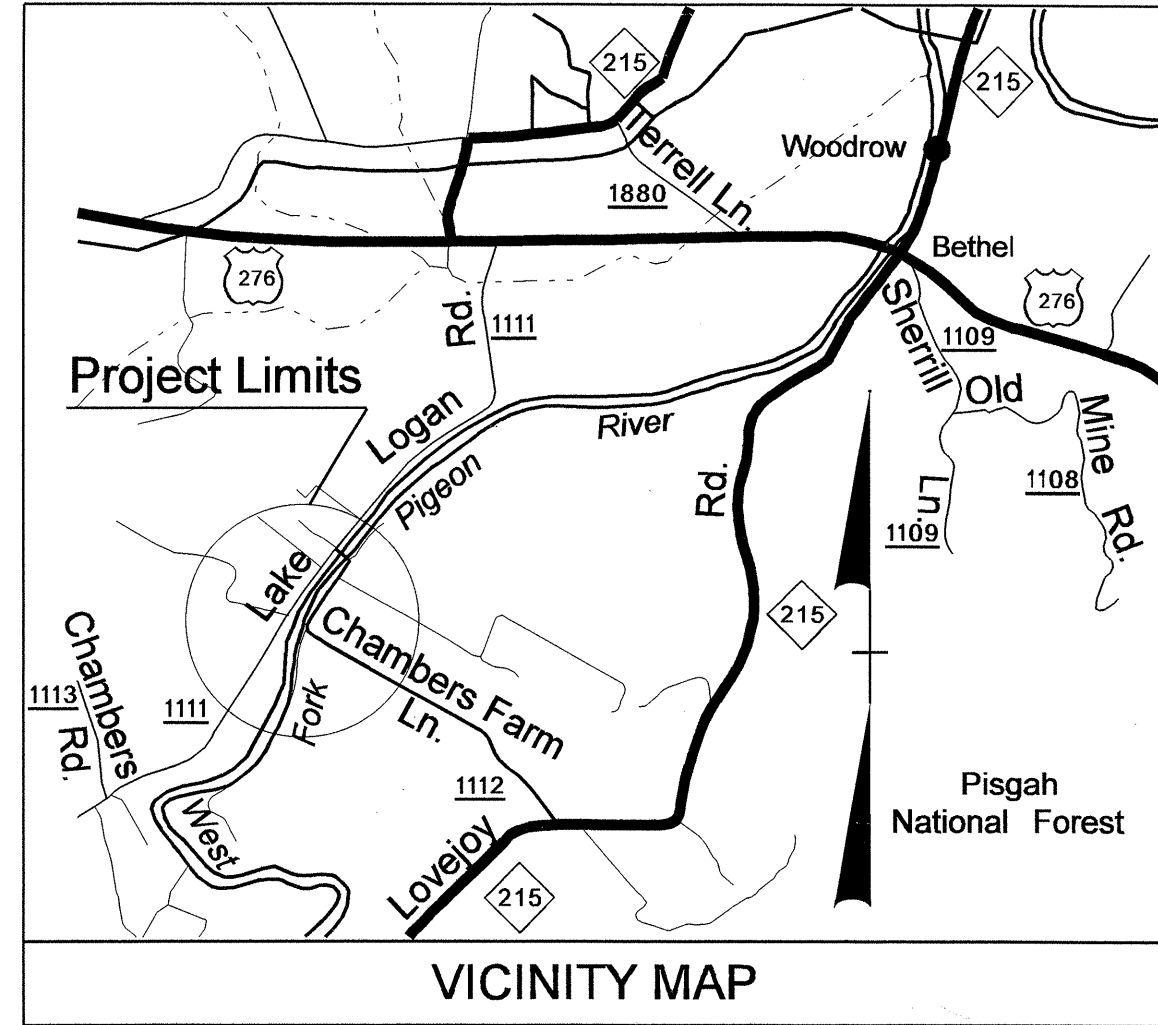


09/08/09

TIP PROJECT: B-3187

CONTRACT: C202323

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

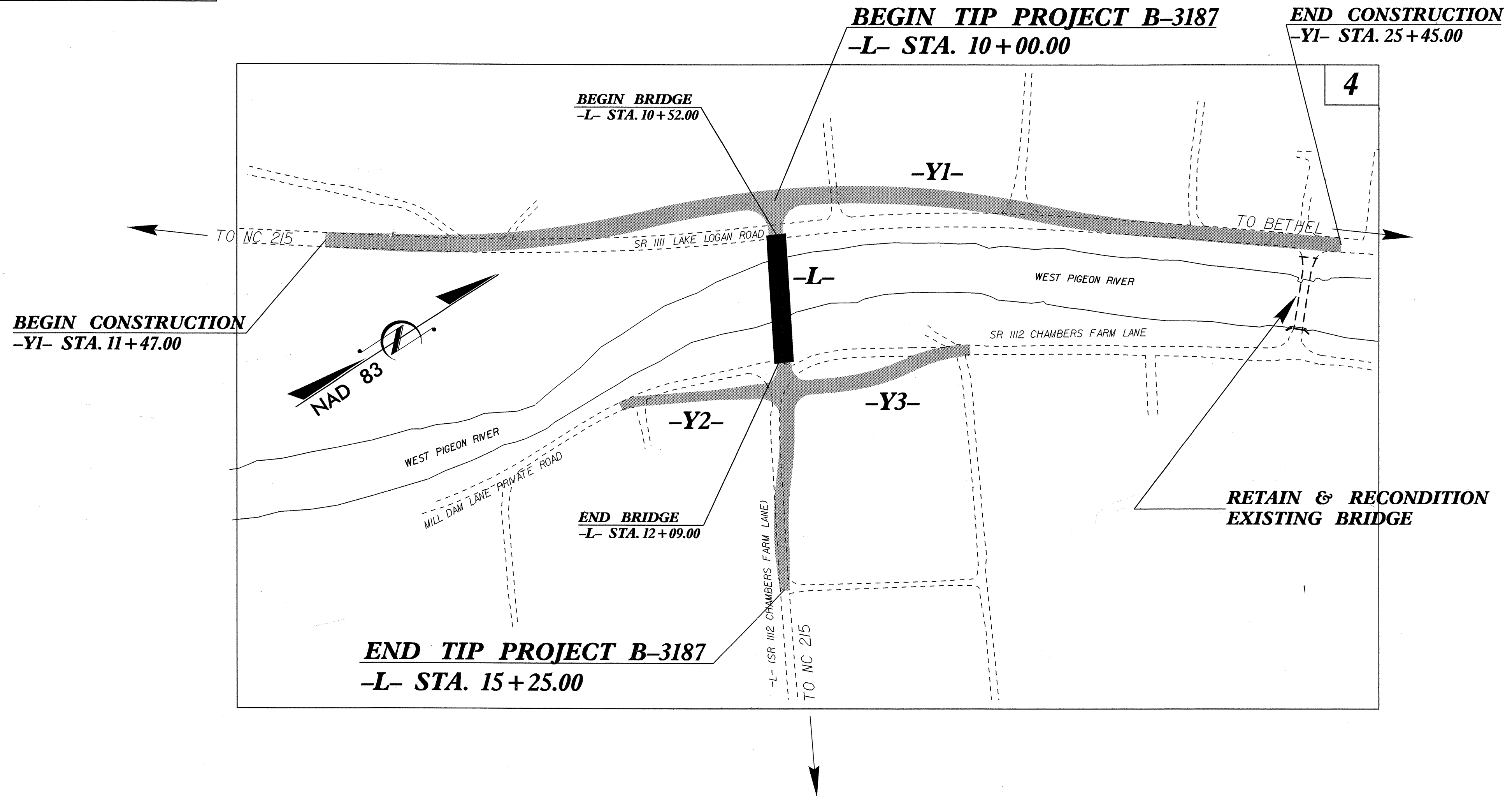


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
HAYWOOD COUNTY

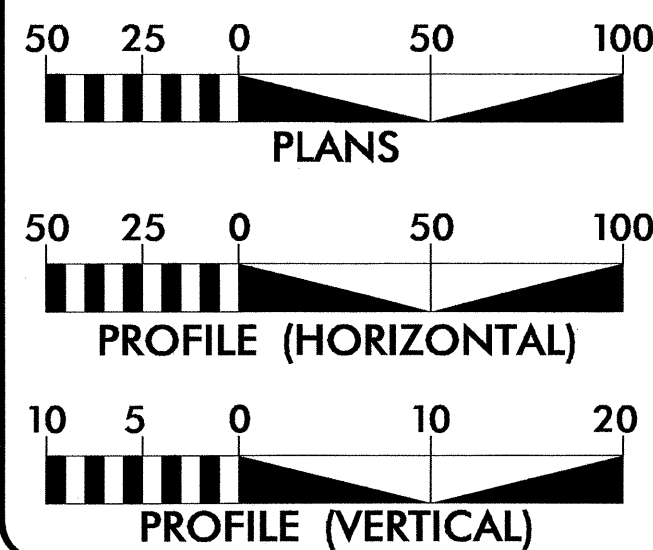
LOCATION: Bridge #79 on SR 1112 (Chambers Farm Lane)
over West Fork Pigeon River

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3187	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
32919.1.1	BRZ-1112(2)	PE	
32919.2.1	BRZ-1112(2)	RW AND UTILITIES	
32919.3.1	BRZ-1112(2)	CONST.	



GRAPHIC SCALES



DESIGN DATA

ADT 2010 = 185 VPD
ADT 2030 = 400 VPD
DHV = 10 %
D = 60 %
T = 4 % *
V = 25 MPH
* TTST 1% DUAL 3%
Sub Regional Tier

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3187 = 0.069 Miles
LENGTH STRUCTURE TIP PROJECT B-3187 = 0.030 Miles
TOTAL LENGTH TIP PROJECT B-3187 = 0.099 Miles

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

2006 STANDARD SPECIFICATIONS
RIGHT OF WAY DATE:
February 20, 2009

LETTING DATE:
SEPTEMBER 20, 2011

JAMES SPEER, PE
PROJECT ENGINEER

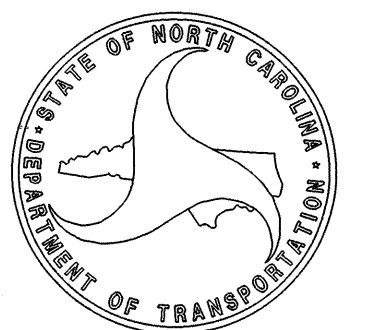
JOHN LANSFORD, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SEAL 31977
ENGINEER
KEVIN B. ALFORD
SIGNATURE: *K. Bagg* 12-14-10 P.E.

ROADWAY DESIGN ENGINEER

JOHN C. FRISFORD
SEAL 1543512
ENGINEER
JOHN C. FRISFORD
SIGNATURE: *John C. Frisford*

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



JOHN M. MILLER
STATE HIGHWAY DESIGN ENGINEER

13-DEC-2010 09:12
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\$\$\$\$\$USERNAME\$\$\$\$\$



8/17/09

20 JUN 2011 09:25 b3187_rdy_tsh.dgn
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SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C THRU 1-D	SURVEY CONTROL SHEETS
2 THRU 2-A	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-B	TYPE III-SHOP CURVED STRUCTURE ANCHOR UNIT DETAIL
2-C THRU 2-D	METHOD OF PIPE INSTALLATION DETAIL
2-E	ANCHORAGE FOR FRAMES DETAIL
2-F	TIMBER BOLLARD DETAIL
2-G	CONCRETE DRIVEWAY DETAIL
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF EARTHWORK, SUMMARY OF PAVEMENT REMOVAL
3-B	LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" AND UNDER), GUARDRAIL SUMMARY
4	PLAN SHEET
5 THRU 6	PROFILE SHEET
TCP-1 THRU TCP-8	TRAFFIC CONTROL PLANS
SD-1	SPECIAL SIGN DESIGN PLAN
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIGN-1 THRU SIGN-2	SIGNING PLANS
UD-1 THRU UD-2	UTILITIES BY OTHERS
X-1	CROSS-SECTION SUMMARY
X-2 THRU X-26	CROSS-SECTIONS
S-1 THRU S-27	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 II.

SUPERELEVATION:
 ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:
 ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

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.

DRIVEWAYS:
 STREET TURNOUT:
 STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

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.

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 AT&T Telephone, Haywood Electric Membership Corp., Mountain Cable.

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

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

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
DIVISION 3 - PIPE CULVERTS	
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.19	Concrete Grated Drop Inlet Type "D" - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.28	Brick Grated Drop Inlet Type "D" - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
848.04	Street Turnout
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

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

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	⑫③
Existing Fence Line	✕-✕-✕
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	WLB
Proposed Wetland Boundary	WLB
Existing Endangered Animal Boundary	EAB
Existing Endangered Plant Boundary	EPB

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	□

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	□
Jurisdictional Stream	JS
Buffer Zone 1	BZ 1
Buffer Zone 2	BZ 2
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	WLB
Proposed Lateral, Tail, Head Ditch	←
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	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	○
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	○
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	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	⊕
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	U/L
U/G Tank; Water, Gas, Oil	□
A/G Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	○
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

3/15/06

SURVEY CONTROL SHEET B-3187

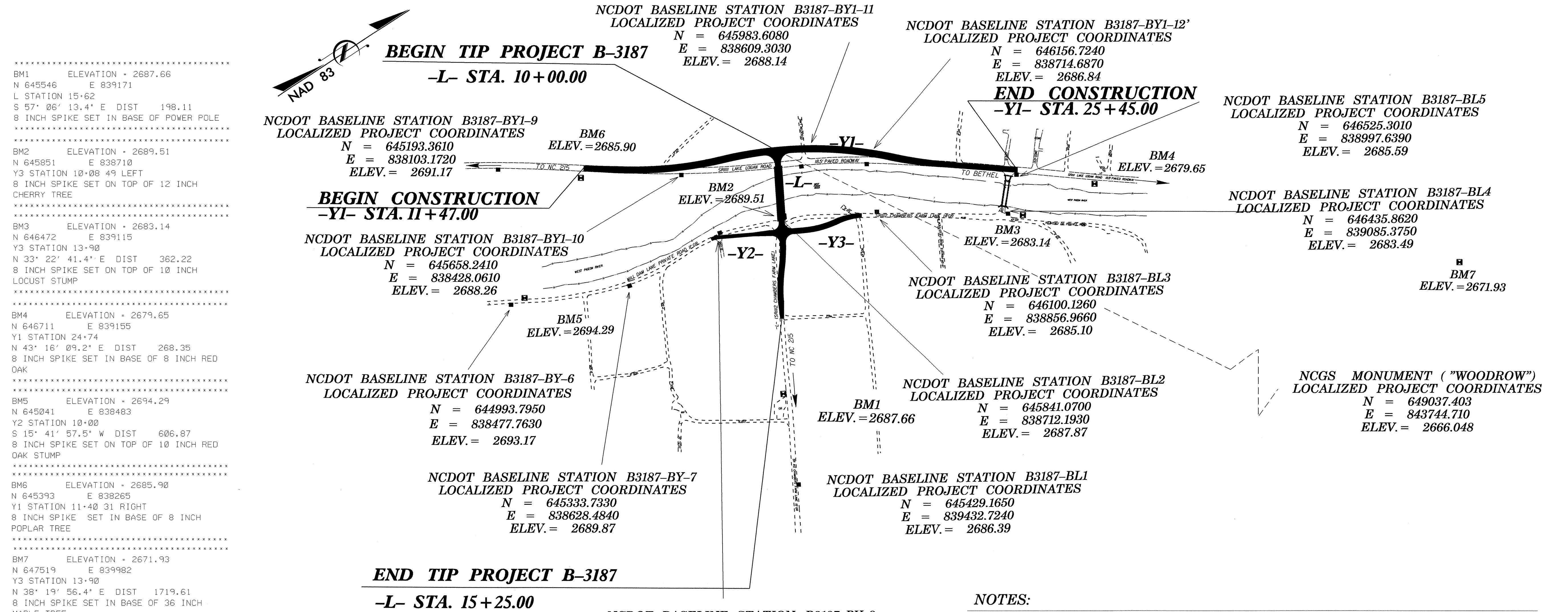
PROJECT REFERENCE NO.	SHEET NO.
B-3187	I-C
Location and Surveys	

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	645429.2220	839432.7370	2686.39	OUTSIDE PROJECT LIMITS	
2	BL-2	645841.0700	838712.1930	2687.87	12+13.31	0.76 RT
3	BL-3	646100.1260	838856.9660	2685.10	12+10.13	295.99 LT
4	BL-4	646435.8620	839085.3750	2683.49	12+41.38	700.85 LT
5	BL-5	646525.3010	838997.6390	2685.59	11+20.79	734.83 LT

BY1 POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
9	BY1-9	645193.3610	838103.1720	2691.17	OUTSIDE PROJECT LIMITS	
10	BY1-10	645658.2410	838428.0610	2688.26	14+47.09	24.65 RT
11	BY1-11	645983.6080	838609.3030	2688.14	18+24.67	53.24 RT
12	BY1-12	646156.7240	838714.6870	2686.84	20+34.45	34.77 RT
5	BL-5	646525.3010	838997.6390	2685.59	OUTSIDE PROJECT LIMITS	

BY POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
6	BY-6	644993.7950	838477.7630	2693.17	OUTSIDE PROJECT LIMITS	
7	BY-7	645333.7330	838628.4840	2689.87	OUTSIDE PROJECT LIMITS	
8	BY-8	645658.1670	838644.8130	2688.80	10+28.72	13.41 LT
2	BL-2	645841.0700	838712.1930	2687.87	OUTSIDE PROJECT LIMITS	

BL POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
1	BL-1	645429.2220	839432.7370	2686.39	OUTSIDE PROJECT LIMITS	
2	BL-2	645841.0700	838712.1930	2687.87	10+00.10	41.95 LT
3	BL-3	646100.1260	838856.9660	2685.10	12+99.73	12.18 LT
4	BL-4	646435.8620	839085.3750	2683.49	OUTSIDE PROJECT LIMITS	
5	BL-5	646525.3010	838997.6390	2685.59	OUTSIDE PROJECT LIMITS	



.....
 BM1 ELEVATION = 2687.66
 N 645546 E 839171
 L STATION 15+62
 S 57° 06' 13.4" E DIST 198.11
 8 INCH SPIKE SET IN BASE OF POWER POLE

 BM2 ELEVATION = 2689.51
 N 645851 E 838710
 Y3 STATION 10+08 49 LEFT
 8 INCH SPIKE SET ON TOP OF 12 INCH CHERRY TREE

 BM3 ELEVATION = 2683.14
 N 646472 E 839115
 Y3 STATION 13+90
 N 33° 22' 41.4" E DIST 362.22
 8 INCH SPIKE SET ON TOP OF 10 INCH LOCUST STUMP

 BM4 ELEVATION = 2679.65
 N 646711 E 839155
 Y1 STATION 24+74
 N 43° 16' 09.2" E DIST 268.35
 8 INCH SPIKE SET IN BASE OF 8 INCH RED OAK

 BM5 ELEVATION = 2694.29
 N 645041 E 838483
 Y2 STATION 10+00
 S 15° 41' 57.5" W DIST 606.87
 8 INCH SPIKE SET ON TOP OF 10 INCH RED OAK STUMP

 BM6 ELEVATION = 2685.90
 N 645393 E 838265
 Y1 STATION 11+40 31 RIGHT
 8 INCH SPIKE SET IN BASE OF 8 INCH POPLAR TREE

 BM7 ELEVATION = 2671.93
 N 647519 E 839982
 Y3 STATION 13+90
 N 38° 19' 56.4" E DIST 1719.61
 8 INCH SPIKE SET IN BASE OF 36 INCH MAPLE TREE

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "WOODROW"
 WITH NAD 83 STATE PLANE GRID COORDINATES OF
 NORTHING: 649037.403(±) EASTING: 843744.710(±)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: .999757089
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "WOODROW" TO -L- L STATION 10+00.00 IS
 S 54° 52' 50" W 7083.46
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NGVD 29

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B3187_LS_CONTROL_070807.TXT

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

NOTE: DRAWING NOT TO SCALE

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

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SURVEY CONTROL SHEET B-3187

PROJECT REFERENCE NO. B3187	SHEET NO. 1-D
Location and Surveys	

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+90.00	-30.00	645828.9796	838794.6849
L	13+69.73	30.00	645733.7243	838823.8002
L	14+64.47	30.00	645675.8669	838905.6923
L	15+25.00	30.00	645645.7721	838958.2118
L	15+25.00	7.11	645665.6326	838969.5922
L	15+25.00	-30.00	645697.8310	838988.0426
L	15+25.00	-6.89	645677.7796	838976.5528
L	14+64.47	-30.00	645727.9258	838935.5231
L	13+69.73	-30.00	645779.2333	838862.9018
L	10+95.00	71.00	645838.9507	838574.6182

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y1	11+47.00	-30.00	645434.3175	838220.1019
Y1	11+47.00	-10.00	645422.6234	838236.3268
Y1	11+47.00	10.00	645410.9294	838252.5518
Y1	11+47.00	30.00	645399.2353	838268.7768
Y1	12+47.65	-30.00	645515.9696	838278.9522
Y1	12+47.65	30.00	645480.8874	838327.6271
Y1	15+13.96	30.00	645718.1563	838461.4537
Y1	15+80.67	-30.00	645802.1855	838430.0589
Y1	21+09.03	-30.00	646255.2858	838718.6606
Y1	22+71.52	-30.00	646374.3392	838822.9932
Y1	23+50.00	-30.00	646436.7312	838870.6105
Y1	23+50.00	-10.00	646424.5954	838886.5078
Y1	15+89.00	82.00	645771.3847	838538.0475
Y1	15+89.00	42.59	645785.0438	838501.0803
Y1	24+40.00	164.20	646387.1061	839078.1984
Y1	24+80.00	160.00	646420.4982	839099.5978
Y1	24+40.00	142.16	646400.8477	839060.9667
Y1	25+43.73	10.00	646564.1129	839022.5503
Y1	25+44.40	78.70	646521.6176	839076.5344
Y1	25+37.91	78.52	646516.6701	839072.3302
Y1	24+40.10	75.84	646442.2738	839009.1764
Y1	20+18.27	85.12	646112.0115	838742.4762
Y1	19+32.92	98.06	646042.4403	838703.2445

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y2	11+90.76	28.52	645780.2770	838759.2877
Y2	11+49.79	26.86	645745.1182	838738.1960
Y2	11+50.06	18.29	645749.4582	838730.7947

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y3	12+55.75	-7.00	646060.1751	838837.8698
Y3	12+56.67	7.00	646053.4787	838850.1988
Y3	12+57.52	20.00	646047.2570	838861.6449
Y3	11+69.95	15.00	645974.6369	838828.2884
Y3	10+65.00	15.00	645870.7346	838793.2835
Y3	11+95.00	15.00	645997.2678	838833.1748
Y3	11+80.00	-21.42	645991.0314	838794.2155

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y1	15+56.00	-97.00	645803.7252	838359.1215
Y1	15+71.00	-136.00	645830.1805	838327.4278
Y1	17+97.61	-30.00	646003.3402	838524.1170
Y1	19+50.00	-55.00	646148.1595	838591.2974
Y1	23+03.48	-124.00	646456.7770	838767.6610
Y1	23+02.86	-83.00	646431.4098	838799.8772
Y1	21+55.00	-58.00	646306.5818	838729.2914
Y1	21+55.00	-48.00	646299.7728	838736.6151
Y1	22+25.00	-45.00	646348.3837	838783.2231
Y1	22+25.00	-30.00	646338.8280	838794.7855

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	645947.7858	838527.4916
PC	12+75.00	645811.0611	838766.0945
PRC	13+69.73	645756.4788	838843.3510
PT	14+64.47	645701.8963	838920.6077
POT	15+61.70	645653.5539	839004.9719

Y1

TYPE	STATION	NORTH	EAST
POT	10+00.00	645297.5230	838158.4881
PC	12+47.65	645498.4285	838303.2896
PRC	15+80.67	645791.9833	838458.2709
PRC	21+09.03	646234.0323	838739.8335
PT	22+71.52	646356.1385	838846.8413
PC	23+49.50	646418.1276	838894.1511
PT	24+54.62	646500.8983	838958.9569
POT	25+50.01	646575.2706	839018.6853

Y2

TYPE	STATION	NORTH	EAST
PC	10+00.00	645624.8555	838647.0103
PT	10+25.18	645648.6298	838654.8893
POT	12+21.44	645820.8779	838748.9629

Y3

TYPE	STATION	NORTH	EAST
POT	10+00.00	645820.8779	838748.9629
PC	10+65.00	645877.9244	838780.1189
PRC	11+69.95	645976.8790	838813.4570
PT	12+52.58	646053.7595	838842.0976
POT	13+89.66	646169.6657	838915.2792

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "WOODROW" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 649037.403(±) EASTING: 843744.710(±) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: .999757089 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "WOODROW" TO -L- L STATION 10+00.00 IS S 54°52'50"W 7083.46 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

NOTES:

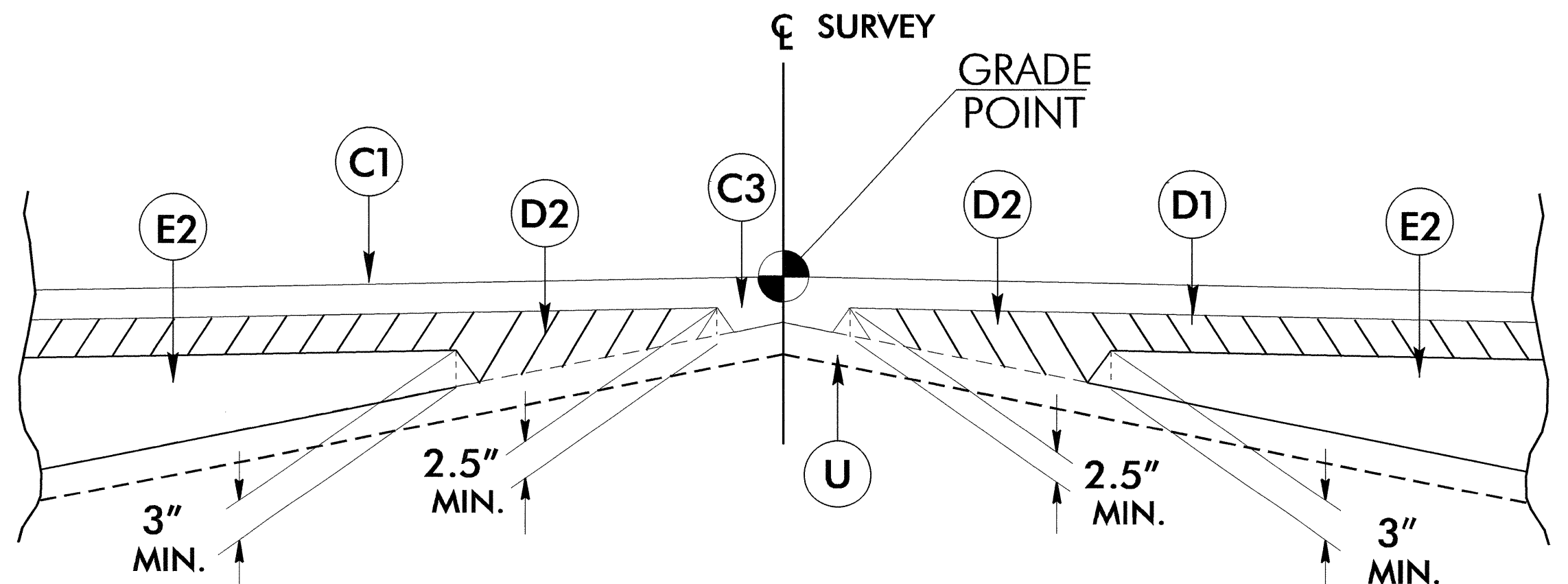
1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
B3187_LS_CONTROL_070807.TXT

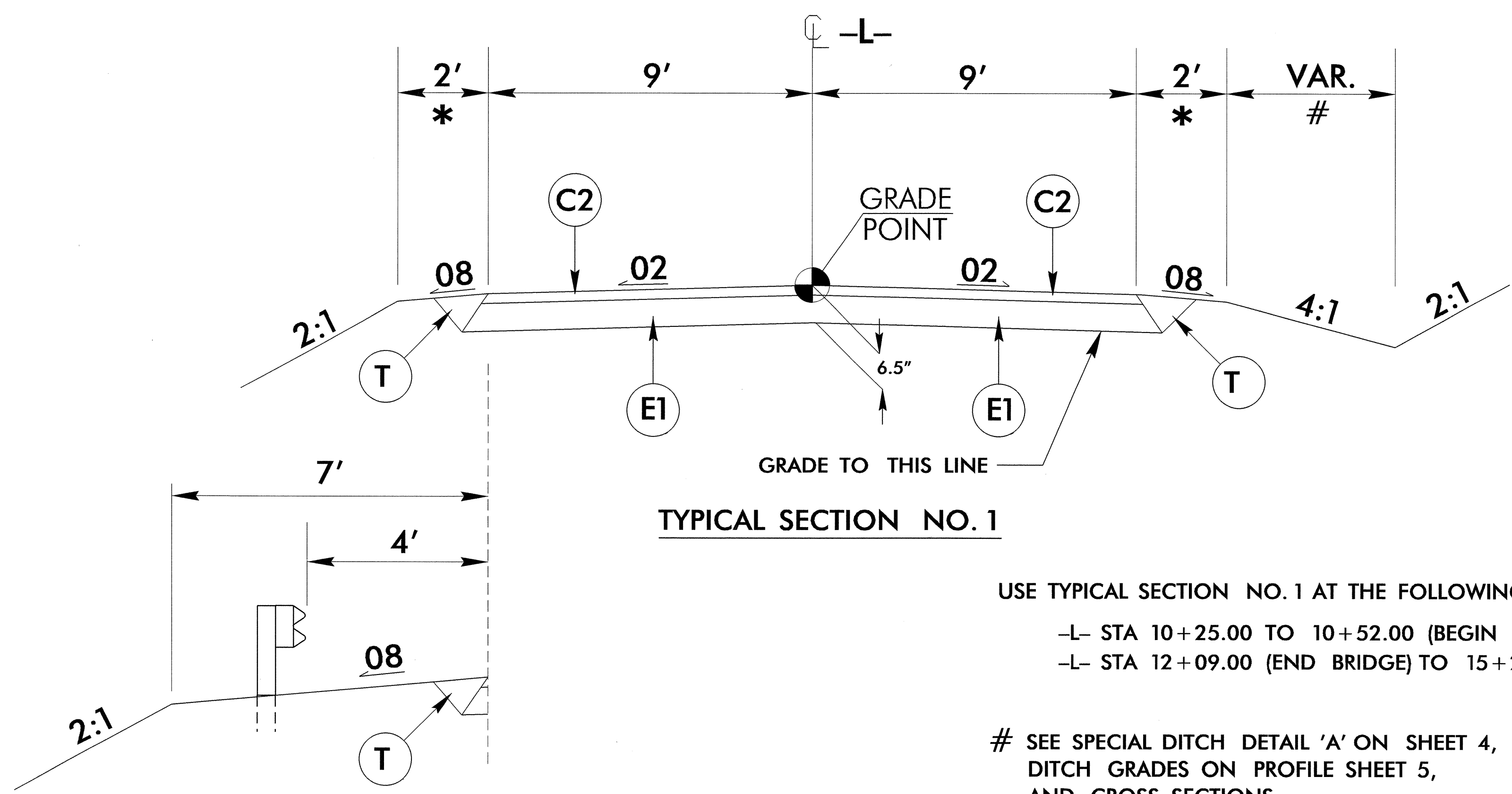
SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2.5" 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 1.5" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" 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. 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 5.5" IN DEPTH.
J	PROPOSED 8" AGGREGATE BASE COURSE
P	PROPOSED PRIME COAT AT A RATE OF 0.35 GAL./SQ. YD.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).

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



Detail Showing Method of Wedging

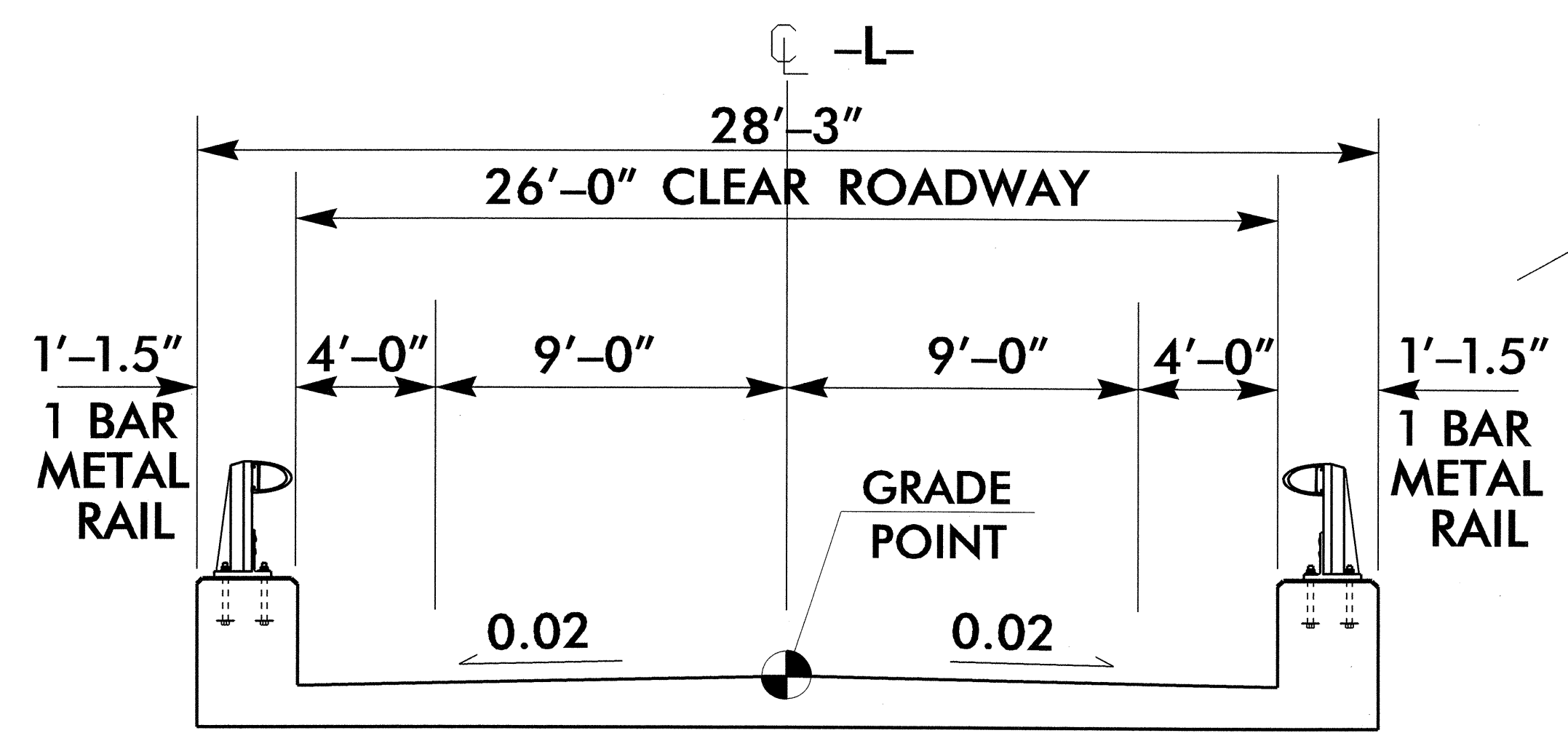


TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:
 -L- STA 10+25.00 TO 10+52.00 (BEGIN BRIDGE)
 -L- STA 12+09.00 (END BRIDGE) TO 15+25.00

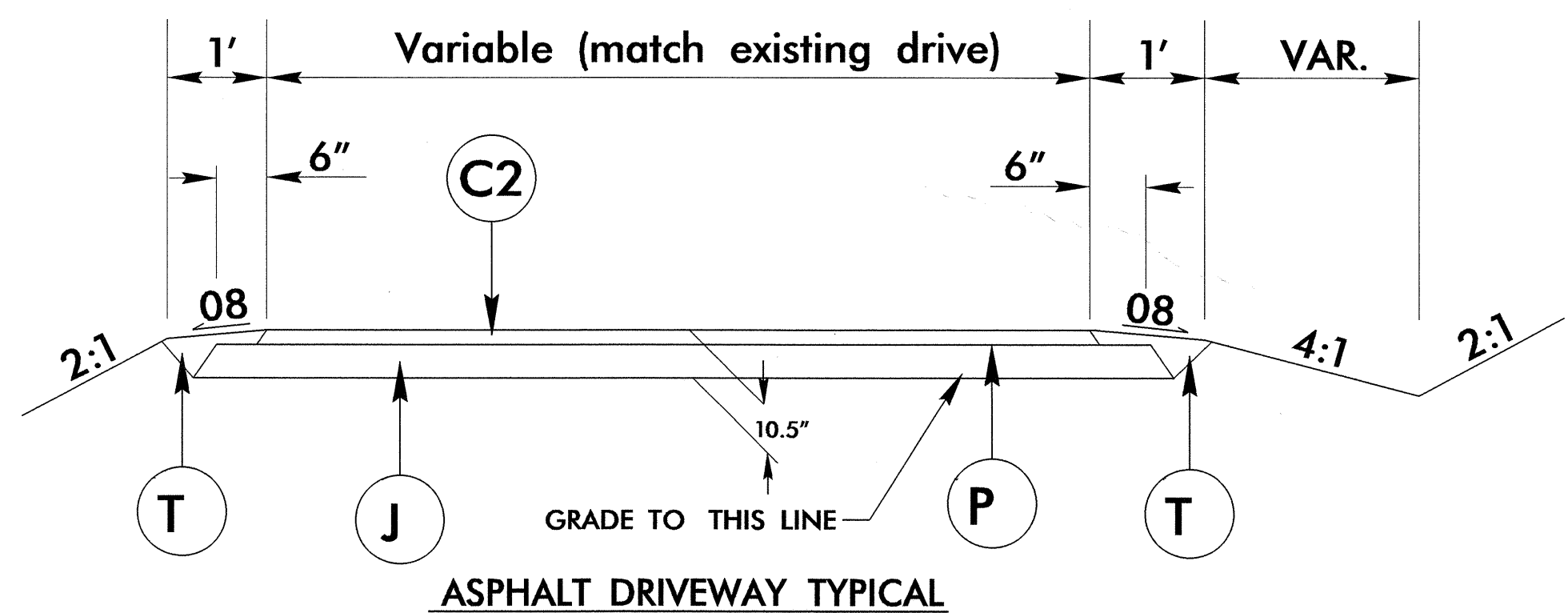
SEE SPECIAL DITCH DETAIL 'A' ON SHEET 4, DITCH GRADES ON PROFILE SHEET 5, AND CROSS SECTIONS

* USE 7' SHOULDERS ALONG -L- AT GUARDRAIL LOCATIONS ON WEST SIDE OF BRIDGE APPROACHING -Y1- (SR1111)



TYPICAL SECTION ON STRUCTURE

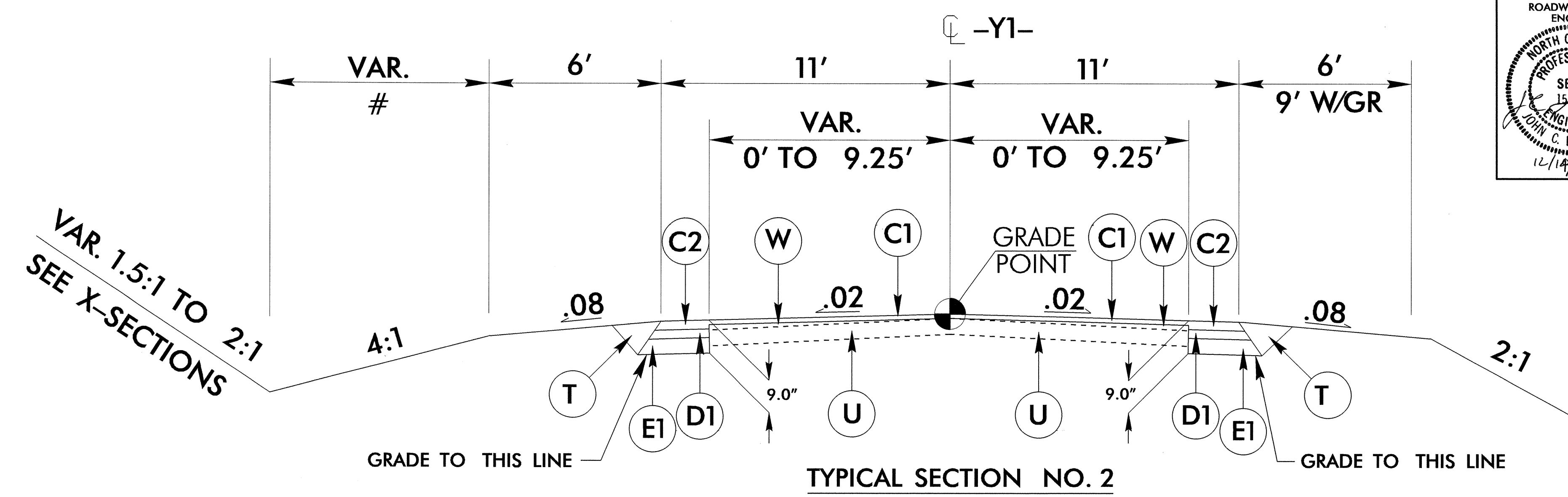
-L- STA 10+52.00 TO 12+09.00



ASPHALT DRIVEWAY TYPICAL

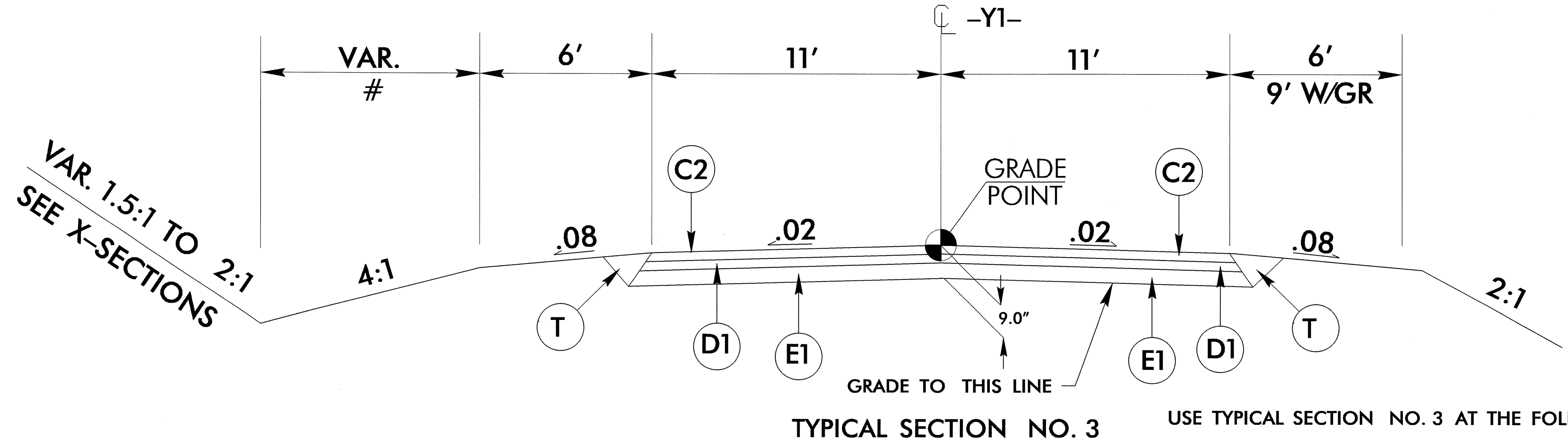
5/14/99
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PAVEMENT SCHEDULE	
C1	1.25" TYPE SF9.5A
C2	2.5" TYPE SF9.5A
C3	VAR. DEPTH TYPE SF9.5A
D1	2.5" TYPE I19.0B
D2	VAR. DEPTH TYPE I19.0B
E1	4" TYPE B25.0B
E2	VAR. DEPTH TYPE B25.0B
J	8" ABC
P	PRIME COAT
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING

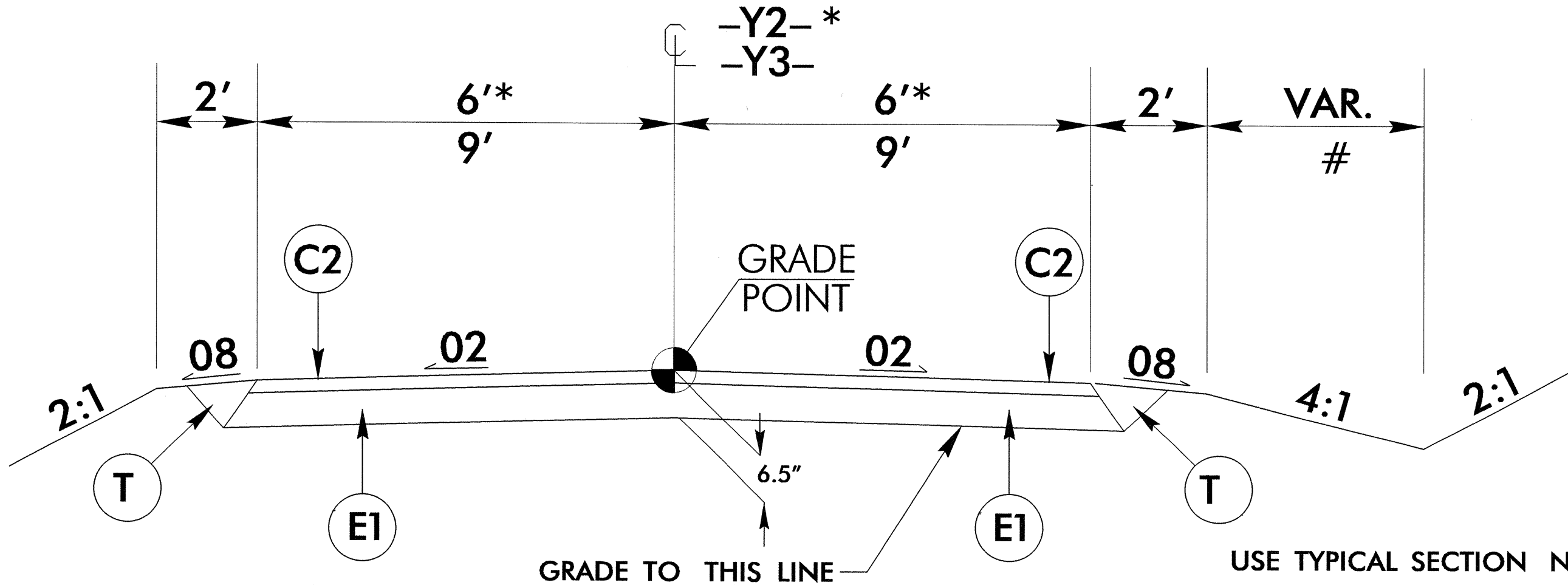


SEE SPECIAL DITCH DETAIL 'A' ON SHEET 4, DITCH GRADES ON PROFILE SHEET 5 & 6, AND CROSS SECTIONS

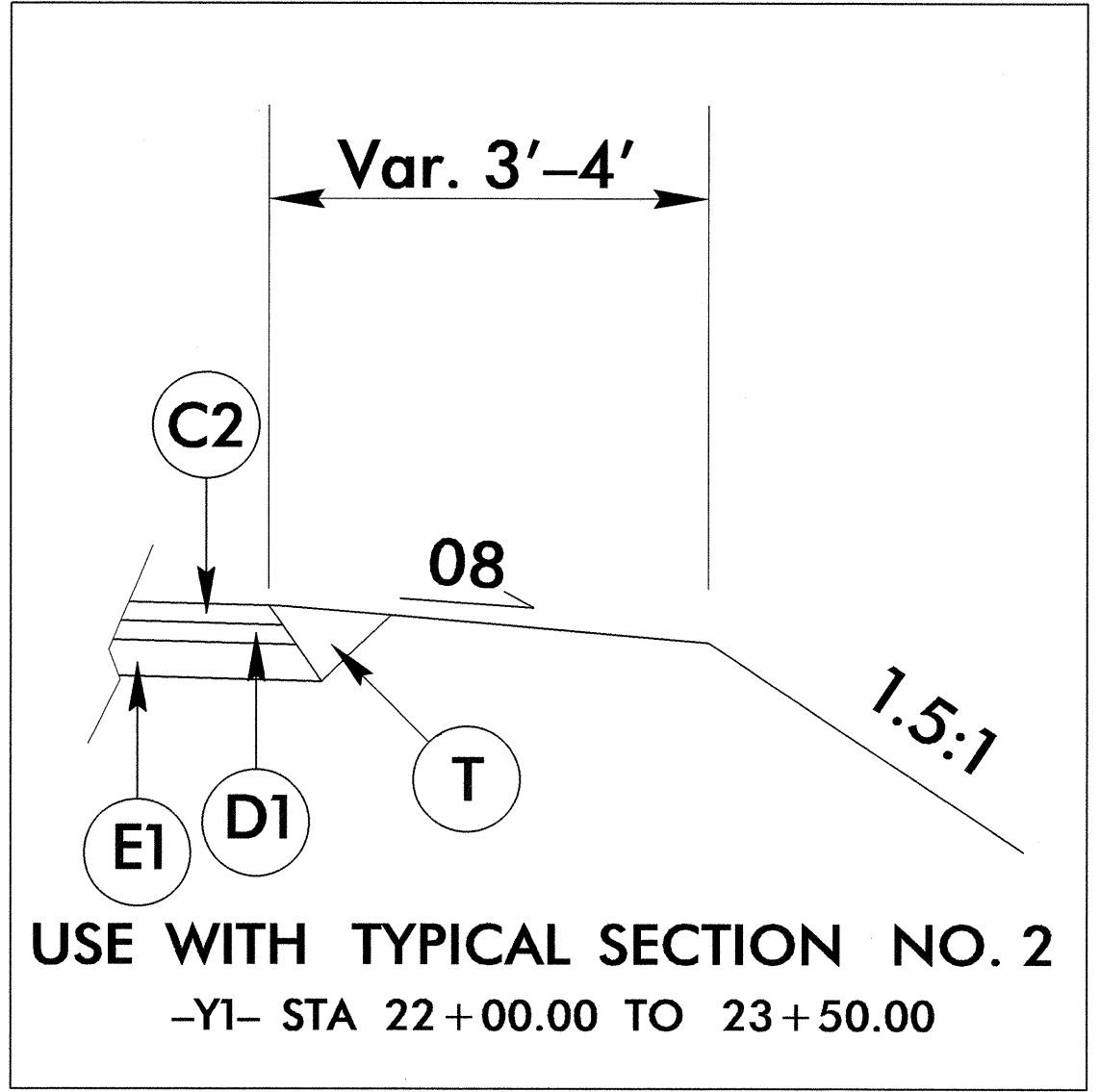
USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATIONS:
-Y1- STA 11+47.00 TO 14+50.00
-Y1- STA 20+50.00 TO 23+50.00



USE TYPICAL SECTION NO. 3 AT THE FOLLOWING LOCATIONS:
-Y1- STA 14+50.00 TO 20+50.00
(SEE SPECIAL SHOULDER DETAIL BELOW)



USE TYPICAL SECTION NO. 4 AT THE FOLLOWING LOCATIONS:
-Y2- STA 10+00.00 TO 11+93.00
-Y3- STA 10+30.00 TO 12+53.00



USE WITH TYPICAL SECTION NO. 2
-Y1- STA 22+00.00 TO 23+50.00

01-DEC-2010 07:32 R:\Roadway\Projects\B3187_rdy_typ\jilansford\RD-Oce860-34.dgn

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

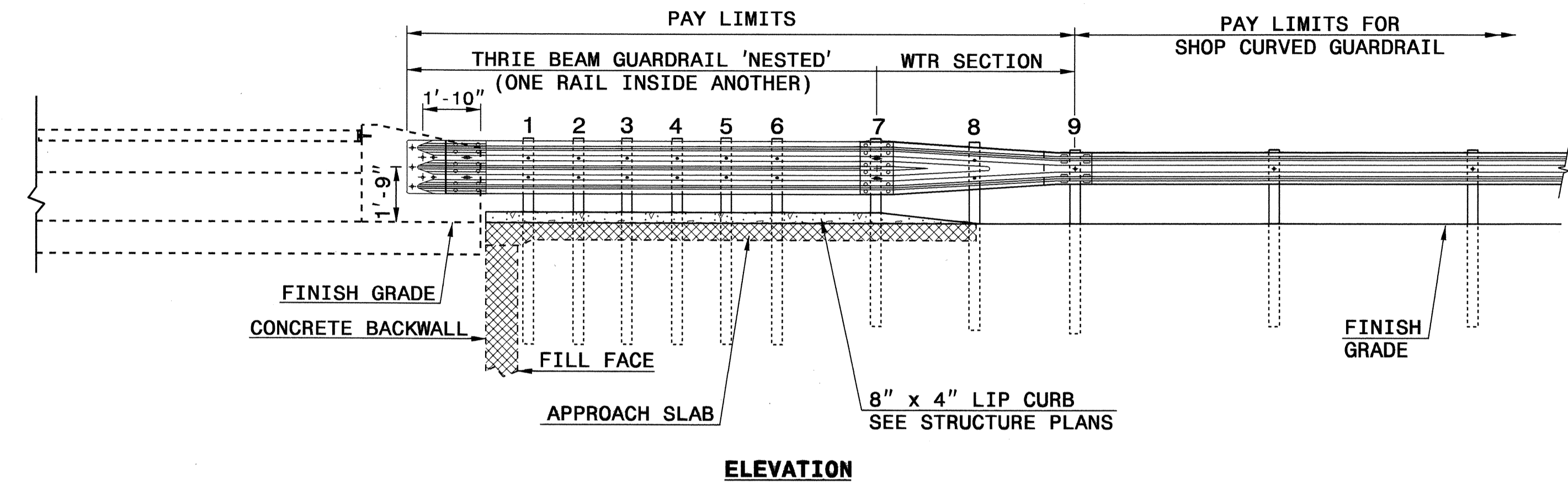
ENGLISH DETAIL DRAWING FOR
**TYPE III - SHOP CURVED
STRUCTURE ANCHOR UNIT**

SHEET 1 OF 1
TYPE III SC

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

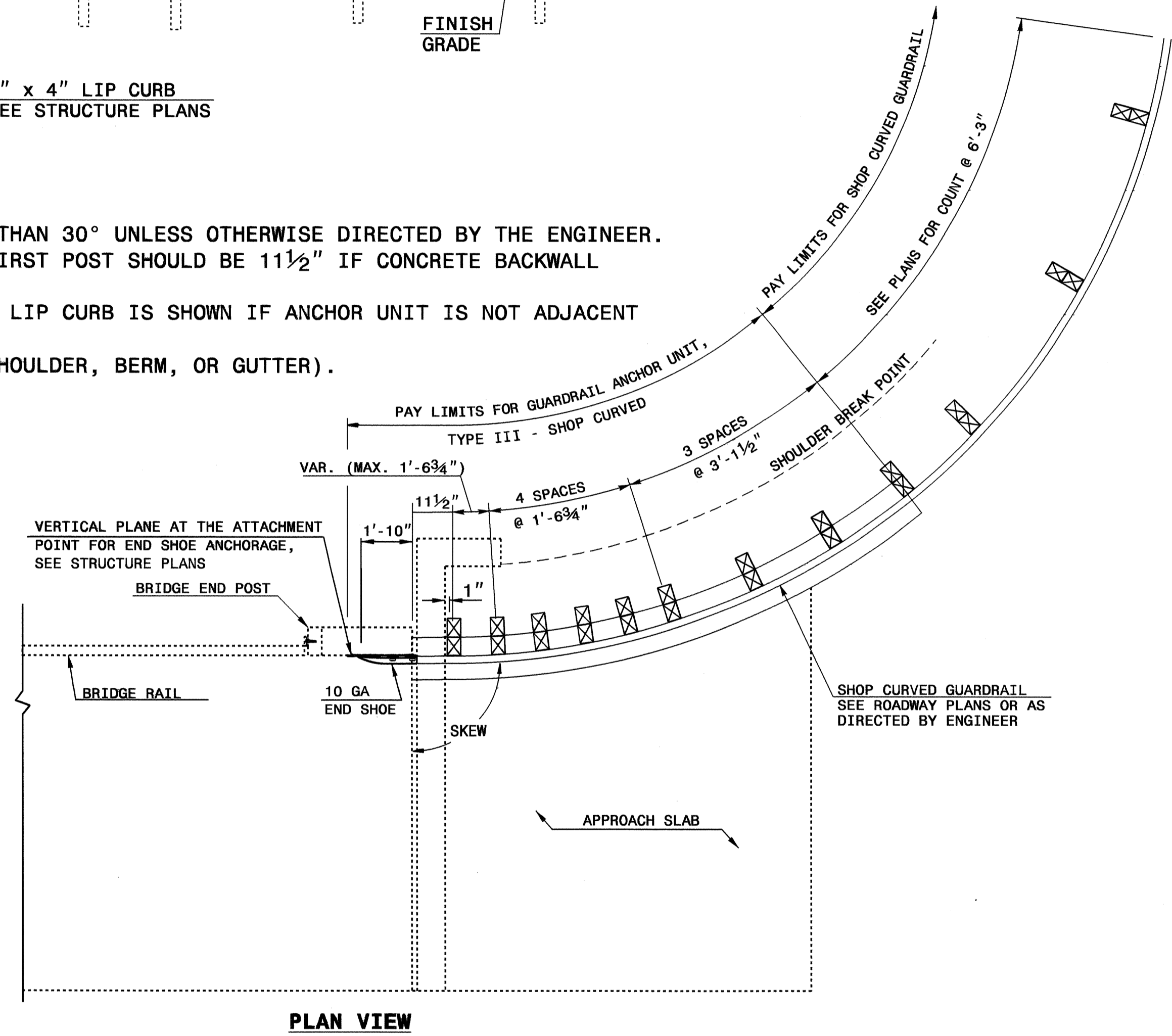
ENGLISH DETAIL DRAWING FOR
**TYPE III - SHOP CURVED
STRUCTURE ANCHOR UNIT**

SHEET 1 OF 1
TYPE III SC



SEE ROADWAY PLANS FOR END TREATMENT

- 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 11½" 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).
 - USE NO STEEL POSTS WITHIN THE GUARDRAIL ANCHOR UNIT LIMITS.
 - LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 - SEE STANDARD 862.03 SHEET 4 FOR POST SECTIONS 1 THRU 9.



**GUARDRAIL ANCHOR UNIT, TYPE III - SHOP CURVED
FOR ATTACHMENT TO RAIL ON BRIDGE**



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

SEE PLATE FOR TITLE

ORIGINAL BY: E.E. WARD DATE: 4-4-02
MODIFIED BY: DATE:
CHECKED BY: DATE: 8/19/10
FILE SPEC.: w:\usr\details\stand\862stds\typeiiisc.dgn

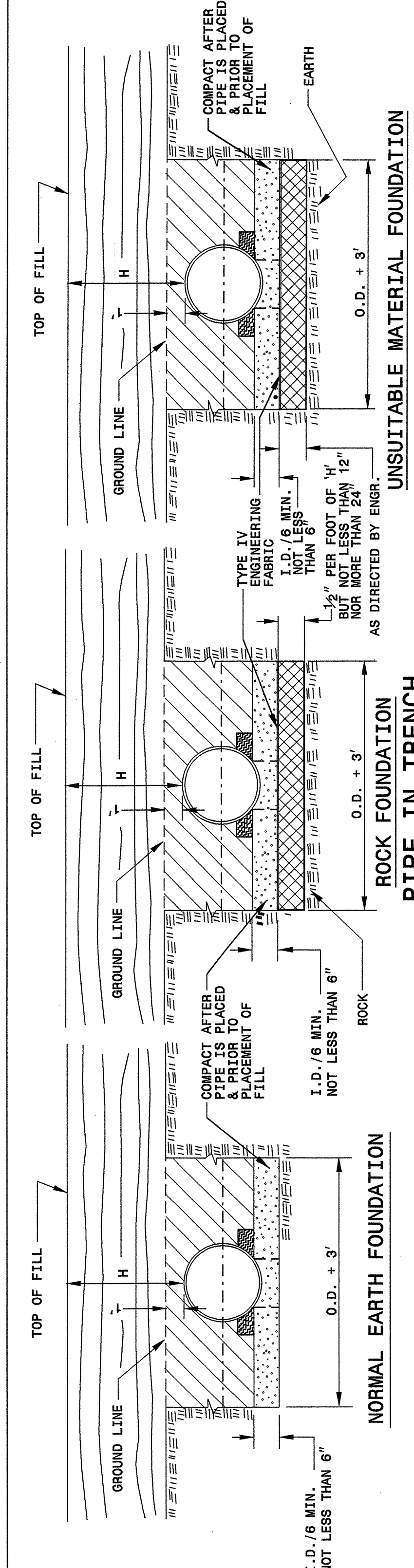
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15-AUG-2010 10:09
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5/14/99

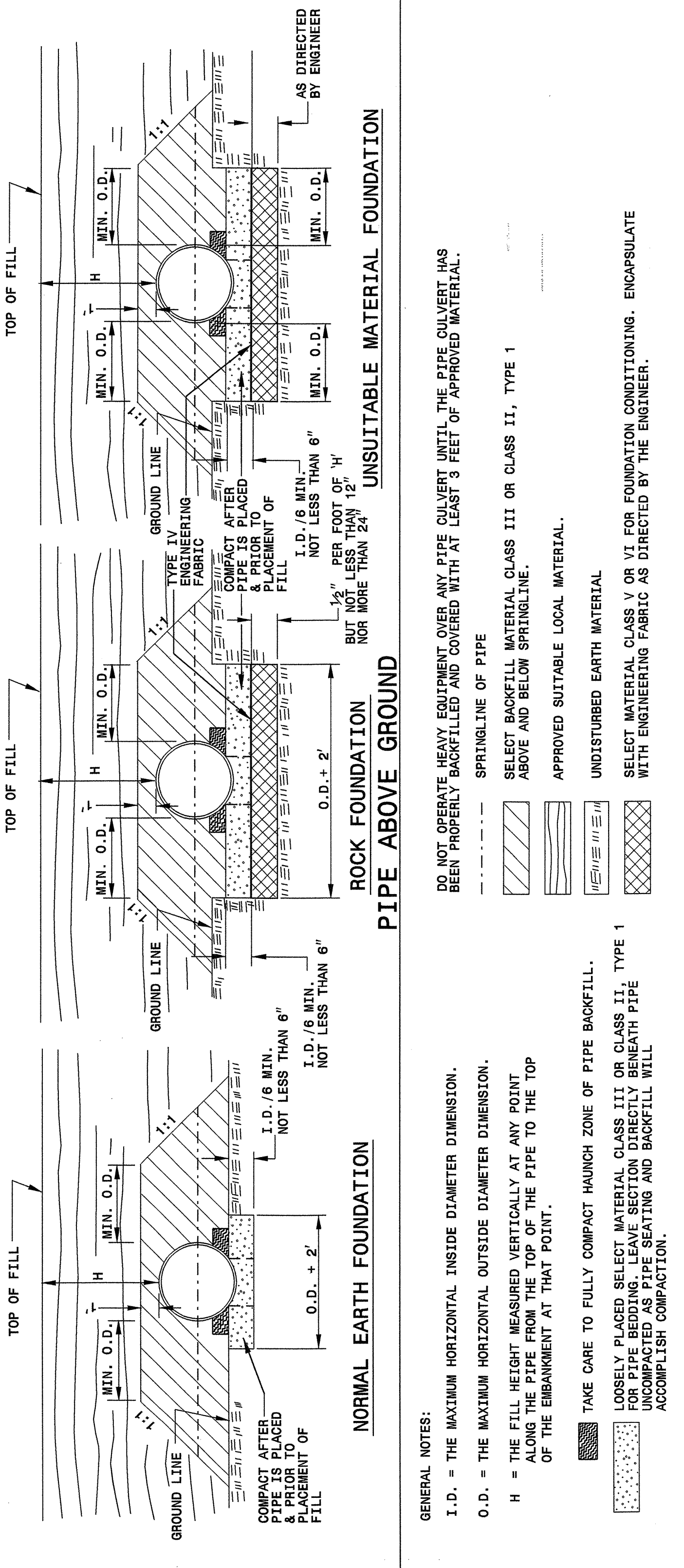
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

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



ENGLISH DETAIL DRAWING FOR METHOD OF PIPE INSTALLATION FLEXIBLE PIPE

ENGLISH DETAIL DRAWING FOR METHOD OF PIPE INSTALLATION FLEXIBLE PIPE



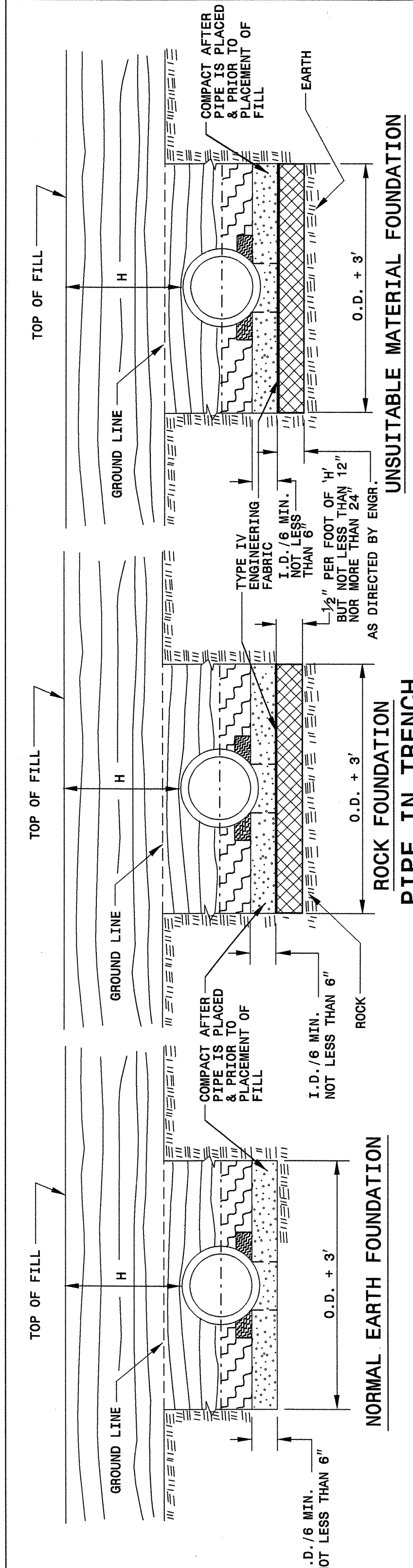
GENERAL NOTES:
 I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
 O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
 H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.
 TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.
 LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTON.
 DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.
 SPRINGLINE OF PIPE
 SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINGLINE.
 APPROVED SUITABLE LOCAL MATERIAL.
 UNDISTURBED EARTH MATERIAL
 SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH ENGINEERING FABRIC AS DIRECTED BY THE ENGINEER.

SHEET 1 OF 3 300D01

SHEET 1 OF 3 300D01

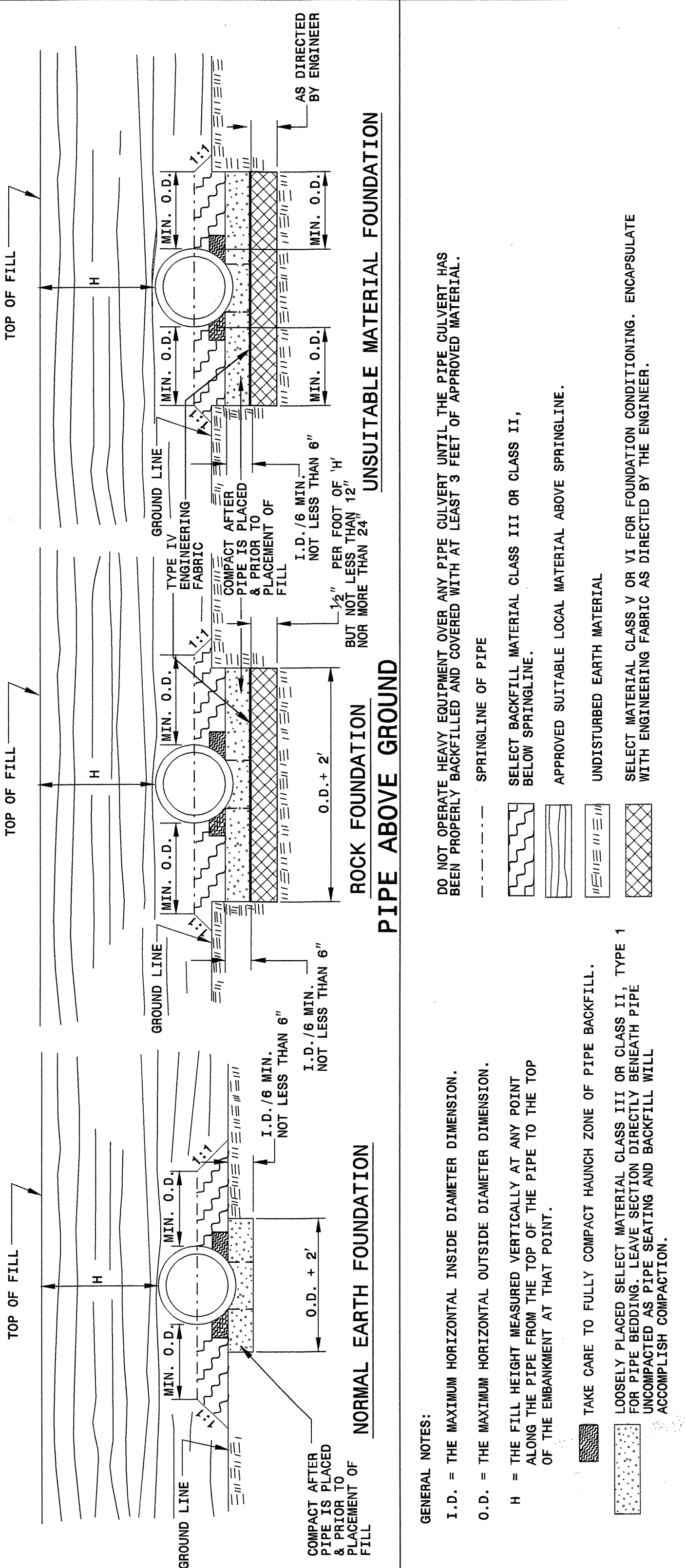
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

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



ENGLISH DETAIL DRAWING FOR METHOD OF PIPE INSTALLATION RIGID PIPE

ENGLISH DETAIL DRAWING FOR METHOD OF PIPE INSTALLATION RIGID PIPE



GENERAL NOTES:
 I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
 O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
 H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.
 TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.
 LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTON.
 DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.
 SPRINGLINE OF PIPE
 SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINGLINE.
 APPROVED SUITABLE LOCAL MATERIAL ABOVE SPRINGLINE.
 UNDISTURBED EARTH MATERIAL
 SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH ENGINEERING FABRIC AS DIRECTED BY THE ENGINEER.

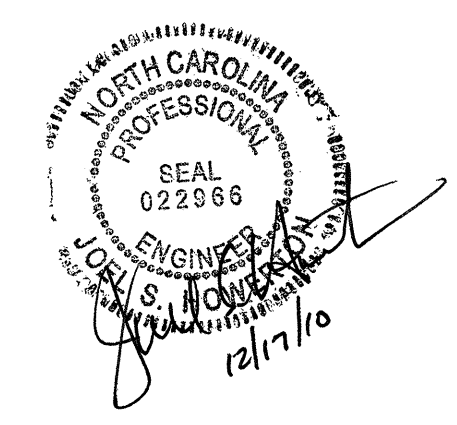
SHEET 2 OF 3 300D01

SHEET 2 OF 3 300D01

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

SEE PLATE FOR TITLE

ORIGINAL BY: KKempf DATE: 5-15-09
 MODIFIED BY: [Signature] DATE: 7/20/09
 CHECKED BY: [Signature] DATE: 7/20/09
 FILE SPEC: jhowerston/stds/stdsdetails/30001/0300d01.dgn



30-JUL-2009 08:49
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 .jhowerton AT P5237501

5/14/99

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

7-06

ENGLISH DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION

FILL HEIGHT TABLES

SHEET 3 OF 3
300D01

FLEXIBLE PIPE

Round Corrugated Steel Pipe 2 2/3 x 1/2 corrugation **					
Diameter (inches)	Minimum cover (inches)	Maximum Height of Cover (feet)			
		(Ga) 16	14	12	10
12	12	204	256		
15	12	162	204		
18	12	135	169	239	
21	12	115	145	204	
24	12	100	126	178	
30	12	79	100	142	
36	12	65	83	117	152
42	12	55	70	100	130
48	12	48	61	87	113
54	12	44	54	77	100
60	12		69		111
66	12				81
72	12				74
78	12				81
84	12				69

Round Corrugated Aluminum Pipe 2 2/3 x 1/2 corrugation **					
Diameter (inches)	Minimum cover (inches)	Maximum Height of Cover (feet)			
		(Ga) 16	14	12	10
12	12	123	155	218	281
15	12	98	123	174	224
18	12	81	102	144	187
21	12	69	87	123	160
24	12	60	76	108	139
27	12	67	95	123	151
30	12	60	85	111	136
36	12	50	71	92	113
42	12	60	78	96	113
48	12	52	68	84	84
54	12	46			74
60	12				50
66	12				62
72	12				51
					41

** FOR DIFFERENT CORRUGATIONS AND ARCH PIPES REFER TO ROADWAY DESIGN MANUAL OR MANUFACTURERS SPECIFICATION.

REFER TO THE FOLLOWING FOR PIPE SPECIFICATIONS

CSP - AASHTO M36
 CAAP - AASHTO M196
 HDPE - AASHTO M294
 PVC - ASTM F949 or AASHTO M504

NOTES: FILL HEIGHTS SHOWN WERE CALCULATED USING AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

1' MINIMUM COVER FOR ALL SIDE DRAIN PIPE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS

RIGID PIPE

RCP - * (Minimum fill) 1' for Class IV & CLASS V
 2' for Class III & Class II

* (Maximum fill) 10' - Class II pipe
 20' - Class III pipe
 30' - Class IV pipe
 40' - Class V pipe

(For fills > 40' & < 80' use LRFD Direct Design Method)

* FILL HEIGHT IS MEASURED FROM THE TOP OF THE PIPE TO THE BOTTOM OF THE PAVEMENT STRUCTURE

REFER TO THE FOLLOWING FOR PIPE SPECIFICATIONS

RCP - AASHTO M170

NOTES: FILL HEIGHTS SHOWN WERE CALCULATED USING AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

1' MINIMUM COVER FOR ALL SIDE DRAIN PIPE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS

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

7-06

ENGLISH DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION

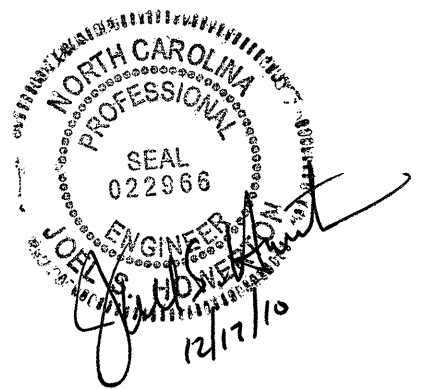
FILL HEIGHT TABLES

SHEET 3 OF 3
300D01

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

SEE PLATE FOR TITLE

ORIGINAL BY: K Kempf DATE: 5-15-09
 MODIFIED BY: *[Signature]* DATE: *[Date]*
 CHECKED BY: *[Signature]* DATE: 7/30/09
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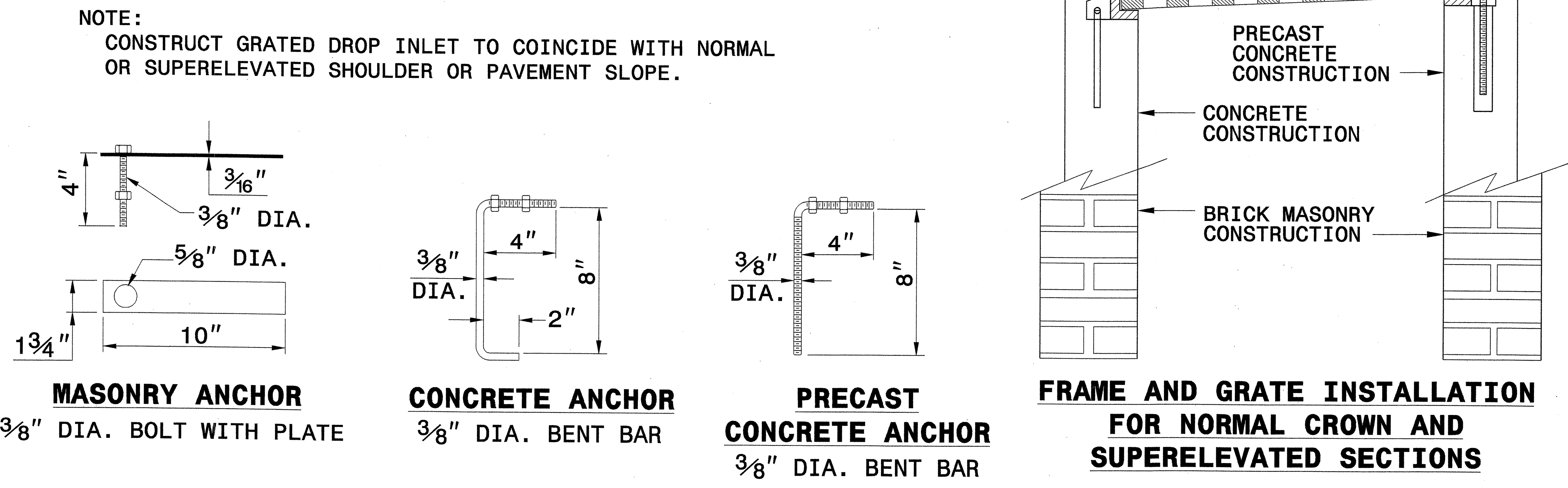
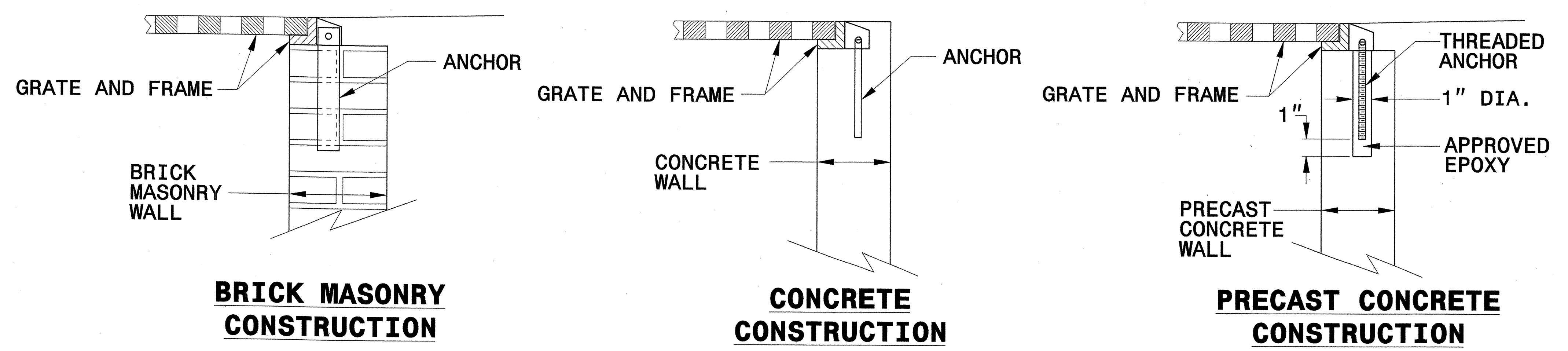
STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
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 ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
 BRICK/CONCRETE/PRECAST CONCRETE

 SHEET 1 OF 1
840D25

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

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



ALL DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED
 1/8" = 1'-0" SCALE
 11/17/06

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

SEE PLATE FOR TITLE

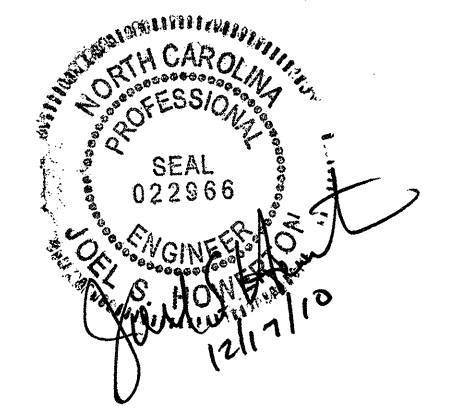
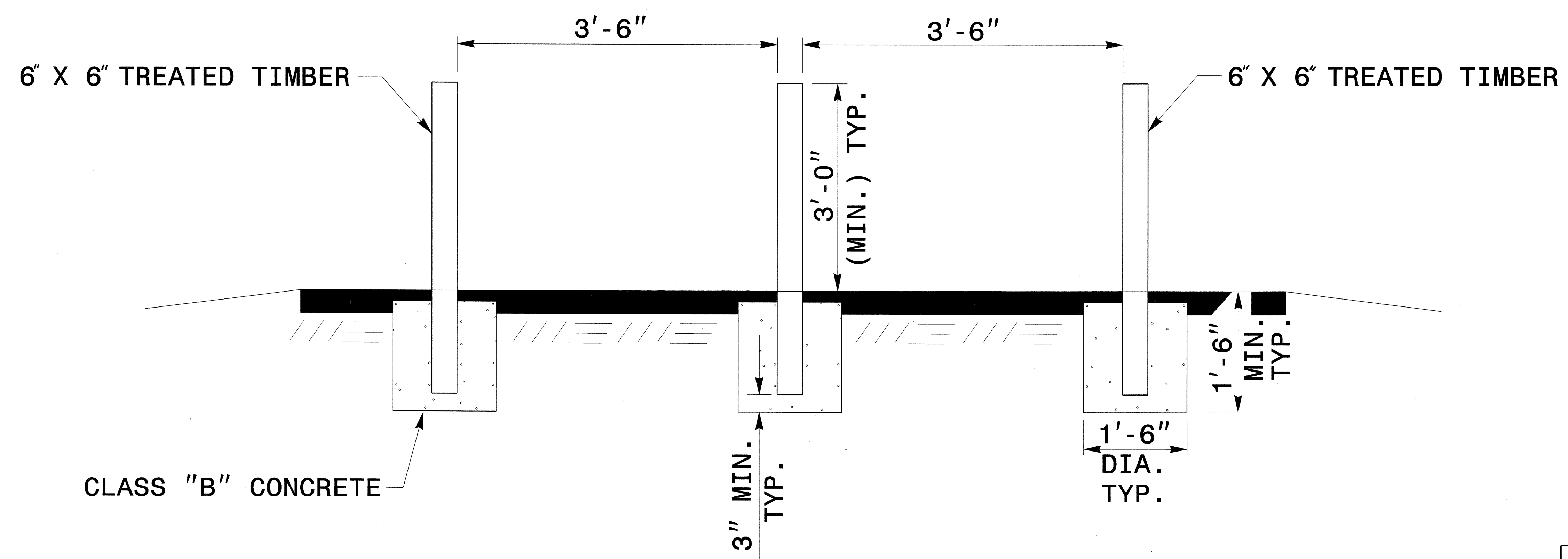
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 MODIFIED BY: E.E. WARD DATE: 9/25/06
 CHECKED BY: *Jules* DATE: 11/3/06
 FILE SPEC.:

NOTES:

PLACE BOLLARDS TO PROHIBIT ENTRY OF UNAUTHORIZED VEHICLES AS SHOWN ON ROADWAY PLANS.

PLACE BOLLARDS AS SHOWN IN PLANS OR AS DIRECTED BY THE ENGINEER.

PROVIDE TIMBER BOLLARDS THAT MEET SECTION 1082-3 OF STANDARD SPECIFICATIONS.



**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
Office 919-250-4128 FAX 919-250-4119

TIMBER BOLLARD

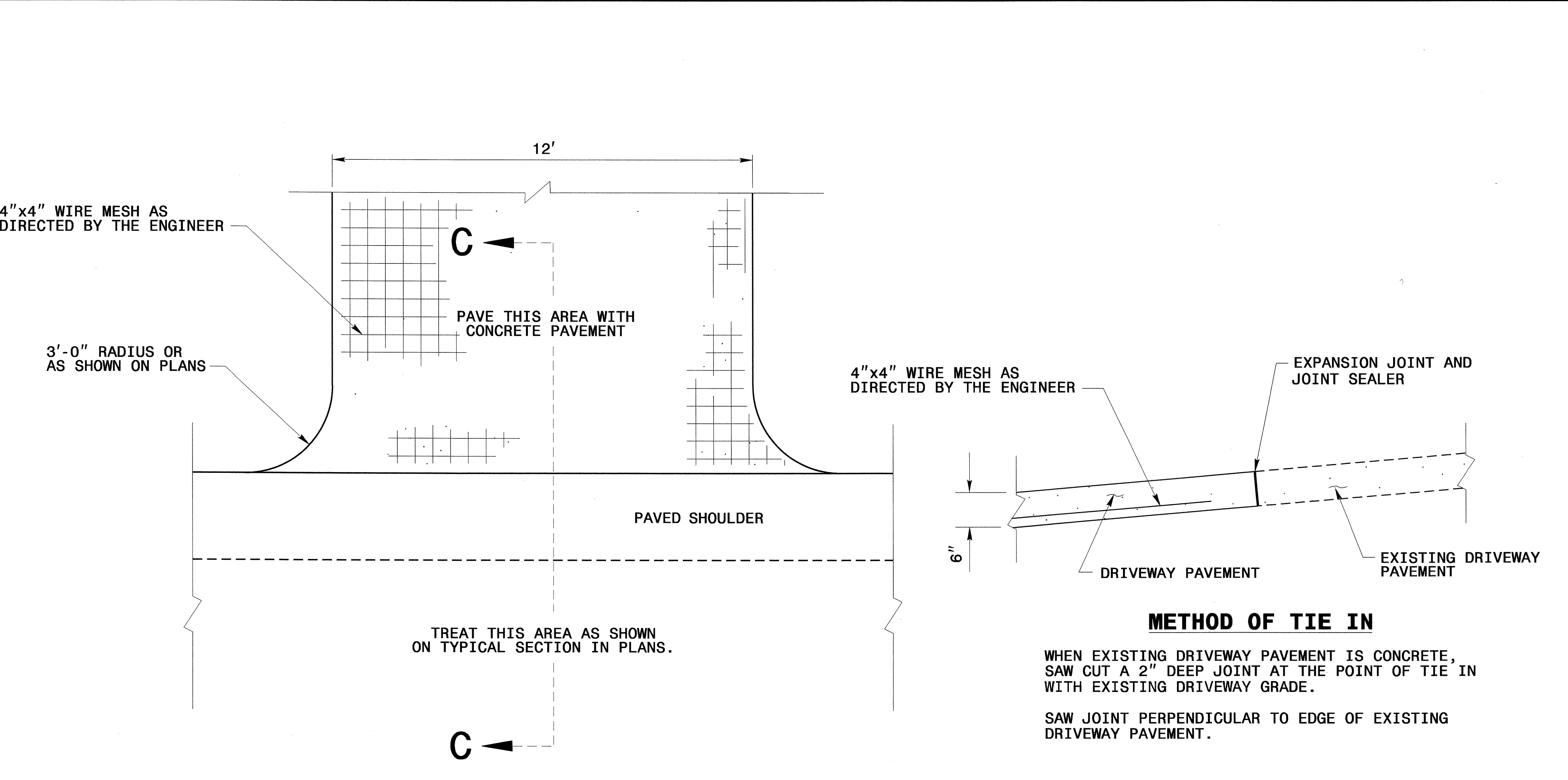
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MODIFIED BY: tsspell	DATE: 08-17-10
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19-AUG-2010 10:06 C:\projects\Special Details\jhowerton\Timber Bollard.dgn
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STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

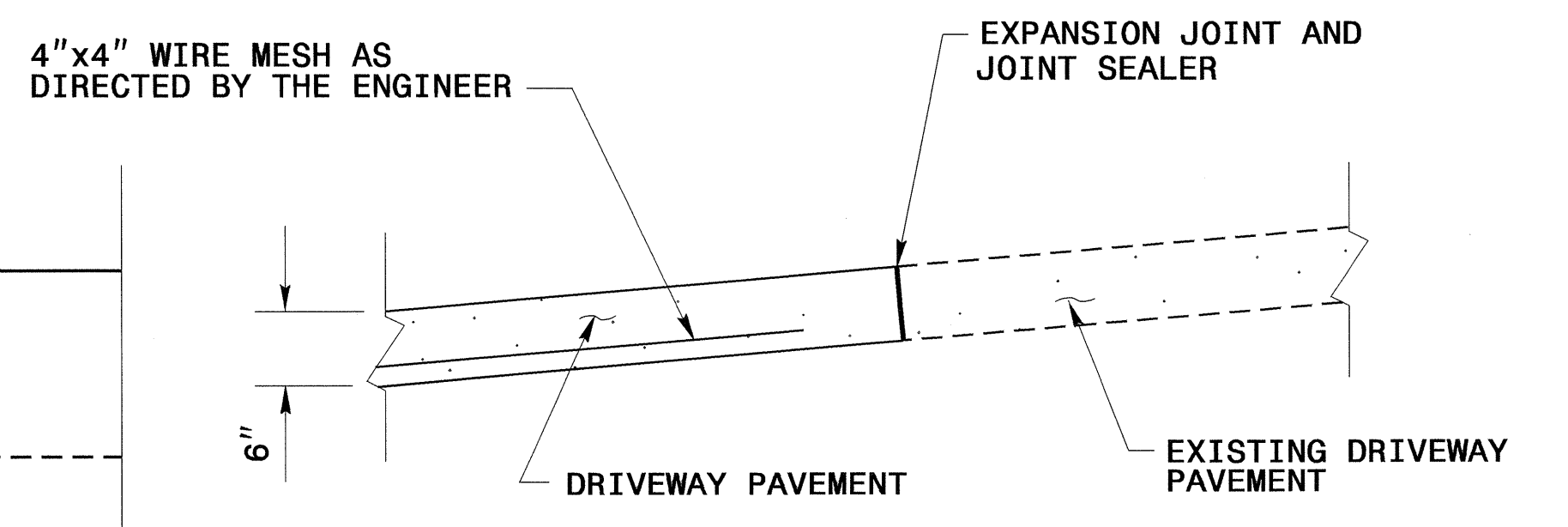
ENGLISH STANDARD DRAWING FOR
CONCRETE DRIVEWAY
6" THICK WIRE REINFORCED

SHEET 1 OF 1
848D02



PARTIAL PLAN OF PAVED DRIVEWAY TURNOUT

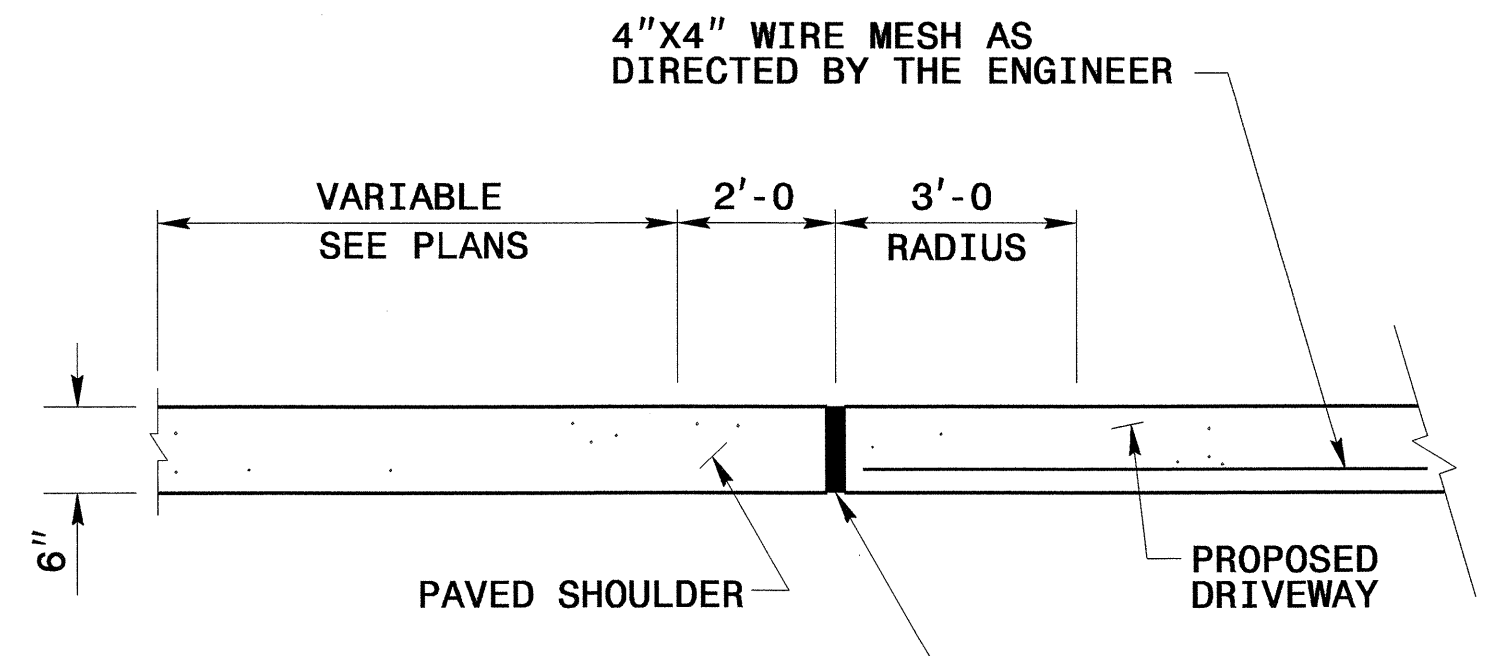
- NOTES:**
- CONSTRUCT STANDARD DRIVEWAY THE WIDTH OF EXISTING DRIVE. CONSTRUCT DRIVE 6" THICK UNLESS OTHERWISE NOTED ON PLANS.
 - PLACE $\frac{1}{2}$ " EXPANSION JOINT BETWEEN DRIVEWAY AND ROADWAY AND AT LOCATIONS AS DIRECTED BY THE ENGINEER. SEAL JOINT WITH JOINT SEALER (SEE STD. SECTION 1028)
 - PLACE WIRE MESH IN BOTTOM THIRD OF CONCRETE DRIVEWAY.
 - SAW CUT OR FORM CONTRACTION JOINTS IN DRIVEWAY @ 10' INTERVALS. AT EVERY THIRD JOINT, PLACE EXPANSION MATERIAL AS SHOWN IN SECTION C-C.



METHOD OF TIE IN

WHEN EXISTING DRIVEWAY PAVEMENT IS CONCRETE, SAW CUT A 2" DEEP JOINT AT THE POINT OF TIE IN WITH EXISTING DRIVEWAY GRADE.

SAW JOINT PERPENDICULAR TO EDGE OF EXISTING DRIVEWAY PAVEMENT.



SECTION C-C

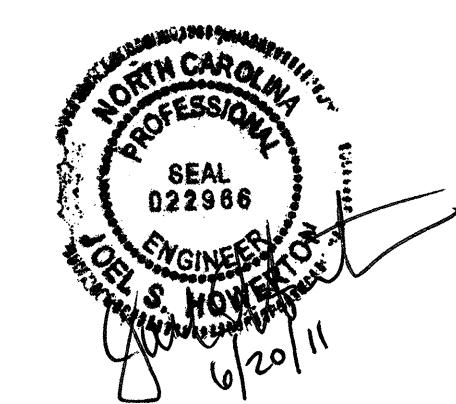
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
CONCRETE DRIVEWAY
6" THICK WIRE REINFORCED

SHEET 1 OF 1
848D02

5/14/99

SUNDERMAN



**CONTRACT STANDARDS & DEVELOPMENT UNIT
STANDARDS AND SPECIAL DESIGN**
Office 919-250-4128 FAX 919-250-4119

CONCRETE DRIVEWAY DETAIL

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt DATE: 03-20-08
CHECKED BY: _____ DATE: _____
FILE SPEC.: g:\aills/english/misc/concdrive.dgn

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202323

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
00010000-N	800	Lump Sum		MOBILIZATION					
00040000-N	801	Lump Sum		CONSTRUCTION SURVEYING					
00290000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (11+30.50)	44300000-N	1130	98	EA	DRUMS
00380000-E	SP	100	CY	SHALLOW UNDERCUT	44350000-N	1135	30	EA	CONES
00430000-N	226	Lump Sum		GRADING	44450000-E	1145	164	LF	BARRICADES (TYPE III)
00500000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB- BING	44500000-N	1150	2,760	HR	FLAGGER
00800000-E	SP	150	TON	CLASS IV SUBGRADE STABILIZA- TION	45070000-E	SP	100	LF	WATER FILLED BARRIER
01340000-E	240	6	CY	DRAINAGE DITCH EXCAVATION	45160000-N	1180	50	EA	SKINNY DRUM
01950000-E	SP	100	CY	SELECT GRANULAR MATERIAL	46500000-N	1251	80	EA	TEMPORARY RAISED PAVEMENT MARKERS
01960000-E	270	275	SY	FABRIC FOR SOIL STABILIZATION	48100000-E	1205	23,642	LF	PAINT PAVEMENT MARKING LINES (4")
03180000-E	SP	39	TON	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRS	48150000-E	1205	4,230	LF	PAINT PAVEMENT MARKING LINES (6")
03200000-E	SP	125	SY	FOUNDATION CONDITIONING FABRIC	48350000-E	1205	104	LF	PAINT PAVEMENT MARKING LINES (24")
03352000-E	SP	48	LF	15" DRAINAGE PIPE	58880000-E	SP	44	LF	GENERIC UTILITY ITEM 12" STEEL ENCASMENT PIPE
03353000-E	SP	224	LF	18" DRAINAGE PIPE	60000000-E	1605	1,775	LF	TEMPORARY SILT FENCE
03430000-E	SP	92	LF	15" SIDE DRAIN PIPE	60060000-E	1610	500	TON	STONE FOR EROSION CONTROL, CLASS A
09950000-E	340	66	LF	PIPE REMOVAL	60090000-E	1610	100	TON	STONE FOR EROSION CONTROL, CLASS B
11210000-E	520	95	TON	AGGREGATE BASE COURSE	60120000-E	1610	175	TON	SEDIMENT CONTROL STONE
12200000-E	545	750	TON	INCIDENTAL STONE BASE	60150000-E	1615	1.5	ACR	TEMPORARY MULCHING
12750000-E	600	70	GAL	PRIME COAT	60180000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
14890000-E	610	855	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	60210000-E	1620	1.25	TON	FERTILIZER FOR TEMPORARY SEED- ING
14980000-E	610	345	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE 119.0B	60240000-E	1622	200	LF	TEMPORARY SLOPE DRAINS
15250000-E	610	630	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	60270000-N	1622	4	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
15750000-E	SP	95	TON	ASPHALT BINDER FOR PLANT MIX	60290000-E	SP	1,130	LF	SAFETY FENCE
16930000-E	654	25	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR	60300000-E	1630	750	CY	SILT EXCAVATION
20220000-E	SP	23	CY	SUBDRAIN EXCAVATION	60360000-E	1631	10,000	SY	MATTING FOR EROSION CONTROL
20330000-E	SP	17	CY	SUBDRAIN FINE AGGREGATE	60370000-E	SP	30	SY	COIR FIBER MAT
20440000-E	SP	100	LF	6" PERFORATED SUBDRAIN PIPE	60380000-E	SP	200	SY	PERMANENT SOIL REINFORCEMENT MAT
20700000-N	SP	1	EA	SUBDRAIN PIPE OUTLETS	60420000-E	1632	450	LF	1/4" HARDWARE CLOTH
20770000-E	SP	6	LF	6" OUTLET PIPE (SUBDRAINS)	607102000-E	SP	30	LB	POLYACRYLAMIDE (PAM)
22860000-N	840	4	EA	MASONRY DRAINAGE STRUCTURES	607103000-E	SP	375	LF	COIR FIBER BAFFLE
23660000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.24	607105000-E	SP	3	EA	*** SKIMMER (1-1/2")
23670000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29	60840000-E	1660	1.5	ACR	SEEDING & MULCHING
27380000-E	SP	15	SY	GENERIC PAVING ITEM 6" CONCRETE DRIVEWAYS	60870000-E	1660	1.5	ACR	MOWING
30300000-E	862	25	LF	STEEL BM GUARDRAIL	60900000-E	1661	50	LB	SEED FOR REPAIR SEEDING
30450000-E	862	75	LF	STEEL BM GUARDRAIL, SHOP CURVED	60930000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
31500000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	60960000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
31800000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** (III SHOP CURVED)	61080000-E	1665	1.5	TON	FERTILIZER TOPDRESSING
32700000-N	SP	2	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	61145000-N	SP	10	MHR	SPECIALIZED HAND MOWING
34350000-N	SP	10	EA	GENERIC GUARDRAIL ITEM TIMBER BOLLARDS	61170000-N	SP	18	EA	RESPONSE FOR EROSION CONTROL
35690000-E	867	520	LF	BARBED WIRE FENCE RESET	61230000-E	1670	0.25	ACR	REFORESTATION
35740000-E	867	630	LF	GENERIC FENCING ITEM WOODEN FENCE RESET					
36280000-E	876	85	TON	RIP RAP, CLASS I					
36490000-E	876	5	TON	RIP RAP, CLASS B					
36560000-E	876	775	SY	FILTER FABRIC FOR DRAINAGE					
40720000-E	903	39	LF	SUPPORTS, 3-LB STEEL U-CHANNEL					
41020000-N	904	3	EA	SIGN ERECTION, TYPE E					
41550000-N	907	9	EA	DISPOSAL OF SIGN SYSTEM, U- CHANNEL					
44000000-E	1110	639	SF	WORK ZONE SIGNS (STATIONARY)					
44050000-E	1110	386	SF	WORK ZONE SIGNS (PORTABLE)					
44100000-E	1110	152	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)					

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SUMMARY OF EARTHWORK IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	ROCK EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- Sta. 10+11.25 to 10+52.00	0			55	55	
-Y1- Sta. 11+47.00 to 23+50.00	2,178	422		808		1,370
SUBTOTAL	2,178	422		863	55	1,370
-L- Sta. 12+09.00 to 15+25.00	221			490	269	
-Y2- Sta. 10+00.00 to 12+12.93	188			152		36
-Y3- Sta. 10+09.45 to 12+53.00	196			192		4
SUBTOTAL	605			834	269	40
PROJECT SUBTOTAL	2,783	422		1,697	324	1,410
Loss Due to Clearing and Grubbing	-75					-75
Waste in Lieu of Borrow					-324	-324
GRAND TOTAL	2,708	422		1,697	0	1,011
SAY	2,750					
DDE = 6 CY						
Shallow Undercut			100			

REMOVAL OF EXISTING PAVEMENT IN SQUARE YARDS

STATION - STATION	LOCATION	ASPHALT REMOVAL	ASPHALT BREAKUP	CONCRETE REMOVAL	CONCRETE BREAKUP
-Y1- STA 13+30 to 15+15	Rt	157			
-Y1- STA 15+15 to 20+45	Rt	1,089			
-Y1- STA 20+45 to 22+10	Rt	170			
-Y1- STA 24+60	Rt	29			
TOTAL		1,445			
SAY		1,450			

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.

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

4/10/10/2010

COMPUTED BY: DATE:
CHECKED BY: AEV DATE: 11/22/10

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. B-3187
SHEET NO. 3-B

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

Main table with columns for STATION, LOCATION, STRUCTURE NO., DRAINAGE PIPE, C.S. PIPE, CLASS III R.C. PIPE, ENDWALLS, FRAME, GRATES AND HOOD, CONCRETE TRANSITIONAL SECTION, and REMARKS.

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

Summary table with columns for SURVEY LINE, BEG. STA., END STA., LOCATION, LENGTH, WARRANT POINT, ANCHORS, IMPACT ATTENUATOR TYPE 350, and REMARKS.

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5/28/09

PROJECT REFERENCE NO. B-3187 SHEET NO. 5

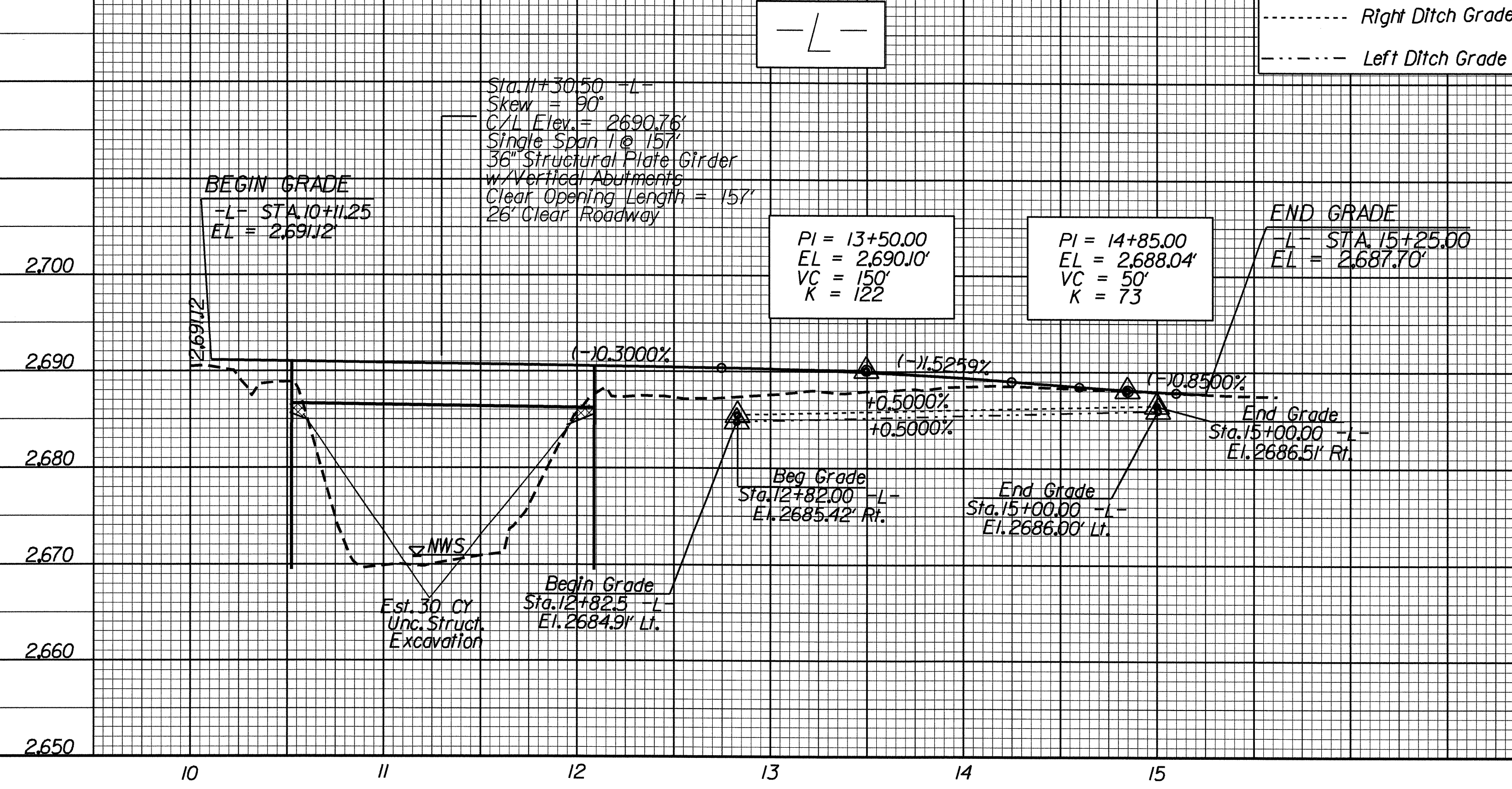
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

SEAL 31977

12/14/10

BM-2 EL = 2689.51'
 N = 645851.2380 E = 838710.1380
 8" SPIKE SET ON TOP OF 12" CHERRY STUMP
 -BL- STA.13+37.81 (6.75' LT)
 -L- STA.12+06.99 (7.04' LT)

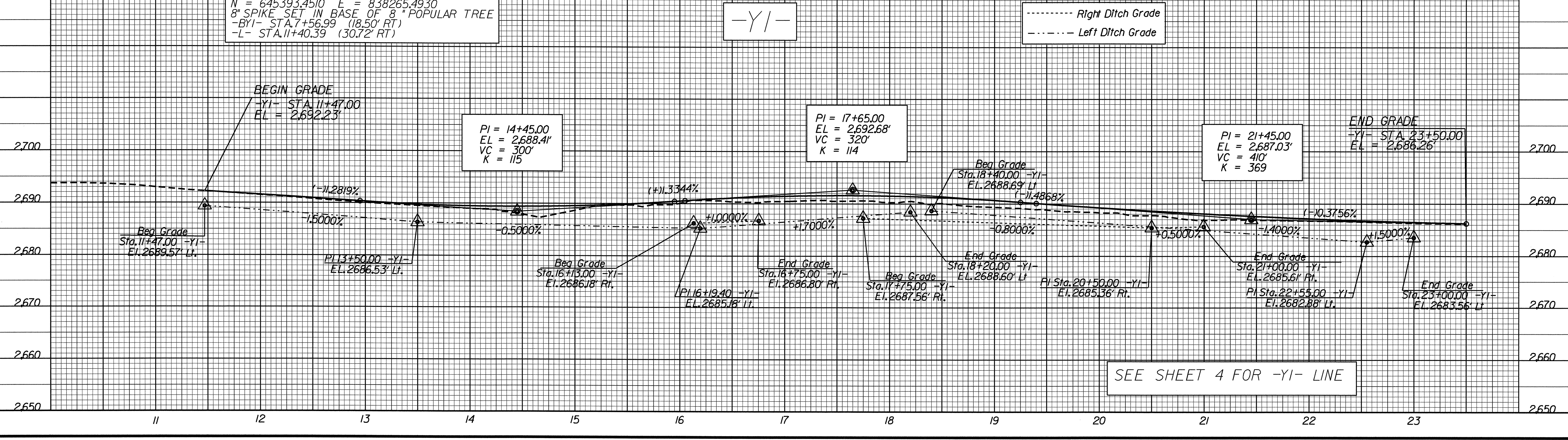


BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 10,500	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2684J	FT
BASE DISCHARGE	= 14,200	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2686.3	FT
OVERTOPPING DISCHARGE	= 20,800	CFS
OVERTOPPING FREQUENCY	= 500 +	YRS
OVERTOPPING ELEVATION	= 2689.32	FT
DATE OF SURVEY	= 8-7-07	
W.S.ELEVATION AT DATE OF SURVEY	= 2671.0	FT

SEE SHEET 4 FOR -L- LINE

BM-6 EL = 2685.90'
 N = 645393.4510 E = 838265.4930
 8" SPIKE SET IN BASE OF 8" POPULAR TREE
 -BYI- STA.7+56.99 (18.50' RT)
 -L- STA.11+40.39 (30.72' RT)



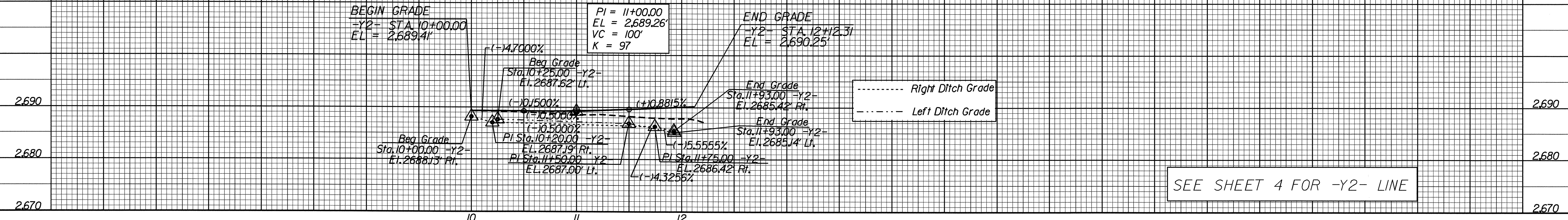
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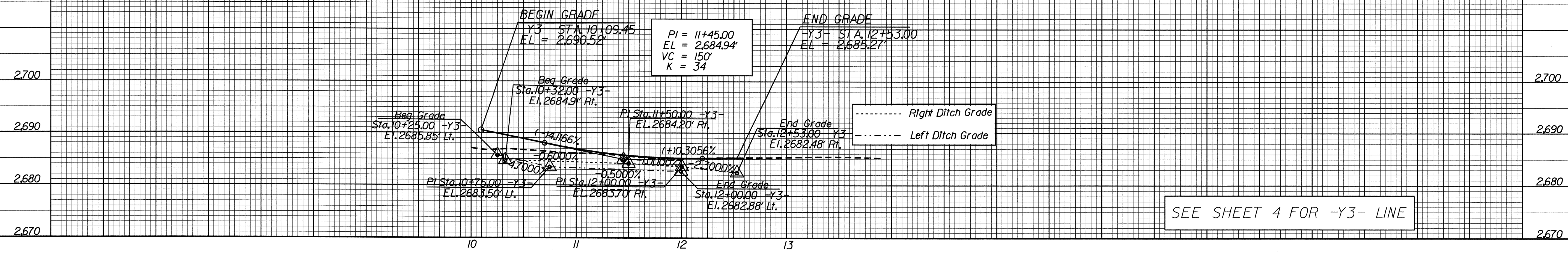
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PROJECT REFERENCE NO. B-3187	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-Y2-



-Y3-



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