

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4524	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33748.1.1	BRZ-1309(5)	PE	
33748.2.1	BRZ-1309(5)	RW & UTILITIES	
33748.3.1	BRZ-1309(5)	CONSTRUCTION	

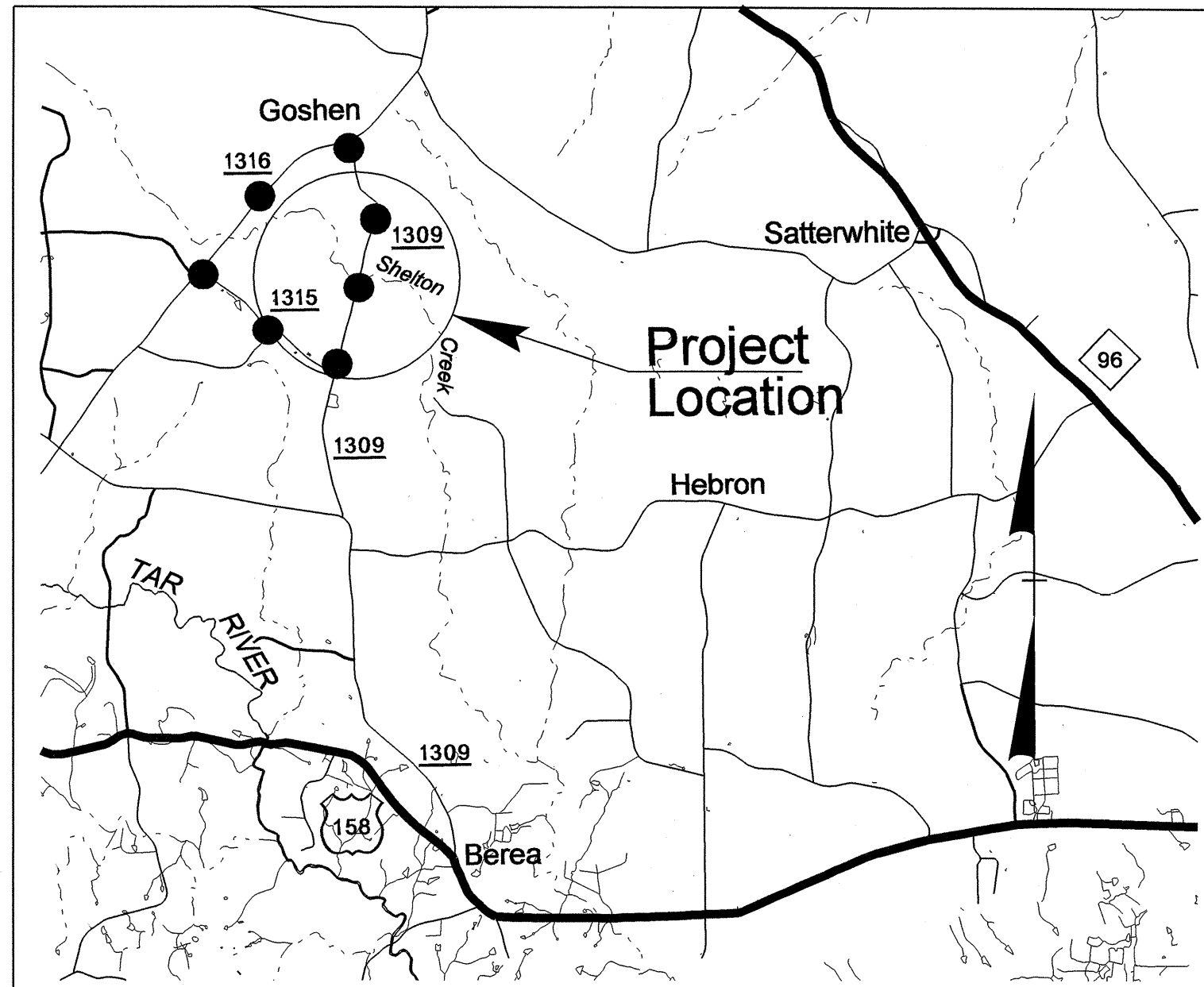
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GRANVILLE COUNTY

LOCATION: Bridge No. 193 over Shelton Creek on SR 1309 (Ben Thorpe Road)

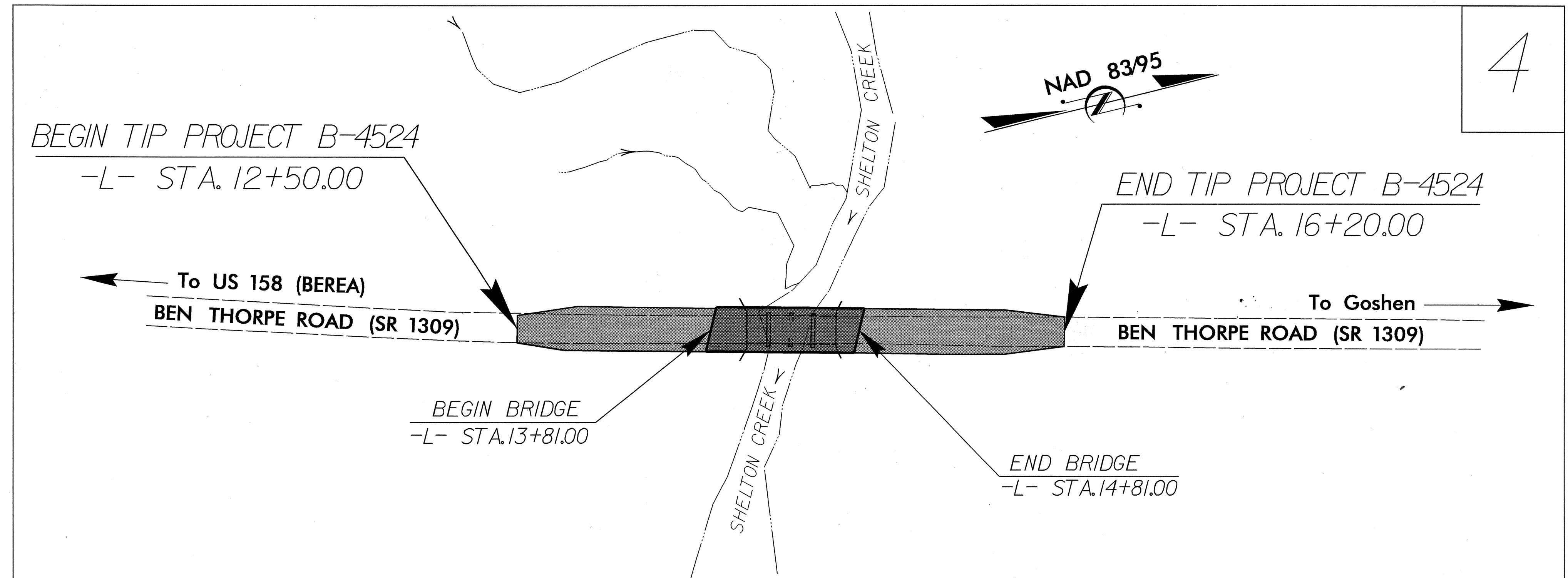
TYPE OF WORK: Grading, Paving, Drainage, and Structure

See Sheet 1-A For Index of Sheets



VICINITY MAP

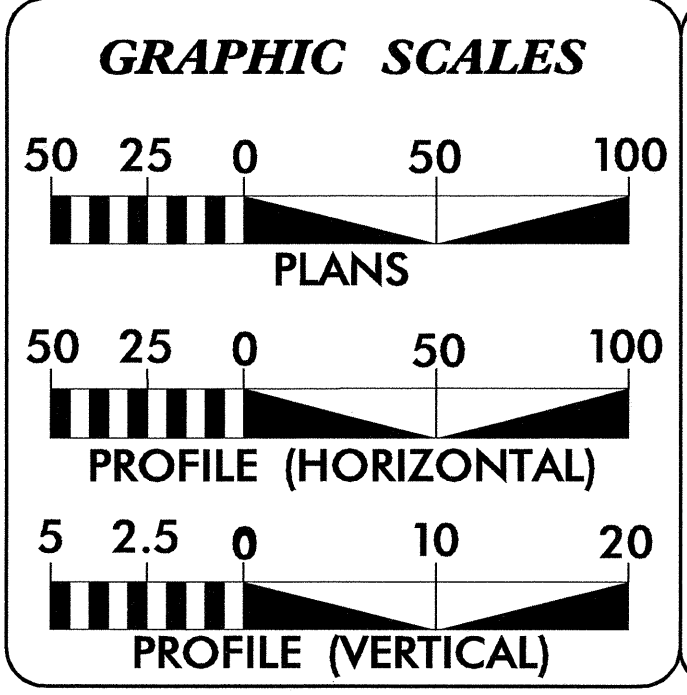
●●●● OFF SITE DETOUR



**DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE
K FACTORS AND STOPPING SIGHT DISTANCES.

TIP PROJECT: B-4524

CONTRACT: C202150



DESIGN DATA

ADT 2008 =	380 vpd
ADT 2030 =	800 vpd
DHV =	13%
D =	60%
T =	3% *
V =	60mph
* TTST =	1%
* DUAL =	2%

PROJECT LENGTH

Length Roadway TIP Project B-4524 =	0.051 Miles
Length Structure TIP Project B-4524 =	0.019 Miles
Total Length TIP Project B-4524 =	0.070 Miles

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: June 17, 2008	JAMES A. SPEER, PE PROJECT ENGINEER
LETTING DATE: June 16, 2009	JOHN LANSFORD, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

Matthew L. Cook
SIGNATURE: ROADWAY DESIGN ENGINEER

PROFESSIONAL SEAL
NORTH CAROLINA
027434
MAY 23 2009
MATTHEW L. COOK
P.E.

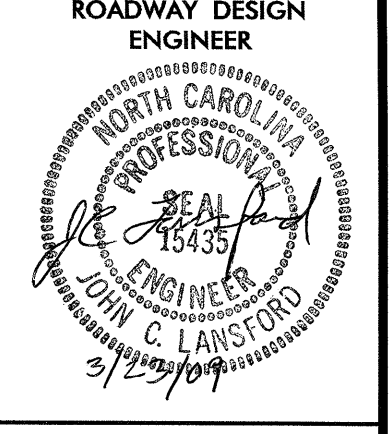
John C. Lansford
SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

John C. Lansford
SIGNATURE: P.E.

STATE HIGHWAY DESIGN ENGINEER

19-MAR-2009 12:00 L:\N\4524_rdy_tsh.dgn USER:JLANSFORD



8/17/09

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2-A	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-B	DETAIL OF ANCHORAGE FOR FRAMES
2-C	SUB REGIONAL TIER APPROACH FILL DETAIL
3	SUMMARY OF QUANTITIES
3-A	LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" AND UNDER), SUMMARY OF GUARDRAIL
3-B	SUMMARY OF EARTHWORK, PAVEMENT REMOVAL SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TCP-1 THRU TCP-3	TRAFFIC CONTROL PLANS
SD-1	SPECIAL SIGN DETAIL
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
X-1	CROSS-SECTION INDEX SHEET
X-2 THRU X-7	CROSS-SECTIONS
S-1 THRU S-17	STRUCTURE PLANS

GENERAL NOTES:

2006 SPECIFICATIONS
EFFECTIVE: 07-18-06
REVISED: 07-30-08

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

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

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.

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.

2006 ROADWAY ENGLISH STANDARD DRAWINGS

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

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'
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method 1
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
816.04	Markers for Drainage Structure and Concrete Pad
840.00	Concrete Base Pad for Drainage Structures
840.13	Concrete Bridge Approach Drop Inlet - 12" thru 24" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb and 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

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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	-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	○
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	-----
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	E
Proposed Temporary Construction Easement	E
Proposed Temporary Drainage Easement	TDE
Proposed Permanent Drainage Easement	PDE
Proposed Permanent Utility Easement	PUE
Proposed Temporary Utility Easement	TUE
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

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
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	Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC. WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊕
Storm Sewer	S

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊕
Power Transformer	⊕
U/G Power Cable Hand Hole	⊕
H-Frame Pole	●
Recorded U/G Power Line	P
Designated U/G Power Line (S.U.E.*)	P

TELEPHONE:

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

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊕
Water Hydrant	⊕
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	A/G Water

TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊕
U/G TV Cable Hand Hole	⊕
Recorded U/G TV Cable	TV
Designated U/G TV Cable (S.U.E.*)	TV
Recorded U/G Fiber Optic Cable	TV FO
Designated U/G Fiber Optic Cable (S.U.E.*)	TV FO

GAS:

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

SANITARY SEWER:

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

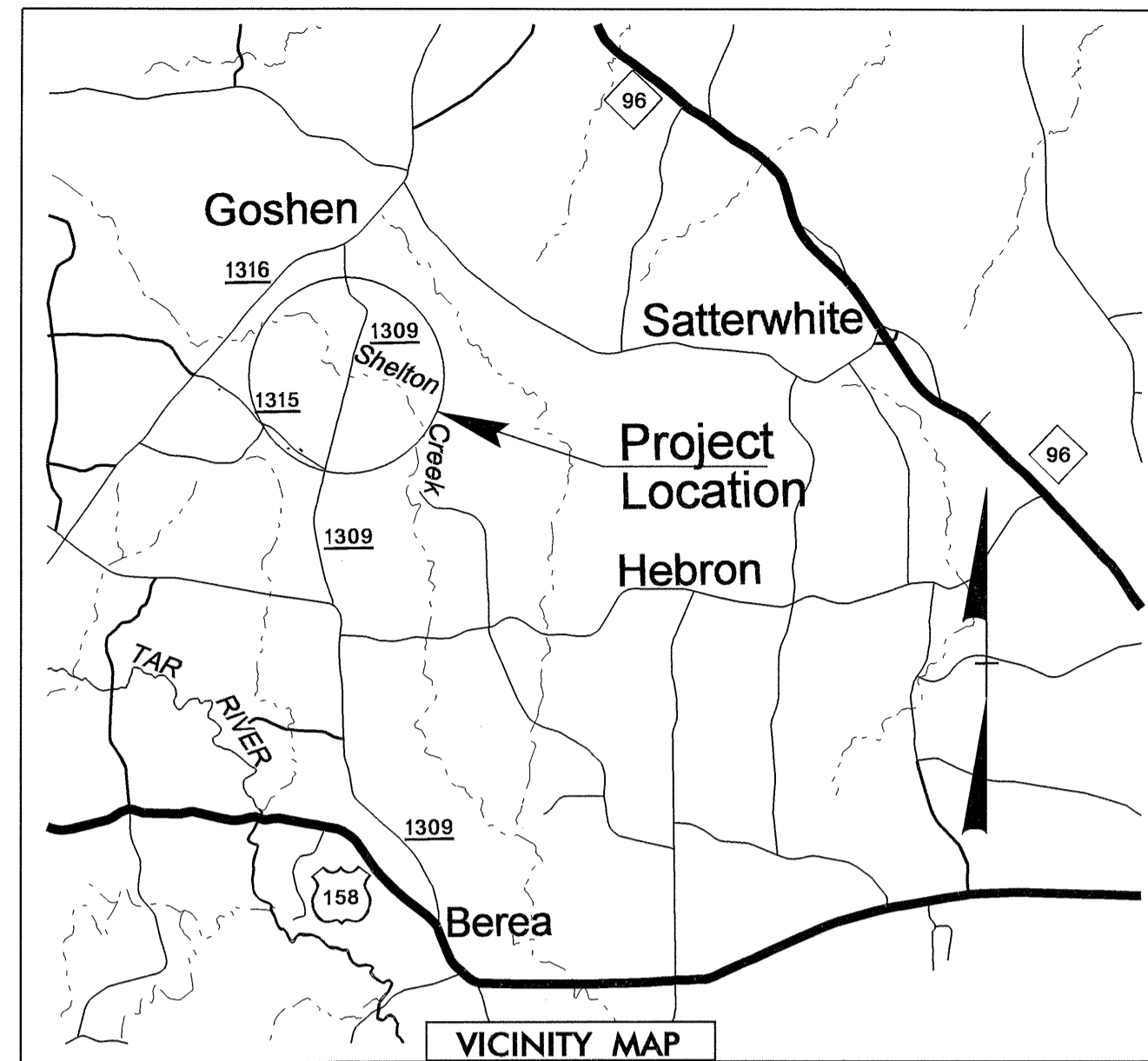
MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	⊕
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	TUL
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.

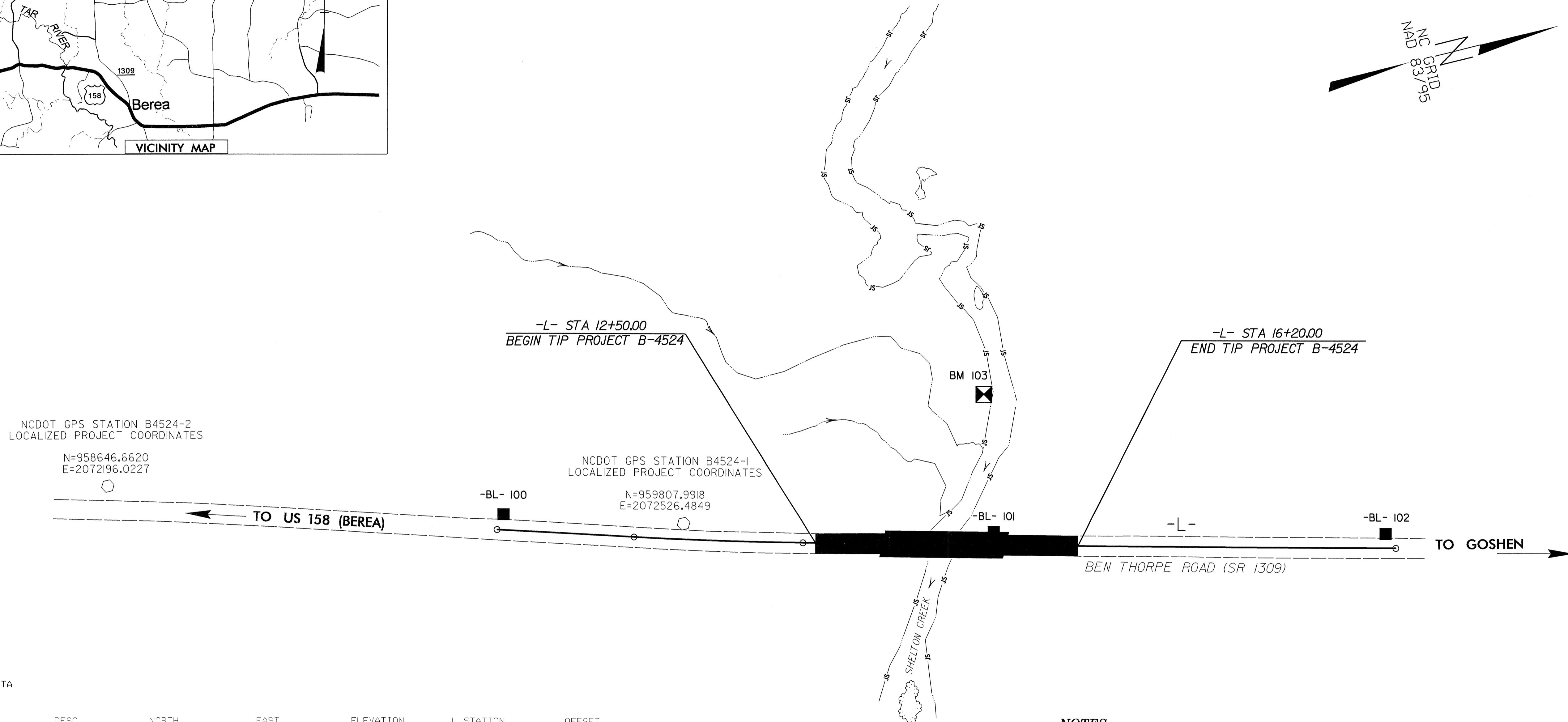
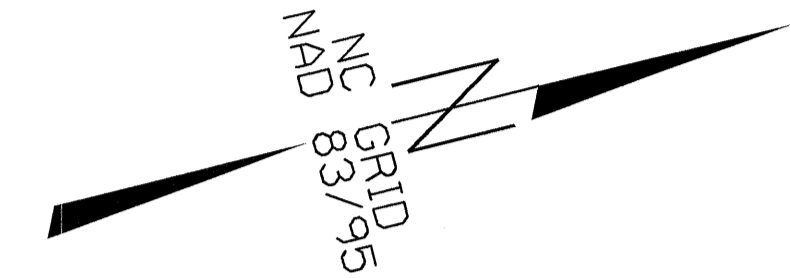
SURVEY CONTROL SHEET B-4524

GRANVILLE COUNTY

**LOCATION: BRIDGE #193 OVER SHELTON CREEK
AND APPROACHES ON SR 1309 (BEN THORPE ROAD)**



B-4524



BASELINE POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
100	BL-100	959639.9853	2072476.2630	514.04	10+05.59	15.09 LT
1	B4524-1	959807.9918	2072526.4849	508.45	11+81.13	15.09 LT
101	BL-101	960098.9212	2072604.7660	503.43	14+82.85	13.07 LT
102	BL-102	960469.0129	2072697.1556	517.86	18+64.38	13.88 LT

BENCHMARK DATA

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*****
BM 103      ELEVATION = 495.47
N 960121    E 2072473
L STATION 14+72 146 LEFT
R/R SPIKE IN BASE OF 12" OAK
*****
  
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DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4524-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 959807.9918(±) EASTING: 2072526.4849(±) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00004810 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4524-1" TO -L- STATION 11+00.00 IS S 05°58'42.0" W 82.39' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

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/B4524_ls_control_060609.txt](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/B4524_ls_control_060609.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)

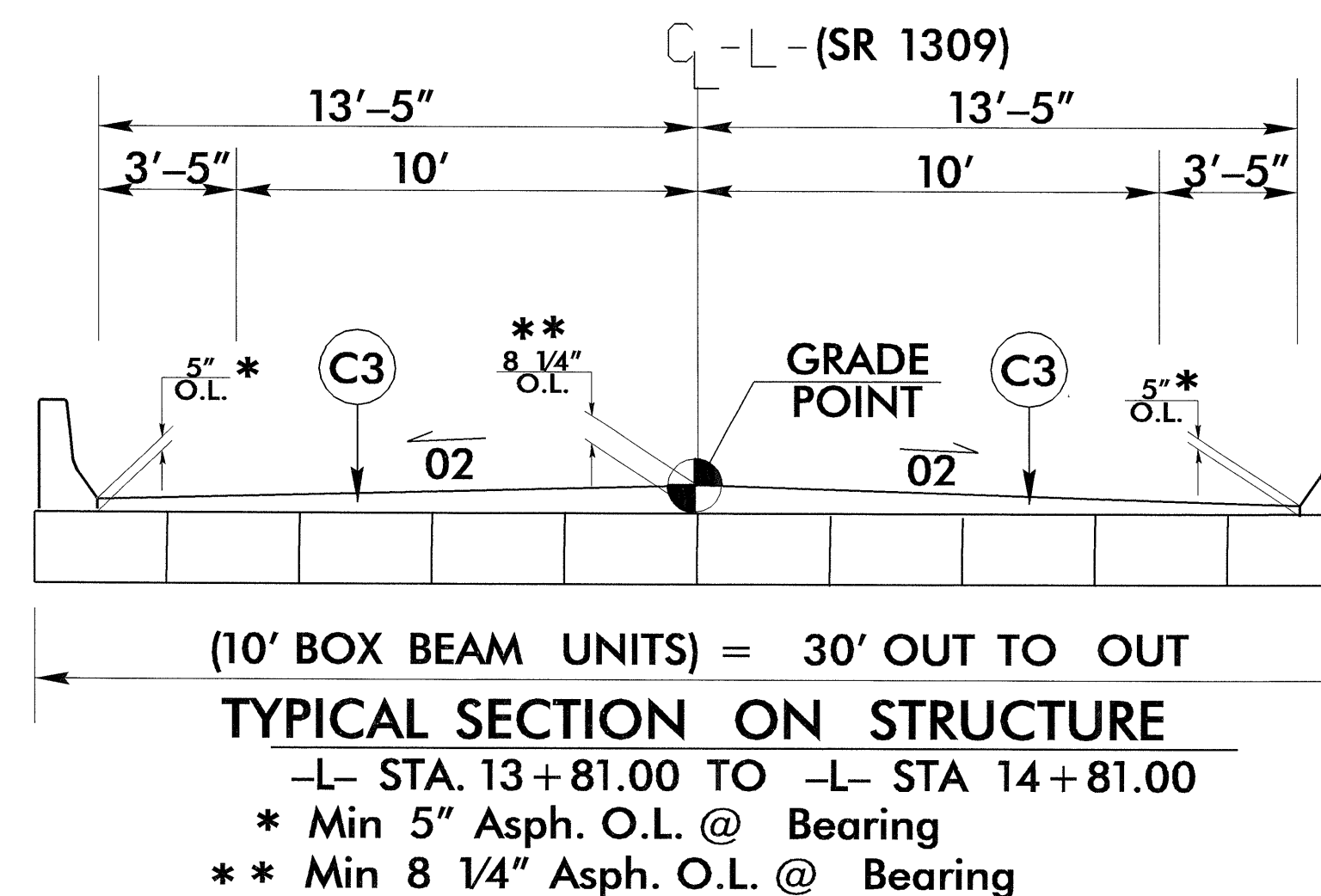
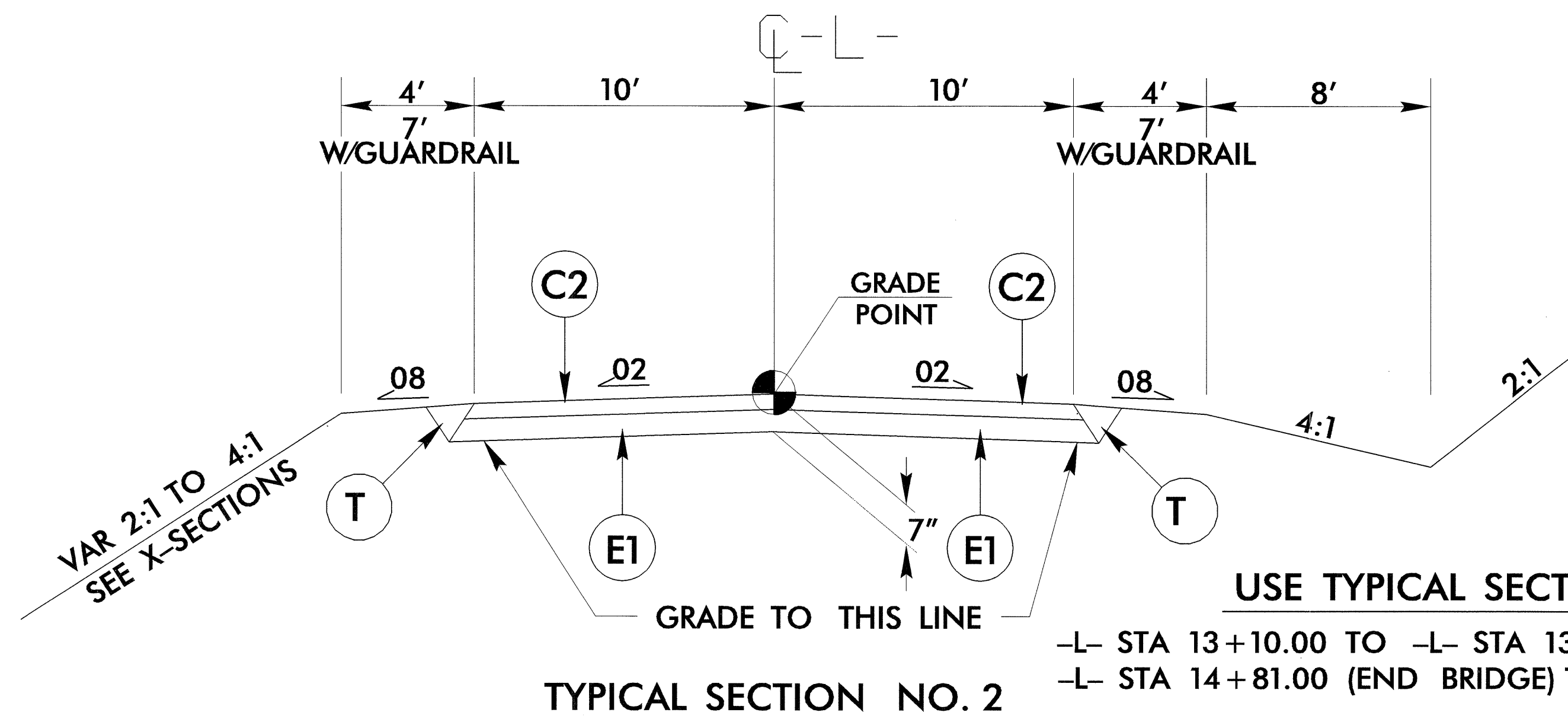
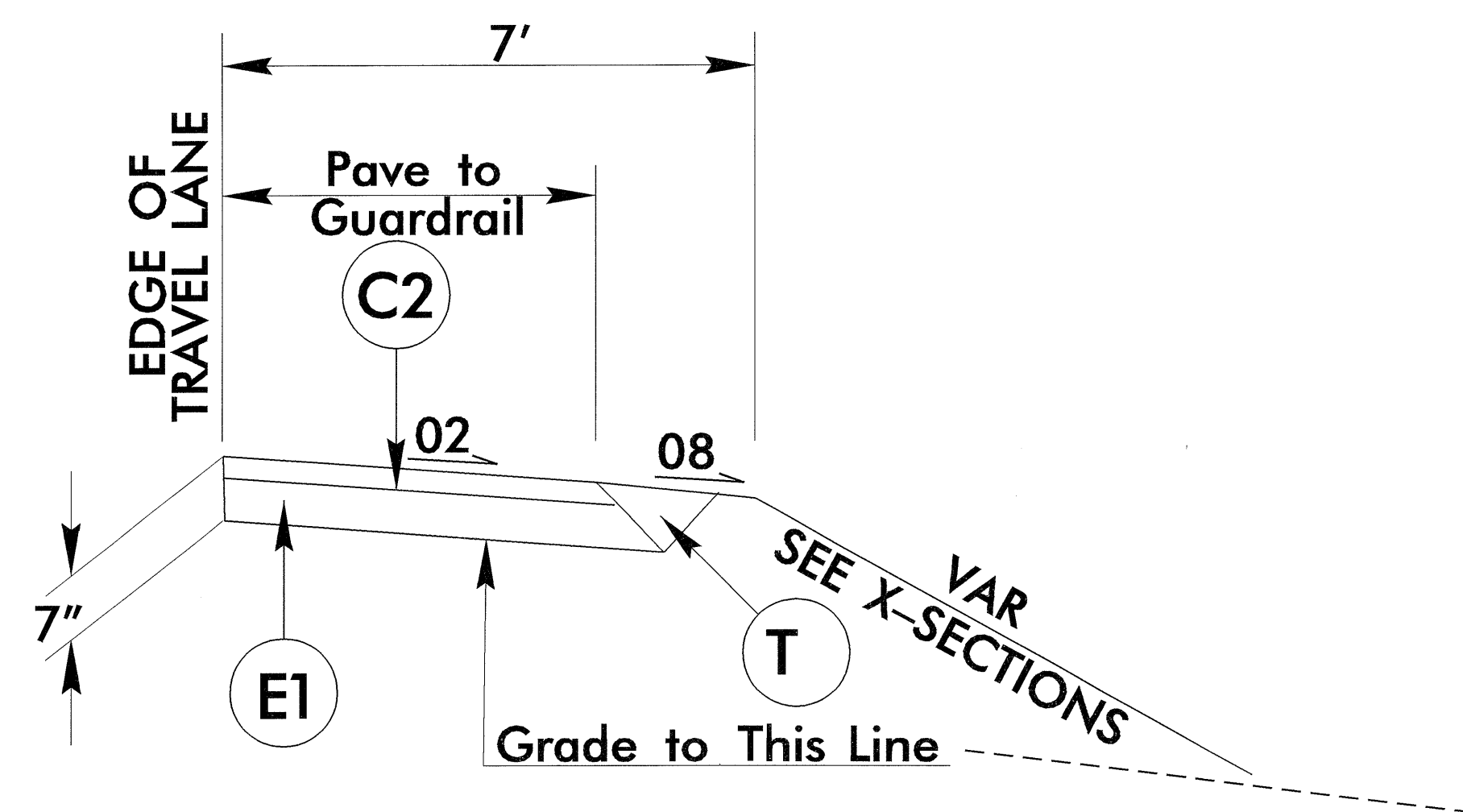
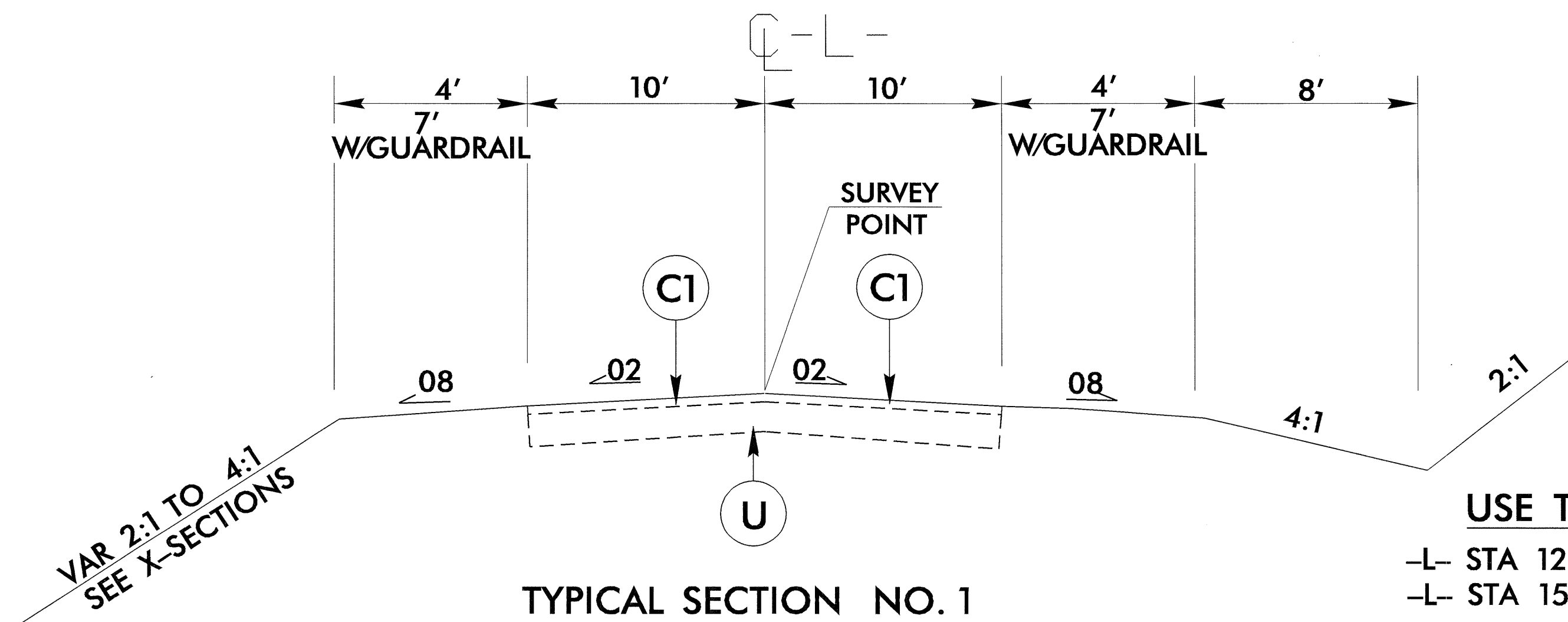
NOTE: DRAWING NOT TO SCALE

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 TO EXCEED 1 1/2" IN DEPTH
E1	PROP. APPROX. 4 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
T	EARTH MATERIAL
U	EXISTING PAVEMENT

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

PROJECT REFERENCE NO. B-4524	SHEET NO. 2-A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL JOHN C. LANSTORD 3/23/09	PAVEMENT DESIGN ENGINEER SEAL 22896 CLARENCE S. MORRISON 3/23/09



8/17/99

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

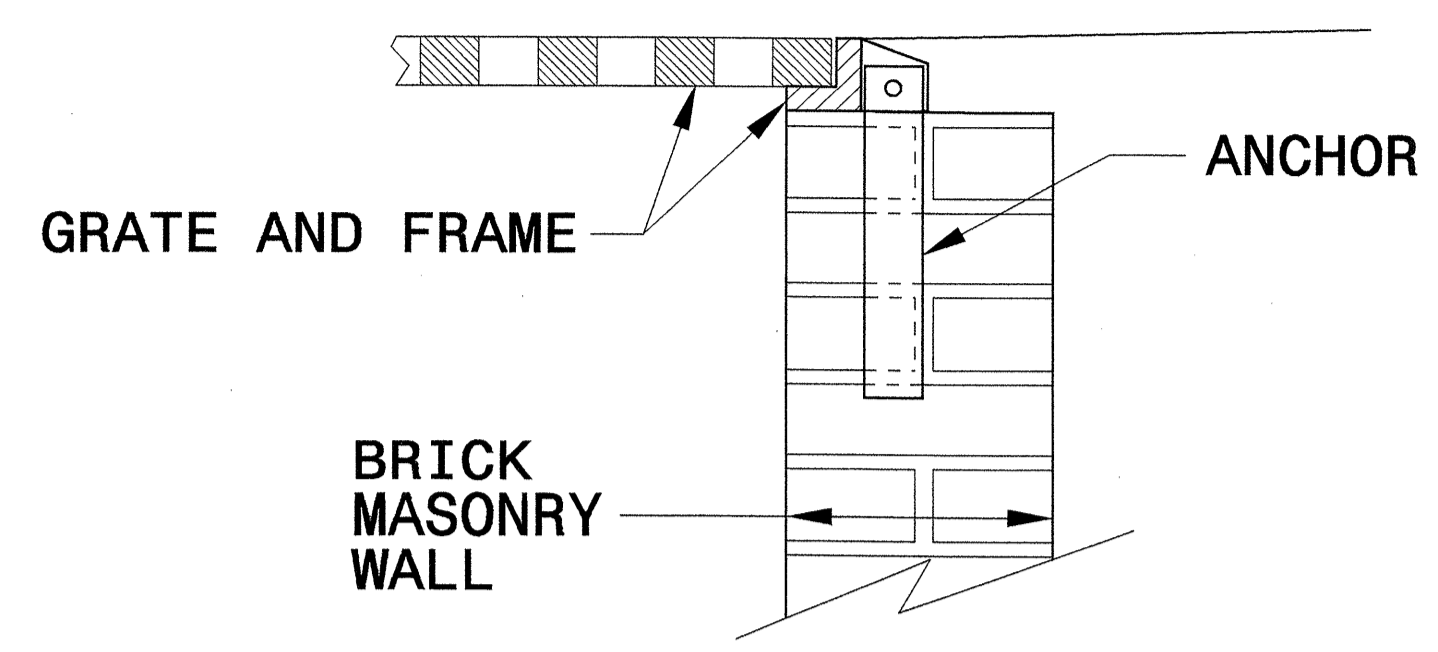
ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1
840D25

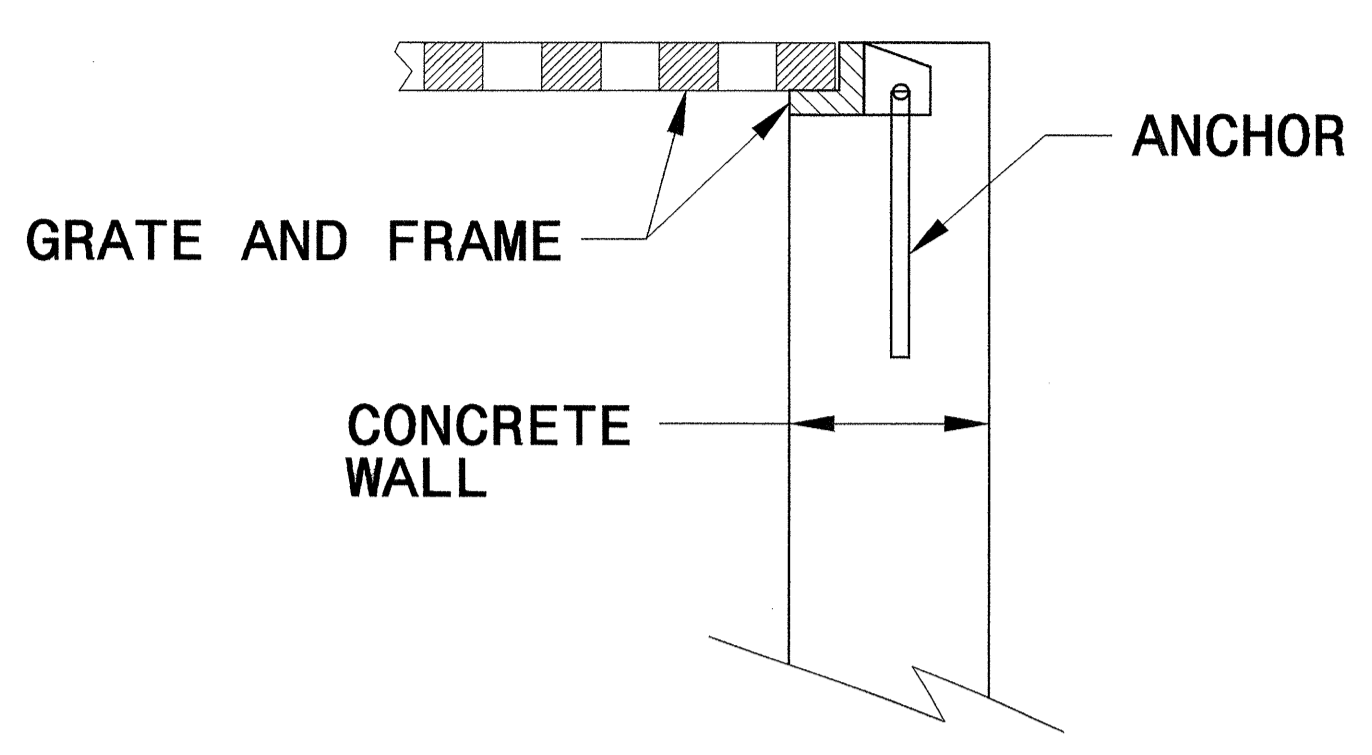
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

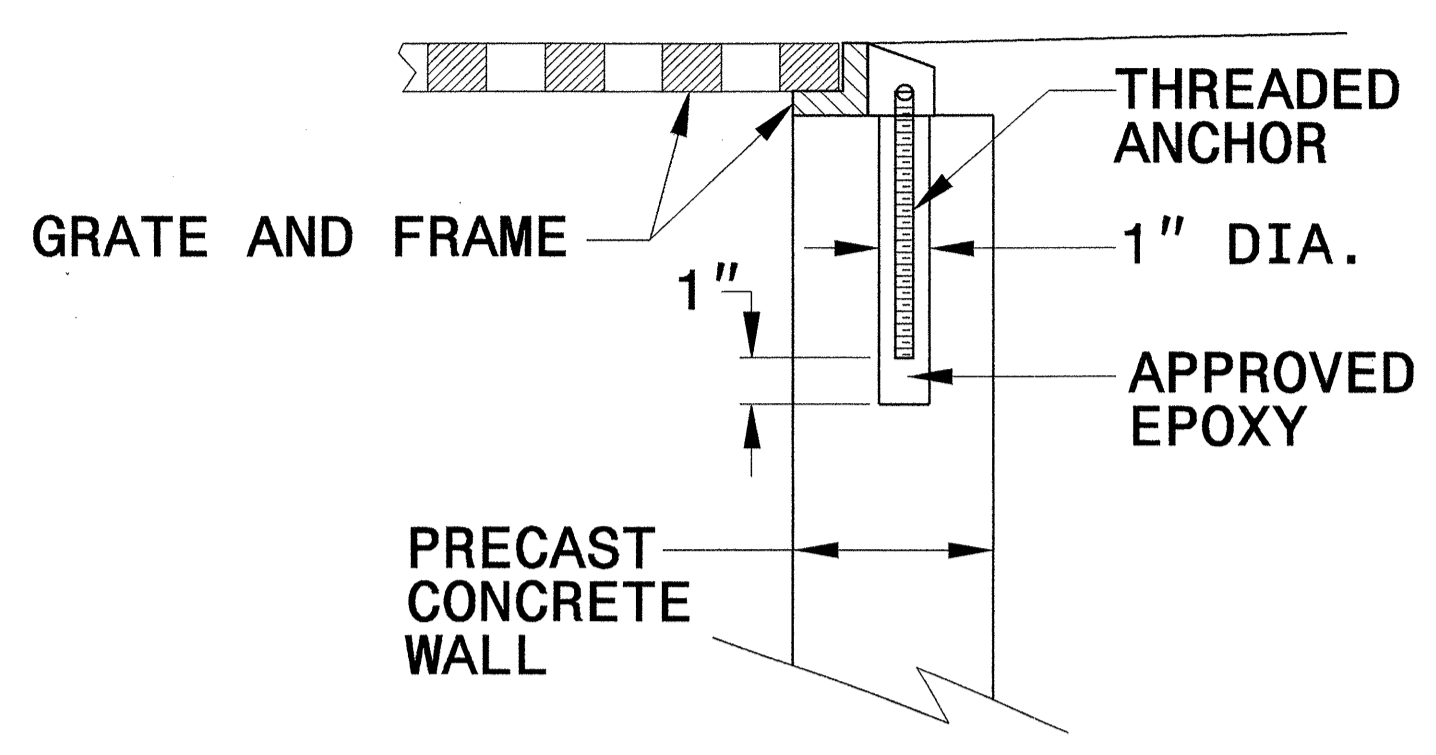
SHEET 1 OF 1
840D25



BRICK MASONRY CONSTRUCTION



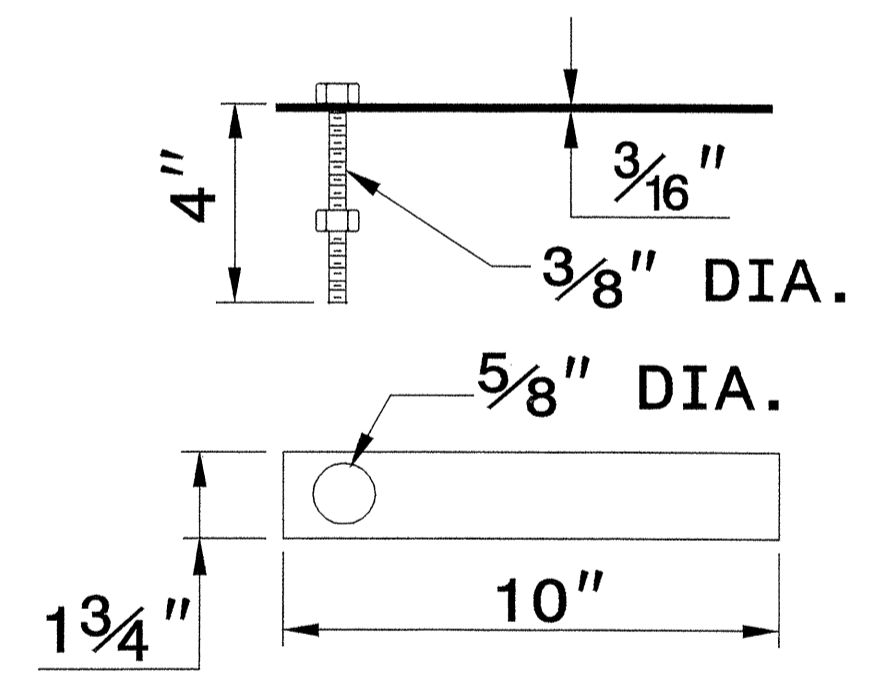
CONCRETE CONSTRUCTION



PRECAST CONCRETE CONSTRUCTION

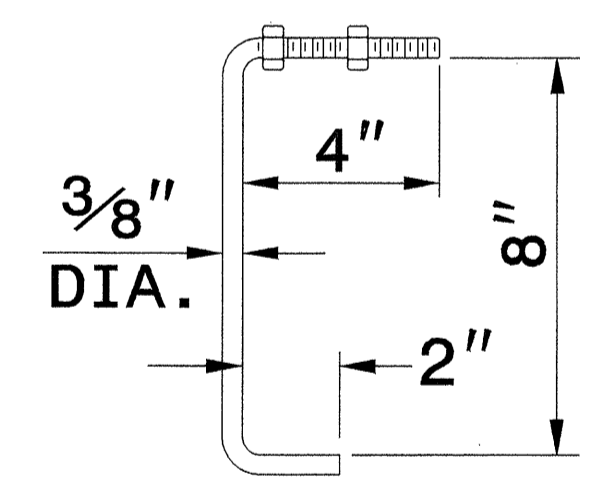
DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

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



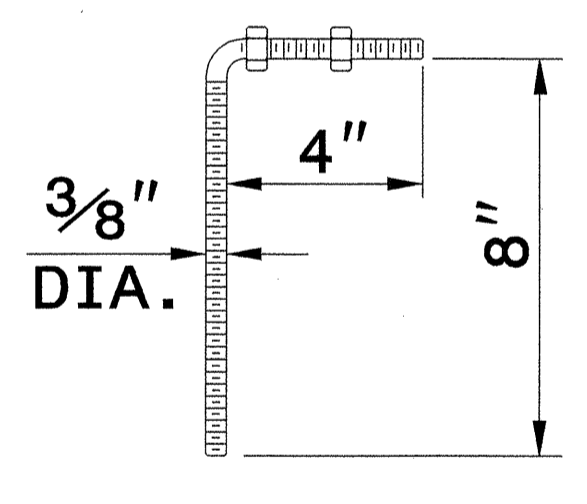
MASONRY ANCHOR

3/8" DIA. BOLT WITH PLATE



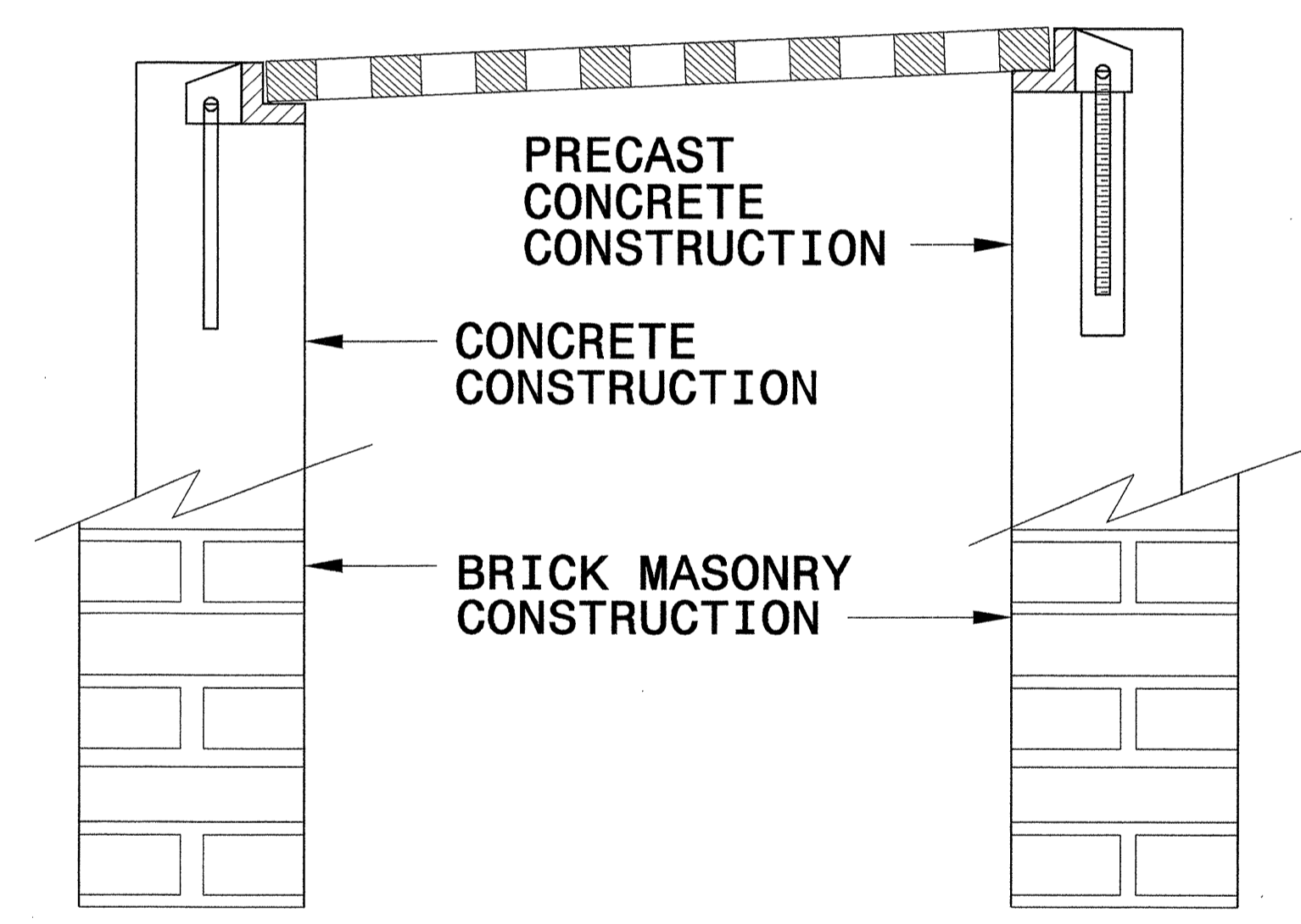
CONCRETE ANCHOR

3/8" DIA. BENT BAR

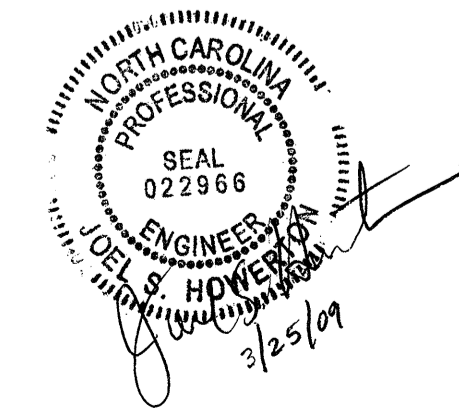


PRECAST CONCRETE ANCHOR

3/8" DIA. BENT BAR



FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS



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

SEE PLATE FOR TITLE

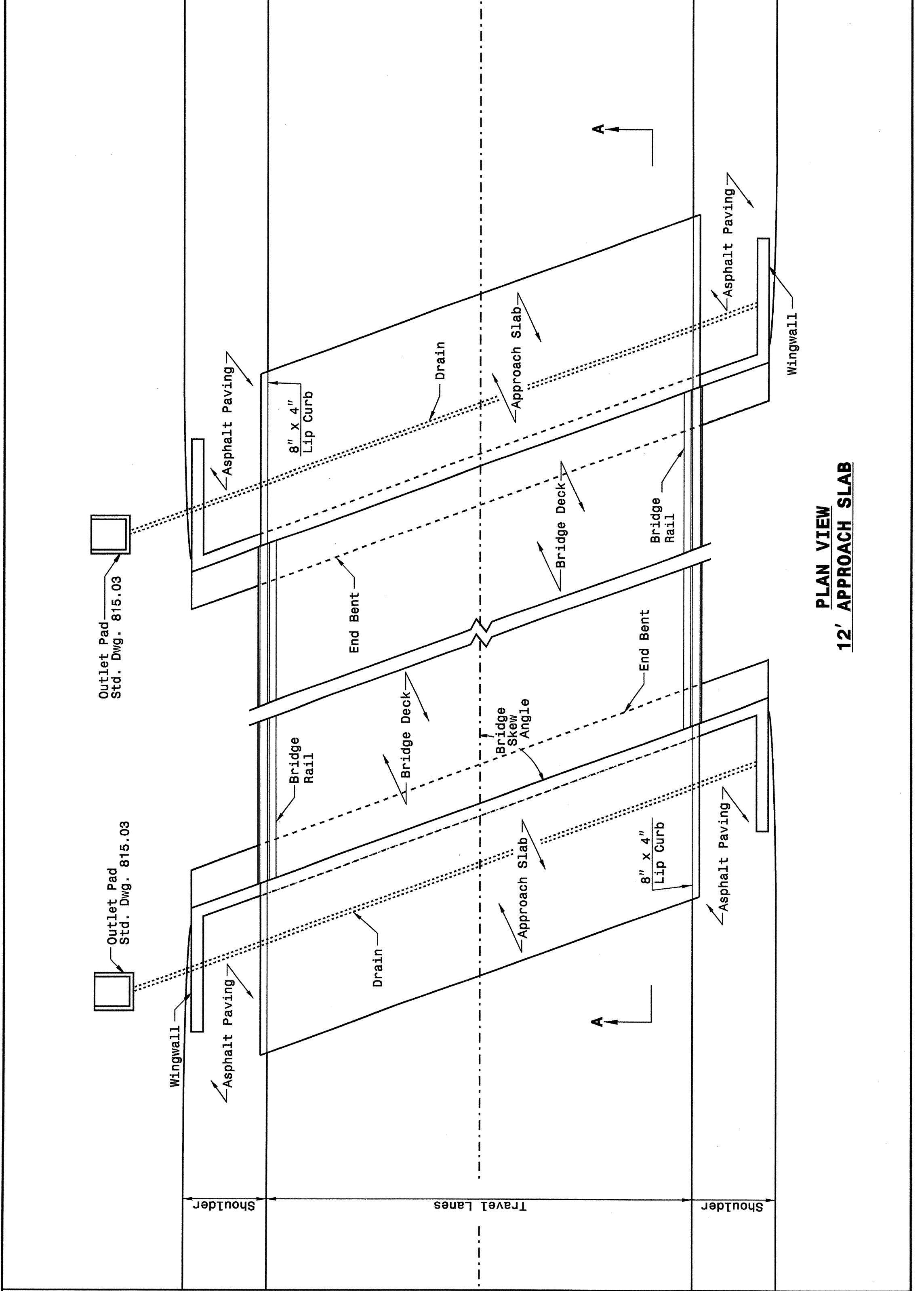
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MODIFIED BY: E.E. WARD DATE: 9/25/06
CHECKED BY: [Signature] DATE: 11/13/06
FILE SPEC.: [Signature]

UNIVERSITY MICROFILMS
SERIALS ACQUISITION
300 N ZEEB RD
ANN ARBOR MI 48106
616 763 0700
COURTESY OF
UNIVERSITY MICROFILMS

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.

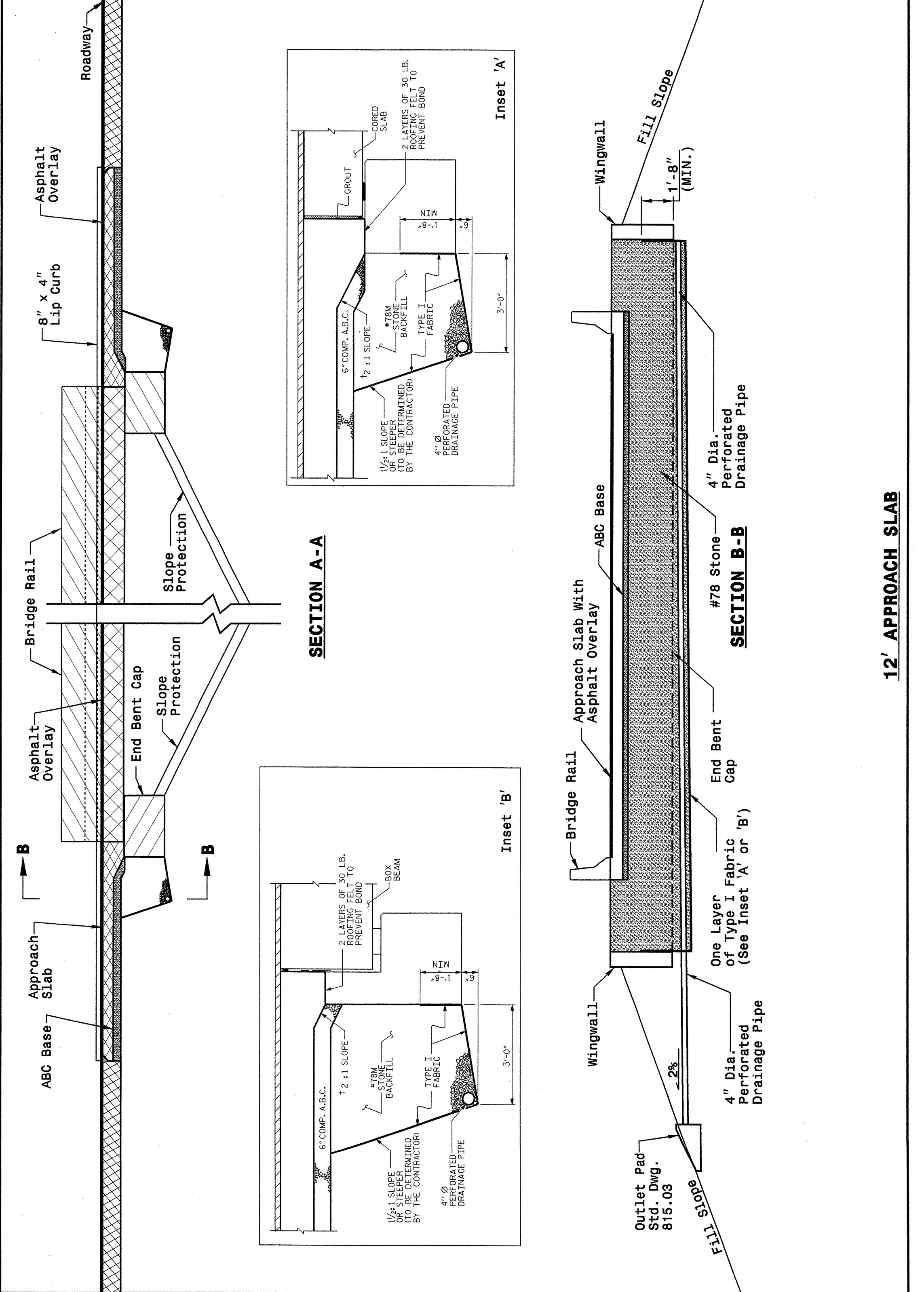
ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

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.

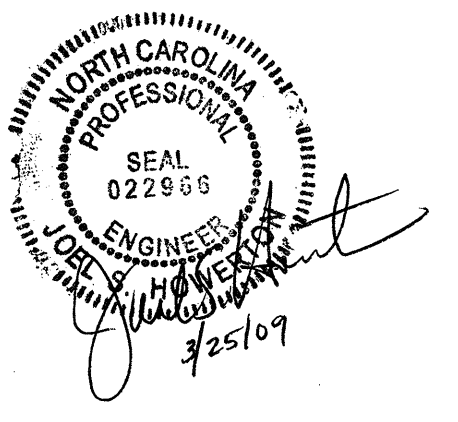
ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

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: *[Blank]*
CHECKED BY: *[Signature]* DATE: 4/27/09
FILE SPEC.: *[Blank]*



26-JUN-2008 15:32
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kempf AT 15237489

STATE OF NORTH CAROLINA
SUMMARY OF QUANTITIES

PROJECT REFERENCE No.	SHEET No.
B-4524	3

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202150

ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION
000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
003000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (14+31.00)
004300000-N	226	Lump Sum		GRADING
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
005700000-E	226	200	CY	UNDERCUT EXCAVATION
019500000-E	265	100	CY	SELECT GRANULAR MATERIAL
019600000-E	270	100	SY	FABRIC FOR SOIL STABILIZATION
031800000-E	300	9	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
036600000-E	310	84	LF	15" RC PIPE CULVERTS, CLASS III
122000000-E	545	100	TON	INCIDENTAL STONE BASE
148900000-E	610	145	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
152500000-E	610	194	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
156000000-E	620	19	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
200000000-N	806	9	EA	RIGHT OF WAY MARKERS
228600000-N	840	3	EA	MASONRY DRAINAGE STRUCTURES
236700000-N	840	3	EA	FRAME WITH TWO GRATES, STD 840.29
255600000-E	846	100	LF	SHOULDER BERM GUTTER
303000000-E	862	150	LF	STEEL BM GUARDRAIL
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
327000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
331700000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
365600000-E	876	225	SY	FILTER FABRIC FOR DRAINAGE
365900000-N	SP	1	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON

ItemNumber	Sec #	Quantity	Unit	Description
440000000-E	1110	282	SF	WORK ZONE SIGNS (STATIONARY)
441000000-E	1110	94	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
444500000-E	1145	96	LF	BARRICADES (TYPE III)
481000000-E	1205	3,200	LF	PAINT PAVEMENT MARKING LINES (4")
490000000-N	1251	6	EA	PERMANENT RAISED PAVEMENT MARKERS
600000000-E	1605	425	LF	TEMPORARY SILT FENCE
606000000-E	1610	75	TON	STONE FOR EROSION CONTROL, CLASS A
609000000-E	1610	70	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	75	TON	SEDIMENT CONTROL STONE
601500000-E	1615	1.5	ACR	TEMPORARY MULCHING
601800000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	1.25	TON	FERTILIZER FOR TEMPORARY SEEDING
602900000-E	SP	450	LF	SAFETY FENCE
603000000-E	1630	125	CY	SILT EXCAVATION
603600000-E	1631	1,000	SY	MATTING FOR EROSION CONTROL
603700000-E	SP	10	SY	COIR FIBER MAT
603800000-E	SP	25	SY	PERMANENT SOIL REINFORCEMENT MAT
604200000-E	1632	225	LF	1/4" HARDWARE CLOTH
604800000-E	SP	70	SY	FLOATING TURBIDITY CURTAIN
607101000-E	SP	60	LF	WATTLE
607102000-E	SP	20	LB	POLYACRYLAMIDE (PAM)
607103000-E	SP	20	LF	COIR FIBER BAFFLES
607105000-E	SP	1	EA	*** SKIMMER (1-1/2")
608400000-E	1660	5	ACR	SEEDING & MULCHING
608700000-E	1660	1	ACR	MOWING
609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING

ItemNumber	Sec #	Quantity	Unit	Description
609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	0.75	TON	FERTILIZER TOPDRESSING
611400000-N	SP	5	HR	SPECIALIZED HAND MOWING
611700000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
612300000-E	1670	0.1	ACR	REFORESTATION

SUMMARY OF EARTHWORK

IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	UNDERCUT	EMBANK. +%	BORROW	WASTE
-L- 12 + 50.00	-L- 13 + 81.00	42		19		23
SUBTOTAL:		42		19		23
-L- 14 + 81.00	-L- 16 + 20.00	30		28	1	3
SUBTOTAL:		30		28	1	3
PROJECT TOTAL:		72		47	1	26
WASTE IN LIEU OF BORROW					-1	-1
PROJECT TOTAL:		72		47		25
GRAND TOTAL:		72		47		25
SAY		75				
CONTINGENCY UNDERCUT			200			

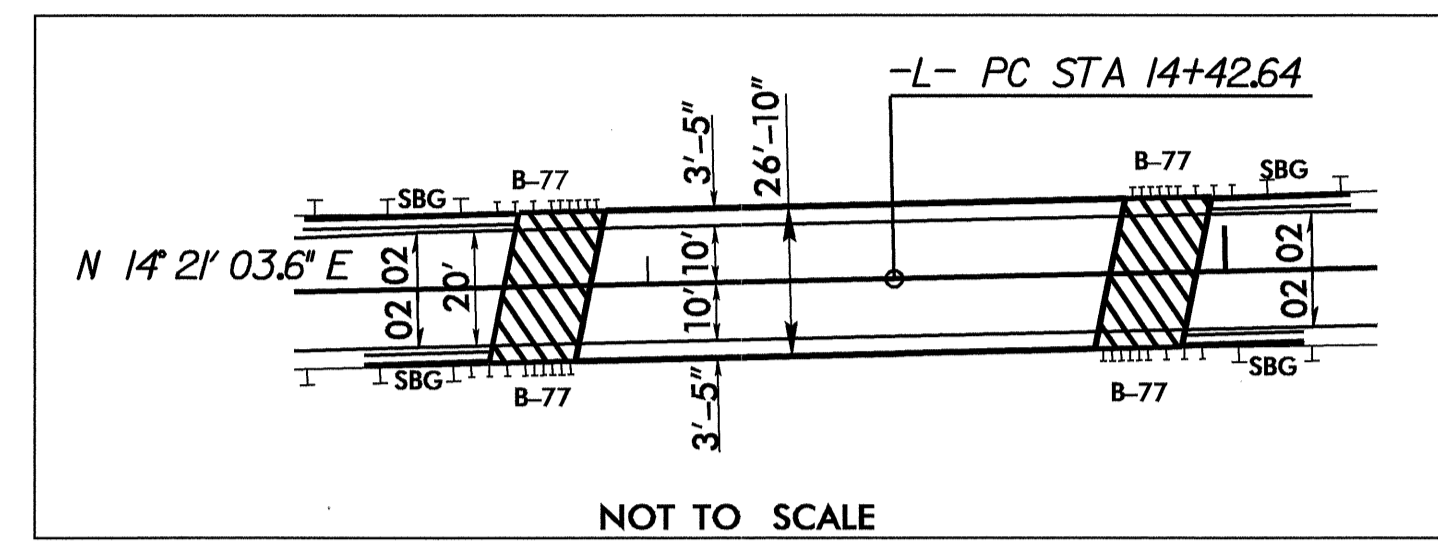
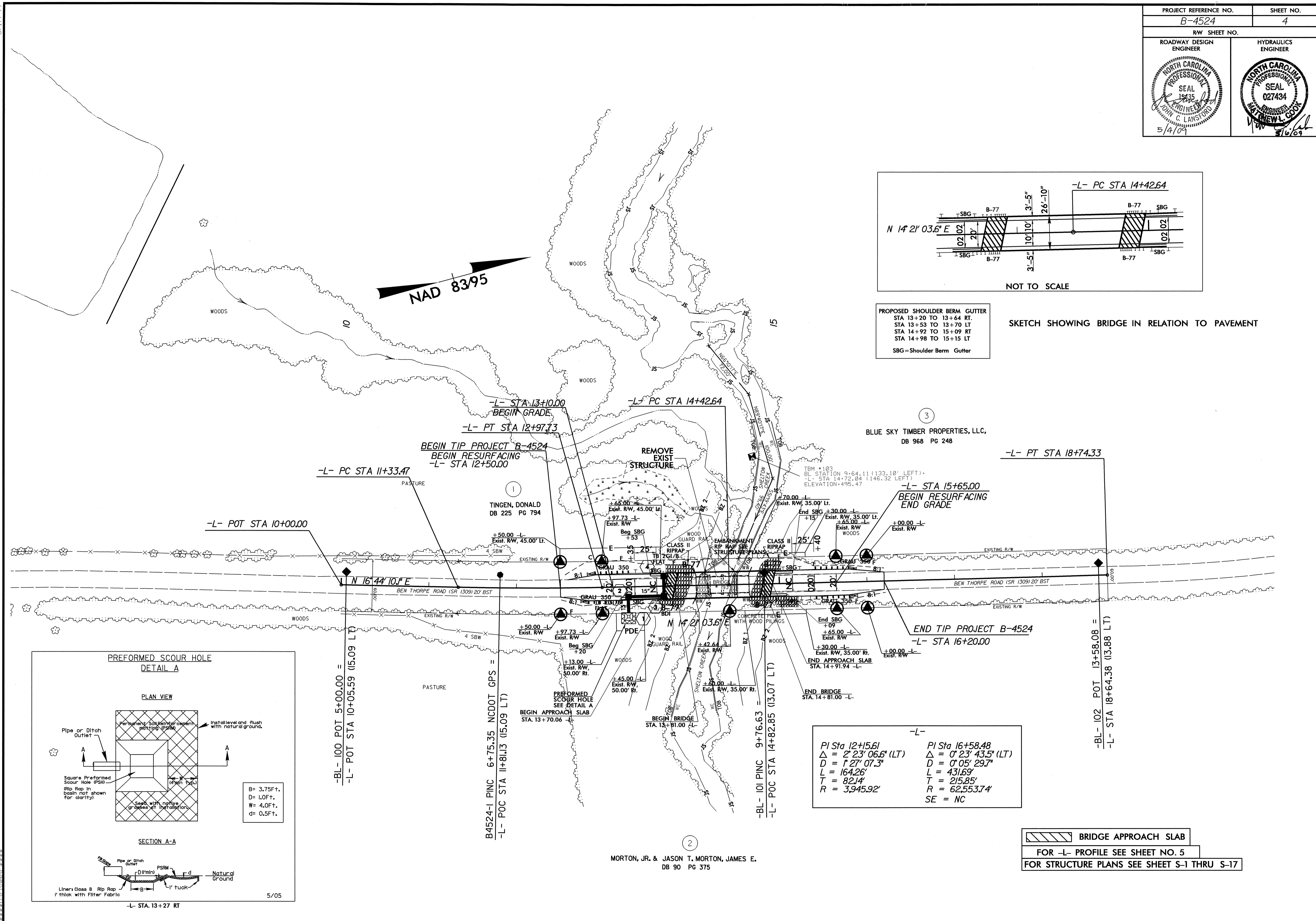
SUMMARY OF PAVEMENT REMOVAL

IN SQUARE YARDS

SURVEY LINE	STATION	STATION	ASPHALT BREAKUP	ASPHALT REMOVAL	CONCRETE BREAKUP	CONCRETE REMOVAL
-L-	13 + 10.00	14 + 04.78		211		
-L-	14 + 65.45	15 + 65.00		221		
Grand Total				432		
SAY				440		

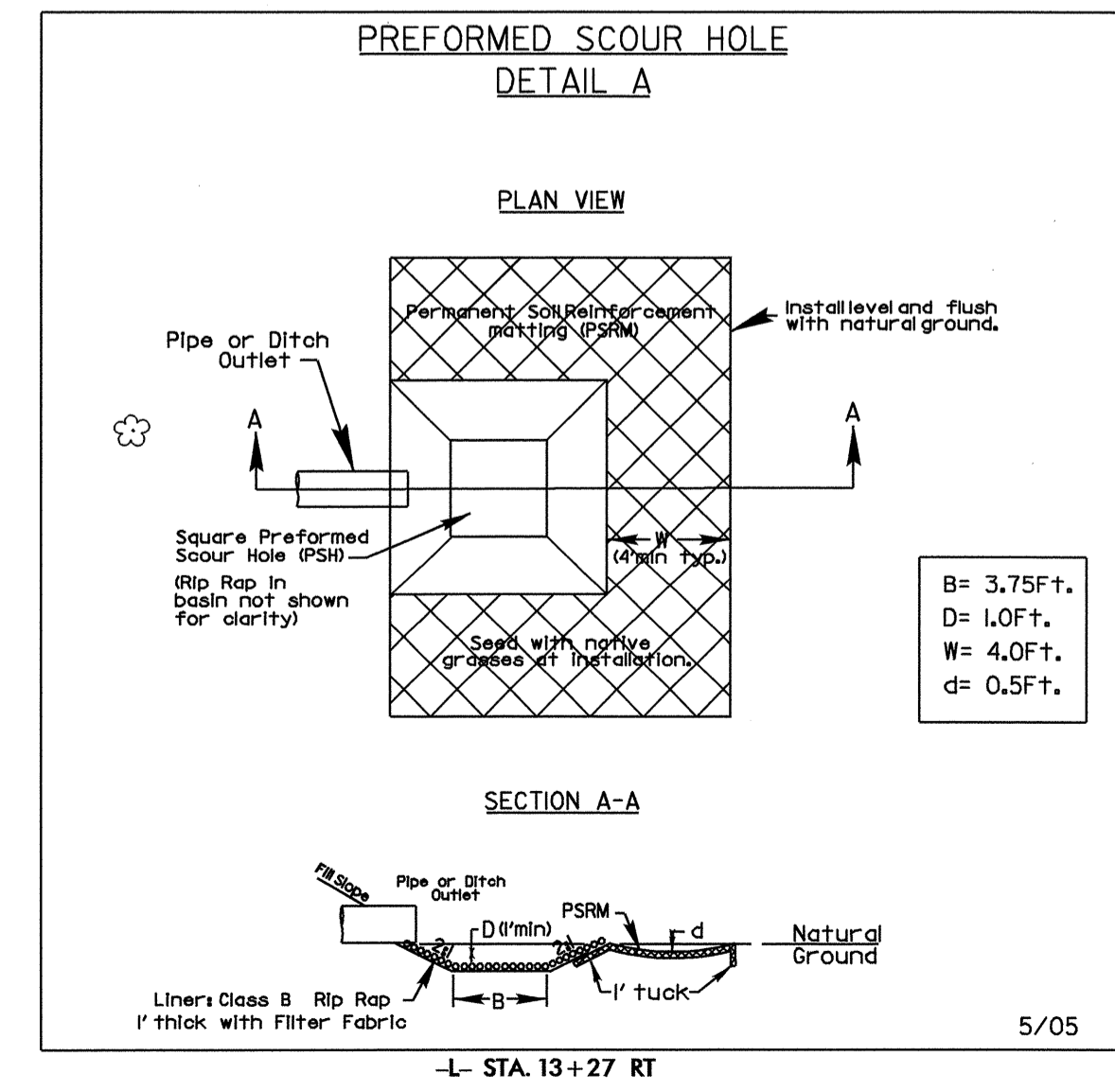
Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

NOTE: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the lump sum price for "Grading".



PROPOSED SHOULDER BERM GUTTER
 STA 13+20 TO 13+64 RT
 STA 13+53 TO 13+70 LT
 STA 14+92 TO 15+09 RT
 STA 14+98 TO 15+15 LT
 SBG = Shoulder Berm Gutter

SKETCH SHOWING BRIDGE IN RELATION TO PAVEMENT

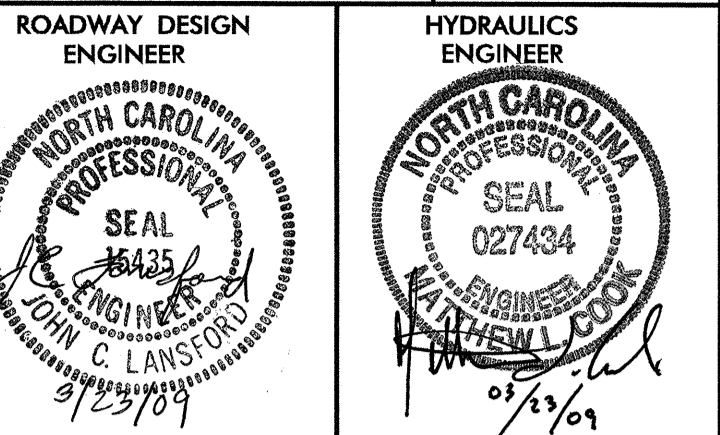


$PI\ Sta\ 12+15.61$ $\Delta = 2^\circ 23' 06.6" (LT)$ $D = 1^\circ 27' 07.3"$ $L = 164.26'$ $T = 82.14'$ $R = 3,945.92'$	$PI\ Sta\ 16+58.48$ $\Delta = 0^\circ 23' 43.5" (LT)$ $D = 0^\circ 05' 29.7"$ $L = 431.69'$ $T = 215.85'$ $R = 62,553.74'$ $SE = NC$
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BRIDGE APPROACH SLAB
 FOR -L- PROFILE SEE SHEET NO. 5
 FOR STRUCTURE PLANS SEE SHEET S-1 THRU S-17

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 rdj-psj
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 5/05

5/28/09

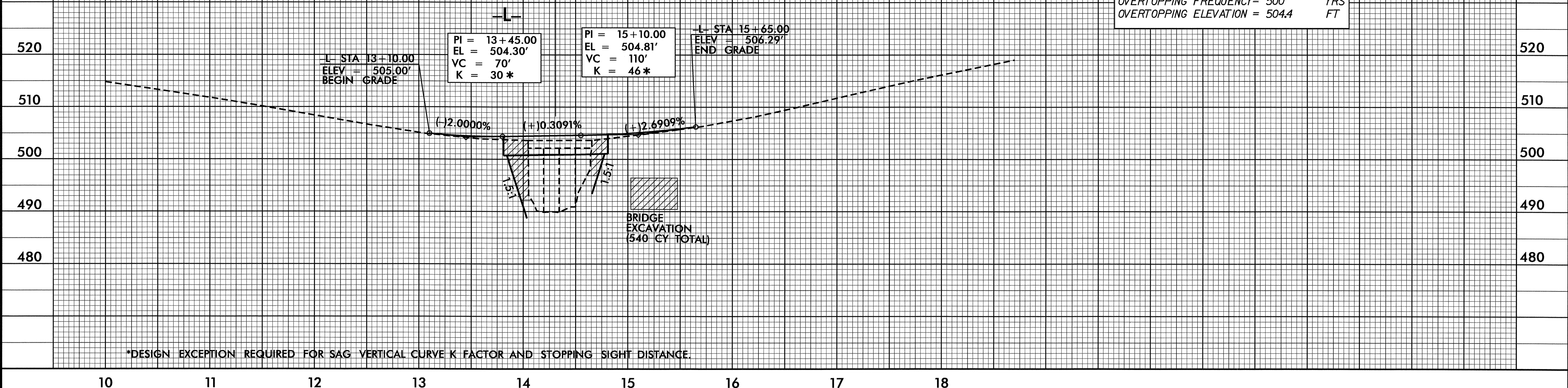


BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1880	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 497.5	FT
BASE DISCHARGE	= 2780	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 499.2	FT
OVERTOPPING DISCHARGE	= 10300	CFS
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING ELEVATION	= 504.4	FT

TBM#103 ELEVATION = 495.47'
 N 960121 E 2072473
 BL STATION 9+64 133.10' LEFT
 -L- STATION 14+72.04 146.32' LEFT
 RAILROAD SPIKE IN BASE OF 12" OAK

BRIDGE STA 14+31.0 -L-
 39" BOX BEAM: 1@100'
 SKEW=110 ^



10 11 12 13 14 15 16 17 18

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