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09/08/99

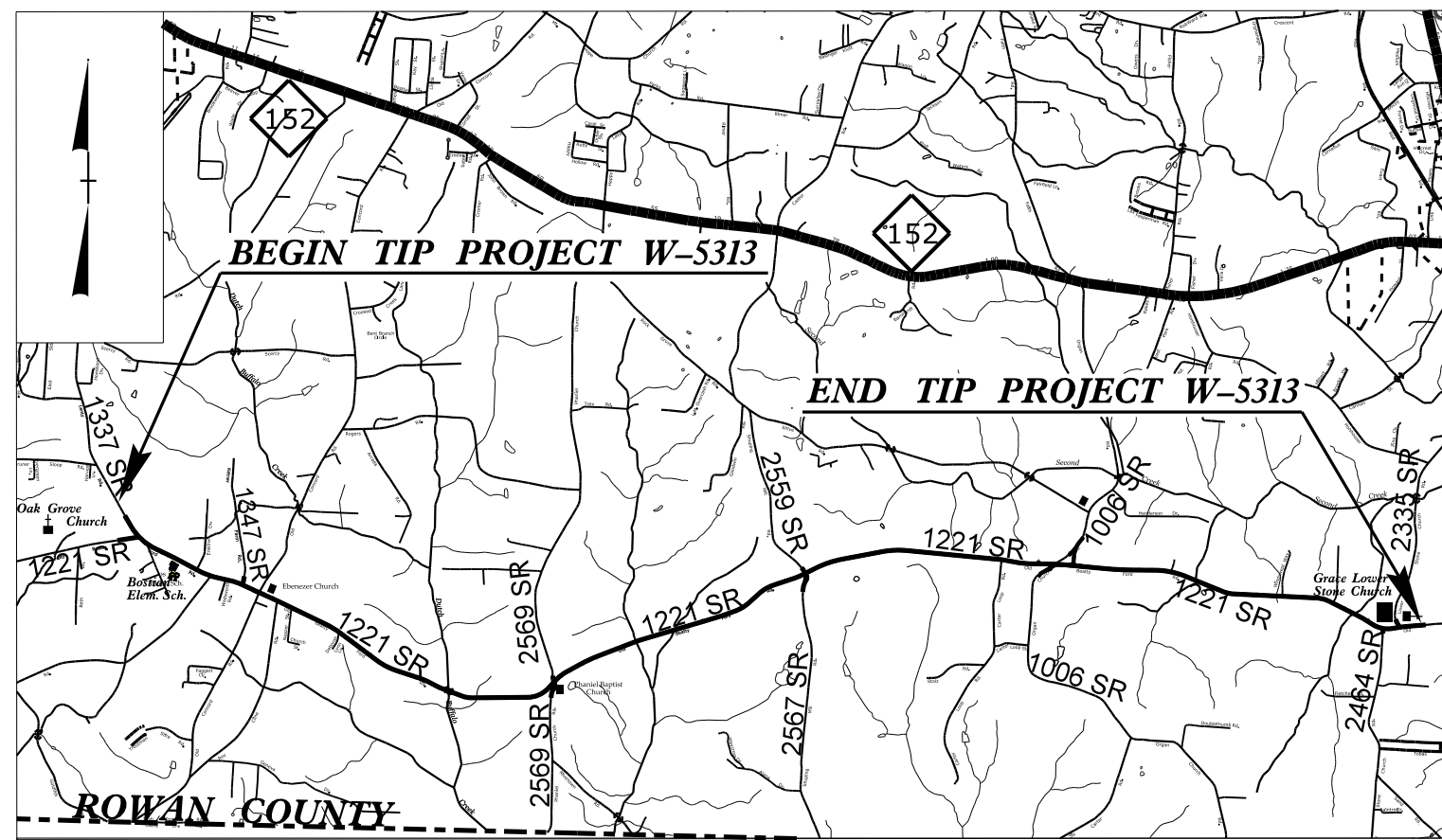
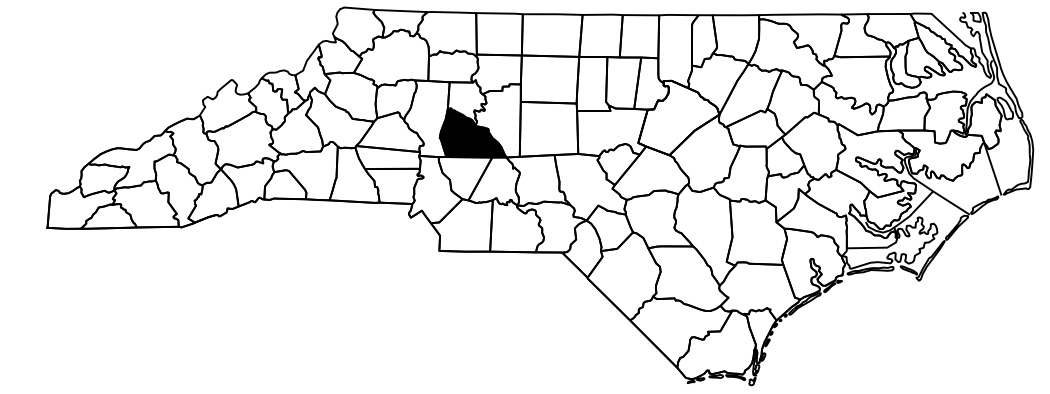
See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROWAN COUNTY

**LOCATION: SR 1221 (OLD BEATTY FORD ROAD)
FROM SR 1337 (LENTZ ROAD) TO
SR 2335 (LOWER STONE CHURCH ROAD)**
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNAL,
AND CULVERTS**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5313	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46136.1.1	STP-1221(15)	P.E.	
46136.2.FD1	STP-1221(15)	RW	
46136.2.FDU1	STP-1221(15)	UTIL	
46136.3.3	STP-1221(15)	CONST.	



VICINITY MAP SHOWING LOCATION OF PROJECT W-5313
(FOR TEMPORARY DETOURS SEE TRAFFIC CONTROL PLANS)

TIP PROJECT: W-5313

CONTRACT: C203672

**BEGIN TIP PROJECT W-5313
-L- STA. 10+25.00**

-L- PC STA. 12+95.91 LB=
-LREV- PC STA. 12+95.91 LA

-LREV- PT STA. 24+20.07 LB=
-L- PT STA. 24+20.07 LA

**BEGIN CONSTRUCTION
-Y2- STA. 10+75.00**

**BEGIN CONSTRUCTION
-Y3- STA. 10+50.00**

**BEGIN EXISTING BRIDGE
-L- STA. 119+26 (+/-)**

**BEGIN CONSTRUCTION
-Y5- STA. 11+90.00**

**END CONSTRUCTION
TIP PROJECT W-5313
-L- STA. 295+35.81
BEGIN LET PROJECT
TIP W-5146**

**BEGIN CONSTRUCTION
-Y8- STA. 11+25.00**

**END CONSTRUCTION
-Y7- STA. 11+40.00**

**BEGIN CONSTRUCTION
TIP PROJECT W-5313
-L- STA. 318+35.84
END LET PROJECT
TIP W-5146**

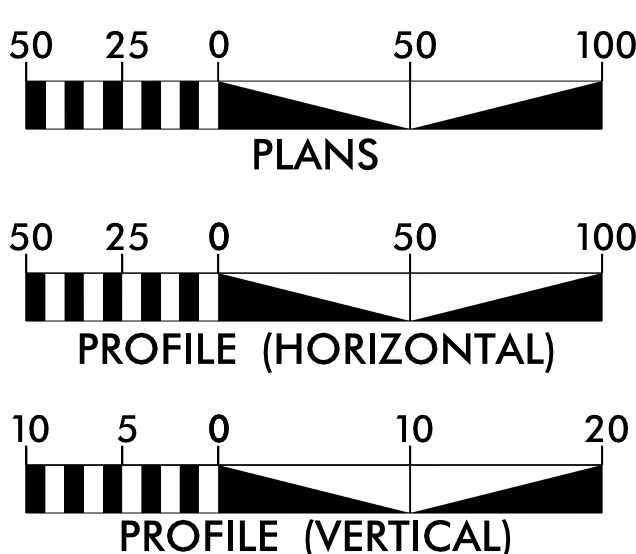
**END TIP PROJECT W-5313
-L- STA. 420+00.00**

LET TIP PROJECT W-5146 NOT
A PART OF TIP PROJECT W-5313

**END CONSTRUCTION
-L- STA. 420+19.59**

DESIGN EXCEPTION FOR SHOULDER WIDTH, SAG VERTICAL CURVE K, CREST VERTICAL CURVE K, AND VERTICAL STOPPING SIGHT DISTANCE ARE REQUIRED.

GRAPHIC SCALES



DESIGN DATA

ADT 2017 = 4504
ADT 2037 = 5944
K = 10 %
D = 65 %
T = 8 % *
V = 50 MPH
* TTST = 3% DUAL = 5%
FUNC CLASS =
RURAL MINOR COLLECTOR
R-R-R GUIDE

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT W-5313 = 7.325 MILES
LENGTH OF STRUCTURE TIP PROJECT W-5313 = 0.00 MILES
TOTAL LENGTH OF TIP PROJECT W-5313 = 7.325 MILES

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

2012 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:
AUGUST 29, 2014**

**LETTING DATE:
JUNE 20, 2017**

KEVIN E. MOORE
PROJECT ENGINEER

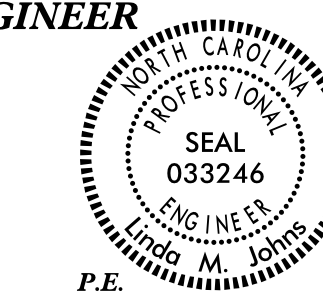
VACANT
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

5/8/2017

DocuSigned by:
Linda M. Johns

SIGNATURE:

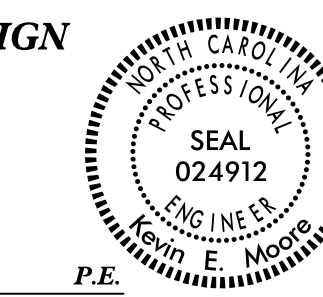


ROADWAY DESIGN ENGINEER

5/8/2017

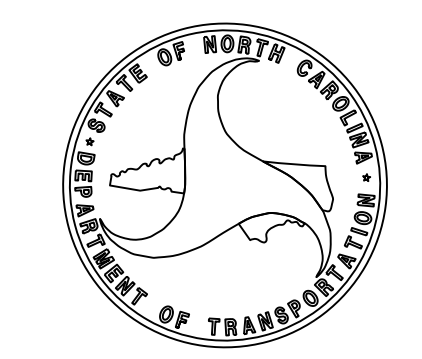
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Kevin E. Moore

SIGNATURE:



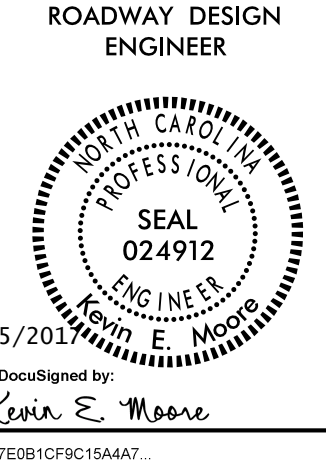
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

08-MAY-2017 11:45
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\$\$\$\$\$USERNAME\$\$\$\$\$



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. W-533
SHEET NO. 1A



INDEX OF SHEETS

STANDARD DRAWINGS

GENERAL NOTES

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C-1 THRU 1C-15	SURVEY CONTROL SHEETS
2A-1	PAVEMENT SCHEDULE, DETAIL SHOWING METHOD OF WEDGING DETAIL SHOWING EXISTING BRIDGE WITH 3" OVERLAY DETAIL OF INCIDENTAL MILLING, TYPICAL SECTIONS
2A-2	UNDERCUT TYPICAL SECTION, SHALLOW UNDERCUT TYPICAL SECTION AND TYPICAL SECTIONS
2A-3	TYPICAL SECTIONS
2A-4	TYPICAL SECTIONS, UNDERCUT TYPICAL SECTION
2A-5	TYPICAL SECTIONS
2C-1	CONCRETE ENDWALL FOR 60° SKEW, 42" PIPE CULVERT
2C-2	REINFORCE CONCRETE ENDWALL FOR SINGLE 54" PIPE 70° SKEW
2C-3	STRUCTURE ANCHOR UNIT, GUARDRAIL ANCHOR UNIT TYPE B-77 FOR F-SHAPE BARRIER
2C-4	PAVEMENT REPAIRS FOR SUPERPAVE MIX TYPES
2D-1 THRU 2D-2	DRAINAGE DETAILS
3B-1 THRU 3B-3	SUMMARY OF EARTHWORK
3B-4	SUMMARY OF GUARDRAIL, REMOVAL OF EXISTING ASPHALT PAVEMENT, BREAKING OF EXISTING ASPHALT PAVEMENT
3D-1 THRU 3D-6	DRAINAGE SUMMARY FOR PIPES 48 INCHES & UNDER
3D-7	DRAINAGE SUMMARY FOR PIPES 54 INCHES & OVER
3G-1	GEOTECHNICAL SUMMARY
2H-1	DETAIL FOR TEMPORARY CONTAINMENT OF CONTAMINATED SOIL
3P-1 THRU 3P-2	PARCEL INDEX SHEETS
4 THRU 34	PLAN SHEETS
35 THRU 53	PROFILE SHEETS
TMP-1 THRU TMP-16	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-15	PAVEMENT MARKING PLANS
EC-1 THRU EC-65	EROSION CONTROL PLANS
RF-1	REFORESTATION
SIGN-1 THRU SIGN-24	SIGNING PLANS
SIG.1	SIGNALS PLAN
UO-1 THRU UO-32	UTILITIES BY OTHERS
X-0 THRU X-167	CROSS-SECTIONS
C-1 THRU C-15	CULVERT CONSTRUCTION PLANS

2012 ROADWAY ENGLISH STANDARD DRAWINGS
EFF. 01-17-2012
REV. 02-29-2016

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

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Super-elevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Super-elevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
838.27	Reinforced Concrete Endwall - for Single 60" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
840.00	Concrete Base Pad for Drainage Structures
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.17	Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.19	Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.26	Brick Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.28	Brick Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.45	Precast Drainage Structure
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.04	Street Turnout
862.01	Guardrail Placement
862.02	Guardrail Installation
862.04	Anchoring End of Guardrail - B-77 and B-83 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

GENERAL NOTES:
2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 10-31-2014

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

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

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

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

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

DRIVEWAYS:
STREET TURNOUT:
STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADIUS NOTED ON PLANS.

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.

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE MCI - Communications
Duke Energy - Power Transmission, Duke Energy - Power Distribution
AT&T - Communications Toll, Time Warner Cable - Communications
Windstream West - Communications, Windstream East - Communications
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.

ROCK
ROCK IS ANTICIPATED AS A CONTINGENCY. BLASTING MAY BE REQUIRED FOR EXCAVATION ON THE PROJECT. SEE SECTION 220 OF THE STANDARD SPECIFICATIONS AND IF APPLICABLE, ROCK BLASTING PROVISION.

8/17/99

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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*

04/06/15

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	(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	----- RW
Proposed Right of Way Line with Iron Pin and Cap Marker	----- RW
Proposed Right of Way Line with Concrete or Granite RW Marker	----- RW
Proposed Control of Access Line with Concrete CA Marker	----- CA

Existing Control of Access	----- CA
Proposed Control of Access	----- CA
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.*)	----- ?U/L
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 W-5313

GPS Calibration Report

Project : W5313Z

TIP Number

User name tbovender

Date & Time 10:05:53 AM 12/16/2013

Coordinate System US State Plane 1983(at ground)

Zone North Carolina 3200

Horizontal Datum NAD 1983 (Conus)

Vertical Datum Geoid Model G09NC

Coordinate Units US survey feet

Distance Units US survey feet

Height Units US survey feet

LOCAL SITE INFORMATION

Localized around

Latitude 35°30'11.61315"N

Longitude 80°33'44.04363"W

Site Scale Factor 1.0001468316

Height 607.743sft

The North Carolina Department of Transportation uses a Localized Coordinate System which is very similar to North Carolina Zone 3200 from which it is derived. Please take care in utilizing these coordinates to eliminate confusion of the two systems.

This file is to aid in the use of Real Time Kinematic (RTK) GPS during construction layout.

Updated Default Projection (Transverse Mercator) Definition

Updated default projection not requested

Horizontal Adjustment Parameters

Northing coordinate of rotation center 648104.993sft

Easting coordinate of rotation center 1557642.997sft

Rotation about the center point 0°00'00"

Translation north 0.012sft

Translation east 0.014sft

Scale factor 1.00000004

Vertical Adjustment Parameters

Northing coordinate of origin point 647341.806sft

Easting coordinate of origin point 1578165.310sft

Vertical separation at origin -0.018sft

Slope north -0.246ppm

Slope east -0.164ppm

Geoid Model Definition

G09NC

Datum Transformation Parameters

Datum Transformation computation not requested

Residual Differences Between GPS (WGSS4) and Local Coordinates

Summary

	Maximum error	Root Mean Square error	Point
Horizontal	0.002sft	0.000	W5313-9 GPS
Vertical	0.000sft	0.000	W5313-1 GPS
Three-dimensional	0.002sft	0.000	W5313-9 GPS

WGSS4 Coordinates	Point Residuals Calculated point FOR DISPLAY ONLY	Local Coordinates
Point W5313-1 GPS Latitude 35°31'13.45073"N Longitude 80°25'03.80840"W Height 654.601sft	Northing 647341.806sft Easting 1578165.310sft Elevation 754.874sft Horz error 0.001sft Vert error 0.000sft 3D error 0.001sft	Point W5313-1 Northing 647341.806sft Easting 1578165.309sft Elevation 754.874sft Utilized Horz and Vert Quality Adjusted quality
Point W5313-2 GPS Latitude 35°31'12.12468"N Longitude 80°25'17.80716"W Height 643.105sft	Northing 647224.284sft Easting 1577006.270sft Elevation 743.394sft Horz error 0.001sft Vert error 0.000sft 3D error 0.001sft	Point W5313-2 Northing 647224.284sft Easting 1577006.270sft Elevation 743.394sft Utilized Horz and Vert Quality Adjusted quality
Point W5313-3 GPS Latitude 35°31'23.66952"N Longitude 80°26'19.70284"W Height 632.504sft	Northing 648465.253sft Easting 1571906.958sft Elevation 732.907sft Horz error 0.001sft Vert error 0.000sft 3D error 0.001sft	Point W5313-3 Northing 648465.254sft Easting 1571906.958sft Elevation 732.907sft Utilized Horz and Vert Quality Adjusted quality
Point W5313-4 GPS Latitude 35°31'27.35301"N Longitude 80°26'32.30289"W Height 651.369sft	Northing 648852.791sft Easting 1570870.905sft Elevation 751.801sft Horz error 0.001sft Vert error 0.000sft 3D error 0.001sft	Point W5313-4 Northing 648852.791sft Easting 1570870.905sft Elevation 751.801sft Utilized Horz and Vert Quality Adjusted quality
Point W5313-5 GPS Latitude 35°31'31.21979"N Longitude 80°27'46.81027"W Height 671.581sft	Northing 649333.869sft Easting 1564718.307sft Elevation 772.156sft Horz error 0.001sft Vert error 0.000sft 3D error 0.001sft	Point W5313-5 Northing 649333.870sft Easting 1564719.308sft Elevation 772.156sft Utilized Horz and Vert Quality Adjusted quality
Point W5313-6 GPS Latitude 35°31'32.35598"N Longitude 80°28'03.56318"W Height 693.823sft	Northing 649469.185sft Easting 1563335.324sft Elevation 794.432sft Horz error 0.001sft Vert error 0.000sft 3D error 0.001sft	Point W5313-6 Northing 649469.186sft Easting 1563335.326sft Elevation 794.432sft Utilized Horz and Vert Quality Adjusted quality
Point W5313-7 GPS Latitude 35°31'14.90334"N Longitude 80°29'05.42808"W Height 658.786sft	Northing 647780.675sft Easting 1558195.630sft Elevation 759.480sft Horz error 0.001sft Vert error 0.000sft 3D error 0.001sft	Point W5313-7 Northing 647780.675sft Easting 1558195.630sft Elevation 759.480sft Utilized Horz and Vert Quality Adjusted quality
Point W5313-8 GPS Latitude 35°31'11.26167"N Longitude 80°29'17.89752"W Height 656.861sft	Northing 647427.918sft Easting 1557159.417sft Elevation 757.572sft Horz error 0.001sft Vert error 0.000sft 3D error 0.001sft	Point W5313-8 Northing 647427.917sft Easting 1557159.416sft Elevation 757.572sft Utilized Horz and Vert Quality Adjusted quality
Point W5313-9 GPS Latitude 35°30'47.95816"N Longitude 80°30'41.95844"W Height 603.938sft	Northing 645176.819sft Easting 1550175.200sft Elevation 704.755sft Horz error 0.001sft Vert error 0.000sft 3D error 0.001sft	Point W5313-9 Northing 645176.818sft Easting 1550175.198sft Elevation 704.755sft Utilized Horz and Vert Quality Adjusted quality
Point W5313-10 GPS Latitude 35°30'52.84482"N Longitude 80°30'57.02510"W Height 620.785sft	Northing 645689.877sft Easting 1548937.263sft Elevation 721.638sft Horz error 0.001sft Vert error 0.000sft 3D error 0.001sft	Point W5313-10 Northing 645689.876sft Easting 1548937.261sft Elevation 721.638sft Utilized Horz and Vert Quality Adjusted quality
Point W5313-11 GPS Latitude 35°31'18.15487"N Longitude 80°31'56.35409"W Height 716.891sft	Northing 648324.139sft Easting 1544072.439sft Elevation 817.895sft Horz error 0.001sft Vert error 0.000sft 3D error 0.001sft	Point W5313-11 Northing 648324.139sft Easting 1544072.439sft Elevation 817.895sft Utilized Horz and Vert Quality Adjusted quality
Point W5313-12 GPS Latitude 35°31'21.96724"N Longitude 80°32'13.14814"W Height 727.933sft	Northing 648731.049sft Easting 1542690.279sft Elevation 828.974sft Horz error 0.001sft Vert error 0.000sft 3D error 0.001sft	Point W5313-12 Northing 648731.049sft Easting 1542690.279sft Elevation 828.974sft Utilized Horz and Vert Quality Adjusted quality
Point W5313-13 GPS Latitude 35°31'33.43655"N Longitude 80°32'39.77131"W Height 720.728sft	Northing 649924.804sft Easting 1540507.788sft Elevation 821.843sft Horz error 0.001sft Vert error 0.000sft 3D error 0.001sft	Point W5313-13 Northing 649924.804sft Easting 1540507.789sft Elevation 821.843sft Utilized Horz and Vert Quality Adjusted quality
Point W5313-14 GPS Latitude 35°31'31.29457"N Longitude 80°32'54.81463"W Height 714.336sft	Northing 649727.611sft Easting 1539261.057sft Elevation 815.474sft Horz error 0.001sft Vert error 0.000sft 3D error 0.001sft	Point W5313-14 Northing 649727.611sft Easting 1539261.058sft Elevation 815.474sft Utilized Horz and Vert Quality Adjusted quality

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "13802-12" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 641735.246(++) EASTING: 1535065.380(++) ELEVATION: 708.81(++)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985319

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "13802-12" TO -L- STATION 10+00.00 IS

13802-12 10,166.40

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES

VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/NSRS 2007 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.

2. 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:

W5313_LS_GPSALIB.HTML
W5313_LS_WGSS4.TXT
W5313_LS_LOCAL.TXT
W5313_LS_CONTROL.TXT

THE WGSS4 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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.

SURVEY CONTROL SHEET W-5313

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
14	W5313-14	649727.6110	1539261.0580	815.47	12+55.55	1172.64 RT
13	W5313-13	649924.8040	1540507.7890	821.85	17+10.82	32.95 RT
20	BL-20	649506.3870	1541121.0324	828.65	24+48.08	20.55 RT
21	BL-21	649173.0122	1541786.0469	823.20	31+93.11	23.61 RT
12	W5313-12	648731.0490	1542690.2790	828.97	41+95.97	29.36 RT
11	W5313-11	648324.1390	1544072.4390	817.89	56+38.78	34.10 LT
22	BL-22	647865.9019	1544927.6109	814.88	66+07.56	19.70 RT
23	BL-23	647435.6861	1545909.8204	822.25	76+79.13	20.02 LT
24	BL-24	646843.3211	1546830.6598	784.72	87+73.22	20.75 LT
25	BL-25	646080.3244	1547830.4433	755.72	100+28.63	23.58 RT
10	W5313-10	645689.8760	1548937.2610	721.61	112+01.65	19.86 RT
9	W5313-9	645176.8180	1550175.1980	704.75	125+38.59	27.78 RT
26	BL-26	645217.6326	1551096.4790	736.39	134+55.99	18.66 LT
27	BL-27	645186.1608	1551804.1469	771.12	141+63.31	19.87 RT
28	BL-28	645287.7892	1552384.8128	779.07	147+45.95	35.56 RT
29	BL-29	645952.3155	1553051.3346	773.21	156+78.75	19.63 LT
30	BL-30	646462.4955	1554074.1830	779.35	168+19.83	22.11 LT
31	BL-31	646681.3768	1554657.5325	749.10	174+42.88	17.51 LT
32	BL-32	647070.6648	1555825.4985	735.86	186+73.49	14.91 LT
8	W5313-8	647427.9170	1557159.4160	757.57	200+53.94	21.20 RT
7	W5313-7	647780.6750	1558195.6300	759.44	211+45.12	24.50 RT
33	BL-33	648437.5705	1558962.2841	781.21	221+48.54	25.08 LT
34	BL-34	648812.2477	1560047.4837	801.91	232+93.73	6.10 RT
35	BL-35	649225.3789	1560910.8354	803.54	242+48.52	28.69 LT
36	BL-36	649377.3748	1561914.0963	808.05	252+60.34	19.52 RT
37	BL-37	649540.5403	1562740.4092	791.71	261+01.41	17.36 LT
6	W5313-6	649469.1860	1563335.3260	794.41	266+99.08	17.84 RT
5	W5313-5	649333.8700	1564718.3080	772.16	280+88.66	20.43 RT
38	BL-38	649312.3175	1565344.3977	766.48	287+13.95	17.92 LT
39	BL-39	649227.3622	1566061.3576	789.72	294+34.69	18.31 LT
40	BL-40	649106.9296	1566674.2592	776.12	300+58.19	17.80 RT
41	BL-41	649143.7038	1567388.4709	799.42	307+70.70	28.46 LT
42	BL-42	649006.3712	1568425.6106	788.56	318+14.73	19.94 RT
43	BL-43	648925.8474	1569418.8073	760.44	328+10.18	21.86 RT
44	BL-44	648958.7243	1570264.9964	766.91	336+55.46	22.54 LT
4	W5313-4	648852.7910	1570870.9060	751.80	342+71.19	22.36 RT
3	W5313-3	648465.2540	1571906.9580	732.91	353+82.05	20.70 RT
45	BL-45	648230.7159	1572547.4498	757.95	360+60.87	21.10 RT
46	BL-46	648220.4435	1573539.1161	746.87	370+49.66	23.85 LT
47	BL-47	648128.9379	1574511.1838	743.20	380+25.02	20.41 RT
48	BL-48	648095.9897	1575332.3084	747.24	388+44.44	20.33 LT
49	BL-49	647634.5335	1576194.7392	702.73	398+19.70	17.68 RT
2	W5313-2	647224.2840	1577006.2700	743.42	407+31.32	7.56 RT
1	W5313-1	647341.8060	1578165.3090	754.87	418+98.21	19.46 LT

 BM1 ELEVATION = 801.11
 N 649427 E 1540161
 L STATION 18+09.00 628 RIGHT
 R/R SPIKE SET IN 48" WILLOW OAK ON EAST SIDE OF OLD MEADOW LN.

 BM2 ELEVATION = 829.73
 N 648287 E 1542265
 L STATION 39+78.00 592 RIGHT
 CHISLED SQUARE IN SOUTHERN (BELL) END OF 12' CONC DRIVEWAY PIPE LEADING TO 4945 MOOSE RD. SR 1308

 BM3 ELEVATION = 817.94
 N 647416 E 1545717
 L STATION 75+15.00 82 RIGHT
 R/R SPIKE SET IN ROOT OF 18" OAK ON SOUTH SIDE OF OLD BEATTY FORD RD.
 ACROSS FROM C. J. AUTO REPAIR 5710 OLD BEATTY FORD RD.

 BM4 ELEVATION = 730.55
 N 645934 E 1548685
 L STATION 108+84.00 125 LEFT
 R/R SPIKE SET IN BASE OF 15' CEDAR APPROX. 120' FROM NORTH EP OF OLD BEATTY FORD RD. DOWN PVT GRAVEL DRIVE ACROSS FROM CHAPMAN FARM RD.

 BM5 ELEVATION = 776.61
 N 645130 E 1551686
 L STATION 140+45.00 75 RIGHT
 R/R SPIKE SET IN BASE OF 24" OAK ON SOUTH SIDE OF OLD BEATTY FORD RD.

 BM6 ELEVATION = 775.86
 N 646358 E 1554174
 L STATION 168+76.00 111 RIGHT
 R/R SPIKE SET ON ROOT OF 24" WILLOW OAK 105' FROM SOUTH EP OF OLD BEATTY FORD RD. JUST EAST OF COUNTRY RIDGE RD. AND WEST OF THE DRIVE FOR 7265 OLD BEATTY FORD RD.

 BM7 ELEVATION = 751.48
 N 647331 E 1557233
 L STATION 200+97.00 135 RIGHT
 R/R SPIKE SET IN BASE OF 24" CEDAR 125' FROM SOUTH EP AND JUST EAST OF DRIVE FOR 7795 OLD BEATTY FORD RD.

 BM8 ELEVATION = 792.30
 N 648539 E 1559624
 L STATION 228+06.00 106 RIGHT
 R/R SPIKE SET IN BASE OF 48" MAPLE NEAR OLD TOBACCO BARN AND LARGE STONE OUTCROP 120' FROM SOUTH EP OF OLD BEATTY FORD RD.

 BM9 ELEVATION = 796.31
 N 649554 E 1563511
 L STATION 268+66.00 83 LEFT
 R/R SPIKE SET IN BASE OF 36" OAK ON EAST SIDE OF DRIVE LEADING TO 9090 OLD BEATTY FORD RD.

 BM10 ELEVATION = 798.32
 N 649066 E 1567393
 L STATION 307+78.00 49 RIGHT
 NCGS MON 'ROW 17' SET IN CONC BASE OF CITGO SIGN IN THE SE QUADRANT OF THE INTERSECTION OF OLD BEATTY FORD AND ORGAN CHURCH RD. WITH PROJECT RELATED ELEV. APPLIED

 BM11 ELEVATION = 768.24
 N 649004 E 1570115
 L STATION 335+05.00 67 LEFT
 R/R SPIKE SET IN BASE OF 18" OAK JUST WEST OF 10104 OLD BEATTY FORD RD. AND 66' FROM NORTH EP

 BM12 ELEVATION = 754.47
 N 648187 E 1572782
 BL STATION 364+15.00 42 RIGHT
 R/R SPIKE SET IN BASE OF 30" MAPLE ON SOUTH SIDE OF OLD BEATTY FORD RD. AND 40' FROM EP

 BM13 ELEVATION = 735.76
 N 648094 E 1575568
 BL STATION 391+79.00 109 LEFT
 R/R SPIKE SET IN BASE OF 36" OAK 115' FROM NORTH EP OF OLD BEATTY FORD RD. AND WEST OF WIND SWEEP WAY (PVT)

POINT	DESC.	NORTH	EAST	ELEVATION	Y4 STATION	OFFSET
63	BY8-63	646022.4732	1552695.4886	779.04	OUTSIDE PROJECT LIMITS	
E0100	POINT NOT SET	645576.7118	1552674.6030	UNKNOWN	10+58.00	78.29 RT
64	BY8-64	645129.5328	1552653.6510	782.50	OUTSIDE PROJECT LIMITS	

POINT	DESC.	NORTH	EAST	ELEVATION	Y6 STATION	OFFSET
59	BY11-59	649083.3313	1559949.3482	816.38	OUTSIDE PROJECT LIMITS	
34	BL-34	648812.2477	1560047.4837	801.91	10+06.10	62.27 RT
58	BY11-58	648304.9426	1560003.4796	792.78	15+75.02	17.98 RT

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
60	BY12-60	649327.5747	1567781.3202	797.79	311+43.17	239.46 LT
41	BL-41	649143.7038	1567388.4709	799.42	307+70.70	28.46 LT
61	BY12-61	648900.9752	1567104.8853	787.88	304+89.76	219.11 RT

POINT	DESC.	NORTH	EAST	ELEVATION	Y8 STATION	OFFSET
62	BY13B-62	647558.7471	1577413.5075	725.96	OUTSIDE PROJECT LIMITS	
2	W5313-2	647224.2840	1577006.2700	743.42	11+05.25	471.91 RT

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
50	BY1-50	650613.2683	1540122.8333	826.76	OUTSIDE PROJECT LIMITS	
13	W5313-13	649924.8040	1540507.7890	821.85	17+10.82	32.95 RT

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
51	BY2-51	649233.2716	1542420.5105	819.39	37+24.40	328.38 LT
12	W5313-12	648731.0490	1542690.2790	828.97	41+95.97	29.36 RT

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
12	W5313-12	648731.0490	1542690.2790	828.97	41+95.97	29.36 RT
52	BY3-52	648461.4652	1542410.9238	829.96	40+35.03	375.93 RT

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
12	W5313-12	648731.0490	1542690.2790	828.97	41+95.97	29.36 RT
53	BY4-53	648503.7390	1543036.4014	826.62	45+82.12	167.47 RT

POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
54	BY5-54	648746.1693	1543664.0707	820.99	10+09.83	16.04 LT
11	W5313-11	648324.1390	1544072.4390	817.89	OUTSIDE PROJECT LIMITS	

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
55	BY6-55	648607.0476	1544298.4779	808.87	57+26.40	385.46 LT
11	W5313-11	648324.1390	1544072.4390	817.89	56+38.78	34.10 LT
56	BY6-56	647901.9327	1543949.4321	810.50	57+02.85	400.97 RT

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
22	BL-22	647865.9019	1544927.6109	814.88	66+07.56	19.70 RT
57	BY7-57	647789.1231	1544564.2235	815.72	63+12.17	246.74 RT

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "I3802-12" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 641735.246(++) EASTING: 1535065.380(++) ELEVATION: 708.81(++)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985319

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "I3802-12" TO -L- STATION 10+00.00 IS 13802-12 10,166.40

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES

VERTICAL DATUM USED IS NAVD 88

NOTES:

- THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/NSRS 2007 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
- 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:
 W5313_LS_GPSALIB.HTML
 W5313_LS_WGS84.TXT
 W5313_LS_LOCAL.TXT
 W5313_LS_CONTROL.TXT
 THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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.

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET W-5313

L			
TYPE	STATION	NORTH	EAST
POT	10+00.00	650540.5245	1540143.9840
PC	13+69.46	650221.6689	1540330.6213
PT	23+50.87	649566.8954	1541042.2211
PC	28+87.47	649335.2172	1541526.2283
PT	30+19.45	649275.6345	1541643.9815
PC	37+64.52	648924.7025	1542301.2317
PT	43+61.04	648716.3655	1542858.3233
PC	47+53.98	648628.5792	1543241.3327
PT	51+01.49	648516.9843	1543569.7919
PC	62+15.10	648053.0298	1544582.1592
PT	63+56.30	647992.9135	1544709.9174
PC	78+15.27	647358.4498	1546023.7097
PT	83+48.10	647081.8473	1546478.1443
PC	96+56.94	646296.3828	1547525.1036
PT	103+26.69	645988.3065	1548116.4308
PC	110+23.11	645771.2531	1548778.1686
PT	113+56.76	645641.3663	1549085.0728
PC	115+56.09	645548.6511	1549261.5349
PT	118+11.89	645444.4610	1549494.9575
PC	123+88.64	645243.5155	1550035.5726
PT	126+93.39	645191.3635	1550334.1055
PC	143+19.17	645207.5796	1551959.8014
PT	149+88.37	645468.2024	1552556.7371
PC	153+61.07	645739.0020	1552812.8127
PT	157+04.36	645947.8960	1553083.4782
PC	162+03.40	646187.6969	1553521.1272
PT	167+43.05	646414.3475	1554010.4158
PC	178+30.61	646803.9127	1555025.8068
PT	181+83.91	646917.3956	1555360.2970
PC	203+36.78	647528.5333	1557424.6045
PT	207+55.18	647659.2199	1557822.0039
PC	209+74.30	647733.8614	1558028.0188
PT	214+81.54	647994.1647	1558459.6305
PC	218+60.63	648249.1570	1558740.1383
PT	223+62.55	648500.4678	1559170.3834
PC	229+64.92	648689.6834	1559742.2733
PT	232+51.72	648798.9512	1560007.1748
PC	237+05.87	649001.7553	1560413.5197
PT	245+16.95	649259.3565	1561179.8673
PC	257+21.36	649481.6493	1562363.5884
PT	264+24.61	649513.1665	1563063.8110
PC	291+39.54	649253.8262	1565766.3270
PT	293+63.70	649222.4447	1565988.2073
PC	296+39.81	649171.5644	1566259.5885
PT	301+49.76	649122.5772	1566766.5051
PC	305+93.16	649119.3220	1567209.8882
PT	310+88.98	649094.2479	1567704.9261
PC	322+65.63	648983.9545	1568876.3895
PT	331+27.95	648940.2176	1569737.3336
PC	337+50.11	648935.4636	1570359.4755
PT	346+49.65	648760.4334	1571236.3488
PC	358+41.23	648311.3829	1572340.0838
PT	361+79.12	648238.8333	1572668.4422
PC	385+86.23	648122.1057	1575072.7287
PT	390+03.31	648016.8417	1575473.1807
PC	398+97.44	647615.4247	1576272.1435
PT	402+73.87	647428.6846	1576598.7770
PC	404+23.36	647347.6212	1576724.3787
PT	410+41.38	647226.3501	1577316.0235
PC	411+97.88	647252.6408	1577470.3016
PT	415+07.82	647291.1196	1577777.7369
POT	420+19.59	647332.1382	1578287.8582

LREV			
TYPE	STATION	NORTH	EAST
PC	12+95.91	650285.1503	1540293.4634
PT	24+20.07	649535.1370	1541108.5686

Y1			
TYPE	STATION	NORTH	EAST
POT	9+86.86	649910.8169	1540580.8437
POT	16+47.86	649811.4724	1539927.3495

Y2			
TYPE	STATION	NORTH	EAST
POT	10+00.00	648758.8924	1543650.2079
POT	12+60.70	648503.0214	1543600.2595

Y3			
TYPE	STATION	NORTH	EAST
POT	10+00.00	645874.1334	1552697.3273
PC	10+32.53	645841.6145	1552696.4780
PT	11+49.71	645725.9340	1552711.8154
POT	12+24.08	645654.6661	1552733.0623

Y4			
TYPE	STATION	NORTH	EAST
POT	10+00.00	645654.6661	1552733.0623
PC	10+65.91	645591.5003	1552751.8938
PRC	12+23.85	645444.1395	1552718.4710
PT	13+76.17	645307.8854	1552655.7908
POT	14+90.87	645194.1087	1552641.3199

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "I3802-12" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 641735.246(±) EASTING: 1535065.380(±) ELEVATION: 708.81(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985319

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "I3802-12" TO -L- STATION 10+00.00 IS 13802-12 10,166.40

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

NOTES:

- THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/NSRS 2007 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
 - 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:
W5313_LS_GPSALIB.HTML
W5313_LS_WGS84.TXT
W5313_LS_LOCAL.TXT
W5313_LS_CONTROL.TXT
- THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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.

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET W-5313

PROJECT REFERENCE NO.	SHEET NO.
W-5313	1C-5
Location and Surveys	

Y5

TYPE	STATION	NORTH	EAST
POT	10+00.00	649108.7493	1559897.0337
PC	11+31.75	649010.3319	1559984.6302
PT	12+45.84	648919.4250	1560053.3653
POT	13+33.49	648845.5179	1560100.4773

Y7

TYPE	STATION	NORTH	EAST
POT	10+00.00	647225.5539	1577040.9088
POT	11+41.48	647084.3919	1577031.3706

Y6

TYPE	STATION	NORTH	EAST
POT	10+00.00	648845.5179	1560100.4773
PC	10+62.23	648789.8415	1560128.2650
PRC	12+23.56	648636.0716	1560118.8913
PT	14+69.00	648407.9190	1560034.4569
POT	15+78.81	648298.9467	1560020.8518

Y8

TYPE	STATION	NORTH	EAST
POT	10+00.00	647517.8460	1577402.4767
PC	10+20.56	647497.9997	1577407.8620
PT	11+57.24	647372.0965	1577460.0839
POT	12+84.99	647261.3190	1577523.7166

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "13802-12" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 641735.246(ft) EASTING: 1535065.380(ft) ELEVATION: 708.81(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985319

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "13802-12" TO -L- STATION 10+00.00 IS 13802-12 10,166.40

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

NOTES:

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/NSRS 2007 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.

2. 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:
 W5313_LS_GPSCALIB.HTML
 W5313_LS_WGS84.TXT
 W5313_LS_LOCAL.TXT
 W5313_LS_CONTROL.TXT

 THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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.

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET W-5313

PROJECT REFERENCE NO. W-5313	SHEET NO. 1C-6
Location and Surveys	

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+53.06	-28.43	650336.4888	1540296.3554
L	24+24.43	-30.00	649562.1964	1541121.5222
L	25+78.10	-28.85	649494.8089	1541259.6296
L	31+21.39	-30.00	649254.0832	1541748.0380
L	31+48.44	24.44	649193.3207	1541746.2557
L	31+51.11	30.00	649187.1563	1541745.9961
L	36+64.00	-30.00	648998.5127	1542226.6885
L	36+83.83	-50.00	649006.8170	1542253.5980
L	37+43.87	-50.00	648978.5376	1542306.5616
L	37+64.52	-30.00	648951.1664	1542315.3619
L	41+01.47	30.00	648760.5302	1542599.1895
L	41+15.54	50.00	648736.9163	1542606.0783
L	41+76.00	55.00	648712.6519	1542663.2111
L	42+04.47	-30.00	648785.3306	1542715.7646
L	48+98.16	-30.00	648619.0215	1543389.4846
L	50+85.00	-30.00	648551.1720	1543567.0059
L	50+95.00	-42.16	648558.0685	1543581.3094
L	51+54.00	-52.62	648542.9415	1543639.4545
L	51+80.00	-30.00	648511.5460	1543653.6667
L	56+26.00	-30.00	648325.7336	1544059.1168
L	56+47.33	-50.00	648335.0297	1544086.8377
L	57+05.44	50.00	648219.9120	1544098.0019
L	57+07.37	-50.00	648310.0156	1544141.4194
L	57+27.00	-30.00	648283.6550	1544150.9339
L	57+27.00	30.00	648229.1101	1544125.9368
L	61+97.00	30.00	648033.2989	1544553.2048
L	62+15.10	-30.00	648080.3022	1544594.6578
L	62+36.00	59.55	647990.2333	1544576.1733
L	63+00.00	61.76	647961.3637	1544632.7129
L	63+15.00	30.00	647983.6723	1544659.7883
L	63+56.30	-30.00	648019.9283	1544722.9635
L	63+56.30	30.00	647965.8987	1544696.8712
L	67+55.32	20.16	647801.2371	1545060.4656
L	67+58.53	30.00	647790.9800	1545059.0777
L	68+31.52	20.07	647768.1810	1545129.1223
L	68+41.23	30.00	647755.0148	1545133.5514
L	74+00.00	30.00	647512.0237	1545636.7162
L	74+72.37	-30.00	647534.5819	1545727.9766
L	74+98.80	30.07	647468.9954	1545725.6544
L	91+03.12	29.74	646604.9548	1547064.2407
L	91+03.24	30.00	646604.6755	1547064.1849
L	96+56.94	30.00	646272.3855	1547507.1000
L	96+82.20	-33.59	646308.4668	1547565.2237
L	96+84.73	-30.00	646304.0977	1547565.1194
L	103+26.69	-30.00	646016.8122	1548125.7808
L	103+26.69	30.00	645959.8008	1548107.0808
L	108+96.21	-30.05	645839.3579	1548666.9522
L	108+96.23	-30.00	645839.3045	1548666.9544

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	109+17.34	30.00	645775.7147	1548668.3101
L	139+65.92	-30.00	645234.0547	1551606.2674
L	143+19.17	-30.00	645237.5781	1551959.5022
L	147+76.18	32.00	645307.0209	1552409.9439
L	148+26.36	-30.00	645386.4578	1552417.3124
L	149+88.37	32.00	645446.2159	1552579.9878
L	151+82.75	32.00	645587.4464	1552713.5393
L	153+06.00	36.00	645674.2529	1552801.1311
L	153+10.82	-54.00	645739.5920	1552739.0502
L	153+50.00	-30.73	645752.0713	1552782.8775
L	153+61.07	30.00	645718.3897	1552834.6102
L	153+84.19	30.00	645734.5650	1552850.2312
L	154+70.86	-29.38	645837.0922	1552872.8636
L	154+71.46	-30.00	645837.9648	1552872.9303
L	154+80.88	30.00	645798.5448	1552919.1338
L	157+00.00	-30.00	645972.0431	1553065.1347
L	157+04.36	30.00	645921.5866	1553097.8940
L	162+03.40	-30.00	646214.0064	1553506.7115
L	162+03.40	30.00	646161.3875	1553535.5430
L	164+42.98	-30.00	646323.5851	1553721.7365
L	164+42.44	30.00	646269.1056	1553746.8815
L	166+41.00	29.25	646349.5469	1553926.7871
L	166+85.00	53.87	646343.1518	1553976.3961
L	167+26.00	50.97	646360.6972	1554012.9719
L	167+49.00	29.16	646389.2570	1554026.4165
L	175+39.34	-30.00	646727.5912	1554743.1253
L	175+39.27	-31.39	646728.8628	1554742.5593
L	175+42.64	30.00	646672.7519	1554767.6915
L	178+30.61	-30.00	646831.9220	1555015.0607
L	178+30.61	30.00	646775.9034	1555036.5529
L	181+83.91	-30.00	646946.1615	1555351.7809
L	181+83.91	30.00	646888.6297	1555368.8131
L	196+40.84	31.80	647300.4831	1556766.3169
L	196+41.61	-28.20	647358.2352	1556750.0203
L	196+41.61	-30.00	647359.9594	1556749.5120
L	208+39.28	30.00	647659.6617	1557911.2923
L	208+39.29	29.98	647659.6834	1557911.2935
L	208+61.18	-30.00	647723.5320	1557911.4401
L	209+74.30	-30.00	647762.0672	1558017.7995
L	209+74.30	30.00	647705.6556	1558038.2381
L	214+81.54	-30.00	648016.3635	1558439.4509
L	214+81.54	30.00	647971.9659	1558479.8100

NOTES:

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/NSRS 2007 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
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 THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "13802-12" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
 NORTHING: 641735.246(ft) EASTING: 1535065.380(ft)
 ELEVATION: 708.81(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985319
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "13802-12" TO -L- STATION 10+00.00 IS
 13802-12 10,166.40
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET W-5313

PROJECT REFERENCE NO.	SHEET NO.
W-5313	1C-7
Location and Surveys	

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	218+60.63	-30.00	648271.3558	1558719.9588
L	218+60.63	30.00	648226.9582	1558760.3178
L	222+58.86	-30.00	648491.2517	1559061.6292
L	223+62.55	30.00	648471.9863	1559179.8068
L	229+64.92	30.00	648661.2018	1559751.6967
L	232+51.72	30.00	648772.1087	1560020.5717
L	232+78.00	-44.57	648850.5649	1560010.7833
L	232+85.78	30.00	648787.3181	1560051.0459
L	234+39.00	30.00	648855.7402	1560188.1386
L	234+40.00	-42.79	648921.3157	1560156.5280
L	237+05.87	30.00	648974.9127	1560426.9167
L	245+16.95	30.00	649229.8719	1561185.4043
L	247+41.78	30.00	649271.3683	1561406.3750
L	249+34.27	30.00	649306.8946	1561595.5544
L	257+21.36	-30.00	649511.1339	1562358.0515
L	257+21.36	30.00	649452.1646	1562369.1254
L	259+46.50	-30.00	649543.0524	1562583.5674
L	259+46.75	-34.40	649547.4568	1562583.4027
L	261+25.48	30.00	649493.8884	1562765.7726
L	261+26.97	-30.00	649553.9070	1562765.8481
L	264+24.61	-30.00	649543.0293	1563066.6767
L	266+84.85	30.00	649458.4446	1563319.9948
L	289+84.56	-30.00	649298.4931	1565614.9227
L	289+86.57	-24.79	649293.1148	1565616.4275
L	291+39.54	30.00	649223.9634	1565763.4613
L	291+90.00	30.00	649218.7003	1565813.0392
L	292+03.34	40.00	649207.2149	1565824.9194
L	292+63.98	40.00	649199.2837	1565884.0568
L	292+85.00	30.00	649206.0819	1565906.0415
L	293+63.70	30.00	649192.9585	1565982.6790
L	322+65.63	-30.00	649013.8224	1568879.2016
L	322+65.63	30.00	648954.0865	1568873.5775
L	327+94.97	30.00	648918.3296	1569403.2440
L	328+56.97	-28.38	648974.3220	1569467.4093
L	328+56.84	-30.00	648975.9454	1569467.3391
L	344+35.34	-30.00	648860.8311	1571043.2201
L	344+35.66	29.52	648803.8087	1571026.1561
L	346+49.65	-30.00	648788.2216	1571247.6543
L	346+49.65	30.00	648732.6451	1571225.0432
L	350+07.14	23.46	648603.9816	1571558.6437
L	350+08.62	30.00	648597.3658	1571557.5505

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	358+41.23	-30.00	648339.1711	1572351.3893
L	359+07.75	29.50	648260.3794	1572393.2078
L	359+07.85	30.00	648259.8708	1572393.1531
L	361+79.12	-30.00	648268.7980	1572669.8969
L	361+79.12	30.00	648208.8686	1572666.9874
L	362+86.68	-30.00	648263.5818	1572777.3366
L	362+89.47	30.00	648203.5171	1572777.2136
L	366+72.61	-30.00	648244.8670	1573162.8143
L	366+72.80	30.00	648184.9285	1573160.0903
L	385+86.23	-30.00	648152.0704	1575074.1835
L	385+86.23	30.00	648092.1410	1575071.2740
L	386+25.56	30.00	648089.5423	1575109.3321
L	386+72.07	-30.00	648144.0013	1575162.1939
L	386+72.19	-27.65	648141.6561	1575162.0038
L	391+95.76	-30.00	647957.2480	1575658.6168
L	392+16.60	30.00	647894.2786	1575650.3016
L	398+97.44	-30.00	647642.2315	1576285.6118
L	398+97.44	30.00	647588.6179	1576258.6752
L	400+19.43	-28.56	647583.8282	1576393.8742
L	400+19.49	-30.00	647585.0604	1576394.6221
L	402+73.87	30.00	647403.4784	1576582.5089
L	404+23.36	30.00	647322.4151	1576708.1107
L	405+66.00	30.00	647253.2755	1576838.5132
L	406+66.00	42.00	647207.0372	1576932.7229
L	407+15.26	42.00	647194.1230	1576982.8224
L	407+41.53	52.00	647178.6357	1577007.9258
L	407+97.56	52.57	647168.7323	1577066.6347
L	408+24.47	30.00	647188.1308	1577097.1414
L	410+41.38	30.00	647196.7765	1577321.0632
L	411+97.88	30.00	647223.0672	1577475.3413
L	413+00.00	-31.58	647299.5971	1577566.8076
L	415+07.82	30.00	647261.2162	1577780.1414
L	416+00.00	29.78	647268.8203	1577872.0082

NOTES:

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/NSRS 2007 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
2. 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/)
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 W5313_LS_CONTROL.TXT
 THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "13802-12" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
 NORTHING: 641735.246(ft) EASTING: 1535065.380(ft)
 ELEVATION: 708.81(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985319
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "13802-12" TO -L- STATION 10+00.00 IS
 13802-12 10,166.40
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET W-5313

PROJECT REFERENCE NO. W-5313	SHEET NO. 1C-8
Location and Surveys	

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
LREV	12+95.91	-30.00	650300.3051	1540319.3542
LREV	18+13.75	44.11	649847.6697	1540582.0208

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y1	10+41.00	-40.00	649863.1342	1540533.3294
Y1	11+80.00	-35.00	649847.1866	1540395.1568
Y1	11+80.00	-40.00	649842.2433	1540395.9083
Y1	12+20.00	-35.00	649841.1748	1540355.6111
Y1	12+20.00	-40.00	649836.2316	1540356.3626
Y1	13+75.00	-31.48	649821.3593	1540201.8427
Y1	13+75.00	-40.00	649812.9361	1540203.1232

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y3	10+50.30	-29.74	645824.4941	1552726.1726

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y4	11+25.50	-30.00	645529.6475	1552787.4443
Y4	12+02.70	30.00	645477.6421	1552706.7605
Y4	12+23.85	30.00	645464.2751	1552696.2324
Y4	12+23.85	-30.00	645424.0038	1552740.7096
Y4	13+50.00	-30.00	645326.7545	1552689.6466
Y4	13+75.00	-29.98	645305.1263	1552685.6639
Y4	13+75.00	30.02	645312.9756	1552626.1795

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y5	12+45.54	29.98	648903.5545	1560027.9287
Y5	12+61.60	-29.86	648922.1884	1560087.0145

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y6	10+62.23	-30.00	648803.2385	1560155.1076
Y6	12+23.56	-30.00	648619.5134	1560143.9077
Y6	14+46.77	-30.00	648424.9586	1560067.2580

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "13802-12" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 641735.246(ft) EASTING: 1535065.380(ft) ELEVATION: 708.81(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985319

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "13802-12" TO -L- STATION 10+00.00 IS 13802-12 10,166.40

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

NOTES:

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/NSRS 2007 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
2. 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:
W5313_LS_GPSCALIB.HTML
W5313_LS_WGS84.TXT
W5313_LS_LOCAL.TXT
W5313_LS_CONTROL.TXT

THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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.

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET W-5313

PROJECT REFERENCE NO. W-5313	SHEET NO. 1C-9
Location and Surveys	

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+40.00	30.87	650404.1066	1540188.0647
L	11+40.00	47.00	650395.9584	1540174.1441
L	28+60.00	-29.99	649374.1271	1541514.3977
L	28+87.47	-40.00	649371.2968	1541543.4984
L	30+19.45	-40.00	649310.9198	1541662.8217
L	31+40.00	-40.00	649254.1404	1541769.1620
L	31+40.00	-30.00	649245.3191	1541764.4520
L	36+81.68	30.00	648937.2562	1542214.0267
L	37+72.50	49.00	648877.6513	1542285.3503
L	37+72.50	55.50	648871.9066	1542282.3092
L	37+75.00	56.00	648870.2672	1542284.3404
L	37+75.00	49.00	648876.4574	1542287.6086
L	38+00.00	-30.00	648934.9230	1542346.3697
L	39+25.00	-50.00	648899.8995	1542465.7160
L	39+26.00	48.00	648809.9657	1542426.7686
L	39+55.00	-50.00	648888.1415	1542492.5894
L	39+62.00	30.00	648811.8479	1542467.5328
L	40+50.00	-30.00	648834.5952	1542571.5722
L	41+06.19	78.62	648713.0763	1542587.5526
L	46+29.31	58.64	648599.2740	1543106.7115
L	46+49.50	30.15	648622.5333	1543132.7561
L	46+49.50	58.72	648594.6854	1543126.3733
L	48+60.95	66.19	648537.9586	1543325.9620
L	48+62.88	66.95	648536.7019	1543327.5232
L	48+65.29	56.06	648546.4726	1543332.8637
L	48+67.58	55.92	648545.9706	1543335.0243
L	48+77.62	-31.05	648626.2824	1543369.8535
L	48+92.26	54.24	648540.5324	1543358.3385
L	48+84.65	-49.16	648641.4557	1543382.0815
L	48+97.38	28.00	648563.2565	1543370.8184
L	49+06.79	-47.95	648633.3846	1543403.4097
L	49+08.85	-47.85	648632.6317	1543405.3919
L	49+11.49	-59.92	648643.2501	1543411.7443
L	49+13.28	-59.17	648641.9577	1543413.2690
L	50+84.13	-49.00	648568.8853	1543573.9364
L	50+84.13	-58.82	648577.8537	1543577.9363
L	50+86.08	-49.12	648568.1766	1543575.8172
L	50+86.08	-58.72	648576.9396	1543579.7375
L	50+93.48	-49.01	648564.9520	1543582.7151
L	51+80.00	-48.52	648528.3828	1543661.3828
L	51+80.00	-55.00	648534.2730	1543664.0822
L	56+03.50	-67.00	648368.7435	1544054.0774
L	56+03.50	-69.50	648371.0162	1544055.1189

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	56+15.50	135.00	648180.1097	1543980.8292
L	56+16.00	133.00	648181.7196	1543982.1170
L	56+22.75	26.65	648275.5882	1544032.5608
L	56+26.00	-48.35	648342.4152	1544066.7617
L	56+26.00	-66.00	648358.4605	1544074.1151
L	56+26.00	-68.50	648360.7332	1544075.1566
L	56+26.00	-82.50	648373.4603	1544080.9893
L	56+33.50	153.00	648156.2471	1543989.6935
L	56+36.50	139.50	648167.2699	1543998.0451
L	56+37.00	137.50	648168.8797	1543999.3329
L	56+40.00	124.00	648179.9024	1544007.6845
L	56+45.44	50.00	648244.9093	1544043.4569
L	56+46.58	125.26	648176.0156	1544013.1413
L	56+48.61	-81.50	648363.1315	1544101.1270
L	57+07.19	155.47	648123.3010	1544055.6546
L	57+08.53	-78.50	648335.4404	1544154.3493
L	57+30.00	157.50	648111.9525	1544075.5450
L	57+31.32	-79.92	648327.2365	1544175.6588
L	57+35.50	-30.00	648280.1137	1544158.6611
L	57+41.00	30.00	648223.2775	1544138.6639
L	64+05.00	-30.00	647998.7498	1544766.8181
L	64+05.00	-44.00	648011.3567	1544772.9063
L	64+30.00	-44.00	648000.4849	1544795.4186
L	64+30.00	-30.00	647987.8700	1544789.3304
L	67+18.00	30.00	647808.6056	1545022.5801
L	67+18.00	49.00	647791.4963	1545014.3175
L	67+92.00	20.11	647785.3311	1545093.5174
L	67+92.00	49.32	647759.0277	1545080.8148
L	68+59.87	30.00	647746.9099	1545150.3342
L	68+59.87	49.62	647729.2428	1545141.8008
L	71+77.00	30.00	647608.9999	1545435.9063
L	71+77.00	51.00	647590.0896	1545426.7740
L	71+93.00	51.00	647583.1316	1545441.1819
L	71+93.00	30.00	647602.0420	1545450.3142
L	74+06.50	52.00	647489.3862	1545633.0022
L	74+09.00	52.00	647488.2990	1545635.2535
L	74+09.63	58.89	647481.8207	1545632.8245
L	74+11.62	57.90	647481.8467	1545635.0470
L	76+09.50	-50.00	647492.9577	1545860.1591
L	76+11.00	-31.00	647475.1960	1545853.2473
L	76+21.50	-73.00	647508.4506	1545880.9671
L	76+23.50	-51.50	647488.2202	1545873.4183
L	76+23.50	-73.00	647507.5808	1545882.7680
L	76+25.50	-51.50	647487.3505	1545875.2193
L	76+31.50	46.50	647396.4930	1545838.0049

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "I3802-12" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 641735.246(±) EASTING: 1535065.380(±) ELEVATION: 708.81(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985319

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "I3802-12" TO -L- STATION 10+00.00 IS
I3802-12 10,166.40

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

NOTES:

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/NSRS 2007 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
 2. 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:
W5313_LS_GPSCALIB.HTML
W5313_LS_WGS84.TXT
W5313_LS_LOCAL.TXT
W5313_LS_CONTROL.TXT
- THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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.

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET W-5313

PROJECT REFERENCE NO.	SHEET NO.
W-5313	1C-10
Location and Surveys	

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	76+39.50	-52.50	647482.1628	1545888.2611
L	76+41.00	-31.29	647462.4110	1545880.3882
L	80+80.50	43.50	647194.6111	1546234.0186
L	80+81.50	51.00	647187.6928	1546230.9604
L	80+82.50	43.50	647193.5878	1546235.7001
L	80+83.50	50.50	647187.0987	1546232.8970
L	81+46.68	30.76	647170.8269	1546296.1371
L	82+74.50	-27.87	647147.9522	1546434.8084
L	83+39.92	31.85	647061.2120	1546452.5568
L	83+40.00	42.00	647053.0277	1546446.5529
L	83+43.50	-55.50	647129.0547	1546507.6958
L	83+43.50	-49.00	647123.8488	1546503.8037
L	83+45.50	-55.50	647127.8324	1546509.3295
L	83+45.50	-48.50	647122.2290	1546505.1339
L	83+70.00	42.00	647035.1077	1546470.4583
L	83+69.88	31.41	647043.6508	1546476.7176
L	89+35.00	30.58	646705.1750	1546929.2609
L	89+35.00	40.00	646697.6399	1546923.6078
L	89+42.06	40.00	646693.4041	1546929.2537
L	89+42.06	55.00	646681.4054	1546920.2519
L	89+63.55	55.00	646668.5102	1547420.9490
L	89+65.00	30.49	646687.2434	1546953.3122
L	89+65.00	40.00	646679.6363	1546947.6051
L	89+65.78	55.00	646667.1698	1546939.2268
L	89+66.30	60.55	646662.4179	1546936.3125
L	89+68.09	59.66	646662.0557	1546938.2784
L	89+72.06	30.46	646683.0306	1546958.9776
L	89+72.06	55.00	646663.4018	1546944.2492
L	91+70.00	-48.00	646627.0038	1547164.3972
L	91+70.11	-30.42	646612.8753	1547153.9351
L	95+68.00	55.00	646305.7653	1547420.9490
L	95+68.00	30.00	646325.7631	1547435.9520
L	95+90.00	55.00	646292.5627	1547438.5471
L	95+90.00	30.00	646312.5605	1547453.5501
L	105+37.00	30.00	645894.2530	1548306.9184
L	105+37.00	40.00	645884.7511	1548303.8017
L	105+53.00	30.00	645889.2663	1548322.1214
L	105+53.00	40.00	645879.7644	1548319.0047
L	108+44.00	30.00	645798.5711	1548598.6271
L	108+44.00	40.00	645789.0692	1548595.5104
L	108+44.25	-30.00	645855.5062	1548617.5600
L	108+44.25	-40.00	645865.0081	1548620.6766
L	108+59.00	30.00	645793.8961	1548612.8799
L	108+59.00	40.00	645784.3941	1548609.7633

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	127+81.00	30.22	645162.0189	1550422.0107
L	127+81.00	54.00	645138.2400	1550422.2479
L	128+25.00	30.12	645162.5577	1550466.0076
L	128+25.00	54.00	645138.6789	1550466.2457
L	129+13.99	30.00	645163.5653	1550554.9919
L	129+14.00	40.00	645153.5659	1550555.1017
L	130+42.73	29.99	645164.8567	1550683.7234
L	130+76.22	40.00	645155.1840	1550717.3168
L	130+92.33	29.99	645165.3555	1550733.3243
L	130+92.33	44.81	645150.5323	1550733.4722
L	131+01.00	55.00	645140.4319	1550742.2420
L	131+03.00	48.00	645147.4515	1550744.1721
L	131+03.00	55.50	645139.9519	1550744.2469
L	131+05.00	48.50	645146.9715	1550746.1770
L	131+22.33	48.45	645147.1917	1550763.5070
L	131+22.33	29.99	645165.6573	1550763.3228
L	135+12.00	-30.06	645229.5871	1551152.3731
L	135+12.00	-40.00	645239.5266	1551152.2740
L	135+33.00	-40.00	645239.7361	1551173.2729
L	137+00.00	-33.00	645234.4022	1551340.3344
L	141+63.00	-30.00	645236.0204	1551803.3413
L	141+63.00	-45.00	645251.0197	1551803.1917
L	141+84.00	-45.00	645251.2292	1551824.1907
L	141+84.00	-30.00	645236.2299	1551824.3403
L	143+20.50	50.50	645157.0974	1551961.7171
L	143+21.00	45.00	645162.6032	1551962.1805
L	143+25.50	51.00	645156.6747	1551967.0285
L	143+26.00	45.00	645162.6832	1551967.4500
L	146+00.00	96.50	645166.4729	1552267.6890
L	147+00.00	35.05	645265.4970	1552342.4173
L	147+73.00	-30.00	645357.9793	1552374.4850
L	148+11.50	-50.50	645395.1590	1552393.9767
L	148+13.50	-52.00	645397.4584	1552394.6737
L	148+15.50	-45.00	645392.7700	1552400.2025
L	148+17.50	-46.00	645394.6699	1552401.1850
L	148+20.50	54.50	645314.0235	1552461.2306
L	148+24.50	32.00	645334.8360	1552451.7021
L	148+25.00	55.50	645315.9723	1552465.7266
L	148+29.50	32.00	645337.8512	1552455.9290
L	149+25.50	-32.79	645448.4567	1552489.8009
L	149+25.50	-55.29	645465.1047	1552474.6649
L	149+82.00	-31.62	645485.4917	1552529.5354
L	149+82.00	-54.50	645501.3387	1552513.0319

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "13802-12"
 WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
 NORTHING: 641735.246(ft) EASTING: 1535065.380(ft)
 ELEVATION: 708.81(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985319
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "13802-12" TO -L- STATION 10+00.00 IS
 13802-12 10,166.40
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

NOTES:

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/NSRS 2007 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
2. 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:
 W5313_LS_GPSALIB.HTML
 W5313_LS_WGS84.TXT
 W5313_LS_LOCAL.TXT
 W5313_LS_CONTROL.TXT
 THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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.

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET W-5313

PROJECT REFERENCE NO.	SHEET NO.
W-5313	1C-11
Location and Surveys	

ROW MARKER PERMANENT EASEMENT - E

ALIGN	STATION	OFFSET	NORTH	EAST
L	151+01.50	-49.00	645584.0681	1552598.8640
L	151+03.50	-48.50	645585.1777	1552600.6015
L	151+04.50	-58.50	645592.7751	1552594.0227
L	151+06.50	-58.00	645593.8847	1552595.7602
L	151+07.50	-26.95	645602.3396	1552646.4921
L	153+28.50	-43.46	645745.1962	1552758.8560
L	153+62.99	-94.46	645805.4155	1552745.6120
L	153+73.00	30.00	645726.7767	1552842.6278
L	154+63.80	-266.15	646010.3430	1552711.2904
L	154+79.86	-247.41	646009.1159	1552738.5310
L	155+00.50	-48.00	645871.0979	1552884.3391
L	155+02.50	-48.00	645872.4196	1552885.9546
L	155+02.50	-57.00	645879.3907	1552880.2622
L	155+04.50	-56.50	645880.3319	1552882.2083
L	156+14.50	-30.00	645926.5898	1552990.0045
L	156+14.50	-42.00	645936.6079	1552983.3987
L	159+35.00	43.00	646021.0117	1553306.4037
L	159+35.00	30.00	646032.4124	1553300.1569
L	159+50.00	35.00	646035.2354	1553315.7142
L	159+50.00	43.00	646028.2195	1553319.5584
L	162+03.40	35.00	646157.0026	1553537.9456
L	175+44.50	-30.00	646729.4385	1554747.9402
L	175+44.50	-50.00	646748.1113	1554740.7761
L	175+72.00	30.00	646683.2704	1554795.1075
L	175+72.00	48.50	646665.9980	1554801.7343
L	176+02.00	48.50	646676.7440	1554829.7436
L	176+02.00	30.00	646694.0164	1554823.1169
L	179+18.00	-55.34	646886.4624	1555088.8868
L	179+18.00	-30.00	646862.6361	1555097.5011
L	179+42.00	30.00	646814.2565	1555140.3425
L	179+42.00	66.00	646780.3364	1555152.4019
L	179+90.00	-55.82	646911.1569	1555157.4664
L	180+02.00	-51.51	646911.0035	1555170.3527
L	180+06.00	45.00	646820.9224	1555205.2155
L	180+06.00	66.00	646801.0377	1555211.9680
L	180+20.00	30.00	646839.5770	1555213.5673
L	180+20.00	45.00	646825.3587	1555218.3463
L	180+36.00	-39.50	646910.5704	1555206.7329
L	180+36.00	-30.00	646901.5548	1555209.7276
L	180+96.00	-55.00	646944.0403	1555259.6097
L	181+20.00	30.00	646870.1760	1555308.0681
L	181+20.00	40.00	646860.6287	1555311.0427
L	181+40.00	40.00	646866.4829	1555329.9807
L	181+40.00	30.00	646876.0434	1555327.0486

ROW MARKER PERMANENT EASEMENT - E

ALIGN	STATION	OFFSET	NORTH	EAST
L	191+20.00	30.00	647154.3577	1556266.3920
L	191+20.00	50.00	647135.1805	1556272.0694
L	191+30.00	-30.00	647214.7282	1556258.9484
L	191+30.00	-45.00	647229.1111	1556254.6903
L	191+58.00	-30.00	647222.6765	1556285.7965
L	191+58.00	-45.00	647237.0595	1556281.5385
L	191+75.00	43.00	647157.5054	1556322.8198
L	191+75.00	62.00	647139.2870	1556328.2133
L	192+14.00	72.00	647140.7693	1556368.4477
L	192+14.00	30.00	647181.0416	1556356.5251
L	192+14.00	41.44	647170.0722	1556359.7726
L	192+44.00	30.00	647189.5577	1556385.2910
L	192+44.00	40.24	647179.7390	1556388.1978
L	192+44.00	72.00	647149.2855	1556397.2135
L	192+50.00	30.00	647191.2609	1556391.0441
L	192+50.00	40.00	647181.6723	1556393.8829
L	192+70.00	-45.00	647268.8530	1556388.9311
L	192+70.00	-30.00	647254.4701	1556393.1891
L	195+00.00	-30.00	647319.7604	1556613.7275
L	196+80.50	-71.25	647410.5522	1556775.0925
L	196+82.00	-73.00	647412.6560	1556776.0340
L	197+27.20	-28.91	647383.2126	1556831.8901
L	197+29.90	-29.17	647384.2302	1556834.4091
L	197+70.50	31.57	647337.5104	1556890.5777
L	197+90.00	51.50	647323.9357	1556914.9331
L	197+99.50	41.00	647336.7005	1556921.0617
L	198+02.00	40.00	647338.3691	1556923.1749
L	198+04.50	46.00	647333.3256	1556927.2753
L	198+06.00	44.50	647335.1897	1556928.2878
L	198+08.50	31.61	647348.2591	1556927.0259
L	208+46.00	30.00	647661.9503	1557917.6090
L	208+46.00	55.00	647638.4455	1557926.1250
L	208+83.00	40.00	647665.1522	1557955.8025
L	208+83.00	55.00	647651.0493	1557960.9122
L	208+90.00	-30.00	647733.3502	1557938.5389
L	208+90.00	-40.00	647742.7521	1557935.1325
L	209+60.00	-30.00	647757.1951	1558004.3524
L	209+60.00	-40.00	647766.5971	1558000.9460
L	218+32.00	30.00	648207.7004	1558739.1331
L	218+32.00	45.00	648196.6010	1558749.2228
L	218+60.63	45.00	648215.8588	1558770.4076
L	218+60.63	-40.00	648278.7554	1558713.2323
L	223+62.00	-34.66	648533.1972	1559158.9636

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "13802-12" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 641735.246(ft) EASTING: 1535065.380(ft) ELEVATION: 708.81(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985319

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "13802-12" TO -L- STATION 10+00.00 IS
13802-12 10,166.40

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

NOTES:

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/NSRS 2007 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
 2. 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:
W5313_LS_GPSALIB.HTML
W5313_LS_WGS84.TXT
W5313_LS_LOCAL.TXT
W5313_LS_CONTROL.TXT
- THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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.

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET W-5313

PROJECT REFERENCE NO. W-5313	SHEET NO. 1C-12
Location and Surveys	

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	223+62.00	-40.00	648538.2662	1559157.2840
L	224+99.01	30.00	648514.8516	1559309.3640
L	224+99.01	67.54	648479.2132	1559321.1553
L	229+95.50	48.50	648653.7022	1559787.1635
L	229+96.00	55.50	648647.2598	1559789.9489
L	229+97.50	48.50	648654.3763	1559789.0979
L	229+98.00	55.50	648647.9367	1559791.8898
L	232+75.11	47.13	648767.2256	1560049.1475
L	234+08.49	48.50	648825.5626	1560169.1012
L	236+00.00	30.00	648927.6371	1560332.1936
L	236+00.00	48.97	648910.6636	1560340.6650
L	236+16.00	-37.18	648994.8915	1560316.5094
L	236+16.00	-56.00	649011.7307	1560308.1051
L	236+30.00	30.00	648941.0340	1560359.0362
L	236+30.00	52.23	648921.1437	1560368.9633
L	236+33.00	-56.00	649019.3223	1560323.3159
L	236+34.50	-62.00	649025.3607	1560321.9786
L	236+35.00	-56.00	649020.2154	1560325.1054
L	236+36.50	-62.00	649026.2538	1560323.7681
L	236+46.00	-36.10	649007.3221	1560343.8343
L	236+46.00	-56.00	649025.1277	1560334.9476
L	236+77.50	30.00	648962.2458	1560401.5369
L	240+04.50	101.00	649026.7586	1560722.7192
L	240+07.00	71.00	649055.6870	1560714.4105
L	260+39.00	-50.00	649570.2256	1562675.7263
L	260+73.00	-50.00	649572.0203	1562710.3596
L	262+00.00	-30.00	649554.5557	1562839.7443
L	275+00.00	30.00	649380.5781	1564131.4216
L	276+29.00	38.00	649360.2921	1564259.0675
L	276+29.00	50.00	649348.3470	1564257.9212
L	276+33.00	-30.00	649427.5990	1564269.5448
L	276+33.00	-50.00	649447.5076	1564271.4553
L	276+54.00	38.00	649357.9040	1564283.9532
L	276+54.00	50.00	649345.9589	1564282.8069
L	276+58.00	-37.00	649432.1789	1564295.0991
L	276+58.00	-50.00	649445.1195	1564296.3410
L	277+00.00	-30.00	649421.1989	1564336.2384
L	278+00.00	30.00	649351.9209	1564430.0497
L	284+00.00	30.00	649294.6067	1565027.3060
L	284+70.00	-30.00	649347.6457	1565102.7173
L	284+70.00	-57.00	649374.5222	1565105.2965
L	284+90.00	40.00	649276.0553	1565115.9392
L	284+90.00	50.00	649266.1010	1565114.9840

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	284+98.00	-42.00	649356.9161	1565131.7356
L	284+98.00	-57.00	649371.8475	1565133.1684
L	285+20.00	40.00	649273.1896	1565145.8020
L	285+20.00	50.00	649263.2353	1565144.8468
L	286+00.00	30.00	649275.5020	1565226.3914
L	286+00.00	-30.00	649335.2276	1565232.1229
L	289+31.07	30.00	649243.8769	1565555.9475
L	289+31.07	46.56	649227.3926	1565554.3656
L	289+45.50	-30.00	649302.2237	1565576.0472
L	289+45.50	-45.00	649317.1556	1565577.4758
L	289+60.00	-30.00	649300.8391	1565590.4766
L	289+60.00	-45.00	649315.7705	1565591.9095
L	289+62.58	-45.00	649315.5242	1565594.4761
L	289+64.61	-45.00	649315.3298	1565596.5020
L	289+65.33	-59.58	649329.7746	1565598.6078
L	289+67.29	-59.21	649329.2191	1565600.5235
L	289+78.76	-45.00	649313.9787	1565610.5810
L	289+85.00	30.00	649238.7253	1565609.6309
L	289+85.00	40.00	649228.7711	1565608.6756
L	290+10.00	30.00	649236.3372	1565604.5166
L	290+10.00	40.00	649226.3830	1565633.5613
L	292+03.93	58.56	649188.7215	1565823.2459
L	292+65.06	59.11	649180.2225	1565882.3301
L	293+26.84	30.00	649199.4057	1565946.8344
L	293+26.84	58.18	649171.6333	1565942.0502
L	293+57.44	30.00	649194.0916	1565976.5934
L	293+57.44	57.17	649167.3751	1565971.6537
L	296+85.47	43.66	649120.4733	1566297.1707
L	327+04.00	30.00	648922.4787	1569312.0917
L	327+04.00	57.00	648895.5125	1569310.7416
L	327+51.00	-48.00	648998.1515	1569362.7144
L	327+51.00	-30.00	648980.1700	1569361.8987
L	327+66.00	35.00	648914.5658	1569373.9904
L	327+66.00	40.00	648909.5706	1569373.7712
L	327+76.00	-48.00	648997.0549	1569387.5703
L	327+76.00	-40.00	648989.0623	1569387.2277
L	327+86.00	30.00	648918.7020	1569394.2511
L	327+86.00	40.00	648908.7107	1569393.8328
L	336+42.09	52.73	648883.5560	1570251.0517
L	336+42.09	29.46	648906.8340	1570251.2296
L	336+72.09	52.89	648883.1745	1570281.0497
L	336+72.09	29.31	648906.7553	1570281.2299
L	338+23.90	28.65	648905.1251	1570432.1348
L	338+23.90	52.53	648881.2629	1570431.2106
L	338+42.00	52.00	648881.0400	1570448.9187
L	338+43.50	59.00	648873.9793	1570450.0557

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "13802-12" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 641735.246(++) EASTING: 1535065.380(++) ELEVATION: 708.81(++) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985319 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "13802-12" TO -L- STATION 10+00.00 IS 13802-12 10,166.40 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/NSRS 2007 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
2. 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:
W5313_LS_GPSCALIB.HTML
W5313_LS_WGS84.TXT
W5313_LS_LOCAL.TXT
W5313_LS_CONTROL.TXT

THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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.

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET W-5313

PROJECT REFERENCE NO. W-5313	SHEET NO. 1C-13
Location and Surveys	

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	338+44.00	51.50	648881.4480	1570450.8964
L	338+45.50	58.50	648874.3863	1570452.0277
L	338+54.55	28.40	648904.0076	1570462.3968
L	338+54.55	48.04	648884.3938	1570461.3835
L	338+92.87	35.00	648895.1644	1570499.7444
L	339+11.72	28.31	648900.5044	1570518.7742
L	339+83.50	-31.34	648953.3893	1570595.7096
L	340+23.00	-55.00	648972.3104	1570638.3616
L	340+25.00	-48.50	648965.6088	1570639.5925
L	340+25.00	-55.50	648972.5556	1570640.4540
L	340+27.00	-49.50	648966.3491	1570641.7417
L	341+10.14	30.81	648875.0669	1570713.0251
L	341+10.14	34.41	648871.5125	1570712.4543
L	341+10.14	46.91	648859.1706	1570710.4723
L	341+20.00	59.00	648845.6893	1570718.0455
L	341+50.00	35.00	648864.3777	1570751.0824
L	341+50.00	31.72	648867.6070	1570751.6568
L	342+11.50	-45.50	648931.8607	1570826.7395
L	342+13.00	-52.50	648938.4106	1570829.6452
L	342+13.50	-45.00	648930.9613	1570828.6355
L	342+15.00	-52.00	648937.5088	1570831.5465
L	342+67.50	-28.11	648902.8073	1570878.6247
L	343+61.54	35.00	648818.7963	1570954.3908
L	343+85.00	27.70	648819.6567	1570978.6478
L	343+85.00	35.00	648812.6309	1570976.6658
L	344+35.69	40.00	648793.7757	1571023.1279
L	344+42.72	69.52	648763.5409	1571021.0287
L	344+44.14	60.20	648772.0383	1571025.0988
L	344+44.75	69.81	648762.6821	1571022.8257
L	344+46.18	60.46	648771.2018	1571026.9211
L	346+49.65	40.00	648723.3824	1571221.2747
L	346+49.65	-40.00	648797.4843	1571251.4228
L	346+67.78	41.37	648715.2802	1571237.5540
L	346+67.78	69.82	648688.9277	1571226.8326
L	346+97.78	69.94	648677.5110	1571254.5756
L	346+97.78	43.64	648701.8720	1571264.4868
L	347+96.91	-40.00	648741.9869	1571387.8316
L	348+57.00	70.60	648616.8975	1571401.8082
L	348+61.00	56.00	648628.9136	1571411.0153
L	349+00.00	-47.00	648709.6227	1571485.9557
L	349+00.00	-80.00	648740.1897	1571498.3918
L	349+90.00	-50.00	648678.4849	1571570.4509
L	349+90.00	-80.00	648706.2731	1571581.7564
L	350+25.00	30.00	648591.1932	1571572.7224

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	350+25.00	56.00	648567.1101	1571562.9242
L	351+50.00	30.00	648544.0868	1571688.5066
L	351+50.00	55.00	648520.9300	1571679.0853
L	351+82.00	-30.00	648587.6040	1571740.7584
L	351+82.00	-50.00	648606.1295	1571748.2955
L	356+84.00	30.00	648342.8484	1572183.1369
L	356+99.50	64.00	648305.5139	1572184.6812
L	357+74.00	30.00	648308.9318	1572266.5015
L	357+80.93	30.00	648306.3203	1572272.9202
L	358+33.00	-30.00	648342.2740	1572343.7627
L	358+72.00	-54.00	648350.8499	1572387.5574
L	358+74.00	-54.50	648350.6620	1572389.5048
L	358+74.50	-48.00	648344.3994	1572387.7004
L	358+76.50	-48.00	648343.7428	1572389.4876
L	361+88.50	-30.00	648268.3429	1572679.2696
L	361+88.50	-69.00	648307.2971	1572681.1608
L	362+60.00	30.00	648204.9463	1572747.7760
L	362+60.00	40.00	648194.9581	1572747.2910
L	362+65.00	-30.00	648264.6332	1572755.6796
L	362+65.00	-40.00	648274.6215	1572756.1646
L	362+78.00	30.00	648204.0734	1572765.7548
L	362+78.00	40.00	648194.0852	1572765.2699
L	362+95.00	-31.47	648264.6467	1572785.7156
L	362+95.00	-40.00	648273.1667	1572786.1293
L	363+05.00	28.64	648204.1225	1572792.7890
L	364+25.00	-30.20	648257.0742	1572915.5011
L	364+25.00	-40.00	648266.8627	1572915.9763
L	364+25.00	35.00	648191.9509	1572912.3394
L	364+25.00	45.00	648181.9627	1572911.8545
L	364+55.00	-40.00	648265.4079	1572945.9410
L	364+55.00	-30.02	648255.4396	1572945.4571
L	364+55.00	35.00	648190.4961	1572942.3041
L	364+55.00	45.00	648180.5079	1572941.8192
L	365+75.00	30.11	648189.5612	1573062.4000
L	373+00.00	30.00	648154.5139	1573786.5524
L	374+30.00	-30.00	648208.1393	1573919.3091
L	374+30.00	-45.00	648223.1217	1573920.0364
L	374+50.00	50.00	648127.2636	1573935.4061
L	374+60.00	-30.00	648206.6845	1573949.2738
L	374+60.00	-45.00	648221.6669	1573950.0012
L	376+00.00	30.00	648139.9661	1574086.1995
L	379+50.00	-30.00	684182.9231	1574438.6973
L	380+00.02	30.00	648120.5682	1574485.7477
L	380+55.00	40.00	648107.9137	1574540.1793
L	380+55.00	50.00	648097.9255	1574539.6944

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "I3802-12"
 WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
 NORTHING: 641735.246(ft) EASTING: 1535065.380(ft)
 ELEVATION: 708.81(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985319
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "I3802-12" TO -L- STATION 10+00.00 IS
 I3802-12 10,166.40
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

NOTES:

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/NSRS 2007 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
2. 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:
 W5313_LS_GPSLIB.HTML
 W5313_LS_WGS84.TXT
 W5313_LS_LOCAL.TXT
 W5313_LS_CONTROL.TXT

 THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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.

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET W-5313

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	380+65.00	-40.00	648187.3347	1574554.0469
L	380+65.00	-50.00	648197.3229	1574554.5319
L	380+85.00	40.00	648106.4590	1574570.1440
L	380+85.00	50.00	648096.4707	1574569.6591
L	380+95.00	-40.00	648185.8799	1574584.0116
L	380+95.00	-50.00	648195.8682	1574584.4966
L	381+40.00	30.00	648113.7801	1574625.5642
L	383+00.00	-30.00	648165.9507	1574788.2855
L	386+47.00	-30.00	648147.1384	1575136.5675
L	386+55.50	-50.00	648166.0081	1575147.6162
L	387+08.00	-28.47	648136.8801	1575198.5161
L	387+89.00	30.38	648062.4519	1575265.3234
L	388+76.50	57.00	648012.6838	1575337.6269
L	388+79.00	50.50	648018.0226	1575342.0249
L	397+45.00	30.00	647657.0558	1576122.4593
L	397+45.00	48.05	647640.9271	1576114.3559
L	397+45.00	70.00	647621.3135	1576104.5015
L	398+25.00	30.00	647621.1403	1576193.9441
L	398+10.00	-30.00	647681.4880	1576207.4774
L	398+10.00	-70.00	647717.2304	1576225.4351
L	398+25.00	46.40	647606.4859	1576186.5814
L	398+25.00	70.00	647585.3979	1576175.9863
L	398+97.44	-70.00	647677.9739	1576303.5696
L	399+23.00	-30.00	647630.5749	1576308.6029
L	399+23.00	-50.00	647648.3801	1576317.7120
L	399+33.50	44.00	647559.9599	1576284.1221
L	399+38.00	-50.00	647641.4216	1576331.2418
L	399+38.00	-55.00	647645.8631	1576333.5381
L	399+41.00	-55.00	647644.4625	1576336.2443
L	399+41.00	-50.00	647640.0230	1576333.9441

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	399+52.50	-30.00	647616.9124	1576335.0329
L	399+52.50	-50.00	647634.6400	1576344.2921
L	404+35.60	48.76	647299.7041	1576708.8720
L	404+35.60	30.00	647315.6161	1576718.8135
L	404+63.94	49.01	647284.0300	1576734.4529
L	404+63.94	30.00	647300.4860	1576743.9763
L	405+56.50	57.00	647232.4504	1576818.6333
L	405+56.50	64.00	647226.0398	1576815.8218
L	405+59.00	57.00	647231.3812	1576821.0810
L	405+59.00	64.00	647224.9622	1576818.2888
L	407+15.00	48.00	647188.3322	1576981.2279
L	407+46.12	95.92	647134.5571	1577004.6084
L	408+08.28	43.32	647176.5896	1577078.9777
L	409+02.50	48.00	647166.5141	1577177.9074
L	409+02.50	55.00	647159.5141	1577177.9218
L	409+04.50	48.00	647166.5210	1577180.0226
L	409+04.50	55.00	647159.5211	1577180.0539
L	410+78.50	52.00	647181.3246	1577361.3496
L	410+80.50	52.50	647181.1677	1577363.4051
L	410+80.50	46.50	647187.0824	1577362.3972
L	410+82.50	46.50	647187.4184	1577364.3688
L	412+32.29	54.36	647204.5762	1577512.8528
L	412+32.29	30.00	647228.6323	1577508.9963
L	412+62.77	55.55	647208.0225	1577542.6779
L	412+62.77	30.00	647233.2854	1577538.8533
L	414+71.00	-30.49	647318.3401	1577738.2889
L	414+68.50	-45.50	647333.0579	1577734.4065
L	414+98.03	-49.78	647339.9299	1577763.8516
L	415+01.00	-30.29	647320.7542	1577768.4535
L	415+07.82	56.00	647235.2998	1577782.2253

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "13802-12" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 641735.246(±) EASTING: 1535065.380(±) ELEVATION: 708.81(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985319

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "13802-12" TO -L- STATION 10+00.00 IS
13802-12 10,166.40

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

NOTES:

- THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/NSRS 2007 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
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[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/](https://connect.ncdot.gov/resources/location/)
THE FILES TO BE FOUND ARE AS FOLLOWS:
W5313_LS_GPSCALIB.HTML
W5313_LS_WGS84.TXT
W5313_LS_LOCAL.TXT
W5313_LS_CONTROL.TXT

THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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.

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET W-5313

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
LREV	14+88.29	53.53	650092.7504	1540355.7126
LREV	14+89.61	60.50	650087.5371	1540350.8907
LREV	14+90.30	53.09	650091.3427	1540357.2884
LREV	14+91.62	60.00	650086.1600	1540352.5202
LREV	15+34.20	35.81	650065.7866	1540398.0839
LREV	16+33.00	-30.00	650030.4223	1540511.5150
LREV	17+37.22	-59.07	649974.4710	1540601.3326
LREV	17+37.80	-66.00	649978.8562	1540606.7280
LREV	17+39.68	-58.55	649972.3899	1540602.6055
LREV	17+40.30	-65.50	649976.7679	1540608.0364
LREV	18+77.61	-46.50	649870.4214	1540690.4770
LREV	18+79.59	-45.50	649868.3857	1540691.2437
LREV	18+80.57	-53.00	649873.3258	1540696.9671
LREV	18+82.55	-52.00	649871.2958	1540697.7319
LREV	19+10.00	-30.00	649837.0291	1540703.2926
LREV	19+91.00	-30.00	649785.9923	1540764.5187
LREV	19+91.00	-40.00	649793.8090	1540770.7556
LREV	20+23.00	-30.00	649766.5603	1540789.3002
LREV	20+23.00	-40.00	649774.4815	1540795.4039

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y4	10+33.50	-58.00	645639.1330	1552798.2158
Y4	10+33.50	-61.00	645639.9902	1552801.0907
Y4	10+36.00	-56.55	645636.3230	1552797.5405
Y4	10+36.00	-60.50	645637.4515	1552801.3258
Y4	10+73.00	-41.04	645594.5681	1552793.5887
Y4	11+67.50	-58.00	645470.8562	1552801.9724
Y4	11+68.00	-49.00	645473.4959	1552793.3419
Y4	11+69.00	-58.00	645468.9346	1552801.2165
Y4	11+69.50	-48.00	645472.0319	1552791.6846
Y4	12+45.00	-72.00	645384.2356	1552762.2193
Y4	12+46.00	-62.00	645389.6980	1552753.8111
Y4	12+48.00	-72.00	645382.5290	1552760.9348
Y4	12+48.50	-62.00	645388.1925	1552752.6851
Y4	12+99.51	49.35	645401.9918	1552632.0896
Y4	13+00.81	43.15	645398.0042	1552637.0808
Y4	13+01.13	49.83	645400.4272	1552630.8442
Y4	13+02.73	42.46	645395.6707	1552636.7842
Y4	13+13.29	-52.71	645349.1621	1552720.4336
Y4	13+52.13	-49.27	645320.6725	1552708.0191
Y4	14+29.00	-30.00	645251.6951	1552678.8858
Y4	14+29.00	-40.50	645250.3703	1552689.3019

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y5	10+35.00	-29.72	649102.3644	1559942.5036
Y5	10+35.00	-44.00	649111.8584	1559953.1705
Y5	12+32.50	-55.50	648961.3107	1560092.3229
Y5	12+33.00	-48.50	648956.9934	1560086.7868
Y5	12+34.50	-55.50	648959.5134	1560093.5128

DATUM DESCRIPTION

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VERTICAL DATUM USED IS NAVD 88

NOTES:

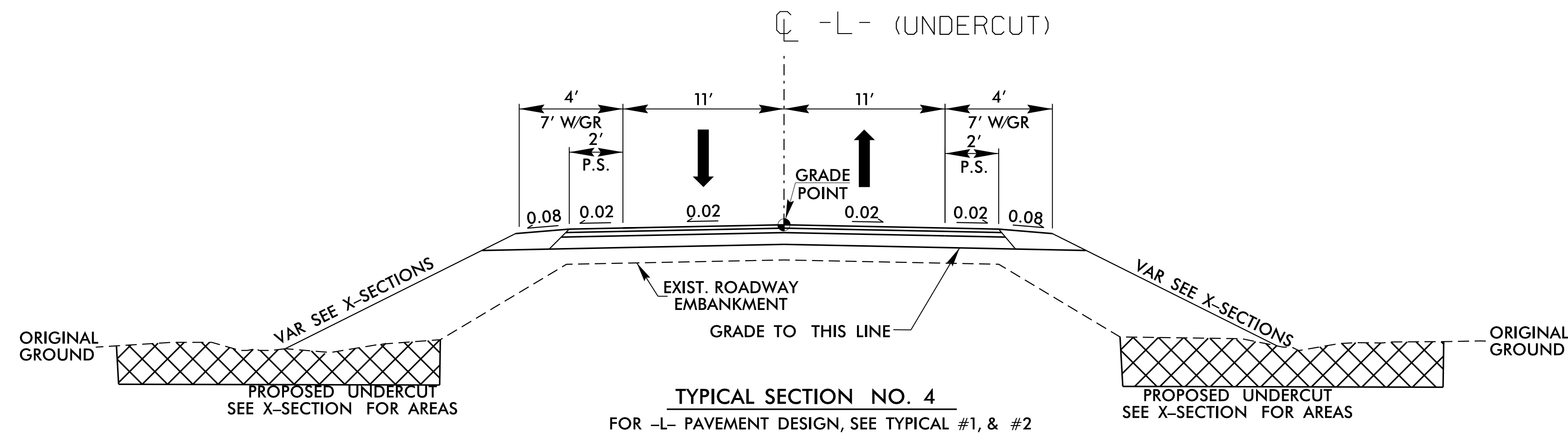
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PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

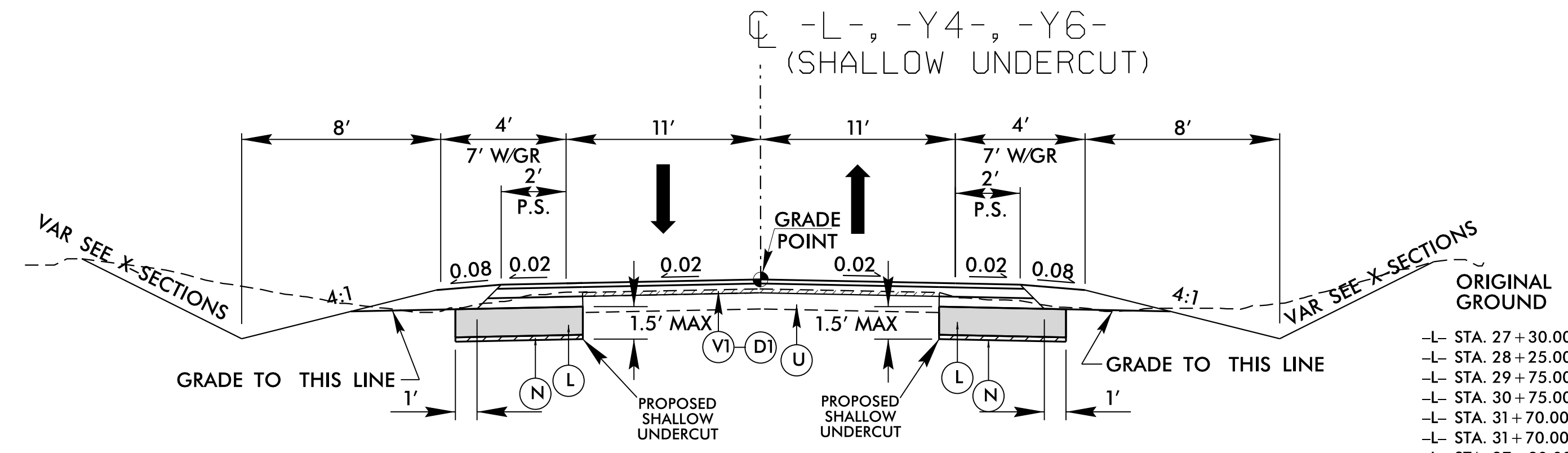
NOTE: DRAWING NOT TO SCALE

PROJECT REFERENCE NO. W-5313	SHEET NO. 2A-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 024912 KEVIN E. MOORE	PAVEMENT DESIGN ENGINEER SEAL 022896 CLARK S. MORRISON
4/7/2017	
DocuSigned by: Kevin E. Moore	
DocuSigned by: Clark S. Morrison	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



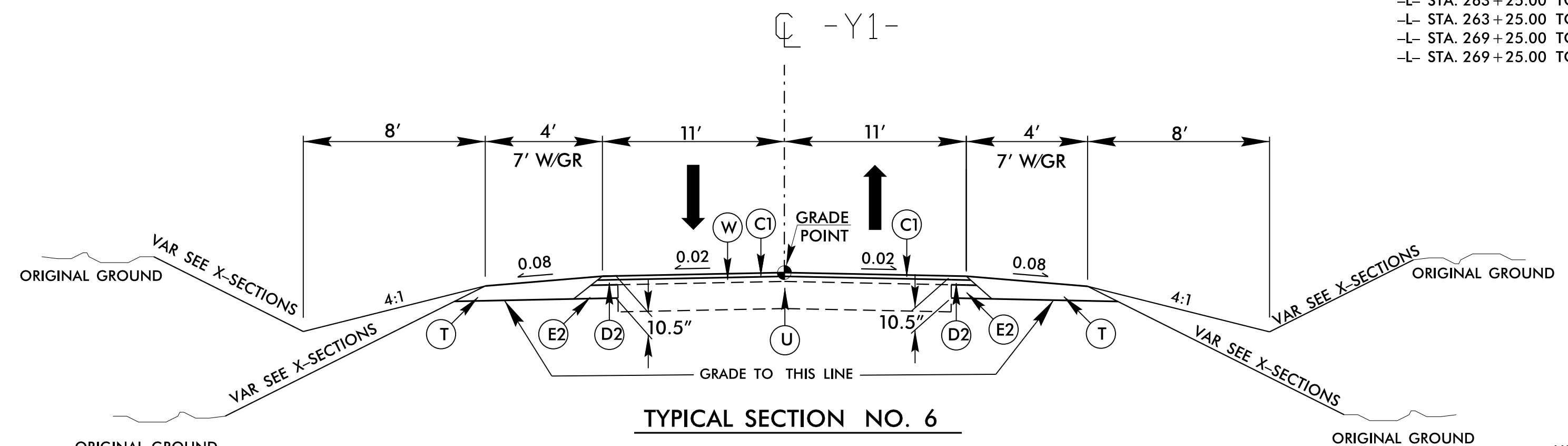
TYPICAL SECTION NO. 4
FOR -L- PAVEMENT DESIGN, SEE TYPICAL #1, & #2

- UNDERCUT LOCATIONS
USE TYPICAL SECTION NO. 4 FOR:**
- L- STA. 179+20.00 TO STA. 180+20.00 RT
 - L- STA. 179+20.00 TO STA. 180+20.00 LT
 - L- STA. 208+60.00 TO STA. 209+70.00 RT
 - L- STA. 208+60.00 TO STA. 209+70.00 LT



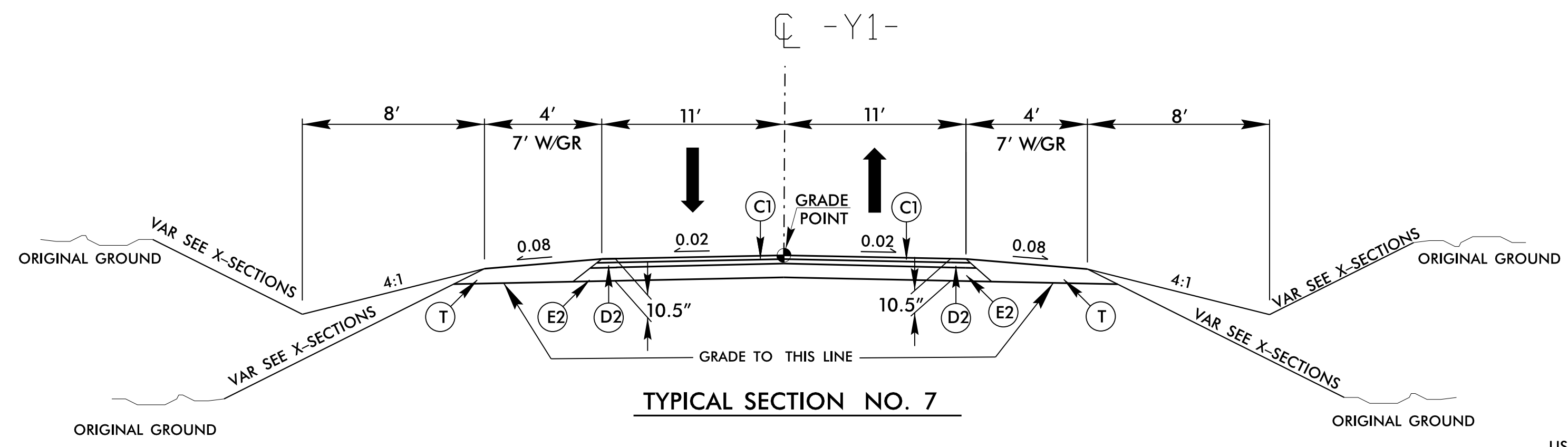
TYPICAL SECTION NO. 5
FOR -L- PAVEMENT DESIGN, SEE TYPICAL #1, & #2
FOR -Y4- PAVEMENT DESIGN, SEE TYPICAL #9, & #10
FOR -Y6- PAVEMENT DESIGN, SEE TYPICAL #12, & #13

- SHALLOW UNDERCUT LOCATIONS
USE TYPICAL SECTION NO. 5 FOR:**
- L- STA. 27+30.00 TO STA. 31+20.00 RT
 - L- STA. 28+25.00 TO STA. 28+75.00 LT
 - L- STA. 29+75.00 TO STA. 30+25.00 LT
 - L- STA. 30+75.00 TO STA. 31+20.00 LT
 - L- STA. 31+70.00 TO STA. 32+25.00 LT
 - L- STA. 31+70.00 TO STA. 32+70.00 RT
 - L- STA. 37+80.00 TO STA. 38+25.00 LT
 - L- STA. 37+80.00 TO STA. 38+70.00 RT
 - L- STA. 40+75.00 TO STA. 47+70.00 LT
 - L- STA. 42+75.00 TO STA. 43+25.00 RT
 - L- STA. 43+75.00 TO STA. 45+75.00 LT
 - L- STA. 46+75.00 TO STA. 47+70.00 RT
 - L- STA. 166+75.00 TO STA. 167+70.00 LT
 - L- STA. 166+75.00 TO STA. 167+70.00 RT
 - L- STA. 263+25.00 TO STA. 268+25.00 RT
 - L- STA. 263+25.00 TO STA. 268+25.00 LT
 - L- STA. 269+25.00 TO STA. 272+60.00 RT
 - L- STA. 269+25.00 TO STA. 272+60.00 LT
 - L- STA. 318+36.00 TO STA. 323+75.00 LT
 - L- STA. 318+36.00 TO STA. 329+75.00 RT
 - L- STA. 324+25.00 TO STA. 329+75.00 LT
 - L- STA. 333+25.00 TO STA. 337+20.00 RT
 - L- STA. 333+25.00 TO STA. 337+20.00 LT
 - L- STA. 372+25.00 TO STA. 373+75.00 LT
 - L- STA. 372+25.00 TO STA. 373+75.00 RT
 - L- STA. 374+75.00 TO STA. 376+70.00 RT
 - L- STA. 376+25.00 TO STA. 376+70.00 LT
 - L- STA. 392+30.00 TO STA. 393+75.00 LT
 - L- STA. 392+30.00 TO STA. 395+30.00 RT
 - Y4- STA. 12+70.00 TO STA. 12+90.00 LT&RT
 - Y4- STA. 12+90.00 TO STA. 13+15.00 LT
 - Y4- STA. 13+15.00 TO STA. 13+75.00 LT
 - Y4- STA. 13+15.00 TO STA. 13+75.00 RT
 - Y6- STA. 13+20.00 TO STA. 13+75.00 LT&RT
 - Y6- STA. 13+75.00 TO STA. 14+25.00 LT
 - Y6- STA. 13+75.00 TO STA. 14+25.00 RT
 - Y6- STA. 14+25.00 TO STA. 15+15.00 LT&RT



TYPICAL SECTION NO. 6

- USE TYPICAL SECTION NO. 6 FOR:**
- Y1- STA. 12+25.00 TO STA. 14+20.00



TYPICAL SECTION NO. 7

- USE TYPICAL SECTION NO. 7 FOR:**
- Y1- STA. 10+15.91 TO STA. 12+25.00

PAVEMENT SCHEDULE	
C1	3" S9.5B
C2	VAR. S9.5B
D1	2.5" I19.0B
D2	3" I19.0B
D3	VAR. I19.0B
E1	4.0" B25.0B
E2	4.5" B25.0B
E3	5.0" B25.0B
E4	5.5" B25.0B
E5	VAR. B25.0B
L	CL.IV SUB.STAB.
N	GEOTEXTILE
R1	2'X6" CONC. C&G
R2	8"X18" CONC. CURB
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	2.5" MILLING
*V2	VAR.DEP.MILLING
W	WEDGING

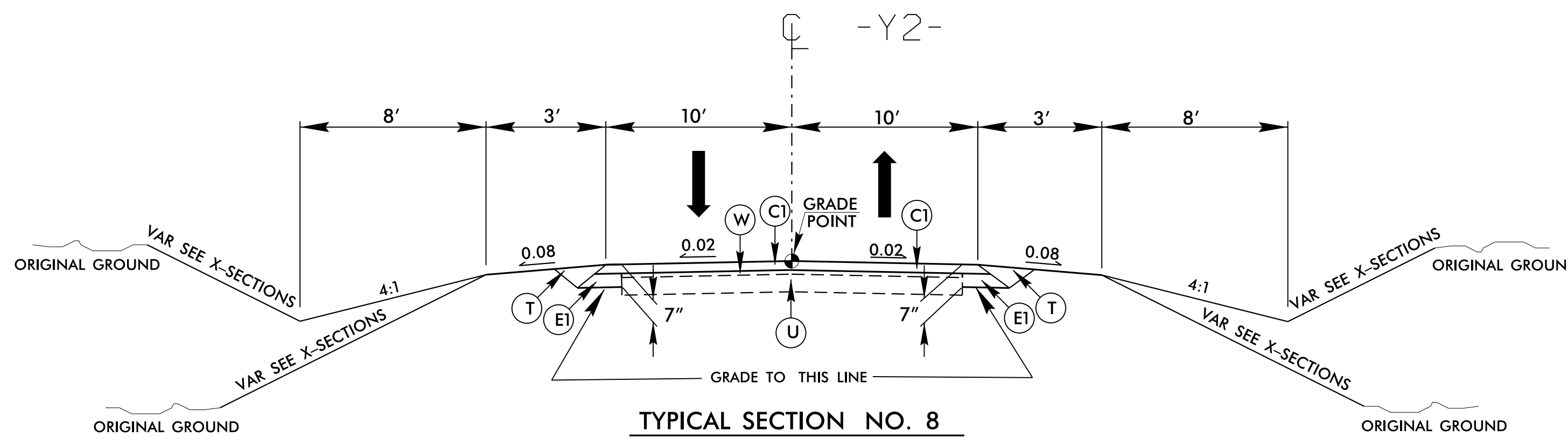
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

5/14/99

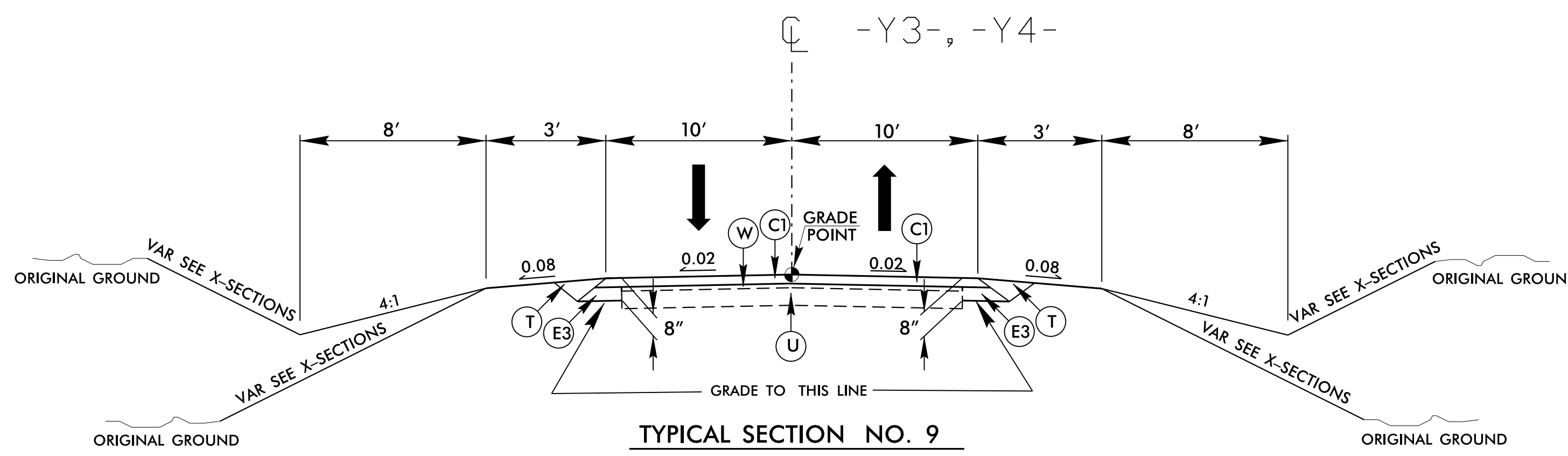
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5/14/99

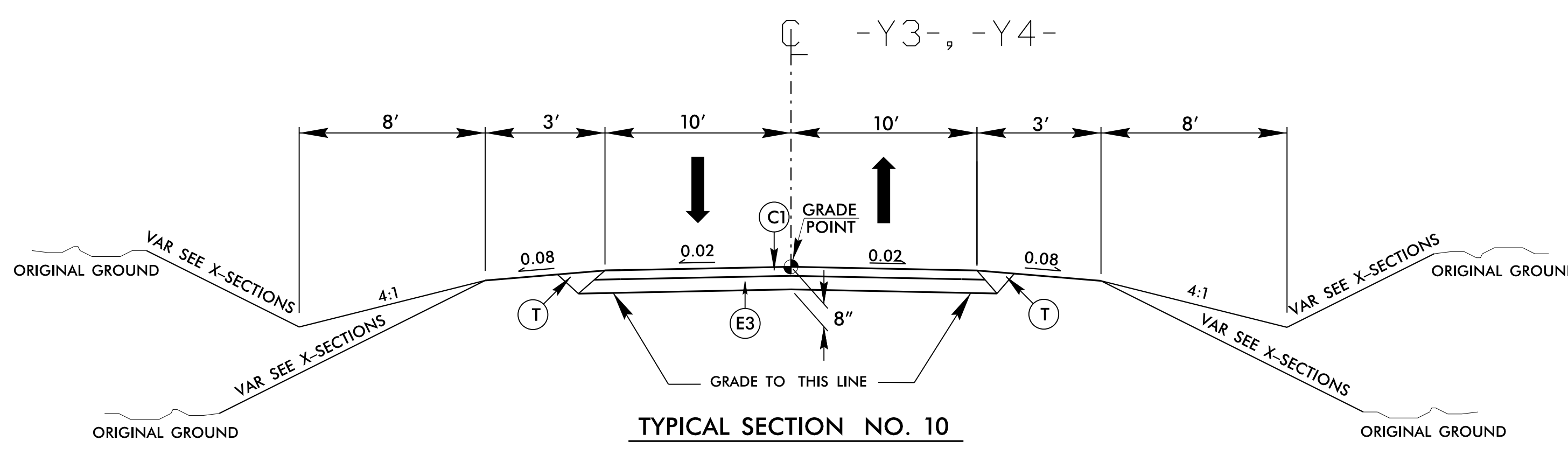
PROJECT REFERENCE NO. W-5313	SHEET NO. 2A-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 024912 Kevin E. Moore	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 022896 Clark S. Morrison
4/7/2017 DocuSigned by: Kevin E. Moore	
4/7/2017 DocuSigned by: Clark S. Morrison	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



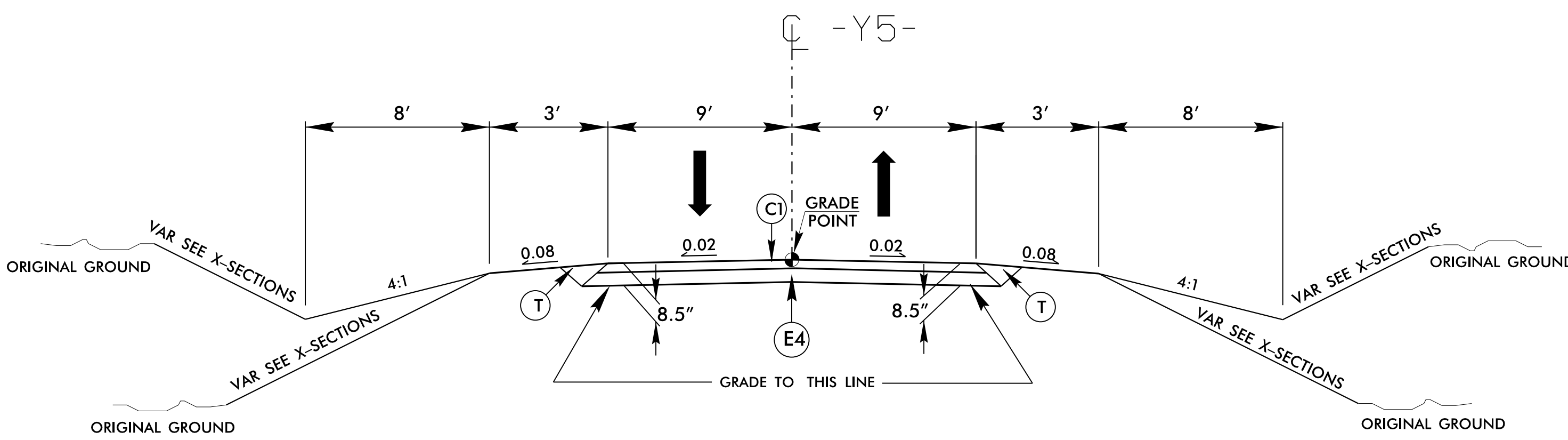
USE TYPICAL SECTION NO. 8 FOR:
-Y2- STA. 10+75.00 TO STA. 12+47.33



USE TYPICAL SECTION NO. 9 FOR:
-Y3- STA. 10+50.00 TO STA. 11+17.23
-Y4- STA. 13+10.28 TO STA. 13+75.00



USE TYPICAL SECTION NO. 10 FOR:
-Y3- STA. 11+17.23 TO STA. 12+09.07
-Y4- STA. 10+15.01 TO STA. 13+10.28



USE TYPICAL SECTION NO. 11 FOR:
-Y5- STA. 11+90.00 TO STA. 13+20.43

PAVEMENT SCHEDULE

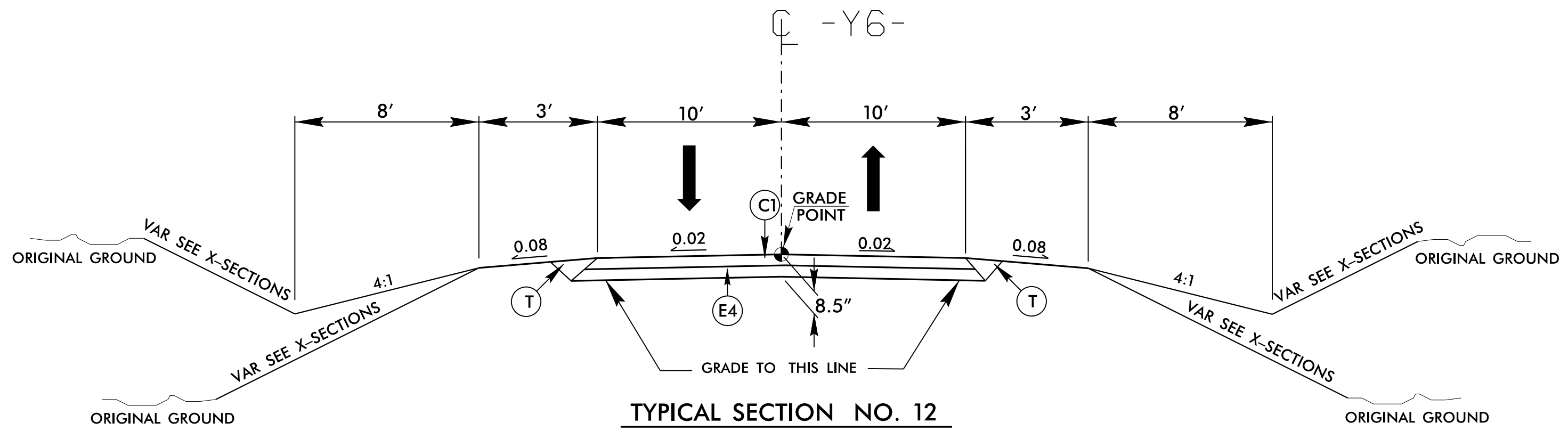
C1	3" S9.5B
C2	VAR. S9.5B
D1	2.5" I19.0B
D2	3" I19.0B
D3	VAR. I19.0B
E1	4.0" B25.0B
E2	4.5" B25.0B
E3	5.0" B25.0B
E4	5.5" B25.0B
E5	VAR. B25.0B
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N	GEOTEXTILE
R1	2'X6" CONC. C&G
R2	8"X18" CONC. CURB
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	2.5" MILLING
*V2	VAR.DEP.MILLING
W	WEDGING

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

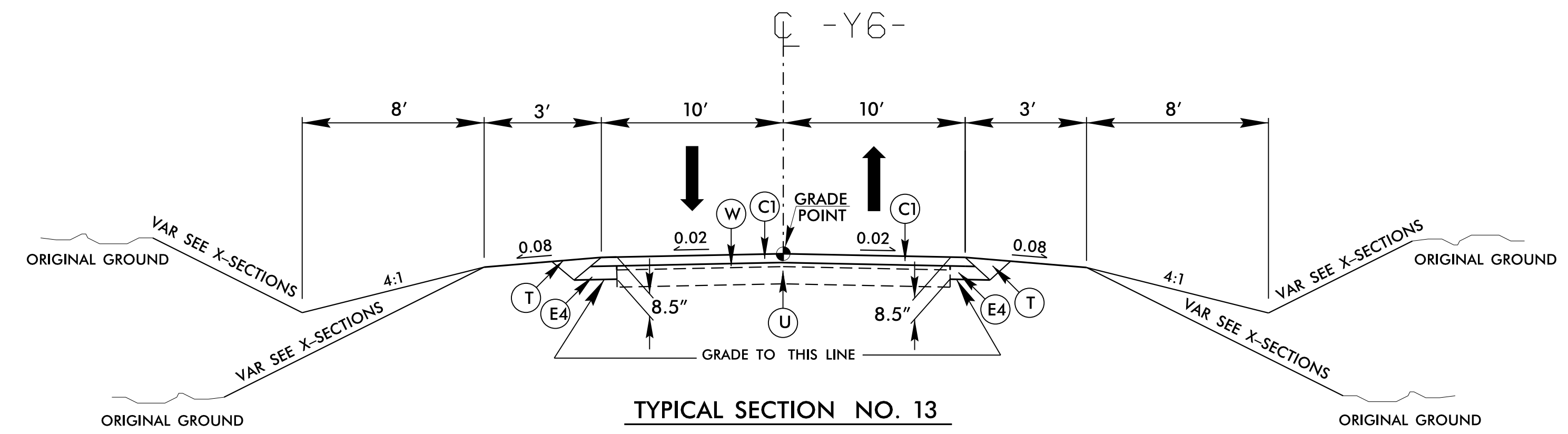
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5/14/99

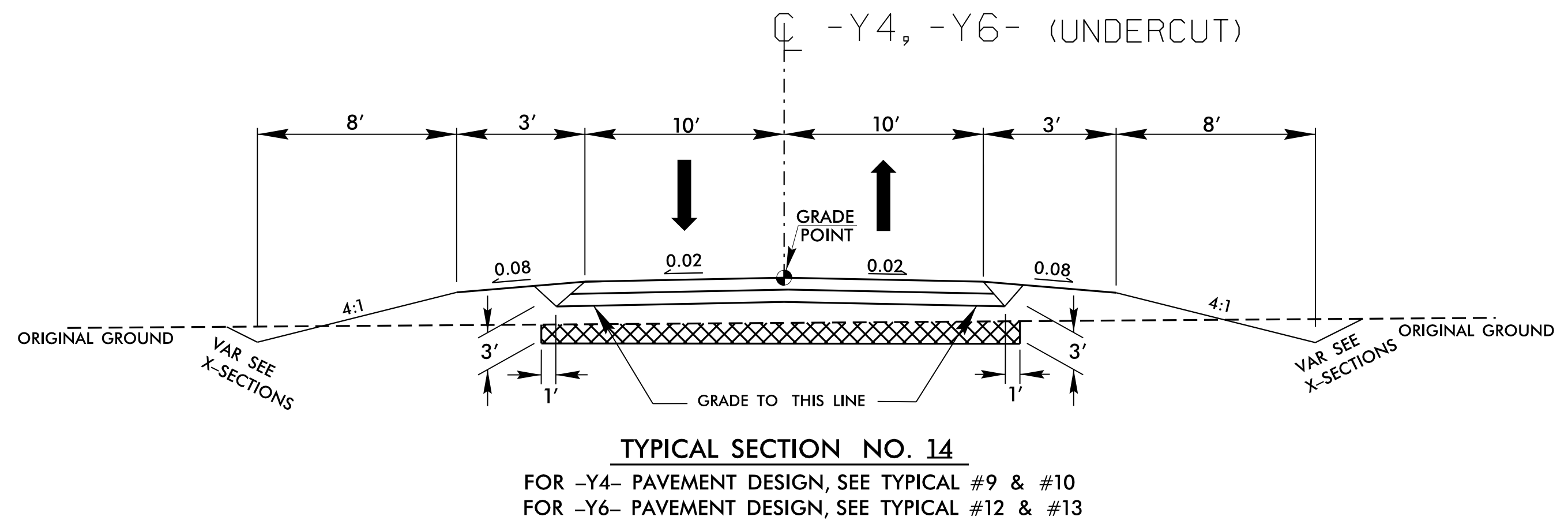
PROJECT REFERENCE NO. W-5313	SHEET NO. 2A-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 024912 KEVIN E. MOORE	PAVEMENT DESIGN ENGINEER SEAL 022896 CLARK S. MORRISON
4/7/2017	4/7/2017
Documented by: Kevin E. Moore Documented by: Clark S. Morrison DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



USE TYPICAL SECTION NO. 12 FOR:
-Y6- STA. 10+13.00 TO STA. 13+71.85



USE TYPICAL SECTION NO. 13 FOR:
-Y6- STA. 13+71.85 TO STA. 15+15.00



USE TYPICAL SECTION NO. 14 FOR:
-Y4- STA. 11+80.00 TO STA. 12+70.00 RT<
-Y6- STA. 12+30.00 TO STA. 13+20.00 RT<

PAVEMENT SCHEDULE

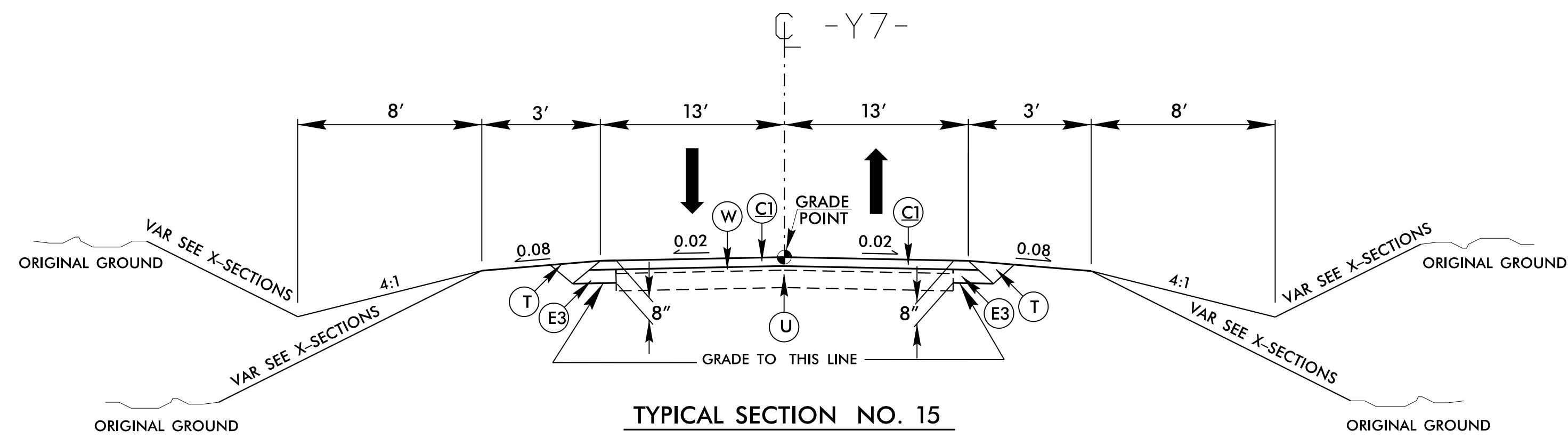
C1	3" S9.5B
C2	VAR. S9.5B
D1	2.5" I19.0B
D2	3" I19.0B
D3	VAR. I19.0B
E1	4.0" B25.0B
E2	4.5" B25.0B
E3	5.0" B25.0B
E4	5.5" B25.0B
E5	VAR. B25.0B
L	CL.IV SUB.STAB.
N	GEOTEXTILE
R1	2'X6" CONC. C&G
R2	8"X18" CONC. CURB
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	2.5" MILLING
*V2	VAR.DEP.MILLING
W	WEDGING

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

07-APR-2017 10:45 W-5313-r.dwg typ.dgn
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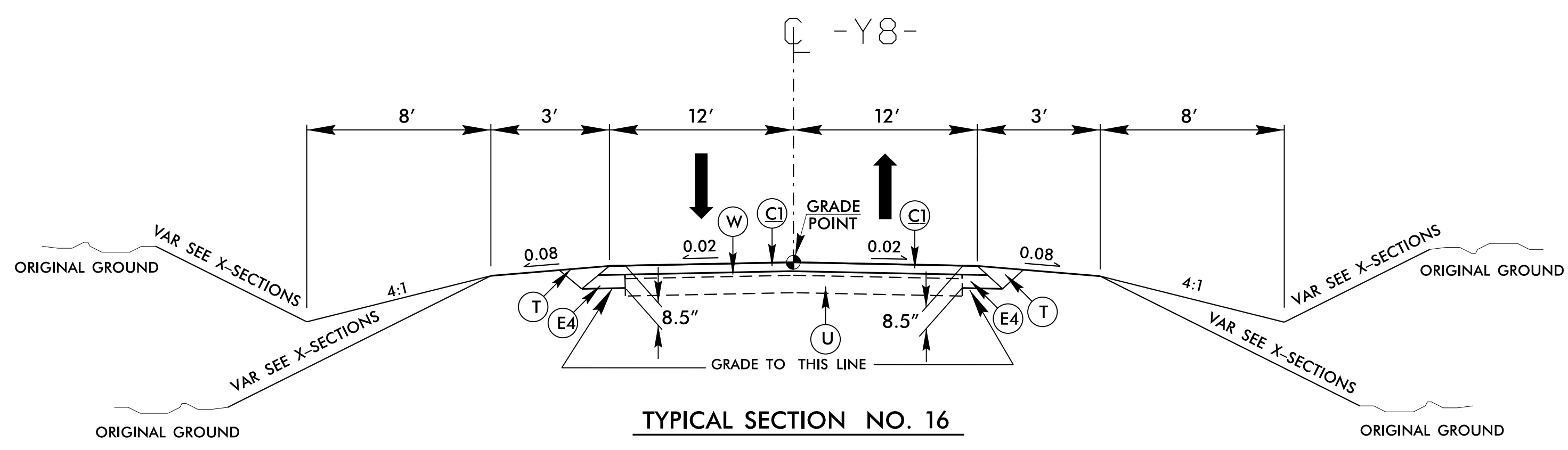
5/14/99

PROJECT REFERENCE NO. W-5313	SHEET NO. 2A-5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 024912 KEVIN E. MOORE 4/7/2017	PAVEMENT DESIGN ENGINEER SEAL 022896 CLARK S. MORRISON 4/7/2017
DocuSigned by: Kevin E. Moore Clark S. Morrison	
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TYPICAL SECTION NO. 15

USE TYPICAL SECTION NO. 15 FOR:
-Y7- STA. 10+13.06 TO STA. 11+40.00



TYPICAL SECTION NO. 16

USE TYPICAL SECTION NO. 16 FOR:
-Y8- STA. 11+25.00 TO STA. 12+71.07

PAVEMENT SCHEDULE

C1	3" S9.5B
C2	VAR. S9.5B
D1	2.5" I19.0B
D2	3" I19.0B
D3	VAR. I19.0B
E1	4.0" B25.0B
E2	4.5" B25.0B
E3	5.0" B25.0B
E4	5.5" B25.0B
E5	VAR. B25.0B
L	CL.IV SUB.STAB.
N	GEOTEXTILE
R1	2'X6" CONC. C&G
R2	8"X18" CONC. CURB
T_	EARTH MATERIAL
U_	EXIST. PAVEMENT
V1	2.5" MILLING
*V2	VAR.DEP.MILLING
W_	WEDGING

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

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RALEIGH, N.C.

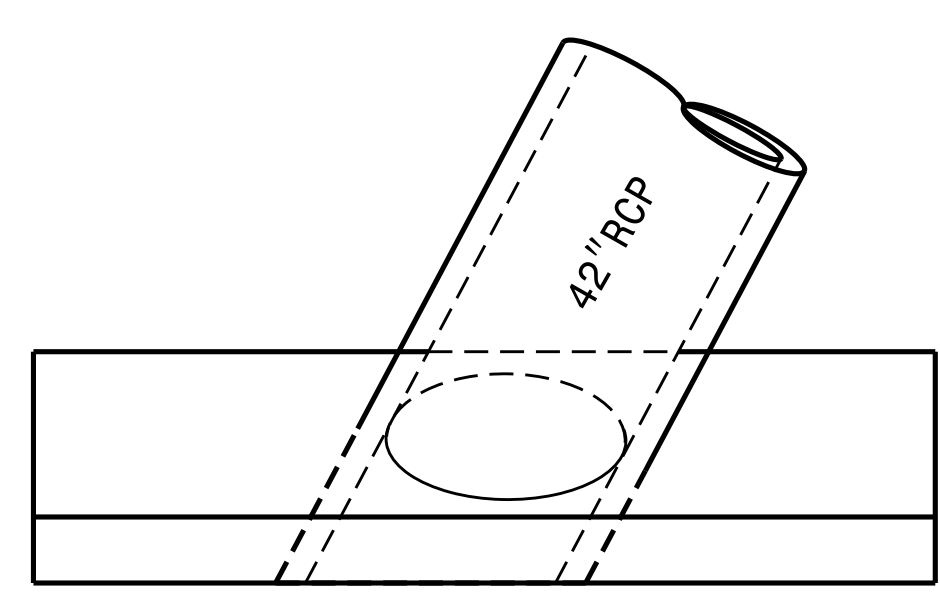
ENGLISH DETAIL DRAWING FOR
**CONCRETE ENDWALL FOR
42" SKREW
42" PIPE CULVERT**

SHEET 1 OF 1
838D01

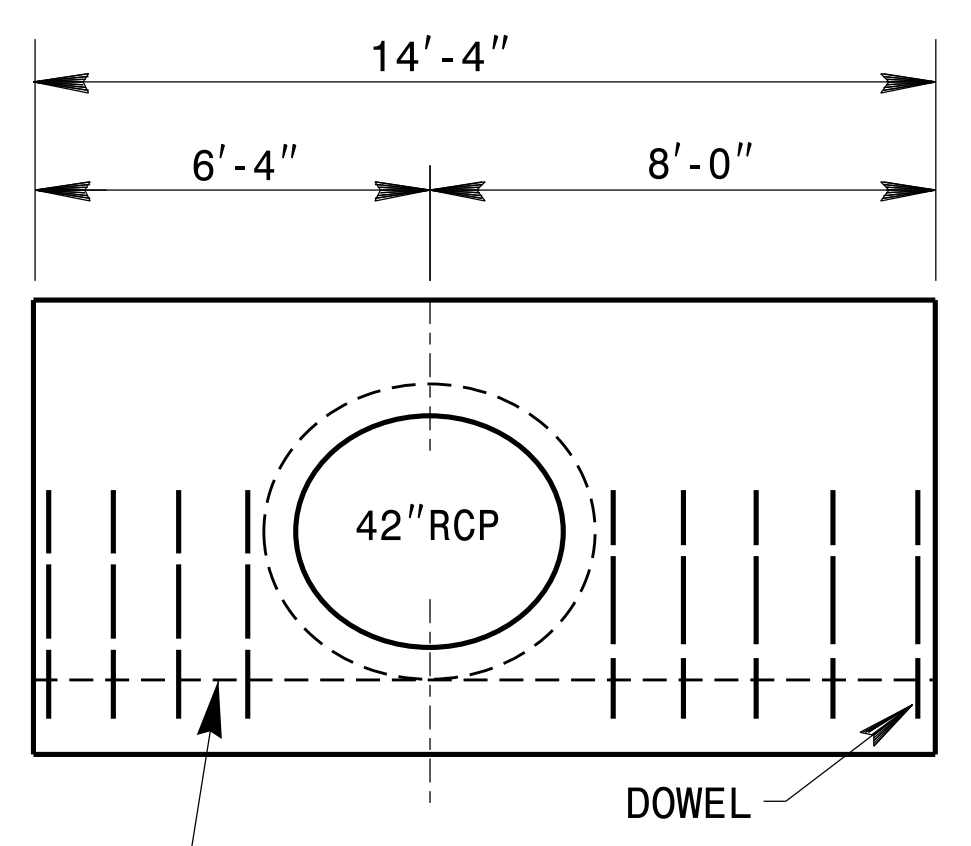
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**CONCRETE ENDWALL FOR
60° SKEW
42" PIPE CULVERT**

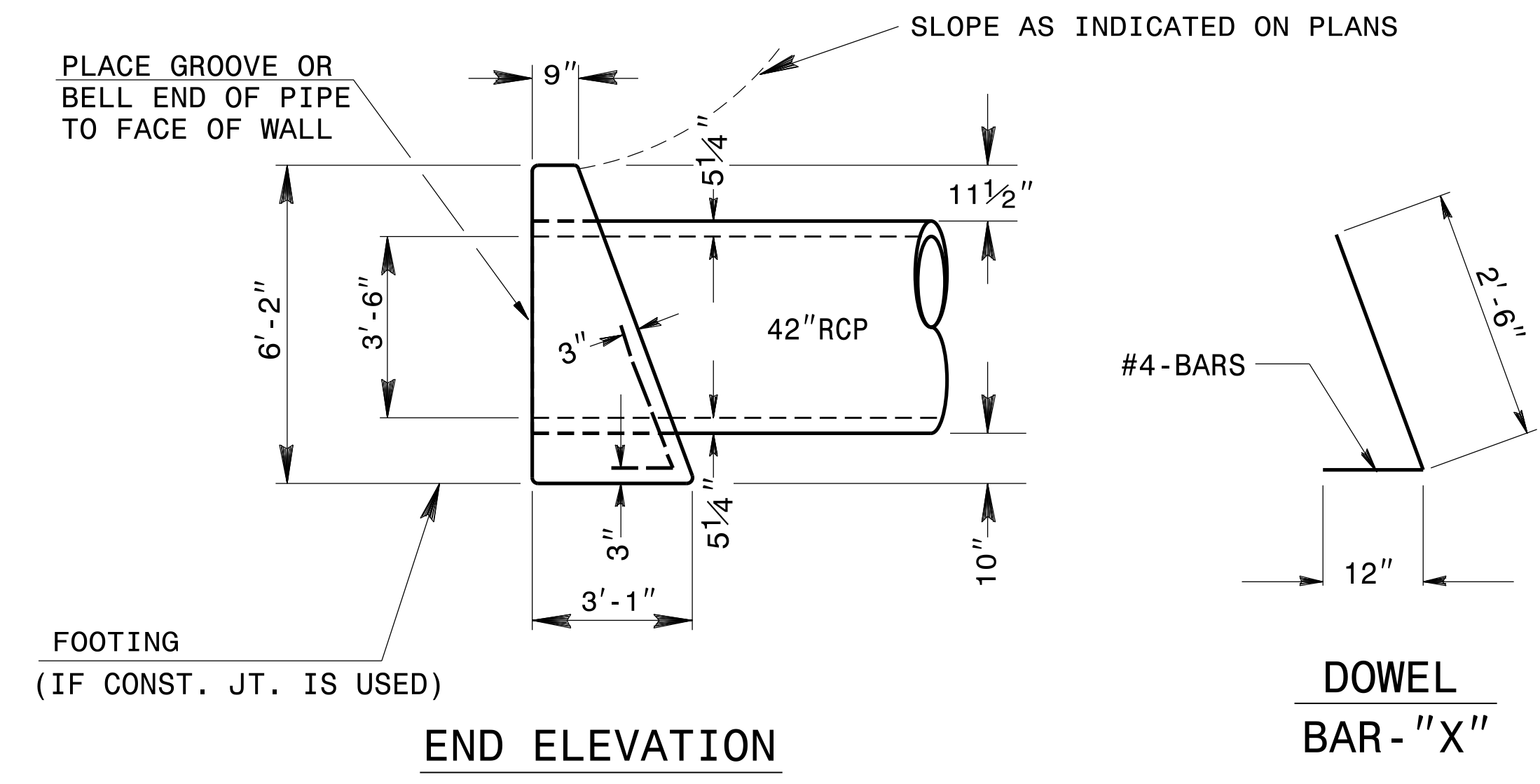
SHEET 1 OF 1
838D01



PLAN



ELEVATION



END ELEVATION

DOWEL
BAR - "X"

STEEL IN ENDWALL WITH REINFORCED CONCRETE PIPE		
LOC.	"X"	"Y"
TOP		42
LEFT	4	
RIGHT	5	
TOTAL LBS.	63	

CONCRETE - 6 CY

GENERAL NOTES:
 -CHAMFER ALL CORNERS 1".
 -PLACE 2 #6 "Y" BARS IN THE TOP OF ENDWALL WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN ENDWALL LENGTH.
 -USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
 -WALL THICKNESS (T) SHOWN IS NOT TO BE INTERPRETED TO MEAN THE THICKNESS ACCEPTABLE, BUT IS USED IN COMPUTING ENDWALL QUANTITIES.
 -WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE, PLACE BAR 'X' DOWELS IN THE BASE AS SHOWN ON PLANS. SPACING OF BARS IS TO BE APPROXIMATELY 12" CENTERS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 -WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE AND POUR THE BASE SEPARATELY THE POUR SHALL BE LEFT ROUGH.
 -USE CLASS "B" CONCRETE.



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ORIGINAL BY: T.S. Spell DATE: 8-16-00
 MODIFIED BY: rnbritt DATE: 03-11-16
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 FILE SPEC.: ;details/nbritt/english/hydro/w5313_42rcp_70sk.dgn

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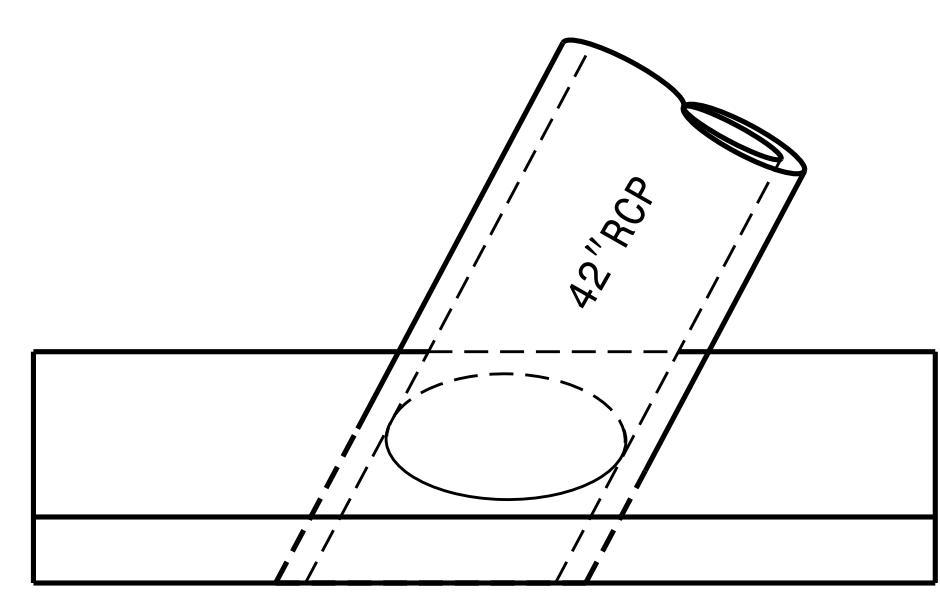
ENGLISH DETAIL DRAWING FOR
**CONCRETE ENDWALL FOR
60° SKEW
42" PIPE CULVERT**

SHEET 1 OF 1
838D01

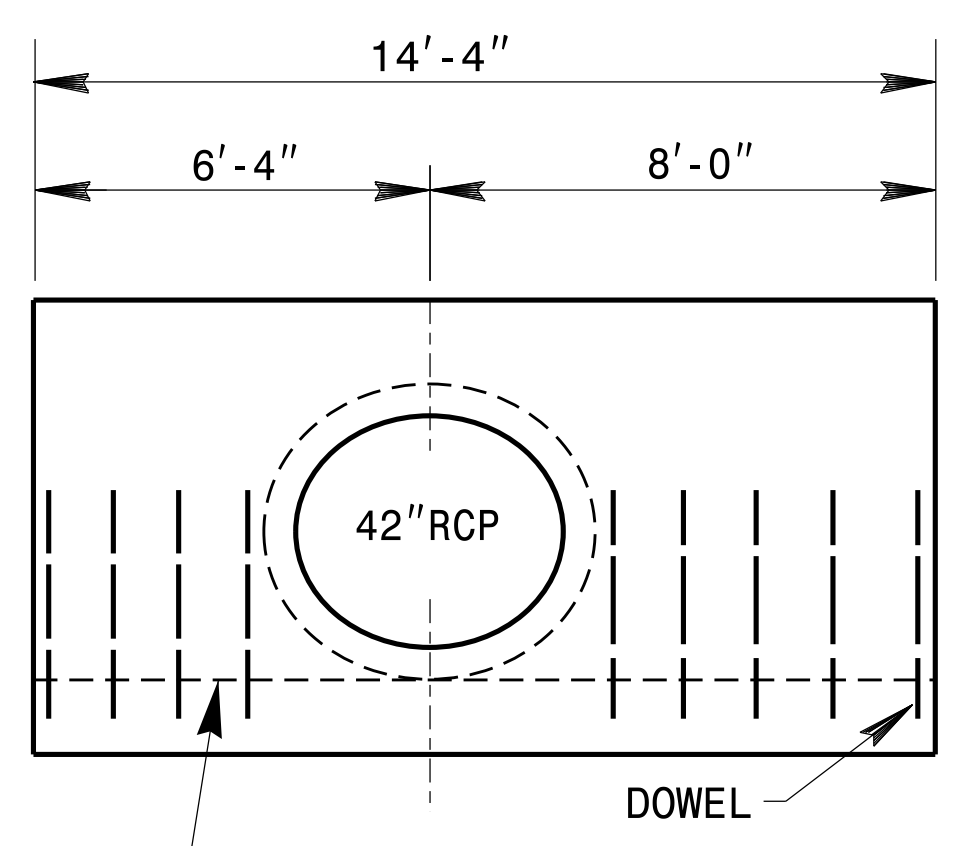
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ENGLISH DETAIL DRAWING FOR
**CONCRETE ENDWALL FOR
60° SKEW
42" PIPE CULVERT**

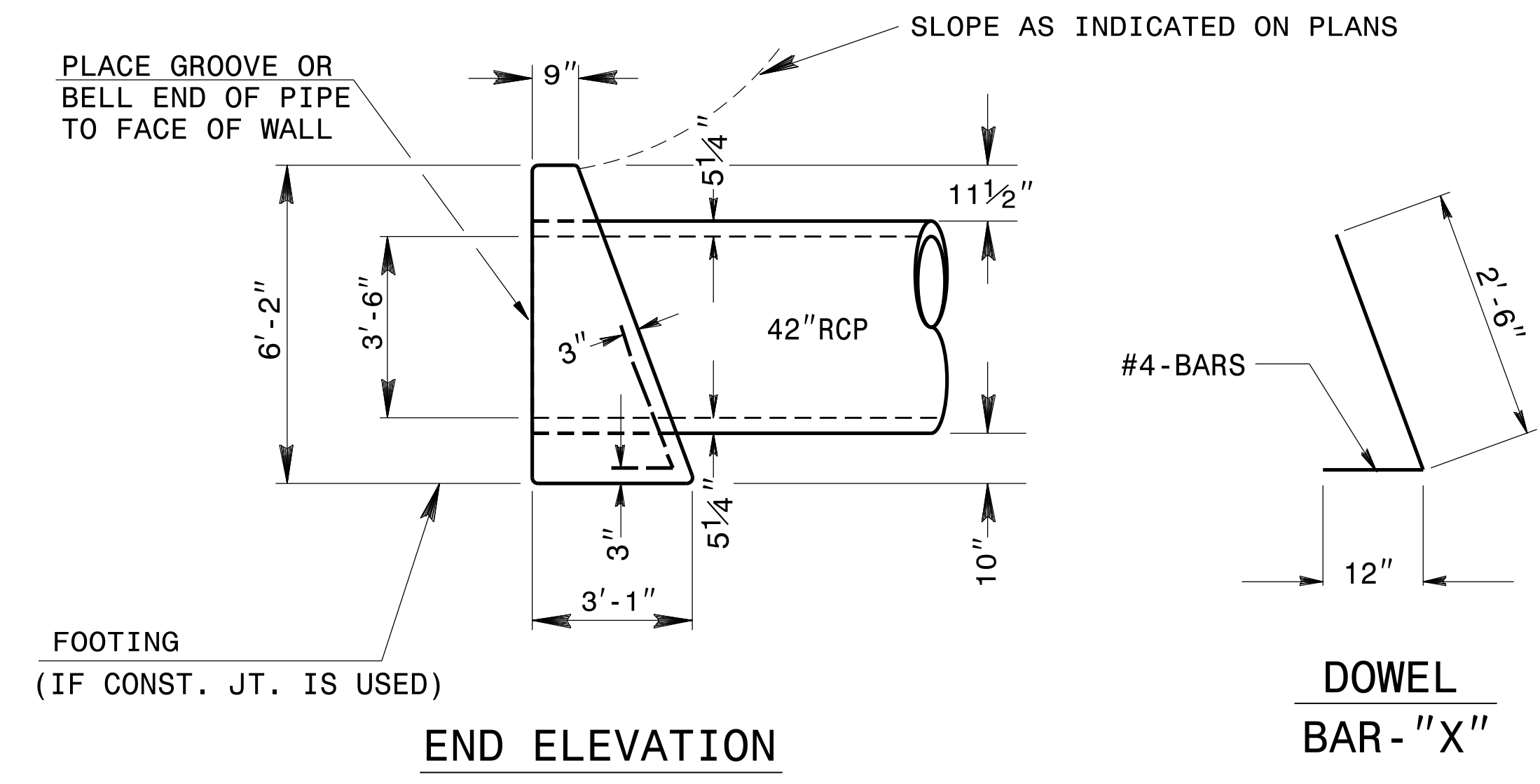
SHEET 1 OF 1
838D01



PLAN



ELEVATION



END ELEVATION

DOWEL
BAR - "X"

STEEL IN ENDWALL WITH REINFORCED CONCRETE PIPE		
LOC.	"X"	"Y"
TOP		42
LEFT	4	
RIGHT	5	
TOTAL LBS.	63	

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GENERAL NOTES:
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 -USE CLASS "B" CONCRETE.

4/7/2017
 Documented by:
Joel Hamilton
 873F3D17DCDCAF...

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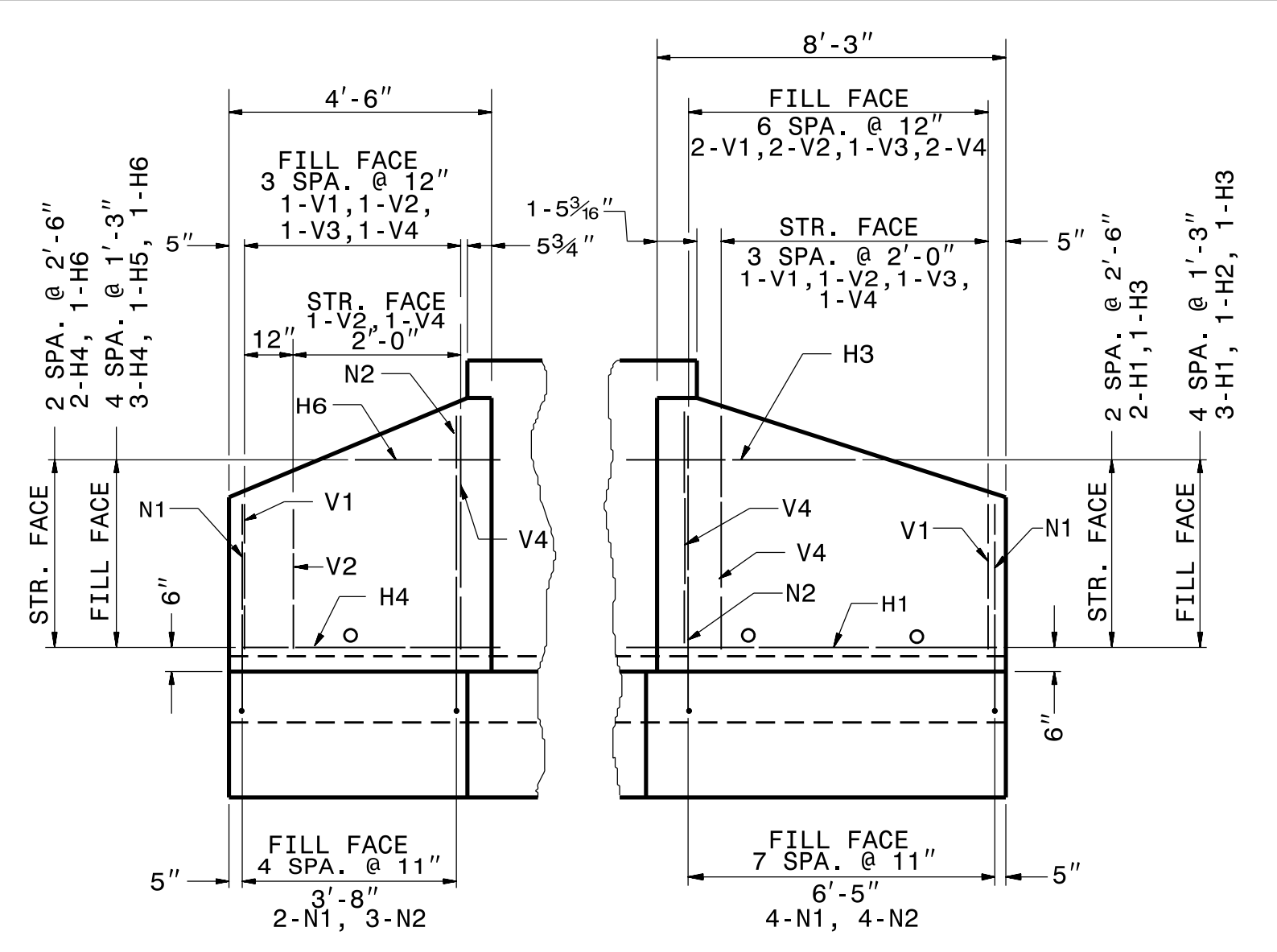
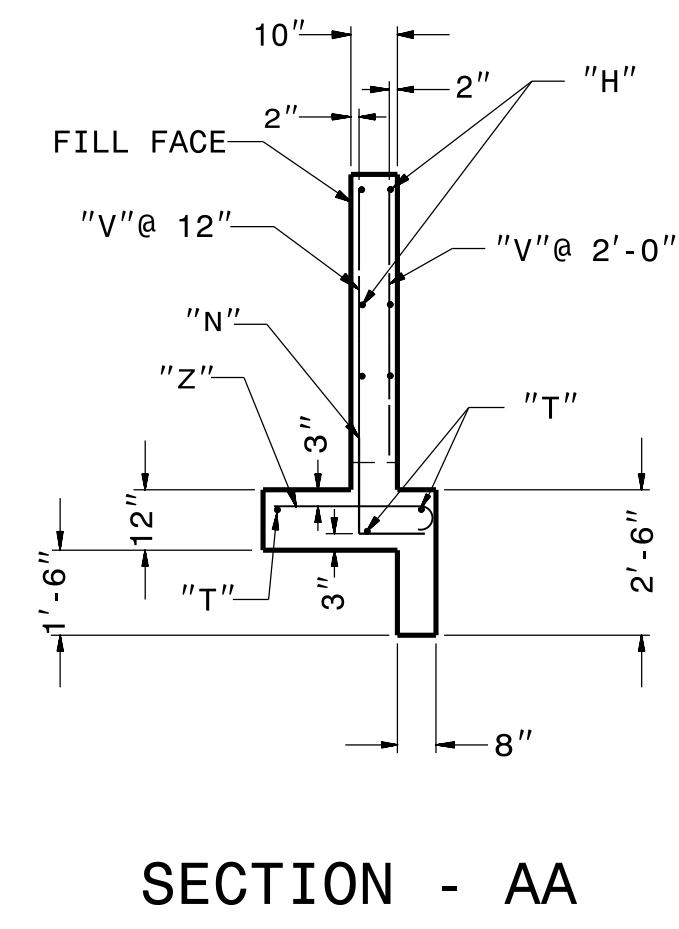
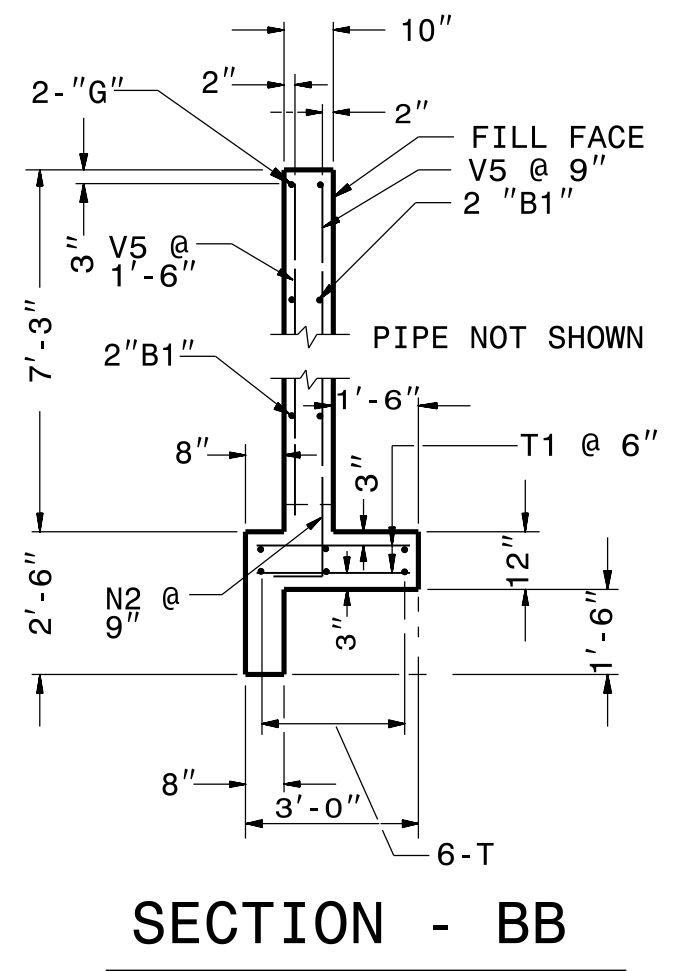
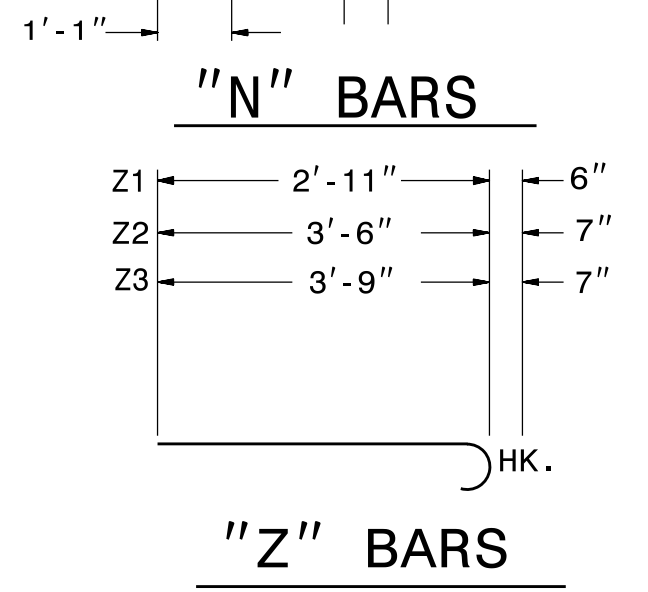
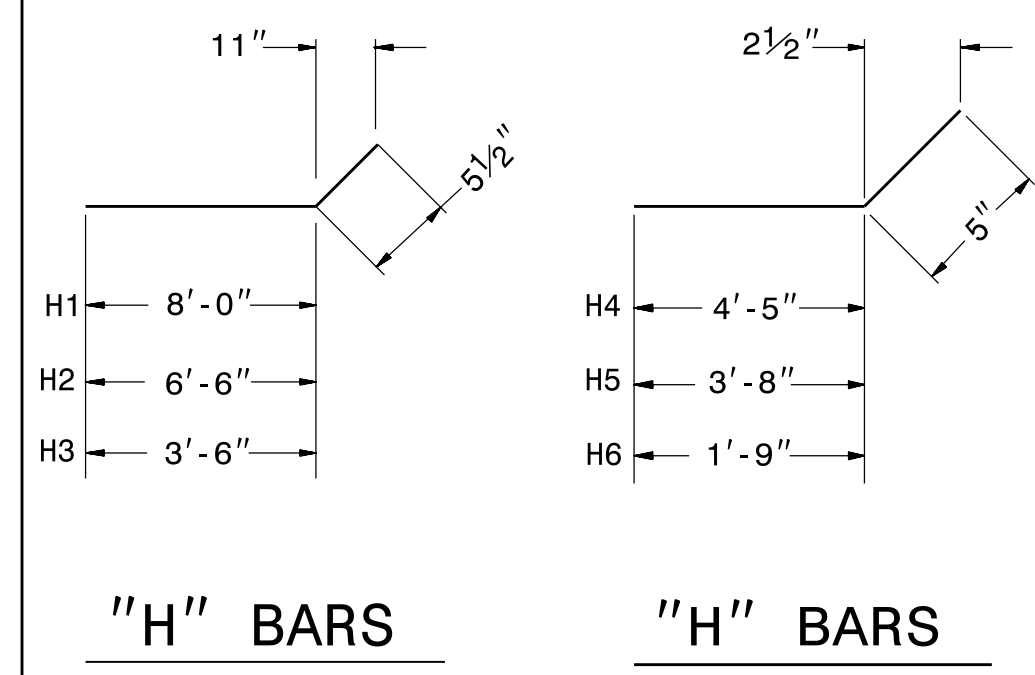
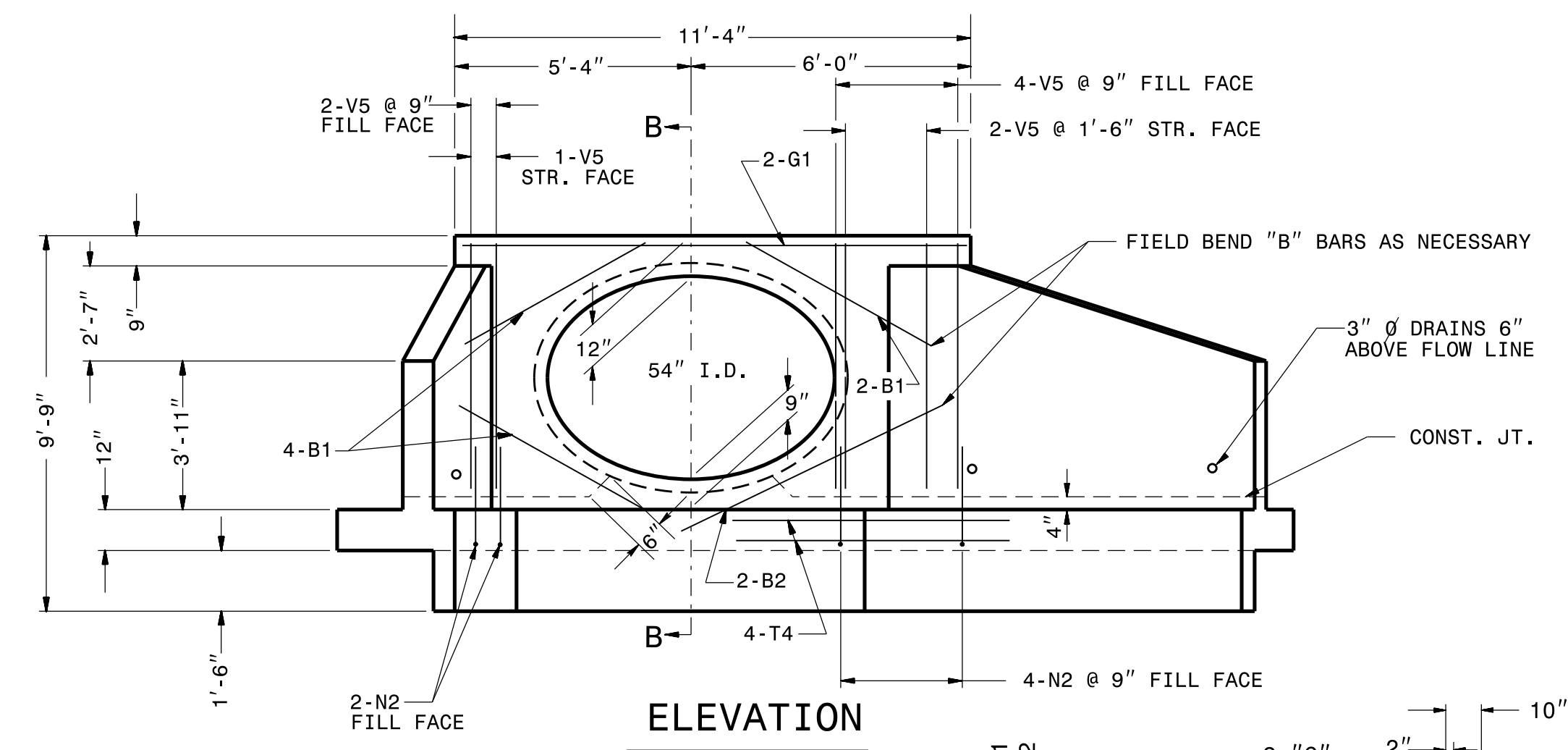
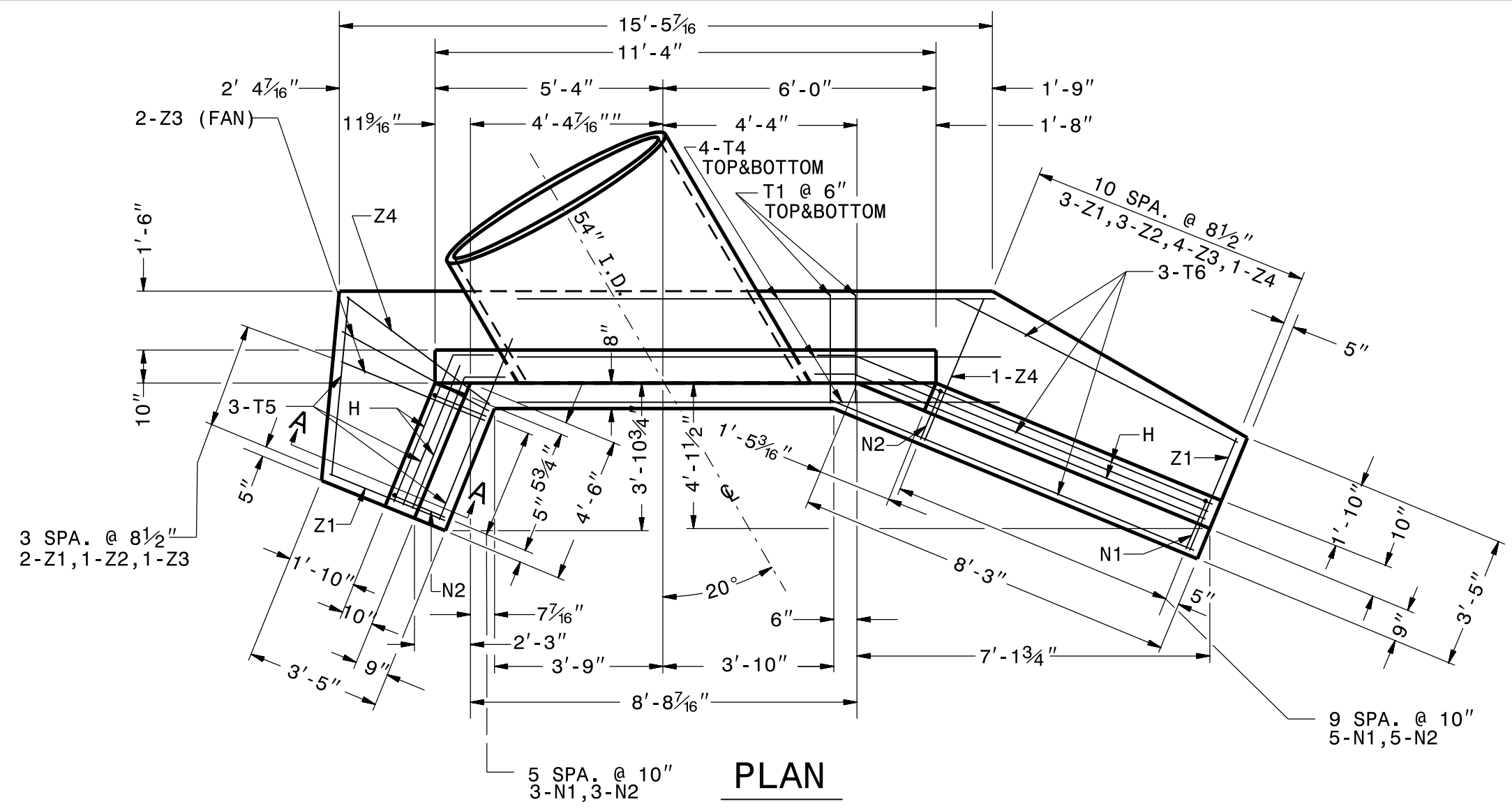
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 MODIFIED BY: rnbritt DATE: 03-11-16
 CHECKED BY: DATE:
 FILE SPEC.: ;details/nbritt/english/hydro/w5313_42rcp_70sk.dgn

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

ENGLISH DETAIL DRAWING FOR
REINFORCED CONCRETE ENDWALL
FOR SINGLE 54" PIPE 70° SKEW

SHEET 1 OF 1
838D35



NOTES:
ALL CONCRETE TO BE CLASS "A".
ALL REINFORCING STEEL TO BE ASTM A615-GRADE 60.
ALL REINFORCING STEEL TO BE DEFORMED BARS. WHERE SPLICING OF REINFORCEMENT IS NECESSARY, BARS ARE TO BE LAPPED AS DIAMETERS. ALL DIMENSIONS RELATIVE TO REINFORCEMENT ARE TO CENTERS OF BARS.
THE FOOTING, CURTAIN WALL AND 4" OF WALL ARE TO BE POURED IN ONE OPERATION ALLOWING NO TIME FOR INITIAL SET TO TAKE PLACE BETWEEN THEM. THE REMAINING WALL SHALL THEN BE POURED IN ONE OPERATION.
ALL EXPOSED CORNERS ARE TO BE CHAMFERED 1".
3" DIAMETER DRAINS TO BE PLACED IN WALL AS SHOWN AND BE 6" ABOVE NORMAL FLOW LINE.
ALL MATERIAL AND WORKMANSHIP AS PER N.C. DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
DIMENSIONS AND QUANTITIES MAY BE ADJUSTED BY THE ENGINEER.

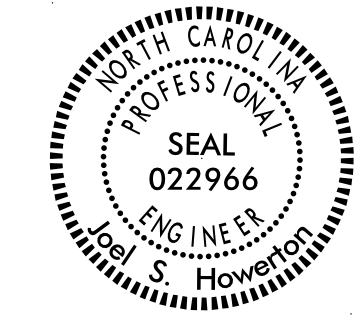
REINFORCING STEEL		1 - PIPE	
BAR	SIZE	LENGTH	NO. WEIGHT
Z1	#4	3'-5"	8 18
Z2	#5	4'-1"	7 30
Z3	#5	4'-4"	1 5
N1	#4	3'-5"	6 14
N2	#5	3'-11"	13 53
V1	#4	3'-5"	4 9
V2	#4	4'-2"	5 14
V3	#4	4'-10"	3 10
V4	#4	5'-5"	5 10
V5	#4	6'-8"	9 40
H1	#4	8'-11"	5 30
H2	#4	7'-5"	1 5
H3	#4	4'-5"	2 6
H4	#4	4'-10"	5 16
H5	#4	4'-1"	1 3
H6	#4	2'-2"	2 3
G1	#7	10'-8"	2 44
T1	#4	2'-6"	46 77
T4	#4	15'-0"	6 60
T5	#4	4'-9"	3 10
T6	#4	8'-0"	3 16
B1	#4	5'-6"	6 22
B2	#4	7'-6"	2 10
REINFORCING STEEL LBS.		505	
CONC./C.M. CU. YDS.		7.5	
CONC./R.C. CU. YDS.		7.1	

DRAWING NOT TO SCALE

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ENGLISH DETAIL DRAWING FOR
REINFORCED CONCRETE ENDWALL
FOR SINGLE 54" PIPE 70° SKEW

SHEET 1 OF 1
838D35



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DETAIL OF REINFORCED CONCRETE ENDWALL FOR SINGLE 54" DIAMETER PIPE - 70° SKEW

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt DATE: 03-11-16
CHECKED BY: _____ DATE: _____
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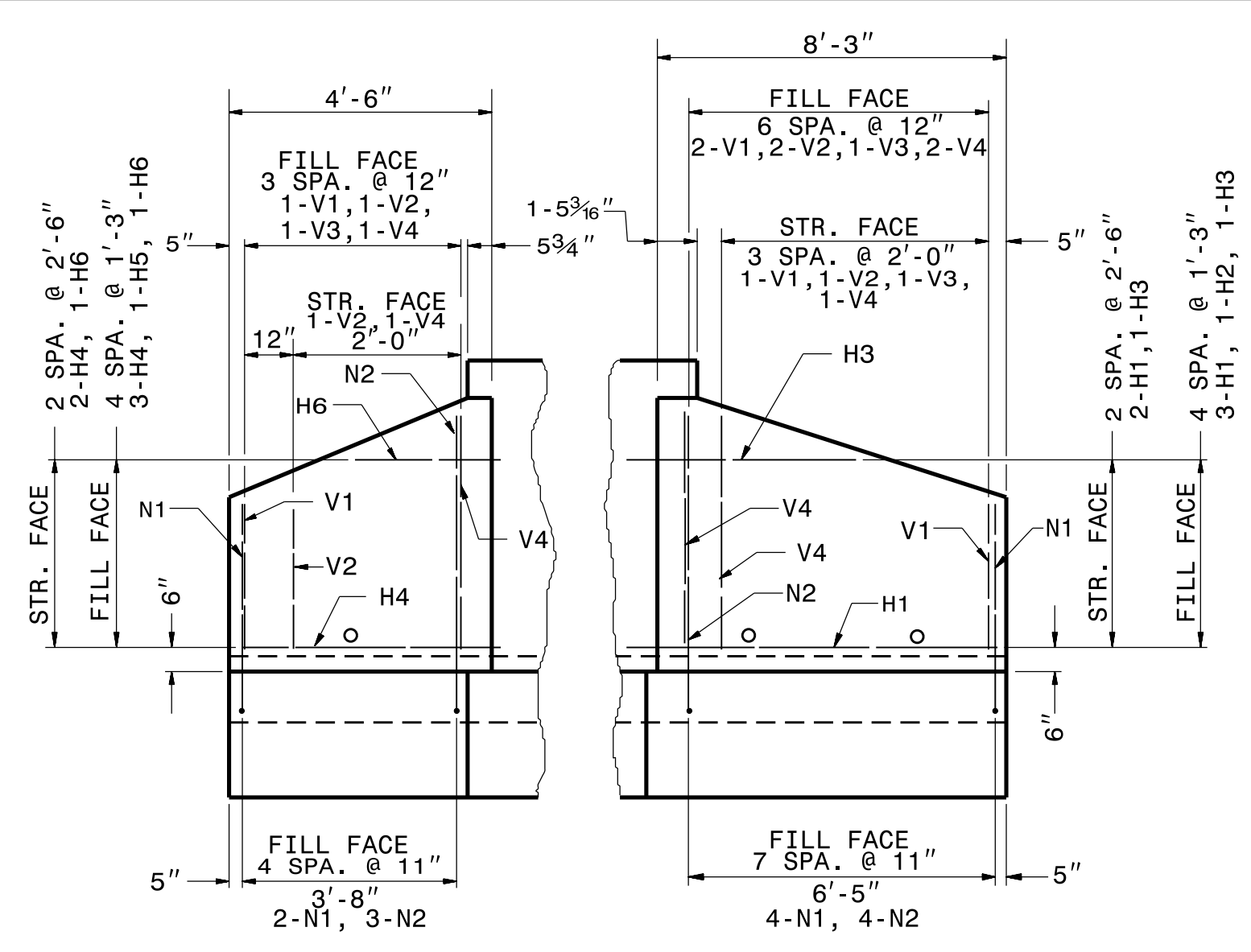
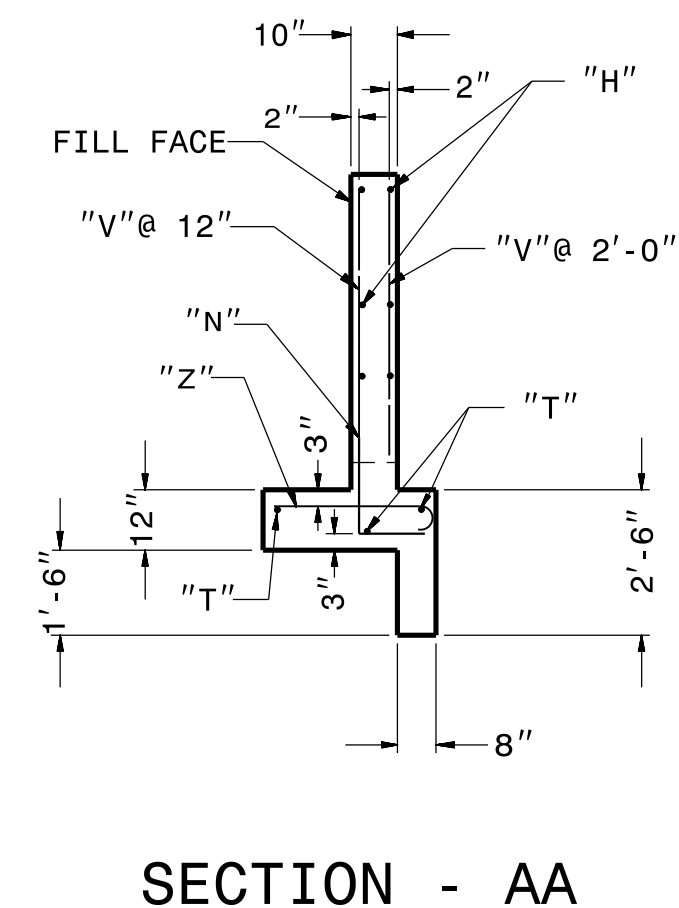
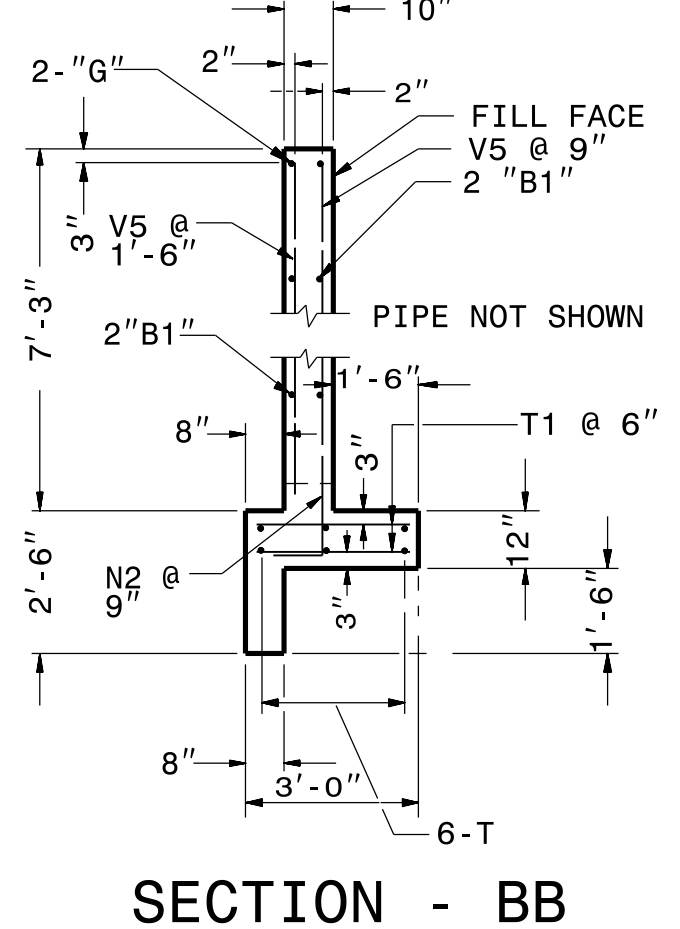
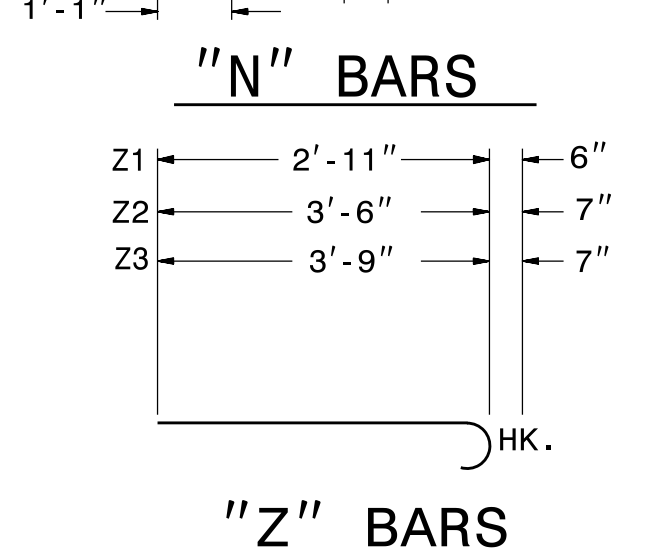
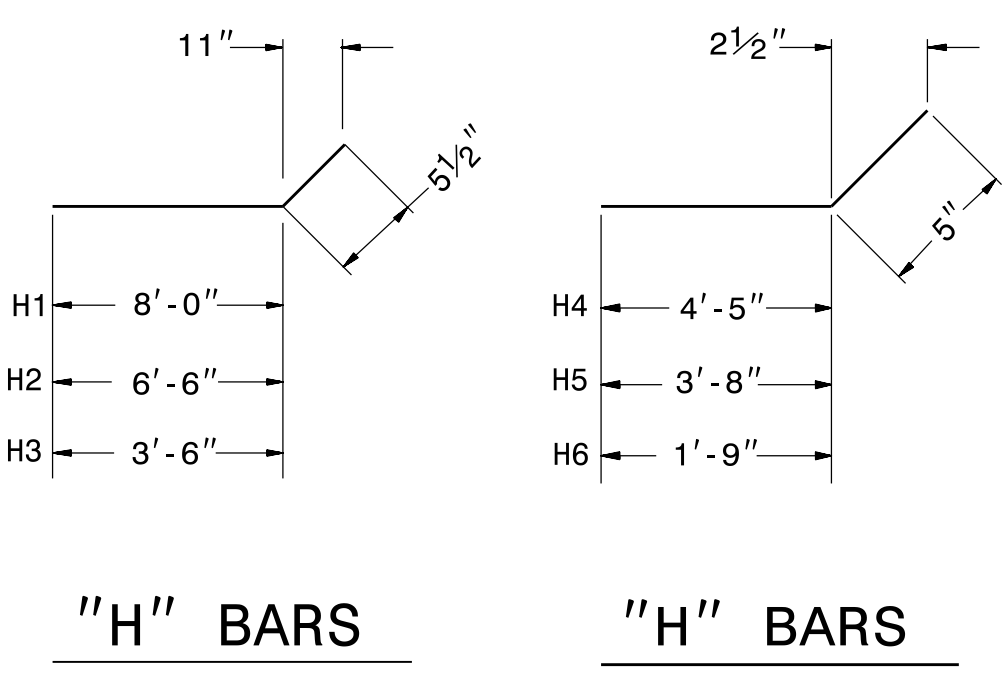
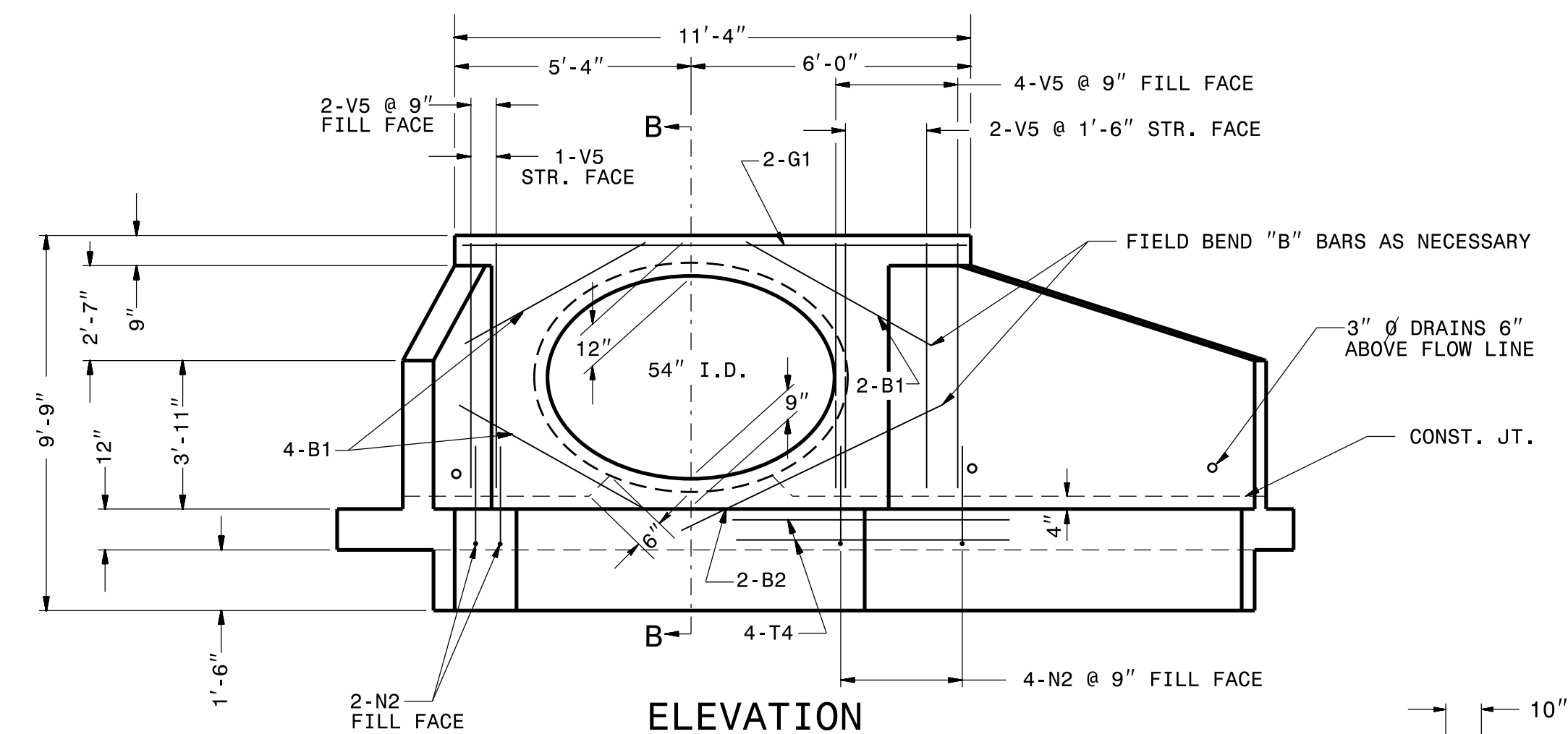
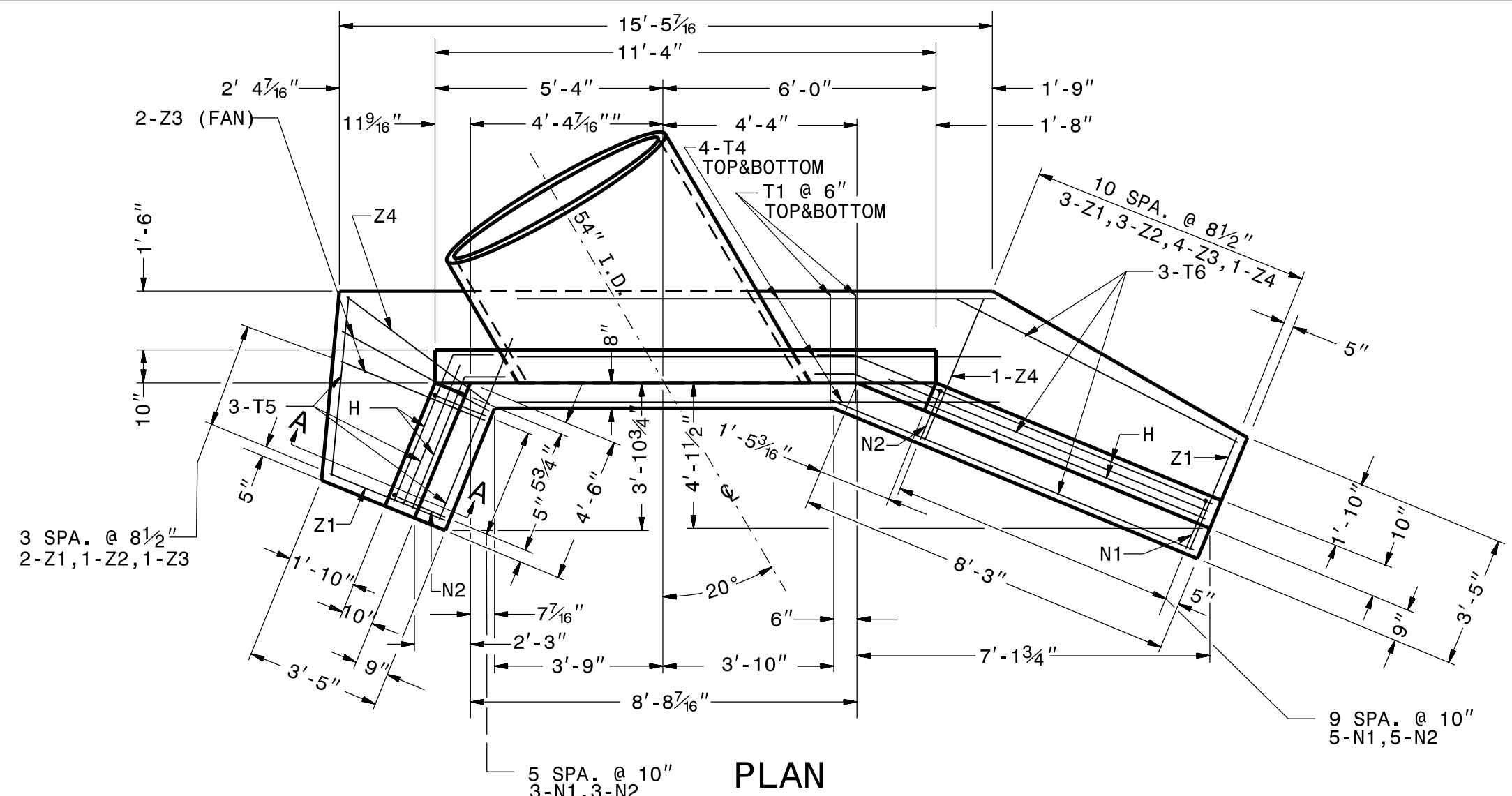
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\$\$\$\$\$USER\$\$\$\$\$

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DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
REINFORCED CONCRETE ENDWALL
FOR SINGLE 54" PIPE 70° SKEW

SHEET 1 OF 1
838D35



NOTES:
ALL CONCRETE TO BE CLASS "A".
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ALL MATERIAL AND WORKMANSHIP AS PER N.C. DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
DIMENSIONS AND QUANTITIES MAY BE ADJUSTED BY THE ENGINEER.

REINFORCING STEEL		PIPE		
BAR	SIZE	LENGTH	NO.	WEIGHT
Z1	#4	3'-5"	8	18
Z2	#5	4'-1"	7	30
Z3	#5	4'-4"	1	5
N1	#4	3'-5"	6	14
N2	#5	3'-11"	13	53
V1	#4	3'-5"	4	9
V2	#4	4'-2"	5	14
V3	#4	4'-10"	3	10
V4	#4	5'-5"	5	10
V5	#4	6'-8"	9	40
H1	#4	8'-11"	5	30
H2	#4	7'-5"	1	5
H3	#4	4'-5"	2	6
H4	#4	4'-10"	5	16
H5	#4	4'-1"	1	3
H6	#4	2'-2"	2	3
G1	#7	10'-8"	2	44
T1	#4	2'-6"	46	77
T4	#4	15'-0"	6	60
T5	#4	4'-9"	3	10
T6	#4	8'-0"	3	16
B1	#4	5'-6"	6	22
B2	#4	7'-6"	2	10
REINFORCING STEEL LBS.		505		
CONC./C.M. CU. YDS.		7.5		
CONC./R.C. CU. YDS.		7.1		

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ENGLISH DETAIL DRAWING FOR
REINFORCED CONCRETE ENDWALL
FOR SINGLE 54" PIPE 70° SKEW

SHEET 1 OF 1
838D35



4/7/2017

DocuSigned by:
Joel Howerton
873F3D17DCDC49F

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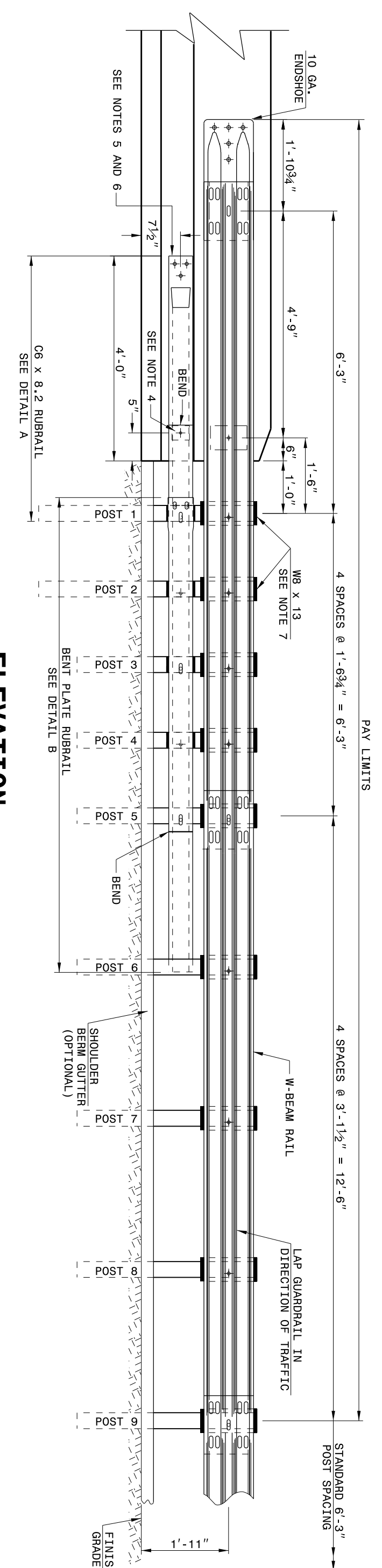
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**DETAIL OF REINFORCED CONCRETE
ENDWALL FOR SINGLE
54" DIAMETER PIPE - 70° SKEW**

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt DATE: 03-11-16
CHECKED BY: _____ DATE: _____
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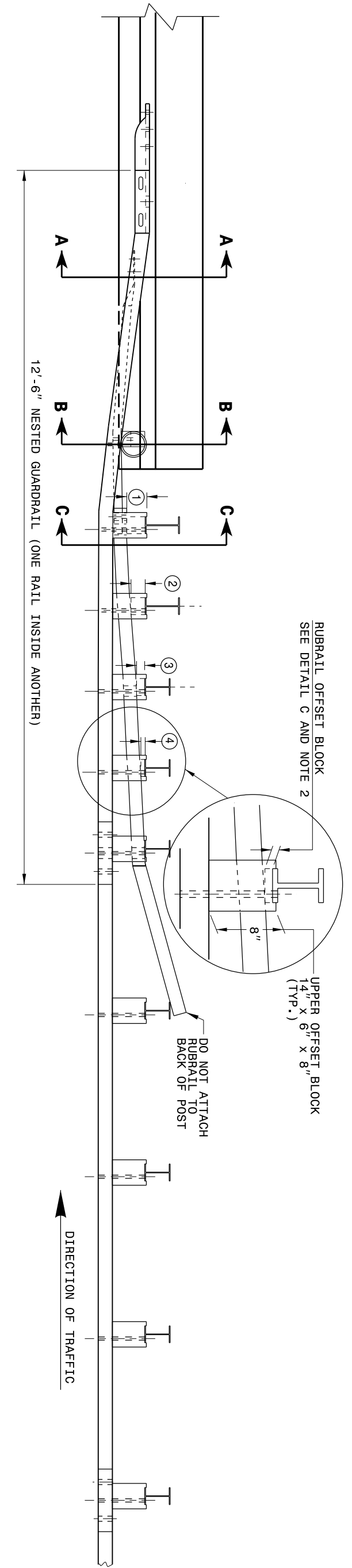
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ELEVATION

- GENERAL NOTES:
- POSTS 1 THROUGH 5 REQUIRE AN ADDITIONAL HOLE TO ATTACH LOWER BLOCKOUTS AND/OR RUBRAIL.
 - BLOCKOUTS 1 THROUGH 4 ARE TO BE FABRICATED FROM 1/2" THICK PLATE AND WELD TO POSTS 1 AND 2 WITH A 5/8" x 4 1/2" BUTTWEED BOLT. RUBRAIL IS FLARED TO BACK OF POST 6 AND NOT SECURED.
 - STEEL SPACER TUBE IS A SCHEDULE 40 GALVANIZED PIPE 6" INSIDE DIAMETER x 9' LONG. ATTACH TUBE TO GUARDRAIL ONLY WITH 5/8" x 1 1/4" LONG BUTTWEED BOLT AND RECTANGULAR PLATE WASHER.
 - SEE DETAIL D FOR SLOPED RUBRAIL BLOCKOUT. BLOCKOUT IS ATTACHED TO RAIL ELEMENT ONLY. USE 3/8" x 3" LAG BOLT WITH FLAT WASHER.
 - TYPE OF F-RAIL SHOWN IS 8.2 RUBRAIL END TO BE CONSISTENT WITH THE SLOPE OF THE F-SHAPE AND ATTACH FLUSH WITH THE SLOPED ANCHORAGE.
 - ANCHORAGE:
 - AT EXISTING BRIDGE RAIL AND NEW OR EXISTING BARRIERS, ANCHOR RUBRAIL USING THREE 5/8" x 6" CHEMICALLY ANCHORED BOLTS WITH WASHERS. MAXIMUM PROJECTION FOR BOLTS IS 1/2".
 - AT EXISTING BRIDGE RAIL AND NEW OR EXISTING BARRIERS, ANCHOR THE W-BEAM END SHOE USING A 4 BOLT HOLD DOWN PLATE (SEE STD. DWG. 862.04).
 - THIS RAIL THE BEAM END SHOE BEHIND THE NESTED GUARDRAIL BARRIER (SEE STD. DWG. 857.01).
 - (C) AT NEW BRIDGE RAIL, ANCHOR THE W-BEAM END SHOE AND RUBRAIL AS DETAILED ON THE STRUCTURE PLANS.
 - POSTS 1 AND 2 ARE W8 x 13, 7'-6" LONG. ALL OTHER POSTS IN THE ANCHOR UNIT ARE W8 x 8.5.



PLAN

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNIT
GUARDRAIL ANCHOR UNIT TYPE B-77
FOR F-SHAPE BARRIER

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SEE TITLE BLOCK

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 MODIFIED BY: DATE:
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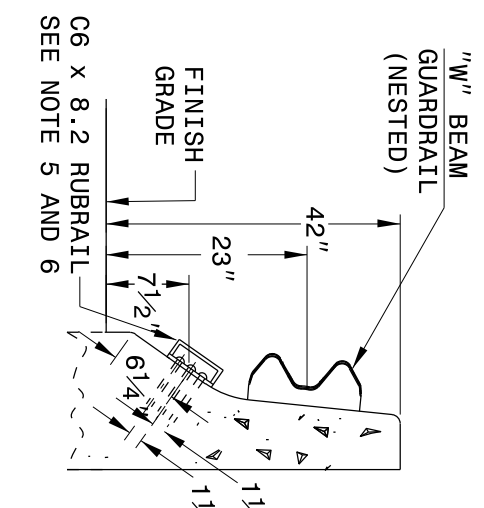


SHEET 4 OF 7
862D03

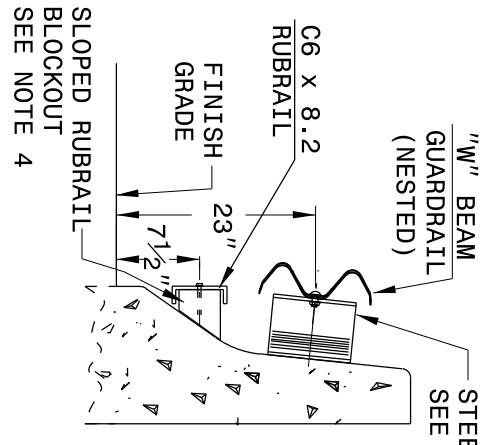
GUARDRAIL ANCHOR UNIT TYPE B-77

SHEET 4 OF 7
862D03

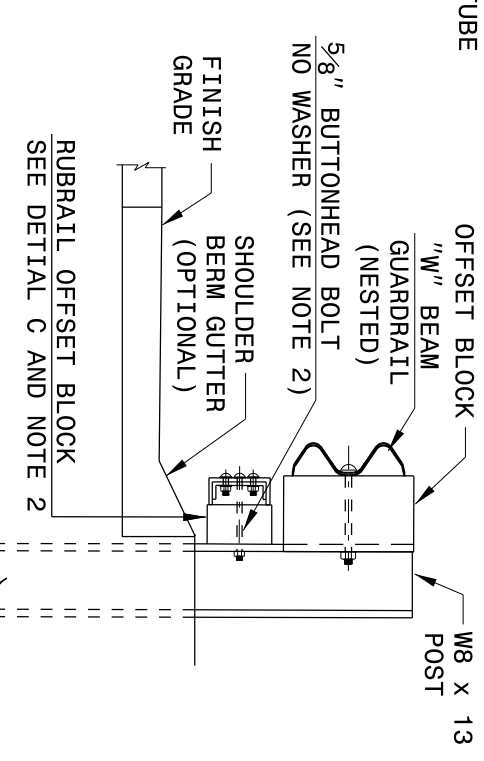
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RALEIGH, N.C.



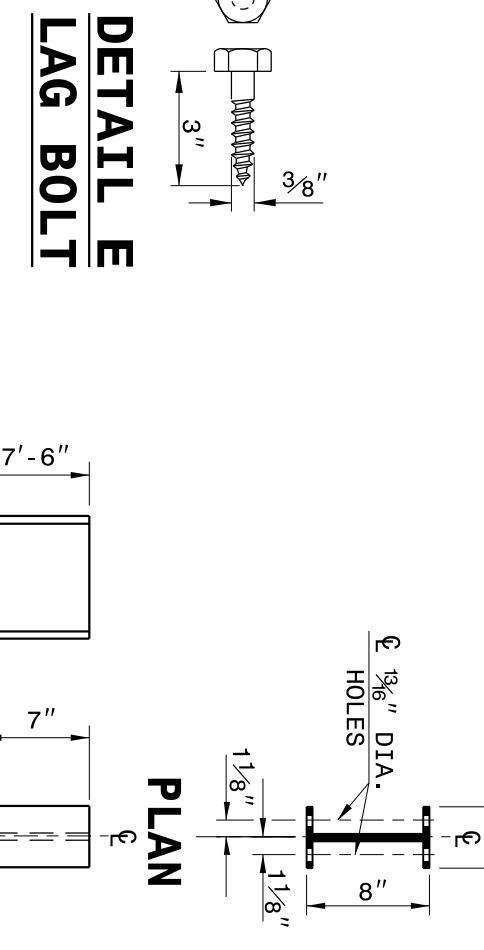
SECTION A-A



SECTION B-B



SECTION C-C



DETAIL E
LAG BOLT

RUBRAIL BLOCKS 7" HIGH x 4" WIDE

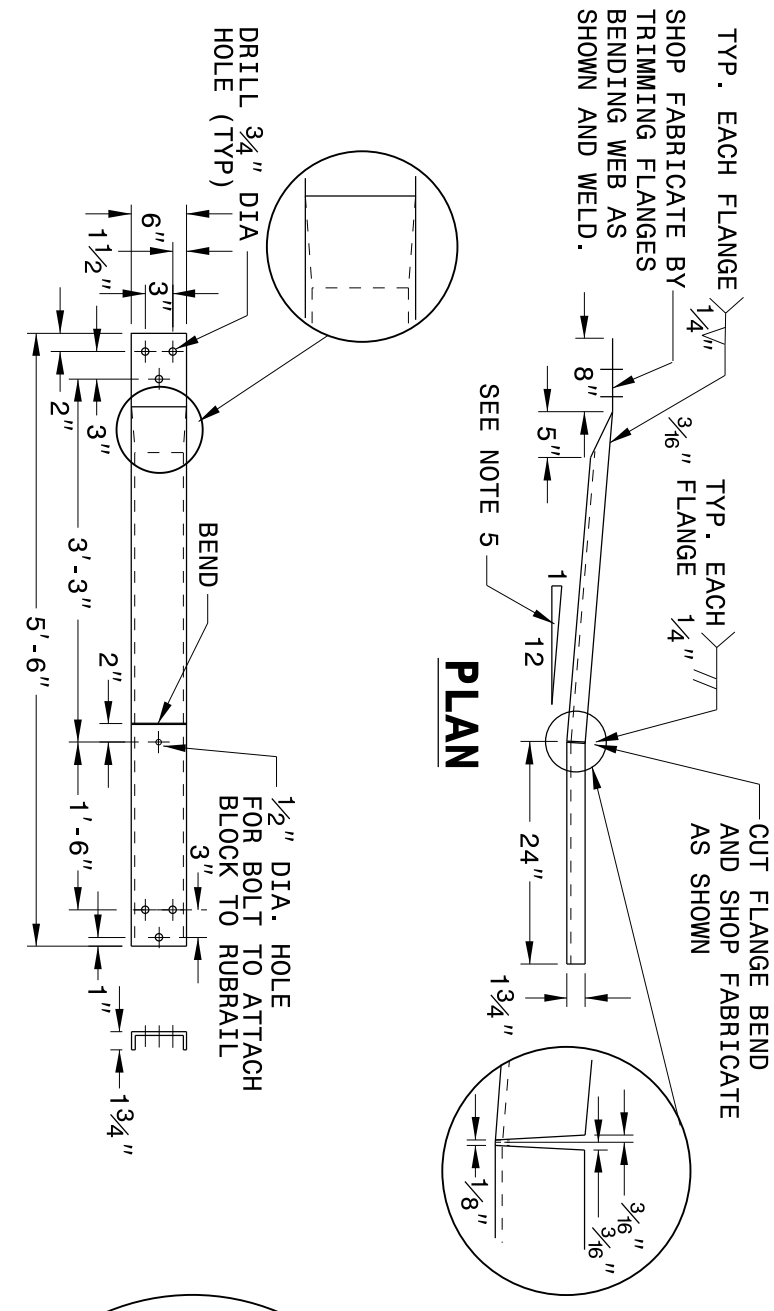
POST	THICKNESS	BOLT LENGTH
1	4 1/4"	9"
2	3 1/4"	5" *
3	2"	6"
4	1"	3" *

* BOLTS FOR POSTS 4 AND 5 ARE USED TO ATTACH BLOCK TO POST. RUBRAIL NOT ATTACHED TO BLOCK.

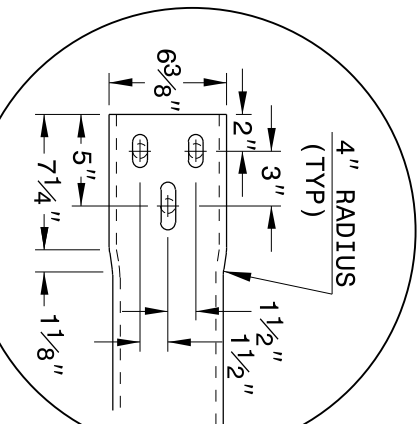
DETAIL C
RUBRAIL BLOCKOUT

DETAIL D
SLOPED RUBRAIL BLOCKOUT

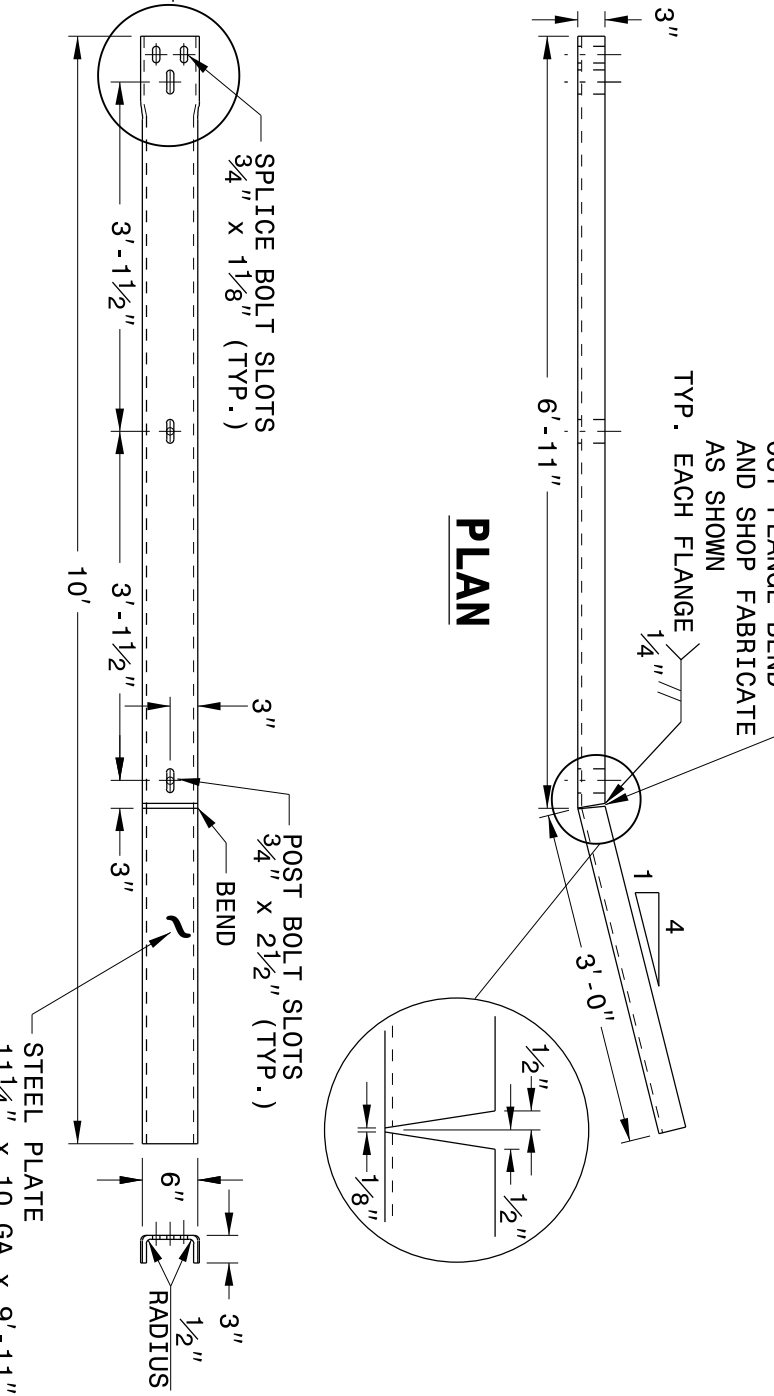
DETAIL F
W8 X 13 X 7'-6"



PLAN



PLAN



PLAN

DETAIL A
C6 X 8.2 RUBRAIL

DETAIL B
BENT PLATE RUBRAIL

SHEET 5 OF 7
862D03

GUARDRAIL ANCHOR UNIT TYPE B-77

SHEET 5 OF 7
862D03

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNIT
GUARDRAIL ANCHOR UNIT TYPE B-77
FOR F-SHAPE BARRIER

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

\$\$\$\$\$USERNAME\$\$\$\$\$
\$\$\$\$\$DATE\$\$\$\$\$
\$\$\$\$\$TIME\$\$\$\$\$

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

ENGLISH DETAIL DRAWING FOR
PAVEMENT REPAIRS
FOR SUPERPAVE MIX TYPES

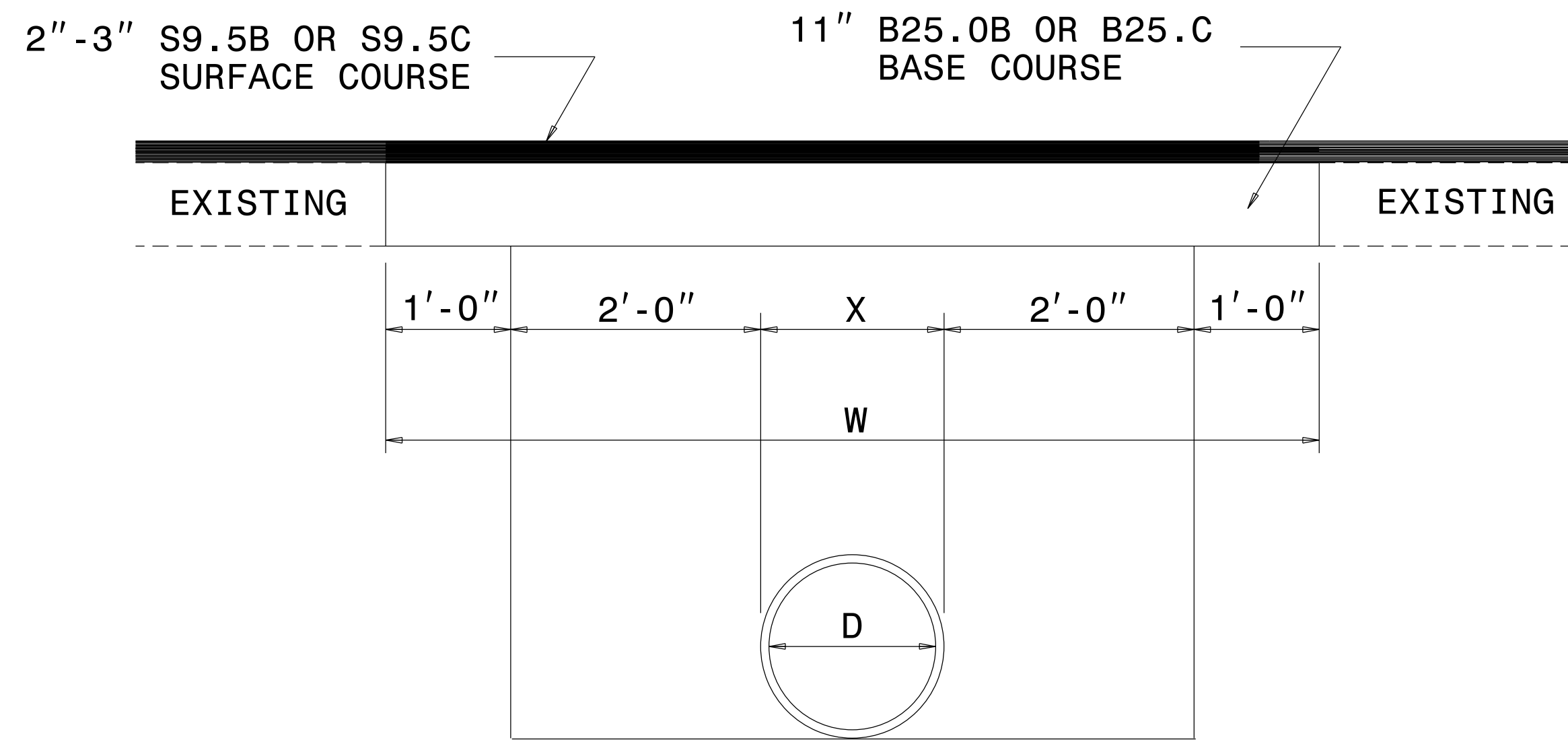
SHEET 1 OF 1
654D01

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

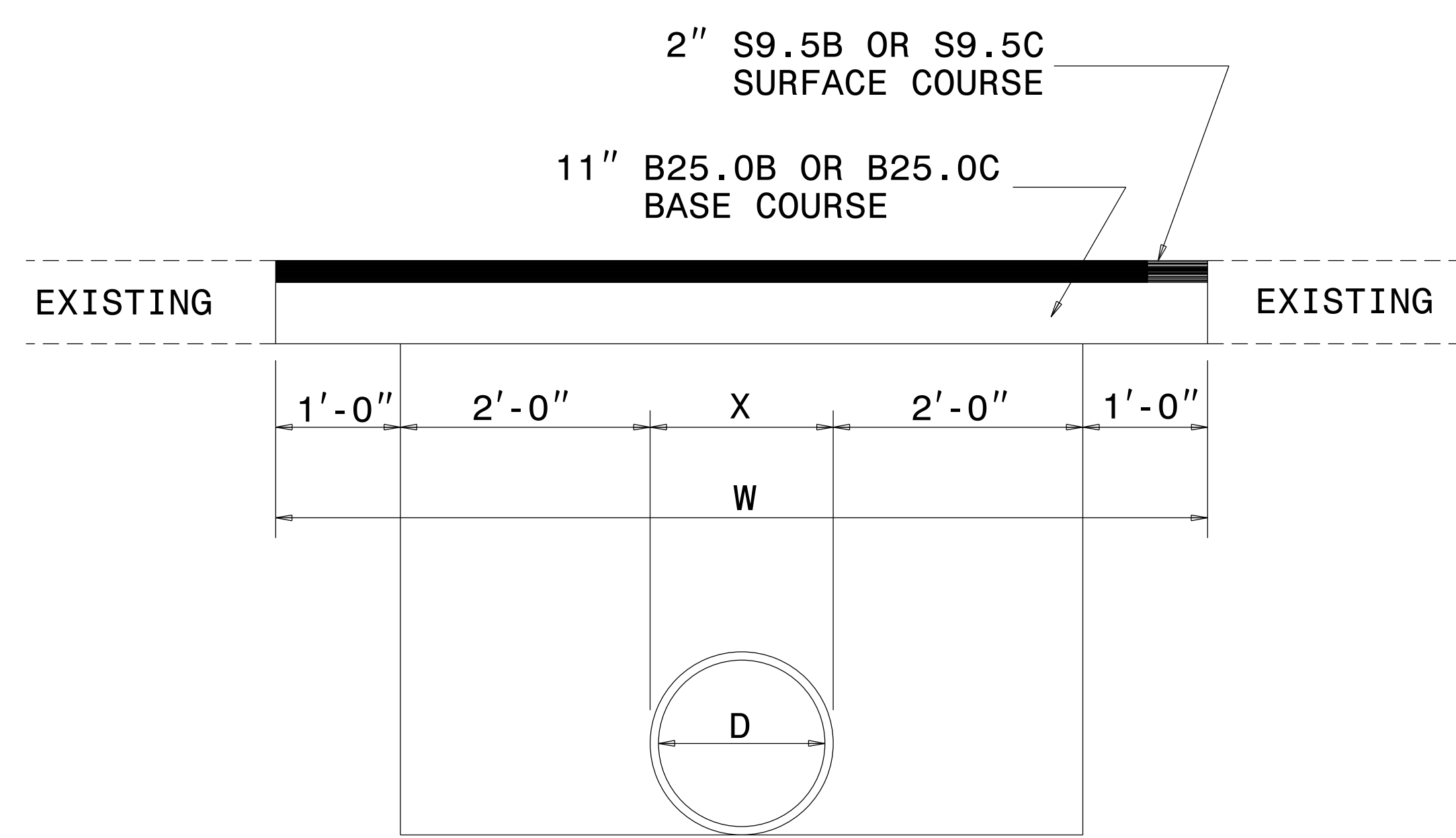
ENGLISH DETAIL DRAWING FOR
PAVEMENT REPAIRS
FOR SUPERPAVE MIX TYPES

SHEET 1 OF 1
654D01

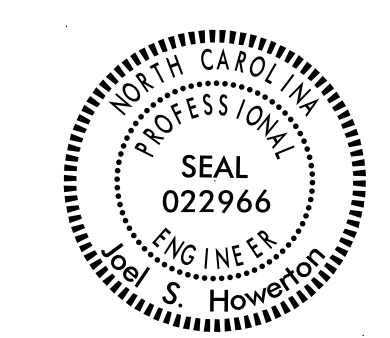
D	X	W
12"	1'-4"	7'-4"
15"	1'-7"	7'-7"
18"	1'-10"	7'-10"
24"	2'-6"	8'-6"
30"	3'-1"	9'-1"
36"	3'-8"	9'-8"
42"	4'-5"	10'-5"
48"	5'-0"	11'-0"
54"	5'-8"	11'-8"
60"	6'-2"	12'-2"



**PAVEMENT REPAIRS ON ROADS TO BE RESURFACED
(PIPE IS PLACED UNDER EXISTING PAVEMENT)**



**PAVEMENT REPAIRS ON ROADS NOT TO BE RESURFACED
(PIPE IS TO BE PLACED UNDER EXISTING PAVEMENT)**



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

SEE TITLE BLOCK

ORIGINAL BY: J.S. HOWERTON DATE: 5/6/15
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC: jhowerton\654D01.dgn

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

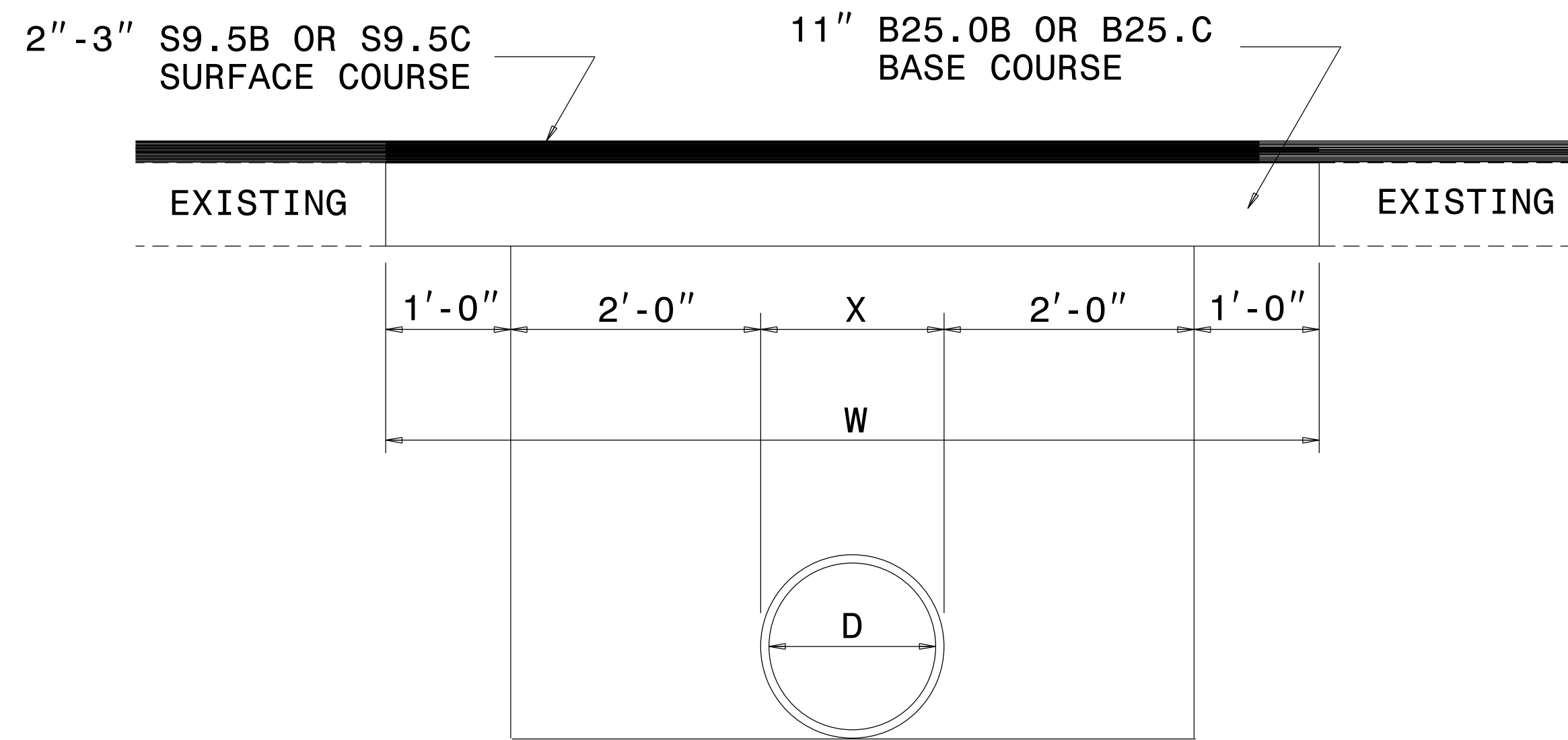
5/14/99
\$\$\$\$\$C:\TIME\$\$\$\$\$
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

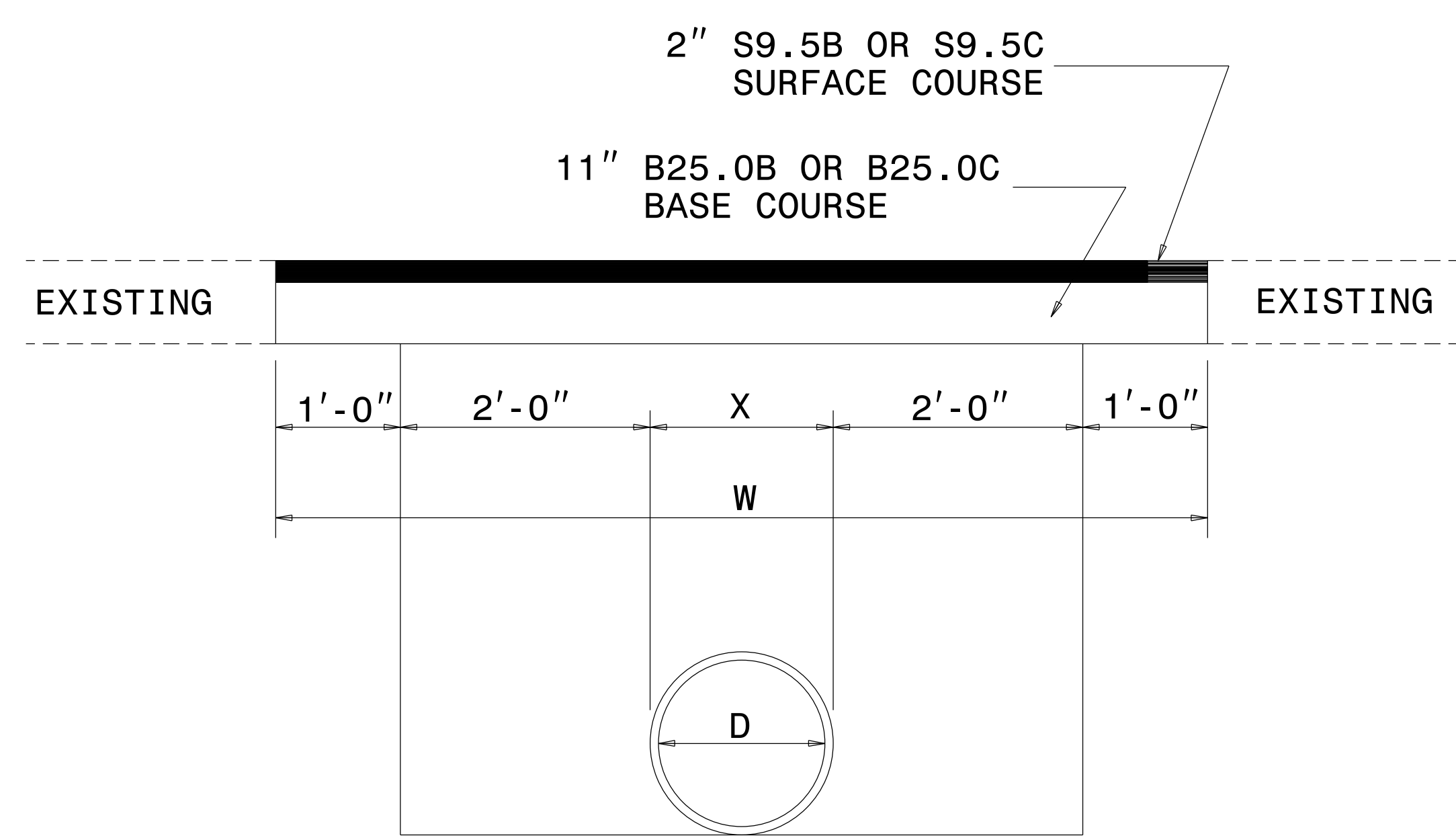
ENGLISH DETAIL DRAWING FOR
PAVEMENT REPAIRS
FOR SUPERPAVE MIX TYPES

SHEET 1 OF 1
654D01

D	X	W
12"	1'-4"	7'-4"
15"	1'-7"	7'-7"
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**PAVEMENT REPAIRS ON ROADS TO BE RESURFACED
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
PAVEMENT REPAIRS
FOR SUPERPAVE MIX TYPES

SHEET 1 OF 1
654D01

5/14/99
\$\$\$\$\$CUTME\$\$\$\$\$
\$\$\$\$\$X=SECTION\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$



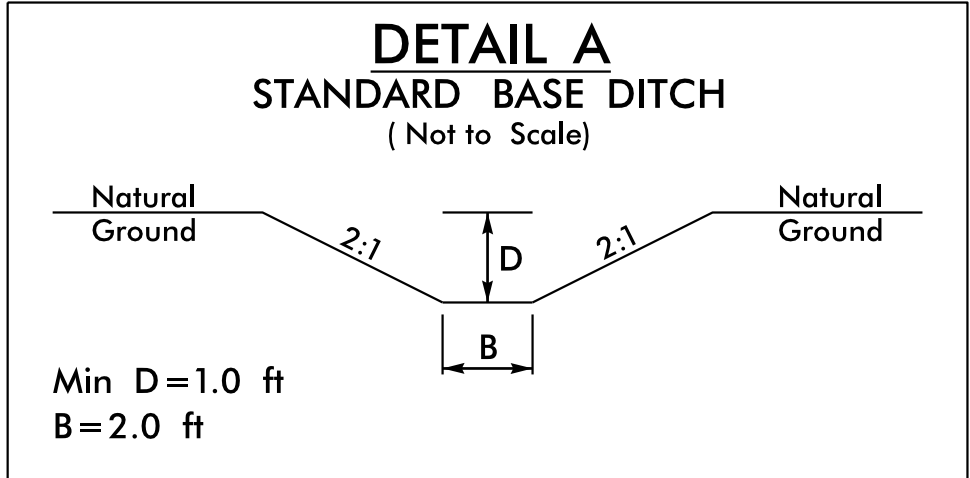
4/7/2017
DocuSigned by:
Joel Howerton
873F3D17DCCD45F

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

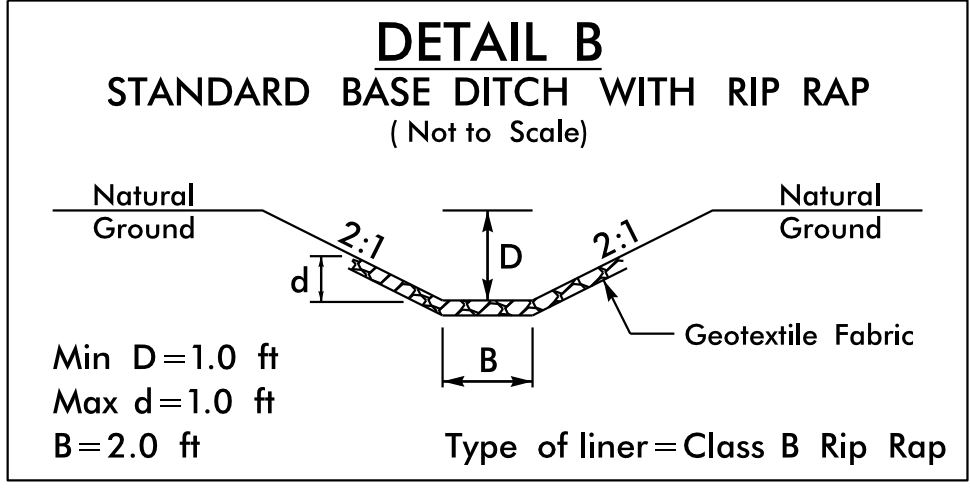
**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

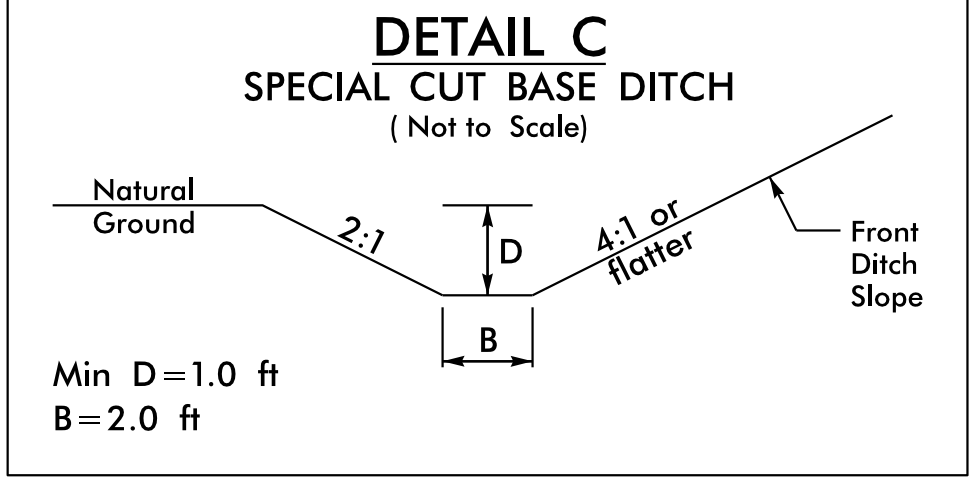
ORIGINAL BY: J.S. HOWERTON DATE: 5/6/15
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC: jhowerton\654D01.dgn



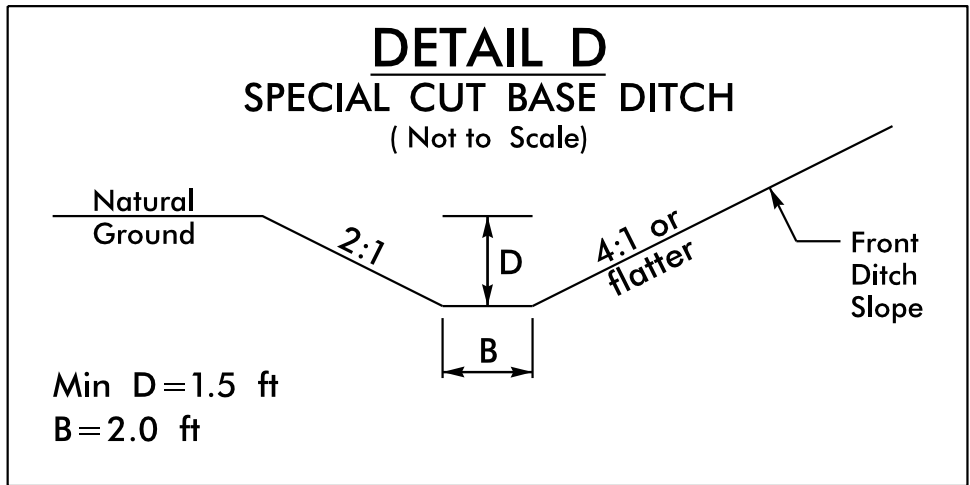
- L- STA 149+44 LT; L=114', S=0.16%, DDE=87CY
- L- STA 162+10 RT; L=30', S=0.50%, DDE=4CY
- L- STA 218+45 RT; L=15', S=0.90%, DDE=5CY
- L- STA 236+20 RT; L=60', S=0.30%, DDE=15CY
- L- STA 243+49 LT; L=425', S=0.30%, DDE=350CY
- L- STA 260+56 LT; L=50', S=0.40%, DDE=15CY
- Y1- STA 13+50 LT; L=19', S=3.47%, DDE=6CY
- Y4- STA 10+69 LT; L=37', S=1.30%, DDE=19CY



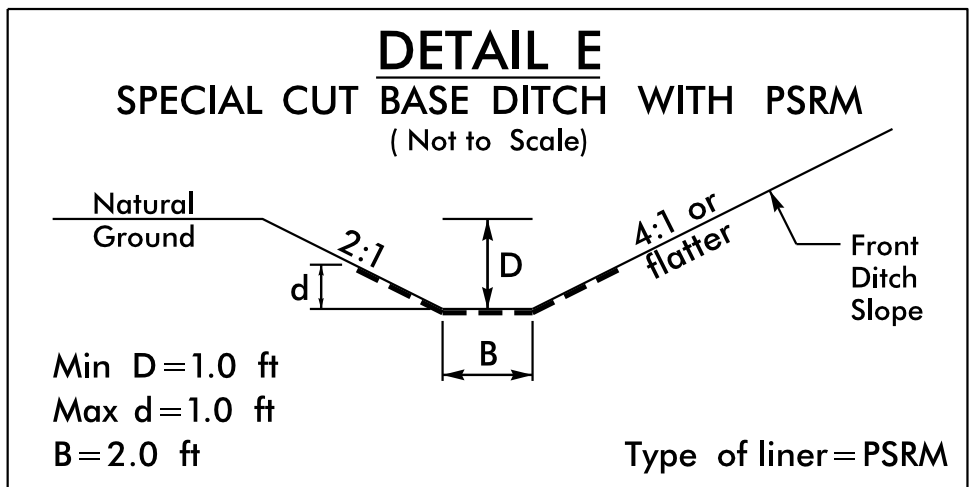
- L- STA 362+75 RT; L=12', S=14.00%, DDE=2CY



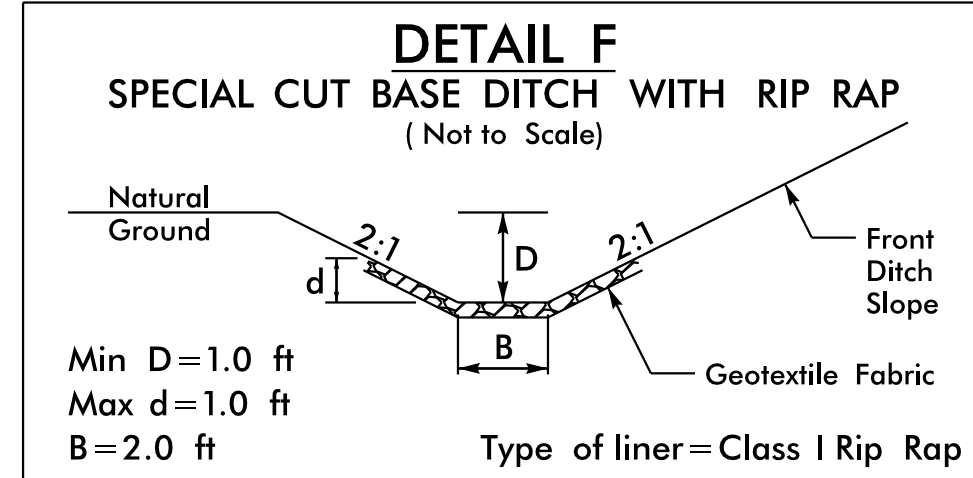
- L- STA 192+50 TO STA 196+50 RT
- L- STA 193+00 TO STA 199+60 LT
- L- STA 218+70 TO STA 222+57 LT
- L- STA 373+50 TO STA 375+50 RT



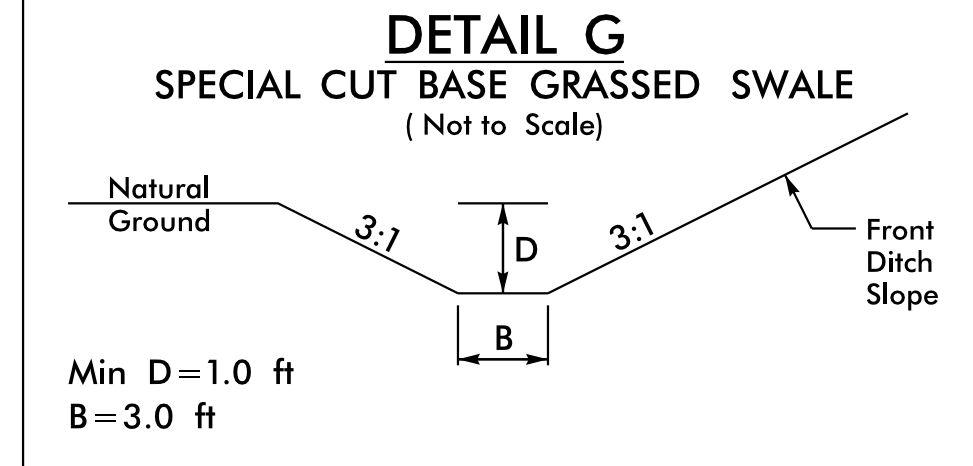
- L- STA 104+31 TO STA 105+28 LT



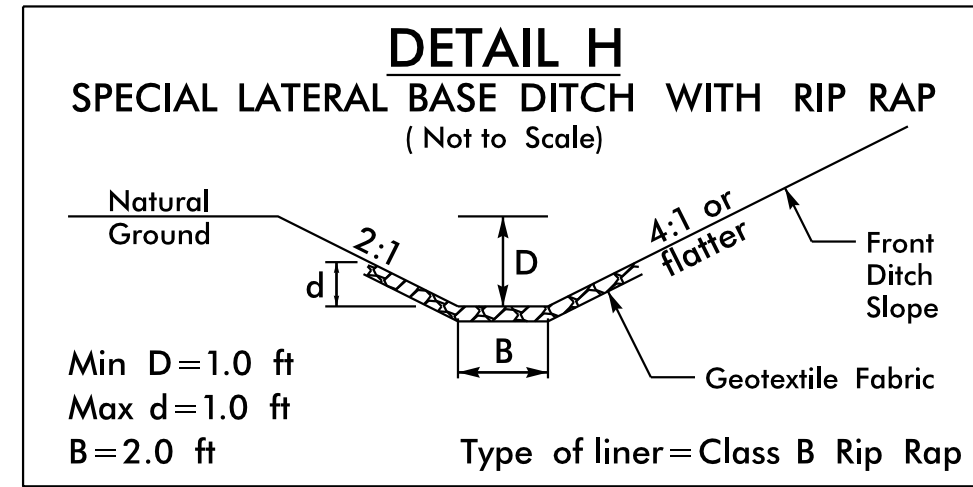
- L- STA 342+70 TO STA 348+60 RT
- Y1- STA 10+24 TO STA 13+49 LT



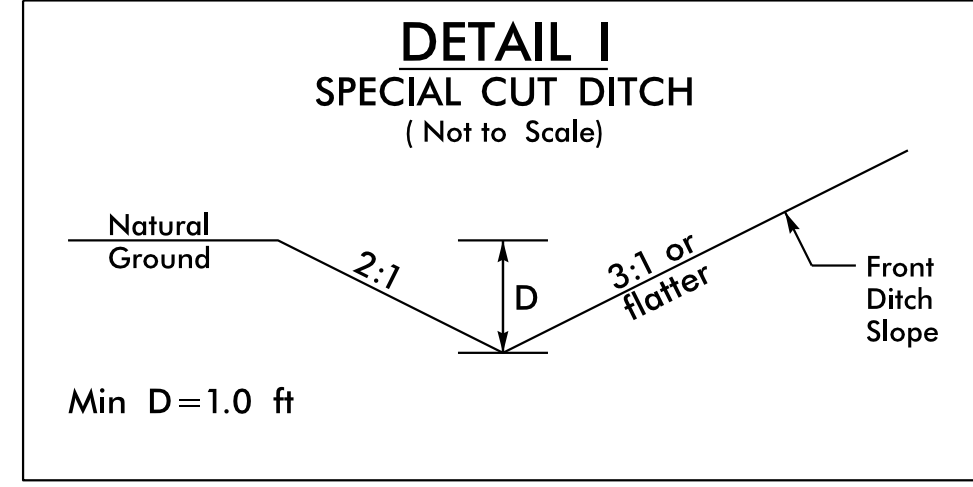
- L- STA 349+10 TO STA 349+34 LT



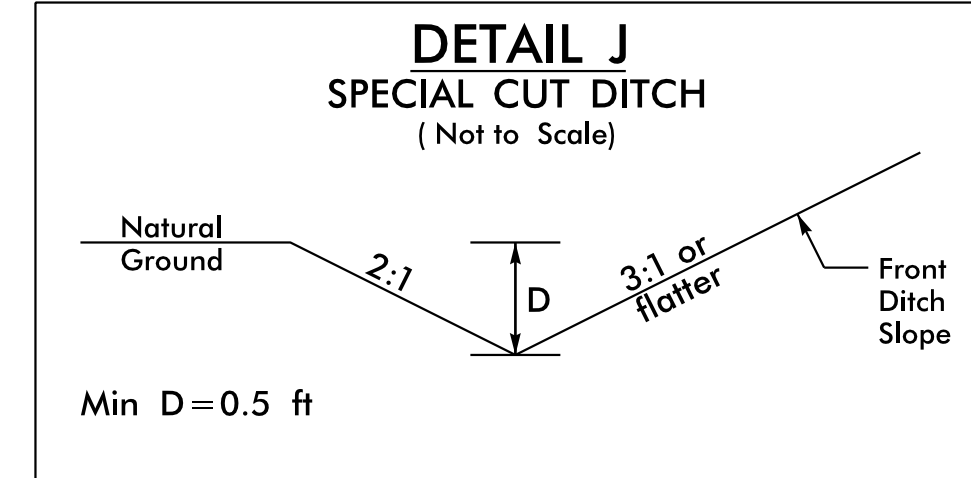
- L- STA 190+50 TO STA 191+15 LT



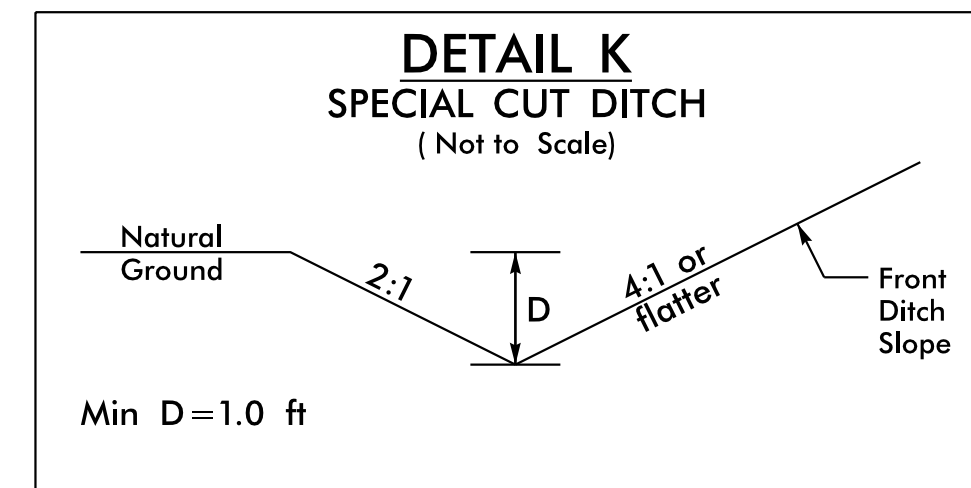
- L- STA 191+60 TO STA 192+50 RT
- L- STA 192+83 TO STA 193+00 LT



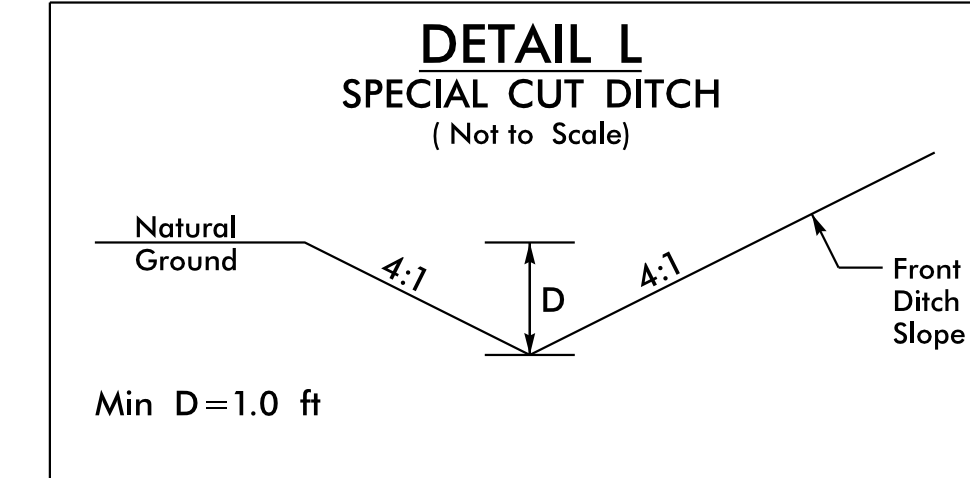
- L- STA. 24+50 TO STA 25+10 LT
- L- STA 28+63 TO STA 31+50 LT
- L- STA 30+00 TO STA 31+39 RT
- L- STA 42+00 TO STA 42+50 RT
- L- STA 52+00 TO STA 53+41 RT
- L- STA 58+50 TO STA 60+50 RT
- L- STA 61+00 TO STA 62+21 RT
- L- STA 63+50 TO STA 65+00 RT
- L- STA 81+00 TO STA 82+46 LT
- L- STA 87+00 TO STA 89+49 RT
- L- STA 88+00 TO STA 89+36 LT
- L- STA 94+74 TO STA 96+00 LT
- L- STA 99+00 TO STA 104+00 RT
- L- STA 105+00 TO STA 105+41 RT
- L- STA 107+50 TO STA 108+82 LT
- L- STA 109+50 TO STA 111+00 LT
- L- STA 123+00 TO STA 124+00 RT
- L- STA 135+23 TO STA 140+50 LT
- L- STA 186+00 TO STA 189+90 RT
- L- STA 189+50 TO STA 190+50 LT
- L- STA 233+70 TO STA 246+00 LT
- L- STA 239+00 TO STA 246+00 RT
- L- STA 284+97 TO STA 288+00 LT
- L- STA 285+25 TO STA 286+50 RT
- L- STA 290+10 TO STA 294+00 LT
- L- STA 328+00 TO STA 330+00 RT
- L- STA 330+80 TO STA 334+00 RT
- L- STA 332+00 TO STA 335+00 LT
- Y2- STA 11+30 TO STA 12+25 RT
- Y6- STA 10+75 TO STA 15+00 RT
- Y6- STA 12+75 TO STA 15+00 LT



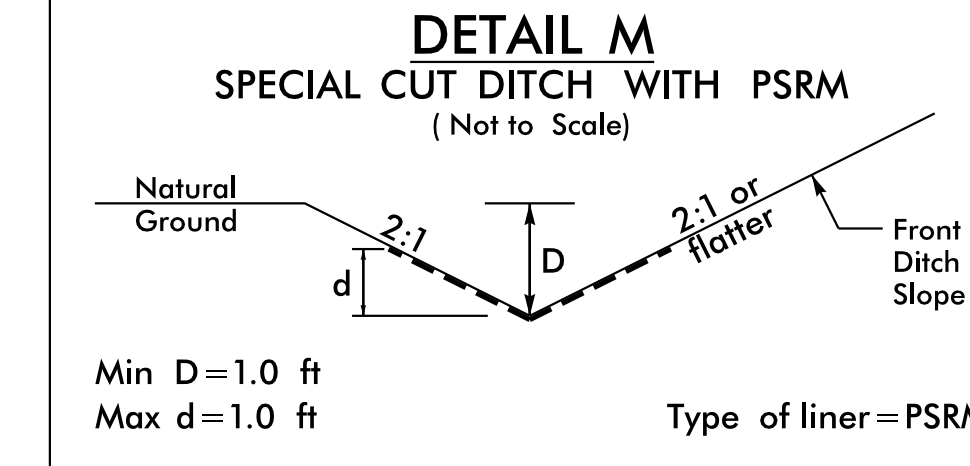
- L- STA 35+00 TO STA 35+75 LT
- L- STA 36+50 TO STA 39+00 RT
- L- STA 39+50 TO STA 41+10 RT
- L- STA 57+31 TO STA 58+00 RT
- L- STA 69+50 TO STA 73+00 LT
- L- STA 93+00 TO STA 93+65 RT
- L- STA 104+00 TO STA 104+31 LT



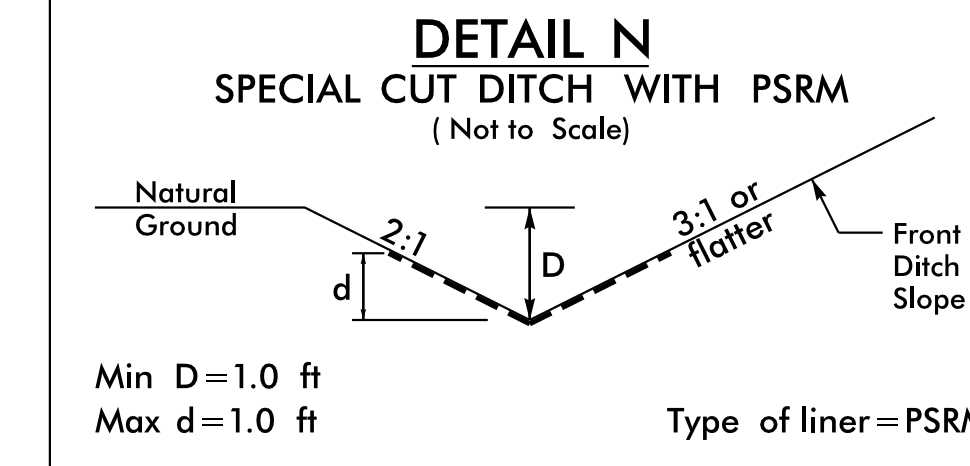
- L- STA 10+00 TO STA 11+00 LT
- L- STA 10+50 TO STA 12+00 RT
- LREV- STA 13+00 TO STA 14+50 RT
- LREV- STA 16+50 TO STA 18+50 LT
- L- STA 24+50 TO STA 25+30 RT
- L- STA 28+08 TO STA 28+60 RT
- L- STA 47+00 TO STA 50+97 LT
- L- STA 129+36 TO STA 131+50 RT
- L- STA 143+25 TO STA 145+00 LT
- L- STA 146+50 TO STA 148+00 RT
- L- STA 148+50 TO STA 149+44 LT
- L- STA 149+00 TO STA 151+00 RT
- L- STA 149+50 TO STA 152+00 LT
- L- STA 152+50 TO STA 154+78 RT
- L- STA 156+00 TO STA 160+00 LT
- L- STA 157+00 TO STA 157+50 RT
- L- STA 159+40 TO STA 166+50 RT
- L- STA 160+28 TO STA 161+89 LT
- L- STA 163+00 TO STA 171+50 LT
- L- STA 196+50 TO STA 199+50 RT
- L- STA 199+60 TO STA 201+00 LT
- L- STA 207+00 TO STA 207+69 LT
- L- STA 208+50 TO STA 208+95 LT
- L- STA 209+00 TO STA 210+00 RT
- L- STA 209+20 TO STA 209+50 LT
- L- STA 210+00 TO STA 218+00 LT
- L- STA 213+50 TO STA 216+00 RT
- L- STA 218+50 TO STA 224+00 RT
- L- STA 222+57 TO STA 224+00 LT
- L- STA 236+23 TO STA 237+50 RT
- L- STA 254+50 TO STA 278+50 RT
- L- STA 257+00 TO STA 270+00 LT
- L- STA 274+00 TO STA 274+25 LT
- L- STA 276+50 TO STA 279+65 LT
- L- STA 283+00 TO STA 283+50 LT
- L- STA 289+50 TO STA 289+96 RT
- L- STA 292+00 TO STA 294+00 RT
- L- STA 318+36 TO STA 327+78 RT
- L- STA 318+36 TO STA 328+45 LT
- L- STA 329+00 TO STA 330+50 LT
- L- STA 336+50 TO STA 341+92 RT
- L- STA 337+00 TO STA 342+05 LT
- L- STA 351+25 TO STA 352+43 RT
- L- STA 353+85 TO STA 356+50 RT
- L- STA 356+50 TO STA 359+50 LT
- L- STA 363+00 TO STA 366+50 RT
- L- STA 365+00 TO STA 366+50 LT
- L- STA 379+50 TO STA 383+50 LT
- L- STA 380+00 TO STA 381+50 RT
- L- STA 417+90 TO STA 418+50 RT
- Y1- STA 13+00 TO STA 14+00 RT
- Y3- STA 10+75 TO STA 11+25 RT
- Y3- STA 11+00 LT TO -L- STA 153+50 LT
- Y4- STA 10+69 TO STA 11+25 RT
- Y4- STA 10+69 LT TO -L- STA 153+25 RT
- Y5- STA 11+80 TO STA 12+60 RT
- Y8- STA 10+94 TO STA 11+75 RT



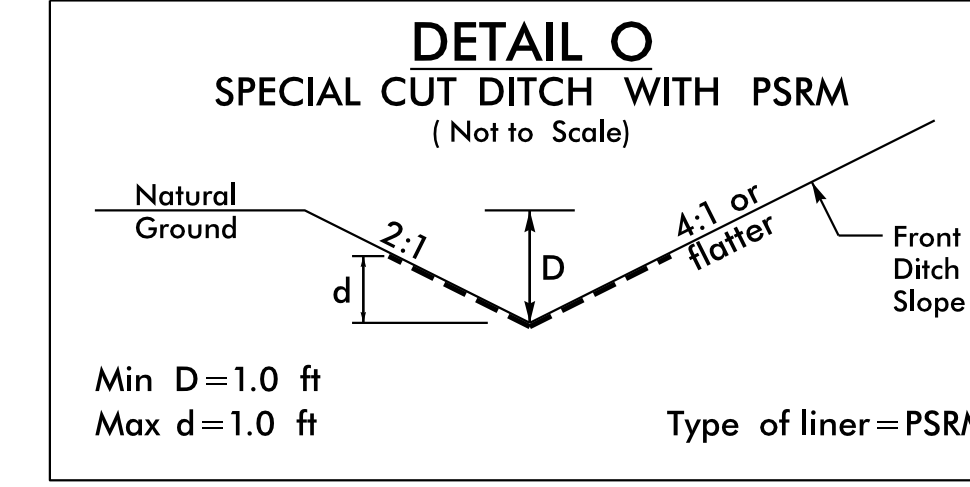
- L- STA 181+70 TO STA 183+40 RT



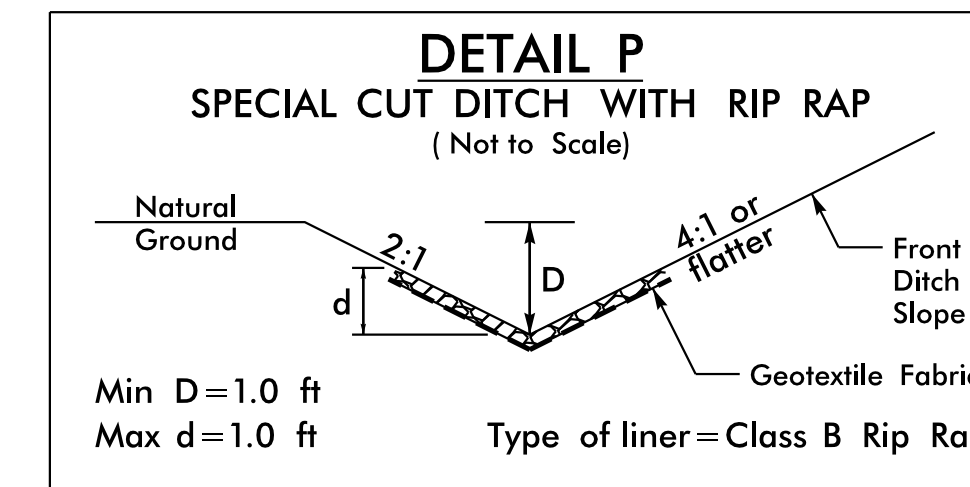
- L- STA 342+40 TO STA 349+10 LT
- L- STA 395+00 TO STA 397+57 RT



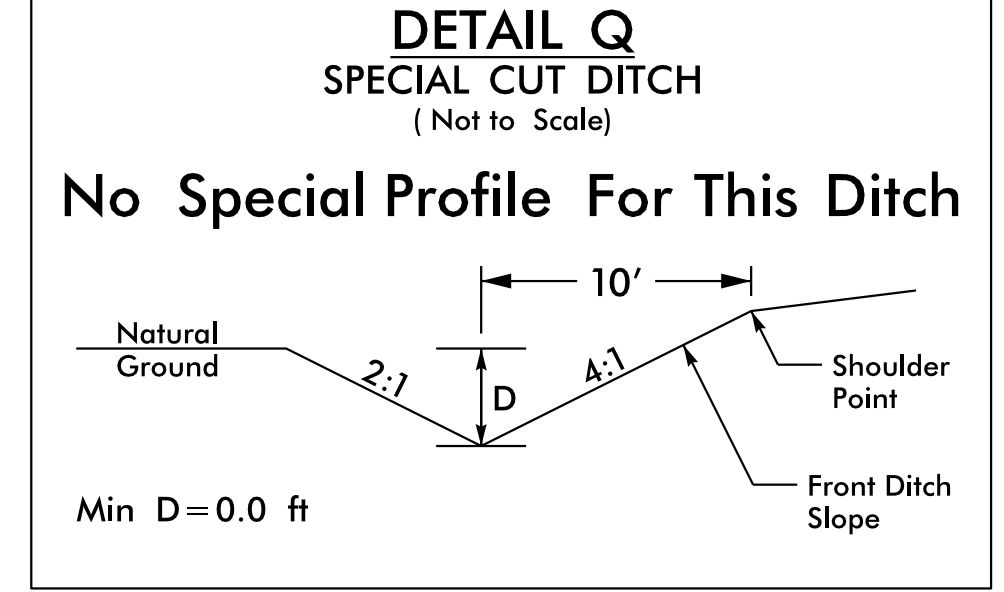
- L- STA 282+00 TO STA 284+25 RT



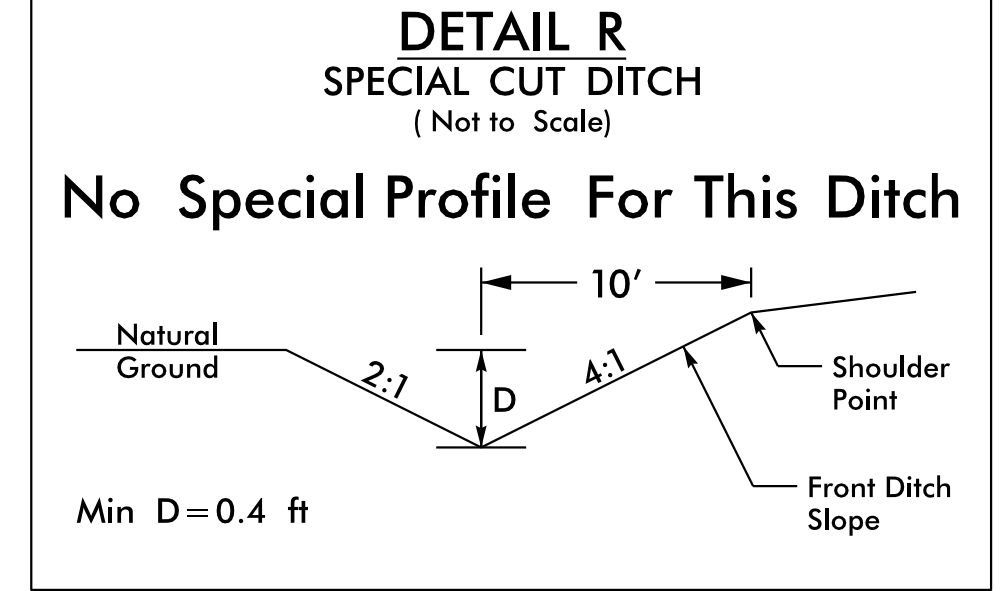
- L- STA 131+50 TO STA 133+00 RT
- L- STA 135+62 TO STA 137+00 RT
- L- STA 289+96 TO STA 292+00 RT
- L- STA 351+90 TO STA 353+00 LT



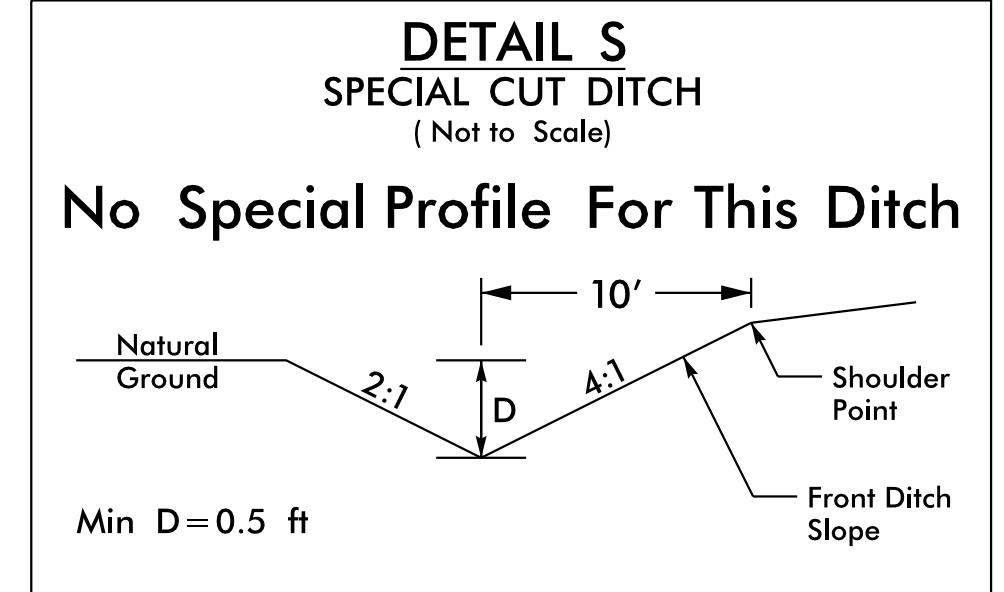
- L- STA 39+00 TO STA 39+50 RT



- L- STA 115+50 TO STA 118+00 LT
- L- STA 121+50 TO STA 123+00 RT
- L- STA 124+00 TO STA 125+50 RT



- L- STA 81+50 TO STA 82+50 RT
- L- STA 92+00 TO STA 93+00 RT
- L- STA 98+00 TO STA 99+00 RT
- L- STA 104+00 TO STA 105+00 RT
- L- STA 107+00 TO STA 107+50 LT



- L- STA 36+00 TO STA 38+00 LT
- L- STA 45+50 TO STA 47+00 RT
- L- STA 77+00 TO STA 79+50 LT

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28-MAR-2017 14:29:33 313-Hyd-PSH-ctrl.dgn

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA
SUMMARY OF EARTHWORK
 IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- STA. 10+25.00 RT TO -L- STA. 12+95.91 RT (ID.)	77				77
-LREV- STA. 12+95.91 RT (ID.) TO -LREV- STA. 24+20.07 RT (EQ.)	77		391	314	
SUBTOTAL:	154		391	314	77
-L- STA. 10+25.00 LT TO -L- STA. 12+95.91 LT (ID.)	35		19		16
-LREV- STA. 12+95.91 LT (ID.) TO -LREV- STA. 24+20.07 LT (EQ.)	1,448		71		1,377
SUBTOTAL:	1,483		90		1,393
-Y1- STA. 10+15.91 RT TO -Y1- STA. 12+25.00 RT	5		196	191	
-Y1- STA. 12+25.00 RT TO -Y1- STA. 14+20.00 RT	80		46		34
-Y1- STA. 10+15.91 LT TO -Y1- STA. 12+25.00 LT	80		136	56	
-Y1- STA. 12+25.00 LT TO -Y1- STA. 14+20.00 LT	91		47		44
SUBTOTAL:	256		425	246	78
-L- STA. 24+24.43 RT (EQ.) TO -L- STA. 27+30.00 RT	77		17		60
-L- STA. 27+30.00 RT TO -L- STA. 32+70.00 RT	203		25	25	203
-L- STA. 32+70.00 RT TO -L- STA. 37+80.00 RT	234		8		226
SUBTOTAL:	514		50	25	489
-L- STA. 24+24.43 LT (EQ.) TO -L- STA. 27+30.00 LT	47		22		25
-L- STA. 27+30.00 LT TO -L- STA. 32+70.00 LT	116		139	139	116
-L- STA. 32+70.00 LT TO -L- STA. 37+80.00 LT	122		19		103
SUBTOTAL:	285		180	139	244
-L- STA. 37+80.00 RT TO -L- STA. 47+70.00 RT	209		212	212	209
-L- STA. 47+70.00 RT TO -L- STA. 77+70.00 RT	540		680	140	
-L- STA. 77+70.00 RT TO -L- STA. 107+70.00 RT	226		2,237	2,011	
-L- STA. 107+70.00 RT TO -L- STA. 119+12.77 RT (EX. BR.)	288		296	8	
SUBTOTAL:	1,263		3,426	2,372	209
-L- STA. 120+33.77 RT (EX. BR.) TO -L- STA. 150+00.00 RT	1,203		440		763
-L- STA. 150+00.00 RT TO -L- STA. 179+20.00 RT	1,023		948		75
SUBTOTAL:	2,226		1,388		838
-L- STA. 37+80.00 LT TO -L- STA. 47+70.00 LT	200		172	172	200
-L- STA. 47+70.00 LT TO -L- STA. 77+70.00 LT	1,831		400		1,431
-Y2- STA. 10+75.00 RT TO -Y2- STA. 12+47.33 RT	31		30		1
-Y2- STA. 10+75.00 LT TO -Y2- STA. 12+47.33 LT	1		32	31	
-L- STA. 77+70.00 LT TO -L- STA. 107+70.00 LT	1,117		216		901
-L- STA. 107+70.00 LT TO -L- STA. 119+12.77 LT (EX. BR.)	159		229	70	
SUBTOTAL:	3,339		1,079	273	2,533
-L- STA. 120+33.77 LT (EX. BR.) TO -L- STA. 150+00.00 LT	1,014		575		439
-L- STA. 150+00.00 LT TO -L- STA. 179+20.00 LT	732		949	217	
SUBTOTAL:	1,746		1,524	217	439
-Y3- STA. 10+50.00 RT TO -Y3- STA. 11+17.33 RT	16		18	2	
-Y3- STA. 11+17.33 RT TO -Y3- STA. 12+09.07 RT	31		11		20
-Y3- STA. 10+50.00 LT TO -Y3- STA. 11+17.33 LT	36		19		17
-Y3- STA. 11+17.33 LT TO -Y3- STA. 12+09.07 LT	51				51
SUBTOTAL:	134		48	2	88
-Y4- STA. 10+15.01 RT TO -Y4- STA. 11+80.00 RT	76		44		32
-Y4- STA. 11+80.00 RT TO -Y4- STA. 12+70.00 RT	20	76	130	110	76
-Y4- STA. 12+70.00 RT TO -Y4- STA. 13+10.28 RT	21		6		21
-Y4- STA. 13+10.28 RT TO -Y4- STA. 13+75.00 RT	22		160	135	16
-Y4- STA. 10+15.01 LT TO -Y4- STA. 11+80.00 LT	25		169		86
-Y4- STA. 11+80.00 LT TO -Y4- STA. 12+70.00 LT	6	86	5		5
-Y4- STA. 12+70.00 LT TO -Y4- STA. 13+10.28 LT	10		12		11
-Y4- STA. 13+10.28 LT TO -Y4- STA. 13+75.00 LT	23				
SUBTOTAL:	203	162	526	408	247
-L- STA. 179+20.00 RT TO -L- STA. 191+75.00 RT	167	160	1,148	981	160
-L- STA. 191+75.00 RT TO -L- STA. 222+00.00 RT	832	178	944	112	178
SUBTOTAL:	999	338	2,092	1,093	338

Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the Lump Sum price for "Grading"

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

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA
SUMMARY OF EARTHWORK
 IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- STA. 179+20.00 LT TO -L- STA. 191+75.00 LT	843	195	1,279	436	195
-L- STA. 191+75.00 LT TO -L- STA. 222+00.00 LT	1,318	166	979		505
SUBTOTAL:	2,161	361	2,258	436	700
-L- STA. 222+00.00 LT TO -L- STA. 225+00.00 LT	99		22		77
-L- STA. 225+00.00 LT TO -L- STA. 236+50.00 LT	265		198		67
SUBTOTAL:	364		220		144
-L- STA. 222+00.00 RT TO -L- STA. 225+00.00 RT	44		179	135	
-L- STA. 225+00.00 RT TO -L- STA. 236+50.00 RT	40		1,927	1,887	
SUBTOTAL:	84		2,106	2,022	
-Y6- STA. 11+90.00 RT TO -Y5- STA. 13+20.42 RT	42		11		31
-Y5- STA. 11+90.00 LT TO -Y5- STA. 13+20.42 LT	71		1		70
SUBTOTAL:	113		12		101
-Y6- STA. 10+13.00 RT TO -Y6- STA. 12+30.00 RT	49		628	579	
-Y6- STA. 12+30.00 RT TO -Y6- STA. 13+20.00 RT	20	53	184	164	53
-Y6- STA. 13+20.00 RT TO -Y6- STA. 13+71.85 RT	11		31	20	
-Y6- STA. 13+71.85 RT TO -Y6- STA. 15+15.00 RT	22		23	1	
-Y6- STA. 10+13.00 LT TO -Y6- STA. 12+30.00 LT	7		883	883	
-Y6- STA. 12+30.00 LT TO -Y6- STA. 13+20.00 LT	11	44	190	183	44
-Y6- STA. 13+20.00 LT TO -Y6- STA. 13+71.85 LT	11		19	8	
-Y6- STA. 13+71.85 LT TO -Y6- STA. 15+15.00 LT	26		10		16
SUBTOTAL:	146	97	1,968	1,838	113
-L- STA. 236+50.00 RT TO -L- STA. 266+00.00 RT	773		570		203
-L- STA. 266+00.00 RT TO -L- STA. 276+10.00 RT	262		223		39
-L- STA. 276+10.00 RT TO -L- STA. 278+10.00 RT	72		104	32	
-L- STA. 278+10.00 RT TO -L- STA. 283+10.00 RT	245		23		222
SUBTOTAL:	1,352		920	32	464
-L- STA. 236+50.00 LT TO -L- STA. 266+00.00 LT	1,414		377		1,037
-L- STA. 266+00.00 LT TO -L- STA. 276+10.00 LT	215		142		73
-L- STA. 276+10.00 LT TO -L- STA. 278+10.00 LT	3		179	176	
-L- STA. 278+10.00 LT TO -L- STA. 283+10.00 LT	139		35		104
SUBTOTAL:	1,771		752	176	1,214
-L- STA. 283+10.00 LT TO -L- STA. 287+90.00 LT	61		301	240	
-L- STA. 287+90.00 LT TO -L- STA. 291+80.00 LT	79		70		9
-L- STA. 291+80.00 LT TO -L- STA. 294+25.00 LT	29		162	133	
-L- STA. 294+25.00 LT TO -L- STA. 295+35.81 LT (W-5146)	19				19
SUBTOTAL:	188		533	373	28
-L- STA. 283+10.00 RT TO -L- STA. 287+90.00 RT	20		366	346	
-L- STA. 287+90.00 RT TO -L- STA. 291+80.00 RT	140		55		85
-L- STA. 291+80.00 RT TO -L- STA. 294+25.00 RT	54		80	26	
-L- STA. 294+25.00 RT TO -L- STA. 295+35.81 RT (W-5146)	35		1		34
SUBTOTAL:	249		502	372	119
-L- STA. 318+35.84 LT (W-5146) TO -L- STA. 324+25.00 RT	115		113	113	115
-L- STA. 324+25.00 RT TO -L- STA. 339+60.00 RT	422		419	119	3
-L- STA. 339+60.00 RT TO -L- STA. 349+71.00 RT	405		864	459	
SUBTOTAL:	942		1,396	572	118
-L- STA. 318+35.84 RT (W-5146) TO -L- STA. 324+25.00 LT	227		113	113	227
-L- STA. 324+25.00 LT TO -L- STA. 339+60.00 LT	337		456	119	
-L- STA. 339+60.00 LT TO -L- STA. 349+71.00 LT	487		803	316	
SUBTOTAL:	1,051		1,372	548	227
-L- STA. 349+71.00 RT TO -L- STA. 374+75.00 RT	1,184		338		846
-L- STA. 374+75.00 RT TO -L- STA. 376+60.00 RT	104		43	43	104
-L- STA. 376+60.00 RT TO -L- STA. 398+18.00 RT	1,061		434		627
SUBTOTAL:	2,349		815	43	1,577

Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the Lump Sum price for "Grading"

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

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA
SUMMARY OF EARTHWORK
 IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- STA. 349+71.00 LT TO -L- STA. 374+75.00 LT	818		385		433
-L- STA. 374+75.00 LT TO -L- STA. 376+60.00 LT	22		58	58	22
-L- STA. 376+60.00 LT TO -L- STA. 398+18.00 LT	600		516		84
SUBTOTAL:	1,440		959	58	539
-L- STA. 398+18.00 LT TO -L- STA. 412+35.00 LT	993		265		728
-L- STA. 412+35.00 LT TO -L- STA. 420+00.00 LT	62		50		12
SUBTOTAL:	1,055		315		740
-Y8- STA. 11+25.00 RT TO -Y8- STA. 12+71.07 RT	54		5		49
-Y8- STA. 11+25.00 LT TO -Y8- STA. 12+71.07 LT			6	6	
SUBTOTAL:	54		11	6	49
-L- STA. 398+18.00 RT TO -L- STA. 412+35.00 RT	1,971		262		1,709
-L- STA. 412+35.00 RT TO -L- STA. 420+00.00 RT	223		43		180
SUBTOTAL:	2,194		305		1,889
-Y7- STA. 10+13.06 RT TO -Y7- STA. 11+40.00 RT	33		6		27
-Y7- STA. 10+13.06 LT TO -Y7- STA. 11+40.00 LT	28		8		20
SUBTOTAL:	61		14		47
TOTALS:	28,176	958	25,657	11,565	15,042
MATERIAL FOR SHOULDER CONSTRUCTION			8,616	8,616	
ADDITIONAL UNDERCUT		3,000	3,600	3,600	3,000
SELECT MATERIAL TO REPLACE BORROW			-1,100	-1,100	
WASTE IN LIEU OF BORROW			-12,388	-12,388	-12,388
PROJECT TOTALS:	28,176	3,958	36,773	10,293	5,654
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				515	
GRAND TOTALS:	28,176	3,958		10,808	
SAY:	28,500	4,100		11,000	
DDE					
850 CY					
Select Granular Material, Class III					
50 CY					
Select Granular Material					
4,100 CY					
Class IV Subgrade Stabilization					
8,465 TONS					
Shallow Undercut					
4,435 CY					
Stabilizer Aggregate					
500 TONS					

Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the Lump Sum price for "Grading"

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