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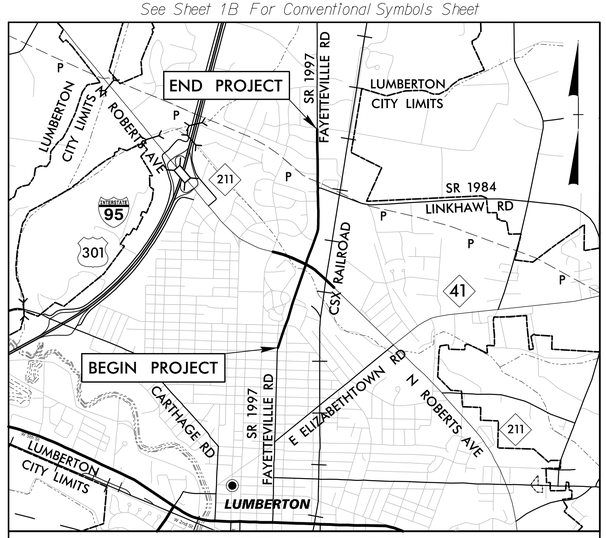
09/08/99

TIP PROJECT: U-5797

CONTRACT: C205036

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



VICINITY MAP N.T.S.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROBESON COUNTY

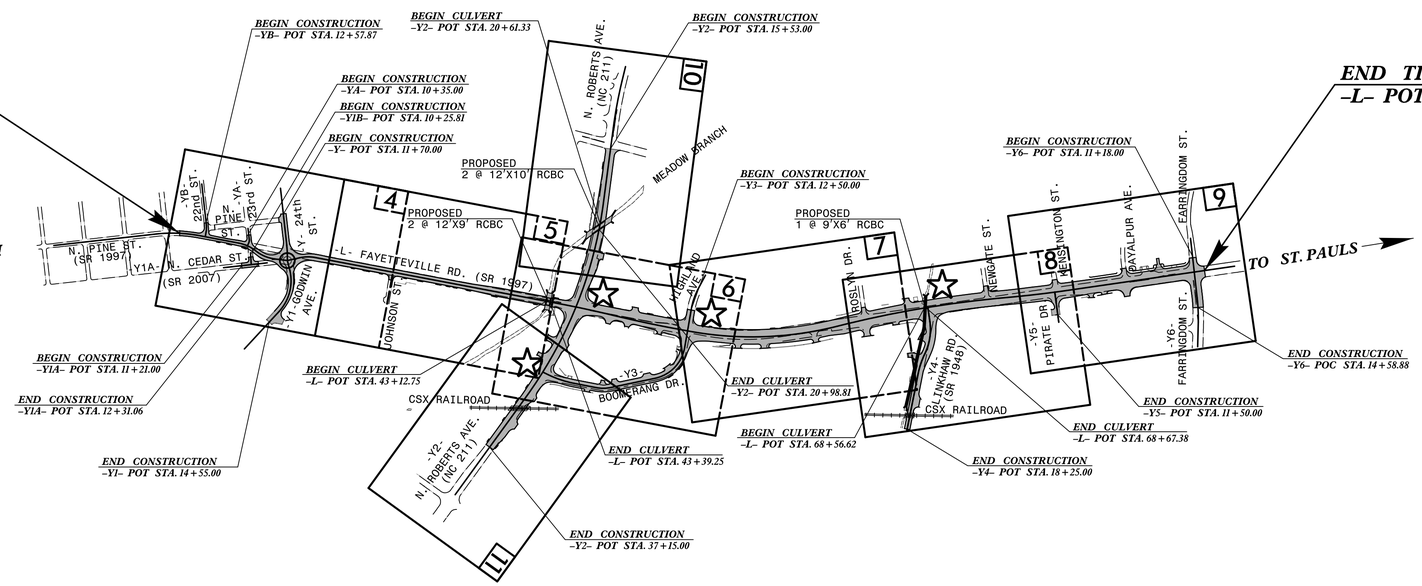
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5797	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
44367.1.1	N/A	PE
44367.2.1	N/A	R.O.W.
44367.2.2	N/A	UTIL
44367.3.1	N/A	CONSTRUCTION

LOCATION: SR 1997 (FAYETTEVILLE ROAD) FROM FARRINGDOM STREET TO EAST 22ND STREET.

TYPE OF WORK: GRADING, PAVING, DRAINAGE, CULVERTS, AND SIGNALS

NAD 83/NA 2011



UPGRADED SIGNAL

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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 2025 = 34,600
ADT 2045 = 41,600
K = 55 %
D = 9 %
T = 4 % *
V = 50 MPH
* TTST = 1% DUAL = 3%
FUNC CLASS =
URBAN ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT U-5797	=	1.299 MILES
LENGTH OF STRUCTURE TIP PROJECT U-5797	=	0.005 MILES
TOTAL LENGTH OF TIP PROJECT U-5797	=	1.304 MILES

NCDOT CONTACT: CRAIG A. FREEMAN JR., PE
NCDOT DIVISION 6

P.O. Box 1150
558 Gillespie Street (Delivery)
Fayetteville, NC 28302

910-364-0603 Office
910-364-0841 Direct
cafreeman2@ncdot.gov

PLANS PREPARED FOR THE NCDOT BY:
STV Engineers, Inc.
400 Hillsborough St, Suite 430
Raleigh, NC 27603
NC License Number F-0991

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
July 22,2022

LETTING DATE:
January 20, 2026

PATRICK A. LIVINGSTON, PE
PROJECT ENGINEER

WESTON D. MURPHY, PE
PROJECT DESIGNER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 051699 ENGINEER TIFFANY A. BREEDLOVE P.E.
Signed by: Tiffany Breedlove
SIGNATURE: 12/18/2025

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 049235 ENGINEER WESTON D. MURPHY P.E.
Signed by: Weston Murphy
SIGNATURE: 12/18/2025

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

12/18/2025
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MurphyWD

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-5797	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049235 3/6/2025 ENGINEER WESTON D. MURPHY

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STV Engineers, Inc.
2121 RDU Center Dr.
Suite 210
Morrisville, NC 27560
NC License Number F-0991

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-4	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B-1 THRU 2B-2	INTERSECTION DETAIL SHEETS
2B-3	RAILROAD DETAIL SHEET
2B-4	TEMPORARY WIDENING DETAIL SHEET
2B-5	ROLLED CURB AND GUTTER DETAIL
2B-6	RAILROAD INTERSECTION DETAIL SHEET
2C-1	METHOD OF PIPE INSTALLATION FLEXIBLE PIPE
2C-2	METHOD OF PIPE INSTALLATION RIGID PIPE
2C-3	EXTRA DEPTH CONCRETE CATCH BASIN
2C-4	SPECIAL DI 840D14
2C-5	CONCRETE MEDIAN DROP INLET TYPE 'A' EXTRA DEPTH OVER 12' TO 25'
2C-6	CONCRETE SIDEWALK
2C-7	CURB RAMP PARALLEL RAMP
2C-8	MEDIAN CURB FOR TRAFFIC BEARING GRATED DROP INLET
2C-9 THRU 2C-10	GUARDRAIL PLACEMENT
2C-11	DETAIL OF TEMPORARY 1" STEEL COVER OVER DRAINAGE STRUCTURE
3B-1 THRU 3B-3	ROADWAY SUMMARIES
3D-1 THRU 3D-15	DRAINAGE SUMMARY SHEETS
3G-1	GEOTECH SUMMARIES
3P-1	PARCEL INDEX SHEET
4 THRU 11	PLAN SHEETS
12 THRU 18	PROFILE SHEETS
RW-1 THRU RW-11	RIGHT OF WAY SHEETS
TMP-1 THRU TMP-30	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-9	PAVEMENT MARKING PLANS
EC-1 THRU EC-19	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-11	SIGNING PLANS
UC-1 THRU UC-16	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-11	UTILITY BY OTHERS PLANS
X-1	CROSS-SECTIONS INDEX OF SHEETS
X-1A THRU X-1C	CROSS-SECTIONS SUMMARY
X-2 THRU X-94	CROSS-SECTIONS
C1-1 THRU C1-12	CULVERT 1 PLANS
C2-1 THRU C2-11	CULVERT 2 PLANS
C3-1 THRU C3-17	CULVERT 3 PLANS

GENERAL NOTES

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

GRADE LINE:
GRADING AND SURFACING OR RESURFACINGAND 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 PROFILESSHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

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

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

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

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

SIDE ROAD:
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.

DRIVEWAYS:
DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.03 AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

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

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:
POWER - DUKE ENERGY
POWER - NEW LUMBERTON ELECTRIC UTILITIES
TELECOMMUNICATIONS - AT&T
CATV - TIME WARNER
FIBER OPTIC - WINDSTREAM
FIBER OPTIC - CROWN CASTLE
NATURAL GAS - PIEDMONT NATURAL GAS
WATER & SEWER - CITY OF LUMBERTON

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.

STANDARD DRAWINGS

2024 ROADWAY ENGLISH STANDARD DRAWINGS EFF. January, 2024

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
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 PAVEMENT	
654.01	Pavement Repairs - For Superpave Mix Types
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain - Installation in Grass Medians and Roundabouts.
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.04	Concrete Open Throat Catch Basin - 12" thru 48" Pipe
840.05	Brick Open Throat Catch Basin - 12" thru 48" Pipe
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.17	Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.26	Brick Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.29	Frames and Narrow Slot Flat Grates
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
840.36	Traffic Bearing Grated Drop Inlet - For Steel (840.37) Double Frame and Grates.
840.37	Steel Grate and Frame
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
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
848.01	Concrete Sidewalk
848.03	Driveway Turnout - Drop Curb Type
848.04	Street Turnout
848.06	Curb Ramp
852.01	Concrete Islands
852.05	Median Curb for Catch Basin - for Use with 1'-6" Curb and Gutter
852.06	Method for Placement of Drop Inlets in Concrete Islands
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels and Ditches

3/6/2025
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9/10/2021

PROJECT REFERENCE NO.	SHEET NO.
U-5797	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

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

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — 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)* — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

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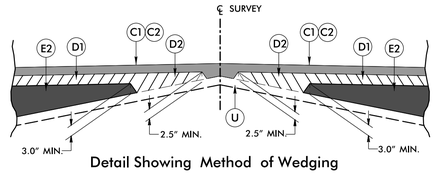


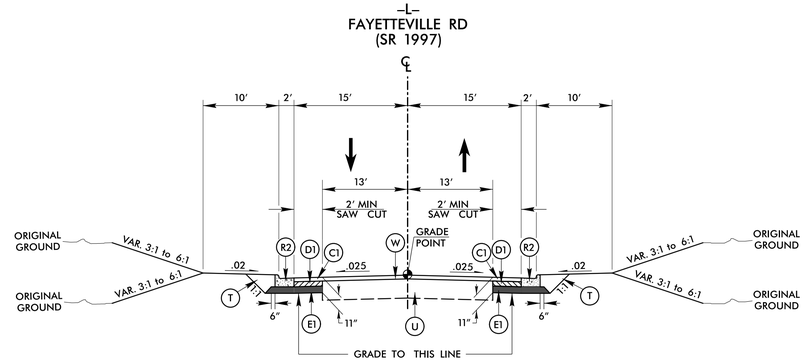
Detail Showing Method of Wedging

PAVEMENT SCHEDULE

(FINAL PAVEMENT DESIGN DATED SEPTEMBER 11, 2024) NTS

A1	PROP. 9" DEPTH JOINTED CONCRETE TRUCK APRON
C1	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.
C2	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 LESS THAN 1.5" IN DEPTH OR GREATER THAN 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 2.5" 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 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
R1	1'-6" CONCRETE CURB AND GUTTER
R2	2'-6" CONCRETE CURB AND GUTTER
R3	2'-9" CONCRETE CURB AND GUTTER
R4	8" X 18" CONCRETE CURB
R5	8" X 12" CONCRETE CURB
R6	ROLLED CONCRETE CURB AND GUTTER (SEE DETAIL ON SHEET 2B-5)
R7	5" MONOLITHIC CONCRETE ISLAND (KEYED-IN)
R8	6" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
R9	4" CONCRETE ISLAND COVER
S	CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	0" TO 3" MILLING
V2	3" MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAILS THIS SHEET)

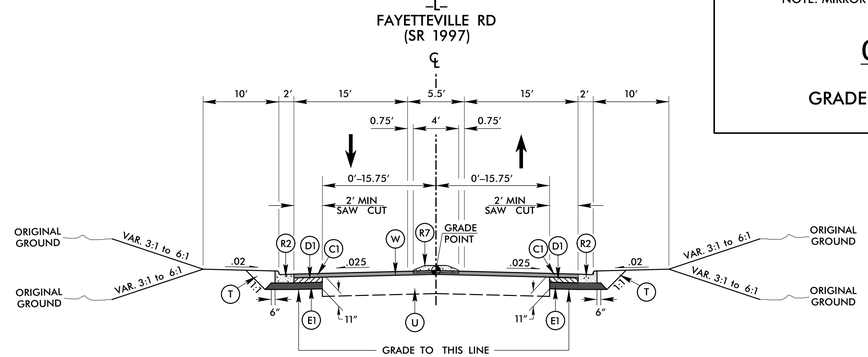
NOTES : PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
INCIDENTAL MILLING TO BE USED AT DISCRETION OF ENGINEER FOR ALL TIE-INS.
SEE PLANS FOR LOCATION OF MONOLITHIC ISLANDS.



TYPICAL SECTION NO. 1

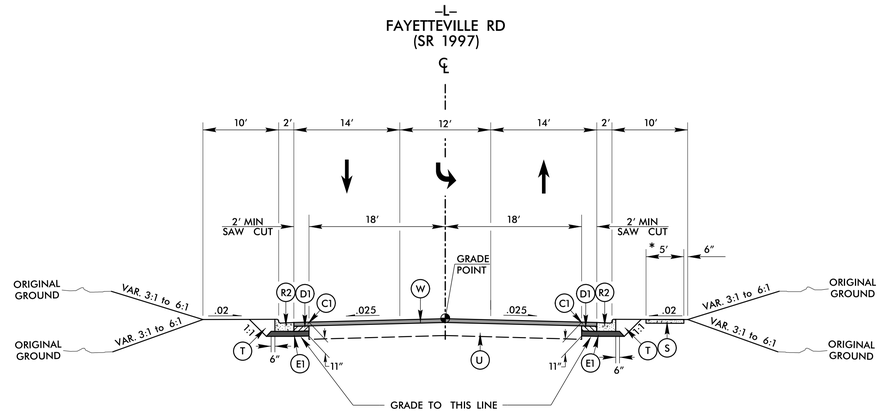
-L- STA. 20+38.00 TO 22+95.16*

*NOTE: SEE TYPICAL 17 FOR MILL AND OVERLAY
-L- STA. 18+35.00 TO 20+38.00



TYPICAL SECTION NO. 2

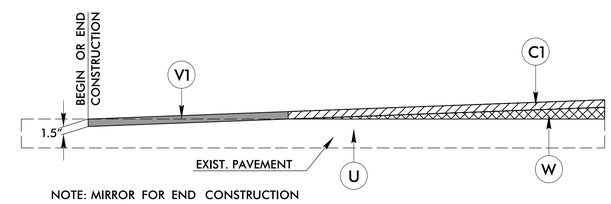
-L- STA. 22+95.16 TO 28+70.94



TYPICAL SECTION NO. 3

-L- STA. 28+70.94 TO 40+12.00

* NOTE: SEE PLANS FOR SIDEWALK LOCATIONS
BERM DESIGNED TO ACCOMMODATE FUTURE SIDEWALK



NOTE: MIRROR FOR END CONSTRUCTION

0" TO 3" MILLING DETAIL

50' PER INCH OF MILLING
GRADE MAY BE ADJUSTED BY RESIDENT ENGINEER
TO ENSURE A PROPER TIE IN

PROJECT REFERENCE NO.	SHEET NO.
U-5797	2A-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 049235 ENGINEER DESIGN D. MURPHY 3/7/2025

PAVEMENT ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 039779 ENGINEER JEREMY R. HAMIN 3/7/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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Suite 210
Morrisville, NC 27560
NC License Number F-0991

3/7/2025
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lpulkits

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8/17/99

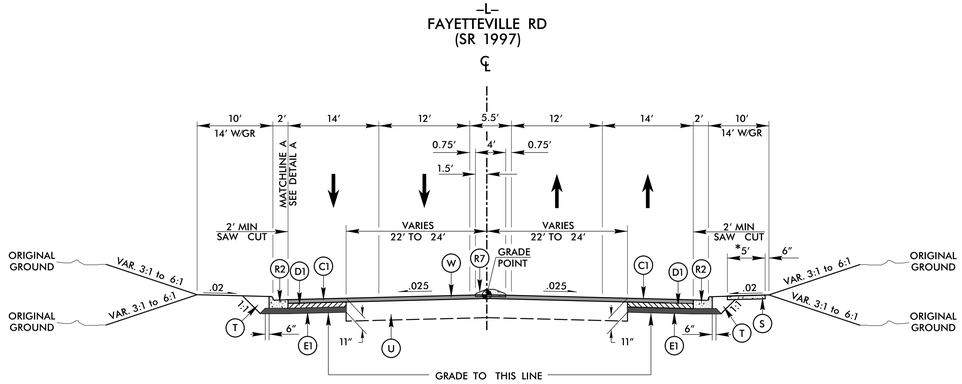
PROJECT REFERENCE NO.	SHEET NO.
U-5797	2A-2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 049235 ENGINEER DESIGN D. MURPHY — 3/6/2025

PAVEMENT ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 039779 ENGINEER JEREMY R. HAMIN — 3/6/2025

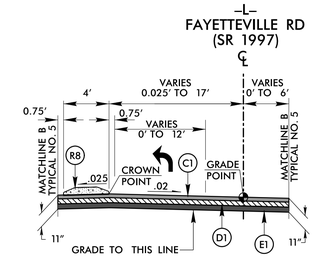
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STV Engineers, Inc.
2121 RDU Center Dr.
Suite 210
Morrisville, NC 27560
NC License Number F-0991



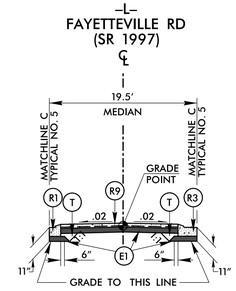
TYPICAL SECTION NO. 4

-L- STA. 40+12.00 TO 45+89.65



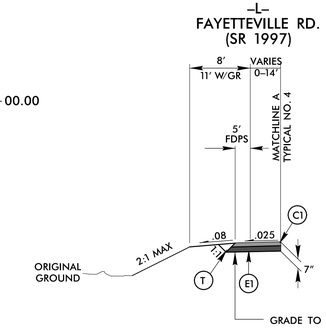
DETAIL B

-L- STA. 45+89.65 TO 52+01.57



DETAIL C

-L- STA. 58+50.00 TO STA. 62+00.00

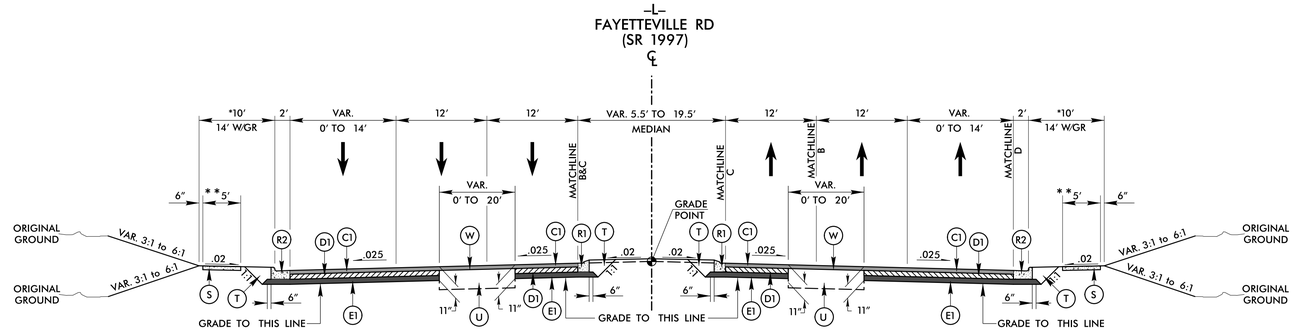


DETAIL A
(TEMPORARY PAVEMENT)

-L- STA. 41+20.93 TO 44+58+/-

* SEE SHEET 2B-4 FOR TEMPORARY PAVEMENT DETAILS

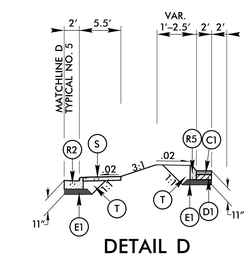
* NOTE: SEE PLANS FOR SIDEWALK LOCATIONS
BERM DESIGNED TO ACCOMMODATE FUTURE SIDEWALK



TYPICAL SECTION NO. 5

-L- STA. 45+89.65 TO STA. 86+23.34

NOTE: SEE TYPICAL SECTION NO. 13
FOR MILL & OVERLAY
-L- STA. 86+23.34 TO 87+20.00

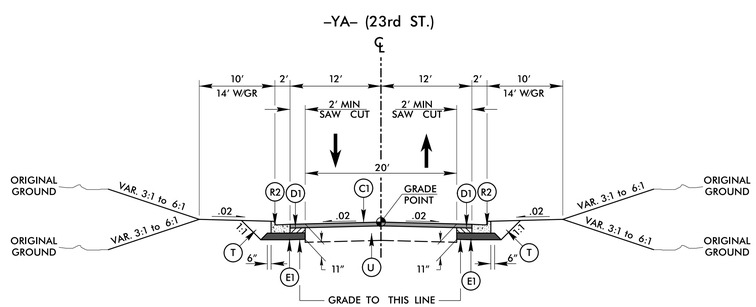


DETAIL D

-L- STA. 49+56.58 TO STA. 50+55.70

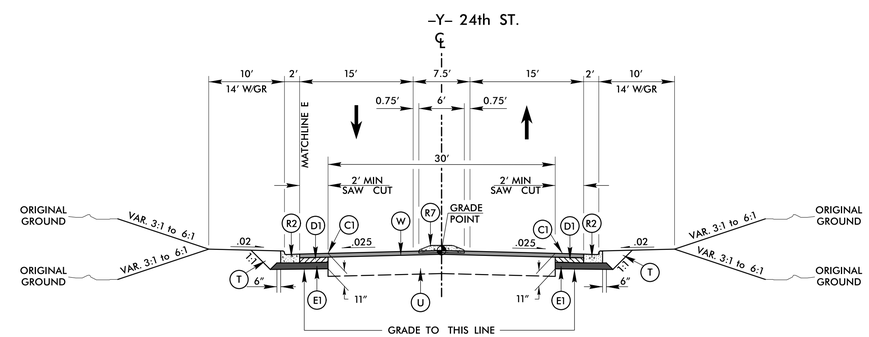
* NOTE: 7' BERM
-L- STA. 46+60.43 TO STA. 48+78.89 LT.
-L- STA. 49+39.65 TO STA. 50+71.48 RT.
-L- STA. 64+86.19 TO STA. 67+24.67 LT.
-L- STA. 72+96.32 TO STA. 86+21.90 LT.
** NOTE: SEE PLANS FOR SIDEWALK LOCATIONS
BERM DESIGNED TO ACCOMMODATE FUTURE SIDEWALK

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN) NTS	
A1	9" CONC. APRON
C1	3.0" S9.5C
C2	VAR. S9.5C
D1	4.0" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0C
E2	VAR. B25.0C
R1	1'-6" C&G
R2	2'-6" C&G
R3	2'-9" C&G
R4	8" x 18" CURB
R5	8" x 12" CURB
R6	ROLLED C&G (SEE DETAIL ON SHEET 2B-5)
R7	5" MONO. ISLAND (KEYED IN)
R8	6" MONO. ISLAND (SURFACE MOUNTED)
R9	4" CONC. ISLAND COVER
S	CONC. SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	0" TO 3" MILLING
V2	3" MILLING
W	WEDGING



TYPICAL SECTION NO. 6

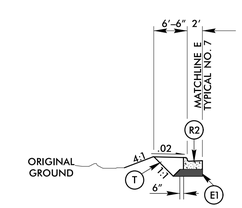
-YA- STA. 10+44.00 TO STA. 10+99.78



TYPICAL SECTION NO. 7

-Y- STA. 13+10.00 TO STA. 14+14.95

NOTE: SEE TYPICAL SECTION NO. 13
FOR MILL & OVERLAY
-Y- STA. 11+70.00 TO 13+10.00



DETAIL E

-Y- STA. 14+00.00 TO 14+14.95 LT.

NOTES : PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
INCIDENTAL MILLING TO BE USED AT DISCRETION OF ENGINEER FOR ALL TIE-INS.
SEE PLANS FOR LOCATION OF MONOLITHIC ISLANDS.

3/6/2025
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MurphyWD

Docusign Envelope ID: 08B953E0-5C91-4822-ADEA-AD161AC5E2B3

8/17/99

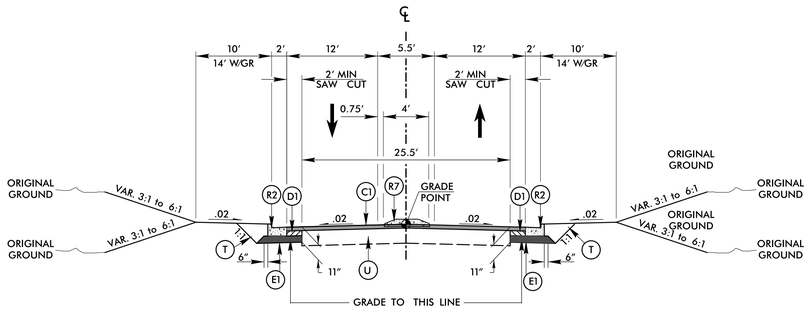
PROJECT REFERENCE NO.	SHEET NO.
U-5797	2A-3
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049235 ENGINEER DAVISON D. MURPHY
STEPHENSON & ASSOCIATES
3/4/2025

PAVEMENT ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039779 ENGINEER JEREMY R. HAMIN
STEPHENSON & ASSOCIATES
3/4/2025

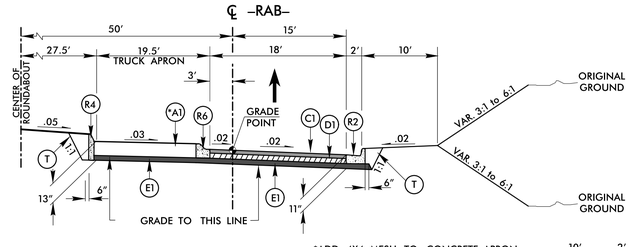
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STV Engineers, Inc.
2121 RDU Center Dr.
Suite 210
Morrisville, NC 27560
NC License Number F-0991



TYPICAL SECTION NO. 8

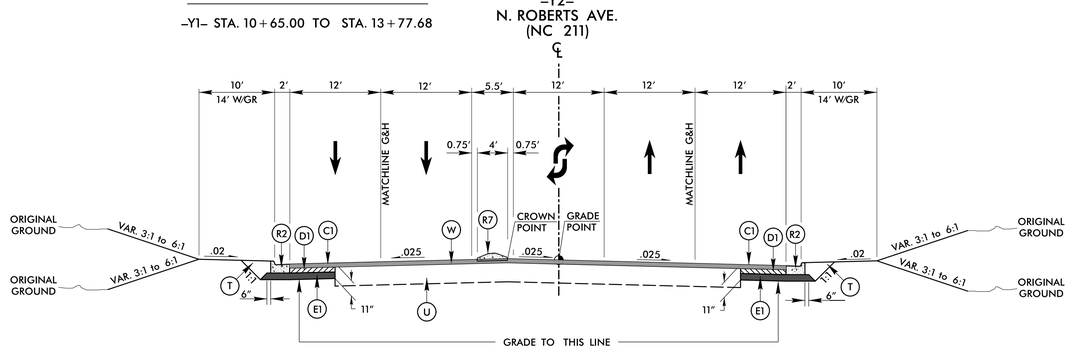
-Y1- STA. 10+65.00 TO STA. 13+77.68



*ADD 4X4 MESH TO CONCRETE APRON.

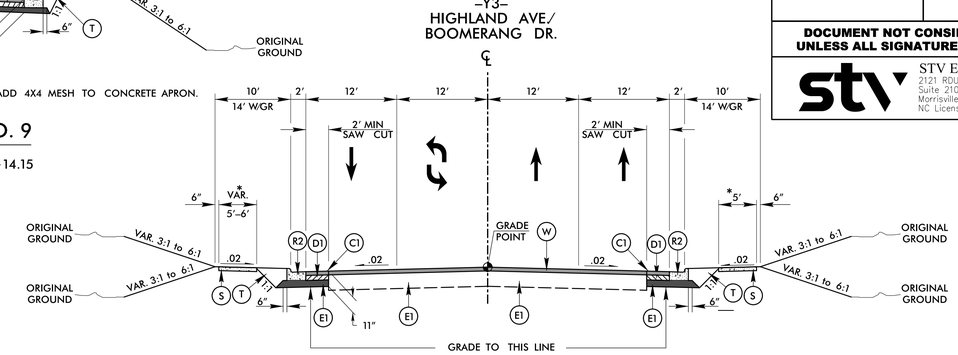
TYPICAL SECTION NO. 9

-RAB- STA. 0+00.00 TO STA. 3+14.15



TYPICAL SECTION NO. 10

-Y2- STA. 15+60.00 TO STA. 25+96.31
-Y2- STA. 26+55.16 TO STA. 33+93.11
-Y2- STA. 34+04.08 TO STA. 37+15.00

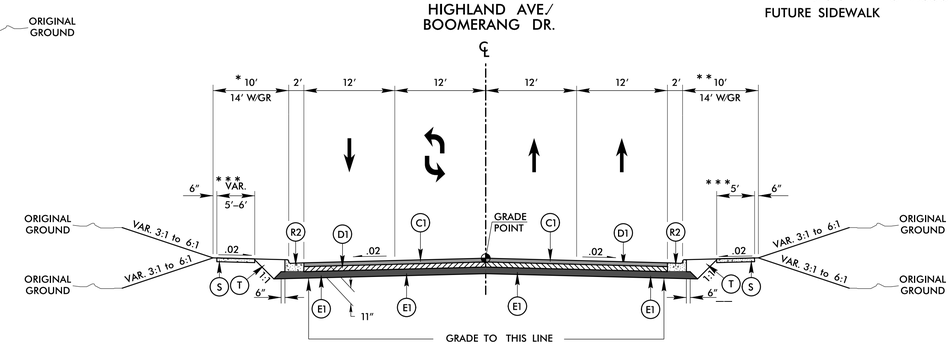


TYPICAL SECTION NO. 11A

-Y3- STA. 12+50.00 TO STA. 13+42.46

* NOTE: REPLACE EXISTING SIDEWALK

BERM DESIGNED TO ACCOMMODATE FUTURE SIDEWALK

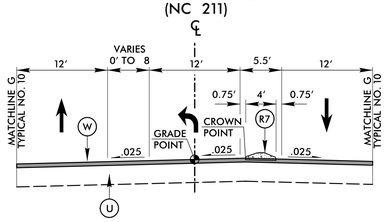


TYPICAL SECTION NO. 11B

-Y3- STA. 14+21.97 TO STA. 25+23.64

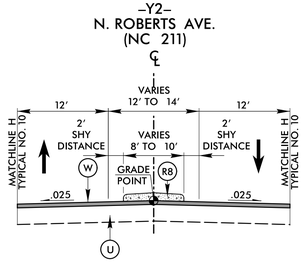
* NOTE: 7' BERM FROM -Y3- STA. 21+33.38 TO 25+23.14 LT.
** NOTE: 7' BERM FROM -Y3- STA. 14+97.75 TO 25+23.14 RT.
*** NOTE: REPLACE EXISTING SIDEWALK
BERM DESIGNED TO ACCOMMODATE FUTURE SIDEWALK
**** NOTE: 10.5' MONOLITHIC ISLAND IN TWO WAY LEFT TURN LANE FROM 24+00.00 TO 25+13.79

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN) NTS	
A1	9" CONC. APRON
C2	3.0" S9.5C
C3	VAR. S9.5C
D1	4.0" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0C
E2	VAR. B25.0C
R1	1'-6" C&G
R2	2'-6" C&G
R3	2'-9" C&G
R4	8" x 18" CURB
R5	8" x 12" CURB
R6	ROLLED C&G (SEE DETAIL ON SHEET 2B-5)
R7	5" MONO. ISLAND (KEYED IN)
R8	6" MONO. ISLAND (SURFACE MOUNTED)
R9	4" CONC. ISLAND COVER
S	CONC. SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	0" TO 3" MILLING
V3	3" MILLING
W	WEDGING



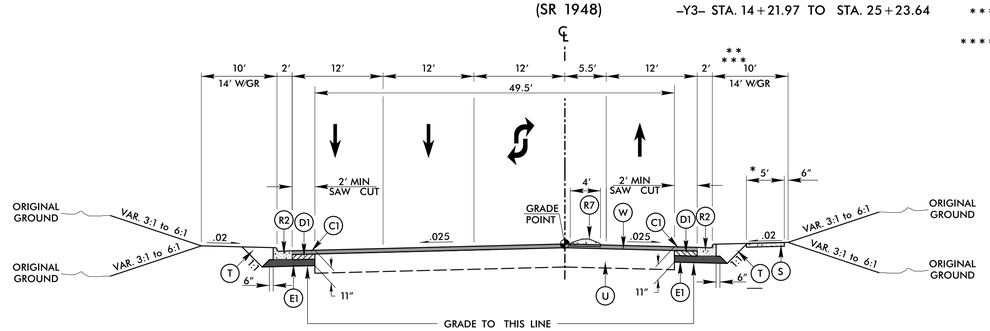
DETAIL G

-Y2- STA. 26+55.16 TO 28+50.00



DETAIL H

-Y2- STA. 32+31.77 TO 33+93.11
-Y2- STA. 34+04.08 TO 35+44.46



TYPICAL SECTION NO. 12

-Y4- STA. 10+47.76 TO STA. 16+07.33

* NOTE: REPLACE EXISTING SIDEWALK
BERM DESIGNED TO ACCOMMODATE FUTURE SIDEWALK
** NOTE: 13' BERM FROM -Y4- STA. 15+00.00 TO 15+50.00 RT.
*** NOTE: 16' BERM FROM -Y4- STA. 16+00.00 TO 16+07.33 RT.

NOTES : PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
INCIDENTAL MILLING TO BE USED AT DISCRETION OF ENGINEER FOR ALL TIE-INS.
SEE PLANS FOR LOCATION OF MONOLITHIC ISLANDS.

3/4/2025
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MurphyWD

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-5797	2A-4
R/W SHEET NO.	

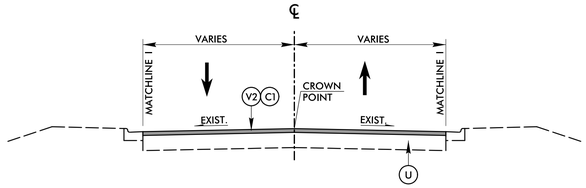
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 049235 ENGINEER DESIGN D. MURPHY 3/5/2025

PAVEMENT ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 039779 ENGINEER JEREMY R. HAMIN 3/5/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STV Engineers, Inc.
2121 RDU Center Dr.
Suite 210
Morrisville, NC 27560
NC License Number F-0991

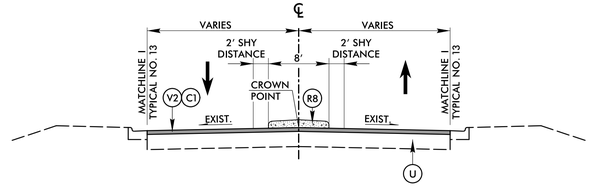
–Y– E. 24th ST.
–Y1– GODWIN AVE.
–Y1A– N. CEDAR ST.
–Y4– LINKHAW DR. (SR 1948)
–Y6– FARRINGDOM ST.



TYPICAL SECTION NO. 13

–Y– STA. 11+70.00 TO STA. 13+10.00
–Y1– STA. 13+77.68 TO STA. 14+55.00
–Y1A– STA. 11+21.00 TO STA. 12+31.06
–Y4– STA. 16+07.33 TO STA. 18+25.00
–Y6– STA. 11+28.93 TO STA. 11+74.56
–Y6– STA. 12+68.11 TO STA. 14+58.88

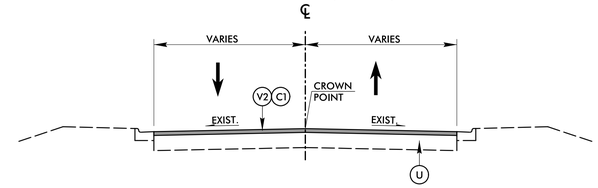
–Y4– LINKHAW DR. (SR 1948)



DETAIL 1

–Y4– STA. 16+75.60 TO STA. 17+27.62
–Y4– STA. 17+36.76 TO STA. 18+21.53

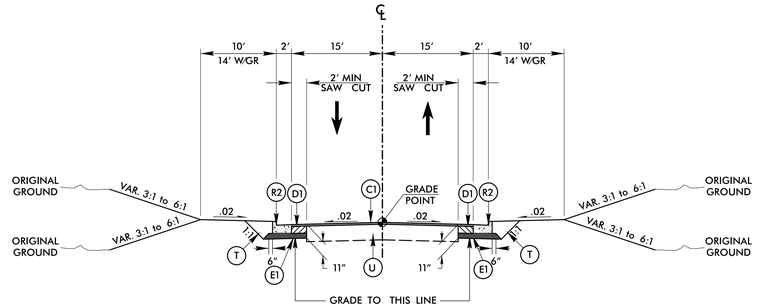
–L– FAYETTEVILLE RD. (SR 1997)
–Y2– ROBERTS (NC 211)



TYPICAL SECTION NO. 14

–L– STA. 86+23.34 TO STA. 87+20.00
–Y2– STA. 15+53.00 TO STA. 15+60.00

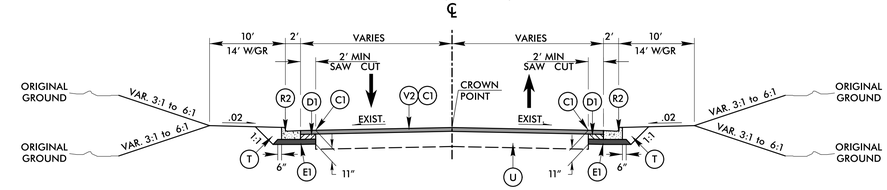
–Y5– PIRATE DR.



TYPICAL SECTION NO. 15

–Y5– STA. 10+47.75 TO STA. 11+50.00

–Y1B– (23rd ST.)

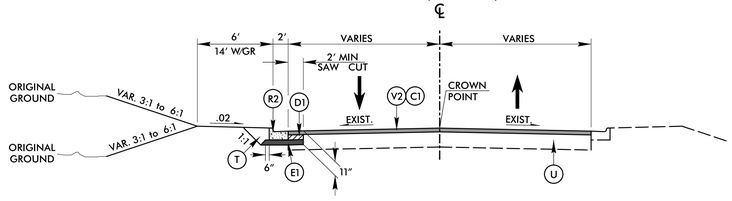


TYPICAL SECTION NO. 16

–Y1B– STA. 10+25.81 TO STA. 10+62.10

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN) NTS	
A1	9" CONC. APRON
C1	3.0" S9.5C
C2	VAR. S9.5C
D1	4.0" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0C
E2	VAR. B25.0C
R1	1'-6" C&G
R2	2'-6" C&G
R3	2'-9" C&G
R4	8" x 18" CURB
R5	8" x 12" CURB
R6	ROLLED C&G (SEE DETAIL ON SHEET 2B-5)
R7	5" MONO. ISLAND (KEYED IN)
R8	6" MONO. ISLAND (SURFACE MOUNTED)
R9	4" CONC. ISLAND COVER
S	CONC. SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	0" TO 3" MILLING
V2	3" MILLING
W	WEDGING

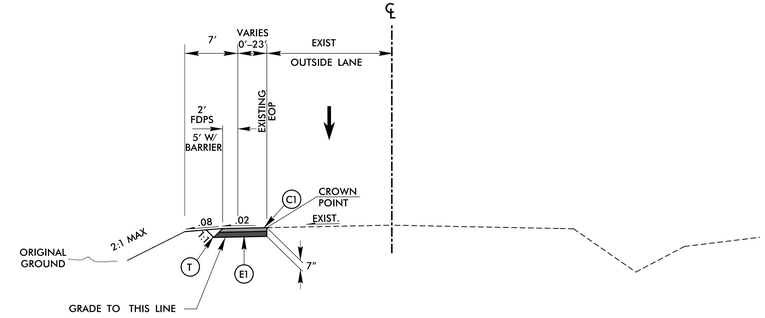
–L– FAYETTEVILLE RD. (SR 1997)
–YB– (22nd ST.)



TYPICAL SECTION NO. 17

–L– STA. 18+35.00 TO STA. 20+38.00
–YB– STA. 12+57.87 TO STA. 13+35.25

–Y2–
N. ROBERTS AVE.
(NC 211)



TYPICAL SECTION NO. 18
(TEMPORARY PAVEMENT)

–Y2– STA. 15+85.46 TO 23+55.01 LT

* SEE SHEET 2B-4 FOR TEMPORARY PAVEMENT DETAILS

NOTES : PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
INCIDENTAL MILLING TO BE USED AT DISCRETION OF ENGINEER FOR ALL TIE-INS.
SEE PLANS FOR LOCATION OF MONOLITHIC ISLANDS.

3/4/2025
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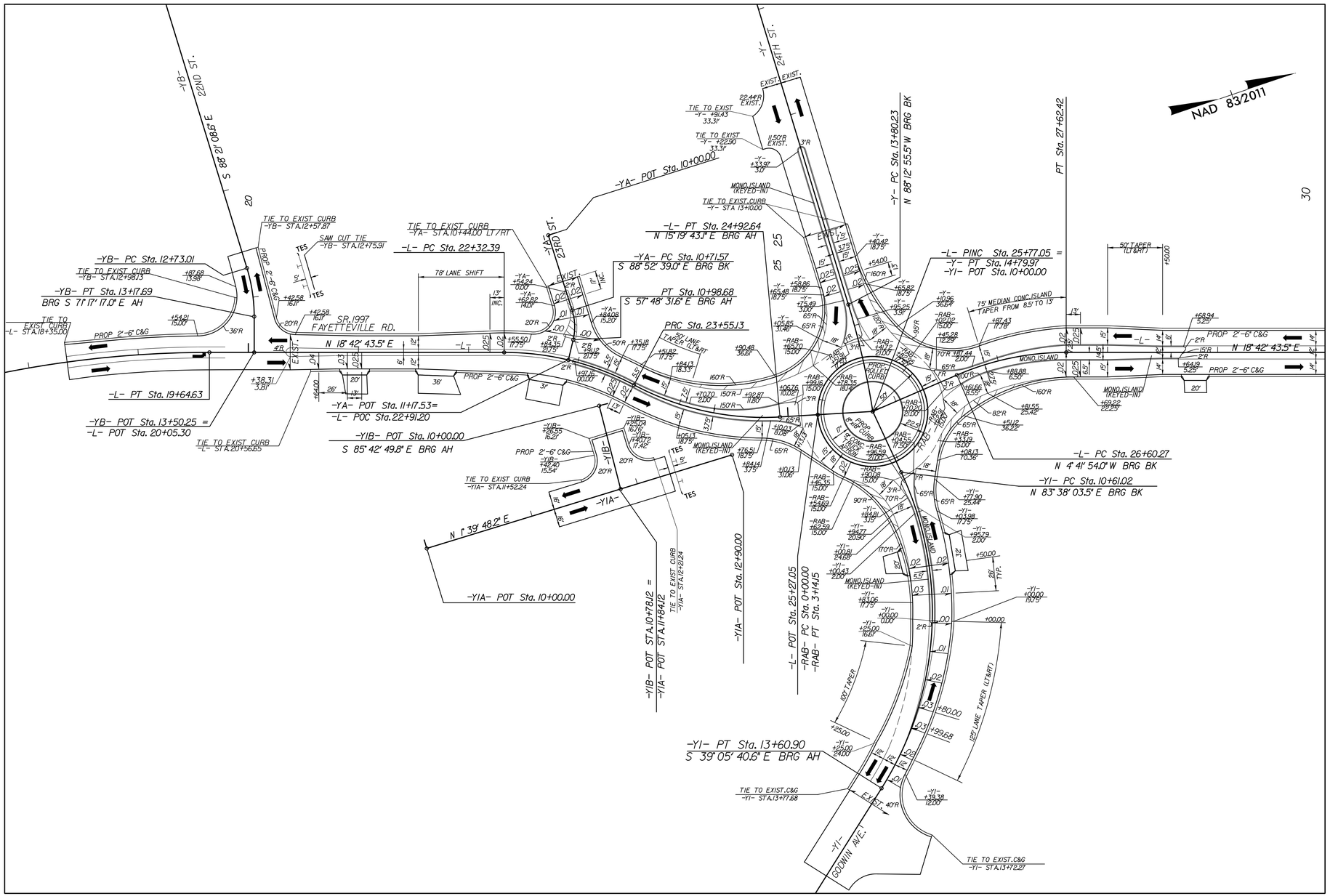
MicroStation

Docusign Envelope ID: B31A1839-68C7-44F7-9E0E-3DFE6B438D0F

8/17/99

–L– (FAYETTEVILLE RD, SR 1997)
–Y– (24TH ST.)
–YA–, –Y1B– (23RD ST.)
–YB– (22ND ST.)
–Y1– (GODWIN AVE.)
–Y1A– (N. CEDAR ST., SR 2007)



PROJECT REFERENCE NO.	SHEET NO.
U-5797	2B-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 049235 ENGINEER WESTON D. MURPHY 3/6/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STV Engineers, Inc.
2121 RDU Center Dr.
Suite 210
Morrisville, NC 27560
NC License Number F-0991

INTERSECTION DETAIL - A

SEE SHEET 4 FOR FULL PLAN VIEW

SCALE : 1" = 50'

3/6/2025
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MurphyWD

Docusign Envelope ID: B31A1839-68C7-44F7-9E0E-3DFE6B438D0F

PROJECT REFERENCE NO.	SHEET NO.
U-5797	2B-2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 049235 ENGINEER WESTON D. MURPHY 3/6/2025

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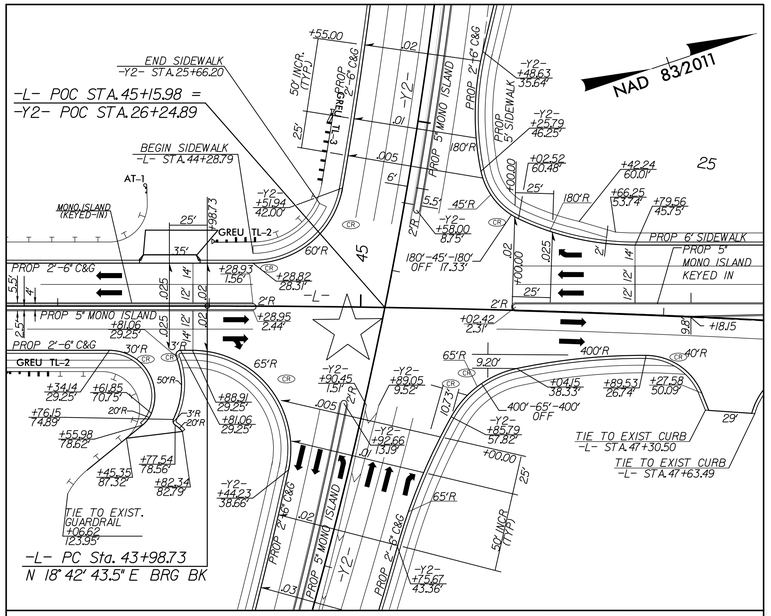
STV Engineers, Inc.
2121 RDU Center Dr.
Suite 210
Morrisville, NC 27560
NC License Number F-0991

☆ UPGRADED SIGNAL

–L– (FAYETTEVILLE RD.)
–Y2– (NC 211 / ROBERTS AVE.)

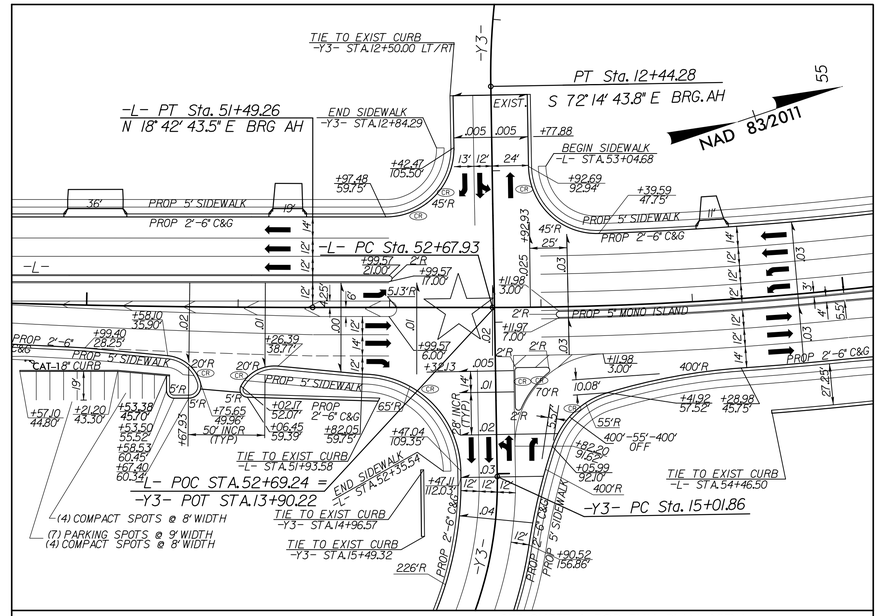


INTERSECTION DETAIL – B

SEE SHEET 6 FOR FULL PLAN VIEW

SCALE : 1" = 50'

–L– (FAYETTEVILLE RD.)
–Y3– (BOOMERANG DR.)

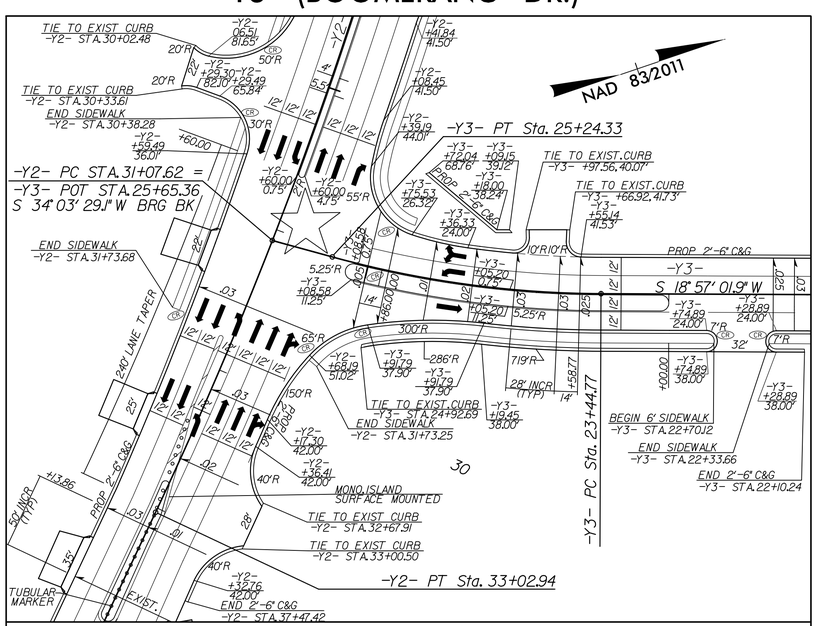


INTERSECTION DETAIL – C

SEE SHEET 6 FOR FULL PLAN VIEW

SCALE : 1" = 50'

–Y2– (NC 211 / ROBERTS AVE.)
–Y3– (BOOMERANG DR.)

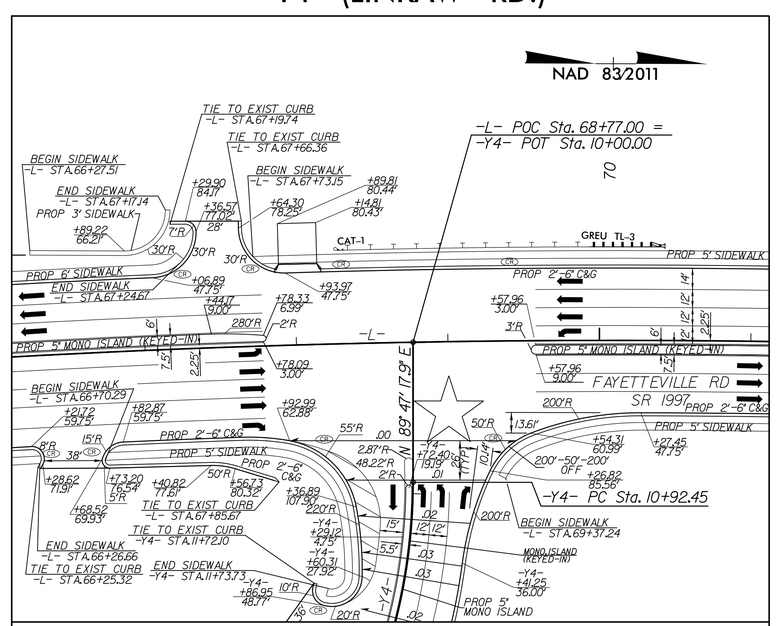


INTERSECTION DETAIL – D

SEE SHEET 6 & 11 FOR FULL PLAN VIEW

SCALE : 1" = 50'

–L– (FAYETTEVILLE RD.),
–Y4– (LINKAW RD.)



INTERSECTION DETAIL – E

SEE SHEET 8 FOR FULL PLAN VIEW

SCALE : 1" = 50'

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3/6/2025
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PROJECT REFERENCE NO.	SHEET NO.
U-5797	2B-3
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

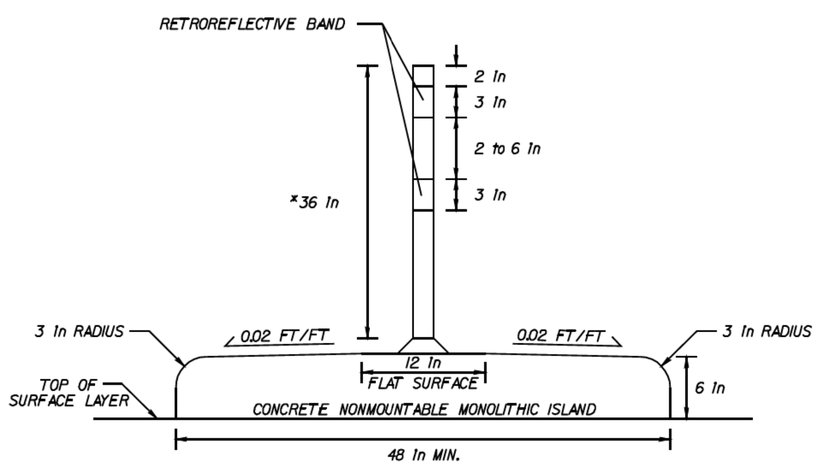
NORTH CAROLINA PROFESSIONAL SEAL 049235 ENGINEER WESTON D. MURPHY 3/6/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STV Engineers, Inc.
2121 RDU Center Dr.
Suite 210
Morrisville, NC 27560
NC License Number F-0991

TYPICAL TUBULAR MARKER

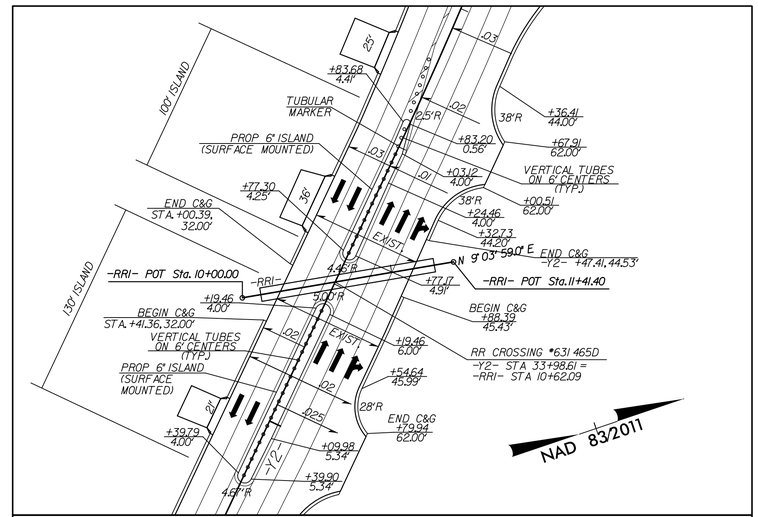
(SEE 2024 NCDOT STANDARD DRAWINGS, STD. 1266.01)



*36 In height may be reduced upon further coordination with the Rail Division if the crossing has a lot of use by oversized vehicles.

SCALE: NTS

-Y2- (NC 211 / ROBERTS AVE.) CSXT RAILROAD

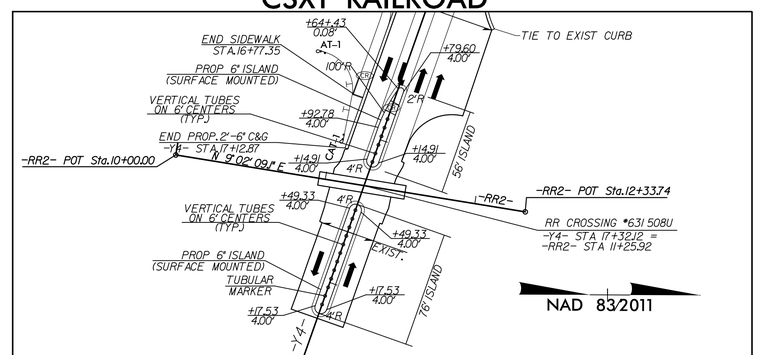


RAILROAD DETAIL – A

SEE SHEET 11 FOR FULL PLAN VIEW

SCALE : 1" = 50'

-Y4- (LINKHAW RD.) CSXT RAILROAD



RAILROAD DETAIL – B

SEE SHEET 8 FOR FULL PLAN VIEW

SCALE : 1" = 50'

* CONCRETE MOUNTABLE MONOLITHIC ISLAND RANGES FROM 8' TO 10' WIDE AT -Y2- (NC 211/ROBERTS AVE.)

* CONCRETE MOUNTABLE MONOLITHIC ISLAND IS 8' WIDE AT -Y4- (LINKHAW RD.)

TUBULAR MARKER TO BE PLACES ON CENTER OF CONCRETE ISLAND.

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MurphyWD

Docusign Envelope ID: 0A3240E6-A3D9-40D5-8090-E48D783FBE0A

8/17/99

DETAIL OF TEMPORARY WIDENING ALONG –Y2– (NC 211 / ROBERTS AVE.) & –L– (SR 1997 / FAYETTEVILLE RD.)

PROJECT REFERENCE NO.	SHEET NO.
U-5797	2B-4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049235 12/4/2025 WESTON D. MURPHY

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 051699 12/4/2025 TIFFANY A. FREEDMAN

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STV Engineers, Inc.
2121 RDU Center Dr.
Suite 210
Morrisville, NC 27560
NC License Number F-0991

UPGRADED SIGNAL

NAD 83/2011

-Y2- PT Sta. 14+12.75

TIE TO EXIST. +85.46 31.57' LT

-Y2- 16+10+/-

CRASH CUSHION

TEMPORARY SS

PROP TEMPORARY PAVEMENT WIDENING OFF EXISTING PAVEMENT

PROP TEMPORARY PAVEMENT CONSTRUCTED IN PHASE 4 STEP 4

350' TAPER

PDE +58.32

TEMPORARY 108" CSP

TEMPORARY SHORING (SEE TMP PLANS SHEET NO. TMP-19)

+00.59

PORTABLE CONCRETE BARRIER

CRASH CUSHION +23.00

410' TAPER

TIE TO EXIST. +55.01 42.11' LT

-Y2- 25+10+/-

-Y2- PC Sta. 19+10.87

PROPOSED CONSTRUCTED IN PHASE 5 STEP 1 (SEE TMP)

-2-12'X10' RC BOX CULVERT

-Y2- NC 211 N. ROBERTS AVE.

-L- SR 1997 FAYETTEVILLE RD.

-L- PRC Sta. 47+74.00

-L- PC Sta. 43+98.73

44+58+/-

REMOVE EXIST. CONC. ISLAND

TIE TO PROPOSED CONSTRUCTION -L- 44+58.57' 36.50' LT

PLACE GUARDRAIL ON THE TEMPORARY SHOULDER

TEMPORARY SS

WIDEN TEMPORARY PAVEMENT OFF OF PROPOSED PAVEMENT PHASE 5 STEP 1 (SEE TMP)

90' TAPER

PORTABLE CONCRETE BARRIER

TIE TO PROPOSED CONSTRUCTION -L- 41+20.93 28.25' LT

PROPOSED CONSTRUCTED IN PHASE 5 STEP 1 (SEE TMP)

SEE SHEETS 5, 6, AND 10 FOR ROW AND EASEMENTS
SEE TMP PLANS FOR TRAFFIC CONTROL DEVICES AND TEMPORARY MARKINGS

12/4/2025
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MurphyWD

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-5797	2B-5
R/W SHEET NO.	

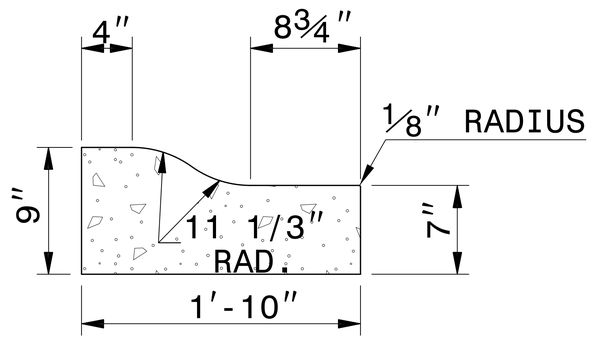
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049235 3/6/2025 WESTON D. MURPHY

DOCUSIGNED BY: 1F1CB30A7F4A8B...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STV Engineers, Inc.
2121 RDU Center Dr.
Suite 210
Morrisville, NC 27560
NC License Number F-0991



ROLLED CURB AND GUTTER

NOTES: SEE NCDOT STANDARD DRAWING 843.01 (DETAILING JOINTS AND JOINT FILLER & SEALER).

3/6/2025
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MIRCHOWD

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PROJECT REFERENCE NO.	SHEET NO.
U-5797	2B-6
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 049235 ENGINEER WESTON D. MURPHY 3/6/2025	NORTH CAROLINA PROFESSIONAL SEAL 051699 ENGINEER TIFFANY A. PREDDY 3/6/2025

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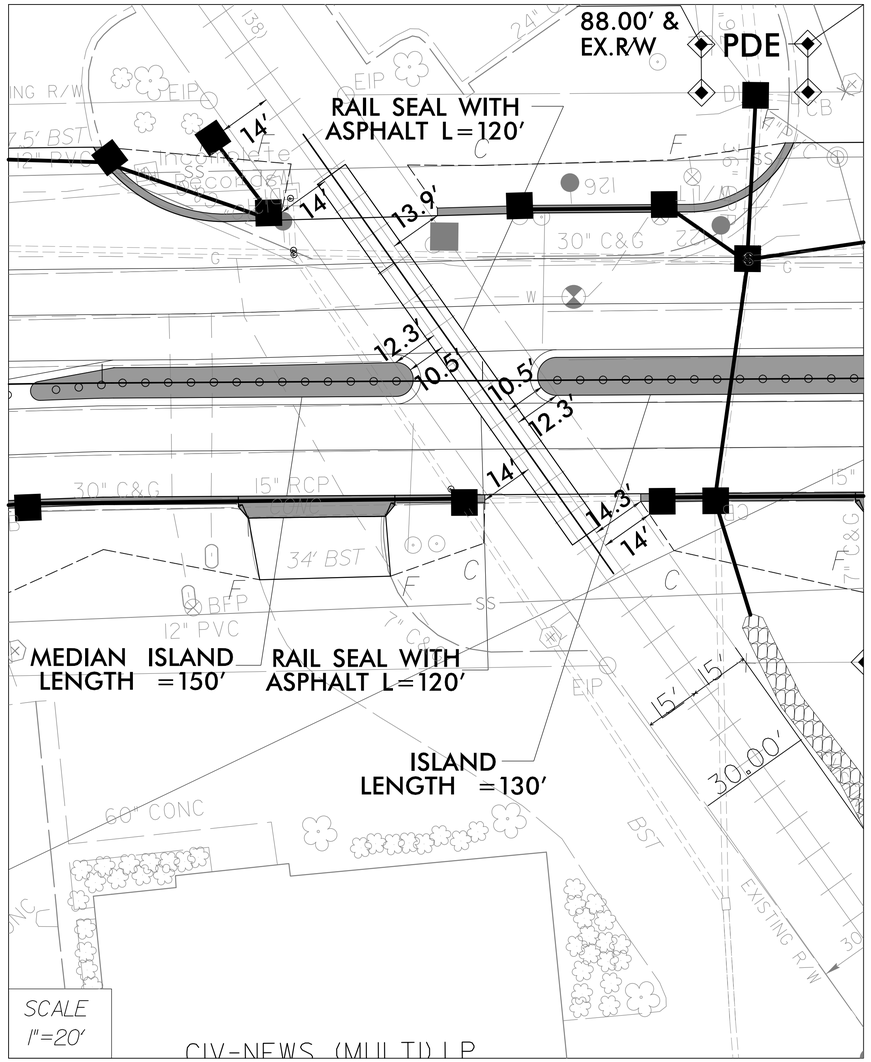
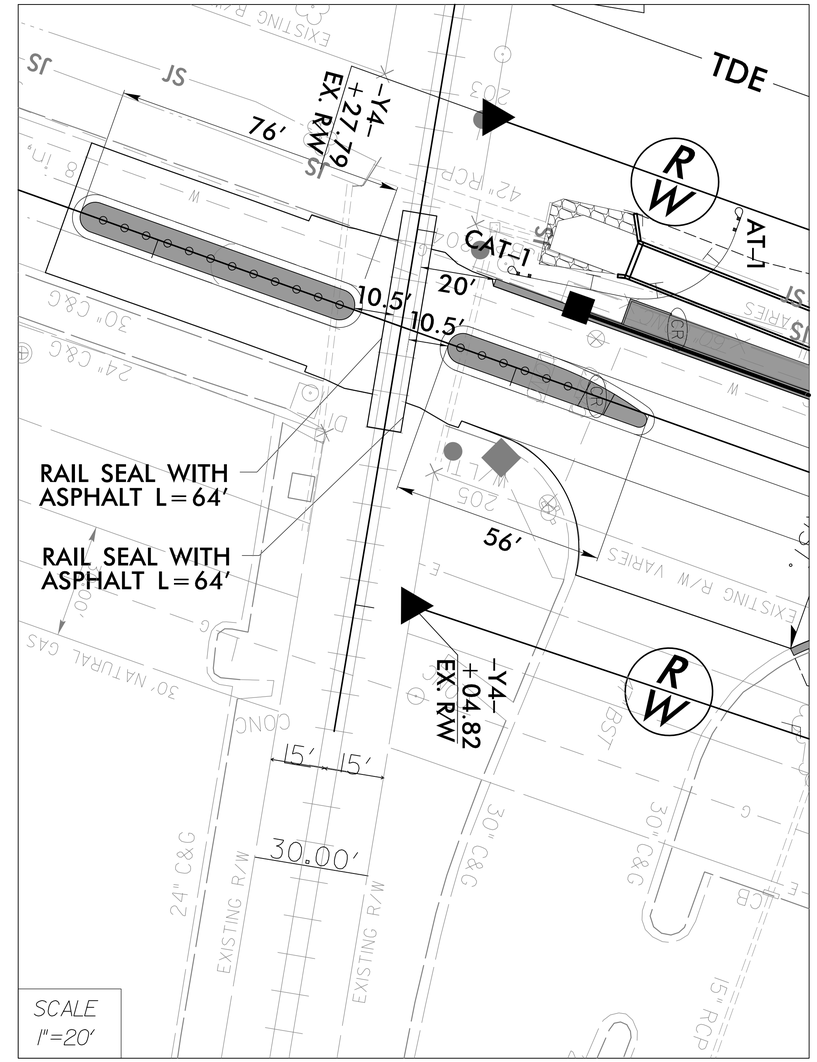
RAILROAD DIMENSIONING DETAIL



-Y2- (NC211/ ROBERTS AVE.)
CSX RAILROAD



-Y4- (LINKHAW RD.)
CSX RAILROAD

8/17/99

3/6/2025
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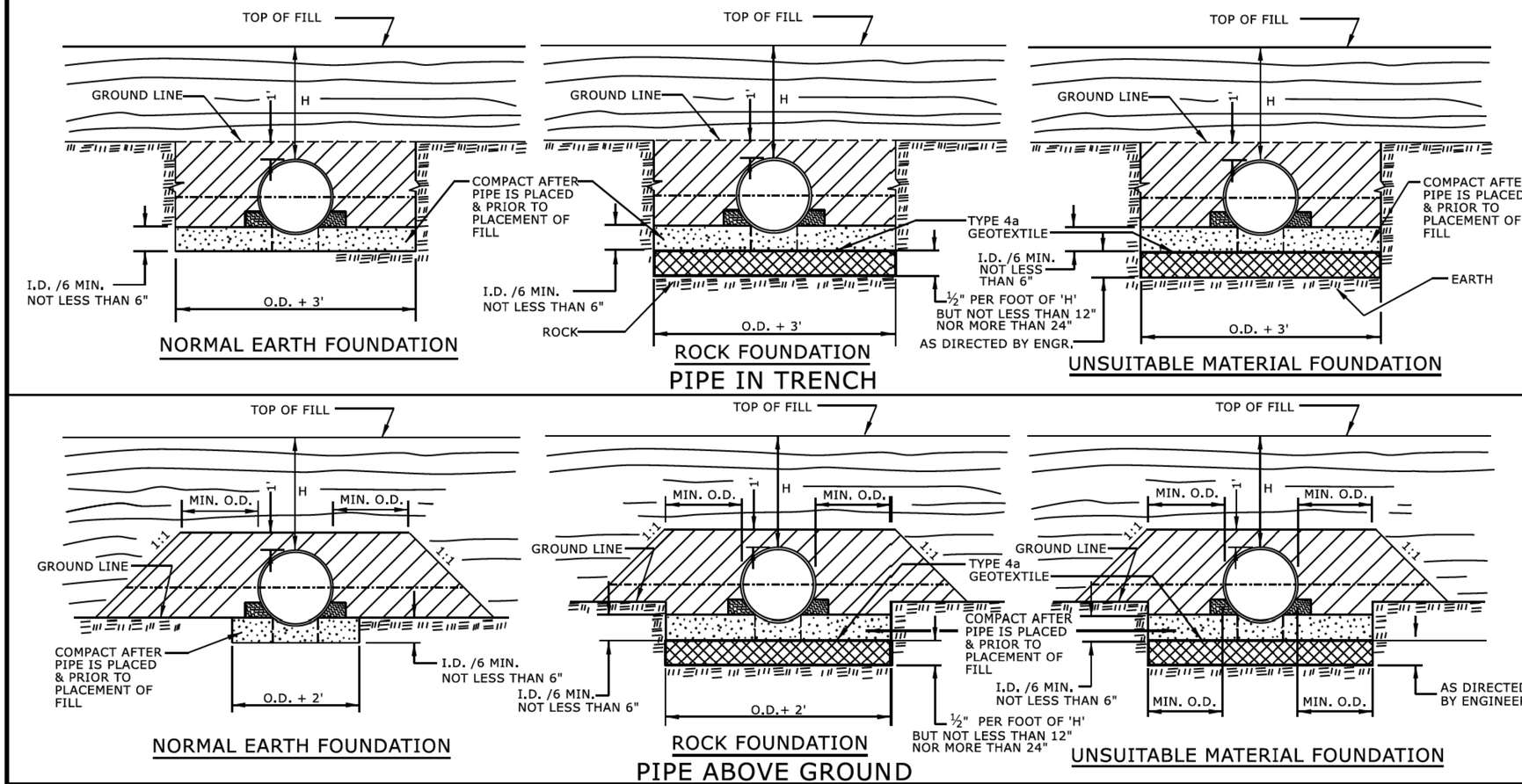
PROJECT REFERENCE NO.	SHEET NO.
U-5797	2C-1



GENERAL NOTES:

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

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

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

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

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

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

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

SPRINGLINE OF PIPE

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

UNDISTURBED EARTH MATERIAL

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

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

ROADWAY DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

FLEXIBLE PIPE

SHEET 1 OF 2

300.01

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

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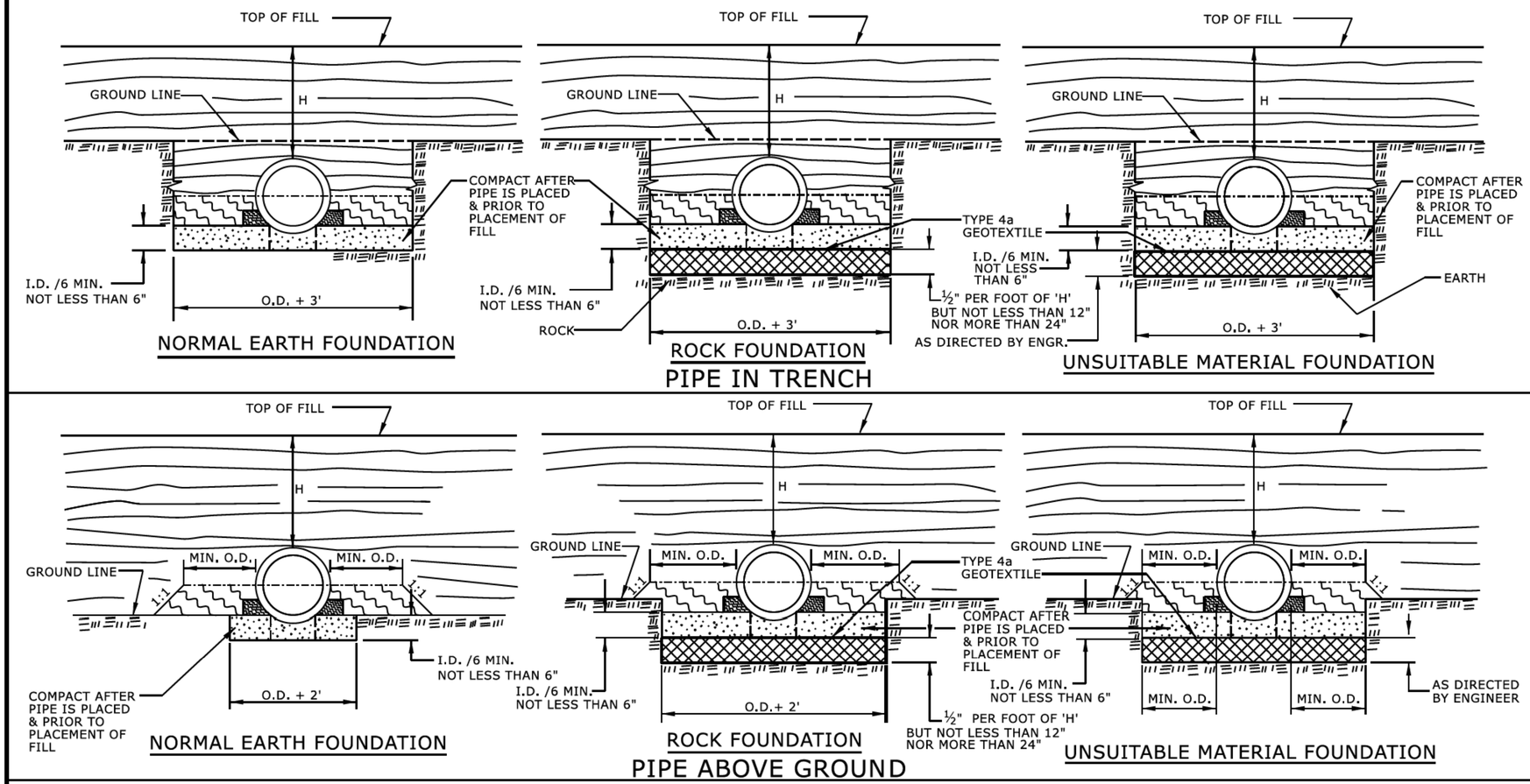

GENERAL NOTES:

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

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

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

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

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

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

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

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.

UNDISTURBED EARTH MATERIAL

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

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

ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
RIGID PIPE

NORTH CAROLINA PROFESSIONAL SEAL 033144 ENGINEER NICOLE M. HACKLER 3/6/2025

SHEET 2 OF 2

300.01

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Office 919-707-6950 FAX 919-250-4119

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-5797	2C-3

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
* USE 6" WALLS FOR BOXES UP TO 8' IN HEIGHT. USE 8" WALLS, 8" BOTTOM SLAB AND 8" TOP SLAB FOR BOXES GREATER THAN 8' IN HEIGHT AND UP TO 20' IN HEIGHT.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
** FOR STRUCTURES WITH PIPE LARGER THAN 54", MAKE THE TOP SLAB 8" THICK.

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

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

SHEET 1 OF 2 **840D02**

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

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

DIMENSIONS OF BOX AND PIPE						COVER DIMENSION		BARS-U		BARS-V		BARS-W		TOTAL LBS.	CU.YDS. CONC. IN BOX		DEDUCTIONS ONE PIPE	
PIPE D	SPAN A	WIDTH B	WIDTH C	SPAN G	MIN. HEIGHT H	E	F	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH		TOP SLAB	BOTTOM SLAB	TOTAL CONC. PER METER	C.M.	R.C.
12"	3'-0"	2'-2"	--	--	2'-0"	--	--	--	--	--	--	--	--	--	0.235	0.772	0.015	0.026
15"	3'-0"	2'-2"			2'-3"										0.235	0.829	0.023	0.036
18"	3'-0"	2'-2"			2'-6"										0.235	0.887	0.033	0.049
24"	3'-0"	2'-2"			3'-1"										0.235	1.001	0.059	0.085
30"	3'-0"	2'-2"	3'-4"	3'-4"	3'-10"	1'-2"	4'-4"	4	1'-5"	2	4'-1"	3	4'-1"	39	0.123	0.347	1.493	0.092	0.127
36"	3'-0"	2'-2"	3'-10"	3'-10"	4'-6"	1'-8"	4'-10"	4	1'-11"	3	4'-7"	3	4'-7"	43	0.161	0.432	1.714	0.132	0.178
42"	3'-0"	2'-2"	4'-5"	4'-5"	4'-11"	2'-2"	5'-5"	5	2'-5"	4	5'-2"	3	5'-2"	47	0.200	0.543	1.738	0.180	0.243
48"	3'-0"	2'-2"	5'-0"	5'-0"	5'-6"	2'-10"	6'-0"	5	3'-1"	4	5'-9"	3	5'-9"	51	0.235	0.667	2.052	0.235	0.317
54"	3'-0"	2'-2"	5'-7"	5'-7"	6'-0"	3'-5"	6'-7"	6	3'-8"	5	6'-4"	3	6'-4"	56	0.289	0.802	2.387	0.297	0.401
60"	3'-0"	2'-2"	6'-3"	6'-3"	6'-6"	4'-1"	7'-3"	6	4'-4"	5	7'-0"	3	7'-0"	61	0.340	0.973	2.722	0.363	0.546
66"	3'-0"	2'-2"	6'-11"	6'-11"	7'-0"	4'-9"	7'-11"	7	5'-0"	6	7'-8"	3	7'-8"	66	0.391	1.160	3.057	0.440	0.655
72"	3'-0"	2'-2"	7'-6"	7'-6"	7'-6"	5'-3"	8'-6"	7	5'-6"	6	8'-3"	3	8'-3"	72	0.442	1.340	3.392	0.524	0.774
78"	3'-0"	2'-2"	8'-1"	8'-1"	8'-0"	5'-11"	9'-1"	8	6'-2"	7	8'-10"	3	8'-10"	78	0.493	1.530	3.727	0.615	0.893
84"	3'-0"	2'-2"	8'-9"	8'-9"	8'-6"	6'-7"	9'-9"	8	6'-10"	7	9'-6"	3	9'-6"	84	0.544	1.760	4.062	0.713	1.010

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

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

SHEET 2 OF 2 **840D02**

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

SEE PLATE FOR TITLE

ORIGINAL BY: 2002 Std.840.01 DATE:
MODIFIED BY: E.E. WARD DATE: 3-1-02
CHECKED BY: DATE:
FILE SPEC.: jhowerton/840d02 Extra Depth CB.dgn

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jhowerton AT CSD-292595

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PROJECT REFERENCE NO.	SHEET NO.
U-5797	2C-4

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

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

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

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

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

CONSTRUCT WITH PIPE CROWNS MATCHING.

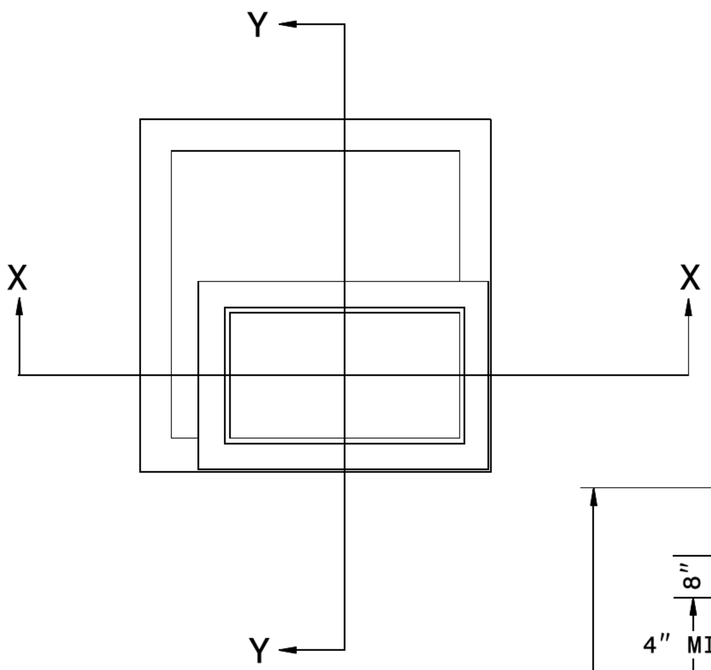
INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.

INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.

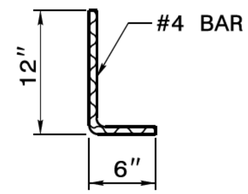
CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

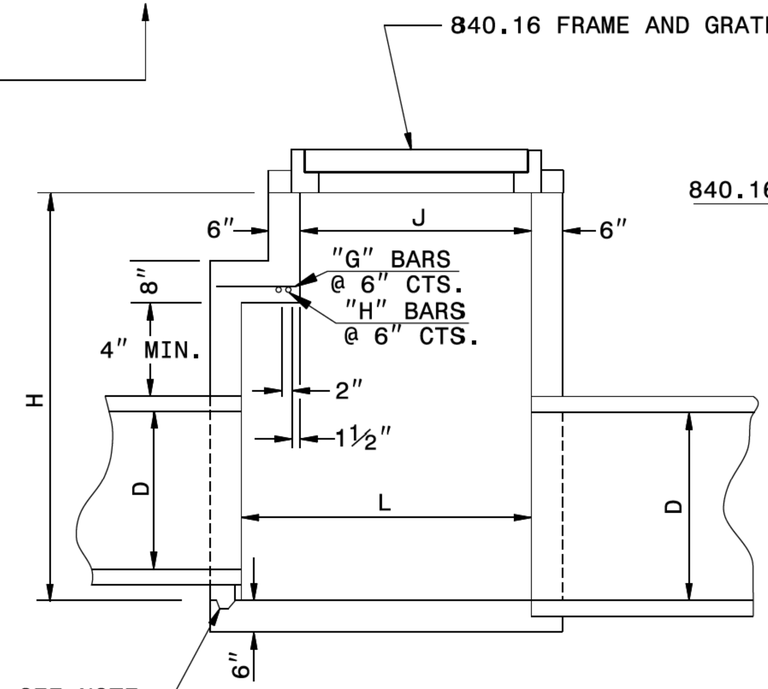
DIMENSIONS MAY BE FIELD ADJUSTED AS DIRECTED BY THE ENGINEER.



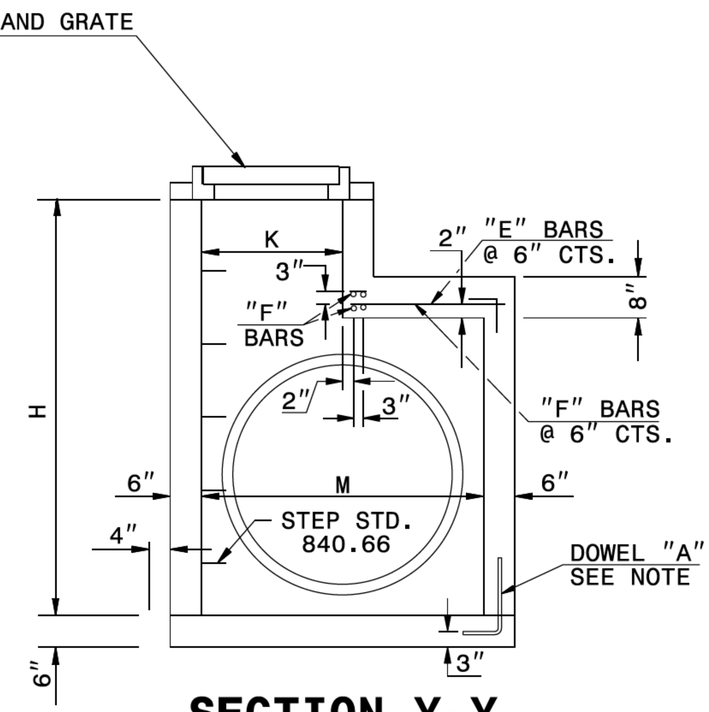
PLAN



DOWEL



SECTION X-X



SECTION Y-Y

MIN. DIMENSIONS AND QUANTITIES FOR CONCRETE DROP INLET(BASED ON MIN. HEIGHT, H)

DIMENSIONS OF BOX AND PIPE						REINFORCING STEEL - NO. 4 BARS									CU YDS CONC. IN BOX				DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	SPAN	WIDTH	HEIGHT	BARS E		BARS F		BARS G		BARS H		TOTAL	BOTTOM SLAB	H TOTAL	H PER FT HT	TOTAL		
D	J	K	L	M	H	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	LBS.					C.S.	R.C.
12"	3'-0"	2'-0"	3'-8"	2'-0"	3'-9"	—	—	—	—	—	—	—	—	—	0.362	0.926	0.247	1.288	0.015	0.024
15"	3'-0"	2'-0"	3'-8"	2'-0"	4'-0"	—	—	—	—	—	—	—	—	—	0.362	0.988	0.247	1.350	0.023	0.036
18"				2'-0"	4'-3"	—	—	—	—	—	—	—	—	—	0.362	1.050	0.247	1.412	0.033	0.049
24"				2'-10"	4'-9"	8	1'-5"	6	4'-9"	—	—	—	—	27	0.444	1.362	0.278	1.806	0.059	0.085
30"			3'-8"	3'-5"	5'-3"	8	2'-0"	7	4'-9"	—	—	—	—	33	0.502	1.644	0.288	2.146	0.092	0.127
36"			4'-0"	4'-0"	5'-9"	8	2'-5"	8	4'-11"	4	0'-9"	2	4'-11"	47	0.560	1.931	0.321	2.525	0.132	0.178
42"			4'-10"	4'-10"	6'-3"	10	3'-1"	9	5'-7"		1'-5"	3	5'-7"	67	0.704	2.500	0.370	3.282	0.180	0.243
48"			5'-4"	5'-4"	6'-9"	11	3'-7"	10	6'-1"		1'-11"	4	6'-1"	87	0.823	3.013	0.407	3.920	0.235	0.317
54"			6'-0"	6'-0"	7'-3"	12	4'-1"	11	6'-7"		2'-5"	5	6'-7"	107	0.951	3.589	0.444	4.677	0.297	0.401
60"			6'-6"	6'-6"	7'-9"	13	4'-9"	12	7'-3"		3'-1"	6	7'-3"	135	1.311	4.539	0.494	5.775	0.367	0.495
66"			7'-2"	7'-2"	8'-3"	14	5'-4"	14	7'-10"		3'-7"	7	7'-10"	168	1.136	5.061	0.537	6.506	0.444	0.599
72"	3'-0"	2'-0"	7'-8"	7'-8"	8'-9"	15	5'-11"	15	8'-5"	4	4'-3"	8	8'-5"	199	1.500	5.860	0.580	7.473	0.528	0.713

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jhowerton AT CSD-292595

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SPECIAL DI 840D14

ORIGINAL BY: J HOWERTON DATE: 04/11/17
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: detail/jhowerton/840d14 di 30 rcp.dgn

Docusign Envelope ID: CFC3D674-FB7E-48C0-8C81-43EB39380840

PROJECT REFERENCE NO.	SHEET NO.
U-5797	2C-5

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

ENGLISH DETAIL DRAWING FOR
CONCRETE MEDIAN DROP INLET TYPE 'A'
EXTRA DEPTH OVER 12' TO 25'
12" THRU 72" PIPE

SHEET 1 OF 2 **840D17**

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE DROP INLETS WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

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

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

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

WHEN PAYMENT FOR THE DROP INLET IS MADE ON A PER EACH BASIS, THE CONCRETE APRON WILL BE CONSIDERED PART OF THE DROP INLET.

CONSTRUCT WITH PIPE CROWNS MATCHING.

USE STANDARD FRAMES AND GRATES 840.22 (SHOWN), 840.24(SHOWN), 840.20, 840.29, AND 840.33.

SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 25 FEET.

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

ENGLISH DETAIL DRAWING FOR
CONCRETE MEDIAN DROP INLET TYPE 'A'
EXTRA DEPTH OVER 12' TO 25'
12" THRU 72" PIPE

SHEET 2 OF 2 **840D17**

QUANTITY TO BE ADDED FOR EACH 2' INCREMENT INLET OPENING

	2'-0"	4'-0"	6'-0"	8'-0"	10'-0"	12'-0"
ADDITIONAL INLETS						
CONCRETE CU. YDS.	0.191	0.417	0.665	0.897	1.145	1.380
CONCRETE APRON CU. YDS.	0.074	0.148	0.222	0.296	0.370	0.444

MIN. DIMENSIONS AND QUANTITIES FOR CONCRETE GRATED DROP INLET(BASED ON MIN. HEIGHT, H)

DIMENSIONS OF BOX AND PIPE					REINFORCING STEEL - NO. 4 BARS										CU YDS CONC. IN BOX			DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	SPAN	WIDTH	HEIGHT	BARS E		BARS F		BARS G		BARS H		TOTAL LBS.	BOTTOM SLAB	H TOTAL	H PER FT HT	APRON	TOTAL	C.S.	R.C.
D	J	K	L	M	H	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH								
12"	3'-8"	2'-0"	3'-8"	2'-0"	3'-9"	—	—	—	—	—	—	—	—	—	0.362	0.926	0.247	0.395	1.683	0.015	0.024
15"	3'-8"	2'-0"	3'-8"	2'-0"	4'-0"	—	—	—	—	—	—	—	—	—	0.362	0.988	0.247	0.395	1.745	0.023	0.036
18"				2'-0"	4'-3"	—	—	—	—	—	—	—	—	—	0.362	1.050	0.247		1.807	0.033	0.049
24"				2'-10"	4'-9"	8	1'-5"	6	4'-9"	—	—	—	—	27	0.444	1.362	0.278		2.201	0.059	0.085
30"			3'-8"	3'-5"	5'-3"	8	2'-0"	7	4'-9"	—	—	—	—	33	0.502	1.644	0.288		2.541	0.092	0.127
36"			4'-0"	4'-0"	5'-9"	8	2'-5"	8	4'-11"	4	0'-9"	2	4'-11"	47	0.560	1.931	0.321		2.920	0.132	0.178
42"			4'-10"	4'-10"	6'-3"	10	3'-1"	9	5'-7"	3	1'-5"	3	5'-7"	67	0.704	2.500	0.370		3.677	0.180	0.243
48"			5'-4"	5'-4"	6'-9"	11	3'-7"	10	6'-1"	4	1'-11"	4	6'-1"	87	0.823	3.013	0.407		4.315	0.235	0.317
54"			6'-0"	6'-0"	7'-3"	12	4'-1"	11	6'-7"	5	2'-5"	5	6'-7"	107	0.951	3.589	0.444		5.072	0.297	0.401
60"			6'-6"	6'-6"	7'-9"	13	4'-9"	12	7'-3"	6	3'-1"	6	7'-3"	135	1.311	4.539	0.494		6.170	0.367	0.495
66"			7'-2"	7'-2"	8'-3"	14	5'-4"	14	7'-10"	7	3'-7"	7	7'-10"	168	1.136	5.061	0.537		6.901	0.444	0.599
72"	3'-8"	2'-0"	7'-8"	7'-8"	8'-9"	15	5'-11"	15	8'-5"	4	4'-3"	8	8'-5"	199	1.500	5.860	0.580	0.395	7.868	0.528	0.713

CONTRACT STANDARDS AND DEVELOPMENT UNIT
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SEE PLATE FOR TITLE

ORIGINAL BY: 2002 STD.840.17 DATE:
MODIFIED BY: K.A. KEMPF DATE: 07-06-09
CHECKED BY: DATE:
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jhowerton AT CSD-2926595

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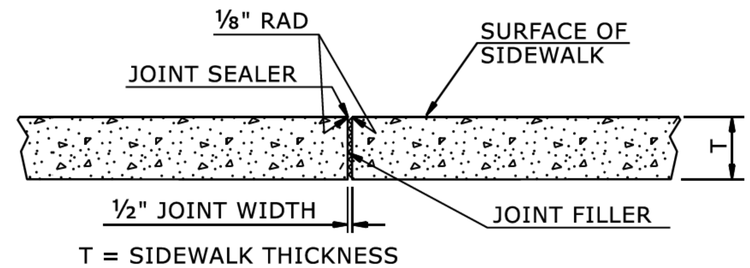
NOTES:

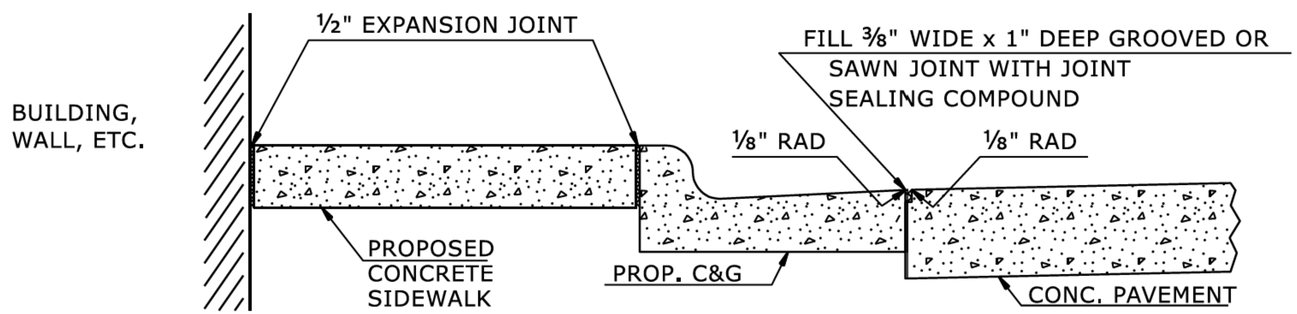
CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

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.



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

SHEET 1 OF 1

848D01

NORTH CAROLINA PROFESSIONAL SEAL 033144 ENGINEER NICOLE M. HACKLER 3/6/2025

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PROJECT REFERENCE NO.	SHEET NO.
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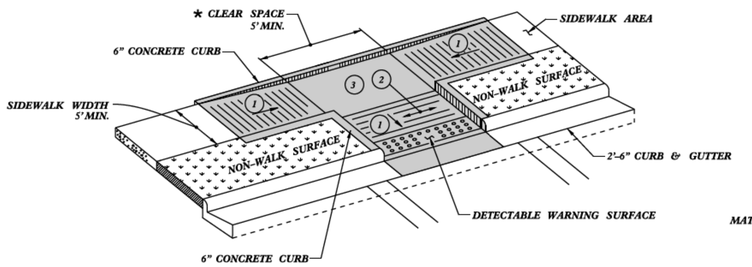
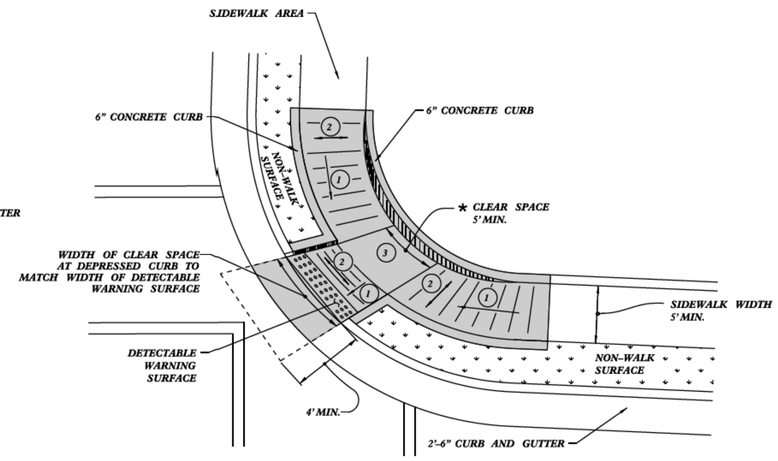
★ - WHERE CLEAR SPACE IS CONSTRAINED ON TWO OR MORE SIDES, THE CLEAR SPACE SHALL BE 4' MINIMUM X 5' MINIMUM, WITH 5' PROVIDED IN THE DIRECTION OF THE PEDESTRIAN STREET CROSSING.



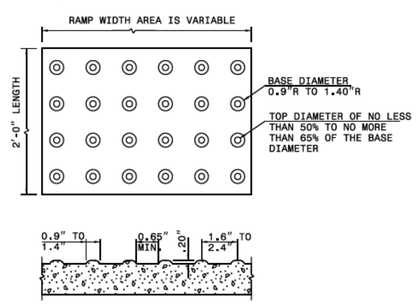
TYPE 3



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
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
CURB RAMP
PARALLEL RAMP

NORTH CAROLINA PROFESSIONAL SEAL 033144 ENGINEER NICOLE M. HACKLER 3/6/2025

SHEET 9 OF 13

848D06

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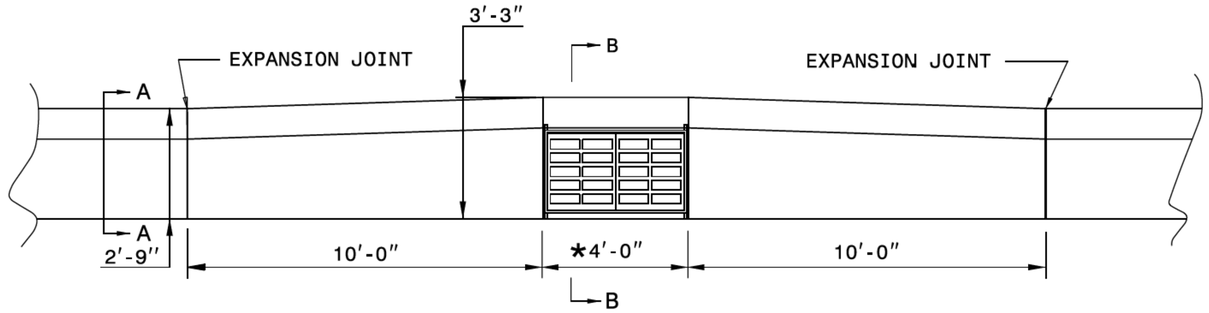
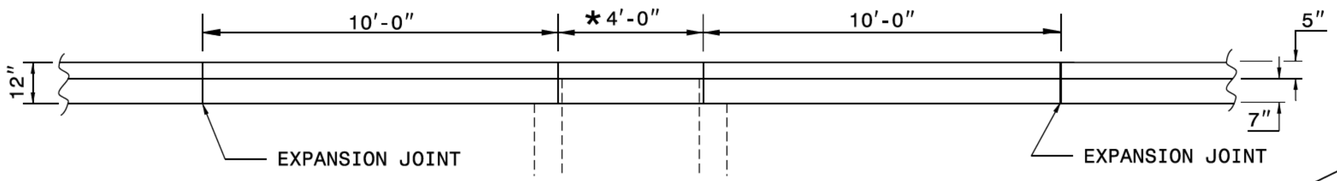
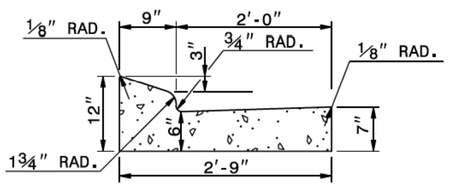
U-5797	2C-8



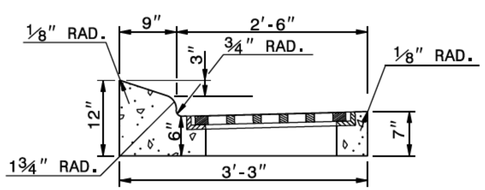
PLAN



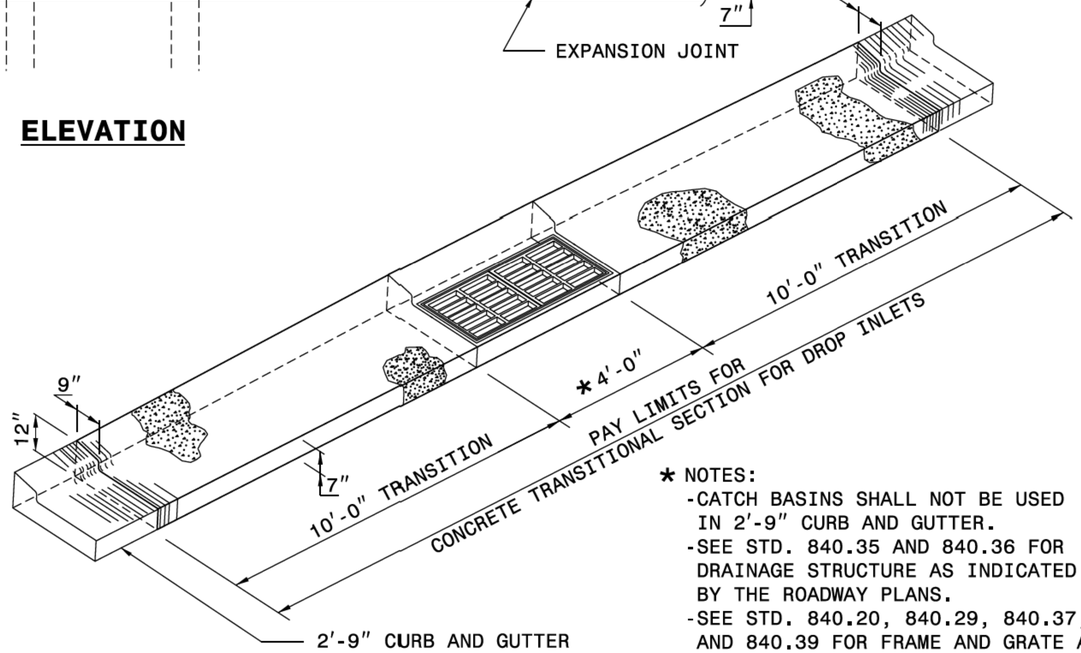
ELEVATION



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

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ORIGINAL BY: K.A. KEMPF DATE: 7-20-23
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FILE SPEC.: 2024 details in lieu\85200701.dgn

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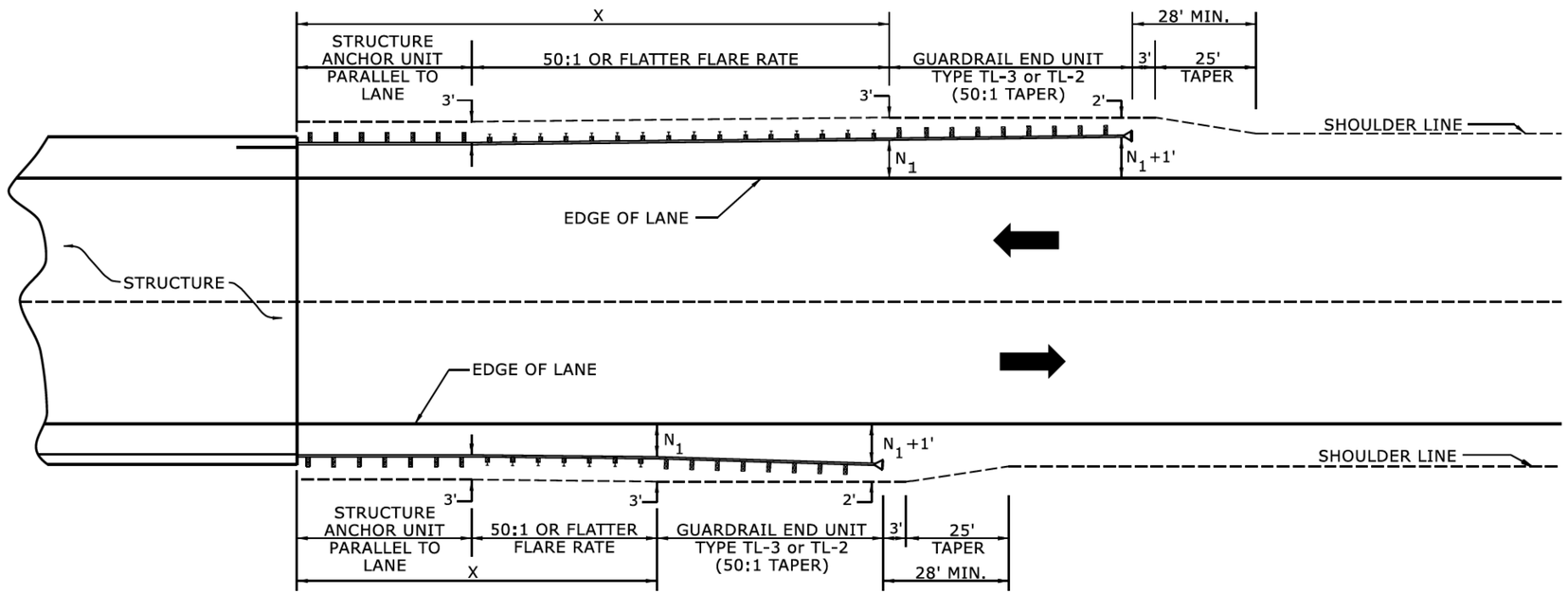
PROJECT REFERENCE NO.	SHEET NO.
U-5797	2C-9



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

SHEET 4 OF 15

862D01

NORTH CAROLINA PROFESSIONAL SEAL 033144 3/6/2025 ENGINEER NICOLE M. HACKLER

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CONTRACTS STANDARDS AND DEVELOPMENT UNIT
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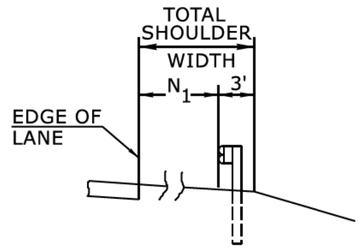
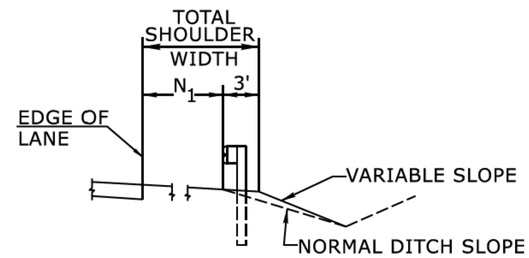
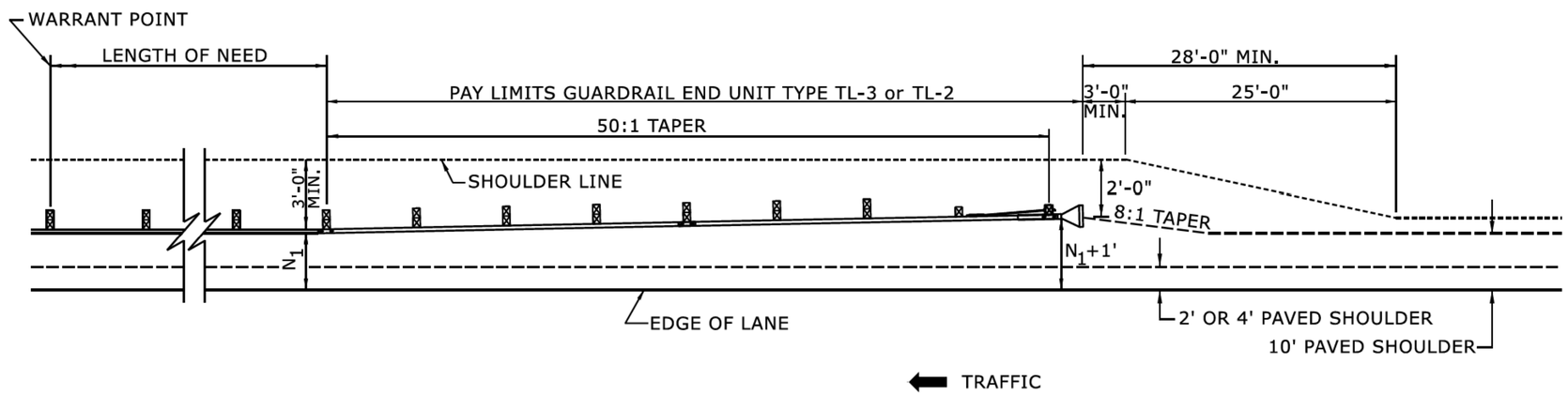


FILL SECTION



CUT SECTION

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



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

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 6 OF 15

862D01

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CHECKED BY: DATE:
FILE SPEC.:

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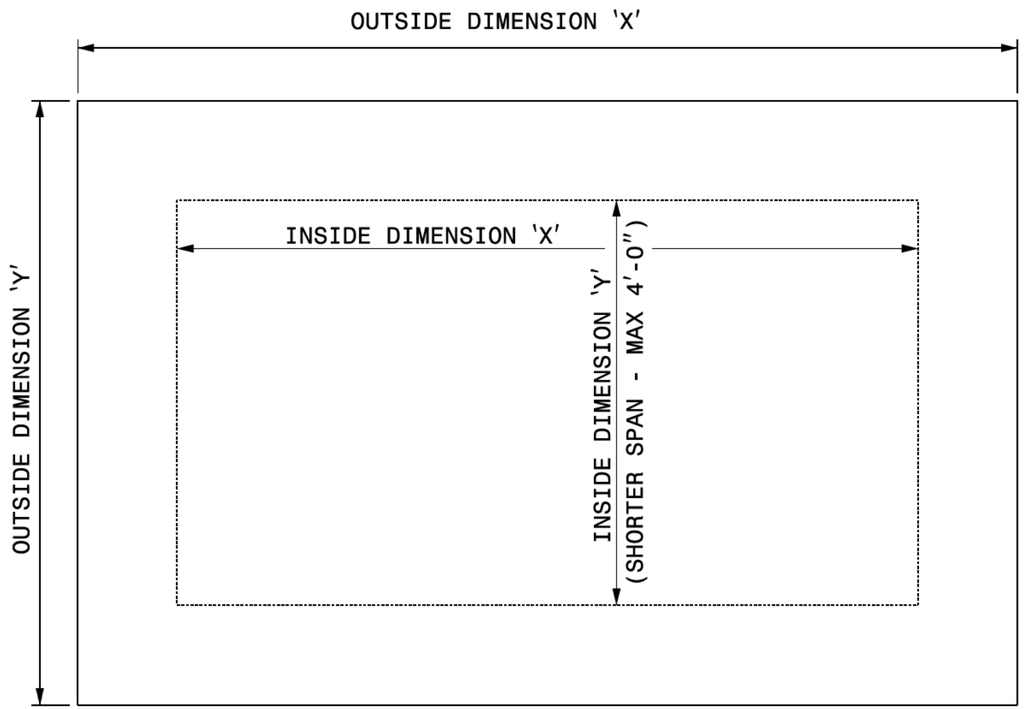
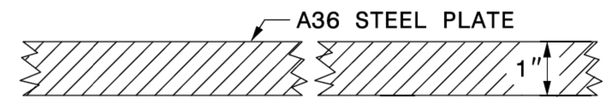


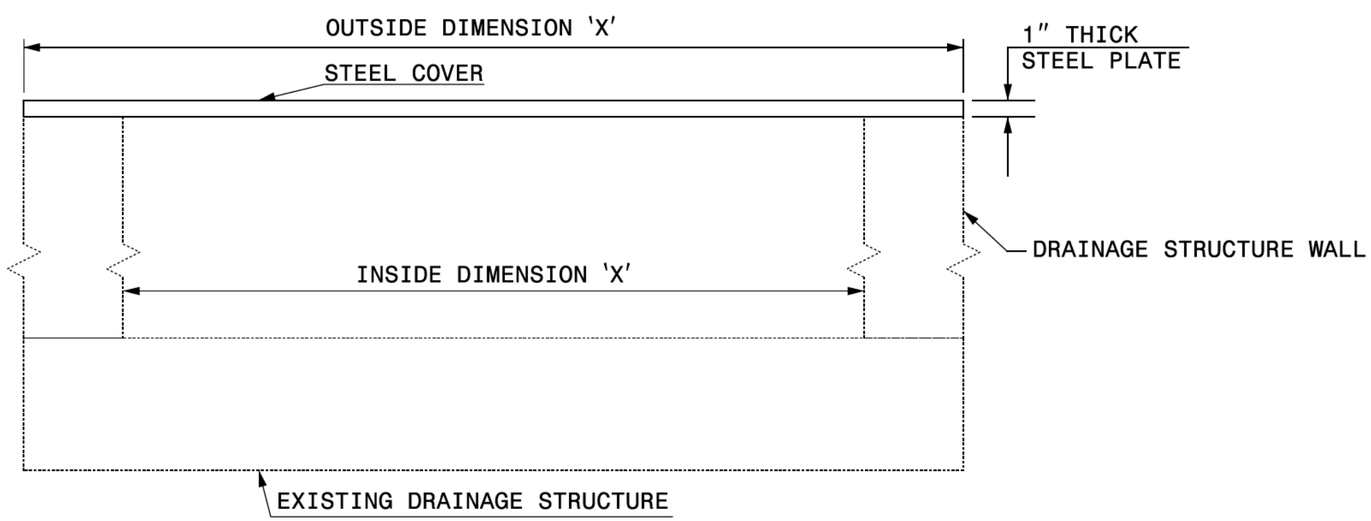
PLAN VIEWS

GENERAL NOTES:

-USE GRADE A36 STEEL
-STEEL COVERS ARE FOR TEMPORARY USE DURING PHASE CONSTRUCTION.
-FILL SHALL BE PLACED DIRECTLY OVER THE STEEL PLATES.
-SEE ROADWAY PLANS AND PROVISIONS FOR LOCATIONS
-QUANTITES TO BE PAID FOR AT THE UNIT PRICE BID PER EACH.



SECTION VIEW OF STEEL TOP PLATE



ELEVATION VIEWS

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DETAIL OF TEMPORARY 1" STEEL COVER OVER DRAINAGE STRUCTURE

ORIGINAL BY: E.E. WARD DATE: 2-2-98
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: eric:/usr/details/metric/stand/stlcvr2.dgn

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STV Engineers, Inc.
2121 RDU Center Dr.
Suite 210
Morrisville, NC 27560
NC License Number F-0991

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
–L– 53+00.00 TO 67+92.00 RT	423		3,503	3,080	
–Y3– 14+21.97 TO 25+23.64 LT	174		890	716	
SUBTOTAL 1	597		4,393	3,796	
–L– 48+86.00 TO 53+00.00 RT	191		178		14
–Y3– 14+21.97 TO 25+23.64 RT	431		104		327
SUBTOTAL 2	622		281		340
–L– 52+65.00 TO 69+50.00 LT	1,228		2,471	1,243	
–L– 69+50.00 TO 86+23.34 LT	1,384		784		600
–Y3– 12+50.00 TO 13+42.46 LT	59		39		20
SUBTOTAL 3	2,671		3,293	1,243	620
–L– 69+00.00 TO 86+23.34 RT	257		521	264	
–Y4– 10+47.76 TO 16+07.49 LT	355		198		158
–Y5– 10+47.45 TO 11+50.00	58		85	27	
SUBTOTAL 4	670		804	291	158
–L– 67+92.00 TO 69+00.00 RT	12		0		12
–Y4– 10+47.76 TO 12+50.00 RT	190		30		160
SUBTOTAL 5	202		30		172
–Y4– 12+50.00 TO 17+06.00 RT	16		960	944	
SUBTOTAL 6	16		960	944	
–Y2– 16+07.21 TO 22+37.26 LT (TEMP)	293		1,278	985	
SUBTOTAL 7	293		1,278	985	
–L– 38+56.00 TO 44+60.00 LT (TEMP)	118		296	178	
–Y2– 18+03.71 TO 25+96.31 RT	249		1,338	1,089	
SUBTOTAL 8	367		1,634	1,267	
–L– 44+60.00 TO 52+65.00 LT	54		228	174	
–Y2– 15+60.00 TO 25+96.31 LT (INCLUDES REMOVAL OF TEMPORARY FILL)	139		2,246	2,107	
SUBTOTAL 9	193		2,474	2,281	
–L– 45+00.00 TO 48+86.00 RT	0		124	124	463
–Y2– 26+55.16 TO 37+15.00 LT	727		264		32
–Y3– 12+50.00 TO 13+42.46 RT	73		41		495
SUBTOTAL 10	800		429	124	

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
–L– 45+00.00 TO 48+86.00 RT	104		99		5
–Y2– 26+55.16 TO 37+15.00 RT	345		246		99
SUBTOTAL 11	449		345		104
–L– 40+21.00 TO 44+60.00 LT (FILL REDUCED TO ACCOUNT FOR FILL PLACED WITH TEMPORARY WIDENING)	49		409	360	
–Y2– 15+60.00 TO 25+96.31 RT	46		2,908	2,862	
SUBTOTAL 12	95		3,317	3,222	
–L– 20+38.00 TO 38+51.00 RT	341		548	207	
–Y1– 10+65.00 TO 13+77.68	132		168	36	
–RAB– 00+00.00 TO 3+14.15	142		2,030	1,888	
SUBTOTAL 13	615		2,746	2,131	429
–L– 18+35.00 TO 40+21.00 LT	768		339		31
–Y– 11+70.00 TO 14+14.95	66		35		4
–YA– 10+44.00 TO 10+99.78	19		15		464
SUBTOTAL 14	853		389		
					2,353
TOTAL	8,443		22,369	16,284	
LOSS DUE TO CLEARING & GRUBBING	–50			50	
USE WASTE IN LIEU OF BORROW				–2,353	–2,353
PROJECT TOTAL	8,393		22,369	13,981	
ESTIMATE 5% TO REPLACE TOPSOIL ON BORROW PIT				699	
GRAND TOTAL	8,393			14,680	
SAY	8,400			14,680	

EST. DDE = 210 CY
EST. SHALLOW UNDERCUT (CONTINGENCY) = 3000 CY

PER GEOTECH RECOMMENDATION, ESTIMATED 850 CY OF UNDERCUT TO BE USED AT THE DISCRETION OF THE RESIDENT ENGINEER.

PER GEOTECH RECOMMENDATION, ESTIMATED 800 CUBIC YARDS OF SELECT GRANULAR MATERIAL

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

NOTE: Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the contract lump sum price for grading.

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-5797	3B-2

STV Engineers, Inc.
2121 RDU Center Dr.
Suite 210
Morrisville, NC 27560
NC License Number F-0991

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL

IN SQUARE YARDS

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
–L–	23+00	26+49	LT	2241.64
–L–	26+49	39+01	LT	626.17
–L–	27+31	32+64	RT	207.67
–L–	32+97	38+92	RT	235.00
–L–	41+21	44+60	LT	413.77
–L–	45+92	52+50	LT	3891.94
–L–	47+66	48+56	RT	57.85
–L–	48+91	49+70	RT	24.19
–L–	49+61	50+61	RT	50.55
–L–	51+11	51+90	RT	125.35
–L–	64+20	64+98	LT	195.06
–L–	66+66	67+84	RT	196.83
–L–	72+47	73+02	RT	227.89
–L–	76+92	77+68	LT	184.16
–L–	78+90	79+29	RT	29.94
–L–	79+63	81+46	LT	252.47
–L–	79+97	80+28	RT	39.92
–L–	80+60	80+95	RT	34.06
–L–	81+59	82+32	LT	165.08
–L–	82+32	83+01	LT	45.14
–L–	83+13	83+55	LT	74.76
–L–	83+55	84+20	LT	117.51

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
–L–	84+29	86+03	LT	267.25
–Y1B–	9+77	10+26	RT	125.29
–Y–	13+03	14+05	RT/LT	448.83
–Y1–	10+25	12+02	RT/LT	936.45
–Y2–	15+61	23+66	LT	3271.11
–Y2–	15+59	16+94	RT	18.76
–Y2–	26+53	30+22	RT/LT	1953.30
–Y2–	29+05	29+32	RT	143.78
–Y2–	29+43	30+02	RT	33.74
–Y2–	30+33	30+59	RT	27.26
–Y2–	33+50	34+50	RT/LT	671.07
–Y2–	34+50	37+15	RT	52.05
–Y2–	35+24	36+51	LT	44.09
–Y3–	12+50	13+37	RT/LT	526.39
–Y3–	14+31	25+16	RT/LT	4871.09
–Y4–	10+82	11+89	RT	89.39
–Y4–	12+30	13+36	RT	422.40
–Y4–	13+67	16+07	RT	217.43
–Y2– TEMP.	15+73	22+37	LT	2630.91
–L– TEMP.	41+20	44+60	LT	326.87
–L– TEMP.	58+45	62+00	RT	148.43
			TOTAL:	26,662.83
			SAY:	26,670

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-5797	3B-3

STV Engineers, Inc.
2121 RDU Center Dr.
Suite 210
Morrisville, NC 27560
NC License Number F-0991

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GUARDRAIL SUMMARY

IN LINEAR FEET

W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR IA-MASH TYPE TL-3			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND RESET EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GREU TL-2	GREU TL-3	GRAU 350	TES	XIII	CAT-1	VI MOD	BIC	AT-1	EA	G	NG				
-YB-	12+73.32	13+04.86	LT	37.5'														2												
-Y1A-	12+36.06	12+36.06	LT /RT	37.5'														2												
-L-	41+10.74	42+30.65	RT	112.5'			43+05.26	43+53.54	14'	14'					2															
-L-	42+65.16	43+06.62	RT	100'	62.5'		43+05.26	43+53.54	14'	14'					1													166'		
-L-	41+51.77	43+58.90	LT	175'	56.25'		43+53.54	43+05.26	14'	14'					1								1						231.25'	RESET GUARDRAIL PLACED ON TEMPORARY SHOULDER
-L- /-Y2-	44+01.76	25+00.95	LT	75'	62.5'		43+53.54	43+05.26	14'	14'					1	1													137.5'	RESET GUARDRAIL PLACED ON TEMPORARY SHOULDER
-L-	49+06.57	49+66.39	RT	56.25'			49+51.88	49+51.88	10'	10'					1					1										OVERHEAD SIGN GUARDRAIL WARRANT
-L-	58+79.89	61+30.16	RT	250'			60+05.00	60+05.00	2'	2'																1				OVERHEAD SIGN GUARDRAIL WARRANT
-L-	58+79.89	61+30.16	LT	250'			60+05.00	60+05.00	2'	2'																1				OVERHEAD SIGN GUARDRAIL WARRANT
-L-	59+88.37	61+10.43	LT	118.75'			60+05.00	60+05.00	14'	14'						1				1										OVERHEAD SIGN GUARDRAIL WARRANT
-L-	68+26.12	70+43.02	LT	268.75'			68+62.14	68+94.32	14'	14'						1				1										
-Y2-	17+84.29	22+34.36	RT	443.75'			21+21.10	22+07.24	14'	14'						1				1										
-Y2-	19+20.99	22+22.15	LT	306.25'			20+32.29	19+51.22	14'	14'						1				1										
-Y4-	16+57.72	17+10.79	RT	31.25'	43.75'															1			1							
-Y4-	14+76.12	14+81.91	RT																									27.5'		
			SUBTOTAL	2,262.5'	225'										6	5		4		6			2			2		193.5'		
			LESS ANCHORS																											
		GREU TL-2	6 @ 25'	-150'																										
		GREU TL-3	4 @ 50'	-200'																										
		CAT-1	6 @ 6.25'	-37.5'																										
		AT-1	2 @ 6.25'		-12.5																									
			TOTAL	1,875'	212.5'										6	5		4		6			2			2		193.5'	368.75'	
	*ADDITIONAL GUARDRAIL POSTS = 10 EACH																													

12/3/2025
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M. Pruitt

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CHECKED BY:	TAP	DATE:	12/24/2024

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5797	3D-1

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. S. PIPE 12 .064 | 15 .064 | 15 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 30" WELDED STEEL PIPE .25" THICK, IN SOIL | 30" WELDED STEEL PIPE .25" THICK, NOT IN SOIL | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 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 D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | T.B PRECAST CONCRETE STRUCTURE 840.46 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | 30" C.S. ELBOW | 36" C.S. ELBOW | 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 |
|---|---|---|---

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5797	3D-2

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. S. PIPE 12 .064 | 15 .064 | 15 .064 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 30" WELDED STEEL PIPE .25" THICK, IN SOIL | 30" WELDED STEEL PIPE .25" THICK, NOT IN SOIL | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | T.B PRECAST CONCRETE STRUCTURE 840.46 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | 30" C.S. ELBOW | 36" C.S. ELBOW | 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 |
|---|---|---|---

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COMPUTED BY:	HMS	DATE:	12/24/2024
CHECKED BY:	TAP	DATE:	12/24/2024

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5797	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 / SIZE / THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. S. PIPE 12 .064 | 15 .064 | 15 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 30" WELDED STEEL PIPE .25" THICK, IN SOIL | 30" WELDED STEEL PIPE .25" THICK, NOT IN SOIL | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 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 D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | T.B PRECAST CONCRETE STRUCTURE 840.46 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | 30" C.S. ELBOW | 36" C.S. ELBOW | 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 |
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COMPUTED BY:	HMS	DATE:	12/24/2024
CHECKED BY:	TAP	DATE:	12/24/2024

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5797	3D-4

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. S. PIPE 12 .064 | 15 .064 | 15 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 30" WELDED STEEL PIPE .25" THICK, IN SOIL | 30" WELDED STEEL PIPE .25" THICK, NOT IN SOIL | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | T.B PRECAST CONCRETE STRUCTURE 840.46 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | 30" C.S. ELBOW | 36" C.S. ELBOW | 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 |
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COMPUTED BY:	HMS	DATE:	12/24/2024
CHECKED BY:	TAP	DATE:	12/24/2024

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5797	3D-5

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. S. PIPE 12 .064 | 15 .064 | 15 .064 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 30" WELDED STEEL PIPE .25" THICK, IN SOIL | 30" WELDED STEEL PIPE .25" THICK, NOT IN SOIL | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 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 D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | T.B PRECAST CONCRETE STRUCTURE 840.46 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | 30" C.S. ELBOW | 36" C.S. ELBOW | 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 |
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COMPUTED BY:	HMS	DATE:	12/24/2024
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5797	3D-6

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. S. PIPE 12 .064 | 15 .064 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 30" WELDED STEEL PIPE .25" THICK, IN SOIL | 30" WELDED STEEL PIPE .25" THICK, NOT IN SOIL | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 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 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | T.B PRECAST CONCRETE STRUCTURE 840.46 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | 30" C.S. ELBOW | 36" C.S. ELBOW | 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 |
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COMPUTED BY:	HMS	DATE:	12/24/2024
CHECKED BY:	TAP	DATE:	12/24/2024

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5797	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 / SIZE / THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. S. PIPE 12 .064 | 15 .064 | 15 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 30" WELDED STEEL PIPE .25" THICK, IN SOIL | 30" WELDED STEEL PIPE .25" THICK, NOT IN SOIL | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B) 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 D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | T.B PRECAST CONCRETE STRUCTURE 840.46 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | 30" C.S. ELBOW | 36" C.S. ELBOW | 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 |
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COMPUTED BY:	HMS	DATE:	12/24/2024
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5797	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 / SIZE / THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. S. PIPE 12 .064 | 15 .064 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 30" WELDED STEEL PIPE .25" THICK, IN SOIL | 30" WELDED STEEL PIPE .25" THICK, NOT IN SOIL | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | T.B PRECAST CONCRETE STRUCTURE 840.46 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | 30" C.S. ELBOW | 36" C.S. ELBOW | 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 |
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J0934DV3

COMPUTED BY:	HMS	DATE:	12/24/2024
CHECKED BY:	TAP	DATE:	12/24/2024

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5797	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 48 INCHES & UNDER)

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. S. PIPE 12 .064 | 15 .064 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 30" WELDED STEEL PIPE .25" THICK, IN SOIL | 30" WELDED STEEL PIPE .25" THICK, NOT IN SOIL | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | T.B PRECAST CONCRETE STRUCTURE 840.46 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | 30" C.S. ELBOW | 36" C.S. ELBOW | 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 |
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5797	3D-10

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. S. PIPE 12 .064 | 15 .064 | 15 .064 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 30" WELDED STEEL PIPE .25" THICK, IN SOIL | 30" WELDED STEEL PIPE .25" THICK, NOT IN SOIL | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | T.B PRECAST CONCRETE STRUCTURE 840.46 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | 30" C.S. ELBOW | 36" C.S. ELBOW | 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 |
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CHECKED BY:	TAP	DATE:	12/24/2024

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5797	3D-11

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. S. PIPE 12 .064 | 15 .064 | 15 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 30" WELDED STEEL PIPE .25" THICK, IN SOIL | 30" WELDED STEEL PIPE .25" THICK, NOT IN SOIL | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | B 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | T.B PRECAST CONCRETE STRUCTURE 840.46 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | 30" C.S. ELBOW | 36" C.S. ELBOW | 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 |
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5797	3D-12

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. S. PIPE 12 .064 | 15 .064 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 30" WELDED STEEL PIPE .25" THICK, IN SOIL | 30" WELDED STEEL PIPE .25" THICK, NOT IN SOIL | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 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. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | T.B PRECAST CONCRETE STRUCTURE 840.46 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | 30" C.S. ELBOW | 36" C.S. ELBOW | 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 |
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5797	3D-13

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. S. PIPE 12 .064 | 15 .064 | 15 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 30" WELDED STEEL PIPE .25" THICK, IN SOIL | 30" WELDED STEEL PIPE .25" THICK, NOT IN SOIL | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 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. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | T.B PRECAST CONCRETE STRUCTURE 840.46 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | 30" C.S. ELBOW | 36" C.S. ELBOW | 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 |
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5797	3D-14

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

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

| LINE & STATION / SIZE / THICKNESS OR GAUGE | OFFSET | | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | C. S. PIPE 12 .064 | 15 .064 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 30" WELDED STEEL PIPE .25" THICK, IN SOIL | 30" WELDED STEEL PIPE .25" THICK, NOT IN SOIL | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 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. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | T.B PRECAST CONCRETE STRUCTURE 840.46 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | 30" C.S. ELBOW | 36" C.S. ELBOW | 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 |
|---|---|---|---

ENGXX05017

COMPUTED BY:	HMS	DATE:	12/24/2024
CHECKED BY:	TAP	DATE:	12/24/2024

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5797	3D-15

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 / SIZE / THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | C.S. STRUCTURAL PLATE PIPE 54 | 60 | 66 | 72 | 78 | 84 | 108 0.109", 12 GAUGE | | | R. C. PIPE CLASS III 54 | 60 | 66 | 72 | 78 | 84 | | R. C. PIPE CLASS IV 54 | 60 | 66 | 72 | 78 | 84 | | R. C. PIPE CLASS V 54 | 60 | 66 | 72 | 78 | 84 | | 60" WELDED STEEL PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 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 D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26 | G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27 | G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28 | G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20 | G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20 | G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22 | G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22 | G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24 | G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24 | G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29 | G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | T.B PRECAST CONCRETE STRUCTURE 840.46 | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | 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 |
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COMPUTED BY: Hunsberger, W. S. DATE: 12/20/24	(9-17-24)	PROJECT NO.	SHEET NO.
CHECKED BY: Hamm, J. R. DATE: 3/3/2025		U-5797	3G-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

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

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

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Subgrade Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY									75
CONTINGENCY			ASU(1)	12	3000	6000	9000		
			TOTAL CY/TONS/SY:		3000	6000**	9000**	0	75

*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.

Docusign Envelope ID: B31A1839-68C7-44F7-9E0E-3DFE6B438D0F

PROJ. REFERENCE NO.	SHEET NO.
U-5797	3P-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	G&M Investments of Lumberton LLC
2	4	Martin and Martin Investments LLC
3	4	Johnnie Jones
4	4,5,6,10	City of Lumberton Meadowbrook Cemetery
5	4	Jerry Townsend, Etux
6	4	National Finance Company Inc.
7	4	Jennifer G. Hickman
8	4	Ferguson & Sons Holdings LLC
9	4	Christopher & Karen Floyd
10	4	Bluewater Property Investments LLC
11	4	Jean Morrison Pait and Bucks Propoertes LLC
12	5	Steven Branch
13	5	RT & DT Enterprises LLC
14	5	RT & DT Enterprises LLC
15	5	Freeman Investments Inc
16	5,6	Jerry M Townsend & VI S Townsend
17	6	William Bryant et. al
18	6	Fayetteville Road Investors II LLC
19	10	VRE Lumberton Roberts LLC
19A	6,10	CCC Carwash LLC
20	6	Hector Maclean Corporation
21	6	Larry & Deidre Mccallum
22	6,7	Betty Nicholson
23	6	Graham & Faust LLC
24	6	A.E. Biggs LLC
25	6	Wal (Lumberton) Realty LLC
26	6	Lumberton Square LLC
27	6	Lumberton Square LLC
28	6,7	JS Investment Holdings LLC
29	6	National Retail Properties LP
30	6	Phase Two Properties, LLC
31	6,11	Z.V. Pate Inc
32	6	Phase Two Properties, LLC
34	7	Dennis Pittman & Mary Pittman
35	7	TEF Gym LLC
35	7	TEF Gym LLC
35	7	TEF Gym LLC
38	7	Alvin Kennedy
39	7	Alvin Kennedy
40	7	Murray Brothers Investment, LLC
41	7	Bryant Enterprises
42	7	Ronald Musselwhite
43	7,8	ALDI Inc.
44	8	Steven R. Branch
45	8	North Caorlina Natural Gas Corporation
46	8	New Life Church of Lumberton
47	8	James & Cynthia Bodiford
48	8,9	Betty D. Nobles
50	8	Adam O Incorporated
51	8	The Lumberton City Board of Education
52	9	Thomas Ray Lee Et Al
53	9	William Antone Jr.
54	9	Hermitage Square Professional Office Complex, Inc., Et Al
55	9	Rust Enterprises Inc.
56	9	GGP Properties LLC
57	9	MCM Properties LLC
58	9	K.M. Biggs Inc.
59	9	Branch Banking and Trust Company
61	9	Farringdom Square Office Condominium Association, LTD. Et Al

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
62	10	City of Lumberton (Lumberton Recreation Dept)
63	8	30' Gas Easement North Carolina Natural Gas Corporation
64	5	RT & DT Enterprises LLC
65	7	Bryant Enterprises
66	7	Highland Townes Condominiums C/O L.B. Gordon Co.(All Common Areas)
70	9	Coble Wilson Jr
71	9	J & S Family Properties LLC
72	11	Storage Solutions LLC
73	11	Elvis Antonio Briones Samayoa
74	4	Elizabeth Biggs Britt