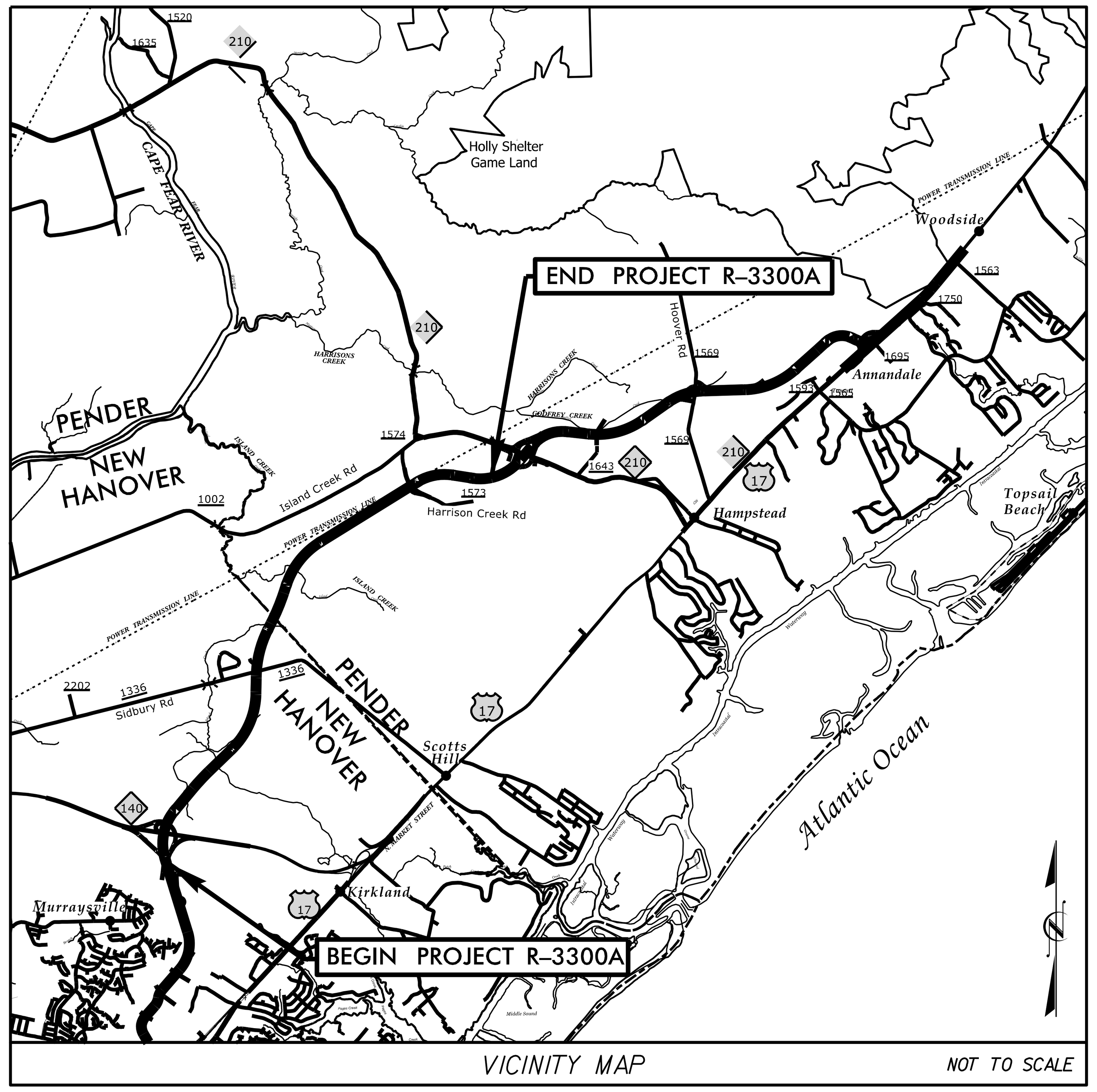
09/08/99

TIP PROJECT: R-3300A

CONTRACT: C205072

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

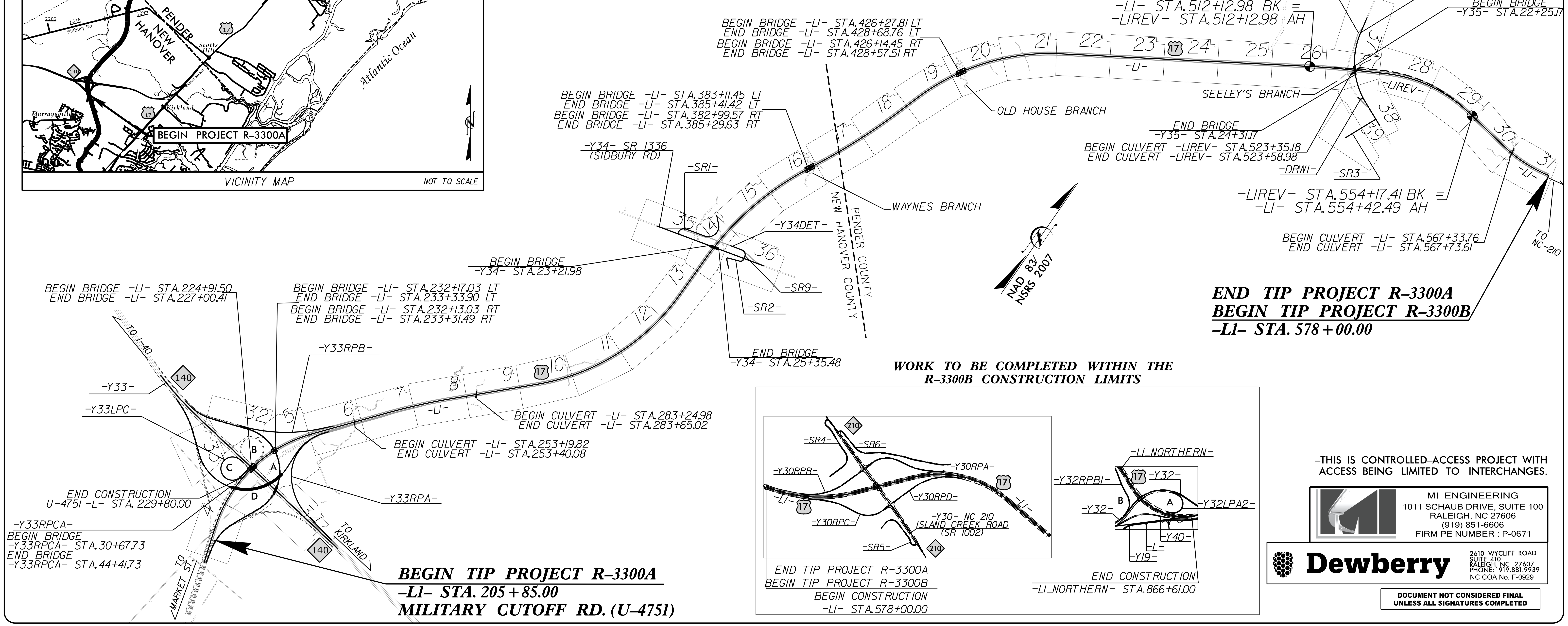
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3300A	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
40237.1.3	N/A	PE
40237.2.4	N/A	R/W
40237.2.6	N/A	UTILITIES
40237.3.2	N/A	CONST

NEW HANOVER & PENDER COUNTIES

LOCATION: US 17 HAMPSTEAD BYPASS FROM US 17 BYPASS SOUTH OF HAMPSTEAD TO NC 210

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES, RETAINING WALL, AND CULVERTS



-THIS IS CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 0 50 100
PLANS

50 0 50 100
PROFILE (HORIZONTAL)

10 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2016 = N/A
ADT 2040 = 54,800
K = 8 %
D = 60 %
T = 6 % *
V = 70 MPH
*(TTST 2% + DUALS 4%)
FUNC CLASS = FREEWAY
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3300A	=	6.869 MILES
LENGTH STRUCTURE TIP PROJECT R-3300A (NORTHBOUND LANES STATIONS USED)	=	0.175 MILES
TOTAL LENGTH TIP PROJECT R-3300A	=	7.044 MILES

PREPARED IN THE OFFICE OF:
Stantec
STANTEC CONSULTING
801 Jones Franklin Road |Suite 300| Raleigh, NC 27606
Tel. (919) 851-6866 | Fax. (919) 851-7024 | www.stantec.com
License No. F-0672

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 1, 2019

LETTING DATE:
JULY 15, 2025

KATRINA N. HAZEL, P.E.
PROJECT DESIGN ENGINEER

TRACE HOWELL, P.E.
NCDOT DIVISION 3 CONTACT

HYDRAULICS ENGINEERS

NORTH CAROLINA PROFESSIONAL SEAL 33246 ENGINEER LINDA M. JOHNS
DocuSigned by: Linda Johns 4/10/2025 P.E.

NORTH CAROLINA PROFESSIONAL SEAL 028933 ENGINEER ANDREA S. HAYDEN
Signed by: Andrea Hayden 4/8/2025 P.E.
FE616A0228254F1...

SIGNATURES:

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034404 ENGINEER KATRINA N. HAZEL
4/8/2025
SIGNATURE: Signed by: Katrina N Hazel P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

4/8/2025
U:\Roadway\Proj\R3300A_rdy_tsh.dgn
khazel

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034404 ENGINEER KATRINA N. HAZEL

5/14/2025

Signed by: Katrina N Hazel

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS

GENERAL NOTES:

2024 SPECIFICATIONS
EFFECTIVE: 01-16-2024
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 MODIFIED METHOD III.

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01 AND STD. NO. 560.02

SIDE ROADS:

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

SUBSURFACE DRAINS:

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

STREET TURNOUT:

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

GUARDRAIL:

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

TEMPORARY SHORING:

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

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE: FOUR COUNTY EMC -

DISTRIBUTION- POWER, DUKE ENERGY - TRANSMISSION & DISTRIBUTION - POWER,

PIEDMONT NATURAL GAS, PENDER COUNTY - WATER, AT&T

TELECOMMUNICATIONS, SPECTRUM - TELECOMMUNICATIONS, DUKE FIBER

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

EFF. 01-16-2024
REV.

2024 ROADWAY ENGLISH STANDARD 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	
200.03	Method of Clearing - Method III Modified
225.01	Guide for Grading Subgrade - Interstate and Freeway
225.02	Guide for Grading Subgrade - Secondary and Local
225.03	Deceleration and Acceleration Lanes
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.05	Method of Obtaining Superelevation - Divided Highways
225.06	Method of Grading Sight Distance at Intersections
235.01	Embankment Monitoring
DIVISION 3 - PIPE CULVERTS	
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
423.01	Bridge Approach Fills - Type 1 Approach Fill for Bridge Abutment
423.02	Bridge Approach Fills - Type 1A Alternate Approach Fill for Integral Bridge Abutment
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
560.02	Method of Shoulder Construction - High Side of Superelevated Curve - Method II
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
610.03	Guide for Paving Shoulders Under Bridges - Method III
654.01	Pavement Repairs
665.01	Asphalt Shoulders - Milled Rumble Strips
665.02	Limits for Asphalt Shoulders - Milled Rumble Strips
DIVISION 8 - INCIDENTALS	
806.03	Concrete Contol of Access Marker
815.02	Subsurface Drain
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.21	Reinforced Concrete Endwall - for Single 54" Pipe 90 Skew
838.27	Reinforced Concrete Endwall - for Single 60" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
838.51	Reinforced Brick Endwall - for Single 54" Pipe 90 Skew
838.57	Reinforced Brick Endwall - for Single 60" Pipe 90 Skew
838.75	Notes for Reinforced Brick Endwall - Std. Dwg 838.51 thru 838.70
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.17	Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.19	Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.20	Frames and Wide Slot Flat Grates
840.22	Frames and Wide Slot Sag Grates
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.26	Brick Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.28	Brick Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.36	Traffic Bearing Grated Drop Inlet - for Steel (840.37) Double Frame and Grates
840.37	Steel Grate and Frame
840.45	Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.04	Street Turnout
857.01	Precast Reinforced Concrete Barrier - 41" Single Faced
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
862.04	Anchoring End of Guardrail - for B-77 and B-83 Anchor Units
865.01	Cable Guiderail
866.02	Woven Wire Fence - with Wood Post
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

5/14/2025
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kbaz1

9/10/2021

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	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) — EIP
- Computed Property Corner
- Existing Concrete Monument (ECM) — 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
- 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.
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

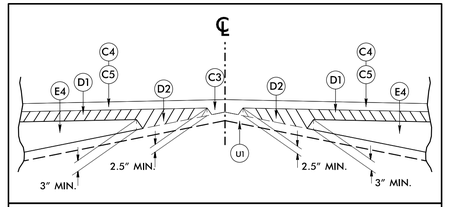
6/2/99

PAVEMENT SCHEDULE

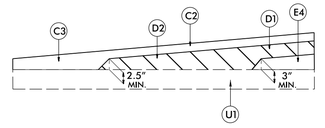
(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1.5″ ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	J1	6″ AGGREGATE BASE COURSE.
C2	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	L1	PROPOSED 3.0″ CLASS IV AGGREGATE STABILIZATION.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1.5″ IN DEPTH.	R1	2′-6″ CONCRETE CURB AND GUTTER.
C4	PROP. APPROX. 1.5″ ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R2	SHOULDER BERM GUTTER.
C5	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.	T1	EARTH MATERIAL.
C6	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 2″ IN DEPTH.	T2	SHOULDER RECONSTRUCTION.
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U1	EXISTING PAVEMENT.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE 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 2½″ IN DEPTH OR GREATER THAN 4″ IN DEPTH.	V1	INCIDENTAL MILLING ASPHALT PAVEMENT
E1	PROP. APPROX. 3.5″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.	V2	1.5″ MILLING ASPHALT PAVEMENT
E2	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	V3	3.0″ MILLING ASPHALT PAVEMENT
E3	PROP. APPROX. 7″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, TO BE PLACED IN TWO LAYERS. THE FIRST LAYER OF 4″ AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. AND THE SECOND LAYER OF 3″ AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAILS).
E4	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3″ IN DEPTH OR GREATER THAN 5½″ IN DEPTH.	W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAILS).

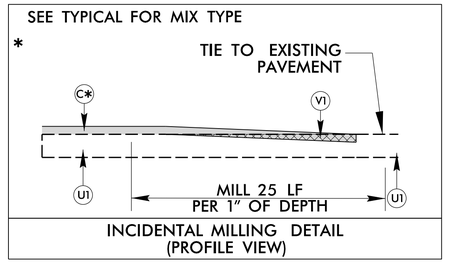
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



W1: WEDGING DETAIL FOR RESURFACING



W2: WEDGING DETAIL FOR RESURFACING



INCIDENTAL MILLING DETAIL (PROFILE VIEW)

NOTE: AS DIRECTED BY THE ENGINEER, STABILIZE SANDY SUBGRADE MATERIAL WITH CLASS IV AGGREGATE TO PREVENT RUTTING OF THE SUBGRADE PRIOR TO PAVING DIRECTLY ON THE SUBGRADE.

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2A-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034404 ENGINEER KATRINA N. HAGEL

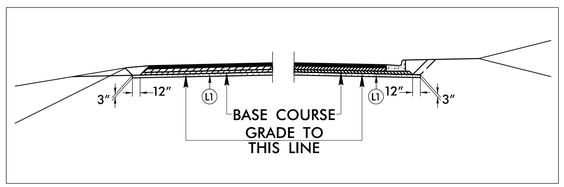
Signed by: Katrina N Hagel 4/8/2025

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 044590 ENGINEER ANDREW D. WARGO

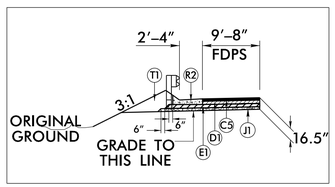
DocuSigned by: Andrew D. Wargo 4/8/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



CLASS IV AGGREGATE STABILIZATION – STABILIZATION OF COASTAL PLAINS SANDS

–Y33– STA. 69+09 TO 102+75
–Y33LPC– STA. 8+06 TO 21+45
–Y33RPA– STA. 5+00 TO 33+79
–Y33RPB– STA. 5+00 TO 24+51
–Y33RPCA– STA. 22+61 TO 30+67.73 BEGIN BRIDGE
–Y33RPCA– STA. 44+41.73 END BRIDGE TO 59+99
–Y34– STA. 11+50 TO 23+21.98 BEGIN BRIDGE
–Y34– STA. 25+35.48 END BRIDGE TO 36+20
–Y35– STA. 12+60 TO 22+25.17 BEGIN BRIDGE
–Y35– STA. 24+31.17 END BRIDGE TO 37+25
–DRW1– STA. 10+10 TO 11+58
TURNAROUND –Y35– STA. 25+65

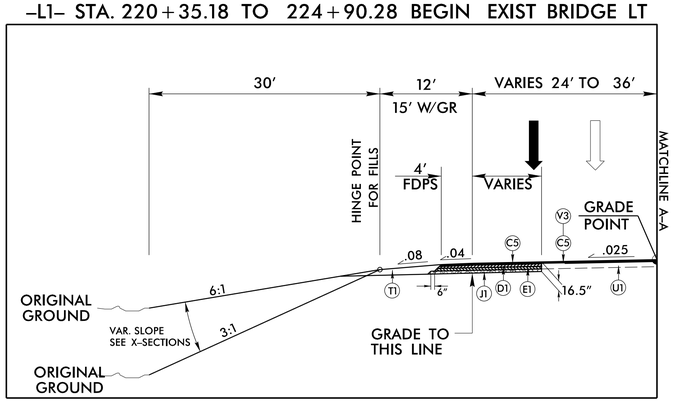


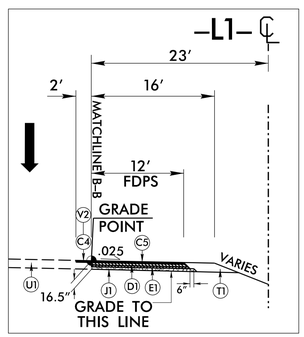
USE INSET DETAIL FOR –L1– SBG LOCATIONS IN CONJUNCTION WITH TYPICAL SECTION NO. 1

TYPICAL SECTION NO. 1–A

USE TYPICAL SECTION NO. 1–A IN CONJUNCTION WITH TYPICAL SECTION NO. 1

–L1– STA. 220+35.18 TO 224+90.28 BEGIN EXIST BRIDGE LT





TYPICAL SECTION NO. 1–B

USE TYPICAL SECTION NO. 1–B IN CONJUNCTION WITH TYPICAL SECTION NO. 1

–L1– STA. 228+71.58 TO 232+17.03 BEGIN BRIDGE LT

NOTES:
SEE PLANS FOR PAVING TO THE FACE OF GUARDRAIL LOCATIONS.
SEE PLANS FOR CABLE GUIDERAIL LOCATIONS

6/2/99

PAVEMENT DESIGN	
C1	PROP. APPROX. 1.5", TYPE S9.5B
C2	PROP. APPROX. 3", TYPE S9.5B
C3	PROP. VAR. DEPTH, TYPE S9.5B
C4	PROP. APPROX. 1.5", TYPE S9.5C
C5	PROP. APPROX. 3", TYPE S9.5C
C6	PROP. VAR. DEPTH, TYPE S9.5C
D1	PROP. APPROX. 4", I19.0C
D2	PROP. VAR. DEPTH, TYPE I19.0C
E1	PROP. APPROX. 3.5", TYPE B25.0C
E2	PROP. APPROX. 4", TYPE B25.0C
E3	PROP. APPROX. 7", TYPE B25.0C
E4	PROP. VAR. DEPTH, TYPE B25.0C
J1	PROP. 6" ABC
L1	PROP. 3.0" CLASS IV AGGREGATE STABILIZATION.
R1	2'-6" CONCRETE CURB AND GUTTER
R2	SHOULDER BERM GUTTER
T1	EARTH MATERIAL
T2	SHOULDER RECONSTRUCTION
U1	EXISTING PAVEMENT
V1	INCIDENTAL MILLING ASPHALT PAVEMENT
V2	1.5" MILLING ASPHALT PAVEMENT
V3	3" MILLING ASPHALT PAVEMENT
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET NO. 2A-1)
W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET NO. 2A-1)

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

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2A-2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034404 ENGINEER KATRINA N. HAGEL

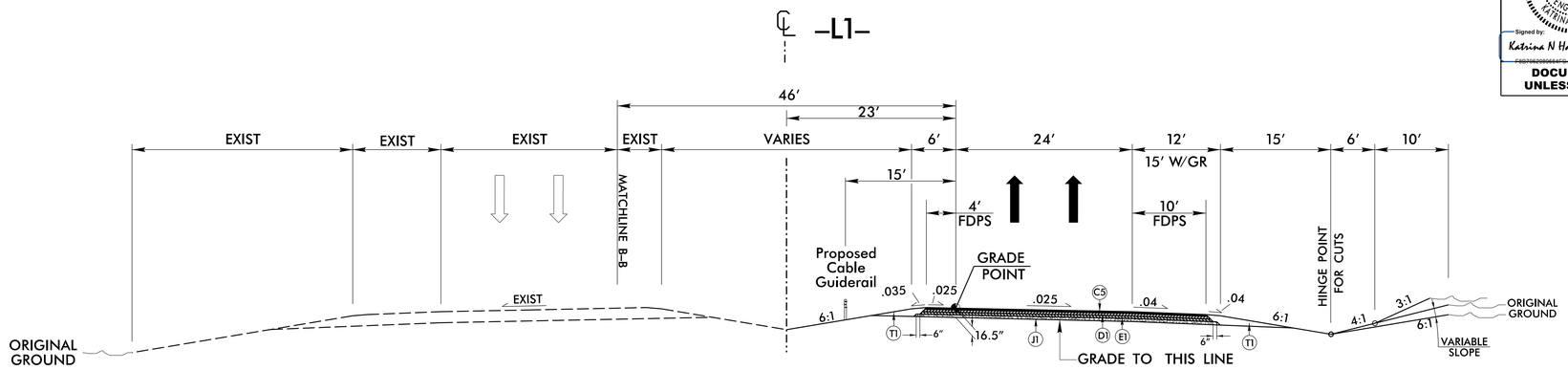
Signed by: Katrina N Hagel 4/8/2025

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 044590 ENGINEER ANDREW D. WARGO

DocuSigned by: Andrew D. Wargo 4/8/2025

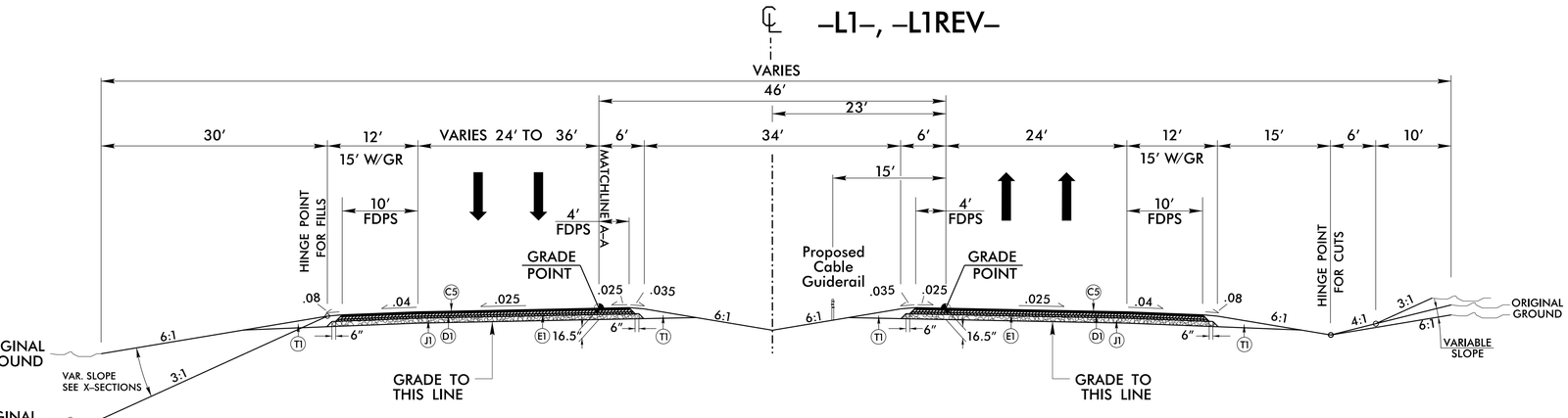
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

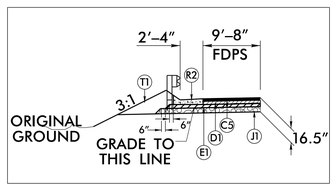


TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

–L1– STA. 205+85.00 TO 224+90.28 BEGIN EXIST BRIDGE LT
–L1– STA. 205+85.00 TO 224+91.50 BEGIN BRIDGE RT
–L1– STA. 226+95.67 END EXIST BRIDGE TO 229+80.28 LT
–L1– STA. 227+00.41 END BRIDGE TO 229+80.28 RT





USE INSET DETAIL FOR –L1–, –L1REV– SBG LOCATIONS IN CONJUNCTION WITH TYPICAL SECTION NO. 2

TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

–L1– STA. 229+80.28 TO 232+17.03 BEGIN BRIDGE LT
–L1– STA. 229+80.28 TO 232+13.03 BEGIN BRIDGE RT
–L1– STA. 233+33.90 END BRIDGE TO 383+11.45 BEGIN BRIDGE LT
–L1– STA. 233+31.51 END BRIDGE TO 382+99.57 BEGIN BRIDGE RT
–L1– STA. 385+41.42 END BRIDGE TO 426+27.81 BEGIN BRIDGE LT
–L1– STA. 385+29.63 END BRIDGE TO 426+14.45 BEGIN BRIDGE RT
–L1– STA. 428+68.76 END BRIDGE TO –L1– STA. 512+12.98 LT
–L1– STA. 428+57.51 END BRIDGE TO –L1– STA. 512+12.98 RT
–L1REV– STA. 512+12.98 TO –L1REV– 554+17.41
–L1– STA. 554+42.49 TO 578+00.00

NOTES:
SEE PLANS FOR PAVING TO THE FACE OF GUARDRAIL LOCATIONS.
SEE PLANS FOR CABLE GUIDERAIL LOCATIONS

4/8/2025
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khazel

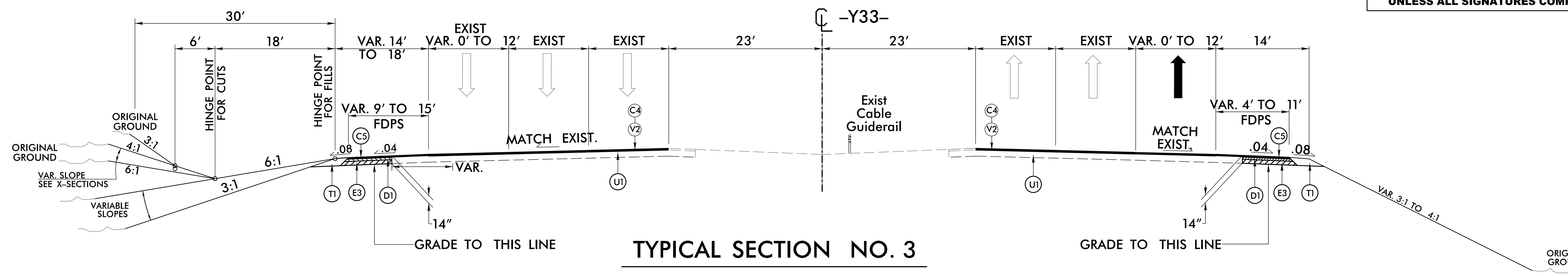
6/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2A-3
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 034404 ENGINEER KATRINA N. HAZEL 4/8/2025 Signed by: Katrina N Hazel	NORTH CAROLINA PROFESSIONAL SEAL 044590 ENGINEER ANDREW D. WARGO 4/8/2025 DocuSigned by: Andrew D. Wargo

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT DESIGN	
C1	PROP. APPROX. 1.5", TYPE S9.5B
C2	PROP. APPROX. 3", TYPE S9.5B
C3	PROP. VAR. DEPTH, TYPE S9.5B
C4	PROP. APPROX. 1.5", TYPE S9.5C
C5	PROP. APPROX. 3", TYPE S9.5C
C6	PROP. VAR. DEPTH, TYPE S9.5C
D1	PROP. APPROX. 4", I19.0C
D2	PROP. VAR. DEPTH, TYPE I19.0C
E1	PROP. APPROX. 3.5", TYPE B25.0C
E2	PROP. APPROX. 4", TYPE B25.0C
E3	PROP. APPROX. 7", TYPE B25.0C
E4	PROP. VAR. DEPTH, TYPE B25.0C
J1	PROP. 6" ABC
L1	PROP. 3.0" CLASS IV AGGREGATE STABILIZATION.
R1	2'-6" CONCRETE CURB AND GUTTER
R2	SHOULDER BERM GUTTER
T1	EARTH MATERIAL
T2	SHOULDER RECONSTRUCTION
U1	EXISTING PAVEMENT
V1	INCIDENTAL MILLING ASPHALT PAVEMENT
V2	1.5" MILLING ASPHALT PAVEMENT
V3	3" MILLING ASPHALT PAVEMENT
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET NO. 2A-1)
W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET NO. 2A-1)

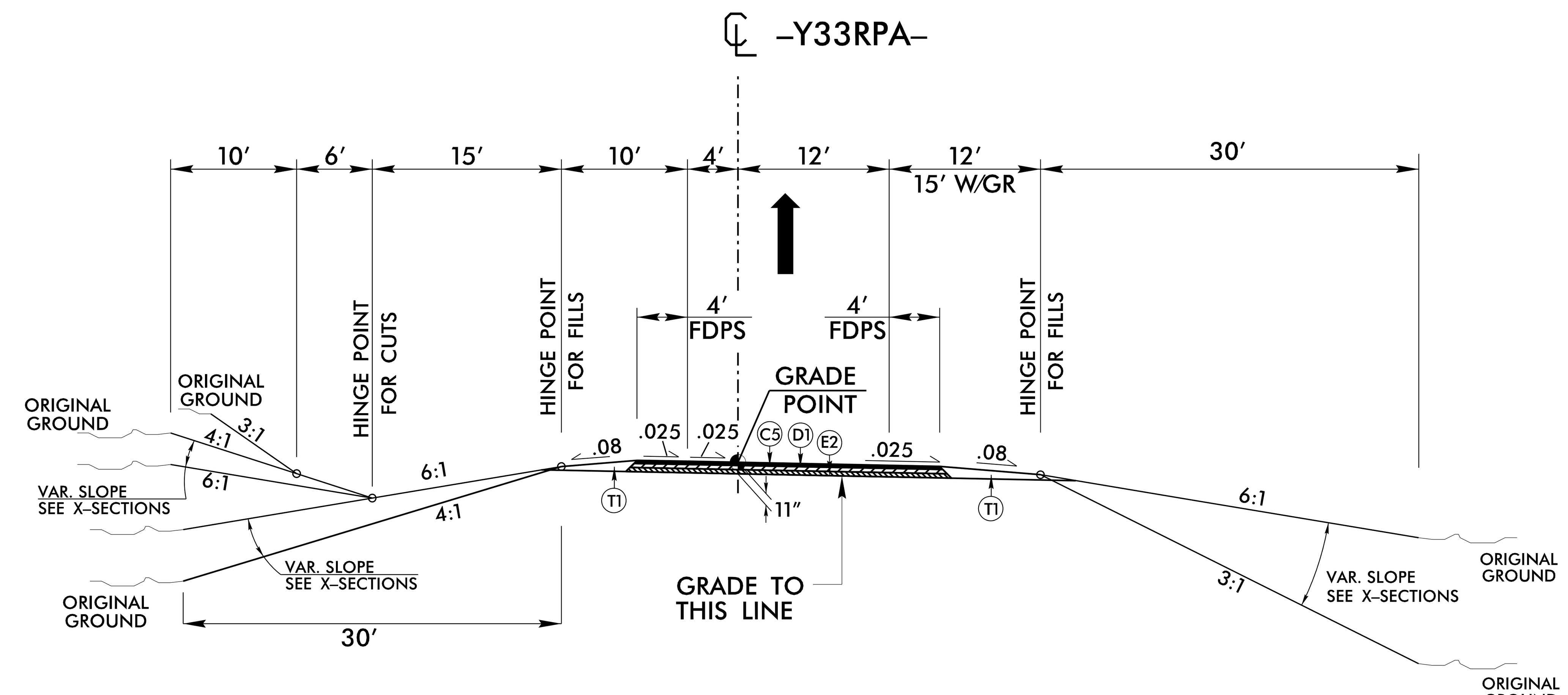
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

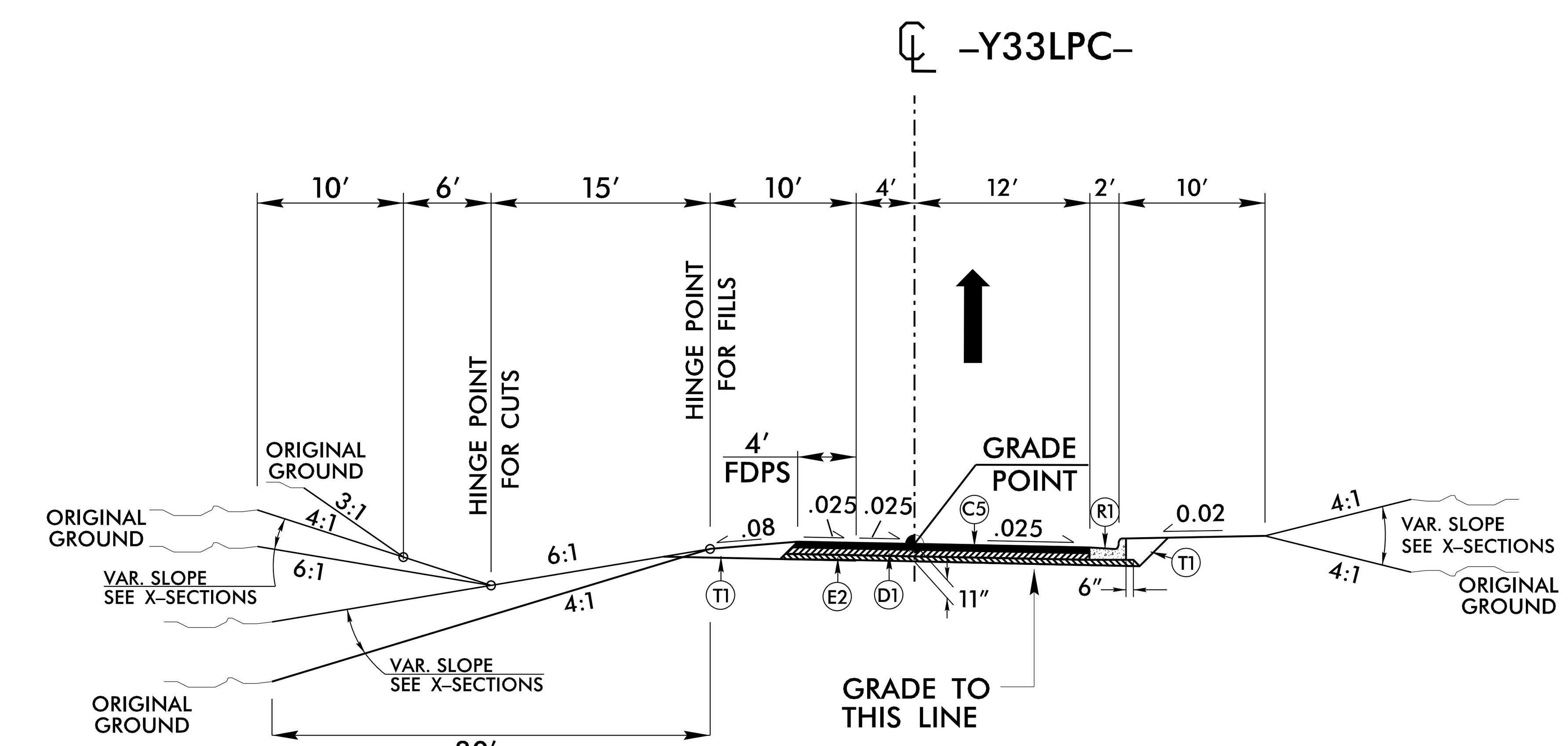
-Y33- STA. 69+09.36 TO 102+75.11



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

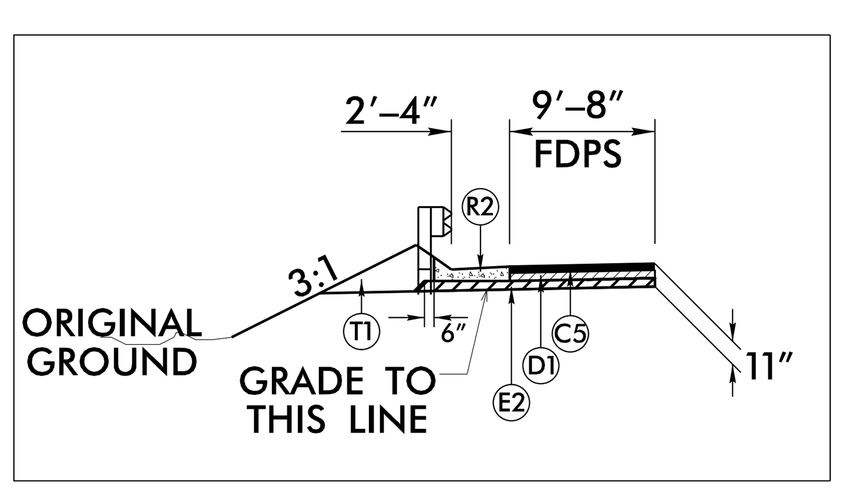
-Y33RPA- STA. 5+00.00 TO 33+78.64



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5

-Y33LPC- STA. 5+00.00 TO 21+45.31



USE INSET DETAIL FOR -Y33RPA-, -Y33RPB-, -Y33RPCA- SBG LOCATIONS

NOTES:
SEE PLANS FOR PAVING TO THE FACE OF GUARDRAIL LOCATIONS.

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2A-4

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034404 ENGINEER KATRINA N. HAGEL

Signed by: Katrina N Hagel 6/2/2025

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 044590 ENGINEER ANTHONY D. WARGO

DocuSigned by: Andrew D. Wargo 6/2/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT DESIGN	
C1	PROP. APPROX. 1.5", TYPE S9.5B
C2	PROP. APPROX. 3", TYPE S9.5B
C3	PROP. VAR. DEPTH, TYPE S9.5B
C4	PROP. APPROX. 1.5", TYPE S9.5C
C5	PROP. APPROX. 3", TYPE S9.5C
C6	PROP. VAR. DEPTH, TYPE S9.5C
D1	PROP. APPROX. 4", I19.0C
D2	PROP. VAR. DEPTH, TYPE I19.0C
E1	PROP. APPROX. 3.5", TYPE B25.0C
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E4	PROP. VAR. DEPTH, TYPE B25.0C
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L1	PROP. 3.0" CLASS IV AGGREGATE STABILIZATION.
R1	2'-6" CONCRETE CURB AND GUTTER
R2	SHOULDER BERM GUTTER
T1	EARTH MATERIAL
T2	SHOULDER RECONSTRUCTION
U1	EXISTING PAVEMENT
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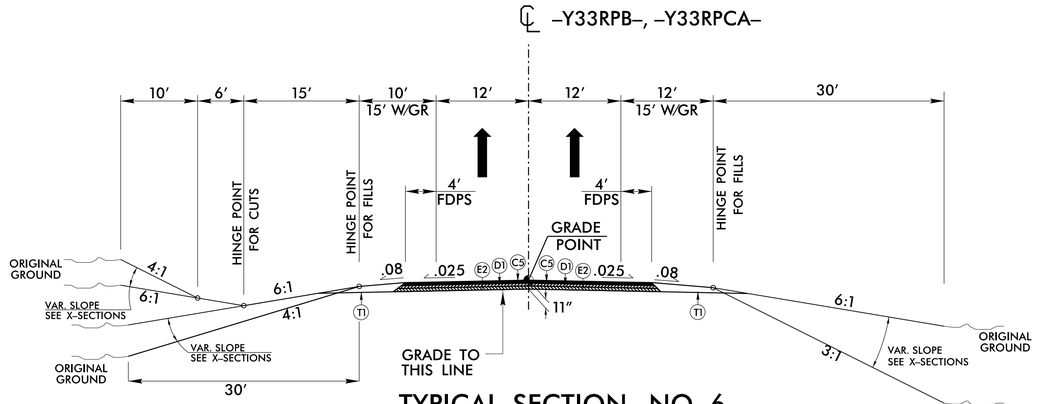
V2	1.5" MILLING ASPHALT PAVEMENT
V3	3" MILLING ASPHALT PAVEMENT
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET NO. 2A-1)
W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET NO. 2A-1)

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

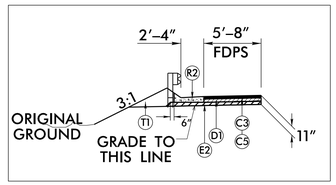
NOTES:
SEE PLANS FOR PAVING TO THE FACE OF GUARDRAIL LOCATIONS.



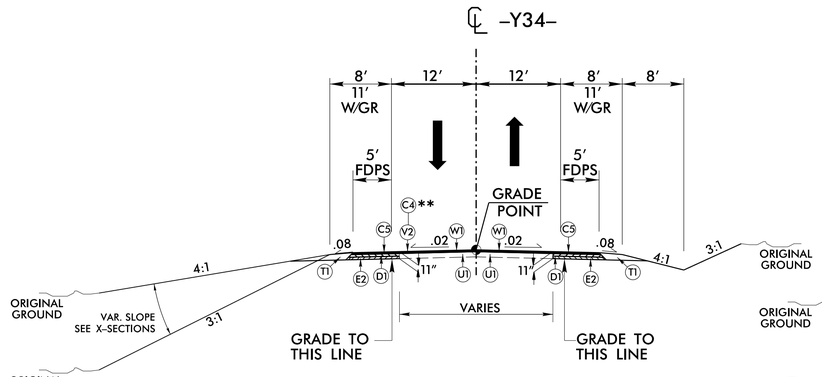
TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6

–Y33RPB– STA. 5+00.00 TO 24+50.53
–Y33RPCA– STA. 22+61.33 TO 30+67.73 BEGIN BRIDGE
–Y33RPCA– STA. 44+41.73 END BRIDGE TO 59+98.99



USE INSET DETAIL FOR
–Y34–, –Y35– SBG LOCATIONS

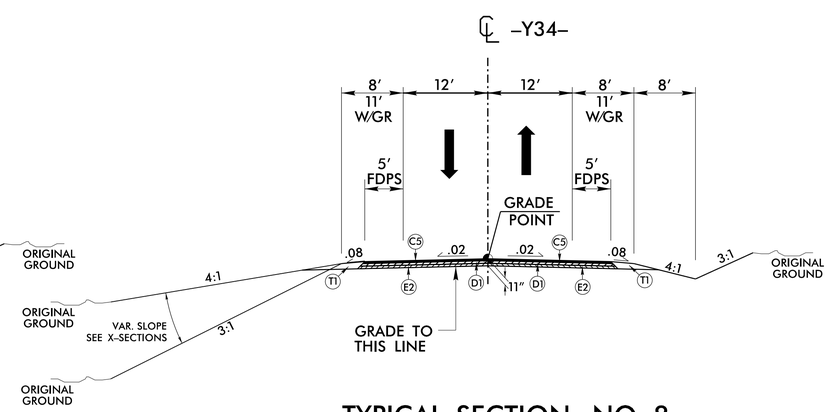


TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7

–Y34– STA. 11+50.00 TO 13+00.00
–Y34– STA. 34+50.00 TO 36+20.00

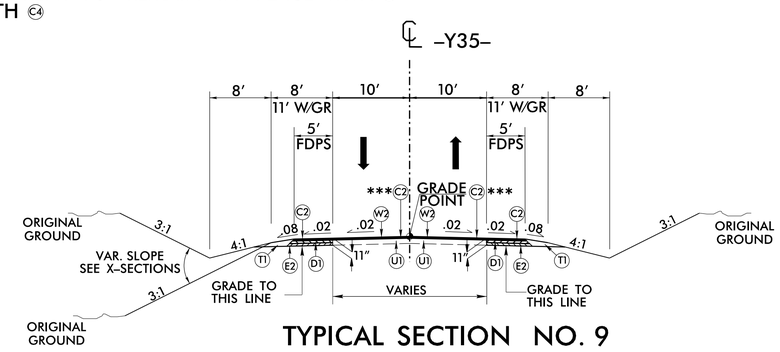
** MILL EXISTING PAVEMENT TO REMAIN IN PLACE WITH V2 AND REPLACE WITH C4



TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8

–Y34– STA. 13+00.00 TO 23+21.98 BEGIN BRIDGE
–Y34– STA. 25+35.48 END BRIDGE TO 34+50.00

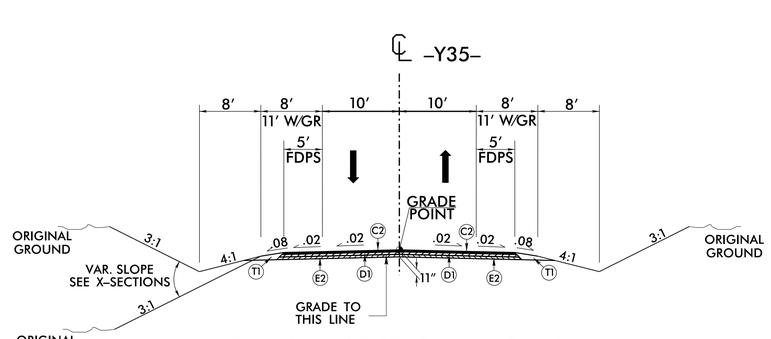


TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9

*** –Y35– STA. 12+00.00 TO 13+00.00
–Y35– STA. 13+00.00 TO 14+05.00
–Y35– STA. 36+00.00 TO 37+25.00

*** OVERLAY EXISTING PAVEMENT TO REMAIN IN PLACE WITH C2



TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10

–Y35– STA. 14+05.00 TO 22+25.17 BEGIN BRIDGE
–Y35– STA. 24+31.17 END BRIDGE TO 36+00.00

6/2/99

4/8/2025
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kbaze

6/2/99

PAVEMENT DESIGN	
C1	PROP. APPROX. 1.5", TYPE S9.5B
C2	PROP. APPROX. 3", TYPE S9.5B
C3	PROP. VAR. DEPTH, TYPE S9.5B
C4	PROP. APPROX. 1.5", TYPE S9.5C
C5	PROP. APPROX. 3", TYPE S9.5C
C6	PROP. VAR. DEPTH, TYPE S9.5C
D1	PROP. APPROX. 4", I19.0C
D2	PROP. VAR. DEPTH, TYPE I19.0C
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E2	PROP. APPROX. 4", TYPE B25.0C
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E4	PROP. VAR. DEPTH, TYPE B25.0C
J1	PROP. 6" ABC
L1	PROP. 3.0" CLASS IV AGGREGATE STABILIZATION.
R1	2'-6" CONCRETE CURB AND GUTTER
R2	SHOULDER BERM GUTTER
T1	EARTH MATERIAL
T2	SHOULDER RECONSTRUCTION
U1	EXISTING PAVEMENT
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V2	1.5" MILLING ASPHALT PAVEMENT
V3	3" MILLING ASPHALT PAVEMENT
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET NO. 2A-1)
W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET NO. 2A-1)

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

NOTES:
SEE PLANS FOR PAVING TO THE FACE OF GUARDRAIL LOCATIONS.

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2A-5

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034404 ENGINEER KATRINA N. HAGEL

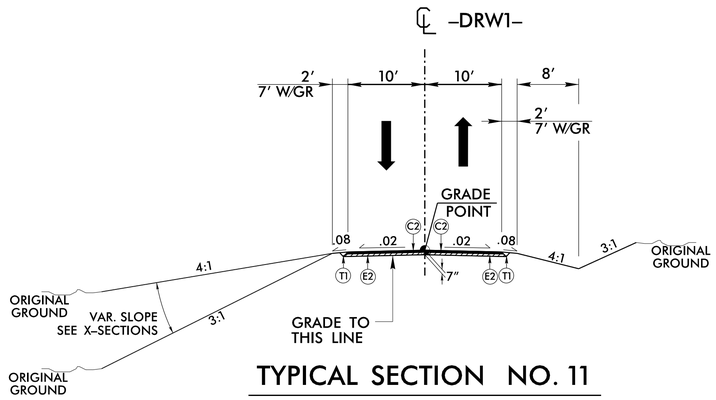
Signed by: Katrina N Hagel 6/30/2025

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 044590 ENGINEER ANDREW D. WARGO

DocuSigned by: Andrew D. Wargo 6/30/2025

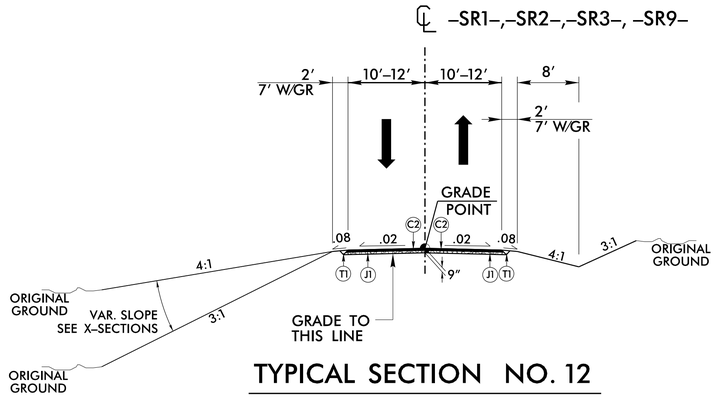
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11

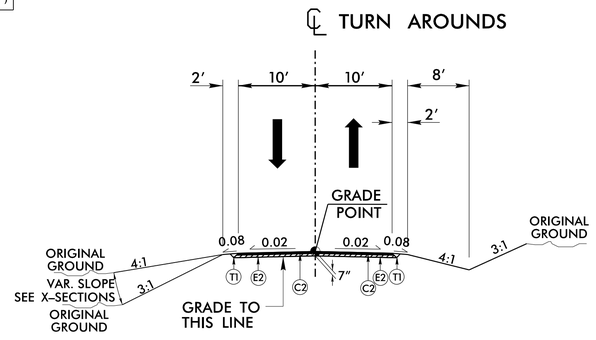
–DRW1– STA. 10+10.00 TO 11+57.76



TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12

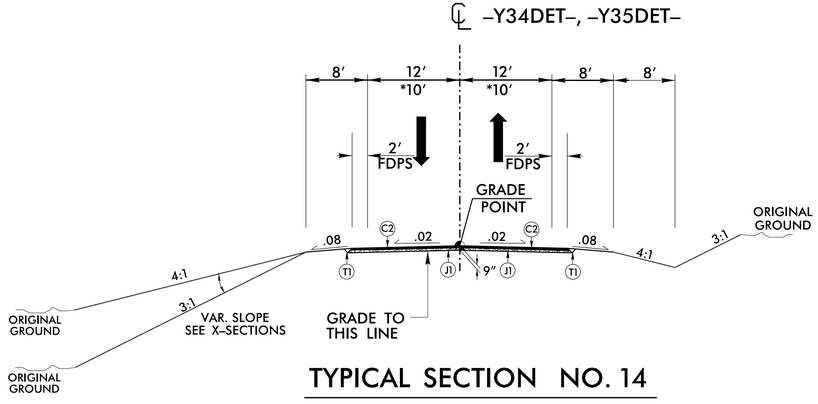
–SR1– STA. 10+12.00 TO 23+00.00
–SR2– STA. 10+12.00 TO 10+51.23
–SR2– STA. 10+51.23 TO 14+68.45 (GRAVEL ONLY)
–SR3– STA. 10+10.00 TO 18+34.64
–SR9– STA. 10+95.00 TO 15+39.11



TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13

–Y35– STA. 25+65.00 RT



TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14

–Y34DET– STA. 11+32.04 TO 36+18.96
*–Y35DET– STA. 12+93.10 TO 17+81.56

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 034404 KATRINA N. HAZEL — 4/8/2025 — Katrina N Hazel

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 044590 ANDREW D. WARGO — 4/8/2025 — Andrew D. Wargo

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEE PAVEMENT MARKING PLANS FOR DETAILS

PAVEMENT DESIGN	
C1	PROP. APPROX. 1.5", TYPE S9.5B
C2	PROP. APPROX. 3", TYPE S9.5B
C3	PROP. VAR. DEPTH, TYPE S9.5B
C4	PROP. APPROX. 1.5", TYPE S9.5C
C5	PROP. APPROX. 3", TYPE S9.5C
C6	PROP. VAR. DEPTH, TYPE S9.5C
D1	PROP. APPROX. 4", I19.0C
D2	PROP. VAR. DEPTH, TYPE I19.0C
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J1	PROP. 6" ABC
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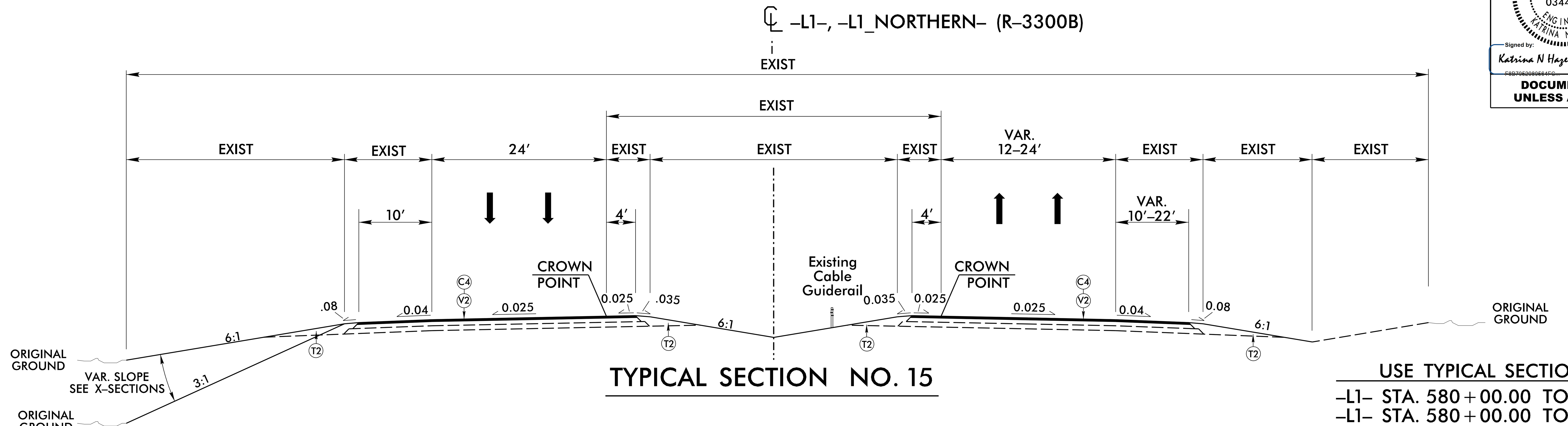
V2	1.5" MILLING ASPHALT PAVEMENT
V3	3" MILLING ASPHALT PAVEMENT
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET NO. 2A-1)
W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET NO. 2A-1)

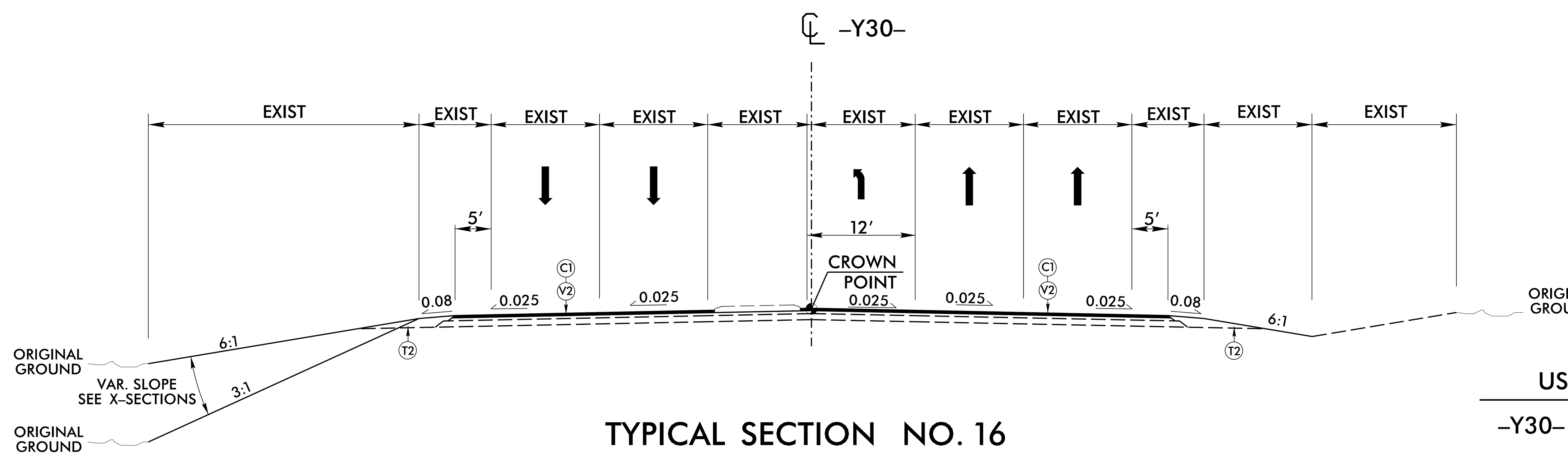
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 15

USE TYPICAL SECTION NO. 15

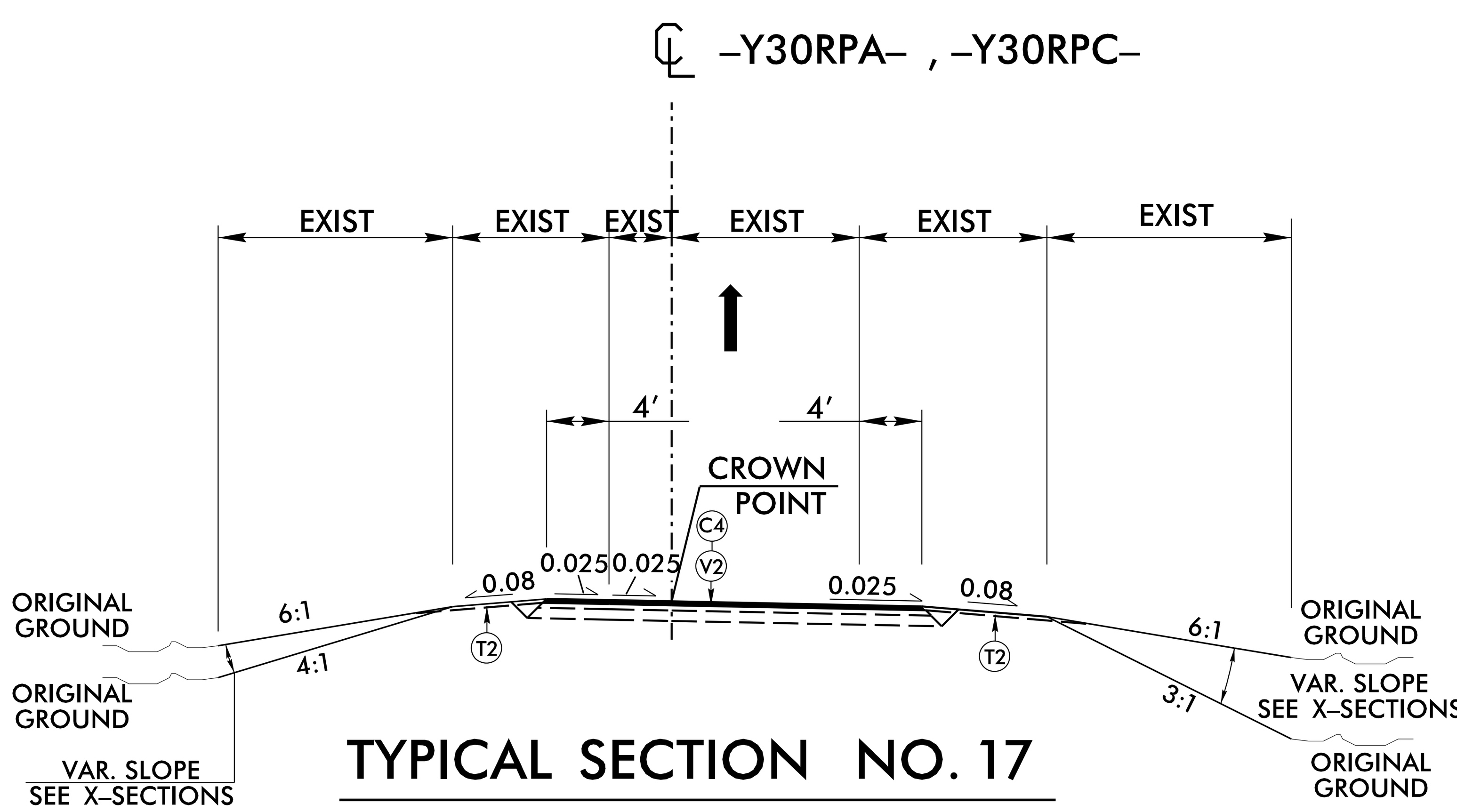
-L1- STA. 580+00.00 TO 650+00+/- LT
-L1- STA. 580+00.00 TO 620+73+/- RT
-L1_NORTHERN- 854+00+/- TO 866+61+/-



TYPICAL SECTION NO. 16

USE TYPICAL SECTION NO. 16

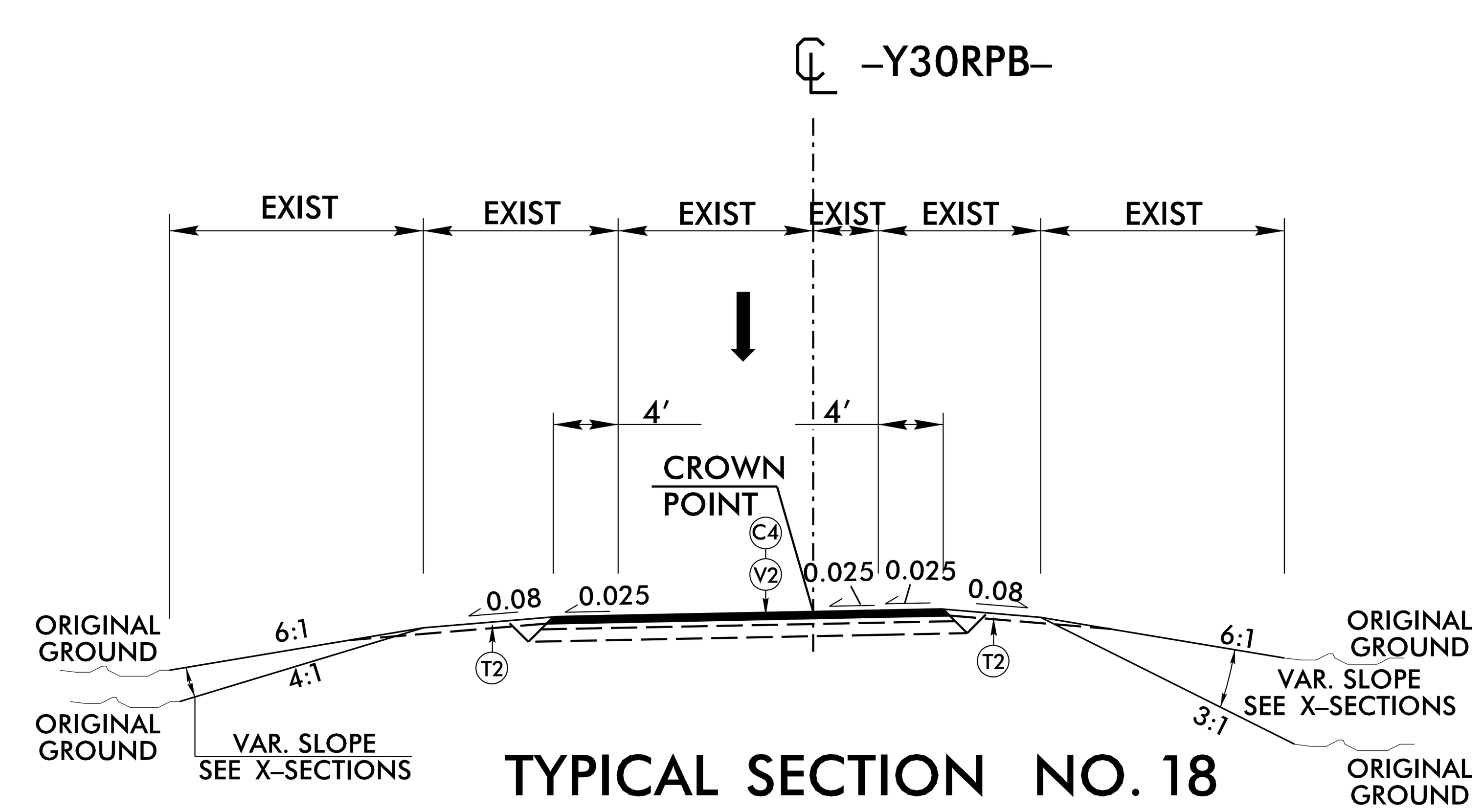
-Y30- STA. 30+25+/- TO 40+32+/-



TYPICAL SECTION NO. 17

USE TYPICAL SECTION NO. 17

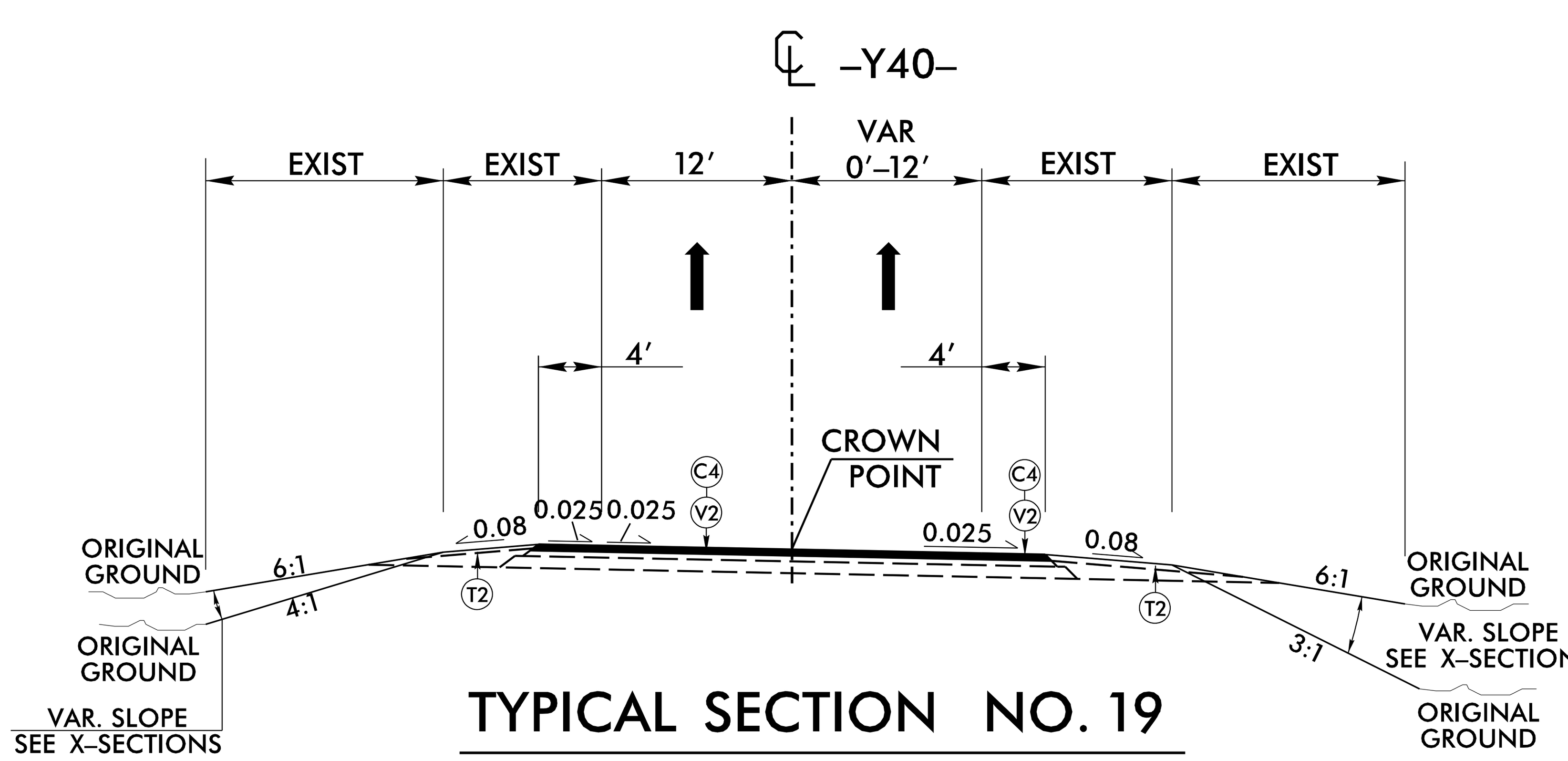
-Y30RPA- STA. 5+00.00 TO 8+32+/-
-Y30RPC- STA. 5+00.00 TO 25+78+/-



TYPICAL SECTION NO. 18

USE TYPICAL SECTION NO. 18

-Y30RPB- STA. 5+00.00 TO 21+74+/-



TYPICAL SECTION NO. 19

USE TYPICAL SECTION NO. 19

-Y40- STA. 238+92+/- TO 256+67+/-

5/14/99

CURVE DATA SHEET

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
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Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2B-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034404 ENGINEER KATRINA N HEGDE

Signed by: Katrina N Hegde
Date: 4/8/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-LI-

PIs Sta 209+35.33	PI Sta 226+97.66	PIs Sta 242+23.74	PI Sta 269+42.35	PIs Sta 298+65.35	PI Sta 320+01.95	PIs Sta 339+41.64	PIs Sta 350+81.32	PI Sta 367+02.87	PIs Sta 382+74.63	PI Sta 398+60.28
Θs = 2° 16' 29.9"	△ = 52° 22' 55.5" (RT)	Θs = 2° 16' 29.9"	△ = 6° 00' 27.9" (RT)	Θs = 0° 58' 42.5"	△ = 43° 00' 47.1" (LT)	Θs = 0° 58' 42.6"	Θs = 0° 32' 30.0"	△ = 24° 54' 10.5" (RT)	Θs = 0° 32' 30.0"	△ = 8° 29' 51.4" (LT)
Ls = 270.00'	D = 1° 41' 06.6"	Ls = 270.00'	D = 0° 23' 23.2"	Ls = 180.00'	D = 1° 05' 13.9"	Ls = 180.00'	Ls = 135.00'	D = 0° 48' 08.9"	Ls = 135.00'	D = 0° 23' 23.2"
LT = 180.01'	L = 3,108.42'	LT = 180.01'	L = 1,541.37'	LT = 120.00'	L = 3,956.29'	LT = 120.00'	LT = 90.00'	L = 3,103.31'	LT = 90.00'	L = 2,180.17'
ST = 90.01'	T = 1,672.35'	ST = 90.01'	T = 771.39'	ST = 60.00'	T = 2,076.60'	ST = 60.00'	ST = 45.00'	T = 1,576.55'	ST = 45.00'	T = 1,092.09'
	R = 3,400.00'		R = 14,700.00'		R = 5,270.00'			R = 7,140.00'		R = 14,700.00'
	SE = .06		SE = .025 (NC)		SE = .04			SE = .03		SE = .025 (NC)
	RO = 270				RO = 180			RO = 135		

PIs Sta 415+58.47	PI Sta 434+32.23	PIs Sta 451+72.16
Θs = 0° 58' 42.6"	△ = 37° 59' 01.2" (RT)	Θs = 0° 58' 42.6"
Ls = 180.00'	D = 1° 05' 13.9"	Ls = 180.00'
LT = 120.00'	L = 3,493.69'	LT = 120.00'
ST = 60.00'	T = 1,813.77'	ST = 60.00'
	R = 5,270.00'	
	SE = .04	
	RO = 180	

-LIREV-

PI Sta 516+10.38	PIs Sta 530+82.90	PI Sta 541+88.86	PIs Sta 552+37.43
△ = 3° 05' 49.8" (RT)	Θs = 2° 16' 29.9"	△ = 33° 16' 27.3" (RT)	Θs = 2° 16' 29.9"
D = 0° 23' 23.2"	Ls = 270.00'	D = 1° 41' 06.6"	Ls = 270.00'
L = 794.62'	LT = 180.01'	L = 1,974.53'	LT = 180.01'
T = 397.41'	ST = 90.01'	T = 1,015.98'	ST = 90.01'
R = 14,700.00'		R = 3,400.00'	
SE = .025 (NC)		SE = .06	
		RO = 270	

PIs Sta 565+55.66	PI Sta 583+70.63
Θs = 2° 16' 29.9"	△ = 53° 48' 06.5" (LT)
Ls = 270.00'	D = 1° 41' 06.6"
LT = 180.01'	L = 3,192.66'
ST = 90.01'	T = 1,724.99'
	R = 3,400.00'
	SE = .06
	RO = 270
	LOCATED ON R-3300B

-Y33-

PI Sta 47+20.47
△ = 13° 25' 32.9" (LT)
D = 0° 44' 58.4"
L = 1,791.18'
T = 899.71'
R = 7,644.00'

-Y33LPC-

PIs Sta 5+50.00	PIs Sta 7+50.38	PI Sta 13+45.27	PIs Sta 20+12.79
Θs = 1° 14' 47.9"	Θs = 15° 20' 49.5"	△ = 234° 21' 41.1" (RT)	Θs = 20° 27' 46.0"
Ls = 150.00'	Ls = 150.00'	D = 20° 27' 46.0"	Ls = 200.00'
LT = 100.00'	LT = 100.38'	L = 1,145.31'	LT = 134.24'
ST = 50.00'	ST = 50.34'	T = 545.27'	ST = 67.49'
		R = 280.00'	
		SE = .08	
		RO = 146	

-Y33RPA-

PIs Sta 13+40.56	PI Sta 19+07.34	PIs Sta 24+46.05	PI Sta 29+07.46	PIs Sta 33+27.24
Θs = 2° 02' 46.6"	△ = 41° 43' 03.6" (RT)	Θs = 2° 02' 45.7"	△ = 45° 00' 00.0" (RT)	Θs = 2° 24' 40.6"
Ls = 100.00'	D = 4° 05' 33.2"	Ls = 100.00'	D = 5° 43' 46.5"	Ls = 100.00'
LT = 66.67'	L = 1,019.36'	LT = 52.81'	L = 785.40'	LT = 51.47'
ST = 33.34'	T = 533.46'	ST = 47.25'	T = 414.21'	ST = 48.60'
	R = 1,400.00'		R = 1,000.00'	
	SE = .065		SE = .08	
	RO = 100			

-Y33RPB-

PIs Sta 7+90.95	PI Sta 17+81.75	PIs Sta 27+37.18
Θs = 0° 42' 58.3"	△ = 26° 55' 21.6" (RT)	Θs = 0° 42' 58.3"
Ls = 100.00'	D = 1° 25' 56.6"	Ls = 100.00'
LT = 66.67'	L = 1,879.56'	LT = 66.67'
ST = 33.33'	T = 957.46'	ST = 33.33'
	R = 4,000.00'	
	SE = .03	
	RO = 200	

-Y33RPCA-

PIs Sta 5+56.00	PI Sta 9+79.39	PIs Sta 13+95.73	PIs Sta 19+57.75	PI Sta 42+77.62	PIs Sta 46+30.29	PIs Sta 50+44.46	PI Sta 54+58.54	PIs Sta 58+55.04
Θs = 1° 00' 09.6"	△ = 18° 42' 36.8" (RT)	Θs = 1° 00' 09.6"	Θs = 3° 29' 45.6"	△ = 125° 06' 21.9" (LT)	Θs = 3° 29' 45.6"	Θs = 5° 09' 23.8"	△ = 31° 49' 38.3" (RT)	Θs = 5° 09' 23.8"
Ls = 84.00'	D = 2° 23' 14.4"	Ls = 84.00'	Ls = 144.00'	D = 4° 51' 20.1"	Ls = 144.00'	Ls = 216.00'	D = 4° 46' 28.7"	Ls = 216.00'
LT = 56.00'	L = 783.73'	LT = 56.00'	LT = 96.02'	L = 2,576.55'	LT = 96.02'	LT = 144.06'	L = 666.59'	LT = 144.06'
ST = 28.00'	T = 395.39'	ST = 28.00'	ST = 48.02'	T = 2,271.89'	ST = 48.02'	ST = 72.06'	T = 342.14'	ST = 72.06'
	R = 2,400.00'			R = 1,180.00'			R = 1,200.00'	
	SE = .045			SE = .06			SE = .08	
	RO = 200			RO = 144			RO = 216	

-Y35-

PI Sta 23+50.61
△ = 54° 29' 00.0" (LT)
D = 3° 07' 51.3"
L = 1,740.17'
T = 942.18'
R = 1,830.00'
SE = .04
RO = 84

-SR1-

PI Sta 11+75.36	PI Sta 21+90.71
△ = 90° 00' 00.0" (RT)	△ = 121° 58' 25.8" (LT)
D = 40° 55' 32.0"	D = 22° 55' 05.9"
L = 219.91'	L = 532.21'
T = 140.00'	T = 450.77'
R = 140.00'	R = 250.00'
SE = .04	SE = .04
RO = 68	RO = 68

-SR2-

PI Sta 10+90.08	PI Sta 14+72.36	PI Sta 15+75.87
△ = 84° 45' 02.8" (RT)	△ = 118° 39' 29.8" (LT)	△ = 2° 31' 13.1" (RT)
D = 66° 37' 22.8"	D = 229° 10' 59.2"	D = 2° 02' 20.4"
L = 127.21'	L = 51.77'	L = 123.61'
T = 78.46'	T = 42.15'	T = 61.81'
R = 86.00'	R = 25.00'	R = 2,810.00'
SE = .02	SE = NC	SE = NC
RO = 36	RO = N/A	RO = N/A

-SR9-

PI Sta 14+27.25
△ = 90° 00' 00.0" (RT)
D = 47° 44' 47.3"
L = 188.50'
T = 120.00'
R = 120.00'
SE = .02
RO = 42

-DRWI-

PI Sta 10+80.78	PI Sta 11+32.67
△ = 73° 24' 46.6" (RT)	△ = 3° 00' 41.2" (RT)
D = 114° 35' 29.6"	D = 6° 00' 00.0"
L = 64.06'	L = 50.19'
T = 37.28'	T = 25.10'
R = 50.00'	R = 954.93'
SE = NC	SE = NC
RO = N/A	RO = N/A

-Y34DET-

PROJECT REFERENCE NO. R-3300A — SHEET NO. 2B-2

RW SHEET NO.

Dewberry — 2610 Wycliff Road, Suite 410, Raleigh, NC 27607

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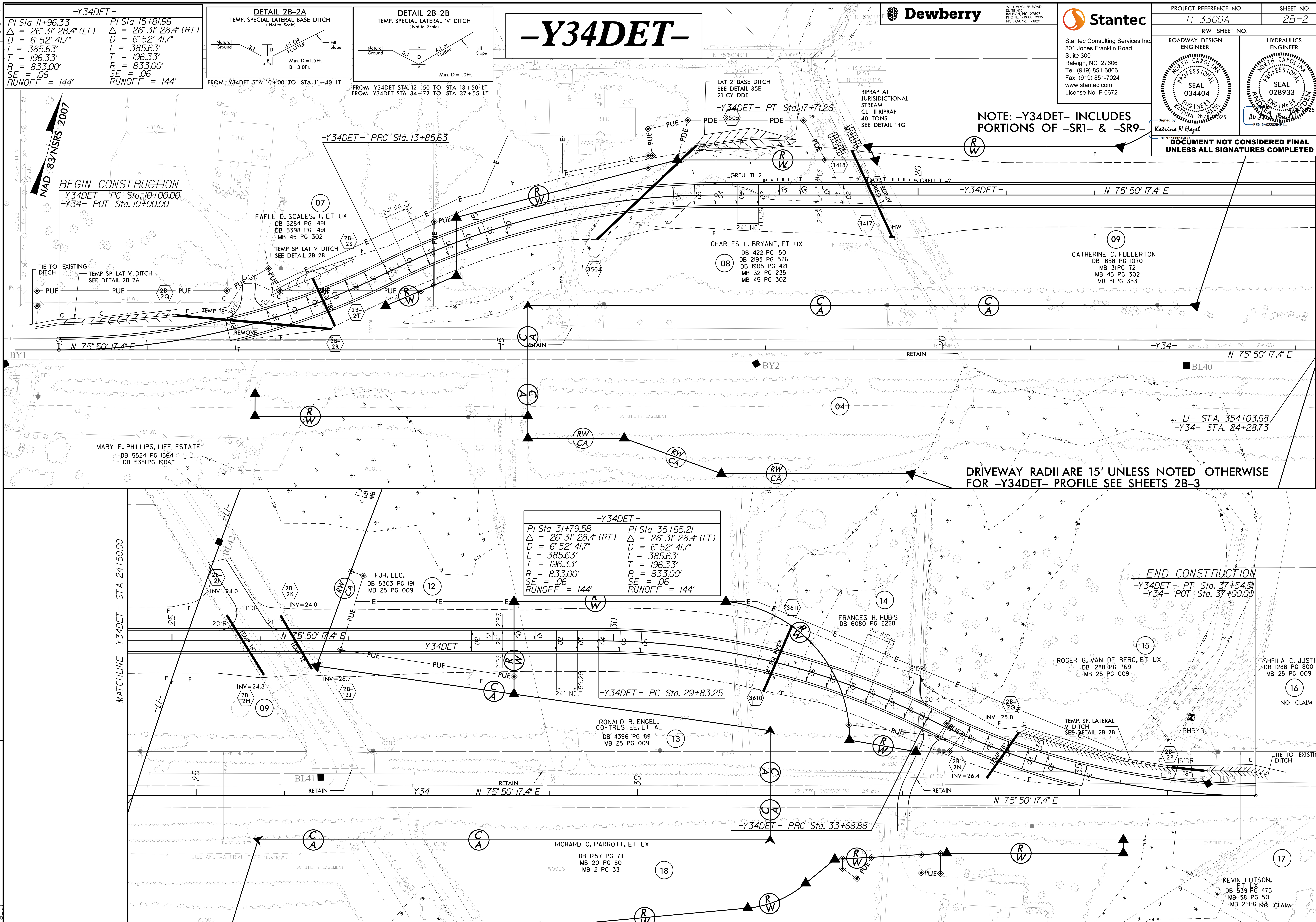
www.stantec.com
License No. F-0672

ROADWAY DESIGN ENGINEER — North Carolina Professional Engineer Seal 034404, Katrina N. Hazel — Signed by: Katrina N Hazel

HYDRAULICS ENGINEER — North Carolina Professional Engineer Seal 028933

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS



-Y34DET-
PI Sta 11+96.33
△ = 26° 31' 28.4" (LT)
D = 6° 52' 41.7"
L = 385.63'
T = 196.33'
R = 833.00'
SE = .06
RUNOFF = 144'
PI Sta 15+81.96
△ = 26° 31' 28.4" (RT)
D = 6° 52' 41.7"
L = 385.63'
T = 196.33'
R = 833.00'
SE = .06
RUNOFF = 144'
DETAIL 2B-2A
TEMP. SPECIAL LATERAL BASE DITCH (Not to Scale)
Min. D = 1.5Ft. B = 3.0Ft.
FROM Y34DET STA. 10+00 TO STA. 11+40 LT
DETAIL 2B-2B
TEMP. SPECIAL LATERAL 'V' DITCH (Not to Scale)
Min. D = 1.0Ft.
FROM Y34DET STA. 12+50 TO STA. 13+50 LT
FROM Y34DET STA. 34+72 TO STA. 37+55 LT
NAD 83/NSRS 2007
BEGIN CONSTRUCTION
-Y34DET- PC Sta. 10+00.00
-Y34- POT Sta. 10+00.00
-Y34DET- PRC Sta. 13+85.63
-Y34DET- PT Sta. 17+71.26
LAT 2' BASE DITCH SEE DETAIL 35E 21 CY DDE
RIPRAP AT JURISDICTIONAL STREAM CL II RIPRAP 40 TONS SEE DETAIL 14G
NOTE: -Y34DET- INCLUDES PORTIONS OF -SR1- & -SR9-
EWELL D. SCALES, III, ET UX DB 5284 PG 1491 DB 5398 PG 1491 MB 45 PG 302
TEMP SP. LAT V DITCH SEE DETAIL 2B-2B
TIE TO EXISTING DITCH
TEMP SP. LAT V DITCH SEE DETAIL 2B-2A
CHARLES L. BRYANT, ET UX DB 4221 PG 150 DB 2193 PG 576 DB 1905 PG 421 MB 32 PG 235 MB 45 PG 302
CATHERINE C. FULLERTON DB 1858 PG 1070 MB 31 PG 72 MB 45 PG 302 MB 31 PG 333
N 75° 50' 17.4" E
-Y34-
MATCHLINE -Y34DET- STA 24+50.00
-LI- STA. 354+03.68
-Y34- STA. 24+28.73
MARY E. PHILLIPS, LIFE ESTATE DB 5524 PG 1564 DB 5351 PG 1904
DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE
FOR -Y34DET- PROFILE SEE SHEETS 2B-3
-Y34DET-
PI Sta 31+79.58
△ = 26° 31' 28.4" (RT)
D = 6° 52' 41.7"
L = 385.63'
T = 196.33'
R = 833.00'
SE = .06
RUNOFF = 144'
PI Sta 35+65.21
△ = 26° 31' 28.4" (LT)
D = 6° 52' 41.7"
L = 385.63'
T = 196.33'
R = 833.00'
SE = .06
RUNOFF = 144'
FJH, LLC. DB 5303 PG 191 MB 25 PG 009
FRANCES H. HUBIS DB 6080 PG 2228
END CONSTRUCTION
-Y34DET- PT Sta. 37+54.51
-Y34- POT Sta. 37+00.00
ROGER G. VAN DE BERG, ET UX DB 1288 PG 769 MB 25 PG 009
SHEILA C. JUSTICE DB 1288 PG 800 MB 25 PG 009
NO CLAIM
-Y34DET- PC Sta. 29+83.25
RONALD R. ENGEL, CO-TRUSTEE, ET AL DB 4396 PG 89 MB 25 PG 009
TEMP. SP. LATERAL V DITCH SEE DETAIL 2B-2B
TIE TO EXISTING DITCH
-Y34DET- PRC Sta. 33+68.88
RICHARD O. PARROTT, ET UX DB 1257 PG 711 MB 20 PG 80 MB 2 PG 33
KEVIN HUTSON, ET UX DB 5391 PG 475 MB 38 PG 50 MB 2 PG 16
NO CLAIM

-Y34DET-

Dewberry
2610 WYCLIFF ROAD SUITE 410 RALEIGH, NC 27607 PHONE: 919.881.9939 NC COA No. F-0929

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License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2B-3

ROADWAY DESIGN ENGINEER — SEAL 034404 — Katrina N. Haydn 4/14/2025

HYDRAULICS ENGINEER — SEAL 028933 — Andrea S. Hayden 4/21/2025

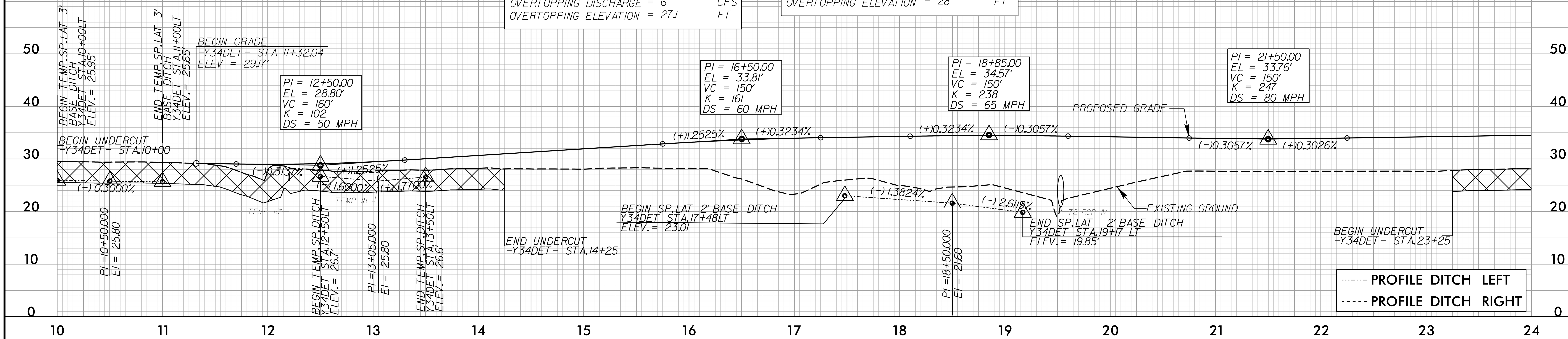
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PIPE HYDRAULIC DATA
Y34DET Sta. 12+20

DRAINAGE AREA	= 1.0	AC
DESIGN FREQUENCY	= 10	YRS
DESIGN DISCHARGE	= 4	CFS
DESIGN HW ELEVATION	= 26.7	FT
100 YEAR DISCHARGE	= 5	CFS
100 YEAR HW ELEVATION	= 26.9	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 6	CFS
OVERTOPPING ELEVATION	= 27.1	FT

PIPE HYDRAULIC DATA
Y34DET Sta. 13+05

DRAINAGE AREA	= 1.0	AC
DESIGN FREQUENCY	= 10	YRS
DESIGN DISCHARGE	= 3	CFS
DESIGN HW ELEVATION	= 26.7	FT
100 YEAR DISCHARGE	= 4	CFS
100 YEAR HW ELEVATION	= 26.9	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 8	CFS
OVERTOPPING ELEVATION	= 28	FT



PIPE HYDRAULIC DATA
Y34DET Sta. 25+80

DRAINAGE AREA	= 1.2	AC
DESIGN FREQUENCY	= 10	YRS
DESIGN DISCHARGE	= 4	CFS
DESIGN HW ELEVATION	= 25.3	FT
100 YEAR DISCHARGE	= 5	CFS
100 YEAR HW ELEVATION	= 25.5	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 14	CFS
OVERTOPPING ELEVATION	= 28	FT

PIPE HYDRAULIC DATA
Y34DET Sta. 26+40

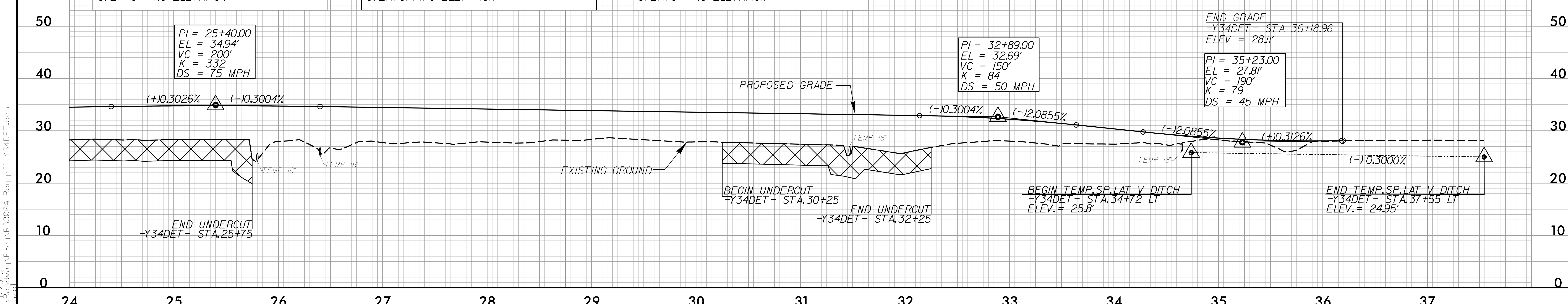
DRAINAGE AREA	= 1.1	AC
DESIGN FREQUENCY	= 10	YRS
DESIGN DISCHARGE	= 3	CFS
DESIGN HW ELEVATION	= 27.7	FT
100 YEAR DISCHARGE	= 4	CFS
100 YEAR HW ELEVATION	= 27.9	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 6	CFS
OVERTOPPING ELEVATION	= 28	FT

PIPE HYDRAULIC DATA
Y34DET Sta. 31+47

DRAINAGE AREA	= 1.8	AC
DESIGN FREQUENCY	= 10	YRS
DESIGN DISCHARGE	= 6	CFS
DESIGN HW ELEVATION	= 27.2	FT
100 YEAR DISCHARGE	= 7	CFS
100 YEAR HW ELEVATION	= 27.5	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 24	CFS
OVERTOPPING ELEVATION	= 32.4	FT

PIPE HYDRAULIC DATA
Y34DET Sta. 34+65

DRAINAGE AREA	= 0.5	AC
DESIGN FREQUENCY	= 10	YRS
DESIGN DISCHARGE	= 1.5	CFS
DESIGN HW ELEVATION	= 27.0	FT
100 YEAR DISCHARGE	= 2.0	CFS
100 YEAR HW ELEVATION	= 27.1	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 9.0	CFS
OVERTOPPING ELEVATION	= 28.2	FT



PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2B-4
RW SHEET NO.	

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RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER: P-0671

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 034404 ENGINEER KATRINA N. HAZEL
Katrina N Hazel

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33246 ENGINEER
Linda Jones

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-Y35DET-

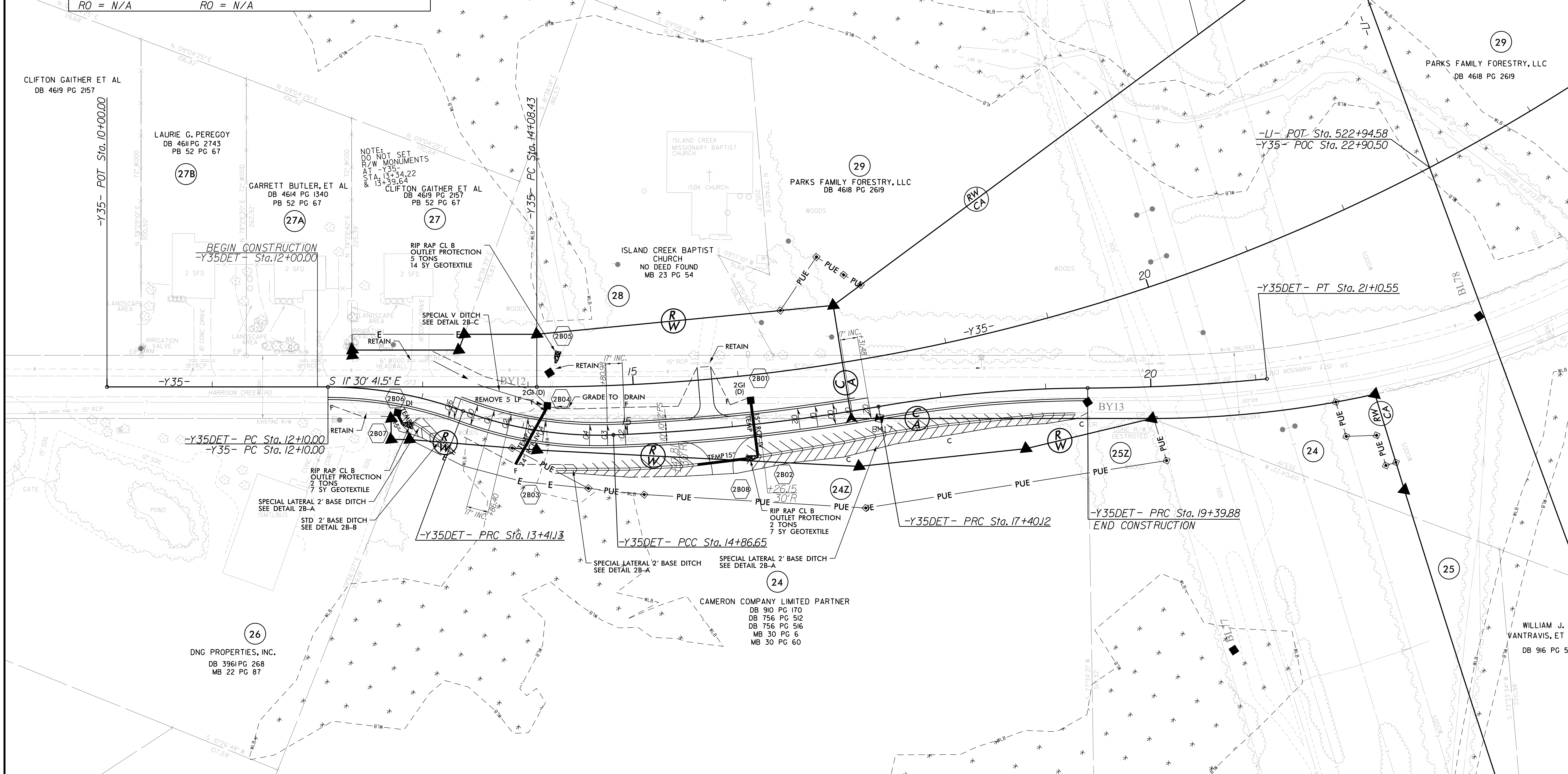
-Y35DET-

PI Sta 16+92.05 △ = 20° 15' 04.2" (RT) D = 15° 26' 37.0" L = 131.13' T = 66.26' R = 371.00' SE = .04 RO = 68	PI Sta 14+14.84 △ = 22° 28' 24.7" (LT) D = 15° 26' 37.0" L = 145.52' T = 73.71' R = 371.00' SE = .04 RO = 68	PI Sta 16+13.58 △ = 7° 44' 14.0" (LT) D = 3° 03' 09.1" L = 253.47' T = 126.93' R = 1,877.00' SE = .04 RO = 68
PI Sta 18+40.24 △ = 9° 46' 56.6" (RT) D = 4° 53' 49.5" L = 199.76' T = 100.12' R = 1,170.00' SE = N/A RO = N/A	PI Sta 20+25.28 △ = 5° 33' 21.9" (LT) D = 3° 15' 19.6" L = 170.67' T = 85.40' R = 1,760.00' SE = N/A RO = N/A	

-Y35-

PI Sta 23+50.61 △ = 54° 29' 00.0" (LT) D = 3° 07' 51.3" L = 1,740.17' T = 942.18' R = 1,830.00' SE = .04 RO = 84

NAD 83/NSRS 2007



DETAIL 2B-A
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground; 3:1; D; B; 3:1 or Flatter; Fill Slope
Min. D=1 Ft.
B=2 Ft.
FROM -Y35DET- STA. 12+86 TO STA. 13+00 RT.
FROM -Y35DET- STA. 14+35 TO STA. 19+27 RT.

DETAIL 2B-B
STANDARD BASE DITCH
(Not to Scale)
Natural Ground; 3:1; D; B; 3:1; Natural Ground
Min. D=1 Ft.
B=2 Ft.
FROM -Y35DET- STA. 13+00 TO 13+48 RT
L=48', S=0.44%, DDE=27CY

DETAIL 2B-C
SPECIAL 'V' DITCH
(Not to Scale)
Natural Ground; 2:1; D; 4:1 or Flatter; Front Ditch Slope
Min. D=1 Ft.
FROM -Y35DET- STA. 13+02 TO STA. 14+20 LT.

4/8/2025
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-Y35DET-

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2B-5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034404 ENGINEER KATRINA N. HAZEL 4/8/2025
Signed by: Katrina N Hazel F8B7052080564FC...

NORTH CAROLINA PROFESSIONAL SEAL 33246 ENGINEER LINDA M. JOHNS 4/10/2025
DocuSigned by: Linda Johns 24345B322D704BD...

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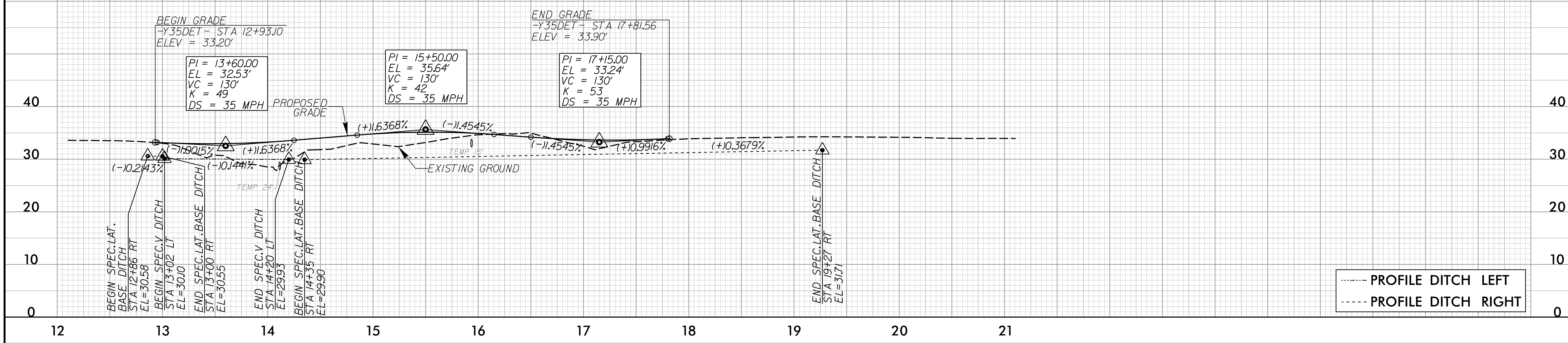
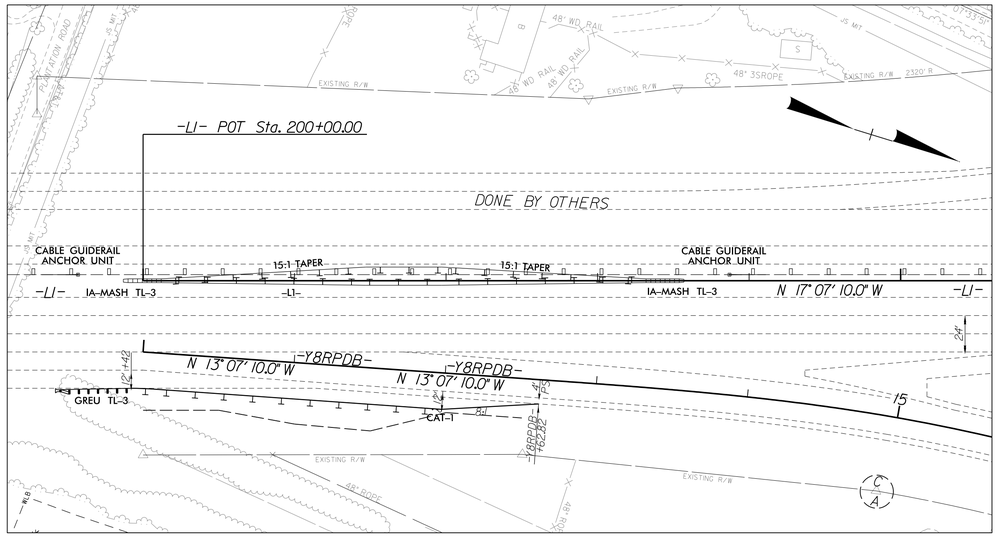


5/28/99

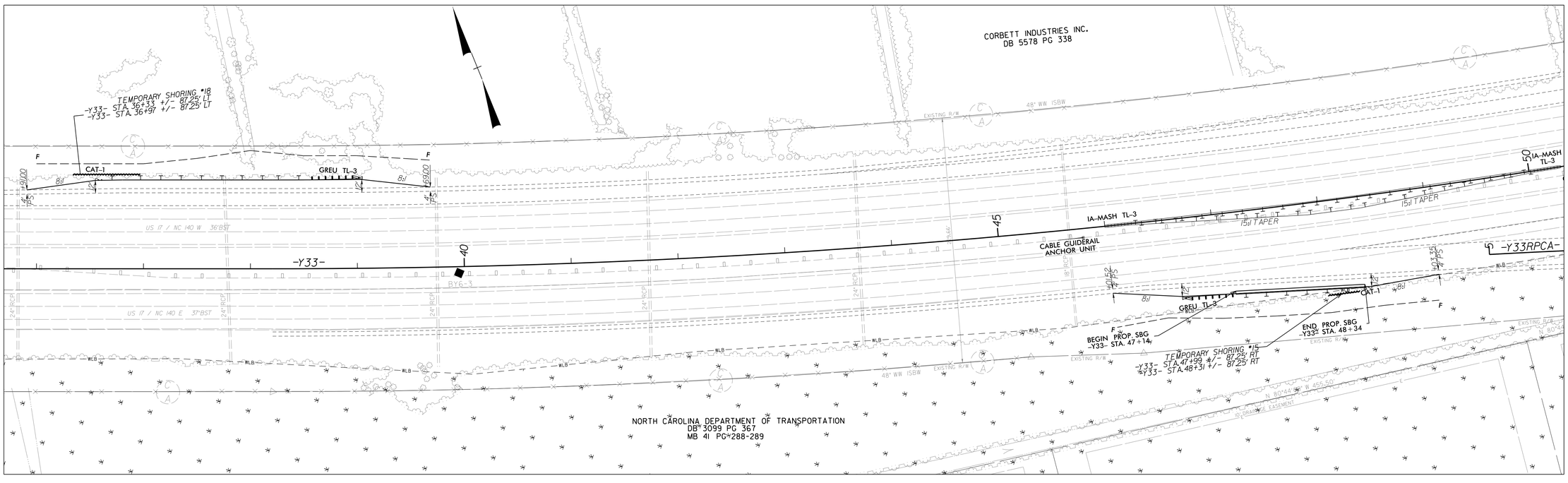
4/8/2025
U:\Roadway\Proj\R3300A_Rdy_pfl_Y35DET.dgn

5/14/99

GUARDRAIL PLACEMENT OUTSIDE R–3300A PROJECT LIMIT DETAILS



–L1– STA. 199+42 TO STA. 203+57



–Y33– STA. 36+55 TO STA. 50+30

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2B-6

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034404 ENGINEER KATRINA NICOLE HAZEL
Signed by: Katrina N Hazel
4/8/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

50 25 0 50 100

4/8/2025
C:\Users\khazel\Documents\R3300A_rdy_gr place_detail.dgn

GUARDRAIL PLACEMENT OUTSIDE R-3300A PROJECT LIMIT DETAILS

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PHONE: 919.881.9939
NC COA No. F-0929

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2B-7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034404 ENGINEER KATRINA N. HAZEL

Signed by: Katrina N Hazel

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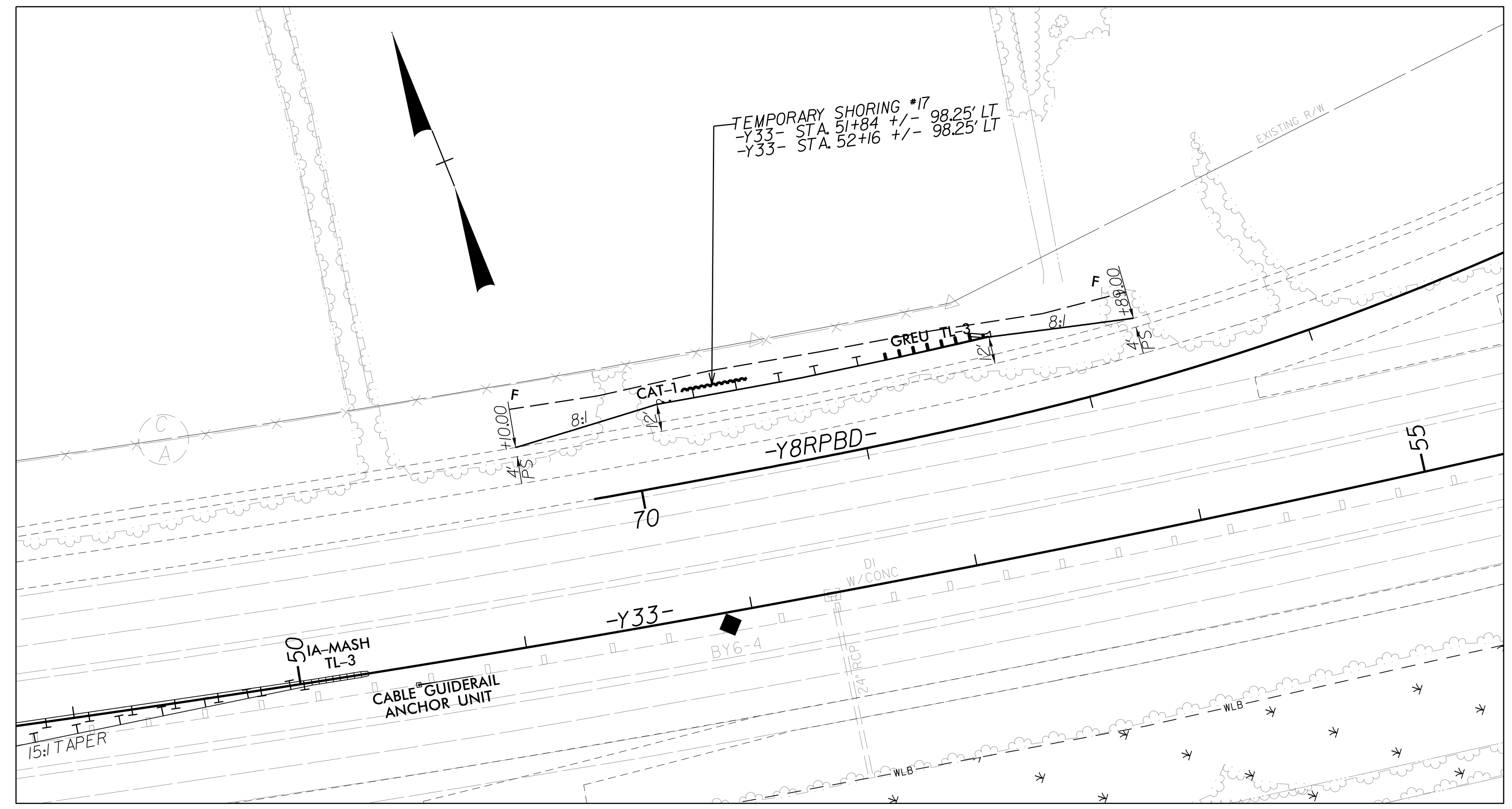
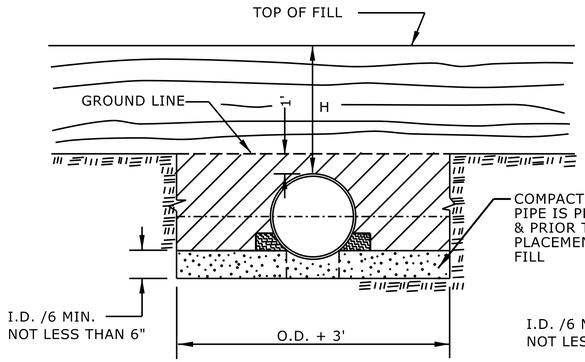
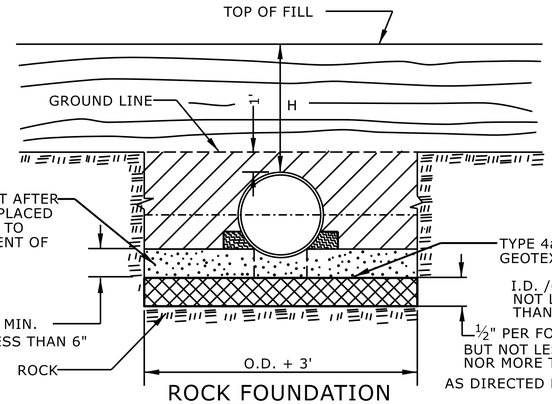


–YRPBD– STA. 68+36 TO STA. 69+86

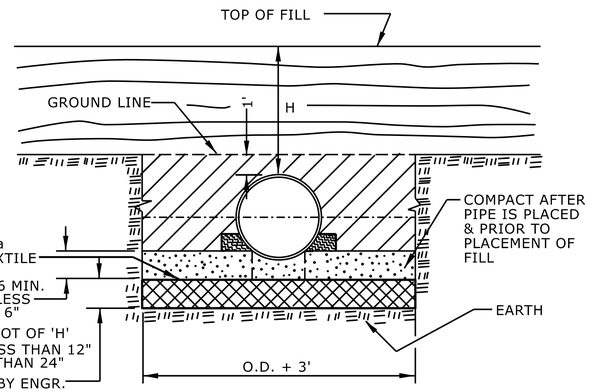
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2C-01



NORMAL EARTH FOUNDATION

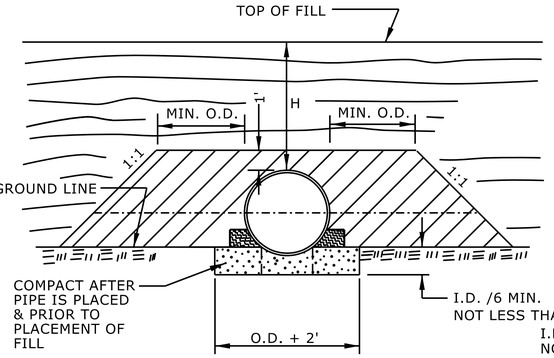


ROCK FOUNDATION



UNSUITABLE MATERIAL FOUNDATION

PIPE IN TRENCH



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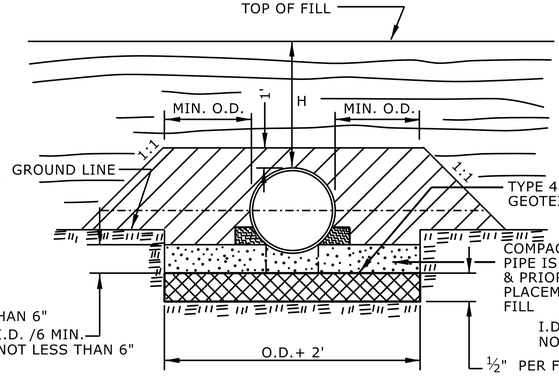

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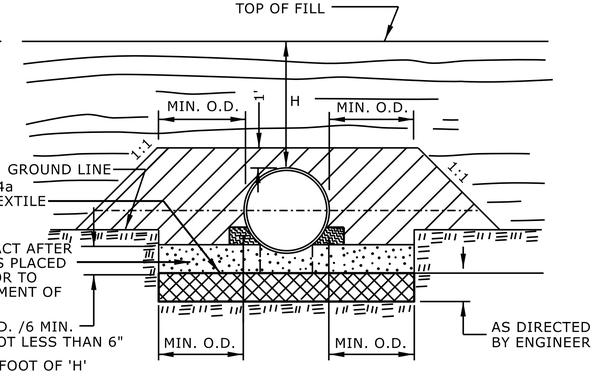

UNSUITABLE MATERIAL FOUNDATION

PIPE ABOVE GROUND

GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINGLINE.

UNDISTURBED EARTH MATERIAL

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

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

ROADWAY DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

FLEXIBLE PIPE

SHEET 1 OF 2

300.01

NORTH CAROLINA PROFESSIONAL SEAL 033144 ENGINEER NICOLE M. HACKLER

Signed by: Nicole M. Hackler
5884323D34164C5...
4/8/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

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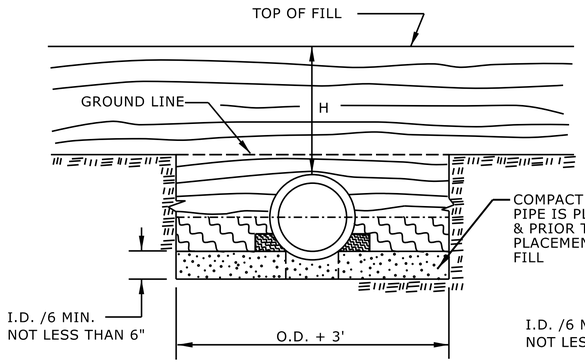
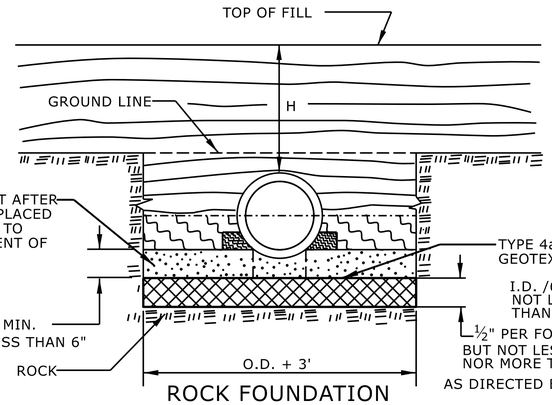
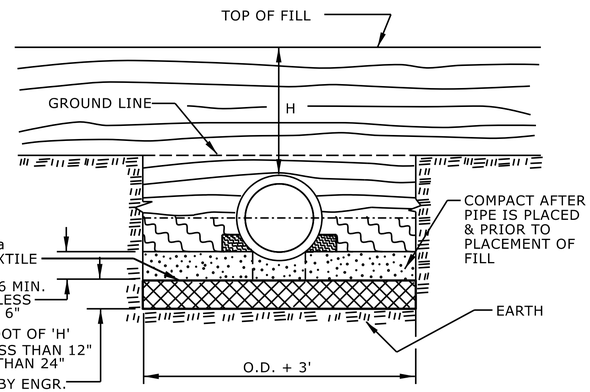
R-3300A	2C-02



NORMAL EARTH FOUNDATION

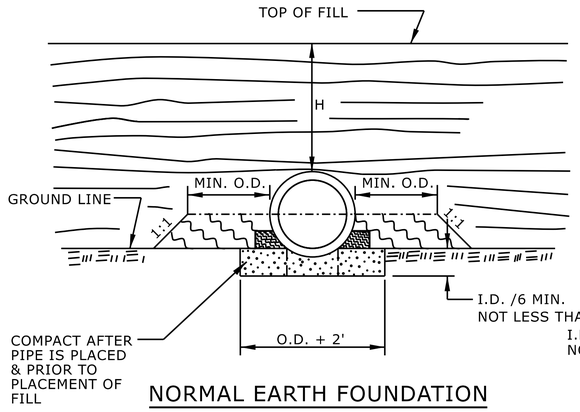


ROCK FOUNDATION



UNSUITABLE MATERIAL FOUNDATION

PIPE IN TRENCH



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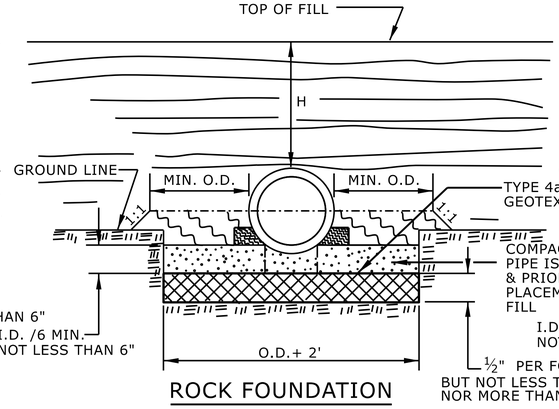

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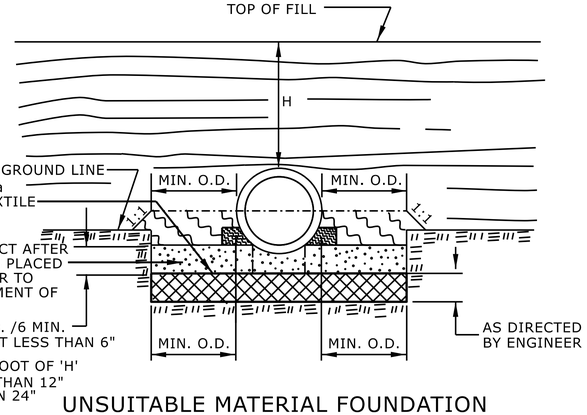

UNSUITABLE MATERIAL FOUNDATION

PIPE ABOVE GROUND

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STATE OF
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

RIGID PIPE

SHEET 2 OF 2

300.01

NORTH CAROLINA PROFESSIONAL SEAL 033144 ENGINEER NICOLE M. HACKLER

Signed by: Nicole M. Hackler
5884323D34164C5...
4/8/2025

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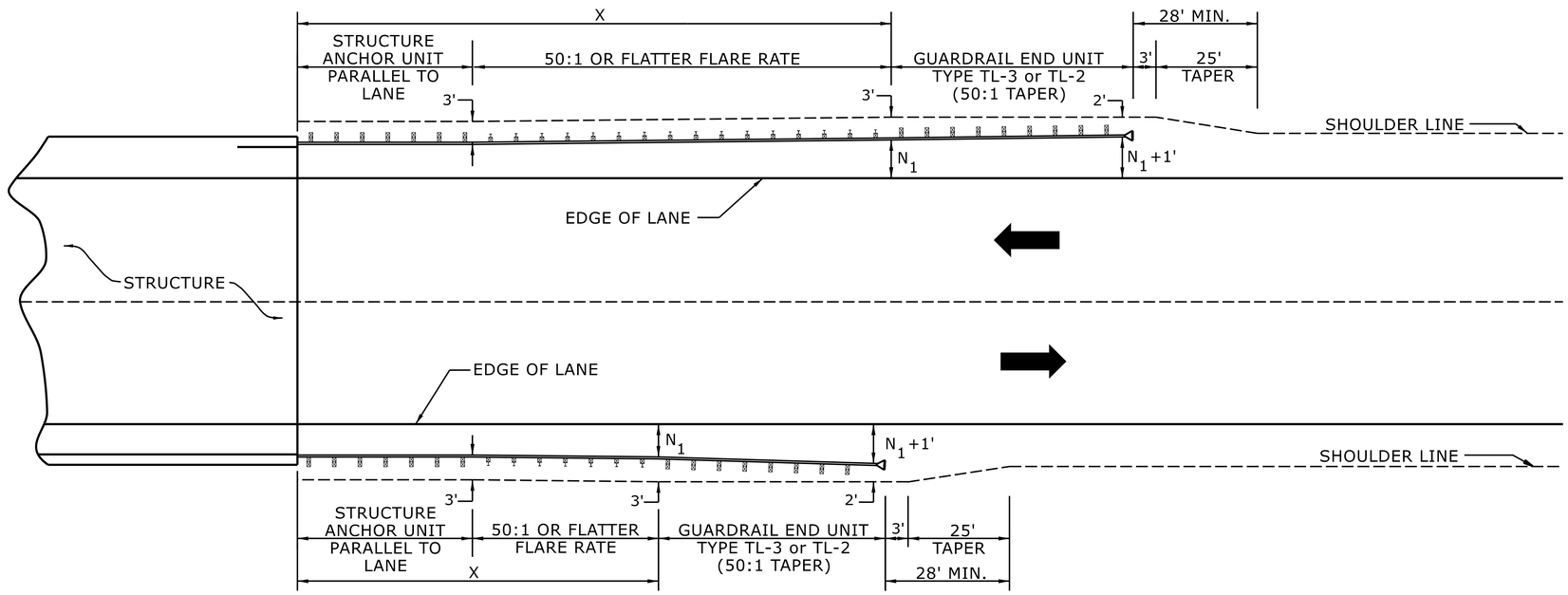
R-3300A	2C-03



USE FLARE RATE AS THE CONTROL IF THE "N_1" DISTANCE IS NOT OBTAINED.
("N_1" IS BASED ON SHOULDER WIDTHS IN THE ROADWAY DESIGN MANUAL)

SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS

FOR POSTED SPEEDS ≥ 45MPH USE GREU TYPE TL-3
FOR POSTED SPEEDS < 45MPH USE GREU TYPE TL-2

GUARDRAIL LENGTH OF NEED (X) IS CALCULATED BASED ON THE AASHTO ROADSIDE DESIGN GUIDE.

LENGTHS AND OFFSETS FOR PROPOSED GUARDRAIL AT TWO LANE - TWO WAY LOCATIONS

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ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 4 OF 15

862D01

NORTH CAROLINA PROFESSIONAL SEAL 033144 ENGINEER NICOLE M. HACKLER

Signed by:
Nicole M. Hackler
5884323D34164C5...
4/8/2025

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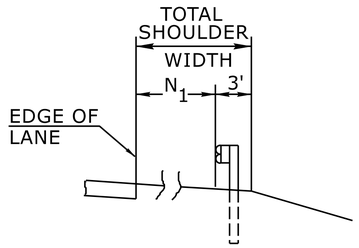
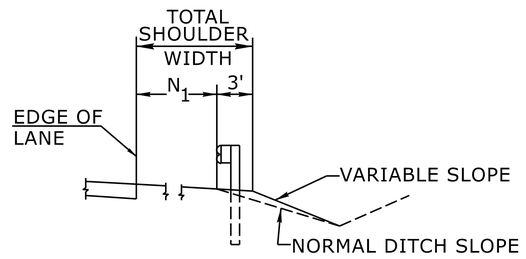
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2C-04

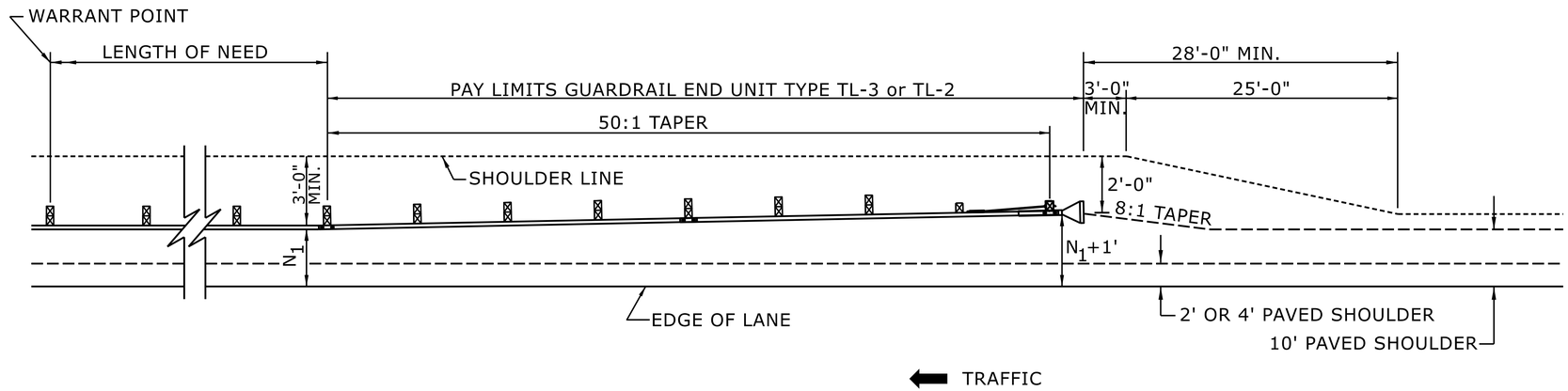


FILL SECTION



CUT SECTION

"N_1"= DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL WHERE GUARDRAIL IS PARALLEL TO LANE.



FOR POSTED SPEEDS ≥ 45mph USE GREU TYPE TL-3
FOR POSTED SPEEDS < 45mph USE GREU TYPE TL-2

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

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ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 6 OF 15

862D01

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033144 NICOLE M. HACKLER

Signed by: Nicole M. Hackler
4/8/2025

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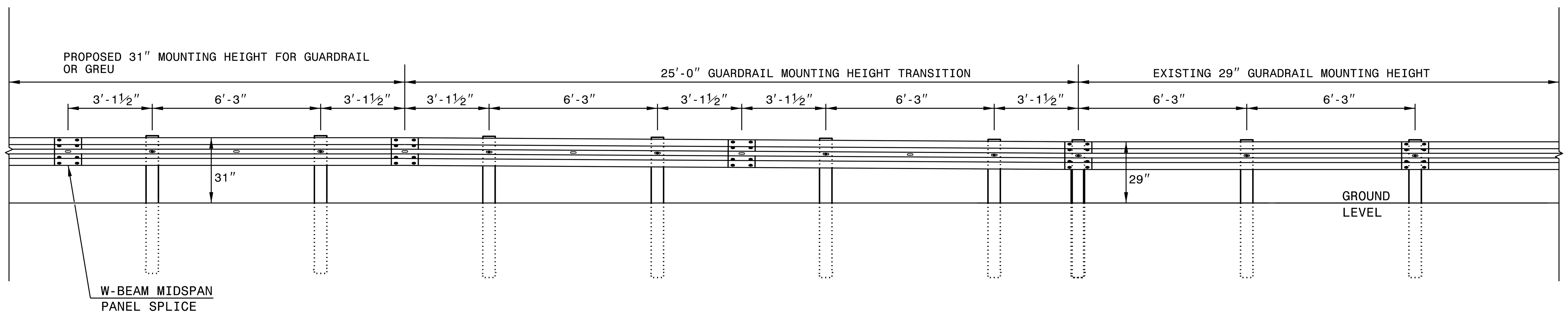
R-3300A	2C-05

NOTE: IF EXISTING GUARDRAIL IS LOWER THAN 29″, USE AN ADDITIONAL 12′-6″ LONG SECTION OF GUARDRAIL, FOR EVERY 1″ OF HEIGHT DIFFERENCE, TO TRANSITION FROM EXISTING GUARDRAIL TO PROPOSED 31″ GUARDRAIL.



ELEVATION VIEW

TRANSITION FROM 29″ TO 31″ W-BEAM GUARDRAIL MOUNTING HEIGHT

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RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 5 OF 9
862D02

NORTH CAROLINA PROFESSIONAL SEAL 033144 ENGINEER NICOLE M. HACKLER
Signed by: Nicole M. Hackler
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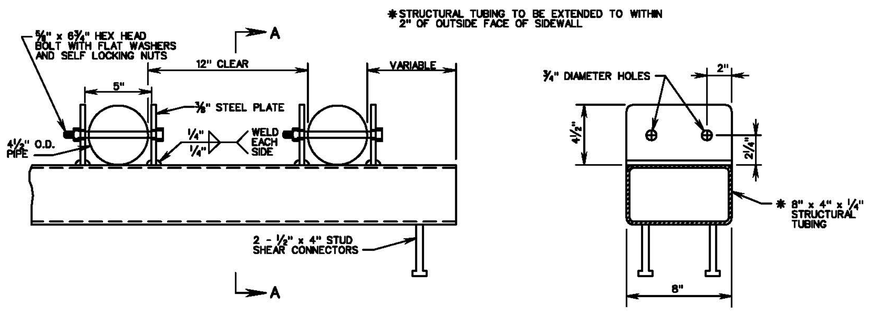
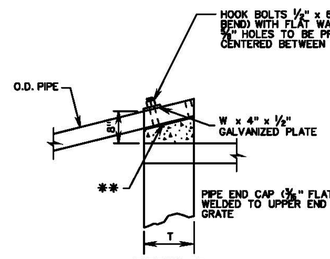
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2D-1

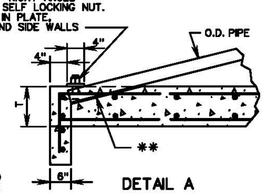


CENTER SUPPORT
(ELEVATION)

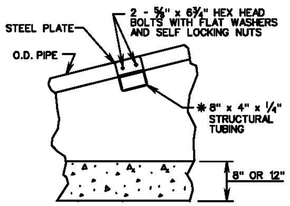
SECTION A-A



DETAIL B



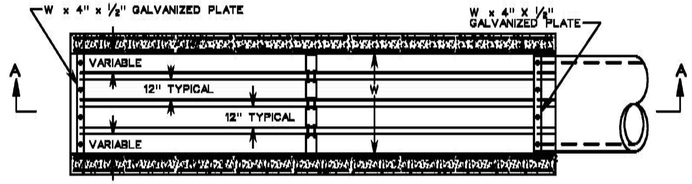
DETAIL A



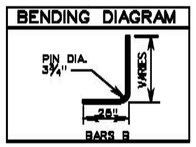
CENTER SUPPORT

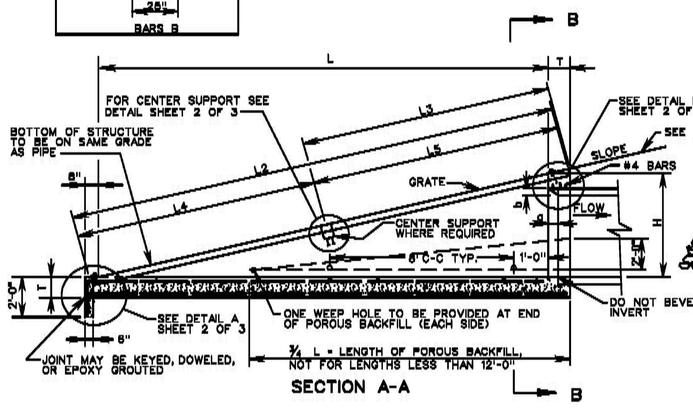
** NOTCHES FOR PIPE TO BE FORMED IN CONCRETE SO THAT PIPE WILL FIT SNUG BUT CAN BE REMOVED.

PIPE ENDWALL WITH LOAD-CARRYING GRATE
12" - 60" CIRCULAR PIPES

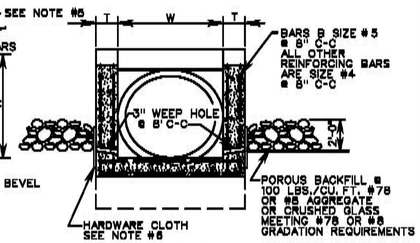


PLAN VIEW





SECTION A-A



GRATE REMOVED
SECTION B-B

NOTES:

1. THIS ITEM MAY BE PRECAST OR CAST IN PLACE. ALL CAST CONCRETE TO BE CLASS A3, FOR PRECAST USE 4000 PSI MINIMUM. REINFORCING STEEL TO HAVE A MINIMUM 1½" COVER.
2. FOR TABULATION OF DIMENSIONS AND QUANTITIES SEE SHEET 3 OF 3.
3. ALL PIPE FOR GRATE, STRUCTURAL TUBING, AND RELATED HARDWARE TO BE GALVANIZED.
4. STANDARD EW-11 TO BE INSTALLED SO THE GRATE CONFIGURATION IS ALWAYS PERPENDICULAR TO THE EDGE OF THE SHOULDER.
5. SLOPE AS SPECIFIED ON TYPICAL SECTION.
6. WEEP HOLE WITH 12" X 12" PLASTIC HARDWARE CLOTH ¼" MESH OR GALVANIZED STEEL WIRE, MINIMUM WIRE DIAMETER 0.03" NUMBER 4 MESH HARDWARE CLOTH ANCHORED FIRMLY OUTSIDE OF STRUCTURE.
7. HEADWALL TO BE BEVELED IN ALL AREAS EXCEPT WHERE A CONFLICT WITH INVERT OR WINGWALLS OCCUR.
8. BEVEL EDGE IS REQUIRED ON THE HEADWALL OF THE INLET END OF THE CULVERT (WHERE THE FLOW ENTERS THE CULVERT).
9. HEADWALL AT THE OUTLET END OF THE CULVERT MAY BE EITHER SQUARE EDGE OR BEVEL EDGE.
10. ¾" CHAMFER MAY BE PROVIDED ON ALL EDGES AT MANUFACTURER'S OPTION.
11. IN NO CASE SHALL THE TOP OF THE ENDWALL PROJECT ABOVE FILL SLOPE, DITCH SLOPE OR SHOULDER

PIPE ENDWALL WITH LOAD-CARRYING GRATE
12" - 60" CIRCULAR PIPES

PIPE GRATE

TYPE I - 3½" O.D.
TYPE II - 4" O.D.
TYPE III - 4½" O.D.

LENGTH OF GRATE TO BE DETERMINED BY L_2 x NUMBER OF PIPES REQUIRED

4 : 1 SLOPE

PIPE SIZE	H	L	W	T	PIPE O.D.	NO. PIPES REQUIRED	L_2	L_3	L_4	L_5
12"	1'-10"	7'-4"	2'-0"	8"	3½"	1	8'-6¾"	NO CENTER SUPPORT REQUIRED		
15" or 18"	2'-4½"	9'-6"	2'-0"	8"	3½"	1	10'-9½"			
21" or 24"	2'-11"	11'-8"	3'-0"	8"	4"	2	13'-0¼"			
27" or 30"	3'-5½"	13'-10"	3'-0"	8"	4"	2	15'-3"			
33" or 36"	4'-0"	16'-0"	4'-0"	8"	4½"	3	17'-6"			
42"	4'-8½"	18'-2"	4'-0"	12"	4½"	3	19'-8¾"			
48"	5'-1"	20'-4"	5'-0"	12"	4½"	3	22'-2⅝"	10'-5¼"	11'-10½"	10'-4¼"
54"	5'-7½"	22'-6"	6'-0"	12"	4½"	4	24'-5½"	12'-8⅛"	11'-10½"	12'-7⅛"
60"	6'-2"	24'-8"	6'-0"	12"	4½"	4	26'-8½"	14'-11"	11'-10½"	14'-10"

6 : 1 SLOPE

PIPE SIZE	H	L	W	T	PIPE O.D.	NO. PIPES REQUIRED	L_2	L_3	L_4	L_5
12"	1'-10"	11'-0"	2'-0"	8"	3½"	1	12'-1¾"	NO CENTER SUPPORT REQUIRED		
15" or 18"	2'-4½"	14'-3"	2'-0"	8"	4"	1	15'-5¼"			
21" or 24"	2'-11"	17'-6"	3'-0"	8"	4½"	2	18'-9"			
27" or 30"	3'-5½"	20'-9"	3'-0"	8"	4½"	2	22'-0"	4'-8⅛"	17'-4½"	4'-7½"
33" or 36"	4'-0"	24'-0"	4'-0"	8"	4½"	3	25'-3⅜"	7'-11⅝"	17'-4½"	7'-11"
42"	4'-6"	27'-3"	4'-0"	12"	4½"	3	28'-11"	11'-7¼"	17'-4½"	11'-6½"
48"	5'-1"	30'-6"	5'-0"	12"	4½"	3	32'-2"	14'-10¾"	17'-4½"	14'-10⅛"
54"	5'-7½"	33'-9"	6'-0"	12"	4½"	4	35'-8"	18'-2¼"	17'-4½"	18'-1⅝"
60"	6'-2"	37'-0"	6'-0"	12"	4½"	4	38'-9½"	19'-5½"	19'-4¾"	19'-4¾"

DIMENSIONS FOR BEVEL ON HEADWALL

PIPE I.D.	a	b
12"	0'-1¼"	0'-1"
15" or 18"	0'-2"	0'-1½"
21" or 24"	0'-2½"	0'-2"
27" or 30"	0'-3¼"	0'-2½"
33" or 36"	0'-3¾"	0'-3"
42"	0'-4½"	0'-3½"
48"	0'-5"	0'-4"
54"	0'-5¾"	0'-4½"
60"	0'-6¼"	0'-5"

3 : 1 SLOPE

PIPE SIZE	H	L	W	T	PIPE GRATE PIPE O.D.	PIPE GRATE NO. PIPES REQUIRED	PIPE GRATE L_2	
12"	1'-10"	5'-6"	2'-0"	8"	3½"	1	6'-9½"	NO CENTER SUPPORT REQUIRED
15" or 18"	2'-4½"	7'-1½"	2'-0"	8"	3½"	1	8'-6¼"	
21" or 24"	2'-11"	8'-9"	3'-0"	8"	3½"	2	10'-2⅜"	
27" or 30"	3'-5½"	10'-4½"	3'-0"	8"	3½"	2	11'-11¾"	
33" or 36"	4'-0"	12'-0"	4'-0"	8"	4"	3	13'-7⅜"	
42"	4'-8½"	13'-7½"	4'-0"	12"	4"	3	15'-4⅛"	
48"	5'-1"	15'-3"	5'-0"	12"	4½"	3	17'-0½"	
54"	5'-7½"	16'-10½"	6'-0"	12"	4½"	4	18'-9⅝"	
60"	6'-2"	18'-6"	6'-0"	12"	4½"	4	20'-6"	

APPROXIMATE QUANTITIES

PIPE SIZE	3 : 1 CONCRETE CUBIC YARDS CONC. PIPE	3 : 1 CONCRETE CUBIC YARDS C.M. PIPE	3 : 1 lbs. REINF. STEEL	PIPE SIZE	4 : 1 CONCRETE CUBIC YARDS CONC. PIPE	4 : 1 CONCRETE CUBIC YARDS C.M. PIPE	4 : 1 lbs. REINF. STEEL	PIPE SIZE	6 : 1 CONCRETE CUBIC YARDS CONC. PIPE	6 : 1 CONCRETE CUBIC YARDS C.M. PIPE	6 : 1 lbs. REINF. STEEL
12"	.95	.97	240	12"	1.17	1.18	308	12"	1.64	1.66	443
15" or 18"	1.27	1.29	328	15" or 18"	1.59	1.61	425	15" or 18"	2.28	2.31	618
21" or 24"	2.30	2.35	483	21" or 24"	2.44	2.49	628	21" or 24"	3.55	3.59	917
27" or 30"	2.38	2.44	608	27" or 30"	3.01	3.01	788	27" or 30"	4.35	4.41	1157
33" or 36"	3.28	3.38	809	33" or 36"	4.20	4.29	1059	33" or 36"	6.01	6.09	1556
42"	6.27	6.46	1050	42"	8.05	8.22	1368	42"	11.59	11.76	1997
48"	8.07	8.29	1327	48"	10.29	10.50	1647	48"	14.84	15.04	2514
54"	10.02	10.29	1612	54"	12.80	13.06	2105	54"	18.47	18.73	3094
60"	11.18	11.50	1826	60"	14.36	14.68	2391	60"	20.82	21.14	3517

PIPE ENDWALL WITH LOAD-CARRYING GRATE
12" - 60" CIRCULAR PIPES

NORTH CAROLINA PROFESSIONAL SEAL 54498 ENGINEER KEITH S. POOLE

DocuSigned by: EA6ED470764646B...

5/19/2025

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FILE SPEC.: _____

$$$$USERNAME$$$$ $$$$SYSTIME$$$$

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034020 ENGINEER YINHUI LIU

DocuSigned by: Yinhui Liu 3/19/2025
6734BA78BCF14BE...
SIGNATURE DATE

ENGINEER

SIGNATURE DATE

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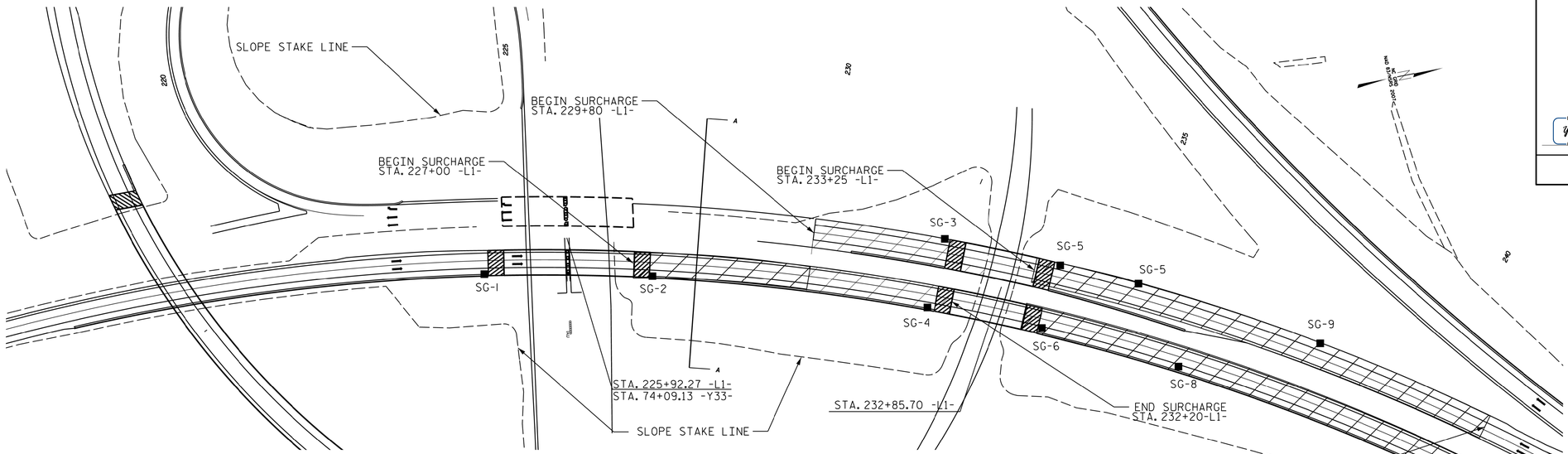
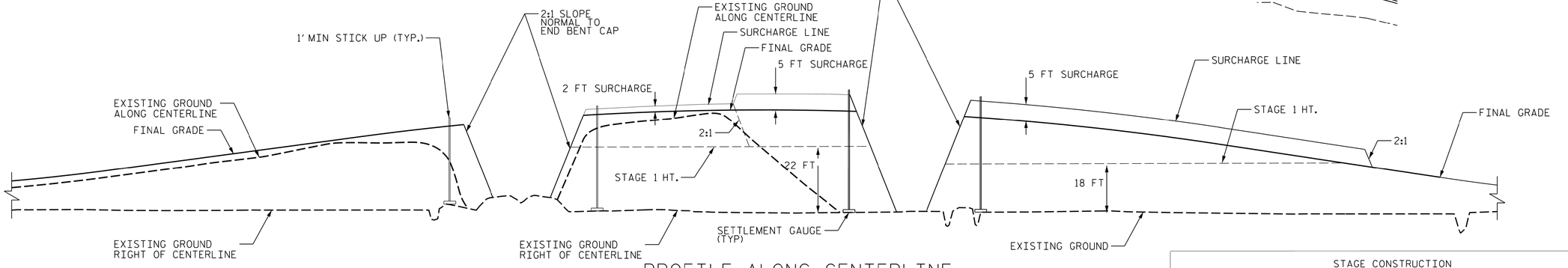


■ SETTLEMENT GAUGES (SG)

EMBANKMENT PLAN VIEW

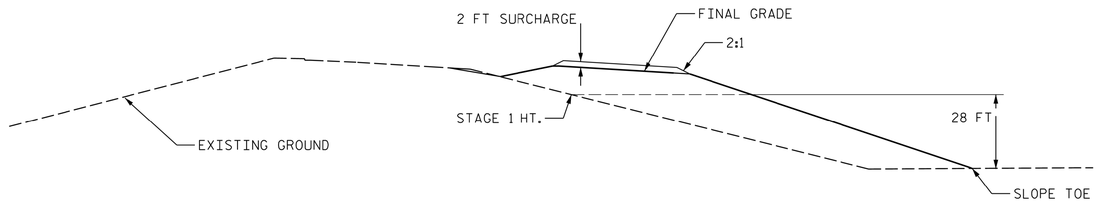
NOT TO SCALE



PROFILE ALONG CENTERLINE

NOT TO SCALE

SETTLEMENT GAUGES			
GAUGE NO.	LINE AND STATION NO.	OFFSET	
		DISTANCE FT	DIRECTION LT/RT
SG-1	-L1- 224+65	55	RT
SG-2	-L1- 227+25	55	RT
SG-3	-L1- 231+90	60	LT
SG-4	-L1- 231+80	55	RT
SG-5	-L1- 233+60	60	LT
SG-6	-L1- 233+60	55	RT
SG-7	-L1- 235+00	60	LT
SG-8	-L1- 236+00	55	RT
SG-9	-L1- 237+50	60	LT



CROSS SECTION A-A (TYP)

NOT TO SCALE

STAGE CONSTRUCTION			
STATION	STAGE	EMBANKMENT HEIGHTS	WAITING PERIOD*
-L- 227+00 TO 229+80	STAGE 1	22 FT	1 MO.
	STAGE 2	F.G. + 2 FT SURCHARGE	1 MO.
-L- 229+80 TO 232+20	STAGE 1	22 FT	6 MO.
	STAGE 2	F.G. + 5 FT SURCHARGE	2 MO.
-L- 233+25 TO 240+50	STAGE 1	18 FT	6 MO.
	STAGE 2	F.G. + 5 FT SURCHARGE	3 MO.

*BRIDGE/EMBANKMENT WAITING PERIOD AT EACH STAGE

PROJECT NO.: R-3300A

NEW HANOVER/PENDER COUNTY

STATION: 225+92.27 -L1- & 232+85.70-L1-

SHEET 1 OF 8

PREPARED BY: Y. LIU	DATE: 02/25
REVIEWED BY: B. LACKEY	DATE: 02/25

Prepared in the Office of:

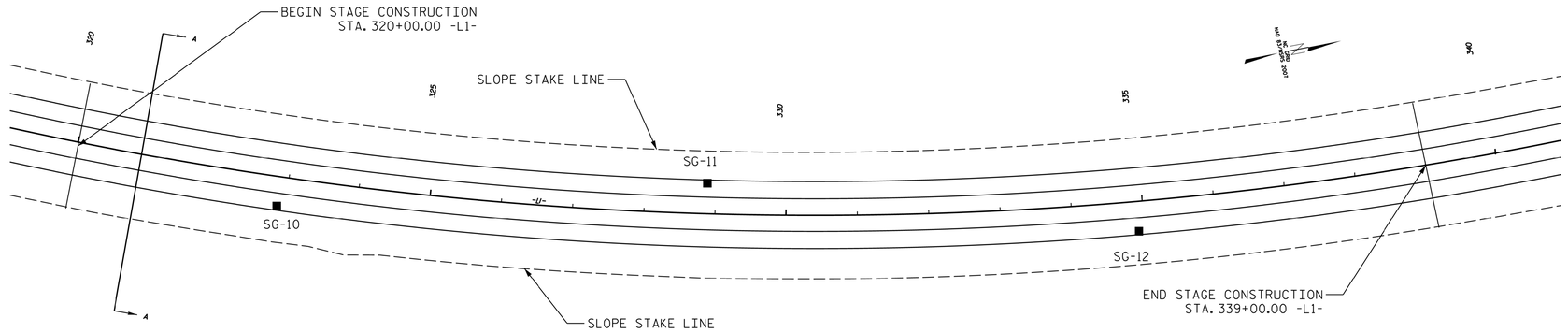
CATLIN Engineers and Scientists

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

GROUND IMPROVEMENT

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			2G-1
2			4			

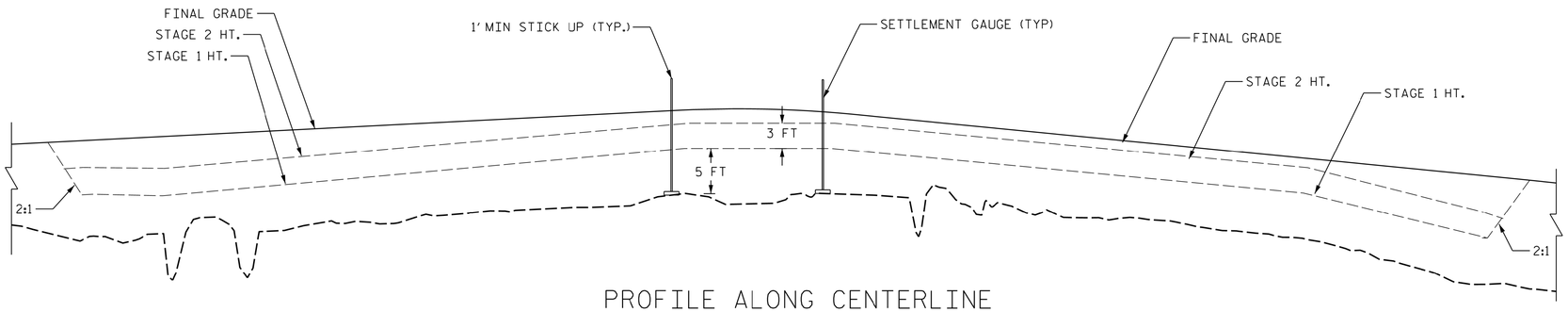


EMBANKMENT PLAN VIEW

NOT TO SCALE

■ SETTLEMENT GAUGES (SG)

SETTLEMENT GAUGES			
GAUGE NO.	LINE AND STATION NO.	OFFSET	
		DISTANCE FT	DIRECTION LT/RT
SG-10	-L1- 323+00	55	RT
SG-11	-L1- 329+00	55	LT
SG-12	-L1- 335+00	55	RT

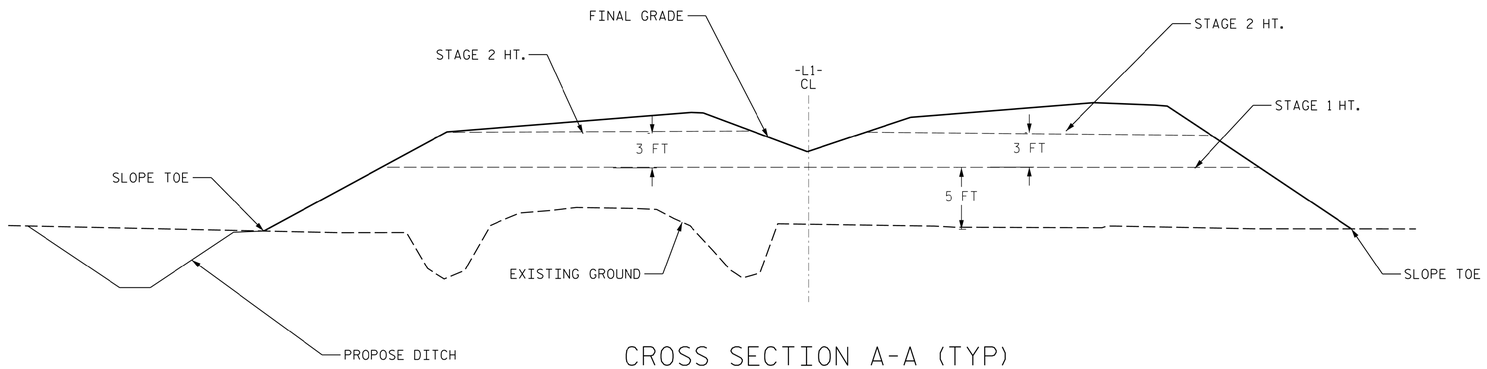


PROFILE ALONG CENTERLINE

NOT TO SCALE

STAGE CONSTRUCTION		
STAGE	EMBANKMENT HEIGHTS	WAITING PERIOD*
STAGE 1	5 FT	6 MO.
STAGE 2	3 FT	6 MO.
STAGE 3	FINAL GRADE	0 MO.

* BRIDGE/EMBANKMENT WAITING PERIOD AT EACH STAGE



CROSS SECTION A-A (TYP)

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GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034020 ENGINEER VINHUI LIU

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SIGNATURE DATE

ENGINEER

SIGNATURE DATE

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PROJECT NO.: R-3300A

NEW HANOVER/PENDER COUNTY

STATION: 320+00 -L1- & 339+50 -L1-

SHEET 2 OF 8

PREPARED BY: Y. LIU	DATE: 02/25
REVIEWED BY: B. LACKEY	DATE: 02/25

Prepared in the Office of:

CATLIN Engineers and Scientists

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

GROUND IMPROVEMENT

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			2G-2
2			4			

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034020 ENGINEER YINHUI LIU

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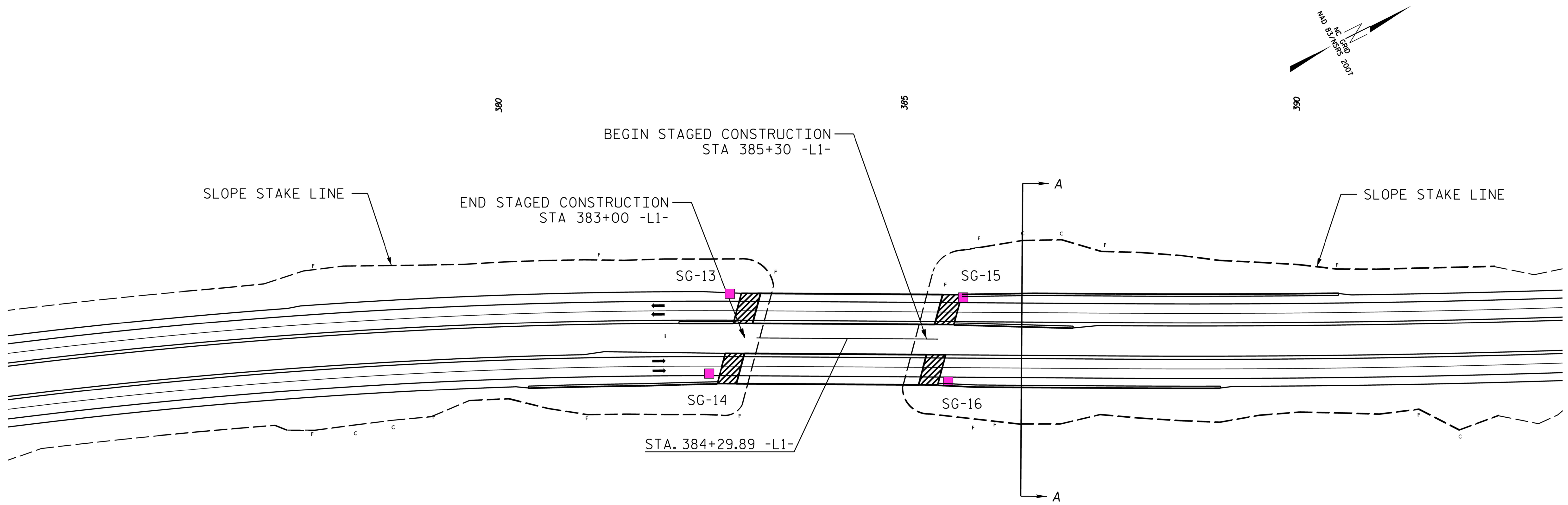
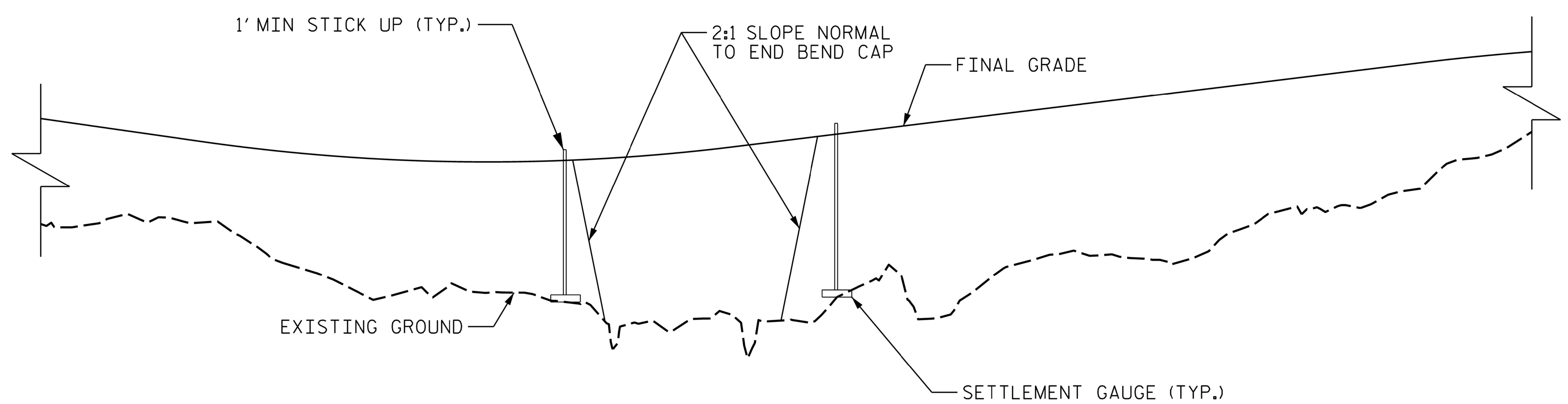


EMBANKMENT PLAN VIEW

NOT TO SCALE

■ SETTLEMENT GAUGES (SG)

SETTLEMENT GAUGES			
GAUGE NO.	LINE AND STATION NO.	OFFSET	
		DISTANCE FT	DIRECTION LT/RT
SG-13	-L1- 382+80	55	LT
SG-14	-L1- 382+70	55	RT
SG-15	-L1- 385+70	55	LT
SG-16	-L1- 385+60	55	RT



PROFILE ALONG CENTERLINE

NOT TO SCALE

PROJECT NO.: R-3300A

NEW HANOVER/PENDER COUNTY

STATION: 384+29.89 -L1-

SHEET 3 OF 8

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CATLIN Engineers and Scientists

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

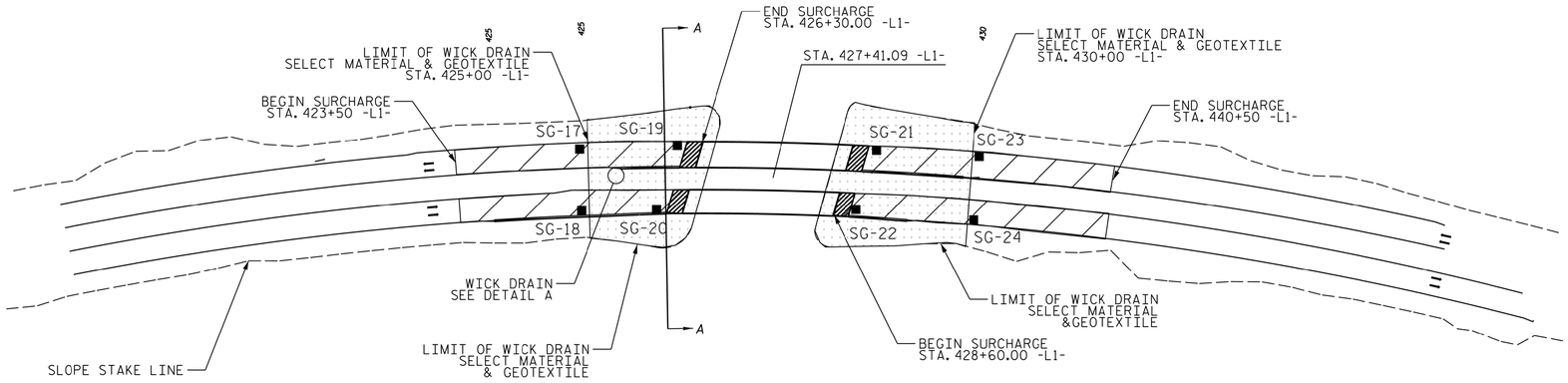
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GROUND IMPROVEMENT

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

SHEET NO. 2G-3

PREPARED BY: Y. LIU	DATE: 02/25
REVIEWED BY: B. LACKEY	DATE: 02/25



EMBANKMENT PLAN VIEW

NOT TO SCALE

NAD 83/NSRS 2007 N E

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034020 ENGINEER YINHUI LIU

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ENGINEER

SIGNATURE DATE

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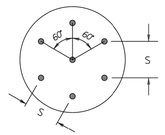
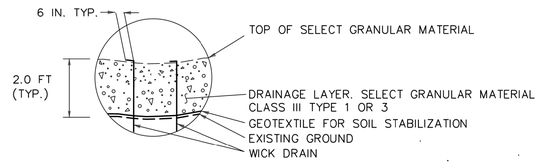
■ SETTLEMENT GAUGES (SG)

GUAGE NO.	LINE AND STATION NO.	OFFSET	
		DISTANCE FT	DIRECTION LT/RT
SG-17	-L1- 424+95	55	LT
SG-18	-L1- 424+95	55	RT
SG-19	-L1- 425+95	55	LT
SG-20	-L1- 425+95	55	RT
SG-21	-L1- 429+00	55	LT
SG-22	-L1- 429+00	55	RT
SG-23	-L1- 430+10	55	LT
SG-24	-L1- 430+10	55	RT



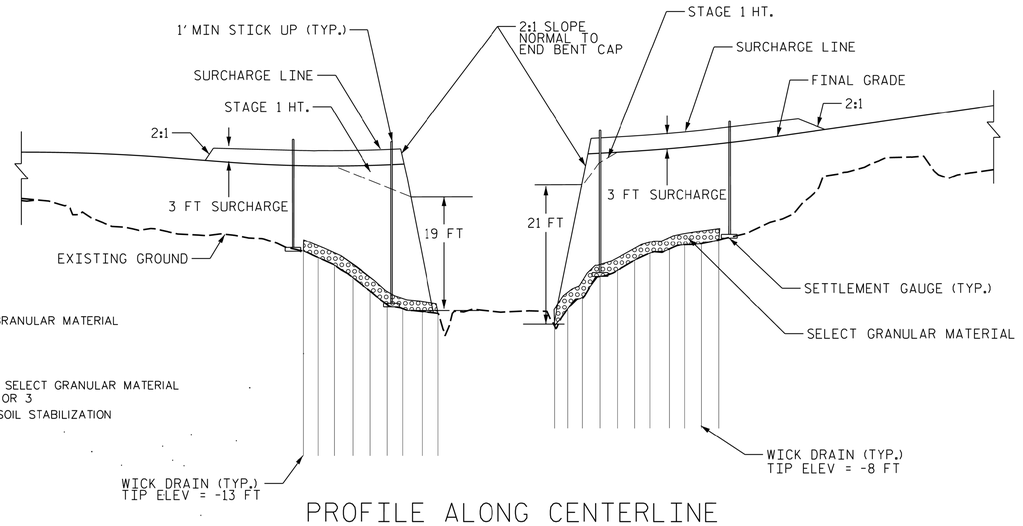
DETAIL A
WICK DRAIN (TYP.)

NOT TO SCALE



DETAIL B
WICK DRAIN (TYP.)

NOT TO SCALE

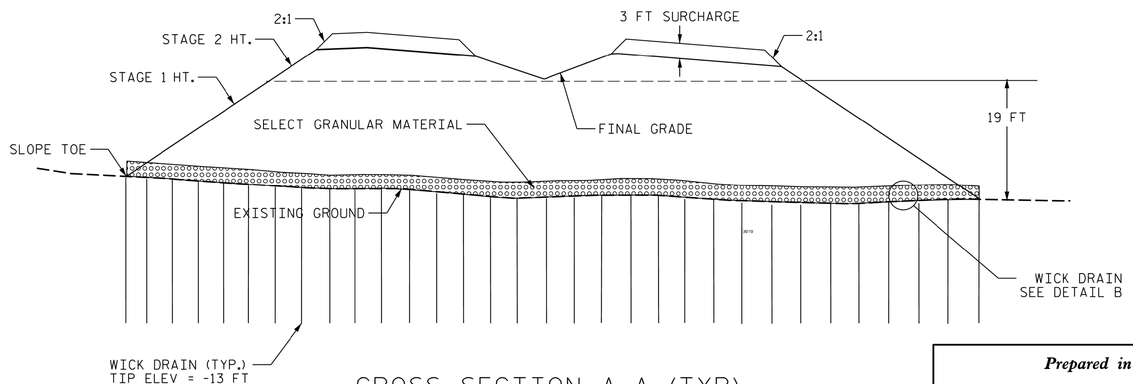


PROFILE ALONG CENTERLINE

NOT TO SCALE

STAGE CONSTRUCTION			
STATION	STAGE	EMBANKMENT HEIGHTS	WAITING PERIOD*
-L1- 425+00 TO 426+30	STAGE 1	19 FT	3 MO.
	STAGE 2	F.G. + 3 FT SURCHARGE	2 MO.
-L1- 428+60 TO 430+00	STAGE 1	21 FT	3 MO.
	STAGE 2	F.G. + 3 FT SURCHARGE	1 MO.

*BRIDGE/EMBANKMENT WAITING PERIOD AT EACH STAGE



CROSS SECTION A-A (TYP)

NOT TO SCALE

WICK DRAINS		
STATIONS	SPACING, S	TIP ELEV.
-L1- 425+00 TO 426+30	4 FT	-13 FT
-L1- 428+60 TO 430+00	4 FT	-8 FT

PROJECT NO.: R-3300A

NEW HANOVER/PENDER COUNTY

STATION: 427+41.09 -L1-

SHEET 4 OF 8

PREPARED BY: Y. LIU	DATE: 02/25
REVIEWED BY: B. LACKEY	DATE: 02/25

Prepared in the Office of:

CATLIN Engineers and Scientists

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

GROUND IMPROVEMENT

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			2G-4
2			4			

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034020 ENGINEER YINHUI LIU

DocuSigned by: Yinhui Liu 3/19/2025
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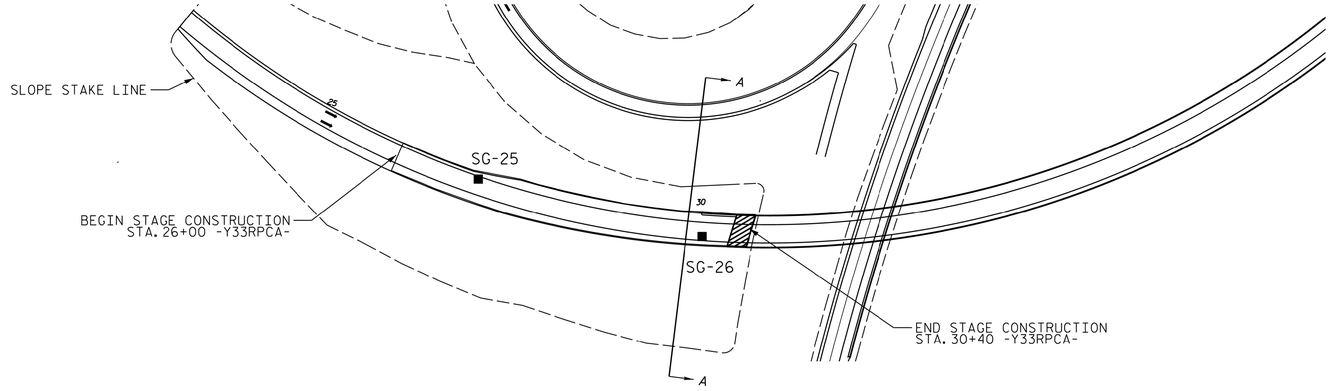


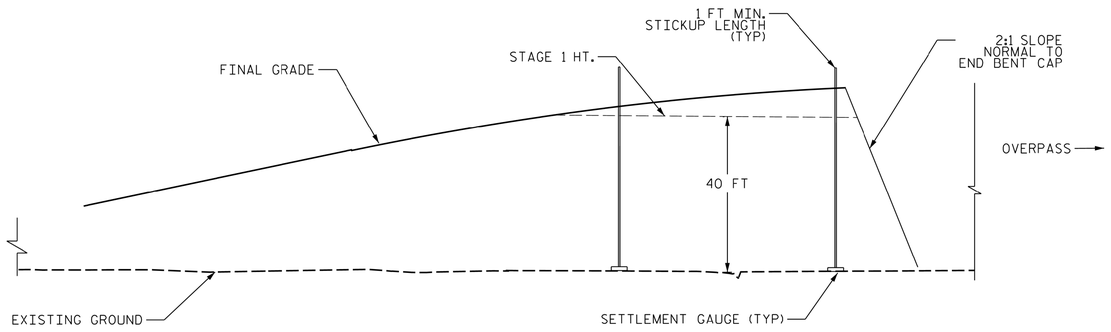
NC GRID
NAD 83/NSRS 2007

■ SETTLEMENT GAUGES (SG)

EMBANKMENT PLAN VIEW

NOT TO SCALE

SETTLEMENT GAUGES			
GAUGE NO.	LINE AND STATION NO.	OFFSET	
		DISTANCE FT	DIRECTION LT/RT
SG-25	-Y33RPCA- 27+00	15	LT
SG-26	-Y33RPCA- 30+00	15	RT

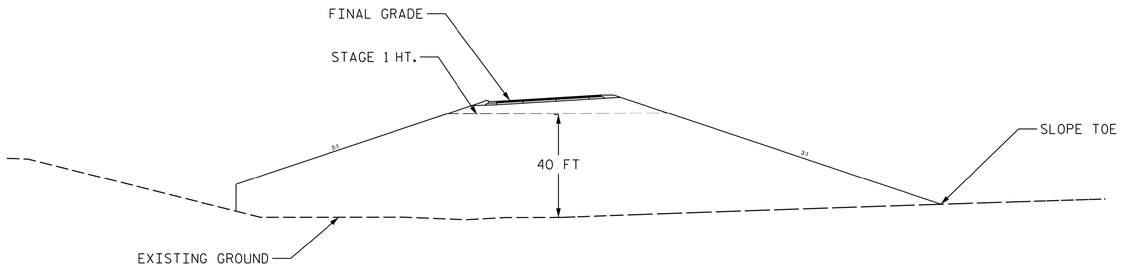


STAGE CONSTRUCTION		
STAGE	EMBANKMENT HEIGHTS	WAITING PERIOD*
STAGE 1	40 FT	2 MO.
STAGE 2	FINAL GRADE	1 MO.

*BRIDGE/EMBANKMENT WAITING PERIOD AT EACH STAGE

PROFILE ALONG CENTERLINE

NOT TO SCALE



CROSS SECTION A-A (TYP)

NOT TO SCALE

PROJECT NO.: R-3300A

NEW HANOVER/PENDER COUNTY

STATION: 30+34.00 -Y33RPCA-

SHEET 5 OF 8

PREPARED BY: Y. LIU	DATE: 02/25
REVIEWED BY: B. LACKEY	DATE: 02/25

Prepared in the Office of:

CATLIN Engineers and Scientists

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

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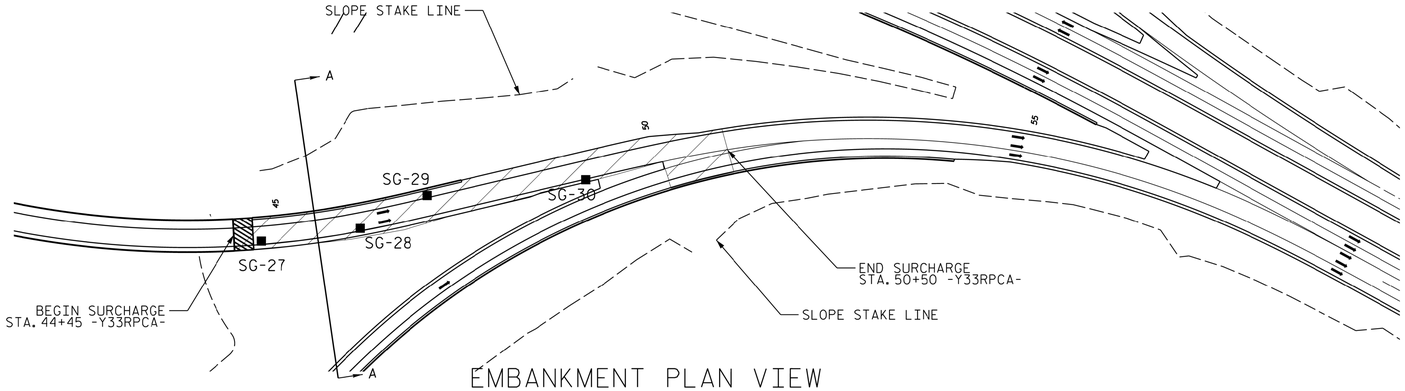
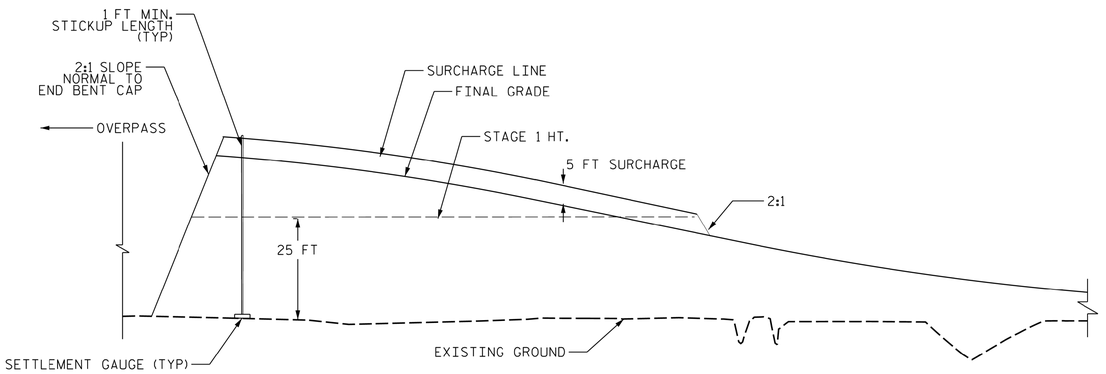
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			2G-5
2			4			



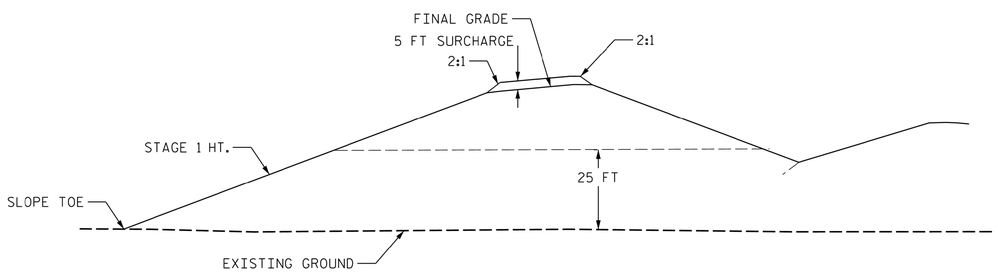
EMBANKMENT PLAN VIEW

NOT TO SCALE



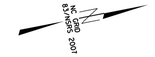
PROFILE ALONG CENTERLINE

NOT TO SCALE



CROSS SECTION A-A (TYP)

NOT TO SCALE



■ SETTLEMENT GAUGES (SG)

SETTLEMENT GAUGES			
GAUGE NO.	LINE AND STATION NO.	OFFSET	
		DISTANCE FT	DIRECTION LT/RT
SG-27	-Y33RPCA- 44+50	15	RT
SG-28	-Y33RPCA- 46+00	15	RT
SG-29	-Y33RPCA- 47+00	20	LT
SG-30	-Y33RPCA- 49+00	15	RT

STAGE CONSTRUCTION		
STAGE	EMBANKMENT HEIGHTS	WAITING PERIOD*
STAGE 1	25 FT	1 MO.
STAGE 2	F.G. + 5 FT SURCHARGE	1 MO.

*BRIDGE/EMBANKMENT WAITING PERIOD AT EACH STAGE

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034020 ENGINEER YINHUI LIU

DocuSigned by: Yinhui Liu 673A8A76BCF14BE... SIGNATURE 3/19/2025 DATE

ENGINEER

SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO.: R-3300A

NEW HANOVER/PENDER COUNTY

STATION: 45+00.00 -Y33RPCA-

SHEET 6 OF 8

PREPARED BY: Y. LIU	DATE: 02/25
REVIEWED BY: B. LACKEY	DATE: 02/25

Prepared in the Office of:

CATLIN Engineers and Scientists

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

GROUND IMPROVEMENT

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			2G-6
2			4			

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034020 ENGINEER YINHUI LIU

DocuSigned by: Yinhui Liu 3/19/2025
673A8A780CF14BE...
SIGNATURE DATE

ENGINEER

SIGNATURE DATE

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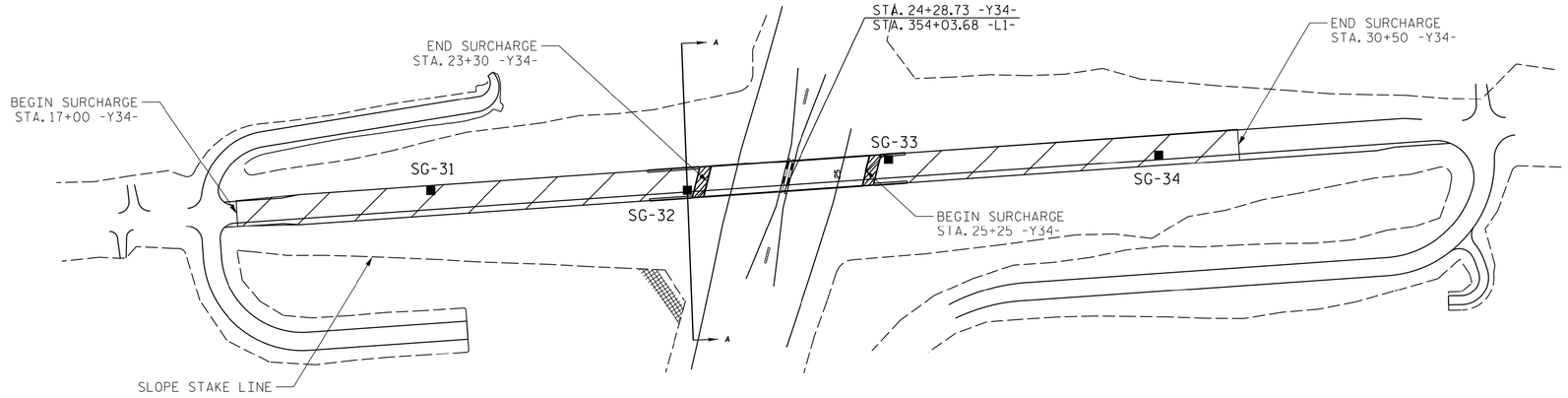
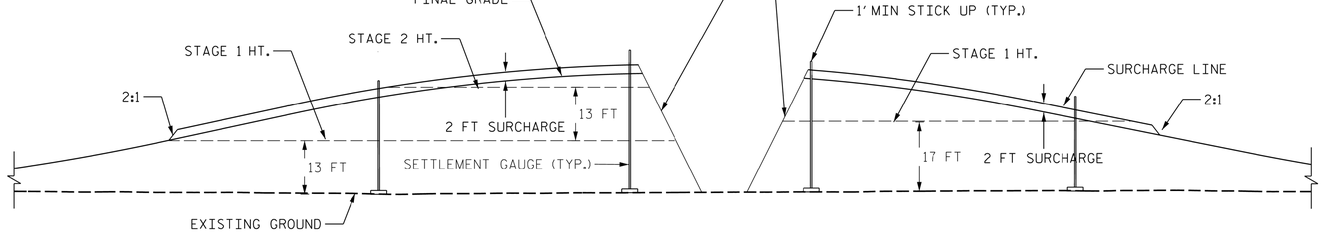


EMBANKMENT PLAN VIEW

NOT TO SCALE

■ SETTLEMENT GAUGES (SG)

SETTLEMENT GAUGES			
GAUGE NO.	LINE AND STATION NO.	OFFSET	
		DISTANCE FT	DIRECTION LT/RT
SG-31	-Y34- 19+50	15	LT
SG-32	-Y34- 23+00	15	RT
SG-33	-Y34- 25+50	15	LT
SG-34	-Y34- 29+50	15	RT

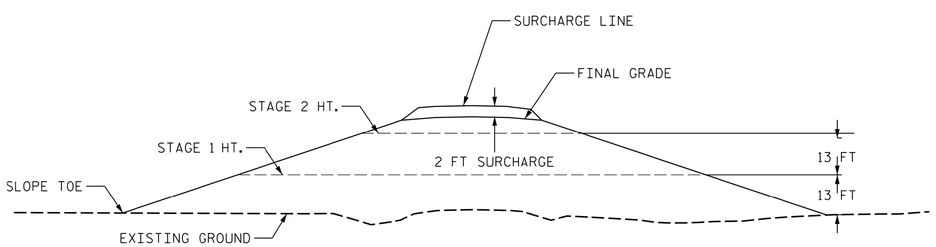


PROFILE ALONG CENTERLINE

NOT TO SCALE

STAGE CONSTRUCTION			
STATION	STAGE	EMBANKMENT HEIGHTS	WAITING PERIOD*
-Y34- 17+00 TO 23+30	STAGE 1	13 FT	1 MO.
	STAGE 2	26 FT	1 MO.
	STAGE 3	F.G. + 2 FT SURCHARGE	2 MO.
-Y34- 25+30 TO 30+50	STAGE 1	17 FT	1 MO.
	STAGE 2	F.G. + 2 FT SURCHARGE	2 MO.

*BRIDGE/EMBANKMENT WAITING PERIOD AT EACH STAGE



CROSS SECTION A-A (TYP)

NOT TO SCALE

PROJECT NO.: R-3300A

NEW HANOVER/PENDER COUNTY

STATION: 24+28.73 -Y34- & 354+03.68 -L1-

SHEET 7 OF 8

PREPARED BY: Y. LIU	DATE: 02/25
REVIEWED BY: B. LACKEY	DATE: 02/25

Prepared in the Office of:

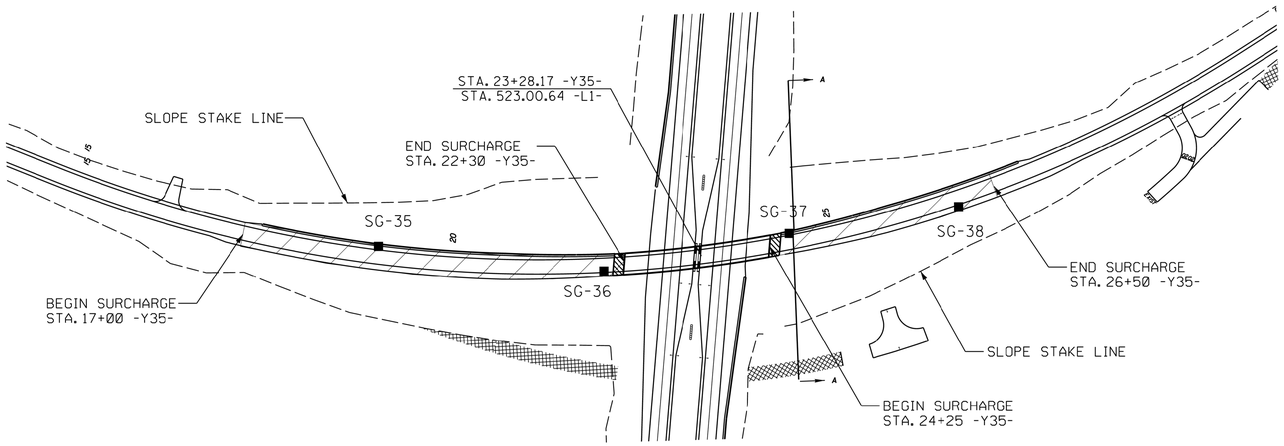
CATLIN Engineers and Scientists

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

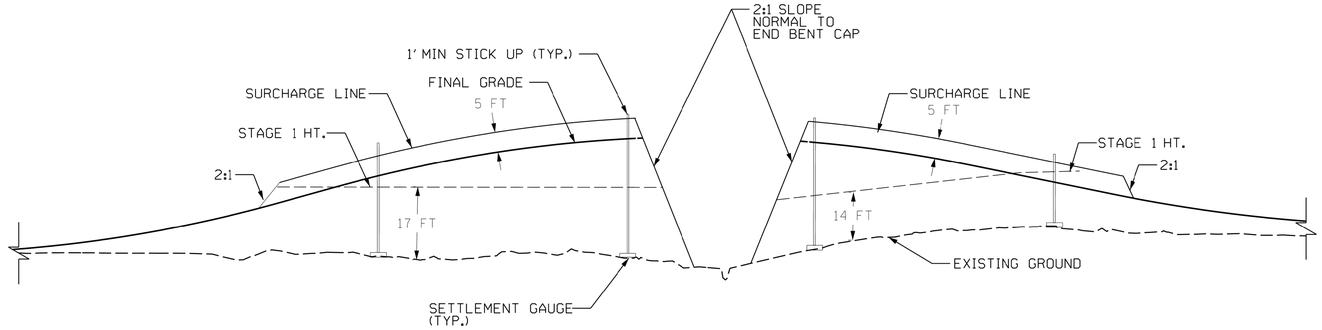
GROUND IMPROVEMENT

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			2G-7
2			4			



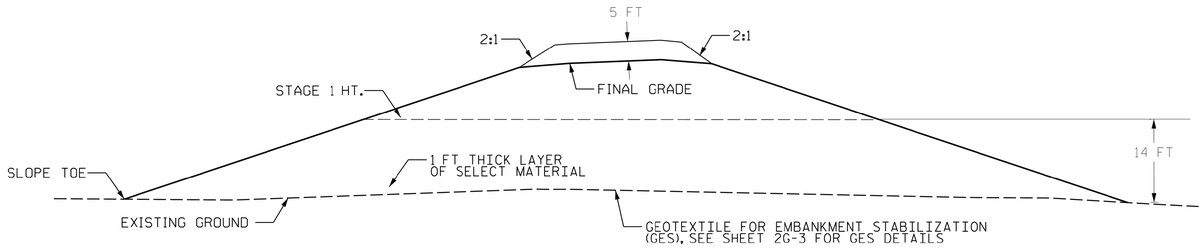
EMBANKMENT PLAN VIEW

NOT TO SCALE



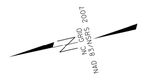
PROFILE ALONG CENTERLINE

NOT TO SCALE



CROSS SECTION A-A (TYP)

NOT TO SCALE



GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034020 ENGINEER YINHUI LIU

DocuSigned by: Yinhui Liu 3/19/2025
873A8A76BCF14BE
SIGNATURE DATE

ENGINEER

SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

■ SETTLEMENT GAUGES (SG)

SETTLEMENT GAUGES			
GAUGE NO.	LINE AND STATION NO.	OFFSET	
		DISTANCE FT	DIRECTION LT/RT
SG-35	-Y35- 19+00	15	LT
SG-36	-Y35- 22+00	15	RT
SG-37	-Y35- 24+50	15	LT
SG-38	-Y35- 26+00	15	RT

STAGE CONSTRUCTION			
STATION	STAGE	EMBANKMENT HEIGHTS	WAITING PERIOD*
-Y35- 18+00 TO 22+30	STAGE 1	17 FT	2 MO.
	STAGE 2	F.G. + 5 FT SURCHARGE	1 MO.
-Y35- 24+25 TO 26+50	STAGE 1	14 FT	3 MO.
	STAGE 2	F.G. + 5 FT SURCHARGE	1 MO.

* BRIDGE/EMBANKMENT WAITING PERIOD AT EACH STAGE

PROJECT NO.: R-3300A

NEW HANOVER/PENDER COUNTY

STATION: 23+28.17 -Y35- & 523+00.64 -L1-

SHEET 8 OF 8

PREPARED BY: Y. LIU	DATE: 02/25
REVIEWED BY: B. LACKEY	DATE: 02/25

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NO.	BY	DATE	NO.	BY	DATE	
1			3			2G-8
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