

09/08/09

See Sheet 1-A For Index of Sheets

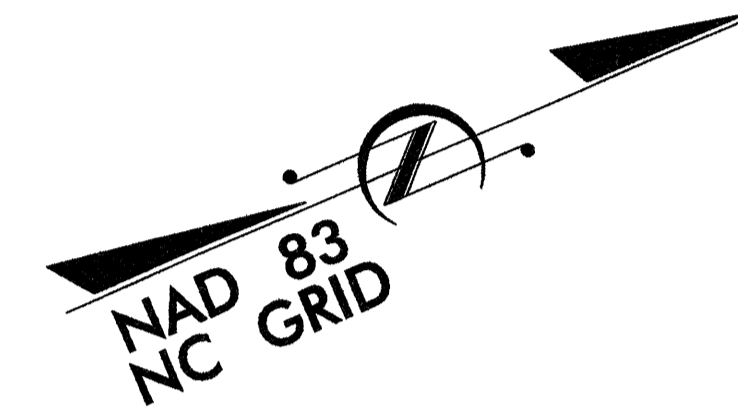
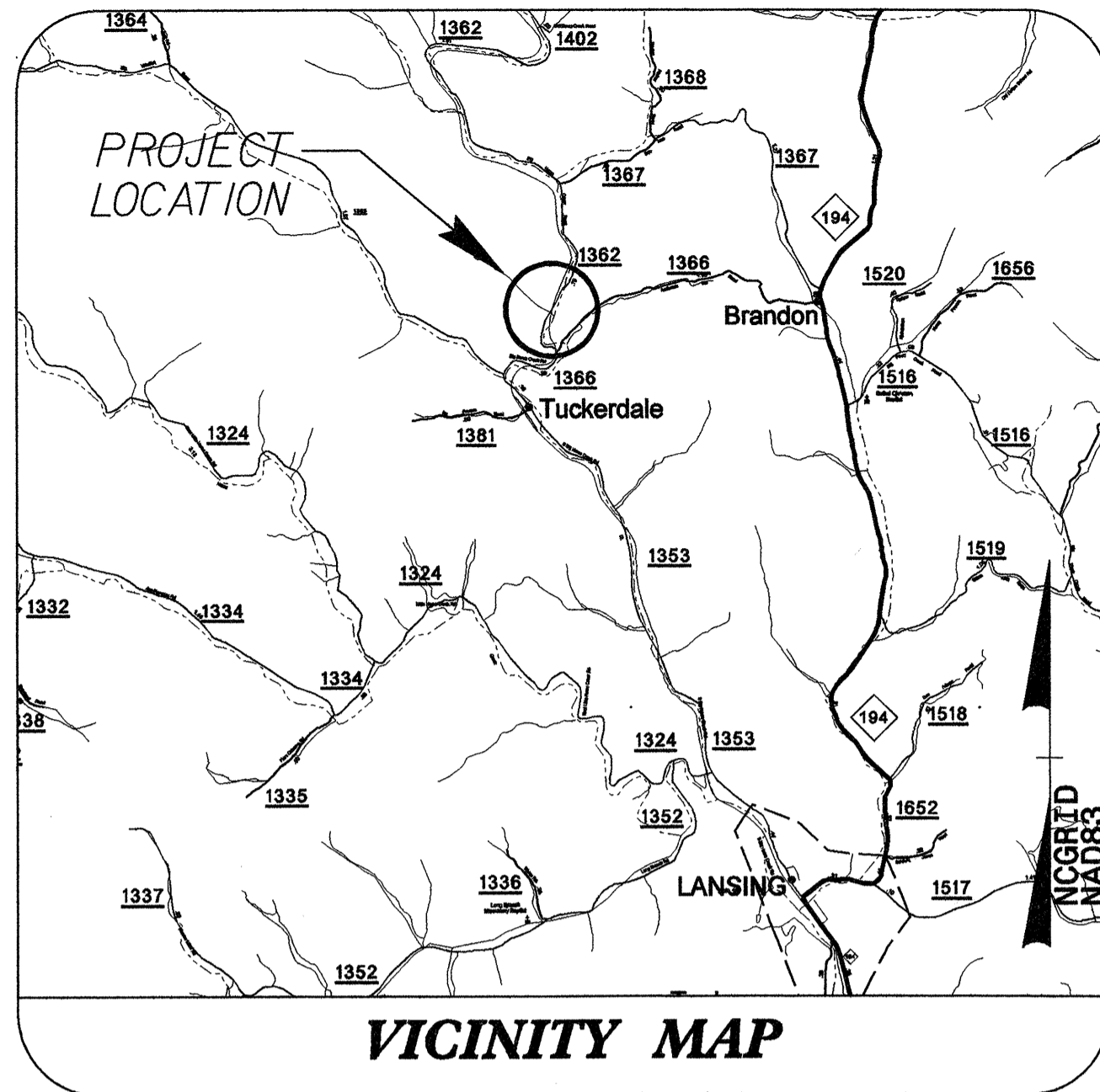
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

ASHE COUNTY

**LOCATION: BRIDGE NO. 165 OVER BIG HORSE CREEK
ON SR 1362 (BIG HORSE CREEK RD)**

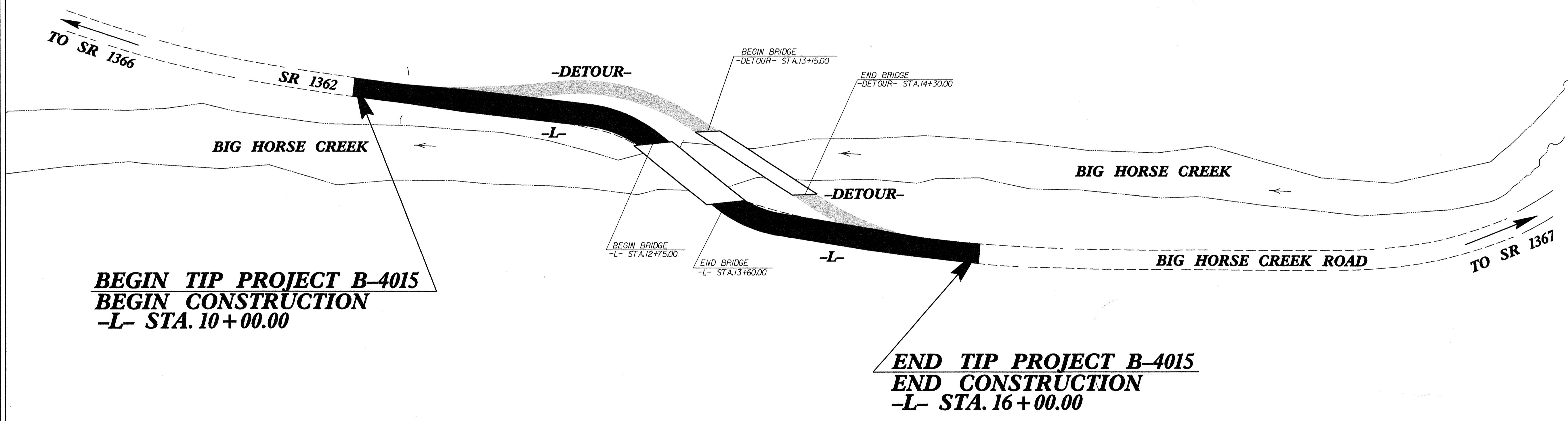
TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4015	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33383.1.1	BRZ-1362(1)	PE	
33383.2.1	BRZ-1362(1)	UTIL. & R/W	
33383.3.1	BRZ-1362(1)	CONST.	



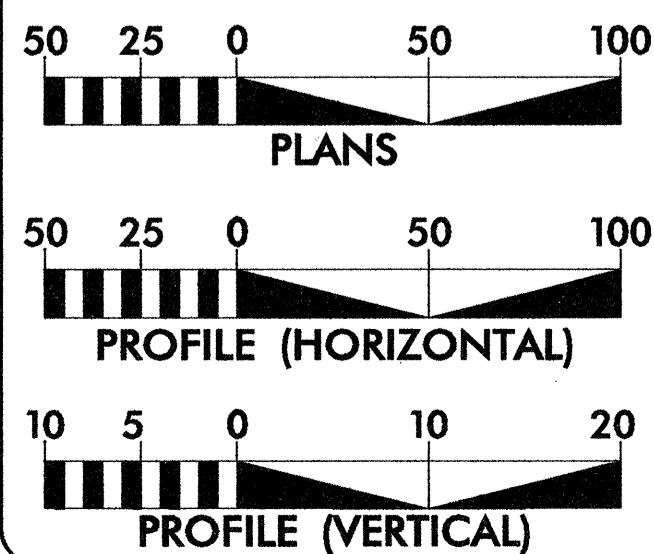
TIP PROJECT: B-4015

CONTRACT: C202037



* NOTE - A DESIGN EXCEPTION IS NEEDED FOR THE MINIMUM HORIZONTAL CURVE RADIUS.

GRAPHIC SCALES



DESIGN DATA

ADT 2008 = 685
 ADT 2028 = 940
 DHV = 12 %
 D = 60 %
 T = 3 % *
 V = 40 MPH
 * TTST 1% DUAL 2%
 FUNC CLASS = LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4015 = 0.098 MILE
 LENGTH STRUCTURE TIP PROJECT B-4015 = 0.016 MILE
 TOTAL LENGTH TIP PROJECT B-4015 = 0.114 MILE

SUNGATE DESIGN GROUP, P.A.



Prepared for the North Carolina Department of Transportation in the Office of:

559 JONES FRANKLIN ROAD
SUITE 164
RALEIGH, N.C. 27606
BUS: 919 851 8077
FAX: 919 851 8107

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 18, 2006

LETTING DATE:
DECEMBER 16, 2008

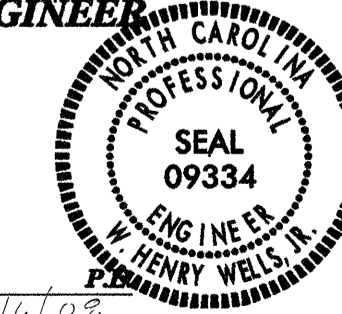
NCDOT CONTACT:

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

BOB A. MAY, PE
PROJECT DESIGN ENGINEER

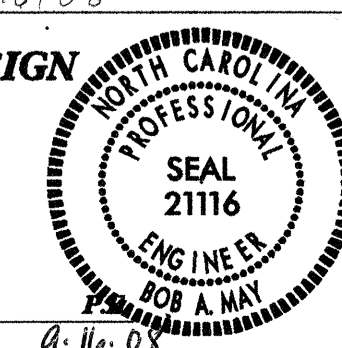
DOUG TAYLOR, PE
ROADWAY DESIGN ENGINEERING
COORDINATION SECTION ENGINEER

HYDRAULICS ENGINEER



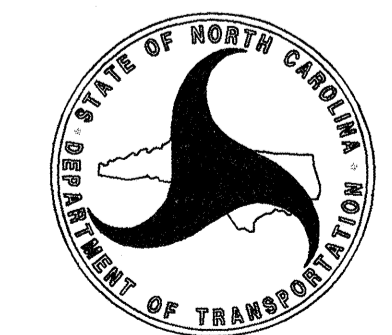
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ROADWAY DESIGN ENGINEER



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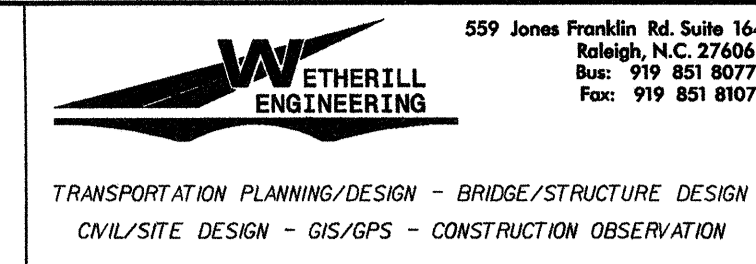
DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA



Bob A. May
STATE HIGHWAY DESIGN ENGINEER

10:57:30 AM
P:\B-4015\Roadway\Proj\B4015_RDY_tsh.dgn
9/7/2008

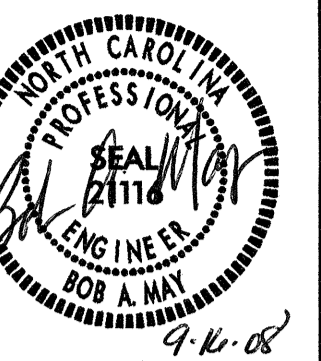
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS



PROJECT REFERENCE NO. SHEET NO.

B-4015

1-A

ROADWAY DESIGN
ENGINEER

GENERAL NOTES

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:

BLUE RIDGE EMC
SKYLINE TELEPHONE
CHARTER COMMUNICATIONS

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

INDEX OF SHEETS

Sheet Number	Sheet
1	Title Sheet
1-A	Index of Sheets, General Notes and List of Standards
1-B	Conventional Symbols
1-C	Survey Control Sheets
2 Thru 2-B	Typical Sections, Pavement Schedule and Miscellaneous Details not covered by Roadway Standards
2-C	Detail of Anchorage for Frames
2-D	Detail for Reinforced Bridge Approach Fill - Sub Regional Tier
3 Thru 3-B	Summary of Quantities, Summary of Drainage, Summary of Guardrail, Summary of Earthwork and Summary of Pavement Removal
4 Thru 5	Plan and Profile Sheets
TCP-1 Thru TCP-7	Traffic Control Plans
EC-1 Thru EC-6	Erosion Control Plans
RF-1	Reforestation Detail Sheet
UO-1 Thru UO-2	Utilities by Others Plans
X-1A	Cross-Section Summary Sheet
X-1 Thru X-13	Cross-Sections
S-1 Thru S-21	Structure Plans

LIST OF ROADWAY STANDARDS

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

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	
200.03	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'
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
815.03	Pipe Underdrain and Blind Drain
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.37	Steel Grate and Frame
840.46	Traffic Bearing Precast Drainage Structure
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.04	Drainage Ditches with Class 'B' Rip Rap

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 High Quality Wetland Boundary	-HQ 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	-----
River Basin Buffer	----- RBB
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Swamp Marsh	→
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
Curb Cut for Future Wheel Chair Ramp	○ CCFR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equaility 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	○ S
Storm Sewer	----- S

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○ P
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	○ T
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	○ W
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

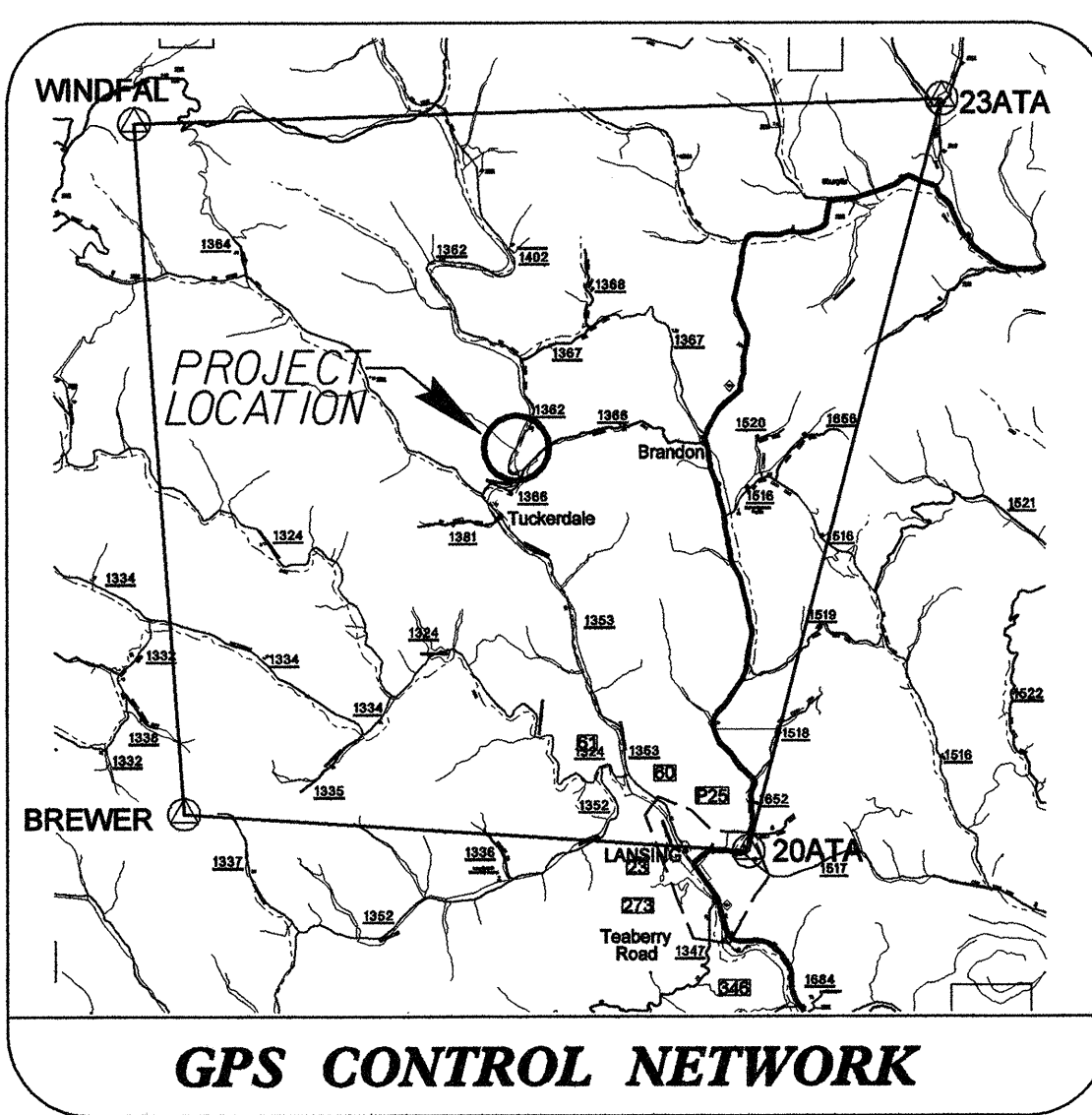
SANITARY SEWER:

Sanitary Sewer Manhole	○ SS
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:

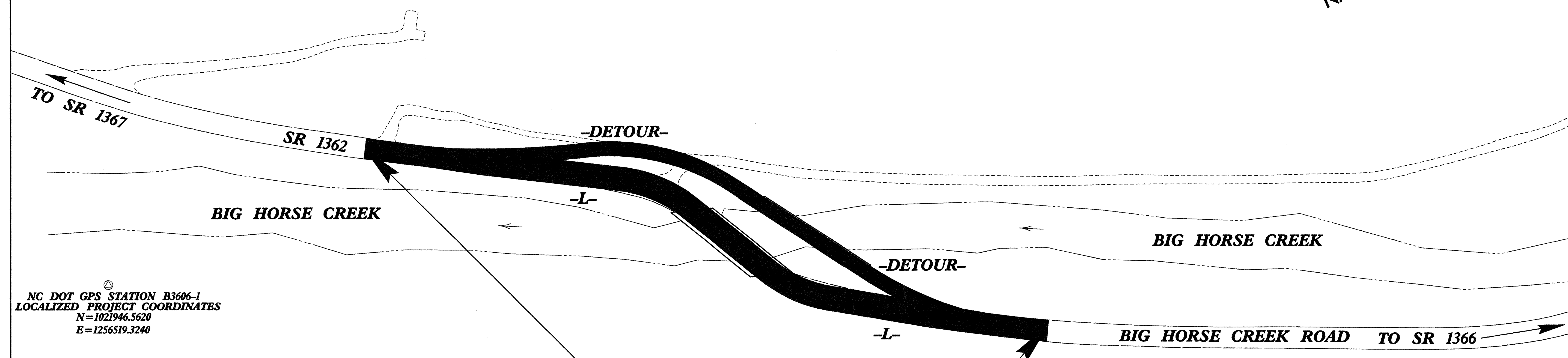
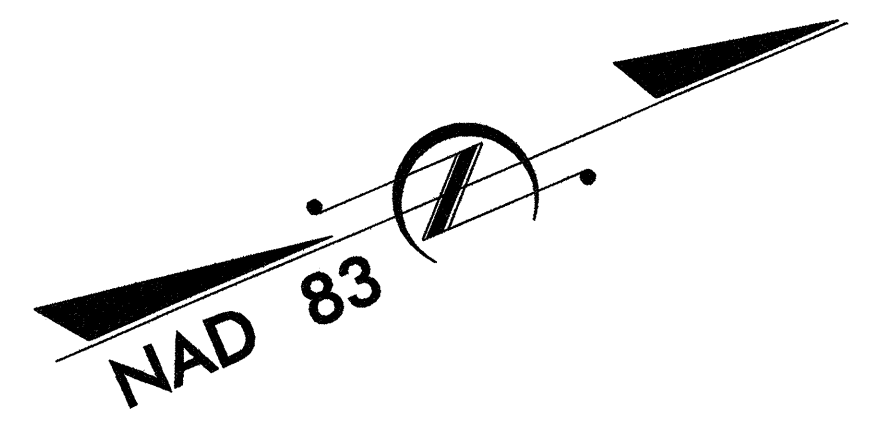
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown U/G Line	----- UTIL
U/G Tank; Water, Gas, Oil	□
A/G Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	○
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

SURVEY CONTROL SHEET B-4015



BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
BL1	BL-1		1022662.7890	1256316.5458	2720.74	5+81.28	14.97 LT
BL2	BL-2		1022963.5511	1256539.1260	2717.41	9+53.35	10.65 RT
BL3	BL-3		1023328.4202	1256753.6393	2719.31	13+87.17	15.94 LT
BL4	BL-4		1023733.2432	1256924.2546	2737.95	18+34.50	13.20 LT
BL5	BL-5		1024004.9124	1256990.0262	2723.63	OUTSIDE PROJECT LIMITS	

 BM #1 ELEVATION = 2726.45
 N 1023331 E 1256652
 L STATION 13+00 78' LEFT
 RAILROAD SPIKE IN 8" MAPLE



⊙
 NC DOT GPS STATION B3606-1
 LOCALIZED PROJECT COORDINATES
 N=1021946.5620
 E=1256519.3240

-L- STA 10+00.00 BEGIN TIP PROJECT B-4015
LOCALIZED PROJECT COORDINATES
 N = 1023010.5016
 E = 1256549.3685

-L- STA 16+00.00 END TIP PROJECT B-4015
LOCALIZED PROJECT COORDINATES
 N = 1023507.1551
 E = 1256861.8304

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B3606-1" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 1021946.5620(ft) EASTING: 1256519.3240(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99999739 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B3606-1" TO -L- STATION 10+00.00 IS N 01°37'03" E 1064.36' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

⊙
 NC DOT GPS STATION B3606-2
 LOCALIZED PROJECT COORDINATES
 N=1022443.4240
 E=1256960.8950

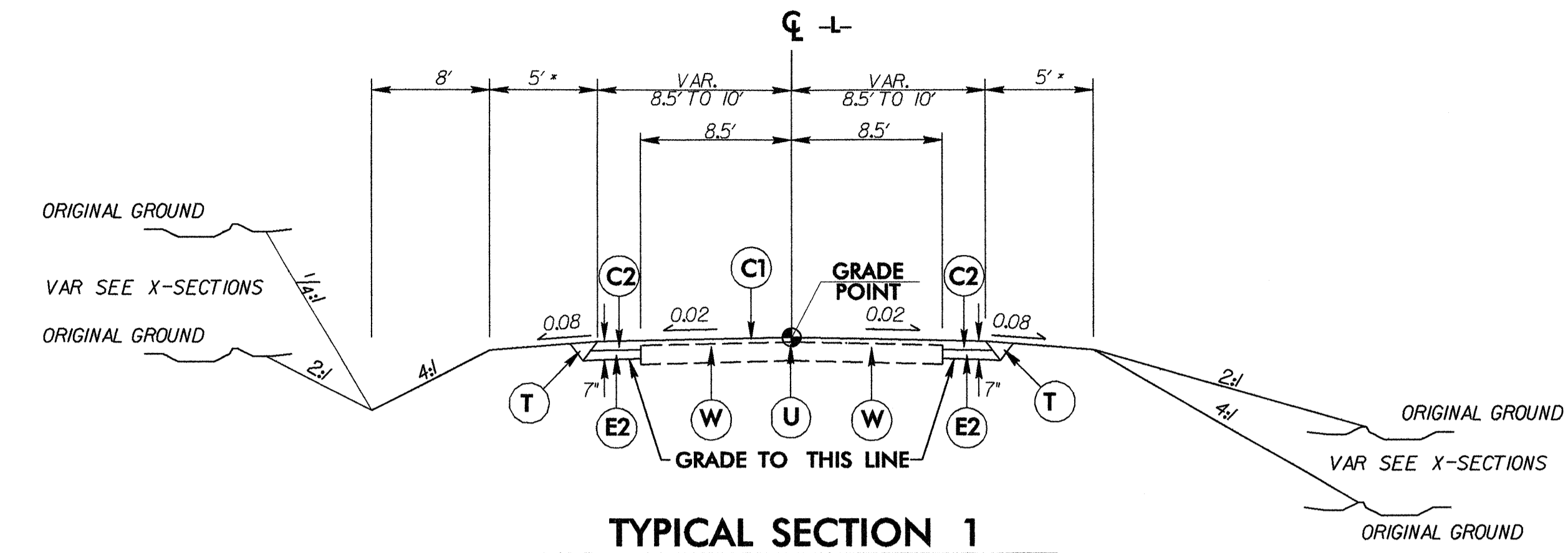
NOTES:
 THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/B4015_LS_CONTROL_050221.TXT](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/B4015_LS_CONTROL_050221.TXT)
 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.

NOTE: DRAWING NOT TO SCALE

6/2/99
 11:24:47 AM
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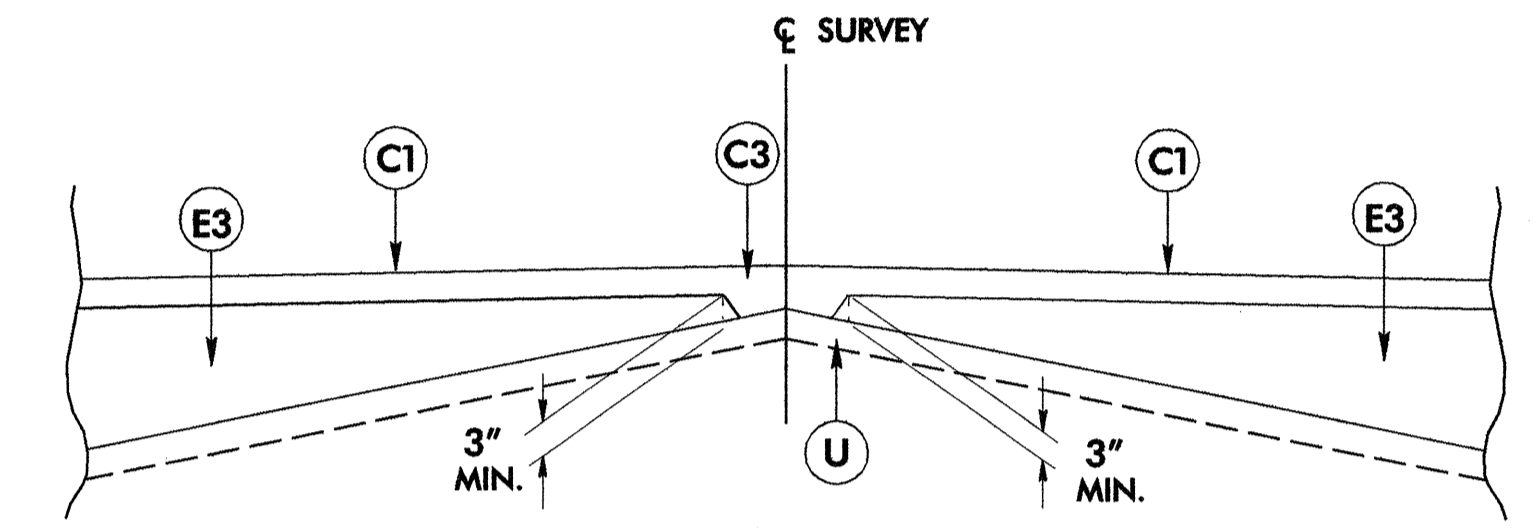
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS PER SQ. YD.
C2	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1 1/2" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 4 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E3	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.
J	6" AGGREGATE BASE COURSE
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

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

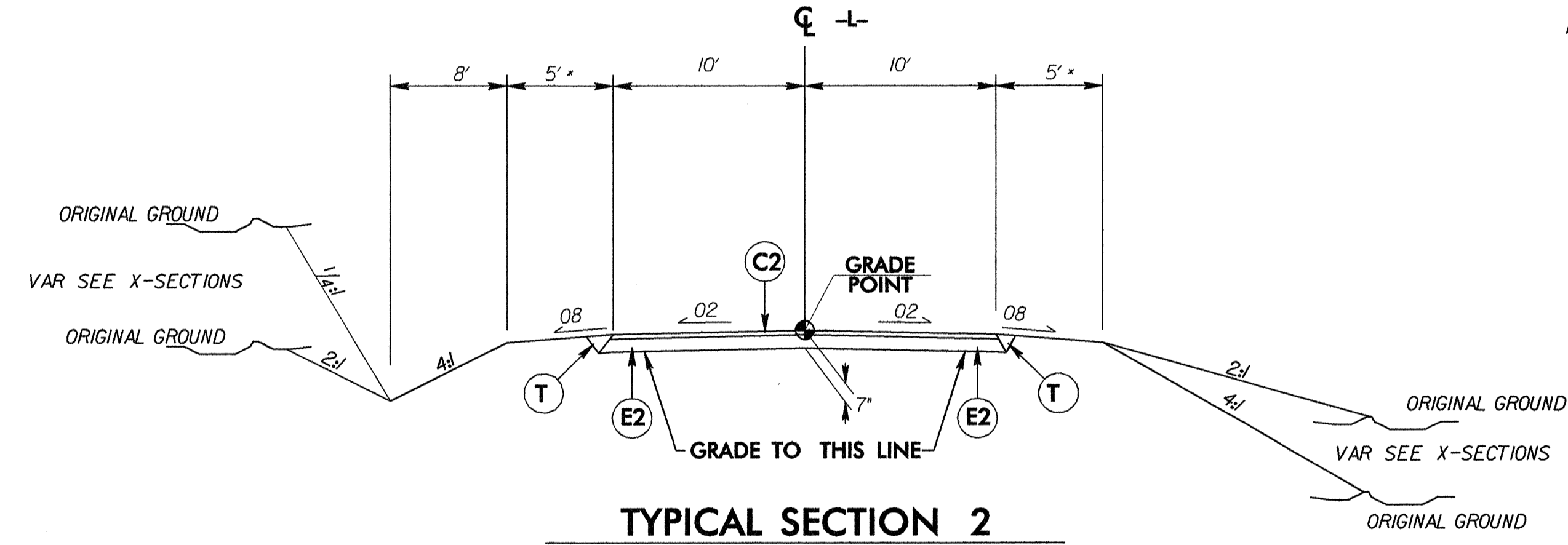


TYPICAL SECTION 1
 -L- STA. 10+50.00 TO -L- STA. 12+61.00
 -L- STA. 14+35.00 TO -L- STA. 15+60.00
 * 8' W/GUARDRAIL

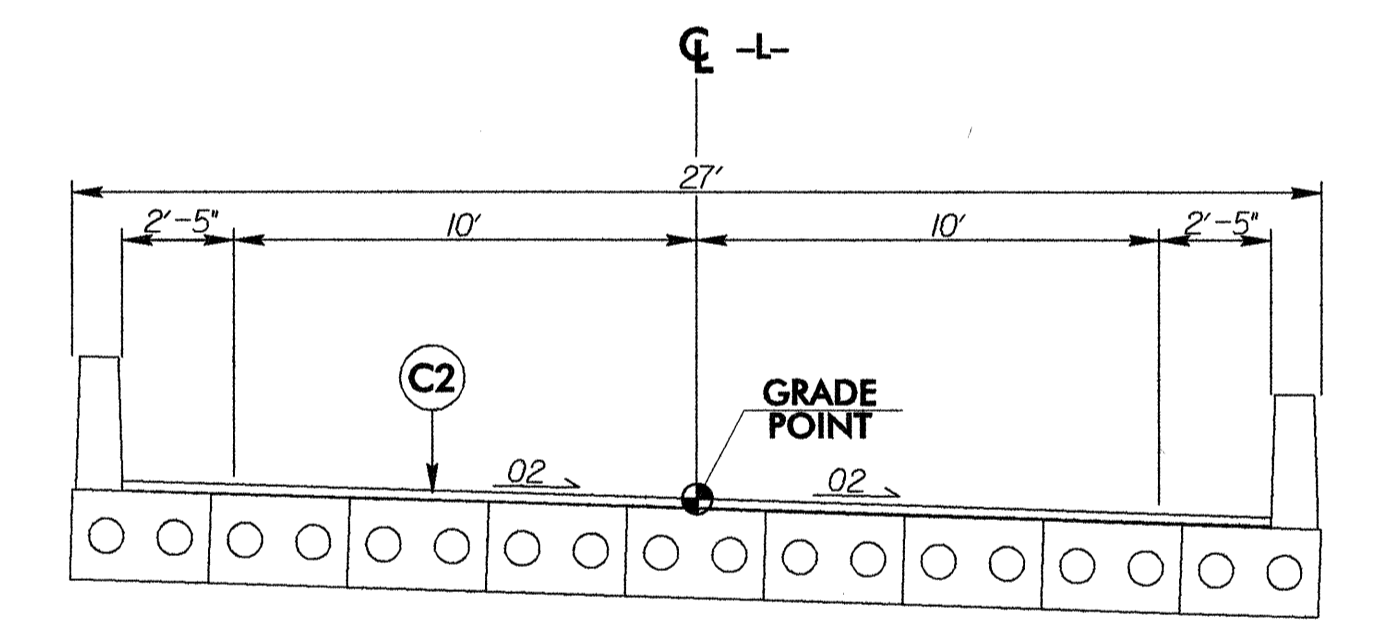
TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 1
 -L- STA. 10+00.00 TO -L- STA. 10+50.00
 TRANSITION FROM TYPICAL SECTION NO. 1 TO EXISTING
 -L- STA. 15+60.00 TO -L- STA. 16+00.00



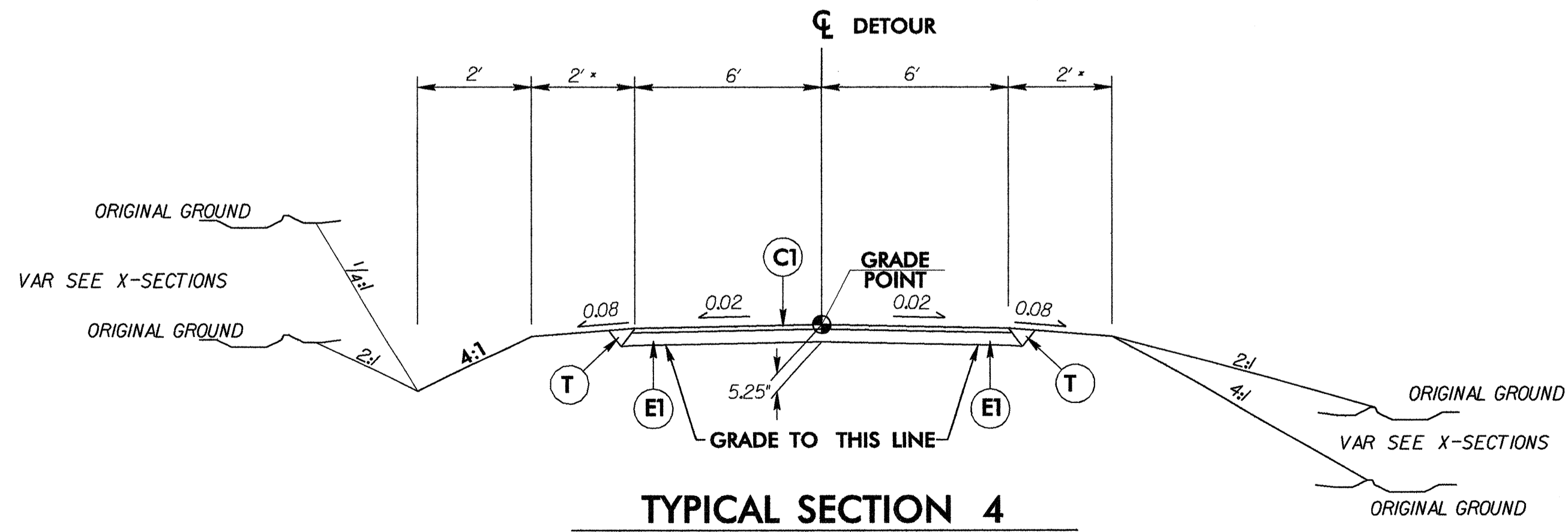
Detail Showing Method of Wedging



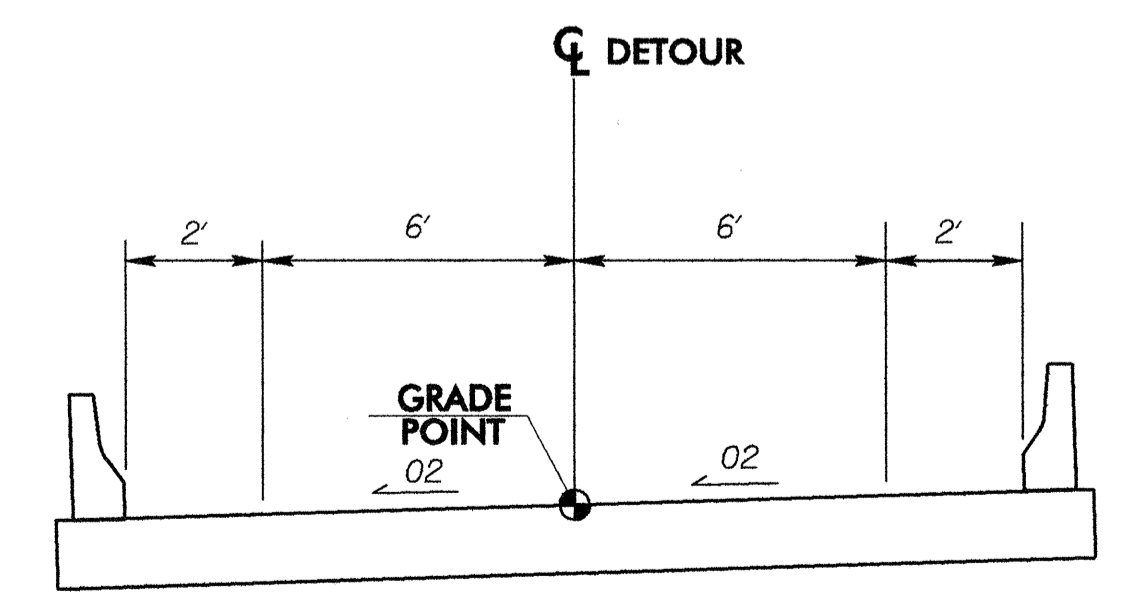
TYPICAL SECTION 2
 -L- STA. 12+40.00 TO -L- STA. 12+75.00 (BEGIN BRIDGE)
 -L- STA. 13+60.00 (END BRIDGE) TO -L- STA. 14+35.00
 * 8.25' W/GUARDRAIL



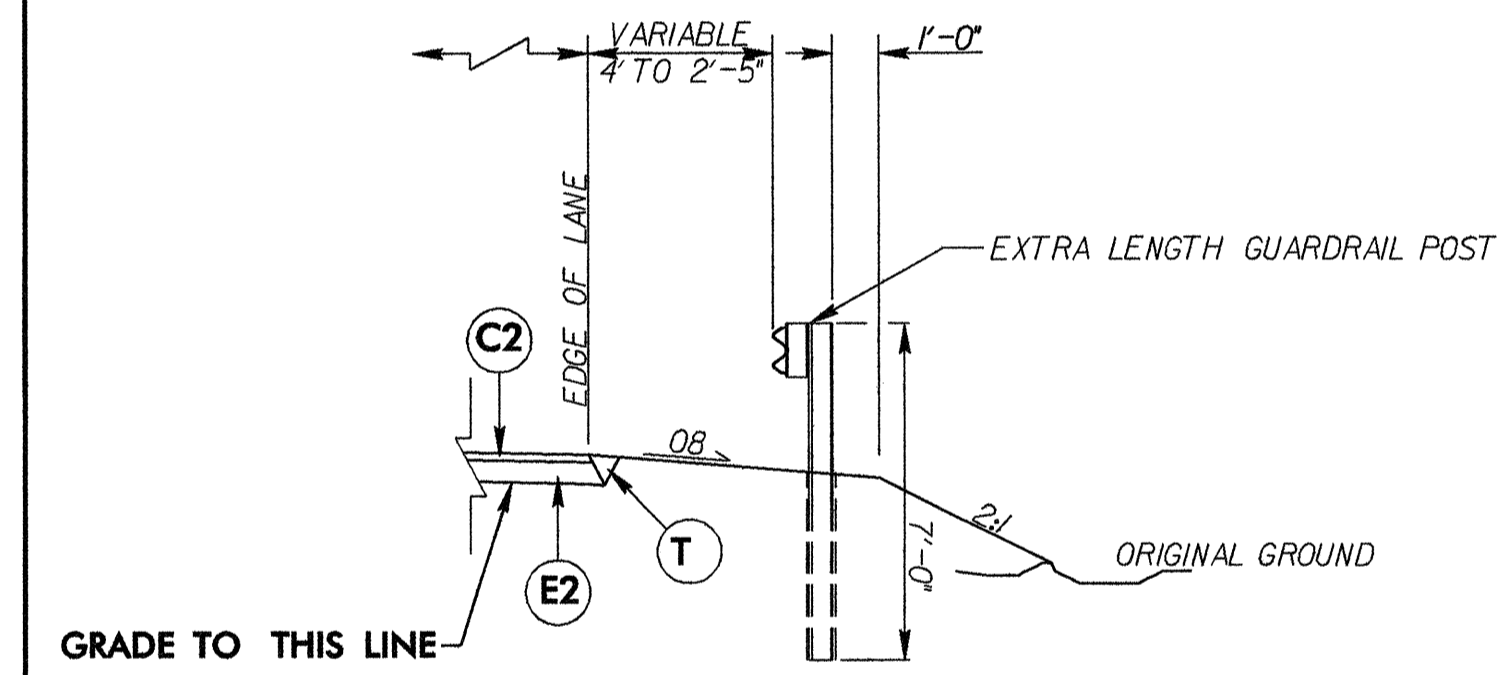
TYPICAL SECTION 3
 -L- STA. 12+75 TO -L- STA. 13+60



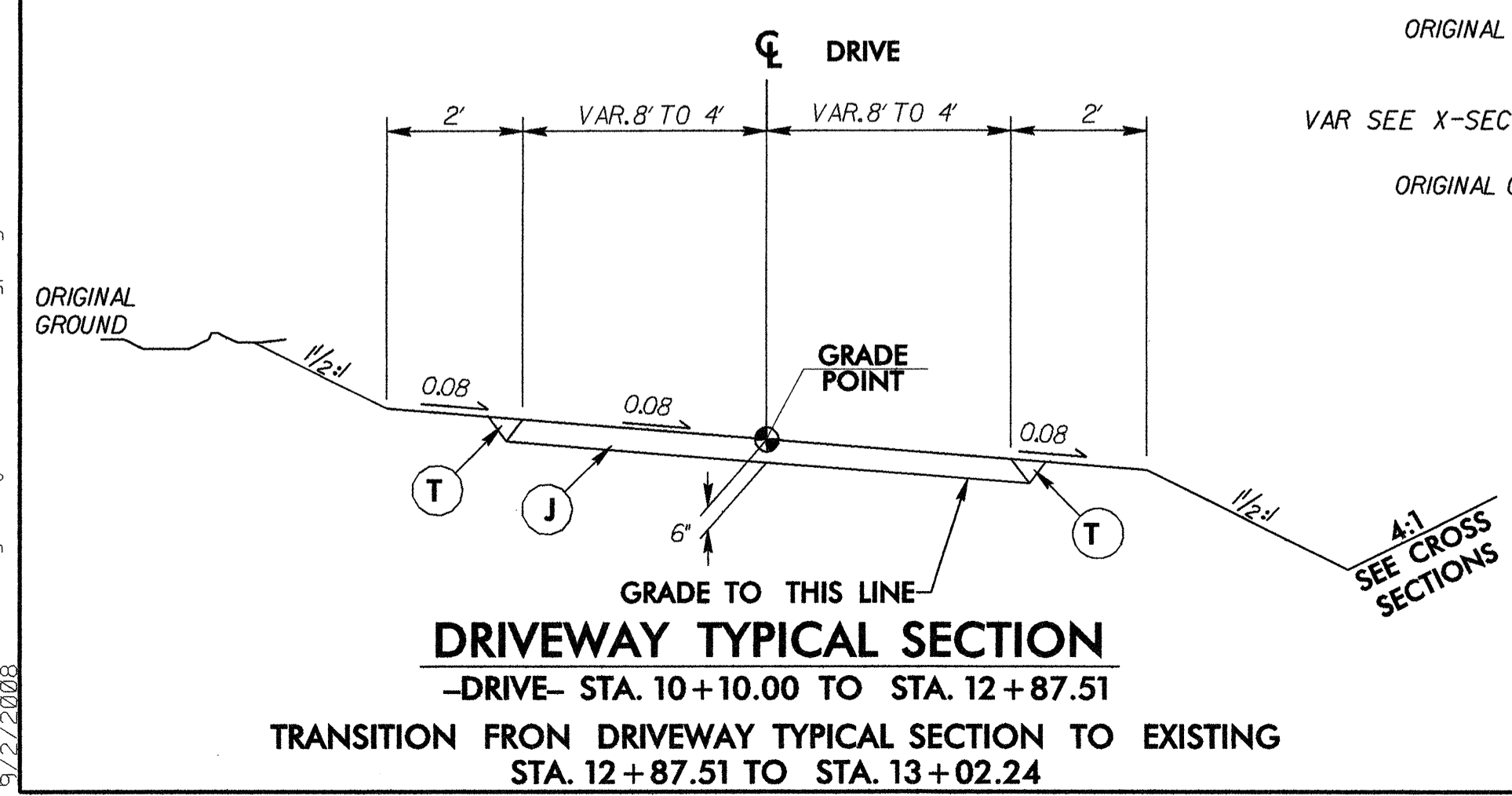
TYPICAL SECTION 4
 -DETOUR- STA. 11+22.81 TO -DETOUR- STA. 13+15.00 (BEGIN BRIDGE)
 -DETOUR- STA. 14+30.00 (END BRIDGE) TO -DETOUR- STA. 15+01.77
 * 5' W/GUARDRAIL
 TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 4
 -DETOUR- STA. 10+67.35 TO -DETOUR- STA. 11+22.81
 TRANSITION FROM TYPICAL SECTION NO. 4 TO EXISTING
 -DETOUR- STA. 15+01.77 TO -DETOUR- STA. 15+35.71



TYPICAL SECTION 5
 -DETOUR- STA. 13+15.00 TO -DETOUR- STA. 14+30.00



PARTIAL TYPICAL SECTION 1
 USE IN CONJUNCTION WITH TYPICAL SECTIONS NO. 1 & 2
 -L- STA. 11+19.00 TO -L- STA. 12+75.00 RT.
 NOTE: 9" X 12" CURB TO BE PLACED FROM STA 12+24 TO STA 12+49 RT



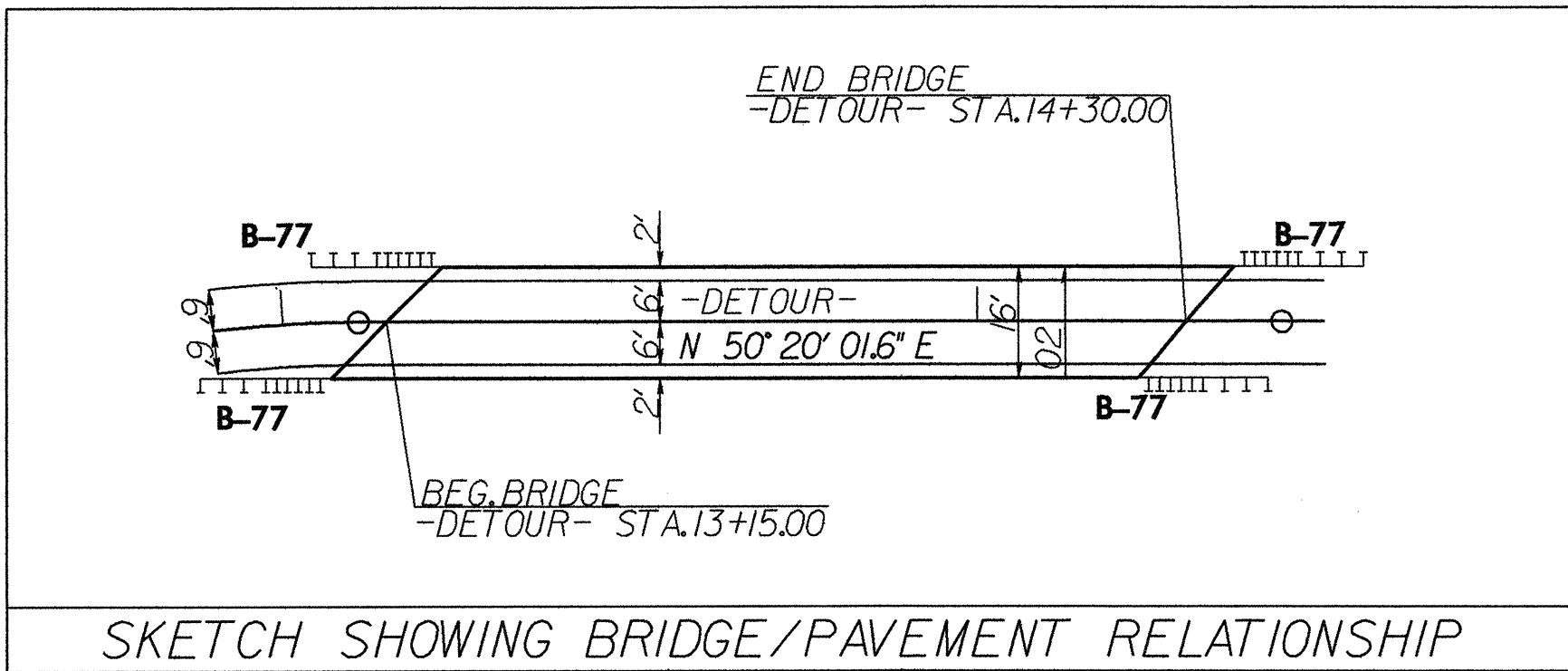
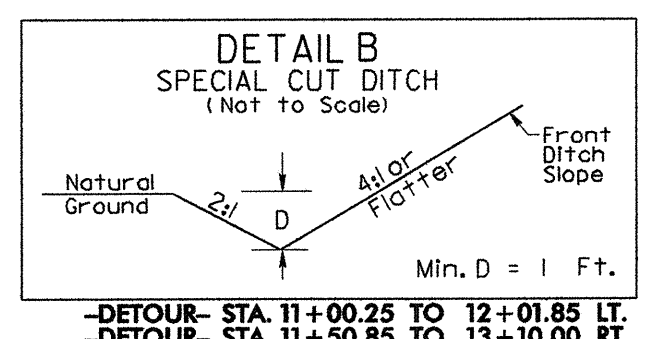
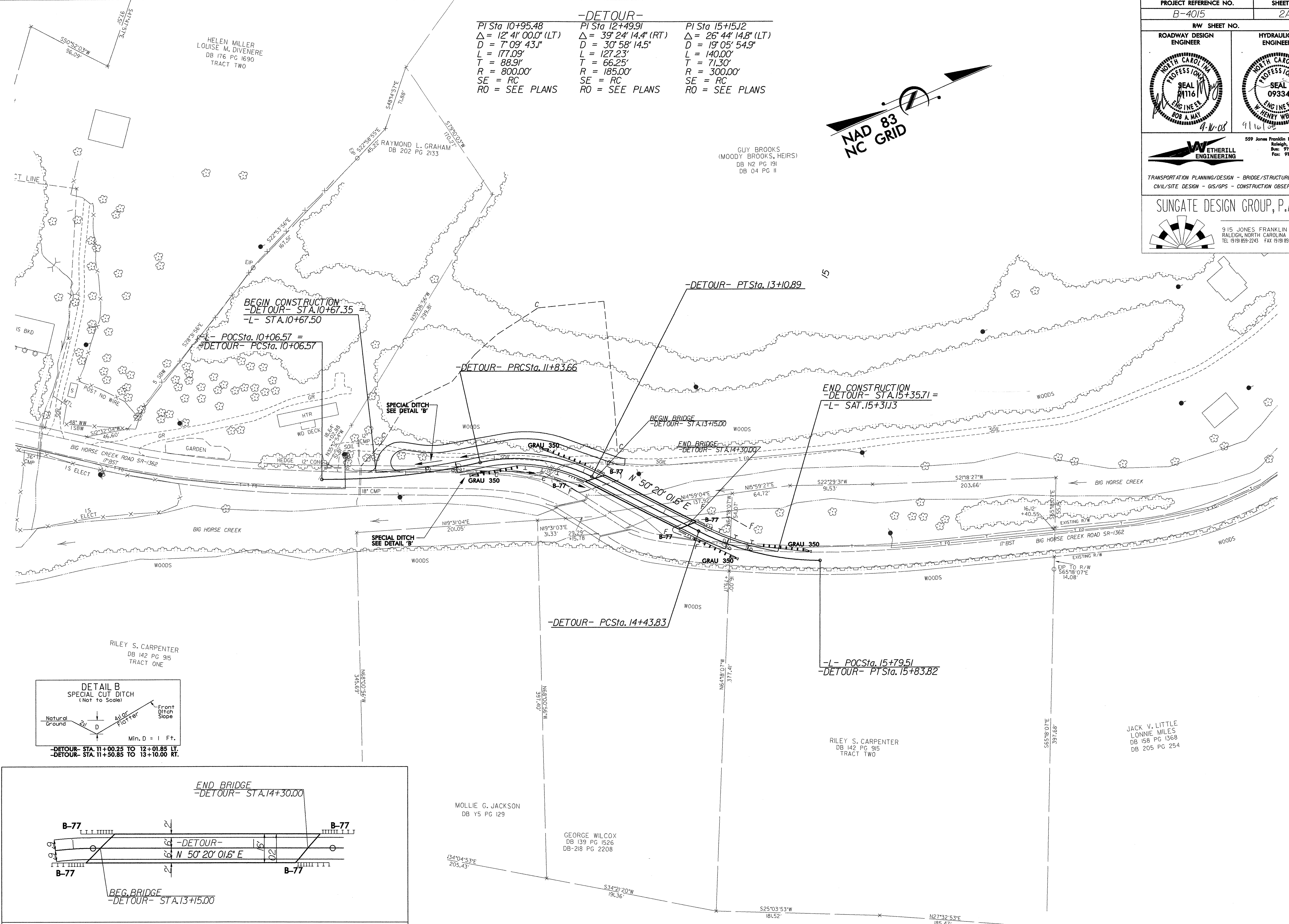
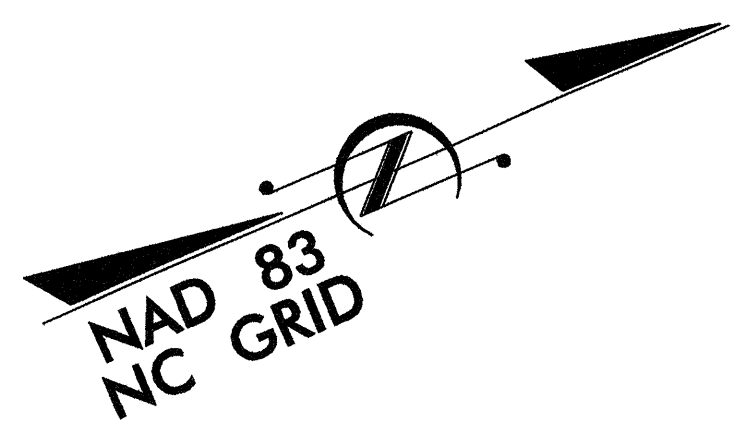
DRIVEWAY TYPICAL SECTION
 -DRIVE- STA. 10+10.00 TO STA. 12+87.51
 TRANSITION FROM DRIVEWAY TYPICAL SECTION TO EXISTING
 STA. 12+87.51 TO STA. 13+02.24

2:25:38 PM Roadway\Proj\B4015.RD\1-tp.dgn

PROJECT REFERENCE NO. B-4015		SHEET NO. 2A	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		ENGINEER	
		559 Jones Franklin Rd. Suite 164 Raleigh, N.C. 27606 Fax: 919 851 8077 Fax: 919 851 8107	
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION			
SUNGATE DESIGN GROUP, P.A.			
915 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL 919 859-2243 FAX 919 859-6258			

-DETOUR-

PI Sta 10+95.48 Δ = 12° 41' 00.0" (LT) D = 7° 09' 43.1" L = 177.09' R = 88.91' SE = RC RO = SEE PLANS	PI Sta 12+49.91 Δ = 39° 24' 14.4" (RT) D = 30° 58' 14.5" L = 127.23' T = 66.25' R = 185.00' SE = RC RO = SEE PLANS	PI Sta 15+15.12 Δ = 26° 44' 14.8" (LT) D = 19° 05' 54.9" L = 140.00' T = 71.30' R = 300.00' SE = RC RO = SEE PLANS
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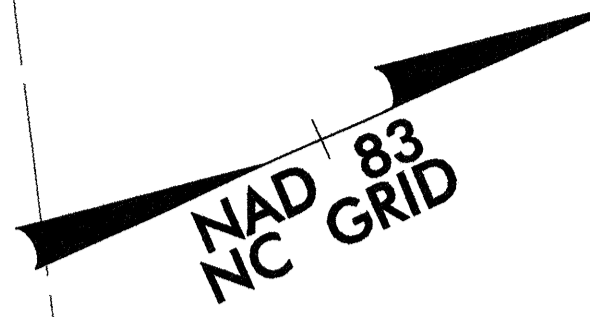


REVISIONS

8/17/99
11:25:04 AM Roadway\Proj\B4015_RDY_psh02.dgn
B:\B-4015\B4015.dwg
5/10/2007

SEE SHEET 5 FOR -DETOUR- PROFILE

8/17/99



PROJECT REFERENCE NO. SHEET NO.
B-4015 2-B

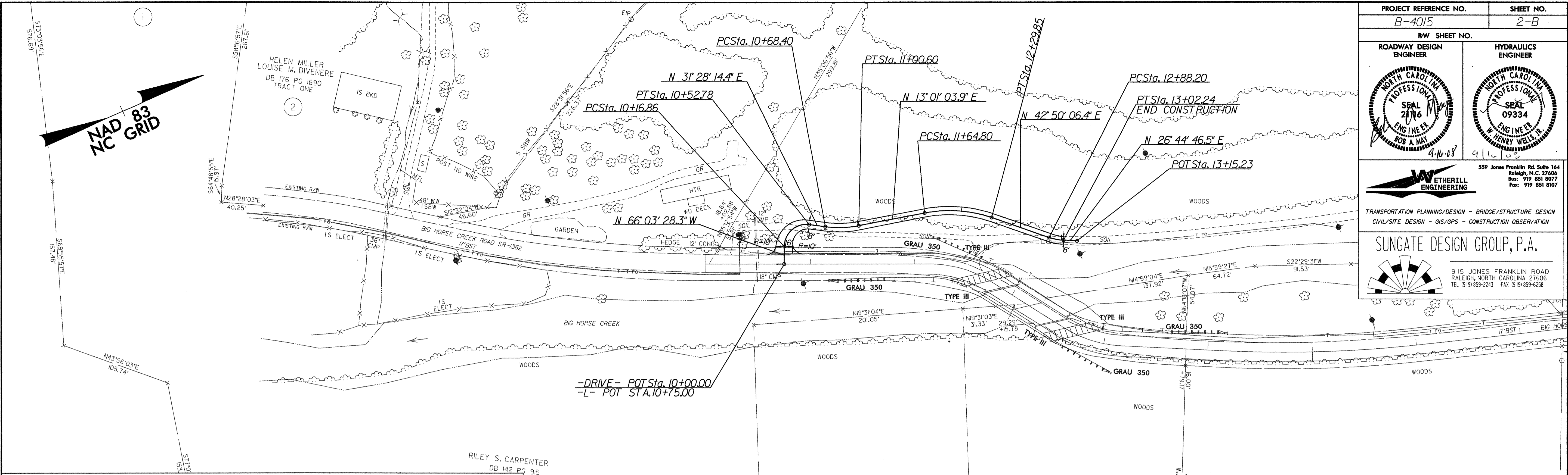
RAW SHEET NO.

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
Phone: 919 851 8077
Fax: 919 851 8107

SUNGATE DESIGN GROUP, P.A.
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

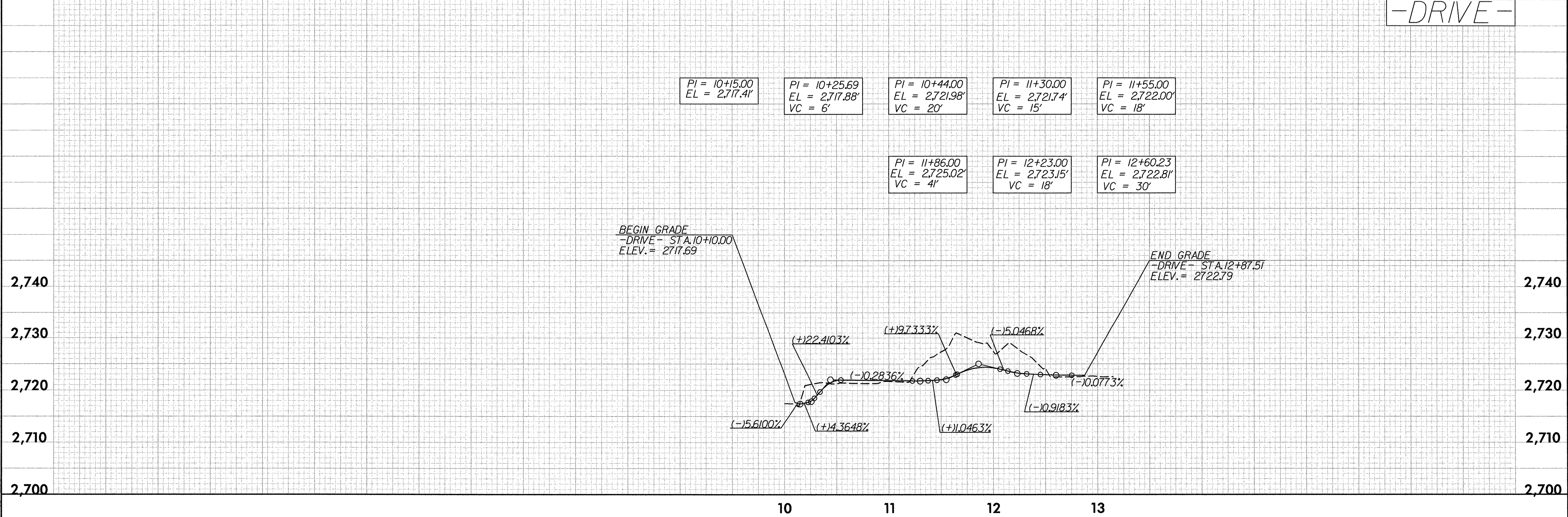
915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL 919 859-2243 FAX 919 859-6258



-DRIVE-

PI Sta 10+40.93 Δ = 97° 31' 42.8" (RT) D = 271° 32' 38.3" L = 35.92' T = 24.07' R = 21.10'	PI Sta 10+84.64 Δ = 18° 27' 10.6" (LT) D = 57° 17' 44.8" L = 32.21' T = 16.24' R = 100.00'	PI Sta 11+98.08 Δ = 29° 49' 02.5" (RT) D = 45° 50' 11.8" L = 65.05' T = 33.28' R = 125.00'	PI Sta 12+95.27 Δ = 16° 05' 20.6" (LT) D = 114° 35' 29.6" L = 14.04' T = 7.07' R = 50.00'
---	---	---	--

RILEY S. CARPENTER
DB 142 PG 915
TRACT TWO
-DRIVE-



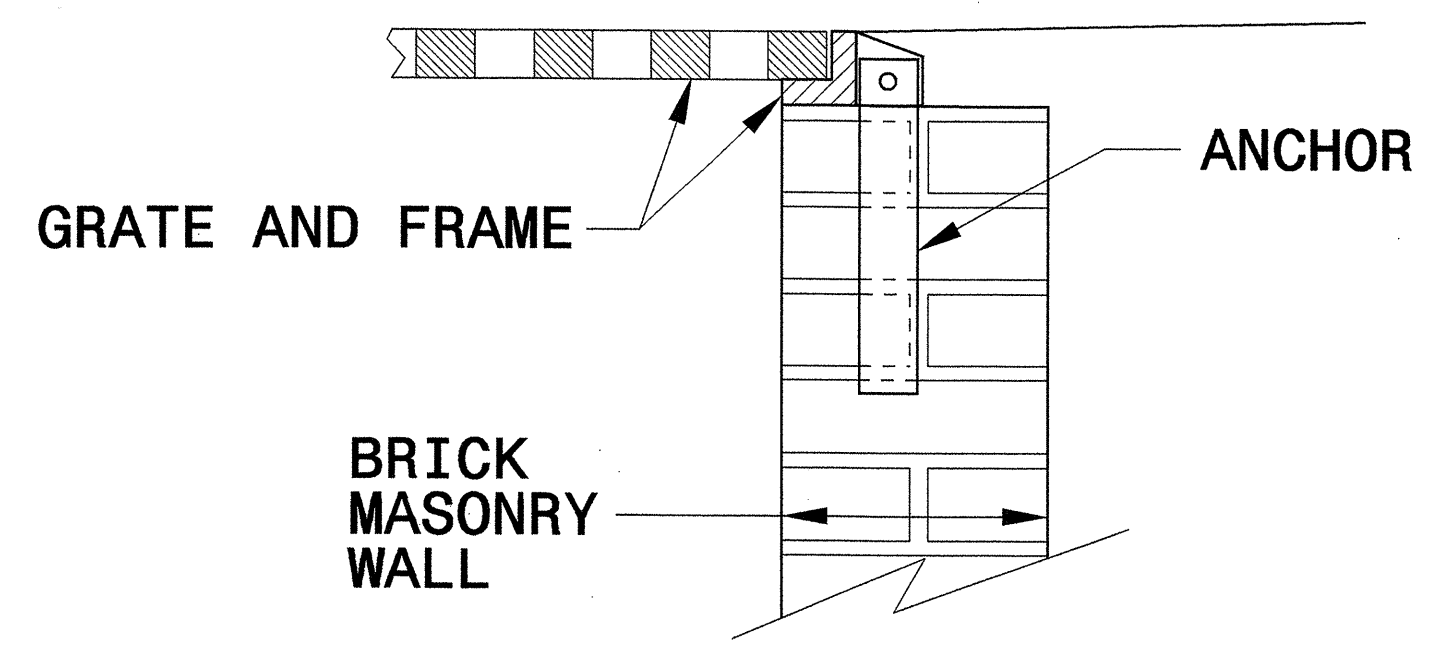
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STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

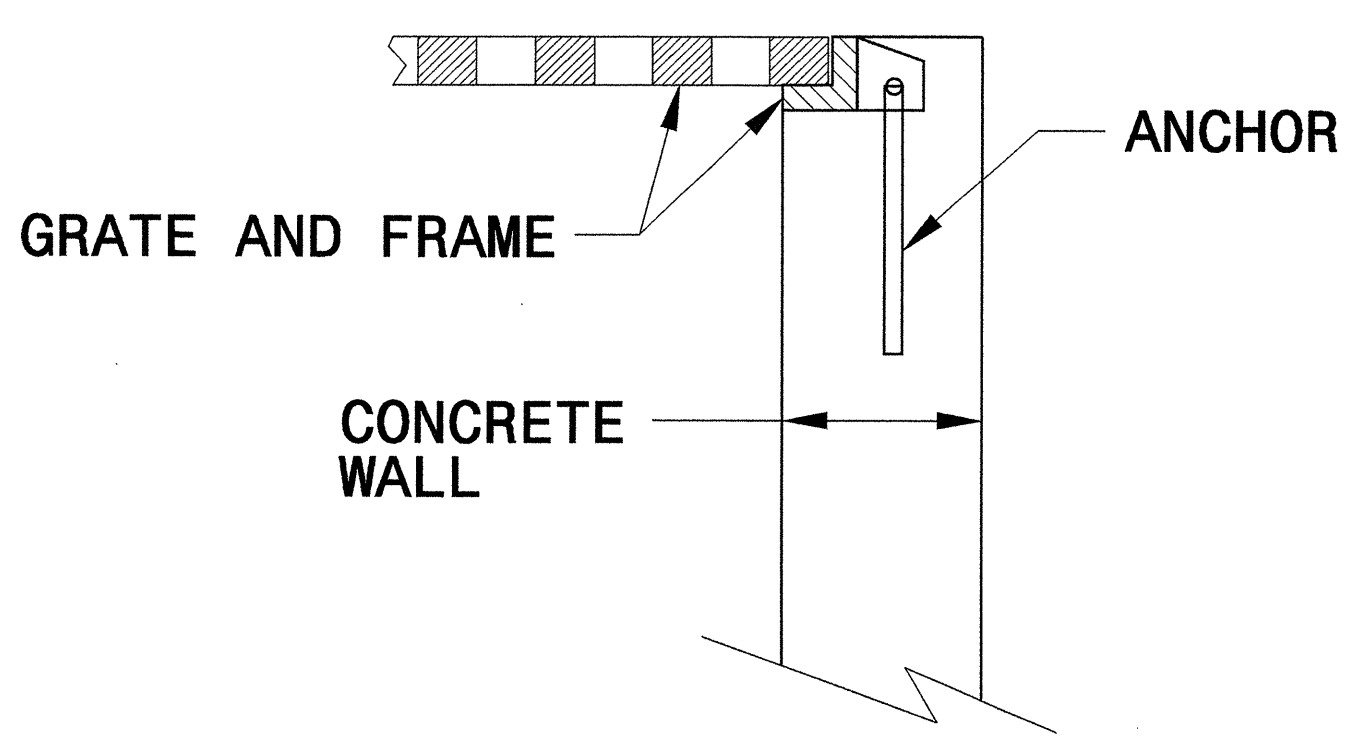
ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
 BRICK/CONCRETE/PRECAST CONCRETE

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

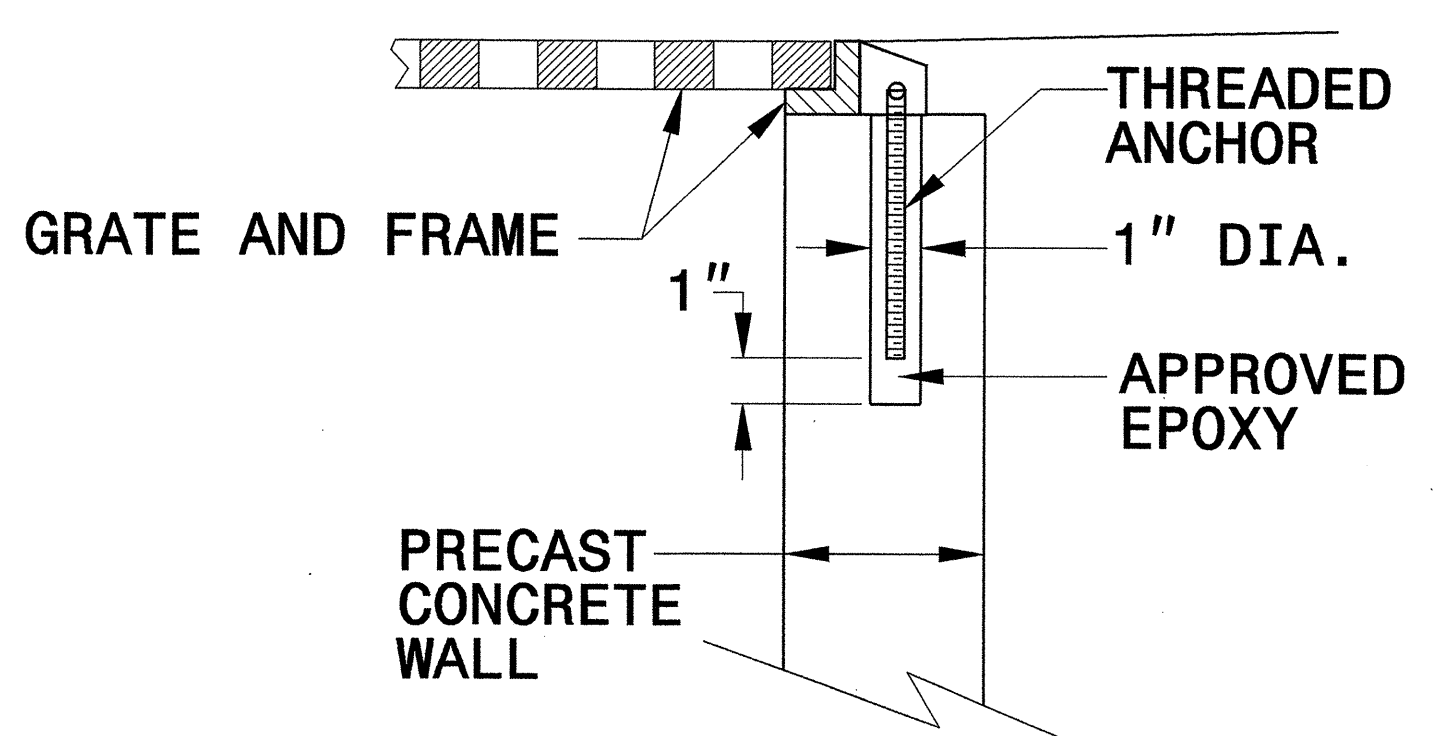
ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
 BRICK/CONCRETE/PRECAST CONCRETE



BRICK MASONRY CONSTRUCTION



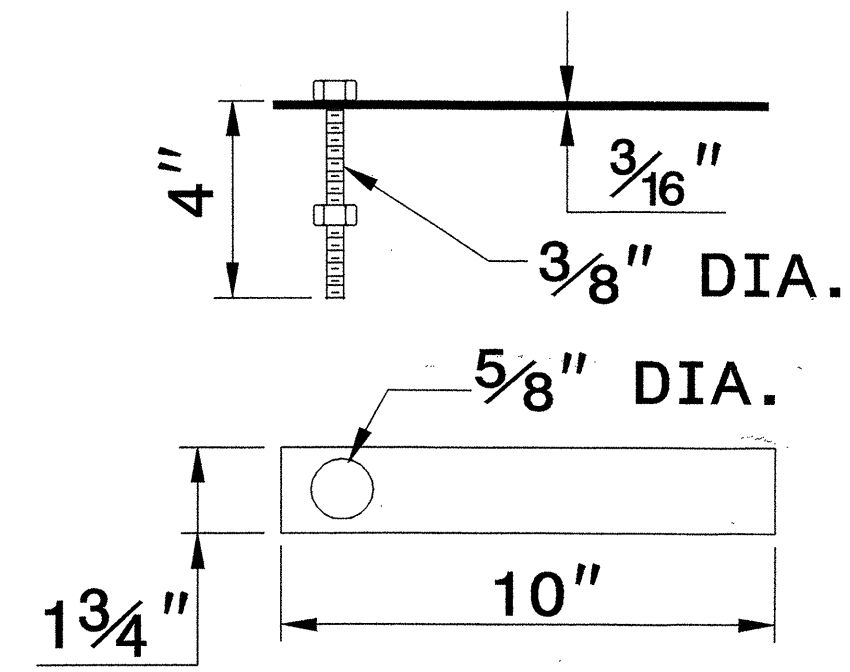
CONCRETE CONSTRUCTION



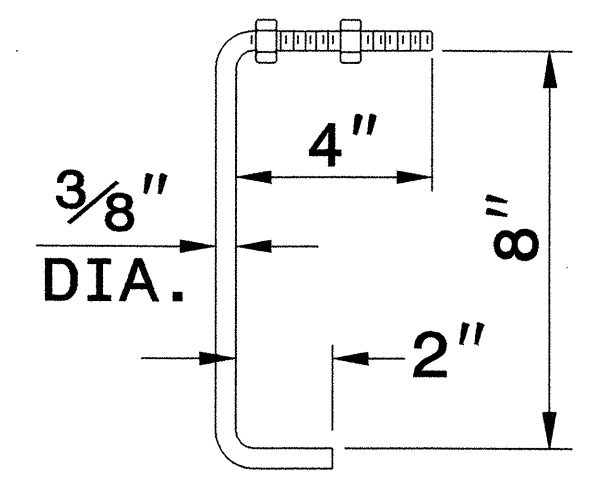
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

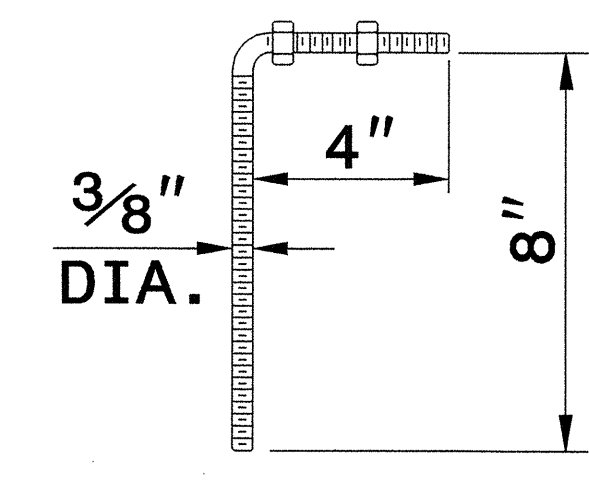
NOTE:
 CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



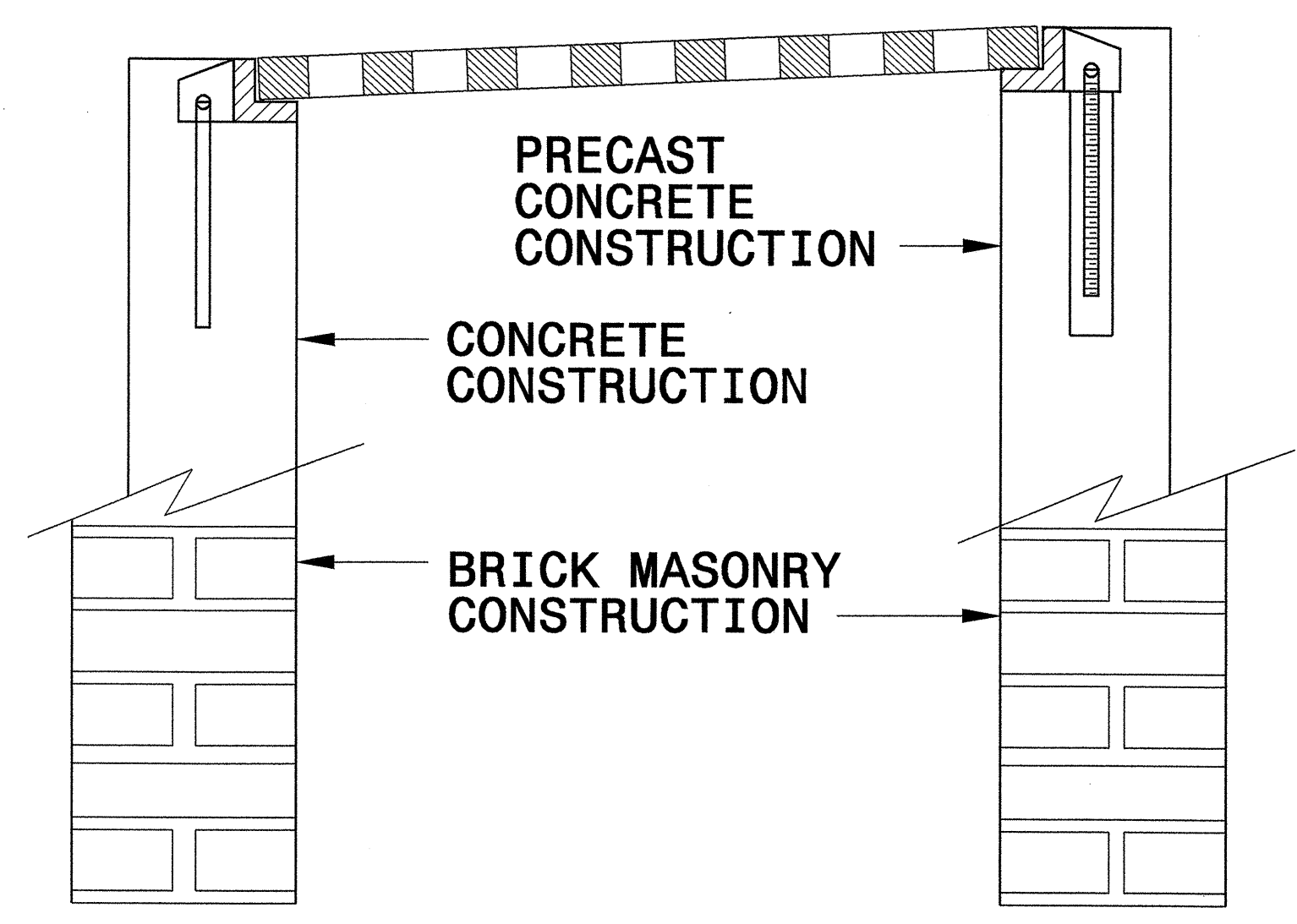
MASONRY ANCHOR
 3/8" DIA. BOLT WITH PLATE



CONCRETE ANCHOR
 3/8" DIA. BENT BAR



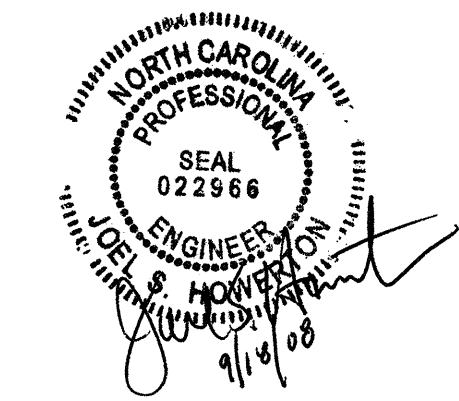
PRECAST CONCRETE ANCHOR
 3/8" DIA. BENT BAR



FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

SHEET 1 OF 1
840D25

SHEET 1 OF 1
840D25



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

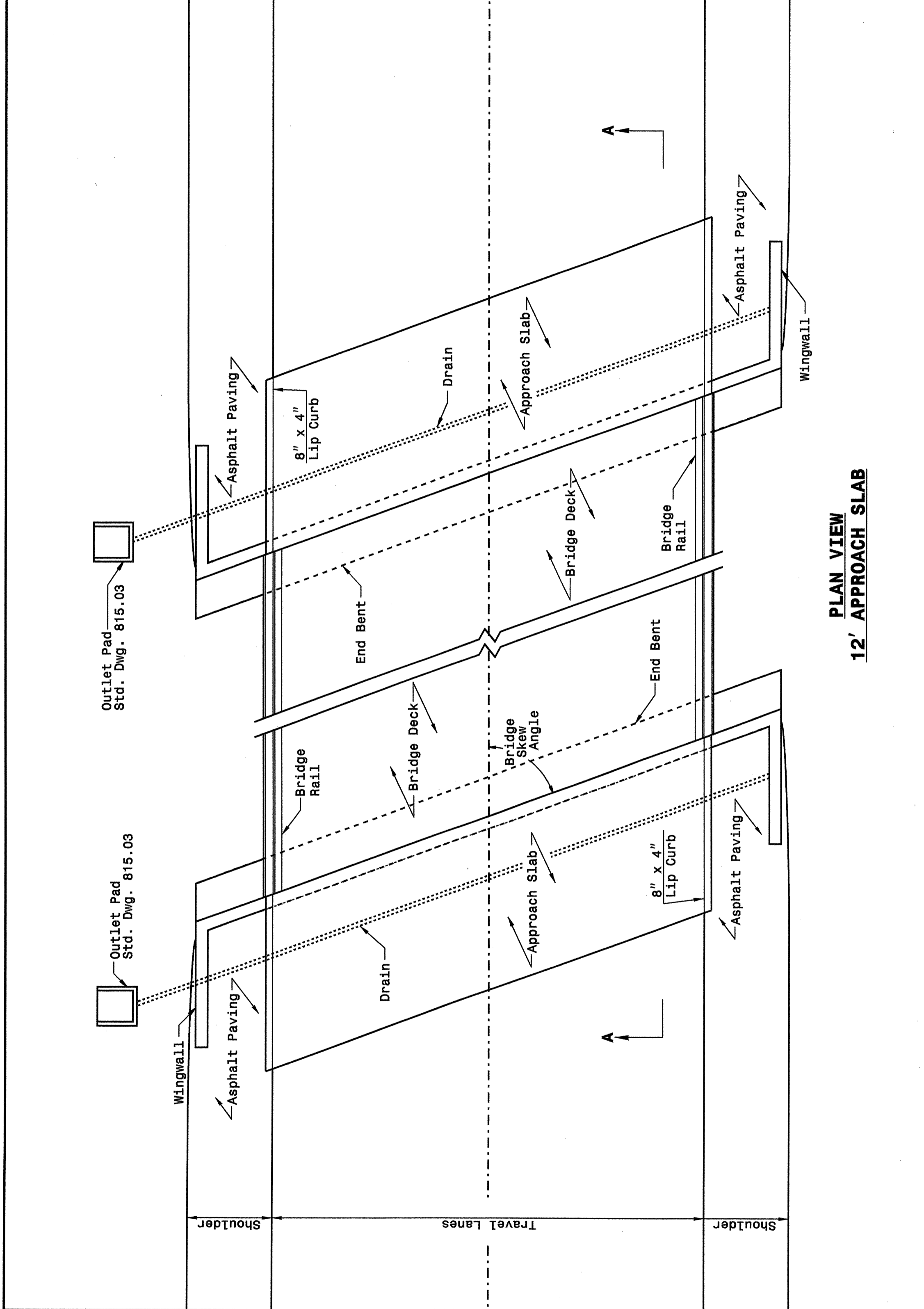
SEE PLATE FOR TITLE

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

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

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

SHEET 1 OF 2
422D11



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

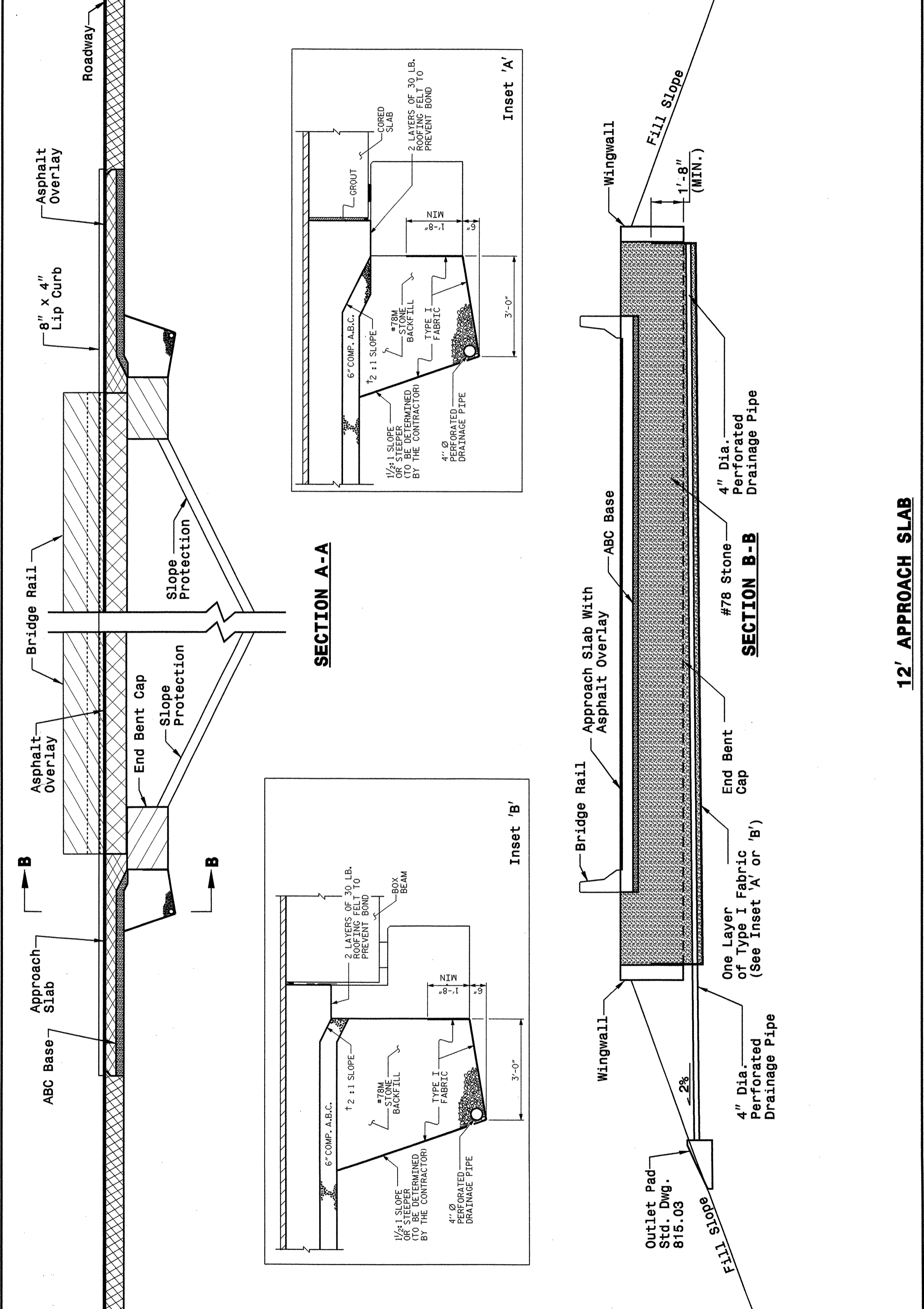
ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

SHEET 1 OF 2
422D11

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

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

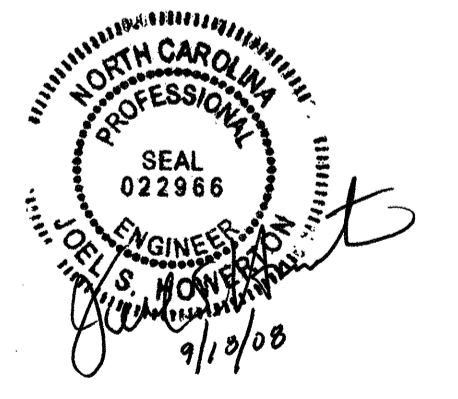
SHEET 2 OF 2
422D11



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

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

SHEET 2 OF 2
422D11



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

BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

ORIGINAL BY: K. A. Kempf DATE: 6-10-08
MODIFIED BY: *[Signature]* DATE:
CHECKED BY: *[Signature]* DATE: 9/27/08
FILE SPEC.: k Kempf/english/bridge approach fills.dgn

26 JUN 2008 15:32 c:\projects\special details\kempf\english\bridge approach fill.dgn
k Kempf

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202037

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	487000000-E	1205	17	LF	REMOVAL OF PAVEMENT MARKING LINES (24")
0022000000-E	225	6,400	CY	UNCLASSIFIED EXCAVATION	600000000-E	1605	1,500	LF	TEMPORARY SILT FENCE
0030000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** STA. 13+17	600600000-E	1610	135	TON	STONE FOR EROSION CONTROL, CLASS A
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING	600900000-E	1610	180	TON	STONE FOR EROSION CONTROL, CLASS B
0057000000-E	226	500	CY	UNDERCUT EXCAVATION	601200000-E	1610	150	TON	SEDIMENT CONTROL STONE
0063000000-N	SP	Lump Sum		GRADING	601500000-E	1615	2.5	ACR	TEMPORARY MULCHING
0080000000-E	SP	600	TON	CLASS IV SUBGRADE STABILIZATION	601800000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
0134000000-E	240	15	CY	DRAINAGE DITCH EXCAVATION	602100000-E	1620	1.25	TON	FERTILIZER FOR TEMPORARY SEEDING
0195000000-E	265	500	CY	SELECT GRANULAR MATERIAL	602900000-E	SP	400	LF	SAFETY FENCE
0196000000-E	270	500	SY	FABRIC FOR SOIL STABILIZATION	603000000-E	1630	300	CY	SILT EXCAVATION
0318000000-E	300	5	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	603600000-E	1631	4,400	SY	MATting FOR EROSION CONTROL
0343000000-E	310	20	LF	15" SIDE DRAIN PIPE	603700000-E	SP	10	SY	COIR FIBER MAT
1121000000-E	520	100	TON	AGGREGATE BASE COURSE	604200000-E	1632	20	LF	1/4" HARDWARE CLOTH
1220000000-E	545	45	TON	INCIDENTAL STONE BASE	607000000-N	SP	4	EA	SPECIAL STILLING BASINS
1489000000-E	610	240	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	6071010000-E	SP	170	LF	WATTLE
1525000000-E	610	200	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	6071020000-E	SP	63	LB	POLYACRYLAMIDE (PAM)
1560000000-E	620	24	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	6071030000-E	SP	30	LF	COIR FIBER BAFFLES
2000000000-N	806	14	EA	RIGHT OF WAY MARKERS	6071050000-E	SP	1	EA	*** SKIMMER (1-1/2")
2022000000-E	815	68	CY	SUBDRAIN EXCAVATION	6084000000-E	1660	3.5	ACR	SEEDING & MULCHING
2033000000-E	815	51	CY	SUBDRAIN FINE AGGREGATE	6087000000-E	1660	1.5	ACR	MOWING
2044000000-E	815	300	LF	6" PERFORATED SUBDRAIN PIPE	6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
2055000000-E	815	9	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS	6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
2066000000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET	6096000000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
2077000000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)	6108000000-E	1665	1.5	TON	FERTILIZER TOPDRESSING
2286000000-N	840	1	EA	MASONRY DRAINAGE STRUCTURES	6114000000-N	SP	5	HR	SPECIALIZED HAND MOWING
2407000000-N	840	1	EA	STEEL FRAME WITH TWO GRATES, STD 840.37	6117000000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
2535000000-E	846	30	LF	***X*** CONCRETE CURB (9" x 12")	6123000000-E	1670	0.1	ACR	REFORESTATION
3030000000-E	862	175	LF	STEEL BM GUARDRAIL	***** BEGIN SCHEDULE AA ***** ***** (2 ALTERNATES) *****				
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	0708000000-E	310	12	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK
3215000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III	*** OR ***				
3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	0540000000-E	SP	12	LF	**** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, **** THICK (15", 0.064")
3380000000-E	862	175	LF	TEMPORARY STEEL BM GUARDRAIL	***** END SCHEDULE AA *****				
3387000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** TEMPORARY (TYPE B-77)					
3389100000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350 TEMPORARY					
3649000000-E	876	17	TON	RIP RAP, CLASS B					
3656000000-E	876	559	SY	FILTER FABRIC FOR DRAINAGE					
4400000000-E	1110	270	SF	WORK ZONE SIGNS (STATIONARY)					
4405000000-E	1110	128	SF	WORK ZONE SIGNS (PORTABLE)					
4410000000-E	1110	36	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)					
4430000000-N	1130	20	EA	DRUMS					
4435000000-N	1135	20	EA	CONES					
4445000000-E	1145	48	LF	BARRICADES (TYPE III)					
4455000000-N	1150	120	MD	FLAGGER					
4480000000-N	1165	1	EA	TMIA					
4609000000-N	SP	180	DAY	GENERIC TRAFFIC CONTROL ITEM TEMPORARY TRAFFIC SIGNAL SYSTEM					
4810000000-E	1205	13,100	LF	PAINT PAVEMENT MARKING LINES (4")					
4835000000-E	1205	34	LF	PAINT PAVEMENT MARKING LINES (24")					
4850000000-E	1205	224	LF	REMOVAL OF PAVEMENT MARKING LINES (4")					

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DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK
 IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
SUMMARY 1					
-DET- 10+67.50 TO 13+15.00 (BEGIN BRIDGE)	5550		13		5537
-DET- 14+30.00 (END BRIDGE) TO 15+31.13	2		197	195	
SUBTOTAL SUMMARY 1	5552		210	195	5537
SUMMARY 2					
-L- 10+50.00 TO 12+75.00 (BEGIN BRIDGE)	10		152	142	
-L- 13+60.00 (END BRIDGE) TO 15+50.00	732		163	163	732
SUBTOTAL SUMMARY 2	742		315	305	732
SUMMARY 3					
-DET- 10+67.50 TO 13+15.00 (BEGIN BRIDGE)	34				34
-DET- 14+30.00 (END BRIDGE) TO 15+31.13	88				88
SUBTOTAL SUMMARY 3	122				122
PROJECT SUBTOTAL	6416		525	500	6391
LOSS DUE TO CL & GR	(-)300				(-)300
WASTE IN LIEU OF BORROW				(-)500	(-)500
PROJECT TOTAL	6116			0	5591
SAY	6400				6000

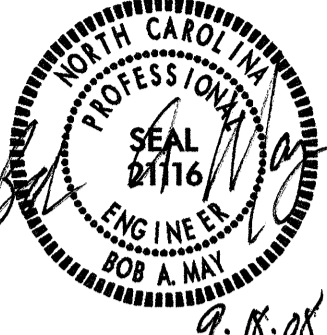
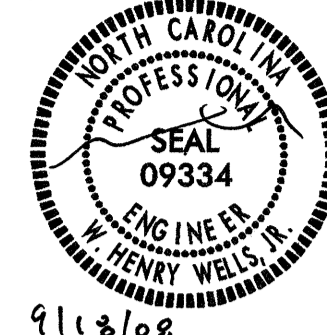

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

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

UNDERCUT EXCAVATION = 500 CY (PER GEOTECHNICAL ENGINEERING UNIT MEMO DATED 2/22/2005)

SUMMARY OF PAVEMENT REMOVAL
 IN SQUARE YARDS

LOCATION	REMOVAL OF EXIST. ASPHALT PAVEMENT	REMOVAL OF EXIST. CONCRETE PAVEMENT	BREAKING OF EXIST. ASPHALT PAVEMENT	BREAKING OF EXIST. CONCRETE PAVEMENT
SUMMARY 1				
-L- 12+61.00 TO EXISTING BRIDGE	42.01			
EXISTING BRIDGE TO -L- 14+35.00	164.27			
SUBTOTAL SUMMARY 1	206.28			
SUMMARY 2				
-DET- 10+67.35 TO 13+15 (TEMP. PAVEMENT)	260.43			
-DET- 14+30 TO 15+32 +/- (TEMP. PAVEMENT)	97.61			
SUBTOTAL SUMMARY 2	358.04			
PROJECT TOTAL	564.32			
SAY	570.00			

PROJECT REFERENCE NO. B-4015		SHEET NO. 4	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
			
		559 Jones Franklin Rd. Suite 164 Raleigh, N.C. 27605 Bus: 919 851 8077 Fax: 919 851 8107	
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION			
SUNGATE DESIGN GROUP, P.A.			
915 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL: (919) 859-2243 FAX: (919) 859-6528			

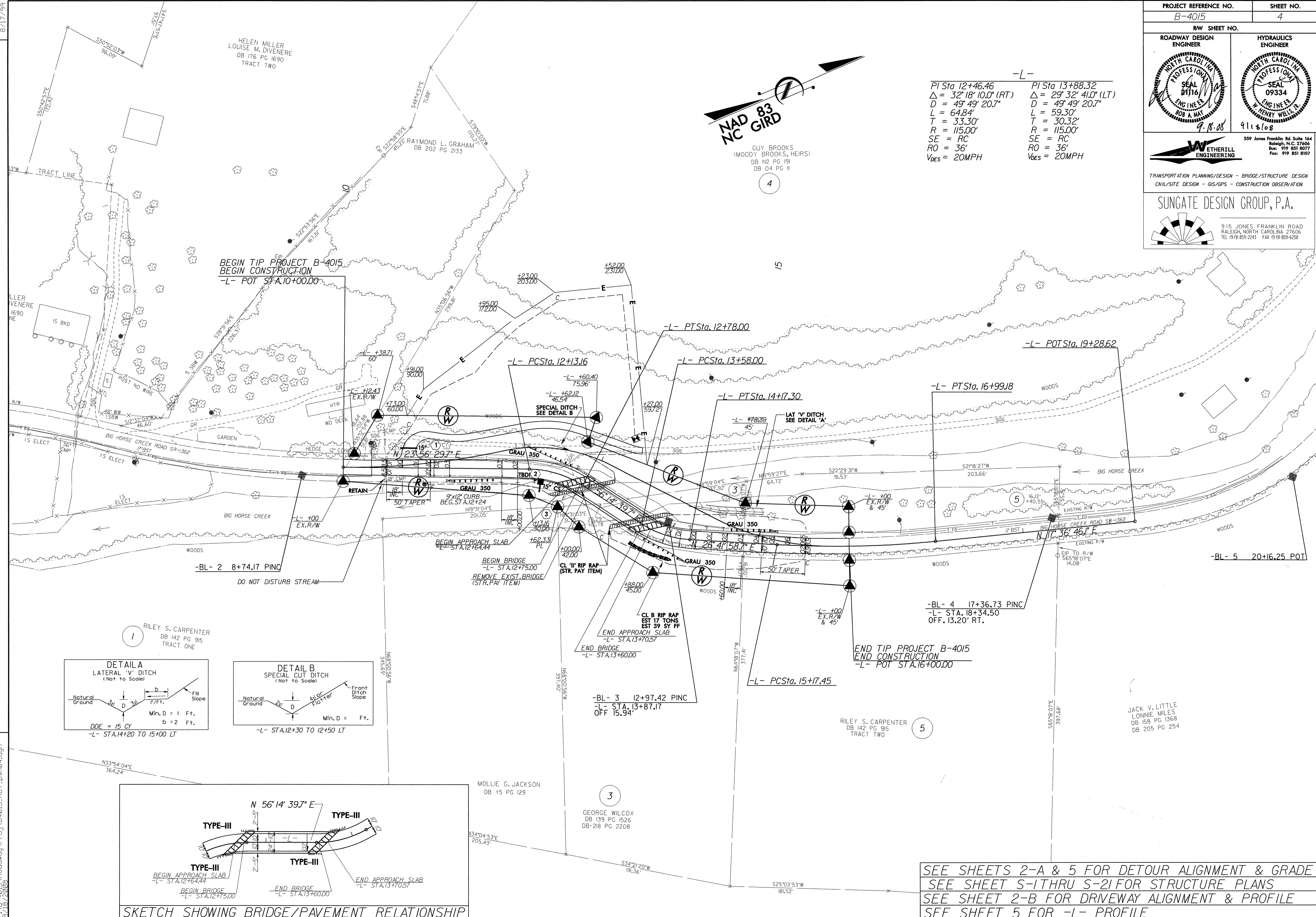
-L-

PI Sta 12+46.46 Δ = 32° 18' 10.0" (RT) D = 49' 49" 20.7" L = 64.84' T = 33.30' R = 115.00' SE = RC RO = 36' Vdes = 20MPH	PI Sta 13+88.32 Δ = 29° 32' 41.0" (LT) D = 49' 49" 20.7" L = 59.30' T = 30.32' R = 115.00' SE = RC RO = 36' Vdes = 20MPH
--	--



GLY BROOKS
(MOODY BROOKS, HEIRS)
DB N2 PG 191
DB 04 PG II

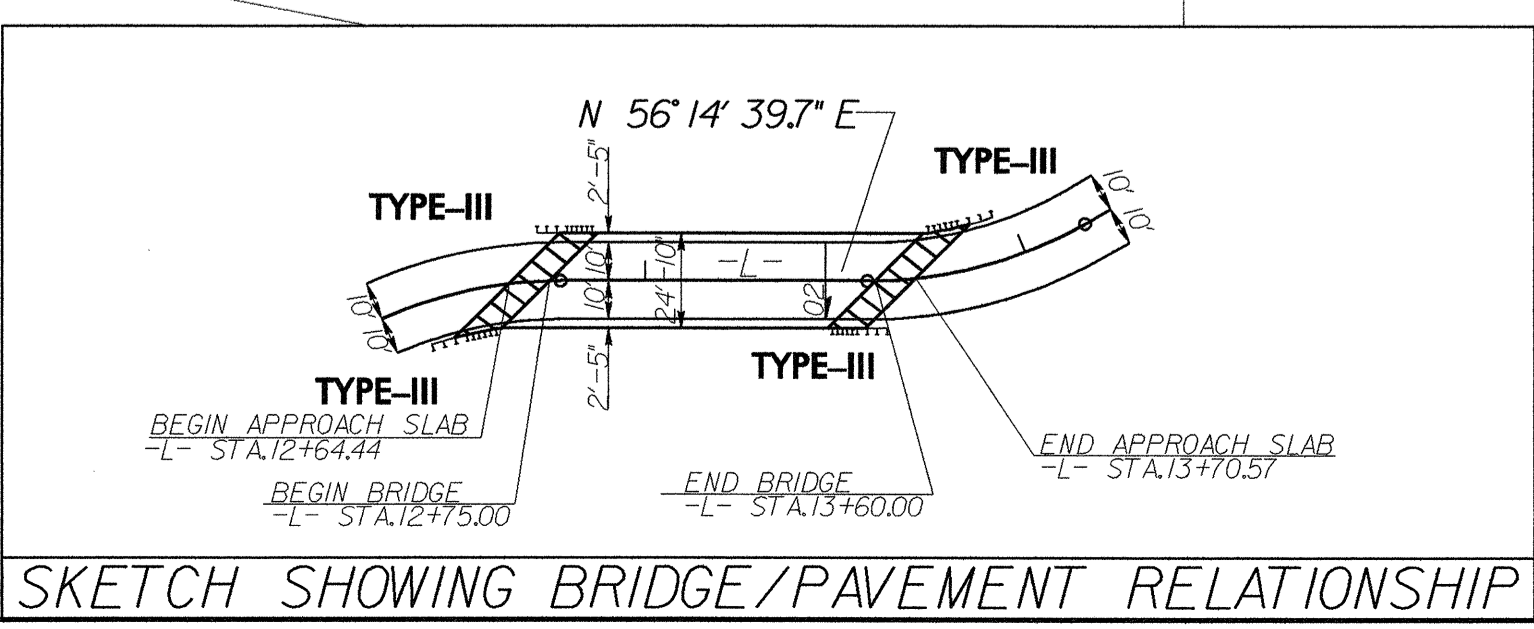
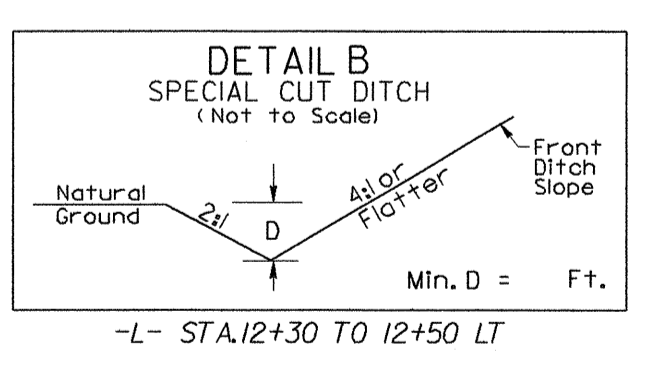
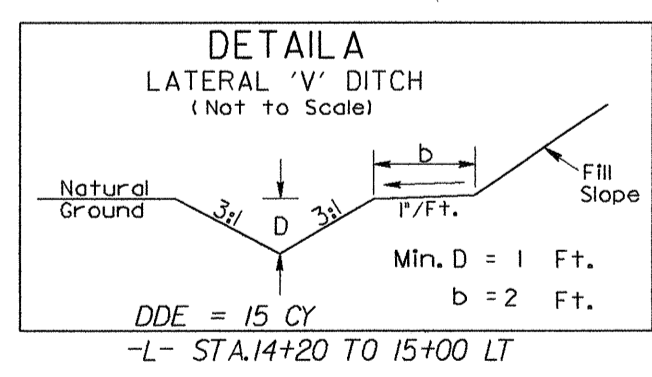
4



BEGIN TIP PROJECT B-4015
BEGIN CONSTRUCTION
-L- POT STA. 10+00.00

-L- POT Sta. 19+28.62

END TIP PROJECT B-4015
END CONSTRUCTION
-L- POT STA. 16+00.00



SEE SHEETS 2-A & 5 FOR DETOUR ALIGNMENT & GRADE
SEE SHEET S-1 THRU S-21 FOR STRUCTURE PLANS
SEE SHEET 2-B FOR DRIVEWAY ALIGNMENT & PROFILE
SEE SHEET 5 FOR -L- PROFILE

REVISIONS

8/17/99
 01:40:43 AM
 C:\B-4015\Roadway\Proj\B4015.RDY - psh04.dgn
 07/18/2008

5/28/99

BM #1
RAILROAD SPIKE IN 8' MAPLE
-L- STA.12+996.3, 77.74' LEFT
N 1023331 E 1256652 EL = 2726.45'

ETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27605
P: 919 851 8077 F: 919 851 8107

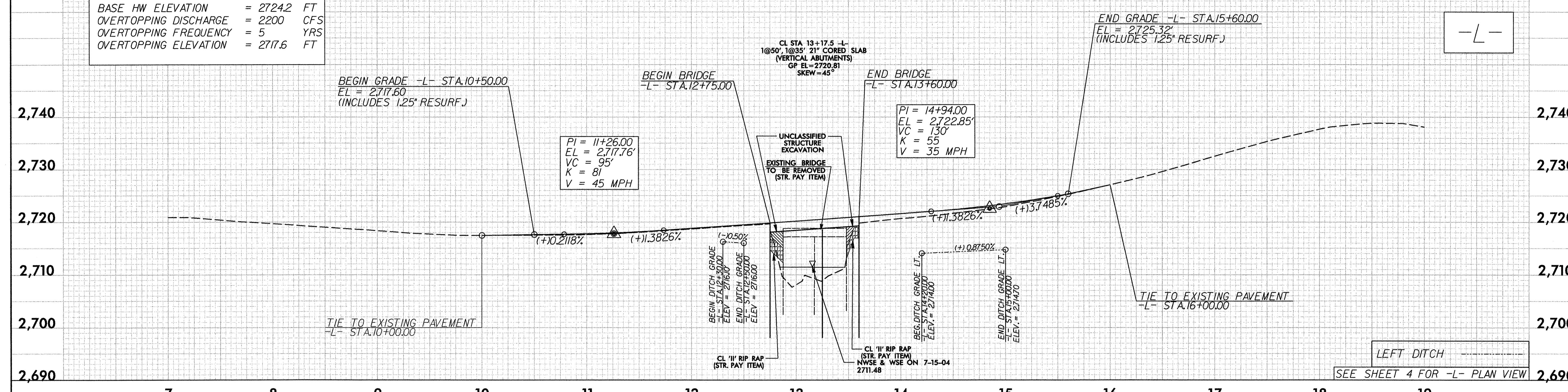
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

SUNGATE DESIGN GROUP, P.A.
915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL: (919) 859-2243 FAX: (919) 859-6258

PROJECT REFERENCE NO. B-4015	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

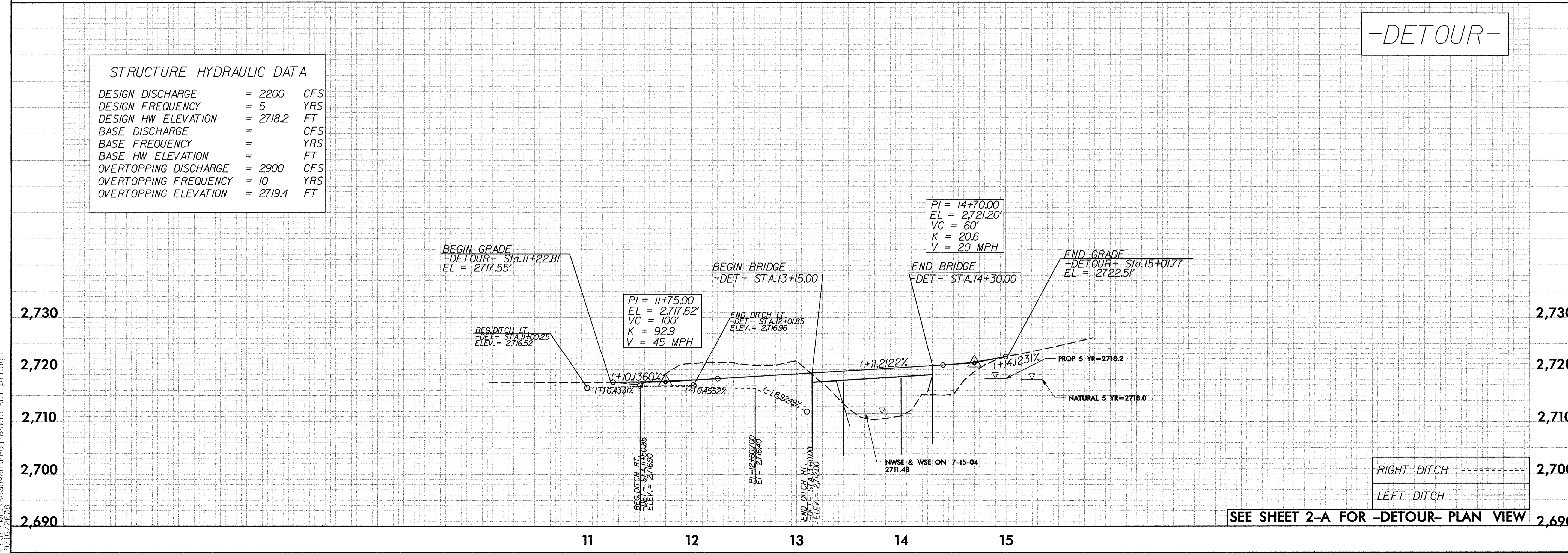
STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 3900	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2722.2	FT
BASE DISCHARGE	= 5700	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2724.2	FT
OVERTOPPING DISCHARGE	= 2200	CFS
OVERTOPPING FREQUENCY	= 5	YRS
OVERTOPPING ELEVATION	= 2717.6	FT



STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 2200	CFS
DESIGN FREQUENCY	= 5	YRS
DESIGN HW ELEVATION	= 2718.2	FT
BASE DISCHARGE	=	CFS
BASE FREQUENCY	=	YRS
BASE HW ELEVATION	=	FT
OVERTOPPING DISCHARGE	= 2900	CFS
OVERTOPPING FREQUENCY	= 10	YRS
OVERTOPPING ELEVATION	= 2719.4	FT



8:43:30 AM
P:\B-4015\Roadway\Proj\B4015-RDY_pf1.dgn
5/28/2008