PROJECT: 49218.3

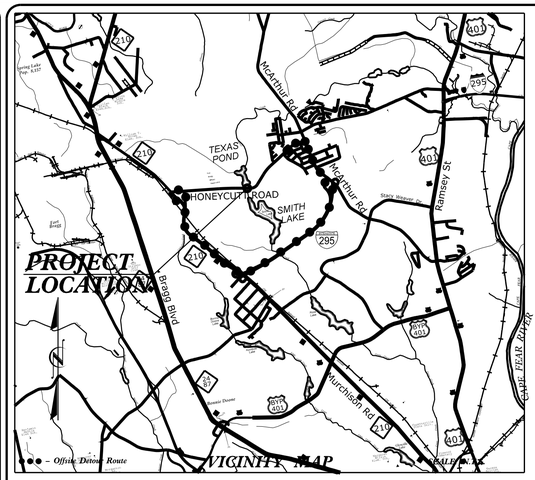
CONTRACT: DF00443

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	49218.3	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
49218.3		PE
49218.3		Utilities
49218.3		Construction



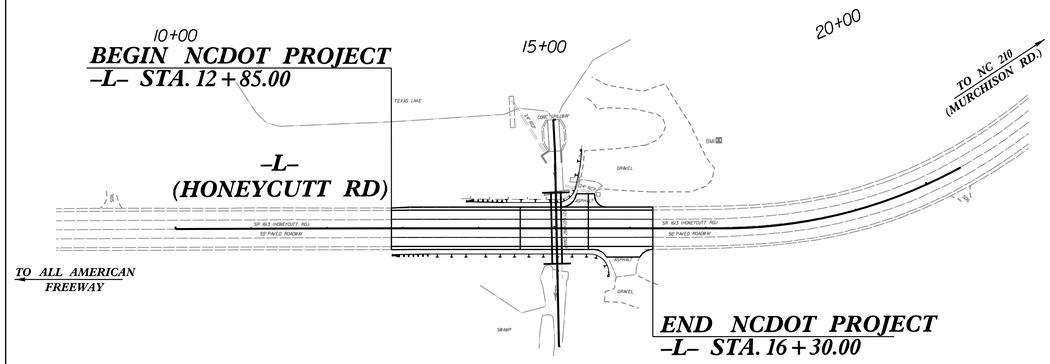
See Sheet 1-A For Index of Sheets

LOCATION: REPLACE CULVERT UNDER SR 1613 (HONEYCUTT ROAD) AT TEXAS POND IN FAYETTEVILLE

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE

FINAL PLANS
JULY 27, 2023

4



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
THIS PROJECT IS WITHIN THE BOUNDARIES OF FORT LIBERTY (ACCESS IS NOT RESTRICTED).

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
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 2024 = .
ADT 2044 = .
K = . %
D = . %
T = . % *
V = 50 MPH
* TTST = __% DUAL = __%
FUNC. CLASS = MINOR ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT 49218.3	=	0.065 MILES
LENGTH STRUCTURE TIP PROJECT 49218.3	=	0.015 MILES
TOTAL LENGTH TIP PROJECT 49218.3	=	0.080 MILES

Prepared in the Office of:
WETHERILL ENGINEERING
1223 Jones Franklin Rd. Raleigh, N.C. 27606
License No. F-0377
Bus: 919.851.8077 Fax: 919.851.8107

Prepared for:
DIVISION OF HIGHWAYS DIVISION 6
558 Gillespie Street Fayetteville, NC 28301

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: N/A

LETTING DATE: AUGUST 23, 2023

GREG PURVIS, PE — *PROJECT ENGINEER*

SCOTT CLARK, PE — *PROJECT DESIGN ENGINEER*

NCDOT CONTACT: CHRISTY WRIGHT HUFF, PE — *DIVISION PROJECT MANAGER*

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 31977 KEVIN B. AILOR
7/27/2023

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 24416 SCOTT CLARK
7/27/2023

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

7/27/2023
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USER:SClark

8/17/99

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	SHEET NO.
49218.3	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL Docusigned by: SEAL 24416 ENGINEER SCOTT CAREY
7/27/2023

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

SUBSURFACE PLANS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE BRIGHTSPEED, CHARTER, AND NEC (COMMUNICATION).

BRIGHTSPEED:	TERESA PADGETT teresa.a.padgett1@brightspeed.com
CHARTER:	ROBERT BULLARD, 910-308-5660 Robert.bullard@charter.com
NEC:	JESSIE MOORE, 919-308-6843 Jessie.t.moore.civ@army.mil

THE RELOCATION OF ALL EXISTING/ACTIVE UTILITIES WITHIN THESE PROJECT LIMITS WILL BE ACCOMPLISHED BY OTHERS PRIOR TO CONSTRUCTION OF THIS PROJECT.

CULVERT:

THE SUPPLIER WILL PROVIDE A SEALED PLAN FOR THEIR PRODUCT FOR NCDOT'S REVIEW PRIOR TO CONTRACTOR'S CONSTRUCTION OF THE CULVERT.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

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 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDNETALS PART 2	
862.01	Guardrail Placement
862.02	Guardrail Installation

INDEX OF SHEETS

7/27/2023
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9/10/2021

PROJECT REFERENCE NO.	SHEET NO.
49218.3	1B

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 (123)
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary (WLB)
- Proposed Wetland Boundary (WLB)
- Existing Endangered Animal Boundary (EAB)
- Existing Endangered Plant Boundary (EPB)
- Existing Historic Property Boundary (HPB)
- Known Contamination Area: Soil (S)
- Potential Contamination Area: Soil (S)
- Known Contamination Area: Water (W)
- Potential Contamination Area: Water (W)
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign (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 (FLOW)
- False Sump

RAILROADS:

- Standard Gauge (CSX TRANSPORTATION)
- RR Signal Milepost (MILEPOST 35)
- Switch (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 (RW)
- Existing Control of Access Line (CA)
- Proposed Control of Access Line (CA)
- Proposed ROW and CA Line (RW 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)

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:

** 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 (P)
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole (HH)
- H–Frame Pole
- U/G Power Line Test Hole (SUE – LOS A)*
- U/G Power Line (SUE – LOS B)* (P)
- U/G Power Line (SUE – LOS C)* (P)
- U/G Power Line (SUE – LOS D)* (P)

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line Test Hole (SUE – LOS A)*
- U/G Gas Line (SUE – LOS B)* (G)
- U/G Gas Line (SUE – LOS C)* (G)
- U/G Gas Line (SUE – LOS D)* (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 Force Main Line Test Hole (SUE – LOS A)*
- SS Force Main Line (SUE – LOS B)* (FSS)
- SS Force Main Line (SUE – LOS C)* (FSS)
- SS Force Main Line (SUE – LOS D)* (FSS)

MISCELLANEOUS:

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

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PROJECT REFERENCE NO.	SHEET NO.
49218.3	2

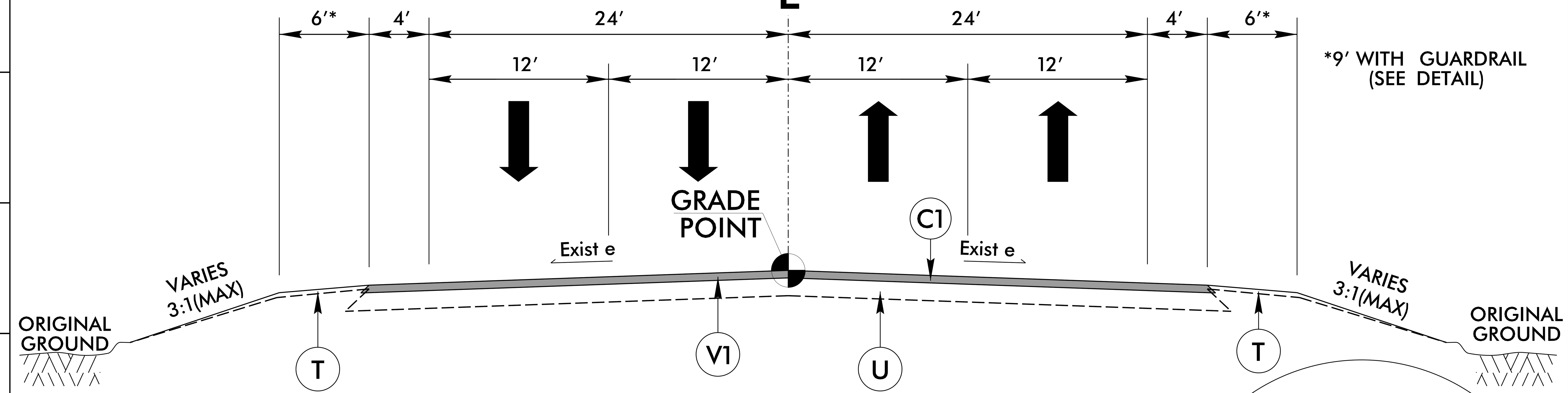
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 24416 M. SCOTT CLARK
DocuSigned by: Scott Clark D11722A19D3340A...
7/27/2023

PAVEMENT SCHEDULE

C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 3″ IN DEPTH.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 21#2″ OR GREATER THAN 4″ IN DEPTH.
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 GREATER THAN 5.5″ IN DEPTH OR LESS THAN 4″ IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING ASPHALT PAVEMENT, VAR DEPTH (0″ - 1.5″)

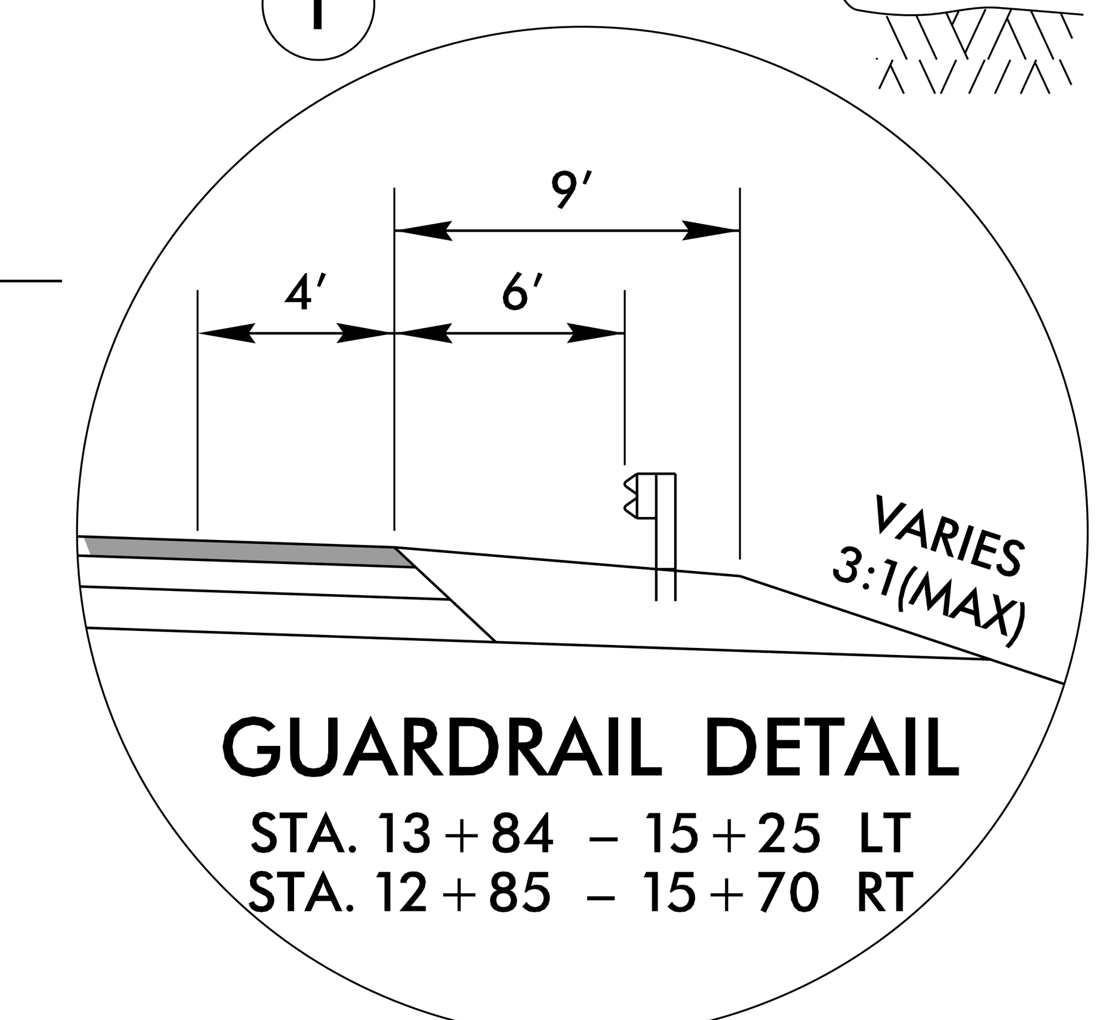
REVISIONS



*9′ WITH GUARDRAIL (SEE DETAIL)

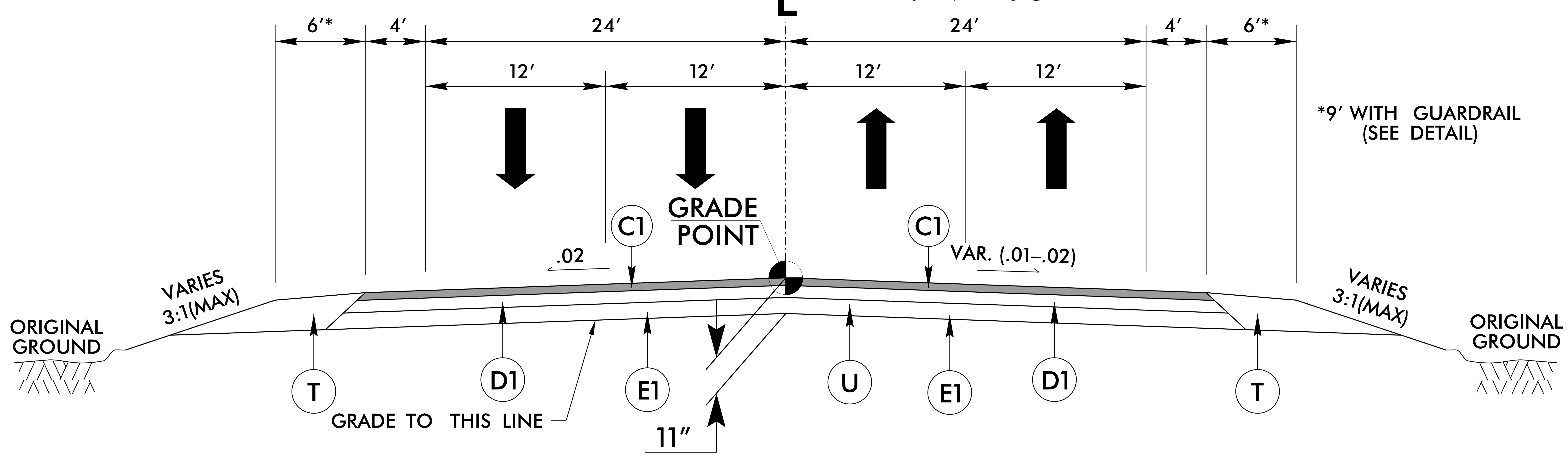
TYPICAL SECTION NO. 1

-L- STA. 12+85.00 – 14+55.00
-L- STA. 15+45.00 – 16+30.00



GUARDRAIL DETAIL

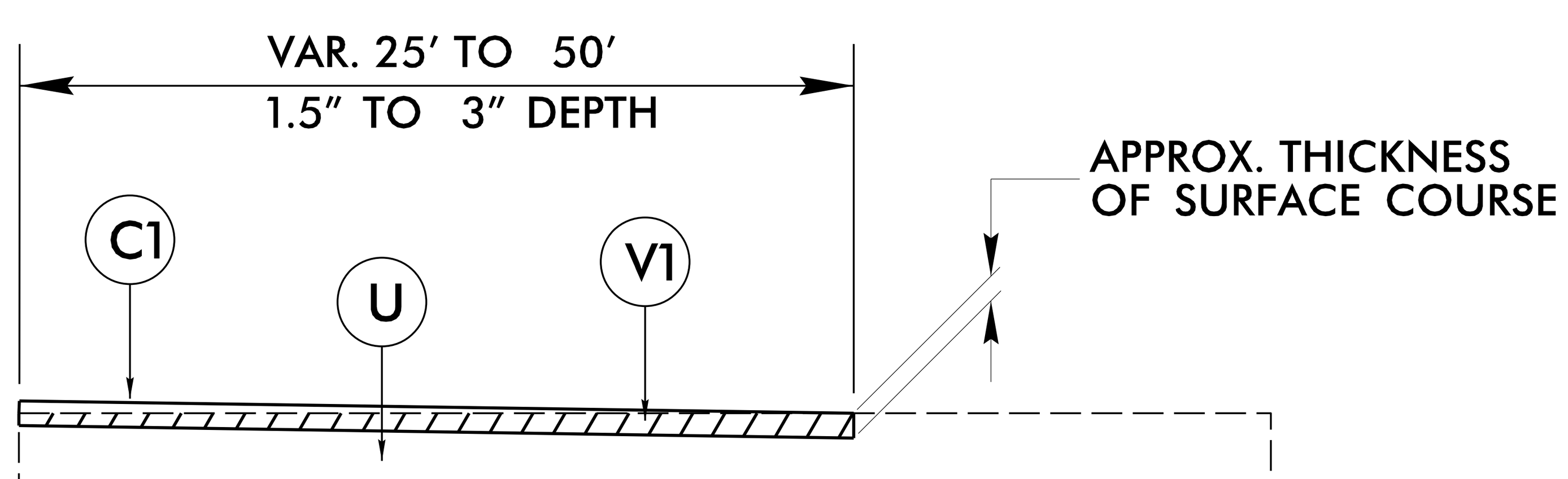
STA. 13+84 – 15+25 LT
STA. 12+85 – 15+70 RT



*9′ WITH GUARDRAIL (SEE DETAIL)

TYPICAL SECTION NO. 2

-L- STA. 14+55.00 – 15+45.00



NOTE: A TEMPORARY ASPHALT WEDGE WILL BE REQUIRED IMMEDIATELY AFTER MILLING TO ENSURE SMOOTH TRAVEL IF THE FINAL LAYER OF SURFACE COURSE IS NOT PLACED ON THE SAME DAY AS MILLING.

INCIDENTAL MILLING DETAIL

USE MILLING DETAIL AT RESURFACING TIES

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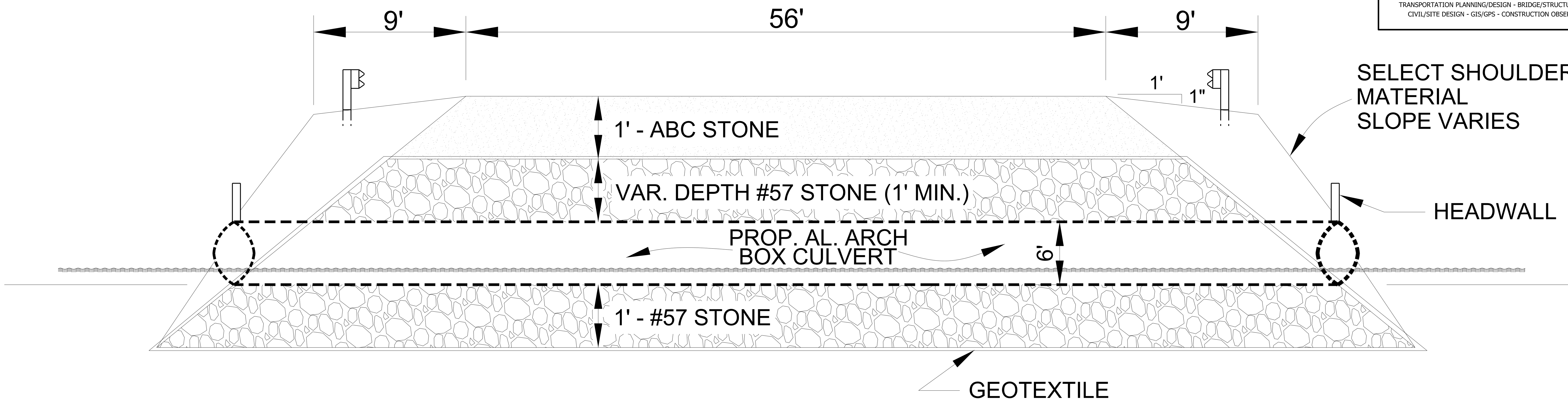
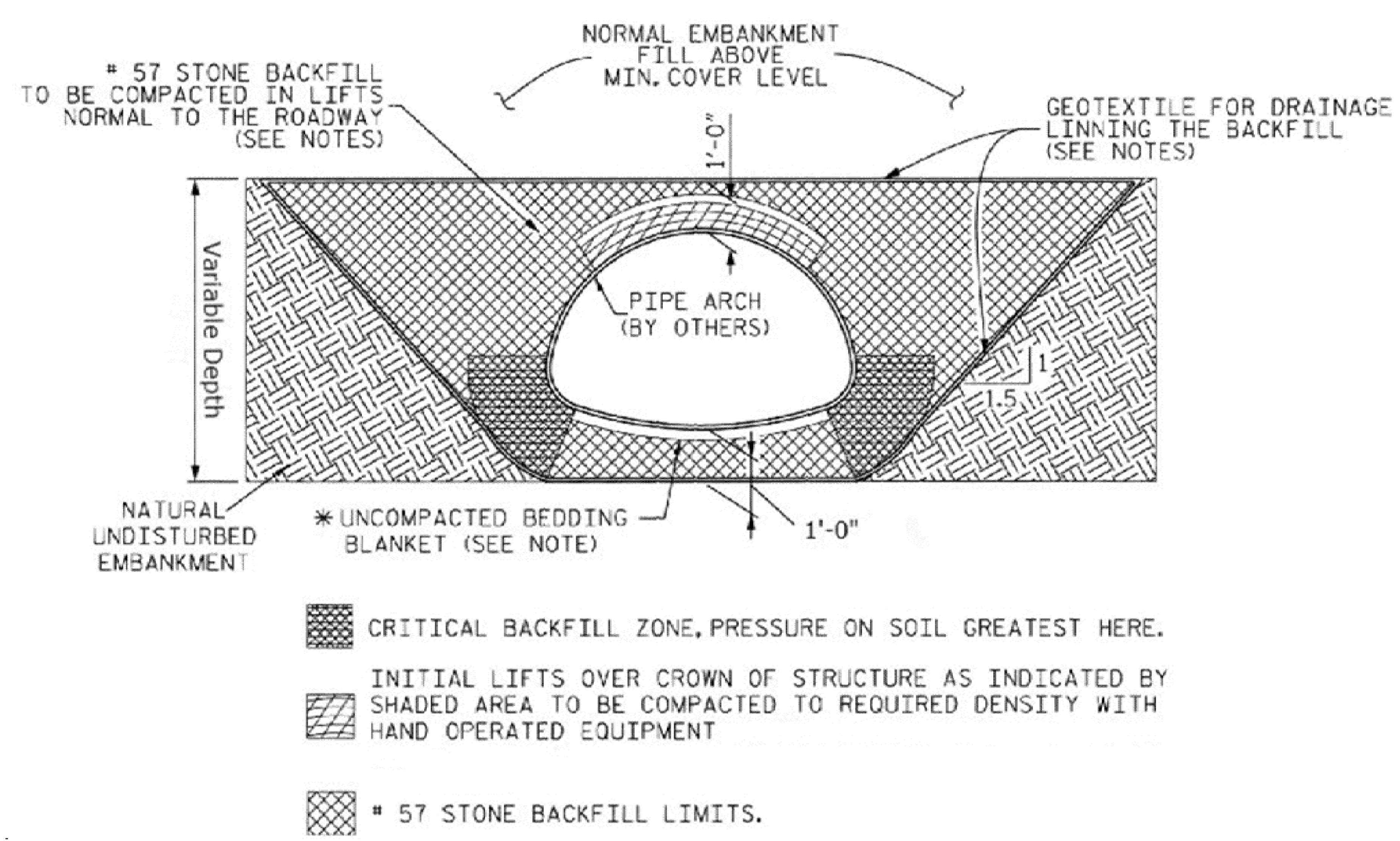
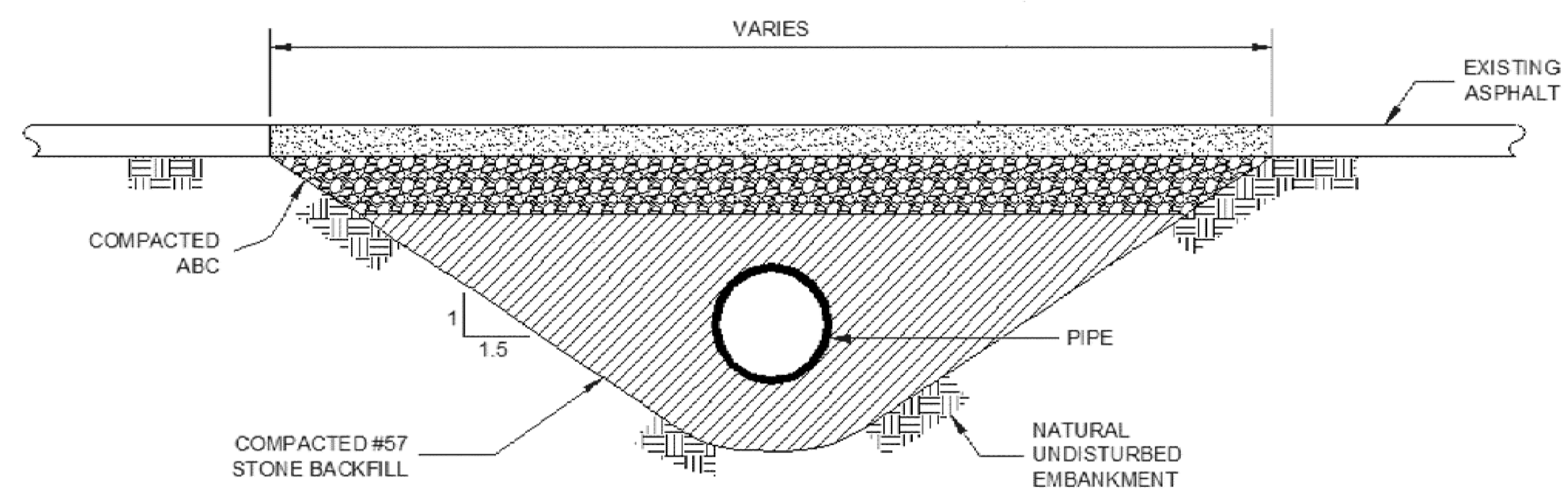
PROJECT REFERENCE NO.	SHEET NO.
49218.3	2A



SECTION VIEW
(NTS)





OPEN CUT & PATCH DETAIL
(NTS)

NOTES:

1. MINIMUM DENSITY FOR ASPHALT CONCRETE SURFACE COURSE (ACSC) S9.5C SHALL BE 92%.
2. MINIMUM DENSITY FOR ASPHALT CONCRETE INTERMEDIATE COURSE (ACIC) I19.0C SHALL BE 92%.
3. ACSC SHALL BE PLACED AND COMPACTED IN MAXIMUM OF 1.5" LIFTS.
4. ACIC SHALL BE PLACED AND COMPACTED IN MAXIMUM OF 4.0" LIFTS.
5. SAW CUT EDGES OF CUT TO PROVIDE A SMOOTH, EVEN EDGE FOR THE PATCH, AND PREVENT DAMAGE TO THE EXISTING ASPHALT WHICH WILL REMAIN IN PLACE.
6. EXISTING ASPHALT TO BE MILLED AND OVERLAYED BEYOND THE LIMITS OF CULVERT CONSTRUCTION. SEE TYPICAL SECTIONS.

TYPICAL BACKFILL SECTION ALONG PIPE
(NTS)

NOTES:

1. GEOTEXTILE FOR DRAINAGE IN FOUNDATION BEDDING AND BACKFILL IS INCIDENTAL TO COST OF PIPE ARCH.
2. COMPLETE AND REGULAR MONITORING OF THE CSP ARCH SHAPE IS NECESSARY DURING ALL BACKFILLING OF THE STRUCTURE.
3. PREVENT EXCESSIVE DISTORTION OF SHAPE AS NECESSARY BY VARYING COMPACTION METHODS AND EQUIPTMENT.
4. EMBANKMENT SLOPE TO BE 1.5:1 MINIMUM SUCH THAT A STABLE EMBANKMENT CAPABLE OF RESISTING SIDE PRESSURES FROM CSP PIPE-ARCH SHAPE WILL BE MAINTAINED THROUGHOUT THE LIFE OF INSTALLATION.

REVISIONS

8/17/99

PIPE REMOVAL & REPLACEMENT DETAILS

12/06/07

COMPUTED BY: MSC DATE: 04/10/2023
CHECKED BY: GSP DATE: 04/17/2023

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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PROJECT REFERENCE NO.	SHEET NO.
49218.3	3

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
–L– STA. 12+85.00	–L– STA. 16+30.00	0	73.52	73.52	
SUBTOTALS:		0	73.52	73.52	
PROJECT SUBTOTALS:		0.00	73.52	73.52	
LOSS DUE TO CLEARING & GRUBBING				0	
GRAND TOTALS:		0	73.52	73.52	
SAY:		0		75	

Note: Approximate quantities only.

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD³
–L–	14+55.00	15+45.00	CL	600.00
TOTAL:				600.00
SAY:				600

PAVEMENT MILLING SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD³
–L–	12+85.00	14+55.00	CL	1056.7
–L–	15+45.00	16+30.00	CL	611.7
TOTAL:				1668.4
MILLING ASPHALT PAVEMENT, 1.5" DEPTH			SAY:	1670

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

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH: STRAIGHT	LENGTH: SHOP CURVED	LENGTH: DOUBLE FACED	WARRANT POINT: APPROACH END	WARRANT POINT: TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH: APPROACH END	FLARE LENGTH: TRAILING END	W: APPROACH END	W: TRAILING END	ANCHORS: XI MOD	ANCHORS: TYPE III	ANCHORS: GREU TL–2	ANCHORS: AT–1	ANCHORS:	ANCHORS: CAT–1	ANCHORS: VI MOD	ANCHORS: BIC	ANCHORS: AT–1	IMPACT ATTENUATOR TYPE 350: EA	IMPACT ATTENUATOR TYPE 350: G	IMPACT ATTENUATOR TYPE 350: NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
–L–	13+84.00	15+03.60	LT.	119.60′			15+20.00	14+84.00	10′–0″	13–0″	N/A	50′–0″	N/A	1′–0″			1	1											215′		
–L–	12+85.00	15+47.00	RT.	262.00′			14+86.00	15+22.00	10′–0″	13–0″	50′–0″	N/A	1′–0″	N/A			1	1													
–L–	15+03.60	15+28.90	LT.		33.86′																									
–L–	15+47.00	15+72.00	RT.		37.89′																									
–L–	15+28.90	15+35.71	LT.	44.85′																										
			PROJECT SUBTOTAL	426.45′	71.75′												2	2													
			LESS ANCHOR DEDUCTIONS	(–)100.00′	0′		ADDITIONAL GUARDRAIL POSTS = 4 EACH												GUARDRAIL ANCHOR DEDUCTIONS												
			GR PROJECT TOTAL	326.45′	71.75′																									
			PERMANENT GR SAY	330′	75′														GREU TL–2 = 2 @ 50′ = 100′												
																			TOTAL DEDUCTIONS = 100.00′											

7/25/2023
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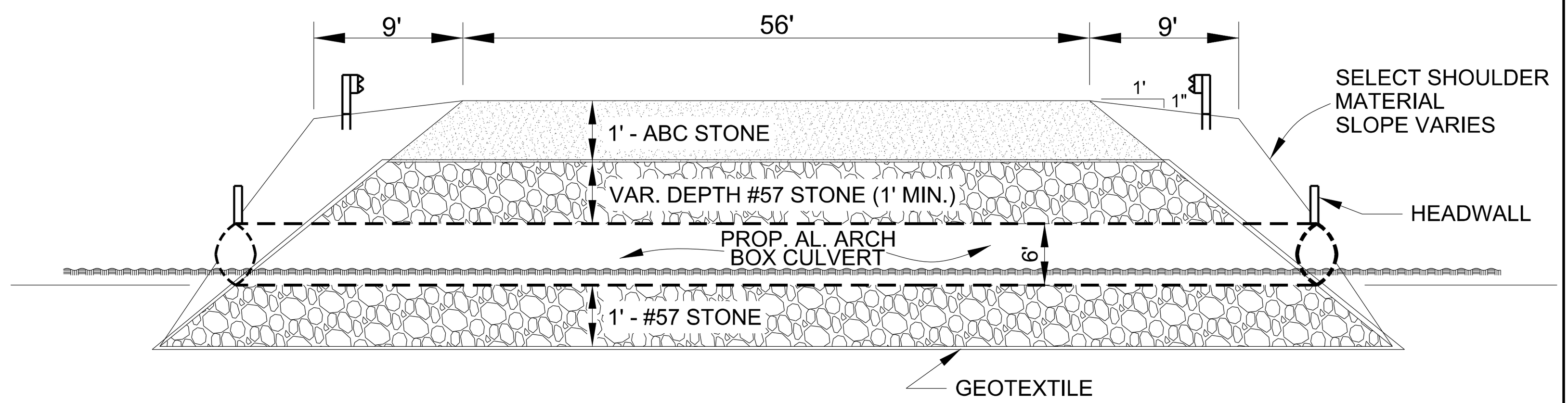
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

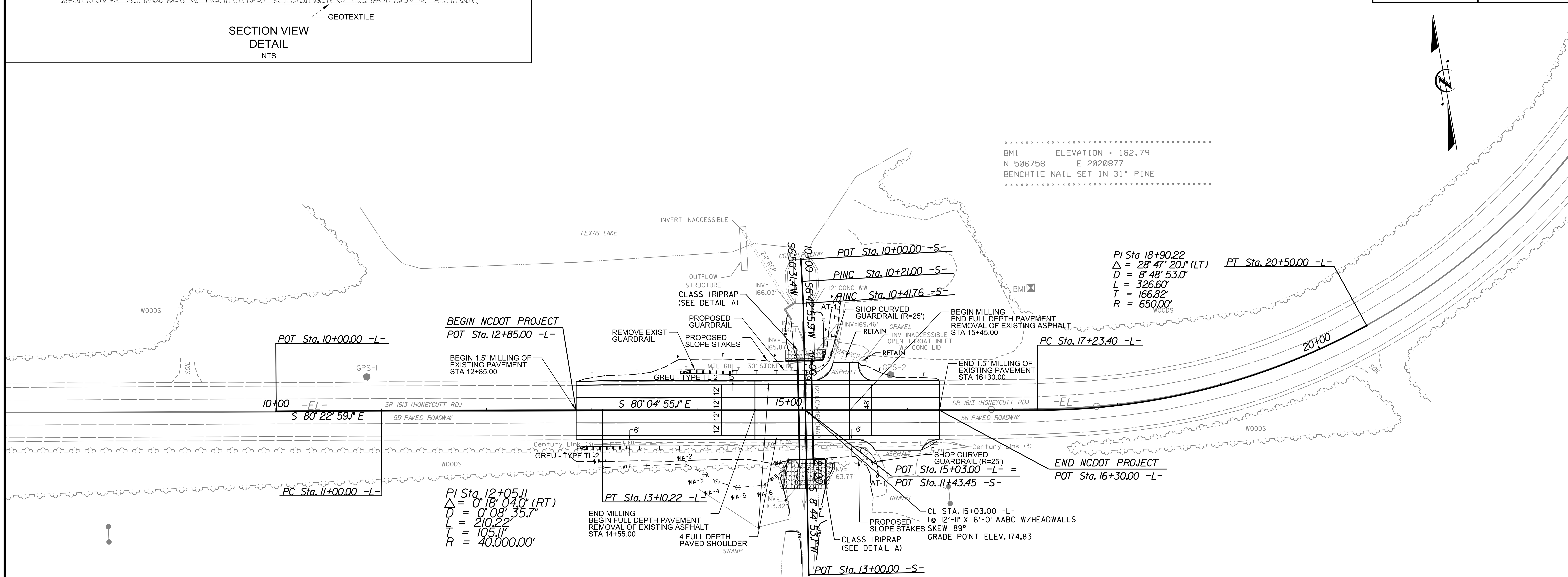
PROJECT REFERENCE NO.	SHEET NO.
49218.3	4

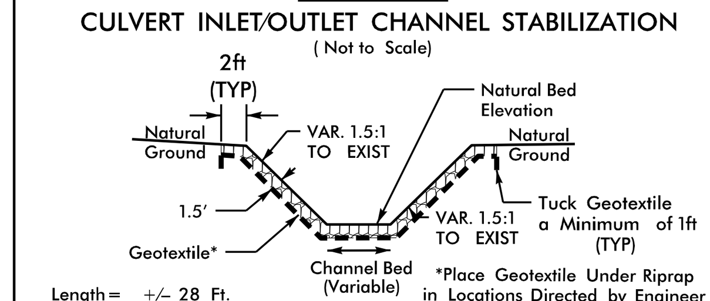
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24416 ENGINEER W. SCOTT CLARK 7/27/2023	NORTH CAROLINA PROFESSIONAL SEAL 31977 ENGINEER KEVIN B. ALFORD 7/27/2023

REVISIONS



SECTION VIEW
DETAIL
NTS





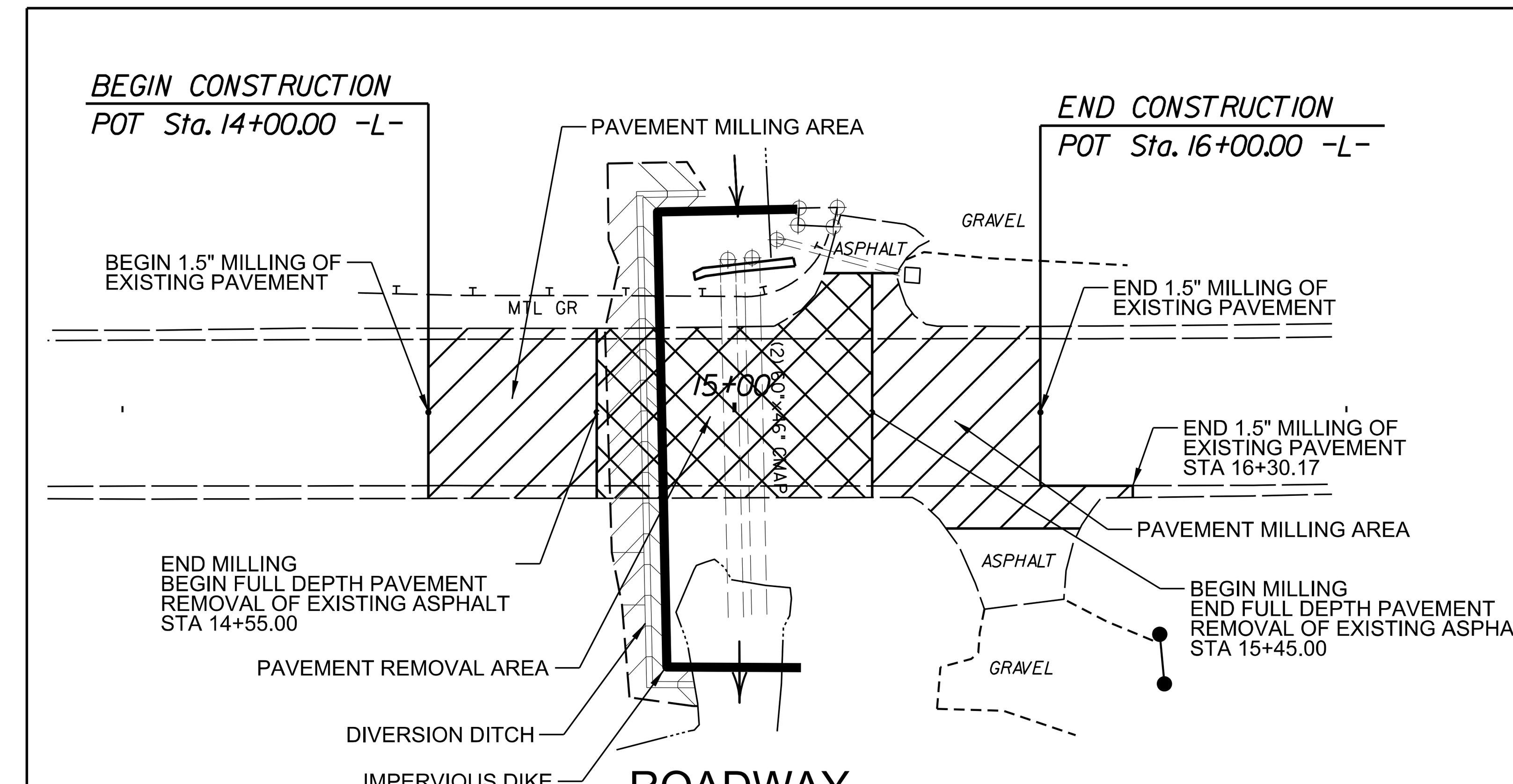
-L- STA. 15+03
10' UPSTREAM (LT. OF -L-) AND
28' DOWNSTREAM (RT. OF -L-)

Control Pt. (Rebar & Plastic Cap)	North	East	Elevation
GPS-1	506783.418	2020241.233	174.206
GPS-2	506699.683	2020731.850	175.391

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "GPS-1"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 506783.418(ft) EASTING: 2020241.233(ft)
ELEVATION: 174.206(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998712625
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-1" TO -L- STATION IS

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



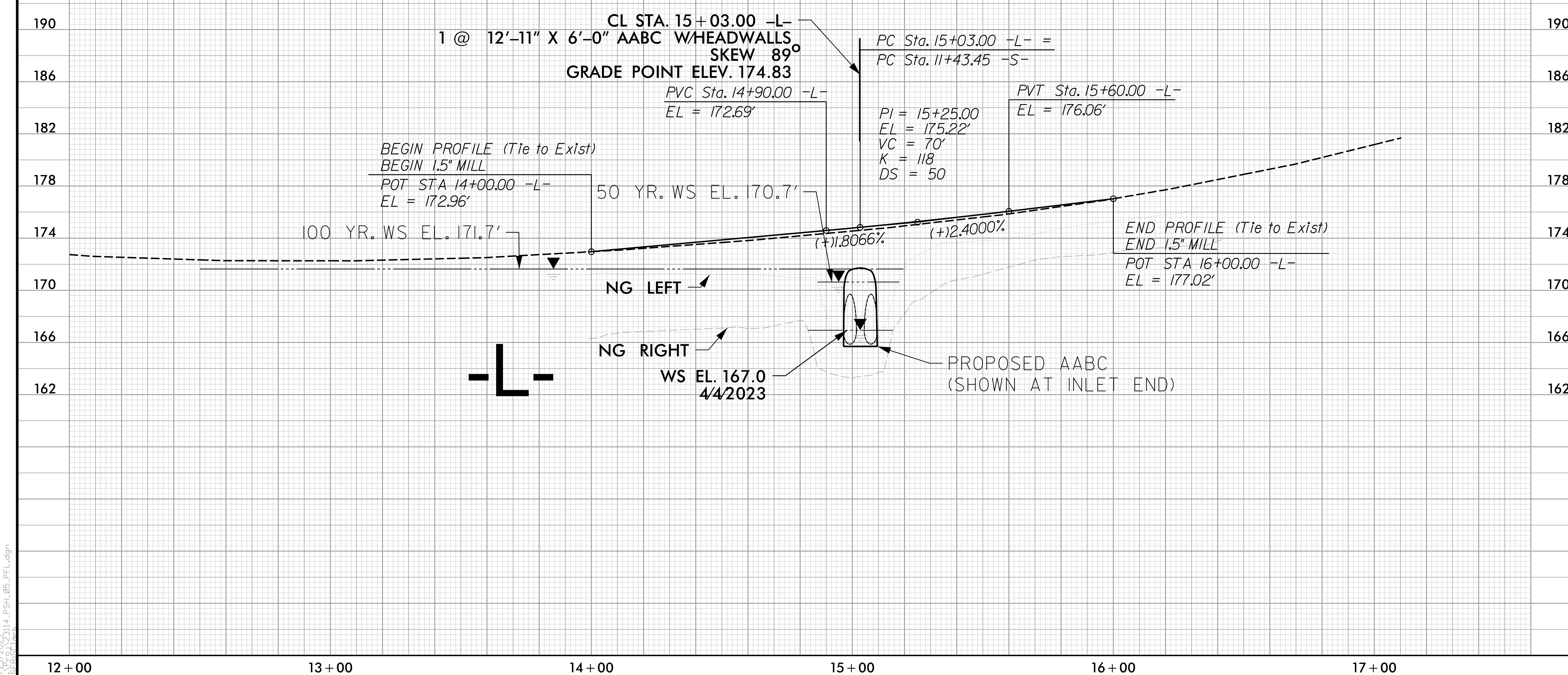
ROADWAY
DEMO PLAN

PROJECT REFERENCE NO.	SHEET NO.
49218.3	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 24416 W. SCOTT CLARK 7/27/2023	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 31977 7/27/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

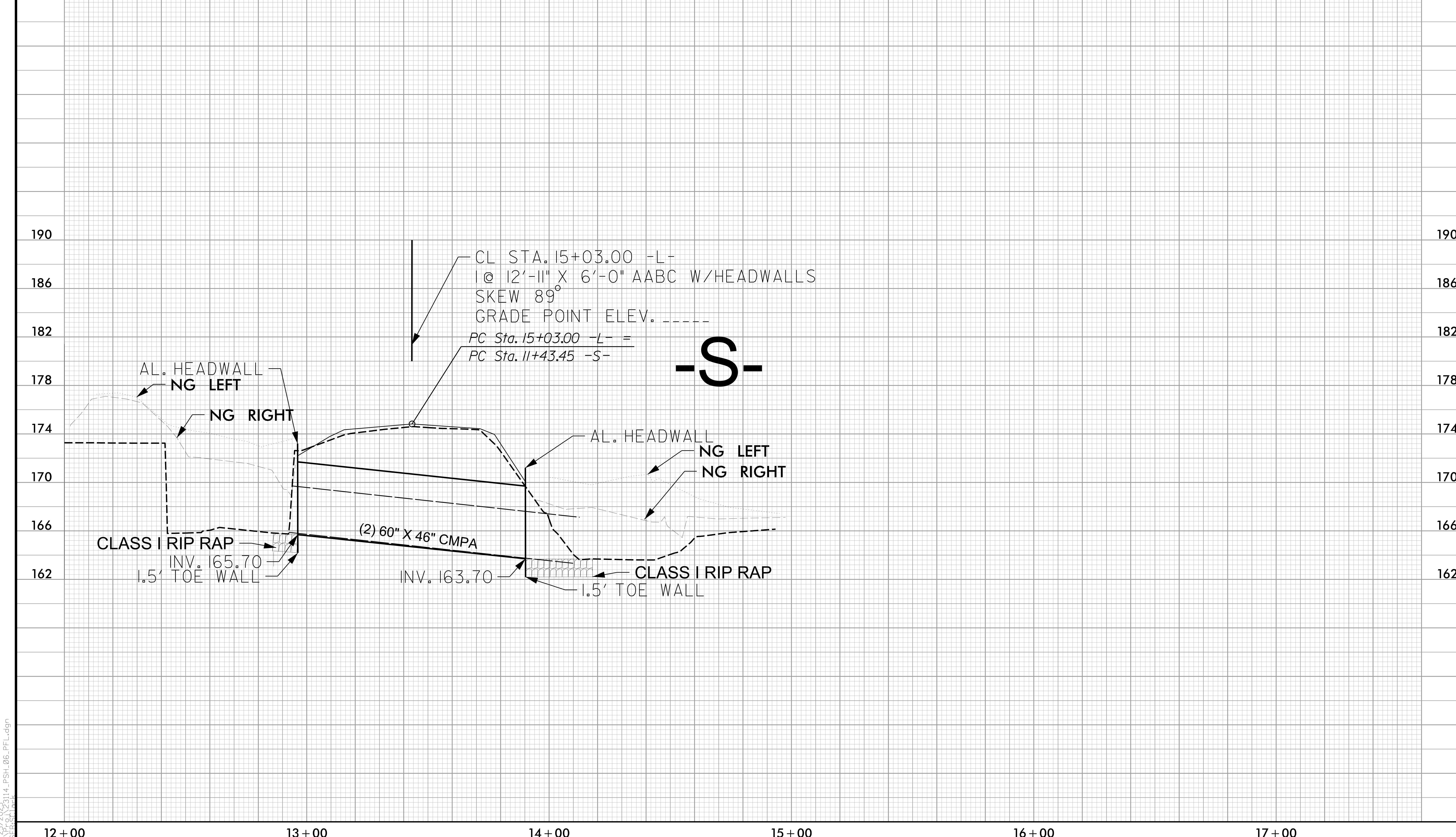
HYDRAULIC DATA

DESIGN DISCHARGE	= 400	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 107.7	FT
BASE DISCHARGE	= 480	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 171.7	FT
OVERTOPPING DISCHARGE	= 520	CFS
OVERTOPPING FREQUENCY	= +/-200	YRS
OVERTOPPING ELEVATION	= 172.3	FT
DATE OF SURVEY	= 04/04/23	
W.S.ELEVATION AT DATE OF SURVEY	= 167.0	FT



PROJECT REFERENCE NO.	SHEET NO.
49218.3	6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 24416 — M. SCOTT CLARK — 7/27/2023	SEAL 31977 — KEVIN B. ALFORD — 7/27/2023

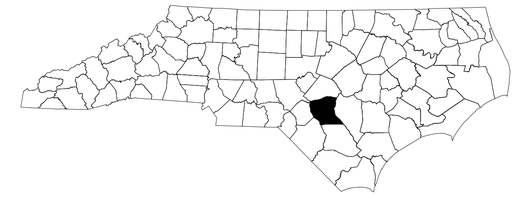
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

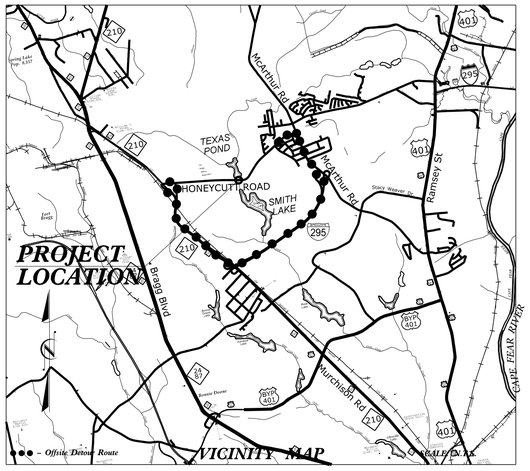


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

CUMBERLAND COUNTY





VICINITY MAP

LOCATION: REPLACE CULVERT UNDER SR 1613 (HONEYCUTT ROAD) AT TEXAS POND IN FAYETTEVILLE

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-01	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-01A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-01B	SIGN AND DEVICE LEGEND
TMP-02	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES AND GENERAL NOTES) AND PHASING
TMP-03	SPECIAL SIGN DESIGN
TMP-04	OFFSITE DETOUR

SHEET NO.
TMP-01

49218.3

TIP PROJECT:

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

PLANS PREPARED BY:

SCOTT CLARK, P.E.

D. ALLEN HAYES, E.I.

NCDOT CONTACTS:

PROJECT ENGINEER

PROJECT DESIGN ENGINEER

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SCOTT CLARK 24416 7/27/2023

7/25/2023
\\Wet-fs01\projects\2023\23114.01\Fort Bragg-Honeycutt Rd\Traffic Design\Pre-Let\Plan\WZTC\49218.3_TMP_01 Title.dgn
User:SClark

PROJ. REFERENCE NO.	SHEET NO.
49218.3	TMP-01A

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
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

LEGEND

GENERAL

NORTH ARROW

TRAFFIC CONTROL DEVICES

BARRICADE (TYPE III)

TEMPORARY SIGNING

STATIONARY SIGN

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APPROVED: _____

DATE: _____

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 24416 W. SCOTT CLARK
7/27/2023

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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND

7/25/2023
\\Weifs01\projects\2023\23114.01Fort Bragg-Honeycutt Rd\Traffic Design\Pre-Let\Plan\WZTC\49218.3_TMP_01A Legend.dgn
User:SClark

PROJ. REFERENCE NO.	SHEET NO.
49218.3	TMP-01B

R11-2 48" X 30"
ROAD CLOSED
W1-6L 48" X 24"
TYPE III BARRICADE
A

R11-2 48" X 30"
ROAD CLOSED
W1-6R 48" X 24"
TYPE III BARRICADE
B

R11-3 60" X 30"
ROAD CLOSED
"#" MILE(S) AHEAD
LOCAL TRAFFIC ONLY
TYPE III BARRICADE
C

R11-4 60" X 30"
ROAD CLOSED TO THRU TRAFFIC
DETOUR
M4-10L 48" X 18"
TYPE III BARRICADE
D

R11-4 60" X 30"
ROAD CLOSED TO THRU TRAFFIC
DETOUR
M4-10R 48" X 18"
TYPE III BARRICADE
E

ROAD CLOSED 500 FT
W20-3 48" X 48"
A

ROAD CLOSED 1000 FT
W20-3 48" X 48"
B

ROAD CLOSED AHEAD
W20-3 48" X 48"
NEXT LEFT SP-4L 42" X 12"
C

ROAD CLOSED AHEAD
W20-3 48" X 48"
D

ROAD CLOSED AHEAD
W20-3 48" X 48"
NEXT RIGHT SP-4R 42" X 12"
E

DETOUR AHEAD
W20-2 48" X 48"
F

SSD 48" X 30"
HONEYCUTT ROAD
DETOUR M4-8 24" X 12"
M6-1 L 21" X 15"
G

SSD 48" X 30"
HONEYCUTT ROAD
DETOUR M4-8 24" X 12"
M5-2 R 21" X 15"
H

SSD 48" X 30"
HONEYCUTT ROAD
DETOUR M4-8 24" X 12"
M6-2 21" X 15"
I

SSD 48" X 30"
HONEYCUTT ROAD
DETOUR M4-8 24" X 12"
M6-1 21" X 15"
J

END DETOUR M4-8 A 24" X 18"
K

X BARRICADES
-WITH MOUNTED SIGNING

X SIGNING
-STATIONARY MOUNTED

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APPROVED: _____

DATE: _____

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 24416 SCOTT CLARK
7/27/2023

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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

SIGN AND DEVICE LEGEND

7/25/2023
\\Wet-fs01\projects\2023\23IN4.01Fort Bragg-Honeycutt Rd\Traffic Design\Pre-Let\Plan\WZTC\49218.3_TMP_01B SDL.dgn
User:SClark

PROJ. REFERENCE NO.	SHEET NO.
49218.3	TMP-02

GENERAL NOTES

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

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

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

AND

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

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

AND

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

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

TRAFFIC CONTROL DEVICES

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

MANAGEMENT STRATEGIES

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

RECOMMENDED STRATEGIES:

TRAFFIC MANAGEMENT STRATEGIES:
ONE-LANE, TWO WAY OPERATION (FLAGGING)
OFF-SITE DETOURS

LOCAL NOTES

1) IN ORDER TO HAVE TIME TO ADEQUATELY REROUTE SCHOOL BUSSES, CUMBERLAND COUNTY SCHOOLS WILL BE CONTACTED AT (910) 678-2300 AT LEAST ONE MONTH PRIOR TO ROAD CLOSURE.

2) CUMBERLAND COUNTY EMERGENCY MANAGEMENT WILL BE CONTACTED AT (910) 321-6736 LEAST ONE MONTH PRIOR TO ROAD CLOSURE TO MAKE THE NECESSARY TEMPORARY REASSIGNMENTS TO PRIMARY RESPONSE UNITS.

PHASING

STEP 1) INSTALL ALL OFFSITE DETOUR SIGNING AND ROAD CLOSURE SIGNING. COVER SIGNS USING AN APPROVED METHOD PER THE DISCRETION OF THE ENGINEER. [SEE SHEETS TMP-01B & 04]

STEP 2) WHEN READY TO CLOSE THE ROADWAY, UNCOVER THE DETOUR AND ROAD CLOSURE SIGNING, CLOSE -L- (HONEYCUTT ROAD), AND DETOUR TRAFFIC. [SEE SHEETS TMP-01B & 04]

STEP 3) AWAY FROM TRAFFIC, REMOVE EXISTING BRIDGE, AND CONSTRUCT PROPOSED -L- STRUCTURE AND APPROACHES FROM THE BEGIN PROJECT LIMITS TO THE END PROJECT LIMITS UP TO AND INCLUDING THE FINAL LIFT OF SURFACE COURSE, AND FINAL PAVEMENT MARKINGS. [SEE ROADWAY PLANS AND FINAL PAVEMENT MARKING PLAN]

STEP 4) OPEN -L- TO THE FINAL TRAFFIC PATTERN, AND REMOVE ALL ROAD CLOSURE SIGNING, OFFSITE DETOUR SIGNING, TEMPORARY TRANSPORATION MANAGEMENT DEVICES. [SEE SHEET TMP-04 FOR SIGN LOCATIONS]

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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: _____

DATE: _____

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 24416 SCOTT CLARK 7/27/2023

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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

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

PROJ. REFERENCE NO.	SHEET NO.
49218.3	TMP-03

SIGN NUMBER: name
TYPE: STATIONARY
QUANTITY: SEE PLANS

SIGN WIDTH: 4′-0″
HEIGHT: 2′-6″
TOTAL AREA: 10.0 Sq.Ft.

BORDER TYPE: INSET
RECESS: 0.38″
WIDTH: 0.63″
RADII: 1.5″

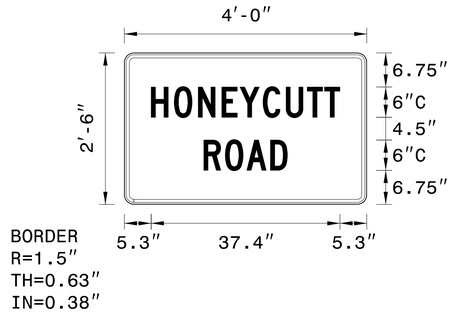
NO. Z BARS:
LENGTH:

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT′L: 0.080″ (2.0 mm) ALUMINUM

DESIGN BY: DAH
PROJECT ID: 49218.3
CHECKED BY: WEI
LOCATION: OFFSITE DETOUR
Jan 12, 2023
DIV: 6



Spacing Factor is 1 unless specified otherwise

USE NOTES: 1,2

1. Legend and border shall be direct applied black non-reflective sheeting.
2. Background shall be NC GRADE B fluorescent orange retroreflective sheeting.

LETTER POSITIONS

Letter locations are panel edge to lower left corner

																										Series/Size Text Length
	H	O	N	E	Y	C	U	T	T																	C 2000
	5.3	9.9	14.6	19.3	22.9	27.5	32	36.2	39.6																	37.4
	R	O	A	D																						C 2000
	15.7	20	24.2	28.9																						16.6

FILENAME: 49218.3_REF_BSSD

NORTH CAROLINA D.O.T. SIGN DETAIL

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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: _____

DATE: _____

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 24416 SCOTT CLARK
7/27/2023

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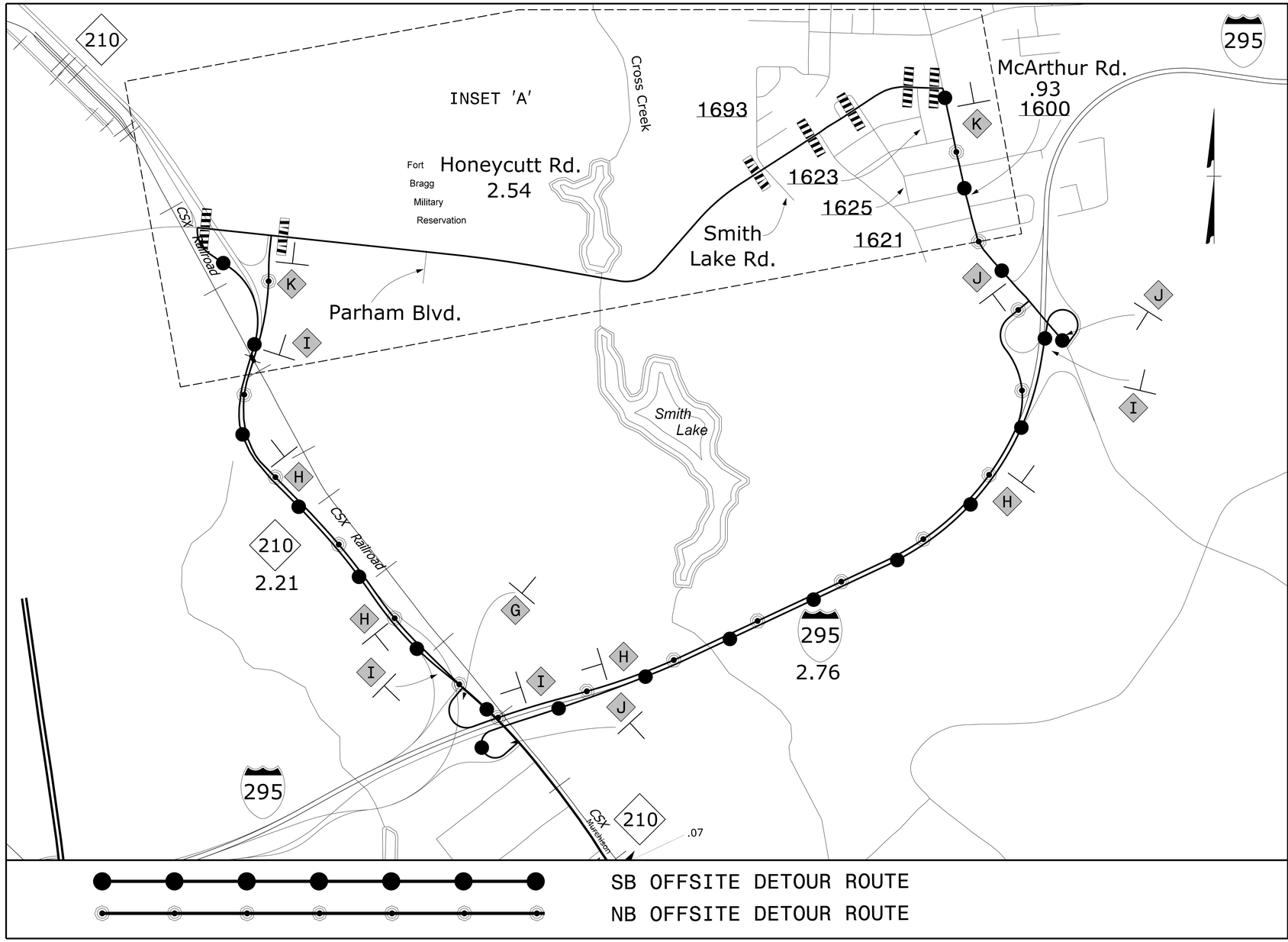
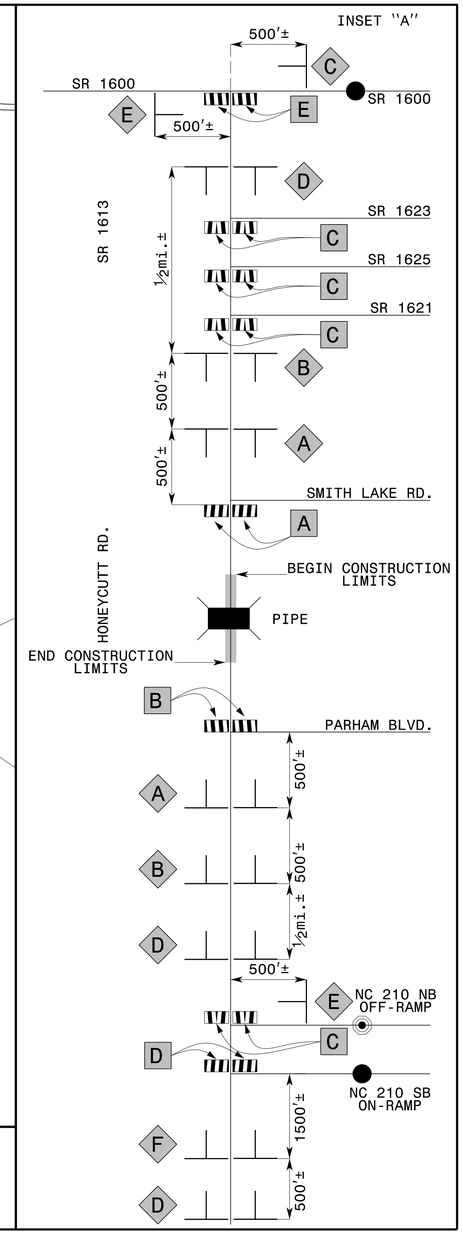
DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

SPECIAL SIGN DESIGN

7/25/2023
\\Wet-fs01\projects\2023\23114.01\Fort Bragg-Honeycutt Rd\Traffic Design\Pre-Let\Plan\WZTC\49218.3_TMP_03 SSD.dgn
User:SClark

PROJ. REFERENCE NO.	SHEET NO.
49218.3	TMP-04





NOTES:
1) REFER TO SHEET TMP-01B FOR SIGN AND DEVICE LEGEND.
2) FOR INSET "A", REFER TO ROADWAY STANDARD DRAWINGS 1101.03, SHEETS 1 & 2 OF 9 FOR APPLICABLE NOTES.

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APPROVED: _____

DATE: _____

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 24416 M. SCOTT CLARK
7/27/2023

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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

OFFSITE DETOUR

T.I.P.: 49218.3

CONTRACT: DF00443

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
CUMBERLAND COUNTY

TIP NO.	SHEET NO.
49218.3	PMP-01

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 24416 SCOTT CLARK
7/27/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX

ROADWAY STANDARD DRAWING

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

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

FINAL PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	PAY ITEM
T1	WHITE SOLID EDGE LINE	THERMOPLASTIC (4", 90 MIL)
T3	WHITE SOLID SKIP	THERMOPLASTIC (4", 90 MIL)
T13	YELLOW DOUBLE CENTER	THERMOPLASTIC (4", 90 MIL)

GENERAL NOTES

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

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

ROAD NAME	MARKING	MARKER
1. SR 1613	THERMOPLASTIC	NONE

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

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

D) ALL STATION ARE CONSIDERED +/- UNLESS OTHERWISE SHOWN ON THE PLANS.

PLAN SUBMITTED TO:

Ayman I. Alqudwah, P.E., Signing and Delineation Regional Engineer

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

PLAN PREPARED BY: Wetherill Engineering, Inc.

SCOTT CLARK, P.E. PROJECT MANAGER

D. ALLEN HAYES, E.I. TRAFFIC DESIGN ENGINEER

WETHERILL ENGINEERING

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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

TIP NO.	SHEET NO.
49218.3	PMP-02

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 24416 SCOTT CLARK 7/27/2023

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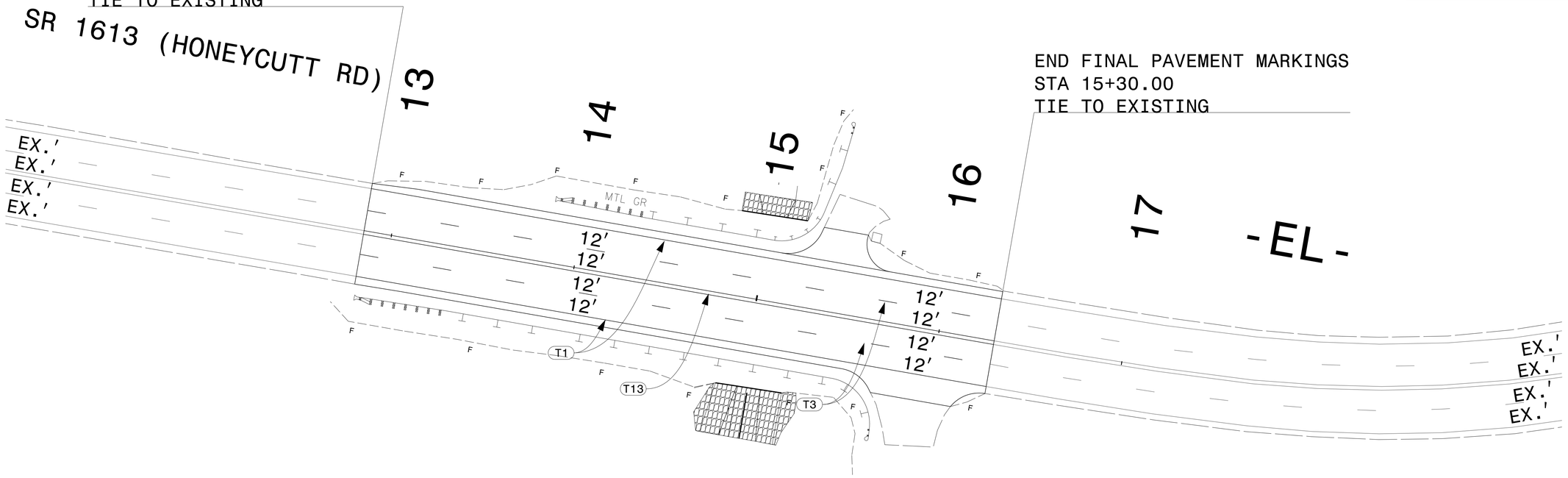
BEGIN FINAL PAVEMENT MARKINGS
STA 12+85.00
TIE TO EXISTING

SR 1613 (HONEYCUTT RD)

END FINAL PAVEMENT MARKINGS
STA 15+30.00
TIE TO EXISTING



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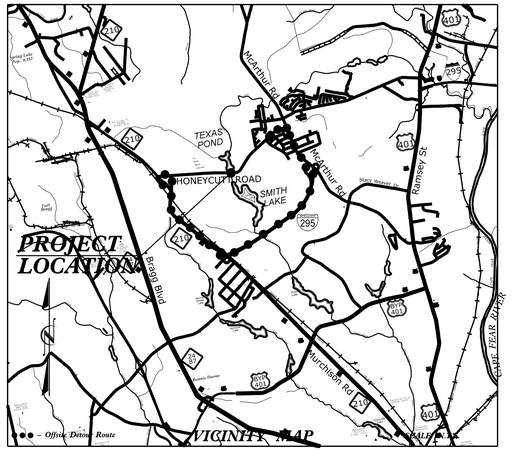
PAVEMENT MARKING DETAIL

PROJECT: 49218.3



See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

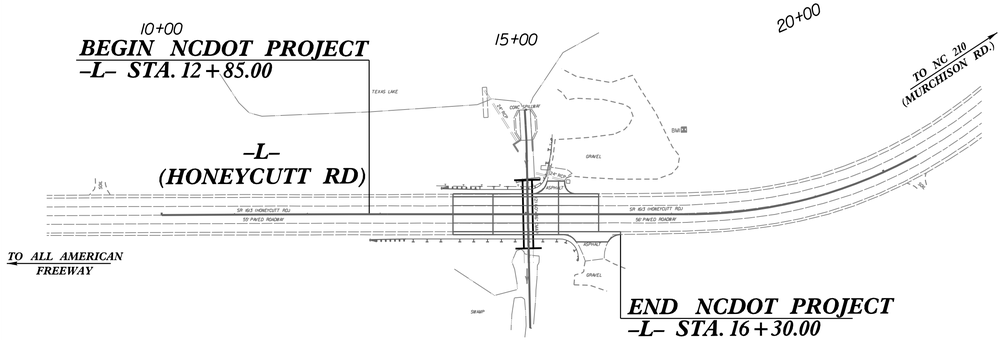
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

CUMBERLAND COUNTY

LOCATION: REPLACE CULVERT UNDER SR 1613 (HONEYCUTT ROAD) AT TEXAS POND IN FAYETTEVILLE

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE

4



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	49218.3	EC-1	

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

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	EW 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.

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.

WETHERILL ENGINEERING
1223 JONES FRANKLIN ROAD
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Prepared in the Office of:

WETHERILL ENGINEERING, INC.

1223 JONES FRANKLIN ROAD
RALEIGH, NC 27606

Designed by:

KATIE ESTEP — ***4485***
NAME — *LEVEL III CERTIFICATION NO.*

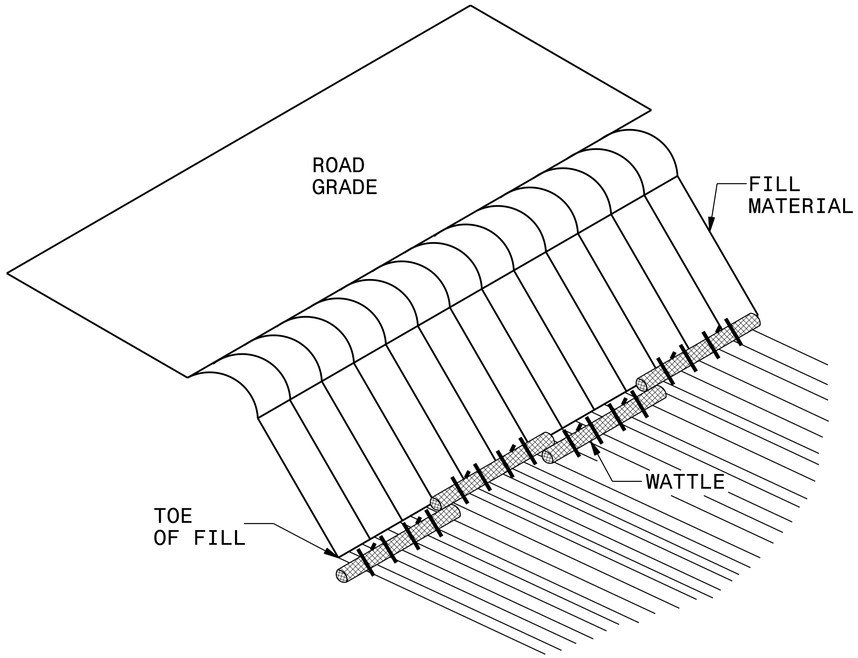
Roadway Standard Drawings

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

PROJECT REFERENCE NO.	SHEET NO.
49218.3	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER WATTLE BARRIER DETAIL



ISOMETRIC VIEW

NOTES:

USE MINIMUM 18 IN. NOMINAL DIAMETER COIR FIBER (COCONUT) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 2 TO 3 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLES ON TOE OF SLOPE.

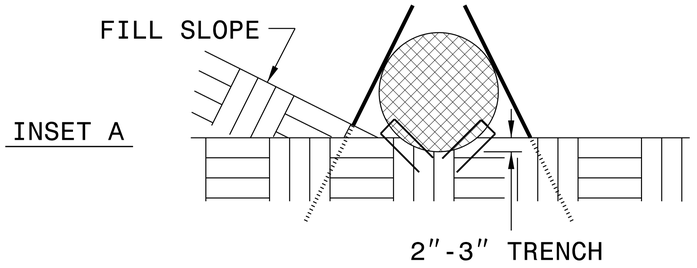
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

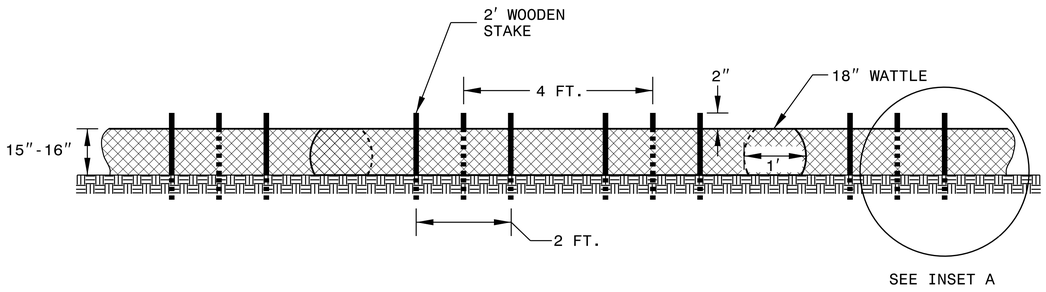
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

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

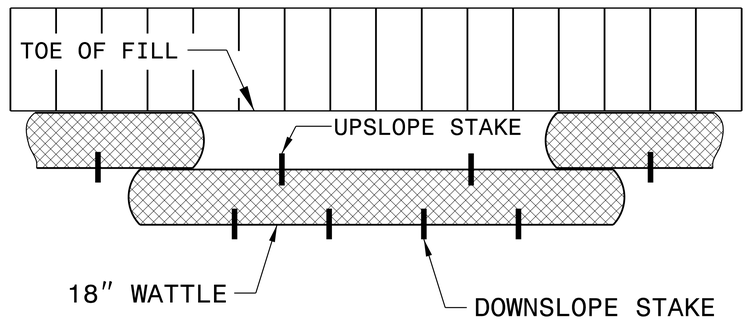
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 25 FT.





FRONT VIEW



TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
49218.3	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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.

8/17/99

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

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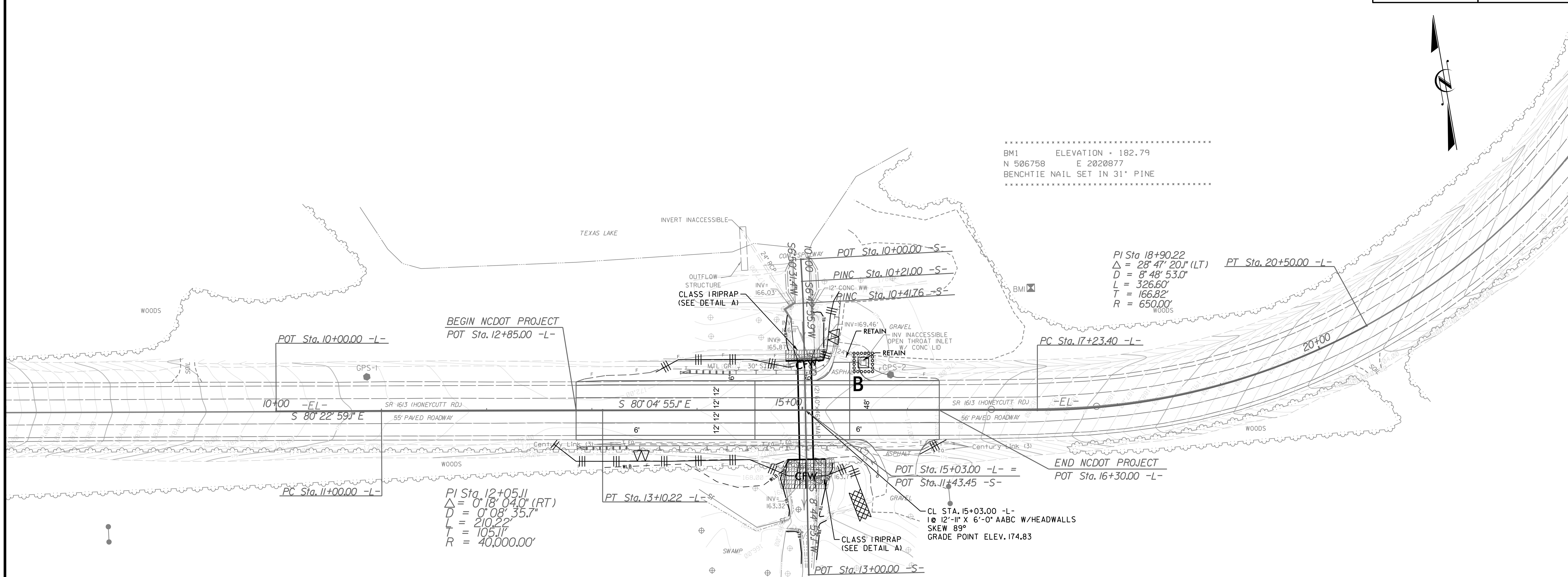
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
49218.3	EC-4/CONSTR. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

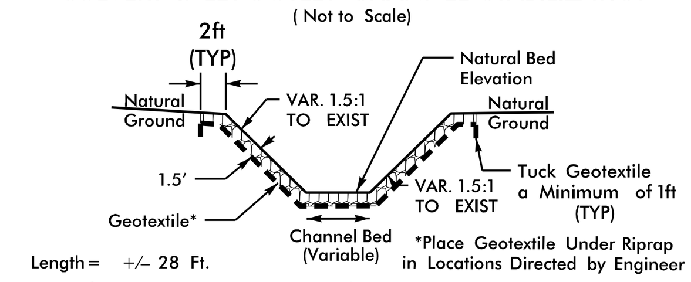
REVISIONS



DETAIL A

CULVERT INLET/OUTLET CHANNEL STABILIZATION

(Not to Scale)



Length = +/– 28 Ft.

Type of Liner = CL I Rip–Rap – Keyed–In

*Place Geotextile Under Riprap in Locations Directed by Engineer

–L– STA. 15+03
10' UPSTREAM (LT. OF –L–) AND
28' DOWNSTREAM (RT. OF –L–)

Control Pt. (Rebar & Plastic Cap)	North	East	Elevation
GPS-1	506783.418	2020241.233	174.206
GPS-2	506699.683	2020731.850	175.391

DATUM DESCRIPTION

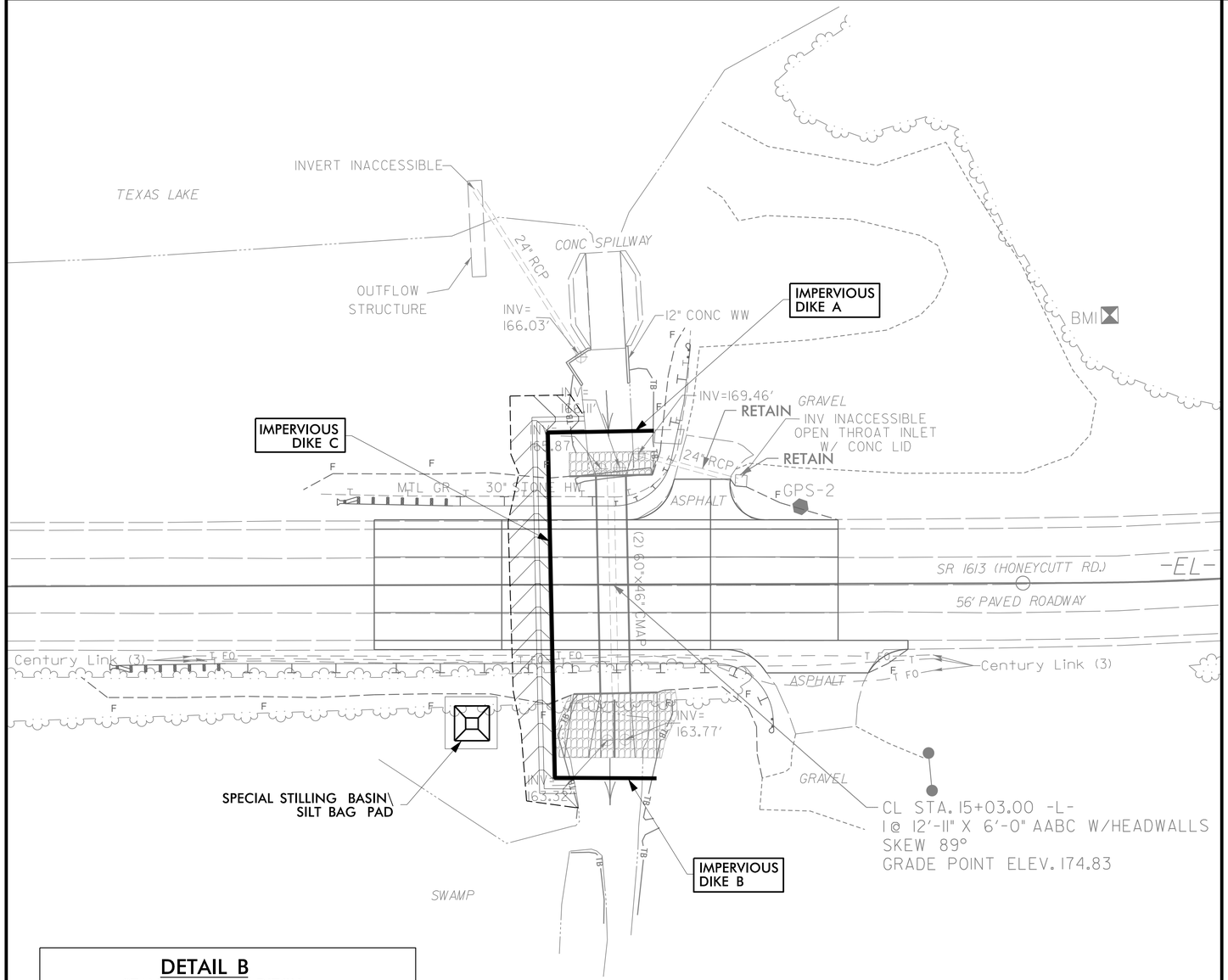
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "GPS-1"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 506783.418(ft) EASTING: 2020241.233(ft)
ELEVATION: 174.206(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998712625
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-1" TO -L- STATION IS

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

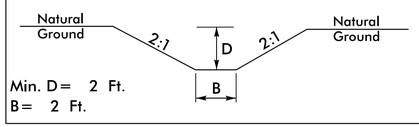
7/26/2023 ...23114_EC_psh_CG.dgn

PIPE CONSTRUCTION SEQUENCE

PROJECT REFERENCE NO.	SHEET NO.
49218.3	EC-4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



DETAIL B
STANDARD BASE DITCH
(Not to Scale)



Min. D= 2 Ft.
B= 2 Ft.

FROM -L- STA. 14+58 TO STA. -14+91

1. INSTALL SPECIAL STILLING BASIN AT OUTLET

2. INSTALL DIVERSION DITCH (SEE DETAIL B) AND IMPERVIOUS DIKE C

3. INSTALL IMPERVIOUS DIKES A AND B TO DIVERT FLOW. ENSURE DIKES A B AND C TIE TOGETHER TO FORM ONE CONTINUOUS DIKE.

4. REMOVE EXISTING 60" X 46" CMAP, INSTALL 12'-11" X 6'-0" AABC AND COMPLETE CHANNEL IMPROVEMENTS

5. REMOVE DIKES A B AND C WHILE DIVERTING FLOW INTO THE PROPOSED CULVERT. REMOVE SPECIAL STILLING BASIN. COMPLETE ROADWAY IMPROVEMENTS.

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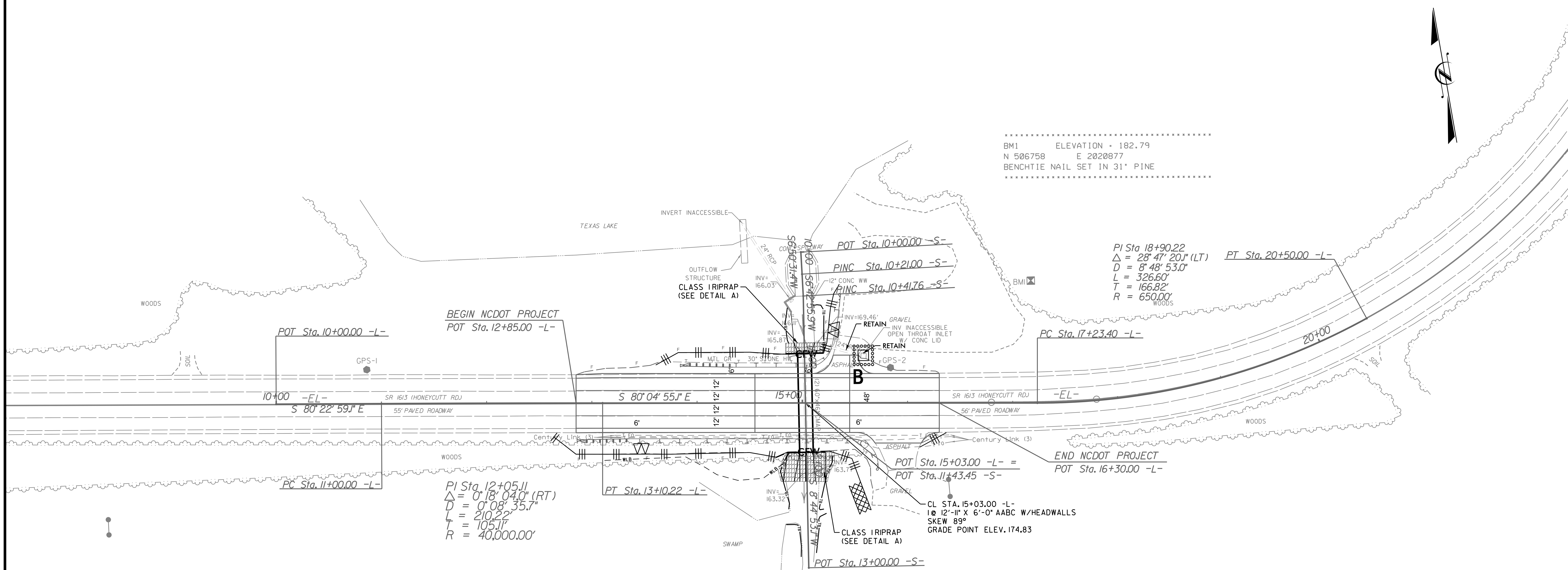
PROJECT REFERENCE NO.	SHEET NO.
49218.3	EC-5/CONSTR. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS



DETAIL A

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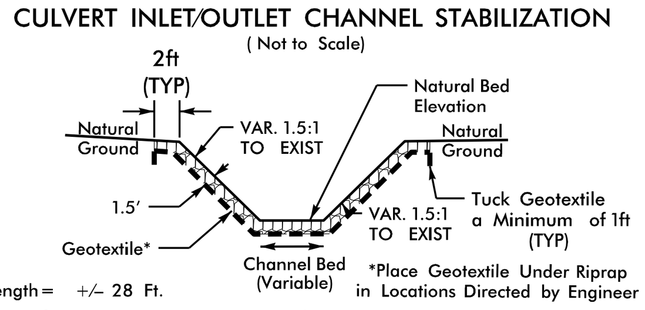
(Not to Scale)



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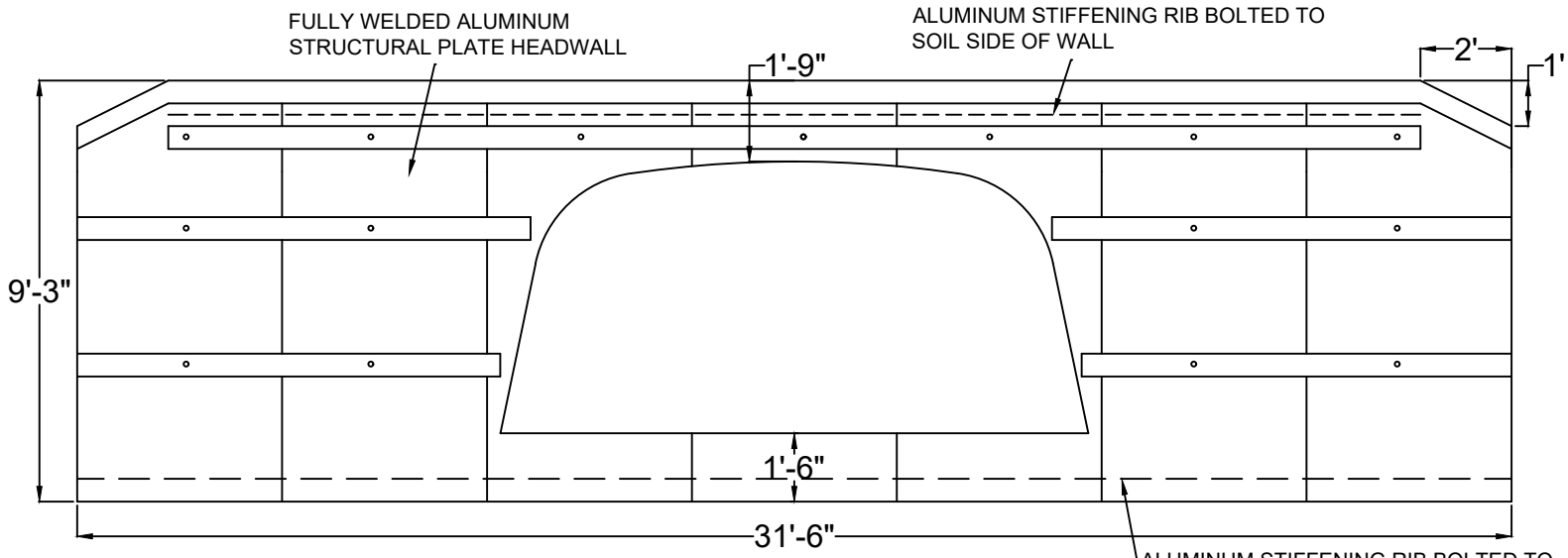
VERTICAL DATUM USED IS NAVD 88

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	49218.3	X-1

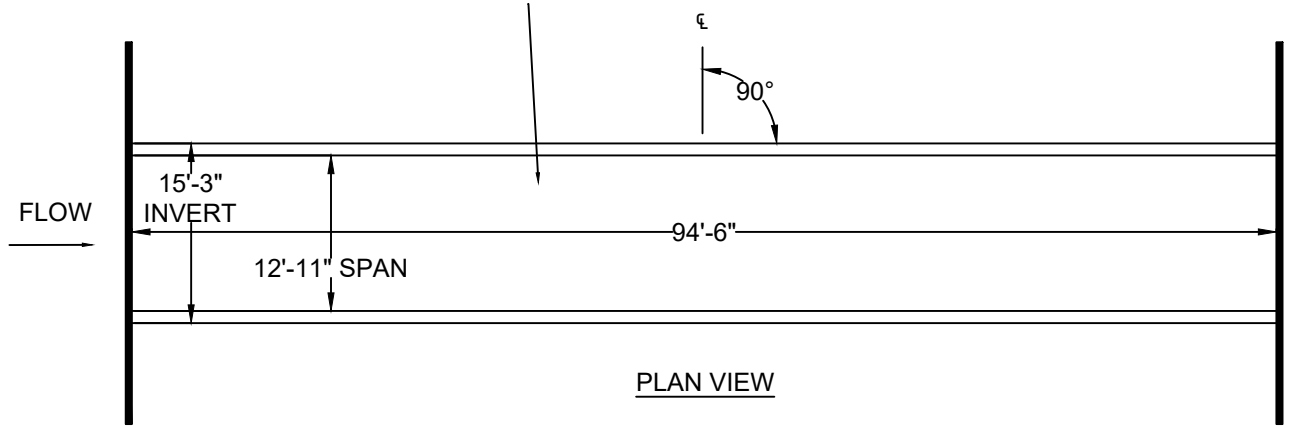
PROJ. REFERENCE NO.	SHEET NO.
49218.3	X-2

PROJ. REFERENCE NO.	SHEET NO.
49218.3	X-3



END VIEW- INLET & OUTLET HEADWALL

94.5 LF OF #19-L2 (12'-11"S PAN X 6'-0" RISE) ALUMINUM BOX CULVERT
WITH FULL ALUMINUM INVERT 0.150" METAL THICKNESS
LRFD HL93 LOADING
MIN COVER= 1.4'
MAX COVER= 4.5'



PLAN VIEW

PROPOSED ELEVATIONS:
℄ RD= 174.83

INLET
TOP OF WALL= 173.43
PIPE INV= 165.70
BOTTOM WALL= 164.20

OUTLET
TOP OF WALL= 171.45
PIPE INV= 163.70
BOTTOM WALL= 162.20

DESCRIPTION

HONEYCUTT RD
CUMBERLAND CO

DATE:

SHEET

NOT TO SCALE