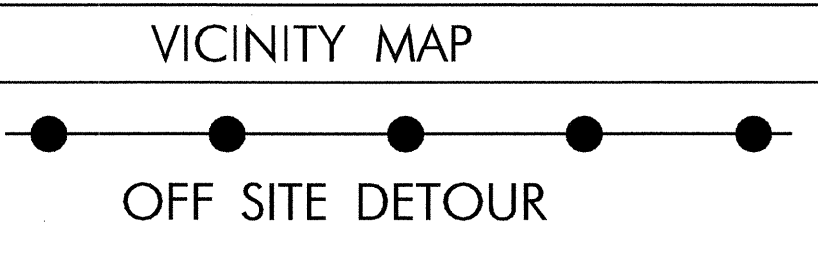
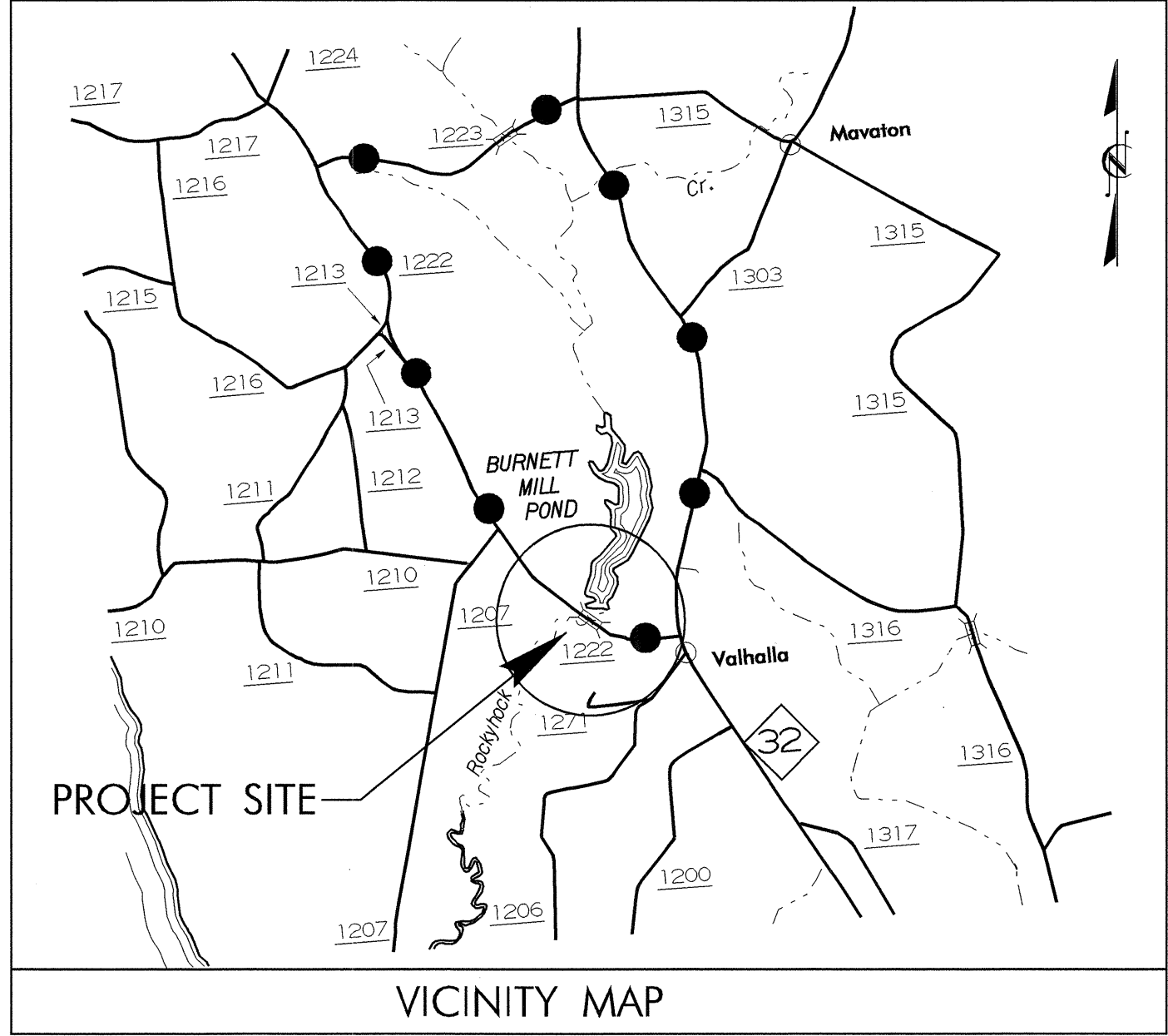


CONTRACT: C201469 TIP PROJECT: B-3636

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

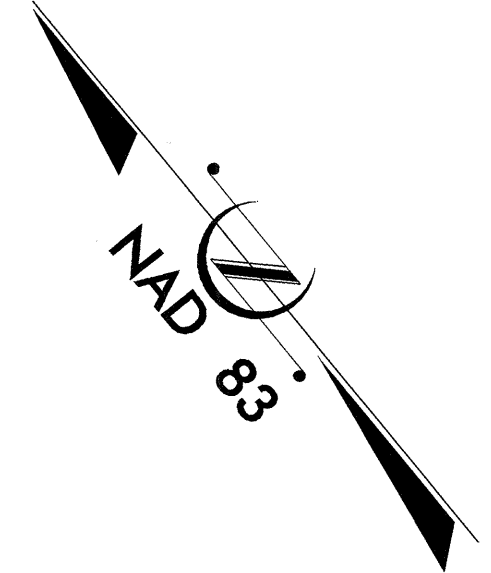
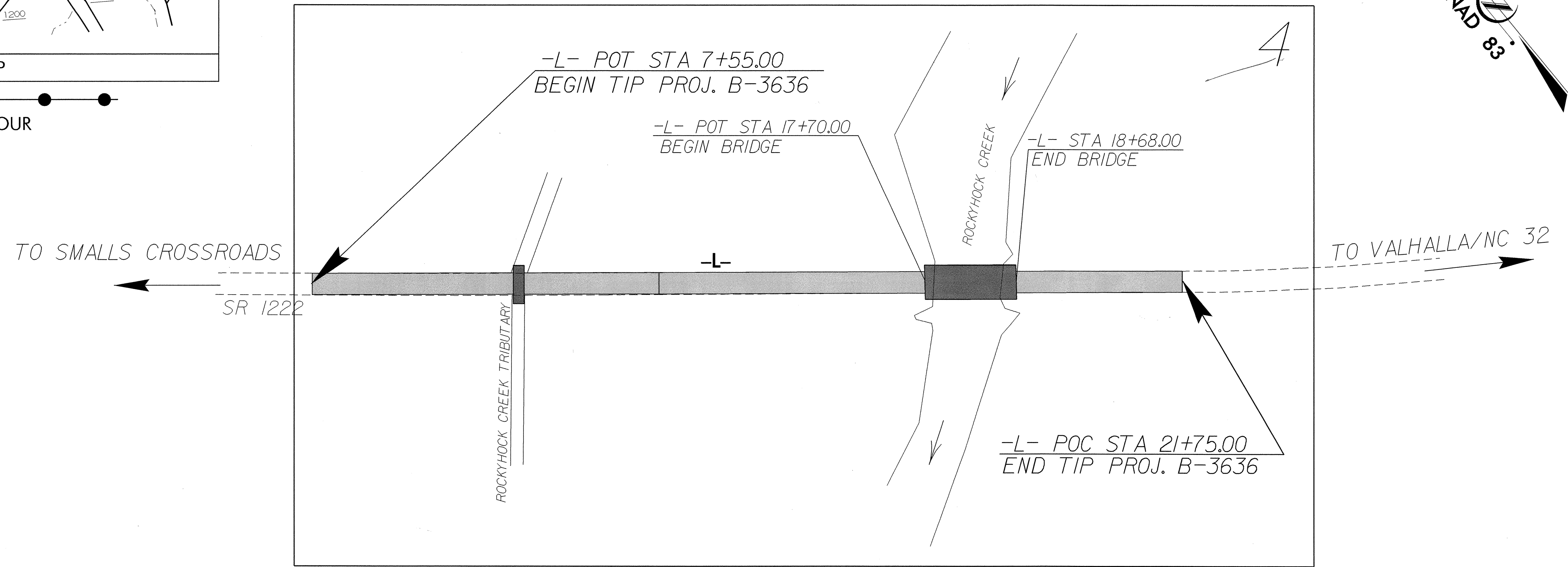


STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

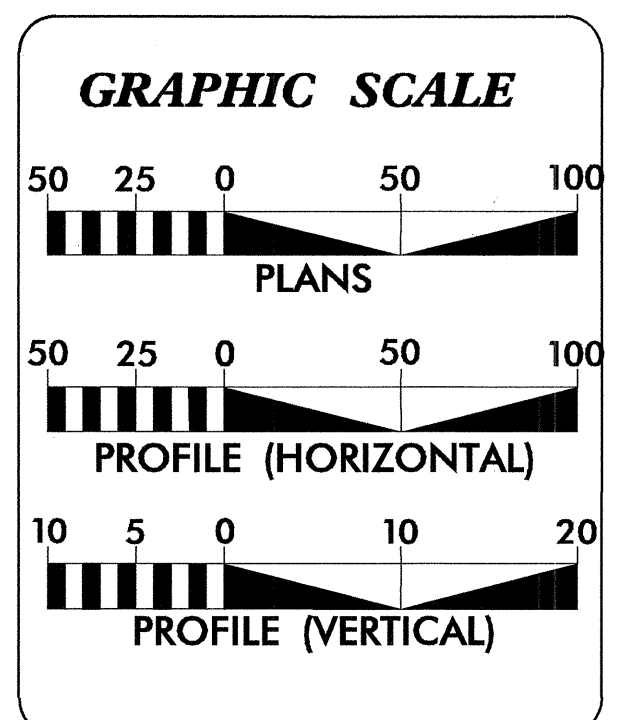
CHOWAN COUNTY

LOCATION: BRIDGE NO. 16 OVER ROCKYHOCK CREEK ON SR 1222
TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3636	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33184.1.1	BRZ-1222(5)	PE	
33184.2.1	BRZ-1222(5)	RW, UTILITIES	
33184.3.1	BRZ-1222(5)	CONSTRUCTION	



DESIGN EXCEPTION FOR SHOULDER WIDTH REQUIRED



DESIGN DATA

ADT 2004 = 2,540 vpd
ADT 2025 = 3,800 vpd
DHV = 10 %
D = 60 %
* T = 4 %
V = 60 MPH
*DUALS = 3% *TTST = 1%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3636	= 0.250 MILES
LENGTH STRUCTURE TIP PROJECT B-3636	= 0.019 MILES
TOTAL LENGTH TIP PROJECT B-3636	= 0.269 MILES

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

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 30, 2005	JAMES A. SPEER, PE PROJECT ENGINEER
LETTING DATE: MAY 16, 2006	JOHN C. LANSFORD, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *Matthew L. Cook* 1/25/06 P.E.

ROADWAY DESIGN

SIGNATURE: *John C. Lansford*

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

out miller
P.E.

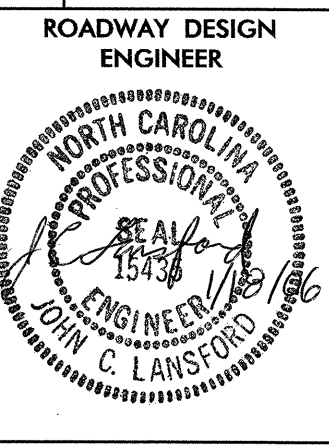
STATE HIGHWAY ENGINEER - DESIGN

**DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION**

APPROVED
DIVISION ADMINISTRATOR

DATE

21-DEC-2005 11:44 Nc3636-rdy-tsh-dgn



8/17/09

SHEET NUMBER	INDEX OF SHEETS SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND TYPICAL SECTION ON STRUCTURE
2-A THRU 2-D	GUARDRAIL INSTALLATION
2-E THRU 2-G	STRUCTURE ANCHOR UNITS
2-H	GUARDRAIL PLACEMENT for 2' Shld. Breakpoint behind face of guardrail
2-I THRU 2-L	REINFORCED BRIDGE APPROACH FILLS
2-M	DETAIL of REINFORCED CONCRETE ENDWALL for 95" X 67" (PIPE ARCH)-90°
2-N	METHOD OF CLEARING
3	SUMMARY OF QUANTITIES
3A	LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER) LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54" & OVER) GUARDRAIL SUMMARY
3-B	SUMMARY OF EARTHWORK SUMMARY OF ASPHALT PAVEMENT REMOVAL
4	PLAN SHEET
5	PROFILE SHEET
TCP-1 THRU TCP-4	TRAFFIC CONTROL PLANS
EC-1 THRU EC-3	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
UC-1 THRU UC-2	UTILITY CONSTRUCTION PLANS
X-1	CROSS-SECTIONS SUMMARY SHEET
X-2 THRU X-9	CROSS-SECTIONS
S-1 THRU S-18	STRUCTURE PLANS

GENERAL NOTES: 2002 SPECIFICATIONS
EFFECTIVE: 01-15-02
REVISED: 05-14-03

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 DETAIL SHEET 2-N.
~~THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE AREAS IN THE PLANS DESIGNATED SAFETY CLEARING. THE LIMITS ARE AS SHOWN AND THE CLEARING AND GRUBBING IS CONSIDERED A PART OF THE LUMP-SUM ITEM FOR "CLEARING AND GRUBBING".~~

SHOULDER CONSTRUCTION:
ASPHALT AND EARTH 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.

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 CHOWAN COUNTY, DOMINION, EASTERN NC NATURAL GAS, MEDIACOM
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

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

ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January 15, 2002 are applicable to this project and by reference hereby are considered a part of these plans:

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
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'
300.03	Method of Structural Plate Pipe and Pipe Arch Installation - Method 'A'
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
816.04	Markers for Drainage Structure and Concrete Pad
820.04	Drain Installation in Shoulder Berm Gutter
840.00	Concrete Base Pad for Drainage Structures
840.25	Anchorage for Frames - Brick or Concrete
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

EFF. 01-15-02
REV. 11-23-04

CONVENTIONAL SYMBOLS

ROADS & RELATED ITEMS

Edge of Pavement	-----
Curb	-----
Prop. Slope Stakes Cut	----- C -----
Prop. Slope Stakes Fill	----- F -----
Prop. Woven Wire Fence	-----
Prop. Chain Link Fence	-----
Prop. Barbed Wire Fence	-----
Prop. Wheelchair Ramp	----- (WCR) -----
Exist. Guardrail	-----
Prop. Guardrail	-----
Equality Symbol	-----
Pavement Removal	-----

RIGHT OF WAY

Baseline Control Point	-----
Existing Right of Way Marker	-----
Exist. Right of Way Line w/Marker	-----
Prop. Right of Way Line with Proposed R/W marker (Iron Pin & Cap)	-----
Prop. Right of Way Line with Proposed (Concrete or Granite) R/W Marker	-----
Exist. Control of Access Line	-----
Prop. Control of Access Line	-----
Exist. Easement Line	----- E -----
Prop. Temp. Construction Easement Line	----- E -----
Prop. Temp. Drainage Easement Line	----- TDE -----
Prop. Perm. Drainage Easement Line	----- PDE -----

HYDROLOGY

Stream or Body of Water	-----
Flow Arrow	-----
Disappearing Stream	-----
Spring	-----
Swamp Marsh	-----
Shoreline	-----
Falls, Rapids	-----
Prop Lateral, Tail, Head Ditches	-----

STRUCTURES

MAJOR	
Bridge, Tunnel, or Box Culvert	----- CONC -----
Bridge Wing Wall, Head Wall and End Wall	----- CONC WW -----

MINOR

Head & End Wall	----- CONC HW -----
Pipe Culvert	-----
Footbridge	-----
Drainage Boxes	----- CB -----
Paved Ditch Gutter	-----

UTILITIES

Exist. Pole	-----
Exist. Power Pole	-----
Prop. Power Pole	-----
Exist. Telephone Pole	-----
Prop. Telephone Pole	-----
Exist. Joint Use Pole	-----
Prop. Joint Use Pole	-----
Telephone Pedestal	-----
Cable TV Pedestal	-----
Hydrant	-----
Satellite Dish	-----
Exist. Water Valve	-----
Sewer Clean Out	-----
Power Manhole	-----
Telephone Booth	-----
Water Manhole	-----
Light Pole	-----
H-Frame Pole	-----
Power Line Tower	-----
Pole with Base	-----
Gas Valve	-----
Gas Meter	-----
Telephone Manhole	-----
Power Transformer	-----
Sanitary Sewer Manhole	-----
Storm Sewer Manhole	-----
Tank; Water, Gas, Oil	-----
Water Tank With Legs	-----
Traffic Signal Junction Box	-----
Fiber Optic Splice Box	-----
Television or Radio Tower	-----

Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement	----- TS -----
Water Line	----- W -----
Sanitary Sewer	----- SS -----
Sanitary Sewer Force Main	----- FSS -----
Gas Line	----- G -----
Storm Sewer	----- S -----
Power Line	----- P -----
Telephone Cable	----- T -----
UG Telephone Conduit	----- TC -----
Unknown Utility	----- ?UTL -----
Television Cable	----- TV -----
Fiber Optics Cable	----- FO -----
Exist. Water Meter	-----
Drawn According to U/G Records	DATUR
Abandoned According to U/G Records	AATUR
End Of Information	E.O.I.

BOUNDARIES & PROPERTIES

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Property Line Symbol	-----
Exist. Iron Pin	----- EIP -----
Property Corner	-----
Property Monument	----- ECM -----
Property Number	----- (123) -----
Parcel Number	----- (6) -----
Fence Line	----- WW & ISBW -----
Existing Wetland Boundaries	----- WLB -----
Proposed Wetland Boundaries	----- WLB -----
Existing Endangered Animal Boundaries	----- EAB -----
Existing Endangered Plant Boundaries	----- EPB -----

BUILDINGS & OTHER CULTURE

Buildings	-----
Foundations	-----
Area Outline	-----
Gate	-----
Gas Pump Vent or U/G Tank Cap	-----
Church	-----
School	-----
Park	-----
Cemetery	-----
Dam	-----
Sign	-----
Well	-----
Small Mine	-----
Swimming Pool	-----

TOPOGRAPHY

Loose Surface	-----
Hard Surface	-----
Change in Road Surface	-----
Curb	-----
Right of Way Symbol	R/W
Guard Post	----- O GP -----
Paved Walk	-----
Bridge	-----
Box Culvert or Tunnel	-----
Ferry	-----
Culvert	-----
Footbridge	-----
Trail, Footpath	-----
Light House	-----

VEGETATION

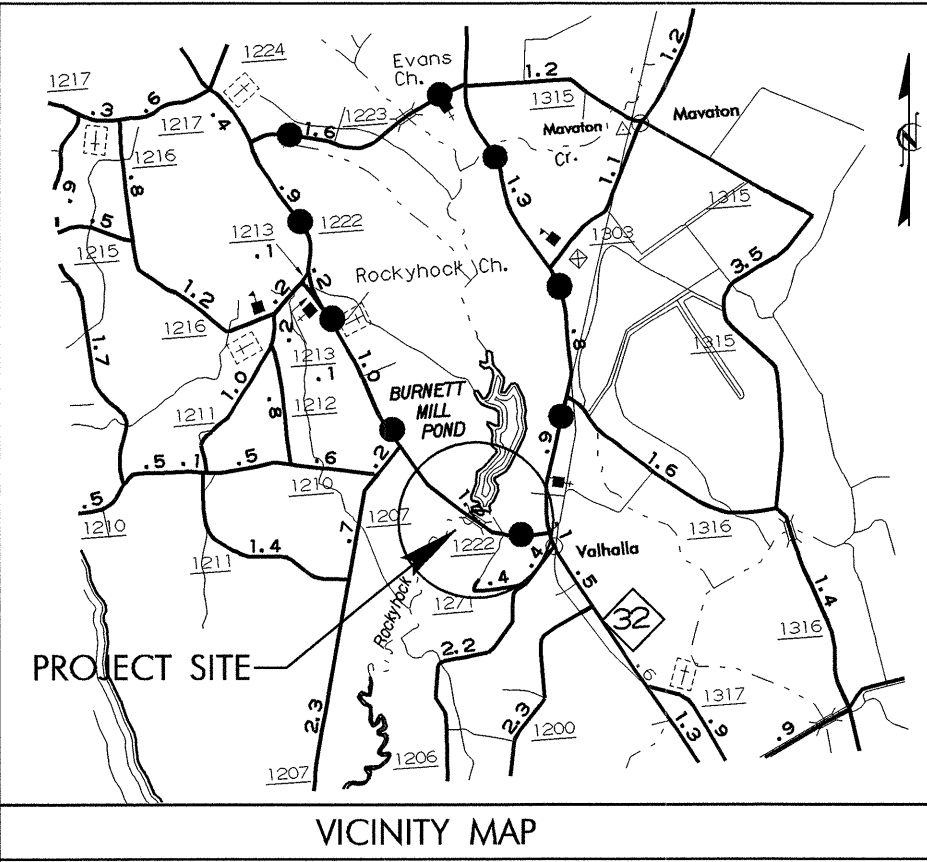
Single Tree	-----
Single Shrub	-----
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	----- VINEYARD -----

RAILROADS

Standard Gauge	-----
RR Signal Milepost	----- MILEPOST 35 -----
Switch	----- SWITCH -----

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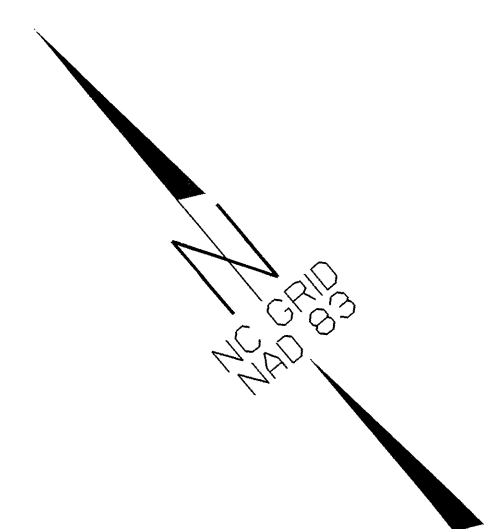
SURVEY CONTROL SHEET B-3636



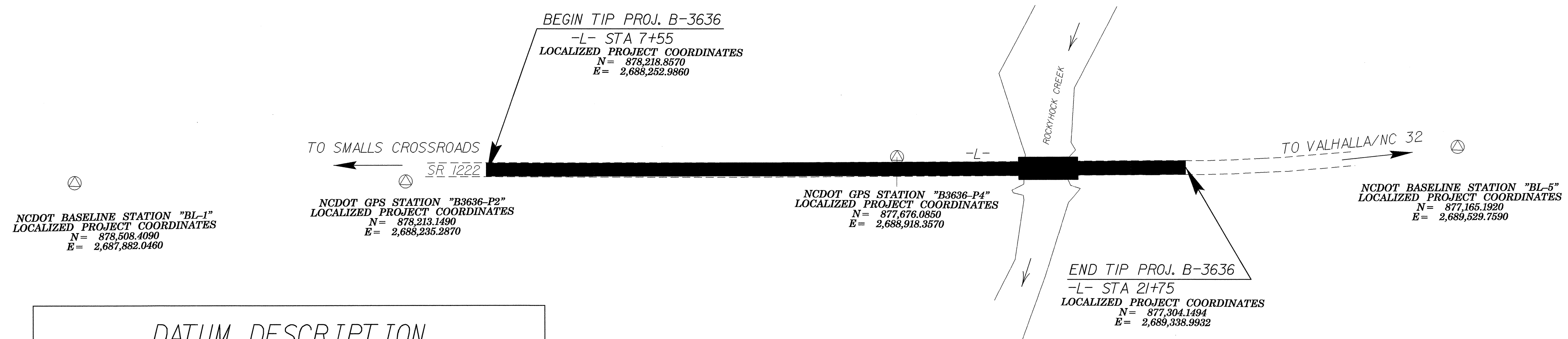
 BM10 ELEVATION = 1.90
 N 877674 E 2688807
 L STATION 15+30 56' RT
 R/R SPIKE IN BASE OF 12" GUM

 BM11 ELEVATION = 17.37
 N 876933 E 2689950
 OUTSIDE PROJECT LIMITS
 R/R SPIKE IN BASE OF 30" OAK

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
BL-1		878508.4090	2687882.0460	7.24	OUTSIDE PROJECT LIMITS	
B3636-P2		878213.1490	2688235.2870	6.22	OUTSIDE PROJECT LIMITS	
B3636-P4		877676.0850	2688918.3570	5.45	16+13.52	16.41 LT
BL-5		877165.1920	2689529.7590	11.28	24+09.99	13.23 RT
B3636-P6		877004.5010	2690005.3680	20.36	OUTSIDE PROJECT LIMITS	



NCDOT BASELINE STATION "B3636-P6"
 LOCALIZED PROJECT COORDINATES
 N = 877,004.5010
 E = 2,690,005.3680



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B3636-P2"

WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF
 NORTHING: 878213.1490(ft) EASTING: 2688235.2870(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99999828

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B3636-P2" TO -L- STATION 7+55.000 IS
 N 72° 07' 31" E 18.60'

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

FILE: b3636_ls_control_041213.txt

SITE CALIBRATION PARAMETERS HAVE NOT BEEN DETERMINED 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 UTILIZING GLOBAL POSITIONING SYSTEM.
 NETWORK FOR GPS "B3636-P2" ESTABLISHED FROM NGS ONLINE POSITIONING USER SERVICE (OPUS)

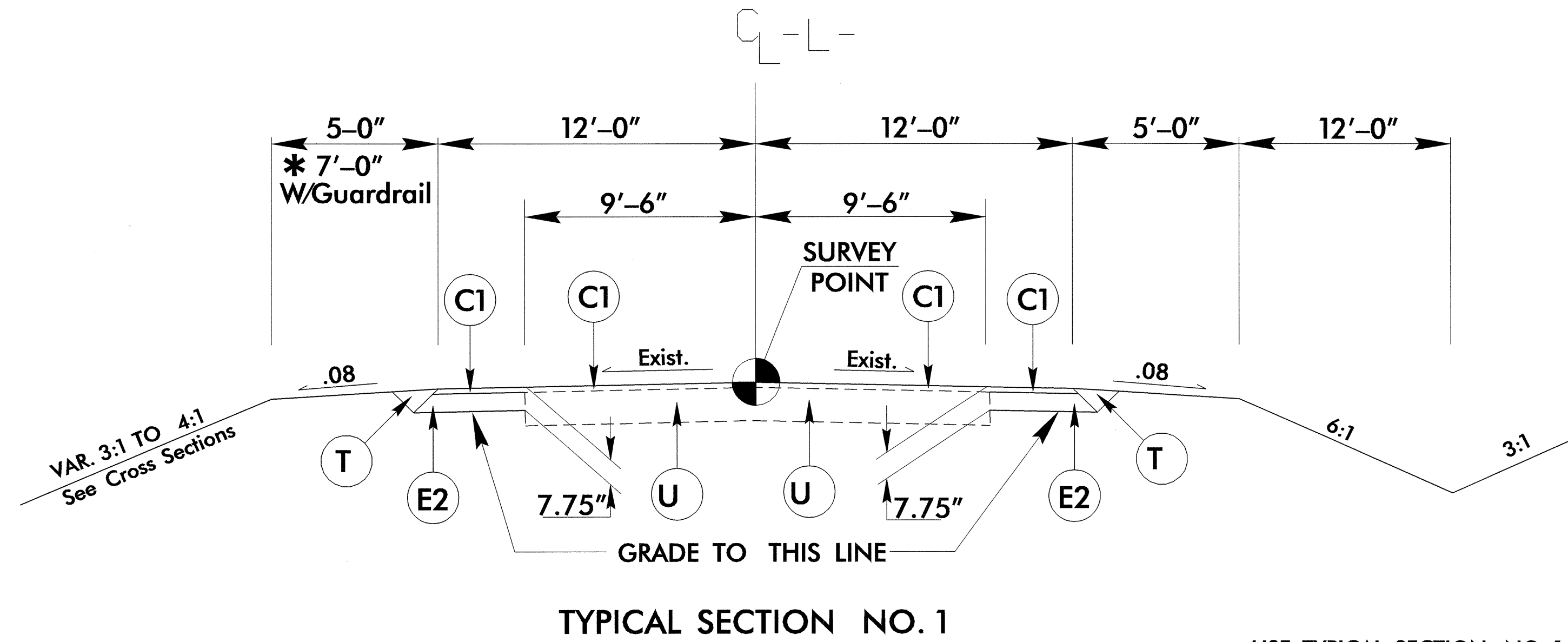
NOTE: DRAWING NOT TO SCALE

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 IN LAYERS NOT TO EXCEED 1.5" 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.
E2	PROP. APPROX. 6 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 370.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
U	EXISTING PAVEMENT.
T	EARTH MATERIAL.

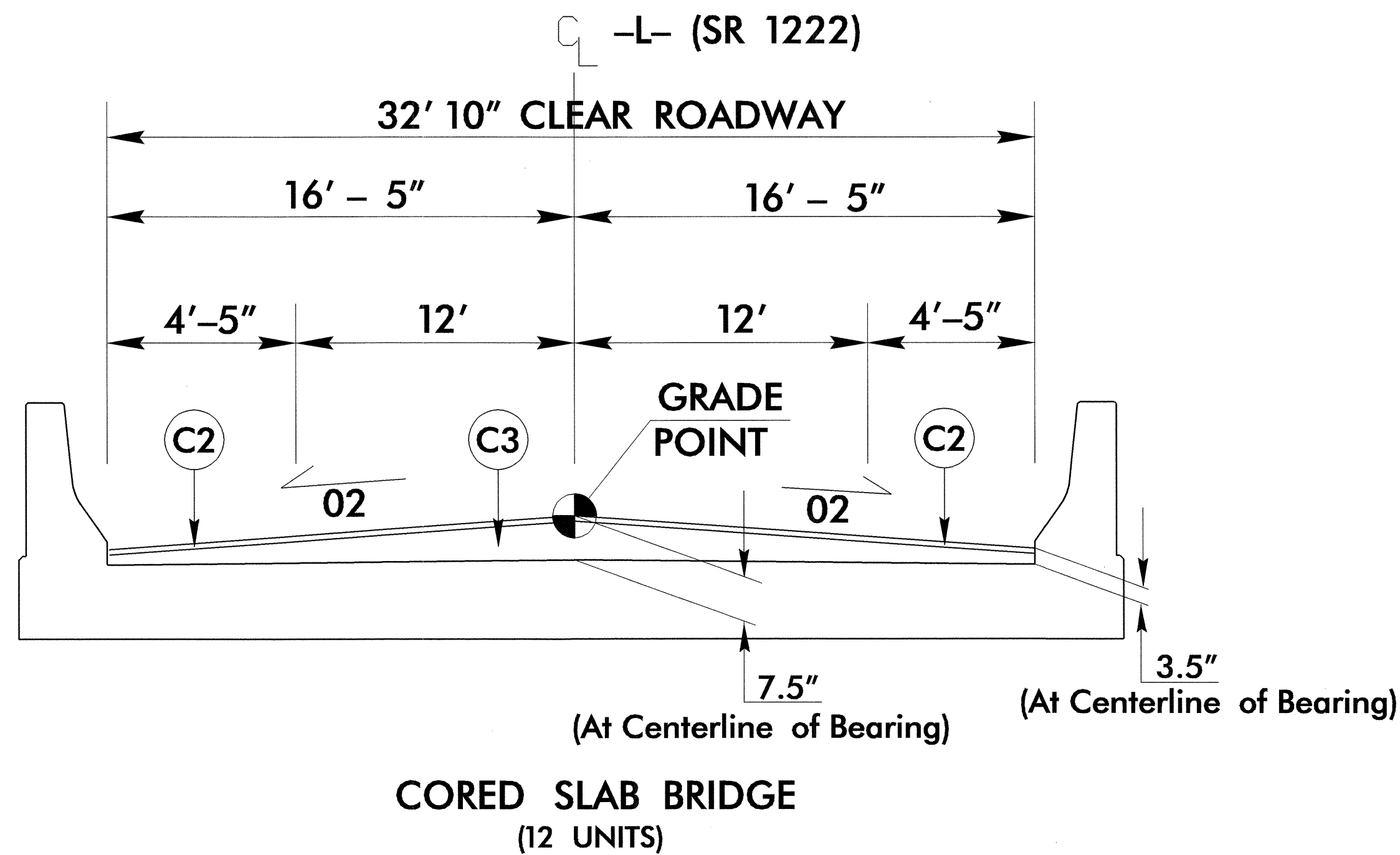
NOTE: ALL SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROJECT REFERENCE NO. B-3636	SHEET NO. 2
ROADWAY DESIGN ENGINEER <i>J.C. Sanford</i>	PAVEMENT DESIGN ENGINEER <i>Mark S. Morrison</i>

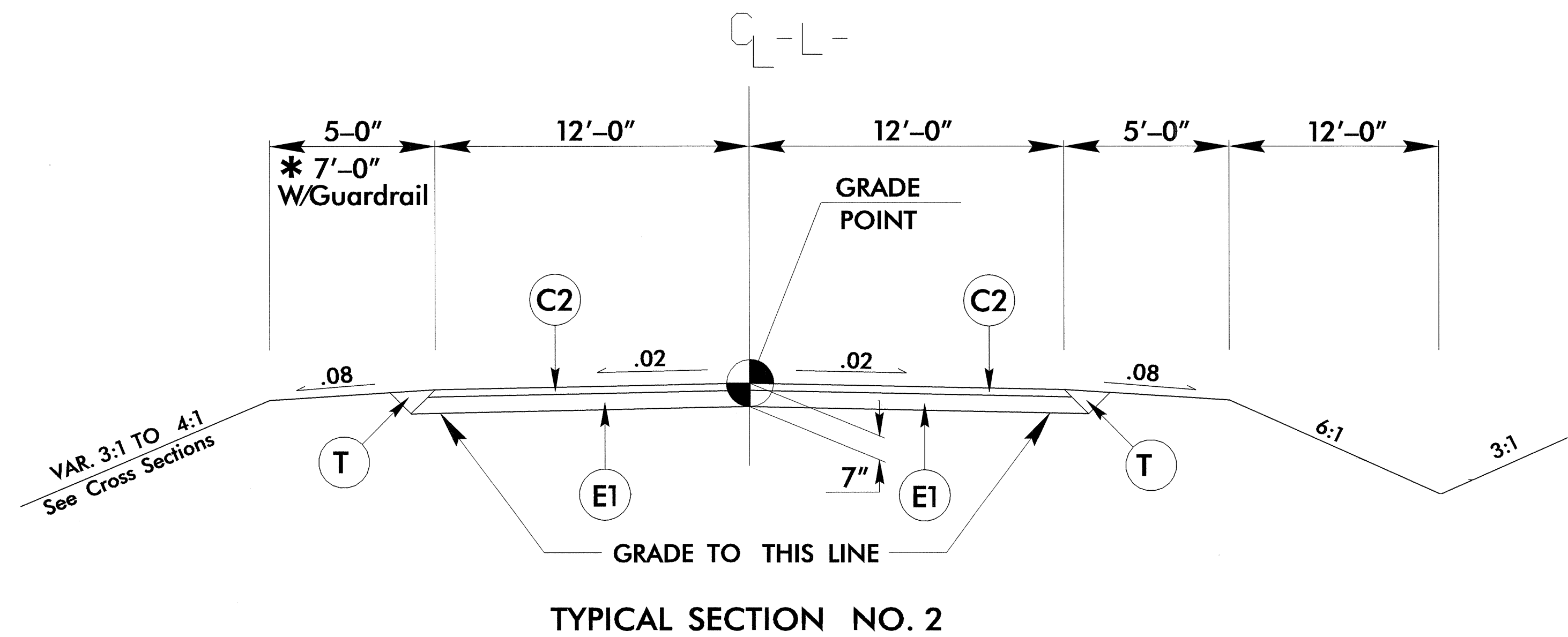


USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:
 -L- STA. 7+55.00 TO 10+50.00
 -L- STA. 11+50.00 TO 15+00.00
 -L- STA. 19+70.00 TO 21+75.00

* USE EXTRA LENGTH GUARDRAIL POSTS;
SEE DETAIL 2-H

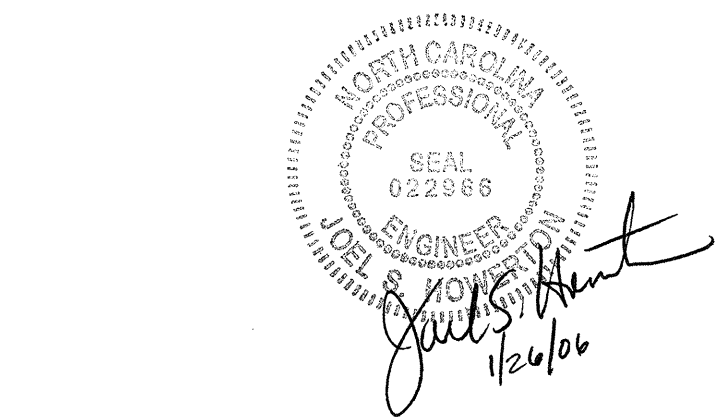
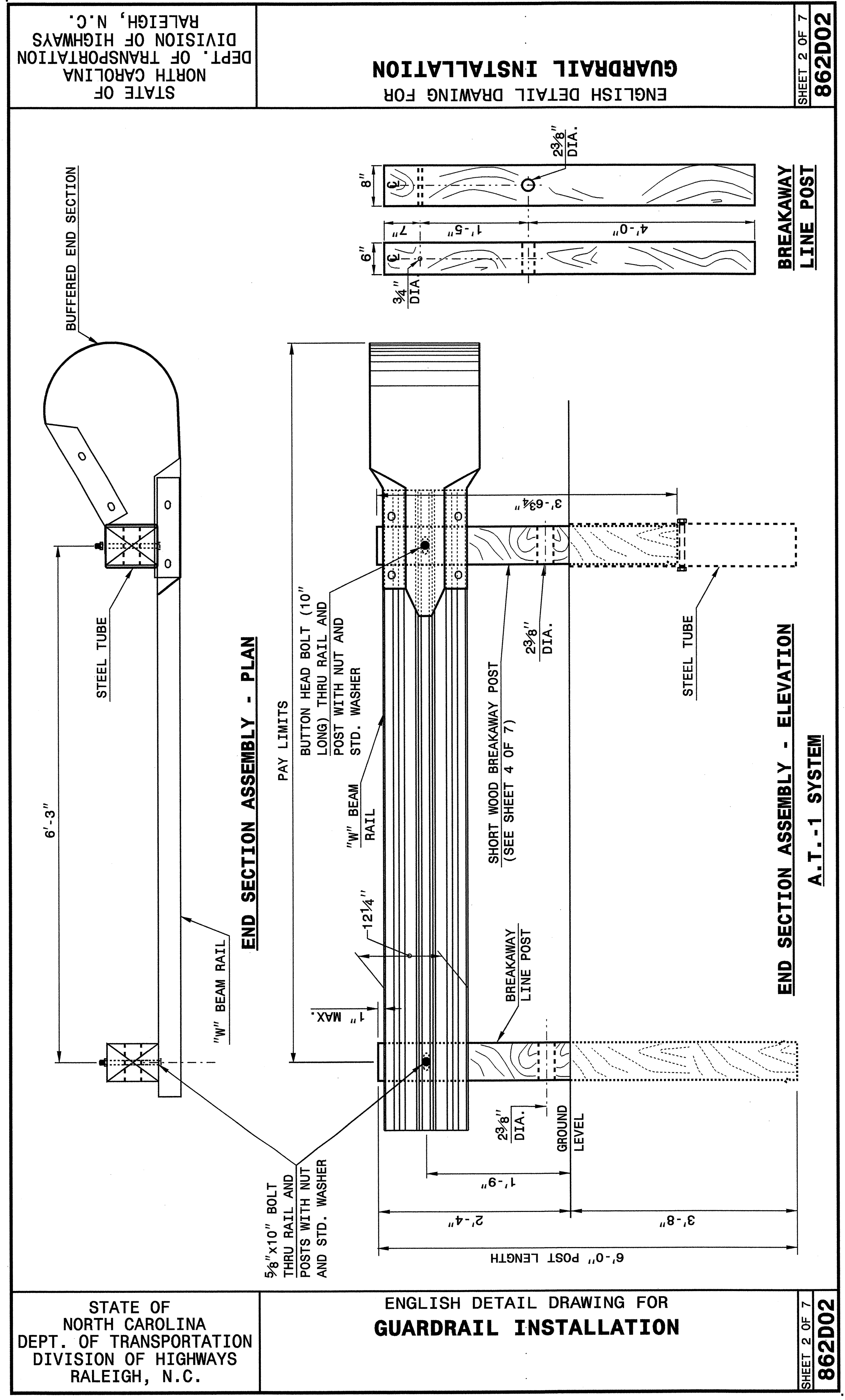
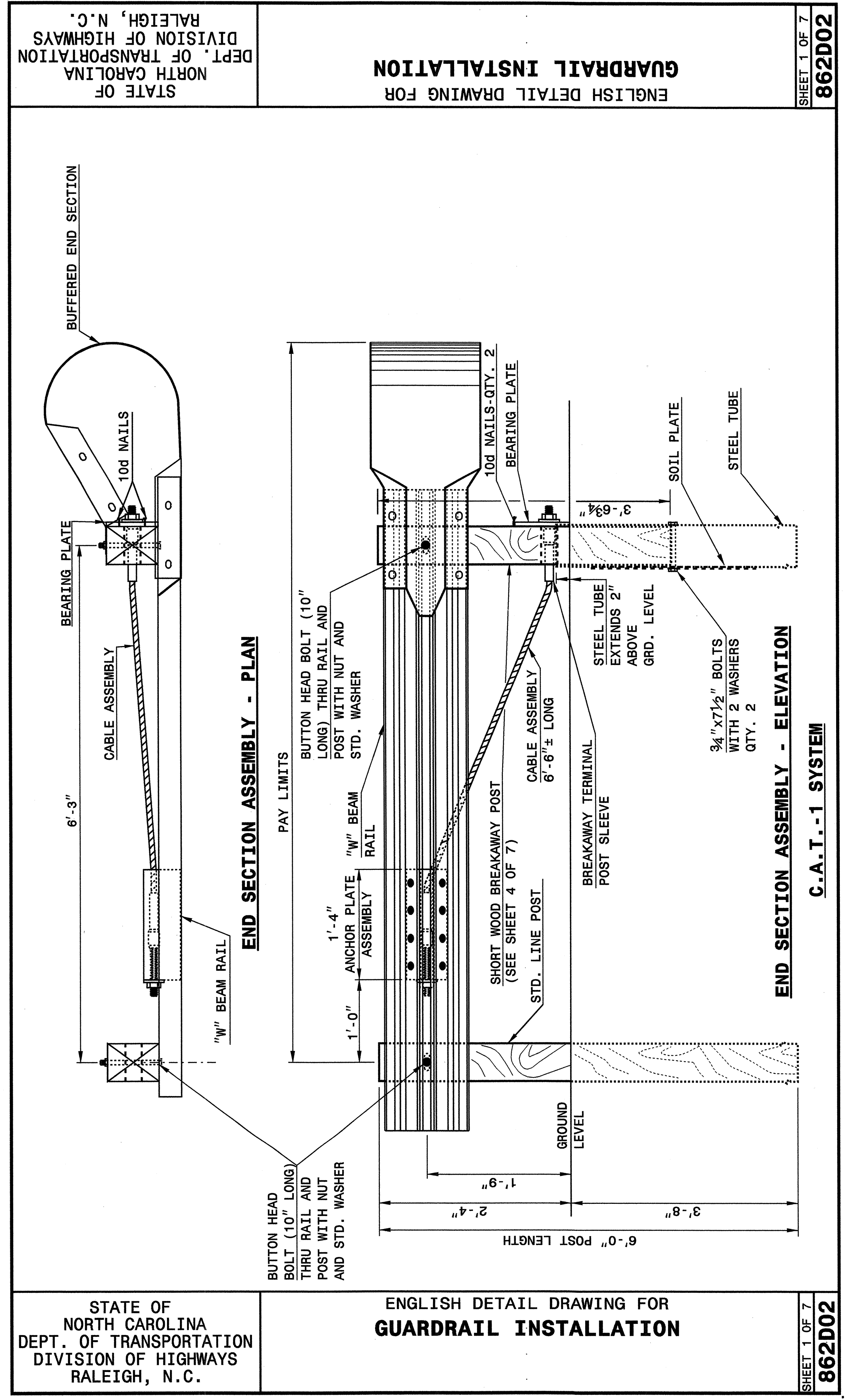


TYPICAL SECTION ON STRUCTURE
-L- STA 17+70.00 TO 18+68.00



USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATIONS:
 -L- STA. 10+50.00 TO 11+50.00
 -L- STA. 15+00.00 TO 17+56.00
 -L- STA. 18+68.00 TO 19+70.00

DESIGN EXCEPTION REQUIRED FOR SHOULDER WIDTH



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

SEE PLATE FOR TITLE

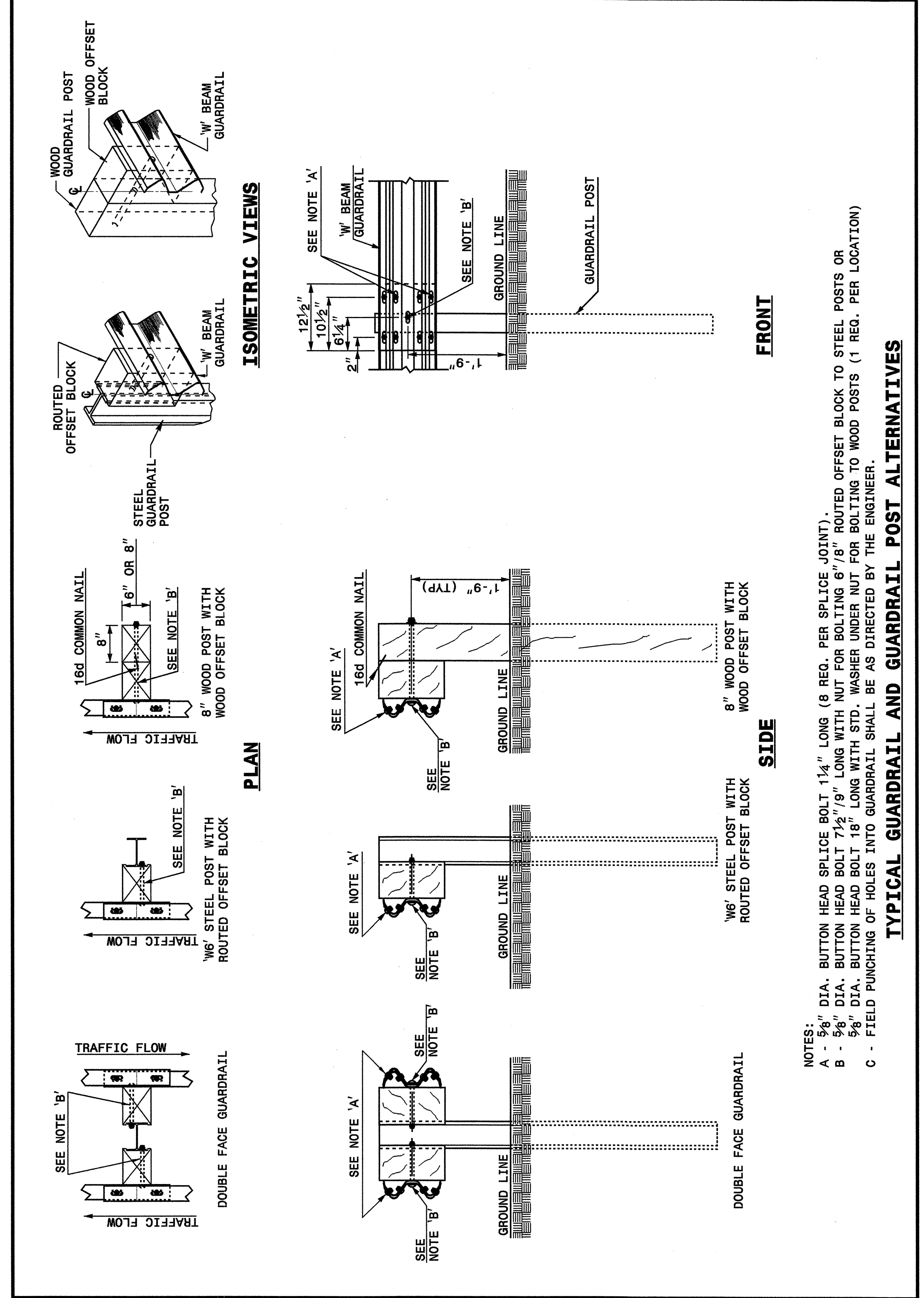
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 3 OF 7
862D02



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

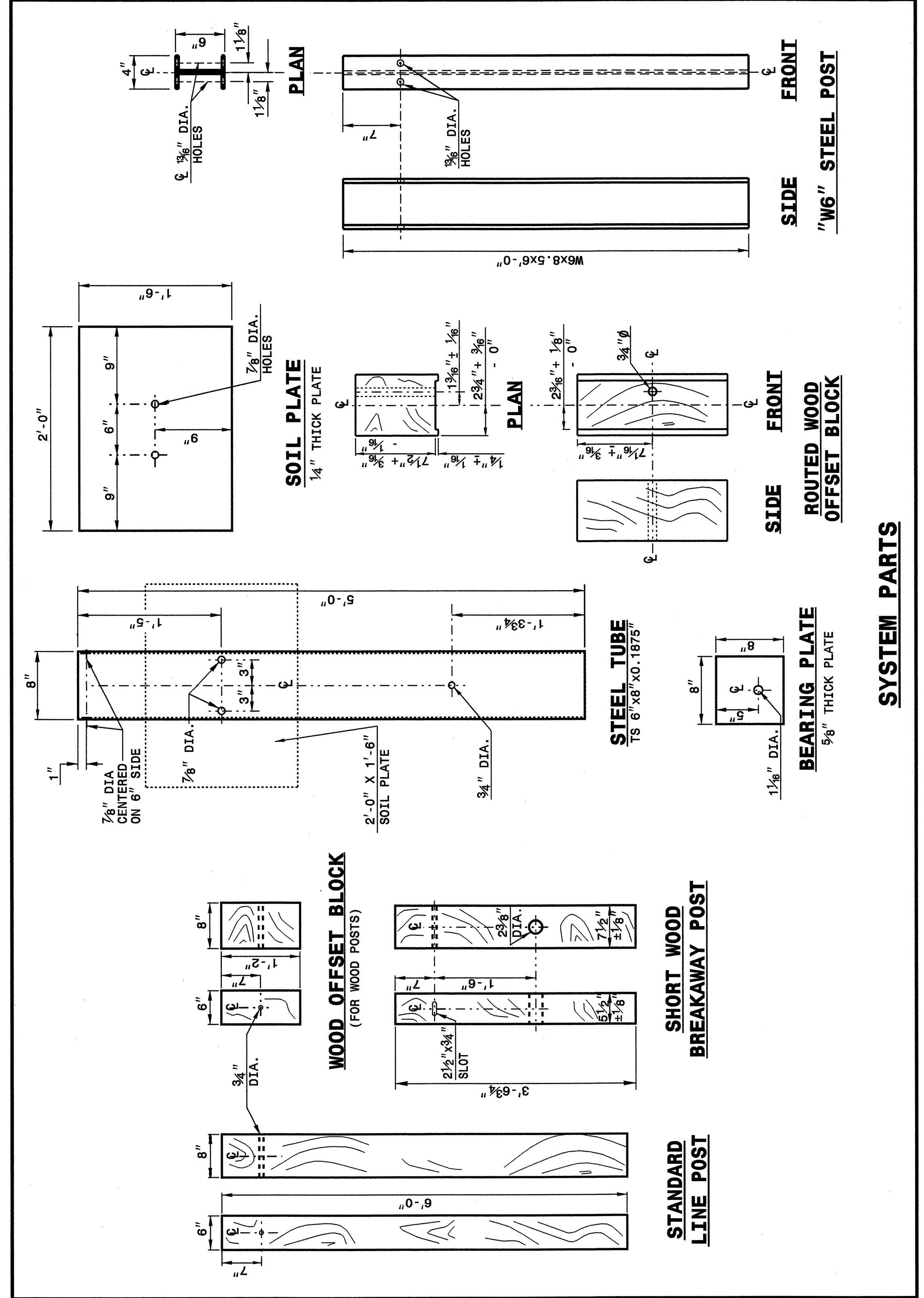
ENGLISH DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 3 OF 7
862D02

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ENGLISH DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 4 OF 7
862D02



STATE OF NORTH CAROLINA
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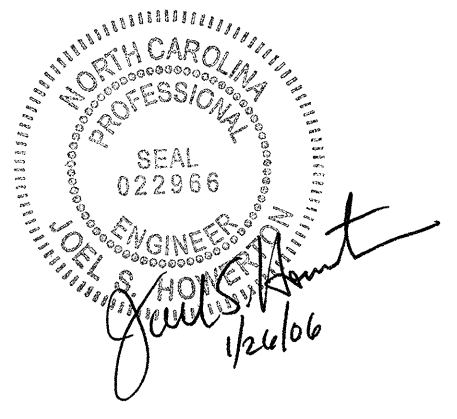
ENGLISH DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 4 OF 7
862D02

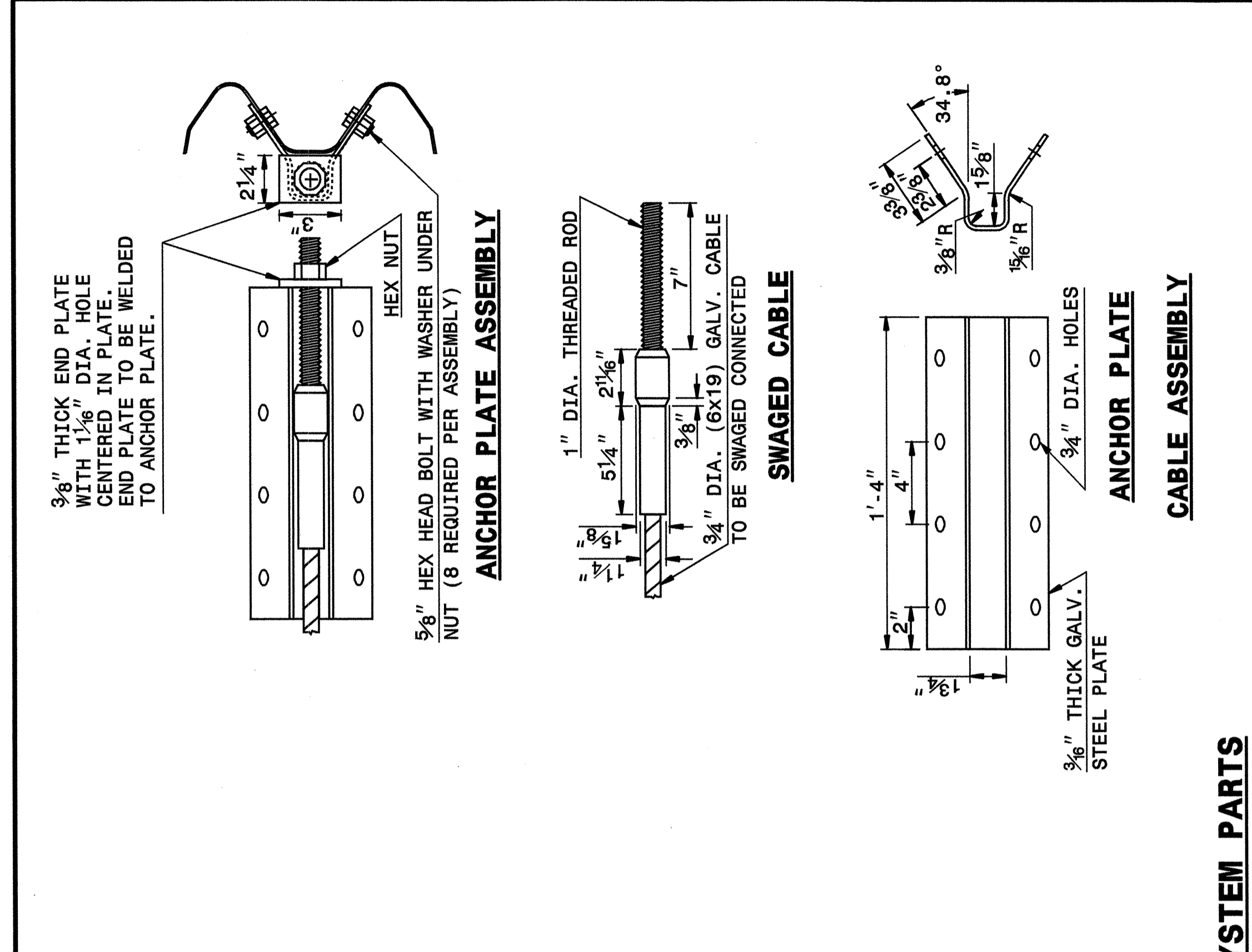
PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-250-4128 FAX 919-250-4119

SEE PLATE FOR TITLE

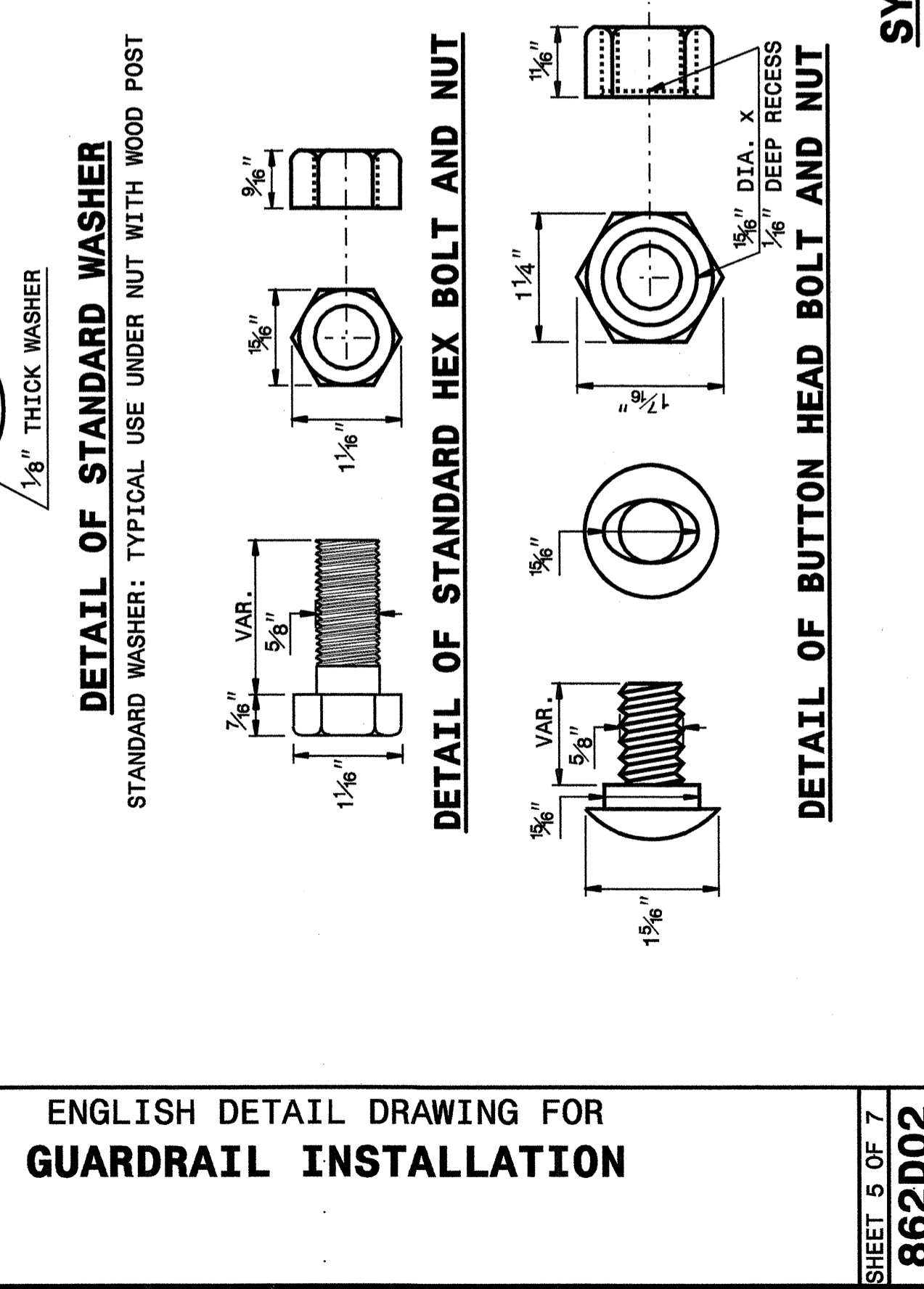
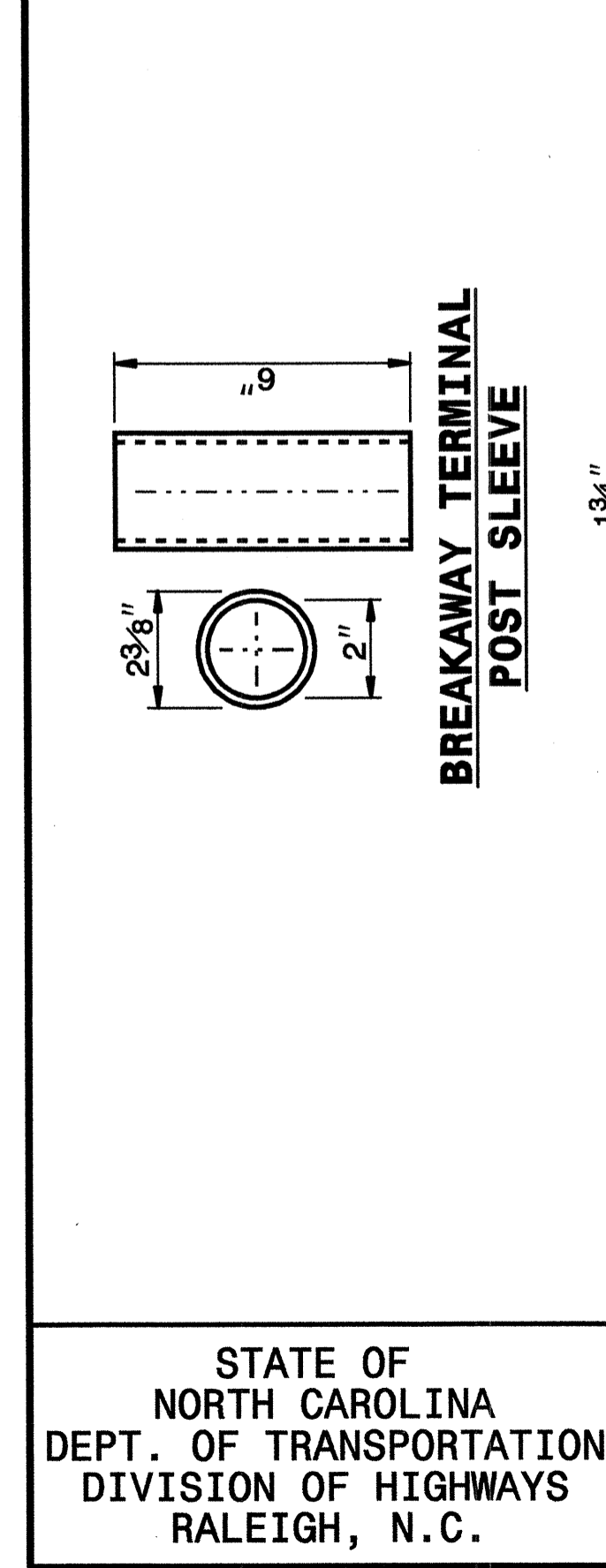
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STATE OF
NORTH CAROLINA
DIVISION OF HIGHWAYS
RALEIGH, N.C.

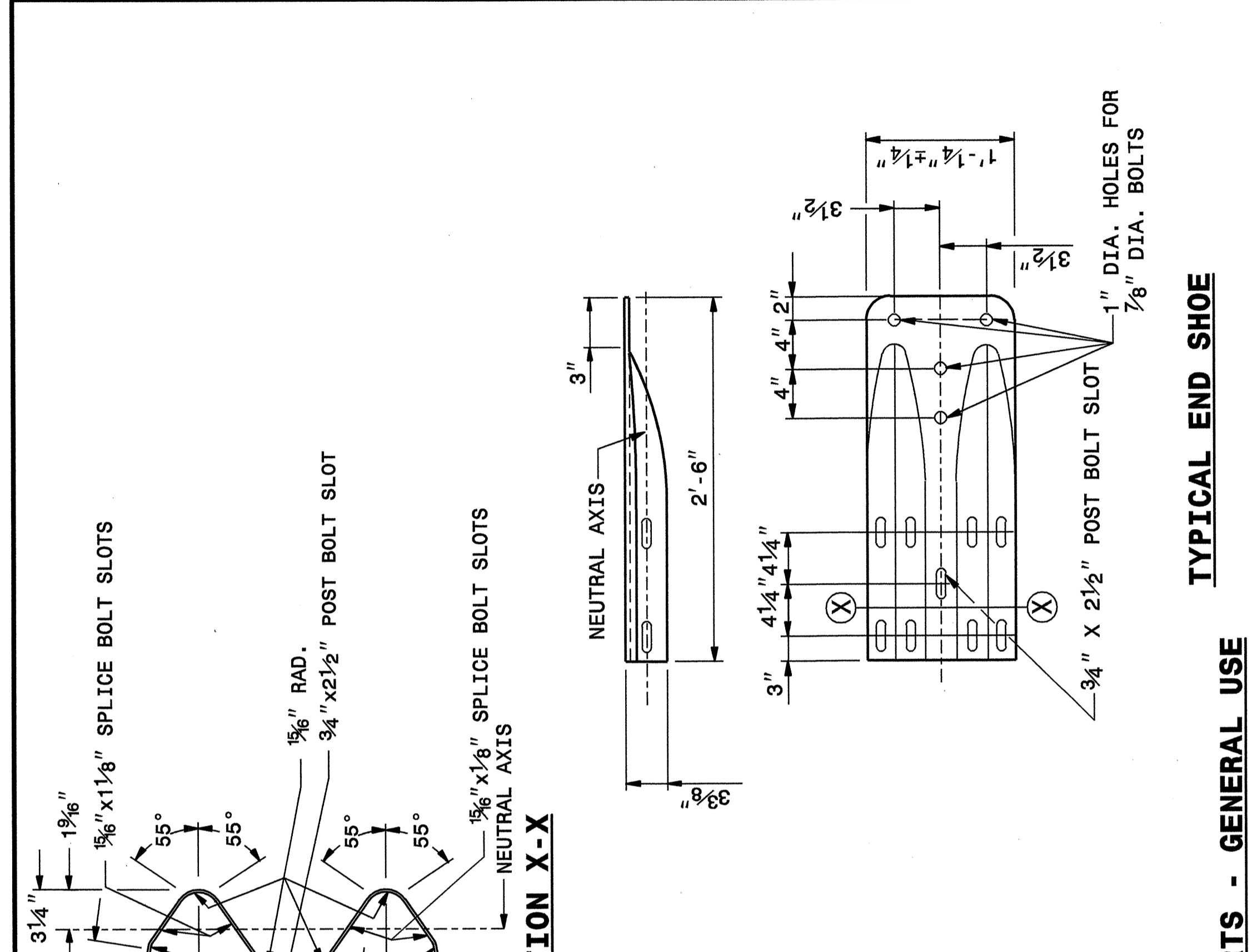


ENGLISH DETAIL DRAWING FOR
GUARDRAIL INSTALLATION
SHEET 5 OF 7
862D02

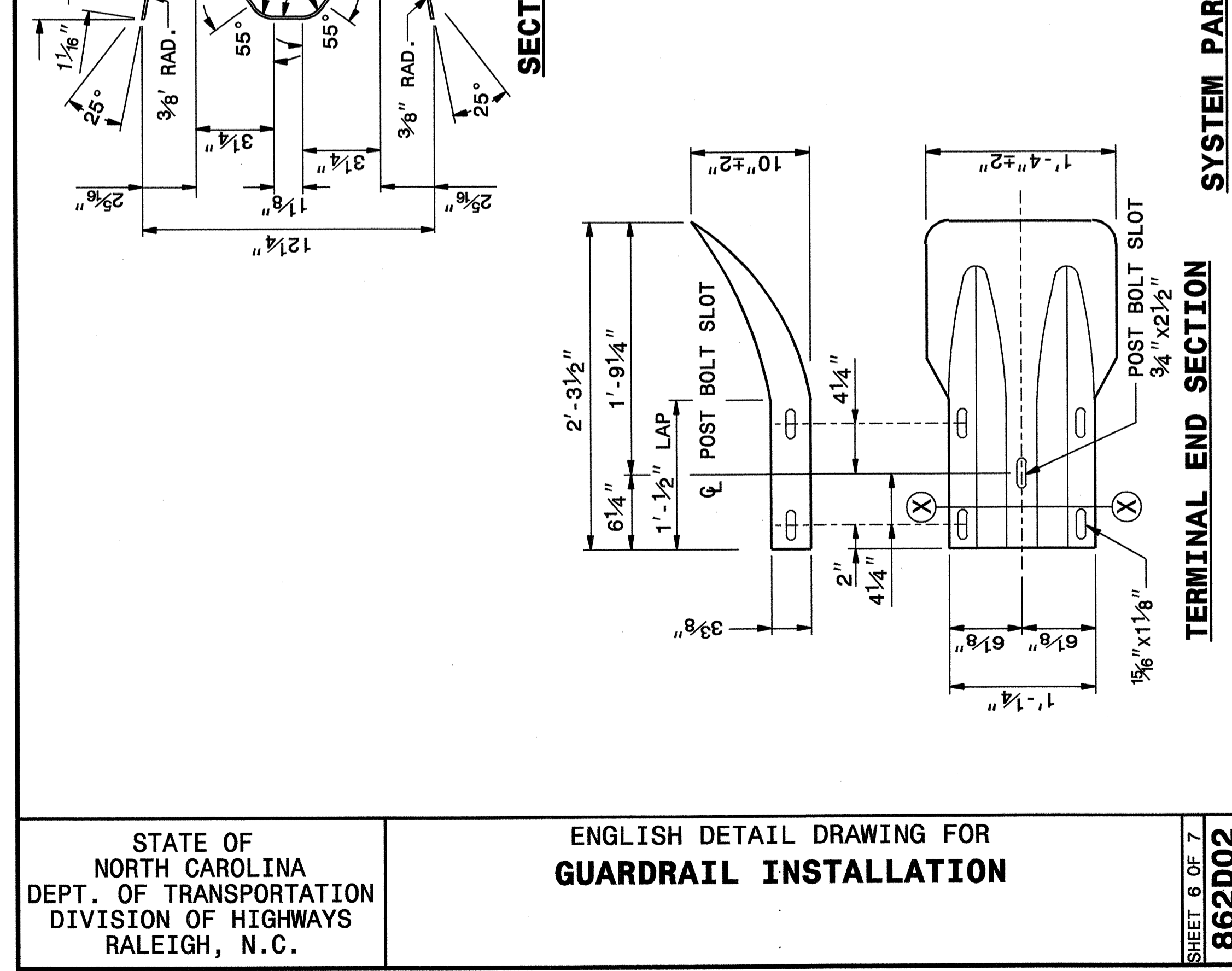


ENGLISH DETAIL DRAWING FOR
GUARDRAIL INSTALLATION
SHEET 5 OF 7
862D02

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



ENGLISH DETAIL DRAWING FOR
GUARDRAIL INSTALLATION
SHEET 6 OF 7
862D02



ENGLISH DETAIL DRAWING FOR
GUARDRAIL INSTALLATION
SHEET 6 OF 7
862D02



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

SEE PLATE FOR TITLE

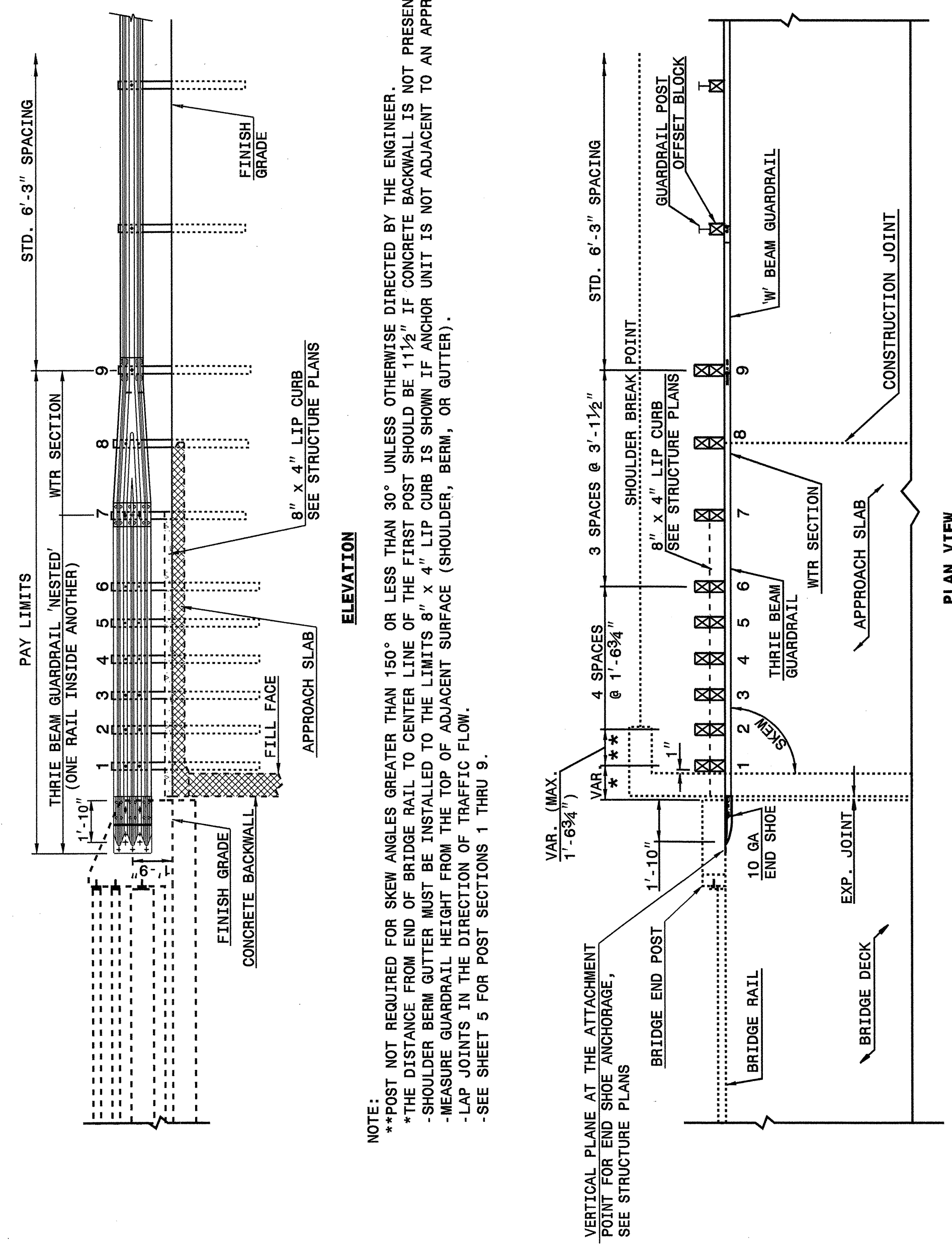
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STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE (15' MINIMUM LENGTH APPROACH SLAB)

SHEET 1 OF 6 862D03



NOTE:
 **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 1 1/2" IF CONCRETE BACKWALL IS NOT PRESENT.
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" X 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 -SEE SHEET 5 FOR POST SECTIONS 1 THRU 9.

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE (15' MINIMUM LENGTH APPROACH SLAB)

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

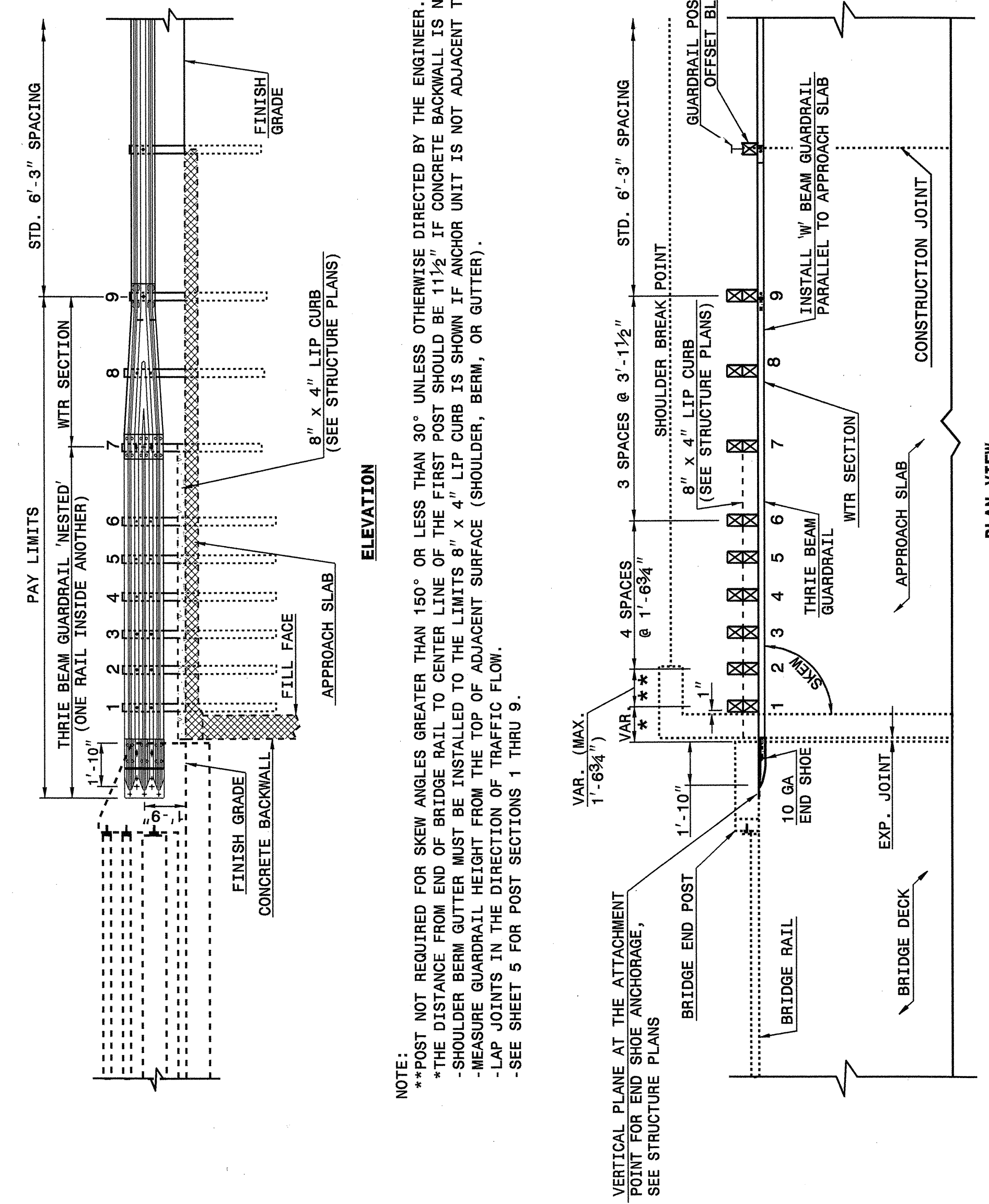
ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE (15' MINIMUM LENGTH APPROACH SLAB)

SHEET 1 OF 6 862D03

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

ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE (25' MINIMUM LENGTH APPROACH SLAB)

SHEET 2 OF 6 862D03



NOTE:
 **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 1 1/2" IF CONCRETE BACKWALL IS NOT PRESENT.
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" X 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
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 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 -SEE SHEET 5 FOR POST SECTIONS 1 THRU 9.

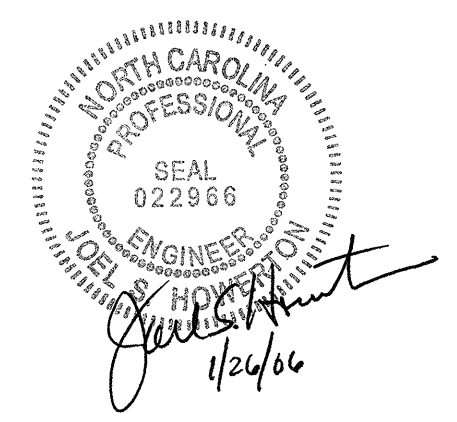
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE (25' MINIMUM LENGTH APPROACH SLAB)

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

ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE (25' MINIMUM LENGTH APPROACH SLAB)

SHEET 2 OF 6 862D03

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 Office 919-250-4128 FAX 919-250-4119

SEE PLATE FOR TITLE

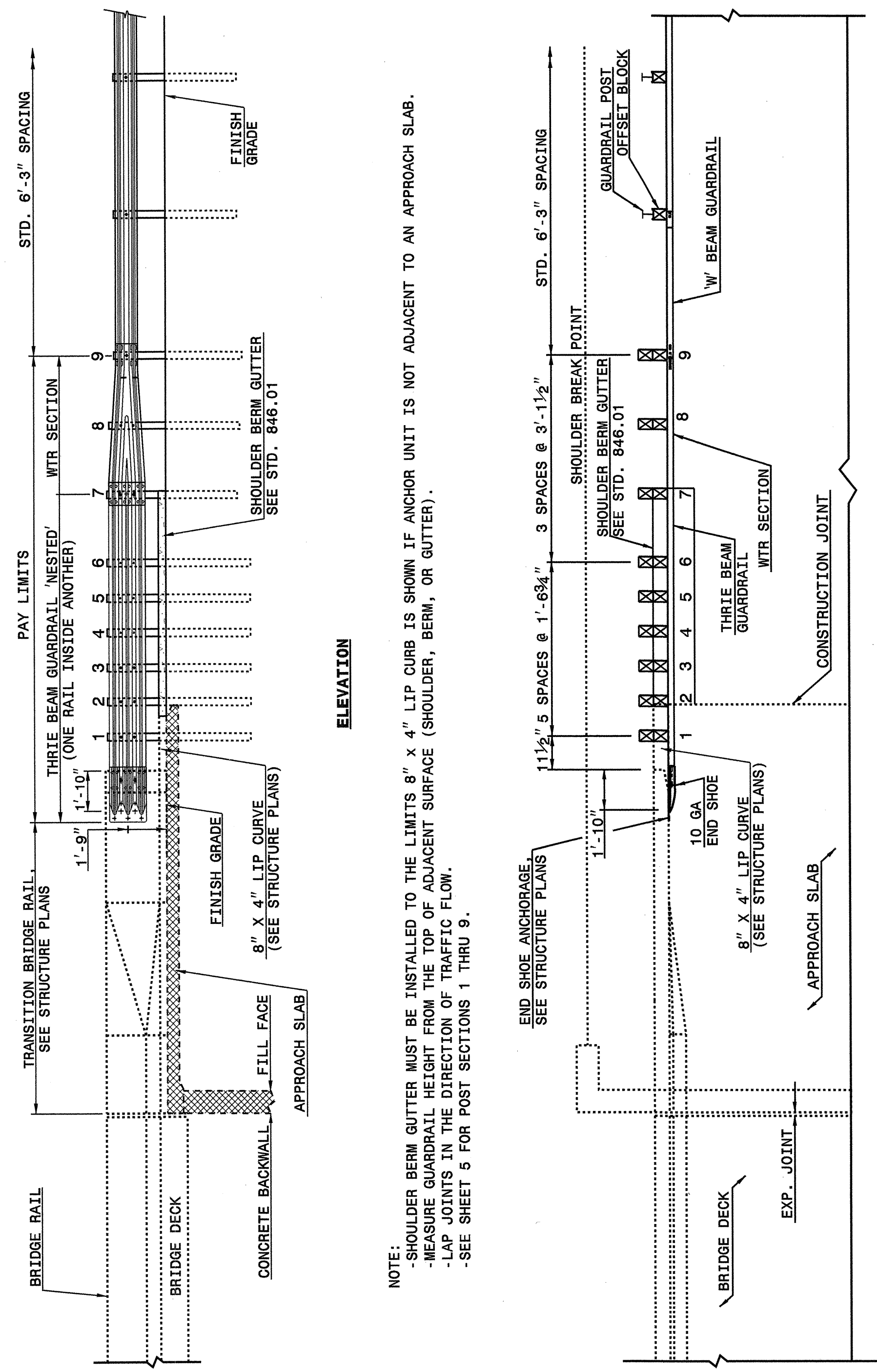
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STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON APPROACH SLAB (15' MINIMUM LENGTH APPROACH SLAB)

SHEET 3 OF 6 862D03



NOTE:
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" X 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 -SEE SHEET 5 FOR POST SECTIONS 1 THRU 9.

PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON APPROACH SLAB (15' MINIMUM LENGTH APPROACH SLAB)

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

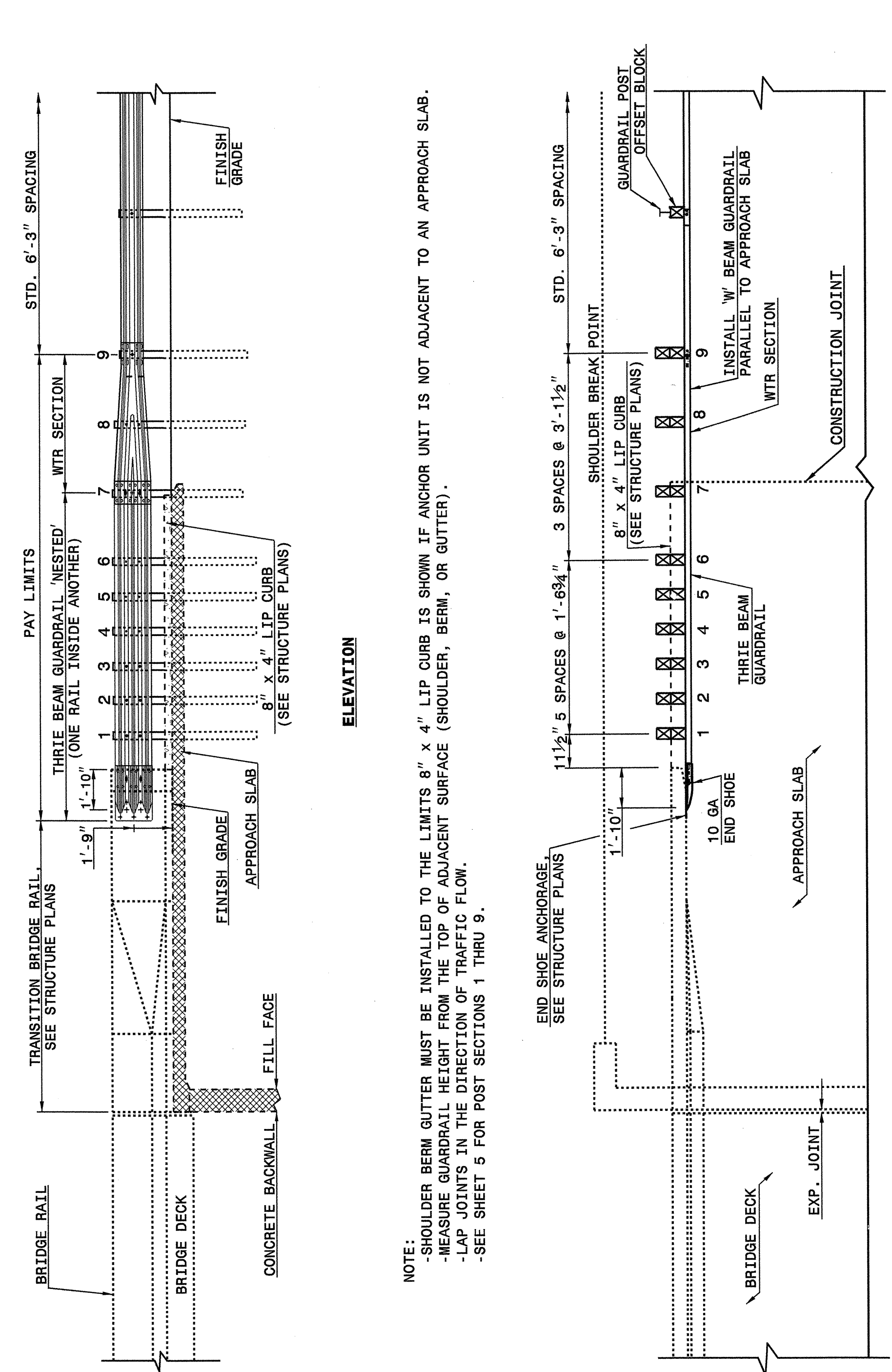
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SHEET 3 OF 6 862D03

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

ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON APPROACH SLAB (25' MINIMUM LENGTH APPROACH SLAB)

SHEET 4 OF 6 862D03



NOTE:
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" X 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 -SEE SHEET 5 FOR POST SECTIONS 1 THRU 9.

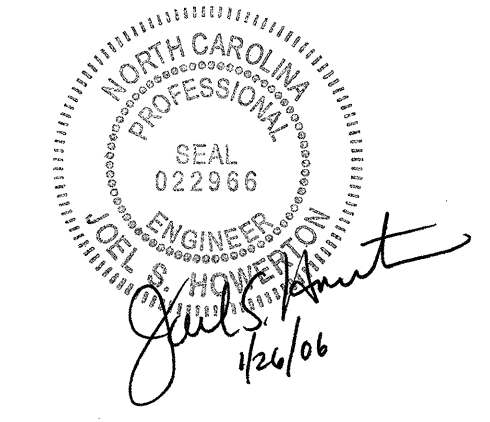
PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON APPROACH SLAB (25' MINIMUM LENGTH APPROACH SLAB)

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

ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON APPROACH SLAB (25' MINIMUM LENGTH APPROACH SLAB)

SHEET 4 OF 6 862D03



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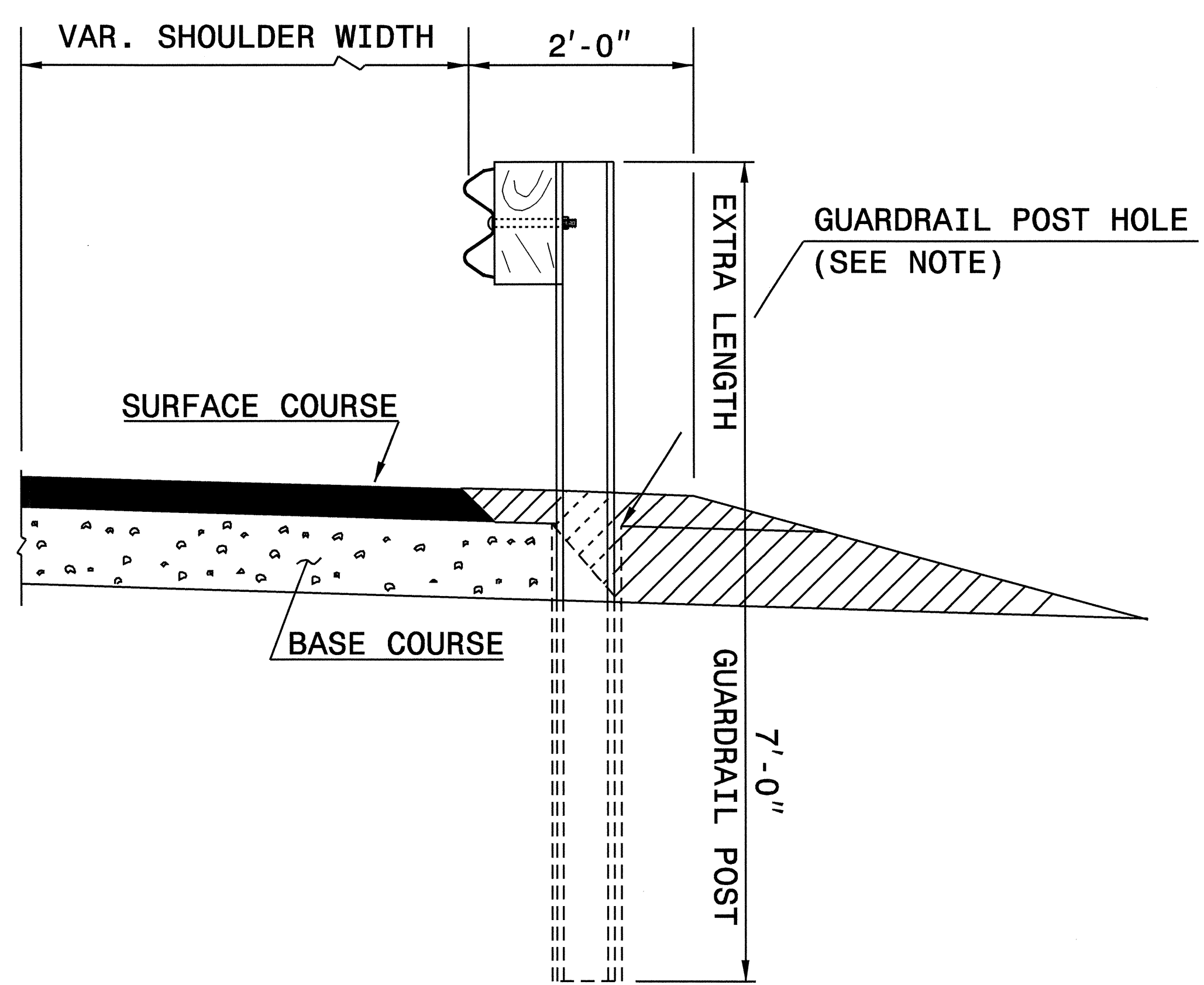
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 CHECKED BY: *Joel S. Howerton* DATE: 1/24/06
 FILE SPEC.: stds/02stdstodetails/english/862d03.dgn

STATE OF
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**GUARDRAIL PLACEMENT FOR 2' SHOULDER
BREAK POINT BEHIND FACE OF GUARDRAIL**

SHEET 1 OF 1
7'GRPOST



FLEXIBLE PAVED SHOULDER

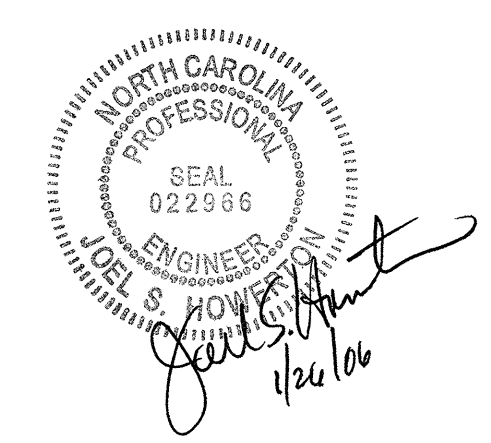
 EARTH MATERIAL

- NOTE:
- 1) USE EXTRA LENGTH GUARDRAIL POST - 7'- 0" TYPICAL
 - 2) SEE ROADWAY PLANS FOR LOCATION
 - 3) REFER TO 862D02 FOR GUARDRAIL PLACEMENT DETAILS

STATE OF
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**GUARDRAIL PLACEMENT FOR 2' SHOULDER
BREAK POINT BEHIND FACE OF GUARDRAIL**

SHEET 1 OF 1
7'GRPOST

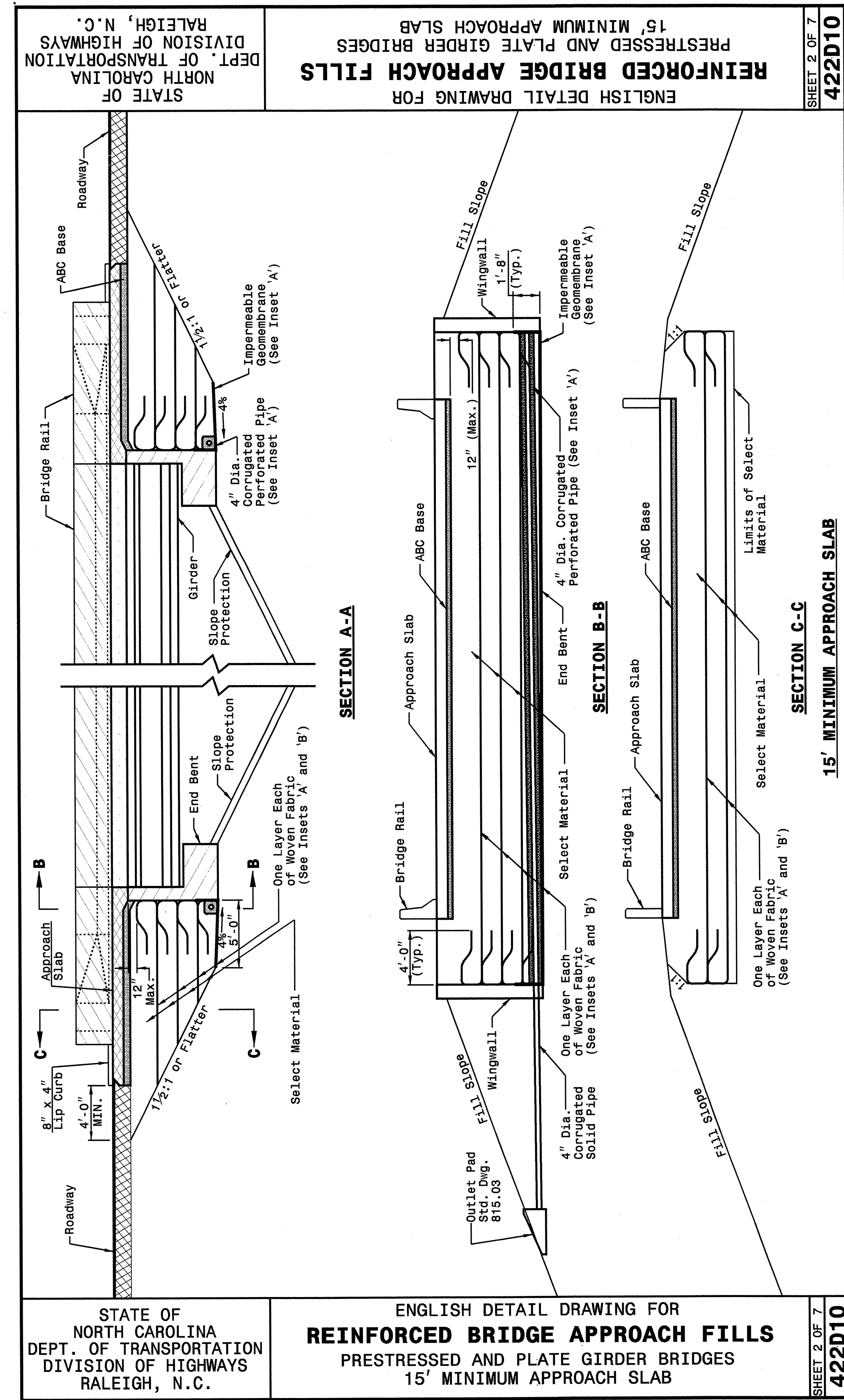
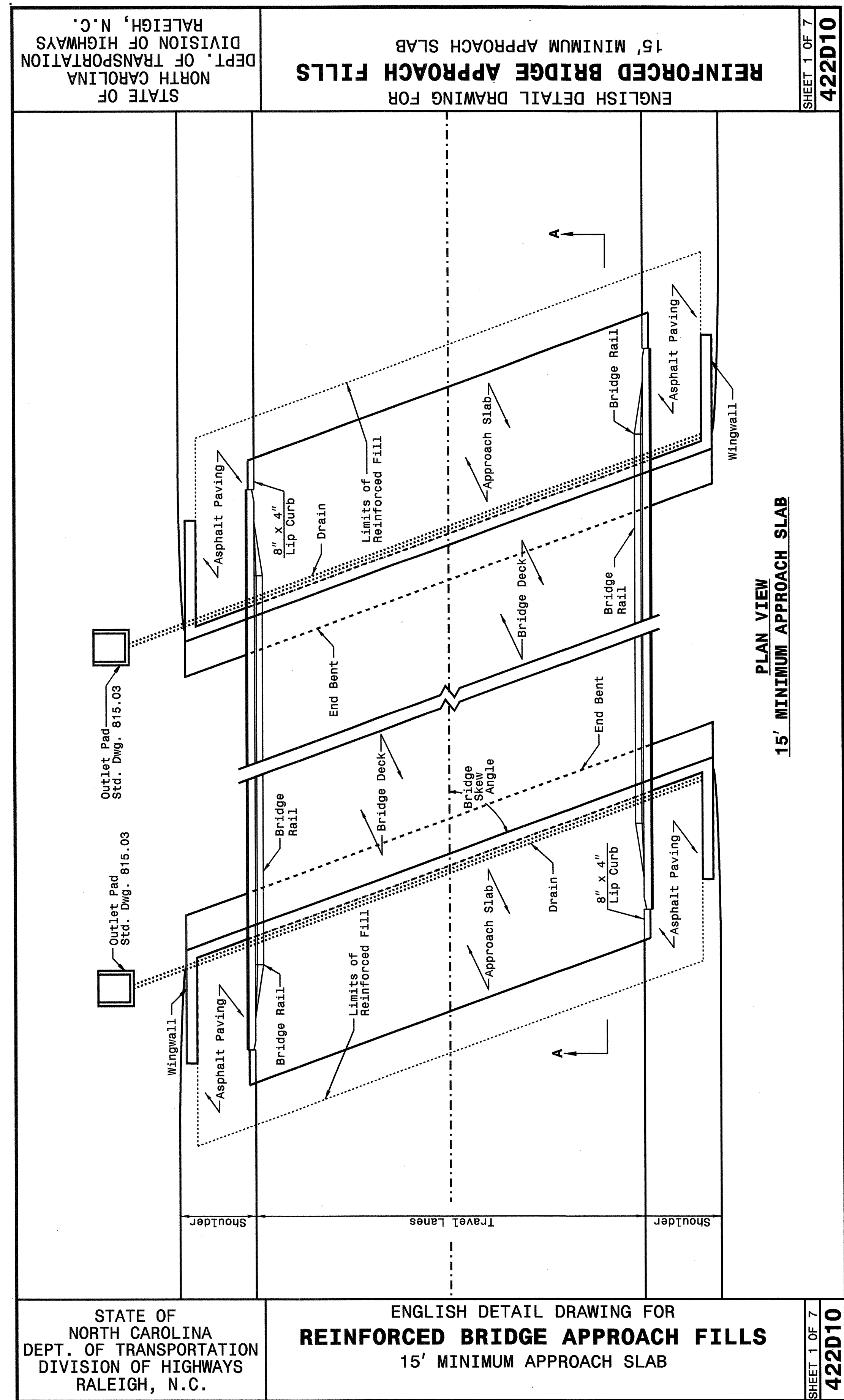


**DESIGN SERVICES UNIT
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SEE PLATE FOR TITLE

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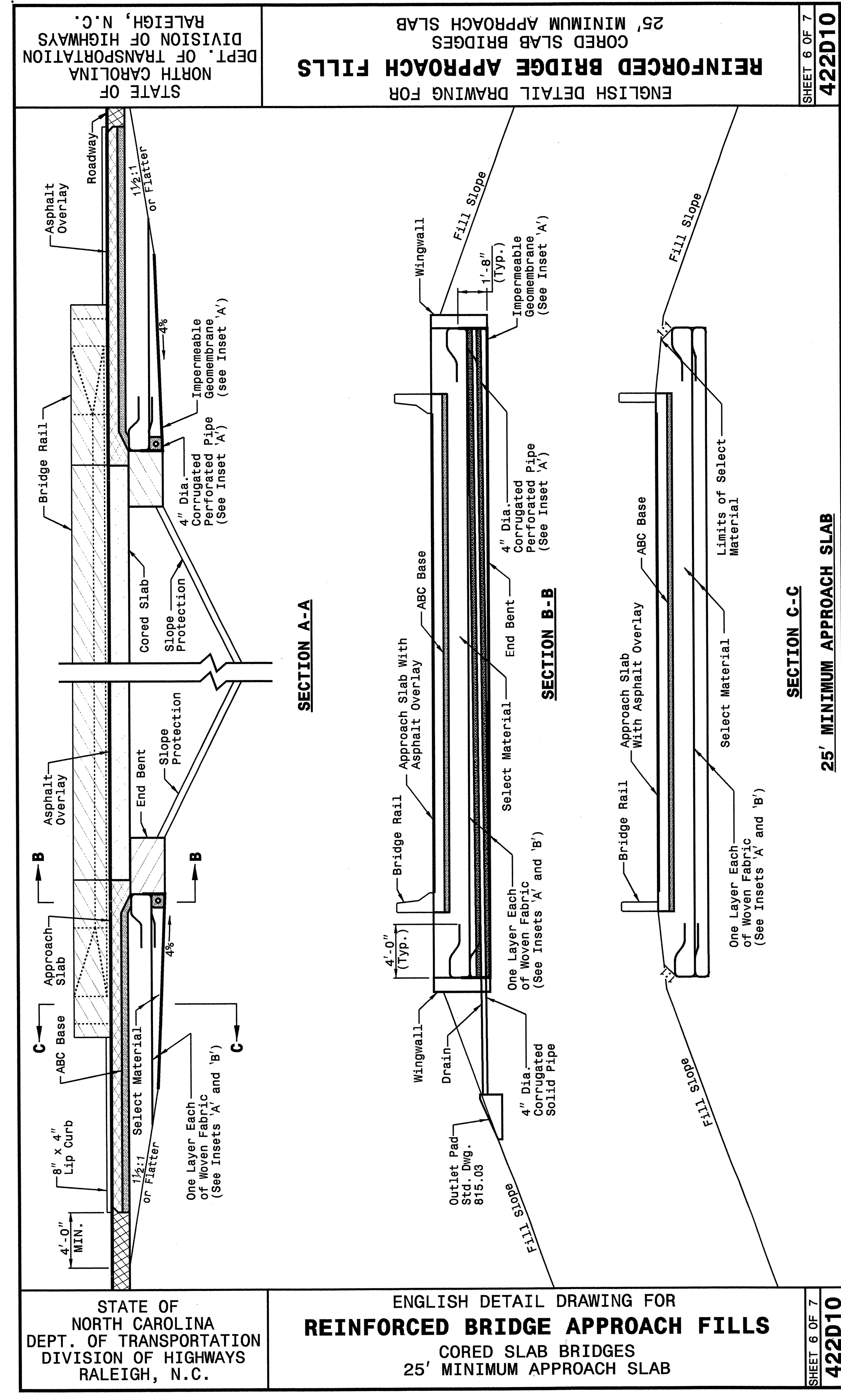
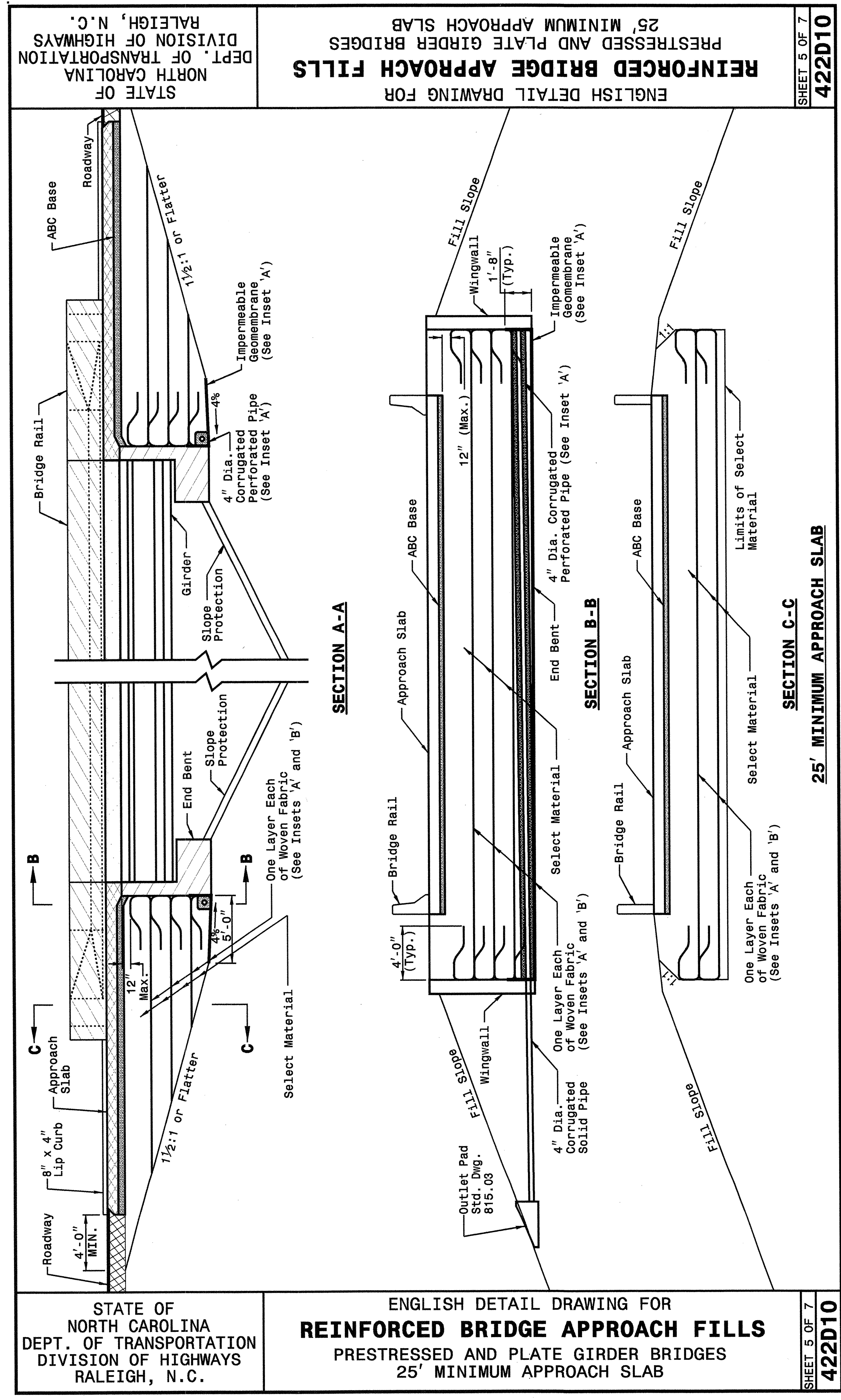
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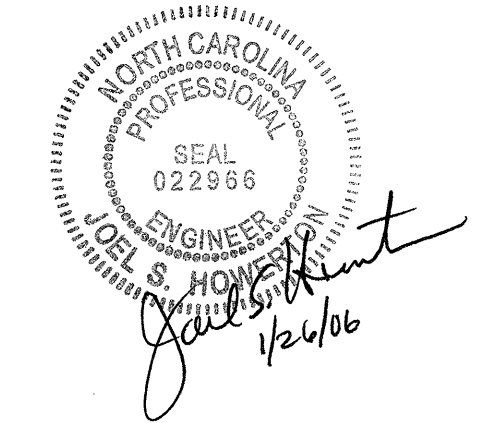
PROJECT SERVICES UNIT
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SEE PLATE FOR TITLE

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 MODIFIED BY: E.E. WARD DATE: 09-12-05
 CHECKED BY: *Joel S. Hower* DATE: 7/20/05
 FILE SPEC.: stds/02stdstodetails/english/422d10.dgn



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SEE PLATE FOR TITLE

ORIGINAL BY: 2002 STANDARDS DATE: 01-15-02
 MODIFIED BY: E.E. WARD DATE: 09-12-05
 CHECKED BY: *Joel S. Honigsman* DATE: 9/24/05
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STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

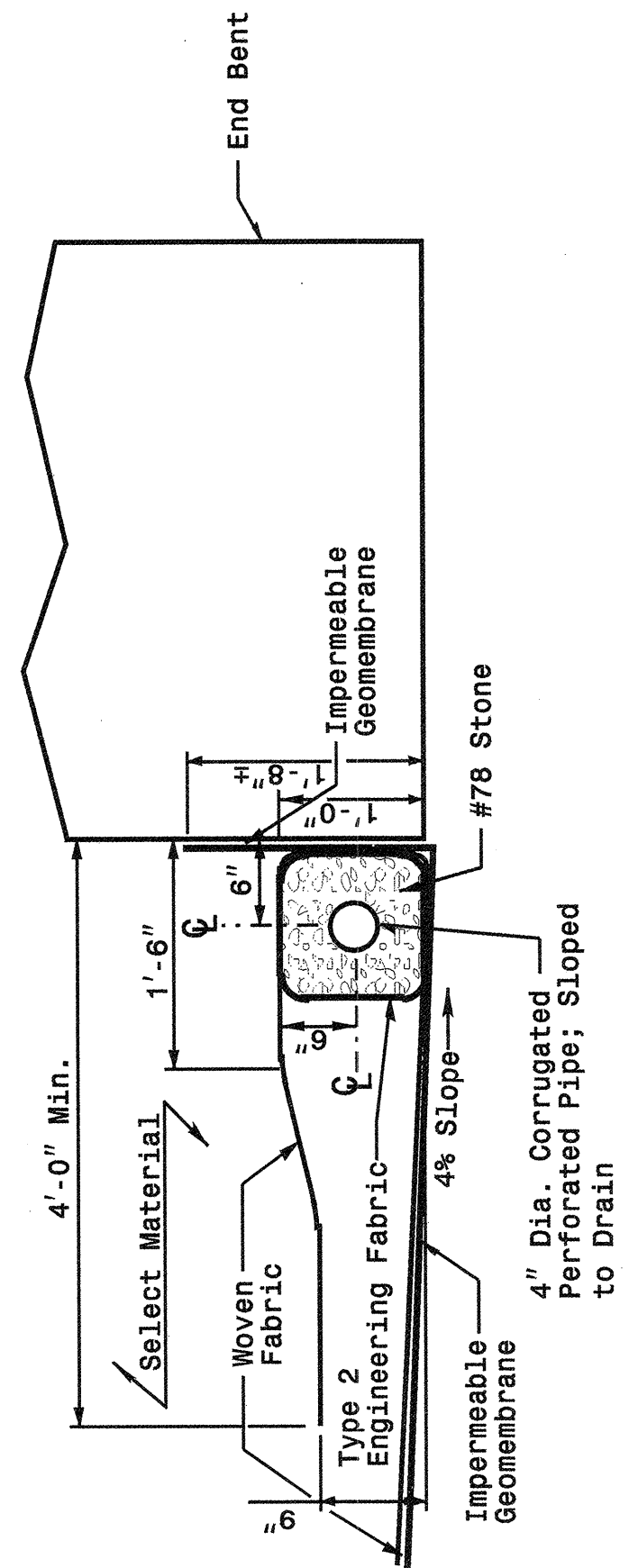
ENGLISH DETAIL DRAWING FOR
REINFORCED BRIDGE APPROACH FILLS
INSETS AND CHARTS

SHEET 7 OF 7
422D10

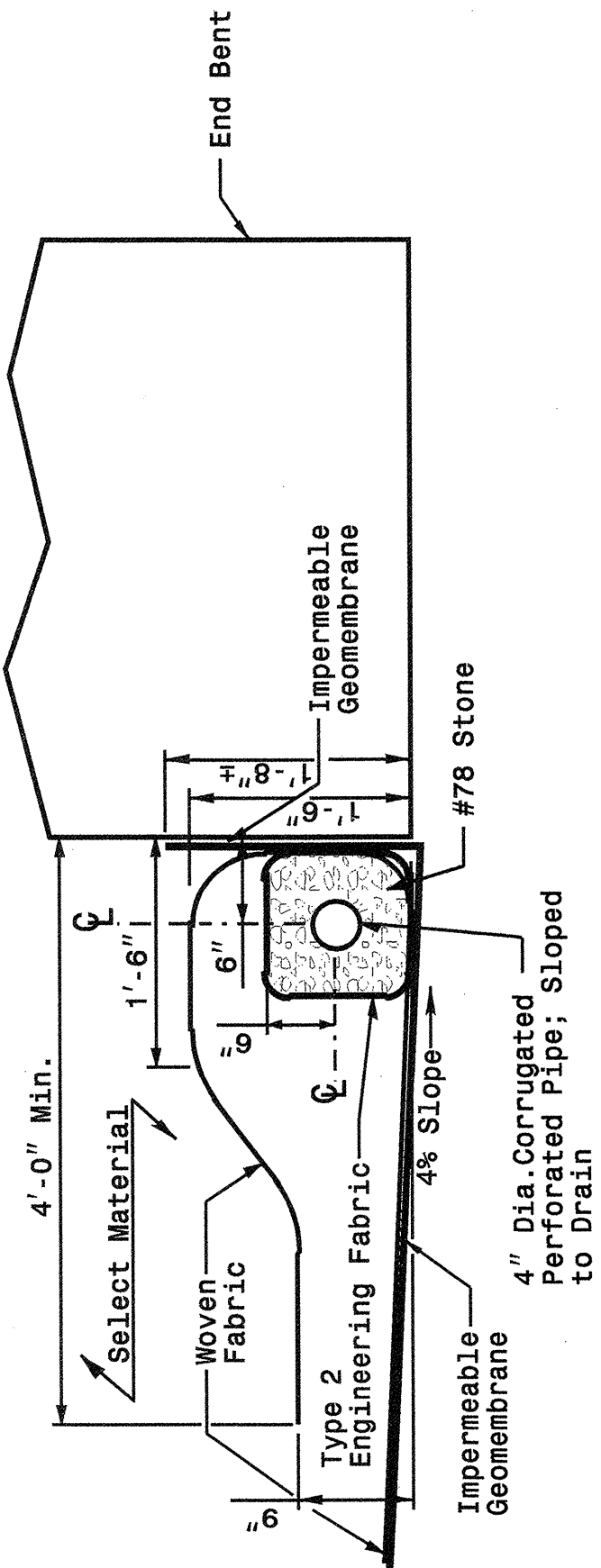
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
REINFORCED BRIDGE APPROACH FILLS
INSETS AND CHARTS

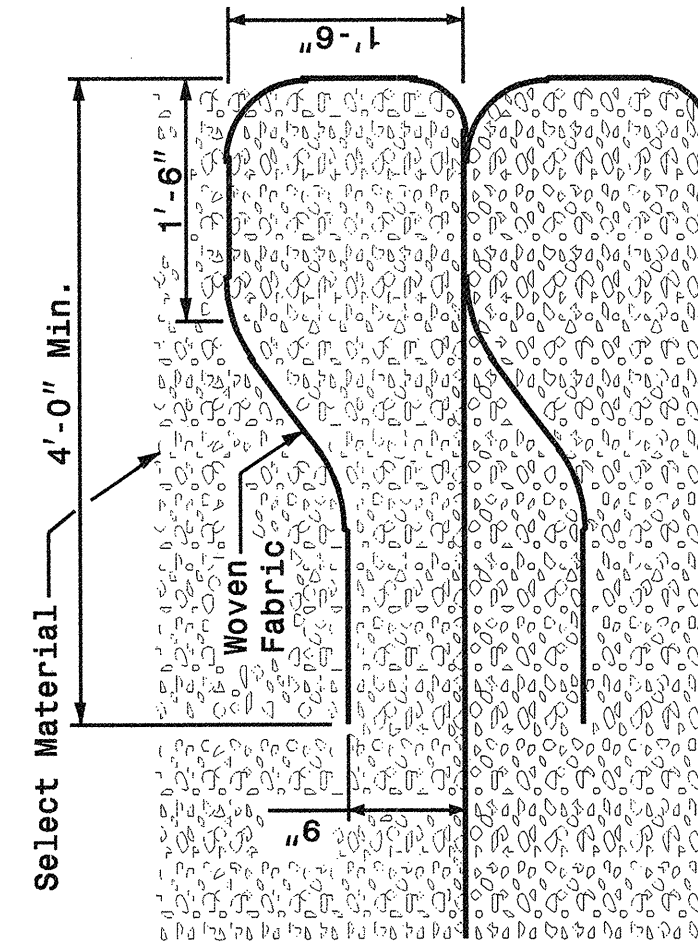
SHEET 7 OF 7
422D10



Cored Slab Bridge
Showing First Lift and Drains



Girder Bridge
Showing First Lift and Drains



Typical Fabric Lift and Wrap
Showing Second and Above Lifts

Inset 'B'

Height of Backwall	Number of Fabric Layers
4'-6" - 5'-9"	3
5'-10" - 7'-2"	4
7'-3" - 8'-8"	5
8'-9" - 10'-1"	6
10'-2" - 11'-8"	7

Note: Cored Slab Structures Require 2 Fabric Layers.

Length of Bridge End Bent Inside Wingwalls

If Bridge Skew is Less Than or Equal to 90°:

$$\frac{\text{Sin (Bridge Skew Angle)}}{\text{Cos (Bridge Skew Angle - 90°)}} = \text{Dis. Between Wingwalls}$$

If Bridge Skew is Greater Than 90°:

$$\frac{\text{Cos (Bridge Skew Angle - 90°)}}{\text{Cos (Bridge Skew Angle - 90°)}} = \text{Dis. Between Wingwalls}$$

Inset 'A'



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ORIGINAL BY: 2002 STANDARDS DATE: 01-15-02
 MODIFIED BY: E.E. WARD DATE: 09-12-05
 CHECKED BY: Joel S. Hunt DATE: 9/20/05
 FILE SPEC.: stds/02stdstodetails/english/422d10.dgn

NOTES:

ALL CONCRETE TO BE CLASS "A".

ALL REINFORCING STEEL SHALL BE ASTMA615-GRADE 60.

ALL REINFORCING STEEL SHALL BE DEFORMED BARS. WHERE SPLICING OF REINFORCEMENT IS NECESSARY, BARS ARE TO BE LAPPED 45 DIAMETERS. ALL DIMENSIONS RELATIVE TO REINFORCEMENT ARE TO CENTERS OF BARS.

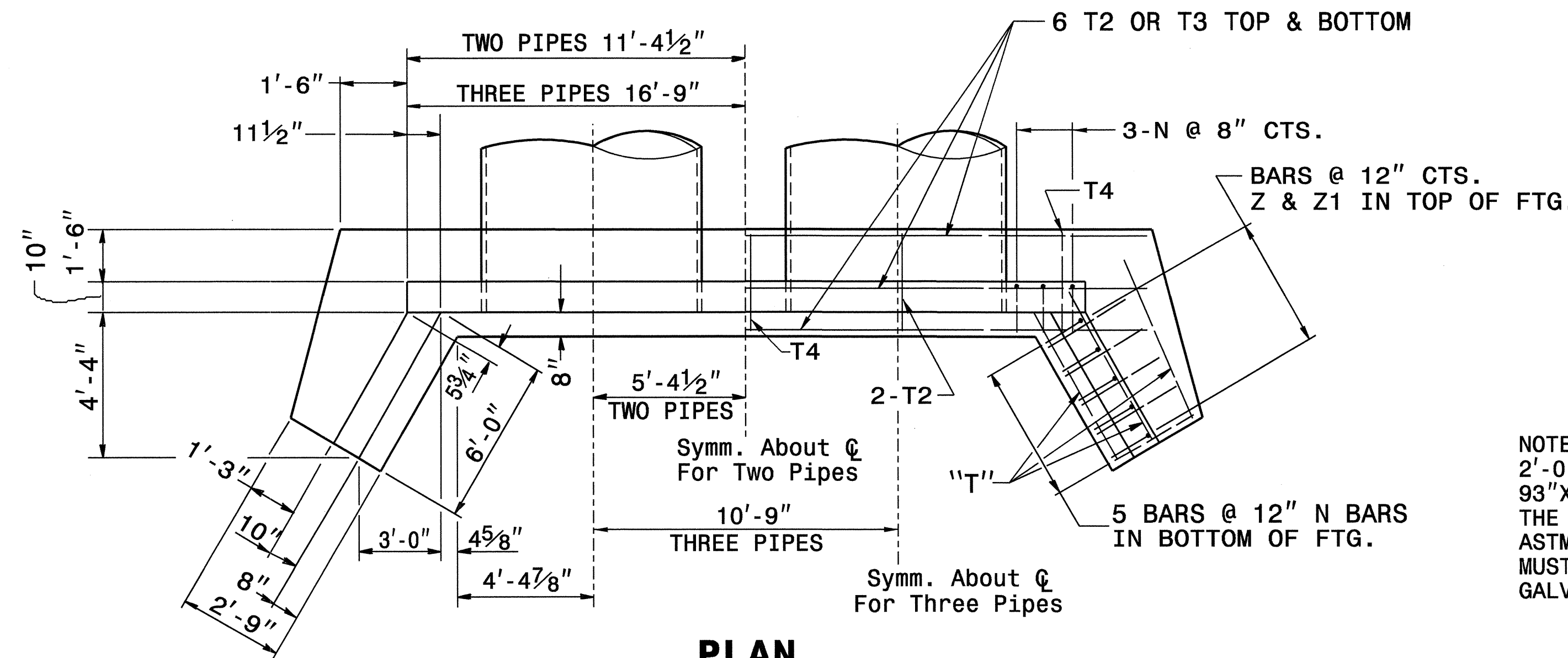
THE FOOTING, CURTAIN WALL AND 4" OF WALL ARE TO BE POURED IN ONE OPERATION ALLOWING NO TIME FOR INITIAL SET TO TAKE PLACE BETWEEN THEM. THE REMAINING WALL SHALL THEN BE POURED IN ONE OPERATION.

ALL EXPOSED CORNERS ARE TO BE CHAMFERED 1".

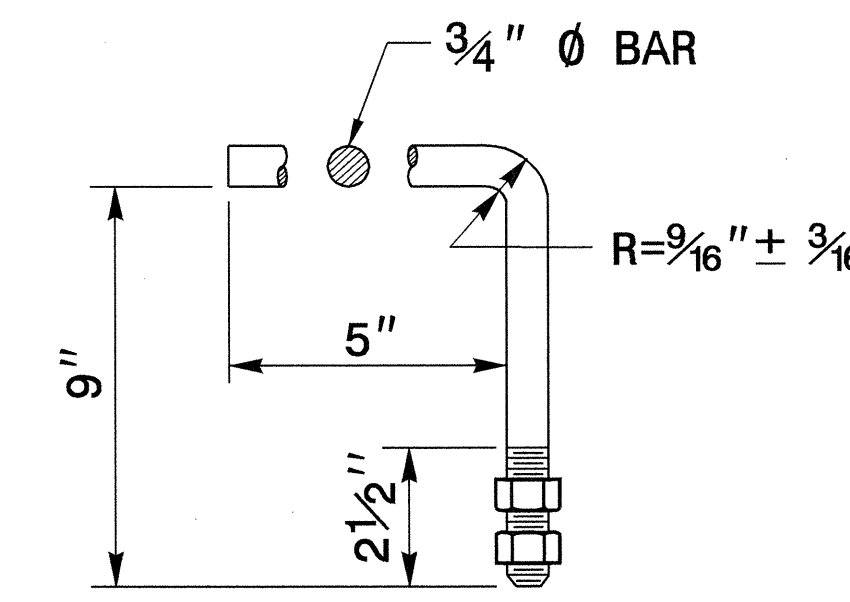
3" DIAMETER DRAINS SHALL BE PLACED IN WALL AS SHOWN AND BE 6" ABOVE NORMAL FLOW LINE.

ALL MATERIAL AND WORKMANSHIP AS PER N.C. DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.

THE EXTRA BARS ARE PROVIDED FOR HOLDING REINFORCING STEEL IN CORRECT POSITION IN WING.

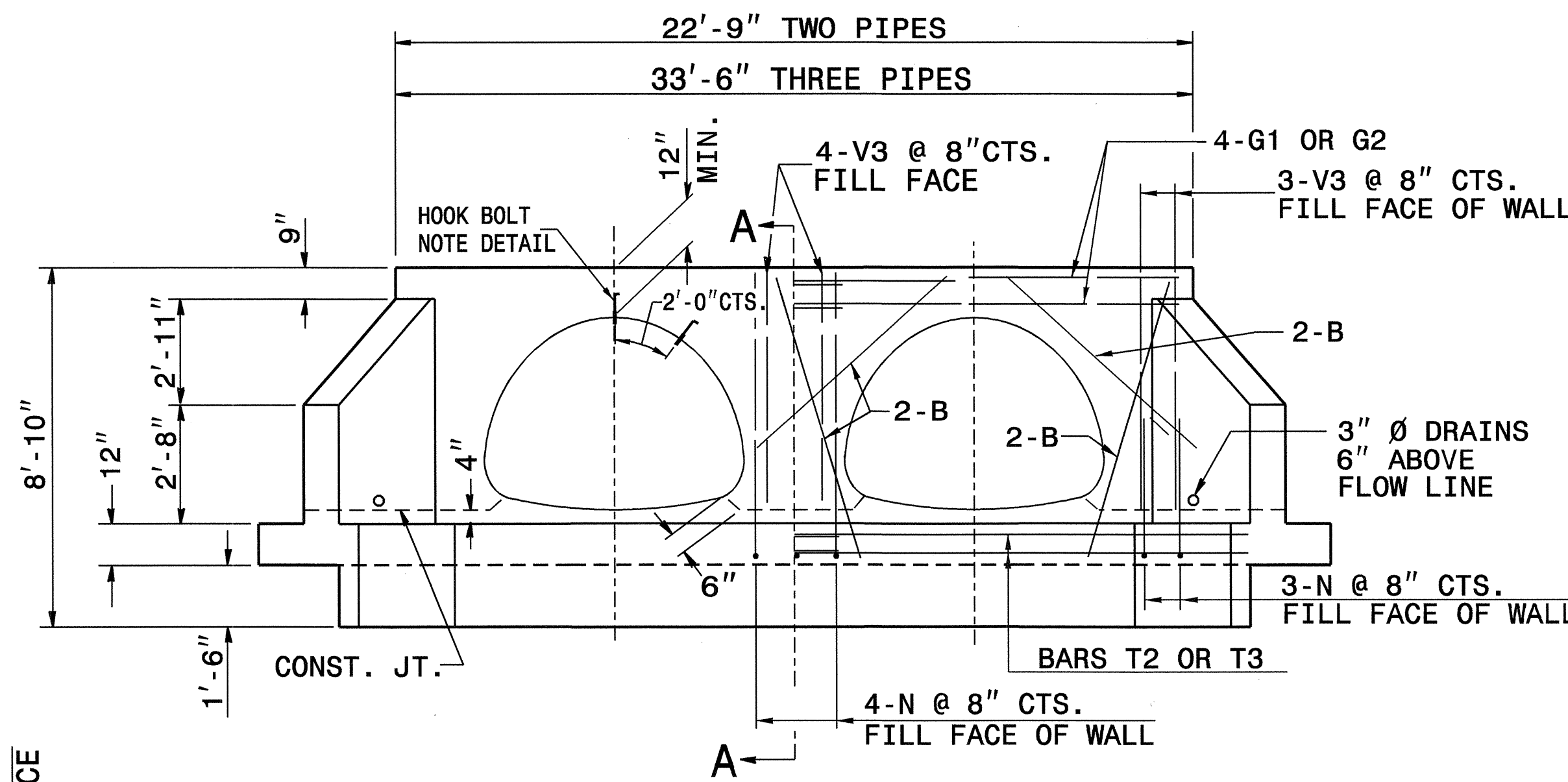


PLAN

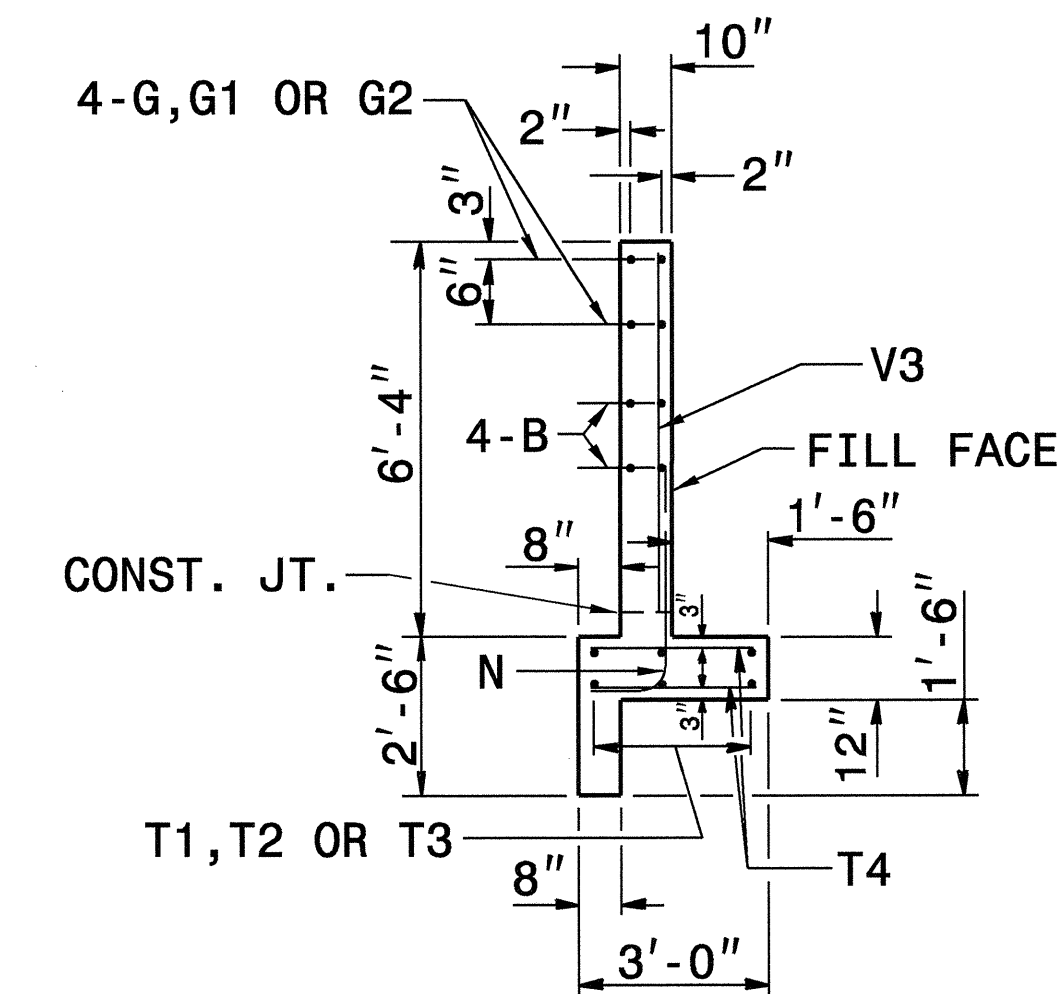


HOOK BOLT

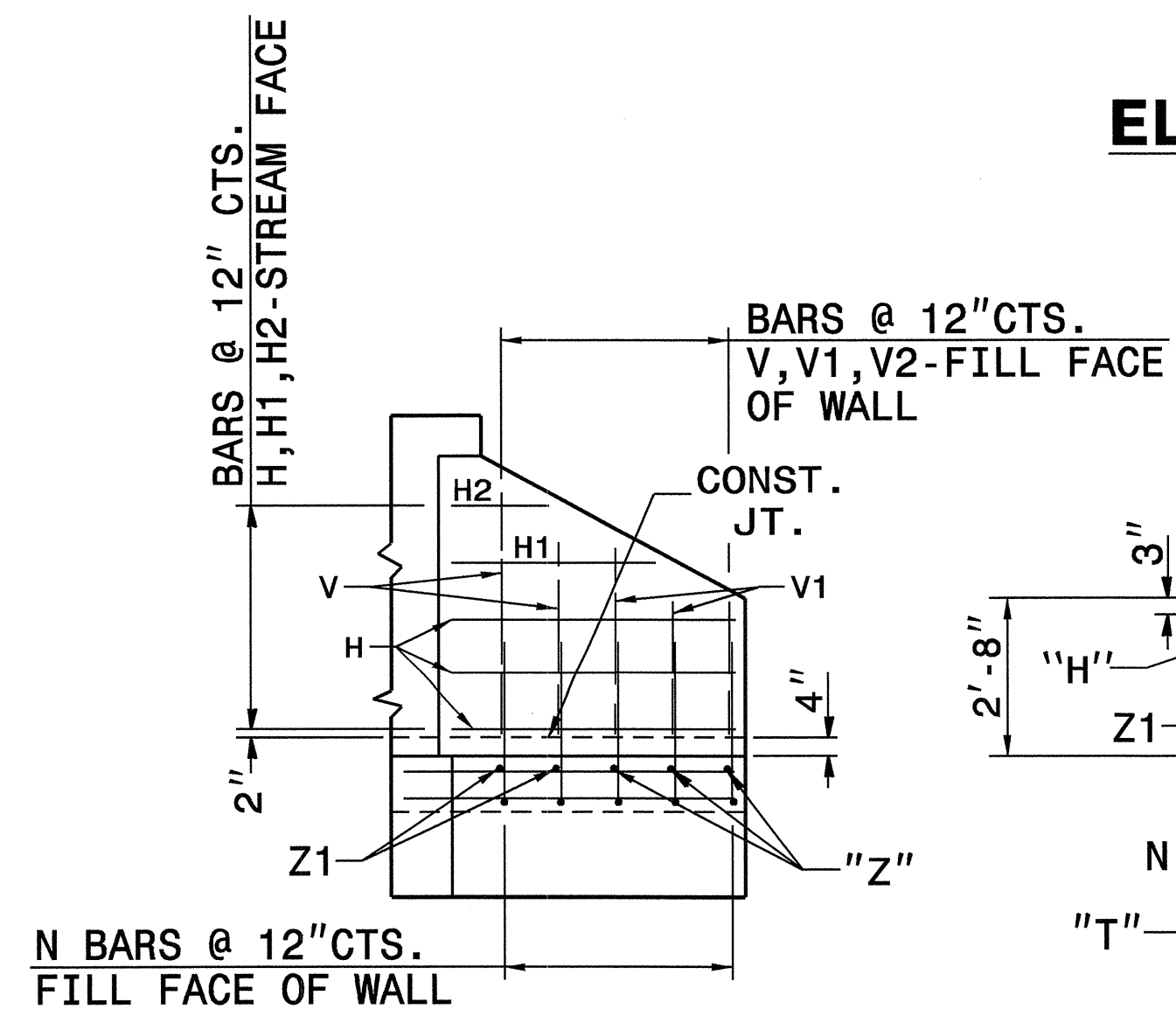
NOTE: CONSTRUCT HOOK BOLTS (ANCHORS) AT 2'-0" CTS. ALONG THE CIRCUMFERENCE OF THE 93" X 64" GSPA. EMBED THE HOOK BOLTS 6" IN DEPTH. THE GALVANIZED 3/4" DIA. HOOK BOLTS MUST MEET ASTM A-307 OR ASTM A-836. BOTH BOLTS AND NUTS MUST BE IN ACCORDANCE WITH ASTM A-153 FOR GALVANIZING.



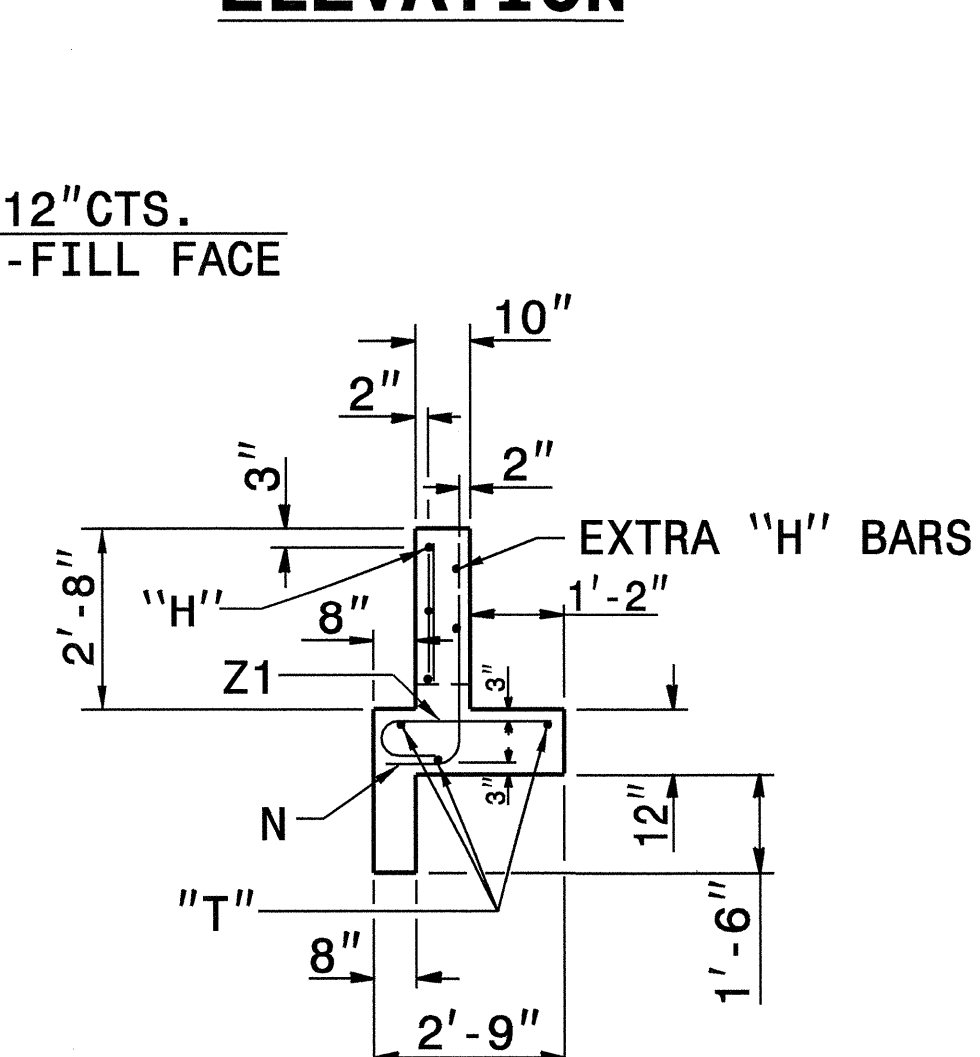
ELEVATION



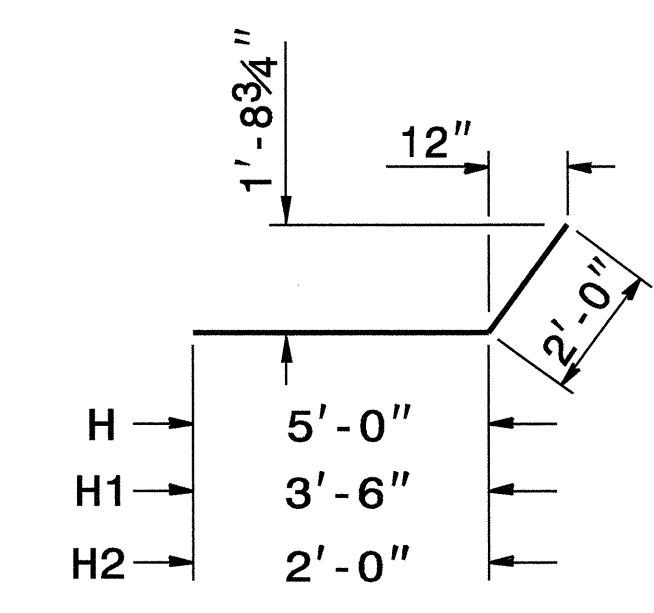
SECTION - AA



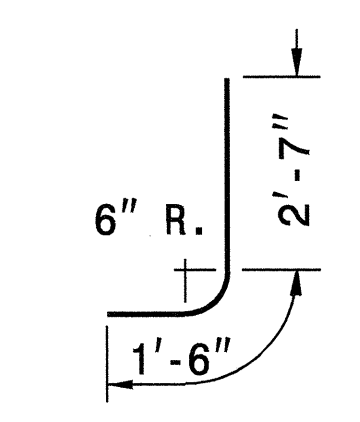
WING ELEVATION



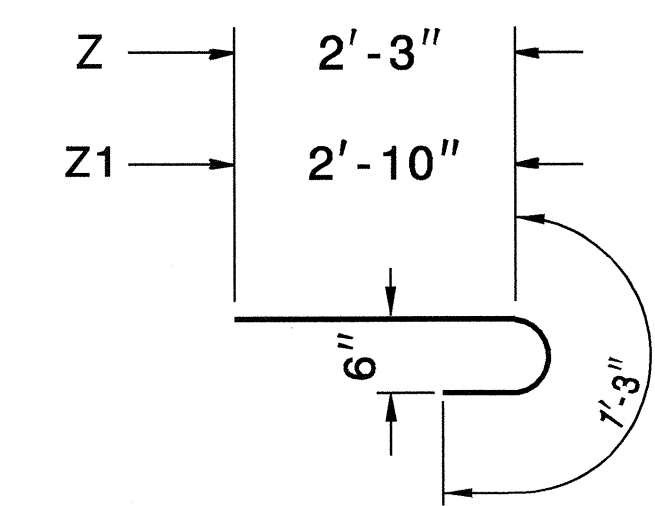
END OF WING



"H" BARS



"N" BARS

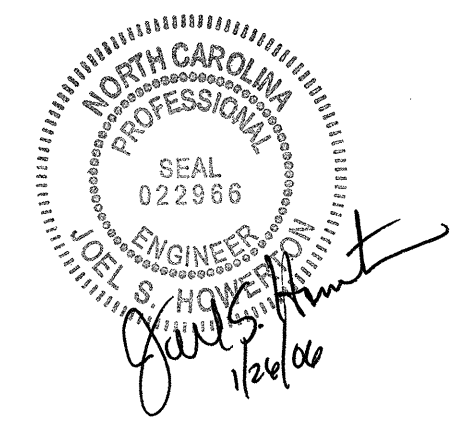


"Z" BARS

"H", "N", & "Z" BAR DIMENSIONS ARE OUT TO OUT.

DESIGN DATA

Specifications	A.A.S.H.T.O. (1977)
Steel in tension	20,000 LBS. PER SQ. IN.
Concrete in compression	1,200 LBS. PER SQ. IN.
Shear Class "A" Concrete	SEE A.A.S.H.T.O.
Equiv. fluid pressure of earth	30 LBS. PER CU. FT.



**PROJECT SERVICES UNIT
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**DETAIL OF REINFORCED
CONCRETE ENDWALL
FOR 95" X 67" (Pipe Arch)-90°**

ORIGINAL BY:	DATE:
MODIFIED BY: T.S. Spell	DATE: 9-19-05
CHECKED BY: J. Spell	DATE: 9/20/05
FILE SPEC.: w:\details\stand\endwpiparch93x64.dgn	

BILL OF MATERIAL FOR ENDWALL								
REINF. STEEL			1 PIPES		2 PIPES		3 PIPES	
BAR	SIZE	LENGTH	NO.	WEIGHT	NO.	WEIGHT	NO.	WEIGHT
B	#4	6'-6"	8	35	16	69	24	104
G	#5	11'-9"	4	49	-	-	-	-
G1	#5	12'-6"	-	-	8	104	-	-
G2	#5	17'-9"	-	-	-	-	8	148
H	#4	7'-0"	10	47	10	47	10	47
H1	#4	5'-6"	2	7	2	7	2	7
H2	#4	4'-0"	4	11	4	11	4	11
N	#4	4'-1"	16	44	20	55	24	65
T	#4	5'-0"	6	20	6	20	6	20
T1	#4	15'-0"	6	60	-	-	-	-
T2	#4	14'-0"	-	-	12	112	-	-
T3	#4	18'-3"	-	-	-	-	12	146
T4	#4	2'-9"	4	7	7	13	10	18
V	#4	4'-3"	6	17	6	17	6	17
V1	#4	3'-0"	6	12	6	12	6	12
V2	-	-	-	-	-	-	-	-
V3	#4	5'-10"	6	23	10	39	14	55
Z	#4	3'-6"	6	14	6	14	6	14
Z1	#4	4'-1"	4	11	4	11	4	11
REINF. STEEL LBS.			357		531		675	
CON./R.C. CU. YDS.			6.2		8.6		11.0	

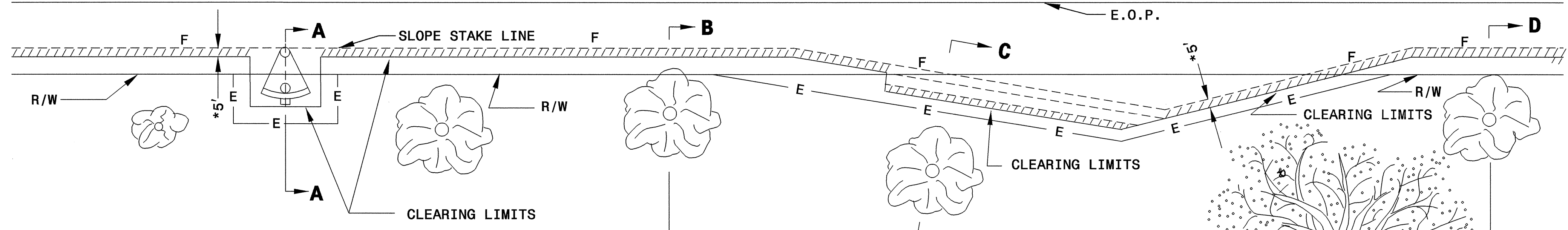
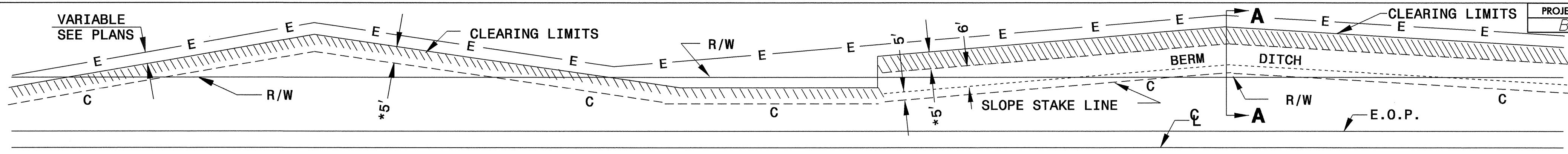
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-02

ENGLISH STANDARD DRAWING FOR
METHOD OF CLEARING

SHEET 1 OF 1
200D03

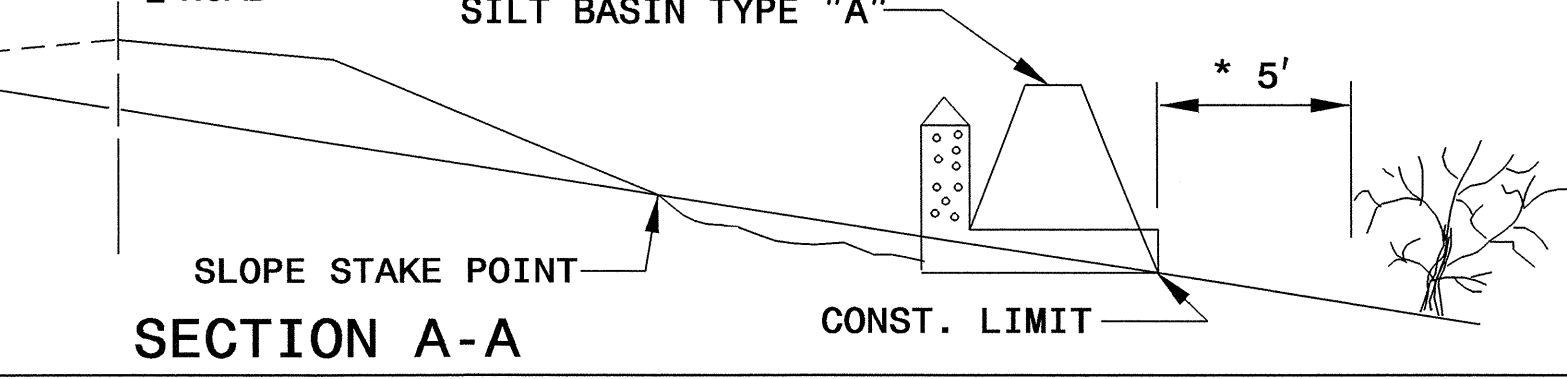
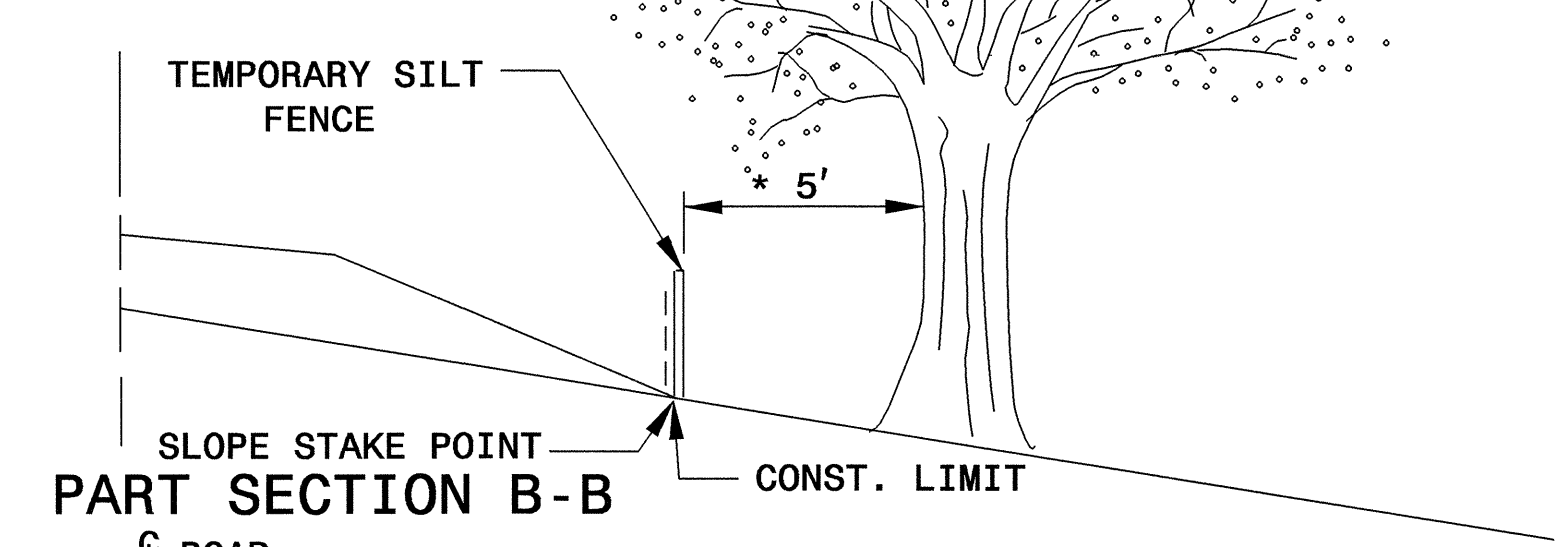
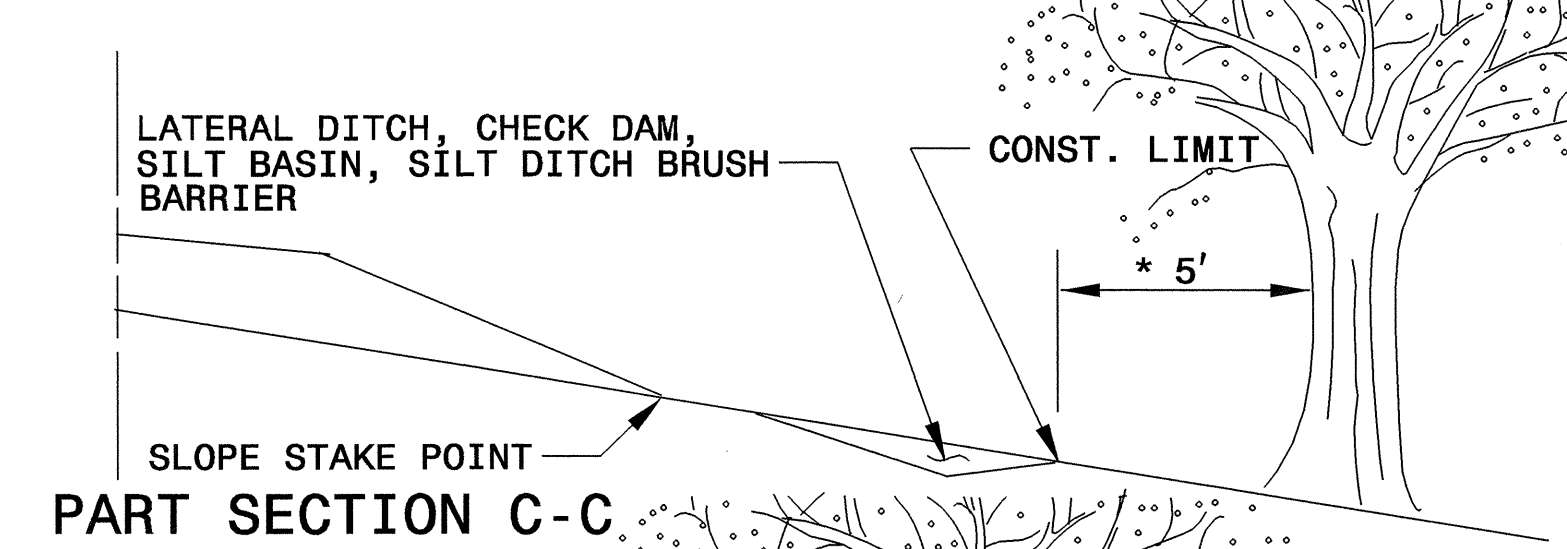
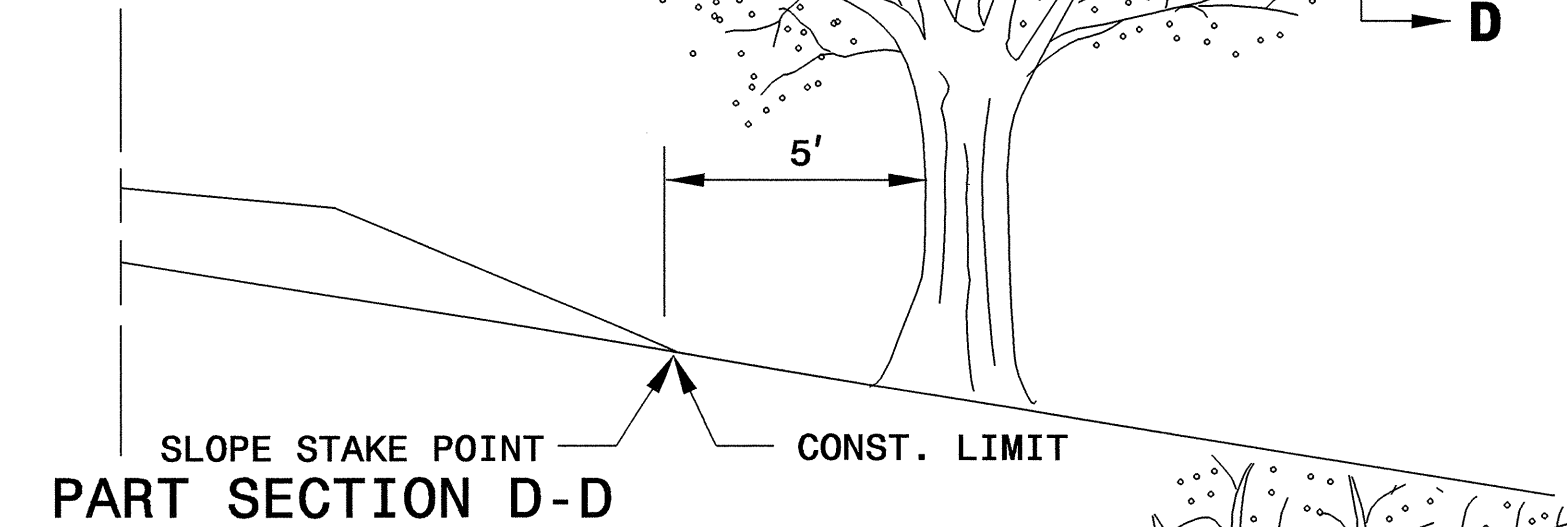
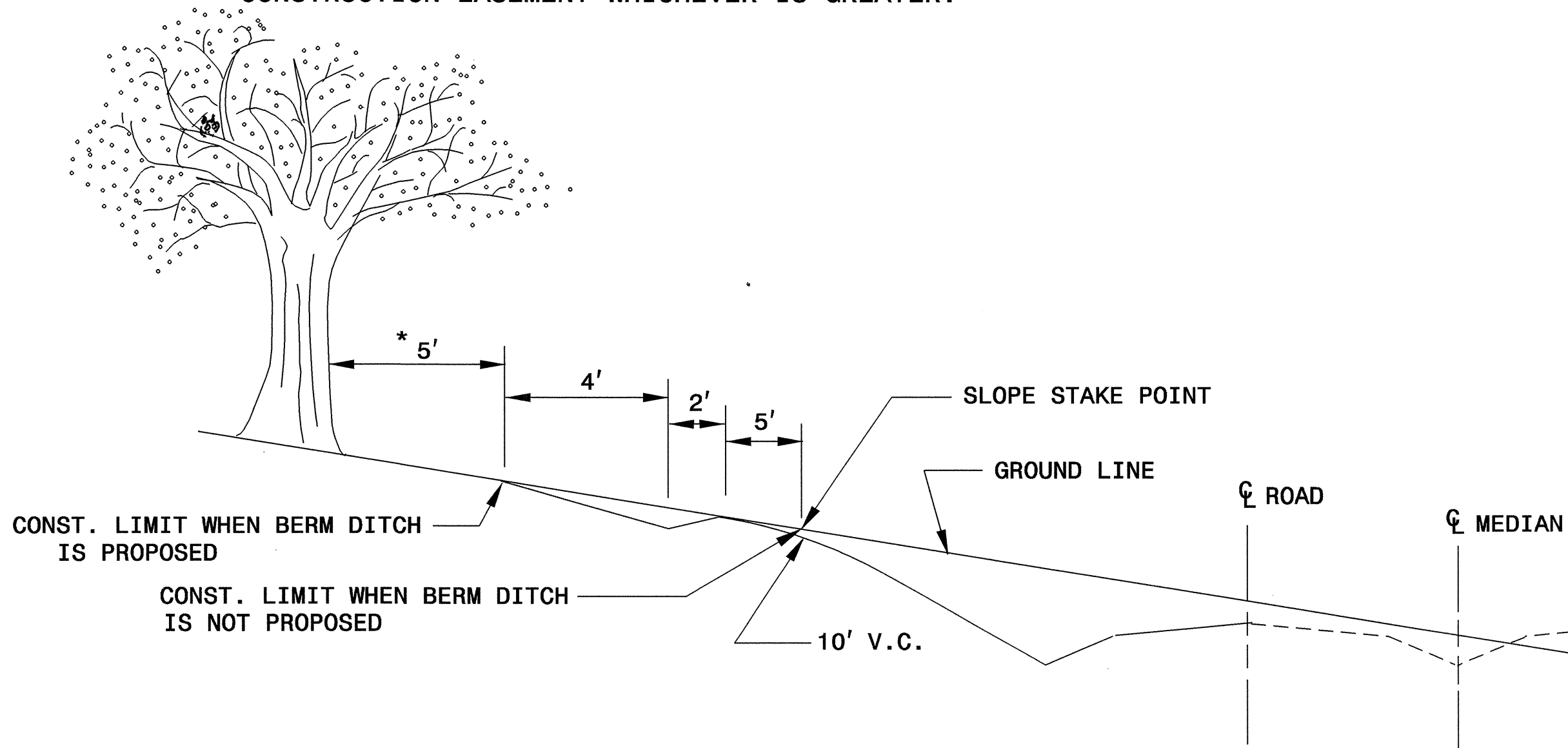


GENERAL NOTES:

1. REMOVE TREES OUTSIDE THE CLEARING LIMIT WHEN, IN THE OPINION OF THE ENGINEER, THE UTILITY OF A TREE WILL BE DESTROYED BY THE CONSTRUCTION OR THE CLEARING OPERATION.
2. CLEAR IN ACCORDANCE WITH THIS STANDARD EXCEPT WHERE ADDITIONAL CLEARING IS REQUIRED FOR SAFETY AS SHOWN ON THE PLANS.

CLEARING LIMITS

- (A) CUTS -- CLEAR TO 5' BEYOND CONSTRUCTION LIMITS.
- (B) FILLS -- CLEAR TO 5' BEYOND CONSTRUCTION LIMITS, UNLESS SPECIFIED OTHERWISE BY WETLAND PERMIT.
- (C) CUTS AND FILLS -- WHEN THE CLEARING LIMITS (A AND B) EXCEED THE PROPOSED R/W OR PROPOSED CONSTRUCTION EASEMENTS, THEN CLEAR ONLY TO THE R/W OR CONSTRUCTION EASEMENT WHICHEVER IS GREATER.



PROJECT REFERENCE NO.
B-3636

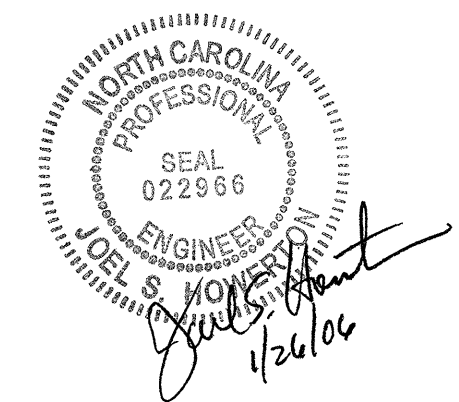
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-02

ENGLISH STANDARD DRAWING FOR
METHOD OF CLEARING

SHEET 1 OF 1
200D03



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201469

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION	204400000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE	600000000-E	1605	2,550	LF	TEMPORARY SILT FENCE
000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING	205500000-E	815	3	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS	606000000-E	1610	75	TON	STONE FOR EROSION CONTROL, CLASS A
000100000-E	200	Lump Sum		CLEARING & GRUBBING .. ACRE(S)	206600000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET	609000000-E	1610	100	TON	STONE FOR EROSION CONTROL, CLASS B
000800000-E	200	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING	207700000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)	601200000-E	1610	50	TON	SEDIMENT CONTROL STONE
002200000-E	225	222	CY	UNCLASSIFIED EXCAVATION	222000000-E	838	13	CY	REINFORCED ENDWALLS	601500000-E	1615	3	ACR	TEMPORARY MULCHING
002900000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (18+19.00)	228600000-N	840	2	EA	MASONRY DRAINAGE STRUCTURES	601800000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
003600000-E	225	100	CY	UNDERCUT EXCAVATION	236700000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29	602100000-E	1620	0.5	TON	FERTILIZER FOR TEMPORARY SEEDING
010600000-E	230	905	CY	BORROW EXCAVATION	255600000-E	846	65	LF	SHOULDER BERM GUTTER	602900000-E	SP	300	LF	SAFETY FENCE
013400000-E	240	155	CY	DRAINAGE DITCH EXCAVATION	303000000-E	862	1,400	LF	STEEL BM GUARDRAIL	603000000-E	1630	15	CY	SILT EXCAVATION
015600000-E	250	1,070	SY	REMOVAL OF EXISTING ASPHALT PAVEMENT	315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	603600000-E	1631	250	SY	MATTING FOR EROSION CONTROL
019500000-E	265	500	CY	SELECT GRANULAR MATERIAL	321500000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III	604200000-E	1632	40	LF	1/4" HARDWARE CLOTH
019600000-E	270	500	SY	FABRIC FOR SOIL STABILIZATION	327000000-N	SP	8	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	6048 607000000-N	SP SP	200 1	SY EA	Floating Turbidity Curtain SPECIAL STILLING BASINS
031800000-E	300	14	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	362800000-E	876	50	TON	PLAIN RIP RAP, CLASS I	608400000-E	1660	2.5	ACR	SEEDING & MULCHING
066000000-E	310	40	LF	****BIT COAT CS PIPE CULVERTS, TYPE A ***** THICK (15", 0.064")	364900000-E	876	2	TON	PLAIN RIP RAP, CLASS B	608700000-E	1660	1.5	ACR	MOWING
068000000-E	310	4	EA	*** BIT COAT CS PIPE ELBOWS, TYPE A ***** THICK (15", 0.064")	365600000-E	876	275	SY	FILTER FABRIC FOR DRAINAGE	609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
096200000-E	320	76	LF	*** X *** CAA STRUCTURAL PLATE PIPE ARCH, ***** THICK (95" X 67", 0.109")	441200000-E	SP	256	SF	WORK ZONE SIGNS (STATIONARY)	609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
101100000-N	500	Lump Sum		FINE GRADING	441220000-E	SP	119	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)	609600000-E	1662	75	LB	SEED FOR SUPPLEMENTAL SEEDING
148900000-E	610	506	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	442500000-N	1125	2	EA	WARNING FLAG SETS	610800000-E	1665	2	TON	FERTILIZER TOPDRESSING
152500000-E	SP	430	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	444610000-E	SP	120	LF	BARRICADES (TYPE III)	611100000-E	SP	30	LF	IMPERVIOUS DIKE
156000000-E	620	51	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	530000000-E	1505	28	TON	FOUNDATION CONDITIONING MATERIAL, UTILITIES CLASS ***** (VI)	611400000-N	SP	2	HR	SPECIALIZED HAND MOWING
202200000-E	815	23	CY	SUBDRAIN EXCAVATION	530600000-E	SP	28	TON	BEDDING MATERIAL, UTILITIES CLASS ***** (IV)	613200000-N	SP	4	EA	GENERIC EROSION CONTROL ITEM RESPONSE FOR EROSION CONTROL
203300000-E	815	17	CY	SUBDRAIN FINE AGGREGATE	544400000-E	1510	530	LF	6" PVC WATER PIPE, SDR ***** (21, 200# WP)	805600000-N	402	Lump Sum		REMOVAL OF EXISTING STRUCTURE AT STATION ***** (10+81.00)
					548000000-E	1510	350	LB	DUCTILE IRON WATER PIPE FITTINGS, 250# MIN WP					

5/28/99

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\$\$\$\$SERIAL\$\$\$\$

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK
 IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	UNDERCUT	EMBNK + %	BORROW	WASTE
7+55.00 -L-	17+70.00 -L-	165		926	761	
	Subtotal	165		926	761	
18+68.00 -L-	21+75.00 -L-	54		151	97	
	Subtotal	54		151	97	
	Total	219		1077	858	
	5% for Borrow Pit				43	
	Grand Total	219			901	
	Say	222			905	
	Undercut		100			
	DDE = 155 CY					

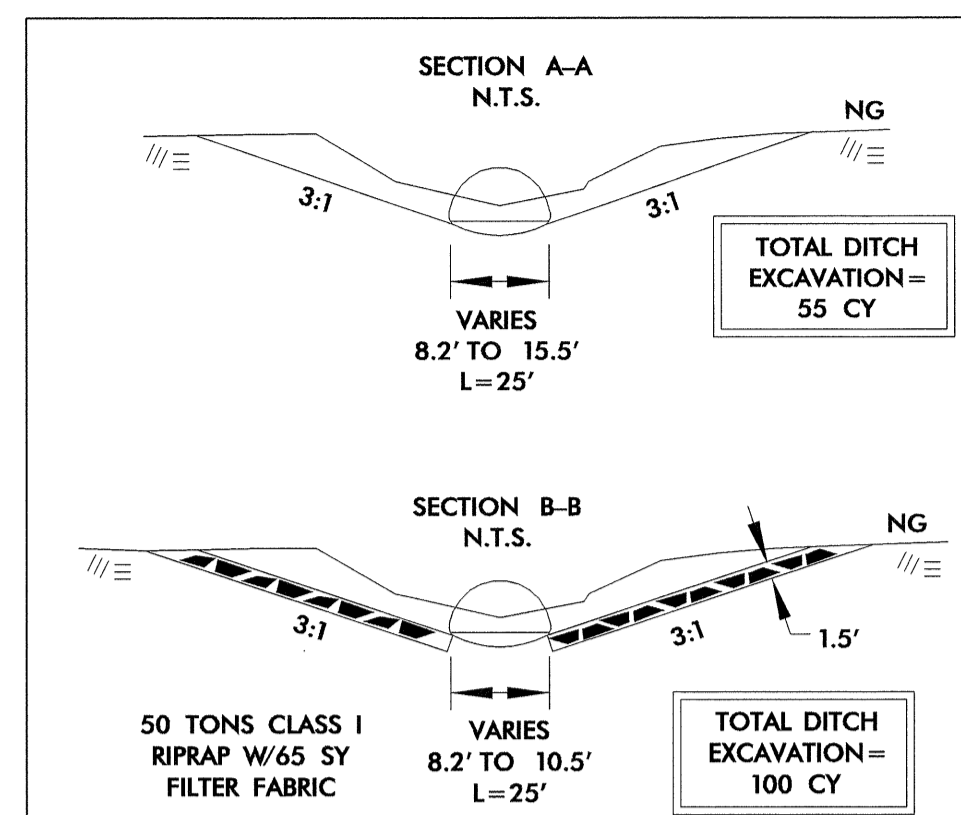
SUMMARY OF ASPHALT PAVEMENT REMOVAL
 IN SQUARE YARDS

STATION	STATION	ASPHALT REMOVAL	ASPHALT BREAKUP	CONC. REMOVAL	CONC. BREAKUP
10+50.00 -L-	11+50.00 -L-	211			
15+00.00 -L-	17+86.00 -L-	604			
18+52.00 -L-	19+70.00 -L-	249			
	TOTAL	1064 SY			
	Say	1070 SY			

7/2/99

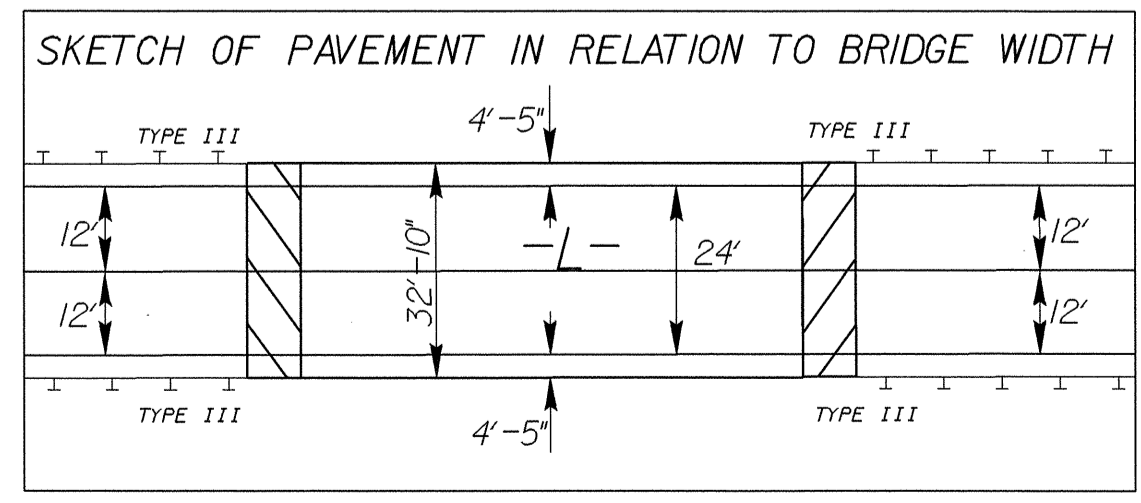
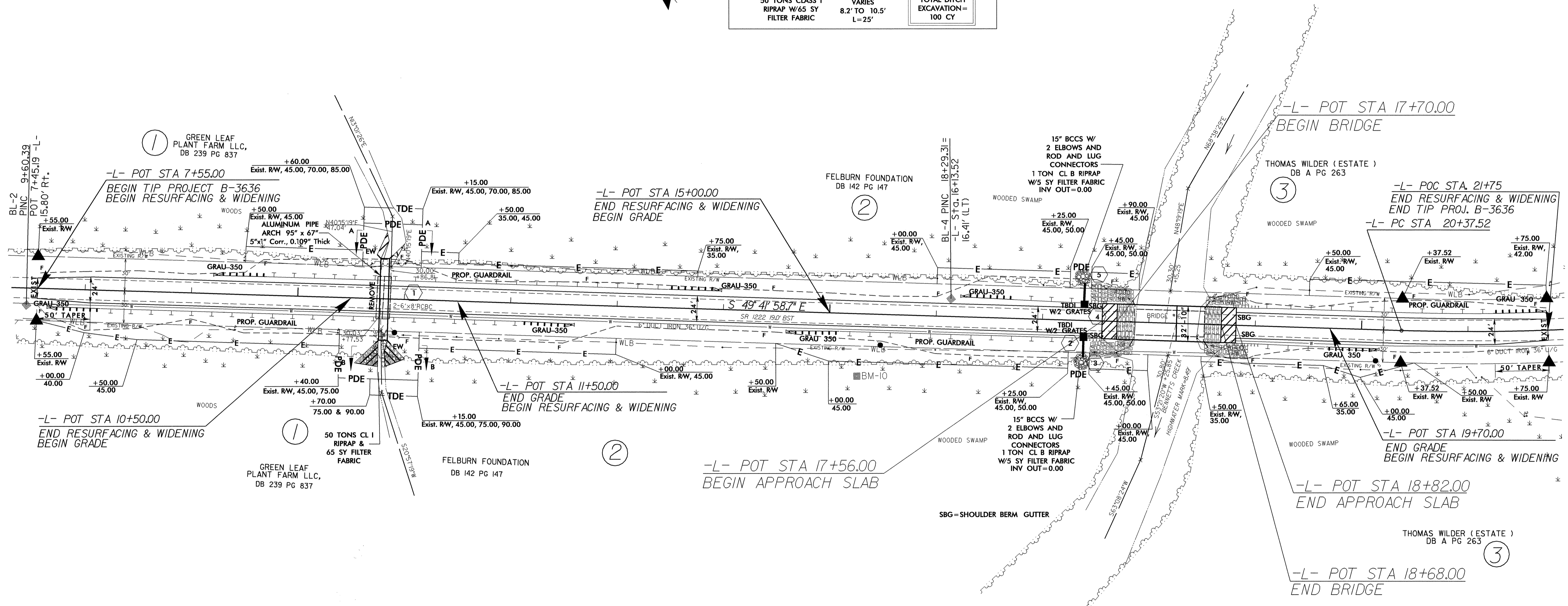
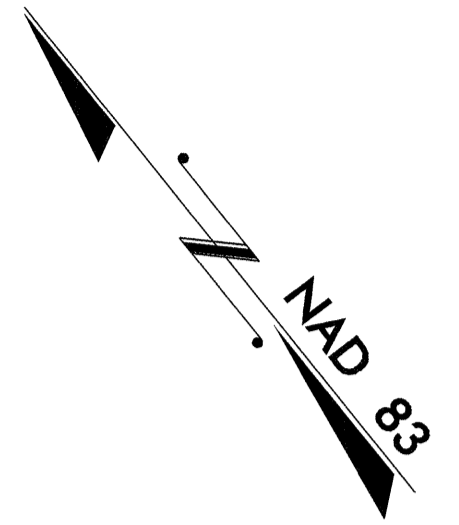
SEE SHEETS S-1 THRU S-18 FOR STRUCTURE PLANS
SEE SHEET 5 FOR -L- PROFILE

PROJECT REFERENCE NO. B-3636	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER



-L-

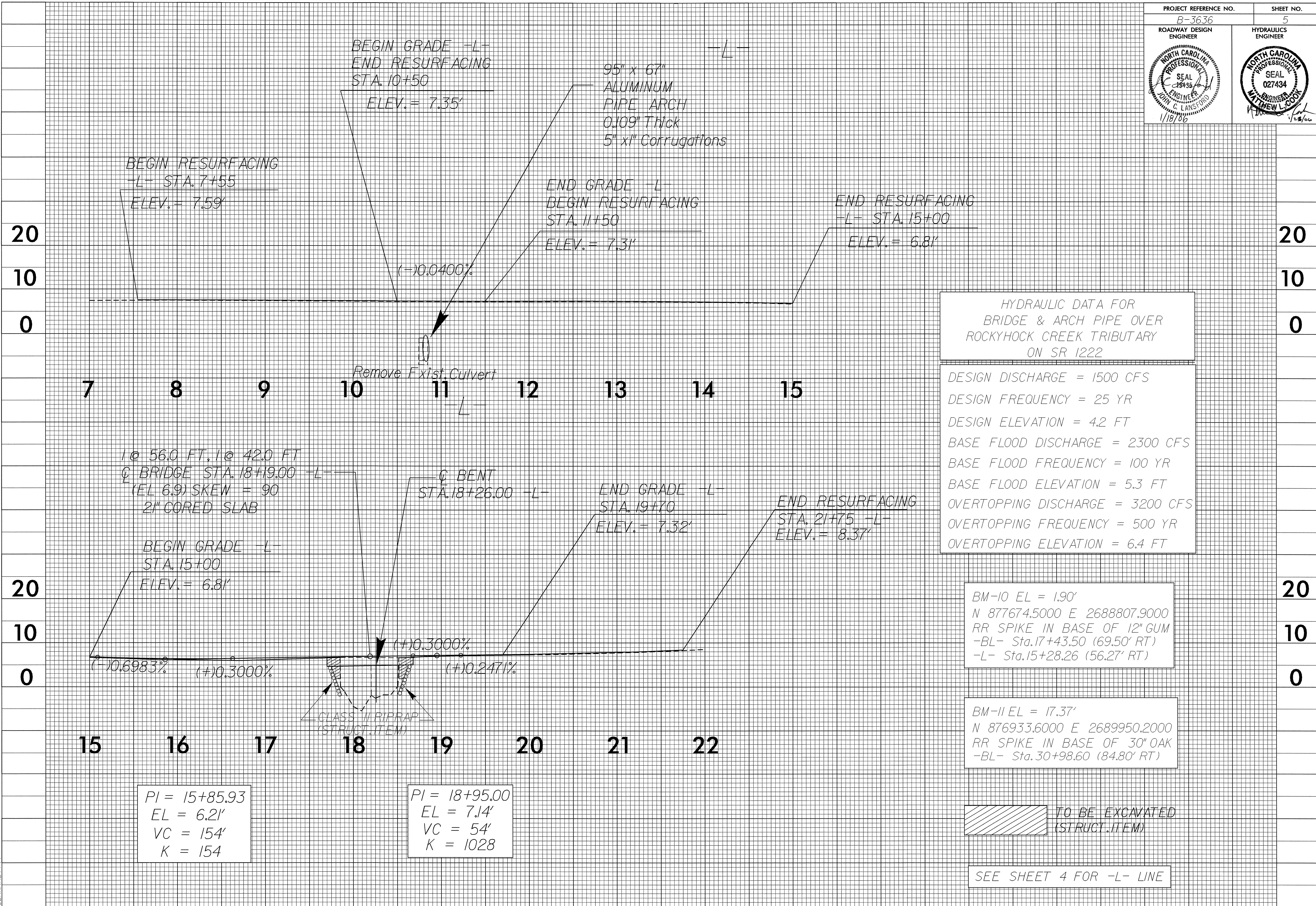
PI Sta 23+04.74
 $\Delta = 15^{\circ} 29' 33.4''$ (LT)
 $D = 2^{\circ} 55' 00.0''$
 $L = 531.18'$
 $T = 267.22'$
 $R = 1,964.43'$



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5/14/99

PROJECT REFERENCE NO. B-3636	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



HYDRAULIC DATA FOR
BRIDGE & ARCH PIPE OVER
ROCKYHOCK CREEK TRIBUTARY
ON SR 1222

DESIGN DISCHARGE = 1500 CFS
DESIGN FREQUENCY = 25 YR
DESIGN ELEVATION = 4.2 FT
BASE FLOOD DISCHARGE = 2300 CFS
BASE FLOOD FREQUENCY = 100 YR
BASE FLOOD ELEVATION = 5.3 FT
OVERTOPPING DISCHARGE = 3200 CFS
OVERTOPPING FREQUENCY = 500 YR
OVERTOPPING ELEVATION = 6.4 FT

BM-10 EL = 1.90'
N 877674.5000 E 2688807.9000
RR SPIKE IN BASE OF 12" GUM
-BL- Sta.17+43.50 (69.50' RT)
-L- Sta.15+28.26 (56.27' RT)

BM-11 EL = 17.37'
N 876933.6000 E 2689950.2000
RR SPIKE IN BASE OF 30" OAK
-BL- Sta.30+98.60 (84.80' RT)

PI = 15+85.93
EL = 6.2'
VC = 154'
K = 154

PI = 18+95.00
EL = 7.14'
VC = 54'
K = 1028

TO BE EXCAVATED
(STRUCT. ITEM)

SEE SHEET 4 FOR -L- LINE

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