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08/17/11

PROJECT: 14SP.20561.1

CONTRACT: DN00132

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

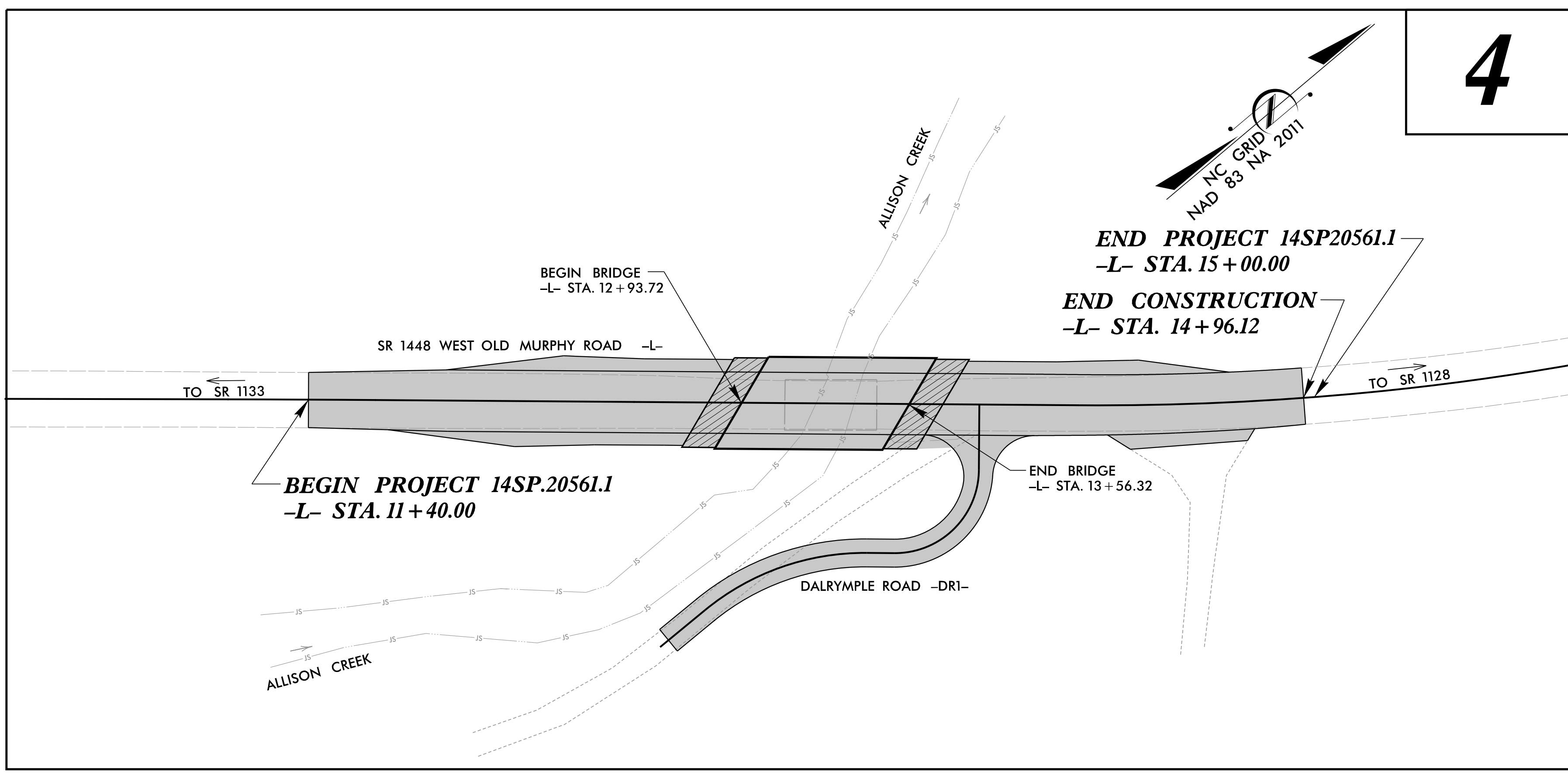
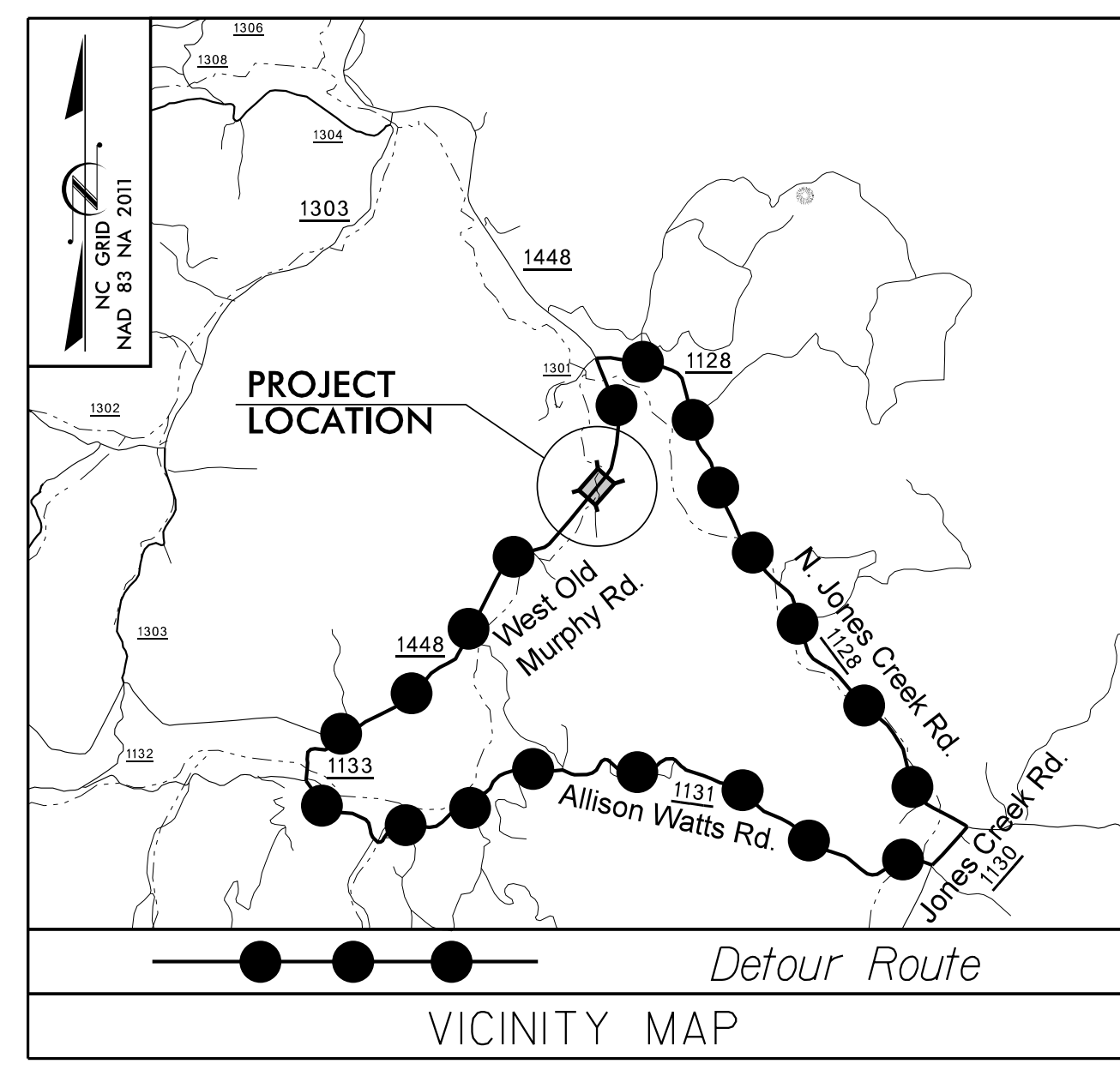
MACON COUNTY

**LOCATION: BRIDGE NO. 343 OVER ALLISON CREEK
ON SR 1448 (WEST OLD MURPHY ROAD)**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	14SP.20561.1	1	24
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
14SP.20561.1	N/A	PE	
14SP.20561.1	N/A	R/W	
14SP.20561.1	N/A	CONST.	

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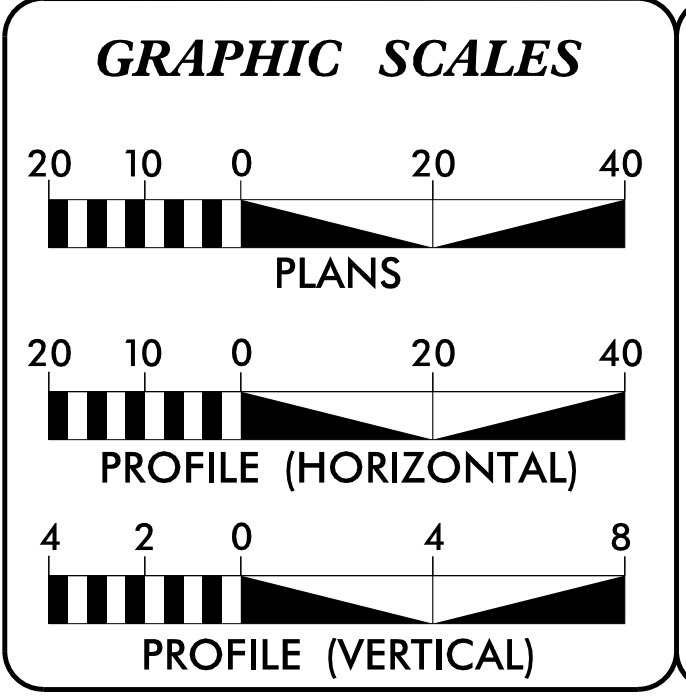


4

V&M
Vaughn & Melton
Consulting Engineers

Charlotte, North Carolina 704-357-0488
Tri-Cities, Tennessee 423-461-8400
Knoxville, Tennessee 865-546-5800
Middlesboro, Kentucky 606-248-6600
Asheville, North Carolina 828-253-2796
Spartanburg, South Carolina 864-574-4775

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DESIGN DATA

ADT 2011 = 590
ADT 2031 = 880
T = 7%
V = 55 MPH
FUNC CLASS = MINOR LOCAL COLLECTOR SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT 14SP20561.1 = 0.056 MI
LENGTH STRUCTURE TIP PROJECT 14SP.20561.1 = 0.012 MI
TOTAL LENGTH OF TIP PROJECT 14SP.20561.1 = 0.068 MI

Prepared in the Office of:
VAUGHN & MELTON
1318-F PATTON AVE.
ASHEVILLE NC, 28806
FOR THE NORTH CAROLINA DIVISION OF HIGHWAYS

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 21, 2017

LETTING DATE: FEBRUARY 2, 2022

RECEE SCHULER, PE, PLS
PROJECT ENGINEER

DAVID DAVES
PROJECT DESIGN ENGINEER

NCDOT CONTACT:
JOHN HERRIN
DIVISION 14 BRIDGE MANAGEMENT

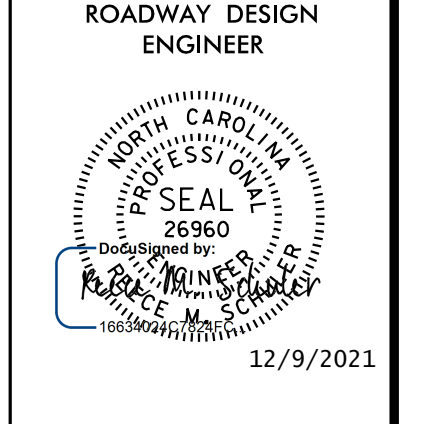
HYDRAULICS ENGINEER

DocuSigned by:
Bradley Kidner
SIGNATURE: 12/9/2021

ROADWAY DESIGN ENGINEER

DocuSigned by:
Reece M. Schuler
SIGNATURE: 12/9/2021

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**



EFF. 01-16-2018
REV.

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C-1	SURVEY CONTROL SHEET
2A-1	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3B-1	SUMMARY OF EARTHWORK SUMMARY OF GUARDRAIL, AND ASPHALT PAVEMENT REMOVAL SUMMARY
3D-1	DRAINAGE SUMMARY
4	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-3	TRAFFIC CONTROL PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1 THRU RF-3	REFORESTATION PLANS
X-1A	CROSS-SECTION SUMMARY
X-1 THRU X-7	CROSS-SECTIONS
S-1 THRU S-13	STRUCTURE PLANS

GENERAL NOTES:

2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.05 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. 560.02

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE: Duke Energy and Frontier Communication

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT IN ACCORDANCE WITH SECTION 801 OF THE 2018 NORTH CAROLINA STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

2018 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, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Super-elevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.03	Reinforced Bridge Approach Fills - Type A Alternate Approach Fill for Integral Abutment
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Super-elevated Curve - Method I
DIVISION 8 - INCIDENTALS	
840.00	Concrete Base Pad for Drainage Structures
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
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

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STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin (EIP)	○
Computed Property Corner	×
Existing Concrete Monument (ECM)	□
Parcel / Sequence Number	(23)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	----- WLB -----
Proposed Wetland Boundary	----- WLB -----
Existing Endangered Animal Boundary	----- EAB -----
Existing Endangered Plant Boundary	----- EPB -----
Existing Historic Property Boundary	----- HPB -----
Known Contamination Area: Soil	----- S -----
Potential Contamination Area: Soil	----- S -----
Known Contamination Area: Water	----- W -----
Potential Contamination Area: Water	----- W -----
Contaminated Site: Known or Potential	☠ ?

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 & PROJECT CONTROL:

Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	●
Secondary Horiz and Vert Control Point	◆
Vertical Benchmark	⊠
Existing Right of Way Monument	△
Proposed Right of Way Monument (Rebar and Cap)	▲
Proposed Right of Way Monument (Concrete)	▲
Existing Permanent Easement Monument	◇
Proposed Permanent Easement Monument (Rebar and Cap)	◆
Existing C/A Monument	△
Proposed C/A Monument (Rebar and Cap)	▲
Proposed C/A Monument (Concrete)	▲
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Existing Control of Access Line	-----
Proposed Control of Access Line	-----
Proposed ROW and CA Line	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage/Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Curb 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:

* SUE - Subsurface Utility Engineering
LOS - Level of Service - A,B,C or D (Accuracy)

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	●
U/G Power Line Test Hole (SUE - LOS A)*	⊕
U/G Power Line (SUE - LOS B)*	-----
U/G Power Line (SUE - LOS C)*	-----
U/G Power Line (SUE - LOS D)*	-----
TELEPHONE:	
Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	⊠
U/G Telephone Test Hole (SUE - LOS A)*	⊕
U/G Telephone Cable (SUE - LOS B)*	-----
U/G Telephone Cable (SUE - LOS C)*	-----
U/G Telephone Cable (SUE - LOS D)*	-----
U/G Telephone Conduit (SUE - LOS B)*	-----
U/G Telephone Conduit (SUE - LOS C)*	-----
U/G Telephone Conduit (SUE - LOS D)*	-----
U/G Fiber Optics Cable (SUE - LOS B)*	-----
U/G Fiber Optics Cable (SUE - LOS C)*	-----
U/G Fiber Optics Cable (SUE - LOS D)*	-----

WATER:	
Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line Test Hole (SUE - LOS A)*	⊕
U/G Water Line (SUE - LOS B)*	-----
U/G Water Line (SUE - LOS C)*	-----
U/G Water Line (SUE - LOS D)*	-----
Above Ground Water Line	-----
TV:	
TV Pedestal	⊠
TV Tower	⊗
U/G TV Cable Hand Hole	⊠
U/G TV Test Hole (SUE - LOS A)*	⊕
U/G TV Cable (SUE - LOS B)*	-----
U/G TV Cable (SUE - LOS C)*	-----
U/G TV Cable (SUE - LOS D)*	-----
U/G Fiber Optic Cable (SUE - LOS B)*	-----
U/G Fiber Optic Cable (SUE - LOS C)*	-----
U/G Fiber Optic Cable (SUE - LOS D)*	-----

GAS:	
Gas Valve	◇
Gas Meter	⊕
U/G Gas Line Test Hole (SUE - LOS A)*	⊕
U/G Gas Line (SUE - LOS B)*	-----
U/G Gas Line (SUE - LOS C)*	-----
U/G Gas Line (SUE - LOS D)*	-----
Above Ground Gas Line	-----

SANITARY SEWER:	
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
SS Force Main Line Test Hole (SUE - LOS A)*	⊕
SS Force Main Line (SUE - LOS B)*	-----
SS Force Main Line (SUE - LOS C)*	-----
SS Force Main Line (SUE - LOS D)*	-----

MISCELLANEOUS:	
Utility Pole	●
Utility Pole with Base	⊠
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line (SUE - LOS B)*	-----
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

SURVEY CONTROL SHEET 55-0343

-FINAL-

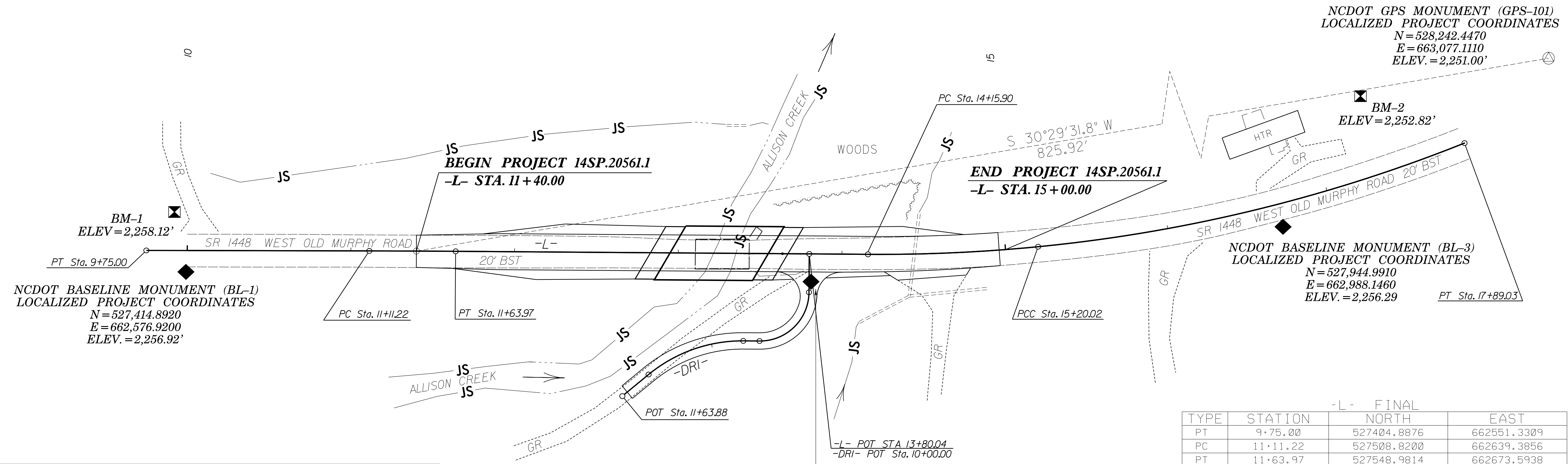
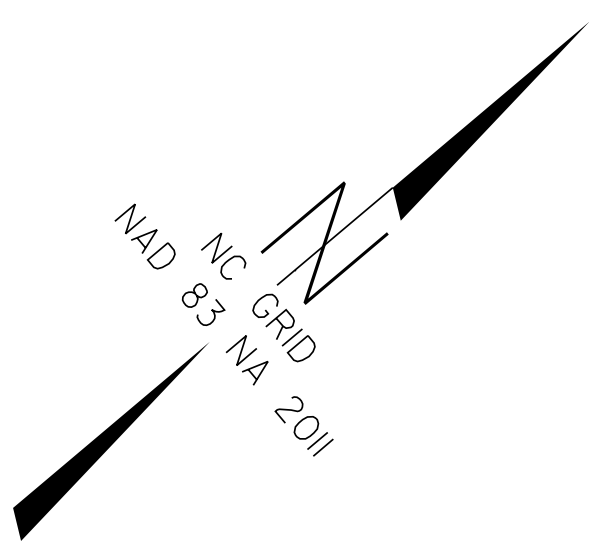
BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL1		527414.8920	662576.9200	2256.92	OUTSIDE PROJECT LIMITS	
2	BL2		527702.9240	662827.7360	2257.28	13+81.16	16.95 RT
3	BL3		527944.9910	662988.1460	2256.29	16+68.52	14.13 RT

.....
 BM1 ELEVATION = 2258.12'
 N 527433.17 E 662544.42
 L STATION 9+92.11 23.55' LEFT
 S 51°27'22.6" W DIST 121.41'
 8" SPIKE SET IN THE BASE OF A 15" WHITE PINE TREE

 BM2 ELEVATION = 2252.82'
 N 528032.64 E 662957.72
 L STATION 17+38.00 48.84' LEFT
 8" SPIKE SET IN THE ROOT OF A 24" LOCUST TREE

-FINAL- ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+40.00	-12.00	527538.53610	662648.88848
L	11+40.00	-35.00	527553.45421	662631.38277
L	13+30.00	-35.00	527697.85319	662754.99839
L	14+15.90	-35.00	527763.09870	662810.87025
L	14+35.00	-35.00	527777.21290	662822.72495
L	14+70.00	-35.00	527803.65242	662843.73891
L	14+85.00	-30.00	527812.22351	662856.47247
L	14+96.12	-12.02	527810.35113	662877.41180
L	14+85.00	12.00	527787.17304	662890.18411
L	14+70.00	30.00	527764.10564	662895.32429
L	14+35.00	30.00	527735.88522	662872.89489
L	13+70.00	30.00	527685.95723	662830.38729
L	13+67.00	40.00	527677.17419	662836.03158
L	13+50.00	40.00	527664.26342	662824.97567
L	13+40.00	30.00	527663.17042	662810.87419
L	11+50.00	30.00	527518.87943	662687.32590
L	11+40.00	12.00	527522.96937	662667.15531



NCDOT BASELINE MONUMENT (BL-1)
 LOCALIZED PROJECT COORDINATES
 N = 527,414.8920
 E = 662,576.9200
 ELEV. = 2,256.92'

NCDOT GPS MONUMENT (GPS-101)
 LOCALIZED PROJECT COORDINATES
 N = 528,242.4470
 E = 663,077.1110
 ELEV. = 2,251.00'

BM-2
 ELEV = 2,252.82'

NCDOT BASELINE MONUMENT (BL-3)
 LOCALIZED PROJECT COORDINATES
 N = 527,944.9910
 E = 662,988.1460
 ELEV. = 2,256.29

NCDOT BASELINE MONUMENT (BL-2)
 LOCALIZED PROJECT COORDINATES
 N = 527,702.9240
 E = 662,827.7360
 ELEV. = 2,257.28'

-L- FINAL

TYPE	STATION	NORTH	EAST
PT	9+75.00	527404.8876	662551.3309
PC	11+11.22	527508.8200	662639.3856
PT	11+63.97	527548.9814	662673.5938
PC	14+15.90	527740.3334	662837.4549
PCC	15+20.02	527822.7971	662900.9415
PT	17+89.03	528062.7529	663020.5614

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "550343 G-101" WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF NORTHING: 528242.4470(ft) EASTING: 663077.1110(ft) ELEVATION: 2251.00(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9997722476

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "550343 G-101" TO -L- STATION 11+40.00 IS S 30° 29' 31.8" W 825.92'

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

NOTES:

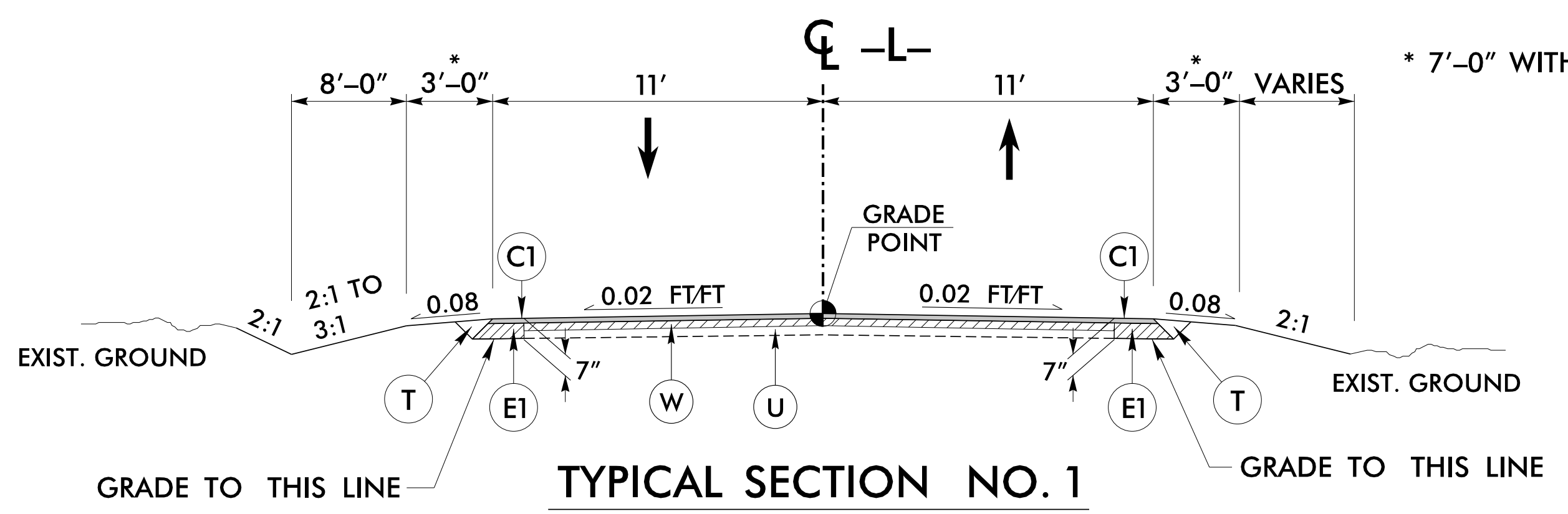
- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/](https://connect.ncdot.gov/resources/location/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 550343_LS_CONTROL.TXT
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER CONTROL INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- ⊕ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT BY THE NCDOT LOCATION AND SURVEYS UNIT. PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

GEOID MODEL - G12NC
 NOTE: DRAWING NOT TO SCALE

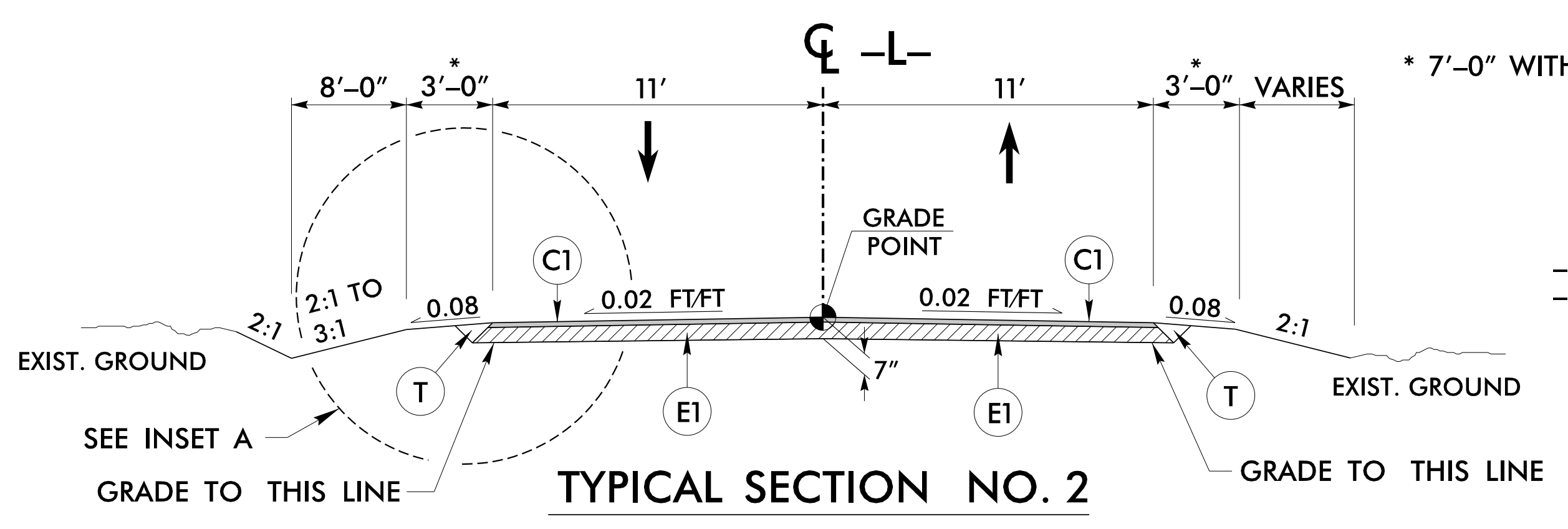
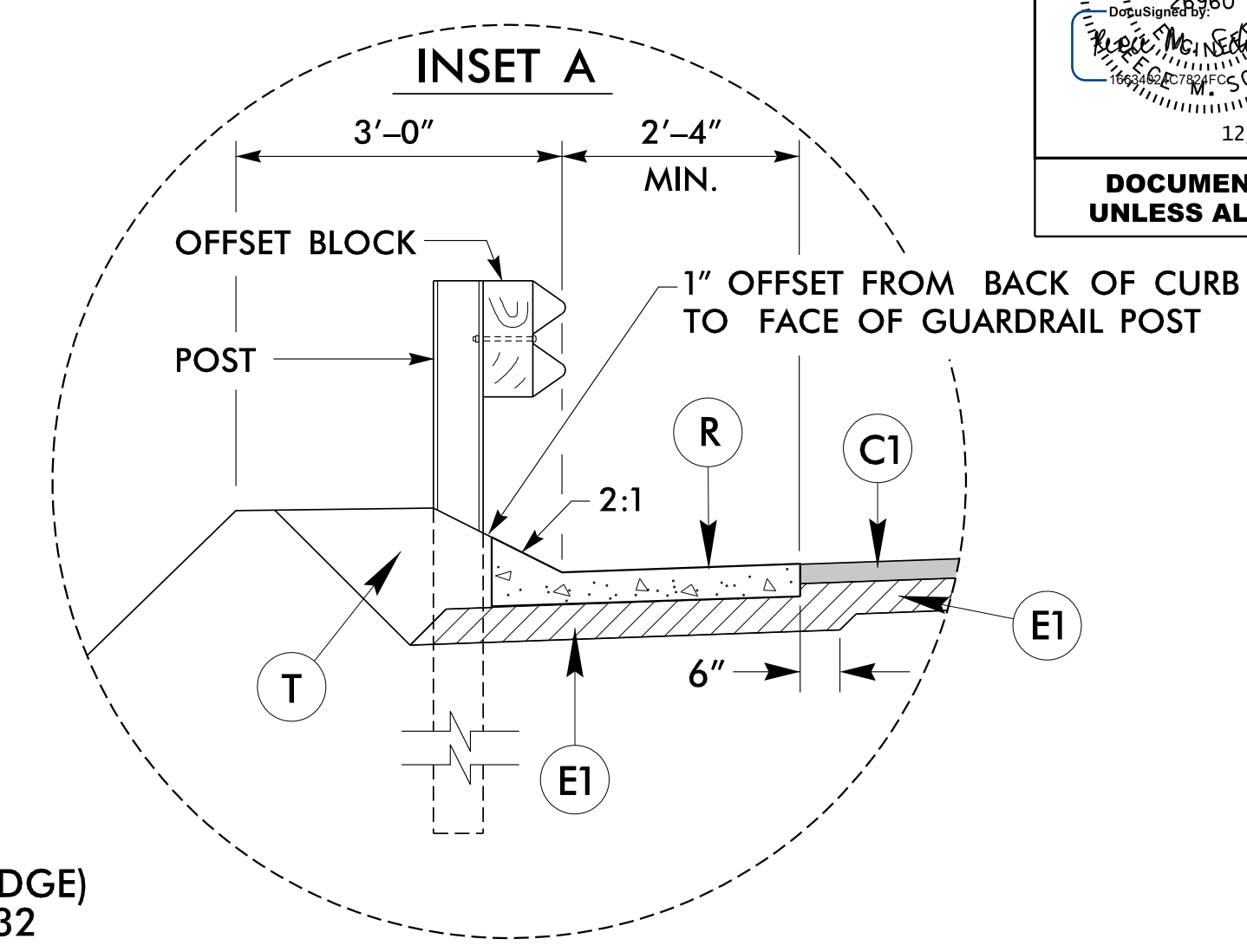
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6/2/2021

PROJECT REFERENCE NO. 14SP.20561J	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

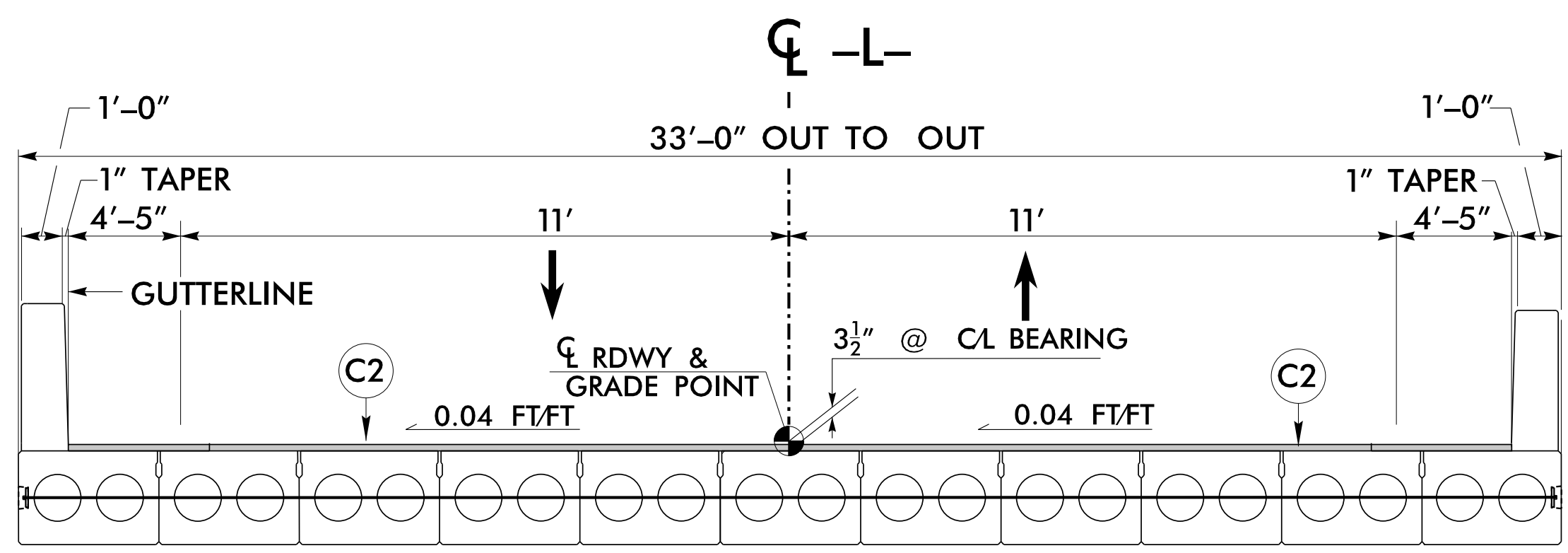


USE TYPICAL SECTION NO. 1
 -L- STA. 11+40 TO -L- STA. 12+43.72
 -L- STA. 14+06.32 TO -L- STA. 14+96.12

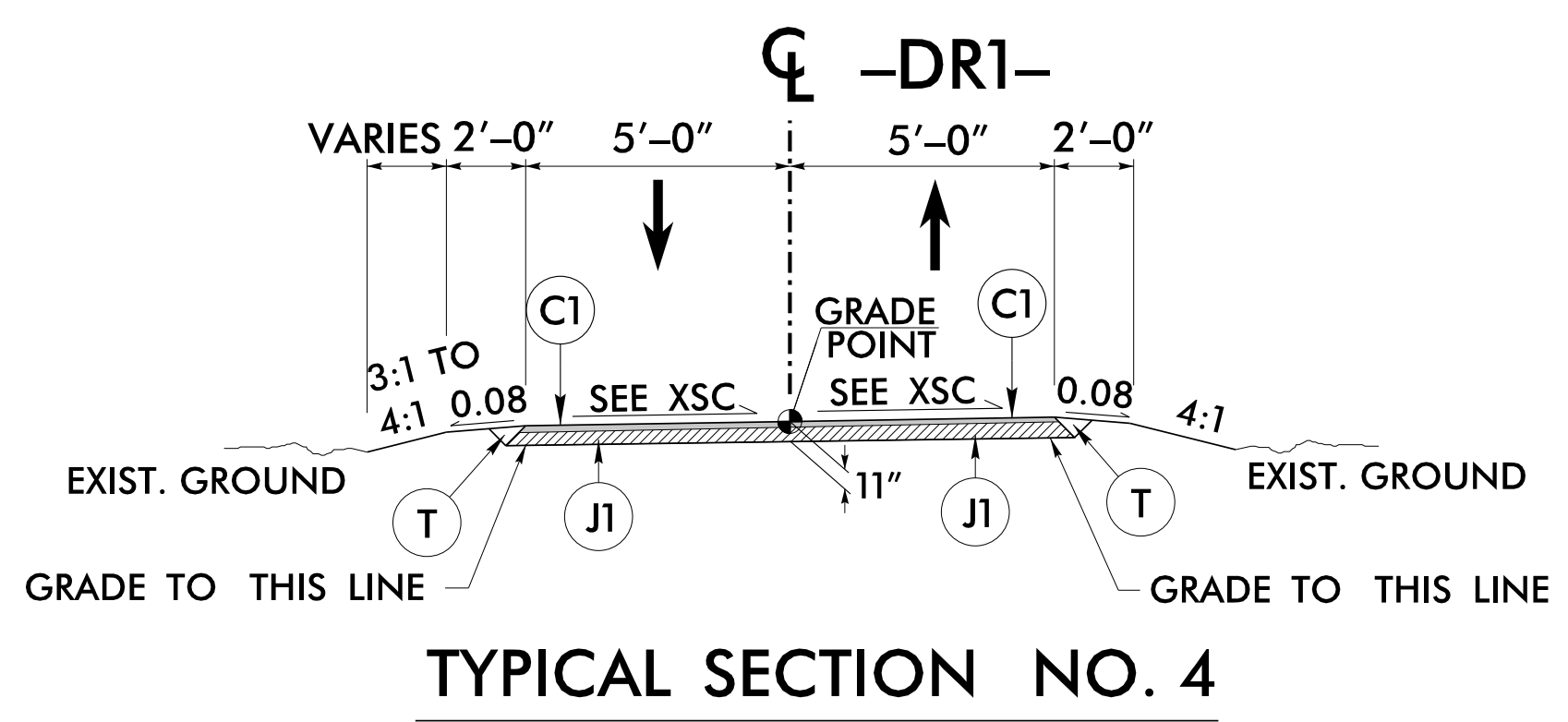
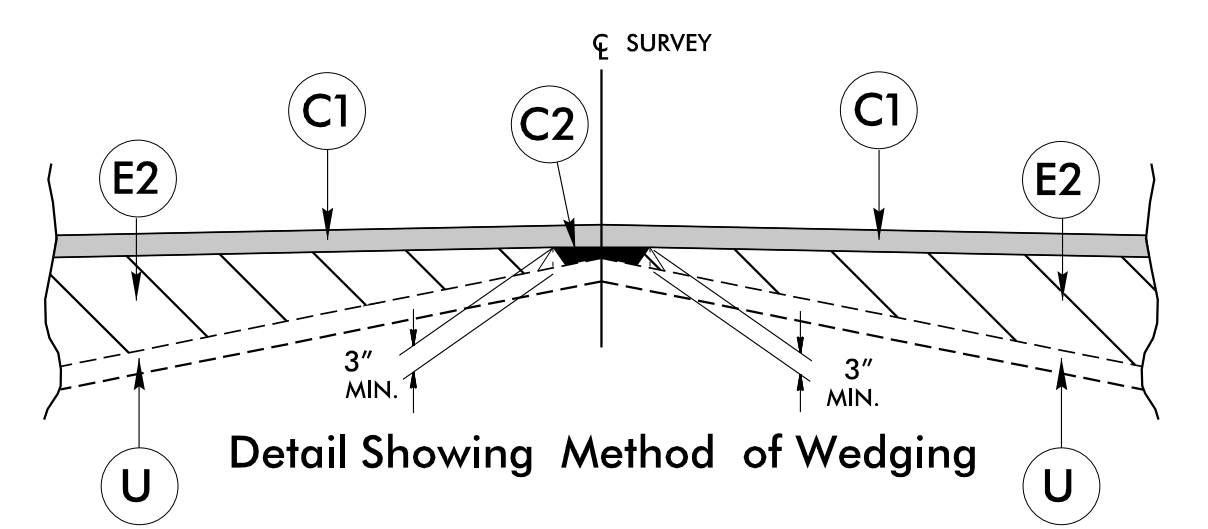
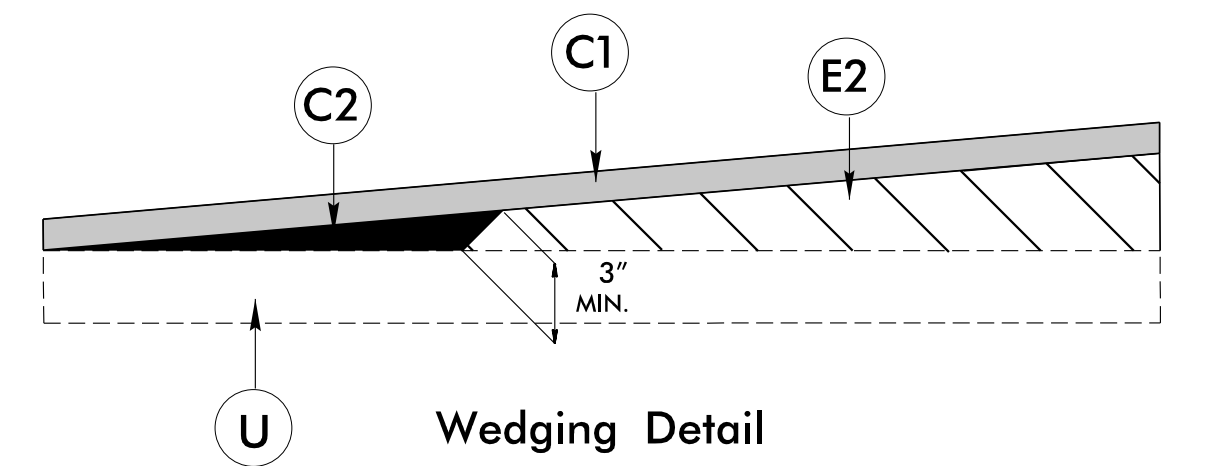


USE TYPICAL SECTION NO. 2
 -L- STA. 12+43.72 TO -L- STA. 12+93.72 (BEGIN BRIDGE)
 -L- STA. 13+56.32 (END BRIDGE) TO -L- STA. 14+06.32

INSET A
 -L- STA. 12+79 TO BEGIN BRIDGE LT



USE TYPICAL SECTION NO. 3
 -L- STA. 12+93.72 (BEGIN BRIDGE) TO
 -L- STA. 13+56.32 (END BRIDGE)



USE TYPICAL SECTION NO. 4
 -DR1- STA. 10+11.00 TO -DR1- STA. 11+60.00

PAVEMENT SCHEDULE	
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" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, 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	8" ABC
R	SHOULDER BERM AND GUTTER (NCDOT STD. DWG. NO. 846.01)
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	INCIDENTAL MILLING (0"-3")
W	PROPOSED WEDGING (SEE APPROPRIATE DETAILS)

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

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 mcschulz

6/21/20

COMPUTED BY: JCG DATE: 6-14-16
CHECKED BY: DATE:

PROJECT REFERENCE NO. SHEET NO.
14SP.20561.1 3B-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK
IN CUBIC YARDS

Table with 6 columns: LOCATION, UNCLASSIFIED EXCAVATION, UNDERCUT, EMBT+%, BORROW, WASTE. Rows include Summary No. 1, Summary No. 2, Summary No. 3, Project Subtotal, Grand Total, and SAY.

CONTINGENCY ITEMS:
INCIDENTAL STONE = 25 TONS
UNDERCUT EXCAVATION = 25 CY
SELECT GRANULAR MATERIAL = 25 CY
CLASS IV SUBGRADE STABILIZATION = 25 TONS
GEOTEXTILE FOR SOIL STABILIZATION = 25 SY

NOTE: Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, and clearing and grubbing will be paid for at the contract lump sum price for "grading".

SHOULDER BERM GUTTER SUMMARY

Table with 4 columns: SURVEY LINE, STATION, STATION, LENGTH. Includes a total row and a SAY row.

PAVEMENT REMOVAL SUMMARY

Table with 6 columns: LINE, LOCATION, ASPHALT REMOVAL, ASPHALT BREAK-UP, CONCRETE REMOVAL, CONCRETE REMOVAL. Includes a total row and a SAY row.

Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, and clearing and grubbing will be paid for at the contract lump sum price for "grading".

"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

Large table with columns for 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 (APPROACH END, TRAILING END), W (APPROACH END, TRAILING END), ANCHORS (XI MOD, XI, GREU, GREU TL-3, TYPE III, TYPE III SHOP CURVED, B-77, AT-1), IMPACT ATTENUATOR TYPE 350 (EA, G, NG), SINGLE FACED GUARDRAIL, REMOVE EXISTING GUARDRAIL, REMOVE AND STOCKPILE EXISTING GUARDRAIL, and REMARKS.

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6/21/20

COMPUTED BY: JCG DATE: 6-14-16
 CHECKED BY: DATE:

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. <i>14SP.20561.I</i>	SHEET NO. <i>30-1</i>
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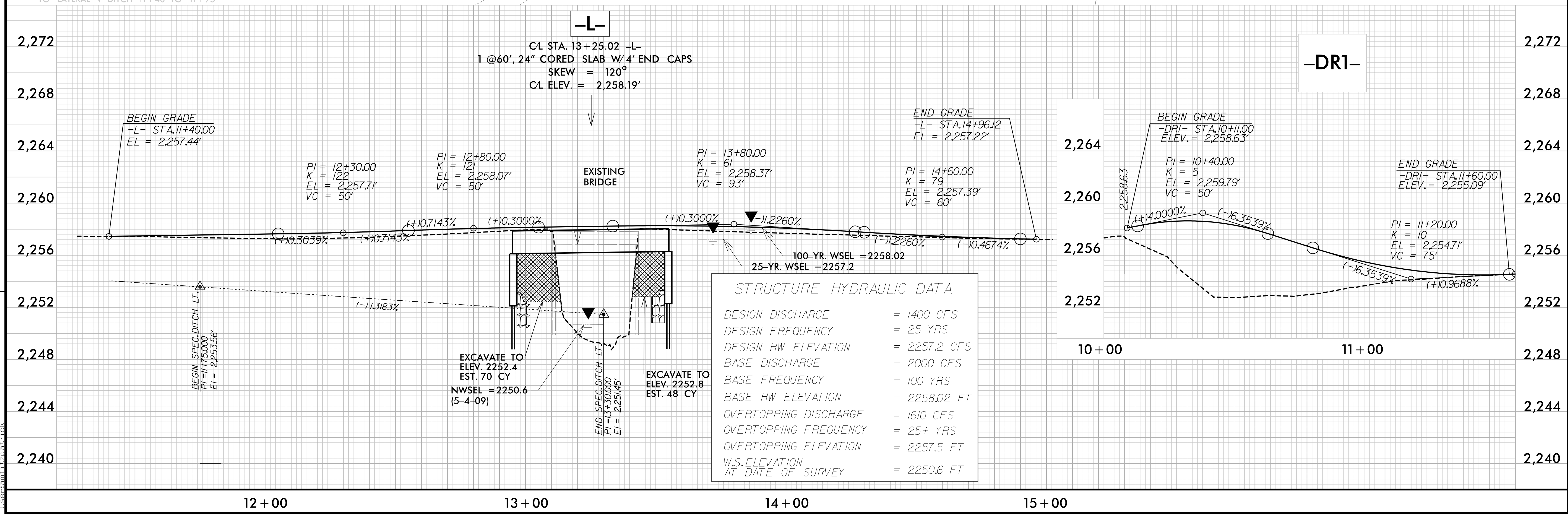
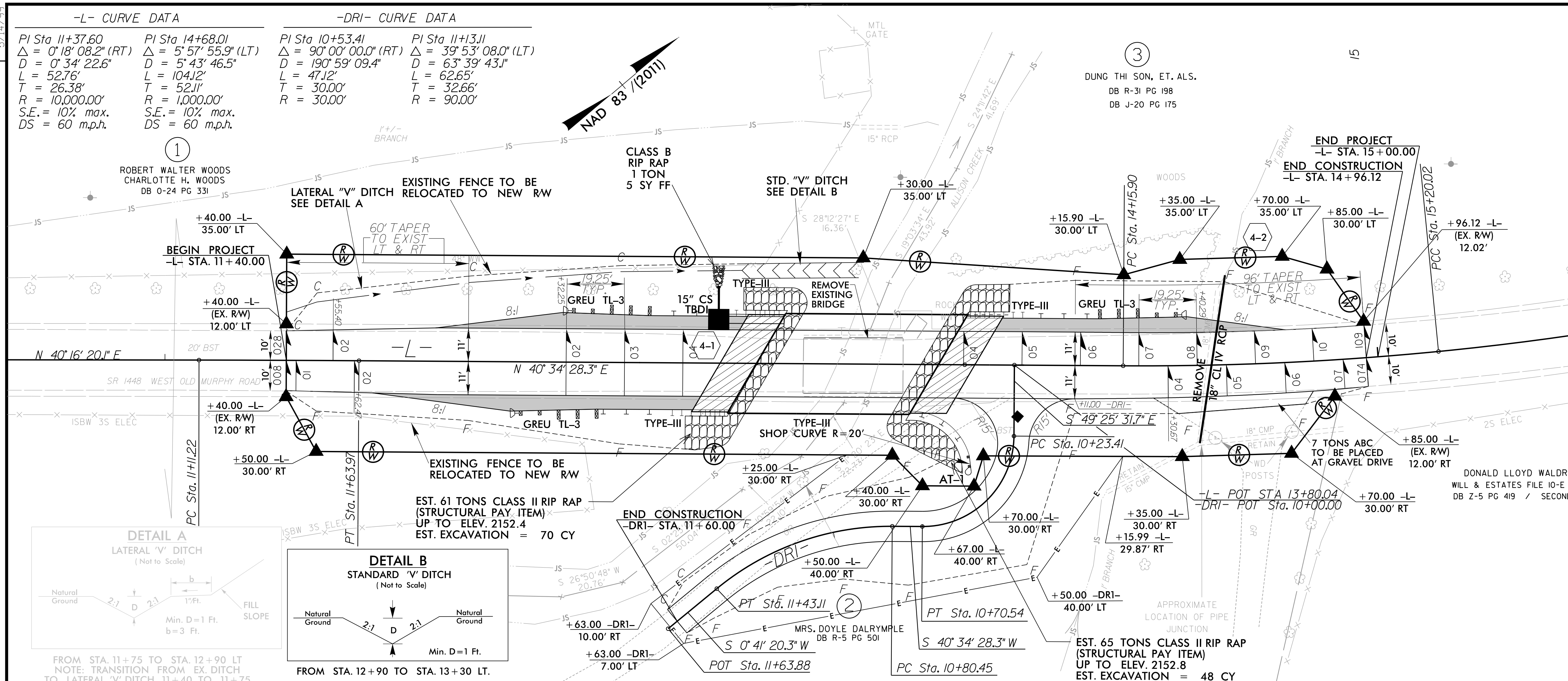
NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout.
 See "Standard Specifications For Roads and Structures, Section 300-5".

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

STATION	LOCATION (L, R, OR CL)	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC)								C.S. PIPE								R.C. PIPE (CLASS III)								R.C. PIPE (CLASS IV)								ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE)	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (.13 X COL. 'B')	FRAME, GRATES AND HOOD STANDARD 840.03	CONCRETE TRANSITIONAL SECTION		CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN. FT.	REMARKS	
								12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	.064	.064	.064	.064	.079	.109	12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"				42"	48"						12"
SIZE	THICKNESS OR GAUGE	FROM	TO																																															
-L- 12 + 82.48	LT	4-1		2258.49	2255.49																																													
-L- 14 + 52.45	LT	4-2	OUT	2249.40	2249.10																																													
TOTAL																																																		

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 \\blc05034-pw03-sum.dgn

PROJECT REFERENCE NO. 14SP.205611	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER ROBERT WALTER WOODS CHARLOTTE H. WOODS DB 0-24 PG 331	HYDRAULICS ENGINEER DONALD LLOYD WALDRUP WILL & ESTATES FILE 10-E / 300 DB Z-5 PG 419 / SECOND TRACT
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



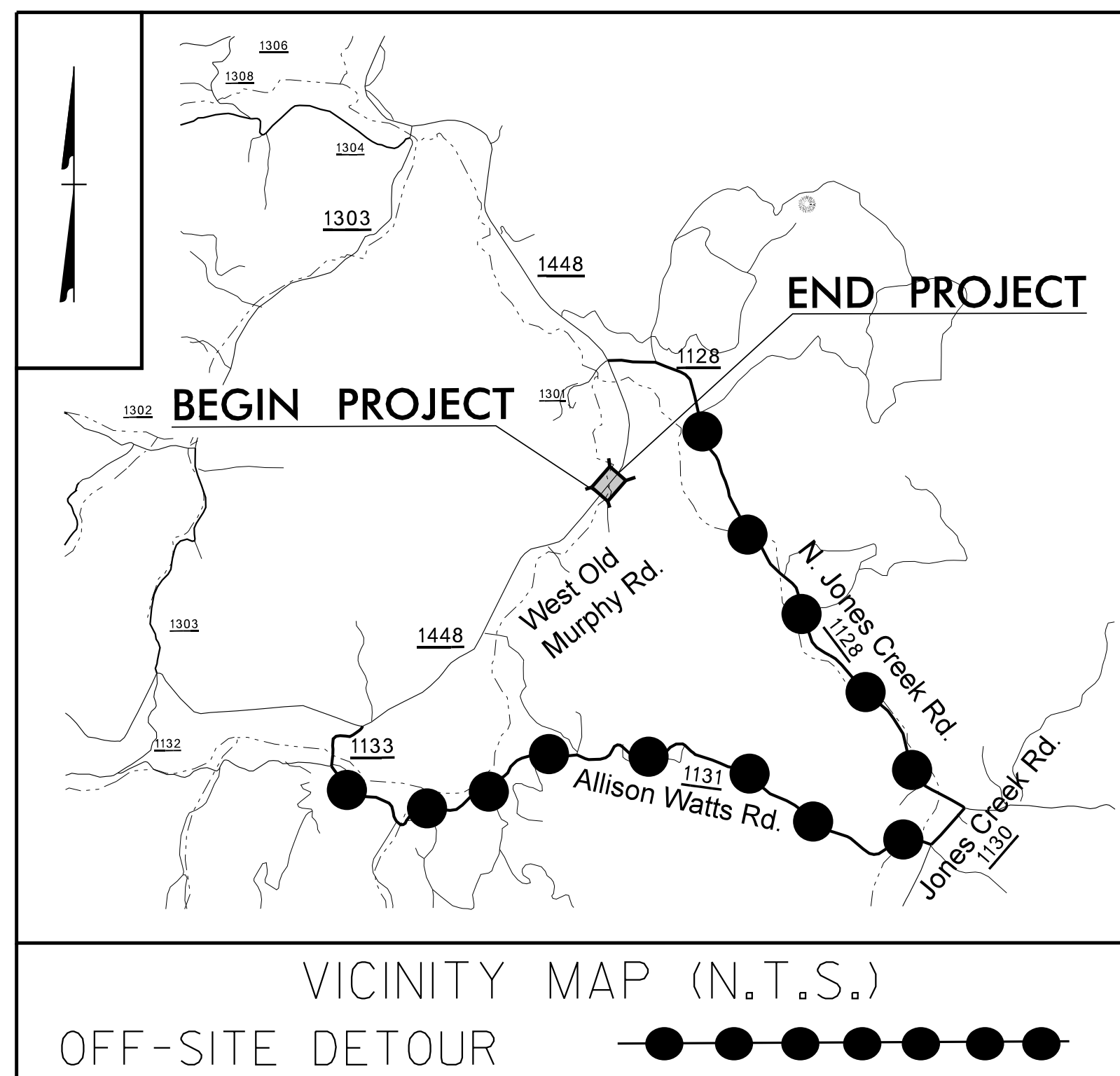
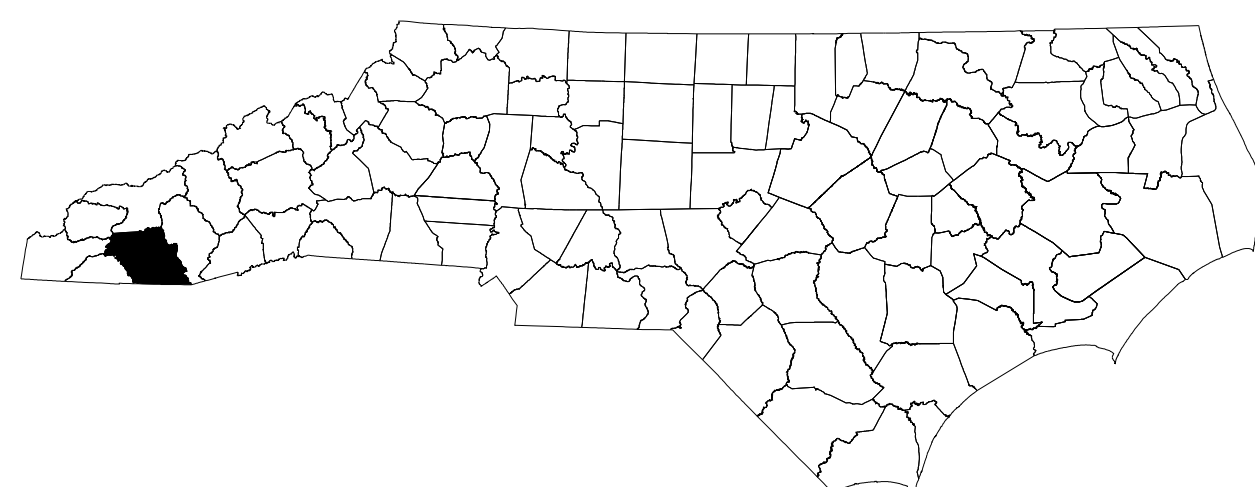
REVISIONS

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

MACON COUNTY
DIVISION 14



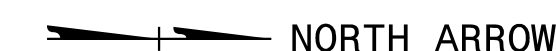
**LOCATION: BRIDGE NO. 343 OVER ALLISON CREEK
ON SR 1448 (WEST OLD MURPHY ROAD)**

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

<u>INDEX OF SHEETS</u>	
SHEET NO.	TITLE
TMP-1	TITLE SHEET, LEGEND, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, GENERAL NOTES, LOCAL NOTES, AND TRANSPORTATION OPERATIONS
TMP-2	SPECIAL SIGN DESIGN
TMP-3	TEMPORARY TRAFFIC CONTROL DETAIL, PHASING NOTES, OFF-SITE DETOUR SIGNING AND ROAD CLOSURE

LEGEND

GENERAL



TRAFFIC CONTROL DEVICES



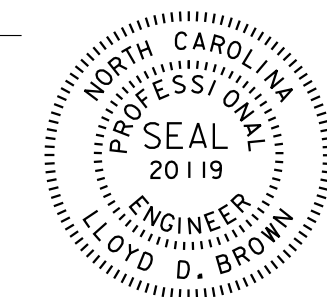
TEMPORARY SIGNING



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UNLESS ALL SIGNATURES COMPLETED**

APPROVED: Lloyd D. Brown
33584DF17F5746B

DATE: 12/9/2021

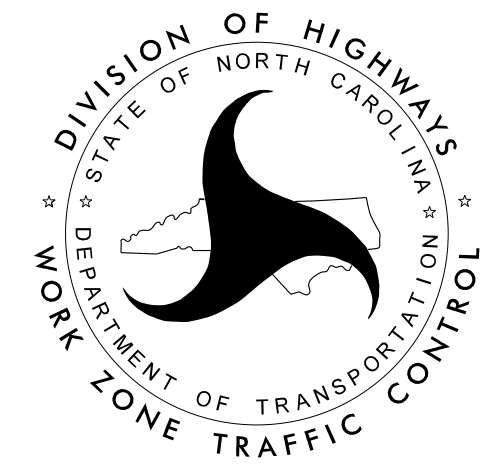


V&M
Vaughn & Melton
Consulting Engineers

Asheville, North Carolina
828-253-2796

- Boone, NC 828-356-9933
- Tri-Cities, TN 423-467-8401
- Knoxville, TN 865-546-5800
- Spartanburg, SC 864-574-4775
- Charleston, SC 843-974-5650
- Middlesboro, KY 606-248-6600
- Raleigh, NC 919-977-9455
- Charlotte, NC 704-357-0488
- Atlanta, GA 770-627-3509

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NCDOT CONTACTS:

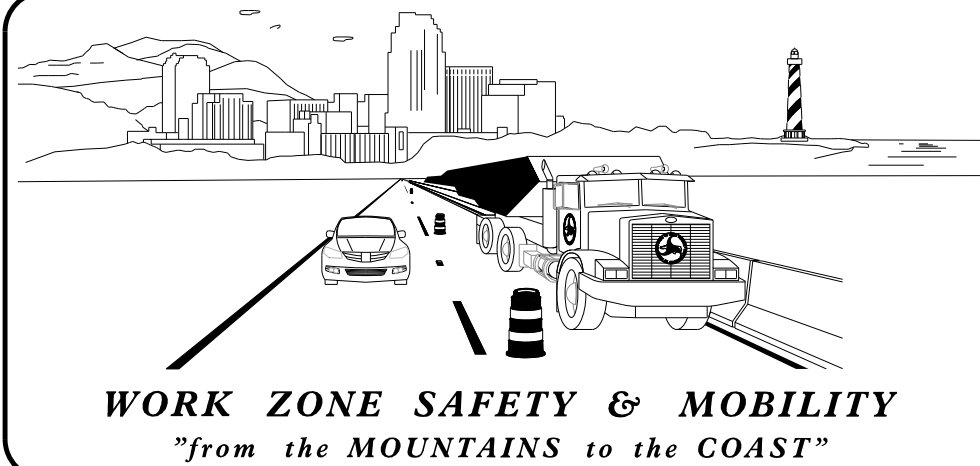
JOSEPH E. HUMMER, Ph.D., P.E.
STATE TRAFFIC MANAGEMENT ENGINEER

DON A. PARKER, P.E.
WESTERN WZTC ENGINEER

PLANS PREPARED BY:

LLOYD DEWAYNE BROWN, P.E., P.L.S.
PROJECT ENGINEER

ALEX FITZPATRICK
PROJECT DESIGN ENGINEER



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User: sam.fitzpatrick

PROJECT: 14SP.20561.1

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 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
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

TRANSPORTATION OPERATIONS

CONSTRUCTION

REMOVE AND REPLACE EXISTING STRUCTURE AND APPROACHES ALONG THE EXISTING ROADWAY ALIGNMENT AS SHOWN IN THE CONSTRUCTION PLANS.

TMP DESIGN PARAMETERS

TRAFFIC WILL BE DETOURED OFF-SITE DURING THE CONSTRUCTION PERIOD. THE OFF-SITE DETOUR WILL INCLUDE SR 1448, SR 1133, SR 1131 AND SR 1128 (SEE SHEET TMP-3)

LOCAL NOTES

- LOCAL NOTES:**
- EMERGENCY VEHICLE ACCESS MUST BE MAINTAINED AT ALL TIMES.
 - NOTIFY THE FIRE DEPT, E.M.S., AND MACON COUNTY SCHOOL BOARD 30 DAYS PRIOR TO ROAD CLOSURE.

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, 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 ENGINEER.

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 THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- B) 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.

- C) 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.

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

TRAFFIC CONTROL DEVICES

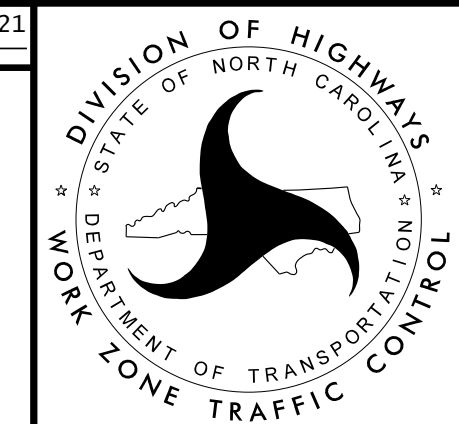
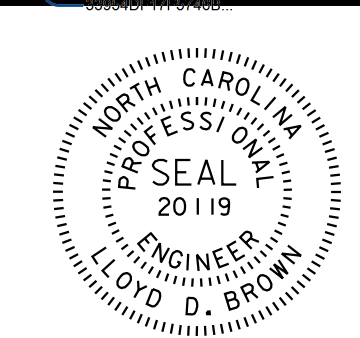
- E) PLACE TYPE III BARRICADES WITH "ROAD CLOSED" SIGN R-11-2 ATTACHED OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKING

- F) INSTALL PERMANENT PAVEMENT MARKINGS PAINT ON FINAL SURFACE OF THE ENTIRE PROJECT. (SEE ATTACHMENT MARKING PLANS)
- G) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- H) FINAL PAVEMENT MARKING APPLICATIONS OF PAINT SHALL BE PLACED IN TWO APPLICATIONS.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

APPROVED: *Lloyd D. Brown* DATE: 12/9/2021



ROADWAY STANDARD DRAWINGS, GENERAL NOTES, LOCAL NOTES, AND TRANSPORTATION OPERATIONS

SIGN NUMR: I-1	BACKG. COLOR: Orange	DESIGN BY: CGM	CHK BY: LDB
TYPE: D Ground	COPY COLOR: Black	PROJECT ID: 14SP.20561.1	DIV: 14
QUANTITY: 12			DATE: Aug 17, 2016

SIGN WIDTH: 2'-6"	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>SYMBOL</th> <th>X</th> <th>Y</th> <th>WID</th> <th>HT</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	SYMBOL	X	Y	WID	HT																										HEIGHT: 1'-6"	
SYMBOL		X	Y	WID	HT																												
TOTAL AREA: 3.8 Sq. Ft.	MAT'L: 0.063 in. (1.6 mm) ALUMINUM																																
BORDER TYPE: FLUSH																																	

RECESS: 0.38"
 WIDTH: 0.63"
 RADII: 1.5"

NO. Z BARS:
 LENGTH: in.

USE NOTES: 1,2

- Legend and border shall be direct applied black non-reflective sheeting.
- Background shall be NC grade B fluouesent orange retroreflective sheeting.

Letter spacings are to start of next letter

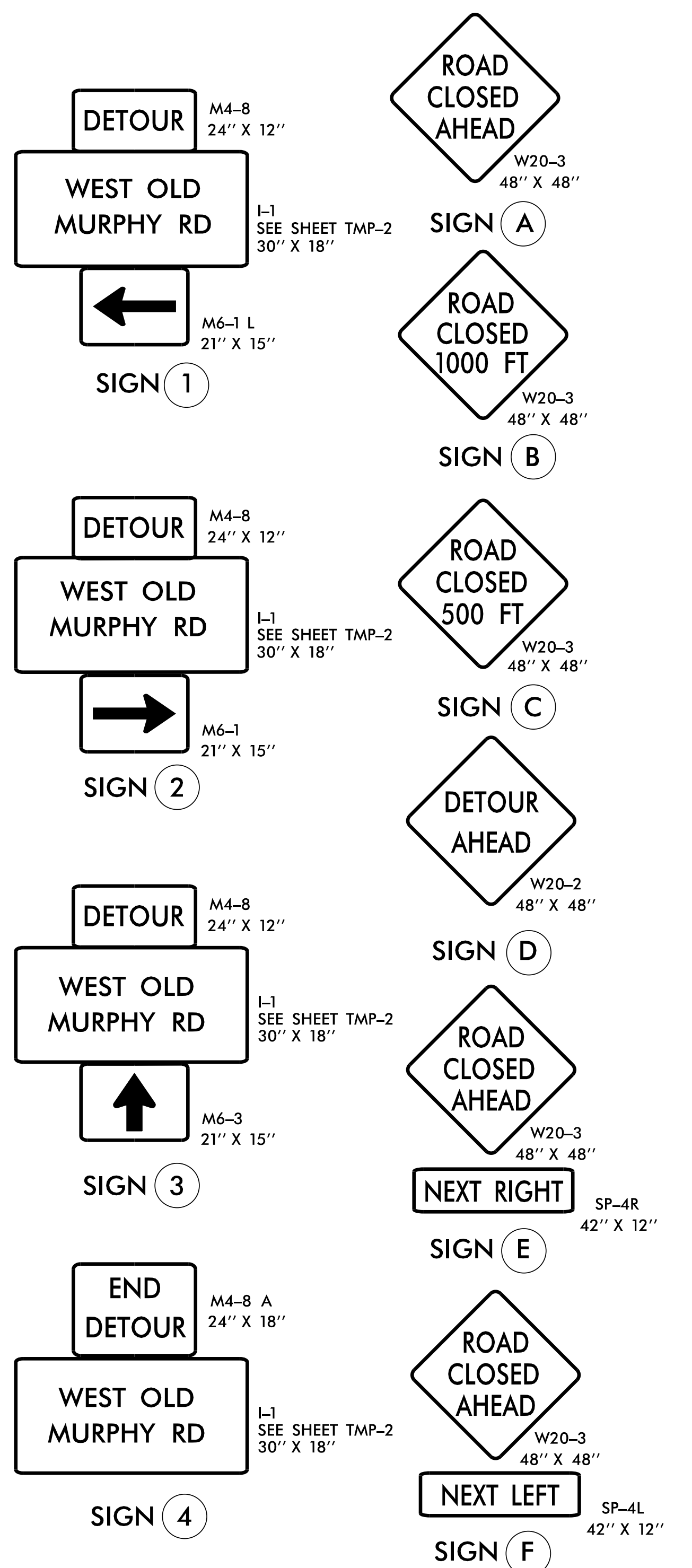
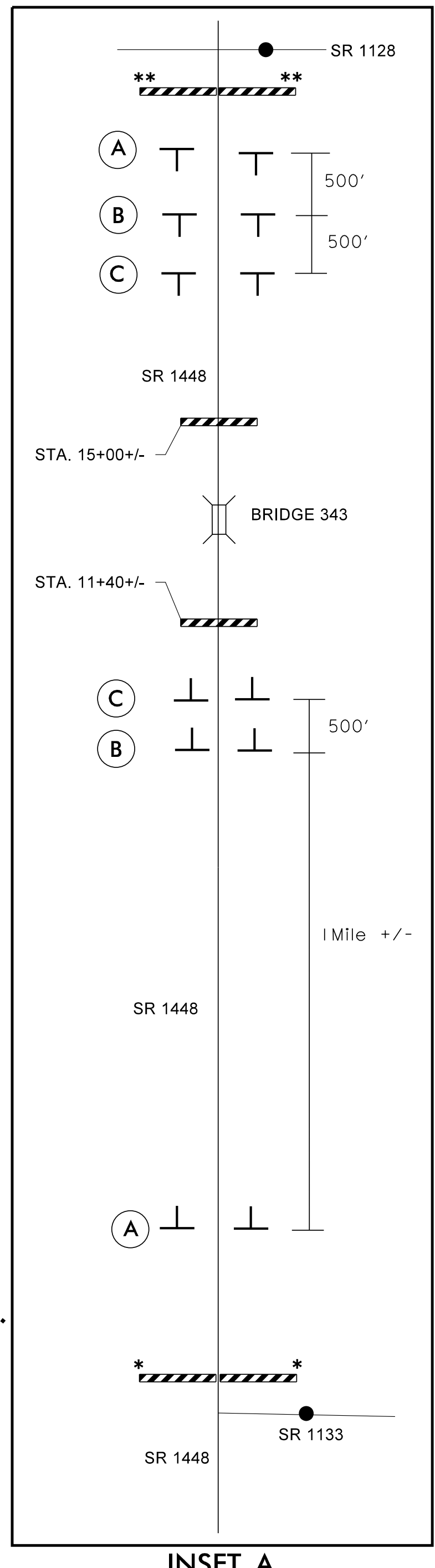
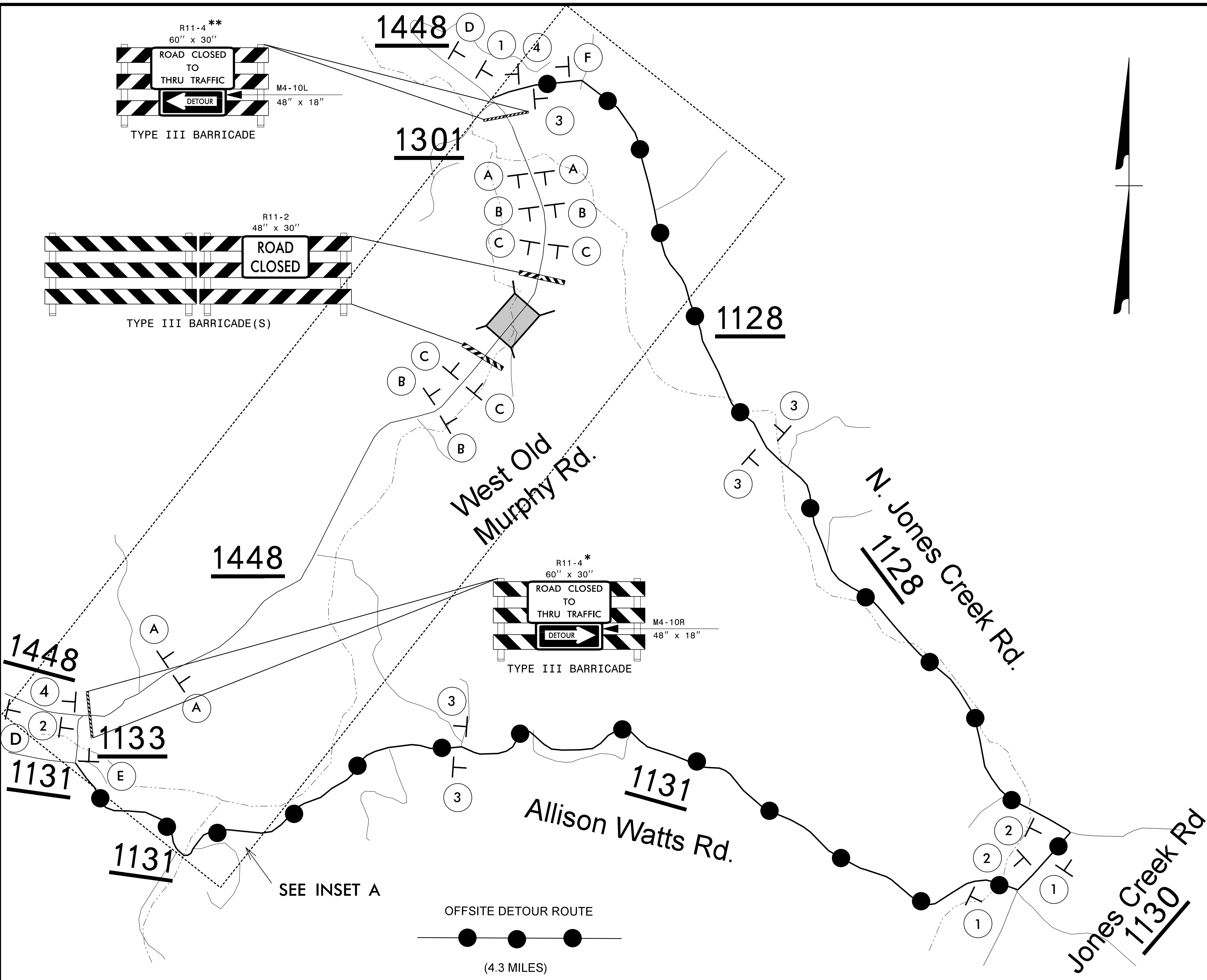
	Letter spacings are to start of next letter											Series/Size	
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												21.3	
	M	U	R	P	H	Y	R		D				C 2000/4
	3.5	3.2	2.8	2.7	2.7	2.6	2.6	1.6	2.7	2.2	3.5		23.0

Spacing Factor is 1 unless specified otherwise
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 User: sam fitzpatrick

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UNLESS ALL SIGNATURES COMPLETED

APPROVED: <u>Lloyd D. Brown</u> DATE: 12/9/2021		
		SPECIAL SIGN DESIGN



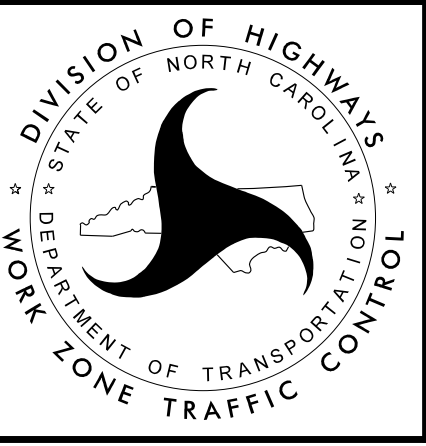
PHASING

- STEP 1: - INSTALL OFF-SITE DETOUR ROUTE SIGN ASSEMBLIES FOR THE CLOSING OF SR 1448 (WEST OLD MURPHY ROAD, -L-).
 - USING ROADWAY STANDARD DRAWING NO. 1101.03, SHEET 1 OF 9, CLOSE SR 1448 (WEST OLD MURPHY ROAD, -L-) TO THRU TRAFFIC, AND DETOUR TRAFFIC OFF-SITE AS SHOWN HEREON. MAINTAIN ACCESS TO ALL RESIDENCES AND BUSINESSES BETWEEN CLOSURE POINTS.
- STEP 2: - AWAY FROM TRAFFIC, REMOVE THE EXISTING STRUCTURE AND CONSTRUCT THE PROPOSED STRUCTURE AND ROADWAY UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE ON -L- FROM STA. 11+45+/- TO STA. 14+65+/-.
- STEP 3: - PLACE FINAL PAVEMENT MARKINGS (SEE PMP-1 AND PMP-2) ON SR 1448 (WEST OLD MURPHY ROAD, -L-) FROM STATION 11+45+/- -L- TO STATION 14+65 +/- -L-. (SEE CONSTRUCTION PLANS).
- STEP 4: - OPEN TO FINAL TRAFFIC PATTERN, AND REMOVE ALL TRAFFIC CONTROL DEVICES, SIGNING AND DETOUR ROUTE SIGNING.

- NOTES:**
- ALL DETOUR SIGN LOCATIONS ARE APPROXIMATE.
 - ALL DETOUR SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE NOTED.
 - TRAFFIC CONTROL DEVICES (A) THROUGH (F) SHALL BE INSTALLED ACCORDING TO ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9.
 - TRAFFIC CONTROL DEVICES (1) THROUGH (4) SHALL BE INSTALLED AS PER ENGINEER'S INSTRUCTIONS, AND AS SHOWN HEREON.
 - SEE ROADWAY STANDARD DRAWING NO. 1101.03, SHEET 1 OF 9 AND 2 OF 9, FOR ADDITIONAL WORK ZONE SIGNS.


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APPROVED: *Lloyd D. Brown* DATE: 12/9/2021



TEMPORARY TRAFFIC CONTROL DETAIL, PHASING NOTES, OFFSITE DETOUR SIGNING AND ROAD CLOSURE

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TIP NO.	SHEET NO.
14SP.20561.1	PMP-1
APPROVED: <u>Lloyd D. Brown</u> 33840F17F5746B DATE: 12/9/2021	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PAVEMENT MARKING PLAN
MACON COUNTY

**LOCATION : BRIDGE NO. 343 ALLISON CREEK
ON SR 1448 (WEST OLD MURPHY ROAD)**

PROJECT: 14SP.20561.1

CONTRACT: DN00132

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C. DATED JANUARY 2018 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 & MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1253.01	RAISED PAVEMENT MARKERS - SNOWPLOWABLE
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES & MOUNTING
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.

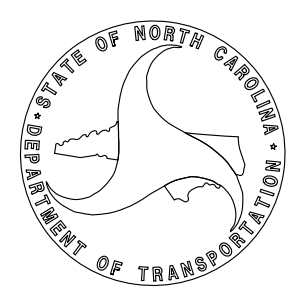
- A.) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE
ROAD NAME: _____ MARKING _____ MARKER _____
SR 1448 (WEST OLD MURPHY ROAD) PAINT NON-CAST IRON SNOWPLOWABLE RAISED
- B.) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- C.) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- D.) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN TITLE SHEET
PMP-2	PAVEMENT MARKING DETAIL, SCHEDULE AND QUANTITIES

PLAN REVIEWED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

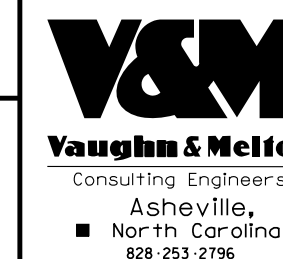
KELVIN L. JORDAN SIGNING & DELINEATION REGIONAL ENGINEER
SIGNING & DELINEATION PROJECT DESIGN ENGINEER



PLAN PREPARED BY: **Vaughn & Melton Consulting Engineers**


LLOYD DEWAYNE BROWN, P.E. PROJECT ENGINEER

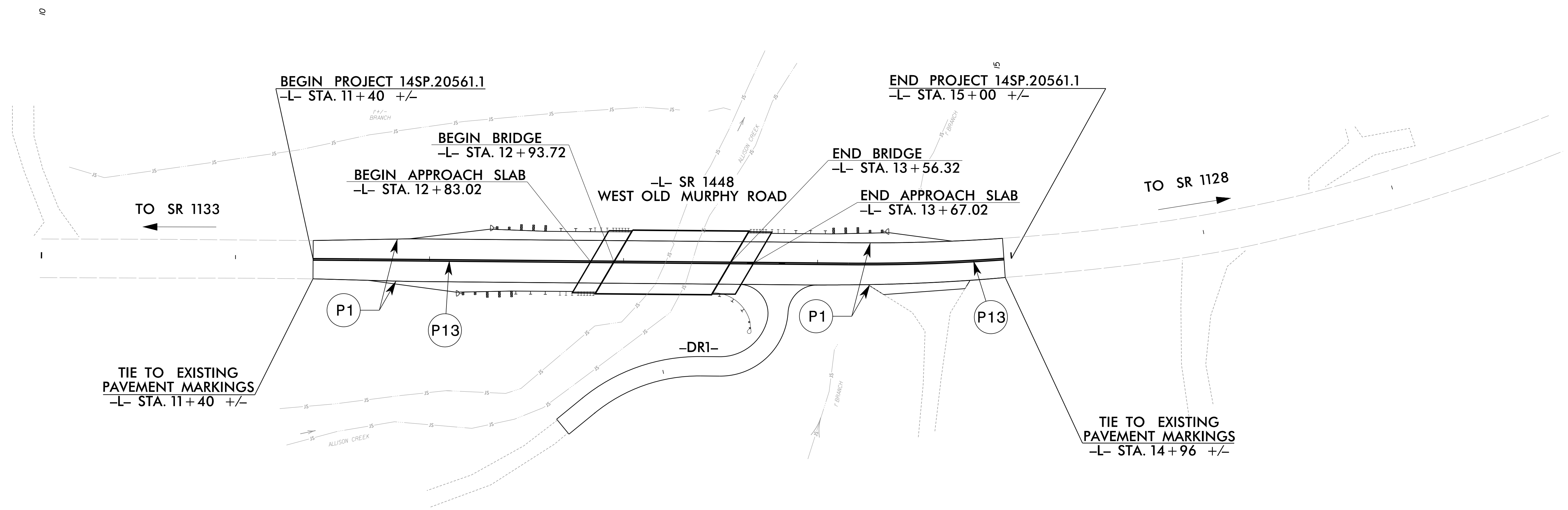
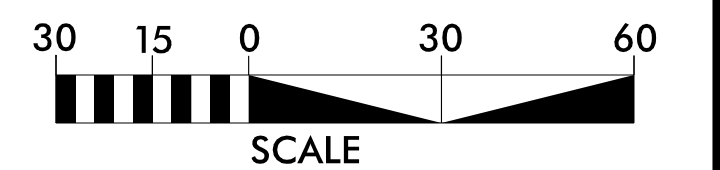
C. GONZALEZ-MARTELL PROJECT DESIGN ENGINEER



<input type="checkbox"/> Raleigh, NC 919-977-9455	<input type="checkbox"/> Charlotte, NC 704-357-0488	<input type="checkbox"/> Boone, NC 828-355-9935
<input type="checkbox"/> Tri-Cities, TN 423-467-8400	<input type="checkbox"/> Tri-Cities, TN 423-467-8400	<input type="checkbox"/> Knoxville, TN 865-546-5800
<input type="checkbox"/> Charleston, SC 843-874-5650	<input type="checkbox"/> Milledgeville, KY 606-248-6600	<input type="checkbox"/> Atlanta, GA 770-627-3509
<input type="checkbox"/> Spartanburg, SC 864-574-4775		

PAVEMENT MARKING DETAIL AND SCHEDULE

TIP NO. 14SP.20561.1	SHEET NO. PMP-2
APPROVED: <i>Lloyd D. Brown</i> <small>233640471757466</small>	
DATE: 12/9/2021	
	
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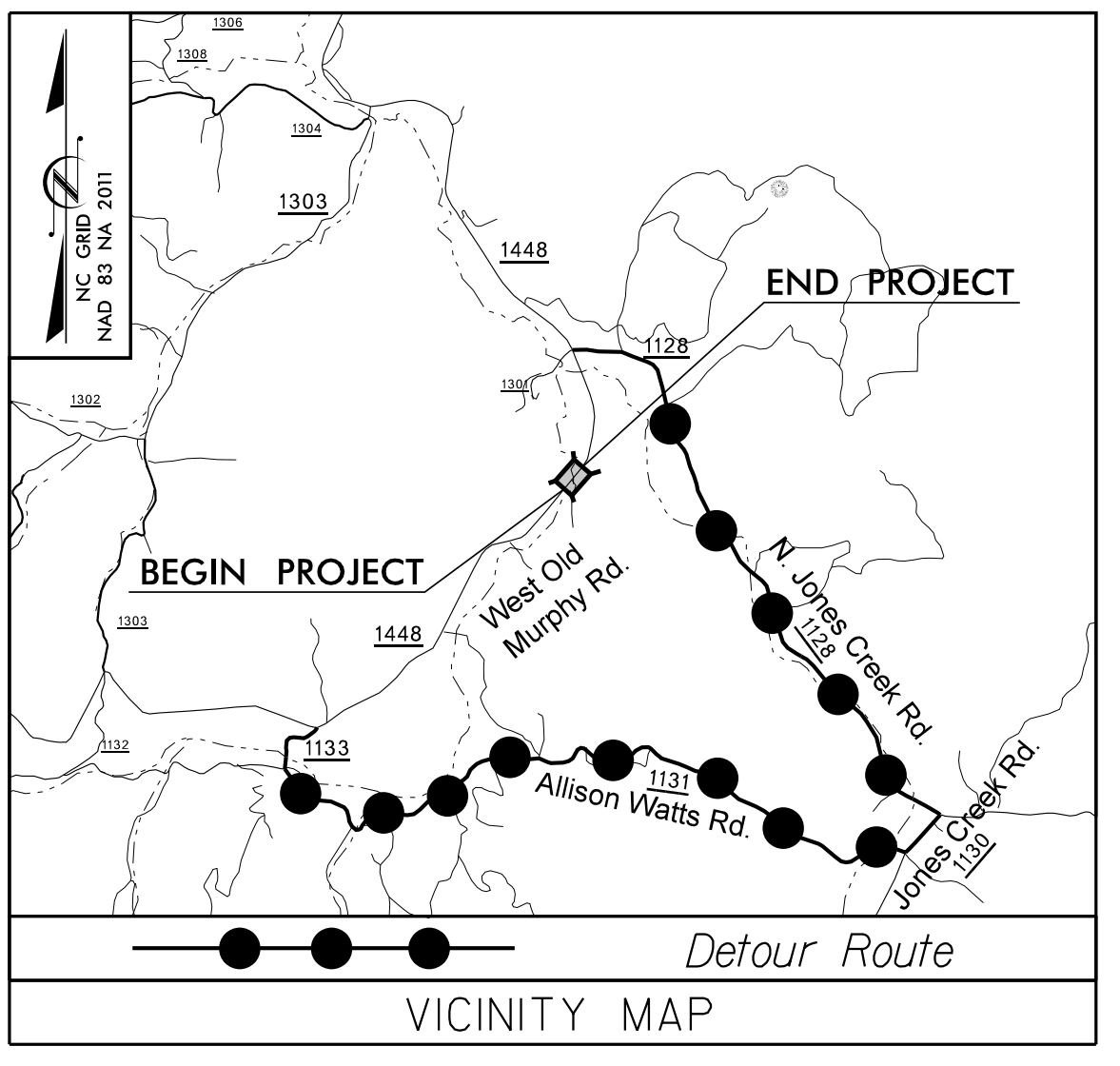
PAVEMENT MARKING SCHEDULE AND QUANTITIES

SYMBOL	DESCRIPTION	QUANTITY BREAKDOWN	PAY ITEM	TOTAL QUANTITY
P1	WHITE SOLID EDGE LINE	713 FT	PAINT (4")	1426 FT
P13	YELLOW DOUBLE CENTER LINE	713 FT	PAINT (4")	1426 FT
ME	NON-CAST IRON SNOWBLOWABLE RAISED PAVEMENT MARKERS YELLOW & YELLOW	5 EA	MARKERS	5 EA

PAVEMENT MARKING DETAIL

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User:smfitzpatrick

PROJECT: 14SP.20561.1



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL
MACON COUNTY

**LOCATION: BRIDGE NO. 550343 OVER ALLISON CREEK
ON SR 1448 (WEST OLD MURPHY ROAD)**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	14SP.20561.1	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
14SP.20561.1	N/A	PE	
14SP.20561.1	N/A	R/W	
14SP.20561.1	N/A	CONST.	

EROSION AND SEDIMENT CONTROL MEASURES

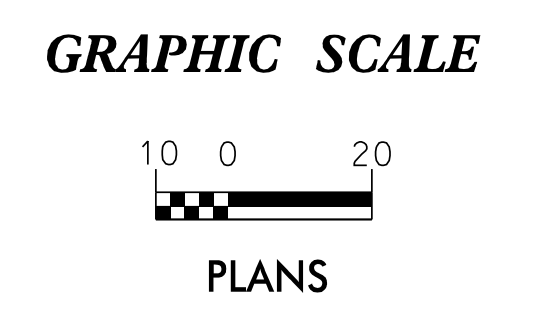
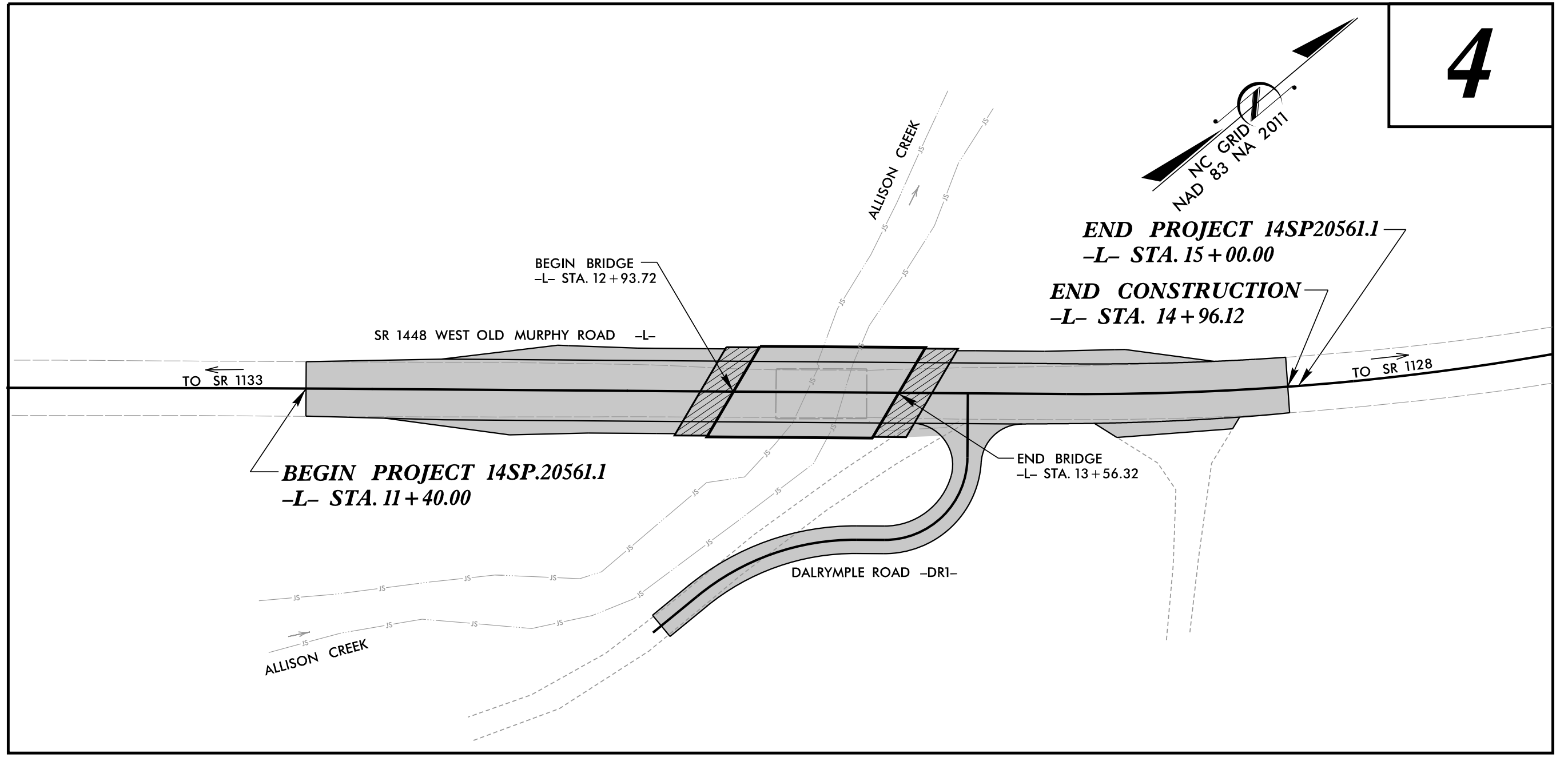
Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	TSF
1606.01	Special Sediment Control Fence	SSCF
1622.01	Temporary Berms and Slope Drains	TBSD
1630.02	Silt Basin Type B	SB
1633.01	Temporary Rock Silt Check Type-A Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	TRSCA
1633.02	Temporary Rock Silt Check Type-B Wattle / Coir Fiber Wattle Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	TRSCB
1634.01	Temporary Rock Sediment Dam Type-A	TRSDA
1634.02	Temporary Rock Sediment Dam Type-B	TRSDB
1635.01	Rock Pipe Inlet Sediment Trap Type-A	RPISTRA
1635.02	Rock Pipe Inlet Sediment Trap Type-B	RPISTRB
1630.04	Stilling Basin	SB
1630.06	Special Stilling Basin	SSB
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	SKB
	Tiered Skimmer Basin	TSKB
	Infiltration Basin	IB

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

ENVIRONMENTALLY
SENSITIVE AREA(S) EXIST
ON THIS PROJECT

Refer To E. C. Special Provisions
for Special Considerations.

THIS PROJECT HAS
BEEN DESIGNED TO
SENSITIVE WATERSHED
STANDARDS.



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 1, 2016 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

Prepared in the Office of:
**Vaughn & Melton
Consulting Engineers**
1318-F Patton Avenue
Asheville, NC 28806
2018 STANDARD SPECIFICATIONS

Designed by:
Christian Gonzalez-Martell 3939
NAME LEVEL III CERTIFICATION NO.

Reviewed in the Office of:
ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611
2018 STANDARD SPECIFICATIONS

Reviewed by:
Reid Whitehead, PE, CPESC

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 2018 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 Wattle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

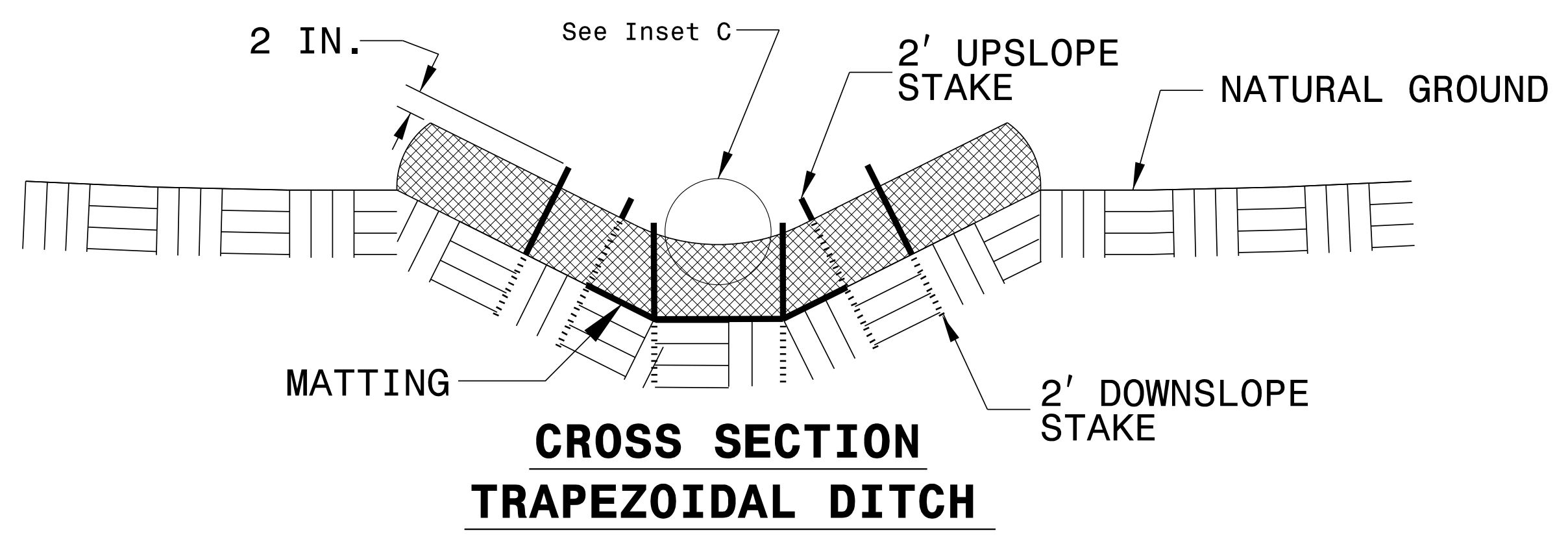
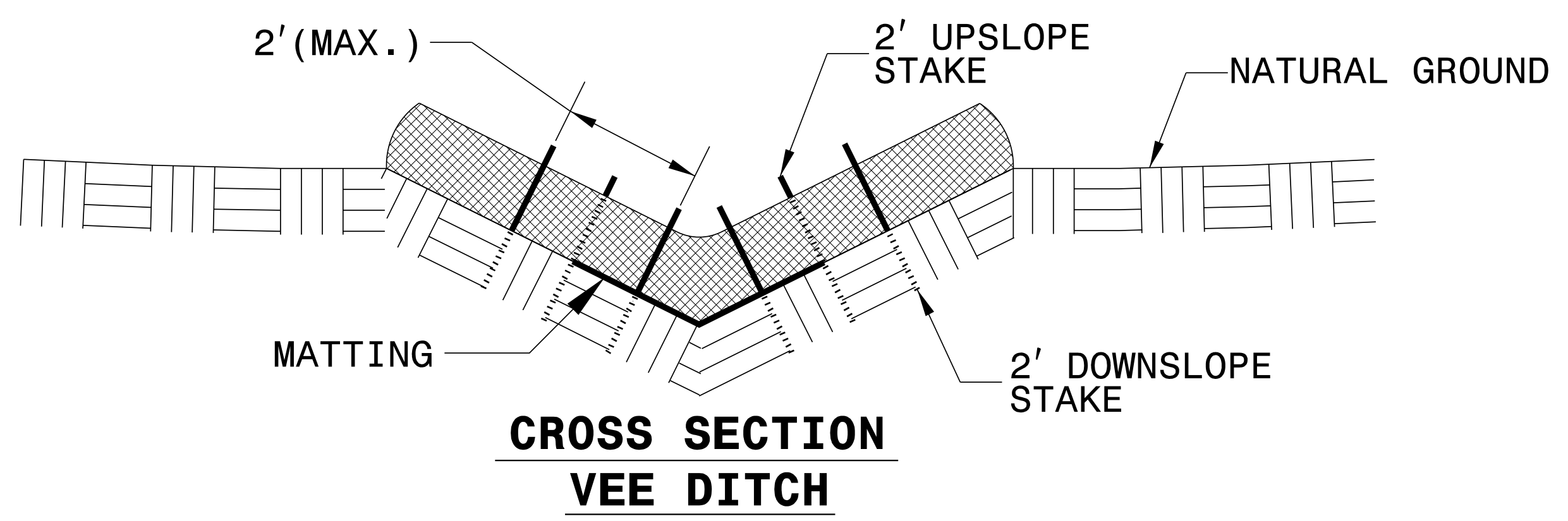
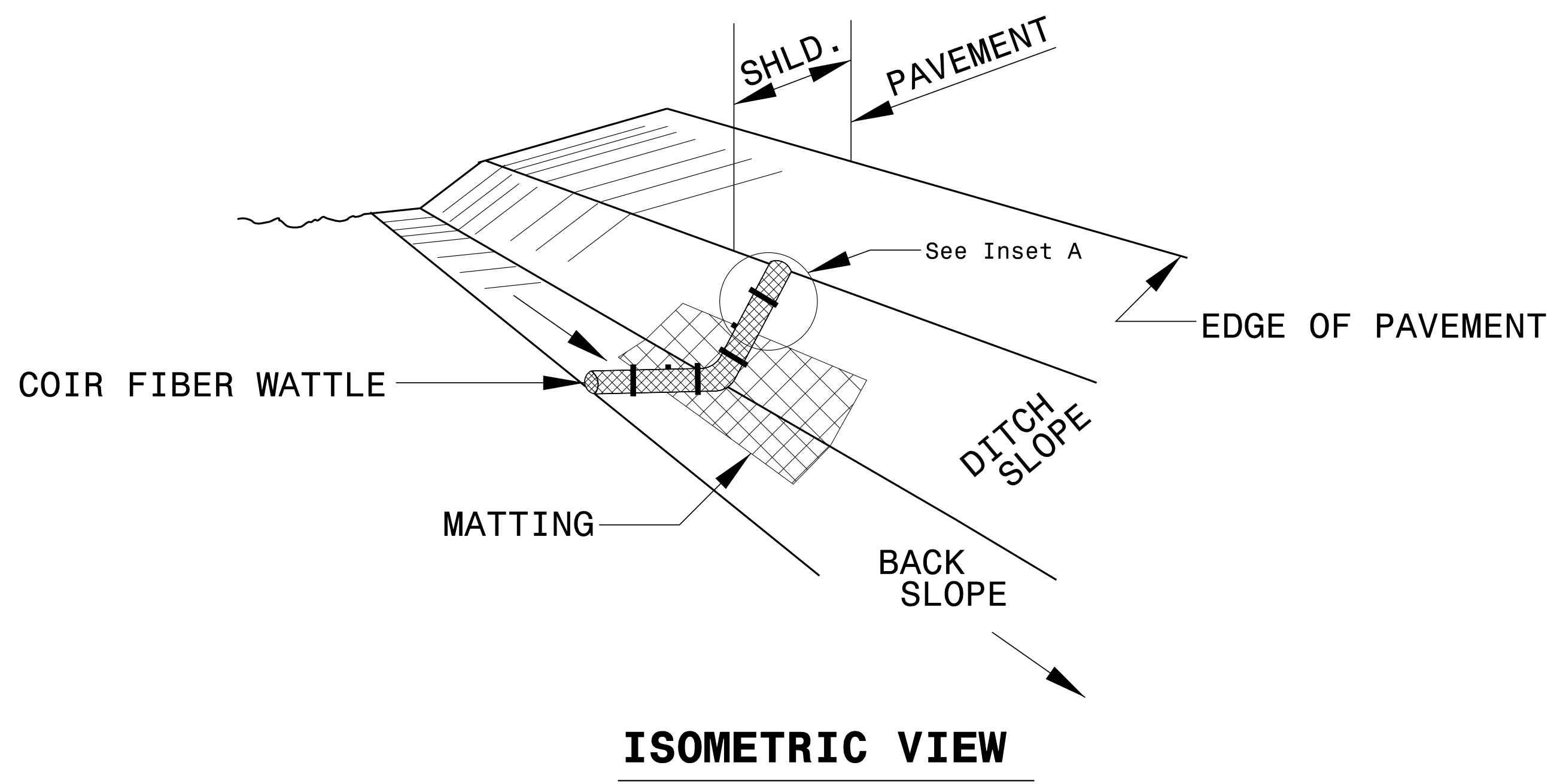
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828-253-2796

- Boone, NC 828-355-9933
- Tri-Cities, TN 423-467-8401
- Knoxville, TN 865-546-5800
- Spartanburg, SC 864-574-4775
- Charleston, SC 843-974-5650
- Middlesboro, KY 606-248-6600
- Raleigh, NC 919-977-9455
- Charlotte, NC 704-357-0488
- Atlanta, GA 770-627-3509

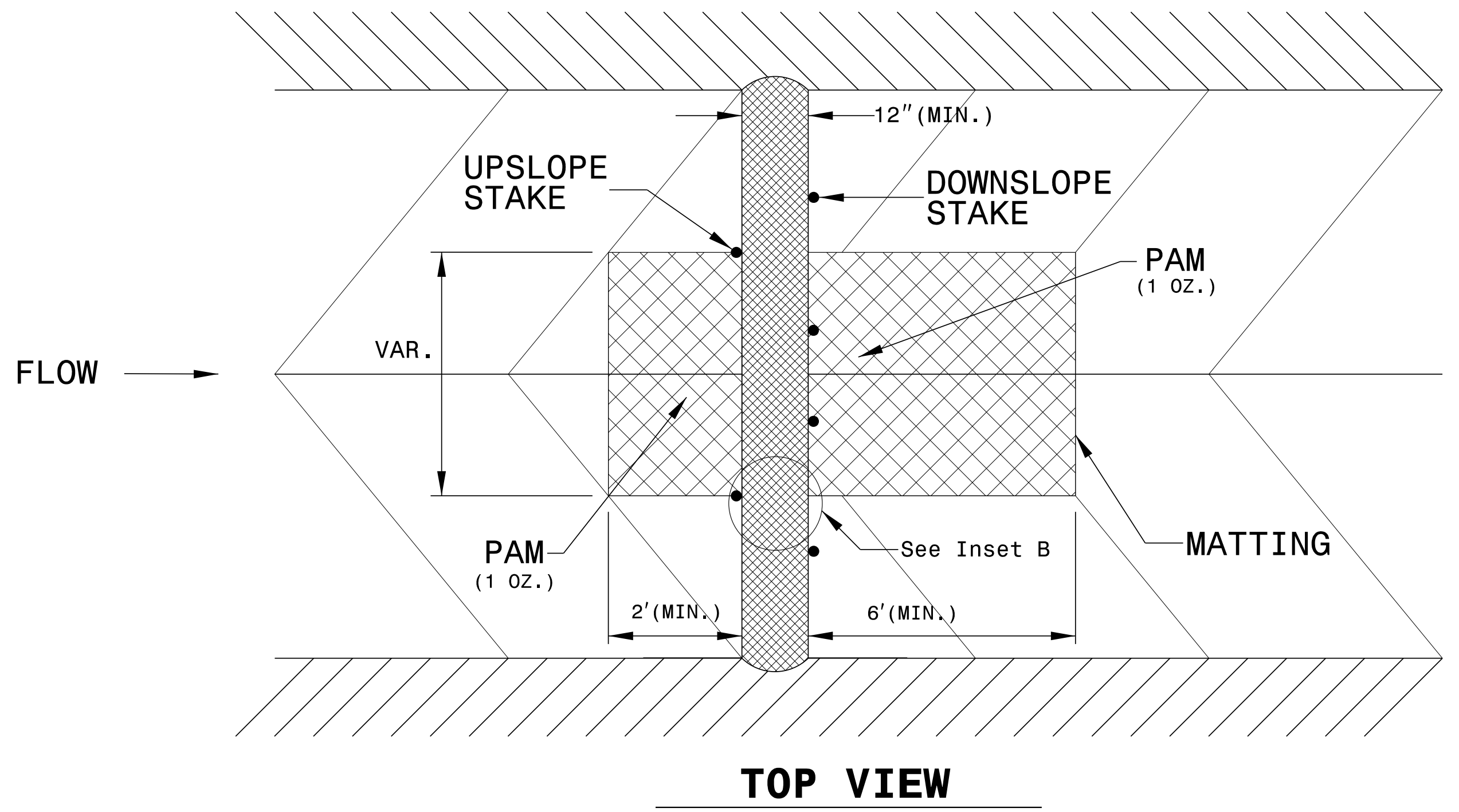
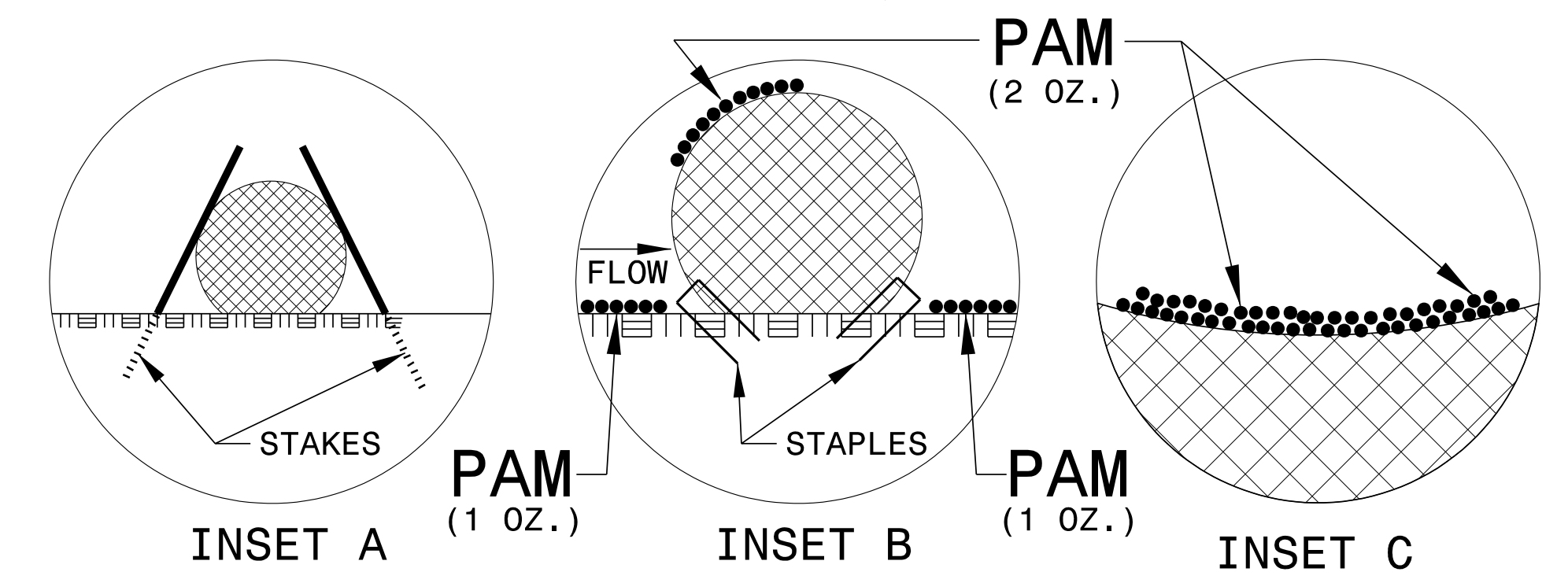
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PROJECT REFERENCE NO. <i>14SP.205611</i>	SHEET NO. <i>EC-2</i>
	
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<input type="checkbox"/> Boone, NC 828-355-9933 <input type="checkbox"/> Tri-Cities, TN 423-467-8401 <input type="checkbox"/> Knoxville, TN 865-540-1800 <input type="checkbox"/> Spartanburg, SC 864-574-4775 <input type="checkbox"/> Charleston, SC 843-974-5650 <input type="checkbox"/> Mississippi, MS 662-248-6600 <input type="checkbox"/> Atlanta, GA 770-627-3590	<input type="checkbox"/> Raleigh, NC 919-977-9455 <input type="checkbox"/> Charlotte, NC 704-357-0488 <input type="checkbox"/>

COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

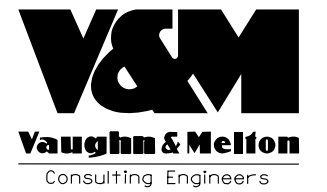


- NOTES:**
- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.
 - USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
 - ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
 - INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
 - 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.
 - INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.
 - 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 WATTLE.
 - INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>14SP.20561J</i>	SHEET NO. <i>EC-3</i>
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- Boone, NC 828-355-9933
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- Charlotte, NC 704-357-0488
- Atlanta, GA 770-627-3590

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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.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. *14SP.20561J* SHEET NO. *EC-3A*

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

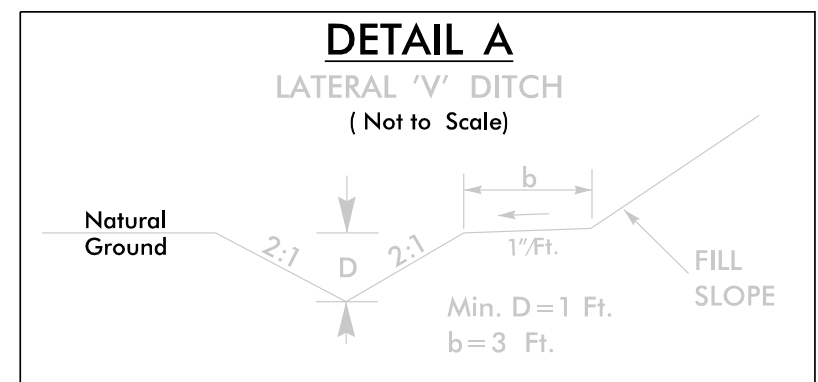
COIR FIBER MATTING

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	11+40	11+75	LT	20
4	-L-	11+75	12+75	LT	50
			SUBTOTAL		70
		MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER			2,178 **
			TOTAL		2,248
			SAY		2,250
		** MATTING FOR EROSION CONTROL TO BE PLACED ON ALL NON-ESA DISTURBED SLOPES			

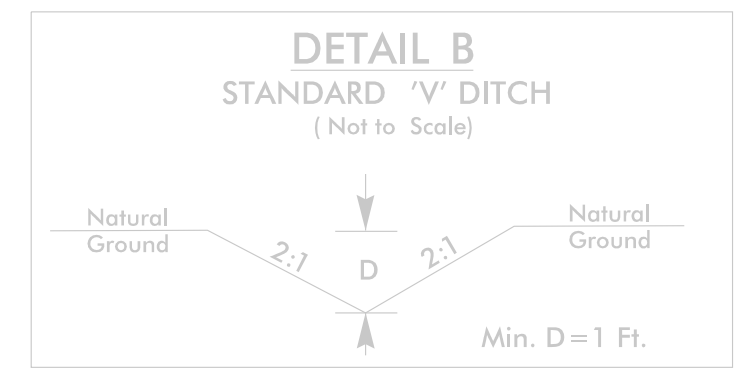
CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	12+75	13+30	LT	30
			SUBTOTAL		30
		COIR FIBER MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER			1,452 **
			TOTAL		1,482
			SAY		1,485
		** COIR FIBER MATTING TO BE PLACED ON ALL ESA DISTURBED SLOPES			

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User: jfz@dot.nc.gov

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Consulting Engineers
Asheville, North Carolina 28803-9333
919-977-9455



FROM STA. 11+75 TO STA. 12+90 LT
NOTE: TRANSITION FROM EX. DITCH TO LATERAL "V" DITCH 11+40 TO 11+75

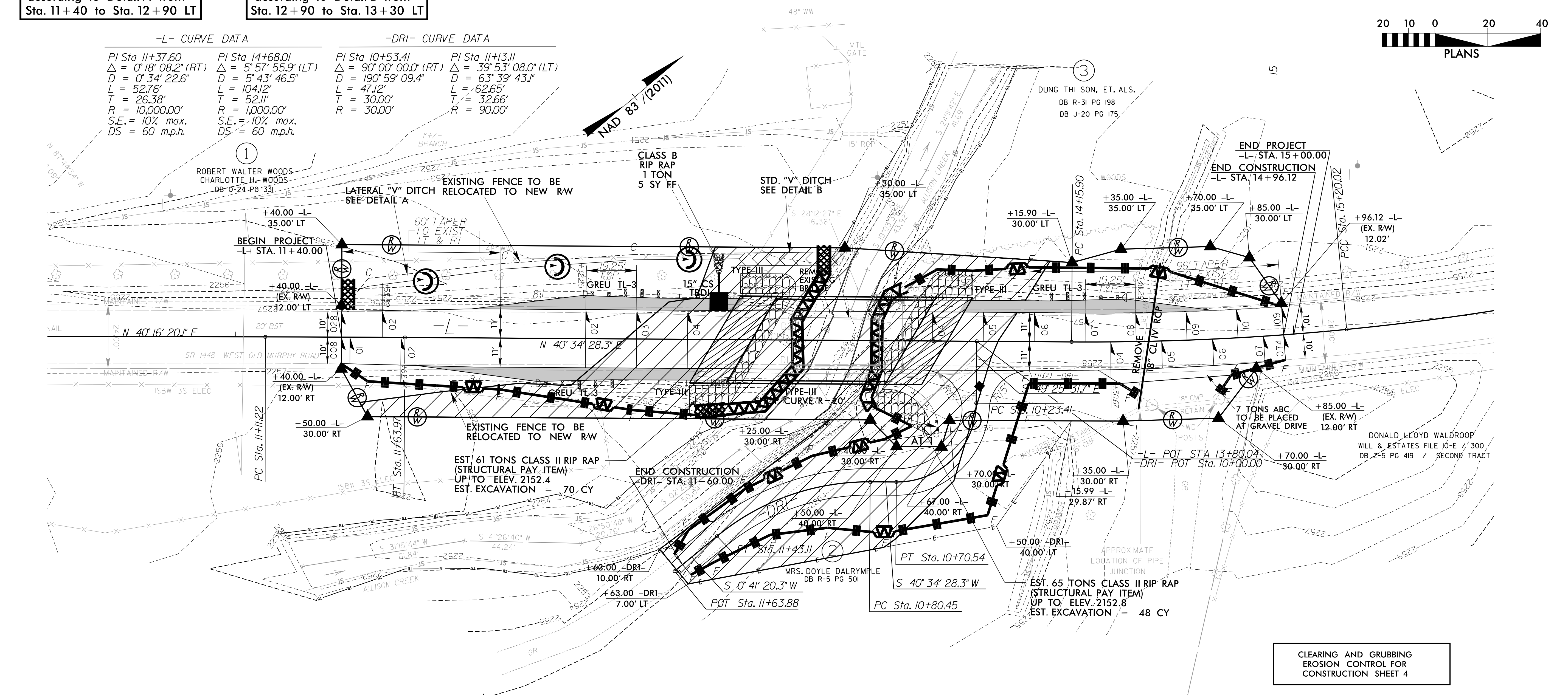
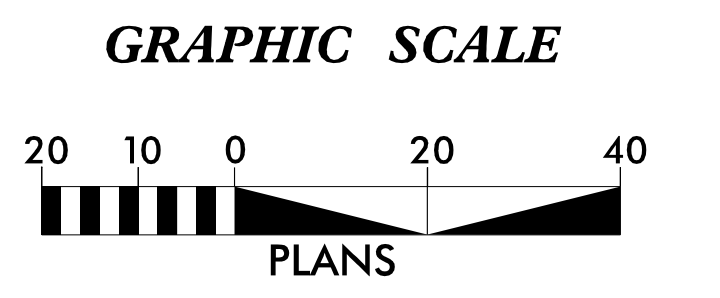


FROM STA. 12+90 TO STA. 13+30 LT.

Excavate Proposed Ditch according to Detail A from Sta. 11+40 to Sta. 12+90 LT

Excavate Proposed Ditch according to Detail B from Sta. 12+90 to Sta. 13+30 LT

-L- CURVE DATA		-DRI- CURVE DATA	
PI Sta 11+37.60	PI Sta 14+68.01	PI Sta 10+53.41	PI Sta 11+13.11
$\Delta = 0^{\circ} 18' 08.2" (RT)$	$\Delta = 5^{\circ} 57' 55.9" (LT)$	$\Delta = 90^{\circ} 00' 00.0" (RT)$	$\Delta = 39^{\circ} 53' 08.0" (LT)$
$D = 0^{\circ} 34' 22.6"$	$D = 5^{\circ} 43' 46.5"$	$D = 190^{\circ} 59' 09.4"$	$D = 63^{\circ} 39' 43.1"$
$L = 52.76'$	$L = 104.12'$	$L = 47.12'$	$L = 62.65'$
$T = 26.38'$	$T = 52.11'$	$T = 30.00'$	$T = 32.66'$
$R = 10,000.00'$	$R = 1,000.00'$	$R = 30.00'$	$R = 90.00'$
$S.E. = 10\% \text{ max.}$	$S.E. = 10\% \text{ max.}$		
$DS = 60 \text{ m.p.h.}$	$DS = 60 \text{ m.p.h.}$		



CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

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

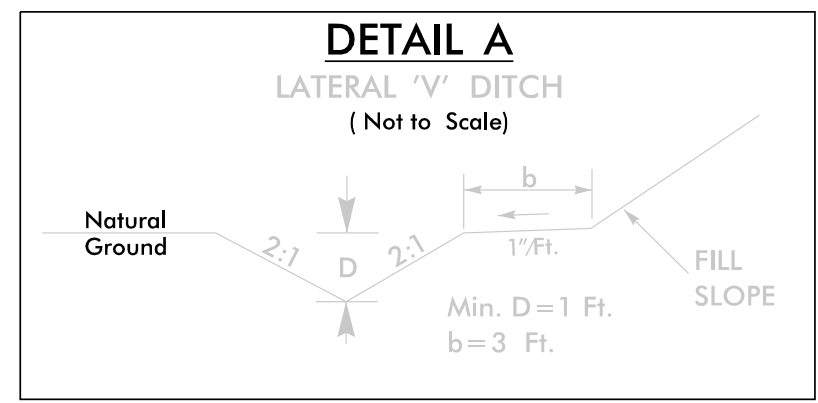
NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
UTILIZE SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

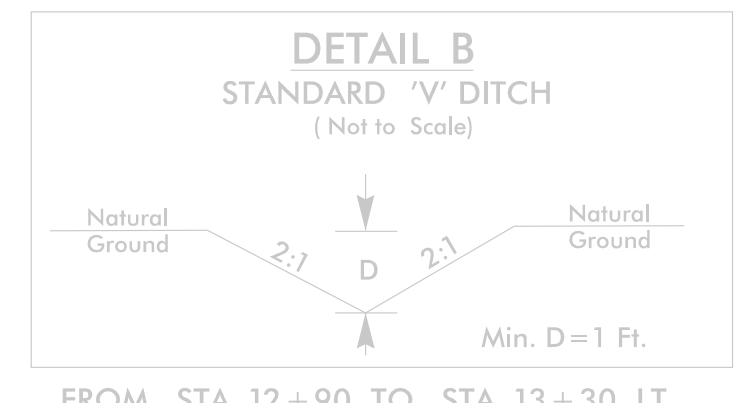
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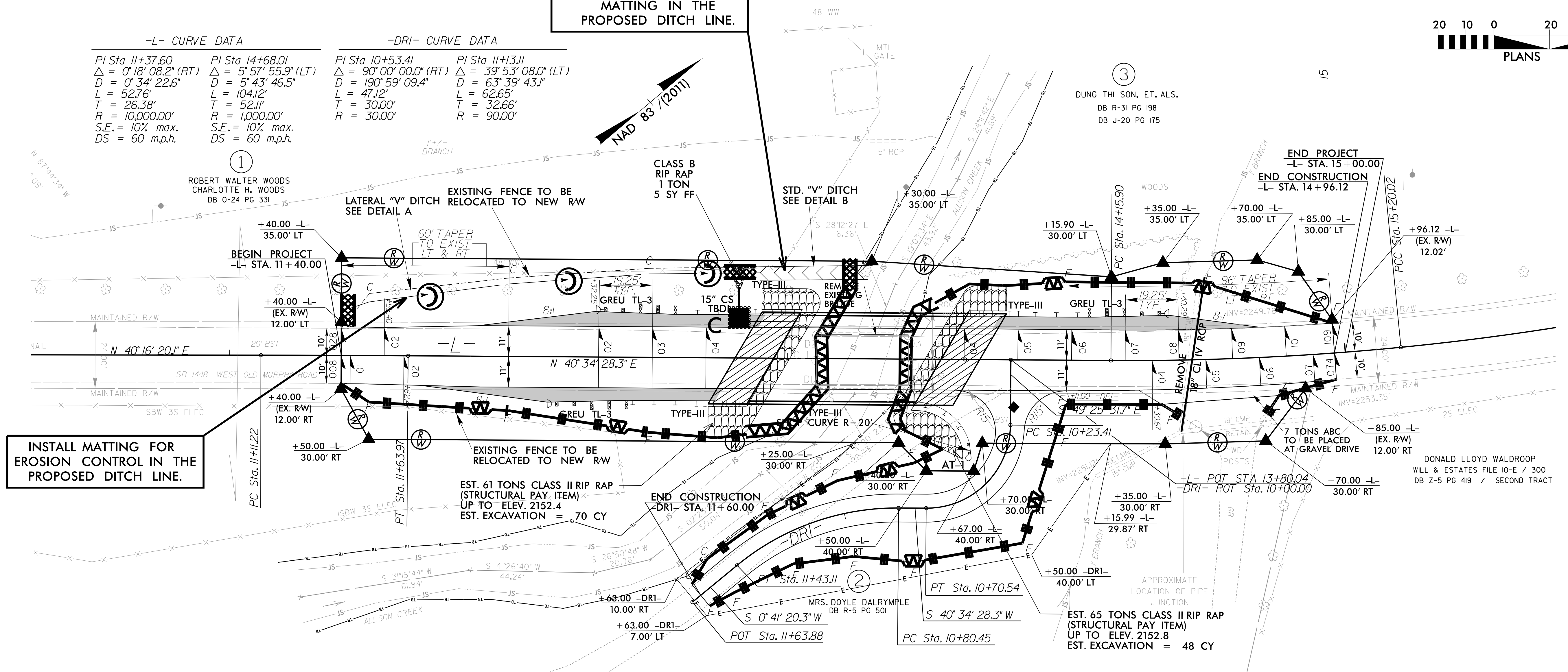
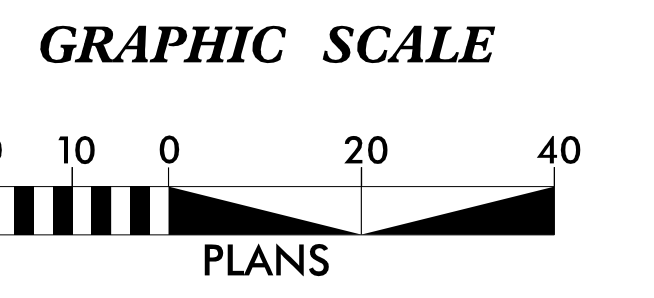
FROM STA. 11+75 TO STA. 12+90 LT
NOTE: TRANSITION FROM EX. DITCH TO LATERAL 'V' DITCH 11+40 TO 11+75



FROM STA. 12+90 TO STA. 13+30 LT.

-L- CURVE DATA		-DRI- CURVE DATA	
PI Sta 11+37.60	PI Sta 14+68.01	PI Sta 10+53.41	PI Sta 11+13.11
$\Delta = 0^{\circ} 18' 08.2''$ (RT)	$\Delta = 5^{\circ} 57' 55.9''$ (LT)	$\Delta = 90^{\circ} 00' 00.0''$ (RT)	$\Delta = 39^{\circ} 53' 08.0''$ (LT)
$D = 0^{\circ} 34' 22.6''$	$D = 5^{\circ} 43' 46.5''$	$D = 190^{\circ} 59' 09.4''$	$D = 63^{\circ} 39' 43.1''$
$L = 52.76'$	$L = 104.12'$	$L = 47.12'$	$L = 62.65'$
$T = 26.38'$	$T = 52.11'$	$T = 30.00'$	$T = 32.66'$
$R = 10,000.00'$	$R = 1,000.00'$	$R = 30.00'$	$R = 90.00'$
$S.E. = 10\%$ max.	$S.E. = 10\%$ max.		
$DS = 60$ m.p.h.	$DS = 60$ m.p.h.		

INSTALL COIR FIBER MATTING IN THE PROPOSED DITCH LINE.



INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

NOTES: 1.) ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.
2.) ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.
3.) ONSITE CONCRETE WASHOUT STRUCTURE IS REQUIRED. LOCATION TO BE DETERMINED IN FIELD.

Place Matting for Erosion Control on Slopes located outside the ESA as Work Allows.

Place Coir Fiber Matting on Slopes located inside the ESA as Work Allows.

NOTE: UTILIZE SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

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User: jfz

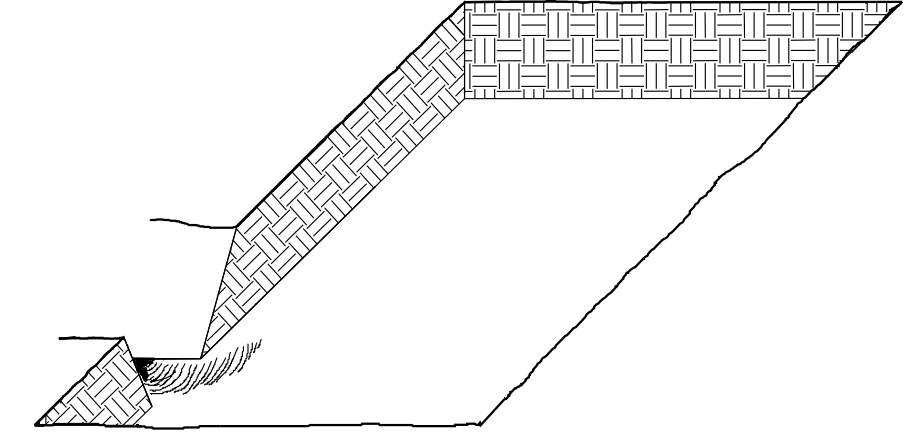
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	14SP.20561.1	RF-1	3
STATE PROJ.NO.	F.A.PROJ.NO.	DESCRIPTION	

PLANTING DETAILS

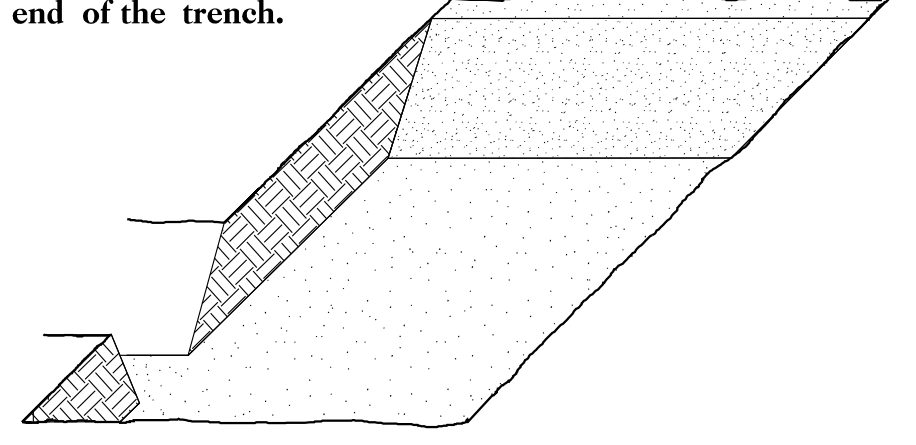
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

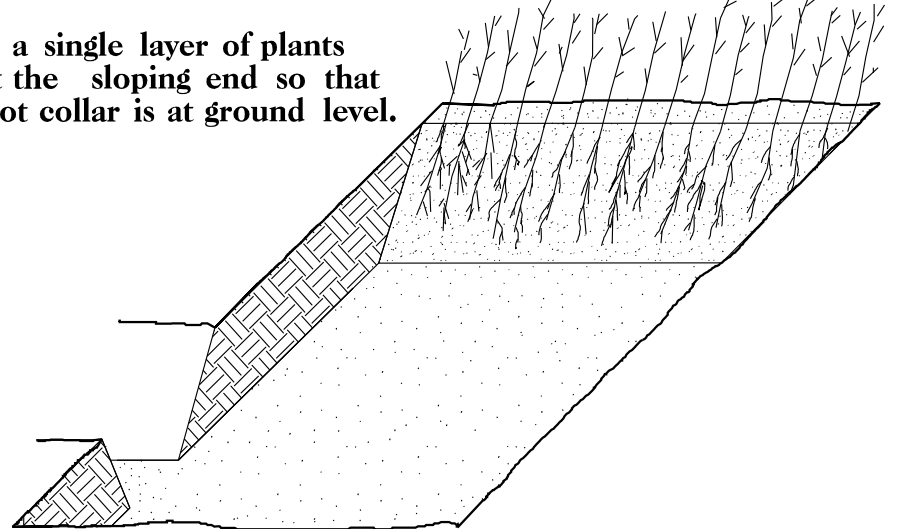
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



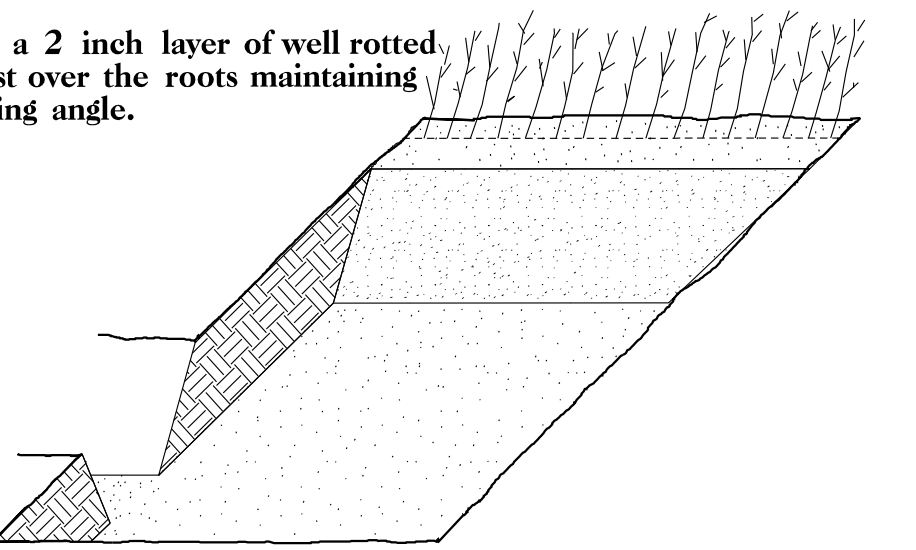
3. Jackfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

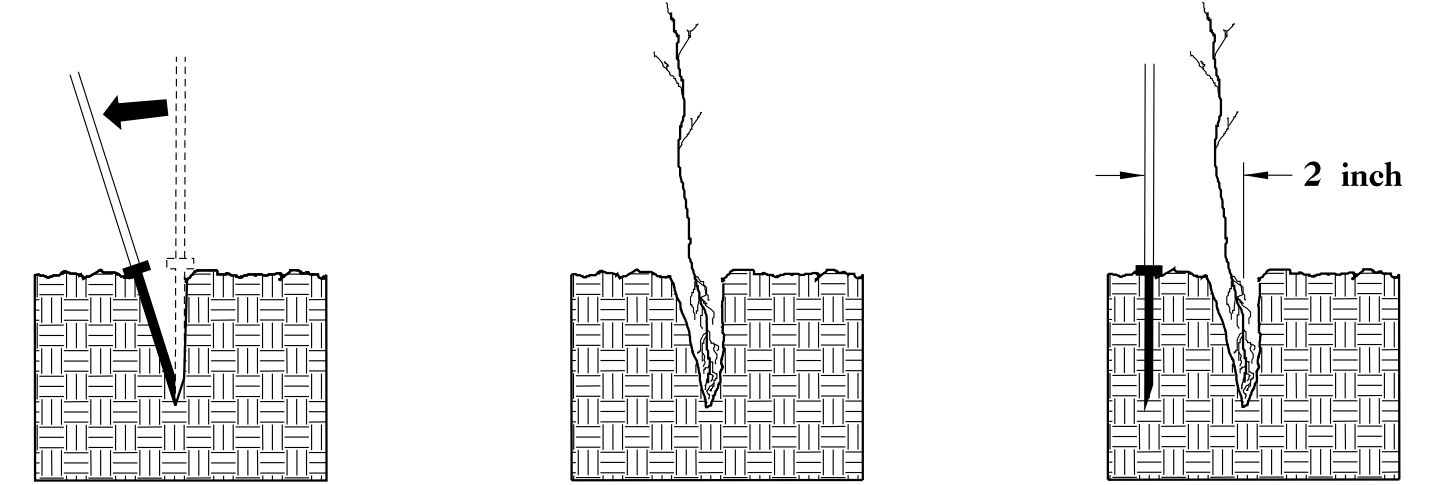


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

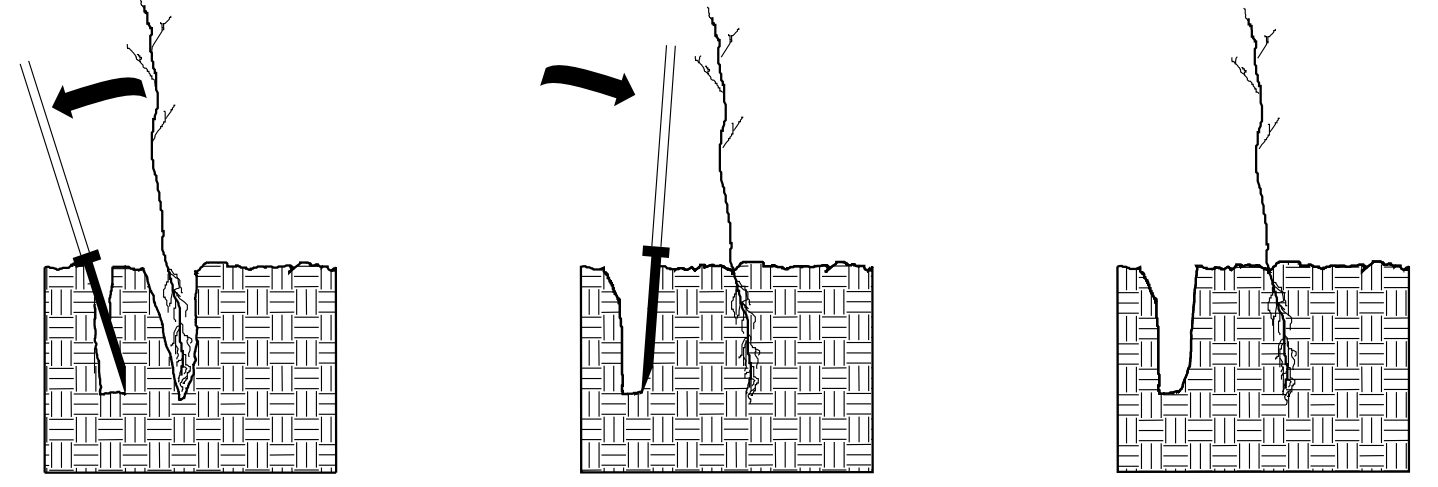


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

DOUBLE PLANTING METHOD USING THE K3C 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.



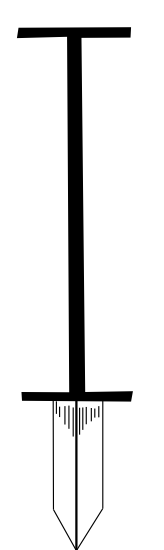
4. Pull handle of bar toward planter, firming soil at bottom.
5. Push handle forward firming soil at top.
6. Leave compaction hole open. Water thoroughly.

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.



K3C 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:

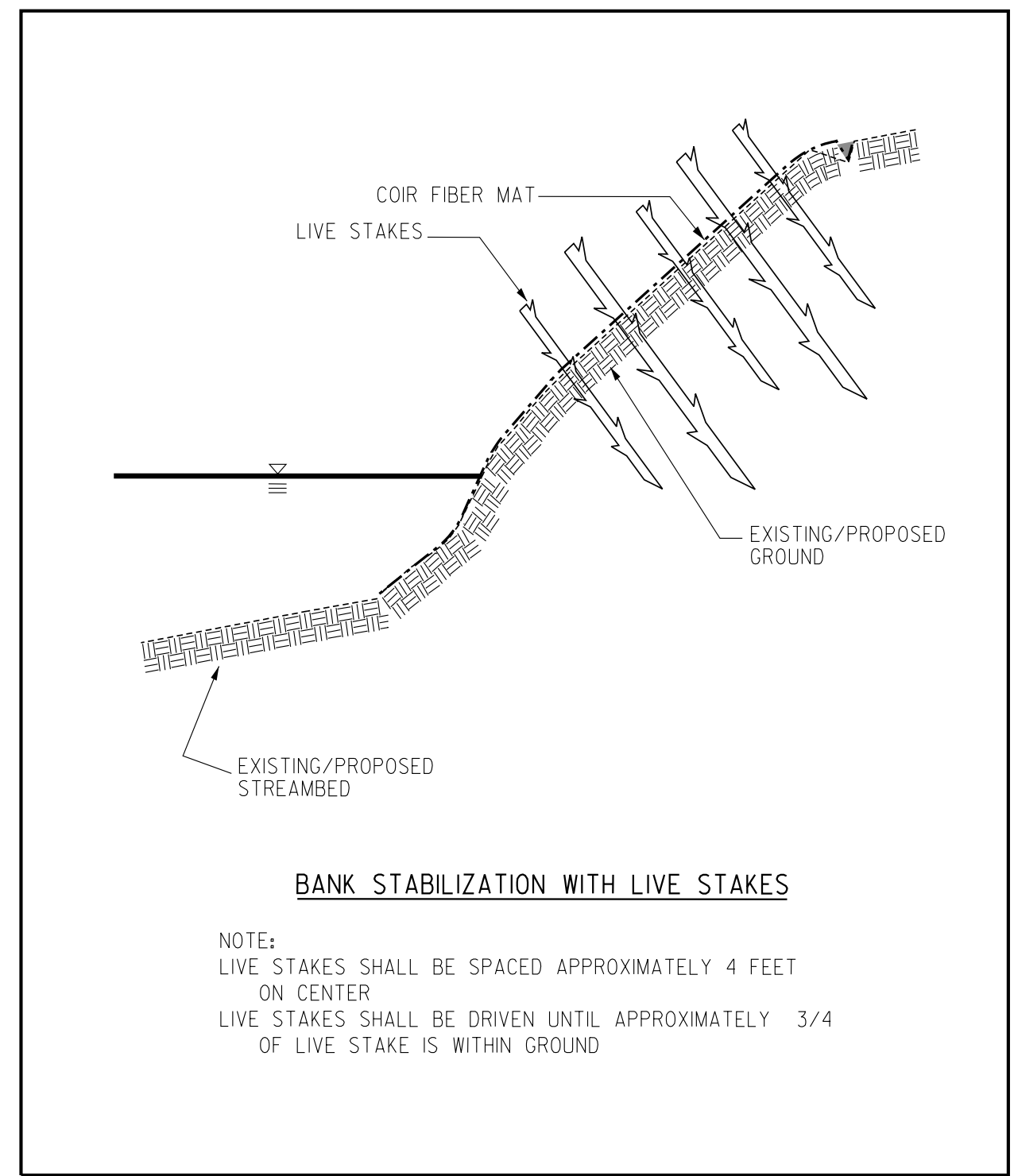
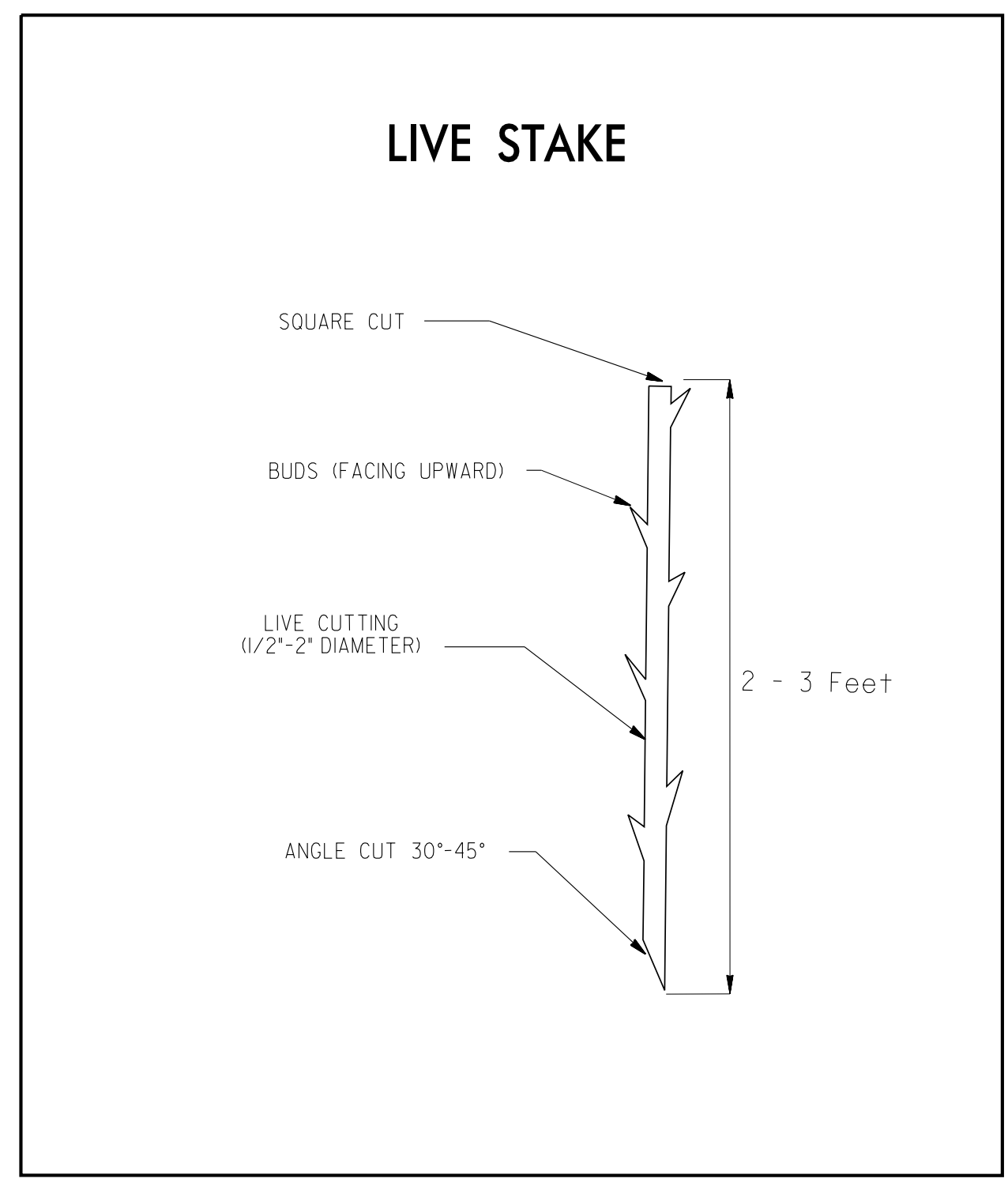
25%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in 3R
25%	PLATANUS OCCIDENTALIS	SYCAMORE	12 in - 18 in 3R
25%	FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in 3R
25%	BETULA NIGRA	RIVER BIRCH	12 in - 18 in 3R

REFORESTATION DETAIL SHEET

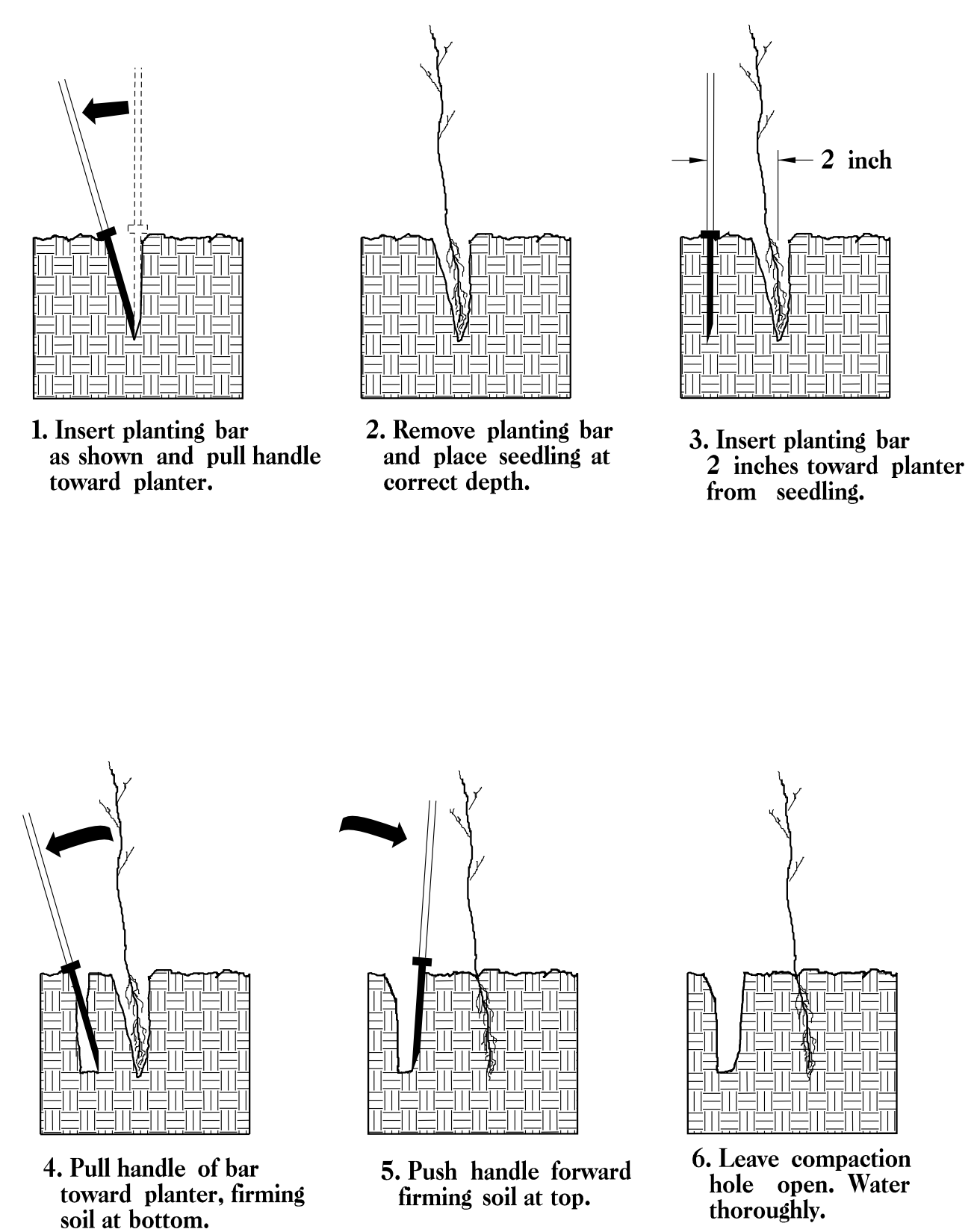
N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

PLANTING DETAILS

LIVE STAKES PLANTING DETAIL



BAREROOT PLANTING DETAIL DOUBLE PLANTING METHOD USING THE K3C PLANTING BAR

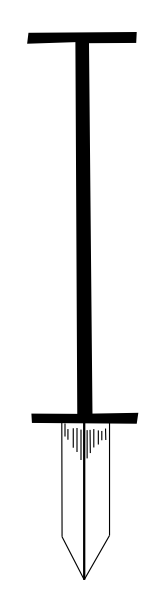


PLANTING NOTES:

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



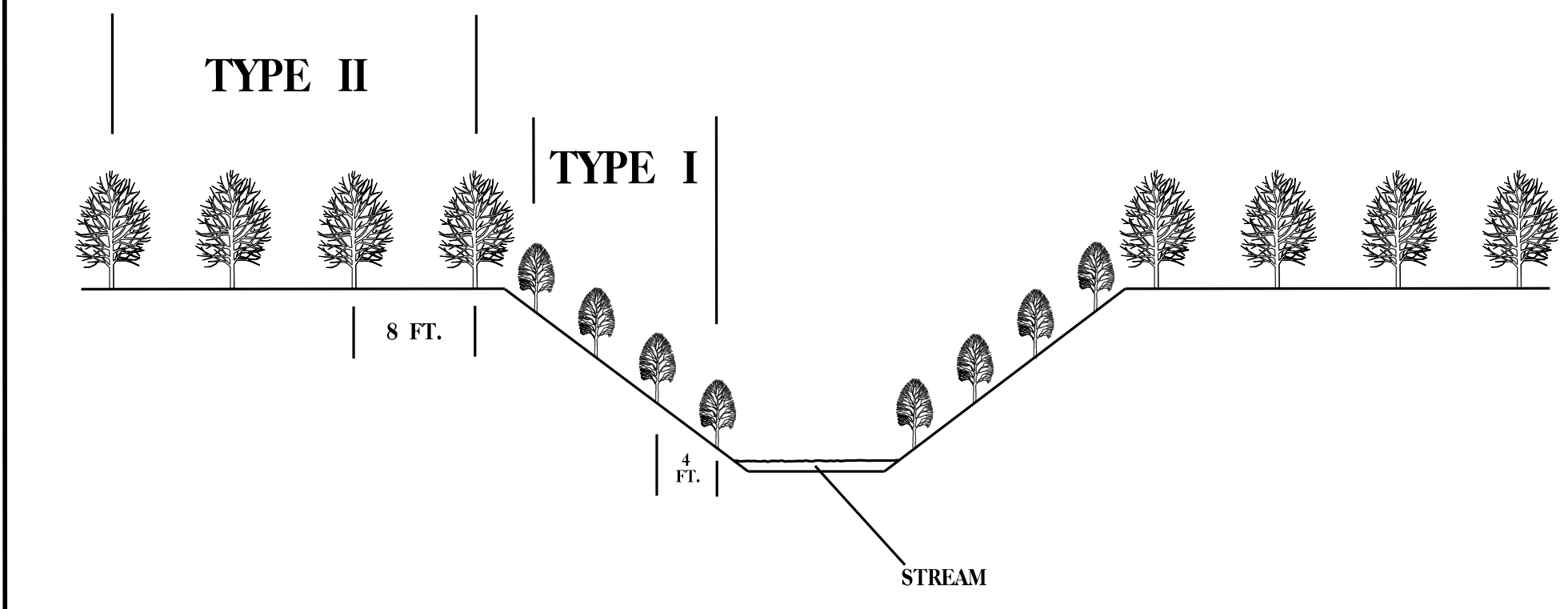
K3C PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



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

- TYPE 1 STREAMBANK REFORESTATION SHALL BE PLANTED 3 FT. TO 5 FT. ON CENTER, RANDOM SPACING, AVERAGING 4 FT. ON CENTER, APPROXIMATELY 2724 PLANTS PER ACRE.
- TYPE 2 STREAMBANK REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.
- NOTE: TYPE 1 AND TYPE 2 STREAMBANK REFORESTATION SHALL BE PAID FOR AS "STREAMBANK REFORESTATION"

STREAMBANK REFORESTATION TYPICAL



STREAMBANK REFORESTATION

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

TYPE 1		
50% SALIX NIGRA	BLACK WILLOW	2 ft - 3 ft LIVE STAKES
50% CORNUS AMOMUM	SILKY DOGWOOD	2 ft - 3 ft LIVE STAKES
TYPE 2		
25% LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in 3R
25% PLATANUS OCCIDENTALIS	SYCAMORE	12 in - 18 in 3R
25% PRUNUS SEROTINA	BLACK CHERRY	12 in - 18 in 3R
25% BETULA NIGRA	RIVER BIRCH	12 in - 18 in 3R

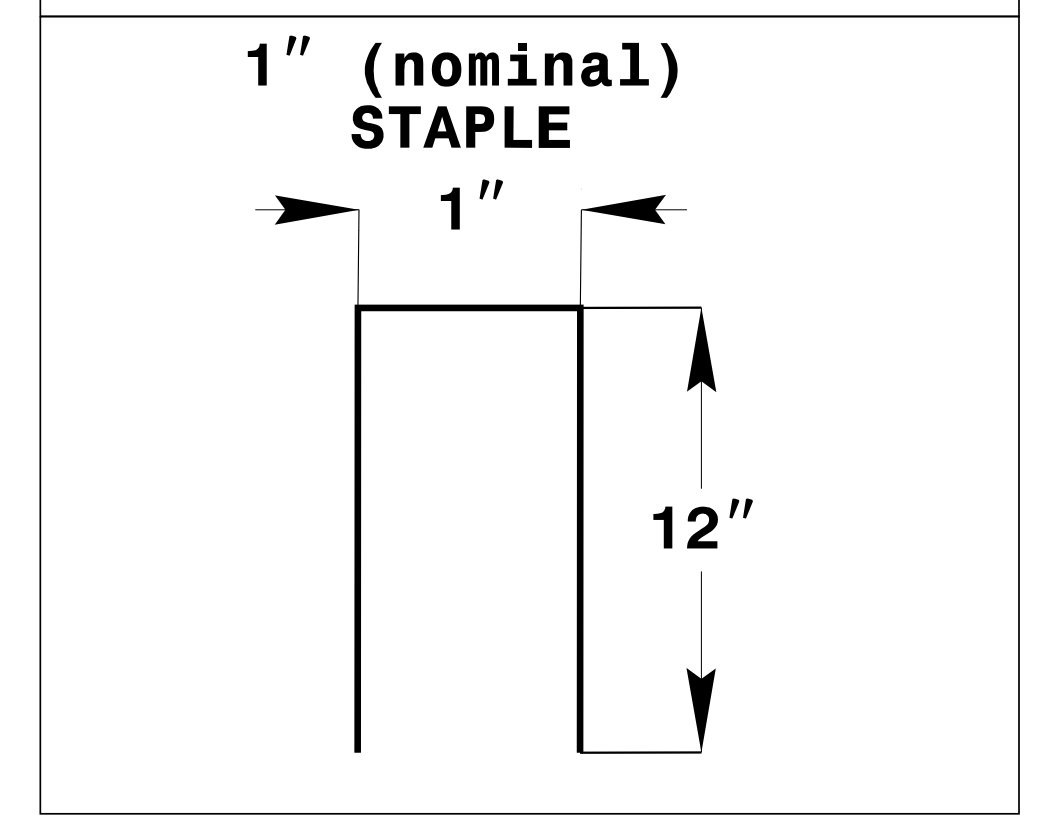
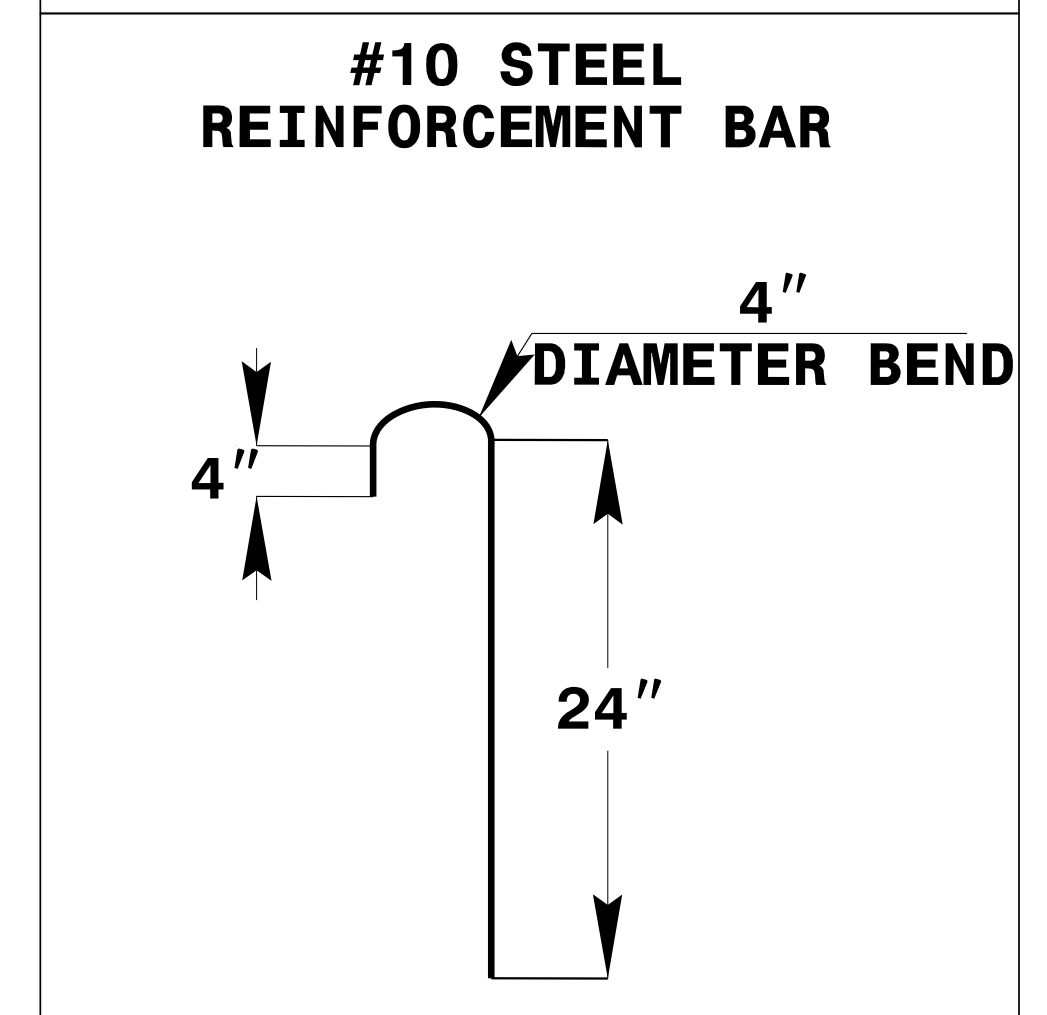
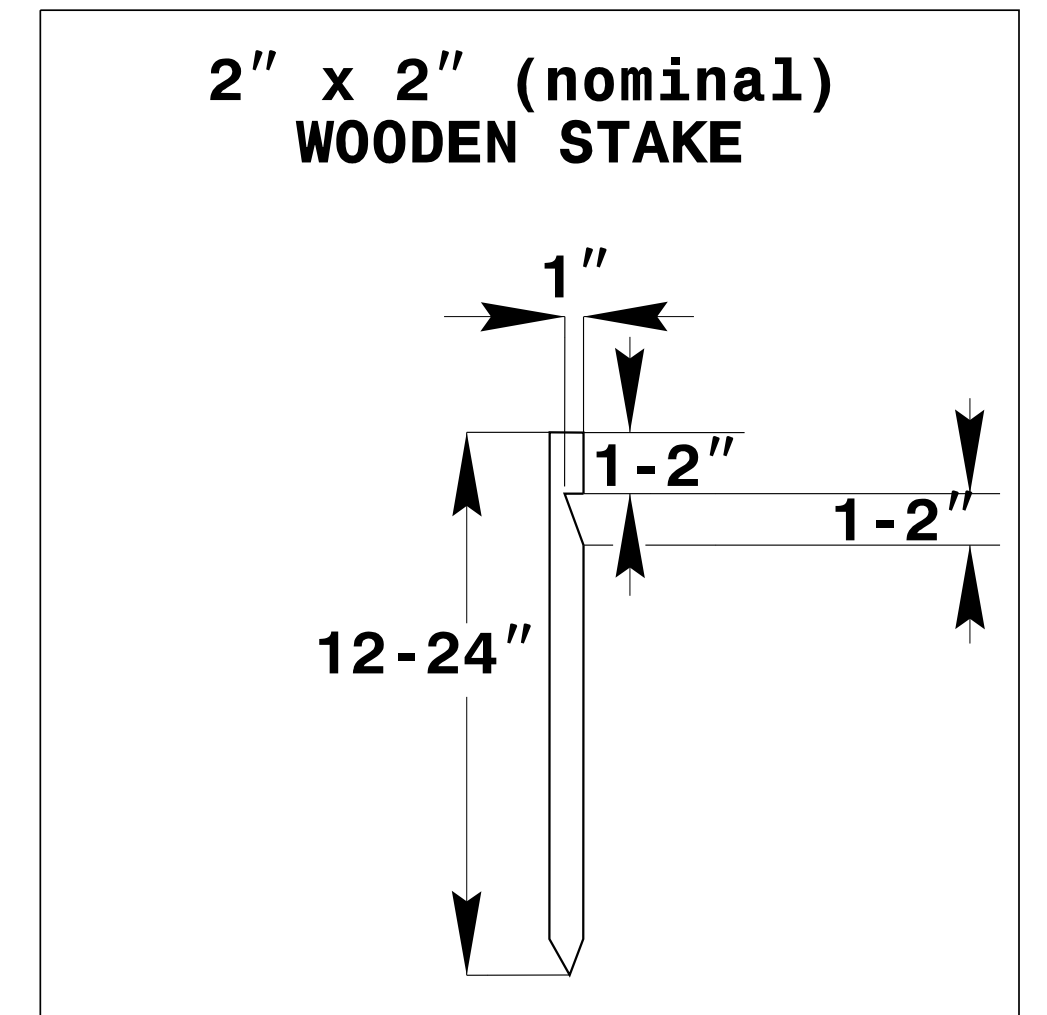
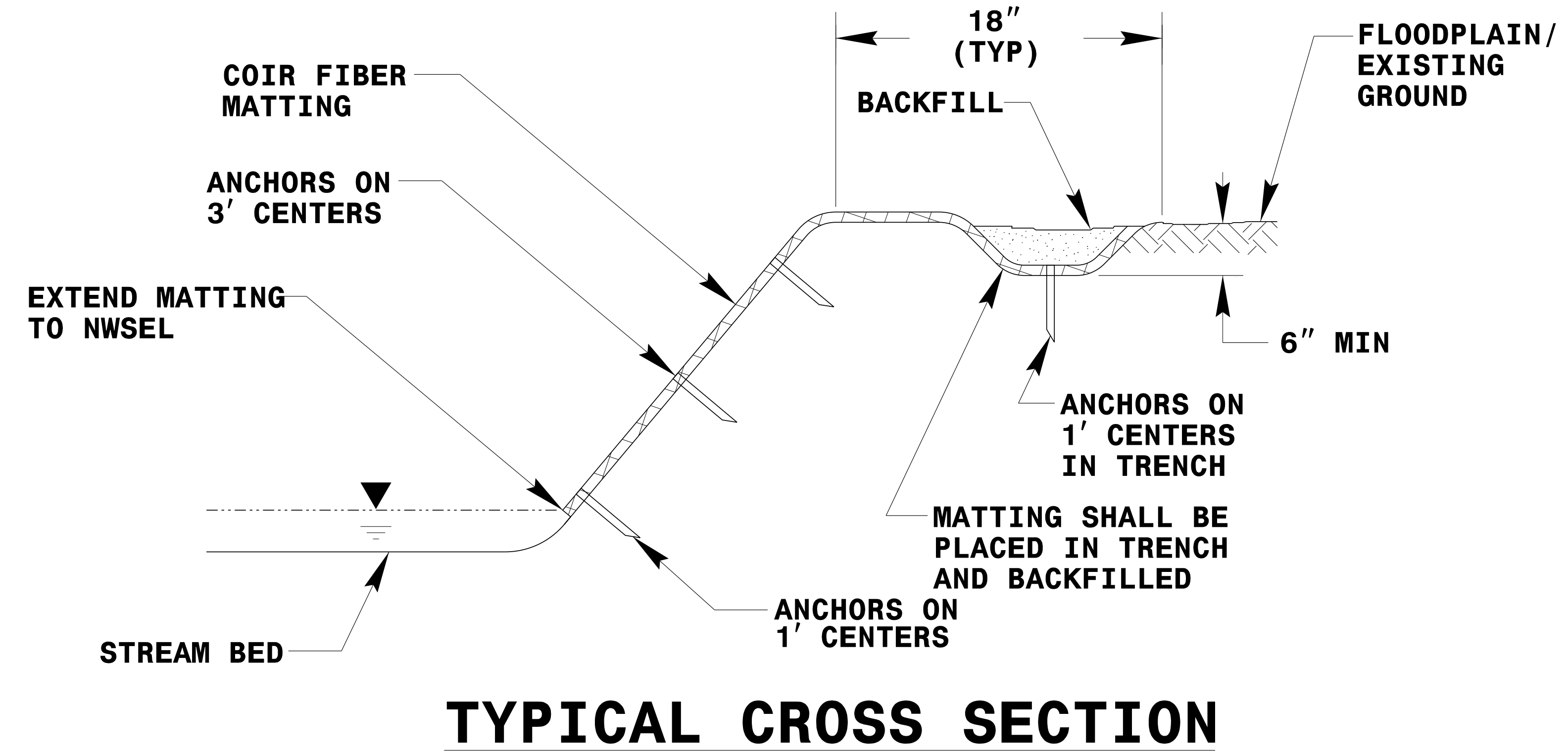
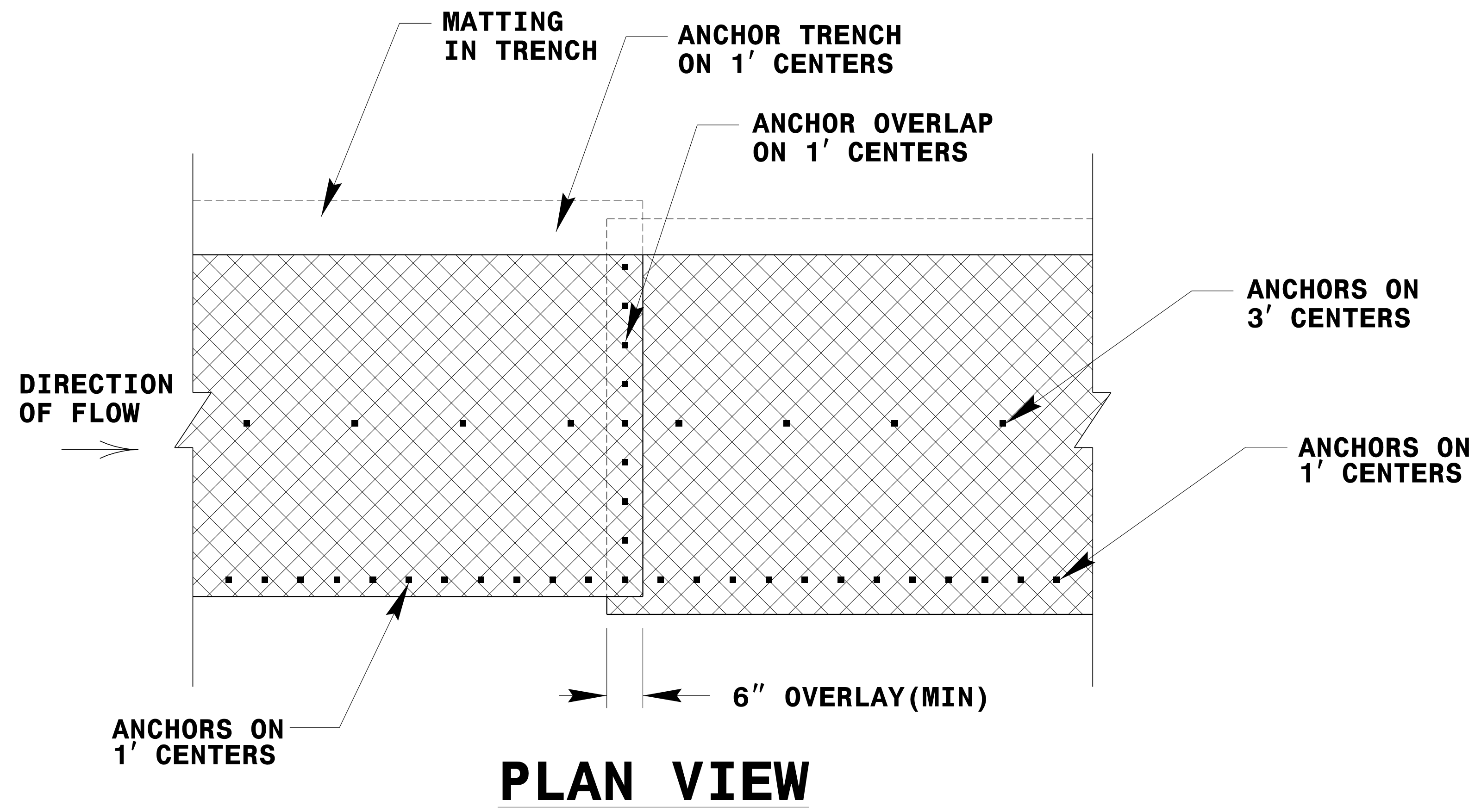
SEE PLAN SHEETS FOR AREAS TO BE PLANTED

STREAMBANK REFORESTATION

DETAIL SHEET 1 OF 2

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

PROJECT REFERENCE NO. 14SP.20561J	SHEET NO. RF-3
V&M Vaughn & Melton Consulting Engineers	
<ul style="list-style-type: none"> Asheville, NC 704-357-0488 	<ul style="list-style-type: none"> Boone, NC 828-355-9933
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ANCHOR OPTIONS

COIR FIBER MATTING DETAIL

NOT TO SCALE

STREAMBANK REFORESTATION

DETAIL SHEET 2 OF 2

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