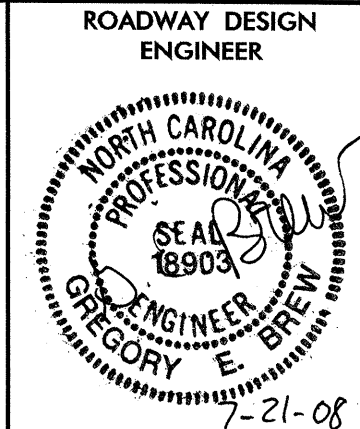
SIGNATURE: *Gregory E. Brew*

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



Gregory E. Brew P.E.
STATE HIGHWAY DESIGN ENGINEER

25-JUN-2008 14:29
C:\pwworking\pico\bd-4449_rdy_tsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

INDEX OF SHEETS

LIST OF STANDARD DRAWINGS

GENERAL NOTES

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

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C THRU 1-D	SURVEY CONTROL SHEETS
2 THRU 2-A	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-B	ANCHORAGE FOR FRAMES DETAIL SHEET
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE, SUMMARY OF GUARDRAIL, TEMPORARY GUARDRAIL SUMMARY
3B	PAVEMENT REMOVAL SUMMARY, SUMMARY OF CURB AND GUTTER, SUMMARY OF CLASS B STONE, SUMMARY OF EARTHWORK
3C	PARCEL INDEX SHEET
4 THRU 5	PLAN SHEETS
6	PROFILE SHEET
TCP-1 THRU TCP- 7	TRAFFIC CONTROL PLANS
SD-1	SPECIAL SIGN DESIGN
EC-1 THRU EC-7	EROSION CONTROL PLANS
SIG-1 THRU SIG-6	SIGNAL PLANS
UC-1 THRU UC-7	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-3	UTILITY CONSTRUCTION PLANS BY OTHERS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-6	CROSS-SECTIONS
S-1 THRU S-36	STRUCTURE PLANS

2006 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 July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superlevation - Two Lane Pavement
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 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
846.01	Concrete Curb, Gutter and Curb & 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
876.01	Rip Rap in Channels

GENERAL NOTES:

2006 SPECIFICATIONS
EFFECTIVE: 07-18-06
REVISED: 07-18-06

GRADE LINE: GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED 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.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE DUKE POWER COMPANY,
CT COMMUNICATIONS, PSNC ENERGY, CITY OF CONCORD WATER AND SEWER,
TIME WARNER CABLE, WATER AND SEWER AUTHORITY OF CABARRUS CO,
CITY OF CONCORD ELECTRIC
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

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

8/17/09

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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	○
Property Corner	→
Property Monument	□
Parcel/Sequence Number	(23)
Existing Fence Line	× × ×
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---WLB---
Proposed Wetland Boundary	---WLB---
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○
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	← FLD →
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
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 Utility Easement	-----

ROADS AND RELATED FEATURES:

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

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	□
Paved Ditch Gutter	-----
Storm Sewer Manhole	○
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	□
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.

3/15/06

SURVEY CONTROL SHEET B-4449

PROJECT REFERENCE NO.	SHEET NO.
R-4449	1 D
Location and Surveys	

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1		B4449-1	606640.3360	1499519.5450	660.76	OUTSIDE PROJECT LIMITS	
3		BL-3	606842.5150	1499858.4370	641.19	OUTSIDE PROJECT LIMITS	
4		BL-4	607279.1440	1500465.3470	608.91	12+61.17	51.46 LT
5		BL-5	607548.4790	1500944.8740	607.61	18+19.61	24.68 LT
6		BL-6	607959.3700	1501444.9350	612.38	24+71.53	44.62 LT
2		B4449-2	608314.3420	1501989.0800	640.85	OUTSIDE PROJECT LIMITS	
10		R2246C BY1-1	608501.3191	1502238.9771	UNKNOWN	OUTSIDE PROJECT LIMITS	
7		NAIL	608733.9640	1502593.6360	660.03	OUTSIDE PROJECT LIMITS	

BY3	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
9		BY3-1	608636.5970	1502143.0940	655.92	OUTSIDE PROJECT LIMITS	
8		BY3-2	608889.6680	1502517.2110	659.80	OUTSIDE PROJECT LIMITS	

```

*****
BM1      ELEVATION = 632.11
N 606939      E 1500017
L STATION 16+40
S 51° 23' 23.9" W DIST 2720.25
RR SPIKE IN POLE
*****
BM2      ELEVATION = 603.58
N 607511      E 1500922
L STATION 16+40
S 47° 20' 27.4" W DIST 1661.05
RR SPIKE IN 24 IN ELM
*****
BM3      ELEVATION = 643.88
N 608352      E 1502031
L STATION 16+40
S 21° 27' 01.6" W DIST 306.06
RR SPIKE IN POLE
*****
BM4      ELEVATION = 650.35
N 608567      E 1502513
L STATION 19+07 265 RIGHT
RR SPIKE IN BASE OF 51 IN PIN OAK
*****
    
```

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "WINDSOR" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 626437.4348(ft) EASTING: 1510910.5018(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999849030 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "WINDSOR" TO -L- STATION 7+00.00 IS S 29° 15' 28.7" W 22327.655 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.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

THE FILES TO BE FOUND ARE AS FOLLOWS:
B4449_LS_CONTROL_070216.TXT

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
3. PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

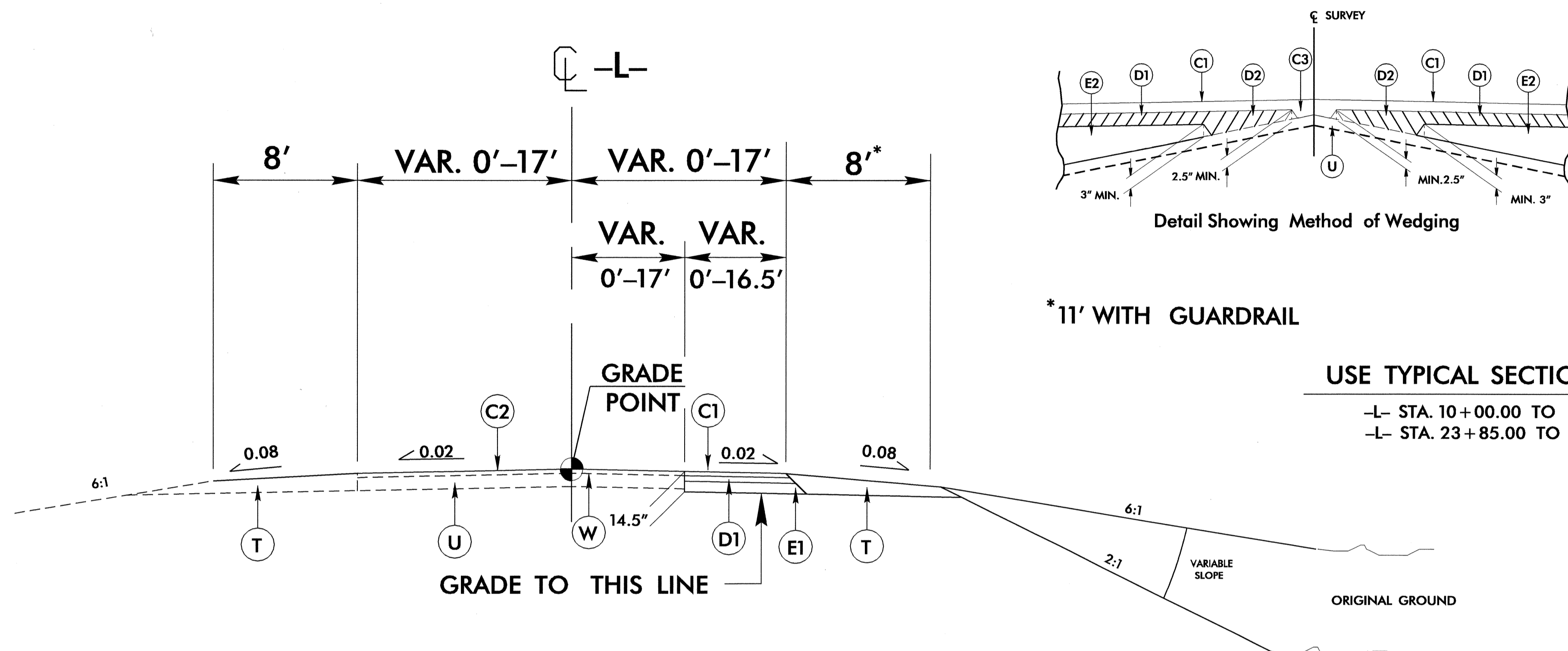
6/2/99

FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 3" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, 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.
E1	PROP. APPROX. 7.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 427.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, 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.
R1	2'-6" CONCRETE CURB AND GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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

PROJECT REFERENCE NO. B-4449	SHEET NO. 2
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER

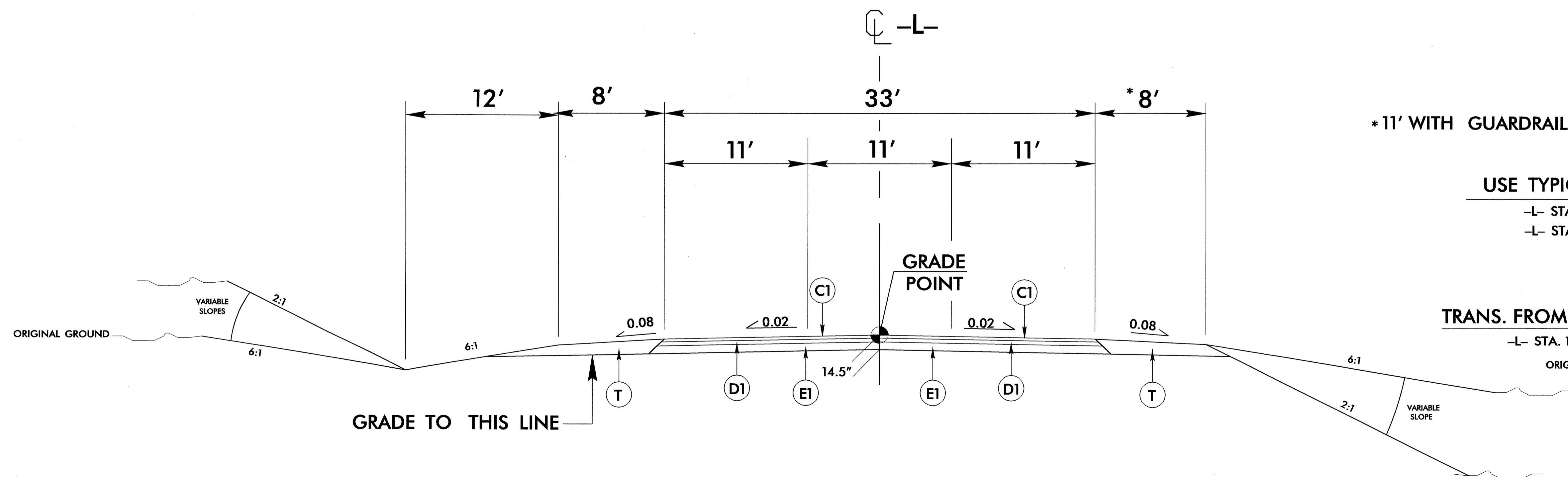


TYPICAL SECTION 1

* 11' WITH GUARDRAIL

USE TYPICAL SECTION NO. 1

-L- STA. 10+00.00 TO 13+11.00
-L- STA. 23+85.00 TO 26+09.41



TYPICAL SECTION 2

* 11' WITH GUARDRAIL

USE TYPICAL SECTION NO. 2

-L- STA. 13+11.00 TO 14+56.00
-L- STA. 20+87.00 TO 23+13.00

TRANS. FROM T.S. No. 2 TO T.S. No. 3

-L- STA. 14+56.00 TO -L- STA. 17+53.00

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RD226363.dwg

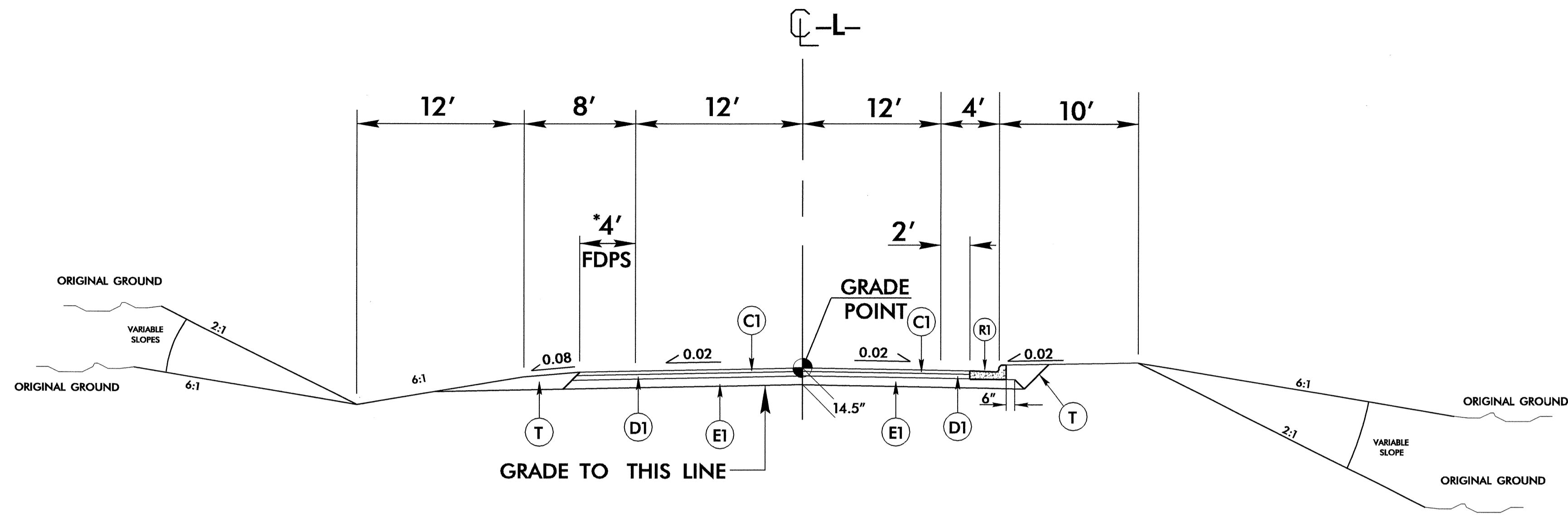
6/2/09

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D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, 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.
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R1	2'-6" CONCRETE CURB AND GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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

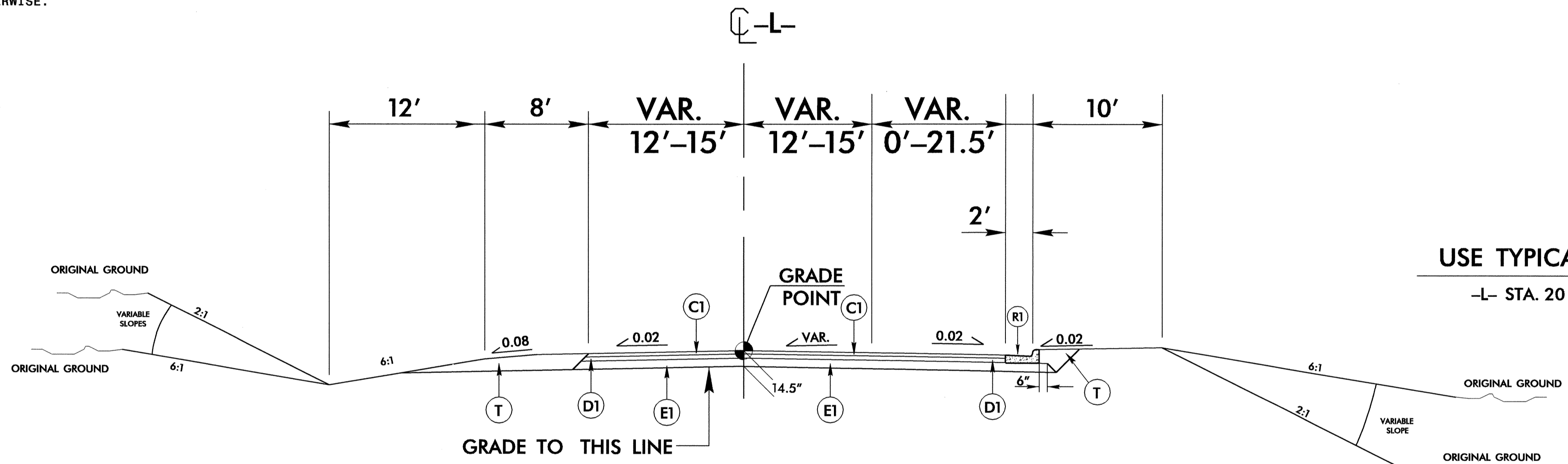
PROJECT REFERENCE NO. B-4449	SHEET NO. 2A
ROADWAY DESIGN ENGINEER GREGORY E. BREWSTER SEAL 18903 NORTH CAROLINA PROFESSIONAL ENGINEER	PAVEMENT DESIGN ENGINEER CLARA S. MORRISON SEAL 22886 NORTH CAROLINA PROFESSIONAL ENGINEER



TYPICAL SECTION 3

USE TYPICAL SECTION NO. 3

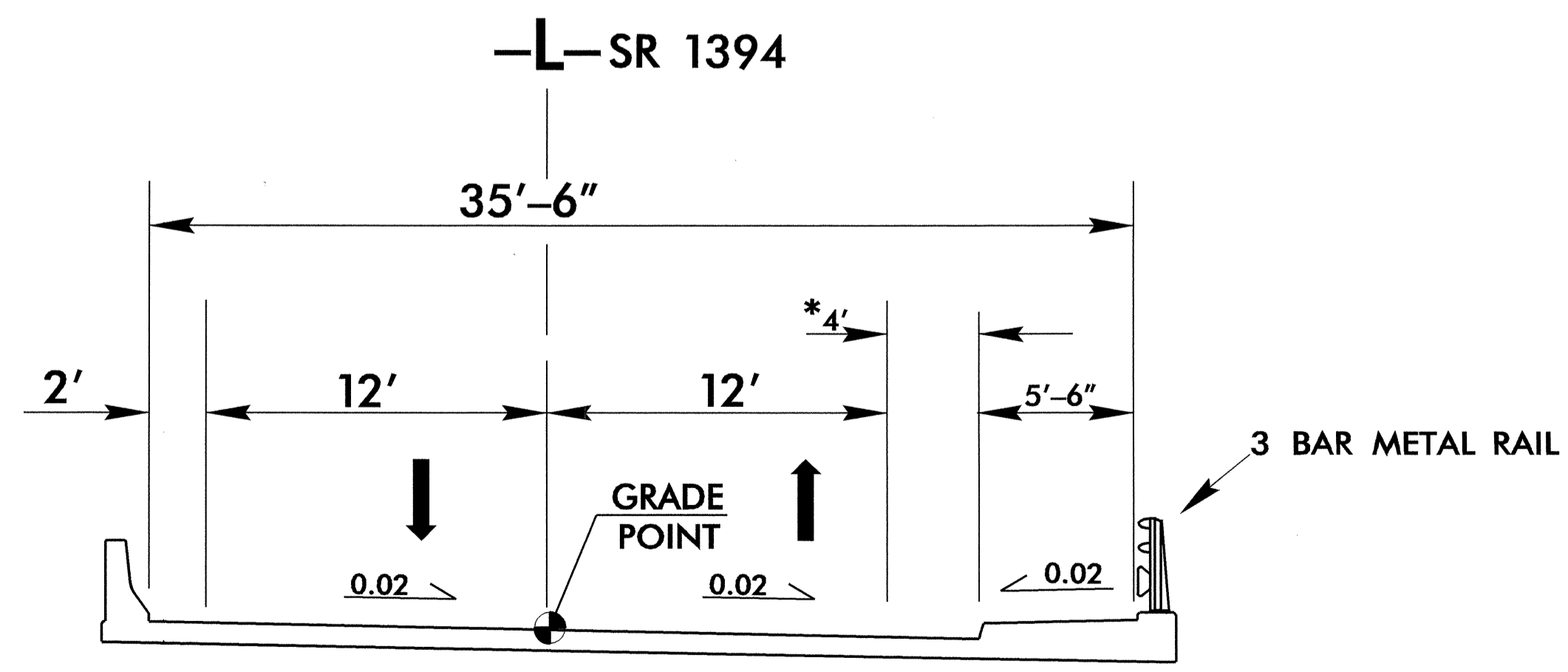
-L- STA. 17+53.00 TO 18+28.00 (BEGIN BRIDGE)
-L- STA. 20+13.00 (END BRIDGE) TO 20+97.64



TYPICAL SECTION 4

USE TYPICAL SECTION NO. 4

-L- STA. 20+97.67 TO 23+85.00



-L- STA. 18+28.00 (BEGIN BRIDGE) TO -L- STA 20+13.00 (END BRIDGE)

* DRAINAGE REQUIREMENT

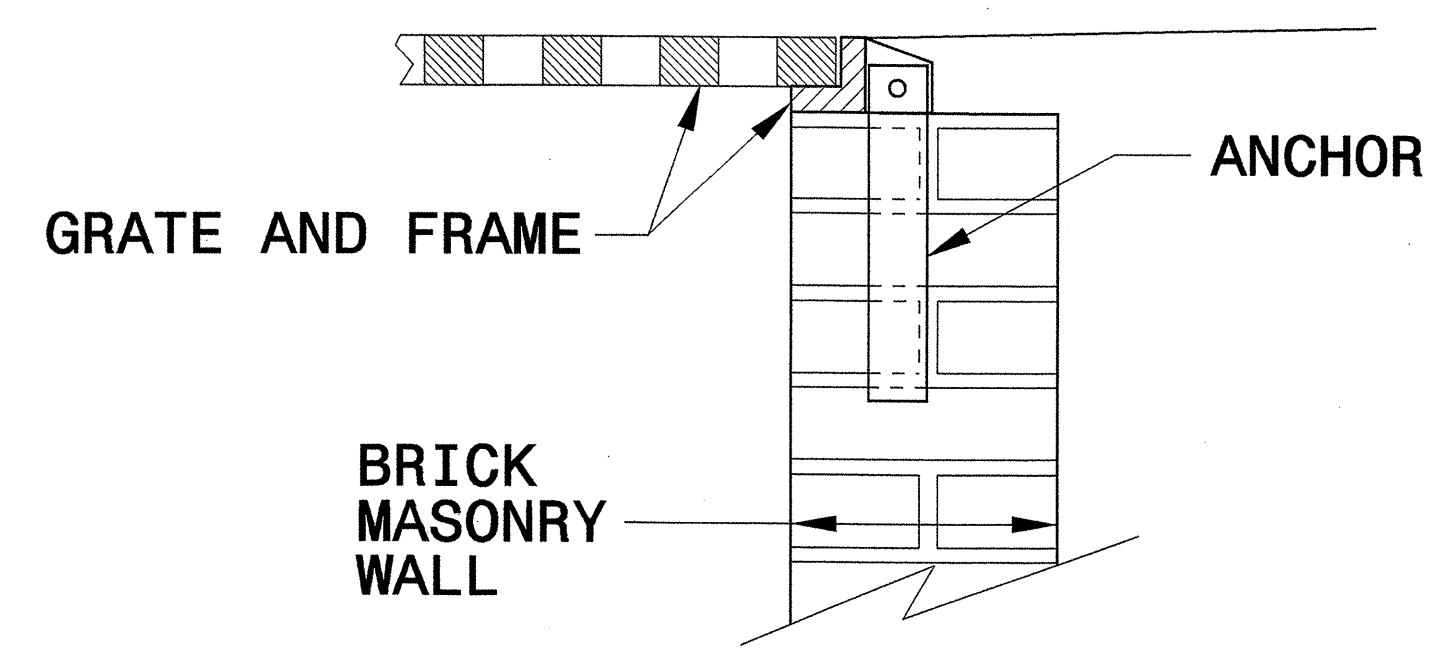
TYPICAL SECTION ON STRUCTURE

21-MAY-2008 11:22
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\$\$\$\$\$ USER:GREGORY.E.BREWSTER

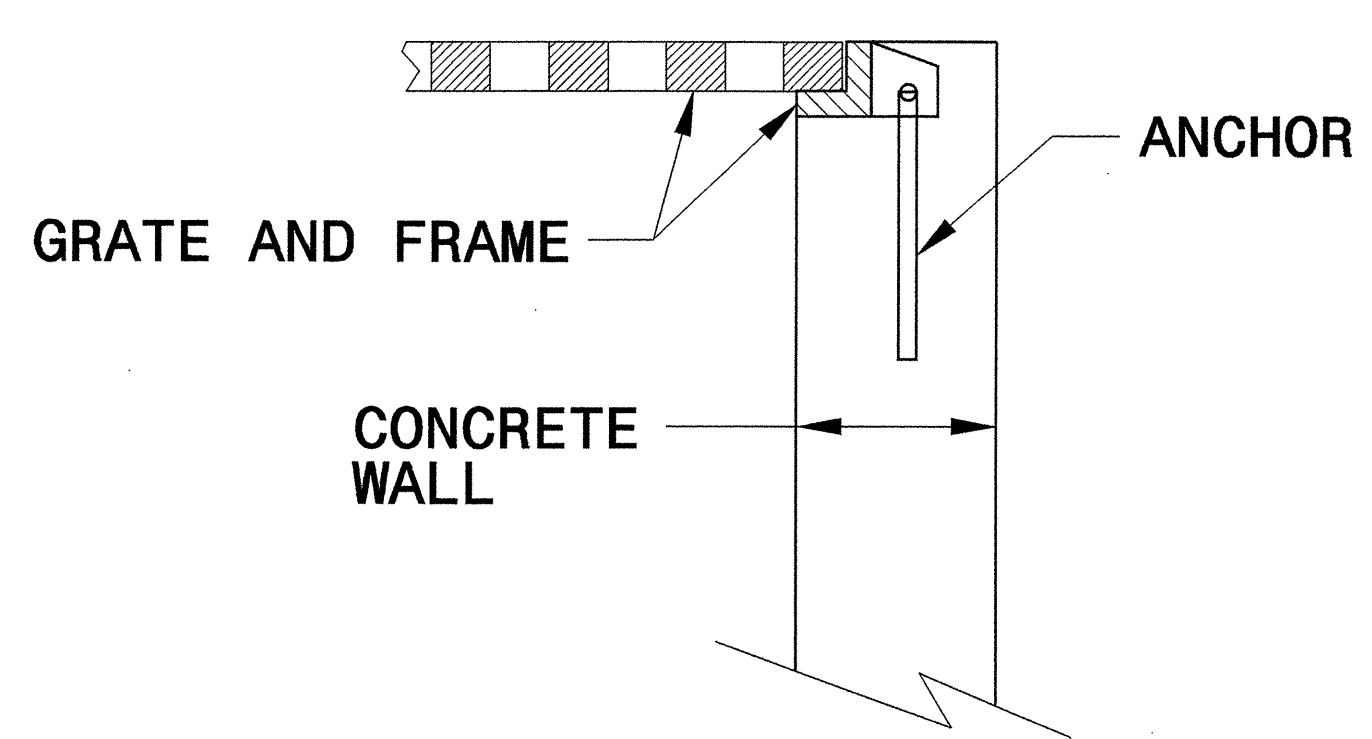
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

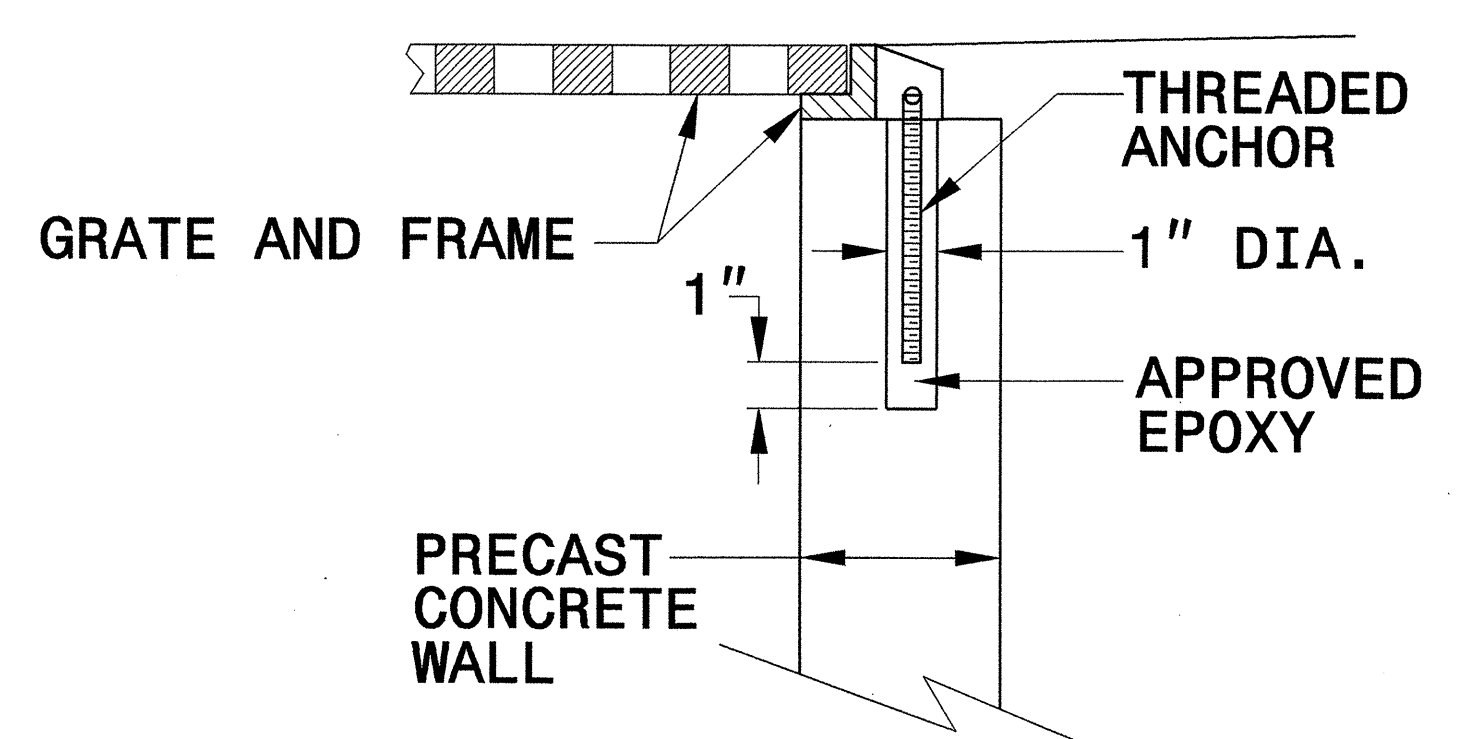
SHEET 1 OF 1
840D25



BRICK MASONRY CONSTRUCTION



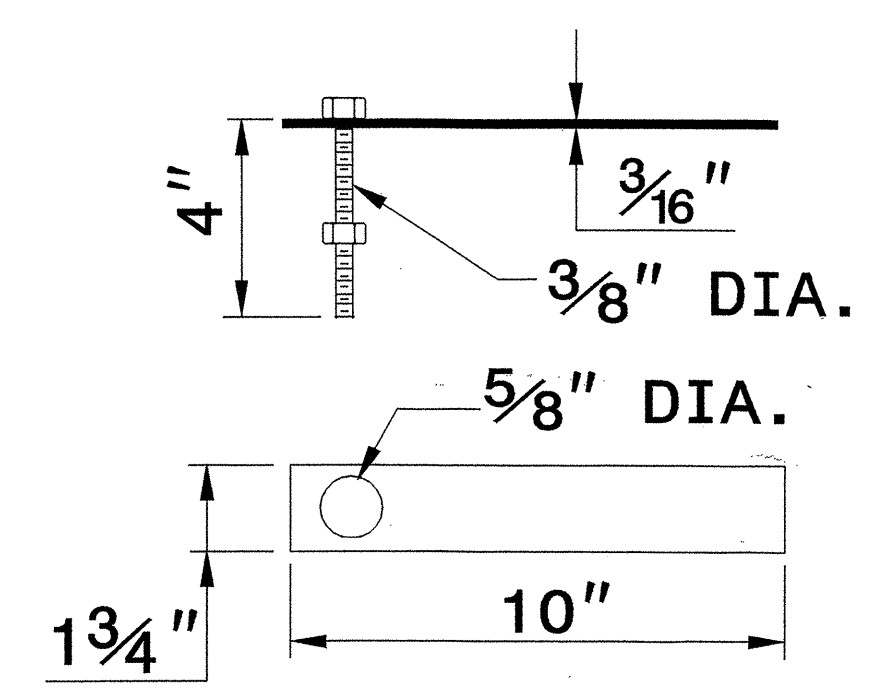
CONCRETE CONSTRUCTION



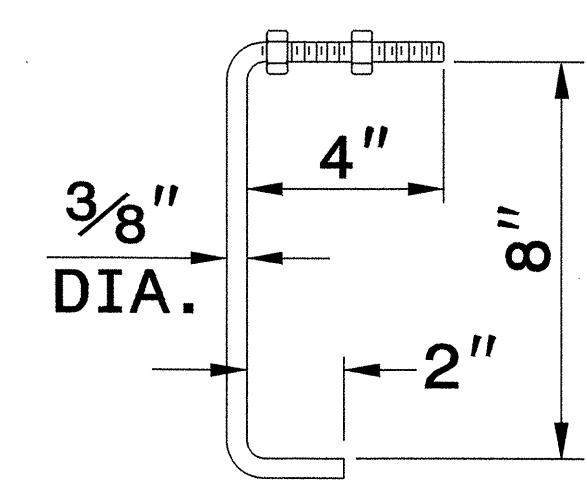
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

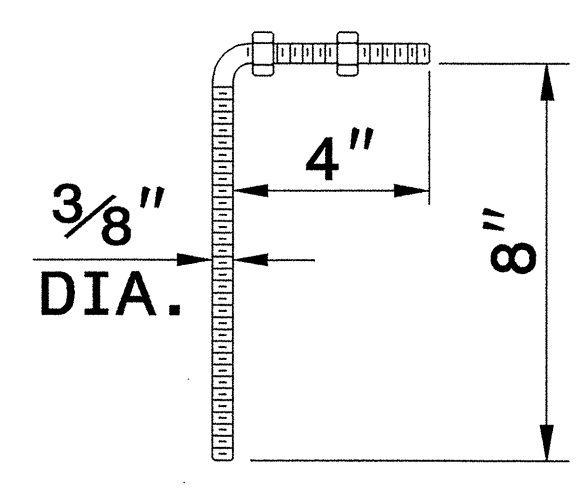
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



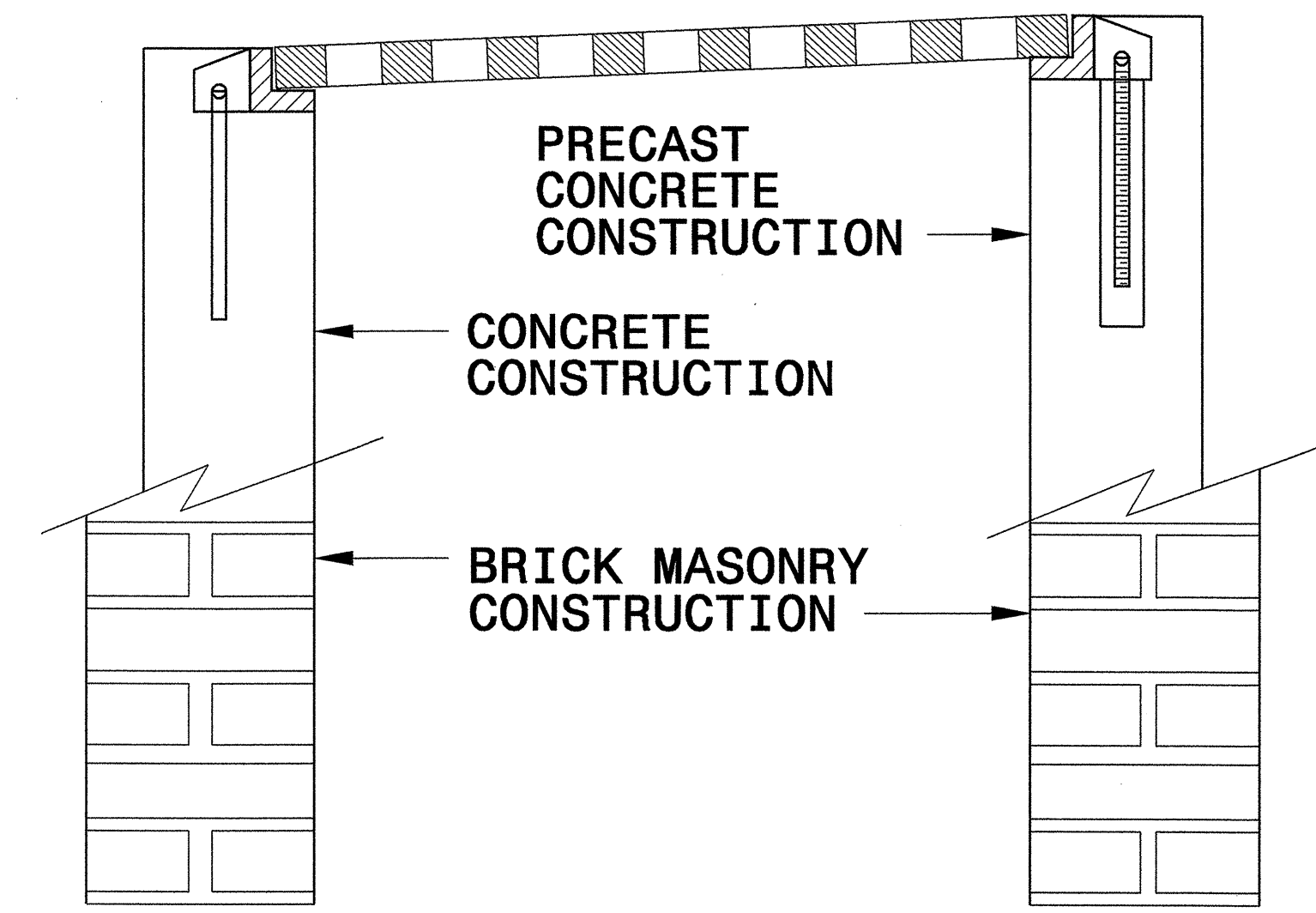
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



CONCRETE ANCHOR
3/8" DIA. BENT BAR



PRECAST CONCRETE ANCHOR
3/8" DIA. BENT BAR

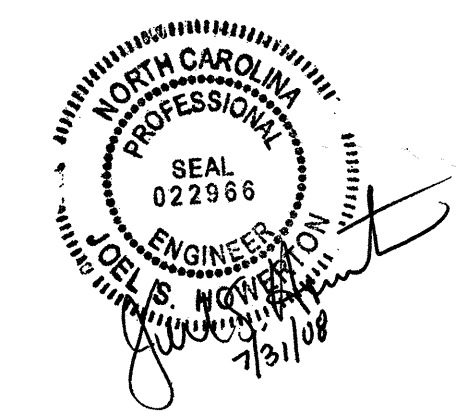


FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

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



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.: _____

PS237501 5/13/2008 0840d25 jhowerton IT01-Oce34bond

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201898

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (19+20.58)
0043000000-N	226	Lump Sum		GRADING
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB- BING
0057000000-E	226	1,175	CY	UNDERCUT EXCAVATION
0080000000-E	SP	1,250	TON	CLASS IV SUBGRADE STABILIZA- TION
0134000000-E	240	310	CY	DRAINAGE DITCH EXCAVATION
0195000000-E	265	500	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	1,250	SY	FABRIC FOR SOIL STABILIZATION
0318000000-E	300	170	TON	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRS
0366000000-E	310	20	LF	15" RC PIPE CULVERTS, CLASS III
0372000000-E	310	228	LF	18" RC PIPE CULVERTS, CLASS III
0378000000-E	310	32	LF	24" RC PIPE CULVERTS, CLASS III
0384000000-E	310	52	LF	30" RC PIPE CULVERTS, CLASS III
0708000000-E	310	88	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK
0714000000-E	310	72	LF	18" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK
0806000000-E	310	4	EA	15" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK
0807000000-E	310	2	EA	18" BIT COAT CS PIPE ELBOWS, T YPE B 0.064" THICK
0995000000-E	340	221	LF	PIPE REMOVAL
1220000000-E	545	120	TON	INCIDENTAL STONE BASE
1491000000-E	610	1,665	TON	ASPHALT CONC BASE COURSE, TYPE B25.0C
1503000000-E	610	1,095	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE 119.0C
1523000000-E	610	775	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5C
1560000000-E	620	124	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
1565000000-E	620	47	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 70-22
1693000000-E	654	50	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
2077000000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)
2286000000-N	840	5	EA	MASONRY DRAINAGE STRUCTURES
2374000000-N	840	5	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)
2549000000-E	846	400	LF	2'-6" CONCRETE CURB & GUTTER
3030000000-E	862	450	LF	STEEL BM GUARDRAIL
3045000000-E	862	50	LF	STEEL BM GUARDRAIL, SHOP CURVED
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3195000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1
3215000000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE III
3270000000-N	SP	3	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3317000000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3380000000-E	862	187.5	LF	TEMPORARY STEEL BM GUARDRAIL
3389100000-N	SP	2	EA	GUARDRAIL ANCHOR UNITS, TYPE 350 TEMPORARY
3649000000-E	876	255	TON	RIP RAP, CLASS B

ItemNumber	Sec #	Quantity	Unit	Description
3656000000-E	876	1,570	SY	FILTER FABRIC FOR DRAINAGE
4400000000-E	1110	437	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	96	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	57	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4430000000-N	1130	15	EA	DRUMS
4445000000-E	1145	96	LF	BARRICADES (TYPE III)
4450000000-N	1150	160	HR	FLAGGER
4650000000-N	1251	25	EA	TEMPORARY RAISED PAVEMENT MARKERS
4685000000-E	1205	3,600	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
4686000000-E	1205	5,180	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
4695000000-E	1205	150	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)
4710000000-E	1205	40	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
4725000000-E	1205	4	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
4770000000-E	1205	840	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (III)
4810000000-E	1205	8,780	LF	PAINT PAVEMENT MARKING LINES (4")
4820000000-E	1205	150	LF	PAINT PAVEMENT MARKING LINES (8")
4835000000-E	1205	40	LF	PAINT PAVEMENT MARKING LINES (24")
4845000000-N	1205	4	EA	PAINT PAVEMENT MARKING SYMBOL
4900000000-N	1251	25	EA	PERMANENT RAISED PAVEMENT MARKERS
5327400000-E	1510	1,263	LF	24" WATER LINE
5540000000-E	1515	2	EA	6" VALVE
5559400000-E	1515	2	EA	24" VALVE
5649000000-N	1515	1	EA	RECONNECT WATER METER
5672000000-N	1515	1	EA	RELOCATE FIRE HYDRANT
5691300000-E	1520	893	LF	8" SANITARY GRAVITY SEWER
5775000000-E	1525	4	EA	4' DIA UTILITY MANHOLE
5776000000-E	1525	1	EA	5' DIA UTILITY MANHOLE
5781000000-E	1525	9	LF	UTILITY MANHOLE WALL, 4' DIA
5782000000-E	1525	5	LF	UTILITY MANHOLE WALL, 5' DIA
5813000000-E	1530	1,179	LF	ABANDON 24" UTILITY PIPE
5816000000-N	1530	4	EA	ABANDON UTILITY MANHOLE
5836400000-E	1540	70	LF	36" ENCASEMENT PIPE
5872400000-E	1550	35	LF	TRENCHLESS INSTALLATION OF 36" IN SOIL
5872410000-E	1550	35	LF	TRENCHLESS INSTALLATION OF 36" NOT IN SOIL
5876000000-N	SP	5	EA	STEEL PILE PIERS
6000000000-E	1605	1,400	LF	TEMPORARY SILT FENCE
6006000000-E	1610	75	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	240	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	285	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	4.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	200	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	1.75	TON	FERTILIZER FOR TEMPORARY SEED- ING
6024000000-E	1622	65	LF	TEMPORARY SLOPE DRAINS
6027000000-N	1622	2	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
6029000000-E	SP	300	LF	SAFETY FENCE
6030000000-E	1630	805	CY	SILT EXCAVATION
6036000000-E	1631	2,450	SY	MATting FOR EROSION CONTROL
6037000000-E	SP	25	SY	COIR FIBER MAT
6042000000-E	1632	120	LF	1/4" HARDWARE CLOTH
6070000000-N	SP	8	EA	SPECIAL STILLING BASINS

ItemNumber	Sec #	Quantity	Unit	Description
6071010000-E	SP	195	LF	WATTLE
6071020000-E	SP	72	LB	POLYACRYLAMIDE (PAM)
6071030000-E	SP	165	LF	COIR FIBER BAFFLES
6071050000-E	SP	4	EA	*** SKIMMER (1-1/2")
6084000000-E	1660	5.5	ACR	SEEDING & MULCHING
6087000000-E	1660	3	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	125	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	3.5	TON	FERTILIZER TOPDRESSING
6114000000-N	SP	2	HR	SPECIALIZED HAND MOWING
6117000000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
7060000000-E	1705	420	LF	SIGNAL CABLE
7120000000-E	1705	3	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
7144000000-E	1705	1	EA	VEHICLE SIGNAL HEAD (12", 5 SECTION)
7252000000-E	1710	290	LF	MESSENGER CABLE (1/4")
7300000000-E	1715	650	LF	UNPAVED TRENCHING (***** (1, 2"))
7324000000-N	1716	4	EA	JUNCTION BOX (STANDARD SIZE)
7360000000-N	1720	2	EA	WOOD POLE
7372000000-N	1721	4	EA	GUY ASSEMBLY
7444000000-E	1725	220	LF	INDUCTIVE LOOP SAWCUT
7456000000-E	1726	990	LF	LEAD-IN CABLE (***** (14-2))
7684000000-N	1750	1	EA	SIGNAL CABINET FOUNDATION
7756000000-N	1751	1	EA	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)
7780000000-N	1751	5	EA	DETECTOR CARD (TYPE 2070L)
7901000000-N	1753	1	EA	CABINET BASE EXTENDER

5/28/09

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SUMMARY OF PAVEMENT REMOVAL

LINE	STATION TO STATION	LOCATION	AREA (SQ. YDS)
-L-	10+60.00 TO 18+37.74	LT	2,254.50
-L-	19+78.69 TO 21+68.00	LT	1,380
-L-	24+06.19 TO 26+09.41	LT	203.30
TOTAL			3,837.80
SAY			3,850

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

SUMMARY OF CLASS B STONE

LINE	STATION	LOCATION	TONS
-L-	12+30	RT	5
-L-	14+50 TO 19+00	RT	205
-L-	19+00 TO 19+20	RT	12
-L-	19+50 TO 20+00	RT	25
-L-	20+65	RT	5
-L-	21+45	RT	5
TOTAL			247
SAY			250

SUMMARY OF 2'-6" CURB AND GUTTER

LINE	STATION TO STATION	LOCATION	LENGTH (LF)
-L-	17+53.00 TO 18+03.85	RT	50.85
-L-	20+37.15 TO 23+85.00	RT	347.85
TOTAL			398.70
SAY			400.00

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT +%	BORROW	WASTE
10+00.00 TO 18+28.00	1,314		3,758	3,004	560
20+13.00 TO 26+09.41	31		3,773	3,742	
SUBTOTAL	1,345		7,531	6,746	560
LOSS DUE TO CLEARING AND GRUBBING	-100			100	
EST. SHOULDER MATERIAL			1,277	1,277	
EST. EXCAVATION AT EXISTING ENDBENTS	1,100				1,100
PROJECT TOTALS	2,345		8,808	8,123	1,660
EST. 5 % TO REPLACE TOPSOIL ON BORROW PITS				406	
GRAND TOTAL	2,345			8,529	
SAY	2,350			8,600	
EST. UNDERCUT	1,175 C.Y.				
DDE =	310 C.Y.				

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

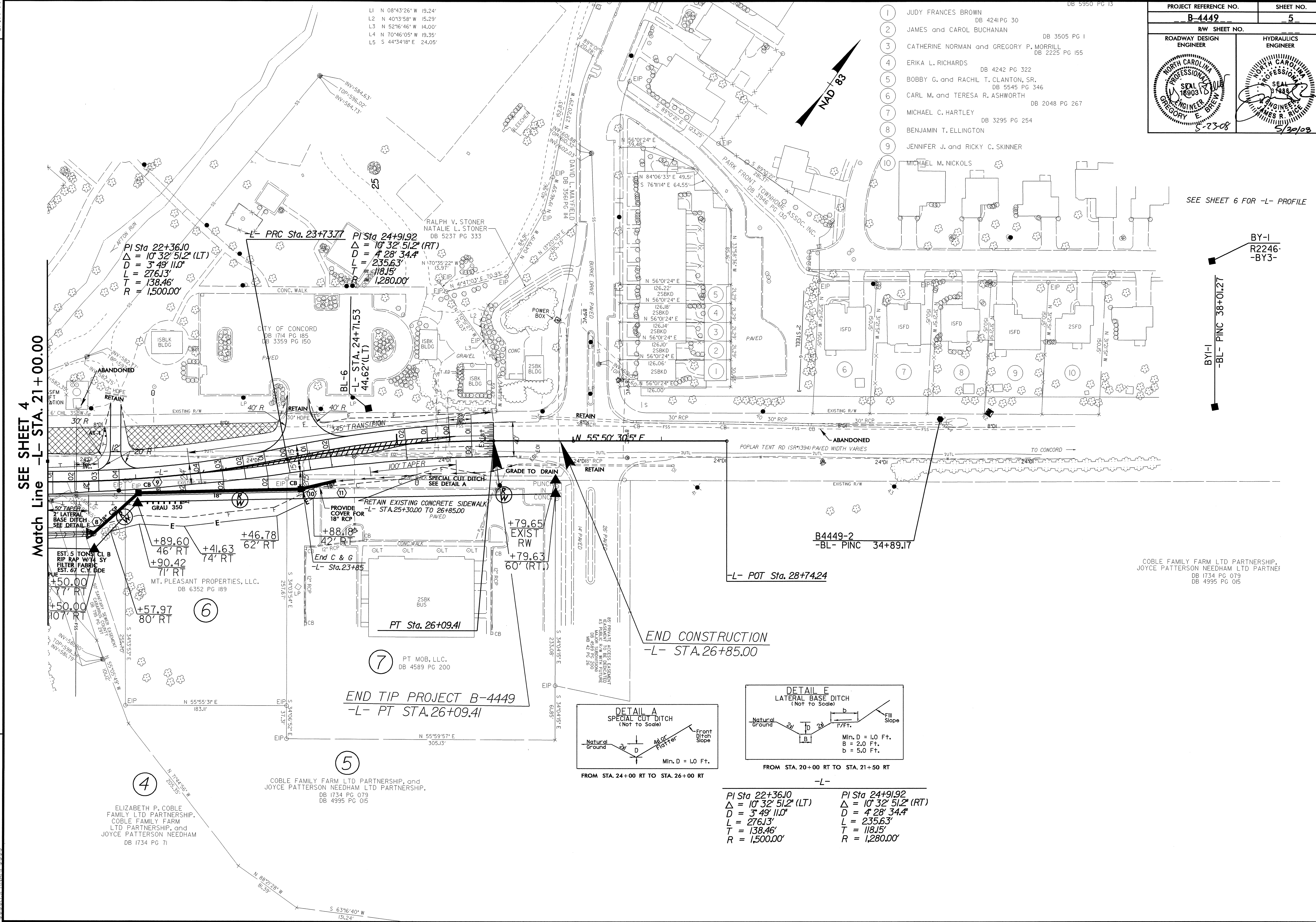
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L1 N 08°43'26" W 19.24'
L2 N 40°13'58" W 15.29'
L3 N 52°16'46" W 14.00'
L4 N 70°14'05" W 19.35'
L5 S 44°34'18" E 24.05'

DB 5950 PG 13

PROJECT REFERENCE NO.	SHEET NO.
B-4449	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

- 1 JUDY FRANCES BROWN DB 4241 PG 30
- 2 JAMES and CAROL BUCHANAN DB 3505 PG 1
- 3 CATHERINE NORMAN and GREGORY P. MORRILL DB 2225 PG 155
- 4 ERIKA L. RICHARDS DB 4242 PG 322
- 5 BOBBY G. and RACHIL T. CLANTON, SR. DB 5545 PG 346
- 6 CARL M. and TERESA R. ASHWORTH DB 2048 PG 267
- 7 MICHAEL C. HARTLEY DB 3295 PG 254
- 8 BENJAMIN T. ELLINGTON
- 9 JENNIFER J. and RICKY C. SKINNER
- 10 MICHAEL M. NICKOLS



SEE SHEET 6 FOR -L- PROFILE

BY-1
R2246-
-BY3-
BY-1
-BL- PINC 38+01.27

COBLE FAMILY FARM LTD PARTNERSHIP,
JOYCE PATTERSON NEEDHAM LTD PARTNE
DB 1734 PG 079
DB 4995 PG 015

SEE SHEET 4
Match Line -L- STA. 21+00.00

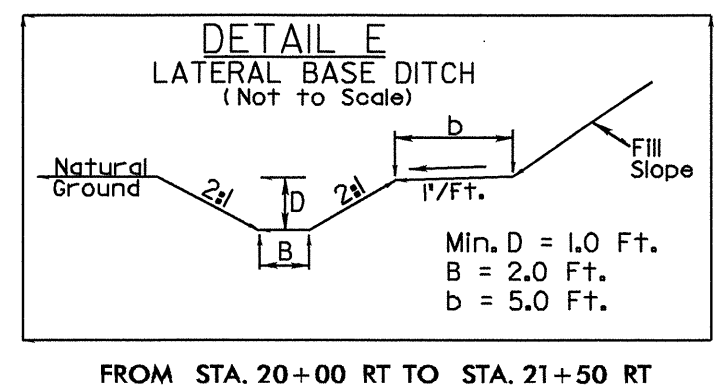
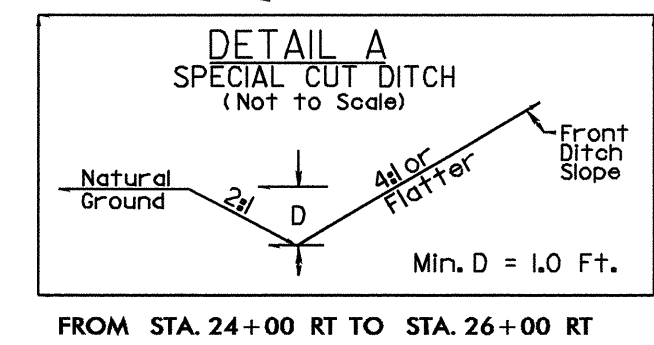
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4 ELIZABETH P. COBLE
FAMILY LTD PARTNERSHIP,
COBLE FAMILY FARM
LTD PARTNERSHIP, and
JOYCE PATTERSON NEEDHAM
DB 1734 PG 71

5 COBLE FAMILY FARM LTD PARTNERSHIP, and
JOYCE PATTERSON NEEDHAM LTD PARTNERSHIP,
DB 1734 PG 079
DB 4995 PG 015

7 PT MOB, LLC.
DB 4589 PG 200
END TIP PROJECT B-4449
-L- PT STA. 26+09.41



-L-

PI Sta 22+36.10	PI Sta 24+91.92
$\Delta = 10^\circ 32' 51.2" (LT)$	$\Delta = 10^\circ 32' 51.2" (RT)$
$D = 3' 49' 11.0"$	$D = 4' 28' 34.4"$
$L = 276.13'$	$L = 235.63'$
$T = 138.46'$	$T = 118.15'$
$R = 1,500.00'$	$R = 1,280.00'$

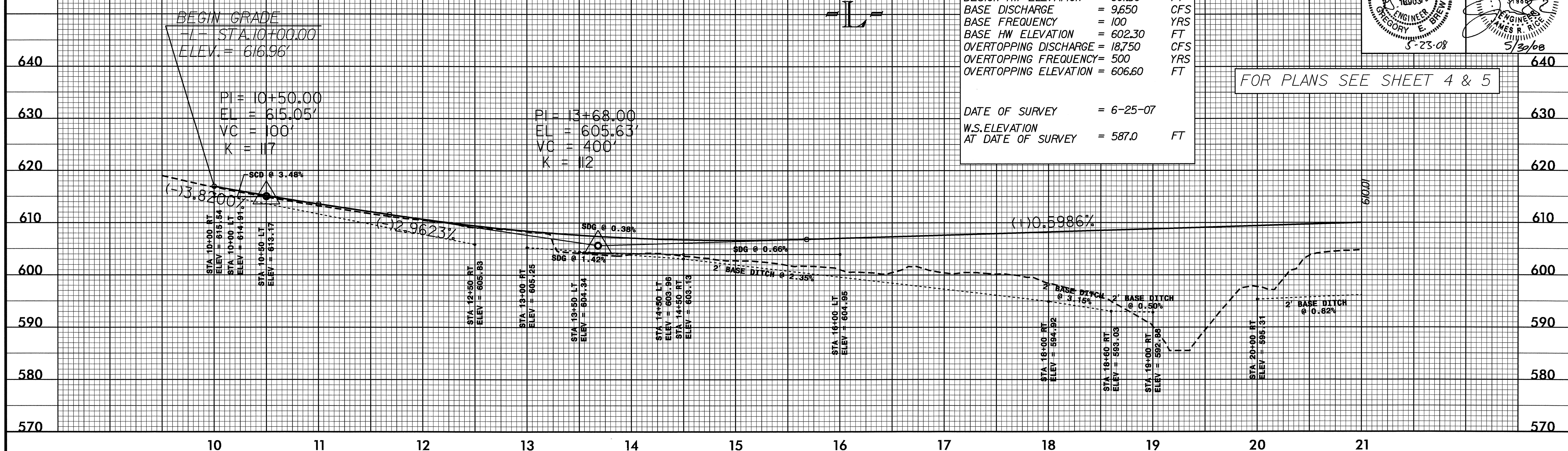
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BM #2 -L- STA.17+79 7' LEFT, ELEV.603.58'

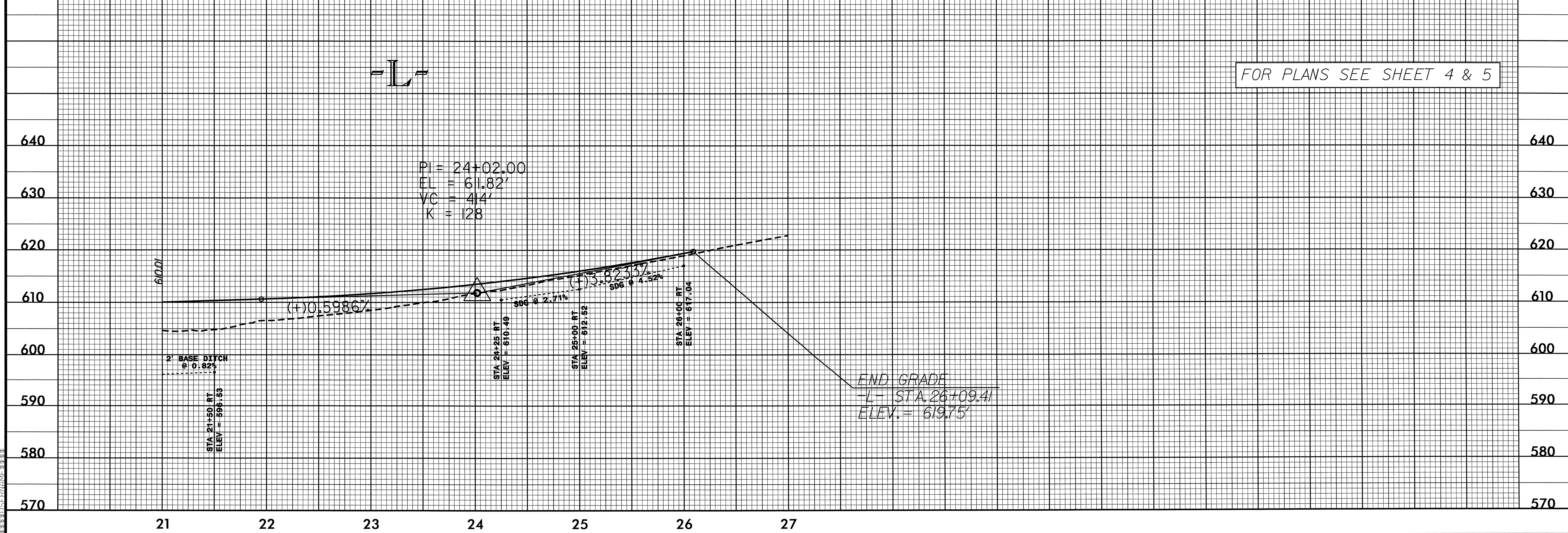
BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 8,000	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 601.50	FT
BASE DISCHARGE	= 9,650	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 602.30	FT
OVERTOPPING DISCHARGE	= 18,750	CFS
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING ELEVATION	= 606.60	FT
DATE OF SURVEY = 6-25-07		
W.S.ELEVATION AT DATE OF SURVEY = 587.0 FT		

PROJECT REFERENCE NO. B-4449	SHEET NO. 6
ROADWAY DESIGN ENGINEER GREGORY E. BREW NORTH CAROLINA PROFESSIONAL SEAL 18903 5-23-08	HYDRAULICS ENGINEER JAMES R. RIGGS NORTH CAROLINA PROFESSIONAL SEAL 31982 5/29/08

FOR PLANS SEE SHEET 4 & 5



FOR PLANS SEE SHEET 4 & 5



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