

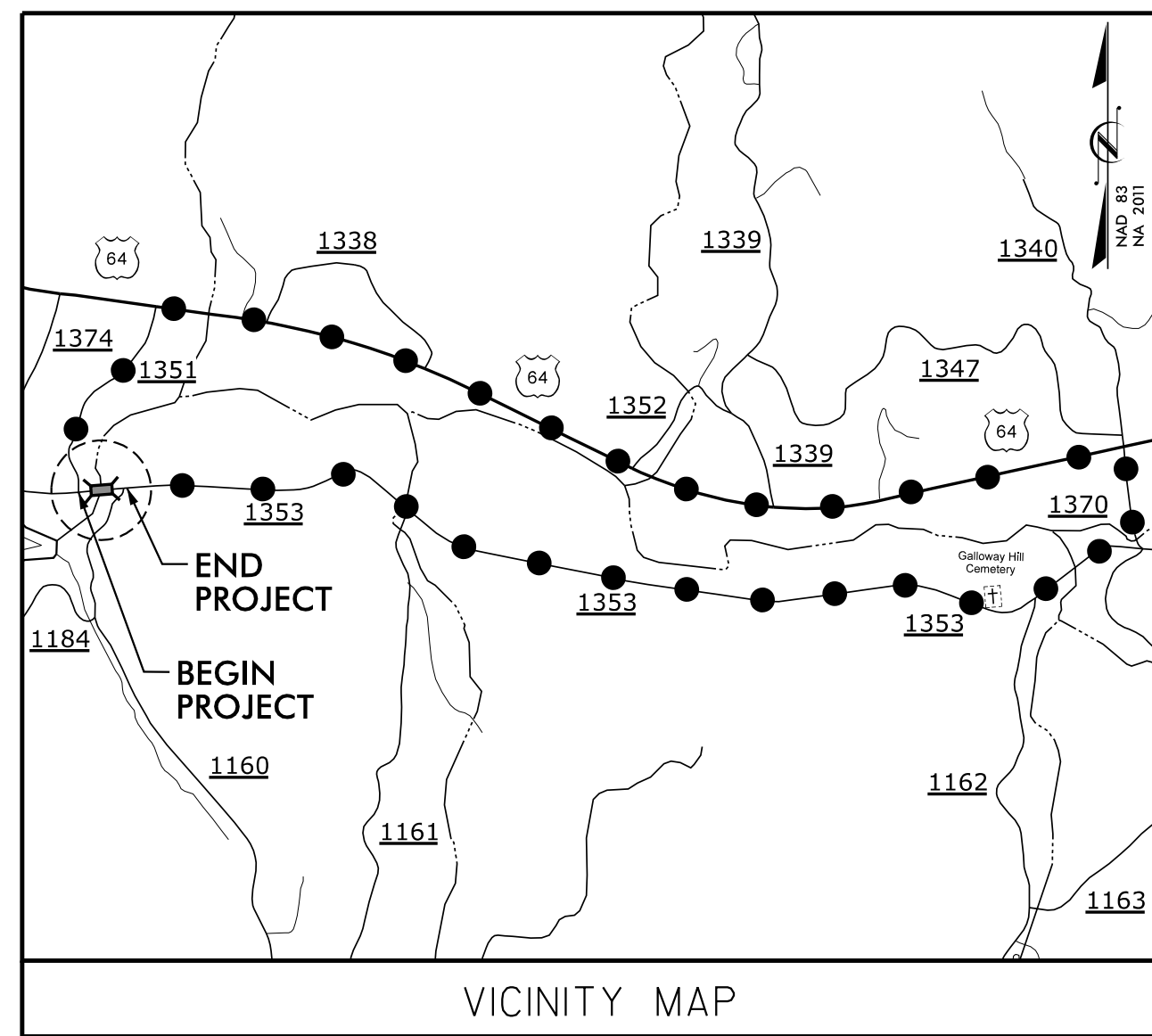
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**PROJECT: 14SP.20221.3**

**CONTRACT: DN00126**



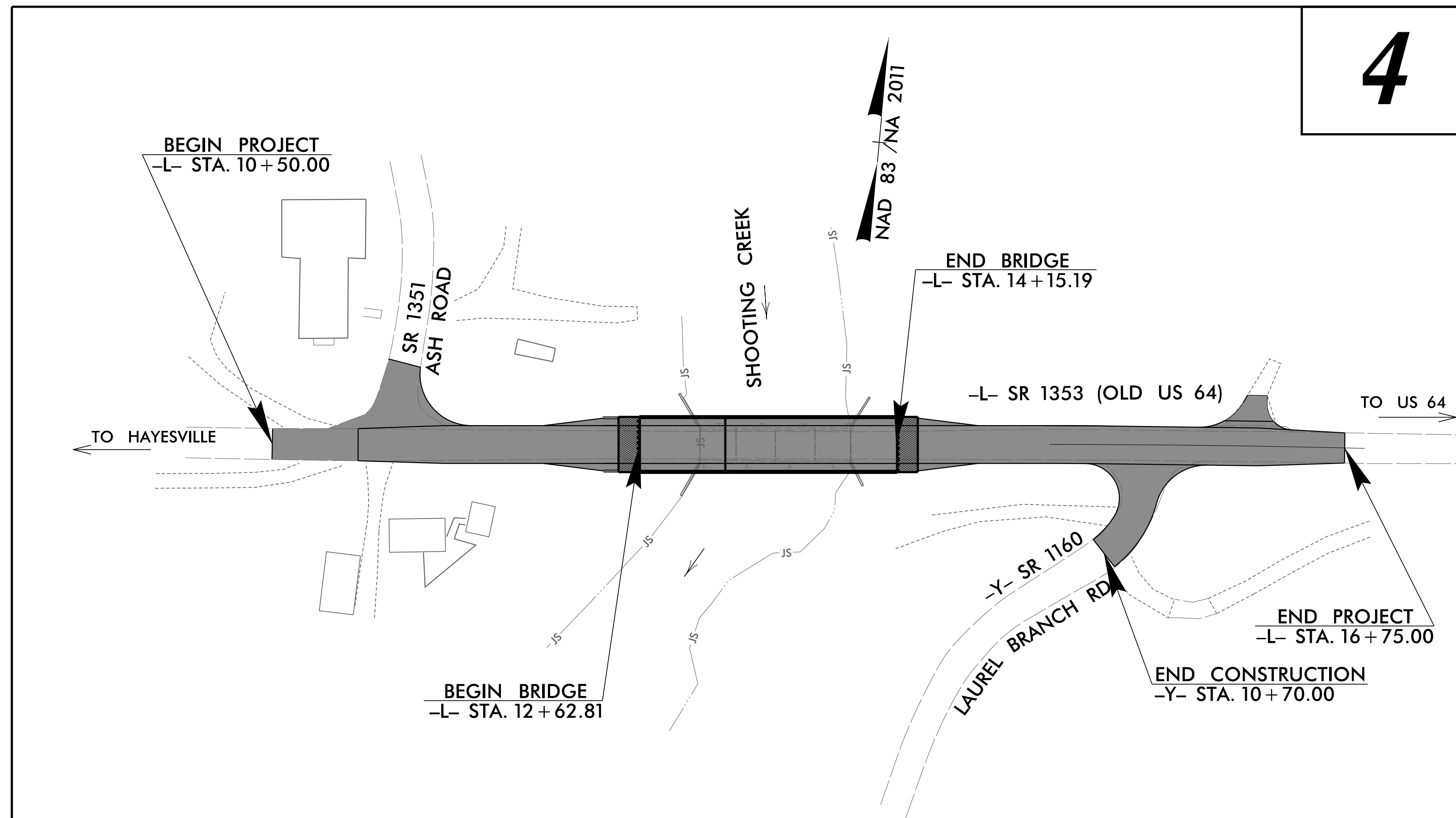
STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**CLAY COUNTY**

**LOCATION: BRIDGE NO. 101 OVER SHOOTING CREEK  
 ON SR 1353 (OLD US 64)**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURES**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	14SP.20221.3	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
14SP.20221.3	N/A	P.E.	
14SP.20221.3	N/A	RW & UTIL.	
14SP.20221.3	N/A	CONST	



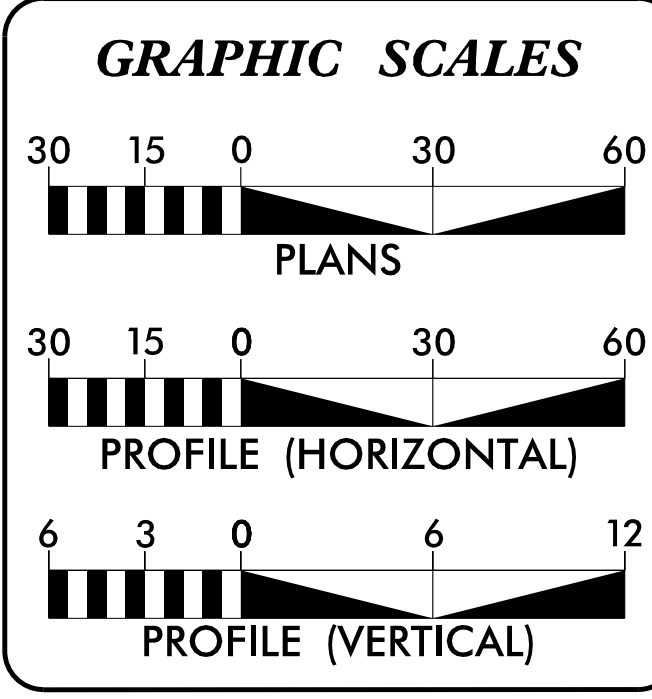
**V&M**  
**Vaughn & Melton**  
 Consulting Engineers

Asheville, North Carolina  
 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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**DESIGN DATA**

ADT 2015 = 1200  
 ADT 2025 = 3600

T = 6 %  
 V = 50 MPH

FUNC CLASS =  
 MINOR COLLECTOR

SUBREGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY PROJECT 14SP.20221.3 = 0.089 MI.  
 LENGTH STRUCTURE PROJECT 14SP.20221.3 = 0.029 MI.  
 TOTAL LENGTH PROJECT 14SP.20221.3 = 0.118 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:**  
 AUGUST 4, 2014

**LETTING DATE:**  
 OCTOBER 9, 2018

**REECE SCHULER, PE**  
 PROJECT ENGINEER

**CHASE CARVER, PE**  
 PROJECT DESIGN ENGINEER

**JOSH DEYTON, PE**  
 BRIDGE MANAGEMENT ENGINEER

NCDOT CONTACT:  
 DIVISION 14

**HYDRAULICS ENGINEER**

5/22/2018 10:49:30 AM EDT

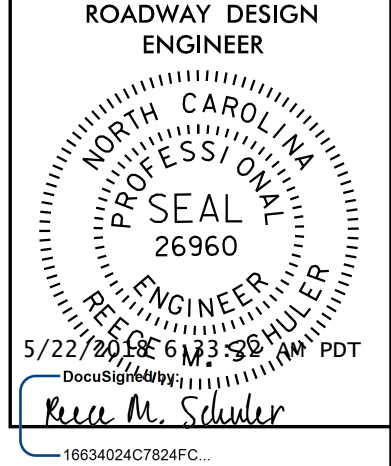
DocuSigned by:  
 Galea Cal  
 SIGNATURE: 5/22/2018 10:49:30 AM EDT

**ROADWAY DESIGN ENGINEER**

5/22/2018 6:32:17 AM PDT

DocuSigned by:  
 Reece M. Schuler  
 SIGNATURE: 5/22/2018 6:32:17 AM PDT

**DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA**



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, MILLING DETAIL, AND WEDGING DETAILS
3B-1	SUMMARY OF GUARDRAIL, SUMMARY OF PAVEMENT REMOVAL, AND SUMMARY OF EARTHWORK
3D-1	SUMMARY OF DRAINAGE
4	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-4	TRAFFIC MANAGEMENT PLANS
PMP-1	PAVEMENT MARKING PLAN
EC-1 THRU EC-5	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY
X-1 THRU X-7	CROSS-SECTIONS
S-1 THRU S-24	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

**SIDE ROADS:**

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

**UNDERDRAINS:**

UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

**GUARDRAIL:**

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

**TEMPORARY SHORING:**

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

**END BENTS:**

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

**UTILITIES:**

UTILITY OWNERS ON THIS PROJECT ARE FRONTIER COMMUNICATIONS (TELEPHONE), BLUE RIDGE MOUNTAIN EMC (POWER), AND WINDSTREAM COMMUNICATIONS (CATV).

**RIGHT-OF-WAY MARKERS:**

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT IN ACCORDANCE WITH SECTION 801 OF THE NCDOT 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 Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.02	Bridge Approach Fills - Type II Modified Approach Fill
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
840.00	Concrete Base Pad for Drainage Structures
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.36	Traffic Bearing Grated Drop Inlet - for Steel (840.37) Double Frame and Grates
840.37	Steel Grate and Frame
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

5/18/2008 11:04:11 AM \\transportation\31236-03 MTC\_14SP.20221.3 C:\ay\_101\VM-PDF\Clay\_101\100% PLANS\_Submittal.8-4-2017\Clay\_101\100% Files\Clay\_101\_Rdy\_sum\_1a.dwg User: jdhavas

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

Note: Not to Scale \*S.U.E. = Subsurface Utility Engineering

## BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
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 ---
Existing Historic Property Boundary	--- HPB ---
Known Contamination Area: Soil	-----
Potential Contamination Area: Soil	-----
Known Contamination Area: Water	-----
Potential Contamination Area: Water	-----
Contaminated Site: Known or Potential	☠ ☢

## 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	---
Proposed Lateral, Tail, Head Ditch	-----
False Sump	▽

## RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ 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 RW Marker	-----
Proposed Control of Access Line with Concrete CA Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	--- E ---
Proposed Temporary Construction Easement	--- E ---
Proposed Temporary Drainage Easement	--- TDE ---
Proposed Permanent Drainage Easement	--- PDE ---
Proposed Permanent Drainage / Utility Easement	--- DUE ---
Proposed Permanent Utility Easement	--- PUE ---
Proposed Temporary Utility Easement	--- TUE ---
Proposed 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	□ 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	●
U/G Power Line LOS B (S.U.E.*)	--- P ---
U/G Power Line LOS C (S.U.E.*)	--- P ---
U/G Power Line LOS D (S.U.E.*)	--- P ---

## TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊙
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	□
U/G Telephone Cable LOS B (S.U.E.*)	--- T ---
U/G Telephone Cable LOS C (S.U.E.*)	--- T ---
U/G Telephone Cable LOS D (S.U.E.*)	--- T ---
U/G Telephone Conduit LOS B (S.U.E.*)	--- TC ---
U/G Telephone Conduit LOS C (S.U.E.*)	--- TC ---
U/G Telephone Conduit LOS D (S.U.E.*)	--- TC ---
U/G Fiber Optics Cable LOS B (S.U.E.*)	--- T FO ---
U/G Fiber Optics Cable LOS C (S.U.E.*)	--- T FO ---
U/G Fiber Optics Cable LOS D (S.U.E.*)	--- T FO ---

## WATER:

Water Manhole	⊙
Water Meter	○
Water Valve	⊗
Water Hydrant	⊙
U/G Water Line LOS B (S.U.E.*)	--- W ---
U/G Water Line LOS C (S.U.E.*)	--- W ---
U/G Water Line LOS D (S.U.E.*)	--- W ---
Above Ground Water Line	--- A/G Water ---

## TV:

TV Pedestal	⊠
TV Tower	⊗
U/G TV Cable Hand Hole	□
U/G TV Cable LOS B (S.U.E.*)	--- TV ---
U/G TV Cable LOS C (S.U.E.*)	--- TV ---
U/G TV Cable LOS D (S.U.E.*)	--- TV ---
U/G Fiber Optic Cable LOS B (S.U.E.*)	--- TV FO ---
U/G Fiber Optic Cable LOS C (S.U.E.*)	--- TV FO ---
U/G Fiber Optic Cable LOS D (S.U.E.*)	--- TV FO ---

## GAS:

Gas Valve	◇
Gas Meter	⊙
U/G Gas Line LOS B (S.U.E.*)	--- G ---
U/G Gas Line LOS C (S.U.E.*)	--- G ---
U/G Gas Line LOS D (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 ---
SS Forced Main Line LOS B (S.U.E.*)	--- FSS ---
SS Forced Main Line LOS C (S.U.E.*)	--- FSS ---
SS Forced Main Line LOS D (S.U.E.*)	--- FSS ---

## MISCELLANEOUS:

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

# SURVEY CONTROL SHEET 21-0101

**-FINAL-**

-FINAL - ROW MARKER - IRON PIN & CAP

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+49.22	-30.28	496462.2493	588528.6277
L	14+50.00	-60.00	496519.1772	588825.4629
L	16+75.00	-15.00	496492.7383	589053.9996
L	16+75.00	15.00	496462.8284	589056.3222
L	16+75.00	25.00	496452.8584	589057.0964
L	15+84.25	25.00	496445.8327	588966.6187
L	15+30.55	30.00	496436.6828	588913.5629
L	13+95.09	32.53	496422.0405	588779.1879
L	12+85.60	32.33	496412.2907	588670.1327
L	11+50.00	25.00	496407.2688	588534.4276
L	11+00.00	15.00	496412.6881	588483.6985

-FINAL - PUE MARKER - IRON PIN & CAP

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+56.52	-68.14	496500.6160	588532.4573
L	15+13.65	-65.16	496530.0936	588888.6884
L	15+61.19	-37.20	496506.0607	588938.8125
L	16+52.65	47.17	496429.0246	589036.5298
L	16+52.65	89.23	496387.0908	589039.7860
L	16+32.65	88.28	496386.4896	589019.7725
L	16+32.65	45.36	496429.2808	589016.4497
L	10+75.61	15.00	496410.5812	588459.3047
L	10+68.16	47.09	496377.9835	588454.4595
L	10+53.71	43.71	496380.1931	588439.6234
L	10+60.26	15.00	496409.3319	588443.9511

-FINAL - PDE MARKER - IRON PIN & CAP

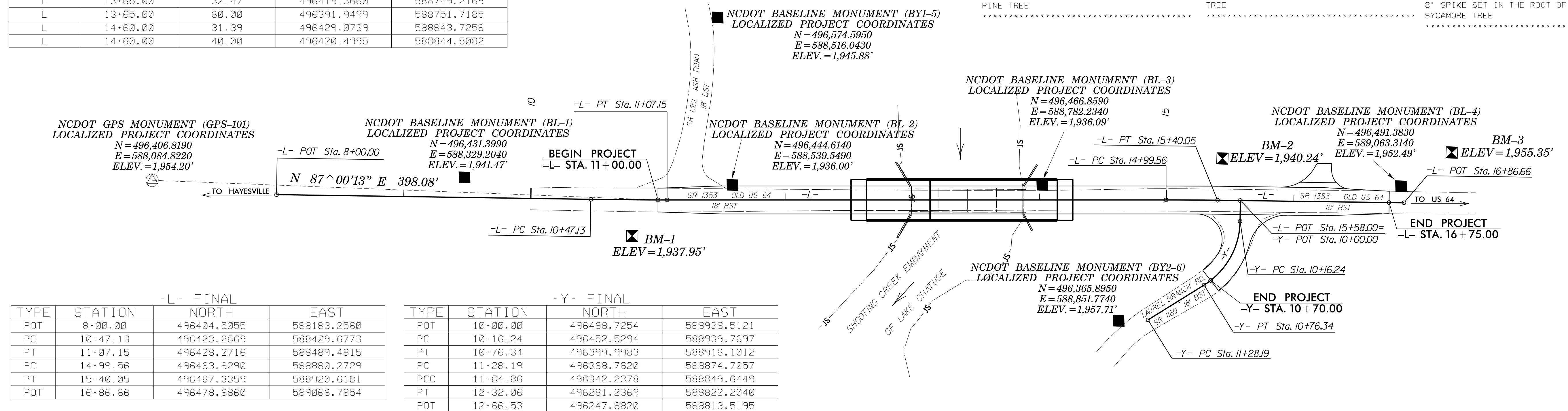
ALIGN	STATION	OFFSET	NORTH	EAST
L	13+65.00	32.47	496419.3660	588749.2169
L	13+65.00	60.00	496391.9499	588751.7185
L	14+60.00	31.39	496429.0739	588843.7258
L	14+60.00	40.00	496420.4995	588844.5082

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL1	496431.3990	588329.2040	1941.47	9+47.57	15.74 LT
2	BL2	496444.6140	588539.5490	1936.00	11+58.49	11.73 LT
3	BL3	496466.8590	588782.2340	1936.09	14+02.20	11.83 LT
4	BL4	496491.3830	589063.3140	1952.49	16+84.18	12.93 LT

BY1 POINT	DESC.	NORTH	EAST	ELEVATION	EY1 STATION	OFFSET
5	BY1-5	496574.5950	588516.0430	1945.88	10+25.67	14.56 LT
22	BL2	496444.6140	588539.5490	1936.00	11+49.23	37.61 LT

BY2 POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
44	BL4	496491.3830	589063.3140	1952.49	OUTSIDE PROJECT LIMITS	
6	BY2-6	496365.8950	588851.7740	1957.71	11+46.17	13.18 RT

BENCHMARK	ELEVATION	DESCRIPTION
BM1	1937.95	ELEVATION - 1937.95
N 496398	588465	E 588465
BL STATION 6+33.00	42	RIGHT
8" SPIKE SET IN BASE OF A 15' WHITE PINE TREE		
BM2	1940.24	ELEVATION - 1940.24
N 496500	588921	E 588921
BL STATION 10+96.00	21	LEFT
8" SPIKE SET IN BASE OF A 24' WALNUT TREE		
BM3	1955.35	ELEVATION - 1955.35
N 496521	589101	E 589101
BL STATION 12+37.00		
N 51°13'39.41" E DIST 48.01		
8" SPIKE SET IN THE ROOT OF A 14' SYCAMORE TREE		



-L- FINAL

TYPE	STATION	NORTH	EAST
POT	8+00.00	496404.5055	588183.2560
PC	10+47.13	496423.2669	588429.6773
PT	11+07.15	496428.2716	588489.4815
PC	14+99.56	496463.9290	588880.2729
PT	15+40.05	496467.3359	588920.6181
POT	16+86.66	496478.6860	589066.7854

-Y- FINAL

TYPE	STATION	NORTH	EAST
POT	10+00.00	496468.7254	588938.5121
PC	10+16.24	496452.5294	588939.7697
PT	10+76.34	496399.9983	588916.1012
PC	11+28.19	496368.7620	588874.7257
PCC	11+64.86	496342.2378	588849.6449
PT	12+32.06	496281.2369	588822.2040
POT	12+66.53	496247.8820	588813.5195

## DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "210101 G-101" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 496406.8190(±) EASTING: 588084.8220(±) ELEVATION: 1954.20 FT. THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999791778 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "210101 G-101" TO -L- STATION 11+00.00 IS 398.08' AT N87°00'13"E ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

**GEOID MODEL - G12NC**

**NOTE: DRAWING NOT TO SCALE**

## 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:  
210101\_LS\_CONTROL.TXT

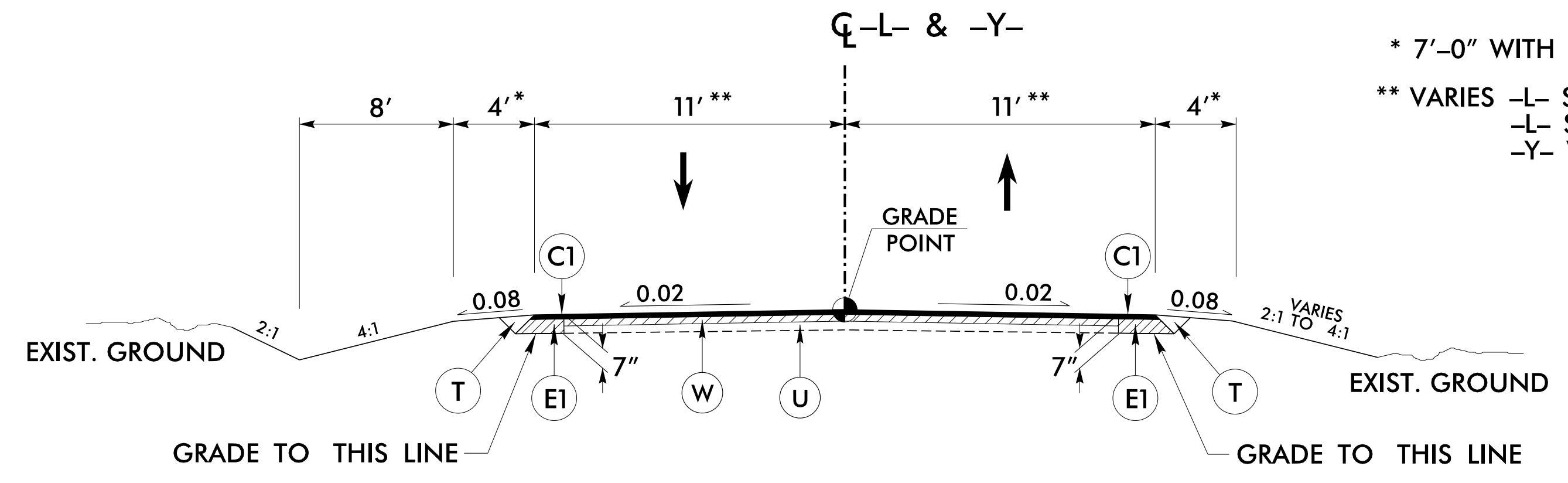
SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER CONTROL INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

⊕ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT. PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

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

PROJECT REFERENCE NO. 14SP.20221.3	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 

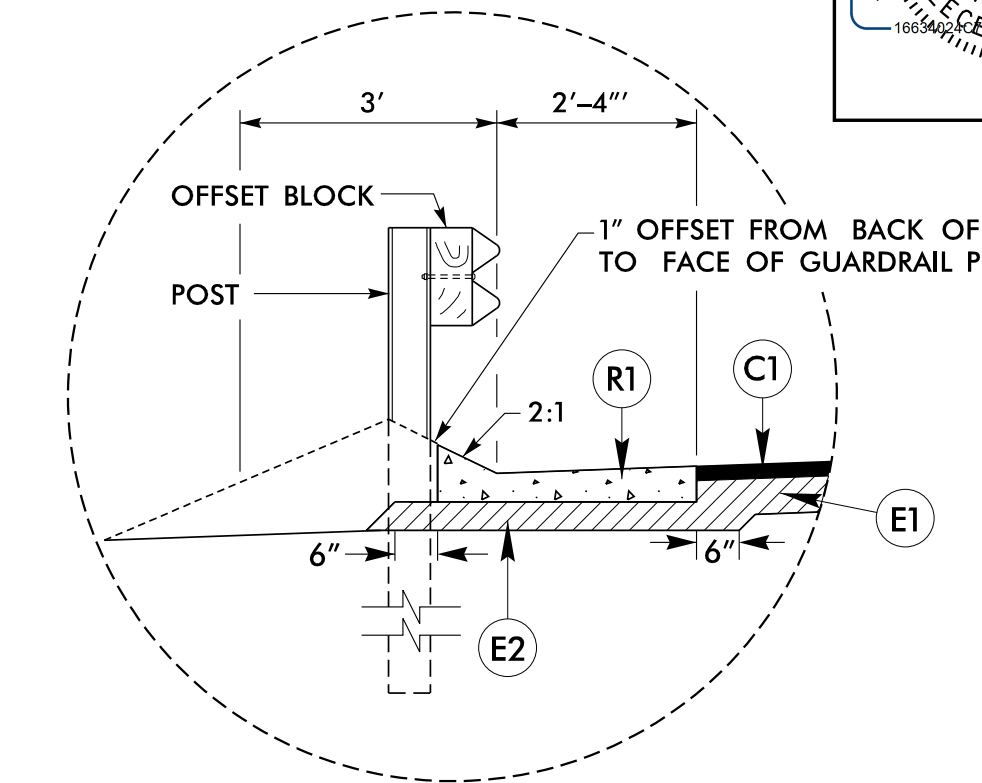


**TYPICAL SECTION NO. 1**

\* 7'-0" WITH GUARDRAIL  
 \*\* VARIES -L- STA. 11+00 TO 11+50  
 -L- STA. 16+25 TO 16+75  
 -Y- VARIES

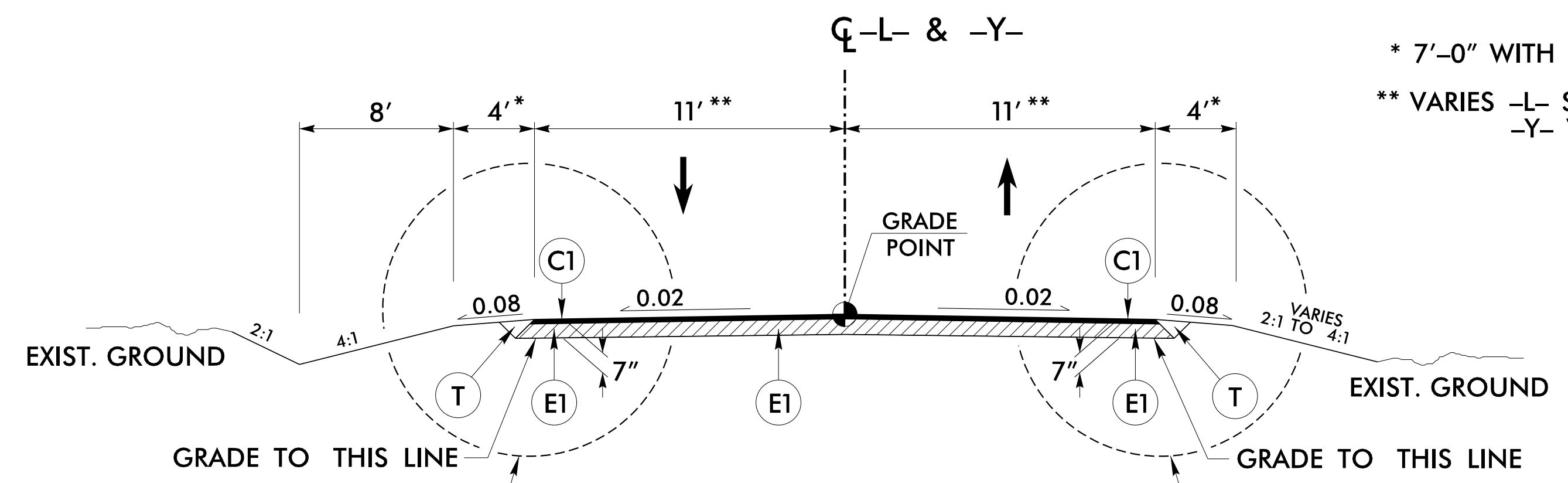
**USE TYPICAL SECTION NO. 1**

-L- STA. 11+00 TO -L- STA. 12+00  
 -L- STA. 16+25 TO -L- STA. 16+75  
 -Y- STA. 10+45 TO -L- STA. 10+70



**INSET A**

SBG -L- STA. 12+43 LT TO BEGIN APPROACH SLAB

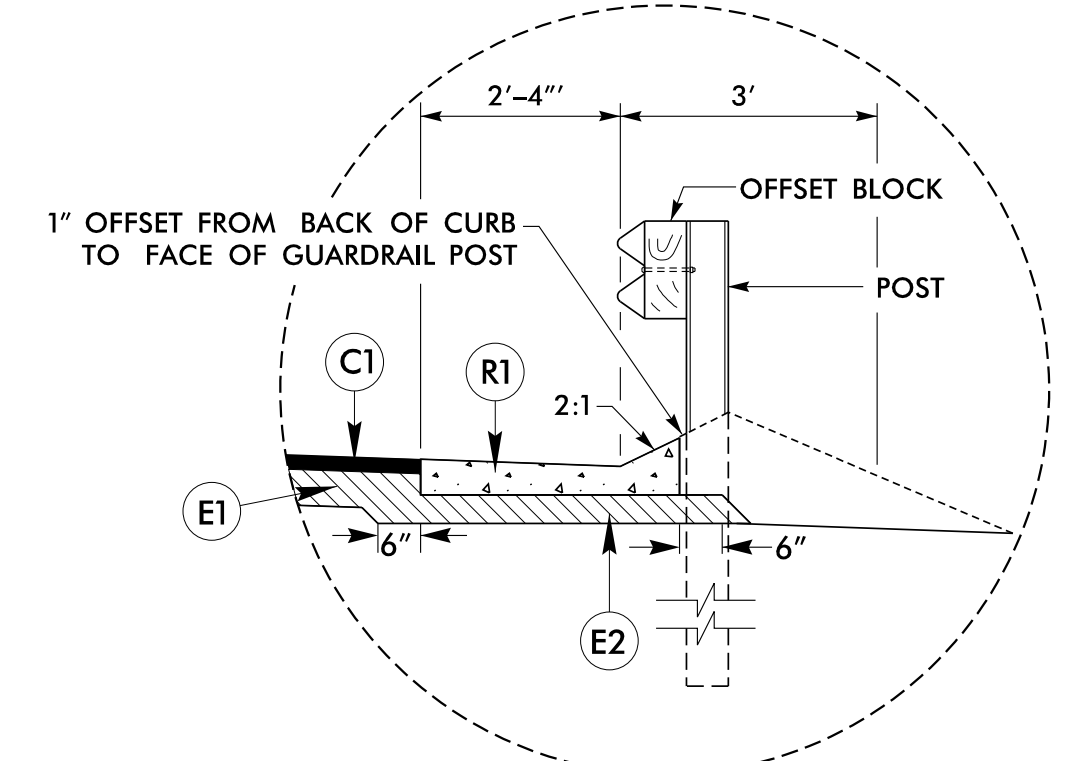


**TYPICAL SECTION NO. 2**

\* 7'-0" WITH GUARDRAIL  
 \*\* VARIES -L- STA. 16+25 TO 16+40  
 -Y- VARIES

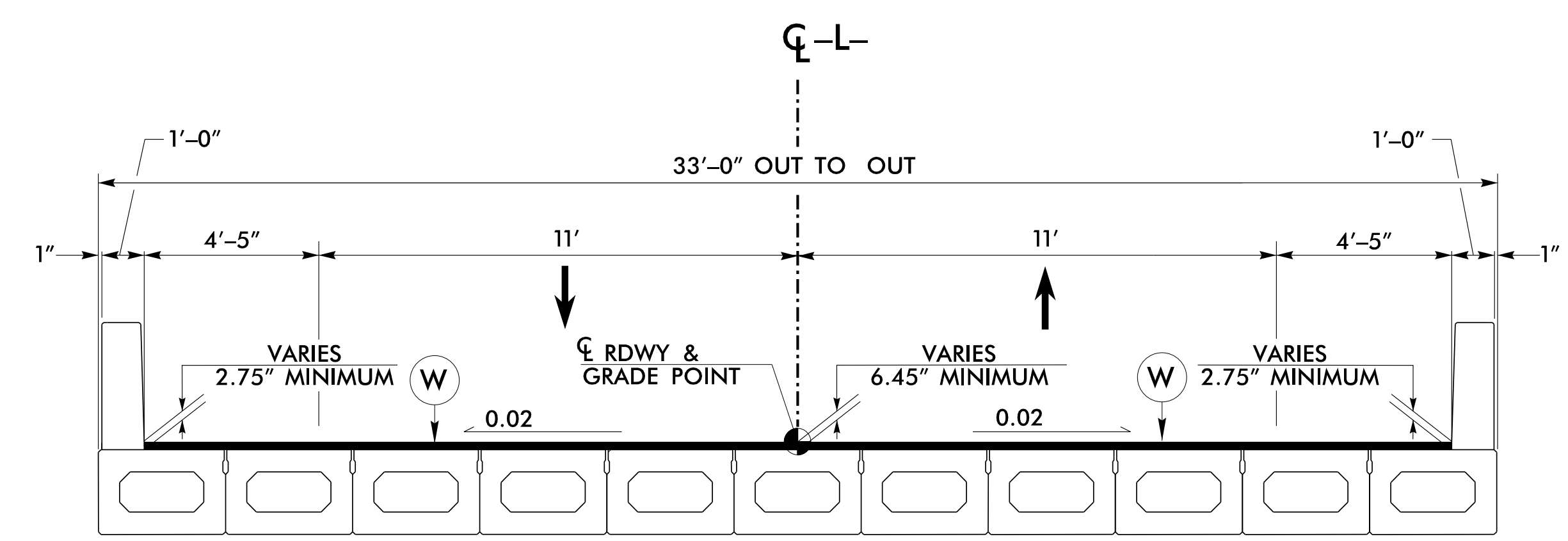
**USE TYPICAL SECTION NO. 2**

-L- STA. 12+00 TO -L- STA. 12+62.81 (BEGIN BRIDGE)  
 -L- STA. 14+15.19 (END BRIDGE) TO -L- STA. 16+25  
 -Y- STA. 10+11 TO -L- STA. 10+45



**INSET B**

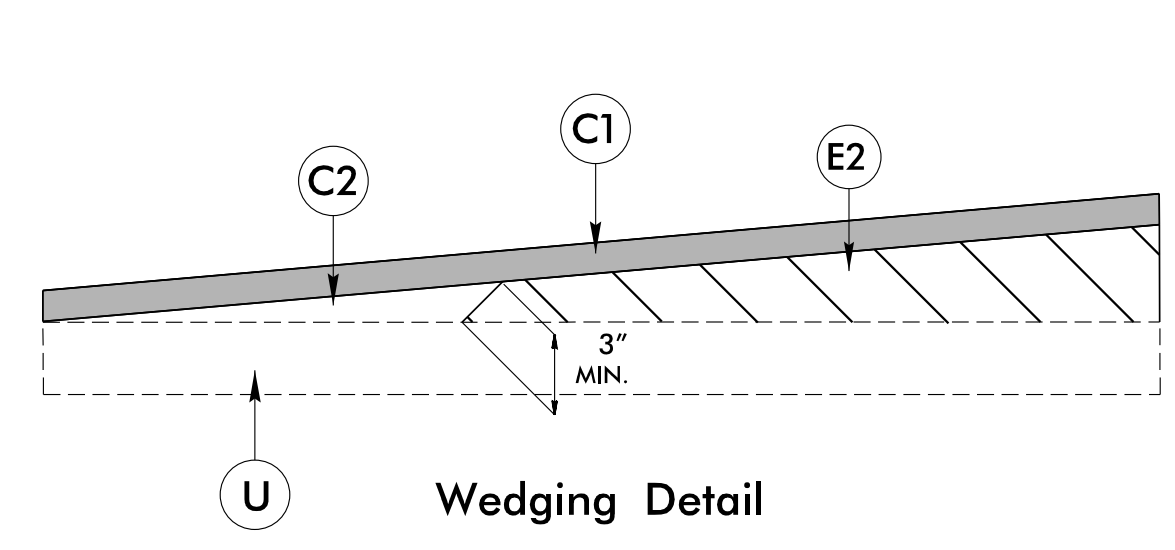
SBG -L- STA. 12+43 RT TO BEGIN APPROACH SLAB



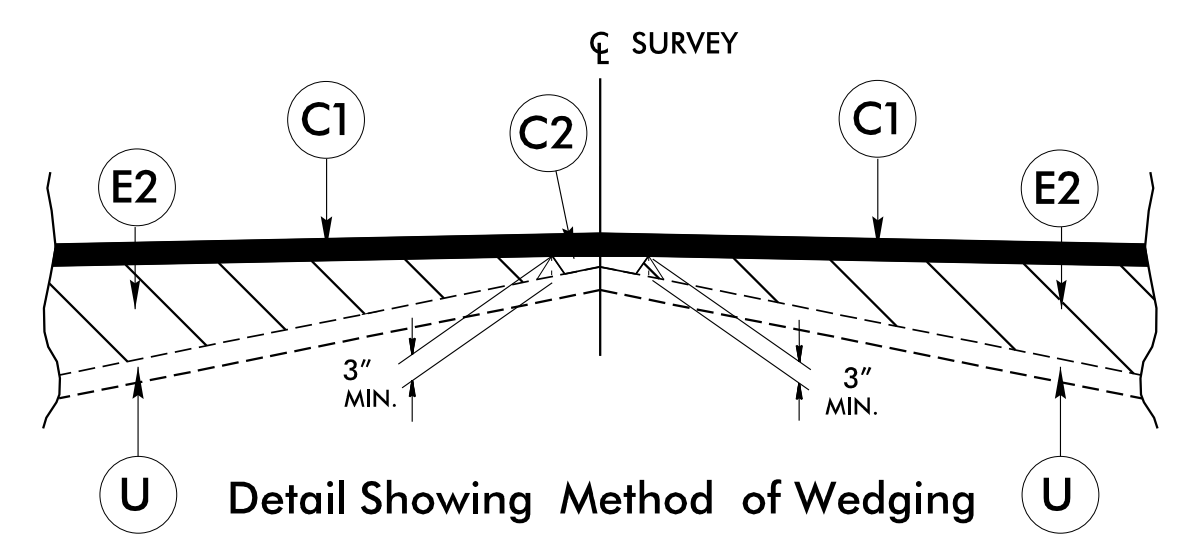
**TYPICAL SECTION NO. 3**

**USE TYPICAL SECTION NO. 3**

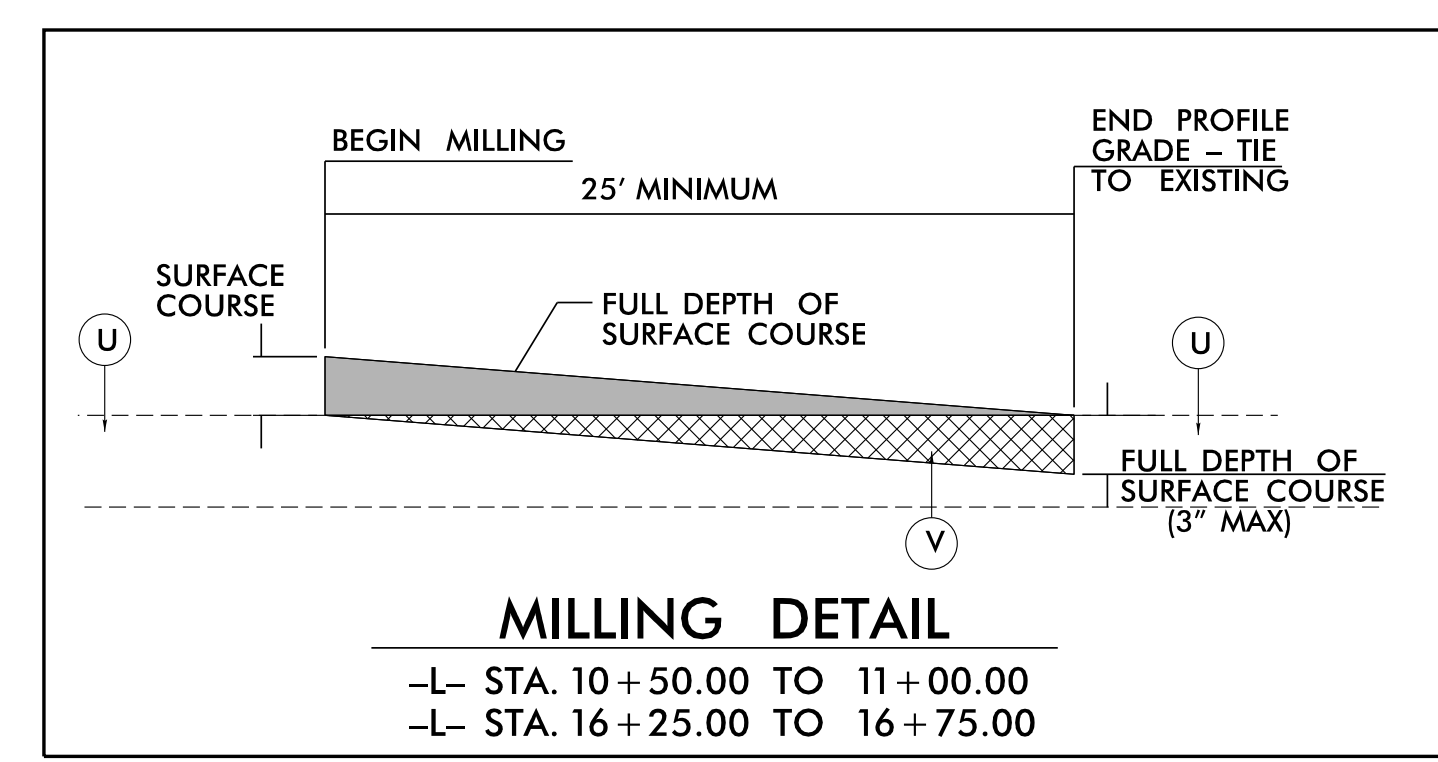
-L- STA. 12+62.81 (BEGIN BRIDGE) TO  
 -L- STA. 14+15.19 (END BRIDGE)



**Wedging Detail**



**Detail Showing Method of Wedging**



**MILLING DETAIL**

-L- STA. 10+50.00 TO 11+00.00  
 -L- STA. 16+25.00 TO 16+75.00

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 B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
R1	SHOULDER BERM GUTTER (NCDOT STANDARD DRAWING NO. 846.01)
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING BITUMINOUS PAVEMENT. 1 1/2" DEPTH.
W	PROPOSED WEDGING (SEE APPROPRIATE DETAILS)

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

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**PAVEMENT REMOVAL SUMMARY**

IN SQUARE YARDS					
LINE	LOCATION	ASPHALT REMOVAL	ASPHALT BREAK-UP	CONCRETE REMOVAL	CONCRETE REMOVAL
-L-	12+00 TO 12+51	96			
-L-	14+26 TO 15+80		308		
-L-	15+80 TO 16+25	89			
-Y-	10+11 TO 10+45	75			
	TOTAL	260	308		
	SAY	265	310		

**SUMMARY OF EARTHWORK**

IN CUBIC YARDS					
LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
SUMMARY NO.1					
-L- STA. 11+00.00 TO STA. 12+62.81 (BEG BRIDGE)	66		128	62	
SUBTOTAL SUMMARY NO.1	66		128	62	
SUMMARY NO.2					
-L- STA. 14+15.19 (END BRIDGE) TO STA. 16+75.00	87		995	908	
SUBTOTAL SUMMARY NO.2	87		995	908	
PROJECT SUBTOTAL					
EST. 5% FOR REPLACING TOP SOIL ON BORROW PITS				49	
GRAND TOTAL	153		1,123	1,019	
SAY	160			1,025	

CONTINGENCY ITEMS:  
INCIDENTAL STONE = 50 TONS  
UNDERCUT EXCAVATION = 50 CY  
SELECT GRANULAR MATERIAL = 50 CY  
CLASS IV SUBGRADE STABILIZATION = 50 TONS  
GEOTEXTILE FOR SOIL STABILIZATION = 50 SY

Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, clearing and grubbing, and removal of existing pavement 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**

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	XI MOD	XI	GREU TL-3	GREU TL-2	IA-350 TL-2	TYPE III	TYPE III SHOP CURVED	B-77	AT-1	EA	G	NG						
-L-	11+81.56	12+62.81	LT	81.25				12+62.81	4	7		50					1													
-L-	11+81.56	12+62.81	RT	81.25			12+62.81		4	7	50						1													
-L-	14+15.39	15+59.14	LT	143.75			14+15.39		4	7	50						1													
-L-	14+15.39	14+96.64	RT	81.25				14+15.39	4	7		50					1													
SUBTOTAL				387.50													4				4									
LESS DEDUCTIONS FOR ANCHORS																														
GREU 350 TL-3 4 @ 50' =				-200.00																										
TYPE III 4 @ 18.75' =				-75.00																										
PROJECT TOTALS:				112.50																										
ADDITIONAL GUARDRAIL POSTS=5 EA.																														

5/21/2018 1:00 PM I:\transportation\31236-03 MTC 14SP.20221.3 Cl by 101\Roadway\Pro\CLAY\_101.rdy\_sum.dgn

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

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

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".

Main data table with columns for Station, Location, Structure No., Pipe Type (Drainage, C.S., R.C. Class III/IV), Pipe Size, Slope, Invert Elevation, Endwalls, Quantities, Frame/Grates, and Remarks. Includes a summary row at the bottom of the data section.

- ABBREVIATIONS
- C.B. CATCH BASIN
- N.D.I. NARROW DROP INLET
- D.I. DROP INLET
- G.D.I. GRATED DROP INLET
- G.D.I. (N.S.) GRATED DROP INLET (NARROW SLOT)
- J.B. JUNCTION BOX
- M.H. MANHOLE
- T.B.D.I. TRAFFIC BEARING DROP INLET
- T.B.J.B. TRAFFIC BEARING JUNCTION BOX

4.104/06  
12/20/2016  
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8/17/99

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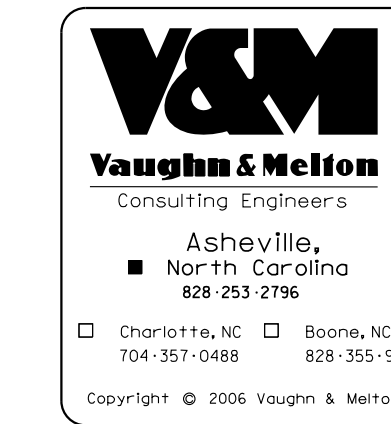
SEE SHEETS S-1 THRU S-24  
FOR STRUCTURE PLANS

PROPOSED FULL DEPTH  
PAVED SHOULDER

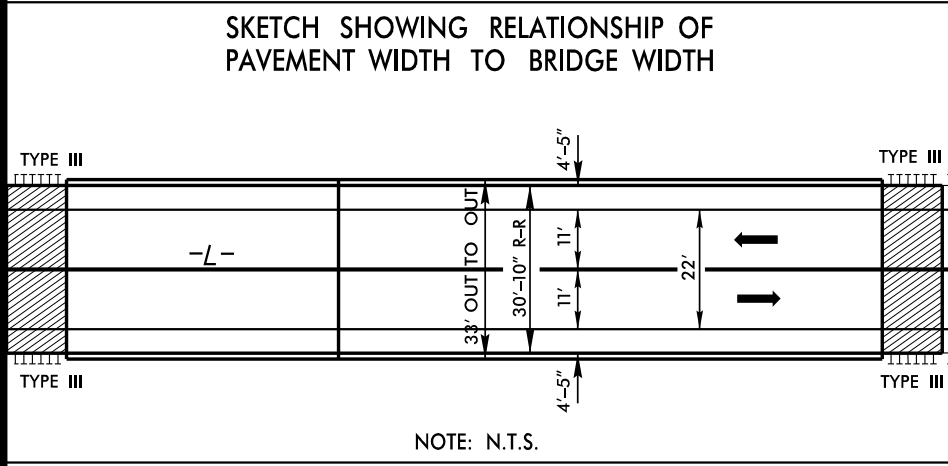
SHOULDER BERM & GUTTER -L- STA. 12+43  
TO BEGIN APPROACH SLAB LT & RT

-L- CURVE DATA

PI Sta 10+77.4 PI Sta 15+99.81  
 $\Delta = 0' 51' 34.7" (LT)$   $\Delta = 0' 46' 23.8" (RT)$   
 $D = 1' 25' 56.6"$   $D = 1' 54' 35.5"$   
 $L = 60.0'$   $L = 40.49'$   
 $T = 30.0'$   $T = 20.24'$   
 $R = 4,000.00'$   $R = 3,000.00'$



PROJECT REFERENCE NO. 14SP.20221.3 SHEET NO. 4  
ROADWAY DESIGN ENGINEER  
HYDRAULICS ENGINEER  
Professional Engineer seals for Kelly R. Swanger and W. Galen Cail

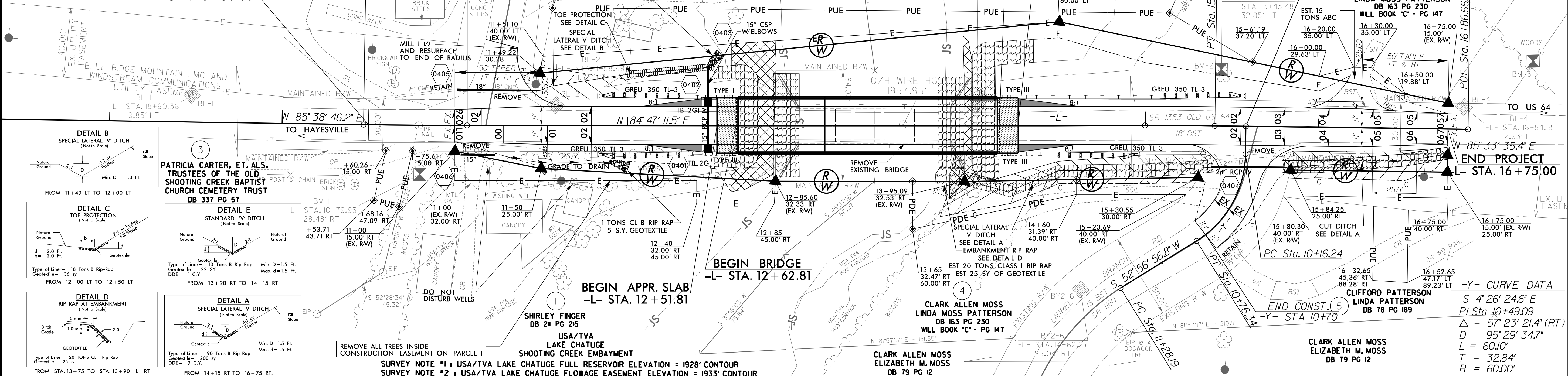


BEGIN PROJECT  
-L- STA. 10+50.00

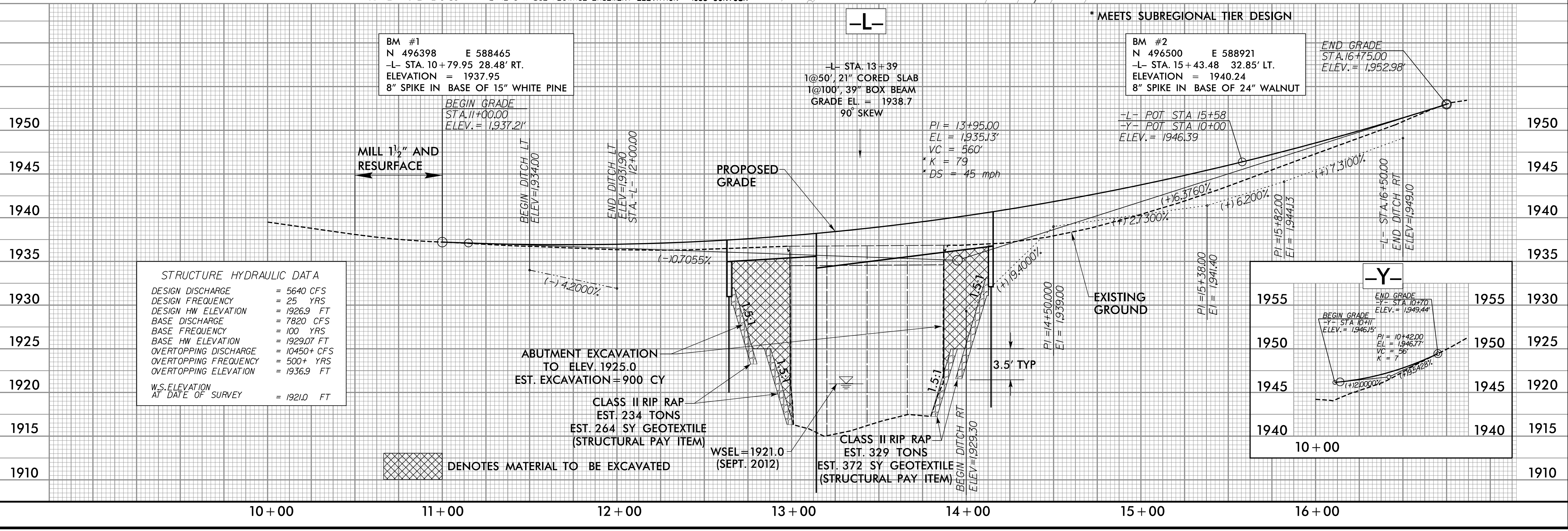
END BRIDGE  
-L- STA. 14+15.19

END APPR. SLAB  
-L- STA. 14+26.19

-L- POT STA 15+58  
-Y- POT STA 10+00



DETAIL B SPECIAL LATERAL 'V' DITCH  
DETAIL C TOE PROTECTION  
DETAIL D RIP RAP AT EMBANKMENT  
DETAIL E STANDARD 'V' DITCH  
DETAIL A SPECIAL LATERAL 'V' DITCH



STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 5640 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 1926.9 FT
BASE DISCHARGE	= 7820 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 1929.07 FT
OVERTOPPING DISCHARGE	= 10450+ CFS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 1936.9 FT
W.S. ELEVATION AT DATE OF SURVEY	= 1921.0 FT

BM #1  
N 496398 E 588465  
-L- STA. 10+79.95 28.48' RT.  
ELEVATION = 1937.95  
8" SPIKE IN BASE OF 15" WHITE PINE

-L- STA. 13+39  
1@50', 21" CORED SLAB  
1@100', 39" BOX BEAM  
GRADE EL. = 1938.7  
90° SKEW

BM #2  
N 496500 E 588921  
-L- STA. 15+43.48 32.85' LT.  
ELEVATION = 1940.24  
8" SPIKE IN BASE OF 24" WALNUT

ABUTMENT EXCAVATION  
TO ELEV. 1925.0  
EST. EXCAVATION = 900 CY

CLASS II RIP RAP  
EST. 234 TONS  
EST. 264 SY GEOTEXTILE  
(STRUCTURAL PAY ITEM)

CLASS II RIP RAP  
EST. 329 TONS  
EST. 372 SY GEOTEXTILE  
(STRUCTURAL PAY ITEM)

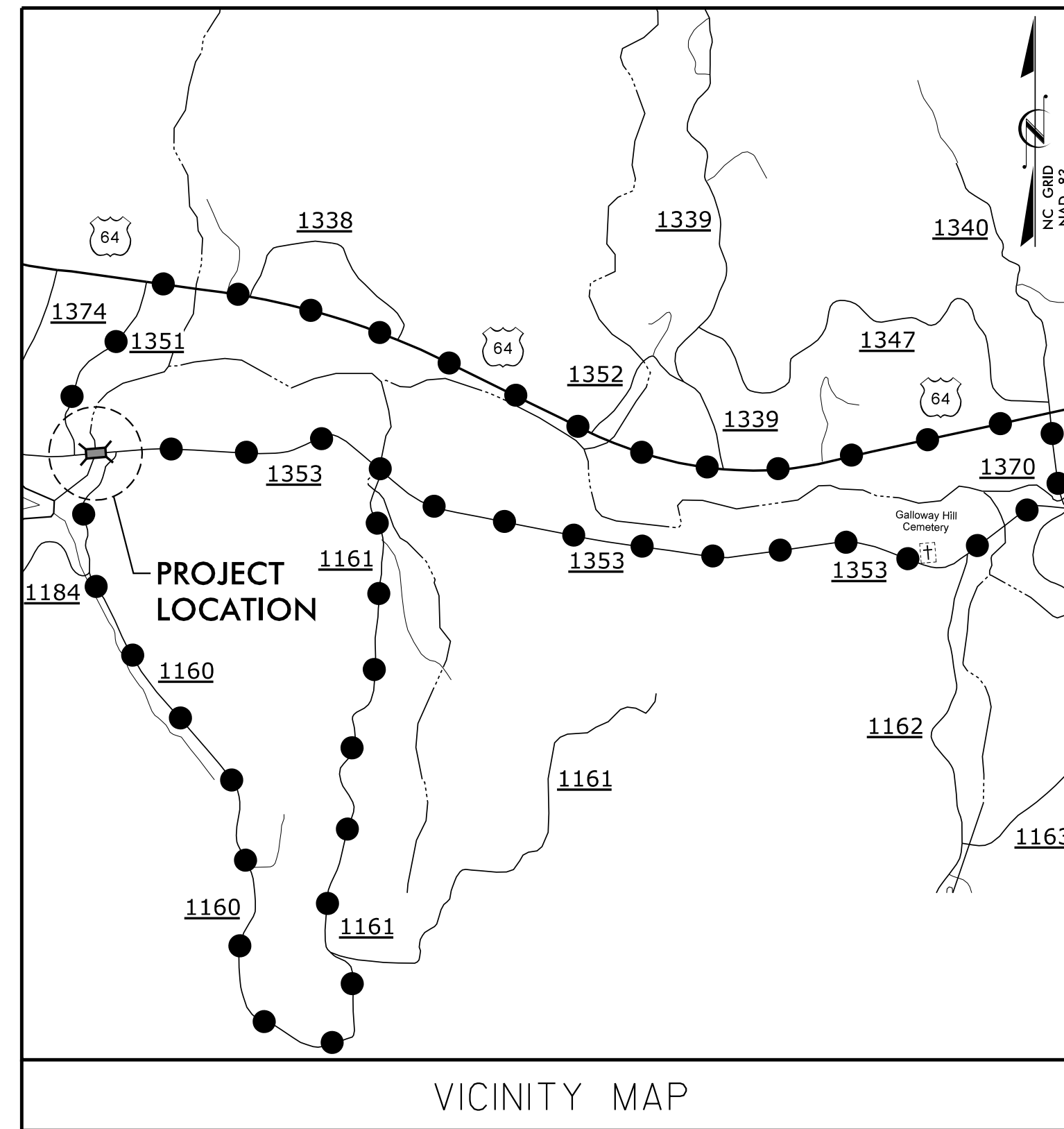
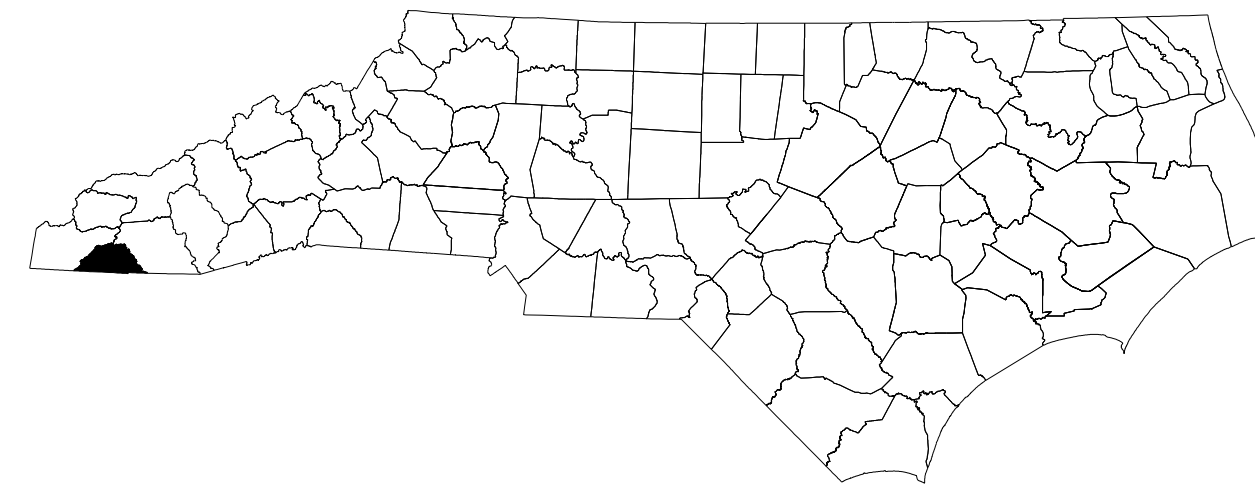
10+00 11+00 12+00 13+00 14+00 15+00 16+00

REVISIONS  
8/17/2017 S:\transportation\31236-03 MTC 14SP.20221.3 Cey 101.Roadway\Proj\CLAY.101\_rdy\_psh.dgn

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**CLAY COUNTY**  
**DIVISION 14**



VICINITY MAP  
OFF-SITE DETOUR ROUTE —●—●—●—●—

**LOCATION: BRIDGE NO.101 OVER SHOOTING CREEK ON SR 1353 (OLD US 64)**

**INDEX OF SHEETS**

SHEET NO.	TITLE
TMP-1	TITLE SHEET, LEGEND, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, GENERAL NOTES AND TRANSPORTATION OPERATIONS
TMP-2 THRU TMP-2A	SPECIAL SIGN DESIGN(S)
TMP-3	TEMPORARY TRAFFIC CONTROL DETAIL, PHASE I NOTES OFFSITE DETOUR SIGNING AND ROAD CLOSURE
TMP-4	TEMPORARY TRAFFIC CONTROL DETAIL, PHASE II NOTES OFFSITE DETOUR SIGNING AND ROAD CLOSURE

**LEGEND**

GENERAL

—▶— NORTH ARROW

TRAFFIC CONTROL DEVICES

▬▬▬ BARRICADE (TYPE III)

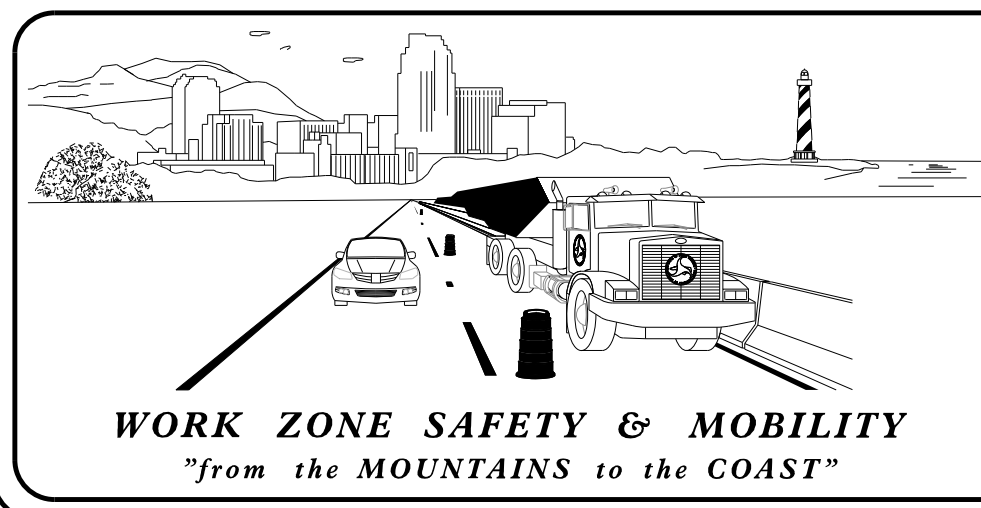
TEMPORARY SIGNING

┌ STATIONARY SIGN

SHEET NO.  
TMP-1

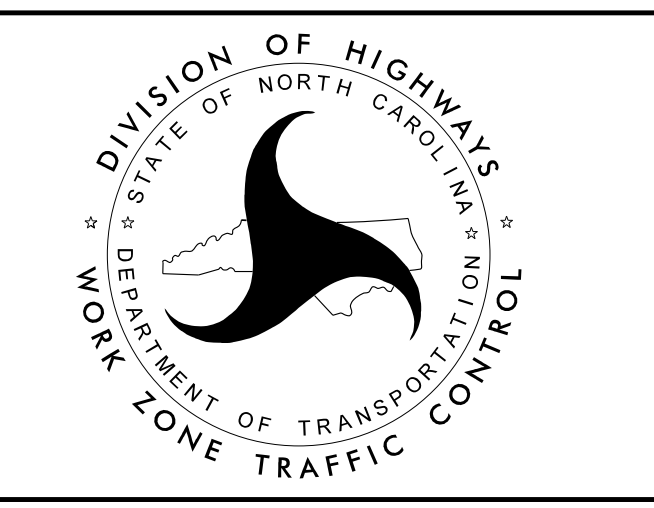
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11/8/2016 C:\Transportation\3236-03 MTC 14SP.20221.3 Clay 101\TrafficControl\TCP\BD-511\_101\_tmp-1.dgn User:rcjmd@tel



**N.C.D.O.T. WORK ZONE TRAFFIC CONTROL**  
1580 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1580  
1020 BIRCH RIDGE DRIVE, RALEIGH, NC 27610 (DELIVERY)  
PHONE: (919) 250-4094 FAX: (919) 250-4098

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER  
LLOYD D. BROWN, P.E. TRAFFIC CONTROL PROJECT ENGINEER  
AARON CARVER, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER  
AARON CARVER, P.E. TRAFFIC CONTROL DESIGN ENGINEER



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Asheville, North Carolina 828-253-2796  
Charlotte, North Carolina 784-357-0488  
Boone, North Carolina 828-355-9933

**PROJECT ENGINEER** LLOYD D. BROWN, P.E.  
**DESIGN ENGINEER** AARON CARVER, P.E.

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

APPROVED: Lloyd D. Brown  
DATE: 11/8/2016

SEAL  
NORTH CAROLINA PROFESSIONAL ENGINEER  
LLOYD D. BROWN  
2019

# 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 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
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.08	PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

## 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 IN TWO PHASES DURING THE CONSTRUCTION PERIOD.

THE OFF-SITE DETOUR IN PHASE I WILL INCLUDE SR 1351 (ASH ROAD), US 64, SR 1340 (GEISKY CREEK CONNECTION), AND SR 1353 (OLD US 64) (SEE SHEET TMP-3).

THE OFF-SITE DETOUR IN PHASE II WILL INCLUDE SR 1160 (LAUREL BRANCH ROAD) AND SR 1161 (HOT HOUSE ROAD) AS WELL AS THE ROUTES LISTED ABOVE FOR PHASE I (SEE SHEET TMP-4).

# 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 TWENTY ONE (21) 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 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 MARKINGS

F) INSTALL PAVEMENT MARKINGS (PAINT) ON THE FINAL SURFACE OF THE ENTIRE PROJECT.

G) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

# LOCAL NOTES

### LOCAL NOTES:

- EMERGENCY VEHICLE ACCESS MUST BE MAINTAINED AT ALL TIMES.
- NOTIFY CLAY COUNTY EMERGENCY SERVICES AND CLAY COUNTY SCHOOL BOARD 30 DAYS BEFORE ANY LANE CLOSURES.

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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  
 Atlanta, GA 770-627-3509  
 Charlotte, NC 704-357-0488  
 Boone, NC 828-355-9933

Asheville, North Carolina 828-253-2796

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APPROVED *Lloyd D. Brown* DATE: 5/29/2014 4:13:09 AM PBT  
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 LLOYD D. BROWN  
 33804DF17F5748E

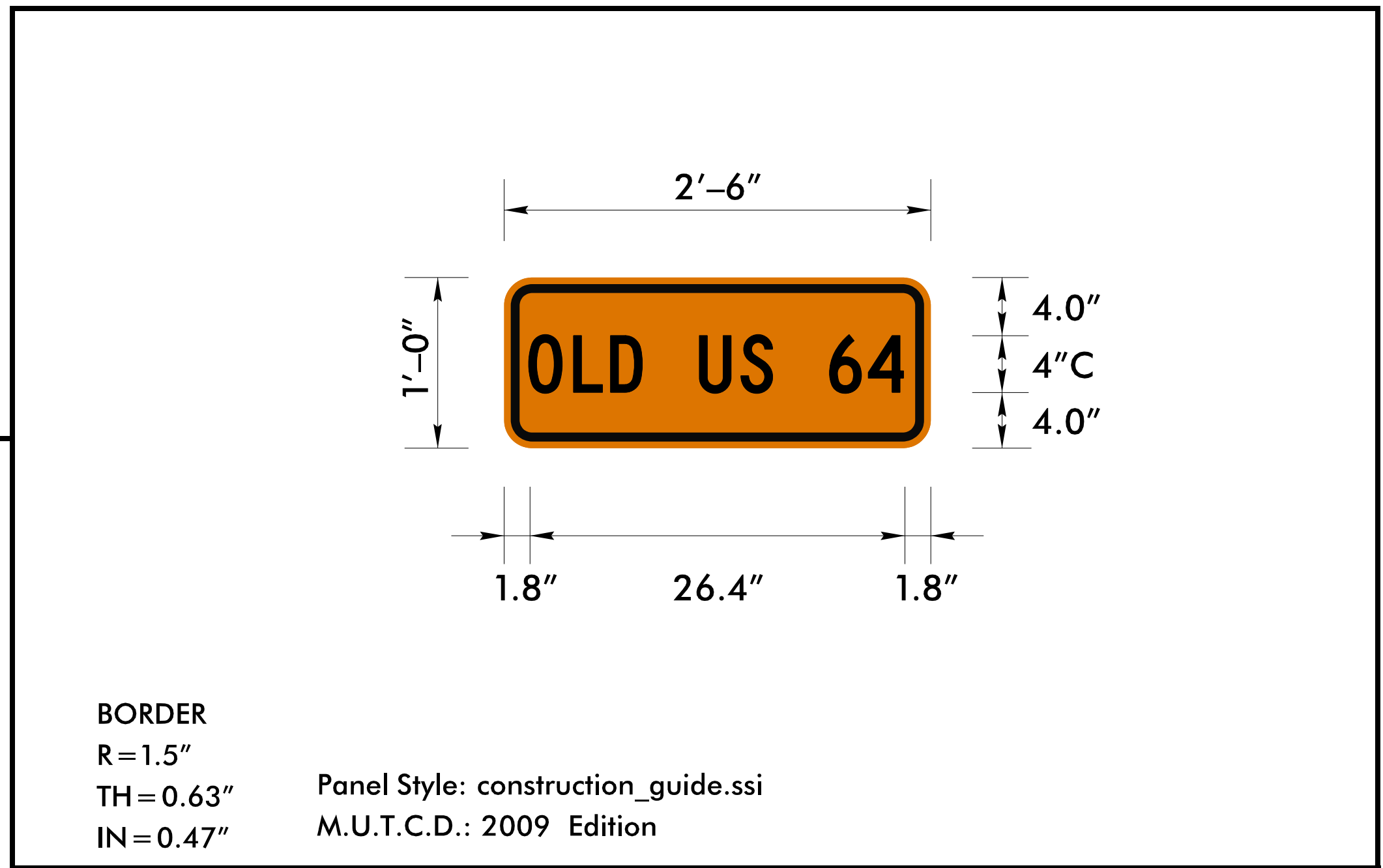
DIVISION OF HIGHWAYS  
 DEPARTMENT OF TRANSPORTATION  
 WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS  
 GENERAL NOTES &  
 TRANSPORTATION OPERATIONS

5/21/2018 10:58:11 AM User: jldobson  
 C:\Users\jldobson\Documents\3236-03 MTC 14SP.20221.3 Clay 10\Traffic\TrafficControl\TCP\BD-51\01\_tmp-1a.dgn

SIGN NUMR: OLD US 64  
TYPE: D Ground  
QUANTITY: 1  
SIGN WIDTH: 2'-6"  
HEIGHT: 1'-0"  
TOTAL AREA: 2.5 Sq.Ft.  
MAT'L: 0.063 in. (1.6 mm) ALUMINUM  
BORDER TYPE: FLUSH  
RECESS: 0.47"  
WIDTH: 0.63"  
RADII: 1.5"  
NO. Z BARS:  
LENGTH: in.

SYMBOL	X	Y	WID	HT



- USE NOTES: 1,3,4
- Legend and border shall be direct applied encapsulated lens reflective sheeting.
  - Legend and border shall be direct applied enclosed lens reflective sheeting.
  - Shields shall be encapsulated lens reflective sheeting on 0.8mm aluminum and demountable.
  - Background shall be encapsulated lens reflective sheeting.
  - Background shall be enclosed lens reflective sheeting.
  - Center arrows vertically on sign.

Letter spacings are to start of next letter

	O	L	D		U	S		6	4												Series/Size	
	1.8	3.2	2.6	2.2	4	2.9	2.2	4	2.7	2.6	1.8										C 2000/4	
																						26.4

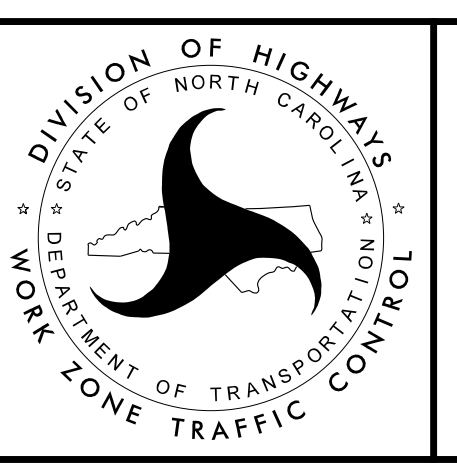
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User:cmartell

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Tri-Cities, TN 423-467-8401  
Knoxville, TN 865-546-5800  
Spartanburg, SC 864-574-4775  
Charleston, SC 843-974-5650  
Milledgeboro, KY 606-248-6600  
Raleigh, NC 919-977-9455  
Charlotte, NC 704-357-0488  
Atlanta, GA 770-627-3509  
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APPROVED BY: *Lloyd D. Brown* DATE: 11/8/2016  
SEAL  
NORTH CAROLINA PROFESSIONAL ENGINEER  
LLOYD D. BROWN  
20119



**SPECIAL SIGN DESIGN**

**SIGN NUMR:** LAUREL BRANCH RD  
**TYPE:** D Ground  
**QUANTITY:** 1  
**BACKG. COLOR:** Orange  
**COPY COLOR:** RGB(0,0,0)  
**DESIGN BY:** WCC  
**PROJECT ID:** 14SP.20221.3  
**CHK BY:** LBD  
**DIV:** 14  
**STD #:** STD  
**DATE:** August 13, 2014

**SIGN WIDTH:** 2'-6"  
**HEIGHT:** 2'-0"  
**TOTAL AREA:** 5.0 Sq.Ft.  
**MAT'L:** 0.063 in. (1.6 mm) ALUMINUM  
**BORDER TYPE:** FLUSH  
**RECESS:** 0.47"  
**WIDTH:** 0.63"  
**RADII:** 1.5"  
**NO. Z BARS:**  
**LENGTH:** in.

SYMBOL	X	Y	WID	HT

**USE NOTES: 1,3,4**

1. Legend and border shall be direct applied encapsulated lens reflective sheeting.
2. Legend and border shall be direct applied enclosed lens reflective sheeting.
3. Shields shall be encapsulated lens reflective sheeting on 0.8mm aluminum and demountable.
4. Background shall be encapsulated lens reflective sheeting.
5. Background shall be enclosed lens reflective sheeting.
6. Center arrows vertically on sign.

**BORDER**  
 R=1.5"  
 TH=0.63"  
 IN=0.47"

Panel Style: construction\_guide.ssi  
 M.U.T.C.D.: 2009 Edition

Letter spacings are to start of next letter

	L	A	U	R	E	L															Series/Size Text Length
	6.9	2.3	3.1	3.1	2.9	2.7	2.1	6.9													C 2000/4 16.2
	6.5	2.9	2.6	3.1	3	3	2.4	6.5													C 2000/4 17
	12.4	2.9	2.3	12.4																	C 2000/4 5.2

Spacing Factor is 1 unless specified otherwise  
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828-355-9933  
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 864-574-4775  
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 606-248-6600  
 919-977-9455  
 704-357-0488  
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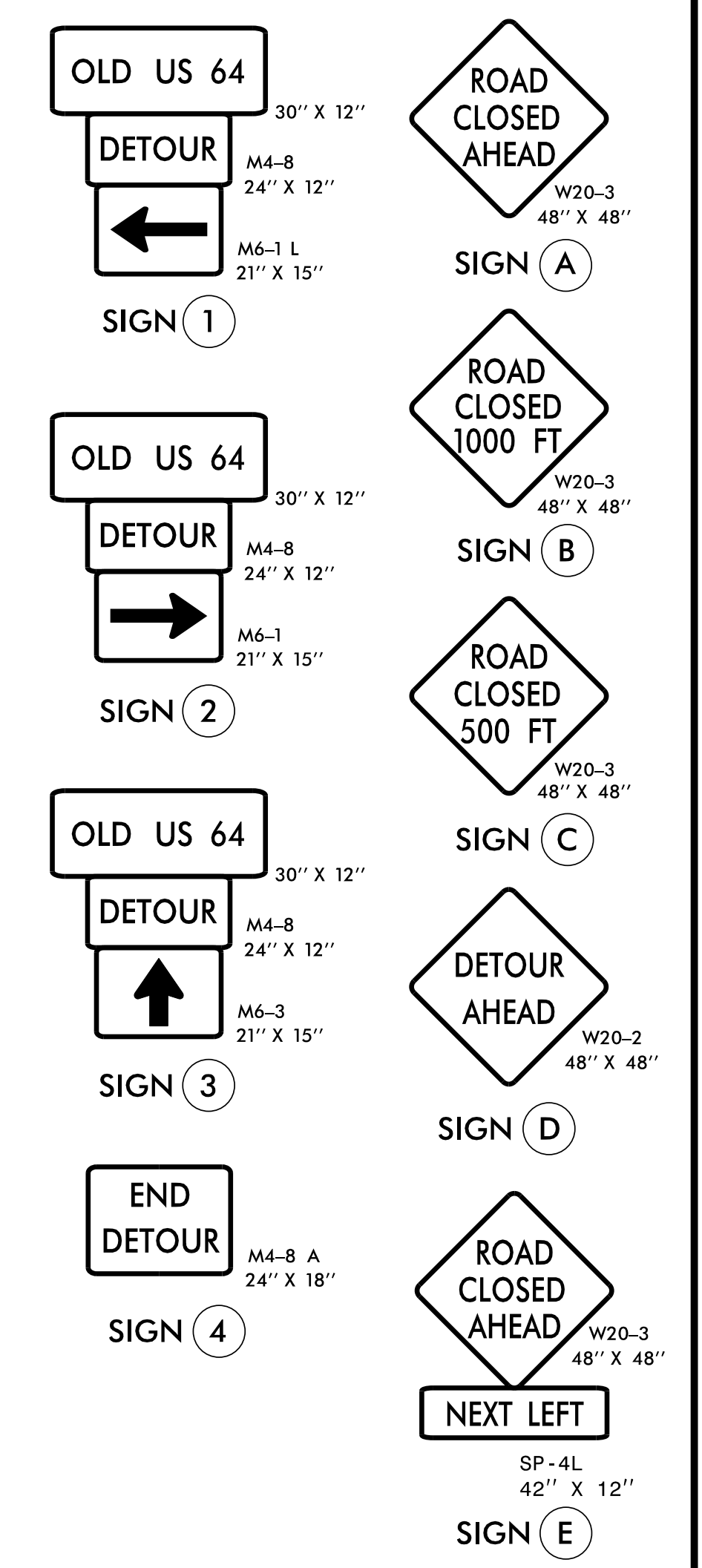
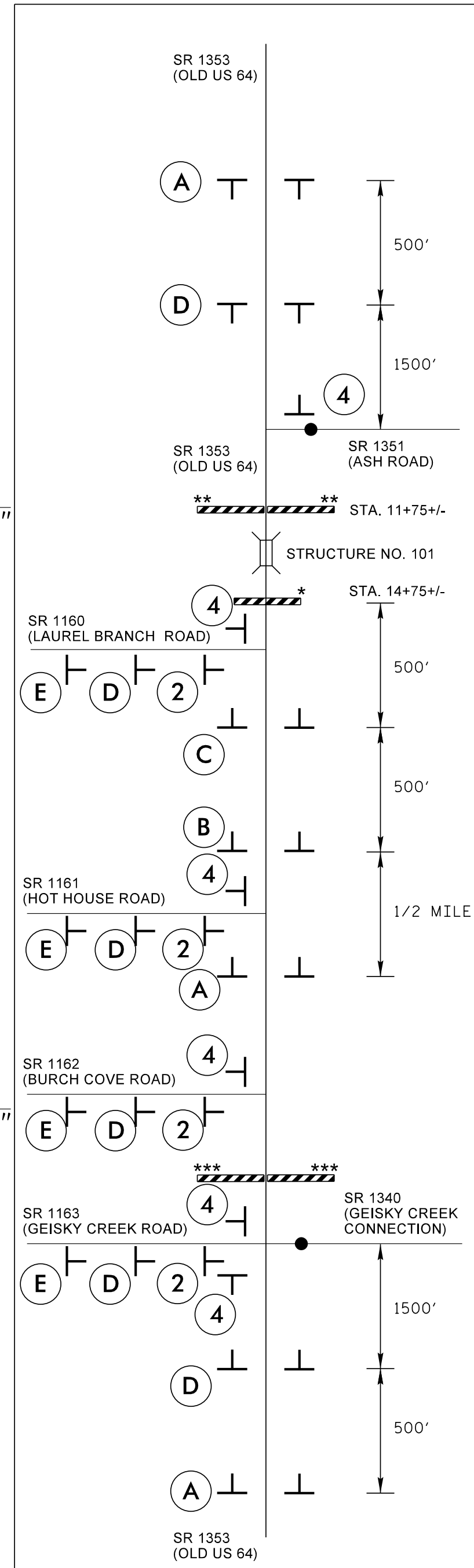
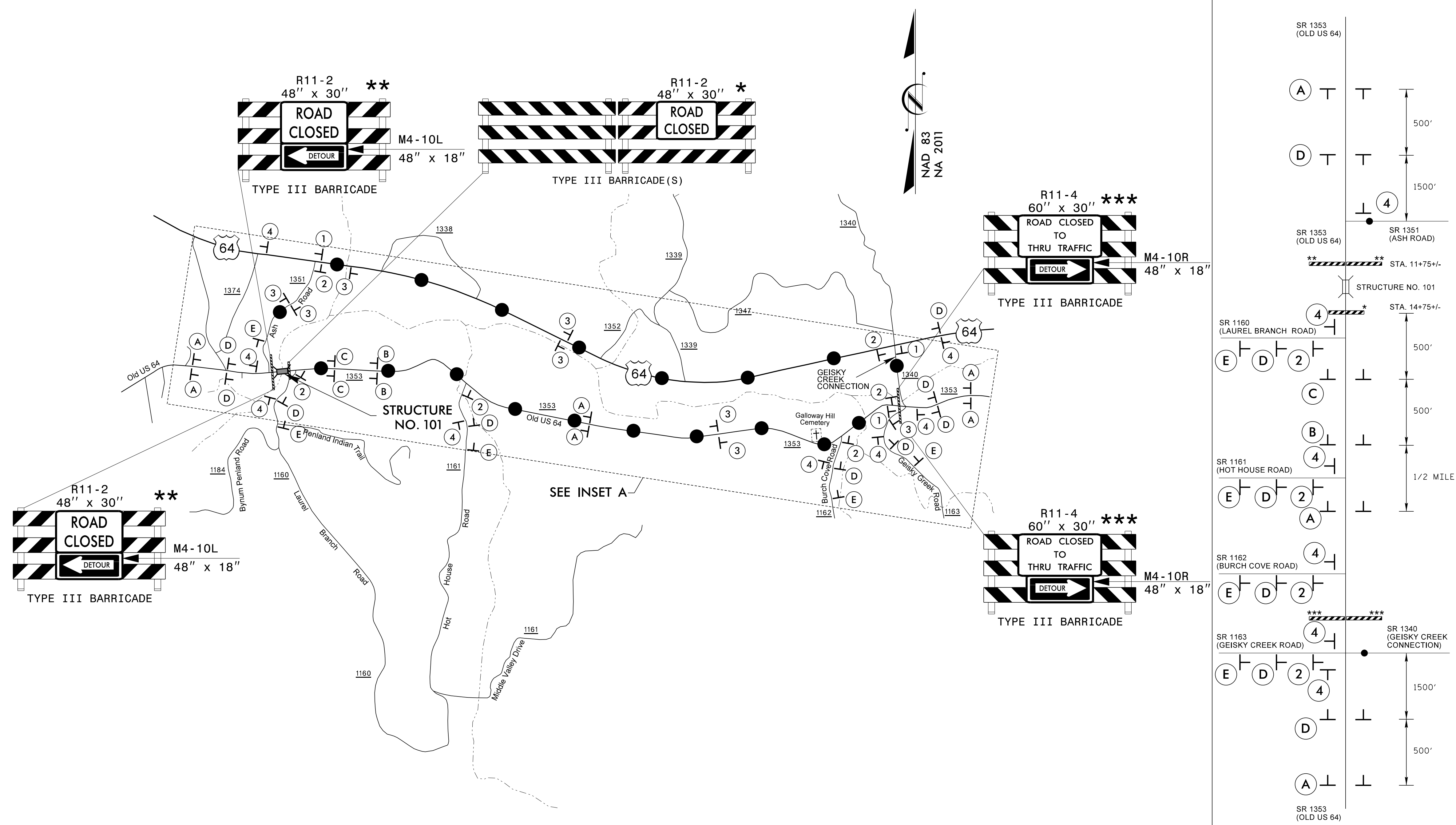
APPROVED: *Lloyd D. Brown* DATE: 11/8/2016

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 20119

APPROVED BY: *LLOYD D. BROWN*



**SPECIAL SIGN DESIGN**



**PHASE I**

- STEP 1: - INSTALL OFF-SITE DETOUR ROUTE SIGN ASSEMBLIES FOR THE CLOSING OF SR 1353 ( OLD US 64, -L- ).
    - USING ROADWAY STANDARD DRAWING NO. 1101.03, SHEETS 1 OF 9 AND 2 OF 9, CLOSE SR 1353 ( OLD US 64, -L- ) TO THRU TRAFFIC.
  - STEP 2: - REMOVE THE EXISTING STRUCTURE AND CONSTRUCT THE PROPOSED STRUCTURE FROM STATION 12+52.01 -L- TO STATION 14+26.39 -L- (SEE CONSTRUCTION PLANS ).
- SEE TMP-4 FOR PHASE II PHASING.

**NOTES:**

- ALL DETOUR SIGN LOCATIONS ARE APPROXIMATE.
- ALL DETOUR SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE NOTED.
- TRAFFIC CONTROL DEVICES (A) THROUGH (E) 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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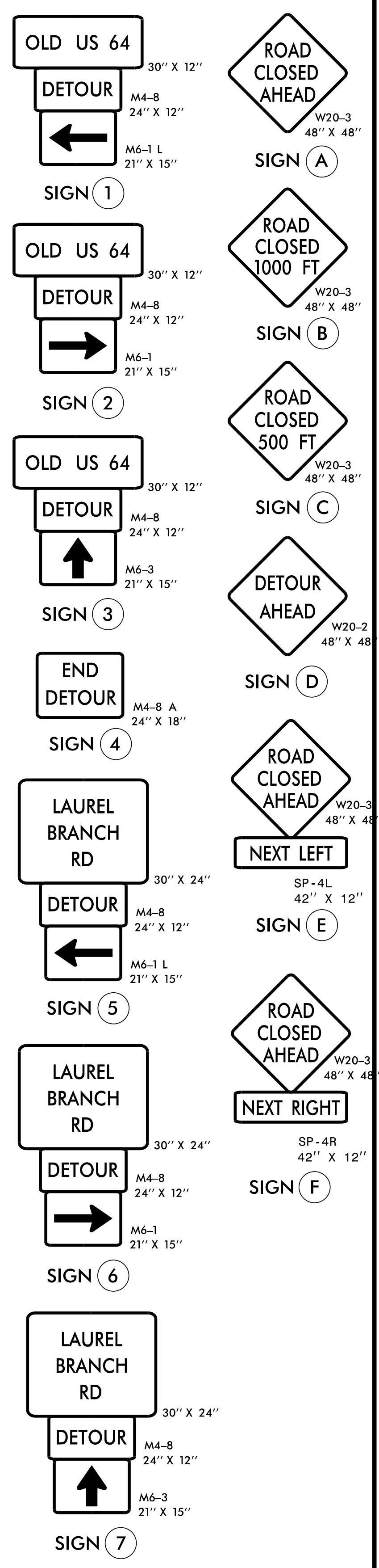
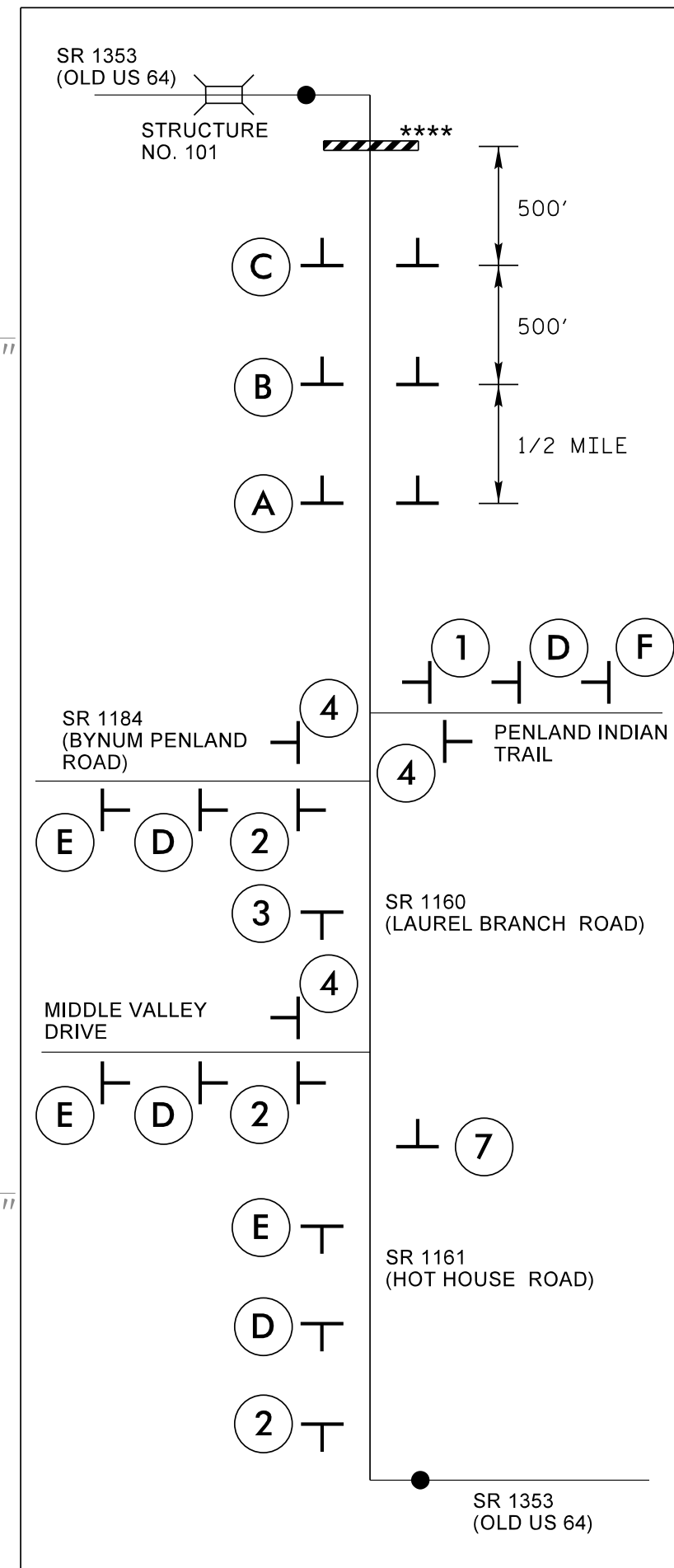
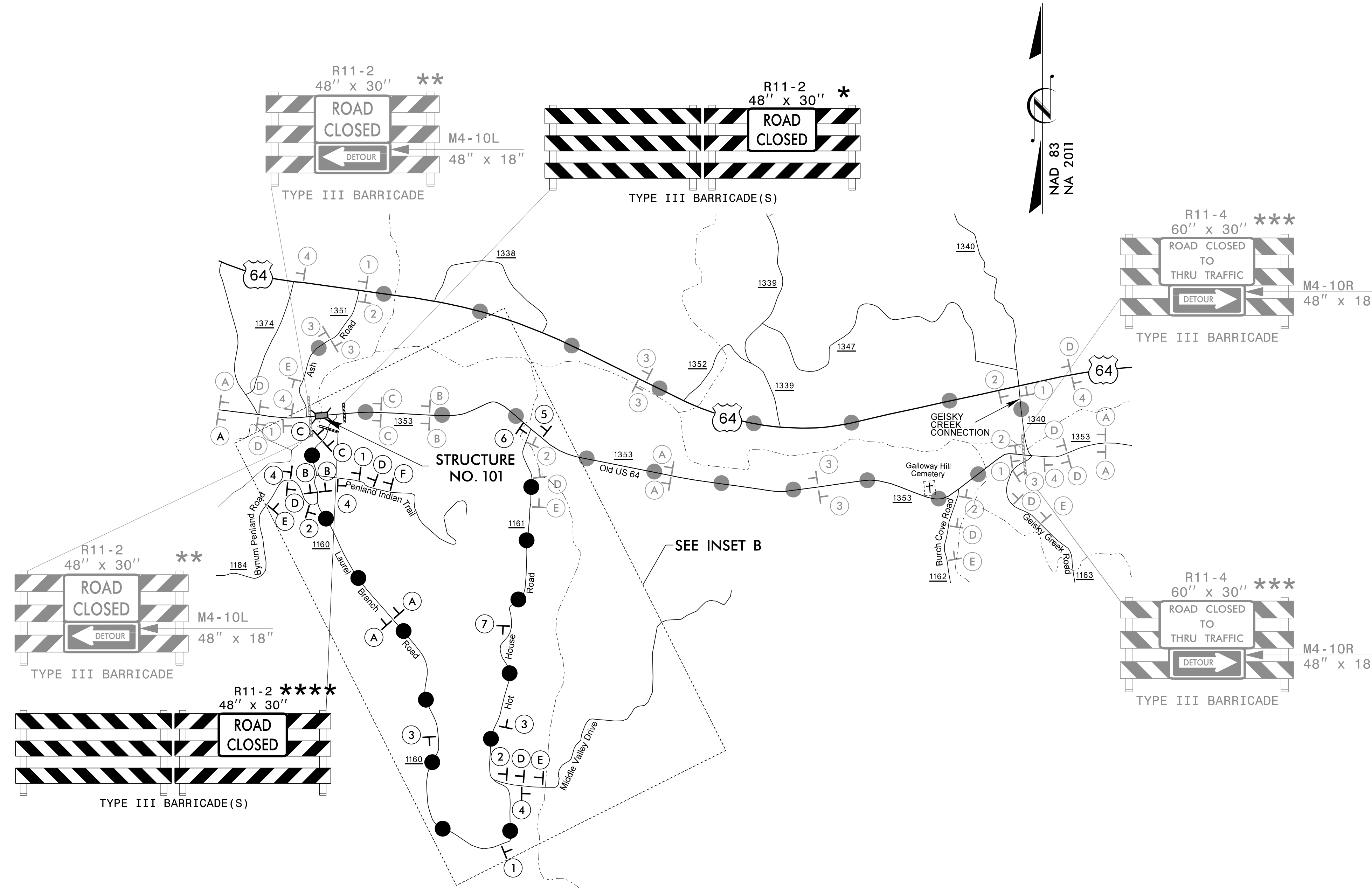
DocuSigned by:  
*Approved by Wayne Brown* 11/8/2016

SEAL

PROFESSIONAL ENGINEER  
LLOYD D. BROWN  
20119

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA  
WORK ZONE TRAFFIC CONTROL

**TEMPORARY TRAFFIC CONTROL DETAIL,  
PHASE I PHASING NOTES,  
OFF-SITE DETOUR SIGNING  
AND ROAD CLOSURE**



**PHASE II**

- NOTE:** PHASE I TO BE SUBSTANTIALLY COMPLETED BEFORE CLOSING SR 1160 (LAUREL BRANCH ROAD) FOR PHASE II TO REDUCE SR 1160 (LAUREL BRANCH ROAD) CLOSURE DURATION.
- STEP 1:** - INSTALL OFF-SITE DETOUR ROUTE SIGN ASSEMBLIES FOR THE CLOSING OF SR 1160 (LAUREL BRANCH ROAD).
- USING ROADWAY STANDARD DRAWING NO. 1101.03, SHEETS 1 OF 9 AND 2 OF 9, CLOSE SR 1160 (LAUREL BRANCH ROAD) TO THRU TRAFFIC.
- STEP 2:** - CONSTRUCT THE PROPOSED ROADWAY UP TO, INCLUDING THE FINAL LAYER OF SURFACE COURSE FROM STATION 11+00+/- -L- TO STATION 12+52.01 -L-, FROM STATION 14+26.39 -L- TO STATION 16+75+/- -L-, AND FROM STATION 10+11+/- -Y- TO STATION 10+70 +/- -Y- (SEE CONSTRUCTION PLANS).
- STEP 3:** - PLACE FINAL PAVEMENT MARKINGS ON ENTIRE PROJECT (SEE SHEET PMP-1).
- STEP 4:** - REMOVE ALL TRAFFIC CONTROL DEVICES, SIGNING AND DETOUR ROUTE SIGNING.
- STEP 5:** - OPEN SR 1353 (OLD US 64) AND SR 1160 (LAUREL BRANCH ROAD) TO FINAL TRAFFIC PATTERN.

- 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 (7) 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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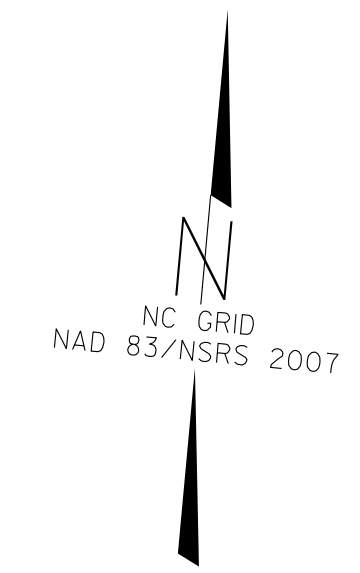
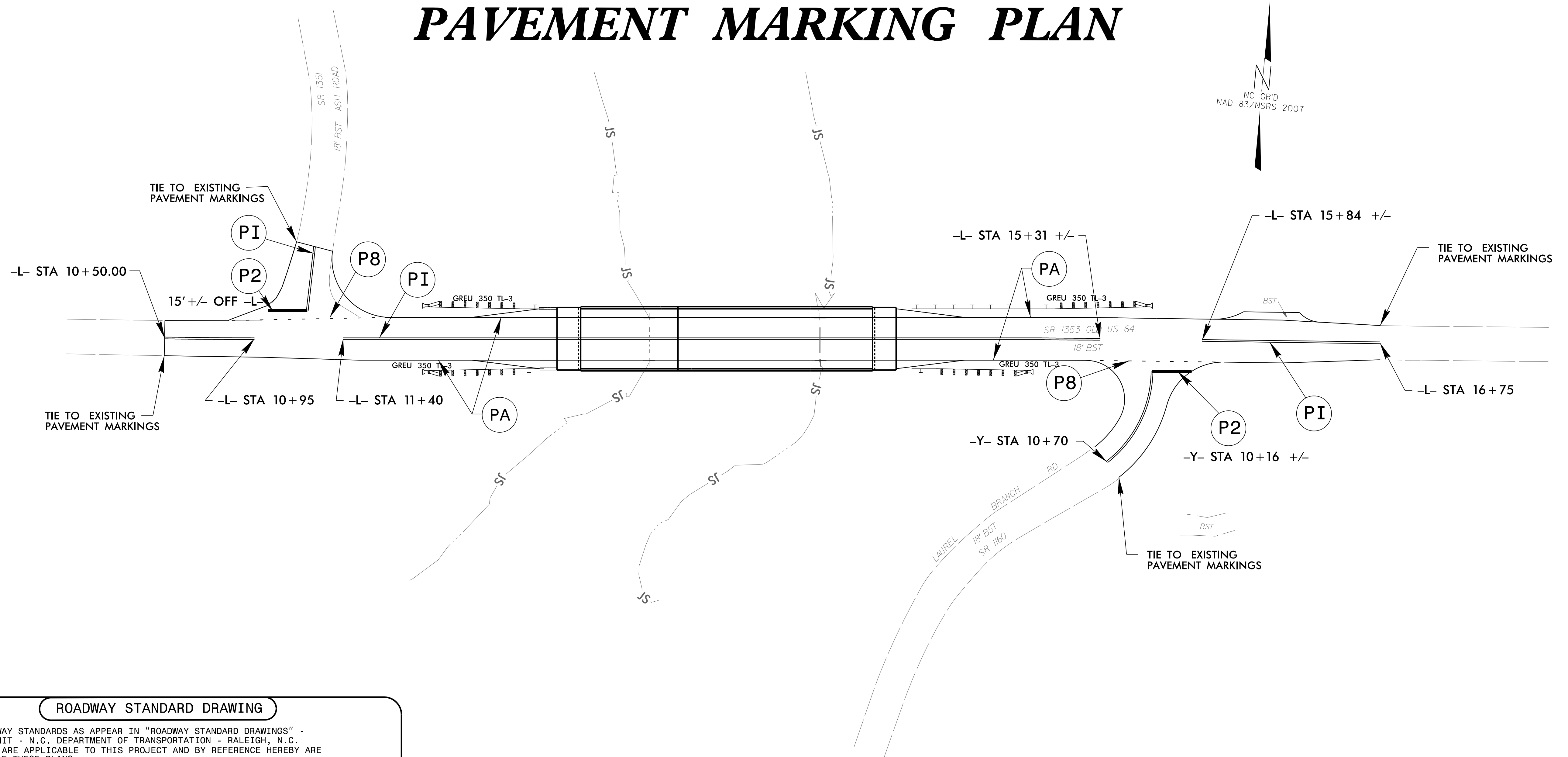
APPROVED *Lloyd D. Brown* 11/8/2016  
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PROFESSIONAL ENGINEER  
20119  
LLOYD D. BROWN

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA  
WORK ZONE TRAFFIC CONTROL

TEMPORARY TRAFFIC CONTROL DETAIL, PHASE II PHASING NOTES, OFF-SITE DETOUR SIGNING AND ROAD CLOSURE

# PAVEMENT MARKING PLAN



### 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
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES & MOUNTING
1262.01	GUARDRAIL END DELINEATION

### FINAL PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	QUANTITY BREAKDOWN	PAY ITEM	TOTAL QUANTITY
PAVEMENT MARKING LINES				
PA	WHITE SOLID EDGE LINE	1439 FT	PAINT (4")	2878 FT
P8	2 FT. - 6 FT./SP WHITE MINISKIP	39 FT	PAINT (4")	78 FT
PI	YELLOW DOUBLE CENTER LINE	1426 FT	PAINT (4")	2852 FT
P2	WHITE STOP BAR	41 FT	PAINT (24")	82 FT

SCALE: 1" = 30'

### 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 ON THE FINAL SURFACE

ROAD NAME:	MARKING
SR 1353 (OLD US 64)	PAINT

B.) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

C.) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

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APPROVED: *Lloyd D. Brown* DATE: 5/29/2018

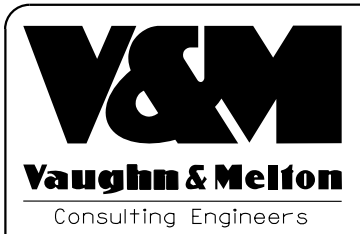
## PAVEMENT MARKING PLAN

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# EROSION CONTROL PLAN

## PHASE I



Charlotte, North Carolina 704-537-0488  
 Tri-Cities, Tennessee 423-467-9400  
 Knoxville, Tennessee 865-546-5800  
 Middleboro, Kentucky 606-248-6600  
 Spartanburg, South Carolina 864-574-4775

Asheville, North Carolina 828-253-2796

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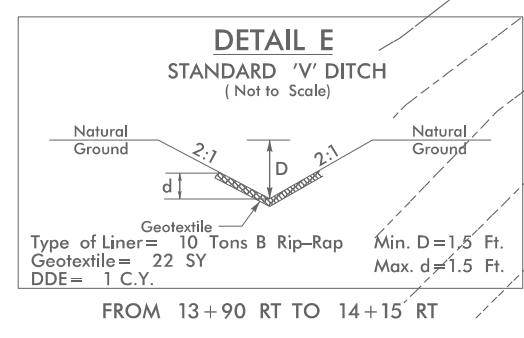
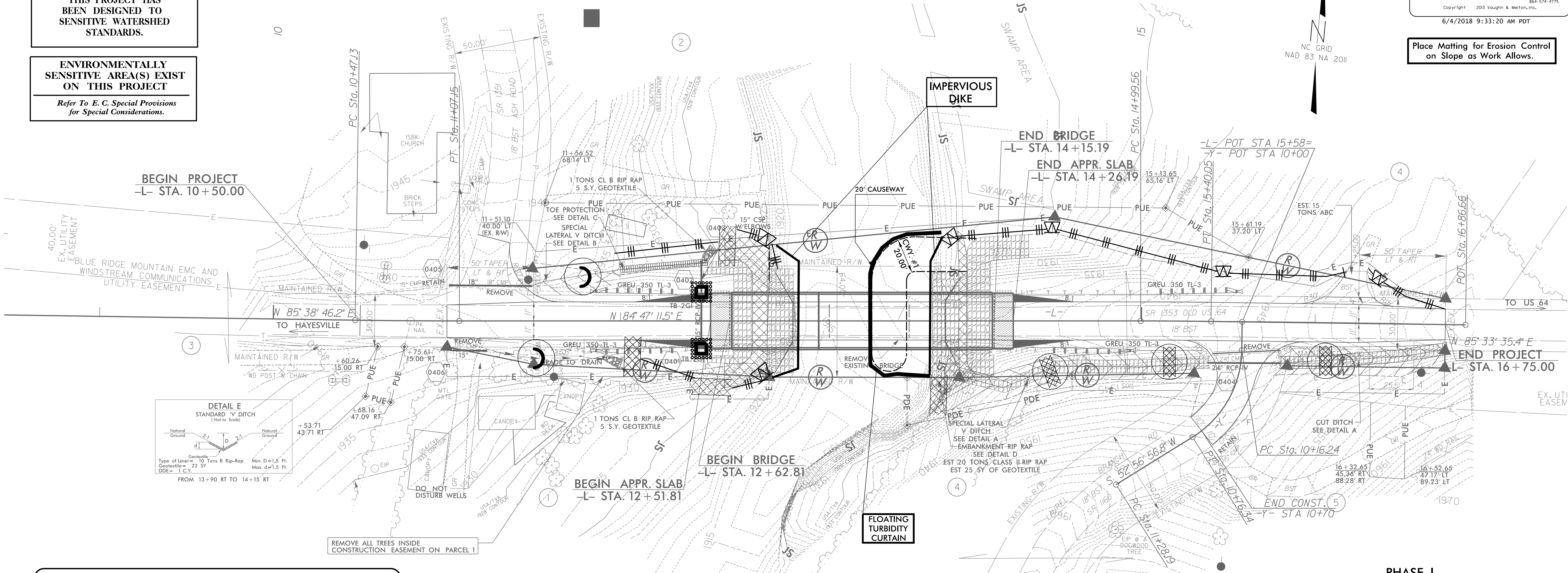
**THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.**

**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.*

**Place Matting for Erosion Control on Slope as Work Allows.**



**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.**

Level III: Designer of Erosion and Sediment Control Plans

**MICHAEL CLARK**  
 Date Issued: June 29, 2016  
 Date Expires: December 31, 2019  
 Certification Number: 3376

**PHASE I**

INSTALL EROSION CONTROL MEASURES FOR CONSTRUCTION OF CAUSEWAY #1

CAUSEWAY #1 IS TO BE CONSTRUCTED FOR THE REMOVAL OF INTERIOR BENTS #2 AND #3 THEN REMOVE CAUSEWAY #1.

TAKE PRECAUTION TO AVOID OVERHEAD UTILITIES.

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	W
1632.03	Rock Inlet Sediment Trap Type C	□
1633.01	Temporary Rock Silt Check Type-A	⊗
	with Polyacrylamide (PAM)	⊗
	Wattle / Coir Fiber Wattle	⌒-EW-
	with Polyacrylamide (PAM)	⌒

**NOTES:** ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

ROADSIDE ENVIRONMENTAL UNIT  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.

**2018 STANDARD SPECIFICATIONS**

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

2018 STANDARD DRAWINGS

- 1605.01 Temporary Silt Fence
- 1606.01 Special Sediment Control Fence
- 1630.06 Special Stilling Basin
- 1631.01 Matting Installation
- 1632.03 Rock Inlet Sediment Trap Type C
- 1633.01 Temporary Rock Silt Check Type A

PROJECT NO. 14SP.20221.3  
 COUNTY CLAY  
 STATION: 12+62.81 -L-  
 REPLACES BRIDGE NO. 101

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

STRUCTURE #101 ON SR 1353  
 OVER SHOOTING CREEK

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

EC-1  
 TOTAL SHEETS

# EROSION CONTROL PLAN

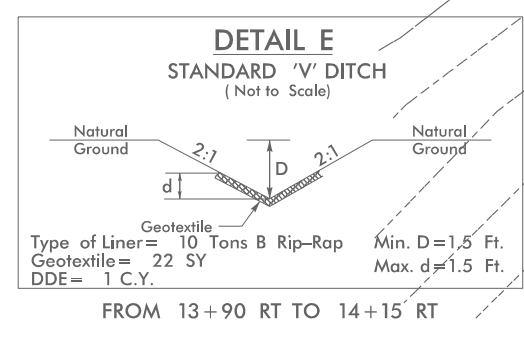
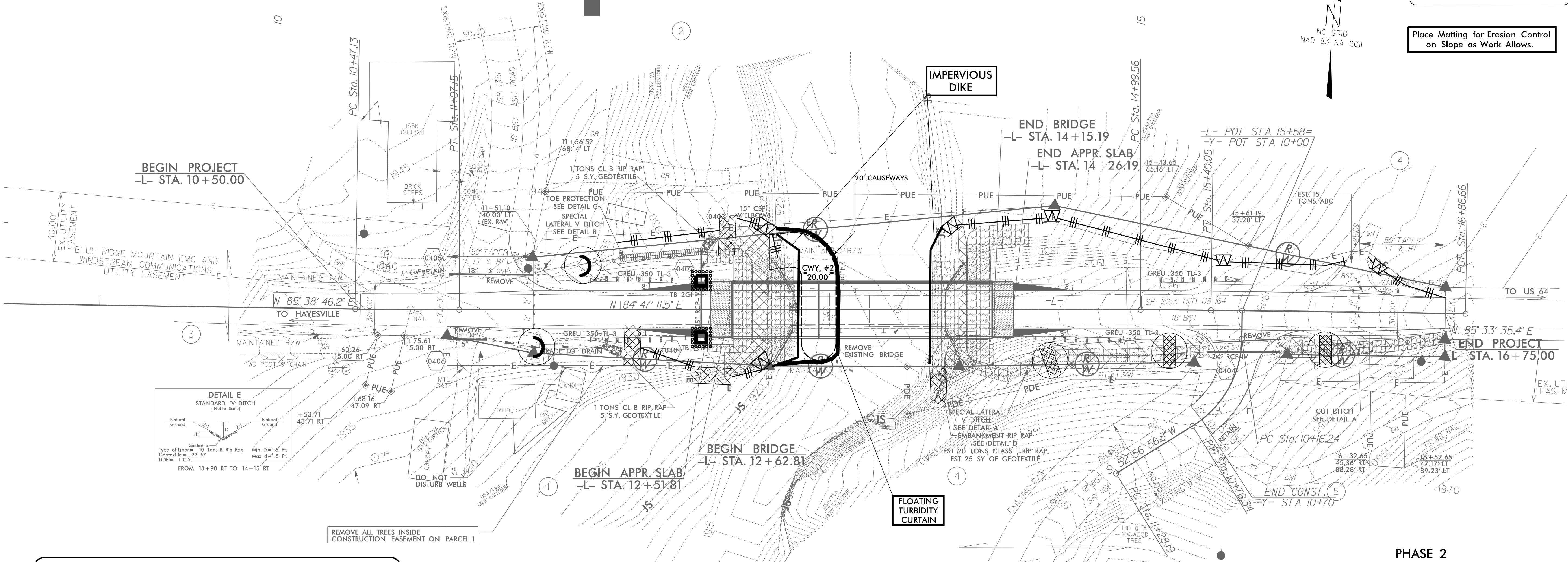
## PHASE 2

Charlotte, North Carolina 704-357-0488  
 Tri-Cities, Tennessee 423-467-9400  
 Knoxville, Tennessee 865-546-5800  
 Middleboro, Kentucky 606-248-6600  
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 Asheville, North Carolina 828-253-2796

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Place Matting for Erosion Control on Slope as Work Allows.



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.

Level III: Designer of Erosion and Sediment Control Plans  
 MICHAEL CLARK  
 Date Issued: June 29, 2016  
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 Certification Number: 3376

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.  
 ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

ROADSIDE ENVIRONMENTAL UNIT  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.  
 2018 STANDARD SPECIFICATIONS

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

2018 STANDARD DRAWINGS

1605.01	Temporary Silt Fence
1606.01	Special Sediment Control Fence
1630.06	Special Stilling Basin
1631.01	Matting Installation
1632.03	Rock Inlet Sediment Trap Type C
1633.01	Temporary Rock Silt Check Type A

PHASE 2  
 INSTALL EROSION CONTROL MEASURES FOR CONSTRUCTION OF CAUSEWAY 2  
 CAUSEWAY #2 IS TO BE CONSTRUCTED FOR THE REMOVAL OF EXISTING INTERIOR BENTS #1 AND THE INSTALLATION OF PROPOSED BENT #1 THEN REMOVED  
 TAKE PRECAUTION TO AVOID OVERHEAD UTILITIES.

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	W W W W
1632.03	Rock Inlet Sediment Trap Type C	[Square with internal structure]
1633.01	Temporary Rock Silt Check Type-A	[Cross-hatched rectangle]
	with Polyacrylamide (PAM)	[Circle with cross-hatch]
	Wattle / Coir Fiber Wattle	)-EW-
	with Polyacrylamide (PAM)	)-

PROJECT NO. 14SP.20221.3  
 COUNTY CLAY  
 STATION: 12+62.81 -L-  
 REPLACES BRIDGE NO. 101

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STRUCTURE #101 ON SR 1353  
 OVER SHOOTING CREEK

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

TOTAL SHEETS: EC-2

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

***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.



# WATTLE WITH POLYACRYLAMIDE DETAIL

**WATTLES WITH POLYACRYLAMIDE (PAM):**

**Description**

Wattles are tubular products consisting of excelsior fibers encased in synthetic netting. Wattles are used on slopes or channels to intercept runoff and act as a velocity break. Wattles are to be placed at locations shown on the plans or as directed. Installation shall follow the detail provided in the plans and as directed. Work includes furnishing materials, installation of wattles, matting installation, PAM application, and removing wattles.

**Materials**

Wattle shall meet the following specifications:

100% Curled Wood(Excelsior) Fibers  
 Minimum Diameter - 12 in.  
 Minimum Density - 2.6 lb/ft<sup>3</sup> +/- 10%  
 Net Material - Synthetic  
 Net Openings - 1 in. x 1 in.  
 Net Configuration - Totally Encased  
 Minimum Weight - 20 lb. +/- 10% per 10 ft. length

**Anchor:** Stakes shall be used as anchors.

**Wooden Stakes:**

Provide hardwood stakes a minimum of 2-ft. long with a 2 in. x 2 in. nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving down into the underlying soil.

**Matting** shall meet the requirements of section 1060-8 of the Standard Specifications, or shall meet specifications provided elsewhere in this contract.

Provide staples made of 0.125" diameter new steel wire formed into a u shape not less than 12" in length with a throat of 1" in width.

Polyacrylamide (PAM) shall be applied in powder form and shall be anionic or neutrally charged. Soil samples shall be obtained in areas where the wattles will be placed, and from offsite material used to construct roadway, and analyzed for the appropriate PAM flocculant to be utilized with each wattle.

**Construction Methods**

Wattles shall be secured to the soil by wire staples approximately every 1 linear foot and at the end of each section of wattle. A minimum of 4 stakes shall be installed on the downstream side of the wattle with a maximum spacing of 2 linear feet along the wattle, and according to the detail. Install a minimum of 2 stakes on the upstream side of the wattle according to the detail provided in the plans. Stakes shall be driven into the ground a minimum of 10 in. with no more than 2 in. projecting from the top of the wattle. Drive stakes at an angle according to the detail provided in the plans.

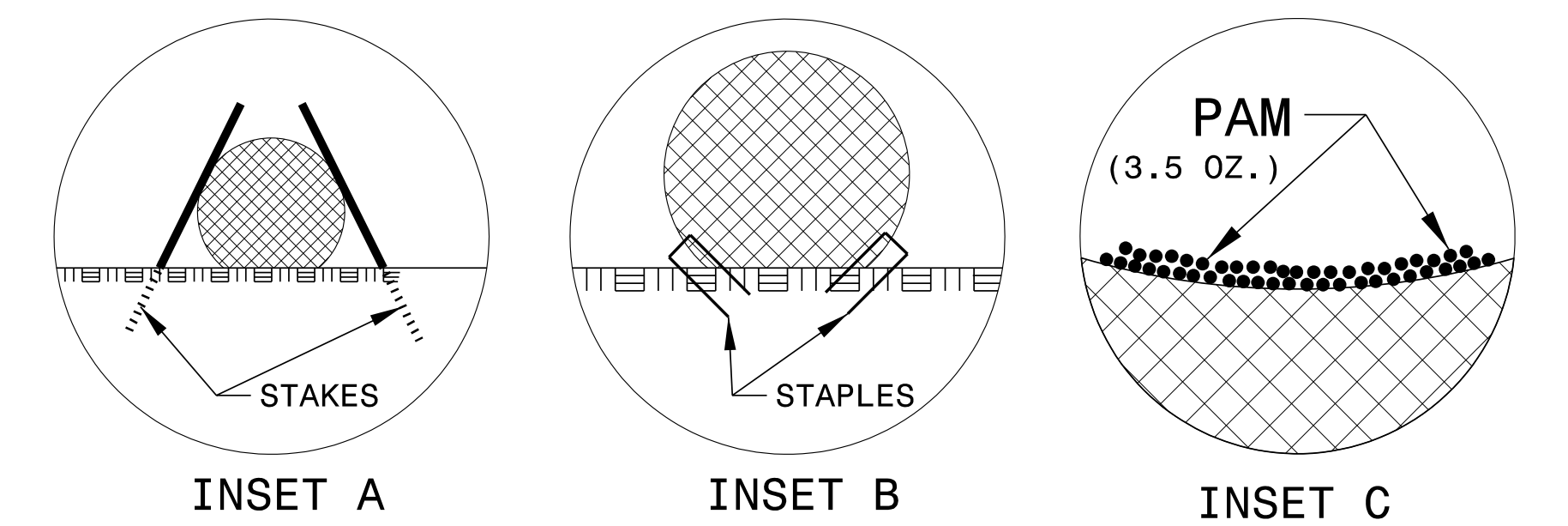
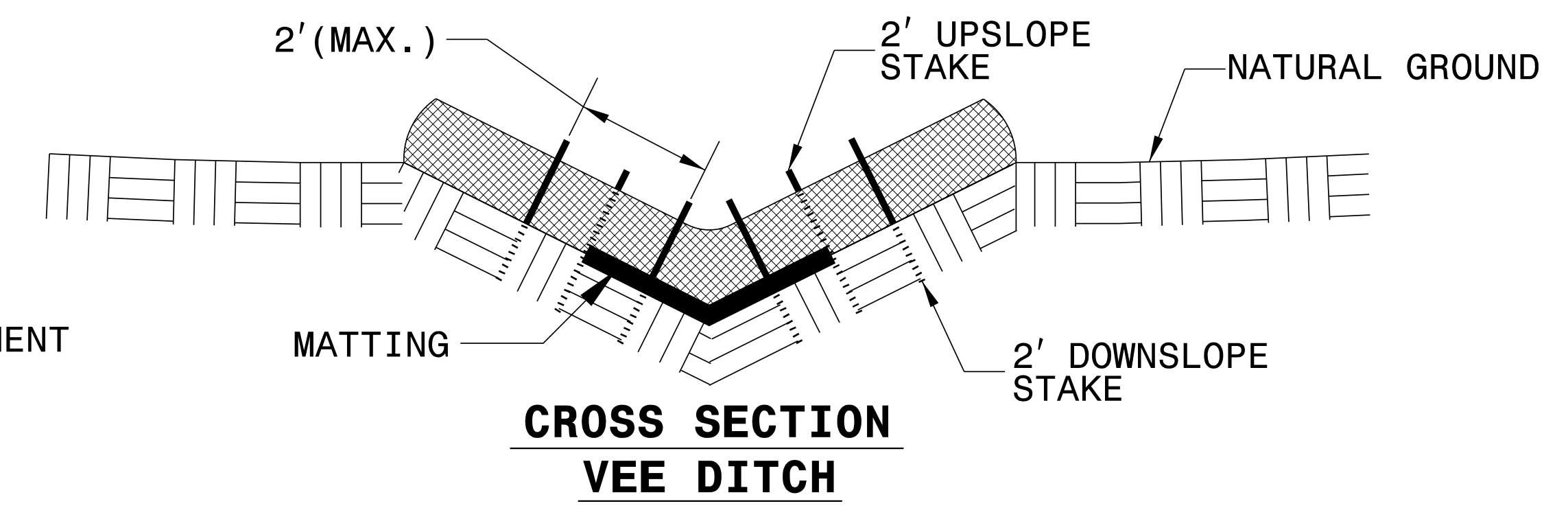
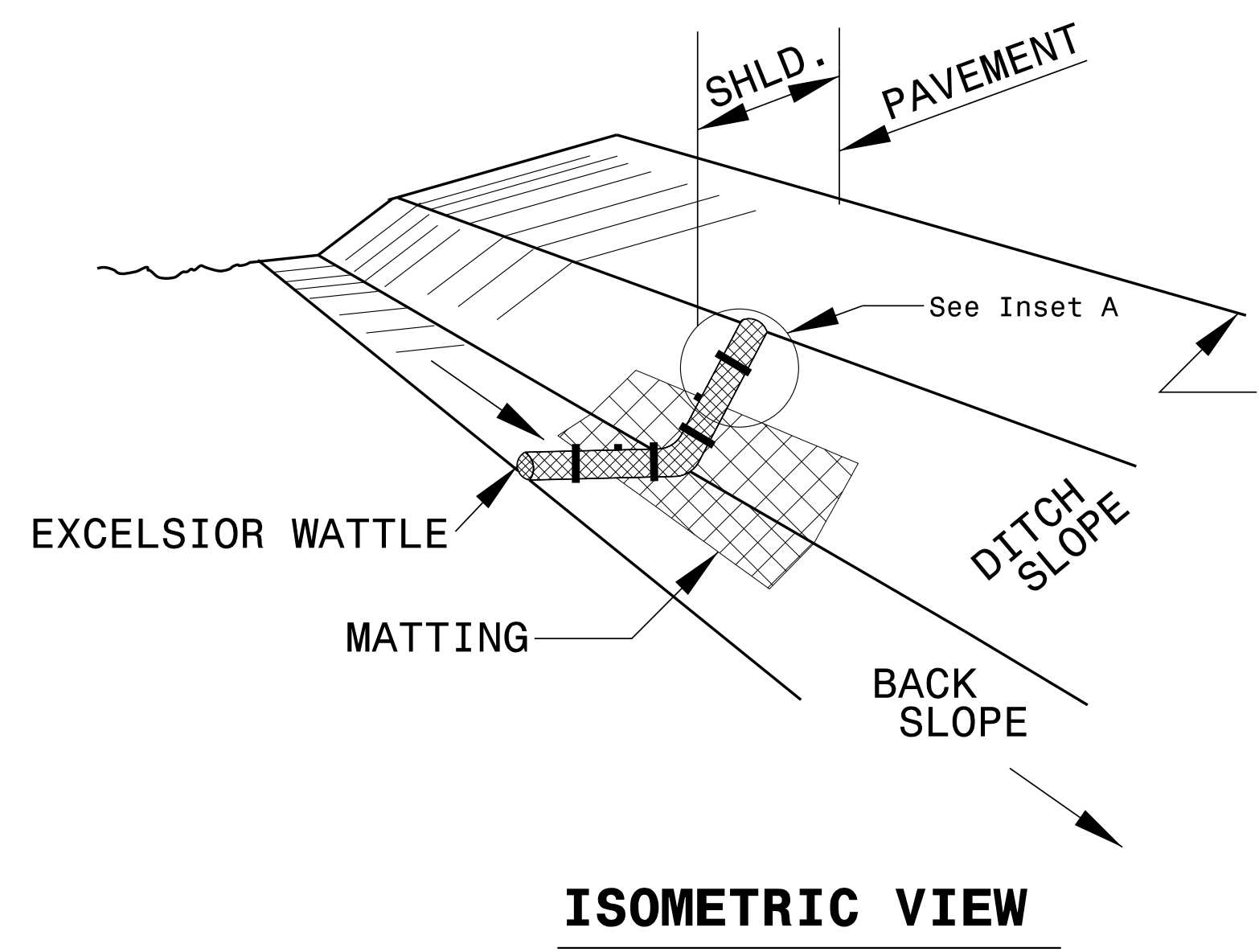
Install wattles to the top of the ditch according to the detail provided in the plans. Overlap adjoining sections of wattles a minimum of 6 in.

Installation of matting shall be in accordance with the detail provided in the plans, and in accordance with section 1631-3(B) of the Standard Specifications, or in accordance with specifications provided elsewhere in this contract.

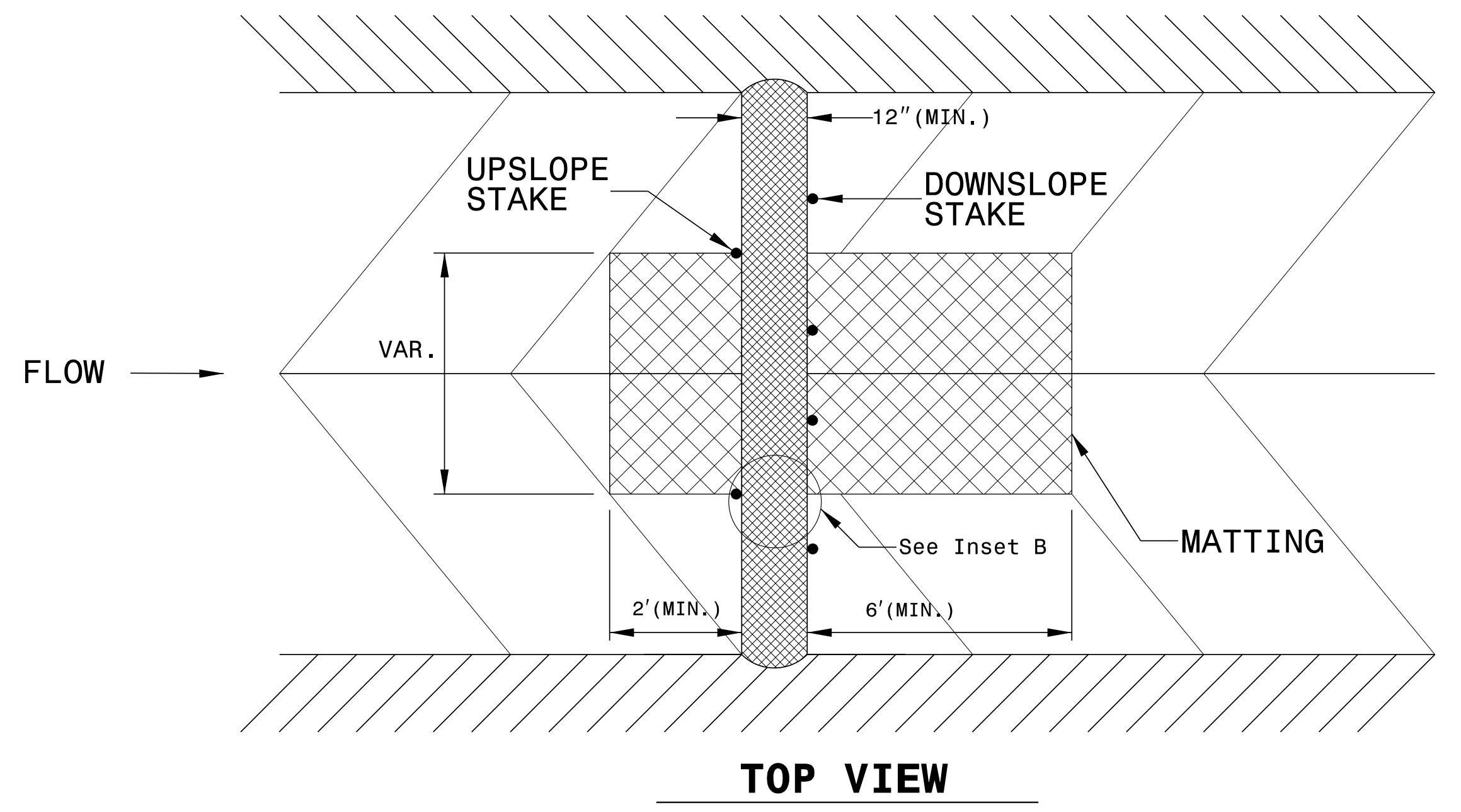
Apply PAM over the lower center portion of the wattle where the water is going to flow over at a rate of 3.5 ounces per wattle. PAM applications shall be done during construction activities after every rainfall event that is equal to or exceeds 0.50 in.

The Contractor shall maintain the wattles until the project is accepted or until the wattles are removed, and shall remove and dispose of silt accumulations at the wattles when so directed in accordance with the requirements of Section 1630 of the Standard Specifications.

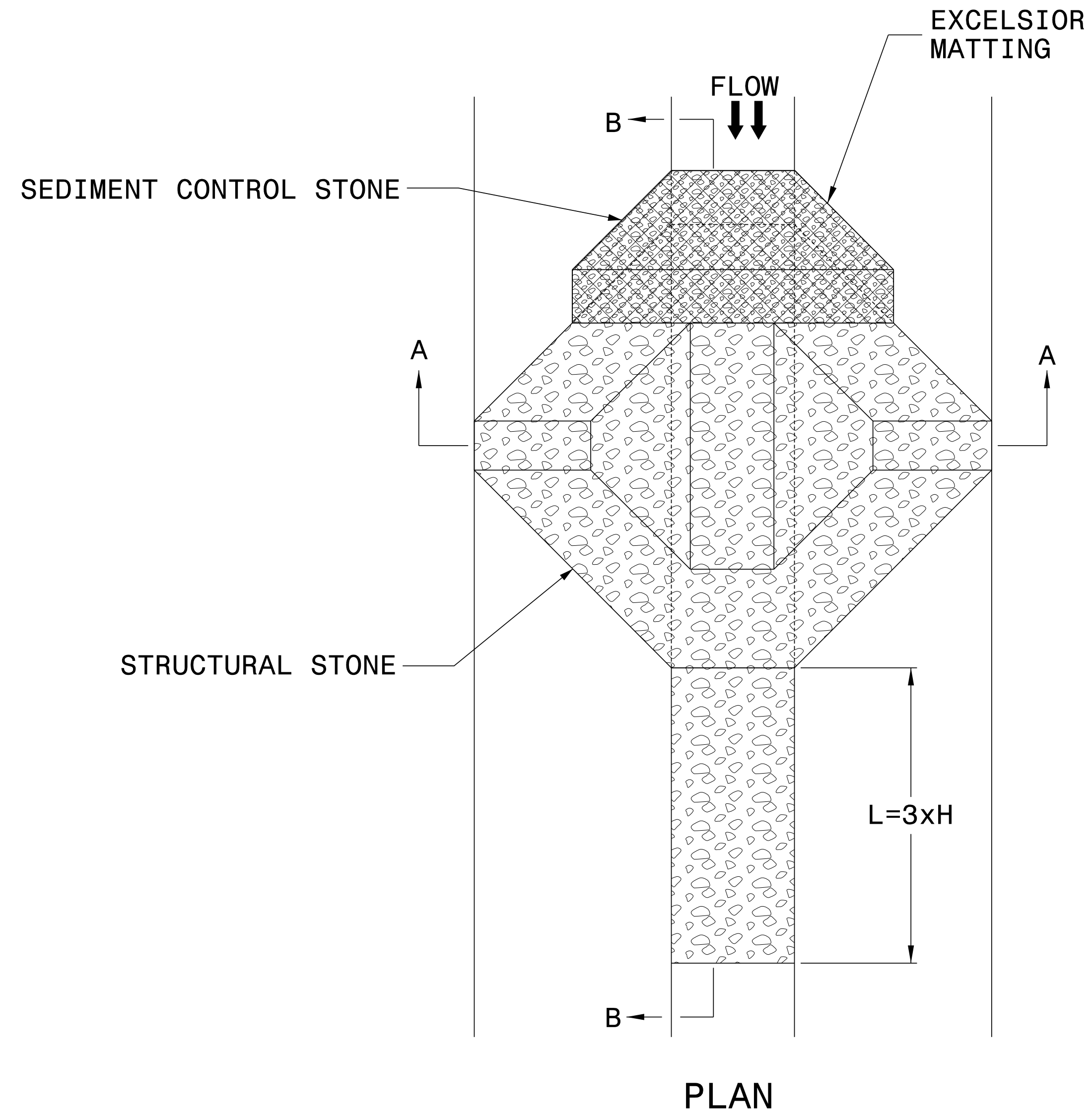
The quantity of wattle(s), wooden stakes, staples, matting and PAM as measured above will be paid for at contract price for "Lump Sum for Erosion Control". Such price and payment will be full compensation for all work covered by this provision, including but not limited to, furnishing all materials, placing and maintaining the wattle(s), and removal and disposal of silt accumulations and wattle.



- NOTES:**
- USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.
  - USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. 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 3.5 OUNCES OF ANIONIC OR NEUTRALLY CHARGED POLYACRYLAMIDE (PAM) OVER WATTLE WHERE WATER WILL FLOW AND AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



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

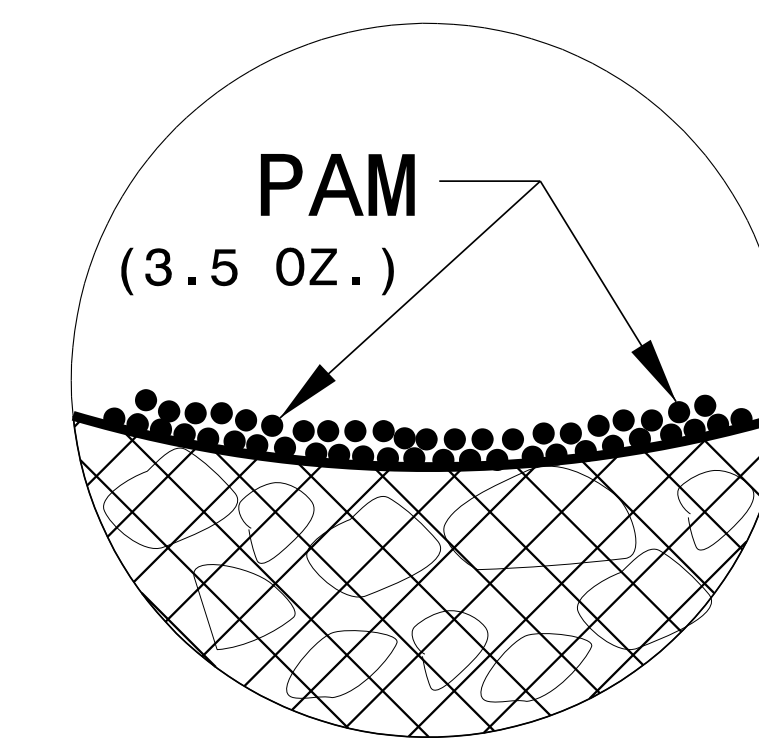


## NOTES

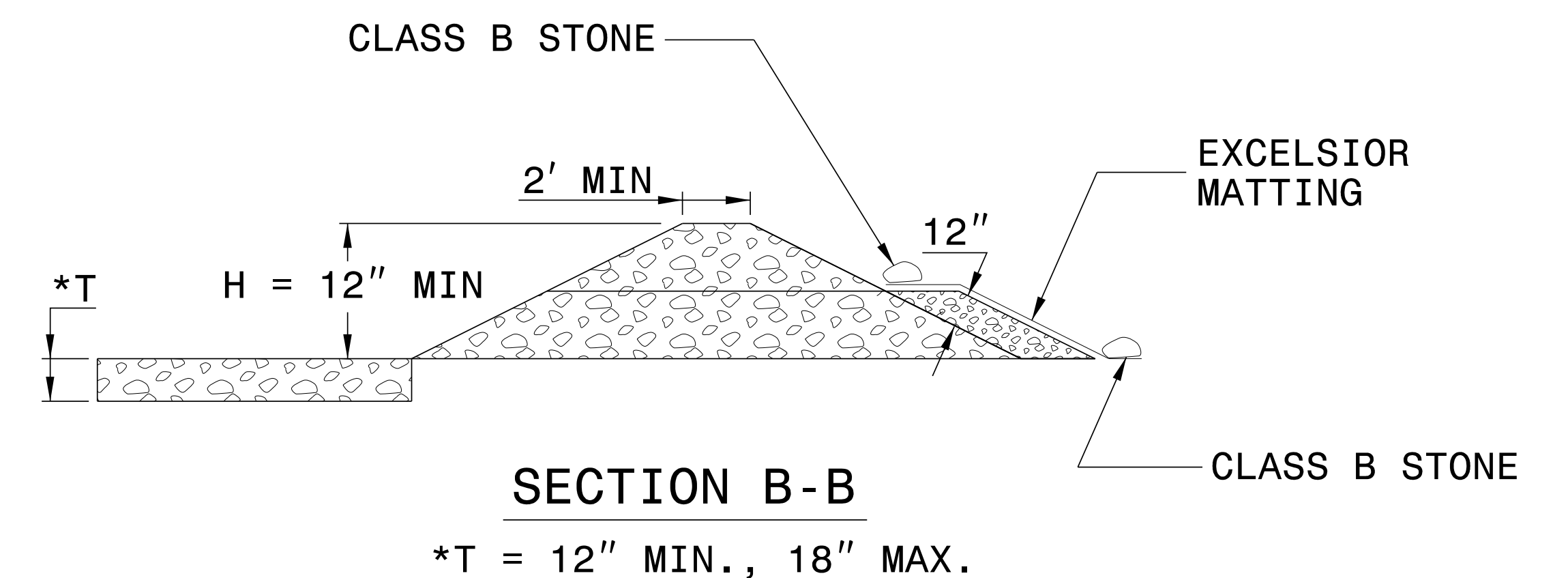
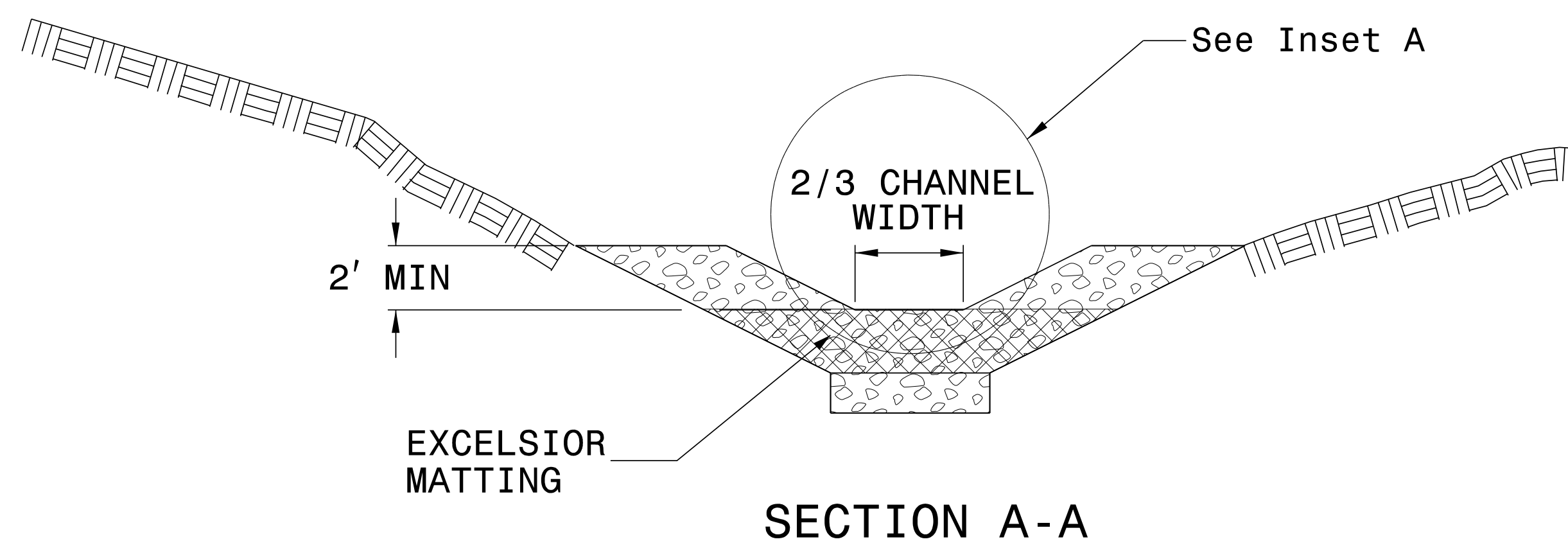
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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



INSET A



NOT TO SCALE

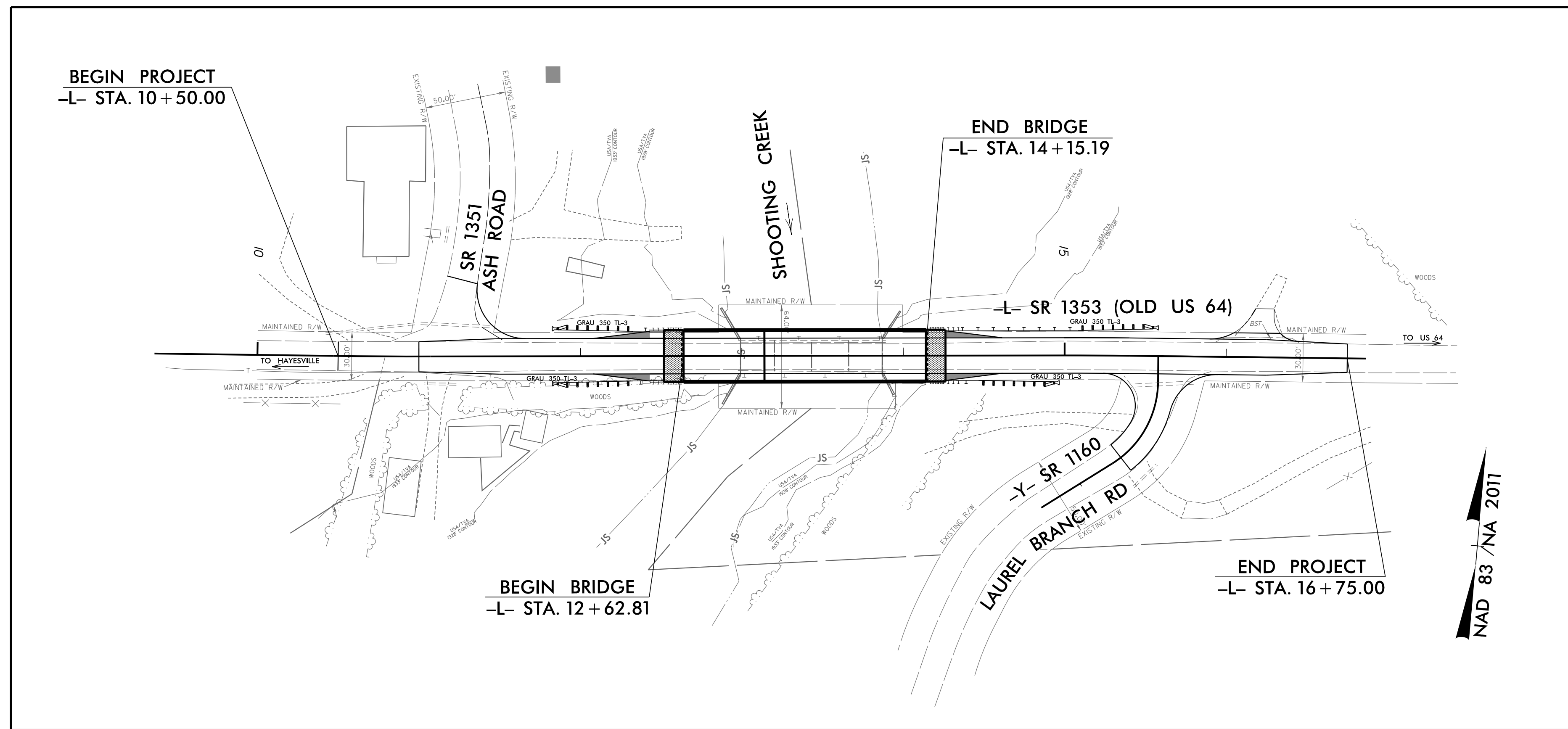
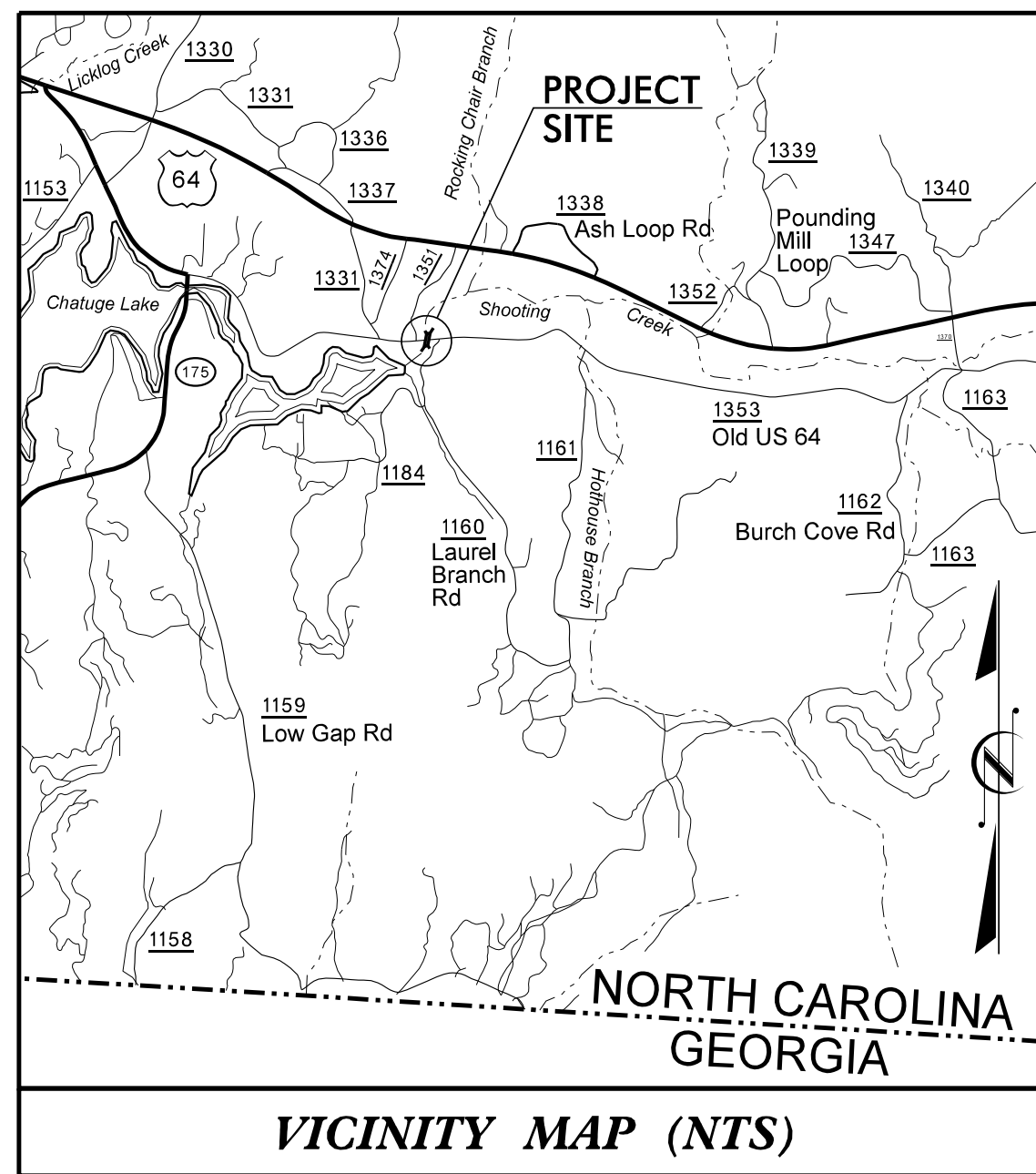
PROJECT REFERENCE NO.	SHEET NO.
14SP.20221.3	UO-1

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS  
CLAY COUNTY**

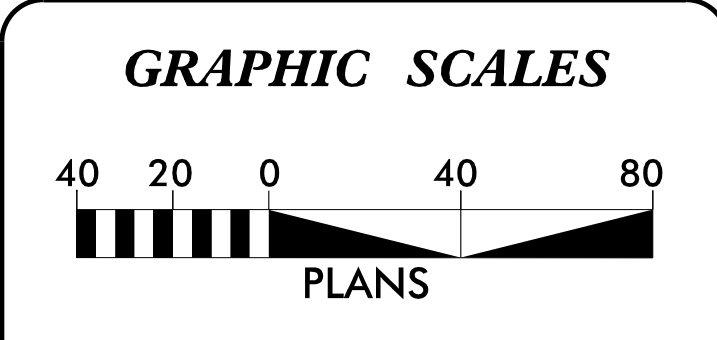
LOCATION: BRIDGE NO. 101 OVER SHOOTING CREEK  
ON SR 1353 (OLD US 64)

TYPE OF WORK: AERIAL POWER, TELEPHONE & CATV,  
UNDERGROUND TELEPHONE



CONTRACT: DN00126 PROJECT REFERENCE: 14SP.20221.3

V&M PROJECT #31236-03 TRANSPORTATION\31236-03 CLAY UTILITIES\UO-1.DGN



**INDEX OF SHEETS**

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

- UTILITY OWNERS ON PROJECT**
- (1) POWER - BLUE RIDGE MOUNTAIN EMC
  - (2) TELEPHONE - FRONTIER COMMUNICATIONS
  - (3) CATV - WINDSTREAM COMMUNICATIONS

**PLANS PREPARED BY:**

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PREPARED FOR THE OFFICE OF:  
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- Middleboro, KY 606-248-6500
- Charlotte, NC 704-357-0488
- Boone, NC 828-355-9933
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9/3/14  
REV. 2/25/16

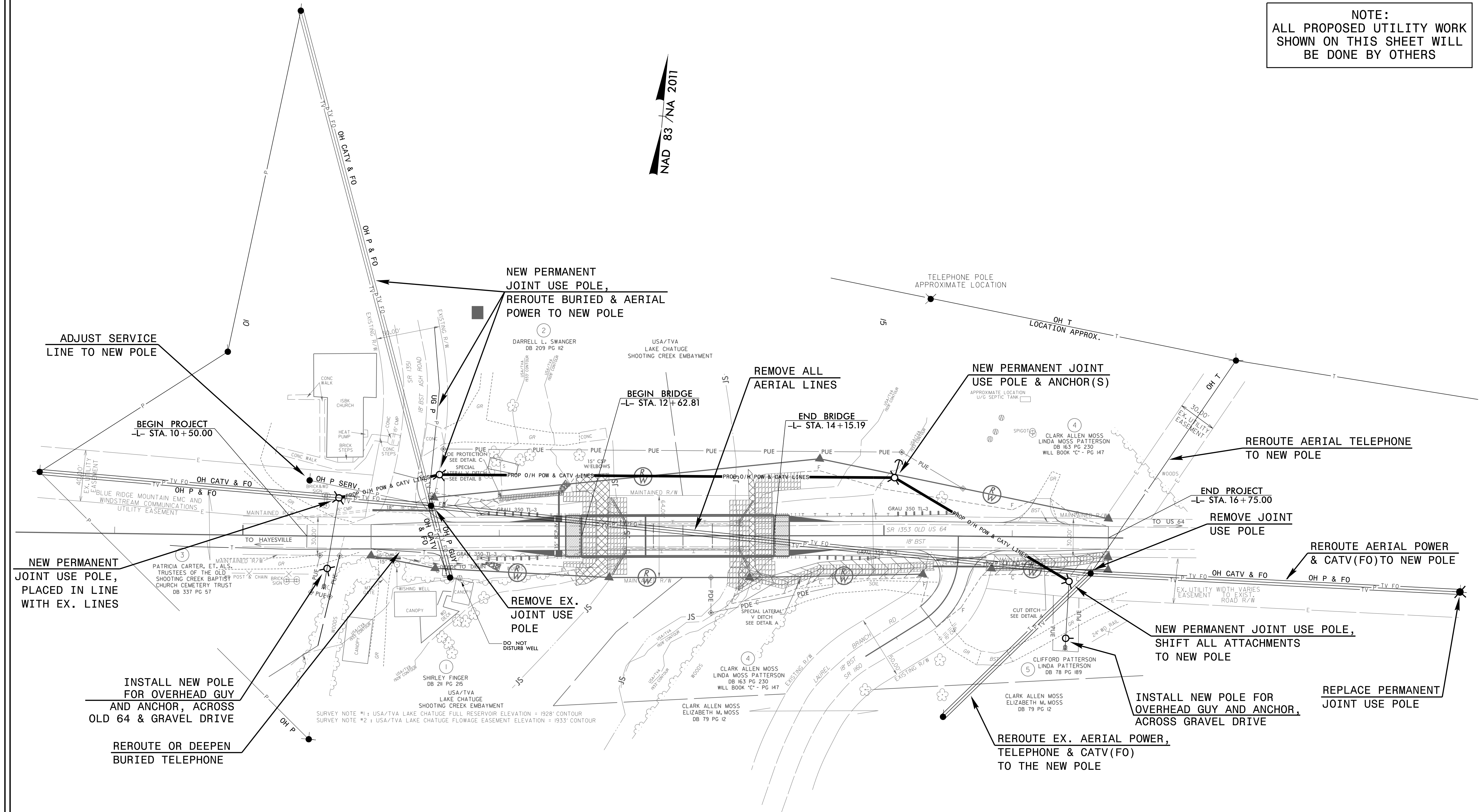
V&M PROJECT #31236-03  
TRANSPORTATION/31236-03 CLAY\_101/UTILITIES/00-2.DGN

**PROJECT REFERENCE: 14SP.20221.3**  
**CONTRACT: DN00126**

PROJECT REFERENCE NO. 14SP.20221.3	SHEET NO. U0-2
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**UTILITIES BY OTHERS**

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



**V&M**  
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