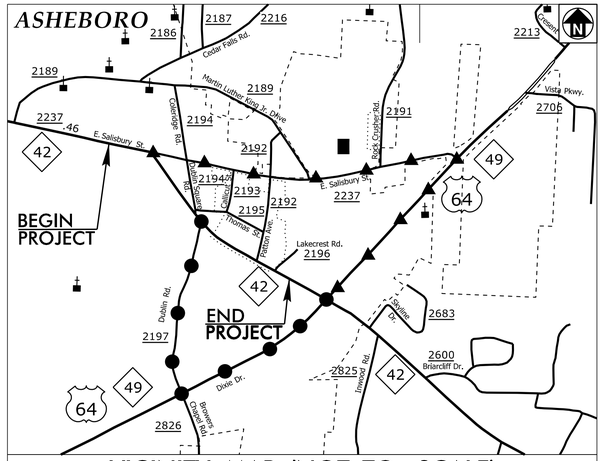
09/08/09

TIP PROJECT: U–5743

CONTRACT: C205157

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



VICINITY MAP (NOT TO SCALE)

OFF–SITE DETOUR 1

OFF–SITE DETOUR 2

(DETOUR FOR CULVERT REPLACEMENT)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

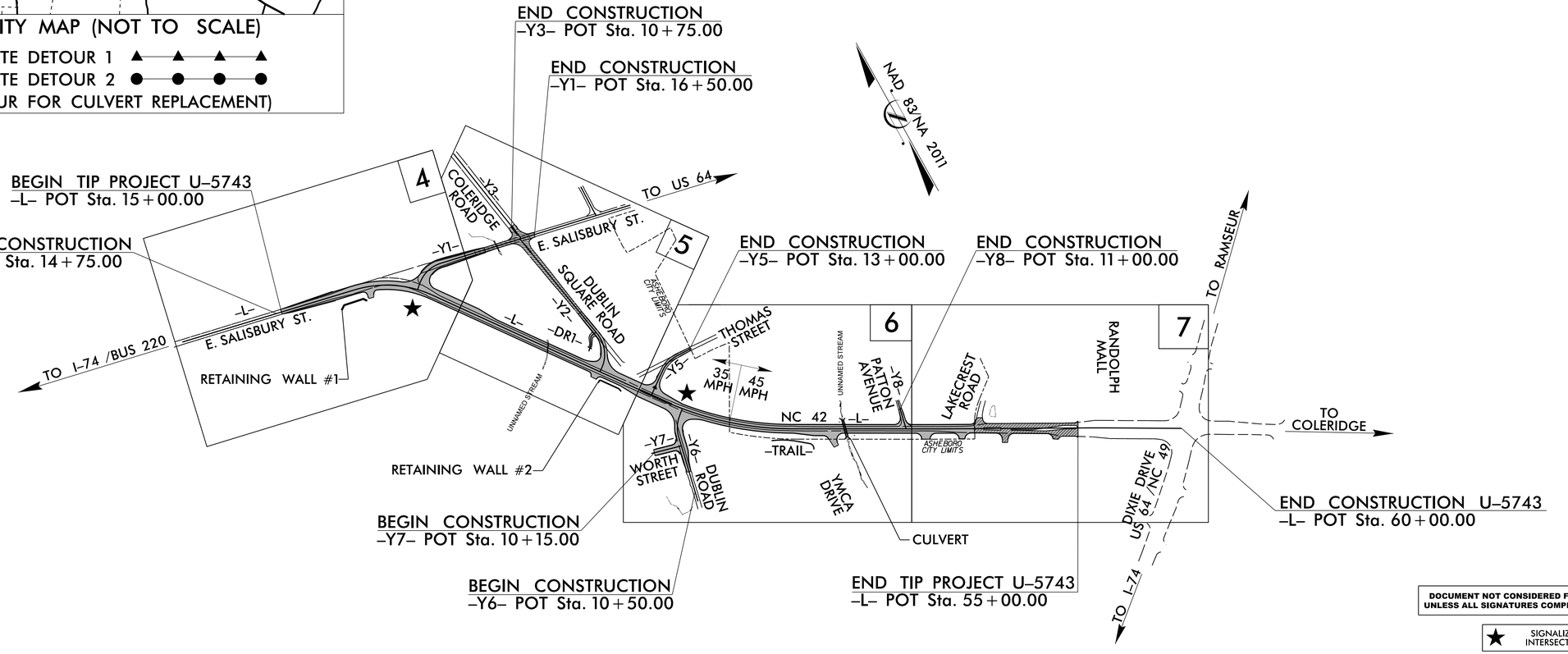
RANDOLPH COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U–5743	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
50165.1.1		P.E.
50165.2.1		R/W
50165.2.2		UTL.
50165.3.1		CONST.

LOCATION: ***NC 42 FROM SR 2237 (EAST SALISBURY STREET) TO NORTH OF US 64 /NC 49 (DIXIE DRIVE) IN ASHEBORO***

TYPE OF WORK: DRAINAGE, GRADING, PAVING, SIGNALS, CULVERT, AND RETAINING WALLS



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

★ SIGNALIZED INTERSECTION

GRAPHIC SCALES

50 0 50 100
PLANS

50 0 50 100
PROFILE (HORIZONTAL)

10 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2026 = 19,290
ADT 2046 = 21,450
K = 9 %
D = 60 %
T = 3 % *
V = 40 / 50 MPH
* TTST =1% DUAL =2%
FUNC CLASS =
URBAN PRINCIPAL ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U–5743 = 0.758 MI

TOTAL LENGTH TIP PROJECT U–5743 = 0.758 MI

PLANS PREPARED FOR THE NCDOT BY:

MOTT MACDONALD
930 Main Campus Drive, Suite 200
Raleigh, NC 27606
(919) 552–2253
www.mottmac.com
LICENSE NO. F–0669

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St. Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F–0116

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
OCTOBER 20, 2021

LETTING DATE:
JUNE 16, 2026

TIM JORDAN, PE
PROJECT ENGINEER

JAMES RICE, PE
HYDRAULICS PROJECT ENGINEER

JEFFREY A. STRODER, PE
NCDOT CONTACT

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER TIMOTHY JORDAN

Signed by: James Timothy Jordan
SIGNATURE:
11-May-2026
P.E.

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 31986 ENGINEER JAMES R. RICE

DocuSigned by:
SIGNATURE:
11-May-2026
P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

5/11/2026
c:\pwworking\hmm\rail_transit\jor66165\d01743\tu-5743_rdy_tsh.dgn
isojordan

8/17/99

GENERAL NOTES

GENERAL NOTES: 2024 SPECIFICATIONS
EFFECTIVE: 01–16–24

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

SUBSURFACE DRAINS:

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

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3' RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS 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".

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE CITY OF ASHEBORO (WATER; GRAVITY & FORCE MAIN SEWER), DUKE ENERGY DISTRIBUTION, RANDOLPH EMC, BRIGHTSPEED, PIEDMONT NATURAL GAS AND SPECTRUM.

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 CONTRACT.

CURB RAMPS:

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD. 848.06.

LIST OF ROADWAY STANDARD DRAWINGS

EFF. 01–16–2024
REV. 11–26–2025

2024 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch – N. C. Department of Transportation – Raleigh, N. C., Dated January, 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
225.02	Guide for Grading Subgrade – Secondary and Local
225.04	Method of Obtaining Superelevation – Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
	DIVISION 3 – PIPE CULVERTS
300.01	Method of Pipe Installation (Use Detail in Lieu of Standard for Sheets 1 and 2 of 2)
310.10	Driveway Pipe Construction
	DIVISION 5 – SUBGRADE, BASES AND SHOULDERS
560.01	Method of Shoulder Construction – High Side of Superelevated Curve – Method 1
	DIVISION 6 – ASPHALT BASES AND PAVEMENTS
654.01	Pavement Repairs
	DIVISION 8 – INCIDENTALS
806.01	Concrete Right of Way Marker
806.02	Granite Right of Way Marker
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
838.80	Precast Endwall – 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
840.22	Frames and Wide 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
840.31	Concrete Junction Box – 12" thru 66" Pipe
840.32	Brick Junction Box – 12" thru 66" Pipe
840.45	Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk (Use Detail in Lieu of Standard for Sheet 1 of 1)
848.02	Driveway Turnout – Radius Type
848.04	Street Turnout
848.06	Curb Ramp (Use Details in Lieu of Standards for Sheets 9 and 10 of 13)
850.01	Concrete Paved Ditches
852.01	Concrete Islands
852.06	Method for Placement of Drop Inlets in Concrete Islands
862.01	Guardrail Placement (Use Detail in Lieu of Standard for Sheets 4, 6, 11, 12, and 14 of 15)
862.02	Guardrail Installation (Use Detail in Lieu of Standard for Sheet 5 of 9)
862.03	Structure Anchor Units (Use Detail in Lieu of Standard for Sheet 8 of 9)
866.01	Chain Link Fence – 4', 5' and 6' High Fence
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

INDEX OF SHEETS

SHEET NUMBER	DESCRIPTION
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A–1 THRU 2A–7	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B–1	INTERSECTION /ISLAND DETAIL SHEET
2C–1 THRU 2C–2	METHOD OF PIPE INSTALLATION
2C–3	CONCRETE SIDEWALK DETAIL
2C–4 THRU 2C–6	GUARDRAIL PLACEMENT DETAILS
2G–1	TEMPORARY SHORING DETAIL
3B–1	GUARDRAIL, EARTHWORK, PAVEMENT REMOVAL AND FENCE SUMMARIES
3D–1 THRU 3D–3	DRAINAGE SUMMARY
3G–1	GEOTECHNICAL SUMMARY
3P–1	PARCEL INDEX SHEET
4 THRU 7	PLAN SHEETS
8 THRU 12	PROFILE SHEETS
RW–01 THRU RW–07	SURVEY CONTROL SHEETS
TMP–1 THRU TMP–11	TRAFFIC MANAGEMENT PLANS
PMP–1 THRU PMP–5	PAVEMENT MARKING PLANS
EC–1 THRU EC–11	EROSION CONTROL PLANS
SIGN–1 THRU SIGN–8	SIGNING PLANS
SIG.1.0 THRU SIG.5.2	SIGNAL PLANS
SIG.M1A THRU SIG.M9	SIGNAL METAL POLE PLANS
SCP–1 THRU SCP–7	SIGNAL COMMUNICATION PLANS
UC–1 THRU UC–11	UTILITY CONSTRUCTION PLANS
UO–1 THRU UO–5	UTILITIES BY OTHERS PLANS
X–1A THUR X–1B	CROSS–SECTIONS INDEX AND SUMMARY
X–2 THRU X–33	CROSS–SECTIONS
C–1 THRU C–6	CULVERT PLANS
CN	CULVERT NOTES
W–1 THRU W–5	WALL PLANS

PROJECT REFERENCE NO.	SHEET NO.
U–5743	1A
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER JARROD TIMOTHY JORDAN
Jarrod Timothy Jordan
Digitally signed by Jarrod Timothy Jordan
02-Apr-2026

MOTT MACDONALD I & E, LLC
LICENSE NO. F–0669

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:
MOTT MACDONALD
930 Main Campus Drive, Suite 200
Raleigh, NC 27606
www.mottmac.com

PROJECT REFERENCE NO.	SHEET NO.
U-5743	1B

9/10/2021

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin (EIP)
- Computed Property Corner
- Existing Concrete Monument (ECM)
- Parcel/Sequence Number
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary
- Proposed Wetland Boundary
- Existing Endangered Animal Boundary
- Existing Endangered Plant Boundary
- Existing Historic Property Boundary
- Known Contamination Area: Soil
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign
- Well
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

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

RAILROADS:

- Standard Gauge — 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
- Existing Control of Access Line
- Proposed Control of Access Line
- Proposed ROW and CA Line
- Existing Easement Line
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage/Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

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

POWER:

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

TELEPHONE:

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

WATER:

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

HDR
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

- Above Ground Water Line — A/G Water

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

4/1/2026
c:\pwworking\hmm\rail transit\jor66165\d0177431\U-5743_rdy_psh01B.dgn
jeo.p.jordan

PROJECT REFERENCE NO.	SHEET NO.
U-5743	2A-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER JAMES TIMOTHY JORDAN — Signed by: James Timothy Jordan DBD87EDB56F64FA... 02-Apr-2026

MOTT MACDONALD I & E, LLC
LICENSE NO. F-0669

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 044590 ENGINEER ANDREW D. WARGO — DocuSigned by: Andrew D. Wargo 2D2C959DCBCA49E... 02-Apr-2026

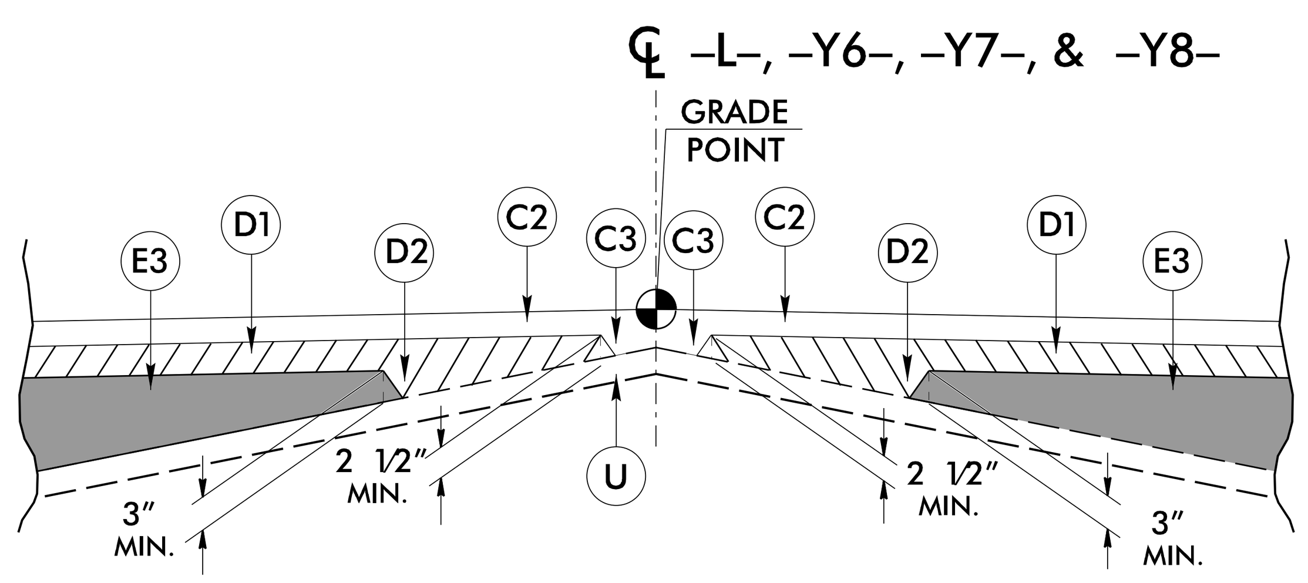
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of: MOTT MACDONALD, 930 Main Campus Drive, Suite 200, Raleigh, NC 27606, www.mottmac.com

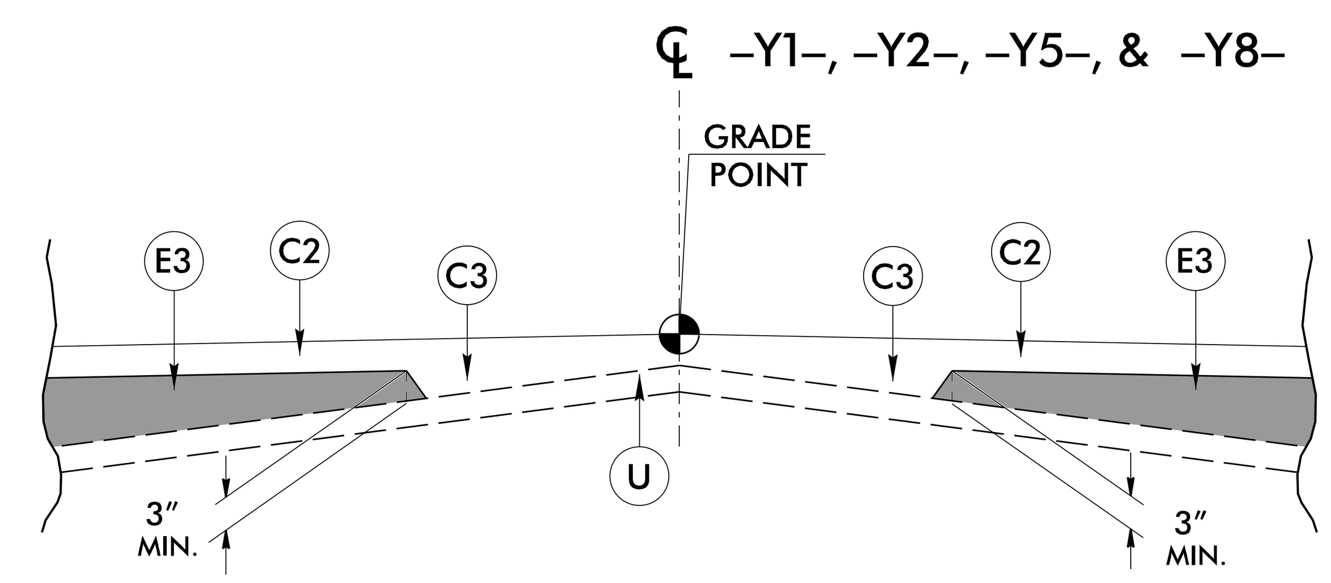
PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN DATED 3/6/26)

A	6" PORTLAND CEMENT CONCRETE PAVEMENT (WITH WELDED WIRE MESH)	E2	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.	T	EARTH MATERIAL.
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	E3	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.	U	EXISTING PAVEMENT.
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.	K	CLASS IV SUBGRADE STABILIZATION MATERIAL	V1	INCIDENTAL MILLING
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 LESS THAN 1" IN DEPTH OR GREATER THAN 1½" IN DEPTH.	N	GEOTEXTILE FOR SUBGRADE STABILIZATION	V2	1.5" MILLING
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R1	2'-6" CONCRETE CURB AND GUTTER	W1	WEDGING (SEE DETAIL 1 SHOWING METHOD OF WEDGING).
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.	R2	CONCRETE ISLAND (KEYED-IN)	W2	WEDGING (SEE DETAIL 2 SHOWING METHOD OF WEDGING).
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	S	5' SIDEWALK		

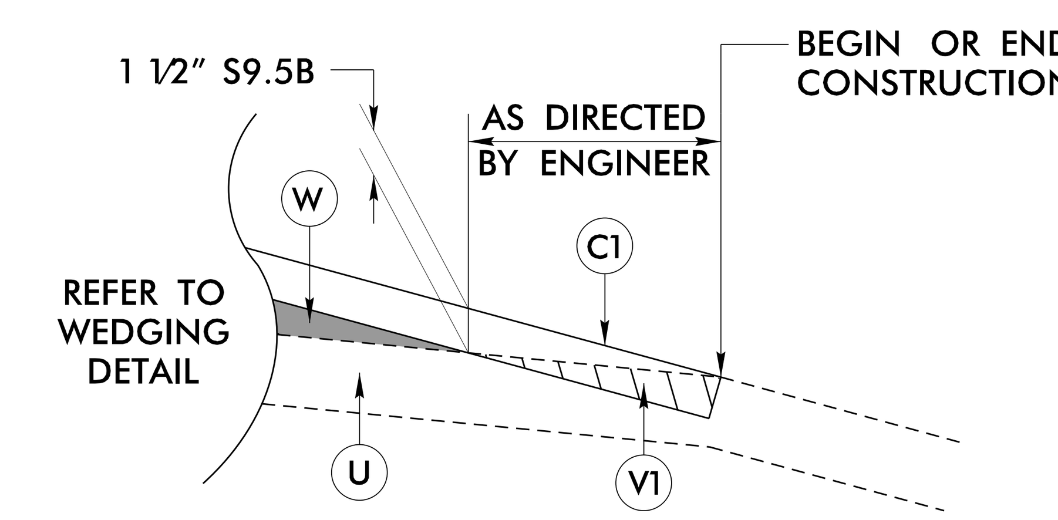
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



DETAIL SHOWING METHOD OF WEDGING 1 (W1)

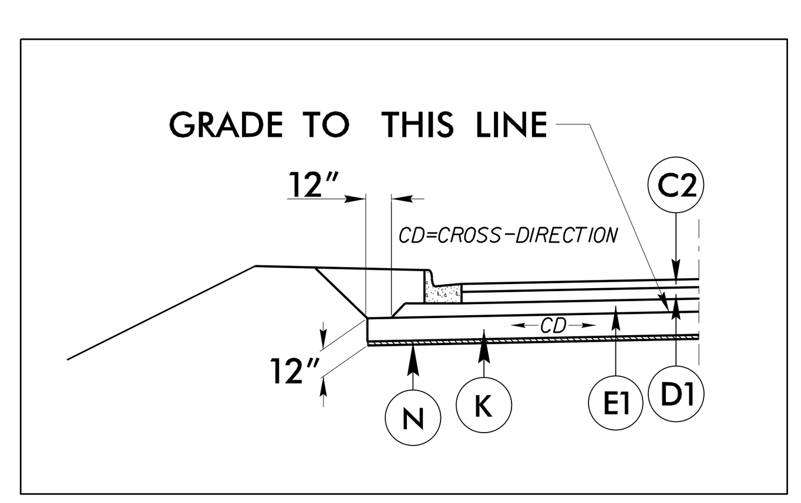


DETAIL SHOWING METHOD OF WEDGING 2 (W2)



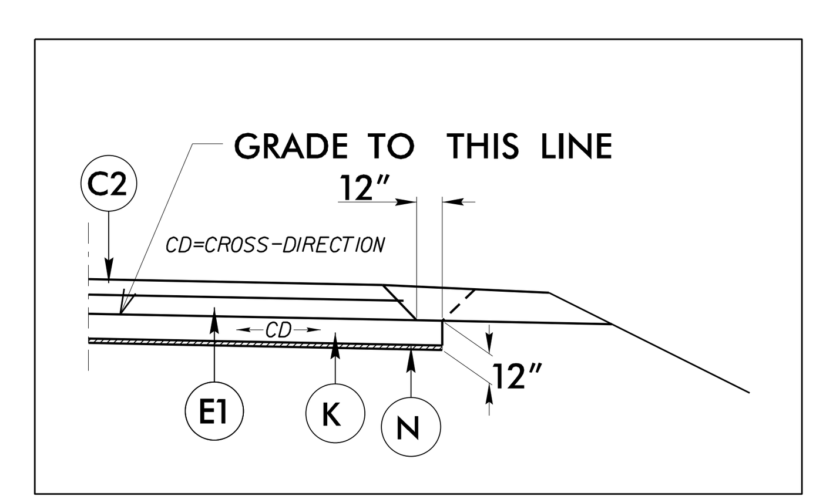
INCIDENTAL MILLING DETAIL

DETAIL SHOWING PROFILE VIEW



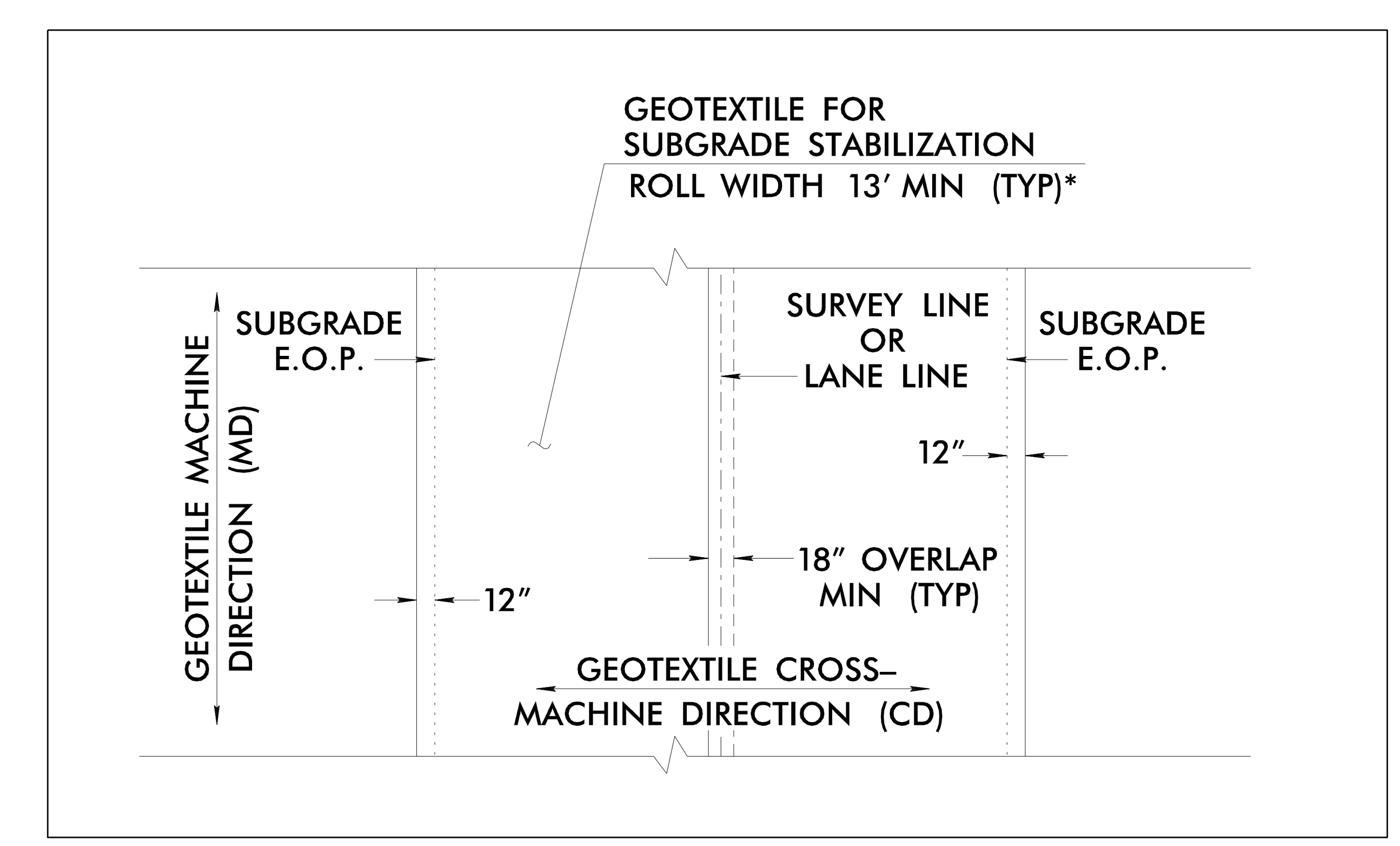
GEOTEXTILE FOR AGGREGATE SUBGRADE STABILIZATION FOR CG WITH ASPHALT BASE

-L- STA. 16+00.00 TO 18+50.00 RT
-L- STA. 23+00.00 TO 25+00.00 LT/RT
-L- STA. 39+00.00 TO 41+00.00 RT
-L- STA. 45+00.00 TO 47+00.00 LT/RT
-L- STA. 51+00.00 TO 53+00.00 RT



GEOTEXTILE FOR AGGREGATE SUBGRADE STABILIZATION FOR SHOULDER WITH ASPHALT BASE

-Y5- STA. 12+00.00 TO 12+50.00 LT/RT



GEOTEXTILE FOR SUBGRADE STABILIZATION PLACEMENT (PLAN VIEW) (100% COVERAGE REQUIRED)

-L- STA. 16+00.00 TO 18+50.00 RT
-L- STA. 23+00.00 TO 25+00.00 LT/RT
-L- STA. 39+00.00 TO 41+00.00 RT
-L- STA. 45+00.00 TO 47+00.00 LT/RT
-L- STA. 51+00.00 TO 53+00.00 RT
-Y5- STA. 12+00.00 TO 12+50.00 LT/RT

*INSTALL GEOTEXTILE FOR SUBGRADE STABILIZATION WITH MINIMUM ROLL WIDTH UNDER ROADWAY EDGES AND SHOULDERS ADJACENT TO FILL SLOPES

PROJECT REFERENCE NO.	SHEET NO.
U-5743	2A-2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21102 TIMOTHY 02-Apr-2026	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 044590 02-Apr-2026
MOTT MACDONALD I & E, LLC LICENSE NO. F-0669	

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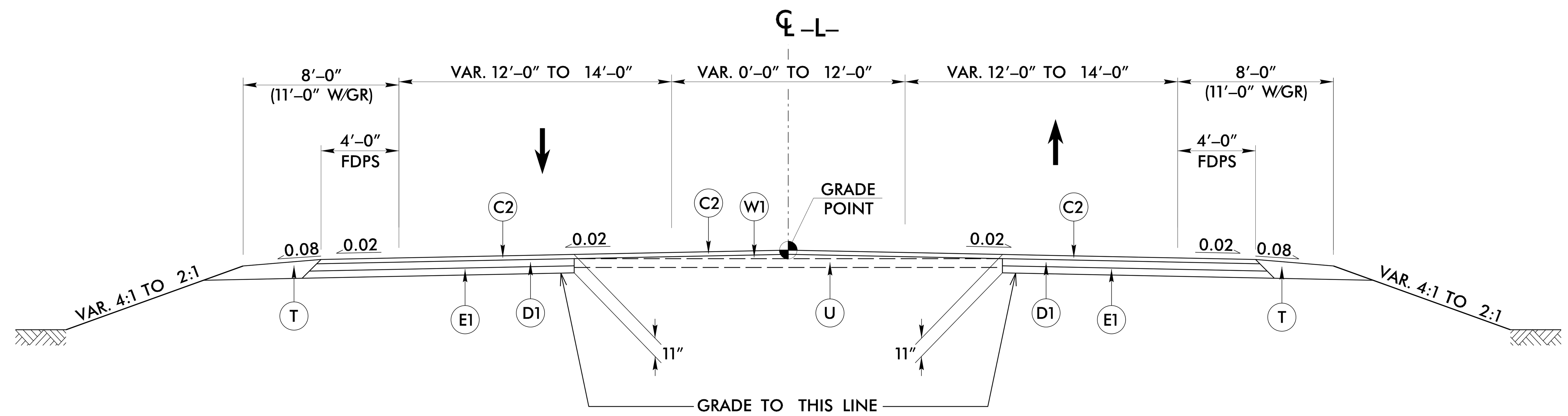
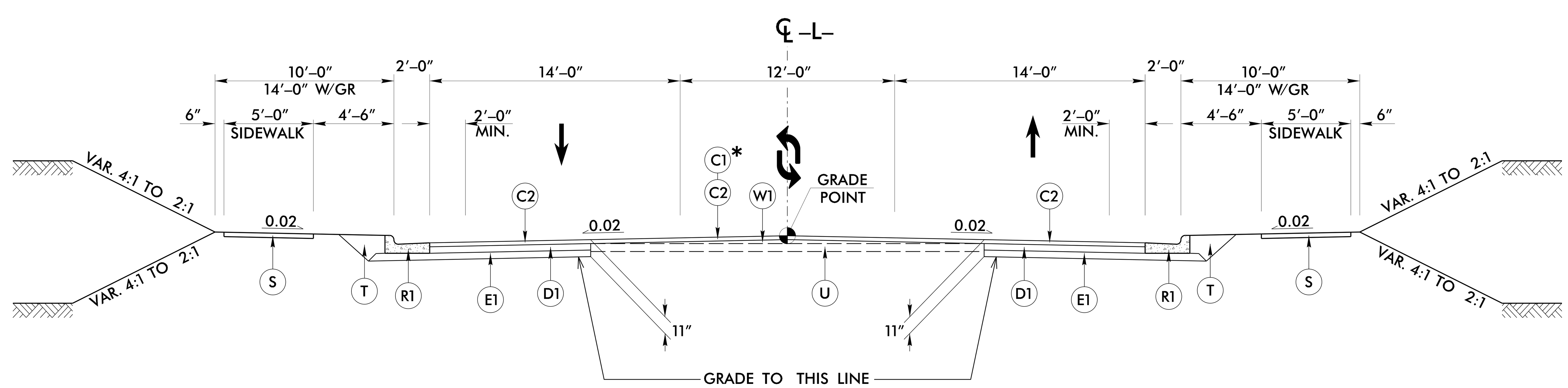


TYPICAL SECTION NO. 1

TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 1
-L- STA 15+00.00 TO 15+50.00

USE TYPICAL SECTION NO. 1:
-L- STA 15+50.00 TO 17+70.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2:
-L- STA 17+70.00 TO 22+75.00
*-L- STA 22+75.00 TO 48+50.00
-L- STA 48+50.00 TO 50+00.00

PAVEMENT SCHEDULE	
C1	1.5″ S9.5B
C2	3″ S9.5B
D1	4″ I19.0C
E1	4″ B25.0C
R1	2′-6″ C & G
S	5′ SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W1	WEDGING

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

PROJECT REFERENCE NO.	SHEET NO.
U-5743	2A-3

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21102 — JAMES TIMOTHY JORDAN — 02-Apr-2026

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 044590 — 02-Apr-2026

MOTT MACDONALD I & E, LLC LICENSE NO. F-0669

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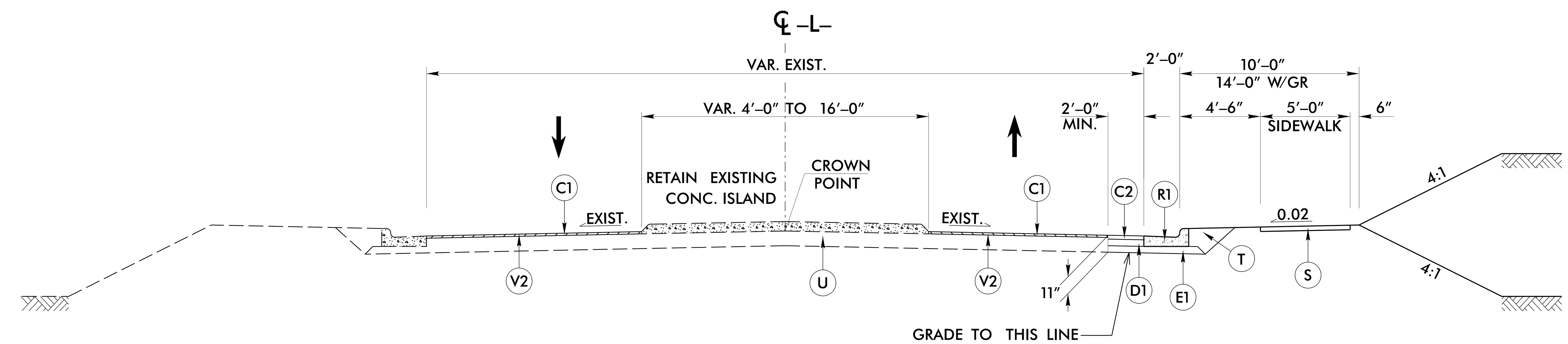
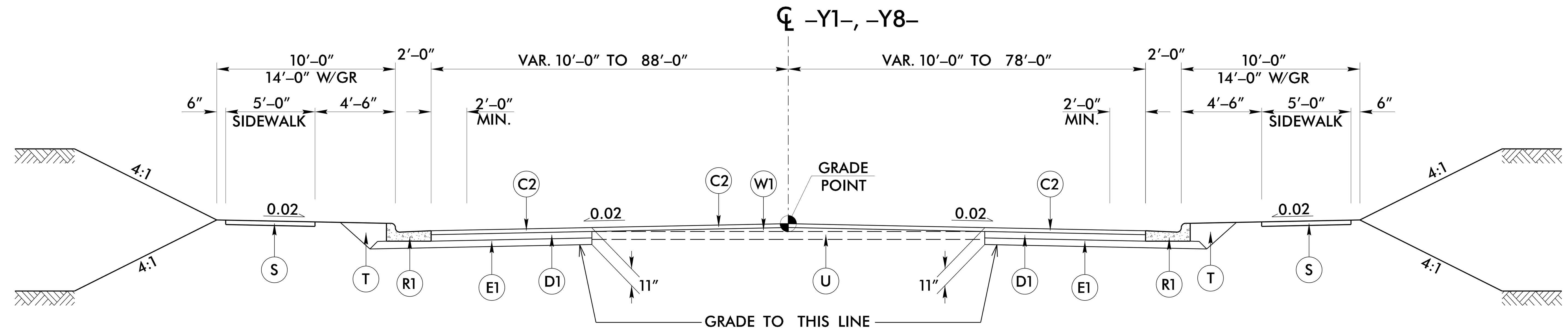


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3:

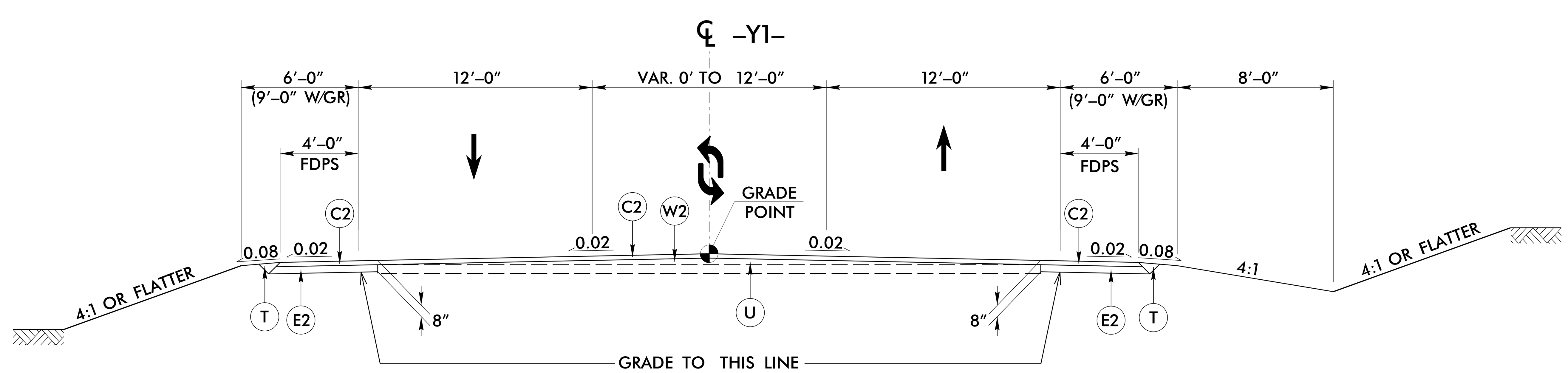
-L- STA 50+00.00 TO 55+00.00



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4:

-Y1- STA 10+20.05 TO 11+10.99
-Y8- STA 10+20.89 TO 10+64.29



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5:

-Y1- STA 11+10.99 TO 13+50.00

TRANSITION FROM TYPICAL SECTION NO. 5 TO EXISTING
-Y1- STA 13+50.00 TO 14+00.00

OVERLAY EXISTING WITH (C1) FROM
-Y1- STA 13+50.00 TO 16+25.00

TRANSITION FROM TYPICAL SECTION NO. 5 TO EXISTING
-Y1- STA 16+25.00 TO 16+50.00

PAVEMENT SCHEDULE	
C1	1.5" S9.5B
C2	3" S9.5B
D1	4" I19.0C
E1	4" B25.0C
E2	5" B25.0C
R1	2'-6" C & G
S	5' SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V2	1.5" MILLING
W1	WEDGING
W2	WEDGING

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

PROJECT REFERENCE NO.	SHEET NO.
U-5743	2A-4

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21102

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 044590

02-Apr-2026

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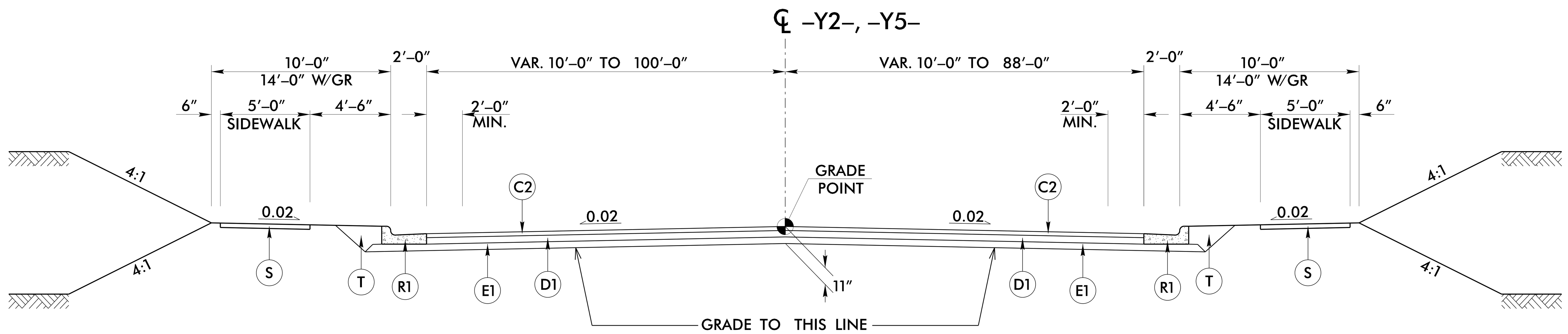
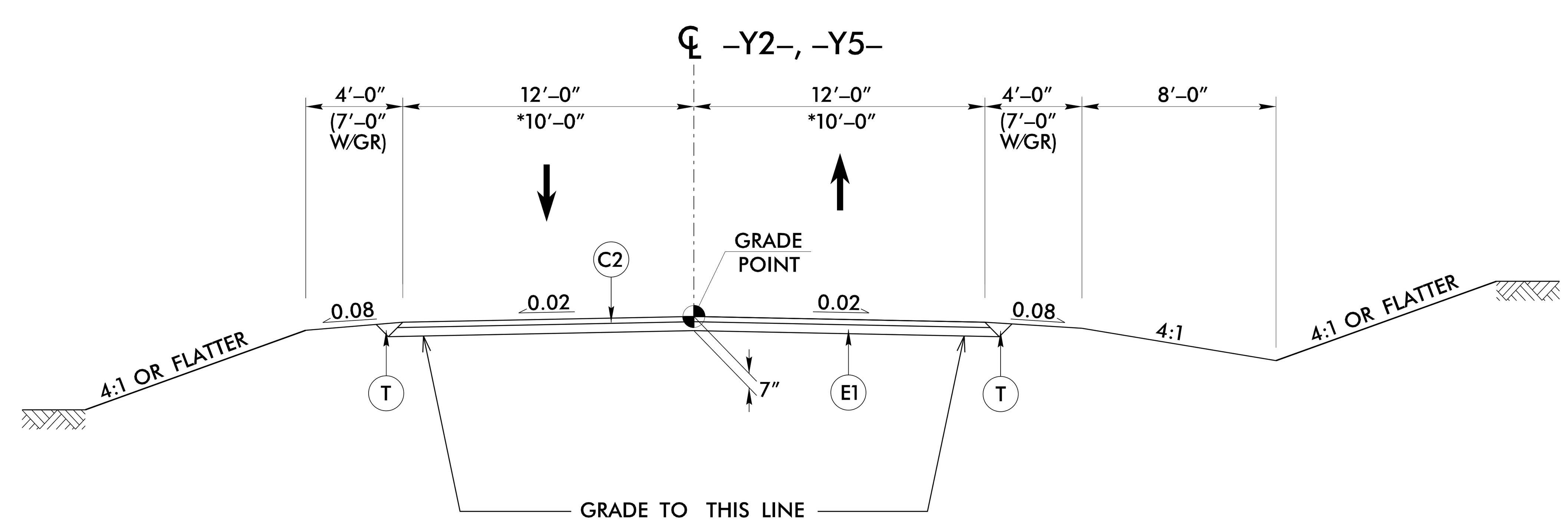


TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6:

-Y2- STA 10+20.00 TO 10+88.08
-Y5- STA 10+32.00 TO 10+90.84



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7:

-Y2- STA 10+88.08 TO 11+40.00
*-Y5- STA 10+90.84 TO 12+00.00

PAVEMENT SCHEDULE	
C2	3" S9.5B
D1	4" I19.0C
E1	4" B25.0C
R1	2'-6" C & G
S	5' SIDEWALK
T	EARTH MATERIAL

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

PROJECT REFERENCE NO.	SHEET NO.
U-5743	2A-5

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21102 — 02-Apr-2026

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 044590 — 02-Apr-2026

MOTT MACDONALD I & E, LLC LICENSE NO. F-0669

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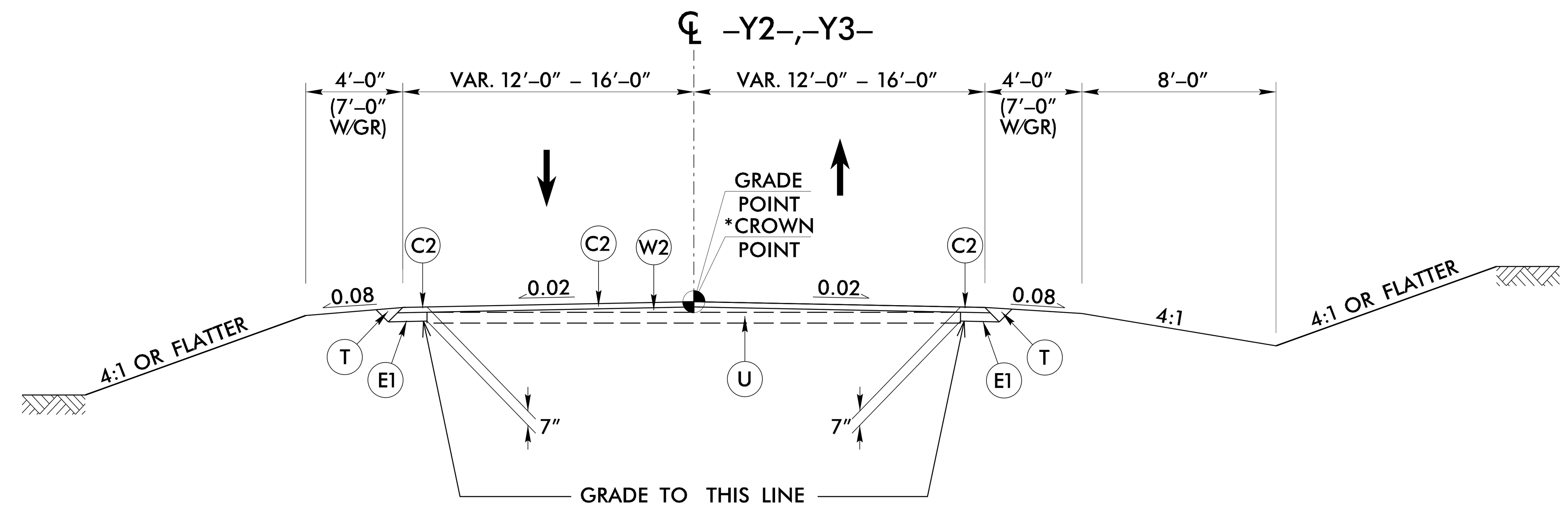
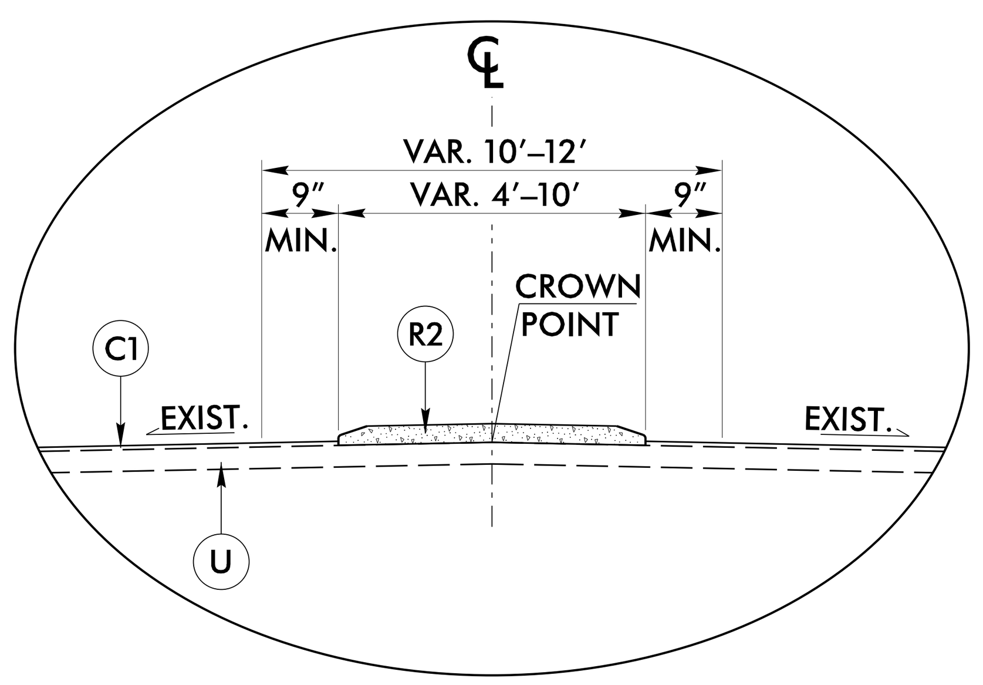


TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8:
-Y2- STA 11+40.00 TO 12+75.00

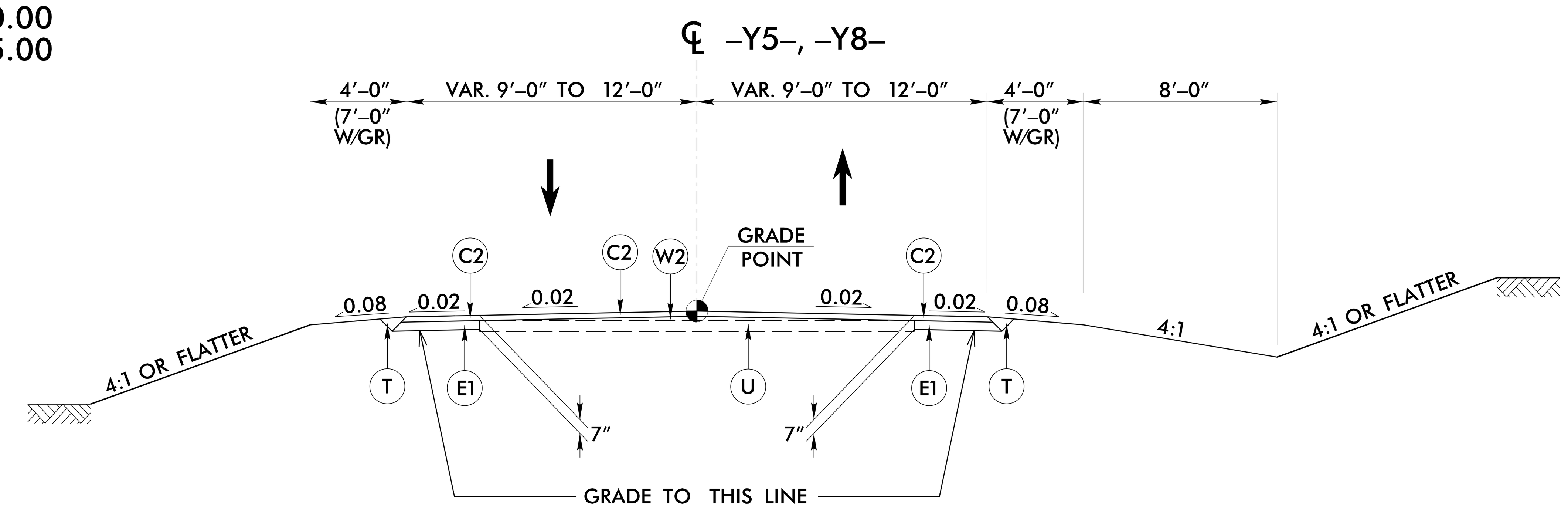
TRANSITION FROM TYPICAL SECTION NO. 8 TO EXISTING
-Y2- STA 12+75.00 TO 13+25.00

OVERLAY EXISTING WITH C1 FROM
-Y2- STA 12+75.00 TO 17+74.00 (MILL 1-½" FULL WIDTH)
*-Y3- STA 10+11.00 TO 10+75.00



MEDIAN ISLAND DETAIL

USE IN CONJUNCTION WITH TYPICAL SECTION NO. 8
-Y2- STA 17+00.00 TO 17+50.00
-Y3- STA 10+25.00 TO 10+75.00



TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9:
-Y5- STA 12+00.00 TO 12+50.00
-Y8- STA 10+64.29 TO 10+75.00

TRANSITION FROM TYPICAL SECTION NO. 9 TO EXISTING
-Y5- STA 12+50.00 TO 13+00.00
-Y8- STA 10+75.00 TO 11+00.00

PAVEMENT SCHEDULE	
C1	1.5" S9.5B
C2	3" S9.5B
E1	4" B25.0C
R2	CONC. ISLAND (KEYED-IN)
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W2	WEDGING

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

4/1/2026
...\rail_transit\jor66165\d0177431\U-5743_rdy_typ.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-5743	2A-6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
SEAL 21102 — 02-Apr-2026	SEAL 044590 — 02-Apr-2026
MOTT MACDONALD I & E, LLC LICENSE NO. F-0669	

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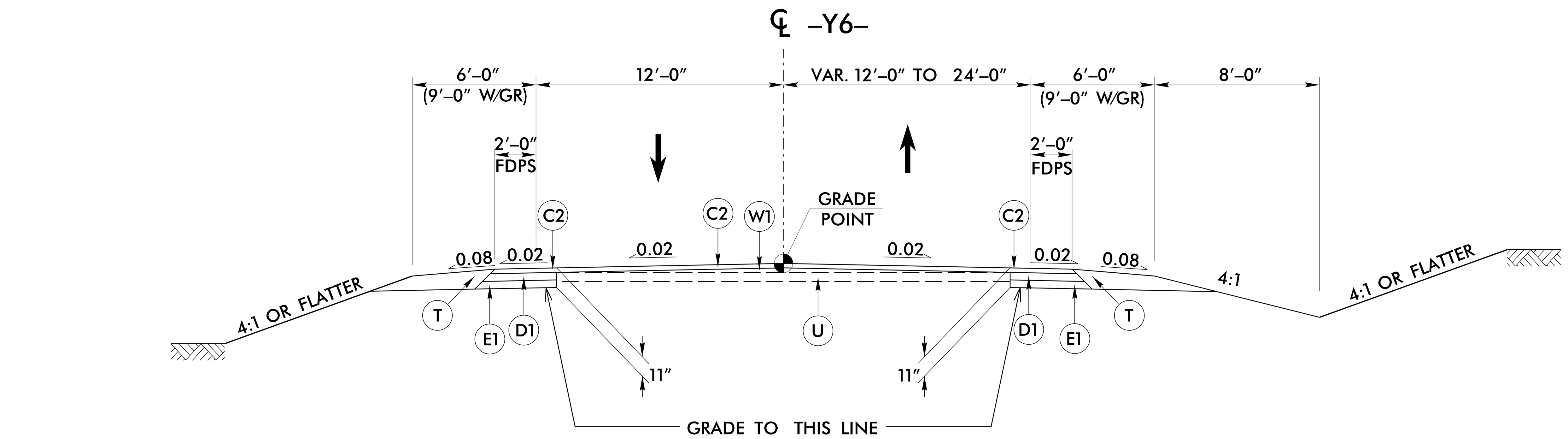
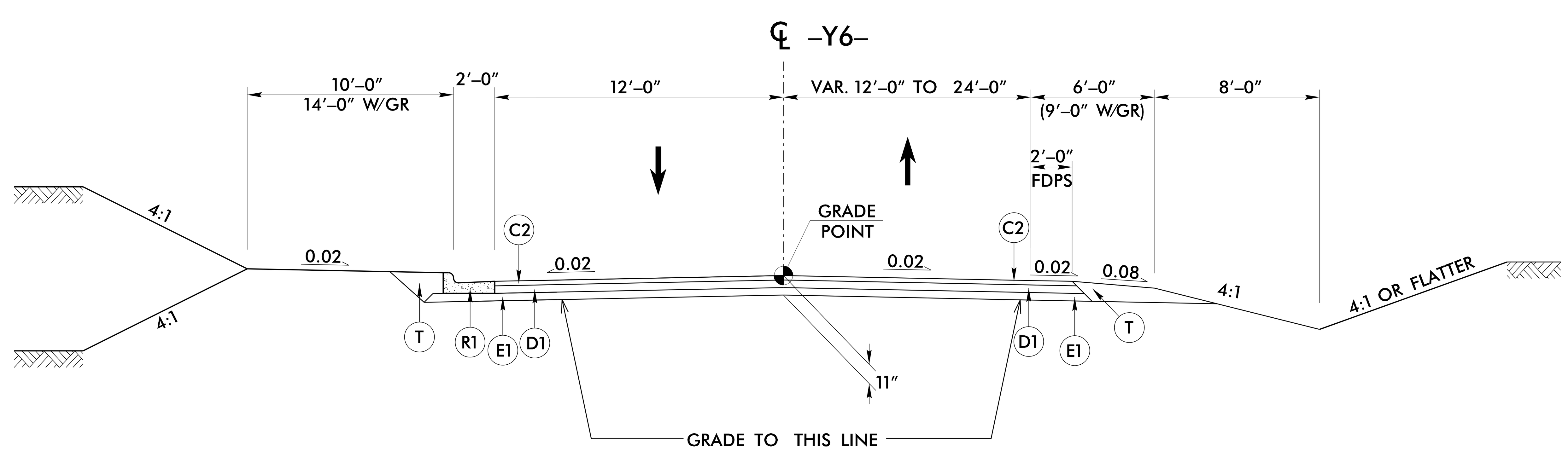


TYPICAL SECTION NO. 10

TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 10
-Y6- STA 11+50.00 TO 12+00.00

USE TYPICAL SECTION NO. 10:
-Y6- STA 12+00.00 TO 12+50.00



TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11:
-Y6- STA 12+50.00 TO 13+52.24

PAVEMENT SCHEDULE	
C2	3" S9.5B
D1	4" I19.0C
E1	4" B25.0C
R1	2'-6" C & G
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W1	WEDGING

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

PROJECT REFERENCE NO.	SHEET NO.
U-5743	2A-7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
SEAL 21102	SEAL 044590
02-Apr-2026	02-Apr-2026
MOTT MACDONALD I & E, LLC LICENSE NO. F-0669	

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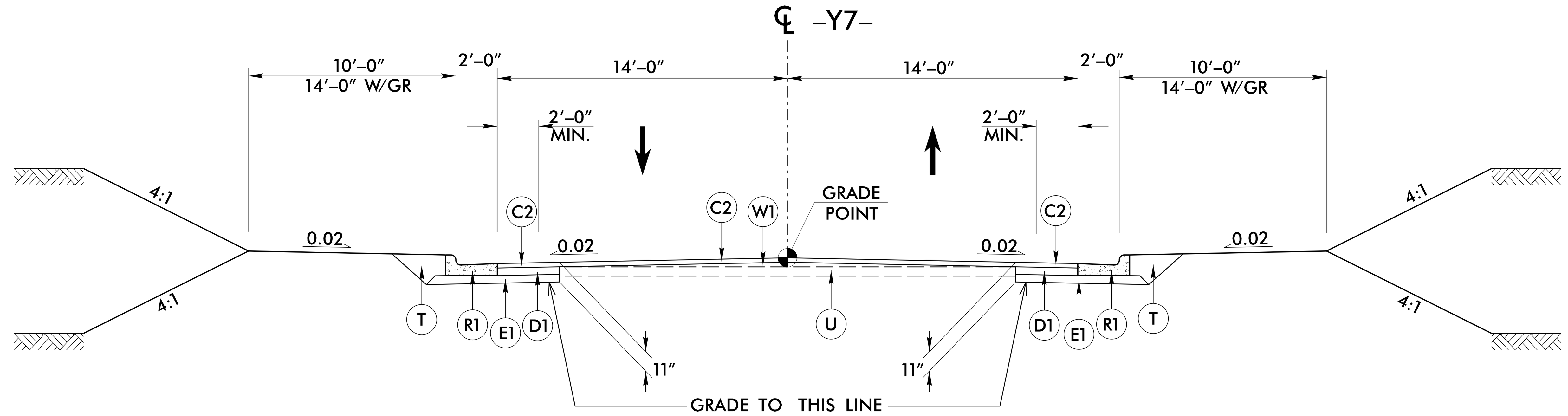
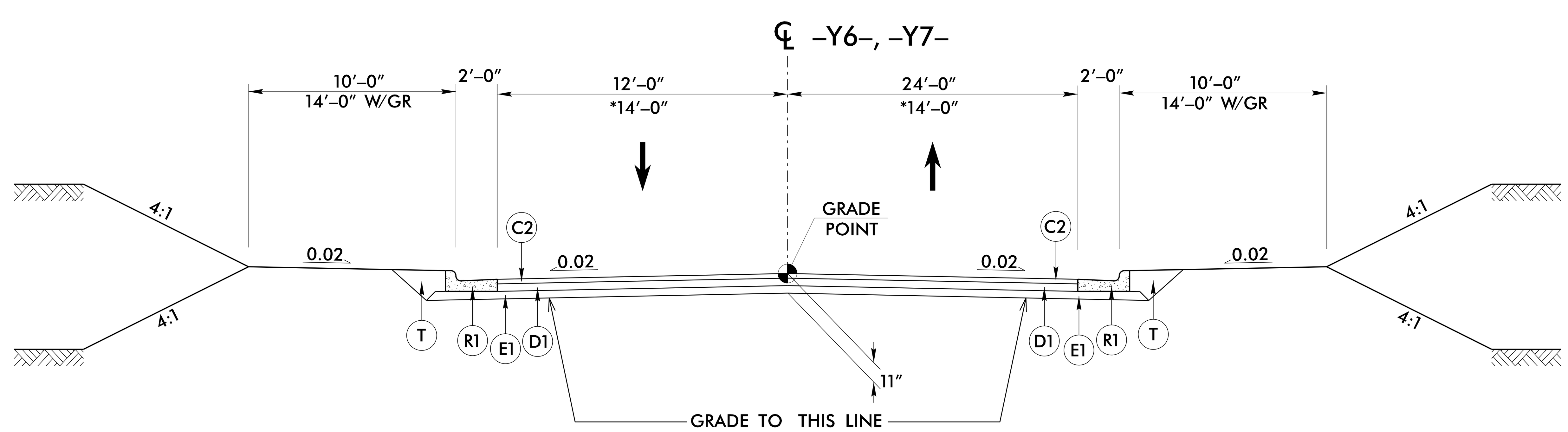


TYPICAL SECTION NO. 12

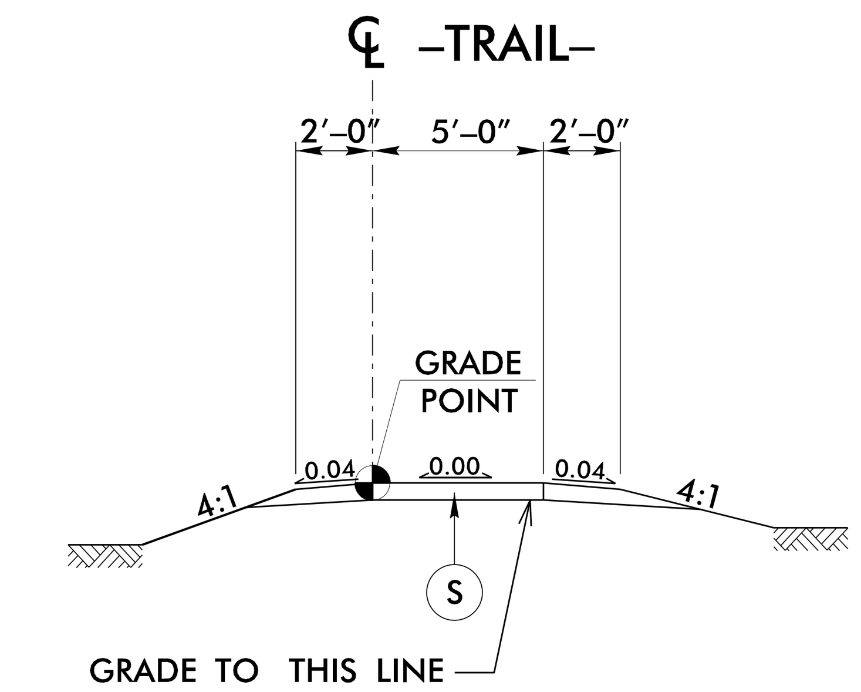
TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 12
-Y7- STA 10+15.00 TO 10+40.00

USE TYPICAL SECTION NO. 12:
-Y7- STA 10+40.00 TO 10+80.00



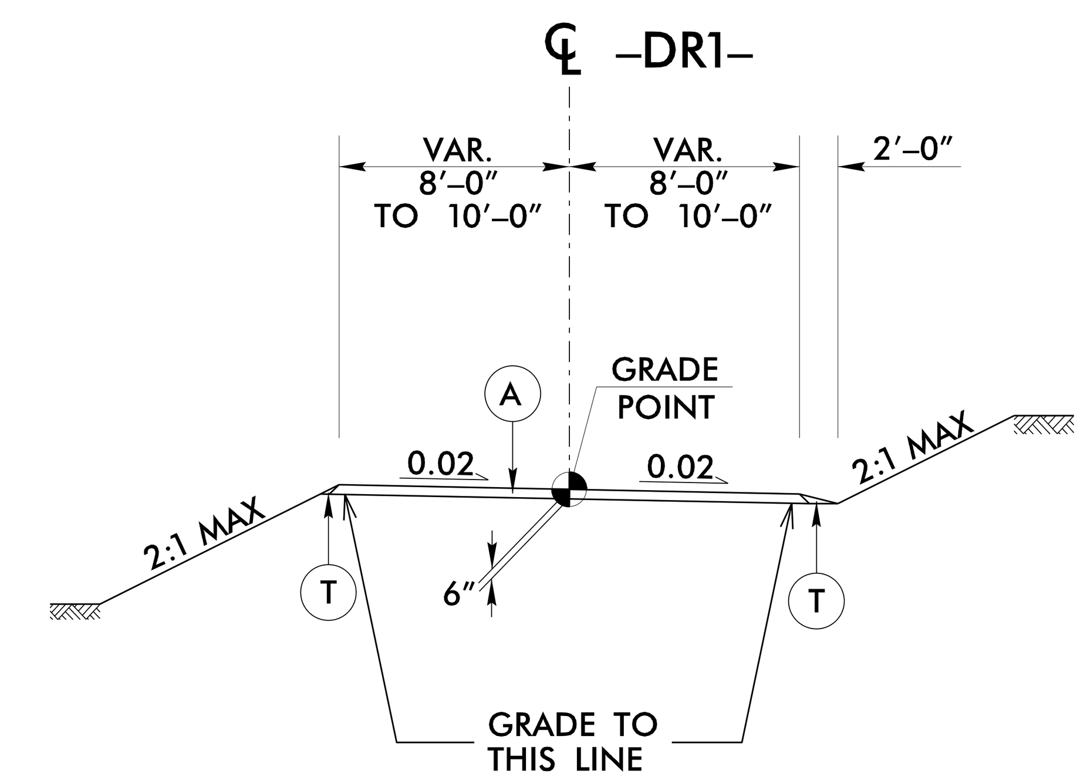
TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13:
-Y6- STA 13+52.24 TO 14+46.38
*-Y7- STA 10+80.00 TO 11+37.68



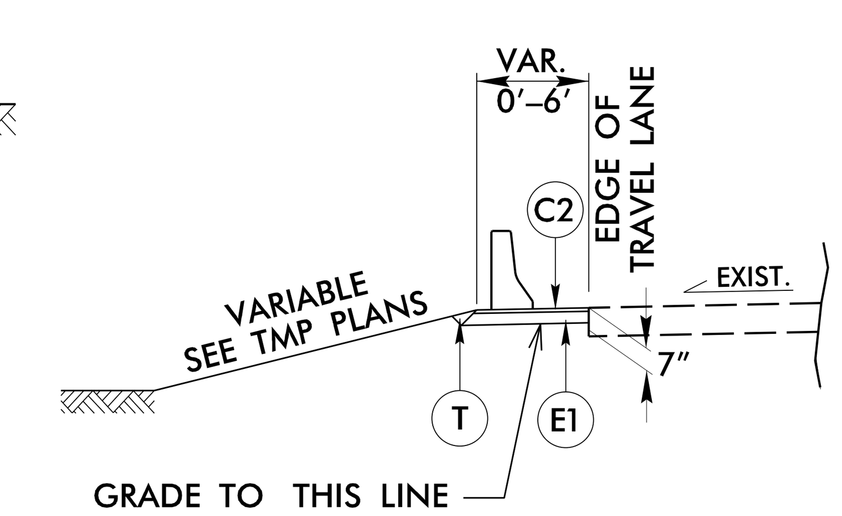
TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14:
-TRAIL- STA 10+00.00 TO 12+25.00



TYPICAL SECTION NO. 15

USE TYPICAL SECTION NO. 15:
-DR1- STA 10+12.00 TO 10+87.08



TEMPORARY PAVEMENT DETAIL
UNDER TEMPORARY BARRIER

-L- STA 15+00 TO 19+25 RT
-L- STA 30+98 TO 34+20 LT
SEE TRANSPORTATION MANAGEMENT PLANS

PAVEMENT SCHEDULE	
A	6" CONCRETE
C2	3" S9.5B
D1	4" I19.0C
E1	4" B25.0C
R1	2'-6" C & G
S	5' SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W1	WEDGING

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

INTERSECTION /ISLAND DETAILS

–L– /–Y2– /–Y5– /–Y6 /–Y7– /–DR1–

FOR PLAN VIEW SEE SHEETS 5 & 6

MONOLITHIC ISLAND
PAVED SHOULDER
SIDEWALK
★ NEW SIGNAL

PROJECT REFERENCE NO.	SHEET NO.
U-5743	2B-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER JAMES TIMOTHY JORDAN

Signed by: JAMES TIMOTHY JORDAN
02-Apr-26

MOTT MACDONALD I & E, LLC
LICENSE NO. F-0669

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NAD 83/2011

25′ 0′ 25′ 50′

(ENGLISH)

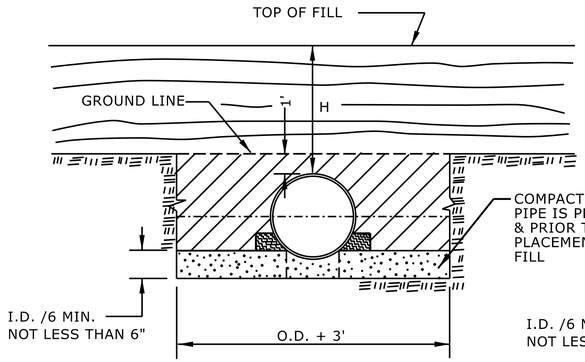
N 10° 01′ 13.5″ W
S 79° 58′ 46.5″ W
–DR1– PT Sta. 10+40.17
–DR1– PC Sta. 10+22.02
–DR1–
S 27° 59′ 05.9″ W
–DR1– PC Sta. 10+63.03
–DR1– PT Sta. 10+80.37
S 47° 50′ 49.7″ W
END CONSTRUCTION
–DR1– POT Sta. 10+87.08
–DR1– POT Sta. 11+00.00
–Y2–
BEGIN C&G
-Y2- +87.39
BEGIN SW
-Y2- +87.39
END C&G
-Y2- +88.08
END SW
-Y2- +78.16
–L– POT Sta. 31+43.44
–Y2– POT Sta. 10+00.00
100′ R
50′ R
120′ R
5′ SIDEWALK
2′–6″ C&G
N 53° 41′ 08.9″ E
END C&G
-Y5- +90.65
END SW
-Y5- +82.00
-Y5- +50.00
0′ RT
-Y5-
N 53° 40′ 29.9″ E
BEGIN C&G
-Y5- +82.00
BEGIN SW
-Y5- +82.00
35+00
PROPOSED MONO. CONC. ISLAND
-Y5- +38.00
8.15′ LT
-Y5- +38.00
8.16′ RT
2′R
16′
50′R
+60.00
0′ RT
+20.00
0′ RT
4′R
–L–
S 36° 19′ 30.1″ E
PROPOSED MONO. CONC. ISLAND
–L– POT Sta. 35+78.40
–Y6– POT Sta. 14+66.38
20′ DR
8″ x 12″ CURB
END SW
-L- +09.16
END C&G
END CURB
-L- +11.29
BEGIN CURB
-L- +93.45
BEGIN SW
-L- +45.47
BEGIN C&G
-L- +43.35
END CURB
-L- +66.29
–L– POT Sta. 34+16.00
–Y5– POT Sta. 10+00.00
90′R
45′R
180′R
N 49° 44′ 19.5″ E
BEGIN SW
-Y6- +63.69
BEGIN C&G
-Y6- +52.24
END SW
-Y6- +77.80
–Y6–
–Y6– POT Sta. 12+80.42
–Y7– POT Sta. 11+49.69
30′ R
SW TO BE REMOVED & REPLACED
END C&G
-Y7- +09.62
–Y7–
S 75° 05′ 02.1″ E
END C&G
-Y7- +15.00
SW TO BE REMOVED & REPLACED
BEGIN C&G
-Y7- +15.00
N 12° 28′ 34.3″ E

END CONSTRUCTION
–Y3– POT Sta.10+75.00
N 9° 29′ 21.9″ W
–Y3–
-Y3- +73.00
2.76′ RT
-Y3- +73.00
3.32′ LT
PROPOSED MONO CONC. ISLAND
-Y3- +27.03
2.90′ LT
–Y1– POT Sta. 15+84.06
–Y3– POT Sta.10+00.00
END CONSTRUCTION
–Y1– POT Sta.16+50.00
–Y1–
S 77° 57′ 32.0″ E
–Y1– POT Sta. 15+77.15
–Y2– POT Sta. 17+85.67
-Y2- +48.00
0.75′ RT
-Y2- +02.00
0.75′ RT
-Y2- +02.00
0.75′ LT
–Y2–
N 10° 01′ 13.5″ W

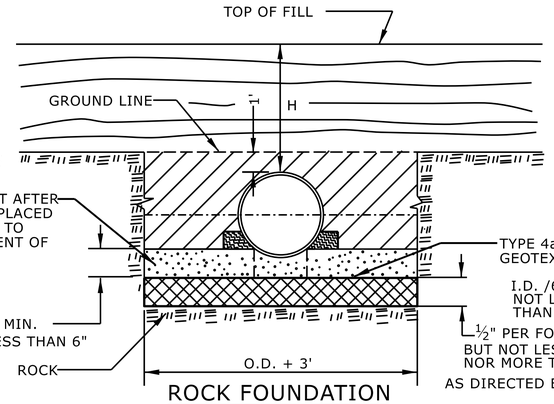
–Y2– /–Y3–

FOR PLAN VIEW SEE SHEET 5

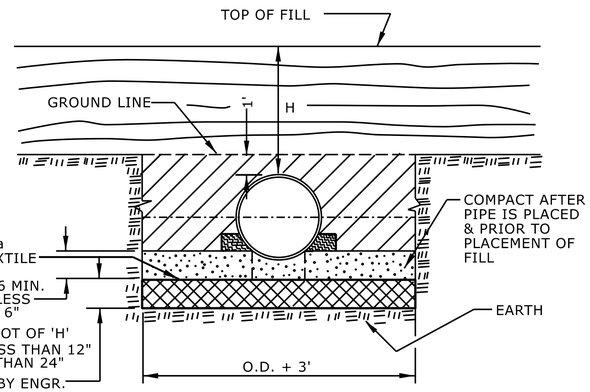
PROJECT REFERENCE NO.	SHEET NO.
U-5743	2C-1



NORMAL EARTH FOUNDATION

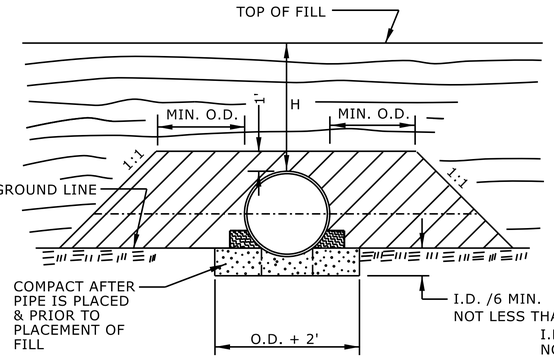


ROCK FOUNDATION

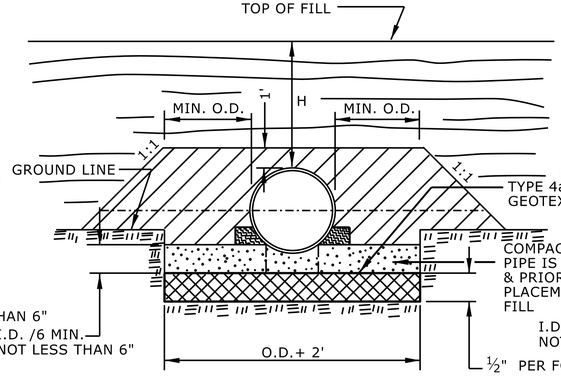


UNSUITABLE MATERIAL FOUNDATION

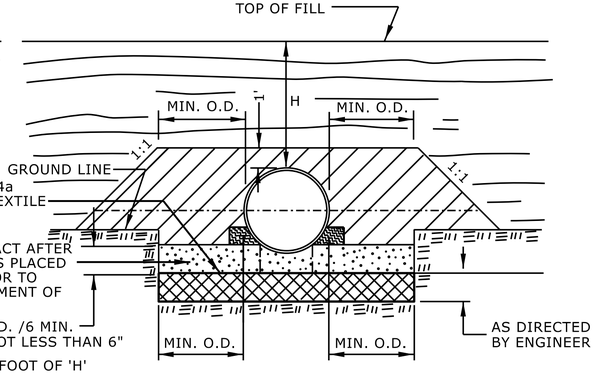
PIPE IN TRENCH



NORMAL EARTH FOUNDATION



ROCK FOUNDATION



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
NORTH CAROLINA
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

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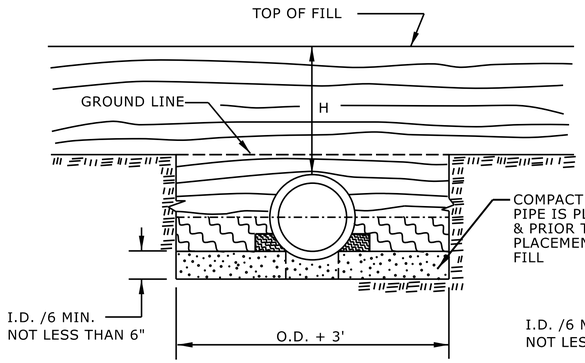
CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

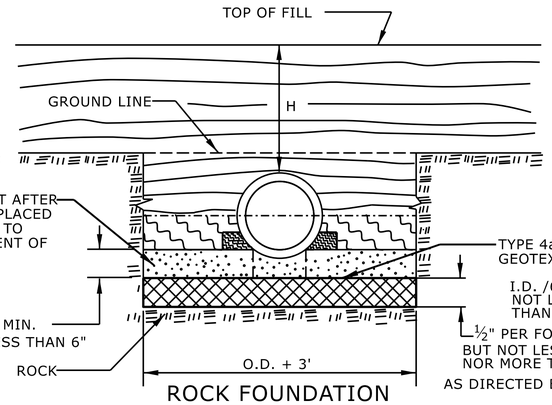
SEE TITLE BLOCK

ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

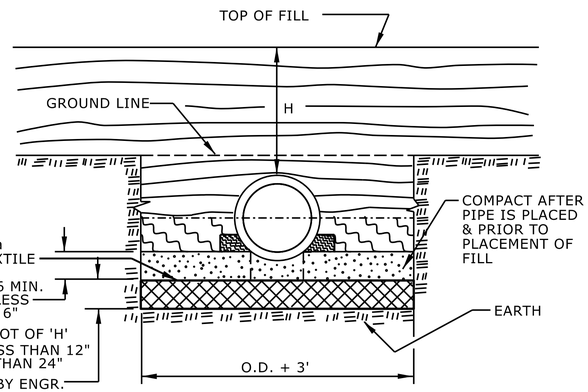
PROJECT REFERENCE NO.	SHEET NO.
U-5743	2C-2



NORMAL EARTH FOUNDATION

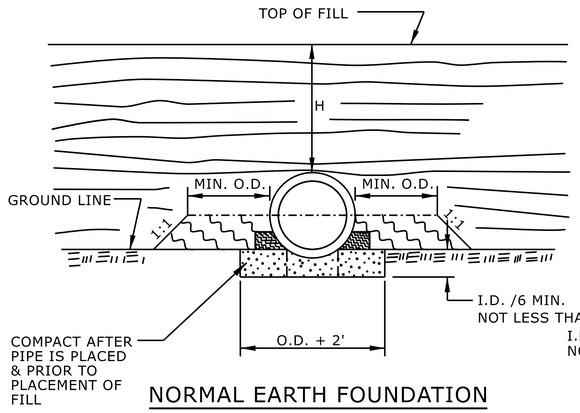


ROCK FOUNDATION

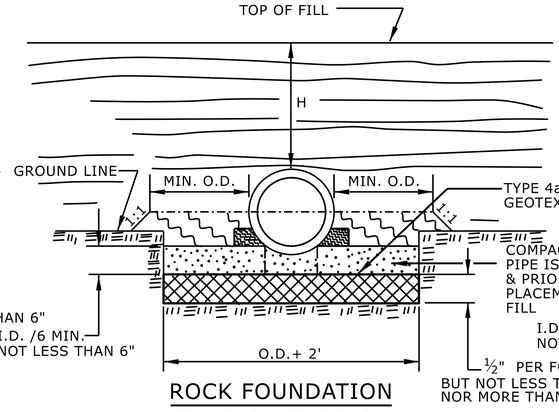


UNSUITABLE MATERIAL FOUNDATION

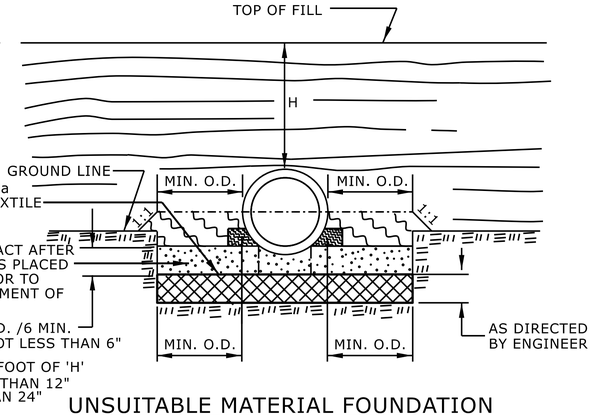
PIPE IN TRENCH



NORMAL EARTH FOUNDATION



ROCK FOUNDATION



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, 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 NORTH CAROLINA
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ROADWAY DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

RIGID PIPE

SHEET 2 OF 2

300.01

NORTH CAROLINA PROFESSIONAL SEAL 033144 ENGINEER NICHOLAS W. TACKER
5884329
02-Apr-2026

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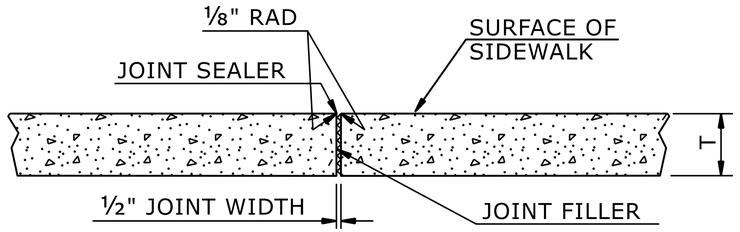
PROJECT REFERENCE NO.	SHEET NO.
U-5743	2C-3

NOTES:

CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

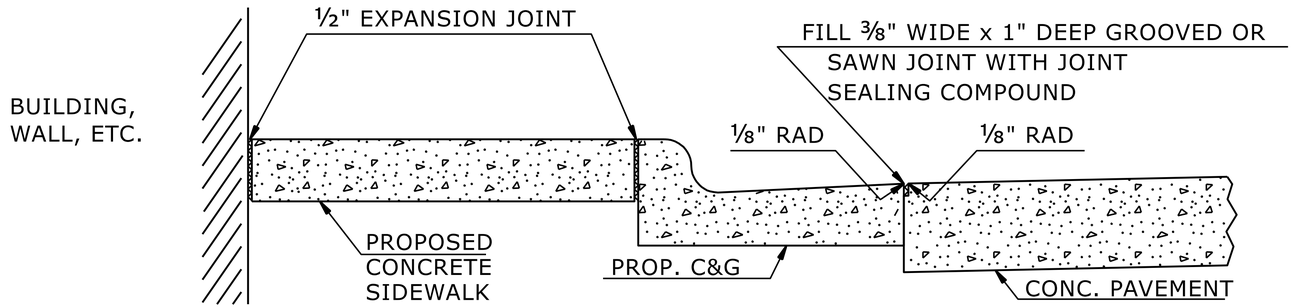
PLACE A GROOVE JOINT 1" DEEP WITH ⅛" RADII IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE ½" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS. A ½" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.

SEE STD. DWG. 848.06 FOR CURB RAMP LOCATION REQUIREMENTS AND CONSTRUCTION GUIDELINES.



T = SIDEWALK THICKNESS

TRANSVERSE EXPANSION JOINT IN SIDEWALK



DETAILS SHOWING JOINTS IN CONCRETE SIDEWALK

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ROADWAY DETAIL DRAWING FOR

CONCRETE SIDEWALK

SHEET 1 OF 1

848D01

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02-Apr-2026

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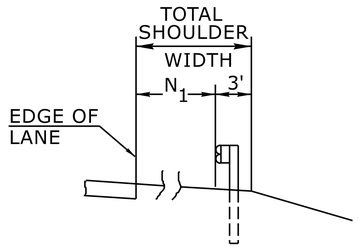
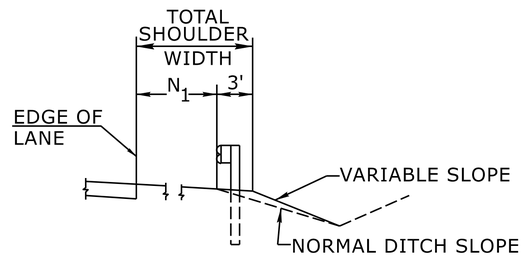
U-5743	2C-4

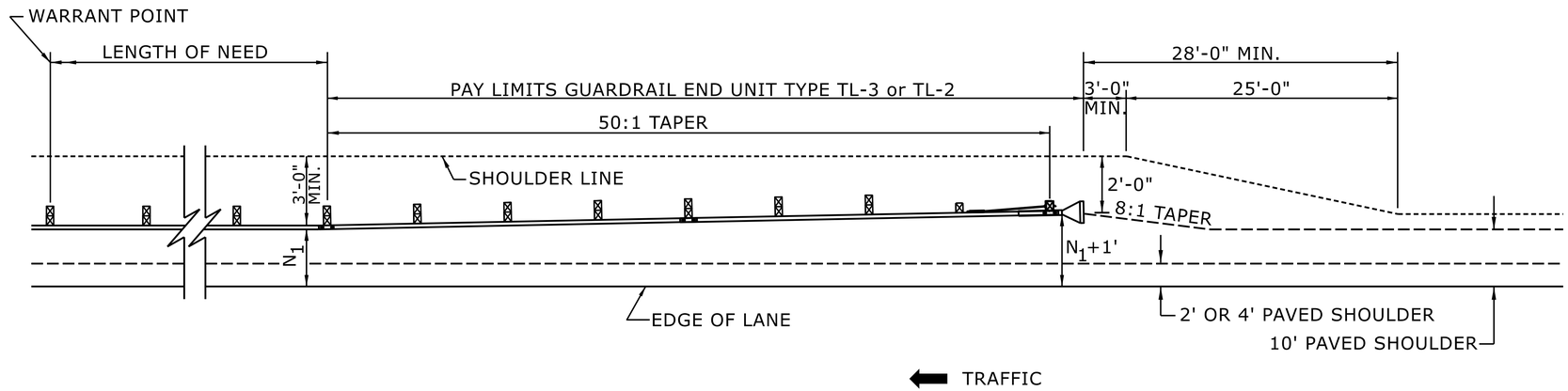


FILL SECTION



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

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02-Apr-2026

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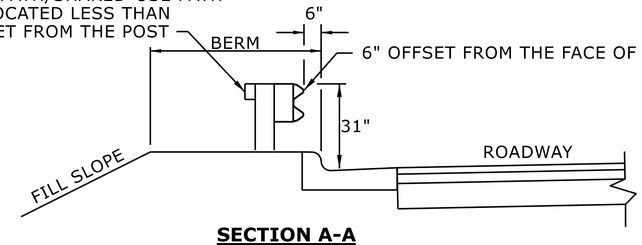
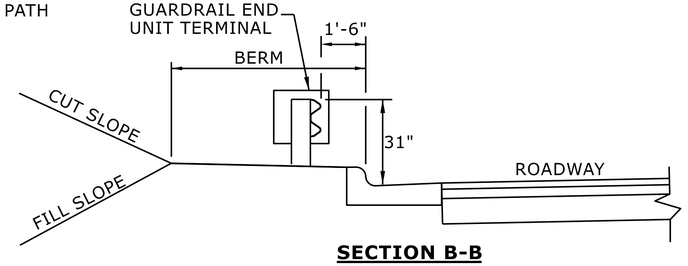
U-5743	2C-5

PLACE APPROVED BICYCLE FRIENDLY RAILINGS, FENCE, OR RUB RAILS IF SIDEPATH/SHARED-USE PATH IS LOCATED LESS THAN 4 FEET FROM THE POST

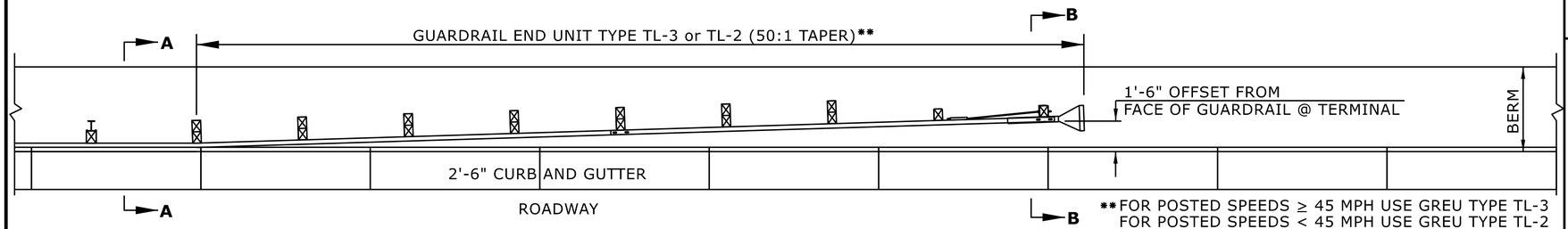
SEE THE ROADWAY DESIGN MANUAL (PART I CHAPTER 4 SECTION 4.14) FOR OFFSET DISTANCES FROM FACE OF GUARDRAIL AND BACK OF GUARDRAIL TO SIDEWALK OR SIDEPATH/SHARED-USE PATH



SECTION A-A



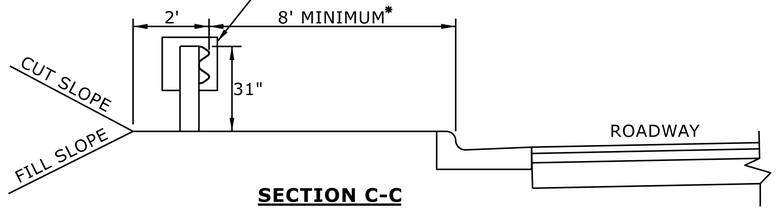
SECTION B-B



GUARDRAIL 6" FROM THE FACE OF CURB

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

BICYCLE FRIENDLY RAILINGS, FENCE OR RUB RAIL SHOULD NOT BE PLACED WITHIN THE LIMITS OF THE STRUCTURAL ANCHOR OR END UNITS



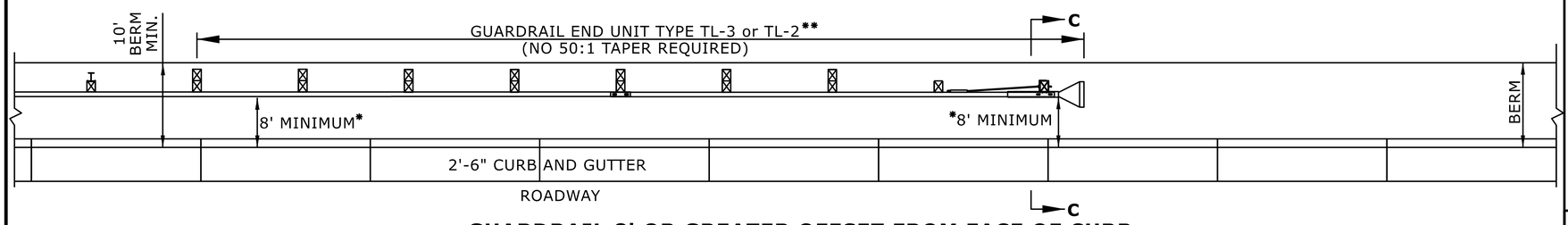
SECTION C-C

* FOR POSTED SPEED ≥ 40 MPH USE 13' MINIMUM OFFSET

SEE THE ROADWAY DESIGN MANUAL (PART I CHAPTER 4 SECTION 4.14) FOR OFFSET DISTANCES FROM FACE OF GUARDRAIL AND BACK OF GUARDRAIL TO SIDEWALK OR SIDEPATH/SHARED-USE PATH

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

BICYCLE FRIENDLY RAILINGS, FENCE OR RUB RAIL SHOULD NOT BE PLACED WITHIN THE LIMITS OF THE STRUCTURAL ANCHOR OR END UNITS



GUARDRAIL 8' OR GREATER OFFSET FROM FACE OF CURB

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RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR

GUARDRAIL PLACEMENT

GUARDRAIL TREATMENT AT CURB AND GUTTER

SHEET 12 OF 15

862D01

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033144 NICOLE M. HACKLER
02-Apr-2026

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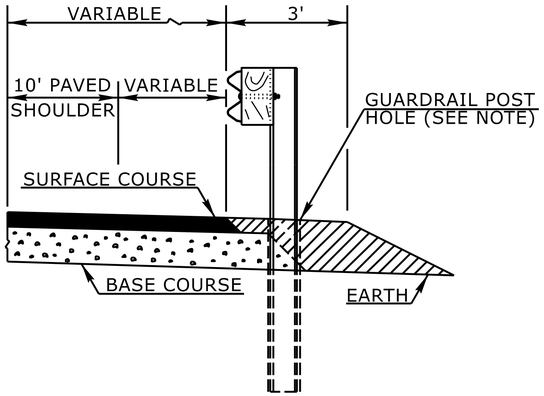
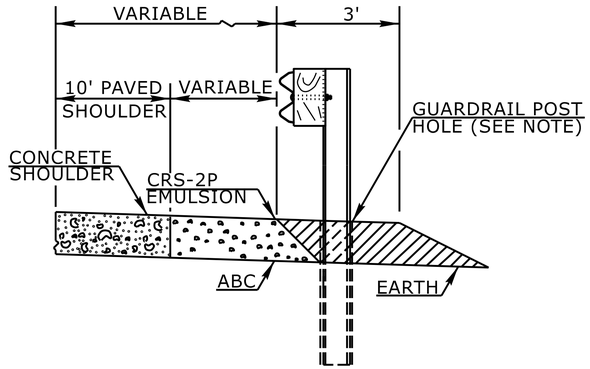
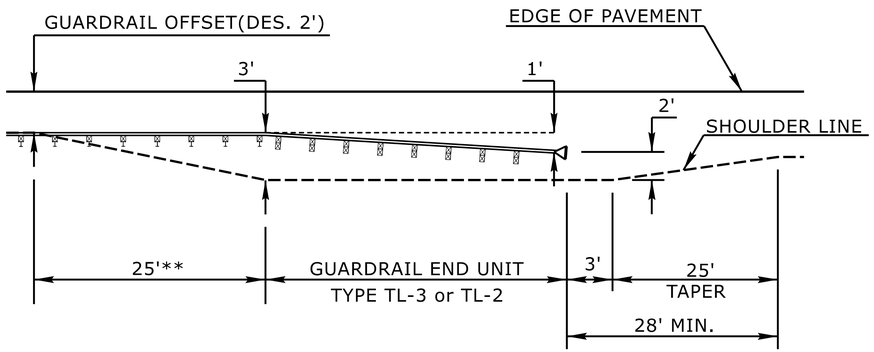
PROJECT REFERENCE NO.	SHEET NO.
U-5743	2C-6



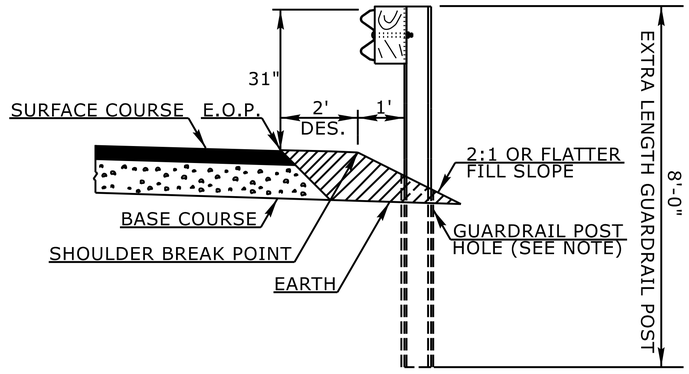
FLEXIBLE PAVED SHOULDER



CONCRETE PAVED SHOULDER



8' GUARDRAIL POST ON 2:1 SLOPE-END UNIT TRANSITION*
PLAN VIEW



8' GUARDRAIL POST ON 2:1 SLOPE*

* THE 8' GUARDRAIL POST ON 2:1 SLOPE DETAIL IS INTENDED FOR USE ONLY IN SEVERELY CONSTRAINED AREAS WITH A POSTED SPEED ≤ 60 MPH. GUARDRAIL END UNITS MAY NOT BE PLACED ON THE 2:1 SLOPE AND MUST TRANSITION TO THE SHOULDER.
** 8' GUARDRAIL POST SHOULD BE USED IN THIS RANGE

NOTE:
WHEN WOODEN GUARDRAIL POSTS ARE USED, DRILL HOLES THROUGH EARTH MATERIAL AND BASE COURSE.THE POST MAY THEN BE DRIVEN TO THE PROPER DEPTH. DRILL THE HOLE OF SUFFICIENT SIZE TO ACCOMMODATE THE PARTICULAR POST BEING USED. BACKFILL AND TAMP HOLES USING THE EXCAVATED MATERIAL.

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ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 11OF 15

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ORIGINAL BY: L.SMITH DATE: 10-14-2025
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5/26/20

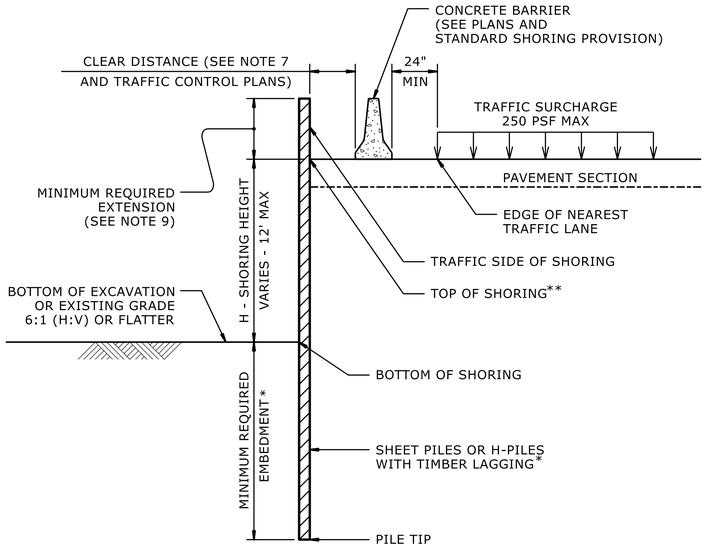
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN^3/FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)			MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN^3/FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)		
				HP 10x42	HP 12x53	HP 14x73			HP 10x42	HP 12x53	HP 14x73
GROUNDWATER ELEVATION BEWTEEN BOTTOM OF SHORING AND PILE TIP	< 6	11.5	4.5	11.5	11.5	11.5	16.0	12.0	13.0	13.0	13.0
	7	13.0	7.0	13.0	13.0	13.0	17.0	14.5	14.5	14.5	14.5
	8	15.0	10.0	--	15.0	15.0	18.0	17.0	--	15.5	15.5
	9	17.0	14.0	--	17.0	17.0	19.0	20.0	--	17.0	17.0
	10	18.5	19.5	--	--	18.5	20.0	23.5	--	--	18.5
	11	20.5	26.0	--	--	--	21.0	28.0	--	--	20.0
	12	22.5	33.0	--	--	--	22.0	33.0	--	--	21.5
GROUNDWATER ELEVATION BELOW PILE TIP	< 6	7.5	3.0	8.0	8.0	8.0	11.0	10.0	9.5	9.5	9.5
	7	8.5	4.5	9.5	9.5	9.5	12.0	12.0	10.5	10.5	10.5
	8	10.0	6.5	10.5	10.5	10.5	12.5	14.0	11.5	11.5	11.5
	9	11.0	9.5	--	12.0	12.0	13.5	16.5	--	12.5	12.5
	10	12.5	13.0	--	--	13.5	14.0	19.5	--	13.5	13.5
	11	13.5	17.0	--	--	14.5	15.0	22.5	--	--	14.5
	12	15.0	21.5	--	--	16.0	16.0	25.5	--	--	15.5

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

*DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT IS "--".

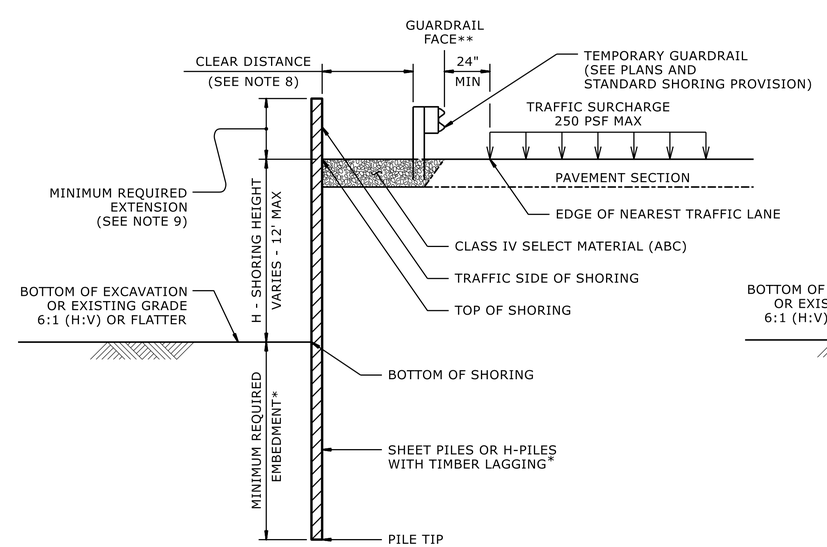
NOTES:

1. AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
2. FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
3. STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
   UNIT WEIGHT, γ = 120 PCF
   FRICTION ANGLE, φ = 30 DEGREES
   COHESION, c = 0 PSF
4. DO NOT USE STANDARD TEMPORARY SHORING IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
5. DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS WITHIN THE EMBEDMENT DEPTH.
6. USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, USE "GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP" FOR GROUNDWATER CONDITION. DO NOT USE STANDARD TEMPORARY SHORING IF GROUNDWATER IS ABOVE BOTTOM OF SHORING.
7. AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN THE MINIMUM REQUIRED FOR CONCRETE BARRIER, SET BARRIER NEXT TO AND UP AGAINST TRAFFIC SIDE OF PILES AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
8. AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN 4' FOR TEMPORARY GUARDRAIL, ATTACH GUARDRAIL TO TRAFFIC SIDE OF PILES AS SHOWN IN THE PLANS AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
9. MINIMUM REQUIRED EXTENSION IS 6" FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32" FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".
10. MINIMUM REQUIRED EMBEDMENT FOR H-PILES WITH TIMBER LAGGING IS BASED ON DRIVEN H-PILES AT MAXIMUM 6' SPACING. AT THE CONTRACTOR'S OPTION, EMBEDMENT DEPTHS MAY BE REDUCED BY 25% FOR DRILLED-IN H-PILES.
11. SUBMIT A "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY SHORING CONSTRUCTION. UP TO 3 SHORING LOCATIONS MAY BE INCLUDED ON EACH FORM. STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM: connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx
12. CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.



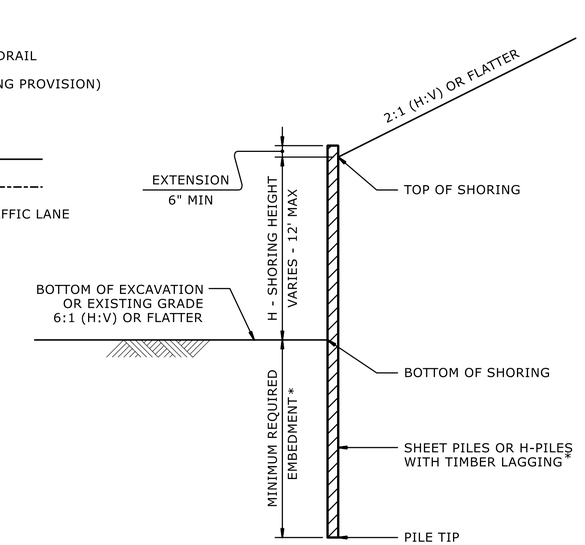
CONCRETE BARRIER

**TOP OF SHORING = EDGE OF PAVEMENT



TEMPORARY GUARDRAIL

**GUARDRAIL FACE = EDGE OF PAVEMENT



STANDARD TEMPORARY SHORING

(SLOPE CASE)
*SEE TABLE ABOVE.

STANDARD TEMPORARY SHORING

(SURCHARGE CASE)
*SEE TABLE ABOVE.

U-5743

2G-1 | -

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL ENGINEERING UNIT

GEOTECHNICAL ENGINEER

DocuSigned by: Scott A. Hidden 03/23/2026

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

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STANDARD DETAIL NO. 1801.01

GEOTECHNICAL STANDARD DETAIL FOR

TEMPORARY SHORING

DATE: 02-18-2025

COMPUTED BY: HC	DATE: 11-5-2025
CHECKED BY: PJ	DATE: 2-16-2026

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-5743	3B-1

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

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS				IMPACT ATTENUATOR TYPE 350			REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GREU TL-3	GREU TL-2	CAT-1	AT-1	NO.	PERMITTED G	PERMITTED NG	
-L-	15+23.96	19+26.96	RT	381.25'	25.00'		16+00.00	19+00.00	8'/12'	11'/14'	25'		0.5'			1		1				BREAK FOR DRIVE
-L-	43+46.84	44+39.60	LT	93.75'			43+69.00	43+59.00	12'	14'	50'		1'		1		1					
-L-	43+49.83	44+22.59	RT	62.50'	37.50'		43+81.00	43+91	12'	14'							1	1				BREAK FOR DRIVE
		SUBTOTAL		537.50'	62.50'																	
		LESS ANCHOR DEDUCTIONS																				
		GREU TL-3 1 x 50.00' =		-50.00'																		
		GREU TL-2 1 x 25.00' =		-25.00'																		
		CAT-1 2 x 6.25' =		-12.50'																		
		AT-1 2 x 6.25' =		-12.50'																		
		TOTAL		437.50'	62.50'										1	1	2	2				
		SAY		437.50'	62.50'										1	1	2	2				ADDITIONAL GUARDRAIL POSTS = 5 EA

NOTE: SUPPORT PLATE, BOLTS, AND WASHERS USED TO ATTACH GUARDRAIL TO A BOX CULVERT AS SHOWN IN STANDARD 862.03 (SHEET 7 OF 9) ARE INCIDENTAL TO THE COST OF THE GUARDRAIL.

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
-L- RT 15+00.00 TO 21+25.00	198		3728	3540	
-L- 21+25.00 TO 34+45.00	743		4002	3609	350
-L- LT 34+45.00 TO 36+00.00	450		107		343
-L- 36+00.00 TO 55+00.00	343		7872	7529	
-Y1- 10+20.05 TO 14+00.00	178		370	192	
-Y2- 10+20.00 TO 13+25.00	538		65		473
-Y5- 10+32.00 TO 13+00.00	981	100	98		983
-Y6- 11+50.00 TO 14+46.38	75		1385	1310	
-Y7- 10+15.00 TO 11+37.68	31		245	214	
-Y8- 10+20.89 TO 11+00.00	80		70		10
-DR1- 10+12.00 TO 10+87.08	128		28		100
SUBTOTAL	3745		17980	16394	2259
-L- LT 15+00.00 TO 21+25.00	6		1236	1230	
-L- RT 34+45.00 TO 36+00.00	10		769	759	
SUBTOTAL	16		2005	1989	
TOTAL	3761	100	19985	18383	2259
MATERIAL FOR SHOULDER CONSTRUCTION			168	168	
LOSS DUE TO CLEARING & GRUBBING	-350			350	
ADDITIONAL UNDERCUT		2050			2050
WASTE IN LIEU OF BORROW				-1509	-1509
PROJECT TOTAL	3411	2150	20153	17392	2800
5% TO REPLACE BORROW				870	
GRAND TOTAL	3411	2150	20153	18262	2800
SAY	3600			19200	

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

SUMMARY OF REMOVAL EXISTING ASPHALT PAVEMENT

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	SY
L	18+84	22+10	LT	1398.01
L	31+40	34+07	LT	172.76
L	48+00	49+16	RT	36.14
L	48+13	50+00	LT	65.52
L	49+74	51+14	RT	65.47
L	51+79	53+50	RT	114.19
Y1	11+05	13+40	RT	12.67
Y1	13+40	14+50	RT	331.79
Y2	10+26	11+59	RT	542.44
Y5	10+39	12+04	LT	391.22
Y6	12+50	14+46	CL	621.08
Y7	10+15	10+75	RT	21.69
Y7	10+15	10+75	LT	21.66
Y7	10+75	11+38	CL	280.05
TEMPORARY PAVEMENT				
L	15+00	19+25		234.78
L	30+98	34+20		90.56
			TOTAL:	4400.05
			SAY:	4625

SUMMARY OF VINYL COATED CHAIN LINK FENCE, 72" FABRIC

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	A FABRIC L.F.	B END BRACE EA.	C CORNER BRACE EA.	D LINE BRACE EA.	E LINE POSTS EA.	F TERMINAL POSTS EA.
-L-	17+78.86	19+20.11	RT	149.44'	2	2		12.45	4
-L-	31+57.34	32+75.41	RT	119.56'	2	1		9.80	3
			TOTAL:	269.00'				22.25	7
			SAY:	280'				23	7

RAL-GTPH6L3

COMPUTED BY:	KMS	DATE:	03/31/2026
CHECKED BY:	JJM	DATE:	03/31/2026

PROJECT NO.	SHEET NO.
U-5743	3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION SIZE THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48
L 14+80	20 LT	401A	401B		857.4	855.0			56																						
L 15+35	24 LT	401B		857.2																																
		401B	401C		855.0	854.9			12																						
L 18+75	39 LT	0402		838.7																																
		0402	0403		835.7	834.3																										64				
L 18+75	22 RT	0403		838.6																																
		0403	0404		834.3	833.6																	140													
L 17+38	27 RT	0404		847.2																																
		0404	0405		833.6	823.3	0.3				52					X	X	X		X																
L 20+65	60 LT	0406		825.5																																
		0406	0407		823.3	817.3															104															
Y1 10+83	56 LT	0407		819.5																																
		0407	0408		817.3	811.5															92															
Y1 11+53	34 LT	0408		814.0																																
		0408	0413		811.5	811.0																12														
L 20+50	22 RT	0410		827.8																																
		0410	0411		824.8	815.8															144															
L 22+00	22 RT	0411		818.8																																
		0411	0412		815.8	805.2															200															
L 24+00	22 RT	0412		808.2																																
		0412	0505		805.2	789.5															300															
Y1 11+53	26 LT	0413		814.9																																
		0413	0409		811.0	807.0																									112					
L 25+87	22 LT	0501		798.7																																
		0501	0503		795.7	789.8															116															
L 27+00	38 LT	0502		793.6																																
		0502	0503		791.4	789.8															16															
L 27+00	22 LT	0503		793.5																																
		0503	0510		789.8	782.6															158															
Y1 13+60	36 RT	0504							56																						
L 27+00	22 RT	0505		793.5																																
		0505	0506		789.5	781.2															172															
L 28+73	22 RT	0506		788.5																																
		0506	0507		780.2	780.0																						24								
L 28+81	44 LT	0507																																		
L 28+37	40 LT	0508		788.4																																
		0508	0510		781.5																						28									
L 28+59	22 LT	0510		788.6																																
L 29+24	22 RT	0512		787.8																																
		0512	0506		783.7	781.2																48														
L 29+38	22 RT	0513		787.8																																
		0513	0512		783.8	783.7	0.5															16														
L 29+38	22 LT	0514		787.8																																
		0514	0513		784.3	783.8																								48						
L 29+24	22 LT	0515		787.8																																
		0515	0514		784.8	784.3															16															
L 30+74	22 RT	0516		789.7																																
		0516	0513		785.9	783.8	0.9														136															
L 30+74	23 LT	0517		789.6																																
		0517	0514		786.1	784.3	0.4														136															
SHEET TOTALS									124		52										1590	76	140				28	24		48	112	64				

LINE & STATION	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G		CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	CONCRETE BRIDGE APPROACH D.I. STD. 840.13	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	T.B.D.I. FOR STEEL GRATES STD. 840.36	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO J.B.	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	ADJUST C.B.	ADJUST D.I.	15" DRAINAGE ELBOW	18" DRAINAGE ELBOW	24" DRAINAGE ELBOW	30" DRAINAGE ELBOW	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 14+80	401A	401B																																																	42	Remove 12" RCP
L 15+35	401B					1											1	1																																	
	401B	401C																																																		
L 18+75	0402					1											1	1																																	
	0402	0403																																																	97	Remove 18" RCP
L 18+75	0403					1			1		1																																									
	0403	0404																																																		
L 17+38	0404					1	5.0	3.6																								1						1													
	0404	0405																																													2					
L 20+65	0406					1											1	1																																	
	0406	0407																																																		
Y1 10+83	0407					1											1	1																																	
	0407	0408																																																	97	Remove 18" RCP
Y1 11+53	0408					1											1	1																																	
	0408	0413																																																	103	Remove 18" RCP
L 20+50	0410					1			1		1																																									
	0410	0411																																																		
L 22+00	0411					1			1		1																																									
	0411	0412																																																	96	Remove 15" RCP
L 24+00	0412					1			1		1																																								26	Remove 18" RCP
	0412	0505																																																		
Y1 11+53	0413					1																								1						1													
	0413	0409																																																		
L 25+87	0501					1			1			1																																								
	0501	0503																																																		
L 27+00	0502					1											1	1																																	
	0502	0503																																																		
L 27+00	0503					1			1			1																																								
	0503	0510																																																		
Y1 13+60	0504																																																		10	Remove 18" RCP
L 27+00	0505					1			1		1																																									
	0505	0506																																																	177	Remove 15" RCP
L 28+73	0506					1	0.4		1		1																																									
	0506	0507																																																		
L 28+81	0507		4.500																																																	48" End Wall
L 28+37	0508					1	1.3													1						1																											
	0508	0510																																																		
L 28+59	0510					1			1			1																																								
L 29+24	0512					1			1		1																																									
	0512	0506																																																	35	Remove 15" HDPE
L 29+38	0513					1			1	1																																											
	0513	0512																																																		
L 29+38	0514					1			1	1																																											
	0514	0513																																																		
L 29+24	0515					1			1			1																																								
	0515	0514																																																		
L 30+74	0516					1			1			1																																								
	0516	0513																																																		
L 30+74	0517					1			1		1																																									
	0517	0514																																															3			18" Flowable Fill
SHEET TOTALS			4.500			24	6.7	3.6	15	2	8	5						6	6	1						1							2						2									2		3		683	

ABBREVIATIONS

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

RAL-GTPH6L3

COMPUTED BY:	KMS	DATE:	03/31/2026
CHECKED BY:	JJM	DATE:	03/31/2026

PROJECT NO.	SHEET NO.
U-5743	3D-2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION	OFFSET	STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC)													R. C. PIPE CLASS III								R. C. PIPE CLASS IV							
SIZE								12	15	18	24	30	36	42	48						12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48
THICKNESS OR GAUGE		FROM	TO	FT.	FT.	FT.	%									DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC																
L 30+70	44 LT	0518		788.6																																
		0518	0517		786.3	786.1																24														
L 31+77	22 RT	0519		792.6																																
		0519	0516		789.6	785.9																								104						
L 33+00	27 RT	0520		795.7																																
		0520	0519		791.8	789.6																124														
L 33+00	34 LT	0521		795.6																																
		0521	0520		792.1	791.8																								64						
Y2 11+00	24 RT	0522		793.5																																
		0522	0523		791.5	789.2																								60						
Y2 11+00	34 LT	0523		791.9																																
		0523	0518		789.2	786.3																44														
Y2 11+75	20 LT	0524																				44														
DR1 10+12	0 CL	0525																				40														
Y6 12+57	38 RT	0601							24																											
L 35+37	27 LT	0602		795.0																																
		0602	0603		792.0	788.0																136														
L 36+73	22 LT	0603		791.0																																
		0603	0604		788.0	781.5																128														
L 38+00	22 LT	0604		784.5																																
		0604	0606		781.5	767.9																164														
L 39+65	47 LT	0605		770.3																																
		0605	0606		768.0	767.9																28														
L 39+65	22 LT	0606		775.0																																
		0606	0608		767.9	759.1	0.6															236														
L 42+00	43 LT	0607		761.5																																
		0607	0608		759.2	759.1																24														
L 42+00	22 LT	0608		763.7																																
		0608	0609		759.1	755.9	1.2															160														
L 43+58	22 LT	0609		761.1																																
		0609	0610		755.9	755.0	1.4															12														
L 42+50	58 RT	0611		759.9																																
		0611	0612		757.5	757.4	0.4															28														
L 42+60	34 RT	0612		761.9																																
		0612	0613		757.4	756.8	0.5																							112						
L 43+70	22 RT	0613		761.0																																
		0613	0614		756.8	756.3	0.5															8														
L 43+82	22 LT	0616		761.1																																
		0616	0615		755.9	755.0																12														
L 44+75	22 LT	0617		762.0																																
		0617	0616		757.1	755.9																96														
L 44+75	47 LT	0618		759.5																																
		0618	0617		757.2	757.1																28														
L 46+00	22 LT	0619		765.8																																
		0619	0617		762.8	757.1																128														
L 43+93	22 RT	0621		761.1																																
		0621	0620		756.0	755.0																			12											
L 45+50	22 RT	0622		764.0																																
		0622	0621		759.7	756.0																			160											
L 35+15	2 RT	0623		796.8																																
SHEET TOTALS									24													1464			172					340						

LINE & STATION	FROM	TO	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	REINFORCED ENDWALLS	DRAINAGE STRUCTURE	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03				CONCRETE TRANSITIONAL SECTION		OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	CONCRETE BRIDGE APPROACH D.I. STD. 840.13	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	T.B.D.I. FOR STEEL GRATES STD. 840.36	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO J.B.	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	ADJUST C.B.	ADJUST D.I.	15" DRAINAGE ELBOW	18" DRAINAGE ELBOW	24" DRAINAGE ELBOW	30" DRAINAGE ELBOW	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	PIPE REMOVAL LIN. FT.	REMARKS
			CY	CY	MASONRY CY	0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.		GRATE TYPE E	F	G		D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05																																						
L 30+70	0518					1												1	1																																		
	0518	0517																																																		45	Remove 18" RCP
L 31+77	0519					1			1			1																																									
	0519	0516																																																			
L 33+00	0520					1			1			1																																									
	0520	0519																																																			
L 33+00	0521					1			1		1																																										
	0521	0520																																																			
Y2 11+00	0522					1																1				1																											
	0522	0523																																																			
Y2 11+00	0523					1																1				1																										17	Remove 15" RCP
	0523	0518																																																			
Y2 11+75	0524																																																				Driveway Pipe
DR1 10+12	0525																																																				Driveway Pipe
Y6 12+57	0601																																																				
L 35+37	0602					1			1			1																																									
	0602	0603																																																			
L 36+73	0603					1			1			1																																									
	0603	0604																																																			
L 38+00	0604					1			1			1																																									
	0604	0606																																																			
L 39+65	0605					1												1	1																																		
	0605	0606																																																			
L 39+65	0606					1	2.0		1			1																																									
	0606	0608																																																		96	Remove 15" RCP
L 42+00	0607					1												1	1																																		
	0607	0608																																																			
L 42+00	0608					1			1			1																																									
	0608	0609																																																		118	Remove 15" RCP
L 43+58	0609					1	0.2		1	1																																											
	0609	0610																																																			
L 42+50	0611					1												1	1																																		
	0611	0612																																																			
L 42+60	0612					1			1		1																																										
	0612	0613																																																		60	Remove 24" RCP
L 43+70	0613					1			1	1																																											
	0613	0614																																																			
L 43+82	0616					1	0.2		1	1																																											
	0616	0615																																																			
L 44+75	0617					1			1		1																																										
	0617	0616																																																		95	Remove 30" HDPE
L 44+75	0618					1												1	1																																		
	0618	0617																																																			
L 46+00	0619					1			1		1																																										
	0619	0617																																																		201	Remove 30" RCP
L 43+93	0621					1	0.1		1			1																																									
	0621	0620																																																			
L 45+50	0622					1			1			1																																									
	0622	0621																																																			
L 35+15	0623					1								1				1	1																																		
SHEET TOTALS						24	2.5		16	3	4	9		1				6	6			2				2																										632	

ABBREVIATIONS

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

RAL-GTPH6L3

COMPUTED BY:	KMS	DATE:	03/31/2026
CHECKED BY:	JJM	DATE:	03/31/2026

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5743	3D-3

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

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

LINE & STATION	OFFSET	STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC)												
SIZE THICKNESS OR GAUGE		FROM	TO	FT.	FT.	FT.	%	12	15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC
		0623	0602		793.1	792.0														
Y6 13+66	26 RT	0624		793.1																
		0624	0624A		790.1	789.9														
TRL 11+00	0 CL	0625							70											
L 47+05	22 RT	0701		771.2																
		0701	0622		765.0	759.7														
L 47+05	22 LT	0702		771.2																
		0702	0701		765.2	765.0														
L 46+87	71 LT	703A	0703		766.5	766.3				40										
L 47+05	37 LT	0703		772.0																
		0703	0702		766.3	765.2														
L 48+18	22 RT	0704		777.5																
		0704	0701		773.7	767.2														
L 49+87	22 RT	0705		784.8																
		0705	0704		781.1	773.7														
L 51+97	25 RT	0706		790.3																
		0706	0705		786.8	781.1	0.4													
		0707	0706		790.0	786.8														
L 49+93	48 LT	0708		784.0																
		0708	0710		780.5	775.0														
		0709	0708		782.0	781.0														
L 48+50	22 LT	0710		779.2																
		0710	0712		775.0	770.4														
L 47+67	38 LT	0711		774.5																
		0711	0712		771.8	771.4														
L 47+67	22 LT	0712		774.6																
		0712	0702		770.4	765.2														
SHEET TOTALS									70	40										
PROJECT TOTALS									218	40	52									

STRUCTURE NUMBER		R. C. PIPE CLASS III								R. C. PIPE CLASS IV								ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	REINFORCED ENDWALLS	DRAINAGE STRUCTURE	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE				CONCRETE TRANSITIONAL SECTION	
FROM	TO	12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48	CY	CY	MASONRY CY	0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.		E	F	G		D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05
0623	0602										36																			
0624																					1			1			1			
0624	0624A		32																											
0625																														
0701																					1	1.2		1			1			
0701	0622					156																								
0702																					1	1.0		1		1				
0702	0701													44																
703A	0703																													
0703																					1	0.7								
0703	0702			16																										
0704																					1			1			1			
0704	0701											116																		
0705																					1			1			1			
0705	0704											172																		
0706																					1			1			1			
0706	0705										212																			
0707	0706										236																			
0708																					1									
0708	0710					148																								
0709	0708												52																	
0710																					1			1		1				
0710	0712					84																								
0711																					1									
0711	0712				16																									
0712																					1			1		1				
0712	0702					64																								
SHEET TOTALS			32	16	16	452					484	288	52	44							11	2.9		8		3	5			
PROJECT TOTALS			3086	92	156	624		28	24		872	400	116	44				4.500			59	16.8		39	5	15	19		1	

FROM	TO	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	CONCRETE BRIDGE APPROACH D.I. STD. 840.13	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	T.B.D.I. FOR STEEL GRATES STD. 840.36	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO J.B.	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	ADJUST C.B.	ADJUST D.I.	15" DRAINAGE ELBOW	18" DRAINAGE ELBOW	24" DRAINAGE ELBOW	30" DRAINAGE ELBOW	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	PIPE REMOVAL LIN. FT.	REMARKS
0623	0602																																						
0624																																							
0624	0624A																																						
0625																																							
0701																																							
0701	0622																																						
0702																																							
0702	0701																																						
703A	0703																																					40	Remove 18" HDPE
0703				1	1																																		
0703	0702																																						
0704																																							
0704	0701																																						
0705																																							
0705	0704																																					72	Remove 18" RCP
0706																																							
0706	0705																																					64	Remove 15" RCP
0707	0706																																					60	Remove 15" RCP
0708				1	1																																		
0708	0710																																					150	Remove 30" RCP
0709	0708																																					48	Remove 24" RCP
0710																																							
0710	0712																																					150	Remove 30" RCP
0711				1	1																																	7	Retain 18" HDPE
0711	0712																																						
0712																																							
0712	0702																																						
SHEET TOTALS				3	3																																	591	
PROJECT TOTALS				15	15	1		2				3							2						2									2		3		1906	

ABBREVIATIONS

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

RWR COMPUTED BY: Hunsberger, W. S. DATE: 03/24/26
RWR CHECKED BY: Hamm, J. R. DATE: 03/24/26

PIR COMPUTED BY: J. B. Barfield DATE: 10/31/25

(9-17-24)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5743	3G-1

SUMMARY OF SUBSURFACE DRAINAGE

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

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

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Subgrade Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
-L-	23+00	25+00	ASU(1)	12	250	550	850		
-L-	45+00	47+00	ASU(1)	12	250	550	800		
-L-	51+00	53+00	ASU(1)	12	50	100	150		
-Y5-	12+00	12+50	ASU(1)	12	50	100	200		
CONTINGENCY			ASU(1)	12	200	400	600		
-L-	16+00	18+50	ASU(1)	12	50	352	806		
-L-	39+00	41+00	ASU(1)	12	50	214	489		
CONTINGENCY			ASU(1)	12	400	800	1200		
CONTINGENCY			AST	3				250	
				TOTAL CY/TONS/SY:	1300	3066**	5095**	250	0

*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)

*AST = Aggregate Stabilization

**Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Subgrade Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-5743	3P-1

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PARCEL INDEX SHEET

PARCEL NO.	SHEET NO.	PROPERTY OWNERS NAME
1	4	CHARLES DOWD (NO CLAIM)
2	4	DAVIDSON BUILDERS AND PROPERTIES, LLC.
3	4	STANLEY & PAULA DAVIS
4A	4	DAVIDSON BUILDERS AND PROPERTIES, LLC.
4B	4	MONARCH
5	4	DAVIDSON BUILDERS AND PROPERTIES, LLC.
6	4	IGLESIA DE DIOS GETSEMANI
7	4	ARC OF STANLY COUNTY INC
8	4	REBECCA C PROVANCHA
9	4	D & L MANAGEMENT
10	4	RICHARD S STOCKNER
11	4	CAROLINA PLANTS INC
12	4	RICHARD S STOCKNER
13	4,5	ROBERT W SMALL
14	4,5	RICHARD S STOCKNER
15	4,5	TRIANGLE PROPERTIES OF RANDOLPH LLC
16	4,5	ARTIE P PHILLIPS
17	5	YER XIONG
18	5	WILLIAM M YORK
19	5	MARK E DAVIDSON
20	5	GREGORY E PHILLIPS
21	5	ROBERTO LEON LUCAS
22	5	MARK DAVIDSON
23	5	FRANCES L ALLEN REDDING, HEIRS
24	5	UNITED PENTECOSTAL CHURCH
25	5	ROBY G KIDD JR
26	5,6	ERIC M DAVIS
27	5,6	THOMAS L OSTEEN
28	6	SANTOS M ARELLANO
29	6	FLAGSHIP ASHEBORO ASC LLC
30	6	MARTIN L COLLINSON
31	6	WENDY C MARCUS
32	6	DARREN C ALLEN
33	6	L AND N INVESTMENTS LLC
34	6	L AND N INVESTMENTS LLC
35	6	YMCA
36	6	H L DELK CONSTRUCTION INC
37	6	JEFFREY W FRAZIER
38	6	RUTH M BRAY
39	6	RUTH M BRAY
40	6	RUTH M BRAY
41	6	STARMONT DEVELOPMENT GROUP LLC
42	6	SHIRLEY M LOWRANCE
43	6,7	BOWLING CENTER INC
44	6	BURNIS SPOON
45	6,7	BEST BETTS PROPERTIES, LLC
46	7	BEST BETTS PROPERTIES, LLC
47	7	SPECIALTY SHOPS III ON 42 OWNERS ASSOCIATION (NO CLAIM)
48	7	MCKENZIE PROPERTIES INVESTMENT LLC
49	7	SPECIALTY SHOPS II ON 42 OWNERS ASSOCIATION
50	7	SPECIALTY SHOPS II ON 42 OWNERS ASSOCIATION

4/1/2026
c:\pwworking\hmm\rail_transit\jor66165\d0177431\U-5743_rdy_psh03P-1.dgn
iso-pjordan

PROJECT REFERENCE NO.	SHEET NO.
U-5743	4

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 21102 Signed by: James Timothy Jordan DBD87EDB56F64FA... 02-Apr-2026 MOTT MACDONALD I & E, LLC LICENSE NO. F-0669	SEAL 31986 DocuSigned by: 082E8F7759FE47A... 02-Apr-2026 HDR ENGINEERING LICENSE NO. F-0116

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:

MOTT MACDONALD
930 Main Campus Drive, Suite 200
Raleigh, NC 27606
www.mottmac.com

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

FOR -L- PROFILE SEE SHEET 8
FOR -Y1- PROFILE SEE SHEET 10

-L-	-Y1-
PI Sta 20+69.83	PI Sta 11+11.18
△ = 41° 26' 05.3" (RT)	△ = 52° 38' 29.2" (RT)
D = 10° 44' 58.8"	D = 37° 12' 18.2"
L = 385.45'	L = 141.49'
T = 201.59'	T = 76.18'
R = 533.00'	R = 154.00'
SE = 04	SE = 05
R0 = 104.00'	R0 = 105.00'

FOR WALL PLANS SEE SHEETS W-1 THRU W-5

▨	PAVEMENT REMOVAL
■	PAVED SHOULDER
▒	SIDEWALK
∽	TEMPORARY SHORING
☆	UPGRADED SIGNAL

-L- STA. 15+30 TO 18+75 LT

-L- STA. 17+19 TO 17+40 RT

-Y1- STA. 12+58 TO 12+85 LT

-L- STA. 17+83 TO STA. 19+16 RT

PROJECT REFERENCE NO.	SHEET NO.
U-5743	5

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21102 — 02-Apr-2026 — MOTT MACDONALD I & E, LLC LICENSE NO. F-0669

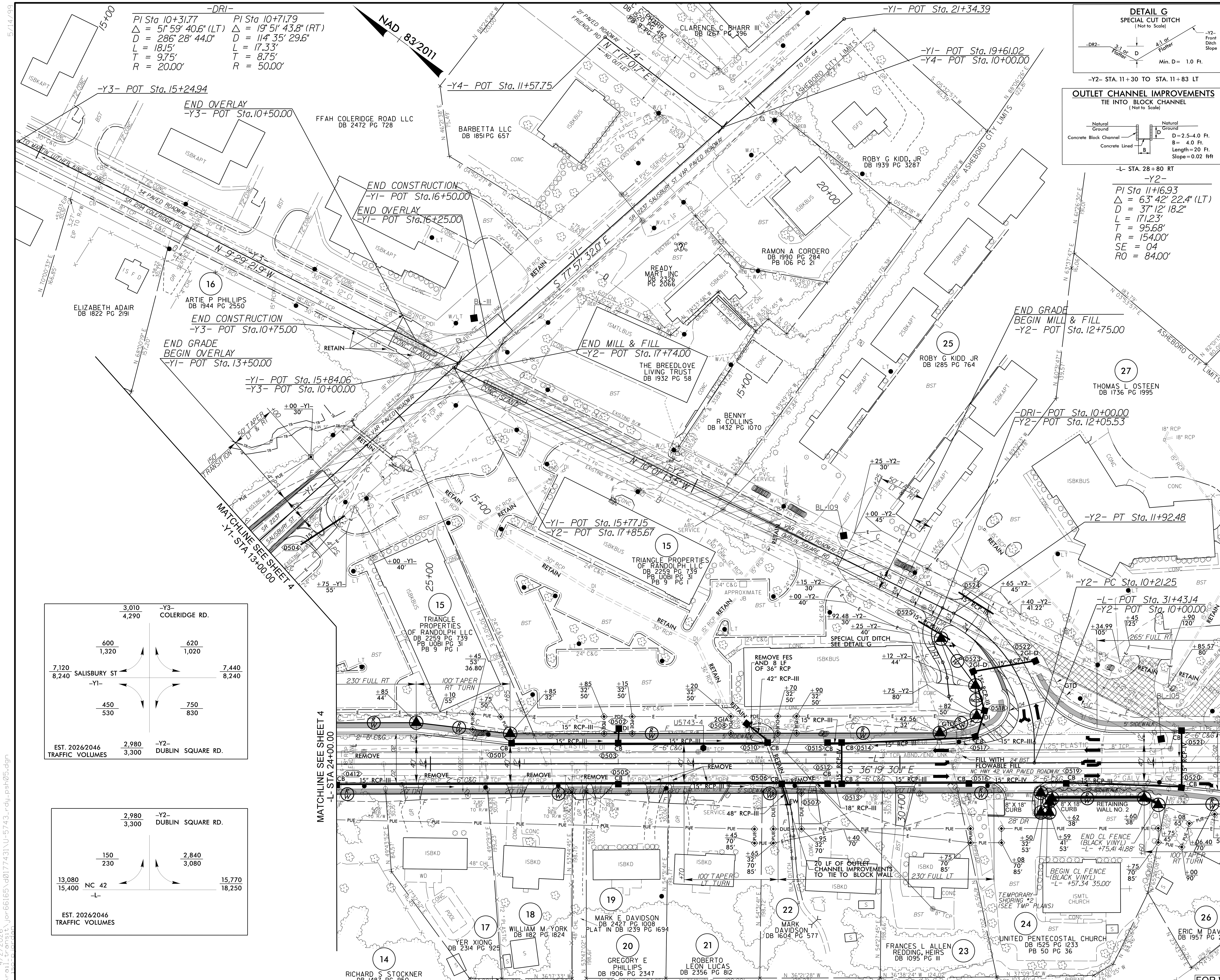
HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 31986 — 02-Apr-2026 — HDR ENGINEERING LICENSE NO. F-0116

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of: MOTT MACDONALD — 930 Main Campus Drive, Suite 200 Raleigh, NC 27606 www.mottmac.com

HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116

FOR -L- PROFILE SEE SHEET 8
FOR -Y1- PROFILE SEE SHEET 10
FOR -Y2- PROFILE SEE SHEET 10
FOR -Y3- PROFILE SEE SHEET 11
FOR -DR1- PROFILE SEE SHEET 12
FOR ISLAND DETAIL SEE SHEET 2B-1



-DR1-
PI Sta 10+31.77
Δ = 51° 59' 40.6" (LT)
D = 286° 28' 44.0"
L = 18.15'
T = 9.75'
R = 20.00'
PI Sta 10+71.79
Δ = 19° 51' 43.8" (RT)
D = 114° 35' 29.6"
L = 17.33'
T = 8.75'
R = 50.00'
NAD 83/2011
DETAIL G
SPECIAL CUT DITCH
-Y2- STA. 11+30 TO STA. 11+83 LT
OUTLET CHANNEL IMPROVEMENTS
TIE INTO BLOCK CHANNEL
-L- STA. 28+80 RT
-Y2-
PI Sta 11+16.93
Δ = 63° 42' 22.4" (LT)
D = 37° 12' 18.2"
L = 171.23'
T = 95.68'
R = 154.00'
SE = .04
RO = 84.00'
-Y3- POT Sta. 15+24.94
END OVERLAY -Y3- POT Sta.10+50.00
END CONSTRUCTION -Y1- POT Sta.16+50.00
END OVERLAY -Y1- POT Sta.16+25.00
END CONSTRUCTION -Y3- POT Sta.10+75.00
END GRADE BEGIN OVERLAY -Y1- POT Sta. 13+50.00
-Y1- POT Sta. 15+84.06
-Y3- POT Sta. 10+00.00
-Y4- POT Sta. 11+57.75
-Y1- POT Sta. 21+34.39
-Y1- POT Sta. 19+61.02
-Y4- POT Sta. 10+00.00
END MILL & FILL -Y2- POT Sta. 17+74.00
END GRADE BEGIN MILL & FILL -Y2- POT Sta. 12+75.00
-DR1- POT Sta. 10+00.00
-Y2- POT Sta. 12+05.53
-Y1- POT Sta. 15+77.15
-Y2- POT Sta. 17+85.67
-Y2- PT Sta. 11+92.48
-Y2- PC Sta. 10+21.25
-L- POT Sta. 31+43.14
-Y2- POT Sta. 10+00.00
MATCHLINE SEE SHEET 4 -Y1- STA 13+00.00
MATCHLINE SEE SHEET 4 -L- STA 24+00.00
MATCHLINE SEE SHEET 6 -L- STA 33+50.00
ELIZABETH ADAIR DB 1822 PG 2191
ARTIE P PHILLIPS DB 1944 PG 2550
FFAH COLERIDGE ROAD LLC DB 2472 PG 728
BARBETTA LLC DB 1851 PG 657
CLARENCE C PHARR III DB 1267 PG 396
ROBY G KIDD, JR DB 1939 PG 3287
RAMON A CORDERO DB 1990 PG 284 PB 106 PG 21
READY MART INC DB 2326 PG 2066
THE BREEDLOVE LIVING TRUST DB 1932 PG 58
BENNY R COLLINS DB 1432 PG 1070
ROBY G KIDD JR DB 1285 PG 764
THOMAS L OSTEEN DB 1736 PG 1995
TRIANGLE PROPERTIES OF RANDOLPH LLC DB 2259 PG 739 PB UOBI PG 31 PB 9 PG 1
RICHARD S STOCKNER DB 1487 PG 950
YER XIONG DB 2314 PG 925
WILLIAM M YORK DB 1182 PG 1824
MARK E DAVIDSON DB 2427 PG 1008 PLAT IN DB 1239 PG 1694
GREGORY E PHILLIPS DB 1906 PG 2347
ROBERTO LEON LUCAS DB 2356 PG 812
MARK DAVIDSON DB 1604 PG 577
FRANCES L ALLEN REDDING, HEIRS DB 1095 PG 111
UNITED PENTECOSTAL CHURCH DB 1525 PG 1233 PB 50 PG 36
ERIC M DAVIS DB 1957 PG 2111
-Y3- COLERIDGE RD.
SALISBURY ST -Y1-
-Y2- DUBLIN SQUARE RD.
EST. 2026/2046 TRAFFIC VOLUMES
NC 42 -L-
20 LF OF OUTLET CHANNEL IMPROVEMENTS TO TIE TO BLOCK WALL
REMOVE FES AND 8 LF OF 36" RCP
SPECIAL CUT DITCH SEE DETAIL G
BEGIN CL FENCE (BLACK VINYL) -L- +57.34 35.00'
END CL FENCE (BLACK VINYL) -L- +75.41 41.88'
RETAINING WALL NO. 2
TEMPORARY SHORING #2 (SEE TMP PLANS)
OVERLAY /MILL & FILL
PAVEMENT REMOVAL
MONOLITHIC ISLAND
PAVED SHOULDER
SIDEWALK
TEMPORARY SHORING

FOR WALL PLANS SEE SHEETS W-1 THRU W-5

PROJECT REFERENCE NO.	SHEET NO.
U-5743	6

R/W SHEET NO. ____

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 21102 Signed by: James Timothy Jordan DBD87EDB56F64FA... 02-Apr-2026 MOTT MACDONALD I & E, LLC LICENSE NO. F-0669	SEAL 31986 DocuSigned by: 082E8F7769FE47A... 02-Apr-2026 HDR ENGINEERING LICENSE NO. F-0116

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Raleigh, NC 27606
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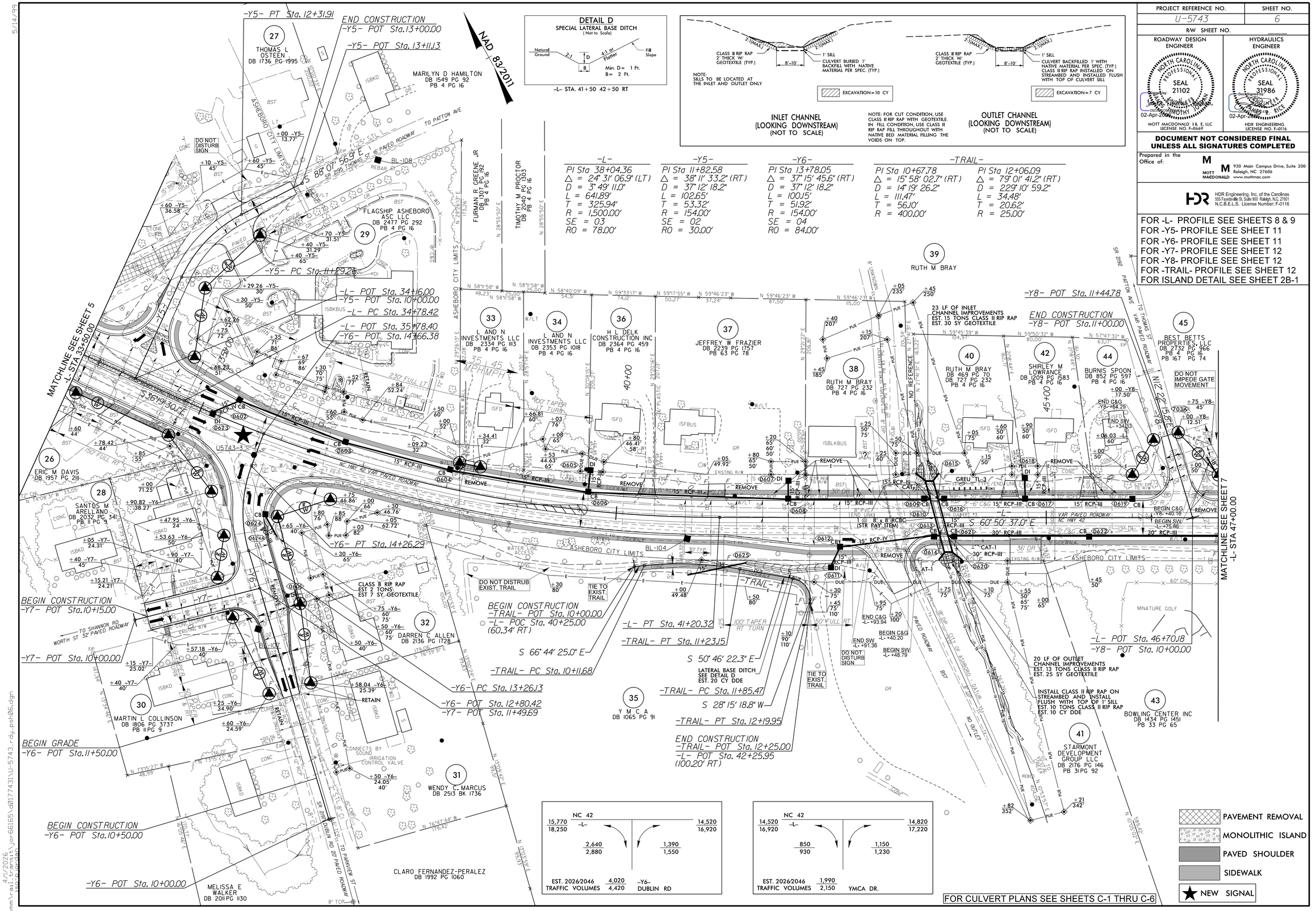
HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

FOR -L- PROFILE SEE SHEETS 8 & 9
FOR -Y5- PROFILE SEE SHEET 11
FOR -Y6- PROFILE SEE SHEET 11
FOR -Y7- PROFILE SEE SHEET 12
FOR -Y8- PROFILE SEE SHEET 12
FOR -TRAIL- PROFILE SEE SHEET 12
FOR ISLAND DETAIL SEE SHEET 2B-1



DETAIL D

SPECIAL LATERAL BASE DITCH
(Not to Scale)

Min. D = 1 Ft.
B = 2 Ft.

-L- STA. 41+50 42+50 RT

NOTE:
SILLS TO BE LOCATED AT THE INLET AND OUTLET ONLY

▨ EXCAVATION = 10 CY

▨ EXCAVATION = 7 CY

INLET CHANNEL
(LOOKING DOWNSTREAM)
(NOT TO SCALE)

NOTE: FOR CUT CONDITION, USE CLASS II RIP RAP WITH GEOTEXTILE. IN FILL CONDITION, USE CLASS II RIP RAP FILL THROUGHOUT WITH NATIVE BED MATERIAL FILLING THE VOIDS ON TOP.

OUTLET CHANNEL
(LOOKING DOWNSTREAM)
(NOT TO SCALE)

-L-	-Y5-	-Y6-	-TRAIL-	-TRAIL-
PI Sta 38+04.36	PI Sta 11+82.58	PI Sta 13+78.05	PI Sta 10+67.78	PI Sta 12+06.09
△ = 24° 31' 06.9" (LT)	△ = 38° 11' 33.2" (RT)	△ = 37° 15' 45.6" (RT)	△ = 15° 58' 02.7" (RT)	△ = 79° 01' 41.2" (RT)
D = 3° 49' 11.0"	D = 37° 12' 18.2"	D = 37° 12' 18.2"	D = 14° 19' 26.2"	D = 229° 10' 59.2"
L = 641.89'	L = 102.65'	L = 100.15'	L = 111.47'	L = 34.48'
T = 325.94'	T = 53.32'	T = 51.92'	T = 56.10'	T = 20.62'
R = 1,500.00'	R = 154.00'	R = 154.00'	R = 400.00'	R = 25.00'
SE = 03	SE = 02	SE = 04		
R0 = 78.00'	R0 = 30.00'	R0 = 84.00'		

EST. 2026/2046 TRAFFIC VOLUMES

EST. 2026/2046 TRAFFIC VOLUMES

FOR CULVERT PLANS SEE SHEETS C-1 THRU C-6

▨	PAVEMENT REMOVAL
▨	MONOLITHIC ISLAND
▨	PAVED SHOULDER
▨	SIDEWALK
★	NEW SIGNAL

PROJECT REFERENCE NO.	SHEET NO.
U-5743	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 21102 — 02-Apr-2026 — MOTT MACDONALD I & E, LLC LICENSE NO. F-0669	SEAL 31986 — 02-Apr-2026 — HDR ENGINEERING LICENSE NO. F-0116

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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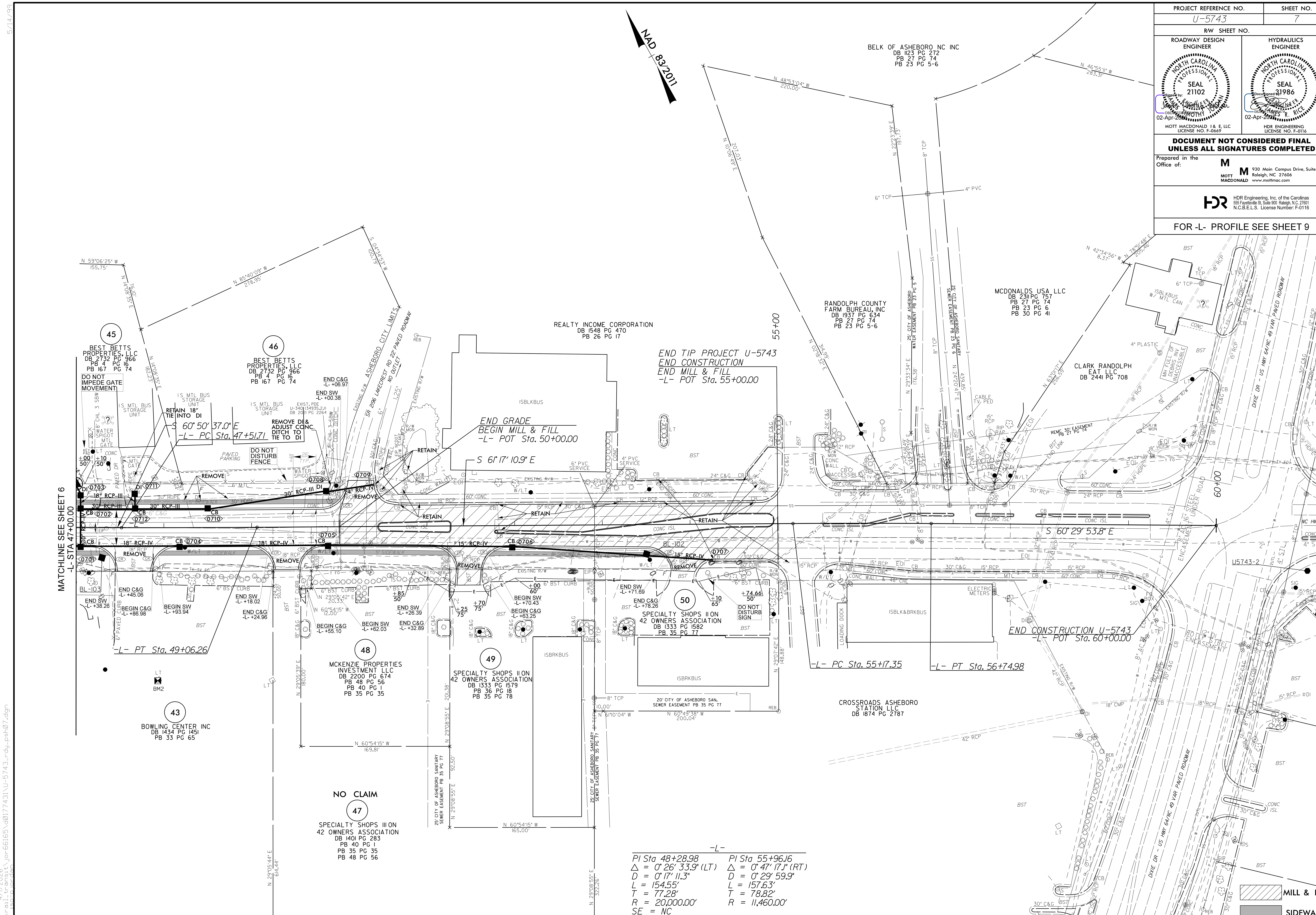
HDR Engineering, Inc. of the Carolinas, 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601, N.C.B.E.L.S. License Number: F-0116

FOR -L- PROFILE SEE SHEET 9



NAD 83/2011
BELK OF ASHEBORO NC INC
DB 1123 PG 272
PB 27 PG 74
PB 23 PG 5-6
REALTY INCOME CORPORATION
DB 1548 PG 470
PB 26 PG 17
RANDOLPH COUNTY FARM BUREAU, INC
DB 1937 PG 634
PB 27 PG 74
PB 23 PG 5-6
MCDONALDS USA LLC
DB 2311 PG 757
PB 27 PG 74
PB 23 PG 6
PB 30 PG 41
CLARK RANDOLPH EAT LLC
DB 2441 PG 708
45
BEST BETTS PROPERTIES, LLC
DB 2732 PG 966
PB 4 PG 16
PB 167 PG 74
46
BEST BETTS PROPERTIES, LLC
DB 2732 PG 966
PB 4 PG 16
PB 167 PG 74
DO NOT IMPEDE GATE MOVEMENT
END TIP PROJECT U-5743
END CONSTRUCTION
END MILL & FILL
-L- POT Sta. 55+00.00
END GRADE
BEGIN MILL & FILL
-L- POT Sta. 50+00.00
S 60° 50' 37.0" E
-L- PC Sta. 47+51.71
S 61° 17' 10.9" E
S 60° 29' 53.8" E
MATCHLINE SEE SHEET 6
-L- STA 47+00.00
-L- PT Sta. 49+06.26
-L- PC Sta. 55+17.35
-L- PT Sta. 56+74.98
END CONSTRUCTION U-5743
-L- POT Sta. 60+00.00
55+00
60+00
RETAIN
REMOVE
DO NOT DISTURB FENCE
DO NOT DISTURB SIGN
48
MCKENZIE PROPERTIES INVESTMENT LLC
DB 2200 PG 674
PB 48 PG 56
PB 40 PG 1
PB 35 PG 35
49
SPECIALTY SHOPS II ON 42 OWNERS ASSOCIATION
DB 1333 PG 1579
PB 36 PG 18
PB 35 PG 78
50
SPECIALTY SHOPS II ON 42 OWNERS ASSOCIATION
DB 1333 PG 1582
PB 35 PG 77
43
BOWLING CENTER INC
DB 1434 PG 1451
PB 33 PG 65
NO CLAIM
47
SPECIALTY SHOPS III ON 42 OWNERS ASSOCIATION
DB 1401 PG 283
PB 40 PG 1
PB 35 PG 35
PB 48 PG 56
CROSSROADS ASHEBORO STATION LLC
DB 1874 PG 2787
SR 2136 LAKECREST RD 22' PAVED ROADWAY
ASHEBORO CITY LIMITS
DIXIE DR - US HWY 64/NC 49 VAR PAVED ROADWAY
20' CITY OF ASHEBORO SAN. SEWER EASEMENT PB 35 PG 77
-L-
PI Sta 48+28.98
Δ = 0° 26' 33.9" (LT)
D = 0° 17' 11.3"
L = 154.55'
T = 77.28'
R = 20,000.00'
SE = NC
PI Sta 55+96.16
Δ = 0° 47' 17.1" (RT)
D = 0° 29' 59.9"
L = 157.63'
T = 78.82'
R = 11,460.00'
MILL & FILL
SIDEWALK

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-5743	8

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER
Digitally signed by
02-Apr-2026

MOTT MACDONALD I & E, LLC
LICENSE NO. F-0669

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 31986 ENGINEER
Docusigned by:
02-Apr-2026

HDR ENGINEERING
LICENSE NO. F-0116

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Raleigh, NC 27606
www.mottmac.com

HDR Engineering, Inc. of the Carolinas
550 Fayetteville St. Suite 900 Raleigh, NC, 27601
N.C.B.E.L.S. License Number: F-0116

-L-

BEGIN PROJECT
-L- Sta. 15+00.00

BEGIN GRADE
-L- Sta. 15+50.00
EL = 858.22'

PI = 16+50.00
EL = 853.49'
VC = 100'
K = 71

PI = 21+80.00
EL = 820.91'
VC = 150'
K = 215

(-)4.7300%
(-)19.62%
(-)15.87%
(-)13.34%
(-)10.50%
(-)16.1472%
(+)4.689%
(-)7.62%
(-)2.48%
(-)5.4485%

PROPOSED GRADE
EXISTING GRADE
REMOVE 18"

BEGIN DITCH
STA. 15+30 - LT
ELEV. 855.02

STA. 16+00 - LT
ELEV. 848.29

STA. 17+00 - LT
ELEV. 842.42

STA. 18+00 - LT
ELEV. 839.08

END DITCH
STA. 18+75 - LT
ELEV. 838.71

BEGIN CONCRETE DITCH
BEHIND RETAINING WALL
STA. 17+82.41 - RT
ELEV. 824.73

STA. 18+00 - RT
ELEV. 832.99

STA. 19+00 - RT
ELEV. 831.28

END CONCRETE DITCH
BEHIND RETAINING WALL
STA. 19+16.76 - RT
ELEV. 827.12

-Y1- (SALISBURY STREET)

BM#3 EL = 854.02'
RAILROAD SPIKE IN 12" PINE
-L- STA. 15+83.41 60.56' LT

FOR PLAN VIEW SEE SHEET 4

-L-

PI = 25+10.00
EL = 802.93'
VC = 150'
K = 175

PI = 28+95.00
EL = 785.25'
VC = 370'
K = 50

PI = 35+05.00
EL = 802.70'
VC = 540'
K = 63

(-)5.4485%
(-)4.5922%
(+)2.8607%
(-)5.7849%

PROPOSED GRADE
EXISTING GRADE

RETAIN & EXTEND
3' X 4' RCBC

FILL 18" W/
FLOWABLE FILL

-Y2- (DUBLIN SQUARE ROAD)

-Y5- (THOMAS STREET)

-Y6- (DUBLIN ROAD)

FOR PLAN VIEW SEE SHEETS 5 AND 6

4/2/2026
d:\projecting\hmm\rail_transit\jor66165\d0177431\U-5743_rdy_psh_08-12.dgn
jor66165

PROJECT REFERENCE NO.	SHEET NO.
U-5743	9

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21102 JAMES TIMOTHY JORDAN — Signed by: James Timothy Jordan DBD87EDB56F64FA... 02-Apr-2026 — MOTT MACDONALD I & E, LLC LICENSE NO. F-0669

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 31986 JAMES R. RICE — DocuSigned by: 082E8F7759FE47A... 02-Apr-2026 — HDR ENGINEERING LICENSE NO. F-0116

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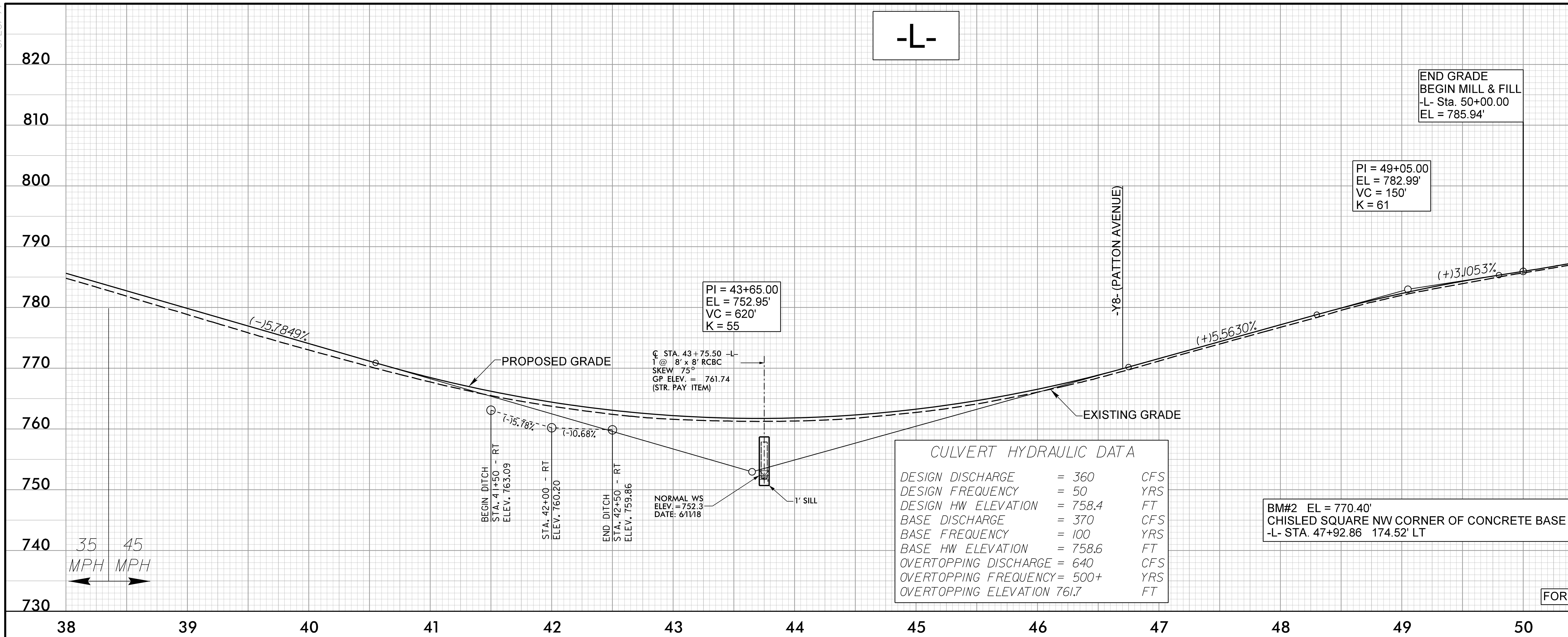
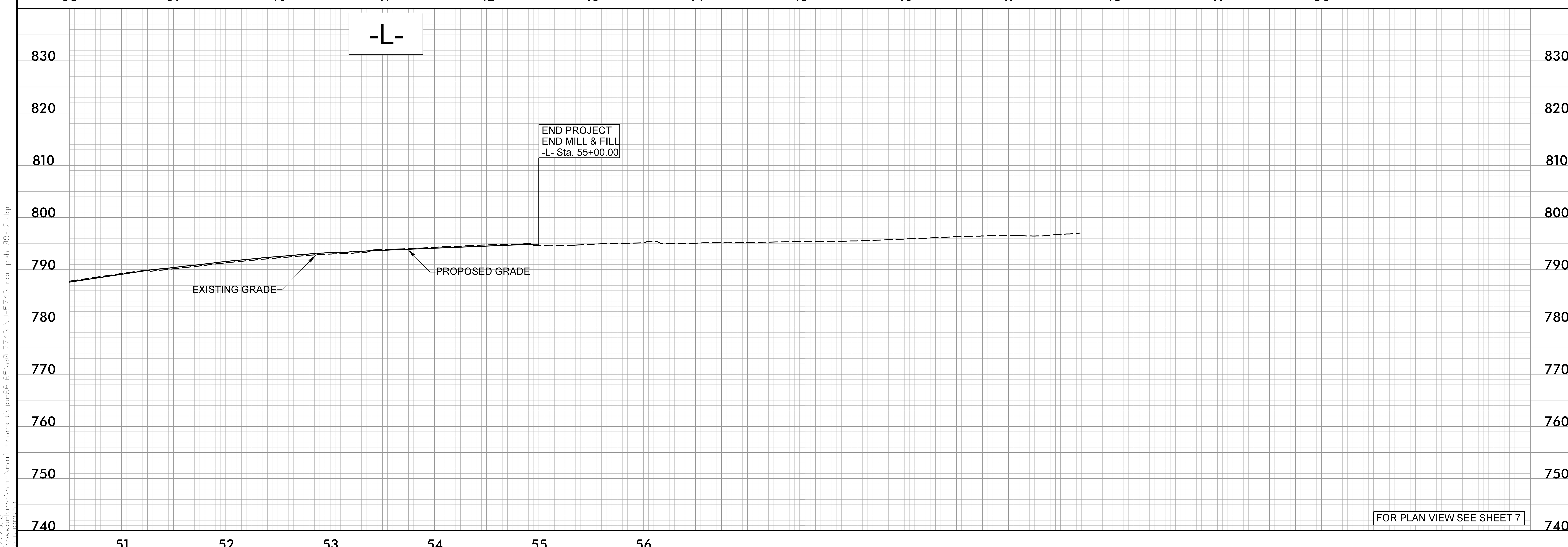


CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 360	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 758.4	FT
BASE DISCHARGE	= 370	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 758.6	FT
OVERTOPPING DISCHARGE	= 640	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	761.7	FT



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PROJECT REFERENCE NO.	SHEET NO.
U-5743	10

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER JAMES TIMOTHY JORDAN
Signed by: James Timothy Jordan DBD87EDB66F64FA...
02-Apr-2026
MOTT MACDONALD I & E, LLC LICENSE NO. F-0669

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31986 ENGINEER JAMES R. RICE
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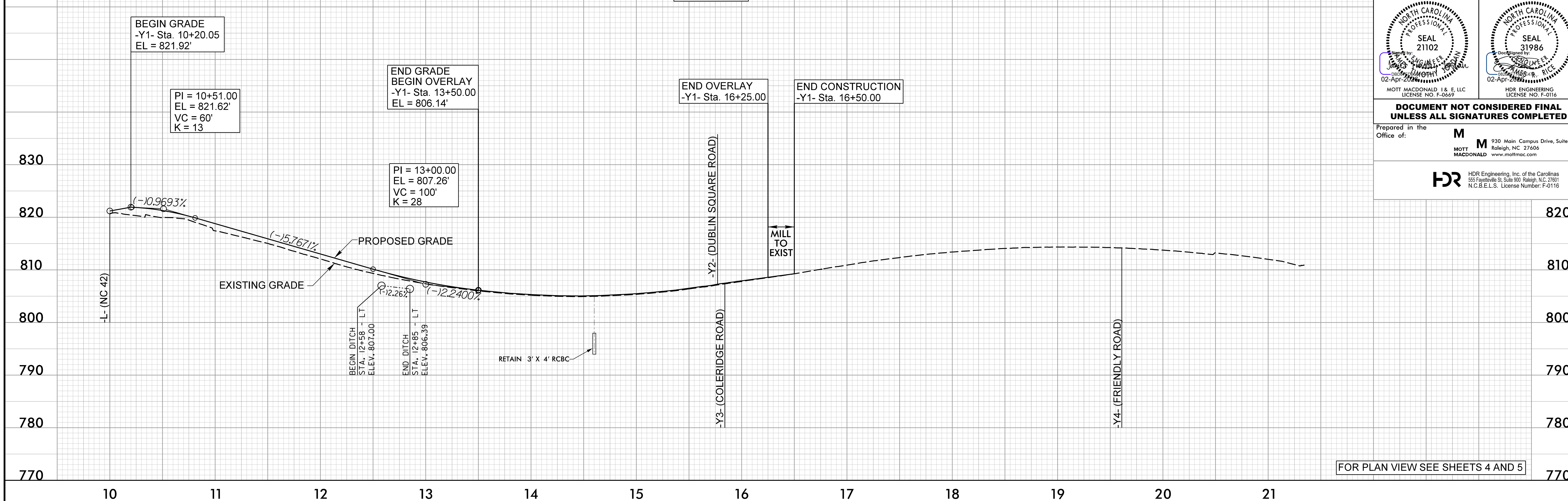
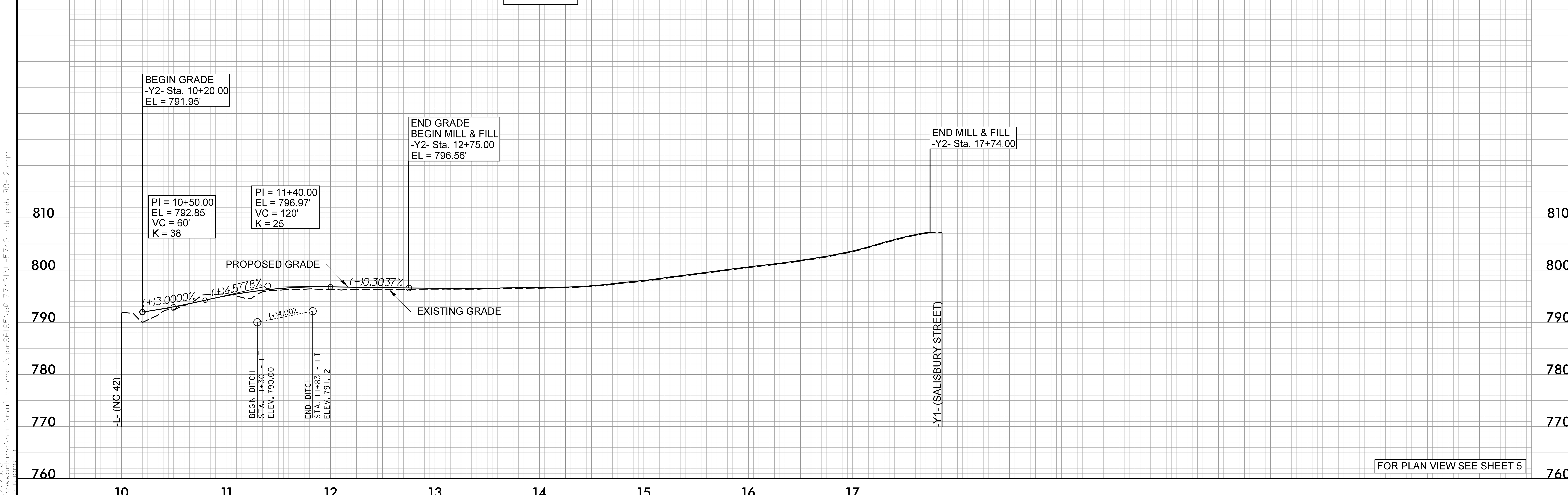
-Y1-



BEGIN GRADE
-Y1- Sta. 10+20.05
EL = 821.92'
PI = 10+51.00
EL = 821.62'
VC = 60'
K = 13
END GRADE
BEGIN OVERLAY
-Y1- Sta. 13+50.00
EL = 806.14'
PI = 13+00.00
EL = 807.26'
VC = 100'
K = 28
END OVERLAY
-Y1- Sta. 16+25.00
END CONSTRUCTION
-Y1- Sta. 16+50.00
(-)0.9693%
(-)5.7671%
(-)2.2400%
(-)2.26%
PROPOSED GRADE
EXISTING GRADE
BEGIN DITCH STA. 12+58 - LT ELEV. 807.00
END DITCH STA. 12+85 - LT ELEV. 806.39
RETAIN 3' X 4' RCBC
-L- (NC 42)
-Y2- (DUBLIN SQUARE ROAD)
-Y3- (COLERIDGE ROAD)
-Y4- (FRIENDLY ROAD)
MILL TO EXIST
FOR PLAN VIEW SEE SHEETS 4 AND 5
830
820
810
800
790
780
770
10
11
12
13
14
15
16
17
18
19
20
21

-Y2-



BEGIN GRADE
-Y2- Sta. 10+20.00
EL = 791.95'
PI = 10+50.00
EL = 792.85'
VC = 60'
K = 38
PI = 11+40.00
EL = 796.97'
VC = 120'
K = 25
END GRADE
BEGIN MILL & FILL
-Y2- Sta. 12+75.00
EL = 796.56'
END MILL & FILL
-Y2- Sta. 17+74.00
(+)3.0000%
(+)4.5778%
(-)0.3037%
(+)4.00%
PROPOSED GRADE
EXISTING GRADE
BEGIN DITCH STA. 11+30 - LT ELEV. 790.00
END DITCH STA. 11+83 - LT ELEV. 791.12
-L- (NC 42)
-Y1- (SALISBURY STREET)
FOR PLAN VIEW SEE SHEET 5
810
800
790
780
770
760
10
11
12
13
14
15
16
17

4/2/2026

PROJECT REFERENCE NO.	SHEET NO.
U-5743	11

ROADWAY DESIGN ENGINEER — SEAL 21102 — 02-Apr-2026 — MOTT MACDONALD I & E, LLC LICENSE NO. F-0669

HYDRAULICS ENGINEER — SEAL 31986 — 02-Apr-2026 — HDR ENGINEERING LICENSE NO. F-0116

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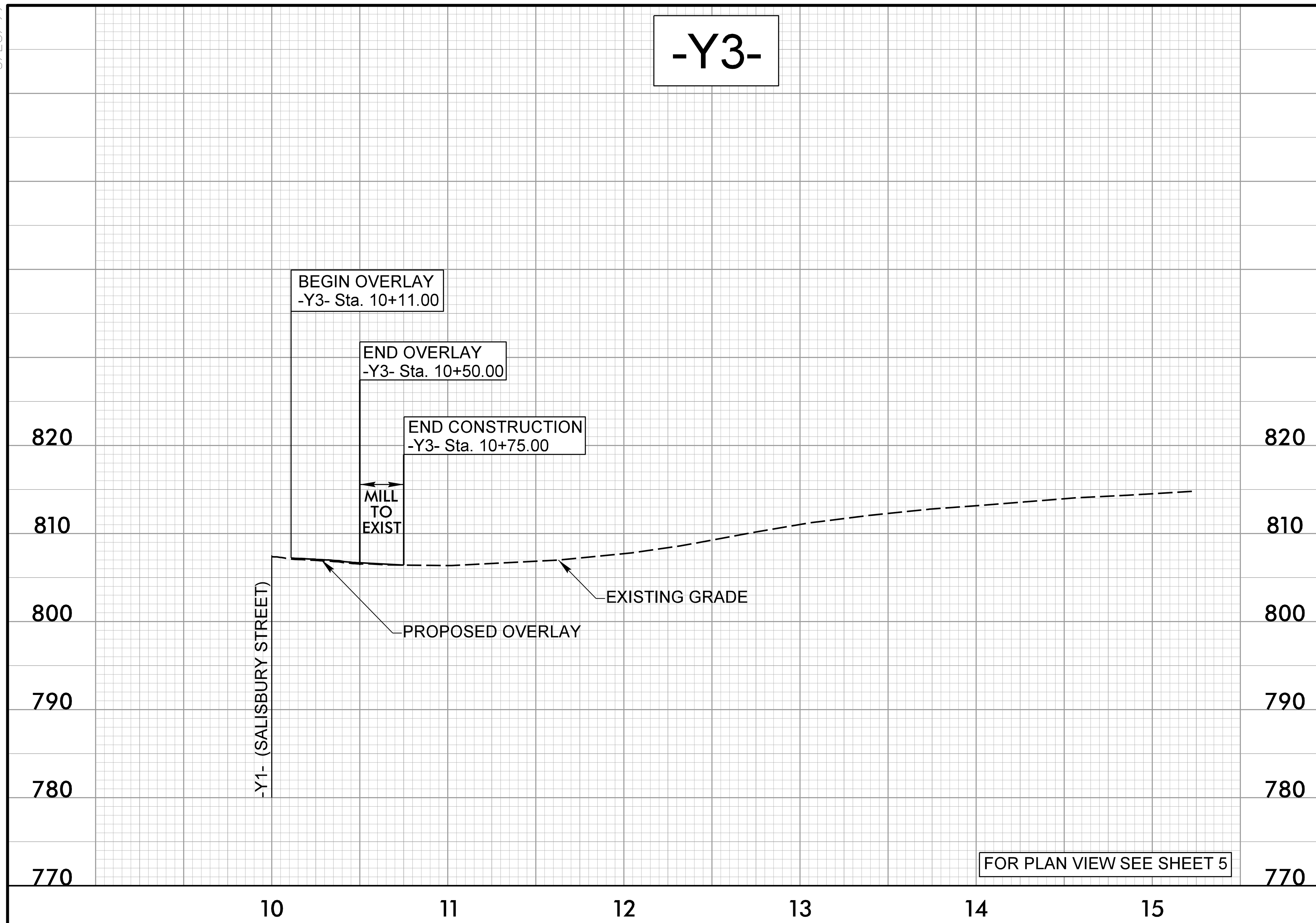

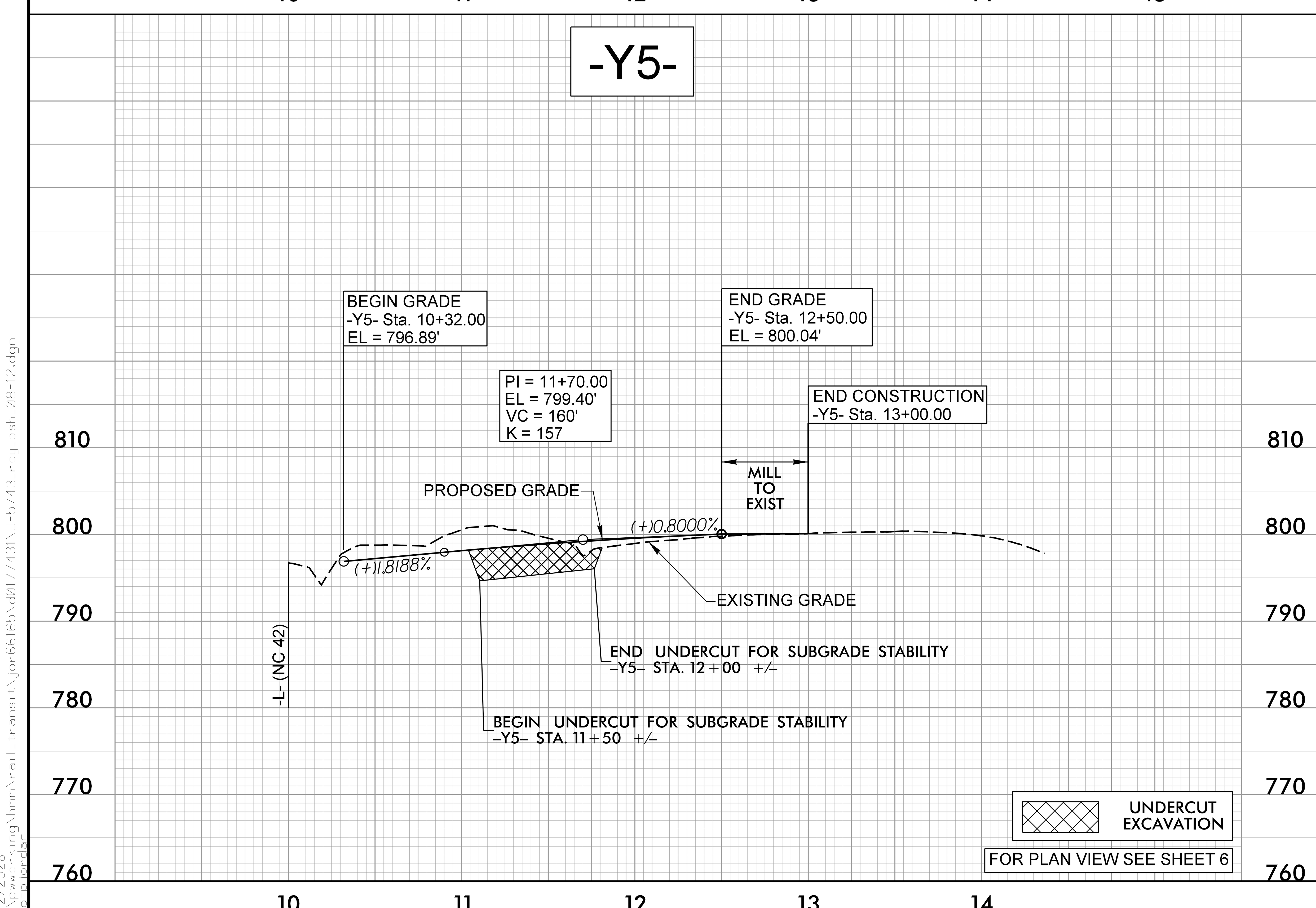

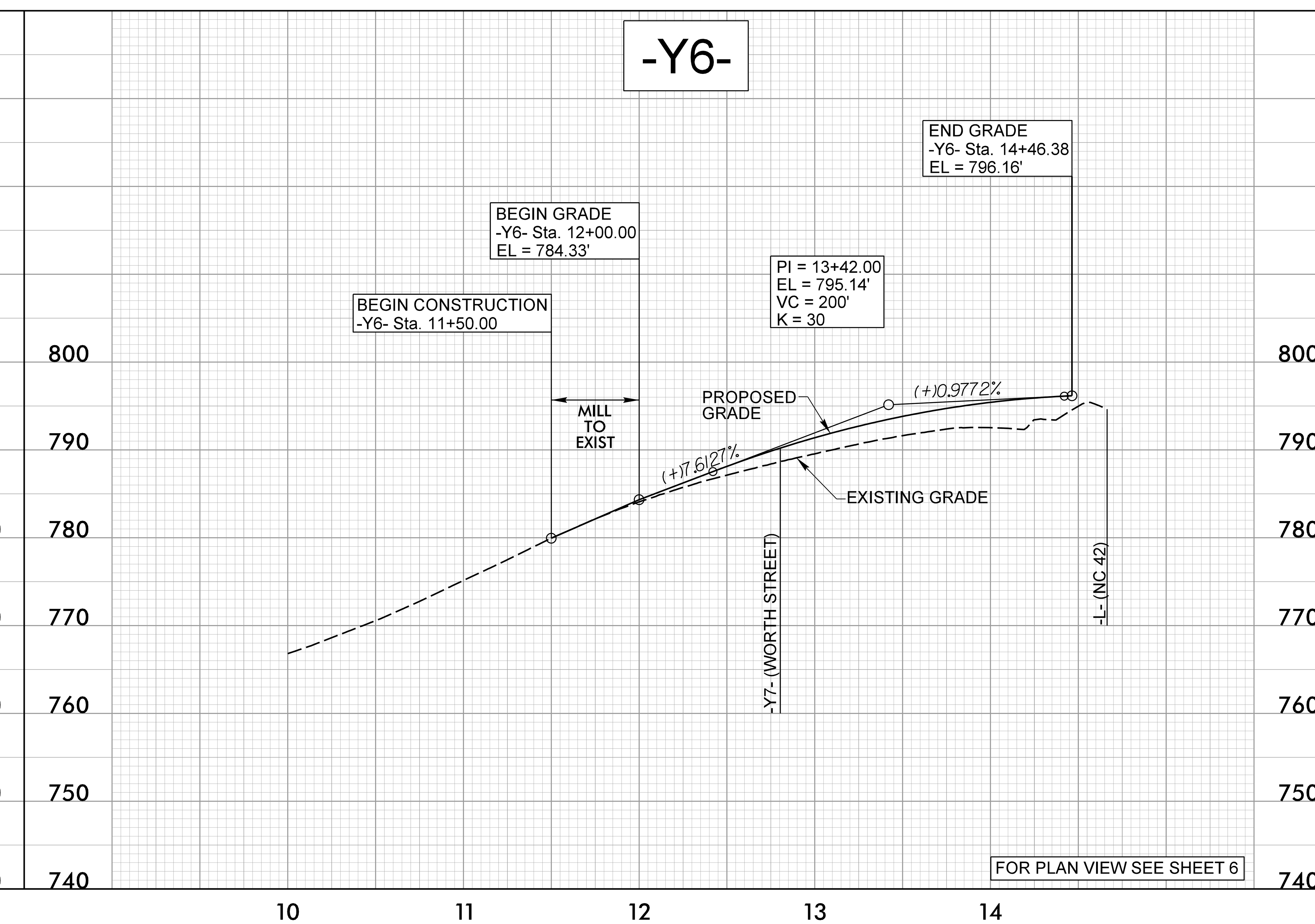

PROJECT REFERENCE NO.	SHEET NO.
U-5743	12

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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