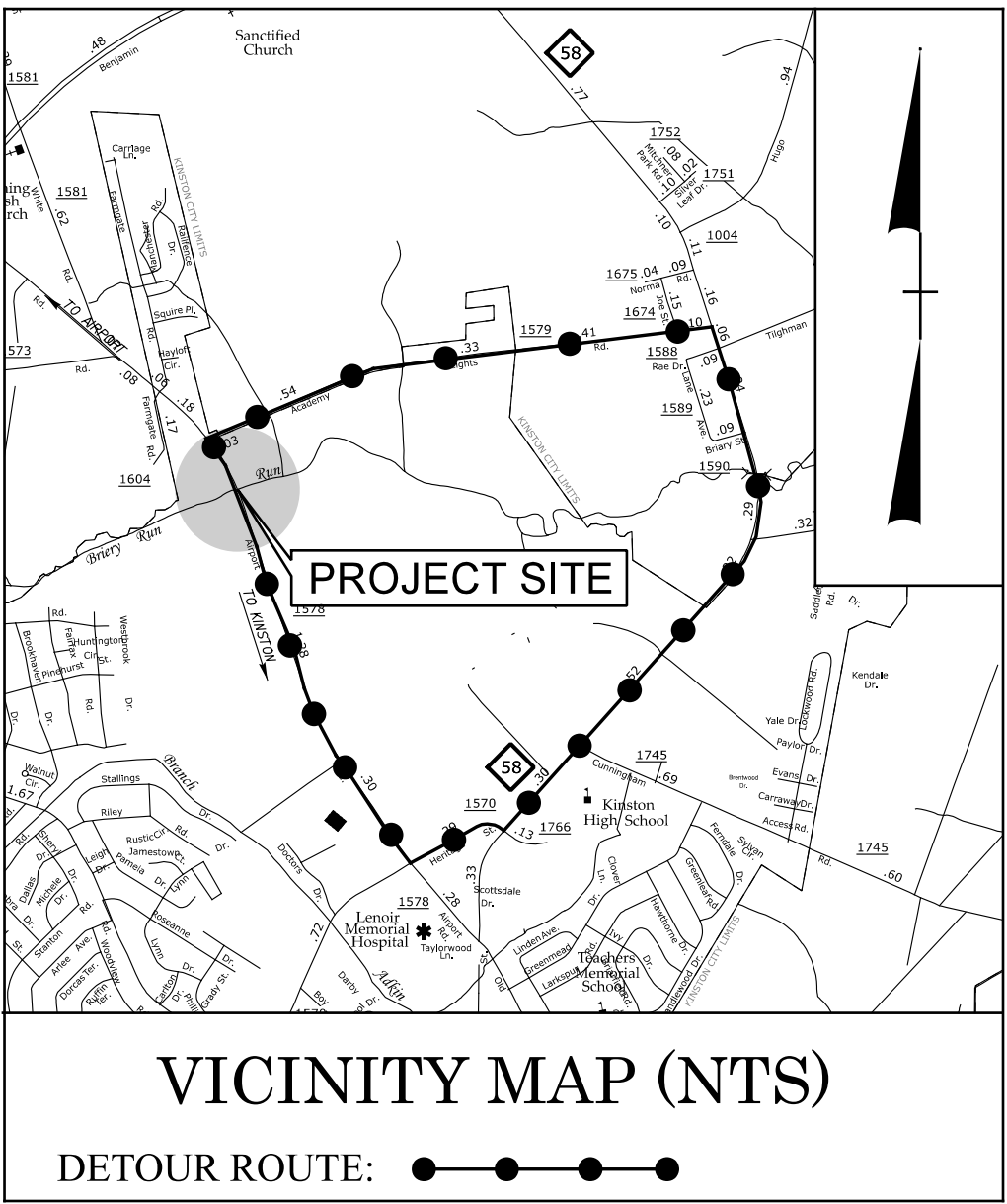


TIP PROJECT: BP2-R027

CONTRACT: DB00609

See Sheet 1A For Index of Sheets

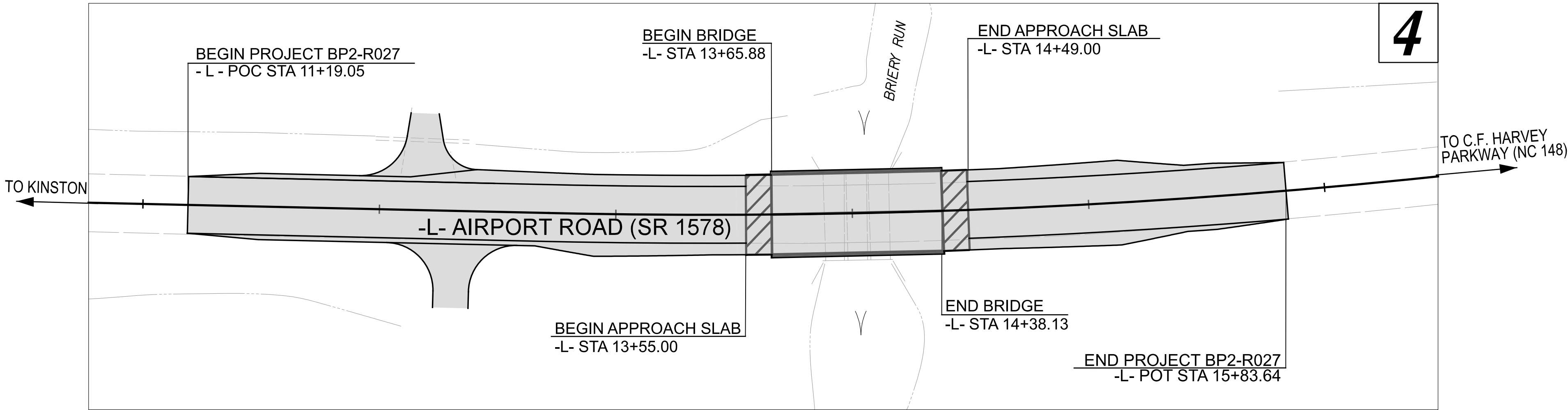
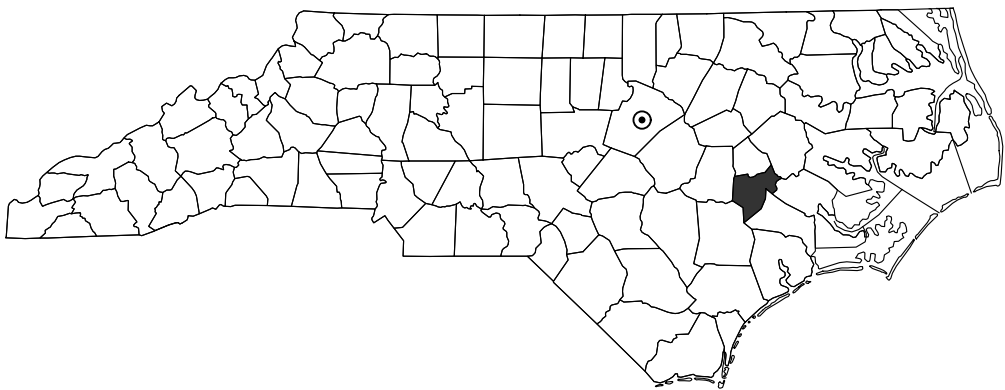


STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

LENOIR COUNTY

LOCATION: *REPLACE BRIDGE #168 OVER BRIERY RUN
ON SR 1578 (AIRPORT ROAD)*

TYPE OF WORK: *GRADING, PAVING, DRAINAGE & STRUCTURE*

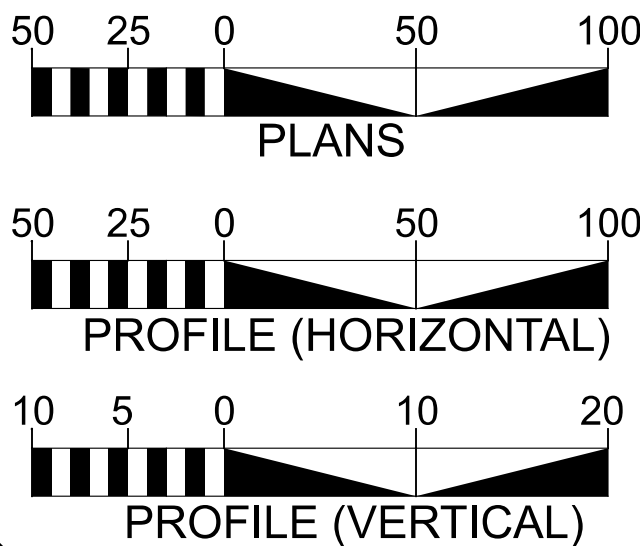


NCDOT CONTACT:
CASEY WHITLEY, PE, PLS
CKWHITLEY@NCDOT.GOV
(252) 439-2811

THIS PROJECT IS WITHIN THE MUNICIPAL LIMITS OF KINSTON

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2022 = 1800
ADT =
K = N/A %
D = N/A %
T = 7 % *
V = 50 MPH
* TTST = DUAL
FUNC CLASS =
MAJOR COLLECTOR
SUB REGIONAL TIER

PROJECT LENGTH

PROJECT LENGTH FOR PROJECT BP2.R027.1
LENGTH ROADWAY = 0.074 MILES
LENGTH STRUCTURE = 0.014 MILES
TOTAL LENGTH = 0.088 MILES

NCDOT CONTACT:
CASEY WHITLEY, PE, PLS

PREPARED IN THE
OFFICE OF:



2024 STANDARD SPECIFICATIONS

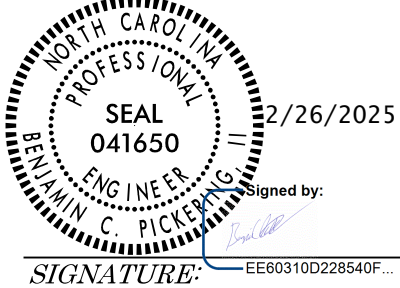
RIGHT OF WAY DATE:
NOVEMBER 25, 2024

LETTING DATE:
MARCH 12, 2025

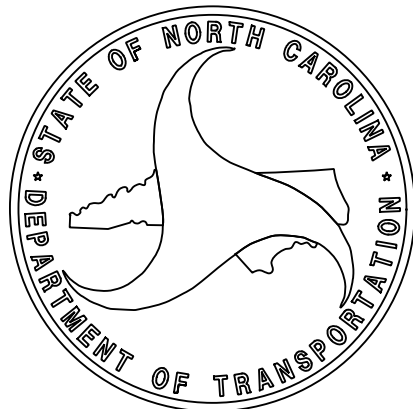
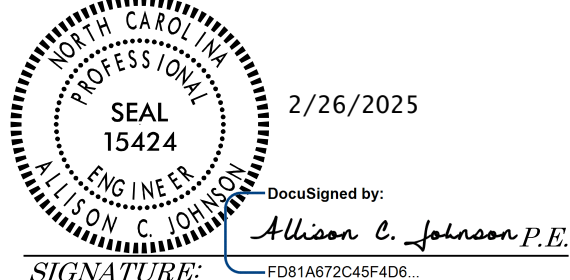
ALLISON C. JOHNSON, P.E.
PROJECT ENGINEER

BENJAMIN C. PICKERING II, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER



ROADWAY DESIGN ENGINEER



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
TMP-1 THRU TMP-2	TRAFFIC MANAGEMENT PLANS
EC-1 THRU EC-6	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
UC-1 THRU UC-4	UTILITIES CONSTRUCTION PLANS
X-1 THRU X-4	CROSS-SECTIONS
S-1 THRU S-17	STRUCTURE PLANS

EFF. 01-16-2024
REV.
2024 ROADWAY ENGLISH STANDAR DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Contracts Standards and Development Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 16, 2024 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
275.01	Rock Plating
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
423.03	Bridge Approach Fills
DIVISION 5 - SUBGRADES BASES SHOULDERS	
560.01	Method of Shoulder Construction
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drains
840.00	Concrete Base Pad For Drainage Structures
840.35	Traffic Bearing Grated Drop Inlet - for Double Frames and Grates
840.46	Traffic Bearing Precast Drairage Structure
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.01	Rip Rap in Channels and Ditches
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

GENERAL NOTES: 2024 SPECIFICATIONS
EFFECTIVE: 01-16-2024
REVISED:

GRADE LINE:

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 INVOLVE.

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.

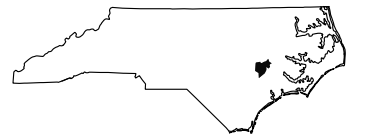
UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE CITY OF KINSTON WATER, PIEDMONT NATURAL GAS COMPANY, AND SUDDEN LINK. RELOCATIONS WILL BE CONSTRUCTED FOR CITY OF KINSTON WATER.

BP2-R027

1A

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
LENOIR COUNTY



ROADWAY DESIGN UNIT

ROADWAY DESIGN
ENGINEER



PREPARED BY



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

REVISIONS

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	

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

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)*	

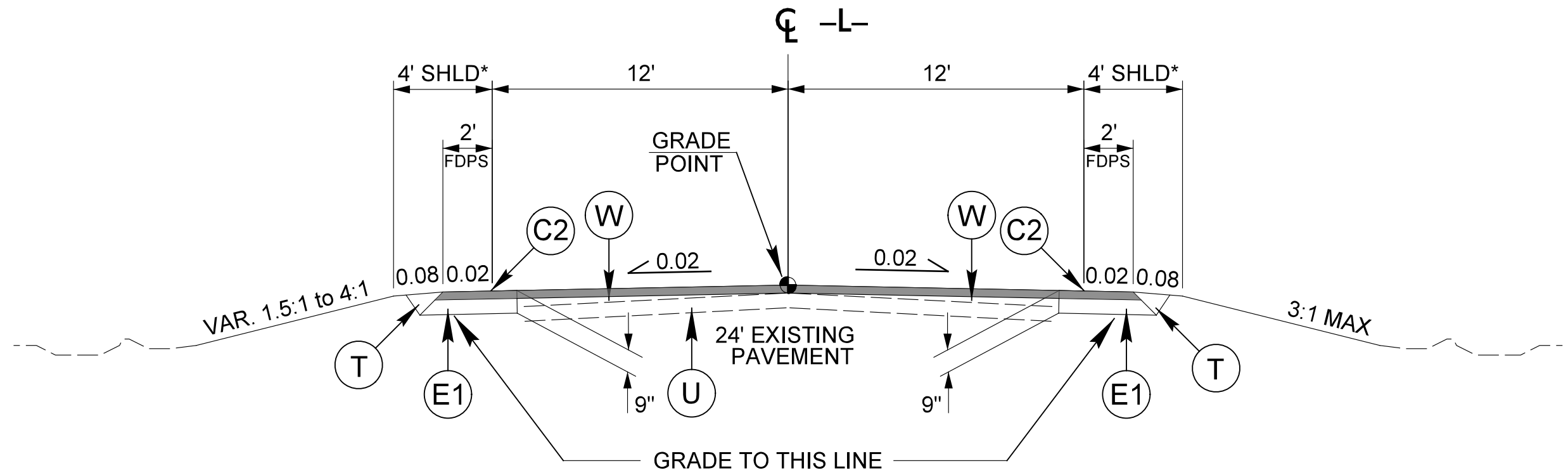
WATER:	
Water Manhole	
Water Meter	
Water Valve	
Water Hydrant	
U/G Water Line Test Hole (SUE - LOS A)*	
U/G Water Line (SUE - LOS B)*	
U/G Water Line (SUE - LOS C)*	
U/G Water Line (SUE - LOS D)*	
Above Ground Water Line	

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	

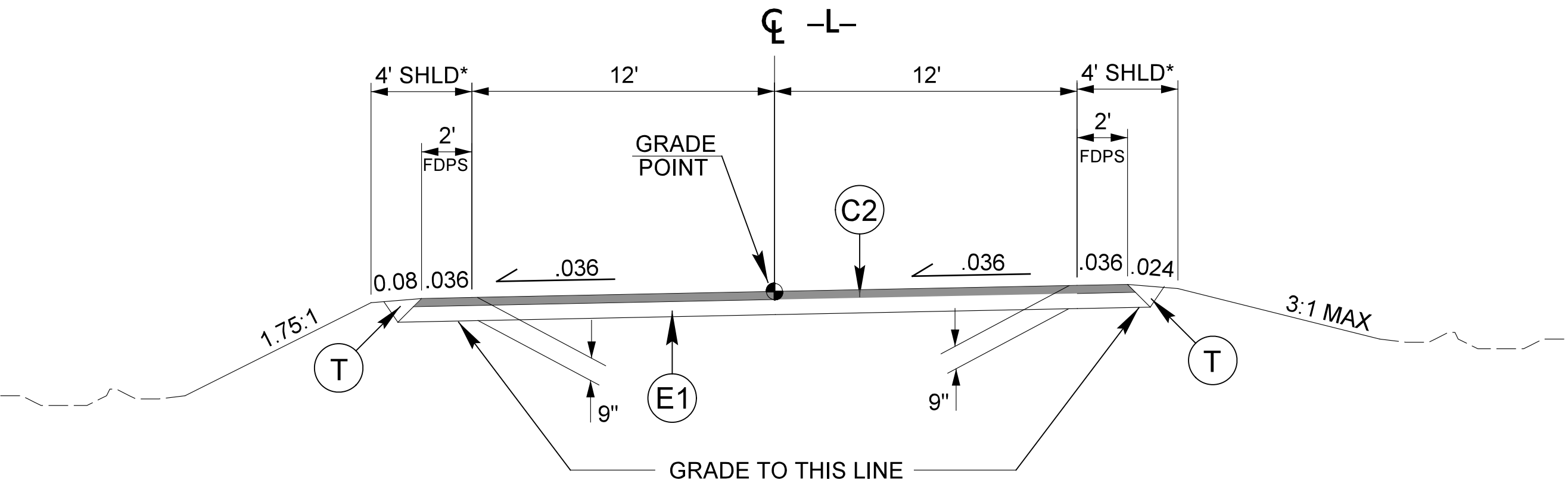
SANITARY SEWER:	
Sanitary Sewer Manhole	
Sanitary Sewer Cleanout	
U/G Sanitary Sewer Line	
Above Ground Sanitary Sewer	
SS Force Main Line Test Hole (SUE - LOS A)*	
SS Force Main Line (SUE - LOS B)*	
SS Force Main Line (SUE - LOS C)*	
SS Force Main Line (SUE - LOS D)*	

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	
End of Information	



TYPICAL SECTION NO. 1

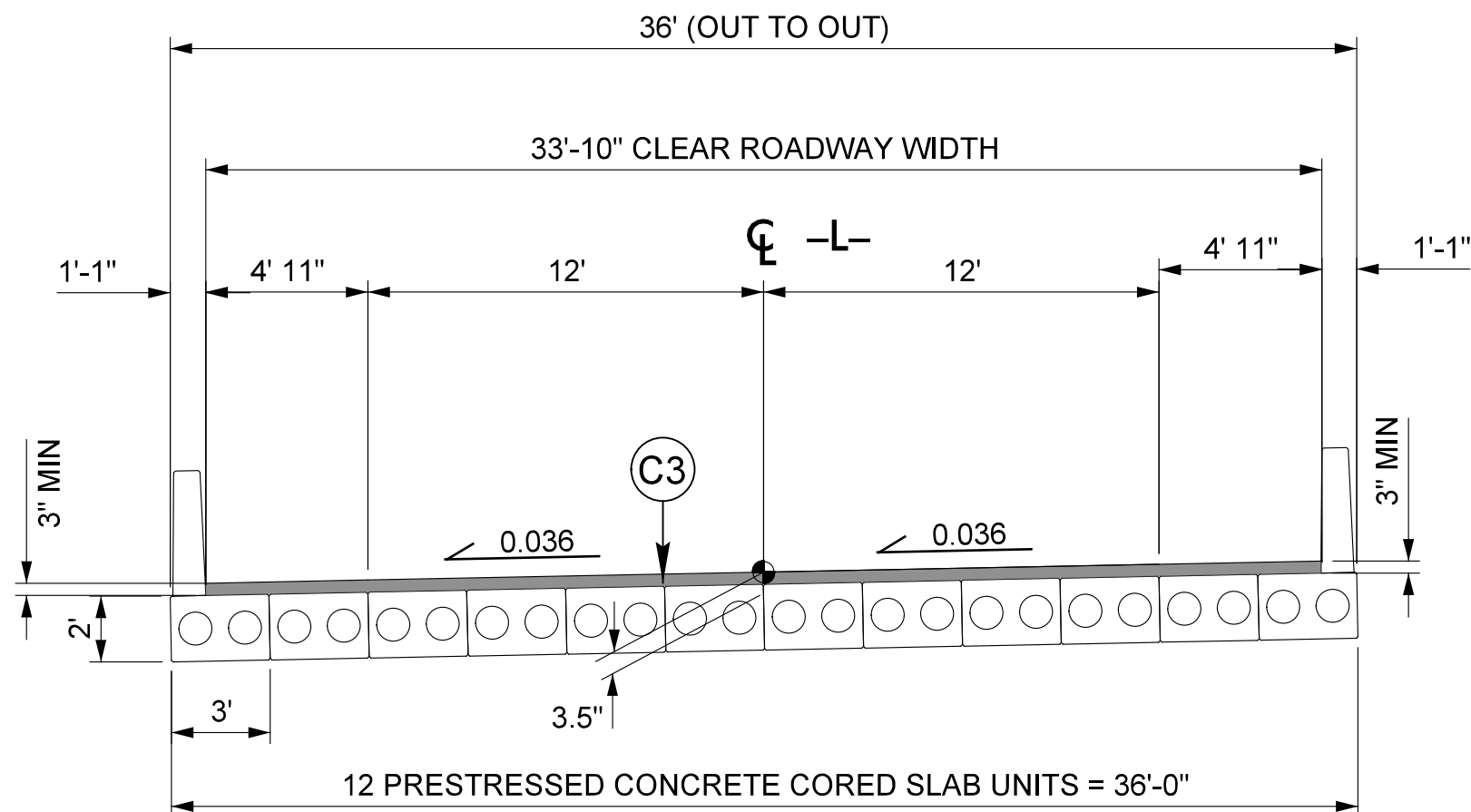
-L- STA. 11+19.05 TO STA. 13+25.00
-L- STA. 14+78.00 TO STA. 15+83.64



TYPICAL SECTION NO. 2

-L- STA. 13+25.00 TO STA. 13+65.88 (BEGIN BRIDGE)
-L- STA. 14+38.13 (END BRIDGE) TO STA. 14+78.00

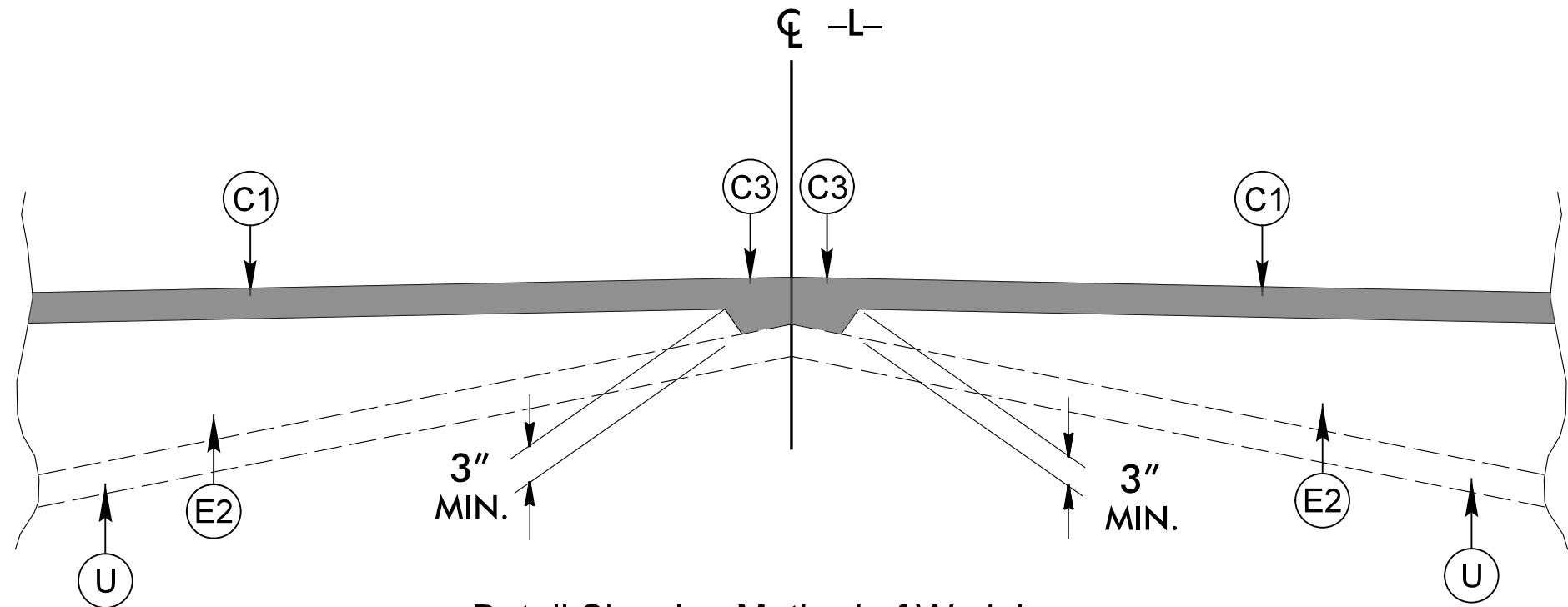
NOTE:
SEE PLAN FOR SUPERELEVATION RATES AND TRANSITIONS
*7'-0" WITH GUARDRAIL INCLUDING FULL DEPTH PAVED SHOULDER BETWEEN



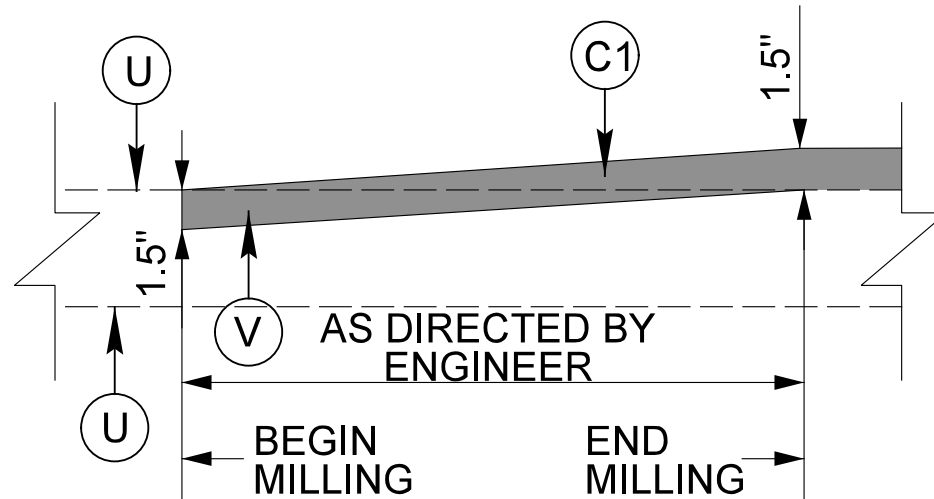
TYPICAL SECTION NO. 3

STRUCTURE

NOTE:
SEE STRUCTURE PLANS FOR STRUCTURE CONSTRUCTION DETAILS



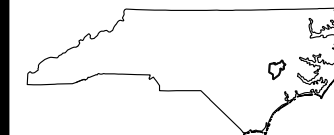
Detail Showing Method of Wedging



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

NOT TO SCALE

PAVEMENT SCHEDULE	
ITEM	DESCRIPTION
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD IN EACH OF TWO LAYERS
C3	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER INCH. DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1.5" IN DEPTH
E1	PROP. APPROX. 6" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YARD IN EACH OF TWO LAYERS.
E2	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER INCH. DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DPETH OR GREATER THAN 5.5" IN DEPTH
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	INCIDENTAL MILLING
W	WEDGING (SEE DETAIL)



COMPUTED BY:	MS	DATE: 2/12/2025
CHECKED BY:	ACJ	DATE: 2/12/2025

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

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

BP2-R027	
.	3D-1

[illegible]

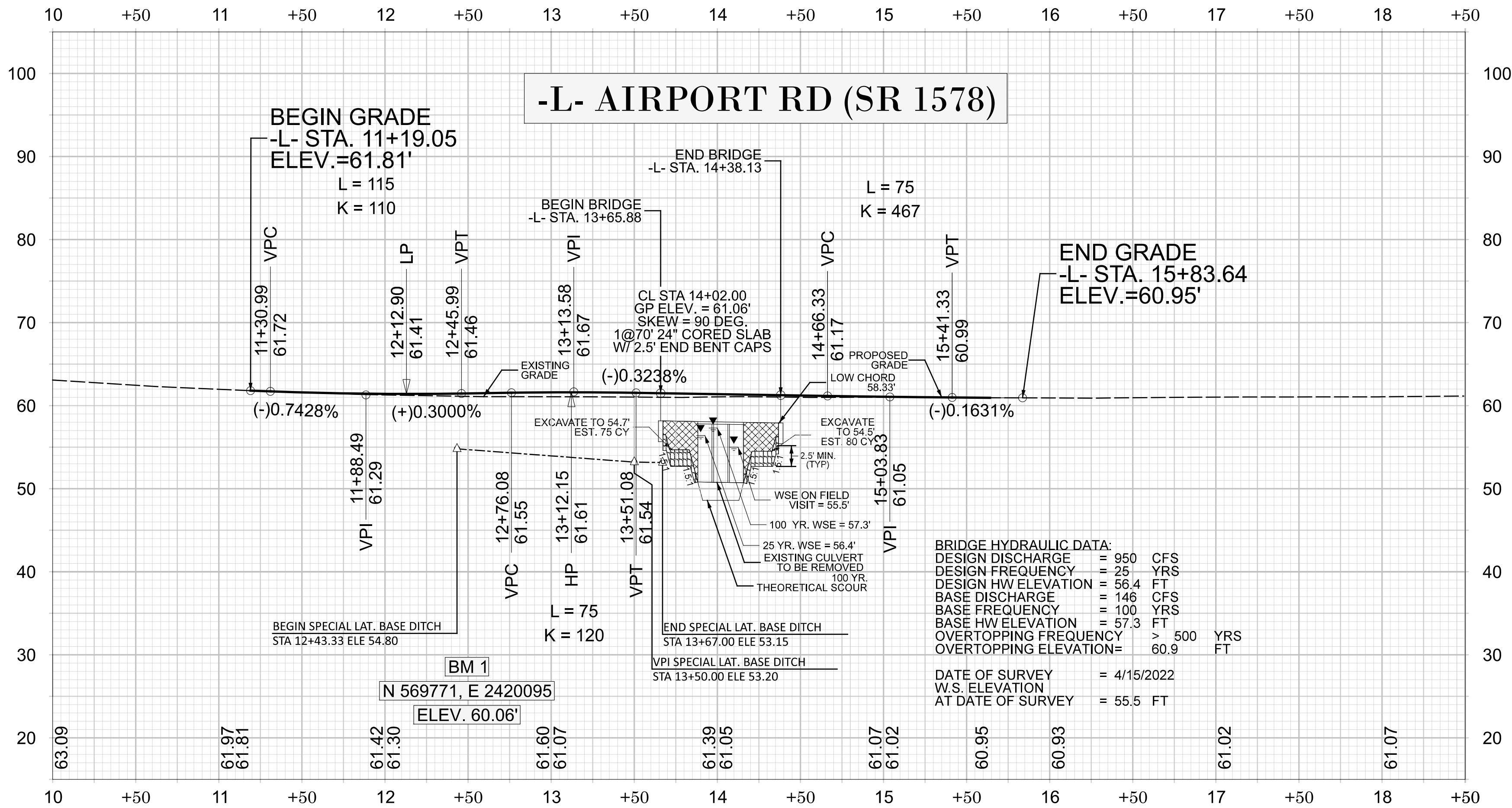
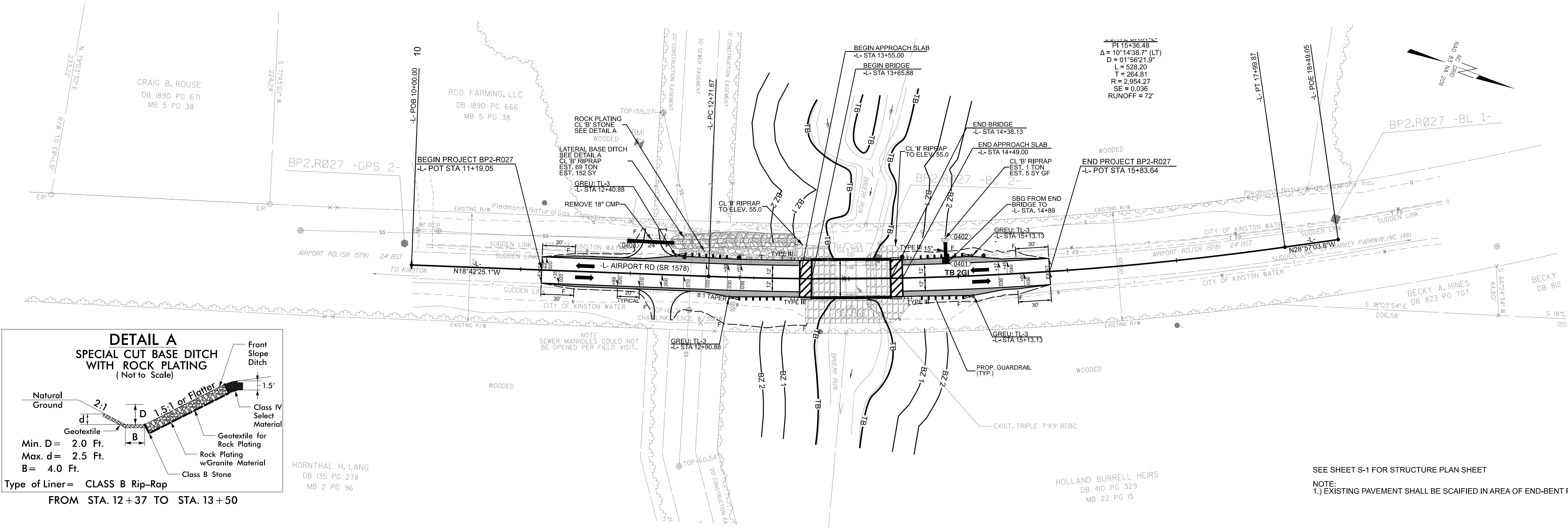
BP2-R027	
	3G-1

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

LINE	STATION	STATION	LOCATION LT/RT/CL	DRAIN TYPE/ UD/BD/SD	LF
	CONTINGENCY			SD	200'
				TOTAL LF:	200'

[illegible]

*USE CLASS 1, 2, OR B RIPRAP IF RIPRAP CLASS IS NOT SHOWN FOR ROCK PLATING LOCATION



BP2-R027
004

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
LEXSOUR COUNTY

ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

NORTH CAROLINA
PROFESSIONAL
SEAL
15424
ALLISON C. JOHNSON

HYDRAULICS
ENGINEER

NORTH CAROLINA
PROFESSIONAL
SEAL
041650
BECKY A. HINES
BENJAMIN C. PICKERING

PREPARED BY
AMERICAN
Engineering
8008 Corporate Center Drive | Suite 110
Charlotte, NC 28226 | 704.375.2438

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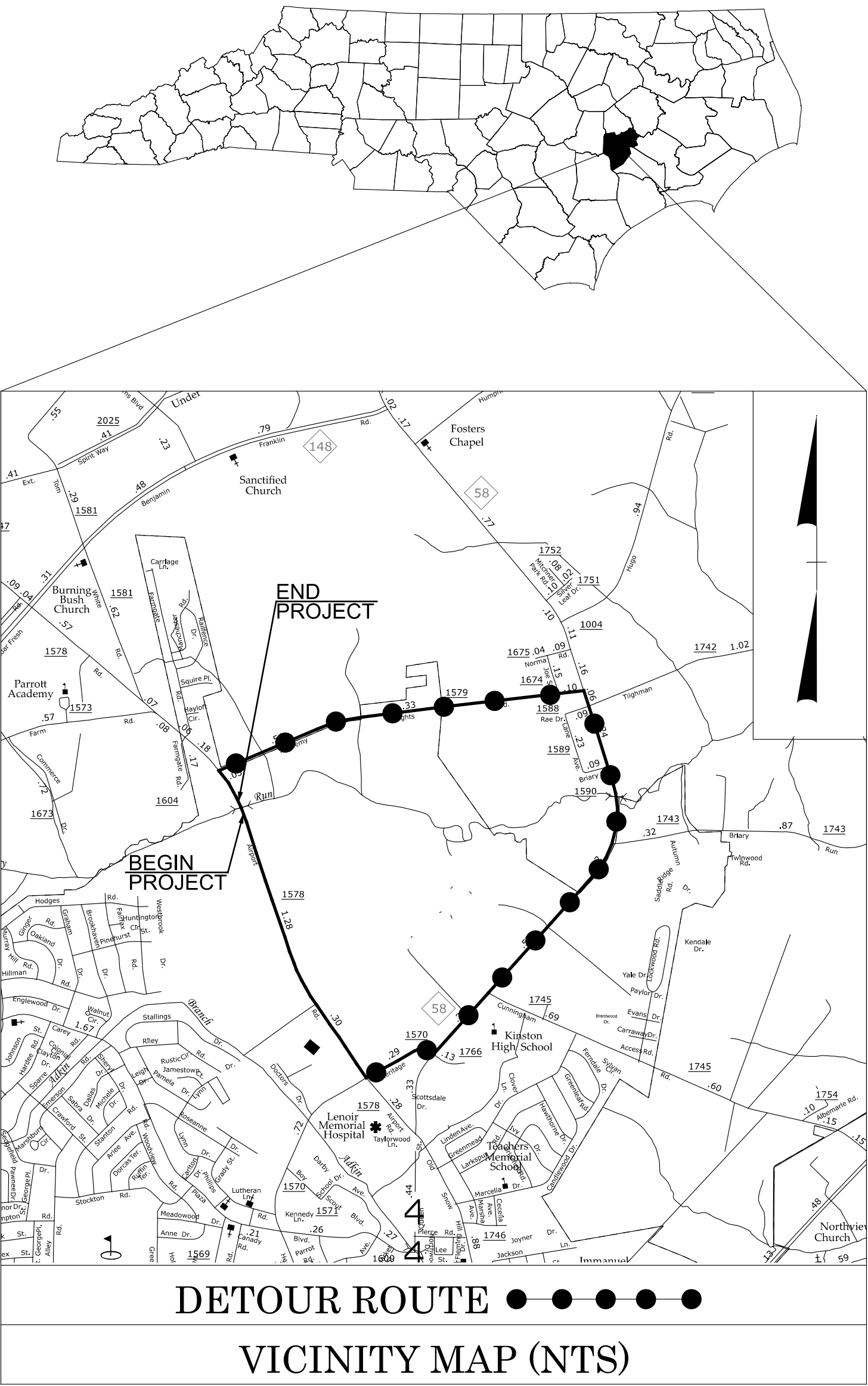
REVISIONS

STATE OF NORTH CAROLINA

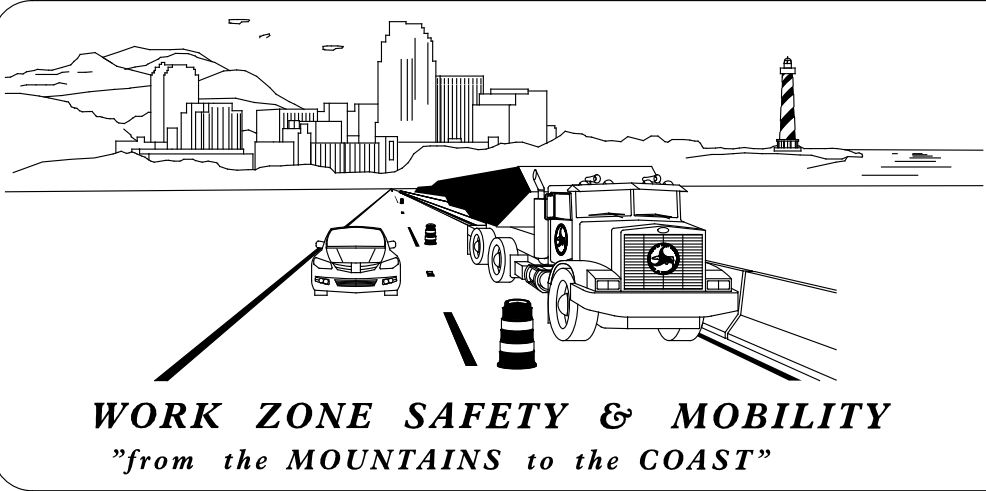
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

LENIOR COUNTY



LOCATION: *BRIDGE #168 ON SR 1578 (AIRPORT ROAD)*
OVER BRIERY RUN



PLANS PREPARED BY:

ALLISON C. JOHNSON, PE
PROJECT ENGINEER

BENJAMIN C. PICKERING, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACTS:

CASEY WHITLEY, PE, PLS
PROJECT ENGINEER



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	ROAD CLOSURE AND OFFSITE DETOUR SIGNING

GENERAL NOTES

IMPLEMENT TRAFFIC CONTROL IN ACCORDANCE WITH THE ROADWAY STANDARD DRAWINGS LISTED ON TMP-2

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.

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 PROJET. CONTACT JEFF DUNNING AT 252-830-3493 30 CALENDAR DAYS PRIOR TO SLOSING THE ROAD FOR DETOUR INSTALLATION.

GRADE AND SUPERELEVATION REVISIONS REQUIRE A TOTAL REPLACEMENT OF THE ROADWAY IN AREAS. COORDINATE WITH PROPERTY OWNERS CONCERNING ACCESS TO DRIVERS DURING CONSTRUCTION. PROVIDE ACCESS USING INCIDENTAL STONE AND FLAGGERS AS NEEDED.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

APPROVED: Allison C. Johnson

DATE: 2/26/2025

SEAL



TIP PROJECT:

BP2-R027

SHEET NO.
TMP-1

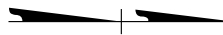
ROADWAY STANDARD DRAWINGS

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:

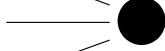
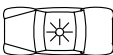
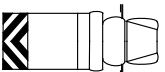
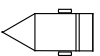
STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

LEGEND

GENERAL

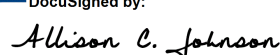
-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  EXIST. PVMT.
-  NORTH ARROW
-  PROPOSED PVMT.
-  TEMP. SHORING (LOCATION PURPOSES ONLY)
-  WORK AREA

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

APPROVED: 

DATE: 2/26/2025

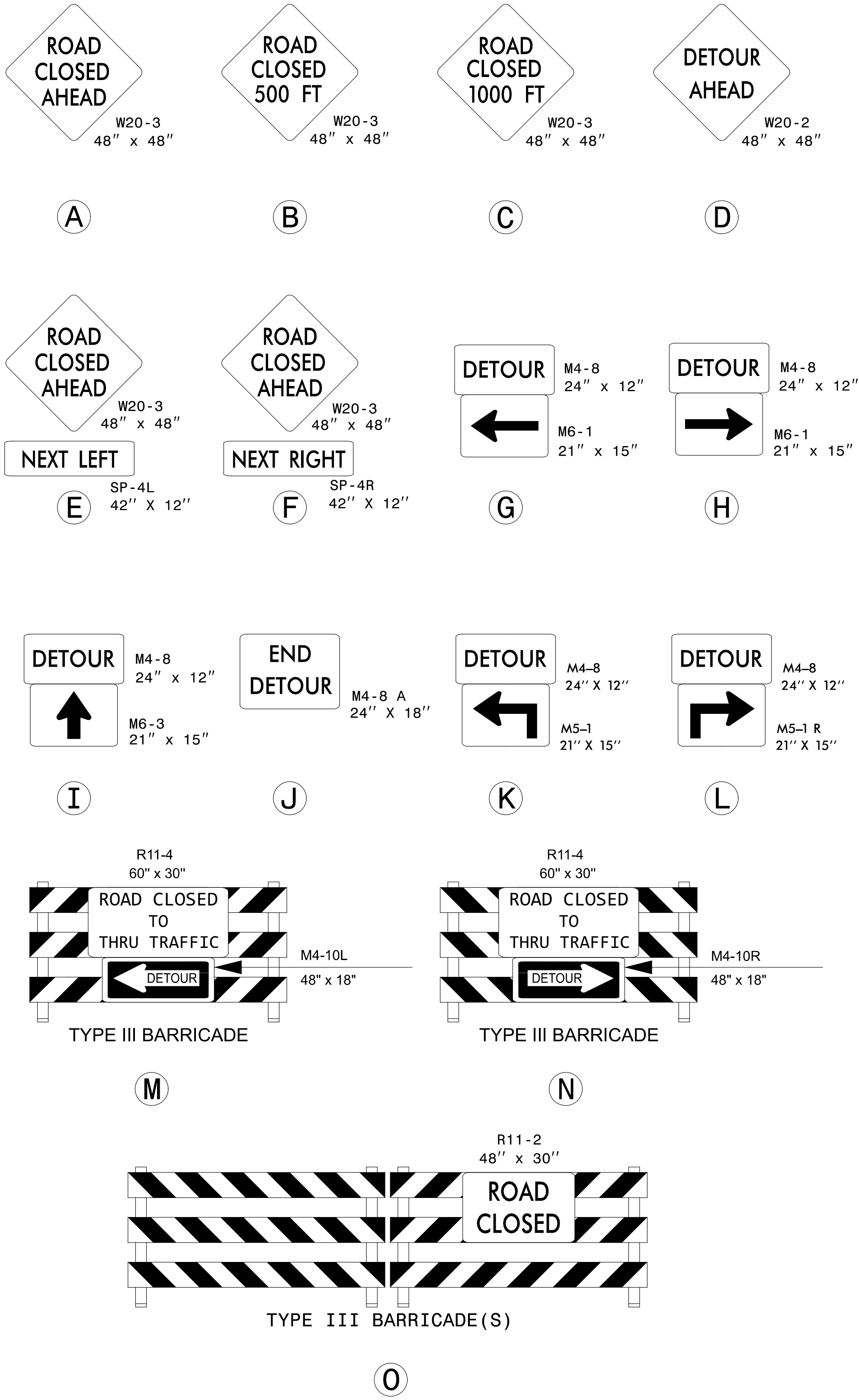
SEAL



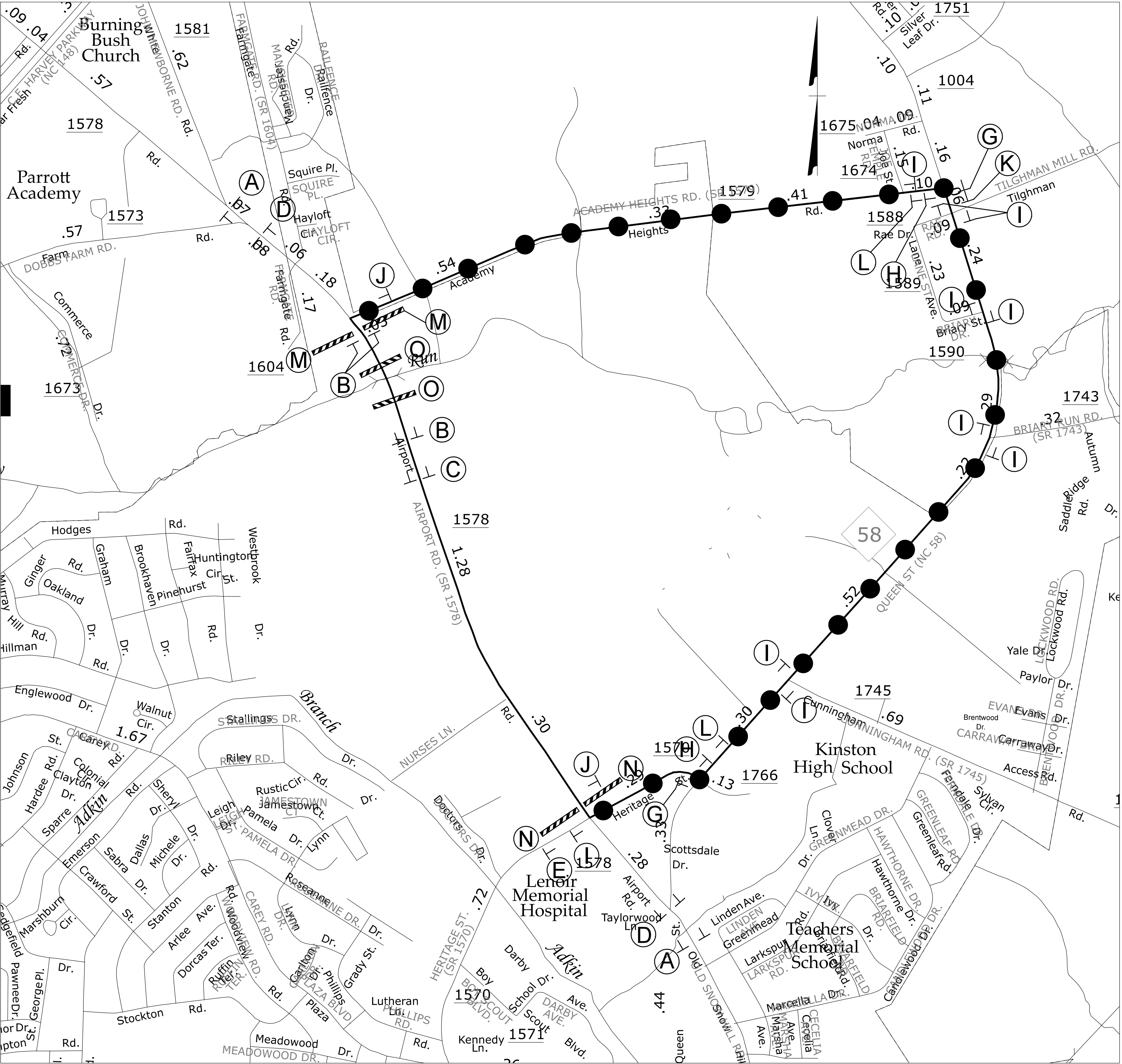


ROADWAY STANDARD
DRAWINGS & LEGEND

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



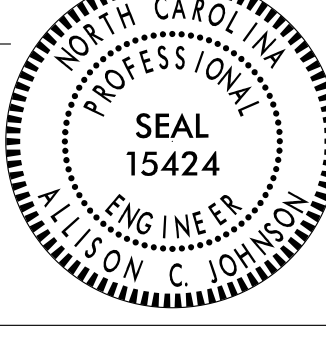
NOTE: COORDINATE WITH THE ENGINEER TO FIELD LOCATE SIGNS AS NEEDED.



APPROVED: 

DATE: 2/26/2025

SEAL



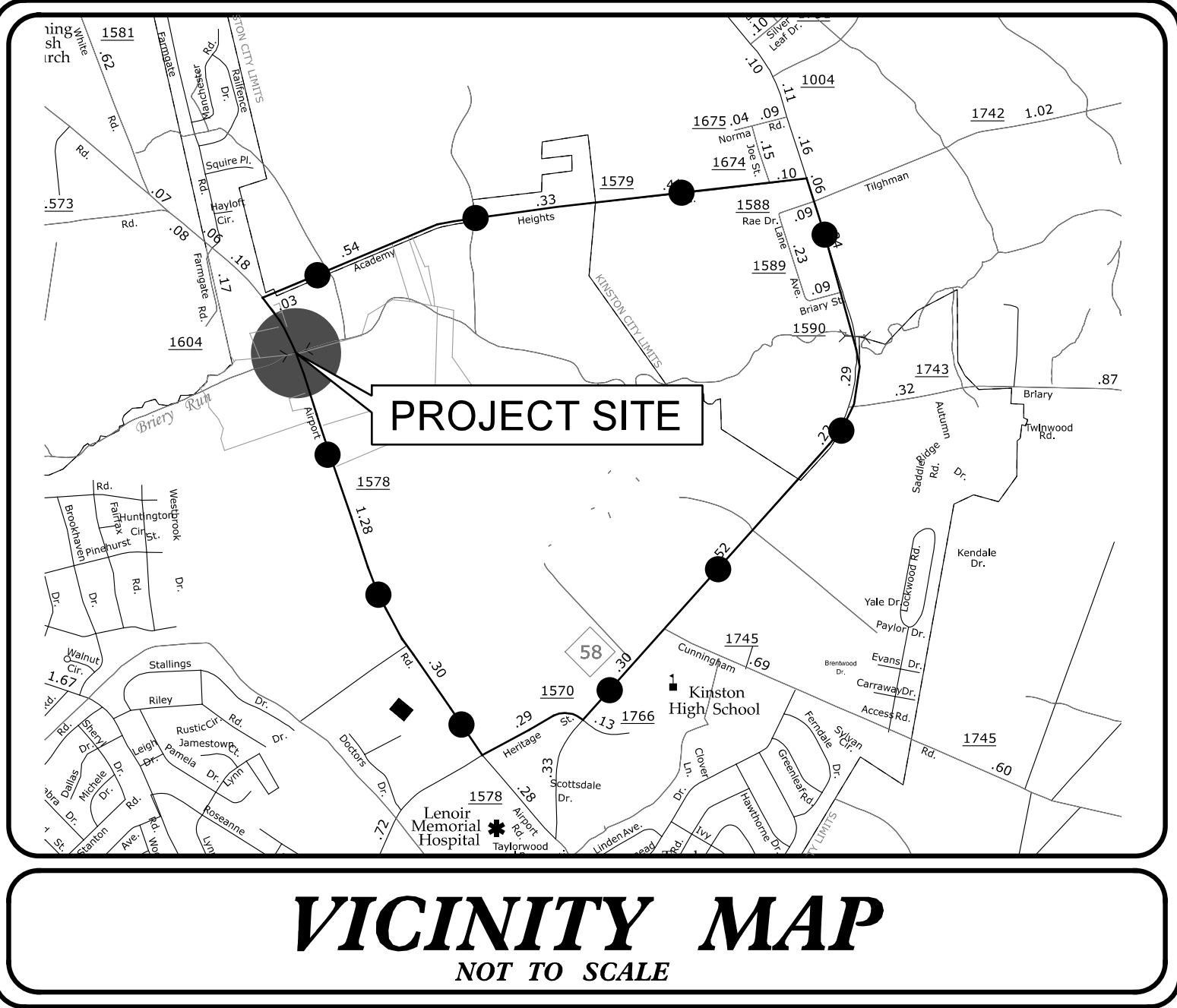
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



OFFSITE DETOUR
DETAILS

2/13/2025
DIV 2\536668\Drainage\Erosion_Control\SHEETS\BP2-R027-1-EC-1.TD.dgn

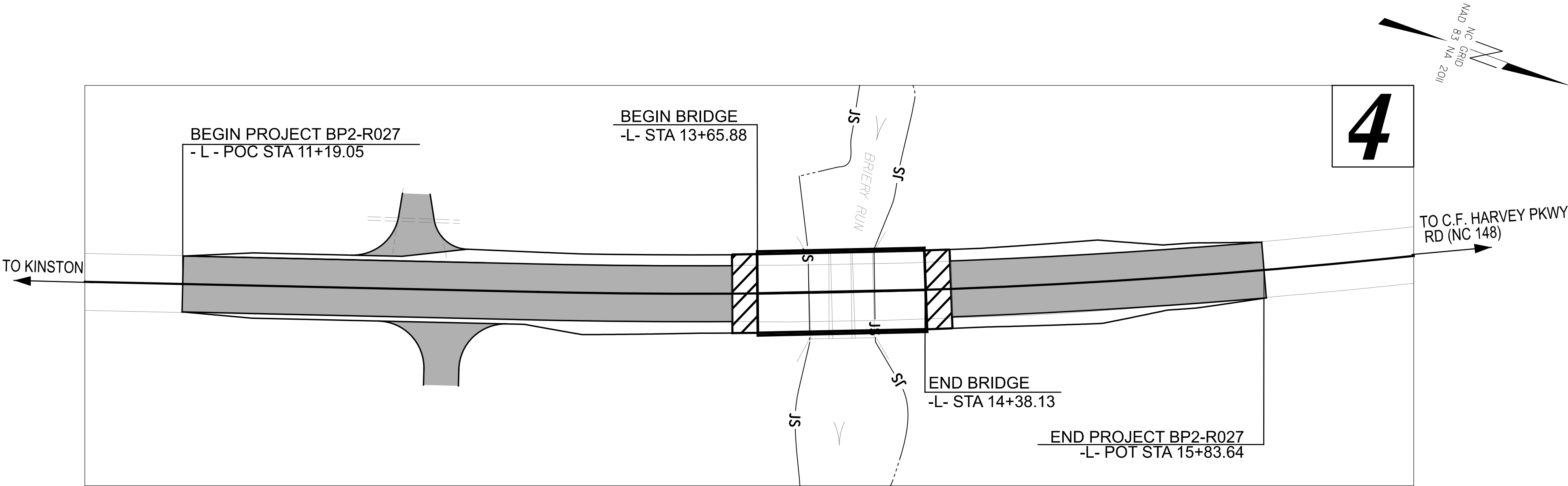
TIP PROJECT: BP2-R027



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL
LENOIR COUNTY

LOCATION: *REPLACE BRIDGE #168 OVER BRIERY RUN
ON SR 1578 (AIRPORT ROAD)*

TYPE OF WORK: *GRADING, PAVING, DRAINAGE & STRUCTURE*

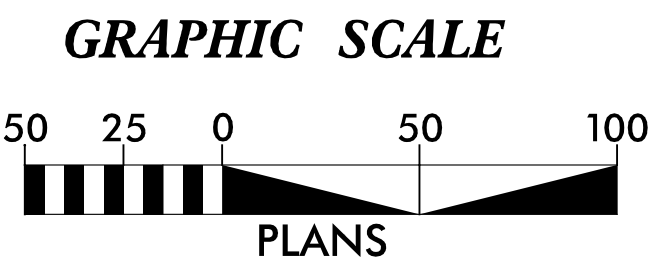


THIS PROJECT CONTAINS
EROSION CONTROL PLANS
FOR CLEARING AND
GRUBBING PHASE OF
CONSTRUCTION.

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.



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY
WITH THE REGULATIONS SET FORTH BY THE
NCG-010000 GENERAL STORMWATER CONSTRUCTION PERMIT
ISSUED BY THE NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL QUALITY DIVISION OF ENERGY,
MINERAL, AND LAND RESOURCES.

**AMERICAN**
Engineering
8008 Corporate Center Drive | Suite 110
Charlotte, NC 28226 | 704.375.2438

Prepared In the Office of:

**AMERICAN**
Engineering
8008 Corporate Center Drive | Suite 110
Charlotte, NC 28226 | 704.375.2438

Designed by:

BENJAMIN C. PICKERING II, P.E. 4564
NAME LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

The "Roadway Standard Drawings"- Roadway Design Unit - N. C.
Department of Transportation - Raleigh, N. C., dated January 2024
and the latest revision thereto are applicable to this project and by
reference hereby are considered a part of these plans.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

EROSION & SEDIMENT CONTROL LEGEND

PROJECT REFERENCE NO.
BP2-R027

SHEET NO.
EC-02

ROADWAY DESIGN
ENGINEER
NORTH CAROLINA
PROFESSIONAL
SEAL
2/25/2024
ALLISON C. JOHNSON
ENGINEER

HYDRAULICS
ENGINEER
NORTH CAROLINA
PROFESSIONAL
SEAL
06/16/99
BENJAMIN C. PICKERING
ENGINEER

Designed by:
Allison C. Johnson
FD81A672C45F4D8...

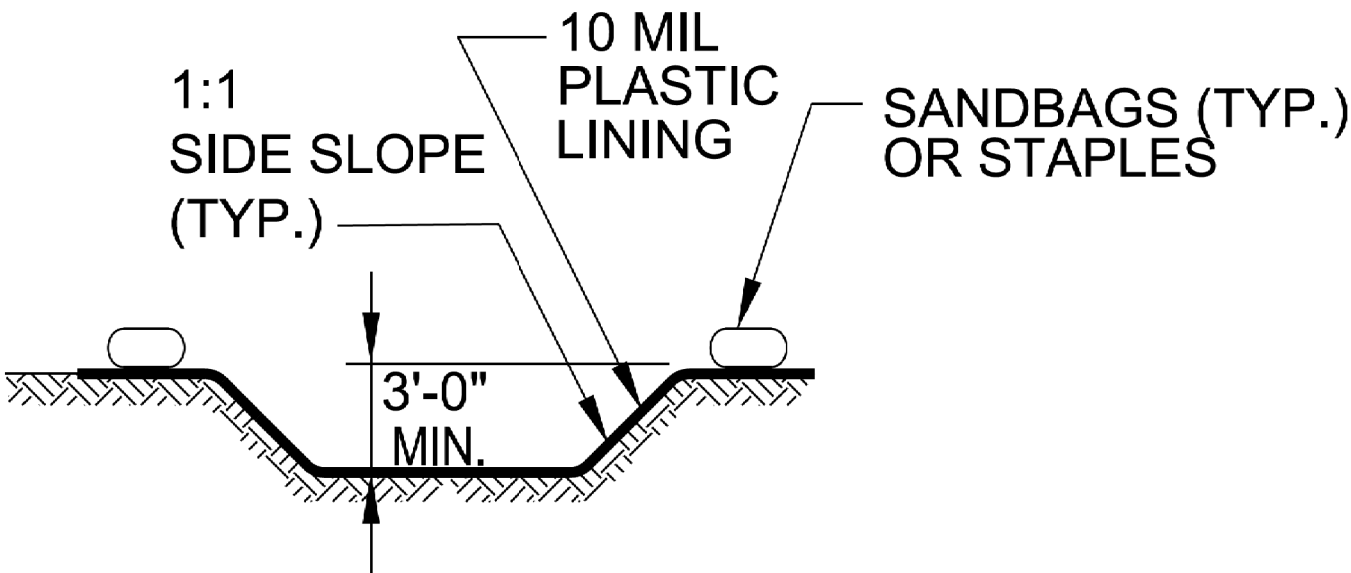
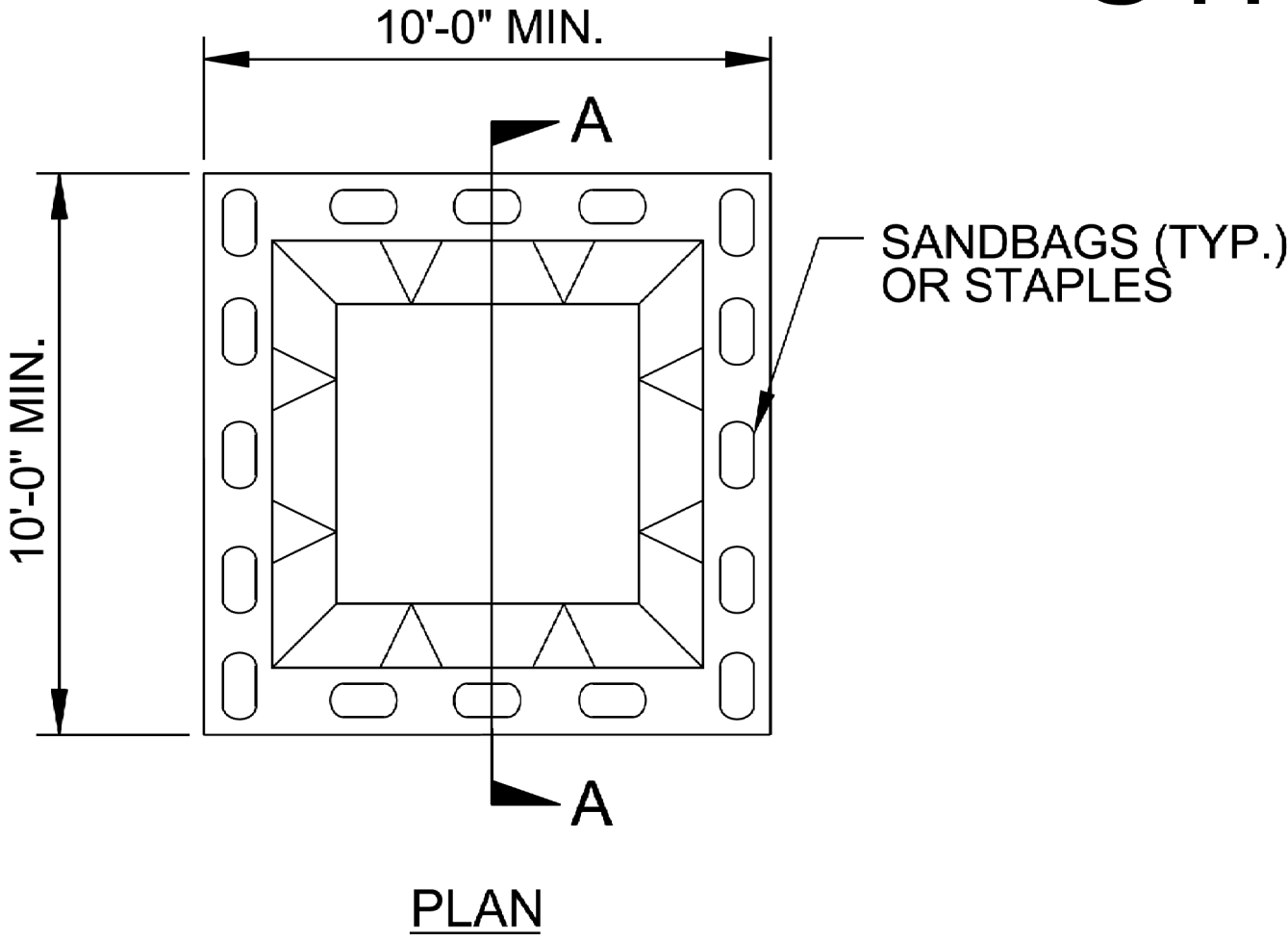
Designed by:
Benjamin C. Pickering
EE60310D228540F...

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	
1630.04	Stilling Basin	
1630.05	Temporary Diversion	
1630.06	Special Stilling Basin	
1630.07	Skimmer Basin	
1630.08	Tiered Skimmer Basin	
1630.09	Earthen Dam with Skimmer	
	Infiltration Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	
1632.02	Type B	
1632.03	Type C	

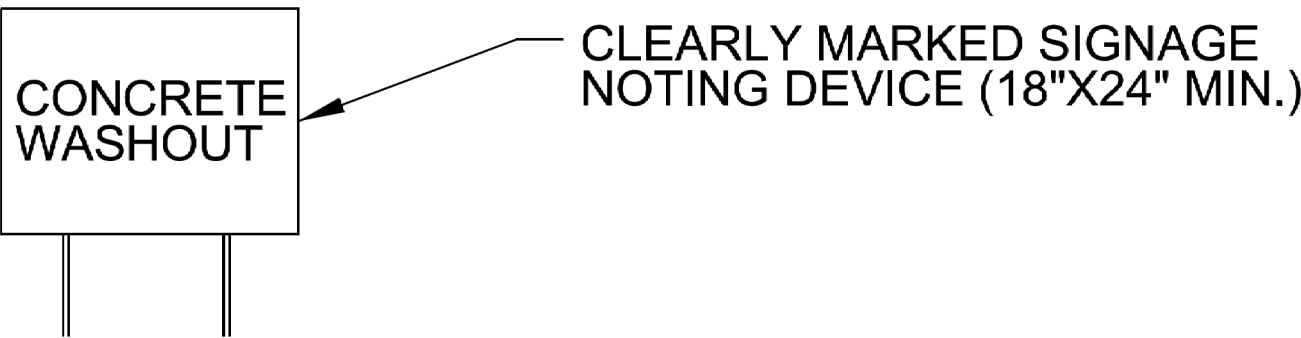
Std. #	Description	Symbol
1633.01	Temporary Rock Silt Check Type A	
1633.02	Temporary Rock Silt Check Type B	
1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1634.01	Temporary Rock Sediment Dam Type A	
1634.02	Temporary Rock Sediment Dam Type B	
1635.01	Rock Pipe Inlet Sediment Trap Type A	
1635.02	Rock Pipe Inlet Sediment Trap Type B	
1636.01	Excelsior Wattle Check	
1636.01	Excelsior Wattle Check with Flocculant	
1636.01	Coir Fiber Wattle Check	
1636.01	Coir Fiber Wattle Check with Flocculant	
1636.02	Silt Fence Excelsior Wattle Break	
	Silt Fence Coir Fiber Wattle Break	
1636.03	Excelsior Wattle Barrier	
1636.03	Coir Fiber Wattle Barrier	

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER

PROJECT REFERENCE NO.	SHEET NO.
BP2-R027	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 15424 2/26/2023 ALLISON C. JOHNSON ENGINEER	HYDRAULICS ENGINEER SEAL 041650 2/26/2023 BENJAMIN C. PICKERING ENGINEER
Drawn by: Allison C. Johnson FDB1A672C45F4D6...	
Signed by: Benjamin C. Pickering EE60310D228540F...	

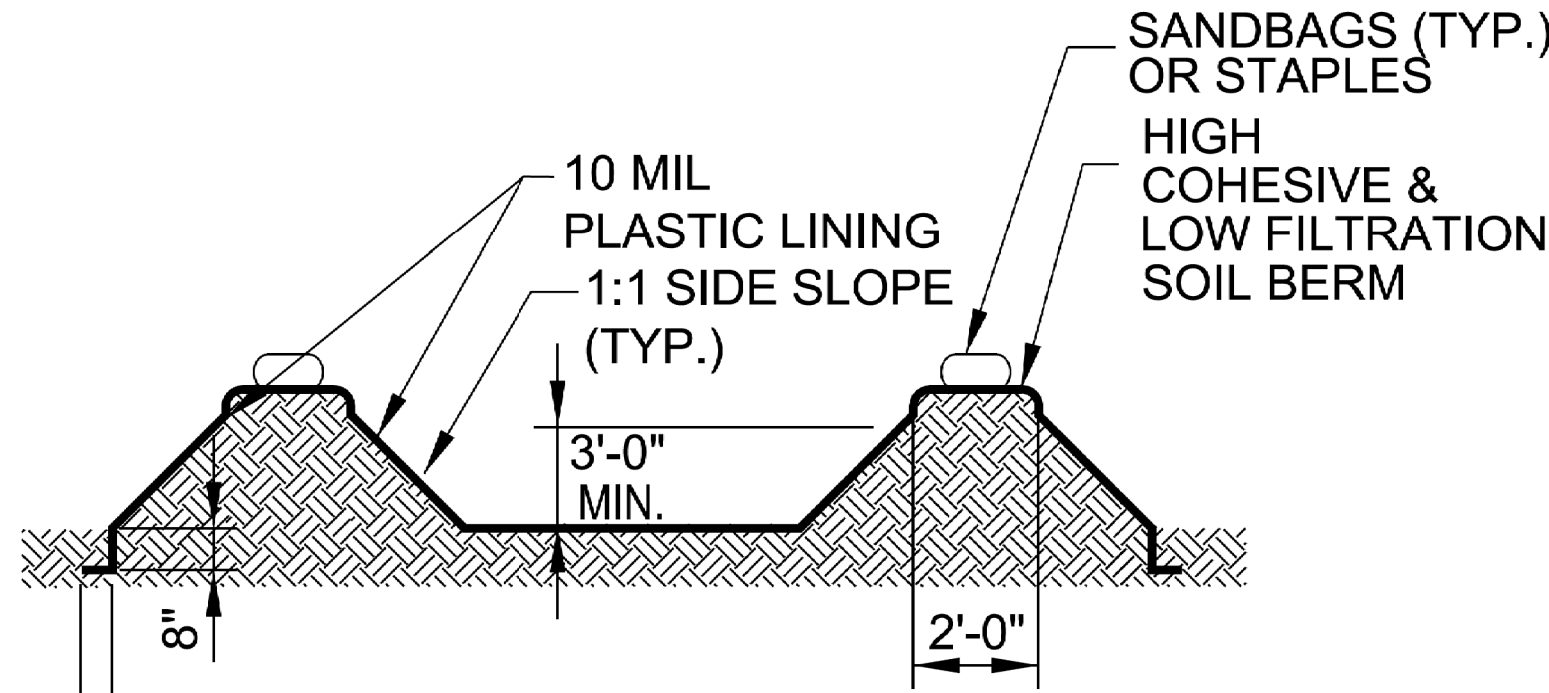
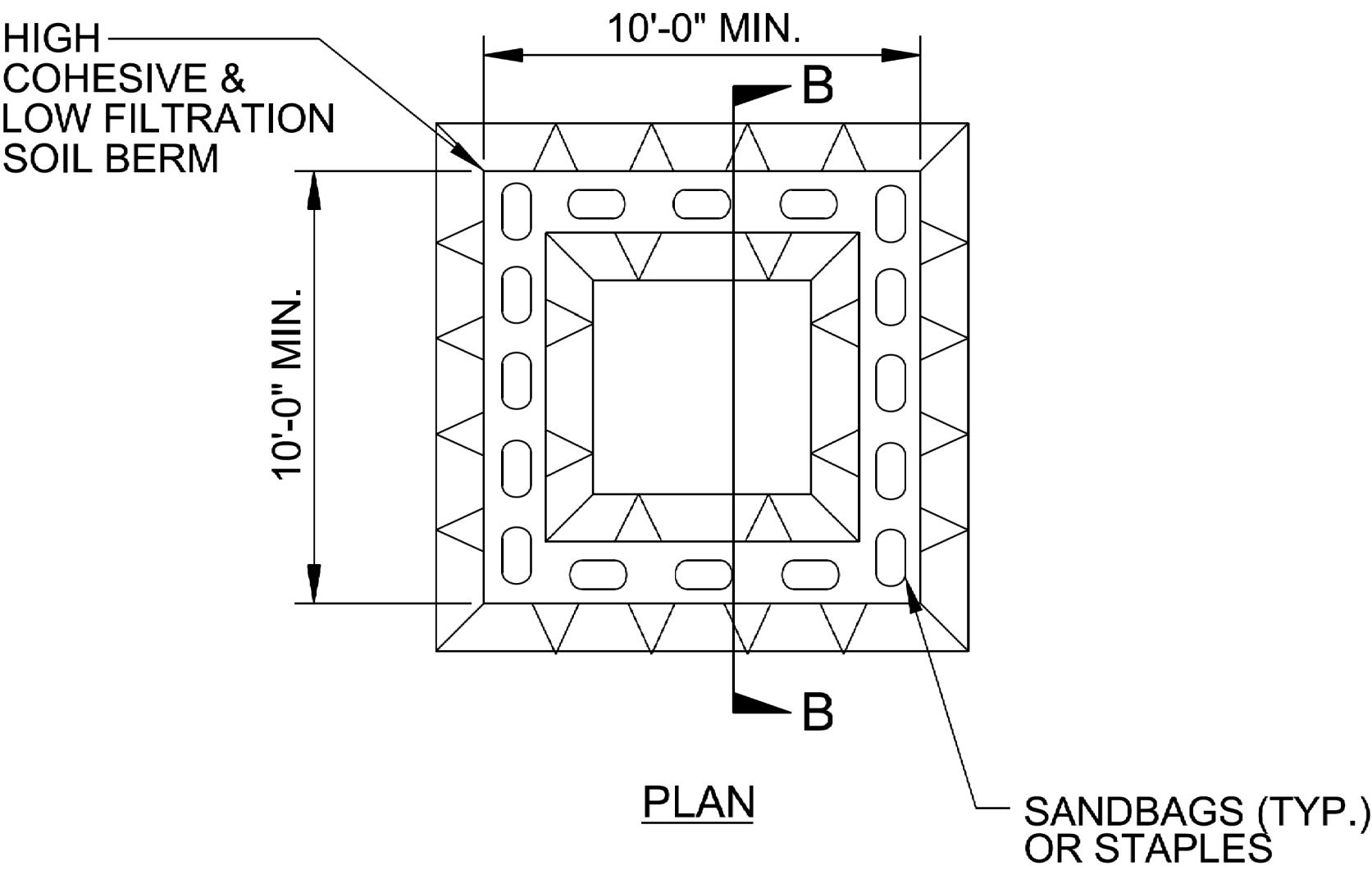


SECTION A-A

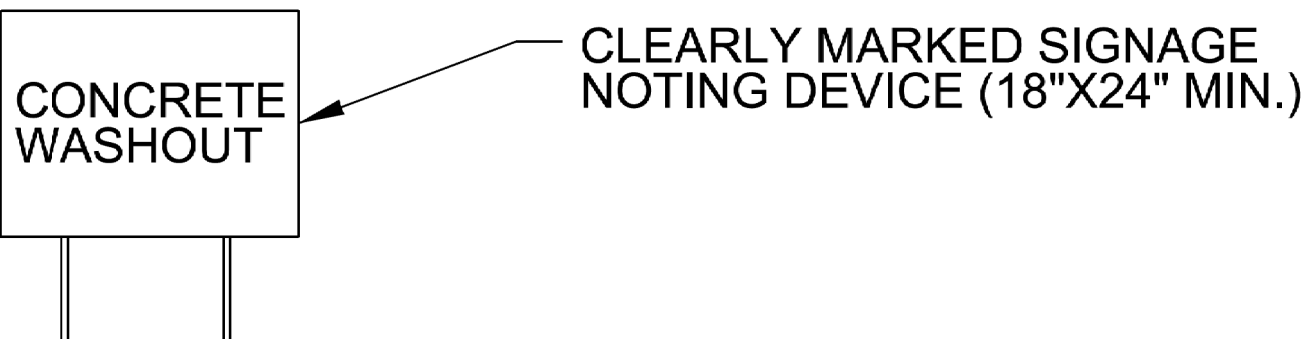


BELOW GRADE WASHOUT STRUCTURE
NOT TO SCALE

- NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.



SECTION B-B



ABOVE GRADE WASHOUT STRUCTURE
NOT TO SCALE

- NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO.	SHEET NO.
BP2-R027	EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 15424 2/26/2025 ALLISON C. JOHNSON	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 041650 2/26/2025 BRYAN C. PICKERING
Designed by: Allison C. Johnson FD818672C45F40B...	
Checked by: Bryan C. Pickering EE803100228540F...	

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.

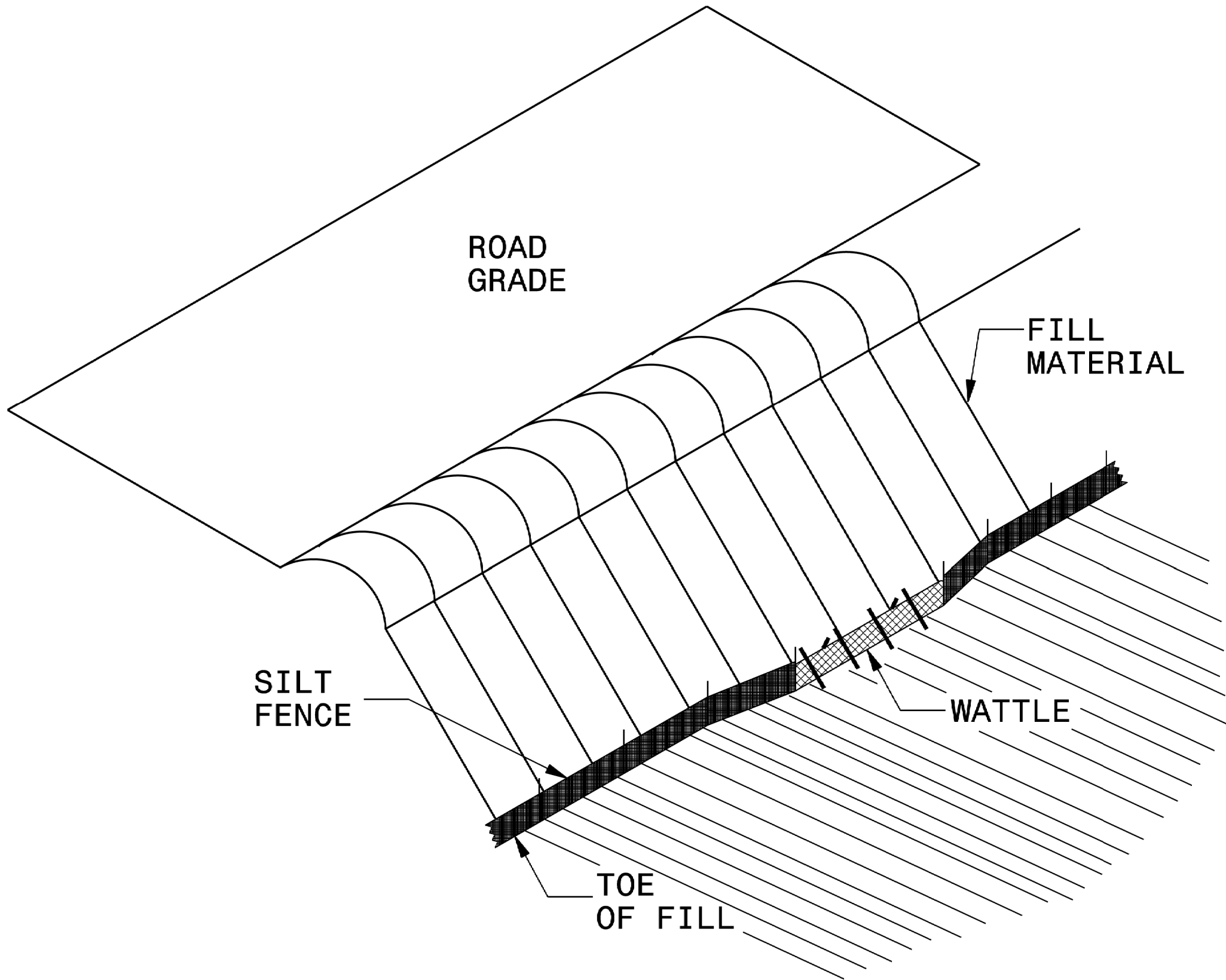
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

PROVIDE STAPLES MADE OF 11 GUAGE STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 6" IN LENGTH.

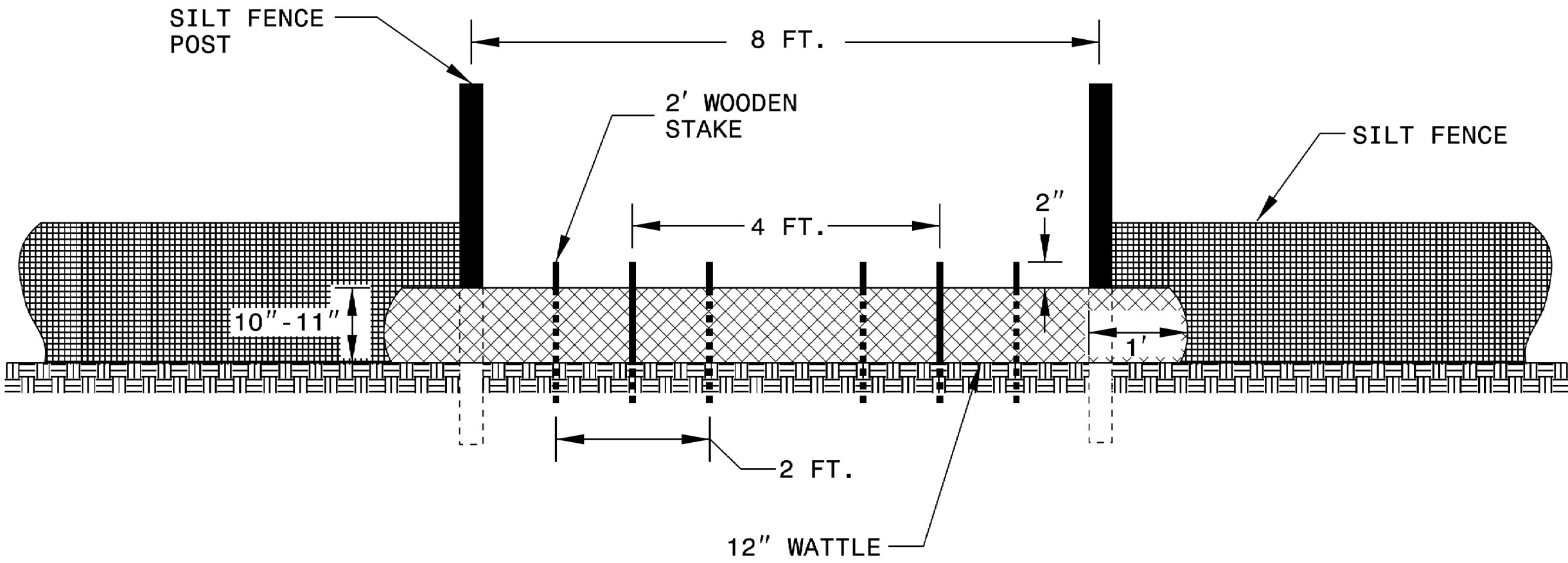
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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.

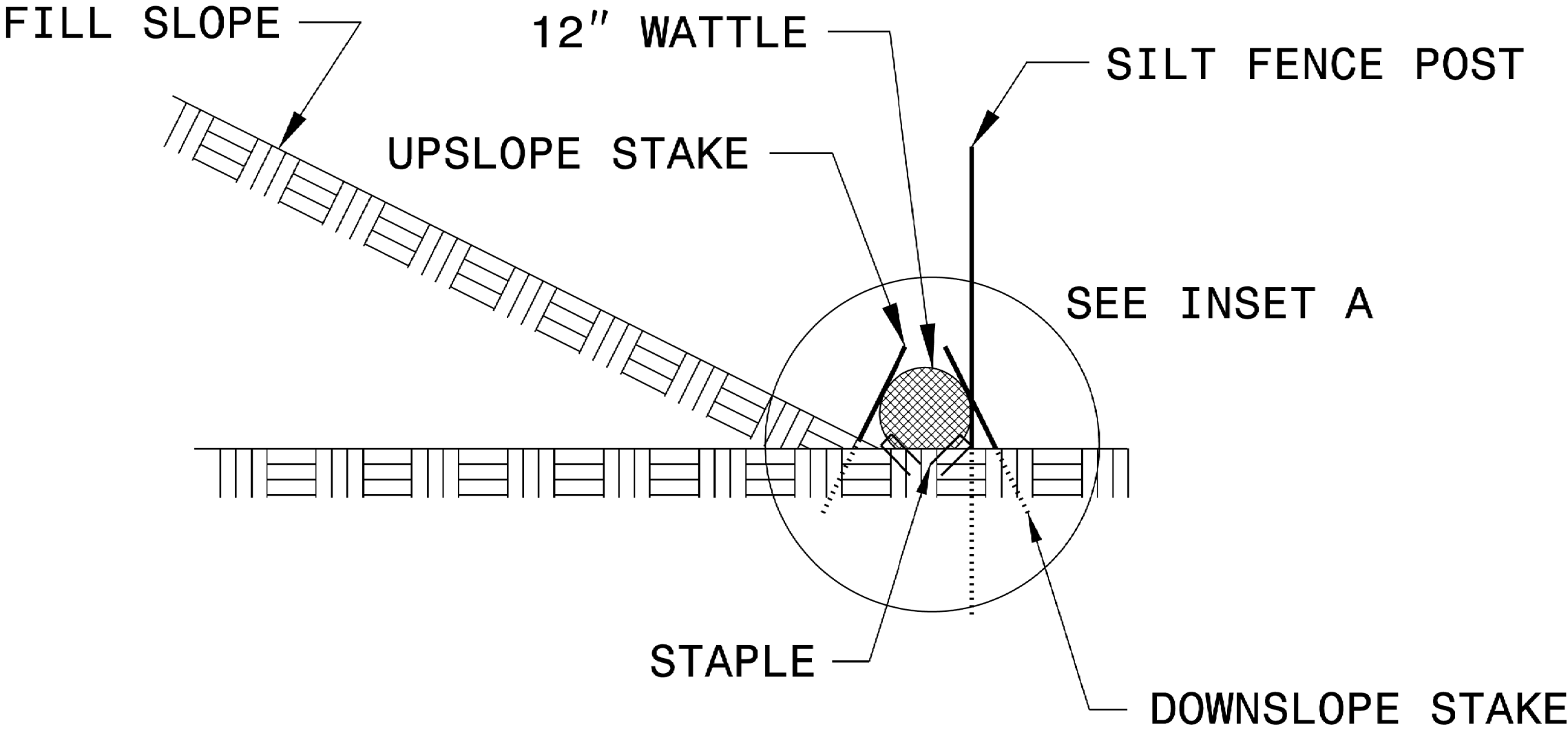
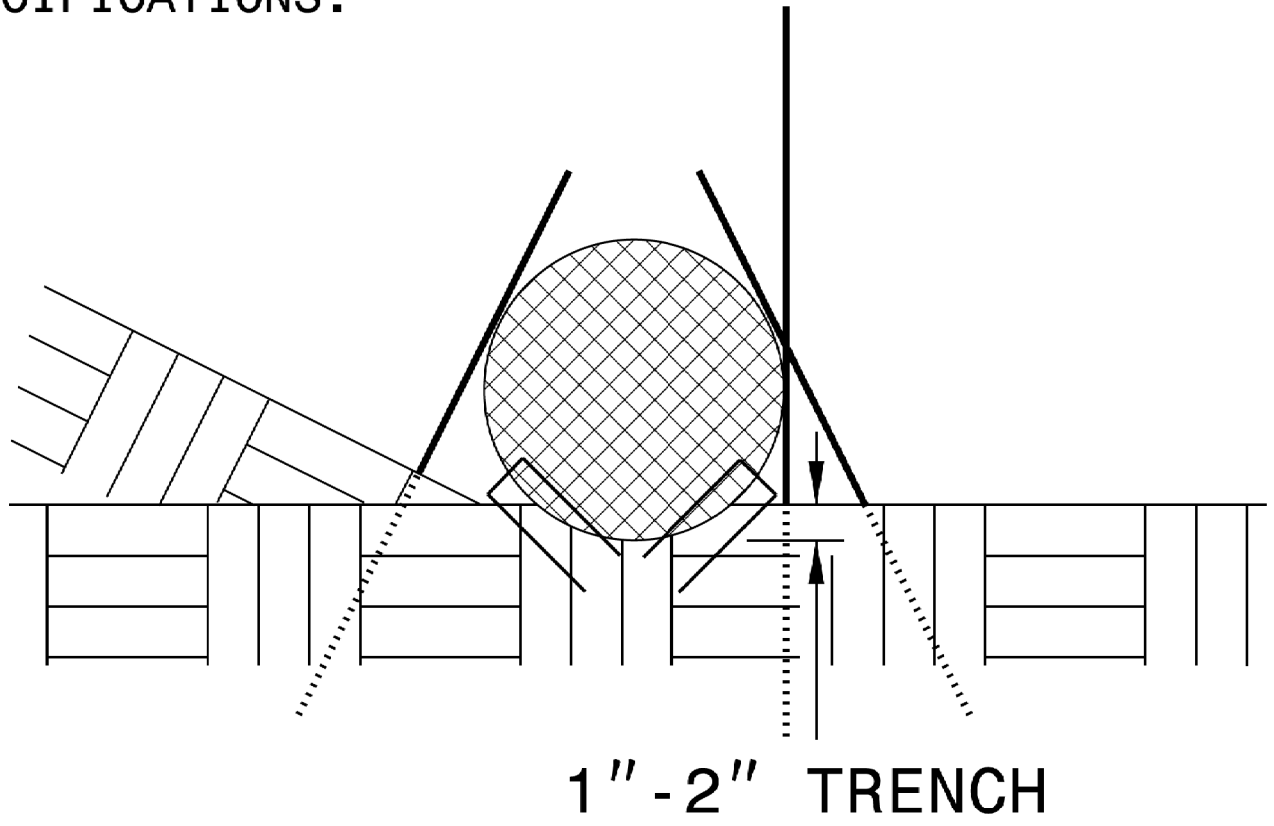


ISOMETRIC VIEW



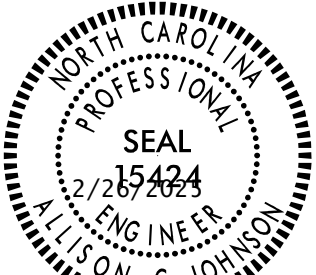
VIEW FROM SLOPE

INSET A



SIDE VIEW

SOIL STABILIZATION SUMMARY SHEET

PROJECT REFERENCE NO.		SHEET NO.	
BP2-R027		EC-3A	
ROADWAY DESIGN ENGINEER  Sealed by: <i>Alison C. Johnson</i>		HYDRAULICS ENGINEER  Sealed by: <i>Alison C. Johnson</i>	
FD146727-CA5406		EE6631002285407	

MATTING FOR EROSION CONTROL

[illegible]

MATTING FOR EROSION CONTROL

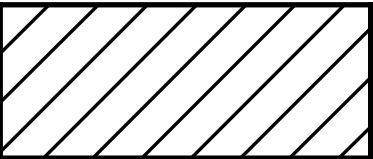
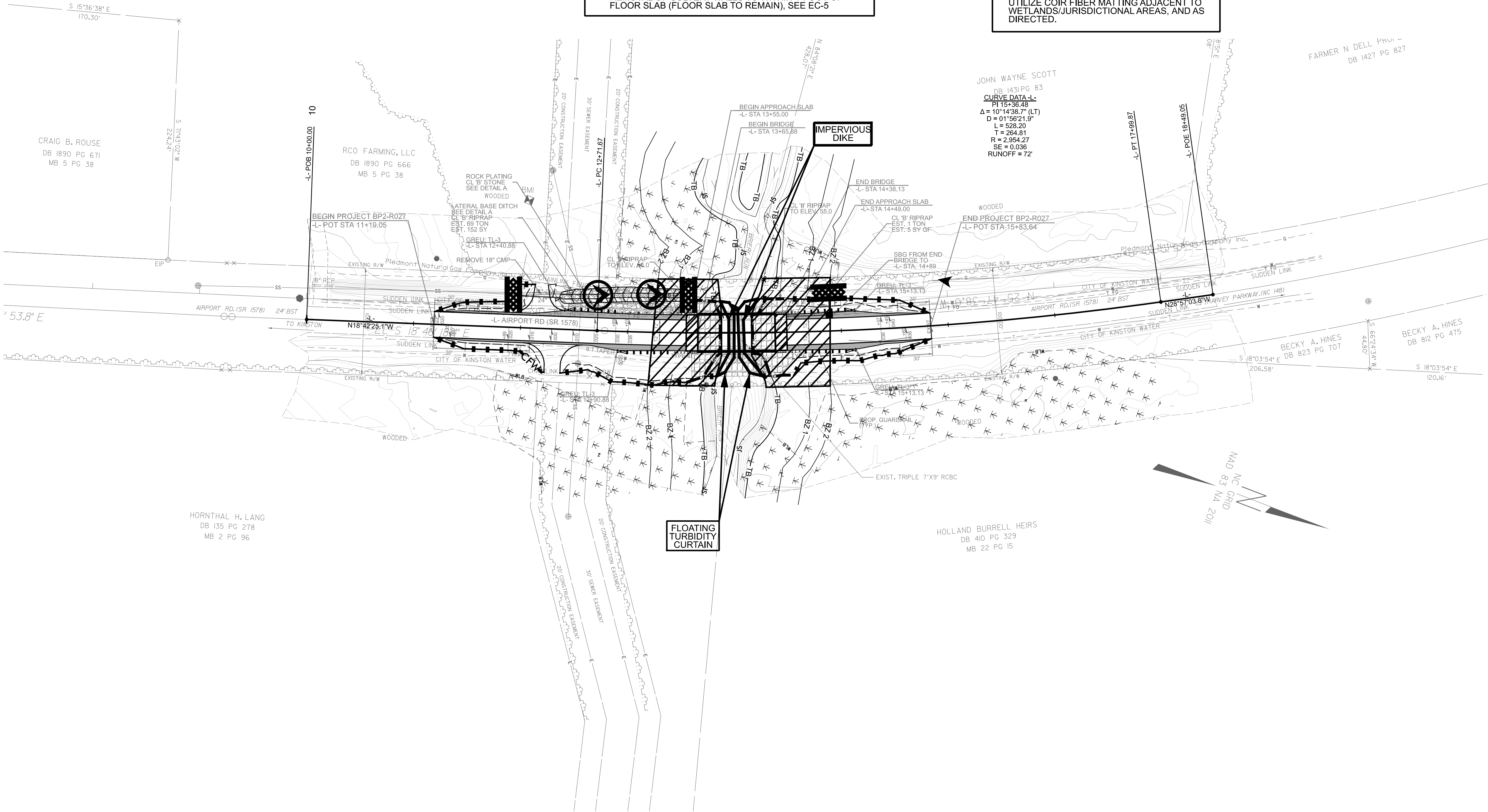
[illegible]

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

PROJECT REFERENCE NO. BP2-R027		SHEET NO. EC-3B	
ROADWAY DESIGN ENGINEER PROFESSIONAL SEAL 15424 2/26/2023 ALLISON C. JOHNSON Designed by: Allison C. Johnson FD81872C45F4D8...		HYDRAULICS ENGINEER PROFESSIONAL SEAL 041650 2/26/2023 BRYAN W. C. PICKERING Designed by: Bryan W. C. Pickering EE60310D228540F...	

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 TO 4:1	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50’ IN LENGTH WITH SLOPES STEEPER THAN 4:1. 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES



ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

NOTE:
UTILIZE IMPERVIOUS DIKES TO ALTERNATE FLOW
BETWEEN EXISTING CULVERT BARRELS TO FACILITATE
REMOVAL OF CULVERT WALLS TO WITHIN 1-FOOT OF
FLOOR SLAB (FLOOR SLAB TO REMAIN), SEE EC-5

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT
DRAINAGE OUTLETS.

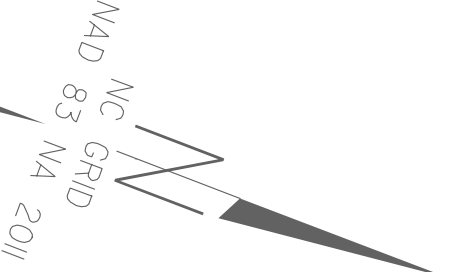
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04

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

NOTE:
UTILIZE COIR FIBER MATTING ADJACENT TO
WETLANDS/JURISDICTIONAL AREAS, AND AS
DIRECTED.

JOHN WAYNE SCOTT
DB 1431 PG 83
CURVE DATA:
PI 13+36.48
 $\Delta = 10^\circ 14' 38.7" (LT)$
 $D = 01^\circ 56' 21.9"$
 $L = 528.20$
 $T = 264.81$
 $R = 2,954.27$
 $SE = 0.036$
 $RUNOFF = 72'$

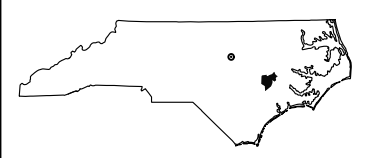
FARMER N DELL PKWY
DB 1427 PG 827



BP2-R027

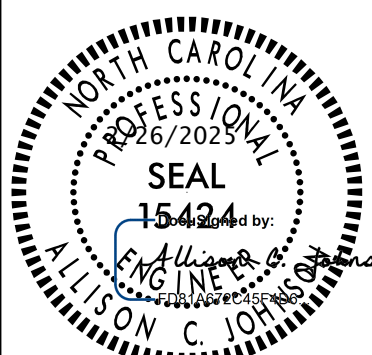
EC-04

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
LENOIR COUNTY

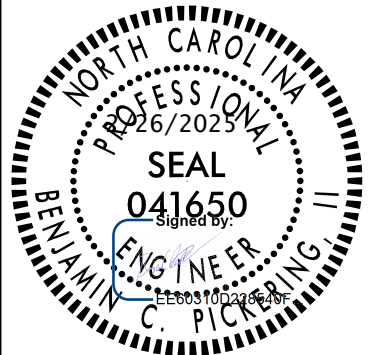


ROADWAY DESIGN UNIT

ROADWAY DESIGN
ENGINEER



HYDRAULICS
ENGINEER



PREPARED BY



REVISIONS

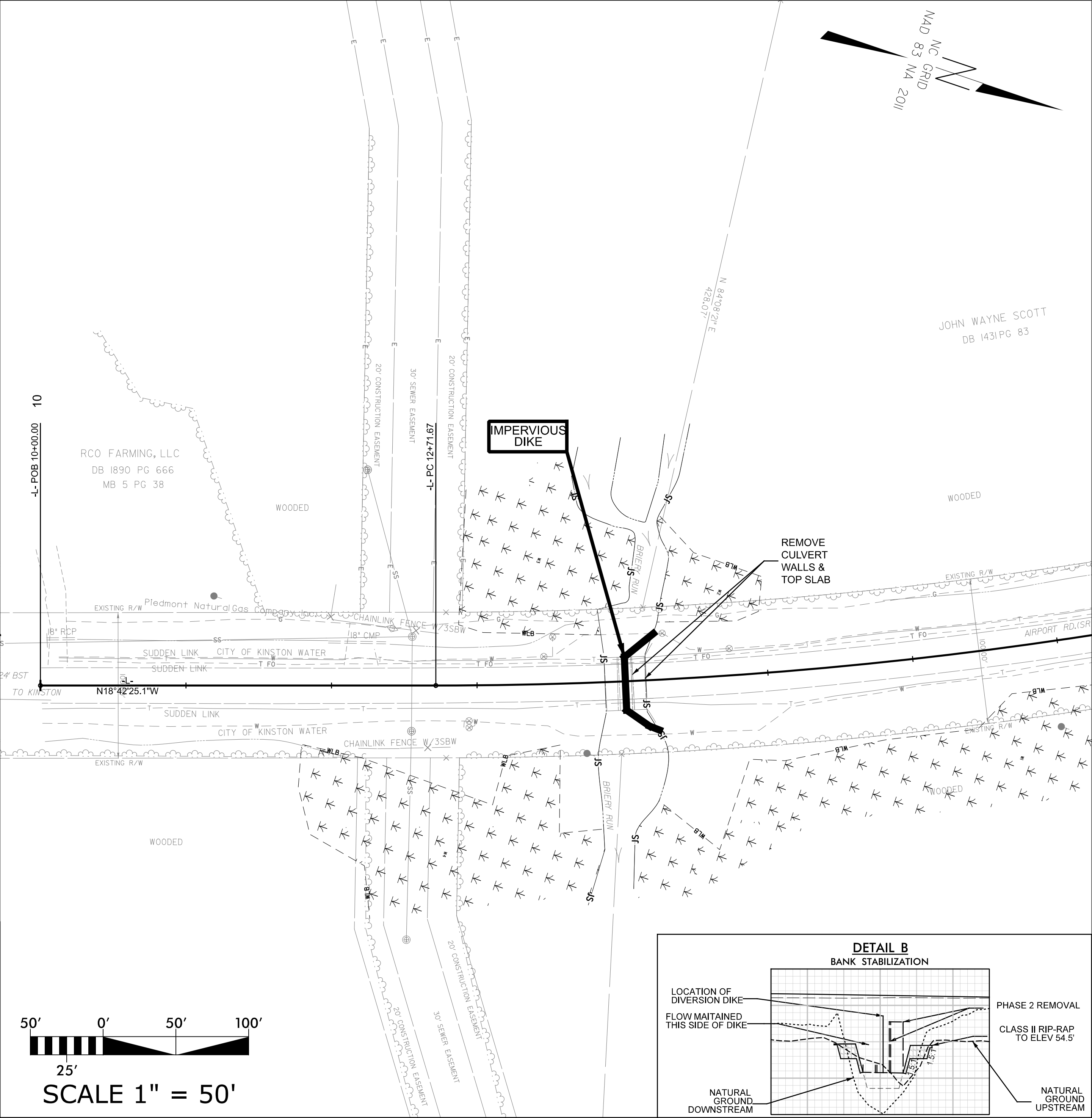
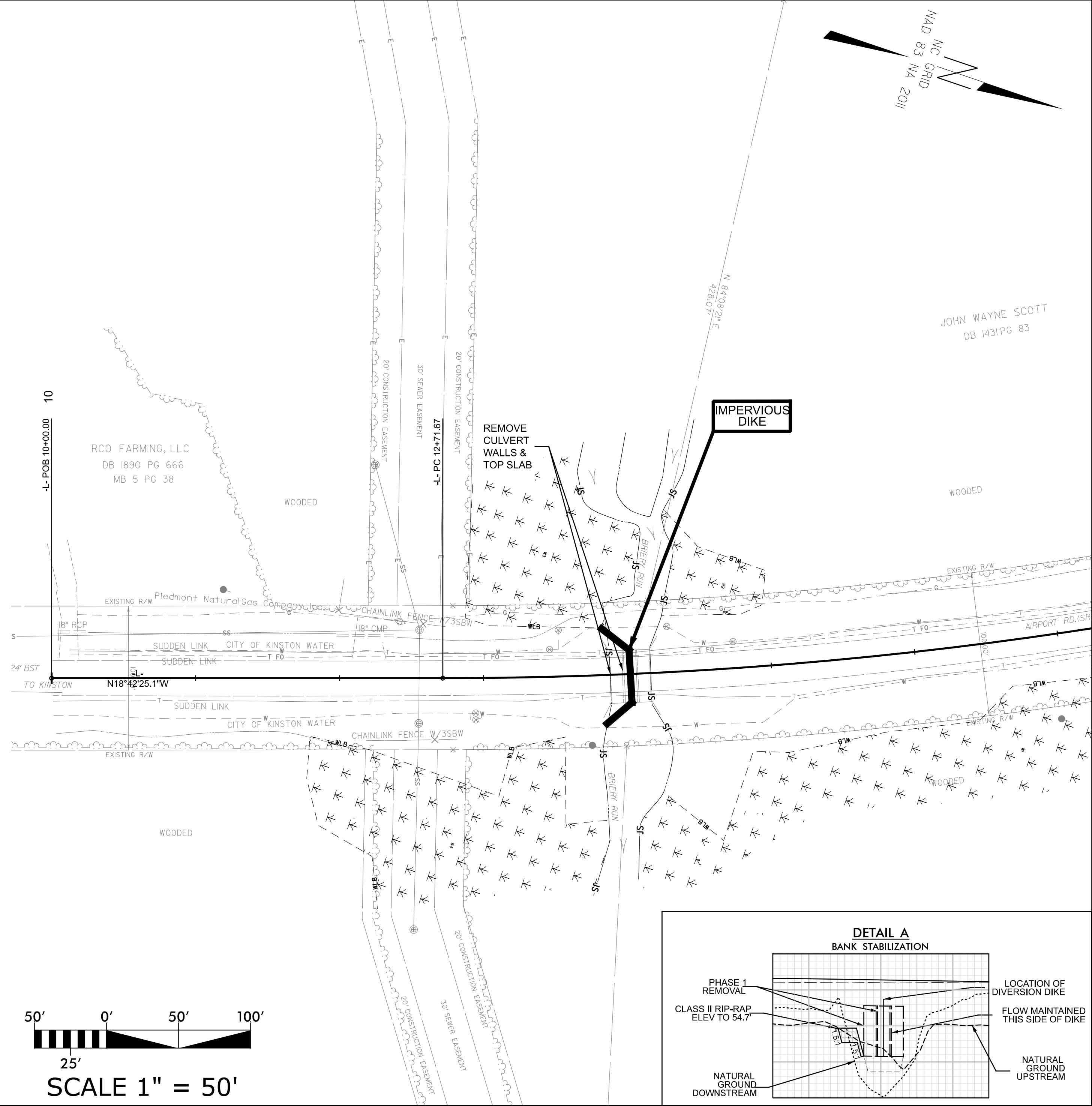
CULVERT DECONSTRUCTION SEQUENCE STA. 14+00 -L-

PHASE I

- 1.) UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED THROUGHOUT CULVERT REMOVAL.
- 2.) INSTALL IMPERVIOUS DIKES.
- 3.) DEWATER CONSTRUCTION AREA, UTILIZING SPECIAL STILLING BASINS FOR PUMPED EFFLUENT
- 4.) REMOVE CULVERT WALLS AS NOTED TO WITHIN 1 FOOT OF CULVERT BOTTOM AND INSTALL RIP RAP TO STABILIZED CHANNEL BANK.
- 5.) EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE RELOCATION OF IMPERVIOUS DIKES.

PHASE II

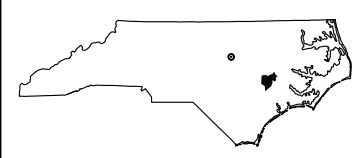
- 1.) ADJUST IMPERVIOUS DIKES.
- 2.) DEWATER CONSTRUCTION AREA, UTILIZE SPECIAL STILLING BASINS FOR PUMPED EFFLUENT
- 3.) REMOVE CULVERT WALLS AS NOTED TO WITHIN 1 FOOT OF CULVERT BOTTOM AND INSTALL RIP RAP TO STABILIZE CHANNEL BANK.
- 4.) EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES.
- 5.) REMOVE ANY REMAINING SPECIAL STILLING BASIN(S), AND IMPERVIOUS DIKES
- 6.) COMPLETE BRIDGE



BP2-R027

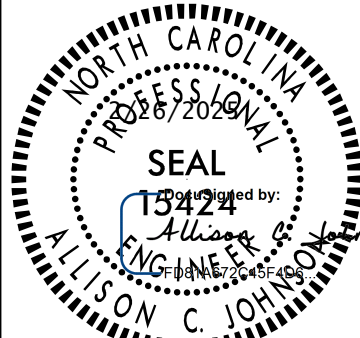
EC-05

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
LENOIR COUNTY

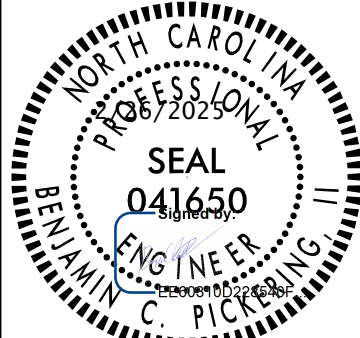


ROADWAY DESIGN UNIT

ROADWAY DESIGN
ENGINEER



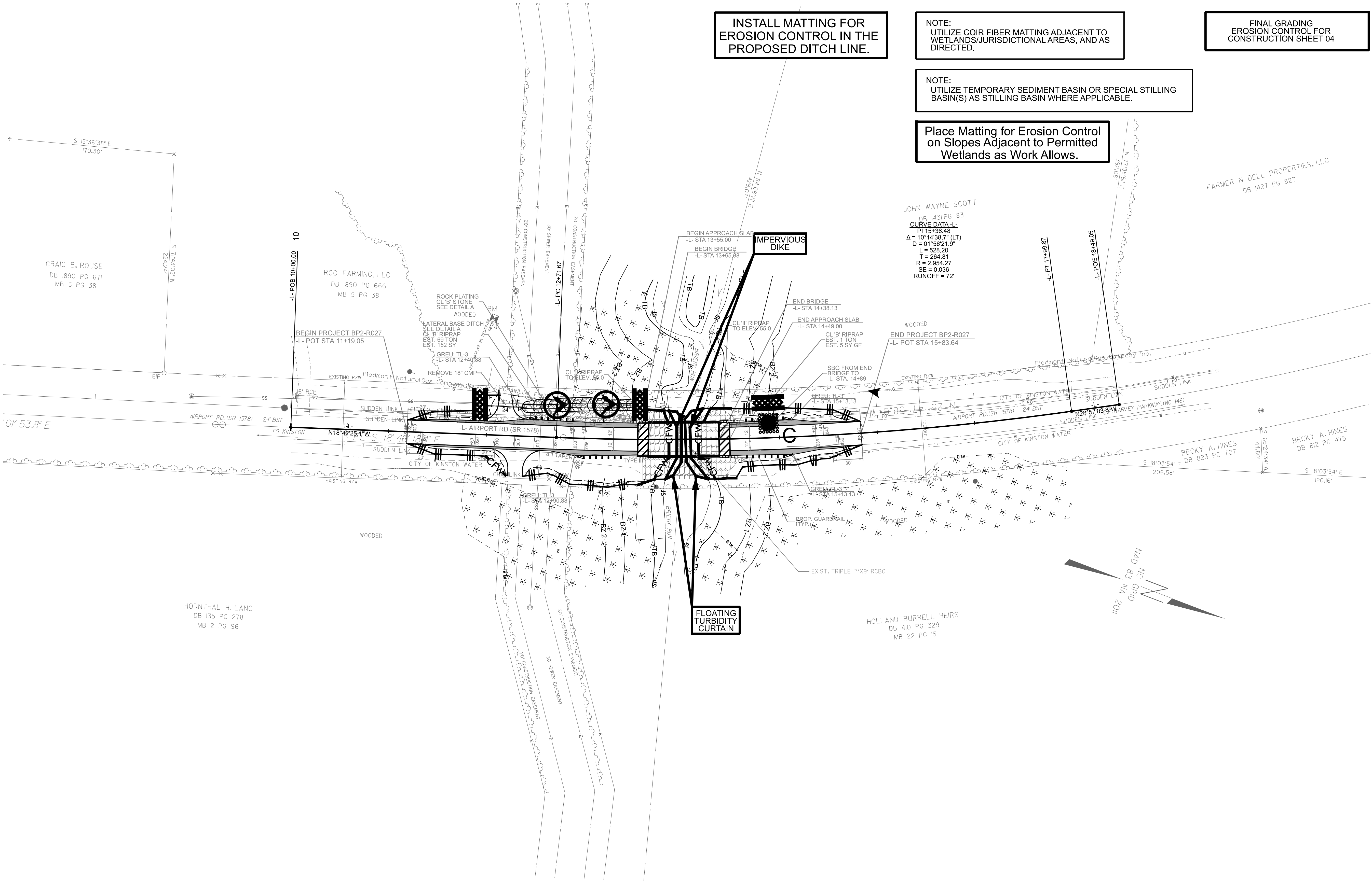
HYDRAULICS
ENGINEER



PREPARED BY



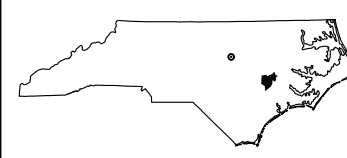
REVISIONS



BP2-R027

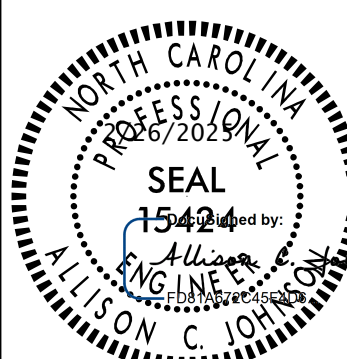
EC-06

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
LENOIR COUNTY

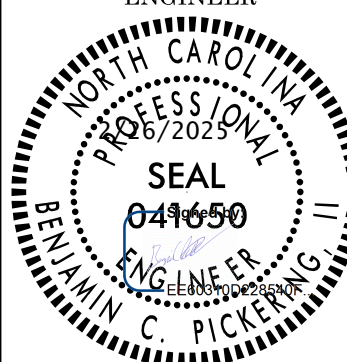


ROADWAY DESIGN UNIT

ROADWAY DESIGN
ENGINEER



HYDRAULICS
ENGINEER



PREPARED BY

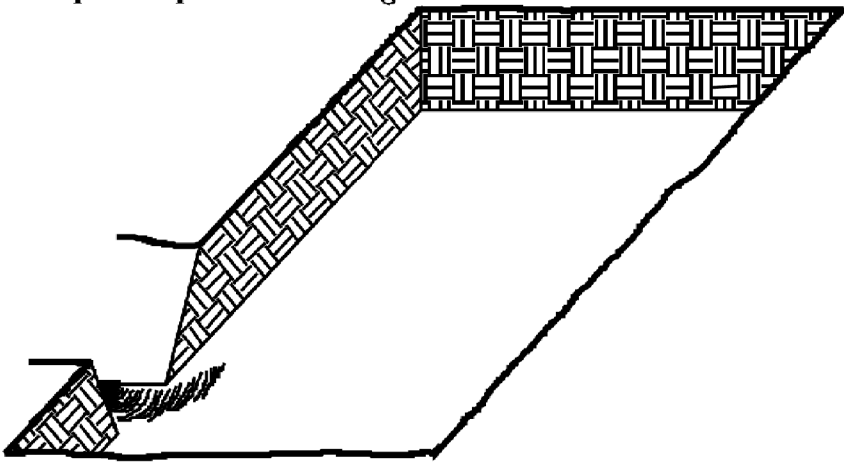


REVISIONS

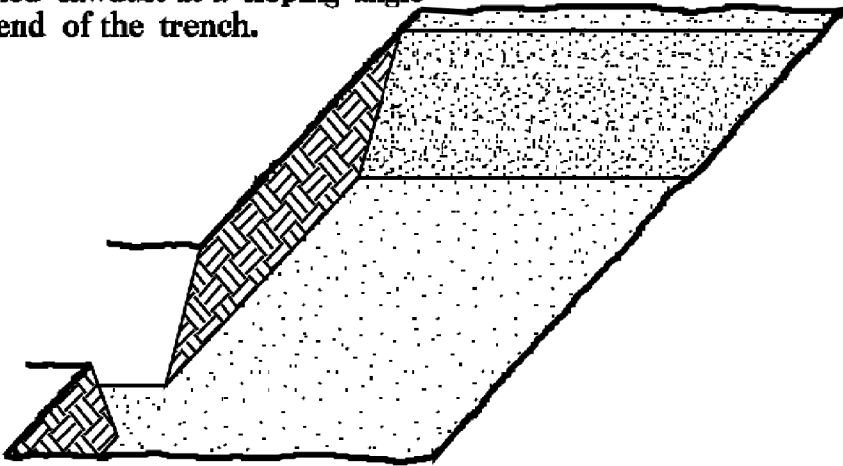
PLANTING DETAILS
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

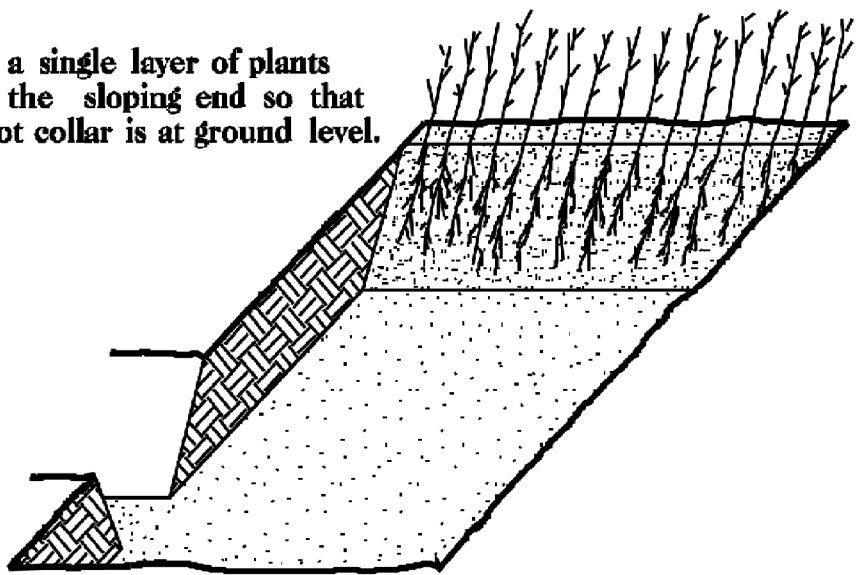
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



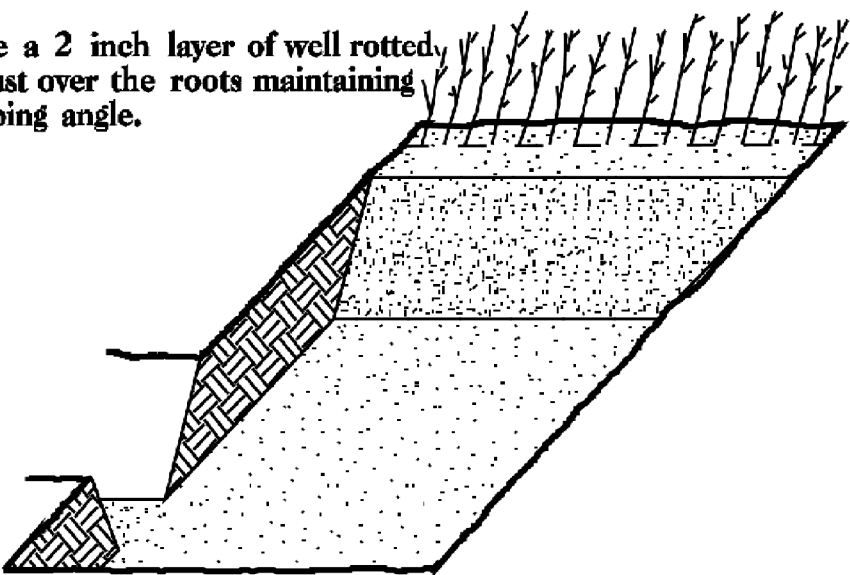
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

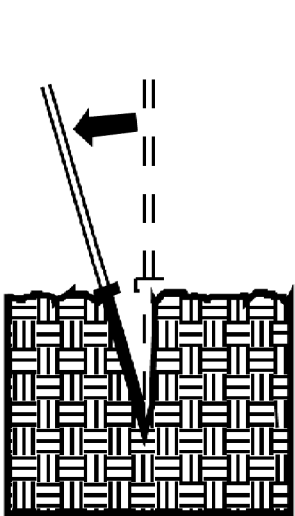


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

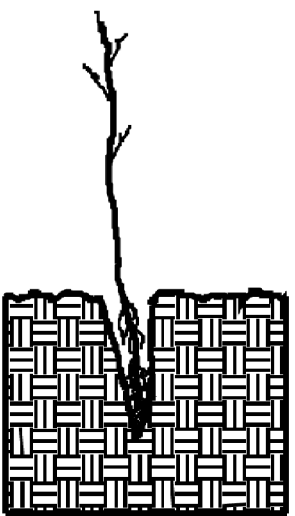


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

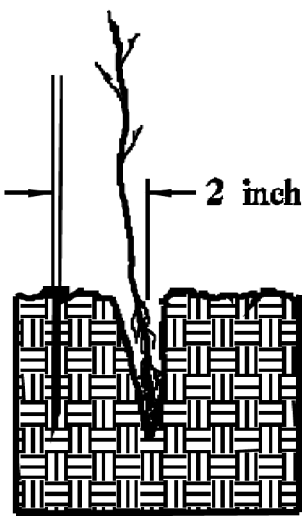
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



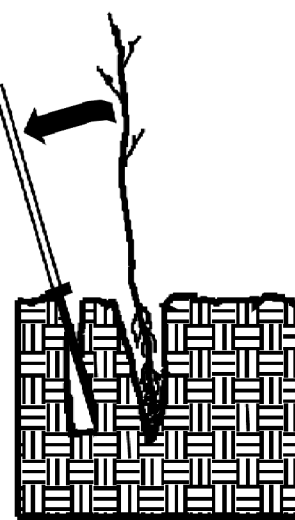
1. Insert planting bar as shown and pull handle toward planter.



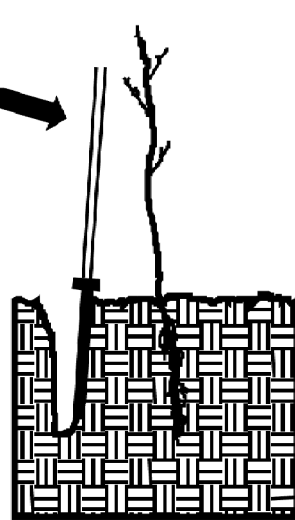
2. Remove planting bar and place seedling at correct depth.



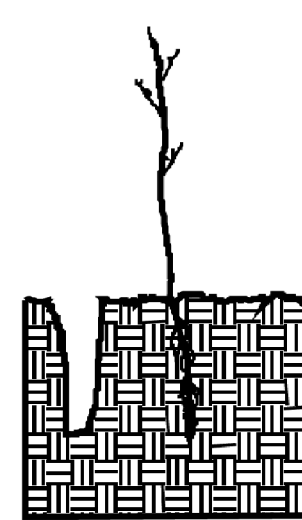
3. Insert planting bar 2 inches toward planter from seedling.



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



5. Push handle forward firming soil at top.



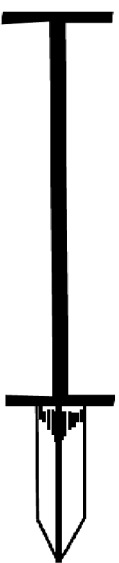
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

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



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



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

REFORESTATION

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

REFORESTATION

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

34% <i>LIRIODENDRON TULIPIFERA</i>	TULIP POPLAR	12 in - 18 in BR
33% <i>PLATANUS OCCIDENTALIS</i>	AMERICAN SYCAMORE	12 in - 18 in BR
33% <i>BETULA NIGRA</i>	RIVER BIRCH	12 in - 18 in BR

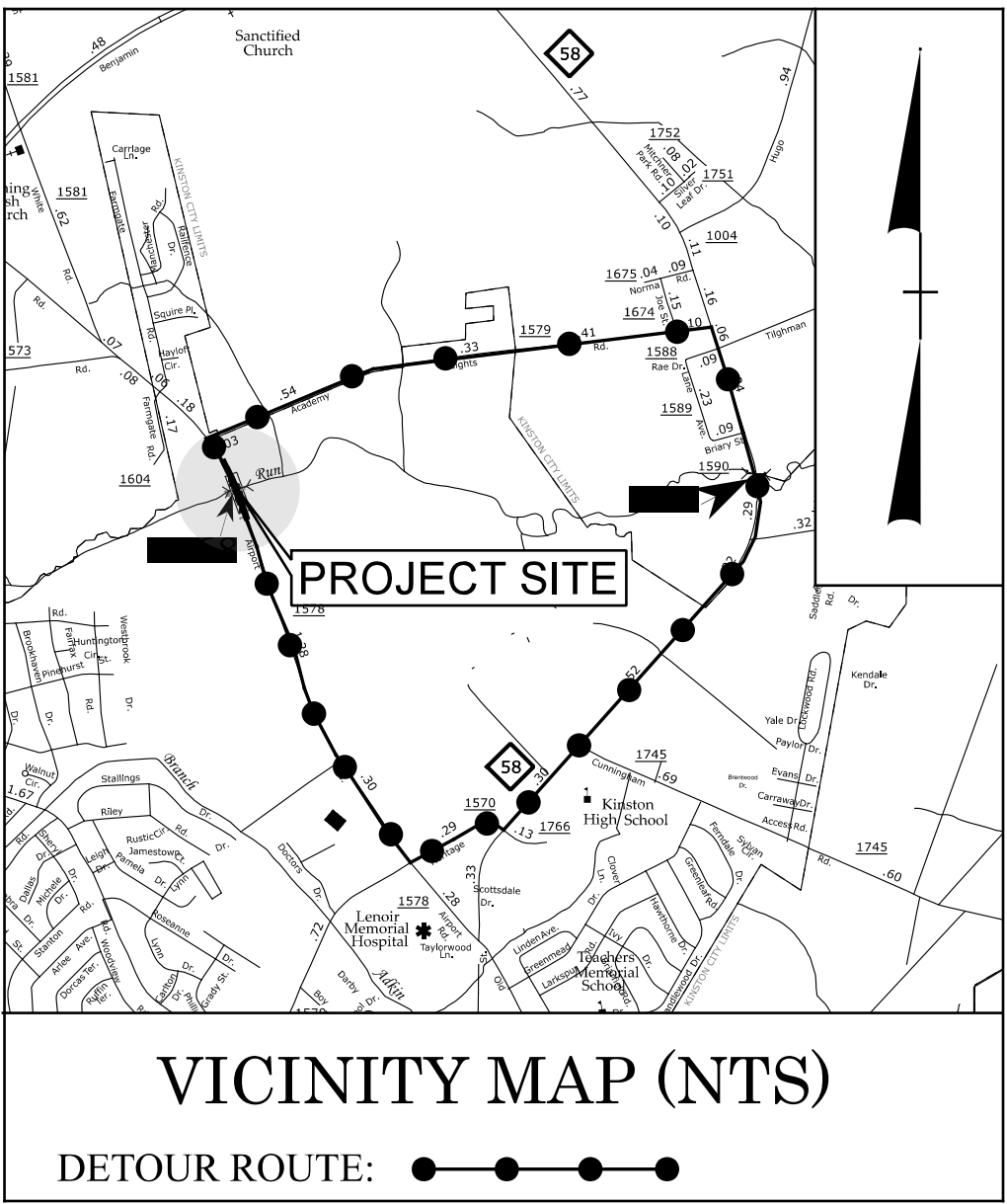
REFORESTATION DETAIL SHEET

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

PROJECT REFERENCE NO. BP2-R027	SHEET NO. RF-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER PROFESSIONAL SEAL 2/26/2025 ALLISON C. JOHNSON	HYDRAULICS ENGINEER PROFESSIONAL SEAL 041650 2/26/2025 BRYAN C. PICKERING
by Allison C. Johnson	
FDB14872045F40B	
EE005100228540F	

TIP PROJECT: BP2-R027

CONTRACT:

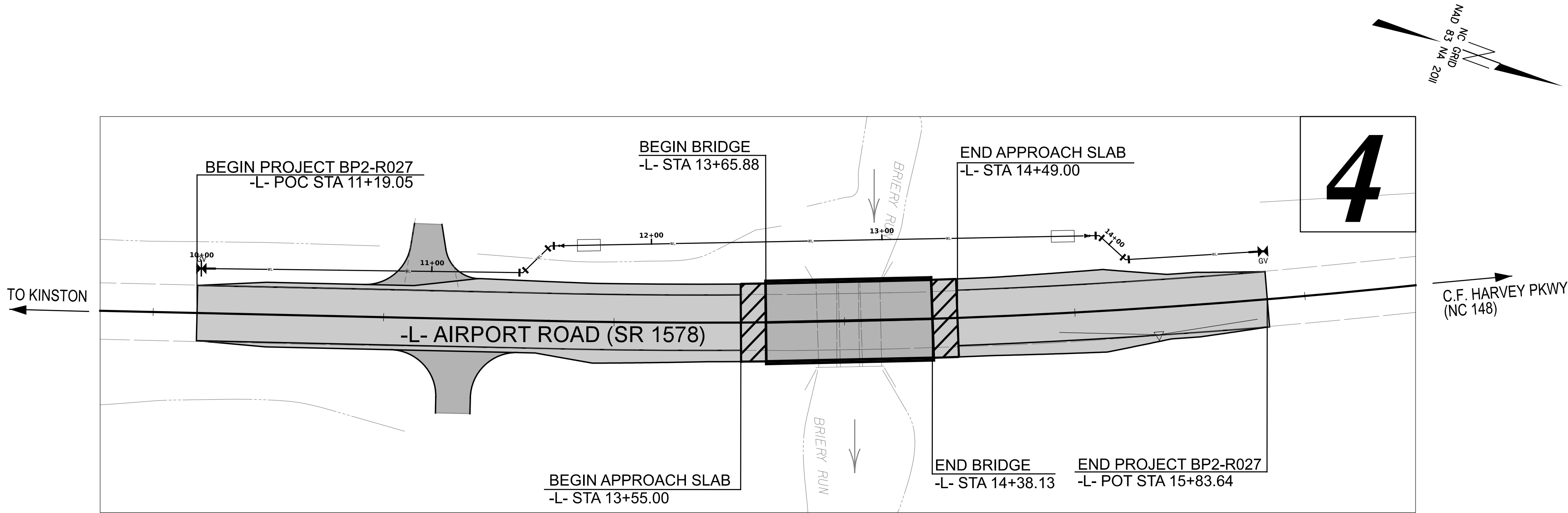
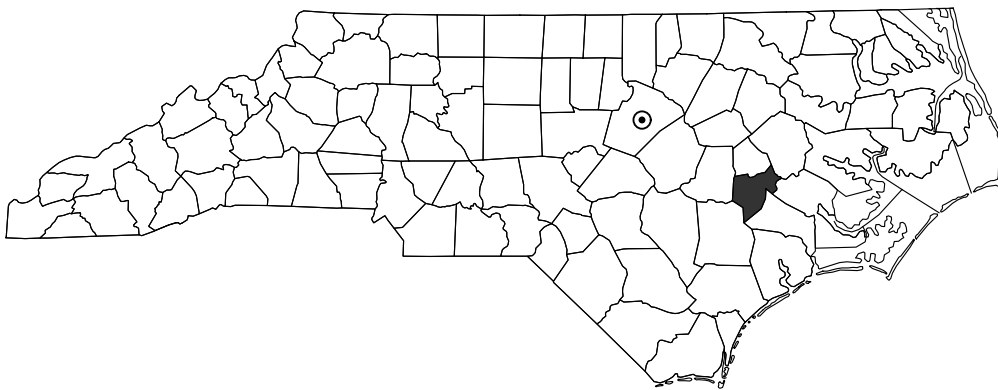


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS
LENOIR COUNTY

LOCATION: BRIDGE# 530168 OVER BRIERY RUN
ON SR 1578 (AIRPORT ROAD)

TYPE OF WORK: WATER LINE CONSTRUCTION

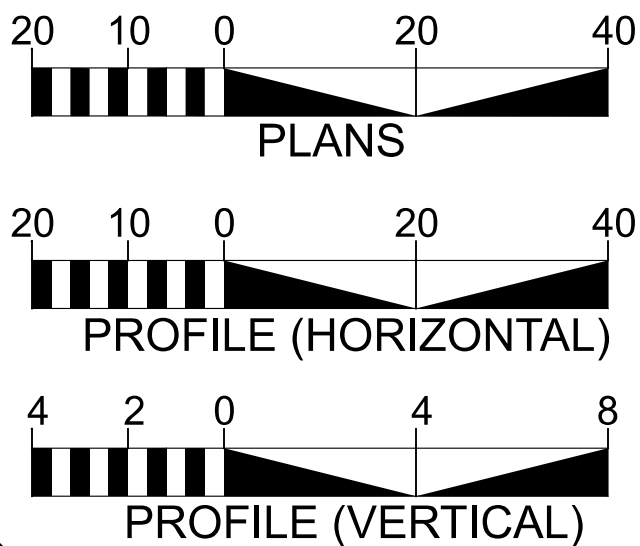


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP2-R027	UC-1	
STATE PROJ. NO.		F. A. PROJ. NO.	DESCRIPTION
BP2.R027.1		N/A	PE
BP2.R027.2		N/A	UTL/ROW
BP2.R027.3		N/A	CONST

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.:

DESCRIPTION:

UC-1
UC-2
UC-3
UC-3A
UC-4

TITLE SHEET
UTILITY SYMBOLOGY
NOTES
DETAILS
PLAN AND PROFILE SHEET

WATER OWNER ON PROJECT

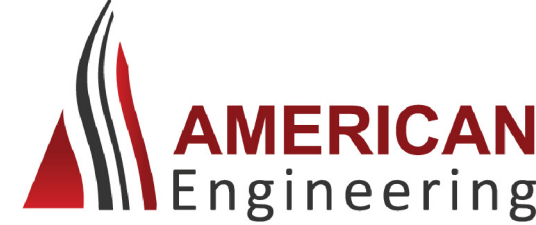
(A) TOWN OF KINSTON

SEAL



DocuSigned by:
Allison C. Johnson
FD81AB72C45F4D6...
2/26/2025

PREPARED IN THE OFFICE OF



8008 Corporate Center Drive | Suite 110
Charlotte, NC 28226 | 704.375.2438

ALLISON C. JOHNSON, P.E. CONSULTANT CONTACT #1
BENJAMIN C. PICKERING II, P.E. CONSULTANT CONTACT #2
CONSULTANT CONTACT #3



DIVISION OF HIGHWAYS
UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH, NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

UTILITIES REGIONAL ENGINEER
UTILITIES ENGINEER
UTILITIES AREA COORDINATOR
UTILITIES COORDINATOR

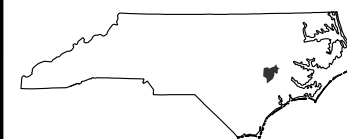
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION

BP2-R027

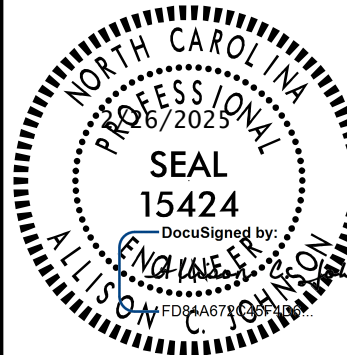
UC-2

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
LENOIR COUNTY



UTILITY DESIGN UNIT

UTILITY CONSTRUCTION
PLANS ONLY



DESIGNED BY: ACJ/MS

DRAWN BY: MS

CHECKED BY: ACJ/BF

APPROVED BY: ACJ

REVISED:

UTILITIES ENGINEERING SEC.
PHONE: (919) 707-6690
FAX: (919) 250-4151

PREPARED BY



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11¼ Degree Bend	
22½ Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	
Water Meter	
Relocate Water Meter	
Remove Water Meter	
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement Method	
Encasement	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Plan Note	
Pay Item Note	

EXISTING UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Utility Pole	
Utility Pole with Base	
H-Frame Pole	
Power Transmission Line Tower	
Water Manhole	
Power Manhole	
Telephone Manhole	
Sanitary Sewer Manhole	
Hand Hole for Cable	
Power Transformer	
Telephone Pedestal	
CATV Pedestal	
Gas Valve	
Gas Meter	
Located Miscellaneous Utility Object	
Abandoned According to Utility Records	
End of Information	

*Underground Power Line	
*Underground Telephone Cable	
*Underground Telephone Conduit	
*Underground Fiber Optics Telephone Cable	
*Underground TV Cable	
*Underground Fiber Optics TV Cable	
*Underground Gas Pipeline	
Aboveground Gas Pipeline	
*Underground Water Line	
Aboveground Water Line	
*Underground Gravity Sanitary Sewer Line	
Aboveground Gravity Sanitary Sewer Line	
*Underground SS Forced Main Line	
Underground Unknown Utility Line	
SUE Test Hole	
Water Meter	
Water Valve	
Fire Hydrant	
Sanitary Sewer Cleanout	

*For Existing Utilities

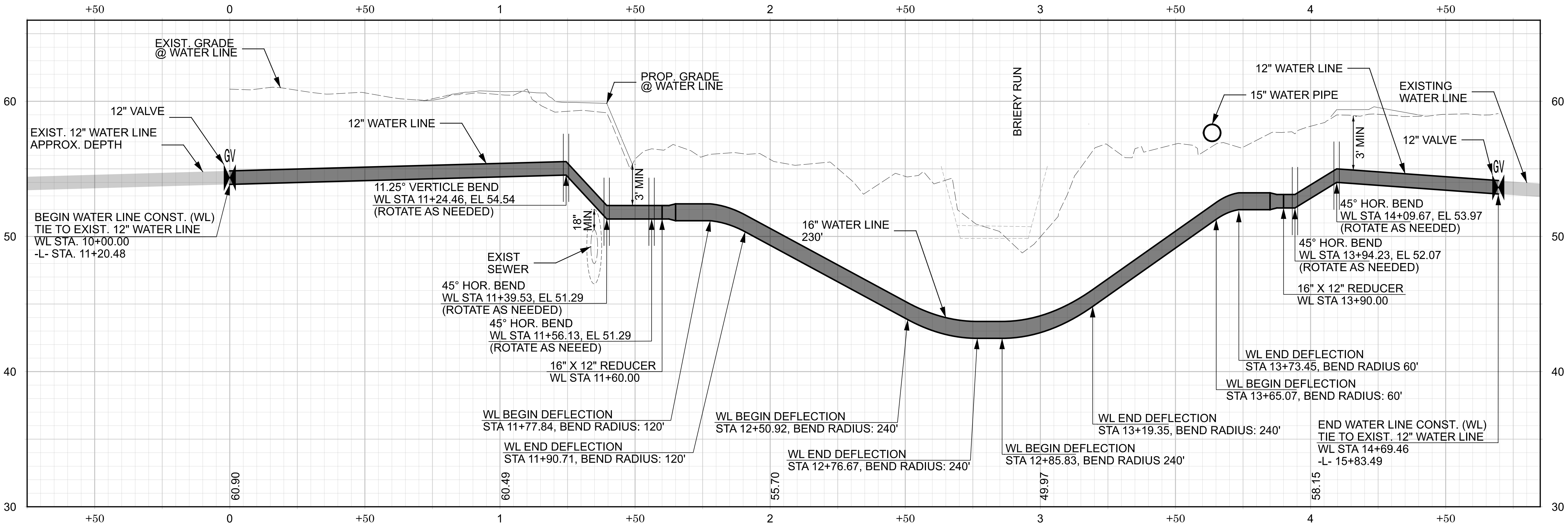
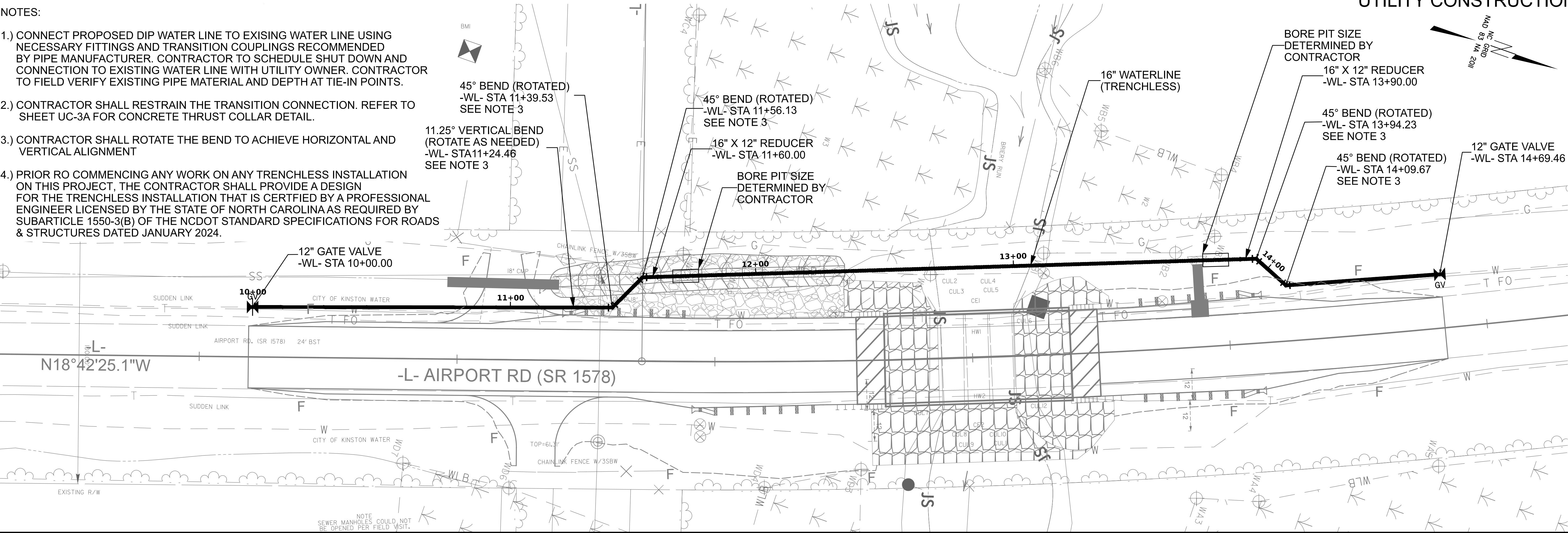
Utility Line Drawn from Record (Type as Shown)	
Designated Utility Line (Type as Shown)	

REVISIONS

02/02/22

NOTES:

- 1.) CONNECT PROPOSED DIP WATER LINE TO EXISING WATER LINE USING NECESSARY FITTINGS AND TRANSITION COUPLINGS RECOMMENDED BY PIPE MANUFACTURER. CONTRACTOR TO SCHEDULE SHUT DOWN AND CONNECTION TO EXISTING WATER LINE WITH UTILITY OWNER. CONTRACTOR TO FIELD VERIFY EXISTING PIPE MATERIAL AND DEPTH AT TIE-IN POINTS.
- 2.) CONTRACTOR SHALL RESTRAIN THE TRANSITION CONNECTION. REFER TO SHEET UC-3A FOR CONCRETE THRUST COLLAR DETAIL.
- 3.) CONTRACTOR SHALL ROTATE THE BEND TO ACHIEVE HORIZONTAL AND VERTICAL ALIGNMENT
- 4.) PRIOR RO COMMENCING ANY WORK ON ANY TRENCHLESS INSTALLATION ON THIS PROJECT, THE CONTRACTOR SHALL PROVIDE A DESIGN FOR THE TRENCHLESS INSTALLATION THAT IS CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED BY THE STATE OF NORTH CAROLINA AS REQUIRED BY SUBARTICLE 1550-3(B) OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS & STRUCTURES DATED JANUARY 2024.



UTILITY CONSTRUCTION

BP2-RQ27

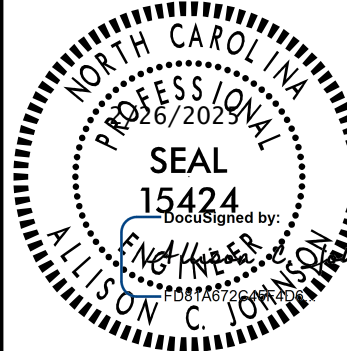
UC-4

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
LENOIR COUNTY



UTILITY DESIGN UNIT

UTILITY CONSTRUCTION
PLANS ONLY



DESIGNED BY: ACJ/MS

DRAWN BY: MS

CHECKED BY: ACJ/BF

APPROVED BY: ACJ

REVISED:

UTILITIES ENGINEERING SEC.
PHONE: (919) 707-6690
FAX: (919) 250-4151

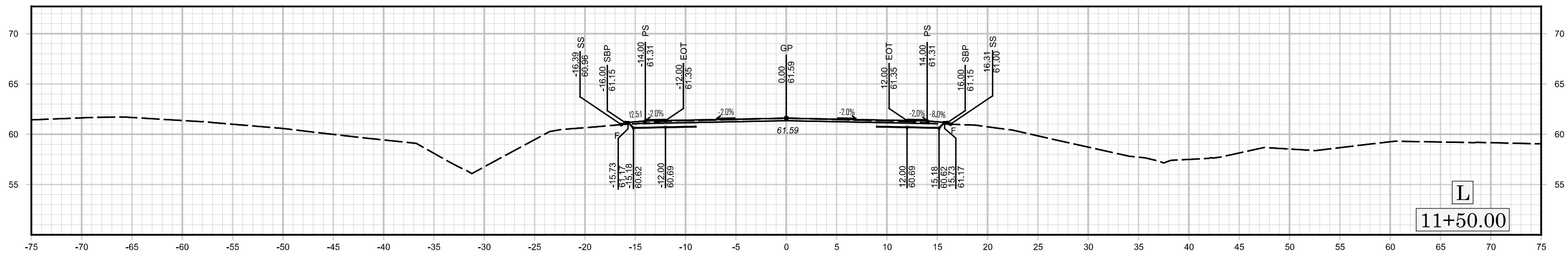
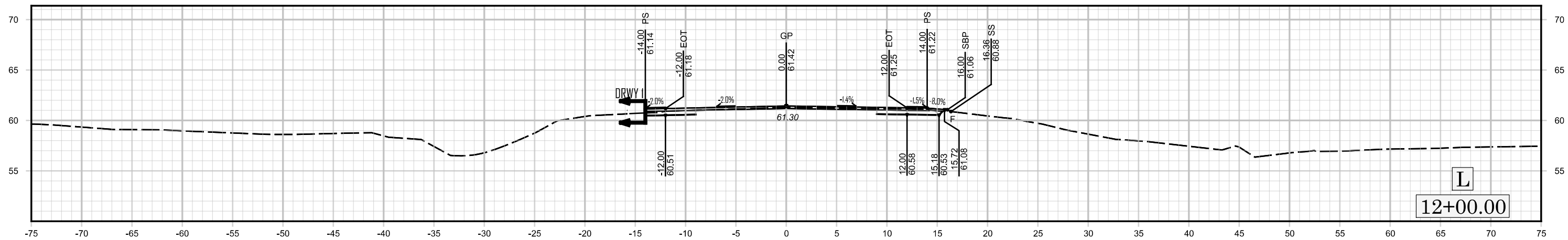
PREPARED BY



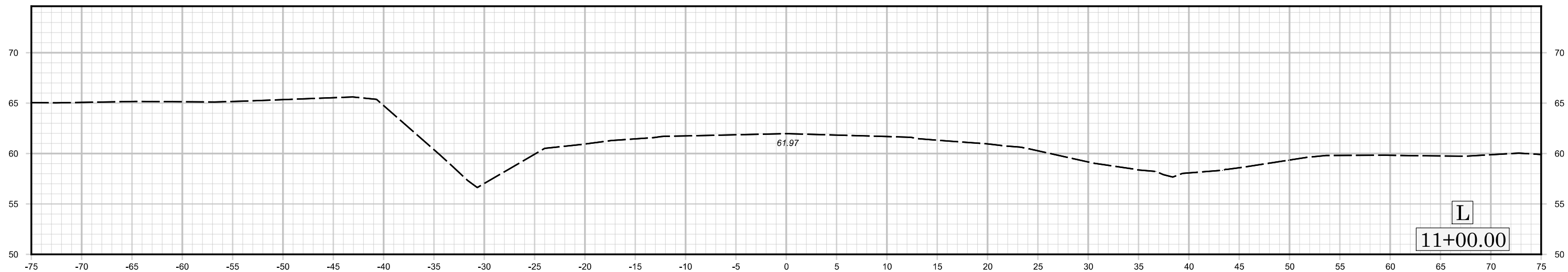
8008 Corporate Center Drive | Suite 110
Charlotte, NC 28226 | 704.375.2438

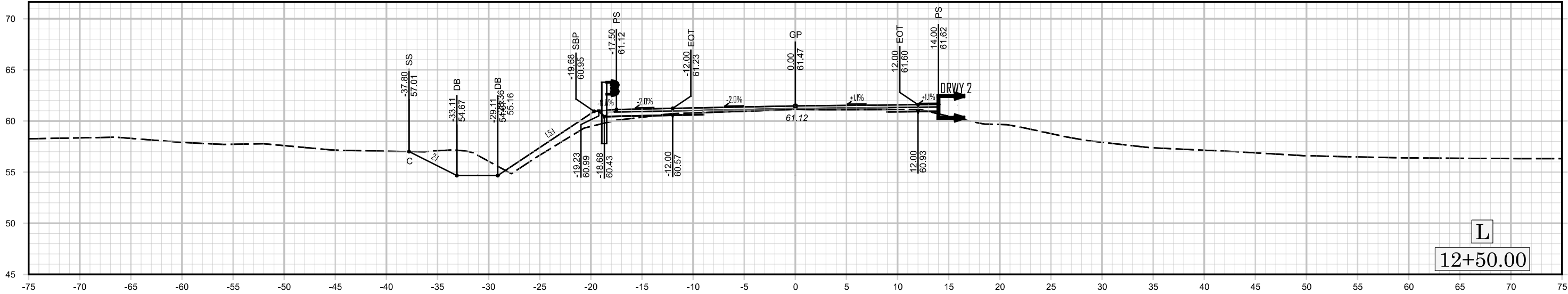
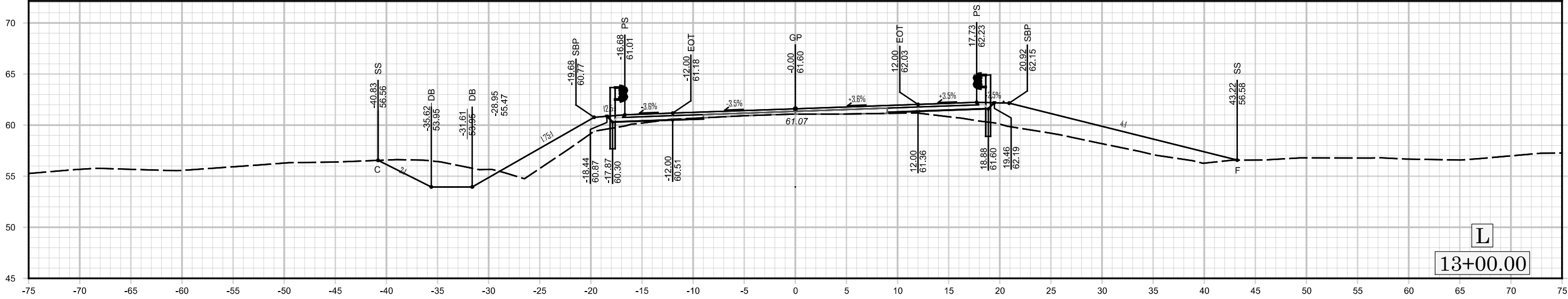
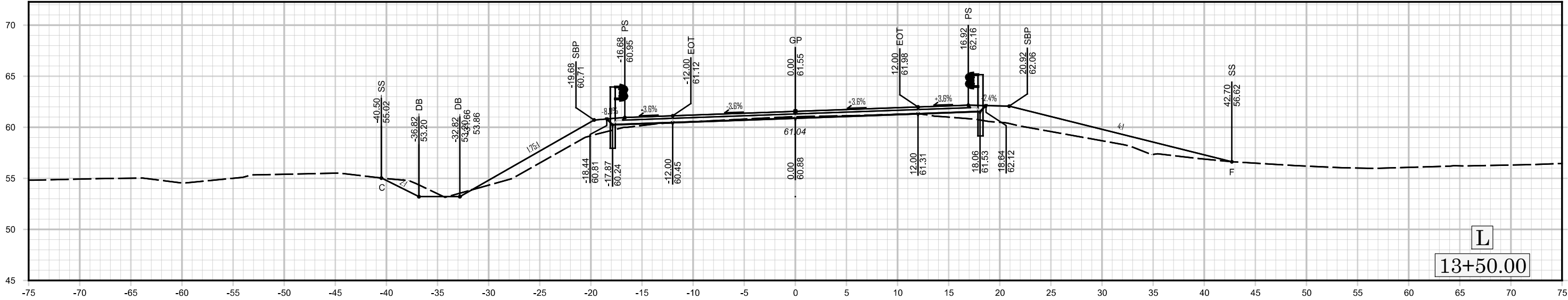
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

REVISIONS

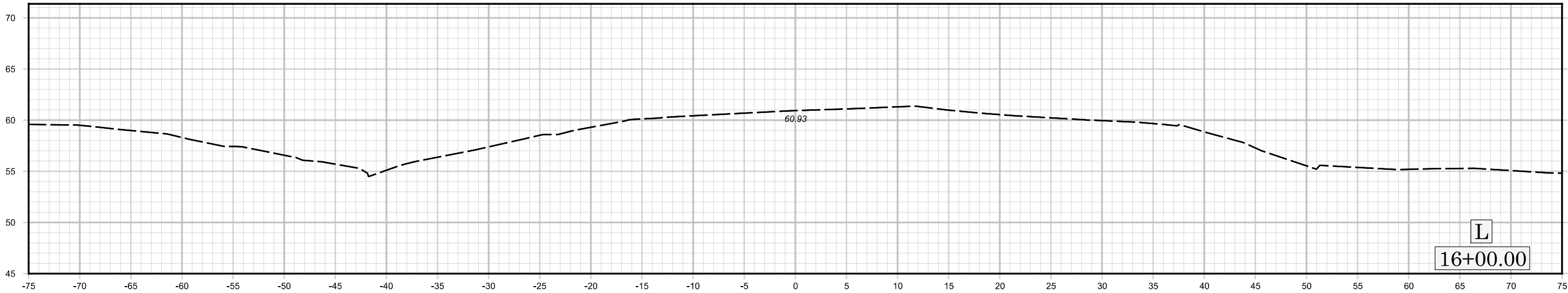


BEGIN PROJECT -L- STA 11+19.05

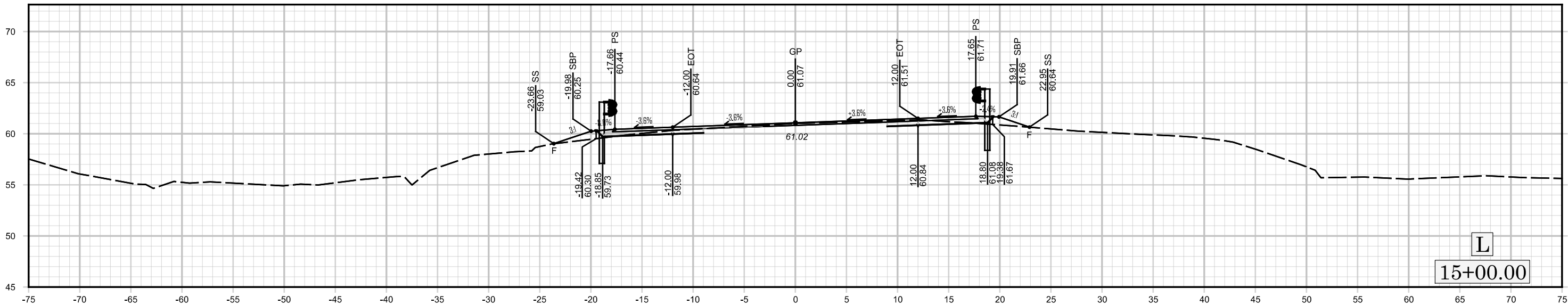
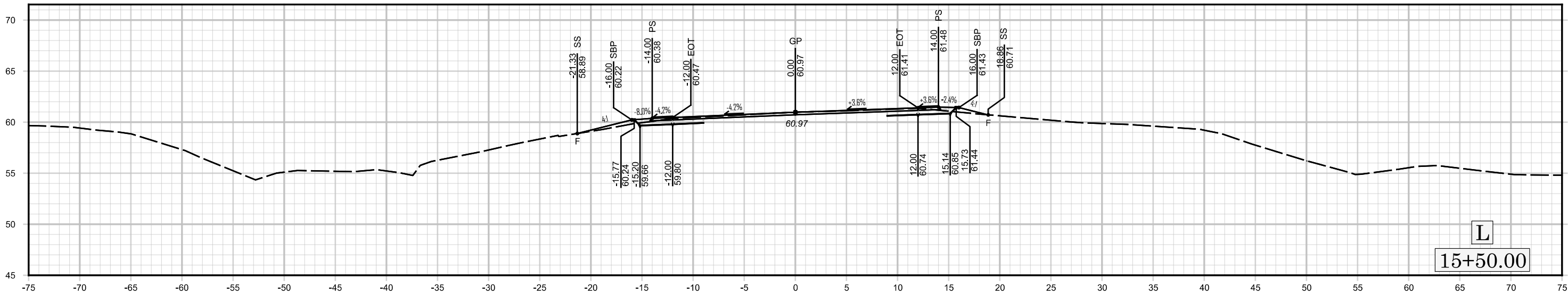






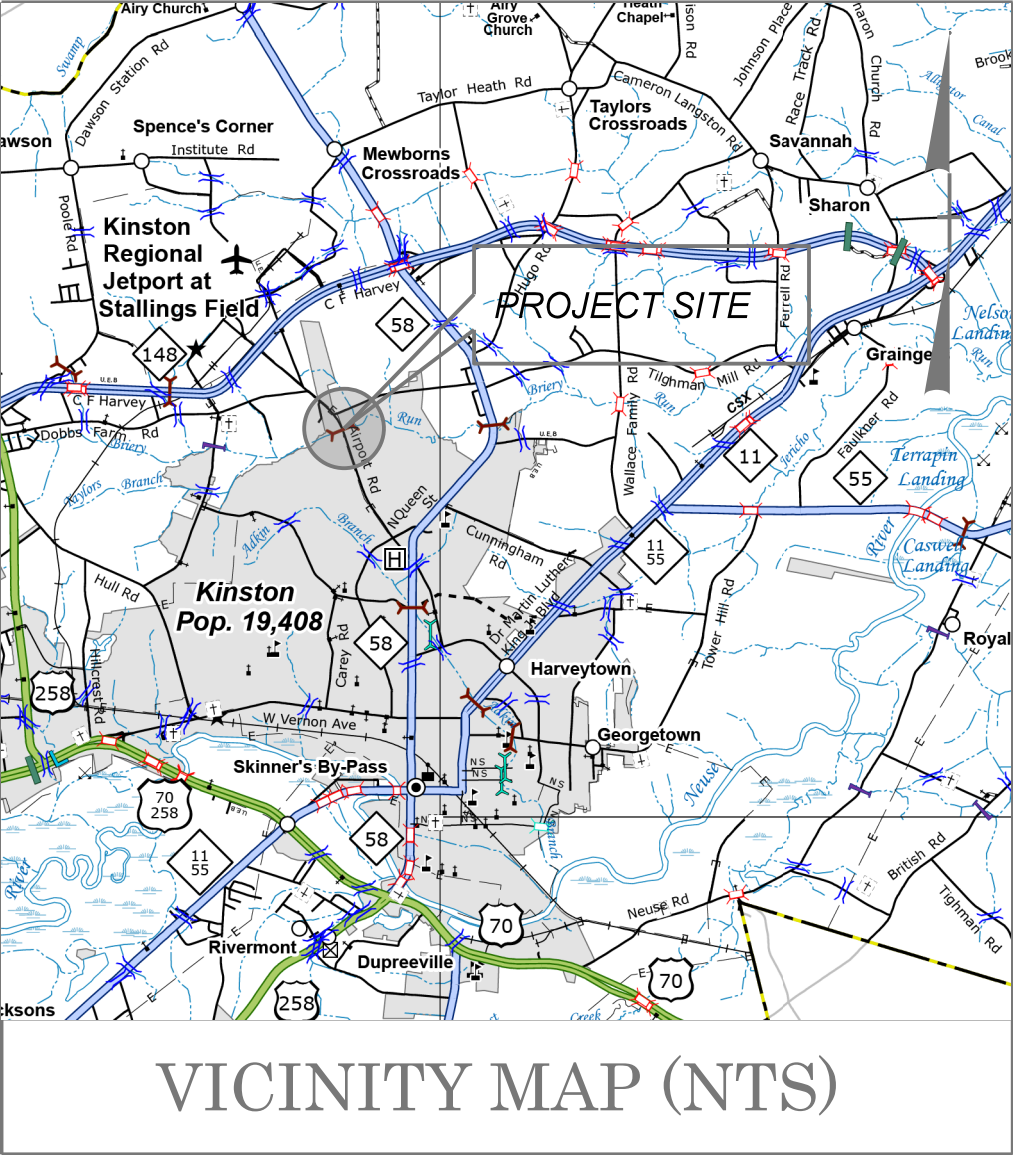


END PROJECT -L- STA 15+83.64



TIP PROJECT: BP2-R027.1

CONTRACT:



VICINITY MAP (NTS)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

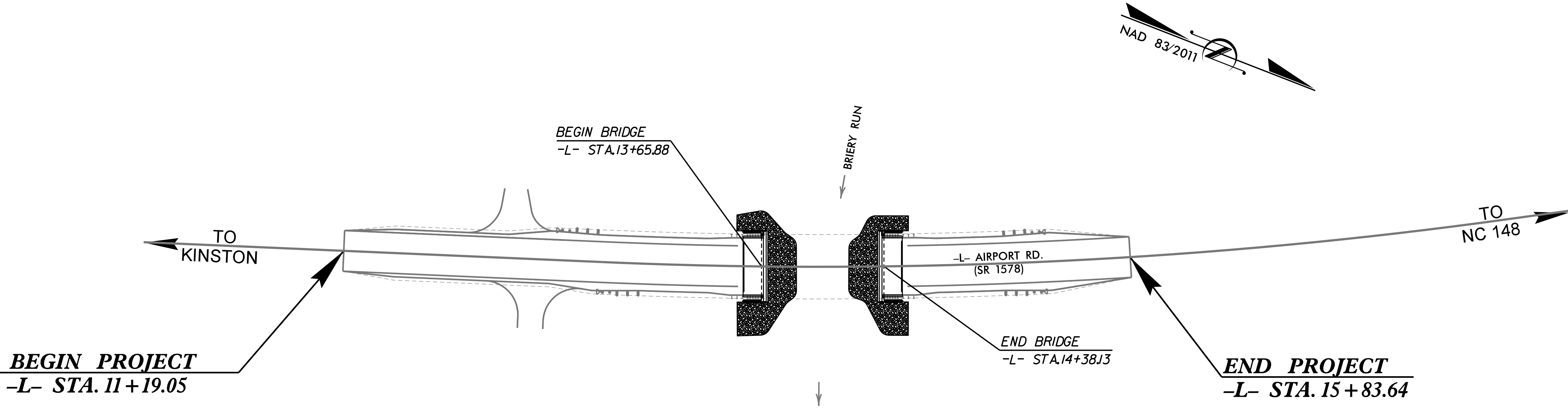
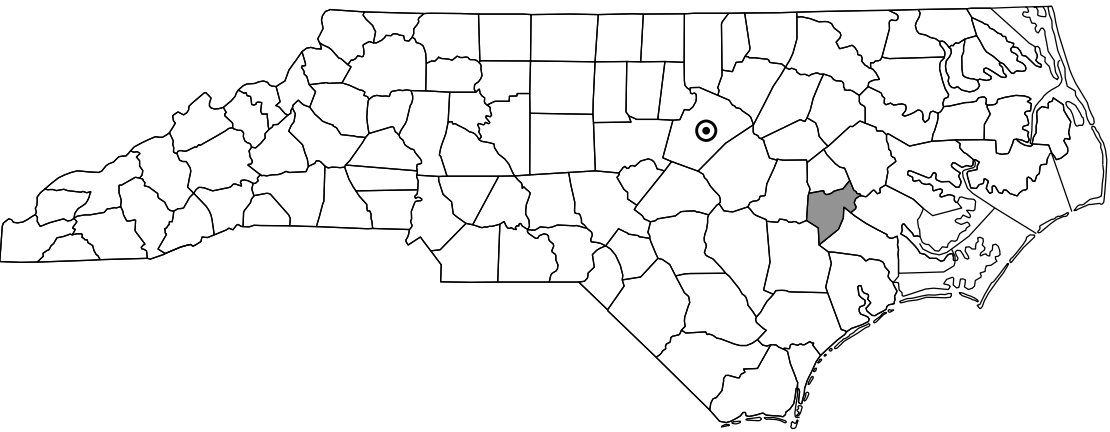
LENOIR COUNTY

LOCATION: *REPLACE BRIDGE # 168 OVER BRIERY RUN
ON SR 1578 (AIRPORT ROAD)*

TYPE OF WORK: *GRADING, PAVING, DRAINAGE & STRUCTURE*

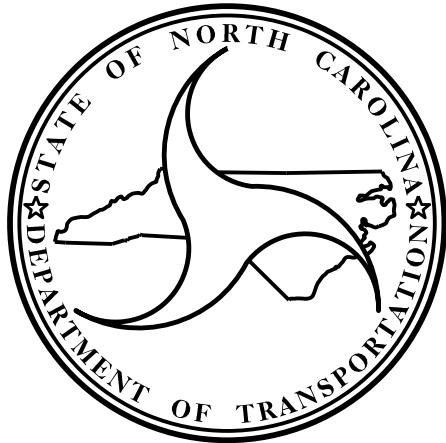
STRUCTURE PLANS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP2-R027.1	01	17
STATE PROJ. NO.		F. A. PROJ. NO.	DESCRIPTION
BP2-R027.1		N/A	PE



INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA
ADT 2022 = 1800
ADT =
K = N/A %
D = N/A %
T = 7 % *
V = 50 MPH
* TTST = DUAL
FUNC CLASS =
MAJOR COLLECTOR
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT BP2-R027.1 = 0.074 MILES
LENGTH OF STRUCTURE TIP PROJECT BP2-R027.1 = 0.014 MILE
TOTAL LENGTH OF TIP PROJECT BP2-R027.1 = 0.088 MILES

NCDOT CONTACT: CASEY WHITLEY PE, PLS

Prepared for:
**DIVISION OF HIGHWAYS
DIVISION TWO**
2815 Rouse Road Extension, Kinston, NC, 28504
2024 STANDARD SPECIFICATIONS

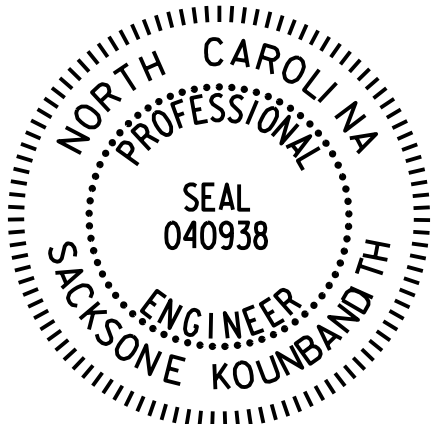
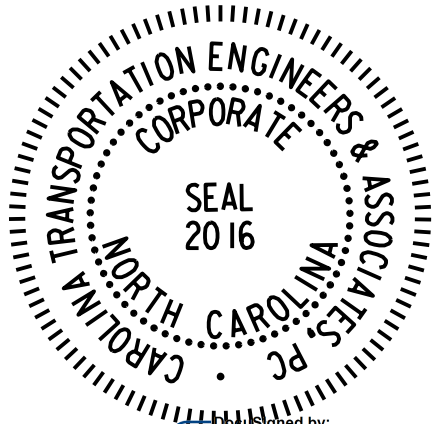
RIGHT OF WAY DATE:
NOVEMBER 25, 2024

LETTING DATE:
MARCH 03, 2026

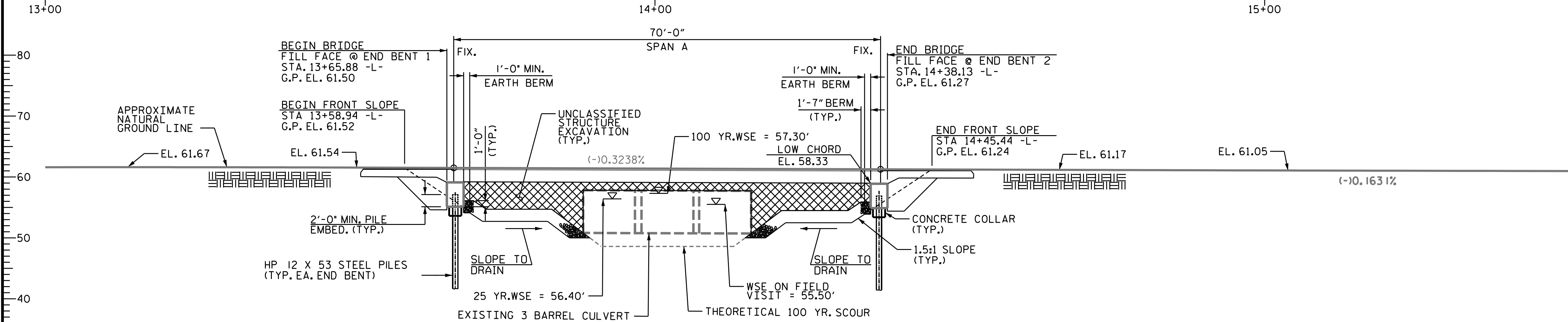
Prepared in the office of:

CarolinaTEA
Carolina Transportation Engineers & Associates, PC

Carolina Transportation Engineers
& Assoc., PC
3600 Arco Corporate Drive
Suite 135
Charlotte, NC 28273
Telephone: (980) 722-6065

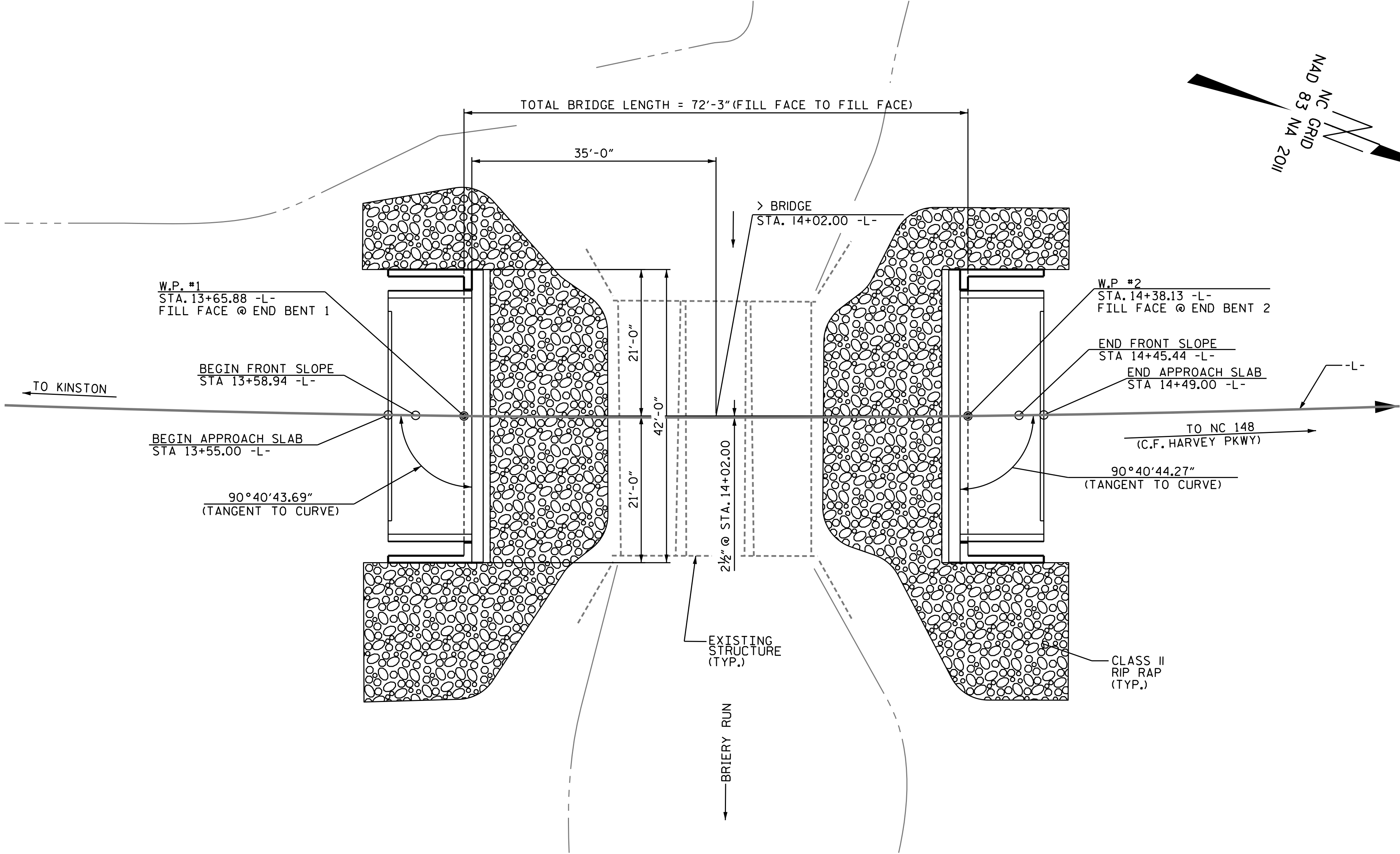


2/12/2025
STRUCTURES DESIGN ENGINEER
2024 STANDARD SPECIFICATIONS



END BENT 1 END BENT 2

SECTION ALONG > SURVEY -L-



PLAN
(PILES NOT SHOWN IN PLAN VIEW)

(-) 0.7428%		(+) 0.3000%
PVI STA. 11+88.49		
EL. = 61.29		
VC = 115		
(+) 0.3000%		(-) 0.3238%
PVI STA. 13+13.58		
EL. = 61.67		
VC = 75		
(-) 0.3238%		(-) 0.1631%
PVI STA. 15+03.83		
EL. = 61.05		
VC = 75		
GRADE DATA -L-		

HYDRAULIC DATA:	
DESIGN DISCHARGE	=920 C.F.S.
FREQUENCY OF DESIGN FLOOD	=25 YRS.
DESIGN HIGH WATER ELEVATION	=56.40 FT.
DRAINAGE AREA	=742 SQ. MI.
BASE DISCHARGE (Q 100)	=1460 C.F.S.
BASE HIGH WATER ELEVATION	=57.30 FT.
OVERTOPPING FLOOD DATA:	
OVERTOPPING DISCHARGE	=3830 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	=500 + YRS.
OVERTOPPING FLOOD ELEVATION	=60.90 FT. *
# 01 ROADWAY @ 16+26.41 -L- (SAG)	
WS EL. TAKEN @ RIVER STATION 22327	

HORIZONTAL CURVE DATA	
PVI STA	15+36.48
Δ	= 10° 14' 38.7" (LT)
D	= 01° 56' 21.9"
L	= 528.20
T	= 264.81
R	= 2954.27

I HEREBY CERTIFY THESE PLANS
ARE THE AS-BUILT PLANS

PROJECT NO. BP2-R027.1
LENOIR COUNTY
STATION: 14+02.00 -L-

SHEET 1 OF 3

DRAWN BY :	J. BAKER	DATE :	12-24
CHECKED BY :	S. KOUNBANDITH	DATE :	12-24
DESIGN ENGINEER OF RECORD:	S. KOUNBANDITH	DATE :	12-24

2/21/2025
C:\Users\JonathanBaker\Carolina TEA\Public - Projects\NC DOT\2018 Eastern Division On Call\315.1.01.22 Division 2 bridges\BP2.R027.1\7 - Structure\Design\Plans\CAD FILES\Final Plans ((BP.R027.1))\002.BPR0271.GD1.dgn
JonathanBaker

CarolinaTEA
Carolina Transportation Engineers & Associates, PC
Carolina Transportation Engineers & Assoc., PC
3600 Arco Corporate Drive
Suite 135
Charlotte, NC 28273
Telephone: (980) 722-6065



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FINAL UNLESS ALL
SIGNATURES COMPLETED

DocuSigned by
S. KOUNBANDITH
2/21/2025

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING					
FOR BRIDGE ON SR 1578 (AIRPORT ROAD) OVER BRIERY RUN BETWEEN SR 1579 AND SR 1570 33'-10" CLEAR ROADWAY - 90° SKEW					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-02
					TOTAL SHEETS 17

SUMMARY OF PILE INFORMATION/INSTALLATION													
(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)													
END BENT/ BENT NO., PILE(S) #-* (E.G., BENT 1, PILES 1-5)	FACTORED RESISTANCE PER PILE (TONS)	PILE CUT-OFF (TOP OF PILE) ELEVATION (FT.)	ESTIMATED PILE LENGTH PER PILE (FT.)	SCOUR CRITICAL ELEVATION (FT.)	DRIVEN PILES			PREDRILLING FOR PILES*			DRILLED IN PILES		
					MIN. PILE TIP (TOP NO HIGHER THAN) ELEV. (FT.)	REQUIRED DRIVING RESISTANCE (RDR)** PER PILE (TONS)	TOTAL PILE REDRIVES QUANTITY (EACH)	PREDRILLING LENGTH PER PILE (LIN. FT.)	PREDRILLING ELEVATION (ELEV NOT TO PREDRILL BELOW) (FT.)	MAXIMUM PREDRILLING DIA. (INCHES)	PILE EXCAVATION (BOTTOM OF HOLE) ELEV. (FT.)	PILE EXCAVATION NOT IN SOIL PER PILE (LIN. FT.)	PILE EXCAVATION IN SOIL PER PILE (LIN. FT.)
END BENT 1, PILES (1-7)	85	-18.50	75			145	7						
END BENT 2, PILES (1-7)	85	-13.33	70			145							

* PREDRILLING FOR OILES IS REQUIRED FOR END BENTS/BENTS WITH A PREDRILLING LENGTH AND AT THE CONTRACTOR'S OPTION FOR END BENTS/BENTS WITH PREDRILLING INFORMATION BUT NO PREDRILLING LENGTH

** RDR =
$$\frac{\text{FACTORED RESISTANCE} + \text{FACTORED DOWNDRAG LOAD} + \text{FACTORED DEAD LOAD}}{\text{DYNAMIC RESISTANCE FACTOR}} + \text{NOMINAL DOWNDRAG RESISTANCE} + \frac{\text{NOMINAL SCOUR RESISTANCE}}{\text{SCOUR RESISTANCE FACTOR}}$$

PILE DESIGN INFORMATION							
(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)							
END BENT/ BENT NO., PILE(S) #-* (E.G., BENT 1, PILES 1-5)	FACTORED AXIAL LOAD PER PILE (TONS)	FACTORED DOWNDRAG LOAD PER PILE (TONS)	FACTORED DEAD * LOAD PER PILE (TONS)	DYNAMIC RESISTANCE FACTOR	NOMINAL DOWNDRAG RESISTANCE PER PILE (TONS)	NOMINAL SCOUR RESISTANCE PER PILE (TONS)	SCOUR RESISTANCE FACTOR (DEFAULT = 1.00)
END BENT 1, PILES (1-7)	85			0.60			1.00
END BENT 2, PILES (1-7)	85			0.60			1.00

* FACTORED DEAD LOAD IS FACTORED WEIGHT OF PILE ABOVE GROUND LINE.

SUMMARY OF DPT/PILE ORDER LENGTHS					
(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)					
DYNAMIC PILE TESTING (DPT)				PILE ORDER LENGTHS	
END BENT/ BENT NO.	DPT TESTING REQUIRED (YES OR MAYBE)	DPT TEST PILE LENGTH (FT.)	TOTAL DPT TESTING QUANTITY (EACH)	END BENT/ BENT NO. (s)	PILE ORDER LENGTH BASIS * (EST OR DPT)
END BENT 1, PILES (1-7)	YES	80	2		
END BENT 2, PILES (1-7)	MAYBE	75			

* EST = PILE ORDER LENGTHS FROM ESTIMATED PILE LENGTHS; DPT = PILE ORDER LENGTHS BASED ON PDA TESTING. FOR GROUPS OF END BENTS/BENTS WITH PILE ORDER LENGTHS BASED ON DPT TESTING, THE FIRST END BENT/BENT NO. LISTED FOR EACH GROUP IS THE REPRESENTATIVE END BENT/BENT WITH THE DPT.

SUMMARY OF PILE ACCESSORIES					
(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)					
END BENT/ BENT NO., PILE(S) #-* (E.G., BENT 1, PILES 1-5)	PIPE PILE PLATES REQUIRED? (YES OR MAYBE)	STEEL PILE POINTS			H=PILE POINTS REQUIRED? YES
		PIPE PILE CUTTING SHOES REQUIRED? YES	PIPE PILE CONICAL POINTS REQUIRED? YES	H=PILE POINTS REQUIRED? YES	
END BENT 1, PILES (1-7)				YES	
END BENT 2, PILES (1-7)				YES	
TOTAL QTY:				14	

NOTES:

1. THE PILE FOUNDATION TABLES ARE BASED ON THE BRIDGE SUBSTRUCTURE DESIGN AND FOUNDATION RECCOMENDATIONS SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER
2. TOTAL PILE DRIVING EQUIPMENT SETUP QUANTITY (NOT SHOWN IN PILE FOUNDATION TABLES) EQUALS THE NUMBER OF DRIVEN PILES, I.E., THE NUMBER OF PILES WITH A REQUIRED DRIVING RESISTANCE.
3. THE ENGINEER WILL DETERMINE THE NEED FOR DPT TESTING WHEN DPTs MAY BE REQUIRED.

PROJECT NO. BP2-R027.1
LENOIR COUNTY
STATION: 14+02.00 -L-

SHEET 2 OF 3

DRAWN BY : J. BAKER DATE : 12-24
CHECKED BY : S. KOUNBANDITH DATE : 12-24
DESIGN ENGINEER OF RECORD: S. KOUNBANDITH DATE : 12-24

CarolinaTEA
Carolina Transportation Engineers & Associates, PC

Carolina Transportation Engineers
& Assoc., PC
3600 Arco Corporate Drive
Suite 135
Charlotte, NC 28273
Telephone: (980) 722-6065

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



DocuSigned by:
Jonathan S. Kounbandith
BE4463F0E6B3481
2/12/2025

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.	
GENERAL DRAWING PILE FOUNDATION TABLES						S-03	
REVISIONS						TOTAL SHEETS	
NO.	BY:	DATE:	NO.	BY:	DATE:	17	
1			3				
2			4				

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LOAD TYPE		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING ⬡	MINIMUM RATING FACTORS (RF)	TONS = W × RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER	
							LIVE-LOAD FACTORS (γ _{LL})	MOMENT				SHEAR					LIVE-LOAD FACTORS (γ _{LL})	MOMENT						
								DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)
DESIGN LOAD		HL-93 (INVENTORY)	N/A	⬡1	1.006	--	1.75	0.273	1.03	70'	EL	34.5	0.507	1.32	70'	EL	6.9	0.80	0.273	1.01	70'	EL	34.5	
		HL-93 (OPERATING)	N/A		1.341	--	1.35	0.273	1.34	70'	EL	34.5	0.507	1.72	70'	EL	6.9	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	⬡2	1.306	47.02	1.75	0.273	1.34	70'	EL	34.5	0.507	1.65	70'	EL	6.9	0.80	0.273	1.31	70'	EL	34.5	
		HS-20 (OPERATING)	36.000		1.740	62.64	1.35	0.273	1.74	70'	EL	34.5	0.507	2.14	70'	EL	6.9	N/A	--	--	--	--	--	
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		2.917	39.379	1.4	0.273	3.75	70'	EL	34.5	0.507	4.87	70'	EL	6.9	0.80	0.273	2.92	70'	EL	34.5	
		SNGARBS2	20.000		2.187	43.741	1.4	0.273	2.81	70'	EL	34.5	0.507	3.47	70'	EL	6.9	0.80	0.273	2.19	70'	EL	34.5	
		SNAGRIS2	22.000		2.077	45.690	1.4	0.273	2.67	70'	EL	34.5	0.507	3.23	70'	EL	6.9	0.80	0.273	2.08	70'	EL	34.5	
		SNCOTTS3	27.250		1.452	39.565	1.4	0.273	1.87	70'	EL	34.5	0.507	2.43	70'	EL	6.9	0.80	0.273	1.45	70'	EL	34.5	
		SNAGGRS4	34.925		1.218	42.554	1.4	0.273	1.57	70'	EL	34.5	0.507	2.03	70'	EL	6.9	0.80	0.273	1.22	70'	EL	34.5	
		SNS5A	35.550		1.191	42.346	1.4	0.273	1.53	70'	EL	34.5	0.507	2.06	70'	EL	6.9	0.80	0.273	1.19	70'	EL	34.5	
		SNS6A	39.950		1.095	43.747	1.4	0.273	1.41	70'	EL	34.5	0.507	1.88	70'	EL	6.9	0.80	0.273	1.10	70'	EL	34.5	
		SNS7B	42.000		1.043	43.801	1.4	0.273	1.34	70'	EL	34.5	0.507	1.85	70'	EL	6.9	0.80	0.273	1.04	70'	EL	34.5	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.336	44.087	1.4	0.273	1.72	70'	EL	34.5	0.507	2.23	70'	EL	6.9	0.80	0.273	1.34	70'	EL	34.5	
		TNT4A	33.075		1.342	44.401	1.4	0.273	1.72	70'	EL	34.5	0.507	2.17	70'	EL	6.9	0.80	0.273	1.34	70'	EL	34.5	
		TNT6A	41.600		1.100	45.746	1.4	0.273	1.41	70'	EL	34.5	0.507	1.98	70'	EL	6.9	0.80	0.273	1.10	70'	EL	34.5	
		TNT7A	42.000		1.106	46.462	1.4	0.273	1.42	70'	EL	34.5	0.507	1.94	70'	EL	6.9	0.80	0.273	1.11	70'	EL	34.5	
		TNT7B	42.000		1.147	48.180	1.4	0.273	1.47	70'	EL	34.5	0.507	1.80	70'	EL	6.9	0.80	0.273	1.15	70'	EL	34.5	
		TNAGRIT4	43.000		1.089	46.838	1.4	0.273	1.40	70'	EL	34.5	0.507	1.74	70'	EL	6.9	0.80	0.273	1.09	70'	EL	34.5	
		TNAGT5A	45.000		1.026	46.175	1.4	0.273	1.32	70'	EL	34.5	0.507	1.74	70'	EL	6.9	0.80	0.273	1.03	70'	EL	34.5	
		TNAGT5B	45.000	⬡3	1.013	45.579	1.4	0.273	1.30	70'	EL	34.5	0.507	1.66	70'	EL	6.9	0.80	0.273	1.01	70'	EL	34.5	
EMERGENCY VEHICLE (EV)		EV2	28.750		1.816	52.212	1.3	0.273	2.11	70'	EL	34.5	0.507	2.59	70'	EL	6.9	0.80	0.273	1.82	70'	EL	34.5	
		EV3	43.000	⬡4	1.188	51.068	1.3	0.273	1.38	70'	EL	34.5	0.507	1.75	70'	EL	6.9	0.80	0.273	1.19	70'	EL	34.5	

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ _{DC}	γ _{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

1.
2.
3.
4.

⬡ CONTROLLING LOAD RATING

⬡1 DESIGN LOAD RATING (HL-93)

⬡2 DESIGN LOAD RATING (HS-20)

⬡3 LEGAL LOAD RATING **

⬡4 EMERGENCY VEHICLE LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER



PROJECT NO. BP2-R027.1

LENOIR COUNTY

STATION: 14+02.00 -L-

ASSEMBLED BY: THA		DATE : 12/24	
CHECKED BY : SK		DATE : 12/24	
DRAWN BY : CVC	6/10	REV. BY : BNB/AKP	06/23
CHECKED BY : DNS		6/10	

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Carolina Transportation Engineers
& Assoc., PC
3600 Arco Corporate Drive
Suite 135
Charlotte, NC 28273
Telephone: (980) 722-6065



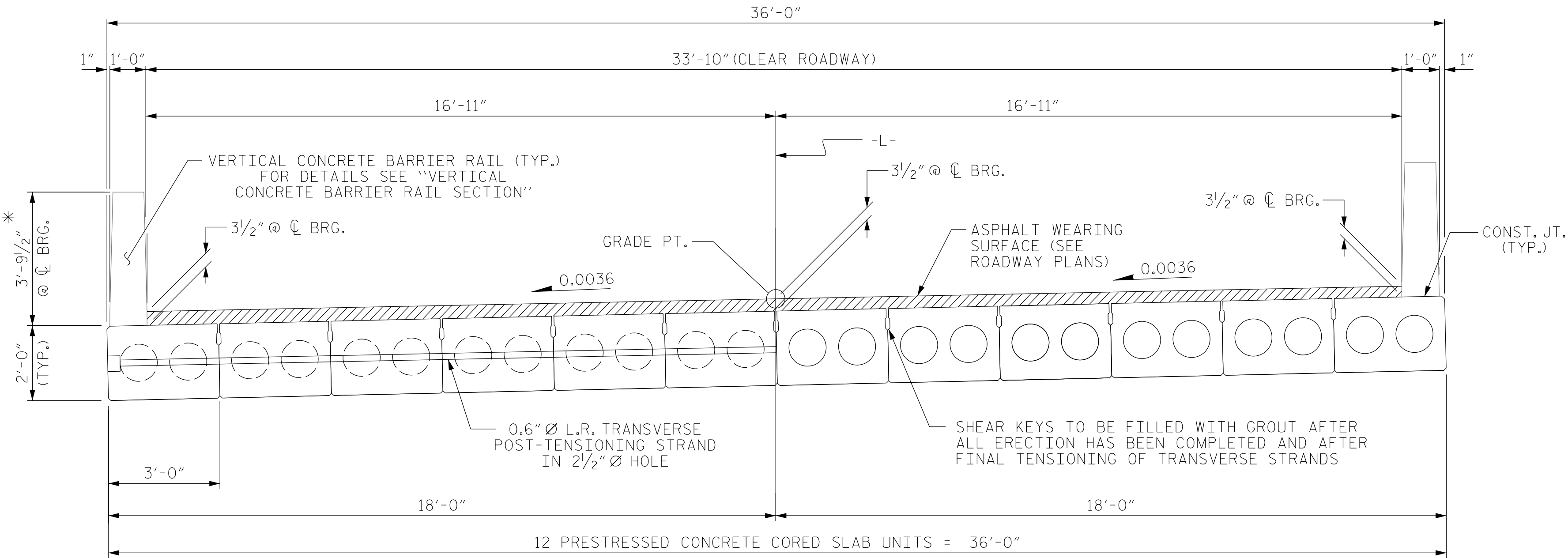
DocuSigned by:
Jonathan Baker
BE4463F6E8B34B1...
2/12/2025

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR
70' CORED SLAB UNIT
90° SKEW
(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO. S-05
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 17
2			4			



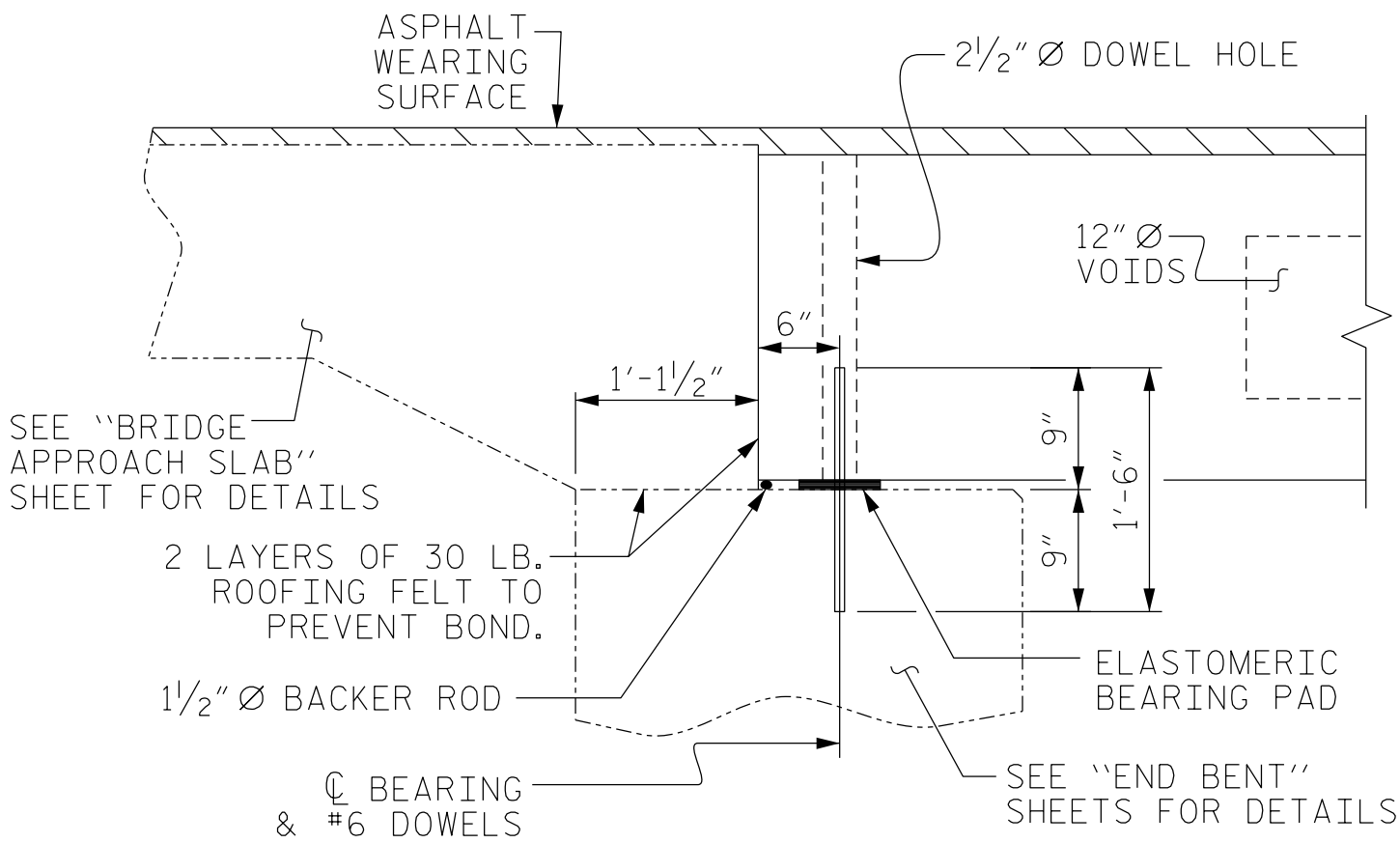
HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

TYPICAL SECTION

HALF SECTION
THROUGH VOIDS

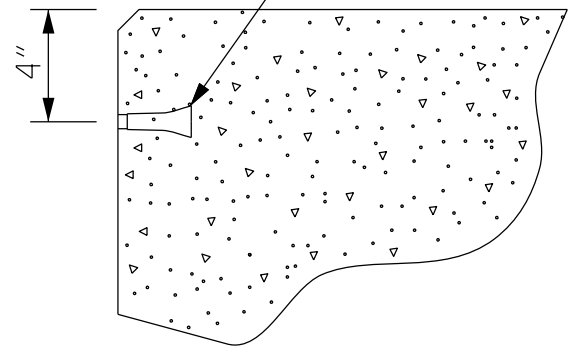
* - THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS, SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.

FIXED END

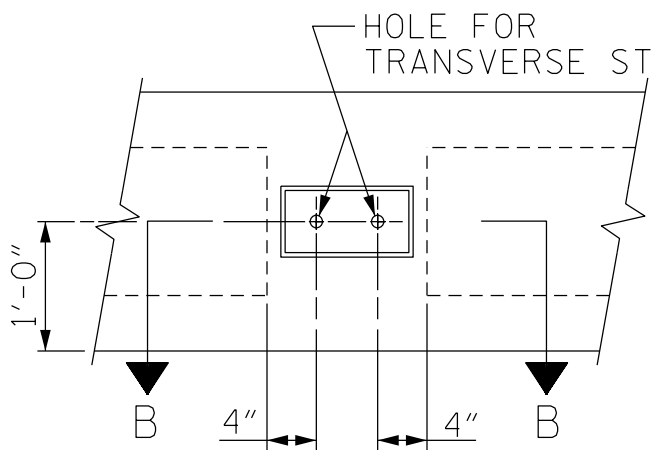


SECTION AT END BENT

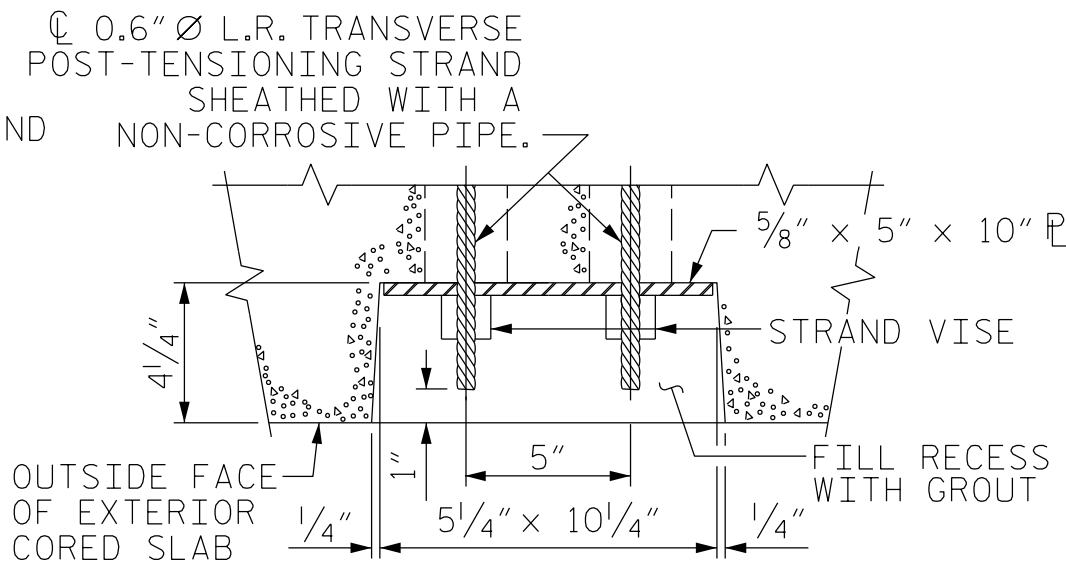
PERMITTED THREADED INSERT
CAST IN OUTSIDE FACE OF
EXTERIOR UNIT AND
RECESSED 3/8" SIZE TO BE
DETERMINED
BY CONTRACTOR.



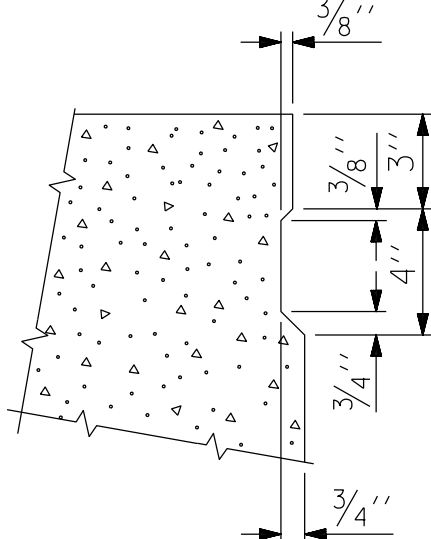
THREADED INSERT DETAIL



ELEVATION VIEW

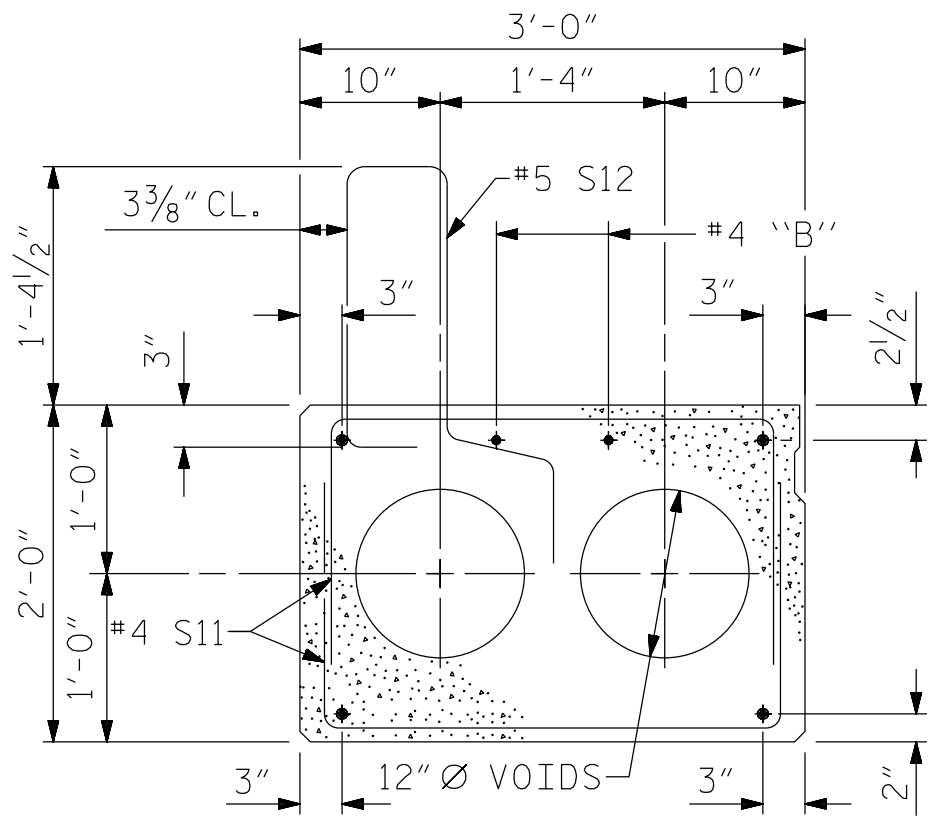


SECTION B-B



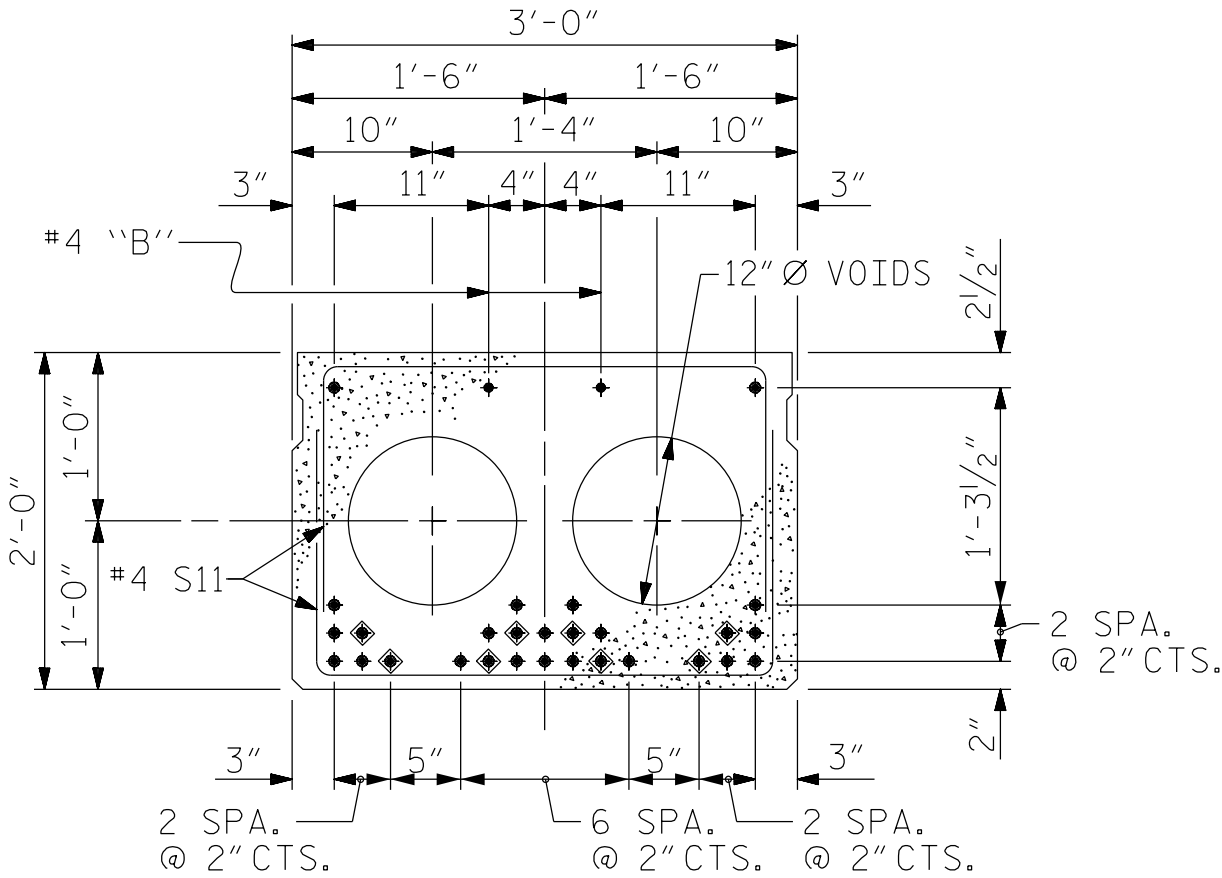
SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE
OF EXTERIOR CORED SLABS.



EXTERIOR SLAB SECTION

(FOR PRESTRESSED STRAND LAYOUT, SEE
INTERIOR SLAB SECTION.)



INTERIOR SLAB SECTION (70' UNIT)

(28 STRANDS REQUIRED)

0.6" Ø LOW
RELAXATION STRAND LAYOUT

- ⦿ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 12'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- ⦿ OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND

PROJECT NO. BP2-R027.1

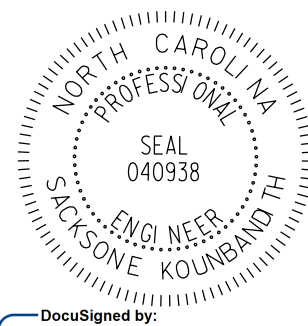
LENOIR COUNTY

STATION: 14+02.00 -L-

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Carolina Transportation Engineers & Associates, PC

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& Assoc., PC
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Charlotte, NC 28273
Telephone: (980) 722-6065

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SIGNATURES COMPLETED

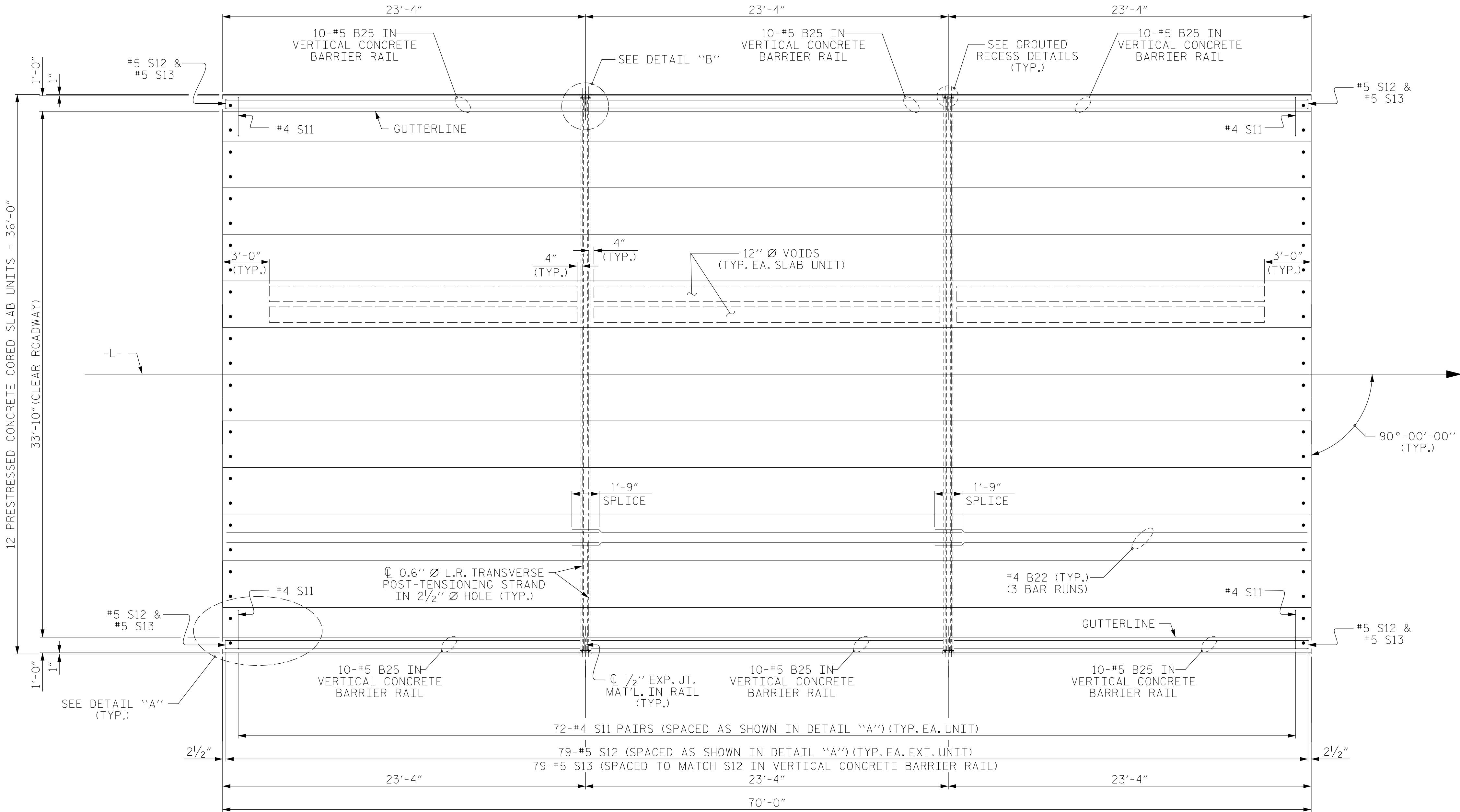


DocuSigned by:
Jonathan Baker
0E44E3FEE8B3401
2/12/2025

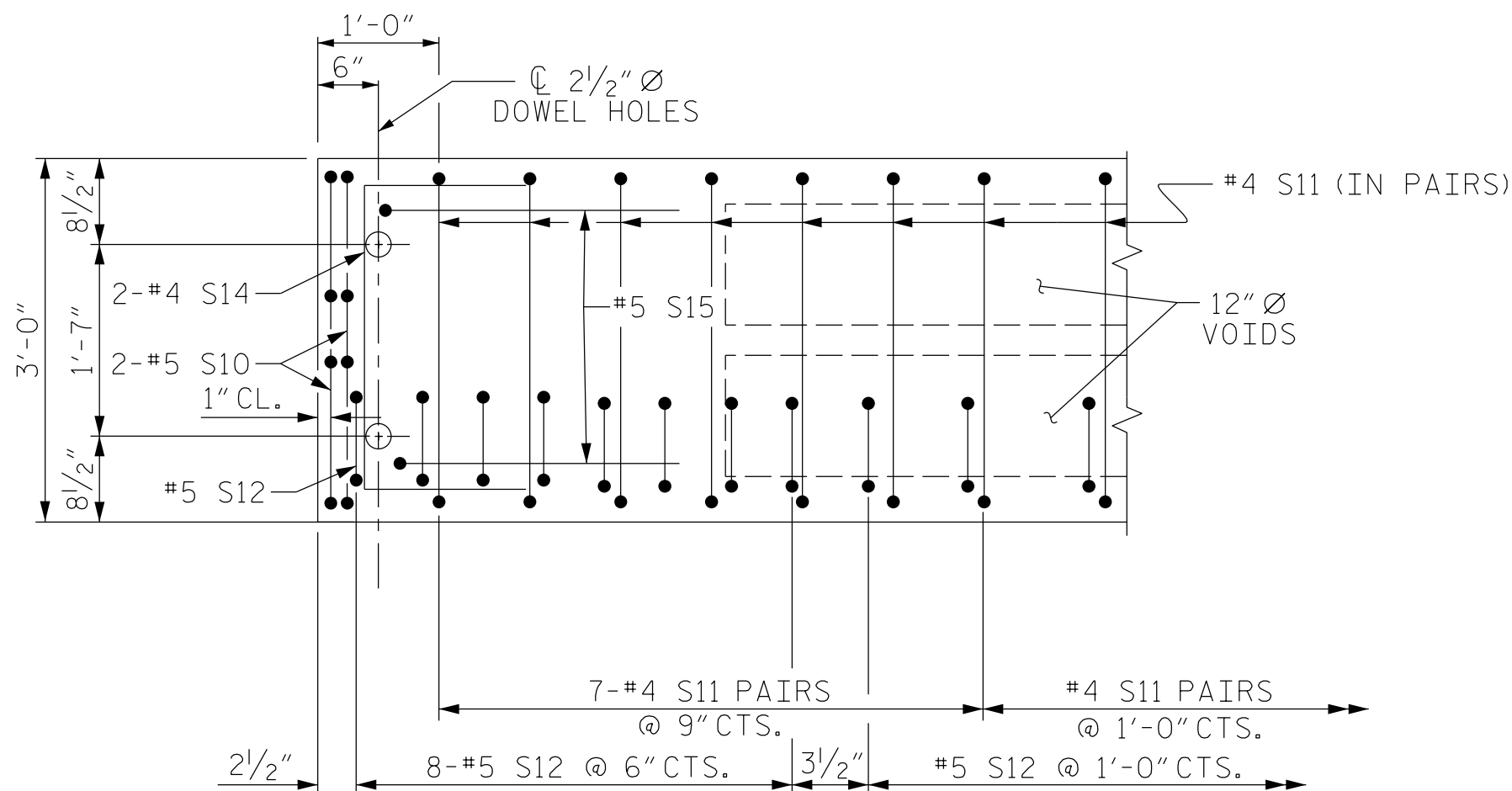
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD 3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLAB UNIT						SHEET NO. S-06	
REVISIONS						TOTAL SHEETS 17	
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3				
2			4				

STD. NO. 24PCS4-36_90S

ASSEMBLED BY : THA	DATE : 12/24
CHECKED BY : SK	DATE : 12/24
DRAWN BY : MAA 6/10	REV. 9/14 MAA/TMG
CHECKED BY : MKT 7/10	

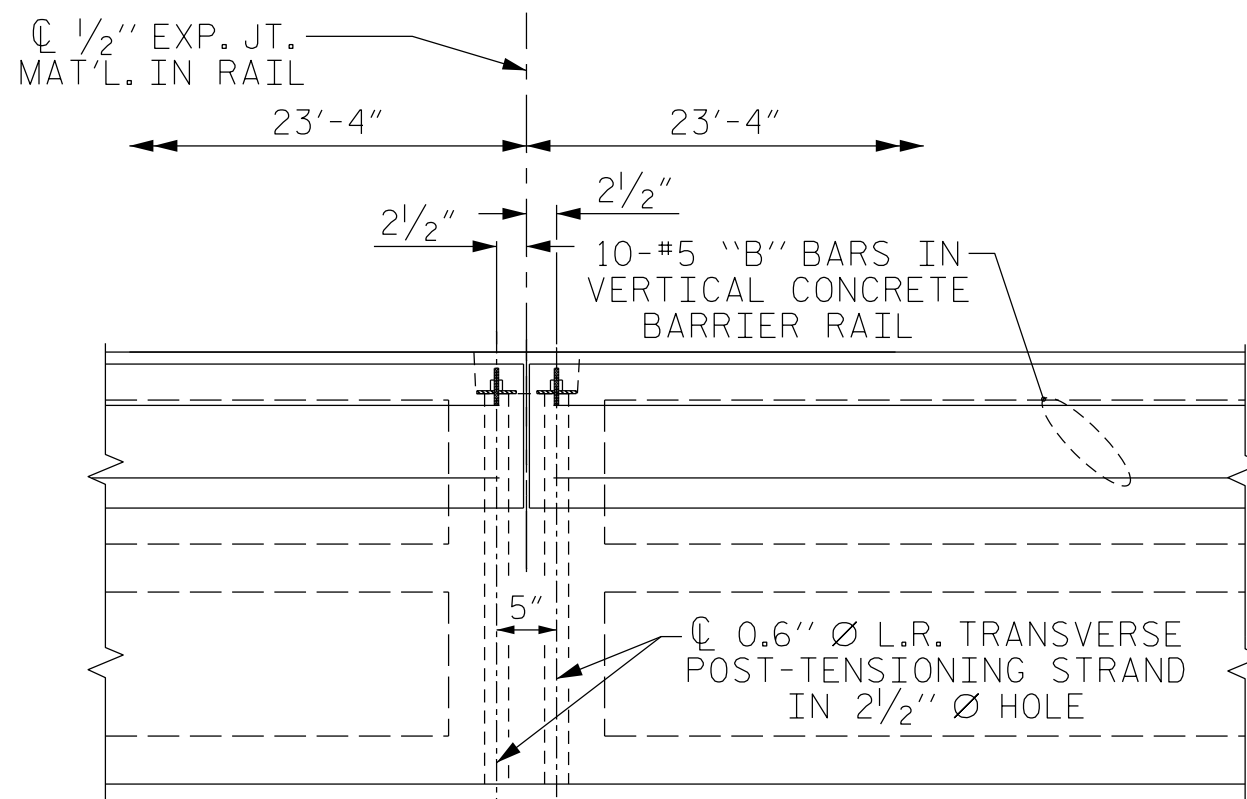


PLAN OF UNIT



DETAIL "A"

(TYPICAL EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR
UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.



DETAIL "B"

#4 S11 BARS MAY BE SHIFTED AS NECESSARY
TO MAINTAIN 1" CLEAR TO GROUTED RECESS AND
2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES

ASSEMBLED BY : THA	DATE : 12/24
CHECKED BY : SK	DATE : 12/24
DRAWN BY : MAA 6/10	REV. 12/5/11 MAA/AAC
CHECKED BY : MKT 7/10	REV. 8/14 MAA/TMG

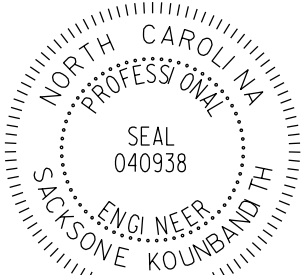
2/11/2025
C:\Users\JonathanBaker\Carolina TEA\Public - Projects\NCDOT\2018 Eastern Division On Call\315.1.01.22 Division 2 bridges\BP2.R027.1\7 - Structure\Design\Plans\CAD FILES\Final Plans ((BP.R027.1))\007.BPR0271.PS.dgn
JonathanBaker

PROJECT NO. BP2-R027.1
LENOIR COUNTY
STATION: 14+02.00 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN OF 70' UNIT 33'-10" CLEAR ROADWAY 90° SKEW					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-07					TOTAL SHEETS 17

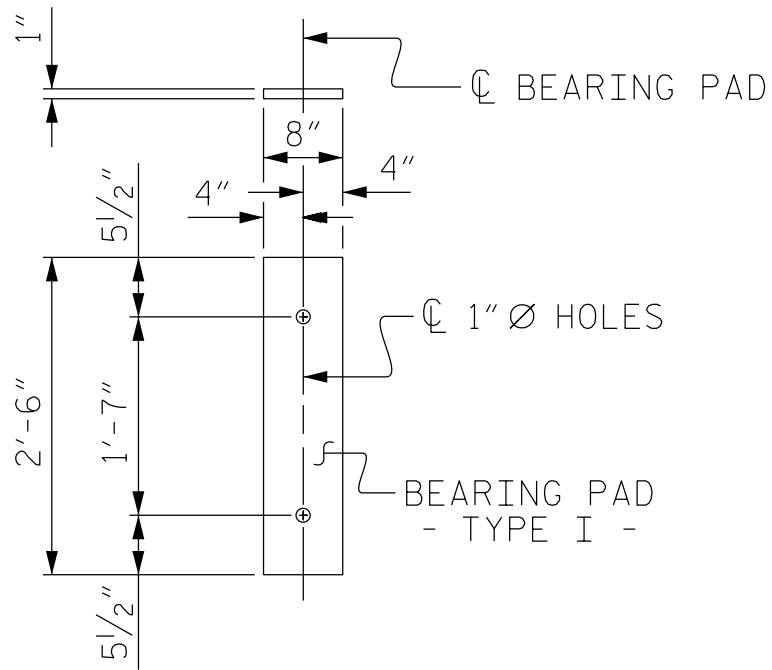
CarolinaTEA
Carolina Transportation Engineers & Associates, PC

Carolina Transportation Engineers
& Assoc., PC
3600 Arco Corporate Drive
Suite 135
Charlotte, NC 28273
Telephone: (980) 722-6065



DocuSigned by:
JonathanBaker
2/12/2025

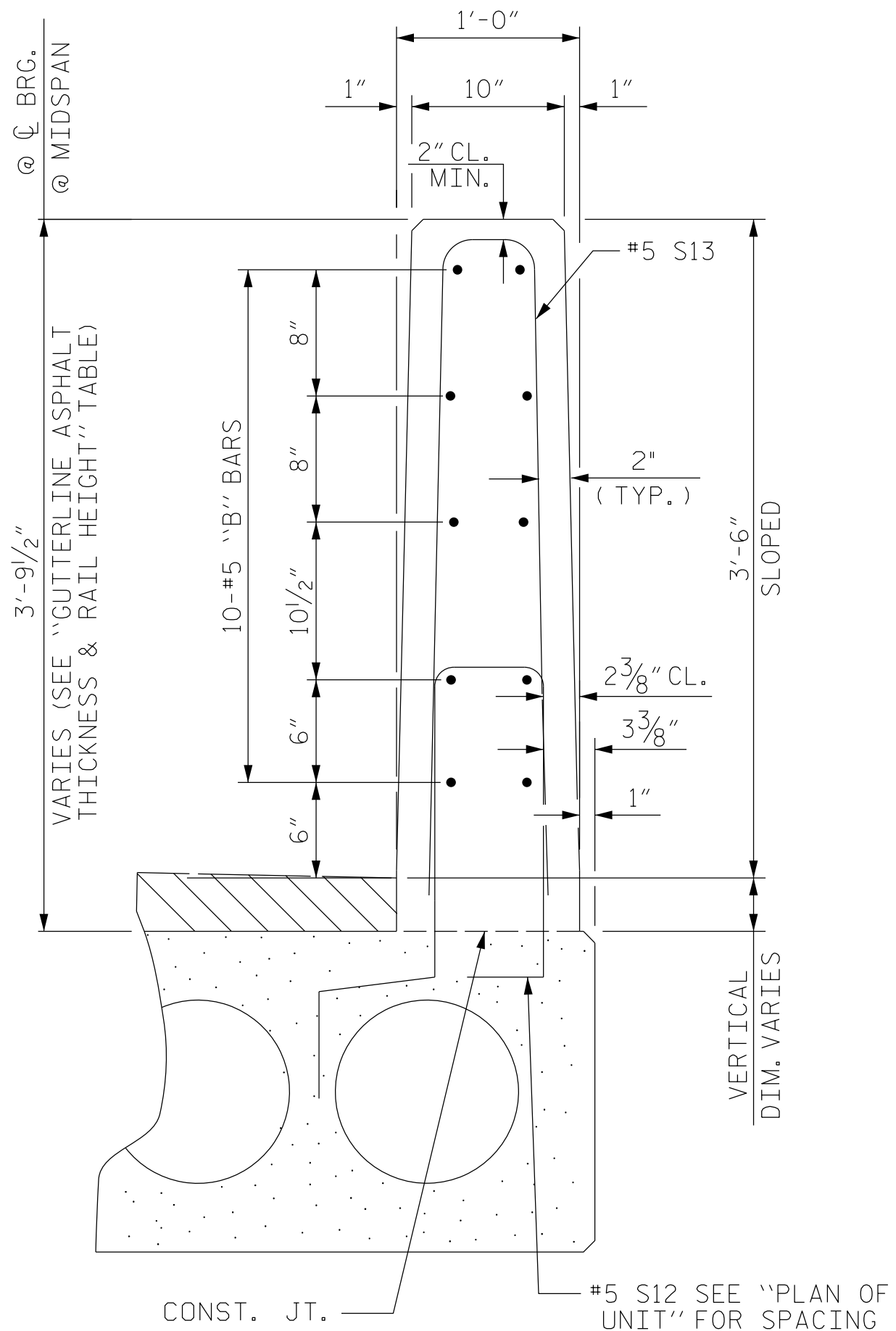
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



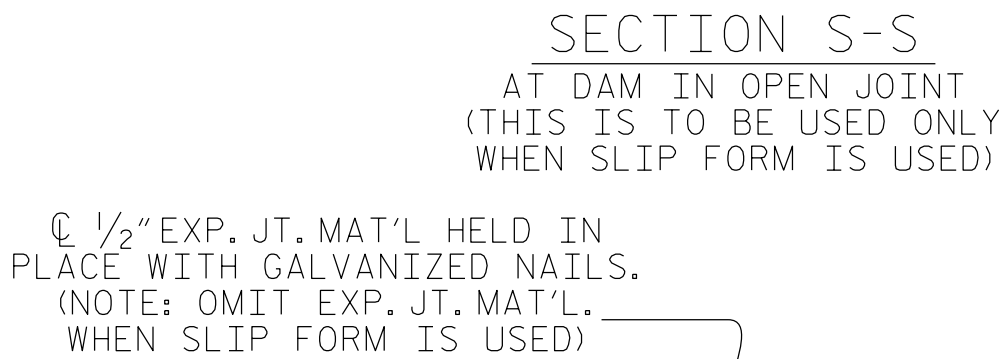
FIXED END
(TYPE I - 24 REQ'D)

ELASTOMERIC BEARING DETAILS

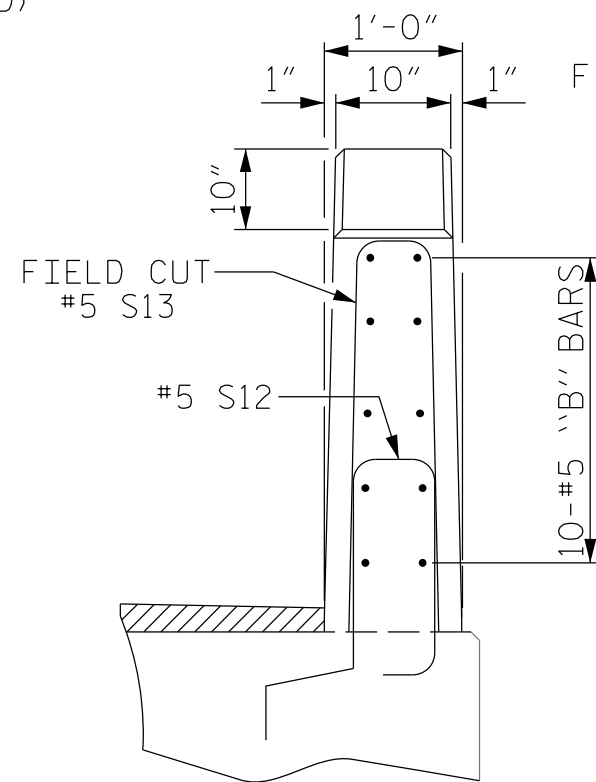
ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.



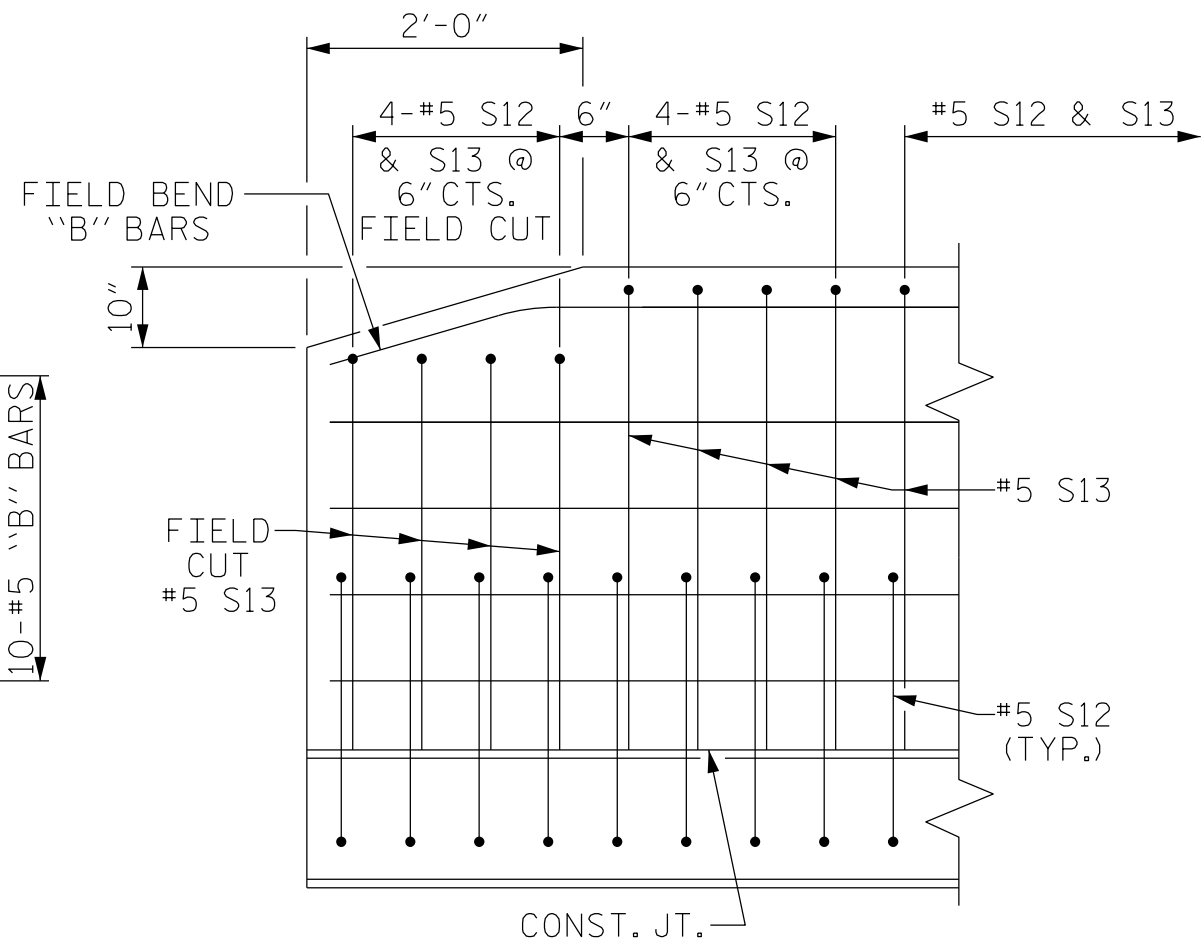
SECTION THRU RAIL



ELEVATION AT EXPANSION JOINTS



END VIEW



SIDE VIEW

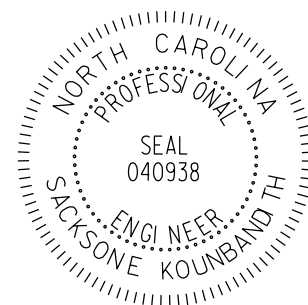
CONCRETE RELEASE STRENGTH	
UNIT	PSI
70' UNITS	5500

GRADE 270 STRANDS	
AREA (SQUARE INCHES)	0.6" Ø L.R.
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

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Jonathan Baker
2/12/2025

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER, SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. AT LEAST SIX WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

ALL REINFORCING STEEL IN VERTICAL CONCRETE BARRIER RAILS SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

FLAME CUTTING OF THE TRANSVERSE POST-TENSIONING STRAND IS NOT ALLOWED.

MAINTAIN A SYMMETRIC TENSION FORCE BETWEEN EACH PAIR OF TRANSVERSE POST TENSIONING STRANDS IN THE DIAPHRAGM.

THE #4 S11 STIRRUPS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO THE GROUTED RECESS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE PERMITTED THREADED INSERTS ARE DETAILED AS AN OPTION FOR THE CONTRACTOR TO ATTACH FALSEWORK AND FORMWORK DURING CONSTRUCTION.

THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

THE PERMITTED THREADED INSERTS SHALL BE GROUTED BY THE CONTRACTOR IMMEDIATELY FOLLOWING REMOVAL OF THE FALSEWORK.

THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

PROJECT NO. BP2-R027.1
LENOIR COUNTY
STATION: 14+02.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

3'-0" X 2'-0"
PRESTRESSED CONCRETE
CORED SLAB UNIT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-08
1			3			TOTAL SHEETS
2			4			17

STD. NO. 24PCS3_36_90S

ASSEMBLED BY : THA	DATE : 12/24
CHECKED BY : SK	DATE : 12/24
DRAWN BY : MAA	6/10
CHECKED BY : MKT	7/10
REV. 5/18	MAA/THC

CORED SLABS REQUIRED			
70' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	70'-0"	140'-0"
INTERIOR C.S.	10	70'-0"	700'-0"
TOTAL	12		840'-0"

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	70' UNIT					
*B25	60	60	#5	STR	22'-11"	1434
*S13	158	158	#5	2	7'-2"	1181
*EPOXY COATED REINFORCING STEEL				LBS.	2615	
CLASS AA CONCRETE				CU.YDS.	18.1	
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.	140.25	

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 2'-0"
70' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2/4" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD **	3/4" ↓
FINAL CAMBER	1 1/2" ↑

** INCLUDES FUTURE WEARING SURFACE

BILL OF MATERIAL FOR ONE 70' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B22	6	#4	STR	24'-6"	98	24'-6"	98
S10	8	#5	3	4'-9"	40	4'-9"	40
S11	144	#4	3	5'-10"	561	5'-10"	561
*S12	79	#5	1	5'-7"	460		
S14	4	#4	3	5'-7"	15	5'-7"	15
S15	4	#5	3	7'-1"	30	7'-1"	30
REINFORCING STEEL				LBS.		744	
* EPOXY COATED REINFORCING STEEL				LBS.		460	
7000 P.S.I. CONCRETE				CU. YDS.		11.8	
0.6" Ø L.R. STRANDS				No.		28	

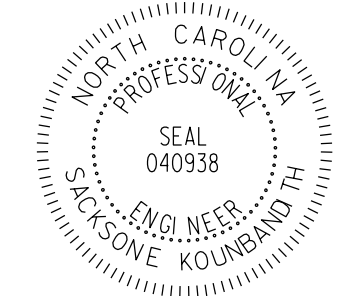
GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
	ASPHALT OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
70' UNITS	3 1/2"	3'-9 1/2"

PROJECT NO. BP2-R027.1
LENOIR COUNTY
STATION: 14+02.00 -L-

DRAWN BY :	T. ABDELAZIZ	DATE :	12/24
CHECKED BY :	S. KOUNBANDITH	DATE :	12/24
DESIGN ENGINEER OF RECORD:	S. KOUNBANDITH	DATE :	12/24



Carolina Transportation Engineers & Associates, PC
3600 Arco Corporate Drive
Suite 135
Charlotte, NC 28273
Telephone: (980) 722-6065



DocuSigned by:
sackson kounbandith
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2/12/2025

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						MISC. INFO. 24" CORED SLAB UNIT 90° SKEW	
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-09	TOTAL SHEETS
1			3				17
2			4				

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 7/8" Ø BOLTS WITH NUTS AND WASHERS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

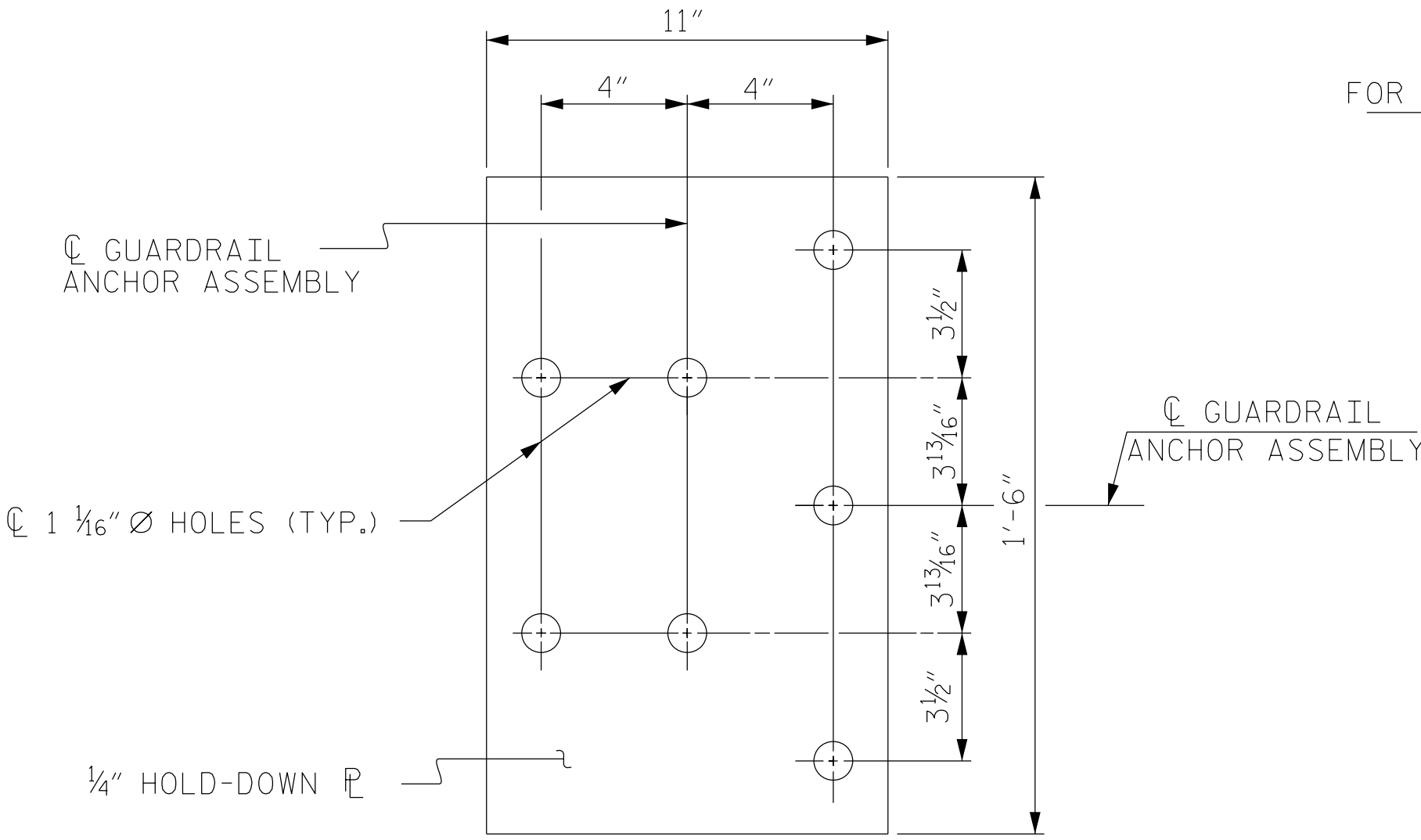
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

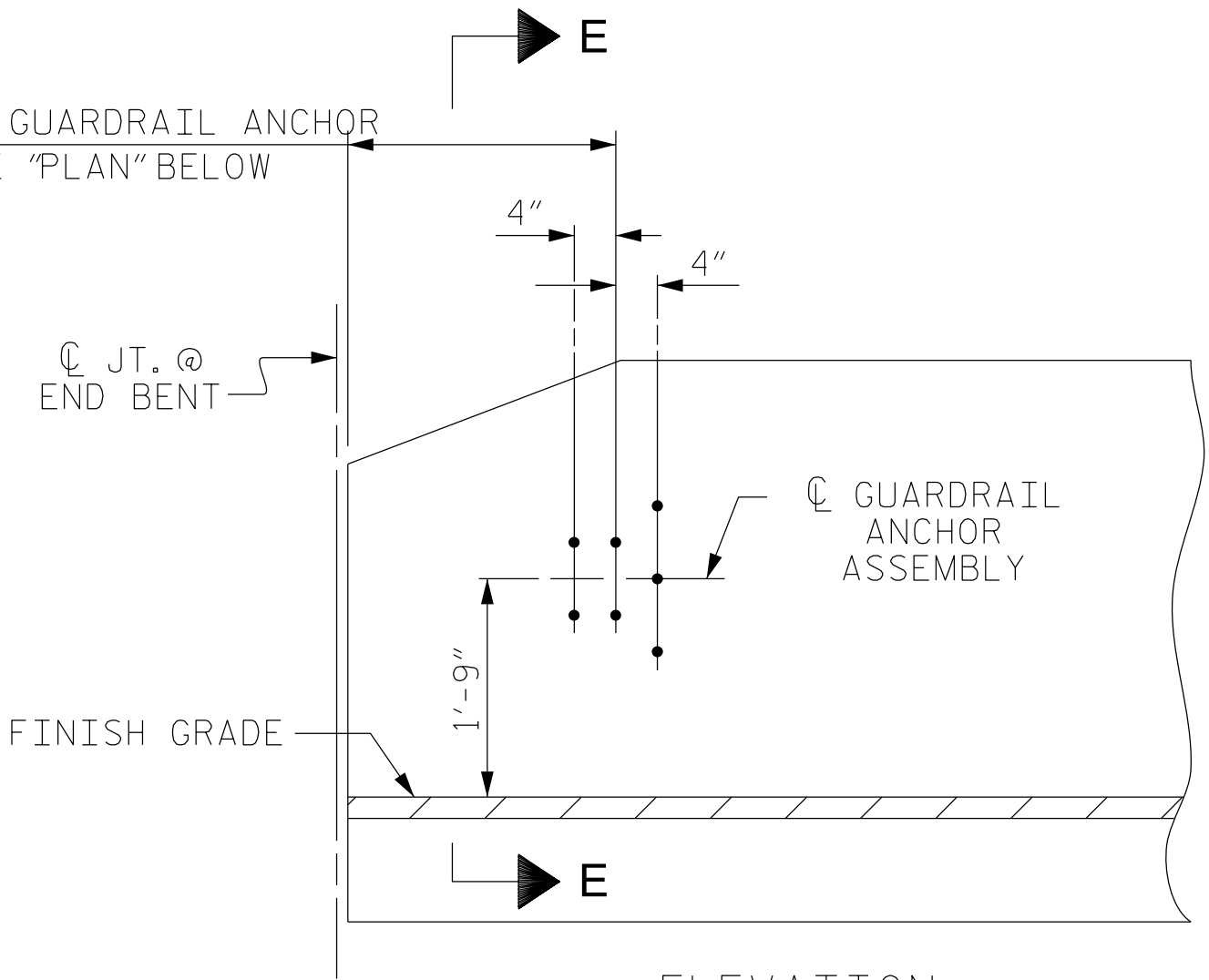
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.

THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

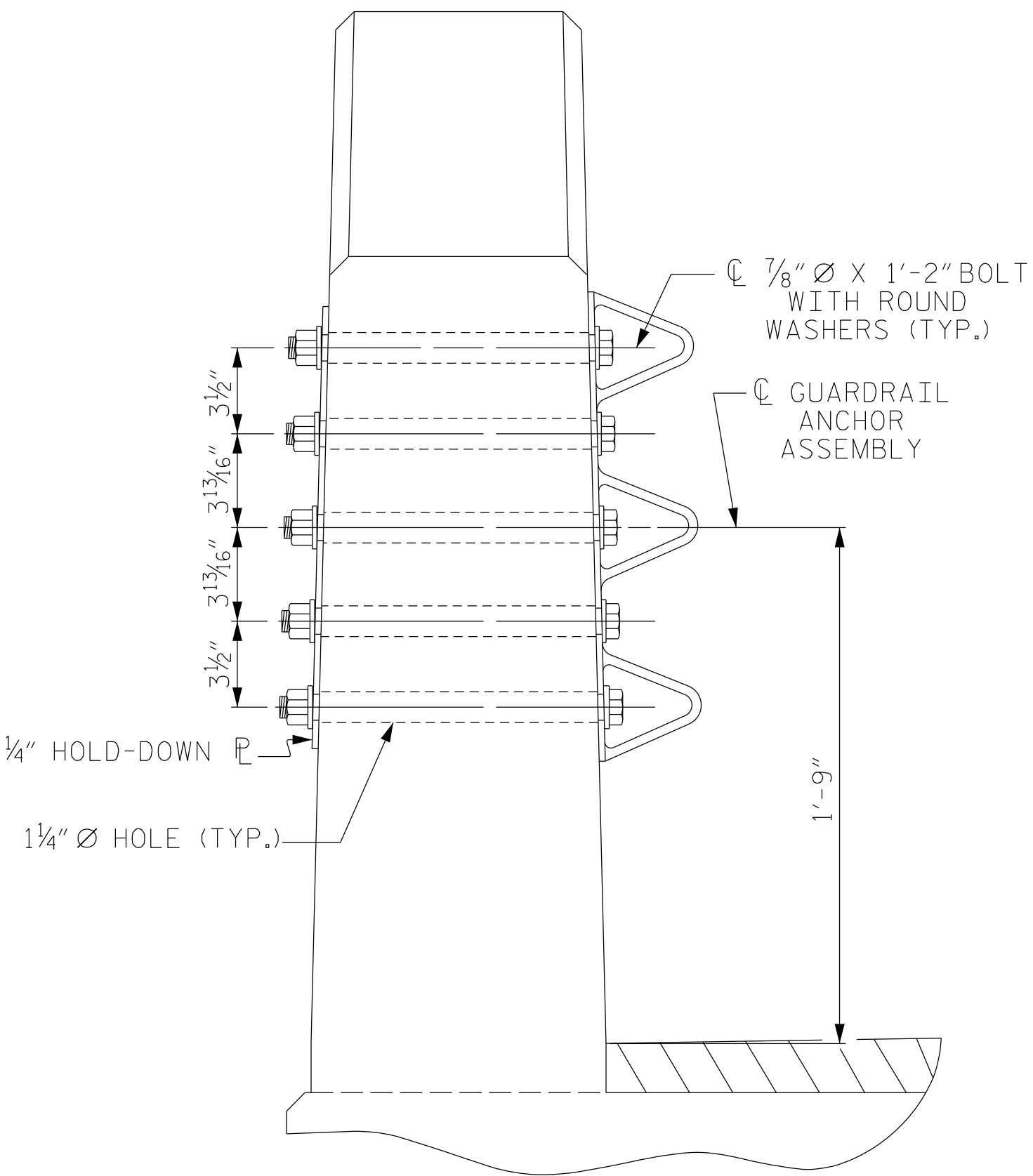
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



PLAN

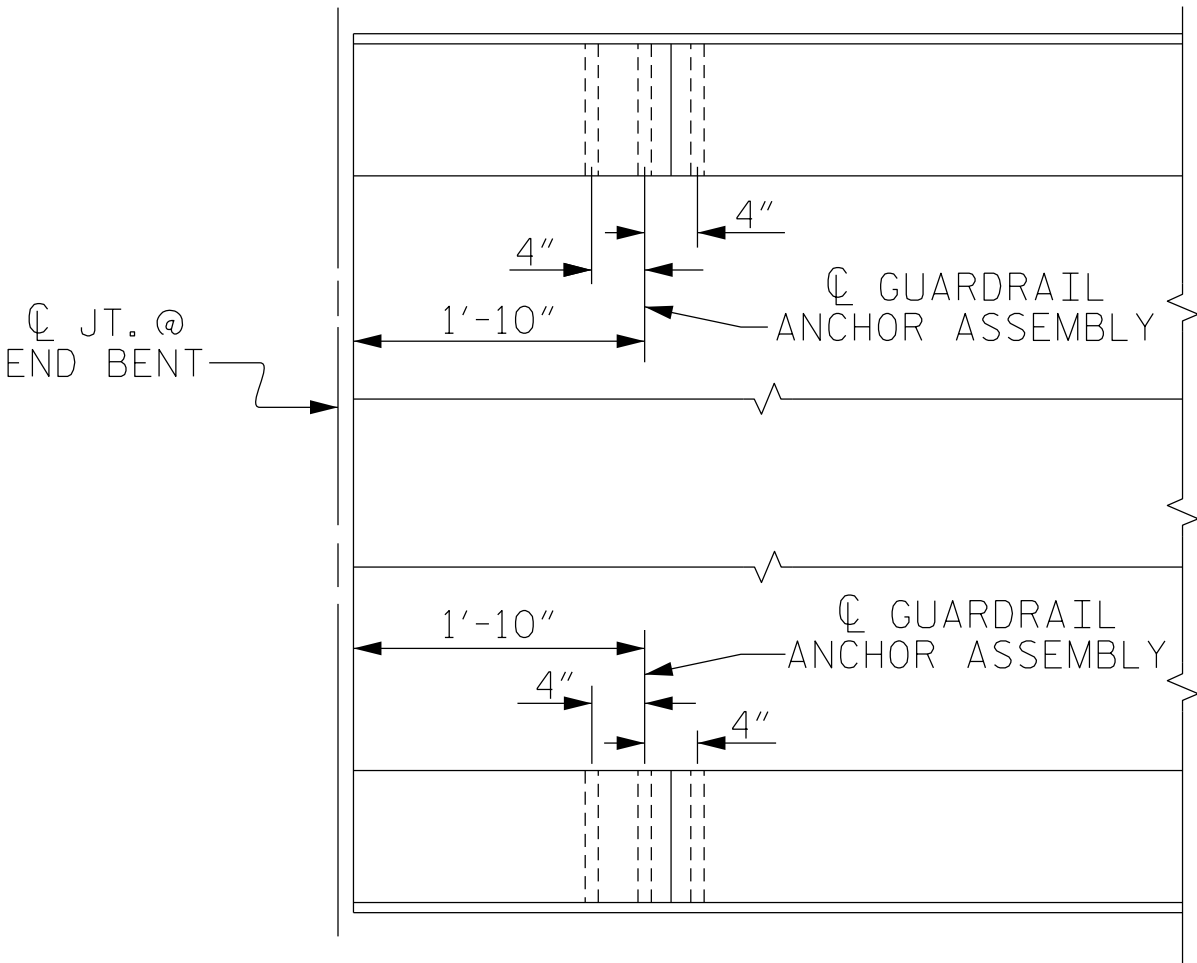


ELEVATION



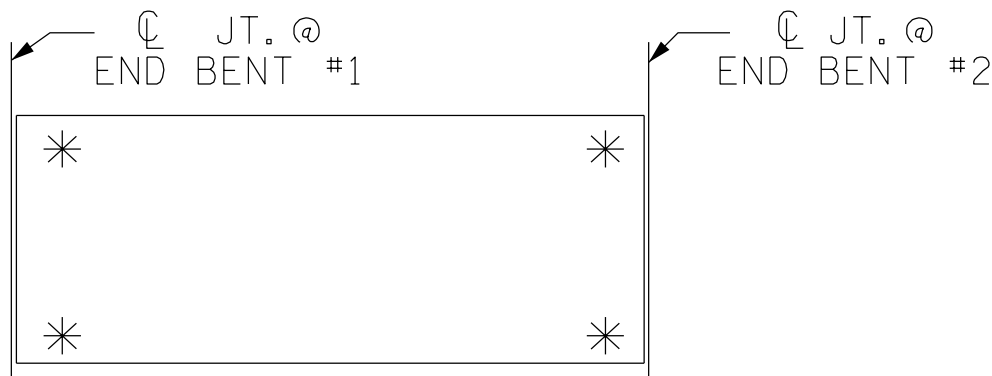
SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL



SKETCH SHOWING POINTS OF ATTACHMENT

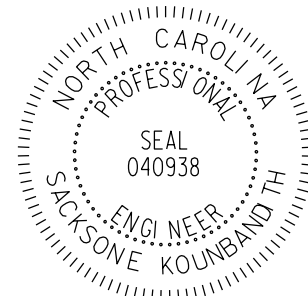
* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. BP2-R027.1
LENOIR COUNTY
STATION: 14+02.00 -L-

ASSEMBLED BY : THA		DATE : 12/24	
CHECKED BY : SK		DATE : 12/24	
DRAWN BY : MAA	5/10	REV. 1/15	MAA/TMG
		REV. 12/17	MAA/THC
CHECKED BY : GM	5/10	REV. 5/18	MAA/THC

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Carolina Transportation Engineers & Associates, PC

Carolina Transportation Engineers & Assoc., PC
3600 Arco Corporate Drive
Suite 135
Charlotte, NC 28273
Telephone: (980) 722-6065



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saksone.kounbandith
9E4463FE8B84B1...
2/12/2025

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
GUARDRAIL ANCHORAGE
DETAILS
FOR VERTICAL CONCRETE
BARRIER RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS 17
2			4			

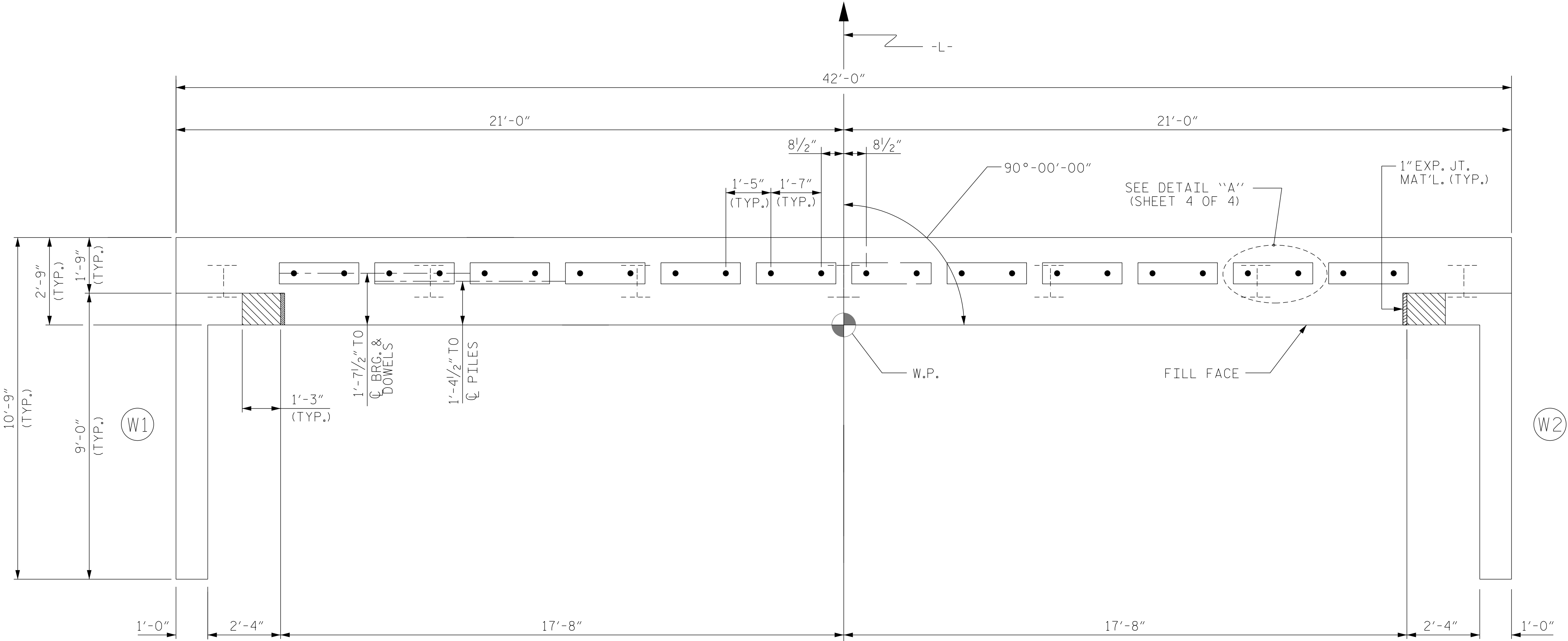
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

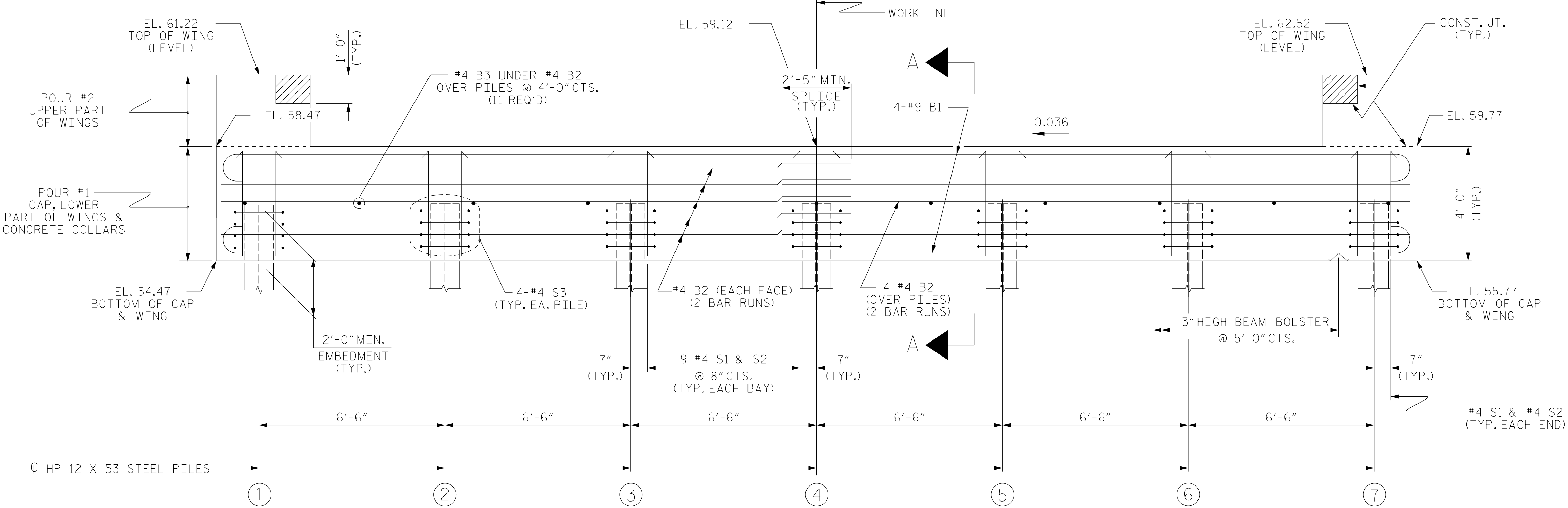
FOR WING DETAILS, SEE SHEET 3 OF 4.



TOP OF PILE ELEVATIONS

①	56.52
②	56.76
③	56.99
④	57.22
⑤	57.46
⑥	57.69
⑦	57.93

.036 SLOPE



PROJECT NO. BP2-R027.1
LENOIR COUNTY
STATION: 14+02.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1

REVISIONS						SHEET NO. S-11
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 17
2			4			

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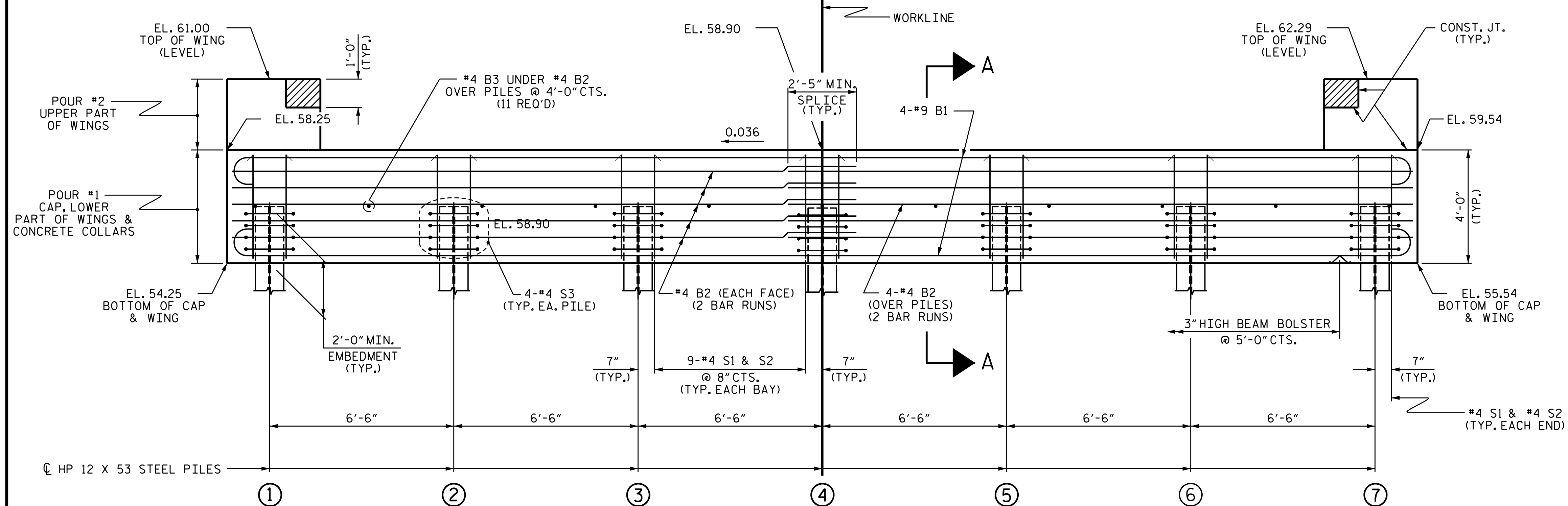
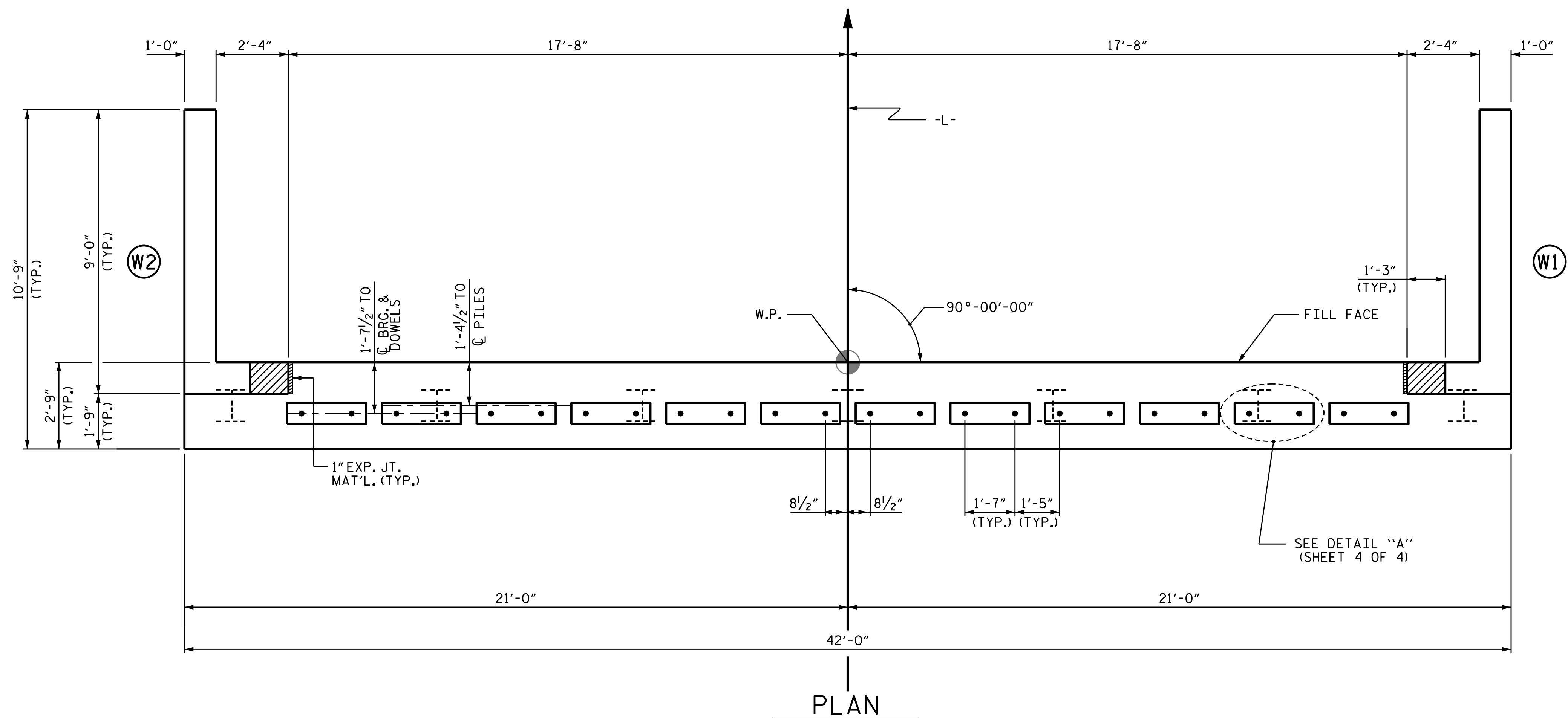
Carolina Transportation Engineers & Assoc., PC
3600 Arco Corporate Drive
Suite 135
Charlotte, NC 28273
Telephone: (980) 722-6065



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Saksone Koushanidze
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DRAWN BY : WJH 12/11	REV. 4/15 MAA/TMG
CHECKED BY : AAC 12/11	

$+$ $+$ 

ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

ASSEMBLED BY : THA		DATE : 12/24	
CHECKED BY : SK		DATE : 12/24	
DRAWN BY : WJH 12/II		REV. 4/15 MAA/TMG	
CHECKED BY : AAC 12/II			

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saksone kounbandith
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2/12/2025

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS
NECESSARY TO CLEAR DOWELS.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

TOP OF PILE ELEVATIONS	
①	56.08
②	56.32
③	56.55
④	56.78
⑤	57.02
⑥	57.25
⑦	57.49

0.036 SLOPE

PROJECT NO. BP2-R027.1
LENOIR COUNTY
 STATION: 14+02.00 -L-

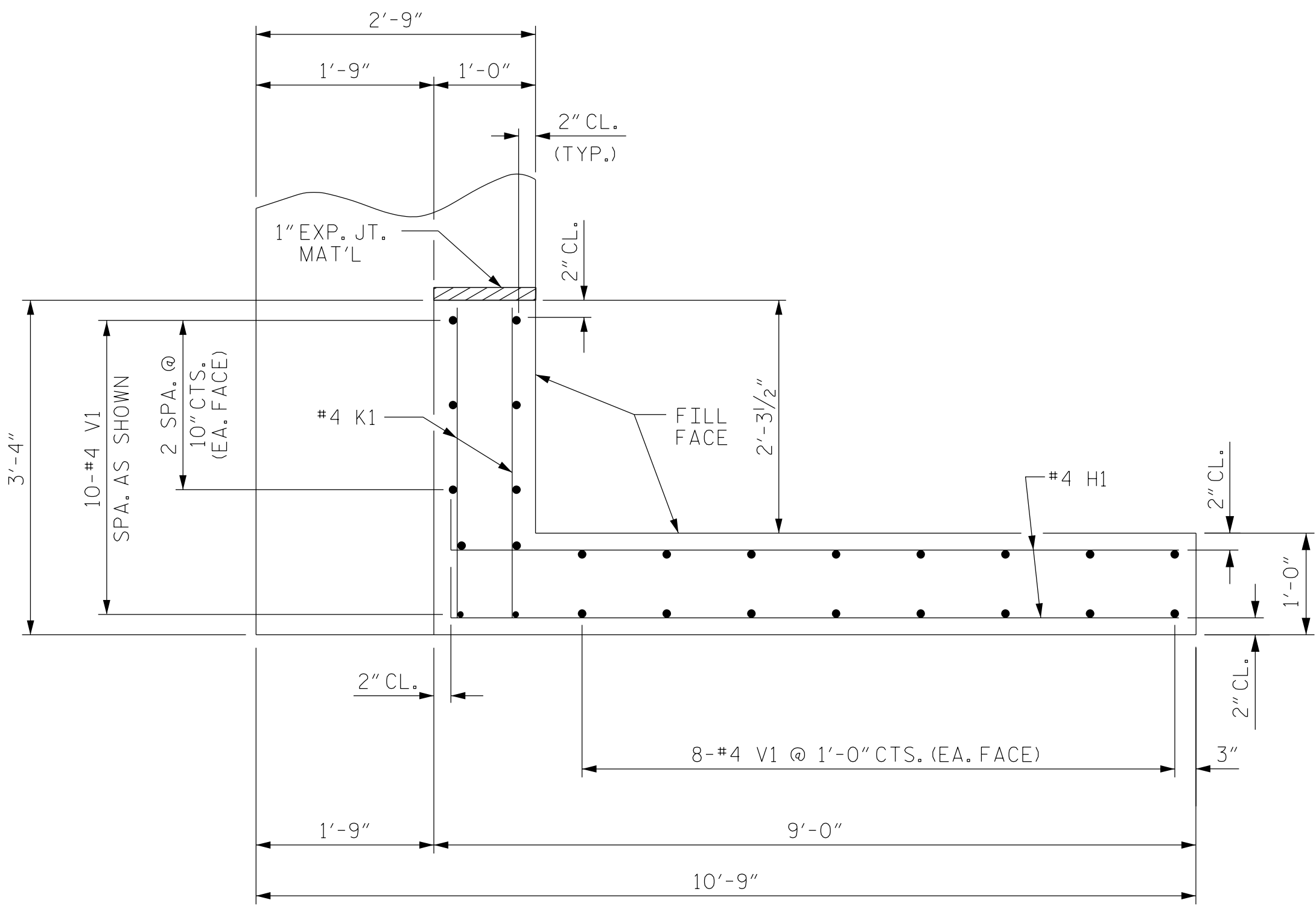
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

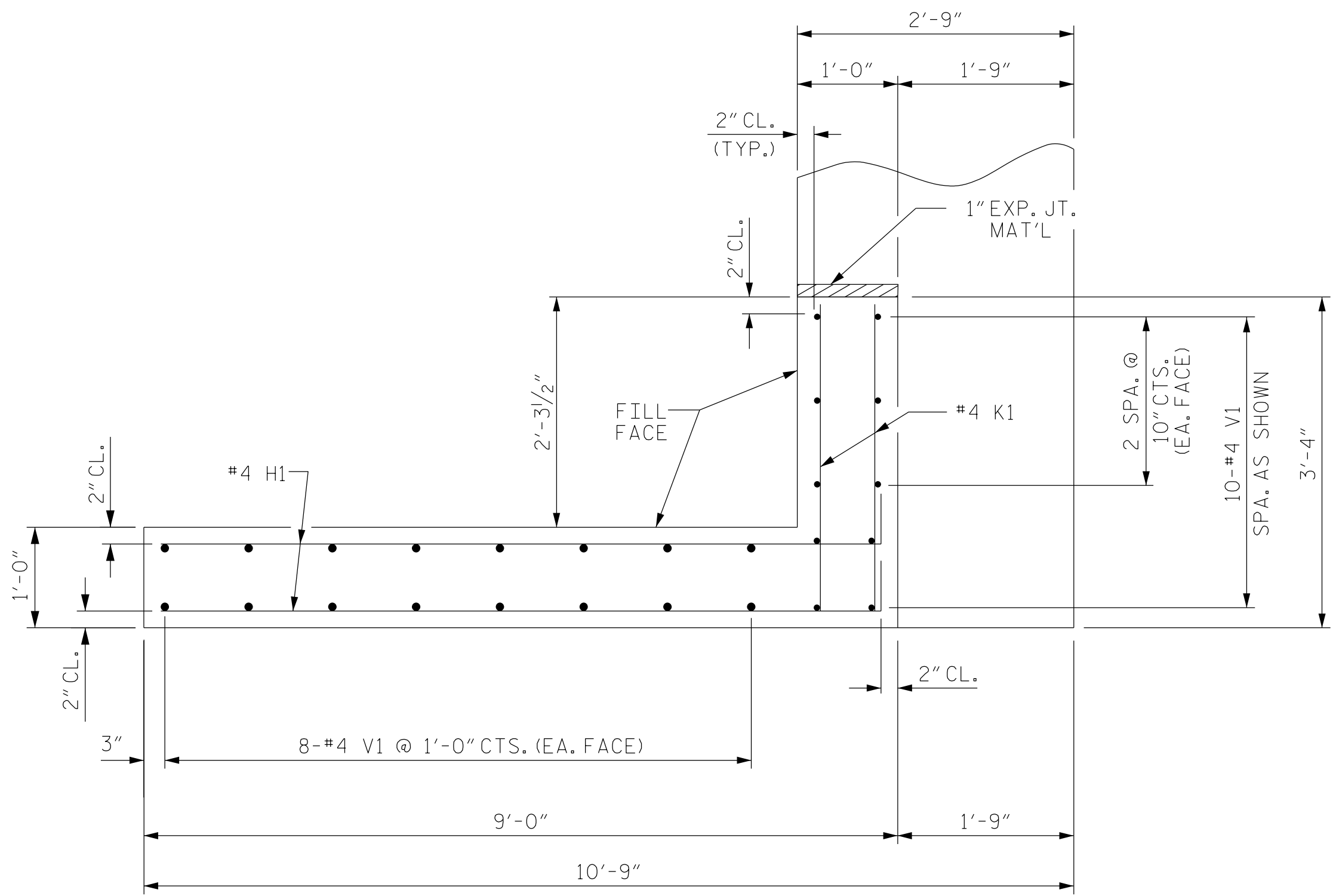
END BENT No. 2

REVISIONS						SHEET NO. S-12
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 17
2			4			

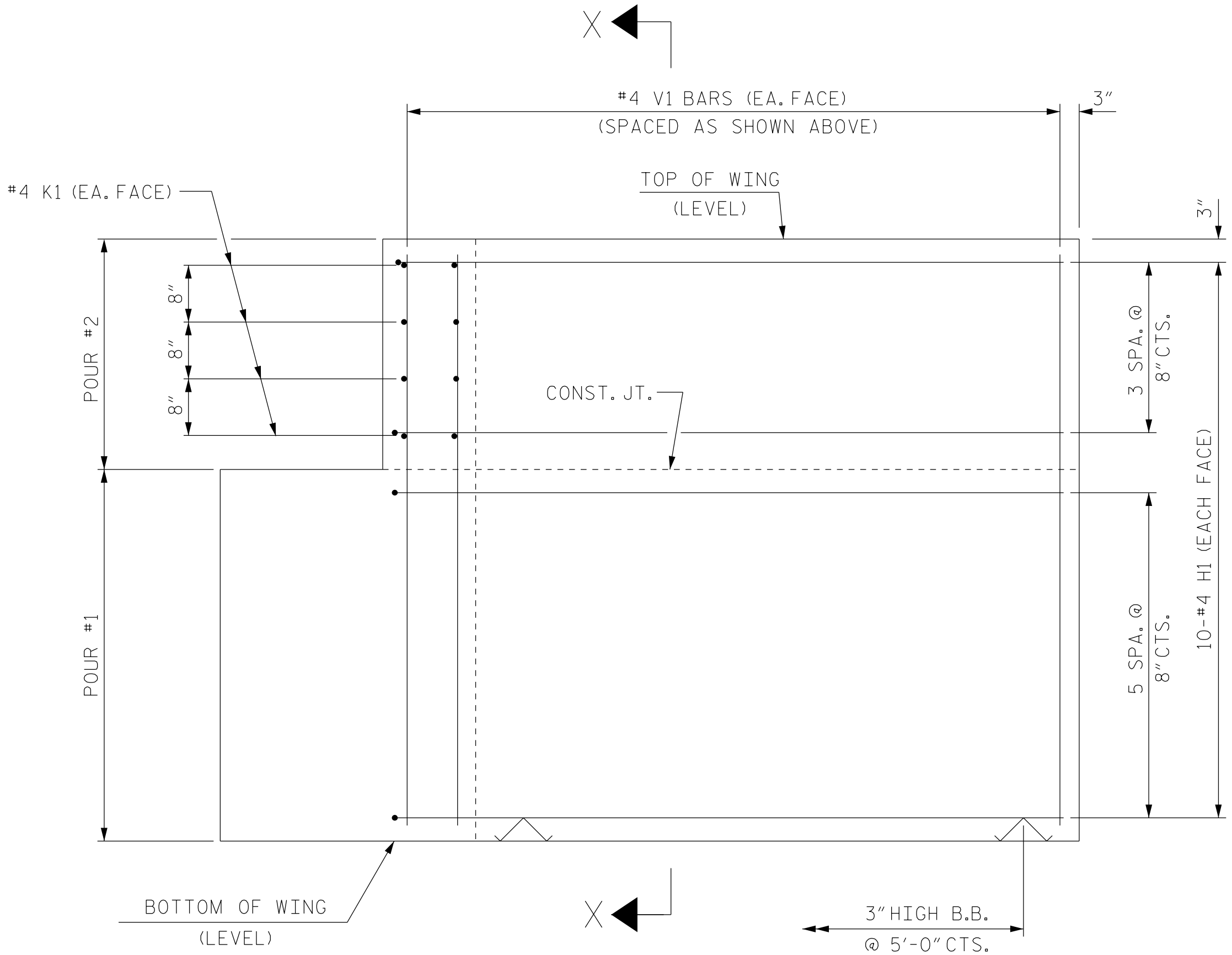
STD. NO. EB_36_90S4



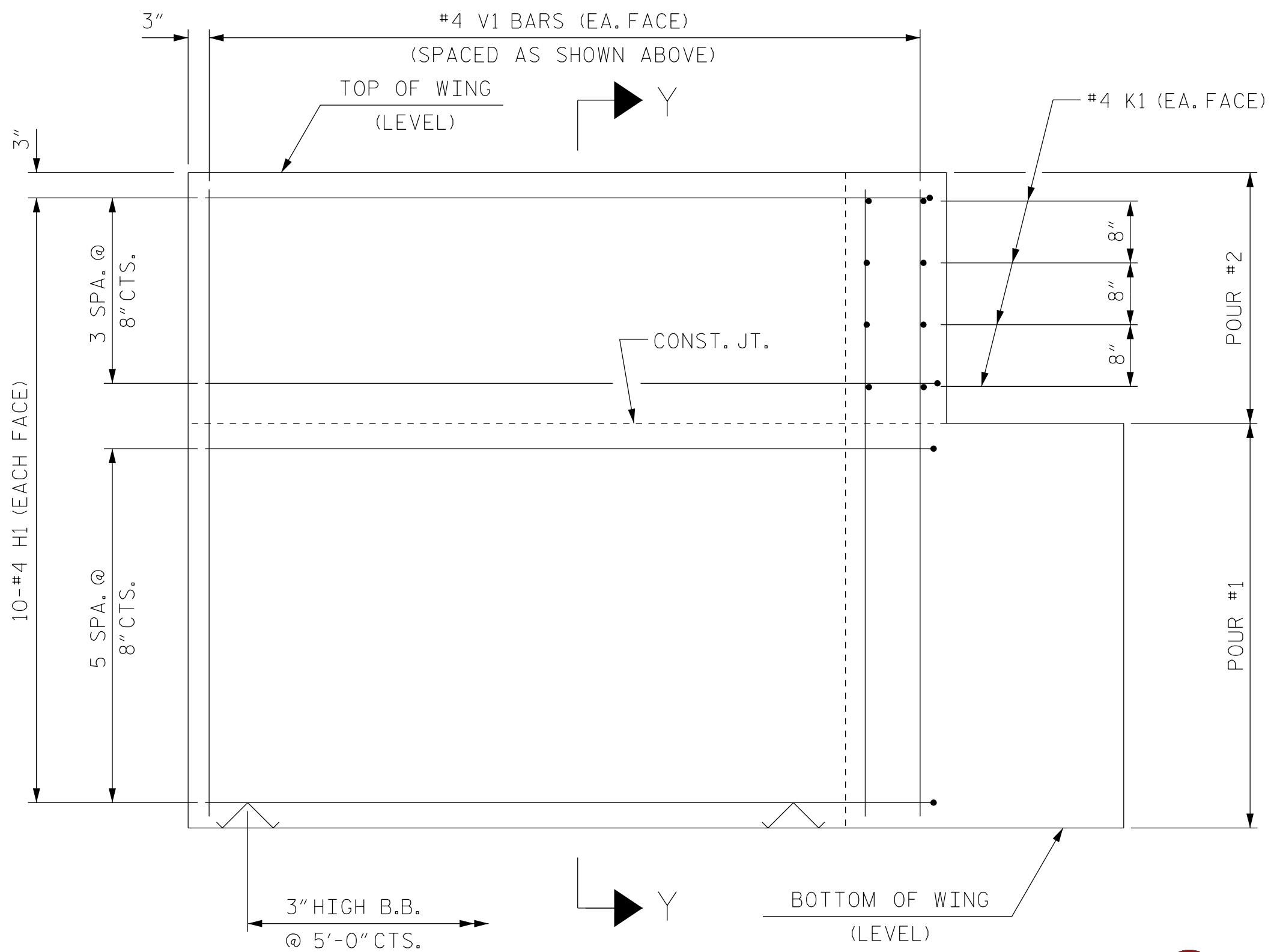
PLAN OF WING (W1)



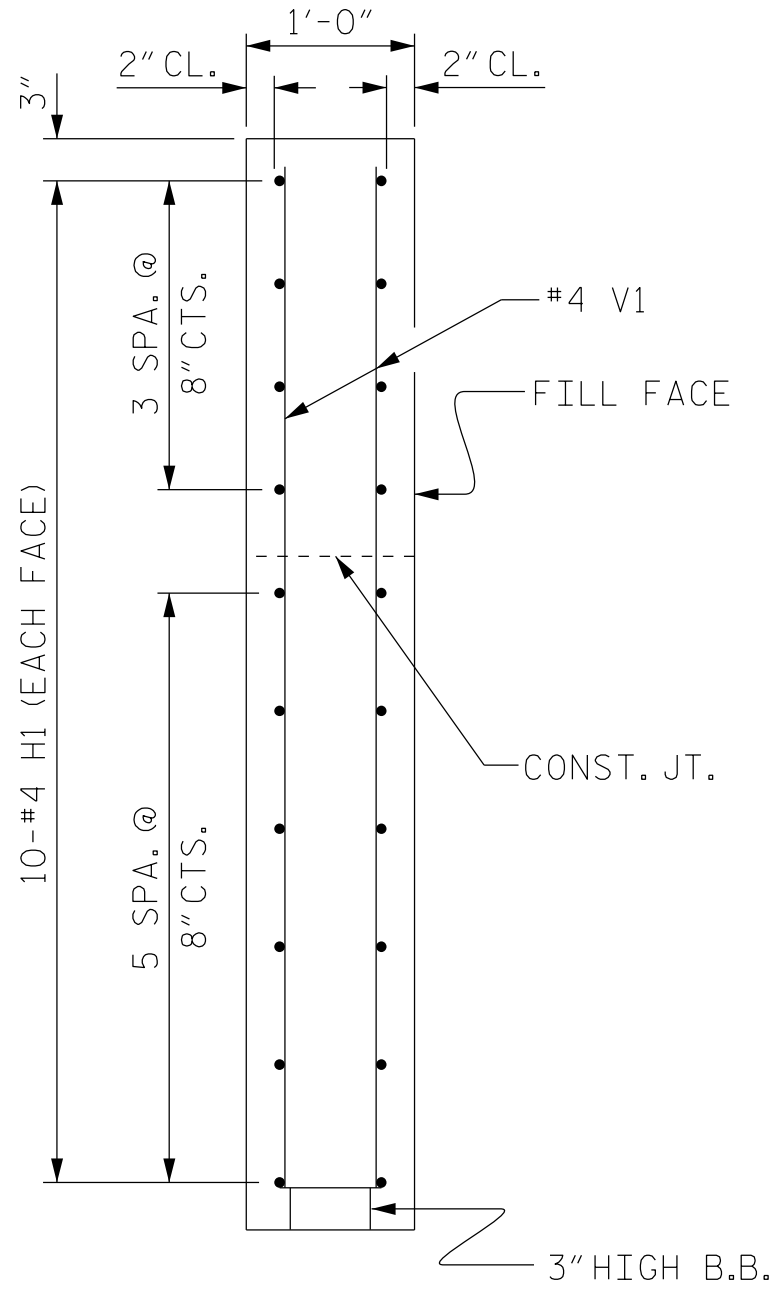
PLAN OF WING (W2)



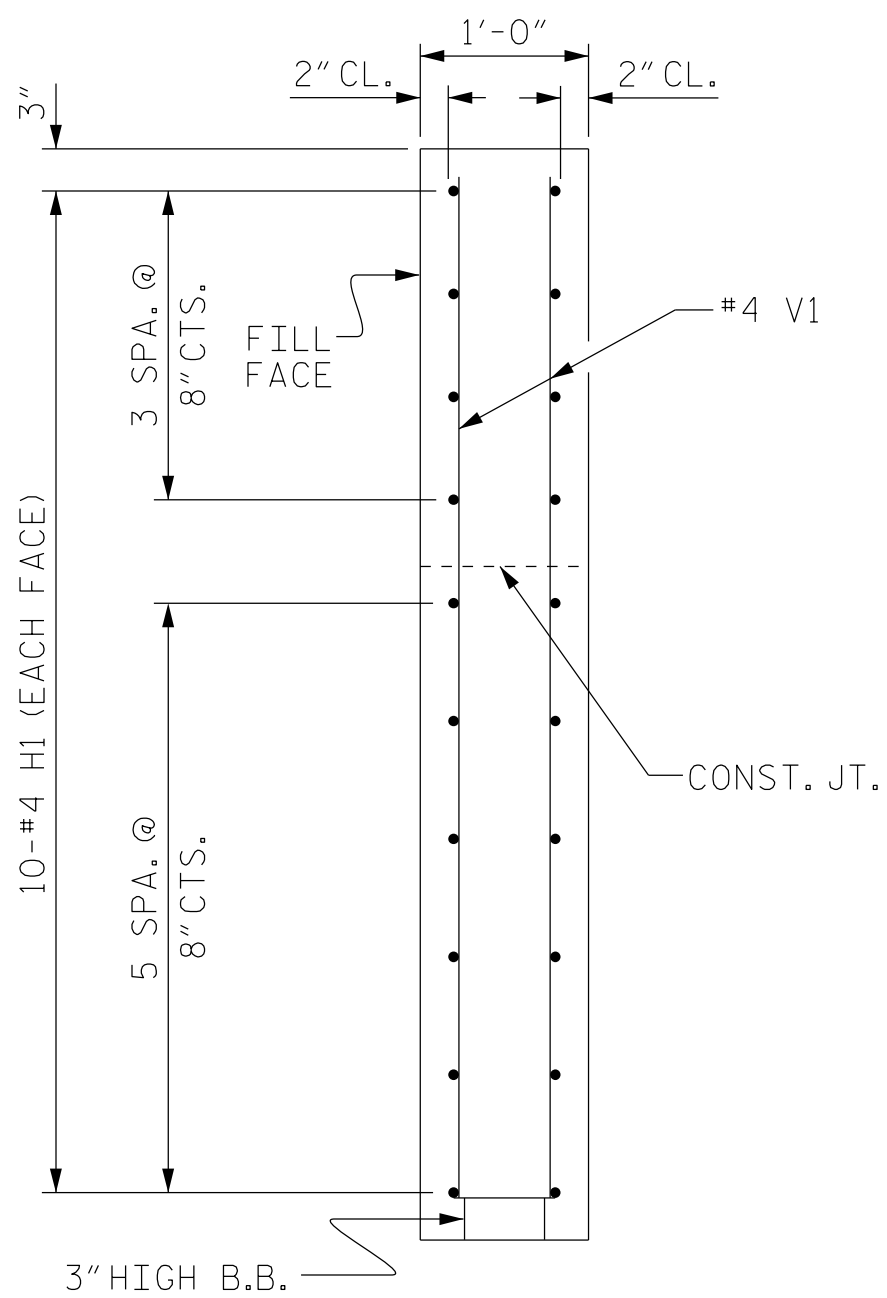
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X



SECTION Y-Y

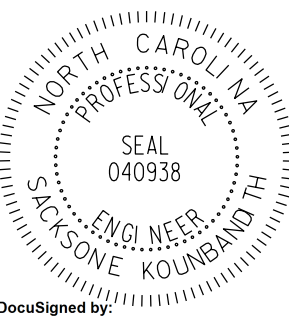
PROJECT NO. BP2-R027.1
LENOIR COUNTY
STATION: 14+02.00 -L-

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DRAWN BY : WJH 12/11	REV. 4/15
CHECKED BY : AAC 12/11	MAA/TMG

2/11/2025
C:\Users\JonathanBaker\Carolina TEA\Public - Projects\NCDOT\2018 Eastern Division On Call\315.1.01.22 Division 2 bridges\BP2.R027.1\7 - Structure\Design\Plans\CAD FILES\Final Plans ((BP.R027.1))\013.BPR0271.EB3.dgn
JonathanBaker

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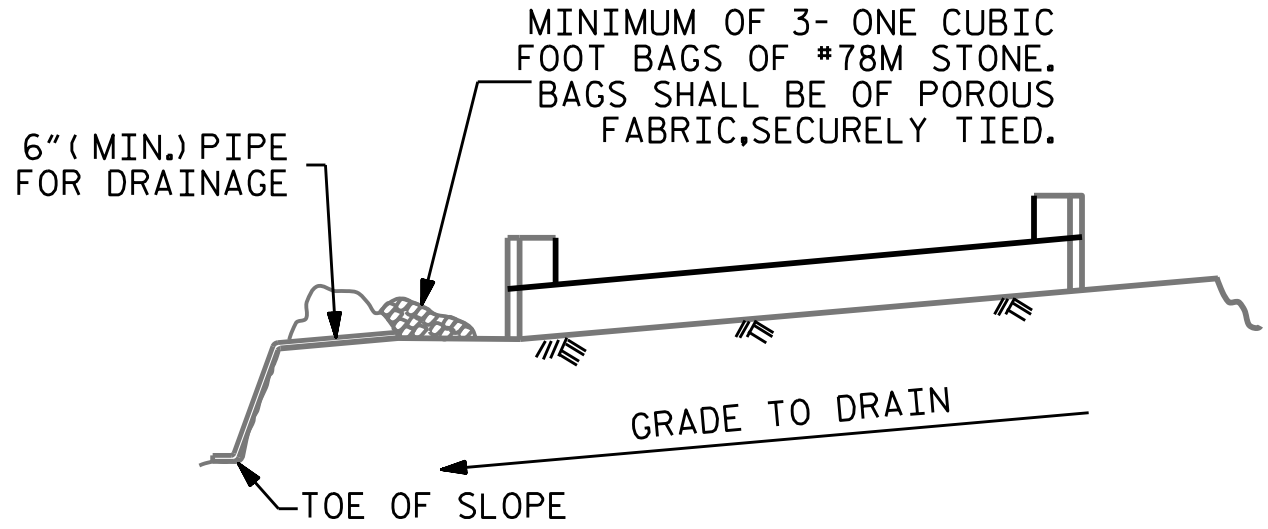


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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 17
2			4			

STD. NO. EB_36_90S4

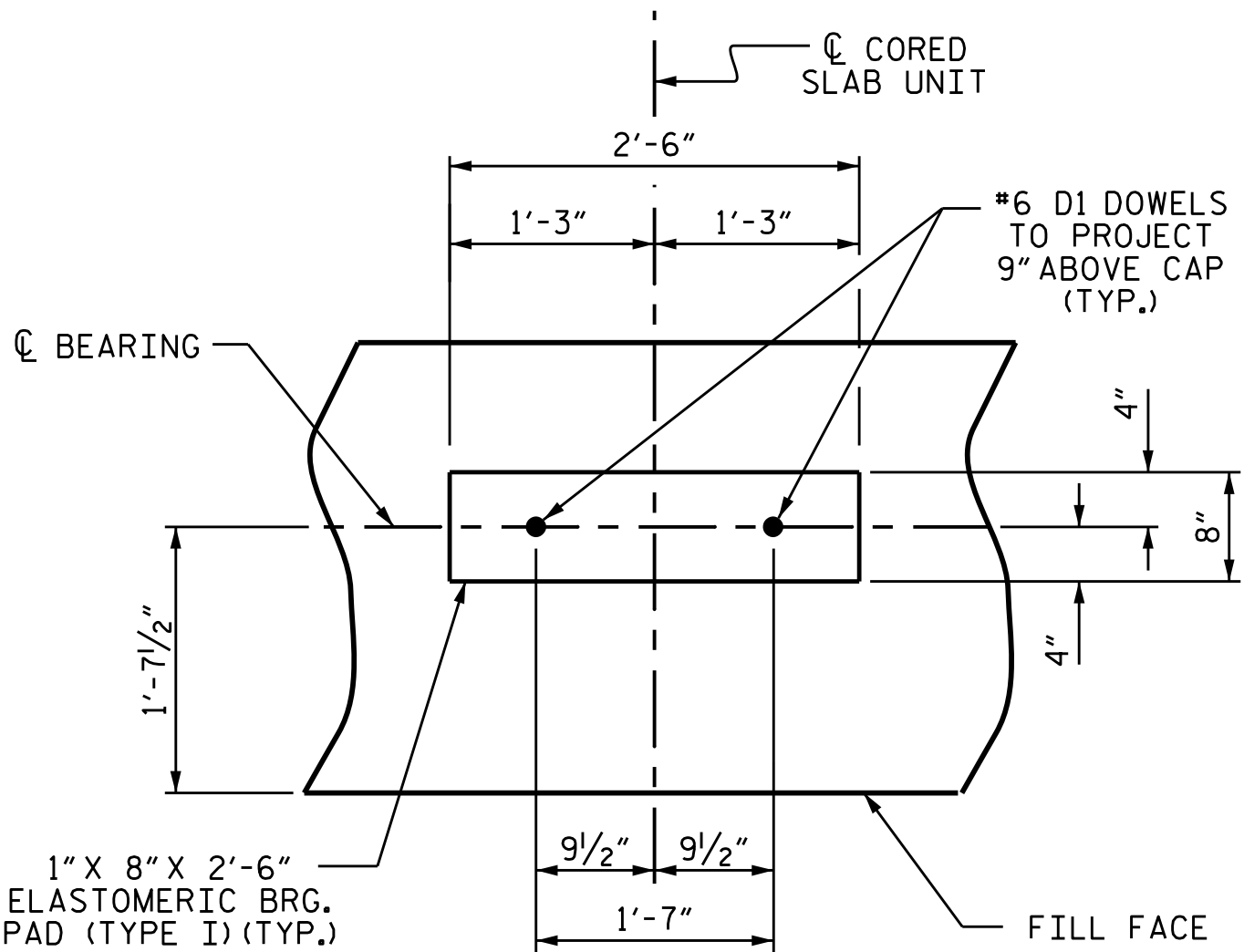


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

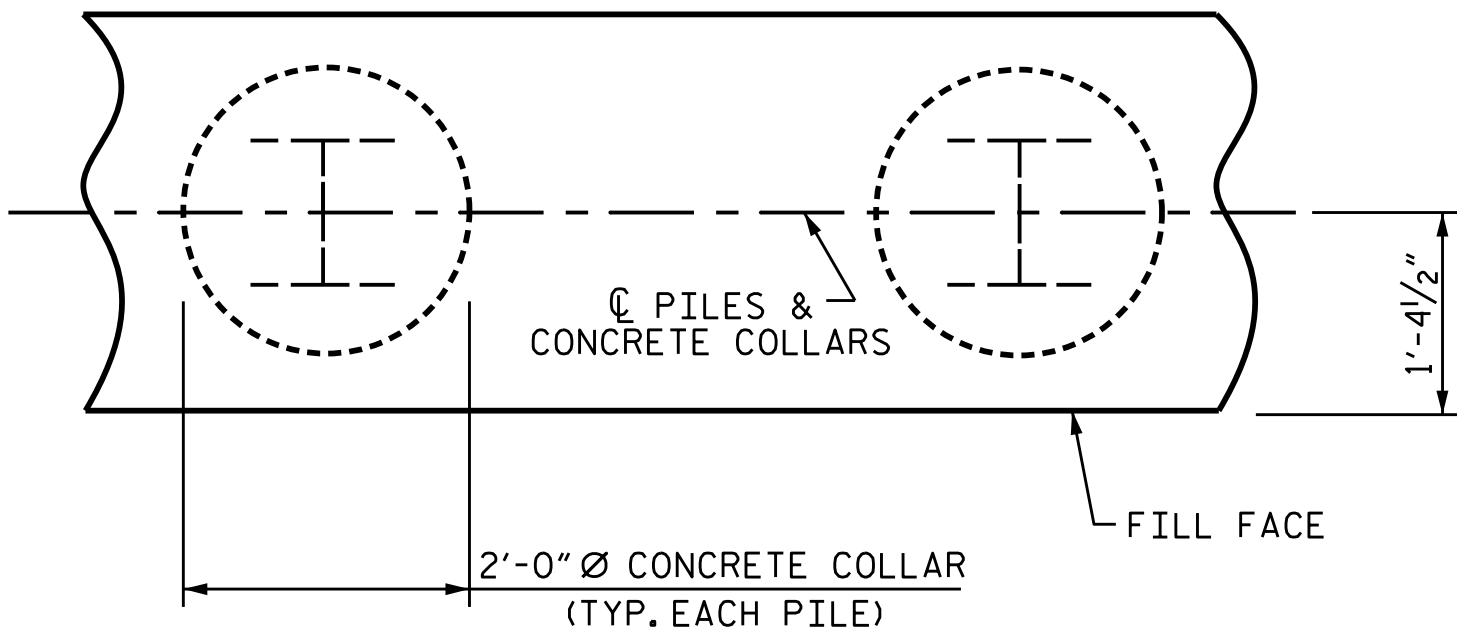
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



DETAIL "A"

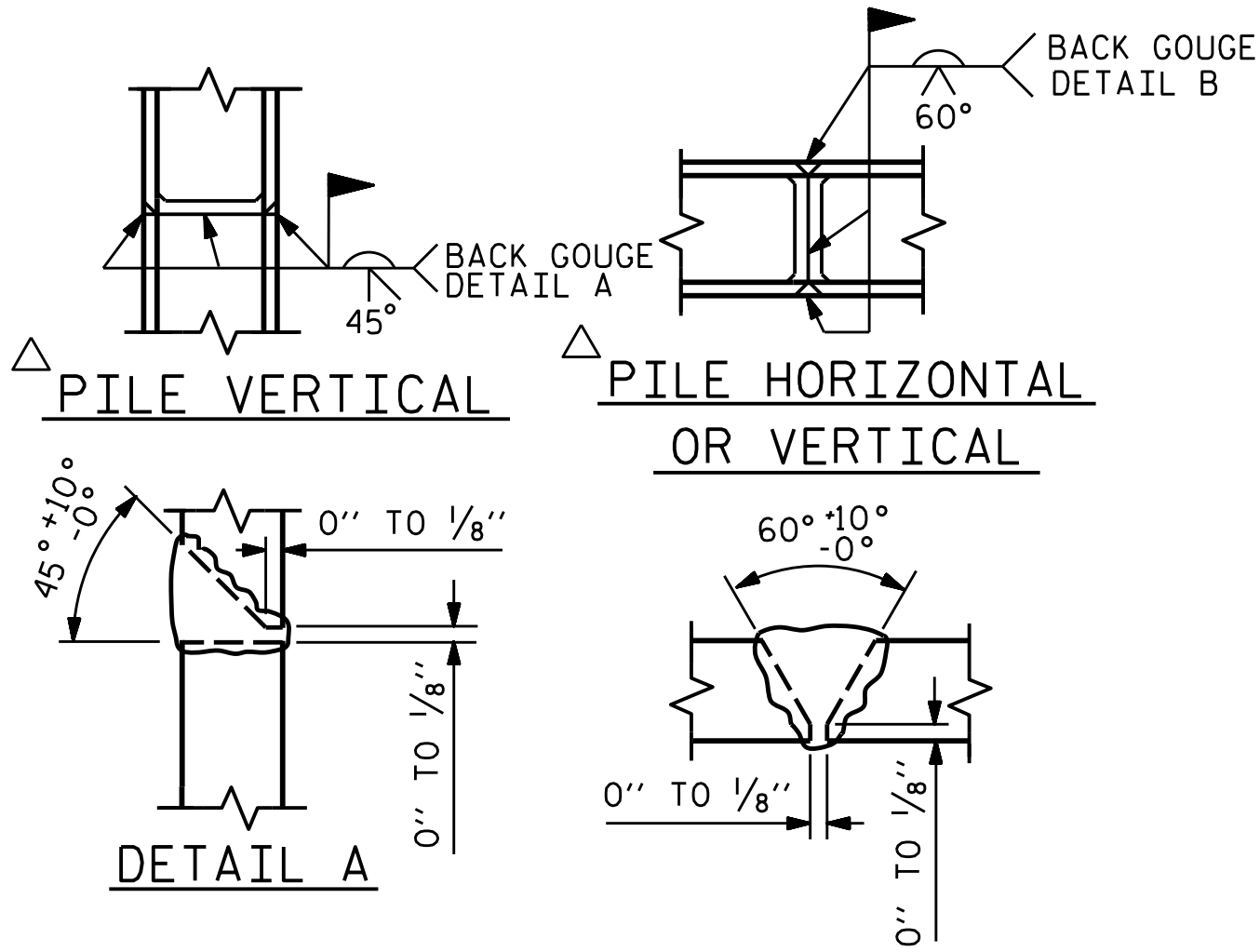
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



PLAN

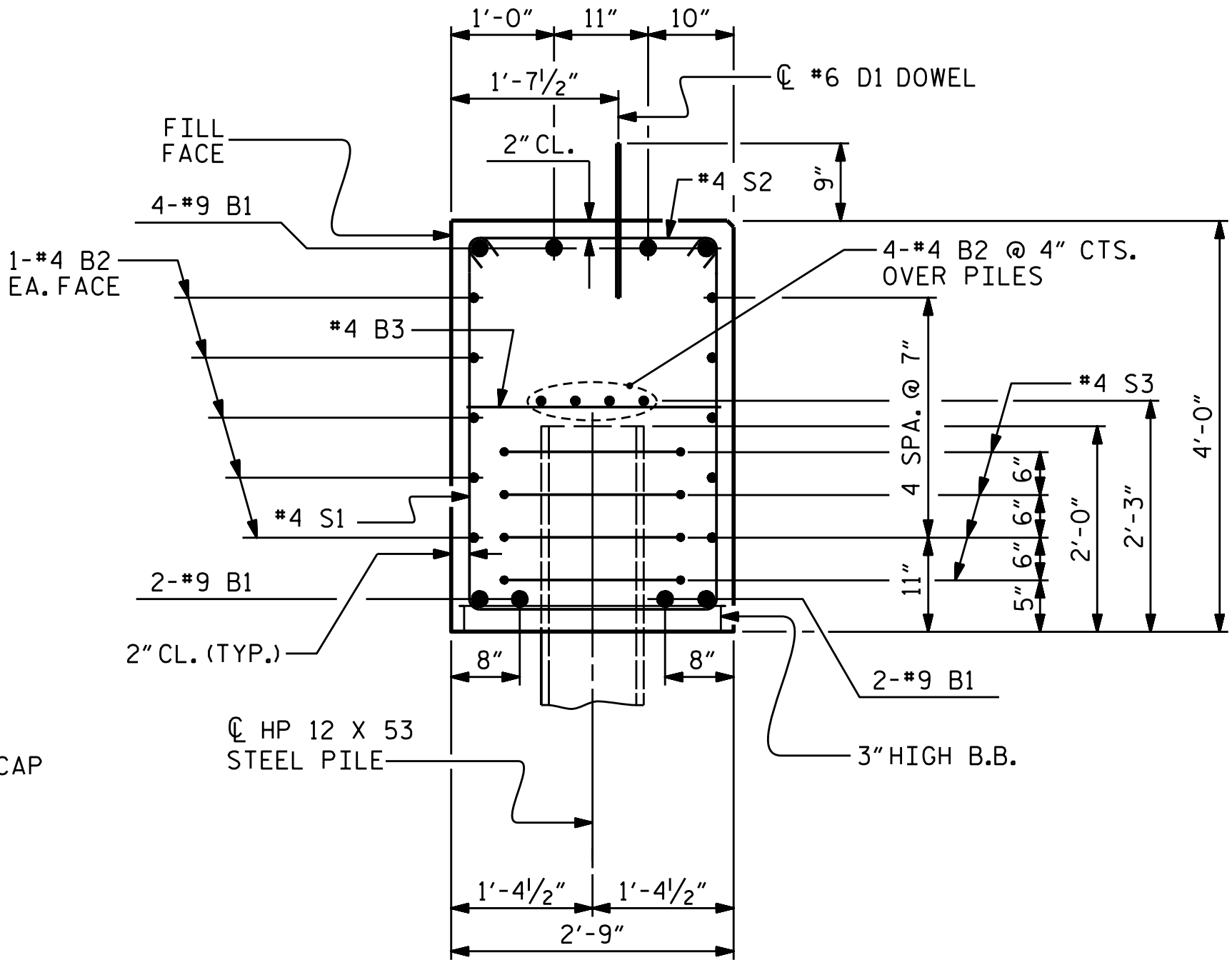
CORROSION PROTECTION FOR STEEL PILES DETAIL

(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



PILE SPLICE DETAILS

POSITION OF PILE DURING WELDING.



SECTION A-A

(CONCRETE COLLAR NOT SHOWN FOR CLARITY. SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL.")

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Carolina Transportation Engineers & Associates, PC

Carolina Transportation Engineers & Assoc., PC
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2/12/2025
sackson.kounand@ttdh.com

BILL OF MATERIAL

FOR ONE END BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		44'-0"	1197
B2	28	#4	STR	22'-1"	413
B3	11	#4	STR	2'-5"	18
D1	24	#6	STR	1'-6"	54
H1	40	#4		9'-4"	249
K1	16	#4	STR	2'-11"	31
S1	56	#4		10'-5"	390
S2	56	#4		3'-2"	118
S3	28	#4		6'-6"	122
V1	52	#4	STR	6'-2"	214

REINFORCING STEEL (FOR ONE END BENT) 2806 LBS.

CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

POUR #1 CAP, LOWER PART OF WINGS & COLLARS 20.7 C.Y.

POUR #2 UPPER PART OF WINGS 2.1 C.Y.

TOTAL CLASS A CONCRETE 22.8 C.Y.

PROJECT NO. BP2-R027.1

LENOIR COUNTY

STATION: 14+02.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1 & 2
DETAILS

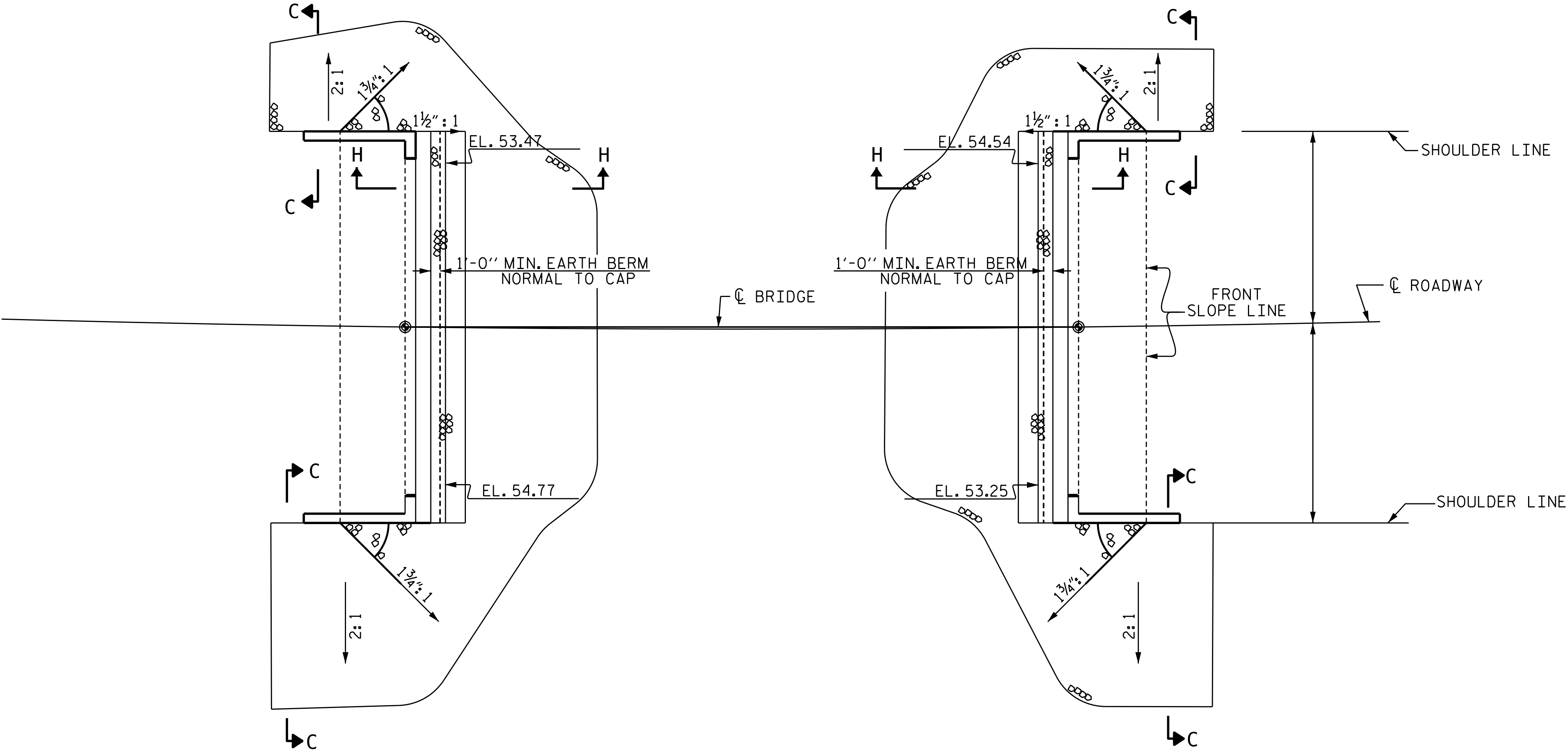
REVISIONS

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

SHEET NO.
S-14

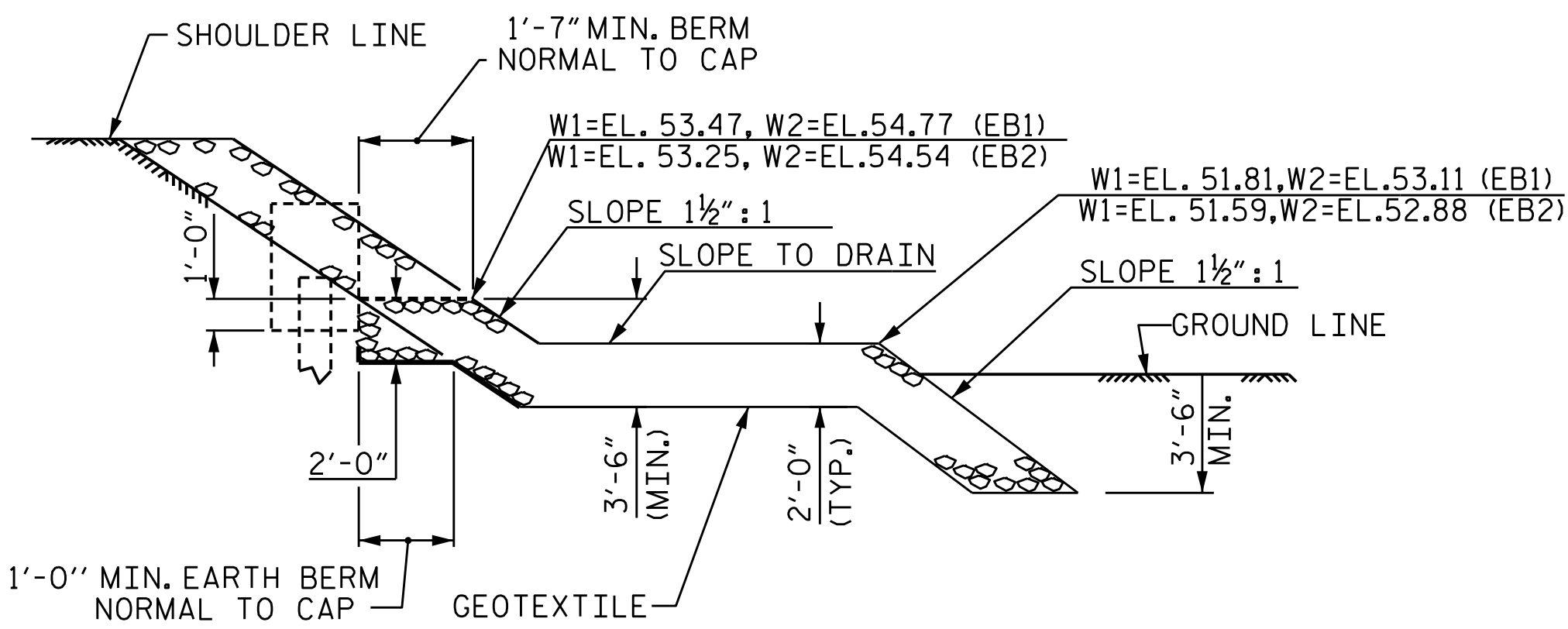
TOTAL
SHEETS
17

ASSEMBLED BY : THA	DATE : 12/24
CHECKED BY : SK	DATE : 12/24
DRAWN BY : WJH 12/11	REV. 4/17
CHECKED BY : AAC 12/11	MAA/THC

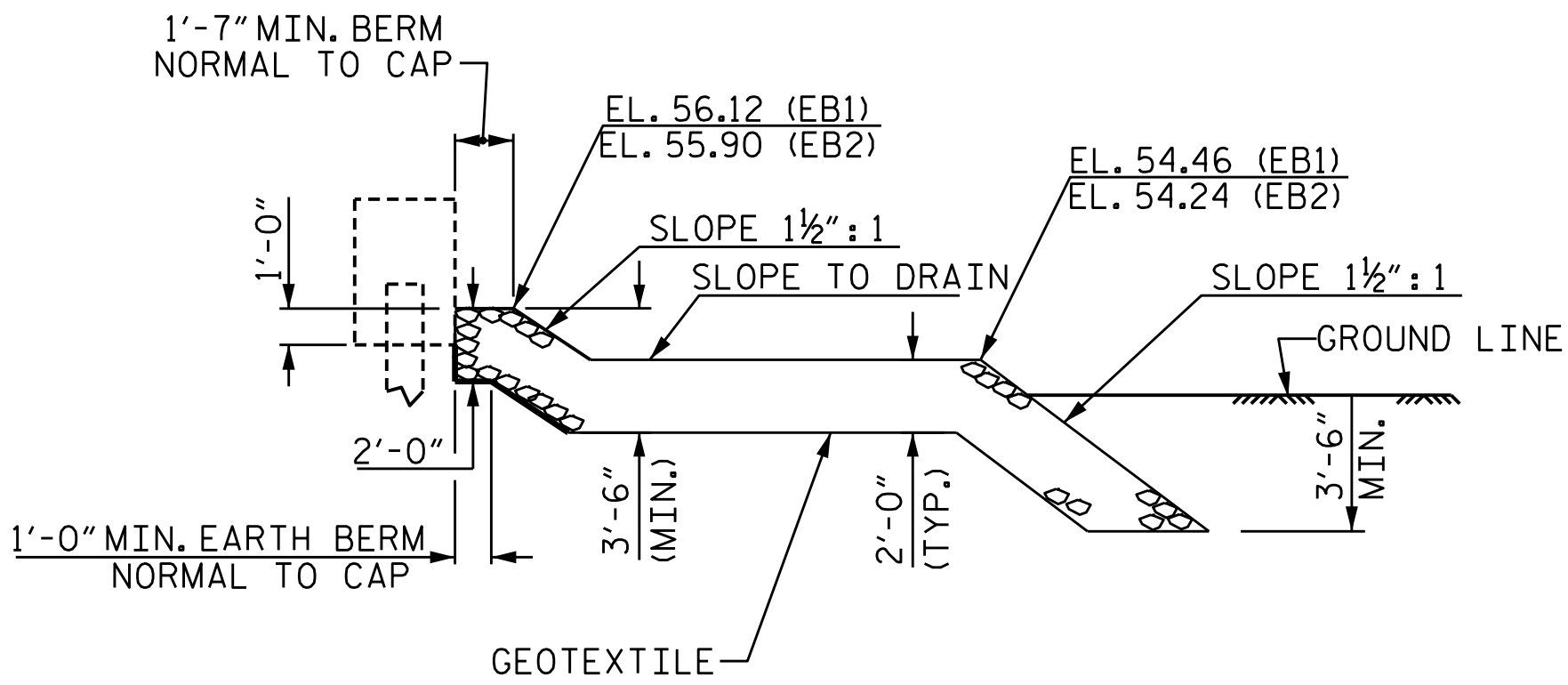


END BENT NO.1 RIP RAP

END BENT NO.2 RIP RAP



SECTION H-H

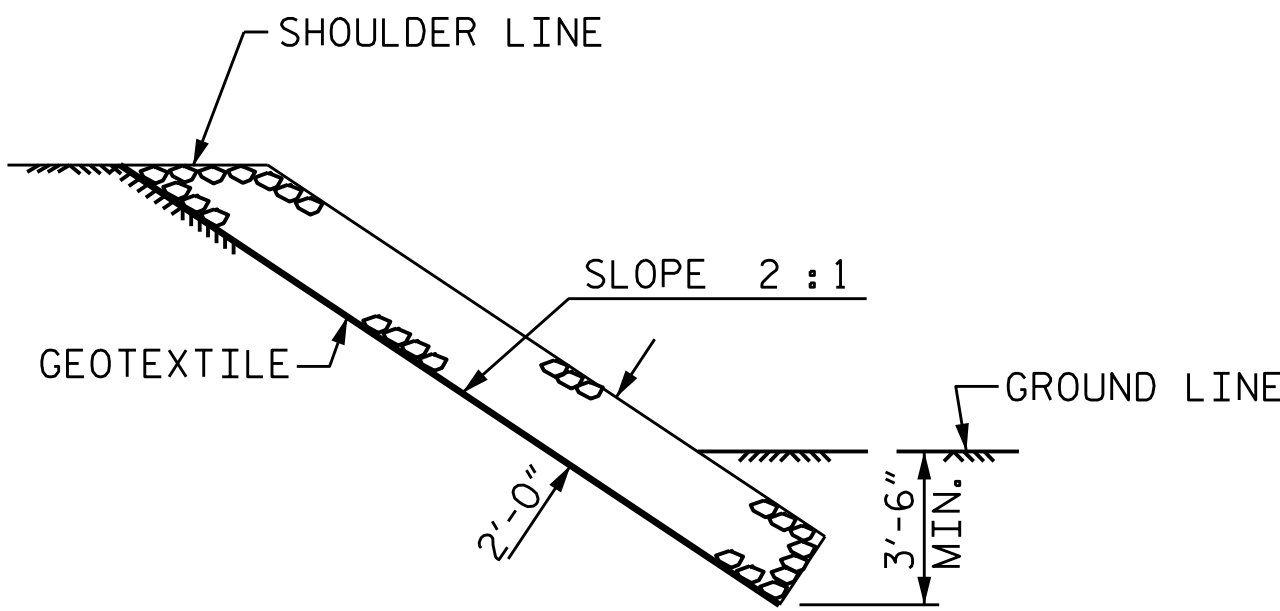


CL SECTION

BERM RIP RAPPED

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

ESTIMATED QUANTITIES		
BRIDGE @ STA. 14+0L.00-L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	80	197
END BENT 2	80	197



SECTION C-C

PROJECT NO. BP2-R027.1
LENOIR COUNTY
STATION: 14+02.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
RIP RAP DETAILS

REVISIONS						SHEET NO. S-15
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 17
2			4			

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ASSEMBLED BY : THA	DATE : 12/24
CHECKED BY : SK	DATE : 12/24
DRAWN BY : REK 1/84	REV. 10/1/11 MAA/GM
CHECKED BY : RDU 1/84	REV. 12/21/11 MAA/GM
	REV. 12/17 MAA/THC

NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 4"Ø DRAINAGE PIPE, AND SELECT MATERIAL BACKFILL, SEE ROADWAY PLANS.

GEOTEXTILE SHALL BE TYPE 1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

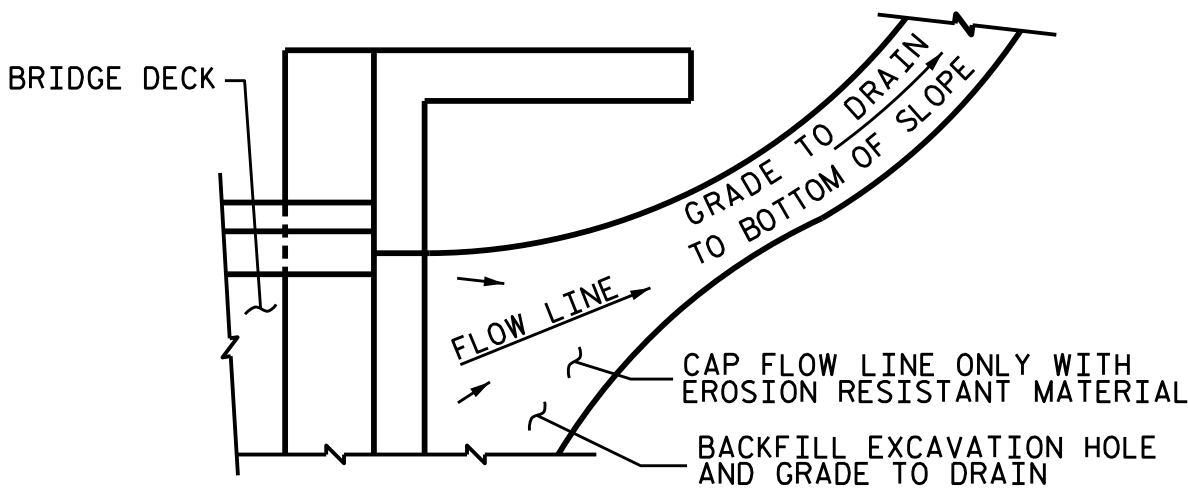
SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

SELECT MATERIAL BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

FOR THE 4"Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

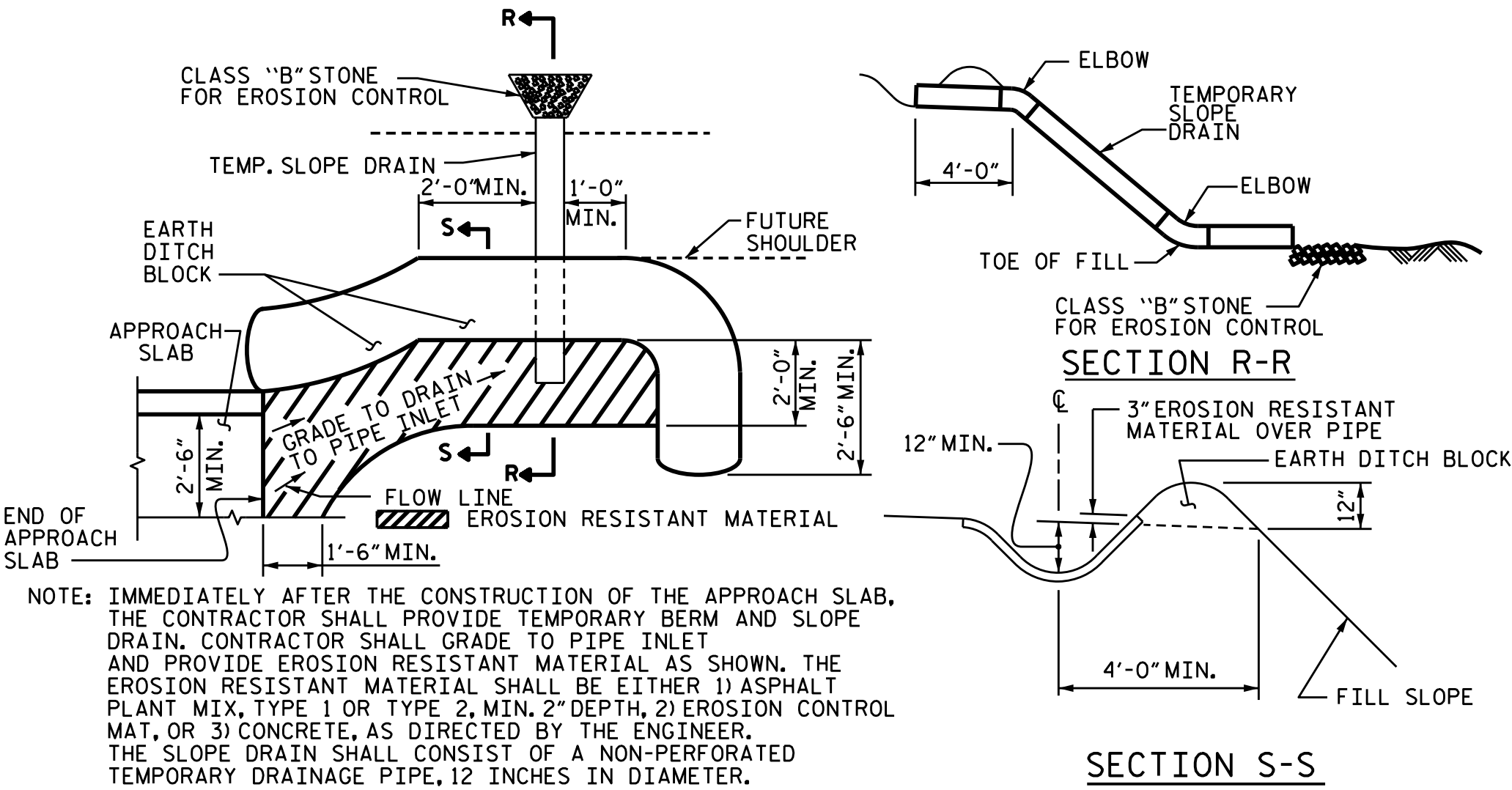
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.



NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

TEMPORARY DRAINAGE DETAIL



NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

PROJECT NO. BP2-R027.1
LENOIR COUNTY
STATION: 14+02.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB UNIT
(SUB-REGIONAL TIER)
90° SKEW

REVISIONS						SHEET NO. S-16
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 17
2			4			

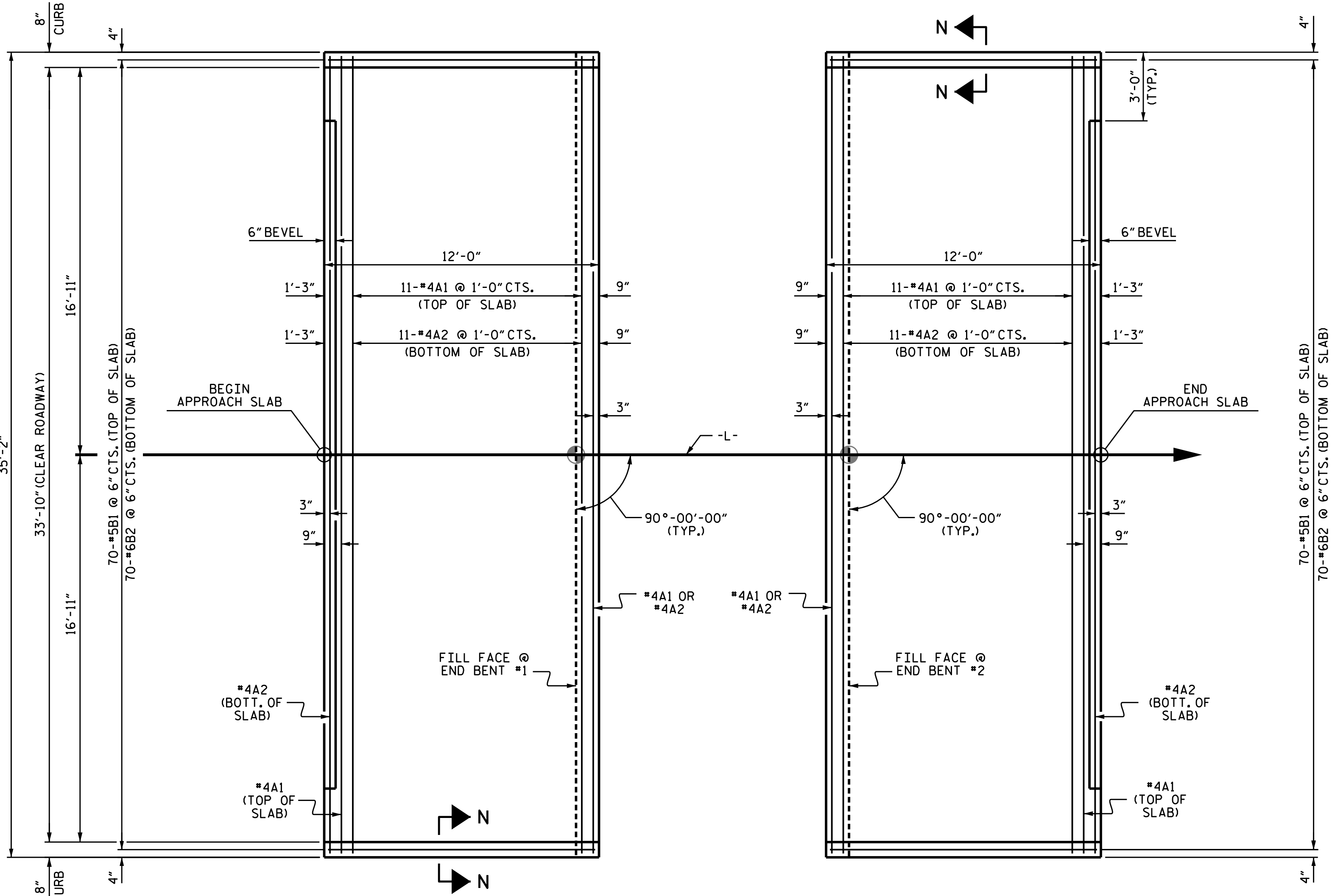
CarolinaTEA
Carolina Transportation Engineers & Associates, PC

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3600 Arco Corporate Drive
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Charlotte, NC 28273
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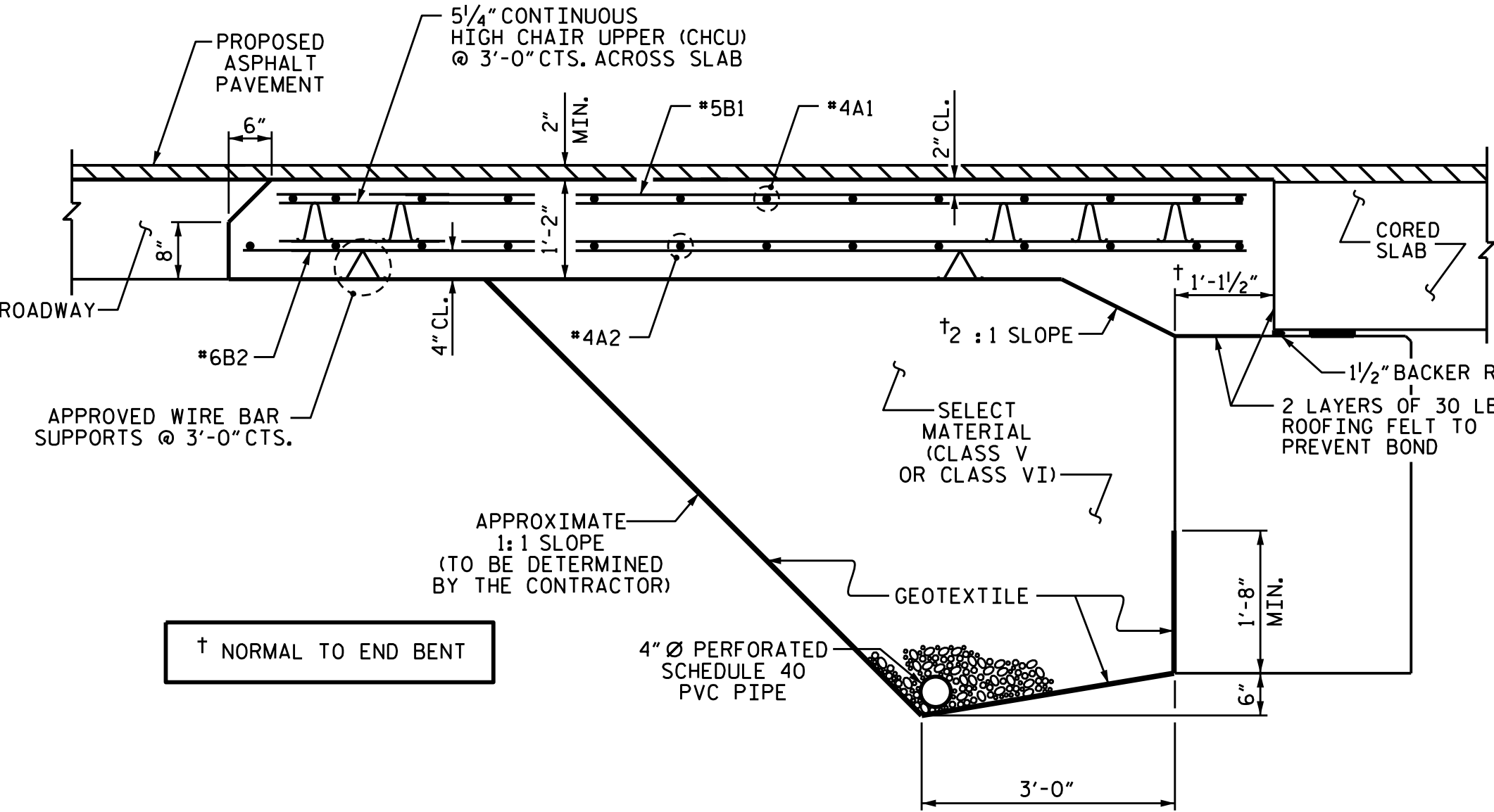
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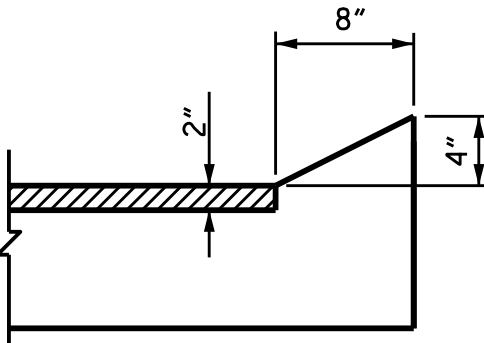
PLAN @ END BENT #1
PLAN @ END BENT #2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB

(TYPE II - MODIFIED APPROACH FILL)



SECTION N-N

CURB DETAILS

SPlice LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	1'-11"	1'-7"
#5	2'-5"	2'-0"
#6	3'-7"	2'-5"

ASSEMBLED BY : THA	DATE : 12/24
CHECKED BY : SK	DATE : 12/24
DRAWN BY : SHS/MAA 5-09	REV. 12-17
CHECKED BY : BCH 5-09	REV. 08-19
	MAA/THC BNB/THC

