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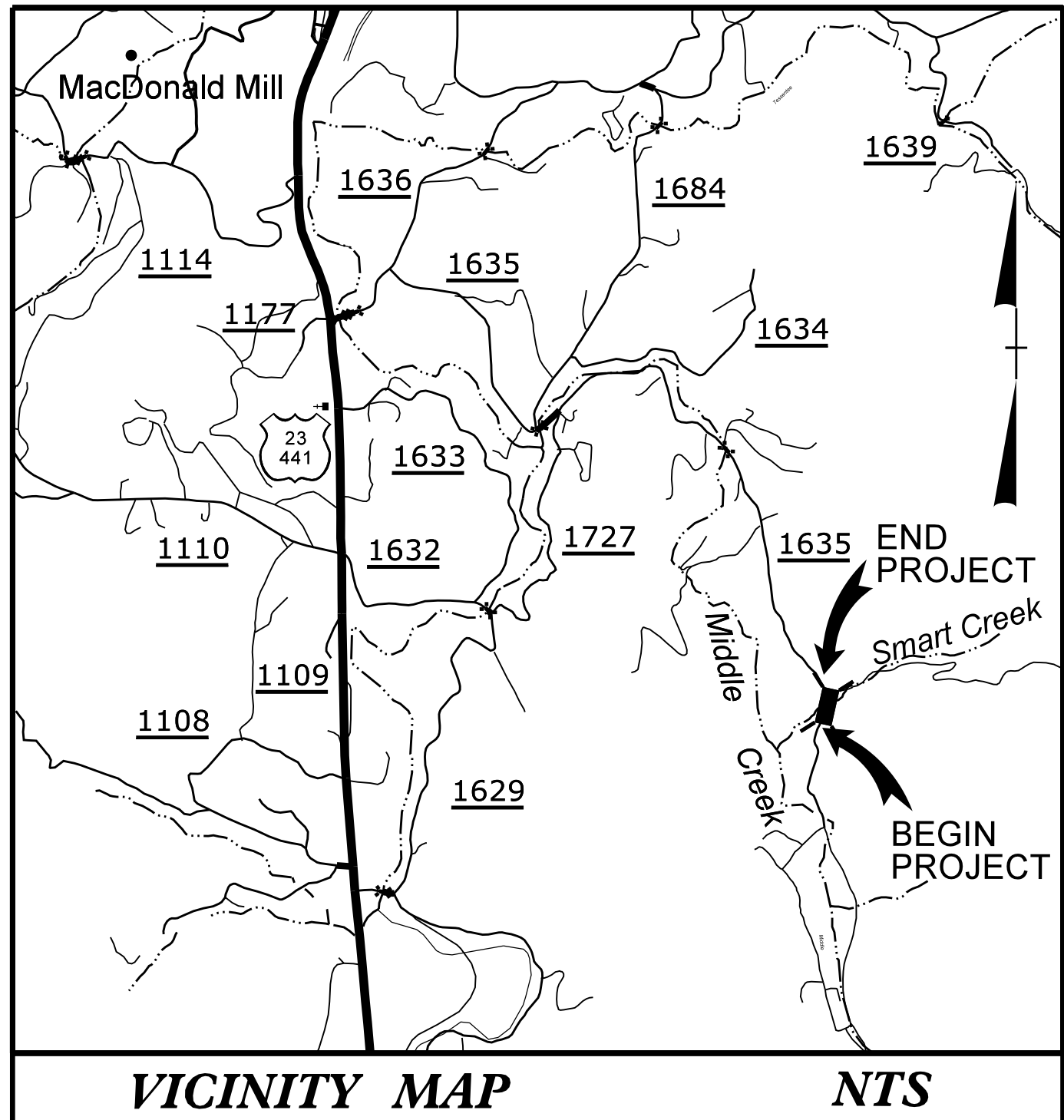
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TIP PROJECT: 17BP.14.R.109

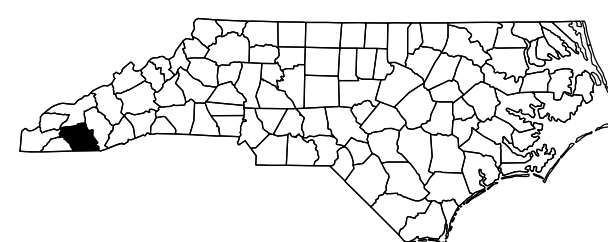
CONTRACT: DN00280

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



VICINITY MAP

NTS



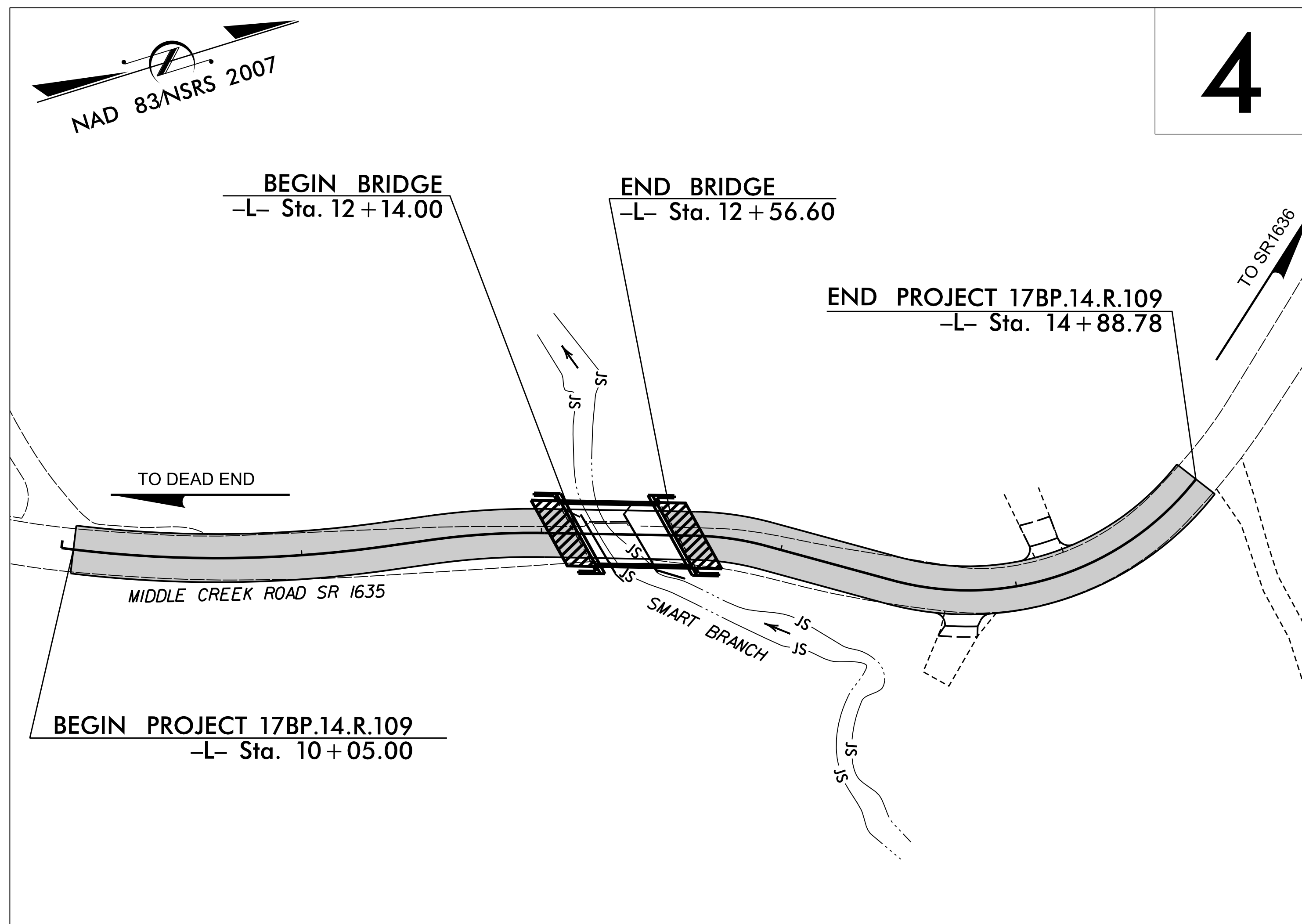
90% PLANS

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
MACON COUNTY

LOCATION: BRIDGE NO. 310 ON SR 1635 (MIDDLE CREEK RD) OVER SMART BRANCH

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.109	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.14.R.109		PE	
17BP.14.R.109		R/W	
17BP.14.R.109		CONST.	

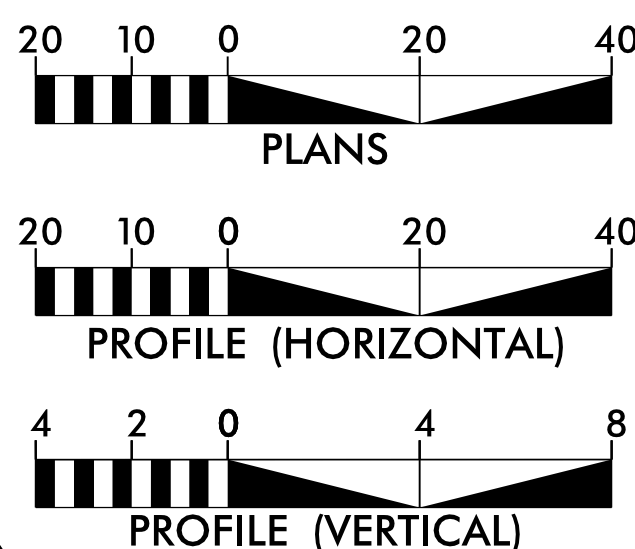


4

NCDOT CONTACT:
 JOSH DEYTON, PE
 HIGHWAY DIVISION 14
 BRIDGE MANAGER

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2010 = 800
 ADT =
 K = %
 D = %
 T = % *
 V = 30 MPH
 * TTST = DUAL
 FUNC CLASS =
 LOCAL
 SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT = 0.084 MILES
 LENGTH STRUCTURES PROJECT = 0.008 MILES
 TOTAL LENGTH PROJECT = 0.092 MILES



Prepared in the Office of:
 THE LOUIS BERGER GROUP, Inc.
 1001 Wade Avenue, Suite 400
 Raleigh, North Carolina 27605
 License No.: F-0840

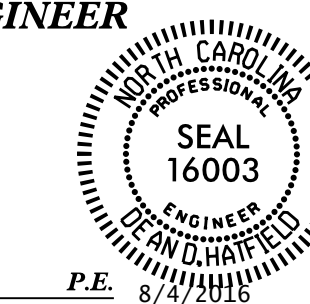
2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DEAN D. HATFIELD, PE
 PROJECT ENGINEER

LETTING DATE: RD ODELL, PE
 PROJECT DESIGN ENGINEER

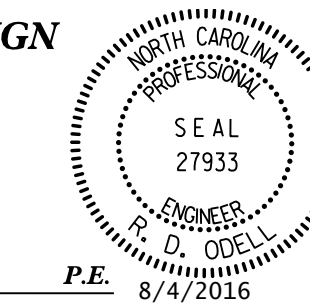
HYDRAULICS ENGINEER

DocuSigned by:
 Dean Hatfield
 SIGNATURE: Dean Hatfield
 P.E. 8/4/2016

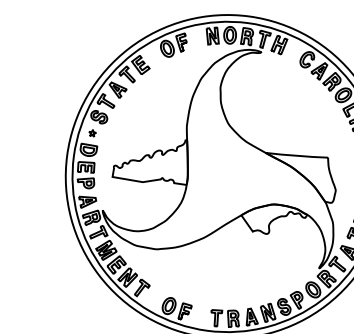


ROADWAY DESIGN ENGINEER

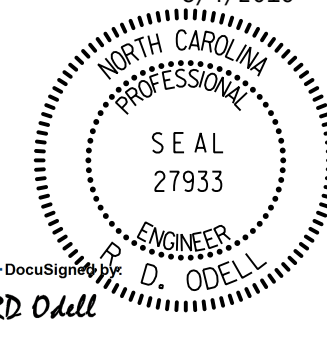
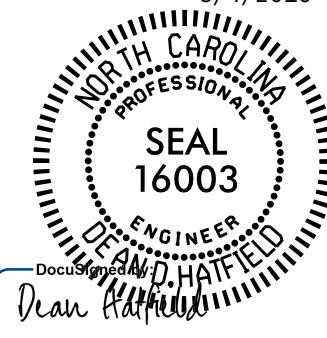
DocuSigned by:
 RD Odell
 SIGNATURE: RD Odell
 P.E. 8/4/2016



**DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA**



STATE HIGHWAY DESIGN ENGINEER

PROJECT REFERENCE NO. 17BPJ4R109	SHEET NO. 1-A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 8/4/2016  RD Odell	HYDRAULICS ENGINEER 8/4/2016  Dean Hatfield
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

INDEX OF SHEETS

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-A	DETOUR SHEET
2-B	DETOUR PROFILE
3-A	SUMMARIES OF EARTHWORK & GUARDRAIL
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-4	TRAFFIC CONTROL PLANS
PMP-1	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
UO-1 THRU UO-3	UTILITIES BY OTHERS PLANS
X-1 THRU X-19	CROSS-SECTIONS
S-1 THRU S-14	STRUCTURE PLANS

GENERAL NOTES

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

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

CLEARING:
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD 11.

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

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

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 NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

SUBSURFACE PLANS:
SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT.

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
HAYWOOD EMC, FRONTIER COMMUNICATION
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

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

ROADWAY ENGLISH STANDARD DRAWINGS

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 4 - MAJOR STRUCTURES	
422.11	Reinforced Bridge Approach Fills - Sub Regional Tier
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
857.01	Precast Reinforced Concrete Barrier - 41" Single Faced
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
866.02	Woven Wire Fence - with Wood Post

REVISIONS

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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	⑩ 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	☒
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 C/A Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
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	-----
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	⊕
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.*)	-----
U/G Power Line LOS C (S.U.E.*)	-----
U/G Power Line LOS D (S.U.E.*)	-----

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.*)	-----
U/G Telephone Cable LOS C (S.U.E.*)	-----
U/G Telephone Cable LOS D (S.U.E.*)	-----
U/G Telephone Conduit LOS B (S.U.E.*)	-----
U/G Telephone Conduit LOS C (S.U.E.*)	-----
U/G Telephone Conduit LOS D (S.U.E.*)	-----
U/G Fiber Optics Cable LOS B (S.U.E.*)	-----
U/G Fiber Optics Cable LOS C (S.U.E.*)	-----
U/G Fiber Optics Cable LOS D (S.U.E.*)	-----

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	-----
U/G Water Line LOS C (S.U.E.*)	-----
U/G Water Line LOS D (S.U.E.*)	-----
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.*)	-----
U/G TV Cable LOS C (S.U.E.*)	-----
U/G TV Cable LOS D (S.U.E.*)	-----
U/G Fiber Optic Cable LOS B (S.U.E.*)	-----
U/G Fiber Optic Cable LOS C (S.U.E.*)	-----
U/G Fiber Optic Cable LOS D (S.U.E.*)	-----

GAS:

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

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	-----
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	UST
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.

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SURVEY CONTROL SHEET 55-0310

-FINAL-

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1		497947.1750	696127.6620	2195.15	OUTSIDE PROJECT LIMITS	
2	BL-2		498264.8900	696217.7820	2184.08	12+49.25	8.30 LT
3	BL-3		498415.4880	696313.4060	2192.93	14+18.36	21.62 RT
4	BL-4		498593.7040	696161.1240	2201.84	OUTSIDE PROJECT LIMITS	

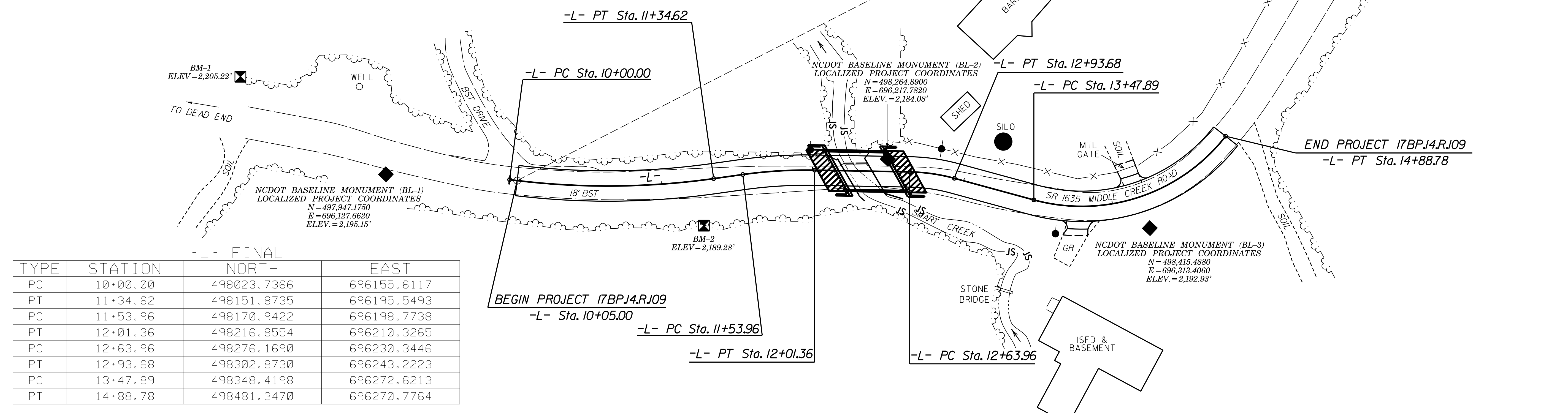
ALIGN	STATION	OFFSET	NORTH	EAST
L	10+05.00	-25.00	498038.6258	696134.9463
L	10+05.00	-30.00	498040.6954	696130.3947
L	11+34.62	-30.00	498156.8755	696165.9692
L	11+53.96	-30.00	498175.9441	696169.1937
L	12+01.36	-30.00	498226.4486	696181.9017
L	12+63.96	-30.00	498285.7622	696201.9198
L	12+93.68	-30.00	498319.1423	696218.0169
L	13+47.89	-30.00	498364.6891	696247.4159
L	14+88.78	-30.00	498464.3845	696246.0322
L	14+88.78	-25.00	498467.2116	696250.1563

BM1	ELEVATION	BM2	ELEVATION	BM3	ELEVATION
	2205.22		2189.28		2201.49
N 497875.41		N 498136.38		N 498617.94	
E 696037.47		E 696223.12		E 696132.44	
L STATION 10+05.00		L STATION 11+24.55		L STATION 14+88.78	
S 38°11'03.3" W DIST 194.49'		8 INCH SPIKE SET IN BASE OF 12 INCH RED OAK		N 45°21'49.5" W DIST 194.41'	
8 INCH SPIKE SET IN ROOT OF 24 INCH POPLAR				8 INCH SPIKE SET IN BASE OF 8 INCH CEDAR TREE	

PUE

-FINAL- ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+15.00	-30.00	498138.7532	696162.5377
L	11+65.00	-45.00	498190.9191	696156.7498
L	12+65.00	-45.00	498291.9165	696188.1722
L	12+93.68	-30.00	498319.1423	696218.0169



-L- FINAL

TYPE	STATION	NORTH	EAST
PC	10+00.00	498023.7366	696155.6117
PT	11+34.62	498151.8735	696195.5493
PC	11+53.96	498170.9422	696198.7738
PT	12+01.36	498216.8554	696210.3265
PC	12+63.96	498276.1690	696230.3446
PT	12+93.68	498302.8730	696243.2223
PC	13+47.89	498348.4198	696272.6213
PT	14+88.78	498481.3470	696270.7764

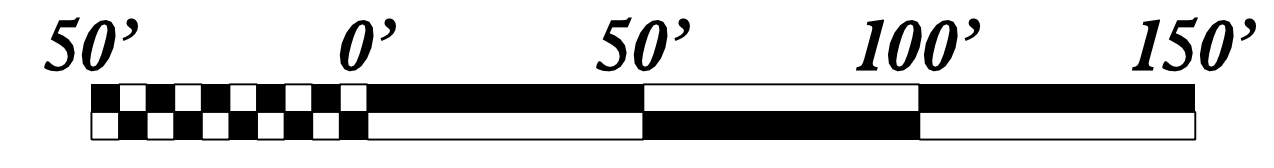
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "550310 GPS-102" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 498812.974(ft) EASTING: 696025.580(ft) ELEVATION: 2202.76(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: .9997786652

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "550310 GPS-102" TO -L- STATION 10+05.00 IS S 9°33'27.3" E 795.74 (ft)

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



GEOID MODEL - G12NC
NOTE: DRAWING NOT TO SCALE

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/)

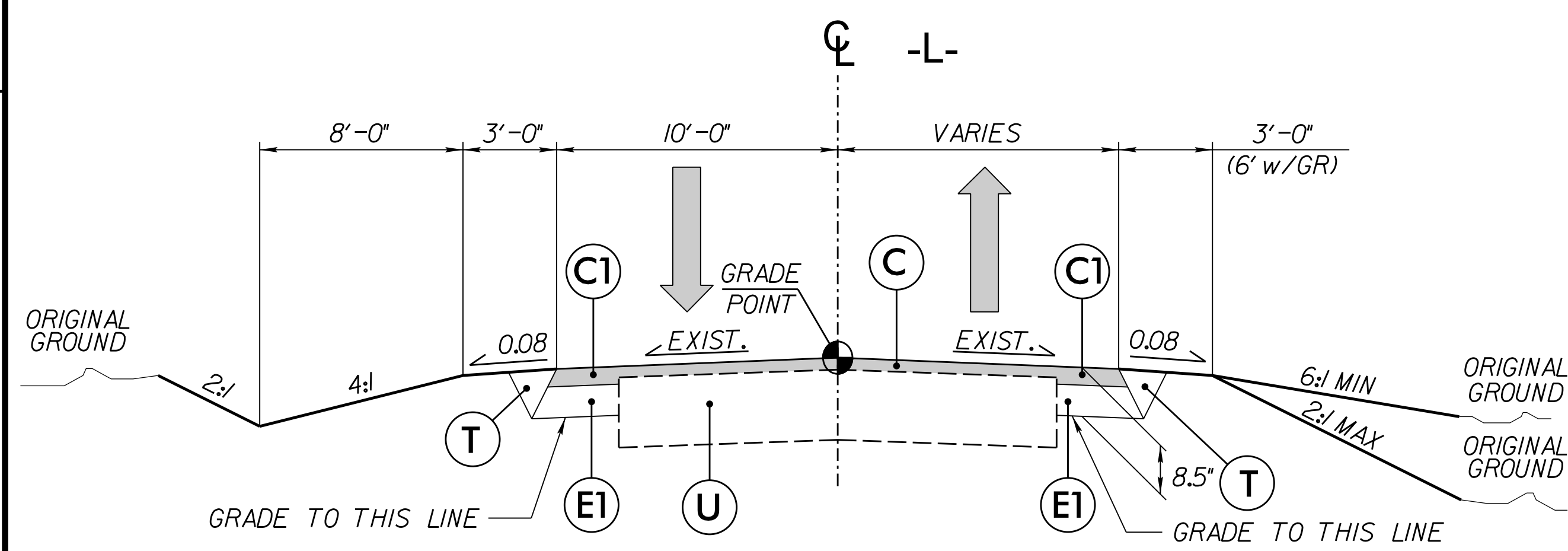
THE FILES TO BE FOUND ARE AS FOLLOWS:
550310_LS_CONTROL.TXT

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

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

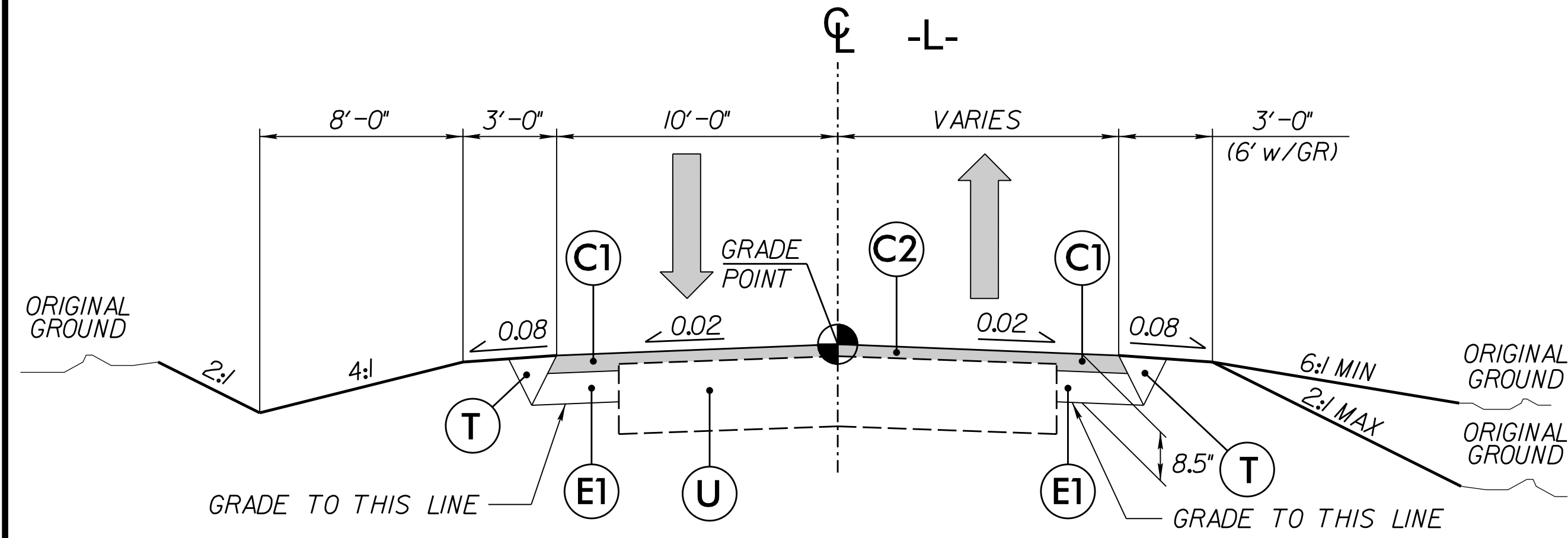
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PROJECT REFERENCE NO. 17BP14.R109	SHEET NO. 2
R/W SHEET NO.	PAVEMENT DESIGN ENGINEER
ROADWAY DESIGN ENGINEER 8/4/2016	PAVEMENT DESIGN ENGINEER 8/4/2016
SEAL 27933	SEAL 16003
RD Odell	Dean Odell
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



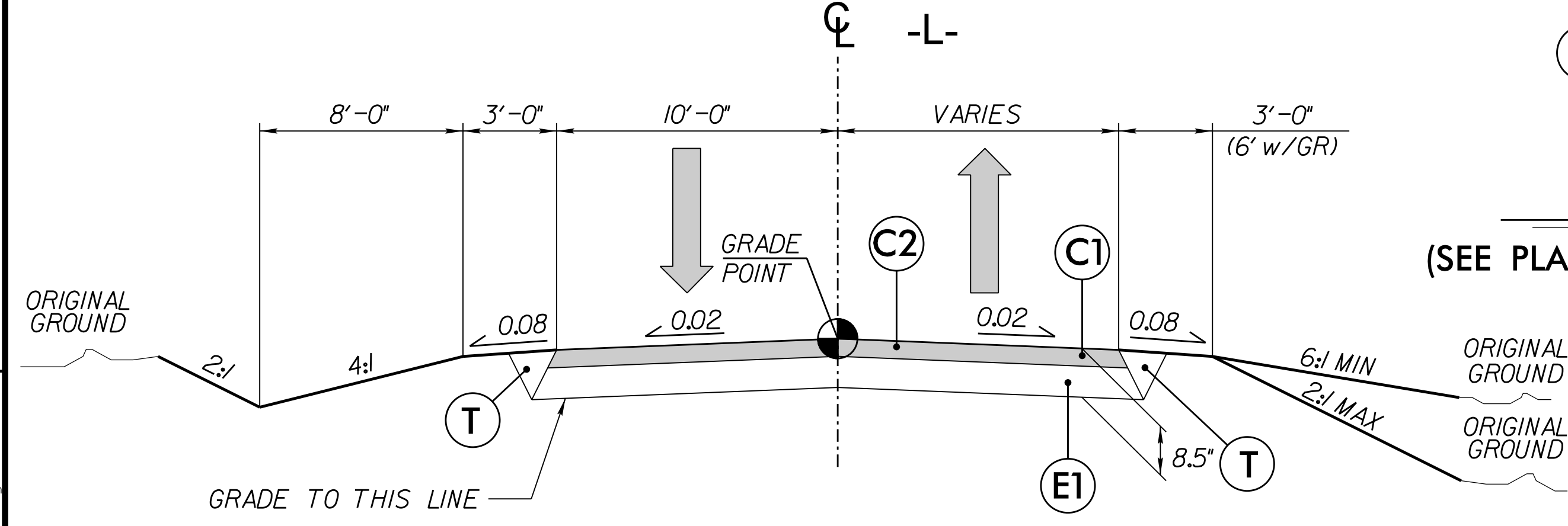
TYPICAL SECTION No. 1

-L- STA 10+05.00 TO -L- STA 10+90.00
-L- STA 14+00.00 TO -L- STA 14+88.78



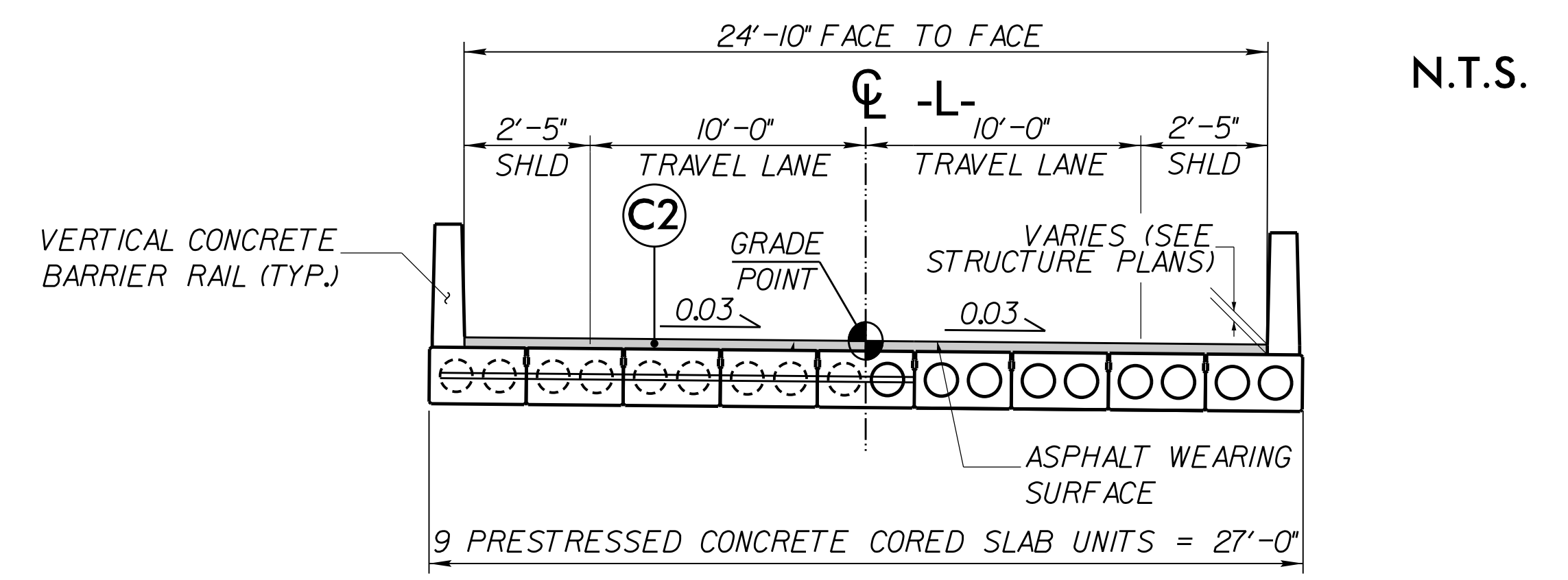
TYPICAL SECTION No. 2

-L- STA 10+90.00 TO -L- STA 11+90.00
-L- STA 12+90.00 TO -L- STA 14+00.00



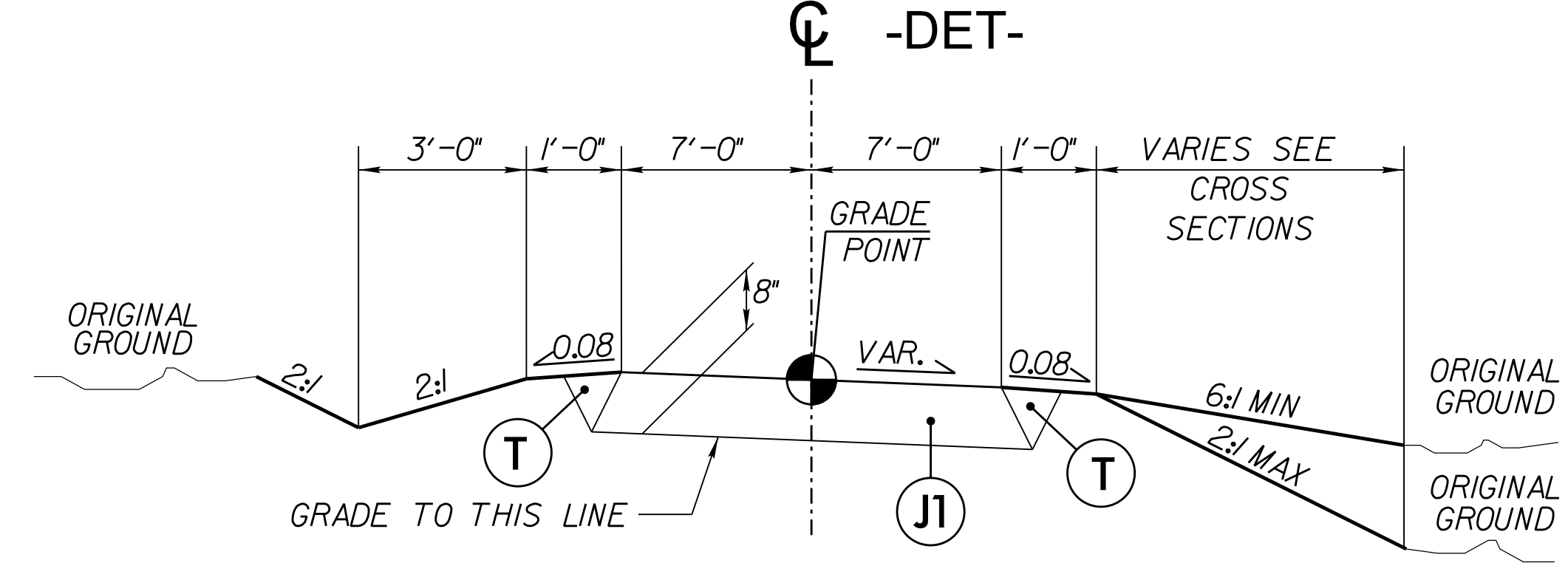
TYPICAL SECTION No. 3

-L- STA 11+90.00 TO -L- STA 12+14.00 (BEGIN BRIDGE)
-L- STA 12+56.60 (END BRIDGE) TO -L- STA 12+90.00



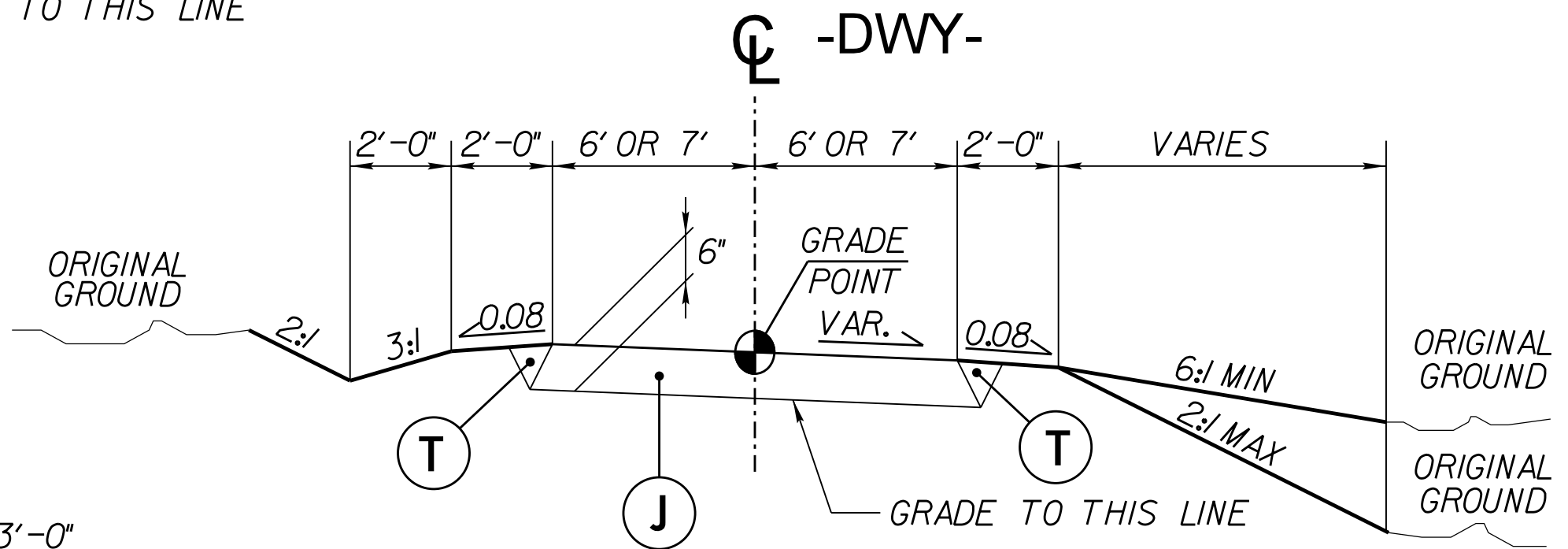
TYPICAL SECTION ON STRUCTURE

-L- STA 12+14.00 (BEGIN BRIDGE) TO -L- STA 12+56.60 (END BRIDGE)



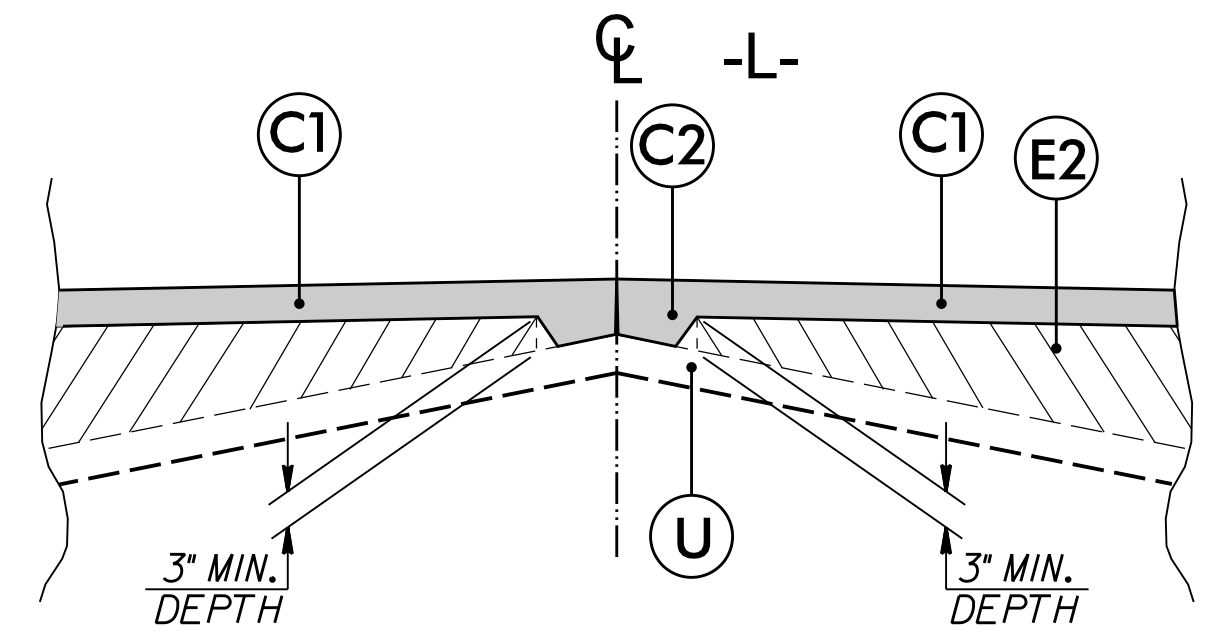
DETOUR TYPICAL SECTION

-DET- STA 11+50.66 TO -DET- STA 15+46.74



DRIVEWAY DETAIL

(SEE PLANS FOR DWY LOCATIONS & WIDTHS)



DETAIL SHOWING METHOD OF WEDGING

Note: Pavement edge slopes are 1:1 unless shown otherwise.

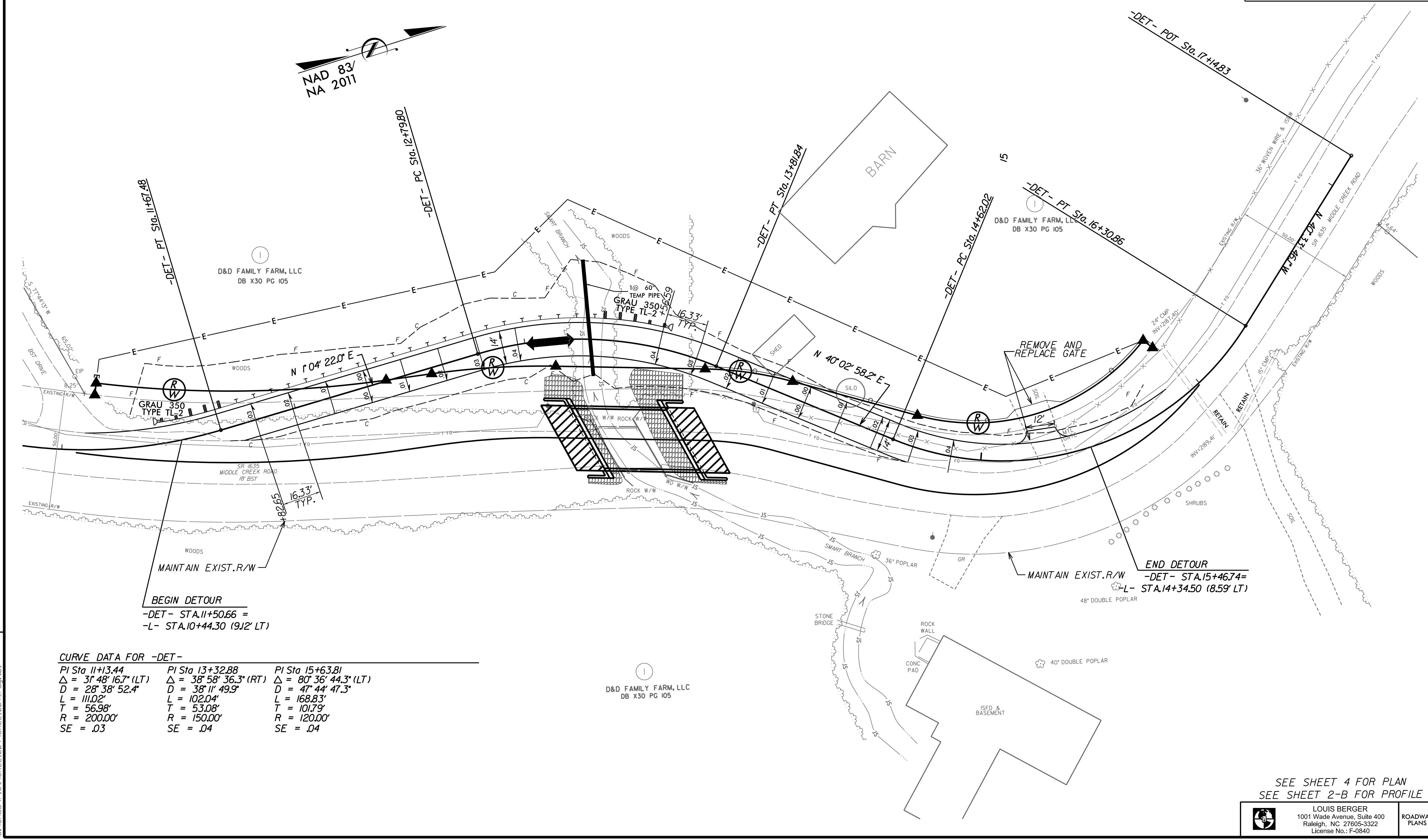
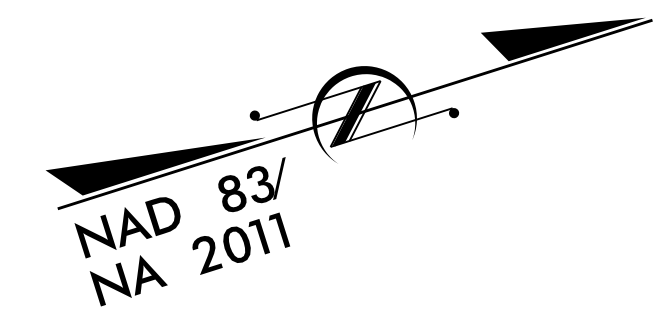
PAVEMENT SCHEDULE	
ITEM	DESCRIPTION
C	Prop. Approx 1.5" Asphalt Concrete Surface Course, Type S9.5B, at an Average Rate of 168 lbs. Per sq. yard.
C1	Prop. Approx 3.0" Asphalt Concrete Surface Course, Type S9.5B, at an Average Rate of 168 lbs. Per sq. yard in each of two layers.
C2	Prop. Var. Depth Asphalt Concrete Surface Course, Type S9.5B, at an Average Rate of 112 lbs. Per sq. yard Per 1" Depth, to be placed in layers not less than 1.5" or greater than 2" in depth.
E1	Prop. Approx 5.5" Asphalt Concrete Base Course, Type B25.0B, at an Average Rate of 627 lbs. Per sq. yard.
E2	Prop. Var. Depth Asphalt Concrete Base Course, Type B25.0B, at an Average Rate of 114 lbs. Per sq. yard Per 1" Depth, to be placed in layers not less than 4" or greater than 5.5" in depth.
J	Prop. 6" Aggregate Base Course.
J1	Prop. 8" Aggregate Base Course.
T	Earth Material
U	Existing Pavement
W	Var. Depth Asphalt Pavement

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PROJECT REFERENCE NO. 17BPJ4R109		SHEET NO. 2-A	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER 8/4/2016		HYDRAULICS ENGINEER 8/4/2016	
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BEGIN DETOUR
 -DET- STA.11+50.66 =
 -L- STA.10+44.30 (9J2' LT)

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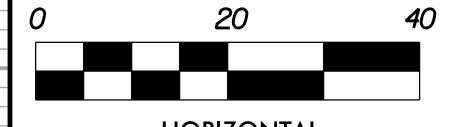
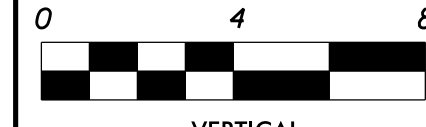
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D = 28'38"52.4"	D = 38'11"49.9"	D = 47'44"47.3"
L = 111.02'	L = 102.04'	L = 168.83'
T = 56.98'	T = 53.08'	T = 101.79'
R = 200.00'	R = 150.00'	R = 120.00'
SE = .03	SE = .04	SE = .04

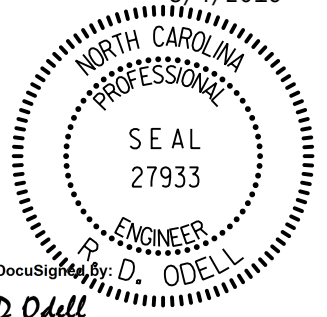
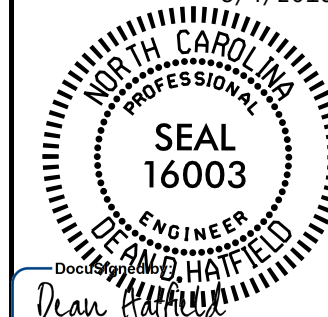
END DETOUR
 -DET- STA.15+46.74=
 -L- STA.14+34.50 (8.59' LT)

SEE SHEET 4 FOR PLAN
 SEE SHEET 2-B FOR PROFILE

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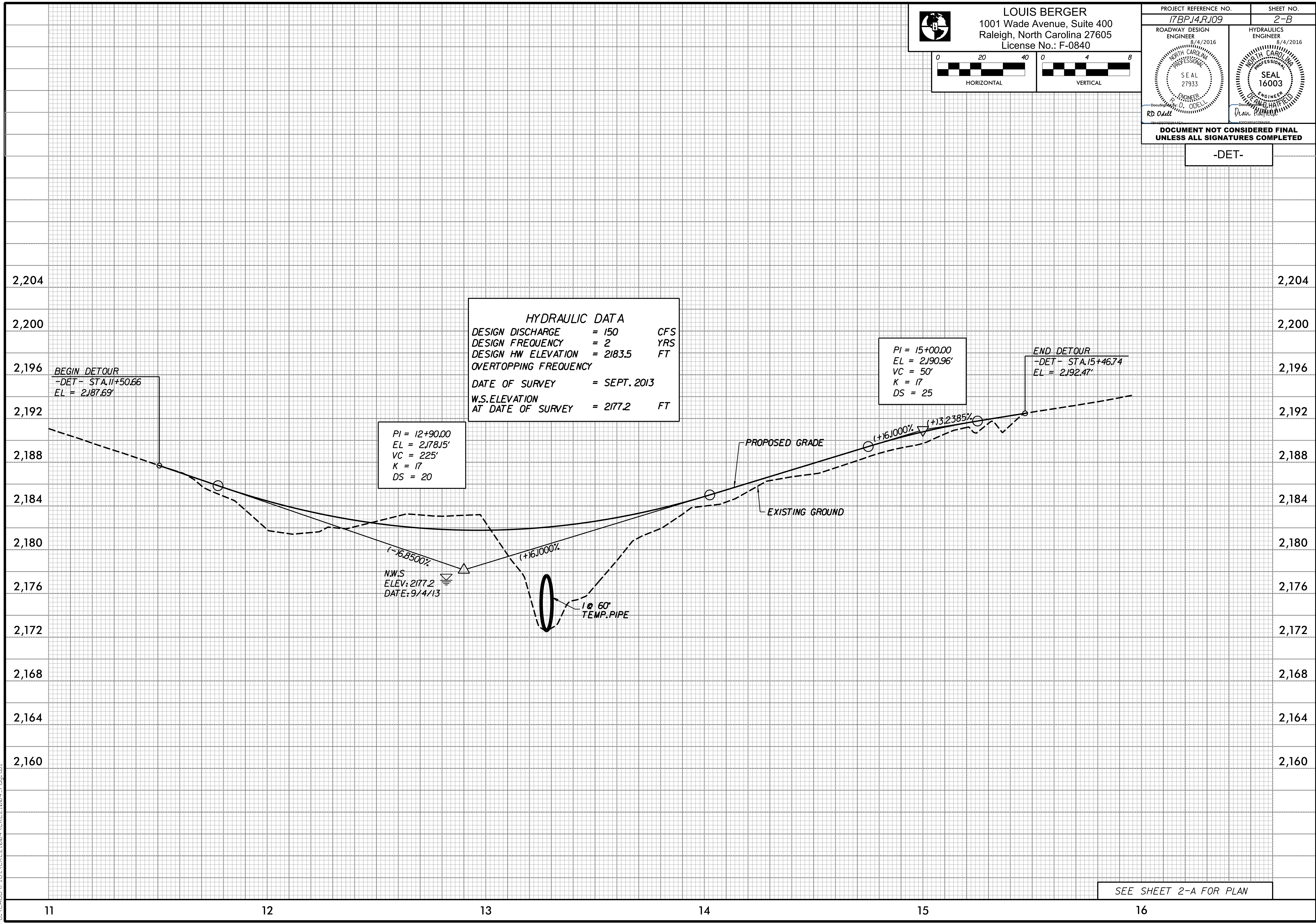
LOUIS BERGER
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 Raleigh, North Carolina 27605
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PROJECT REFERENCE NO. 17BPJ4R109	SHEET NO. 2-B
ROADWAY DESIGN ENGINEER 8/4/2016 RD Odell	HYDRAULICS ENGINEER 8/4/2016 Dean Harte
	

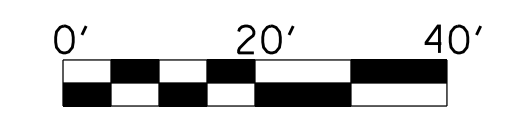
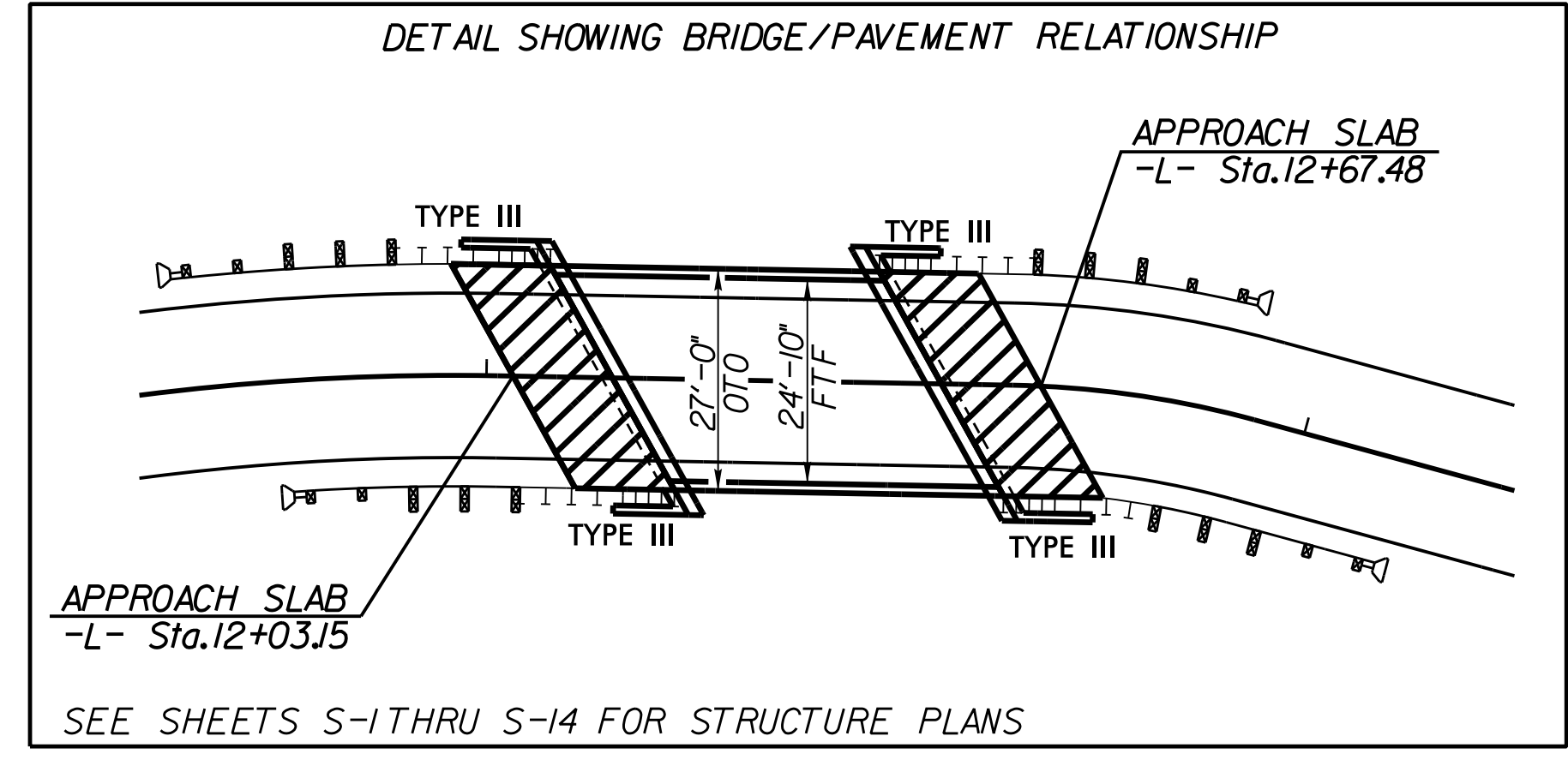
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-DET-

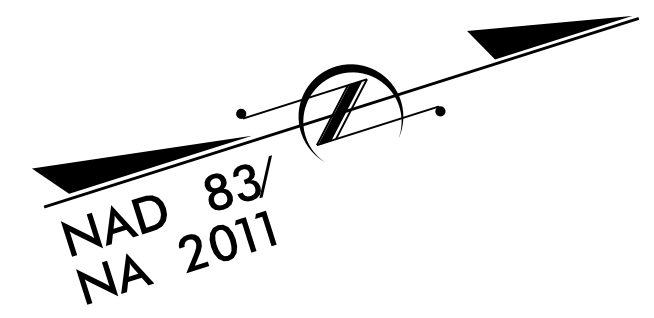


SEE SHEET 2-A FOR PLAN

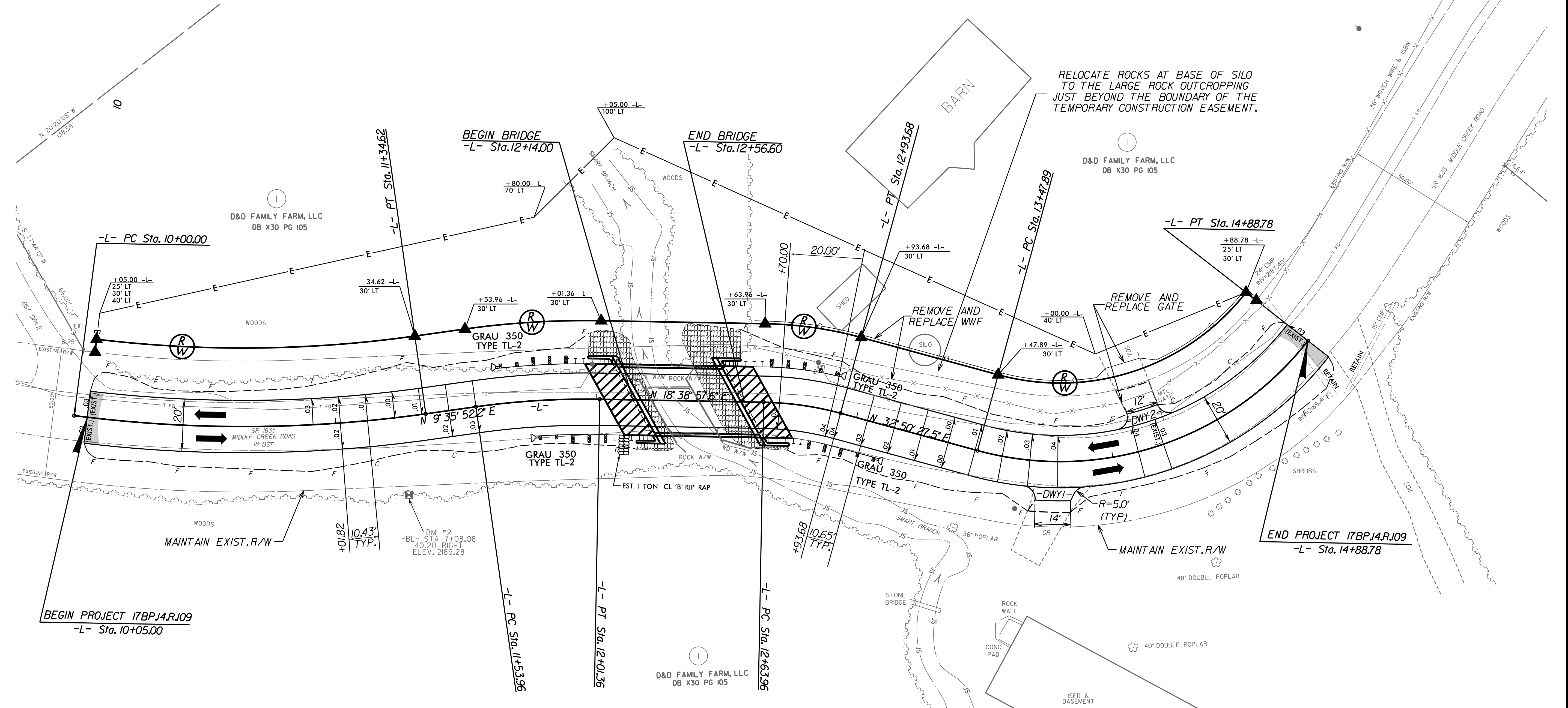
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PROJECT REFERENCE NO. 17BPJ4R109		SHEET NO. 4	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER 8/4/2016 RD O'NEILL	HYDRAULICS ENGINEER 8/4/2016 DR. DEAN HARTFIELD	NORTH CAROLINA PROFESSIONAL SEAL 27933 16003	
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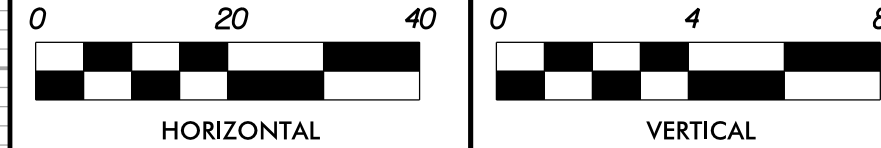
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$D = 11^\circ 27' 33.0''$	$D = 19^\circ 05' 54.9''$	$D = 47^\circ 44' 47.3''$	$D = 47^\circ 44' 47.3''$
$L = 134.62'$	$L = 47.39'$	$L = 29.72'$	$L = 140.89'$
$T = 67.72'$	$T = 23.75'$	$T = 14.94'$	$T = 79.84'$
$R = 500.00'$	$R = 300.00'$	$R = 120.00'$	$R = 120.00'$
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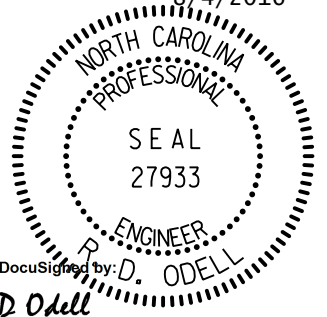
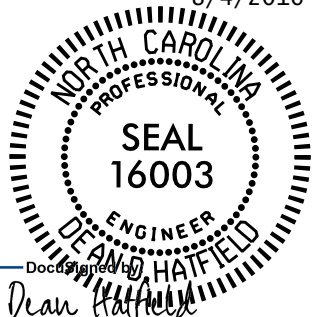
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SEE SHEET 5 FOR PROFILE

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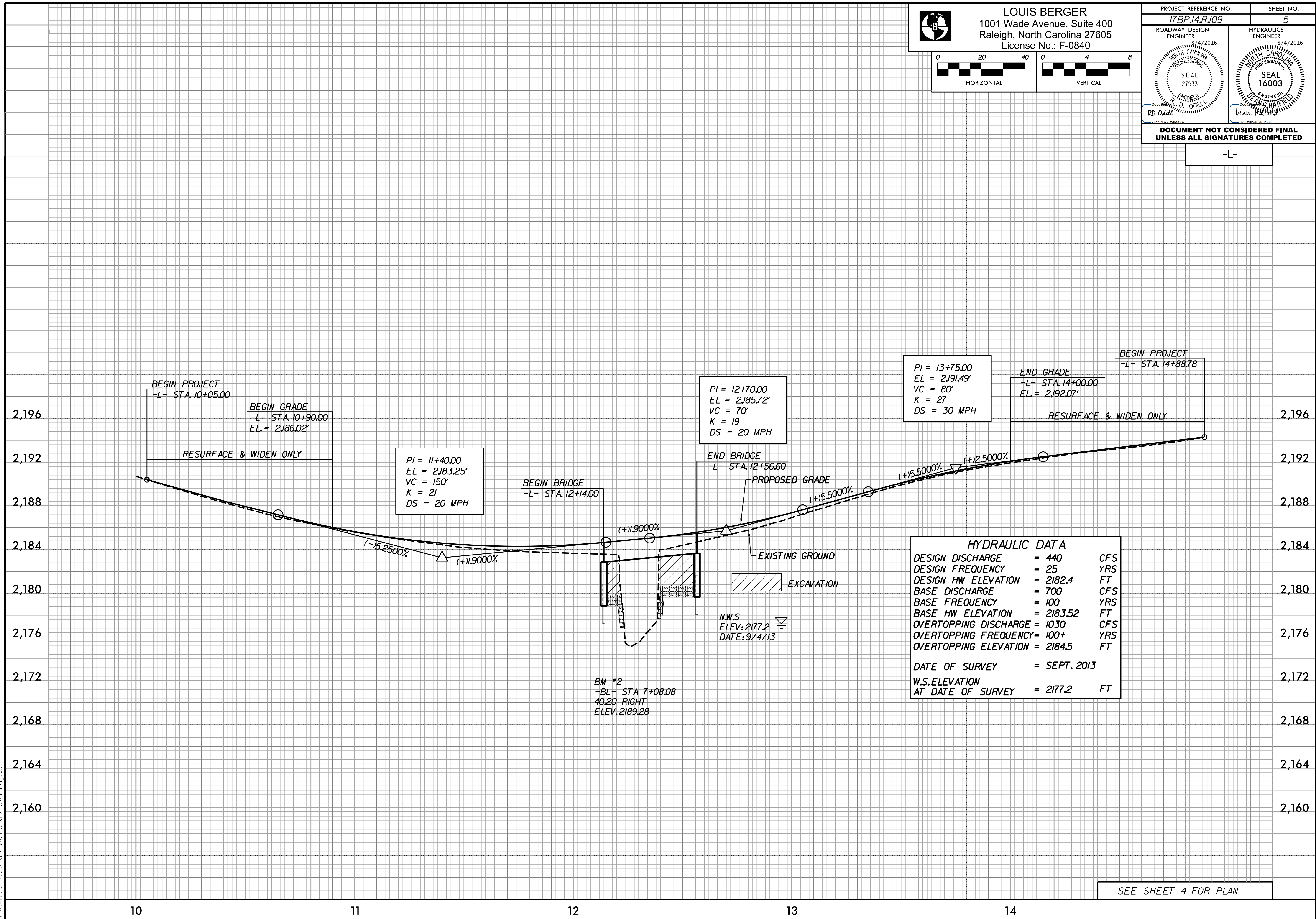
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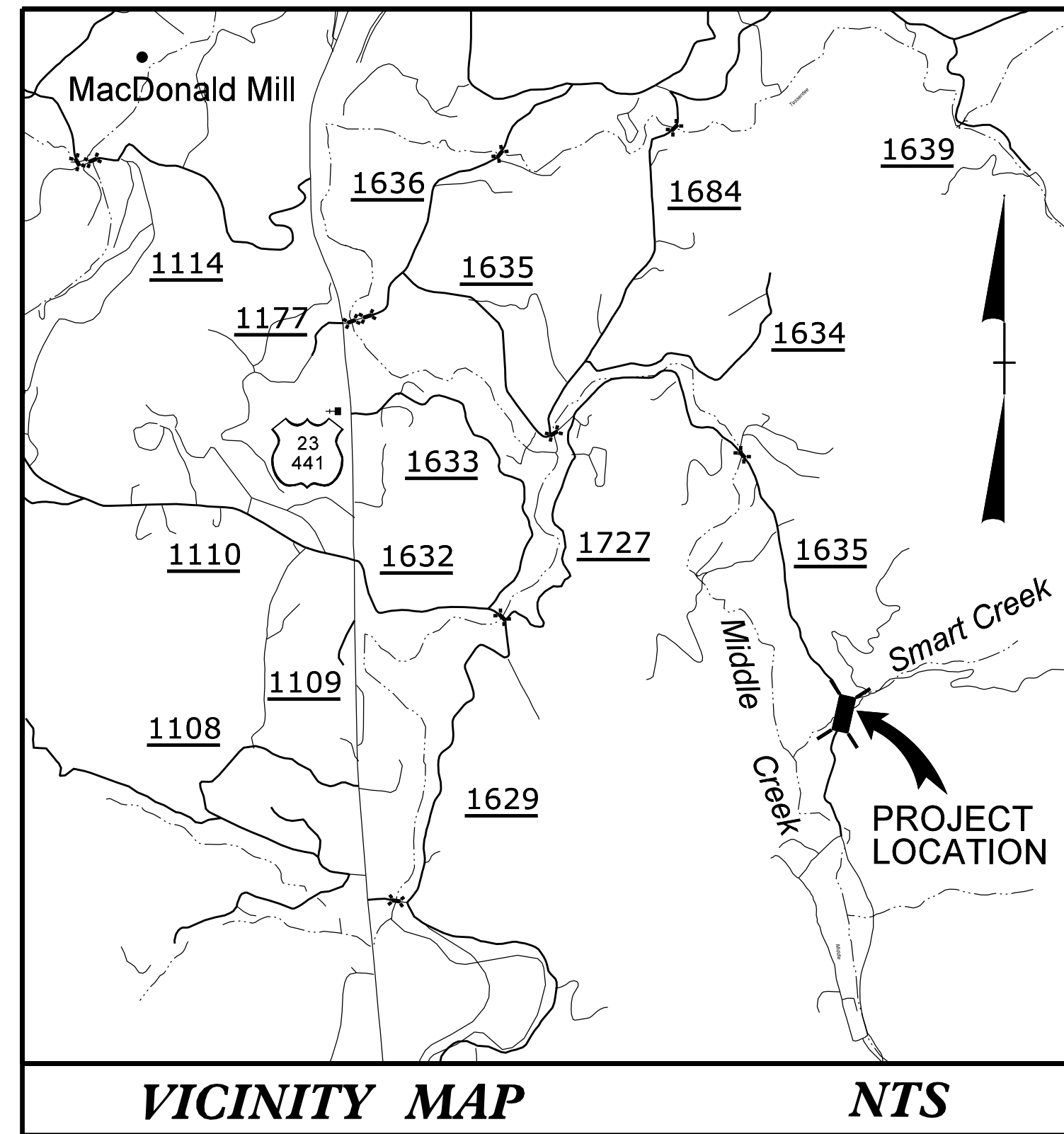
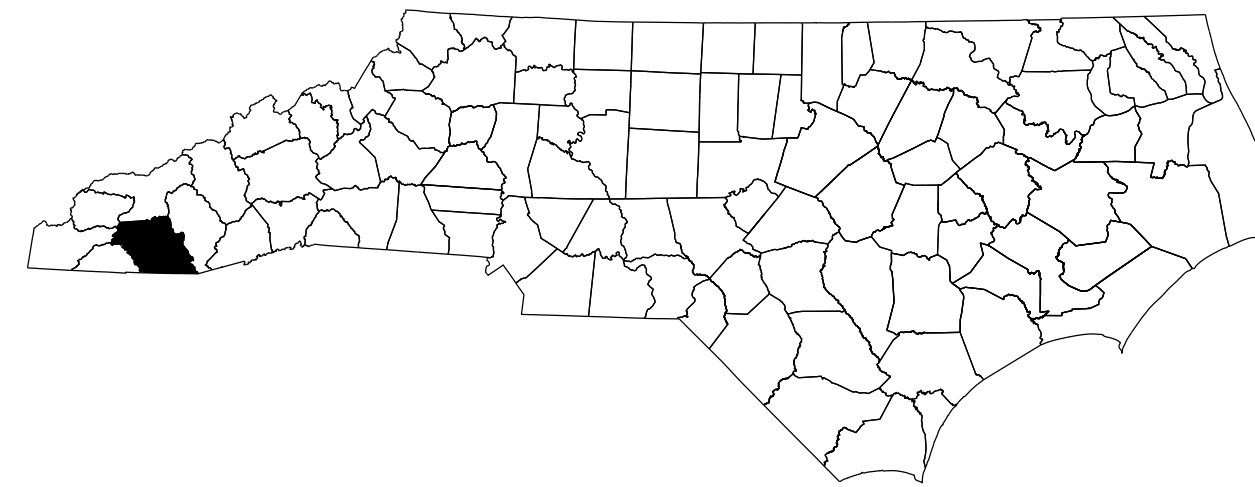
SEE SHEET 4 FOR PLAN

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

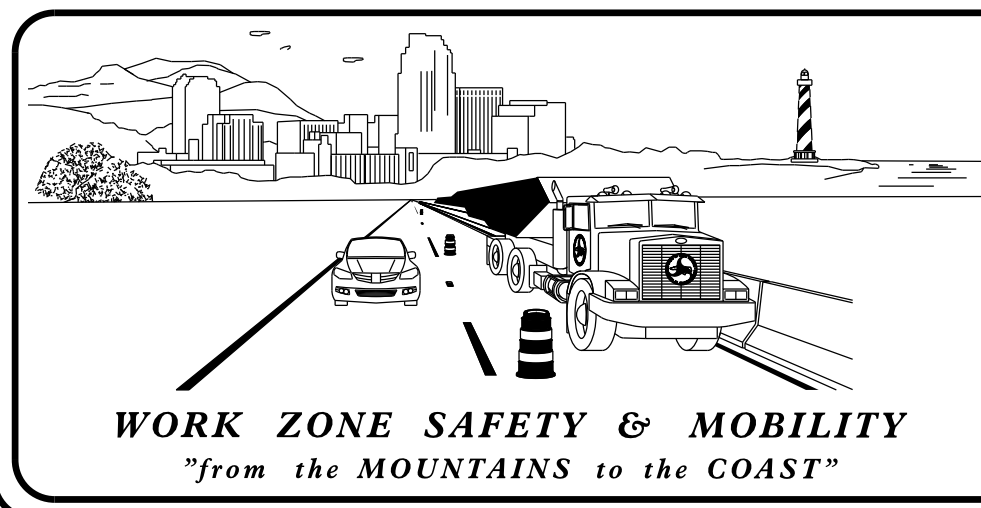
TRANSPORTATION MANAGEMENT PLAN

MACON COUNTY



LOCATION: BRIDGE NO. 310 ON SR 1635 OVER SMART BRANCH

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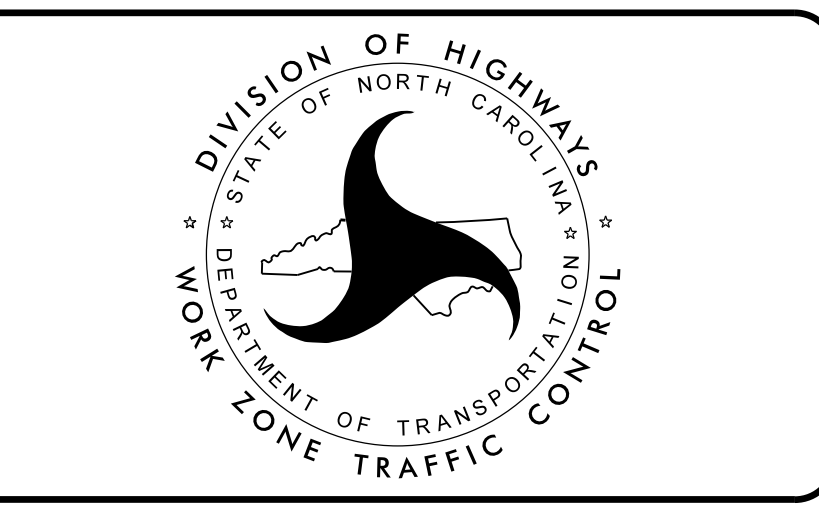


N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER

TRAFFIC CONTROL PROJECT ENGINEER

TRAFFIC CONTROL PROJECT DESIGN ENGINEER



Prepared In the Office of:
LOUIS BERGER
1001 Wade Avenue, Suite 400
Raleigh, North Carolina 27605
License No.: F-0840

DEAN D. HATFIELD, PE
PROJECT ENGINEER

RD ODELL, PE
PROJECT DESIGN ENGINEER

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APPROVED: _____
DATE: _____ 8/4/2016

SEAL

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES AND LOCAL NOTES AND TEMPORARY TRAFFIC CONTROL PHASING)
TMP-2	TEMPORARY TRAFFIC CONTROL PHASE I DETAIL
TMP-3	TEMPORARY TRAFFIC CONTROL PHASE II DETAIL
TMP-4	TEMPORARY TRAFFIC CONTROL PHASE III DETAIL

SHEET NO.
TMP-1

PROJECT: 17BP.14.R.109



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PROJECT REFERENCE NO.

17BPJ4R109

SHEET NO.

TMP-1A

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

<u>STD. NO.</u>	<u>TITLE</u>
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE 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	DRUM
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.

- REMOVAL
- WORK AREA

SIGNALS

- TEMPORARY

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- DRUM

TEMPORARY SIGNING

- STATIONARY SIGN

TEMPORARY PAVEMENT MARKING

- STOPBAR
- P2 24" WHITE STOPBAR

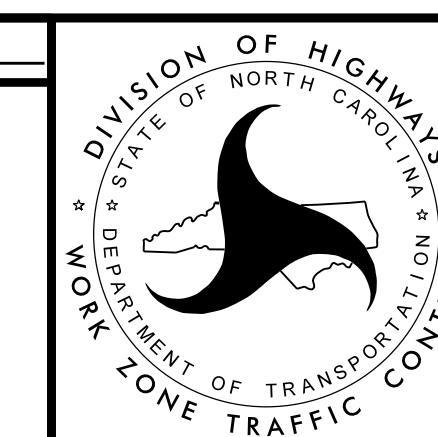
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APPROVED: _____ DATE: 8/4/2016

RD O'Neil



ROADWAY STANDARD DRAWINGS,
& LEGEND



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PROJECT REFERENCE NO.

17BPJ4R109

SHEET NO.

TMP-1B

GENERAL NOTES /LOCAL 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.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- E) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- F) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.
- G) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 200 IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- I) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- J) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

- K) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.
- L) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

- M) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
-L-	PAINT	NONE

- N) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.
- O) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- P) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

- Q) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) 200 AND 400 RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

MANAGEMENT STRATEGIES

- DURING CONSTRUCTION, SR 1635 (MIDDLE CREEK ROAD) TRAFFIC WILL BE PLACED IN A ONE LANE, TWO WAY PATTERN PER NCDOT.
- SIGNAGE AT THE BEGINNING AND END OF CONSTRUCTION WILL MANAGE SR 1635 TRAFFIC.
- THE CONSTRUCTION OF TIE-INS, TRAFFIC SHIFTS, PLACEMENT OF FINAL SURFACE COURSE AND PAVEMENT MARKINGS WILL BE PERFORMED USING FLAGGERS FOR TWO LANE, ONE WAY TRAFFIC OPERATION.

PHASING

PHASE I

STEP 1: PRIOR TO CONSTRUCTION OPERATIONS, INSTALL WORK ZONE ADVANCE WARNING SIGNS PER SHEET TMP-2 AND ROADWAY STANDARD DRAWING 1101.01 SHEET 3 OF 3.

STEP 2: WHILE TRAFFIC IS MAINTAINED ON THE EXISTING ROADWAY, COMPLETE THE FOLLOWING (TMP-2):

- CONSTRUCT TEMPORARY PIPE AND TEMPORARY DRAINAGE.
- CONSTRUCT TEMPORARY DETOUR.
- PLACE TEMPORARY GUARDRAIL AND BARRICADES.

PHASE II

STEP 1: TO BE COMPLETED IN ONE WORK PERIOD, USING RDWY STD. 1101.02 SHEET 1 OF 15, PERFORM THE FOLLOWING (TMP-3):

- CONSTRUCT/INSTALL TEMPORARY TRAFFIC SIGNAL.
- PLACE TEMPORARY MARKINGS ON EXISTING SR 1635 FOR A TEMPORARY ONE LANE, TWO WAY TRAFFIC PATTERN .
- CONSTRUCT DETOUR TIE-INS TO EXISTING ROADWAY.
- INSTALL ADDITIONAL SIGNS FOR TEMPORARY TRAFFIC SIGNAL, ACTIVATE THE SIGNAL, AND SHIFT TRAFFIC TO TEMPORARY ONE LANE, TWO WAY PATTERN.

STEP 2: WITH TRAFFIC ON TEMPORARY DETOUR, COMPLETE THE FOLLOWING (TMP-3):

- REMOVE EXISTING BRIDGE IN ACCORDANCE WITH ROADWAY AND STRUCTURE PLANS.
- CONSTRUCT PROPOSED BRIDGE (SEE STRUCTURE PLANS).
- CONSTRUCT -L- FROM STA. 10+05 +/- TO -L- STA. 14+88.78 +/- UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE.

STEP 3: TO BE COMPLETED IN ONE WORK PERIOD, CONSTRUCT TIE INS AND PLACE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS.

PHASE III

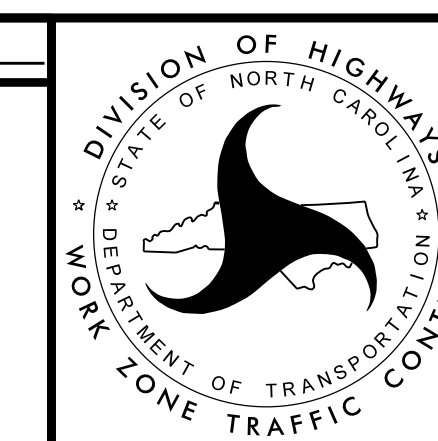
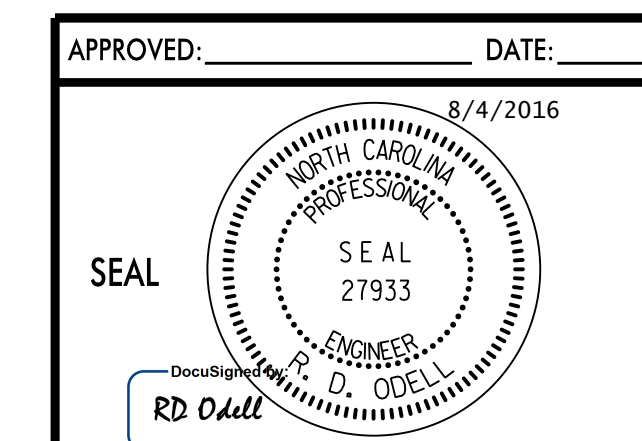
STEP 1: MAINTAIN THE TEMPORARY TRAFFIC SIGNAL TO PERFORM THE FOLLOWING (TMP-4):

- PLACE TRAFFIC INTO A TEMPORARY ONE- LANE, TWO WAY TRAFFIC PATTERN ACROSS THE PROPOSED STRUCTURE.
- COMPLETE THE REMOVAL OF THE DETOUR AND ASSOCIATED TRAFFIC CONTROL DEVICES.
- PERFORM ALL NECESSARY SHOULDER WORK AWAY FROM TRAFFIC.
- COMPLETE ALL PAVED DRIVEWAYS.

STEP 2: TO BE COMPLETED IN ONE WORK PERIOD, CONSTRUCT TIE-INS AND PLACE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS. AT THE END OF THE WORK PERIOD OPEN CULVERT TO FINAL TRAFFIC PATTERN.

STEP 3: COMPLETE THE REMOVAL OF ANY REMAINING TRAFFIC CONTROL DEVICES.

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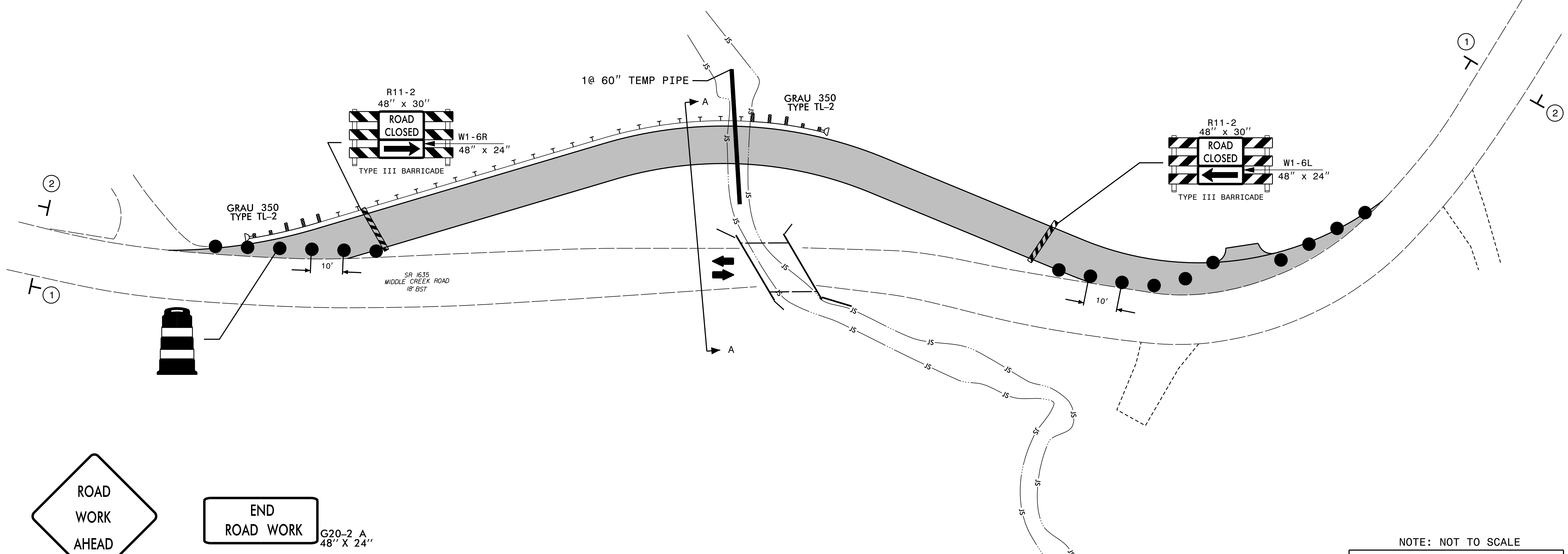
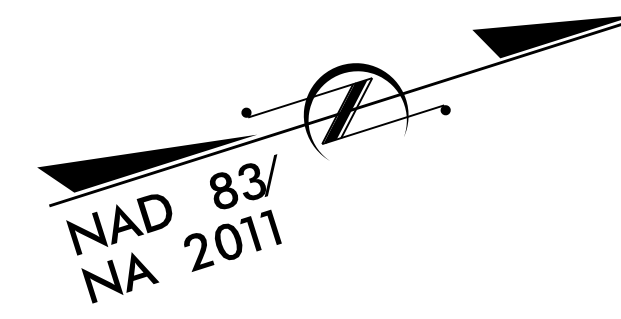
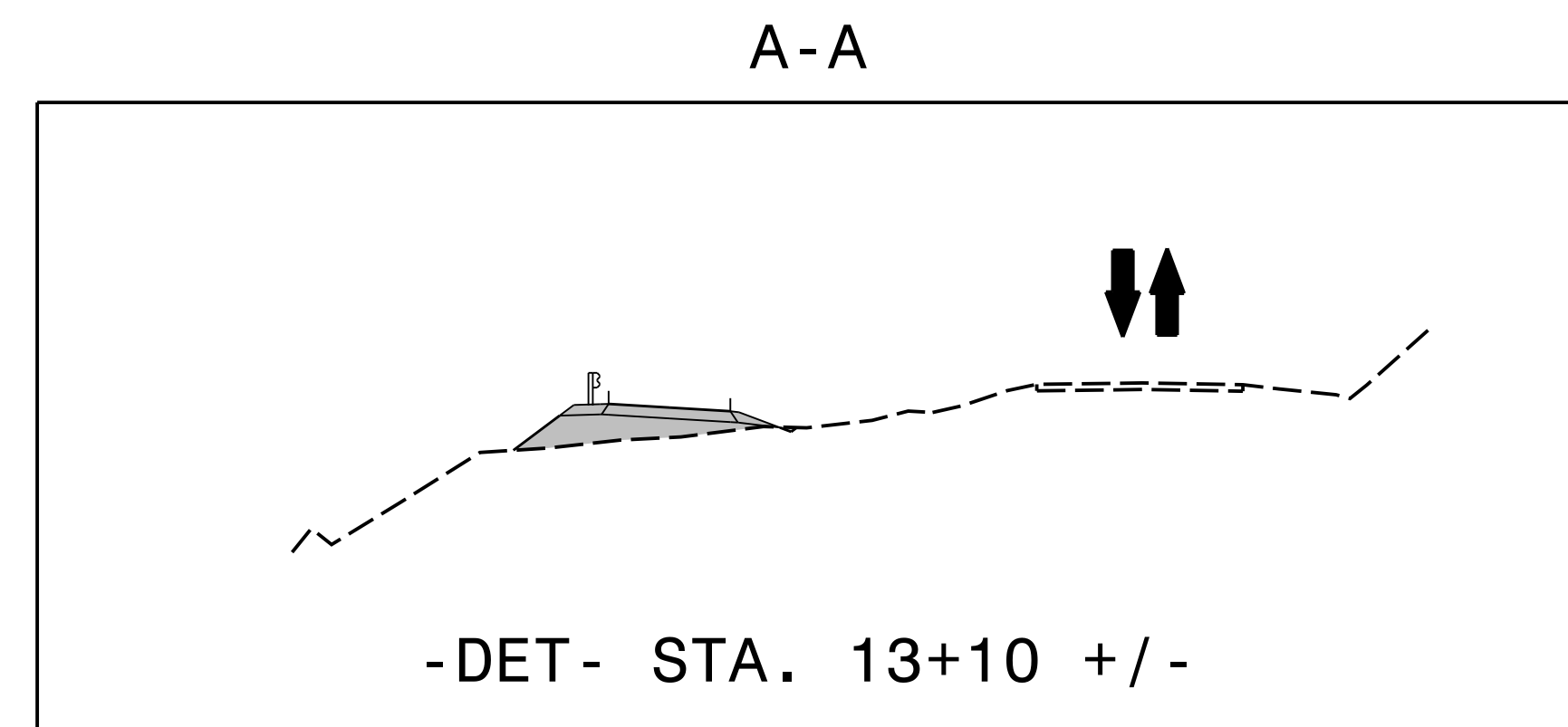


TRANSPORTATION OPERATIONS PLAN:
(MANAGEMENT STRATEGIES,
GENERAL NOTES AND LOCAL NOTES,
AND PHASING)

REVISIONS

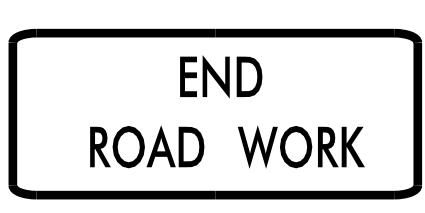
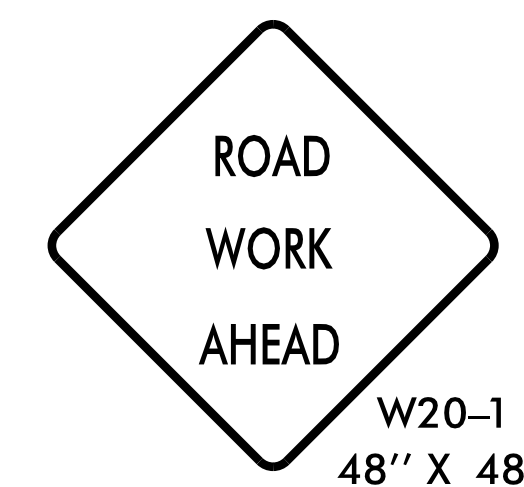
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REVISIONS

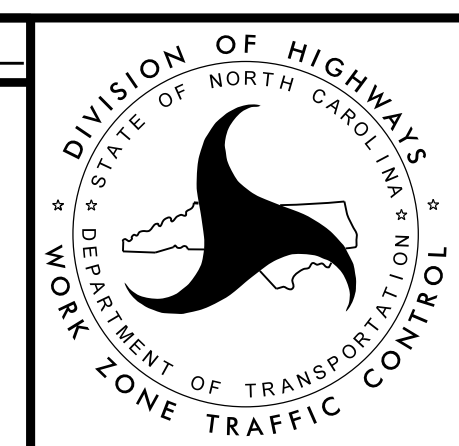


- NOTES:
1. FOR CONSTRUCTION PHASING NOTES, SEE SHEET TMP-1B.
 2. ALL SIGN LOCATIONS ARE APPROXIMATE.
 3. SEE ROADWAY STANDARD DRAWING 1101.01 SHEET 3 OF 3 FOR SIGN LOCATIONS AND APPLICABLE NOTES.
 4. MAINTAIN ACCESS TO ALL DRIVEWAYS DURING CONSTRUCTION.

NOTE: NOT TO SCALE
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

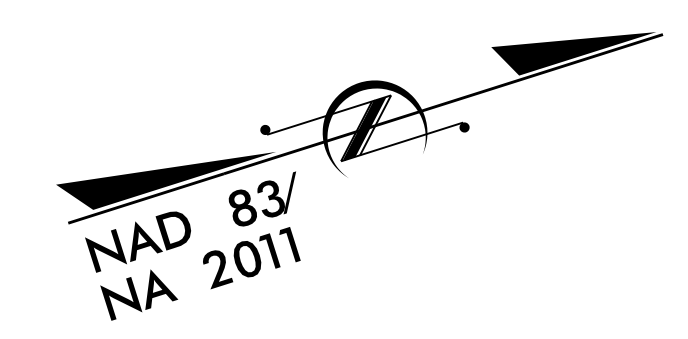
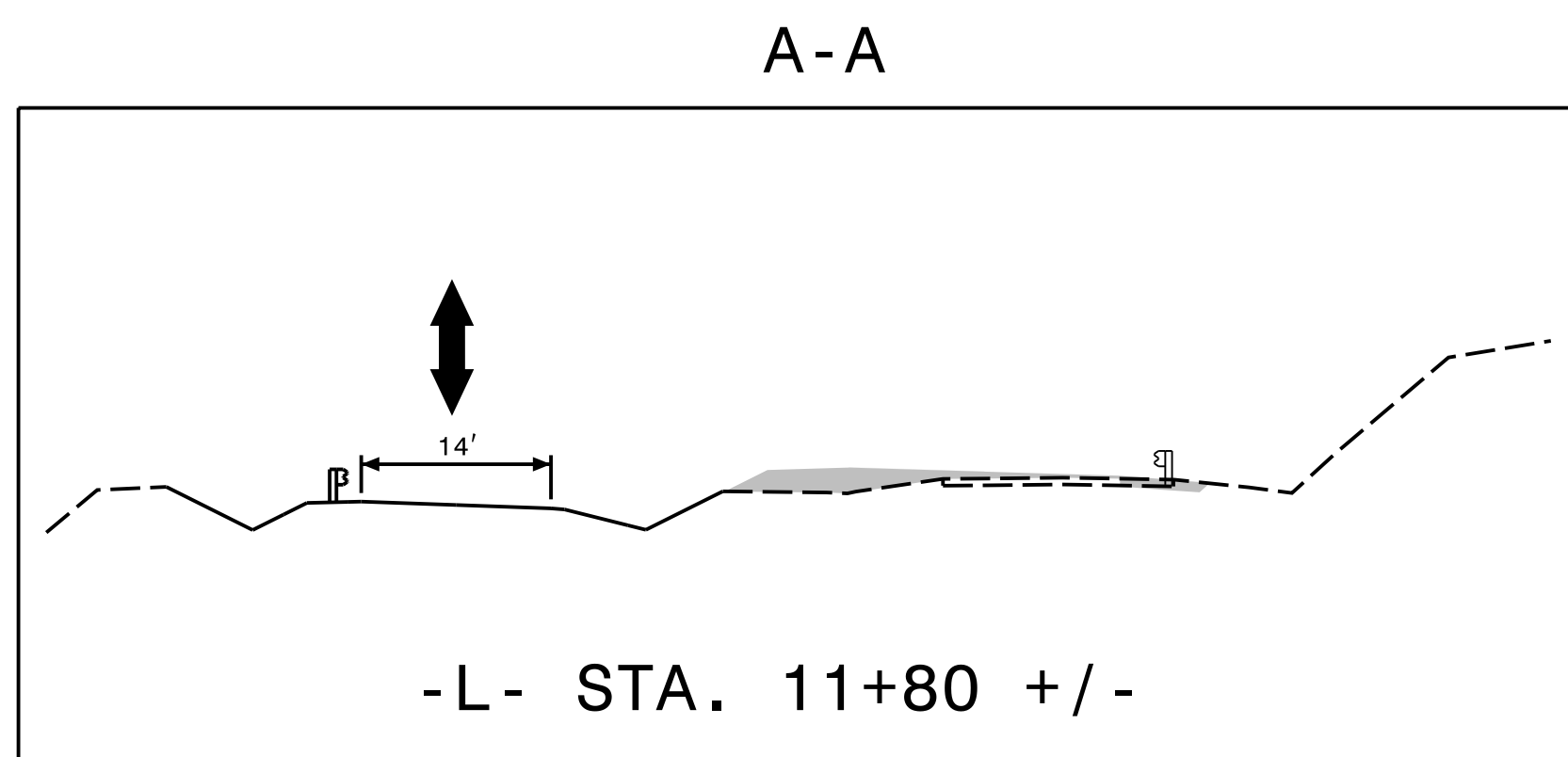


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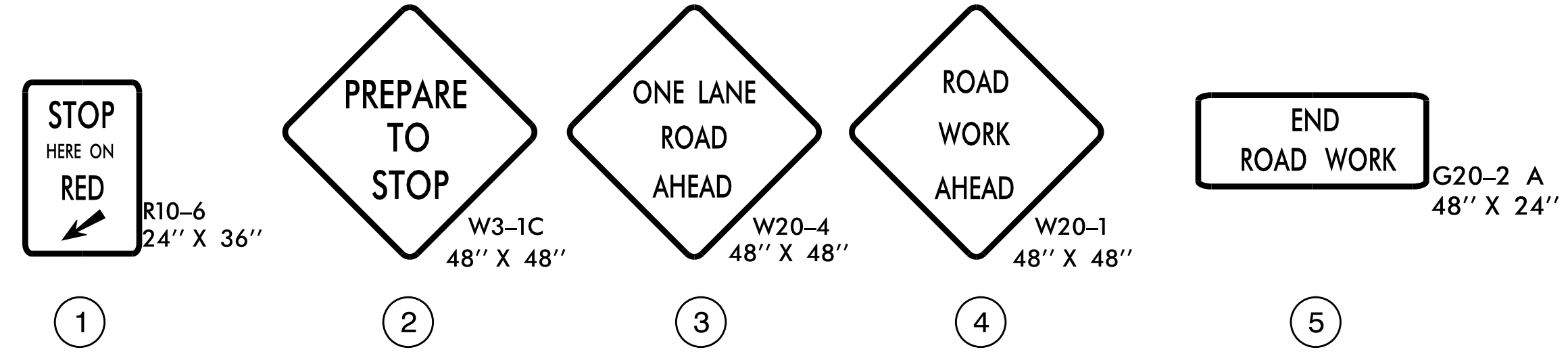
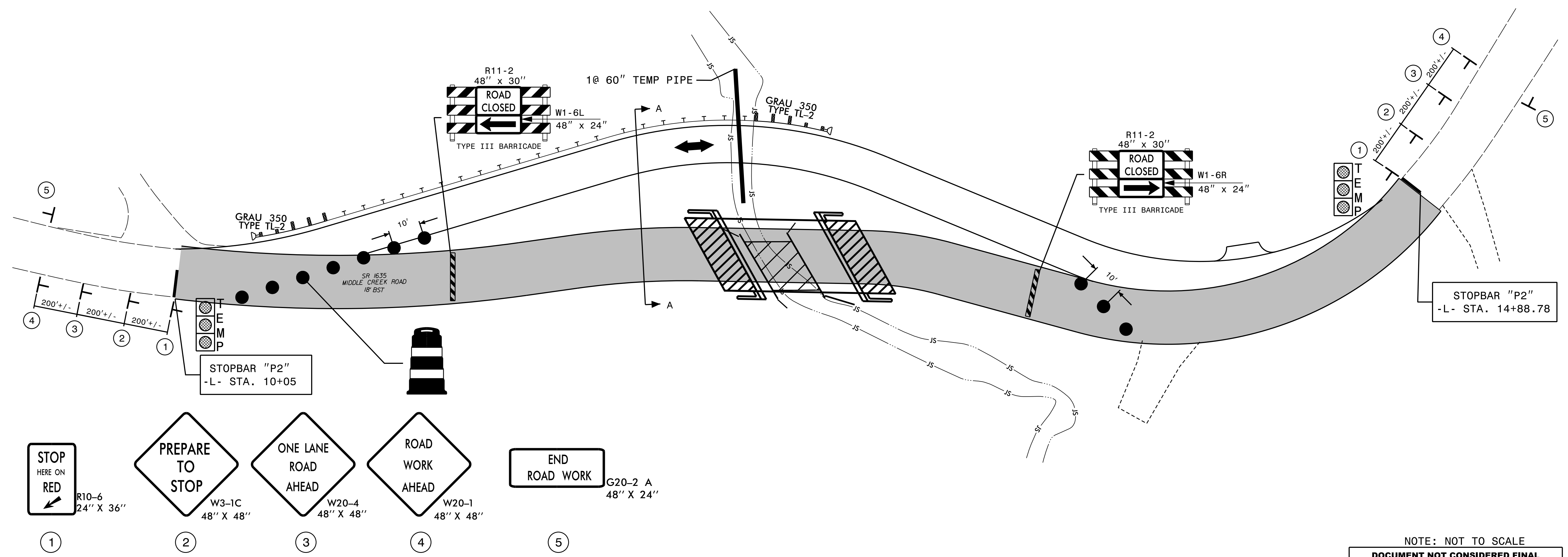


TEMPORARY TRAFFIC CONTROL
PHASE I DETAIL

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REVISIONS



- NOTES:**
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 2. ALL SIGN LOCATIONS ARE APPROXIMATE.
 3. SEE ROADWAY STANDARD DRAWING 1101.01 SHEET 3 OF 3 FOR SIGN LOCATIONS AND APPLICABLE NOTES.
 4. MAINTAIN ACCESS TO ALL DRIVEWAYS DURING CONSTRUCTION.

NOTE: NOT TO SCALE
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SEAL

RD O'Neil

TEMPORARY TRAFFIC CONTROL
 PHASE II DETAIL

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LOUIS BERGER
1001 Wade Avenue, Suite 400
Raleigh, NC 27605-3322
License No.: F-0840

PROJECT REFERENCE NO.

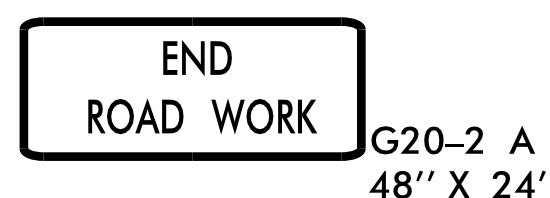
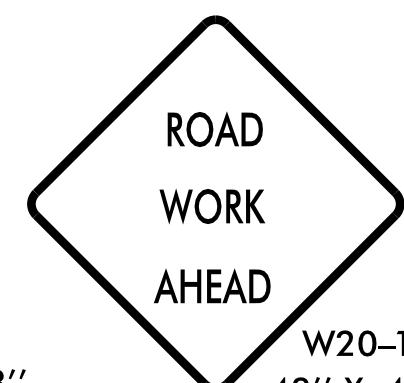
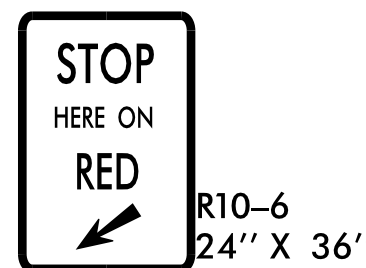
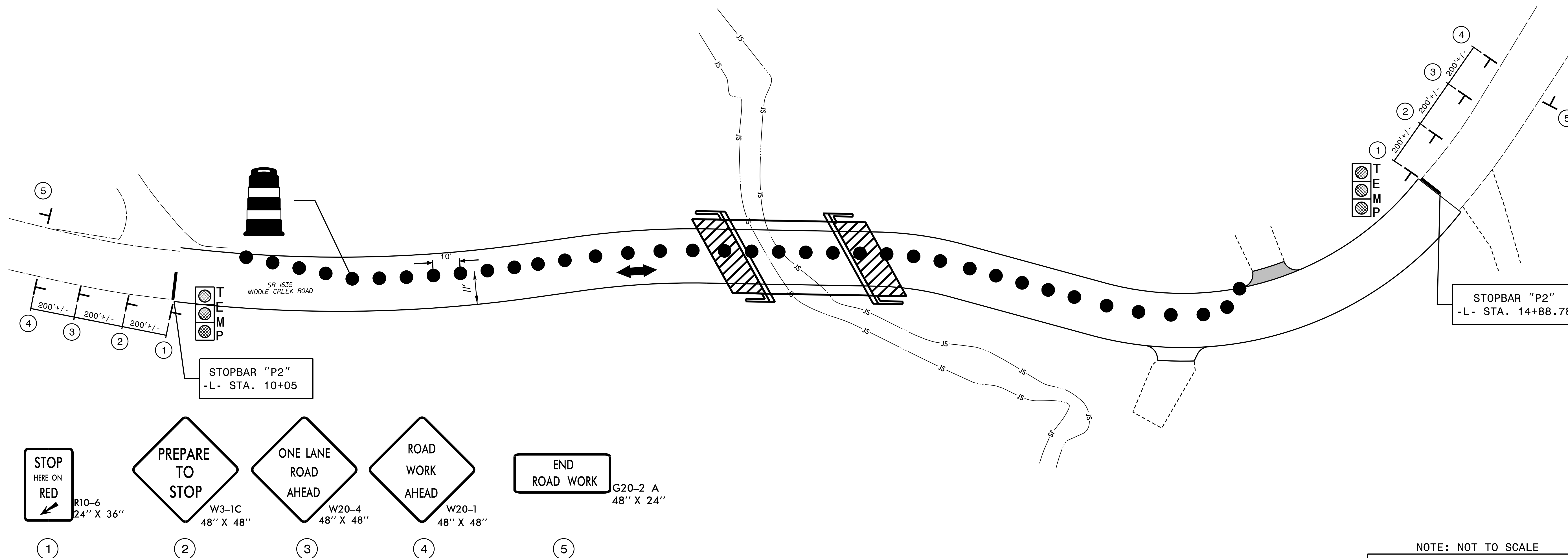
17BPJ4R109

SHEET NO.

TMP-4

REVISIONS

NAD 83/
NA 2011

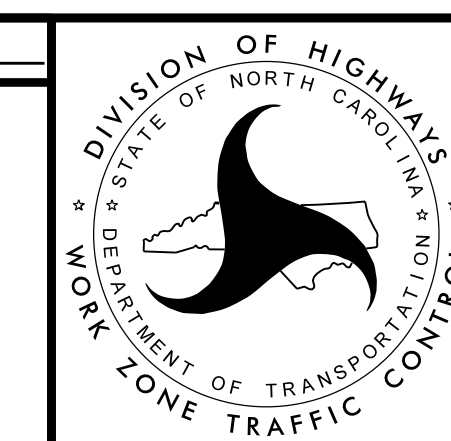


NOTES:

1. FOR CONSTRUCTION PHASING NOTES, SEE SHEET TMP-1B.
2. ALL SIGN LOCATIONS ARE APPROXIMATE.
3. SEE ROADWAY STANDARD DRAWING 1101.01 SHEET 3 OF 3 FOR SIGN LOCATIONS AND APPLICABLE NOTES.
4. MAINTAIN ACCESS TO ALL DRIVEWAYS DURING CONSTRUCTION.

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TEMPORARY TRAFFIC CONTROL
PHASE III DETAIL

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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLANS MACON COUNTY

LOCATION: BRIDGE NO. 310 ON SR 1635 (MIDDLE CREEK RD) OVER SMART BRANCH

PROJECT REFERENCE NO.	SHEET NO.
17BPJ4R109	PMP-1

SEAL

8/4/2016

NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL
27933
R. D. ODELL

RD OdeLL
781400702846A...

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UNLESS ALL SIGNATURES COMPLETED**

INDEX

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

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - ROADWAY DESIGN UNIT-N.C. DEPARTMENT OF TRANSPORTATION-RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES

PAVEMENT MARKING SCHEDULE

ASPHALT PAVEMENT DESIGN
(AS SHOWN)

PAVEMENT MARKING LINES
PA - PAINT - WHITE EDGELINE (4")
PI - PAINT - YELLOW DOUBLE CENTER (4")

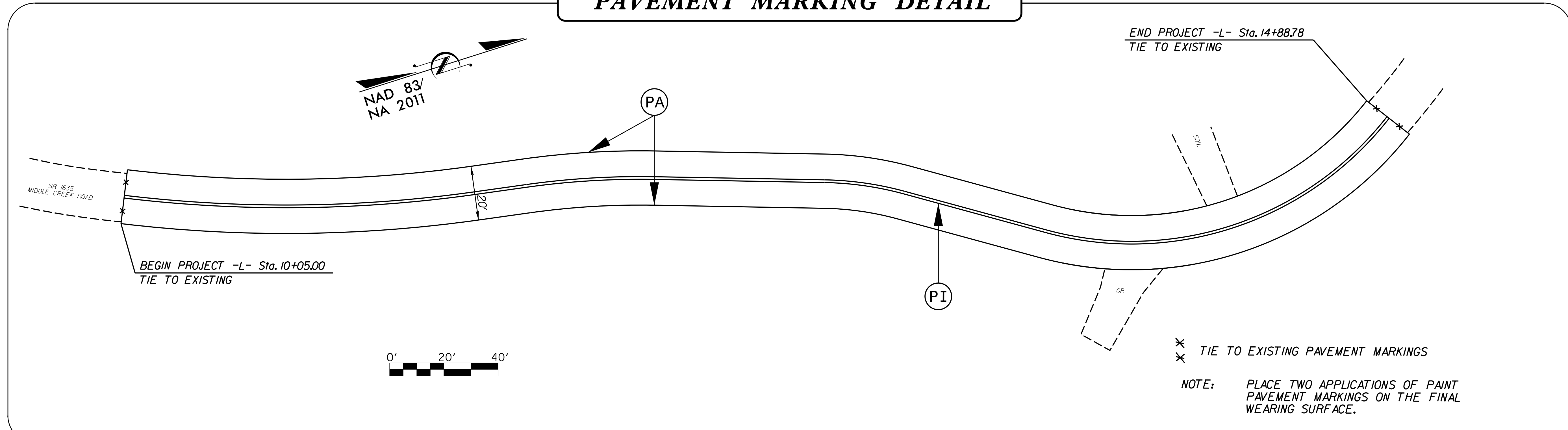
GENERAL NOTES

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

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

ROAD NAME	MARKING	MARKER
-L-	PAINT	NONE
- B) PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE, PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.
- C) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.
- D) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- E) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

PAVEMENT MARKING DETAIL



REVISIONS

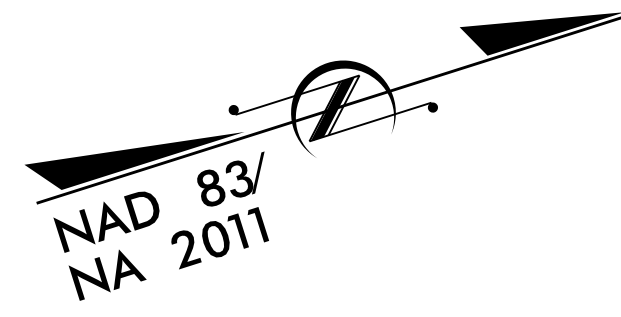
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EROSION CONTROL

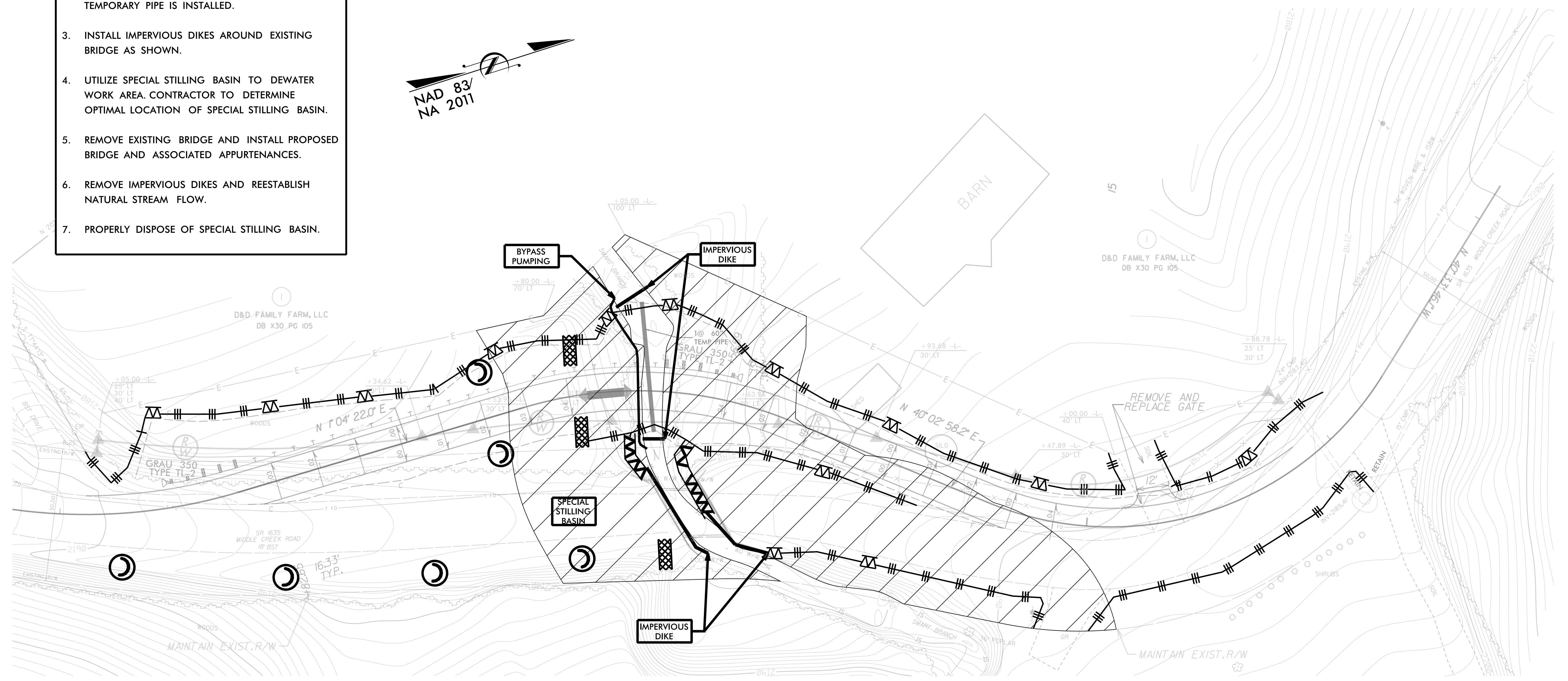
CONSTRUCTION SEQUENCE

1. CONSTRUCT IMPERVIOUS DIKES UPSTREAM AND DOWNSTREAM OF TEMPORARY DETOUR AND BYPASS PUMPING SYSTEM AS SHOWN.
2. INSTALL 60" TEMPORARY PIPE AND DETOUR. REMOVE BYPASS PUMPING SYSTEM ONCE TEMPORARY PIPE IS INSTALLED.
3. INSTALL IMPERVIOUS DIKES AROUND EXISTING BRIDGE AS SHOWN.
4. UTILIZE SPECIAL STILLING BASIN TO DEWATER WORK AREA. CONTRACTOR TO DETERMINE OPTIMAL LOCATION OF SPECIAL STILLING BASIN.
5. REMOVE EXISTING BRIDGE AND INSTALL PROPOSED BRIDGE AND ASSOCIATED APPURTENANCES.
6. REMOVE IMPERVIOUS DIKES AND REESTABLISH NATURAL STREAM FLOW.
7. PROPERLY DISPOSE OF SPECIAL STILLING BASIN.

PHASE I



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



REVISIONS

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Roadway Standard Drawings

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

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

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

2012 STANDARD SPECIFICATIONS

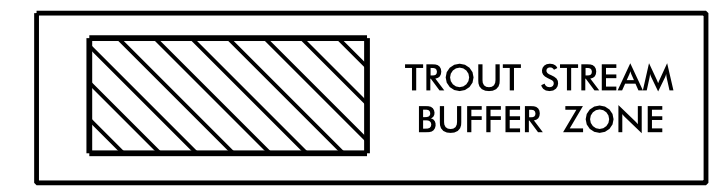
THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

SEE RF-1 AND PROJECT SPECIAL PROVISIONS

WALTER D. ROBERTS, III
LEVEL IIIA NAME
3514
LEVEL IIIA CERTIFICATION NO.

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.



EROSION AND SEDIMENT CONTROL MEASURES

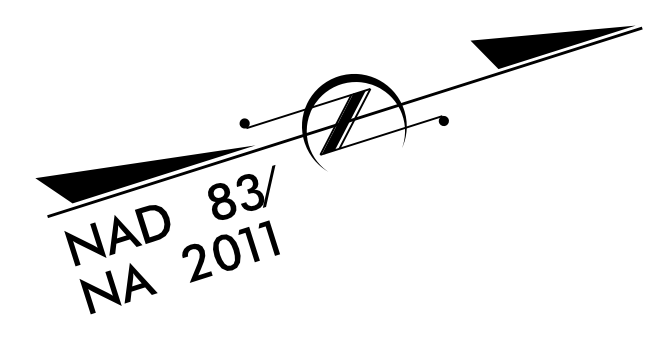
Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1630.06	Special Stilling Basin Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	(C)
1635.01	Temporary Rock Silt Check Type-A	

EROSION CONTROL

PHASE II

- CONSTRUCTION SEQUENCE**
1. FINALIZE ALL REMAINING ROADWAY IMPROVEMENTS.
 2. REMOVE DETOUR AND ALL ASSOCIATED APPURTENANCES.
 3. STABILIZE ALL DISTURBED AREAS.

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



REVISIONS

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Roadway Standard Drawings

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

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

2012 STANDARD SPECIFICATIONS

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EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	▲▲▲▲▲▲▲▲
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	⊙
1633.01	Temporary Rock Silt Check Type-A	▨▨▨▨▨▨

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.

SEE RF-1 AND PROJECT SPECIAL PROVISIONS



WALTER D. ROBERTS, III
 LEVEL IIIA NAME

3514
 LEVEL IIIA CERTIFICATION NO.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

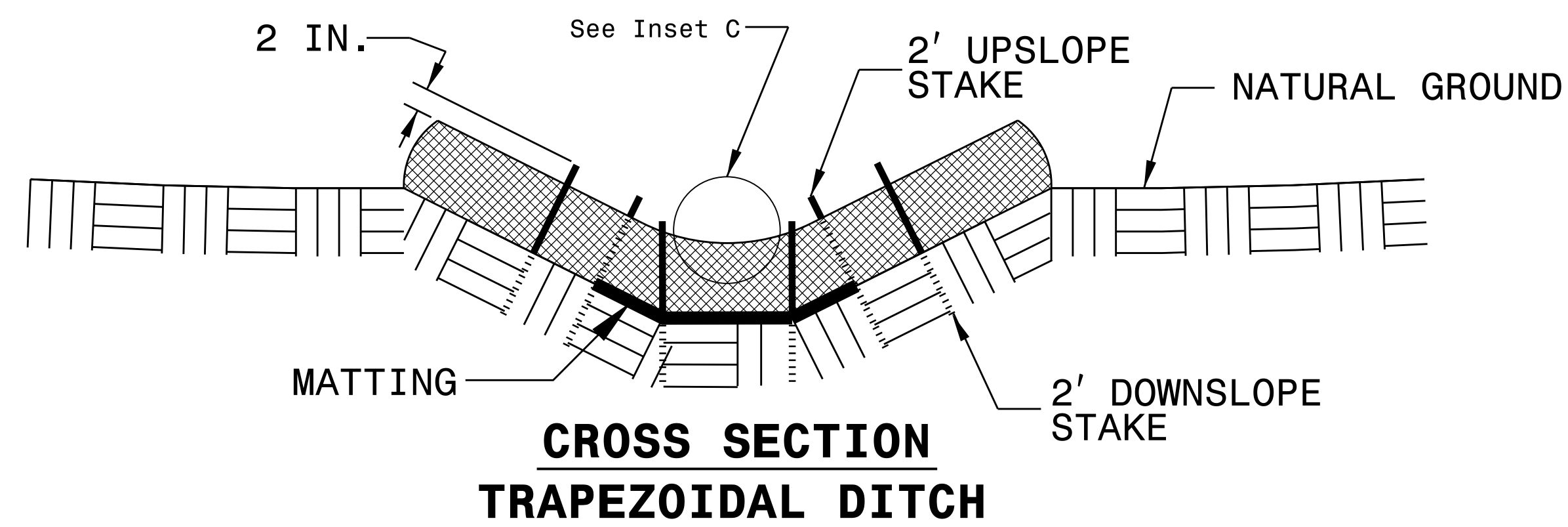
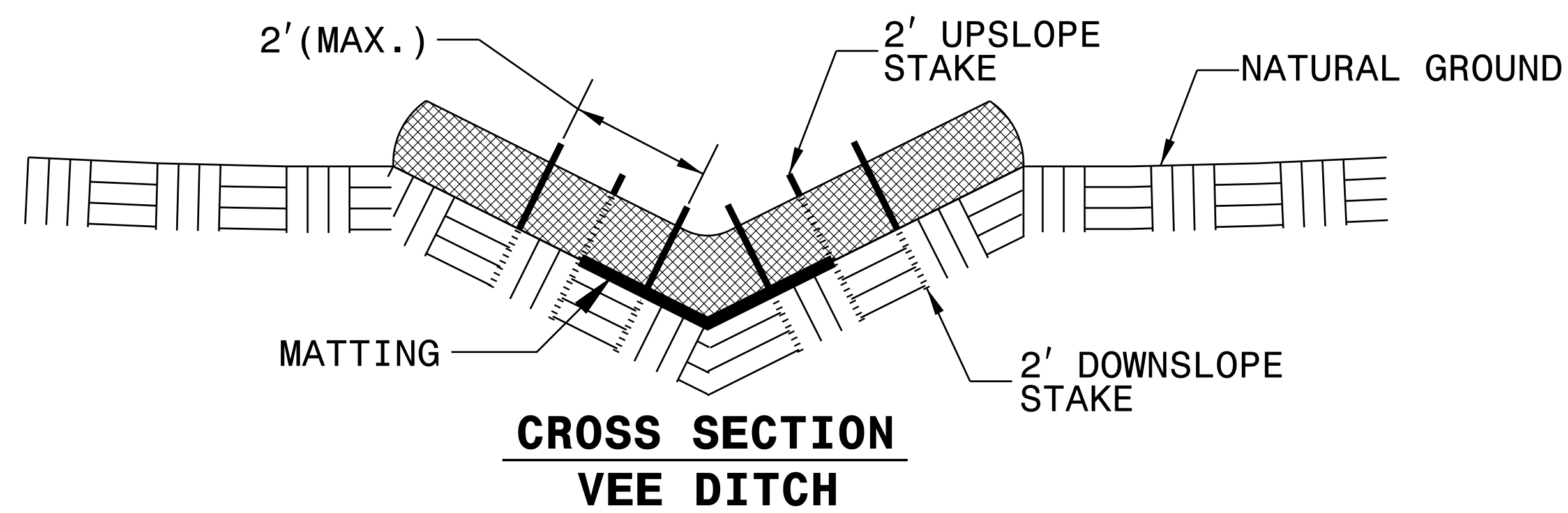
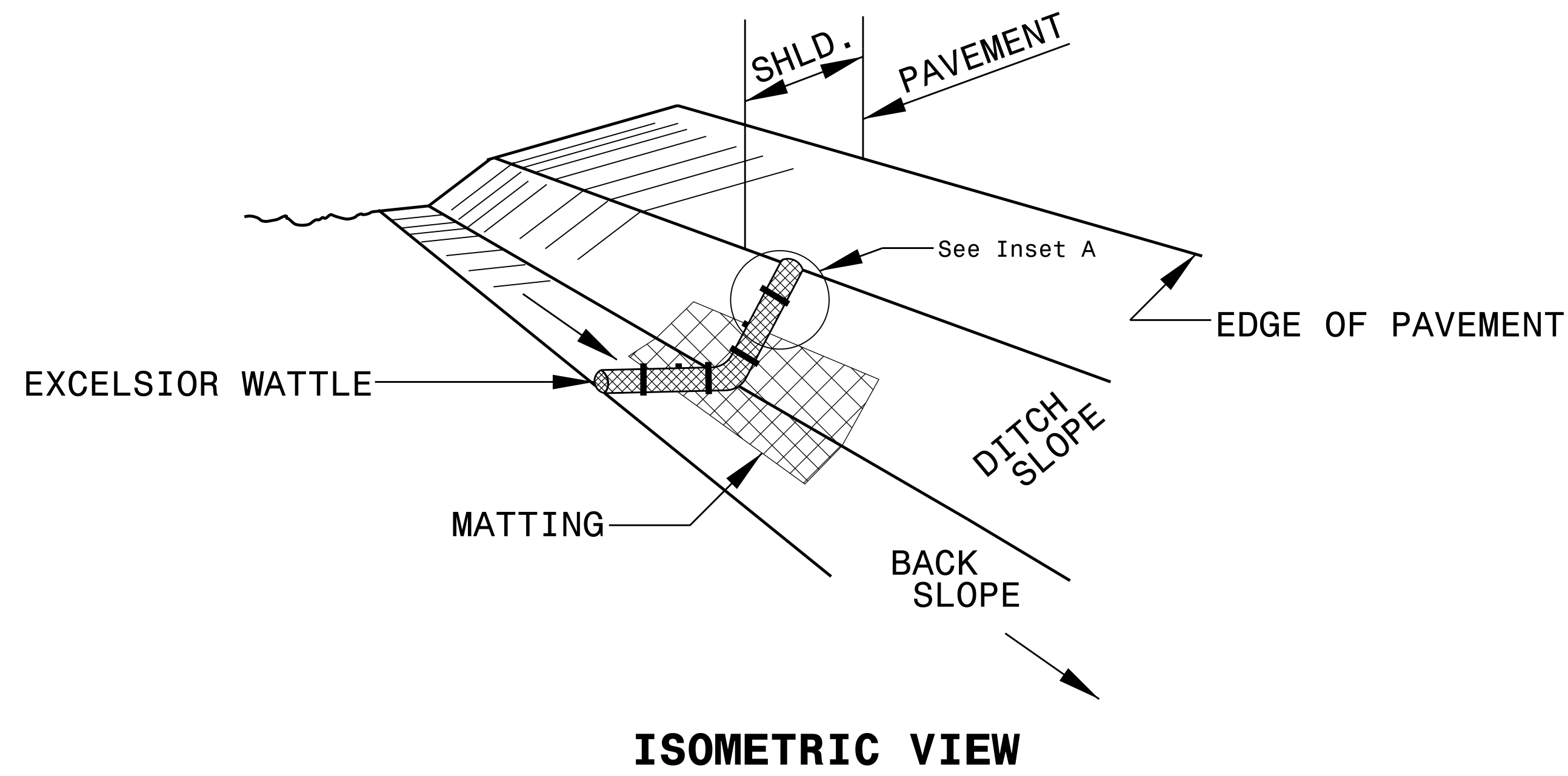
SOIL STABILIZATION TIMEFRAMES

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

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WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR 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.

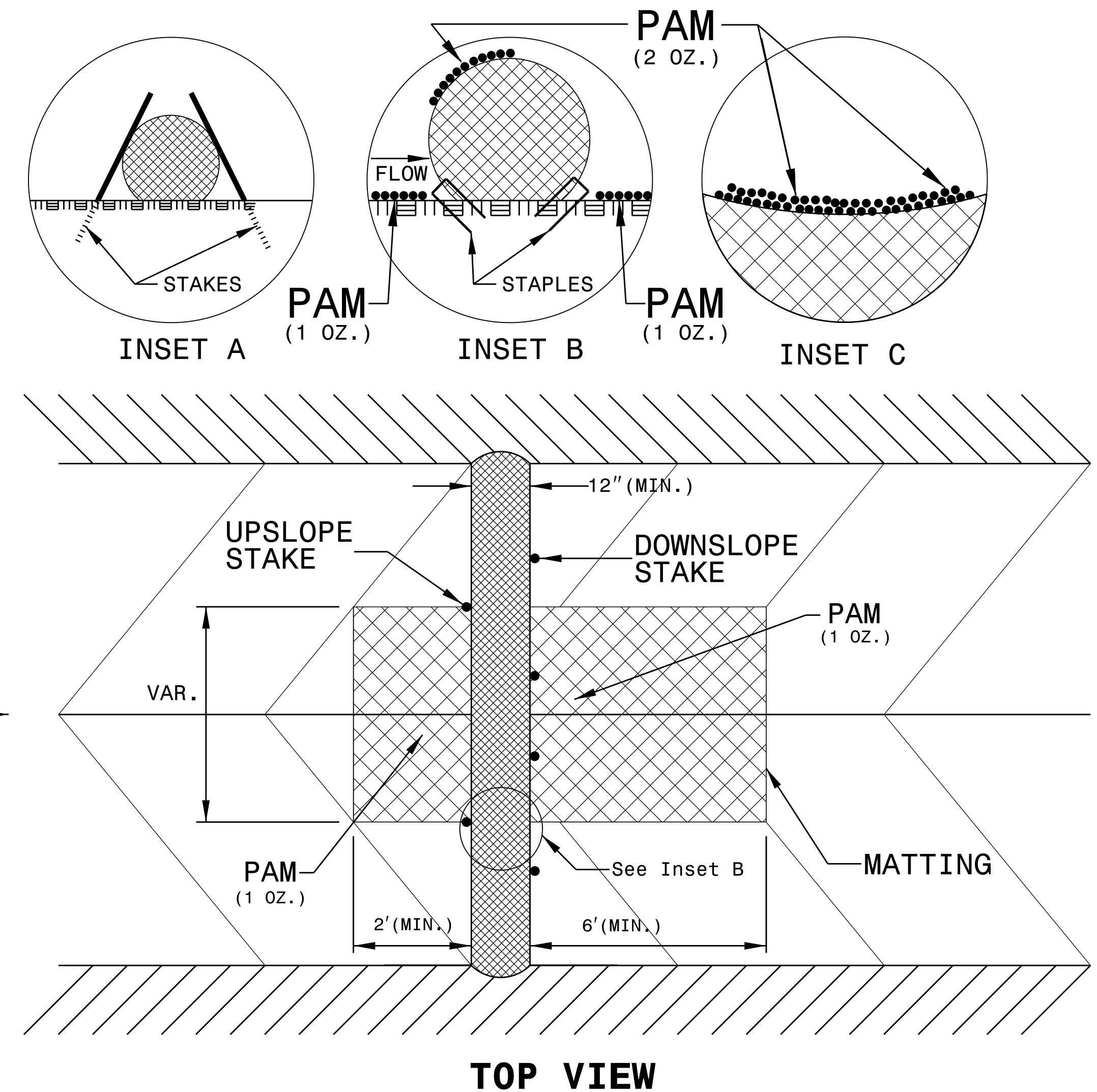
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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 EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



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**DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA**

SOIL STABILIZATION SUMMARY SHEET

PERMANENT SOIL REINFORCEMENT MAT

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
			SUBTOTAL		0
			ADDITIONAL PSRM TO BE INSTALLED		-
			TOTAL		0
			SAY		0

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
EG-1	-DET-	11+90	13+00	R1	40
			SUBTOTAL		40
	MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE			ENGINEER	2625
			TOTAL		2665
			SAY		2665

REVISIONS

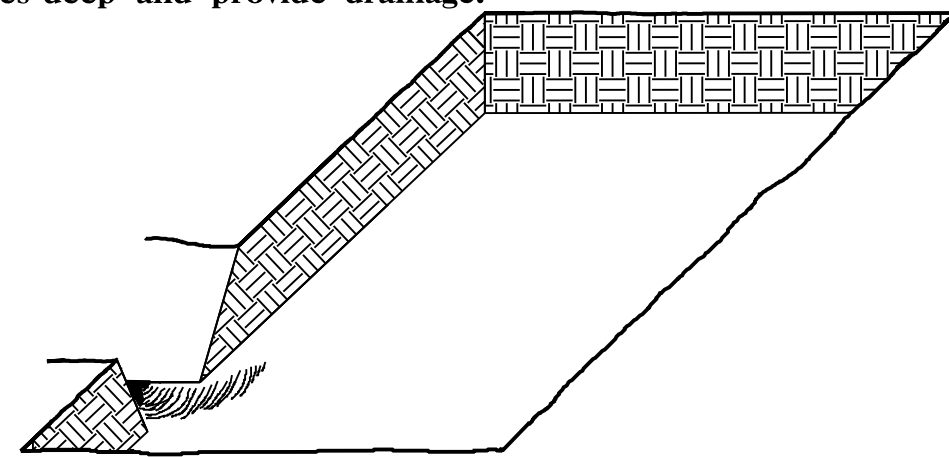
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PLANTING DETAILS

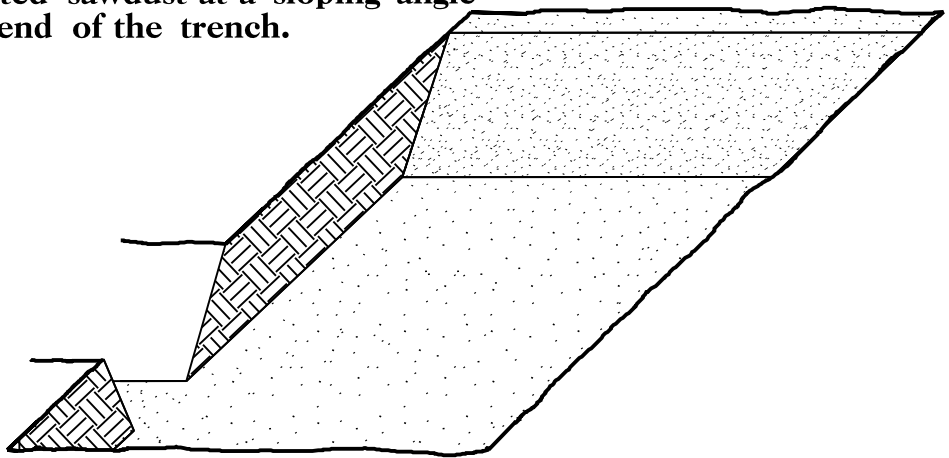
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

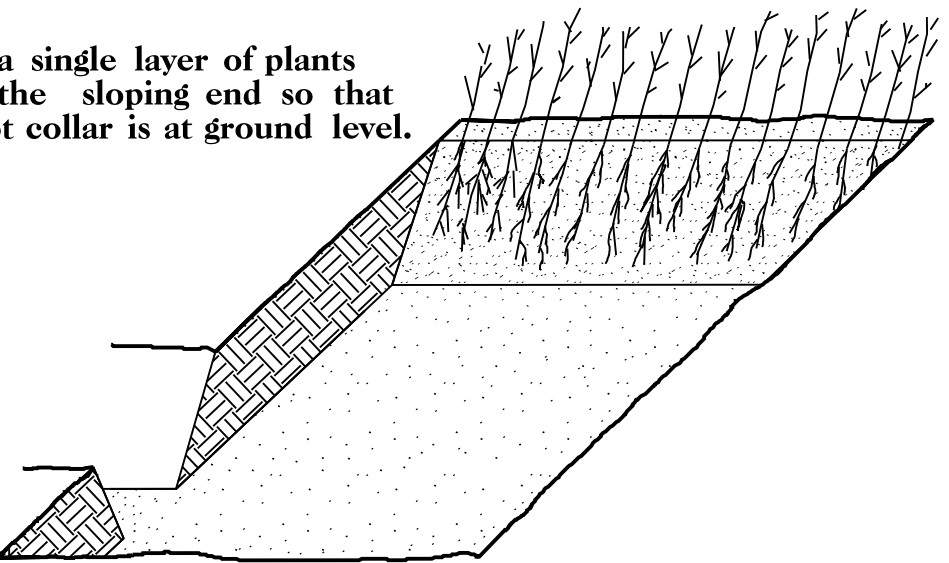
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



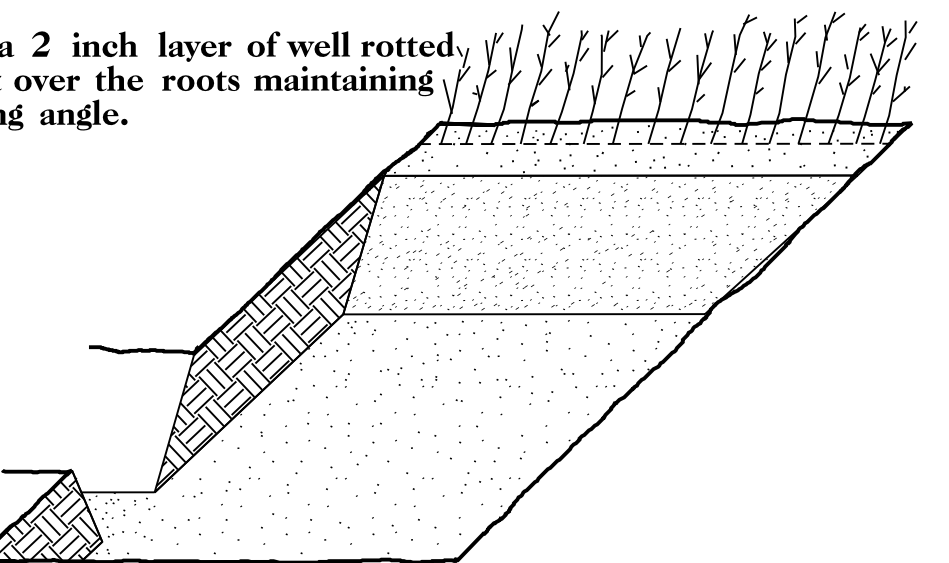
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

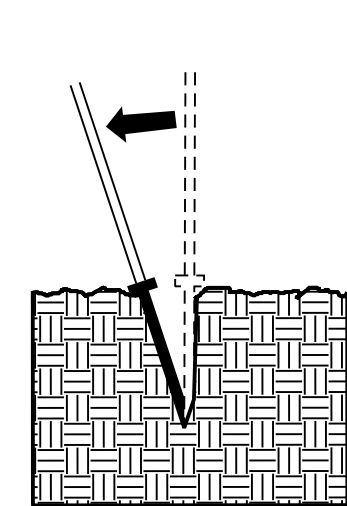


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

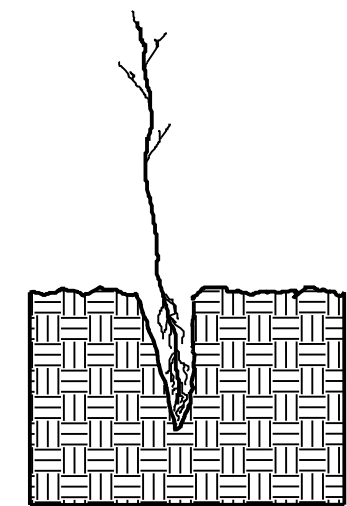


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

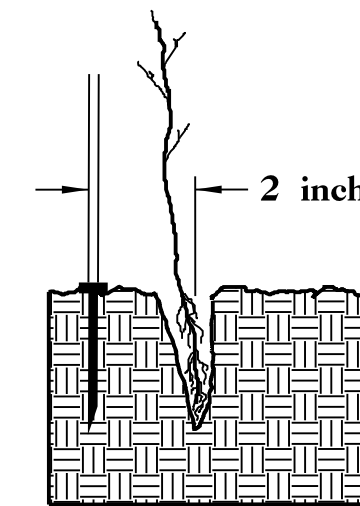
DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



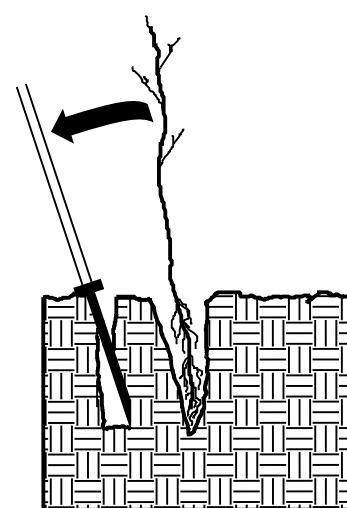
1. Insert planting bar as shown and pull handle toward planter.



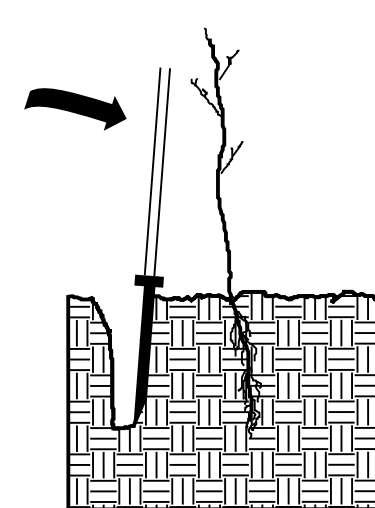
2. Remove planting bar and place seedling at correct depth.



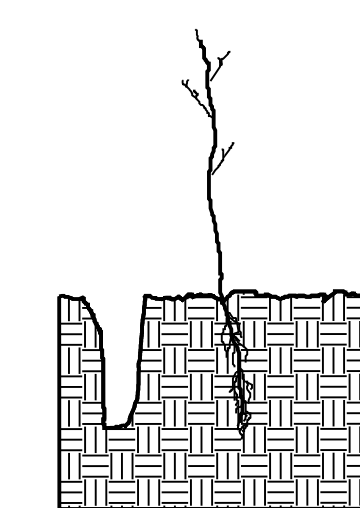
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



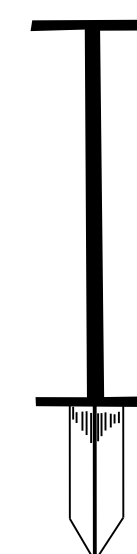
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

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



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



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

REFORESTATION

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

REFORESTATION

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

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

Reforestation:

Reforestation will be planted within interchanges and along the outside borders of the road, and in other areas as directed. Reforestation is not shown on the plan sheets.

All non-maintained riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the preconstruction contours and revegetated with native woody species.

The entire Reforestation operation shall comply with the requirements of Section 1670 of the Standard Specifications.

Reforestation shall be bare root seedlings 12"-18" tall.

Reforestation shall be planted as soon as practical following permanent Seeding and Mulching. The seedlings shall be planted in a 16-foot wide swath adjacent to mowing pattern line, or as directed.

Root dip: The roots of reforestation seedlings shall be coated with a slurry of water, and either a fine clay (kaolin) or a superabsorbent that is designated as a bare root dip. The type, mixture ratio, method of application, and the time of application shall be submitted to the Engineer for approval.

With the approval of the Engineer, seedlings may be coated before delivery to the job or at the time of planting, but at no time shall the roots of the seedlings be allowed to dry out. The roots shall be moistened immediately prior to planting.

Seasonal Limitations: Reforestation shall be planted from November 15 through March 15.

Payment for Reforestation will be included in the contract bid price for Lump Sum for Erosion Control.

REFORESTATION DETAIL SHEET

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

REVISIONS

DATE PRINTED: 6/8/2016 4:29:42 PM
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 Davis-Martin-Powell and Associates
 09/08/99

CONTRACT: DN00270 **TIP PROJECT: 17BP.14.R.109**

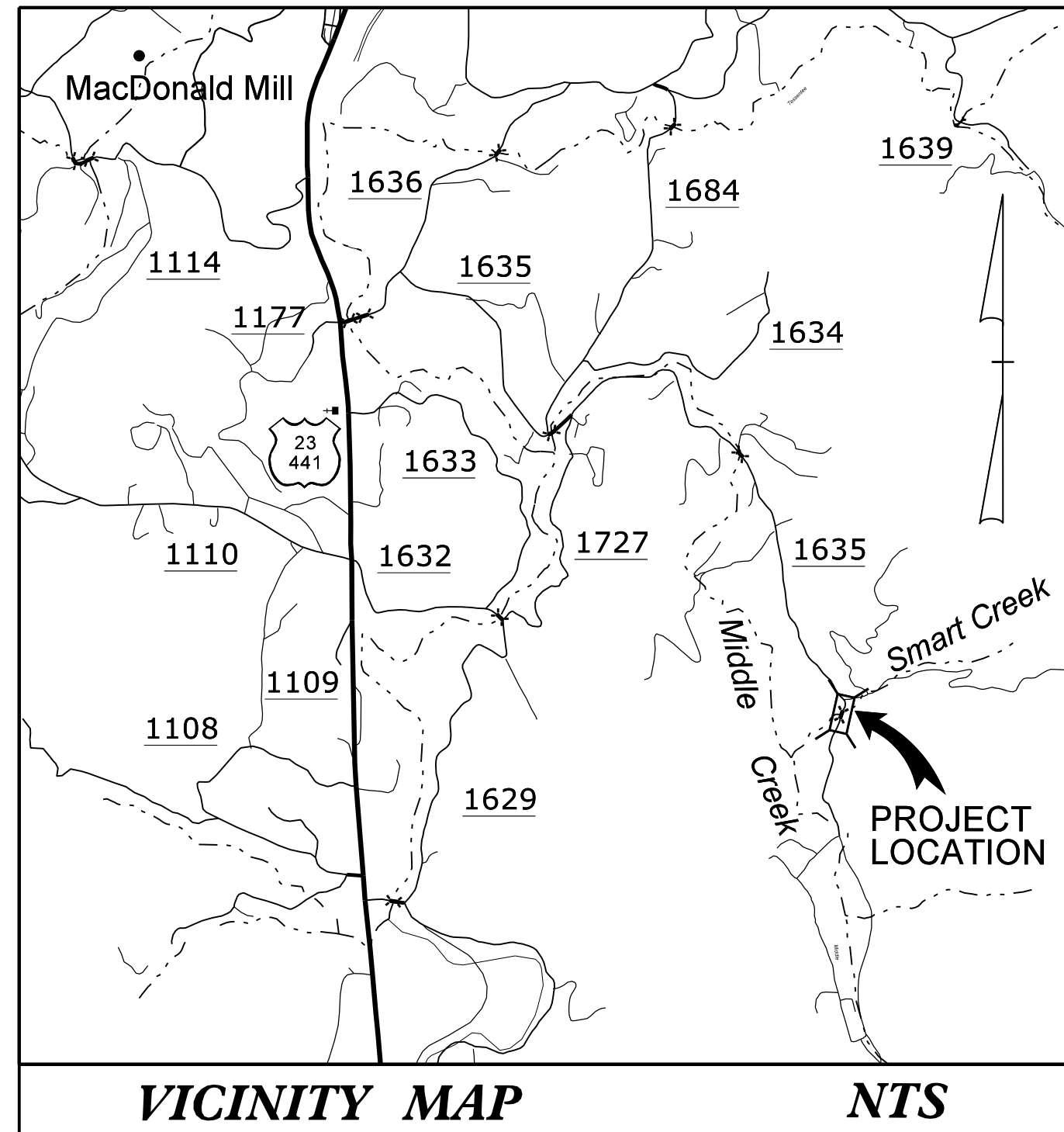
STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
17BP.14.R.109	UO-1

UTILITIES BY OTHERS PLANS MACON COUNTY

LOCATION: BRIDGE NO. 310 ON SR 1635 (MIDDLE CREEK ROAD) OVER SMART BRANCH

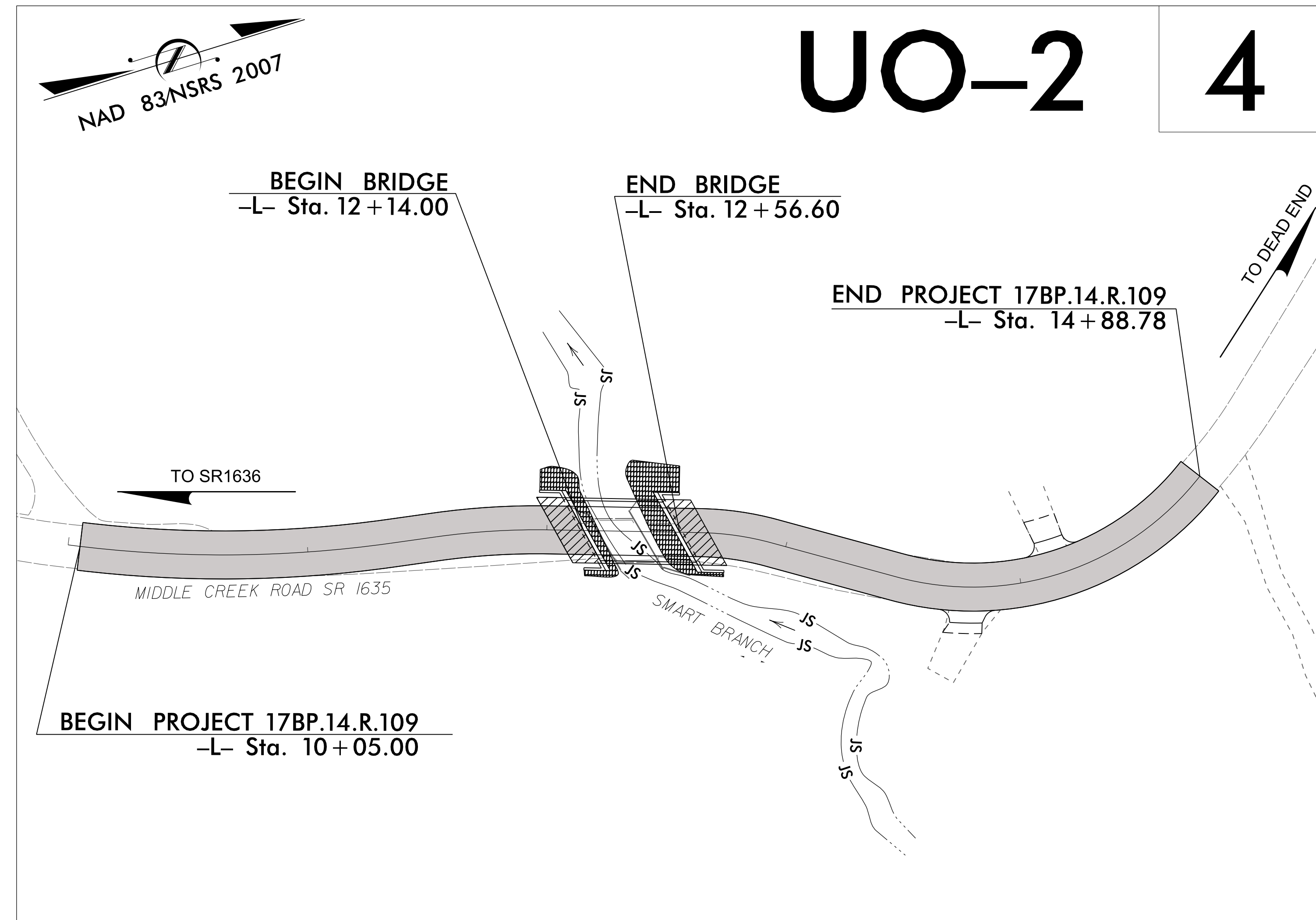
TYPE OF WORK: UTILITIES BY OTHERS



VICINITY MAP

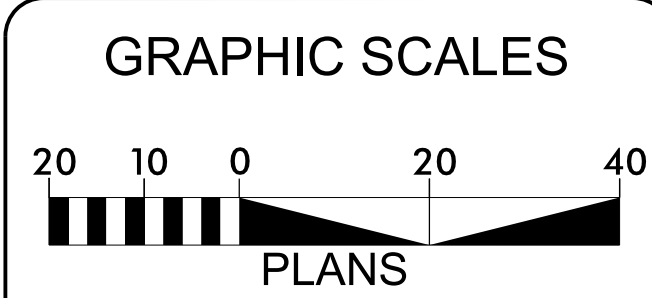
NTS

75% PLANS



NCDOT CONTACT:
 JOSH DEYTON, PE
 HIGHWAY DIVISION 14
 BRIDGE MANAGER

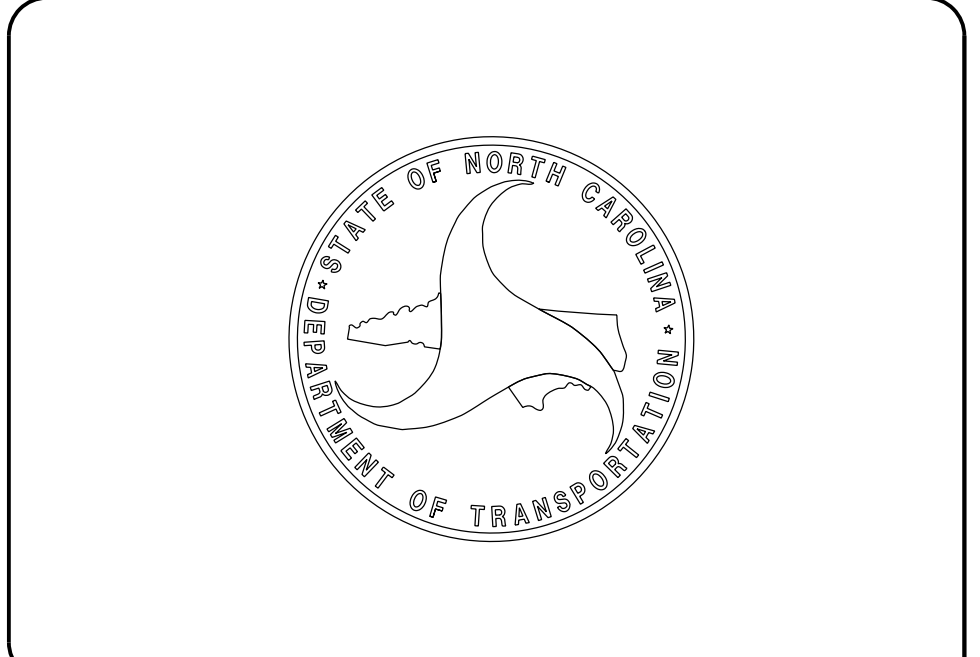
PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UTILITIES BY OTHERS PLAN SHEET
UO-3	DETOUR PLAN (FOR REFERENCE)

- UTILITY OWNERS ON PROJECT**
- (1) POWER - HAYWOOD EMC
 - (2) TELEPHONE - FRONTIER COMMUNICATIONS

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



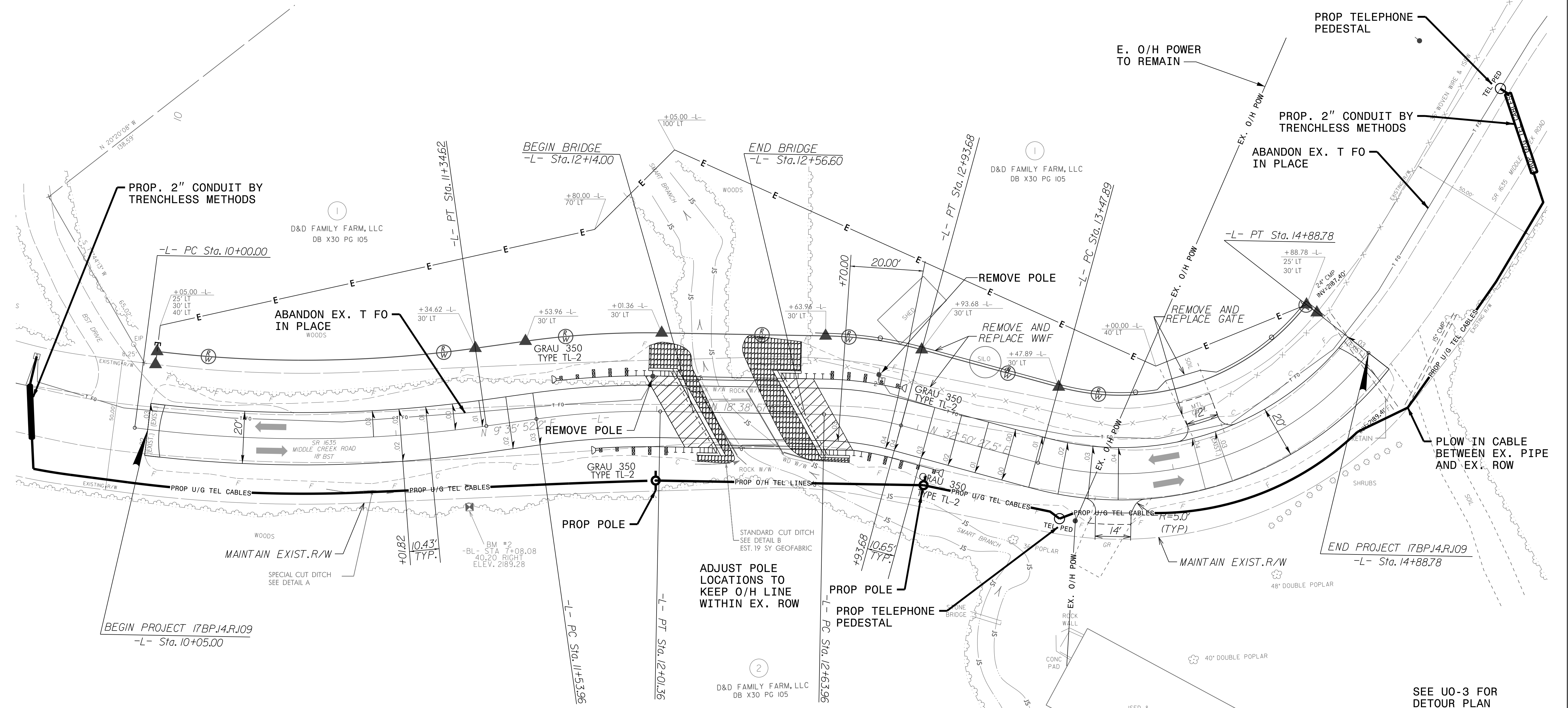
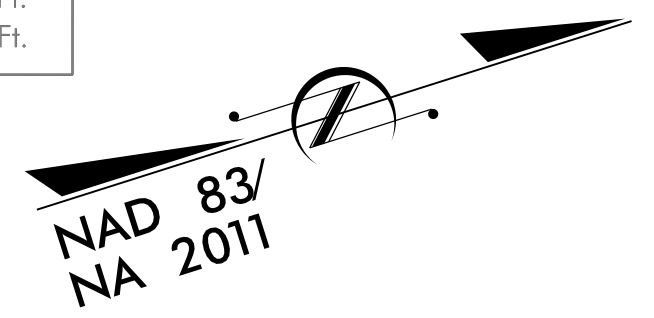
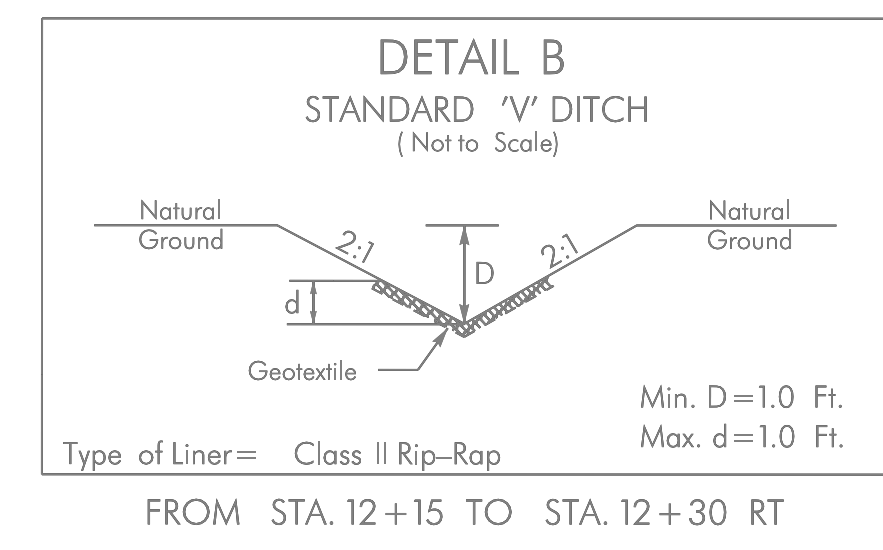
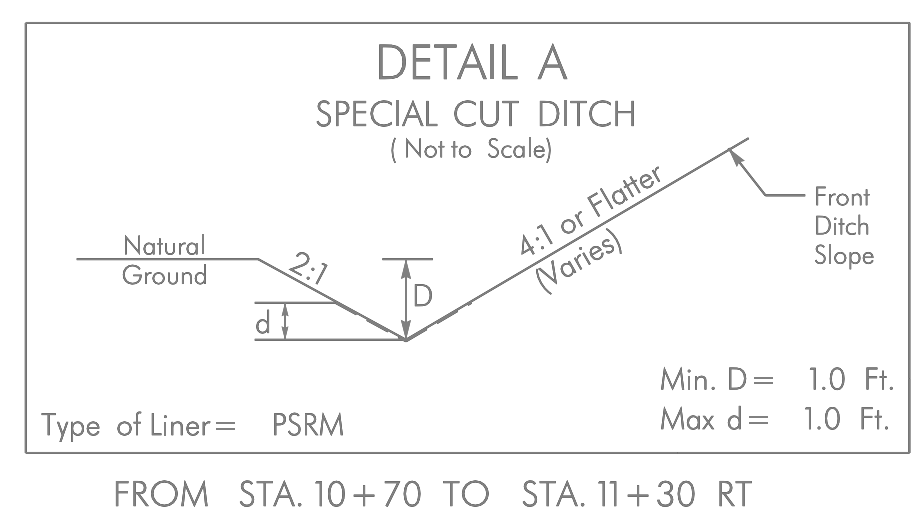
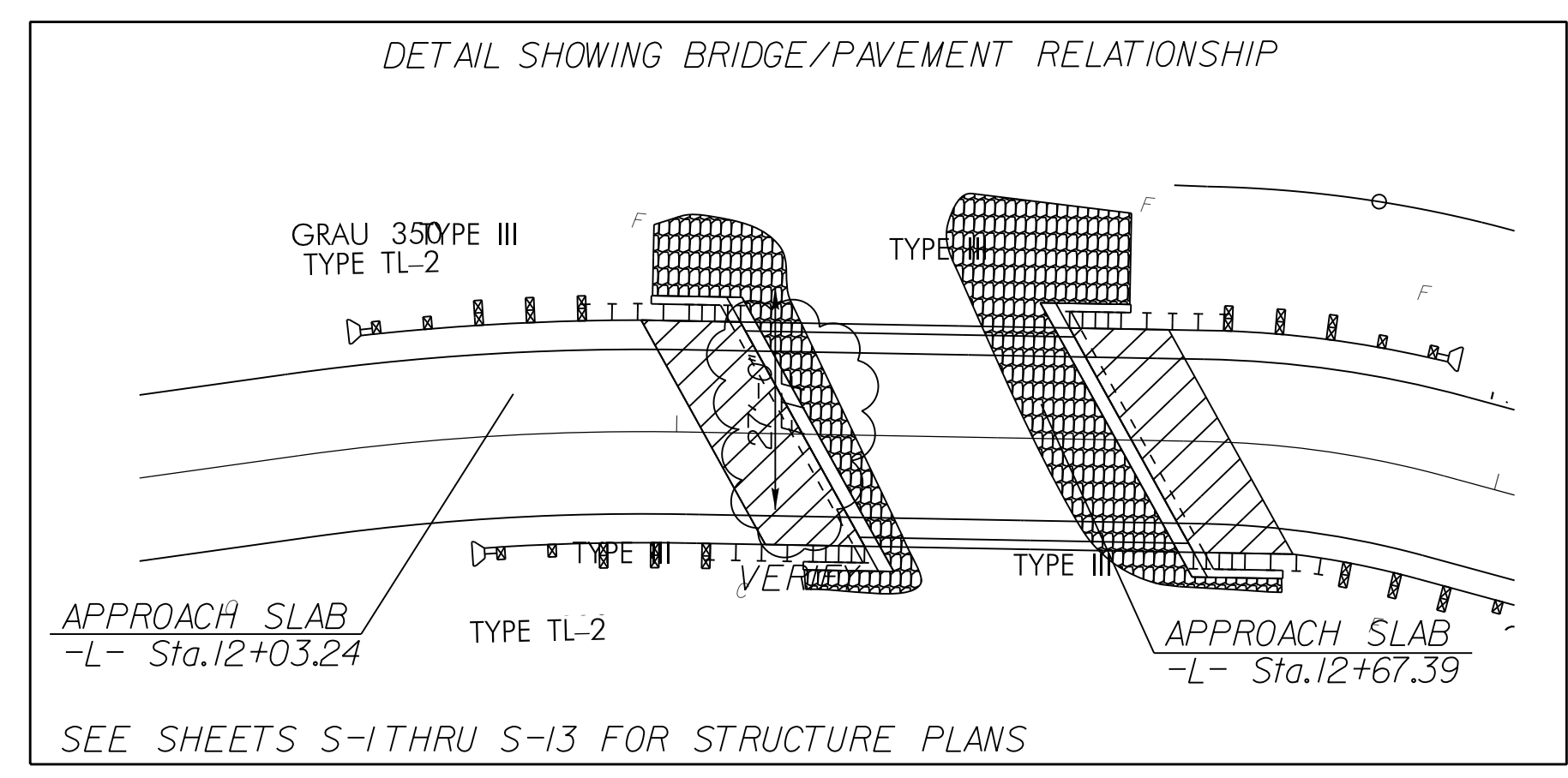


UTILITIES BY OTHERS

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

- LEGEND**
- PROPOSED JOINT-USE UTILITY POLE
 - ⊙ PROPOSED POWER POLE
 - ⊕ PROPOSED TELEPHONE POLE

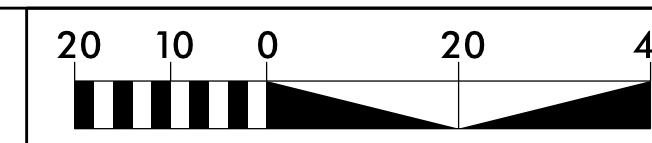
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



CURVE DATA FOR -L-

PI Sta. 10+67.72	PI Sta. 11+77.71	PI Sta. 12+78.89	PI Sta. 14+27.73
$\Delta = 15^\circ 25' 35.9\" (LT)$	$\Delta = 9^\circ 03' 05.5\" (RT)$	$\Delta = 14^\circ 11' 29.8\" (RT)$	$\Delta = 67^\circ 16' 20.1\" (LT)$
$D = 11^\circ 27' 33.0\"$	$D = 19^\circ 05' 54.9\"$	$D = 47^\circ 44' 47.3\"$	$D = 47^\circ 44' 47.3\"$
$L = 134.62'$	$L = 47.39'$	$L = 29.72'$	$L = 140.89'$
$T = 67.72'$	$T = 23.75'$	$T = 14.94'$	$T = 79.84'$
$R = 500.00'$	$R = 300.00'$	$R = 120.00'$	$R = 120.00'$
SE = EXIST.	SE = .03	SE = .03	SE = .04

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 Davis Martin Powell and Associates

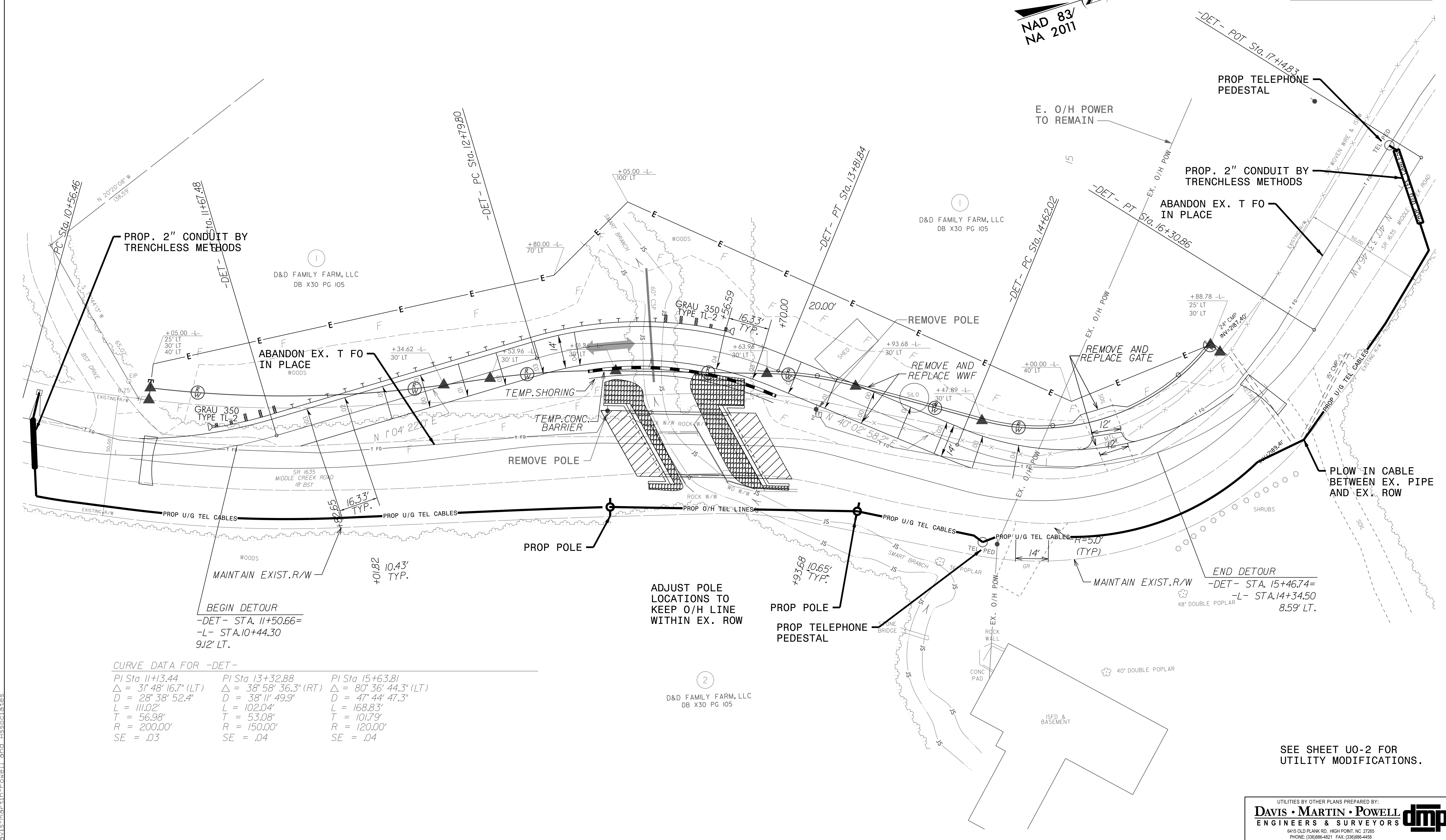
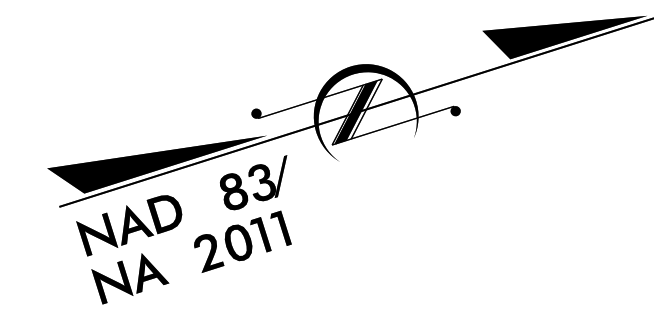


UTILITIES BY OTHERS

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SHOWN ON THIS SHEET WILL
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- LEGEND**
- PROPOSED JOINT-USE UTILITY POLE
 - ⊙ PROPOSED POWER POLE
 - ⊙ PROPOSED TELEPHONE POLE

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



CURVE DATA FOR -DET-

PI Sta 11+13.44	PI Sta 13+32.88	PI Sta 15+63.81
$\Delta = 31^\circ 48' 16.7\" (LT)$	$\Delta = 38^\circ 58' 36.3\" (RT)$	$\Delta = 80^\circ 36' 44.3\" (LT)$
$D = 28^\circ 38' 52.4\"$	$D = 38^\circ 11' 49.9\"$	$D = 47^\circ 44' 47.3\"$
$L = 111.02'$	$L = 102.04'$	$L = 168.83'$
$T = 56.98'$	$T = 53.08'$	$T = 101.79'$
$R = 200.00'$	$R = 150.00'$	$R = 120.00'$
$SE = .03$	$SE = .04$	$SE = .04$

SEE SHEET UO-2 FOR
UTILITY MODIFICATIONS.

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 Davis Martin Powell and Associates