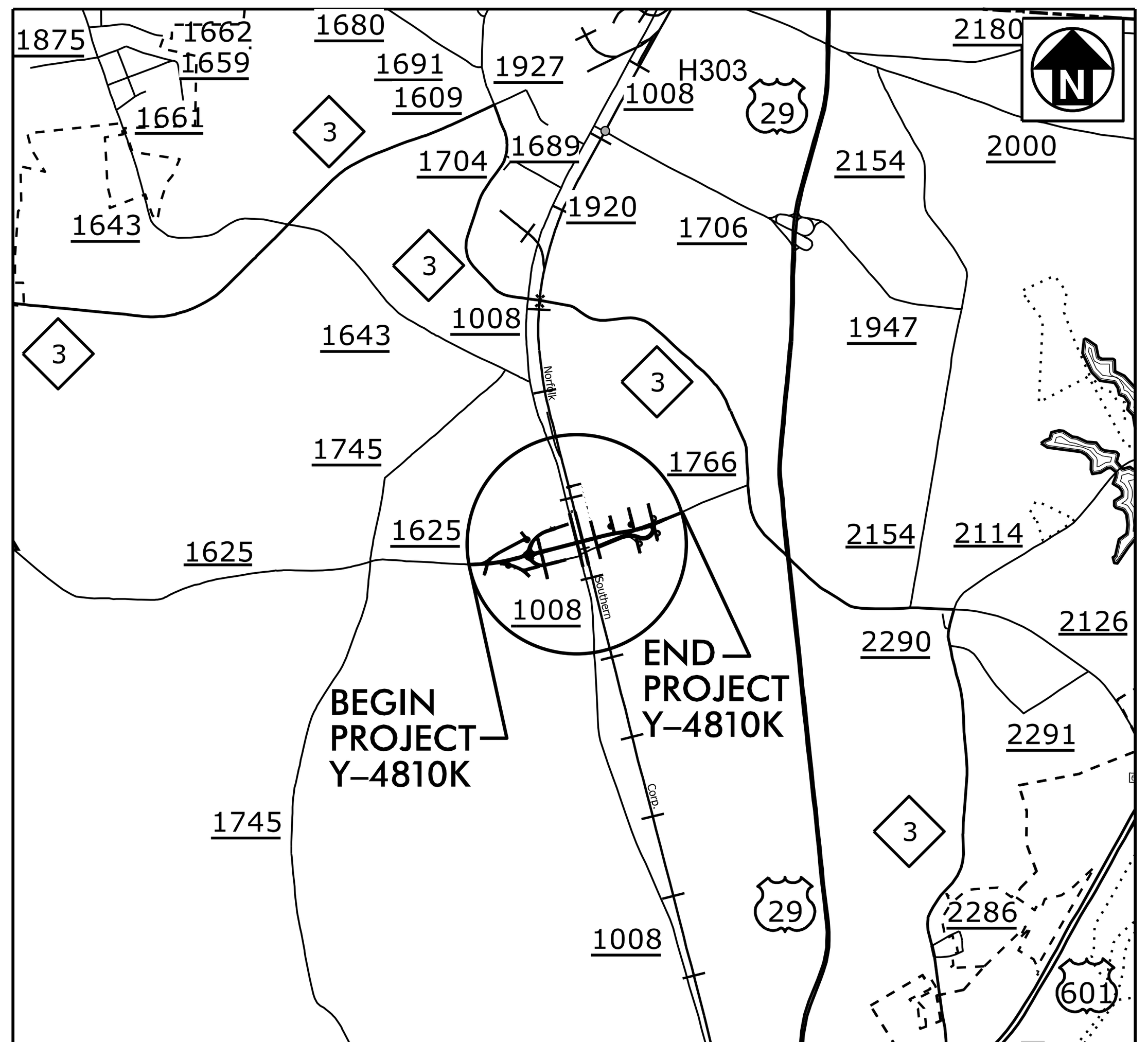
TIP PROJECT: Y-4810K

CONTRACT: C204345

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



ROGERS LAKE ROAD VICINITY MAP
CABARRUS COUNTY

CITY OF KANNAPOLIS CITY LIMITS

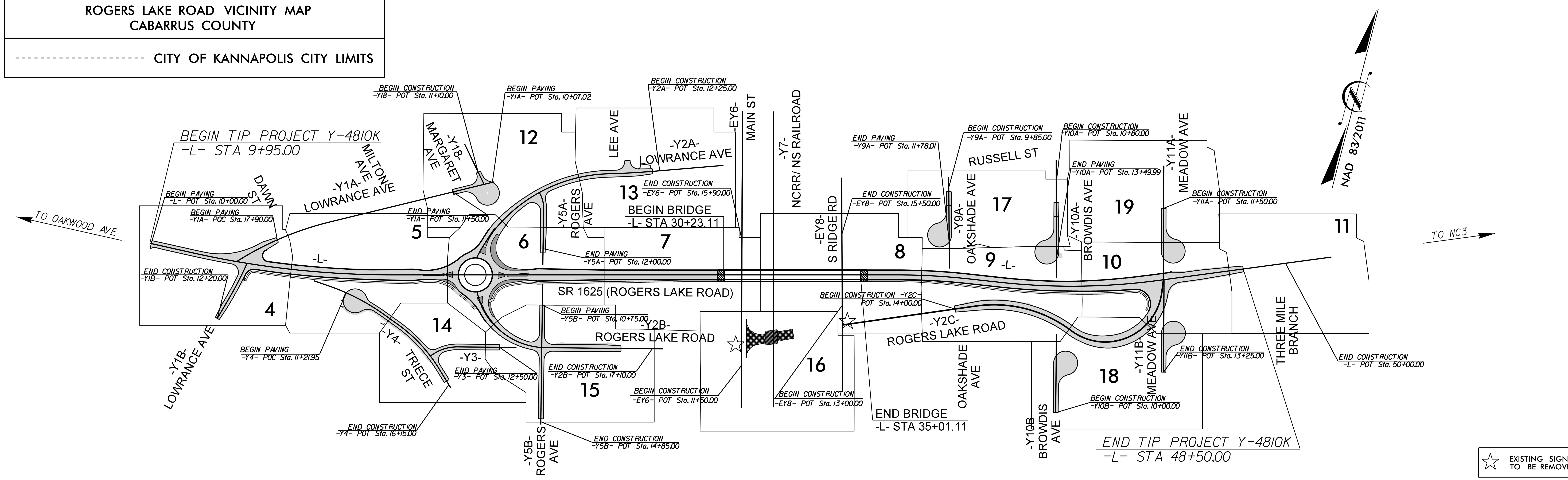
STATE OF NORTH CAROLINA
RAIL DIVISION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	Y-4810K	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
40325.1.46		P.E.	
40325.2.46		R/W	
40325.3.46		CONST.	

CABARRUS COUNTY

LOCATION: GRADE SEPARATION AT SR 1625 (ROGERS LAKE ROAD) OVER NS/NCRR RAILROAD AND CLOSURE OF AT-GRADE CROSSING (#724408Y) IN KANNAPOLIS AT MILEPOST 350.73

TYPE OF WORK: DRAINAGE, GRADING, PAVING, RETAINING WALL, AND STRUCTURE



*DESIGN EXCEPTION:
LANE TAPER RATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

PLANS: 20 10 0 20 40
PROFILE (HORIZONTAL): 20 10 0 20 40
PROFILE (VERTICAL): 4 2 0 4 8

DESIGN DATA

ADT 2020 = 8,600
ADT 2040 = 11,200
K = 10 %
D = 55 %
T = 5 % *
V = 50 MPH
* TTST = 1% DUAL 4%
FUNC CLASS = URBAN MAJOR COLLECTOR SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT Y-4810K = 0.639 MILES
LENGTH STRUCTURE TIP PROJECT Y-4810K = 0.091 MILES
TOTAL LENGTH OF TIP PROJECT Y-4810K = 0.730 MILES

PLANS PREPARED FOR THE NCDOT BY:
WGI — MOTT MACDONALD — SUNGATE DESIGN GROUP, P.A.

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 14, 2018

LETTING DATE: NOVEMBER 15, 2022

MICHAEL PEKAREK, PE
PROJECT ENGINEER
PEF ENGINEER

KUMAR TRIVEDI, PE
NCDOT CONTACT
NCDOT RAIL DIVISION

HYDRAULICS ENGINEER
SEAL 26971
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
SEAL 27391
SIGNATURE: P.E.

NC DEPARTMENT OF TRANSPORTATION
RAIL DIVISION
1556 MAIL SERVICE CENTER
RALEIGH, NC 27699-1556
(919) 707 4110
(919) 707-4154 (FAX)

PROJECT REFERENCE	SHEET NO.
Y-4810K	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27391 ENGINEER MICHAEL PEKAREK

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

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Prepared in the Office of:

MOTT MACDONALD
7621 Purfoy Road; Suite 115
Fuquay-Varina, NC 27526
www.mottmac.com/north-america

GENERAL NOTES

GENERAL NOTES: 2018 SPECIFICATIONS
EFFECTIVE: 01-16-18

GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

SUBSURFACE DRAINS:

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

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FOOT 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 WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

END BENTS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE AT&T, CITY OF KANNAPOLIS,

DUKE POWER, LEVEL 3, PSNC ENERGY, SPECTRUM CATV, WINDSTREAM, AND NCDOT.

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

RIGHT-OF-WAY MARKERS:

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

CURB RAMPS:

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.05 and/or 848.06.

INDEX OF SHEETS

LIST OF ROADWAY STANDARD DRAWINGS

2018 ROADWAY ENGLISH STANDARD DRAWINGS EFF. 01-16-2018

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

STD.NO.	TITLE
DIVISION 2 – EARTHWORK	
200.02	Method of Clearing – Method II
225.02	Guide for Grading Subgrade – Secondary and Local
225.04	Method of Obtaining Superelevation – Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
235.01	Embankment Monitoring
DIVISION 3 – PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 4 – MAJOR STRUCTURES	
422.01	Bridge Approach Fills – Type I Standard Approach Fill
422.03	Reinforced Bridge Approach Fills – Type A Alternate Approach Fill for Integral Abutment
DIVISION 5 – SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction – High Side of Superelevated Curve – Method I
DIVISION 6 – ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 7 – CONCRETE PAVEMENTS AND SHOULDERS	
700.01	Concrete Pavement Joints – Construction and Contraction Joints
700.03	Dowel Assembly
700.04	Concrete Pavement Header Board
DIVISION 8 – INCIDENTALS	
815.02	Subsurface Drain
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
840.04	Concrete Open Throat Catch Basin – 12" thru 48" Pipe
840.05	Brick Open Throat Catch Basin – 12" thru 48" Pipe
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
840.24	Frames and Narrow Slot Sag Grates
840.26	Brick Grated Drop Inlet Type 'A' – 12" thru 72" Pipe
840.27	Brick Grated Drop Inlet Type 'B' – 12" thru 36" Pipe
840.28	Brick Grated Drop Inlet Type 'D' – 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet – for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.02	Drop Inlet Installation in Expressway Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout – Radius Type
848.04	Street Turnout
848.05	Curb Ramp – Proposed Curb & Gutter
852.01	Concrete Islands
852.02	Concrete Mountable Median – for Use with Rigid or Flexible Pavement
852.06	Method for Placement of Drop Inlets in Concrete Islands
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

12/2/2016

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

**S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Computed Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

- Standard Gauge — NCRR / NS
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

- Secondary Horiz and Vert Control Point
- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Exist Permanent Easment Pin and Cap
- New Permanent Easement Pin and Cap
- Vertical Benchmark
- Existing Right of Way Marker
- Existing Right of Way Line
- New Right of Way Line — RW
- New Right of Way Line with Pin and Cap — RW
- New Right of Way Line with Concrete or Granite R/W Marker — RW
- New Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- New Control of Access — CA
- Existing Easement Line — E
- New Temporary Construction Easement — E
- New Temporary Drainage Easement — TDE
- New Permanent Drainage Easement — PDE
- New Permanent Drainage / Utility Easement — DUE
- New Permanent Utility Easement — PUE
- New Temporary Utility Easement — TUE
- New 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
- Pavement Soil Reinforcement Mat (P.S.R.M)

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:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — 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 Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E*) — W
- U/G Water Line LOS C (S.U.E*) — W
- U/G Water Line LOS D (S.U.E*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) — G
- U/G Gas Line LOS C (S.U.E.*) — G
- U/G Gas Line LOS D (S.U.E.*) — 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 Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:

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

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	2A-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27391 — 2/3/2021 — MOTT MACDONALD I& E, LLC LICENSE NO. F-0669

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022896 CLARK S. MORRISON — Clark S. Morrison 2/3/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of: MOTT MACDONALD, 7621 Purfoy Road; Suite 115, Fuquay-Varina, NC 27526, www.mottmac.com/north-america

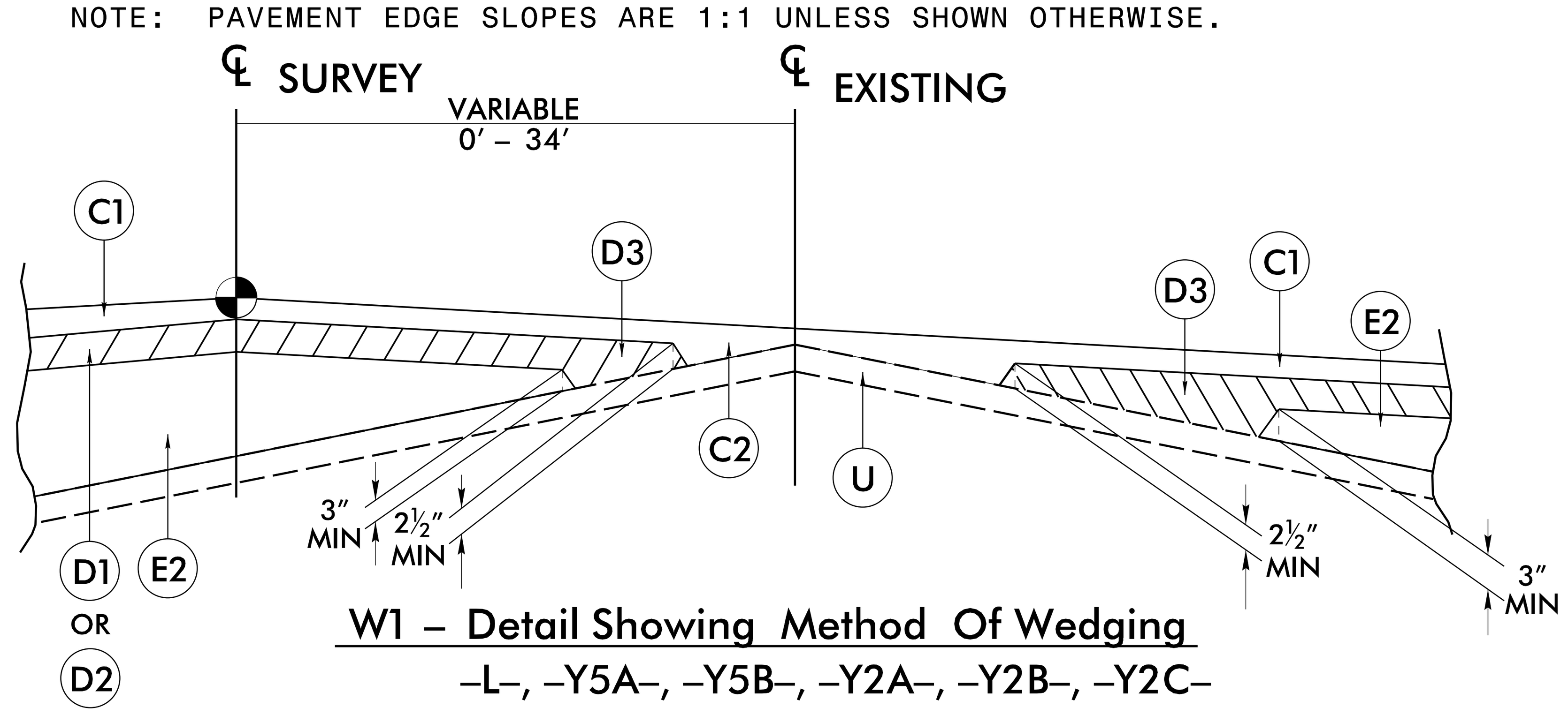
PAVEMENT SCHEDULE

A1	7" JOINTED CONCRETE PAVEMENT	J	PROP. 6" AGGREGATE BASE COURSE	U	EXISTING PAVEMENT.
C1	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.	R1	1'-6" CONCRETE CURB AND GUTTER.	W1	VAR. DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING).
C2	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.	R2	2'-6" CONCRETE CURB AND GUTTER.	W2	VAR. DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING).
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R3	9"X18" CURB	V1	INCIDENTAL MILLING
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R4	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)	V2	2 ½" MILLING
D3	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.	R5	EXPRESSWAY GUTTER		
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	S	4" CONCRETE SIDEWALK.		
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.	T	EARTH MATERIAL.		

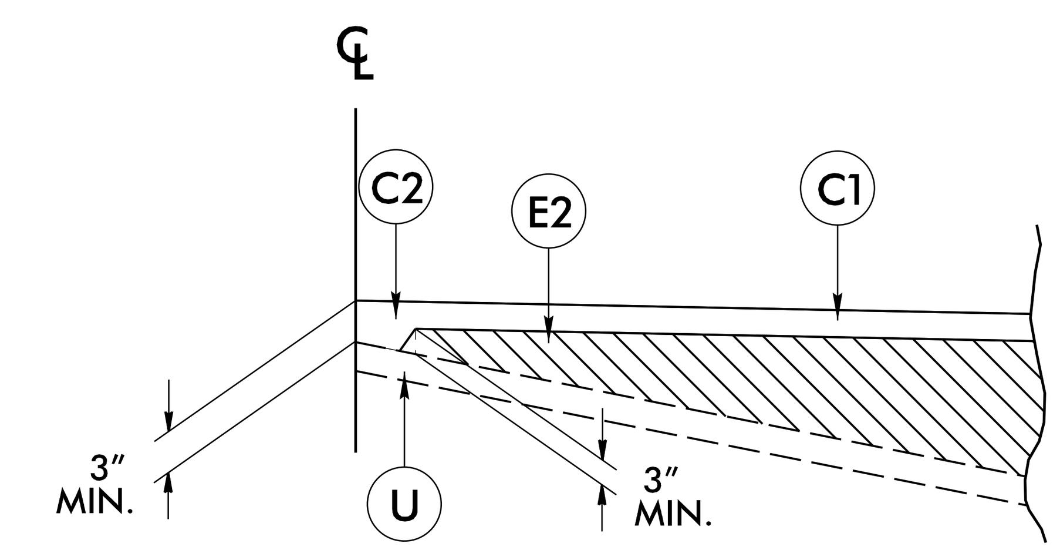
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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

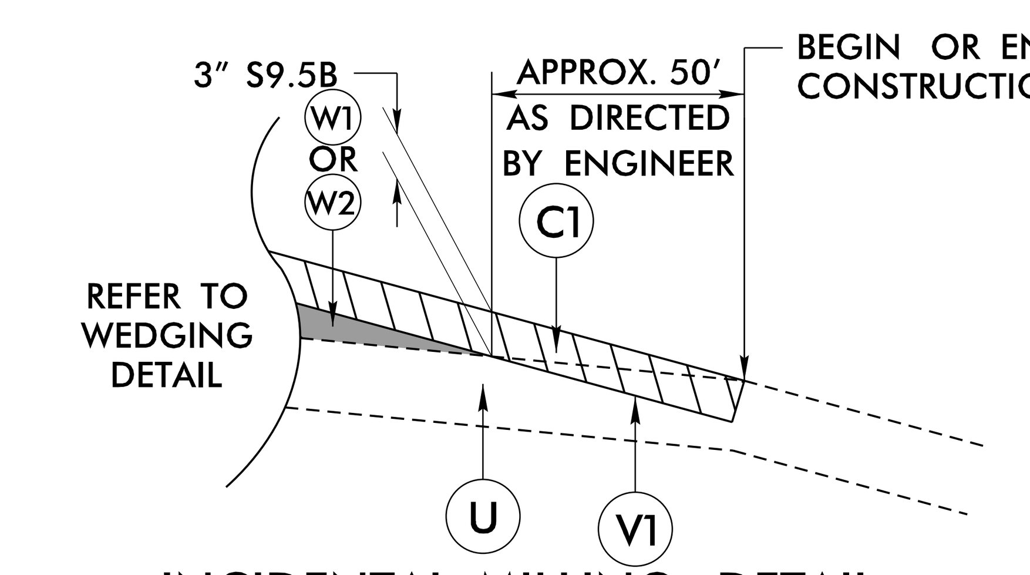
NOTES:
- SEE PLANS FOR LOCATION OF TURN LANES AND TAPERS
- SEE PLANS FOR INTERSECTION TURNOUTS



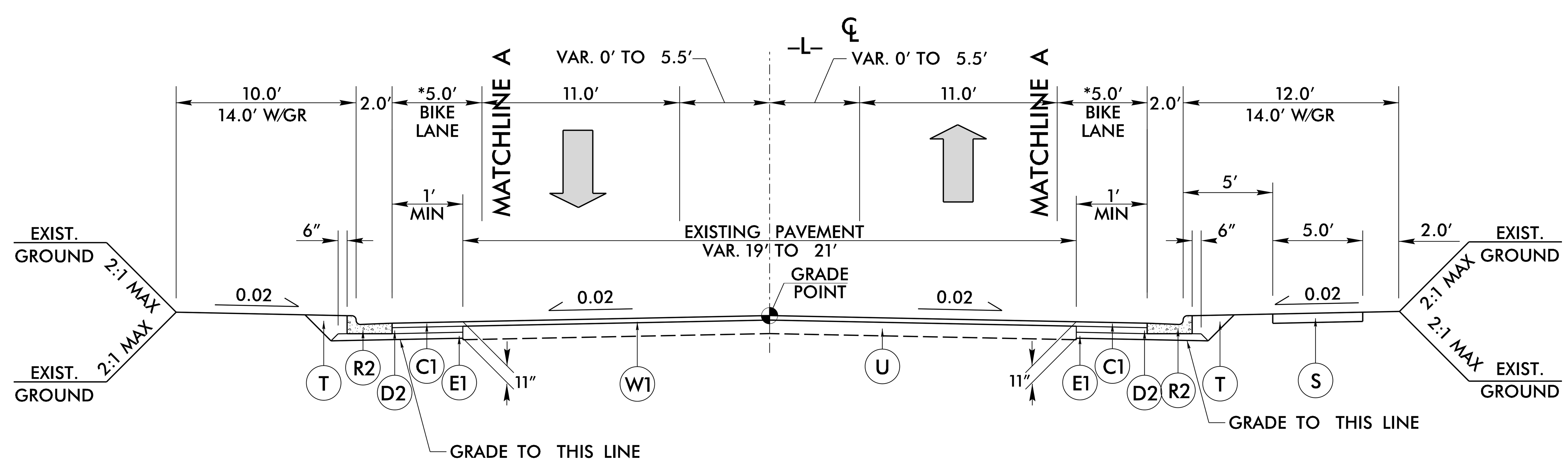
W1 – Detail Showing Method Of Wedging
–L–, –Y5A–, –Y5B–, –Y2A–, –Y2B–, –Y2C–



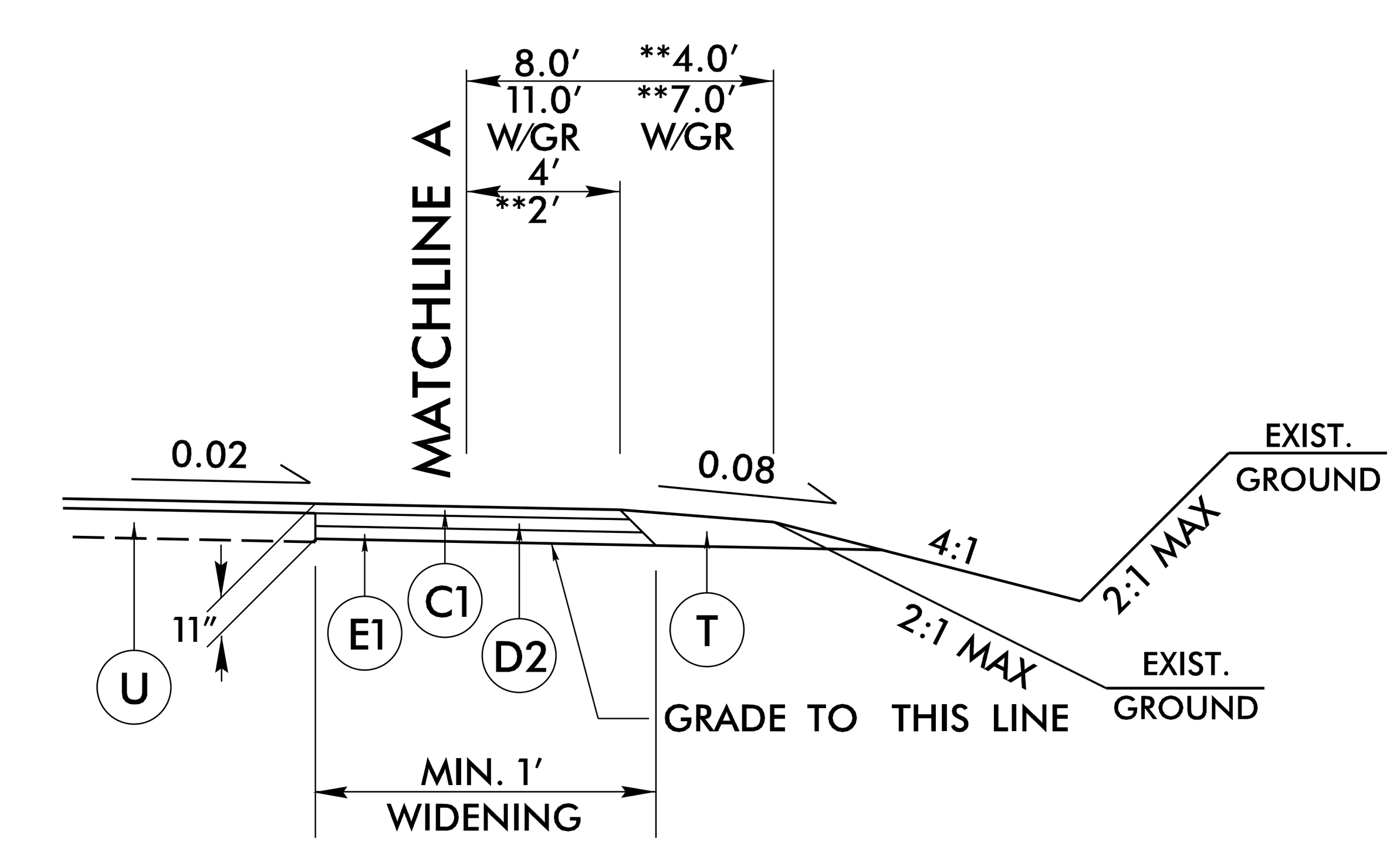
W2 – Detail Showing Method Of Wedging
–Y1A–, –Y1B–, –Y2C–, –Y3–, –Y4–, –Y9A–, –Y10A–, –Y10B–, –Y11A–, –Y11B–, –Y18–



INCIDENTAL MILLING DETAIL
DETAIL SHOWING PROFILE VIEW



TYPICAL SECTION NO. 1



PARTIAL TYPICAL SECTION NO. 1A

USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1
**–L– STA 10+00 TO 13+20 LT&RT
–L– STA 45+70 TO 48+50 LT&RT

*BEG/END BIKE LANES:
BEG BIKE LANES –L– STA 14+00.00
END BIKE LANES –L– STA 45+50.00

USE TYPICAL SECTION NO. 1:
–L– STA 10+00.00 TO 15+50.00
–L– STA 42+00.00 TO 48+50.00

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	2A-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27391 ENGINEER MICHAEL PEKAREK 2/3/2021	NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON Clark S. Morrison 2/3/2021
MOTT MACDONALD I & E, LLC LICENSE NO. F-0669	

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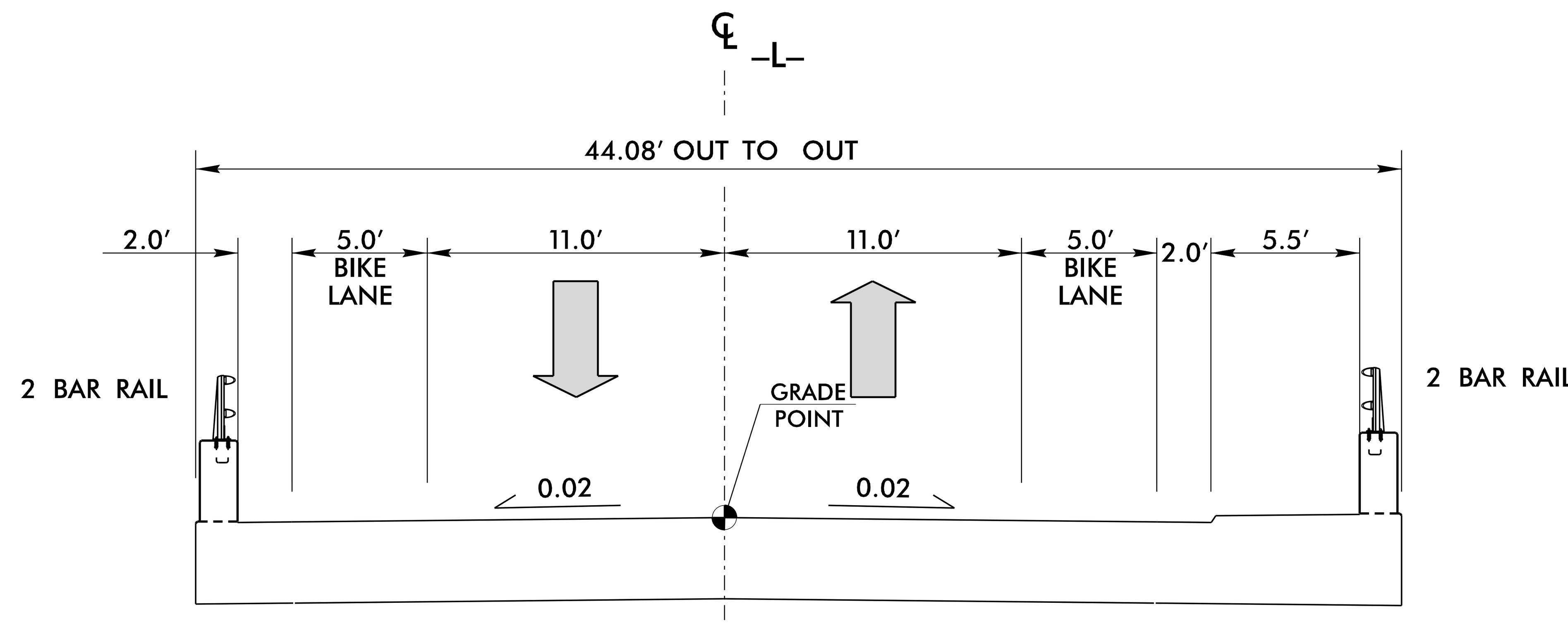
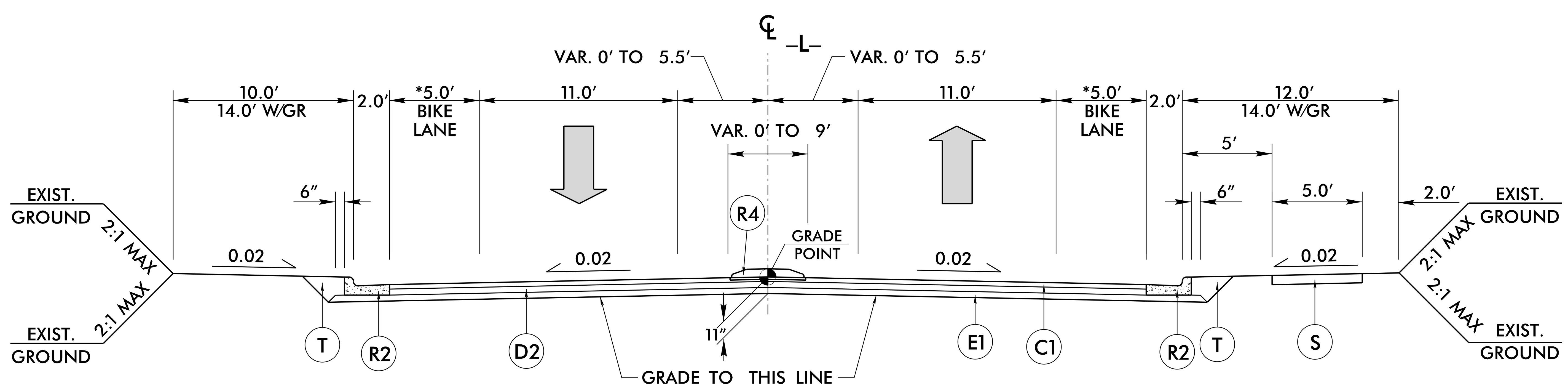


BRIDGE TYPICAL SECTION

USE BRIDGE TYPICAL SECTION:
-L- STA 30+23.11 TO 35+01.11

NOTE: SEE STRUCTURE PLANS FOR FENCE LOCATION ALONG THE BRIDGE



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2:
-L- STA 15+50.00 TO 20+87.67
-L- STA 22+07.67 TO 30+23.11 (BEG. BRIDGE)
-L- STA 35+01.11 (END BRIDGE) TO 42+00.00

*BEG/END BIKE LANES:
END BIKE LANES -L- STA 19+28.00
BEG BIKE LANES -L- STA 23+67.00

A1	7" CONCRETE PAVEMENT
C1	3" S9.5B
C2	VAR. DEPTH S9.5B
D1	2.5" I19.0C
D2	4" I19.0C
D3	VAR. DEPTH I19.0C
E1	4" B25.0C
E2	VAR. DEPTH B25.0C
J	6" ABC
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	9"X18" CURB
R4	5" MON. CONC. IS. (KEY. IN)
R5	EXPRESSWAY GUTTER
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	VAR. DEPTH ASPH. PAVE.
W2	VAR. DEPTH ASPH. PAVE.
V1	INCIDENTAL MILLING
V2	2.5" MILLING

NOTES:
-SEE PLANS FOR LOCATION OF TURN LANES AND TAPERS
-SEE PLANS FOR INTERSECTION TURNOUTS
-SEE PLANS FOR LOCATION OF ISLANDS

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

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	2A-3

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — SEAL 27391 — Michael ... 2/3/2021 — MOTT MACDONALD I & E, LLC LICENSE NO. F-0669

PAVEMENT DESIGN ENGINEER — SEAL 022896 — Cark S. Morrison 2/3/2021

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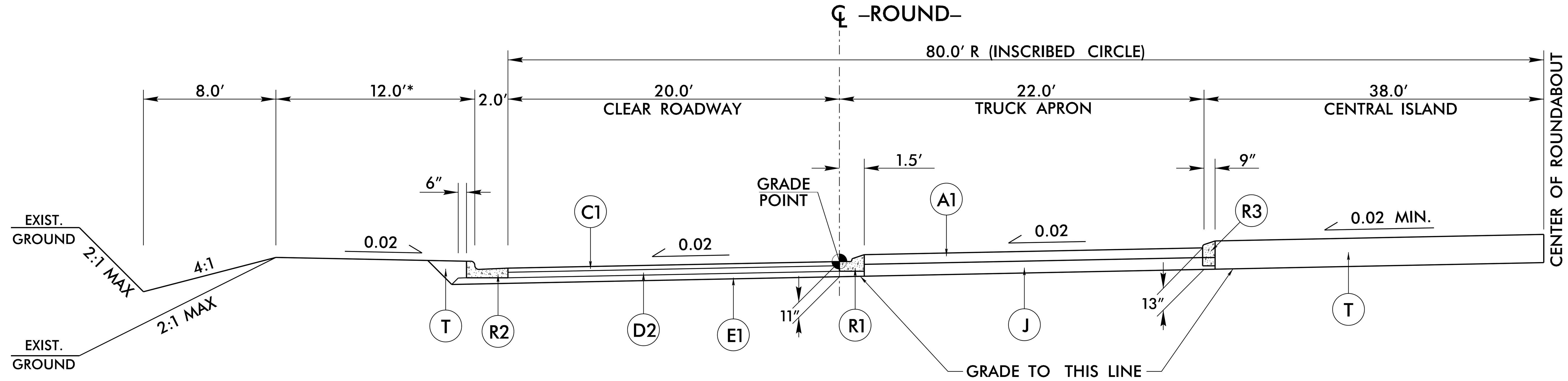
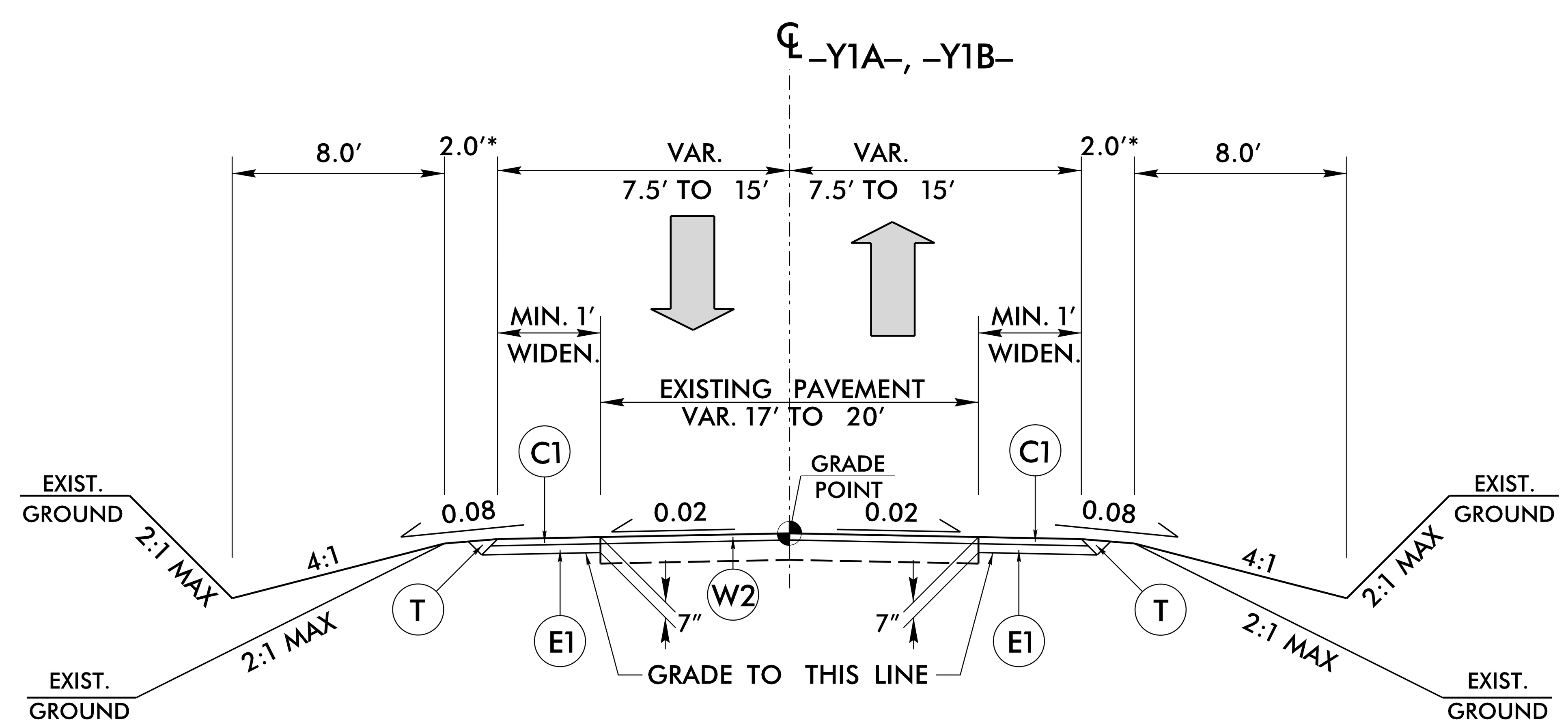


* SEE PLAN VIEW FOR SIDEWALK LOCATIONS

TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3:
-ROUND- STA 10+00.00 TO 13+76.98
NOTE: 15' RADIAL JOINT SPACING
WELDED WIRE MESH (EITHER 4x4 W3.5xW3.5 OR 6x6 W5xW5)



* 7.0' w/GUARDRAIL

TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4:
-Y1A- STA 17+90.00 TO 19+35.43
-Y1B- STA 10+11.39 TO 12+20.00

A1	7" CONCRETE PAVEMENT
C1	3" S9.5B
C2	VAR. DEPTH S9.5B
D1	2.5" I19.0C
D2	4" I19.0C
D3	VAR. DEPTH I19.0C
E1	4" B25.0C
E2	VAR. DEPTH B25.0C
J	6" ABC
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	9"X18" CURB
R4	5" MON. CONC. IS. (KEY. IN)
R5	EXPRESSWAY GUTTER
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	VAR. DEPTH ASPH. PAVE.
W2	VAR. DEPTH ASPH. PAVE.
V1	INCIDENTAL MILLING
V2	2.5" MILLING

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

NOTES:
-SEE PLANS FOR LOCATION OF TURN LANES AND TAPERS
-SEE PLANS FOR INTERSECTION TURNOUTS

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	2A-4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27391 — MOTT MACDONALD I & E, LLC LICENSE NO. F-0669 — 2/3/2021

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022896 CLARK S. MORRISON — Clark S. Morrison 2/3/2021

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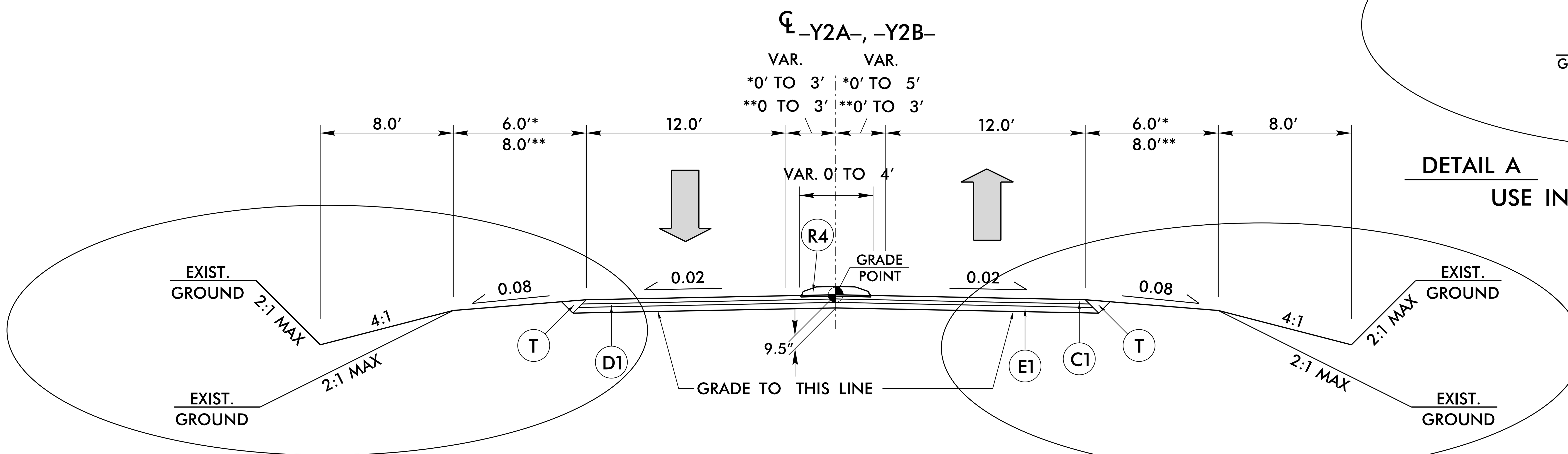


SEE DETAIL A

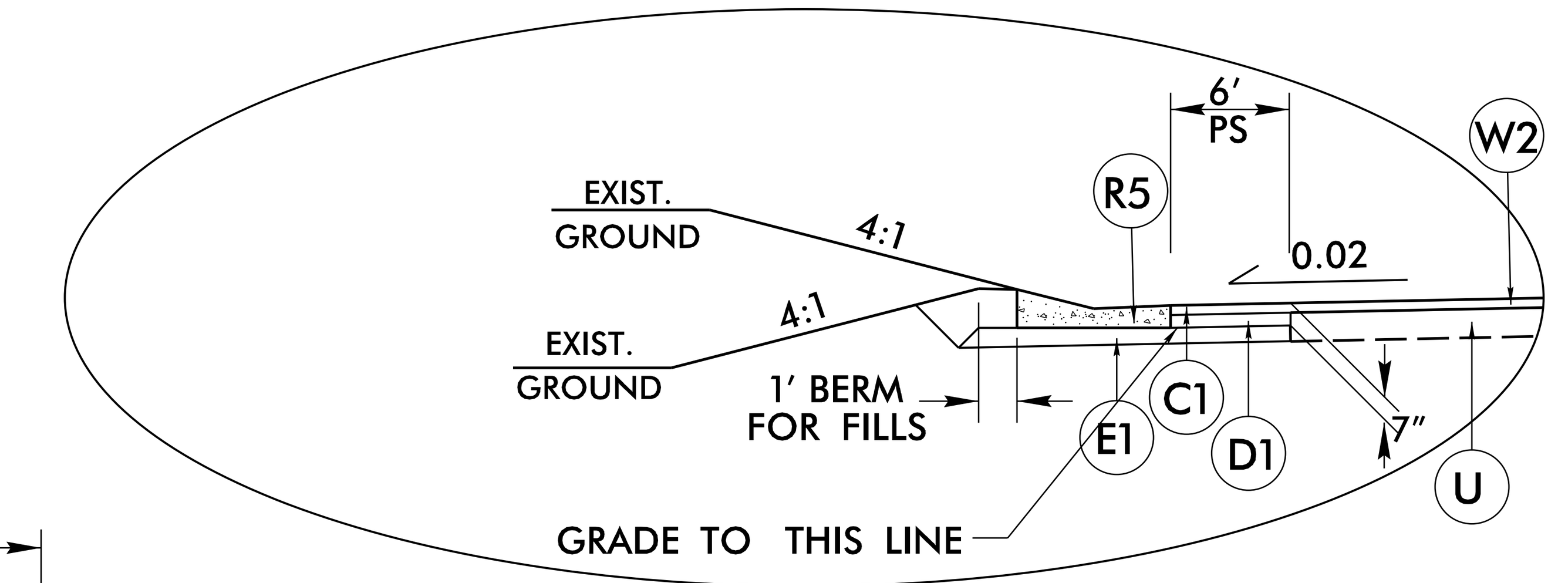
* 9.0' w/GUARDRAIL
** 11.0' w/GUARDRAIL

TYPICAL SECTION NO. 5

SEE DETAIL B

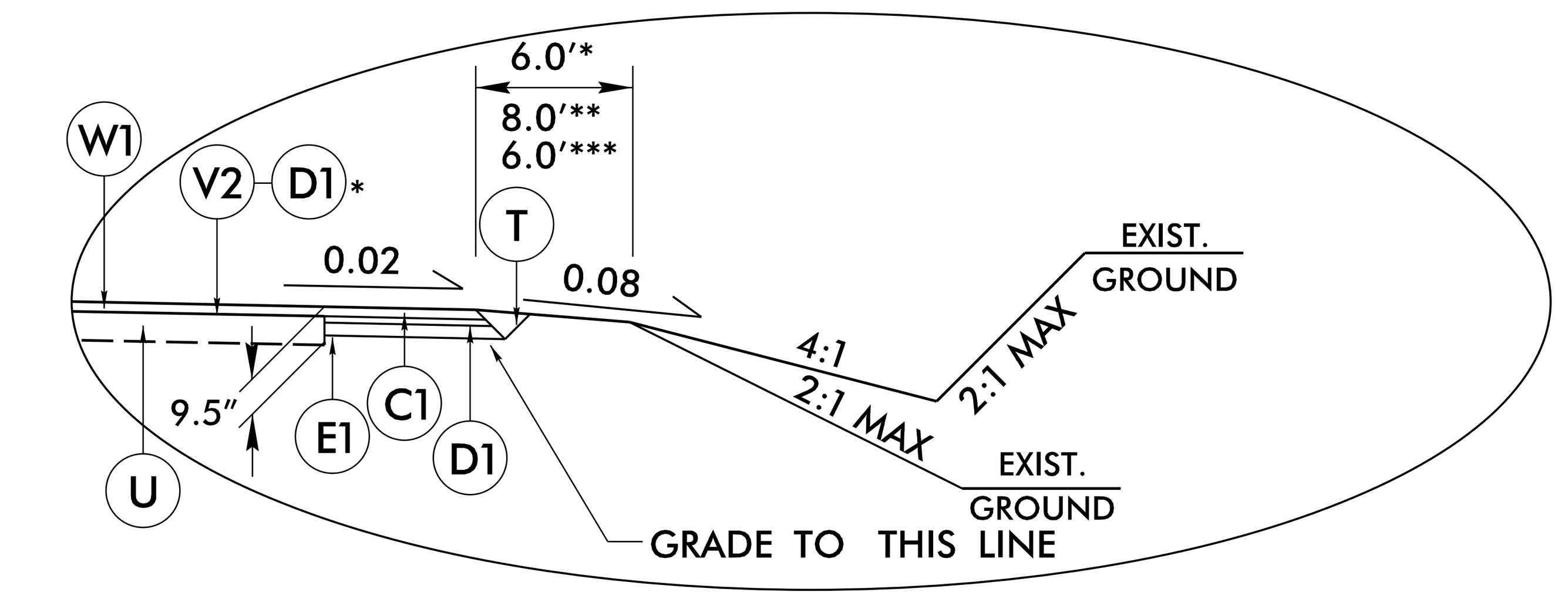
USE TYPICAL SECTION NO. 5:
*-Y2A- STA 12+50.00 TO 18+76.26
**-Y2B- STA 11+04.00 TO 16+00.00

NOTES:
- SEE PLANS FOR LOCATION OF TURN LANES AND TAPERS
- SEE PLANS FOR INTERSECTION TURNOUTS
- SEE PLANS FOR LOCATIONS OF ISLANDS



DETAIL A

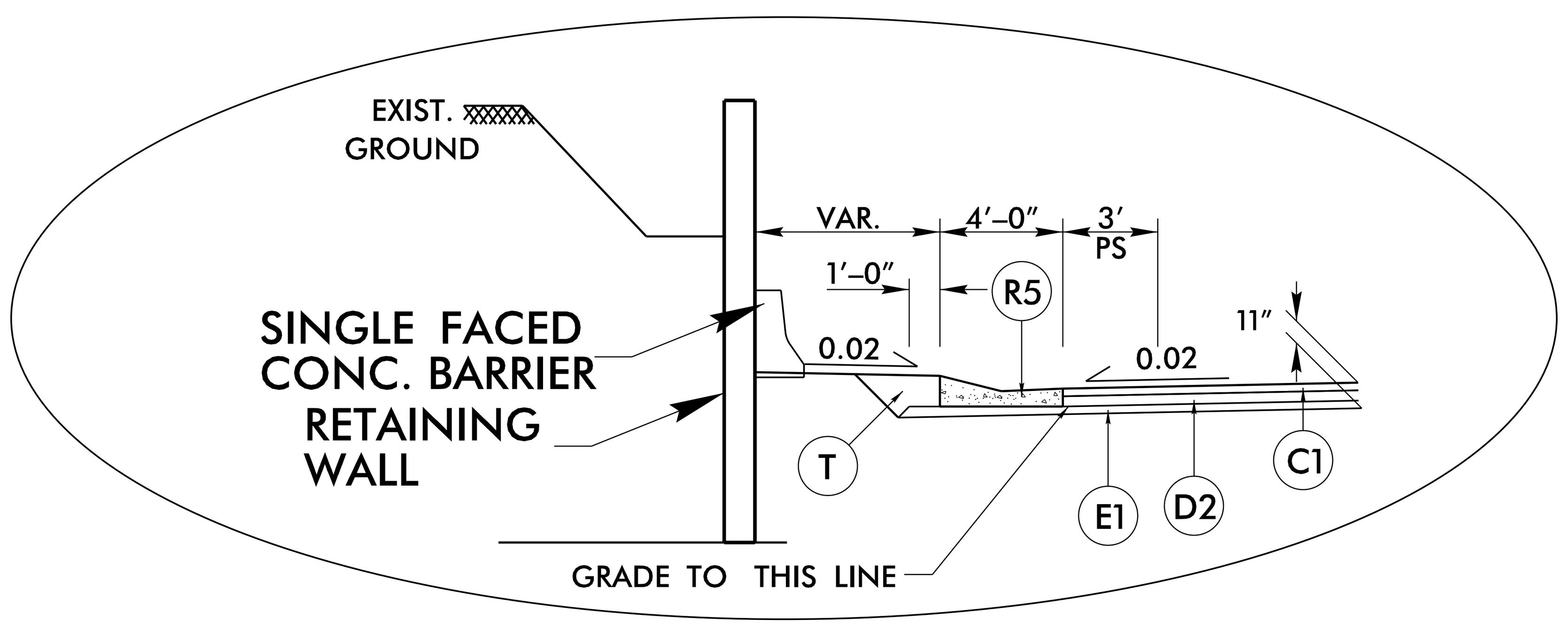
DETAIL A
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 5
-Y2B- STA 14+00.00 TO 15+50.00 LT



DETAIL B

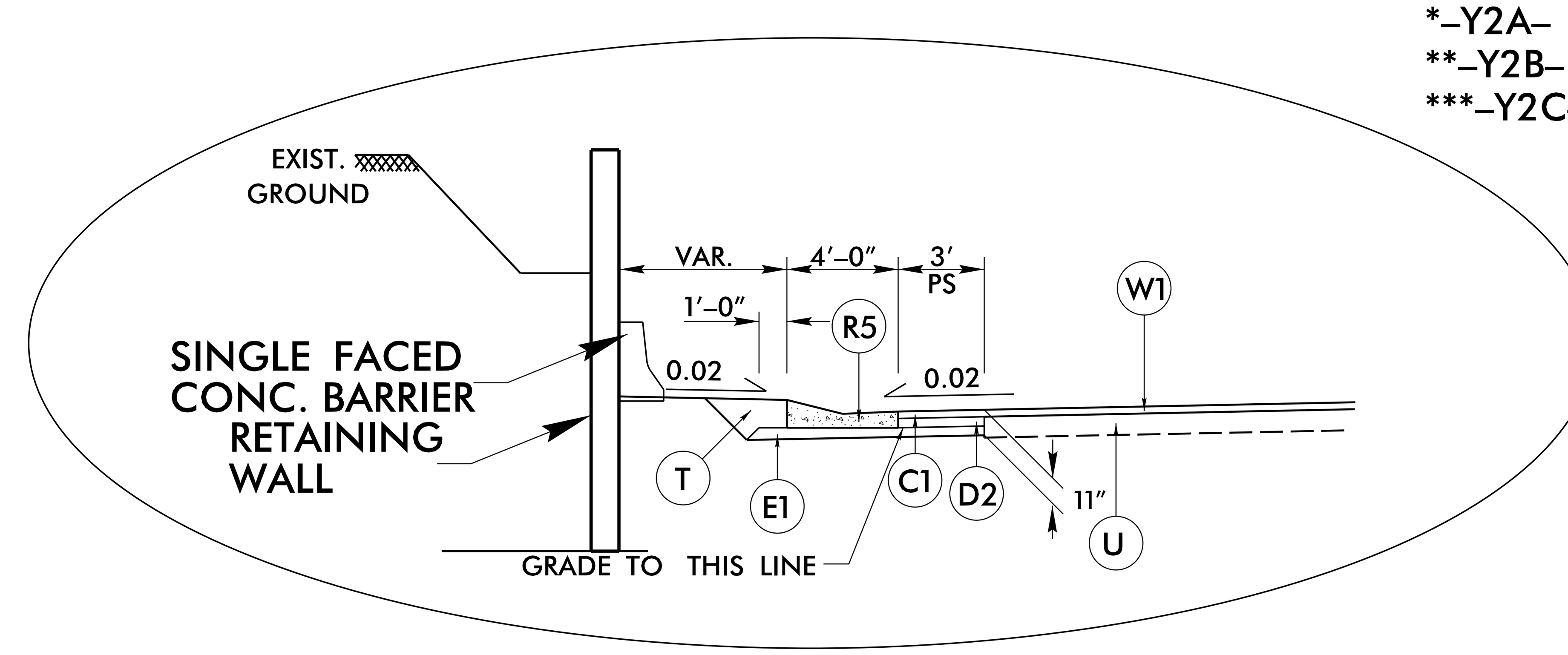
DETAIL B
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 5
*-Y2A- STA 12+50.00 TO 15+45.61 LT&RT
**-Y2B- STA 14+50.00 TO 16+00.00 LT&RT
***-Y2C- STA 14+00.00 TO 15+71.58 RT

A1	7" CONCRETE PAVEMENT
C1	3" S9.5B
C2	VAR. DEPTH S9.5B
D1	2.5" I19.0C
D2	4" I19.0C
D3	VAR. DEPTH I19.0C
E1	4" B25.0C
E2	VAR. DEPTH B25.0C
J	6" ABC
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	9"X18" CURB
R4	5" MON. CONC. IS. (KEY. IN)
R5	EXPRESSWAY GUTTER
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	VAR. DEPTH ASPH. PAVE.
W2	VAR. DEPTH ASPH. PAVE.
V1	INCIDENTAL MILLING
V2	2.5" MILLING



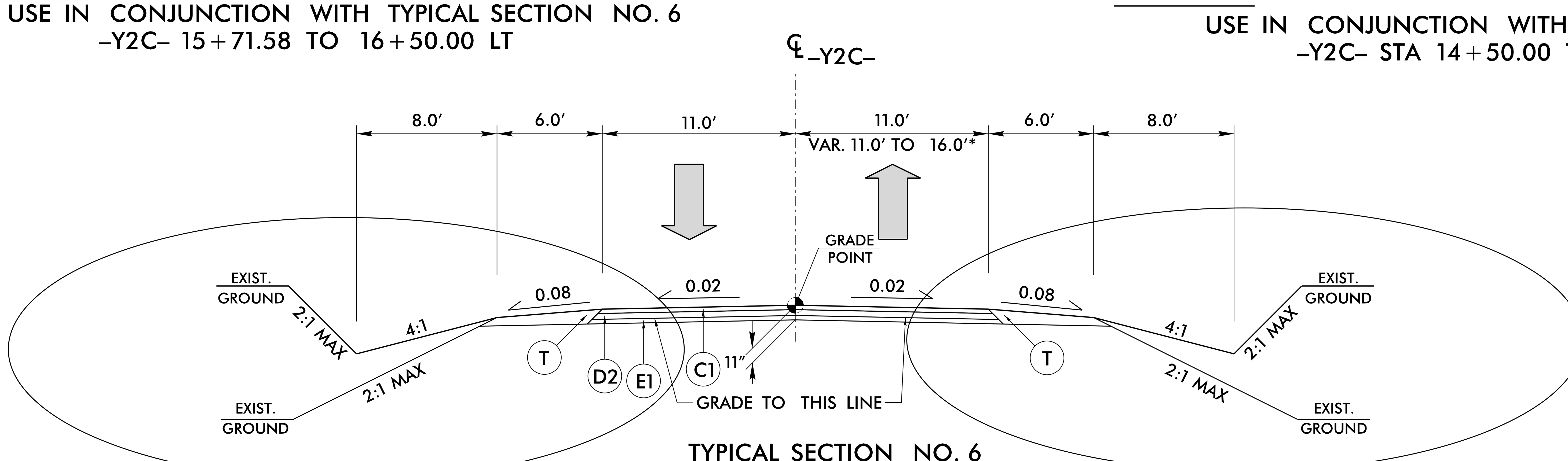
DETAIL C

DETAIL C
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 6
-Y2C- 15+71.58 TO 16+50.00 LT



DETAIL D

DETAIL D
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 6
-Y2C- STA 14+50.00 TO 15+71.58 LT



SEE DETAIL C & D

TYPICAL SECTION NO. 6

SEE DETAIL B

USE TYPICAL SECTION NO. 6:
-Y2C- STA 14+60.00 TO 21+61.34

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

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	2A-5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27391 ENGINEER	NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON
MOTT MACDONALD I& E, LLC LICENSE NO. F-0669 ... 3/2021	Clark S. Morrison 2/3/2021

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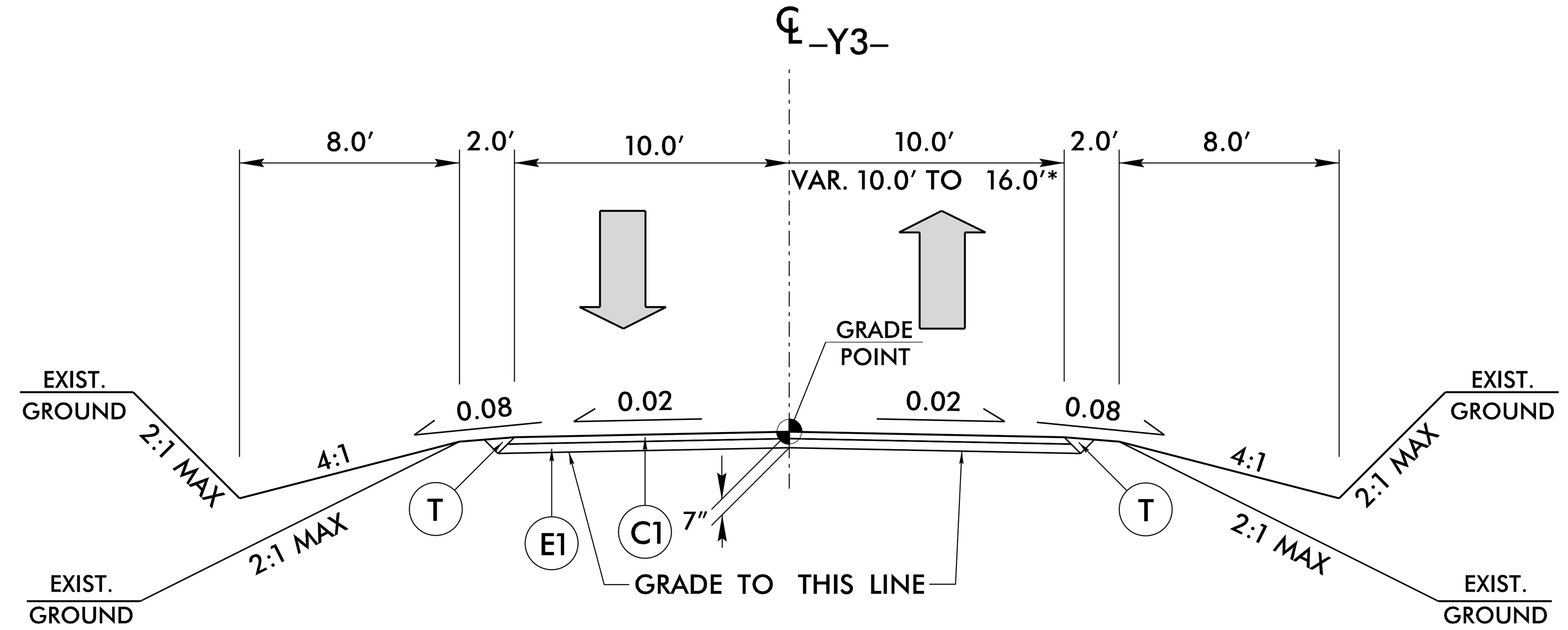
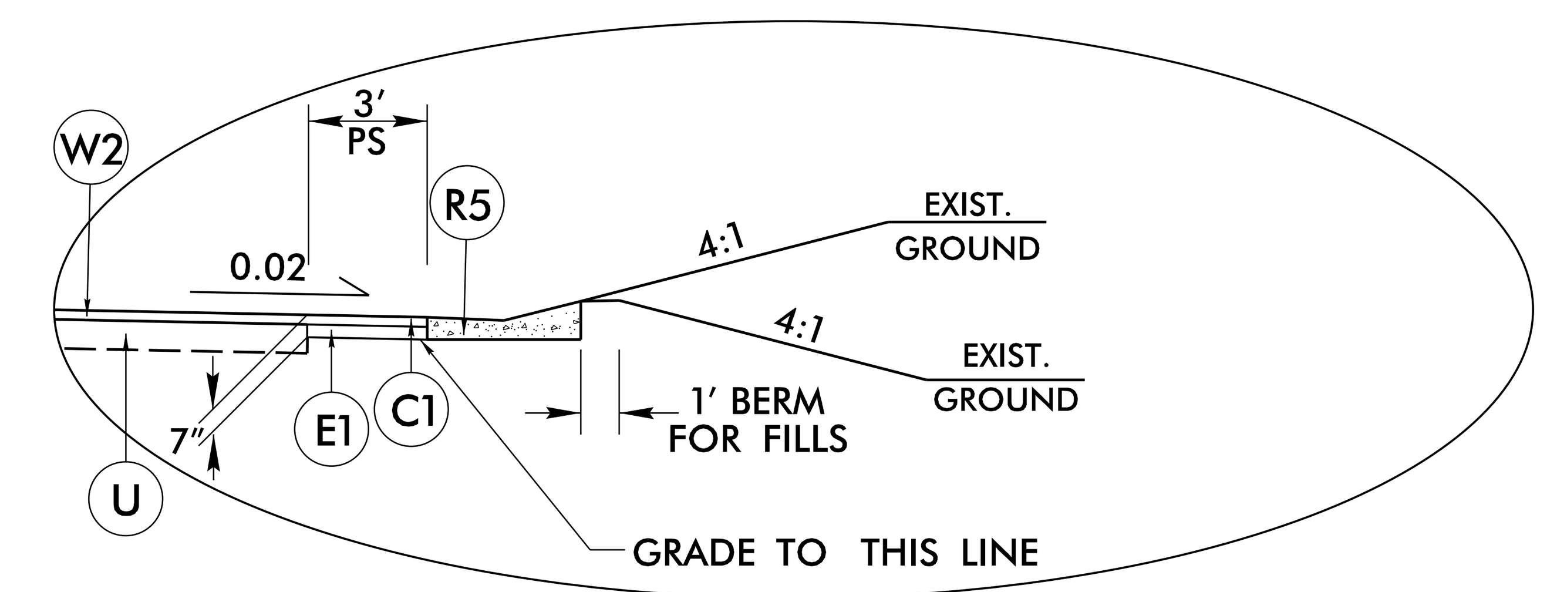
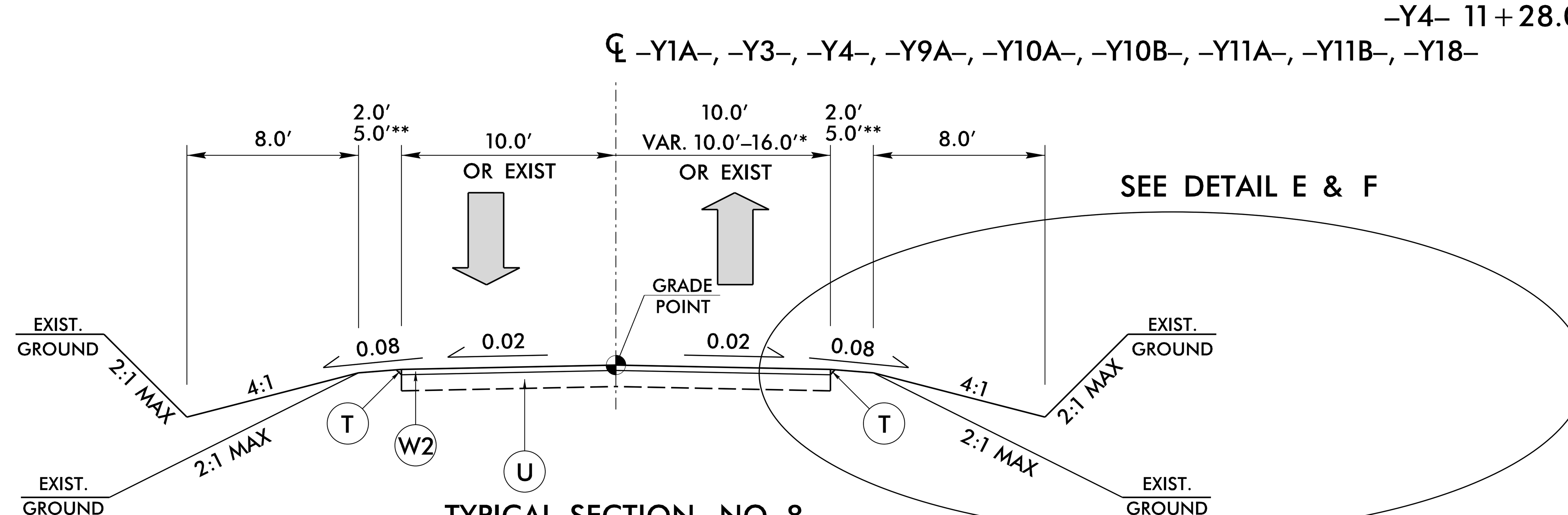


TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7:
-Y3- STA 10+10.04 TO 10+38.50



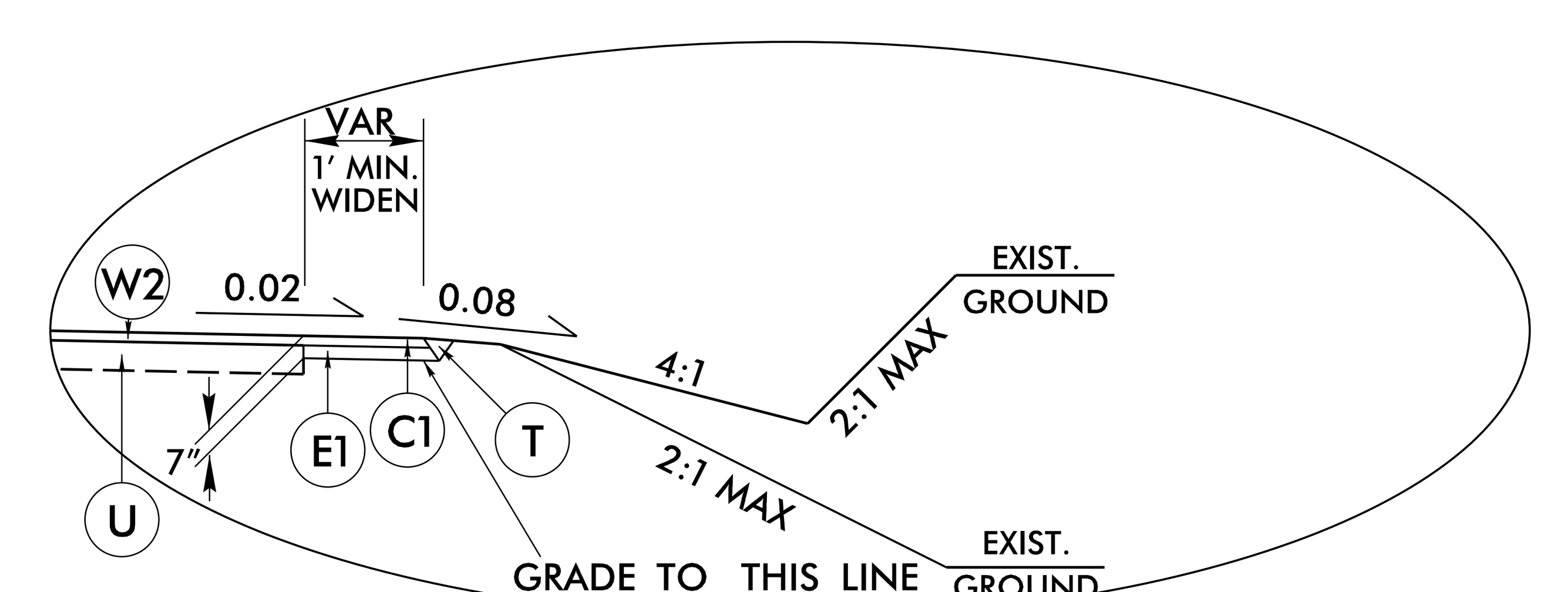
DETAIL E
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 8
-Y4- 11+28.00 TO 15+00.00 RT



* 7.0' w/GUARDRAIL
** 8.0' w/GUARDRAIL

TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8:
-Y3- STA 10+38.50 TO 12+50.00
**-Y4- STA 11+21.95 TO 16+00.00
-Y9A- STA 10+00.00 TO 11+78.01
-Y10A- STA 11+50.00 TO 13+49.99
-Y10B- STA 10+00.00 TO 11+99.93
-Y18- STA 11+10.00 TO 11+48.41.00
-Y1A- STA 10+07.02 TO 11+50.00
**-Y11A- STA 11+50.00 TO 13+25.08
**-Y11B- STA 11+63.31 TO 13+25.00



DETAIL F
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 8
FOR ALL WIDENING

A1	7" CONCRETE PAVEMENT
C1	3" S9.5B
C2	VAR. DEPTH S9.5B
D1	2.5" I19.0C
D2	4" I19.0C
D3	VAR. DEPTH I19.0C
E1	4" B25.0C
E2	VAR. DEPTH B25.0C
J	6" ABC
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	9"X18" CURB
R4	5" MON. CONC. IS. (KEY. IN)
R5	EXPRESSWAY GUTTER
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	VAR. DEPTH ASPH. PAVE.
W2	VAR. DEPTH ASPH. PAVE.
V1	INCIDENTAL MILLING
V2	2.5" MILLING

NOTES:
- SEE PLANS FOR LOCATION OF TURN LANES AND TAPERS
- SEE PLANS FOR INTERSECTION TURNOUTS
- SEE PLANS FOR CUL-DE-SAC LOCATIONS

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

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	2A-6

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 27391 ENGINEER — MOTT MACDONALD I & E, LLC LICENSE NO. F-0669 — 2/3/2021

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER — CLARK S. MORRISON — Clark S. Morrison 2/3/2021

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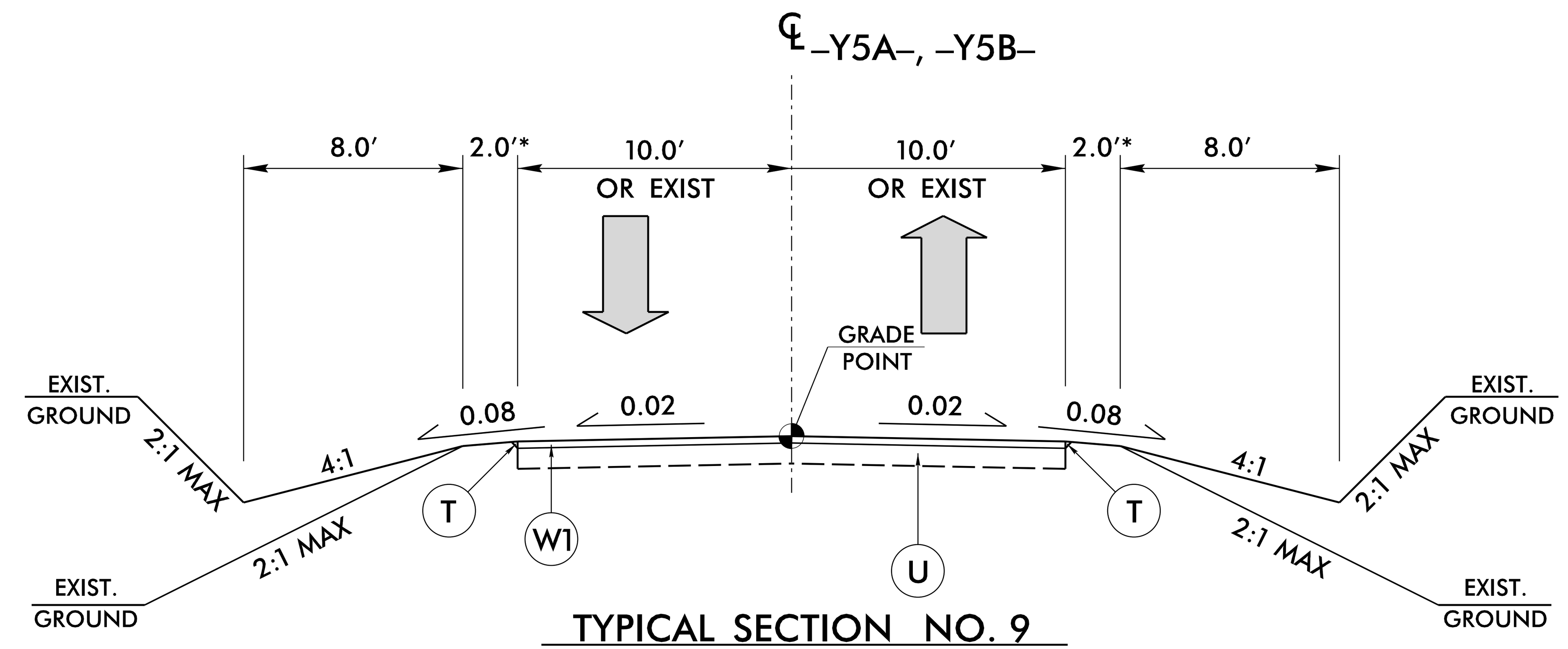
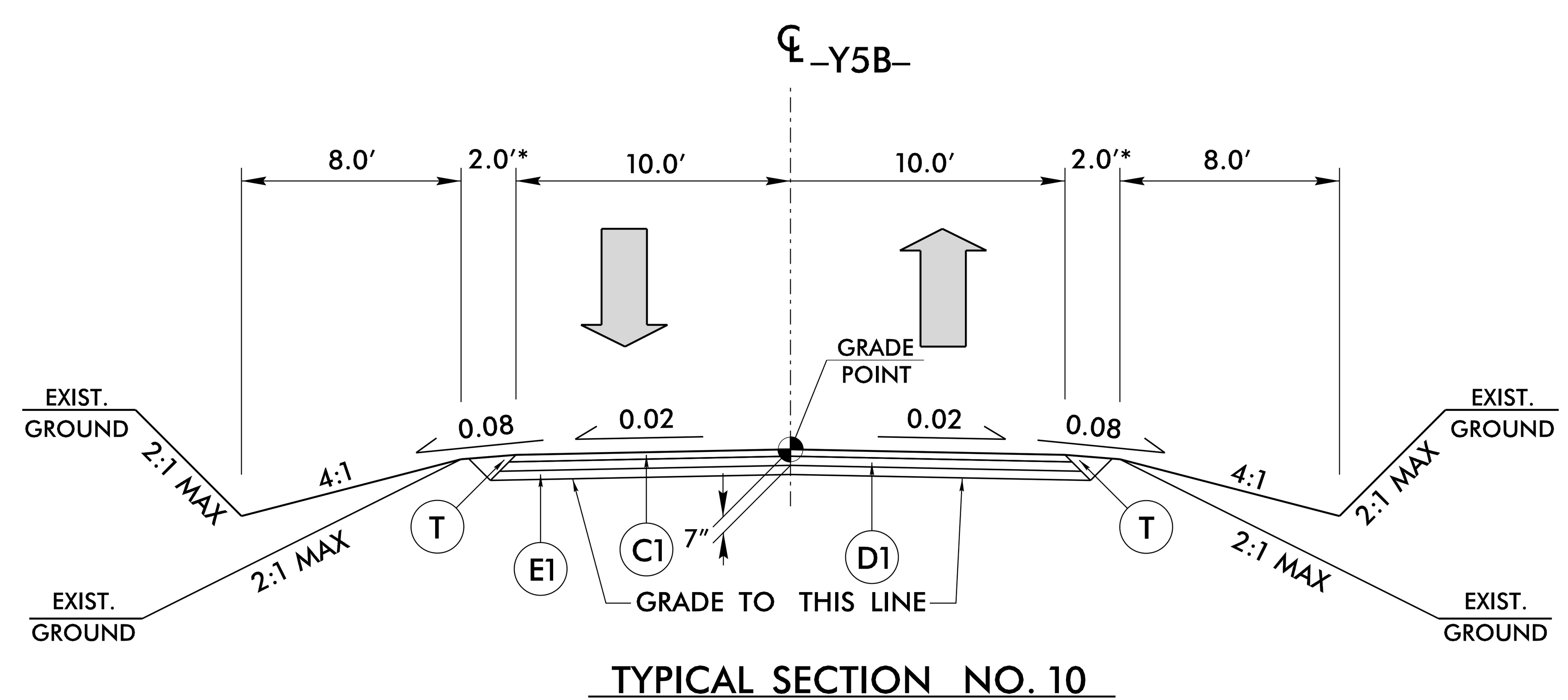


TYPICAL SECTION NO. 9

* 7.0' w/GUARDRAIL

USE TYPICAL SECTION NO. 9:
-Y5A- STA 10+11.00 TO 12+00.00
-Y5B- STA 12+36.31 TO 14+75.00



TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10:
-Y5B- STA 10+75.00 TO 12+12.26

* 7.0' w/GUARDRAIL

A1	7" CONCRETE PAVEMENT
C1	3" S9.5B
C2	VAR. DEPTH S9.5B
D1	2.5" I19.0C
D2	4" I19.0C
D3	VAR. DEPTH I19.0C
E1	4" B25.0C
E2	VAR. DEPTH B25.0C
J	6" ABC
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	9"X18" CURB
R4	5" MON. CONC. IS. (KEY. IN)
R5	EXPRESSWAY GUTTER
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	VAR. DEPTH ASPH. PAVE.
W2	VAR. DEPTH ASPH. PAVE.
V1	INCIDENTAL MILLING
V2	2.5" MILLING

NOTES:
- SEE PLANS FOR LOCATION OF TURN LANES AND TAPERS
- SEE PLANS FOR INTERSECTION TURNOUTS
- SEE PLANS FOR LOCATIONS OF ISLANDS
- SEE PLANS FOR CUL-DE-SAC LOCATIONS

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

5/14/99
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	2B-1
R/W SHEET NO.	

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27391 ENGINEER
MICHAEL PEKAREK
3/2021
MOTT MACDONALD I & E, LLC
LICENSE NO. F-0669

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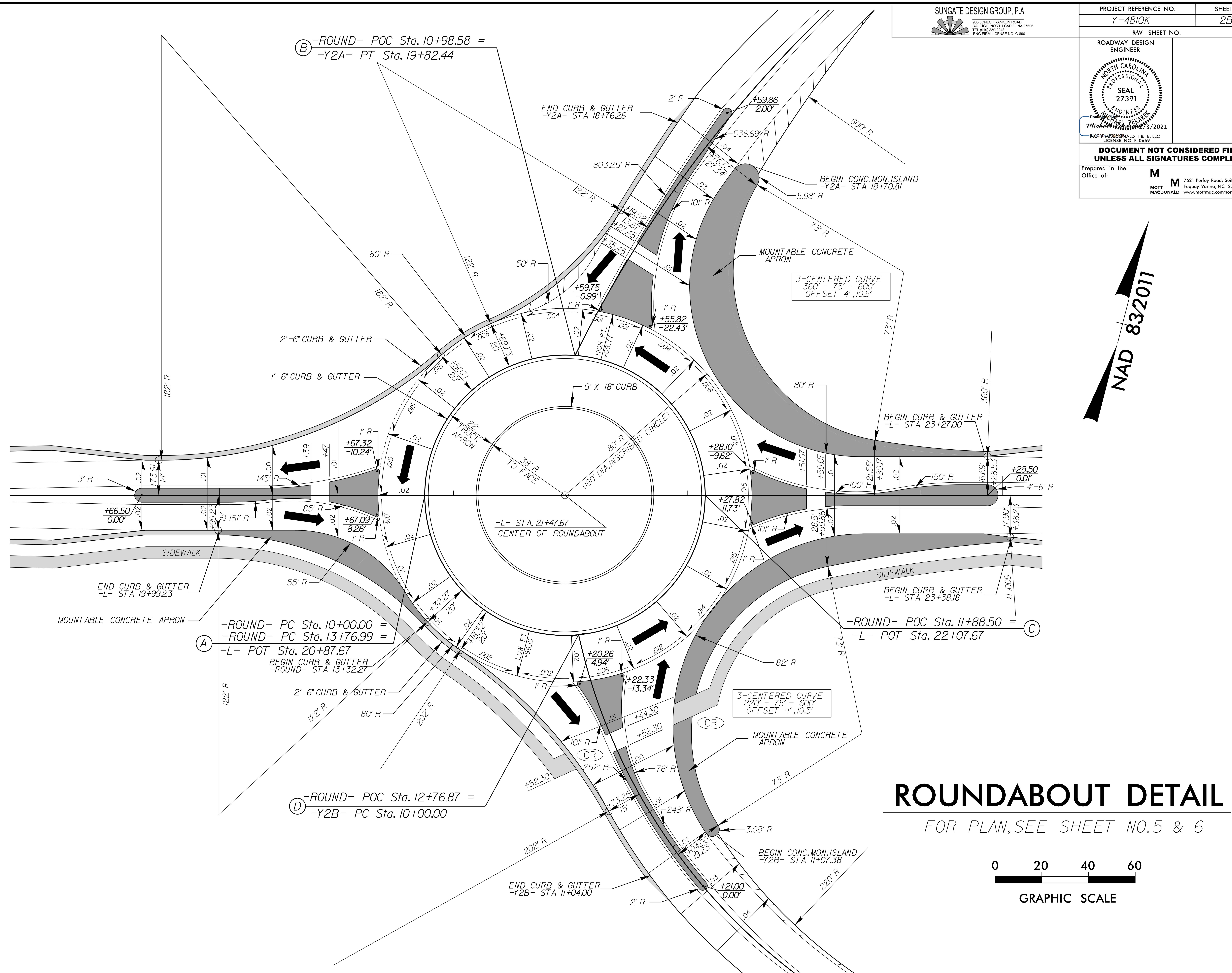
-ROUND- POC Sta. 10+98.58 =
-Y2A- PT Sta. 19+82.44
END CURB & GUTTER
-Y2A- STA 18+76.26
BEGIN CONC. MON. ISLAND
-Y2A- STA 18+70.81
MOUNTABLE CONCRETE APRON
3-CENTERED CURVE
360' - 75' - 600'
OFFSET 4', 10.5'
2'-6" CURB & GUTTER
1'-6" CURB & GUTTER
9" X 18" CURB
22' TRUCK APRON
38' R TO FACE
80' R (160' DIA. INSCRIBED CIRCLE)
-L- STA. 21+47.67
CENTER OF ROUNDABOUT
BEGIN CURB & GUTTER
-L- STA 23+27.00
BEGIN CURB & GUTTER
-L- STA 23+38.18
SIDEWALK
END CURB & GUTTER
-L- STA 19+99.23
MOUNTABLE CONCRETE APRON
-ROUND- PC Sta. 10+00.00 =
-ROUND- PC Sta. 13+76.99 =
-L- POT Sta. 20+87.67
BEGIN CURB & GUTTER
-ROUND- STA 13+32.27
2'-6" CURB & GUTTER
-ROUND- POC Sta. 11+88.50 =
-L- POT Sta. 22+07.67
3-CENTERED CURVE
220' - 75' - 600'
OFFSET 4', 10.5'
MOUNTABLE CONCRETE APRON
CR
-ROUND- POC Sta. 12+76.87 =
-Y2B- PC Sta. 10+00.00
BEGIN CONC. MON. ISLAND
-Y2B- STA 11+07.38
END CURB & GUTTER
-Y2B- STA 11+04.00
NAD 83/2011

ROUNDABOUT DETAIL

FOR PLAN, SEE SHEET NO.5 & 6

0 20 40 60
GRAPHIC SCALE

4:22:40 PM
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SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	2B-2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27391 ENGINEER MICHAEL PEKAREK 2/3/2021

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

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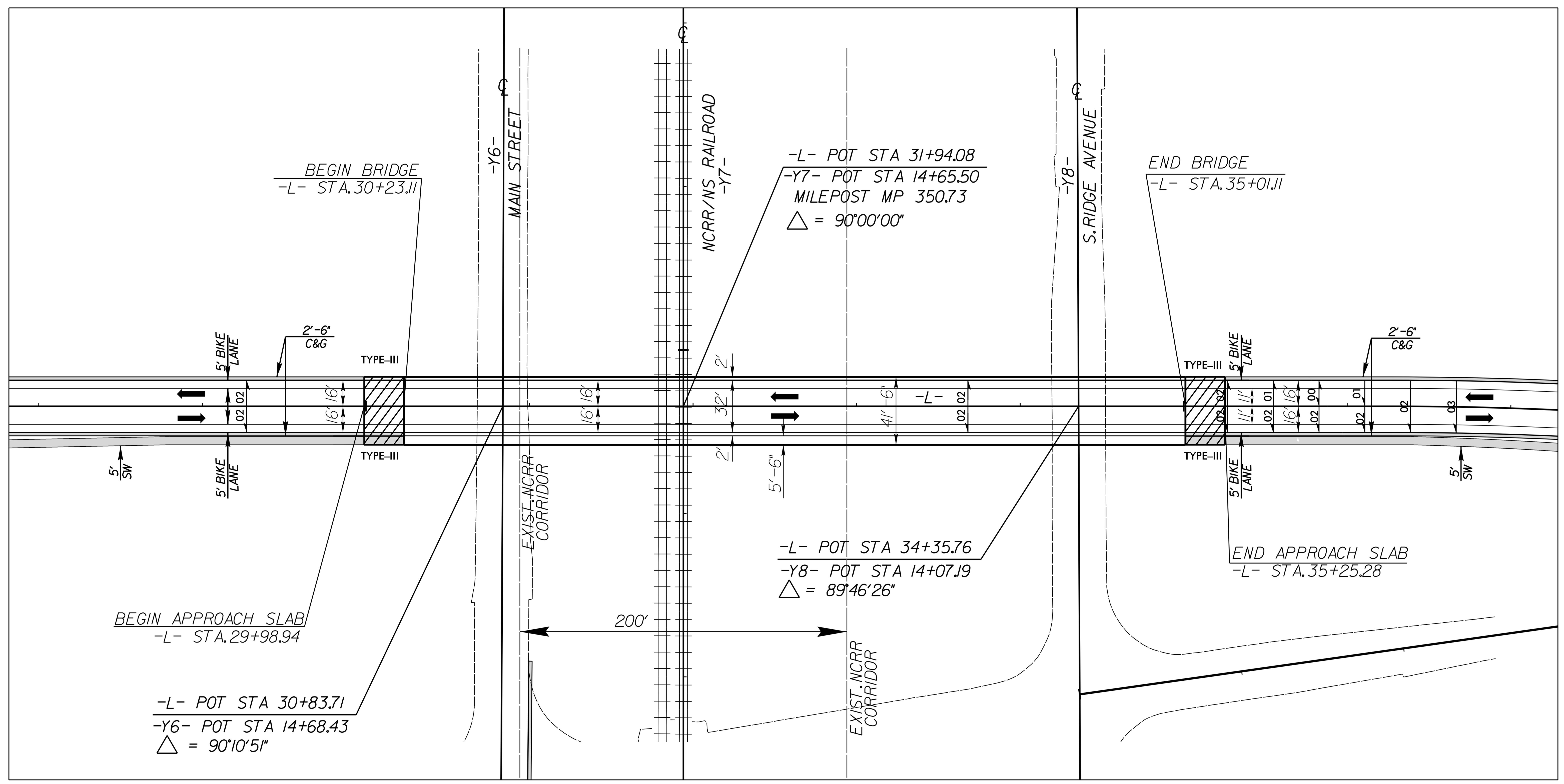
NAD 83/2011

DETAIL SHOWING PAVEMENT – BRIDGE RELATIONSHIP



SR 1625–ROGERS LAKE ROAD OVER US 29A–MAIN STREET, RAILROAD, AND S. RIDGE AVENUE

FOR STRUCTURE PLANS, SEE SHEETS S-1 TO S-52
FOR PLAN, SEE SHEET NO.7 & 8

0 50 100 150

GRAPHIC SCALE

6/2/99

10:12:06 PM
R:\Roadway\Proj\Y4810K_rdy_psh_02B-2_Bridge_Detail.dgn

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	2B-3
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — SEAL 27391 — MICHAEL PEKAREK — MOTT MACDONALD I& E, LLC LICENSE NO. F-0669

HYDRAULICS ENGINEER — SEAL 26971 — JOSHUA G. DALTON — SUNGATE DESIGN GROUP, P.A. LICENSE NO. C-890

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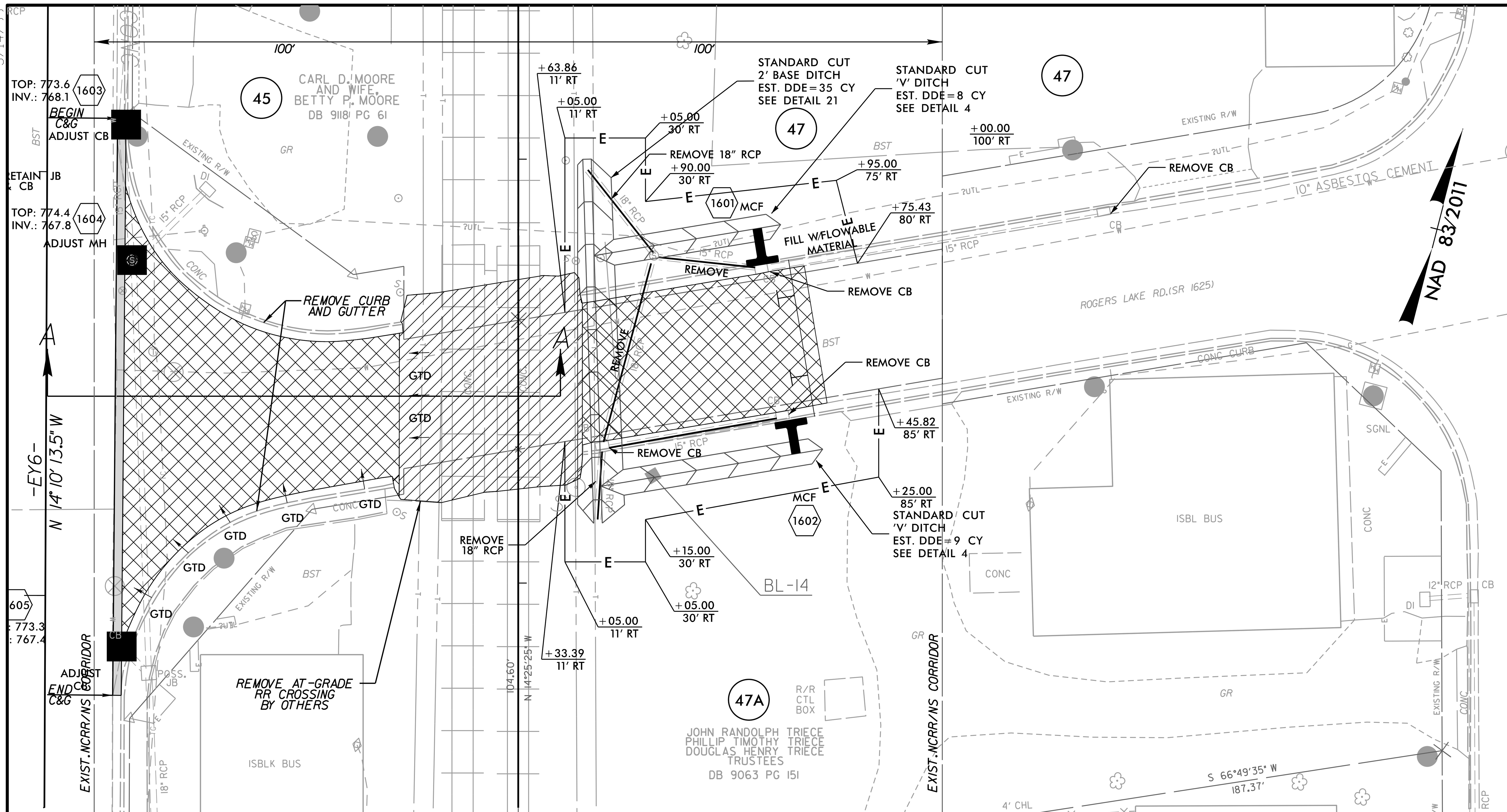
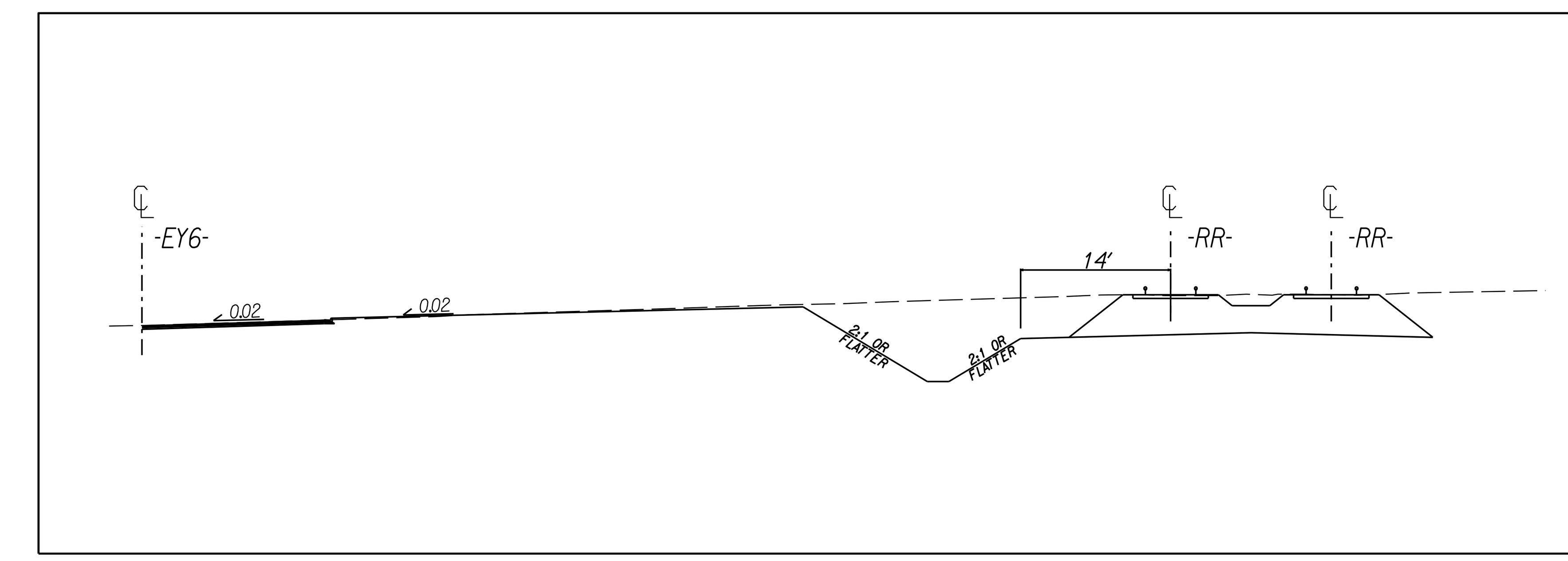


SECTION AA :



(crosshatch)	OBLITERATE
(hatch)	REMOVAL BY OTHERS

NOTE: ALL WORK WITHIN NCRR CORRIDOR TO BE COORDINATED WITH NCDOT, NCRR, AND NS

NOTES:

1. CONTACT THE NCDOT RESIDENT ENGINEER TO SCHEDULE THE CLOSURE OF ROGERS LAKE ROAD.
2. THE EXISTING PAVEMENT WITHIN 10' OF THE CENTERLINE OF THE TRACK WILL BE REMOVED BY OTHERS. THE CONCRETE PANELS WILL ALSO BE REMOVED BY OTHERS. THE EXISTING GATES, AND FLASHERS WILL BE REMOVED BY OTHERS.
3. CONTRACTOR SHALL SEED AND MULCH THE DISTURBED AREA OUTSIDE THE RAILROAD BALLAST LINE.
4. CONTRACTOR SHALL CONTACT NORTH CAROLINA 811 TO LOCATE ALL UNDERGROUND UTILITIES IN THE WORK AREA. CONTRACTOR SHALL ALSO CONTACT NORFOLK SOUTHERN RAILWAY TO LOCATE ANY UNDERGROUND RAILROAD UTILITIES IN THE WORK AREA PRIOR TO COMMENCEMENT OF WORK ON THE NCRR CORRIDOR.
5. CONTRACTOR SHALL REMOVE EXISTING HIGHWAY ROADBED AND GRADE AREA TO MATCH ADJACENT TOPOGRAPHY. ANY EXISTING CULVERTS IN THE RAILROAD DITCHES SHALL BE REMOVED AND GRADE EXISTING DITCHES TO DRAIN. ALL GRADING AND DITCHING SHALL NOT BE WITHIN 14' OF EXISTING RAIL CONTRACTOR SHALL COORDINATE WITH THE ENGINEER ON HAULING AWAY ANY ASPHALT LEFT BY THE REMOVAL OF OTHERS. ALL PAVEMENT WITHIN THE RAILROAD CORRIDOR IS TO BE REMOVED PRIOR TO THE CONCLUSION OF THE PROJECT
6. PROVIDE PERMANENT SIGNING AS SHOWN.
7. PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.
8. ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERNATING ANY TRAFFIC PATTERN.

CROSSING CLOSURE DETAIL

ROGERS LAKE ROAD

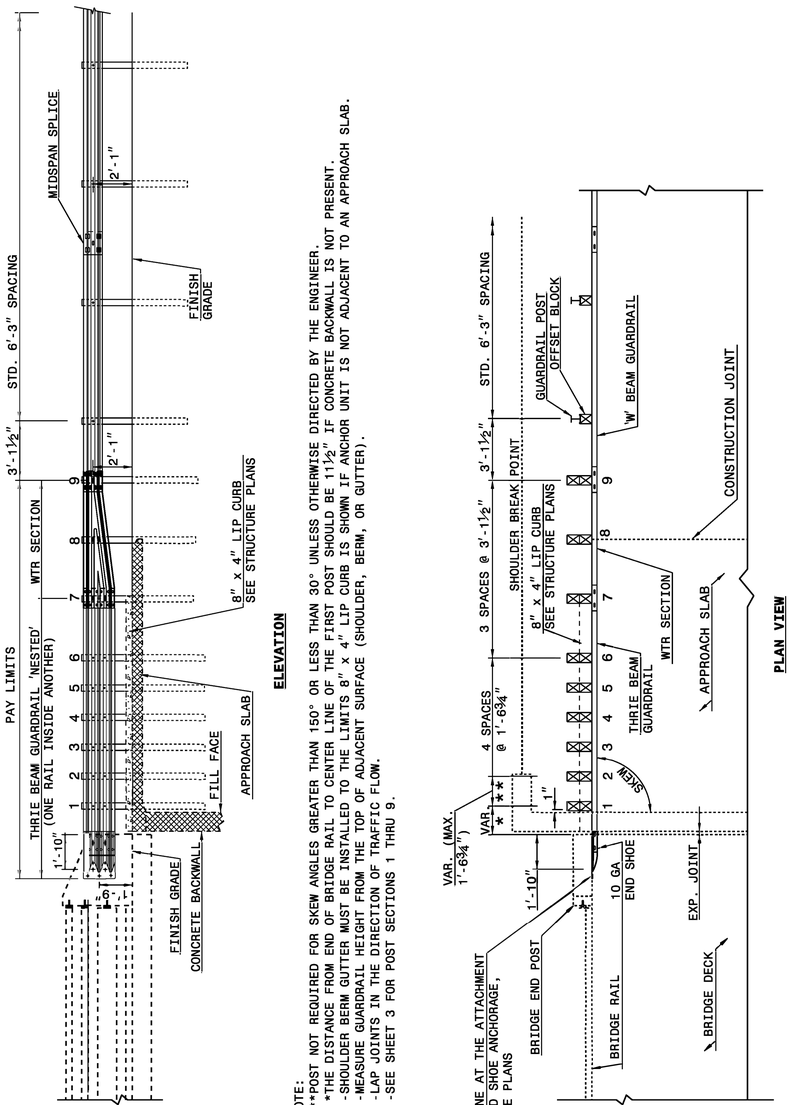
SEE SHEET 16 FOR PLAN VIEW

PROJECT REFERENCE NO.	SHEET NO.

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

ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7
862D03



ELEVATION

PLAN VIEW

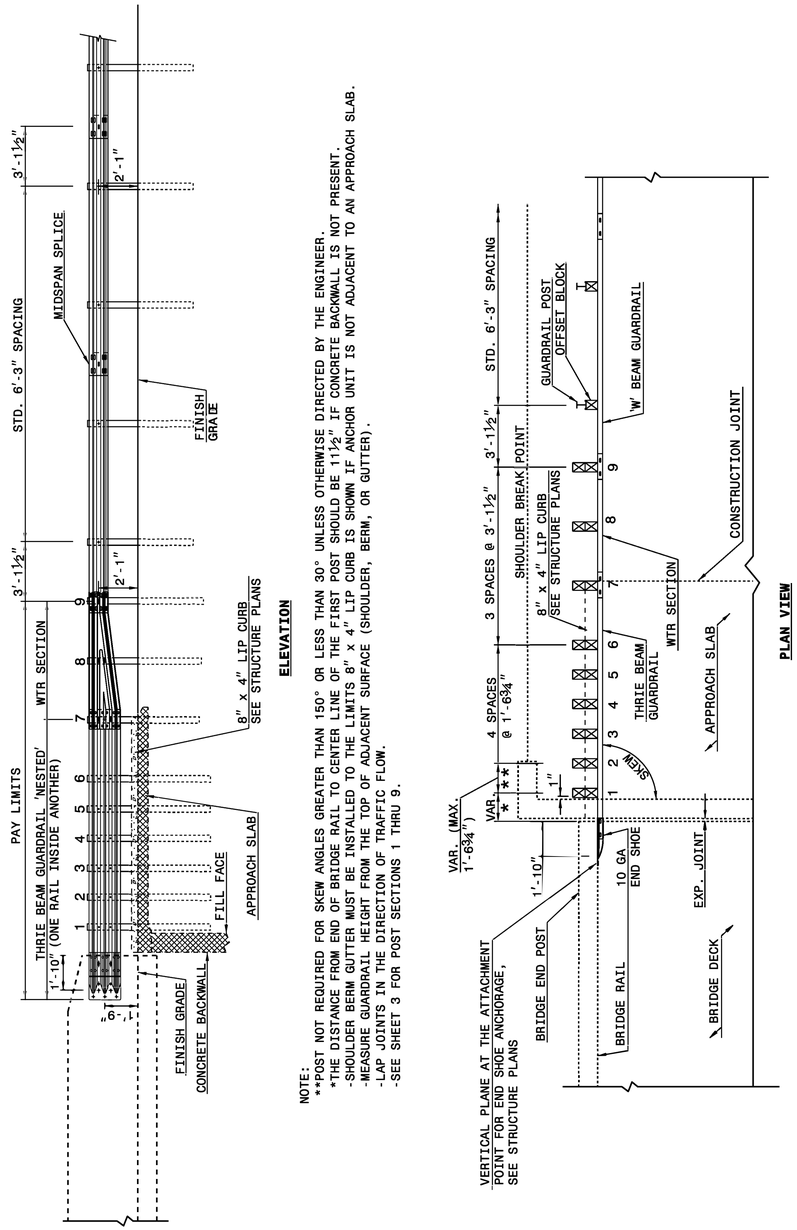
NOTE:
**POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE

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

ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 2 OF 7
862D03



ELEVATION

PLAN VIEW

NOTE:
**POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

ORIGINAL BY: J HOWERTON DATE: 06-22-12
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

14-DEC-2017 10:36
S:\Contracts\Contracts\Special Details\jhowerton\Standard Drawings\2018 Standard Drawings\Details in Lieu of Standards\Division 8\0862d0301.dgn
jhowerton AT CSD-2925595

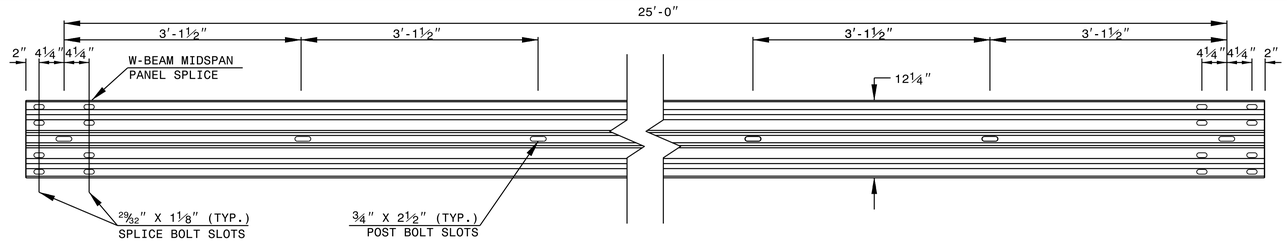
PROJECT REFERENCE NO.	SHEET NO.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

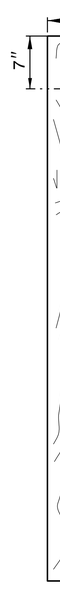
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

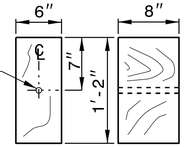
SHEET 6 OF 8
862D02



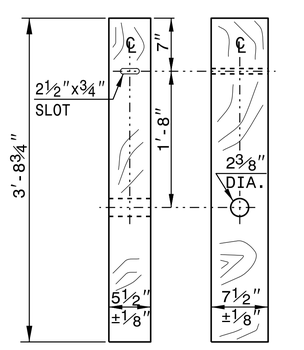
STANDARD W-BEAM GUARDRAIL



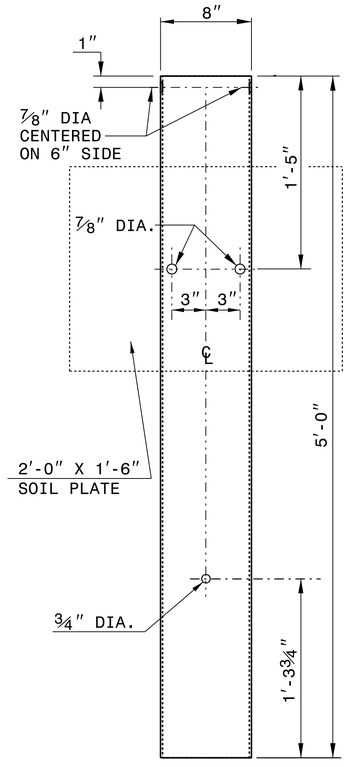
STANDARD LINE POST



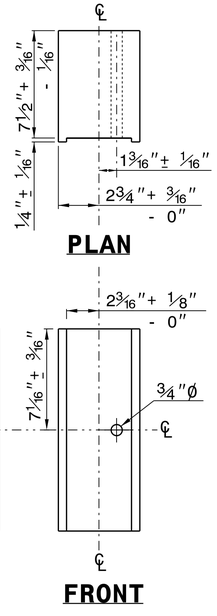
WOOD OFFSET BLOCK
(FOR WOOD POSTS)



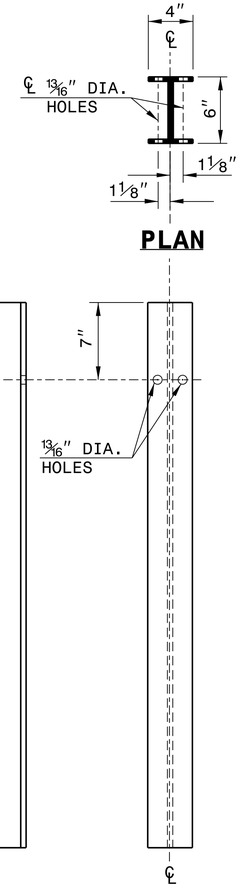
SHORT WOOD BREAKAWAY POST



STEEL TUBE
TS 6"x8"x0.1875"



ROUTED OFFSET BLOCK



"W6" STEEL POST

SYSTEM PARTS

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022071 CONNECTION DAVIDSON

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

SEE TITLE BLOCK

ORIGINAL BY: J.HOWERTON DATE: 3-7-2018
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

PROJECT REFERENCE NO.	SHEET NO.

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

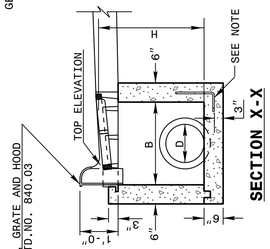
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.

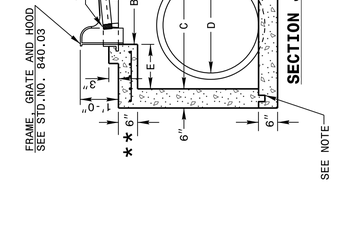
FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.

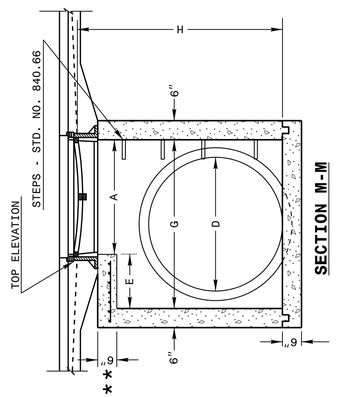
CONSTRUCT WITH PIPE CROWNS MATCHING.

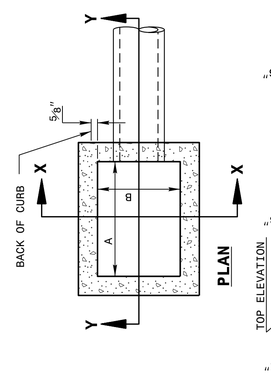
CHAMFER ALL EXPOSED CORNERS 1".

** FOR STRUCTURES WITH PIPE LARGER THAN 54", MAKE THE TOP SLAB 8" THICK.





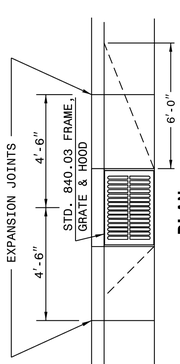


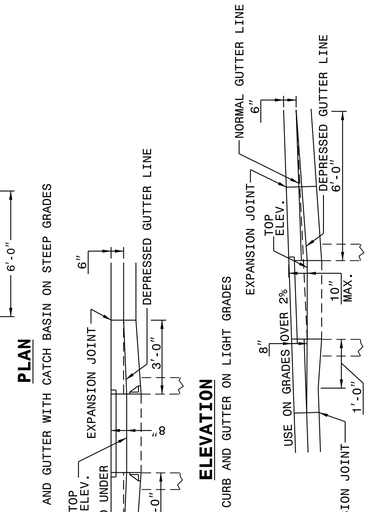


STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

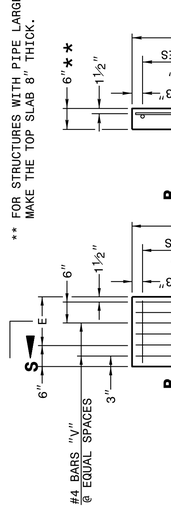
ENGLISH DETAIL DRAWING FOR
MINIMUM DEPTH
CONCRETE CATCH BASIN
12" THRU 84" PIPE

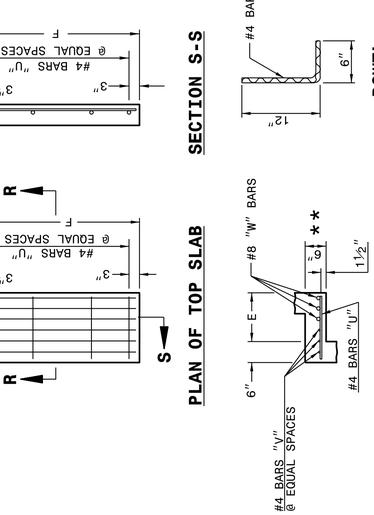
SHEET 1 OF 2
840D02





** FOR STRUCTURES WITH PIPE LARGER THAN 54", MAKE THE TOP SLAB 8" THICK.





* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *

PIPE D	DIMENSIONS OF BOX AND PIPE SPAN A	WIDTH B	WIDTH C	SPAN G	MIN. HEIGHT H	COVER DIMENSION E	COVER DIMENSION F	BARS-U NO.	BARS-U LENGTH	TOTAL LBS.	CU.YDS. CONC. IN BOX TOP SLAB	CU.YDS. CONC. IN BOX BOTTOM SLAB	CU.YDS. CONC. IN BOX TOT. CONC. FOR MINIMUM HEIGHT H	DEDUCTIONS ONE PIPE C.M.	DEDUCTIONS ONE PIPE R.C.	BARS-V NO.	BARS-V LENGTH
12"	3'-0"	2'-2"	--	--	2'-0"	--	--	--	--	--	--	0.235	0.772	0.015	0.026	--	--
15"	3'-0"	2'-2"			2'-3"							0.235	0.829	0.023	0.036		
18"	3'-0"	2'-2"			2'-6"							0.235	0.887	0.033	0.049		
24"	3'-0"	2'-2"			3'-1"							0.235	1.001	0.059	0.085		
30"	3'-0"	2'-2"	3'-4"	3'-4"	3'-10"	1'-2"	4'-4"	4	1'-6"	39	0.123	0.347	1.433	0.092	0.127	2	4'-1"
36"	3'-0"	2'-2"	3'-10"	3'-10"	4'-6"	1'-8"	4'-10"	4	1'-11"	43	0.161	0.432	1.714	0.132	0.178	3	4'-7"
42"	3'-0"	2'-2"	4'-5"	4'-5"	4'-11"	2'-2"	5'-5"	5	2'-5"	47	0.200	0.543	1.738	0.160	0.243	3	5'-2"
48"	3'-0"	2'-2"	5'-0"	5'-0"	5'-6"	2'-10"	6'-0"	5	3'-1"	51	0.235	0.667	2.052	0.235	0.317	3	5'-9"
54"	3'-0"	2'-2"	5'-7"	5'-7"	6'-0"	3'-5"	6'-7"	6	3'-8"	56	0.289	0.802	2.387	0.297	0.401	3	6'-4"
60"	3'-0"	2'-2"	6'-3"	6'-3"	6'-6"	4'-1"	7'-3"	6	4'-4"	61	0.340	0.973	2.722	0.363	0.546	3	7'-0"
66"	3'-0"	2'-2"	6'-11"	6'-11"	7'-0"	4'-9"	7'-11"	7	5'-0"	66	0.391	1.160	3.057	0.440	0.655	3	7'-8"
72"	3'-0"	2'-2"	7'-6"	7'-6"	7'-6"	5'-3"	8'-6"	7	5'-6"	72	0.442	1.340	3.392	0.524	0.774	3	8'-3"
78"	3'-0"	2'-2"	8'-1"	8'-1"	8'-0"	5'-11"	9'-1"	8	6'-2"	78	0.493	1.530	3.727	0.615	0.893	3	8'-10"
84"	3'-0"	2'-2"	8'-9"	8'-9"	8'-6"	6'-7"	9'-9"	8	6'-10"	84	0.544	1.760	4.062	0.713	1.010	3	9'-6"

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

ENGLISH DETAIL DRAWING FOR
MINIMUM DEPTH
CONCRETE CATCH BASIN
12" THRU 84" PIPE

SHEET 2 OF 2
840D02

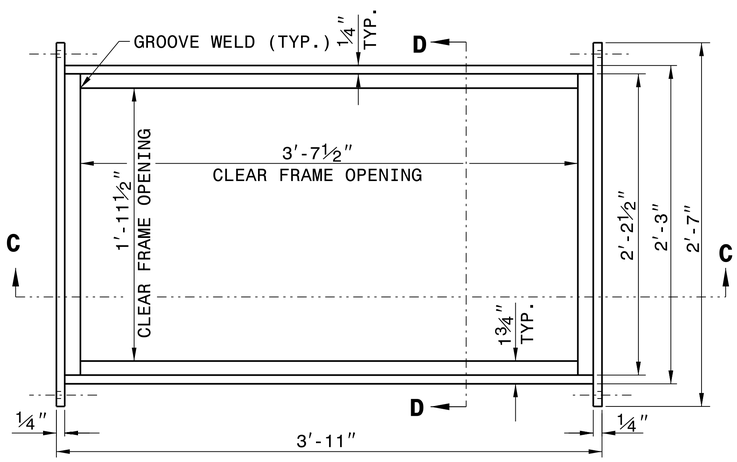
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

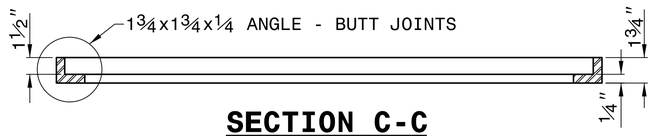
SEE PLATE FOR TITLE

ORIGINAL BY: 2002 Std.840.01 DATE:
MODIFIED BY: E.E. WARD DATE: 3-1-02
CHECKED BY: DATE:
FILE SPEC.: s:Special Details/jhowerton/840d02.dgn

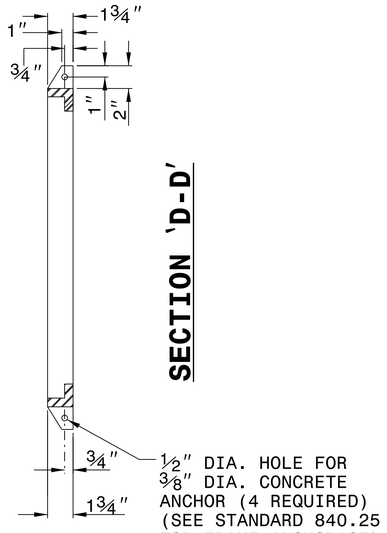
PROJECT REFERENCE NO.	SHEET NO.



PLAN VIEW



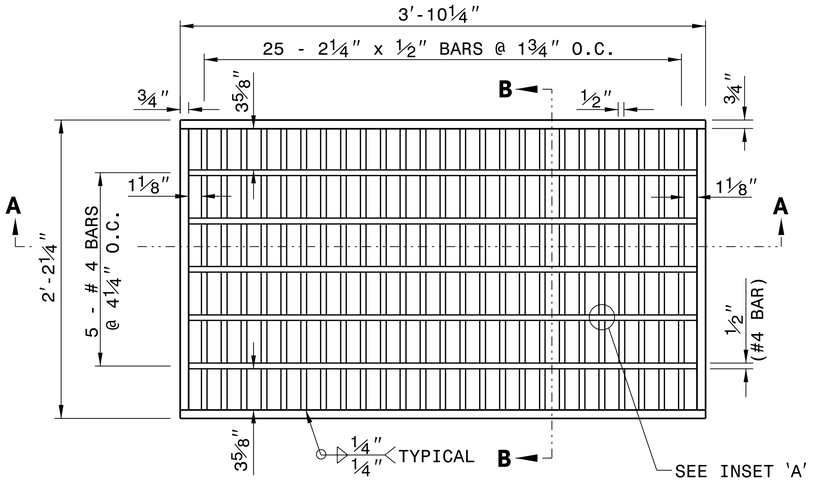
SECTION C-C
FRAME



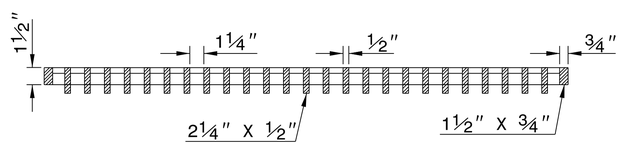
SECTION 'D-D'

NOTES:

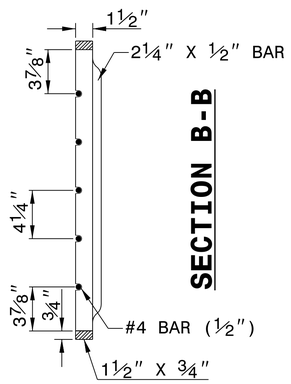
1. HOT DIP GALVANIZE FRAME AND GRATE IN ACCORDANCE WITH ASTM DESIGNATION A-123 AND AASHTO M-111.
2. GRATE SHOULD MEET HS-20 LOADING.
3. PROVIDE STEEL CONFORMING TO THE REQUIREMENTS OF A.S.T.M. DESIGNATION A-36.
4. WELD IN ACCORDANCE WITH THE ANSI/AASHTO/AWS D1.5 WELDING CODE. SEAL WELD ALL CONNECTIONS ALONG TOP AND BOTTOM HORIZONTAL SEAMS OF CONNECTIONS IN ADDITION TO ANY REQUIRED STRUCTURAL WELDS.
5. SEE STANDARD DRAWING 840.25 FOR FRAME ANCHORAGE.



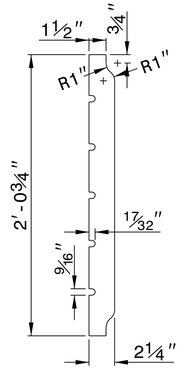
PLAN VIEW



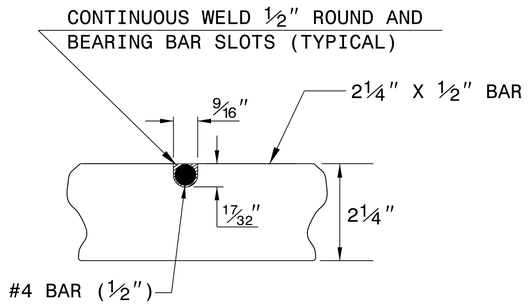
SECTION A-A
GRATE



SECTION B-B



DETAIL OF BEARING BAR



INSET 'A'

(17/32" X 9/16" NOTCH IN 2¼" X ½" BAR)

REVISED 10-10-02
FOR HS-20 LOADING

NORTH CAROLINA PROFESSIONAL SEAL 022071 ENGINEER E. E. WARD JR. CONSTRUCTION DIVISION

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

BICYCLE SAFE STEEL GRATE AND FRAME

ORIGINAL BY:	E.E. WARD	DATE:	11-12-98
MODIFIED BY:	E.E. WARD	DATE:	10-10-02
CHECKED BY:		DATE:	
FILE SPEC.:	/usr/stand/details/bicyclesafe.dgn		

11-MAY-2018 08:38
S:\Contracts\Contracts\Special Details\eriward\usr\details\stand\bicyclesafe.dgn
jhowerton AT CSD-292595

PROJECT REFERENCE NO.	SHEET NO.

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

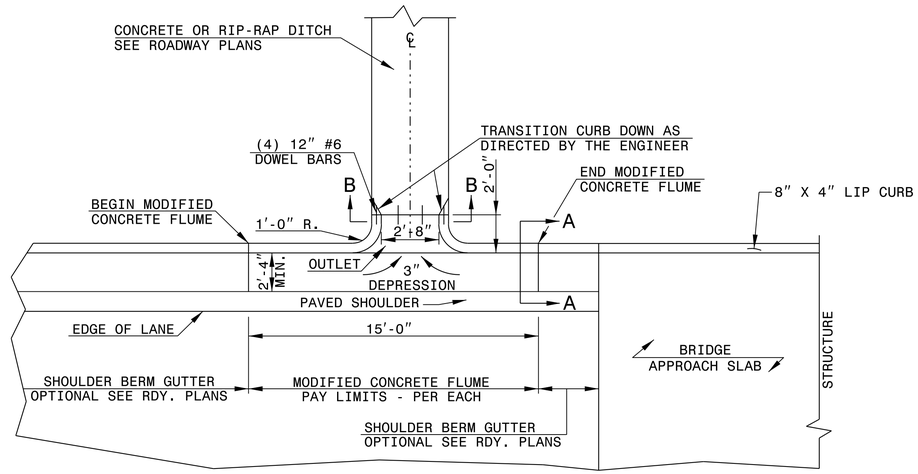
ENGLISH DETAIL DRAWING FOR

MODIFIED CONCRETE FLUME

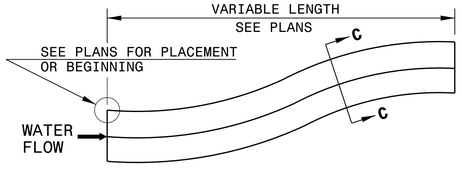
WITH CONCRETE OR RIP-RAP DITCH

SHEET 1 OF 1

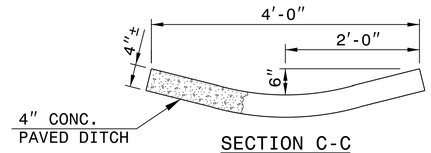
MODFLMDTCH



PLAN VIEW

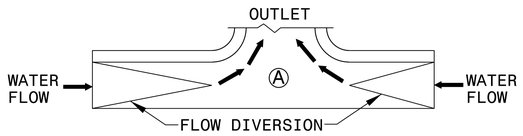


DOWNGRADE OR SAG

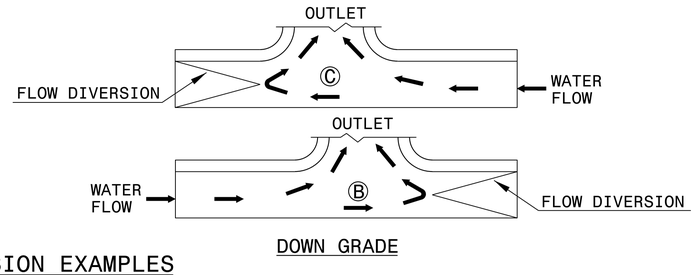


SECTION C-C

SECTION A-A

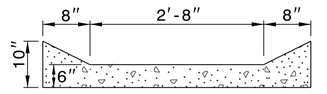


SAG

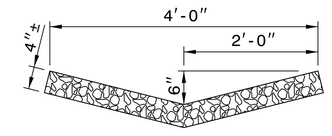


DOWN GRADE

FLOW DIVERSION EXAMPLES



SECTION B-B



RIP-RAP LINED DITCH

NOTES:

- CONSTRUCT MODIFIED CONCRETE FLUME AND SHOULDER BERM GUTTER IN ACCORDANCE WITH THIS DETAIL.
- CONSTRUCT CONCRETE DITCH IN ACCORDANCE WITH STD. DWG. NO. 850.01.
- CONSTRUCT RIP RAP LINED DITCH IN ACCORDANCE WITH THIS DETAIL, IF CALLED FOR IN PLANS.
- CONCRETE OR RIP RAP LINED DITCH SHALL BE THE TYPE AND LENGTH SPECIFIED BY THE ROADWAY PLANS. THE DITCH SHALL TERMINATE AS SHOWN ON THE PLANS. IF NO TERMINATION IS INDICATED PLACE RIP-RAP AT THE END OF THE DITCH AS INDICATED BY STD. DWG. 876.02 FOR AN 18″ PIPE. TRANSITIONS FROM THE DITCH TO TERMINATION SHALL BE AS DIRECTED BY THE ENGINEER.
- MODIFICATIONS SHALL BE AS DICTATED BY SITE CONDITIONS AND DIRECTED BY THE ENGINEER.

STATE OF
NORTH CAROLINA
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

MODIFIED CONCRETE FLUME

WITH CONCRETE OR RIP-RAP DITCH

SHEET 1 OF 1

MODFLMDTCH

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

SEE PLATE FOR TITLE

ORIGINAL BY: E.E. Ward DATE: Apr. 2002
MODIFIED BY: J.S. Howerton DATE: October 2017
CHECKED BY: _____ DATE: _____
FILE SPEC.: w:details\stand\modifiedflume.dgn

5/14/99

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	2D-1
R/W SHEET NO.	

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26971 ENGINEER JOSHUA G. DALTON
2/3/2021
SUNGATE DESIGN GROUP, P.A. LICENSE NO. C-890

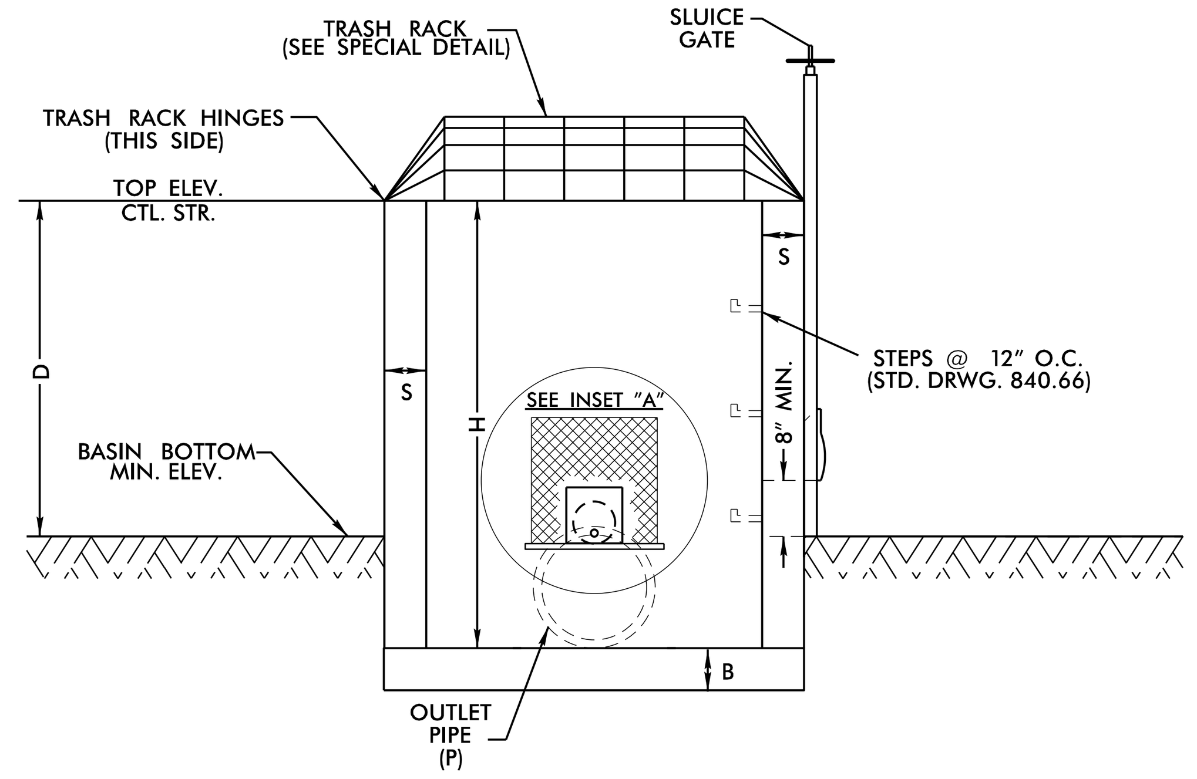
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:
MOTT MACDONALD
7621 Purfoy Road; Suite 115
Fuquay-Varina, NC 27526
www.mottmac.com/north-america

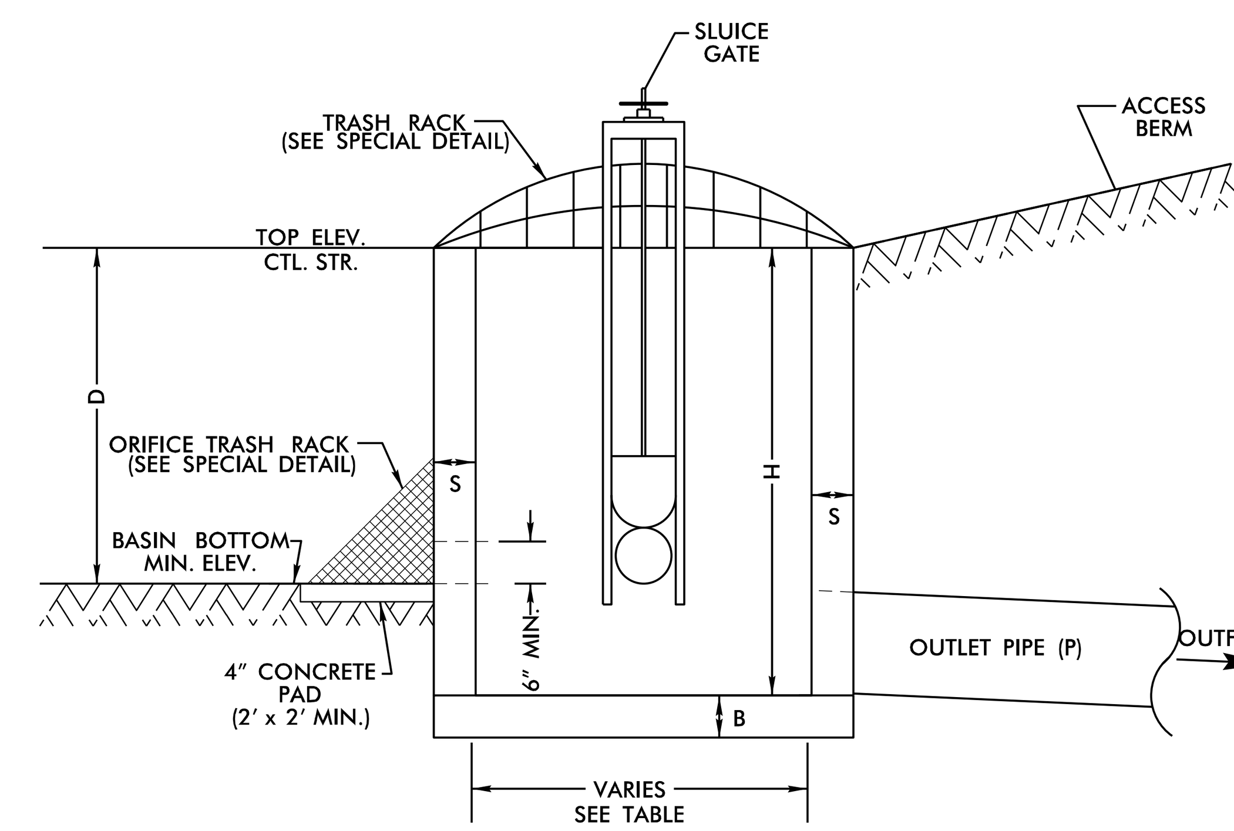
DETAIL 17

DRY DETENTION BASIN DRAWDOWN STRUCTURE

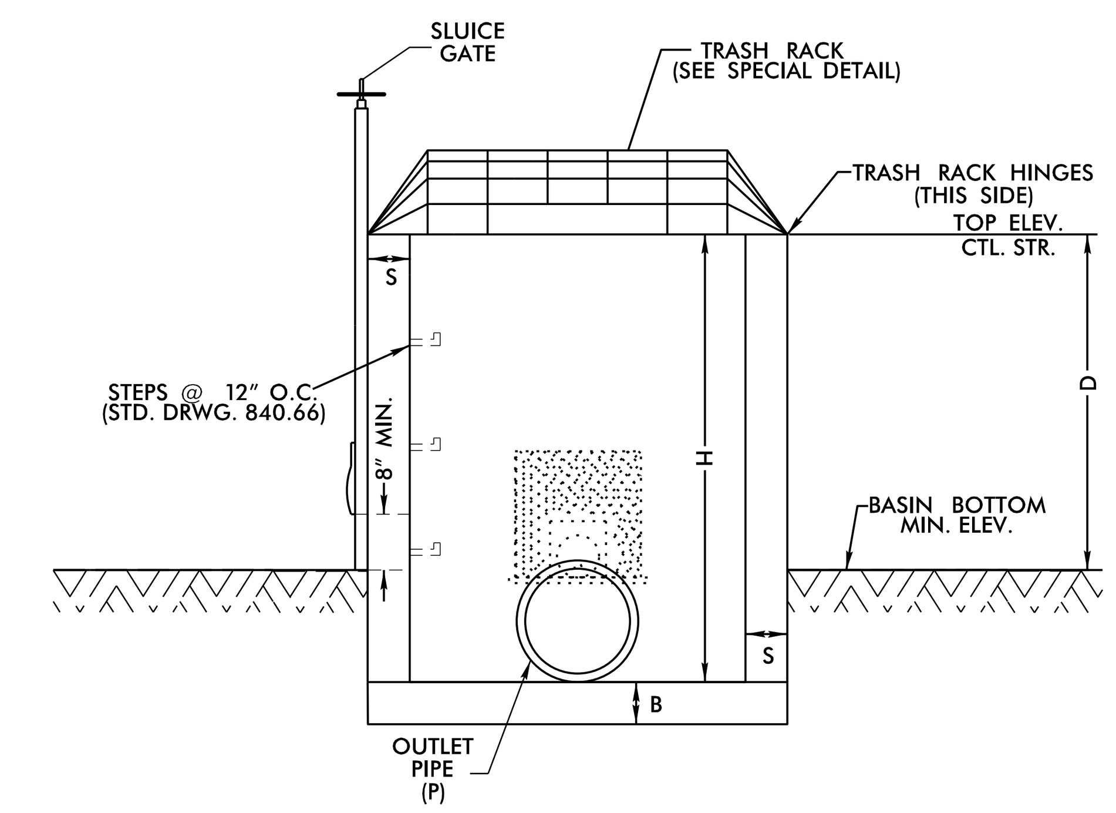
NOT TO SCALE



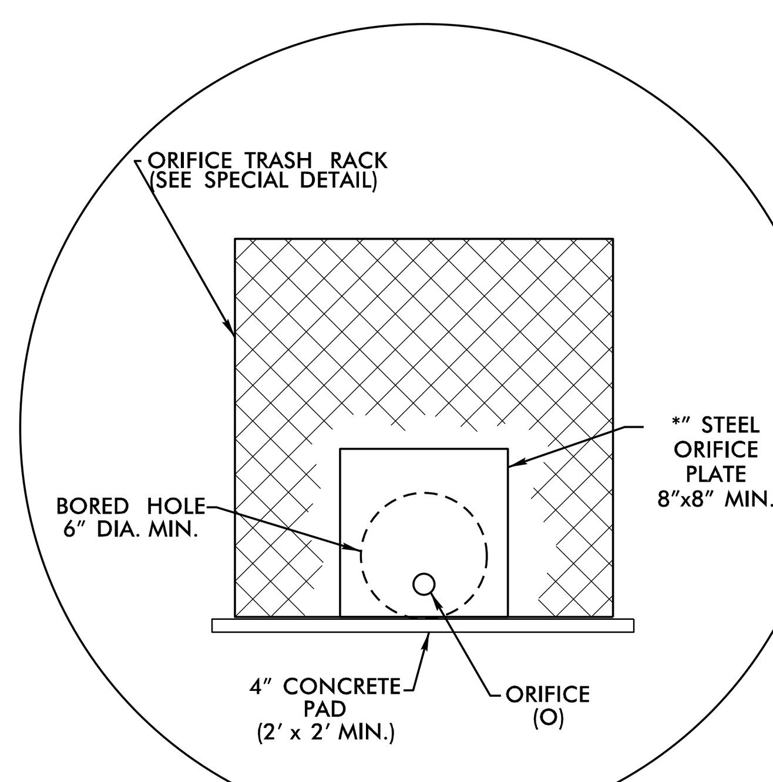
SIDE 1



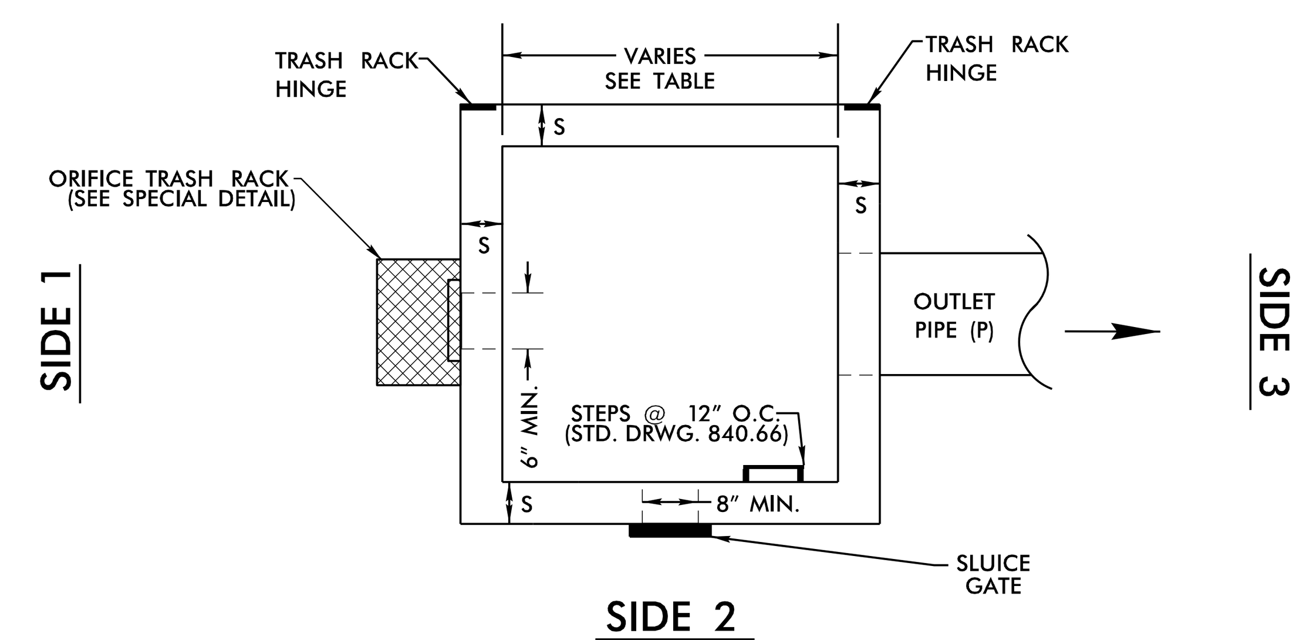
SIDE 2



SIDE 3



INSET "A"



PLAN VIEW

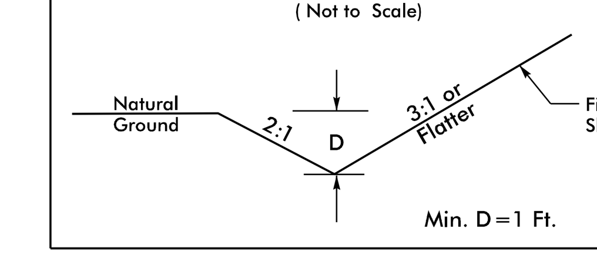
TRASH RACK NOT SHOWN FOR CLARITY

NOTES:
1. TOP ELEVATION OF CONTROL STRUCTURE (WEIR ELEVATION) SHOULD BE SET AT THE WQv ELEVATION.
2. 15" MINIMUM DIAMETER FOR OUTLET PIPE.
3. 2" MINIMUM DIAMETER ORIFICE. IF ORIFICE IS GREATER THAN 6", A STEEL PLATE IS NOT REQUIRED.
4. NO BEDDING MATERIAL TO BE USED. THEREFORE, DO NOT FOLLOW STANDARD DRAWINGS FOR METHOD OF PIPE INSTALLATION FOR OUTLET PIPE THROUGH EMBANKMENT.
5. SLUICE GATE IS FOR MAINTENANCE AND SHOULD REMAIN CLOSED DURING NORMAL OPERATION. A GATE VALVE MAY BE USED IN LIEU OF THE 8" SLUICE GATE.
6. SLUICE GATE SHALL PROVIDE WATERTIGHT SEAL. PROVIDE ADEQUATE CLEARANCE FOR GATE OPERATION AND FOR PROPER SEATING OF GATE OVER PIPE.
7. SELECT BOX STANDARD AS REQUIRED TO ACCOMMODATE SLUICE GATE AND ORIFICE TRASH RACK WIDTH.
8. ENSURE TRASH RACK OPENS FREELY AND WITHOUT INTERFERENCE WITH SLUICE GATE.
9. ADJUST FOOTER DIMENSIONS AS NEEDED FOR ANTI-FLOTATION.
10. PAYMENT OF THE TRASH RACKS ARE INCIDENTAL TO THE DRY DETENTION BASIN DRAWDOWN STRUCTURE.

MINIMUM DIMENSIONS FOR DRY DETENTION BASIN DRAWDOWN STRUCTURE

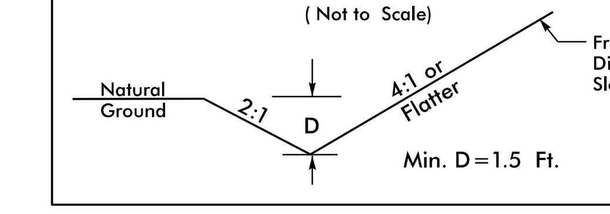
STATION	STRUCTURE NUMBER	S (INCHES) 6" MIN.	B (INCHES) 6" MIN.	BASIN BOTTOM MINIMUM ELEV.	TOP ELEVATION CONTROL STRUCTURE	MAX. STORAGE DEPTH(D) FEET	INV. ELEV. CTL. STR.	CTL. STR. DIMENSIONS (W x L x H)	ORIFICE DIAMETER (O) INCHES	ORIFICE INV. ELEV.	OUTLET PIPE DIAMETER(P) INCHES
11+83 -Y2B- LT	1501	6	12	755.0	758.0	3	754.5	4x4x3.5	6	755.0	24

DETAIL 1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



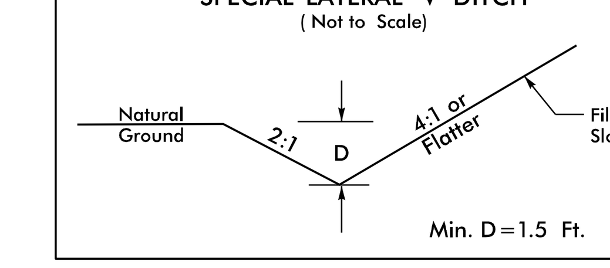
FROM STA. 10+00 -L- TO STA. 11+50 -L- RT
FROM STA. 12+70 -Y5B- TO STA. 14+00 -Y5B- RT

DETAIL 2
SPECIAL CUT DITCH
(Not to Scale)



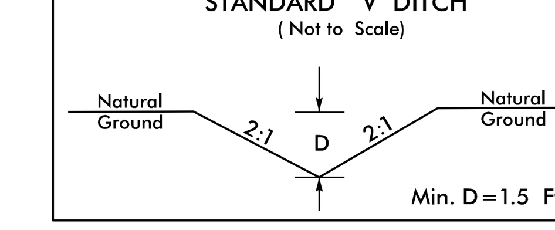
FROM STA. 12+38 -L- TO STA. 18+50 -Y1A- RT
FROM STA. 47+50 -L- TO STA. 49+00 -L- LT
FROM STA. 17+50 -Y2A- LT TO STA. 22+50 -L- LT
FROM STA. 17+50 -Y2A- TO STA. 18+50 -Y2A- RT
FROM STA. 18+50 -Y2A- TO STA. 18+75 -Y2A- RT
FROM STA. 16+50 -Y2C- TO STA. 18+00 -Y2C- RT
FROM STA. 10+24 -Y3- TO STA. 10+70 -Y3- LT

DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



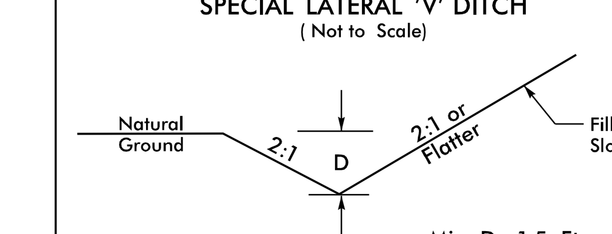
FROM STA. 14+25 -L- TO STA. 17+50 -L- LT
FROM STA. 13+75 -Y2A- TO STA. 15+00 -Y2A- RT
FROM STA. 10+50 -Y5A- TO 11+35 -Y5A- RT
FROM 13+00 -Y2A- LT TO STA. 10+50 -Y5A- LT
FROM STA. 12+00 -Y11A- TO STA. 13+00 -Y11A- RT

DETAIL 4
STANDARD 'V' DITCH
(Not to Scale)



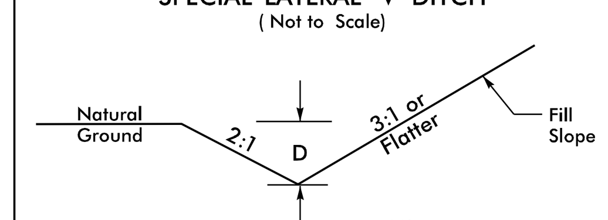
FROM STA. 16+20 -Y2A- TO STA. 17+00 -Y2A- RT
FROM STA. 40+72 -L- TO STA. 40+92 -L- LT
FROM STA. 12+20 -Y7- TO STA. 12+37 -Y7- RT
FROM STA. 12+75 -Y7- TO STA. 12+90 -Y7- RT
FROM STA. 13+00 -Y11A- TO STA. 46+00 -L- LT

DETAIL 5
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



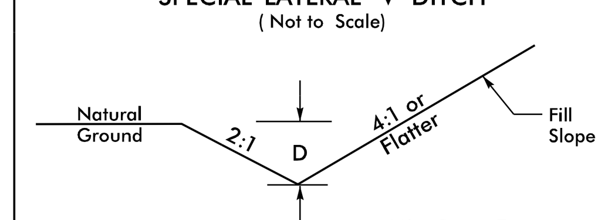
FROM STA. 22+50 -L- TO STA. 23+70 -L- LT
FROM STA. 23+70 -L- TO STA. 24+50 -L- LT

DETAIL 6
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



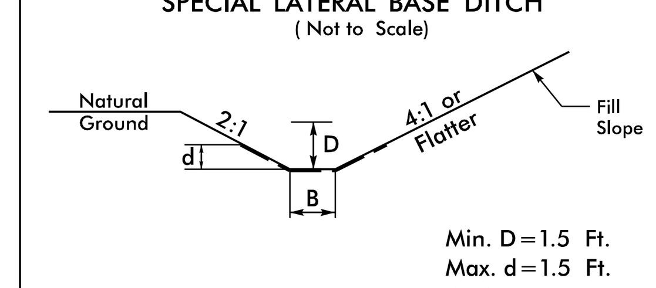
FROM STA. 12+65 -Y5B- TO STA. 14+75 -Y5B- LT

DETAIL 7
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



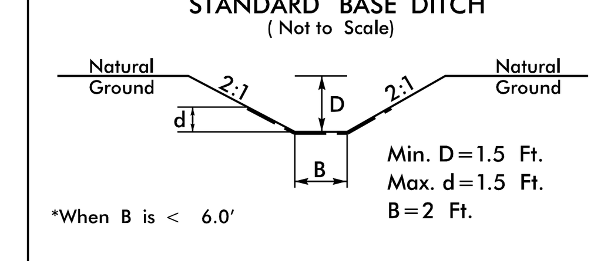
FROM STA. 19+50 -L- TO STA. 20+00 -L- LT
FROM STA. 20+00 -L- TO STA. 20+50 -L- LT

DETAIL 8
SPECIAL LATERAL BASE DITCH
(Not to Scale)



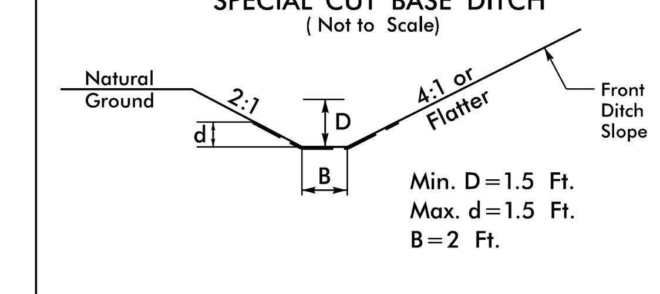
FROM STA. 12+00 -Y4- TO STA. 14+55 -Y4- LT

DETAIL 9
STANDARD BASE DITCH
(Not to Scale)



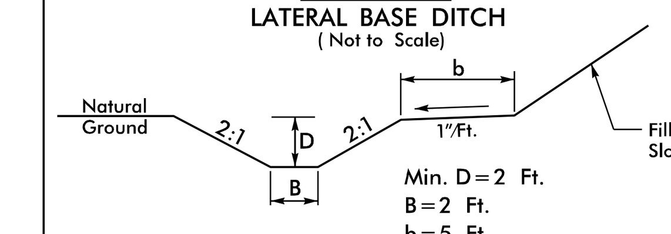
FROM STA. 17+70 -L- TO STA. 17+90 -L- RT
FROM STA. 12+34 -Y3- TO STA. 13+10 -Y3- RT

DETAIL 10
SPECIAL CUT BASE DITCH
(Not to Scale)



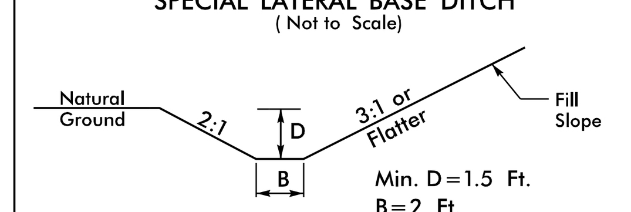
FROM STA. 17+00 -Y2C- TO STA. 20+00 -Y2C- LT

DETAIL 11
LATERAL BASE DITCH
(Not to Scale)



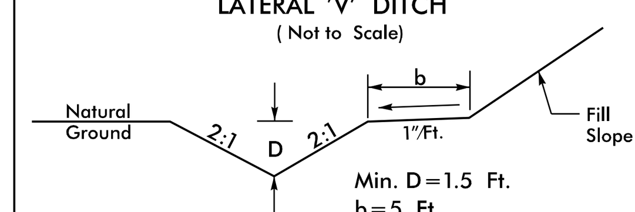
FROM STA. 26+50 -L- TO STA. 30+25 -L- LT

DETAIL 12
SPECIAL LATERAL BASE DITCH
(Not to Scale)



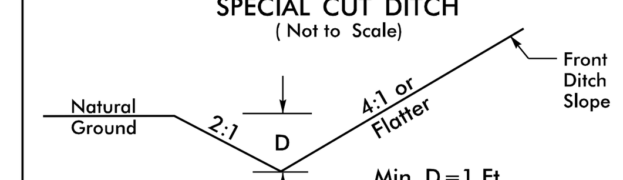
FROM STA. 12+50 -Y2B- TO STA. 13+00 -Y2B- RT

DETAIL 13
LATERAL 'V' DITCH
(Not to Scale)



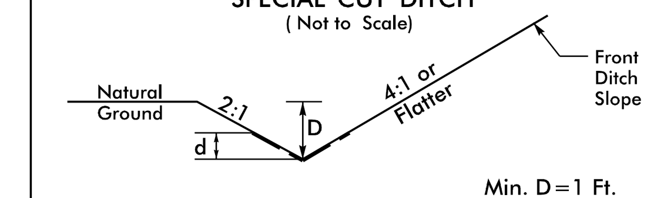
FROM STA. 35+50 -L- TO STA. 38+50 -L- RT

DETAIL 14
SPECIAL CUT DITCH
(Not to Scale)



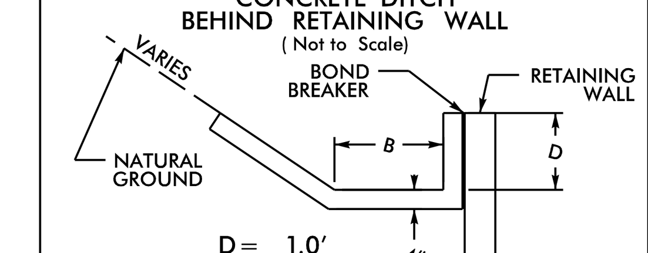
FROM STA. 10+50 -Y3- RT TO STA. 16+00 -Y4- LT
FROM STA. 10+00 -Y9A- TO STA. 11+50 -Y9A- RT

DETAIL 15
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 11+50 -Y10A- TO STA. 13+34 -Y10A- RT

DETAIL 16
CONCRETE DITCH BEHIND RETAINING WALL
(Not to Scale)



FROM STA. 38+50 -L- TO STA. 40+50 -L- RT

5/14/99

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	2D-2
R/W SHEET NO.	

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 26971 JOSHUA G. DALTON

SUNGATE DESIGN GROUP, P.A.
LICENSE NO. C-890

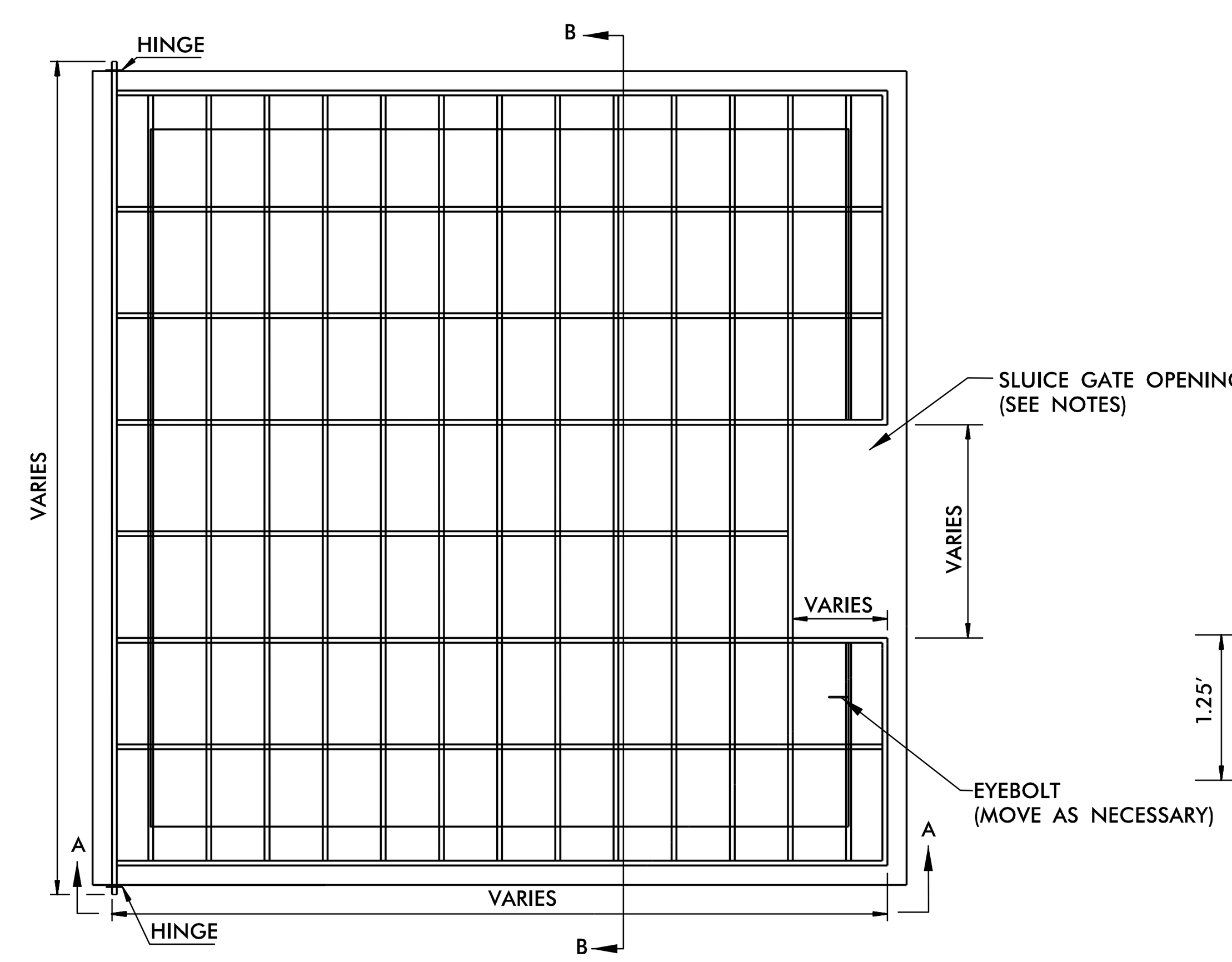
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:
MOTT MACDONALD
7621 Purfoy Road; Suite 115
Fuquay-Varina, NC 27526
www.mottmac.com/north-america

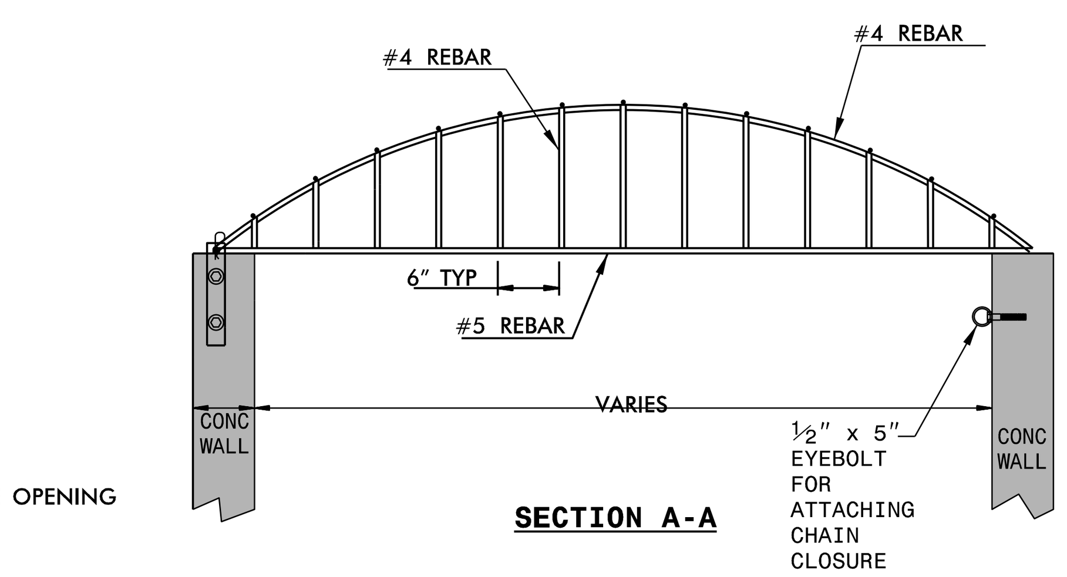
DETAIL 18

REMOVABLE ORIFICE TRASH RACK

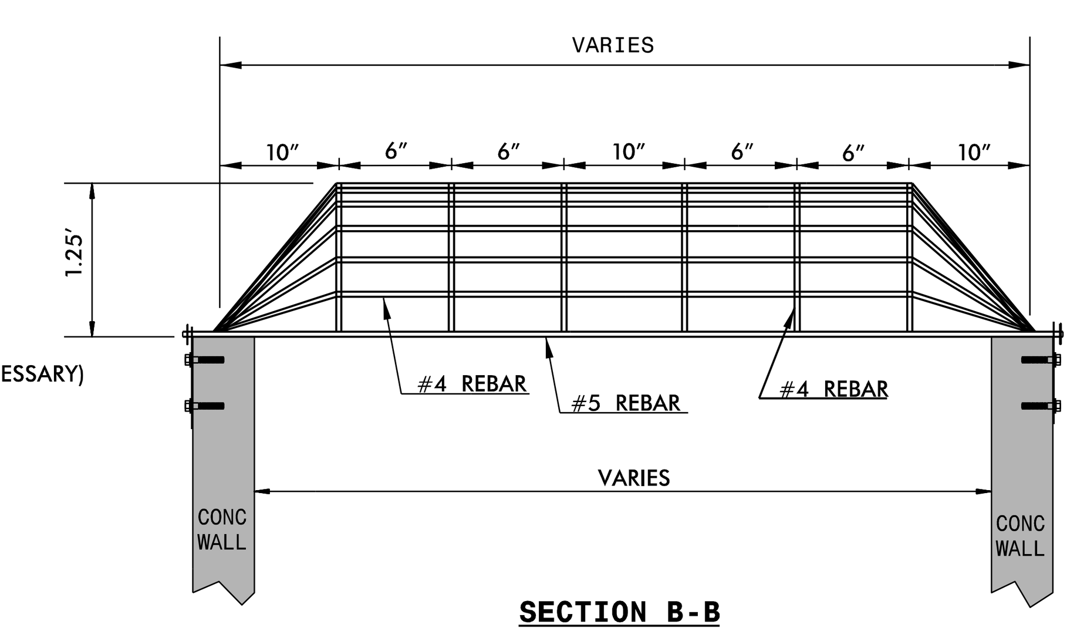
NOT TO SCALE



PLAN



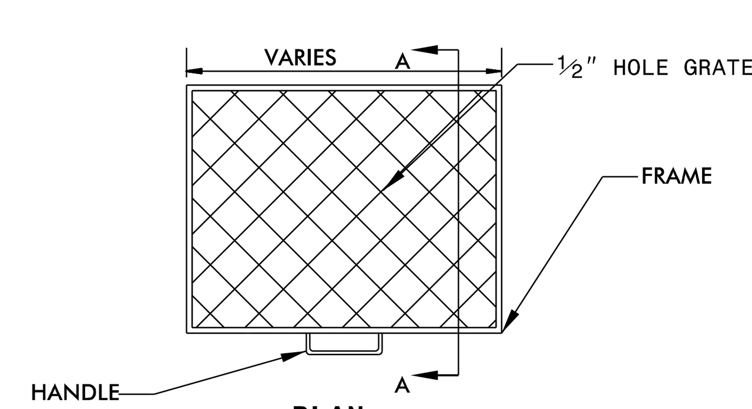
SECTION A-A



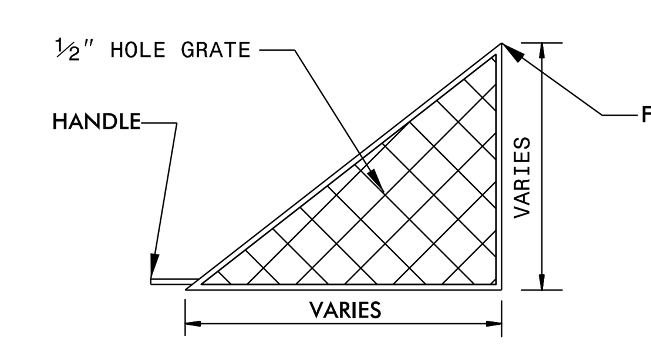
SECTION B-B

RISER TRASH RACK NOTES:
1. ALL JOINTS SHALL BE FULLY WELDED AROUND JOINT WITH A MINIMUM OF A 1/4" BEAD.
2. IF BOLTS ARE ANCHORED IN CONCRETE, FOLLOW STD. DWG. 862.03 AND 862.04 FOR ANCHORING PROCEDURE.
3. EYEBOLT FOR CHAIN CLOSURE SHALL BE INSTALLED BY THE SAME METHOD AS THE HINGE PLATE BOLTS.
4. RACK AND HARDWARE SHALL BE ALUMINUM OR REBAR AND GALVANIZED IN ACCORDANCE WITH ASTM A-153.
5. PROVIDE OPENING IN TRASH RACK TO ACCOMODATE SLUICE GATE ON THE OUTLET PIPE. ENSURE TRASH RACK OPENS FREELY AND WITHOUT INTERFERENCE WITH SLUICE GATES.

REBAR TRASH RACK
NOT TO SCALE



PLAN

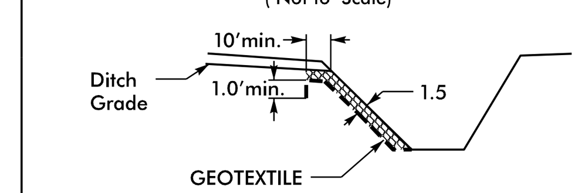


SECTION A-A

ORIFICE TRASH RACK NOTES:
1. ALL JOINTS SHALL BE FULLY WELDED AROUND JOINT WITH A MINIMUM OF A *" BEAD.
2. IF BOLTS ARE ANCHORED IN CONCRETE, FOLLOW STD. DWG. 862.03 AND 862.04 FOR ANCHORING PROCEDURE.
3. REMOVEABLE ORIFICE TRASH RACK SHALL BE ATTACHED TO CONCRETE BOX BY HINGE OR SLIDE RAIL SYSTEM.
4. RACK AND HARDWARE SHALL BE ALUMINUM OR GALVANIZED IN ACCORDANCE WITH ASTM A-153.

DETAIL 19

RIP RAP AT EMBANKMENT
(Not to Scale)

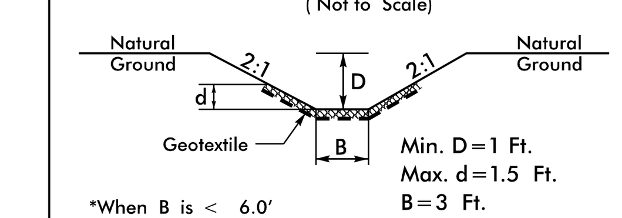


Type of Liner = 4 TONS,CL I Rip-Rap
Geotextile = 5 SY

FROM STA. 49+12 -L- TO STA. 49+25 -L- RT

DETAIL 20

STANDARD BASE DITCH
(Not to Scale)



Min. D = 1 Ft.
Max. d = 1.5 Ft.
B = 3 Ft.

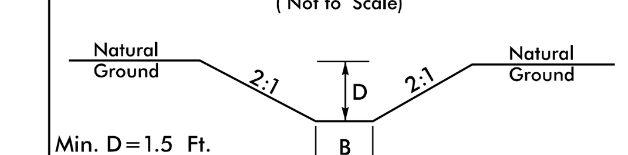
*When B is < 6.0'

Type of Liner = CL I Rip-Rap

FROM STA. 15+26 -Y4- TO STA. 15+50 -Y4- RT

DETAIL 21

STANDARD BASE DITCH
(Not to Scale)

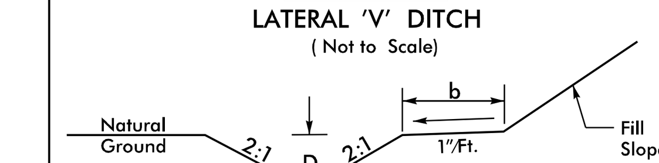


Min. D = 1.5 Ft.
B = 2 Ft.

FROM STA. 12+15 -Y7- TO STA. 13+00 -Y7- RT

DETAIL 22

LATERAL 'V' DITCH
(Not to Scale)

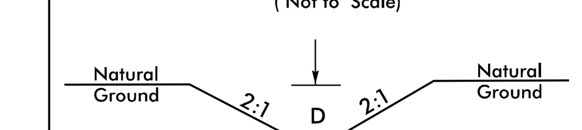


Min. D = 1.0 Ft.
b = 5 Ft.

FROM STA. 27+50 -L- TO STA. 30+30 -L- RT

DETAIL 23

STANDARD 'V' DITCH
(Not to Scale)



Min. D = 1.5 Ft.

FROM STA. 30+30 -L- RT TO STA. 30+52 -L- RT

COMPUTED BY: JAW	DATE: 11/22/17
CHECKED BY: MJC	DATE: 04/2/19

PROJECT REFERENCE NO.	SHEET NO.
Y4810-K	3B-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	UNDERCUT	EMBANK. +%	BORROW	WASTE
-L- 10+00.00	20+67.67	1081	1511	5132	4915	2375
-Y1A- 10+07.02	11+50.00	45		72	57	30
-Y1B- 10+57.00	12+20.00	6	49	292	288	51
-L- (-ROUND-) 20+67.67	22+27.67	128	1431	1990	1862	1431
-Y3- 10+10.04	12+50.00	273				273
-Y4- 11+21.95	16+00.00	945		308		637
SUBTOTAL:		2478	2991	7794	7122	4797
-L- 22+27.67	30+23.11	786	772	37042	36256	772
BASIN EXC.		4250				4250
-Y2A- 12+50.00	19+61.13	2318	1407	265		3460
-Y2B- 10+20.20	16+00.00	368	288	2383	2158	431
-Y5A- 10+00.00	12+00.00	344		16		328
-Y5B- 10+75.00	12+12.27	7		190	187	4
-Y5B- 12+36.31	14+75.00	158		905	823	76
SUBTOTAL:		8231	2467	40801	39424	9321
-L- 35+01.11	48+50.00	1427	1372	71557	70612	1854
-Y9A- 10+00.00	11+78.01	748		23		725
-Y10A- 11+50.00	13+50.00	224	324	20	20	548
-Y10B- 10+50.00	11+99.93	26		16		10
-Y2C- 14+60.00	22+90.59	2762	2595	1477	1146	5026
-Y11A- 12+00.00	13+25.08	110		476	418	52
-Y11B- 11+63.31	12+75.00	83		218	135	
SUBTOTAL:		5380	4291	73787	72331	8215
PROJECT TOTALS:		16089	9749	122382	118847	22333
ADDITIONAL UNDERCUT			2250	2700	2700	2250
ADJUSTMENT FOR ADDITIONAL UNDERCUT				-2400	-2400	-2000
MATERIAL FOR SHOULDER CONSTRUCTION				4920	4920	
WASTE IN LIEU OF BORROW:					-5724	-5724
LOSS DUE TO CLEARING & GRUBBING		-250			250	
5% TO REPLACE BORROW					5932	
GRAND TOTALS:		15839	11999	127602	124555	16859
SAY:		18000	14000		138000	

*UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3' OF EMBANKMENT OR BACKFILL -L- STA 21+75 TO 23+75, -Y1A- 10+25 TO 10+75, & -Y2C- 12+25 TO 14+25 (1,155 CY) PER GEOTECH

EST. DDE = 1,148 CY
EST. SHALLOW UNDERCUT EXCAVATION = 735 CY
EST. SELECT GRANULAR MATERIAL, CLASS III = 11,600 CY
EST. CLASS IV SUBGRADE = 1,220 TONS

Earthwork quantities are calculated by the designer.
These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

SUMMARY OF BREAKING EXISTING ASPHALT PAVEMENT

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
-L-	23+77	23+91	CL	70.69
-L-	41+77	42+14	CL	107.01
-Y5B-	11+20	12+13	CL	167.07
			Y-4810K TOTAL:	344.77
			Y-4810K SAY:	350

SUMMARY OF EXPRESSWAY GUTTER

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	LENGTH
-Y4-	11+28.25	15+00.00	RT	381
-Y2C-	14+50.00	16+50.00	LT	208
-Y2B-	14+00.00	15+50.00	LT	150
			Y-4810K TOTAL:	739
			Y-4810K SAY:	750

EXISTING ASPHALT PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
-L-	14+24.00	17+05.00	RT	474.89
-L-	23+76.00	23+91.00	RT	141.04
-L-	23+77.00	23+92.00	LT	115.21
-L-	31+01.00	32+64.00	RT	803.57
-L-	38+03.00	38+19.00	LT	189.41
-L-	38+06.00	38+22.00	RT	175.41
-L-	41+81.00	41+99.00	LT	164.51
-Y1A-	9+34.00	10+35.00	RT	24.52
-Y2A-	14+57.00	16+89.00	RT	505.34
-Y2B-	11+87.00	12+96.00	RT	182.40
-Y2C-	15+48.00	19+79.00	LT	790.41
-Y2C-	16+48.00	16+62.00	RT	82.47
-Y2C-	17+66.00	17+87.00	RT	197.59
-Y2C-	21+77.00	22+23.00	LT	106.32
-Y4-	12+90.00	13+21.00	RT	2.46
-Y4-	12+71.00	15+27.00	LT	330.55
-Y4-	15+32.00	16+00.00	LT	3.48
-Y9A-	10+00.00	11+04.00	LT	1.02
-Y10A-	12+01.00	13+25.00	LT	7.11
-Y10B-	10+00.00	11+75.00	LT	93.65
-Y10B-	10+00.00	10+98.00	RT	7.92
-Y11A-	11+50.00	13+00.00	LT	11.22
-Y11A-	11+50.00	11+68.00	RT	0.29
-Y11B-	11+54.00	12+51.00	RT	25.51
-Y11B-	13+00.00	13+81.00	CL	112.86
			TOTAL:	4549.18
			SAY:	4550

EXISTING ASPHALT PAVEMENT REMOVAL SUMMARY BY OTHERS

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
-Y7-	12+18.97	12+72.56	CL	234.34
			TOTAL:	234.34
			SAY:	235

"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	XI MOD	XI	GREU TL-3	M-350	TYPE III	CAT-1	AT-1	TES	B-77	NO.	PERMITTED G	PERMITTED NG				
Y4	11+09.04		CL	25.00																										
Y3	12+51.07		CL	25.00																										
Y1A	END		CL	25.00																										
Y5A	12+21.26		CL	25.00																										
Y5B	10+66.57		CL	25.00																										
L	22+91.86	30+23.11	RT	731.25			23+89.00		12	14	50		1				1		1											
L	22+91.86	30+23.11	LT	731.25				27+39.00	12	14		50		1			1		1											
EY7	12+40.00	12+77.00	LT	37.5																										
L	35+01.11	41+82.36	RT	681.25			41+32.00		12	14	50		1				1		1											
L	35+01.11	42+32.36	LT	731.25				40+80.00	12	14		50		1			1		1											
TOTALS				3037.5												TOTALS:	4		4											
DEDUCTIONS FOR ANCHOR UNITS																														
	GREU, TL-3	4	50.00	-200.00																										
	TYPE III	4	18.75	-75.00																										
		GRAND TOTAL		2762.5																										
			SAY	2775.00																										

6/16/99
4:04:11 PM ...Y-4810K\Roadway\Proj\Y4810K_rdy_psh_03B.dgn

ERIC-HP-NEW

COMPUTED BY:	EML	DATE:	11/15/2021
CHECKED BY:	JGD	DATE:	11/15/2021

PROJECT NO.	SHEET NO.
Y-4810K	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		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC)								DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	R. C. PIPE CLASS III								R. C. PIPE CLASS IV								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		MINIMUM DEPTH CATCH BASIN SEE DETAIL SHEET 2C-3	DRY DETENTION BASIC DRAWDOWN STRUCTURE SEE DETAIL SHEET 2D-1	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	BICYCLE SAFE STEEL GRATE AND FRAME SEE DETAIL SHEET 2C-4	J.B. STD. 840.31 OR STD. 840.32	T.B.D.I. STD. 840.35	M.H. FRAME AND COVER STD. 840.54	ADJUST C.B.	ADJUST MH	15" DRAINAGE PIPE ELBOW	18" DRAINAGE PIPE ELBOW	24" DRAINAGE PIPE ELBOW	MODIFIED CONC. FLUME SEE DETAIL SHEET 2C-5	8" SLUICE GATE (8" SIZE SLUICE GATE) SEE DETAIL SHEET 2D-1	PREFORMED SCOUR HOLE (PER EACH)	ENERGY DISSIPATION BASIN		FLOWABLE FILL	CONCRETE COLLARS CL. "B" STD. 840.72	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	REMARKS
		FROM	TO	FT.	FT.	FT.	%	12	15	18	24	30	36	42	48						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.		GRATE TYPE E	F	G		D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05																															CY	CY	CY	LIN. FT.	
Y1A 18+39	0 CL	0401	0402		768.7	765.5																									68																																																							
L 10+80	21 RT	0404							28																																																																												
L 11+88	22 LT	0405							52																																																																											
Y1B 11+28	16 RT	0406							28																																																																												
L 15+15	51 RT	0501		763.5																																				1												1	1																																	
L 16+91	18 LT	0502		767.3																																				1				1						1																																					
		0502	0504		765.0	764.6																								136																																																									
L 17+50	49 LT	0503		766.5																																																																																		
		0503	0504		764.5	764.4																		36																																																													
L 17+61	18 LT	0504		768.4																																				1			1		1																																								
		0504	0505		764.4	764.0																										76																																																					
L 19+53	19 RT	0506		769.9																																				1			1			1																																							
		0506	0507		766.7	765.1																								44																																																									
L 19+81	17 LT	0507		770.1																																				1	0.1		1		1																																								
		0507	0504		765.1	764.4																									220																																																						
L 20+00	55 LT	0508		766.7																																																																																		
		0508	0507		765.2	765.1																	44																																																														
L 19+75	55 RT	0509		764.0																																				1												1	1																																	
Y2A 18+50	36 RT	0601		770.5																																																																																		
		0601	0621		769.0	768.9	0.6																								36																																																								
Y2A 18+81	18 LT	0602		771.3																																				1								1																1				1																		
		0602	0603		768.3	765.7	0.7																40																																																														
L 22+28	36 LT	0604		771.1																																				1								1																		1		1																	
		0604	0605		767.9	764.8																44																																																															
ROUND 13+01	27 RT	0606		770.5																																				1			1	1																																									
		0606	0622		767.5	764.6																								96																																																										
Y2B 11+00	0 CL	0607		767.6																																				1								1																1				1																		
		0607	0608		764.6	764.5																								16																																																										
Y2B 11+00	15 LT	0608		767.3																																				1																								1				1																		
		0608	0609		764.5	756.0			48							X																																																										2												
L 22+28	32 RT	0610		771.2																																				1								1																		1		1																	
		0610	0611		768.0	756.0			68							X																																																										2												
Y5A 11+35	21 RT	0612		766.8																																				1												1	1																																	
		0612	0613		764.6	764.3																								44																																																									
Y5A 11+50	20 LT	0613		766.5																																				1												1	1																																	
		0613	0614		764.2	763.9																76																																																															
L 23+70	63 LT	0615		765.5																																																																																		
		0615	0617		763.5	763.2	0.8																	44																																																													
L 23+31	19 LT	0616		772.1																																				1			1		1																																								
		0616	0617		769.1	768.9																								40																																																										
L 23+70	24 LT	0617		772.6																																				1	4.4		1		1																																								
		0617	0619		763.2	762.8	0.9																									44																																																					
L 23+43	21 RT	0618		772.2																																				1			1			1																																							
		0618	0619		769.2	769.1																								24																																																									
L 23+70	23 RT	0619		772.6																																				1	4.8		1			1																																							
		0619	0620		762.8	756.0	1.0																	72																																																													
Y2A 18+62	2 RT	0621		771.9																																				1								1																1				1																		
		0621	0602		768.9	768.3	0.6																								28																																																							
Y2B 11+00	17 RT	0622		767.6																																				1			1		1																																								
SHEET TOTALS									224													120	84	152						400	352	120									20	9.3		9	2	5	3		5		1		4	4											4		2		6				4												

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

ERIC-HP-NEW

COMPUTED BY: EML **DATE:** 11/15/2021

CHECKED BY: JGD **DATE:** 11/15/2021

PROJECT NO.	SHEET NO.
Y-4810K	3D-2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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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	Drainage Pipe 15	Drainage Pipe 18	Drainage Pipe 24	Drainage Pipe 30	Drainage Pipe 36	Drainage Pipe 42	Drainage Pipe 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	R. C. PIPE CLASS III 15	R. C. PIPE CLASS III 18	R. C. PIPE CLASS III 24	R. C. PIPE CLASS III 30	R. C. PIPE CLASS III 36	R. C. PIPE CLASS III 42	R. C. PIPE CLASS III 48	R. C. PIPE CLASS IV 12	R. C. PIPE CLASS IV 15	R. C. PIPE CLASS IV 18	R. C. PIPE CLASS IV 24	R. C. PIPE CLASS IV 30	R. C. PIPE CLASS IV 36	R. C. PIPE CLASS IV 42	R. C. PIPE CLASS IV 48	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	CONCRETE TRANSITIONAL SECTION C.B. STD. 852.05	MINIMUM DEPTH CATCH BASIN SEE DETAIL SHEET 2C-3	DRY DETENTION BASIC DRAWDOWN STRUCTURE SEE DETAIL SHEET 2D-1	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	BICYCLE SAFE STEEL GRATE AND FRAME SEE DETAIL SHEET 2C-4	J.B. STD. 840.31 OR STD. 840.32	T.B.D.I. STD. 840.35	M.H. FRAME AND COVER STD. 840.54	ADJUST C.B.	ADJUST MH	15" DRAINAGE PIPE ELBOW	18" DRAINAGE PIPE ELBOW	24" DRAINAGE PIPE ELBOW	MODIFIED CONC. FLUME SEE DETAIL SHEET 2C-5	8" SLUICE GATE (8" SIZE SLUICE GATE) SEE DETAIL SHEET 2D-1	PREFORMED SCOUR HOLE (PER EACH)	ENERGY DISSIPATION BASIN		FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
		0622	0607		764.6	764.6																								16																																																						
L 26+50	24 RT	0701		781.6																																				1			1			1																																						
		0701	0702		778.6	778.5																								36																																																						
L 26+50	24 LT	0702		781.6																																				1			1		1																																							
		0702	0703		778.5	773.7			40							X																																																								2												
L 29+82	18 RT	0704		801.0																																				1			1			1																																						
		0704	0705		798.0	796.0																								36																																																							
L 29+82	18 LT	0705		801.0																																				1			1		1																																							
		0705	0706		796.0	772.3			68							X																																																								2												
L 30+25	80 LT	0707		773.6																																																																																
		0707	0710		772.1	771.8	1.1																40																																																														
L 30+63	80 LT	0710		774.2																																				1												1	1																																			
		0710	0711		770.7	768.8	4.2																140																																																														
L 30+63	63 RT	0711		771.8																																				1												1	1																																			
		0711	0713		769.2	768.7	4.4																28																																																															
L 30+52	91 RT	0712		771.9																																				1															1							1																							
		0712	0713		768.6	768.4																	12																																																														
L 30+62	95 RT	0713		772.4																																				1												1	1																																			
		0713	0714		768.7	768.6	5.1																32																																																															
L 35+41	18 RT	0801		811.5																																				1			1		1																																							
		0801	0802		808.4	808.1																								36																																																							
L 35+41	18 LT	0802		811.6																																				1			1			1																																						
		0802	0803		808.1	775.5			72																																																																	2												
Y2C 14+08	24 LT	0901		777.2																																				1																1						1																							
		0901	0907		775.3	775.0																								108																																																							
L 38+47	23 RT	0902		801.2																																				1			1		1																																							
		0902	0903		798.2	795.9																								32																																																								
L 38+94	24 RT	0903		798.9																																				1			1		1																																							
		0903	0904		795.9	795.8																								44																																																								
L 38+94	24 LT	0904		799.6																																				1			1			1																																						
		0904	0905		795.8	784.1																								180																																																								
L 40+75	24 LT	0905		787.1																																				1			1			1																																						
		0905	0906		782.1	773.0	0.4		44							X																																																								2												
Y2C 15+19	21 LT	0907		779.4																																				1															1									1																				
		0907	0909		775.0	774.7																								88																																																							
RETWALL 11+98	7 LT	0908		780.0																																				1												1	1																																			
		0908	0909		776.8	776.8																4																																																															
Y2C 16+05	21 LT	0909		779.6																																				1															1									1																				
		0909	0910		774.7	774.3																								104																																																							
Y2C 18+24	0 CL	0911	1801		769.0	766.2																									88																																																					
Y2C 16+59	32 RT	0912							28																																																																											
L 43+40	20 LT	1001		771.2																																				1			1			1																																						
		1001	1003		768.2	759.0																								124																																																							
L 44+68	47 LT	1002		761.3																																				1												1	1																																			
		1002	1003		759.0	759.0																24																																																															
L 44+68	23 LT	1003		762.8																																				1			1			1																																						
		1003	1004		759.0	750.1	0.3																							124																																																								
L 45+95	30 LT	1004		753.1																																				1			1			1																																						
		1004	1007		749.8	749.6	0.3																								72																																																						
Y2C 22+37	0 CL	1006	1007		756.6	749.1																										104																																																					
SHEET TOTALS									252													28	252							928	160	104									22			13		5	8							5	5		3	1						2		2								8												

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

ERIC-HP-NEW

COMPUTED BY:	EML	DATE:	11/15/2021
CHECKED BY:	JGD	DATE:	11/15/2021

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
Y-4810K	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)								DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	R. C. PIPE CLASS III								R. C. PIPE CLASS IV							
SIZE			FROM	TO	FT.	FT.	FT.	%	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																																					
Y2C 22+50	36	RT	1007		753.2																																
			1007	1008		749.1	731.9																		184												
L 47+75	30	RT	1008		736.6																																
			1008	1101		731.9	725.7																		100												
L 48+74	16	RT	1101		730.5																																
			1101	1102		725.7	722.0					44					X																				
Y2A 12+40	16	RT	1301		786.5																																
			1301	1302		784.2	781.1																68														
Y2A 13+10	26	RT	1302		783.3																																
			1302	1303		780.8	780.3																								64						
Y2A 13+37	27	LT	1304							28																											
Y2A 14+50	27	LT	1305							32																											
Y4 14+55	31	LT	1401		758.0																																
			1401	1402		755.5	754.8																											44			
Y4 14+59	15	RT	1402		758.8																																
			1402	1403		754.8	748.0																			180											
Y4 15+57	19	RT	1406							28																											
Y2B 11+84	58	LT	1501		758.0																																
			1501	1502		754.5	754.2	1.5																									104				
Y3 12+34	19	LT	1502		758.3																																
			1502	1503		754.2	753.9	1.6																									44				
Y5B 10+79	14	LT	1504		760.6																																
			1504	1505		758.3	757.9																32														
Y5B 11+12	16	LT	1505		760.2																																
			1505	1506		757.9	756.0	0.5																							40						
Y2B 16+02	14	LT	1507		769.6																																
			1507	1518		767.3	765.1																								60						
Y2B 13+50	34	LT	1508		761.6																																
			1508	1514		759.3	755.9	0.4																							72						
Y2B 15+99	15	RT	1510		769.7																																
			1510	1511		767.4	764.4																84														
Y2B 15+14	28	RT	1511		766.7																																
			1511	1513		764.4	759.9																104														
Y2B 14+10	29	RT	1513		762.1																																
			1513	1514		759.9	755.9																56														
Y2B 13+53	38	RT	1514		758.1																																
			1514	1515		755.1	754.8																										72				
Y5B 13+77	18	RT	1516							16																											
Y2B 14+05	19	LT	1517		764.7																																
			1517	1508		761.9	759.2																								56						
Y2B 15+40	19	LT	1518		768.2																																
			1518	1517		765.1	761.9																								132						
Y7 12+76	57	RT	1601																																		
Y7 12+37	64	RT	1602																																		
L 31+02	157	RT	1603		773.6																																
L 31+03	189	RT	1604		774.4																																
L 31+01	280	RT	1605		773.3																																
Y10A 12+31	20	RT	1701							12																											
Y11A 11+88	15	RT	1901							24																											
SHEET TOTALS										140		44											344		284	180					424		220	44			

LINE & STATION	FROM	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	MINIMUM DEPTH CATCH BASIN SEE DETAIL SHEET 2C-3	DRY DETENTION BASIC DRAWDOWN STRUCTURE SEE DETAIL SHEET 2D-1	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
Y2C 22+50	1007					1														1		
	1007	1008																				
L 47+75	1008					1														1		
	1008	1101																				
L 48+74	1101					1														1		
	1101	1102																				
Y2A 12+40	1301					1												1	1			
	1301	1302																				
Y2A 13+10	1302					1												1	1			
	1302	1303																				
Y2A 13+37	1304																					
Y2A 14+50	1305																					
Y4 14+55	1401																					
	1401	1402																				
Y4 14+59	1402					1																
	1402	1403																				
Y4 15+57	1406																					
Y2B 11+84	1501					1											1					
	1501	1502																				
Y3 12+34	1502					1												1	1			
	1502	1503																				
Y5B 10+79	1504					1												1	1			
	1504	1505																				
Y5B 11+12	1505					1												1	1			
	1505	1506																				
Y2B 16+02	1507					1												1	1			
	1507	1518																				
Y2B 13+50	1508					1												1	1			
	1508	1514																				
Y2B 15+99	1510					1												1	1			
	1510	1511																				
Y2B 15+14	1511					1												1	1			
	1511	1513																				
Y2B 14+10	1513					1												1	1			
	1513	1514																				
Y2B 13+53	1514					1																1
	1514	1515																				
Y5B 13+77	1516																					
Y2B 14+05	1517					1															1	
	1517	1508																				
Y2B 15+40	1518					1															1	
	1518	1517																				
Y7 12+76	1601																					
Y7 12+37	1602																					
L 31+02	1603																					
L 31+03	1604																					
L 31+01	1605																					
Y10A 12+31	1701																					
Y11A 11+88	1901																					
SHEET TOTALS						18											1	10	10	3	2	1

LINE & STATION	FROM	TO	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	BICYCLE SAFE STEEL GRATE AND FRAME SEE DETAIL SHEET 2C-4	J.B. STD. 840.31 OR STD. 840.32	T.B.D.I. STD. 840.35	M.H. FRAME AND COVER STD. 840.54	ADJUST C.B.	ADJUST MH	15" DRAINAGE PIPE ELBOW	18" DRAINAGE PIPE ELBOW	24" DRAINAGE PIPE ELBOW	MODIFIED CONC. FLUME SEE DETAIL SHEET 2C-5	8" SLUICE GATE (8" SIZE SLUICE GATE) SEE DETAIL SHEET 2D-1	PREFORMED SCOUR HOLE (PER EACH)	ENERGY DISSIPATION BASIN		FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
Y2C 22+50	1007							1																						
	1007	1008																												
L 47+75	1008							1																						
	1008	1101																												
L 48+74	1101							1																						
	1101	1102																		2										
Y2A 12+40	1301																													
	1301	1302																												
Y2A 13+10	1302																													
	1302	1303																												
Y2A 13+37	1304																													
Y2A 14+50	1305																													
Y4 14+55	1401																													
	1401	1402																												
Y4 14+59	1402									1				1																
	1402	1403																												
Y4 15+57	1406																													
Y2B 11+84	1501																					1								
	1501	1502																												
Y3 12+34	1502																													
	1502	1503																												
Y5B 10+79	1504																													
	1504	1505																												
Y5B 11+12	1505																													
	1505	1506																												
Y2B 16+02	1507																													
	1507	1518																												
Y2B 13+50	1508																													
	1508	1514																												
Y2B 15+99	1510																													
	1510	1511																												
Y2B 15+14	1511																													
	1511	1513																												
Y2B 14+10	1513																													
	1513	1514																												
Y2B 13+53	1514							1																						
	1514	1515																												
Y5B 13+77	1516																													
Y2B 14+05	1517									1																				
	1517	1508																												
Y2B 15+40	1518									1																				
	1518	1517																												
Y7 12+76	1601																				1									
Y7 12+37	1602																				1									
L 31+02	1603															1														
L 31+03	1604																1													
L 31+01	1605															1														
Y10A 12+31	1701																													
Y11A 11+88	1901																													
SHEET TOTALS								4		3				1		2	1			2	2	1								

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

ERIC-HP-NEW

COMPUTED BY:	EML	DATE:	11/15/2021
CHECKED BY:	JGD	DATE:	11/15/2021

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
Y-4810K	3D-4

**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)

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

LINE & STATION SIZE THICKNESS OR GAUGE	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								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		MINIMUM DEPTH CATCH BASIN SEE DETAIL SHEET 2C-3	DRY DETENTION BASIC DRAWDOWN STRUCTURE SEE DETAIL SHEET 2D-1	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	BICYCLE SAFE STEEL GRATE AND FRAME SEE DETAIL SHEET 2C-4	J.B. STD. 840.31 OR STD. 840.32	T.B.D.I. STD. 840.35	M.H. FRAME AND COVER STD. 840.54	ADJUST C.B.	ADJUST MH	15" DRAINAGE PIPE ELBOW	18" DRAINAGE PIPE ELBOW	24" DRAINAGE PIPE ELBOW	MODIFIED CONC. FLUME SEE DETAIL SHEET 2C-5	8" SLUICE GATE (8" SIZE SLUICE GATE) SEE DETAIL SHEET 2D-1	PREFORMED SCOUR HOLE (PER EACH)	ENERGY DISSIPATION BASIN		FLOWABLE FILL	CONCRETE COLLARS CL. "B" STD. 840.72	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	REMARKS
		FROM	TO					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	12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48			MASONRY	0' THRU 5'	A 5' THRU 10'	B 10' AND ABOVE		E	F	G	D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05																																			
				FT.	FT.	FT.	%																														CY	CY	CY	EACH	LIN. FT.	LIN. FT.																																							CY	CY	CY	LIN. FT.	
Y7 12+81	98 RT																																																																														4				
Y1A 18+51	19 RT																																																																																		166	Remove 15" HDPE
Y3 12+63	1 LT																																																																																			61	Remove 18" RCP
Y2B 12+25	10 RT																																																																																			19	Remove 15" RCP
Y3 12+13	15 LT																																																																																			48	Remove 15" RCP
Y3 12+65	16 LT																																																																																			50	Remove 15" RCP
Y2B 13+20	17 LT																																																																																			32	Remove 18" RCP
Y2B 13+67	16 LT																																																																																			56	Remove 15" RCP
Y2B 14+43	14 LT																																																																																				85	Remove 15" RCP
Y2B 15+09	14 LT																																																																																				44	Remove 12" RCP
Y4 14+49	10 LT																																																																																				52	Remove 15" RCP
Y4 14+46	11 RT																																																																																			39	Remove 15" RCP
L 19+75	52 RT																																																																																				7	Remove 15" RCP
Y5A 10+68	16 RT																																																																																			18	Remove 18" RCP
Y5A 11+76	15 RT																																																																																				62	Remove 15" RCP
L 23+71	14 LT																																																																																				56	Remove 15" RCP
Y5B 10+30	13 RT																																																																																				56	Remove 15" RCP
Y5B 10+09	14 LT																																																																																				4	Remove 12" RCP
L 23+98	13 RT																																																																																					22	Remove 15" CMP
L 23+97	28 LT																																																																																				40	Remove 12" RCP
Y5A 11+81	12 LT																																																																																				5	Remove 15" RCP
Y5A 11+16	12 LT																																																																																				60	Remove 12" RCP
Y5A 10+57	11 LT																																																																																				56	Remove 12" RCP
Y2A 16+30	8 LT																																																																																				60	Remove 12" RCP
Y5B 10+88	13 RT																																																																																				56	Remove 15" RCP
Y5B 11+62	16 RT																																																																																				88	Remove 15" RCP
Y5B 11+30	13 LT																																																																																				44	Remove 15" RCP
Y5B 11+80	15 LT																																																																																					52	Remove 15" RCP
Y2B 13+22	16 RT																																																																																				28	Remove 15" RCP
Y2B 13+73	15 RT																																																																																				73	Remove 12" RCP
Y2B 14+34	15 RT																																																																																				48	Remove 12" RCP
Y2B 14+84	15 RT																																																																																				49	Remove 12" RCP
Y2B 15+56	15 RT																																																																																				90	Remove 12" RCP
Y2B 14+10	23 RT																																																																																				14	Remove 12" RCP
Y11B 10+54	14 LT																																																																																				34	Remove 15" RCP
L 45+65	16 RT																																																																																				37	Remove 18" RCP
L 45+67	15 LT																																																																																				33	Remove 15" RCP
L 44+81	14 LT																																																																																				27	Remove 12" RCP
L 44+50	18 RT																																																																																				36	Remove 12" RCP
L 43+53	26 RT																																																																																				29	Remove 12" RCP
L 43+78	7 LT																																																																																				65	Remove 12" RCP
Y10A 13+86	13 RT																																																																																				27	Remove 12" RCP
Y10A 13+13	13 RT																																																																																				21	Remove 12" RCP
Y10A 12+30	14 RT																																																																																					17	Remove 12" RCP
Y2C 15+41	16 RT																																																																																					25	Remove 12" RCP
Y2C 17+33	31 LT																																																																																					22	Remove 12" RCP
Y2C 17+50	4 LT																																																																																					17	Remove 12" RCP
Y4 15+53	14 RT																																																																																					24	Remove 12" RCP
Y5B 10+58	14 LT																																																																																					64	Remove 12" RCP
SHEET TOTALS																																																																																	4			2118	

ERIC-HP-NEW

COMPUTED BY: EML DATE: 11/15/2021
CHECKED BY: JGD DATE: 11/15/2021

PROJECT NO.	SHEET NO.
Y-4810K	3D-5

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	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	MINIMUM DEPTH CATCH BASIN SEE DETAIL SHEET 2C-3	DRY DETENTION BASIC DRAWDOWN STRUCTURE SEE DETAIL SHEET 2D-1	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	BICYCLE SAFE STEEL GRATE AND FRAME SEE DETAIL SHEET 2C-4	J.B. STD. 840.31 OR STD. 840.32	T.B.D.I. STD. 840.35	M.H. FRAME AND COVER STD. 840.54	ADJUST C.B.	ADJUST MH	15" DRAINAGE PIPE ELBOW	18" DRAINAGE PIPE ELBOW	24" DRAINAGE PIPE ELBOW	MODIFIED CONC. FLUME SEE DETAIL SHEET 2C-5	8" SLUICE GATE (8" SIZE SLUICE GATE) SEE DETAIL SHEET 2D-1	PREFORMED SCOUR HOLE (PER EACH)	ENERGY DISSIPATION BASIN		FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
Y5B 12+69	12	RT																																																																																		6	Remove 12" RCP
Y5B 13+34	12	RT																																																																																		94	Remove 12" RCP
Y4 12+63	17	LT																																																																																		35	Remove 15" RCP
Y4 10+55	16	LT																																																																																		24	Remove 15" RCP
L 15+16	37	RT																																																																																		8	Remove 15" RCP
L 15+17	47	RT																																																																																		5	Remove 18" RCP
L 25+69	54	RT																																																																																		36	Remove 15" RCP
L 25+42	69	RT																																																																																		24	Remove 15" RCP
Y1B 11+28	13	RT																																																																																		22	Remove 10" TCP
L 15+10	0	CL																																																																																		82	Remove 12" RCP
L 38+01	16	RT																																																																																		29	Remove 12" RCP
L 37+98	17	LT																																																																																		21	Remove 12" RCP
Y9A 11+89	14	RT																																																																																		20	Remove 12" RCP
L 47+85	16	RT																																																																																		30	Remove 18" RCP
L 23+71	23	RT																																																																																		16	Remove 15" RCP
Y5B 10+99	14	LT																																																																																		16	Remove 12" RCP
Y2A 13+36	17	RT																																																																																		40	Remove 15" HDPE
Y2A 12+73	15	RT																																																																																		61	Remove 15" RCP
Y5A 12+09	12	LT																																																																																		20	Remove 15" RCP
L 30+62	10	LT																																																																																		7	Remove 15" RCP
L 10+83	16	RT																																																																																		42	Remove 15" RCP
Y2A 13+37	16	LT																																																																																	13	Remove 12" RCP
Y2A 14+48	14	LT																																																																																		19	Remove 15" RCP
Y2A 16+35	51	RT																																																																																		38	Remove 15" RCP
Y4 14+79	81	RT																																																																																		139	Remove 18" RCP
Y4 14+04	30	LT																																																																																		15	Remove 15" RCP
L 30+62	110	RT																																																																																		29	Remove 15" RCP
L 30+62	79	RT																																																																																		29	Remove 15" RCP
L 30+60	94	RT																																																																																		5	Remove 15" RCP
Y2B 12+64	6	LT																																																																																		63	Remove 15" RCP
Y7 12+23	19	RT																																																																																		16	Remove 18" RCP
Y7 12+35	41	RT																																																																																		40	Remove 15" RCP
Y7 12+54	26	RT																																																																																		44	Remove 18" RCP
Y7 12+81	98	RT																																																																																		79	Remove 15" RCP
Y7 12+75	45	RT																																																																																		23	Remove 15" RCP
Y7 12+87	24	RT																																																																																		25	Remove 18" RCP
SHEET TOTALS																																																																																						1215	
PROJECT TOTALS										616		44											492	336	436	180					1752	512	444	44							60	9.3		22	2	10	11		5		1	1	19	19	3	5	2						6		9		2		7		2	1	12		2	2	1				4			3333	

ABBREVIATIONS

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

COMPUTED BY : A.F. RIGGS, JR.	DATE: FEBRUARY 2019
CHECKED BY: A.A. NASH	DATE: FEBRUARY 2019
AMENDED BY: M.H. STEPHENS, P.E. NCDOT	DATE: APRIL 2019*

* QUANTITY SHEET AMENDED TO INCLUDE EMBANKMENT WAITING PERIODS AND SETTLEMENT GUAGES

(5-15-18)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
Y-4810K	3G-1

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	500
				TOTAL LF:	500

*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 Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
-L-	12+25	14+25	ASU (1)	12	40	76	120		
-L-	45+25	46+75	ASU (1)	12	30	57	90		
-Y1B-	11+25	11+75	ASU (1)	12	15	28	45		
-Y2A-	12+75	15+75	ASU (1)	12	35	66	105		
-Y2A-	16+25	16+75	ASU (1)	12	20	38	60		
-Y2B-	14+25	15+75	ASU (1)	12	40	76	125		
-Y2C-	15+25	15+75	ASU (1)	12	5	9	15		
-Y3-	10+25	12+25	ASU (1)	12	30	57	90		
-Y5B-	10+75	11+25	ASU (1)	12	10	19	30		
-Y5B-	13+75	14+25	ASU (1)	12	10	19	30		
-Y9A-	10+25	11+75	ASU (1)	12	50	95	155		
-Y10A-	11+75	13+25	ASU (1)	12	25	47	75		
-Y11A-	12+75	13+75	ASU (1)	12	30	57	90		
-Y11B-	10+25	11+25	ASU (1)	12	40	76	120		
CONTINGENCY			ASU (1)	12	250	500	2000		
			TOTAL CY/TONS/SY:		630	1220**	3150**	0	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 Soil 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.

SUMMARY OF EMBANKMENT WAITING PERIODS

LINE	Station	Station	MONTHS
-L-	29+23±	30+23±	4*

embankment to finished grade before beginning end bent construction at End Bent No. 1 and 2 month waiting period after constructing the embankment, end bent and reinforced bridge approach fill.

SUMMARY OF SETTLEMENT GAUGES

Gauge No.	LINE and Station	Offset	
		Distance FT	Direction LT/RT
1	29+99	20	LT
2	29+99	20	RT
	TOTAL GAUGES (EACH):		2

PROJ. REFERENCE NO.	SHEET NO.
Y-4810K	3P-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME	DEED BOOK
1	4	GARY L. BUNN AND WIFE, THERESA S. BUNN	DB 8173 PG 219
2	4	ELLEN M. THOMPSON	DB 10541 PG 129
3	4	VICTOR BENITEZ	DB 8250 PG 27
4	4,5	JAMES P. KEAN AND WIFE, PEGGY A. KEAN	DB 10969 PG 311
5	4,5	TERRY K. MEASE AND WIFE, MARSHA B. MEASE	DB 7846 PG 47
6	4	WARREN B. CHAPMAN	DB 478 & 6294 PG 333 & 49
7		DELETED	
8	4	LAURA CRUSE OSBORNE	DB 602 PG 308
9	4	DARBY T. VERBOS AND HUSBAND, TYLER L. VERBOS	DB 9224 PG 299
10	4	RICHARD C. HORTON AND DONNA C. HORTON,HUSBAND AND WIFE, TENANTS BY THE ENTIRETIES WITH RIGHTS OF SURVIVORSHIP	DB 8006 PG 206
11	4	EDDIE E. DURHAM	DB 568 PG 484
12	4,5	CHARLES H. WHITEHEAD AND WIFE, MYRTLE F. WHITEHEAD	DB 369 PG 235
13	4	LESLIE W. PUNTCH AND WIFE, GAIL B. PUNTCH	DB 478 PG 333
14	4	RONALD C. ALMOND	DB 1566 PG 206
15	5	MILDRED J. WATERS	
16	5	KENNETH W. MILLER	DB 7760 PG 139
17	5	DONALD ROMANO, WIDOWER	DB 9592 PG 322
18	5	ALICE A. WILSON, SINGLE	DB 668 PG 86
19	5,6,12	BETTY S RITCHIE	DB 284 PG 290
20		DELETED	
21	5,6	8' ALLEY	
22	5	JOHANNA F. E. ROBERTS (UNMARRIED)	DB 10834 PG 65
23	5	STEPHEN R. JEWETT AND WIFE, CATHY G. JEWETT	DB 760 PG 152
24	5	LYNN E. FRAZIER AND WIFE, SHIRLEY M. FRAZIER	DB 592 PG 248
25	5	JAMES J. KUFFNER AND WIFE, CRYSTAL G. KUFFNER	DB 8571 PG 64
26	5, 14	DANIEL RAY ROSENBALM (MARRIED)	DB 10931 PG 286
27	5,6,14	JESUS CHRIST IS THE ANSWER BAPTIST CHURCH	DB 3072 PG 20
28		DELETED	
29	6,12	D.B. JORDAN, AND WIFE, JOSIE H. JORDAN	DB 356 PG 279
30	6,12	ROBERT L. RITCHIE AND WIFE, JOYCE D. RITCHIE	DB 459 PG 430
31	6	JOSIE H. JORDAN	DB 722 PG 263
32	6,12	EDDIE B. DURHAM	DB 570 PG 430
33	6,12	FRANCES J. NICHOLSON	DB 445 PG 427
34	6	JOHNNY E. NICHOLSON AND WIFE, FRANCES JORDAN NICHOLSON	DB 334 PG 256
35	6	JOHNNY E. NICHOLSON AND WIFE, FRANCES JORDAN NICHOLSON	DB 355 PG 290
36	6,7	BNM REALTY, INC.	DB 4146 PG 231
37	6	PATRICIA ANN JORDAN GOODNIGHT AND SHIRLEY RUTH JORDAN BEAVER	DB 7912 PG 78
38	6	SHIRLEY J. BEAVER AND HUSBAND, JOHN M. BEAVER	DB 618 PG 326
39	6	PATRICIA ANN JORDAN GOODNIGHT AND SHIRLEY RUTH JORDAN BEAVER, EQUALLY, AND AS TENNANT IN COMMON	DB 7033 PG 30
40	6	CHARLES R. REED, III	DB 10838 PG 203
41	6,14	4 U & ME PROPERTIES, LLC	DB 11195 PG 348
42	6,14,15	THOMAS LEE JORDAN AND WIFE, RUTH S. JORDAN	DB 355 PG 235
43	7,8	CARL D. MOORE AND WIFE, BETTY P. MOORE	DB 2805 PG 54
44	71516	ROBERT E. STAMEY, SR. AND WIFE, NANCY O. STAMEY	DB 1384 PG 268
45	7,8,16	CARL D. MOORE AND WIFE, BETTY P. MOORE	DB 9118 PG 61
46		DELETED	
47	8,16	JOHN RANDOLPH TRIECE, PHILIP TIMOTHY TRIECE, AND DOUGLAS HENRY TRIECE TRUSTEES	DB 784 PG 287 & 299
47A	16	JOHN RANDOLPH TRIECE, PHILIP TIMOTHY TRIECE, AND DOUGLAS HENRY TRIECE TRUSTEES	DB 9063 PG 151
48	8	ROXANNE W. REED AND HUSBAND, EDWARD L. REED	DB 9120 PG 175
49	8,17	TIMOTHY R HARTLESS	DB 12111 PG 106
50	8	TERESA ROXANNE WHITTINGTON	DB 644 PG 314
51	8,9	PHILIP EVANS	DB 9528 PG 293
52	8,9	CHESTER C. COOK AND WIFE, PATRICIA T. COOK CHESTER C. COOK AND WIFE, PATRICIA T. COOK	DB 357 PG 274
52A	9	EDWARD BURNS DUTY	DB 12475 PG 233
53	9	K.J. UNDERWOOD	DB 700 PG 223
54	9,17	VELBA ARLENE PERKINS AND MELBA DARLENE PERKINS, JTWROS	DB 8504 PG 329
55	9	VELBA ARLENE PERKINS AND MELBA DARLENE PERKINS, JTWROS	DB 8504 PG 329
56	91017	ENZA GERMANO AKA ENZA FRIEDMAN	DB 10996 PG 182
57	9,10	ALVIN M. HOKE AND WIFE GWYNEIRA L. HOKE	DB 310 PG 257
58		DELETED	

PARCEL No.	SHEET No.	PROPERTY OWNER NAME	DEED BOOK
59	9	MELBA DARLENE PERKINS	DB 506 PG 99
60	9	JAMES R. DUREN AND SPOUSE, DEANNE S. DUREN	DB 7795 PG 69
61	9	D & E LIMITED, LLC	DB 11392 PG 366
62	9,18	BRIDLEWOOD PROPERTIES, LLC	DB 7156 PG 240
63	10,19	MARCO ANTONIO BARRERA MARTINEZ	DB 7771 PG 45
63A	19	CONNIE D. WILLIAMSON	DB 1259 PG 235
64	10,11	DOROTHY TRIECE MASSEY	DB 274 PG 212
64A		DELETED	
65	10	CHESTER C. COOK AND WIFE, PAT COOK	DB 216 PG 128
66	10,19	D & E LIMITED, LLC	DB 11393 PG 0001
67	10,11	K.J. UNDERWOOD	DB 741 PG 186
68	11	WILLARD E. YOW	DB 3917 PG 263
69	10	PAT L. COOK AND HUSBAND CHESTER C. COOK	DB 277 PG 312
70	9,10,18	ARNOLD J. CROUCH AND WIFE, CARLYIN H. CROUCH	DB 458 PG 676
71	10	D & E LIMITED, LLC	DB 11361 PG 225
72	10	D & E LIMITED, LLC	DB 11361 PG 247
73	10	D & E LIMITED, LLC	DB 11361 PG 258
74	10,18	D & E LIMITED, LLC	DB 11582 PG 239
74A	18	REGINALD K. SMITH & BOBBY D. MULLIS	DB 1967 PG132
74B	18	D & E LIMITED, LLC	DB 11582 PG 239
75	10,11	D&E LIMITED, LLC	DB 11392 PG 334
76	12	BECKY HOWARD SMITH	DB 817 PG 324
77	12	ROBERT P. SEAFORD AND WIFE, MARGARET ANN WILSON SEAFORD	DB 285 PG 290
78	12, 13	NINA RUTH GLASS GRAVES	DB 310 PG 88
79	6,7,12,13	ERIC SCOTT SMITH, UNMARRIED	DB 3044 PG 1
80	13	CITY OF KANNAPOLIS, A NORTH CAROLINA MUNICIPAL CORPORATION	DB 10233 PG 345
81	7,13	VERA M. BREWER	DB 560 PG 283
82	7,13	CHARLES R. REED, III	DB 10838 PG 203
83	14	DANIEL RAY ROSENBALM AND LINDA DAY HUIE, AS JOINT TENANTS, WITH RIGHTS OF SURVIVORSHIP	DB 9598 PG 225
84	14	CECIL G. KELLER AND WIFE, BETTY G. KELLER	DB 5858 PG 116
85	14	WELL LOT	
86	14	MARK D. MILLER (UNMARRIED)	DB 775 PG 54
87	14	MITCHELL STANBACK (SINGLE)	DB 929 PG 97
88	14	DENNIS A. DANIELS AMY A. DANIELS	DB 7105 PG 275
89	14	WILLIAM VANWIEREN, II (SINGLE)	DB 8873 PG 34
90	15	CECIL G. KELLER AND WIFE, BETTY G. KELLER	DB 736 PG 48
91	14,15	PAUL DALTON BYRD	DB 4915 PG 15
92	6,15	CYNTHIA J. BARNHARDT, DIVORCED	DB 4689 PG 309
93	6,15	DAVID W. NICHOLSON AND WIFE, ANGELA C. NICHOLSON	DB 2827 PG 145
94	6,15	FRANKIE LAVERA BAKER GOSA	DB 1935 PG 51
95	6,15	A.L. HELMS AND WIFE, SARA HELMS	DB 210 PG 61
96	6,7,15	JOE E. WILLIAMS AND WIFE, MARY E. WILLIAMS	DB 413 PG 692
97	15	JOHN H. WOOLLERTON, JR.	DB 6303 PG 239
98	15	JAMES WILBUR FINK AND WIFE, DOROTHY LEE ALWRAN FINK	DB 223 PG 207
99	15	MICHAEL DERON SIMMONS	DB 1311 PG 335
100	15	H.L. RED SMITH, LLC.	DB 10976 PG 203
101	14,15	JEREMY SELLERS UNMARRIED	DB 9631 PG 226
102		DELETED	
103	15	RICHARD C. OWINGS AND SPOUSE, TAMMY S. OWINGS	DB 3150 PG 44
104	15	LANCE M. MIDDLETON AND FRANCES J. MIDDLETON	DB 9081 PG 73
105	17	JOHN RANDOLPH TRIECE, PHILIP TIMOTHY TRIECE, AND DOUGLAS HENRY TRIECE, TRUSTEES	DB 9395 PG 36
106	17	PEDRO C. PARRA AND WIFE, MARIA C. MALDONADO	DB 7677 PG 285
107	17	JOE & CAROLYN GLASS PROPERTIES, LLC	DB 8950 PG 318
108	17	BERNARDINO MORALES VAZQUEZ AND WIFE ELIZABETH CASTRO RAMOS	DB 13132 PG 89
109	17	BARBARA H. ROCHE	DB 7709 PG 235
110	17	JUNIOR LAMARR HALL	DB 9875 PG 116
111	17	CORALEE REITH, UNMARRIED	DB 9612 PG 52
112	17	BOBBY RAY YOST AND WIFE, THANH-LAN THI YOST	DB 3029 PG 57
113	18	JOHN RANDOLPH TRIECE, PHILIP TIMOTHY TRIECE, AND DOUGLAS HENRY TRIECE, TRUSTEES	DB 9063 PG 148
114		DELETED	
115	18	ALILEEN J. TRIECE, ET AL	DB 11705 PG 140; DB 784 PG 269

5/14/99

SUNGATE DESIGN GROUP, P.A.	PROJECT REFERENCE NO.	SHEET NO.
905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL (919) 859-2243 ENG FIRM LICENSE NO. C-690	Y-4810K	4
	R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27391 MICHAEL DEAN PEKARIK	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 26971 JOSHUA C. DALTON
Docusigned by: Michael Pekarik 12/3/2021	Docusigned by: Joshua Dalton 12/3/2021
MOTT MACDONALD E & E, LLC LICENSE NO. F-0665	SUNGATE DESIGN GROUP, P.A. LICENSE NO. C-0290

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Prepared in the Office of: MOTT MACDONALD — 7621 Parfoy Road; Suite 115, Fuquay-Varina, NC 27526, www.mottmac.com/north-america

NAD 83/2011

MATCHLINE SEE SHEET 5 -Y1A- STA 17+50.00

MATCHLINE SEE SHEET 5 -L- STA 15+00.00

SEE SHEET 2D-1 FOR DITCH DETAILS

-L- SEE PROFILE SHEET 20
-Y1A- SEE PROFILE SHEET 29
-Y1B- SEE PROFILE SHEET 30

BEGIN TIP PROJECT Y-4810K
-L- POT Sta. 9+95.00

BEGIN PAVING
-L- POT Sta. 10+00.00

-L- PC Sta. 11+48.98

-Y1A- PT Sta. 19+51.99
-L- POC Sta. 13+06.52

BEGIN PAVING
-Y1A- POC Sta. 17+90.00

-Y1B- PC Sta. 10+00.00
-L- POC Sta. 13+43.58

-Y1B- PT Sta. 11+39.99

END CONSTRUCTION
-Y1B- POT Sta. 12+20.00

-Y1B- POT Sta. 12+23.87

BEGIN C&G +40

BEGIN SIDEWALK +57
BEGIN C&G +58.14

-L-
PI Sta 15+03.22
△ = 12° 38' 01.9" (LT)
D = 1° 47' 25.8"
L = 705.61'
T = 354.24'
R = 3,200.00'
SE = 03
RO = 84'

-Y1B-
PI Sta 10+70.07
△ = 6° 20' 20.1" (RT)
D = 4° 31' 41.0"
L = 139.99'
T = 70.07'
R = 1,265.35'

-Y1A-
PI Sta 17+74.64
△ = 18° 38' 28.2" (LT)
D = 5° 12' 31.3"
L = 357.88'
T = 180.54'
R = 1,100.00'

TRAFFIC DIAGRAM — ADT 2020 / ADT 2040

	-Y1A- LOWRANCE AVE		-L-
ROGERS LAKE RD	1,440 / 200		
	1,330 / 100	100 / 100	
-L-	8,340 / 10,800	<100 / <100	100 / 200 — 7,210 / 11,000
-Y1B-		120 / 200	

5/14/99

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-690

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	5
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27391 ENGINEER MICHAEL PEKAREK
MOTT MACDONALD I & E, LLC
LICENSE NO. F-0665

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 26971 ENGINEER JOSHUA G. DALTON
SUNGATE DESIGN GROUP, P.A.
LICENSE NO. C-690

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MOTT MACDONALD
7621 Parfay Road; Suite 115
Fuquay-Varina, NC 27526
www.mottmac.com/north-america

NAD 83/2011

BYI-22
-Y1A- PC Sta. 15+94.10
S 61° 52' 13.5" W

PI Sta 17+74.64
Δ = 18° 38' 28.2" (LT)
D = 5° 12' 31.3"
L = 357.88'
T = 180.54'
R = 1,100.00'

PI Sta 15+03.22
Δ = 12° 38' 01.9" (LT)
D = 1° 47' 25.8"
L = 705.61'
T = 354.24'
R = 3,200.00'
SE = 03
RO = 84'

PI Sta 11+64.61
Δ = 16° 45' 59.5" (RT)
D = 7° 26' 27.6"
L = 225.33'
T = 113.47'
R = 770.00'
SE = 04
RO = 72'

-L- PT Sta. 18+54.59

-Y4- PC Sta. 10+51.13

BEGIN PAVING
-Y4- POC Sta. 11+21.95

-Y4- POT Sta. 10+00.00

BEGIN EXP. GUTTER +28

CULDESAC CENTER
-Y4- STA 11+62.52
OFFSET 12' RT

-Y4- PT Sta. 12+76.46

MATCHLINE SEE SHEET 4
-L- STA 17+50.00

MATCHLINE SEE SHEET 4
-L- STA 15+00.00

MATCHLINE SEE SHEET 6
-L- STA 20+50.00

MATCHLINE SEE SHEET 14
-Y4- STA 13+00.00

GFS PROPERTIES, LLC
DB 7868 PG 342

TERRY K. MEASE AND WIFE, MARSHA B. MEASE
DB 7846 PG 47

MILDRED J. WATERS

KENNETH W. MILLER
DB 7760 PG 139

DONALD ROMANO, WIDOWER
DB 9592 PG 322
ISFD

ALICE A. WILSON, SINGLE
DB 668 PG 86
ISFD

BETTY S. RITCHIE
DB 284 PG 290

CHARLES H. WHITEHEAD AND WIFE, MYRTLE L. WHITEHEAD
DB 369 PG 235

JOHANNA F. E. ROBERTS (UNMARRIED)
DB 10834 PG 65

STEPHEN R. JEWETT AND WIFE CATHY G. JEWETT
DB 760 PG 152

JAMES J. KUFFNER AND WIFE CRYSTAL G. KUFFNER
DB 8571PG 64

SPEC. LATERAL 'V' DITCH SEE DETAIL 3

SPEC. LATERAL 'V' DITCH SEE DETAIL 7

SPEC. LATERAL 2' BASE DITCH w/PSRM SEE DETAIL 8

STANDARD CUT 2' BASE DITCH w/PSRM EST. DDE=20 CY SEE DETAIL 9

CL B RIP RAP EST 5 TONS EST 14 SY GF

200' MED. TAPER

75.00' DUKE ENERGY TRANSMISSION R/W

REMOVE 10 LF 18" RCP

RETAIN 18" RCP

REMOVE DI END C&G
REMOVE 9 LF +99.23
15" RCP

END BIKE LANE +28.00

SEE SHEET 2D-1 FOR DITCH DETAILS

-L- SEE PROFILE SHEET 20, 21, & 22
-Y4- SEE PROFILE SHEET 36

9:43:04 AM
R:\Raleigh\Projects\Y4810K_rdy_psh_05.dgn

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	6

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27391 MICHAEL PEKAREK — MOTT MACDONALD I&E, LLC LICENSE NO. F-0669

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 26971 JOSHUA G. DALTON — SUNGATE DESIGN GROUP, P.A. LICENSE NO. C-890

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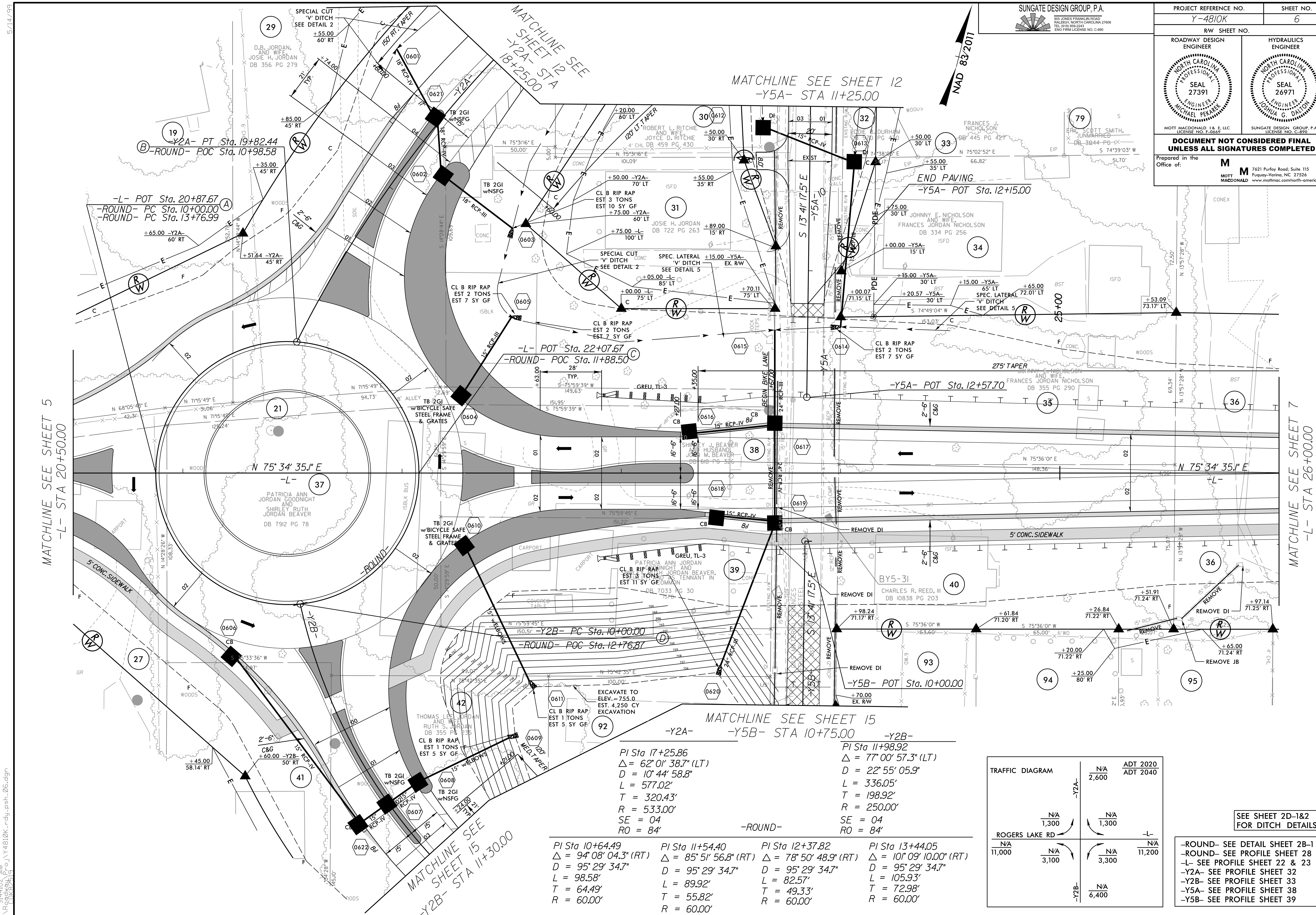
Prepared in the Office of: MOTT MACDONALD, 7621 Purfoy Road; Suite 115, Fuquay-Varina, NC 27526, www.mottmac.com/north-america

SUNGATE DESIGN GROUP, P.A., 905 JONES FRANKLIN ROAD, RALEIGH, NORTH CAROLINA 27606, TEL (919) 859-2243, ENG FIRM LICENSE NO. C-890



-Y2A-	-Y2B-
PI Sta 17+25.86	PI Sta 11+98.92
Δ = 62° 01' 38.7" (LT)	Δ = 77° 00' 57.3" (LT)
D = 10° 44' 58.8"	D = 22° 55' 05.9"
L = 577.02'	L = 336.05'
T = 320.43'	T = 198.92'
R = 533.00'	R = 250.00'
SE = 04	SE = 04
RO = 84'	RO = 84'

-ROUND-

PI Sta 10+64.49	PI Sta 11+54.40	PI Sta 12+37.82	PI Sta 13+44.05
Δ = 94° 08' 04.3" (RT)	Δ = 85° 51' 56.8" (RT)	Δ = 78° 50' 48.9" (RT)	Δ = 101° 09' 10.00" (RT)
D = 95° 29' 34.7"	D = 95° 29' 34.7"	D = 95° 29' 34.7"	D = 95° 29' 34.7"
L = 98.58'	L = 89.92'	L = 82.57'	L = 105.93'
T = 64.49'	T = 55.82'	T = 49.33'	T = 72.98'
R = 60.00'	R = 60.00'	R = 60.00'	R = 60.00'

TRAFFIC DIAGRAM — ADT 2020 / ADT 2040

Leg	ADT 2020	ADT 2040
-Y2A-	N/A	2,600
-Y2A- (turn)	N/A	1,300
-Y2A- (turn)	N/A	1,300
ROGERS LAKE RD	N/A	11,000
-L-	N/A	11,200
(turn)	N/A	3,100
(turn)	N/A	3,300
-Y2B-	N/A	6,400

SEE SHEET 2D-1&2 FOR DITCH DETAILS

-ROUND- SEE DETAIL SHEET 2B-1
-ROUND- SEE PROFILE SHEET 28
-L- SEE PROFILE SHEET 22 & 23
-Y2A- SEE PROFILE SHEET 32
-Y2B- SEE PROFILE SHEET 33
-Y5A- SEE PROFILE SHEET 38
-Y5B- SEE PROFILE SHEET 39

5/14/99

9:44:02 AM R:\Roadway\Proj\Y4810K_rdy_psh_06.dgn

5/14/99

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-690

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27391 ENGINEER MICHAEL PEKAREK
MOTT MACDONALD I & E, LLC
LICENSE NO. F-0665

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 26971 ENGINEER JOSHUA G. DALTON
SUNGATE DESIGN GROUP, P.A.
LICENSE NO. C-0290

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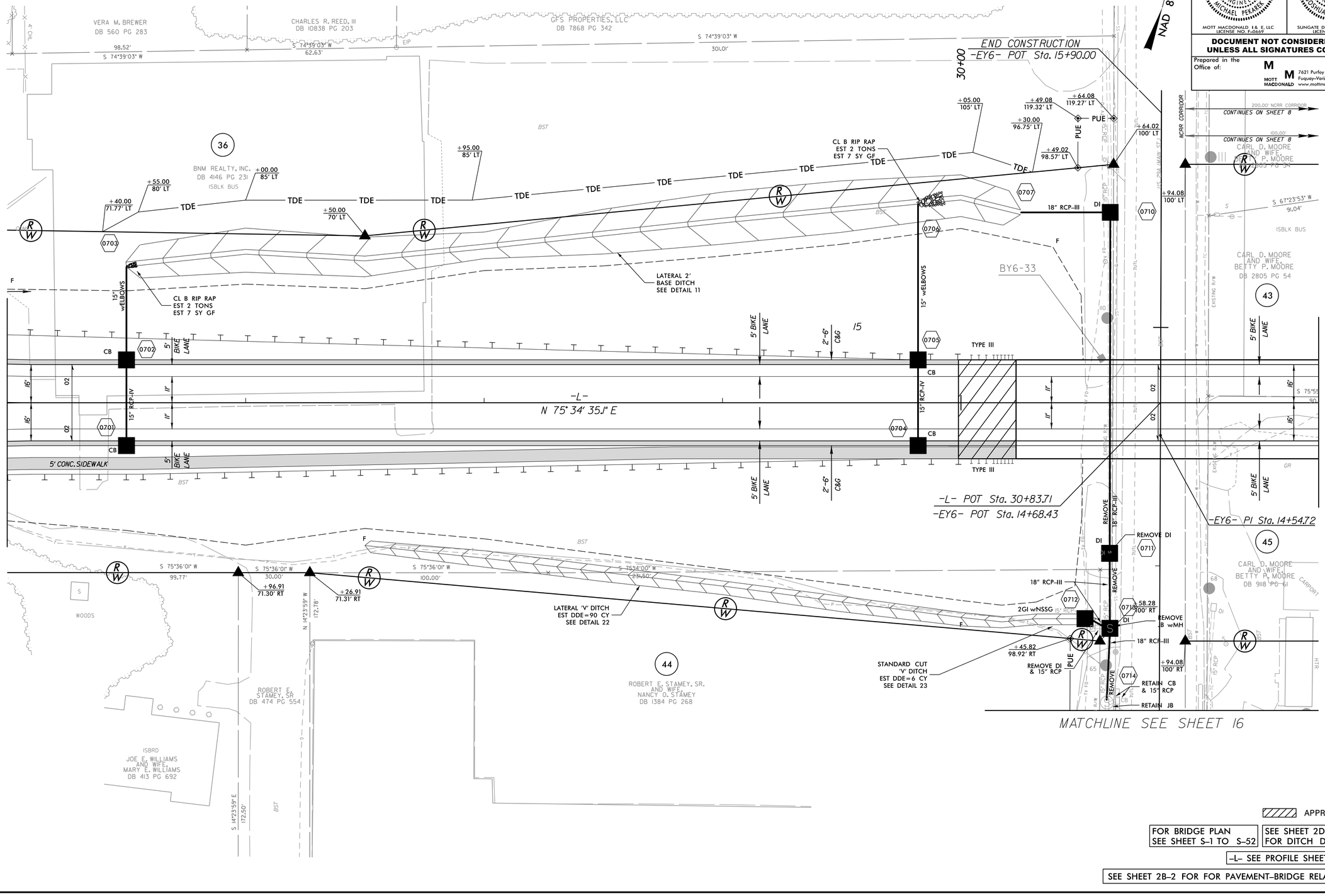
Fuquay-Varina, NC 27526
www.mottmac.com/north-america

NAD 83/2011



APPROACH SLAB

FOR BRIDGE PLAN SEE SHEET S-1 TO S-52	SEE SHEET 2D-1 & 2D-2 FOR DITCH DETAILS

-L- SEE PROFILE SHEET 23 & 24

SEE SHEET 2B-2 FOR FOR PAVEMENT-BRIDGE RELATIONSHIP

R:\Projects\Y4810K_rdy_psh_07.dgn
10:06:43 AM
PEKAREK

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	8

R/W SHEET NO.

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27391 ENGINEER MICHAEL PEKAREK 2/3/2021	NORTH CAROLINA PROFESSIONAL SEAL 26971 ENGINEER JOSHUA G. DALTON 2/3/2021
MOTT MACDONALD I&E, LLC LICENSE NO. F-0669	SUNGATE DESIGN GROUP, P.A. LICENSE NO. C-890

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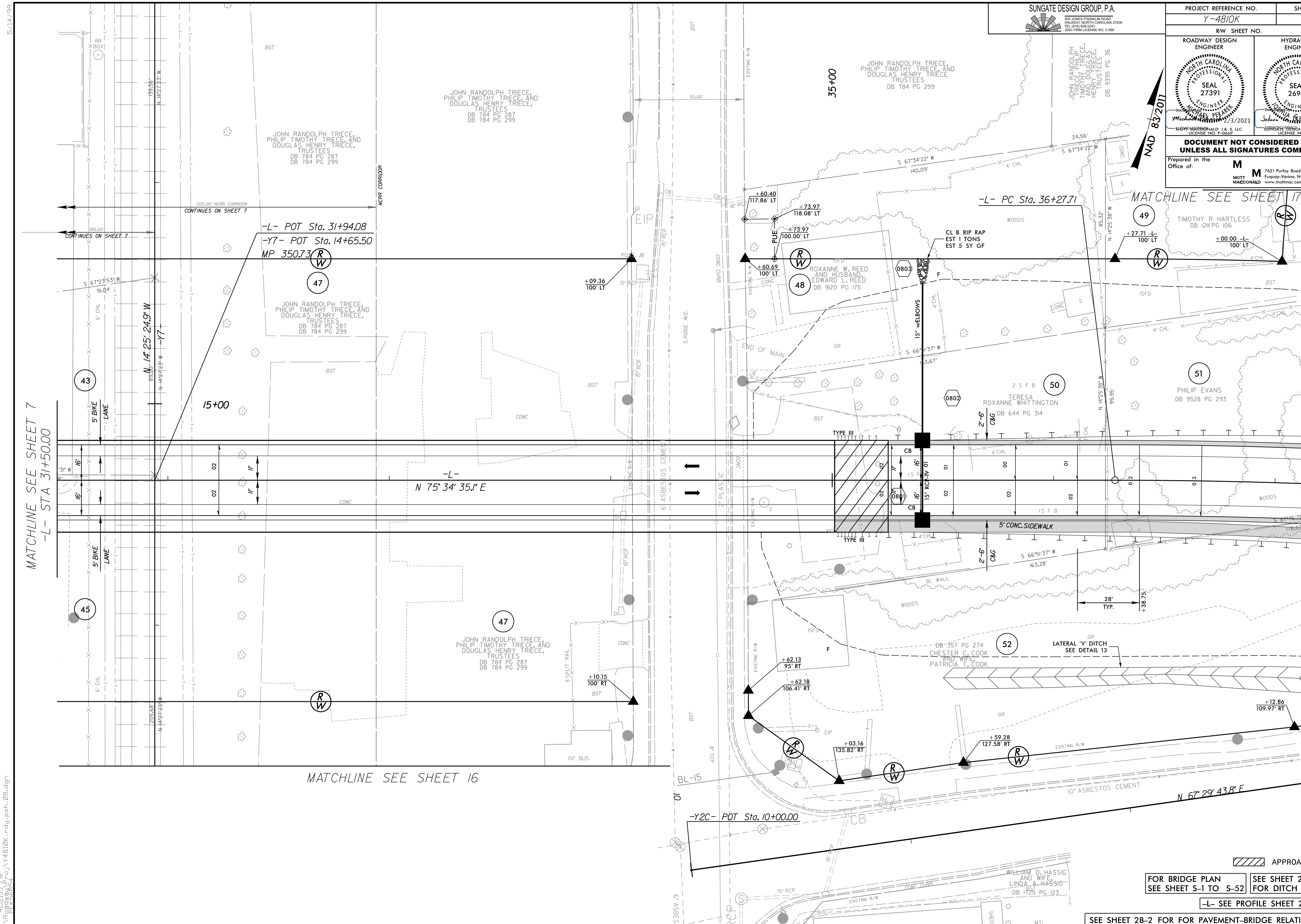

NAD 83/2011
MATCHLINE SEE SHEET 17
MATCHLINE SEE SHEET 7 -L- STA 31+50.00
MATCHLINE SEE SHEET 9 -L- STA 37+15.00
MATCHLINE SEE SHEET 16
-L- POT Sta. 31+94.08
-Y7- POT Sta. 14+65.50
MP 350.73
-L- PC Sta. 36+27.71
-Y2C- POT Sta. 10+00.00
-L-
N 75° 34' 35.1" E
N 14° 25' 24.9" W
N 67° 29' 43.8" E
15+00
35+00
200.00' NCRR CORRIDOR
CONTINUES ON SHEET 7
NCRR CORRIDOR
JOHN RANDOLPH TRIECE, PHILIP TIMOTHY TRIECE, AND DOUGLAS HENRY TRIECE, TRUSTEES DB 784 PG 287 DB 784 PG 299
JOHN RANDOLPH TRIECE, PHILIP TIMOTHY TRIECE, AND DOUGLAS HENRY TRIECE, TRUSTEES DB 784 PG 299
ROXANNE W. REED AND HUSBAND, EDWARD L. REED DB 9120 PG 175
TERESA ROXANNE WHITTINGTON DB 644 PG 314
TIMOTHY R HARTLESS DB 12111 PG 106
PHILIP EVANS DB 9528 PG 293
DB 357 PG 274 CHESTER C. COOK AND WIFE, PATRICIA T. COOK
WILLIAM D. HASSIG AND WIFE, LINDA A. HASSIG DB 1725 PG 123
43
45
47
48
49
50
51
52
CL B RIP RAP EST 1 TONS EST 5 SY GF
LATERAL 'V' DITCH SEE DETAIL 13
5' BIKE LANE
5' CONC. SIDEWALK
15" WELBOWS
15" RCP
TYPE III
CB
2'-6" C&G
28' TYP.
+60.40 117.86' LT
+73.97 118.08' LT
+73.97 100.00' LT
+60.69 100' LT
+09.36 100' LT
+27.71 -L- 100' LT
+00.00 -L- 100' LT
+10.15 100' RT
+62.13 95' RT
+62.18 106.41' RT
+03.16 135.82' RT
+59.28 127.58' RT
+12.86 109.97' RT
+38.75
S 67°34'22" W 140.09'
S 67°23'53" W 91.04'
S 66°51'37" W 163.28'
10" ASBESTOS CEMENT
S. RIDGE AVE.
END OF MAIN
WOODS
EXISTING R/W
BL-15

APPROACH SLAB

FOR BRIDGE PLAN SEE SHEET S-1 TO S-52

SEE SHEET 2D-1 FOR DITCH DETAILS

-L- SEE PROFILE SHEET 24 & 25

SEE SHEET 2B-2 FOR FOR PAVEMENT-BRIDGE RELATIONSHIP

4:32:53 PM
R:\Roadway\Proj\Y4810K_rdy_psh_08.dgn

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD, RALEIGH, NORTH CAROLINA 27606, TEL (919) 859-2243, ENG FIRM LICENSE NO. C-890

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27391 MICHAEL PEKAREK — 3/2021 — MOTT MACDONALD I&E, LLC LICENSE NO. F-0669

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 26971 JOSHUA S. DALTON — 3/2021 — SUNGATE DESIGN GROUP, P.A. LICENSE NO. C-890

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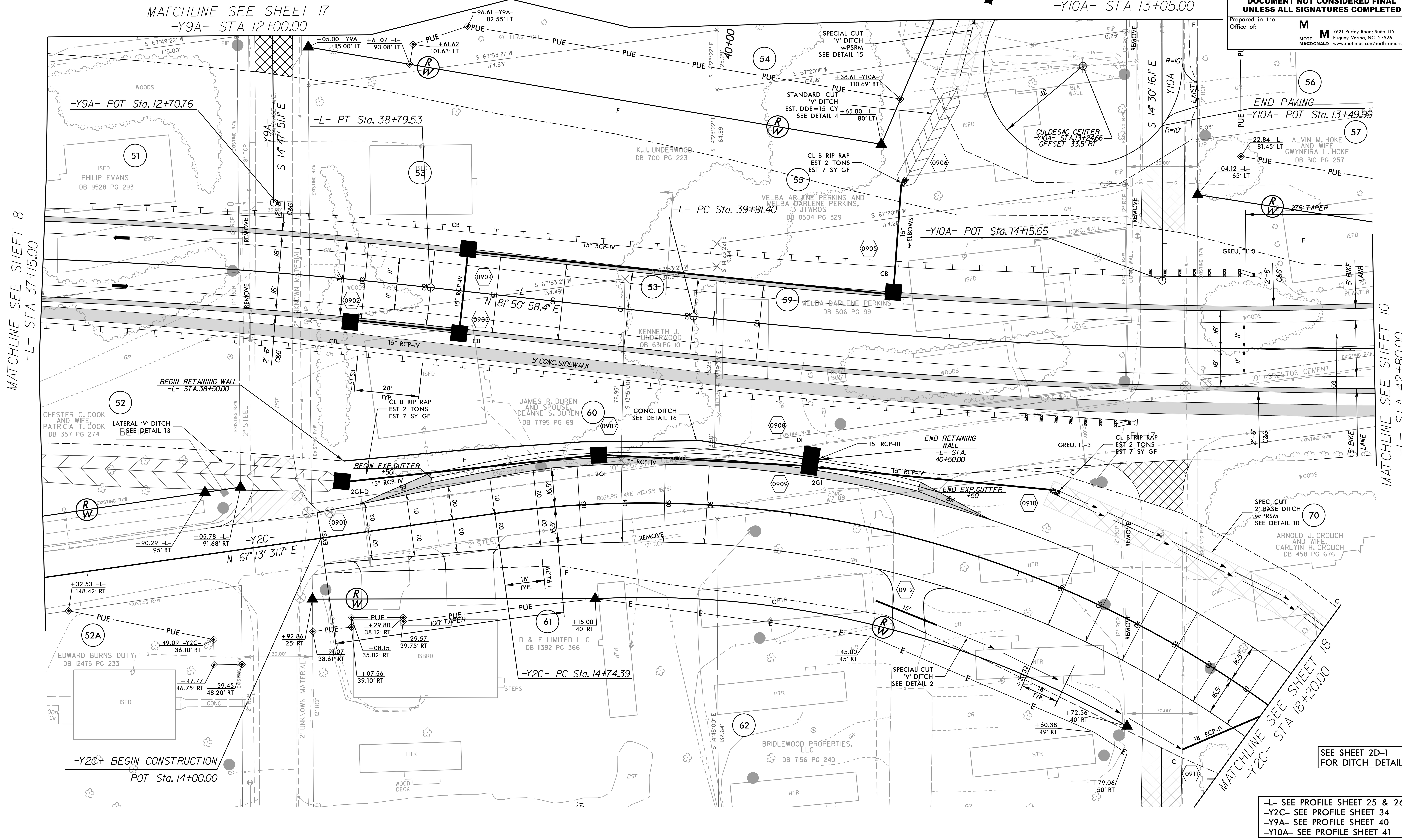
-L-

PI Sta 37+53.74
△ = 6° 16' 23.3" (RT)
D = 2° 29' 28.0"
L = 251.82'
T = 126.04'
R = 2,300.00'
SE = .03
RO = 84'

PI Sta 42+73.11
△ = 13° 57' 57.4" (LT)
D = 2° 29' 28.0"
L = 560.63'
T = 281.71'
R = 2,300.00'
SE = .03
RO = 84'

-Y2C-

PI Sta 16+61.08
△ = 45° 03' 49.7" (RT)
D = 12° 43' 56.6"
L = 353.93'
T = 186.69'
R = 450.00'
SE = .06
RO = 108.00'



NAD 83/2011
MATCHLINE SEE SHEET 17 -Y9A- STA 12+00.00
MATCHLINE SEE SHEET 17 -Y10A- STA 13+05.00
MATCHLINE SEE SHEET 8 -L- STA 37+15.00
MATCHLINE SEE SHEET 10 -L- STA 42+80.00
MATCHLINE SEE SHEET 18 -Y2C- STA 18+20.00
-Y9A- POT Sta. 12+70.76
-L- PT Sta. 38+79.53
-L- PC Sta. 39+91.40
-Y10A- POT Sta. 14+15.65
END PAVING -Y10A- POT Sta. 13+49.99
CULDESAC CENTER -Y10A- STA 13+24.56 OFFSET 33.5' RT
-L- N 81° 50' 58.4" E
-Y2C- N 67° 13' 31.7" E
-Y2C- PC Sta. 14+74.39
-Y2C- BEGIN CONSTRUCTION POT Sta. 14+00.00
BEGIN RETAINING WALL -L- STA. 38+50.00
END RETAINING WALL -L- STA. 40+50.00
BEGIN EXP. GUTTER +50
END EXP. GUTTER +50
SPECIAL CUT 'V' DITCH w/PSRM SEE DETAIL 15
STANDARD CUT 'V' DITCH EST. DDE=15 CY SEE DETAIL 4
CL B RIP RAP EST 2 TONS EST 7 SY GF
LATERAL 'V' DITCH SEE DETAIL 13
CONC. DITCH SEE DETAIL 16
SPEC. CUT 2' BASE DITCH w/PRSM SEE DETAIL 10
SPECIAL CUT 'V' DITCH SEE DETAIL 2
5' CONC. SIDEWALK
PHILIP EVANS DB 9528 PG 293
K.J. UNDERWOOD DB 700 PG 223
VELBA ARLENE PERKINS AND MELBA DARLENE PERKINS, JTWROS DB 8504 PG 329
MELBA DARLENE PERKINS DB 506 PG 99
KENNETH J. UNDERWOOD DB 631 PG 10
ALVIN M. HOKE AND WIFE, GWYNEIRA L. HOKE DB 310 PG 257
CHESTER C. COOK AND WIFE, PATRICIA T. COOK DB 357 PG 274
JAMES R. DUREN AND SPOUSE, DEANNE S. DUREN DB 7795 PG 69
ARNOLD J. CROUCH AND WIFE, CARLYIN H. CROUCH DB 458 PG 676
EDWARD BURNS DUTY DB 12475 PG 233
D & E LIMITED LLC DB 1392 PG 366
BRIDLEWOOD PROPERTIES, LLC DB 7156 PG 240
ROGERS LAKE RD. (SR 1651)

SEE SHEET 2D-1 FOR DITCH DETAILS

-L- SEE PROFILE SHEET 25 & 26
-Y2C- SEE PROFILE SHEET 34
-Y9A- SEE PROFILE SHEET 40
-Y10A- SEE PROFILE SHEET 41

4:32:54 PM
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5/14/99

*DESIGN EXCEPTION:
LANE TAPER RATE

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 27391	SEAL 26971
MOTT MACDONALD I&E, LLC LICENSE NO. F-0669	SUNGATE DESIGN GROUP, P.A. LICENSE NO. C-890

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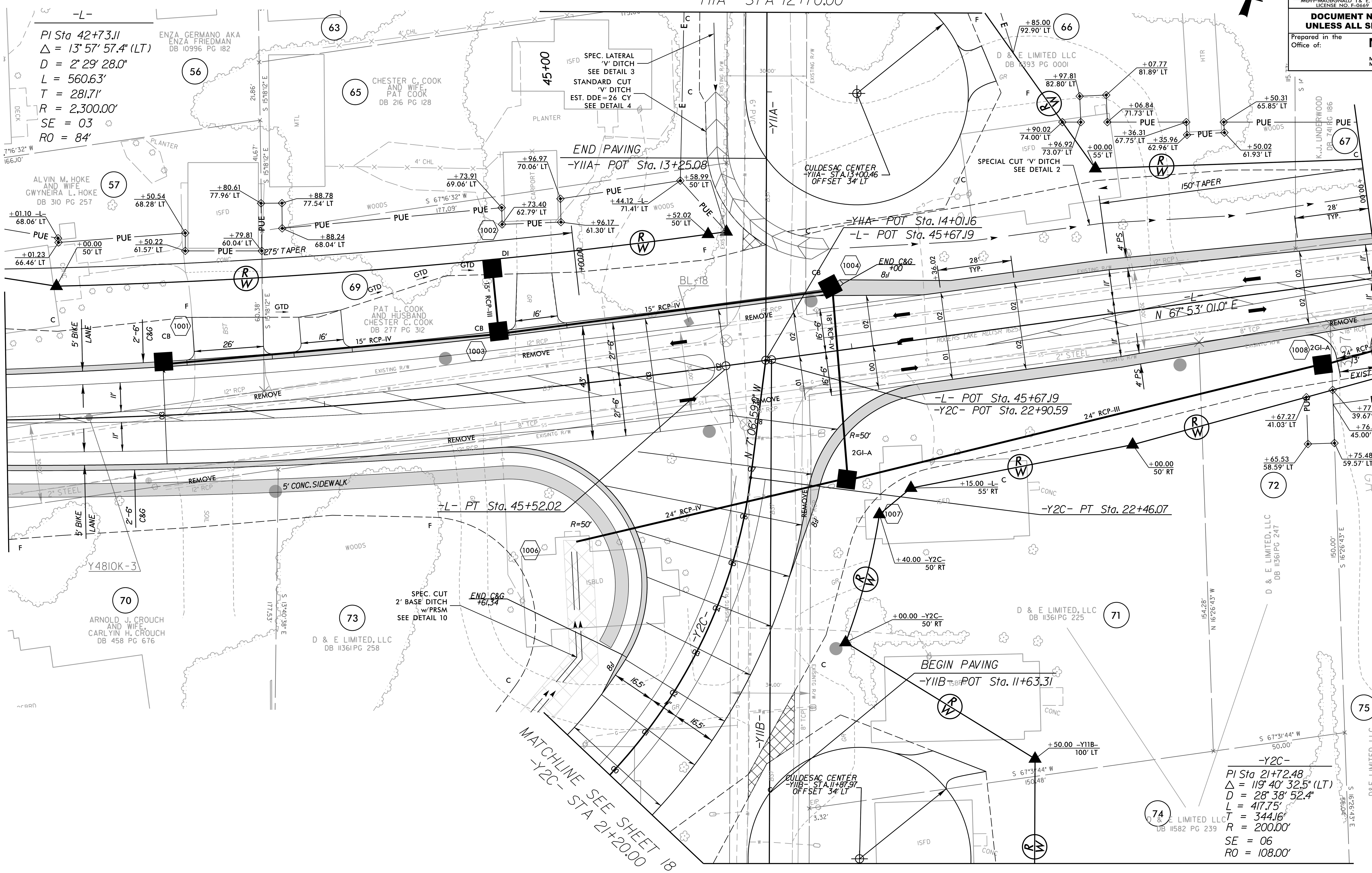
NAD 83/2011

MATCHLINE SEE SHEET 19
-Y11A- STA 12+70.00



-L-
PI Sta 42+73.11
△ = 13° 57' 57.4" (LT)
D = 2° 29' 28.0"
L = 560.63'
T = 281.71'
R = 2,300.00'
SE = .03
RO = 84'
END PAVING
-Y11A- POT Sta. 13+25.08
CULDESAC CENTER -Y11A- STA.13+00.46 OFFSET 34' LT
-Y11A- POT Sta. 14+01.16
-L- POT Sta. 45+67.19
-L- POT Sta. 45+67.19
-Y2C- POT Sta. 22+90.59
N 67° 53' 01.0" E
-L- PT Sta. 45+52.02
-Y2C- PT Sta. 22+46.07
SPEC. LATERAL 'V' DITCH SEE DETAIL 3
STANDARD CUT 'V' DITCH EST. DDE=26 CY SEE DETAIL 4
SPECIAL CUT 'V' DITCH SEE DETAIL 2
SPEC. CUT 2' BASE DITCH w/PRSM SEE DETAIL 10
5' CONC. SIDEWALK
150' TAPER
275' TAPER
BEGIN PAVING
-Y11B- POT Sta. 11+63.31
CULDESAC CENTER -Y11B- STA.11+87.97 OFFSET 34' LT
-Y2C-
PI Sta 21+72.48
△ = 119° 40' 32.5" (LT)
D = 28° 38' 52.4"
L = 417.75'
T = 344.16'
R = 200.00'
SE = .06
RO = 108.00'
D & E LIMITED, LLC DB 1136 PG 225
CHESTER C. COOK AND WIFE, PAT COOK DB 216 PG 128
PAT L. COOK AND HUSBAND CHESTER C. COOK DB 277 PG 312
ALVIN M. HOKE AND WIFE GWYNEIRA L. HOKE DB 310 PG 257
ENZA GERMANO AKA ENZA FRIEDMAN DB 10996 PG 182
ARNOLD J. CROUCH AND WIFE, CARLYIN H. CROUCH DB 458 PG 676
D & E LIMITED, LLC DB 1136 PG 258
D & E LIMITED LLC DB 1393 PG 0001
K.J. UNDERWOOD DB 1418 PG 186
D & E LIMITED, LLC DB 1136 PG 247
D & E LIMITED LLC DB 11582 PG 239
D&E LIMITED, LLC DB 1392 PG 334
Y4810K-3

MATCHLINE SEE SHEET 9
-L- STA 42+80.00

MATCHLINE SEE SHEET 11
-L- STA 48+00.00

MATCHLINE SEE SHEET 18
-Y2C- STA 21+20.00

MATCHLINE SEE SHEET 18
-Y11B- STA 11+90.00

SEE SHEET 2D-1 FOR DITCH DETAILS

-L- SEE PROFILE SHEET 26 & 27
-Y2C- SEE PROFILE SHEET 35
-Y11A- SEE PROFILE SHEET 42
-Y11B- SEE PROFILE SHEET 43

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SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL: (919) 859-2243
ENG FIRM LICENSE NO. C-890

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	11
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27391 ENGINEER
MICHAEL SPEAKER
5/13/2021
ELECTRONICALLY SIGNED BY: MICHAEL SPEAKER, PE
MOTT MACDONALD I & E, LLC
LICENSE NO. F-0665

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 26971 ENGINEER
JOSHUA D. DALTON
5/13/2021
1288ADBC1489DD...
SUNGATE DESIGN GROUP, P.A.
LICENSE NO. C-0910

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NAD 83/2011

K.J. UNDERWOOD
DB 741 PG 186
67

HARDIN MCRAE AND WIFE DOROTHY MCRAE
DB 466 PG 646

HARDIN MCRAE AND WIFE DOROTHY MCRAE
DB 337 PG 70

HARDIN MCRAE AND WIFE DOROTHY MCRAE
DB 303 PG 189

WILLARD E. YOW
DB 3917 PG 263

68
WILLARD E. YOW
DB 3917 PG 263

AUSTIN ST.
THREE MILE BRANCH
JS
WOODS
ISFD
ISBRD
ISBLKD
BST
EIP
CONC
BRICK WALK
BRICK WALL
PLASTIC
6' WD
4' CHL
12" HDPE
18" HDPE
18" RCP
15" RCP
8" TCP
4.5' BRICK HW
EXISTING R/W
EXISTNG R/W
S 14°40'33" E
S 24°24'10" E 100.00'
S 19°11'05" E 98.44'
S 24°23'10" E 100.46'
S 19°12'28" E 92.56'
S 19°11'05" E 92.80'
N 66°04'20" E 47.64'
S 66°43'50" W 113.03'
S 66°43'50" W 146.55'
N 10°07'25" W 96.73'
S 24°11'43" E 253.09'
N 67° 53' 01.0" E
POT Sta. 51+62.34
BL-19
35.00'
30.00'
1.05'
2.5' UNKNOWN MATERIAL

SPECIAL CUT 'V' DITCH SEE DETAIL 2
INSTALL CL I RIPRAP IN EXISTING DITCH
EST. 12 TONS CL I RIPRAP
EST. 26 SY GEOTEXTILE

+18.16 66.94' LT
+28.01 65.23' LT
+16.41 56.92' LT
+26.33 55.57' LT
+35.00 40' LT
+50.00 40' LT
+50.00 15' LT
+35.00 15' LT
+93.73 32.75' LT
+92.82 15' LT
+30.70 15' RT
+31.97 50' RT
+50.00 15' RT
+50.00 30' RT
+25.00 PROP. R/W
+05.00 45' RT
+10.00 55' RT
PUE
DUE
150' TAPER
50+00

MATCHLINE SEE SHEET 10 -L- STA 48+00.00

2GI-A
1101
1102
24" RCP-III
24" w/ELBOWS
EXIST FES
STEEL
END OF MAIN
RIP-RAP AT EMBANKMENT SEE DETAIL 19

Y4810K-A

END CONSTRUCTION
-L- POT Sta. 50+00.00

END TIP PROJECT Y-4810K
-L- POT Sta. 48+50.00

JOHN RANDOLPH TRIECE, PHILIP TIMOTHY TRIECE, AND DOUGLAS HENRY TRIECE, TRUSTEES
DB 784 PG 299

JOHN RANDOLPH TRIECE, PHILIP TIMOTHY TRIECE, AND DOUGLAS HENRY TRIECE, TRUSTEES
DB 9063 PG 144

6" ASBESTOS CEMENT
BRANCH AVE.
KENNEL
GR
2SFD
ISFD
BY12-48
CITY OF KANNAPOLIS PUBLIC WORKS 20' SEWER R/W

75 D&E LIMITED, LLC
DB 11392 PG 334

*DESIGN EXCEPTION:
LANE TAPER RATE

SEE SHEET 2D-1 FOR DITCH DETAILS

-L- SEE PROFILE SHEET 27

4:33:00 PM
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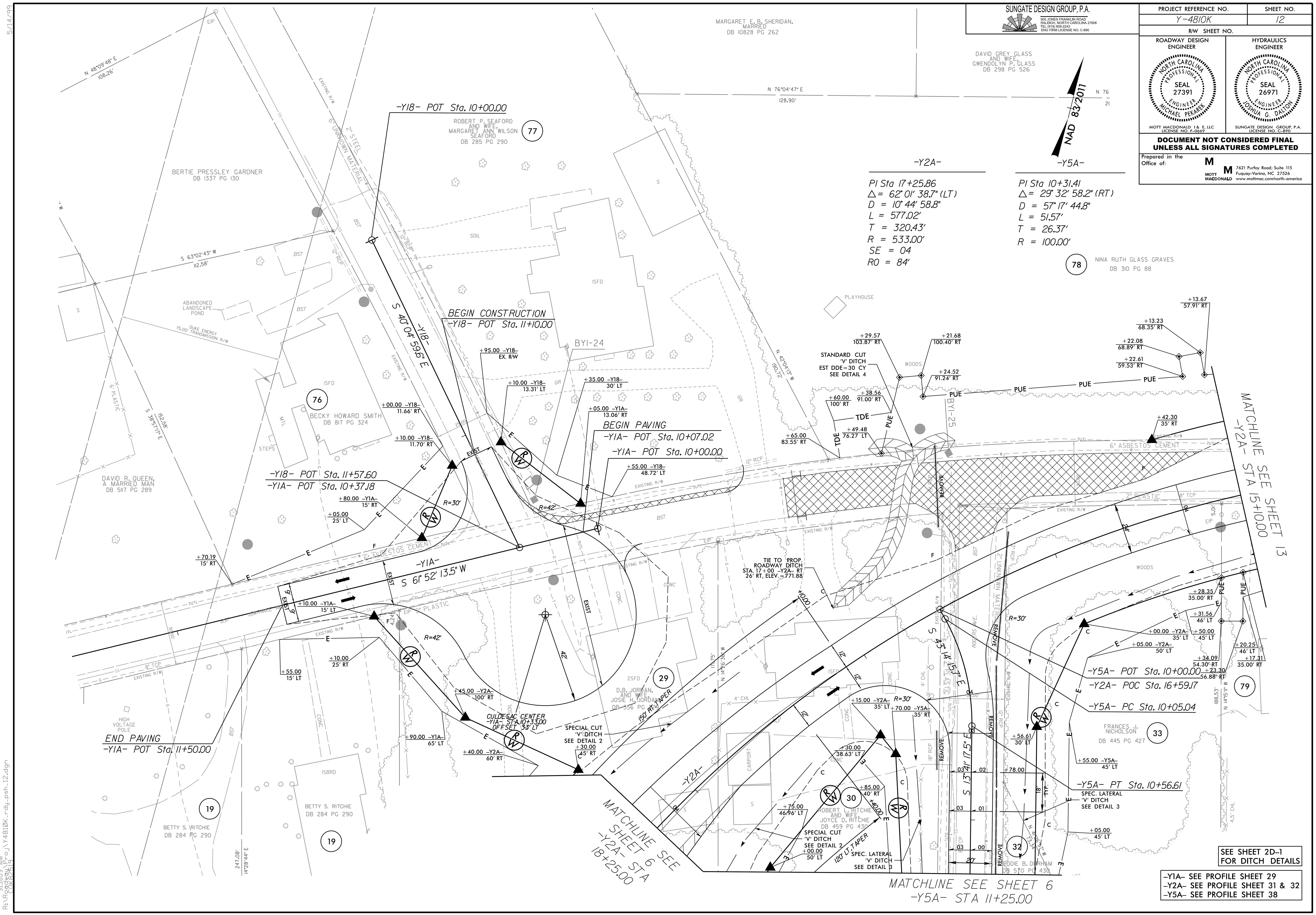
PFK/RBR4



SUNGATE DESIGN GROUP, P.A.
PROJECT REFERENCE NO.
SHEET NO.
Y-4810K
12
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27391 ENGINEER MICHAEL PEKAREK
NORTH CAROLINA PROFESSIONAL SEAL 26971 ENGINEER JOSHUA G. DALTON
MOTT MACDONALD I&E, LLC LICENSE NO. F-0669
SUNGATE DESIGN GROUP, P.A. LICENSE NO. C-890
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NAD 83/2011
-Y2A-
PI Sta 17+25.86
△ = 62° 01' 38.7" (LT)
D = 10° 44' 58.8"
L = 577.02'
T = 320.43'
R = 533.00'
SE = 04
RO = 84'
-Y5A-
PI Sta 10+31.41
△ = 29° 32' 58.2" (RT)
D = 57° 17' 44.8"
L = 51.57'
T = 26.37'
R = 100.00'
-Y18- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-Y18- POT Sta. 11+10.00
BEGIN PAVING
-Y1A- POT Sta. 10+07.02
-Y1A- POT Sta. 10+00.00
-Y18- POT Sta. 11+57.60
-Y1A- POT Sta. 10+37.18
END PAVING
-Y1A- POT Sta. 11+50.00
CULDESAC CENTER -Y1A- STA 10+33.00 OFFSET 53' LT
S 40° 04' 59.6" E
S 61° 52' 13.5" W
-Y5A- POT Sta. 10+00.00
-Y2A- POC Sta. 16+59.17
-Y5A- PC Sta. 10+05.04
-Y5A- PT Sta. 10+56.61
MARGARET E. B. SHERIDAN, MARRIED DB 10828 PG 262
DAVID GREY GLASS AND WIFE, GWENDOLYN P. GLASS DB 298 PG 526
ROBERT P. SEAFORD AND WIFE, MARGARET ANN WILSON SEAFORD DB 285 PG 290
BERTIE PRESSLEY GARDNER DB 1337 PG 130
BECKY HOWARD SMITH DB 817 PG 324
DAVID R. QUEEN, A MARRIED MAN DB 5117 PG 289
NINA RUTH GLASS GRAVES DB 310 PG 88
D.B. JORDAN, AND WIFE, JOSIE H. JORDAN DB 356 PG 75
ROBERT L. RITCHIE AND WIFE, JOYCE D. RITCHIE DB 459 PG 430
BETTY S. RITCHIE DB 284 PG 290
FRANCES J. NICHOLSON DB 445 PG 427
EDDIE B. DURHAM DB 570 PG 430
MATCHLINE SEE SHEET 13 -Y2A- STA 15+10.00
MATCHLINE SEE SHEET 6 -Y2A- STA 18+25.00
MATCHLINE SEE SHEET 6 -Y5A- STA 11+25.00
SEE SHEET 2D-1 FOR DITCH DETAILS
-Y1A- SEE PROFILE SHEET 29
-Y2A- SEE PROFILE SHEET 31 & 32
-Y5A- SEE PROFILE SHEET 38

5/14/99

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	13
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27391 ENGINEER JOSHUA PESSARRA
Joshua Pessarra 12/3/2021
MOTT MACDONALD I & E, LLC
LICENSE NO. F-0665

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 26971 ENGINEER JOSHUA G. DALTON
Joshua G. Dalton 12/3/2021
SUNGATE DESIGN GROUP, P.A.
LICENSE NO. C-890

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7621 Parfoy Road; Suite 115
Fuquay-Varina, NC 27526
www.mottmac.com/north-america

NAD 83/2011

-Y2A-
PI Sta 13+21.80
△ = 3° 19' 56.5" (RT)
D = 1° 59' 30.8"
L = 167.30'
T = 83.67'
R = 2,876.47'

-Y2A-
PI Sta 17+25.86
△ = 62° 01' 38.7" (LT)
D = 10° 44' 58.8"
L = 577.02'
T = 320.43'
R = 533.00'
SE = 04
RO = 84'

DAVID GREY GLASS AND WIFE, GWENDOLYN P. GLASS
DB 298 PG 526

RICHARD THOMAS ABSHER AND WIFE, JANET WILSON ABSHER
DB 1713 PG 92

78 NINA RUTH GLASS GRAVES
DB 310 PG 88

CITY OF KANNAPOLIS, A NORTH CAROLINA MUNICIPAL CORPORATION
DB 10233 PG 345

80

ERIC SCOTT SMITH, UNMARRIED
DB 3044 PG 1
79

VERA M. BREWER
DB 560 PG 283
81

CHARLES R. REED, III
DB 10838 PG 203
82

GFS PROPERTIES, LLC
DB 7868 PG 342

BEGIN PAVING
-Y2A- POC Sta. 12+50.00

BEGIN CONSTRUCTION
-Y2A- POT Sta. 12+25.00

-Y2A- PRC Sta. 14+05.42

-Y2A- PC Sta. 12+38.13

-Y2A- POT Sta. 10+00.00

MATCHLINE SEE SHEET -Y2A- STA 15+10.00 12

-Y2A- S 70° 42' 25.2" W

SEE SHEET 2D-1 FOR DITCH DETAILS

-Y2A- SEE PROFILE SHEET 31

4:13:08 PM
R:\Raleigh\Projects\Y4810K_rdy.psh.13.dgn
PPRIDDY

5/14/99

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	14
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27391 ENGINEER	NORTH CAROLINA PROFESSIONAL SEAL 26971 ENGINEER
2/3/2021	2/3/2021
MOTT MACDONALD I& E, LLC LICENSE NO. F-0669	SUNGATE DESIGN GROUP, P.A. LICENSE NO. C-890

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Fuquay-Varina, NC 27526
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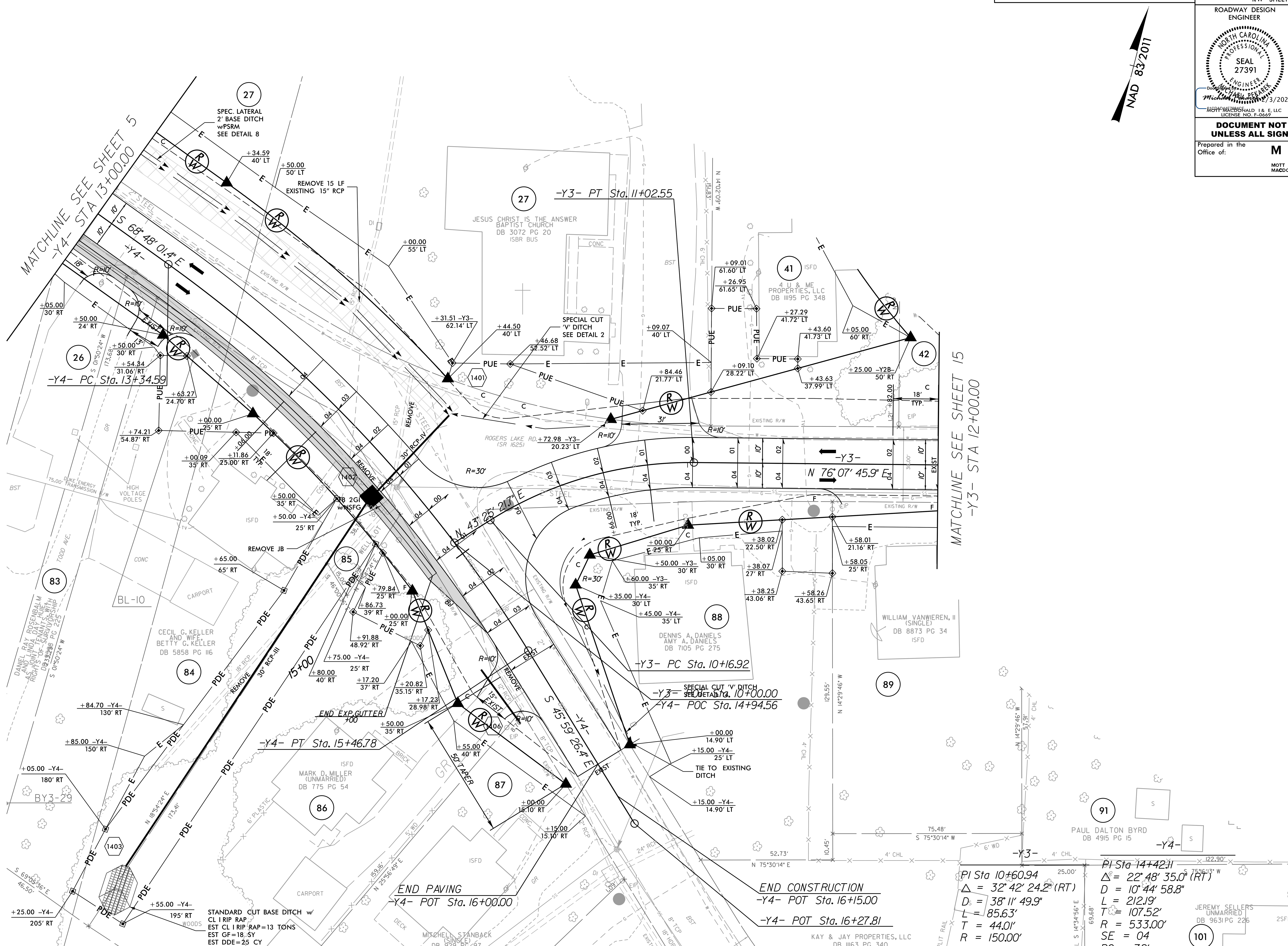

SEE SHEET 2D-1 FOR DITCH DETAILS

-Y4- SEE PROFILE SHEET 36 & 37
-Y3- SEE PROFILE SHEET 37

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5/14/99

MATCHLINE SEE SHEET 6 -Y5B- STA 10+75.00

MATCHLINE SEE SHEET 6 -Y2B- STA 11+30.00

MATCHLINE SEE SHEET 14 -Y3- STA 12+00.00

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	15
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27391 ENGINEER MICHAEL PEKAREK
MOTT MACDONALD I & E, LLC
LICENSE NO. F-0569

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 26971 ENGINEER JOSHUA G. DALTON
SUNGATE DESIGN GROUP, P.A.
LICENSE NO. C-890

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NAD 83/2011

END PAVING -Y3- POT Sta. 12+50.00

BEGIN PAVING -Y5B- POT Sta. 10+75.00

-Y2B- PT Sta. 13+36.05

END PAVING -Y2B- POT Sta. 16+00.00

END CONSTRUCTION -Y2B- POT Sta. 17+10.00

-Y3- POT Sta. 13+09.72

-Y2B- POC Sta. 13+21.65

-Y5B- POT Sta. 12+24.29

END PAVING -Y5B- POT Sta. 14+75.00

END CONSTRUCTION -Y5B- POT Sta. 14+85.00

-Y2B-
PI Sta 11+98.92
Δ = 77° 00' 57.3" (LT)
D = 22° 55' 05.9"
L = 336.05'
T = 198.92'
R = 250.00'
SE = 04
RO = 84'

SEE SHEET 2D-1&2 FOR DITCH DETAILS

-Y2B- SEE PROFILE SHEET 33 & 35
-Y3- SEE PROFILE SHEET 37
-Y5B- SEE PROFILE SHEET 39

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SUNGATE DESIGN GROUP, P.A.

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	16
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27391 MICHAEL PEKAREK — MOTT MACDONALD I&E, LLC LICENSE NO. F-0669

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 26971 JOSHUA G. DALTON — SUNGATE DESIGN GROUP, P.A. LICENSE NO. C-890

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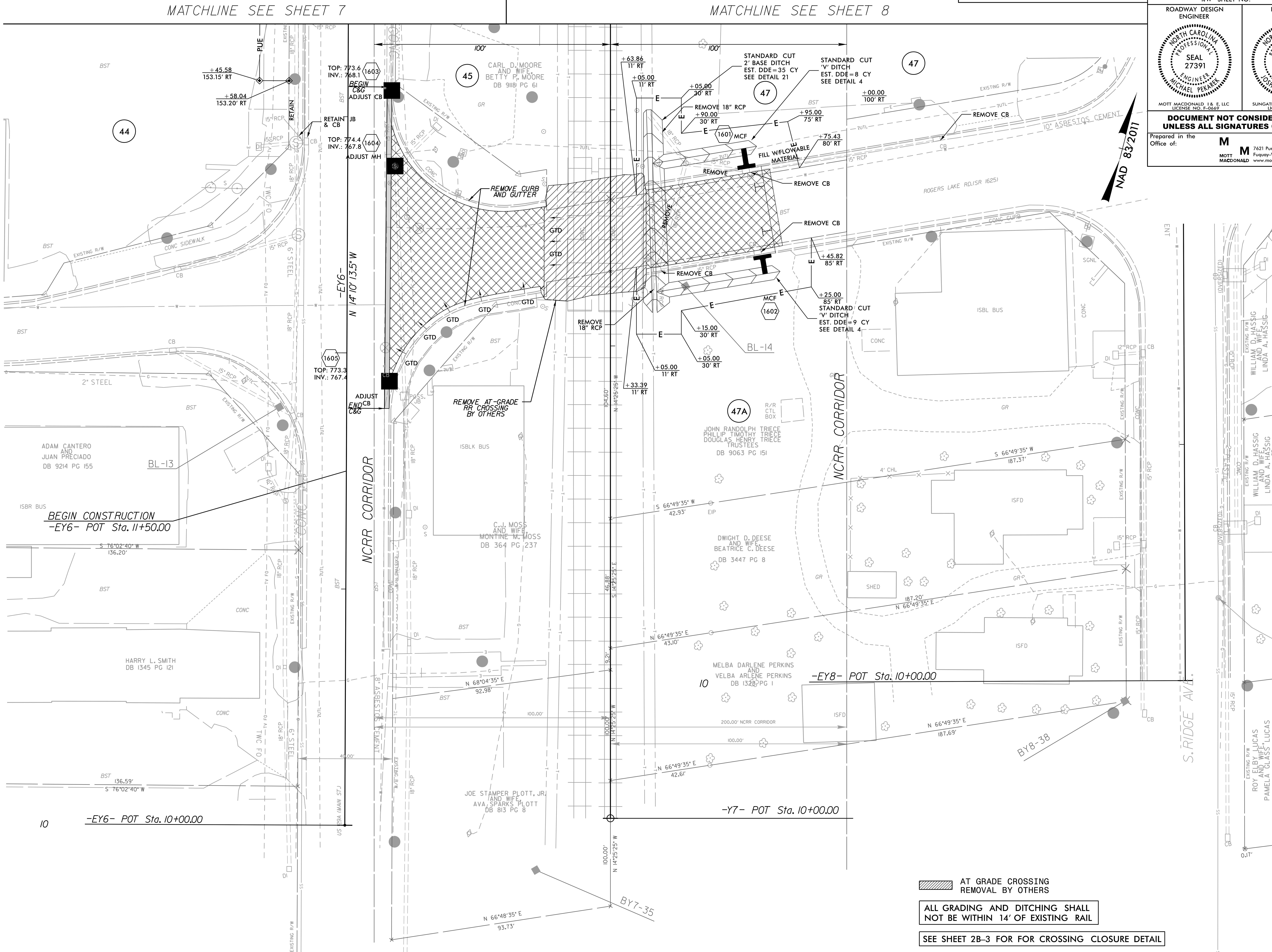

MATCHLINE SEE SHEET 7
MATCHLINE SEE SHEET 8
NAD 83/2011
44
45
47
47A
CARL D. MOORE AND WIFE BETTY P. MOORE DB 9118 PG 61
JOHN RANDOLPH TRIECE PHILLIP TIMOTHY TRIECE DOUGLAS HENRY TRIECE TRUSTEES DB 9063 PG 151
ADAM CANTERO AND JUAN PRECIADO DB 9214 PG 155
C.J. MOSS AND WIFE MONTINE M. MOSS DB 364 PG 237
DWIGHT D. DEESE AND WIFE BEATRICE C. DEESE DB 3447 PG 8
HARRY L. SMITH DB 1345 PG 121
MELBA DARLENE PERKINS AND VELBA ARLENE PERKINS DB 1328 PG 1
JOE STAMPER PLOTT, JR. AND WIFE AVA SPARKS PLOTT DB 813 PG 8
WILLIAM D. HASSIG AND WIFE, LINDA A. HASSIG DB 1725 PG 123
ROY ELBY LUCAS AND WIFE, PAMELA GLASS LUCAS DB 10438 PG 155
ROGERS LAKE RD.(SR 1625)
NCRR CORRIDOR
S. RIDGE AVE.
-EY6- N 14°10'13.5" W
REMOVE CURB AND GUTTER
REMOVE AT-GRADE RR CROSSING BY OTHERS
BEGIN CONSTRUCTION -EY6- POT Sta. 11+50.00
-EY6- POT Sta. 10+00.00
-Y7- POT Sta. 10+00.00
-EY8- POT Sta. 10+00.00
BL-13
BL-14
BY7-35
BY8-38
STANDARD CUT 2' BASE DITCH EST. DDE=35 CY SEE DETAIL 21
STANDARD CUT 'V' DITCH EST. DDE=8 CY SEE DETAIL 4
STANDARD CUT 'V' DITCH EST. DDE=9 CY SEE DETAIL 4
FILL W/FLOWABLE MATERIAL
REMOVE 18" RCP
REMOVE CB
TOP: 773.6 INV.: 768.1
TOP: 774.4 INV.: 767.8
TOP: 773.3 INV.: 767.4
ADJUST CB
ADJUST MH
RETAIN JB & CB
AT GRADE CROSSING REMOVAL BY OTHERS
ALL GRADING AND DITCHING SHALL NOT BE WITHIN 14' OF EXISTING RAIL
SEE SHEET 2B-3 FOR FOR CROSSING CLOSURE DETAIL

5/14/99

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5/14/99

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	17

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27391 ENGINEER	NORTH CAROLINA PROFESSIONAL SEAL 26971 ENGINEER
2/3/2021	2/3/2021
MOTT MACDONALD I& E, LLC LICENSE NO. F-0669	SUNGATE DESIGN GROUP, P.A. LICENSE NO. C-890

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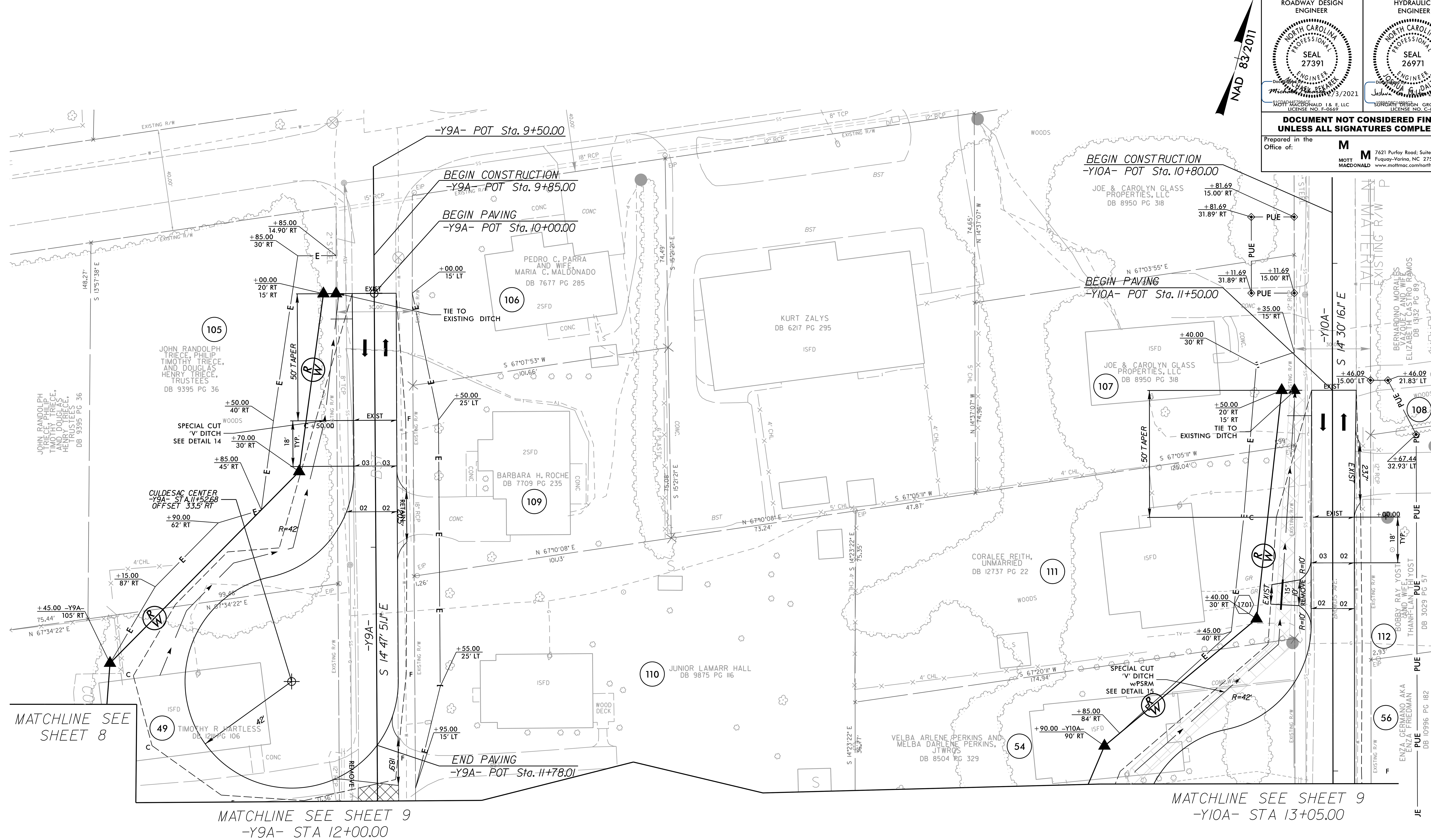

NAD 83/2011
-Y9A- POT Sta. 9+50.00
BEGIN CONSTRUCTION -Y9A- POT Sta. 9+85.00
BEGIN PAVING -Y9A- POT Sta. 10+00.00
END PAVING -Y9A- POT Sta. 11+78.01
BEGIN CONSTRUCTION -Y10A- POT Sta. 10+80.00
BEGIN PAVING -Y10A- POT Sta. 11+50.00
-Y9A- S 14° 47' 51" E
-Y10A- S 14° 30' 16" E
CULDESAC CENTER -Y9A- STA 11+52.68 OFFSET 33.5' RT
SPECIAL CUT 'V' DITCH SEE DETAIL 14
SPECIAL CUT 'V' DITCH w/PSRM SEE DETAIL 15
TIE TO EXISTING DITCH
50' TAPER
R=42'
JOHN RANDOLPH TRIECE, PHILIP TIMOTHY TRIECE, AND DOUGLAS HENRY TRIECE, TRUSTEES DB 9395 PG 36
PEDRO C. PARRA AND WIFE, MARIA C. MALDONADO DB 7677 PG 285
BARBARA H. ROCHE DB 7709 PG 235
KURT ZALYS DB 6217 PG 295
JUNIOR LAMARR HALL DB 9875 PG 116
TIMOTHY R HARTLESS DB 12118 PG 106
JOE & CAROLYN GLASS PROPERTIES, LLC DB 8950 PG 318
CORALEE REITH, UNMARRIED DB 12737 PG 22
VELBA ARLENE PERKINS AND MELBA DARLENE PERKINS, JTWROS DB 8504 PG 329
BERNARDINO MORALES VAZQUEZ AND WIFE, ELIZABETH CARDOSO RAMOS
BOBBY RAY YOST AND WIFE, THANH-LAN T. YOST DB 3029 PG 57
ENZA GERMANO AKA ENZA FRIEDMAN DB 10996 PG 182
MATCHLINE SEE SHEET 8
MATCHLINE SEE SHEET 9 -Y9A- STA 12+00.00
MATCHLINE SEE SHEET 9 -Y10A- STA 13+05.00

SEE SHEET 2D-1 FOR DITCH DETAILS

-Y9A- SEE PROFILE SHEET 40
-Y10A- SEE PROFILE SHEET 41

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5/14/99

NAD 83/2011

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

PROJECT REFERENCE NO.	SHEET NO.
Y-4810K	18
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27391 ENGINEER
REGISTERED ENGINEER
Michael T. Hall
12/3/2021
ALTERNATE DESIGN
MOTT MACDONALD I & E, LLC
LICENSE NO. F-0665

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 26971 ENGINEER
REGISTERED ENGINEER
Joshua G. Dalton
12/3/2021
ALTERNATE DESIGN
SUNGATE DESIGN GROUP, P.A.
LICENSE NO. C-870

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MATCHLINE SEE SHEET 9
-Y2C- STA 18+20.00

MATCHLINE SEE SHEET 10
-Y2C- STA 21+20.00

MATCHLINE SEE SHEET 10
-Y11B- STA 11+90.00

(1801) INV.: 766.2
CL B RIP RAP
EST 2 TONS
EST 7 SY GF

18" RCP-IV

SPEC. CUT
2' BASE DITCH
w/PRSM
SEE DETAIL 10

70
ARNOLD J. CROUCH AND WIFE, CARLYIN H. CROUCH
DB 458 PG 676

BL WALL

-Y2C- PRC Sta. 18+28.32

N 68°50'04" E
175.91'

D & E LIMITED, LLC
DB 11361 PG 258

73

100' TAPER

+00.00 -Y2C- 40' RT
+35.00 -Y2C- 40' RT
+00.00 55' RT
+00.00 40' RT
+75.00 40' RT
+75.00 15' RT

-Y11B- POT Sta. 11+90.00

74
N 67°55'47" E
205.86'
+10.00 100' LT

74B
-Y11B- POT Sta. 12+51.87
D & E LIMITED LLC
DB 11582 PG 239
N 68°19'22" E
207.91'
+60.00 40' LT

74A
REGINALD K. SMITH & BOBBY D. MULLIS
DB 1967 PG 132

END PAVING
-Y10B- POT Sta. 11+99.93

+15 14.16' LT
+95 25' LT

62
+49.88 13.64' LT
+15.00 13.37' LT
+49.74 31.65' LT
+59.84 33.71' LT
+57.84 43.51' LT
+49.66 41.84' LT
+49.60 48.61' LT
+22.45 48.40' LT
+27.81 13.47' LT
PUE

CULDESAC CENTER
-Y10B- STA 11+74.60
OFFSET 33.5' RT

+40.00 80' RT

N 68°19'22" E
174.53'

S 13°40'38" E
85.76'

WOODS

113
JOHN RANDOLPH TRIECE, PHILIP TIMOTHY TRIECE, AND DOUGLAS HENRY TRIECE, TRUSTEES
DB 9063 PG 148

S 14°44'08" E
46.90'

SHED

20

115
ALILEEN J. TRIECE, ET AL
DB 11705 PG 140
DB 784 PG 269
WOODS

+95.00 30' RT

+53.07 24.50' RT
+52.97 17.13' RT

N 75°14'27" E
173.66'

JOHN RANDOLPH TRIECE, PHILIP TIMOTHY TRIECE AND DOUGLAS HENRY TRIECE TRIECE, TRUSTEES
DB 784 PG 287

N 75°14'27" E
173.76'

S 14°44'08" E
20.00'

-Y2C-
PI Sta 21+72.48
△ = 119° 40' 32.5" (LT)
D = 28° 38' 52.4"
L = 417.75'
T = 344.16'
R = 200.00'
SE = 06
RO = 108.00'

PHILIP TIMOTHY TRIECE
DB 548 PG 665

S 14°44'08" E
93.69'

BEGIN PAVING
-Y10B- POT Sta. 10+00.00

BEGIN PAVING
-Y11B- POT Sta. 13+25.00

50' LT TAPER
50' TAPER

18' TYP.

EXIST

SEE SHEET 2D-1
FOR DITCH DETAILS

-Y2C- SEE PROFILE SHEETS 34 & 35
-Y10B- SEE PROFILE SHEET 41
-Y11B- SEE PROFILE SHEET 43

R:\Projects\Y4810K_rdy_psh_18.dgn
4/23/23 PM
PERKINS, BRIAN