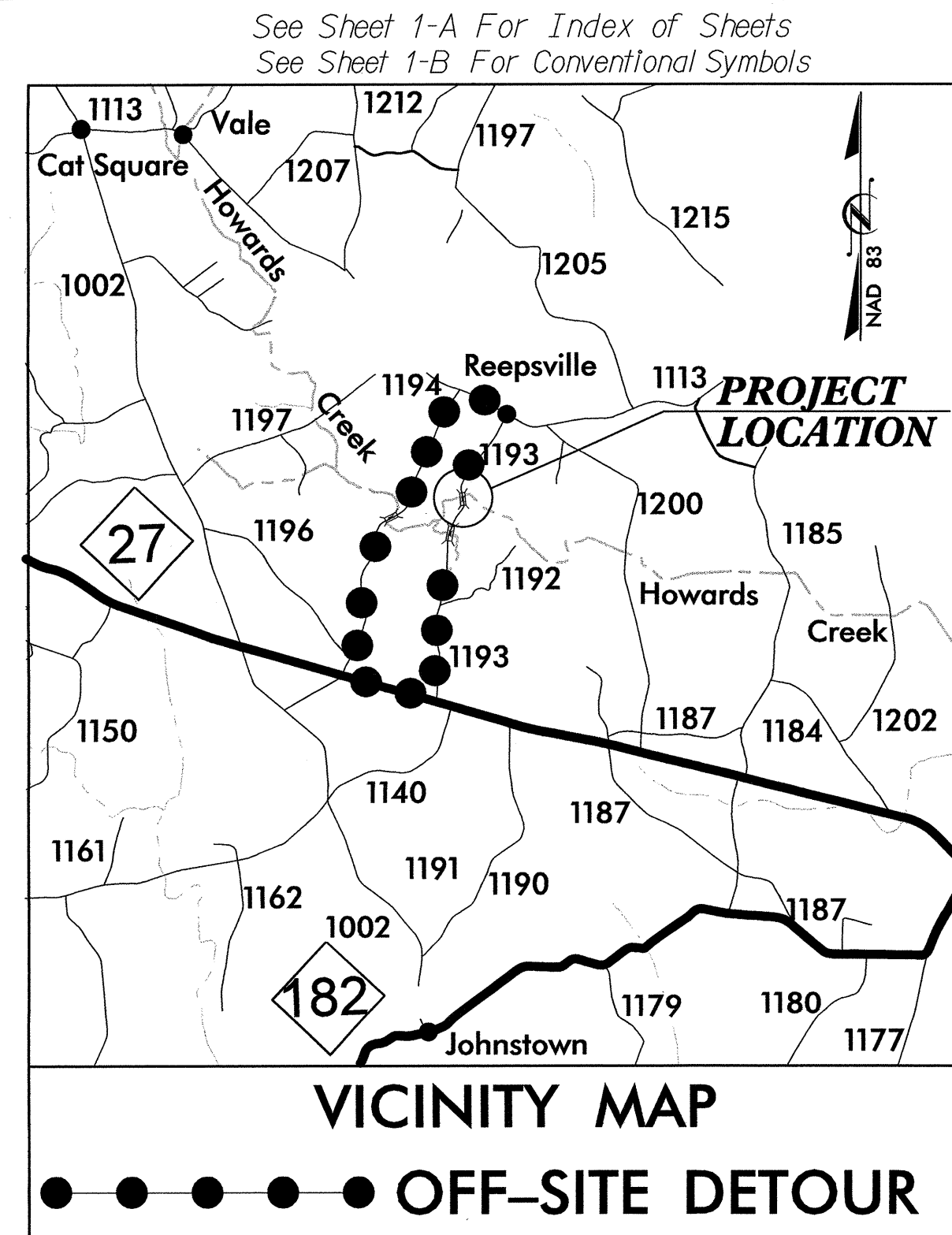


09/08/09
 CONTRACT: C202049
 TIP PROJECT: B-4177
 SYSTEMS\$\$\$\$
 DGN\$\$\$\$
 USER\$\$\$\$

TIP PROJECT: B-4177

CONTRACT: C202049

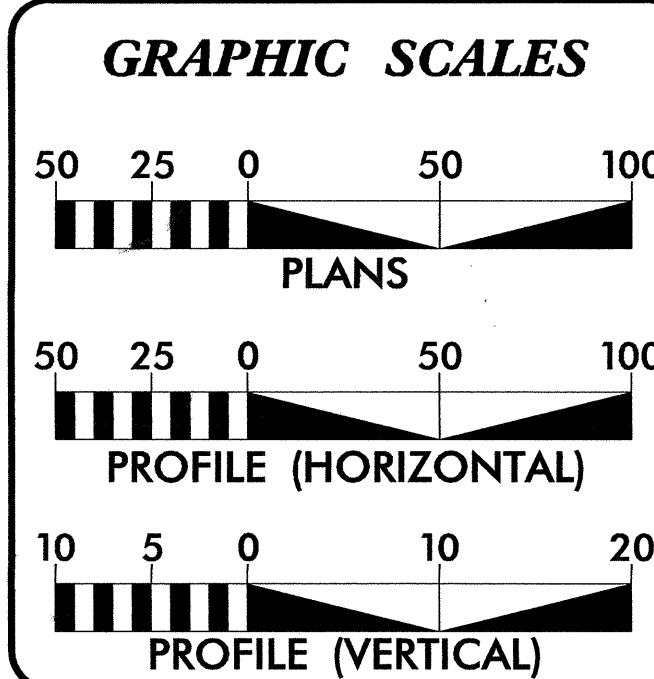
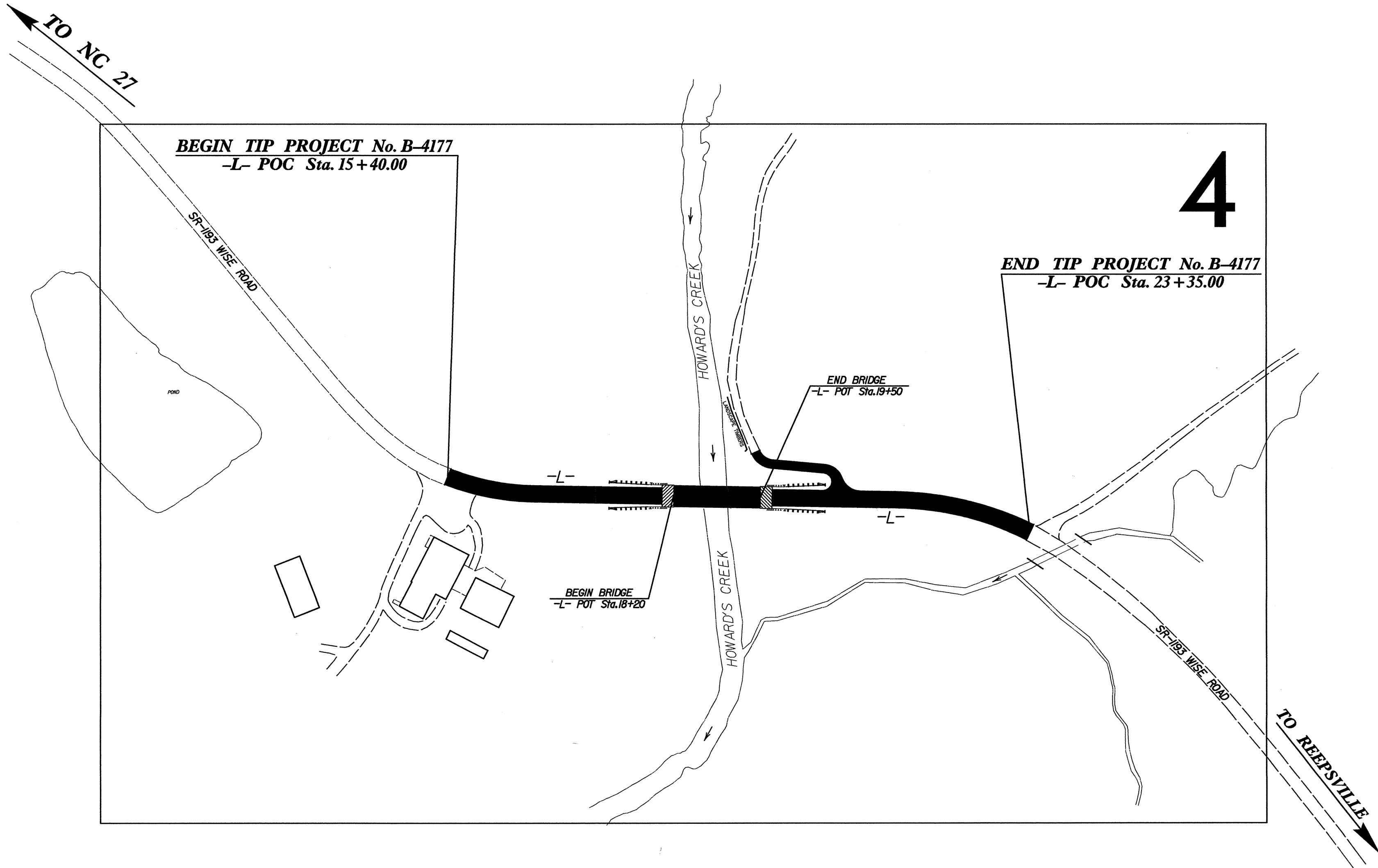
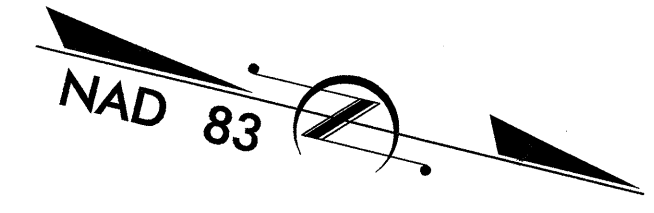


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
LINCOLN COUNTY

LOCATION: BRIDGE No. 142 OVER HOWARDS CREEK ON SR-1193 (WISE ROAD), SOUTH OF REEPSVILLE

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4177	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33524.1.1	BRZ-1193(5)	PE	
33524.2.1	BRZ-1193(5)	RW & UTILITIES	
33524.3.1	BRZ-1193(5)	CONSTRUCTION	



DESIGN DATA

ADT 2008 =	580
ADT 2030 =	870
DHV =	10 %
D =	60 %
T =	3 % *
V =	30 MPH
* TTST 1 %	DUAL 2 %

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT TIP No. B-4177 =	0.126 miles
LENGTH OF STRUCTURE PROJECT TIP No. B-4177 =	0.025 miles
TOTAL LENGTH OF PROJECT TIP No. B-4177 =	0.151 miles

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY 9, 2008

LETTING DATE:
JANUARY 20, 2009

J. S. GOODNIGHT, PE
PROJECT ENGINEER

S. D. KENDALL, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *David P. Becker* 11/19/08 P.E.

ROADWAY DESIGN ENGINEER

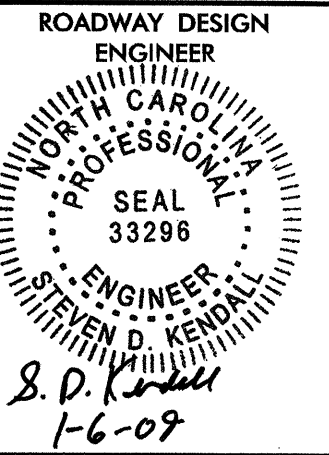
SIGNATURE: *S. D. Kendall* 11-19-08 P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. SHEET NO.
B-4177 1-A



**2006 ROADWAY ENGLISH
STANDARD DRAWINGS**

GENERAL NOTES

INDEX OF SHEETS

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

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

N. C. Department of Transportation – Raleigh, N. C., Dated July 18, 2006 are applicable to this project and by reference hereby are considered part of these plans. The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch –

STD.NO.	TITLE
DIVISION 2 – EARTHWORK	
200.03	Method of Clearing – Method III
225.02	Guide for Grading Subgrade – Secondary and Local
225.04	Method of Obtaining Superelevation – Two Lane Pavement
DIVISION 3 – PIPE CULVERTS	
300.01	Method of Pipe Installation – 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	
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
862.01	Guardrail Placement
862.02	Guardrail Installation
866.03	Structure Anchor Units
866.02	Woven Wire Fence – with Wooden Posts
866.04	Barbed Wire Fence
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

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 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.

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.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE:

Duke Energy – Steve Farrell (704) 382-7380
A T & T – Reed McCumber (828) 465-7517

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

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

SHEET No.

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 SHEET
1-E	CENTERLINE COORDINATION LIST
2	TYPICAL SECTIONS, PAVEMENT SCHEDULE, AND WEDGING DETAILS
2-A	STRUCTURE TYPICAL SECTION, SKETCH SHOWING BRIDGE / PAVEMENT RELATIONSHIP
2-B	SPECIAL DETAILS: ANCHORAGE FOR FRAMES
3	SUMMARY OF QUANTITIES
3-A	QUANTITY SUMMARY SHEETS: DRAINAGE SUMMARY (48" & UNDER) GUARDRAIL SUMMARY SUMMARY OF EARTHWORK
4	PLAN SHEET
5	PROFILE SHEET
TCP-1 THRU TCP-3	TRAFFIC CONTROL PLANS
SD-1	SPECIAL SIGN DESIGN
EC-1 THRU EC-5	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1	CROSS-SECTION SUMMARY SHEETS
X-2 THRU X-16	CROSS-SECTIONS
S-1 THRU S-26	STRUCTURE PLAN SHEETS

5/28/09

06-JAN-2009 11:38
RD238341 1/6/2009 b4177_rdy_tsh.tmburns RD-Oce34

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	□ EOM
Parcel/Sequence Number	②③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-WLB-
Proposed Wetland Boundary	-WLB-
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-

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	-----
Buffer Zone 2	-----
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Swamp Marsh	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite Marker	-----
Existing Control of Access	○
Proposed Control of Access	○
Existing Easement Line	-E-
Proposed Temporary Construction Easement	-E-
Proposed Temporary Drainage Easement	-TDE-
Proposed Permanent Drainage Easement	-PDE-
Proposed Permanent 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
Curb Cut for Future Wheel Chair Ramp	○ CCFR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----

VEGETATION:

Single Tree	○
Single Shrub	○
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○
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	-----

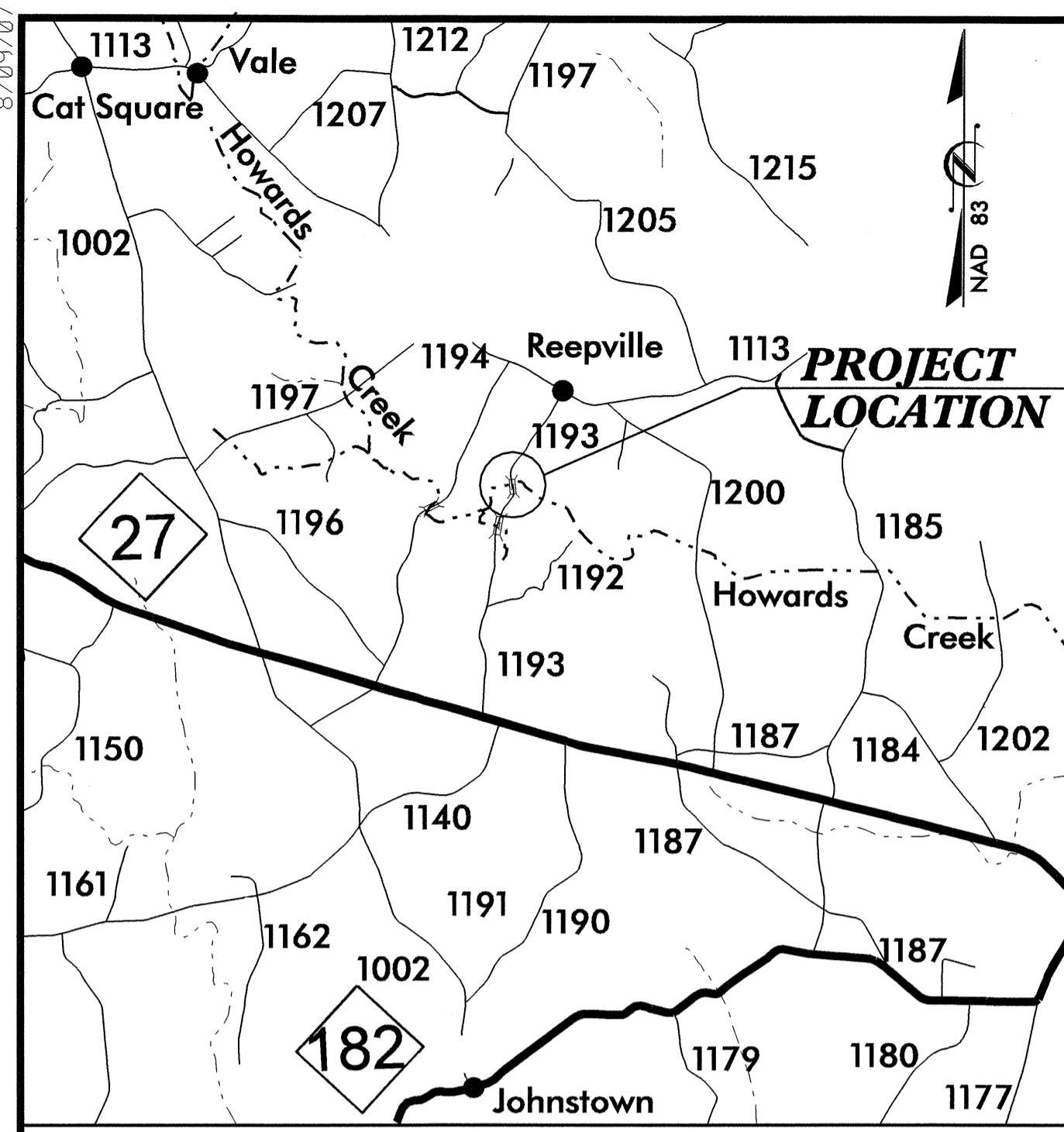
SANITARY SEWER:

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.

SURVEY CONTROL SHEET B-4177



VICINITY MAP
NOT TO SCALE

NOTES:

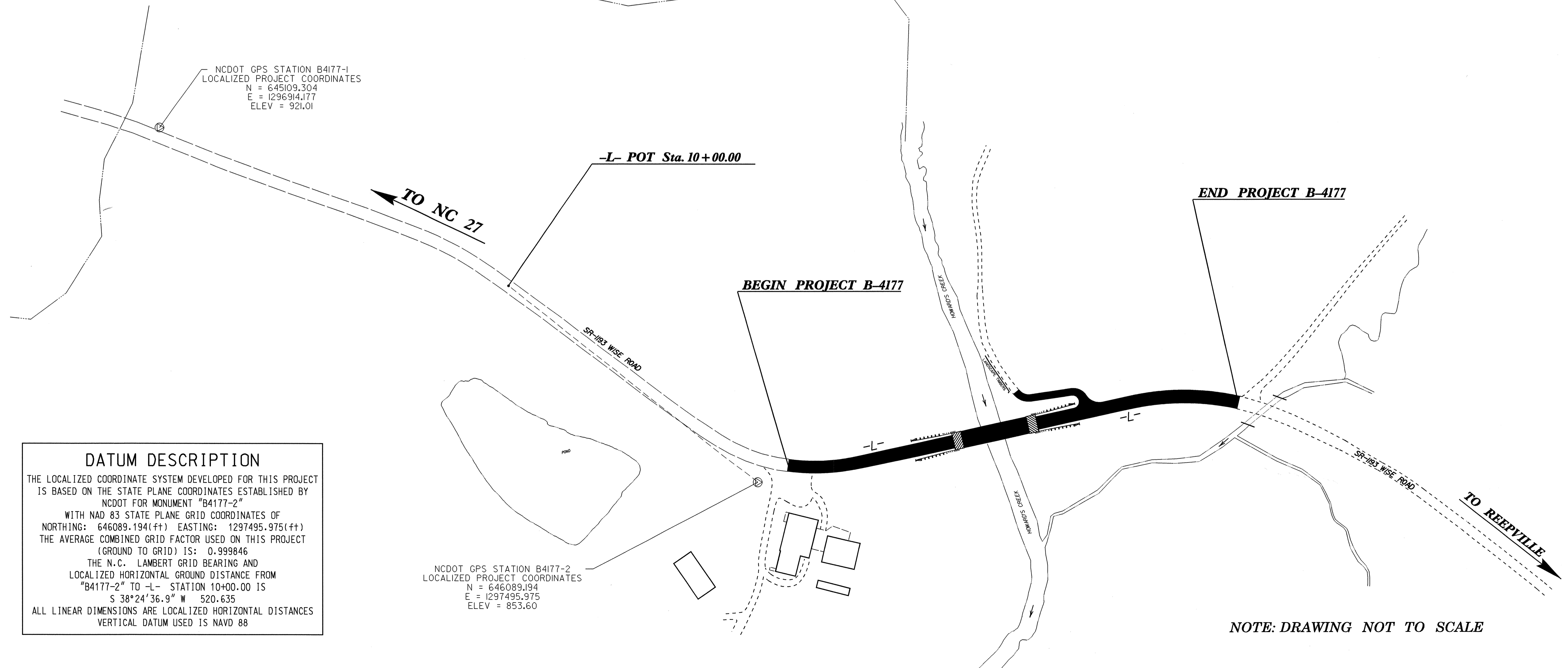
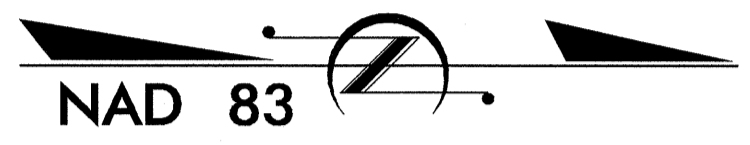
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[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
B4177_LS_CONTROL_070809.TXT
B4177_LS_LOCAL_060421.TXT

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

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

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)



NCDOT GPS STATION B4177-1
LOCALIZED PROJECT COORDINATES
N = 645109.304
E = 1296914.177
ELEV = 921.01

NCDOT GPS STATION B4177-2
LOCALIZED PROJECT COORDINATES
N = 646089.194
E = 1297495.975
ELEV = 853.60

DATUM DESCRIPTION
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4177-2"
WITH NAD 83 STATE PLANE GRID COORDINATES OF
NORTHING: 646089.194(±) EASTING: 1297495.975(±)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999846
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4177-2" TO -L- STATION 10+00.00 IS
S 38°24'36.9" W 520.635
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

8/09/07
 22-OCT-2008 09:28
 C:\p03\proj\B4177\1s_1c_070809.dgn

SURVEY CONTROL SHEET B-4177

PROJECT REFERENCE NO.	SHEET NO.
B-4177	1-D
Location and Surveys	

BL POINT	DESC.	NORTH	EAST	ELEVATION	L30 STATION	OFFSET
GPS1	B4177-1	645109.3040	1296914.1770	921.01	OUTSIDE PROJECT LIMITS	
GPS2	B4177-2	646089.1940	1297495.9750	853.60	15+09.15	38.34 RT
LS3	BL-3	646525.8690	1297414.3190	824.65	19+41.18	12.39 RT
LS4	BL-4	646781.4080	1297340.1050	834.50	22+04.64	13.15 LT
LS5	BL-5	647038.1170	1297447.0580	838.33	OUTSIDE PROJECT LIMITS	

T0 POINT	DESC.	NORTH	EAST	ELEVATION	L30 STATION	OFFSET
LS6	T-6	646430.9560	1297212.7190	810.76	18+92.34	205.01 LT
LSE03		646525.8690	1297414.3190	824.65	19+41.18	12.39 RT
LS7	T-7	646566.8630	1297598.9550	811.41	19+41.08	201.53 RT

```

.....
BM1      ELEVATION = 860.91
N 645984      E 1297438
L STATION 14+01 31 RIGHT
RR SPIKE IN BASE OF WOOD FENCE CORNER
.....
BM2      ELEVATION = 831.74
N 646552      E 1297347
L STATION 19+81 47 LEFT
RR SPIKE IN BASE OF 10IN OAK
.....
BM3      ELEVATION = 847.63
N 647104      E 1297438
L30 STATION 24+38
N 13° 35' 56.7" E DIST 103.28
RR SPIKE IN BASE OF POWER POLE
.....
    
```

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4177-2"

WITH NAD 83 STATE PLANE GRID COORDINATES OF
 NORTHING: 646089.194(ft) EASTING: 1297495.975(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
 (GROUND TO GRID) IS: 0.999846

THE N.C. LAMBERT GRID BEARING AND
 LOCALIZED HORIZONTAL GROUND DISTANCE FROM
 "B4177-2" TO L- STATION 10+00.00 IS
 S 38°24'36.9" W 520.635

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/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)
- THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4177_LS_CONTROL_070809.TXT
 B4177_LS_LOCAL_060421.TXT
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

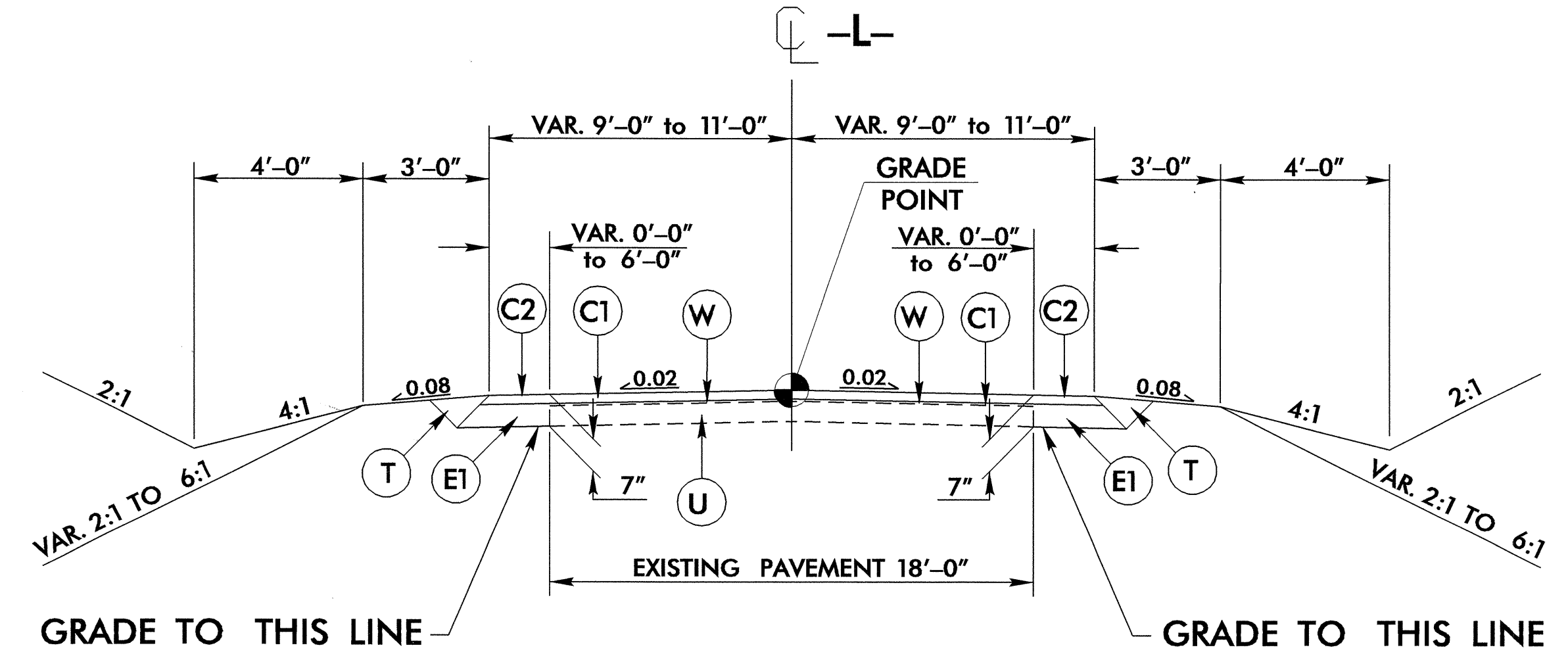
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PROJECT REFERENCE NO. B-4177	SHEET NO. 2
ROADWAY DESIGN ENGINEER SEAL 33298 JAMES S. KENDALL	PAVEMENT DESIGN ENGINEER SEAL 22886 CLARK S. MORRISON

PAVEMENT SCHEDULE			
C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 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 LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
C2	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	T	EARTH MATERIAL.
C3	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 2" IN DEPTH.	U	EXISTING PAVEMENT.
E1	PROP. APPROX. 4 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).

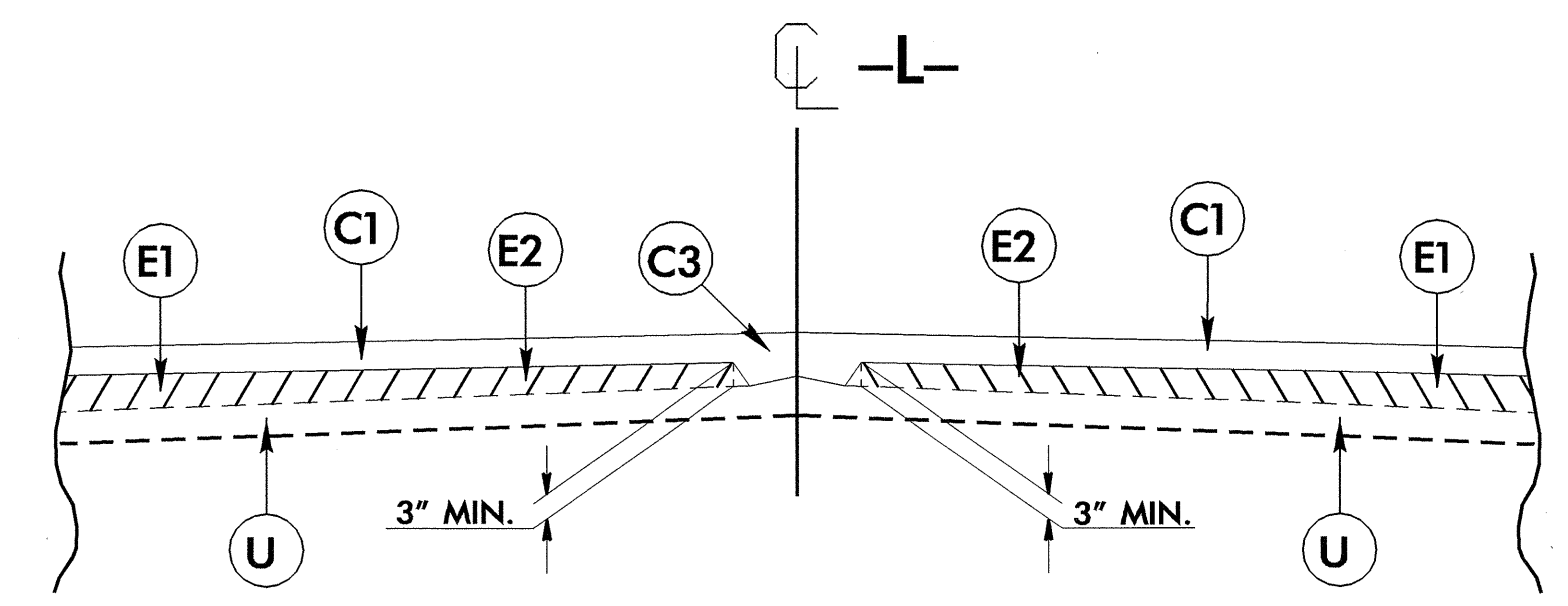
NOTE:
RESURFACE EXISTING PAVEMENT FROM -L- Sta. 15+40 TO 15+90
GRADE EXISTING GRAVEL ROAD FROM TYPICAL SECTION No. 2 TO EXISTING -L- Sta. 22+75 TO -L- Sta. 23+35

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

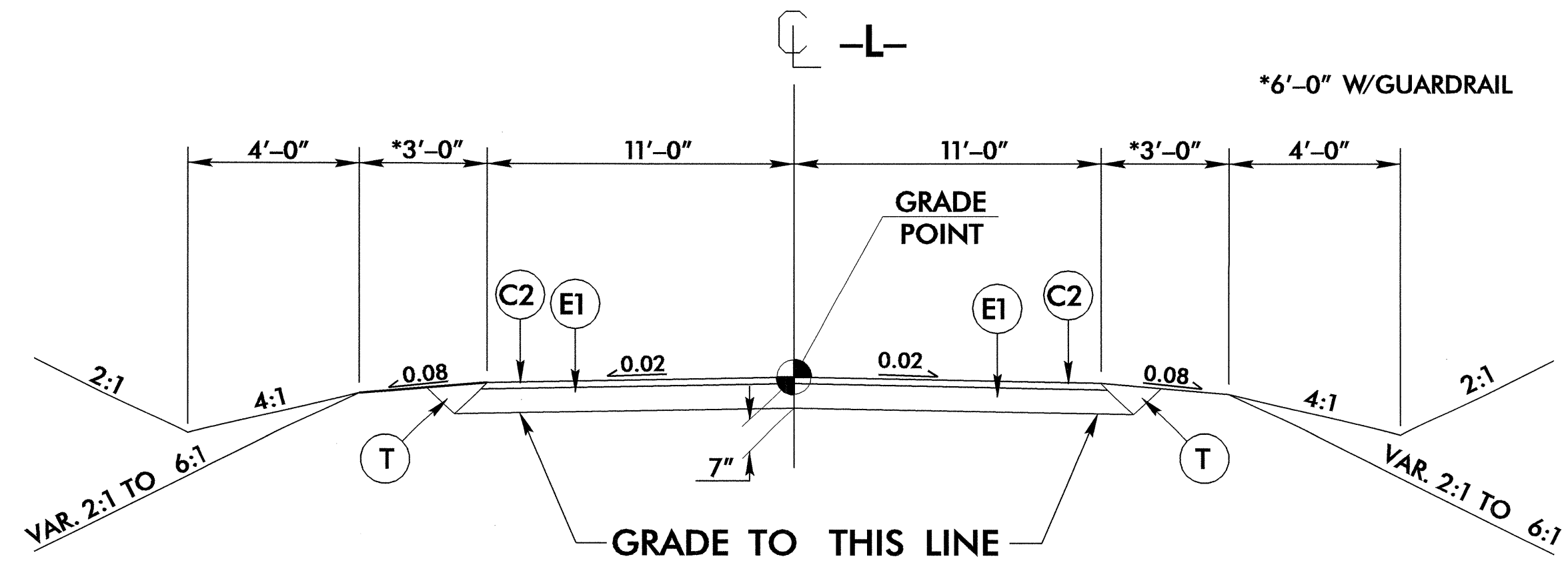


TYPICAL SECTION NO. 1

-L- Sta. 15+90.00 TO Sta. 17+01.55

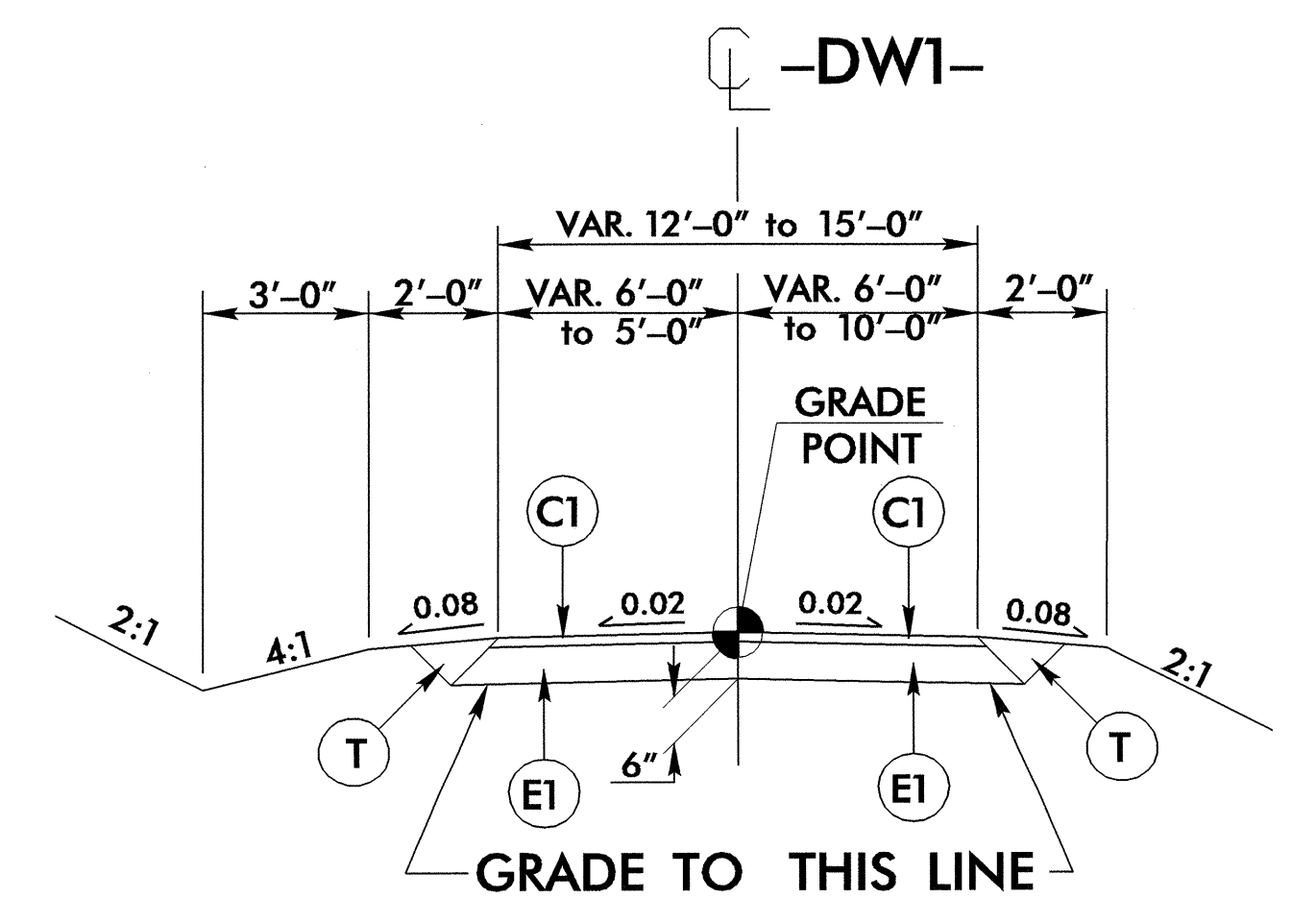


Detail Showing Method of Wedging



TYPICAL SECTION NO. 2

-L- Sta. 17+00 TO Sta. 18+20 (BRIDGE)
-L- Sta. 19+50 (BRIDGE) TO Sta. 22+75



TYPICAL SECTION NO. 3

-DW1- Sta. 10+25.00 TO Sta. 11+66.93

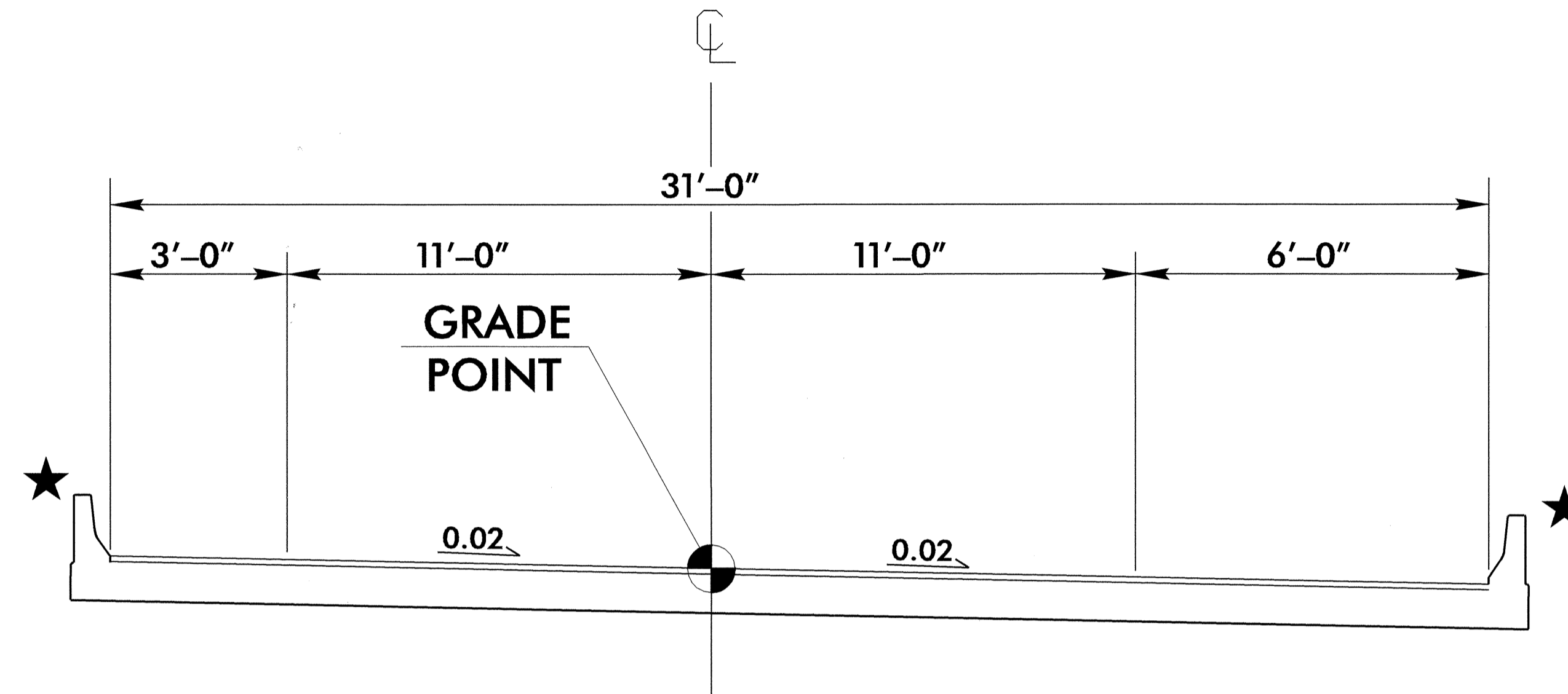
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STRUCTURE TYPICAL SECTIONS

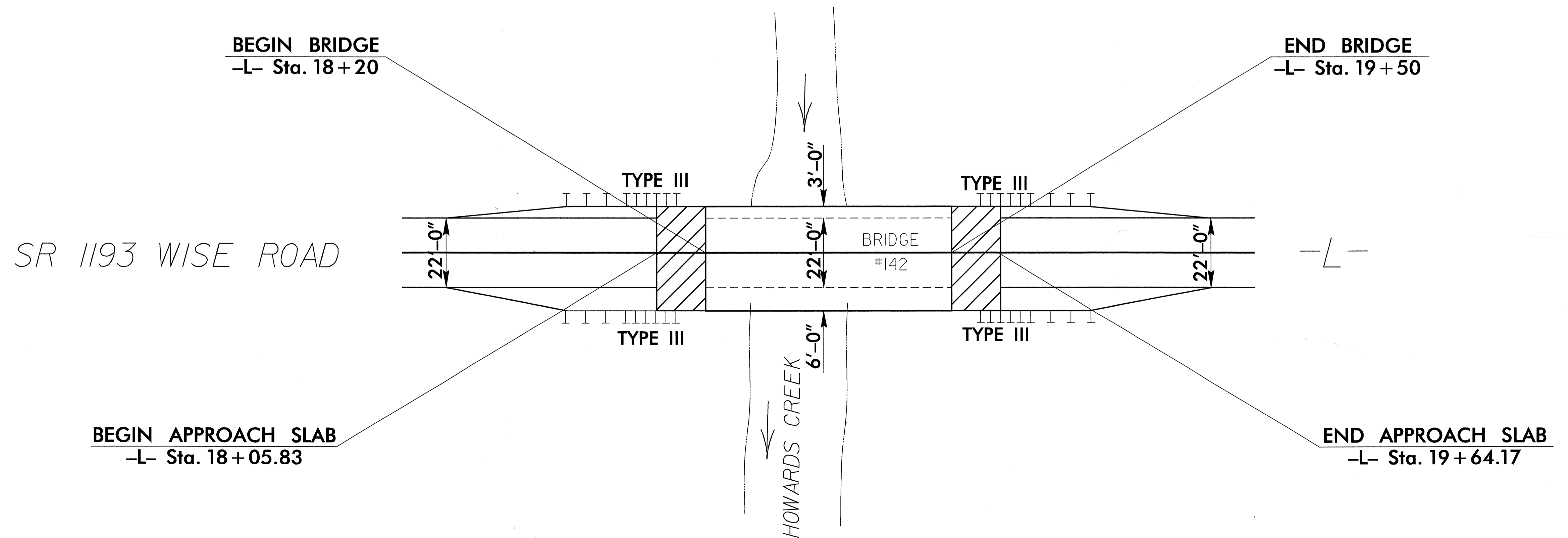
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ADT 2025 =	800
DHV =	10 %
D =	60 %
T =	3 % *
V =	30 MPH
* TTST 1 %	DUAL 2%
FUNCTIONAL CLASSIFICATION =	LOCAL

★ BRIDGE RAIL TO BE DETERMINED BY STRUCTURE DESIGN UNIT



TYPICAL SECTION NO. A

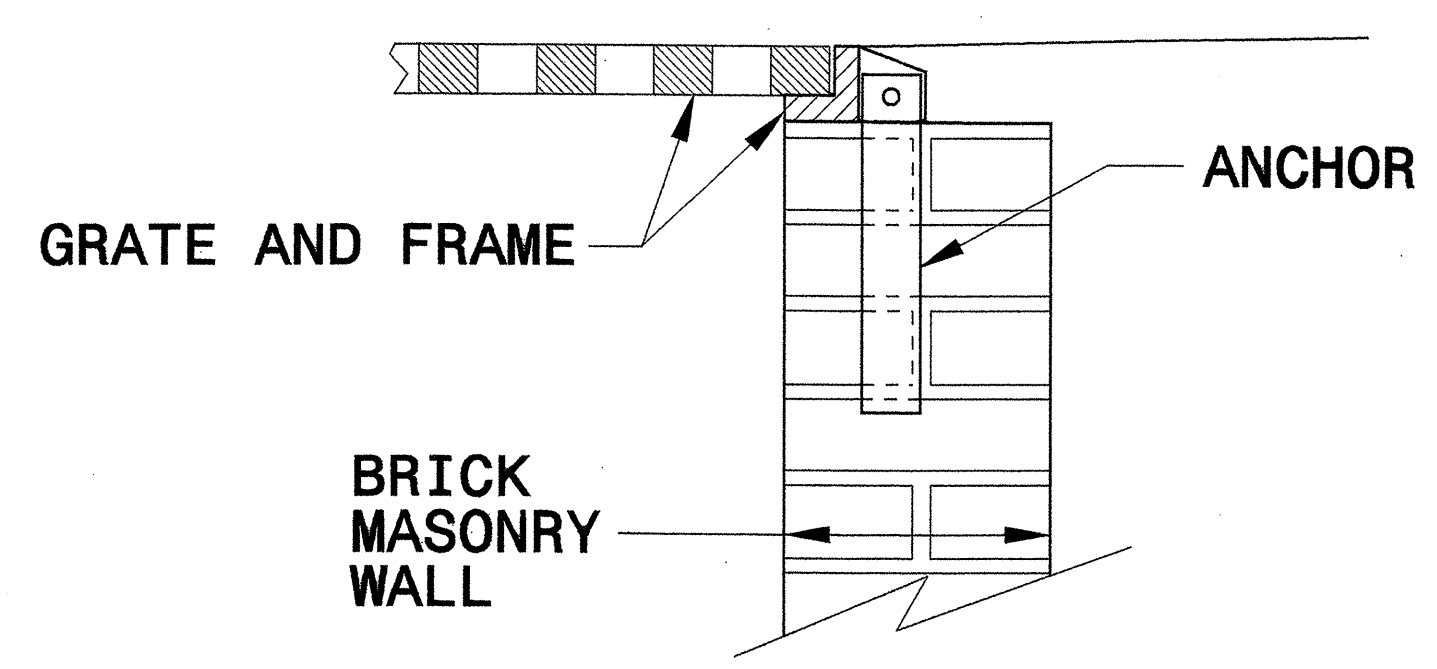
SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP



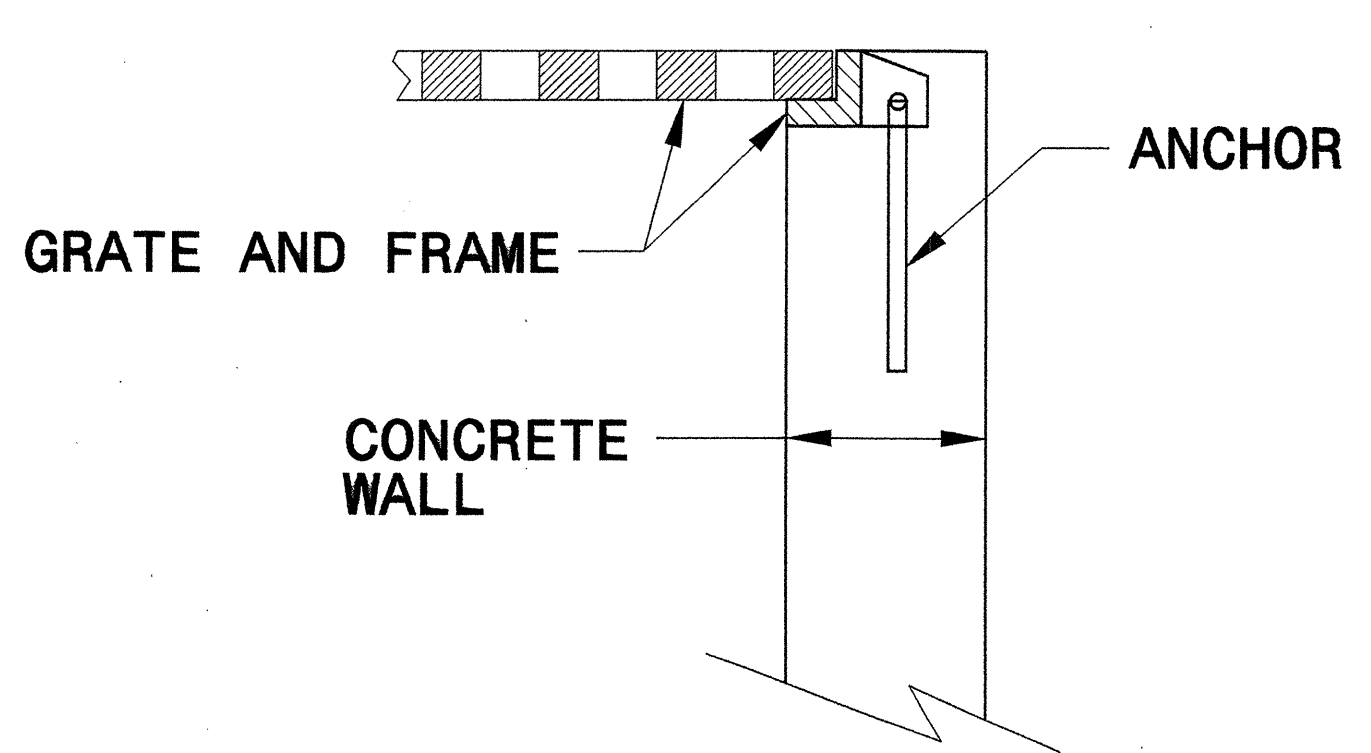
STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

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

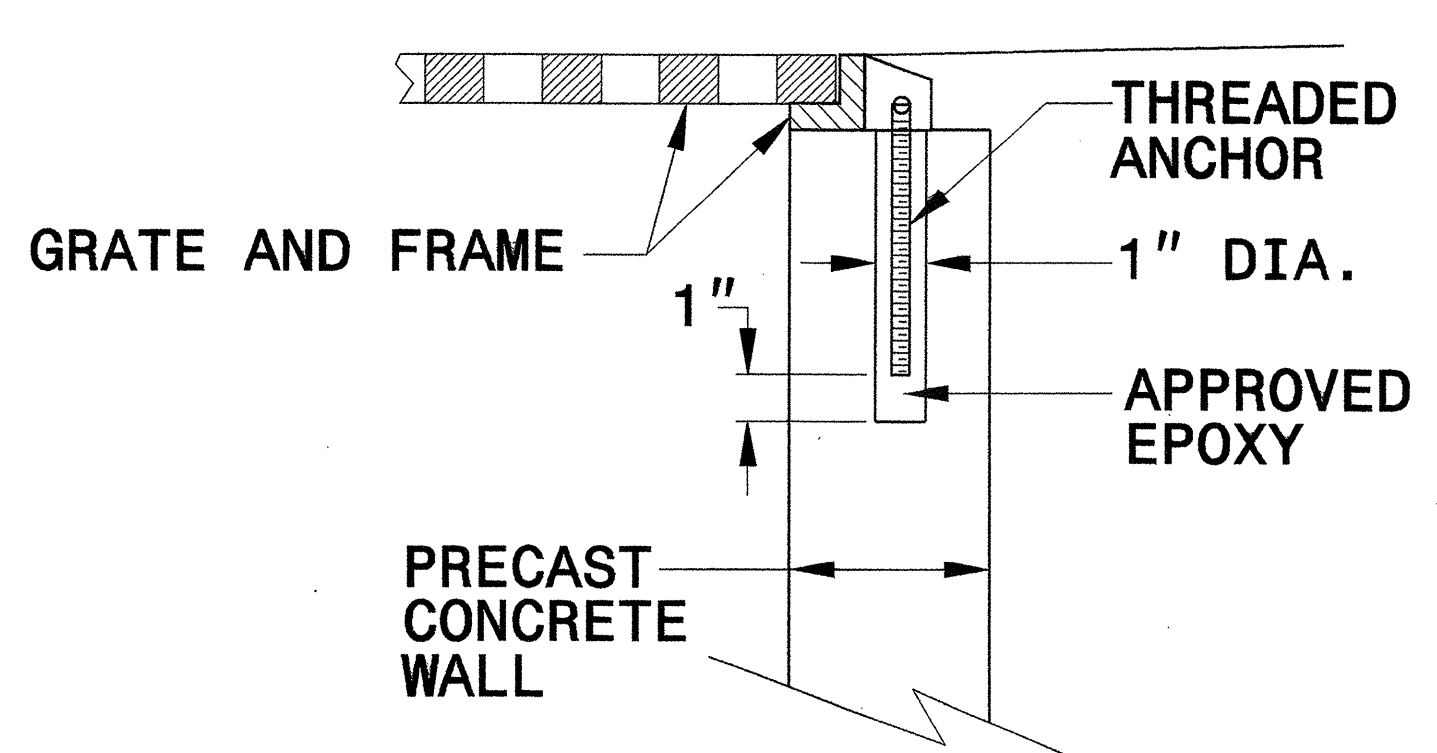
SHEET 1 OF 1
840D25



BRICK MASONRY CONSTRUCTION



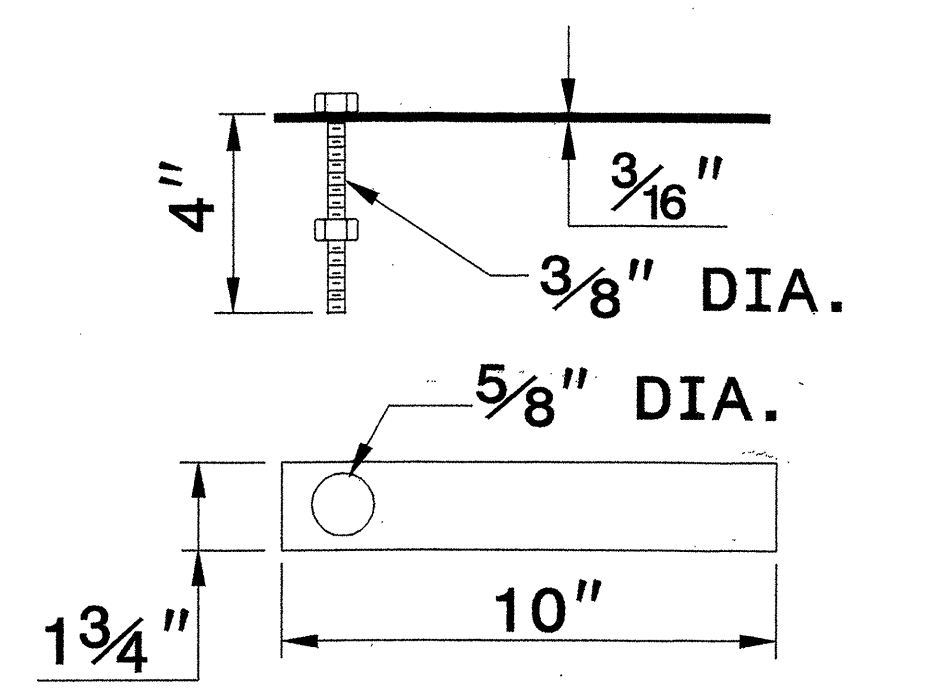
CONCRETE CONSTRUCTION



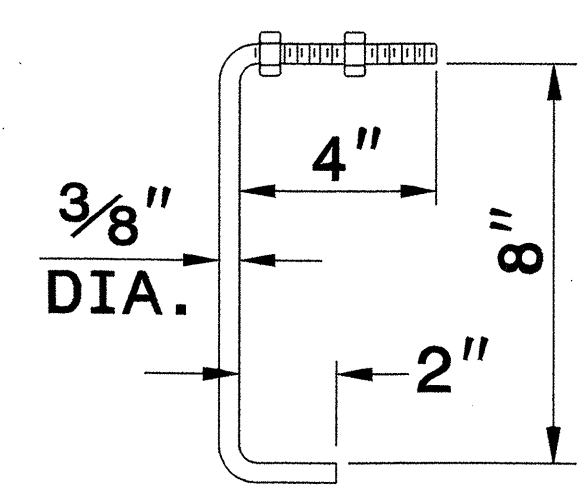
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

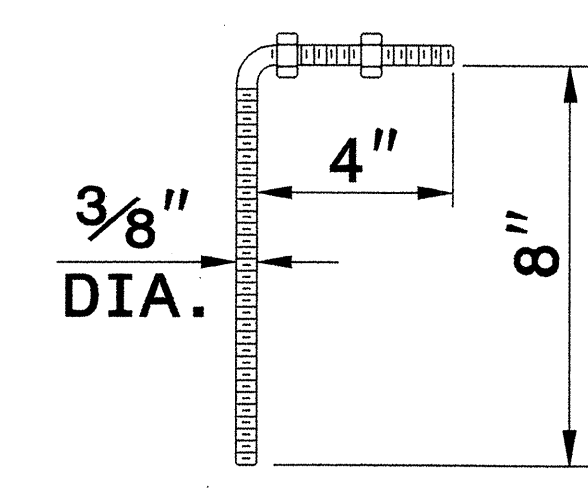
NOTE:
 CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



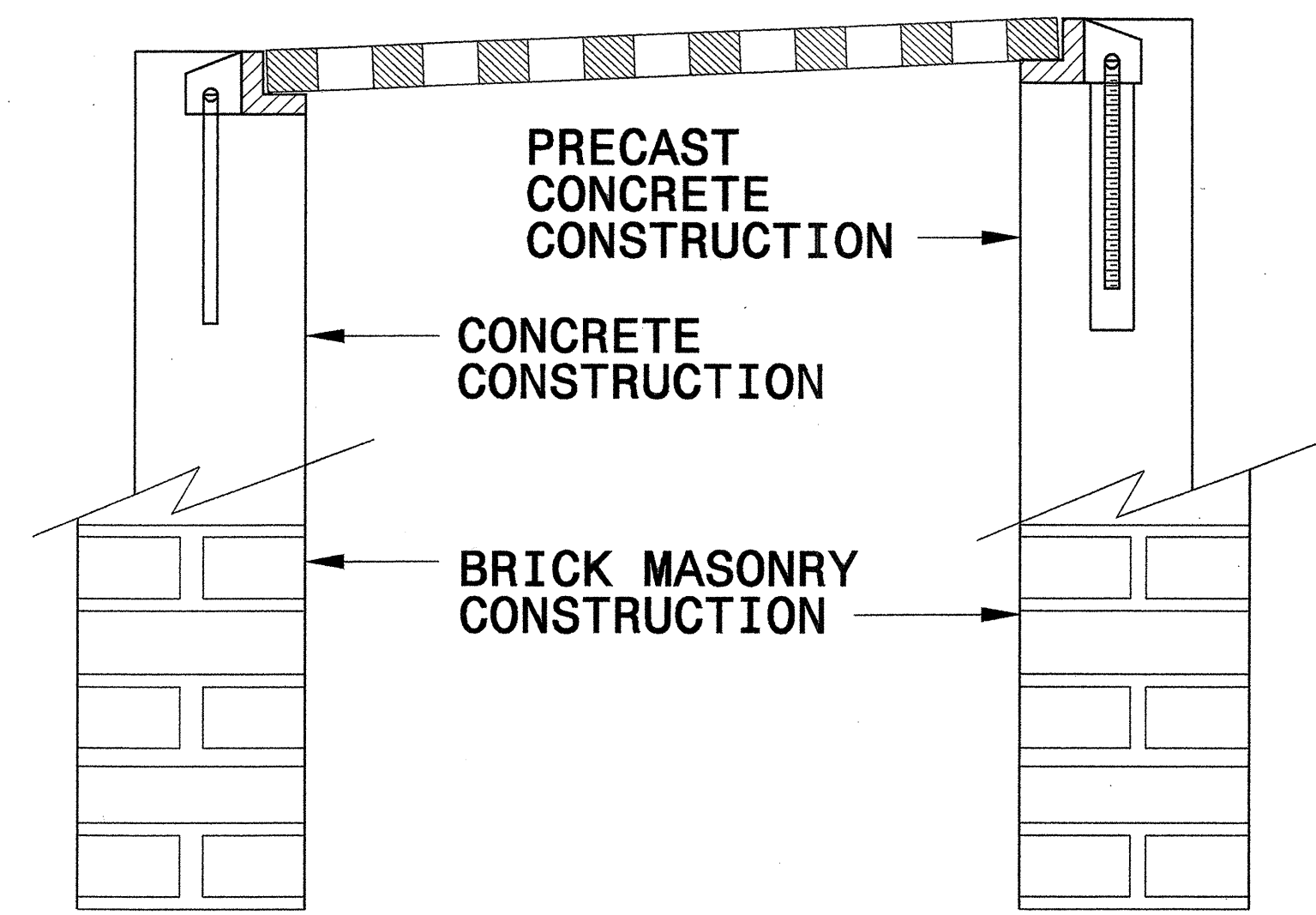
MASONRY ANCHOR
 3/8" DIA. BOLT WITH PLATE



CONCRETE ANCHOR
 3/8" DIA. BENT BAR



PRECAST CONCRETE ANCHOR
 3/8" DIA. BENT BAR

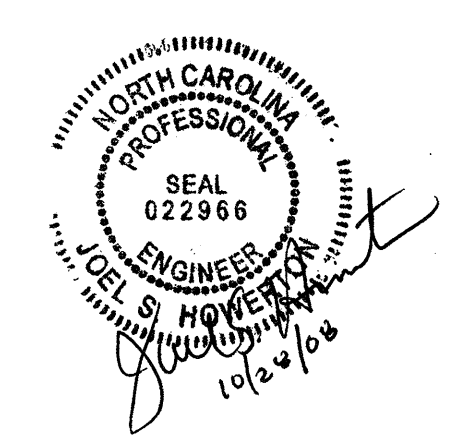


FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

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.:

\$\$\$\$\$\$ DIMENSIONS \$\$\$\$\$\$
 \$\$\$\$\$\$ SURFACES \$\$\$\$\$\$
 \$\$\$\$\$\$ UNLESS NOTED \$\$\$\$\$\$



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

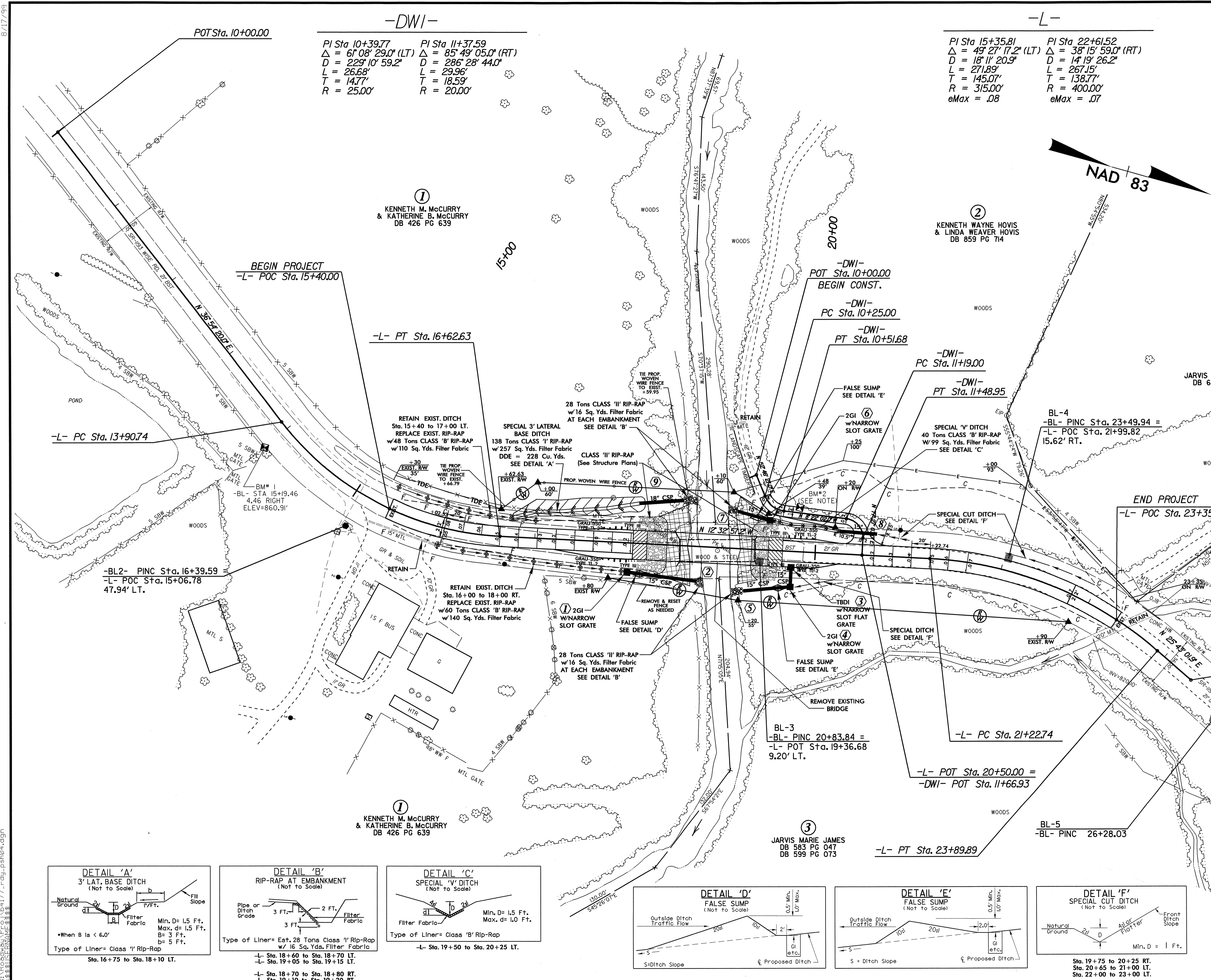
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202049

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION	228600000-N	840	4	EA	MASONRY DRAINAGE STRUCTURES	601200000-E	1610	175	TON	SEDIMENT CONTROL STONE
000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING	230800000-E	840	1	LF	MASONRY DRAINAGE STRUCTURES	601500000-E	1615	2	ACR	TEMPORARY MULCHING
002200000-E	225	5,700	CY	UNCLASSIFIED EXCAVATION	235420000-N	840	3	EA	FRAME WITH GRATE, STD 840.24	601800000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING
003000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (19+00)	235500000-N	840	1	EA	FRAME WITH GRATE, STD 840.29	602100000-E	1620	1.25	TON	FERTILIZER FOR TEMPORARY SEEDING
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING	315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	602900000-E	SP	225	LF	SAFETY FENCE
005700000-E	226	200	CY	UNDERCUT EXCAVATION	316500000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** (350 TL-2)	603000000-E	1630	600	CY	SILT EXCAVATION
006300000-N	SP	Lump Sum		GRADING	321500000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III	603600000-E	1631	2,000	SY	MATting FOR EROSION CONTROL
013400000-E	240	210	CY	DRAINAGE DITCH EXCAVATION	350300000-E	866	210	LF	WOVEN WIRE FENCE, 47" FABRIC	603700000-E	SP	25	SY	COIR FIBER MAT
019500000-E	265	800	CY	SELECT GRANULAR MATERIAL	350900000-E	866	10	EA	4" TIMBER FENCE POSTS, 7'-6" LONG	603800000-E	SP	85	SY	PERMANENT SOIL REINFORCEMENT MAT
019600000-E	270	800	SY	FABRIC FOR SOIL STABILIZATION	351500000-E	866	20	EA	5" TIMBER FENCE POSTS, 8'-0" LONG	604200000-E	1632	80	LF	1/4" HARDWARE CLOTH
031800000-E	300	30	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	355700000-E	866	100	LF	ADDITIONAL BARBED WIRE	607000000-N	SP	4	EA	SPECIAL STILLING BASINS
036600000-E	310	78	LF	15" RC PIPE CULVERTS, CLASS III	356900000-E	867	100	LF	BARBED WIRE FENCE RESET REMOVE AND RESET EXISTING 5 STRAND BARBED WIRE FENCING	6071030000-E	SP	200	LF	COIR FIBER BAFFLES
070800000-E	310	148	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK	362800000-E	876	135	TON	RIP RAP, CLASS I	6071050000-E	SP	4	EA	*** SKIMMER (1-1/2')
071400000-E	310	48	LF	18" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK	362800000-E	876	135	TON	RIP RAP, CLASS I	608400000-E	1660	11	ACR	SEEDING & MULCHING
122000000-E	545	200	TON	INCIDENTAL STONE BASE	363500000-E	876	125	TON	RIP RAP, CLASS II	608700000-E	1660	1	ACR	MOWING
148900000-E	610	1,000	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	364900000-E	876	165	TON	RIP RAP, CLASS B	609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
152500000-E	610	515	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	365600000-E	876	1,385	SY	FILTER FABRIC FOR DRAINAGE	609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
156000000-E	620	75	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	440000000-E	1110	253	SF	WORK ZONE SIGNS (STATIONARY)	609600000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
202200000-E	815	112	CY	SUBDRAIN EXCAVATION	441000000-E	1110	104	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)	610800000-E	1665	1	TON	FERTILIZER TOPDRESSING
203300000-E	815	84	CY	SUBDRAIN FINE AGGREGATE	443000000-N	1130	10	EA	DRUMS	611400000-N	SP	5	HR	SPECIALIZED HAND MOWING
204400000-E	815	500	LF	6" PERFORATED SUBDRAIN PIPE	444500000-E	1145	80	LF	BARRICADES (TYPE III)	611700000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
205500000-E	815	15	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS	481000000-E	1205	6,480	LF	PAINT PAVEMENT MARKING LINES (4")					
206600000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET	600000000-E	1605	480	LF	TEMPORARY SILT FENCE					
207700000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)	600600000-E	1610	180	TON	STONE FOR EROSION CONTROL, CLASS A					
					600900000-E	1610	185	TON	STONE FOR EROSION CONTROL, CLASS B					

5/28/99

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PROJECT REFERENCE NO. B-4177	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER KENNETH M. McCURRY NORTH CAROLINA PROFESSIONAL SEAL 33298	HYDRAULICS ENGINEER KENNETH WAYNE HOVIS NORTH CAROLINA PROFESSIONAL SEAL 029984
NOTE: SEE SHEET No. 2-A FOR BRIDGE SKETCH SEE SHEET No. 5 FOR PROFILES SEE SHEET No's. S-1 THRU S-26 FOR STRUCTURE DESIGN PLANS	
	
NOTE: -BL- BM# 2 STA 21+27.68 57.03 LEFT ELEV=831.74'	



-DWI-

PI Sta 10+39.77 Δ = 6° 08' 29.0" (LT) D = 229' 10" 59.2" L = 26.68' T = 14.77' R = 25.00'	PI Sta 11+37.59 Δ = 85° 49' 05.0" (RT) D = 286' 28" 44.0" L = 29.96' T = 18.59' R = 20.00'
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-L-

PI Sta 15+35.81 Δ = 49° 27' 17.2" (LT) D = 18° 11' 20.9" L = 271.89' T = 145.07' R = 315.00' eMax = .08	PI Sta 22+61.52 Δ = 38° 15' 59.0" (RT) D = 14° 19' 26.2" L = 267.15' T = 138.77' R = 400.00' eMax = .07
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1
KENNETH M. McCURRY
& KATHERINE B. McCURRY
DB 426 PG 639

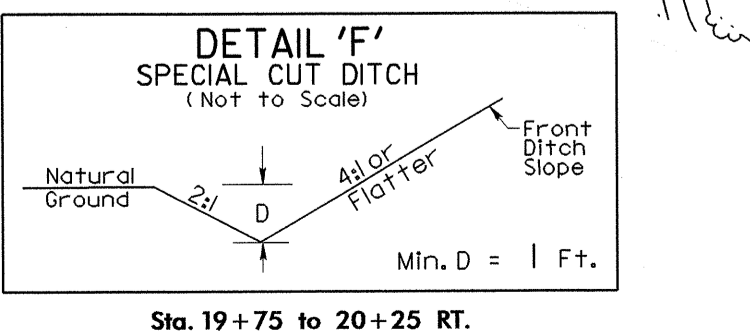
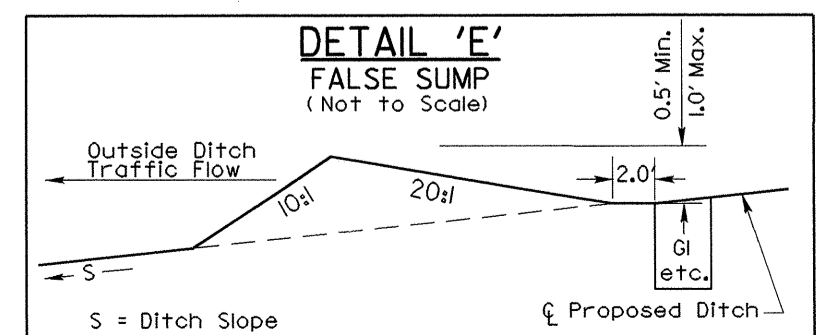
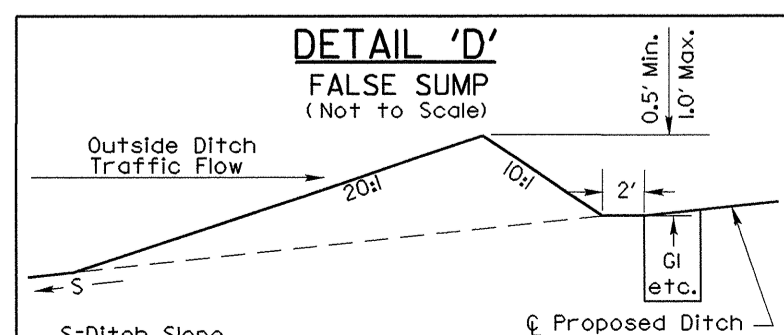
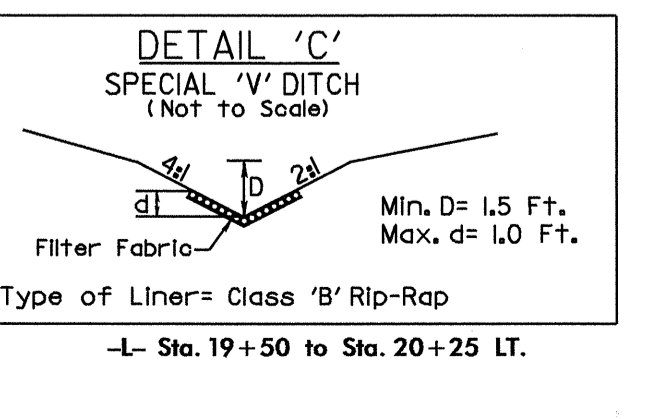
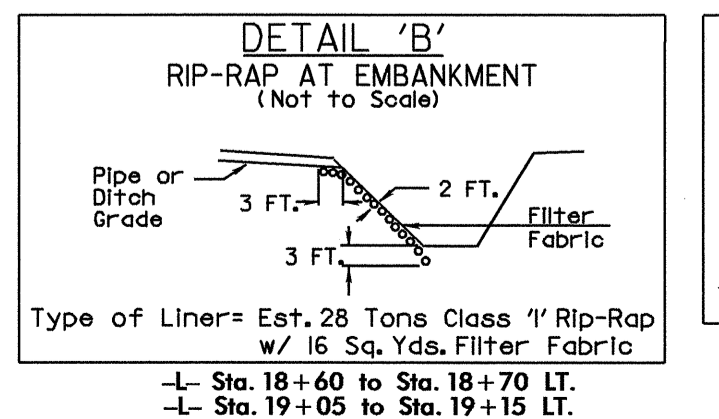
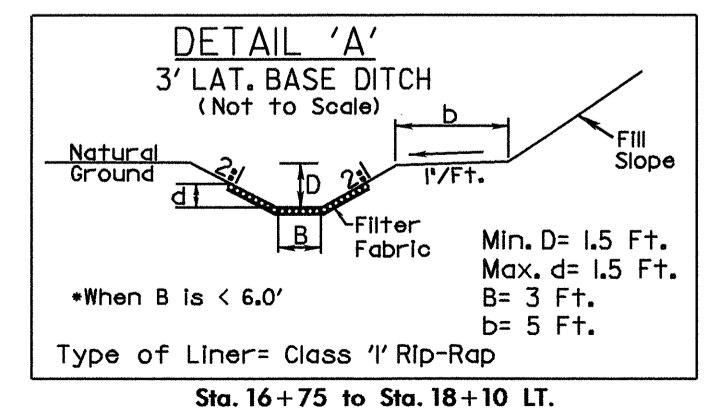
2
KENNETH WAYNE HOVIS
& LINDA WEAVER HOVIS
DB 859 PG 714

JARVIS MARIE JAMES
DB 687 PG 487

DEBBIE M. CASH
DB 916 PG 094

3
JARVIS MARIE JAMES
DB 583 PG 047
DB 599 PG 073

1
KENNETH M. McCURRY
& KATHERINE B. McCURRY
DB 426 PG 639



8/17/09
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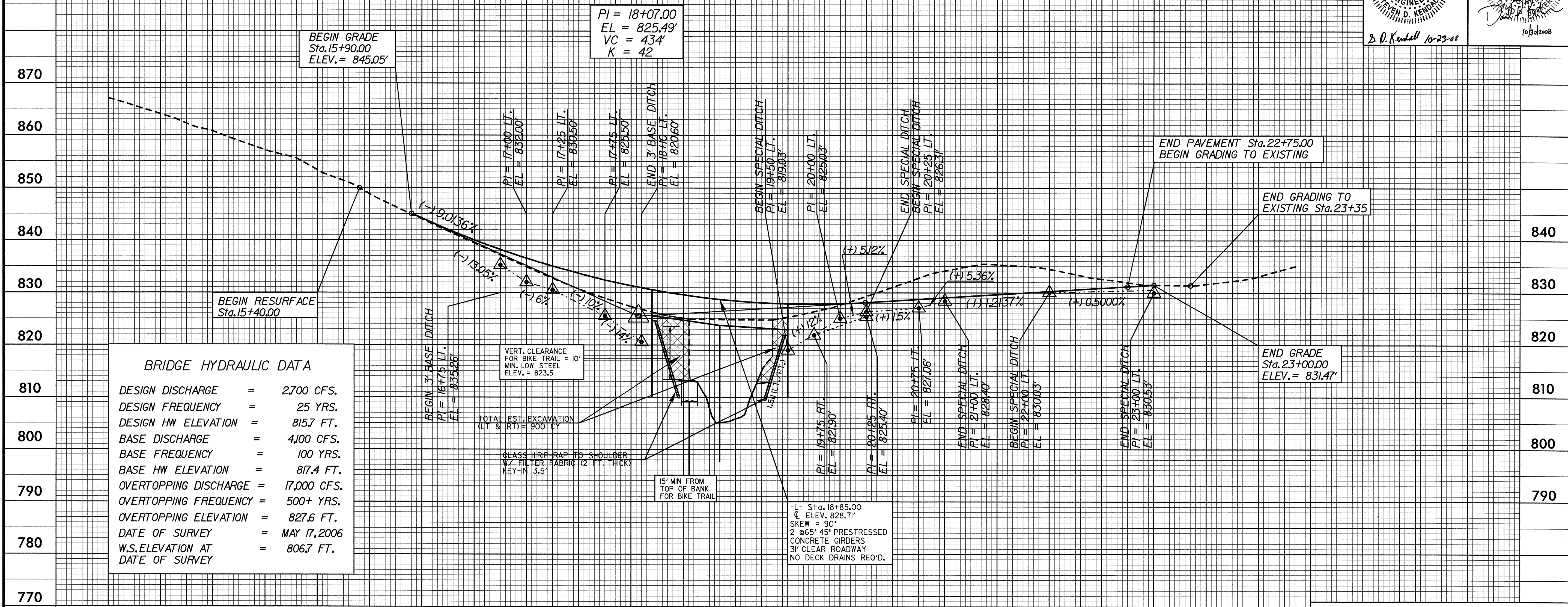
5/14/09

BM 1: R.R. SPIKE IN BASE OF WOOD FENCE CORNER
-BL- Sta. 15+19.46 (4.46' RT.)
ELEV. = 860.91'
N 645984 E 1297438

-L-

BM 2: R.R. SPIKE IN BASE OF 10" OAK TREE
-BL- Sta. 21+27.68 (57.03' LT.)
ELEV. = 831.74'
N 646552 E 1297347

PROJECT REFERENCE NO. B-4177	SHEET NO. 5
ROADWAY DESIGN ENGINEER SEAL 33298 STEVEN D. KEMMEL	HYDRAULICS ENGINEER SEAL 029984 10/30/2008



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	2700 CFS.
DESIGN FREQUENCY	=	25 YRS.
DESIGN HW ELEVATION	=	815.7 FT.
BASE DISCHARGE	=	4,100 CFS.
BASE FREQUENCY	=	100 YRS.
BASE HW ELEVATION	=	817.4 FT.
OVERTOPPING DISCHARGE	=	17,000 CFS.
OVERTOPPING FREQUENCY	=	500+ YRS.
OVERTOPPING ELEVATION	=	827.6 FT.
DATE OF SURVEY	=	MAY 17, 2006
W.S. ELEVATION AT DATE OF SURVEY	=	806.7 FT.

VERT. CLEARANCE FOR BIKE TRAIL = 10'
MIN. LOW STEEL
ELEV. = 823.5

TOTAL EST. EXCAVATION (LT. & RT.) = 900 CY

CLASS II RIP-RAP TO SHOULDER
W/ FILTER FABRIC (2 FT. THICK)
KEY-IN 3.5'

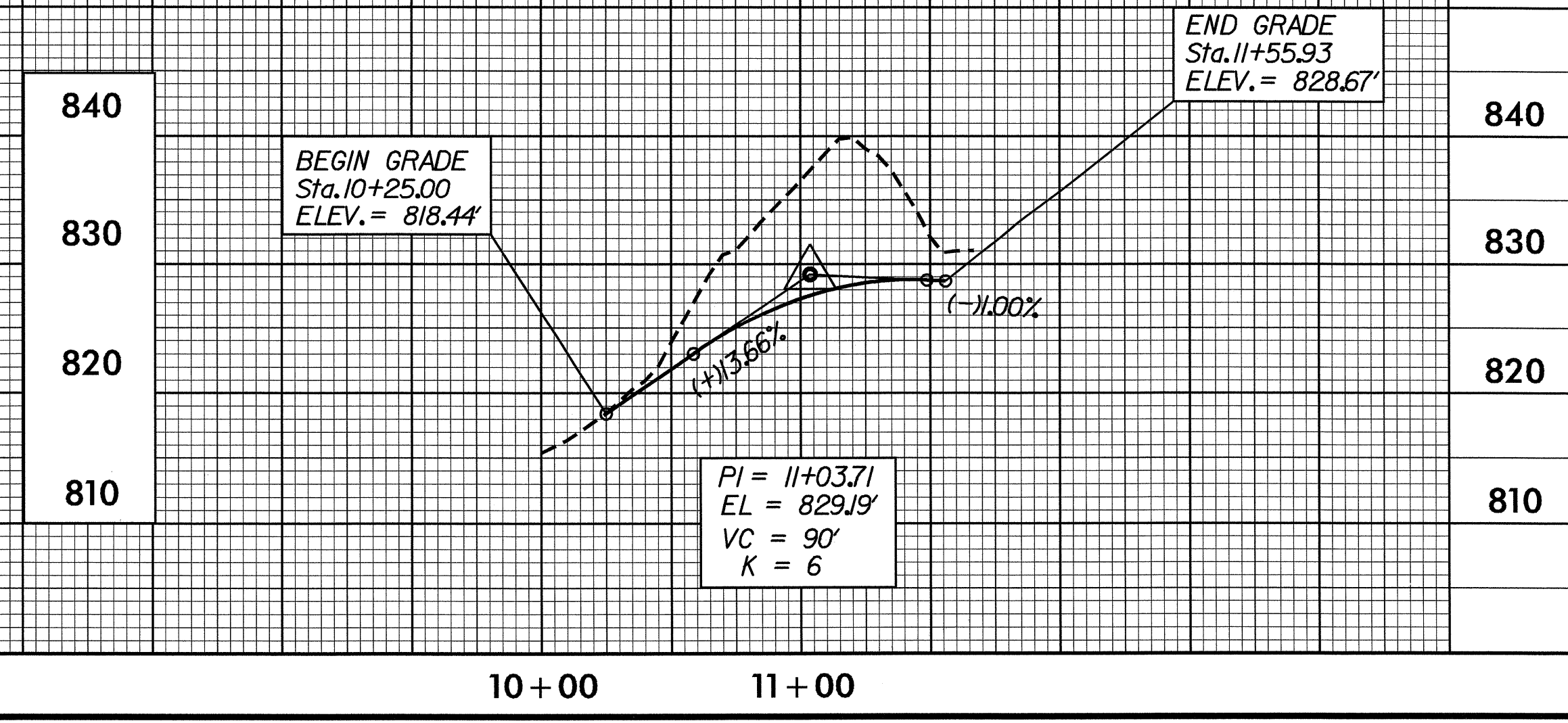
15' MIN FROM TOP OF BANK FOR BIKE TRAIL

-L- Sta. 18+85.00
C ELEV. 828.71'
SKEW = 90°
2 @ 65' 45" PRESTRESSED CONCRETE GIRDERS
3' CLEAR ROADWAY
NO DECK DRAINS REQ'D.

13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

USE FOR ROADWAY VERTICAL ALIGNMENT ONLY.
SEE STRUCTURE PLANS FOR BRIDGE DESIGN

-DWI-



29-SEP-2008 09:27
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