

09/08/09

See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

GASTON COUNTY

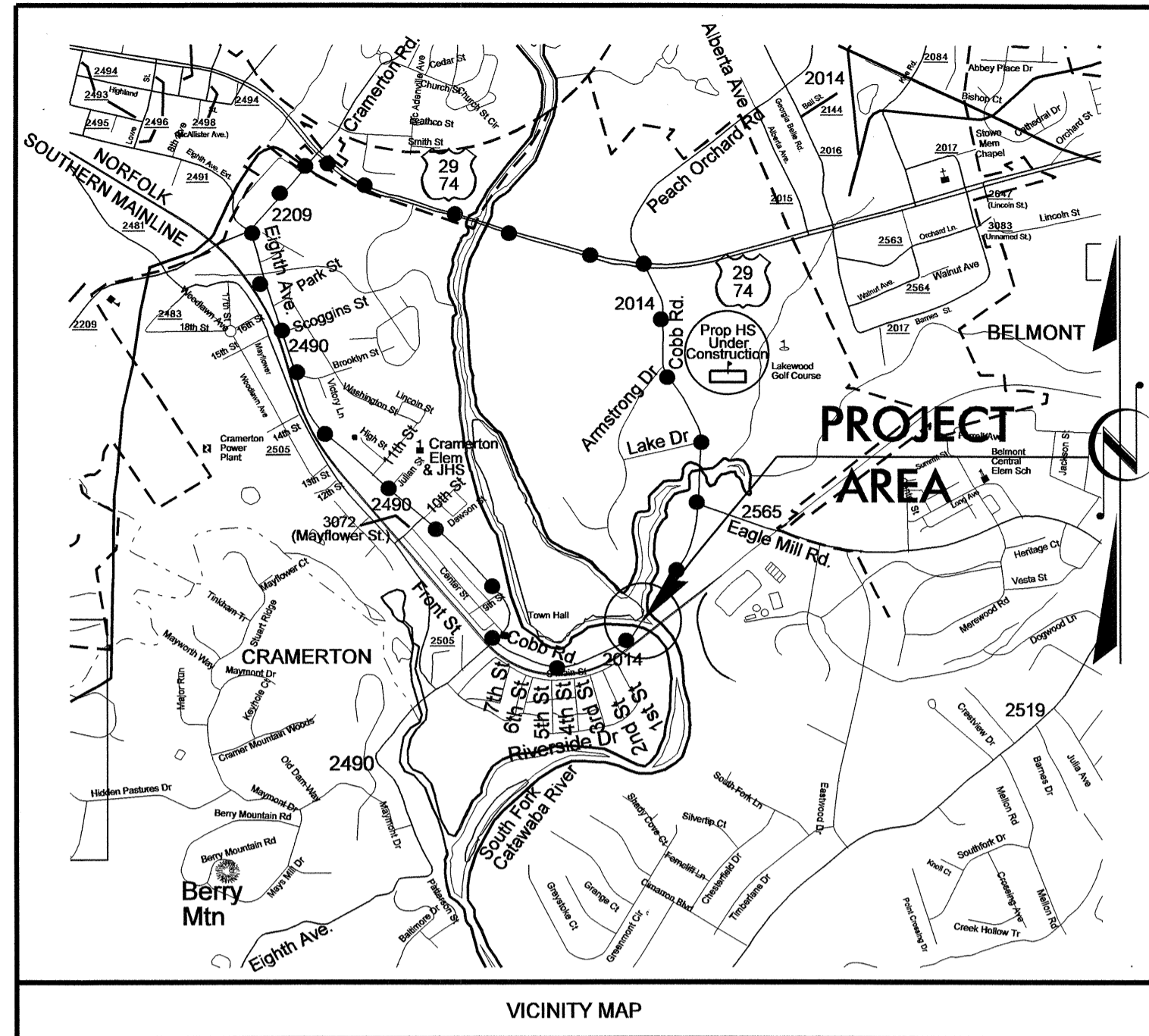
**LOCATION: BRIDGE NO. 6 ON SR 2014 (LAKEWOOD RD)
OVER SOUTH FORK CATAWBA RIVER**
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4752	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38524.1.1	BRSTP-2014(3)	PE	
38524.2.1	BRSTP-2014(3)	RW,UTIL	
38524.3.1	BRSTP-2014(3)	CONSTR	



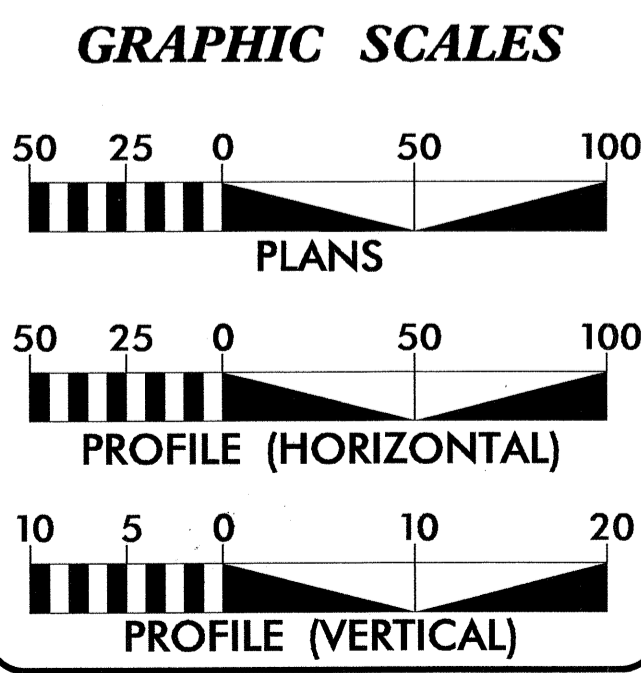
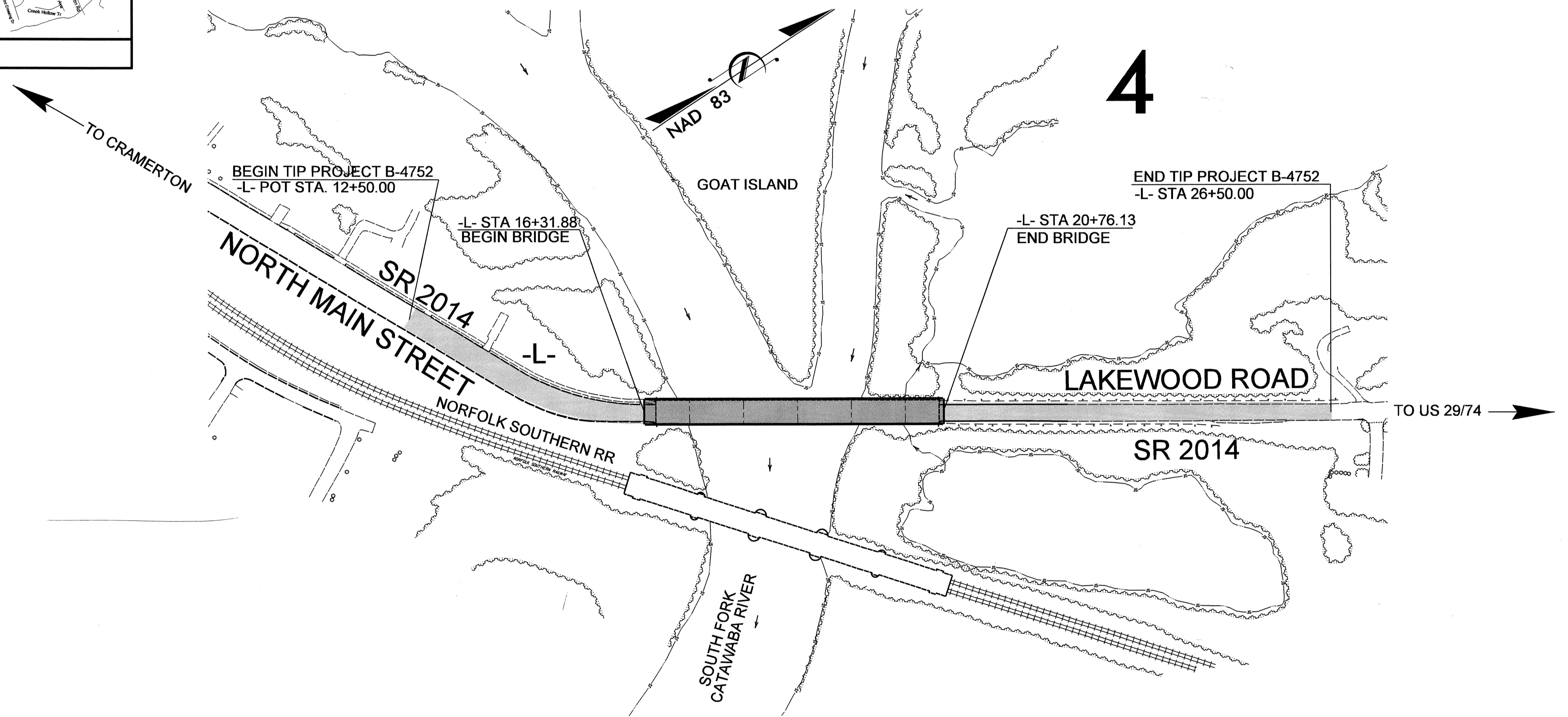
TIP PROJECT: B-4752

CONTRACT: C203014



VICINITY MAP

••• OFFSITE DETOUR



DESIGN DATA

ADT 2012 =	4740
ADT 2035 =	7500
DHV =	10%
D =	70 %
T =	4 % *
V =	40 MPH
* TTST 1% DUAL 3%	

FUNCTIONAL CLASSIFICATION:
MINOR ARTERIAL

SUBREGIONAL TIER DESIGN

PROJECT LENGTH

LENGTH ROADWAY F.A. PROJECT BRSTP-2014(3) =	0.181
LENGTH STRUCTURE F.A. PROJECT BRSTP-2014(3) =	0.084
TOTAL LENGTH F.A. PROJECT BRSTP-2014(3) =	0.265

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
DECEMBER 21, 2011

LETTING DATE:
AUGUST 21, 2012

JASON MOORE, P.E.
PROJECT ENGINEER

JEANIE TYSON
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

30 MAY 2012

Ray D. Long
SIGNATURE

ROADWAY DESIGN ENGINEER

5/24/12

Jason Moore
SIGNATURE

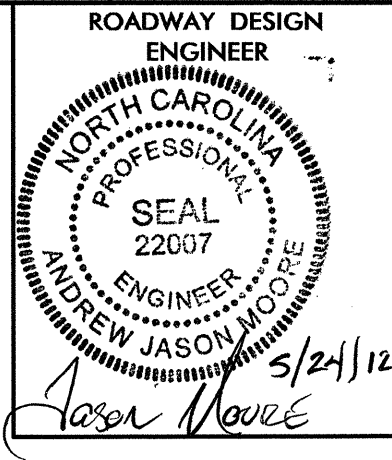
Professional Engineer Seals for Jason Moore and Andrew Jason Moore.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER

P.E.

21-MAY-2012 16:56
R:\Roadway\Proj\01\B4752_rdy_tsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$



8/17/99

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	TYPICAL SECTIONS
2-A	ROCK EMBANKMENT TYPICAL
2-B THRU 2-C	DETAIL OF GUARDRAIL BURIED IN CUT (BIC)
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF EARTHWORK, GUARDRAIL SUMMARY, ASPHALT PAVEMENT REMOVAL SUMMARY, SHOULDER BERM GUTTER SUMMARY
3-B	DRAINAGE SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-3	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MANAGEMENT PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-3	SIGNING PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
UC-1 THRU UC-4	UTILITIES BY CONTRACT PLANS
X-1 THRU X-6	CROSS SECTIONS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 11/01/11

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

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:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3' RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS 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.

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

- DUKE ENERGY DISTRIBUTION - POWER
- PSNC - GAS
- TWO RIVER UTILITIES - WATER, SEWER

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.

2012 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, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.25	Anchorage for Frames - Brick or Concrete or Precast
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
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout - Radius Type
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

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Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○
Property Corner	⊗
Property Monument	⊞
Parcel/Sequence Number	⑩23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	⊞
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-WLB-
Proposed Wetland Boundary	-WLB-
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	⊙
Well	⊙
Small Mine	⊗
Foundation	▭
Area Outline	▭
Cemetery	⊕
Building	▭
School	▭
Church	⊕
Dam	▭

HYDROLOGY:

Stream or Body of Water	~~~~~
Hydro, Pool or Reservoir	▭
Jurisdictional Stream	-JS-
Buffer Zone 1	-BZ 1-
Buffer Zone 2	-BZ 2-
Flow Arrow	←
Disappearing Stream	→
Spring	⊙
Wetland	⊙
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 Drainage / Utility Easement	-DUE-
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	⊞
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊙
Pavement Removal	▭

VEGETATION:

Single Tree	⊙
Single Shrub	⊙
Hedge	~~~~~
Woods Line	~~~~~
Orchard	⊙
Vineyard	▭

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

Existing Telephone Pole	⊙
Proposed Telephone Pole	⊙
Telephone Manhole	⊙
Telephone Booth	⊞
Telephone Pedestal	⊞
Telephone Cell Tower	⊙
U/G Telephone Cable Hand Hole	⊞
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

WATER:

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

TV:

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

GAS:

Gas Valve	⊙
Gas Meter	⊙
Recorded U/G Gas Line	-----
Designated U/G Gas Line (S.U.E.*)	-----
Above Ground Gas Line	-----

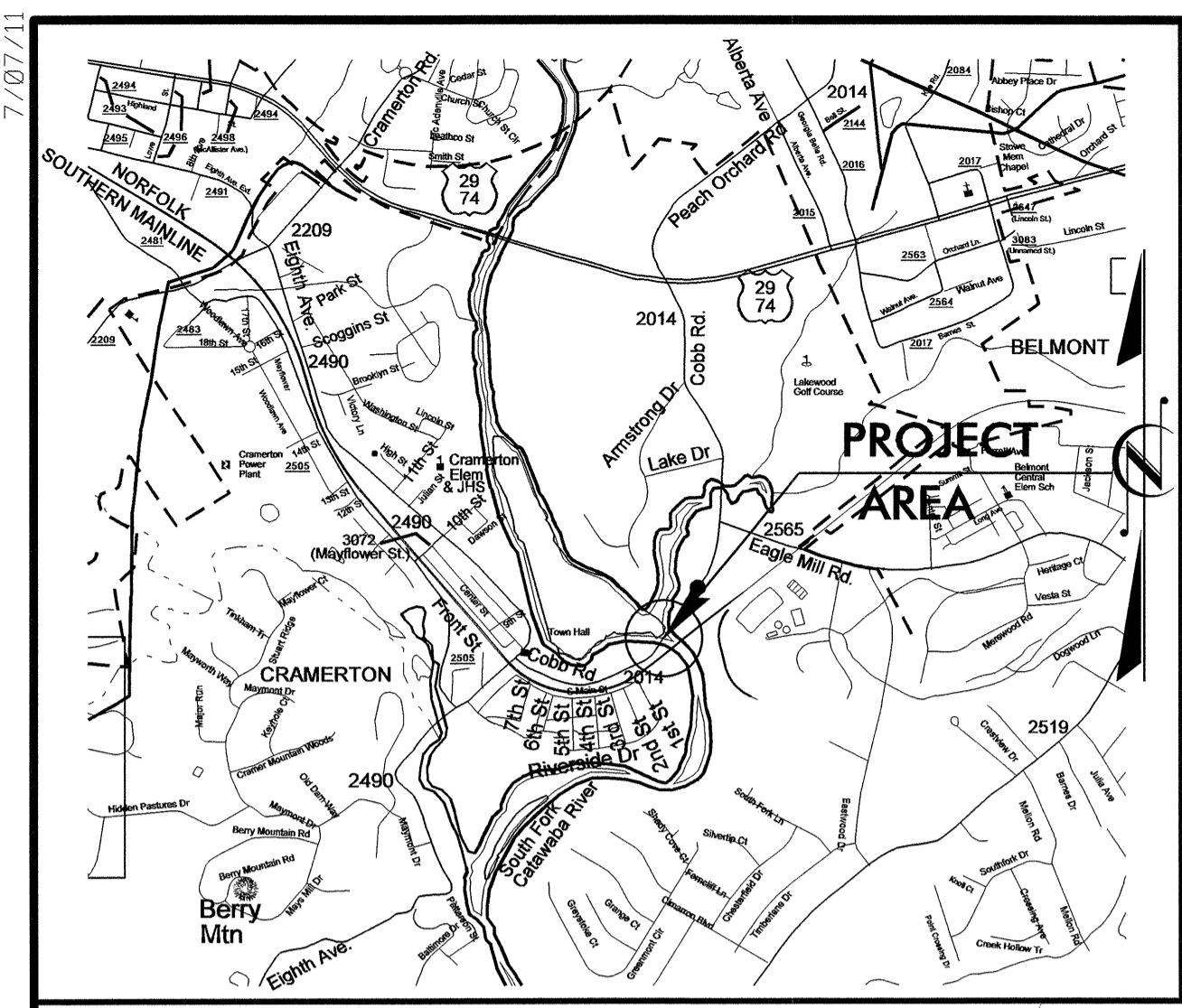
SANITARY SEWER:

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

MISCELLANEOUS:

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

SURVEY CONTROL SHEET



BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
6	BL-6	546581.3290	1382157.1640	595.25	OUTSIDE PROJECT LIMITS	
1	B4752-1	546671.0200	1382470.8080	599.74	OUTSIDE PROJECT LIMITS	
2	B4752-2	546963.6000	1383038.9790	595.76	15+71.46	41.93 RT
3	BL-3	547439.0690	1383286.2890	589.90	20+99.39	19.25 LT
4	BL-4	547729.3380	1383531.9730	594.42	24+77.23	23.80 RT
5	BL-5	548047.1330	1383717.8400	602.18	OUTSIDE PROJECT LIMITS	

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+50.00	-26.96	546852.5938	1382721.8314
L	12+78.12	-26.94	546864.4740	1382747.3170
L	13+73.71	-26.98	546904.9490	1382833.9210
L	14+51.94	-27.05	546938.1833	1382902.1210
L	15+03.00	-26.04	546963.8192	1382941.7073
L	15+48.15	-24.51	546990.7084	1382973.8217
L	16+09.16	-29.99	547037.6460	1383005.1790
L	17+06.56	30.00	547085.0730	1383109.0208
L	23+00.00	30.00	547578.5224	1383438.6767
L	26+07.79	30.00	547834.4571	1383609.6575
L	26+50.00	-30.00	547902.8823	1383583.2123
L	26+50.00	28.88	547870.1768	1383632.1679

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4752-1"

WITH NAD 83/CORS96 STATE PLANE GRID COORDINATES OF NORTHING: 546671.020(±) EASTING: 1382470.808(±) ELEVATION: 599.74(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999849

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4752-1" TO -L- STATION 12+50.00 IS N59°05'09.5"E 305.880'

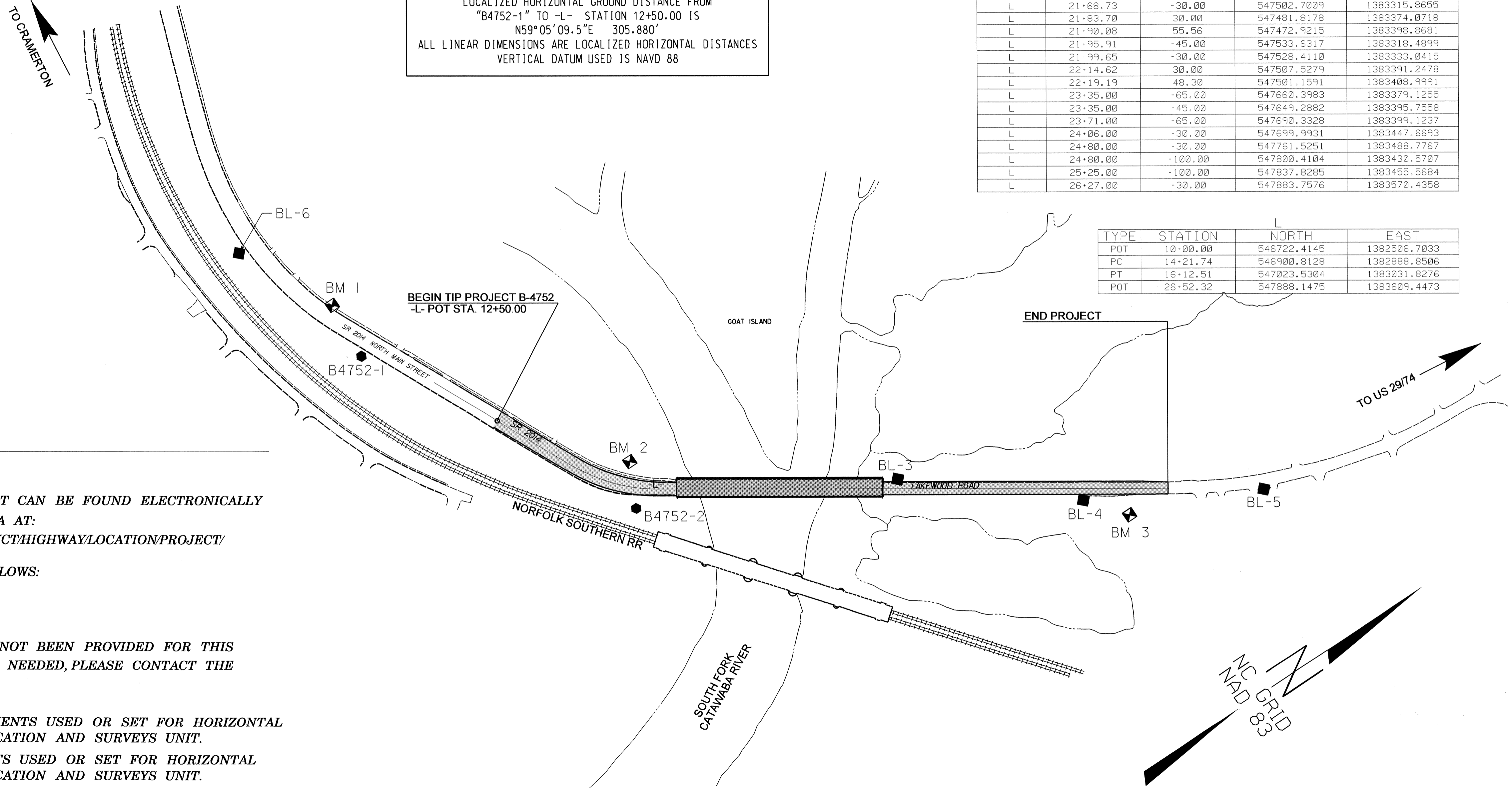
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+50.00	-36.96	546861.6542	1382717.6017
L	12+78.12	-36.94	546873.5349	1382743.0884
L	13+73.71	-36.98	546914.0065	1382829.6883
L	14+05.00	-150.00	547029.6510	1382810.2340
L	14+05.00	-37.51	546927.7100	1382857.8195
L	14+05.00	-27.50	546918.6555	1382862.0502
L	14+45.00	-150.00	547042.7501	1382837.2497
L	14+45.00	-27.43	546935.3748	1382896.3597
L	14+45.00	-37.44	546944.1460	1382891.5312
L	15+03.00	-35.94	546971.5834	1382935.5639
L	20+63.53	-451.68	547649.4681	1382906.7889
L	20+92.63	-458.94	547677.7058	1382916.9199
L	21+68.73	-30.00	547502.7009	1383315.8655
L	21+83.70	30.00	547481.8178	1383374.0718
L	21+90.08	55.56	547472.9215	1383398.8681
L	21+95.91	-45.00	547533.6317	1383318.4899
L	21+99.65	-30.00	547528.4110	1383333.0415
L	22+14.62	30.00	547507.5279	1383391.2478
L	22+19.19	48.30	547501.1591	1383408.9991
L	23+35.00	-65.00	547660.3983	1383379.1255
L	23+35.00	-45.00	547649.2882	1383395.7558
L	23+71.00	-65.00	547690.3328	1383399.1237
L	24+06.00	-30.00	547699.9931	1383447.6693
L	24+80.00	-30.00	547761.5251	1383488.7767
L	24+80.00	-100.00	547800.4104	1383430.5707
L	25+25.00	-100.00	547837.8285	1383455.5684
L	26+27.00	-30.00	547888.7576	1383570.4358

.....
 BM1 ELEVATION = 598.01
 N 546680 E 1382351
 L STATION 10+00
 S 74°45'09.66" W DIST 161.28
 RR SPIKE IN LIGHT POLE

.....
 BM2 ELEVATION = 590.53
 N 547006 E 1382953
 L STATION 15+44 50 LEFT
 RR SPIKE IN 12" HICKORY

.....
 BM3 ELEVATION = 599.92
 N 547791 E 1383609
 L STATION 25+72 54 RIGHT
 RR SPIKE IN 20" HICKORY



TYPE	STATION	NORTH	EAST
POT	10+00.00	546722.4145	1382506.7033
PC	14+21.74	546900.8128	1382888.8506
PT	16+12.51	547023.5304	1383031.8276
POT	26+52.32	547888.1475	1383609.4473

NOTES:

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/doh/preconstruct/highway/location/project/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4752_LS_CONTROL.TXT
 B4752_LS_LOCAL.TXT
 SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
 - INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 - INDICATES LOCAL CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 - ◆ INDICATES BENCHMARKS USED OR SET FOR VERTICAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
- PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

NOTE: DRAWING NOT TO SCALE

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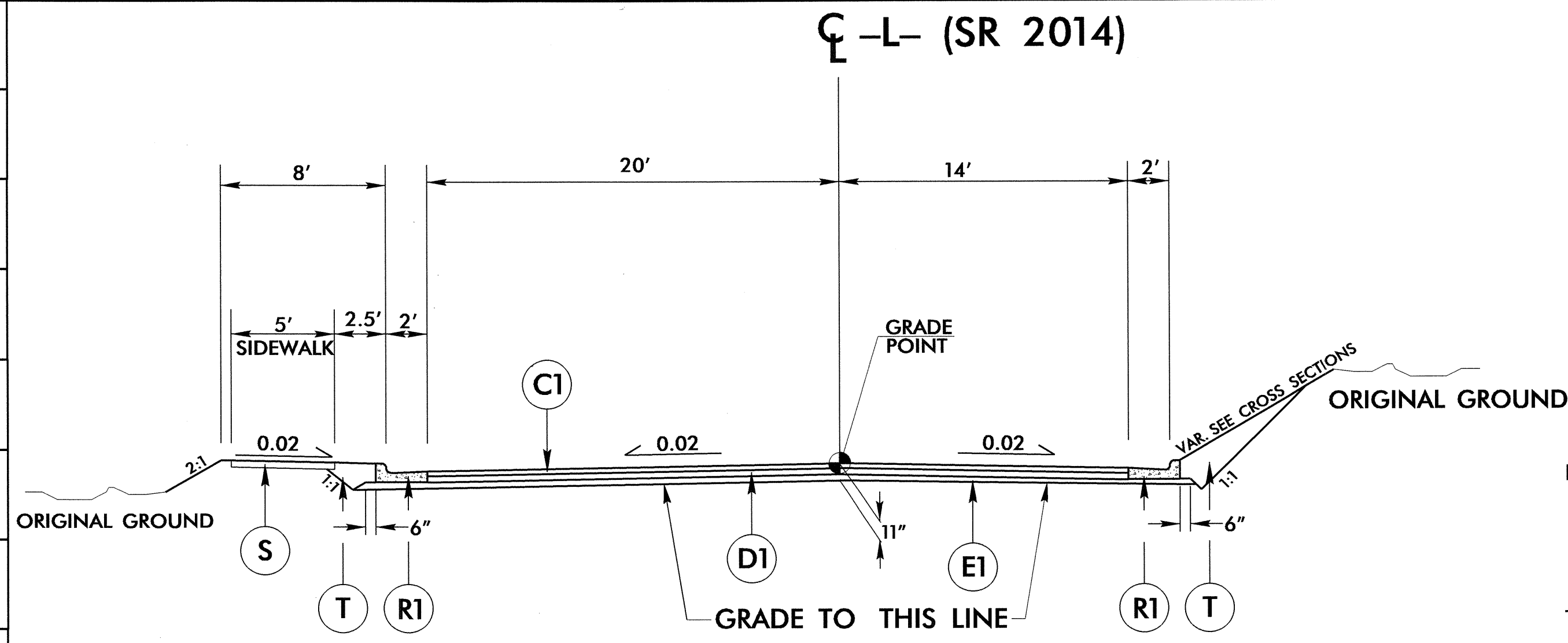
6/2/99

PAVEMENT SCHEDULE

(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-4" CONCRETE SHOULDER BERM GUTTER.
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.

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



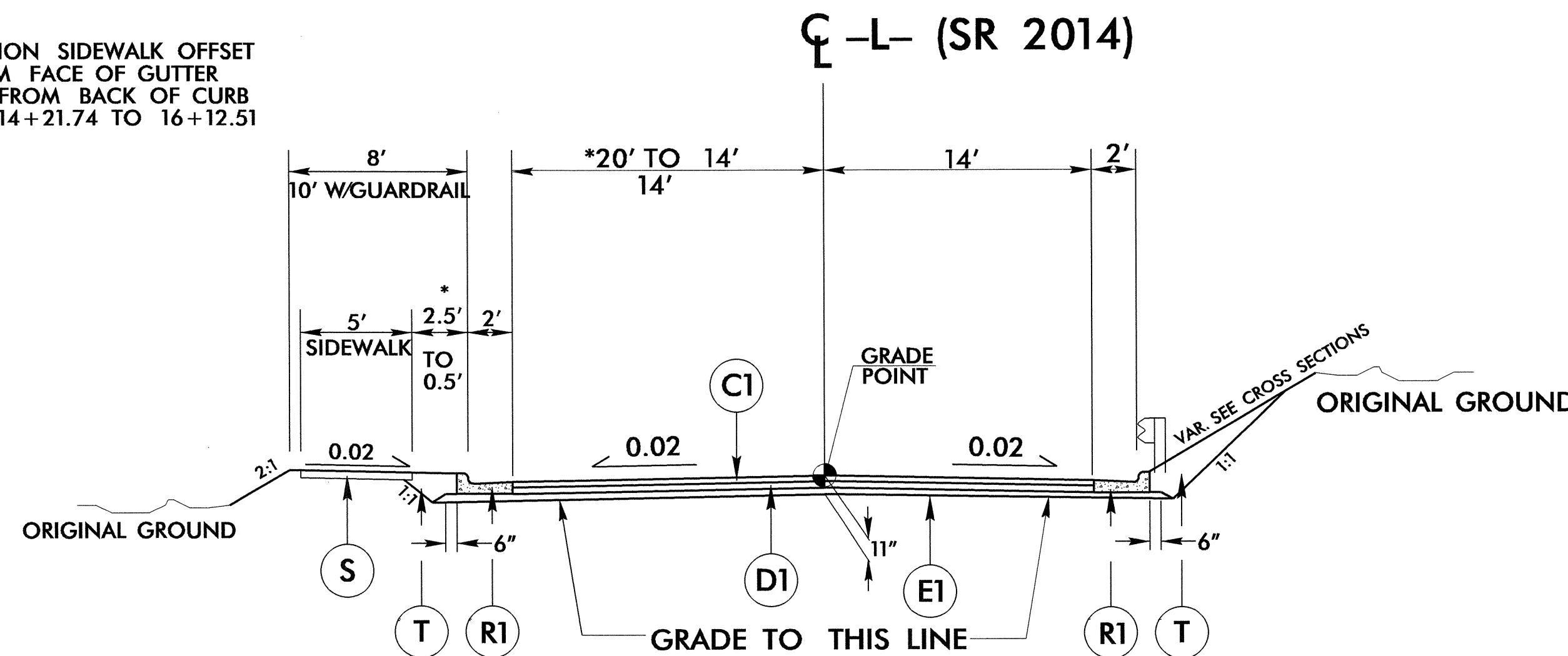
TYPICAL SECTION No. 1

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION #1
-L- STA 12+50.00 TO 13+00.00

USE TYPICAL SECTION No. 1

-L- STA 13+00.00 TO STA 14+21.74

*TRANSITION SIDEWALK OFFSET
2.5' FROM FACE OF GUTTER
TO 0.0' FROM BACK OF CURB
-L- STA 14+21.74 TO 16+12.51

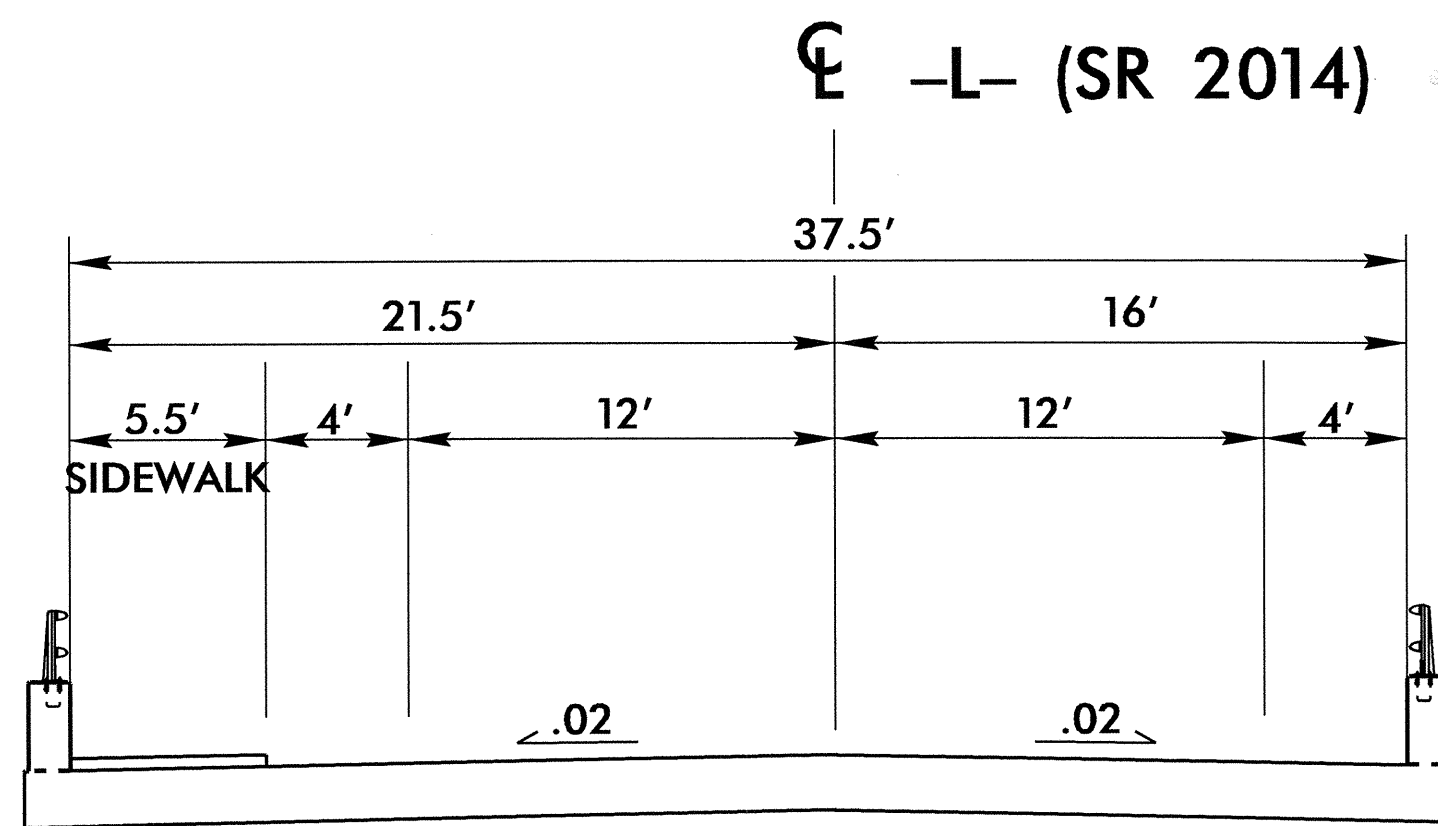


TYPICAL SECTION No. 2

*NOTE: TRANSITION LANE WIDTH AND SIDEWALK
OFFSET ON LEFT SIDE FROM
-L- STA 14+21.74 TO -L- STA 16+12.51

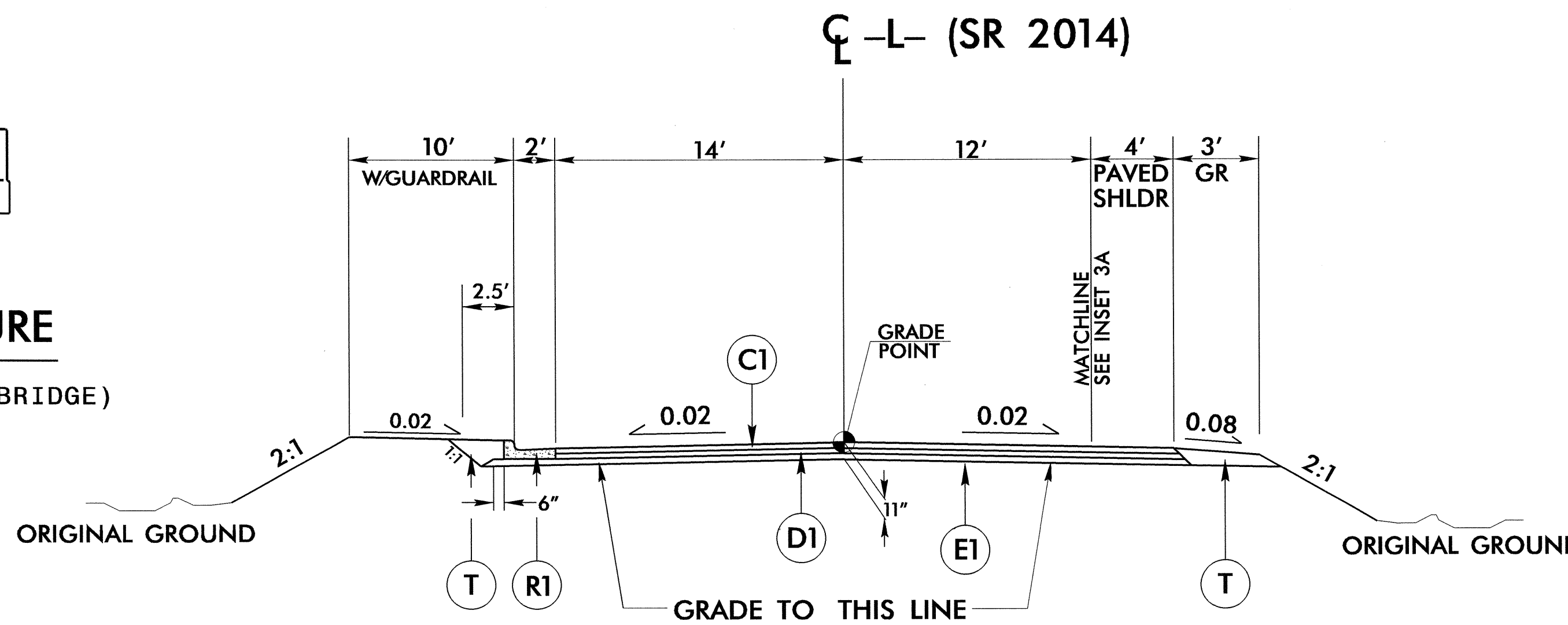
USE TYPICAL SECTION No. 2

-L- STA 14+21.74 TO STA 16+31.88 (BEGIN BRIDGE)



USE TYPICAL SECTION ON STRUCTURE

-L- STA 16+31.88 (BEGIN BRIDGE) TO 20+76.13 (END BRIDGE)



TYPICAL SECTION No. 3

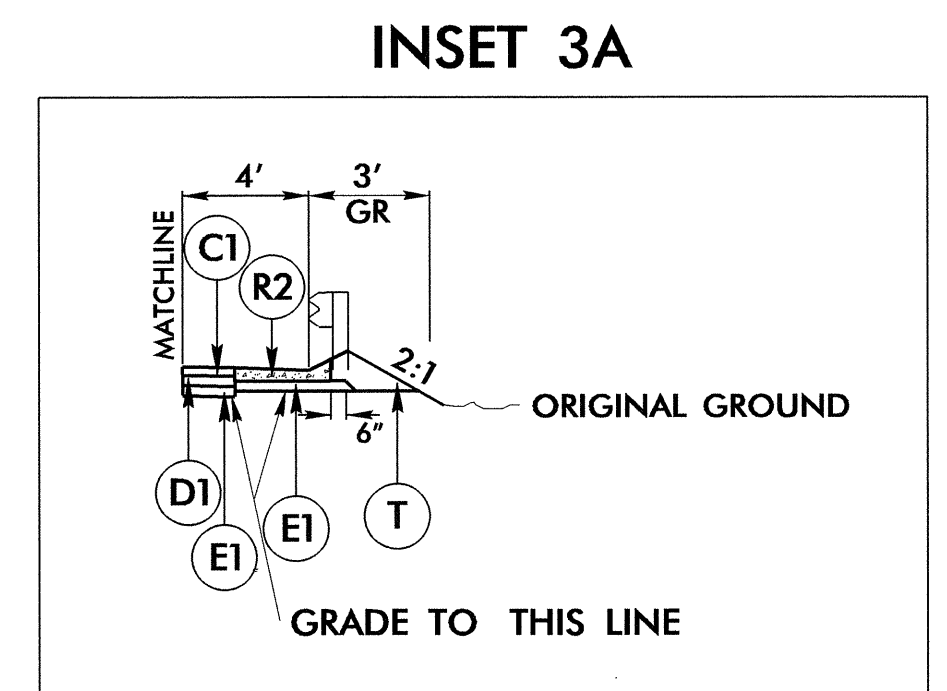
NOTE: USE INSET 3A IN CONJUNCTION WITH
TYPICAL SECTION NO.3
-L- STA 21+00.13 TO 24+27.00

USE TYPICAL SECTION No. 3

-L- STA 20+76.13 (END BRIDGE) TO 26+00.00

NOTE: TRANSITION FROM TYPICAL SECTION #3 TO EXISTING
-L- STA 26+00.00 TO 26+50.00

PROJECT REFERENCE NO. B-4752	SHEET NO. 2
ROADWAY DESIGN ENGINEER ANDREW JASON MOORE SEAL 22007 5/24/12	PAVEMENT DESIGN ENGINEER CLAYTON S. MORRISON SEAL 22896 5/25/12



NOTE: USE INSET 3A IN CONJUNCTION WITH
TYPICAL SECTION NO.3
-L- STA 21+00.13 TO 24+27.00

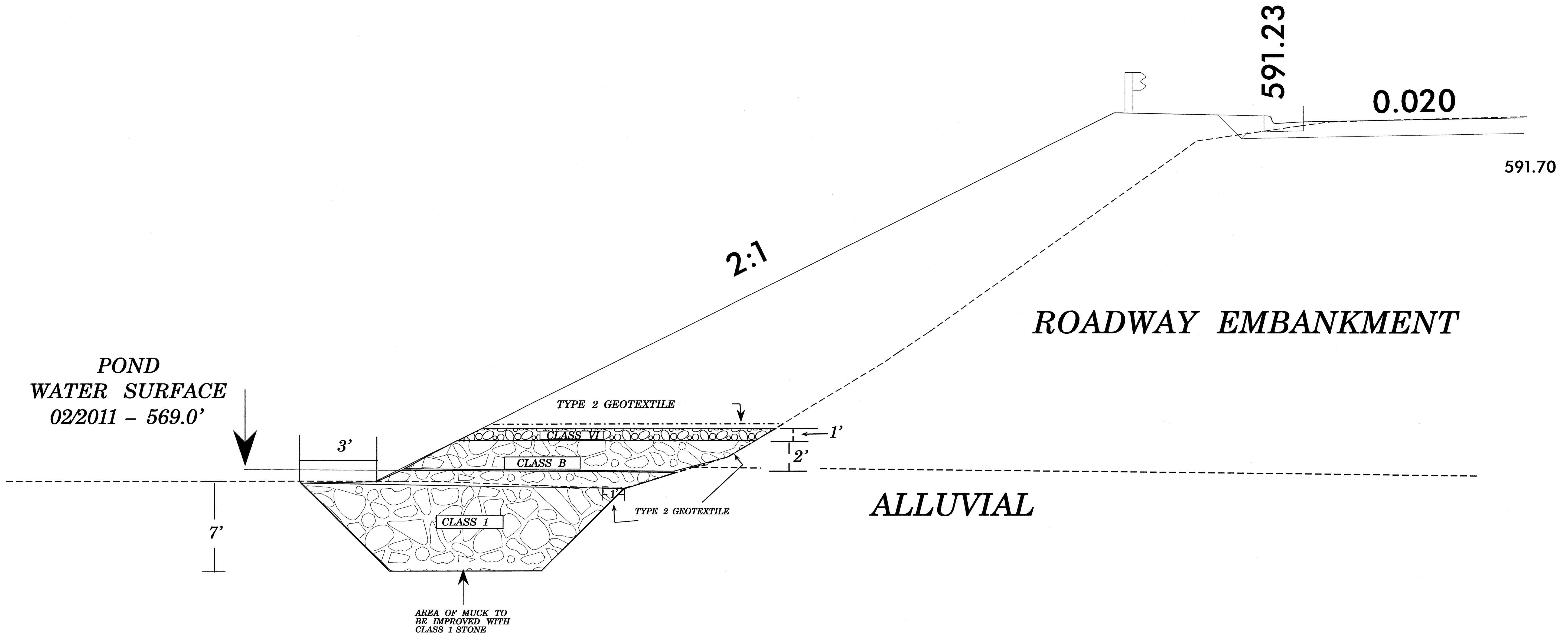
USE TYPICAL SECTION No. 3

-L- STA 20+76.13 (END BRIDGE) TO 26+00.00

NOTE: TRANSITION FROM TYPICAL SECTION #3 TO EXISTING
-L- STA 26+00.00 TO 26+50.00

24-MAY-2012 12:58
R:\Roadway\Projects\4752_rdy_typ.dgn
R:\Roadway\Projects\4752_rdy_typ.dgn

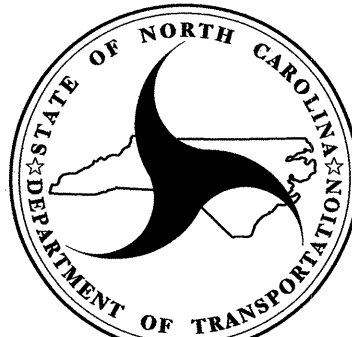
ROCK EMBANKMENT TYPICAL



PREPARED BY: JP ROGERS DATE: 03/2011
 REVIEWED BY: S CLARK DATE: 05/12

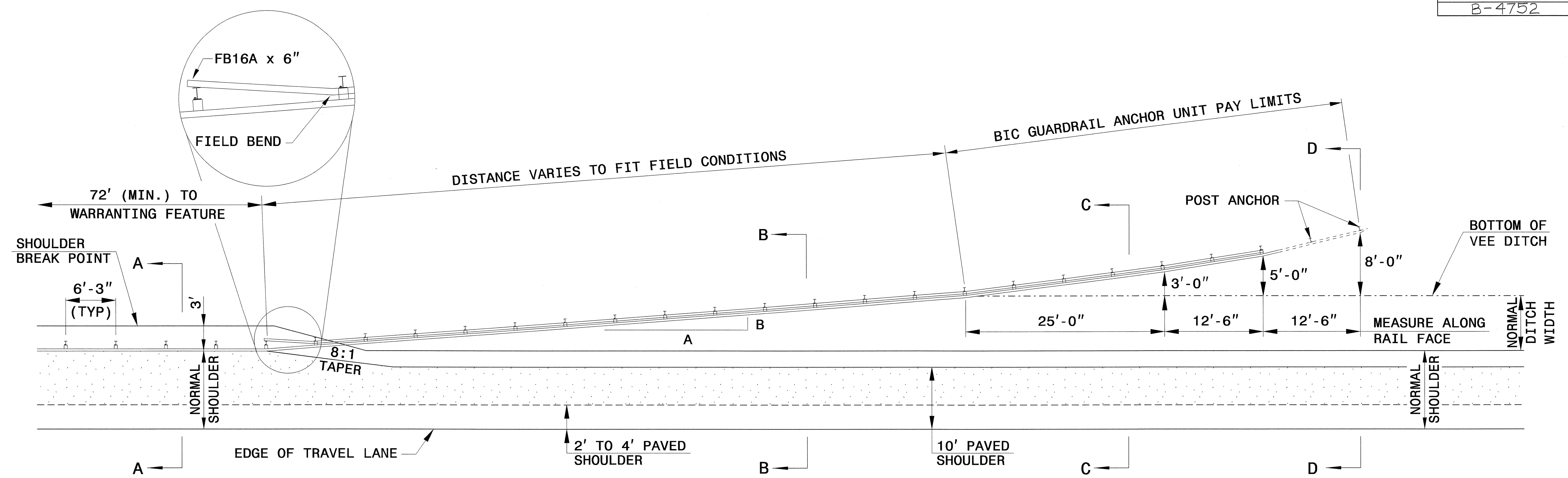
GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
 CONTRACT OFFICE


 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

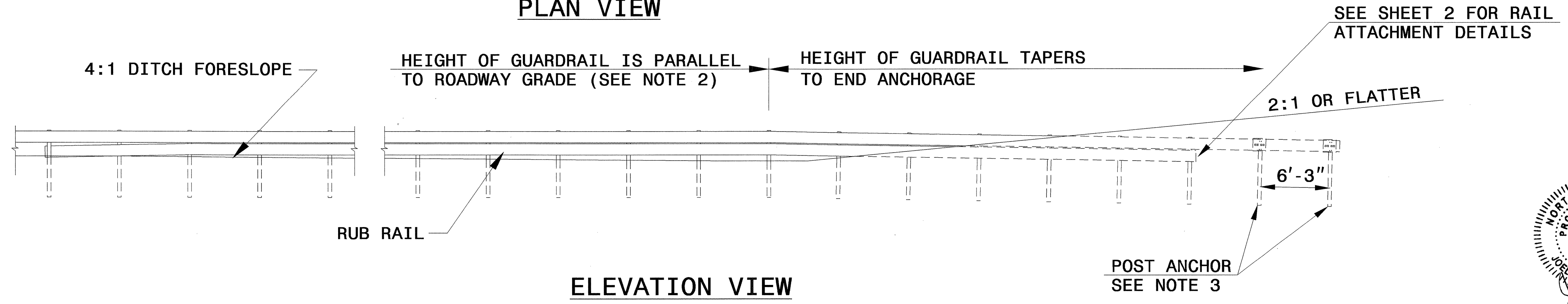
BRIDGE #06 ON SR 2014 LAKEWOOD
 RD. OVER SOUTH FORK OF THE
 CATAWBA RIVER

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

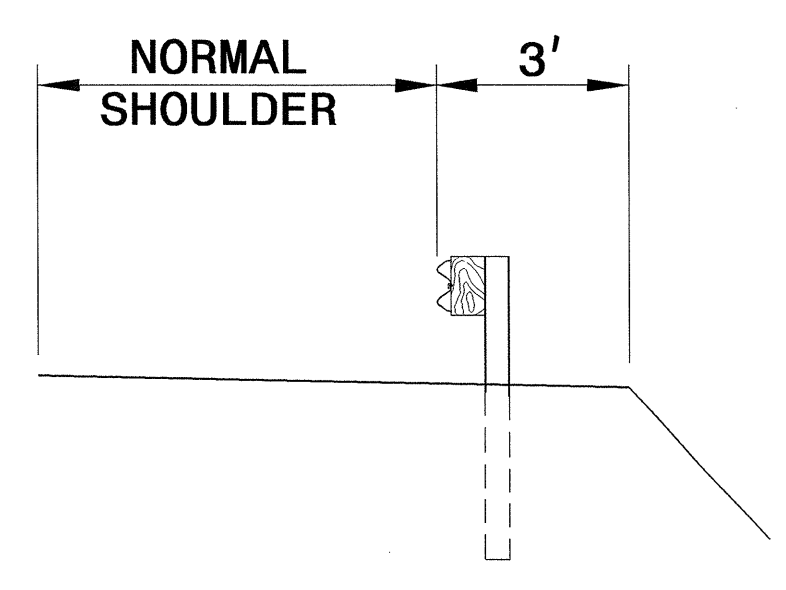


PLAN VIEW

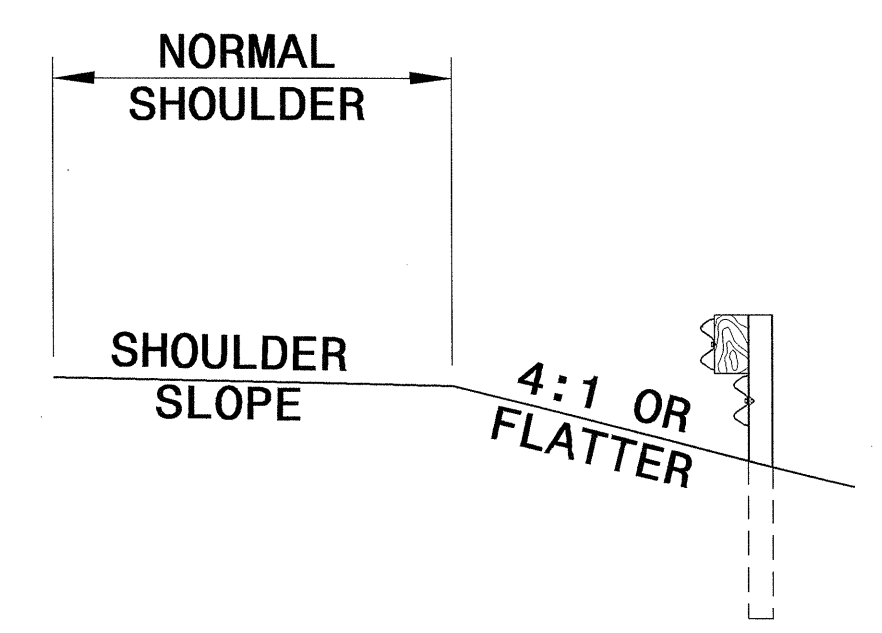
DESIGN SPEED mph	A:B
≥ 60	13:1
55	12:1
50	11:1
45	10:1
40	9:1
30 or less	7:1



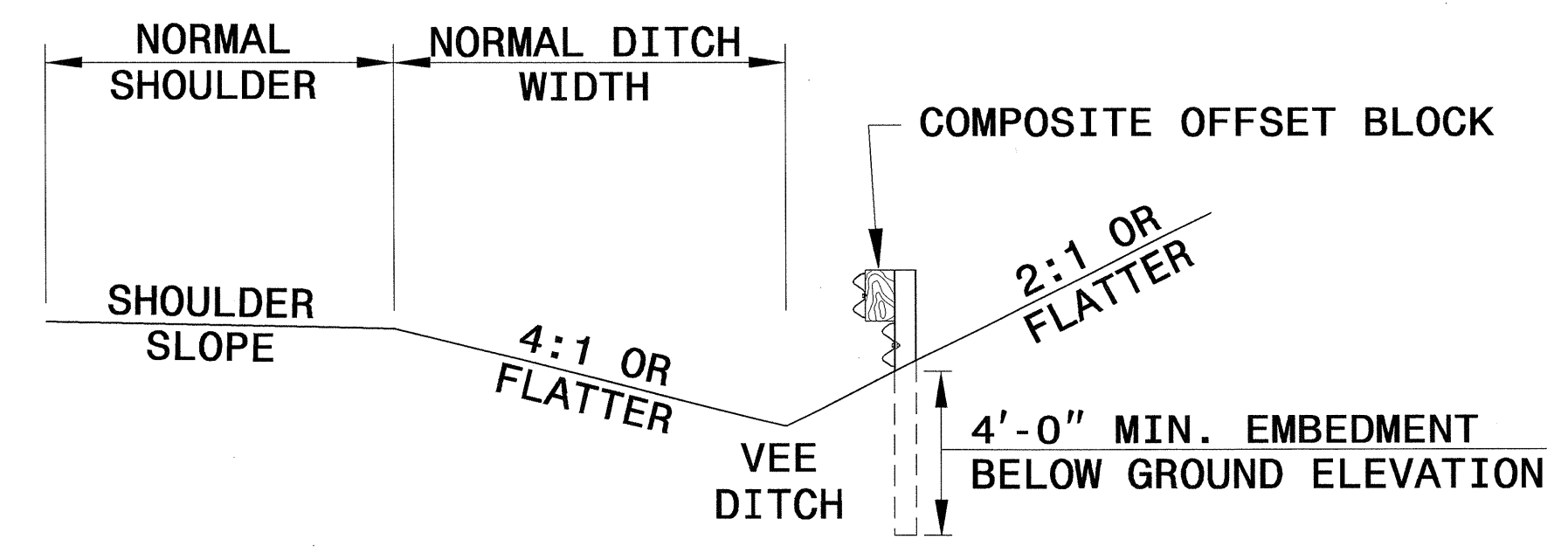
ELEVATION VIEW



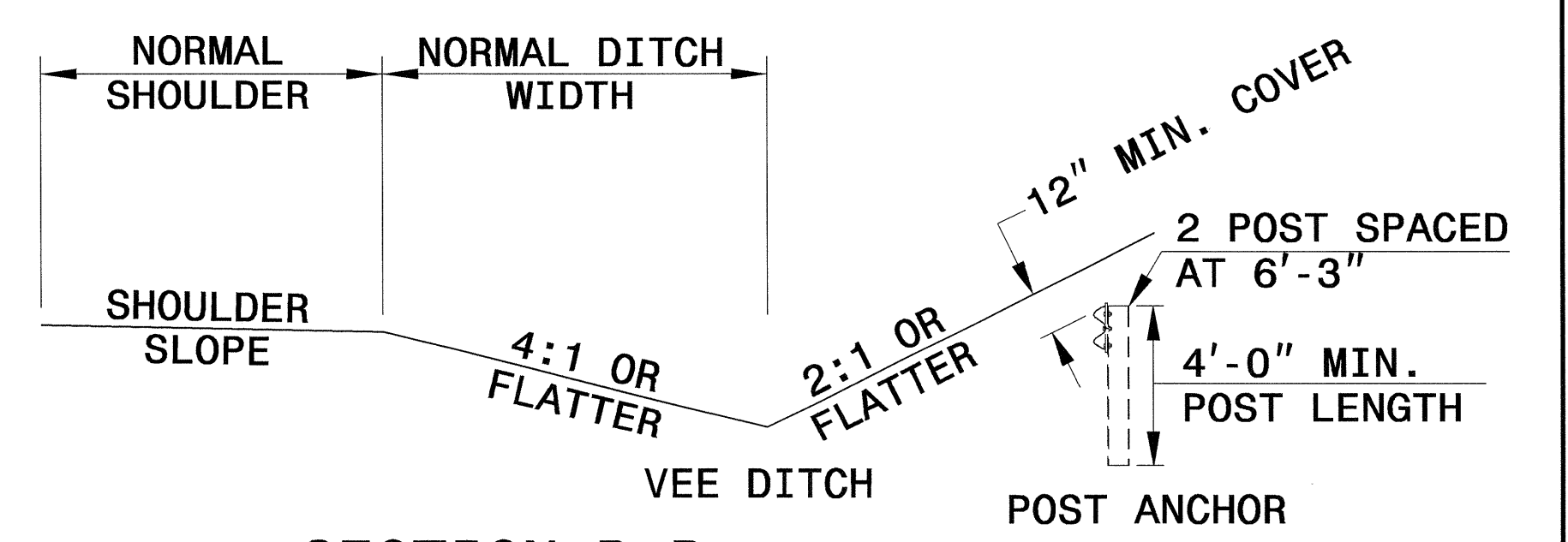
SECTION A-A



SECTION B-B
(WITH RUBRAIL)

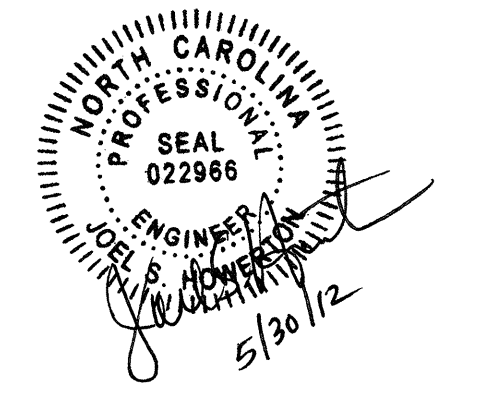


SECTION C-C
(WITH RUBRAIL)



SECTION D-D

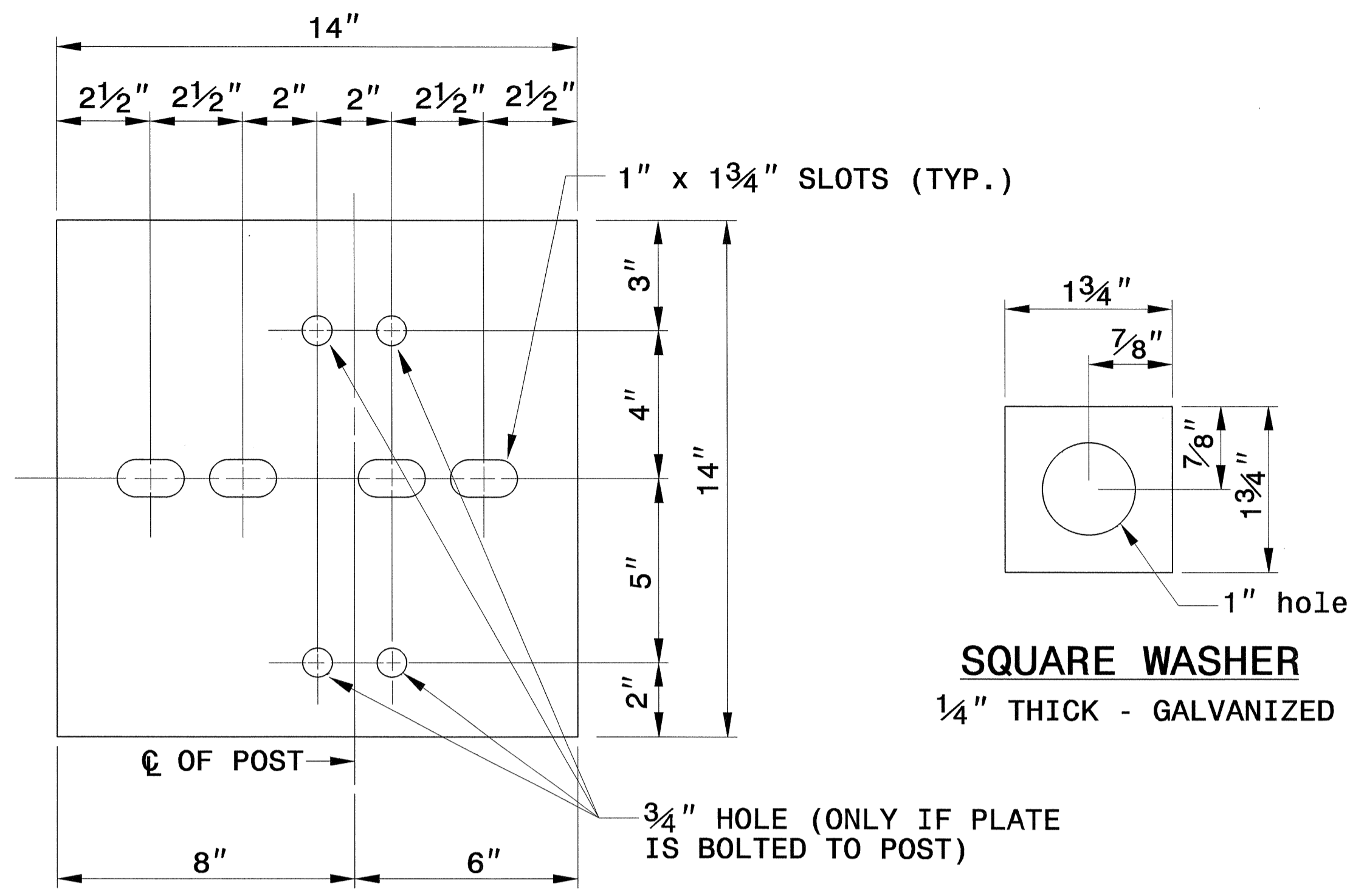
- NOTES:
- VARIABLE DITCH OFFSETS MAY BE USED TO FIT FIELD CONDITIONS.
 - HEIGHT OF GUARDRAIL MAY BE TAPERED DOWN IN ELEVATION TO MAINTAIN 3'-9" MAXIMUM HEIGHT.
 - ALL POSTS ARE 8'-0" IN LENGTH FROM WHERE THE GUARDRAIL FLARES AWAY FROM THE SHOULDER BACK TO THE DITCH FLOW LINE. GUARDRAIL POSTS BEYOND THE DITCH FLOW LINE MAY BE SHORTENED AS LONG AS A MINIMUM OF 4 FT. EMBEDMENT REMAINS BELOW THE EXISTING GROUND LINE. POST FOR POST ANCHOR MAY BE REDUCED TO 4 FT., ALL OF WHICH WILL BE BELOW GROUND.
 - REFER TO NCDOT STANDARD DRAWINGS 862.02 FOR GUARDRAIL INSTALLATION NOT COVERED IN THIS DETAIL AND INSTALL IN ACCORDANCE WITH SECTION 862 OF THE STANDARDS SPECIFICATIONS.
 - PAYMENT FOR ANY RUBRAIL INSTALLATION BEYOND BIC GUARDRAIL ANCHOR UNIT PAY LIMITS WILL BE INCIDENTAL TO PAYMENT FOR BIC ANCHOR UNIT.



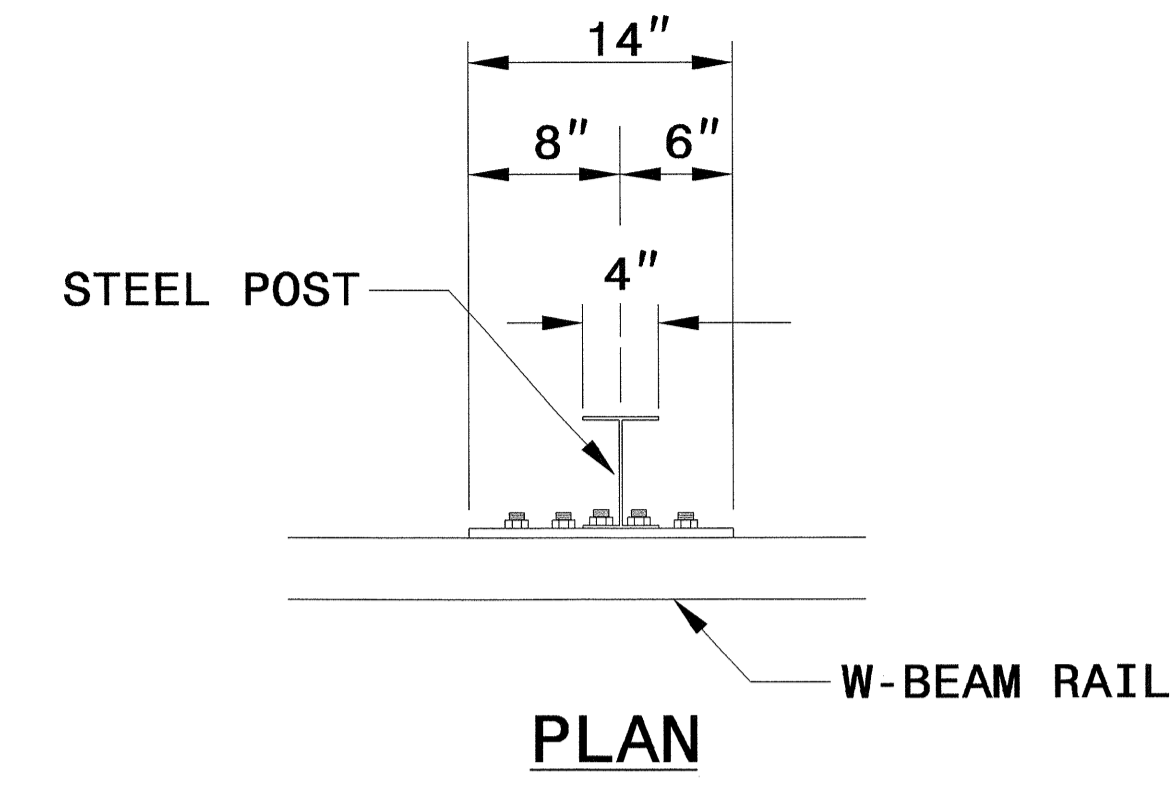
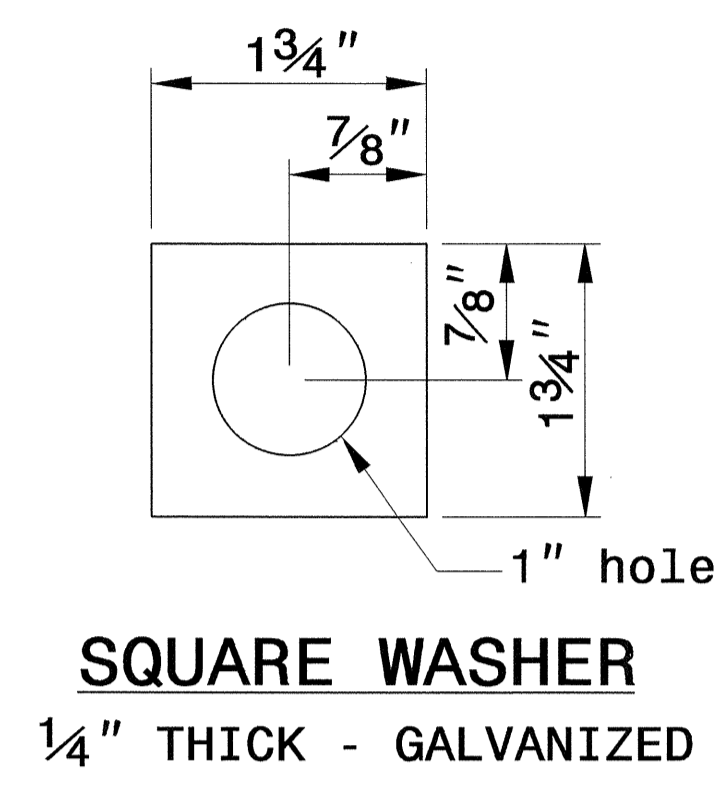
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

DETAIL OF GUARDRAIL BURIED IN CUT (BIC)

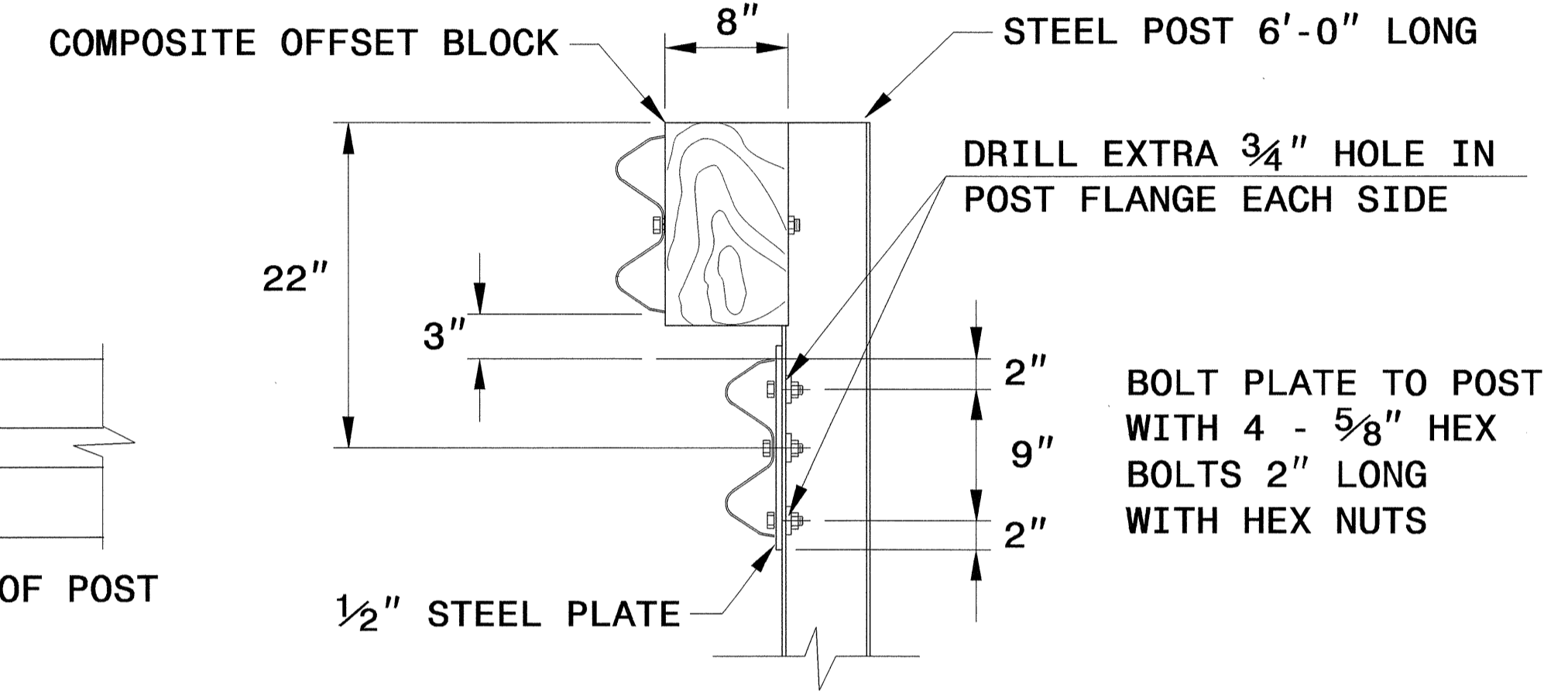
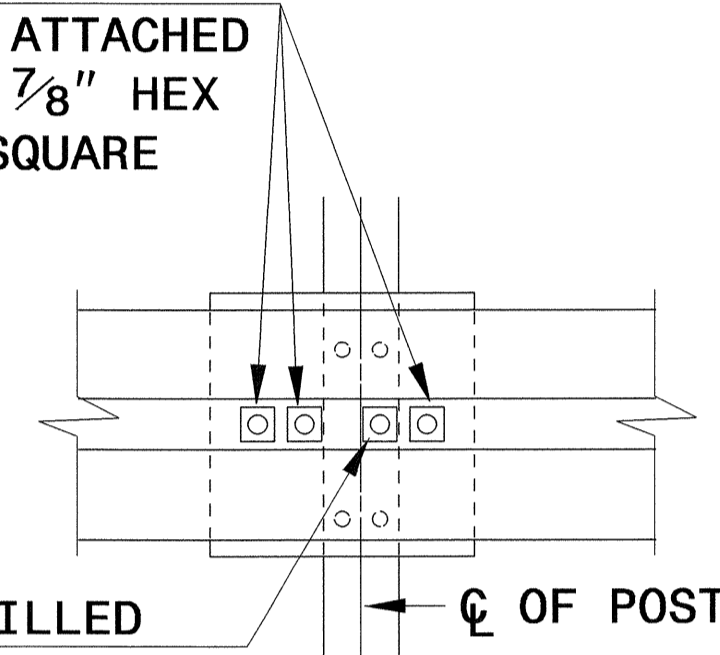
ORIGINAL BY: FHWA-G4 SYSTEM DATE: 8-13-98
MODIFIED BY: E.E. WARD DATE: 12-7-01
CHECKED BY: [Signature] DATE: 4/24/12
FILE SPEC.: @icward/misc_guardrail/BIC.dgn



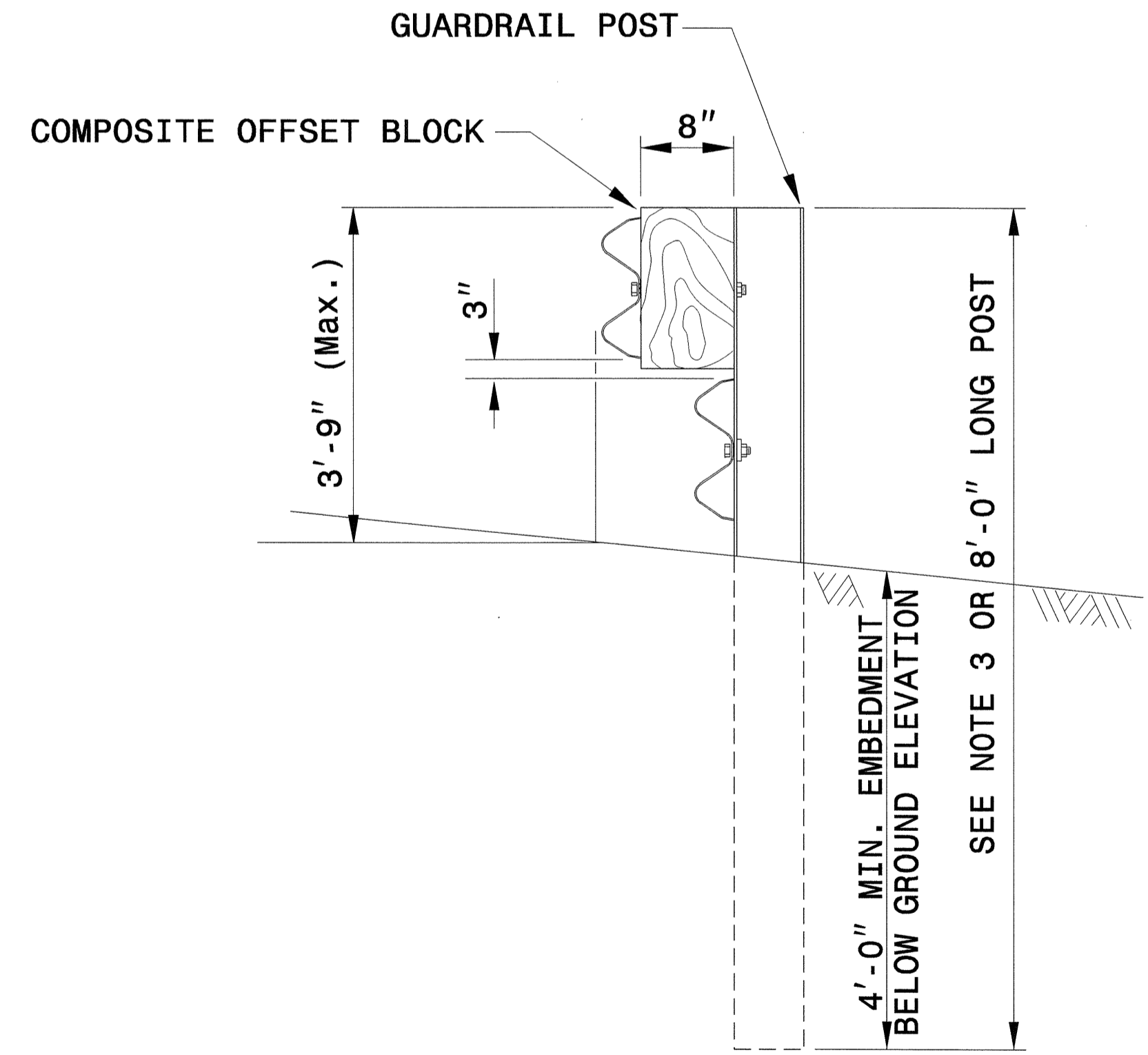
STEEL PLATE - 1/2"
 GALVANIZED
 WELDED OR BOLTED TO POST



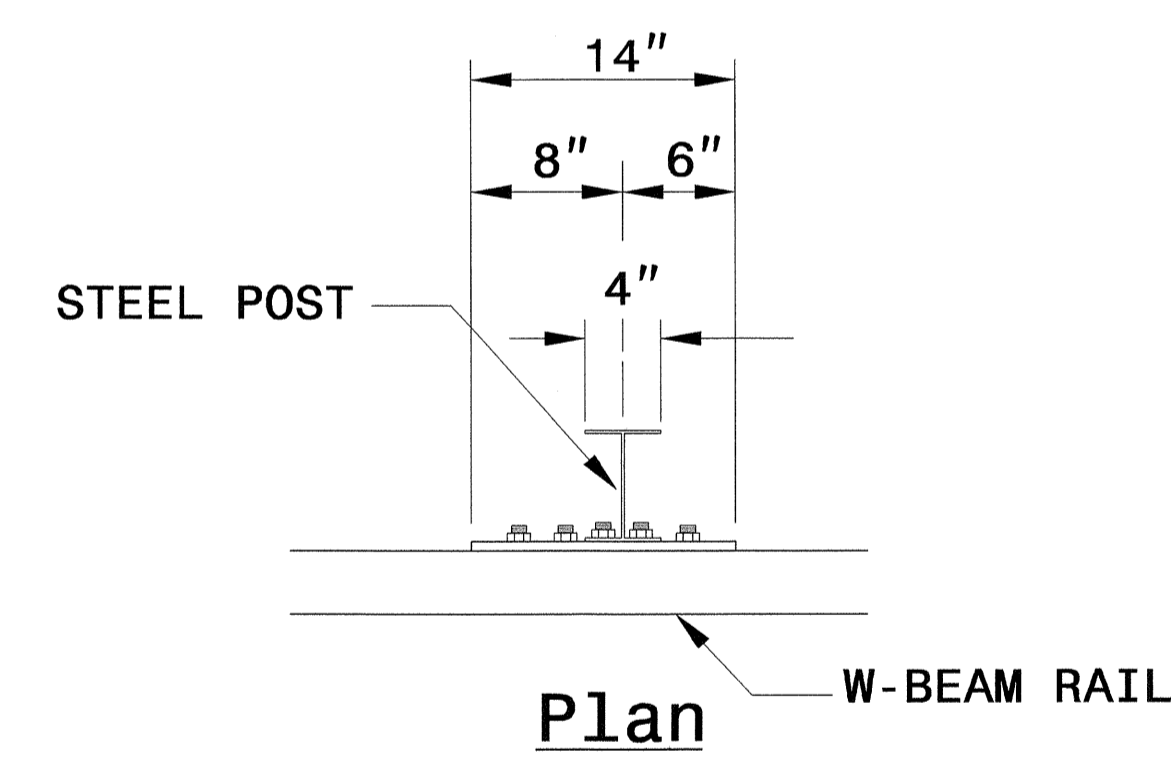
3 - 7/8" HOLES TO BE FIELD DRILLED IN RAIL AND ATTACHED TO STEEL PLATE WITH 7/8" HEX BOLTS 2" LONG WITH SQUARE WASHER



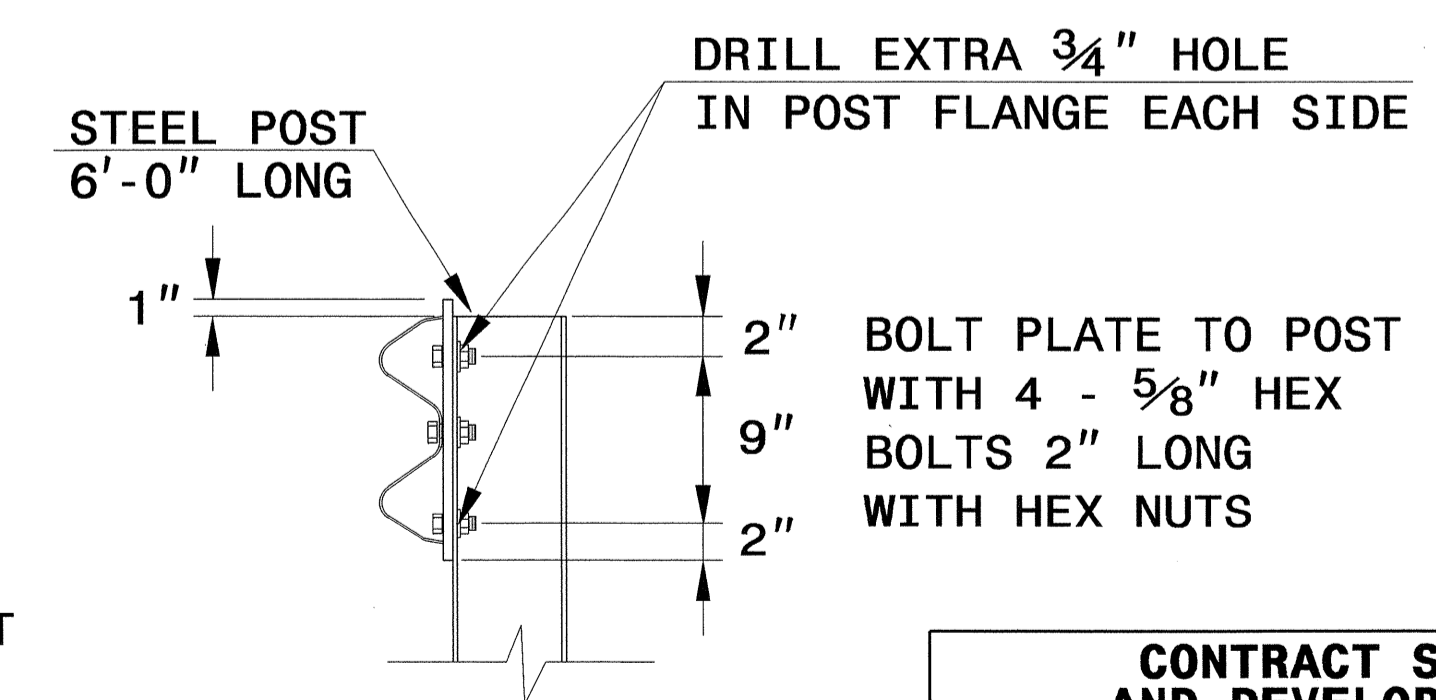
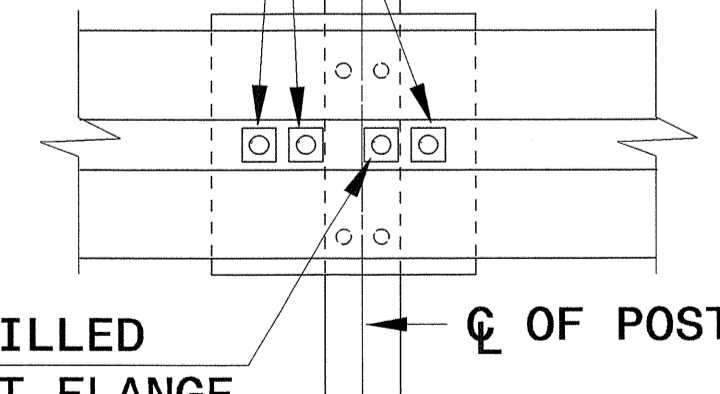
RUBRAIL ANCHOR DETAILS



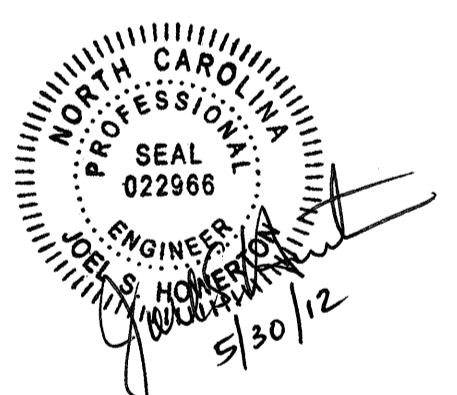
RAIL ATTACHMENT DETAIL



3 - 1" HOLES TO BE FIELD DRILLED IN RAIL AND ATTACHED TO STEEL PLATE WITH 7/8" HEX BOLTS 2" LONG WITH SQUARE WASHER



POST ANCHOR DETAILS



CONTRACT STANDARDS AND DEVELOPMENT UNIT
 Office 919-707-6950 FAX 919-250-4119

DETAIL OF GUARDRAIL BURIED IN CUT (BIC)

ORIGINAL BY: FHWA-G4 SYSTEM DATE: 8-13-98
 MODIFIED BY: E.E. WARD DATE: 12-7-01
 CHECKED BY: Eric Ward DATE: 4/24/12
 FILE SPEC.: ericward/misc. guardrail/BIC.dgn

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203014

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (18+54.00)
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
0057000000-E	226	750	CY	UNDERCUT EXCAVATION
0063000000-N	SP	Lump Sum		GRADING
0106000000-E	230	6,100	CY	BORROW EXCAVATION
0134000000-E	240	5	CY	DRAINAGE DITCH EXCAVATION
0195000000-E	265	500	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	2,100	SY	GEOTEXTILE FOR SOIL STABILIZATION
0222000000-E	SP	2,100	SY	GEOTEXTILE FOR ROCK EMBANKMENTS
0314000000-E	SP	65	TON	SELECT MATERIAL, CLASS ***** (V)
0318000000-E	300	120	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
0320000000-E	300	370	SY	FOUNDATION CONDITIONING GEOTEXTILE
0354000000-E	310	848	LF	*** RC PIPE CULVERTS, CLASS ***** (15", V)
0582000000-E	310	172	LF	15" CS PIPE CULVERTS, 0.064" THICK
0636000000-E	310	4	EA	*** CS PIPE ELBOWS, ***** THICK (15", 0.064")
0995000000-E	340	55	LF	PIPE REMOVAL
1099500000-E	505	500	CY	SHALLOW UNDERCUT
1099700000-E	505	1,000	TON	CLASS IV SUBGRADE STABILIZATION
1489000000-E	610	790	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1498000000-E	610	690	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B

ItemNumber	Sec #	Quantity	Unit	Description
6021000000-E	1620	1.5	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	600	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	600	LF	SAFETY FENCE
6030000000-E	1630	230	CY	SILT EXCAVATION
6036000000-E	1631	7,200	SY	MATting FOR EROSION CONTROL
6037000000-E	SP	170	SY	COIR FIBER MAT
6042000000-E	1632	850	LF	1/4" HARDWARE CLOTH
6048000000-E	SP	875	SY	FLOATING TURBIDITY CURTAIN
6070000000-N	1639	18	EA	SPECIAL STILLING BASINS
6071020000-E	SP	25	LB	POLYACRYLAMIDE (PAM)
6071030000-E	1640	85	LF	COIR FIBER BAFFLE
6071050000-E	SP	1	EA	*** SKIMMER (1-1/2")
6084000000-E	1660	3	ACR	SEEDING & MULCHING
6087000000-E	1660	1	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	75	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	2.25	TON	FERTILIZER TOPDRESSING
6114500000-N	1667	20	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	25	EA	RESPONSE FOR EROSION CONTROL

Summary of Quantities - B-4752

ItemNumber	Sec #	Quantity	Unit	Description
1519000000-E	610	510	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
1575000000-E	620	100	TON	ASPHALT BINDER FOR PLANT MIX
2022000000-E	815	112	CY	SUBDRAIN EXCAVATION
2033000000-E	815	84	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	500	LF	6" PERFORATED SUBDRAIN PIPE
2070000000-N	815	1	EA	SUBDRAIN PIPE OUTLET
2077000000-E	815	6	LF	6" OUTLET PIPE
2286000000-N	840	12	EA	MASONRY DRAINAGE STRUCTURES
2308000000-E	840	19.6	LF	MASONRY DRAINAGE STRUCTURES
2367000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29
2374000000-N	840	3	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)
2374000000-N	840	5	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)
2374000000-N	840	2	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)
2549000000-E	846	1,190	LF	2-6" CONCRETE CURB & GUTTER
2556000000-E	846	330	LF	SHOULDER BERM GUTTER
2591000000-E	848	190	SY	4" CONCRETE SIDEWALK
2612000000-E	848	20	SY	6" CONCRETE DRIVEWAY
2830000000-N	858	3	EA	ADJUSTMENT OF MANHOLES
3030000000-E	862	1,012.5	LF	STEEL BM GUARDRAIL
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3180000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** (BIC)
3215000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III
3270000000-N	SP	3	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3360000000-E	863	1,009	LF	REMOVE EXISTING GUARDRAIL

ItemNumber	Sec #	Quantity	Unit	Description
3628000000-E	876	500	TON	RIP RAP, CLASS I
3649000000-E	876	160	TON	RIP RAP, CLASS B
3656000000-E	876	1,785	SY	GEOTEXTILE FOR DRAINAGE
3659000000-N	SP	2	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON
4072000000-E	903	45	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4096000000-N	904	2	EA	SIGN ERECTION, TYPE D
4102000000-N	904	2	EA	SIGN ERECTION, TYPE E
4155000000-N	907	10	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4400000000-E	1110	416	SF	WORK ZONE SIGNS (STATIONARY)
4410000000-E	1110	129	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4430000000-N	1130	6	EA	DRUMS
4445000000-E	1145	120	LF	BARRICADES (TYPE III)
4685000000-E	1205	1,200	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
4686000000-E	1205	3,640	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
4770000000-E	1205	1,960	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (II)
4900000000-N	1251	18	EA	PERMANENT RAISED PAVEMENT MARKERS
5326200000-E	1510	90	LF	12" WATER LINE
5558000000-E	1515	2	EA	12" VALVE
6000000000-E	1605	3,250	LF	TEMPORARY SILT FENCE
6006000000-E	1610	225	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	180	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	640	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	3	ACR	TEMPORARY MULCHING
6018000000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

**SUMMARY OF EARTHWORK
IN CUBIC YARDS**

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
13+00.00	16+31.88	357	31		326
	BEGIN BRIDGE				
SUBTOTALS:		357	31		326
20+76.13	26+00.00	391	5,959	5,568	
	END BRIDGE				
SUBTOTALS:		391	5,959	5,568	
SUBTOTALS:					
TOTAL:		748	5,990	5,568	326
MATERIAL FOR SHOULDER CONSTRUCTION			12	12	
LOSS DUE TO CLEARING & GRUBBING		-100		100	
PROJECT TOTAL		648	6,002	5,680	326
EST. 5% TO REPLACE TOPSOIL ON BORROW PIT				268	
GRAND TOTALS:		660	6,002	5,964	
SAY:		660		6,100	

UNDERCUT CONTINGENCY = 750 CY
SHALLOW UNDERCUT CONTINGENCY = 500 CY
CLASS IV SUBGRADE STABILIZATION = 1,000 TON
EST DDE = 5 CY

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

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

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
-L-	21+00.13	24+27.00	326.9
TOTAL:			326.9
SAY:			330

**ASPHALT PAVEMENT
REMOVAL SUMMARY**

SURVEY LINE	STATION	STATION	LOCATION L/RT/CL	YD ²
-L-	13+00	15+00	LT & RT	800.00
-L-	15+00	16+49.5	LT & RT	511.62
-L-	20+69.24	26+00	LT & RT	1415.36
TOTAL:				2,726.98
SAY:				2,800

GUARDRAIL SUMMARY

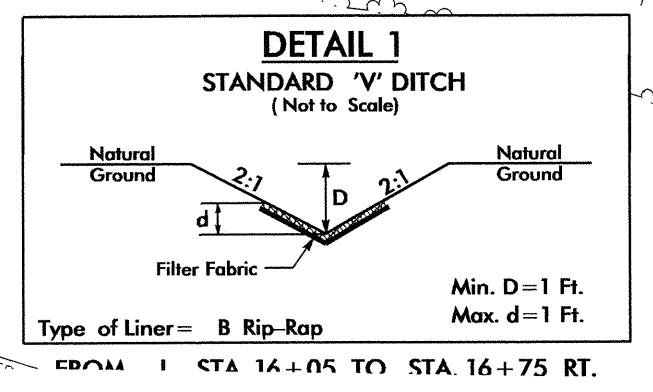
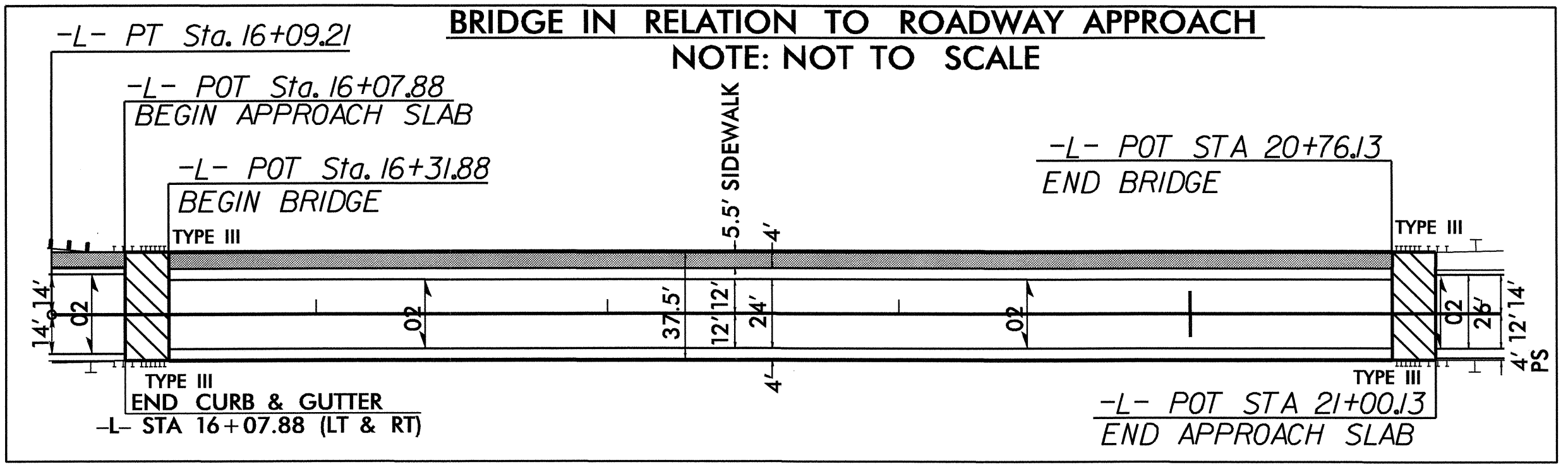
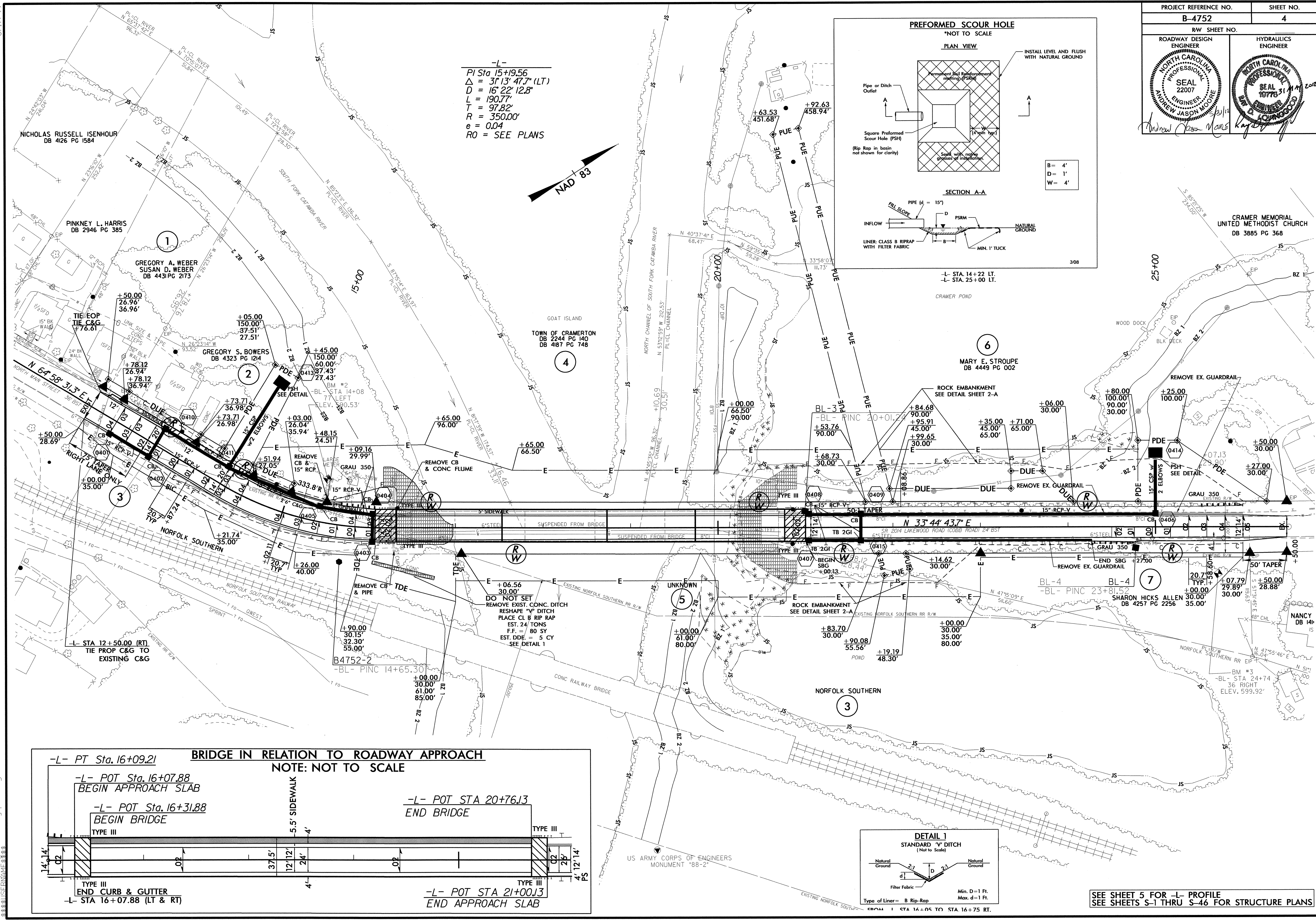
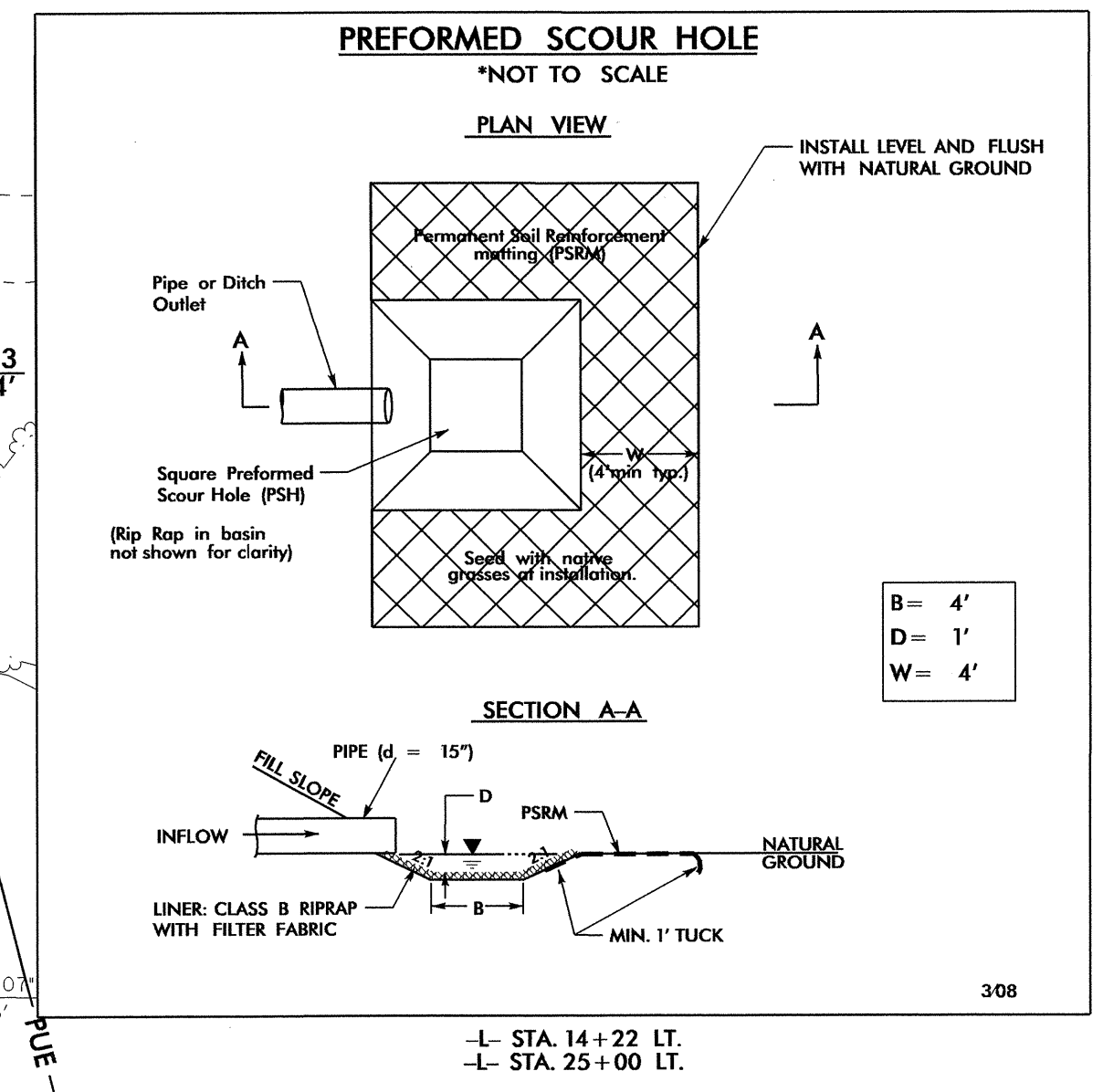
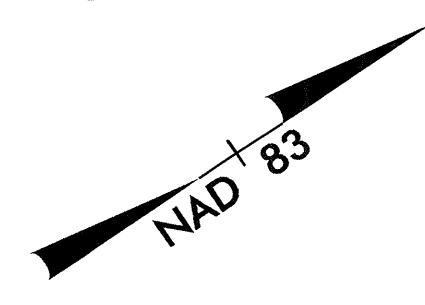
"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL
G = GATING IMPACT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

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL- DER WIDTH	FLARE LENGTH		W		ANCHORS							IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS							
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	XI MOD	XI	GRAU 350	M-350	III	CAT-1	VI MOD	BIC	AT-1	EA	G	NG											
-L-	15+58.01	16+31.88	LT	75.00				BRIDGE	7.5	10.5																									
-L-	13+70.62	16+31.88	RT	262.50				BRIDGE	2	VARIES	50	50	1																						
-L-	20+76.13	26+01.13	LT	525.00				FILL HEIGHT	10	12	50		1																			592			
-L-	20+76.13	24+88.63	RT	412.50				FILL HEIGHT	4	7		50		1																		417			
SUBTOTAL				1,275.00																															
LESS ANCHOR DEDUCTIONS																																			
GRAU 350: 3 @ 50'																																			
TYPE III: 4 @ 18.75'																																			
BIC: 1 @ 50'																																			
ANCHOR TOTALS																																			
GRAND TOTALS				1,000																															
SAY				1,012.50																															

ADDITIONAL GUARDRAIL POSTS = 5 EA

24-MAY-2012 14:17 R:\Roadway\Proj\B4752_Rdy_sum_3A.dgn

-L-
 PI Sta 15+19.56
 $\Delta = 31'13" 47.7"$ (LT)
 $D = 16'22" 12.8"$
 $L = 190.77'$
 $T = 97.82'$
 $R = 350.00'$
 $e = 0.04'$
 RO = SEE PLANS



SEE SHEET 5 FOR -L- PROFILE
 SEE SHEETS S-1 THRU S-46 FOR STRUCTURE PLANS

8/17/09
 30-MAY-2012 14:39
 RD244219 5/30/2012 b4752_rdy_psh_4 scalhoum RD-Oce860-34

5/14/99

PROJECT REFERENCE NO. B-4752	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L- SR 2014



SEE SHEET 4 FOR PLAN VIEW

23-MAY-2012 12:45 P:\Roadway\Proj\Ab4752-rdy-pfl.dgn