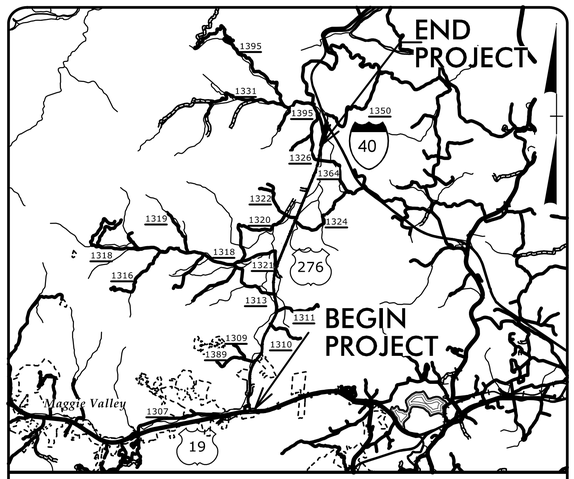
09/08/24

TIP PROJECT: R-5921

CONTRACT: C204943

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HAYWOOD COUNTY

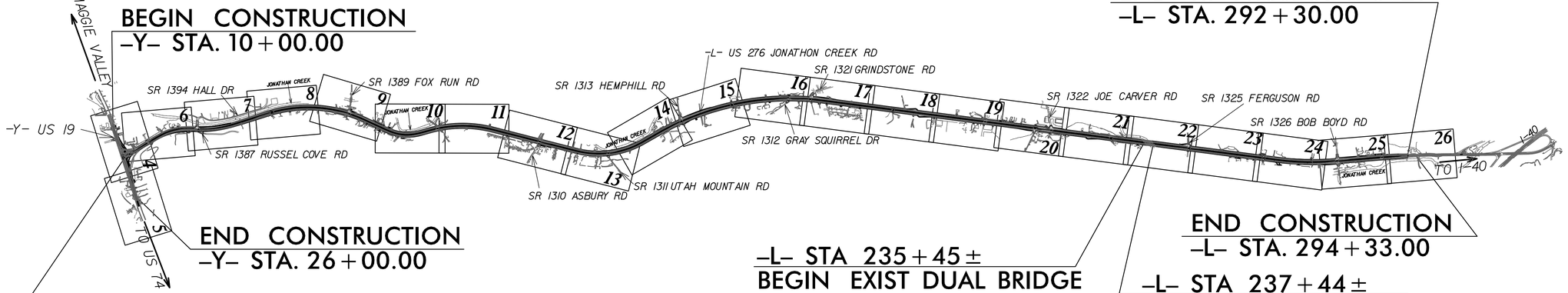
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5921	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
48470.1.1	0276019	PE
48470.2.1	0276019	R/W
48470.2.2	0276019	UTIL.
48470.3.1	0276019	CONST.

LOCATION: MODERNIZE US 276 (JONATHAN CREEK RD) FROM US 19 TO 0.5 MILES SOUTH OF I-40

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

NAD 83/2011



BEGIN CONSTRUCTION
-Y- STA. 10+00.00

END CONSTRUCTION
-Y- STA. 26+00.00

BEGIN TIP PROJECT R-5921
-L- STA. 10+00.00

END TIP PROJECT R-5921
-L- STA. 292+30.00

-L- STA 235+45 ±
BEGIN EXIST DUAL BRIDGE

END CONSTRUCTION
-L- STA. 294+33.00

-L- STA 237+44 ±
END EXIST DUAL BRIDGE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2024 = 5,500 – 13,800
ADT 2045 = 7,000 – 17,500
K = 9 %
D = 55 %
T = 7 % *
V = 60 MPH *[1]
* TTST = 3% DUAL = 4%
FUNC CLASS =
MINOR RURAL ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-5921 = 5.347 MILES

TOTAL LENGTH TIP PROJECT R-5921 = 5.347 MILES

*[1] NOTE: US 276 FROM -L- STA 10+00 TO -L- STA 37+00
POSTED SPEED = 35 MPH

NCDOT CONTACT: JEANETTE WHITE, PE

PLANS PREPARED BY:	*PLANS PREPARED FOR:*
TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	NORTH CAROLINA DEPARTMENT OF TRANSPORATION DIVISION 14 252 Webster Rd Sylva, NC 28779

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JANUARY 9, 2023

LETTING DATE: NOVEMBER 19, 2024

JIMMY TERRY, PE
PROJECT ENGINEER

AUSTIN R. TURNER, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

9/19/2024

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR

Signed by: Randy Henegar P.E.
SIGNATURE

ROADWAY DESIGN ENGINEER

9/19/2024

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY

DocuSigned by: Jimmy Terry P.E.
SIGNATURE

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

9/18/2024
X:\NCDOT\R-5921\Roadway\Proj\R-5921_Rdy_tsh.dgn
User:smelvin

8/17/99

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-4	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B-1	ROADWAY DETAIL - ROUNDABOUT LAYOUT
2B-2	ROADWAY DETAIL - DETOUR LAYOUTS
2B-3 THRU 2B-4	ROADWAY DETAIL - CONCRETE ISLAND & U-TURN LAYOUTS
2C-1 THRU 2C-9	SPECIAL DETAILS
2D-1 thru 2D-3	DRAINAGE DETAILs
2G-1 THRU 2G-3	GEOTECHNICAL DETAILS - STANDARD TEMPORARY WALL
3B-1	EARTHWORK SUMMARY, ASPHALT PAVEMENT REMOVAL & BREAKING SUMMARY, AND SHOULDER BERM GUTTER SUMMARY
3B-2	GUARDRAIL SUMMARY
3D-1 THRU 3D-9	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
3P-1	PARCEL INDEX SHEET
4 THRU 26	PLAN SHEETS
27 THRU 38	PROFILE SHEETS
RW01 THRU RW26	SURVEY CONTROL SHEETS
TMP-1 THRU TMP-33	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-13	PAVEMENT MARKING PLANS
E-1	ELECTRICAL PLANS
EC-1 THRU EC-50	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL
RF-2 THRU RF-3	STREAMBANK REFORESTATION DETAIL
SIGN-1 THRU SIGN-18	SIGNING PLANS
SIG-1.0 THRU SIG-5.0	SIGNAL PLANS
UC-1 THRU UC-29	UTILITIES CONSTRUCTION PLANS
UO-1 THRU UO-26	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION INDEX
X-1B THRU X-1D	CROSS-SECTIONS SUMMARY SHEETS
X-1 THRU X-137	CROSS-SECTIONS
S-1 THRU S-3	STRUCTURE PLANS

STANDARD DRAWINGS

REV.

2024 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Contracts Standards and Development Unit - N. C. Department of Transportation - Raleigh, N. C., Dated January 16, 2024 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
	DIVISION 2 - EARTHWORK
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.05	Method of Obtaining Superelevation - Divided Highways
225.06	Method of Grading Sight Distance at Intersections
	DIVISION 3 - PIPE CULVERTS
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
	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 8 - INCIDENTALS
815.02	Subsurface Drain
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.27	Reinforced Concrete Endwall - for Single 60" Pipe 90 Skew
838.39	Reinforced Concrete Endwall - for Single 72" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
838.57	Reinforced Brick Endwall - for Single 60" Pipe 90 Skew
838.69	Reinforced Brick Endwall - for Single 72" Pipe 90 Skew
838.75	Notes for Reinforced Brick Endwall - Std. Dwg 838.51 thru 838.70
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.17	Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.20	Frames and Wide Slot Flat Grates
840.22	Frames and Wide Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.26	Brick Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe

STD.NO.	TITLE
	DIVISION 8 - INCIDENTALS -CONTINUE
840.29	Frames and Narrow Slot Flat Grates
840.30	Driveway Drop Inlet
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.51	Brick Manhole - 12" thru 36" Pipe
840.52	Precast Manhole - 4', 5' and 6' Diameter 12" thru 48" Pipe
840.53	Precast Manhole with Masonry Base - 12" thru 42" Pipe
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.71	Concrete and Brick Pipe Plug
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
846.02	Drop Inlet Installation in Expressway Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
848.06	Curb Ramp
852.01	Concrete Islands
852.04	Method for Placement of Drop Inlets in Grassed Median - Using 1'-6" Curb and Gutter
852.06	Method for Placement of Drop Inlets in Concrete Islands
852.07	Median Curb for Traffic Bearing Grated Drop Inlet for Use with 2'-9" Curb and Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
866.04	Barbed Wire Fence - with Wood Posts
876.01	Rip Rap in Channels and Ditches
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

PROJECT REFERENCE NO.	SHEET NO.
R-5921	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 035018 ENGINEER JIMMY L. TERRY

10/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GENERAL NOTES

2024 SPECIFICATIONS
EFFECTIVE: 01-16-2024
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 AND 225.05 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 NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY, HAYWOOD EMC, AT&T, NCENC, CHARTER, ZITO MEDIA, AND TOWN OF MAGGIE VALLEY (WATER & SEWER)

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 848.06.

ROCK

ROCK IS ANTICIPATED -L- 60+22, 82 RT, -L- 134+73, 72 RT, AND -L- 138+85, 66 LT. BLASTING MAY BE REQUIRED FOR EXCAVATION ON THE PROJECT. SEE SECTION 220 OF THE STANDARD SPECIFICATIONS AND IF APPLICABLE, ROCK BLASTING PROVISION.

8/22/2024
R-5921_Roadway\Proj\R-5921_Rdy_tsh.dgn
User:rpruett

5/20/2024

PROJECT REFERENCE NO.	SHEET NO.
R-5921	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Secondary Horiz and Vert Control Point
- Vertical Benchmark
- Existing Right of Way Monument
- Proposed Right of Way Monument (Rebar and Cap)
- Proposed Right of Way Monument (Concrete)
- Existing Permanent Easement Monument
- Proposed Permanent Easement Monument (Rebar and Cap)
- Existing C/A Monument
- Proposed C/A Monument (Rebar and Cap)
- Proposed C/A Monument (Concrete)
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Existing Control of Access Line — CA
- Proposed Control of Access Line — CA
- Proposed ROW and CA Line — RW CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage/Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:

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

VEGETATION:

- Single Tree
- Single Shrub
- Hedge

- Woods Line
- Orchard
- Vineyard — Vlneyard

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

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

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

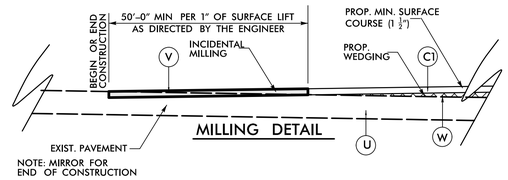
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line (SUE – LOS B)* — 2UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

6/2/99

PAVEMENT SCHEDULE FINAL

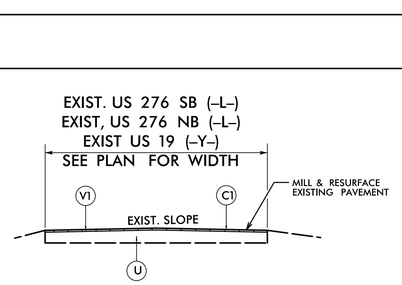
C1	PROP. APPROX. 1 ½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
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 4" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	1'-6" CONCRETE CURB AND GUTTER.
R3	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
R4	EXPRESSWAY GUTTER
R5	8" X 12" CONCRETE CURB
R6	9" X 18" CONCRETE CURB
R7	12" CONCRETE TRUCK APRON.
R8	4" CONCRETE ISLAND COVER
R9	SHOULDER BERM GUTTER
R10	2'-9" CONCRETE CURB AND GUTTER.
R11	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	INCIDENTAL MILLING, SEE THIS SHEET FOR DETAIL
V1	1½" MILLING
W	WEDGING EXISTING PAVEMENT, SEE THIS SHEET FOR DETAILS

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



USE MILLING DETAIL FOR TIE–IN LOCATIONS

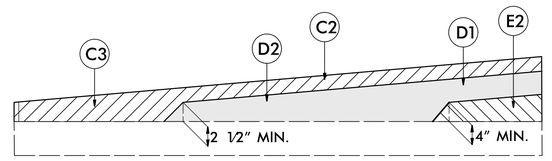
–L– STA. 291+55± TO –L– STA. 292+30±
–Y– STA. 10+00.00 TO –Y– STA. 10+75.00
–Y– STA. 25+25.00 TO –Y– STA. 26+00.00



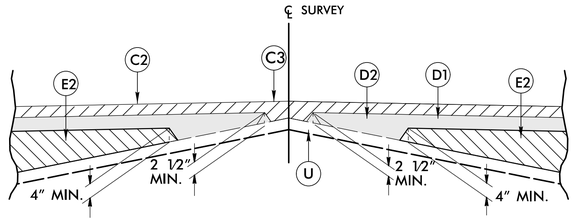
–L– STA. 234+00± TO 235+10± (BEGIN EXIST BRIDGE), LT
–L– STA. 237+10± (END EXIST. BRIDGE) TO –L– STA 238+20±, LT

–L– STA. 234+70± TO –L– STA. 235+81± (BEGIN EXIST. BRIDGE), RT
–L– STA. 237+78± (END EXIST. BRIDGE) TO –L– STA 238+90±, RT

–Y– STA. 10+00.00 TO –Y– STA. 26+00.00
(SEE TMP–4 & 5, PHASE I – STEP 2)



Wedging Detail For Resurfacing



Detail Showing Method of Wedging

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2A-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY
Jimmy L Terry
8/26/2024

PAVEMENT DESIGN ENGINEER

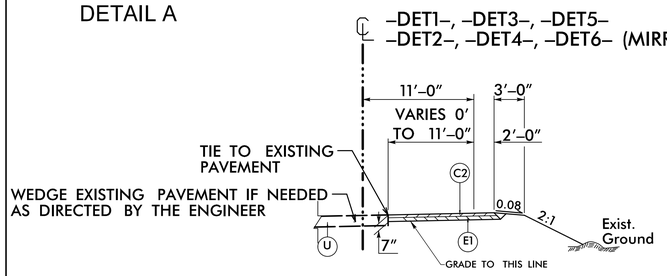
NORTH CAROLINA PROFESSIONAL SEAL 041986 ENGINEER MATTHEW BREWER
Matthew Brewer
8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST., STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

NOTE: UNLESS OTHERWISE NOTED USE 3" S9.5C AND 4" B25.0C FOR ALL TEMPORARY PAVEMENT AREAS.

DETAIL A



USE DETAIL A

-DET1- STA. 10+00.00 TO -DET1- STA. 11+26.33
-DET1- STA. 12+48.83 TO -DET1- STA. 13+49.60

-DET2- STA. 10+00.00 TO -DET2- STA. 10+94.49
-DET2- STA. 12+14.40 TO -DET2- STA. 13+37.04

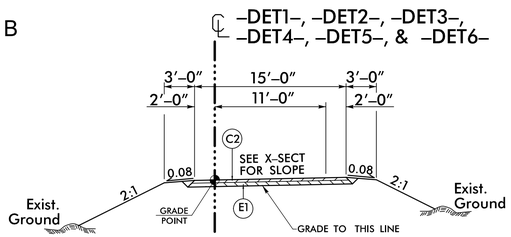
-DET3- STA. 10+00.00 TO -DET3- STA. 11+07.63
-DET3- STA. 12+21.76 TO -DET3- STA. 13+40.13

-DET4- STA. 10+00.00 TO -DET4- STA. 11+14.76
-DET4- STA. 12+25.64 TO -DET4- STA. 13+28.08

-DET5- STA. 10+00.00 TO -DET5- STA. 10+91.91
-DET5- STA. 12+16.38 TO -DET5- STA. 13+31.38

-DET6- STA. 10+00.00 TO -DET6- STA. 11+14.27
-DET6- STA. 12+30.60 TO -DET6- STA. 13+37.81

DETAIL B



USE DETAIL B

-DET1- STA. 11+26.33 TO -DET1- STA. 12+48.83
-DET2- STA. 10+94.49 TO -DET2- STA. 12+14.40
-DET3- STA. 11+07.63 TO -DET3- STA. 12+21.76
-DET4- STA. 11+14.76 TO -DET4- STA. 12+25.64
-DET5- STA. 10+91.91 TO -DET5- STA. 12+16.38
-DET6- STA. 11+14.27 TO -DET6- STA. 12+30.60

8/20/2024
R-5921\Roadway\Proj\R-5921_Rdy_typ.dgn
jlterry1

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2A-2

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY
8/26/2024

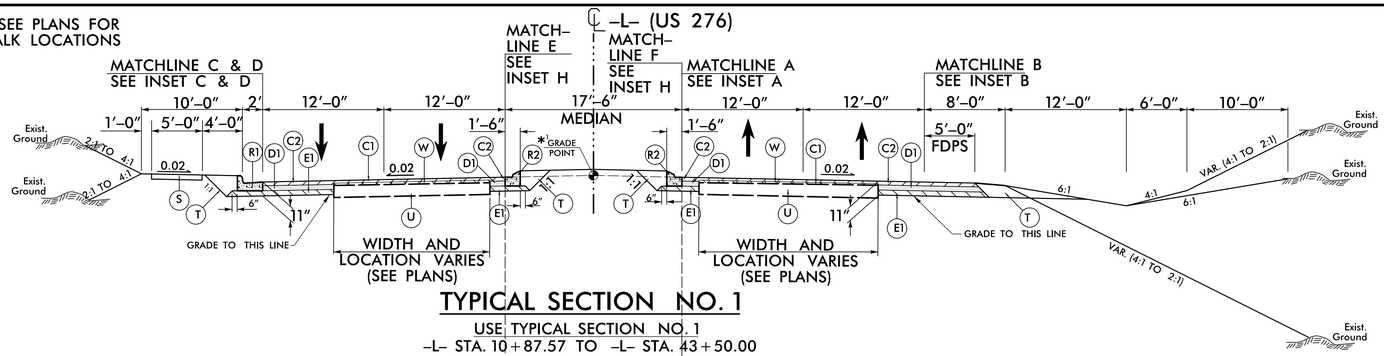
PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 041986 ENGINEER MATTHEW BREWER
8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST., STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

PAVEMENT SCHEDULE FINAL	
C1	1 ½" S9.5C
C2	3" S9.5C
D1	4" I19.5C
E1	4" B25.0C
R1	2'-6" C & G
R2	1'-6" C & G
R3	5" MCI (SURFACE MOUNTED)
R4	EXPRESSWAY GUTTER
R9	SHL. BERM GUTTER
R10	2'-9" C & G
T	EARTH MATERIAL
S	4" CONC. SIDEWALK
U	EXISTING PAVEMENT
W	WEDGING

NOTE: SEE PLANS FOR SIDEWALK LOCATIONS

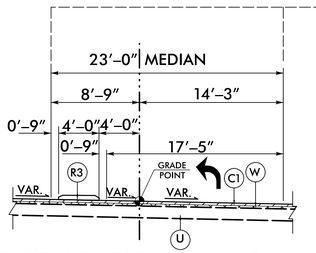


TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
–L– STA. 10+87.57 TO –L– STA. 43+50.00

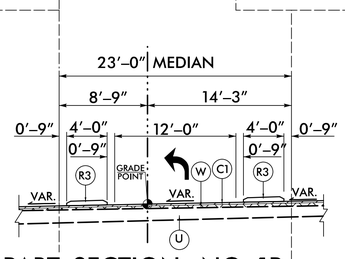
NOTE: TRANSITION BETWEEN TYP. SECT. NO. 1 AND TYP. SECT. NO. 2 AS FOLLOWS:
–L– STA. 43+50.00 TO –L– STA 43+70.00
(GRADE ENDS 43+50.00)

NOTE: TRANSITION BETWEEN PART SECT. NO 1A AS FOLLOWS:
–L– STA. 16+70.00 TO –L– STA 20+00.00



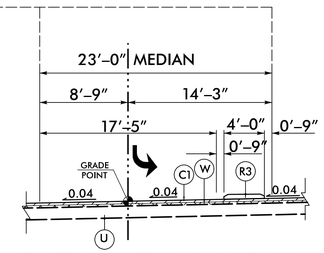
PART SECTION NO. 1A

USE PART SECTION NO. 1A
–L– STA. 20+00.00 TO –L– STA. 25+75.28



PART SECTION NO. 1B

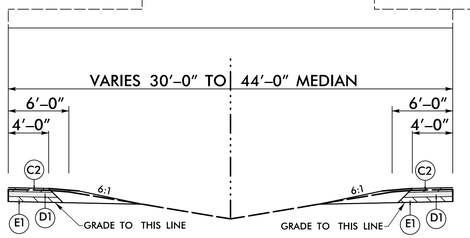
USE PART SECTION NO. 1B
–L– STA. 25+75.28 TO –L– STA. 28+06.26



PART SECTION NO. 1C

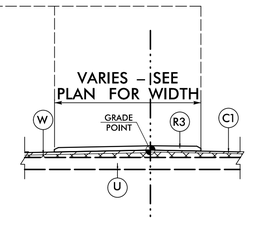
USE PART SECTION NO. 1C
–L– STA. 28+06.26 TO –L– STA. 32+30.00

NOTE: TRANSITION BETWEEN PART. SECT. NO. 1B AND PART SECT. NO 1D AS FOLLOWS:
–L– STA. 32+30.00 TO –L– STA. 35+50.00



PART SECTION NO. 1D

USE PART SECTION NO. 1D
–L– STA. 35+50.00 TO –L– STA. 43+50.00

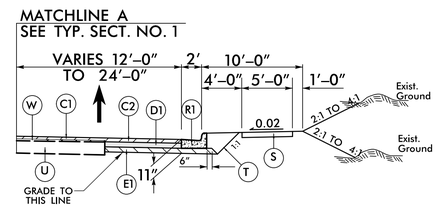


PART SECTION NO. 1E

USE PART SECTION NO. 1E
–L– STA. 10+87.57 TO –L– STA. 11+90.00

INSET A

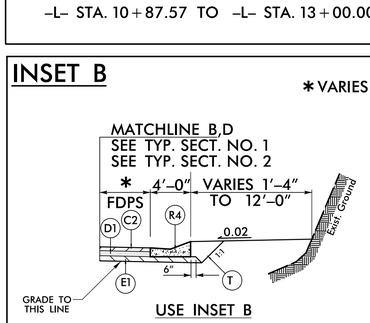
NOTE: SEE PLANS FOR SIDEWALK LOCATIONS



USE INSET A
–L– STA. 10+87.57 TO –L– STA. 13+00.00, RT

INSET B

*VARIES 6' TO 13'



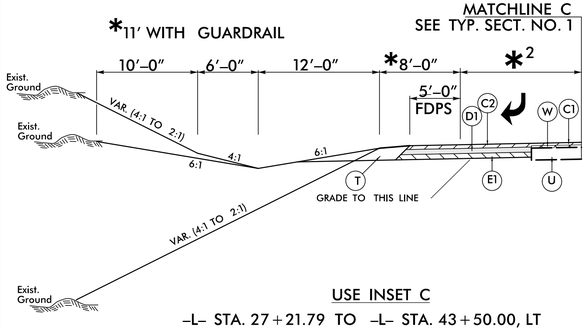
USE INSET B
–L– STA. 20+00.00 TO –L– STA. 24+40±, RT
–L– STA. 267+50.00 TO –L– STA. 271+33±, LT
–L– STA. 281+88.00 TO –L– STA. 285+18±, LT

INSET C

*2 12'–0"
–L– STA. 27+21.79 TO –L– STA. 32+30.00, LT

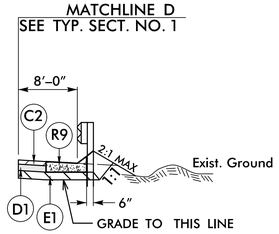
0'–0" TO 12'–0"
–L– STA 32+30.00 TO –L– STA. 34+30.00, LT

0'–0"
–L– 34+30.00 TO –L– STA. 43+50.00



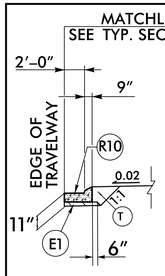
USE INSET C
–L– STA. 27+21.79 TO –L– STA. 43+50.00, LT

INSET D



USE INSET D
-L- STA. 27+20.00 LT TO -L- 34+05.00 LT

INSET H



SEE DETAIL SHEET 2C-1 FOR 2'–9" C&G

USE INSET H
-L- STA. 17+90.00 LT TO -L- 20+00.00 LT
-L- STA. 32+30.00 RT TO -L- 35+00.00 RT

NOTE:
TRANSITION TO 1'–6" C&G (SEE DETAIL SHT 2C–1) AS FOLLOWS:
–L– STA. 17+80.00 TO –L– STA. 17+90.00 LT

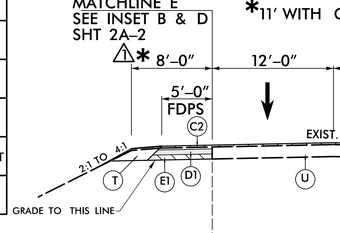
TRANSITION TO 4' PAVED SHOULDER AS FOLLOWS:
–L– STA. 35+00.00 TO –L– STA. 35+50.00 RT

8/20/2024
K:\NCDOT\R-5921\Roadway\Proj\R-5921_Rdy_typ.dgn
User:jmeyer

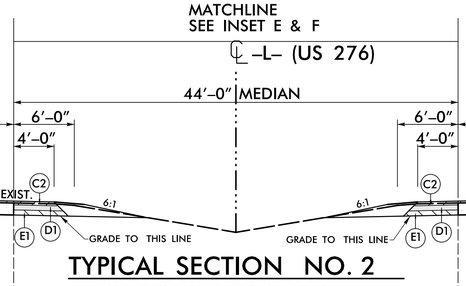
6/2/99

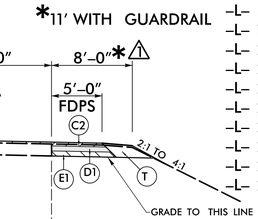
PAVEMENT SCHEDULE - FINAL			
C1	1 ½" S9.5C	R5	8"x12" CURB
C2	3" S9.5C	R11	5" MCI (KEYED IN)
D1	4" I19.5C	T	EARTH MATERIAL
E1	4" B25.0C	U	EXISTING PAVEMENT
R4	EXPRESSWAY GUTTER	W	WEDGING

MATCHLINE E
SEE INSET B & D
SHT 2A–2



MATCHLINE
SEE INSET E & F





⚠ GUARDRAIL OFFSETS VARY AT BELOW STATION RANGES (SEE PLANS FOR OFFSETS)
–L– 74+00 TO 78+50 RT
–L– 124+00 TO 128+00 LT
–L– 228+98.75 TO 233+50 RT
–L– 231+00 TO 233+25 LT
–L– 237+00 TO 244+80 LT
–L– 239+50 TO 244+50.25 RT
–L– 245+00 TO 254+00 RT
–L– 261+85 TO 268+50 RT
–L– 271+00 TO 272+31 RT
–L– 283+00 TO 285+00 RT

PROJECT REFERENCE NO.	SHEET NO.
R–5921	2A–3

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L TERRY
8/26/2024

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041986 MATTHEW BREWER
8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST., STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

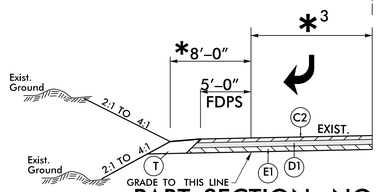
NOTE: TRANSITION BETWEEN TYP. SECT. NO. 2 AND EXISTING AS FOLLOWS:
–L– STA. 287+30.00 TO –L– STA 292+30.00, LT
–L– STA. 288+00.00 TO –L– STA. 292+30.00, RT

TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

NO PROPOSED GRADE

–L– STA. 43+50.00 TO –L– STA. 235+45± (BEGIN EXIST. DUAL BRIDGES)
–L– STA. 237+44± (END EXIST. DUAL BRIDGES) TO –L– STA. 292+30.00



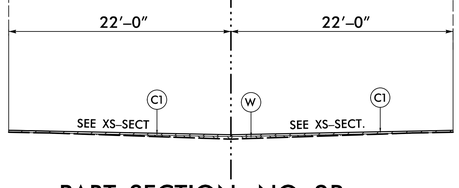
PART SECTION NO. 2A

USE PART SECTION NO. 2A

*3 VARIES 0′–0″ TO 12′–0″ (RT TURN)
–L– STA. 135+55.85 TO –L– STA. 142+00.00, LT
–L– STA. 163+92.24 TO –L– STA. 169+00.00, LT
–L– STA. 215+86.63 TO –L– STA. 218+25.00, LT
–L– STA. 277+94.19 TO –L– STA. 284+50.00, LT

VARIES 0′–0″ TO 30′± (U–TURN BULB)
–L– STA. 183+95.61 TO –L– STA. 186+26.36, LT

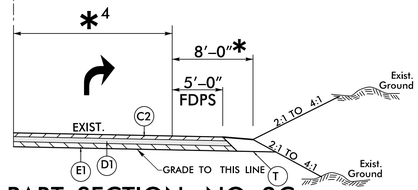
VARIES 0′–0″ TO 45′± (U–TURN BULB)
–L– STA. 242+98.72 TO –L– STA. 245+29.55, LT



PART SECTION NO. 2B

USE PART SECTION NO. 2B

–L– STA. 59+79.38 TO –L– STA. 60+35.25
–L– STA. 79+80.90 TO –L– STA. 80+33.95
–L– STA. 102+19.51 TO –L –STA 102+73.45
–L– STA. 117+21.88 TO –L– STA 117+80.94
–L– STA. 134+41.91 TO –L– STA 134+99.11
–L– STA. 200+59.38 TO –L– STA. 201+36.12
–L– STA. 214+99.10 TO –L– STA. 215+62.03
–L– STA. 276+71.05 TO –L– STA. 277+51.56
–L– STA. 285+50.00 TO –L– STA. 287+07.68



PART SECTION NO. 2C

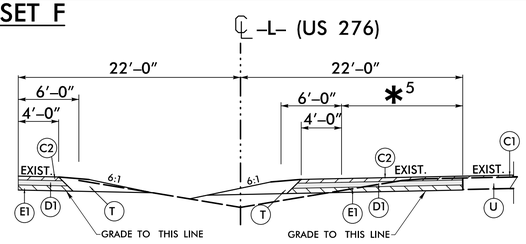
USE PART SECTION NO. 2C

*4 VARIES 0′–0″ TO TO 25′–8″ (U–TURN BULB)
–L– STA. 134+51.40 TO –L– STA. 136+79.06, RT

VARIES 0′–0″ TO 30′± (U–TURN BULB)
–L– STA. 186+42.37 TO –L– STA. 189+12.53, RT
–L– STA. 222+87.87 TO –L– STA. 225+46.93, RT

VARIES 0′–0″ TO 12′–0″ (RT TURN)
–L– STA. 208+00.00 TO –L– STA. 211+18.61, RT
–L– STA. 273+50.00 TO –L– STA. 276+63.47, RT

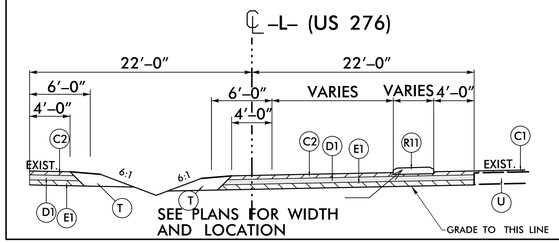
INSET F



NOTE: USE MIRRORED INSET FOR LT SIDE

*5 0′–0″ TO 12′–0″			12′	12′–0″ TO 20′–0″
–L– STA. 52+50.00 TO –L– STA. 54+50.00, RT	–L– STA. 206+00.00 TO –L– STA. 208+00.00, LT		–L– STA. 54+50.00 TO –L– STA. 59+79.38, RT	–L– STA. 143+50.00 TO –L– STA. 145+52.01, RT
–L– STA. 65+00.00 TO –L STA. 67+00.00, LT	–L– STA. 208+00.00 TO –L– STA. 210+00.00, RT		–L– STA. 60+35.25 TO –L STA. 65+00.00, LT	–L– STA. 157+50.00 TO –L– STA. 162+14.67, RT
–L– STA. 73+00.00 TO –L– STA. 75+00.00, RT	–L– STA. 220+00.00 TO –L– STA. 222+00.00, LT		–L– STA. 75+00.00 TO –L– STA. 79+80.90, RT	–L– STA. 164+30.41 TO –L– STA. 168+50.00, LT
–L– STA. 85+50.00 TO –L– STA. 87+50.00, LT	–L– STA. 228+75.00 TO –L– STA. 230+75.00, LT		–L– STA. 80+33.95 TO –L– STA. 85+50.00, LT	–L– STA. 182+00.00 TO –L– STA. 185+31.88, LT
–L– STA 96+00.00 TO –L– STA. 98+00.00, RT	–L– STA. 238+00.00 TO –L– STA. 240+00.00, RT		–L– STA. 98+00.00 TO –L STA. 102+19.51, RT	–L– STA. 187+37.94 TO –L– STA. 192+00.00, LT
–L– STA. 108+00.00 TO –L– STA. 110+00.00, LT	–L– STA. 250+50.00 TO –L– STA. 252+50.00, LT		–L– STA. 102+73.45 TO –L– STA. 108+00.00, LT	–L– STA. 223+82.78 TO –L– STA. 228+75.00, LT
–L– STA. 110+50.00 TO –L– STA. 112+50.00, RT	–L– STA. 254+50.00 TO –L– STA. 256+50.00, RT		–L– STA. 112+50.00 TO –L– STA. 117+21.88, RT	–L– STA. 240+00.00 TO –L– STA. 243+99.65, RT
–L– STA. 123+00.00 TO –L– STA. 125+00.00, LT	–L– STA. 266+00.00 TO –L– STA. 268+00.00, LT		–L– STA. 117+80.94 TO –L– STA. 123+00.00, LT	–L– STA. 246+05.65 TO –L– STA. 250.+50.00, LT
–L– STA. 127+50.00 TO –L– STA. 129+50.00, RT	–L– STA. 270+00.00 TO –L– STA. 272+00.00, RT		–L– STA. 129+50.00 TO –L– STA. 134+41.91, RT	–L– STA. 256+50.00 TO –L– STA. 260+19.65, RT
–L– STA. 140+00.00 TO –L– STA. 142+00.00, LT	–L– STA. 283+00.00 TO –L– STA. 285+00.00, LT		–L– STA. 134+99.11 TO –L– STA. 140+00.00, LT	–L– STA. 262+25.65 TO –L– STA. 266+00.00, LT
–L– STA. 141+50.00 TO –L– STA. 143+50.00, RT	–L– STA. 283+00.00 TO –L– STA. 285+00.00, RT		–L– STA. 195+50.00 TO –L– STA. 200+59.38, RT	
–L– STA. 155+50.00 TO –L– STA. 157+50.00, RT			–L– STA 201+36.12 TO –L– STA. 206+00.00, LT	
–L– STA. 168+50.00 TO –L– STA. 170+50.00, LT			–L– STA. 210+00.00 TO –L– STA. 214+99.10, RT	
–L– STA. 180+00.00 TO –L– STA. 182+00.00, RT			–L– STA. 215+62.03 TO –L– STA. 220+00.00, LT	
–L– STA. 192+00.00 TO –L– STA. 194+00.00, LT			–L– STA. 272+00.00 TO –L– STA. 276+71.05, RT	
–L– STA. 193+50.00 TO –L– STA. 195+50.00, RT			–L– STA. 277+51.56 TO –L– STA. 283+00.00, LT	
			–L– STA. 285+00.00 TO –L– STA. 286+50.00, RT	

INSET G



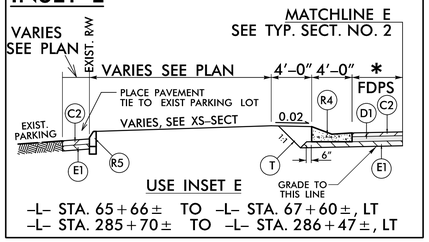
SEE DETAIL SHT. 2B–3 & 2B–4 FOR CROSS–OVER LAYOUT

–L– STA. 145+50.00 TO –L– STA. 146+69.57, RT
–L– STA. 162+12.63 TO –L– STA. 162+97.46, RT
–L– STA. 163+44.01 TO –L– STA. 164+32.63, LT (MIRRORED)
–L– STA. 185+29.88 TO –L– STA. 185+79.53, RT
–L– STA. 186+90.35 TO –L– STA. 187+39.94, LT (MIRRORED)
–L– STA. 211+40.00 TO –L– STA. 212+40.00 (MIRRORED)
–L– STA 223+25.00 TO –L– STA. 223+75.00, LT (MIRRORED)
–L– STA. 243+97.65 TO –L– STA. 244+81.80, RT
–L– STA. 245+27.49 TO –L– STA. 246+07.65, LT
–L– STA. 260+17.65 TO –L– STA. 261+01.80, RT
–L– STA. 261+47.46 TO –L– STA. 262+27.65, LT

NOTE: SEE PLAN AND DETAIL
–L– STA. 162+97.46 TO –L– STA. 163+44.01
–L– STA. 185+79.53 TO –L– STA. 186+90.35
–L– STA. 244+81.80 TO –L– STA. 245+27.49
–L– STA. 261+01.80 TO –L– STA. 261+47.46

INSET E

*VARIES 6′ TO 13′

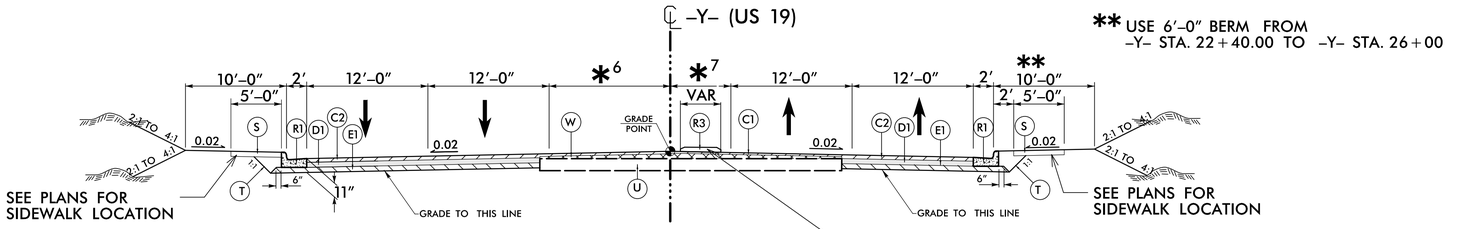


–L– STA. 65+66± TO –L– STA. 67+60±, LT
–L– STA. 285+70± TO –L– STA. 286+47±, LT

8/30/2024
K:\DOT\R-5921\Roadway\Proj\R-5921_Rdy_typ.dgn
User:mplyle

6/2/99

PAVEMENT SCHEDULE FINAL	
C1	1 ½" S9.5C
C2	3" S9.5C
D1	4" I19.5C
E1	4" B25.0C
R1	2'-6" C & G
R2	1'-6" C & G
R3	5" MCI (SURFACE MOUNTED)
R6	9"x18" CURB
R7	12"MC TRUCK APRON
R8	4"CONC. ISL. COV
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	1½" MILLING
W	WEDGING

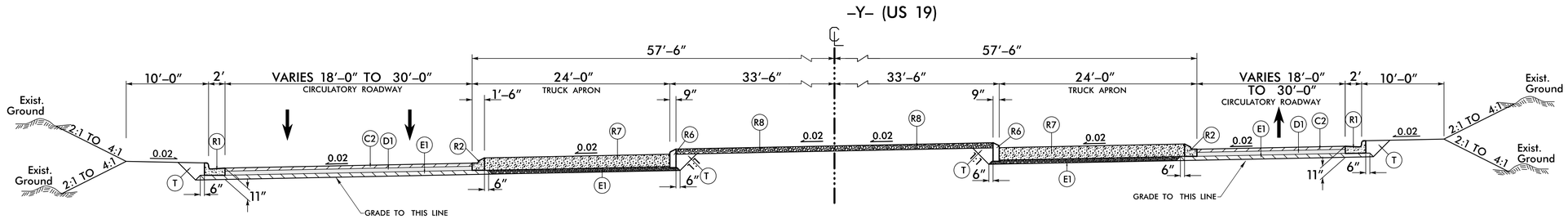


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

–Y– STA. 10+00.00 TO –Y– STA. 16+13.93
–Y– STA. 17+77.04 TO –Y– STA. 26+00.00

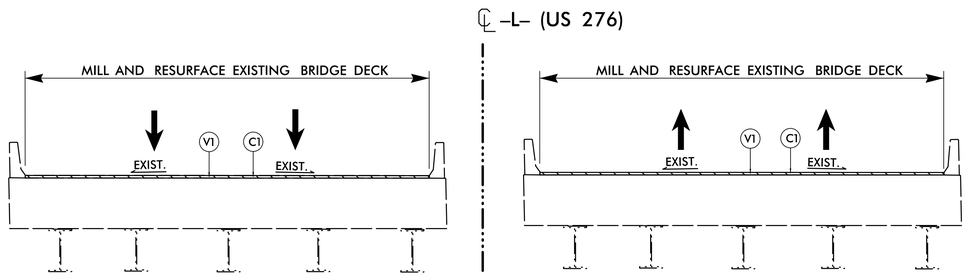
*6	6'–0" TO 12'–0"	–Y– STA 10+00.00 TO 13+00.00 LT
	12'–0"	–Y– STA 13+00.00 TO 15+60.64 LT
	VARIES (SEE PLAN)	–Y– STA 15+60.64 TO 16+13.93 LT
		–Y– STA 17+77.04 TO 18+86.10 LT
	6'–0"	–Y– STA 18+86.10 TO 26+00.00 LT
*7	6'–0"	–Y– STA 10+00.00 TO 15+05.80 RT
	VARIES (SEE PLAN)	–Y– STA 15+05.80 TO 16+13.93 RT
		–Y– STA 17+77.04 TO 18+86.10 RT
	12'–0"	–Y– STA 18+86.10 TO 22+25.00 RT
	12'–0" TO 6'–0"	–Y– STA 22+25.00 TO 26+00.00 RT



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

–Y– STA. 16+13.93 TO –Y– STA. 17+77.04
–L– STA. 10+00.00 TO –L– STA. 10+87.57



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5

-L- STA. 235+10+/- TO -L- STA. 237+10 +/- (LEFT BRIDGE)
-L- STA. 235+81+/- TO -L- STA. 237+78+/- (RIGHT BRIDGE)

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2A-4

ROADWAY DESIGN ENGINEER
SEAL 35018
JIMMY L. TERRY
ENGINEER
8/26/2024

PAVEMENT DESIGN ENGINEER
SEAL 041986
MATTHEW BREWER
ENGINEER
8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST., STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2B-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 035018 ENGINEER JIMMY L. TERRY
8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

REVISIONS

8/17/99

PROP MONOLITHIC CONC ISLAND
PROP CONC TRUCK APRON
PROP CONC ISLAND COVER

NAD 83'2011

US 276

US 19

US 19

-L-

-Y-

-Y-

1'-6" C&G

CONC TRUCK APRON

9.48' CURB

75.5' INSCRIBED CIRCLE RADIUS

87.5' INSCRIBED CIRCLE RADIUS

+40-L-
3.44'LT

+41.15-L-
8.81'RT

+24.31-L-
13.70'LT

+31.38-L-
9.87'RT

+30.75-L-
4.22'RT

+14.43-L-
16.34'LT

+10.46-L-
1.38'LT

+72.53-Y-
14.24'LT

+74.20-Y-
7.18'LT

+63.13-Y-
12.56'LT

+94.99-Y-
4.25'RT

+65.56-Y-
0.76'LT

+82.94-Y-
9.20'RT

+91.22-Y-
17.02'RT

+81.37-Y-
14.13'RT

+87.10-L-
20.75'RT

+97.84-L-
32.75'LT

10+87.57 -L- =
RDABT 1+28.17
EL. 2,756.85'

3.75'R,+91.20-L-
15.39'RT

1.75'R,+88.35-L-
24.77'LT

+04.06-L-
53.16'LT

149.25'R

+86.84-L-
42.55'RT

+13.48-L-
32.81'RT

3.75'R,+11.57-Y-
19.55'LT

-Y- 16+13.93 =
RDABT 0+00 =
RDABT .5+26.67
EL. 2,756.85'

+09.96-Y-
56.34'LT

+91.28
21.69'RT

+80.07-Y-
29.95'LT

+90.76
39.19'LT

+46.87-Y-
73.21'LT

+85.97-Y-
30.00'LT

+87.52-Y-
53.05'LT

+00.00-Y-

+69.78-Y-
36.00'LT

+49.99-Y-
11.31'LT

+50.00-Y-

1.75'R,+78.16
21.40'LT

2'R,+69.10-Y-
3.00'LT

1.75'R,+12.78-Y-
24.29'RT

+90.28-Y-
30.00'RT

+04.96-Y-
56.53'RT

+69.86-Y-
82.49'RT

+35.79-Y-
81.59'RT

3.75'R,+78.98-Y-
23.91'RT

+20.64-Y-
46.59'RT

+94.46-Y-
36.00'RT

2'R,+01.99-Y-
3.00'RT

-Y- 17+15.06 86.61'RT =
RDABT 3+74.75
EL. 2,760.75'

-Y- 17+77.04 =
RDABT 2+72.88
EL. 2,760.35'

+03.48-Y-
52.49'RT

ROUNDABOUT LAYOUT

50' 0' 50' 100'
25'

5/24/2024
X:\NCDOT\R-5921\Roadway\Proj\R-5921_Rdy_Dets_2B-1_(Roundabout_Layout).dgn
User:smelvin

8/17/99

REVISIONS

-DET1- CURVE DATA

PI Sta 11+11.65
△ = 23° 41' 27.8" (RT)
D = 11° 27' 33.0"
L = 206.74'
T = 104.87'
R = 500.00'

PI Sta 12+81.94
△ = 15° 35' 04.0" (LT)
D = 11° 27' 33.0"
L = 136.00'
T = 68.42'
R = 500.00'

-DET2- CURVE DATA

PI Sta 10+69.78
△ = 15° 53' 22.6" (LT)
D = 11° 27' 33.0"
L = 138.66'
T = 69.78'
R = 500.00'

PI Sta 12+39.17
△ = 22° 43' 54.8" (RT)
D = 11° 27' 33.0"
L = 198.37'
T = 100.51'
R = 500.00'

-DET3- CURVE DATA

PI Sta 10+82.48
△ = 18° 44' 00.7" (RT)
D = 11° 27' 33.0"
L = 163.48'
T = 82.48'
R = 500.00'

PI Sta 12+52.74
△ = 20° 14' 33.3" (LT)
D = 11° 27' 33.0"
L = 176.65'
T = 89.26'
R = 500.00'

-DET4- CURVE DATA

PI Sta 10+87.32
△ = 19° 48' 47.8" (LT)
D = 11° 27' 33.0"
L = 172.90'
T = 87.32'
R = 500.00'

PI Sta 12+51.12
△ = 17° 46' 56.2" (RT)
D = 11° 27' 33.0"
L = 155.18'
T = 78.22'
R = 500.00'

-DET5- CURVE DATA

PI Sta 10+83.21
△ = 18° 53' 47.5" (RT)
D = 11° 27' 33.0"
L = 164.90'
T = 83.21'
R = 500.00'

PI Sta 12+48.92
△ = 19° 04' 37.1" (LT)
D = 11° 27' 33.0"
L = 166.48'
T = 84.02'
R = 500.00'

-DET6- CURVE DATA

PI Sta 10+85.36
△ = 19° 22' 37.8" (LT)
D = 11° 27' 33.0"
L = 169.10'
T = 85.36'
R = 500.00'

PI Sta 12+54.26
△ = 19° 19' 57.6" (RT)
D = 11° 27' 33.0"
L = 168.71'
T = 85.16'
R = 500.00'

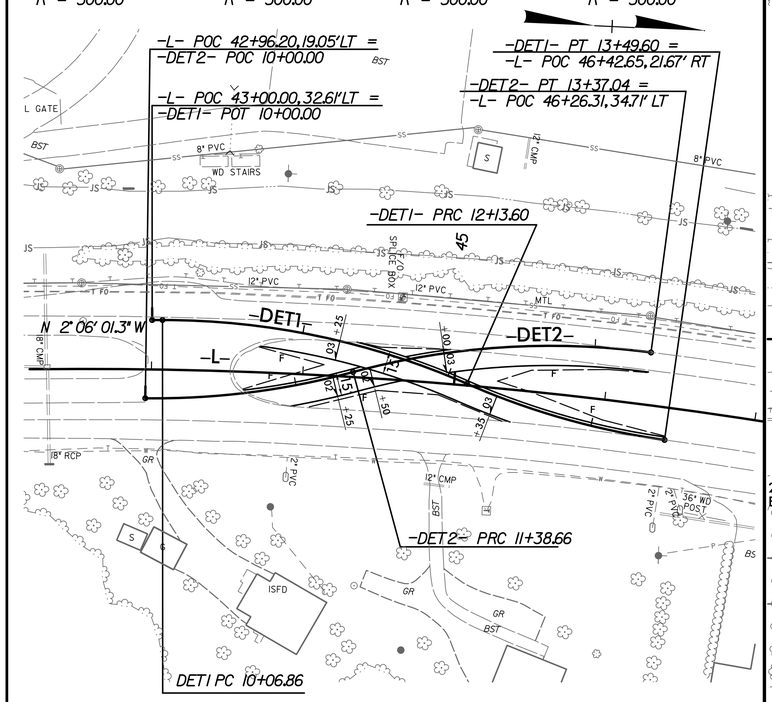
PROJECT REFERENCE NO.	SHEET NO.
R-5921	2B-2

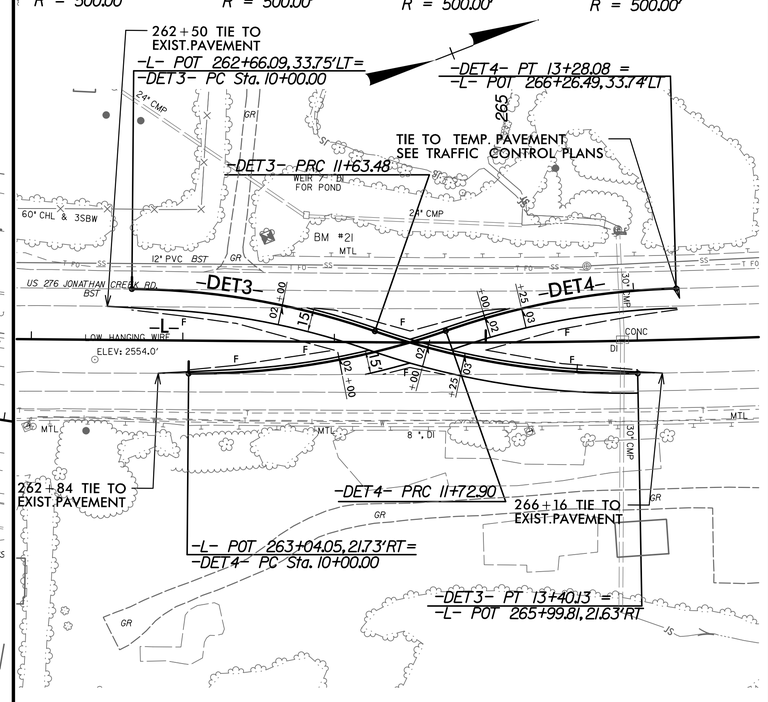
R/W SHEET NO.

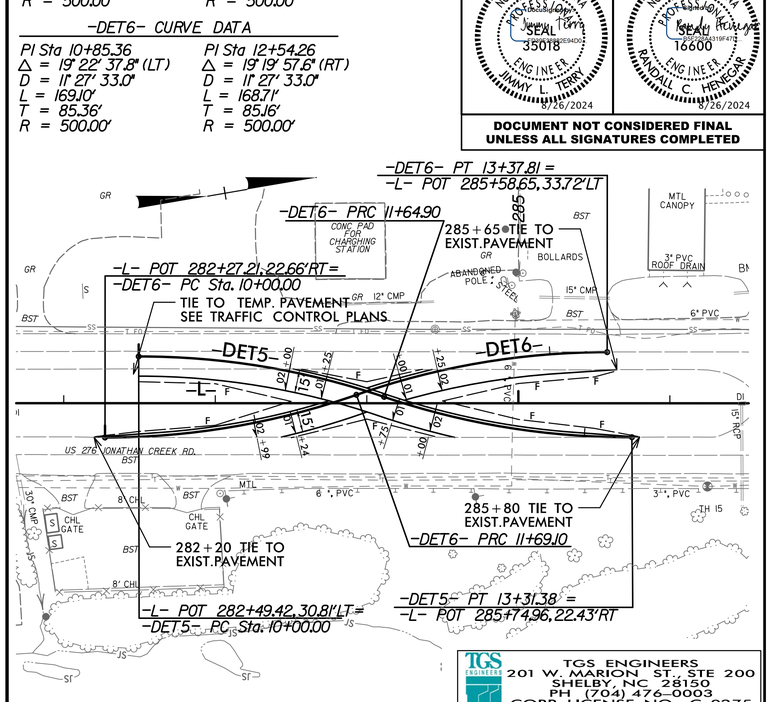
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY
8/26/2024

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16600 RANDALL C. HENEGAR
8/26/2024

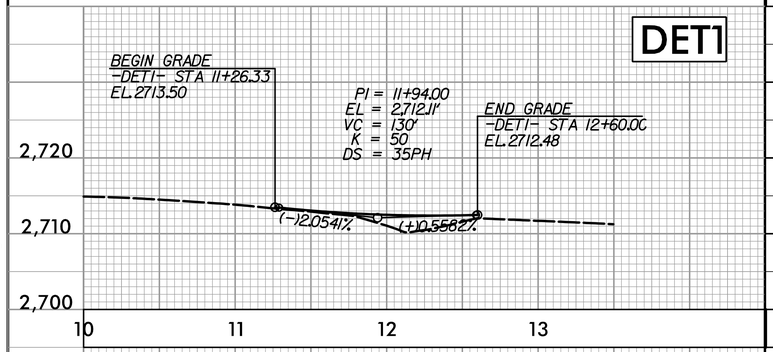
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

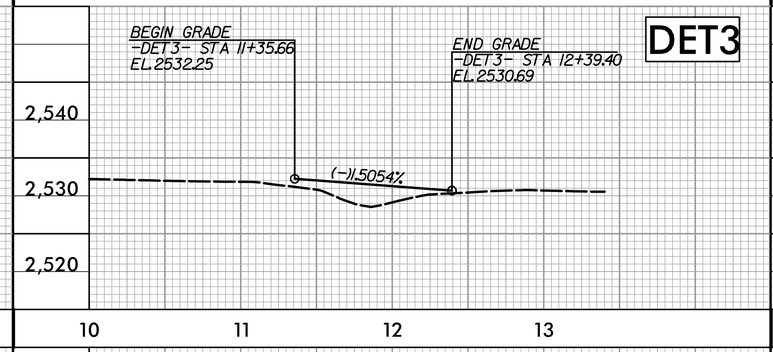


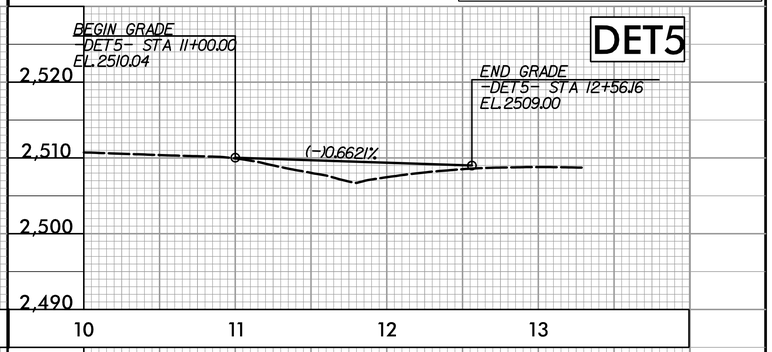


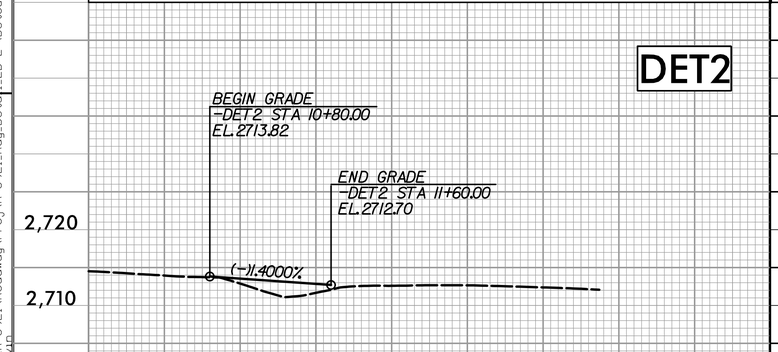


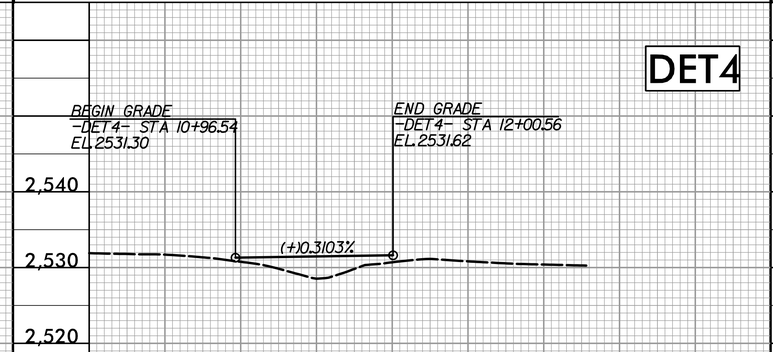
TGS ENGINEERS
201 W. MARION ST. STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

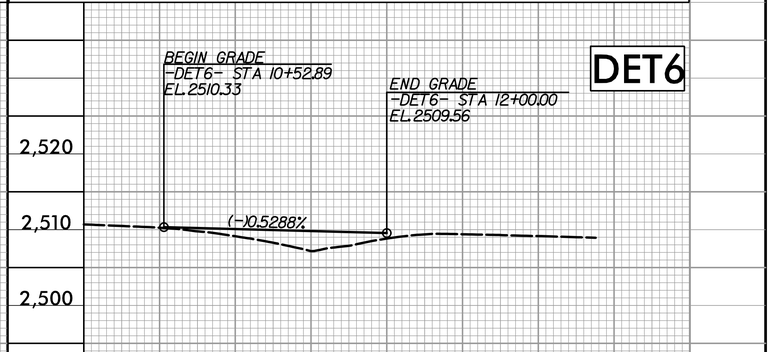












5/24/2024
X:\NCDOT\R-5921\Roadway\Proj\R-5921_Rdy_Detail_2B-2 (Detour Crossover).dgn
User:melvin

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2B-3
R/W SHEET NO.	

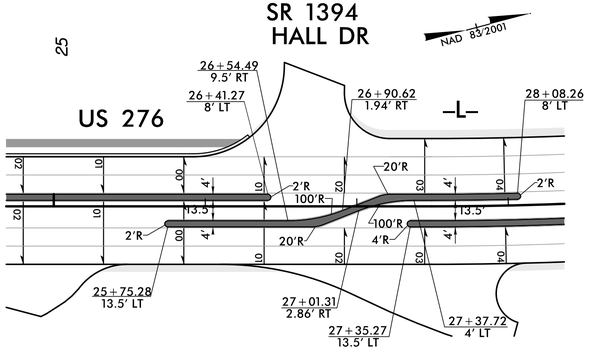
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY
8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

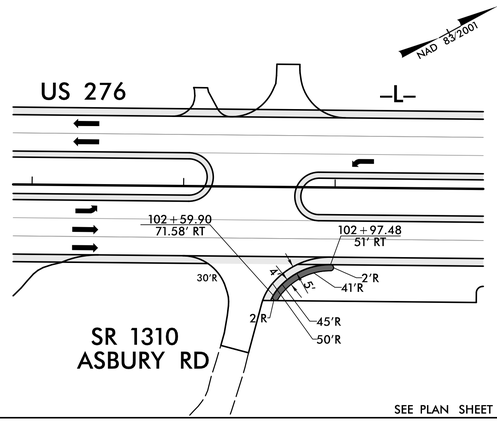
REVISIONS 8/17/99

SR 1394 HALL DR

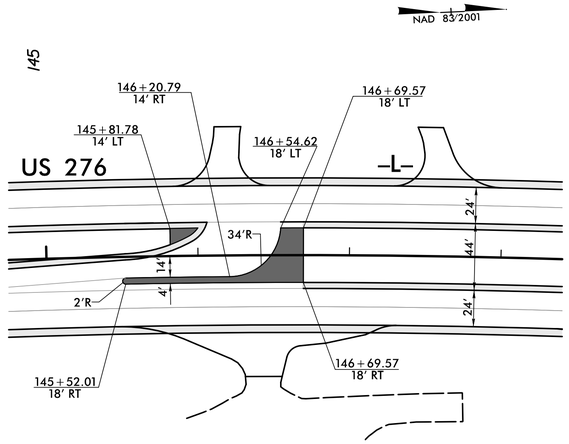


SEE PLAN SHEET NO.07

US 276 / SR 1310 ASBURY RD

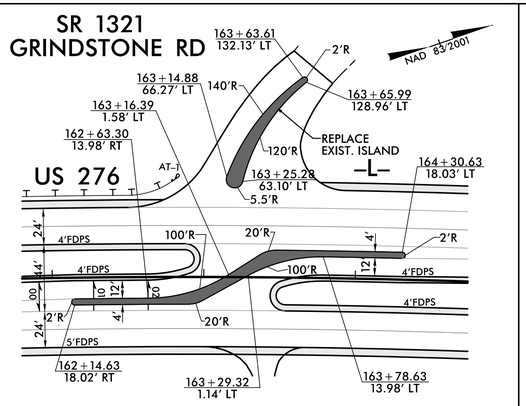


SEE PLAN SHEET NO.12

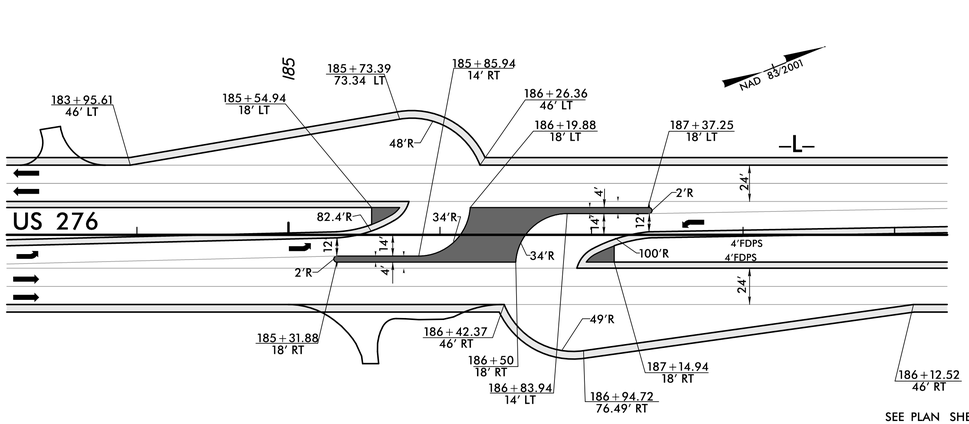


SEE PLAN SHEET NO.15

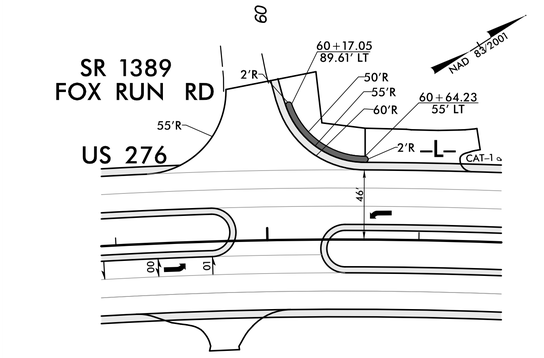
SR 1321 GRINDSTONE RD



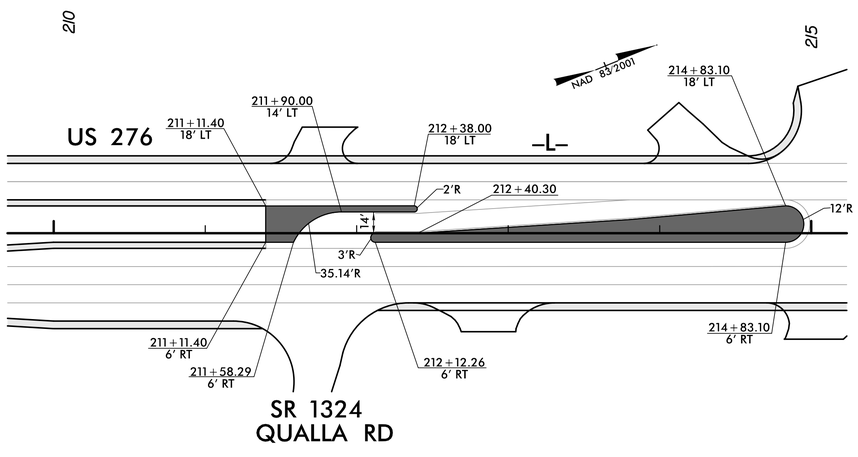
SEE PLAN SHEET NO.17



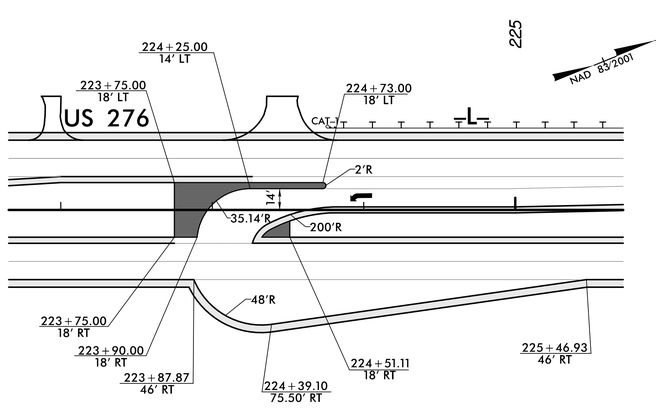
SEE PLAN SHEET NO.18



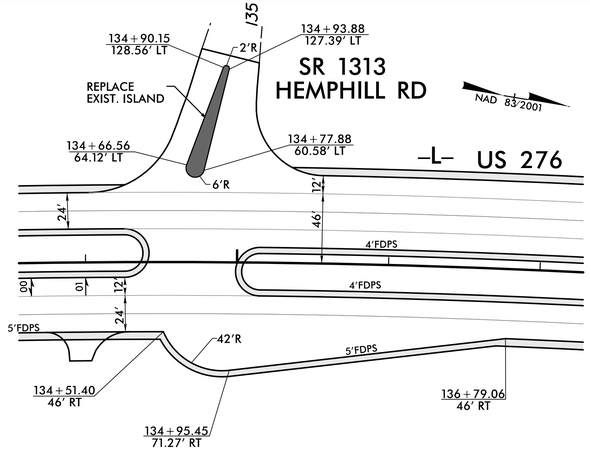
SEE PLAN SHEET NO.9



SEE PLAN SHEET NO.20



SEE PLAN SHEET NO.21



SEE PLAN SHEET NO.15

50' 0' 50' 100'
25'

CONCRETE ISLAND & U-TURN LAYOUTS

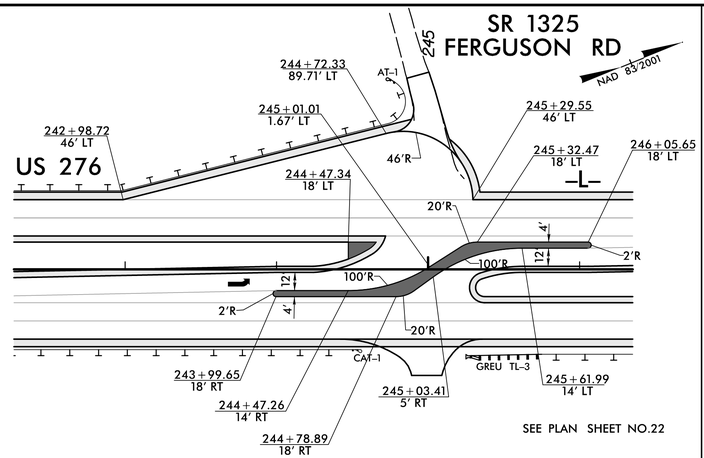
6/3/2024
R:\NCDOT\R-5921\Roadway\Proj\R-5921_Rdy_Det_2B-3 (Island & Uturn_Layouts.dgn
jlerisme.vin

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2B-4
R/W SHEET NO.	

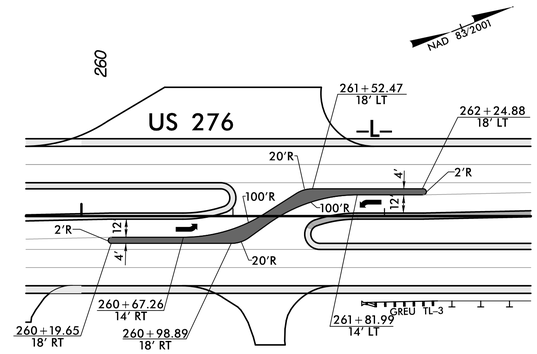
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY
Docusigned by: Jimmy L. Terry 6/26/2024

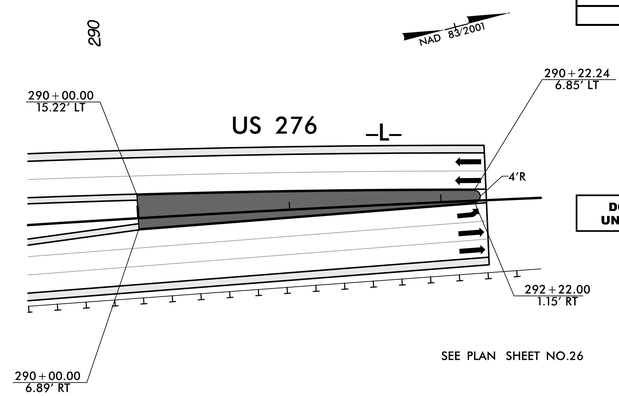
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



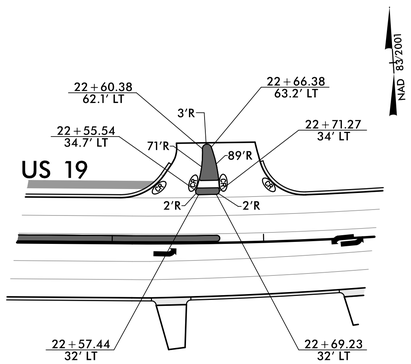
SEE PLAN SHEET NO.22



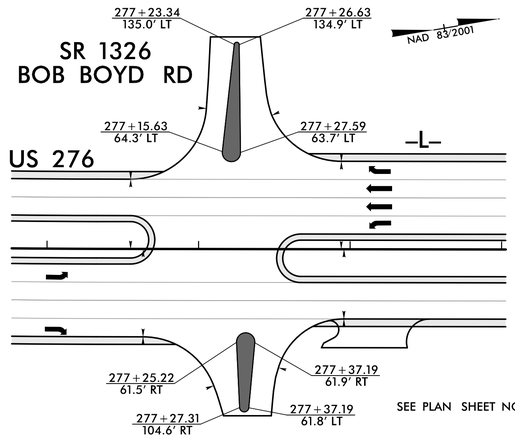
SEE PLAN SHEET NO.24



SEE PLAN SHEET NO.26



SEE PLAN SHEET NO. 5



SEE PLAN SHEET NO. 25

SR 1364
COLEMAN MOUNTAIN RD

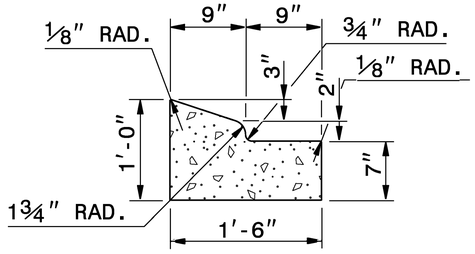
50' 0' 50' 100'
25'

CONCRETE ISLAND & U–TURN LAYOUTS

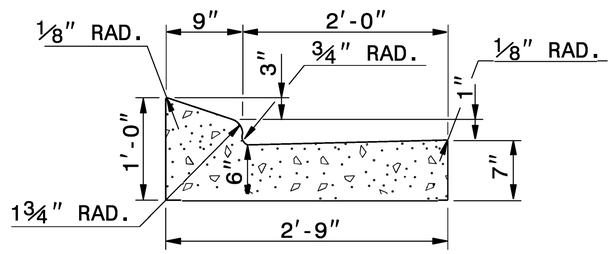
6/3/2024
K:\NCDOT\R-5921\Roadway\Proj\R-5921_Rdy_Detl_2B-3 (Island & Uturn_Layouts.dgn
jlerisme\vin

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2C-1



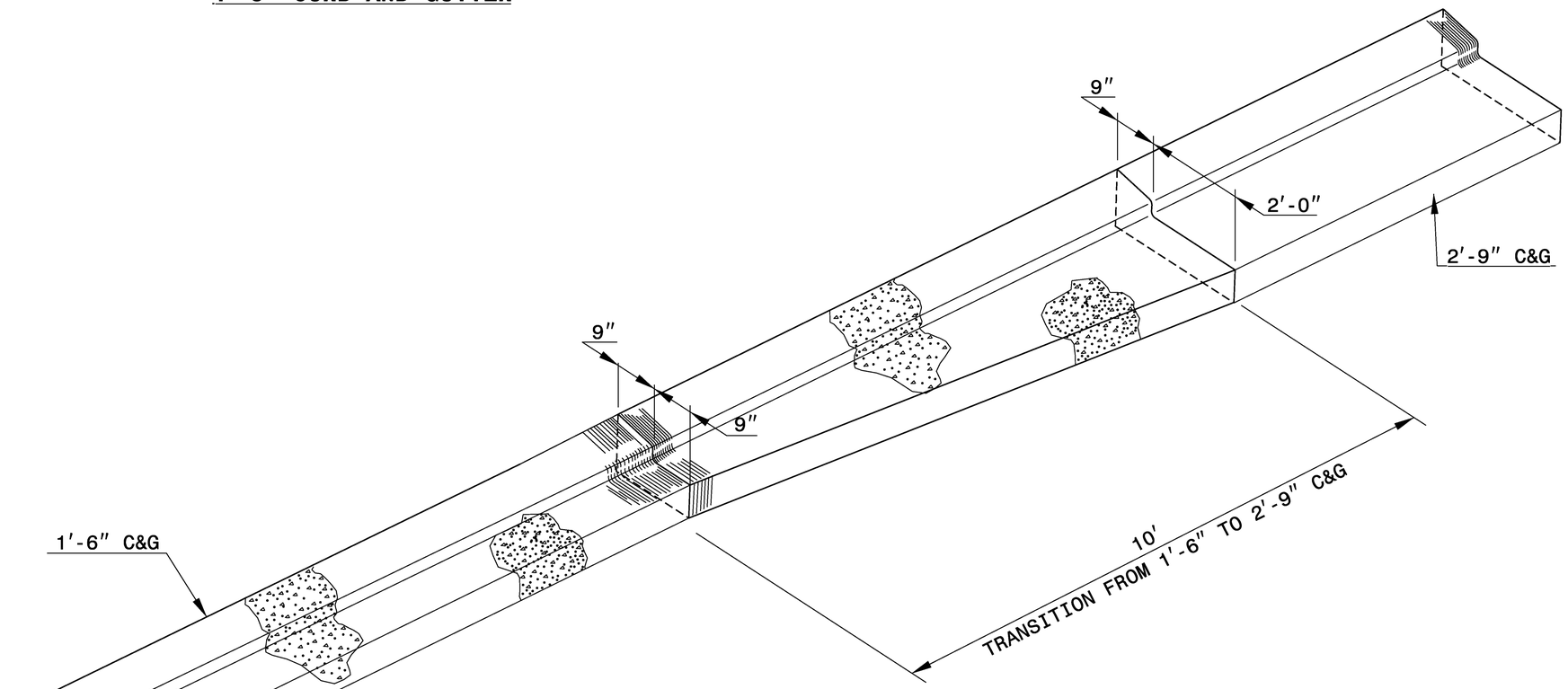
1'-6" CURB AND GUTTER



2'-9" CURB AND GUTTER

NOTE: SEE STD. DWG. 846.01 FOR ADDITIONAL CURB AND GUTTER INFORMATION.

SEE ROADWAY PLANS FOR LOCATION OF CURB TRANSITION.



ISOMETRIC VIEW OF TRANSITIONING CURB & GUTTER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 33144 NICOLE M. HACKLER
8/26/2024

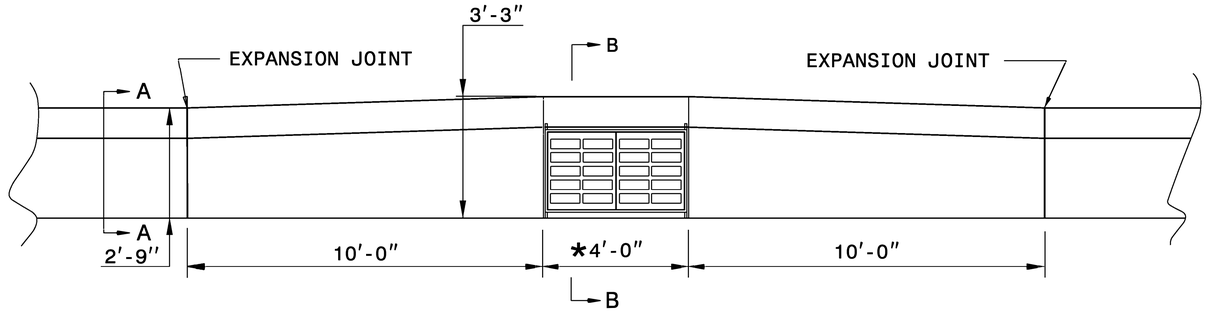
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

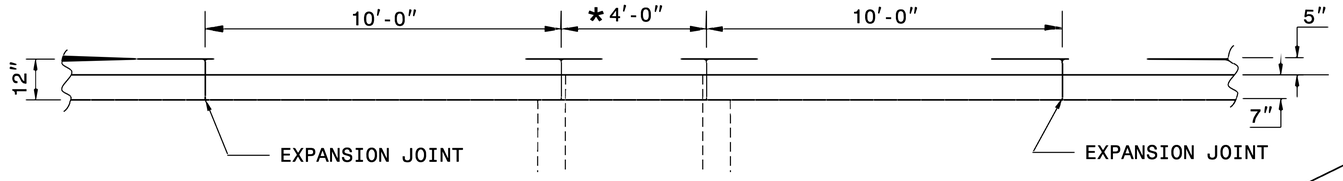
DETAIL OF 1'-6" TO 2'-9" CURB & GUTTER TRANSITION SECTION

ORIGINAL BY: T.S.SPELL DATE: NOV. 26, 2001
MODIFIED BY: T.S.SPELL DATE: JAN. 23, 2007
CHECKED BY: DATE:
FILE SPEC.: DS174:/usr/details/stand/cgtransit.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2C-2

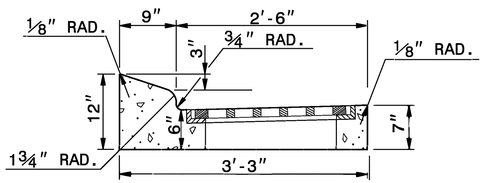


PLAN

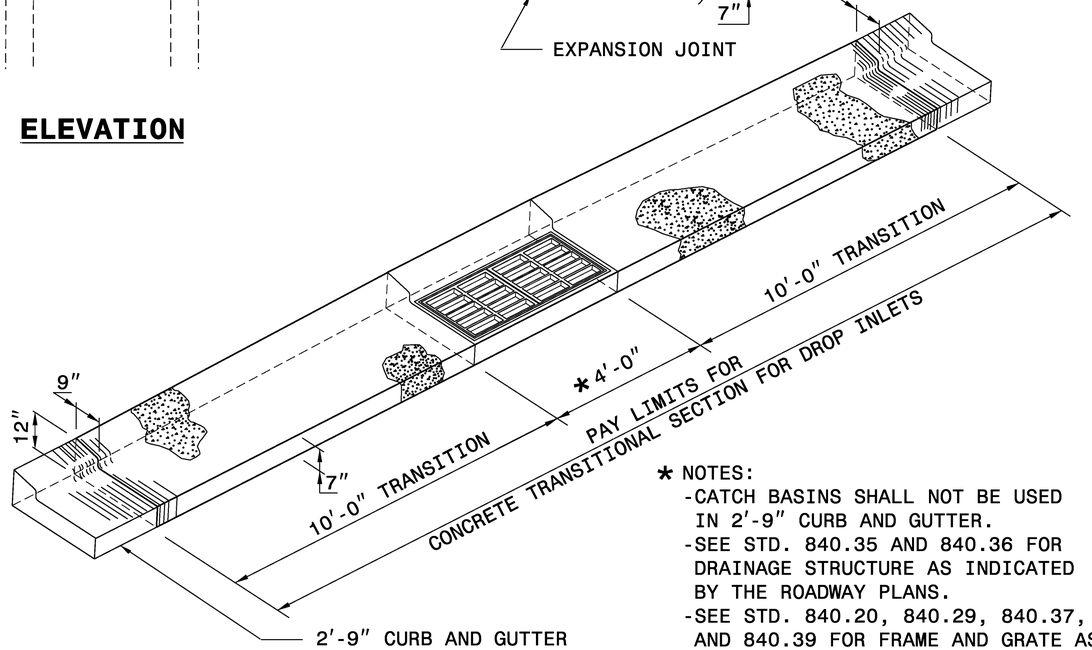


ELEVATION

SECTION - AA



SECTION - BB



* NOTES:
- -CATCH BASINS SHALL NOT BE USED IN 2′-9″ CURB AND GUTTER.
- -SEE STD. 840.35 AND 840.36 FOR DRAINAGE STRUCTURE AS INDICATED BY THE ROADWAY PLANS.
- -SEE STD. 840.20, 840.29, 840.37, AND 840.39 FOR FRAME AND GRATE AS INDICATED BY THE ROADWAY PLANS.

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

ROADWAY DETAIL DRAWING FOR

MEDIAN CURB FOR TRAFFIC BEARING GRATED DROP INLET

(FOR USE WITH 2′-9″ CURB AND GUTTER)

SHEET 1 OF 1

852D07

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033144 NICOLE M. HACKLER

8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

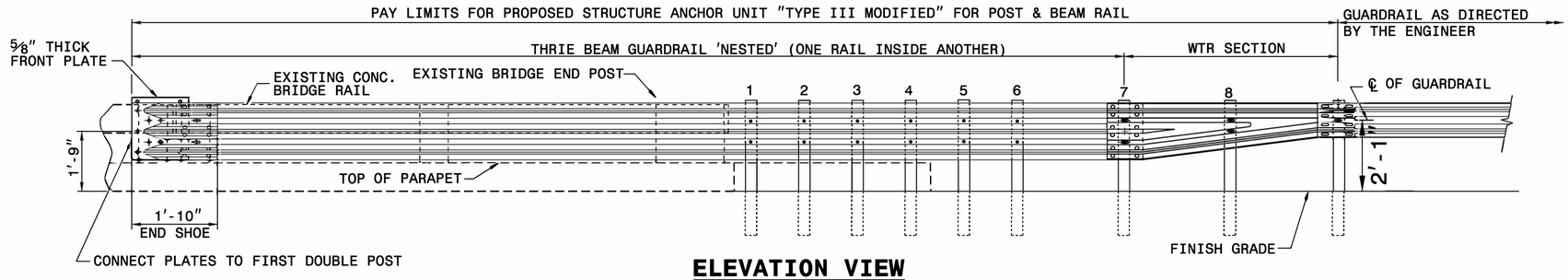
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

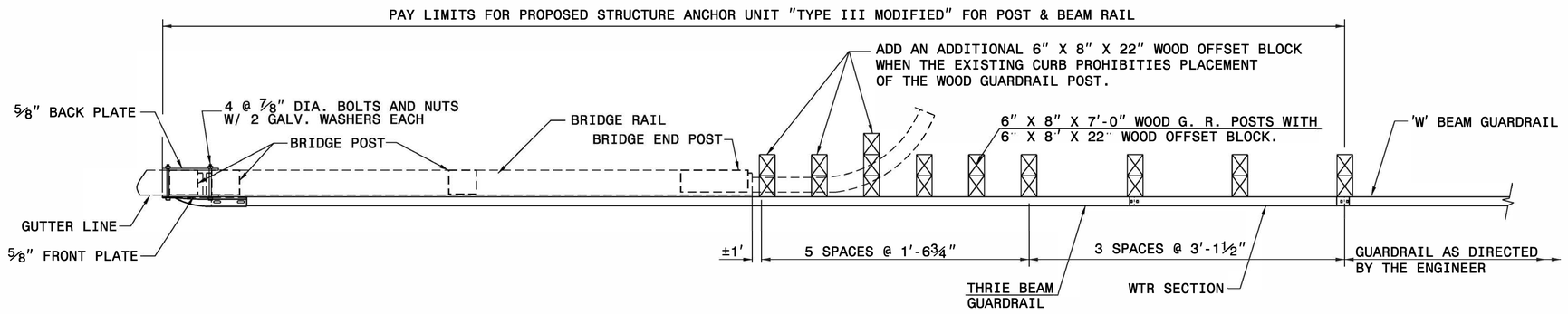
ORIGINAL BY: K.A. KEMPF DATE: 7-20-23
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: 2024 details in lieu\852D0701.dgn

11-JAN-2024 12:49
\852d0701.dgn
$$$$USERNAME$$$$

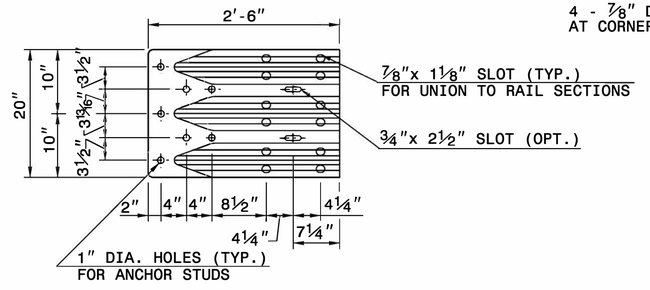
PROJECT REFERENCE NO.	SHEET NO.
R-5921	2C-3



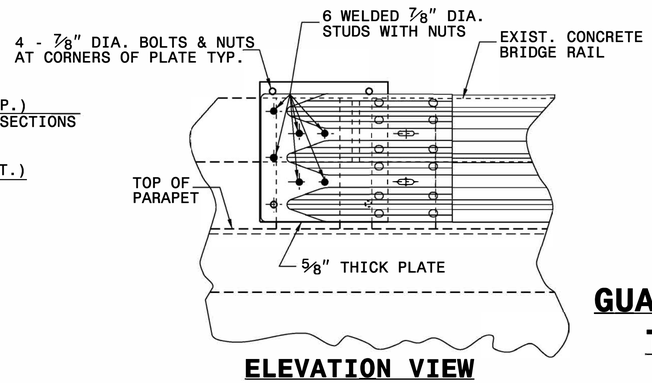
ELEVATION VIEW



PLAN VIEW

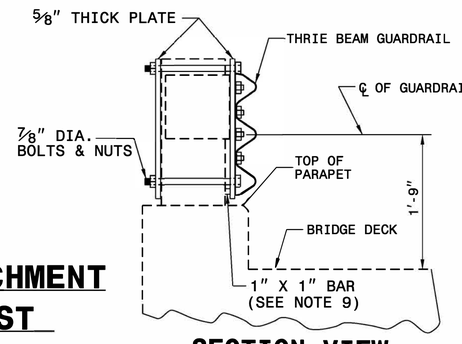


END SHOE



ELEVATION VIEW

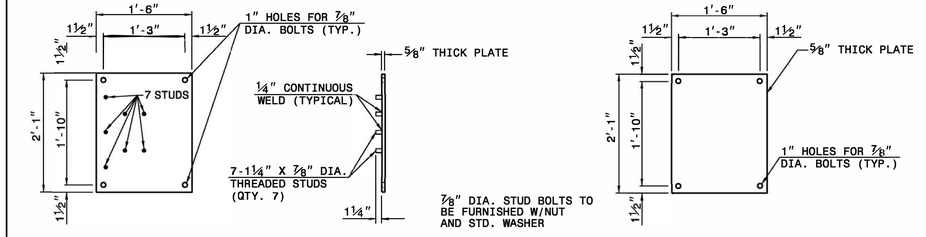
GUARDRAIL ATTACHMENT TO BRIDGE POST



SECTION VIEW

GENERAL NOTES:

1. USE NUTS, BOLTS, AND WASHERS CONFORMING TO THE REQUIREMENTS OF A.S.T.M. A-307 AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF STAND. SPECS.
2. TAP NUTS FOR THE 7/8" DIA. STUDS AND BOLTS AFTER GALVANIZING SEE A.S.T.M. A-563.
3. USE PLATES AND TUBES CONFORMING TO THE REQUIREMENTS OF A.S.T.M. A-36 AND GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH SECTION 1076 OF STAND. SPECS.
4. ADDITIONAL FIELD HOLES MAY BE DRILLED IN STEEL RAIL AS DIRECTED BY THE ENGINEER.
5. INSTALL FACE OF GUARDRAIL AS NEAR AS POSSIBLE TO PLUMB WITH THE PARAPET FACE AT BRIDGE END POST SPACER TUBE LOCATION BY USING STANDARD OR ALTERED SPACER TUBES OR A COMBINATION THEREOF OR AS DIRECTED BY THE ENGINEER. FOR VERY SMALL PARAPET WIDTHS, GUARDRAIL MAY BE INSTALLED AGAINST BRIDGE RAIL WITHOUT SPACER TUBES.
6. DO NOT DRILL BRIDGE RAIL IN ORDER TO INSTALL GUARDRAIL ANCHOR UNIT.
7. USE THIS DETAIL ONLY FOR BRIGES WITH POST AND BEAM TYPE RAIL.
8. ATTACH 1" X 1" BAR AND THREADED STUDS TO PLATE WITH 1/4" WELDS ALL AROUND.
9. 1" X 1" BAR MAY NOT BE NEEDED ON BRIDGE RAILS WHERE FACE OF RAIL DOES NOT PROJECT BEYOND FACE OF POST.
10. PROVIDE SHOP DRAWINGS OF THE PLATES TO THE ENGINEER FOR APPROVAL BEFORE FABRICATING THE PLATES.
11. LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
12. SEE ROADWAY STARDARD DRAWING 862.03 SHEET 3 FOR ADDITIONAL INFORMATION ON THE TYPE III ANCHOR UNIT



FRONT VIEW — SIDE VIEW

FRONT PLATE — BACK PLATE

BRIDGE PLATES

8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

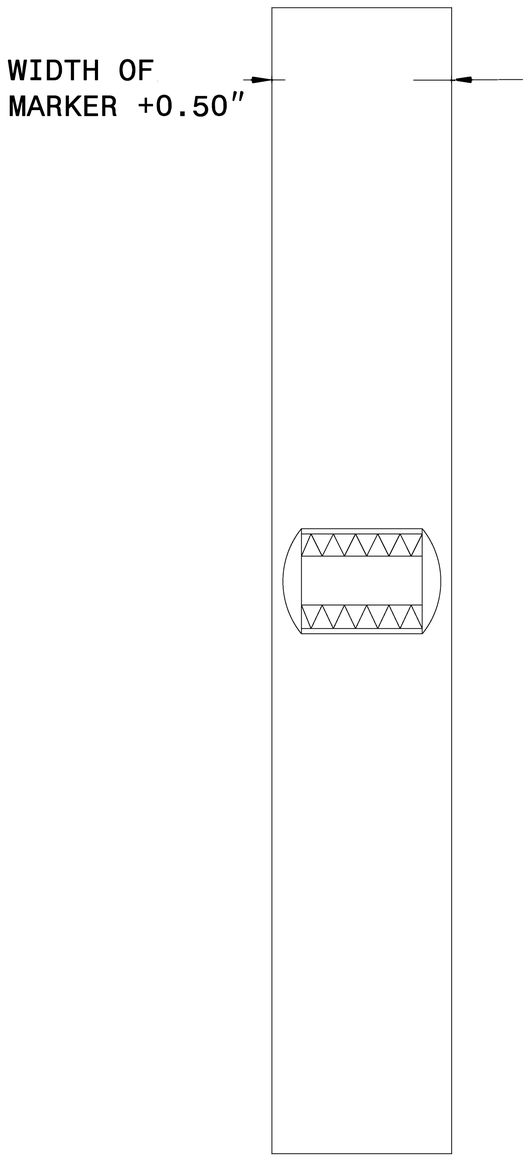
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

STRUCTURE ANCHOR UNIT TYPE III MODIFIED

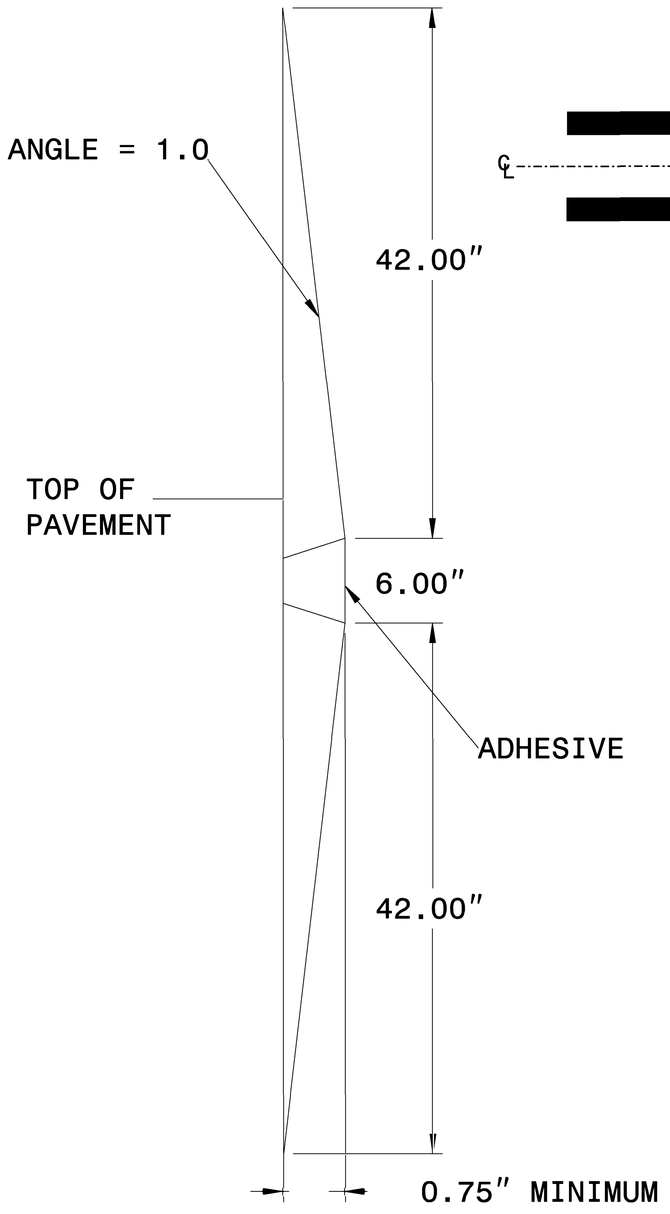
ORIGINAL BY: C.O. CUEVAS DATE: 12-00
MODIFIED BY: JS HOWERTON DATE: 01-18
CHECKED BY: _____ DATE: _____
FILE SPEC.: \usr\details\stand\bpiii.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2C-4

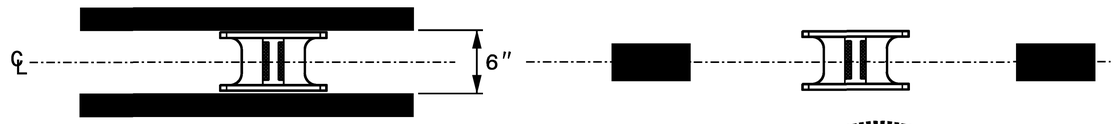
PLAN VIEW



SECTION VIEW



MARKER SPACING



NORTH CAROLINA PROFESSIONAL SEAL 024921 ENGINEER RENEE B. ROACH

DocuSigned by: Renee B. Roach, PE

8/27/2024

NOTES:

1. THE PAVEMENT SHALL BE SAW CUT TO THE DIMENSIONS SHOWN.
2. THE SAW CUT AREA MUST BE DRY AND FREE OF DUST. DIRT OR ANY MATERIAL WHICH WILL ADVERSELY AFFECT THE BOND OF THE ADHESIVE.
3. INSTALL MARKERS WITH APPROVED ADHESIVE. ADHESIVE SHOULD NOT BE ALLOWED TO BUILD UP IN FRONT OF MARKER LENS.
4. THE MARKER AND THE ADHESIVE PAD SHALL NOT EXCEED THE TOP OF THE PAVEMENT SURFACE. DEPTH = 0.75″ MINIMUM.
5. RECESSED MARKERS INSTALLED ON CONCRETE PAVEMENT SHOULD BE INSTALLED A MINIMUM OF 2″ FROM THE PAVEMENT JOINT OR EDGE

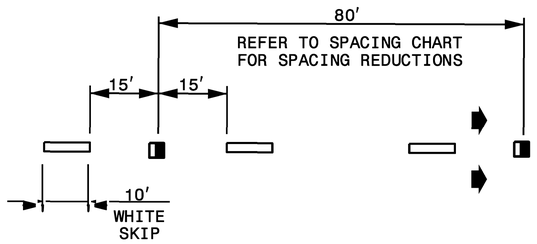
CONTRACTS STANDARDS
AND DEVELOPMENT UNIT
Office 919-707-8950 FAX 919-250-4119

DETAIL OF INLAID RAISED PAVEMENT MARKER

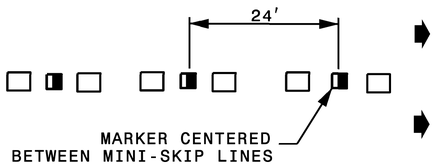
ORIGINAL BY: rgwatson DATE: 02-06-2024
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2C-5

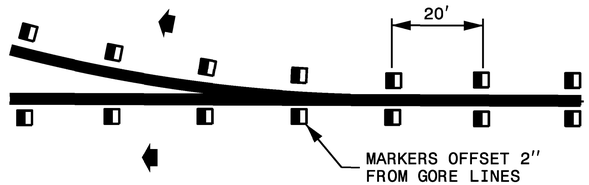
10′-30′/SP SKIP LINE



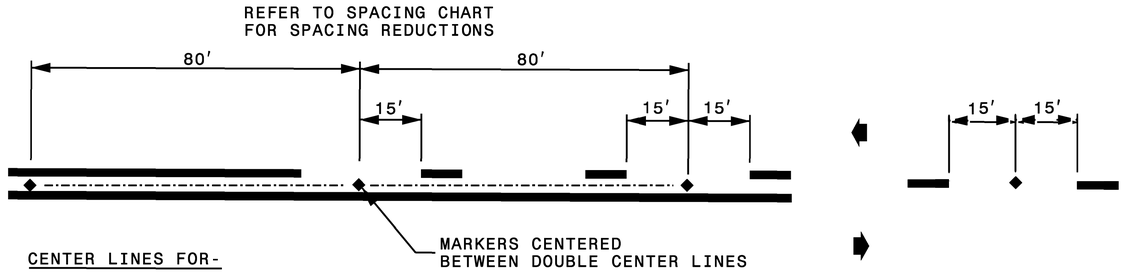
3′-9′/SP MINI-SKIP LINE



GORE LINES



YELLOW CENTER LINES

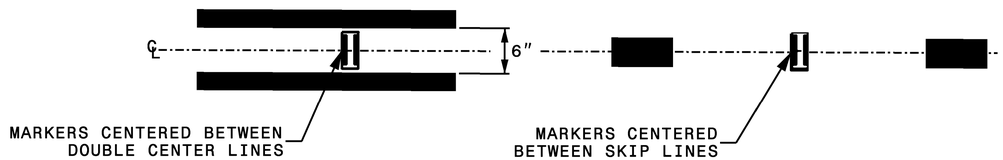


CENTER LINES FOR-

TWO-LANE, TWO-WAY ROADWAYS
UNDIVIDED ROADWAYS
TWO-WAY LEFT TURN LANES

DETAIL OF PAVEMENT MARKER PLACEMENT

RAISED REFLECTIVE PAVEMENT MARKERS



LEGEND

- CRYSTAL/RED PAVEMENT MARKER
- YELLOW/YELLOW PAVEMENT MARKER
- DIRECTION OF TRAFFIC FLOW

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

ROADWAY DETAIL DRAWING FOR
RAISED PAVEMENT MARKERS
INSTALLATION SPACING

SHEET 2 OF 3

1250D01

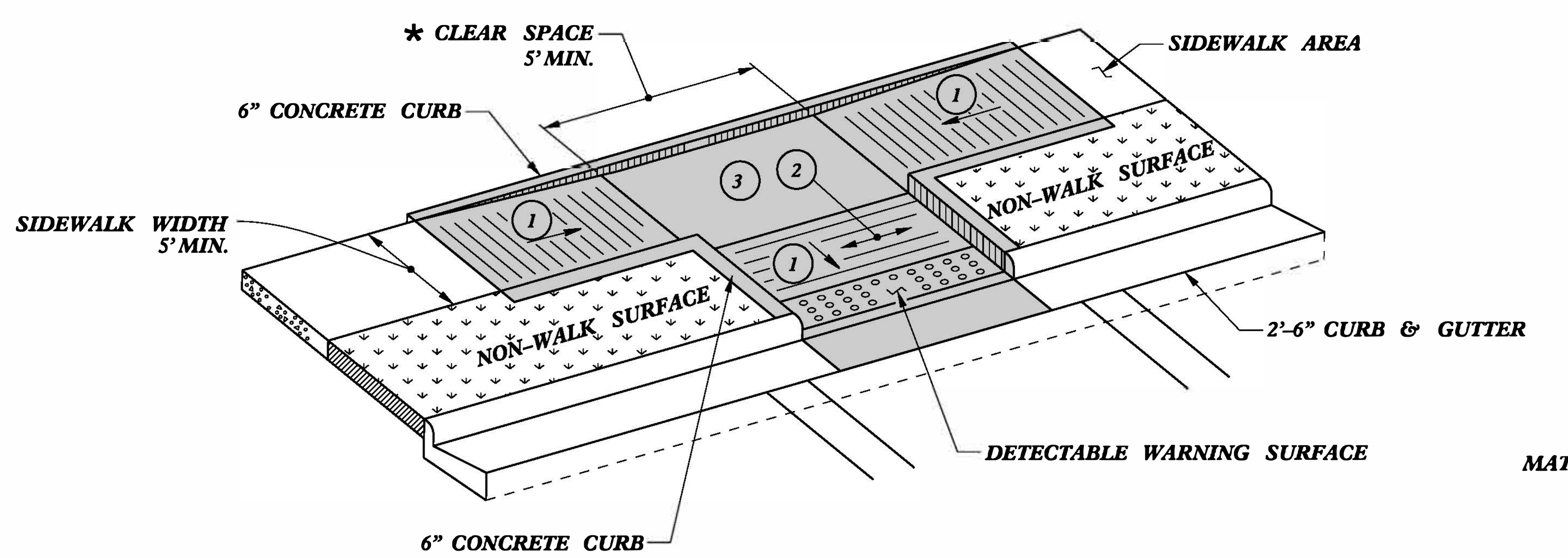
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024921 RENEE B. KOHLER
RENEE B. KOHLER, PE
8/27/2024

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-8950 FAX 919-250-4119

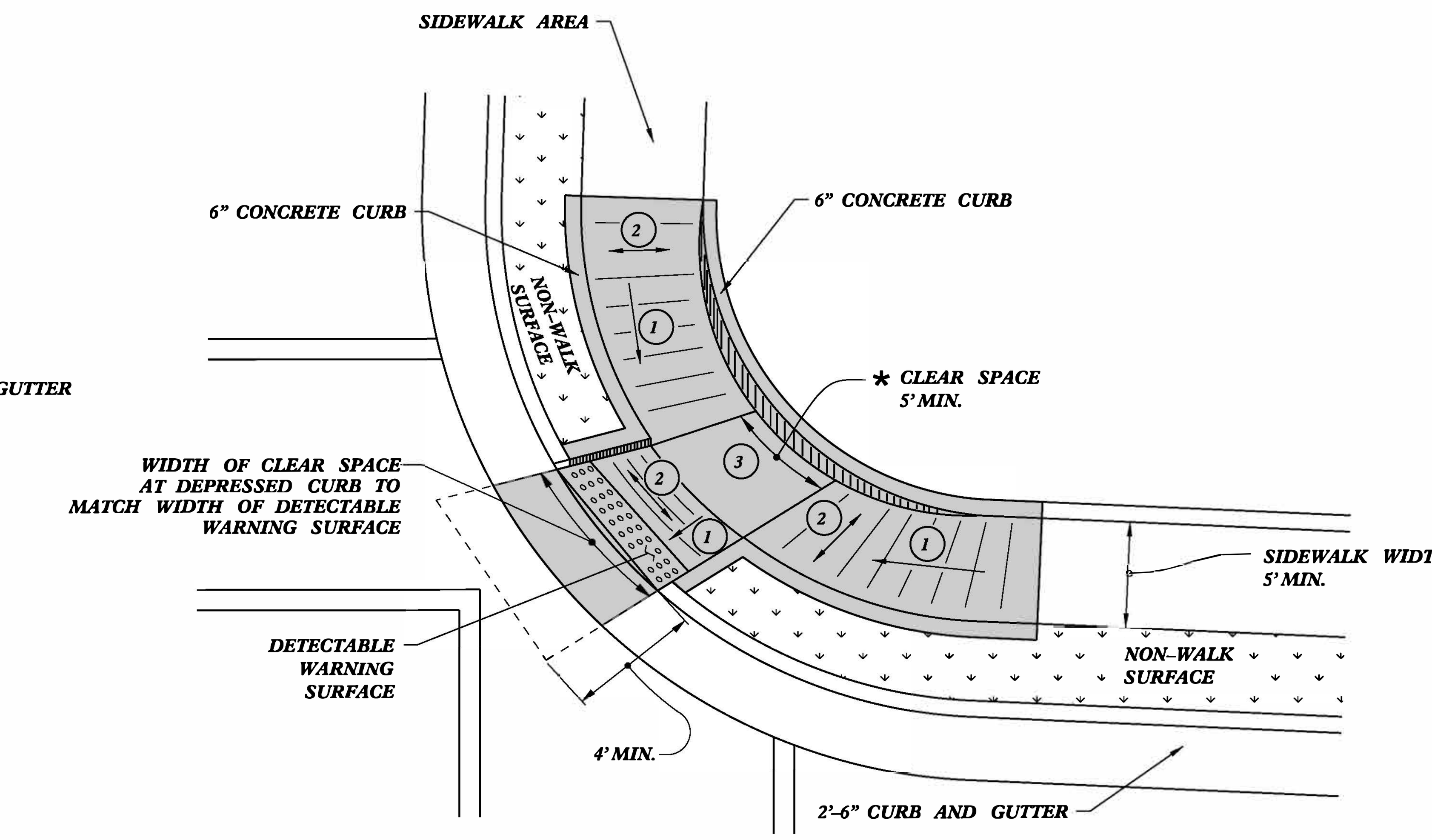
SEE TITLE BLOCK

ORIGINAL BY: M.V. SPRINGER DATE: 2-15-24
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

* - WHERE CLEAR SPACE IS CONSTRAINED ON TWO OR MORE SIDES, THE CLEAR SPACE SHALL BE 4' MINIMUM X 5' MINIMUM, WITH 5' PROVIDED IN THE DIRECTION OF THE PEDESTRIAN STREET CROSSING.



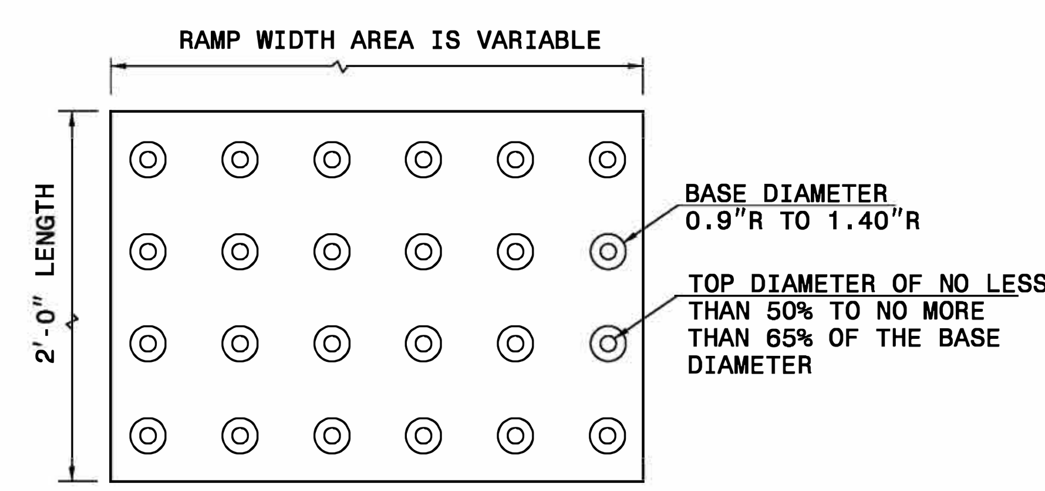
TYPE 3

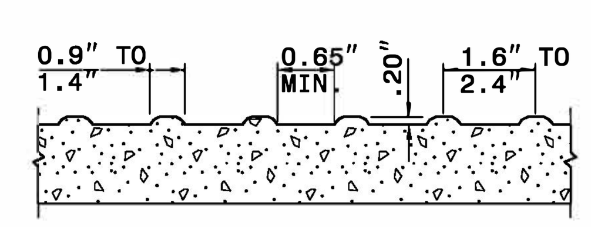


TYPE 3 MODIFIED
INSTALLATION IN A RADIUS

NOTES:
DETECTABLE WARNING SURFACE SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.

DETECTABLE WARNING SURFACE SHALL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.





DETECTABLE WARNING SURFACE

(1) 8.33% (12:1) MAX RAMP SLOPE

(2) CROSS SLOPE: 2.00%

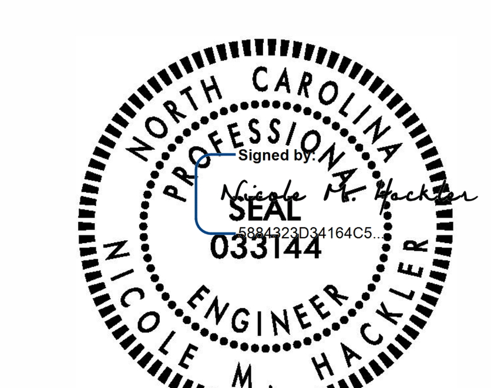
(3) MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00%.

PAY LIMITS FOR 1 CURB RAMP

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

ROADWAY DETAIL DRAWING FOR
CURB RAMP
PARALLEL RAMP

SHEET 9 OF 13
848D06



8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

ORIGINAL BY: S.CALHOUN DATE: 12-22-2023
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: special details\nmhackler\D0609.dgn

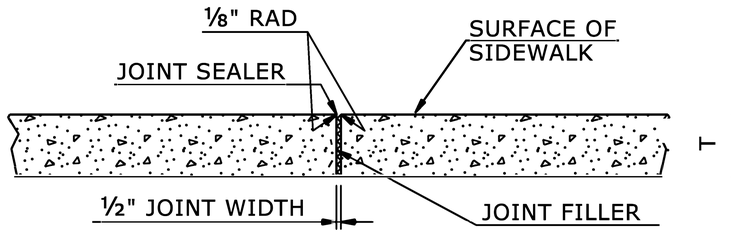
PROJECT REFERENCE NO.	SHEET NO.
R-5921	2C-7

NOTES:

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

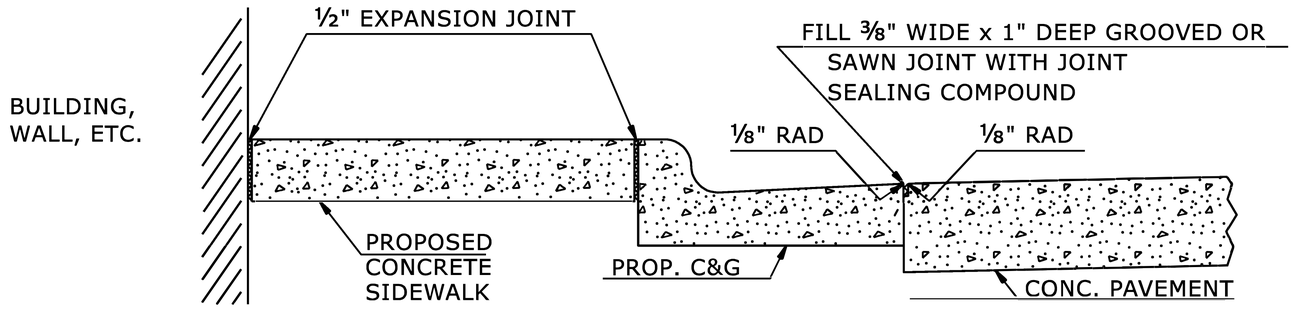
PLACE A GROOVE JOINT 1" DEEP WITH ⅛" RADII IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE ½" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS. A ½" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.

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



T = SIDEWALK THICKNESS

TRANSVERSE EXPANSION JOINT IN SIDEWALK



DETAILS SHOWING JOINTS IN CONCRETE SIDEWALK

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

ROADWAY DETAIL DRAWING FOR
CONCRETE SIDEWALK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033144 NICOLE M. HACKLER
Signed by: Nicole M. Hackler
8/26/2024

SHEET 1 OF 1

848D01

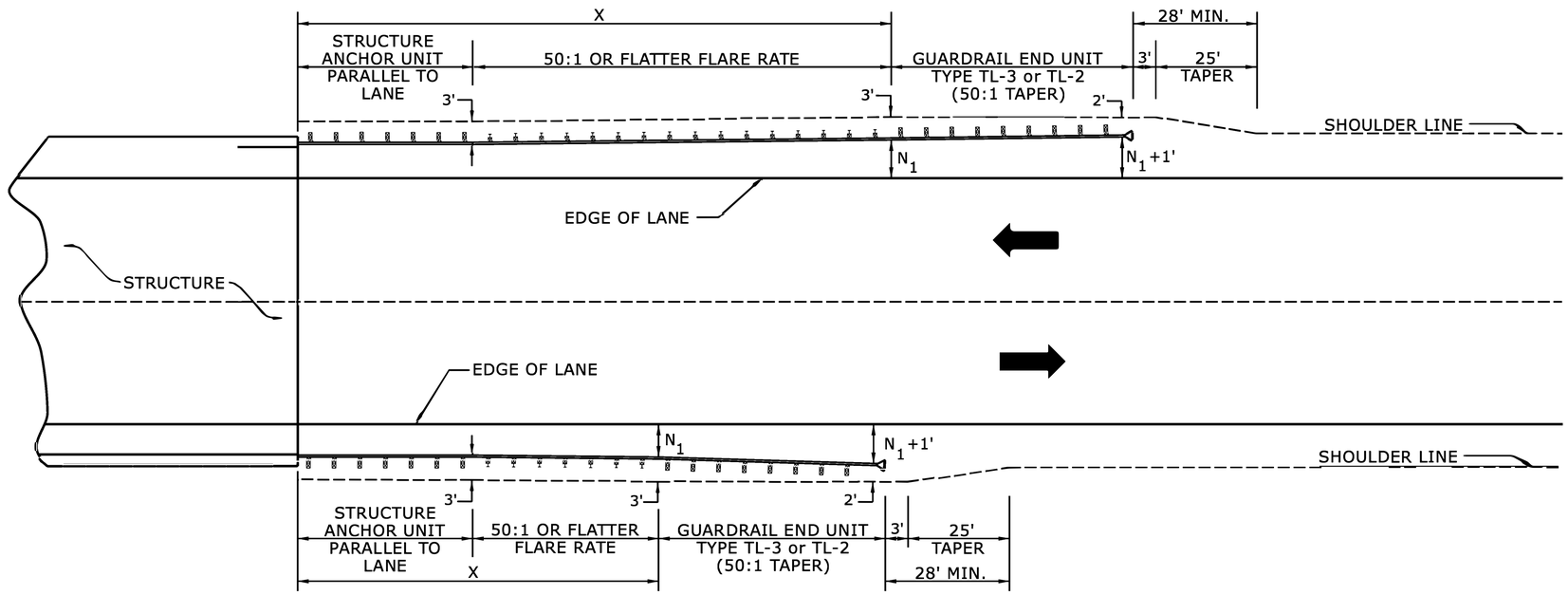
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

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

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2C-8



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

SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS

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

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

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

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033144 NICOLE M. HACKLER
Signed By: 4164C5
8/26/2024

SHEET 4 OF 15
862D01

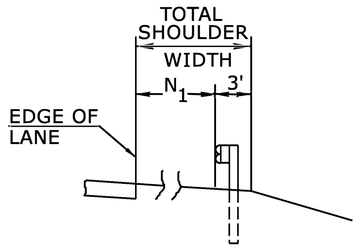
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

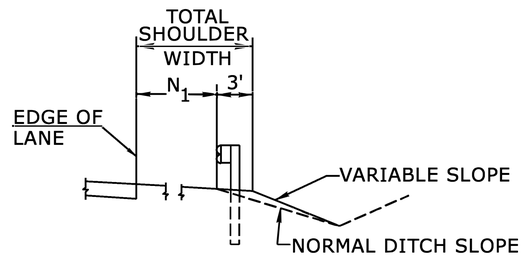
SEE TITLE BLOCK

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

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2C-9

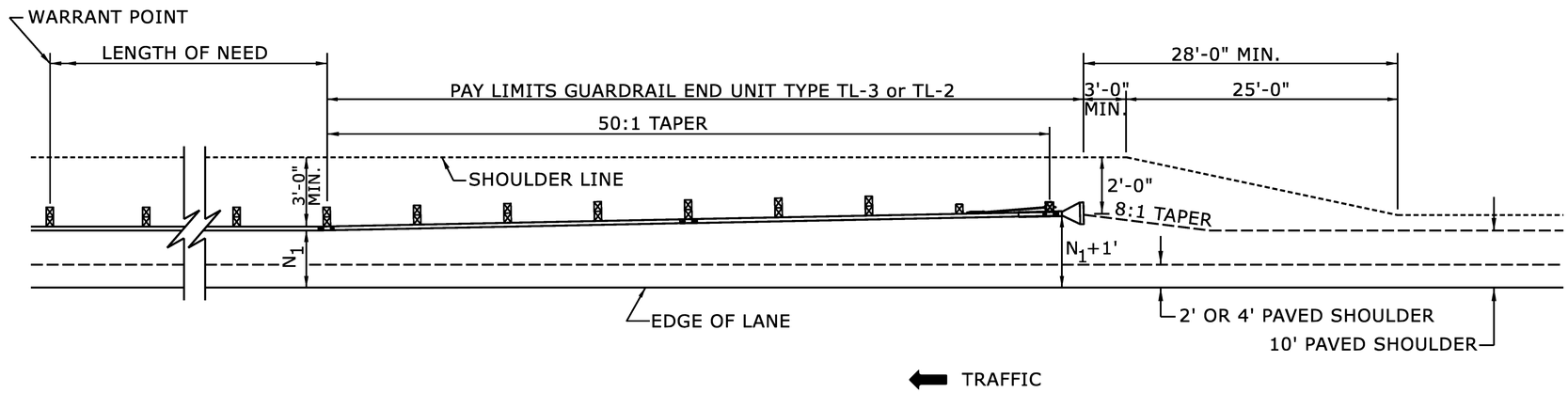


FILL SECTION



CUT SECTION

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



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

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033144 NICOLE M. HACKLER
8/26/2024

SHEET 6 OF 15
862D01

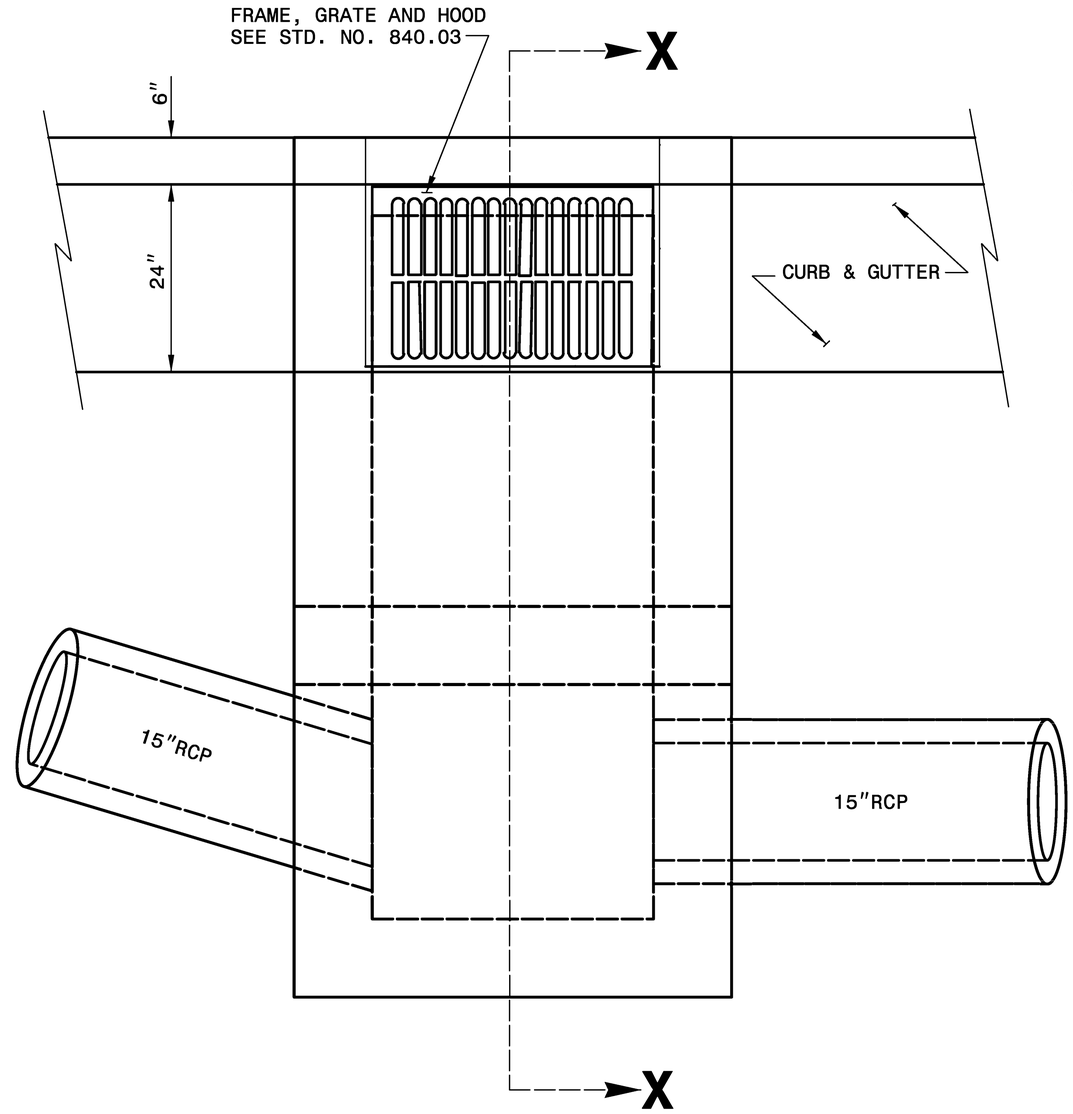
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

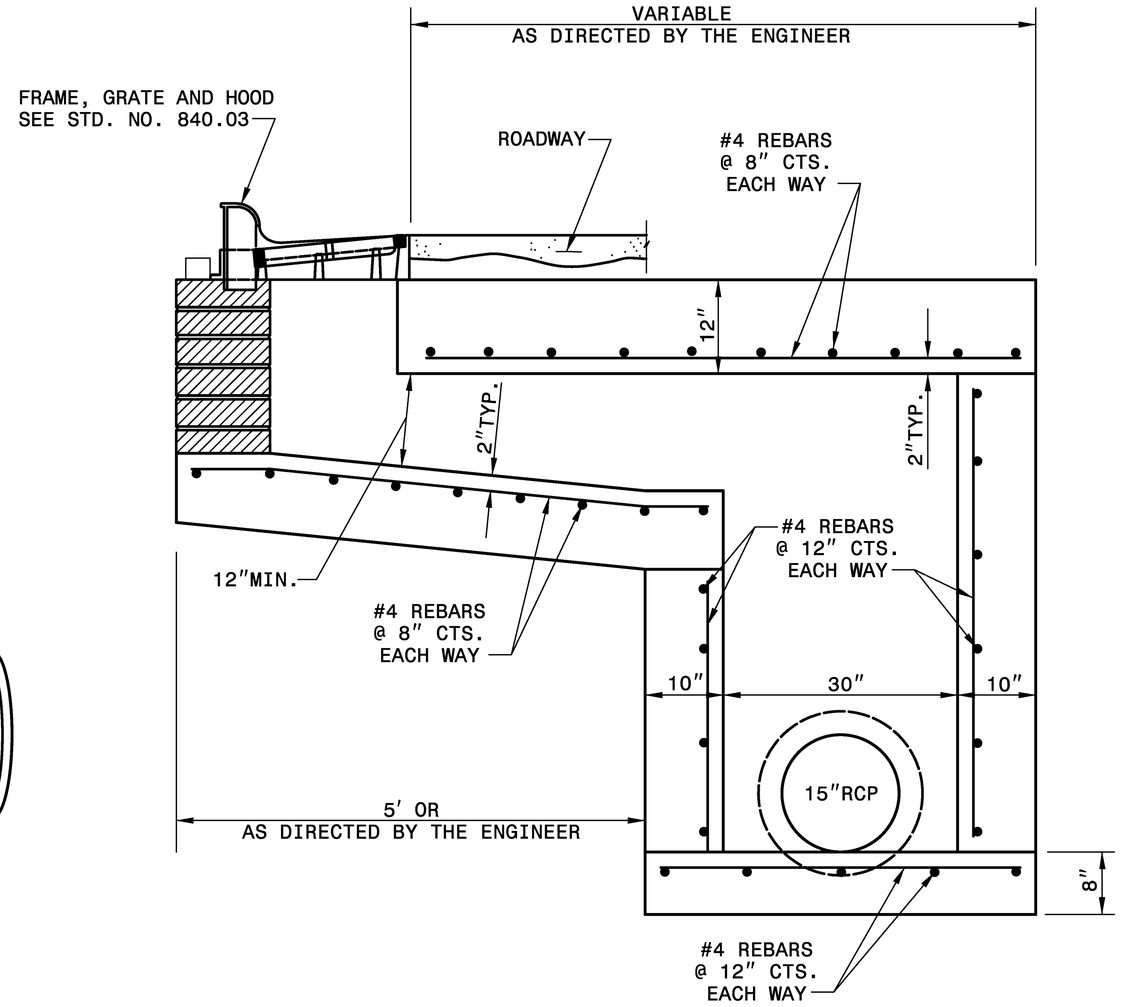
SEE TITLE BLOCK

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

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2D-1



PLAN



SECTION X-X

NOTES:

MORTAR JOINTS ½" TO ¼" THICK.

USE CLASS "B" CONCRETE THROUGHOUT.

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

USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.

CHAMFER ALL EXPOSED CORNERS 1".

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY

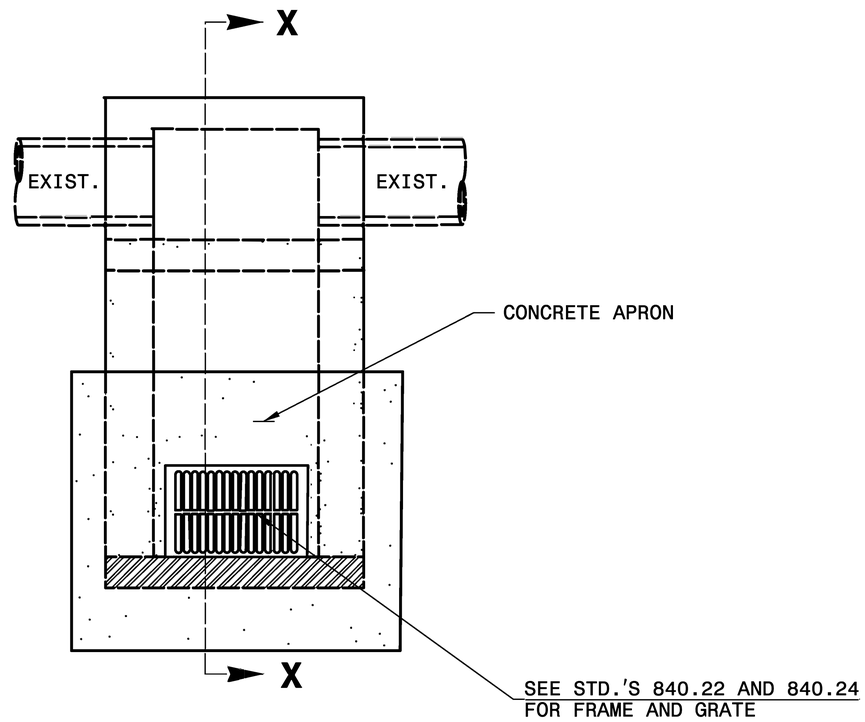
8/26/2024

PROPOSED OFFSET CATCH BASIN

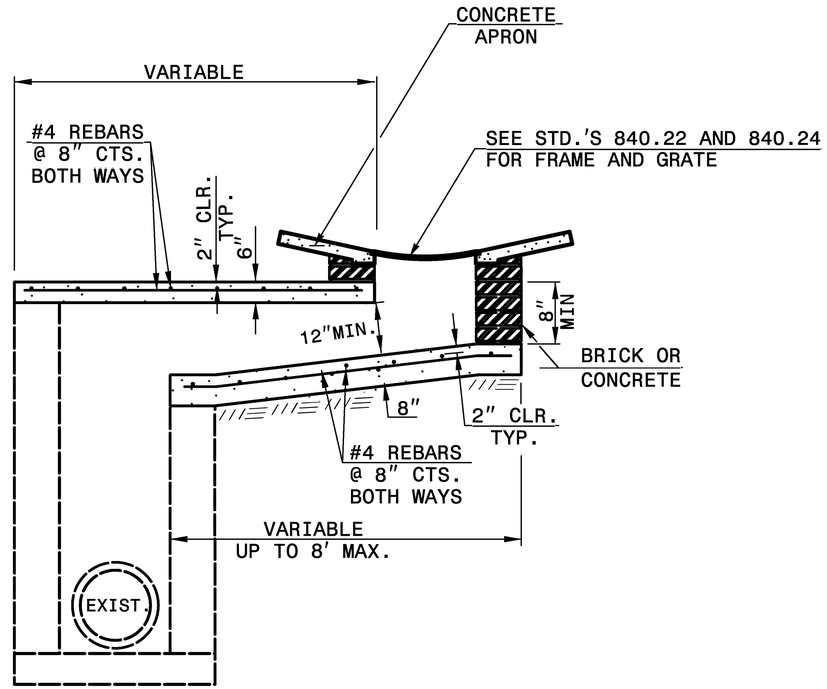
ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt DATE: 10-30-2012
CHECKED BY: _____ DATE: _____
FILE SPEC.: nbritt/english/hydro/840d06.dgn

5/24/2024
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
.Users\melvin

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2D-2



PLAN



SECTION X-X

NOTES:

MORTAR JOINTS ½" TO ¼" THICK.

USE CLASS "B" CONCRETE THROUGHOUT.

USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY

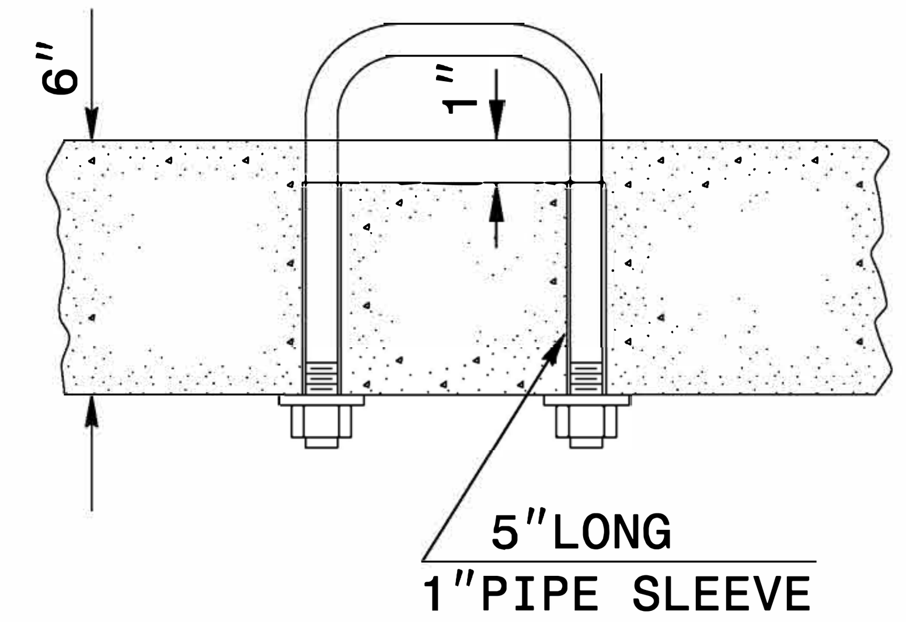
8/26/2024

PROPOSED OFFSET DROP INLET

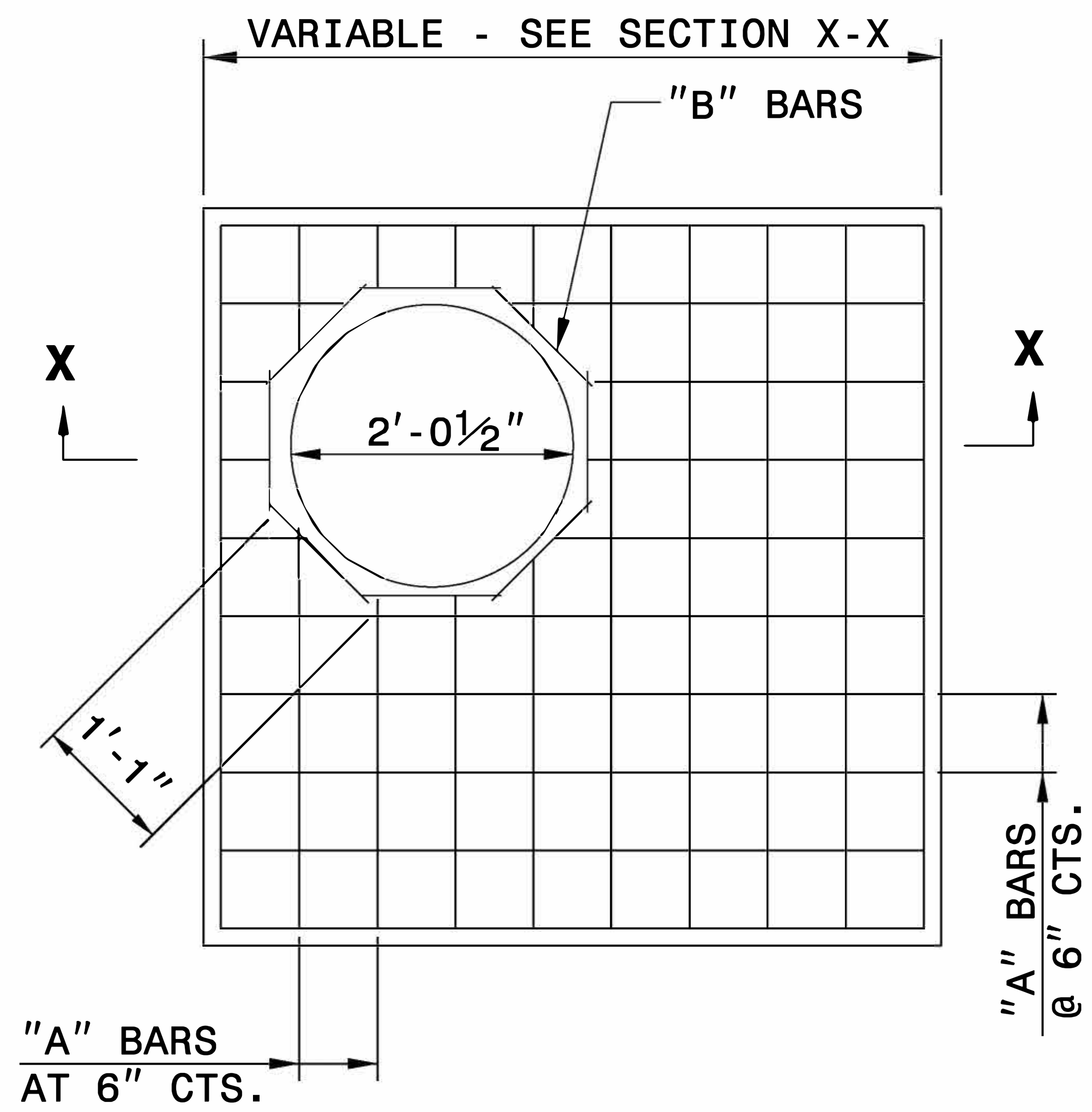
ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt DATE: 4/13/15
CHECKED BY: _____ DATE: _____
FILE SPEC.: nbrit/english/hydro/840d06 offset box.es.dgn

5/24/2024
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
User:rsmelvin

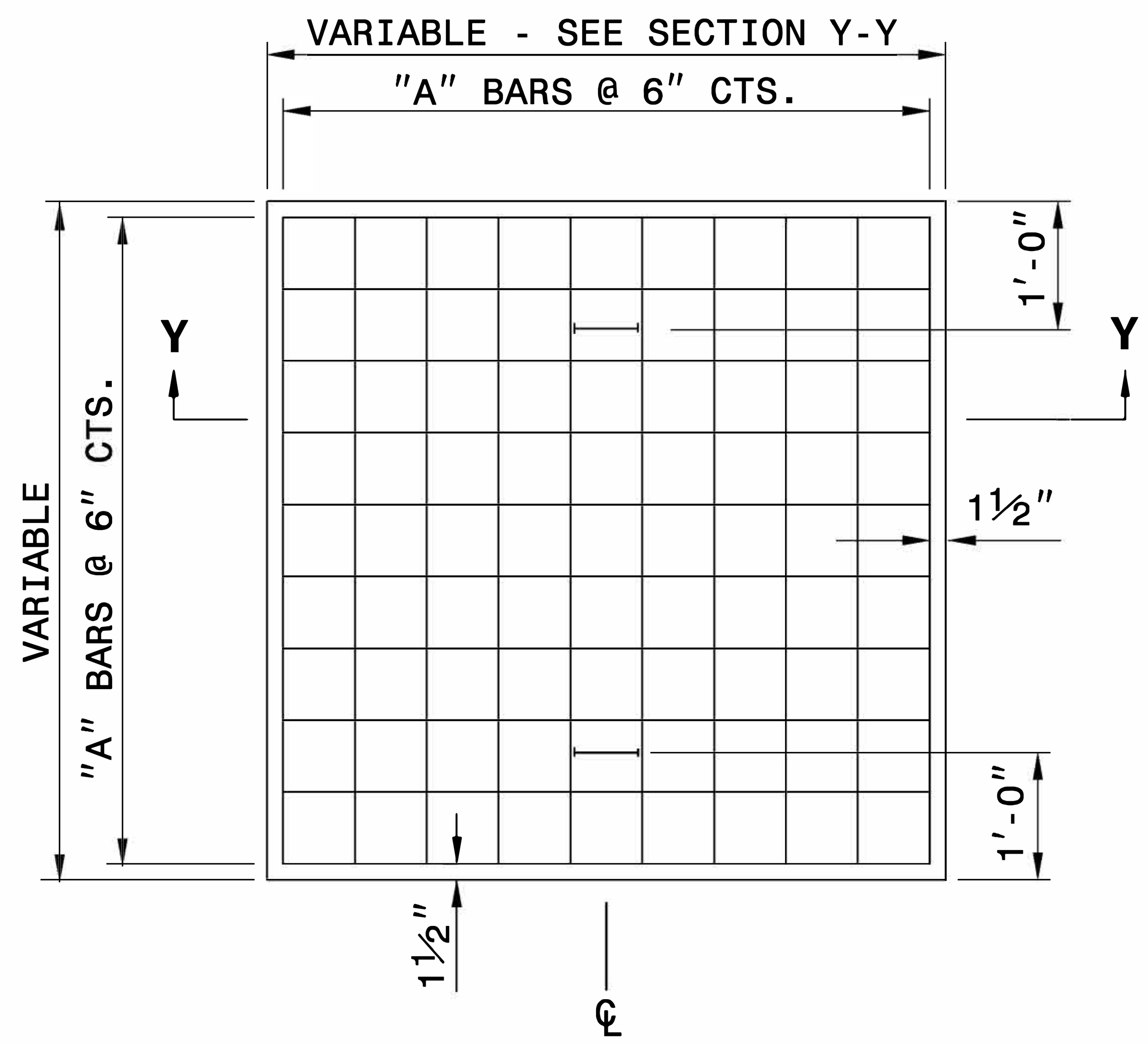
PROJECT REFERENCE NO.	SHEET NO.
R-5921	2D-3



PARTIAL SECTION



PLAN



PLAN

GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

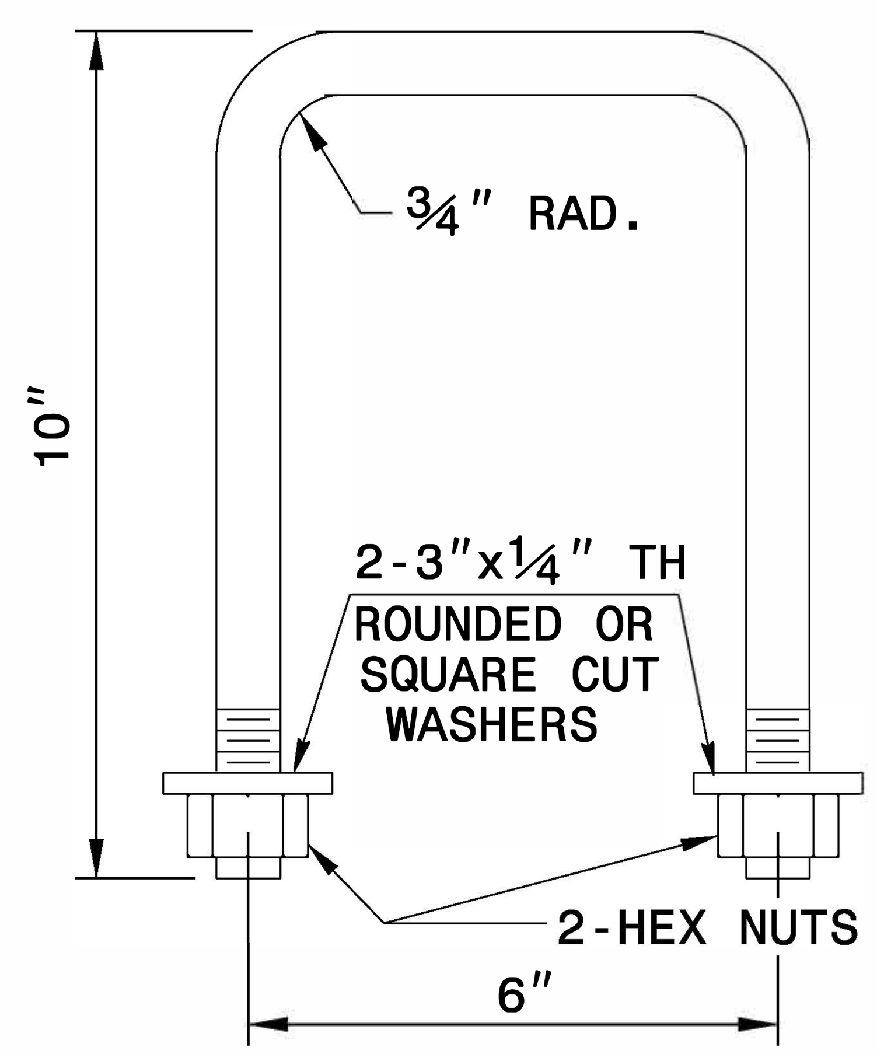
THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.

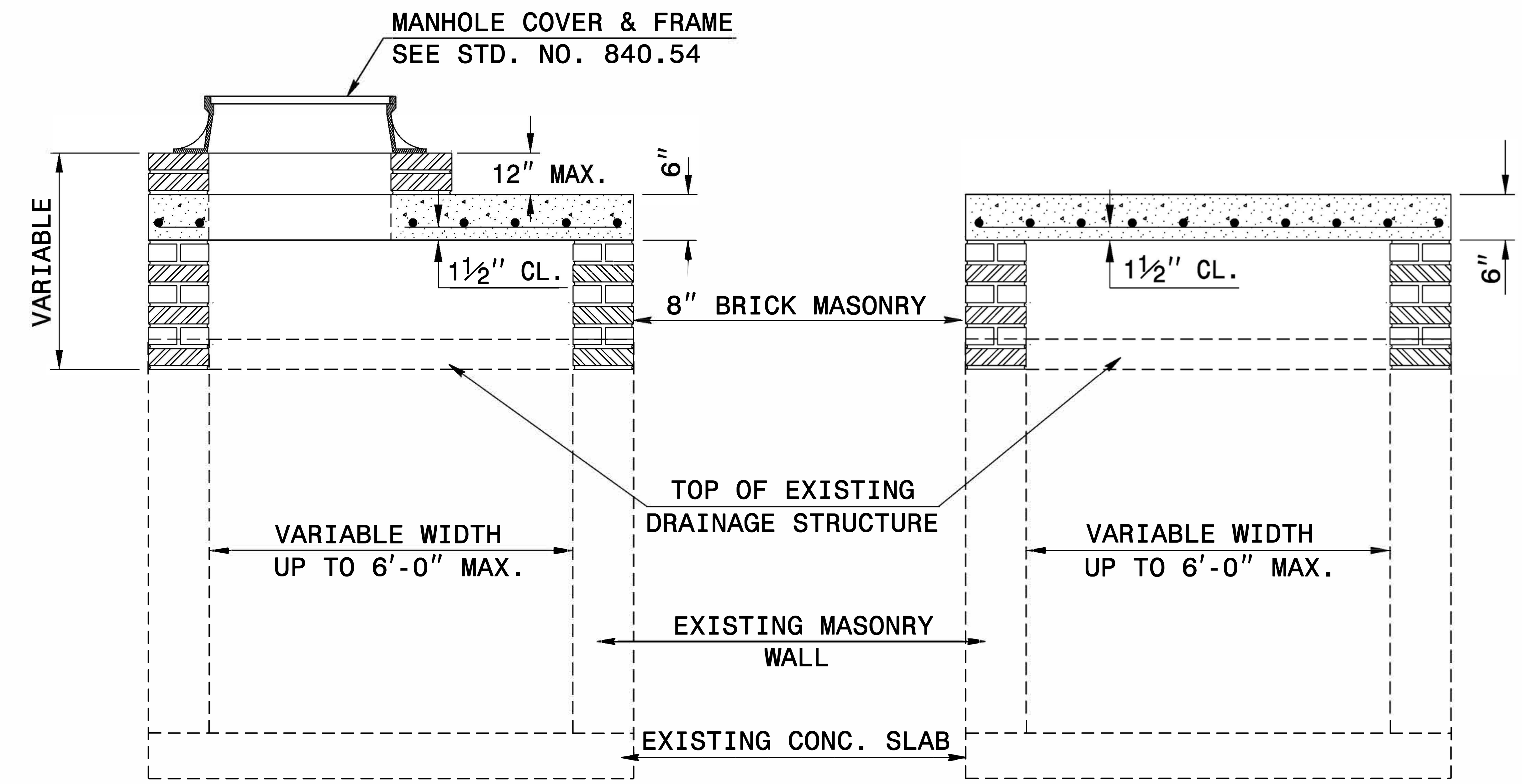
BILL OF MATERIALS

REINFORCING STEEL				
CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.
A	#4	20	4'-6"	60.12
B	#4	8	1'-1"	5.79
TOTAL				65.91 *
MASONRY				CU YDS
TOP SLAB CONCRETE CLASS "B"				.4326 *
BRICK MASONRY PER FT HT (MIN)				.4111

* NOTE:
QUANTITIES BASED ON 3'-6" X 3'-6" DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.



DETAIL OF HANDLE



SECTION X-X

SECTION Y-Y

8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DETAIL TO CONVERT EXISTING DI, CB, OTCB or GI TO JUNCTION BOX (MANHOLE OPTIONAL)

ORIGINAL BY: T.S.S. DATE: NOV.1997
MODIFIED BY: T.S.S. DATE: FEB.2000
CHECKED BY: DATE:
FILE SPEC.: ds174:/usr/details/stand/boxtojbe.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2G-1

GEOTECHNICAL ENGINEER

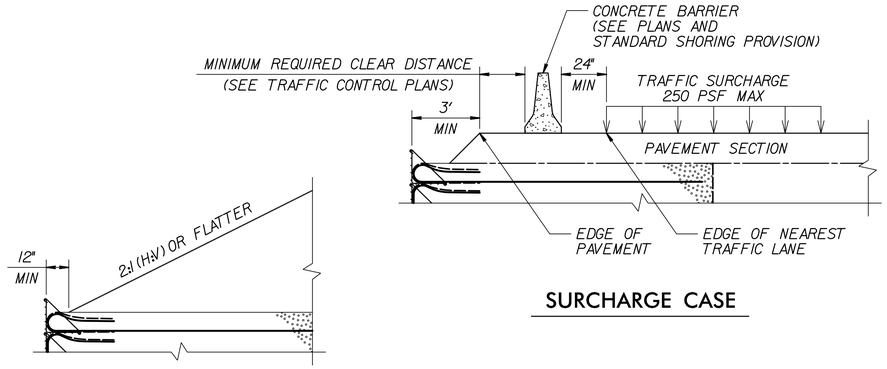
NORTH CAROLINA PROFESSIONAL SEAL 041986 ENGINEER MATTHEW BREWER

DocuSigned by: Matthew Brewer 8/26/2024
3861290C0... SIGNATURE DATE

ENGINEER

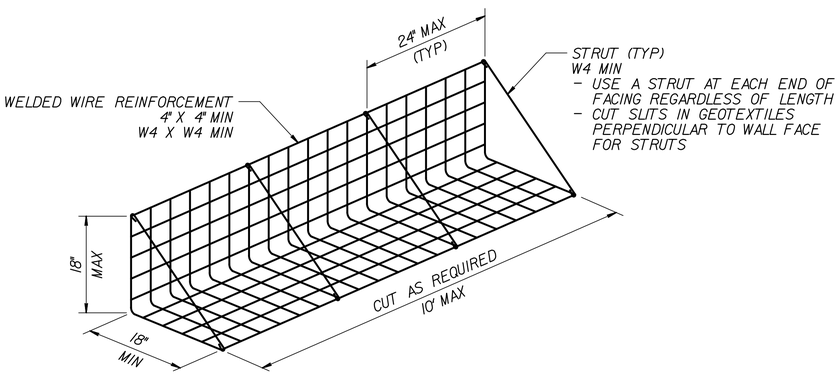
SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

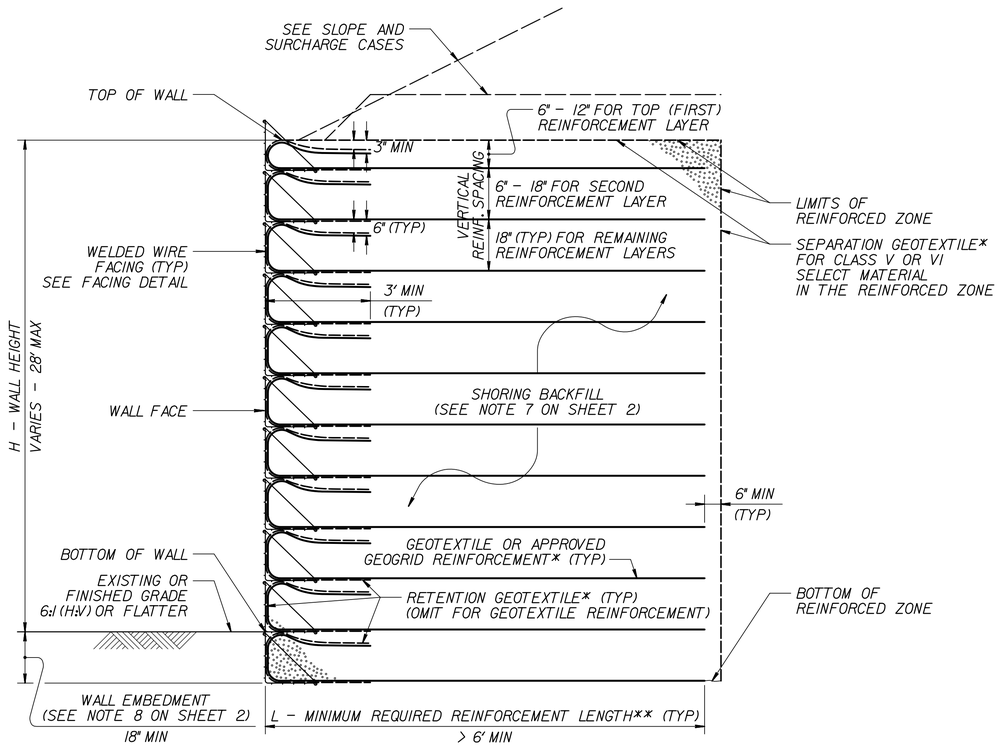


SURCHARGE CASE

SLOPE CASE

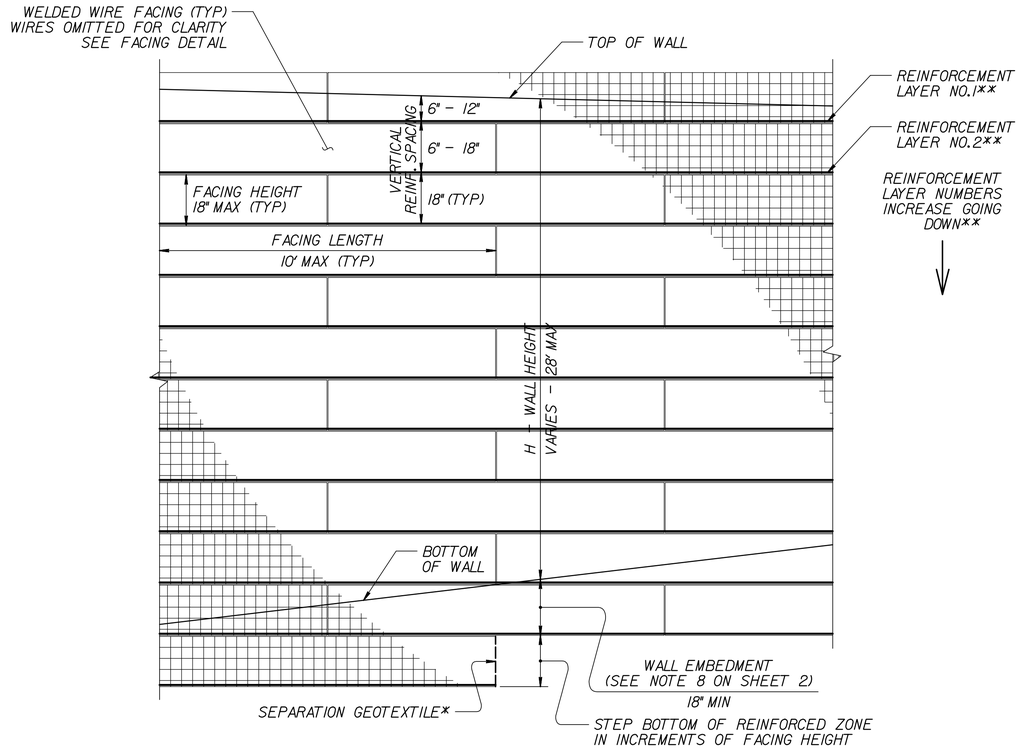


FACING DETAIL



STANDARD TEMPORARY WALL

(FOR STANDARD TEMPORARY WALLS ON STRUCTURES, SEE TEMPORARY WALL ON STRUCTURE DETAIL ON SHEET 2.)
*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.
**SEE REINFORCEMENT TABLES ON SHEET 3.



STANDARD TEMPORARY WALL – PARTIAL ELEVATION

*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.
**SEE REINFORCEMENT TABLES ON SHEET 3.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

STANDARD DETAIL NO. 1801.02

STANDARD
TEMPORARY WALL
SHEET 1 OF 3

DATE: 11-19-13

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2G-2

GEOTECHNICAL ENGINEER

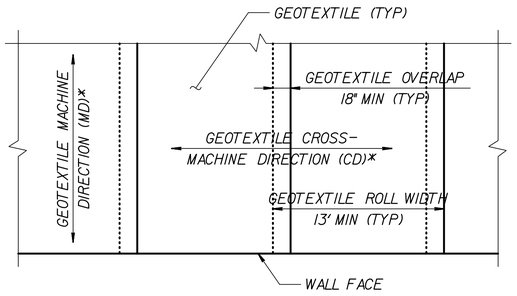
NORTH CAROLINA PROFESSIONAL SEAL 041986 ENGINEER MATTHEW BREWER

DocuSigned by: Matthew Brewer 8/26/2024
38E129C0A4E... SIGNATURE DATE

ENGINEER

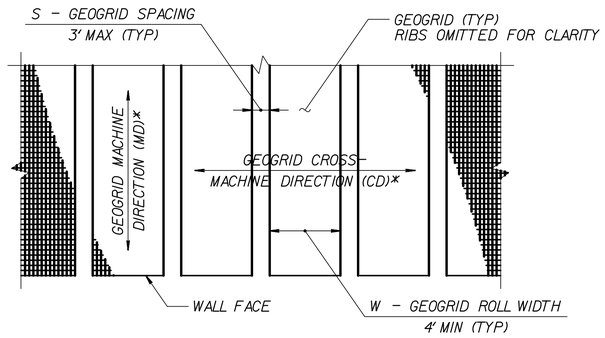
SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



GEOTEXTILE PLACEMENT

(100% COVERAGE MIN FOR GEOTEXTILE REINFORCEMENT)

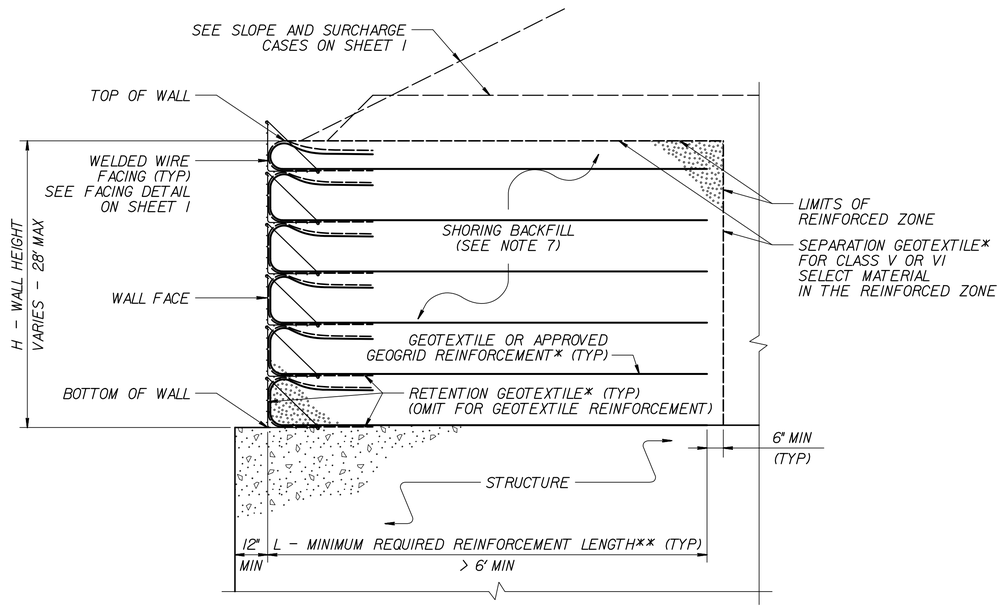


GEOGRID PLACEMENT

(80% COVERAGE MIN FOR GEOGRID REINFORCEMENT - $\frac{W}{W+S}$ x 100 $\geq$ 80%, SEE NOTE 11)

GEOSYNTHETIC PLACEMENT DETAILS

(PLAN VIEW)
*SEE NOTE 12.



TEMPORARY WALL ON STRUCTURE DETAIL

*SEE GEOSYNTHETIC PLACEMENT DETAILS.
**SEE REINFORCEMENT TABLES ON SHEET 3.

NOTES:

1. AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY WALLS AS NOTED IN THE PLANS.
2. FOR STANDARD TEMPORARY WALLS, SEE STANDARD SHORING PROVISION.
3. STANDARD TEMPORARY WALLS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
   UNIT WEIGHT, γ = 120 PCF
   FRICTION ANGLE, ϕ = 30 DEGREES
   COHESION, c = 0 PSF
4. DO NOT USE STANDARD TEMPORARY WALLS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
5. DO NOT USE STANDARD TEMPORARY WALLS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW TEMPORARY WALLS.
6. USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, ASSUME GROUNDWATER DEPTH IS LESS THAN 7' BELOW BOTTOM OF REINFORCED ZONE. DO NOT USE STANDARD TEMPORARY WALLS IF GROUNDWATER OR FLOOD ELEVATION IS ABOVE BOTTOM OF REINFORCED ZONE.
7. DO NOT USE A-2-4 SOIL FOR STANDARD TEMPORARY WALLS AROUND CULVERTS OR IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS FOR SLOPE CASES. DO NOT USE CLASS VI SELECT MATERIAL IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS WITH GEOTEXTILE REINFORCEMENT.
8. WALL EMBEDMENT IS NOT REQUIRED FOR STANDARD TEMPORARY WALLS ON STRUCTURES OR ROCK AS DETERMINED BY THE ENGINEER.
9. DO NOT USE MORE THAN 4 DIFFERENT REINFORCEMENT STRENGTHS FOR EACH STANDARD TEMPORARY WALL.
10. GEOGRIDS FOR GEOGRID REINFORCEMENT ARE APPROVED FOR SHORT TERM DESIGN STRENGTHS (3-YEAR DESIGN LIFE) IN THE MD AND CD BASED ON MATERIAL TYPE. THE LIST OF APPROVED GEOGRIDS WITH DESIGN STRENGTHS IS AVAILABLE FROM: connect.ncdot.gov/resources/Geological/Pages/Products.aspx
    DEFINE MATERIAL TYPE FROM THE WEBSITE ABOVE FOR SHORING BACKFILL AS FOLLOWS:

MATERIAL TYPE	SHORING BACKFILL
BORROW	A-2-4 SOIL
FINE AGGREGATE	CLASS II, TYPE I OR CLASS III SELECT MATERIAL
COARSE AGGREGATE	CLASS V OR VI SELECT MATERIAL

11. FOR GEOGRID REINFORCEMENT WITH LESS THAN 100% COVERAGE, STAGGER REINFORCEMENT SO GEOGRIDS ARE CENTERED OVER GAPS IN THE REINFORCEMENT LAYER BELOW.
12. AT THE CONTRACTOR'S OPTION, REINFORCEMENT MAY BE INSTALLED WITH THE MD PARALLEL TO THE WALL FACE IF BOTH OF THE FOLLOWING CONDITIONS OCCUR:
    - W (REINFORCEMENT ROLL WIDTH) $\geq$ (MINIMUM REQUIRED REINFORCEMENT LENGTH) + 4.5' AND
    - REINFORCEMENT STRENGTH IN CD $\geq$ MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD.
13. SUBMIT A "STANDARD TEMPORARY WALL SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY WALL CONSTRUCTION. STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM: connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx
14. DO NOT PLACE SHORING BACKFILL OR REINFORCEMENT UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.
15. FOR STANDARD TEMPORARY WALLS WITH PILE FOUNDATIONS IN THE REINFORCED ZONE, DRIVE PILES THROUGH REINFORCEMENT AFTER CONSTRUCTING TEMPORARY WALLS.
16. DO NOT SPLICE OR OVERLAP REINFORCEMENT SO SEAMS ARE PARALLEL TO THE WALL FACE.
17. CONTACT THE ENGINEER WHEN EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT.
18. FOR STANDARD TEMPORARY WALLS WITH INTERIOR ANGLES LESS THAN 90 DEGREES, WRAP GEOSYNTHETICS AT ACUTE CORNERS AS DIRECTED BY THE ENGINEER.
19. FOR STANDARD TEMPORARY WALLS WITH TOP OF WALL WITHIN 5' OF FINISHED GRADE, REMOVE TOP FACING AND INCORPORATE TOP REINFORCEMENT LAYER INTO FILL WHEN PLACING FILL IN FRONT OF WALL.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

STANDARD DETAIL NO. 1801.02

STANDARD TEMPORARY WALL
SHEET 2 OF 3

DATE: 10-19-21

PROJECT REFERENCE NO.	SHEET NO.
R-5921	2G-3

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 041986 ENGINEER MATTHEW BREWER

DocuSigned by: Matthew Brewer 8/26/2024
386129C0A4674... SIGNATURE DATE

ENGINEER

SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SLOPE OR SURCHARGE CASE	GROUNDWATER DEPTH BELOW BOTTOM OF REINFORCED ZONE (SEE NOTE 6 ON SHEET 2) (FT)	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)	H – WALL HEIGHT (FT)																								
			< 4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
SLOPE CASE	> 0	CLASS II,TYPE I, CLASS III,CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	8	9	11	12	13	13	14	15	16	17	18	19	20	21	22	23	24	24	25	26	27	27
SURCHARGE CASE	> 0 TO 7 FOR H < 20′ > 0 TO 10 FOR H ≥ 20′	ALL SHORING BACKFILL TYPES	6	7	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	17	17	18	19	19	20	21	22
	> 7 FOR H < 20′ > 10 FOR H ≥ 20′	A-2-4 SOIL	6	6	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21
		CLASS II,TYPE I OR CLASS III SELECT MATERIAL	6	6	7	7	8	8	9	10	10	11	11	12	12	13	14	15	15	16	16	17	17	18	18	19	20
		CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	7	7	8	8	9	9	10	10	11	12	13	13	14	14	15	15	16	17	17	18	19	19

L – MINIMUM REQUIRED REINFORCEMENT LENGTH (FT)

(FOR ALL REINFORCEMENT TYPES)

WALL HEIGHT (H) + WALL EMBEDMENT (FT)	NUMBER OF REINFORCEMENT LAYERS*
2.5 – 4	3
4 – 5.5	4
5.5 – 7	5
7 – 8.5	6
8.5 – 10	7
10 – 11.5	8
11.5 – 13	9
13 – 14.5	10
14.5 – 16	11
16 – 17.5	12
17.5 – 19	13
19 – 20.5	14
20.5 – 22	15
22 – 23.5	16
23.5 – 25	17
25 – 26.5	18
26.5 – 28	19
28 – 29.5	20

*BASED ON VERTICAL REINFORCEMENT SPACING SHOWN ON SHEET 1.

REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL	A-2-4 SOIL	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL
1	2400	2400	2400	2400	2400
2	2400	2400	2400	2400	2400
3	2400	2400	2400	2400	2400
4	2400	2400	2500	2400	2400
5	2500	2400	3000	2400	2400
6	3000	2400	3500	2800	2400
7	3500	2700	4000	3200	2600
8	4000	3100	4500	3600	2900
9	4500	3500	5000	4000	3200
10	5000	3900	5500	4400	3500
11	5500	4300	6000	4800	3800
12	6000	4700	6500	5200	4100
13	6500	5100	7000	5600	4400
14	7000	5400	7500	6000	4700
15	7500	5800	8000	6400	5000
16	8000	6200	8500	6800	5300
17	8500	6600	9000	7200	5600
18	9000	7000	9500	7600	5900
19	9500	7400	10000	8000	6200
20	10000	7800	10500	8400	6500

GEOTEXTILE REINFORCEMENT
ULTIMATE TENSILE STRENGTH (LB/FT)

REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL	A-2-4 SOIL	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL
1	240	200	340	290	240
2	380	310	520	430	350
3	530	420	700	570	460
4	690	550	870	720	570
5	860	690	1050	860	680
6	1030	830	1220	1000	790
7	1200	970	1400	1150	900
8	1370	1110	1580	1290	1010
9	1550	1240	1750	1430	1120
10	1720	1380	1930	1580	1230
11	1890	1520	2100	1720	1340
12	2060	1660	2280	1860	1450
13	2240	1800	2450	2010	1560
14	2410	1940	2630	2150	1670
15	2580	2080	2800	2290	1780
16	2750	2220	2980	2440	1890
17	2930	2360	3160	2580	2000
18	3100	2500	3330	2720	2110
19	3270	2640	3510	2860	2220
20	3440	2780	3690	3000	2330

GEOGRID REINFORCEMENT
SHORT–TERM DESIGN STRENGTH (LB/FT)
(SEE NOTE 10 ON SHEET 2.)

MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD
(SEE NOTE 9 ON SHEET 2.)
*SEE PARTIAL ELEVATION ON SHEET 1 FOR REINFORCEMENT LAYER NUMBERING.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

STANDARD DETAIL NO. 1801.02

STANDARD TEMPORARY WALL
SHEET 3 OF 3

DATE: 11-19-13

COMPUTED BY: SGM DATE: 4/4/2024
CHECKED BY: JLT DATE: 7/19/2024

PROJECT NO.	SHEET NO.
R-5921	3B-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
CROSSOVER (DET1 & DET2) @ -L- 43+61.21 TO 46+42.65		50	92	42	
CROSSOVER (DET3 & DET4) @ -L- 262+66.09 TO 266+26.49		39	273	234	
CROSSOVER (DET5 & DET6) @ -L- 282+27.21 TO 285+74.96		41	209	168	
SUBTOTAL 1		130	574	444	
-L- 10+87.57	-L- 40+00.00	1,080	11,470	10,390	
-Y- 10+00.00	-Y- 26+00.00	1,154	3,640	2,486	
SUBTOTAL 2		2,234	15,110	12,876	
-L- 40+00.00	-L- 70+00.00	2,908	1,712		1,196
SUBTOTAL 3		2,908	1,712		1,196
-L- 70+00.00	-L- 100+00.00	2,881	806		2,075
SUBTOTAL 4		2,881	806		2,075
-L- 100+00.00	-L- 130+00.00	3,136	1,489		1,647
SUBTOTAL 5		3,136	1,489		1,647
-L- 130+00.00	-L- 160+00.00	2,875	2,394		482
SUBTOTAL 6		2,875	2,394		482
-L- 160+00.00	-L- 189+50.00	6,194	1,390		4,804
SUBTOTAL 7		6,194	1,390		4,804
-L- 189+50.00	-L- 220+00.00	4,183	948		3,235
SUBTOTAL 8		4,183	948		3,235
-L- 220+00.00	-L- 235+50.00	2,078	1,490		588
SUBTOTAL 9		2,078	1,490		588
Existing Dual Bridge					
-L- 237+50.00	-L- 265+00.00	3,205	2,561		644
SUBTOTAL 10		3,205	2,561		644
-L- 265+00.00	-L- 294+33.00	3,096	1,795		1,301
SUBTOTAL 11		3,096	1,795		1,301
TOTALS:		32,920	30,269	13,320	15,972
MATERIAL FOR SHOULDER CONSTRUCTION			18,584	18,584	
LOSS DUE TO CLEARING & GRUBBING		-250		250	
WASTE IN LIEU OF BORROW				-15,972	-15,972
PROJECT TOTALS:		32,670	48,853	16,182	0
EST. 5% TO REPLACE TOP SOIL ON BORROW PITS				809	
GRAND TOTALS:		32,670	48,853	16,991	
SAY:		**32,700**		**17,000**	

Note: Earthwork quantities are calculated by TGS Engineers. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

EST. DDE = 880 CUBIC YARDS
EST. SHALLOW UNDERCUT = 1,000 CUBIC YARDS
EST. SELECT GRANULAR MATERIAL = 1,050 CUBIC YARDS
PER GEOTECH RECOMMENDATION, ESTIMATED 1,050 CUBIC YARDS OF UNDERCUT TO BE USED IN THE DISCRETION OF THE RESIDENT ENGINEER.

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for grading.

PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS

SURVEY LINE	Station	Station	LOC	ASPHALT REMOVAL	ASPHALT BREAKUP	CONCRETE REMOVAL	CONCRETE BREAKUP
-Y-	13+45	16+83	RT	875.42			
-Y-	17+54	24+62	RT	1,975.49			
-Y-	14+75	15+96	LT	223.66			
-Y-	16+45	17+28	LT	566.99			
-L-	10+96	11+91	RT	53.59			
-L-	Exist, US19 Off-Ramp		RT	1,586.16			
-L-	Exist, US19 On-Ramp		LT	388.14			
-L-	10+80	12+31	LT	485.08			
-L-	12+83	18+50	LT	997.08			
-L-	18+82	26+37	LT	1,404.37			
-L-	27+00	43+74	LT	1,824.87			
-L-	10+89	13+07	MED	367.82			
-L-	13+67	20+19	RT	845.16			
-L-	31+55	37+01	RT	125.61			
-L-	15+50		MED	12.82			
-L-	157+64	161+76	MED	500.16			
-L-	180+32	181+71	MED	262.74			
-L-	227+74	228+84	MED	216.27			
TEMPORARY PAVEMENT							
-Y-	17+06+/-		LT	89.38			
-L-	11+00	12+73	LT	255.26			
-L-	15+14	26+23	LT	681.48			
-L-	28+31	42+77	LT	597.58			
-L-	11+10	13+60	RT	301.01			
-L-	26+65		LT	74.58			
-DET1-				319.04			
-DET2-				243.45			
-DET3-				331.76			
-DET4-				279.21			
-DET5-				360.44			
-DET6-				289.15			
-Y-	11+88	17+75	RT		941.24		
-L-	18+50	25+50	LT		1,112.26		
-L-	15+50		MED		29.03		
TOTALS:				16,533.77	2,082.53		
SAY:				**16,540**	**2,090**		

SHOULDER BERM GUTTER SUMMARY

IN LINEAR FEET

LINE	LOC	STATION	STATION	LENGTH
-L-	LT	27+20	34+05	685
			TOTAL	685
			SAY	690

COMPUTED BY: SGM DATE: 5/24/24
CHECKED BY: JLT DATE: 7/19/24

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
R-5921	3B-2

"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

GUARDRAIL SUMMARY

G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

SURVEY LINE	BEG. STA.	END STA.	LOC	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR		SINGLE FACED CONCRETE BARRIER	EXTRA DEPTH POSTS	REMOVE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	Type III MODIFIED		GREU, TL-3	GREU, TL-2	CAT-1	AT-1	Type III SC			G	NG				
-L-	15+67+/-	19+09+/-	LT																								356.1	
-L-	19+31+/-	20+52+/-	LT																								127.4	
-L-	25+76.00	26+52.00	LT	31.25	75.00														1		1						292.2	R= 49'
-L-	26+92.00	56+84.00	LT	2,968.75	43.75		56+00.00	26+92.00	8'	11'	50'		1'				1				1						2684.3	R=25'; 685' WITH SBG
-L-	61+50.00	64+50.00	LT	300.00			63+50.00	62+00.00	8'	11'	50'		1'				1		1							48		USE EXTRA DEPTH POSTS : 300' @ 6'-3" SPACING
-L-	71+00.00	79+75.00	LT	856.25	50.00		79+50.00	72+00.00	8'	11'									1							36	930.2	R=20; TIE TO EXIST. GR; EXTRA DEPTH POSTS: 72+25 TO 72+75 & 77+50 TO 79+75 : 275' @ 6'-3" SPACING
-L-	74+03.00	78+46.75	RT	443.75			75+00.00	77+50.00	10'	13'	50'		1'				1		1								402.7	
-L-	115+50.00	128+00.00	LT	1,250.00			127+50.00	116+50.00	8'	11'	50'	50'	1'	1'			2										1181.6	
-L-	159+05.00	162+50.00	LT	350.00	37.50		161+16.00	159+28.00	8'	11'									1	1						62	388.1	USE EXTRA DEPTH POSTS: 387.5 @ 6'-3" SPACING
-L-	214+28+/-	214+82+/-	LT																								78.7	
-L-	215+81.25	219+00.00	LT	318.75			218+50.00	216+00.00	5'	8'	50'		1'				1		1								314.6	
-L-	219+63+/-	228+14+/-	RT																								851.2	
-L-	223+75.00	227+81.25	LT	406.25			227+00.00	224+00.00	8'	11'	50'		1'				1		1								201.8	
-L-	228+25.00	230+50.00	LT	225.00			230+00.00	228+50.00	8'	11'	50'		1'				1		1								178.4	
-L-	228+98.75	233+55.00	RT	456.25			229+50.00	233+00.00	10'	13'	50'		1'				1		1								476.2	
-L-	231+08.50	234+96.00	LT	387.50				234+96.00	8'	11'					1				1								387.3	TIE TO EXIST. BRIDGE
-L-	234+08.75	235+65.00	MED, RT	156.25			235+65.00		6'	9'	137.5'		2.75'		1		1										151.3	TIE TO EXIST. BRIDGE
-L-	234+48.00	235+98.00	RT	150.00			235+98.00		10'	13'	50'		1'		1		1										150.5	TIE TO EXIST. BRIDGE
-L-	236+93.00	244+80.00	LT	787.50	37.50		236+93.00		6'	9'					1					1							789	R=15'; TIE TO EXIST. BRIDGE
-L-	237+25.00	238+75.00	MED, LT	150.00			237+25.00		6'	9'	131.25		2.625'		1		1										180.8	TIE TO EXIST. BRIDGE
-L-	237+94.00	244+50.25	RT	656.25			237+94.00		7'	10'					1				1								675.9	TIE TO EXIST. BRIDGE
-L-	245+25.00	253+87.50	RT	862.50			245+50.00	253+75.00	10'	13'	50'		1'				1		1								869.6	
-L-	261+85.00	263+60.00	RT	175.00			262+35.00	262+50.00	10'	13'	50'		1'				1		1								665.4	
-L-	264+90.00	268+46.25	RT	356.25			264+50.00	268+00.00	10'	13'	50'		1'				1		1									
-L-	263+50.00	267+50.00	LT	400.00			267+00.00	264+00.00	8'	11'	50'		1'				1		1								389.3	
-L-	271+00.00	272+31.25	RT	131.25			271+72.00		10'	13'	50'		1'				1		1								102.3	
-L-	283+08.00	294+33.00	RT	1,125.00			283+50.00	294+00.00	10'	13'	50'		1'				1		1							88	1125.8	USE EXTRA DEPTH POSTS: 286+50 TO 292+00 550' @ 6'-3" SPACING
SUB-TOTALS				12,943.75	243.75										6		18		17	2	2					234	13,950.70	
LESS ANCHOR DEDUCTIONS																												
TYPE III MODIFIED		6 @ 18.75 ft		112.50																								
TYPE TL-3		18 @ 50 ft		900.00																								
CAT-1		17 @ 6.25 ft		106.25																								
AT-1		2 @ 6.25 ft			12.50																							
TYPE III SC		2 @ 18.75 ft			37.50																							
ANCHOR TOTALS				1,118.75	50.00																							
GRAND-TOTALS				11,825.00	193.75										6		18		17	2	2					234	13,950.70	
SAY				**11,850**	**200**										**6**		**18**		**17**	**2**	**2**					**240**	**13,955**	
ADDITIONAL GUARDRAIL POST = 10 EA																												

TEMPORARY GUARDRAIL SUMMARY

-L-	24+84.50	25+90.75	LT	106.25													2											TEMPORARY END UNITS
SUB-TOTALS				106.25													2											
LESS ANCHOR DEDUCTIONS																												
TYPE TL-2		2 @ 25 ft		50.00																								
ANCHOR TOTALS				50.00																								
GRAND-TOTALS				56.25													2											
SAY				**62.5**													**2**											

TGSLTW1019

COMPUTED BY:	REL	DATE:	9-13-2024
CHECKED BY:	JWT	DATE:	9-13-2024

PROJECT NO.	SHEET NO.
R-5921	3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION SIZE THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 15	18	24	30	36	42	48	DO NOT USE PVC	C. S. PIPE 15 .064	18 .064	24 .064	42 .109	48 .109	R. C. PIPE CLASS III 12	15	18	24	30	36	42	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48
Y 13+16	60 RT	0400		2752.9																															
		0400	0401		2749.4	2749.3						28																							
Y 13+14	32 RT	0401		2755.0																															
		0401	0403		2749.3	2749.1																											28		
Y 14+00	4 RT	0402		2754.4																															
		0402	0403		2751.2	2750.9																								84							
Y 13+14	4 RT	0403		2754.0																															
		0403	0404		2749.1	2747.3																											40		
Y 13+14	38 LT	0404		2752.1																															
		0404	0405		2746.0	2745.5																												128	
Y 14+50	38 LT	0405		2752.9																															
		0405	0406		2745.5	2745.1																												96	
Y 15+43	40 LT	0406		2754.8																															
		0406	0426		2744.7	2744.2																												64	
Y 15+38	38 RT	0407		2756.3																															
		0407	0408		2745.1	2744.9																										32			
Y 15+44	6 RT	0408		2756.1																															
		0408	0406		2744.9	2744.7																										48			
Y 16+12	100 LT	0409		2756.0																															
		0409	0410		2744.0	2743.3																					80								
L 11+90	78 LT	0410		2754.2																															
		0410	0425		2743.3	2739.5																					112								
Y 20+95	32 LT	0411		2775.6																															
		0411	0414		2772.6	2766.4																								100							
Y 20+28	79 RT	0412		2770.9																															
		0412	0413		2766.9	2766.1																										84			
Y 20+04	0 CL	0413		2770.8																															
		0413	0414		2764.8	2764.0																										32			
Y 19+95	32 LT	0414		2769.4																															
		0414	0415		2764.0	2762.7																			48										
Y 19+02	9 RT	0416		2765.0																															
		0416	0430		2761.9	2759.4																								56							
Y 17+90	23 RT	0417		2761.1																															
		0417	0431		2757.9	2757.1																								24							
Y 15+33	59 RT	0418		2749.4																															
		0418	0407		2745.2	2745.1					24																								
Y 18+01	48 LT	0419		2760.2																															
		0419	0420		2756.3	2755.0																								76							
Y 17+33	87 LT	0420		2757.7																															
		0420	0421		2754.7	2754.1																								28							
L 11+00	39 RT	0421		2757.1																															
		0421	0422		2754.1	2752.0																								88							
L 11+86	23 RT	0422		2755.0																															
		0422	0423		2752.0	2751.9																								12							
L 11+84	6 RT	0423		2755.0																															
		0423	0424		2751.9	2750.9																								40							
L 11+85	35 LT	0424		2753.9																															
		0424	0410		2750.9	2750.5	0.3																							44							
Y 15+99	55 LT	0426		2755.3																															
		0426	0409		2744.2	2744.0																												28	
						SHEET TOTALS					24	28													48		192		552			196	68	316	

STRUCTURE NUMBER FROM	TO	15" PIPE REHABILITATION CIPP LINER	18" PIPE REHABILITATION CIPP LINER	24" PIPE REHABILITATION CIPP LINER	30" PIPE REHABILITATION CIPP LINER		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) 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 T.B.D.I. STD. 852.04 OR 852.06	T.B.D.I. STD. 852.07	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. (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. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	TEMP STEEL PLATE COVER MASONRY DRAINAGE	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	OFFSET C.B. (SEE SHEET 2D-1)	ADJUST DI	OFFSET DI (SEE SHEET 2D-2)	24" C.S. ELBOW	30" C.S. ELBOW	42" C.S. ELBOW	48" C.S. ELBOW	PIPE CLEANOUT EA	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
0400							3.400																																											
0400	0401																																																	
0401								1	0.7		1			1																																				
0401	0403																																																	
0402								1								1						1									1																			
0402	0403																																																	
0403								1								1						1									1																			
0403	0404																																																	
0404								1	1.1		1		1																																					
0404	0405																																																	
0405								1	2.4		1		1																																					
0405	0406																																																	
0406								1	5.0	0.1	1		1																																					
0406	0426																																																	
0407								1	5.0	1.2	1		1																																					
0407	0408																																																	
0408								1	5.0	1.1						1						1									1																			
0408	0406																																																	
0409								1	5.0	1.4										1					1																									
0409	0410																																																	
0410								1	5.0	0.9										1					1																									
0410	0425																																																	
0411								1			1		1																																					
0411	0414																																																	
0412								1												1					1																									
0412	0413																																																	
0413								1	1.1							1						1									1																			
0413	0414																																																	
0414								1	0.4		1		1																																					
0414	0415																																																	
0416								1								1						1									1																			
0416	0430																																																	
0417								1								1						1									1																			
0417	0431																																																	
0418																																																		
0418	0407																																																	
0419								1			1		1																																					
0419	0420																																																	
0420								1			1		1																																					
0420	0421																																																	
0421								1			1		1																																					
0421	0422																																																	
0422								1			1		1																																					
0422	0423																																																	
0423								1								1						1									1																			
0423	0424																																																	
0424								1			1			1																																				
0424	0410																																																	
0426								1	5.0	1.1	1		1																																					
0426	0409																																																	
SHEET TOTALS							3.400	23	35.7	5.8	13		11	2		7				3		7			3						7																			

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

TGSLTW1019

COMPUTED BY:	REL	DATE:	9-13-2024
CHECKED BY:	JWT	DATE:	9-13-2024

PROJECT NO.	SHEET NO.
R-5921	3D-2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION (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) 15	18	24	30	36	42	48	DO NOT USE PVC
Y 12+50	37	LT	0427		2752.0											
			0427	0428		2749.0	2748.7									
Y 11+45	35	LT	0428		2752.3											
Y 20+75	0	CL	0429		2775.2											
			0429	0413		2772.1	2767.7									
Y 18+46	12	RT	0430		2762.6											
			0430	0417		2759.4	2757.9									
Y 17+78	0	CL	0431		2760.3											
			0431	0432		2757.1	2756.6									
Y 17+75	17	LT	0432		2759.8											
			0432	0419		2756.6	2756.3									
Y 16+10	0	CL	0433		2756.8											
			0433	0434		2753.6	2753.3									
Y 16+12	16	LT	0434		2756.5											
			0434	0426		2753.3	2752.1									
Y 21+50	0	CL	0500		2779.8											
			0500	0429		2776.7	2772.1									
Y 22+00	32	LT	0501		2782.1											
			0501	0411		2779.1	2772.6									
Y 26+00	32	RT	0506		2803.7											
			0506	0507		2800.7	2799.3									
Y 25+66	32	RT	0507		2802.3											
			0507	0509		2799.3	2798.0									
Y 25+39	37	RT	0508		2801.7											
			0508	0509		2798.5	2798.0	0.4								
Y 25+34	32	RT	0509		2801.0											
			0509	0513		2798.0	2791.5	1.1								
Y 24+50	42	RT	0510		2797.5											
			0510	0511		2794.8	2793.4		32							
Y 24+19	45	RT	0511		2796.1											
			0511	0513		2793.4	2793.0		12							
Y 24+15	34	RT	0513		2796.0											
			0513	0514		2791.5	2790.3	0.5								
Y 23+94	32	LT	0514		2793.5											
			0514	0515		2790.3	2789.7	0.8		20						
Y 23+85	50	LT	0515		2793.0											
Y 24+07	41	RT	0517		2794.6											
			0517	0518		2791.1	2790.9		8							
Y 23+73	35	RT	0518		2793.3											
			0518	0520		2790.9	2789.4									
Y 23+76	41	RT	0519		2793.3											
			0519	0520		2789.8	2789.4		8							
Y 23+47	36	RT	0520		2792.4											
			0520	0522		2789.4	2783.7									
Y 22+57	55	RT	0521		2784.8											
Y 22+60	37	RT	0522		2787.0											
			0522	0521		2782.6	2782.1		20							
Y 22+50	43	RT	0523		2786.2											
			0523	0522		2782.7	2782.6		12							
L 22+47	50	RT														
SHEET TOTALS									92	20						

LINE & STATION	FROM	TO	C. S. PIPE 15 (.064)	18 (.064)	24 (.064)	42 (.109)	48 (.109)	R. C. PIPE CLASS III 12	15	18	24	30	36	42	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	15" PIPE REHABILITATION CIPP LINER	18" PIPE REHABILITATION CIPP LINER	24" PIPE REHABILITATION CIPP LINER	30" PIPE REHABILITATION CIPP LINER		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY
Y 12+50	0427																											
	0427	0428														100												
Y 11+45	0428																											
Y 20+75	0429																											
	0429	0413														68												
Y 18+46	0430																											
	0430	0417														56												
Y 17+78	0431																											
	0431	0432														16												
Y 17+75	0432																											
	0432	0419														36												
Y 16+10	0433																											
	0433	0434														16												
Y 16+12	0434																											
	0434	0426														40												
Y 21+50	0500																											
	0500	0429														72												
Y 22+00	0501																											
	0501	0411														104												
Y 26+00	0506																											
	0506	0507														32												
Y 25+66	0507																											
	0507	0509														32												
Y 25+39	0508																											
	0508	0509							8																			
Y 25+34	0509																											
	0509	0513														120												
Y 24+50	0510																											
	0510	0511																										
Y 24+19	0511																											
	0511	0513																										
Y 24+15	0513																											
	0513	0514															68											
Y 23+94	0514																											
	0514	0515																										
Y 23+85	0515																											
Y 24+07	0517																											
	0517	0518																										
Y 23+73	0518																											
	0518	0520														24												
Y 23+76	0519																											
	0519	0520																										
Y 23+47	0520																											
	0520	0522														88												
Y 22+57	0521																											
Y 22+60	0522																											
	0522	0521																										
Y 22+50	0523																											
	0523	0522																										
L 22+47																												
SHEET TOTALS									8							804	68											

LINE & STATION	FROM	TO	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 T.B.D.I. STD. 852.04 OR 852.06	T.B.D.I. STD. 852.07	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. (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. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35
Y 12+50	0427		1			1	1																				
	0427	0428																									
Y 11+45	0428		1					1																			
Y 20+75	0429		1								1						1										1
	0429	0413																									
Y 18+46	0430		1								1						1										1
	0430	0417																									
Y 17+78	0431		1								1						1										1
	0431	0432																									
Y 17+75	0432		1								1						1										1
	0432	0419																									
Y 16+10	0433		1								1						1										1
	0433	0434																									
Y 16+12	0434		1								1						1										1
	0434	0426																									
Y 21+50	0500		1								1						1										1
	0500	0429																									
Y 22+00	0501		1			1		1																			
	0501	0411																									
Y 26+00	0506		1			1			1																		
	0506	0507																									
Y 25+66	0507		1			1			1																		
	0507	0509																									
Y 25+39	0508		1														1										1
	0508	0509																									
Y 25+34	0509		1			1			1																		
	0509	0513																									
Y 24+50	0510		1													1				1							
	0510	0511																									
Y 24+19	0511		1													1				1							
	0511	0513																									
Y 24+15	0513		1			1			1																		
	0513	0514																									
Y 23+94	0514		1			1		1																			
	0514	0515																									
Y 23+85	0515		1													1				1							
Y 24+07	0517		1																		1	16					
	0517	0518																									
Y 23+73	0518		1			1			1																		
	0518	0520																									
Y 23+76	0519		1																		1	16					
	0519	0520																									
Y 23+47	0520		1			1			1																		
	0520	0522																									
Y 22+57	0521		1																	1							
Y 22+60	0522		1			1			1																		
	0522	0521																									
Y 22+50	0523		1																		1	20					
	0523	0522																									
L 22+47																											
SHEET TOTALS			26			10	1	3	7		7					3	8			4	3	52					8

LINE & STATION	FROM	TO	TEMP STEEL PLATE COVER MASONRY DRAINAGE	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	OFFSET C.B. (SEE SHEET 2D-1)	ADJUST DI	OFFSET DI (SEE SHEET 2D-2)	24" C.S. ELBOW	30" C.S. ELBOW	42" C.S. ELBOW	48" C.S. ELBOW	PIPE CLEANOUT EA	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
Y 12+50	0427																				
	0427	0428																			
Y 11+45	0428								1												
Y 20+75	0429																				
	0429	0413																			
Y 18+46	0430																				
	0430	0417																			
Y 17+78	0431																				
	0431	0432																			
Y 17+75	0432																				
	0432	0419																			
Y 16+10	0433																				
	0433	0434																			
Y 16+12	0434																				
	0434	0426																			
Y 21+50	0500																				
	0500	0429																			
Y 22+00	0501																				
	0501	0411																			
Y 26+00	0506																				
	0506	0507																			
Y 25+66	0507																				
	0507	0509																			
Y 25+39	0508																				
	0508	0509																			
Y 25+34	0509																				
	0509	0513																			
Y 24+50	0510																				
	0510	0511																			
Y 24+19	0511																				
	0511	0513																			
Y 24+15	0513																				
	0513	0514																			
Y 23+94	0514																				
	0514	0515																			
Y 23+85	0515																				
Y 24+07	0517																				
	0517	0518																			
Y 23+73	0518																				
	0518	0520																			
Y 23+76	0519																				
	0519	0520																			
Y 23+47	0520																				
	0520	0522																			
Y 22+57	0521										1										
Y 22+60	0522																				
	0522	0521																			
Y 22+50	0523																				
	0523	0522																			
L 22+47																		0.5526			
SHEET TOTALS									1		1							0.5526			

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

TGSLITW1019

COMPUTED BY: REL DATE: 9-13-2024

CHECKED BY: JWT DATE: 9-13-2024

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-5921	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 FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) SIZE: 15	18	24	30	36	42	48	DO NOT USE PVC
L 14+94	36	LT	0600		2744.8											
			0600	0601		2741.8	2738.1									
L 16+58	35	LT	0601		2741.1											
			0601	0602		2738.1	2738.0									
L 16+58	6	LT	0602		2741.6											
			0602	0603		2738.0	2736.2									
L 18+00	7	LT	0603		2739.4											
			0603	0604		2736.2	2734.6									
L 19+51	6	LT	0604		2737.8											
			0604	0605		2734.6	2733.6									
L 20+53	6	LT	0605		2736.7											
			0605	0630		2728.2	2726.4									
L 19+77	60	RT	0606		2735.0											
			0606	0607		2732.9	2730.4				28					
L 20+02	46	RT	0607		2735.2											
			0607	0608		2730.4	2729.9									
L 20+58	46	RT	0608		2734.7											
			0608	0605		2728.4	2728.2									
L 20+59	59	RT	0609		2734.7											
			0609	0608		2730.2	2728.4	0.3								
L 22+41	7	LT	0611		2735.0											
			0611	0614		2731.8	2730.5									
L 21+39	53	LT	0612		2736.0											
			0612	0613		2733.8	2732.7									
L 22+41	53	LT	0613		2734.9											
			0613	0611		2732.7	2732.3									
L 23+74	6	LT	0614		2733.7											
			0614	0615		2730.5	2729.6									
L 24+50	7	LT	0615		2732.8											
			0615	0625		2729.6	2729.1									
L 23+50	47	RT	0618		2731.7											
			0618	0619		2728.5	2728.3									
L 24+27	47	RT	0619		2731.4											
			0619	0620		2728.3	2728.1									
L 24+56	47	RT	0620		2731.4											
			0620	0701		2727.0	2726.6									
L 25+00	64	RT	0621		2730.6											
			0621	0620		2727.1	2727.0		24							
L 25+00	6	LT	0625		2732.3											
			0625	0702		2729.1	2728.8									
L17+89	111	LT	0627		2730.8											
			0627	0628		2728.6	2728.0		32							
L 20+31	65	LT	0630													
			0630	0610		2726.4	2725.8									
L 25+49	55	RT	0700		2731.2											
			0700	0701		2727.7	2726.3					16				
L 25+40	45	RT	0701		2731.1											
			0701	0702		2726.3	2725.8									
L 25+39	6	LT	0702		2731.8											
			0702	0703		2725.8	2720.0									
					SHEET TOTALS				56		28		16			

	C. S. PIPE SIZE: 15	18	24	42	48	R. C. PIPE CLASS III SIZE: 12	15	18	24	30	36	42	R. C. PIPE CLASS IV SIZE: 12	15	18	24	30	36	42	48
THICKNESS OR GAUGE	.064	.064	.064	.109	.109															
L 14+94														164						
L 16+58														28						
L 16+58														140						
L 18+00														148						
L 19+51														100						
L 20+53												60								
L 19+77																				
L 20+02																52				
L 20+58												52								
L 20+59																				
					12															
L 22+41														132						
L 21+39																				
						104														
L 22+41																				
						44														
L 23+74																				
														76						
L 24+50																				
														48						
L 23+50																				
														72						
L 24+27																				
														28						
L 24+56																				
														84						
L 25+00																				
L 25+00																				
														36						
L17+89																				
L 20+31																				
												20								
L 25+49																				
L 25+40																				
												52								
L 25+39																				
												88								
					12	148						140	132	1056		52				

	15" PIPE REHABILITATION CIPP LINER	18" PIPE REHABILITATION CIPP LINER	24" PIPE REHABILITATION CIPP LINER	30" PIPE REHABILITATION CIPP LINER	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B) A: 0' THRU 5' EACH	B: 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 T.B.D.I. STD. 852.04 OR 852.06	T.B.D.I. STD. 852.07	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. (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. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	TEMP STEEL PLATE COVER MASONRY DRAINAGE	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	OFFSET C.B. (SEE SHEET 2D-1)	ADJUST DI	OFFSET DI (SEE SHEET 2D-2)	24" C.S. ELBOW	30" C.S. ELBOW	42" C.S. ELBOW	48" C.S. ELBOW	PIPE CLEANOUT EA	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
L 14+94						1			1							1																												
L 16+58						1			1							1																												
L 16+58						1			1								1																												
L 18+00						1			1								1																												
L 19+51						1			1								1																												
L 20+53						1	3.5		1								1																												
L 19+77																																													
L 20+02						1			1								1																												
L 20+58						1	1.3		1								1																												
L 20+59																4.500																												
L 22+41						1			1								1																												
L 21+39						1			1								1	1																										
L 22+41						1			1								1	1																										
L 23+74						1			1								1																												
L 24+50						1			1								1																												
L 23+50						1			1								1																												
L 24+27						1			1								1																												
L 24+56						1			1								1																												
L 25+00						1			1								1																												
L 25+00						1			1								1																												
L17+89						1			1								1	1																												
L 20+31						1	5.0	1.3									1																												
L 25+49																3.400																												
L 25+40						1			1								1																												
L 25+39						1	1.0		1								1																												
						22	10.8	1.3	2			2		6	3	3	3	2	3	14			1	40	1		1	9		2	2								2					

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

TGSLTW1019

COMPUTED BY: REL DATE: 9-13-2024

CHECKED BY: JWT DATE: 9-13-2024

PROJECT NO.	SHEET NO.
R-5921	3D-4

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION	OFFSET		STRUCTURE NUMBER FROM	TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 15	18	24	30	36	42	48	DO NOT USE PVC	C. S. PIPE 15 (.064)	18 (.064)	24 (.064)	42 (.109)	48 (.109)	R. C. PIPE CLASS III 12	15	18	24	30	36	42	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48
L 28+00	3	LT	0704		2730.1																															
			0704	0705		2727.0	2726.9																							16						
L 28+00	14	RT	0705		2730.8																															
			0705	0706		2726.9	2726.1																							148						
L 29+50	14	RT	0706		2729.9																															
			0706	0707		2726.1	2725.4																							148						
L 31+00	14	RT	0707		2728.5																															
			0707	0708		2725.4	2724.4																							88						
L 31+89	14	RT	0708		2727.6																															
			0708	0717		2720.1	2717.8																								64					
L 31+87	60	RT	0709		2723.6																															
			0709	0708		2720.6	2720.1																48												
L 34+01	17	RT	0711		2725.3																															
			0711	0712		2722.2	2721.2																							68						
L 34+73	18	RT	0712		2724.4																															
			0712	0713		2721.2	2720.5															52													
L 29+50	52	LT	0715		2727.1																															
			0715	0716		2724.0	2722.8																							128						
L 30+82	52	LT	0716		2726.0																															
			0716	0717		2722.8	2721.7																							104						
L 31+89	51	LT	0717		2724.8																															
			0717	0710		2715.0	2714.3	2.0																36											
L 33+00	49	LT	0718		2723.7																															
			0718	0717		2718.8	2717.5																							108						
L 33+99	43	LT	0719		2722.9																															
			0719	0718		2719.8	2718.8																							96						
L 42+32	63	RT	0800		2712.0																															
			0800	0803		2709.0	2708.6																										64			
L 42+31	0	CL	0803		2713.0																															
			0803	0804		2706.4	2703.5																		76										
L 48+62	CL		0805																																	
L 53+08	66	RT	0900		2703.0																															
L 59+50	5	LT	0903		2697.6																															
L 63+17	4	RT	0904		2693.8																															
L 66+93	1	RT	0906		2689.5																															
L 77+65	CL		1001																																	
L 79+26	5	LT	1002		2687.4																															
L 79+26	CL		1003																																	
L 83+62	4	RT	1100		2680.7																															
L 86+53	3	RT	1101		2673.2																															
L 91+64	2	LT	1103		2661.8																															
L 98+45	5	LT	1200		2656.6																															
L 101+77	2	LT	1201		2654.0																															
L 108+20	4	RT	1204		2649.3																															
L 102+14	66	LT	1205						36																											
L 113+11	4	LT	1300		2645.3																															
L 116+12	4	LT	1301		2643.2																															
L 115+12	70	RT	1304																																	
L 115+67	84	RT	1305		2644.7																															
			1304	1305		2642.0	2641.6															60													
								SHEET TOTALS	36														112	48	36	76				904	64		64			

LINE & STATION	FROM	TO	15" PIPE REHABILITATION CIPP LINER	18" PIPE REHABILITATION CIPP LINER	24" PIPE REHABILITATION CIPP LINER	30" PIPE REHABILITATION CIPP LINER		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	QUANTITIES FOR DRAINAGE STRUCTURES 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 T.B.D.I. STD. 852.04 OR 852.06	T.B.D.I. STD. 852.07
L 28+00	0704								1								1	
	0704	0705																
L 28+00	0705								1								1	
	0705	0706																
L 29+50	0706								1								1	
	0706	0707																
L 31+00	0707								1								1	
	0707	0708																
L 31+89	0708								1	2.5							1	
	0708	0717																
L 31+87	0709								1									
	0709	0708																
L 34+01	0711								1								1	
	0711	0712																
L 34+73	0712								1								1	
	0712	0713																
L 29+50	0715								1									
	0715	0716																
L 30+82	0716								1									
	0716	0717																
L 31+89	0717								1	4.9								
	0717	0710																
L 33+00	0718								1									
	0718	0717																
L 33+99	0719								1									
	0719	0718																
L 42+32	0800																	
	0800	0803																
L 42+31	0803								1	1.5								
	0803	0804																
L 48+62	0805				148													
L 53+08	0900								1									
L 59+50	0903								1	0.1								
L 63+17	0904								1	0.4								
L 66+93	0906								1	0.1								
L 77+65	1001			140														
L 79+26	1002								1									
L 79+26	1003		68															
L 83+62	1100								1									
L 86+53	1101								1	1.8								
L 91+64	1103								1	1.5								
L 98+45	1200								1	2.0								
L 101+77	1201								1	1.1								
L 108+20	1204								1	1.0								
L 102+14	1205																	
L 113+11	1300								1	1.0								
L 116+12	1301								1	1.2								
L 115+12	1304																	
L 115+67	1305								1									
	1304	1305																
SHEET TOTALS			68	140	148				28	19.1							7	

LINE & STATION	FROM	TO	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. (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. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	TEMP STEEL PLATE COVER MASONRY DRAINAGE	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	OFFSET C.B. (SEE SHEET 2D-1)	ADJUST DI	OFFSET DI (SEE SHEET 2D-2)	24" C.S. ELBOW	30" C.S. ELBOW	42" C.S. ELBOW	48" C.S. ELBOW	PIPE CLEANOUT EA	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
L 28+00	0704						1									1																			
	0704	0705																																	
L 28+00	0705						1									1																			
	0705	0706																																	
L 29+50	0706						1									1																			
	0706	0707																																	
L 31+00	0707						1									1																			
	0707	0708																																	
L 31+89	0708						1									1																			
	0708	0717																																	
L 31+87	0709					1				1																									
	0709	0708																																	
L 34+01	0711						1									1																			
	0711	0712																																	
L 34+73	0712						1									1																			
	0712	0713																																	
L 29+50	0715					1	1																												
	0715	0716																																	
L 30+82	0716					1	1																												
	0716	0717																																	
L 31+89	0717					1	1																												
	0717	0710																																	
L 33+00	0718					1	1																												
	0718	0717																																	
L 33+99	0719					1	1																												
	0719	0718																																	
L 42+32	0800																																		
	0800	0803																																	
L 42+31	0803					1	1																												
	0803	0804																																	
L 48+62	0805																																		
L 53+08	0900					1				1																									
L 59+50	0903								1																1										
L 63+17	0904								1																1										
L 66+93	0906								1															1											
L 77+65	1001																																		
L 79+26	1002								1																1										
L 79+26	1003																																		
L 83+62	1100						1																		1										
L 86+53	1101						1																		1										
L 91+64	1103						1																		1										
L 98+45	1200						1																		1										
L 101+77	1201						1																		1										
L 108+20	1204					1			1																										
L 102+14	1205																																		
L 113+11	1300								1																1										
L 116+12	1301								1																1										
L 115+12	1304																																		15" INLET
L 115+67	1305		1	1																															
	1304	1305																																	
SHEET TOTALS			1	1		9	18		7	2						7								1	10										

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

NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)

TGSLTW1019

COMPUTED BY: REL DATE: 9-13-2024

CHECKED BY: JWT DATE: 9-13-2024

PROJECT NO.	SHEET NO.
R-5921	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) 15	18	24	30	36	42	48	DO NOT USE PVC	C. S. PIPE 15 .064	18 .064	24 .064	42 .109	48 .109	R. C. PIPE CLASS III 12	15	18	24	30	36	42	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	15" PIPE REHABILITATION CIPP LINER	18" PIPE REHABILITATION CIPP LINER	24" PIPE REHABILITATION CIPP LINER	30" PIPE REHABILITATION CIPP LINER		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) 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 T.B.D.I. STD. 852.04 OR 852.06	T.B.D.I. STD. 852.07	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. (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. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	TEMP STEEL PLATE COVER MASONRY DRAINAGE	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	OFFSET C.B. (SEE SHEET 2D-1)	ADJUST DI	OFFSET DI (SEE SHEET 2D-2)	24" C.S. ELBOW	30" C.S. ELBOW	42" C.S. ELBOW	48" C.S. ELBOW	PIPE CLEANOUT EA	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
L 116+03	70 RT	1306																																																																																	15" OUTLET
		1305	1306		2641.6	2641.3																40																																																												
L 121+89	CL	1405																																				136																																																
L 121+88	12 RT	1401		2639.7																																						1	2.5															1																1										
L 127+13	2 RT	1403		2634.3																																						1																1																1										
L 133+10	7 LT	1404		2626.7																																						1	1.2															1																1										
L 138+13	6 RT	1500		2621.6																																						1	1.0															1																1										
L 145+13	0 CL	1501		2618.7																																						1	3.9																							1					1	1																	
L 145+12	11 LT	1502		2617.1																																						1	2.3															1																1										
L 137+52	66 RT	1505		2621.7																																																																															
		1505	1506		2619.7	2618.2	1.1																						60																																																								
L 138+12	66 RT	1506		2620.0																																						1													1				1																													
L 148+06	1 LT	1600		2612.9																																						1	0.7															1																1										
L 149+60	1 LT	1601		2611.3																																						1	0.7															1																1										
L 154+13	1 LT	1602		2604.7																																						1																1																1										
L 157+91	8 LT	1603		2602.5																																						1	1.7															1																1										
L 161+14	12 LT	1605																																								1	0.4															1																1										
L 162+50	10 LT	1700		2599.6																																						1													1			1																														
		1700	1605		2596.9	2595.5																136																																																												
L 166+01	1 RT	1702		2596.3																																						1	1.0															1																1										
L 173+03	2 RT	1703		2587.3																																						1																1															1											
L 166+00|76 LT|1706| |2596.7|																																				|1|								|1|1|																																						
		1706	1707		2594.5	2592.3		8																																																																												
L 166+01	66 LT	1707		2595.4																																						1																													1																	
L 180+25	0 CL	1800		2582.6																																						1												1				1																														
L 185+00	8 LT	1802		2582.4																																						1													1			1																														
		1802	1803		2579.7	2578.5																116																																																												
L 186+14	2 LT	1803		2583.0																																						1								1							1									1																							
		1803	1804		2578.5	2575.2																184																																																												
L 188+00	9 RT	1804		2581.1																																						1	2.9															1																1										
L 188+00	87 RT	1805		2581.5																																																																															
		1805	1808		2579.0	2576.5																								20																																																				
L 188+01	66 RT	1808		2579.8																																																																1														
L 195+02	4 LT	1901		2577.0																																						1	0.3															1																1										
L 200+02	5 LT	1902		2571.2																																						1	0.1															1																1										
L 202+01	6 RT	1903		2568.1																																						1																1																1										
L 102+73	66 RT	1904						40																																																																											
L 209+01	2 LT	2001		2558.7																																						1	0.4															1																1										
L 209+03	72 RT	2002		2557.8																																						1													1				1																													
L 211+33	5 LT	2003		2557.4																																						1	3.0															1																1										
L 212+36	19 LT	2004		2558.7																																						1								1							1									1																							
		2004	2005		2555.5	2555.1																							16																																																								
L 212+39	1 LT	2005		2558.3																																						1	5.0	0.7						1							1									1																							
L 211+42	70 RT	2006		2557.3																																						1	1.3																												1																	
L 214+86	0 CL	2007		2557.3																																						1	5.0	0.8																				1					1	1																	
L 213+50	8 LT	2008		2557.7																																						1								1							1									1																							
		2008	2009		2554.5	2553.9																							104																																																								
L 214+50	16 LT	2009		2557.1																																						1								1							1									1																							
		2009	2010		2553.9	2553.8																							28																																																								
L 214+81	19 LT	2010		2557.0																																						1	4.1							1							1									1																							
SHEET TOTALS								48														476							208	20									136				34	37.5	1.5						6		1	1	1	4	6		21	2			2			6		4	2		1			1	17										

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

TGSLTW1019

COMPUTED BY:	REL	DATE:	9-13-2024
CHECKED BY:	JWT	DATE:	9-13-2024

PROJECT NO.	SHEET NO.
R-5921	3D-6

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION	OFFSET	STRUCTURE NUMBER FROM	TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 15	18	24	30	36	42	48	DO NOT USE PVC	C. S. PIPE 15 (.064)	18 (.064)	24 (.064)	42 (.109)	48 (.109)	R. C. PIPE CLASS III 12	15	18	24	30	36	42	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48
		2010	2007		2547.9	2547.7	0.6																16												
L 217+88	5 RT	2011		2552.7																															
L 211+00	78 RT	2015		2557.2																															
		2015	2006		2554.4	2551.1																44													
L 211+78	65 LT	2016						56																											
L 222+50	1 RT	2100		2548.6																															
		2100	2101		2545.9	2545.2	0.5															124													
L 223+75	11 RT	2101		2549.2																															
		2101	2103		2545.2	2541.7	0.6															374													
L 223+70	19 LT	2102		2550.4																															
		2102	2101		2547.2	2546.5																28													
L 227+53	7 RT	2103		2545.7																															
L 243+03	8 LT	2200		2541.4																															
L 245+01	3 LT	2201		2541.6																															
		2201	2301		2538.4	2537.1																96													
L 244+60	73 LT	2202		2535.4																															
		2202	2203		2532.1	2532.2			38																										
L 246+00	19 LT	2300		2541.1																															
		2300	2301		2537.9	2537.1																28													
L 246+00	9 RT	2301		2539.8																															
		2301	2302		2537.1	2533.3																200													
L 248+03	7 RT	2302		2536.4																															
L 248+03	13 RT	2303		2534.8																															
L 260+03	9 LT	2401		2531.7																															
L 261+18	0 CL	2402		2532.0																															
		2402	2404		2528.8	2527.5																							104						
L 262+23	19 LT	2403		2532.6																															
		2403	2404		2529.4	2528.5																							28						
L 262+23	11 RT	2404		2531.2																															
		2404	2405		2527.5	2524.4																364													
L 265+90	8 RT	2405		2529.0																															
L 271+50	3 LT	2406		2524.5																															
		2406	2412		2521.0	2516.0	0.4																	84											
L 269+50	54 LT	2407		2528.1																															
		2407	2408		2524.9	2523.9																							96						
L 270+50	54 LT	2408		2527.1																															
		2408	2409		2523.9	2523.0																							72						
L 271+26	54 LT	2409		2526.2																															
		2409	2406		2522.2	2521.0																									56				
L 271+29	66 LT	2410		2526.8																															
		2410	2409		2524.2	2522.2	0.5											12																	
L 265+88	95 RT	2413		2531.0																															
L 265+90	CL	2414																																	
L 276+47	4 LT	2500		2514.7																															
L 281+62	5 RT	2502		2509.1																															
		2502	2505		2502.4	2502.0																													56
L 281+51	70 LT	2503		2511.7																															
		2503	2504		2506.7	2502.6														8															
L 281+52	51 LT	2504		2509.5																															
		2504	2502		2502.6	2502.4																													68
							SHEET TOTALS	56	38									12		8		1258	16	84					300		56				124

LINE & STATION	FROM	TO	15" PIPE REHABILITATION CIPP LINER	18" PIPE REHABILITATION CIPP LINER	24" PIPE REHABILITATION CIPP LINER	30" PIPE REHABILITATION CIPP LINER		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) 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 T.B.D.I. STD. 852.04 OR 852.06	T.B.D.I. STD. 852.07
	2010	2007																
L 217+88	2011								1	3.8								
L 211+00	2015								1									
	2015	2006																
L 211+78	2016																	
L 222+50	2100								1									
	2100	2101																
L 223+75	2101								1									
	2101	2103																
L 223+70	2102								1								1	
	2102	2101																
L 227+53	2103								1									
L 243+03	2200								1	4.0								
L 245+01	2201								1								1	
	2201	2301																
L 244+60	2202								1									
	2202	2203																
L 246+00	2300								1								1	
	2300	2301																
L 246+00	2301								1									
	2301	2302																
L 248+03	2302								1									
L 248+03	2303																	
L 260+03	2401								1									
L 261+18	2402								1								1	
	2402	2404																
L 262+23	2403								1								1	
	2403	2404																
L 262+23	2404								1									
	2404	2405																
L 265+90	2405								1	5.0	2.7							
L 271+50	2406								1									
	2406	2412																
L 269+50	2407								1									
	2407	2408																
L 270+50	2408								1									
	2408	2409																
L 271+26	2409								1									
	2409	2406																
L 271+29	2410																	
	2410	2409																
L 265+88	2413								1	5.0	7.5							
L 265+90	2414					166												
L 276+47	2500								1	0.1								
L 281+62	2502								1	1.8								
	2502	2505																
L 281+51	2503							4.900										
	2503	2504																
L 281+52	2504								1	1.9								
	2504	2502																
SHEET TOTALS						166		4.900	25	21.6	10.2						5	

LINE & STATION	FROM	TO	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. (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. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	TEMP STEEL PLATE COVER MASONRY DRAINAGE	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	OFFSET C.B. (SEE SHEET 2D-1)	ADJUST DI	OFFSET DI (SEE SHEET 2D-2)	24" C.S. ELBOW	30" C.S. ELBOW	42" C.S. ELBOW	48" C.S. ELBOW	PIPE CLEANOUT EA	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
	2010	2007																																	
L 217+88	2011								1																1										
L 211+00	2015					1			1																										
	2015	2006																																	
L 211+78	2016																																		
L 222+50	2100					1			1																										
	2100	2101																																	
L 223+75	2101					1			1																										
	2101	2103																																	
L 223+70	2102						1									1																			
	2102	2101																																	
L 227+53	2103								1																1										
L 243+03	2200								1																1										
L 245+01	2201						1									1																			
	2201	2301																																	
L 244+60	2202												1																						
	2202	2203																																	
L 246+00	2300						1									1																			
	2300	2301																																	
L 246+00	2301					1			1																										
	2301	2302																																	
L 248+03	2302					1			1																										
L 248+03	2303																															0.3990			
L 260+03	2401								1																1										
L 261+18	2402								1							1																			
	2402	2404																																	
L 262+23	2403						1									1																			
	2403	2404																																	
L 262+23	2404					1			1																										
	2404	2405																																	
L 265+90	2405								1																1										
L 271+50	2406					1			1																										
	2406	2412																																	
L 269+50	2407						1									1																			
	2407	2408																																	
L 270+50	2408						1									1																			
	2408	2409																																	
L 271+26	2409						1									1																			
	2409	2406																																	
L 271+29	2410																																		
	2410	2409																								2									
L 265+88	2413												1					1	1																
L 265+90	2414																																		
L 276+47	2500								1																1										
L 281+62	2502				1				1																										
	2502	2505																																	
L 281+51	2503																																		
	2503	2504																											2						
L 281+52	2504														1																				
	2504	2502																																	
SHEET TOTALS					1	7	7		15				2		1	8		1	1						6	2			2			0.3990			

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

TGSLITW1019

COMPUTED BY: REL DATE: 9-13-2024

CHECKED BY: JWT DATE: 9-13-2024

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-5921	3D-7

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 FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) SIZE 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE PVC THICKNESS OR GAUGE | C. S. PIPE .064 15 | .064 18 | .064 24 | .109 42 | .109 48 | R. C. PIPE CLASS III 12 | 15 | 18 | 24 | 30 | 36 | 42 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 15" PIPE REHABILITATION CIPP LINER | 18" PIPE REHABILITATION CIPP LINER | 24" PIPE REHABILITATION CIPP LINER | 30" PIPE REHABILITATION CIPP LINER | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B) A 0' THRU 5' EACH | B 5' THRU 10' LIN. FT. | 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 T.B.D.I. STD. 852.04 OR 852.06 | T.B.D.I. STD. 852.07 | 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. (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. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | OFFSET C.B. (SEE SHEET 2D-1) | ADJUST DI | OFFSET DI (SEE SHEET 2D-2) | 24" C.S. ELBOW | 30" C.S. ELBOW | 42" C.S. ELBOW | 48" C.S. ELBOW | PIPE CLEANOUT EA | 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 |
|---|---|---

TGSLITW1019

COMPUTED BY: REL DATE: 9-13-2024

CHECKED BY: JWT DATE: 9-13-2024

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-5921	3D-8

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 FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) SIZE: 15	18	24	30	36	42	48	DO NOT USE PVC THICKNESS OR GAUGE
L 11+02	39 RT	0421													
L 11+85	23 RT	0422													
L 11+85	7 RT	0423													
L 11+85	35 LT	0424													
Y 20+75	1 LT	0429													
Y 21+50	1 LT	0500													
L 212+36	18 LT	2004													
L 213+50	5 LT	2008													
L 214+50	15 LT	2009													
L 214+82	17 LT	2010													
L 245+00	0 CL	2201													
L 246+00	17 LT	2300													
L 261+18	0 CL	2402													
L 127+05	69 LT														
L 147+40	35 RT														
L 161.05	74 LT														
SHEET TOTALS															
PROJECT TOTALS								684	58	112	24	44			

LINE & STATION	C. S. PIPE SIZE: 15	18	24	42	48 THICKNESS OR GAUGE: .064	.064	.064	.109	.109	R. C. PIPE CLASS III 12	15	18	24	30	36	42	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48
L 11+02																								
L 11+85																								
L 11+85																								
L 11+85																								
Y 20+75																								
Y 21+50																								
L 212+36																								
L 213+50																								
L 214+50																								
L 214+82																								
L 245+00																								
L 246+00																								
L 261+18																								
L 127+05																								
L 147+40																								
L 161.05																								
SHEET TOTALS																								
PROJECT TOTALS		12	12	8						2274	64	240	124	140	324		4260	152	204	260	68	316	124

LINE & STATION	15" PIPE REHABILITATION CIPP LINER	18" PIPE REHABILITATION CIPP LINER	24" PIPE REHABILITATION CIPP LINER	30" PIPE REHABILITATION CIPP LINER	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B) A: 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 T.B.D.I. STD. 852.04 OR 852.06	T.B.D.I. STD. 852.07	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. (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. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	TEMP STEEL PLATE COVER MASONRY DRAINAGE	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	OFFSET C.B. (SEE SHEET 2D-1)	ADJUST DI	OFFSET DI (SEE SHEET 2D-2)	24" C.S. ELBOW	30" C.S. ELBOW	42" C.S. ELBOW	48" C.S. ELBOW	PIPE CLEANOUT EA	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
L 11+02																																													
L 11+85																																													
L 11+85																																													
L 11+85																																													
Y 20+75																																													
Y 21+50																																													
L 212+36																																													
L 213+50																																													
L 214+50																																													
L 214+82																																													
L 245+00																																													
L 246+00																																													
L 261+18																																													
L 127+05																																													
L 147+40																																													
L 161.05																																													
SHEET TOTALS																																		13											3				
PROJECT TOTALS	68	140	284	166		16.200	169	149.2	25	1	14	11		40	3	5	5	7	28	69		44	12	4	92	5		2	54	16	7	6		2		1	2	34	2		2	2	3	109	1.5042	0.803	3359	

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

T:\SLT\W1019

COMPUTED BY: REL DATE: 9-13-2024

CHECKED BY: JWT DATE: 9-13-2024

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-5921	3D-9

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 54 INCHES & OVER)

LINE & STATION	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) SIZE: 54 60 66 72 78 84	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	C. S. PIPE SIZE: 54 60 66 72 78 84	R. C. PIPE CLASS III SIZE: 54 60 66 72 78 84	R. C. PIPE CLASS IV SIZE: 54 60 66 72 78 84	R. C. PIPE CLASS V SIZE: 54 60 66 72 78 84	STRUCTURAL PLATE PIPE SIZE: 60 66 72	REINFORCED ENDWALLS THICKNESS OR GAUGE CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) A: 0' THRU 5' EACH	B: 5' THRU 10' LIN. FT.	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. 852.06 OR STD. 852.06	C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	CONCRETE BRIDGE APPROACH D.I. STD. 840.13	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	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
L 12+47	0 CL	0435																	7.100																									
		0435	0435Out		2743.0	2740.0												182																												
L 15+50	75 LT	0626																	7.100																									
		0626	0626Out		2733.5	2732.0												72																												
L 18+50	76 LT	0629																	7.100																									
		0629	0627Out		2728.4	2725.3												140																												
L 211+39	82 RT	2014																	5.600																									
		2014	2006		2550.6	2550.5	0.8								12				26.900																									
SHEET TOTALS															12	182		212	26.900																									
PROJECT TOTALS															12	182		212	26.900																									

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: REK DATE: 7/24/2023
CHECKED BY: DMB DATE: 7/24/2023

(2-3-23)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-5921	3G-1

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	1000
				TOTAL LF:	1000

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

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Subgrade Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY			ASU(1)	12	500	1000	1500	500	
CONTINGENCY			ASU(1)	12	500	1000	1500		
			TOTAL CY/TONS/SY:		1000	2000**	3000**	500	0

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

PROJ. REFERENCE NO.	SHEET NO.
R-5921	3P-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

REVISIONS

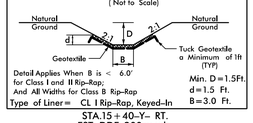
PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	ROHANA HOTELS, LLC
2	4 & 6	RUFUS SHEHAN HEIRS
3	4	GULF HIGHWAY LAND CORP.
4	5	MARSHA R. TONEY
5	5	AMOS DAN MYERS
6	5	THOMAS E. STEFFEL
7	5	AMOS DAN MYERS
8	5	MARLI VENTURES, LLC
9	6	BLAKE ANDREW BARKER
10	6	ROBERT POLYANCHEK
11	6	BRUCE ALEXANDER CAMPBELL, JR
12	6	RALPH GENE LOWE
13	7	WILLIAM DAVID DALLAS
14	7	CHARLES A. BATTS
15	9 & 10	FOWLER ENTERPRISES
16	10	CTE COMPANY
17	13	ROBERT M. WILEY
18	13	ADDIE PEARL SUTTON BECK
19	14 & 15	HANK AARON ROSS
20	15	CHARLES LEE BOYD
21	16	NANCY HALL OWENBY
22	18	ROBERT WESLEY PREBECK, TRUSTEE
23	18	OAKS UNLIMITED, LLC
24	20	QUALLA COMPANY, L.P.
25	20	JONATHAN VALLEY BAPTIST CHURCH
26	20 & 21	MOCNY LIMITED PARTNERSHIP, LLLP
27		NOT USED, PREVIOUS CLAIM REMOVED
28	21	JACK M. LEATHERWOOD, JR
29	21 & 22	SMOKY MOUNTAIN FARMERS COOPERATIVE
30	22	APPALACHIAN ENTERPRISE & HOLDINGS
31	22	HOBART DEAN ROSS, TRUSTEE
32	24	STEVEN L. MILLER
33	24	JEFFREY WAYNE LIEBRECHT
34	24 & 25	ZITO WEST HOLDINGS, LLC
35	25	THE HT HACKNEY COMPANY
36	25	HACKNEY PETROLEUM CAROLINA
37	25	THE HT HACKNEY COMPANY
38	25	HANK AARON ROSS

PARCEL No.	SHEET No.	PROPERTY OWNER NAME

8/17/99

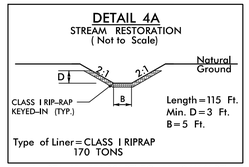
REVISIONS

DETAIL 8
STANDARD BASE DITCH
(Not to Scale)



STA.15+40–Y– RT.
EST. DDE–200cu.yds.
RIP RAP– EST. 120 TONS
GEOTEXT.–280sq.yds.

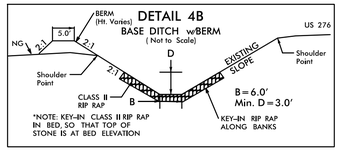
DETAIL 4A
STREAM RESTORATION
(Not to Scale)



–L– STA 11+15(128' RT) TO 11+94(56' RT)
SEE PFL FOR CHANNEL GRADE (3.2%)

DETAILS 4A & 4B NOTES:
1) RIP RAP SHALL BE EMBEDDED IN ORDER TO NOT IMPEDE AQUATIC ORGANISM PASSAGE. NATIVE MATERIAL SHALL BE PLACED ON TOP OF RIP–RAP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BEAD AT PROJECT SITE. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER.

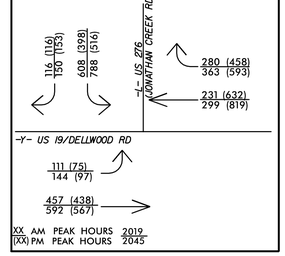
DETAIL 4B
BASE DITCH w/BERM
(Not to Scale)



*NOTE: KEY–IN CLASS II RIP RAP IN BED, SO THAT TOP OF STONE IS AT BED ELEVATION

FROM STA 13+07 TO 18+04 –L– LT
CLASS II RIPRAP : EST. 90 TONS

PEAK HOUR TRAFFIC VOLUMES
(Vehicles per Hour)



XX AM PEAK HOURS 2019
(XX) PM PEAK HOURS 2045

NOTE:
SEE DETAIL SHEET 2B–1 FOR ROUNDABOUT LAYOUT

PROP MONOLITHIC CONC ISLAND – SURFACE MOUNTED
PROP CONC SIDEWALK
PROP CONC TRUCK APRON
PAVEMENT REMOVAL
PROP CONC ISLAND COVER

PROJECT REFERENCE NO.	SHEET NO.
R–5921	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY
8/26/2024

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16600 RANDALL C. HENEGAR
8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

MATCH LINE STA –L– 14+00.00
MATCH TO SHEET NO. 6

NOTE: ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.

ROHANA HOTELS, LLC
BK 979 PG 826
CAB C SLOT 5183

SEE DETAIL 4B BASE DITCH WITH BERM

EDITH GRANT
BK 842 PG 931

PHILLIP R. BLACK
BK 864 PG 305
CAB C SLOT 6424

JAMES J. TEAGUE, JR.
BK 455 PG 1619

JJ OF MAGGIE VALLEY, LLC
BK 920 PG 2234
CAB B SLOT 315-1

SMOKY MOUNTAIN RETREAT REALTY, INC
BK 978 PG 72
CAB C SLOT 7493

EVA MAE LEDFORD
BK 253 PG 254

GULF HIGHWAY LAND CORP.
BK IIIPG 1820
CAB C SLOT 347

GULF HIGHWAY LAND CORPORATION
BK 647 PG 210
CAB B SLOT 53 (MCD)

–Y– STA. 10+00.00
BEGIN CONSTRUCTION

–L– STA. 10+00.00
BEGIN TIP PROJECT R–5921

–L– PC 10+00.00 = –Y– POC 17+01.52

–L– CURVE DATA

PI Sta 11+29.84	PI Sta 13+55.16
Δ = 23° 17' 29.4" (LT)	Δ = 9° 26' 16.3" (RT)
D = 9° 05' 40.4"	D = 4° 46' 28.7"
L = 256.10'	L = 197.67'
T = 129.84'	T = 99.06'
R = 630.00'	R = 1,200.00'
SE = 0.02	SE = 0.02
DS = 35 MPH	DS = 35 MPH

–Y– CURVE DATA

PI Sta 13+32.39	PI Sta 15+40.09	PI Sta 16+62.68	PI Sta 18+18.41	PI Sta 19+86.78
Δ = 20° 04' 46.7" (LT)	Δ = 15° 01' 32.3" (RT)	Δ = 18° 19' 17.7" (RT)	Δ = 15° 36' 41.9" (LT)	Δ = 10° 19' 09.4" (RT)
D = 5° 43' 46.5"	D = 22° 02' 12.6"	D = 10° 25' 02.7"	D = 11° 27' 33.0"	D = 5° 08' 19.1"
L = 350.46'	L = 68.18'	L = 175.87'	L = 136.24'	L = 200.82'
T = 177.04'	T = 34.29'	T = 88.69'	T = 68.54'	T = 100.68'
R = 1,000.00'	R = 260.00'	R = 550.00'	R = 500.00'	R = 1,115.00'
SE = 0.04	SE = –0.02	SE = –0.02	SE = 0.02	SE = –0.02
DS = 50 MPH	DS = 25 MPH	DS = 35 MPH	DS = 35 MPH	DS = 35 MPH

FOR –L– PROFILE, SEE SHEET NO. 27
FOR –Y– PROFILE, SEE SHEET NO. 38

MATCH LINE STA –Y– 21+00.00
MATCH TO SHEET NO. 5

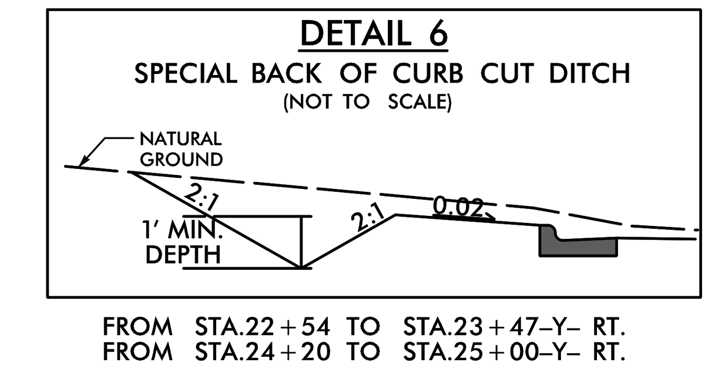
8/20/2024
X:\NCDOT\R-5921\Roadway\Proj\R-5921_Rdy_psh_04.dgn
User:jmejia

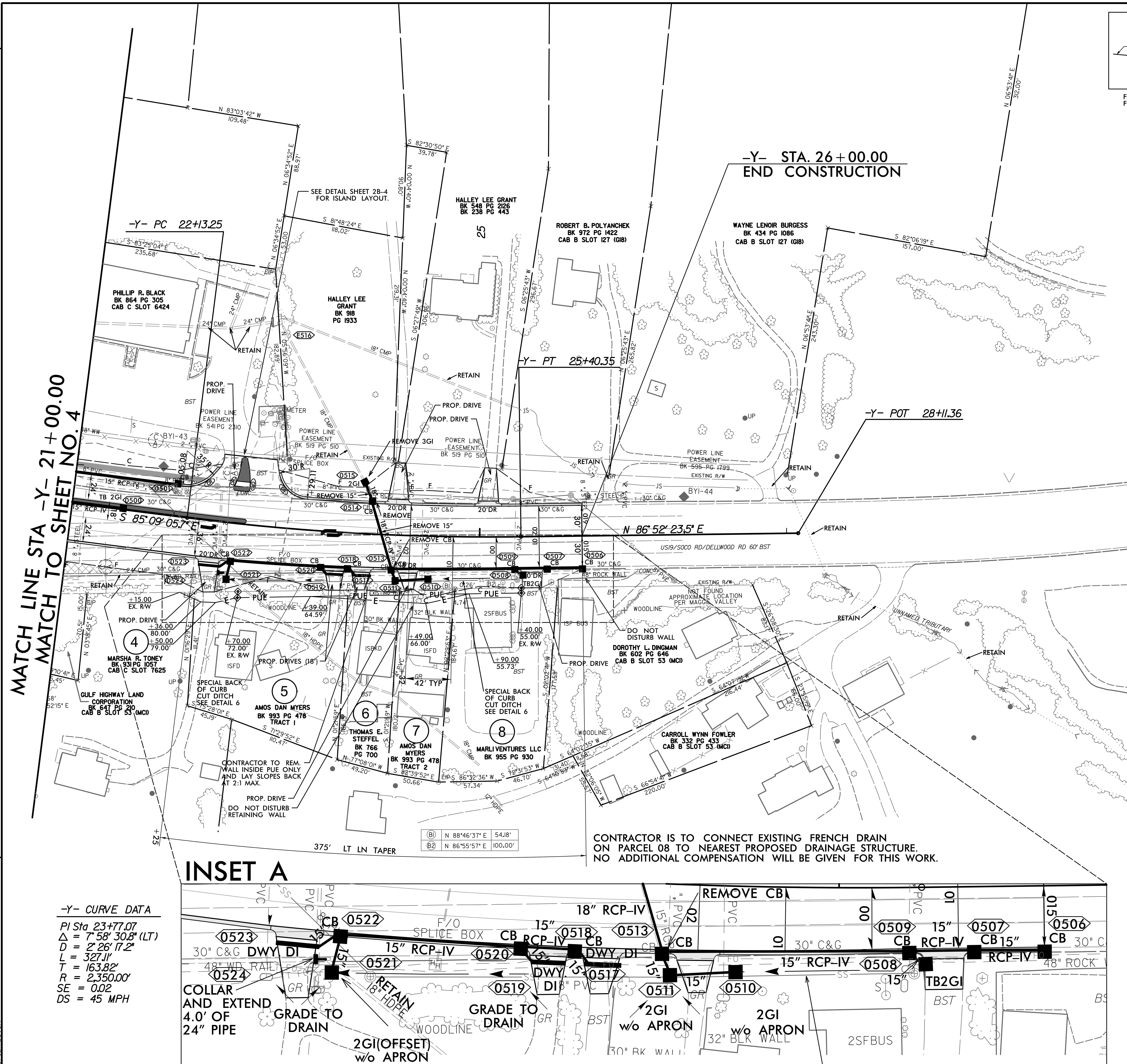
PROJECT REFERENCE NO.	SHEET NO.
R-5921	5
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY 8/26/2024	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16600 RANDALL C. HENEGAR 8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275





CONTRACTOR IS TO CONNECT EXISTING FRENCH DRAIN ON PARCEL 08 TO NEAREST PROPOSED DRAINAGE STRUCTURE. NO ADDITIONAL COMPENSATION WILL BE GIVEN FOR THIS WORK.

-Y- CURVE DATA

PI Sta 23+77.07
Δ = 7°58' 30.8" (LT)
D = 2°26' 17.2"
L = 327.11'
T = 163.82'
R = 2,350.00'
SE = 0.02
DS = 45 MPH

SEE DETAIL SHEET 2B-4 FOR ISLAND LAYOUT.

NOTE: ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.

- PROP MONOLITHIC CONC ISLAND - SURFACE MOUNTED
- PAVEMENT REMOVAL
- PROP CONC SIDEWALK

FOR -Y- PROFILE, SEE SHEET NO. 38

REVISIONS

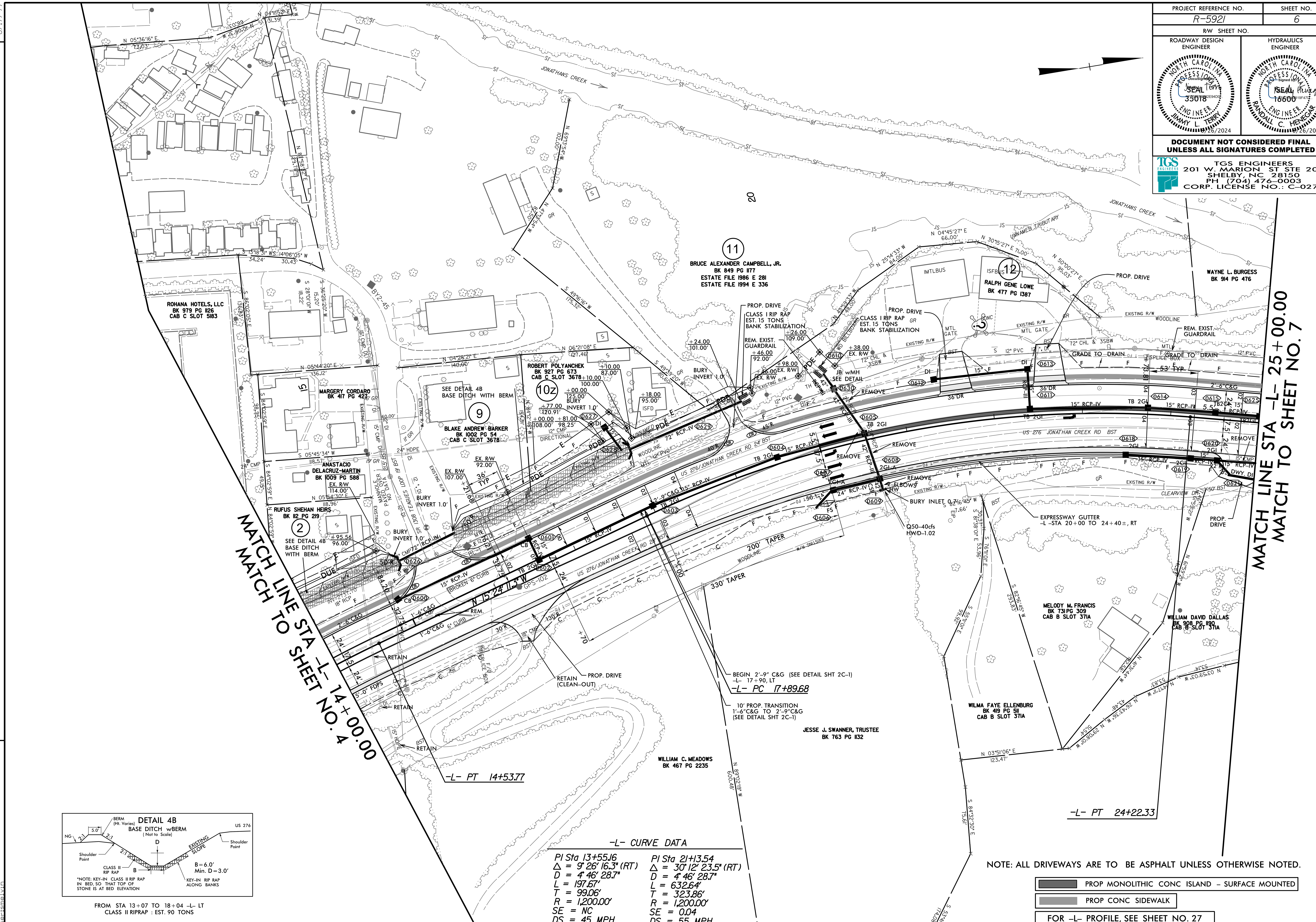
8/17/99

8/20/2024
X:\NC001_R-5921\Roadway\Proj\R-5921_Rdy_psh_05.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-5921	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY 8/26/2024	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16600 RANDALL C. HENEGAR 8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275



FROM STA 13+07 TO 18+04 -L- LT
CLASS II RIPRAP : EST. 90 TONS

-L- CURVE DATA

PI Sta 13+55.16	PI Sta 21+13.54
Δ = 9° 26' 16.3" (RT)	Δ = 30° 12' 23.5" (RT)
D = 4° 46' 28.7"	D = 4° 46' 28.7"
L = 197.67'	L = 632.64'
T = 99.06'	T = 323.86'
R = 1,200.00'	R = 1,200.00'
SE = NC	SE = 0.04
DS = 45 MPH	DS = 55 MPH

NOTE: ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.

PROP MONOLITHIC CONC ISLAND - SURFACE MOUNTED

PROP CONC SIDEWALK

FOR -L- PROFILE, SEE SHEET NO. 27

8/17/99

8/20/2024
X:\NCDOT\R-5921\Roadway\Proj\R-5921_Rdy_psh_06.dgn
jjsertmmlvn

PROJECT REFERENCE NO.	SHEET NO.
R-5921	7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY

Docusigned by: Jimmy Terry 1DF47E2E3ED2402...

8/26/2024

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDAL C. HENEGAR

Signed by: Randal Henegar 1BF47E2E3ED2402...

8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

REVISIONS

8/17/99

MATCH LINE STA -L- 25+00.00
MATCH TO SHEET NO. 6

MATCH LINE STA -L- 39+00.00
MATCH TO SHEET NO. 8

WAYNE L. BURGESS
BK 914 PG 476

DELLWOOD MISSIONARY BAPTIST CHURCH
BK 750 PG 1914

DELLWOOD MISSIONARY BAPTIST CHURCH
BK 750 PG 1910

KIMBERLY WHITE GREENE
BK 849
PG 1285

DOROTHY JEAN HALL
ESTATE FILE 2001E 49
BK 168 PG 273

-L- PT 34+48.37

N 50°53'18" E
350.53'

N 85°56'42" W
91.60'

N 59°44'48" E
174.92'

S 59°44'48" W
39.19'

N 22°06'25" E
131.22'

S 80°46'12" E
260.22'

S 76°45'49" E
256.60'

S 87°23'18" W
356.02'

36" CMP

SR 1394 HALL DR BST

EXISTING R/W

6' STEEL CROSS

PIPE BURIED

SEE DETAIL SHT 28-3 FOR ISLAND LAYOUT

-L- PC 27+49.29

BM #3
HEAD WALL CORNER

CL 1 RIP RAP
EST. 10 TONS
GEOTEXT. 23 SYDS

REM. EXIST. GUARDRAIL

60'R BL -3

GRADE TO DRAIN

REMOVE CAT-1

2'-6" C&G

REMOVE 24" GABION BASKET WALL

15" RCP-IV

REMOVE 40'R HW

5' FDPS

SPLICE BOX

JB w/Slab Typ

CONC BRIDGE

LOW HANGING WIRE ELEV: 2746.5'

BEGIN SBG 27+20-L- LT.
53' TYP

TYPE-III SC EP-RR-25

SHOULDER BERM GUTTER -L- STA 27+20 TO 34+05±, LT

REM. EXIST. GUARDRAIL

24" RCP-III

18" RCP-III

15" RCP-IV

12" PVC

2GI

TB 2GI

4' FDPS

5' FDPS

LOW HANGING WIRE ELEV: 2751.2'

REMOVE

2'-9" C&G

8" PVC

12" DI

200' TAPER

END SBG 34+00-L- LT.
36' TYP

JONATHANS CREEK

FILL WITH FLOWABLE FILL

PLUG

REMOVE DI

N 2°27'40.2" W

US 276/JONATHAN CREEK RD 25' BST

US 276/JONATHAN CREEK RD 24' BST

SR 1387 RUSSELL COVE RD 17' BST

WOODLINE

EXISTING R/W

+95.00 EX. R/W

+59.00 107.00'

+67.00 EX. R/W

+62.00 EX. R/W

+94.00 EX. R/W 81.00'

465' TAPER

CLASS B RIP RAP 2 TONS 7 SY GEOTEXTILE

750' TRANS, 30' TO 44' MEDIAN (SEE CROSS SECTIONS & TYPICALS)

STEVEN DAN MYERS
BK 407 PG 1247

END 50' PROP. TRANSITION 2'-9" C&G TO 4' PAVED SHOULDER
END 2'-9" C&G (SEE DETAIL SHT 2C-1)
-L- 35+00, RT

CHARLES A. BATTS
BK 887 PG 1214

MY OAKRIDGE LAND HOLDINGS, LLC
BK RB 1083 PG 803-806

WILLIAM DAVID DALLAS
BK 908 PG 1190
CAB B SLOT 371A

JOSEPH A. MANISCALCO
BK 736 PG 611
CAB C SLOT 1200

MARY BETH AKERS
ESTATE FILE 2017 E 217

BY3-47

BY3-48

BY4-49

BY4-50

BY4-51

-L- CURVE DATA
PI Sta 31+01.50
△ = 17° 15' 52.4" (LT)
D = 2° 28' 10.7"
L = 699.07'
T = 352.20'
R = 2,320.00'
SE = 0.04
DS = >60 MPH

NOTE: ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.

PROP MONOLITHIC CONC ISLAND – SURFACE MOUNTED

FOR -L- PROFILE, SEE SHEET NO. 28

8/20/2024
X:\NCDOT\R-5921\Roadway\Proj\R-5921_Rdy_psh_07.dgn
User: jsmelvin

PROJECT REFERENCE NO.	SHEET NO.
R-5921	8
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY — 8/26/2024

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENNEGAR — 8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

REVISIONS

8/17/99

MATCH LINE STA –L– 39+00.00
TO SHEET NO. 7

–L– STA 43+50.00
END GRADE
BEGIN RESURFACING

DOROTHY JEAN HALL
ESTATE FILE 2001E 49
BK 168 PG 273

HAYWOOD COUNTY
CONSOLIDATED SCHOOL SYSTEM
BK 274 PG 119

WILLIAM B. CAMPBELL
BK 647 PG 482

JULIAN DEMIRKOL
BK 829 PG 1680

WILBURN GREGORY BROOKSHIRE
BK 744 PG 1722

RICHARD LEE PATE
BK 668 PG 1133
CAB C SLOT 3344

PARTRIDGE ELECTRICAL SERVICES, INC.
BK 987 PG 1632

HERBERT LEROY TRAGESSER
BK 310 PG 136

RANDALL M. WATSON
BK 916 PG 172
CAB C SLOT 7306
BK 916 PG 1777
CAB C SLOT 7322

KIMBERLY MYERS PILAT
BK 407 PG 1250

US 276 JONATHAN CREEK RD BST

SR 1394 HALL DR 2F BST

JONATHANS CREEK

REM. EXIST. GUARDRAIL

RETAIN AND LINE WITH CIPP

REMOVE

PROP. DRIVE

750' TRANS. 30' TO 44' MEDIAN
(SEE CROSS SECTIONS & TYPICALS)

–L– PC 42+37.75

MATCH LINE STA –L– 53+00.00
TO SHEET NO. 9

–L– CURVE DATA
PI Sta 53+45.54
Δ = 41° 56' 43.6" (RT)
D = 1° 58' 57.2"
L = 2,115.73'
T = 1,107.79'
R = 2,890.00'
SE = 0.05
DS = 65 MPH

NOTE: ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.

PROP MONOLITHIC CONC ISLAND – SURFACE MOUNTED

FOR –L– PROFILE, SEE SHEET NO. 28

8/20/2024
R:\R-5921\Roadway\Proj\R-5921_Rdy_psh_08.dgn
User:sjnelson

NOTE: ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.

PROJECT REFERENCE NO.	SHEET NO.
R-5921	9
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY

8/26/2024

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR

8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

REVISIONS 8/17/99

MATCH LINE STA -L- 53+00.00 MATCH TO SHEET NO. 8

MATCH LINE STA -L- 67+00.00 MATCH TO SHEET NO. 10

CHARLES FRANKLIN HUDSON II
BK 988 PG 2173
CAB C SLOT 100

JAMES HALASZ
BK 401 PG 569
CAB C SLOT 100

HAMIEL HOLDINGS, LLC
BK 1028 PG 586
CAB C SLOT 100
CAB D SLOT 1094

JERRY K. WORLEY, TRUSTEE
BK 702 PG 1277
CAB B SLOT 159 (11)

JULIAN DEMIRKOL
BK 829 PG 1680

JULIAN DEMIRKOL
BK 829 PG 1680

JAMES ALLEN WOOD, JR.
BK 955 PG 105
EXISTING R/W

ELIE. TROYER, JR.
BK 910 PG 1491

PHOENIX SKI CORPORATION
CAB C SLOT 2105
BK 909 PG 2133

PHOENIX SKI CORPORATION
BK 866 PG 342
CAB C SLOT 2105

PHOENIX SKI CORPORATION
BK 881 PG 2199
CAB C SLOT 2105

AMY CLARK POWELL
BK 470 PG 7
CAB C SLOT 2105

DIRK K. KAPPLINGER
BK 496 PG 2188
CAB C SLOT 2105

FOX RUN APARTMENTS, LLC
BK 1036 PG 714
CAB C SLOT 8079

JOHN L. ZAMBITO
BK 957 PG 897
CAB C SLOT 8079

JOSEPH POWELL
BK 539 PG 2163

LEVERITT HOLDINGS, LLC
BK 952 PG 1954

(15)
FOWLER ENTERPRISES
BK 394 PG 847
CAB B SLOT 159 (11)

SR 1389 FOX RUN RD 23.5' BST

US 276 JONATHAN CREEK RD BST

SR 1539 FOX RUN RD 27.5' BST

CLEARWATER DR

JONATHANS CREEK

SEE DETAIL SHT 2B-3 FOR ISLAND LAYOUT

DO NOT DISTURB ROCK WALL

DO NOT DISTURB BRICK WALL

EXPRESSWAY GUTTER -L- STA 65+66± TO 67+60±, LT

PLACE PAVEMENT TO TIE EXIST. PARKING LOT TO CURB

200' TAPER

-L- PT 63+53.48

-L- CURVE DATA
PI Sta 53+45.54
Δ = 41° 56' 43.6" (RT)
D = 1° 58' 57.2"
L = 2,115.73'
T = 1,107.79'
R = 2,890.00'
SE = 0.05
DS = 55 MPH

8/20/2024
R:\NCDOT\R-5921\Roadway\Proj\R-5921_Rdy_psh_09.dgn
User: smelvin

NOTE: ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.

PROJECT REFERENCE NO.	SHEET NO.
R-5921	10
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY
8/26/2024

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18600 ENGINEER RANDALL C. HENEGAR
8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

REVISIONS 8/17/99

MATCH LINE STA -L- 67+00.00 MATCH TO SHEET NO. 9

MATCH LINE STA -L- 81+00.00 MATCH TO SHEET NO. 11

-L- PC 69+08.06

-L- PT 76+21.08

-L- PC 78+47.99

FOWLER ENTERPRISES BK 394 PG 847 CAB B SLOT 159 (11)

DONNA LAWTER BK 488 PG 489

HOMER JERRY FRANKLIN BK 754 PG 541

WILLIAM C. WEST BK 1025 PG 714

WILLIAM C. WEST BK 972 PG 621 CAB D SLOT 155

HAYES ARTHUR SINGLETON, TRUSTEE BK 779 PG 2362 CAB C SLOT 1589

HARLEY RALPH MESSER BK 933 PG 1928 CAB C SLOT 7670

DENNIS HALL ESTATE FILE 2008 E 288

LEVERITT HOLDINGS, LLC BK 952 PG 1954

KRISTEN LEE STEVENS BK 981PG 2079 CAB C SLOT 6190

CRAIG WOOLMINTON-SMITH BK 942 PG 70 CAB C SLOT 4663

CTE COMPANY, LLC BK 1028 PG 758 CAB C SLOT 4663

PLACE PAVEMENT TO TIE EXIST. PARKING LOT TO CURB

EXPRESSWAY GUTTER -L- STA 65+66± TO 67+60±, LT

DO NOT DISTURB BRICK WALL

PROP. DRIVE

RETAIN

TIE TO SECOND JOINT OF EXISTING GUARDRAIL

RETAIN AND LINE WITH CIPP

2GI(OFFSET)

JONATHANS CREEK

US 276 JONATHAN CREEK RD BST

N 0° 34' 04.5" W

N 39° 29' 03.4" E

-L- CURVE DATA

PI Sta 72+79.83	PI Sta 85+36.74
Δ = 40° 03' 07.9" (LT)	Δ = 29° 47' 02.2" (RT)
D = 5° 37' 02.0"	D = 2° 12' 43.9"
L = 713.02'	L = 1,346.35'
T = 371.78'	T = 688.76'
R = 1,020.00'	R = 2,590.00'
SE = EXIST.	SE = EXIST.
DS = 55 MPH	DS = 60 MPH

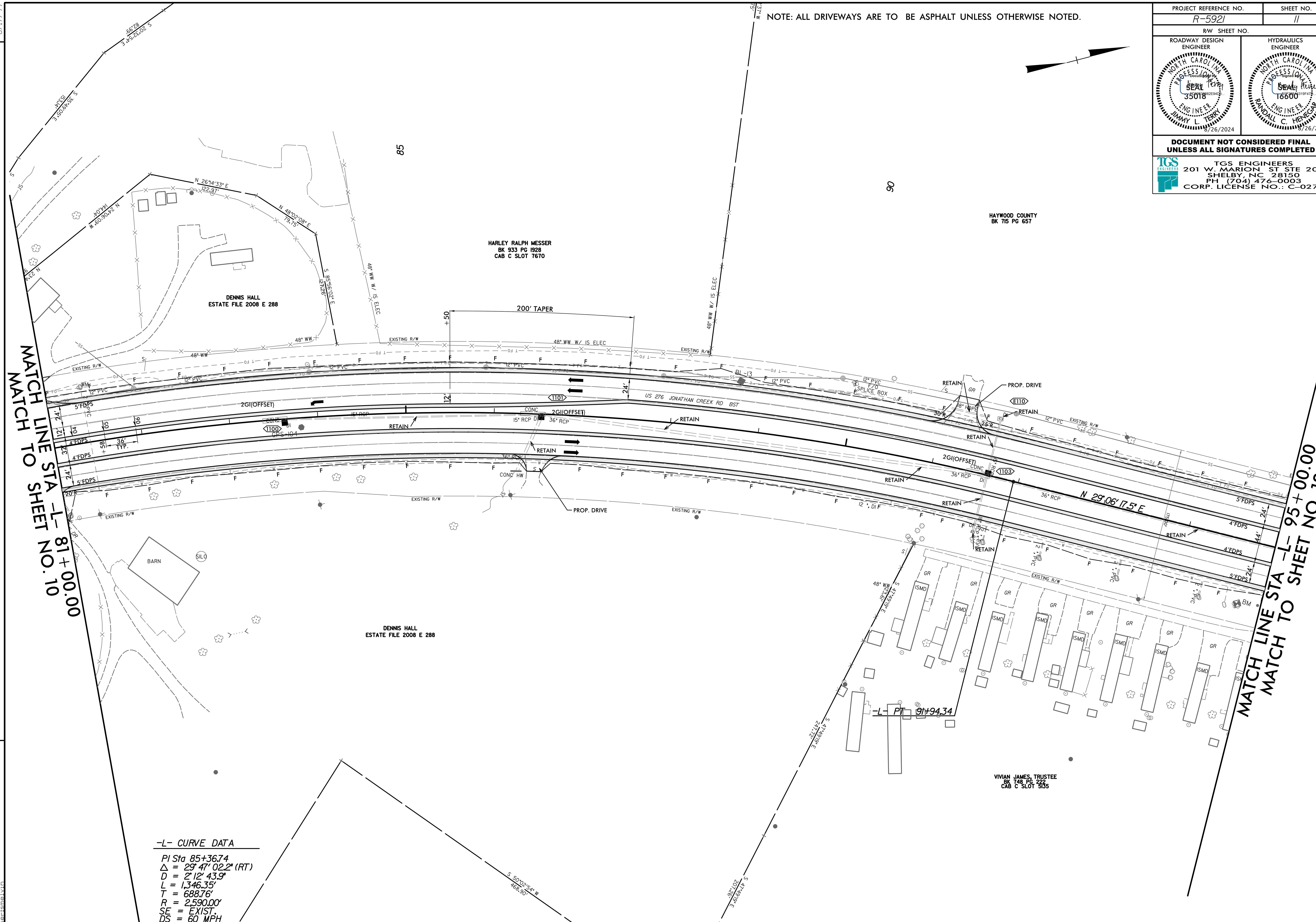
PROJECT REFERENCE NO.	SHEET NO.
R-5921	11
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY — DocuSigned by: Jimmy Terry FD39F38882E94D0... 8/26/2024	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16600 RANDALL C. HENEGAR — Signed by: Randy Henegar B5F228A4319F47D... 8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NOTE: ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.



-L- CURVE DATA

PI Sta 85+36.74
Δ = 29° 47' 02.2" (RT)
D = 2° 12' 43.9"
L = 1,346.35'
T = 688.76'
R = 2,590.00'
SE = EXIST.
DS = 60 MPH

REVISIONS

8/17/99

8/20/2024
X:\NCDOT\R-5921\Roadway\Proj\R-5921_Rdy_psh_11.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-5921	12
R/W SHEET NO.	

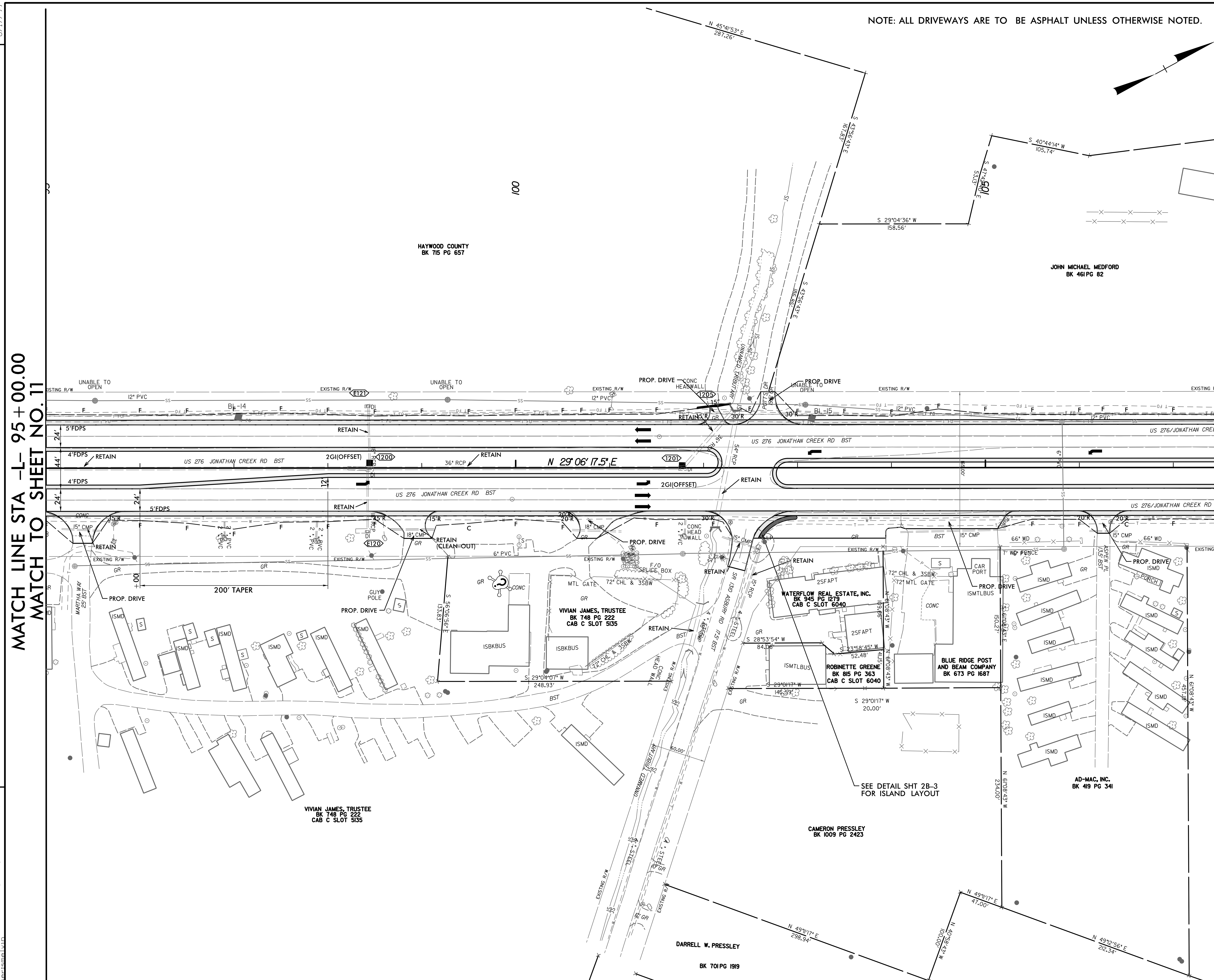
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY — DocuSigned by: Jimmy L. Terry — 8/26/2024

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16600 RANDALL C. HENEGAR — Signed by: Randall Henegar — 8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NOTE: ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.



PROJECT REFERENCE NO.	SHEET NO.
R-5921	13

R/W SHEET NO.

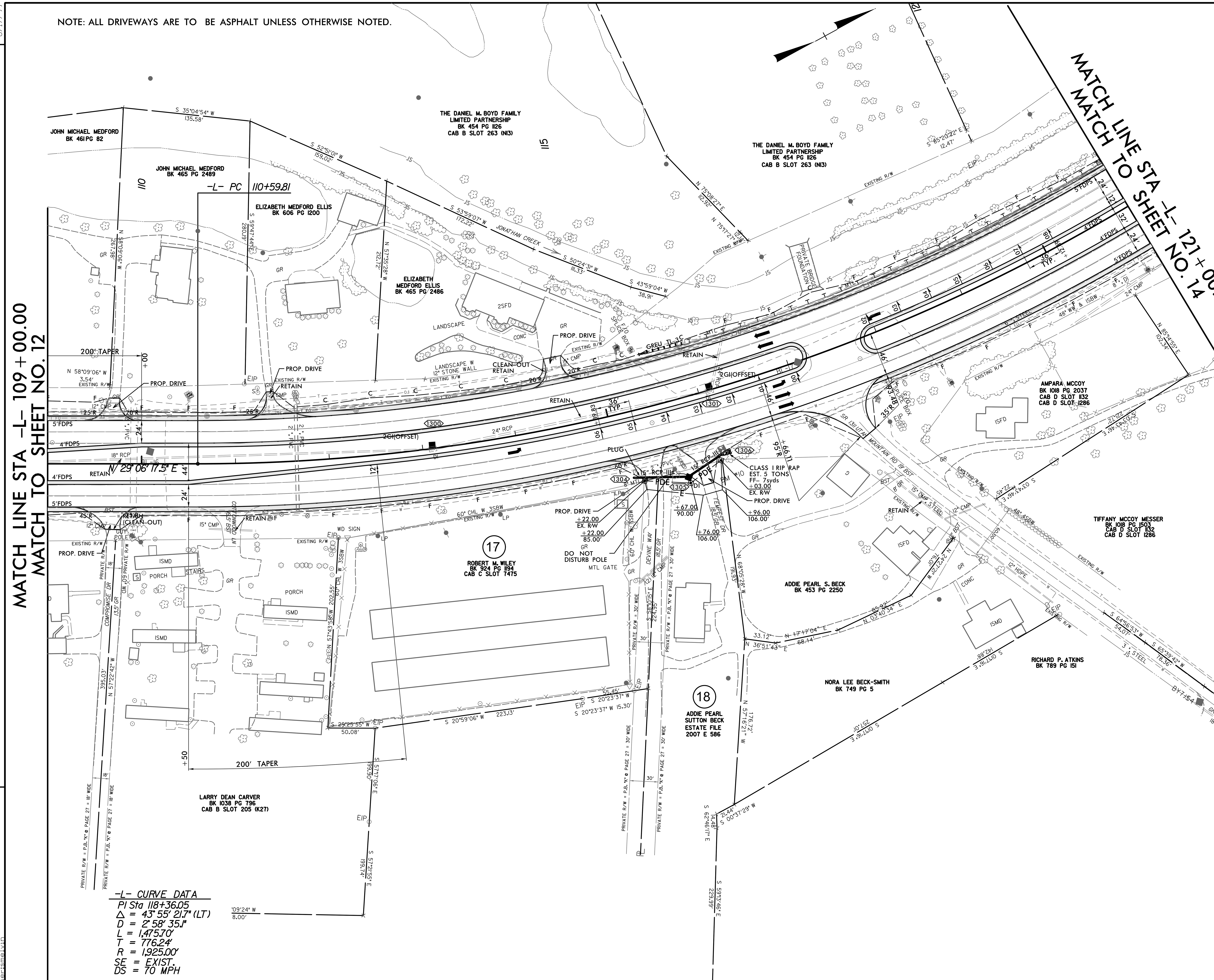
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY 8/26/2024

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16600 RANDALL C. HENEGAR 8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NOTE: ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.



-L- CURVE DATA
PI Sta 118+36.05
Δ = 43° 55' 21.7" (LT)
D = 2° 58' 35.1"
L = 1,475.70'
T = 776.24'
R = 1,925.00'
SE = EXIST.
DS = 70 MPH

REVISIONS

8/17/99

8/20/2024
X:\NCDOT\R-5921\Roadway\Proj\R-5921_Rdy_psh_13.dgn

NOTE: ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.

PROJECT REFERENCE NO.	SHEET NO.
R-5921	14
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY — 8/26/2024

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR — 8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

8/17/99

REVISIONS

MATCH LINE STA -L- 121+00.00
MATCH TO SHEET NO. 13

MATCH LINE STA -L- 134+00.00
MATCH TO SHEET NO. 15

-L- PT 125+35.50

N 14°49'04.2" W

-L- PC 129+07.86

KATE K. MORROW
BK 405 PG 873
CAB B SLOT 263 (NI3)

HANK AARON ROSS
BK 978 PG 1776
CAB B SLOT 263 (NI3)

ROBERT LEWIS STEPHENS
BK 481PG 24

RAYMOND M. BORGES
BK 757 PG 79

CAROLYN TUCKER NORMAN
BK 444 PG 1755

BOBBY M. MCKAY FAMILY TRUST
DATED 11/18/2019
BK 995 PG 2485

TIFFANY MCCOY MESSER
BK 1018 PG 1503
CAB D SLOT 1132
CAB D SLOT 1286

HANNA LEE MESSER
BK 1030 PG 454

HARLEY RALPH MESSER
BK 485 PG 925

JAMES EDWARD TUCKER
BK 213 PG 119

JONATHAN CREEK

200' TAPER

GUARDRAIL IS TO BE MIN. 10' OFFSET FROM EOT, -L- 124+00 TO 128+00

CLEAN DEBRIS FROM OUTLET

RETAIN (CLEANOUT)

RETAIN (CLEAN-OUT)

RETAIN AND LINE WITH CIPP

US 276 JONATHAN CREEK RD

2GI(OFFSET)

PROP. DRIVE

MTL GATES

MTL CARPOORT

ISFWD

ISMD

MTL CP

CONC BLOCK WALL

48" CONC BLOCK WALL

36" WD FENCE

DO NOT DISTURB UTILITY VAULT

SPLICE BOX

ISBKD

WOODLINE

END 24" CMP NOT FOUND

-L- CURVE DATA

PI Sta 118+36.05	PI Sta 148+21.29
Δ = 43° 55' 21.7" (LT)	Δ = 37° 06' 45.9" (RT)
D = 2° 58' 35.1"	D = 1° 00' 18.7"
L = 1,475.70'	L = 3,692.12'
T = 776.24'	T = 1,913.43'
R = 1,925.00'	R = 5,700.00'
SE = EXIST.	SE = EXIST.
DS = 70 MPH	DS = 60 MPH

8/20/2024
K:\NCDOT\R-5921\Roadway\Proj\R-5921_Rdy_psh_14.dgn
User_name\VP

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-5921	15
R/W SHEET NO.	

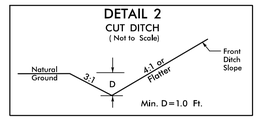
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY
8/26/2024

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16600 RANDALL C. HENEGAR
8/26/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

DETAIL 2
CUT DITCH
(Not to Scale)



FROM STA.134+50 TO STA.137+50–L– RT.

MATCH LINE STA –L– 134+00.00
MATCH TO SHEET NO. 14

MATCH LINE STA –L– 148+00.00
MATCH TO SHEET NO. 16

20
CHARLES LEE BOYD
ESTATE FILE 2001E 289

19
HANK AARON ROSS
BK 978 PG 1776

CHARLES BRIAN BOYD
BK 911 PG 2270
CAB C SLOT 1199

WILLIAM HAMPTON CHOATE, SR., TRUSTEE
BK 946 PG 519

JOHN E. POWELL
BK 437 PG 2217

SEE DETAIL SHT 2B-3 FOR ISLAND LAYOUT (PROP. MONOLITHIC ISLAND – SURFACE MOUNTED)

SEE DETAIL SHT 2B-3 FOR ISLAND LAYOUT (PROP. MONOLITHIC ISLAND – KEYED IN)

SEE DETAIL SHT 2B-3 FOR U-TURN BULB LAYOUT

RELOCATE FENCE BY OWNER

RELOCATE FENCE BY OWNER

200 ' TAPER

200 ' TAPER

US 276 JONATHAN CREEK RD.
BST

SR 1313 HEMPHILL RD (SR BST

BARRETT CREEK

PLUG AND FILL 8" VCP

REMOVE 5'FDPS

PROP. DRIVE

PROP. DRIVE

PROP. DRIVE

PROP. DRIVE

CLEANOUT PIPE AT OUTLET

ISMTLBUS

ISBKD

WDS

ISFD

BILLBOARD

-L- CURVE DATA
PI Sta 148+21.29
Δ = 37° 06' 45.9" (RT)
D = 1° 00' 18.7"
L = 3,692.12'
T = 1,913.43'
R = 5,700.00'
SE = EXIST.
DS = 60 MPH

NOTE: ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.

PROP MONOLITHIC CONC ISLAND

8/20/2024
8:\NCDOT\R-5921\Roadway\Proj\R-5921_Rdy_psh_15.dgn
User:smelvin

NOTE: ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.

PROJECT REFERENCE NO.	SHEET NO.
R-5921	16
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY

DocuSigned by: Jimmy Terry E89400...

8/16/2024

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16600 RANDALL C. HENEGAR

DocuSigned by: Randall Henegar 0AF47D...

8/16/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

REVISIONS

8/17/99

MATCH LINE STA -L- 148+00.00
MATCH TO SHEET NO. 15

MATCH LINE STA -L- 162+00.00
MATCH TO SHEET NO. 17

WILLIAM HAMPTON CHOATE, SR., TRUSTEE
BK 946 PG 519

JOHNNY LOWE CONSTRUCTION, INC.
BK 913 PG 1576

JOE W. POWELL, SR.
BK 444 PG 2225
CAB D SLOT 164

VALLEY BROOK MOBILE HOME PARK, LLC
BK 773 PG 357
CAB B SLOT 369-A

JOHN E. POWELL
BK 437 PG 2217

JOHN E. POWELL
BK 308 PG 265

NANCY HALL OWENBY
BK 673 PG 1762

NANCY HALL OWENBY
ESTATE FILE
1989 E 324

NANCY HALL OWENBY
BK 413 PG 734

-L- CURVE DATA
PI Sta 148+21.29
Δ = 37° 06' 45.9" (RT)
D = 1° 00' 18.7"
L = 3,692.12'
T = 1,913.43'
R = 5,700.00'
SE = EXIST.
DS = 60 MPH

8/20/2024
X:\NCDOT\R-5921\Roadway\Proj\R-5921_Rdy_psh_16.dgn
User:tsmelvin