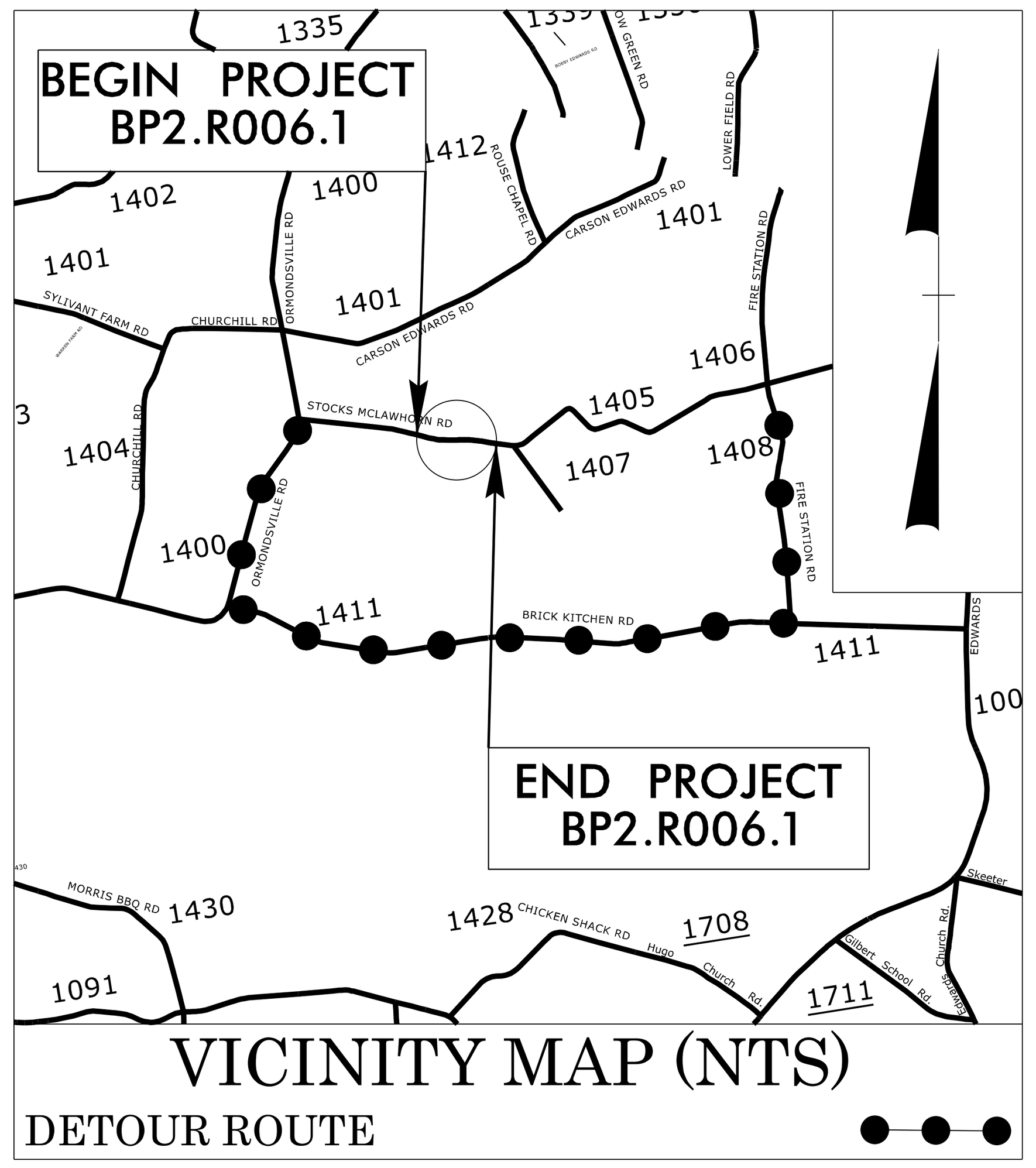
09/08/99

PROJECT: BP2.R006.1

CONTRACT: DB00532

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

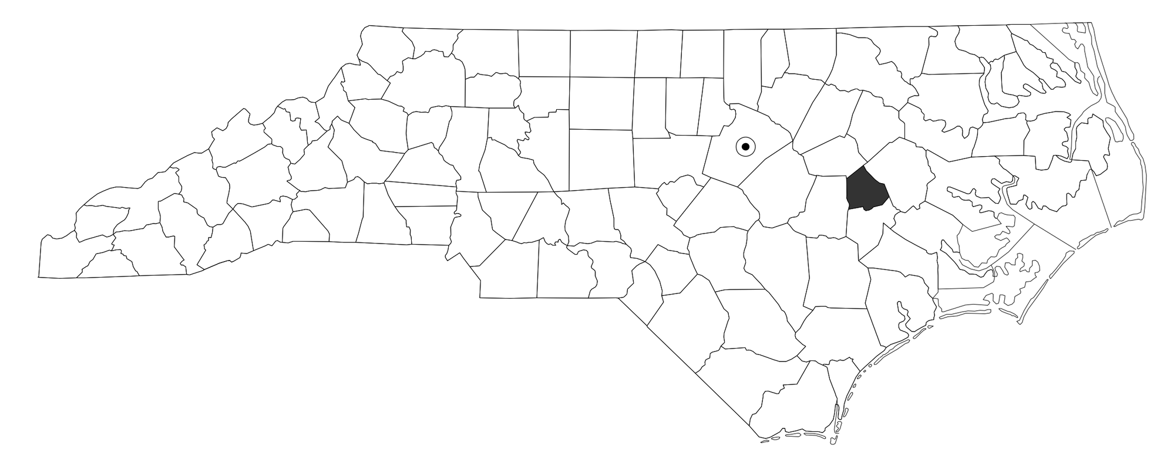


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GREENE COUNTY

LOCATION: *REPLACE BRIDGE NO. 390057 OVER POLECAT CREEK ON SR 1405 (STOCKS MCLAWHORN ROAD)*

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



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP2.R006.1	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
BP2.R006.1	N/A	PE
BP2.R006.2	N/A	R/W, UTIL
BP2.R006.3	N/A	CONST

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2022 = 220
ADT 2042 = 400
K = N/A
D = N/A
T = 6 % *
V = 60 MPH
* TTST = N/A DUAL= N/A
FUNC CLASS = LOCAL
SUB-REGIONAL TIER

PROJECT LENGTH

PROJECT LENGTH FOR PROJECT BP2.R006.1:

LENGTH ROADWAY	=	0.119 MILES
LENGTH CULVERT	=	0.004 MILES
TOTAL LENGTH	=	0.123 MILES

NCDOT CONTACT: MICHAEL AMAN, PE

PREPARED IN THE OFFICE OF: CDM Smith

CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
DECEMBER 3, 2021

LETTING DATE:
JULY 27, 2022

ADAM M. CONRAD, PE
PROJECT ENGINEER

TRUNG T. NGUYEN, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

DocuSigned by: Heather Hartenrider
2D70FCB1728844D...
SIGNATURE: P.E.

NORTH CAROLINA SEAL 035021 ENGINEER HEATHER M. HARTENRIDER 6/15/2022

ROADWAY DESIGN ENGINEER

DocuSigned by: Adam M. Conrad
0DDC0FFA0FD94AD...
SIGNATURE: P.E.

NORTH CAROLINA SEAL 043767 ENGINEER ADAM M. CONRAD 6/15/2022

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

5/26/22

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
3B-1	ROADWAY SUMMARIES
3D-1	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
4	PLAN AND PROFILE SHEET
4A	ROW PLAN SHEET
RW-01 THRU RW-	SURVEY CONTROL, EXISTING CENTERLINES, RIGHT OF WAY, EASEMENT, AND PROPERTY TIES
TMP-1 THRU TMP-2	TRAFFIC MANAGEMENT PLANS
EC-1 THRU EC-6	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1 THRU X-6	CROSS-SECTIONS
S-1 THRU S-3	STRUCTURE PLANS

EFF. 01-16-2018
REV.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels

GENERAL NOTES:

2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 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.

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

GUARDRAIL:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE LUMEN/CENTURYLINK AND

GREENE COUNTY REGIONAL WATER SYSTEM.

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 OTHERS.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 043767 ENGINEER ADAM M. CONRAD
6/28/2022
DocuSigned by:
Adam M. Conrad
0DDC0FFA0FD94AD...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

CDM Smith
CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

REVISIONS

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin (EIP)
- Computed Property Corner
- Existing Concrete Monument (ECM)
- Parcel/Sequence Number
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary
- Proposed Wetland Boundary
- Existing Endangered Animal Boundary
- Existing Endangered Plant Boundary
- Existing Historic Property Boundary
- 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
- Well
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream
- Buffer Zone 1
- Buffer Zone 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch
- False Sump

RAILROADS:

- Standard Gauge
- RR Signal Milepost
- Switch
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut
- Proposed Slope Stakes Fill
- Proposed Curb Ramp
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert
- Bridge Wing Wall, Head Wall and End Wall

MINOR:

- Head and End Wall
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB
- Paved Ditch Gutter
- Storm Sewer Manhole
- Storm Sewer

UTILITIES:

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

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H–Frame Pole
- U/G Power Line Test Hole (SUE – LOS A)*
- U/G Power Line (SUE – LOS B)*
- U/G Power Line (SUE – LOS C)*
- U/G Power Line (SUE – LOS D)*

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole
- Telephone Pedestal
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole
- U/G Telephone Test Hole (SUE – LOS A)*
- U/G Telephone Cable (SUE – LOS B)*
- U/G Telephone Cable (SUE – LOS C)*
- U/G Telephone Cable (SUE – LOS D)*
- U/G Telephone Conduit (SUE – LOS B)*
- U/G Telephone Conduit (SUE – LOS C)*
- U/G Telephone Conduit (SUE – LOS D)*
- U/G Fiber Optics Cable (SUE – LOS B)*
- U/G Fiber Optics Cable (SUE – LOS C)*
- U/G Fiber Optics Cable (SUE – LOS D)*

WATER:

- Water Manhole
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line Test Hole (SUE – LOS A)*
- U/G Water Line (SUE – LOS B)*
- U/G Water Line (SUE – LOS C)*
- U/G Water Line (SUE – LOS D)*
- Above Ground Water Line

TV:

- TV Pedestal
- TV Tower
- U/G TV Cable Hand Hole
- U/G TV Test Hole (SUE – LOS A)*
- U/G TV Cable (SUE – LOS B)*
- U/G TV Cable (SUE – LOS C)*
- U/G TV Cable (SUE – LOS D)*
- U/G Fiber Optic Cable (SUE – LOS B)*
- U/G Fiber Optic Cable (SUE – LOS C)*
- U/G Fiber Optic Cable (SUE – LOS D)*

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

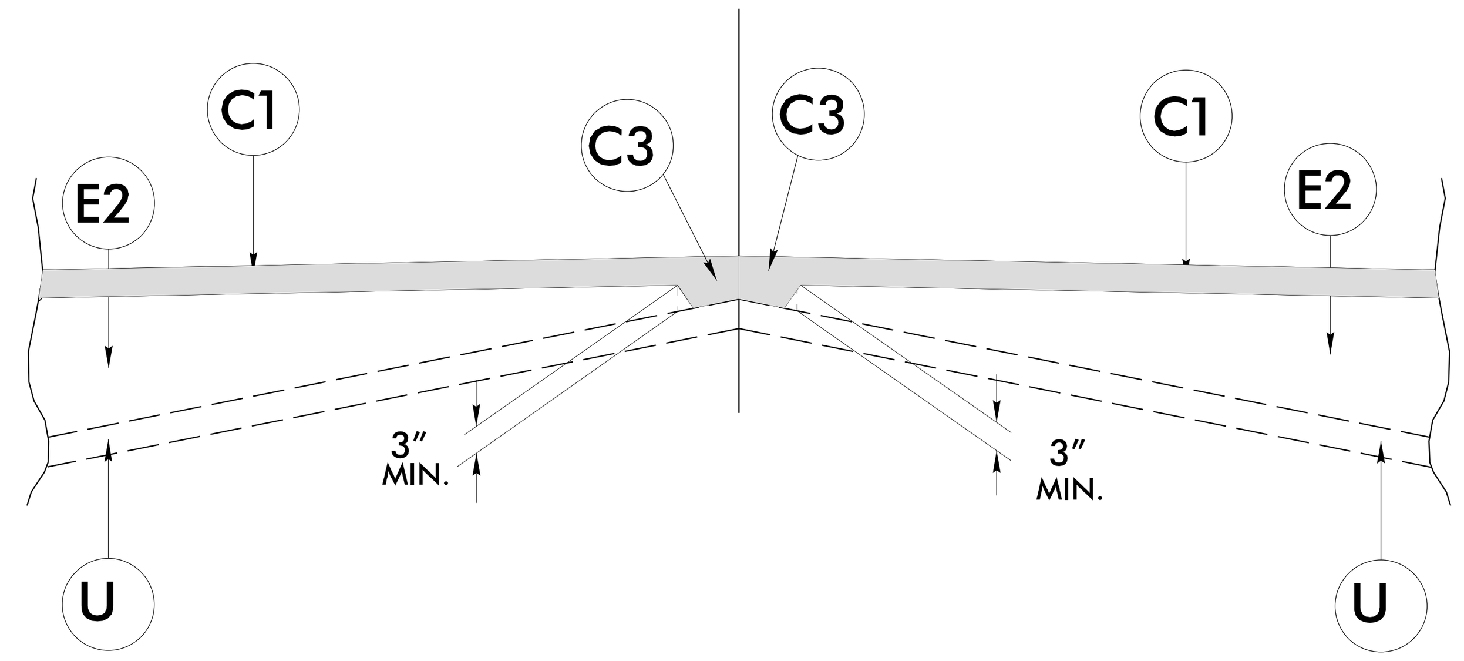
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box
- Utility Unknown U/G Line (SUE – LOS B)*
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc.
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- Abandoned According to Utility Records —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

PAVEMENT SCHEDULE

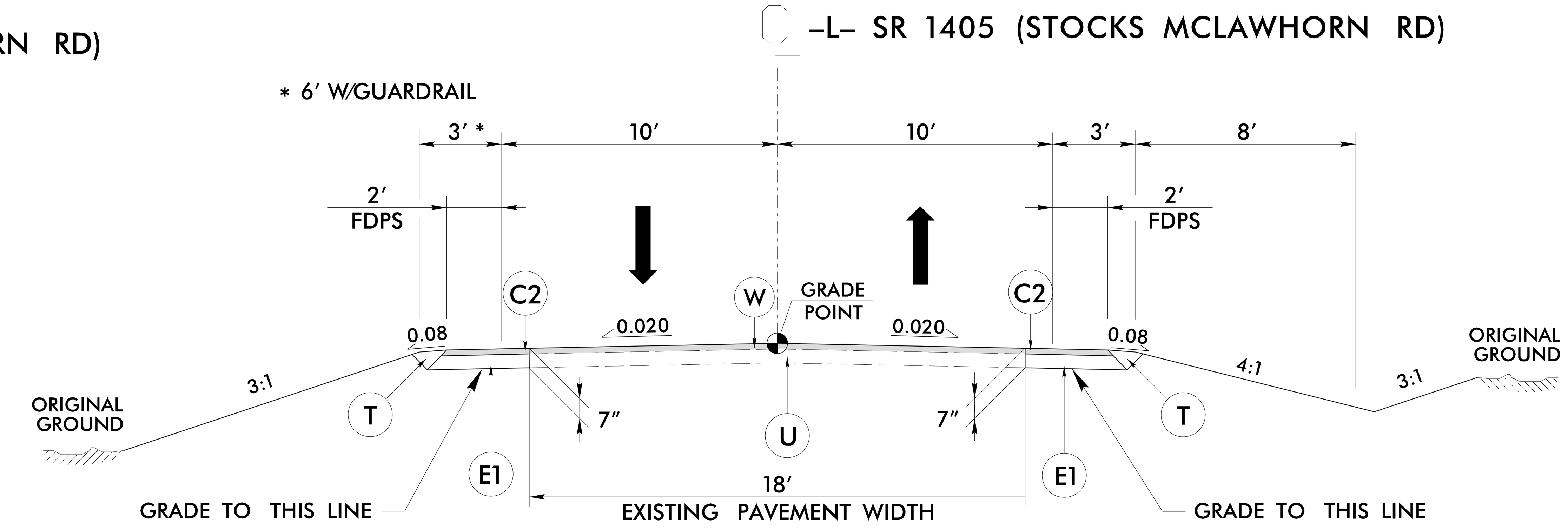
(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF THE TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
J	VARIABLE AGGREGATE BASE COURSE
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	INCIDENTAL MILLING.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE -L- WEDGING DETAIL)

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



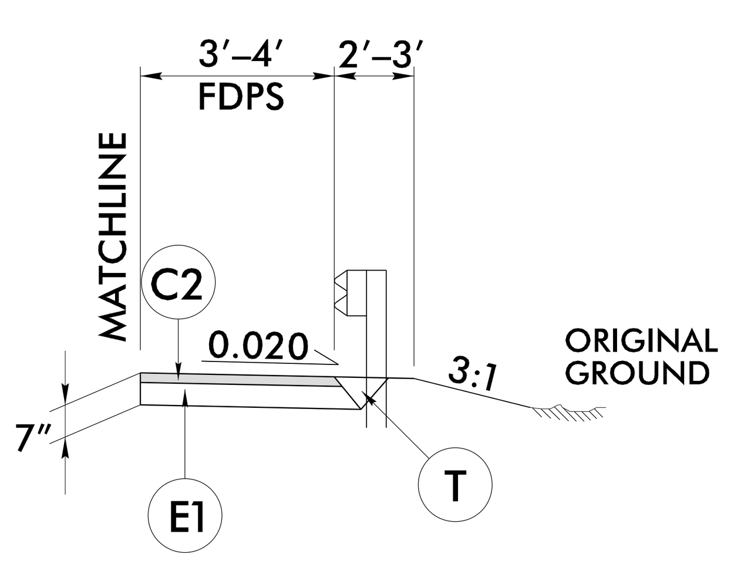
Detail Showing Method of Wedging – W



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

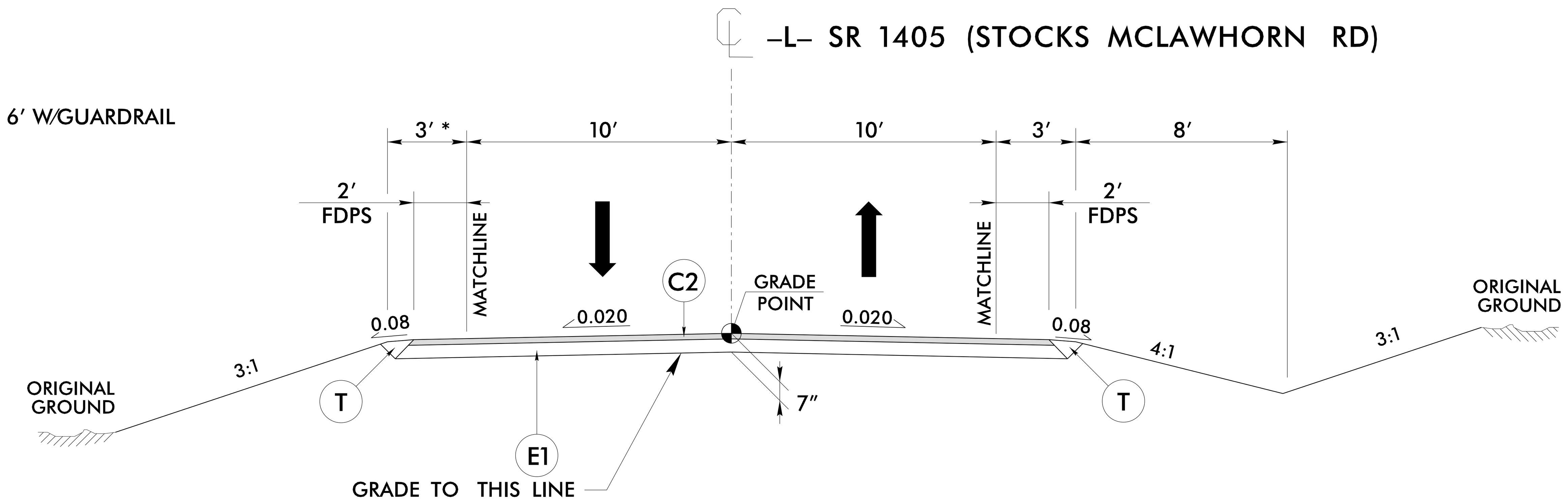
-L- STA. 9+50.00 TO STA. 11+23.51
-L- STA. 14+64.50 TO STA. 16+00.00



DETAIL A

USE DETAIL A IN CONJUNCTION WITH TYPICAL SECTION NO. 2

-L- STA. 11+87.50 TO STA. 14+12.50 (RT)
-L- STA. 11+87.50 TO STA. 14+12.50 (LT)

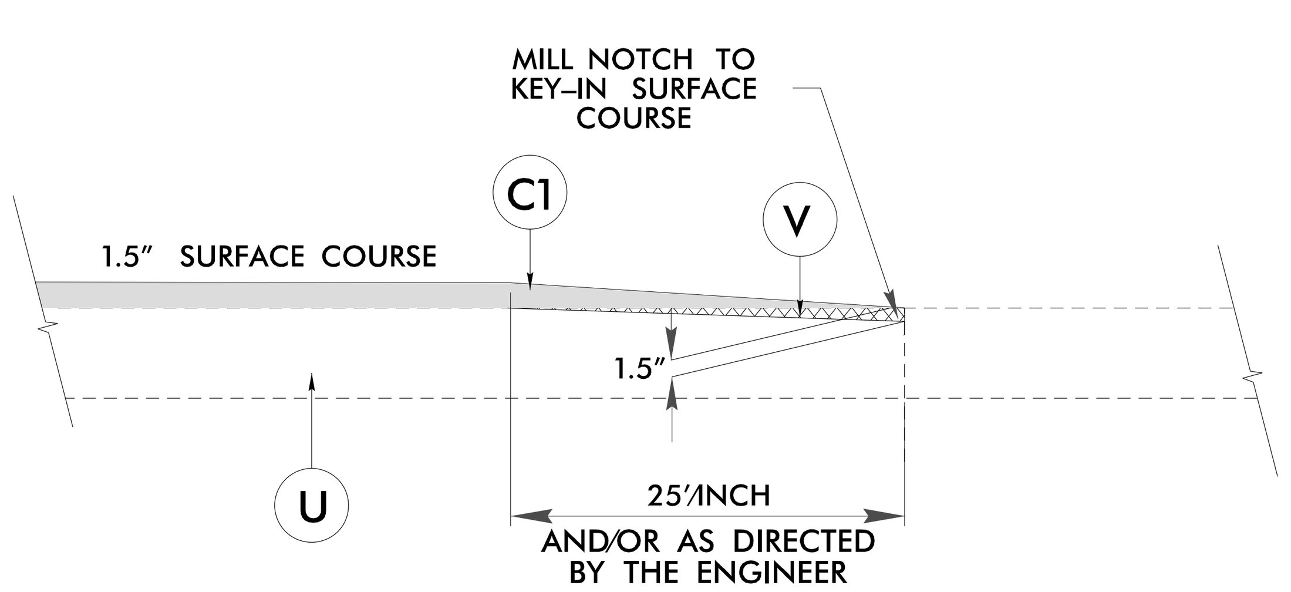


TYPICAL SECTION NO. 2

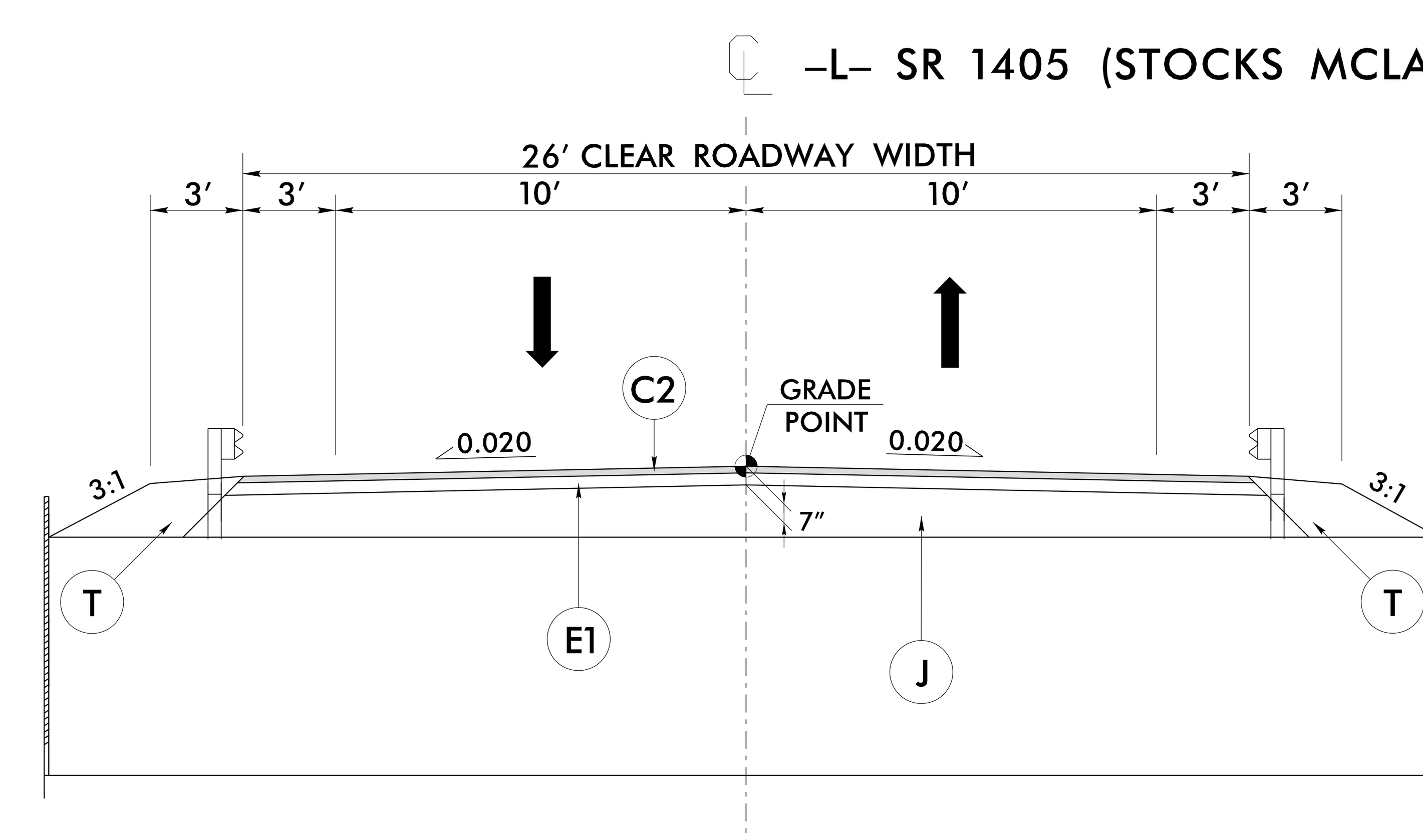
USE TYPICAL SECTION NO. 2

-L- STA. 11+23.51 TO STA. 14+64.50

MILLING DETAIL
INCIDENTAL MILLING AT BEGIN/END FOR TIE-INS



-L- STA. 9+50.00 TO STA. 9+87.50
-L- STA. 15+62.50 TO STA. 16+00.00



CULVERT TYPICAL SECTION

BP2.R006.1

4RDI | 2A-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043767

3/25/2022

DocuSigned by: Aden M. Conrad

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

CDM Smith

CDM Smith Inc.
4600 Park Road
Suite 240
Charlotte, NC 28209
NC COA No. F-1255

5/26/20

BP2.R006.1
4RD1 | 3B-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY (LF)

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GREU TL-3									EA	G	NG				
–L–	11+87.50±	14+12.50±	LT	225.0			12+82±	13+03±	3.00	6.00	50.00	50.00	1.00	1.00	2														
–L–	11+87.50±	14+12.50±	RT	225.0			12+96±	13+18±	3.00	6.00	50.00	50.00	1.00	1.00	2														
			SUBTOTALS	450.00											4														
			GREU TL-3, 4@50.00'	-200.00																									
			PROJECT TOTALS	250.00											4														
			SAY	250.00											4														
ADDITIONAL GUARDRAIL POSTS = 10 EA																													

SUMMARY OF EARTHWORK (CY)

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
–L– 9+50.00 – 12+88.57	368		8,100	7,732	
–L– 13+11.43 – 16+00.00	83		2,660	2,577	
SUBTOTAL	451		10,760	10,309	
PROJECT TOTAL	451		10,760	10,309	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				515	
GRAND TOTAL	451		10,760	10,824	
SAY	500			11,000	

UNDERCUT (CONTINGENCY) = 300 CY
SELECT GRANULAR MATERIAL (CONTINGENCY) = 300 CY

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.

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

SUMMARY OF PAVEMENT REMOVAL (SY)

LINE	STATION – STATION	LOCATION	REMOVAL (SY)
–L–	STA. 11+23.51 TO STA. 12+76.06	CL	317
–L–	STA. 13+28.45 TO STA. 14+64.50	CL	279
GRAND TOTAL			596
SAY			600

DL-3CPL8C3

COMPUTED BY: Prabhash R. Joshi **DATE:** 11/04/2021
CHECKED BY: Shirshant Sharma **DATE:** 11/09/2021

PROJECT NO.	SHEET NO.
BP2.R006.1	3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

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

LINE & STATION	OFFSET	STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Side Drain Pipe (RCP, CSP, CAAP, HDPE, or PVC)															DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	R. C. PIPE CLASS III															R. C. PIPE CLASS IV															STRUCTURAL PLATE PIPE					ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	REINFORCED ENDWALLS	DRAINAGE STRUCTURE	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03				CONCRETE TRANSITIONAL SECTION		OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	CONCRETE BRIDGE APPROACH D.I. STD. 840.13	TEMP STEEL PLATE COVER MASONRY DRAINAGE		FLOWABLE FILL	CONCRETE COLLARS CL. "B" STD. 840.72	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	
SIZE								12	15	18	24	30	36	42	48	54	60	66	72	78	84							12	15	18	24	30	36	42	48	54	60	66	72	78	84		12	15	18	24	30	36	42	48	54	60	66	72	78	84		60	66	72								A	B																
THICKNESS OR GAUGE		FROM	TO																																																										MASONRY	0' THRU 5'	5' THRU 10'	10' AND ABOVE		GRATE TYPE				D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05									
				FT.	FT.	FT.	%																																																			CY	CY	CY	EACH	LIN. FT.	LIN. FT.		E	F	G								CY	CY	CY	LIN. FT.	REMARKS
15+36 - L	20 RT								44																																																																											Driveway Pipe
SHEET TOTALS									44																																																																											
PROJECT TOTALS									44																																																																											

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

COMPUTED BY: Tyler C. Bottoms DATE: 2/16/2022
CHECKED BY: Thein Tun Zan DATE: 2/21/2022

(12-17-19)

PROJECT NO.	SHEET NO.
SF-390057	3G-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	200
				TOTAL LF:	200

*UD = Underdrain
*BD = Blind Drain
*SD = Subsurface Drain


DETAIL B
RIP RAP AT EMBANKMENT
(Not to Scale)
Type of Liner=68 TONS,CL 'I' Rip-Rap
Geotextile=116 sy
FROM STA. 12+94 TO STA. 13+04 LT -L-
FROM STA. 12+73 TO STA. 12+82 RT -L-
FROM STA. 13+18 TO STA. 13+28 LT -L-
FROM STA. 12+98 TO STA. 13+10 RT -L-
-L- START 5+00.00
-L- PC 5+93.27
-L- PT 9+06.28
-L- PC 12+36.35
-L- PT 14+22.13
-L- PC 15+46.28
-L- PT 17+88.88
CUR DATA -L-
PIc 7+50.43
Δc = 12°47'07.0" (LT)
D = 04°05'04.7"
Lc = 313.01
Tc = 157.16
R = 1,402.71
SE = EXIST.
DS= EXIST.
CUR DATA -L-
PIc 13+29.24
Δc = 01°21'09.3" (LT)
D = 00°43'40.9"
Lc = 185.79
Tc = 92.90
R = 7,870
SE = NC
DS= 50 MPH
L.A. MOYE FAMILY, LLC
DB 547 PG 702
MB 16 PG 65
NAD 83
NSRS 2007
S67°29'38.7"E
S80°16'45.7"E
S81°37'55.0"E
S72°35'58.0"E
BEGIN PROJECT
-L- POT STA 9+50.00
END PROJECT
-L- POC STA 16+00.00
CUR DATA -L-
PIc 16+67.83
Δc = 09°01'57.0" (RT)
D = 03°43'23.3"
Lc = 242.60
Tc = 121.55
R = 1,538.91
SE = EXIST.
DS= EXIST.
DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Min. D= 0.5 Ft.
FROM STA. 9+50 TO STA. 13+00 LT -L-
FROM STA. 13+22 TO STA. 14+47 LT -L-
FROM STA. 10+50 TO STA. 12+75 RT -L-
FROM STA. 13+10 TO STA. 16+00 RT -L-
PROP. EXCAVATION EST. 16 CY
CLASS I RIPRAP EST. 14 TONS 24 SY GEOTEXTILE
SPECIAL LATERAL 'V' DITCH
CLASS I RIPRAP EST. 18 TONS 31 SY GEOTEXTILE
CLASS I RIPRAP EST. 18 TONS 30 SY GEOTEXTILE
PROP. EXCAVATION EST. 10 CY
PROP. EXCAVATION EST. 21 CY
15" RCP-IV INV IN = 45.5' INV OUT = 45.0'
BM-1 -L- STA 15+44.73 77.52' (RT), EL= 53.06'
18' BST SR 1405 (STOCKS MCLAWHORNE RD)
PLANS
50 25 0 50 100


-L- SR 1405 (STOCKS MCLAWHORN ROAD)
L = 180
K = 172
DS = 55
L = 190
K = 80
DS = 55
L = 200
K = 90
DS = 55
BM1
-L- STA. 15+44.73
77.52' RT, EL. 53.06'
25 YR WSEL.=44.4' (DESIGN)
100 YR WSEL.=45.6'
PROPOSED GRADE
BEGIN GRADE
-L- STA 9+50.00
END GRADE
-L- STA 16+00.00
EXISTING GRADE
(+)0.3147%
(+)1.3636%
(-)0.8500%
(+)1.5203%
HPNC
W.S.E. ON (01/28/21) = 40.5'
BEGIN V DITCH LT PI=9+50.00 El.=41.49
BEGIN V DITCH RT PI=10+50.00 El.=42.23
END V DITCH RT PI=12+75.00 El.=40.91
END V DITCH LT PI=13+00.00 El.=40.41
BEGIN V DITCH RT PI=13+10.00 El.=40.67
BEGIN V DITCH LT PI=13+22.00 El.=42.12
END V DITCH LT PI=14+47.00 El.=43.27
END V DITCH RT PI=16+00.00 El.=46.09

BP2.R006.1

4RDI 004

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 043767 6/28/2022

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 035021 6/28/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

CDM Smith

CDM Smith Inc. 5400 Glenwood Avenue Suite 400 Raleigh, NC 27612-3228 NC COA No. F-1255


NAD 83
NSRS 2007
-L- START 5+00.00
-L- PC 5+93.27
-L- PT 9+06.28
10
-L- PC 12+36.35
-L- PT 14+22.13
15
-L- PC 15+46.28
-L- PT 17+88.88
20
CUR DATA -L-
PI= 7+50.43
Δc = 12°47'07.0" (LT)
D = 04°05'04.7"
Lc = 313.01
Tc = 157.16
R = 1,402.71
SE = EXIST.
DS= EXIST.
CUR DATA -L-
PI= 13+29.24
Δc = 01°21'09.3" (LT)
D = 00°43'40.9"
Lc = 185.79
Tc = 92.90
R = 7,870
SE = NC
DS= 50 MPH
CUR DATA -L-
PI= 16+67.83
Δc = 09°01'57.0" (RT)
D = 03°43'23.3"
Lc = 242.60
Tc = 121.55
R = 1,538.91
SE = EXIST.
DS= EXIST.
L.A. MOYE FAMILY, LLC
DB 547 PG 702
MB 16 PG 65
L.A. MOYE FAMILY, LLC
DB 609 PG 861
MB 16 PG 66
-L-
S67°29'38.7"E
S80°16'45.7"E
S81°37'55.0"E
S72°35'58.0"E
BEGIN PROJECT
-L- POT STA 9+50.00
END PROJECT
-L- POC STA 16+00.00
PDE
TDE
+50.00 EXIST R/W
+80.00 60.00 LT
+50.00 45.00 LT EX. R/W
+50.00 60.00 LT
+70.00 45.00 LT EX. R/W
+75.00 45.00 LT EXIST R/W
+50.00 EXIST R/W
+30.00 45.00 RT EX. R/W
+50.00 90.00 RT 75.00 RT
+50.00 45.00 RT EX. R/W
+75.00 45.00 RT EXIST R/W
+20.00 90.00 RT 75.00 RT
EXISTING R/W
50 25 0 50 100
PLANS

PARCEL ROW INDEX TABLE

PARCEL NO.	SHEET NO.	PROPERTY OWNER NAME	ROW AREA (SF)	ROW AREA (ACRE)	PDE AREA (SF)	PDE AREA (ACRE)	TDE AREA (SF)	TDE AREA (ACRE)
1	4	L.A. MOYE FAMILY, LLC	965.60	0.02	5096.81	0.12		
1	4	L.A. MOYE FAMILY, LLC	839.53	0.02	2153.00	0.05		
1	4	L.A. MOYE FAMILY, LLC	850.75	0.02	2531.67	0.06	327.00	0.01
1	4	L.A. MOYE FAMILY, LLC	946.31	0.02	3573.85	0.08	736.08	0.02

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 043767 ENGINEER ADAM M. CONRAD
3/25/2022
DocuSigned by: Adam M. Conrad
0DDC0FFA0FD94AD...

HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

02/18/22

TIP PROJECT: BP2.R006.1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

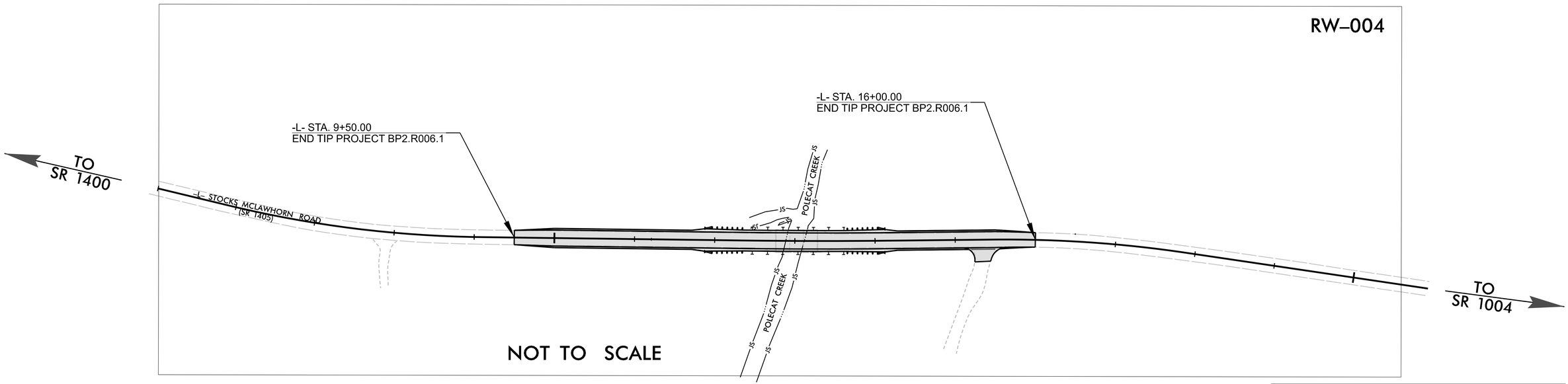
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP2.R006.1	RW01	

SURVEY CONTROL, EXISTING CENTERLINES, RIGHT OF WAY, EASEMENTS AND PROPERTY TIES

GREENE COUNTY

NC GRID
NAD 83/2001

RW–004



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "GPS1"
WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 621253.347(ft) EASTING: 2434170.548(ft)
ELEVATION: 54.45(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.99988147
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"GPS1" TO -L- STATION 5+00 IS
S 68°18'37.8" E 804.14(ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

ESP
License No. F-1407
2200 Gateway Centre Blvd Morrisville, NC 27560

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	*LETTING DATE:*
DECEMBER 3, 2021	*MAY 25, 2022*

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3866 LAND SURVEYOR TONYA L. GIBBS

Tonya Gibbs
2E2F55AA0EC84DA...
3/29/2022

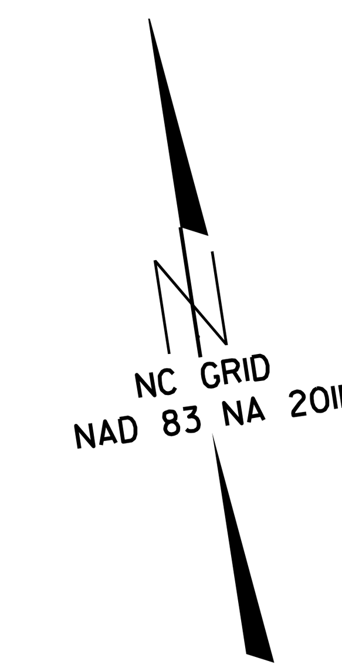
NORTH CAROLINA LICENSE NO. F-1407 ESP ASSOCIATES, INC.

SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION



I, Jimmy E. Liverman Jr., PLS, certify that the Project Control was performed under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

Class of survey: ***AA***
Type of GPS field procedure: RTN (VRS)
Dates of survey: October 2020
Datum/Epoch: NAD83 (2011)
Published/Fixed-control use: N/A
Localized around: GPS1
Northing: 621253.347
Easting: 2434170.548
Combined grid factor: 0.99988147
Geoid model: Geoid12B
Units: US Survey Feet

I also certify that the Baseline Control for this project was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed in October 2020, and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

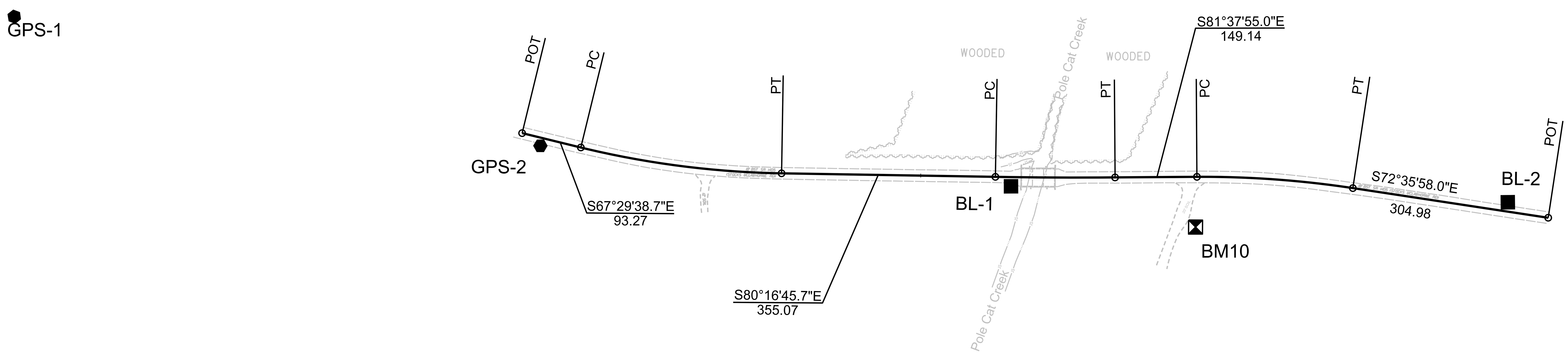
This 6th day of April, 2022.

DocuSigned by:
Jimmy Liverman

Professional Land Surveyor L-4457

NORTH CAROLINA PROFESSIONAL SEAL L-4457 LAND SURVEYOR JIMMY E. LIVERMAN JR.

Jimmy E. Liverman Jr.
NCDOT Division 1
Locating Engineer



SEE SHEET RW2C-2
FOR FURTHER
ALIGNMENT DETAILS

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
3. PLAN SHEET PREPARED BY ESP ASSOCIATES, INC.
4. NOT TO SCALE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPETED

BP2-R006.1

R/W	02C-1

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

TIP PROJECT: BP2.R006.1

COUNTY : GREENE

02/21/2022

SURVEY CONTROL SHEET
W/ EXISTING CENTERLINE ALIGNMENT PRIOR TO CONSTRUCTION

BL

POINT	DESC.	NORTH	EAST	ELEVATION
1	BL-1	620760.0170	2435650.8010	45.71
2	BL-2	620618.7110	2436404.9040	47.79
GPS1	GPS-1	621253.3312	2434170.5226	54.45
GPS2	GPS-2	620932.5120	2434942.6220	46.53

BM10 ELEVATION = 53.12
N 620654 E 2435923
STA 15+44.73 OFFSET 77.52
BENCHTIE IN 24" OAK

EL

EXISTING CENTERLINE ALIGNMENT (US SURVEY FEET)									
POINT	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R
POT	620956.155	2434917.758							
LINE			S67°29'38.7"E	93.27					
PC	620920.451	2435003.929							
CURVE					12°47'07.0" Left	04°05'04.7"	313.01	157.16	1402.71
PT	620833.760	2435304.016							
LINE			S80°16'45.7"E	355.07					
PC	620773.808	2435653.992							
CURVE					01°21'09.7" Left	00°59'46.4"	135.78	67.89	5751.29
PT	620752.464	2435788.083							
LINE			S81°37'55.0"E	149.14					
PC	620730.759	2435935.638							
CURVE					09°01'56.7" Right	03°43'23.4"	242.60	121.55	1538.91
PT	620676.720	2436171.887							
LINE			S72°35'58.0"E	304.98					
POT	620585.515	2436462.911							

I, Jimmy E. Liverman Jr., PLS, certify that the Project Control was performed under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

Class of survey: ***AA***
Type of GPS field procedure: RTN (VRS)
Dates of survey: October 2020
Datum/Epoch: NAD83 (2011)
Published/Fixed-control use: N/A
Localized around: GPS1
Northing: 621253.347
Easting: 2434170.548
Combined grid factor: 0.99988147
Geoid model: GEOID12B
Units: US Survey Feet

I also certify that the Baseline Control for this project was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed October 2020, and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 6th day of April, 2022.

DocuSigned by:
Jimmy Liverman
C782A59719E7430...

Professional Land Surveyor L-4457

NORTH CAROLINA PROFESSIONAL SEAL L-4457 LAND SURVEYOR JIMMY E. LIVERMAN JR.

Jimmy E. Liverman Jr
NCDOT Division 1
Locating Engineer

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
3. PLAN SHEET PREPARED BY ESP ASSOCIATES, INC.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

BP2.R006.1
R/W | 02C-2
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

TIP PROJECT: BP2.R006.1
COUNTY : GREENE

PROPOSED ALIGNMENT CONTROL SHEET

I, Jimmy E. Liverman Jr., PLS, certify that the data compiled came from available surveys/mapping performed by others and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

This 6th day of April, 2022.

DocuSigned by:
Jimmy Liverman

Professional Land Surveyor L-4457

NORTH CAROLINA PROFESSIONAL SEAL L-4457 LAND SURVEYOR JIMMY E. LIVERMAN JR.

Jimmy E. Liverman JR.
NCDOT Division 1
Locating Engineer

2018 STANDARD SPECIFICATIONS

TIP PROJECT: BP2.R006.1
COUNTY : GREENE

L

TYPE	STATION	NORTH	EAST
POT	5+00.00	620956.1547	2434917.7583
PC	5+93.27	620920.4515	2435003.9283
PT	9+06.28	620833.7603	2435304.0161
PC	12+36.35	620778.0309	2435629.3414
PT	14+22.13	620748.8262	2435812.8136
PC	15+46.28	620730.7590	2435935.6381
PT	17+88.88	620676.7179	2436171.8923
POT	20+93.86	620585.5150	2436462.9113

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
3. PLAN SHEET PREPARED BY ESP ASSOCIATES, INC.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

02/21/2022

RIGHT OF WAY CONTROL SHEET

ROW MARKER IRON PIN AND CAP: L			
STATION	OFFSET	NORTH	EAST
12+30.00	30.00	620749.5330	2435618.0215
12+30.00	45.00	620734.7484	2435615.4888
12+50.00	-45.00	620820.1042	2435650.3227
12+50.00	-29.99	620805.3035	2435647.8137
13+50.00	30.14	620729.8761	2435736.8349
13+50.00	45.00	620715.1915	2435734.5419
13+70.00	-45.00	620801.0603	2435768.1058
13+70.00	-29.89	620786.1274	2435765.8080

PERMANENT EASEMENT MARKER IRON PIN AND CAP: L			
STATION	OFFSET	NORTH	EAST
9+50.00	-30.00	620855.9480	2435352.1722
10+50.00	30.00	620779.9250	2435440.6058
12+50.00	75.00	620701.7920	2435630.2666
12+80.00	-60.00	620829.9733	2435682.1917
13+20.00	75.00	620690.2912	2435699.9913
13+50.00	-60.00	620818.9292	2435750.7742
14+75.00	30.00	620711.4516	2435860.7528
14+75.00	-45.00	620785.6531	2435871.6676
14+75.00	45.00	620696.6113	2435858.5698
14+75.00	-30.00	620770.8123	2435869.4883

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED IN JANUARY, 2022.

I, Toynia E.S. Gibbs, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from January 26th to the 27th, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This date of 3/29/2022.

DocuSigned by:
Toynia Gibbs
2E2F55AA0EC84DA...

Professional Land Surveyor L-3866

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

BP2.R006.1
R/W | 03E-1

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

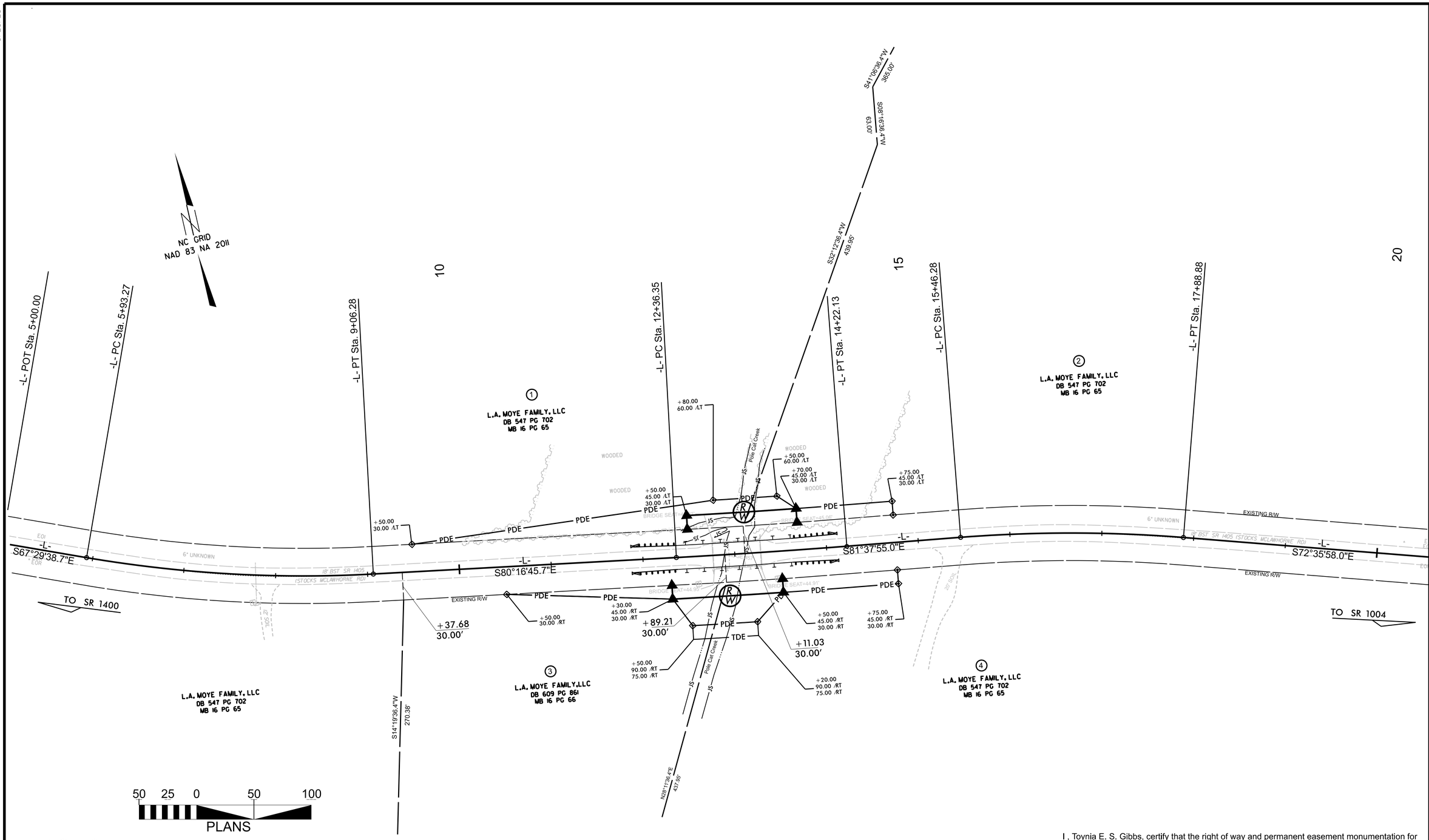
TIP PROJECT: BP2.R006.1
COUNTY : GREENE

ESP
2200 Gateway Centre Blvd Morrisville, NC 27560
License No. F-1407

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3866 LAND SURVEYOR TOYNIA E.S. GIBBS
Toynia E.S. Gibbs 3/29/2022
2E2F55AA0EC84DA...

5/26/20



NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED IN JANUARY, 2022.

I , Toynia E. S. Gibbs, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed in January 2022, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This date of 3/29/2022.

DocuSigned by:
Toynia Gibbs

Professional Land Surveyor L-3866

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPETED

BP2.R006.1
R/W | 004

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

TIP PROJECT: *BP2 R006*
County: GREENE

ESP
License No. F-1407
2200 Gateway Centre Blvd Morrisville, NC 27560

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL LAND SURVEYOR SEAL L-3866 TOYNIA E.S. GIBBS

Document... 3/29/2022
Toynia Gibbs
2E2F55AA0EC84DA...

08/12/2021

PROJECT: BP2.R006.1

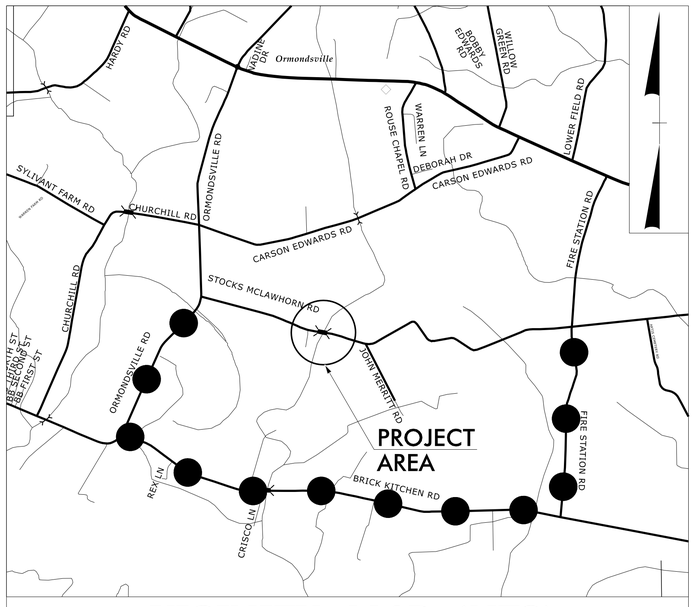
CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

GREENE COUNTY

LOCATION: REPLACE BRIDGE NO. 390057 OVER POLECAT CREEK ON SR 1405 (STOCKS MCLAWHORN ROAD)



VICINITY MAP (NTS)

DETOUR ROUTE

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, AND LOCAL NOTES)
TMP-2	OFFSITE DETOUR

BP2.R006.1
TMP | 1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043767
3/25/2022
DocuSigned by: Adam M. Conrad
ODDC0FFA8FD34AD...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

CDM Smith
CDM Smith Inc.
4000 Sherwood Avenue
Suite 400
Raleigh, NC 27612-3328
NC COA No. F-1255

NCDOT CONTACTS:

KEN THORNEWELL, PE
PROJECT ENGINEER

SPENCER JENNINGS
PROJECT DESIGN ENGINEER

PLANS PREPARED BY:

ADAM M. CONRAD, PE
PROJECT ENGINEER

RYAN J. DEMUYNCK, EI
PROJECT DESIGN ENGINEER

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY (TEMP)

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM
- SKINNY DRUM
- TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 043767 ENGINEER
3/25/2022
DocuSigned by: Adam M. Conrad

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
ROADWAY DESIGN UNIT

PREPARED BY

CDM Smith
CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

5/26/20

MANAGEMENT STRATEGIES

THE FOLLOWING LISTED WORK ZONE STRATEGIES ARE RECOMMENDED FOR INCLUSION WITHIN THIS TRANSPORTATION MANAGEMENT PLAN (TMP).

RECOMMENDED STRATEGIES:

TRAFFIC MANAGEMENT STRATEGIES:

FULL ROADWAY CLOSURES

OFF-SITE DETOURS / USE OF ALTERNATIVE ROUTES

GENERAL NOTES

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

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

TRAFFIC PATTERN ALTERATIONS

A) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

B) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

C) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

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

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

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

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

TRAFFIC CONTROL DEVICES

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

G) STATE FORCES WILL INSTALL AND MAINTAIN THE PROJECT DETOUR AND TYPE III BARRICADES AT THE PROJECT LIMITS. STATE FORCES WILL INSTALL MARKINGS AND MARKERS ON THE FINISHED PROJECT. CONTACT JIM EVANS AT (252)439-2829 TWO WEEKS PRIOR TO CLOSING THE ROAD FOR DETOUR INSTALLATION.

PHASING

STEP 1: USING SHEET TMP-2 AND RSD 1101.03 (SHEET 1 OF 9), INSTALL DETOUR ROUTE SIGNING TO CLOSE SR 1405 (STOCKS MCLAWHORN ROAD) ON PROPOSED - L- FROM STA. 9+50+/- TO STA. 16+00+/-.

STEP 2: AWAY FROM TRAFFIC, COMPLETE CONSTRUCTION OF PROPOSED CULVERT AND ROADWAY APPROACHES, INCLUDING DRAINAGE, GUARDRAIL, FINAL PAVEMENT MARKINGS AND MARKERS ON PROPOSED -L- FROM STA. 9+50+/- TO STA. 16+00+/-.

STEP 3: REMOVE TEMPORARY TRAFFIC CONTROL DEVICES AND OPEN -L- TO PROPOSED 2-LANE, 2-WAY TRAFFIC PATTERN.

LOCAL NOTES

1. NCDOT DIVISION 2 WILL CONTACT GREENE COUNTY SCHOOL DISTRICT AT (252)747-5942 AT LEAST ONE MONTH PRIOR TO CONSTRUCTION TO COORDINATE CONSTRUCTION ACTIVITIES WITH SCHOOL TRANSPORTATION SCHEDULES.

2. GREENE COUNTY EMERGENCY SERVICES WILL BE CONTACTED AT (252)747-2544 AT LEAST ONE MONTH PRIOR TO CONSTRUCTION TO MAKE THE NECESSARY TEMPORARY REASSIGNMENTS TO PRIMARY RESPONSE UNITS.

3. HOOKERTON VOLUNTEER FIRE DEPARTMENT (VFD), (252)747-3816, AND SCUFFLETON VFD, (252)747-4039, WILL BE CONTACTED ALSO AT LEAST ONE MONTH PRIOR TO CONSTRUCTION TO MAKE THE NECESSARY TEMPORARY REASSIGNMENTS TO PRIMARY RESPONSE UNITS.

4. GREENE COUNTY SHERIFF'S OFFICE WILL BE CONTACTED AT (252)747-3411 AT LEAST ONE MONTH PRIOR TO COORDINATE CONSTRUCTION ACTIVITIES WITH PERSONNEL.

BP2.R006.1

TMP | 1B

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043767

3/25/2022

DocuSigned by: Ashley M. Conrad

0DDC0FFABFD0450...

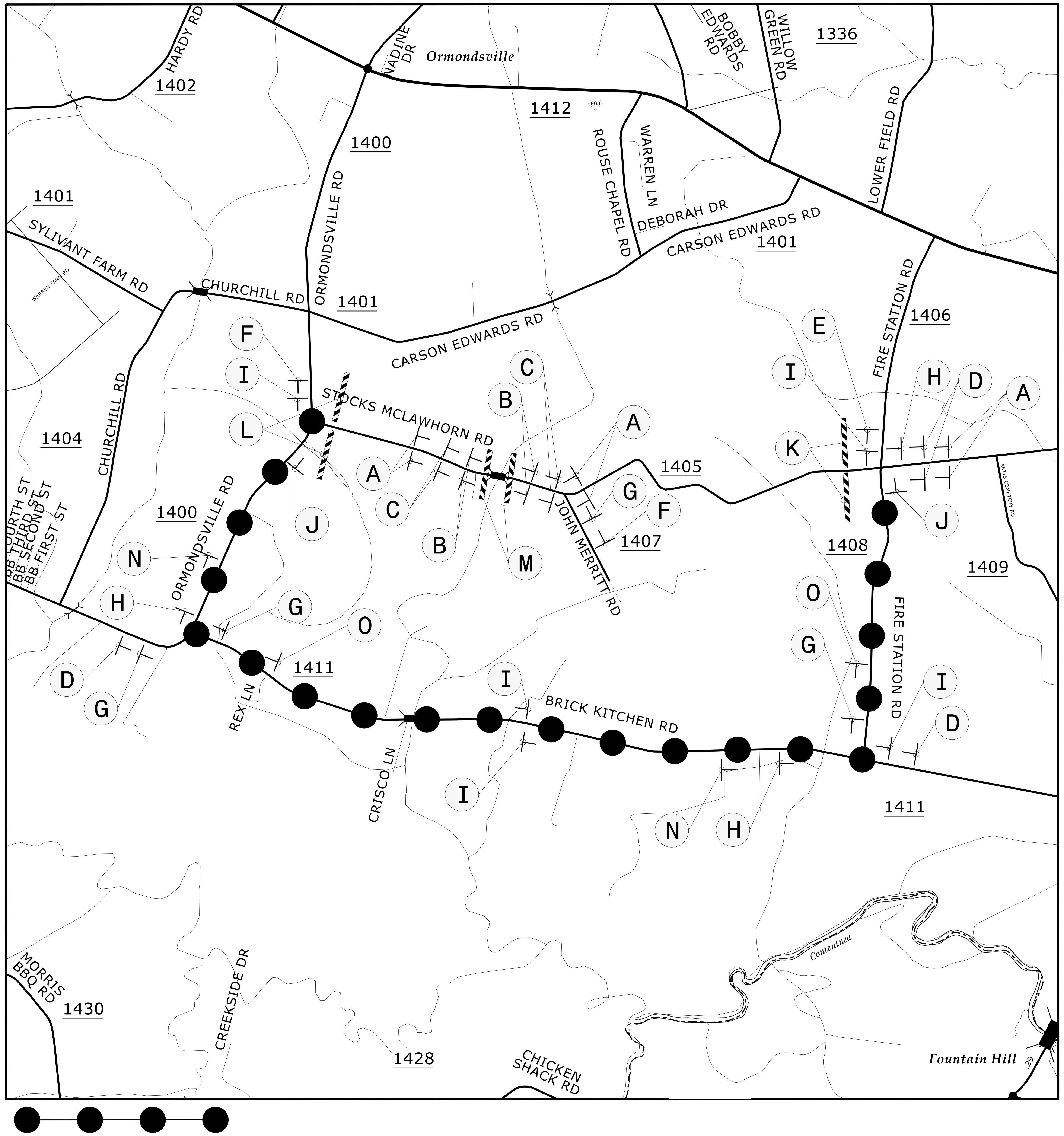
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

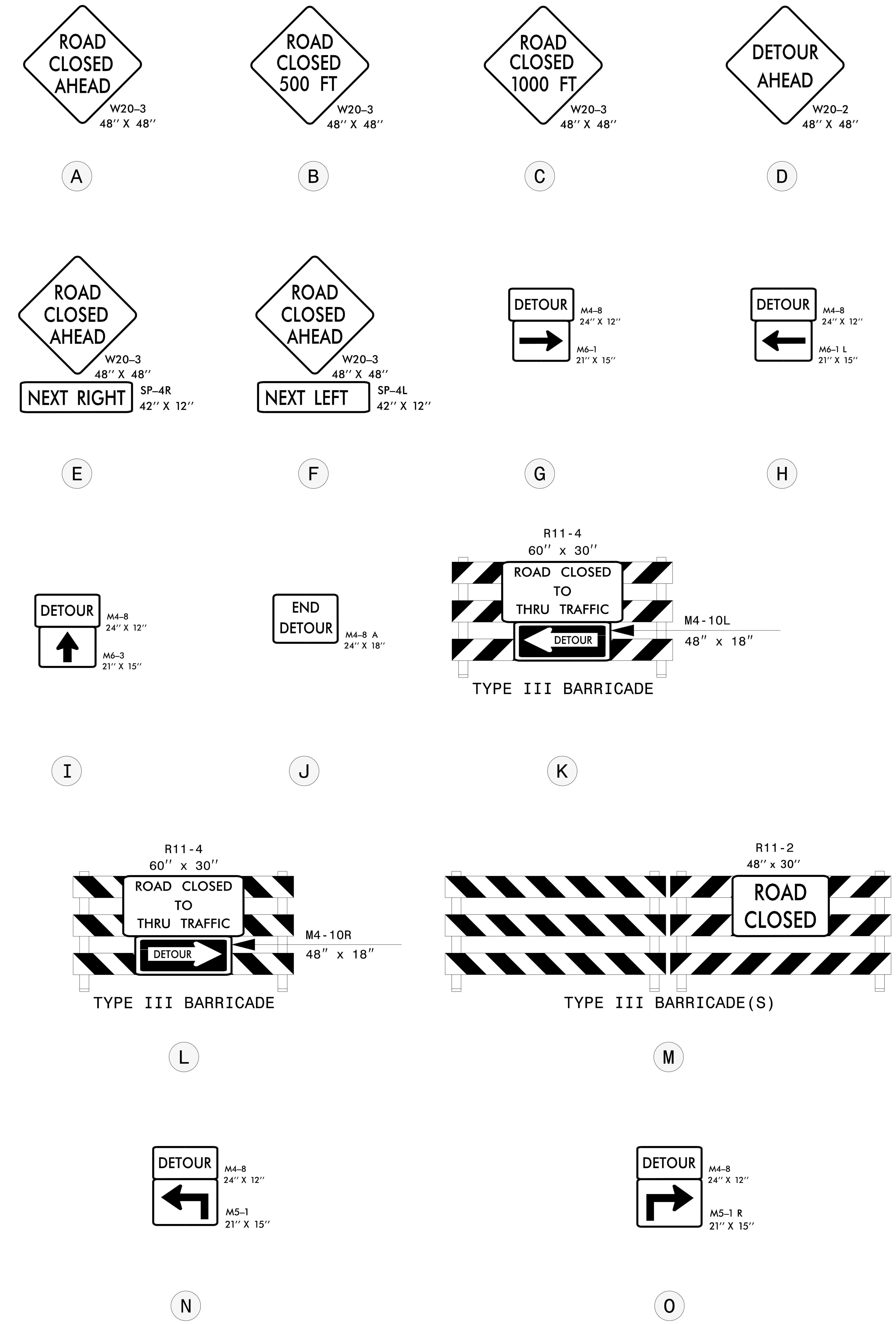
ROADWAY DESIGN UNIT

PREPARED BY

CDM Smith
CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC COA No. P-1255



OFF-SITE DETOUR ROUTE



BP2.R006.1

TMP	2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 043767 ENGINEER
3/25/2022
DocuSigned by: Adam M. Conrad

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

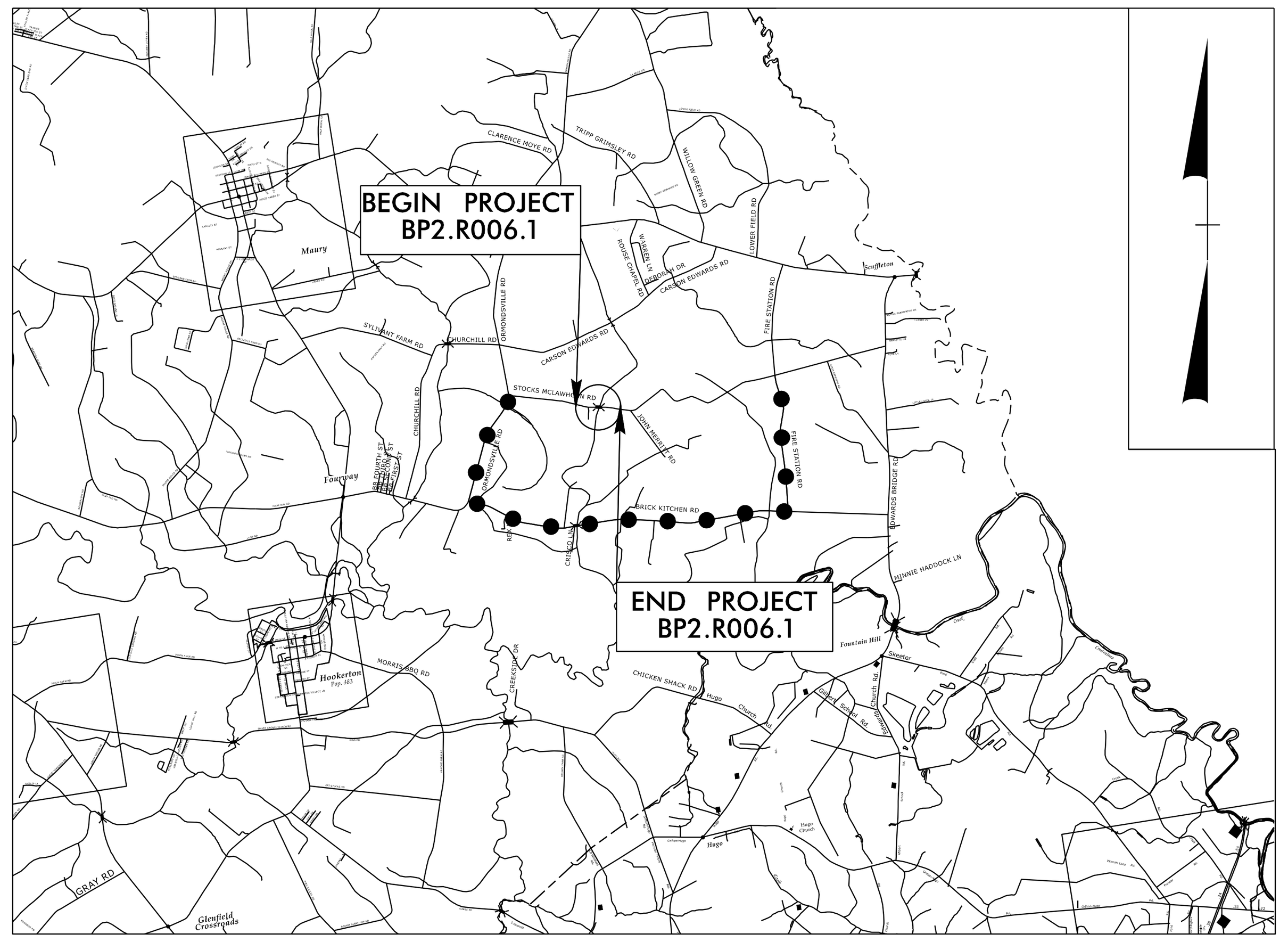
CDM Smith

CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC ODA No. F-1255

PROJECT: BP2.R006.1

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP2.R006.1	EC-1	9

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



VICINITY MAP

NOT TO SCALE

DETOUR ROUTE

STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

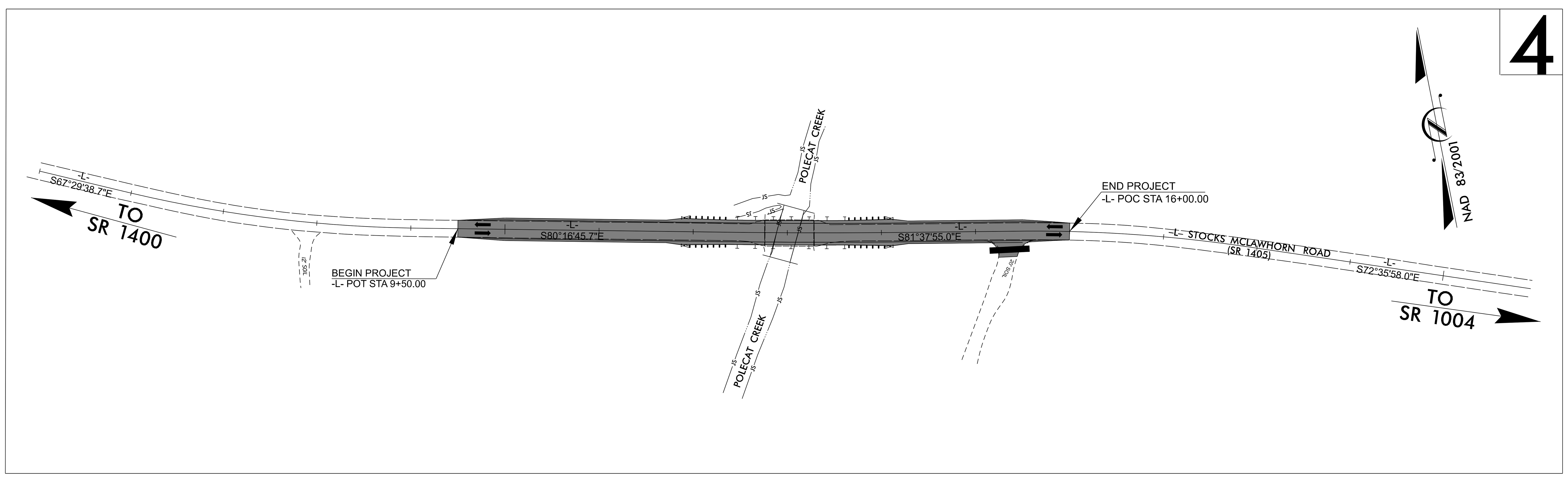
PLAN FOR PROPOSED

HIGHWAY EROSION CONTROL

GREEN COUNTY

LOCATION: *REPLACE BRIDGE NO. 390057 OVER POLECAT CREEK ON SR 1405 (STOCKS MCLAWHORN ROAD)*

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



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	FW / CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

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

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

GRAPHIC SCALE

50 25 0 50 100

PLANS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE APPLICABLE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.

CDM Smith

Prepared In the Office of:

CDM Smith Inc.

5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

Designed by:

SHIRSHANT SHARMA, PE — *4208*

NAME — *LEVEL III CERTIFICATION NO.*

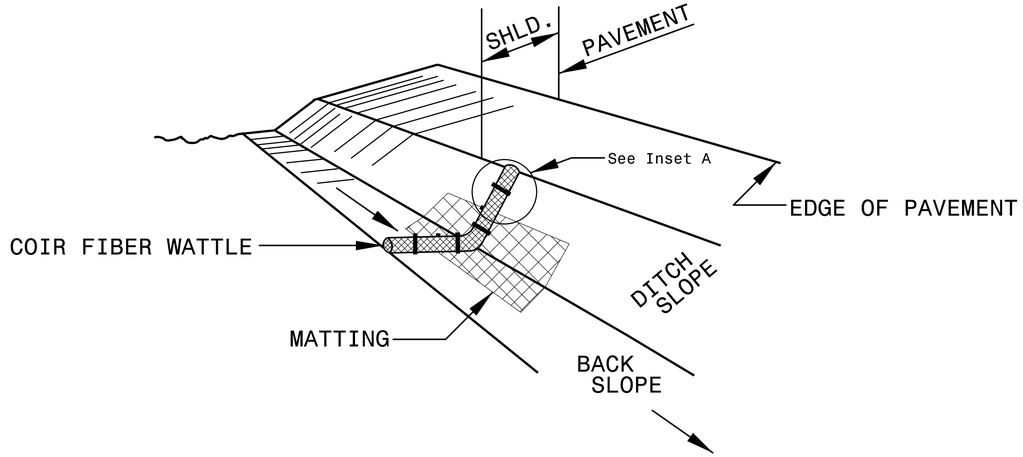
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2018 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

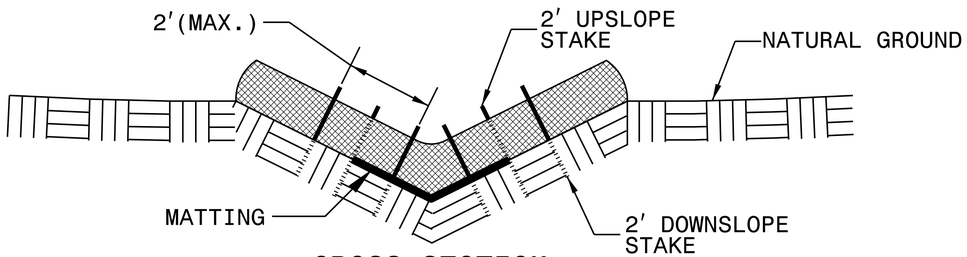
1604.01	Railroad Erosion Control Detail
1605.01	Temporary Silt Fence
1606.01	Special Sediment Control Fence
1607.01	Gravel Construction Entrance
1622.01	Temporary Berms and Slope Drains
1630.01	Riser Basin
1630.02	Silt Basin Type B
1630.03	Temporary Silt Ditch
1630.04	Stilling Basin
1630.05	Temporary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

PROJECT REFERENCE NO.	SHEET NO.
BP2.R006J	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

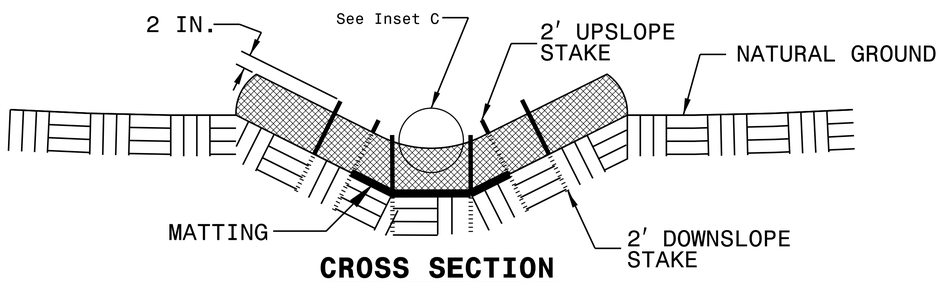
COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

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

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

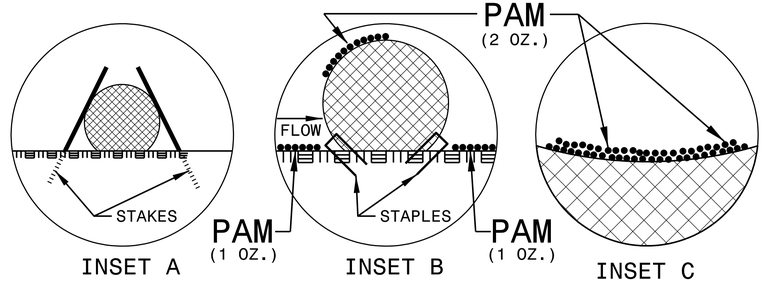
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

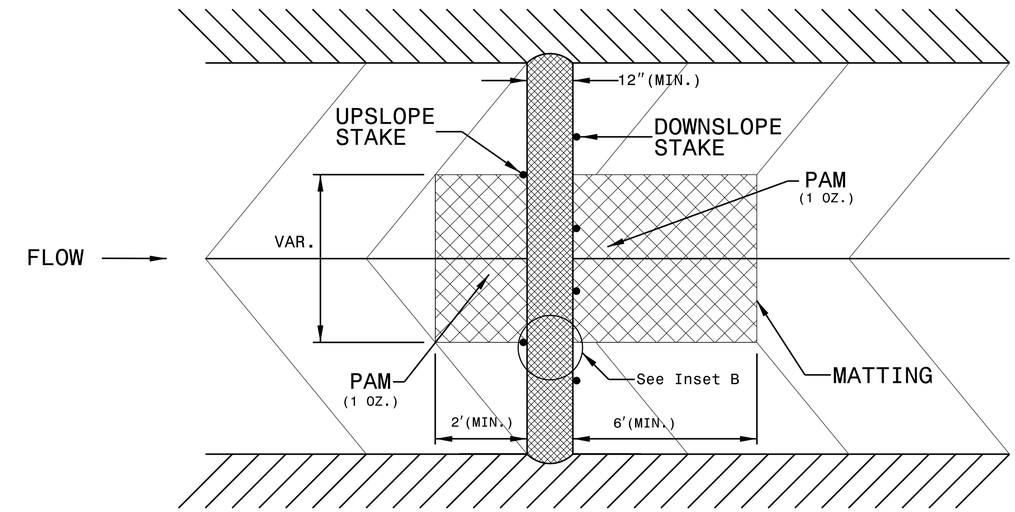
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

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

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

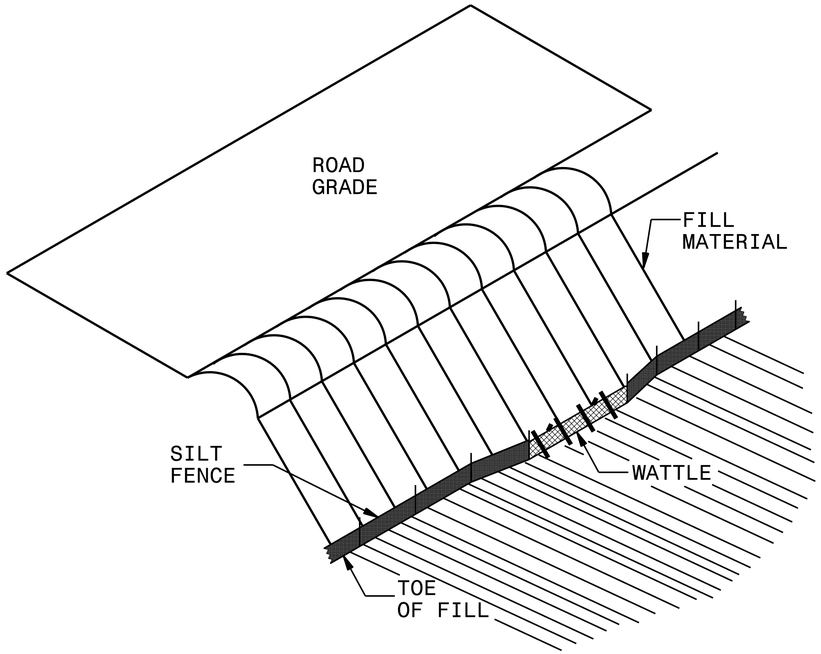




TOP VIEW

SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO.	SHEET NO.
BP2.R006J	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



ISOMETRIC VIEW

NOTES:

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

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

DO NOT PLACE WATTLE ON TOE OF SLOPE.

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

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

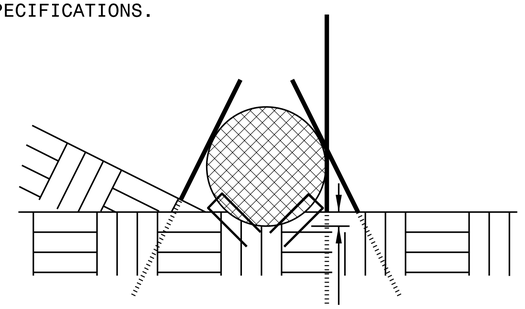
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

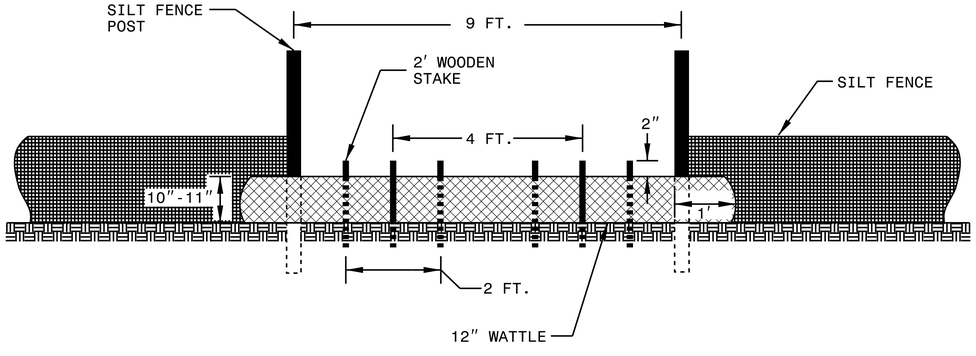
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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

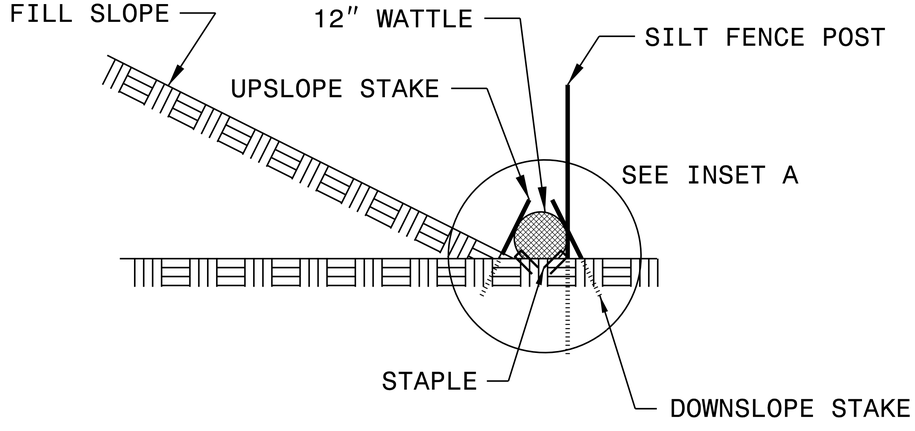
INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A





VIEW FROM SLOPE



SIDE VIEW

PROJECT REFERENCE NO.	SHEET NO.
BP2.R006J	EC-3

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	9+50	13+00	LT	535
4	-L-	13+22	14+47	LT	110
4	-L-	10+50	12+75	RT	255
4	-L-	13+10	16+00	RT	240
				SUBTOTAL	1,140
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					0
				TOTAL	1,140
				SAY	1,140

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)

PROJECT REFERENCE NO.	SHEET NO.
BP2.R006J	EC-3A

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

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

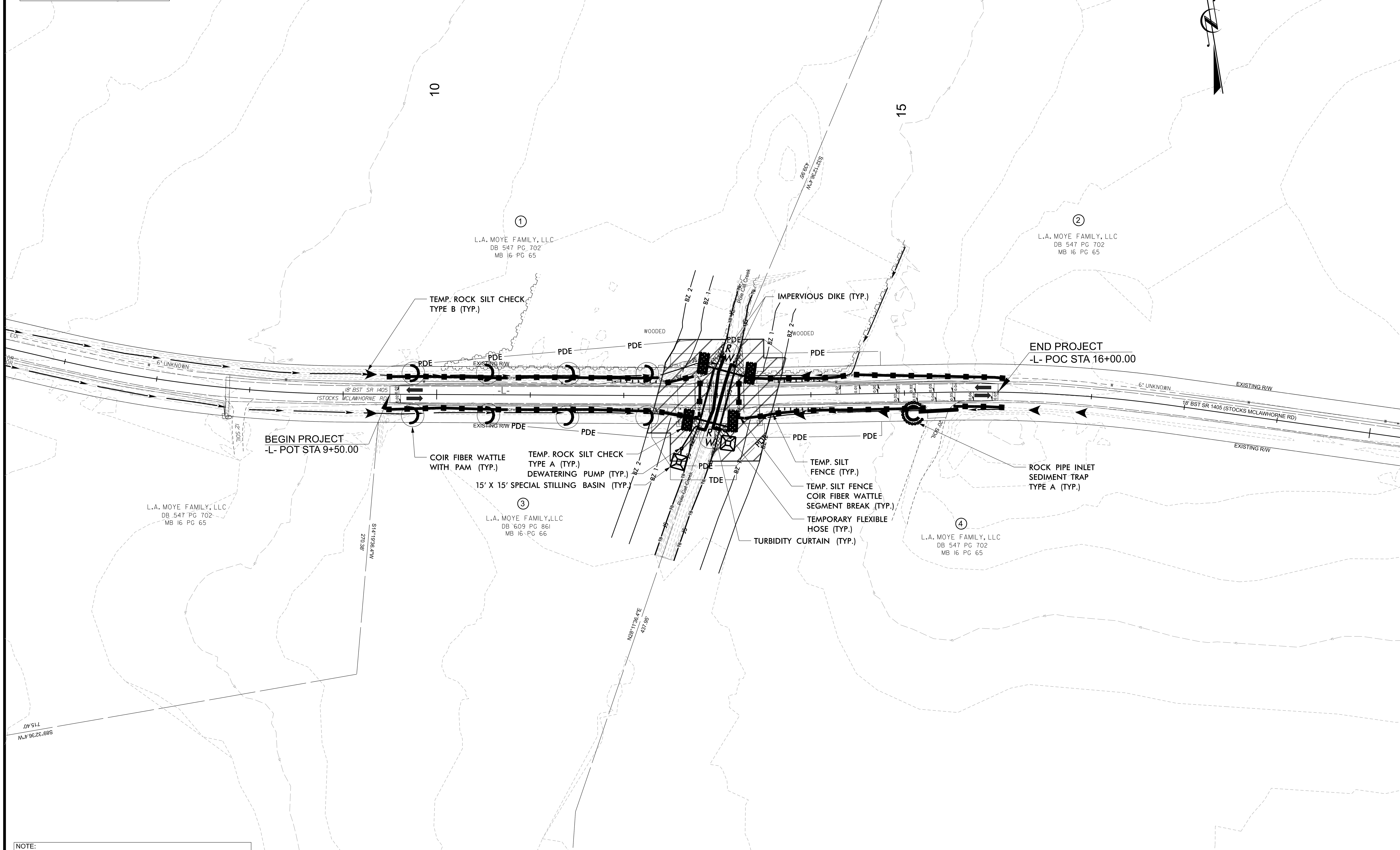
PROJECT REFERENCE NO.	SHEET NO.
BP2.R006J	EC-4/CONST 4

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

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

NOTE:
PLACE TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS



10
15
20
① L.A. MOYE FAMILY, LLC DB 547 PG 702 MB 16 PG 65
② L.A. MOYE FAMILY, LLC DB 547 PG 702 MB 16 PG 65
③ L.A. MOYE FAMILY, LLC DB 609 PG 861 MB 16 PG 66
④ L.A. MOYE FAMILY, LLC DB 547 PG 702 MB 16 PG 65
L.A. MOYE FAMILY, LLC DB 547 PG 702 MB 16 PG 65
TEMP. ROCK SILT CHECK TYPE B (TYP.)
IMPERVIOUS DIKE (TYP.)
WOODED
PDE
TDE
EXISTING R/W
6" UNKNOWN
18' BST SR 1405 (STOCKS MCLAWHORNE RD)
-L-
END PROJECT
-L- POC STA 16+00.00
BEGIN PROJECT
-L- POT STA 9+50.00
COIR FIBER WATTLE WITH PAM (TYP.)
TEMP. ROCK SILT CHECK TYPE A (TYP.)
DEWATERING PUMP (TYP.)
15' X 15' SPECIAL STILLING BASIN (TYP.)
TEMP. SILT FENCE (TYP.)
TEMP. SILT FENCE COIR FIBER WATTLE SEGMENT BREAK (TYP.)
TEMPORARY FLEXIBLE HOSE (TYP.)
TURBIDITY CURTAIN (TYP.)
ROCK PIPE INLET SEDIMENT TRAP TYPE A (TYP.)
BZ 1
BZ 2
Pole Cat Creek
S08°16'36.4"W 63.00'
S27°12'36.4"W 439.56'
N28°11'36.4"E 437.86'
S14°19'36.4"W 270.38'
S89°32'36.4"W 715.40'

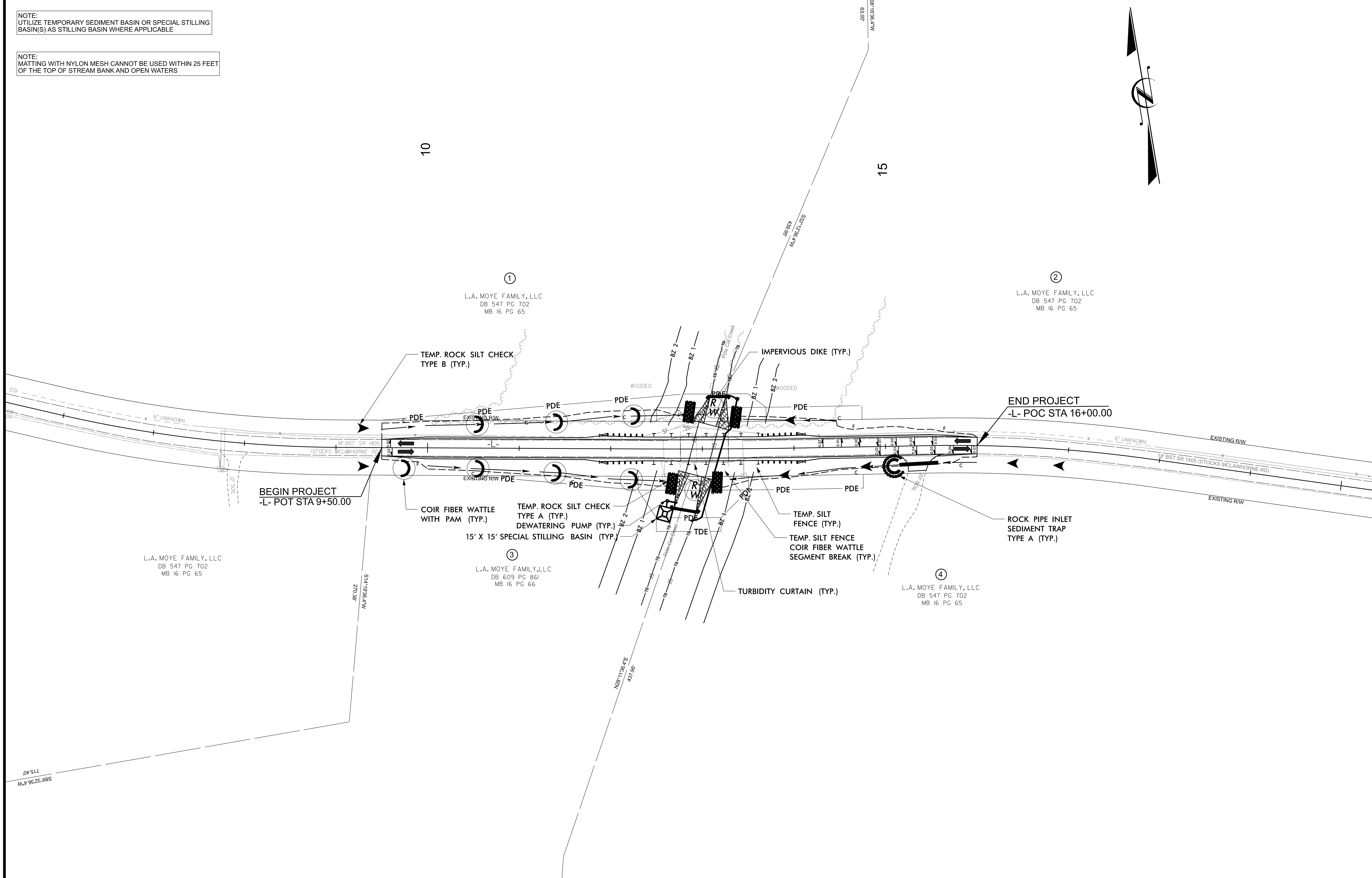
NOTE:
PLACEMENT AND QUANTITY OF EROSION CONTROL DEVICES SHOWN ON THESE PLANS MAY BE MODIFIED AS NEEDED IN ORDER TO MAINTAIN COMPLIANCE WITH ALL APPLICABLE REGULATIONS

PROJECT REFERENCE NO.	SHEET NO.
BP2.R006J	EC-5/CONST 4

FINAL GRADING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE

NOTE:
MATTING WITH NYLON MESH CANNOT BE USED WITHIN 25 FEET OF THE TOP OF STREAM BANK AND OPEN WATERS



10
15
20
S08°16'36.4"W
63.00'
S32°12'36.4"W
439.59'
① L.A. MOYE FAMILY, LLC
DB 547 PG 702
MB 16 PG 65
② L.A. MOYE FAMILY, LLC
DB 547 PG 702
MB 16 PG 65
③ L.A. MOYE FAMILY, LLC
DB 609 PG 861
MB 16 PG 66
④ L.A. MOYE FAMILY, LLC
DB 547 PG 702
MB 16 PG 65
L.A. MOYE FAMILY, LLC
DB 547 PG 702
MB 16 PG 65
TEMP. ROCK SILT CHECK
TYPE B (TYP.)
IMPERVIOUS DIKE (TYP.)
WOODED
PDE
TDE
BZ 1
BZ 2
6" UNKNOWN
EXISTING R/W
18' BST SR 1405
(STOCKS MCLAWHORNE RD)
-L-
END PROJECT
-L- POC STA 16+00.00
BEGIN PROJECT
-L- POT STA 9+50.00
COIR FIBER WATTLE
WITH PAM (TYP.)
TEMP. ROCK SILT CHECK
TYPE A (TYP.)
DEWATERING PUMP (TYP.)
15' X 15' SPECIAL STILLING BASIN (TYP.)
TEMP. SILT
FENCE (TYP.)
TEMP. SILT FENCE
COIR FIBER WATTLE
SEGMENT BREAK (TYP.)
TURBIDITY CURTAIN (TYP.)
ROCK PIPE INLET
SEDIMENT TRAP
TYPE A (TYP.)
16' BST SR 1405 (STOCKS MCLAWHORNE RD)
S14°19'36.4"W
270.36'
N28°11'36.4"E
437.85'
S89°32'36.4"W
715.40'

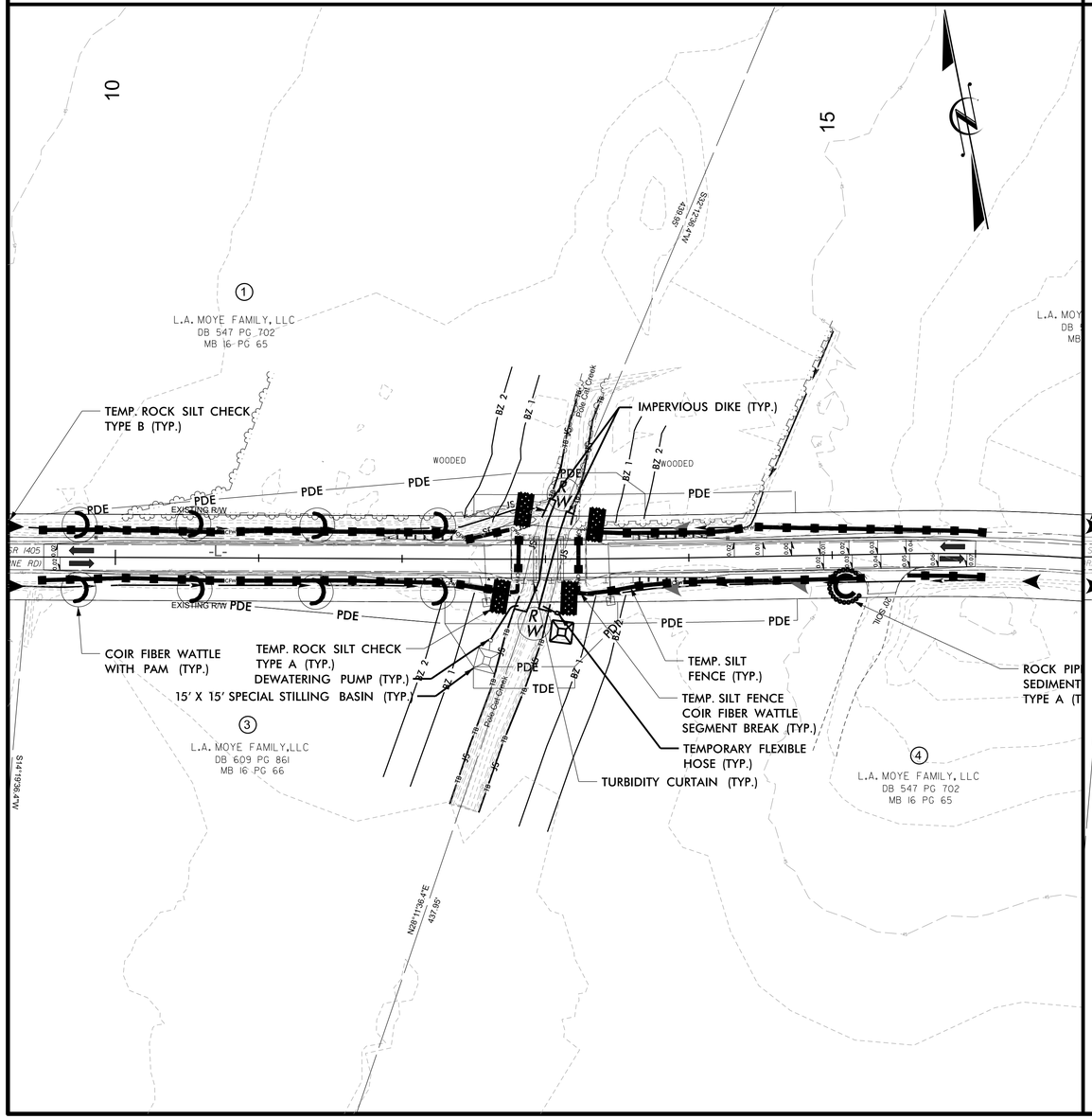
NOTE:
PLACEMENT AND QUANTITY OF EROSION CONTROL DEVICES SHOWN ON THESE PLANS MAY BE MODIFIED AS NEEDED IN ORDER TO MAINTAIN COMPLIANCE WITH ALL APPLICABLE REGULATIONS

PROJECT REFERENCE NO.	SHEET NO.
BP2.R006.1	EC-6/CONST 4

CULVERT CONSTRUCTION SEQUENCE STA. 13+00 –L–

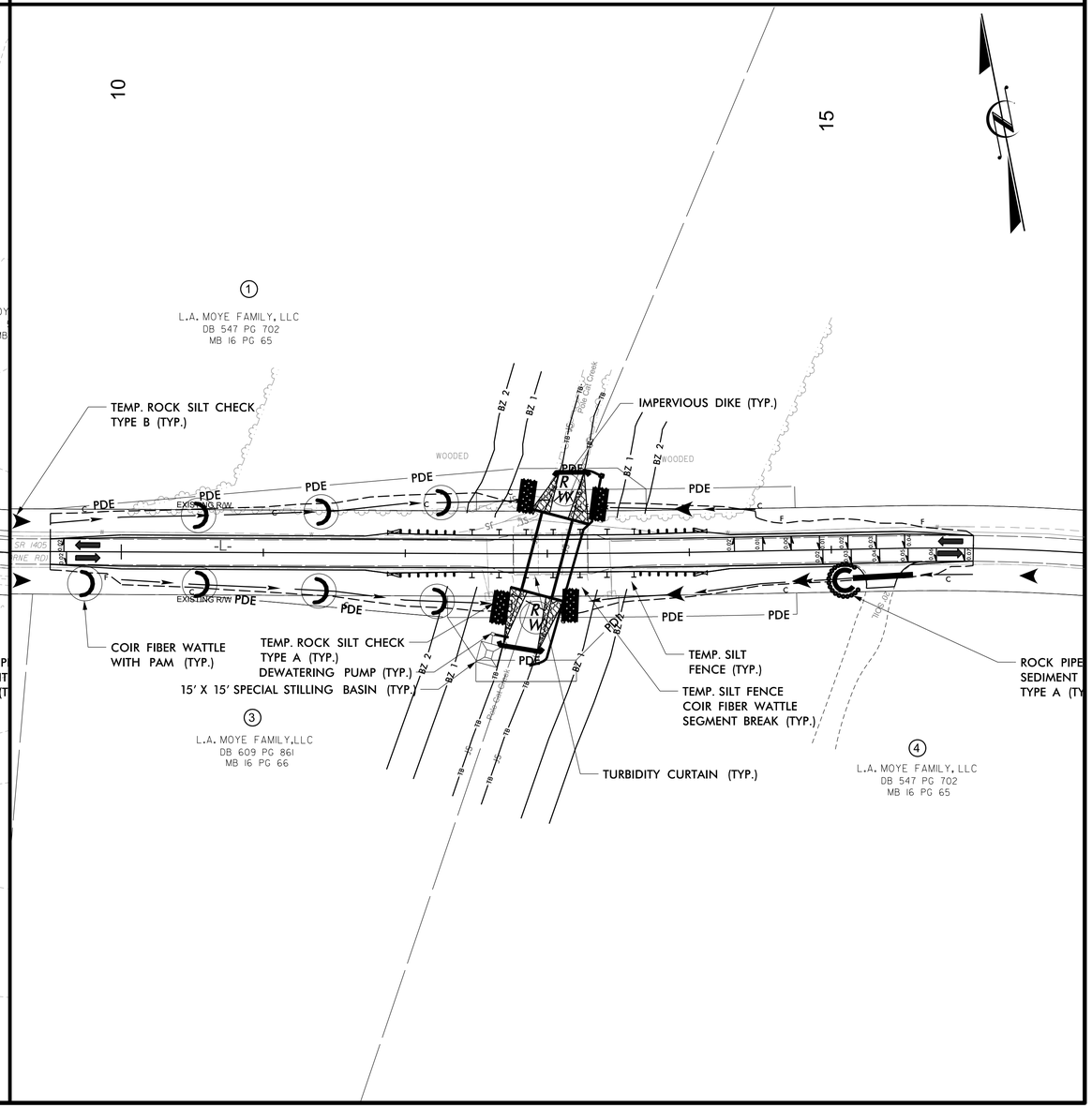
PHASE I

1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED THROUGHOUT CULVERT CONSTRUCTION.
2. CONSTRUCT IMPERVIOUS DIKES.
3. DEWATER AREA BEHIND IMPERVIOUS DIKES.
4. REMOVE 52' EXISTING BRIDGE.



PHASE II

5. INSTALL SPECIAL STILLING BASINS.
6. INSTALL UPSTREAM PUMP AND TEMPORARY FLEXIBLE HOSE.
7. PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
8. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS DEWATER ENTRAPPED AREA.
9. CONSTRUCT PROPOSED 22'–1" X 9'–3" ALUMINUM BOX CULVERT.
10. EXCAVATE ANY REMAINING SILT, REMOVE STILLING BASINS AND IMPERVIOUS DIKES.
11. COMPLETE ROADWAY AND ANY NECESSARY EMBANKMENT IMPROVEMENTS.



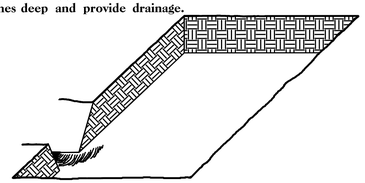
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP2.R006.1	RF-1	9
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

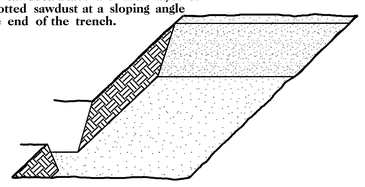
SEEDLING / LINER 3AREROOT PLANTING DETAIL

HEALING IN

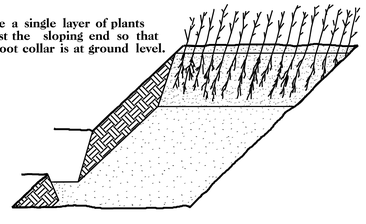
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



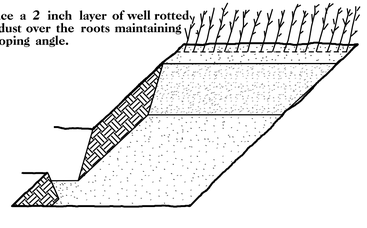
3. 3ackfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

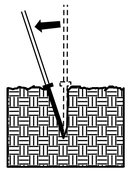


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

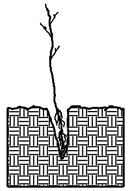


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

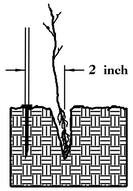
DOUBLE PLANTING METHOD USING THE KOC PLANTING 3AR



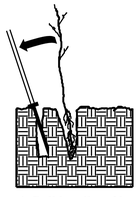
1. Insert planting bar as shown and pull handle toward planter.



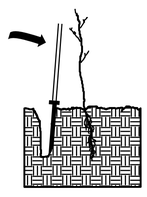
2. Remove planting bar and place seedling at correct depth.



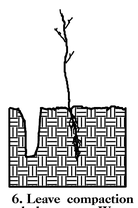
3. Insert planting bar 2 inches toward planter from seedling.



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



5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING 3AG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.

KOC PLANTING 3AR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.

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

REFORESTATION

☐ TREE REFORESTATION SHALL 3E PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

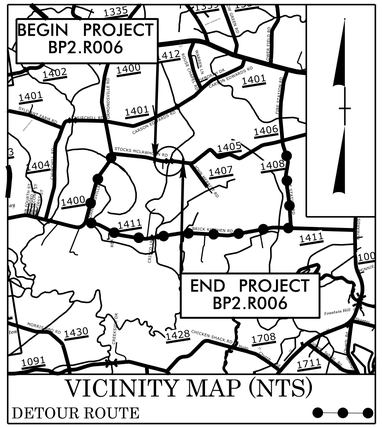
REFORESTATION

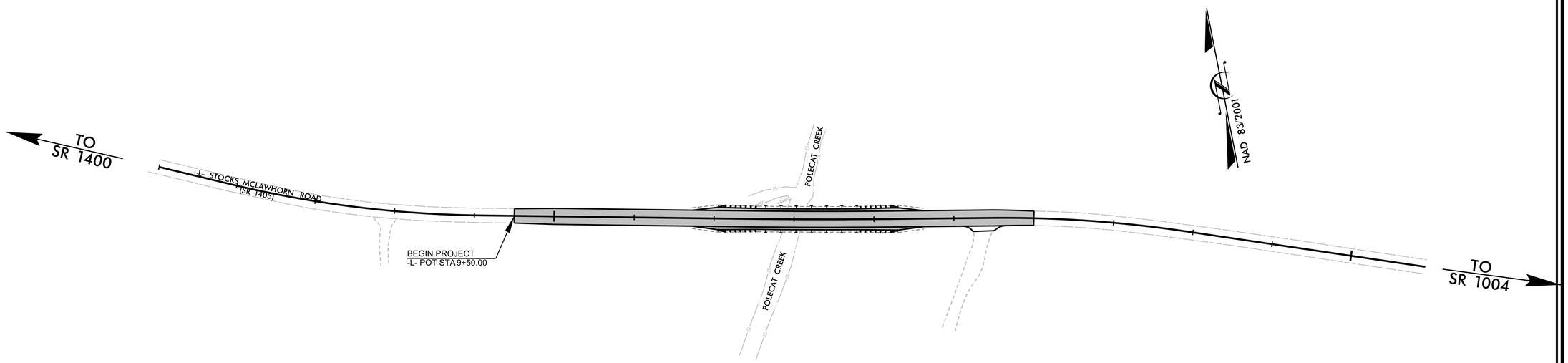
MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25% LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in – 18 in 3R
25% PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in – 18 in 3R
25% FRAXINUS PENNSYLVANICA	GREEN ASH	12 in – 18 in 3R
25% 3ETULA NIGRA	RIVER 3IRCH	12 in – 18 in 3R

REFORESTATION DETAIL SHEET

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





09/08/99

TIP PROJECT: BP2.R006

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
BP2.R006	UO–1

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

UTILITIES BY OTHERS PLANS
GREENE COUNTY

LOCATION: REPLACE BRIDGE NO. 390057 OVER POLECAT CREEK ON SR 1405 (STOCKS MCLAWHORN ROAD)

TYPE OF WORK: RELOCATION OF COMMUNICATION & WATER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

INDEX OF SHEETS

SHEET NO.:	*DESCRIPTION:*
UO–1	*TITLE SHEET*
UO–02	*UBO PLAN SHEET*

UTILITY OWNERS WITH CONFLICTS

(A) WATER – GREENE REGIONAL WATER
(B) COMMUNICATIONS – LUMEN

PREPARED IN THE OFFICE OF:

SAM™

2641 Sumner Boulevard
Suite 116
Raleigh, NC 27616
(919) 878–7466

FREDDIE BUNN	*UTILITY PROJECT MANAGER*
MATTHEW WARD	*PROJECT UTILITY COORDINATOR*

DIVISION OF HIGHWAYS
DIVISION 2

2815 Rouse Road Extension
Kinston, NC 28504

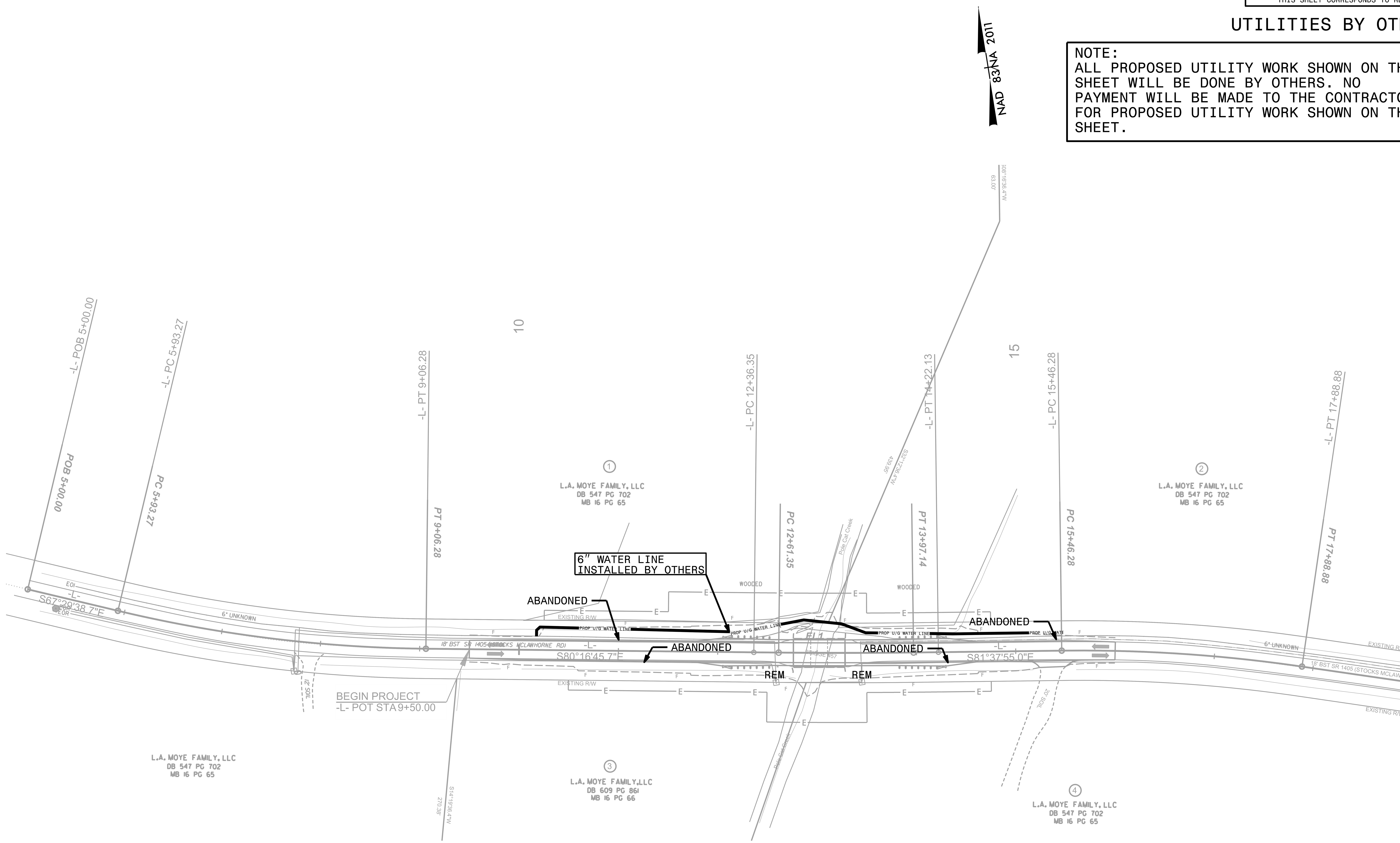
MICHAEL AMAN, PE	*DIVISION CONTACT #1*
DAVID KRAMER	*DIVISION CONTACT #2*

$$$$$SYSTIME$$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
BP2.R.006	U0-02
THIS SHEET CORRESPONDS TO RDY- 4	

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.



8/17/99
3/8/2022
BP2.R006_Rdy4_UO02.dgn

CROSS SECTION SHEET INDEX

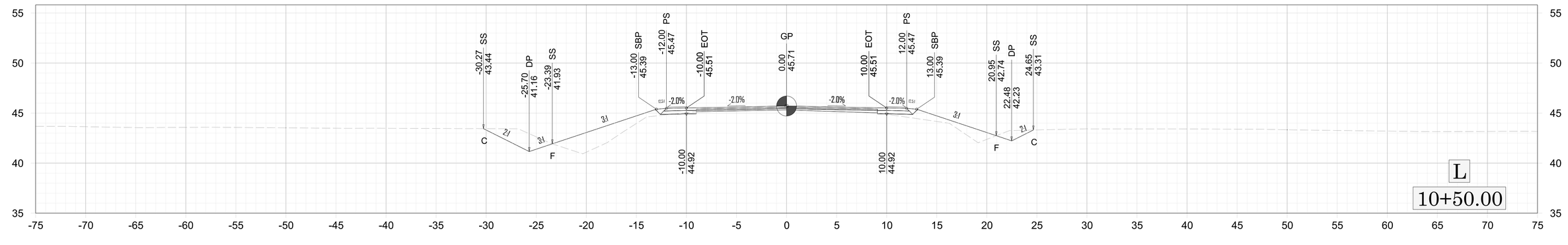
Note: "Quantities are approximate only. The Resident Engineer will re–cross–section the work accurately when the project is staked out. These cross–section notes will be used in computing the final quantities for which the contractor will be paid."

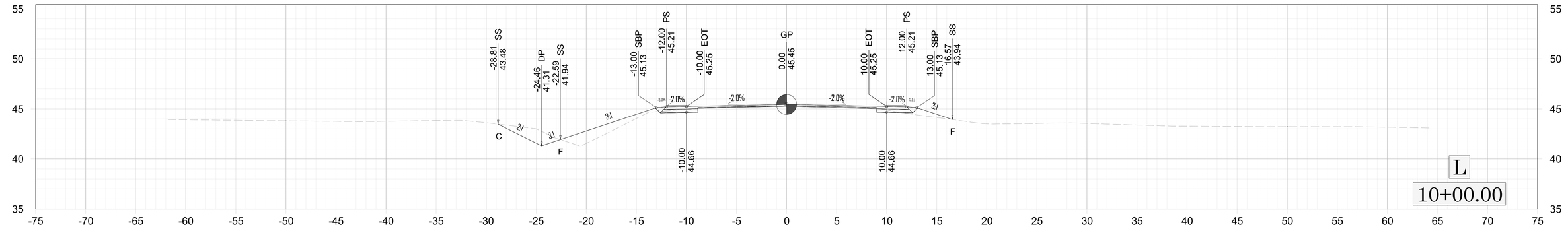
5/26/20

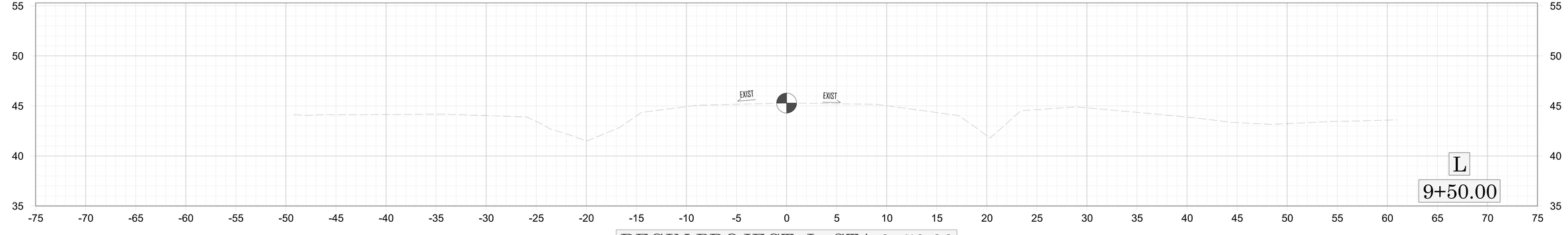
CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

0 5 10

BP2.R006.1
X 002







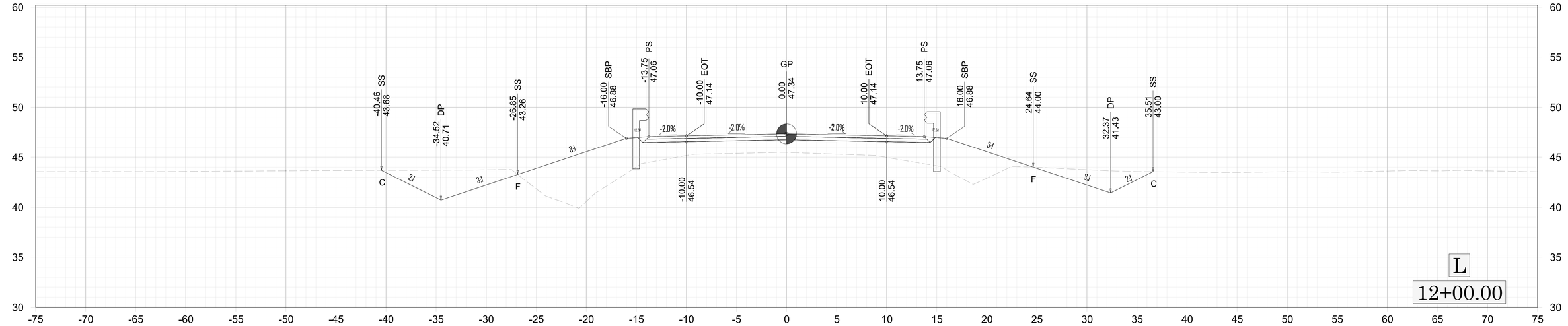
BEGIN PROJECT -L- STA 9+50.00

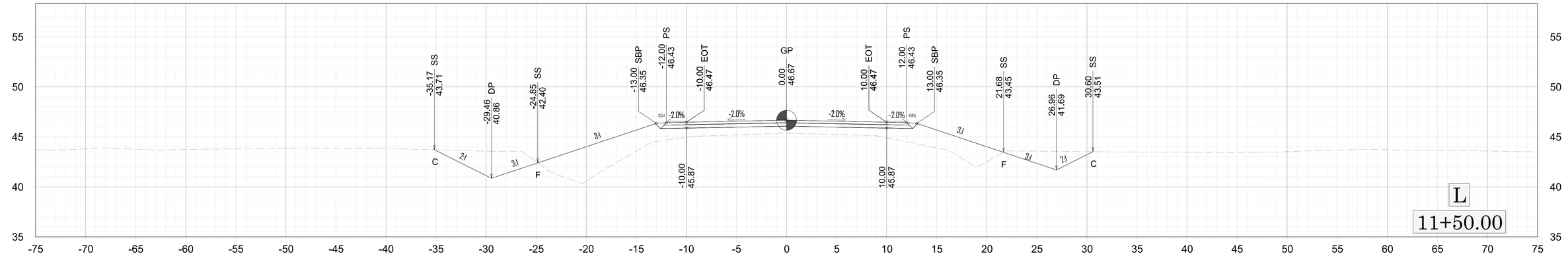
CDM Smith
CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

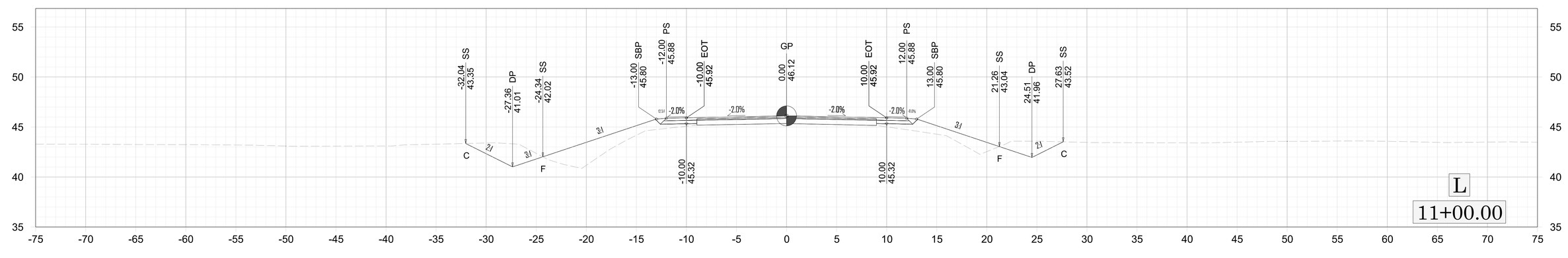
0 5 10

BP2.R006.1
X 003

5/26/20





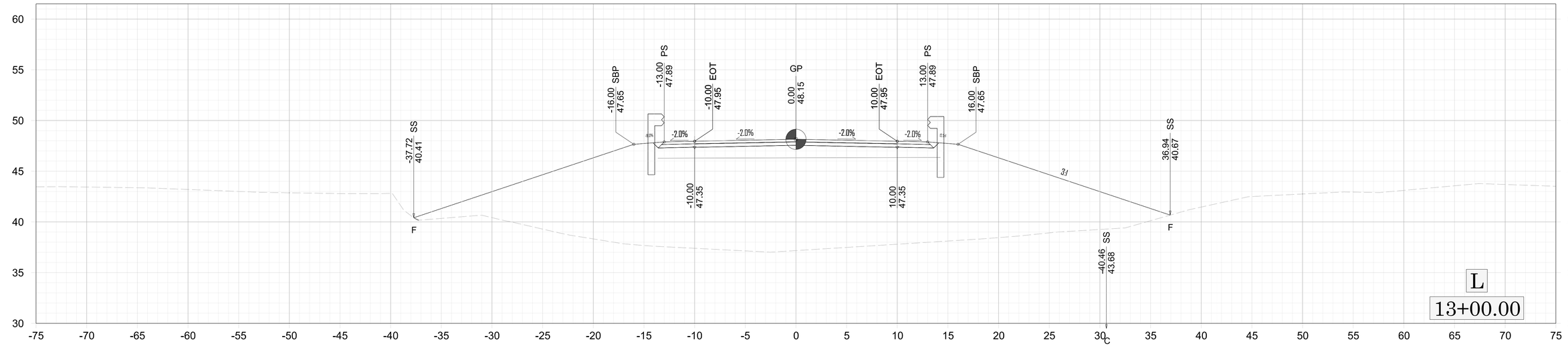


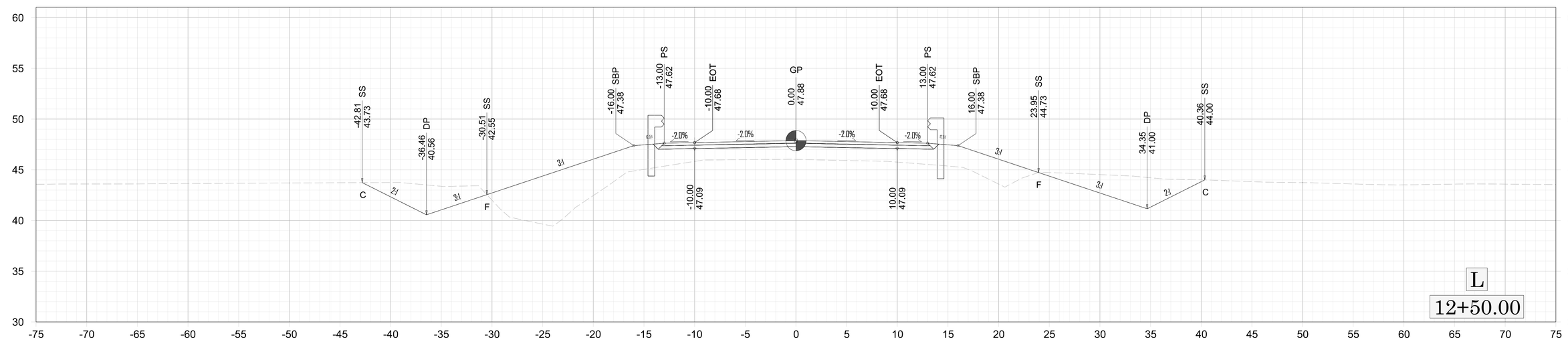
5/26/20

CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

0 5 10

BP2.R006.1
X 004



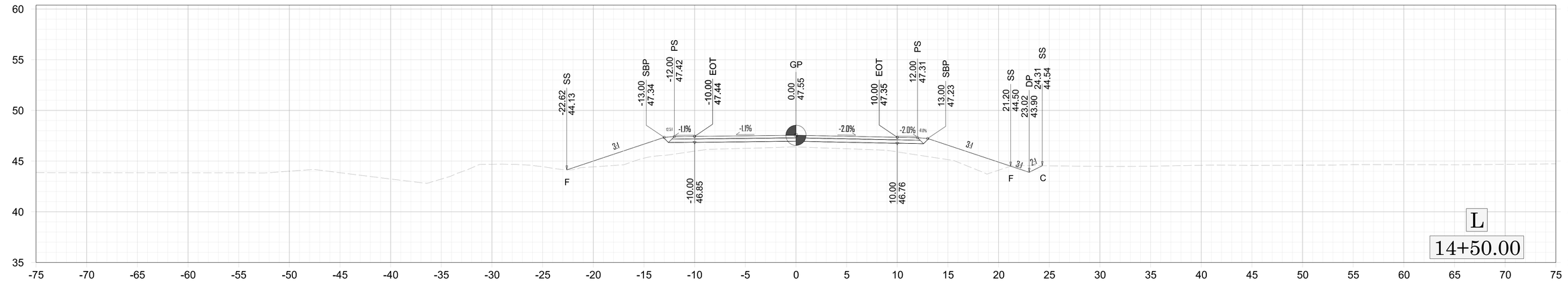


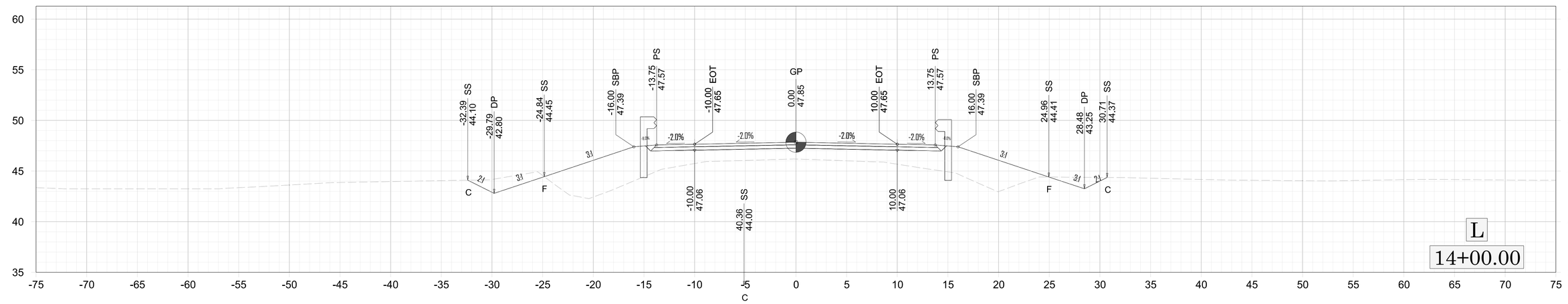
CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

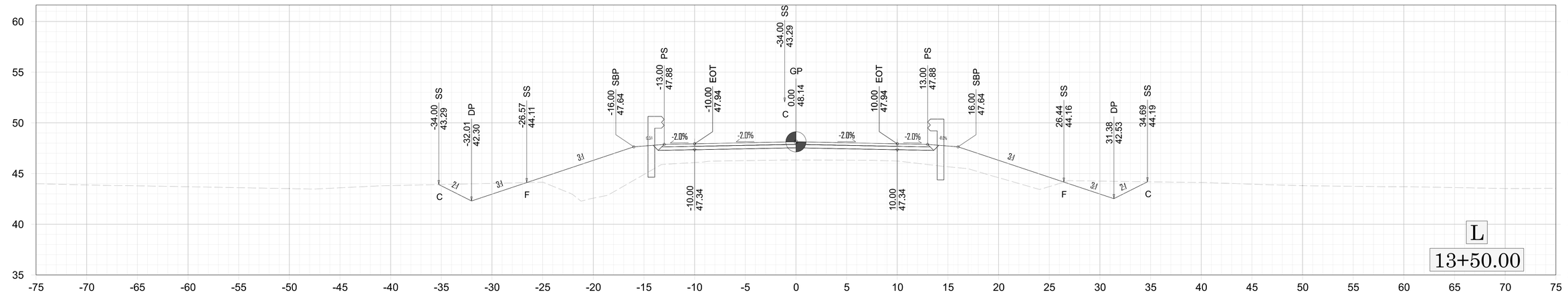
0 5 10

BP2.R006.1
X 005

5/26/20





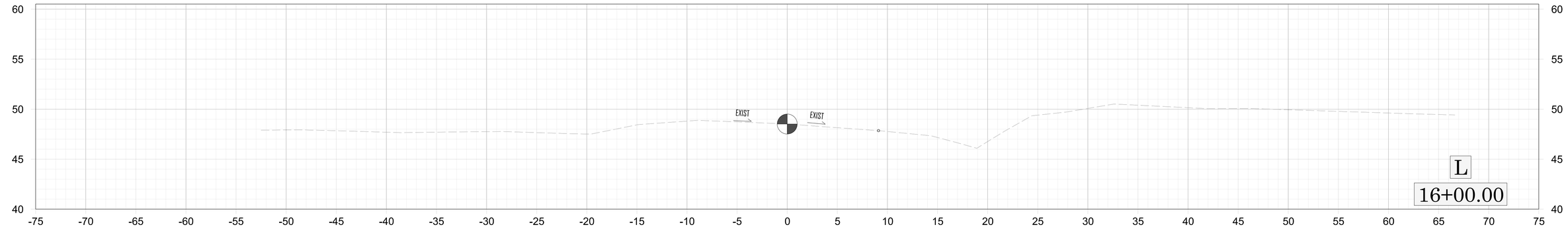


5/26/20

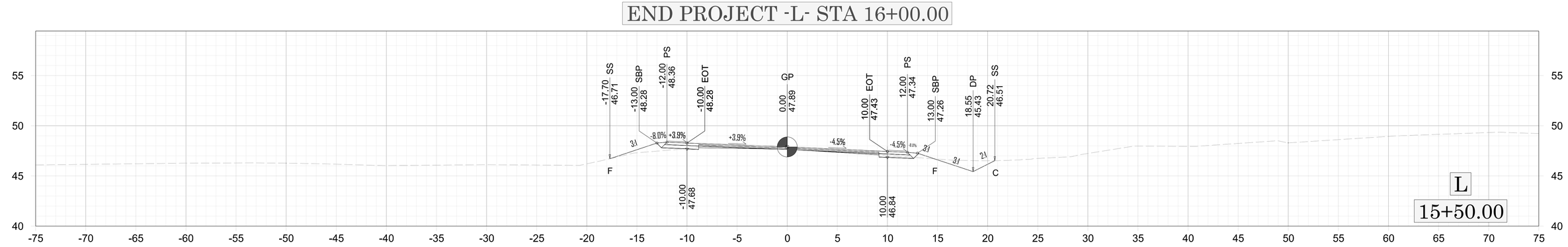
CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

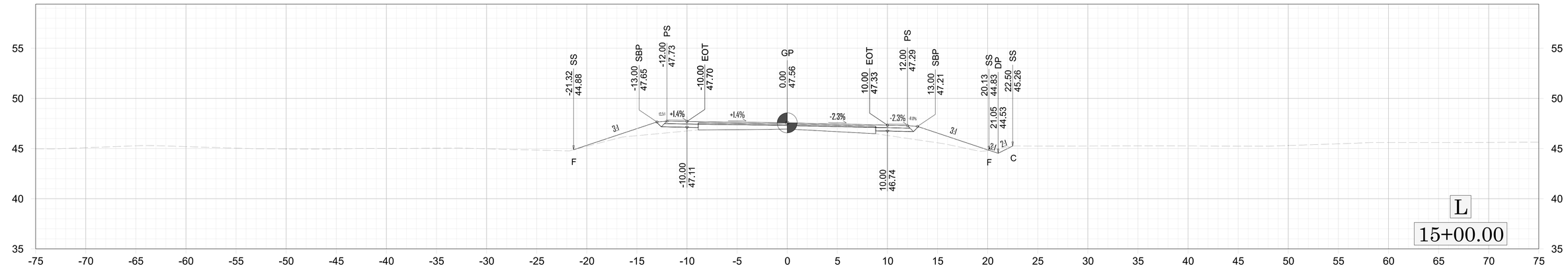
0 5 10

BP2.R006.1
X 006



END PROJECT -L- STA 16+00.00

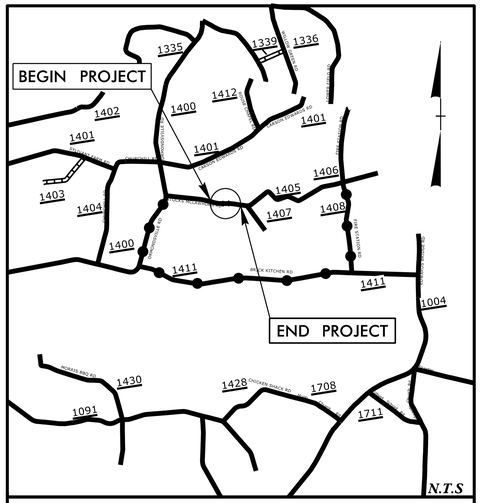




PROJECT: BP2.R006.1

CONTRACT: DB00532

CULVERT



VICINITY MAP

DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

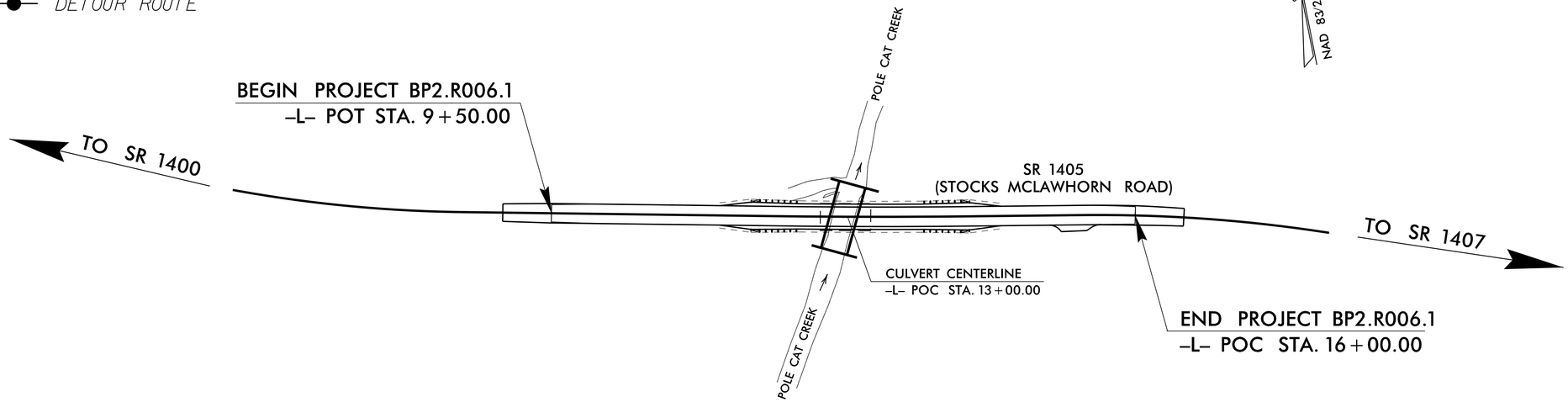
GREENE COUNTY

LOCATION: REPLACE BRIDGE NO. 390057 OVER POLE CAT CREEK ON SR 1405 (STOCKS MCLAWHORN ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND CULVERT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP2.R006.1		3

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
BP2.R006.1	N/A	P.E.
BP2.R006.2	N/A	UTIL & R/W
BP2.R006.3	N/A	CONST.



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DESIGN DATA

ADT 2022 = 220
ADT 2042 = 400
K = N/A %
D = N/A %
T = 6 % *
V = 60 MPH
TTST = N/A DUAL = N/A
FUNC CLASS =
LOCAL
SUB–REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT BP2.R006 = 0.119 MILES
LENGTH CULVERT PROJECT BP2.R006 = 0.004 MILES

TOTAL LENGTH PROJECT BP2.R006 = 0.123 MILES

Prepared In the Office of:
CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612–3228
NC COA No. F–1255

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

LETTING DATE : JULY 27, 2022

ADAM M. CONRAD, P.E.
PROJECT ENGINEER

TING H. FANG, P.E.
PROJECT DESIGN ENGINEER

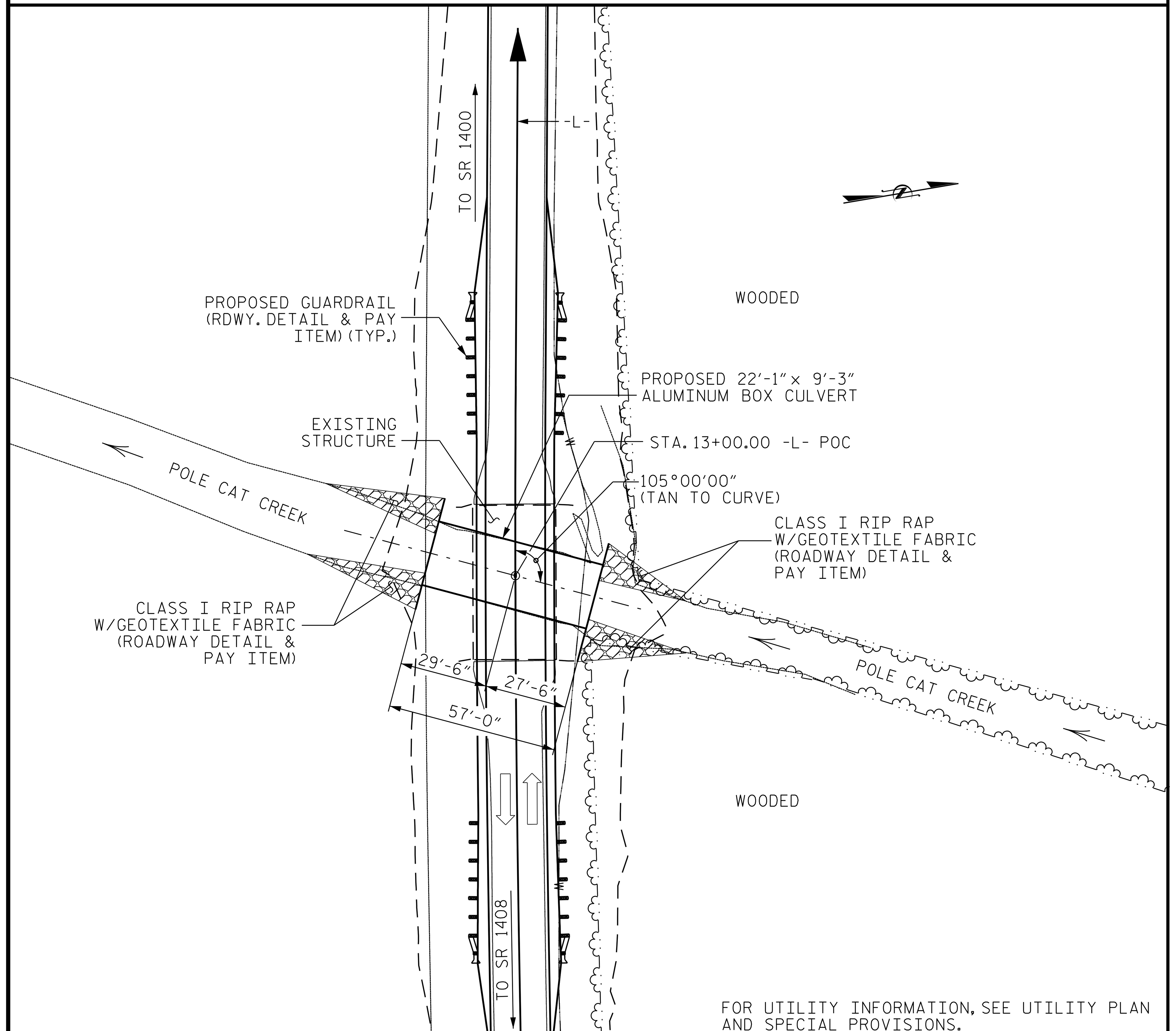
MICHAEL C. AMAN, P.E.
NCDOT CONTACT

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG

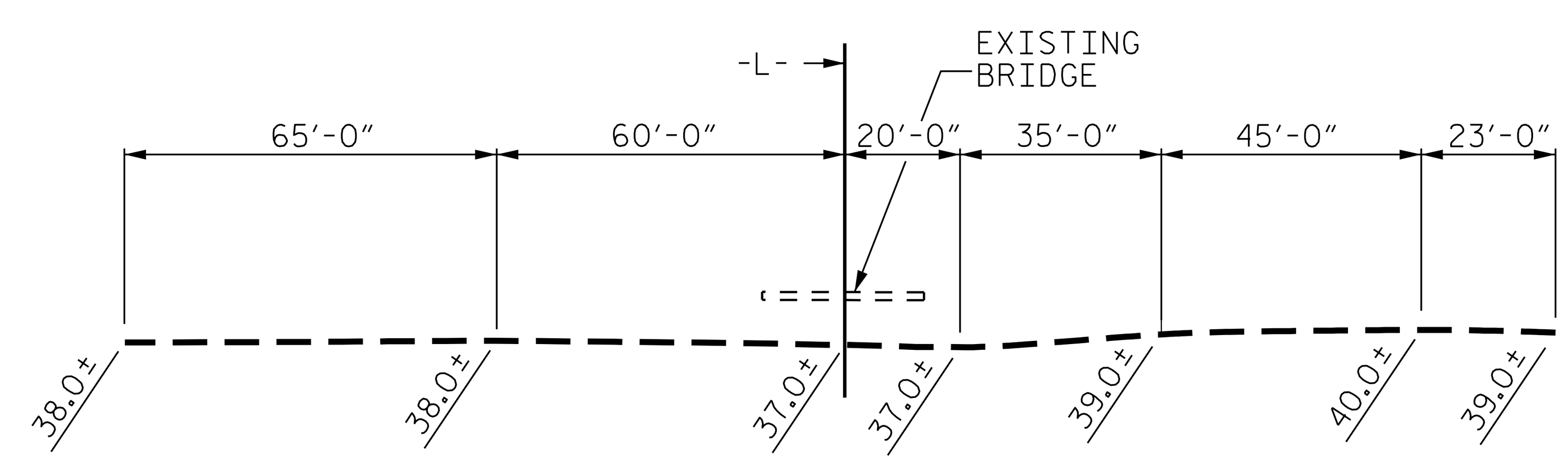
DocuSigned by: Ting Fang 60E43C9AEA80462...

6/15/2022

BM 1 : STA. 15+44.73, -L-, 77.52' RT. EL. 53.06



LOCATION SKETCH



PROFILE ALONG ℄ CULVERT

ROADWAY DATA

GRADE PT. EL. @ STA. 13+00.00 -L-	= 48.15'
BED ELEV. @ STA. 13+00.00 -L-	= 36.71'
ROADWAY SLOPE	= VARIES

HORIZONTAL CURVE DATA

P.I. STA. = 13+29.24 -L-
Δ = 1°-21'-09.3" (LT.)
D = 0°-43'-40.9"
L = 185.79'
T = 92.90'
R = 7,870.00'

HYDRAULIC DATA

DESIGN DISCHARGE	= 540 CFS
FREQUENCY OF DESIGN FLOOD	= 25 YRS.
DESIGN HIGH WATER ELEVATION	= 44.4'
DRAINAGE AREA	= 3.65 SQ. MI.
BASE DISCHARGE (Q100)	= 820 CFS
BASE HIGH WATER ELEVATION	= 45.6'

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 820 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 100 YRS.
OVERTOPPING FLOOD ELEVATION	= 45.3' ✱

✱ OVERTOPPING OCCURS AT ℄ AT STA. 9+60.30 -L-

TOTAL STRUCTURE QUANTITIES

REMOVAL OF EXISTING STRUCTURE	LUMP SUM
ASBESTOS ASSESSMENT	LUMP SUM
CULVERT EXCAVATION	LUMP SUM
FOUNDATION CONDITIONNING MATERIAL	97 TONS
ALUMINUM BOX CULVERT	LUMP SUM
FLOWABLE FILL	26.6 C.Y.

NOTES

ASSUMED LIVE LOAD ---------HL-93 OR ALTERNATE LOADING

CULVERT IS TO BE DESIGNED FOR A MINIMUM FILL DEPTH OF 1'-3" AND A MAXIMUM OF 2'-0".

3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

THE CONTRACTOR SHALL CHECK THE LENGTH AND ELEVATION OF THE CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

ALL MATERIALS SHALL MEET THE REQUIREMENTS OF THE NCDOT STANDARDS SPECIFICATIONS FOR ROADS AND STRUCTURES DATED JANUARY 2018.

THE DETAILS SHOWN ARE FOR GENERAL LAYOUT ONLY. THE SUPPLIER SHALL PROVIDE DETAILS, DESIGN AND RATING SHEET FOR REVIEW AND APPROVAL THAT MEET THE REQUIREMENTS OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12, AND ARE SEALED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER.

UNLESS OTHERWISE INDICATED, THE SUPPLIER SHALL DETAIL, DESIGN, AND FURNISH ALL STRUCTURAL ELEMENTS AND HARDWARE.

THE EXISTING STRUCTURE CONSISTING OF 3 SPANS; 3 @ 17'-0", WITH A CLEAR ROADWAY WIDTH OF 28'-0" AND REINFORCED CONCRETE DECK ON TIMBER JOISTS; SUBSTRUCTURE CONSISTING OF TIMBER CAP ON TIMBER PILES AT END BENTS AND INTERIOR BENTS LOCATED AT THE PROPOSED STRUCTURE SITE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED CULVERT, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

REMOVAL OF THE EXISTING STRUCTURE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE STRUCTURE SPILLWAY AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH THE ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

GUARDRAIL POST LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER TO ENSURE ADEQUATE COVER AND INSTALLATION. FOR CULVERT 25 FT OR LESS, SEE ROADWAY DETAIL DRAWING 862D01 AS OPTIONAL GUARDRAIL PLACEMENT.

EXCAVATE 1 FOOT BELOW CULVERT AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH SECTION 414 OF THE STANDARD SPECIFICATIONS.

BACKFILL CULVERT IN ACCORDANCE WITH SECTION 414 OF THE STANDARD SPECIFICATIONS OR AS RECOMMENDED BY ALUMINUM BOX CULVERT MANUFACTURER.

FOR ALUMINUM BOX CULVERT, SEE ALUMINUM BOX CULVERT AT STATION 13+00.00 -L- SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CONSTRUCTION SEQUENCE SEE EROSION CONTROL PLANS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

FOUNDATION NOTE

THE ALUMINUM BOX CULVERT SHALL BE CONSTRUCTED WITH 12 INCHES OF FOUNDATION CONDITIONING MATERIAL PLACED BELOW THE BOTTOM OF CULVERT.

PROJECT NO. BP2.R006.1
GREENE COUNTY
STATION: 13+00.00 -L-

SHEET 1 OF 3 REPLACES BRIDGE NO. 57

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 22'-1" X 9'-3" ALUMINUM BOX CULVERT

105° SKEW

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
Ting Fang
2/7/2022

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

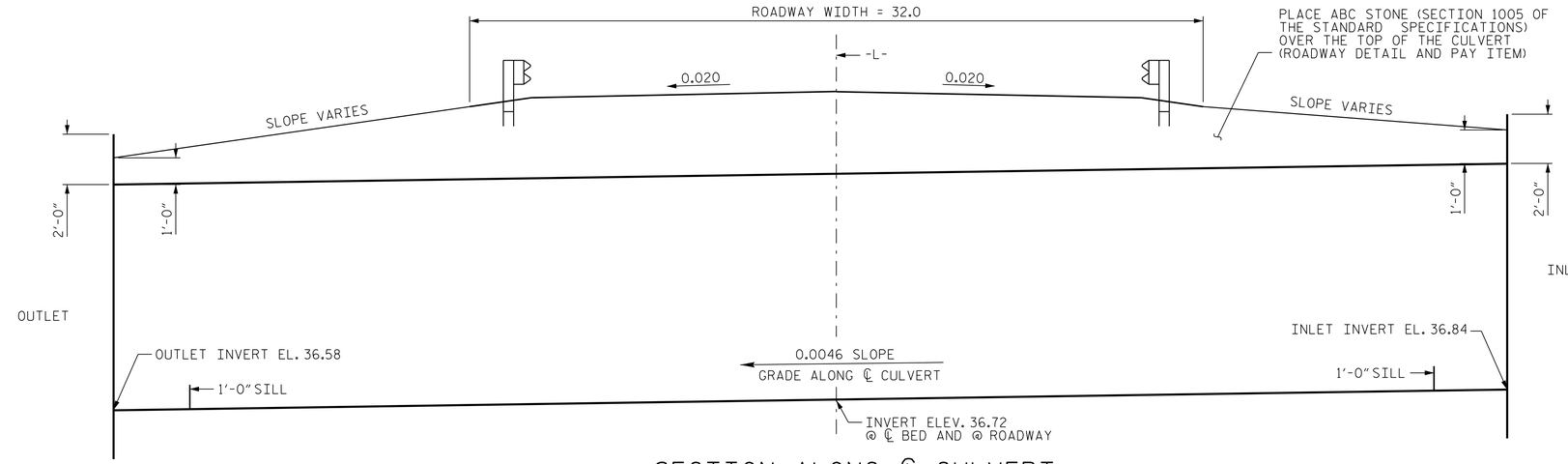
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : JJR	DATE : 10/21	DWG. No.
CHECKED BY : THF	DATE : 11/21	
DESIGN ENGINEER : VDK	DATE : 12/21	

REVISIONS

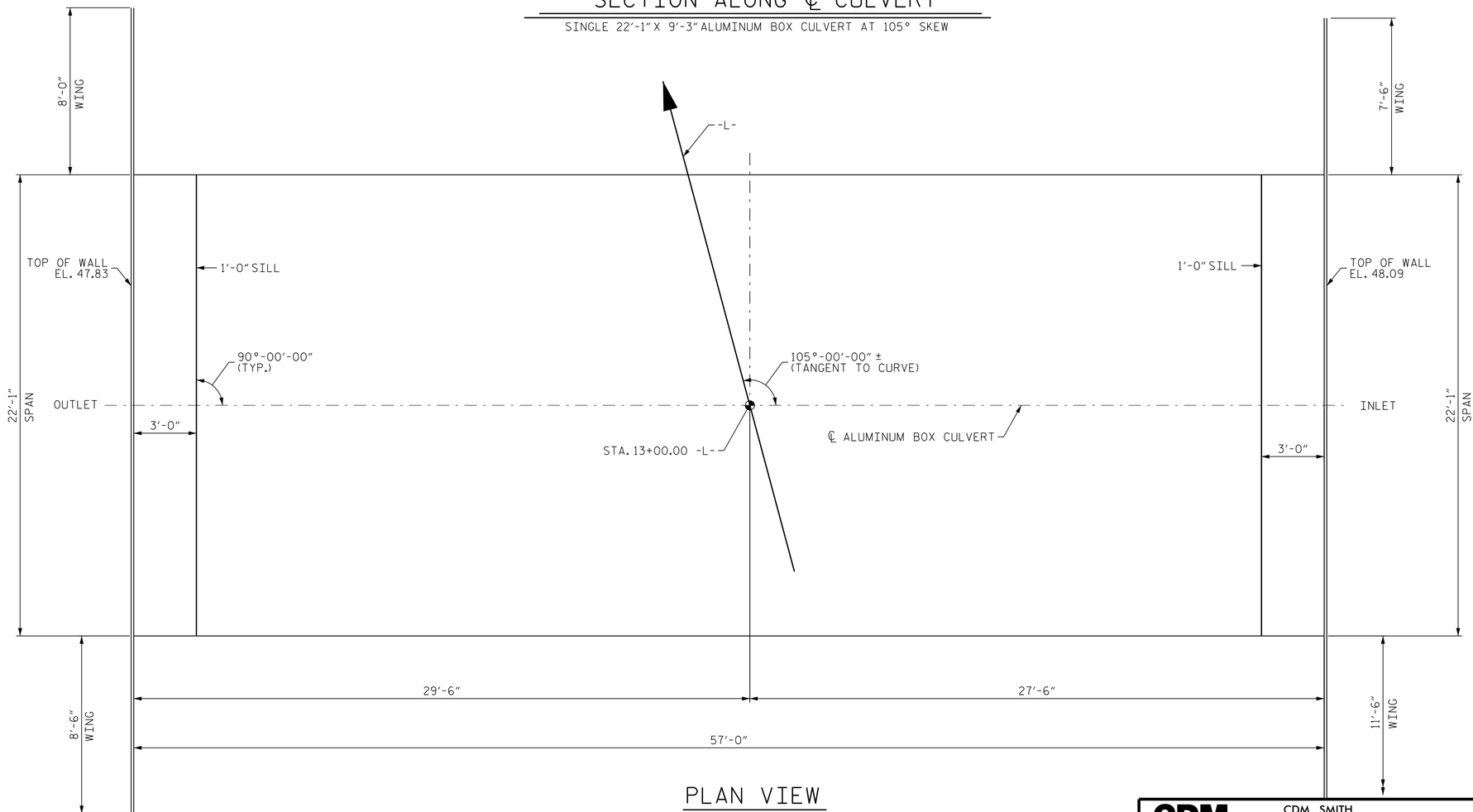
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. C-1
TOTAL SHEETS 3



SECTION ALONG ℄ CULVERT

SINGLE 22'-1" X 9'-3" ALUMINUM BOX CULVERT AT 105° SKEW



PLAN VIEW

DIMENSIONS TO BE VERIFIED BY ENGINEER IN FIELD

NOTES:

MINIMUM EMBEDMENT ALONG THE BASE OF WALL SHALL BE 3'-0", INCLUDING 2'-0" OF FLOWABLE FILL SEE DETAIL SHEET C-3.

CONTRACTOR MUST SUBMIT SEALED SHOP DRAWINGS FOR ALUMINUM BOX CULVERT & HEADWALLS TO NCDOT FOR APPROVAL PRIOR TO CONSTRUCTION.

BACKFILL WITH NATIVE MATERIAL TO SILL HEIGHT IN THE CULVERT. NATIVE MATERIAL BETWEEN SILLS IN THE CULVERT SHALL PROVIDE A CONTINUOUS FLOW CHANNEL.

NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM OR FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE CULVERT.

RIP RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL IN THE CULVERT. IF RIP RAP IS USED TO LINE THE FLOW CULVERT BARREL. NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE.

NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

SILLS ARE ALUMINUM AND BOLTED INTO THE CULVERT.

SILLS ARE TO BE 1 FOOT, TOP OF SILLS SHOULD MATCH STREAM BED ELEVATION.

THE ENTIRE COST OF THE ALUMINUM SILLS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FIR THE ALUMINUM BOX CULVERT.

PROJECT NO. BP2.R006.1

GREENE COUNTY

STATION: 13+00.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 22'-1" X 9'-3" ALUMINUM BOX CULVERT

105° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-2
1			3			TOTAL SHEETS
2			4			3

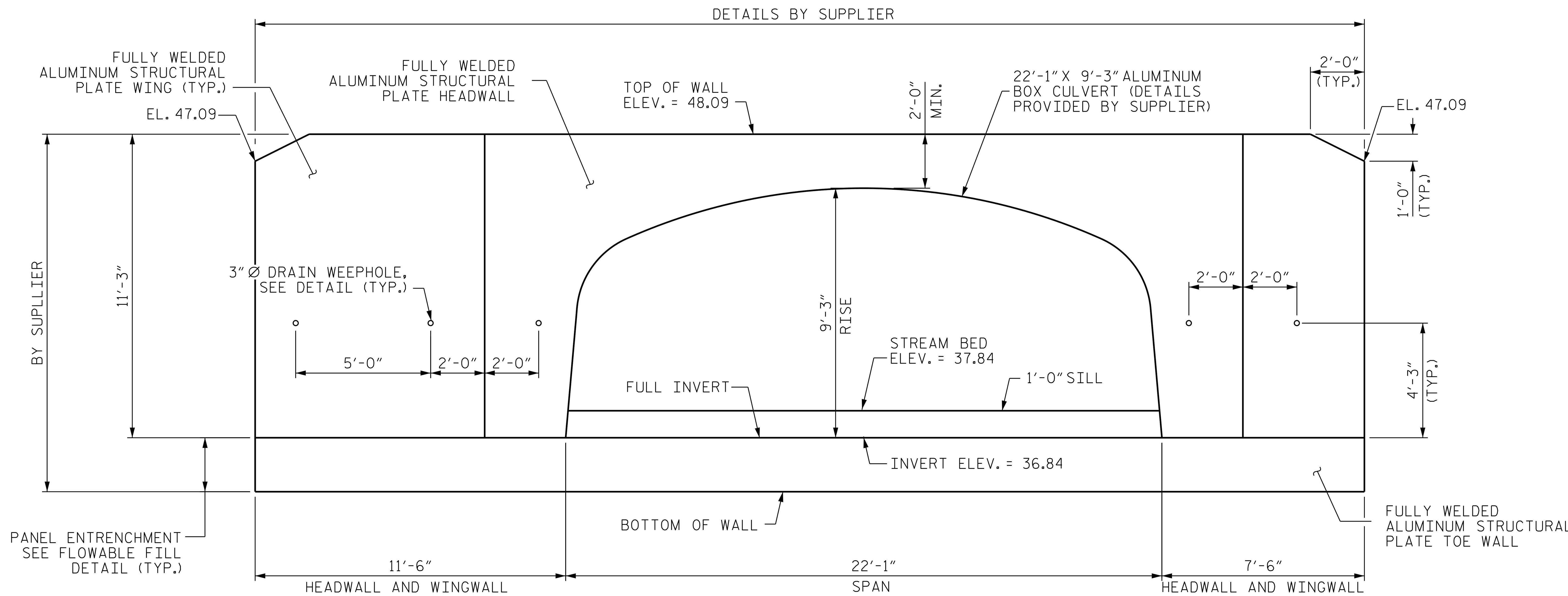
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : JJR DATE : 10/21
CHECKED BY : THF DATE : 11/21
DESIGN ENGINEER : VDK DATE : 12/21

DWG. No.

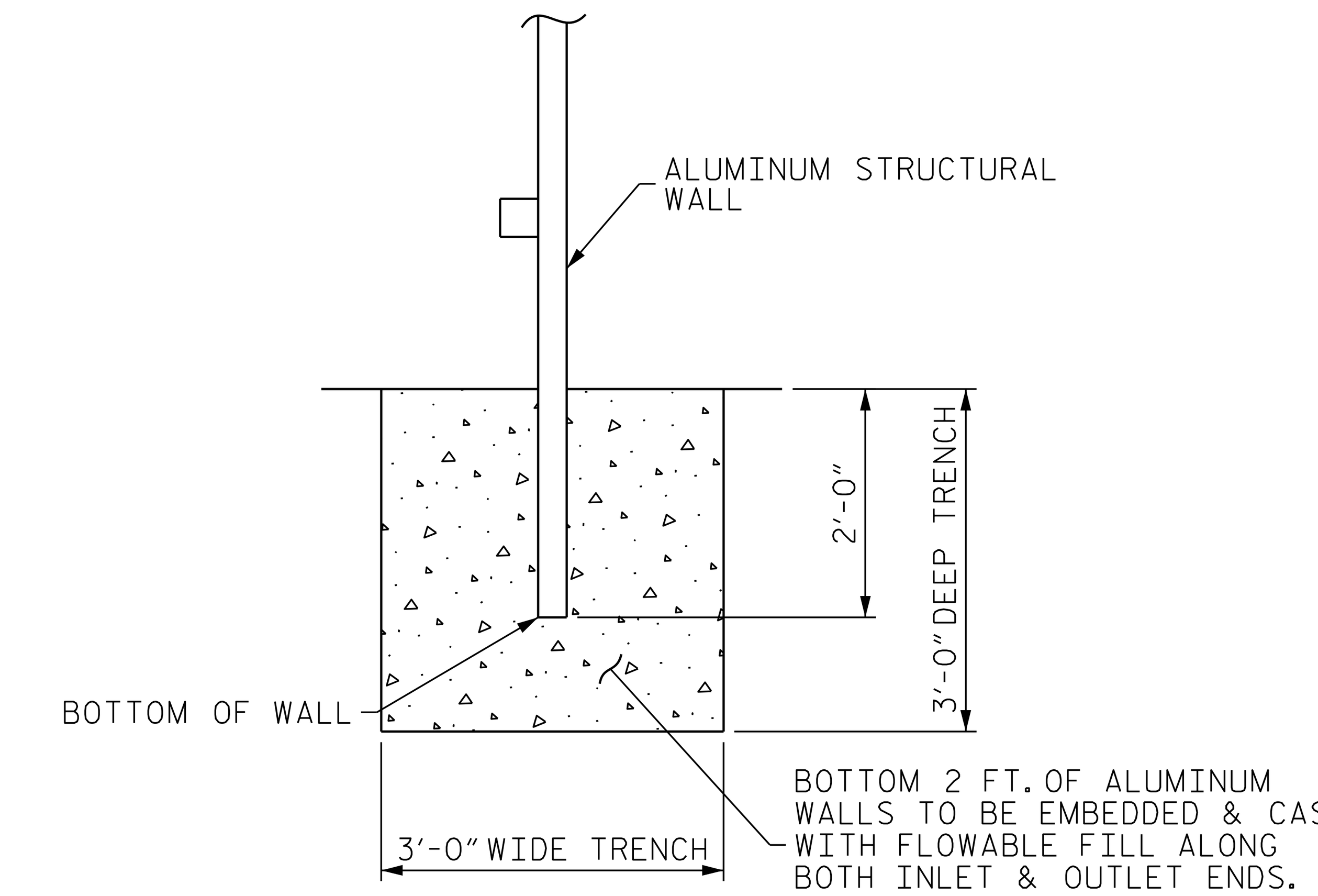
CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
Ting Fang
2/7/2022

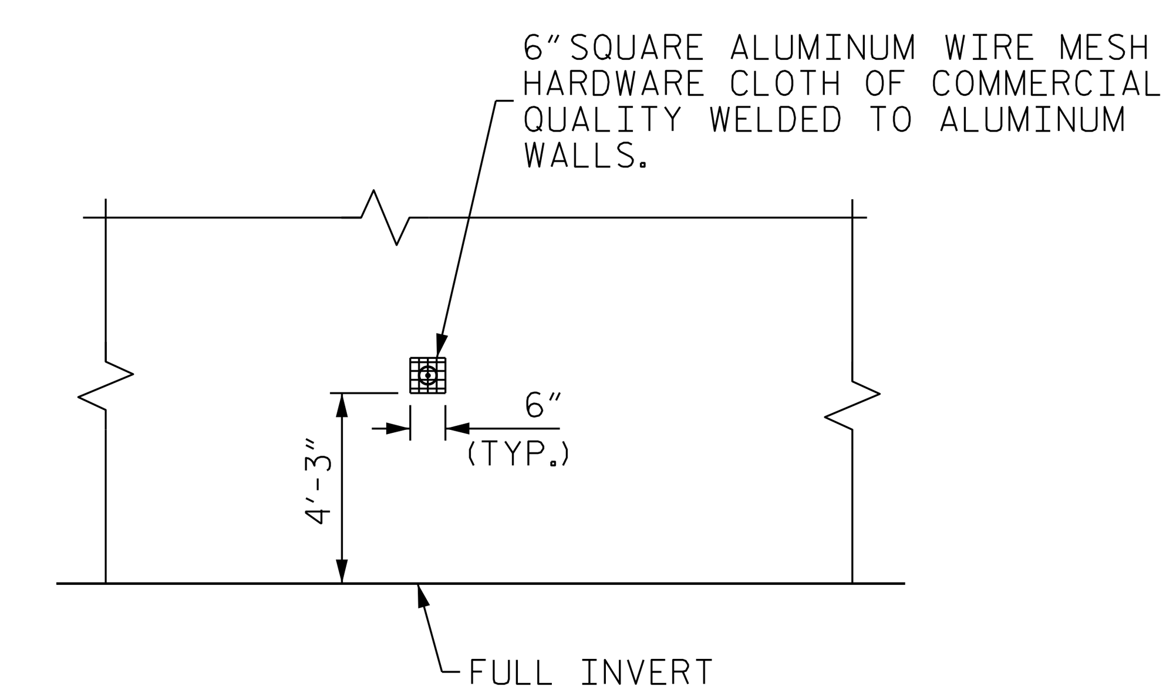


INLET HEADWALL ELEVATION - LOOKING DOWNSTREAM

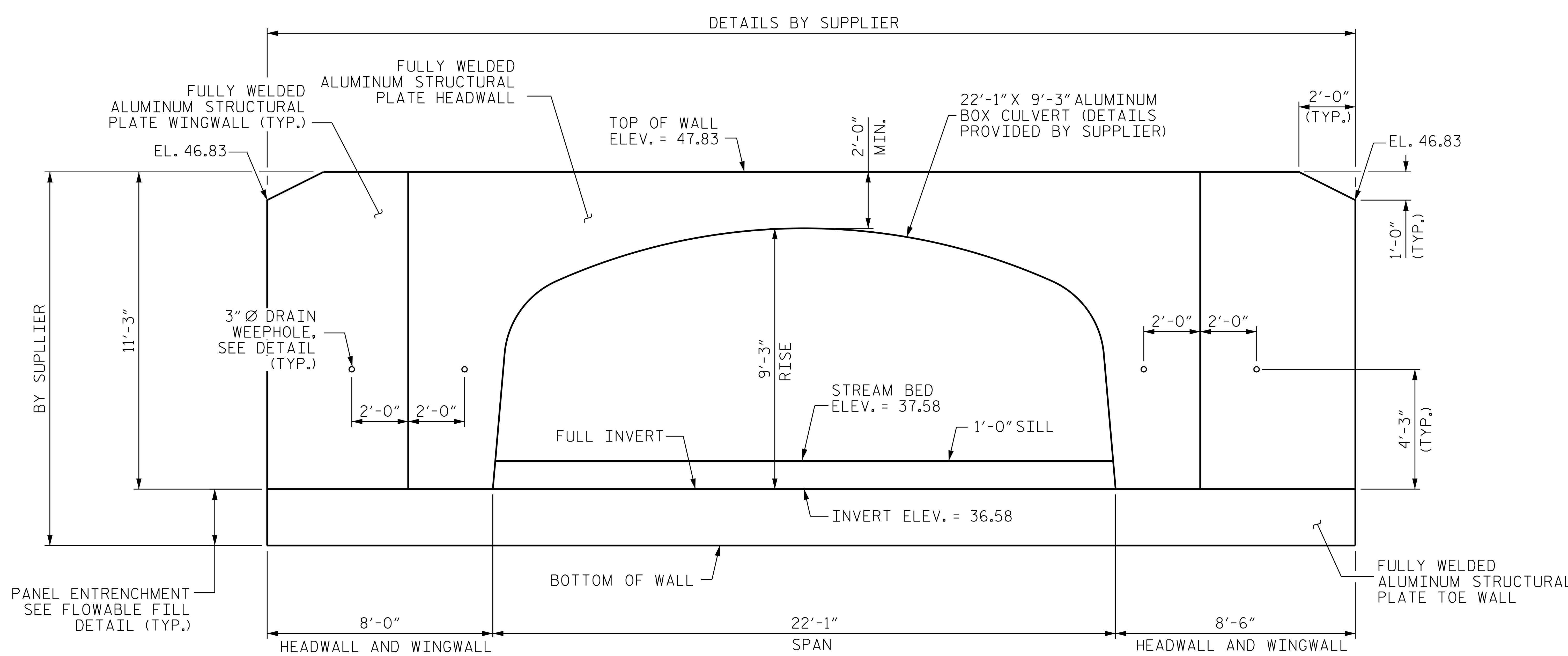
DIMENSIONS TO BE VERIFIED BY ENGINEER IN THE FIELD.



FLOWABLE FILL DETAIL



WEEPHOLE DETAIL



OUTLET HEADWALL ELEVATION - LOOKING UPSTREAM

DIMENSIONS TO BE VERIFIED BY ENGINEER IN THE FIELD.

PROJECT NO. BP2.R006.1
GREENE COUNTY
STATION: 13+00.00 -L-

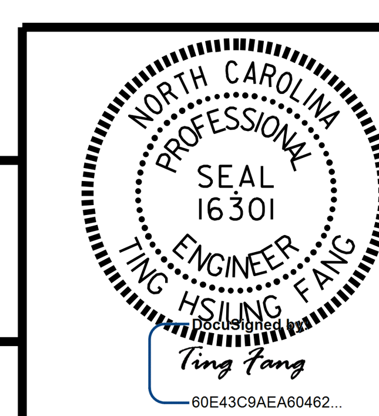
SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 22'-1" X 9'-3" ALUMINUM BOX CULVERT

105° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-3
1			3			TOTAL SHEETS
2			4			3



CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DRAWN BY : JJR	DATE : 10/21	DWG. No.
CHECKED BY : THF	DATE : 11/21	
DESIGN ENGINEER : VDK	DATE : 12/21	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED