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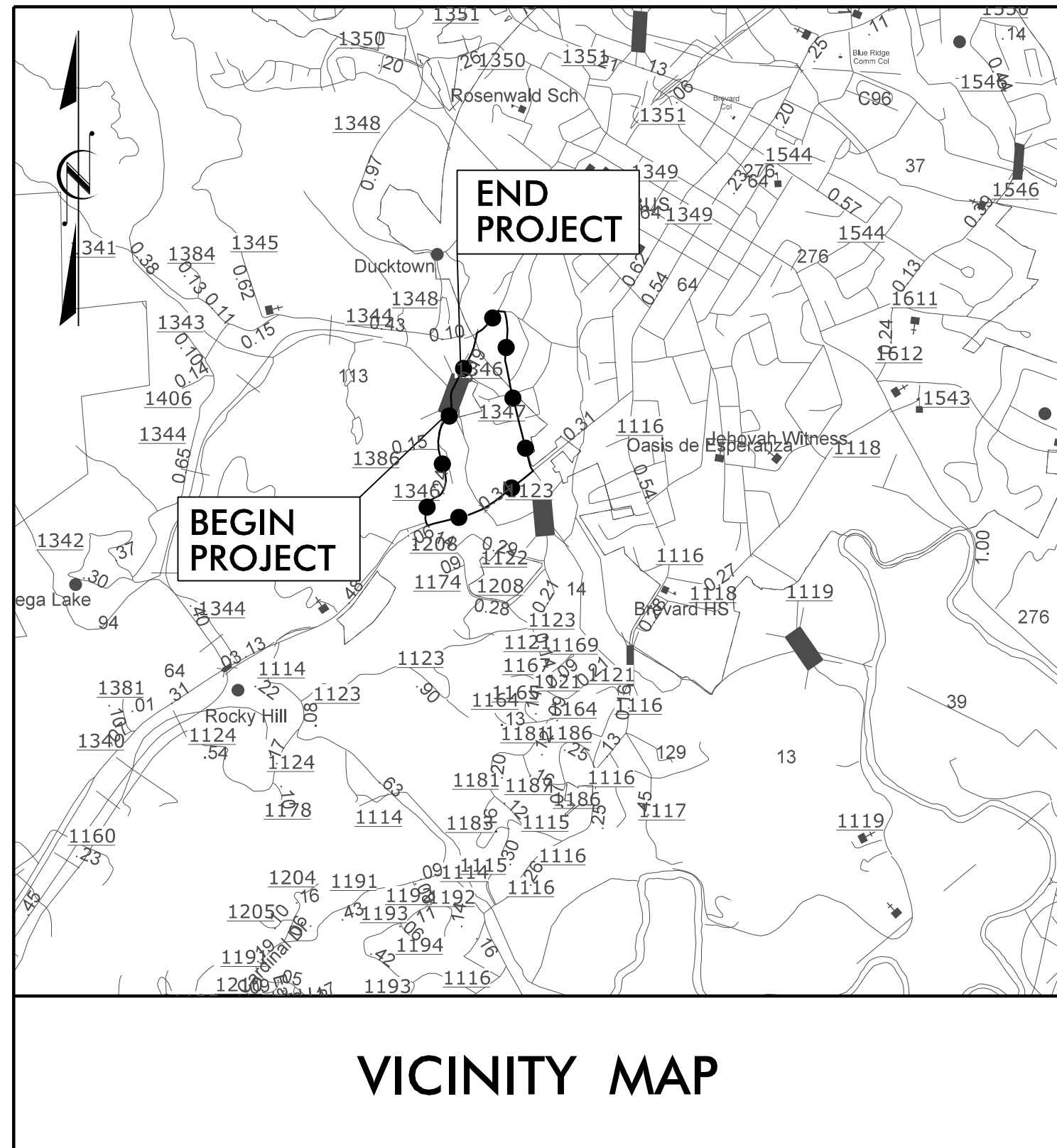
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PROJECT: 17BP.14.R.24

CONTRACT: DN00157

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



VICINITY MAP

●●●●● DETOUR

BEGIN STATE PROJECT 17BP.14.R.24
 -L- STA. 10 + 78.44

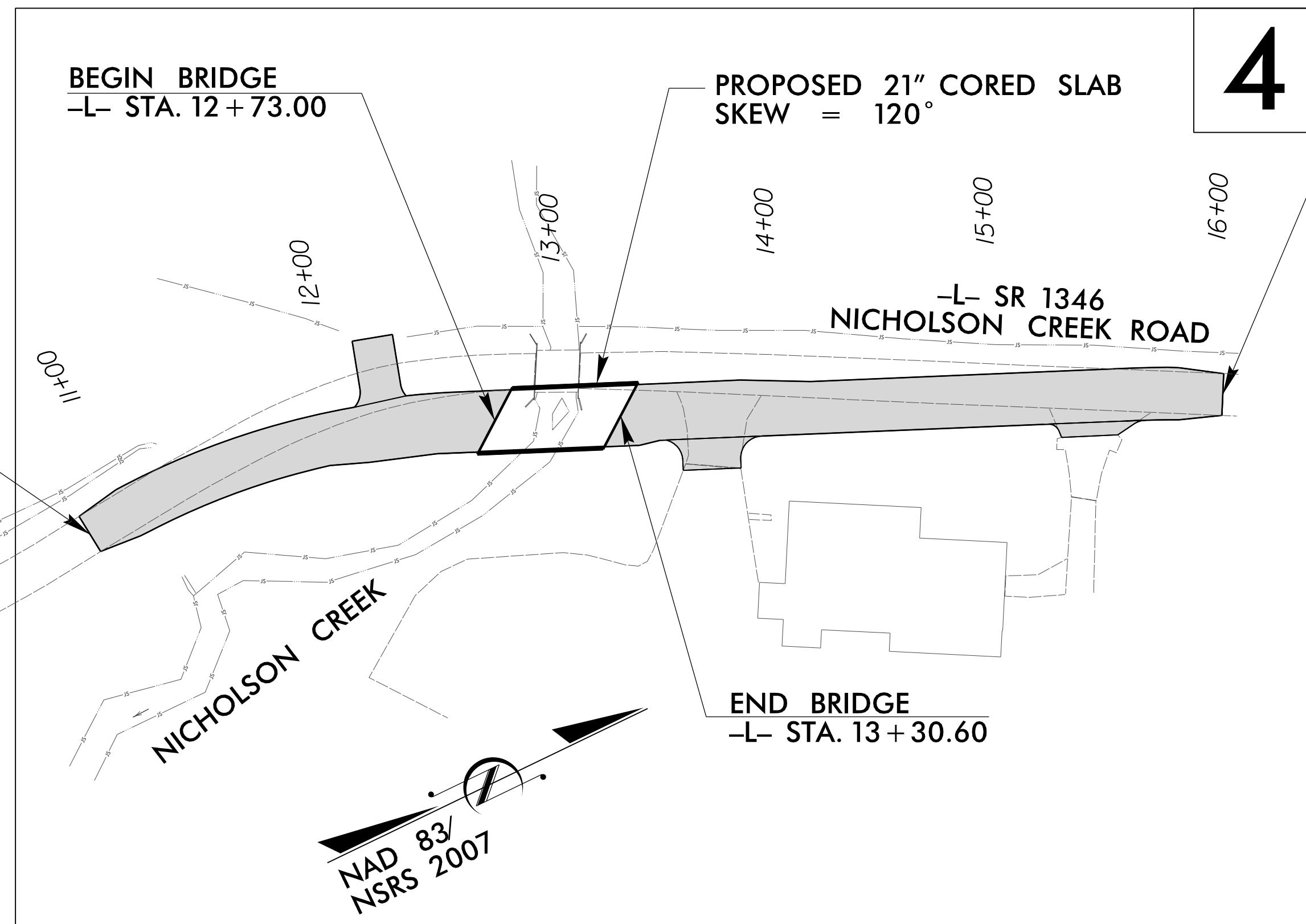
TO ROCKY HILL

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

TRANSYLVANIA COUNTY

**LOCATION: BRIDGE NO. 113 ON SR 1346 (NICHOLSON CREEK ROAD)
 OVER NICHOLSON CREEK**

**TYPE OF WORK: PAVING, GRADING, GUARDRAIL, DRAINAGE
 AND STRUCTURE**



4

END STATE PROJECT 17BP.14.R.24
 -L- STA. 16 + 06.13

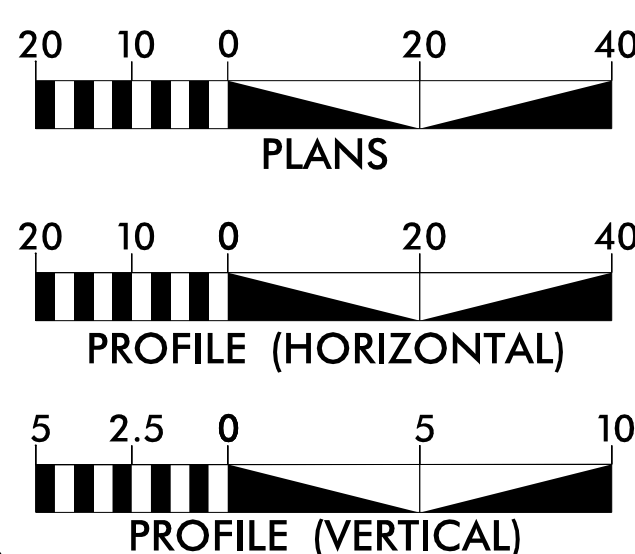
TO BREVARD

NAD 83/
 NSRS 2007

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2015 = 1,160
 ADT 2035 = 2,150
 K = N/A %
 D = N/A %
 T = 6 % *
 V = 30 MPH
 * TTST = N/A DUAL 6%
 FUNC CLASS = LOCAL
 SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT 17BP.14.R.24 = 0.089 mi.
 LENGTH STRUCTURE PROJECT 17BP.14.R.24 = 0.011 mi.
 TOTAL LENGTH PROJECT 17BP.14.R.24 = 0.100 mi.

Prepared for NCDOT In the Office of:

moffatt & nichol
 4700 FALLS OF NEUSE ROAD, SUITE 300
 RALEIGH, NORTH CAROLINA 27609
 (919) 781-4625 VOICE (919) 781-4869 FAX
 NC License NO.: F-0105

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
 APRIL 24, 2015

LETTING DATE:
 2017

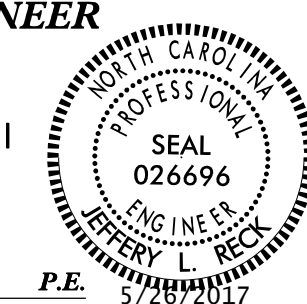
TIM REID, P.E.
 PROJECT ENGINEER

TRENT HUFFMAN, P.E.
 PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

moffatt & nichol

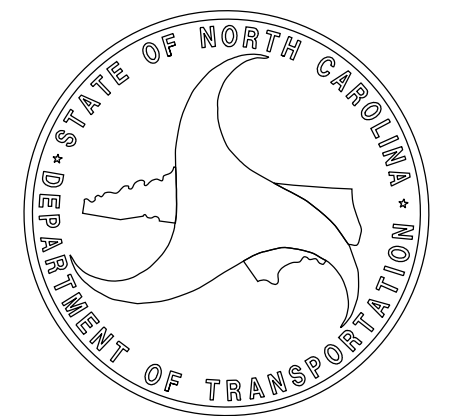
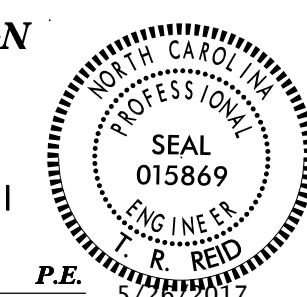
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 Jeffrey L. Reid
 1939014554262
 SIGNATURE:



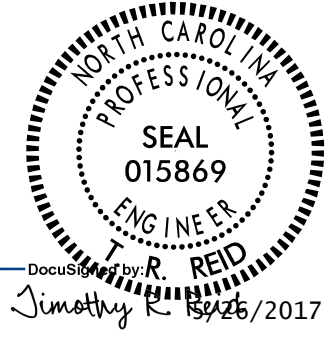

ROADWAY DESIGN ENGINEER

moffatt & nichol

DocuSigned by:
 Timothy R. Reid
 1939014554262
 SIGNATURE:



INDEX OF SHEETS

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.24	1A
ROADWAY DESIGN ENGINEER	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
	

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C	SURVEY CONTROL SHEET
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2C-1	TYPE III - SHOP CURVED STRUCTURE ANCHOR UNIT
3B-1	SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY PARCEL INDEX, RIP RAP SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-3	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION PLANS
RF-1	REFORESTATION PLAN
UD-1 THRU UD-2	UTILITIES PLANS BY OTHERS
XA, X-1 THRU X-8	CROSS-SECTION SUMMARY, CROSS-SECTIONS
S, S-1 THRU S-14	STRUCTURE PLANS
SN	STANDARD STRUCTURE NOTE SHEET

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 07-30-2012

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 11.

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

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING RADII AS SHOWN ON THE PLANS. LOCATION 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.

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: POWER - DUKE ENERGY, TELEPHONE - COMPTORIUM, WATER - CITY OF BREVARD

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT IN ACCORDANCE WITH SECTION 801 OF THE 2012 NORTH CAROLINA STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

EFF. 01-17-2012
REV. 10-30-2012

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	
200.02	Method of Clearing - Method 11
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
310.02	Parallel Pipe End Section - Precast Concrete Section for 15" to 24" Pipe
310.03	Cross Pipe End Section - Precast Concrete Section for 18" to 30" Pipe
DIVISION 4 - MAJOR STRUCTURES	
422.11	Bridge Approach Fills - Sub Regional Tier
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	
806.01	Concrete Right-of-Way Marker
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.36	Traffic Bearing Grated Drop Inlet - for Steel (840.37) Double Frame and Grates
840.37	Steel Grate and Frame
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units (Details in Lieu of Standard Drawing as March 2013 Letting)
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Property Corner	✕
Property Monument	□ ECM
Parcel/Sequence Number	⑫③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	--- WLB ---
Proposed Wetland Boundary	--- WLB ---
Existing Endangered Animal Boundary	--- EAB ---
Existing Endangered Plant Boundary	--- EPB ---
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ☠

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
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	--- FLD ---
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	CSX TRANSPORTATION MILEPOST 35
Switch	SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite R/W Marker	-----
Proposed Control of Access Line with Concrete CA Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
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 Aerial Utility Easement	----- AUE
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 Curb Ramp	○ CR
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	----- CONC
Bridge Wing Wall, Head Wall and End Wall	--- CONC WW ---
MINOR:	
Head and End Wall	--- CONC HW ---
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○ S
Storm Sewer	----- S

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

TV Satellite Dish	☼
TV Pedestal	□
TV Tower	⊗
U/G TV Cable Hand Hole	□
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

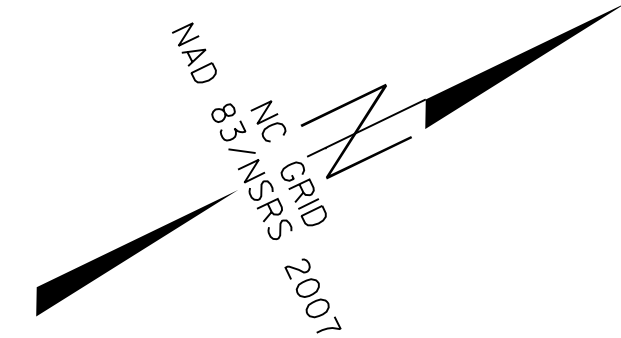
MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	----- ?UTL
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊗
U/G Test Hole (S.U.E.*)	⊗
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

SURVEY CONTROL SHEET 87-0113 -FINAL-

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.24	1C
Location and Surveys	

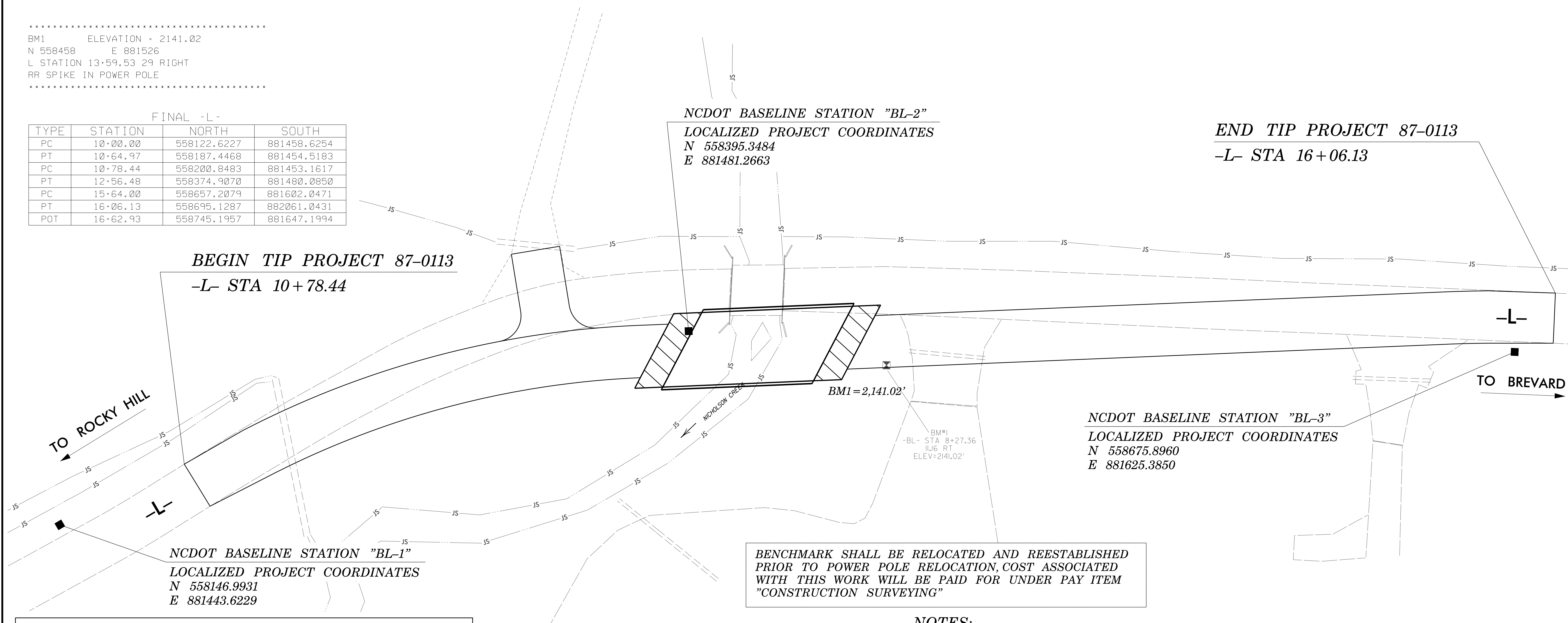
BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	558146.9931	881443.6229	2139.43	10+25.16	14.01 LT
2	BL-2	558395.3484	881481.2663	2139.88	12+75.71	7.02 LT
3	BL-3	558675.8960	881625.3850	2143.18	15+91.15	13.30 RT



 BM1 ELEVATION = 2141.02
 N 558458 E 881526
 L STATION 13+59.53 29 RIGHT
 RR SPIKE IN POWER POLE

FINAL -L-

TYPE	STATION	NORTH	SOUTH
PC	10+00.00	558122.6227	881458.6254
PT	10+64.97	558187.4468	881454.5183
PC	10+78.44	558200.8483	881453.1617
PT	12+56.48	558374.9070	881480.0850
PC	15+64.00	558657.2079	881602.0471
PT	16+06.13	558695.1287	882061.0431
POT	16+62.93	558745.1957	881647.1994



NCDOT BASELINE STATION "BL-1"
 LOCALIZED PROJECT COORDINATES
 N 558146.9931
 E 881443.6229

NCDOT BASELINE STATION "BL-2"
 LOCALIZED PROJECT COORDINATES
 N 558395.3484
 E 881481.2663

END TIP PROJECT 87-0113
 -L- STA 16+06.13

NCDOT BASELINE STATION "BL-3"
 LOCALIZED PROJECT COORDINATES
 N 558675.8960
 E 881625.3850

BENCHMARK SHALL BE RELOCATED AND REESTABLISHED PRIOR TO POWER POLE RELOCATION, COST ASSOCIATED WITH THIS WORK WILL BE PAID FOR UNDER PAY ITEM "CONSTRUCTION SURVEYING"

DATUM DESCRIPTION

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

WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
 NORTHING: 558146.9931(ft) EASTING: 881443.6229(ft)
 ELEVATION: 2139.43(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999774958

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-1" TO -L- STATION 10+78.44 IS
 N10°02'37.97"E 54.6940'

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

FINAL ROW MARKER AND IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+80.00	18.97	558298.3850	881476.2634
L	12+75.00	45.00	558374.0599	881528.7391
L	13+50.00	45.00	558442.9093	881558.4840
L	13+56.00	30.00	558454.3663	881547.0937
L	15+85.06	29.58	558663.4955	881637.4435

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION](https://connect.ncdot.gov/resources/location)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 87-0113_LS_CONTROL.TXT
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- ⊗ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

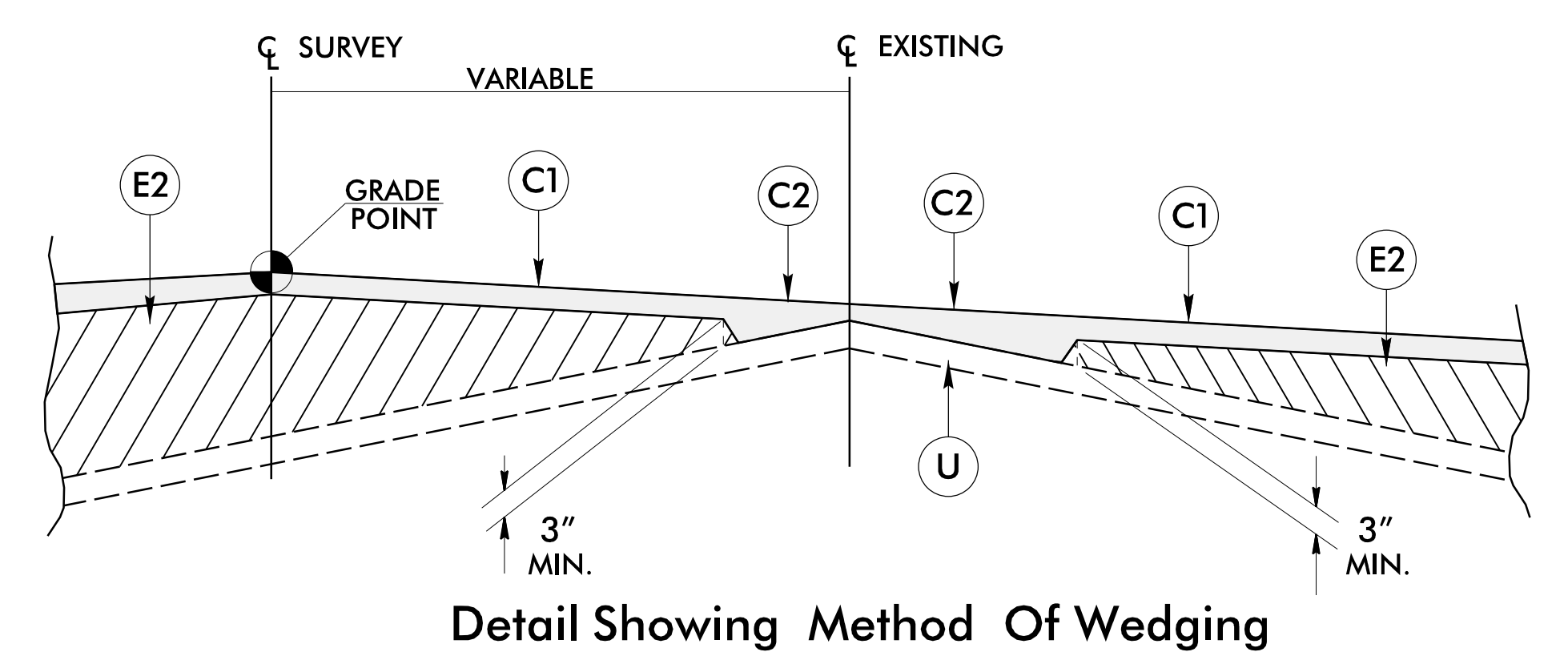
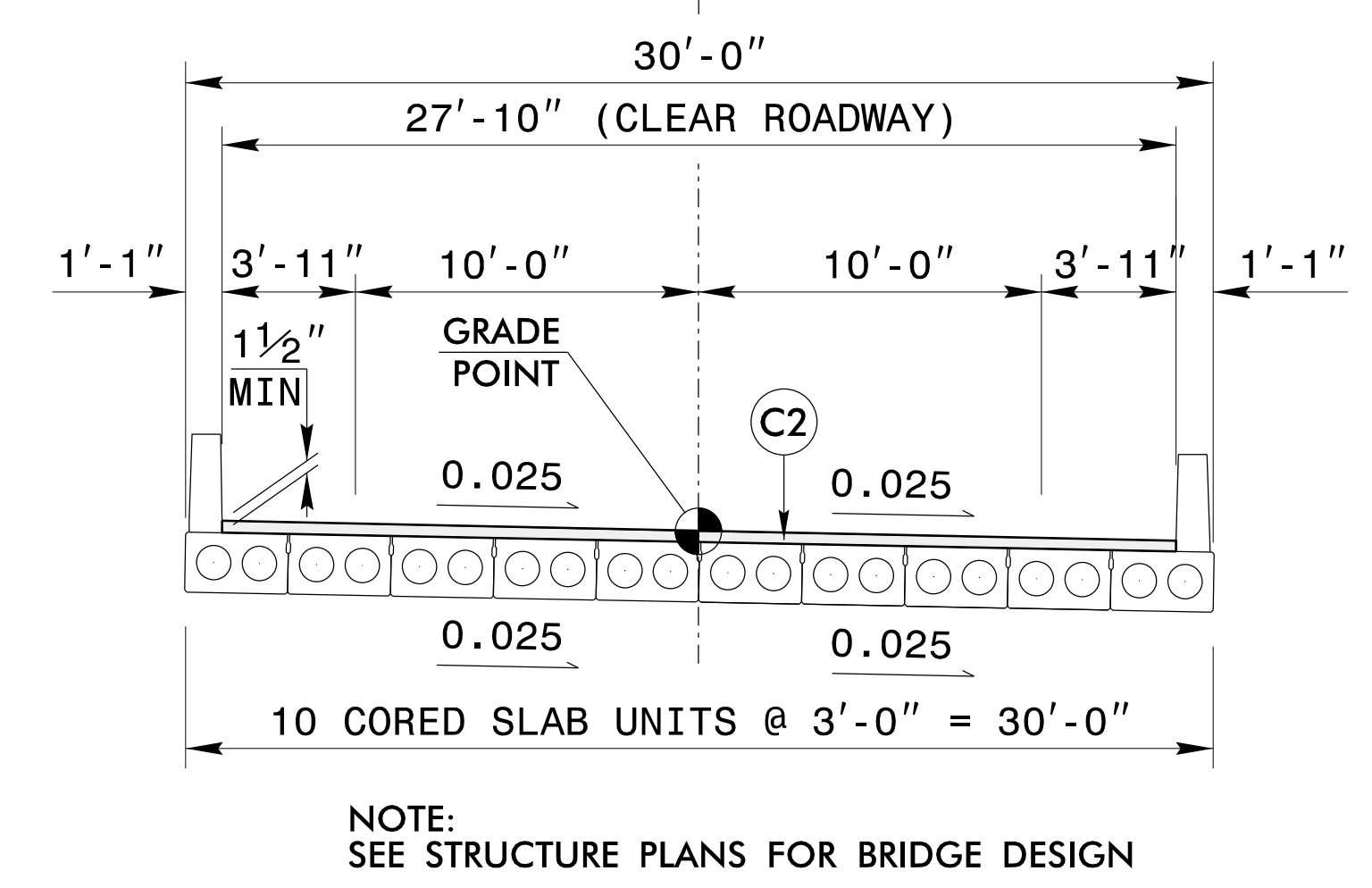
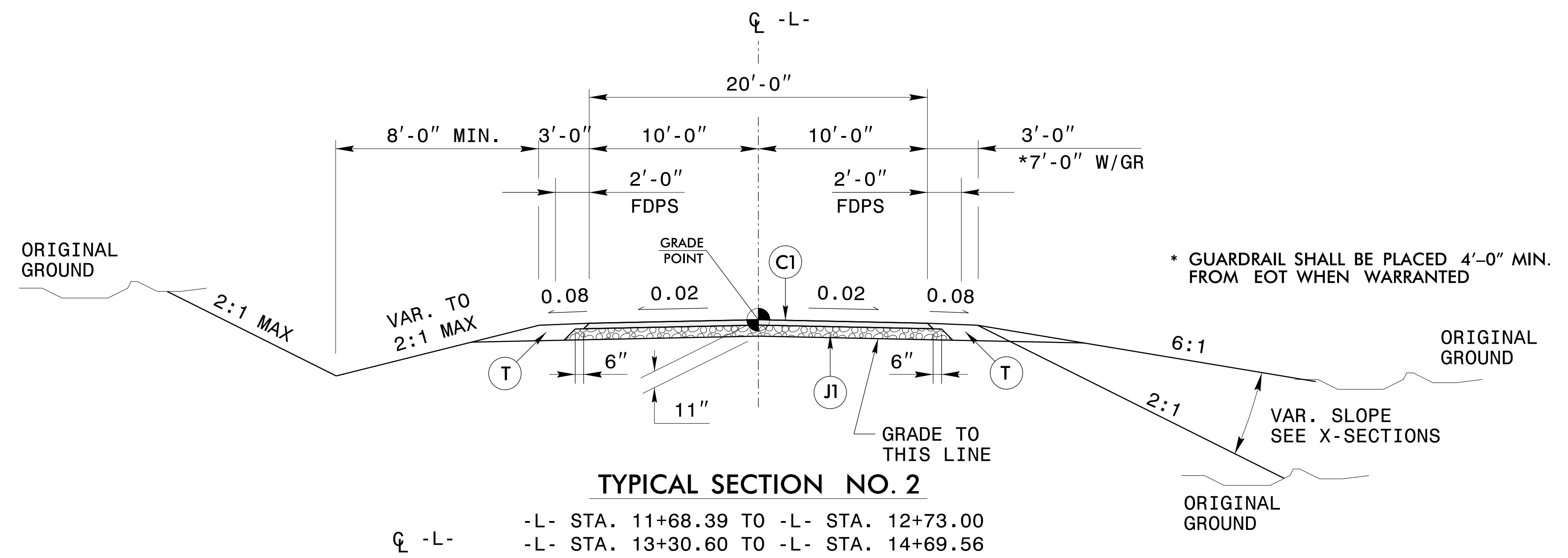
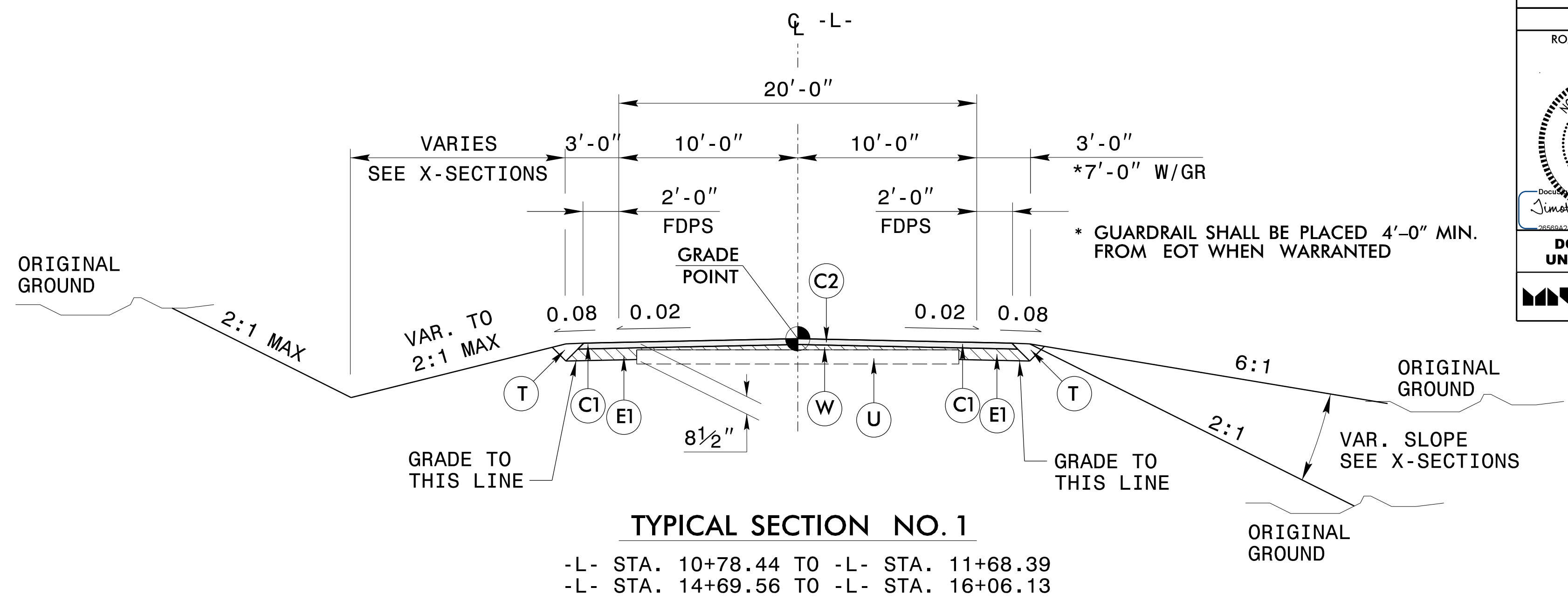
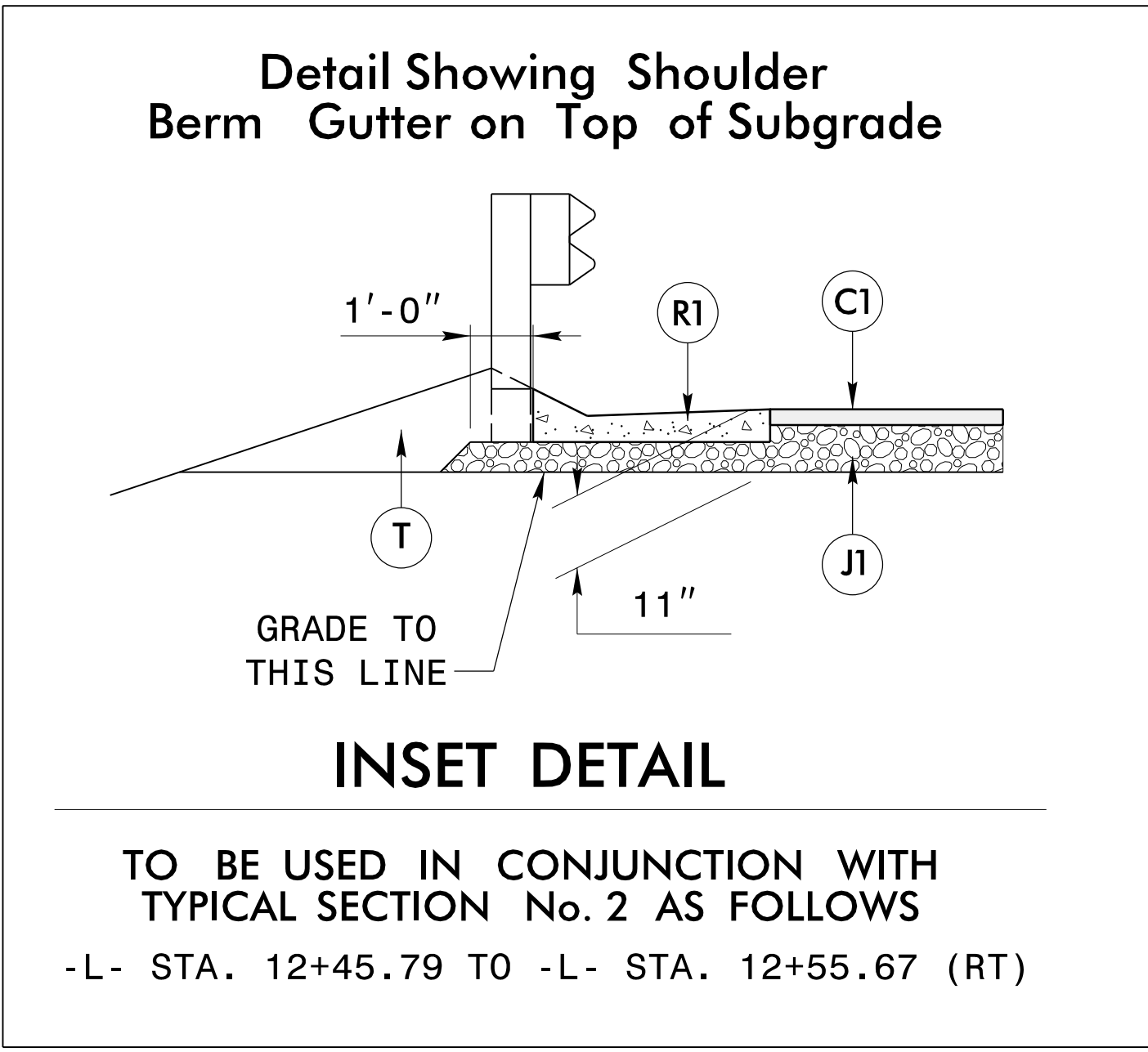
GEOIDAL MODEL -
 NOTE: DRAWING NOT TO SCALE

5/26/2017 P:\7658-05\CADD\870113\Roadway\Proj\870113-r_dj_psh01-C.dgn

5/14/99

PAVEMENT SCHEDULE <i>(FINAL PAVEMENT DESIGN)</i>	
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.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1 1/2" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
E1	PROP. APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 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 1/2" IN DEPTH.
J1	PROP. 8" AGGREGATE BASE COURSE
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL ON THIS SHEET)

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



(-L-) SR 1346 (Nicholson Creek Road) over Nicholson Creek
-L- STA. 12+73.00 TO -L- STA. 13+30.60

PROJECT REFERENCE NO. 17BP.14.R.24	SHEET NO. 2A-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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

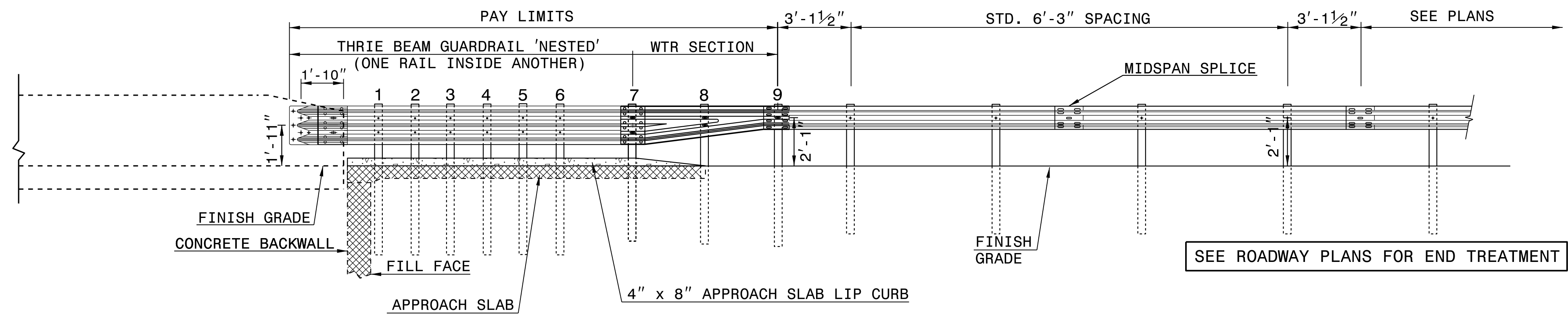
ENGLISH DETAIL DRAWING FOR TYPE III - SHOP CURVED STRUCTURE ANCHOR UNIT

SHEET 1 OF 1 TYPE III SC

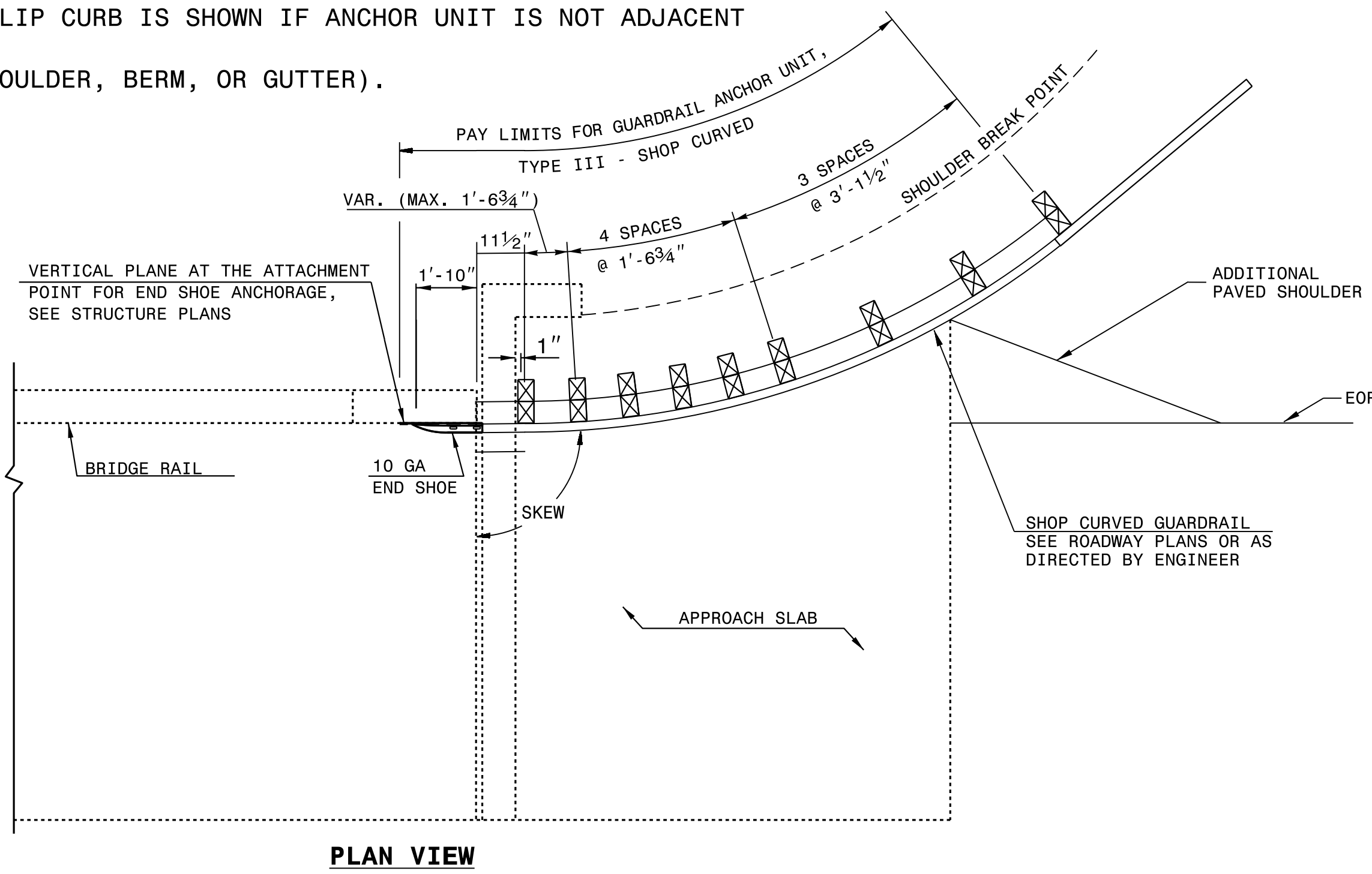
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

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

SHEET 1 OF 1 TYPE III SC



- 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 11 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).
 - 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

26-MAY-2017 16:36 S:\Contracts\Special Details\hover-ton\Guardrail\31 inch Guardrail\type_iii_sc.dgn Jhover-ton AT USD-292595

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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

SEE PLATE FOR TITLE

ORIGINAL BY: E.E.Ward DATE: 4-4-02
MODIFIED BY: T.S.Spell DATE: 5-29-09
CHECKED BY: DATE:
FILE SPEC.: ward:\usr\details\stand\862stds\typeiiisc.dgn

12/06/07

COMPUTED BY: DGM DATE: 03/31/2015
CHECKED BY: TEH DATE: 04/20/2015

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. 17BP.14.R.24
SHEET NO. 3B-1

SUMMARY OF EARTHWORK

Table with columns: ALIGNMENT, STATION, STATION, UNCL. EXCAV., EMBANK. +%, BORROW, WASTE. Includes subtotals for shoulder material, project totals, and grand totals.

EST. 50 CY UNDERCUT - PER DIVISION REQUEST
EST. 50 CY SELECT GRANULAR MATERIAL - PER DIVISION REQUEST
EST. 50 SY GEOTEXTILE FOR SOIL STABILIZATION - PER DIVISION REQUEST
EST. 50 TONS INCIDENTAL STONE - PER DIVISION REQUEST
EST. 65 CY EXCAVATION AT END BENT 1
EST. 50 CY EXCAVATION AT END BENT 2

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, Borrow Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

RIGHT OF WAY AREA DATA

Table with columns: PARCEL NO., PROPERTY OWNERS NAMES, TOTAL ACREAGE, AREA TAKEN, AREA REMAINING RT., AREA REMAINING LT., CONST. EASE., TEMP. UTILITY EASE., PERM. DRAIN. EASE., TEMP. DRAIN. EASE.

SHOULDER BERM GUTTER SUMMARY

Table with columns: SURVEY LINE, STATION, STATION, LENGTH (FT). Includes a total length of 9.9 and a 'SAY' value of 10.

SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL

Table with columns: SURVEY LINE, STATION, STATION, LOCATION L/R/V/C/L, SY. Includes a total SY of 125.20 and a 'SAY' value of 130.

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

Large table listing pipe and endwall details. Columns include Station, Location, Structure No., Top Elevation, Invert Elevation, Slope Critical, Drainage Pipe, C.S. Pipe, Class IV R.C. Pipe, Endwalls, Quantities for Drainage Structures, Frame, Grates and Hood Standard, Concrete Transitional Section, Catch Basin, Drop Inlet, 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

Table summarizing guardrail data. Columns include Survey Line, Beg. Sta., End Sta., Location, Length (Straight, Shop Curved, Double Faced), Warrant Point (Approach End, Trailing End), "N" Dist. from E.O.L., Total Shoul. Width, Flare Length, W, Anchors (Type III, Shop Curved, CAT-1, VI Mod, BIC, AT-1, TL-2), Impact Attenuator Type 350 (EA, G, NG), Single Faced Guardrail, Remove Existing Guardrail, Remove and Stockpile Existing Guardrail, and Remarks.

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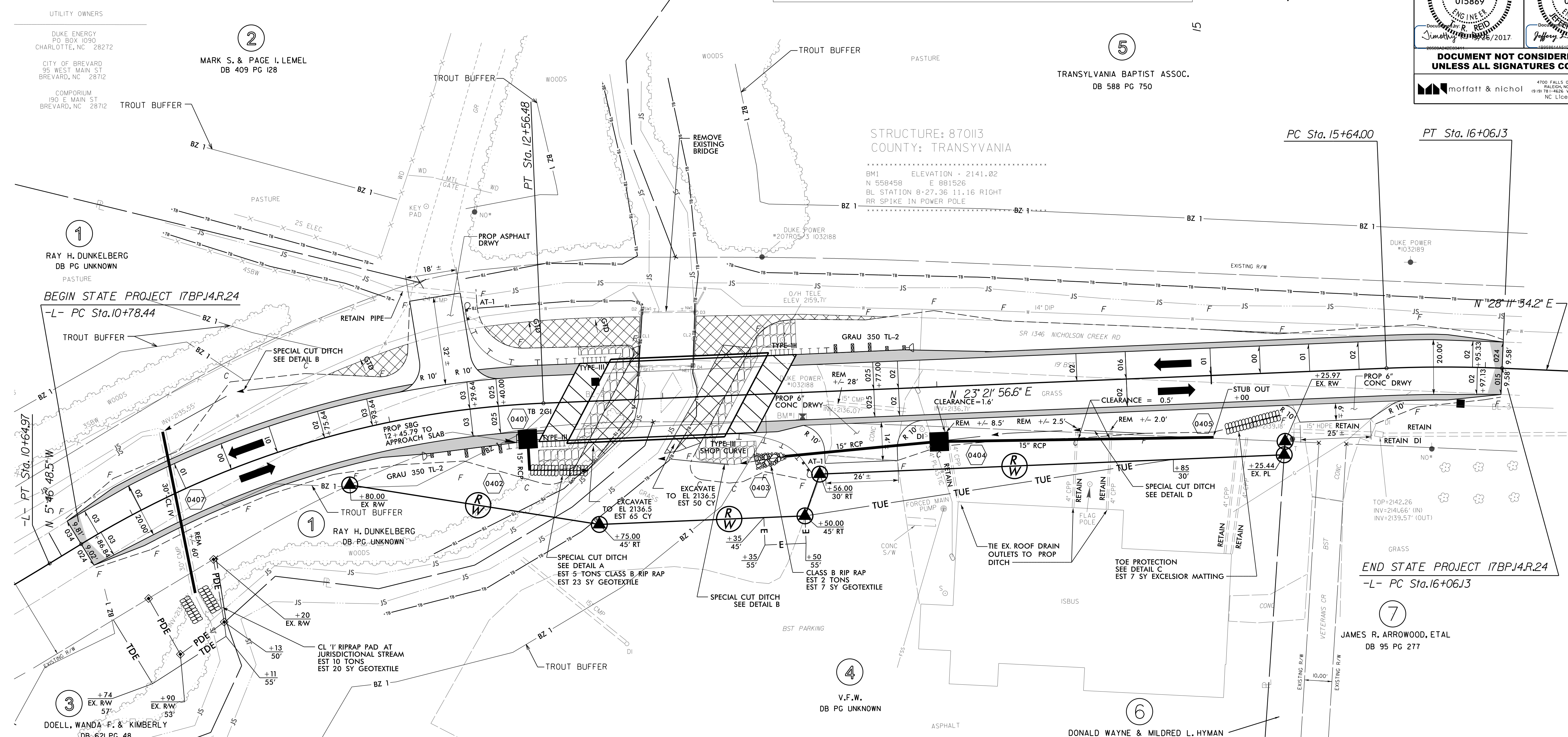
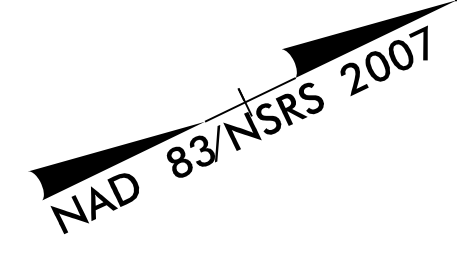
PROJECT REFERENCE NO. 17BP.14.R.24		SHEET NO. 4	
RW SHEET NO. ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

PI Sta 10+32.50 Δ = 4° 18' 35.2" (LT)
 D = 6° 38' 00.7"
 L = 64.97'
 T = 32.50'
 R = 863.73'
 e = 4.0%
 DS = 30 MPH

PI Sta 11+69.43 Δ = 29° 08' 45.1" (RT)
 D = 16° 22' 12.8"
 L = 178.04'
 T = 90.99'
 R = 350.00'
 e = 5.0%
 DS = 30 MPH

PI Sta 15+85.08 Δ = 4° 49' 37.6" (RT)
 D = 1° 27' 33.0"
 L = 42.12'
 T = 21.07'
 R = 500.00'
 e = 5.0%
 DS = 30 MPH

BENCHMARK SHALL BE RELOCATED AND REESTABLISHED PRIOR TO POWER POLE RELOCATION, COST ASSOCIATED WITH THIS WORK WILL BE PAID FOR UNDER PAY ITEM "CONSTRUCTION SURVEYING"



UTILITY OWNERS

DUKE ENERGY
PO BOX 1090
CHARLOTTE, NC 28272

CITY OF BREVARD
95 WEST MAIN ST
BREVARD, NC 28712

COMPORIUM
190 E MAIN ST
BREVARD, NC 28712

1 RAY H. DUNKELBERG
DB PG UNKNOWN

PASTURE

BEGIN STATE PROJECT 17BPJ4R.24
-L- PC Sta. 10+78.44

3 DOELL, WANDA F. & KIMBERLY
DB 621 PG 48

2 MARK S. & PAGE I. LEMEL
DB 409 PG 128

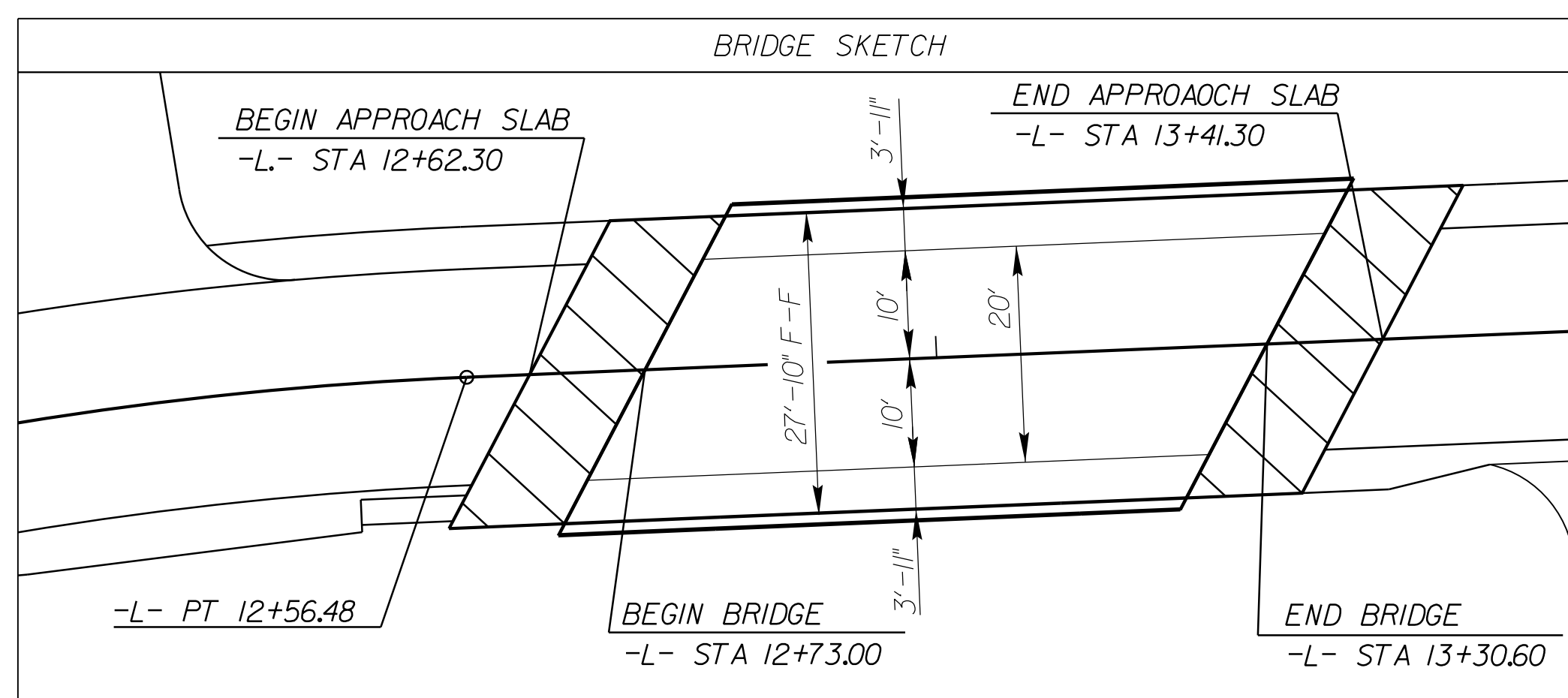
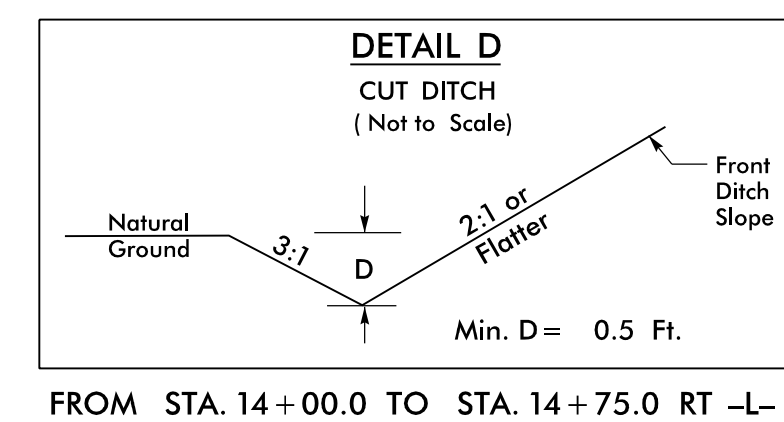
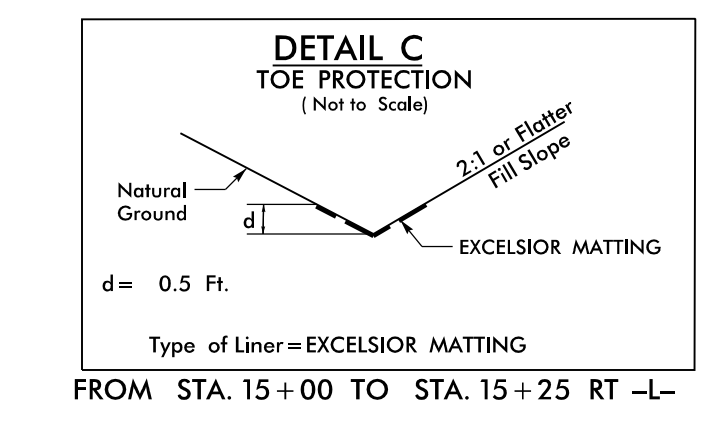
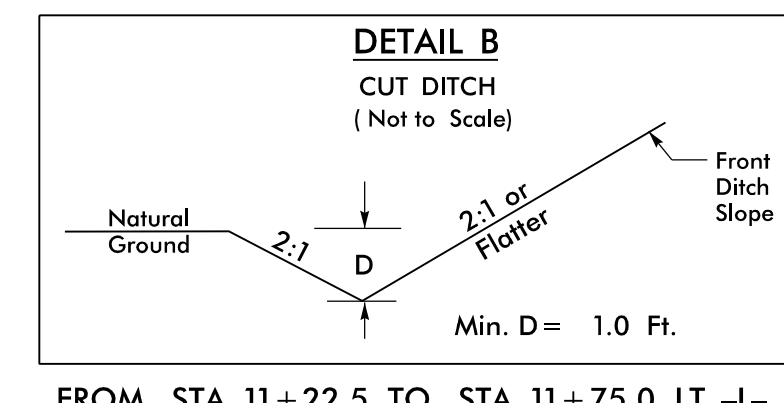
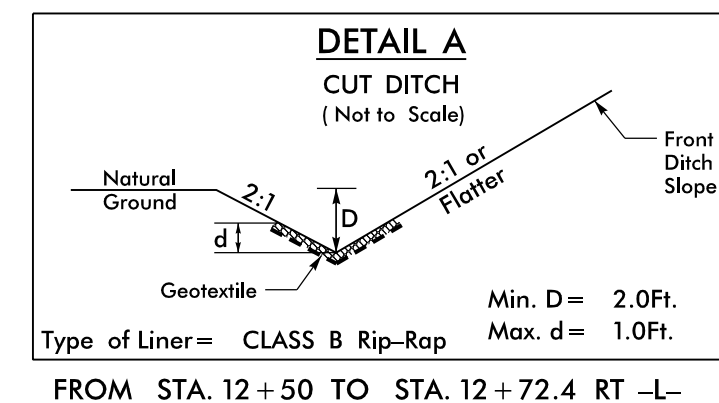
1 RAY H. DUNKELBERG
DB PG UNKNOWN

4 V.F.W.
DB PG UNKNOWN

5 TRANSYLVANIA BAPTIST ASSOC.
DB 588 PG 750

7 JAMES R. ARROWOOD, ETAL
DB 95 PG 277

END STATE PROJECT 17BPJ4R.24
-L- PC Sta. 16+06.13




FOR -L- PROFILE SEE SHEET 5

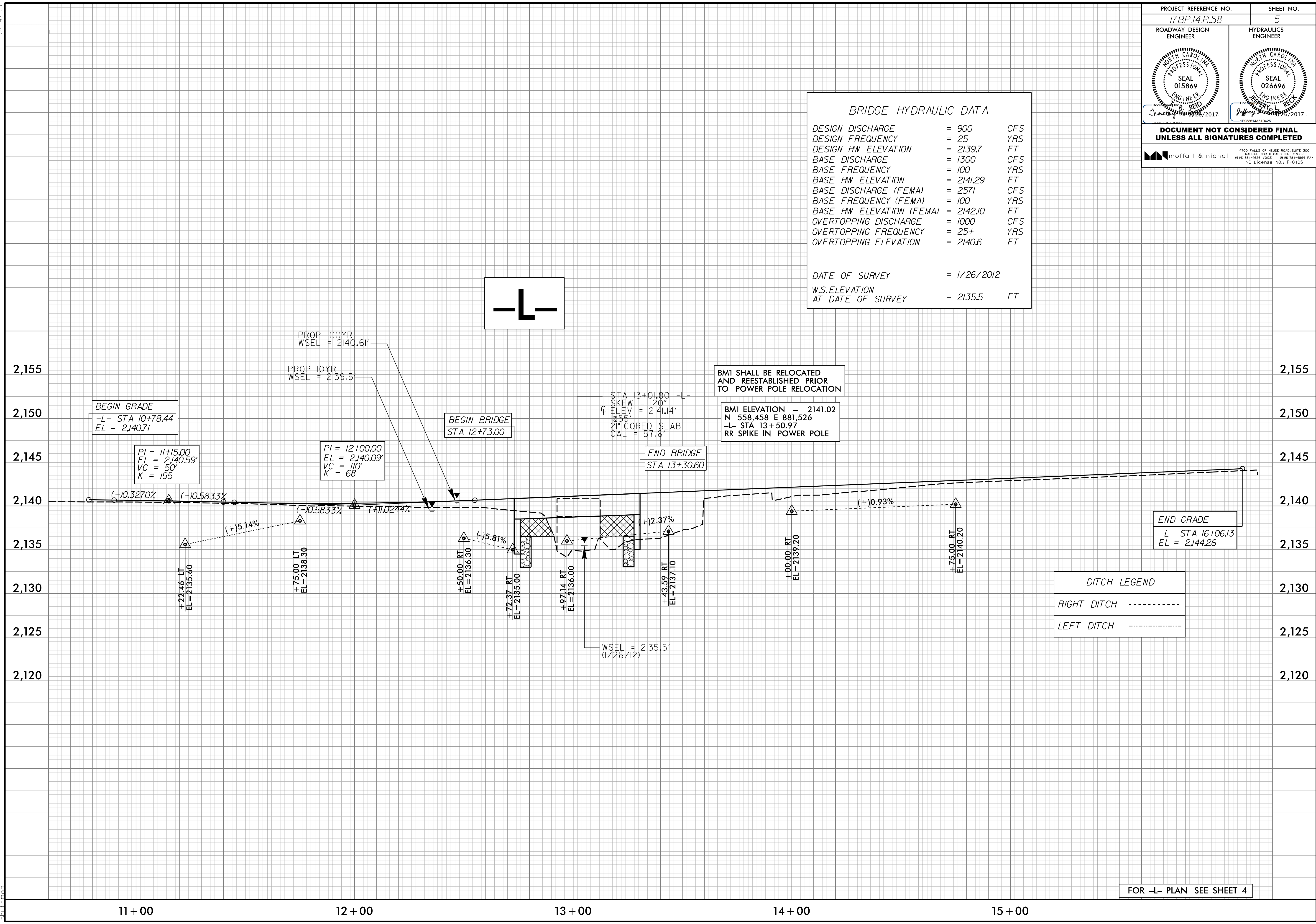
REVISIONS

8/17/99
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5/14/99

PROJECT REFERENCE NO. 17BPJ4.R.58	SHEET NO. 5
ROADWAY DESIGN ENGINEER SEAL 015869 JIMMY R. REID 1/2017	HYDRAULICS ENGINEER SEAL 026696 JEFFREY L. REID 1/2017
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 4700 FALLS OF NEUSE ROAD, SUITE 300 RALEIGH, NORTH CAROLINA 27609 (919) 781-7400 FAX (919) 781-7400 NC License No. 1-0105	

BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 900	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2139.7	FT
BASE DISCHARGE	= 1300	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2141.29	FT
BASE DISCHARGE (FEMA)	= 2571	CFS
BASE FREQUENCY (FEMA)	= 100	YRS
BASE HW ELEVATION (FEMA)	= 2142.10	FT
OVERTOPPING DISCHARGE	= 1000	CFS
OVERTOPPING FREQUENCY	= 25+	YRS
OVERTOPPING ELEVATION	= 2140.6	FT
DATE OF SURVEY	= 1/26/2012	
W.S. ELEVATION AT DATE OF SURVEY	= 2135.5	FT



FOR -L- PLAN SEE SHEET 4

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 thurman

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

TRANSYLVANIA COUNTY

BRIDGE NO. 113 ON SR 1346 (NICHOLSON CREEK)

PROJECT: 17BP.14.R.24

CONTRACT: DN00157

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
1101.01	WORK ZONE ADVANCE WARNING SIGNS FOR FACILITIES ≤ 55 MPH
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS TYPES
1264.02	OBJECT MARKERS INSTALLATION

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND AND INDEX OF SHEETS
TMP-2	GENERAL NOTES, PHASING
TMP-3	DETOUR SIGNING

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- REMOVAL
- USER DEFINED (IF NEEDED)
- USER DEFINED (IF NEEDED)

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW PANEL (TYPE C)
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- CHANGEABLE MESSAGE SIGN (CMS)

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TRAFFIC CONTROL PROJECT DESIGN ENGINEER
PROJECT ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

APPROVED: DATE: 5/30/2011			<p>RAMEY KEMP & ASSOCIATES, INC. Transportation Engineers 5808 Faringdon Place, Suite 100 Raleigh, North Carolina 27609 919-872-5115 Tel. 919-878-5416 Fax. www.rameykemp.com NC License No. C-0910</p>
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GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWING, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEERING.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TRAFFIC PATTERN ALTERATIONS

- A) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION SIGNING.

SIGNING

- B) INSTALL ADVANCED WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- C) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

- D) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

- E) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

- F) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROAD.

PAVEMENT MARKINGS AND MARKERS

- G) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKERS
SR 1346 (Nicholson Creek Road)	PAINT	RAISED

- H) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- I) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS.
- J) PASSING ZONE WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

PHASING

PHASE I

PRIOR TO ANY CONSTRUCTION OPERATIONS, PLACE AND COVER OFF-SITE DETOUR SIGNING AS SHOWN ON TMP-3 AND IN ACCORDANCE WITH RSD 1101.03 (SHEET 1 OF 9).

PHASE II

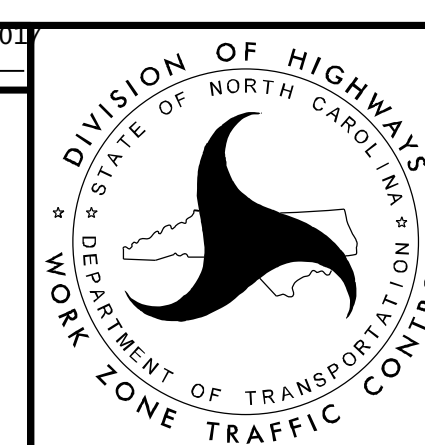
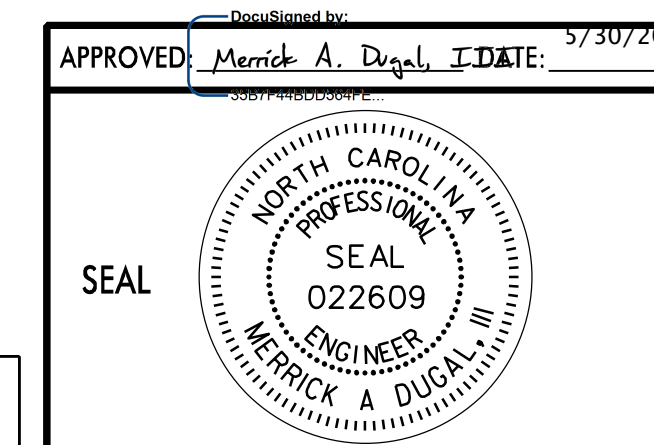
USING OFF-SITE DETOUR, UNCOVER DETOUR SIGNS, CLOSE -L- (SR 1346 / NICHOLSON CREEK ROAD) TO TRAFFIC AND CONSTRUCT BRIDGE, APPROACHES AND ROADWAY UP TO AND INCLUDING FINAL LAYER OF SURFACE COURSE.

PHASE III

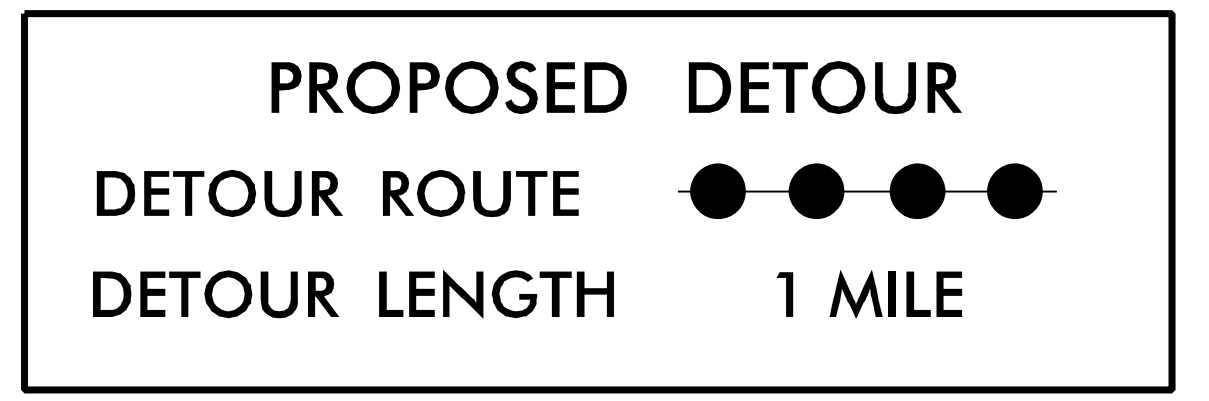
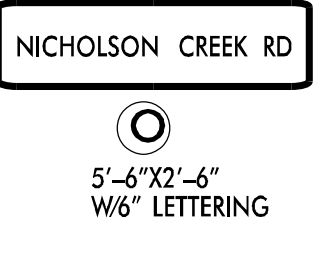
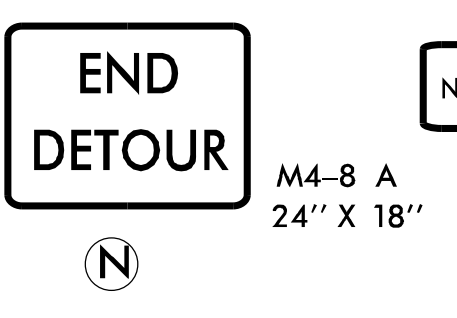
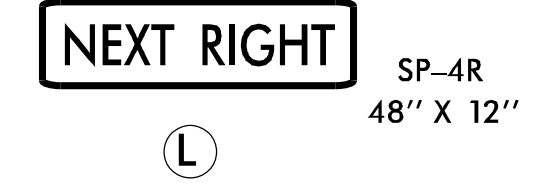
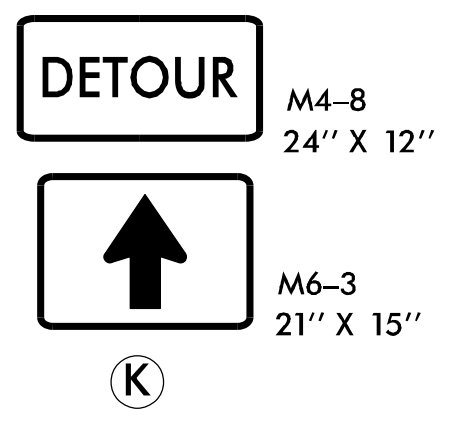
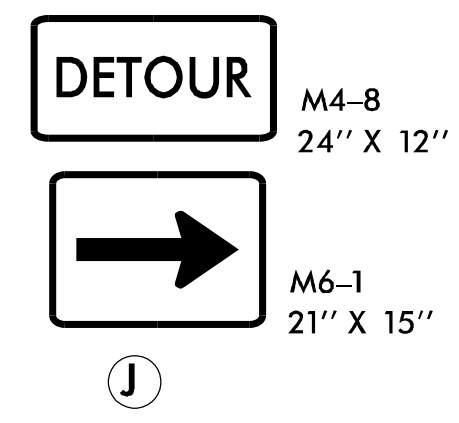
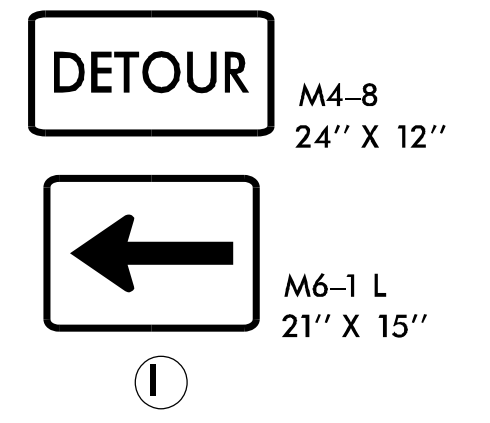
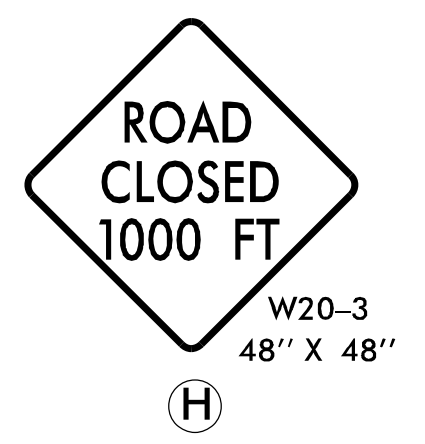
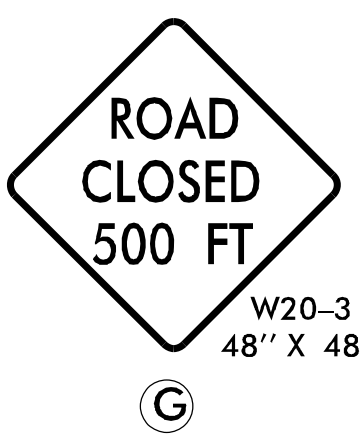
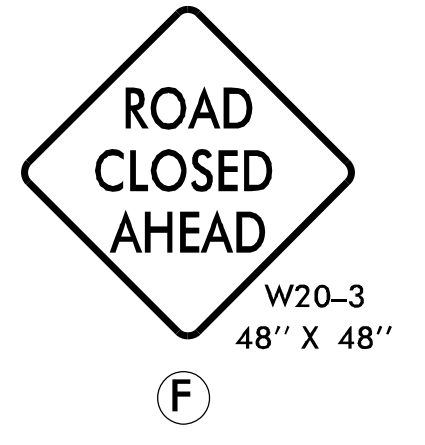
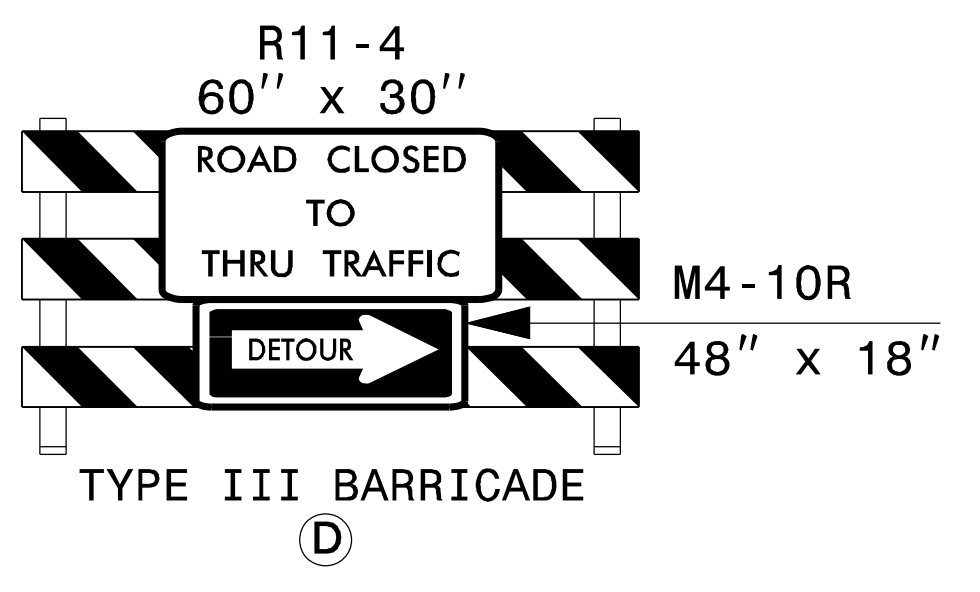
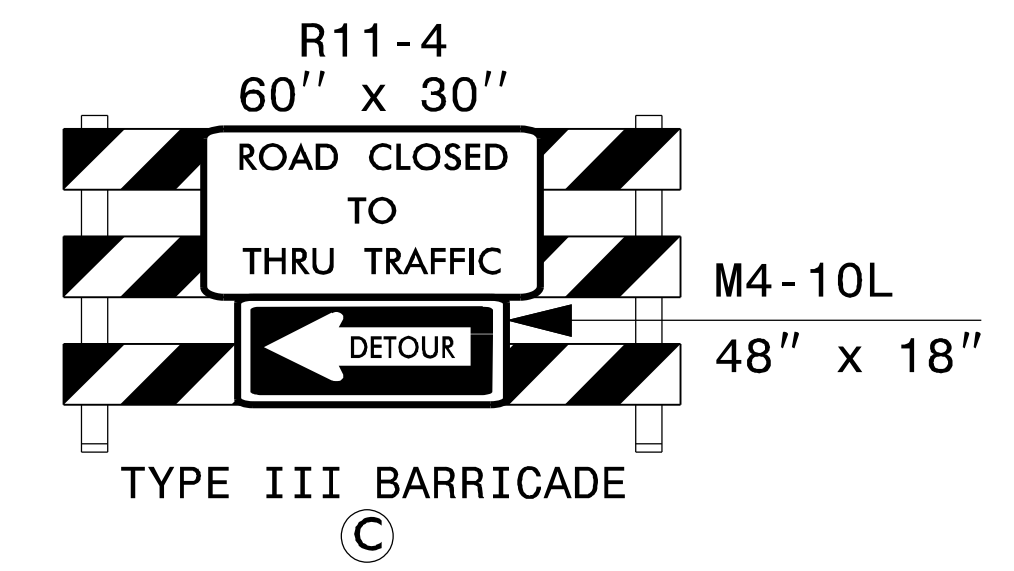
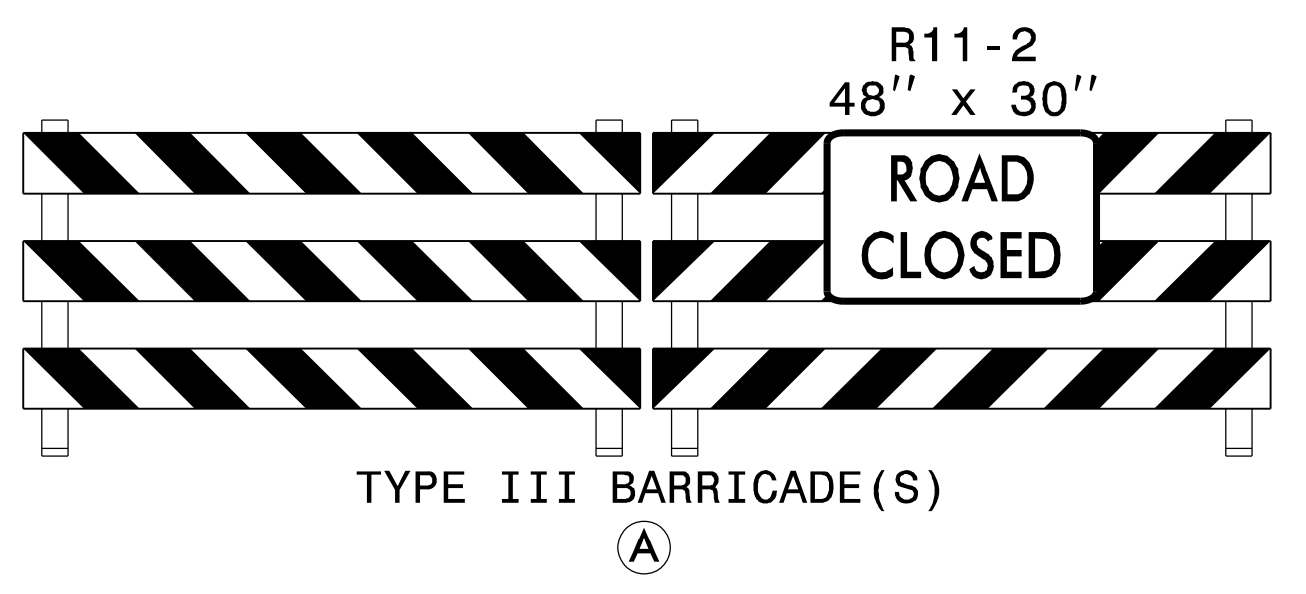
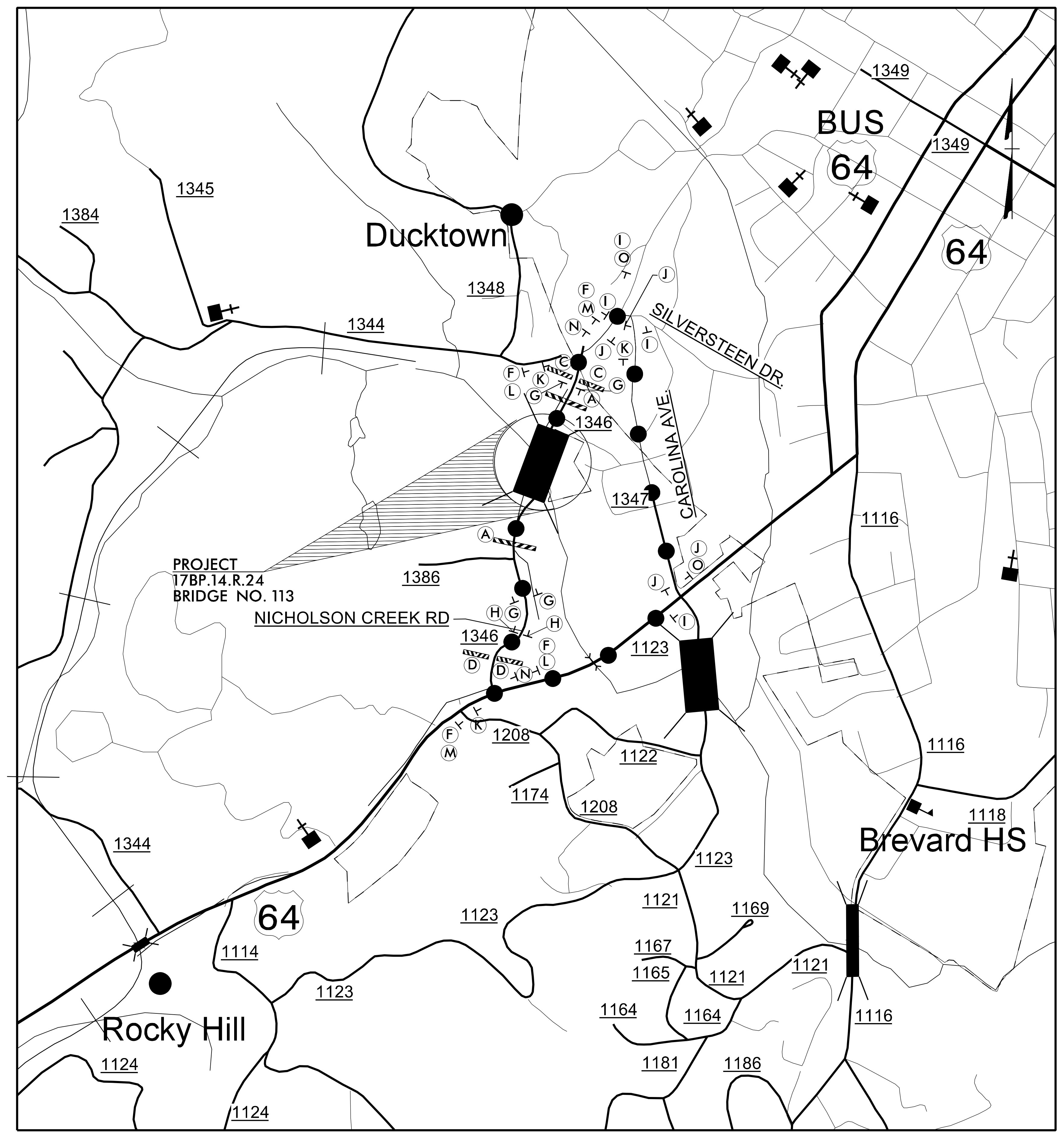
UPON COMPLETION OF BRIDGE, APPROACHES AND ROADWAY, PLACE FINAL PAVEMENT MARKING IN ACCORDANCE WITH RSD 1205.02 AND 1205.12. REMOVE BARRICADES AND DETOUR SIGNS AND OPEN -L- (SR 1346/ NICHOLSON CREEK ROAD) TO TRAFFIC.

11/8/2016 11:46:01 AM TCP_2.dgn User: dpotts

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TRANSPORTATION OPERATIONS PLAN



11/8/2016
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 UNLESS ALL SIGNATURES COMPLETED

APPROVED: Merrick A. Duval II DATE: 5/30/2016

SEAL

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 WORK ZONE TRAFFIC CONTROL

**TRANSPORTATION
 DETOUR
 DETAIL**

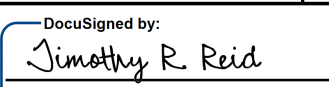


PROJECT: 17BP.14.R.24

CONTRACT: DN00157

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLANS

**LOCATION: BRIDGE NO. 113 ON SR 1346 (NICHOLSON CREEK ROAD)
 OVER NICHOLSON CREEK**

PROJECT REFERENCE NO. 17BP.14.R.24	SHEET NO. PMP-01
APPROVED:  <small>DocuSigned by: Timothy R. Reid 26568A242E83411</small>	
DATE: 5/26/2017	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 <small>4700 FALLS OF NEUSE ROAD, SUITE 300 RALEIGH, NORTH CAROLINA - 27609 (919) 781-4626 VOICE (919) 781-4869 FAX NC License No.: F-0105</small>	

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
SR 1346 AND BRIDGE	PAINT	NONE
- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- C) REMOVE / REPLACE ANY CONFLICTING / DAMAGED PAVEMENT MARKINGS AND MARKERS.
- D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

PAVEMENT MARKING SCHEDULE

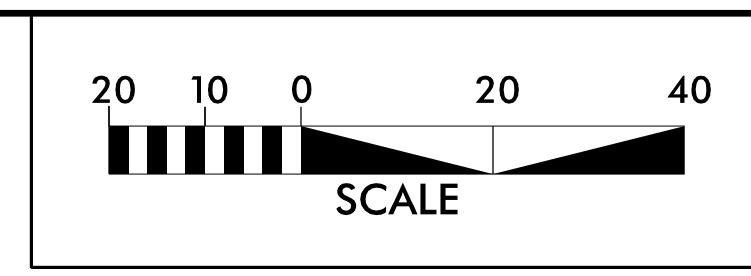
SYMBOL	DESCRIPTION
PA - WHITE EDGE LINE (4")	PAINT
PI - YELLOW DOUBLE CENTER LINE (4")	PAINT

INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN COVER SHEET NOTES & SCHEDULE
PMP-2	PAVEMENT MARKING DETAIL

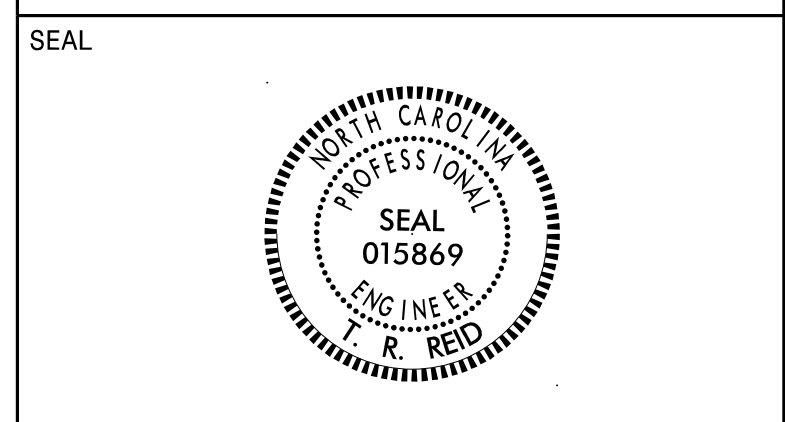
**PAVEMENT MARKING DETAIL
 NICHOLSON CREEK ROAD**

8/17/99



PROJECT REFERENCE NO. 17BP.14.R.24	SHEET NO. PMP-02
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APPROVED: *Timothy R. Reid*
DocuSigned by:
 26568A242E83411...
 DATE: 5/26/2017

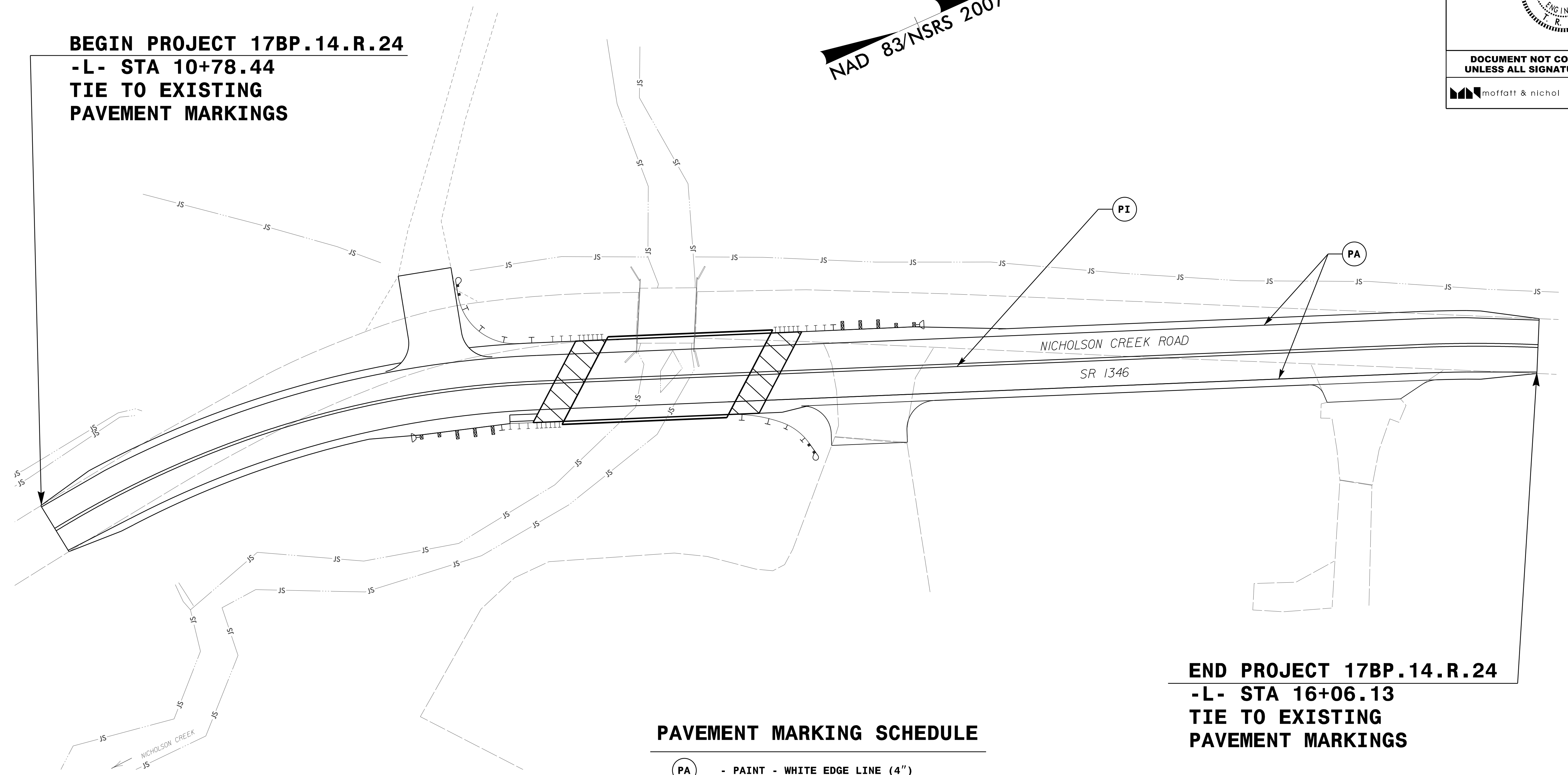


**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

moffatt & nichol
4700 FALLS OF NEUSE ROAD, SUITE 300
 WALEN NORTH CAROLINA - 27609
 (919) 781-4626 VOICE (919) 781-4869 FAX
 NC License NO.: F-0105

NAD 83/NSRS 2007

**BEGIN PROJECT 17BP.14.R.24
 -L- STA 10+78.44
 TIE TO EXISTING
 PAVEMENT MARKINGS**



**END PROJECT 17BP.14.R.24
 -L- STA 16+06.13
 TIE TO EXISTING
 PAVEMENT MARKINGS**

PAVEMENT MARKING SCHEDULE

- (PA)** - PAINT - WHITE EDGE LINE (4")
- (PI)** - PAINT - YELLOW DOUBLE CENTER LINE (4")

NOTE:
 1. ALL STRIPING SHOWN SHALL HAVE TWO COATS

**PAVEMENT MARKING DETAIL
 NICHOLSON CREEK ROAD**

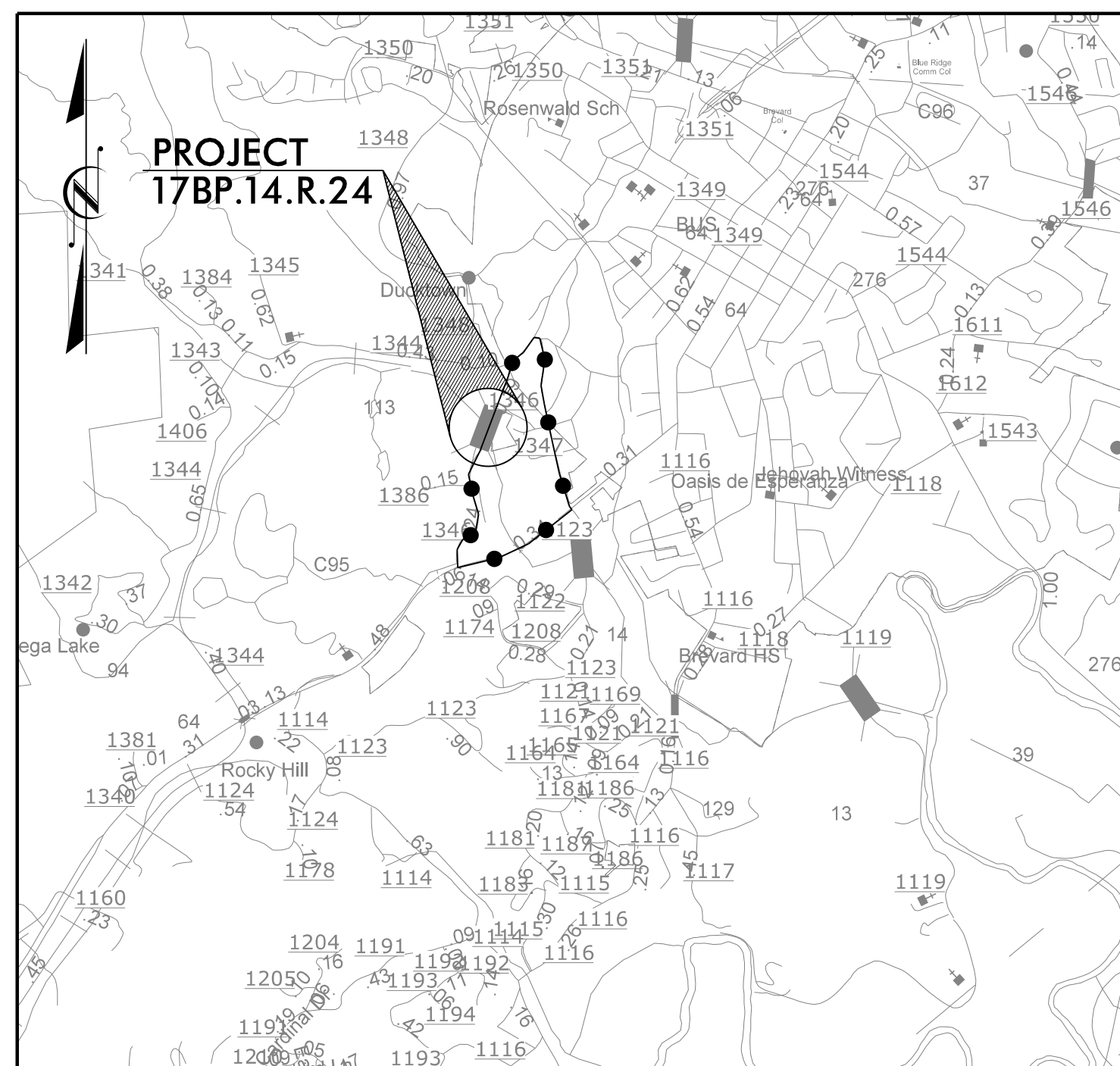
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PROJECT: 17BP.14.R.24

CONTRACT: DN00157

BRIDGE 870113

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.24	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.14.R.24		PE	



VICINITY MAP

● ● ● ● ● DETOUR

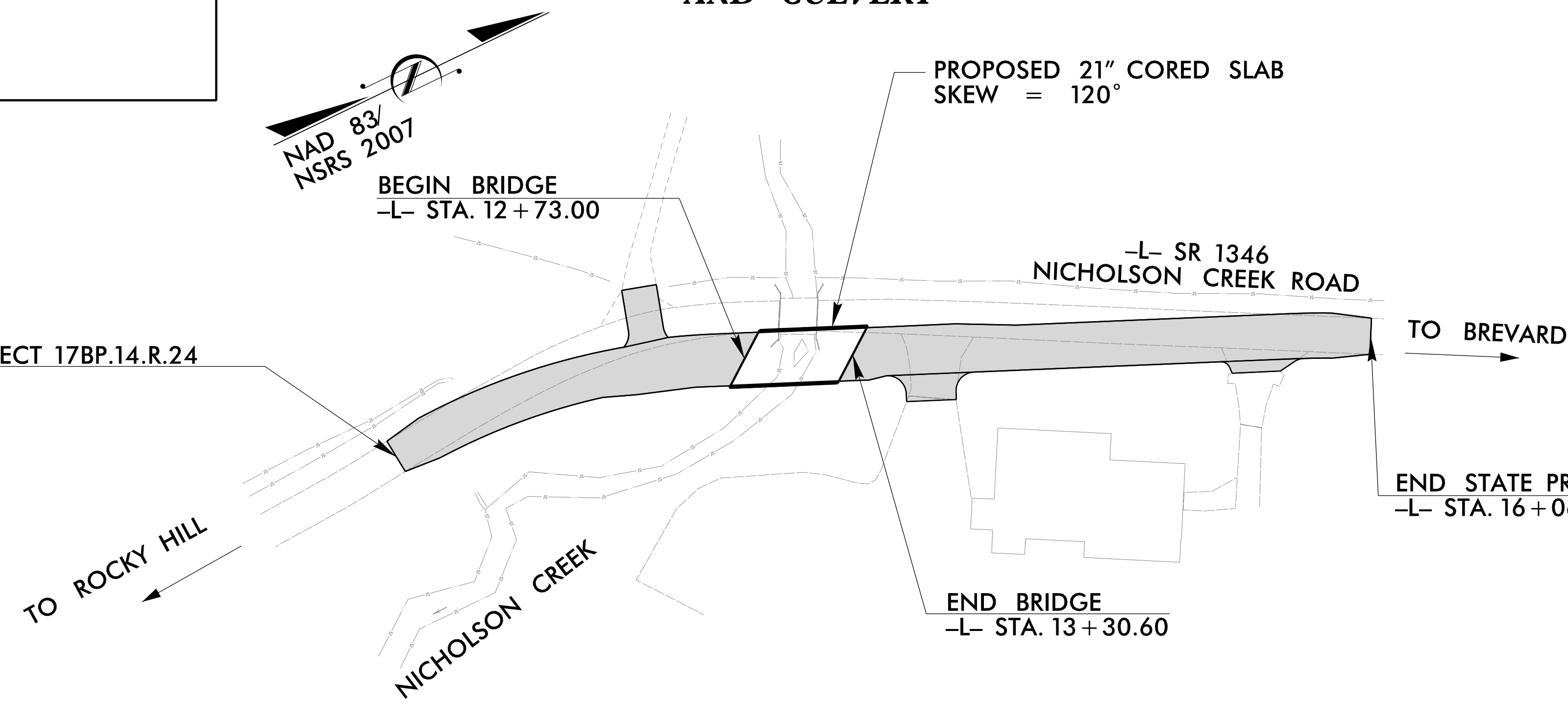
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

TRANSYLVANIA COUNTY

**LOCATION: BRIDGE NO. 113 ON SR 1346 (NICHOLSON CREEK ROAD)
OVER NICHOLSON CREEK**

**TYPE OF WORK: PAVING, GRADING, GUARDRAIL, DRAINAGE
AND CULVERT**



EROSION AND SEDIMENT CONTROL MEASURES

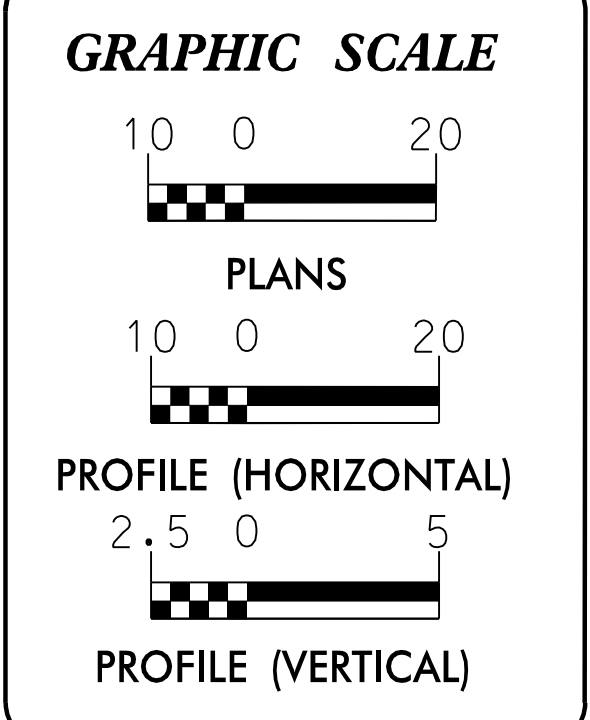
Sid. #	Description	Symbol
1650.05	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	▲▲▲▲▲
1622.01	Temporary Berms and Slope Drains	TBD
1630.02	Silt Basin Type B	▨
1655.01	Temporary Rock Silt Check Type-A	▨
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	▨
1633.02	Temporary Rock Silt Check Type-B	▶
	Wattle/Coir Fiber Wattle	◌
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	◌
1634.01	Temporary Rock Sediment Dam Type-A	▨
1634.02	Temporary Rock Sediment Dam Type-B	▨
1655.01	Rock Pipe Inlet Sediment Trap Type-A	⊓
1655.02	Rock Pipe Inlet Sediment Trap Type-B	⊓
1630.04	Stilling Basin	▭
1630.06	Special Stilling Basin	▭
	Rock Inlet Sediment Trap:	
1652.01	Type A	A
1652.02	Type B	B
1652.03	Type C	C
	Skimmer Basin	▭
	Tiered Skimmer Basin	▭
	Infiltration Basin	▭

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT
Refer To E. C. Special Provisions for Special Considerations.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

PREPARED BY: **moffatt & nichol**
4700 FALLS OF NEUSE ROAD, SUITE 300
RALEIGH, NORTH CAROLINA 27609
19191 781-4625 VOICE 19191 781-4869 FAX
NC License No.: F-0105

DESIGN BY: **JEFF RECK, PE**
NCDOT LEVEL III-A: DESIGNER OF EROSION AND SEDIMENT CONTROL PLANS CERT #132

REVIEWED BY: **JEFFREY L. RECK, PE**
NCDOT LEVEL III-A: DESIGNER OF EROSION AND SEDIMENT CONTROL PLANS CERT #132

Prepared for the Office of:
ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

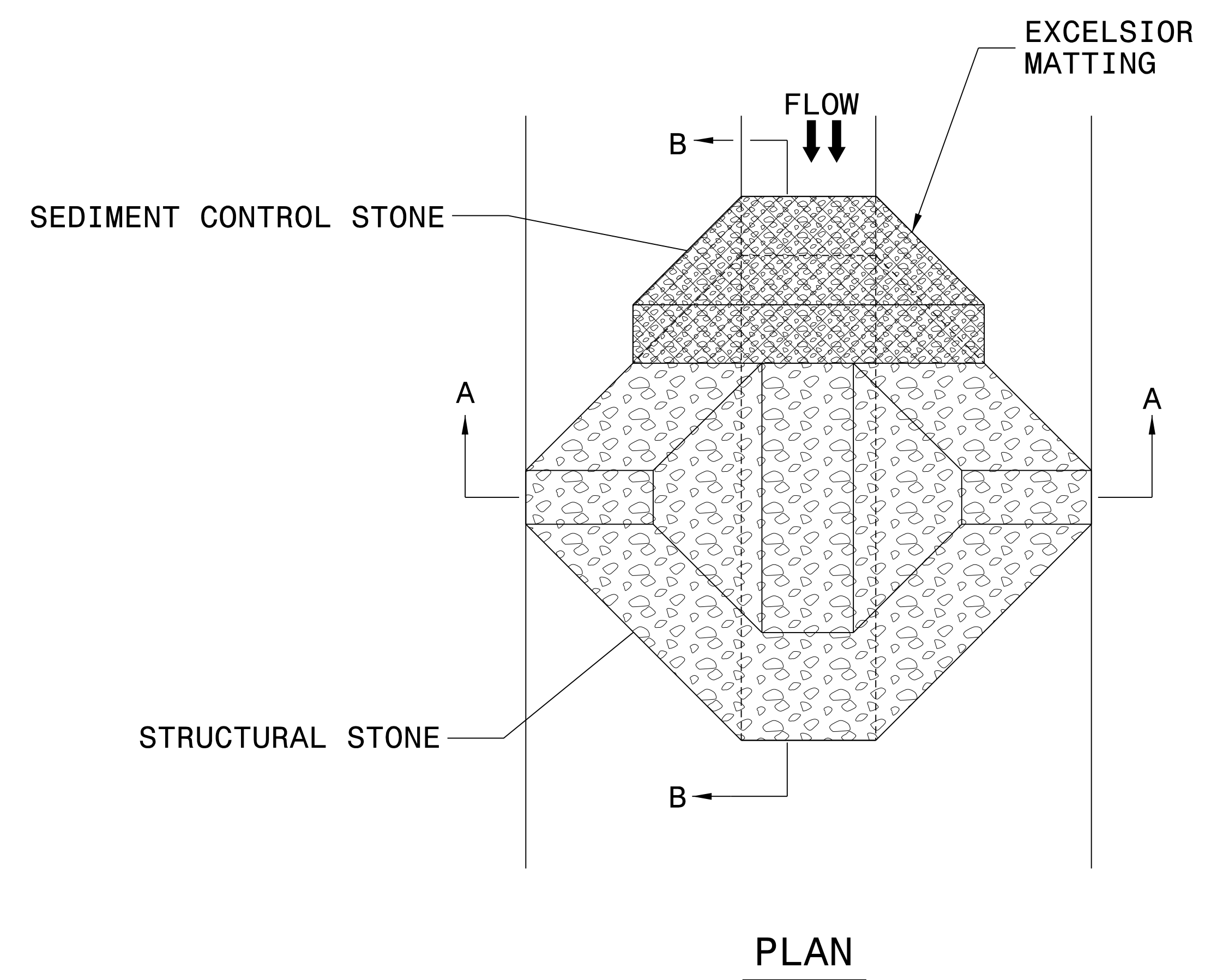
2012 STANDARD SPECIFICATIONS

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type A
1622.01 Temporary Berms and Slope Drains	1633.02 Temporary Rock Silt Check Type B
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type B	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Coir Fiber Baffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



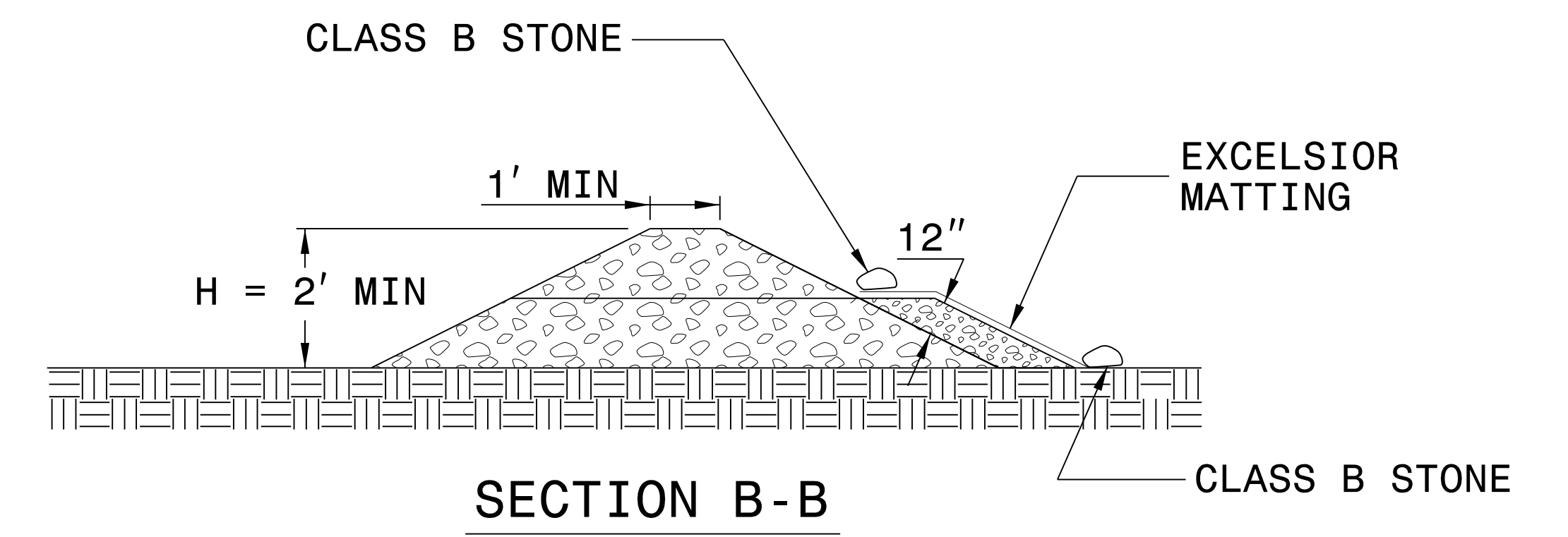
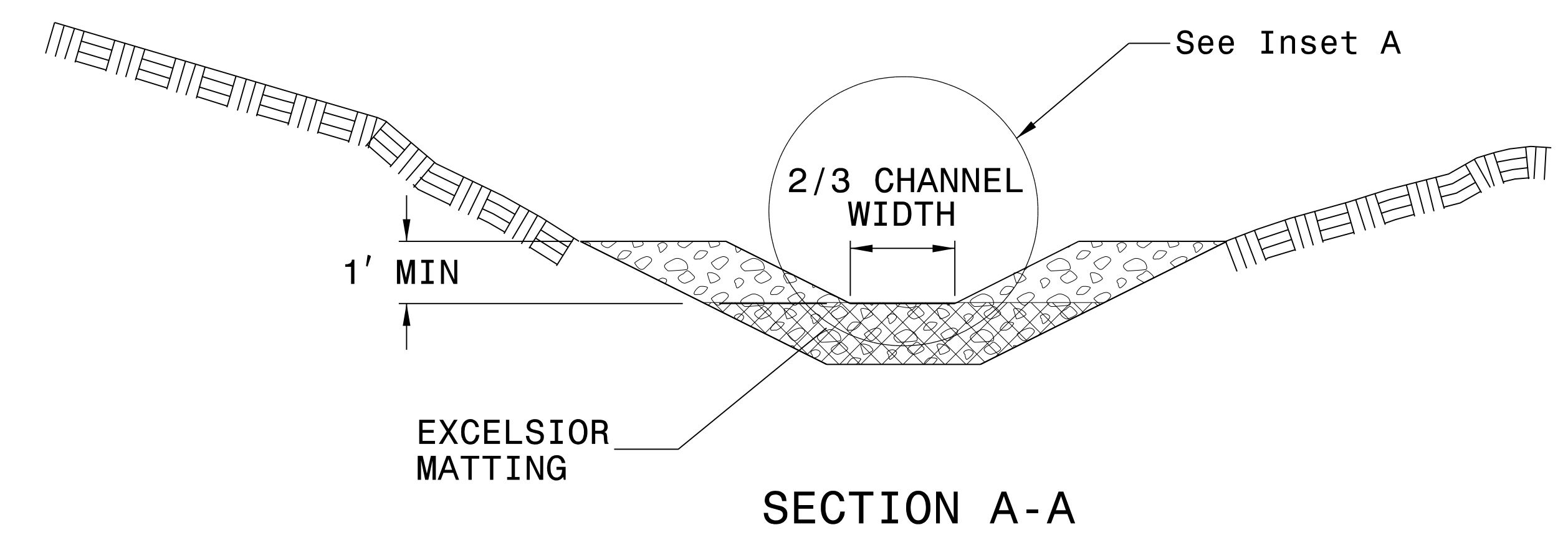
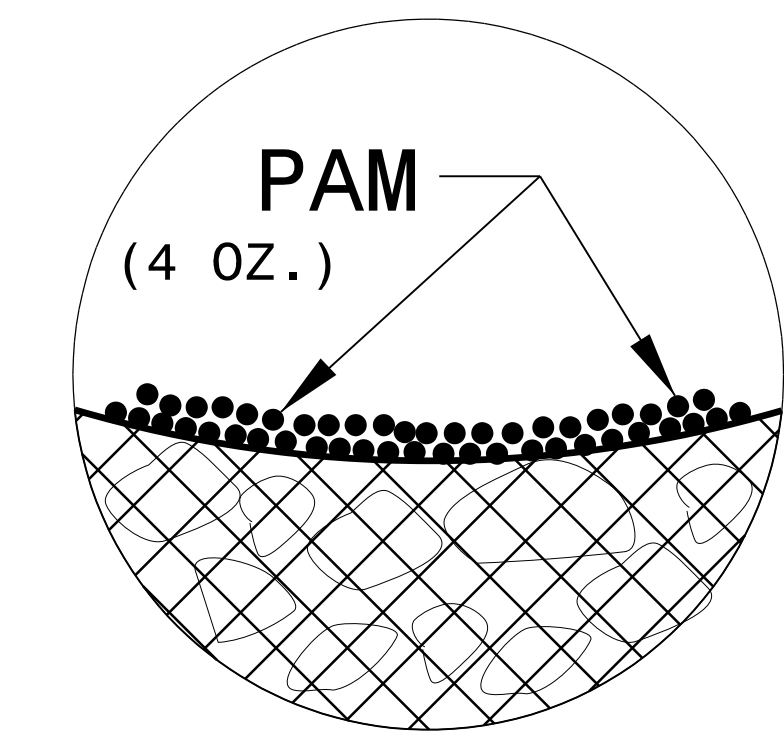
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

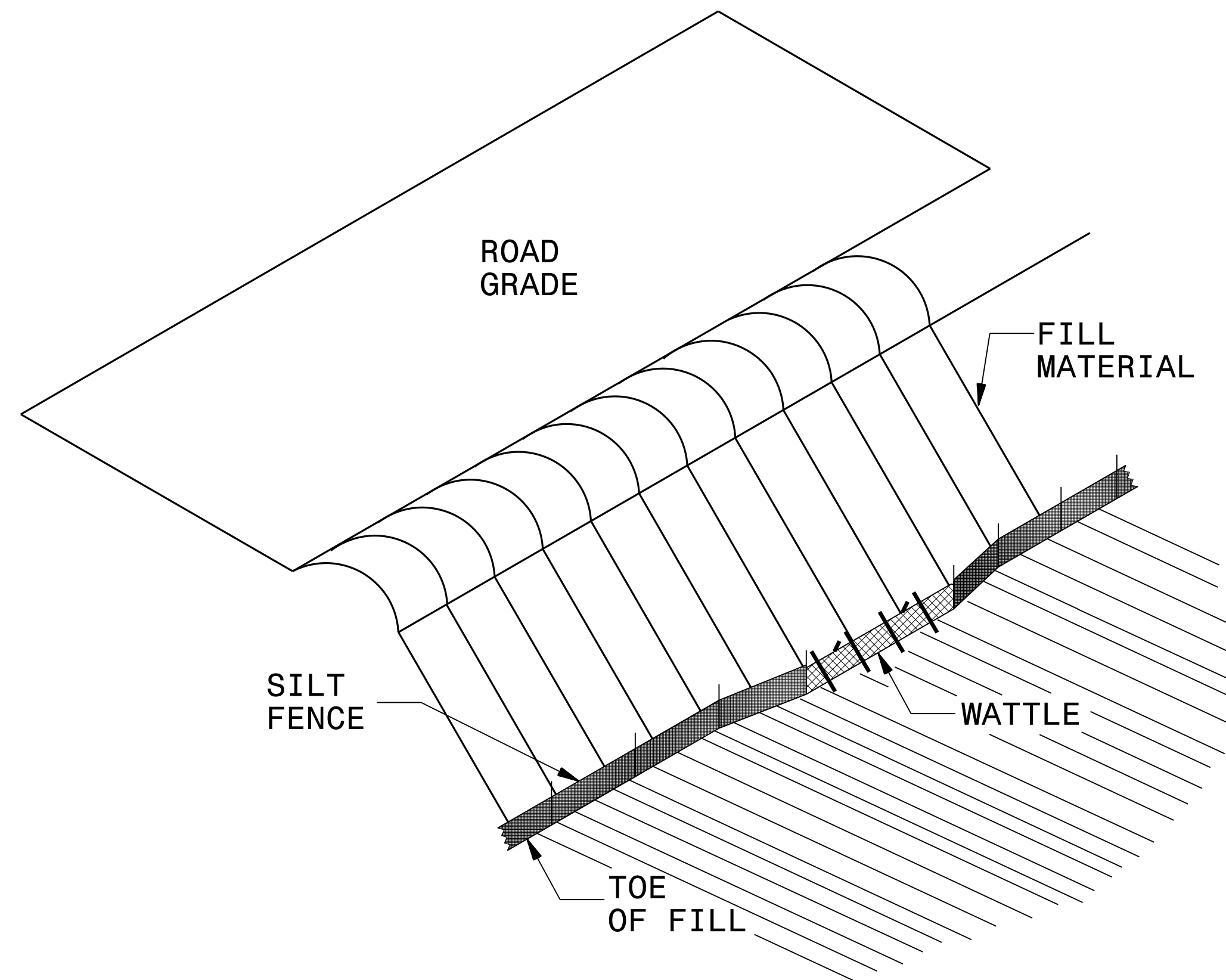
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



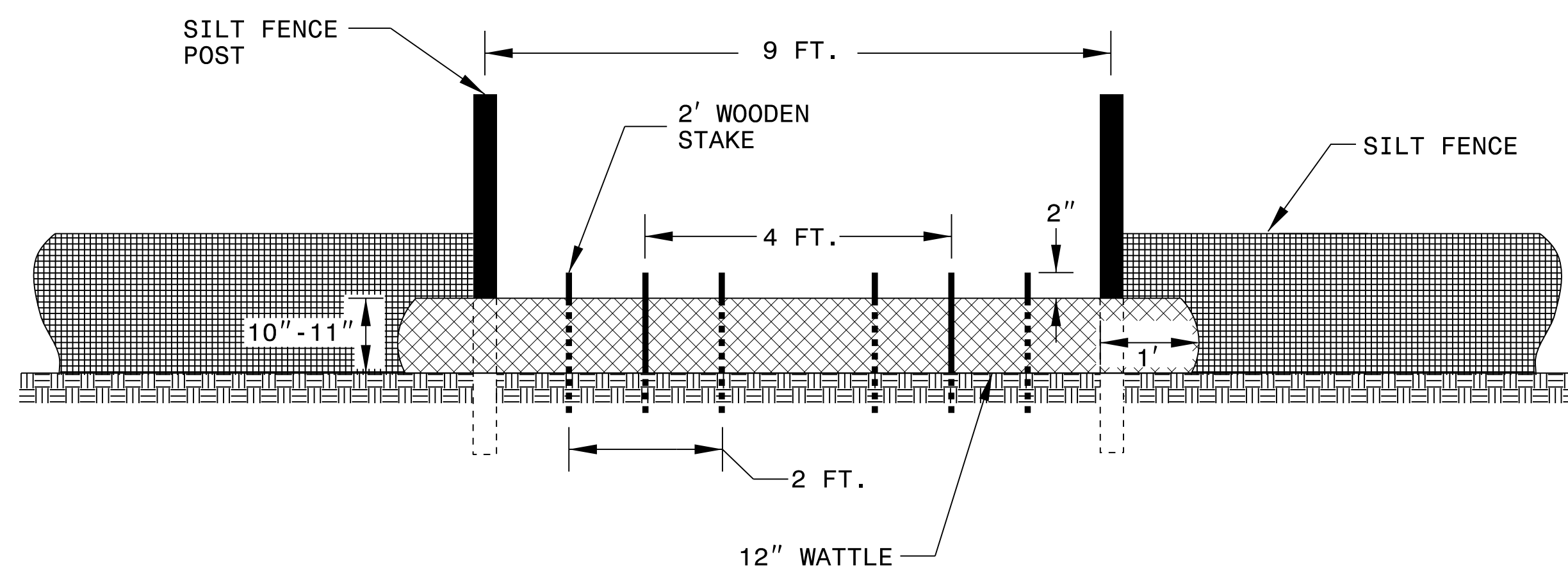
NOT TO SCALE

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17BP.14.R.24

SILT FENCE COIR FIBER WATTLE BREAK DETAIL



ISOMETRIC VIEW



VIEW FROM SLOPE

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

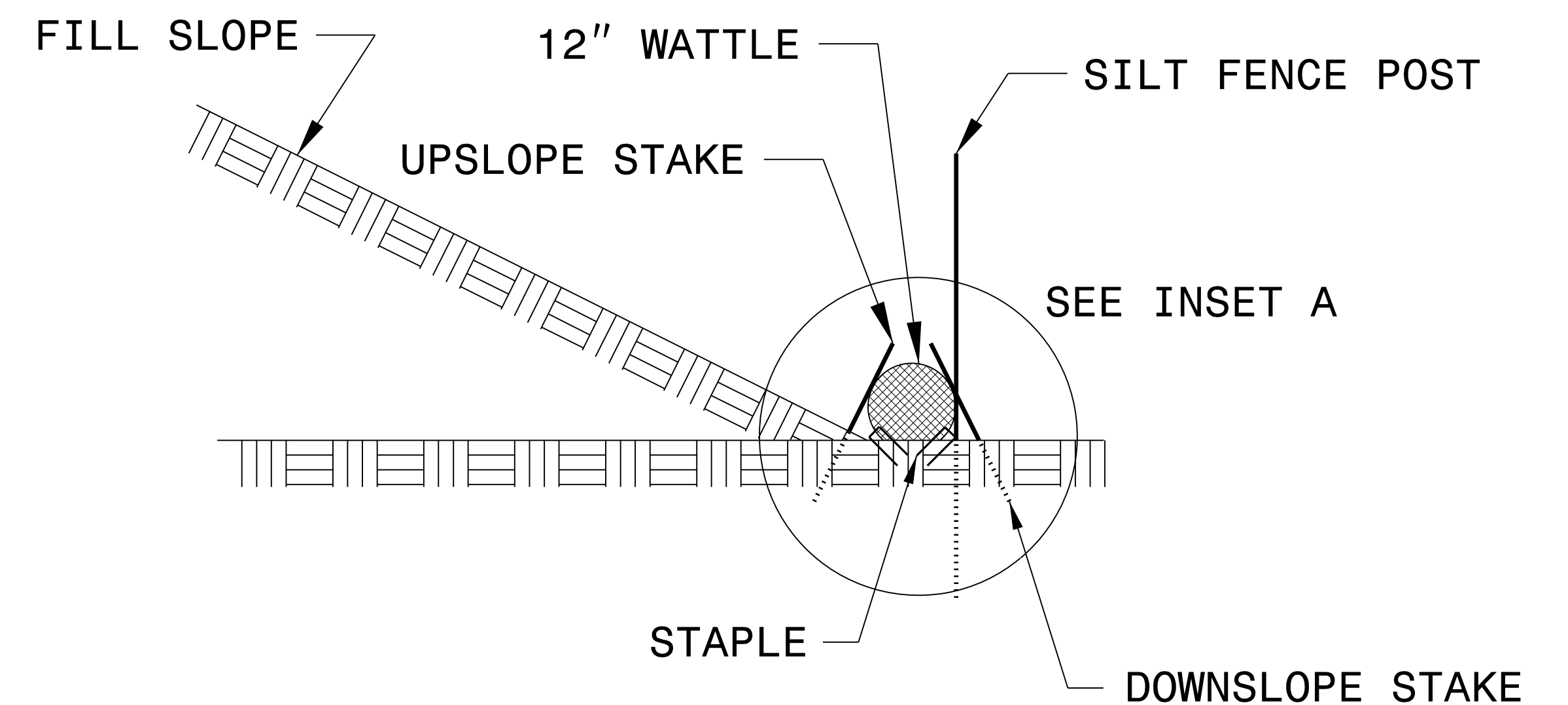
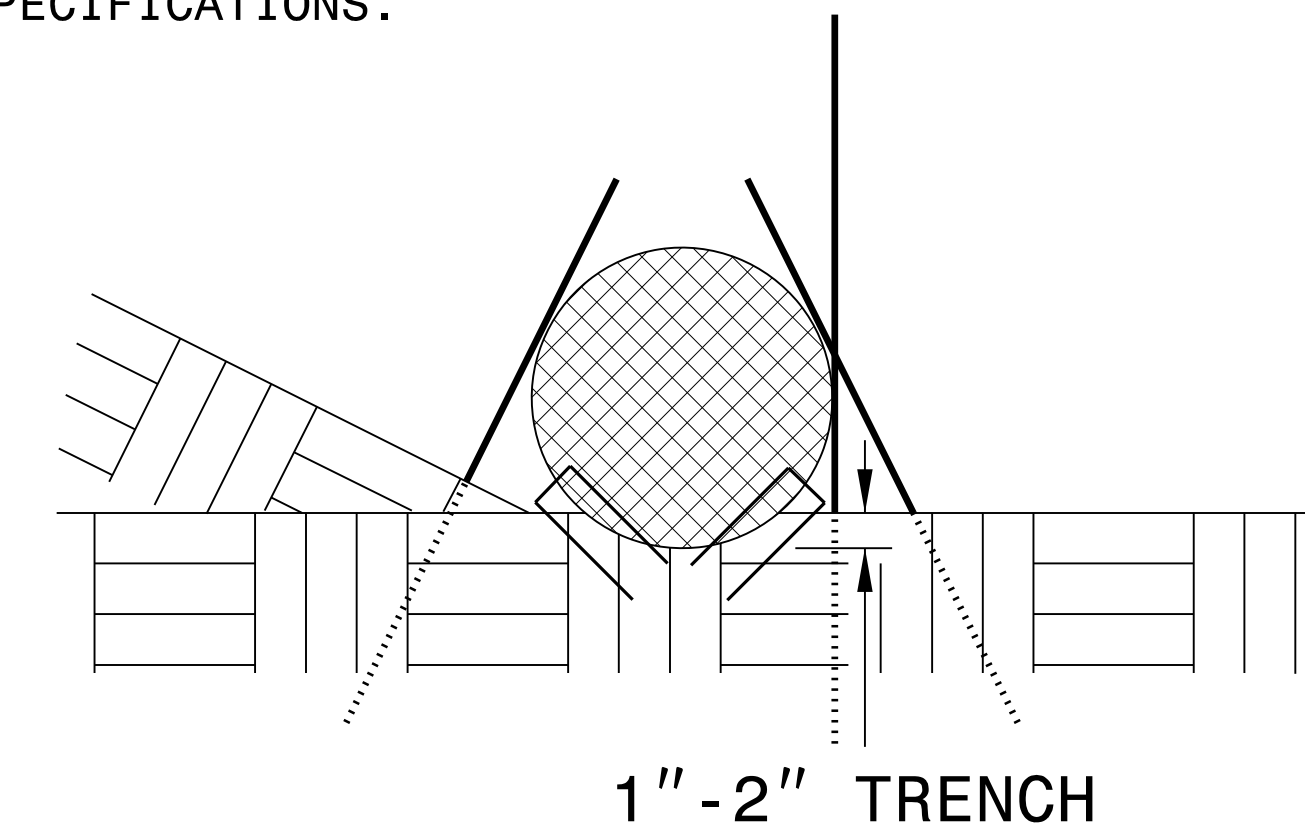
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A



SIDE VIEW

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DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

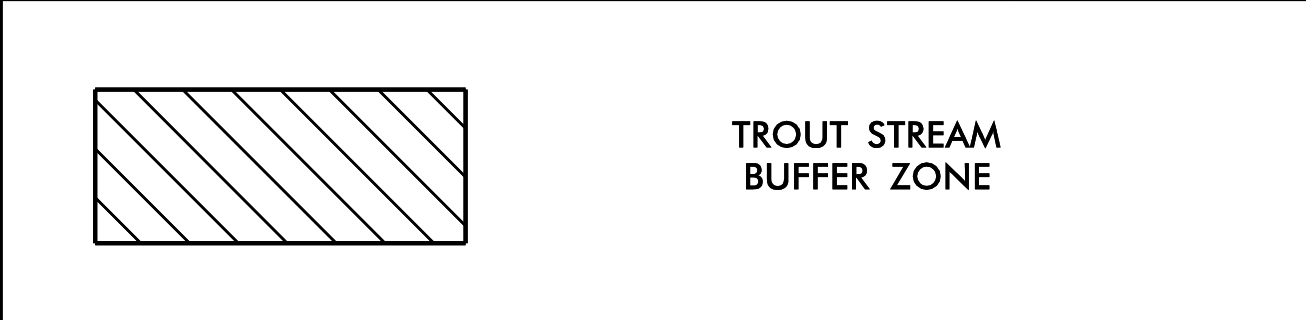
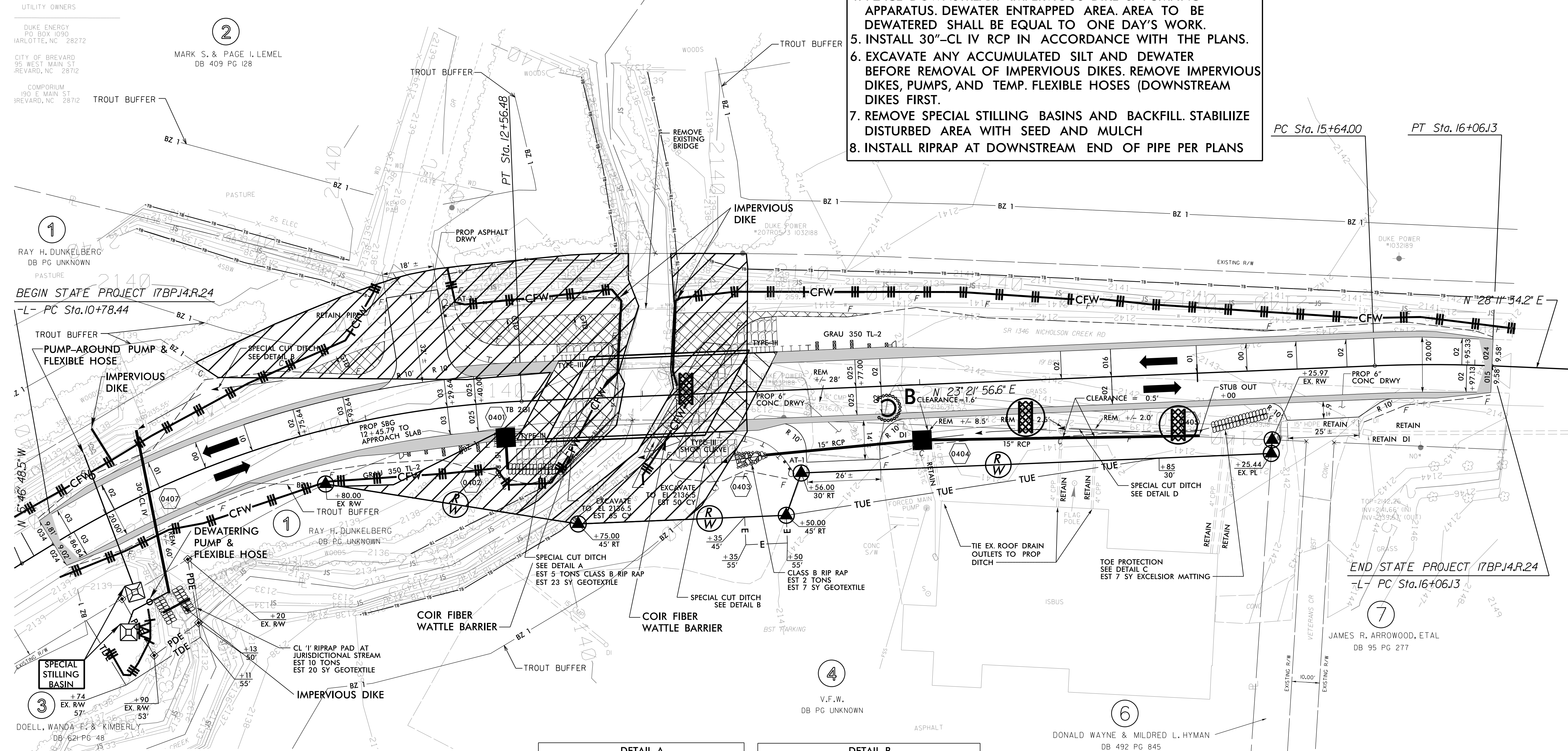
SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

NAD 83/NSRS 2007

- CULVERT CONSTRUCTION SEQUENCE STA. 11+17.3 -L-**
1. INSTALL (2) SPECIAL STILLING BASINS
 2. INSTALL UPSTREAM PUMP AND TEMP. FLEXIBLE HOSE
 3. PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
 4. PLACE DOWNSTREAM IMPERVIOUS DIKE & PUMPING APPARATUS. DEWATER ENTRAPPED AREA. AREA TO BE DEWATERED SHALL BE EQUAL TO ONE DAY'S WORK.
 5. INSTALL 30"-CL IV RCP IN ACCORDANCE WITH THE PLANS.
 6. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES. REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMP. FLEXIBLE HOSES (DOWNSTREAM DIKES FIRST).
 7. REMOVE SPECIAL STILLING BASINS AND BACKFILL. STABILIZE DISTURBED AREA WITH SEED AND MULCH
 8. INSTALL RIPRAP AT DOWNSTREAM END OF PIPE PER PLANS

<i>PI Sta 10+32.50</i> $\Delta = 4' 18" 35.2" (LT)$ $D = 6' 38" 00.7"$ $L = 64.97'$ $T = 32.50'$ $R = 863.73'$ $e = 4.0\%$ $DS = 30 MPH$	<i>PI Sta 11+69.43</i> $\Delta = 29' 08" 45.1" (RT)$ $D = 16' 22" 12.8"$ $L = 178.04'$ $T = 90.99'$ $R = 350.00'$ $e = 5.0\%$ $DS = 30 MPH$	<i>PI Sta 15+85.08</i> $\Delta = 4' 49' 37.6" (RT)$ $D = 11' 27' 33.0"$ $L = 42.12'$ $T = 21.07'$ $R = 500.00'$ $e = 5.0\%$ $DS = 30 MPH$
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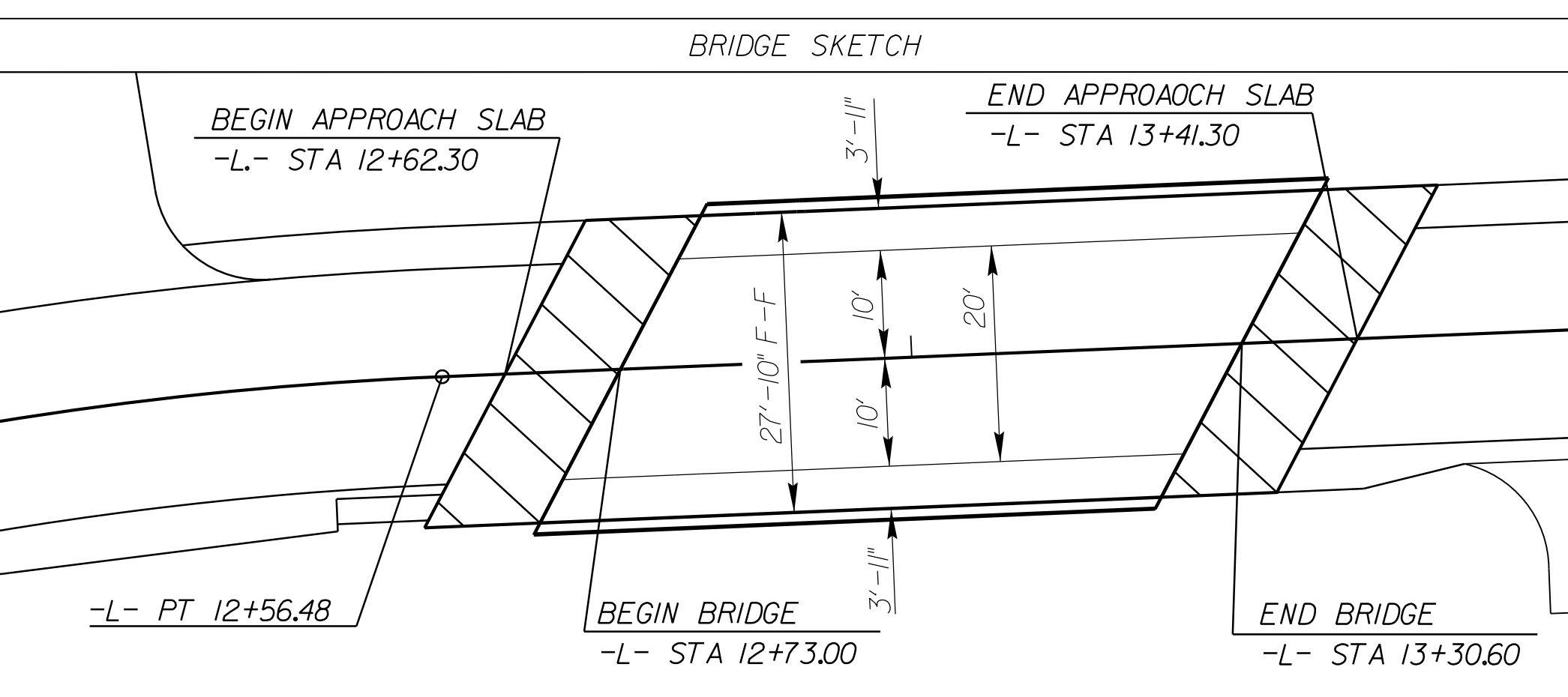
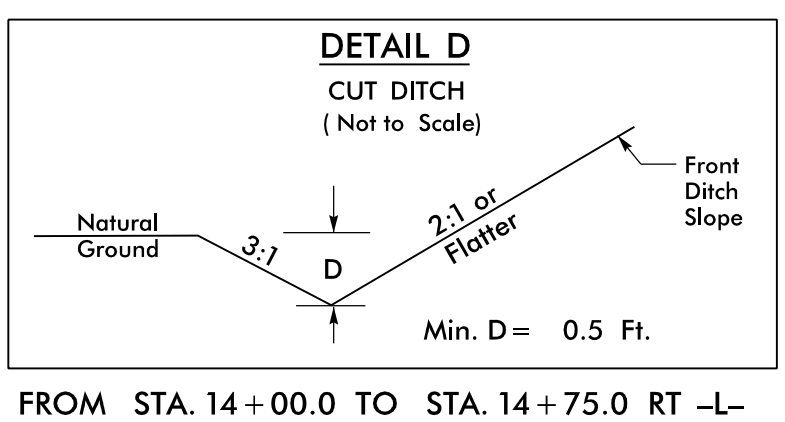
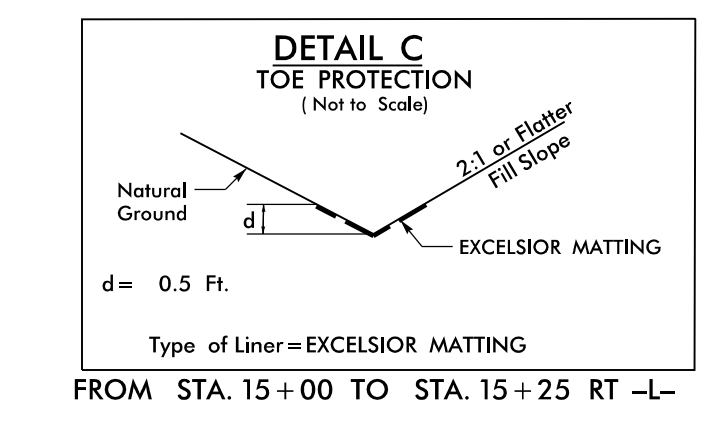
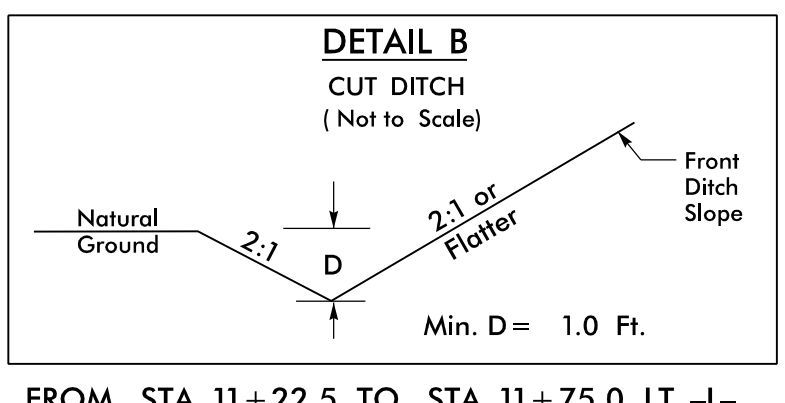
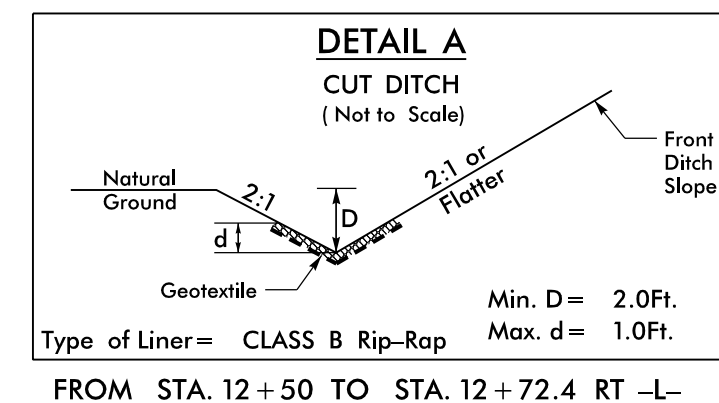


NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

PLEASE NOTE THAT THE COST FOR THE PUMP AND FLEX HOSE WILL BE INCIDENTAL TO THE PRICE BID FOR THE SPECIAL STILLING BASIN

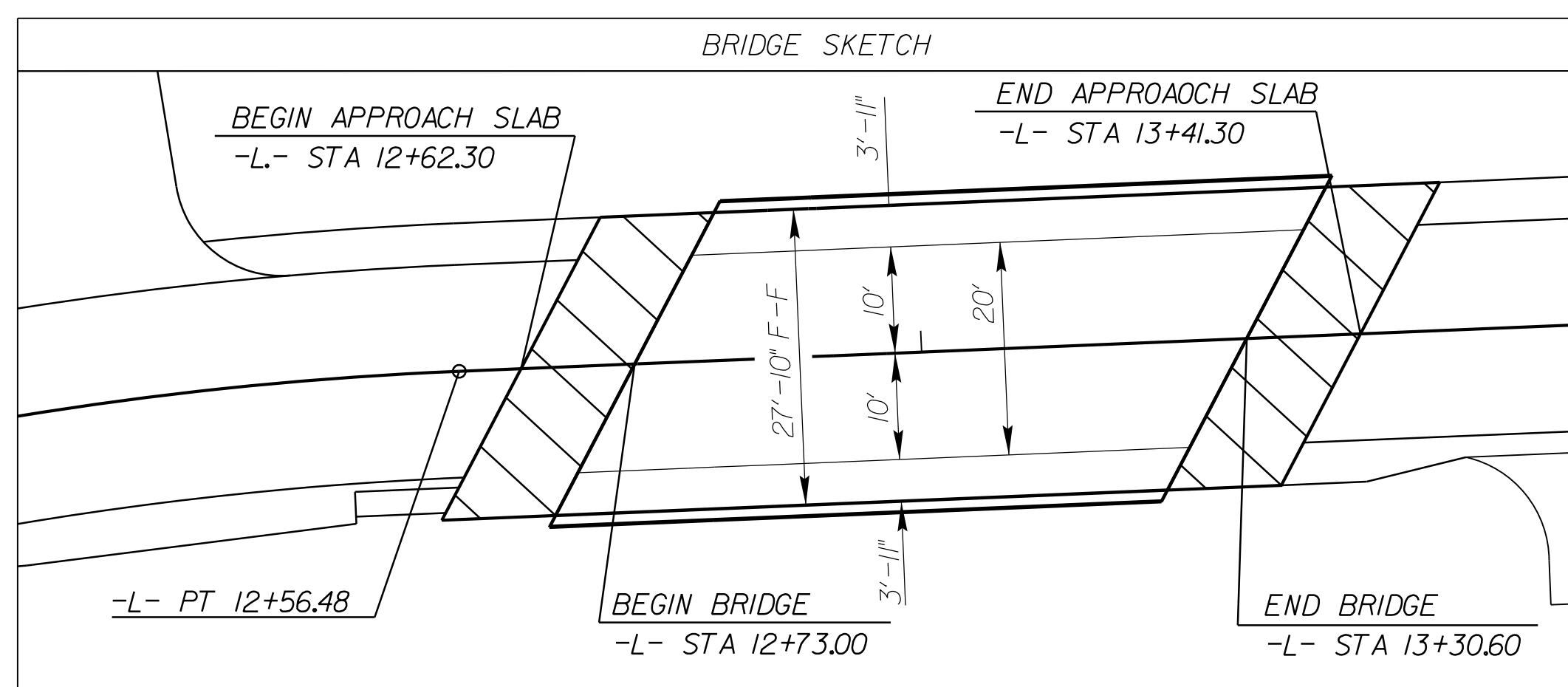
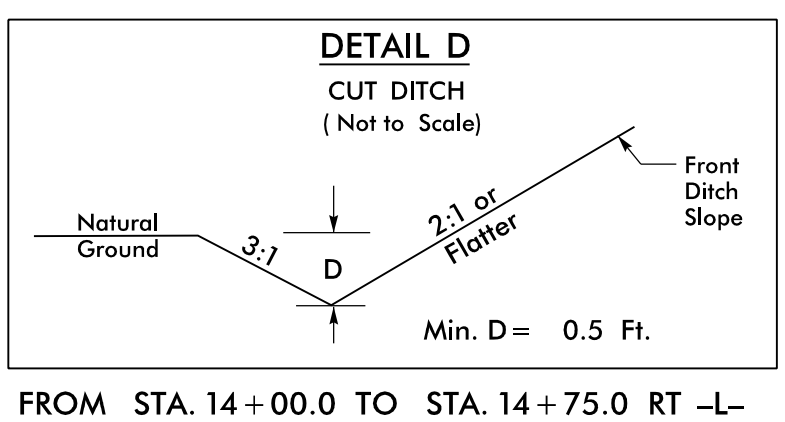
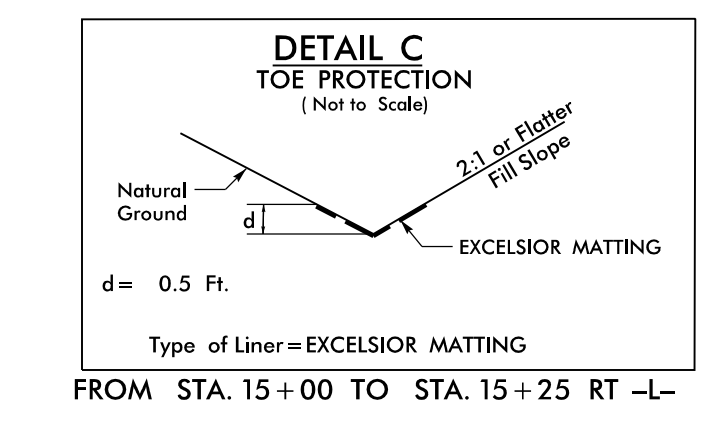
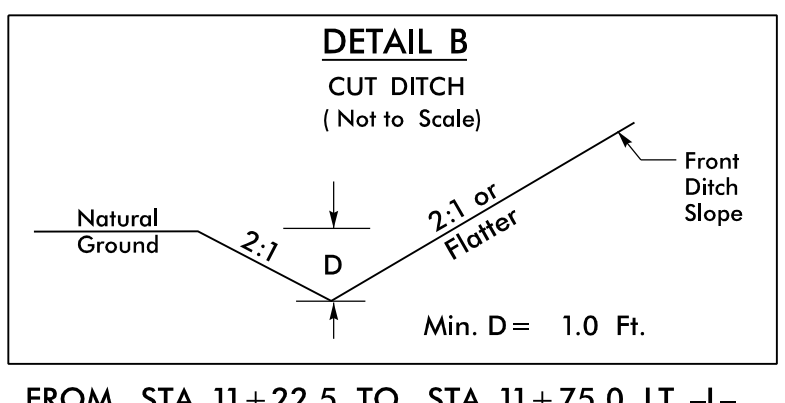
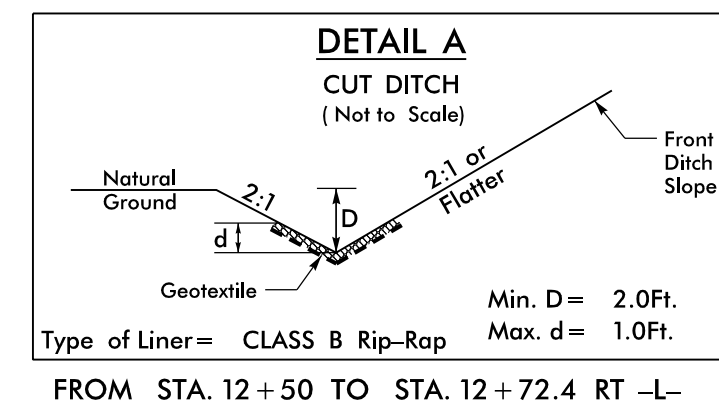
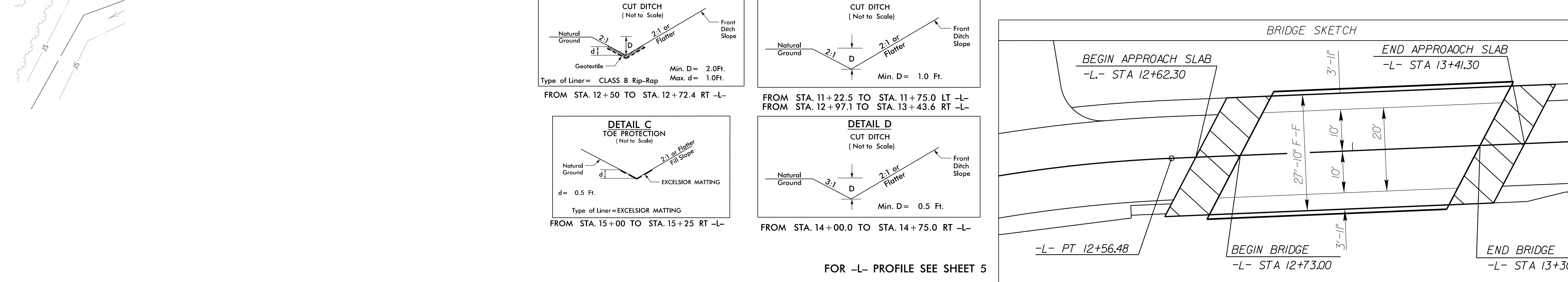
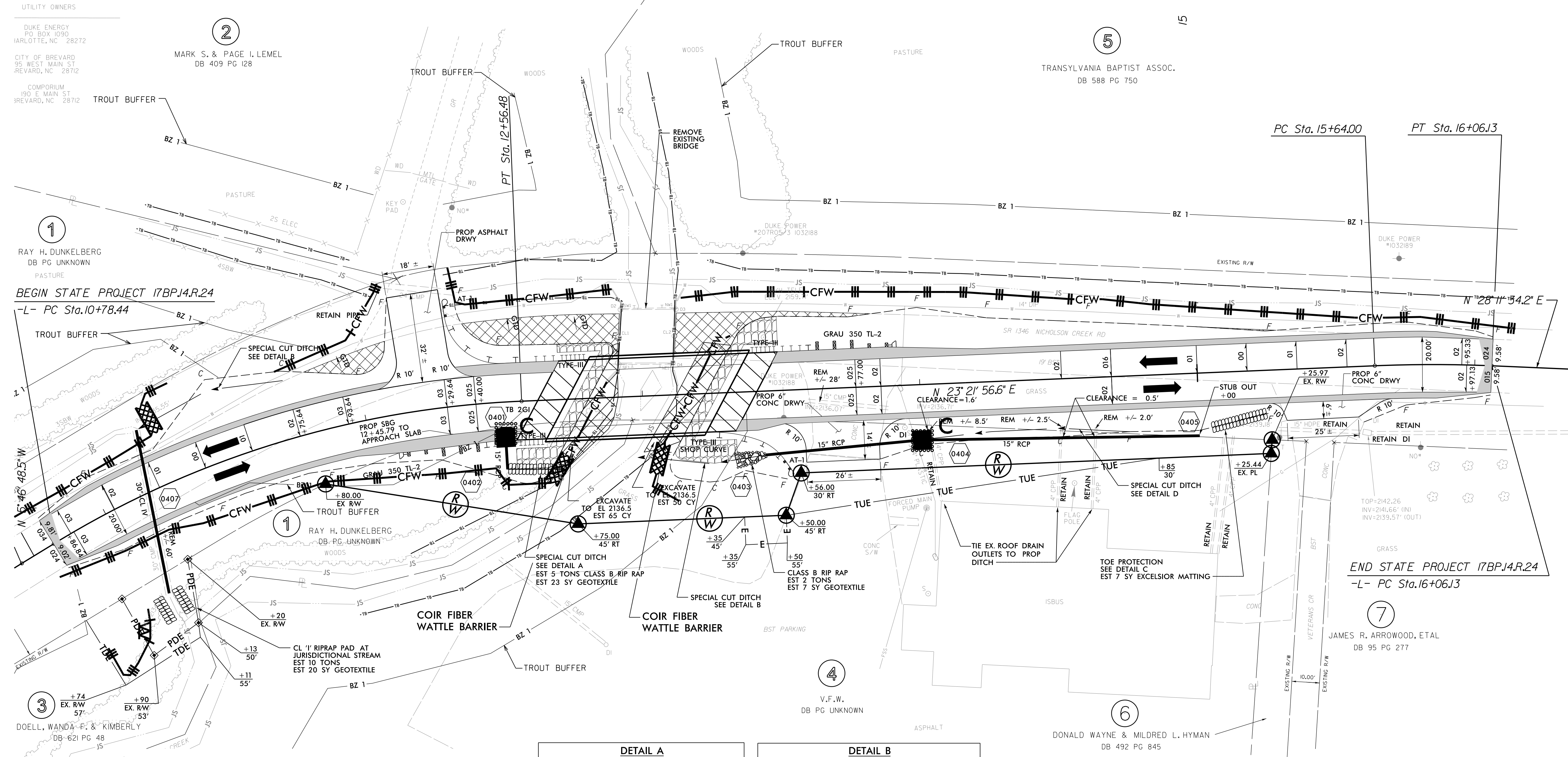


FOR -L- PROFILE SEE SHEET 5

REVISIONS
 8/17/09
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NAD 83/NSRS 2007

PI Sta 10+32.50 $\Delta = 4' 18' 35.2''$ (LT) $D = 6' 38' 00.7''$ $L = 64.97'$ $T = 32.50'$ $R = 863.73'$ $e = 4.0\%$ $DS = 30$ MPH	PI Sta 11+69.43 $\Delta = 29' 08' 45.1''$ (RT) $D = 16' 22' 12.8''$ $L = 178.04'$ $T = 90.99'$ $R = 350.00'$ $e = 5.0\%$ $DS = 30$ MPH	PI Sta 15+85.08 $\Delta = 4' 49' 37.6''$ (RT) $D = 1' 27' 33.0''$ $L = 42.12'$ $T = 21.07'$ $R = 500.00'$ $e = 5.0\%$ $DS = 30$ MPH
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FOR -L- PROFILE SEE SHEET 5

REVISIONS

8/17/09
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 8/17/09

UTILITY OWNERS

DUKE ENERGY
PO BOX 1090
CHARLOTTE, NC 28272

CITY OF BREVARD
95 WEST MAIN ST
BREVARD, NC 28712

COMPTORIUM
190 E MAIN ST
BREVARD, NC 28712

1 RAY H. DUNKELBERG
DB PG UNKNOWN
PASTURE

BEGIN STATE PROJECT 17BP.14.R.24
-L- PC Sta. 10+78.44

3 DOELL, WANDA F. & KIMBERLY
DB 621 PG 48

2 MARK S. & PAGE I. LEMEL
DB 409 PG 128

1 RAY H. DUNKELBERG
DB PG UNKNOWN
WOODS

COIR FIBER
WATTLE BARRIER

COIR FIBER
WATTLE BARRIER

4 V.F.W.
DB PG UNKNOWN

5 TRANSYLVANIA BAPTIST ASSOC.
DB 588 PG 750

6 DONALD WAYNE & MILDRED L. HYMAN
DB 492 PG 845

7 JAMES R. ARROWOOD, ETAL
DB 95 PG 277

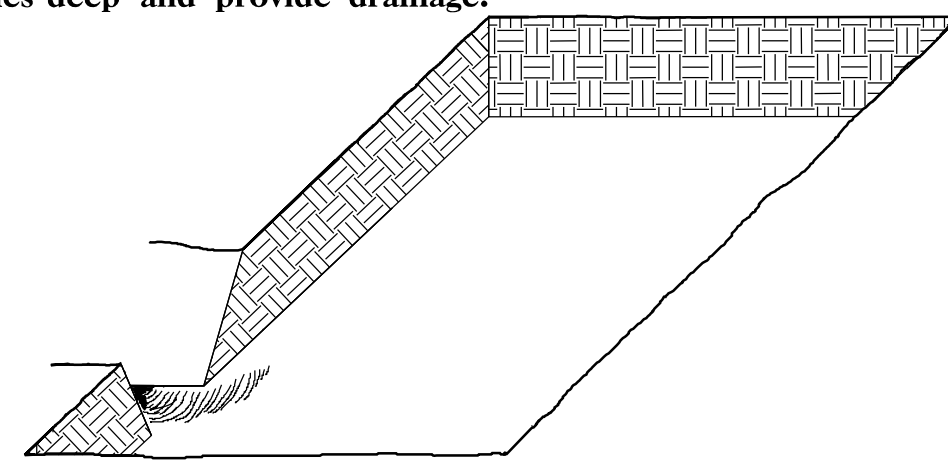
END STATE PROJECT 17BP.14.R.24
-L- PC Sta. 16+06.13

PLANTING DETAILS

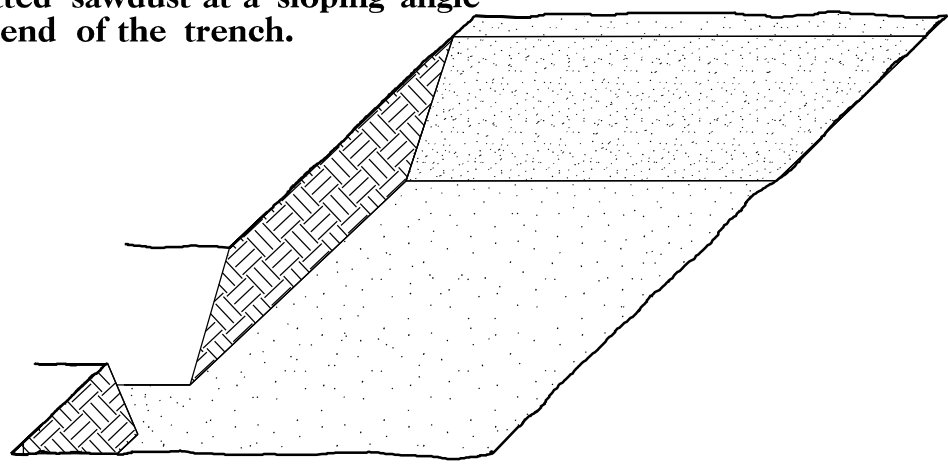
SEEDLING / LINER BARERoot PLANTING DETAIL

HEALING IN

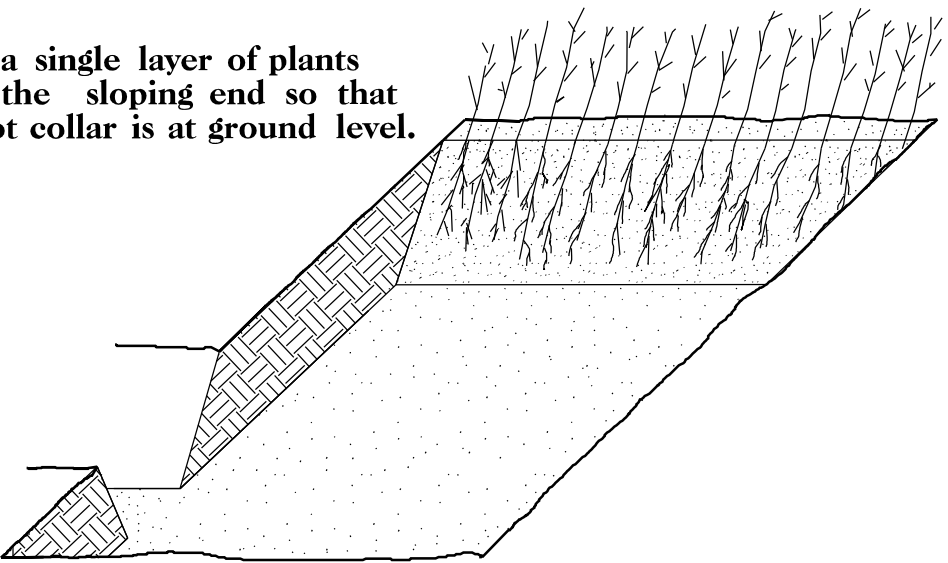
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



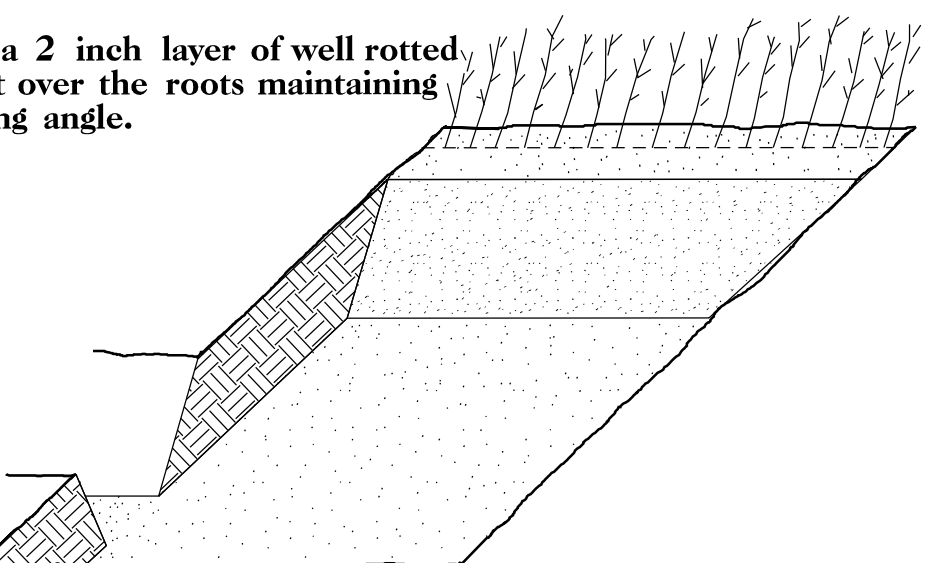
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

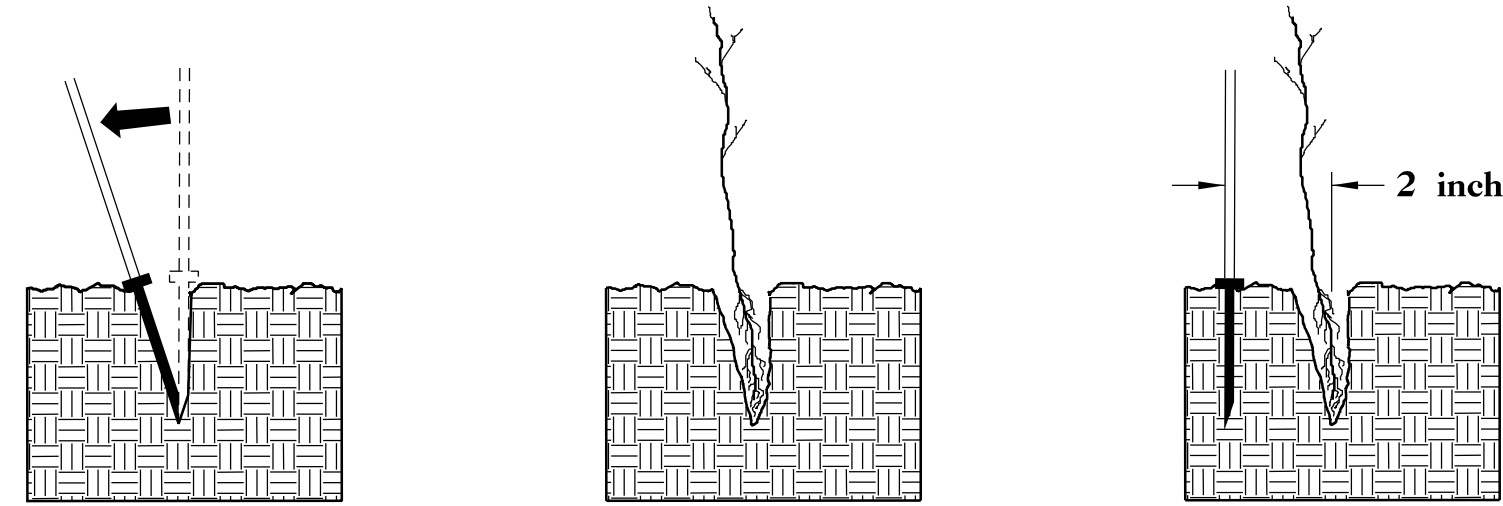


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

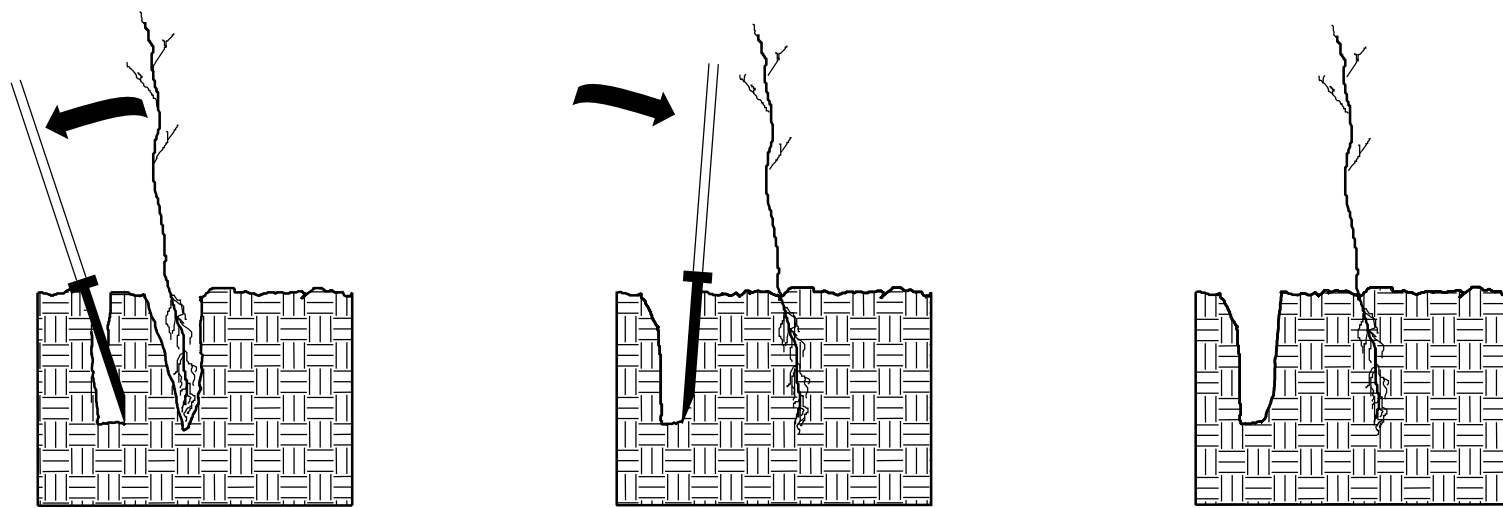


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



1. Insert planting bar as shown and pull handle toward planter.
2. Remove planting bar and place seedling at correct depth.
3. Insert planting bar 2 inches toward planter from seedling.



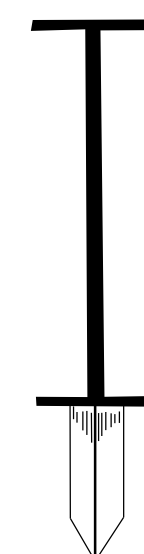
4. Pull handle of bar toward planter, firming soil at bottom.
5. Push handle forward firming soil at top.
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

- TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25% LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
25% PLATANUS OCCIDENTALIS	SYCAMORE	12 in - 18 in BR
25% FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in BR
25% BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

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PROJECT: 17BP.14.R.24

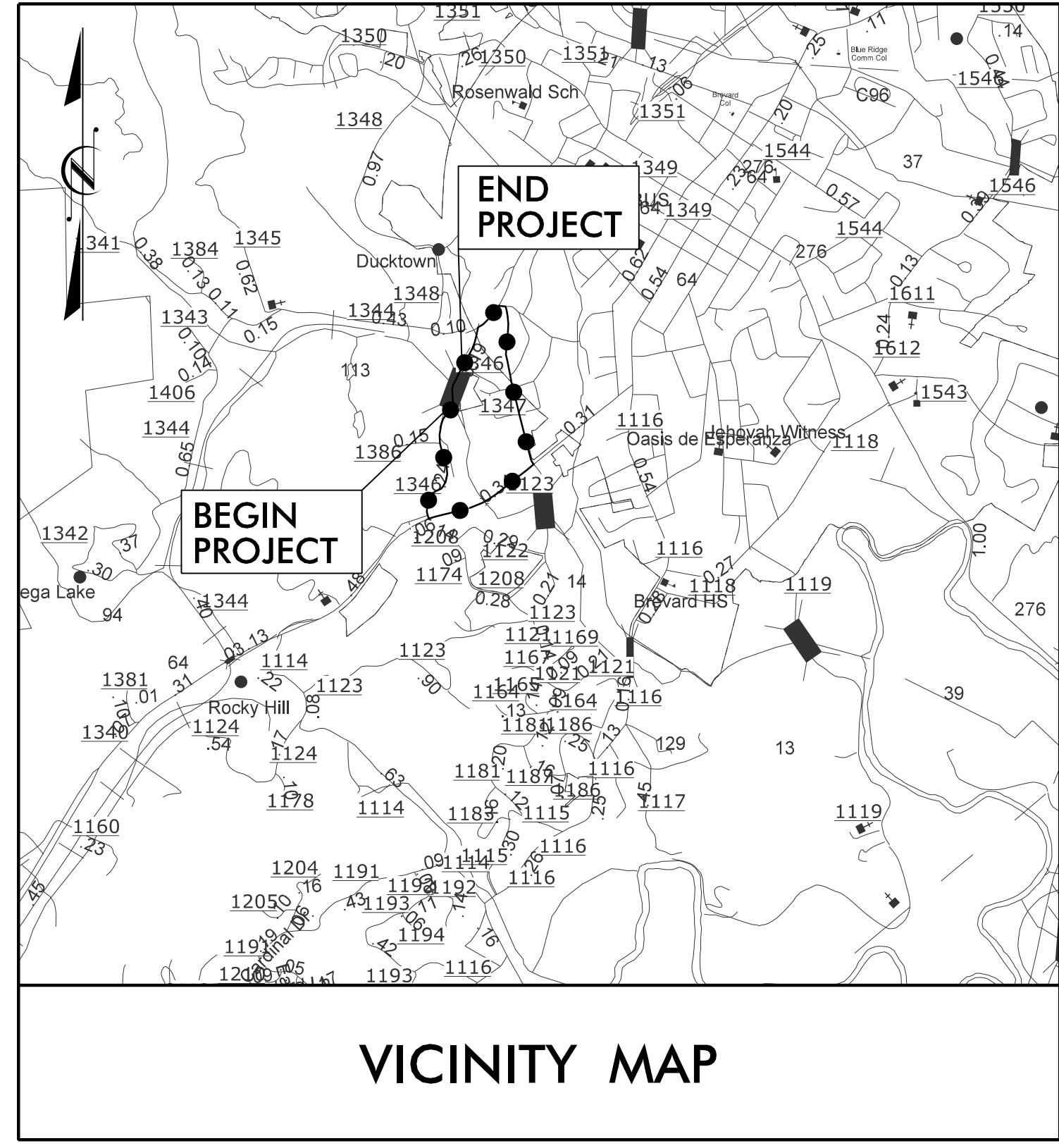
CONTRACT: DN00157

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
17BP.14.R.24	UO-1

UTILITIES BY OTHERS PLANS TRANSYLVANIA COUNTY

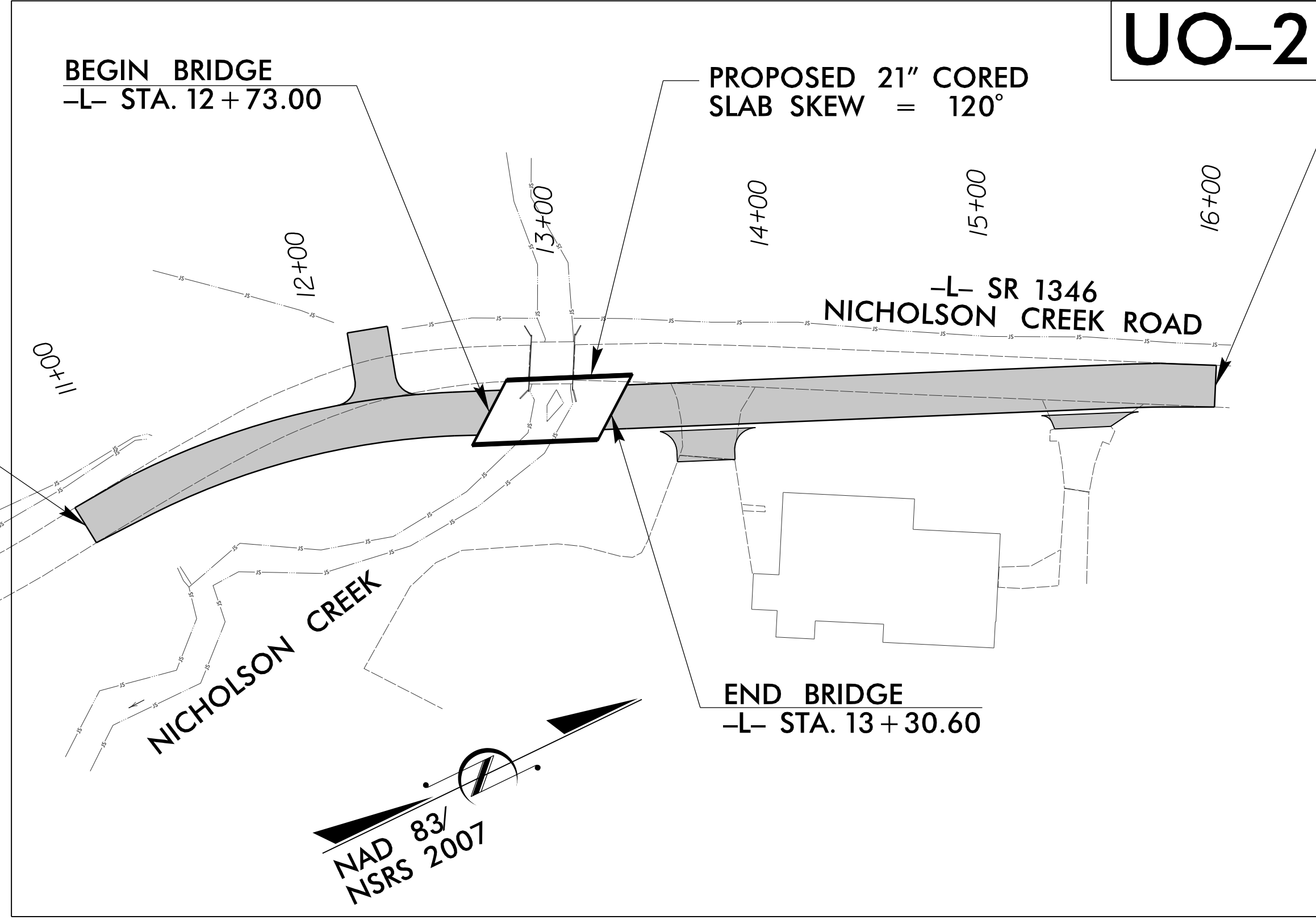
LOCATION: BRIDGE NO. 113 ON SR 1346 (NICHOLSON CREEK ROAD)
OVER NICHOLSON CREEK
TYPE OF WORK: UTILITIES BY OTHERS



●●●●● DETOUR

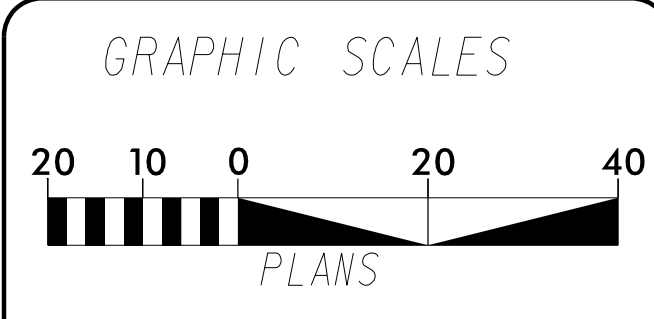
BEGIN STATE PROJECT 17BP.14.R.24
-L- STA. 10+78.44

TO ROCKY HILL



THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES
THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



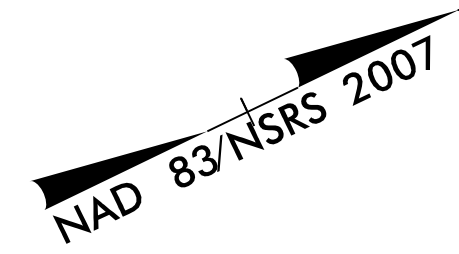
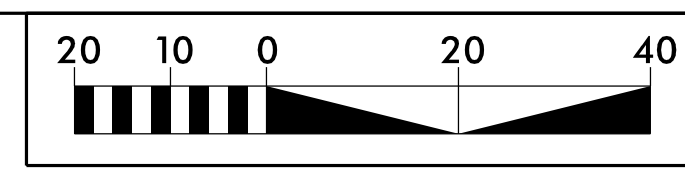
INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UTILITIES BY OTHERS PLAN SHEET

- UTILITY OWNERS ON PROJECT
- POWER - DUKE ENERGY
 - TELEPHONE & CATV - COMPORIUM
 - WATER - TOWN OF BREVARD
 - GAS - PSNC ENERGY
 - SEWER - VFW (PRIVATE)

UTILITIES BY OTHER PLANS PREPARED BY:
DAVIS • MARTIN • POWELL
 ENGINEERS & SURVEYORS **dmp**
6415 OLD PLANK RD., HIGH POINT, NC 27265
 PHONE: (336)886-4821 FAX: (336)886-4458
 WWW.DMP-NC.COM LICENSE: F-0245



5/25/2017
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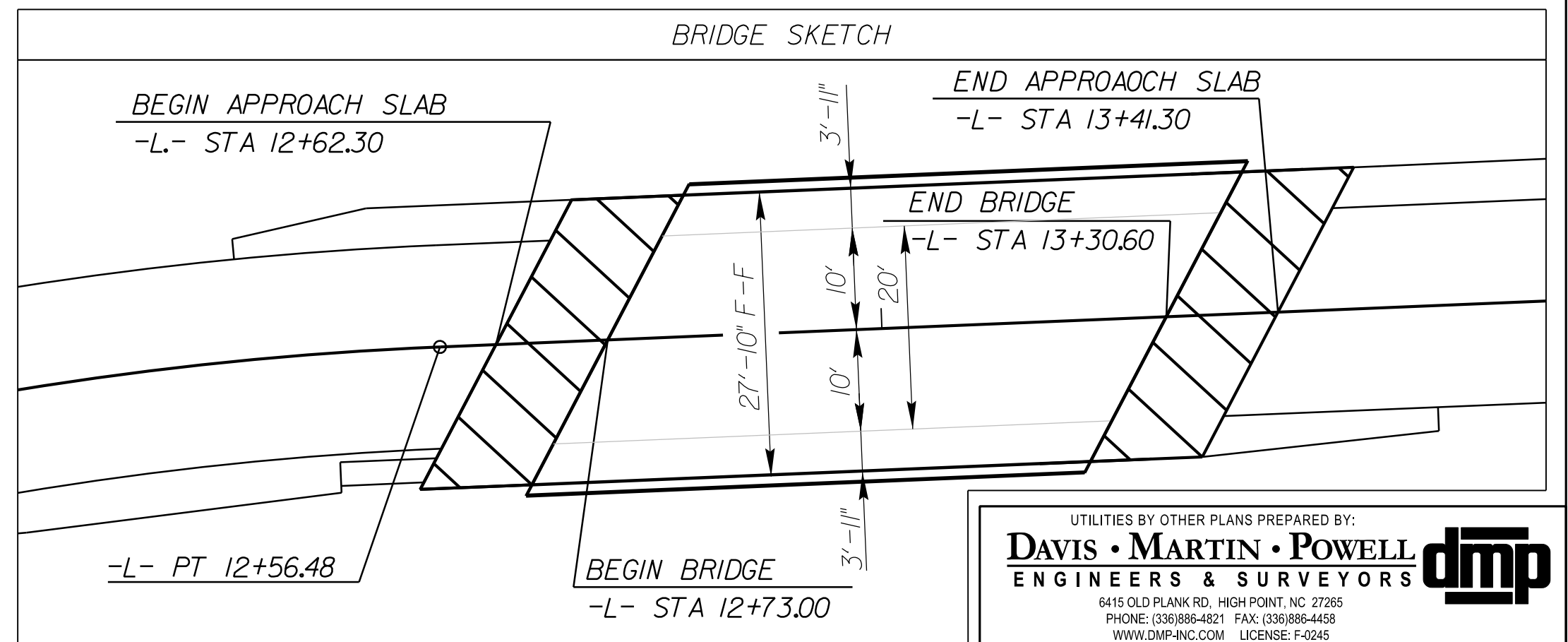
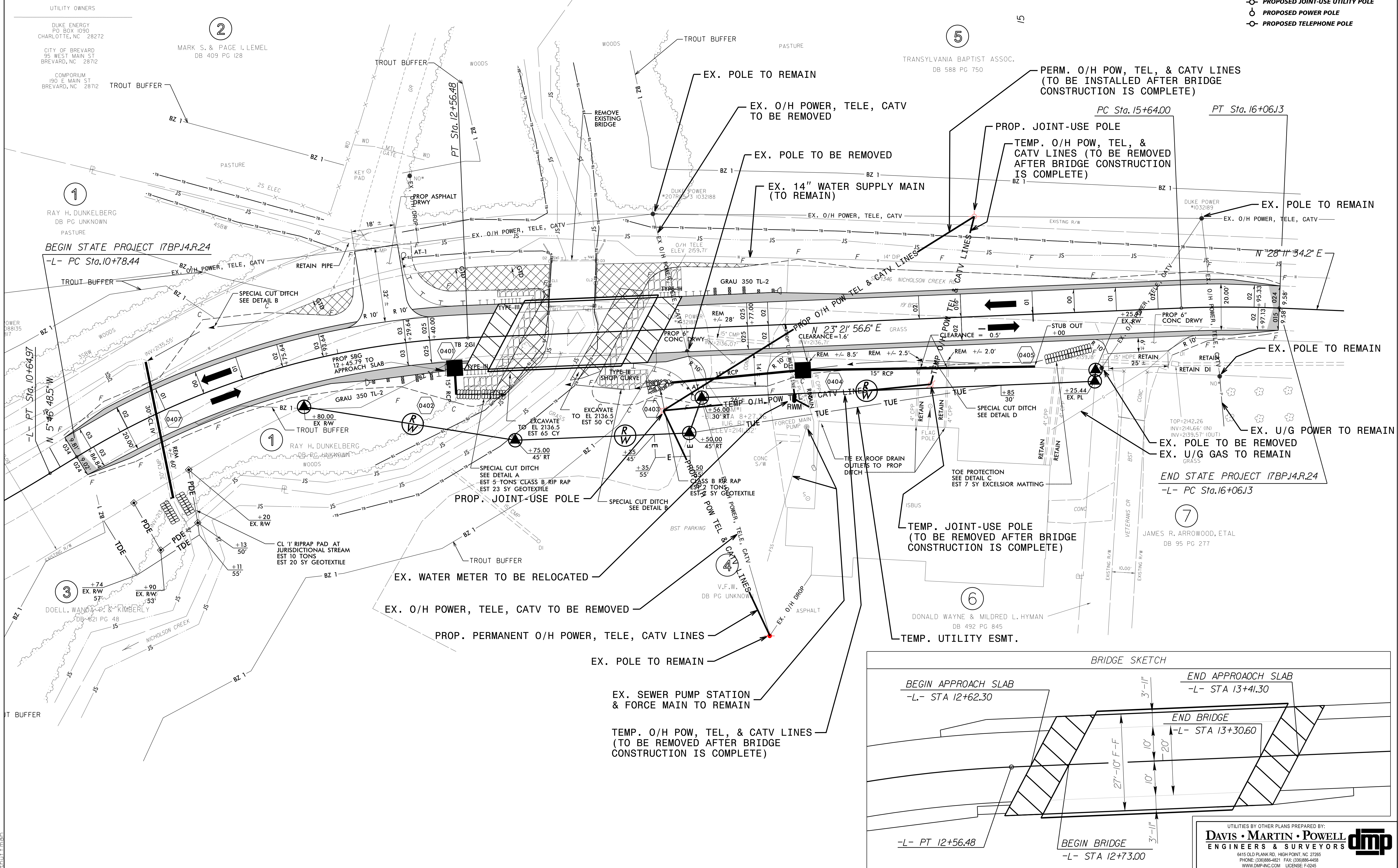
UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

LEGEND

- PROPOSED JOINT-USE UTILITY POLE
- PROPOSED POWER POLE
- PROPOSED TELEPHONE POLE

<p>PI Sta 10+32.50 $\Delta = 4'18'' 35.2''$ (LT) $D = 6'38'' 00.7''$ $L = 64.97'$ $T = 32.50'$ $R = 863.73'$ $e = 4.0\%$ $DS = 30$ MPH</p>	<p>PI Sta 11+69.43 $\Delta = 29'08'' 45.1''$ (RT) $D = 16'22'' 12.8''$ $L = 178.04'$ $T = 90.99'$ $R = 350.00'$ $e = 5.0\%$ $DS = 30$ MPH</p>	<p>PI Sta 15+85.08 $\Delta = 4'49'' 37.6''$ (RT) $D = 11'27'' 33.0''$ $L = 42.12'$ $T = 21.07'$ $R = 500.00'$ $e = 5.0\%$ $DS = 30$ MPH</p>
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5/25/2017
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 thurman