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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R–3830	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
38887.1.1	STP–0042(49)	PE
38887.2.2	N/A	UTIL
38887.2.3	N/A	R/W
38887.3.2	N/A	CONST.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LEE COUNTY

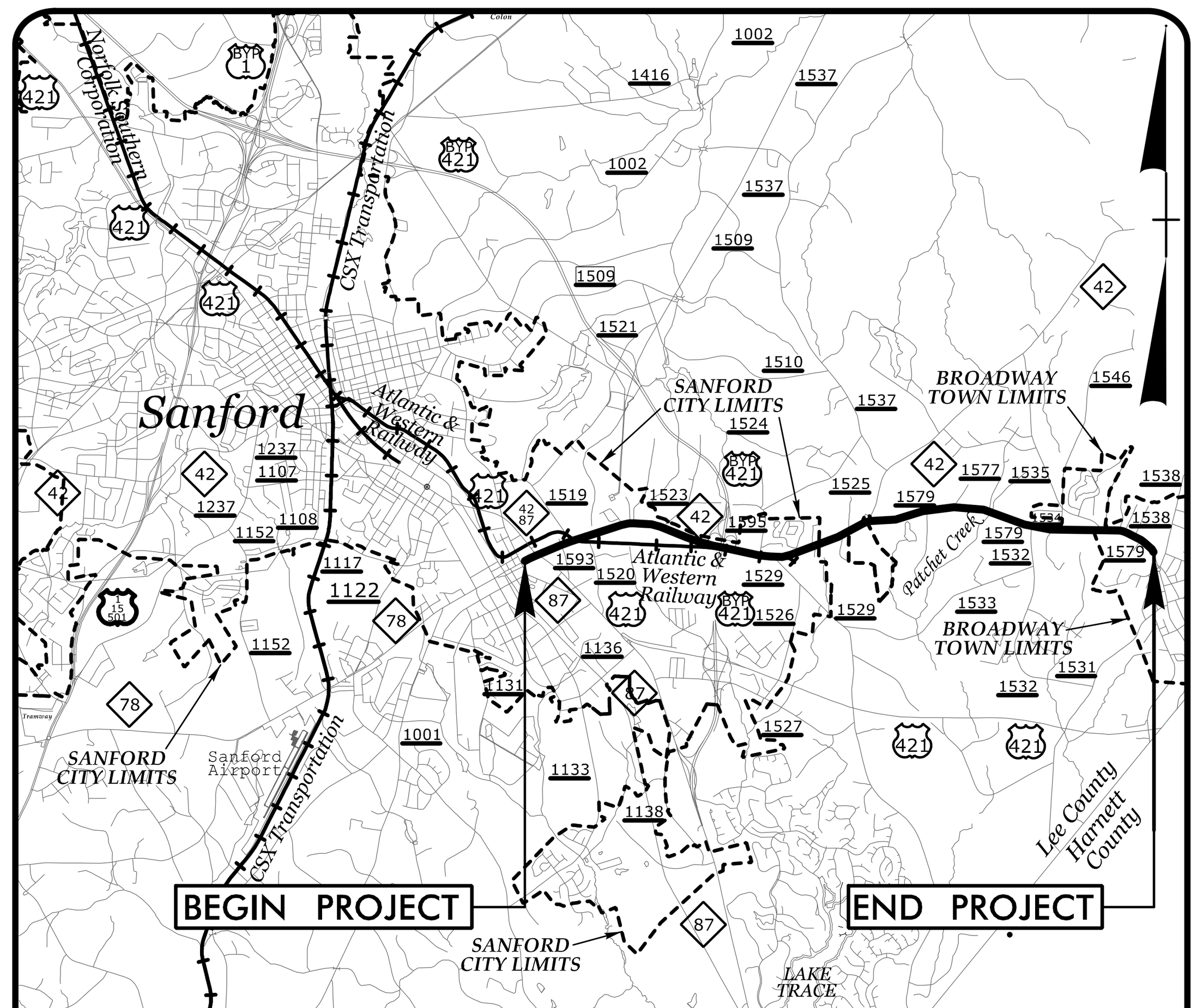
LOCATION: NC 42 FROM US 421 TO SR 1579 (MAIN STREET) IN SANFORD AND ALONG SR 1579 FROM NC 42 TO SR 1538 (E. HARRINGTON AVE) IN BROADWAY

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

TIP PROJECT: R–3830

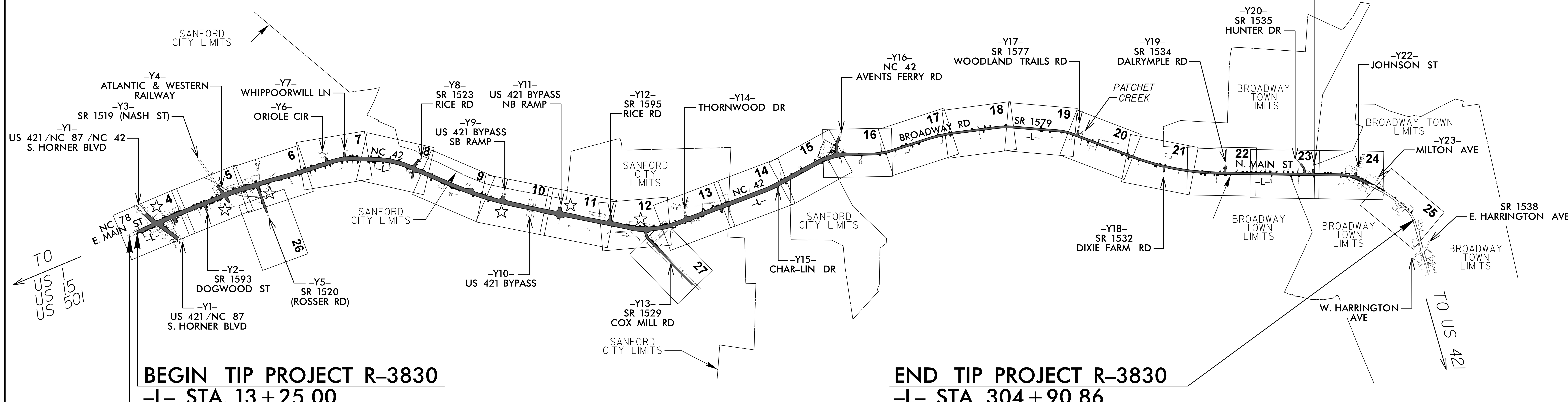
CONTRACT: C204369

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



VICINITY MAP

NAD 83/ NSRS 2007



BEGIN TIP PROJECT R–3830
–L– STA. 13+25.00

BEGIN CONSTRUCTION
–L– STA.11+37.00

END TIP PROJECT R–3830
–L– STA. 304+90.86

☆ UPGRADE EXISTING SIGNAL

THIS IS NOT A CONTROLLED ACCESS PROJECT WITH THE EXCEPTION OF THE INTERCHANGE AND U–TURN BULBS.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2022 = 15,950
ADT 2042 = 21,150
K = 8 %
D = 55 %
T = 4 % *
V = 50 MPH
* TTST = 2% DUAL = 2%
FUNC CLASS = MINOR ARTERIAL REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R–3830	=	*5.524 mile*
TOTAL LENGTH TIP PROJECT R–3830	=	*5.524 mile*

LENGTH OF PROJECT BASED ON –L–

Prepared For:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610
By:
TGS ENGINEERS
706 HILLSBOROUGH ST
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: OCTOBER 30, 2017

LETTING DATE: AUGUST 16, 2022

V. MARCUS LOWERY, PE
PROJECT ENGINEER

TERRY E. FARR, PE
NCDOT CONTACT

HYDRAULICS ENGINEER
SEAL 044158 — NORTH CAROLINA PROFESSIONAL ENGINEER — BENJAMIN J. HENEGAR
DocuSigned by: Benjamin J. Henegar
SIGNATURE: P.E. 6/30/2022 | 3:10 PM EDT

ROADWAY DESIGN ENGINEER
SEAL 027418 — NORTH CAROLINA PROFESSIONAL ENGINEER — V. MARCUS LOWERY
DocuSigned by: Marcus Lowery
SIGNATURE: P.E. 6/30/2022 | 3:01 PM EDT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

5/20/2022
C:\Projects\NCDOT\R-3830\Roadway\Proj\r3830_rdy_tsh.dgn
User:mlowery

09/08/99

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C–1 THRU 1C–2	SURVEY CONTROL SHEETS
2A–1 THRU 2A–10	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B–1 THRU 2B–6	INTERSECTION DETAILS
2B–7 THRU 2B–14	TEMPORARY PAVEMENT LOCATIONS (ALSO SHOWS TEMPORARY GUARDRAIL LOCATIONS)
2C–1	DETAIL OF 2'–9" CONCRETE CURB & GUTTER
2C–2	DETAIL OF 1'–6" TO 2'–9" CURB & GUTTER TRANSITION SECTION
2C–3	DETAIL OF 1'–6" TO 2'–6" CURB & GUTTER TRANSITION SECTION
2C–4	DETAIL OF CURB RAMPS * GRASS MEDIAN ISLAND
2C–5	DETAIL OF PEDESTRIAN SAFETY RAIL
2C–6	DETAIL OF 840D14 SPECIAL DROP INLET
2C–7	DETAIL OF 840D17 CONCRETE GRATED DROP INLET TYPE *A* MINIMUM DEPTH
2C–8	DETAIL OF TRAFFIC BEARING DROP INLET TYPE *A*
2C–9	DETAIL OF 2'–9" TO FRAME AND GRATE
2C–10	DETAIL OF REINFORCED CONCRETE ENDWALL SILL
2C–11	DETAIL OF COAL COMBUSTION PRODUCT PLACEMENT
2C–12	DETAIL OF TEMPORARY 1" STEEL COVER OVER DRAINAGE STRUCTURE
2C–13	DETAIL FOR W–BEAM GUARDRAIL SECTION
2G–1	DETAIL OF STANDARD TEMPORARY SHORING
2G–2 THRU 2G–4	DETAIL OF STANDARD TEMPORARY WALL (SHEETS 1 THRU 3)
3B–1	SUMMARY OF EARTHWORK
3B–2	SUMMARIES OF GUARDRAIL; TEMPORARY GUARDRAIL; REMOVAL OF EXISTING ASPHALT PAVEMENT; BREAKING OF EXISTING ASPHALT PAVEMENT; MILLING ASPHALT PAVEMENT, 1.5" DEPTH; MILLING ASPHALT PAVEMENT, 2.5" DEPTH; AND MILLING ASPHALT PAVEMENT, 3.0" DEPTH
3D–1 THRU 3D–21	LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)
3D–22	LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54 INCHES & OVER)
3G–1	SUMMARIES OF SUBSURFACE DRAINAGE; AGGREGATE SUBGRADE STABILIZATION
3P–1 THRU 3P–2	PARCEL INDEX SHEETS
04 THRU 27	PLAN SHEETS
28 THRU 44	PROFILE SHEETS
TMP–1 THRU TMP–7.22	TRANSPORTATION MANAGEMENT PLANS
PMP–1 THRU PMP–24	PAVEMENT MARKING PLANS
E1 THRU E2	ELECTRICAL PLANS
EC–01 THRU EC–52	EROSION CONTROL PLANS
SIGN–1 THRU SIGN–25A	SIGNING PLANS
SIG–1.0 THRU SIG–22.6	SIGNAL PLANS
M1 THRU M8	METAL POLE STANDARD DRAWINGS
SCP–1 THRU SCP–17	SIGNAL COMMUNICATION PLANS
UC–1 THRU UC–35	UTILITY CONSTRUCTION PLANS
UO–1 THRU U0–25	UTILITIES BY OTHERS PLANS
X–1	CROSS SECTION INDEX SHEET
X–1A THRU X–1F	CROSS SECTION EARTHWORK VOLUME SUMMARIES
X–2 THRU X–137	CROSS SECTIONS
W–1 THRU W–6	STRUCTURE PLANS — WALLS

GENERAL NOTES

GENERAL NOTES: 2018 SPECIFICATIONS

EFFECTIVE: 01–16–2018
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

SUBSURFACE DRAINS:

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

DRIVEWAYS:

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

STREET TURNOUT:

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

GUARDRAIL:

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

TEMPORARY SHORING:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY;

CENTRAL ELECTRIC MEMBERSHIP; QWEST TELECOMMUNICATIONS; WINDSTREAM;

AT&T; CONTERRA; RANDOLPH TELECOMMUNICATIONS; NCEMC; SPECTRUM;

PSNC–GAS; DIXIE PIPELINE; TOWN OF BRAODWAY; CITY OF SANFORD

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

RIGHT–OF–WAY MARKERS:

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

CURB RAMPS

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

PROJECT REFERENCE NO.	SHEET NO.
R–3830	1A

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 027418 ENGINEER MARCUS LOWERY

6/30/2022 | 3:01 PM EDT

STANDARD DRAWINGS

EFF. 01–16–2018
REV.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 – EARTHWORK	
200.03	Method of Clearing – Method III
225.02	Guide for Grading Subgrade – Secondary and Local
225.04	Method of Obtaining Superelevation – Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 – PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 5 – SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction – High Side of Superelevated Curve – Method I
DIVISION 6 – ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 – INCIDENTALS	
815.02	Subsurface Drain
838.01	Concrete Endwall for Single and Double Pipe Culverts – 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts – 15" thru 48" Pipe 90 Skew
838.21	Reinforced Concrete Endwall – for Single 54" Pipe 90 Skew
838.39	Reinforced Concrete Endwall – for Single 72" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall – Std. Dwg 838.21 thru 838.40
838.51	Reinforced Brick Endwall – for Single 54" Pipe 90 Skew
838.69	Reinforced Brick Endwall – for Single 72" Pipe 90 Skew
838.75	Notes for Reinforced Brick Endwall – Std. Dwg 838.51 thru 838.70
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin – 12" thru 54" Pipe
840.02	Concrete Catch Basin – 12" thru 54" Pipe
840.03	Frame, Grates and Hood – for Use on Standard Catch Basin
840.14	Concrete Drop Inlet – 12" thru 30" Pipe
840.15	Brick Drop Inlet – 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates – for use with Std. Dwg 840.14 and 840.15
840.17	Concrete Grated Drop Inlet Type 'A' – 12" thru 72" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' – 12" thru 36" Pipe
840.19	Concrete Grated Drop Inlet Type 'D' – 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames – Brick or Concrete or Precast
840.26	Brick Grated Drop Inlet Type 'A' – 12" thru 72" Pipe
840.27	Brick Grated Drop Inlet Type 'B' – 12" thru 36" Pipe
840.28	Brick Grated Drop Inlet Type 'D' – 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box – 12" thru 66" Pipe
840.32	Brick Junction Box – 12" thru 66" Pipe
840.34	Traffic Bearing Junction Box – for Use with Pipes 42" and Under
840.35	Traffic Bearing Grated Drop Inlet – for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.51	Brick Manhole – 12" thru 36" Pipe
840.52	Precast Manhole – 4', 5' and 6' Diameter
840.53	Precast Manhole with Masonry Base – 12" thru 42" Pipe
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.71	Concrete and Brick Pipe Plug
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.03	Driveway Turnout – Drop Curb Type
848.04	Street Turnout
848.05	Curb Ramp – Proposed Curb & Gutter
848.06	Curb Ramp – Existing Curb & Gutter
850.01	Concrete Paved Ditches
850.10	Guide for Berm Drainage Outlet – 15" and 18" Pipe
852.01	Concrete Islands
852.04	Method for Placement of Drop Inlets in Grassed Median – Using 1'–6" Curb and Gutter
852.06	Method for Placement of Drop Inlets in Concrete Islands
857.01	Precast Reinforced Concrete Barrier – 41" Single Faced
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

9/10/2021

PROJECT REFERENCE NO.	SHEET NO.
R-3830	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)
- Computed Property Corner
- Existing Concrete Monument (ECM)
- Parcel/Sequence Number
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary
- Proposed Wetland Boundary
- Existing Endangered Animal Boundary
- Existing Endangered Plant Boundary
- Existing Historic Property Boundary
- Known Contamination Area: Soil
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY & PROJECT CONTROL:

- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Secondary Horiz and Vert Control Point
- Vertical Benchmark
- Existing Right of Way Monument
- Proposed Right of Way Monument (Rebar and Cap)
- Proposed Right of Way Monument (Concrete)
- Existing Permanent Easement Monument
- Proposed Permanent Easement Monument (Rebar and Cap)
- Existing C/A Monument
- Proposed C/A Monument (Rebar and Cap)
- Proposed C/A Monument (Concrete)
- Existing Right of Way Line
- Proposed Right of Way Line
- Existing Control of Access Line
- Proposed Control of Access Line
- Proposed ROW and CA Line
- Existing Easement Line
- Proposed Temporary Construction Easement
- Proposed Temporary Drainage Easement
- Proposed Permanent Drainage Easement
- Proposed Permanent Drainage/Utility Easement
- Proposed Permanent Utility Easement
- Proposed Temporary Utility Easement
- Proposed Aerial Utility Easement

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut
- Proposed Slope Stakes Fill
- Proposed Curb Ramp
- 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
- Storm Sewer

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
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line Test Hole (SUE – LOS A)*
- U/G Power Line (SUE – LOS B)*
- U/G Power Line (SUE – LOS C)*
- U/G Power Line (SUE – LOS D)*

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

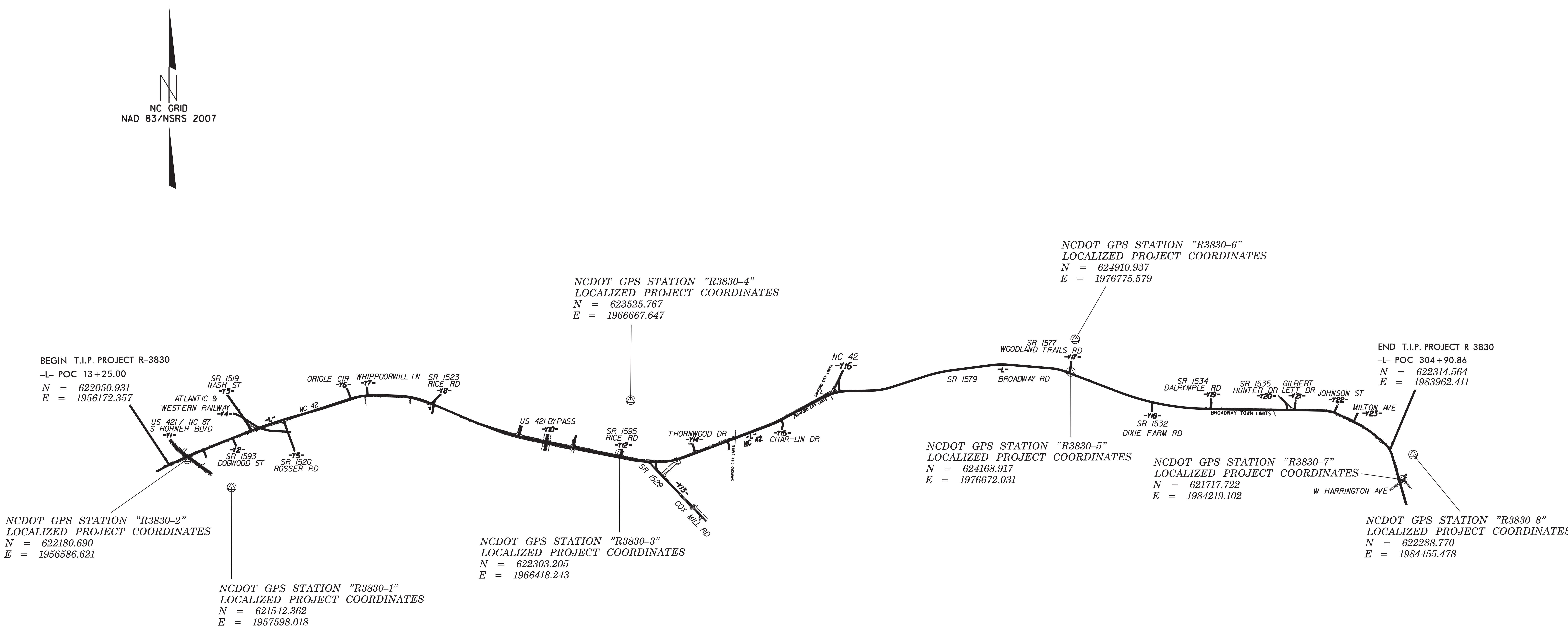
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Force Main Line Test Hole (SUE – LOS A)*
- SS Force Main Line (SUE – LOS B)*
- SS Force Main Line (SUE – LOS C)*
- SS Force Main Line (SUE – LOS D)*

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box
- Utility Unknown U/G Line (SUE – LOS B)*
- 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.

PROJECT REFERENCE NO.	SHEET NO.
R-3830	1C-1
Location and Surveys	

SURVEY CONTROL SHEET R–3830



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "R3830-3"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 622,303.205(ft) EASTING: 1,966,418.243(ft)
ELEVATION: 447.365(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999862791
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R3830-3" TO -L- STATION 13+25.00 IS
S 88°35'22.4" W 10248.99'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES:

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
   HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   R3830_LS_CONTROL.TXT

   SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

◎ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

NOTE: DRAWING NOT TO SCALE

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-3830	1C-2
Location and Surveys	

SURVEY CONTROL SHEET R-3830

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
100	BL-100	621972.2260	1955933.7520	449.59	10+77.87	40.62 LT
2	R3830-2	622180.6900	1956586.6210	445.89	17+57.36	52.84 RT
101	BL-101	622430.6870	1957136.0170	448.32	23+61.28	34.83 RT
102	BL-102	622656.4370	1957539.2980	458.42	28+19.73	23.64 LT
103	BL-103	622864.9690	1958109.7140	459.76	34+26.60	6.34 LT
104	BL-104	623079.7900	1958760.6310	453.01	41+11.87	1.76 LT
105	BL-105	623234.3310	1959370.8290	453.77	47+41.35	15.67 RT
106	BL-106	623395.9740	1959870.9010	454.66	52+66.27	4.58 RT
107	BL-107	623563.9000	1960416.6800	446.60	58+37.29	14.17 RT
108	BL-108	623596.4400	1960921.4810	449.06	63+55.05	45.94 RT
109	BL-109	623578.7520	1961471.7250	453.75	69+07.57	41.92 RT
110	BL-110	623477.8020	1961962.8860	455.30	74+20.60	37.93 RT
111	BL-111	623263.3160	1962502.1940	453.20	80+03.35	27.50 RT
112	BL-112	623027.0420	1963059.9100	455.25	86+08.81	26.08 RT
113	BL-113	622808.9930	1963615.9930	446.98	92+03.72	36.93 RT
114	BL-114	622648.4220	1964159.3950	439.62	97+67.58	41.24 RT
115	BL-115	622551.7450	1964609.8450	432.82	102+26.41	39.48 RT
116	BL-116	622416.8150	1965219.0310	432.75	108+50.13	54.34 RT
117	BL-117	622312.2350	1965808.2810	442.80	114+48.48	43.31 RT
3	R3830-3	622303.2050	1966418.2430	447.37	120+48.74	65.47 LT
118	BL-118	622188.1960	1967056.9820	446.43	127+04.64	66.03 LT
119	BL-119	622126.5110	1967597.8290	449.67	132+50.33	19.65 RT
120	BL-120	622340.6710	1968213.4990	446.06	139+00.41	3.22 RT
121	BL-121	622545.8020	1968777.6580	445.10	145+00.67	9.88 RT
122	BL-122	622761.0440	1969331.5990	438.79	150+94.92	3.47 RT
123	BL-123	622993.4740	1969916.4160	438.20	157+24.43	5.01 LT
124	BL-124	623265.5890	1970429.7980	425.92	163+06.19	7.36 LT
125	BL-125	623573.8340	1970923.8560	417.15	168+87.59	40.28 LT
126	BL-126	623742.8050	1971358.6020	417.34	173+43.66	43.49 LT
127	BL-127	623760.3670	1971862.4920	430.90	178+41.24	22.67 LT
128	BL-128	623780.2220	1972502.1350	420.25	184+79.91	10.08 RT
129	BL-129	623947.2080	1973019.7370	404.36	190+25.06	8.20 RT
130	BL-130	624116.6660	1973560.1040	422.26	195+91.96	7.01 RT
131	BL-131	624195.0840	1973986.3350	421.74	200+26.65	10.56 RT
132	BL-132	624257.1970	1974513.6490	407.32	205+57.58	16.67 RT
133	BL-133	624322.6180	1975053.5100	423.69	211+02.92	12.73 RT
134	BL-134	624283.5270	1975670.5450	415.72	217+22.90	11.06 RT
135	BL-135	624243.2590	1976200.3570	407.32	222+54.23	7.19 RT
5	R3830-5	624168.9170	1976672.0310	403.51	227+28.69	38.72 LT
136	BL-136	623936.5660	1977132.2680	411.58	232+41.50	14.44 RT
137	BL-137	623719.2930	1977713.3410	431.38	238+61.85	10.47 RT
138	BL-138	623505.9030	1978356.7120	453.46	245+38.76	13.49 RT
139	BL-139	623392.1870	1978891.5900	465.25	250+84.56	12.73 RT
140	BL-140	623325.8520	1979477.4340	475.45	256+73.12	12.54 RT
141	BL-141	623319.0620	1979928.7160	482.90	261+23.96	6.12 RT
142	BL-142	623305.5840	1980546.8020	482.92	267+42.18	10.62 RT
143	BL-143	623295.9120	1981153.3200	489.10	273+48.77	11.47 RT
144	BL-144	623286.6780	1981765.5410	482.61	279+61.06	11.81 RT
145	BL-145	623327.2610	1982276.3460	477.08	284+71.22	36.20 LT
146	BL-146	623249.8880	1982711.6130	476.12	289+06.25	23.18 LT
147	BL-147	623026.8070	1983164.5320	476.46	294+00.72	26.42 LT
148	BL-148	622724.9250	1983636.5620	480.06	299+64.63	29.02 LT
149	BL-149	622258.1780	1984012.2570	477.81	305+58.89	29.79 LT
7	R3830-A7	621717.7220	1984219.1020	473.19	311+35.66	79.37 LT
150	BL-150	621429.3450	1984190.0630	471.79	314+04.51	29.00 RT
151	BL-151	621083.5100	1984350.0572	470.05	OUTSIDE PROJECT LIMITS	

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
152	BY1-152	622605.9180	1956162.1850	443.93	OUTSIDE PROJECT LIMITS	
EQ2		622180.6900	1956586.6210	445.89	15+58.01	49.55 RT
153	BY1-153	621921.2050	1956968.9360	430.63	20+19.90	37.28 RT

BY2

POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
154	BY2-154	623635.2420	1957479.1620	457.85	OUTSIDE PROJECT LIMITS	
155	BY2-155	623293.2820	1957716.9320	454.54	14+04.75	25.04 RT
EQ103		622864.9690	1958109.7140	459.76	19+64.25	85.22 LT

BY3

POINT	DESC.	NORTH	EAST	ELEVATION	Y5 STATION	OFFSET
EQ104		623079.7900	1958760.6310	453.01	OUTSIDE PROJECT LIMITS	
156	BY3-156	622651.0620	1958911.9610	448.64	14+52.27	16.33 RT
157	BY3-157	622267.9450	1959044.1570	442.75	OUTSIDE PROJECT LIMITS	

BY4

POINT	DESC.	NORTH	EAST	ELEVATION	Y8 STATION	OFFSET
158	BY4-158	623627.1570	1962358.4690	458.81	10+13.56	22.60 LT
EQ110		623477.8020	1961962.8860	455.30	12+76.97	239.01 RT

BY5

POINT	DESC.	NORTH	EAST	ELEVATION	Y13 STATION	OFFSET
EQ118		622188.1960	1967056.9820	446.43	OUTSIDE PROJECT LIMITS	
159	BY5-159	621789.1920	1967433.0320	446.32	14+00.37	22.42 LT
160	BY5-160	621304.2520	1967829.4680	438.32	OUTSIDE PROJECT LIMITS	

BY6

POINT	DESC.	NORTH	EAST	ELEVATION	Y16 STATION	OFFSET
161	BY6-161	624255.8600	1971497.8710	419.68	OUTSIDE PROJECT LIMITS	
EQ126		623742.8050	1971358.6020	417.34	14+58.00	58.31 RT

BY7

POINT	DESC.	NORTH	EAST	ELEVATION	Y20 STATION	OFFSET
162	BY7-162	623581.5770	1981406.8520	486.35	OUTSIDE PROJECT LIMITS	
EQ144		623286.6780	1981765.5410	482.61	OUTSIDE PROJECT LIMITS	

BM1 ELEVATION - 451.52
N 622045 E 1955851
L STATION 10+41.00 144 LEFT
RR SPIKE SET IN BASE OF 34" OAK

BM2 ELEVATION - 457.30
N 622618 E 1957279
L STATION 25+64.00 85 LEFT
RR SPIKE SET IN BASE OF 16" MAGNOLIA

BM3 ELEVATION - 460.43
N 623684 E 1957526
L STATION 31+92.00 982 LEFT
RR SPIKE SET IN BASE OF 20" PINE

BM4 ELEVATION - 458.30
N 623090 E 1959403
L STATION 47+36.00 163 RIGHT
RR SPIKE SET IN BASE OF 22" OAK

BM5 ELEVATION - 445.66
N 623495 E 1961040
L STATION 64+77.00 143 RIGHT
RR SPIKE SET IN BASE OF 15" PINE

BM6 ELEVATION - 452.36
N 623189 E 1963050
L STATION 85+36.00 119 LEFT
RR SPIKE SET IN BASE OF 15" PINE

BM7 ELEVATION - 427.78
N 622344 E 1965162
L STATION 108+09.00 136 RIGHT
RR SPIKE SET IN BASE OF 11" SWEETGUM

BM8 ELEVATION - 445.79
N 622304 E 1967092
L STATION 127+31.00 184 LEFT
RR SPIKE SET IN BASE OF 16" PINE

BM9 ELEVATION - 447.56
N 622412 E 1968761
L STATION 144+39.00 129 RIGHT
RR SPIKE SET IN BASE OF 18" PINE

BM10 ELEVATION - 418.37
N 623263 E 1971051
L STATION 168+50.00 294 RIGHT
RR SPIKE SET IN BASE OF 14" PINE

BM11 ELEVATION - 401.18
N 623766 E 1972865
L STATION 188+22.00 133 RIGHT
RR SPIKE SET IN BASE OF 24" PINE

BM12 ELEVATION - 408.65
N 624104 E 1974592
L STATION 206+16.00 179 RIGHT
RR SPIKE SET IN BASE OF 14" PECAN

BM13 ELEVATION - 406.73
N 624410 E 1976641
L STATION 226+14.00 253 LEFT
RR SPIKE SET IN BASE OF 22" PINE

BM14 ELEVATION - 447.18
N 623670 E 1978323
L STATION 244+62.00 136 LEFT
RR SPIKE SET IN BASE OF 19" PINE

BM15 ELEVATION - 474.79
N 623068 E 1980265
L STATION 264+63.00 252 RIGHT
RR SPIKE SET IN BASE OF 19" OAK

BM16 ELEVATION - 478.38
N 623494 E 1982261
L STATION 284+53.00 203 LEFT
RR SPIKE SET IN BASE OF 24" OAK

BM17 ELEVATION - 479.71
N 622730 E 1983373
L STATION 297+47.00 129 RIGHT
RR SPIKE SET IN BASE OF 22" OAK

BM18 ELEVATION - 468.55
N 621067 E 1984467
L STATION 317+13.00 0 RIGHT
RR SPIKE SET IN BASE OF 12" OAK

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "R3830-3"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 622,303.205(ft) EASTING: 1,966,418.243(ft)
ELEVATION: 447.365(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999862791
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R3830-3" TO -L- STATION 13+25.00 IS S 88°35'22.4" W 10248.99'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES:

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT: HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/*

   THE FILES TO BE FOUND ARE AS FOLLOWS: R3830_LS_CONTROL.TXT

   SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

◎ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

NOTE: DRAWING NOT TO SCALE

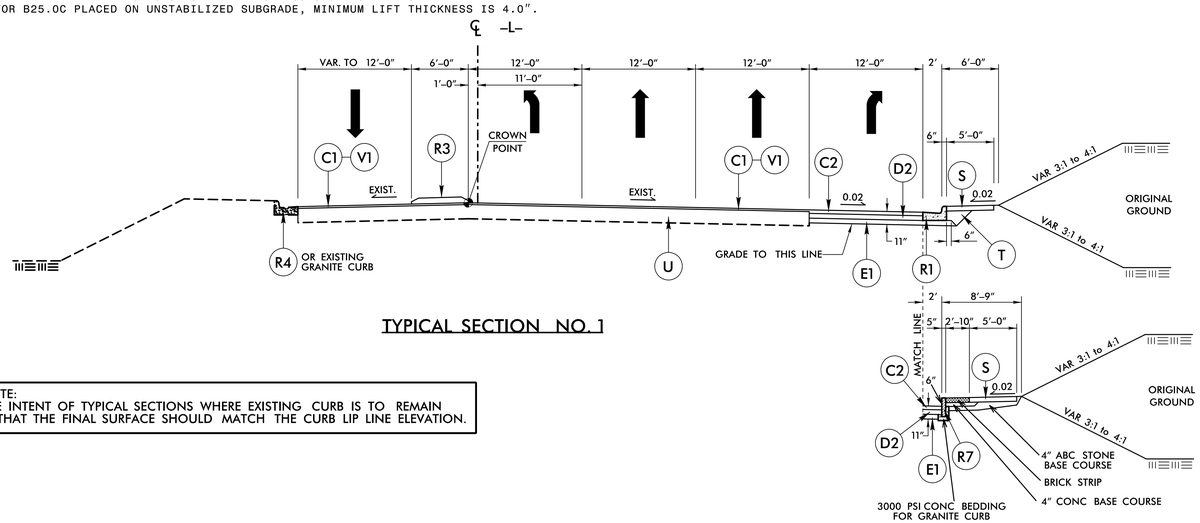
11-MAY-2022 15:01
Z:\Proj\div8\location&survey\todd\may-11-22\R3830_ls_lc-2.dgn
plotter: AT DIV08-3209S

6/2/99

PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN: DECEMBER 6, 2018)

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R1	2'-6" CONCRETE CURB AND GUTTER.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R2	1'-6" CONCRETE CURB AND GUTTER.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	R3	5" MONOLITHIC CONCRETE ISLAND (KEYED-IN)
C4	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R4	EXISTING CONCRETE CURB AND GUTTER.
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.	R5	2'-9" CONCRETE CURB AND GUTTER.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R6	8"X18" CONCRETE CURB.
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R7	GRANITE CURB
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.	S	4" CONCRETE SIDEWALK.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL.
E2	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3"* IN DEPTH OR GREATER THAN 5½" IN DEPTH.	V1	MILLING BITUMINOUS PAVEMENT. 1½ DEPTH.
J1	PROP. 8" AGGREGATE BASE COURSE	V2	MILLING BITUMINOUS PAVEMENT. 3" DEPTH.
J2	PROP. 6" AGGREGATE BASE COURSE	V3	MILLING BITUMINOUS PAVEMENT. 2½" DEPTH.
L	CLASS IV SUBGRADE STABILIZATION	W1	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON THIS SHEET)
N	GEOTEXTILE FOR SOIL STABILIZATION	W2	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON THIS SHEET)
P	PRIME COAT	W3	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON THIS SHEET)

NOTE: ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE
* FOR B25.0C PLACED ON UNSTABILIZED SUBGRADE, MINIMUM LIFT THICKNESS IS 4.0".



TYPICAL SECTION NO. 1

NOTE:
THE INTENT OF TYPICAL SECTIONS WHERE EXISTING CURB IS TO REMAIN IS THAT THE FINAL SURFACE SHOULD MATCH THE CURB LIP LINE ELEVATION.

USE TYPICAL SECTION NO. 1:

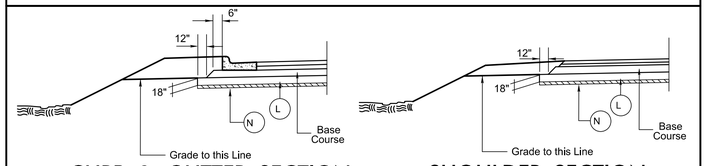
FROM –L– STA. 13+25.00 TO 17+45.91

TYPICAL SECTION NO. 1A

USE FOR GRANITE CURB /BRICK STRIP /SIDEWALK ASSEMBLY:

FROM –L– STA. 13+25.00 TO 16+78.00 RT

AGGREGATE SUBGRADE DETAIL



CURB & GUTTER SECTION

SHOULDER SECTION

SEE SHEET 3G–1 "SUMMARY OF AGGREGATE SUBGRADE" TABLE FOR PERTINENT ALIGNMENTS AND STATIONS

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2A-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER MARCUS LOWERY

6/30/2022 | 2:57 PM EDT

PAVEMENT DESIGN ENGINEER

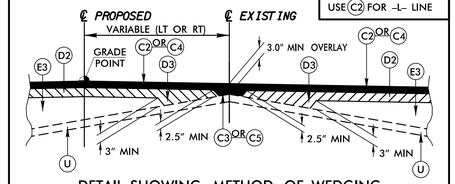
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CARRIE S. MORRISON

7/1/2022 | 8:10 AM PDT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

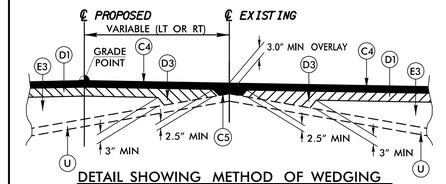
TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

DETAIL W1



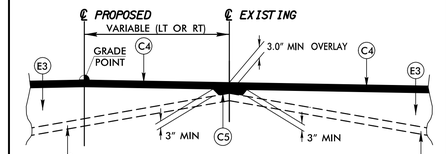
DETAIL SHOWING METHOD OF WEDGING FOR –L–, –DRW2–, –DRW4–, –Y3–

DETAIL W2



DETAIL SHOWING METHOD OF WEDGING FOR –Y13–

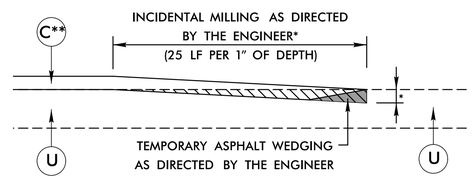
DETAIL W3



DETAIL SHOWING METHOD OF WEDGING FOR –Y2–, –Y5–, –Y6–, –Y7–, –Y8–, –Y12–, –Y16–, –Y17–, –Y18–, –Y19–, –Y20–, –Y21–, –Y22–, –DRW1–

NOTE:
SEE TYPICALS FOR REQUIRED MILLING.
MILLING OPERATION OCCURS PRIOR TO WEDGING AND OVERLAY.

MILLED BUTT JOINT TIE–IN DETAIL (PROFILE)



* MILL DEPTH AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER

** SEE TYPICALS FOR MIX TYPE

DocuSign Envelope ID: 3399CCFD-0403-4985-ACD8-614571360960

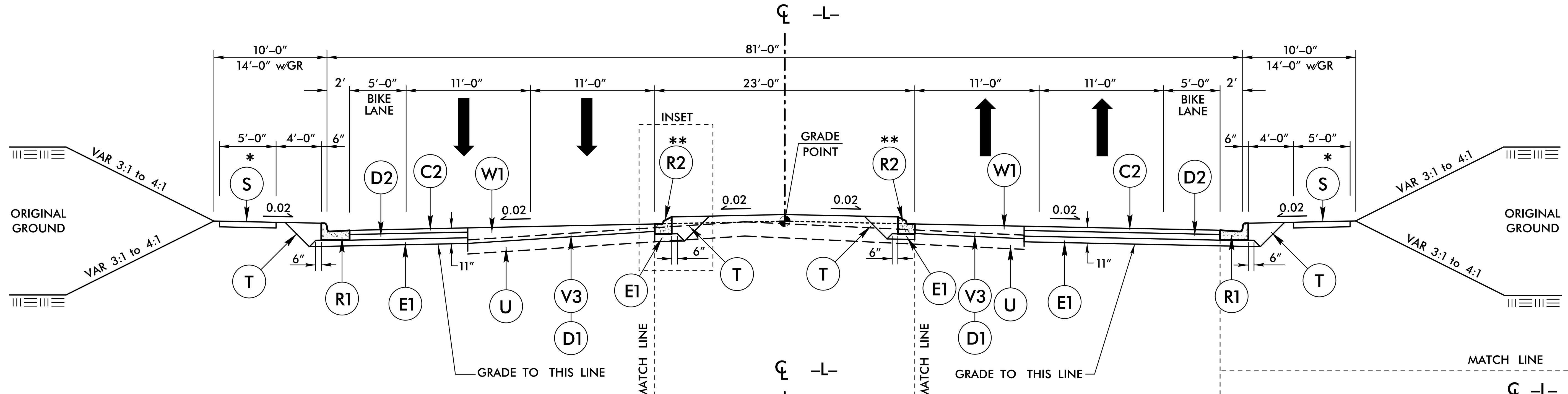
PROJECT REFERENCE NO.	SHEET NO.
R-3830	2A-2

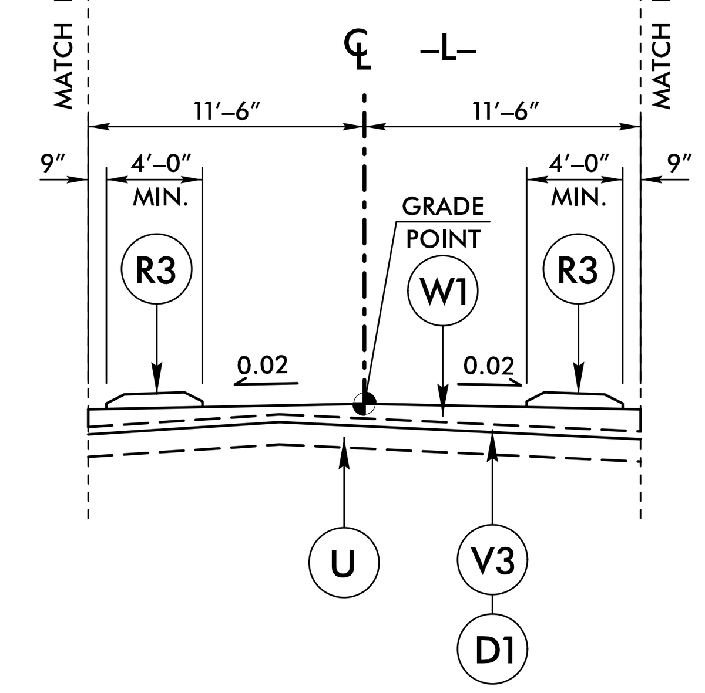
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 027418 — V. MARCUS LOWERY — 6/30/2022 | 2:57 PM EDT

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022896 — CLARK S. MORRISON — 7/1/2022 | 8:10 AM PDT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275





TYPICAL SECTION NO. 2A

USE FOR MONOLITHIC CONC. ISLAND:

FROM -L- STA. 28+77.08 TO 31+77.00
FROM -L- STA. 59+77.11 TO 61+60.00
FROM -L- STA. 118+70.00 TO 121+17.92

TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2:

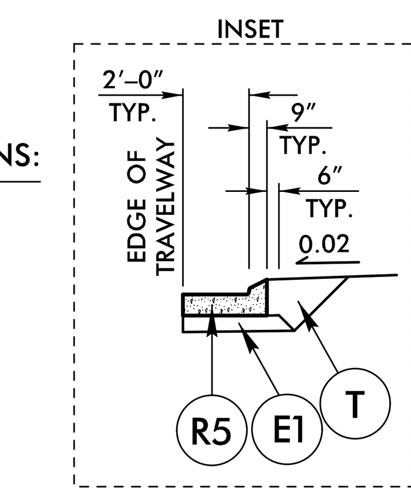
FROM -L- STA. 18+20.98 TO 79+45.00
FROM -L- STA. 117+70.00 TO 136+71.19

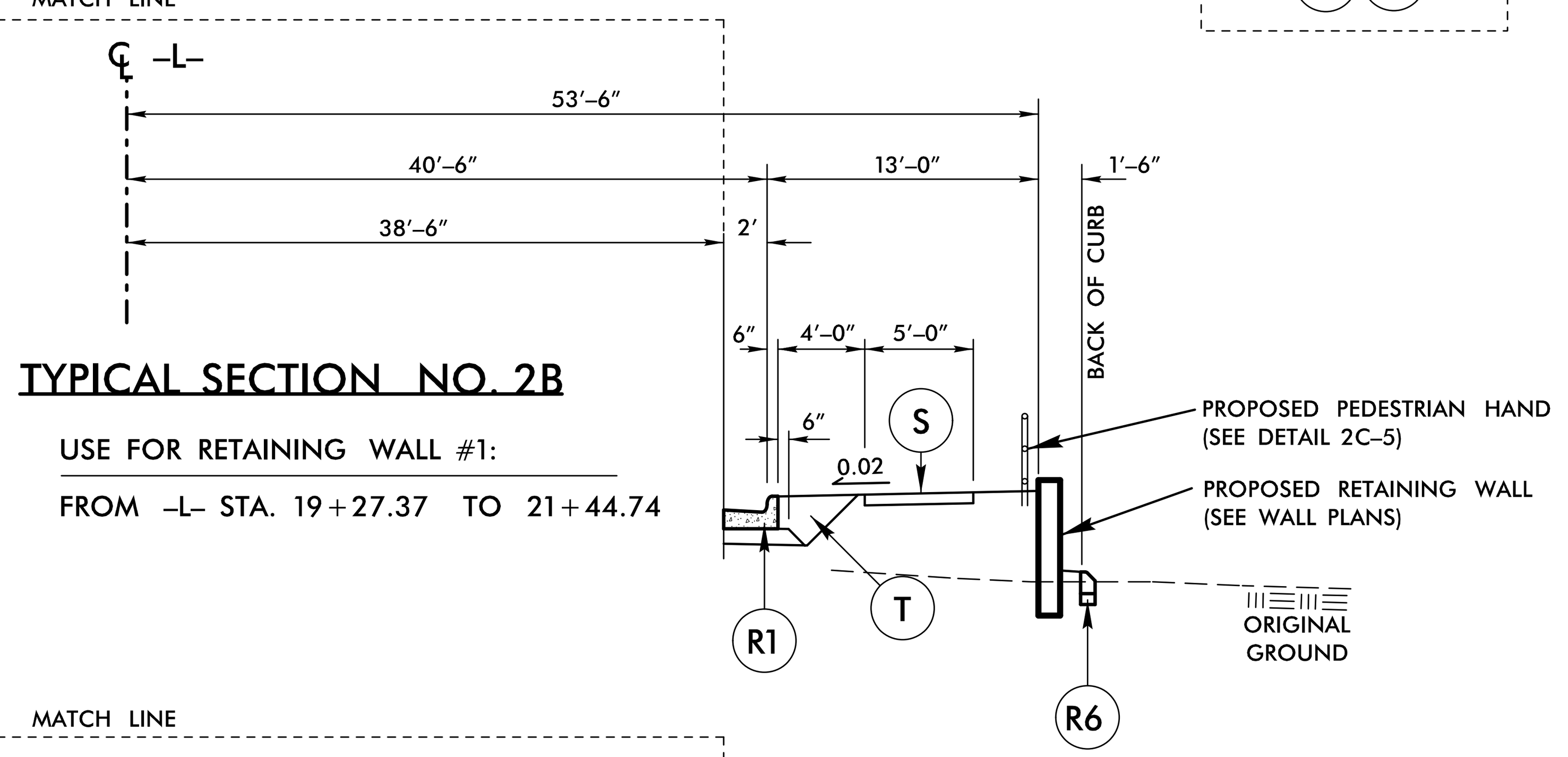
* SIDEWALK LOCATIONS:

-L- STA. 18+20.98 TO 79+45.00 LT.
-L- STA. 20+24.31 TO 42+74.69 RT.
-L- STA. 117+70.00 TO 136+71.19 LT.

** 2'-9" CONCRETE CURB AND GUTTER LOCATIONS:

-L- STA. 56+97.47 TO 59+77.11 LT
-L- STA. 61+60.00 TO 76+12.50 LT
-L- STA. 124+19.96 TO 128+39.50 RT
-L- STA. 129+35.50 TO 136+71.19 RT

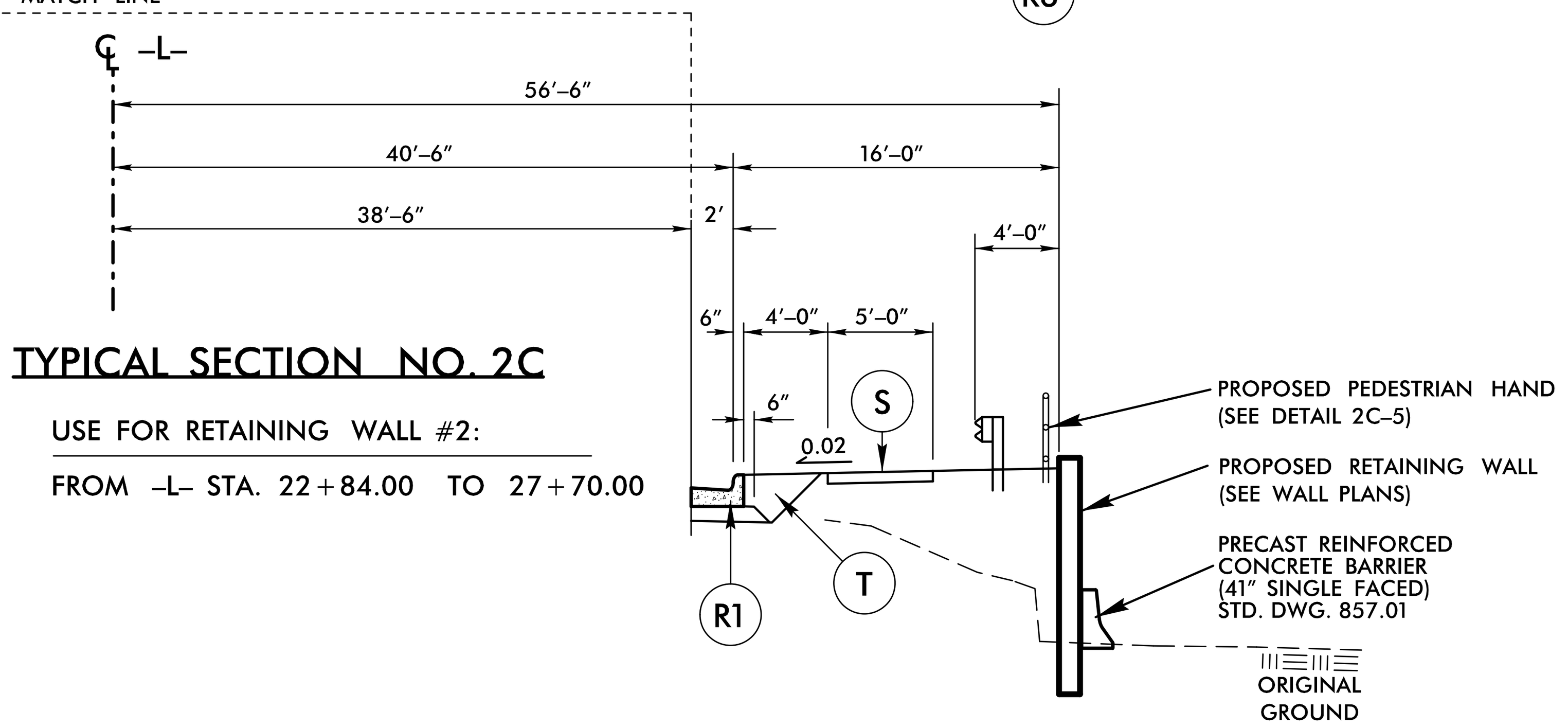




TYPICAL SECTION NO. 2B

USE FOR RETAINING WALL #1:

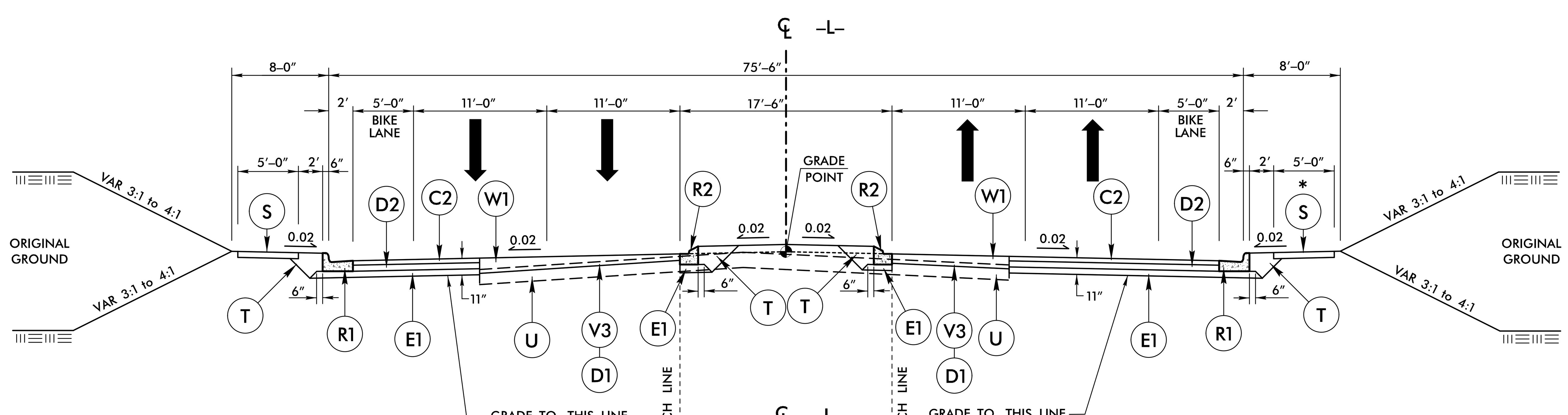
FROM -L- STA. 19+27.37 TO 21+44.74

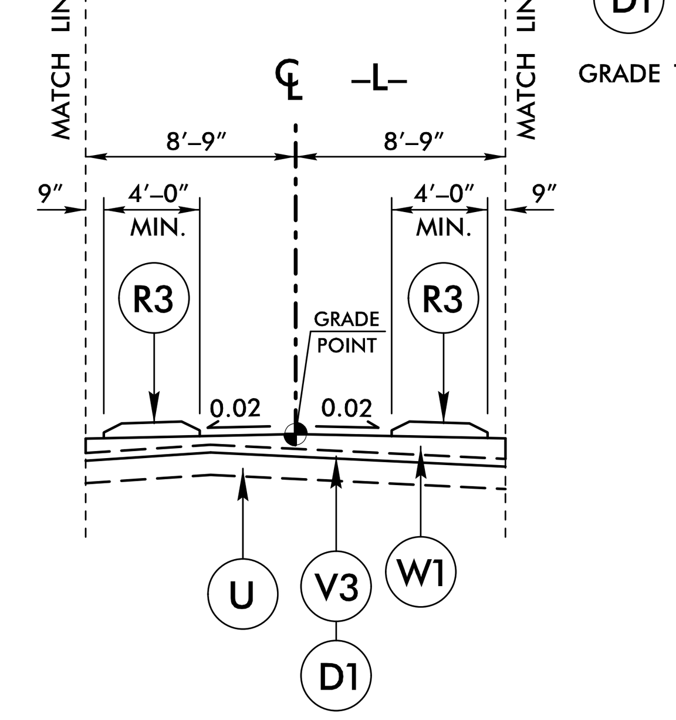


TYPICAL SECTION NO. 2C

USE FOR RETAINING WALL #2:

FROM -L- STA. 22+84.00 TO 27+70.00





TYPICAL SECTION NO. 3A

USE FOR MONOLITHIC CONC. ISLAND:

FROM -L- STA. 86+65.60 TO 90+38.00
FROM -L- STA. 92+59.29 TO 94+00.00

TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3:

FROM -L- STA. 79+45.00 TO 94+00.00

* SIDEWALK LOCATION:

-L- STA. 84+05.34 TO 85+38.00 RT.

C1	1½" S9.5C
C2	3" S9.5C
C3	VAR. S9.5C
C4	3" S9.5B
C5	VAR. S9.5B
D1	2½" I19.0C
D2	4" I19.5C
D3	VAR. I19.0C
E1	4" B25.0C
E2	5½" B25.0C
E3	VAR. B25.0C
J1	8" ABC
J2	6" ABC
L	CLASS IV STAB.
N	GEOTEXTILE
P	PRIME COAT
R1	2'-6" C & G
R2	1'-6" C & G
R3	5" CONC. ISLAND
R4	EXIST. C & G
R5	2'-9" C & G
R6	8"X18" CURB
R7	GRANITE CURB
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	1½" MILLING
V2	3" MILLING
V3	2½" MILLING
W1	WEDGING
W2	WEDGING
W3	WEDGING

6/2/99

4/8/2022
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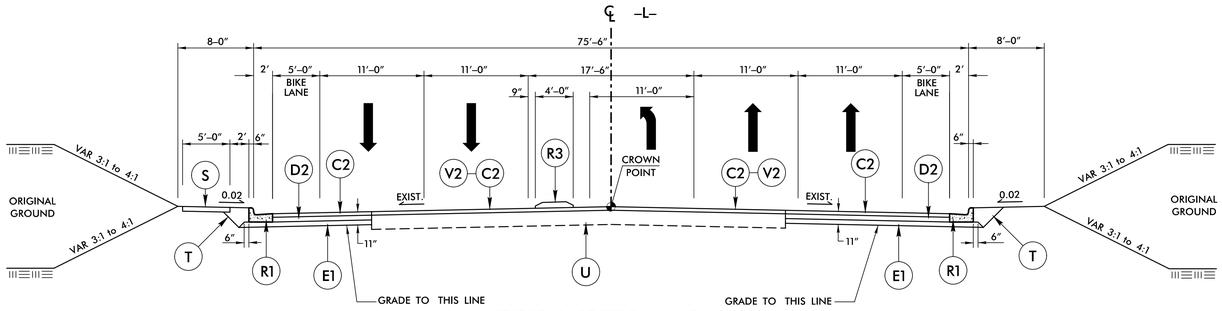
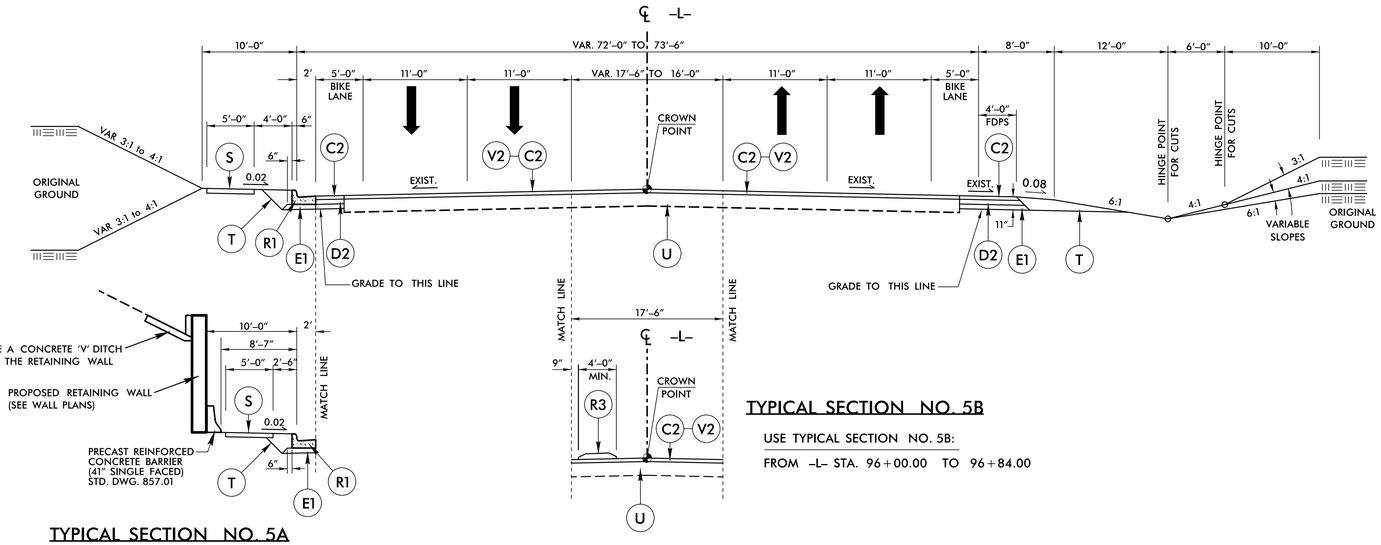
6/2/99



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4:

FROM –L– STA. 94+00.00 TO 96+00.00



TYPICAL SECTION NO. 5A

USE TYPICAL SECTION NO. 5A:

FROM –L– STA. 102+14.88 TO 105+03.34

TYPICAL SECTION NO. 5

TYPICAL SECTION NO. 5B

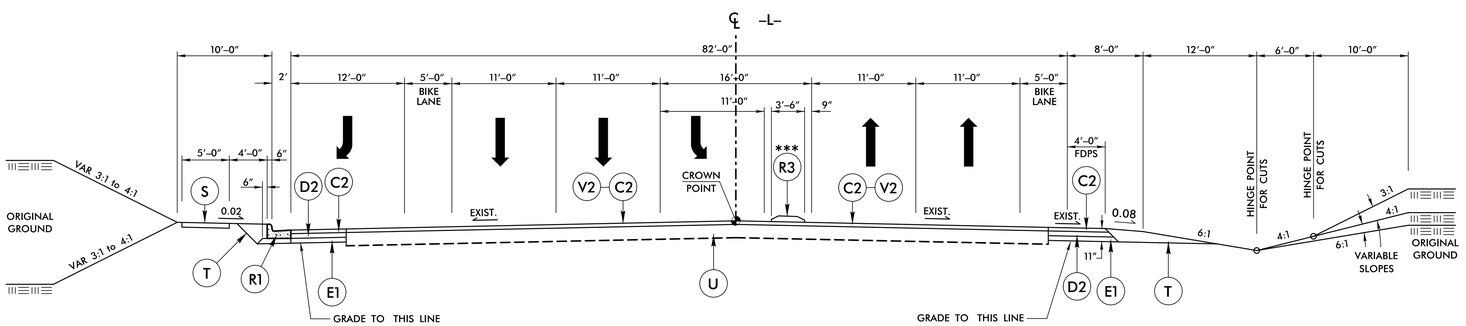
USE TYPICAL SECTION NO. 5B:

FROM –L– STA. 96+00.00 TO 96+84.00

USE TYPICAL SECTION NO. 5:

FROM –L– STA. 96+00.00 TO 110+50.00

NOTE:
THE EXISTING SHOULDER AND TRENCH DRAIN SHALL NOT BE DISTURBED FROM –L– STA. 102+66.27 TO 104+64.73 (RT.) (SEE PLANS)



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6:

FROM –L– STA. 110+50.00 TO 113+00.00

*** 5" MONOLITHIC CONC. ISLAND AT THIS LOCATION TO BE KEYED IN (SINCE LESS THAN 4' WIDE)

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2A-3

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER MARCUS LOWERY
6/30/2022 | 2:57 PM EDT

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CARRIE S. MORRISON
7/1/2022 | 8:10 AM PDT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

C1	1½" S9.5C
C2	3" S9.5C
C3	VAR. S9.5C
C4	3" S9.5B
C5	VAR. S9.5B
D1	2½" I19.0C
D2	4" I19.5C
D3	VAR. I19.0C
E1	4" B25.0C
E2	5½" B25.0C
E3	VAR. B25.0C
J1	8" ABC
J2	6" ABC
L	CLASS IV STAB.
N	GEOTEXTILE
P	PRIME COAT
R1	2'-6" C & G
R2	1'-6" C & G
R3	5" CONC. ISLAND
R4	EXIST. C & G
R5	2'-9" C & G
R6	8"X18" CURB
R7	GRANITE CURB
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	1½" MILLING
V2	3" MILLING
V3	2½" MILLING
W1	WEDGING
W2	WEDGING
W3	WEDGING

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2A-4

ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DocuSigned by: Marcus Lowery — NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER V. MARCUS LOWERY — 6/30/2022 | 2:57 PM EDT	DocuSigned by: Clark S. Morrison — NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON — 7/1/2022 | 8:10 AM PDT

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706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
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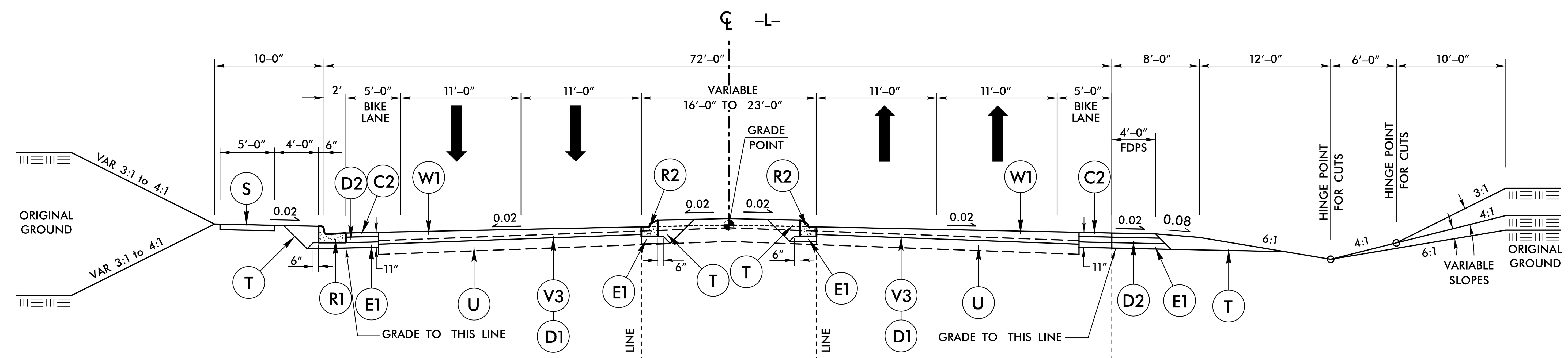
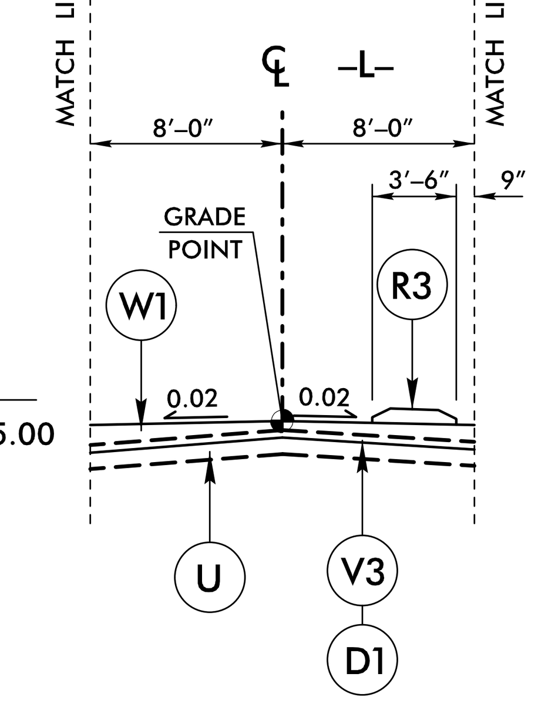
CORP. LICENSE NO.: C-0275

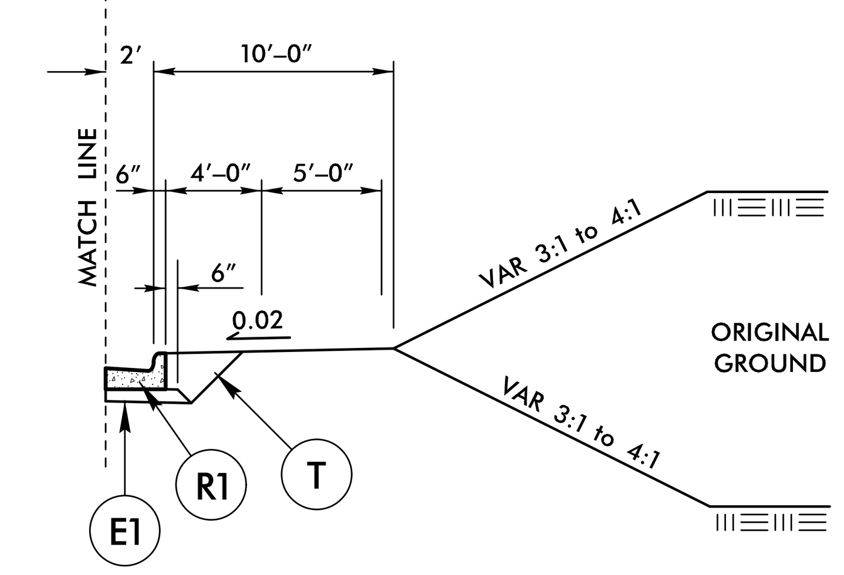


TYPICAL SECTION NO. 7A

USE TYPICAL SECTION NO. 7A:
FROM -L- STA. 113+00.00 TO 113+25.00



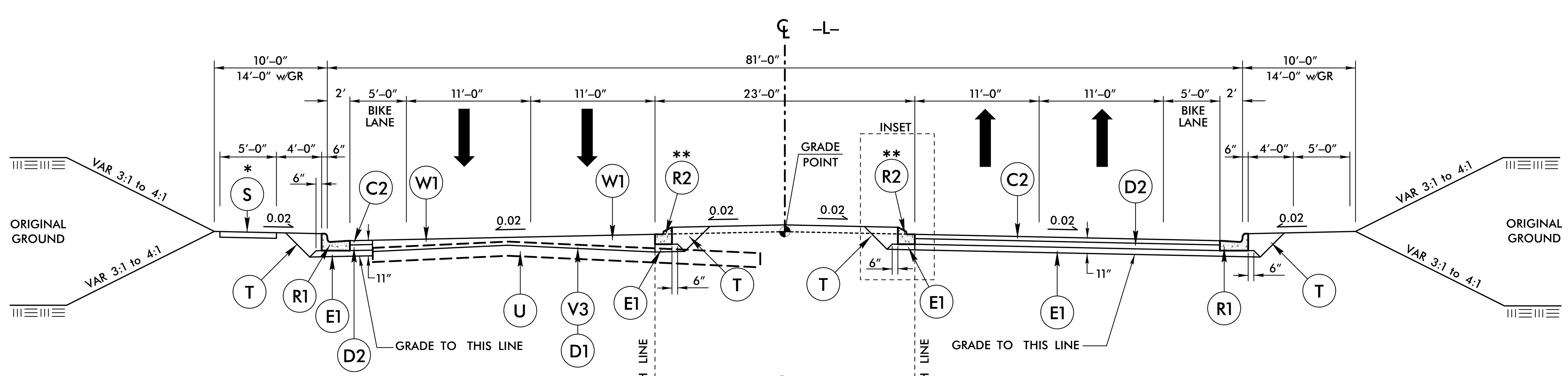
TYPICAL SECTION NO. 7

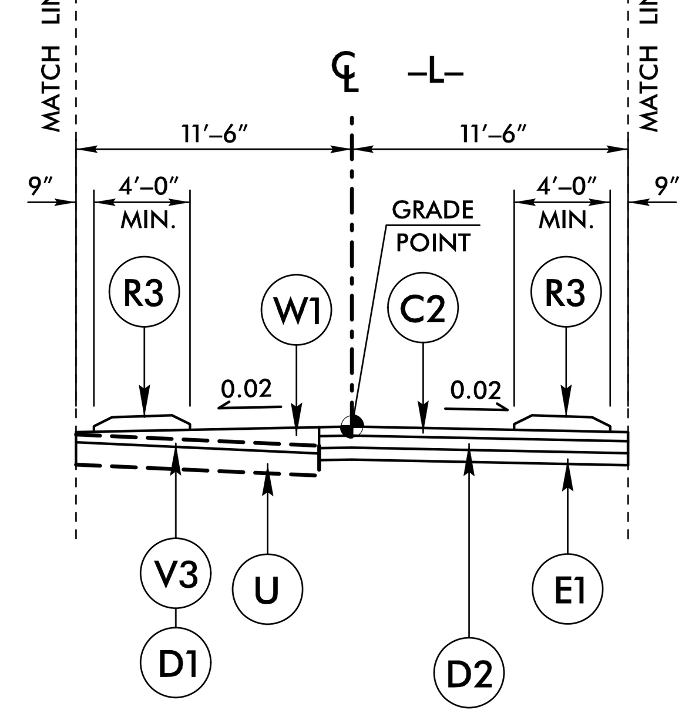


TYPICAL SECTION NO. 7B

USE TYPICAL SECTION NO. 7B:
FROM -L- STA. 115+25.00 TO 117+70.00

USE TYPICAL SECTION NO. 7:
FROM -L- STA. 113+00.00 TO 117+70.00





TYPICAL SECTION NO. 8A

USE FOR MONOLITHIC CONC. ISLAND:
FROM -L- STA. 136+71.19 TO 140+30.40
FROM -L- STA. 143+08.85 TO 144+73.98

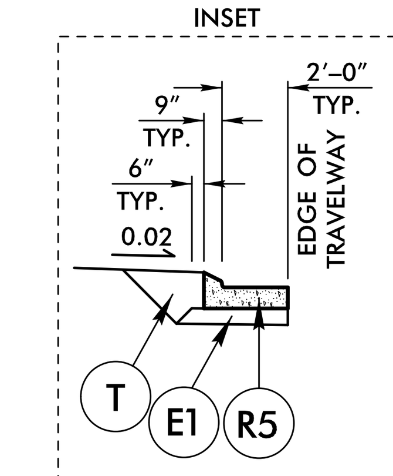
TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8:
FROM -L- STA. 136+71.19 TO 173+60.00

* SIDEWALK:
-L- STA. 136+71.19 TO 137+58.99 LT.

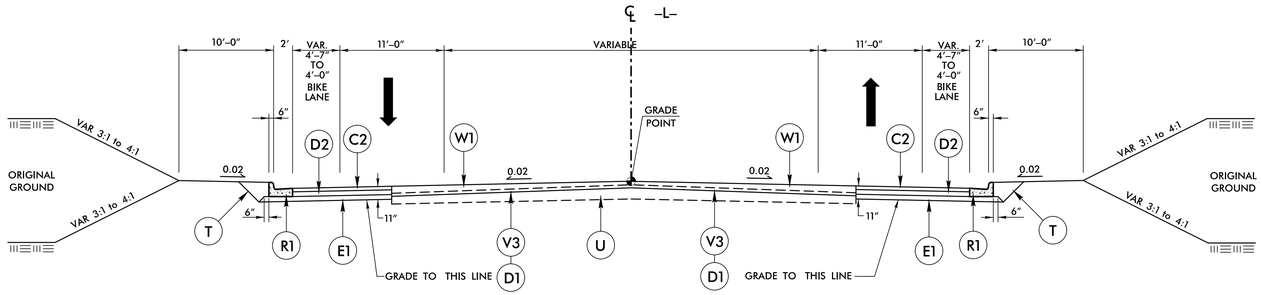
** 2'-9" CONCRETE CURB AND GUTTER LOCATIONS:
-L- STA. 155+49.09 TO 160+02.60 RT
-L- STA. 168+27.13 TO 173+60.00 LT

INSET



C1	1½" S9.5C
C2	3" S9.5C
C3	VAR. S9.5C
C4	3" S9.5B
C5	VAR. S9.5B
D1	2½" I19.0C
D2	4" I19.5C
D3	VAR. I19.0C
E1	4" B25.0C
E2	5½" B25.0C
E3	VAR. B25.0C
J1	8" ABC
J2	6" ABC
L	CLASS IV STAB.
N	GEOTEXTILE
P	PRIME COAT
R1	2'-6" C & G
R2	1'-6" C & G
R3	5" CONC. ISLAND
R4	EXIST. C & G
R5	2'-9" C & G
R6	8"X18" CURB
R7	GRANITE CURB
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	1½" MILLING
V2	3" MILLING
V3	2½" MILLING
W1	WEDGING
W2	WEDGING
W3	WEDGING

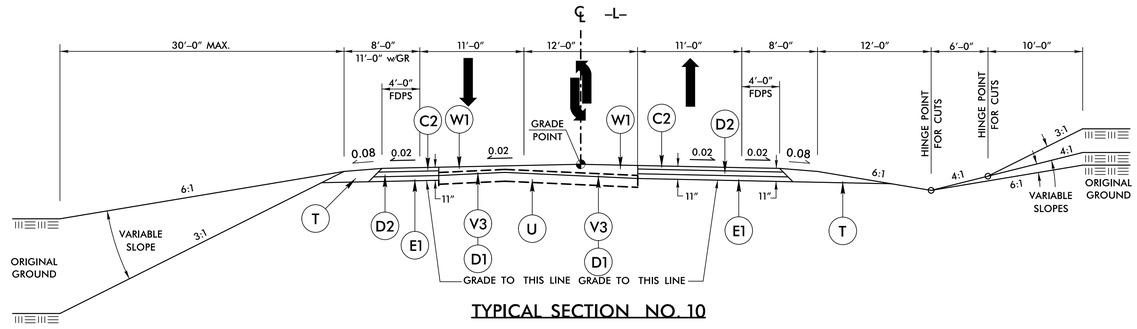
6/2/99



TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9:

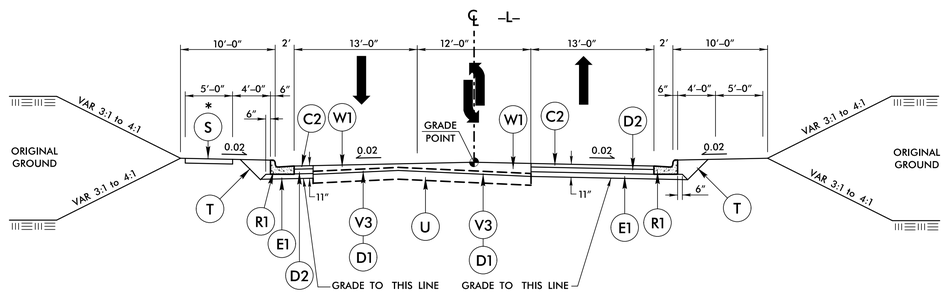
FROM –L– STA. 173+60.00 TO 178+35.00



TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10:

FROM –L– STA. 178+35.00 TO 254+35.00



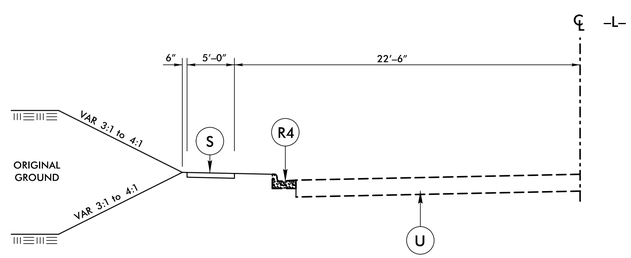
TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11:

FROM –L– STA. 254+35.00 TO 292+00.00

* SIDEWALK LOCATIONS:

FROM –L– STA. 280+08.39 TO 292+00.00 LT.
FROM –L– STA. 279+67.00 TO 292+00.00 RT.



TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12:

FROM –L– STA. 292+00.00 TO 304+90.86 LT.

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2A-5

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER MARCUS LOWERY

6/30/2022 | 2:57 PM EDT

PAVEMENT DESIGN ENGINEER

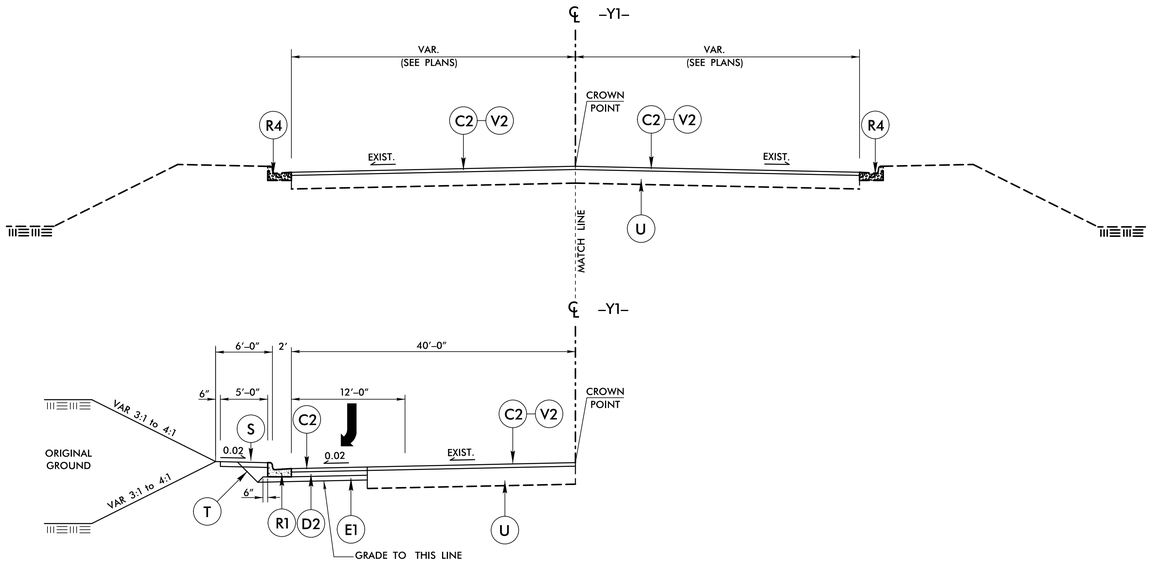
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CARRIE S. MORRISON

7/1/2022 | 8:10 AM PDT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

C1	1½″ S9.5C
C2	3″ S9.5C
C3	VAR. S9.5C
C4	3″ S9.5B
C5	VAR. S9.5B
D1	2½″ I19.0C
D2	4″ I19.5C
D3	VAR. I19.0C
E1	4″ B25.0C
E2	5½″ B25.0C
E3	VAR. B25.0C
J1	8″ ABC
J2	6″ ABC
L	CLASS IV STAB.
N	GEOTEXTILE
P	PRIME COAT
R1	2′-6″ C & G
R2	1′-6″ C & G
R3	5″ CONC. ISLAND
R4	EXIST. C & G
R5	2′-9″ C & G
R6	8″X18″ CURB
R7	GRANITE CURB
S	4″ SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	1½″ MILLING
V2	3″ MILLING
V3	2½″ MILLING
W1	WEDGING
W2	WEDGING
W3	WEDGING



TYPICAL SECTION NO. 13A

USE TYPICAL SECTION NO. 13A:

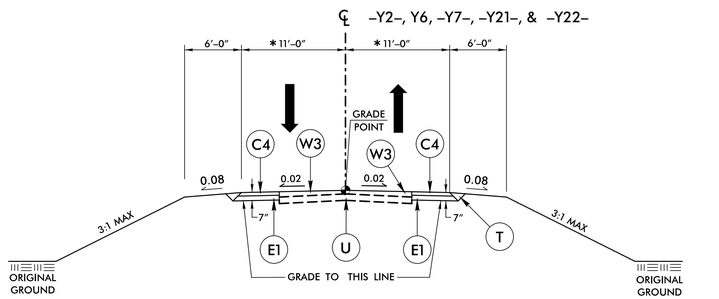
FROM –Y1– STA. 17+02.95 TO 18+70.00 LT.

TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13:

FROM –Y1– STA. 12+20.00 TO 17+02.95
FROM –Y1– STA. 18+70.00 TO 20+95.00

NOTE:
THE INTENT OF TYPICAL SECTIONS WHERE EXISTING CURB IS TO REMAIN IS THAT THE FINAL SURFACE SHOULD MATCH THE CURB LIP LINE ELEVATION.



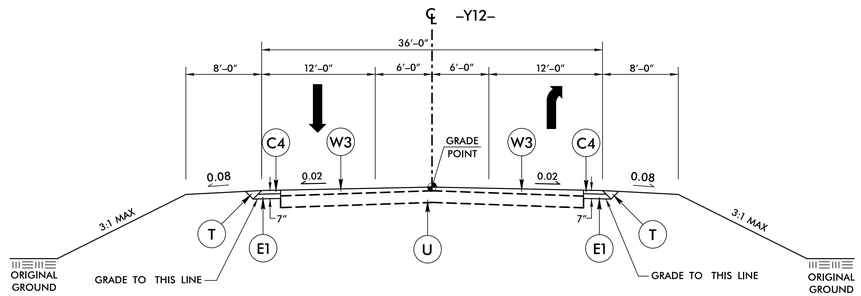
TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14

FROM –Y2– STA. 10+38.50 TO 11+70.00
FROM –Y6– STA. 11+55.00 TO 12+39.27
FROM –Y7– STA. 10+50.00 TO 11+59.02
FROM –Y21– STA. 10+70.00 TO 11+55.86
FROM –Y22– STA. 10+60.00 TO 11+52.63

* NOTE:
SEE PLANS FOR VARIABLE PAVEMENT WIDTH

WHERE 2'–6" CURB & GUTTER IS USED FOR –L– LINE RADIUS RETURNS ONTO –Y– LINES, USE –L– LINE PAVEMENT DESIGN THROUGH THE RADIUS RETURNS IN LIEU OF –Y– LINE PAVEMENT DESIGN. SEE PLANS FOR LOCATIONS.



TYPICAL SECTION NO. 15

USE TYPICAL SECTION NO. 15:

FROM –Y12– STA. 10+15.00 TO 11+52.98

WHERE 2'–6" CURB & GUTTER IS USED FOR –L– LINE RADIUS RETURNS ONTO –Y– LINES, USE –L– LINE PAVEMENT DESIGN THROUGH THE RADIUS RETURNS IN LIEU OF –Y– LINE PAVEMENT DESIGN. SEE PLANS FOR LOCATIONS.

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2A-6

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER MARCUS LOWERY
6/30/2022 | 2:57 PM EDT

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON
7/1/2022 | 8:10 AM PDT

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TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
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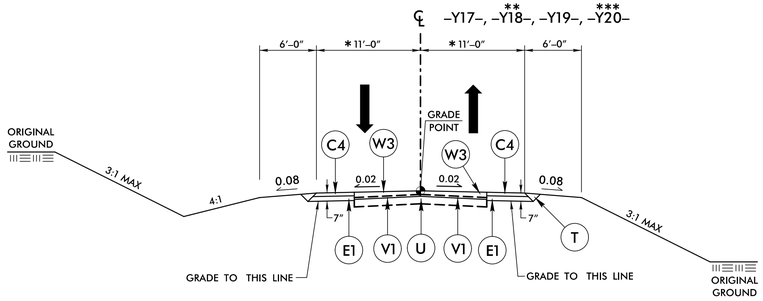
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

C1	1½" S9.5C
C2	3" S9.5C
C3	VAR. S9.5C
C4	3" S9.5B
C5	VAR. S9.5B
D1	2½" I19.0C
D2	4" I19.5C
D3	VAR. I19.0C
E1	4" B25.0C
E2	5½" B25.0C
E3	VAR. B25.0C
J1	8" ABC
J2	6" ABC
L	CLASS IV STAB.
N	GEOTEXTILE
P	PRIME COAT
R1	2'-6" C & G
R2	1'-6" C & G
R3	5" CONC. ISLAND
R4	EXIST. C & G
R5	2'-9" C & G
R6	8"X18" CURB
R7	GRANITE CURB
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	1½" MILLING
V2	3" MILLING
V3	2½" MILLING
W1	WEDGING
W2	WEDGING
W3	WEDGING

6/2/99



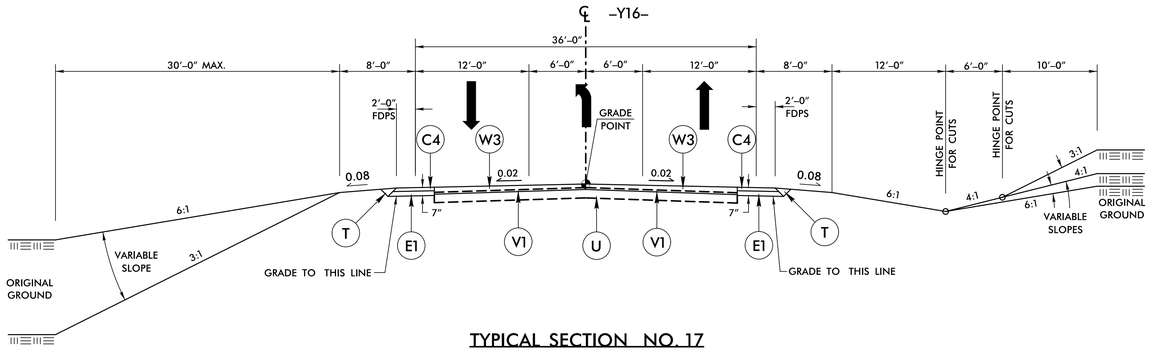
TYPICAL SECTION NO. 16

USE TYPICAL SECTION NO. 16

FROM –Y17– STA. 11+60.00 TO 12+51.74
FROM –Y18– STA. 10+21.00 TO 11+10.00
FROM –Y19– STA. 11+11.00 TO 12+20.42
FROM –Y20– STA. 11+00.00 TO 13+28.09

NOTES:
* SEE PLANS FOR VARIABLE PAVEMENT WIDTH
** FOR –Y18–, MILL 3.0" (INSTEAD OF 1.5") AND REPLACE WITH 3.0" S9.5B
*** FOR –Y20–, USE FULL DEPTH NEW PAVEMENT IN LIEU OF WEDGING & WIDENING STA. 12+14.08 TO 13+28.09

WHERE 2'–6" CURB & GUTTER IS USED FOR –L– LINE RADIUS RETURNS ONTO –Y– LINES, USE –L– LINE PAVEMENT DESIGN THROUGH THE RADIUS RETURNS IN LIEU OF –Y– LINE PAVEMENT DESIGN. SEE PLANS FOR LOCATIONS.



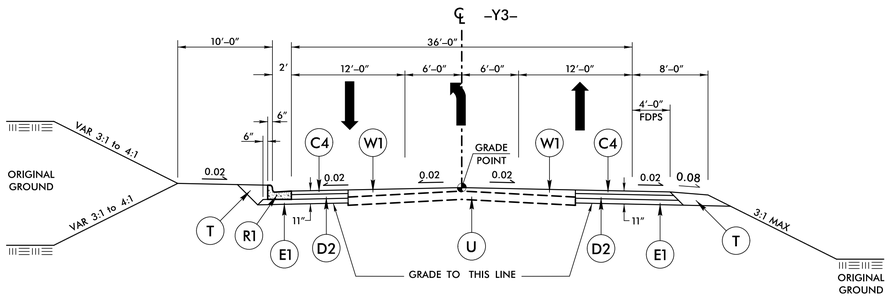
TYPICAL SECTION NO. 17

USE TYPICAL SECTION NO. 17:

FROM –Y16– STA. 10+90.00 TO 14+70.41

NOTE:
USE FULL DEPTH NEW PAVEMENT IN LIEU OF WEDGING & WIDENING STA. 12+85.37 TO 14+70.41

WHERE 2'–6" CURB & GUTTER IS USED FOR –L– LINE RADIUS RETURNS ONTO –Y– LINES, USE –L– LINE PAVEMENT DESIGN THROUGH THE RADIUS RETURNS IN LIEU OF –Y– LINE PAVEMENT DESIGN. SEE PLANS FOR LOCATIONS.

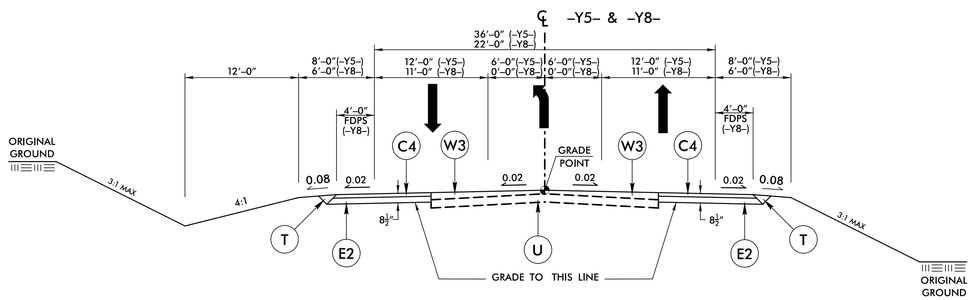


TYPICAL SECTION NO. 18

USE TYPICAL SECTION NO. 18:

FROM –Y3– STA. 17+20.63 TO 19+35.35

WHERE 2'–6" CURB & GUTTER IS USED FOR –L– LINE RADIUS RETURNS ONTO –Y– LINES, USE –L– LINE PAVEMENT DESIGN THROUGH THE RADIUS RETURNS IN LIEU OF –Y– LINE PAVEMENT DESIGN. SEE PLANS FOR LOCATIONS.



TYPICAL SECTION NO. 19

USE TYPICAL SECTION NO. 19:

FROM –Y5– STA. 10+38.50 TO 16+40.00
FROM –Y8– STA. 10+60.00 TO 12+47.65

WHERE 2'–6" CURB & GUTTER IS USED FOR –L– LINE RADIUS RETURNS ONTO –Y– LINES, USE –L– LINE PAVEMENT DESIGN THROUGH THE RADIUS RETURNS IN LIEU OF –Y– LINE PAVEMENT DESIGN. SEE PLANS FOR LOCATIONS.

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2A-7

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER MARCUS LOWERY
6/30/2022 | 2:57 PM EDT

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CARRIE S. MORRISON
7/1/2022 | 8:10 AM PDT

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C2	3" S9.5C
C3	VAR. S9.5C
C4	3" S9.5B
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D1	2½" I19.0C
D2	4" I19.5C
D3	VAR. I19.0C
E1	4" B25.0C
E2	5½" B25.0C
E3	VAR. B25.0C
J1	8" ABC
J2	6" ABC
L	CLASS IV STAB.
N	GEOTEXTILE
P	PRIME COAT
R1	2'-6" C & G
R2	1'-6" C & G
R3	5" CONC. ISLAND
R4	EXIST. C & G
R5	2'-9" C & G
R6	8"X18" CURB
R7	GRANITE CURB
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	1½" MILLING
V2	3" MILLING
V3	2½" MILLING
W1	WEDGING
W2	WEDGING
W3	WEDGING

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2A-8

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER V. MARCUS LOWERY
6/30/2022 | 2:57 PM EDT

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON
7/1/2022 | 8:10 AM PDT

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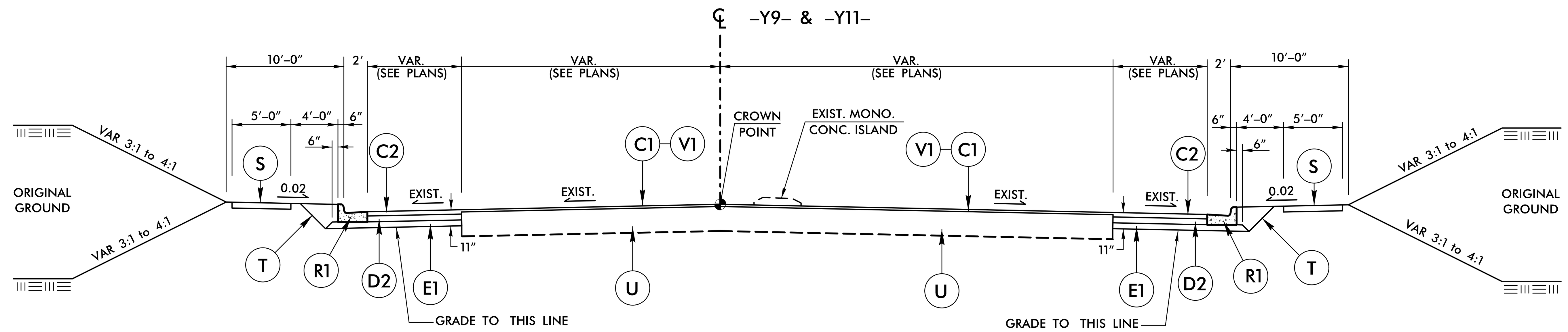
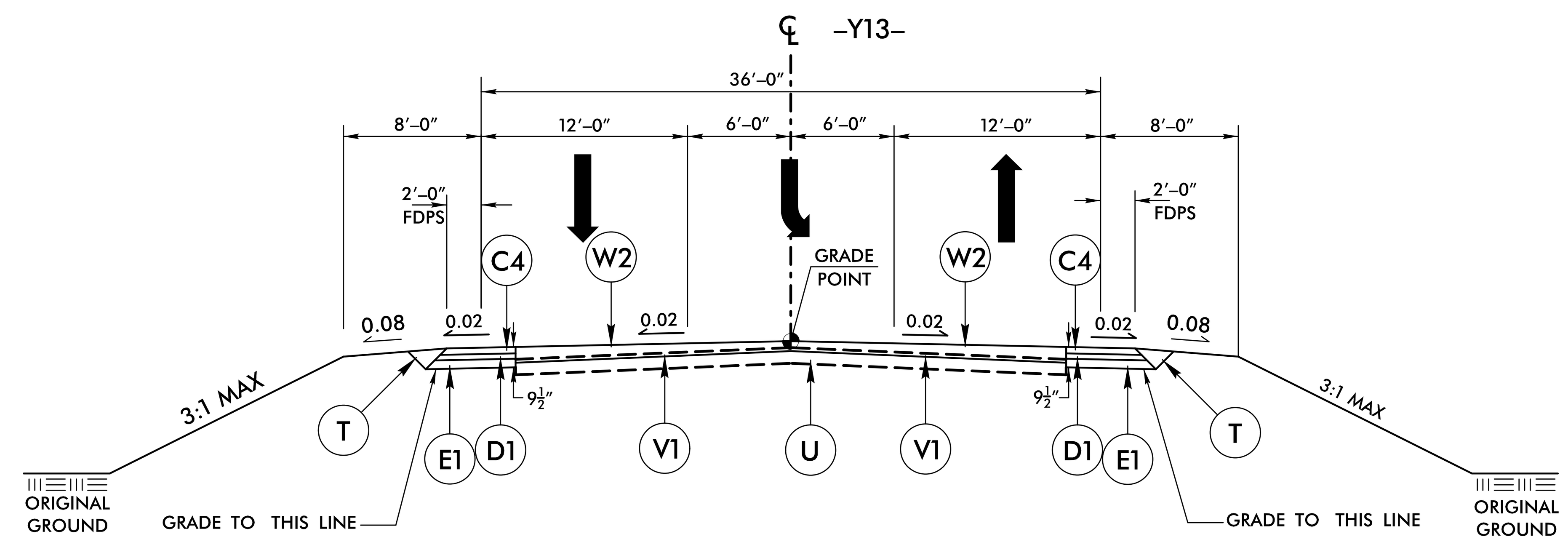


TYPICAL SECTION NO. 20

USE TYPICAL SECTION NO. 20:

FROM -Y9- STA. 11+20.00 TO 12+11.36
FROM -Y11- STA. 11+70.00 TO 12+65.99
NOTE: SEE PLANS FOR CURB & GUTTER AND SIDEWALK LOCATIONS

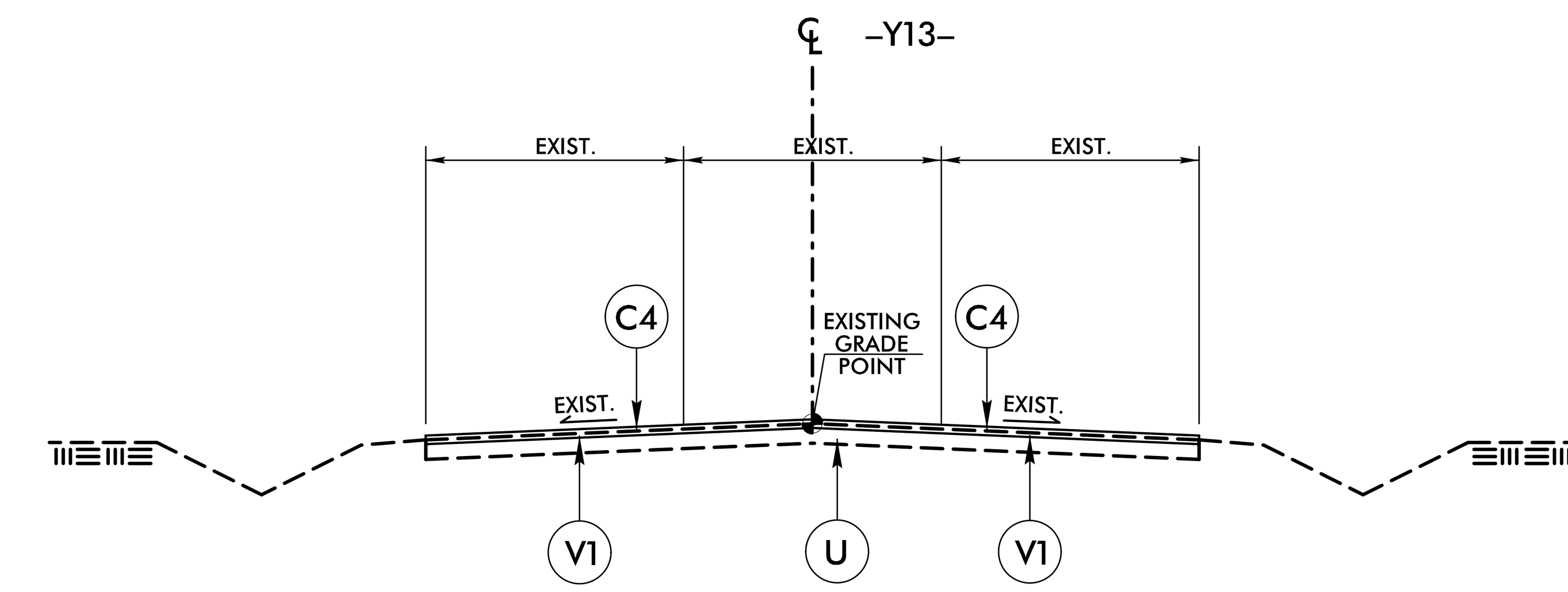


TYPICAL SECTION NO. 21

USE TYPICAL SECTION NO. 21:

FROM -Y13- STA. 10+38.50 TO 16+25.00

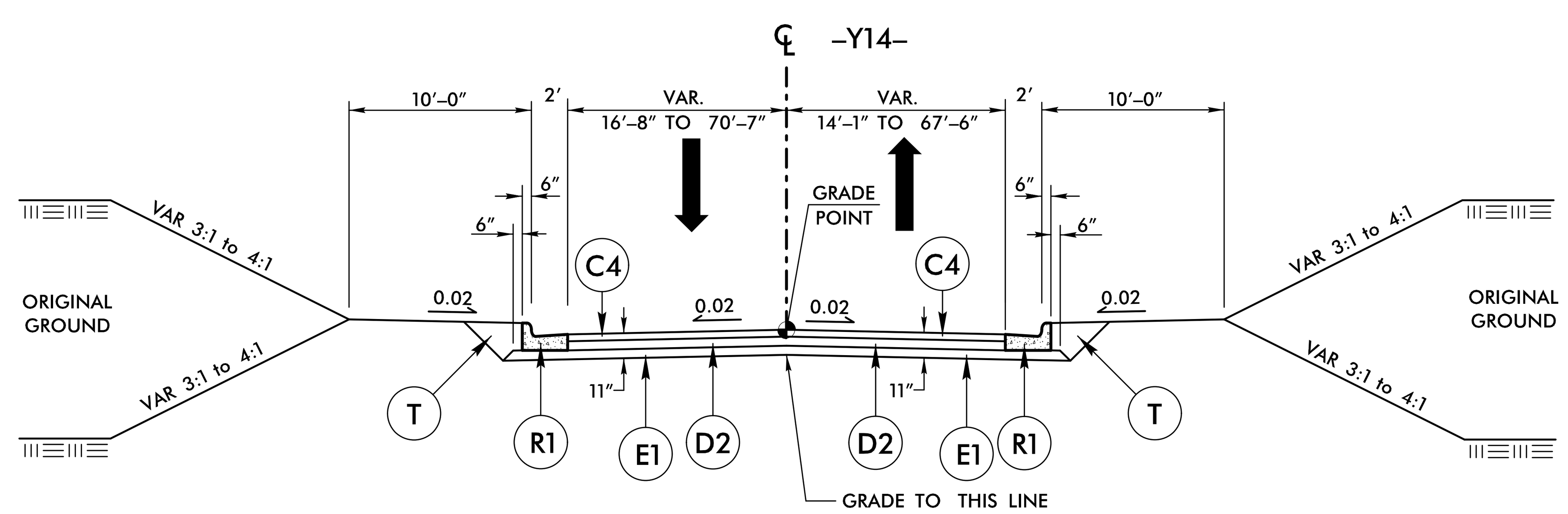
WHERE 2'-6" CURB & GUTTER IS USED FOR -L- LINE RADIUS RETURNS ONTO -Y- LINES, USE -L- LINE PAVEMENT DESIGN THROUGH THE RADIUS RETURNS IN LIEU OF -Y- LINE PAVEMENT DESIGN. SEE PLANS FOR LOCATIONS.



TYPICAL SECTION NO. 21A

USE TYPICAL SECTION NO. 21A:

FROM -Y13- STA. 16+25.00 TO 26+10.00
(RESURFACING)

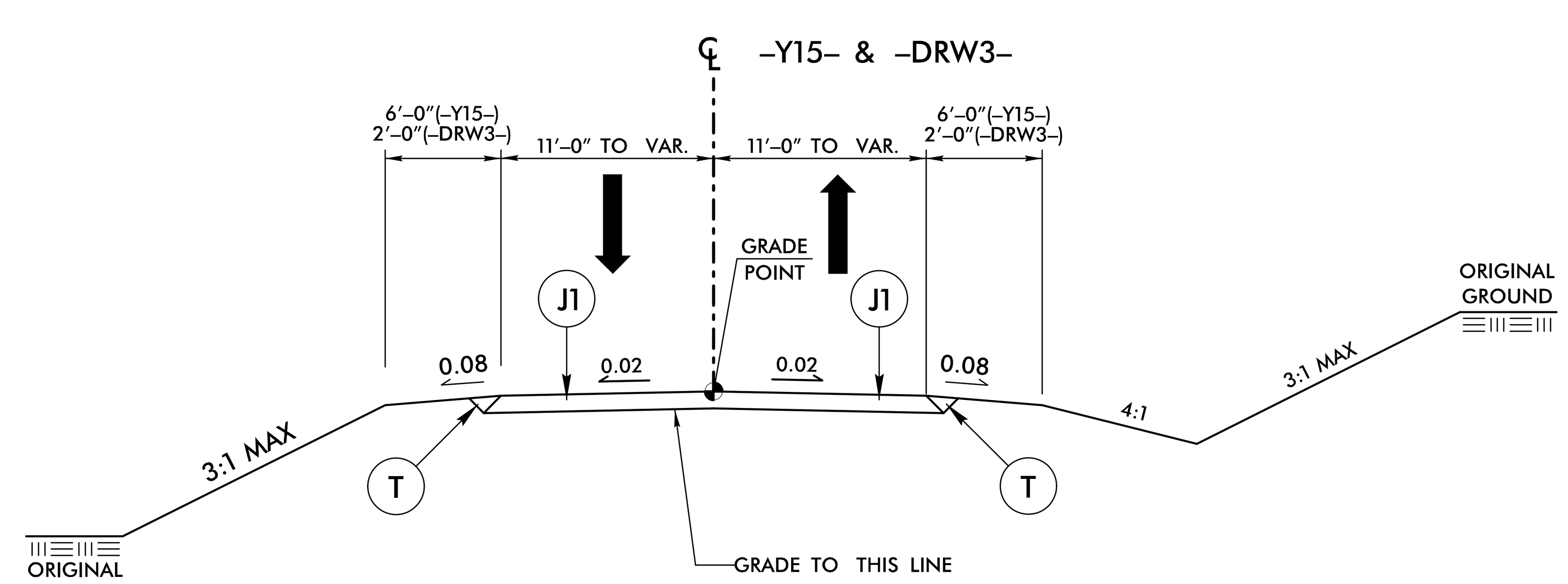


TYPICAL SECTION NO. 22

USE TYPICAL SECTION NO. 22:

FROM -Y14- STA. 10+96.00 TO 11+56.91

WHERE 2'-6" CURB & GUTTER IS USED FOR -L- LINE RADIUS RETURNS ONTO -Y- LINES, USE -L- LINE PAVEMENT DESIGN THROUGH THE RADIUS RETURNS IN LIEU OF -Y- LINE PAVEMENT DESIGN. SEE PLANS FOR LOCATIONS.



TYPICAL SECTION NO. 23

USE TYPICAL SECTION NO. 23:

FROM -Y15- STA. 10+38.50 TO 12+15.00
FROM -DRW3- STA. 10+38.50 TO 11+25.00

WHERE 2'-6" CURB & GUTTER IS USED FOR -L- LINE RADIUS RETURNS ONTO -Y- LINES, USE -L- LINE PAVEMENT DESIGN THROUGH THE RADIUS RETURNS IN LIEU OF -Y- LINE PAVEMENT DESIGN. SEE PLANS FOR LOCATIONS.

C1	1½" S9.5C
C2	3" S9.5C
C3	VAR. S9.5C
C4	3" S9.5B
C5	VAR. S9.5B
D1	2½" I19.0C
D2	4" I19.5C
D3	VAR. I19.0C
E1	4" B25.0C
E2	5½" B25.0C
E3	VAR. B25.0C
J1	8" ABC
J2	6" ABC
L	CLASS IV STAB.
N	GEOTEXTILE
P	PRIME COAT
R1	2'-6" C & G
R2	1'-6" C & G
R3	5" CONC. ISLAND
R4	EXIST. C & G
R5	2'-9" C & G
R6	8"X18" CURB
R7	GRANITE CURB
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	1½" MILLING
V2	3" MILLING
V3	2½" MILLING
W1	WEDGING
W2	WEDGING
W3	WEDGING

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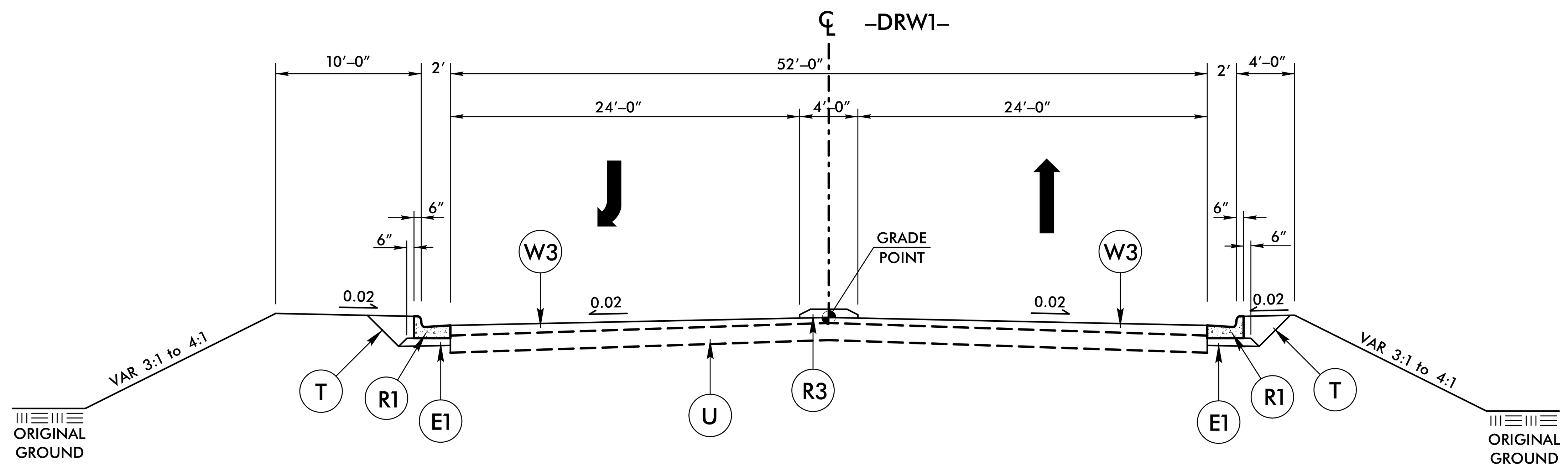
PROJECT REFERENCE NO.	SHEET NO.
R-3830	2A-9
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER V. MARCUS LOWERY — 6/30/2022 | 2:57 PM EDT	NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON — 7/1/2022 | 8:10 AM PDT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

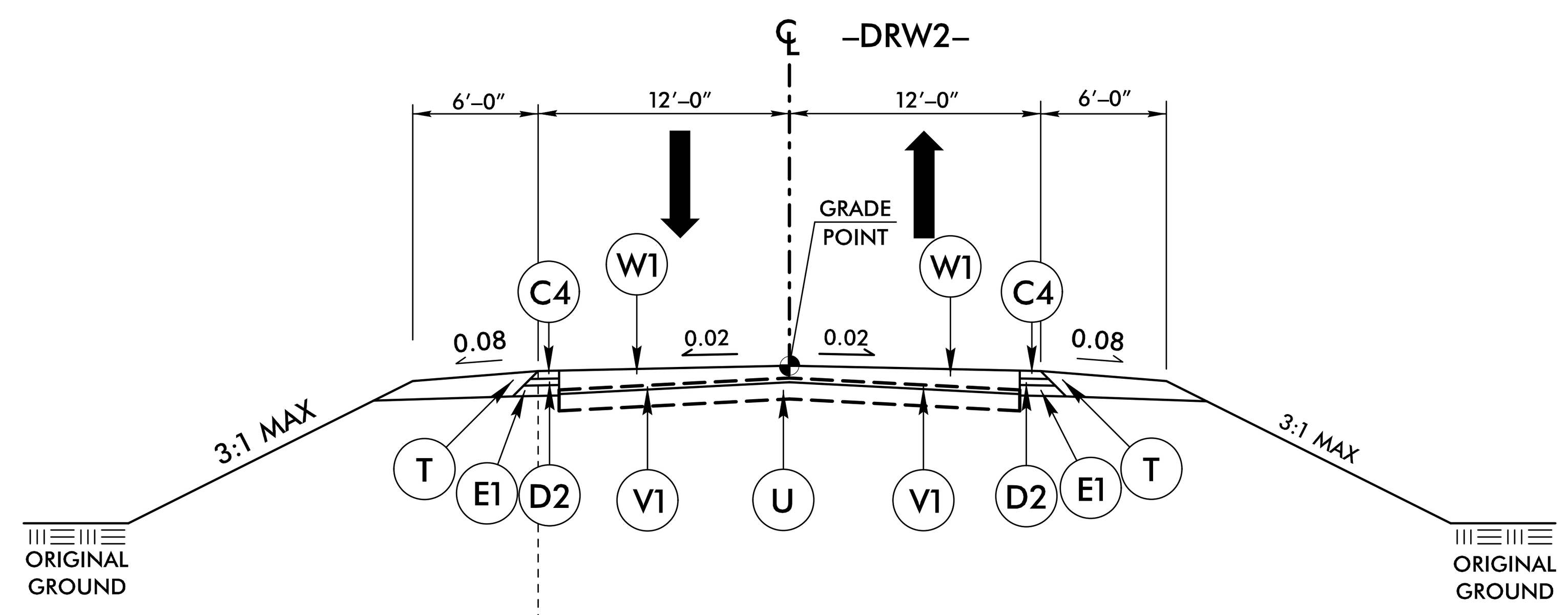
C1	1½" S9.5C
C2	3" S9.5C
C3	VAR. S9.5C
C4	3" S9.5B
C5	VAR. S9.5B
D1	2½" I19.0C
D2	4" I19.5C
D3	VAR. I19.0C
E1	4" B25.0C
E2	5½" B25.0C
E3	VAR. B25.0C
J1	8" ABC
J2	6" ABC
L	CLASS IV STAB.
N	GEOTEXTILE
P	PRIME COAT
R1	2'-6" C & G
R2	1'-6" C & G
R3	5" CONC. ISLAND
R4	EXIST. C & G
R5	2'-9" C & G
R6	8"X18" CURB
R7	GRANITE CURB
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	1½" MILLING
V2	3" MILLING
V3	2½" MILLING
W1	WEDGING
W2	WEDGING
W3	WEDGING



TYPICAL SECTION NO. 24

USE TYPICAL SECTION NO. 24:
FROM -DRW1- STA. 10+38.50 TO 11+51.52

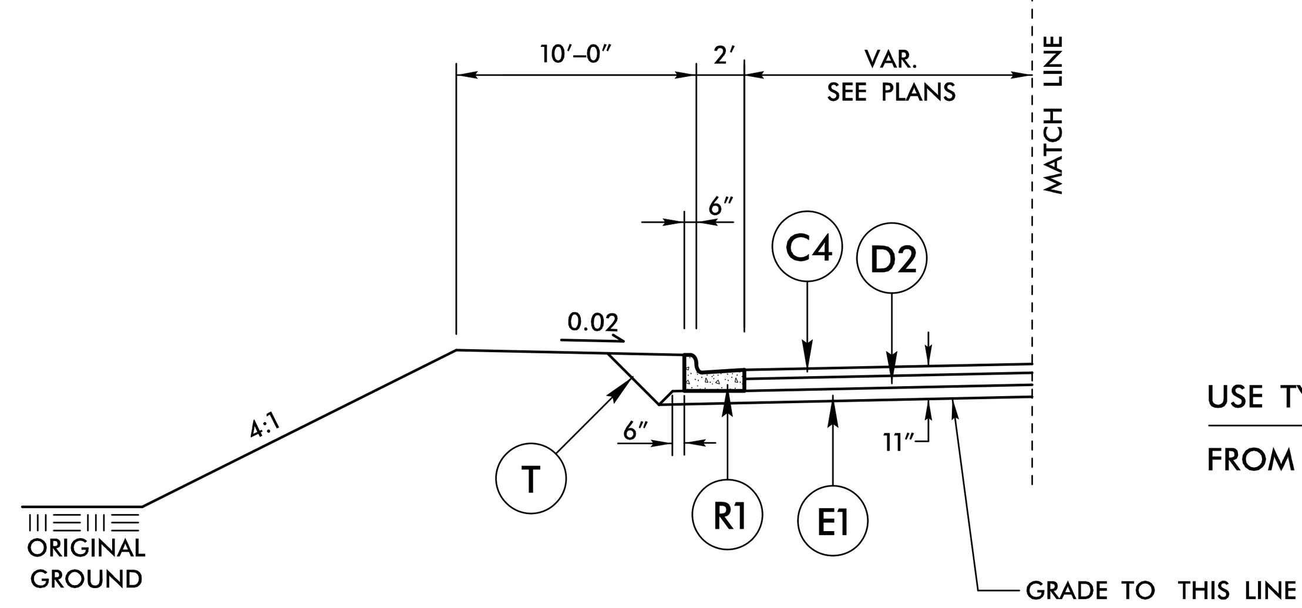
WHERE 2'-6" CURB & GUTTER IS USED FOR -L- LINE RADIUS RETURNS ONTO -Y- LINES, USE -L- LINE PAVEMENT DESIGN THROUGH THE RADIUS RETURNS IN LIEU OF -Y- LINE PAVEMENT DESIGN. SEE PLANS FOR LOCATIONS.



TYPICAL SECTION NO. 25

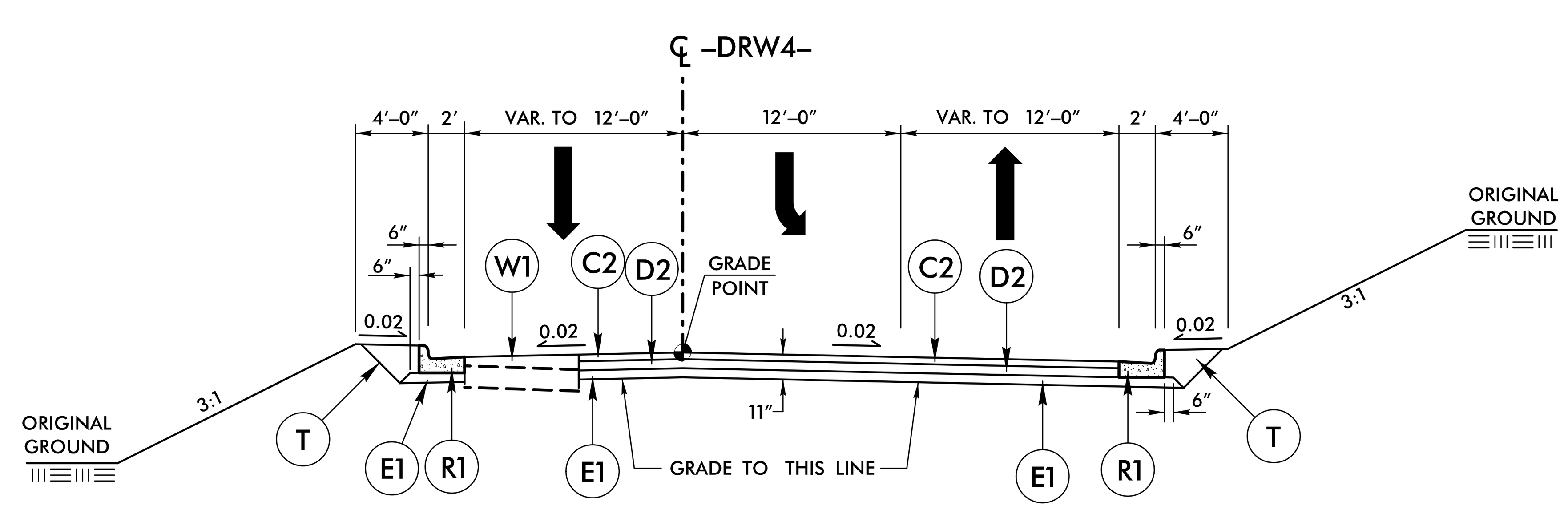
USE TYPICAL SECTION NO. 25:
FROM -DRW2- STA. 10+39.44 TO 11+95.00

WHERE 2'-6" CURB & GUTTER IS USED FOR -L- LINE RADIUS RETURNS ONTO -Y- LINES, USE -L- LINE PAVEMENT DESIGN THROUGH THE RADIUS RETURNS IN LIEU OF -Y- LINE PAVEMENT DESIGN. SEE PLANS FOR LOCATIONS.



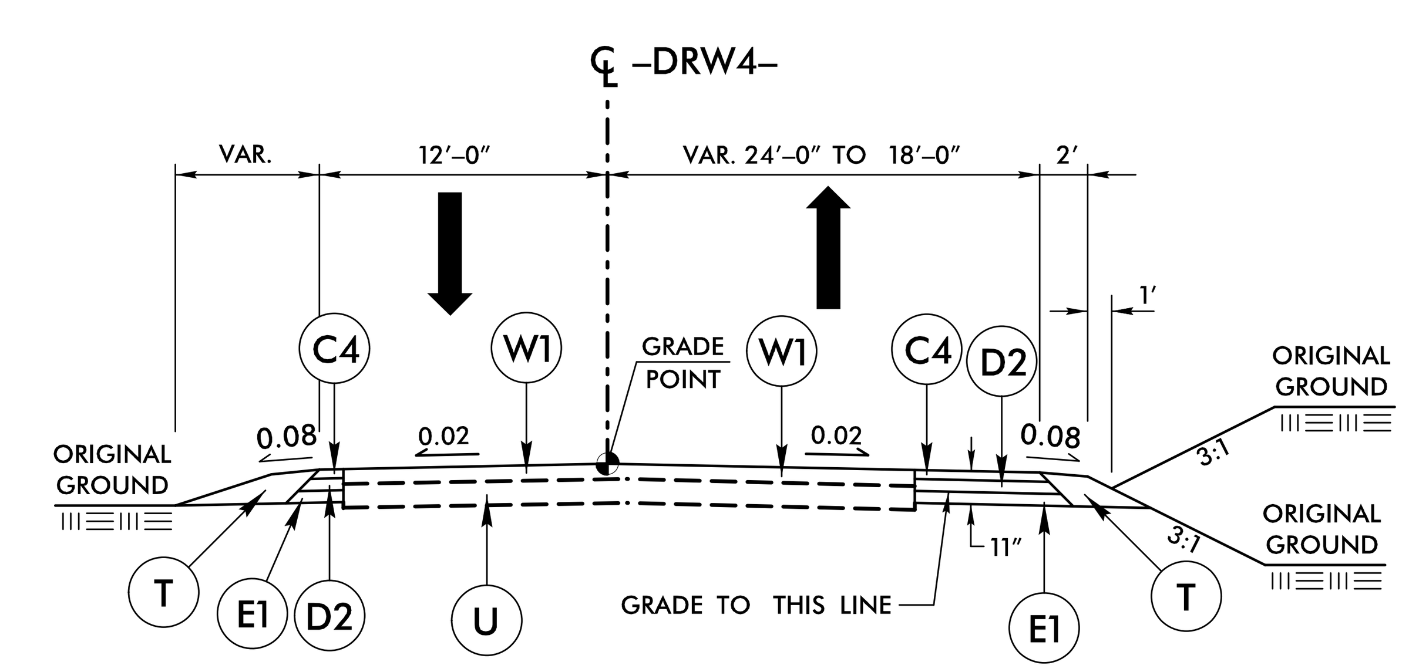
USE TYPICAL SECTION NO. 25A:
FROM -DRW2- STA. 10+39.44 TO 10+90.59 (LT.)

TYPICAL SECTION NO. 25A



TYPICAL SECTION NO. 26

USE TYPICAL SECTION NO. 26:
FROM -DRW4- STA. 10+39.77 TO 11+03.95



TYPICAL SECTION NO. 27

USE TYPICAL SECTION NO. 27:
FROM -DRW4- STA. 11+03.95 TO 11+82.35

6/2/99

5/24/2022
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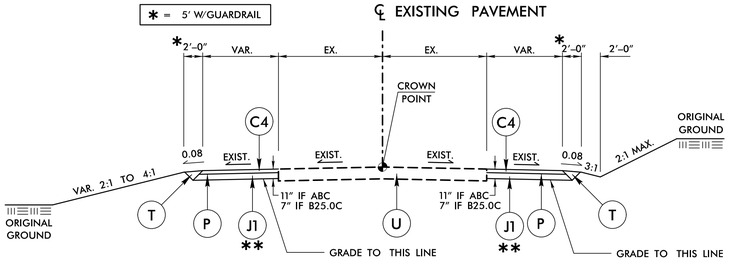
6/2/99



TYPICAL SECTION NO. 28

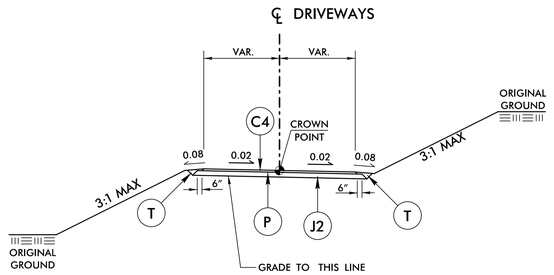
USE TYPICAL SECTION NO. 28:

AT TEMPORARY WIDENING LOCATIONS AS SHOWN IN THE WORK ZONE TRAFFIC CONTROL PLANS.

DIMENSIONS SHOWN ARE MINIMUMS AND SUBJECT TO CHANGE AS DIRECTED BY THE ENGINEER TO SUIT FIELD CONDITIONS.

WIDENING IS SHOWN ON BOTH SIDES OF THE TYPICAL TO REFLECT THE CUT AND FILL SECTIONS. HOWEVER, ACTUAL TEMPORARY WIDENING WILL TYPICALLY OCCUR ONLY ON ONE SIDE OF THE EXISTING PAVEMENT AT ONE TIME – SEE THE TRAFFIC CONTROL PLANS FOR PHASING.

NOTE:
** FOR TEMPORARY PAVEMENT, IN AREAS OF NARROW WIDENING, 4.0" OF B25.0C MAY BE USED IN LIEU OF THE 8.0" OF ABC IN WHICH CASE THE PRIME COAT IS NOT NEEDED.



TYPICAL SECTION NO. 29

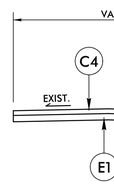
USE TYPICAL SECTION NO. 29:

AT DRIVEWAY LOCATIONS TO THE DIMENSIONS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

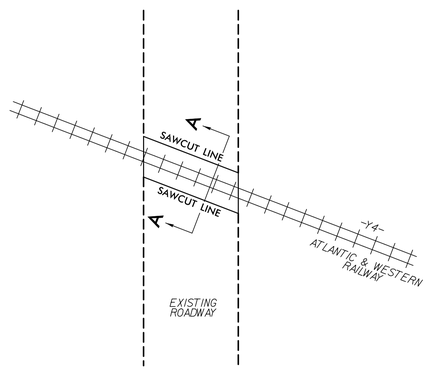
NOTE:
DRIVEWAY PAVEMENT TO BE REPLACED "IN KIND".
— IF EXISTING DRIVEWAY IS GRAVEL, REPLACE WITH 6" ABC.
— IF EXISTING DRIVEWAY IS ASPHALT, REPLACE WITH 3" S9.5B ON 6" ABC (PER THE TYPICAL SHOWN).
— NOTABLE EXCEPTION: IF PROPOSED DRIVEWAY GRADE IS >7%, PAVE WITH 3" S9.5B ON 8" ABC.

— IF EXISTING DRIVEWAY IS CONCRETE, REPLACE WITH AT LEAST 6" JOINTED CONCRETE REINFORCED WITH WIRE MESH.

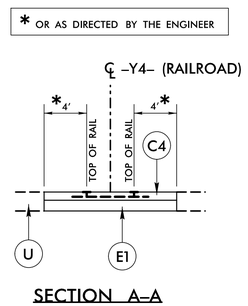
RAILROAD CROSSING REMOVAL DETAIL



TYPICAL SECTION NO. 30



PLAN VIEW



SECTION A–A

USE TYPICAL SECTION NO. 30:

AT THE FOLLOWING RAILROAD CROSSING LOCATIONS:
–Y4– @ –Y3– (NASH ST.)
–Y4– @ –L– (NC 42)
–Y4– @ –Y5– (ROSSER RD.)

NOTE:
— CONTRACTOR TO SAWCUT AND REMOVE EXISTING PAVEMENT AS DIRECTED BY THE ENGINEER
— ATLANTIC & WESTERN RAILWAY TO REMOVE THE RAILROAD CROSSING
— CONTRACTOR TO PERFORM PAVEMENT REPAIR USING THIS TYPICAL OR AS DIRECTED BY THE ENGINEER

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2A-10

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER MARCUS LOVERY
8/3/2022 | 12:42 PM EDT

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON
8/3/2022 | 11:55 AM PDT

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TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

C1	1½" S9.5C
C2	3" S9.5C
C3	VAR. S9.5C
C4	3" S9.5B
C5	VAR. S9.5B
D1	2½" I19.0C
D2	4" I19.5C
D3	VAR. I19.0C
E1	4" B25.0C
E2	5½" B25.0C
E3	VAR. B25.0C
J1	8" ABC
J2	6" ABC
L	CLASS IV STAB.
N	GEOTEXTILE
P	PRIME COAT
R1	2'-6" C & G
R2	1'-6" C & G
R3	5" CONC. ISLAND
R4	EXIST. C & G
R5	2'-9" C & G
R6	8"X18" CURB
R7	GRANITE CURB
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	1½" MILLING
V2	3" MILLING
V3	2½" MILLING
W1	WEDGING
W2	WEDGING
W3	WEDGING

8/3/2022
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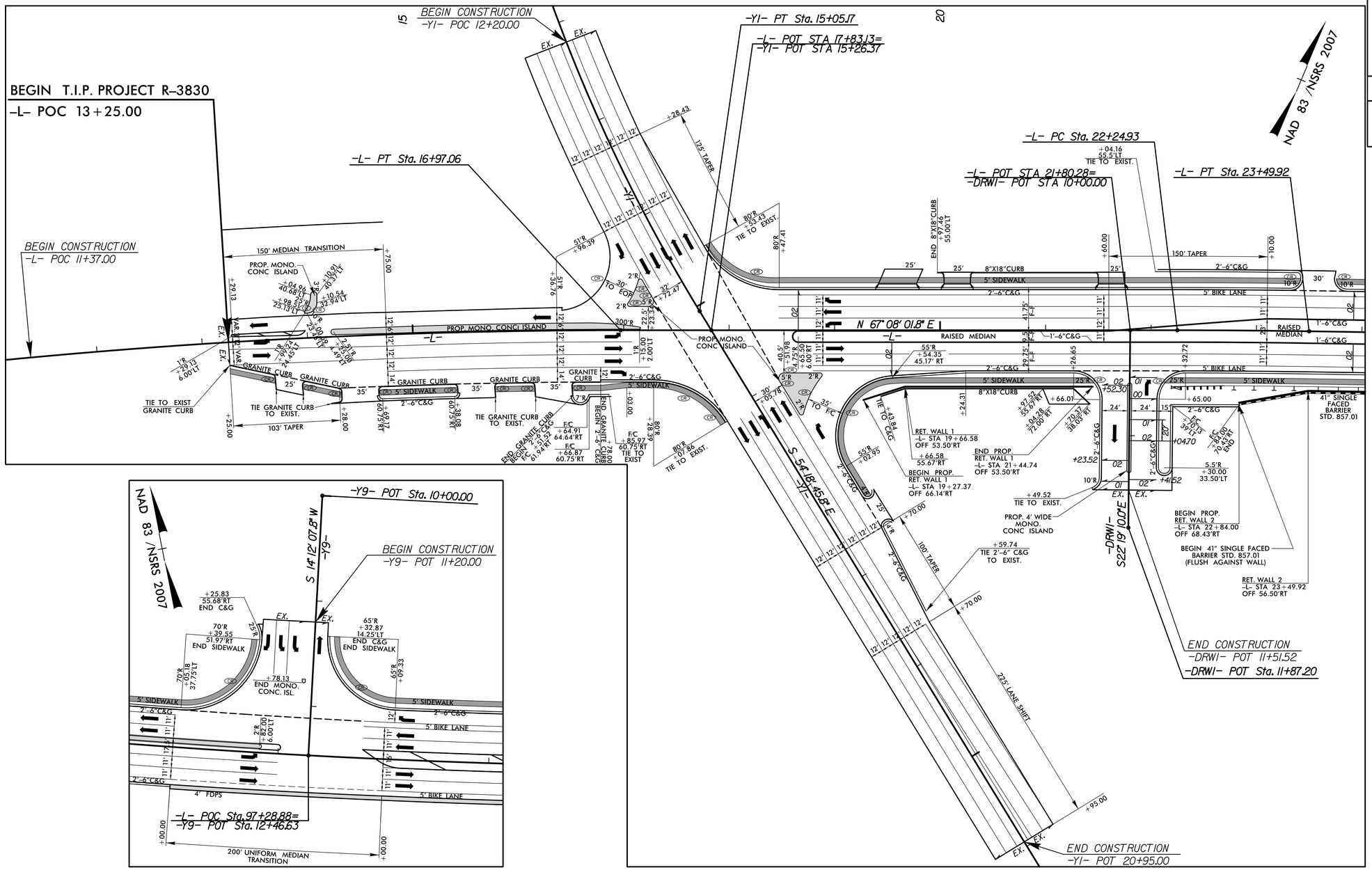
User: mlovery

8/17/99

REVISIONS

INTERSECTION DETAILS

NOTE:
LOCATIONS OF WHEELCHAIR RAMP SYMBOLS (♿) ARE APPROXMATE.
REFER TO THE PAVEMENT MARKING PLANS FOR EXACT LOCATIONS.



NC 42 (–L–) /
US 421 BYPASS SB RAMP (–Y9–) INTERSECTION DETAIL

SEE SHEET 10 FOR PLAN VIEW

US 421 /NC87 /NC42 (–Y1–) S. HORNER BLVD. /
NC 42 (–L–) INTERSECTION DETAIL

SEE SHEET 04 FOR PLAN VIEW

NC 42 (–L–) /
(–DRW1–) INTERSECTION DETAIL

SEE SHEET 04 FOR PLAN VIEW

CHANNELIZATION RADII ARE 3' UNLESS OTHERWISE NOTED
RADII DIMENSIONS ARE TO FACE OF CURB (F/C) UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2B-1

R/W SHEET NO.

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER MARCUS LOWERY
6/30/2022 | 3:01 PM EDT

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706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

SCALE
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4/8/2022
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User:mjoyce

CHANNELIZATION RADII ARE 3' UNLESS OTHERWISE NOTED
RADII DIMENSIONS ARE TO FACE OF CURB (F/C) UNLESS OTHERWISE NOTED

120-40-120 / 5.0-5.0 = THREE-CENTERED CURVE (TYP.). RADII AND OFFSET DIMENSIONS ARE TO EOP

INTERSECTION DETAILS

NOTE:
LOCATIONS OF WHEELCHAIR RAMP SYMBOLS ARE APPROXMATE.
REFER TO THE PAVEMENT MARKING PLANS FOR EXACT LOCATIONS.

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2B-2

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 027418 MARCUS LOWERY

6/30/2022 | 3:01 PM EDT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

SCALE
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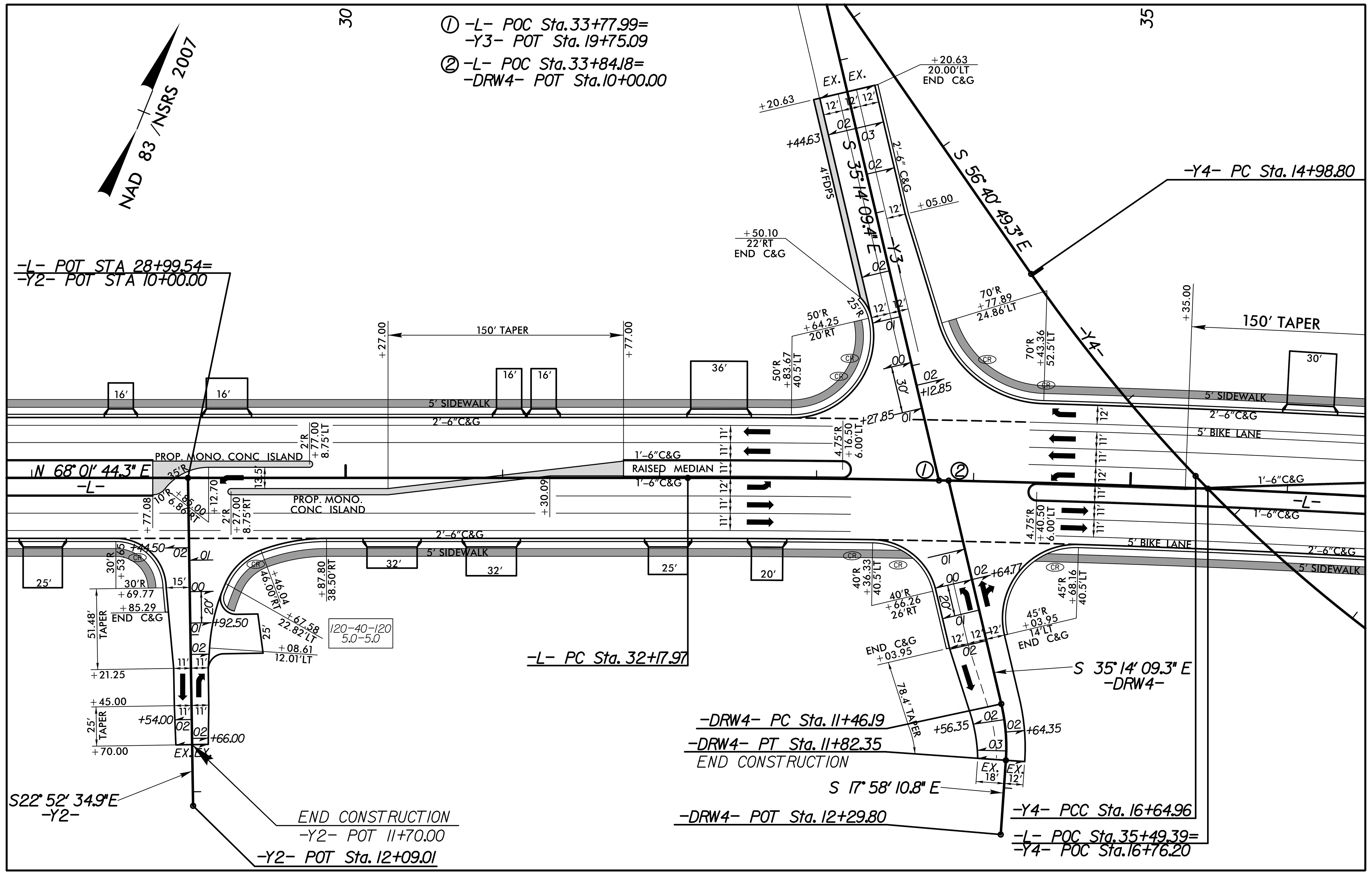
REVISIONS

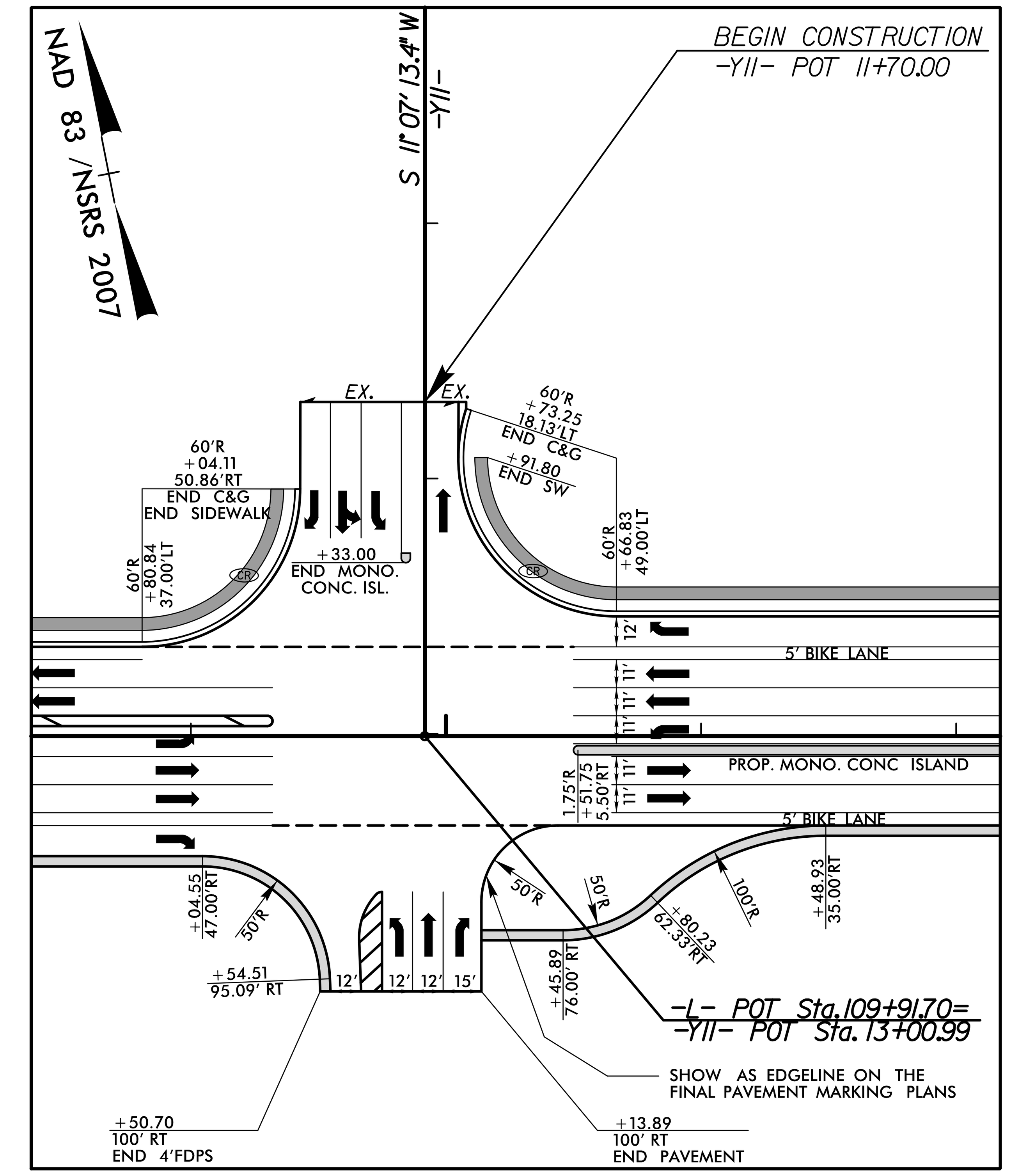


NC 42 (-L-)/
SR 1593 (-Y2-) DOGWOOD ST. INTERSECTION DETAIL

SEE SHEET 05 FOR PLAN VIEW

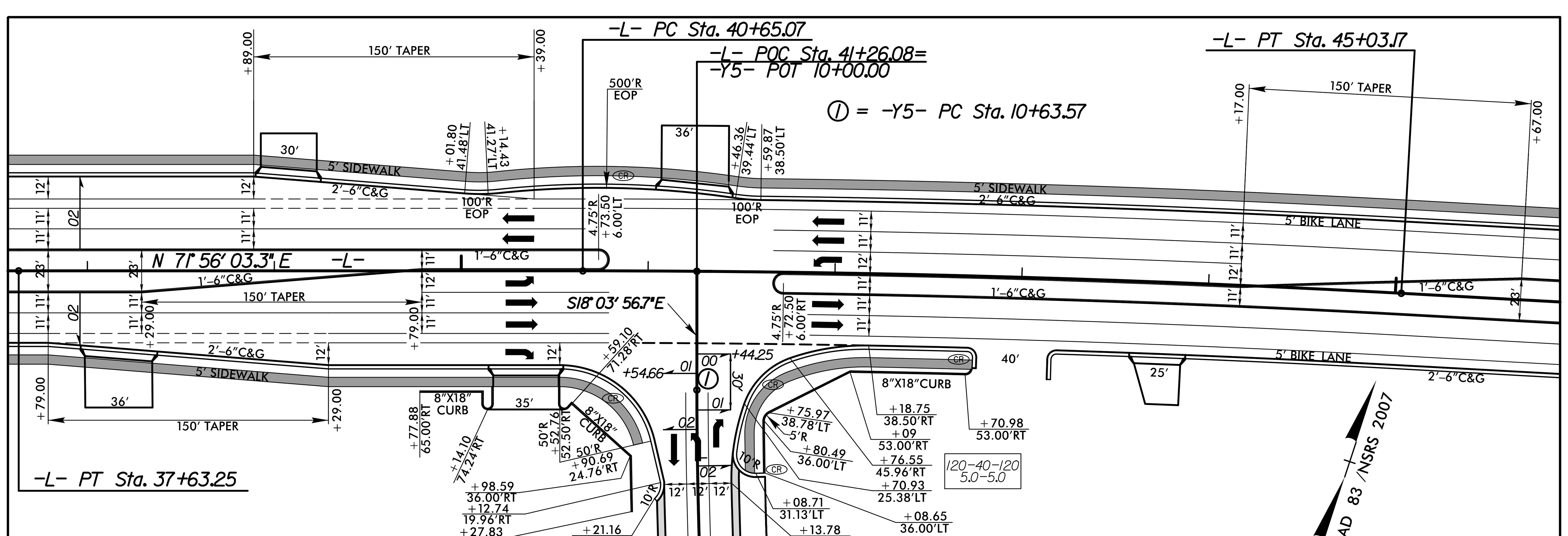
NC 42 (-L-)/
SR 1519 (-Y3-) NASH ST. INTERSECTION DETAIL

SEE SHEET 05 FOR PLAN VIEW



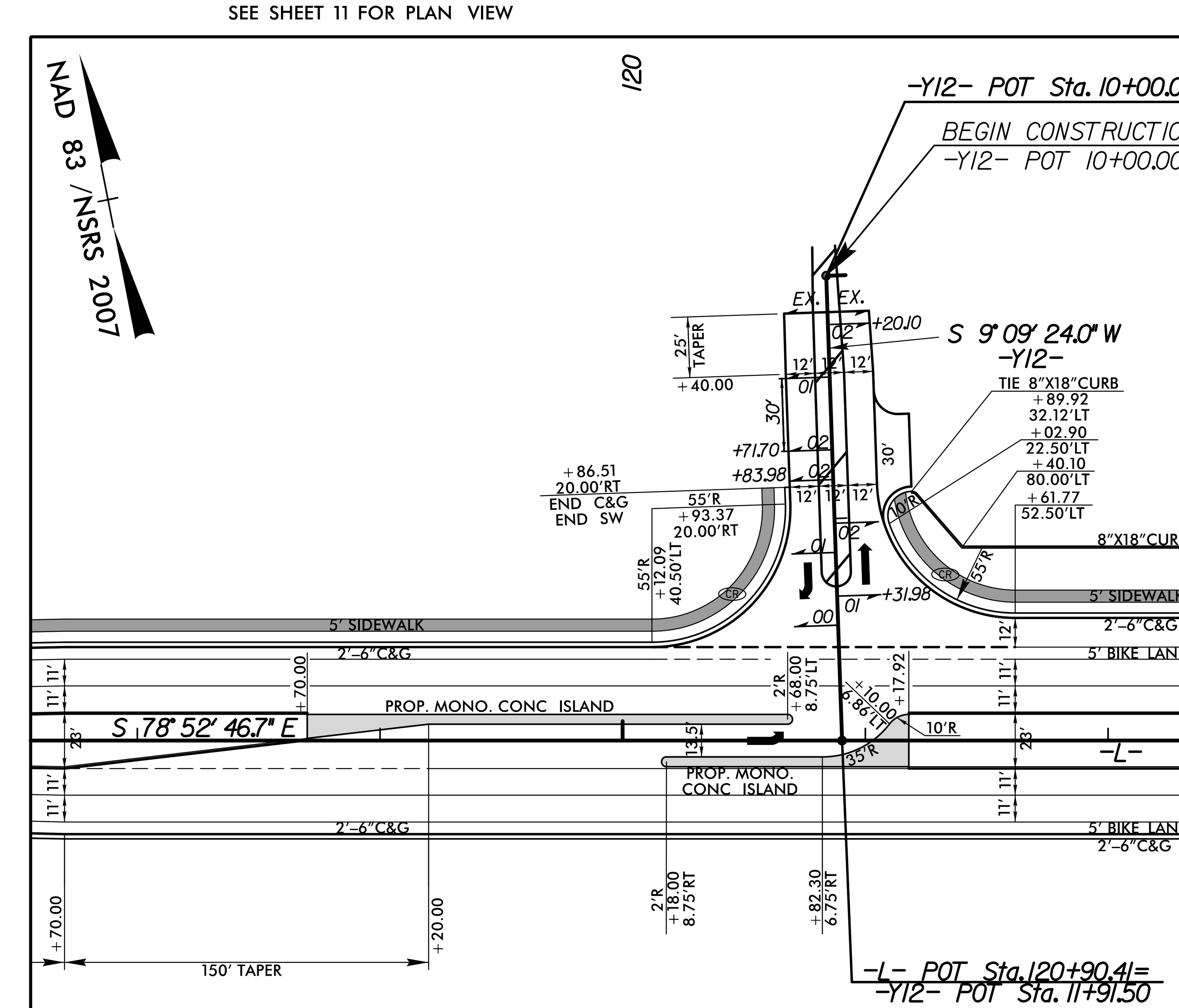
NC 42 (-L-)/
US 421 BYPASS NB RAMP (-Y11-) INTERSECTION DETAIL

SEE SHEET 11 FOR PLAN VIEW



NC 42 (-L-)/
SR 1520 (-Y5-) ROSSER RD. INTERSECTION DETAIL

SEE SHEET 06 FOR PLAN VIEW



NC 42 (-L-)/
SR 1595 (-Y12-) RICE RD. INTERSECTION DETAIL

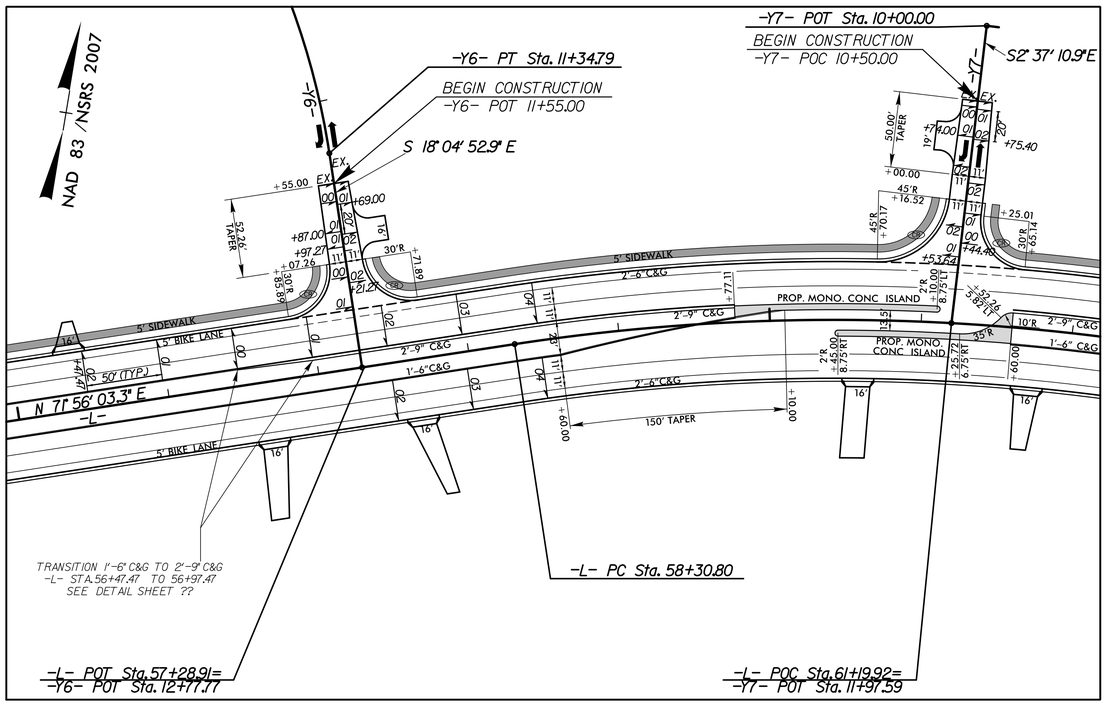
SEE SHEET 12 FOR PLAN VIEW

8/17/99

REVISIONS

INTERSECTION DETAILS

NOTE:
LOCATIONS OF WHEELCHAIR RAMP SYMBOLS (♿) ARE APPROXMATE.
REFER TO THE PAVEMENT MARKING PLANS FOR EXACT LOCATIONS.

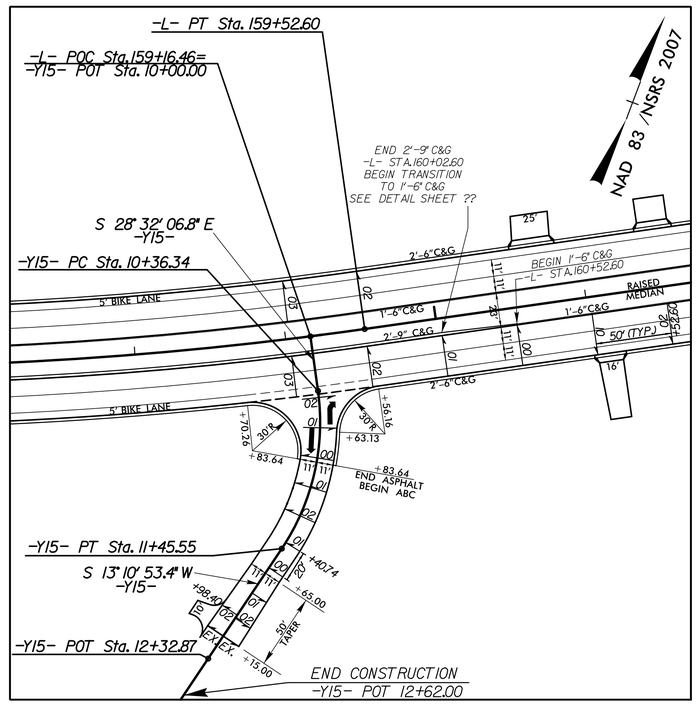


NC 42 (–L–)/
ORIOLE CIR. (–Y6–) INTERSECTION DETAIL

SEE SHEET 07 FOR PLAN VIEW

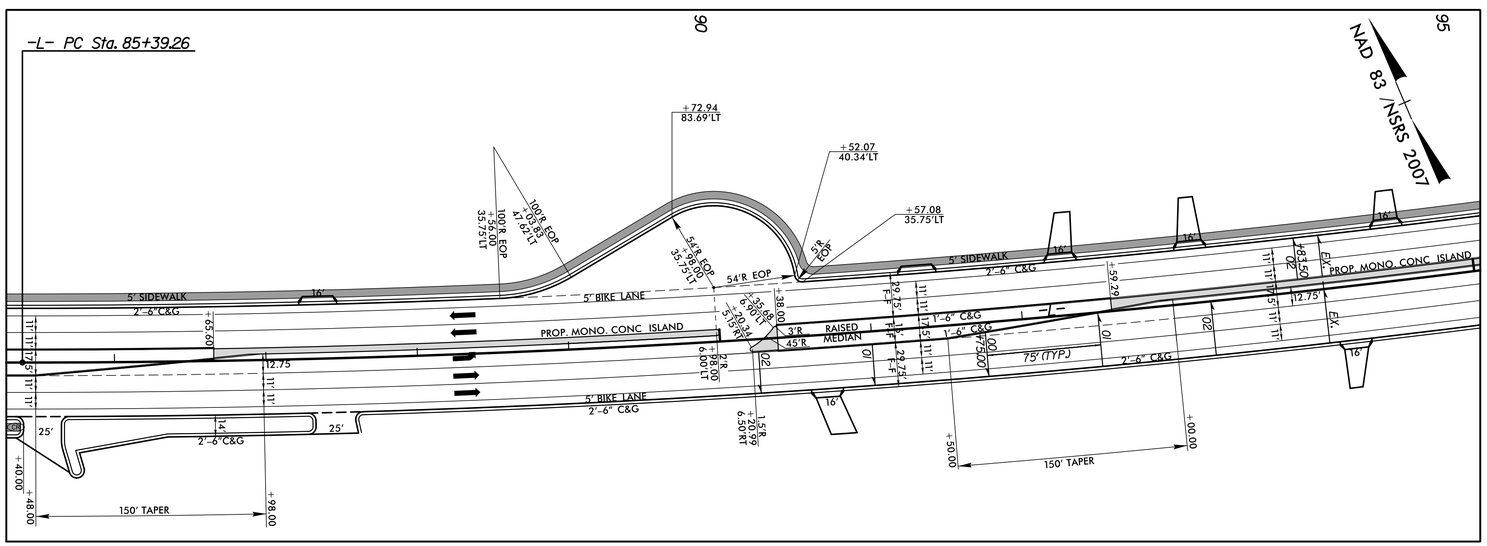
NC 42 (–L–)/
WHIPPOORWILL LN. (–Y7–) INTERSECTION DETAIL

SEE SHEET 07 FOR PLAN VIEW



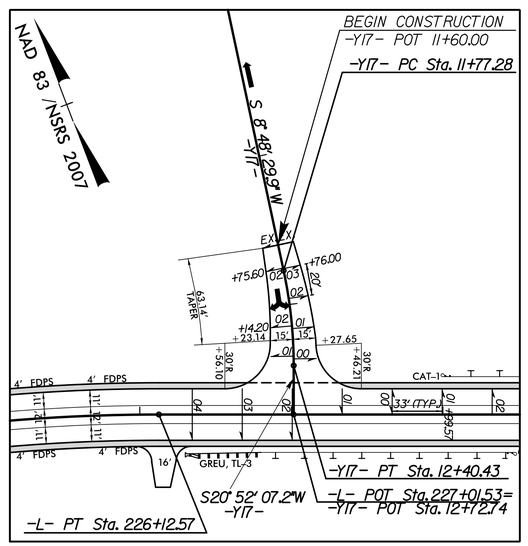
NC 42 (–L–)/
CHAR-LIN DR. (–Y15–) INTERSECTION DETAIL

SEE SHEET 14 FOR PLAN VIEW



NC 42 (–L–)/
ISLAND & BULB DETAILS

SEE SHEETS 09 & 10 FOR PLAN VIEW



SR 1579 (–L–) BROADWAY RD./
SR 1577 (–Y17–) WOODLAND TRAILS RD.
INTERSECTION DETAIL

SEE SHEET 20 FOR PLAN VIEW

CHANNELIZATION RADII ARE 3' UNLESS OTHERWISE NOTED
RADII DIMENSIONS ARE TO FACE OF CURB (F/C) UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2B-3
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA
PROFESSIONAL
MARCUS LOWERY
SEAL
027418
ENGINEER
6/30/2022 | 3:01 PM EDT

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TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

SCALE
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User:mwlowery

8/17/99

REVISIONS

CHANNELIZATION RADII ARE 3' UNLESS OTHERWISE NOTED
RADII DIMENSIONS ARE TO FACE OF CURB (F/C) UNLESS OTHERWISE NOTED

120-40-120 / 5.0-5.0 = THREE-CENTERED CURVE (TYP.). RADII AND OFFSET DIMENSIONS ARE TO EOP

INTERSECTION DETAILS

NOTE:
LOCATIONS OF WHEELCHAIR RAMP SYMBOLS (♿) ARE APPROXMATE.
REFER TO THE PAVEMENT MARKING PLANS FOR EXACT LOCATIONS.

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2B-4

R/W SHEET NO.

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 027418 V. MARCUS LOWERY
6/30/2022 | 3:01 PM EDT

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TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
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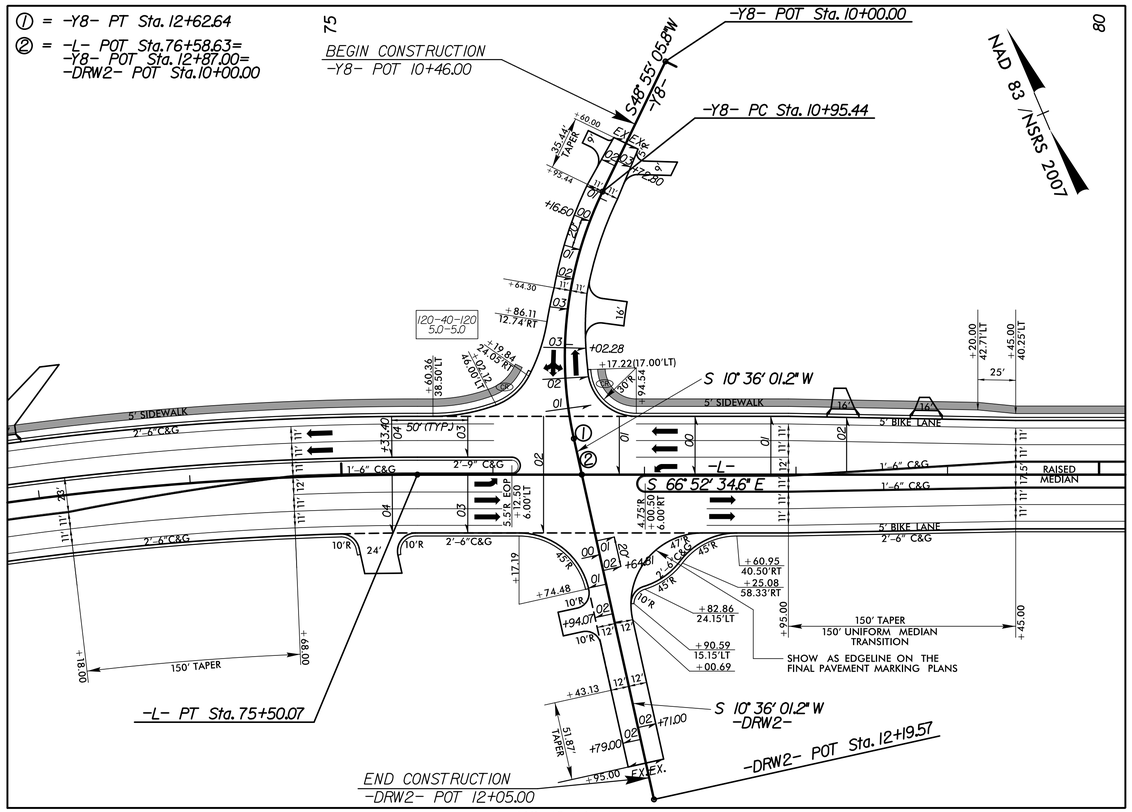
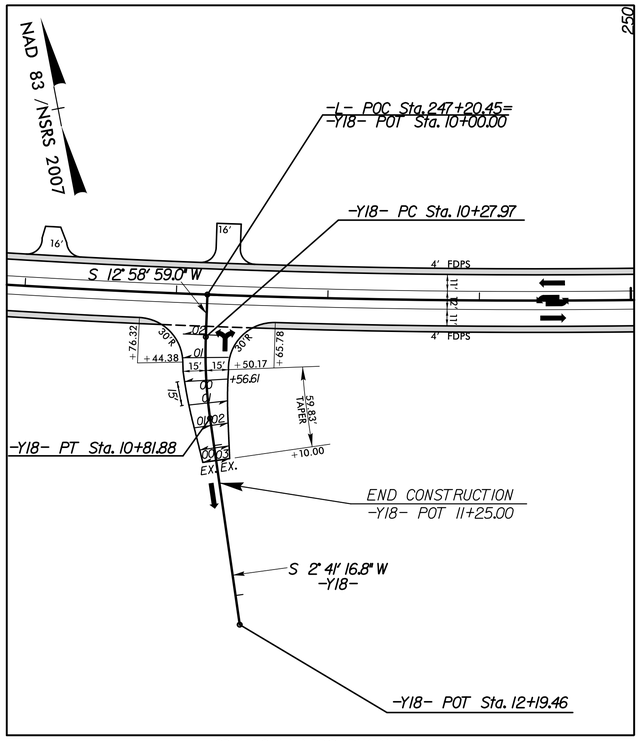
SCALE 0 50 100



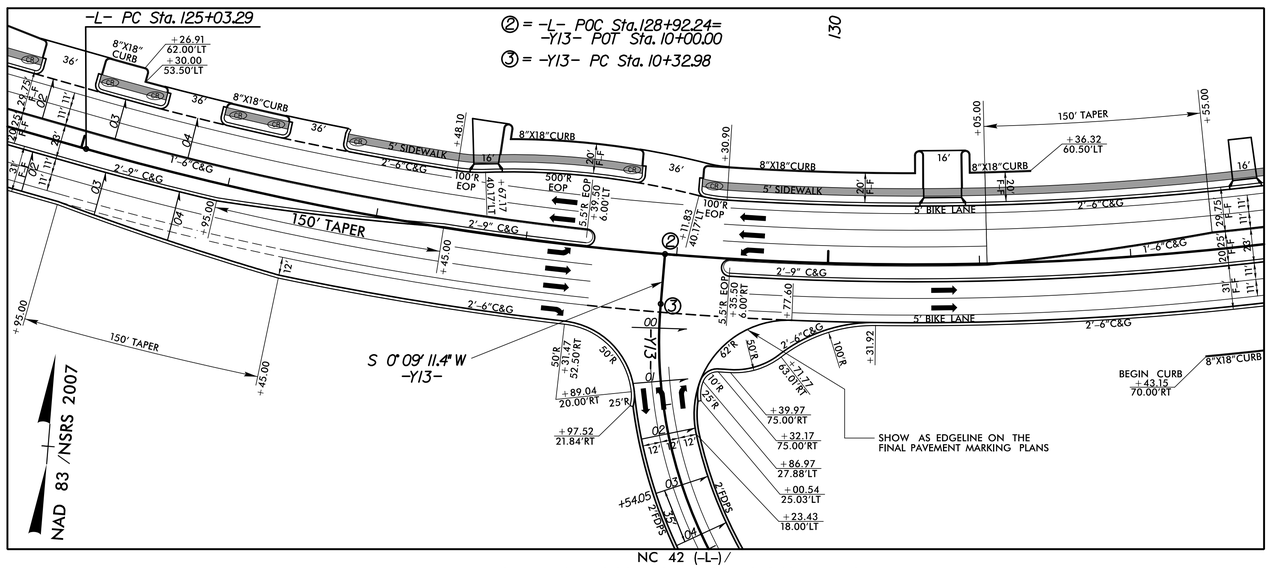
NC 42 (–L–) /
SR 1523 (–Y8–) RICE RD. INTERSECTION DETAIL

SEE SHEET 08 FOR PLAN VIEW



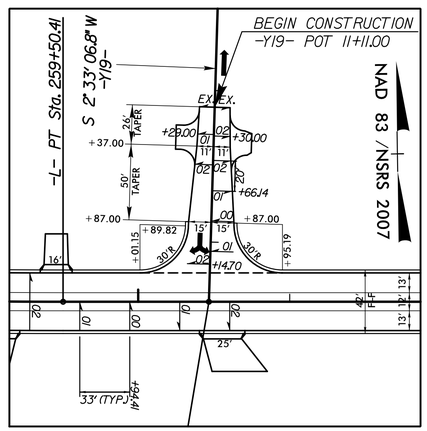
SR 1579 (–L–) BROADWAY RD. /
SR 1532 (–Y18–) DIXIE FARM RD. INTERSECTION DETAIL

SEE SHEET 21 FOR PLAN VIEW



NC 42 (–L–) /
SR 1529 (–Y13–) COX MILL RD. INTERSECTION DETAIL

SEE SHEET 12 FOR PLAN VIEW



SR 1579 (–L–) N. MAIN ST. /
SR 1534 (–Y19–) DALRYMPLE RD. INTERSECTION DETAIL

SEE SHEET 22 FOR PLAN VIEW

4/8/2022
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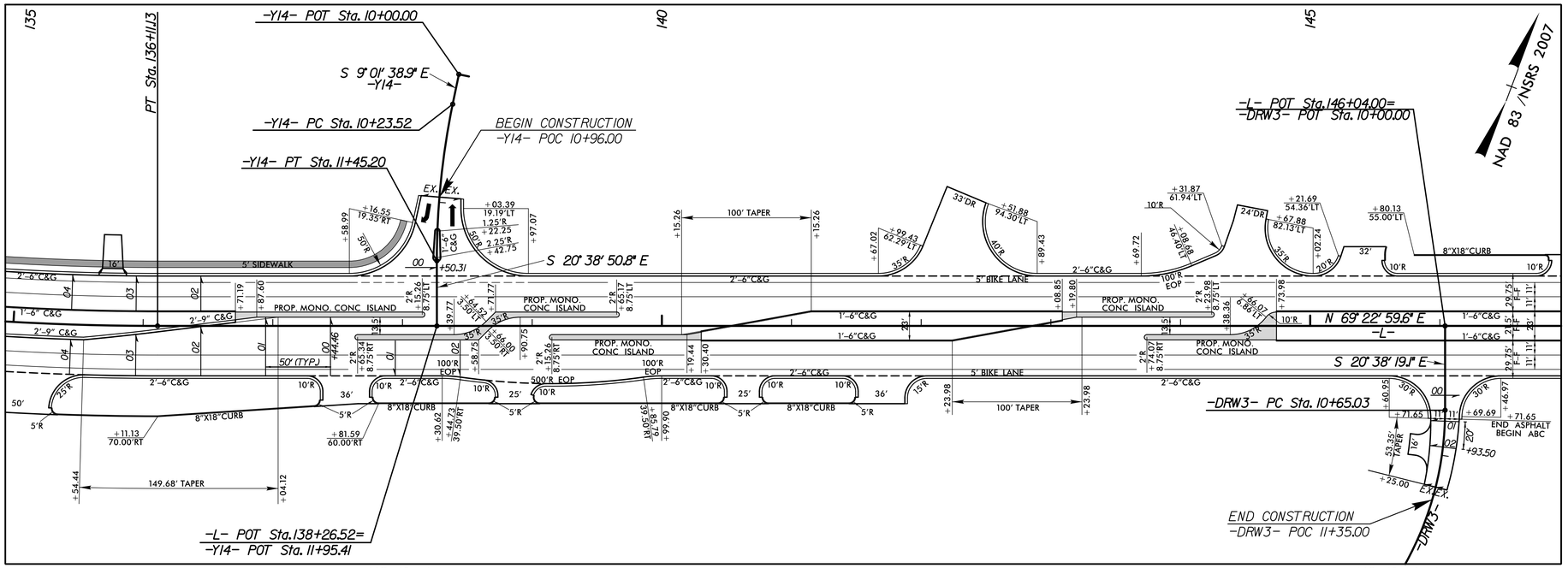
User:(User)

8/17/99

REVISIONS

INTERSECTION DETAILS

NOTE:
LOCATIONS OF WHEELCHAIR RAMP SYMBOLS (♿) ARE APPROXMATE.
REFER TO THE PAVEMENT MARKING PLANS FOR EXACT LOCATIONS.

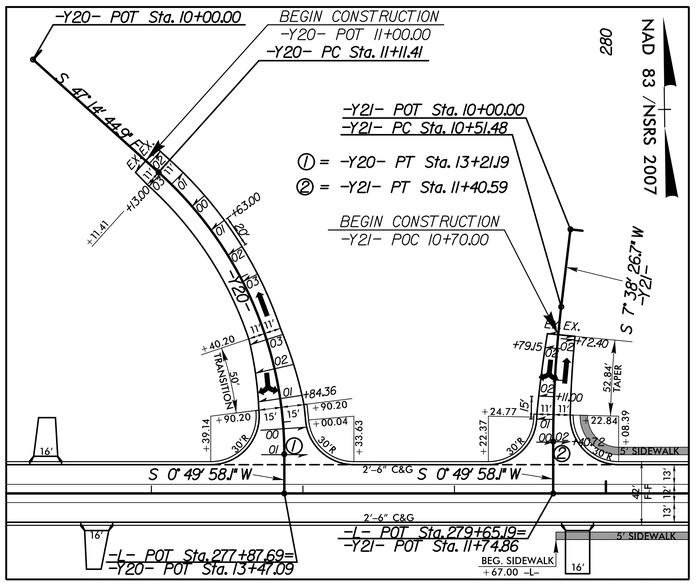


NC 42 (–L–)/
THORNWOOD DR. (–Y14–) INTERSECTION DETAIL

SEE SHEET 13 FOR PLAN VIEW

NC 42 (–L–)/
GREEN MEADOW DR. (–DRW3–) INTERSECTION DETAIL

SEE SHEET 13 FOR PLAN VIEW

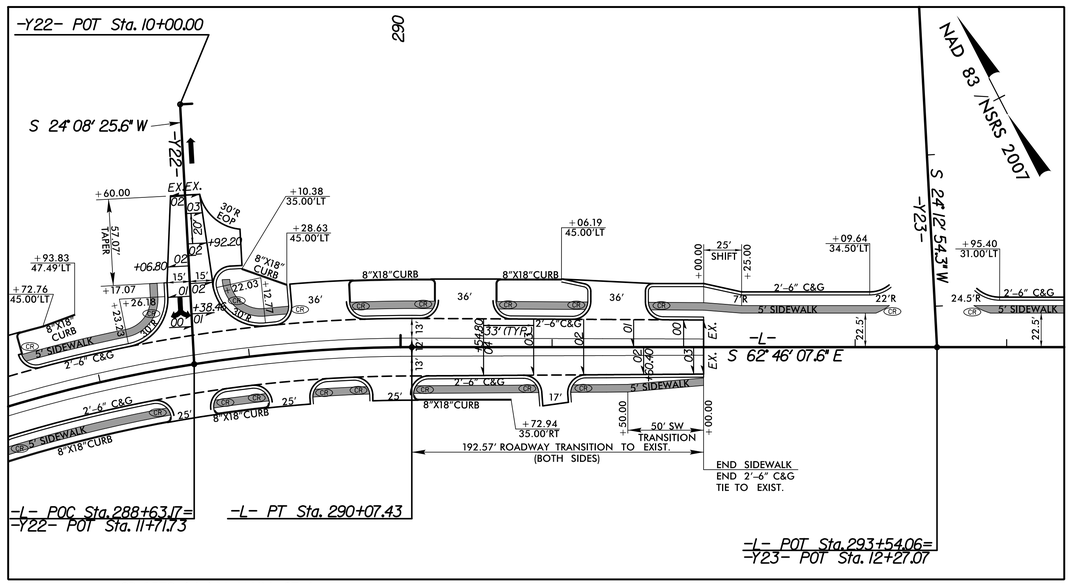


SR 1579 (–L–) N. MAIN ST./
SR 1535 (–Y20–) HUNTER DR. INTERSECTION DETAIL

SEE SHEET 23 FOR PLAN VIEW

SR 1579 (–L–) N. MAIN ST./
GILBERT LETT DR. (–Y21–) INTERSECTION DETAIL

SEE SHEET 23 FOR PLAN VIEW



SR 1579 (–L–) N. MAIN ST./
JOHNSON ST. (–Y22–) INTERSECTION DETAIL

SEE SHEET 24 FOR PLAN VIEW

DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED
CHANNELIZATION RADII ARE 3' UNLESS OTHERWISE NOTED
RADII DIMENSIONS ARE TO FACE OF CURB (F/C) UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2B-5
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 027418 V. MARCUS LOWERY
6/30/2022 | 3:01 PM EDT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

SCALE
0 50 100

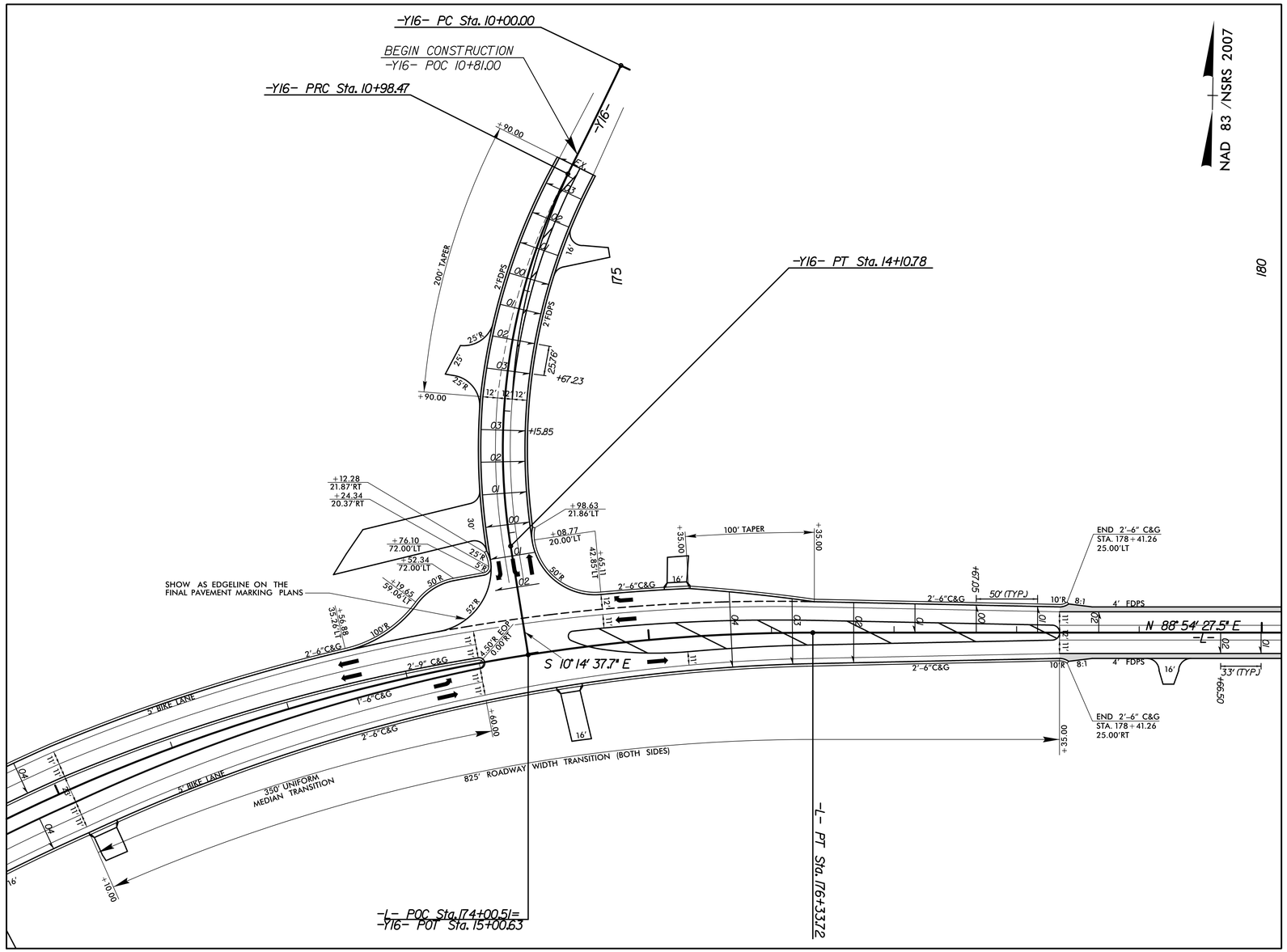
4/8/2022
C:\Projects\NCDOT\R-3830\Roadway\Proj\r-3830_rdy_psh_2b-5.dgn
User:Lowery

8/17/99

REVISIONS

INTERSECTION DETAILS

NOTE:
LOCATIONS OF WHEELCHAIR RAMP SYMBOLS (♿) ARE APPROXMATE.
REFER TO THE PAVEMENT MARKING PLANS FOR EXACT LOCATIONS.



NC 42/SR 1579 (-L-) BROADWAY TD./
NC 42 (-Y16-) AVENTS FERRY RD. INTERSECTION DETAIL

SEE SHEETS 15 & 16 FOR PLAN VIEW

CHANNELIZATION RADII ARE 3' UNLESS OTHERWISE NOTED
RADII DIMENSIONS ARE TO FACE OF CURB (F/C) UNLESS OTHERWISE NOTED
DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

4/8/2022
4:39:20 PM
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User:mlowery

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2B-6
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER MARCUS LOWERY
6/30/2022 | 3:01 PM EDT

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TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

SCALE
0 50 100

-L-
PI Sta 42+84.18
Δ = 3° 08' 15.6" (RT)
D = 0° 42' 58.3"
L = 438.10'
T = 219.11'
R = 8,000.00'
SE = NC

PI Sta 49+69.18
Δ = 3° 08' 15.6" (LT)
D = 0° 42' 58.3"
L = 438.10'
T = 219.11'
R = 8,000.00'
SE = NC

-Y4-
PI Sta 18+43.53
Δ = 21° 44' 18.7" (LT)
D = 6° 09' 39.0"
L = 352.85'
T = 178.57'
R = 930.00'

PI Sta 23+13.81
Δ = 0° 19' 07.1" (RT)
D = 0° 09' 59.9"
L = 191.22'
T = 95.61'
R = 34,384.60'

-Y5-
PI Sta 11+11.37
Δ = 2° 11' 26.8" (LT)
D = 2° 17' 30.6"
L = 95.59'
T = 47.80'
R = 2,500.00'
SE = SEE PLANS

① = -Y5- PC Sta. 10+63.57

NAD 83 /NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2B-7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA
PROFESSIONAL
SEAL
027418
ENGINEER
MARCUS LOWERY
6/30/2022 | 3:01 PM EDT

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TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

REVISIONS 5/14/99

-L- POC Sta. 41+26.08=
-Y5- POT 10+00.00
-L- PC Sta. 40+65.07

-L- PC Sta. 47+50.07

-L- PT Sta. 51+88.18

-L- PT Sta. 45+03.17

-Y4- PT Sta. 20+17.81

-Y4- PC Sta. 22+18.21

-Y4- PT Sta. 24+09.42

-Y5- PT Sta. 11+59.16

-Y5- POT STA 12+90.58=
-Y4- POC STA 23+31.50

BEGIN TEMPORARY PAVEMENT
-L- STA 47+05 +/-

= TEMPORARY PAVEMENT

TEMPORARY PAVEMENT LOCATIONS

SEE TRAFFIC CONTROL PLANS FOR PHASING

MATCHLINE -L- STA 52+00.00
SEE SHEET 2B-8

4/6/2022
R-3830_Roadway\Proj\r-3830_rdy_psh_2b-7.dgn
User:mlowery

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2B-8
RW SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER MARCUS LOWDER
6/30/2022 | 3:01 PM EDT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

REVISIONS 5/14/99

NAD 83 /NSRS 2007

-L-
PI Sta 60+78.95
Δ = 20° 06' 09.9" (RT)
D = 4° 05' 33.2"
L = 491.20'
T = 248.15'
R = 1,400.00'
SE = 0.04
Lr = 200'
NON-STANDARD

-Y6-
PI Sta 10+67.81
Δ = 15° 26' 45.5" (RT)
D = 11° 27' 33.0"
L = 134.79'
T = 67.81'
R = 500.00'
SE = SEE PLANS

-Y6- PC Sta. 10+00.00
-Y6- PT Sta. 11+34.79
BEGIN CONSTRUCTION -Y6- POT 11+55.00
-Y7- POT Sta. 10+00.00
BEGIN CONSTRUCTION -Y7- POC 10+50.00
-L- POC Sta. 61+19.93= -Y7- POT Sta. 11+97.59
-L- POT Sta. 57+28.91= -Y6- POT Sta. 12+77.77
-L- PC Sta. 58+30.80
-L- PT Sta. 63+22.00
MATCHLINE -L- STA. 52+00.00 SEE SHEET 2B-7

CRISPIN V. POPOCA AND WIFE, MARICRUZ M. POPOCA DB 534 PG 489 PC 3 SL 69

43 MARTIN RUIZ LEZAMA AND WIFE, MARIA G. LEZAMA DB 640 PG 705 PC 3 SL 69

42 STEVEN JOLLEY, AND WIFE, TEENA A. JOLLEY DB 1292 PG 242

40 BERTICE D. McDONALD AND WIFE, SHARON W. McDONALD DB 297 PG 450

JESSIE B. NORRIS AND HIS WIFE BARBARA T. NORRIS DB 103 PG 150 PC 3 SL 69

45 FORREST E. WATSON DB 552 PG 985 PC 3 SL 69

48 SHIRLEY H. HARRINGTON DB 495 PG 684 PC 3 SL 69

MAURICE WILSON AND WIFE, MARY D. WILSON DB 942 PG 613 PC 3 SL 69

50

54 WATSON P. KELLY DB 348 PG 5 PC 4 SL 199

WICKER-BATCHELOR RENTAL CO. DB 624 PG 580 PC 3 SL 69

52

51 KIMCUC THI MICHAEL DB 1353 PG 316 PC 2 SL 660 PC 2 SL 798

53 LINH D. PHAN AND WIFE HUONG T. NGUYEN DB 616 PG 638

55 TABOYS CORPORATION, A NORTH CAROLINA CORPORATION DB 566 PG 738

46 IGLESIA DE DIOS GETSEMANI DB 560 PG 520 PC 2 SL 660 PC 2 SL 798

47 DEBRA S. DUNN AND DAVID JAMES OQUINN DB 739 PG 414 PC 2 SL 660 PC 2 SL 798

44 M & H PROPERTIES, INC. DB 357 PG 693 PC 2 SL 660 PC 2 SL 798

41 WAYNE A. HARGROVE DB 696 PG 16 PC 2 SL 660 PC 2 SL 798

39 PAMELA M. BRADFORD DB 823 PG 415 PC 2 SL 660 PC 2 SL 798

TRANSITION 1'-6" C&G TO 2'-9" C&G -L- STA.56+47.47 TO 56+97.47 SEE DETAIL SHEET 2C-2

END TEMPORARY PAVEMENT -L- STA 59+45 +/-

= TEMPORARY PAVEMENT

TEMPORARY PAVEMENT LOCATIONS

SEE TRAFFIC CONTROL PLANS FOR PHASING

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PROJECT REFERENCE NO.	SHEET NO.
R-3830	2B-9
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

DocuSigned by: Marcus Lowery
3EA77CBED01848T...

SEAL 027418
V. MARCUS LOWERY

6/30/2022 | 3:01 PM EDT

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TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

-L-	-Y13-
PI Sta 130+71.82	PI Sta 11+54.71
Δ = 31° 44' 13.7" (LT)	Δ = 44° 10' 17.0" (LT)
D = 2° 51' 53.2"	D = 19° 05' 54.9"
L = 1,107.84'	L = 231.28'
T = 568.53'	T = 121.73'
R = 2,000.00'	R = 300.00'
SE = 0.04	SE = SEE PLANS
Lr = 200'	

① = -L- POT Sta.120+90.41= -Y12- POT Sta. 11+91.50

② = -L- POC Sta.128+92.24= -Y13- POT Sta. 10+00.00

③ = -Y13- PC Sta. 10+32.98

NAD 83 / NSRS 2007

BEGIN TEMPORARY PAVEMENT
-L- STA 128+09 +/-

END TEMPORARY PAVEMENT
-L- STA 132+00 +/-

▨ = TEMPORARY PAVEMENT

TEMPORARY PAVEMENT LOCATIONS

SEE TRAFFIC CONTROL PLANS FOR PHASING

REVISIONS

5/14/99

4/11/2022
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PROJECT REFERENCE NO.	SHEET NO.
R-3830	2B-10
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER MARCUS LOWERY
6/30/2022 | 3:01 PM EDT

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TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

REVISIONS 5/14/99

NAD 83 /NSRS 2007

-L-
PI Sta 172+79.26
Δ = 27° 37' 35.0" (RT)
D = 3° 49' 11.0"
L = 723.26'
T = 368.80'
R = 1,500.00'
SE = 0.04
Lr = 200'

BEGIN TEMPORARY PAVEMENT
-L- STA 166+85 +/-

104 — 107 T & S SLOAN PROPERTIES, LLC DB 1030 PG 345 PC 9 SL 90E — 109 BELINDA GAIL DICKENS DB 782 PG 574 PC 9 SL 90E — 111 DONALD G. THOMAS AND WIFE, MARIE B. THOMAS DB 624 PG 553 PC 1 SL 176 — 112 DONALD GENE THOMAS DB 291 PG 145 PC 1 SL 176 — 113 A.K. GRIFFIN, JR. AND WIFE, MARY K. GRIFFIN DB 291 PG 149 PC 1 SL 176 — 114 EDNA M. DICKENS DB 106 PG 629

108 ALICE FAYE BRYANT DB 623 PG 936 — 110 ROUTE 2, BOX 236, LLC DB 1119 PG 538 PC 2006 SL 246

BEGIN TEMPORARY PAVEMENT
-L- STA 168+00 +/-

TRANSITION 1'-6" C&G TO 2'-9" C&G
-L- STA 167+77.13 TO 168+27.13
SEE DETAIL SHEET 2C-2

-L- PC Sta. 169+10.46

TBM=10

MATCHLINE -L- STA. 172+00.00
SEE SHEET 2B-11

= TEMPORARY PAVEMENT

TEMPORARY PAVEMENT LOCATIONS

SEE TRAFFIC CONTROL PLANS FOR PHASING

4/11/2022
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User:mlowery

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2B-11
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER MARCUS LOWERY
6/30/2022 | 3:01 PM EDT

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TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

REVISIONS 5/14/99

END TEMPORARY PAVEMENT
–L– STA 172+00 +/–

–L–
PI Sta 172+79.26
Δ = 27° 37' 35.0" (RT)
D = 3° 49' 11.0"
L = 723.26'
T = 368.80'
R = 1,500.00'
SE = 0.04
Lr = 200'

PI Sta 183+58.98
Δ = 16° 57' 18.8" (LT)
D = 3° 34' 51.6"
L = 473.48'
T = 238.48'
R = 1,600.00'
SE = 0.04
Lr = 132'

–Y16–
PI Sta 10+49.24
Δ = 1° 09' 01.0" (RT)
D = 1° 10' 05.4"
L = 98.47'
T = 49.24'
R = 4,904.81'
V = 40 mph
SE = SEE PLANS

PI Sta 12+59.91
Δ = 35° 47' 16.0" (LT)
D = 11° 27' 33.0"
L = 312.31'
T = 161.44'
R = 500.00'
V = 40 mph
SE = SEE PLANS

NAD 83 /NSRS 2007

GEORGE WAYNE WATSON AND WIFE, JUDY G. WATSON
EST 01-E PG 222
DB 1410 PG 540
PC 2015 SL 146
116

–Y16– PC Sta. 10+00.00
BEGIN CONSTRUCTION
–Y16– POC 10+81.00
–Y16– PRC Sta. 10+98.47

CHRISTOPHER WADE DEAN
DB 1363 PG 620
PC 4 SL 211
115

JOSE LUIS LLAMAS GARCIA AND WIFE, SAGRARIO C. TORRES
DB 925 PG 374
118

DONALD G. THOMAS
DB 654 PG 156
119

–Y16– PT Sta. 14+10.78

EDNA M. DICKENS
DB 106 PG 629
114

BEGIN TEMPORARY PAVEMENT
–L– STA 181+40 +/–

WILBER F. THOMAS AND WIFE, BOBBIE S. THOMAS
DB 329 PG 956
120

BEGIN BIKE LANE STA 178+35
END BIKE LANE STA 178+35

–L– PC Sta. 181+20.50

ANTHONY HART AND WIFE SANDRA HART
DB 1508 PG 718
PC 10 SL 19C
122

BETTIE B. GILLIS
DB 630 PG 416
PC 8 SL 95A
121

WILBER F. THOMAS AND WIFE, BOBBIE S. THOMAS
DB 329 PG 956
117

WILBER F. THOMAS AND WIFE, BOBBIE S. THOMAS
DB 329 PG 956
117

MATCHLINE –L– STA 172+00.00 SEE SHEET 2B-10

MATCHLINE –L– STA 185+00.00 SEE SHEET 2B-12

–L= POC Sta. 174+00.51=
–Y16– POT Sta. 15+00.63

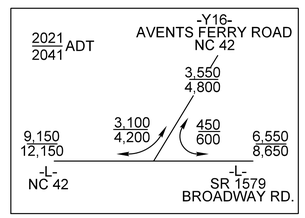
–L– PT Sta. 176+33.72

END TEMPORARY PAVEMENT
–L– STA 173+25 +/–

BEGIN TEMPORARY PAVEMENT
–L– STA 181+20 +/–

825' ROADWAY WIDTH TRANSITION (BOTH SIDES)

350' UNIFORM MEDIAN TRANSITION



= TEMPORARY PAVEMENT

TEMPORARY PAVEMENT LOCATIONS

SEE TRAFFIC CONTROL PLANS FOR PHASING

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2B-12
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER V. MARCUS LOWERY

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TGS ENGINEERS
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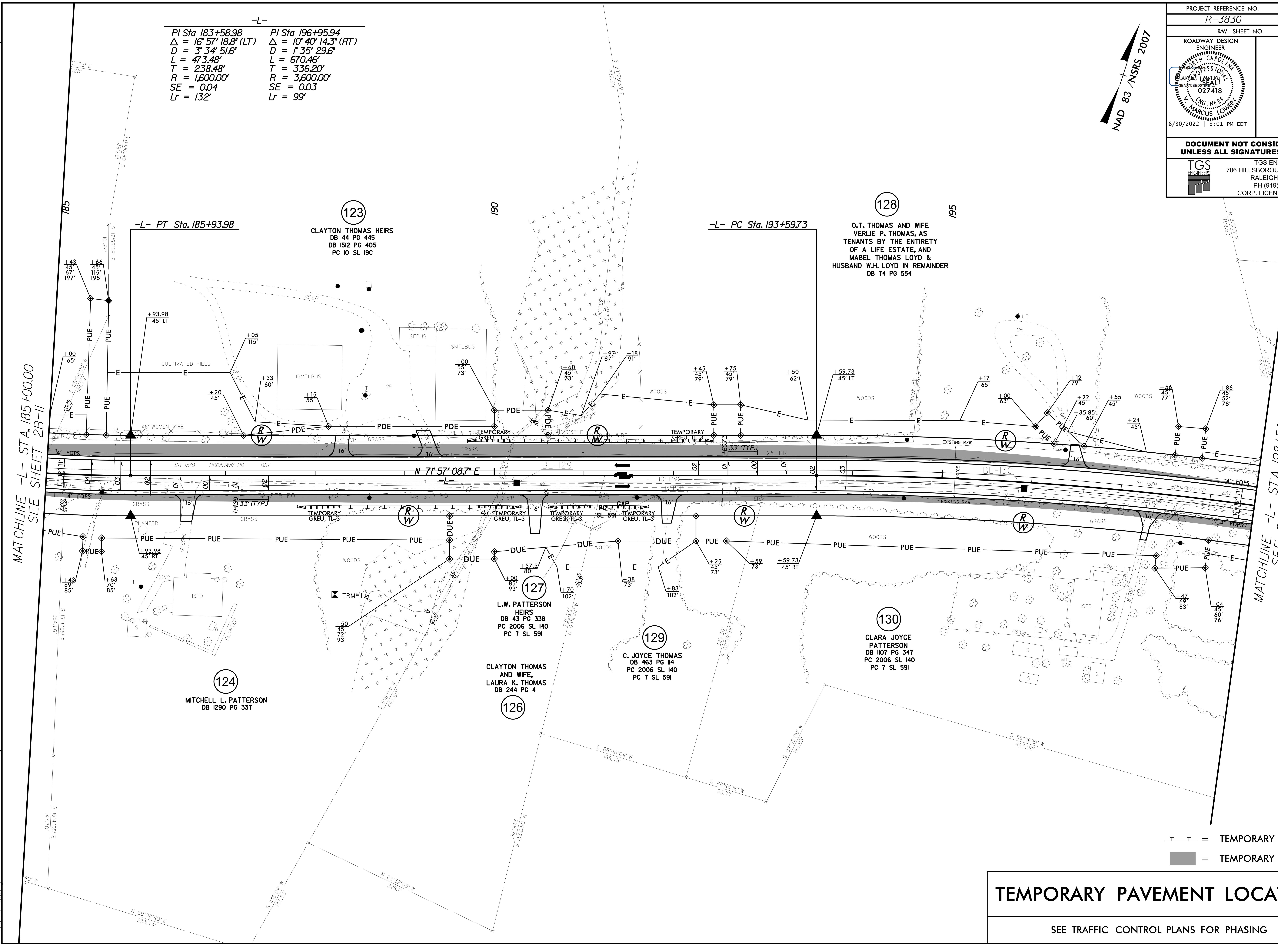
REVISIONS


-L-
PI Sta 183+58.98
△ = 16° 57' 18.8" (LT)
D = 3° 34' 51.6"
L = 473.48'
T = 238.48'
R = 1,600.00'
SE = 0.04
Lr = 132'
PI Sta 196+95.94
△ = 10° 40' 14.3" (RT)
D = 1° 35' 29.6"
L = 670.46'
T = 336.20'
R = 3,600.00'
SE = 0.03
Lr = 99'
NAD 83 / NSRS 2007
MATCHLINE -L- STA. 185+00.00 SEE SHEET 2B-11
MATCHLINE -L- STA. 198+50.00 SEE SHEET 2B-13
-L- PT Sta. 185+93.98
-L- PC Sta. 193+59.73
N 71° 57' 08.7" E
SR 1579 BROADWAY RD BST
123
CLAYTON THOMAS HEIRS
DB 44 PG 445
DB 1512 PG 405
PC 10 SL 19C
128
O.T. THOMAS AND WIFE
VERLIE P. THOMAS, AS
TENANTS BY THE ENTIRETY
OF A LIFE ESTATE, AND
MABEL THOMAS LOYD &
HUSBAND W.H. LOYD IN REMAINDER
DB 74 PG 554
124
MITCHELL L. PATTERSON
DB 1290 PG 337
126
CLAYTON THOMAS
AND WIFE,
LAURA K. THOMAS
DB 244 PG 4
127
L.W. PATTERSON
HEIRS
DB 43 PG 338
PC 2006 SL 140
PC 7 SL 591
129
C. JOYCE THOMAS
DB 463 PG 114
PC 2006 SL 140
PC 7 SL 591
130
CLARA JOYCE
PATTERSON
DB 1107 PG 347
PC 2006 SL 140
PC 7 SL 591
TEMPORARY GREU, TL-3
33' (TYP.)
CULTIVATED FIELD
WOODS
GRASS
TBM#11

T T = TEMPORARY GUARDRAIL

= TEMPORARY PAVEMENT

TEMPORARY PAVEMENT LOCATIONS

SEE TRAFFIC CONTROL PLANS FOR PHASING

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2B-13
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER MARCUS LOWERY
6/30/2022 | 3:01 PM EDT

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TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

REVISIONS 5/14/99

NAD 83 /NSRS 2007

-L- PI Sta 196+95.94
Δ = 10° 40' 14.3" (RT)
D = 1° 35' 29.6"
L = 670.46'
T = 336.20'
R = 3,600.00'
SE = 0.03
Lr = 99'

-L- PI Sta 211+14.26
Δ = 12° 08' 25.1" (RT)
D = 3° 22' 13.2"
L = 360.21'
T = 180.78'
R = 1,700.00'
SE = 0.04
Lr = 132'

MATCHLINE -L- STA. 198+50.00 SEE SHEET 2B-12

MATCHLINE -L- STA. 212+00.00 SEE SHEET 2B-14

-L- PT Sta. 200+30.19

-L- PC Sta. 209+33.48

N 82° 37' 23.0" E -L-

(131) CHRISTOPHER JODY MEASAMER
DB 1114 PG 487
PC 2006 SL 196
PC 2011 SL 131
PC 9 SL 316

(133) LARRY W. MEASAMER, AND WIFE SHARON B. MEASAMER
DB 683 PG 83
PC 2006 SL 196
PC 2011 SL 131
PC 9 SL 316

(135) WILLIAM AVERY HUTCHENS, III AND WIFE, SHARON ROSSER HUTCHENS
DB 977 PG 358
PC 6 SL 108
PC 7 SL 81

(137) DONALD G. THOMAS AND WILLIAM AVERY HUTCHEN, III AND WILLIAM AVERY HUTCHEN, II
DB 951 PG 957
PC 10 SL 49E

(139) RICHARD F. KOCHENBERGER AND WIFE, BARBARA KOCKENBERGER
DB 660 PG 496
PC 8 SL 99G

(132) THE ESTATE OF DONALD G. THOMAS
DB 297 PG 348
DB 447 PG 608
DB 1521 PG 18

(136) WILLIAM AVERY HUTCHENS, III AND WIFE, SHARON ROSSER HUTCHENS
DB 977 PG 358
PC 6 SL 108
PC 7 SL 81

(138) SYLVIA T. THOMAS AND HUSBAND, WALTER D. THOMAS
DB 577 PG 763
PC 8 SL 551

(141) TRAVIS W. BUCHANAN AND WIFE CANDACE C. BUCHANAN
DB 1446 PG 459
DB 1447 PG 660
DB 1521 PG 794
PC 8 SL 551

JOSEPH C. THOMAS
DB 982 PG 245
PC 9 SL 90D
PC 2005 SL 107

= TEMPORARY GUARDRAIL

= TEMPORARY PAVEMENT

TEMPORARY PAVEMENT LOCATIONS

SEE TRAFFIC CONTROL PLANS FOR PHASING

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2B-14
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 027418 ENGINEER V. MARCUS LOWERY

6/30/2022 | 3:01 PM EDT

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TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
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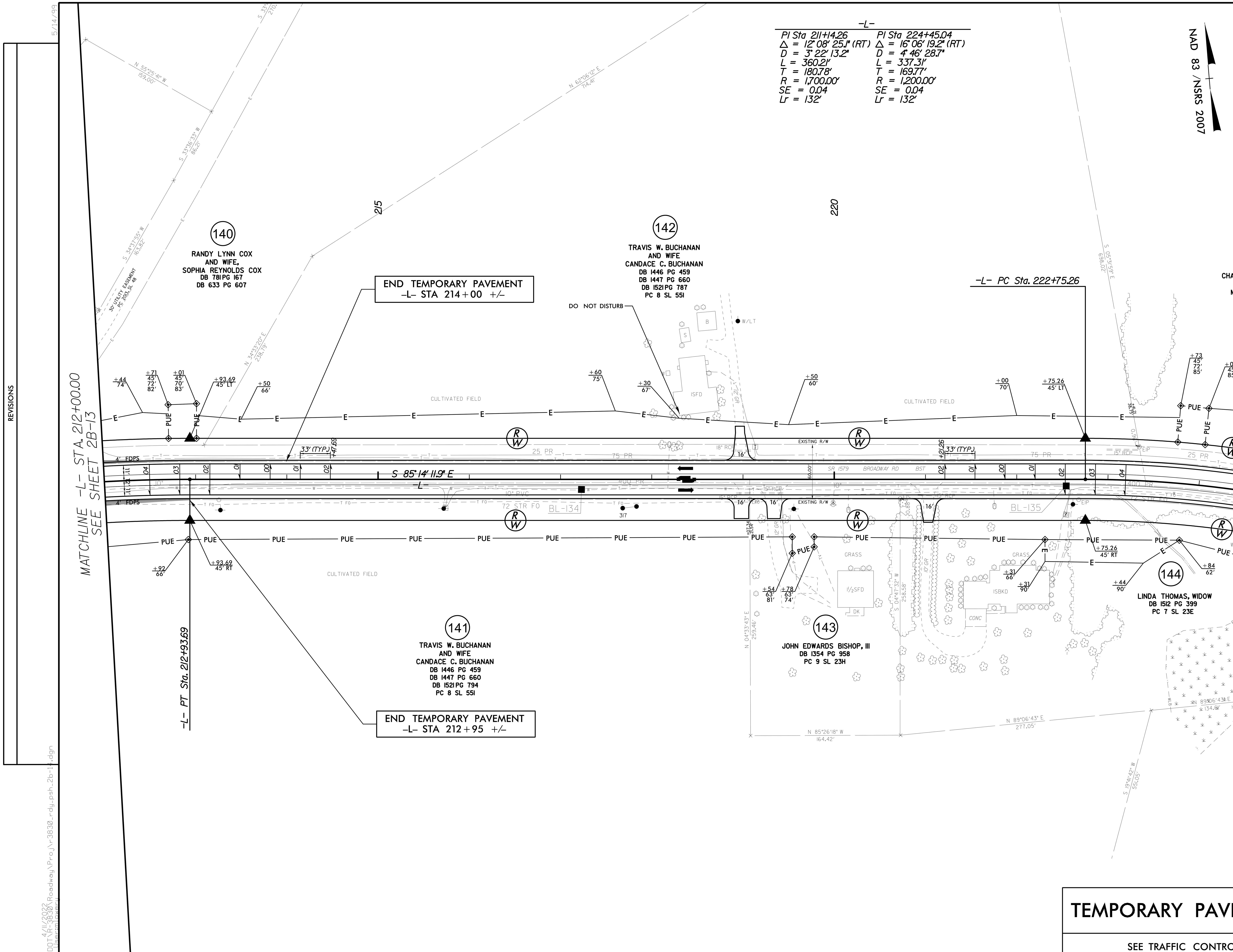


REVISIONS
MATCHLINE -L- STA. 212+00.00 SEE SHEET 2B-13
-L-
PI Sta 211+14.26
Δ = 12° 08' 25.1" (RT)
D = 3° 22' 13.2"
L = 360.21'
T = 180.78'
R = 1,700.00'
SE = 0.04
Lr = 132'
PI Sta 224+45.04
Δ = 16° 06' 19.2" (RT)
D = 4° 46' 28.7"
L = 337.31'
T = 169.77'
R = 1,200.00'
SE = 0.04
Lr = 132'
NAD 83 /NSRS 2007
215
220
225
140
RANDY LYNN COX AND WIFE, SOPHIA REYNOLDS COX
DB 781 PG 167
DB 633 PG 607
142
TRAVIS W. BUCHANAN AND WIFE CANDACE C. BUCHANAN
DB 1446 PG 459
DB 1447 PG 660
DB 1521 PG 787
PC 8 SL 551
CHARLES H. ANGEL, JR. AND WIFE, MARY SUE ANGEL
DB 577 PG 763
PC 8 SL 551
145
END TEMPORARY PAVEMENT -L- STA 214+00 +/-
DO NOT DISTURB
-L- PC Sta. 222+75.26
CULTIVATED FIELD
FIELD
S 85° 14' 11.9" E
SR 1579 BROADWAY RD BST
BL-134
BL-135
141
TRAVIS W. BUCHANAN AND WIFE CANDACE C. BUCHANAN
DB 1446 PG 459
DB 1447 PG 660
DB 1521 PG 794
PC 8 SL 551
143
JOHN EDWARDS BISHOP, III
DB 1354 PG 958
PC 9 SL 23H
144
LINDA THOMAS, WIDOW
DB 1512 PG 399
PC 7 SL 23E
-L- PT Sta. 212+93.69
END TEMPORARY PAVEMENT -L- STA 212+95 +/-
WOODS
GRASS
= TEMPORARY PAVEMENT

TEMPORARY PAVEMENT LOCATIONS

SEE TRAFFIC CONTROL PLANS FOR PHASING

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2C-1

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

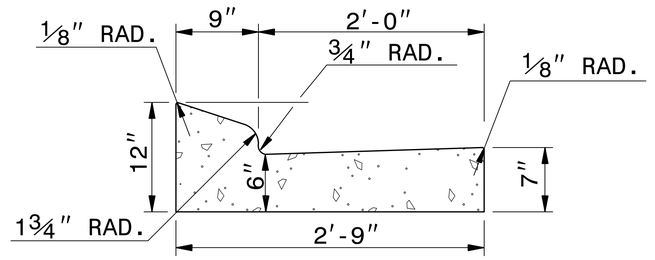
ENGLISH DETAIL DRAWING FOR

2′-9″ CONCRETE CURB & GUTTER

SHEET 1 OF 1

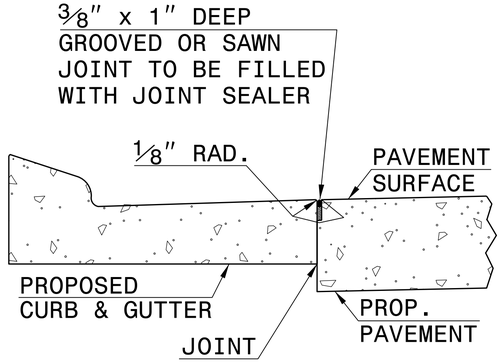
846D01

GENERAL NOTES:
- -PLACE CONTRACTION JOINTS AT 10′ INTERVALS, EXCEPT THAT A 15′ SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10′ INTERVALS.
- -JOINT SPACING MAY BE ALTERED IF REQUIRED BY THE ENGINEER.
- -CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. MAKE NON-TEMPLATE FORMED JOINTS A MIN. OF 1½″ DEEP.
- -FILL ALL CONSTRUCTION JOINTS WITH JOINT FILLER AND SEALER.
- -SPACE EXPANSION JOINTS AT 90′ INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.
- -SEE RDWY. STD. DWG. NO. 846.01, SHEET 2 OF 3 FOR PLACEMENT IN SUPERELEVATIONS. (USE 2′-6″ CURB AND GUTTER RATES)

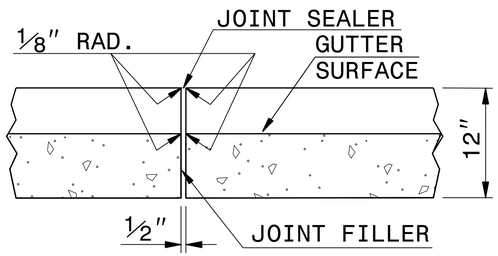


2′-9″ CURB AND GUTTER

SECTION VIEW OF CURB AND GUTTER



LONGITUDINAL JOINT



TRANSVERSE EXPANSION JOINT IN CURB AND GUTTER

SECTION VIEW OF JOINTS

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

ENGLISH DETAIL DRAWING FOR

2′-9″ CONCRETE CURB & GUTTER

SHEET 1 OF 1

846D01

10-AUG-2017 11:46
S:\Contracts\Contracts\Special Details\eriewardlusr\details\stand\c&g2'-9.dgn
jhowerton AT CSD-242595

DocuSigned by: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022071 Ronald Ellis Vanhoy, Jr.
6/30/2022 | 3:43 PM EDT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

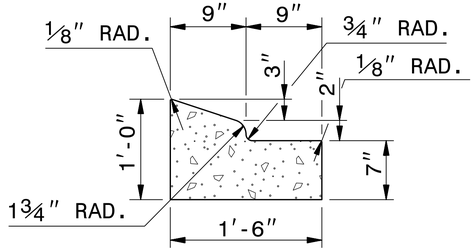
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

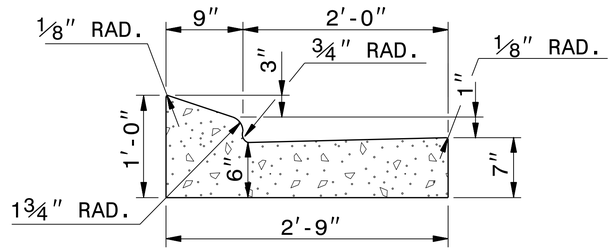
ORIGINAL BY: STD. 846.01 DATE:
MODIFIED BY: E.E. WARD DATE: 8-15-00
CHECKED BY: DATE:
FILE SPEC.: /usr/details/stand/c&g2'-9".dgn

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2C-2



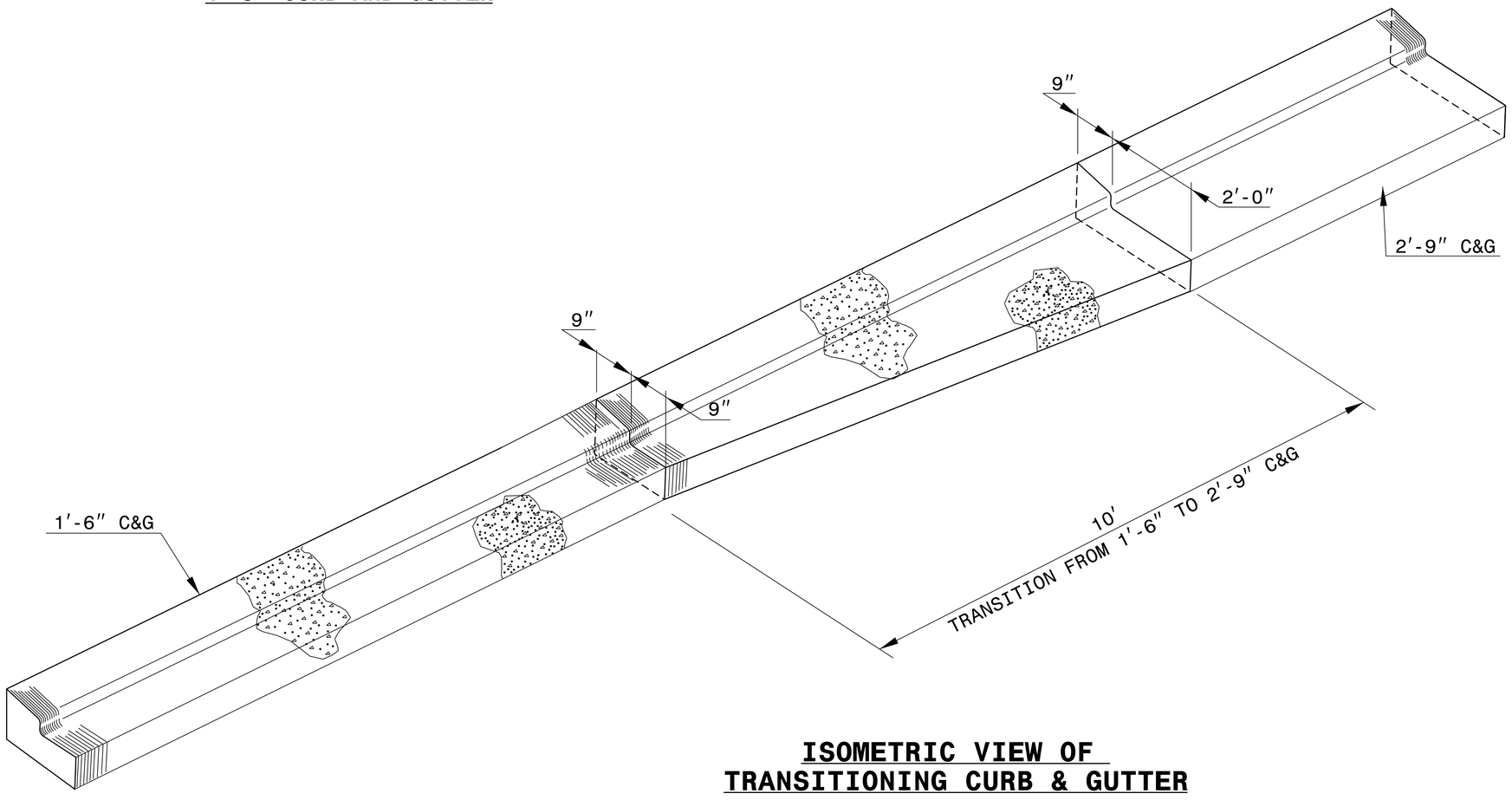
1'-6" CURB AND GUTTER



2'-9" CURB AND GUTTER

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

SEE ROADWAY PLANS FOR LOCATION OF CURB TRANSITION.



ISOMETRIC VIEW OF TRANSITIONING CURB & GUTTER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022071 TRANSPORTATION DIVISION

Ronald Elton Davenport, Jr.

6/30/2022 | 3:43 PM EDT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

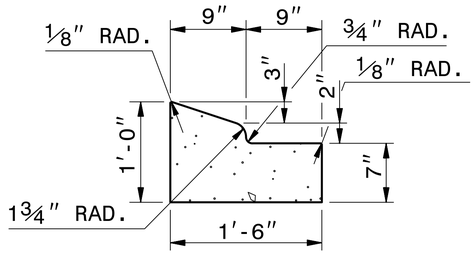
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

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

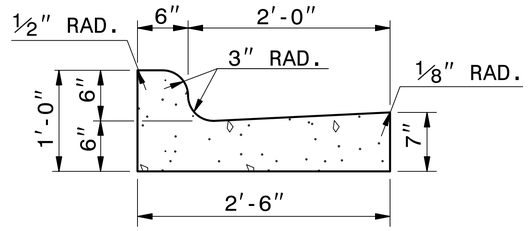
ORIGINAL BY: T.S.SPELL DATE: NOV. 26, 2001
MODIFIED BY: T.S.SPELL DATE: JAN. 23, 2007
CHECKED BY: DATE:
FILE SPEC.: DS174:/usr/details/stand/cgtransit.dgn

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2C-3



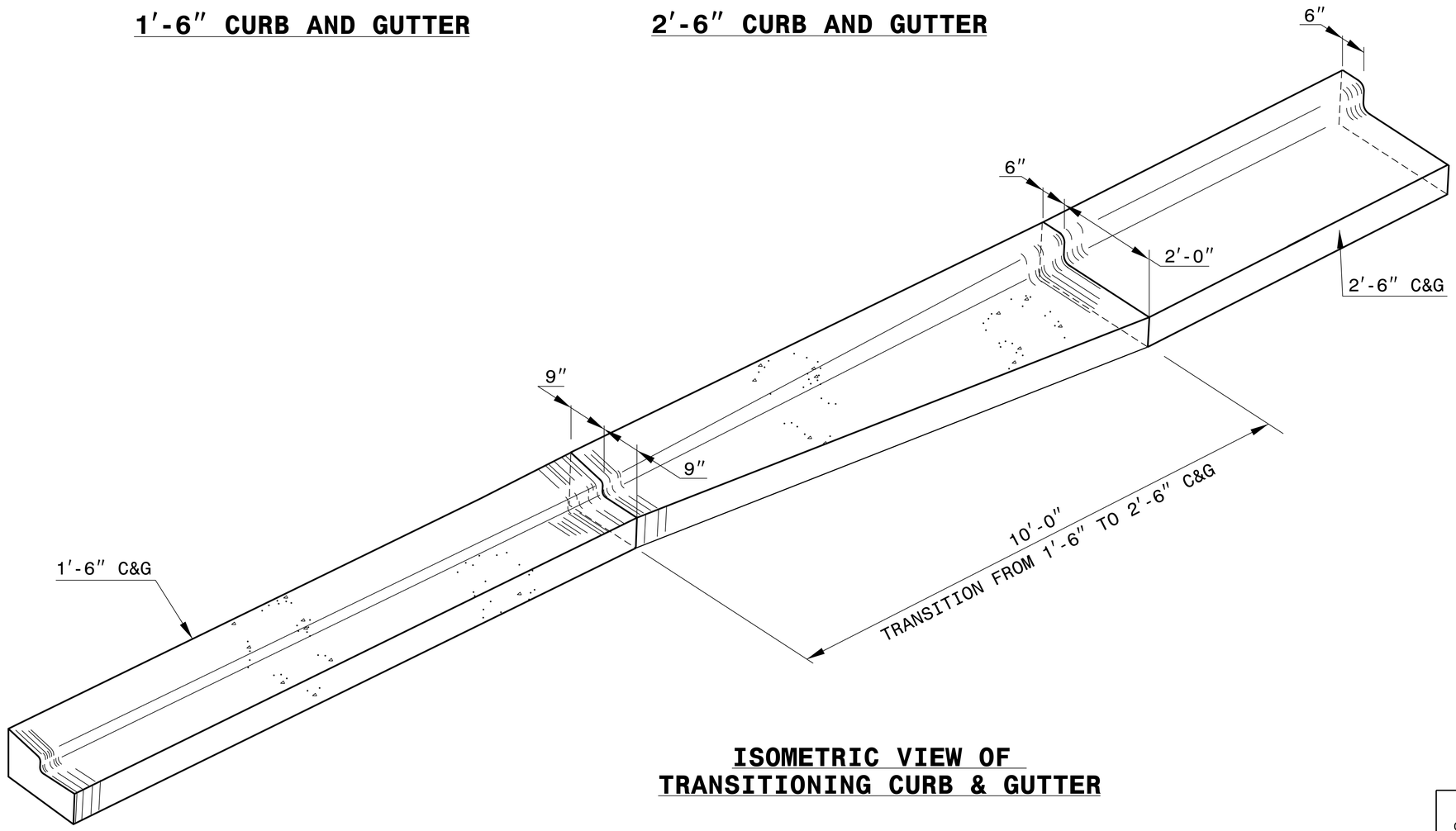
1′-6″ CURB AND GUTTER



2′-6″ CURB AND GUTTER

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

SEE ROADWAY PLANS FOR LOCATION OF CURB TRANSITION.



ISOMETRIC VIEW OF TRANSITIONING CURB & GUTTER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022071 — Donald Ellis Davenport, Jr.
6/30/2022 | 3:43 PM EDT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

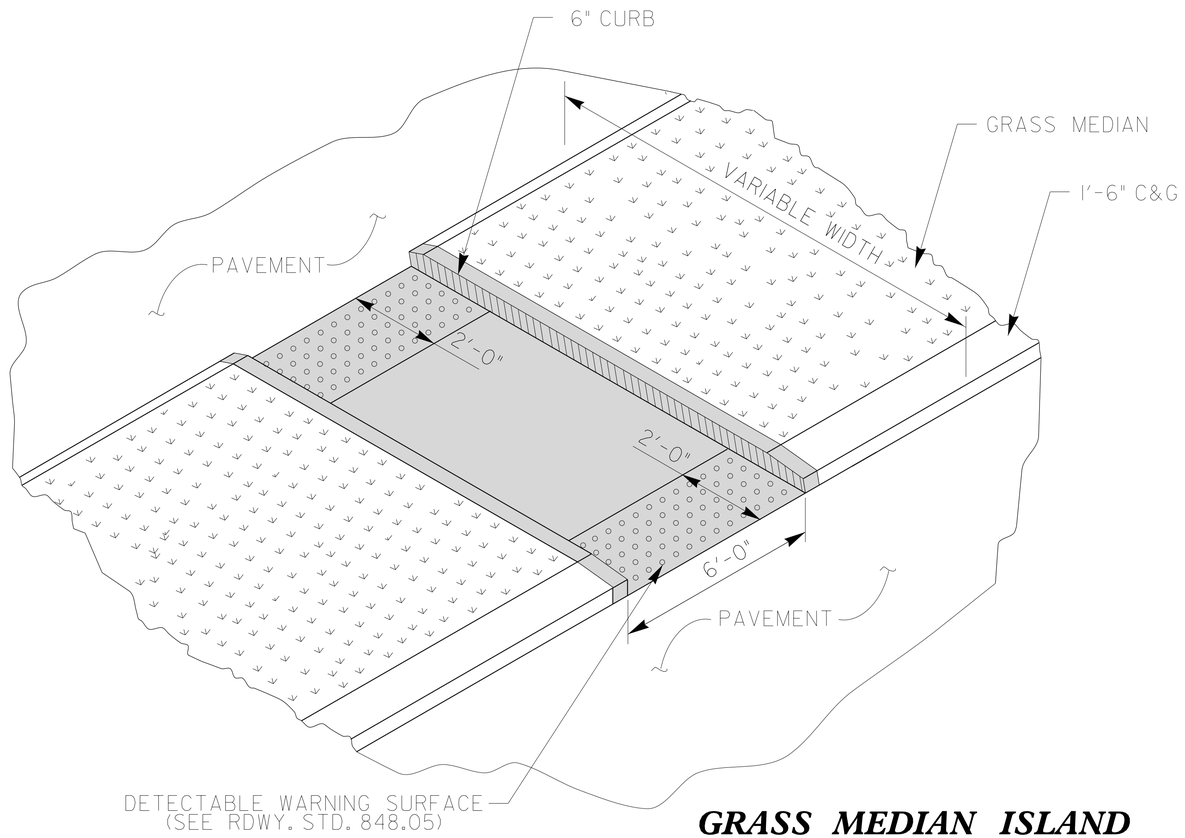
DETAIL OF 1′-6″ TO 2′-6″ CURB & GUTTER TRANSITION SECTION

ORIGINAL BY: T.S.SPELL DATE: MARCH 3,2000
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: DS174:/usr/details/stand/cgtransit.dgn

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2C-4

PAY LIMITS FOR 2 CURB RAMPS
(CALCULATE BASED ON NUMBER OF SETS OF TRUNCATED DOMES)



GRASS MEDIAN ISLAND WITH CUT THROUGH

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION — SEAL 022071 — ENGINEER — CONSTRUCTION DIVISION

6/30/2022 | 3:43 PM EDT

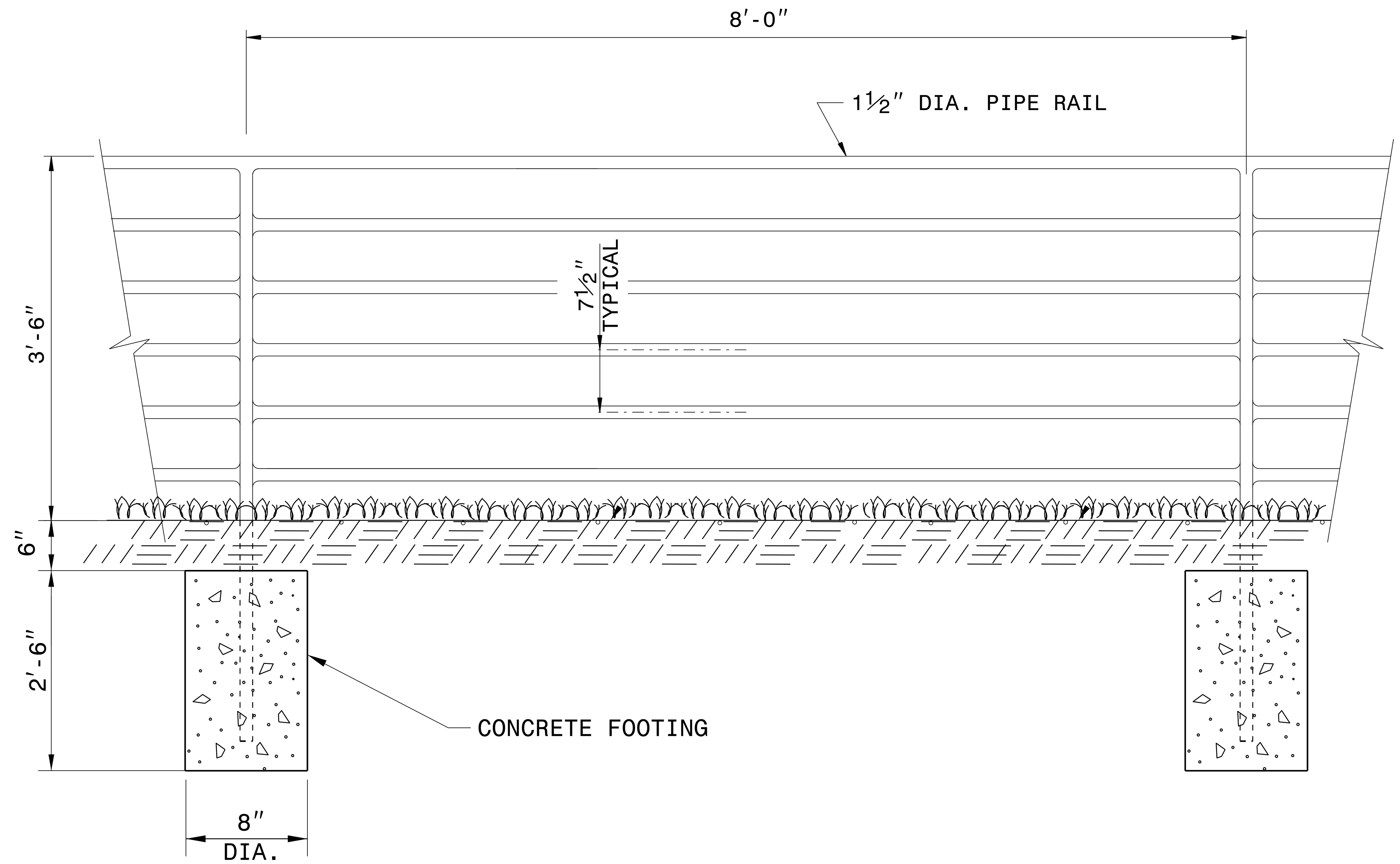
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

CURB RAMPS

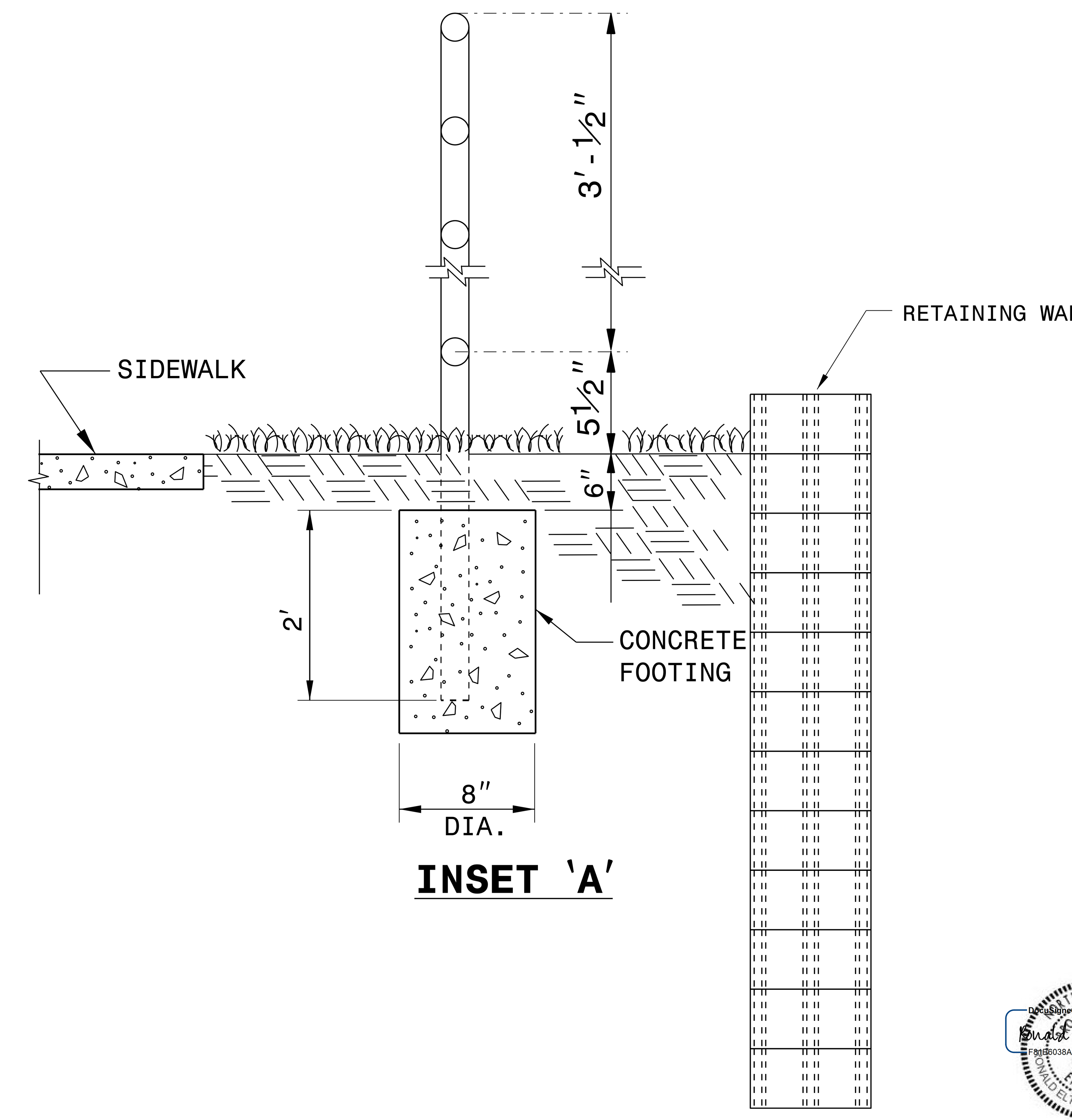
Grass Median Island

ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: stds/2012CurbRamp/CurbRampDetails.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2C-5



ELEVATION OF HANDRAIL



INSET 'A'

NOTES:

CONSTRUCT PROPOSED STEEL PIPE RAIL OF 1½" DIAMETER SCHEDULE 40 PLAIN END GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A53.

REPAIR GALVANIZING IN ACCORDANCE WITH SECTION 1076 OF THE NCDOT STANDARD SPECIFICATIONS.

PAINT, IF REQUIRED BY THE ENGINEER, IN ACCORDANCE WITH SECTION 1080 OF THE STANDARD SPECIFICATIONS.

WELD IN ACCORDANCE WITH ARTICLE 1072-18 OF THE STANDARD SPECIFICATIONS.

USE CLASS 'B' CONCRETE FOR HANDRAIL FOOTINGS.

PLACEMENT OF HANDRAIL IN RELATION TO RETAINING WALL AND SIDEWALK MAY BE MODIFIED AS DIRECTED BY THE ENGINEER.

6/30/2022 | 3:43 PM EDT

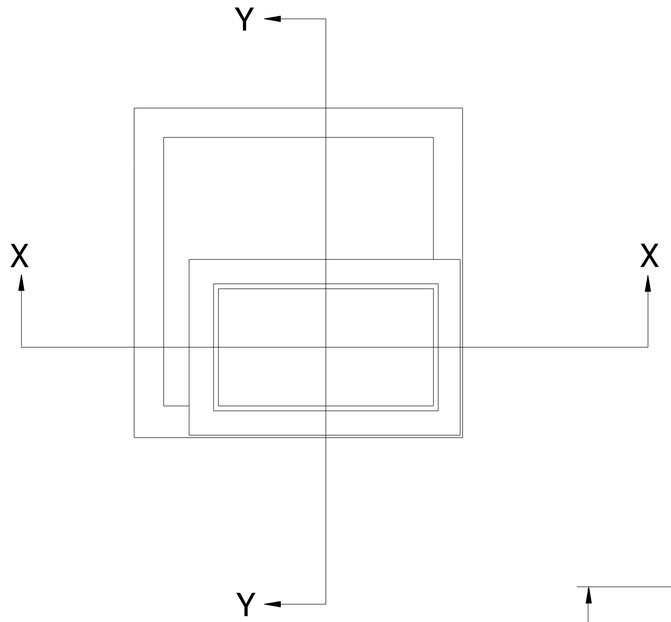
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

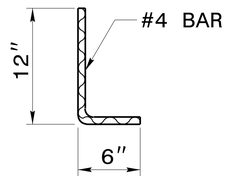
PROPOSED PEDESTRIAN SAFETY RAIL

ORIGINAL BY: E.E. WARD DATE: 12-99
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: jhowerton/handrail adjacent to sidewalk.dgn

PROJ. REFERENCE NO.	SHEET NO.
R-3830	2C-6



PLAN



DOWEL

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.

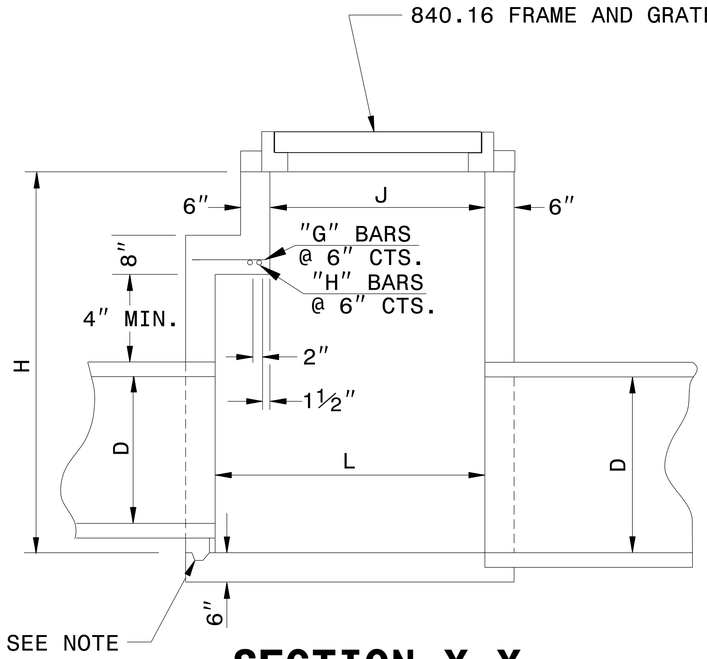
INSTALL 2″ WEEPHOLES AS DIRECTED BY THE ENGINEER.

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.

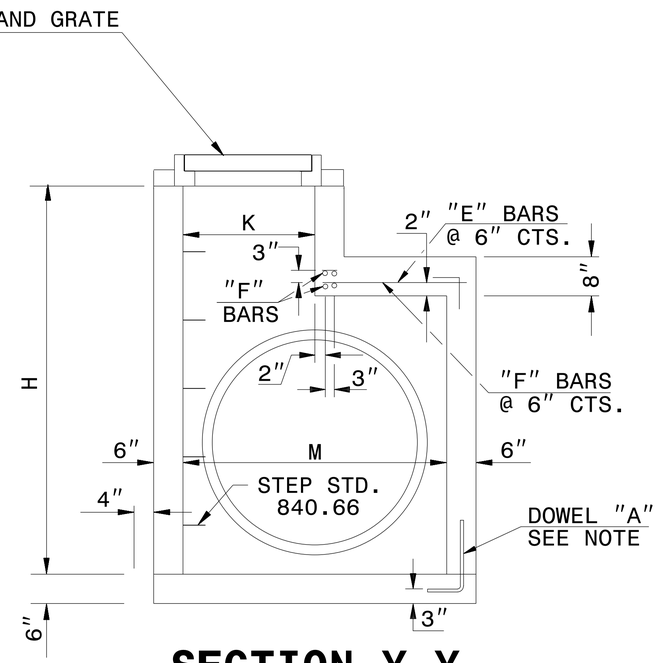
CHAMFER ALL EXPOSED CORNERS 1″.

DRAWING NOT TO SCALE.

DIMENSIONS MAY BE FIELD ADJUSTED AS DIRECTED BY THE ENGINEER.



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	H	H PER	TOTAL		
D	J	K	L	M	H	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	LBS.	SLAB	TOTAL	FT HT		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

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

SPECIAL DI

ORIGINAL BY:	rnbritt	DATE:	05-15-09
MODIFIED BY:	rnbritt	DATE:	08-25-09
CHECKED BY:		DATE:	
FILE SPEC.:	detail/nbritt/english/interstate/i5010di30-18rcp.dgn		

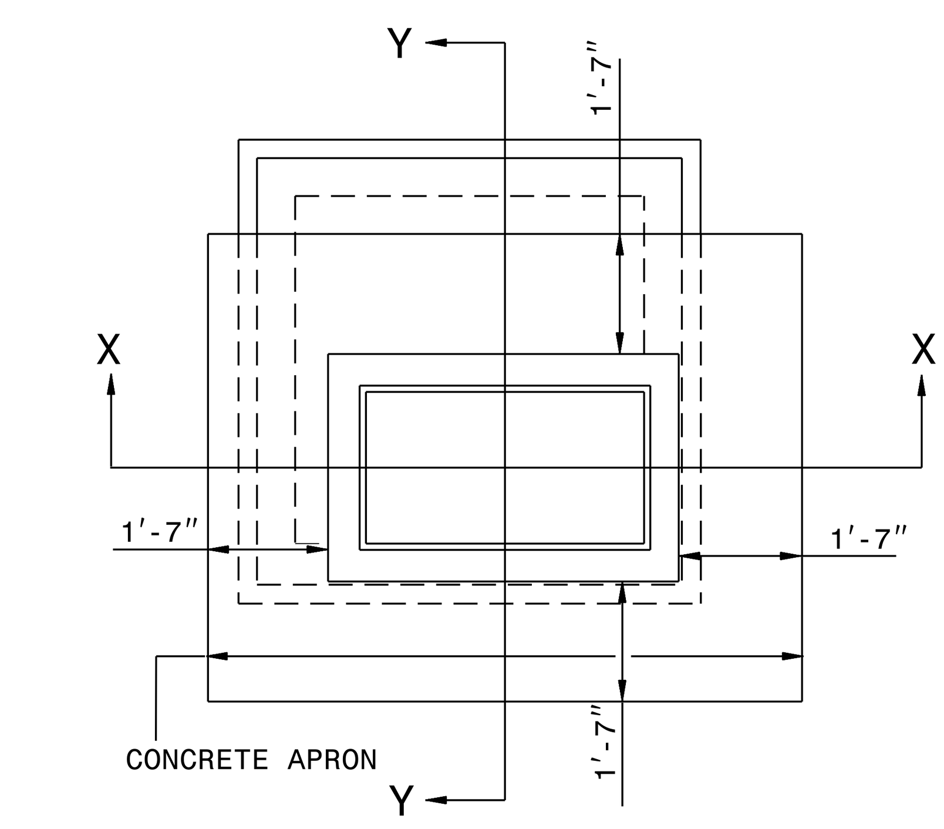
11-SEP-2017 11:55
S:\Contracts\Contracts\Special Details\jhowerton\840D17 Minimum Depth Type A.dgn
jhowerton AT CSD-292595

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2C-7

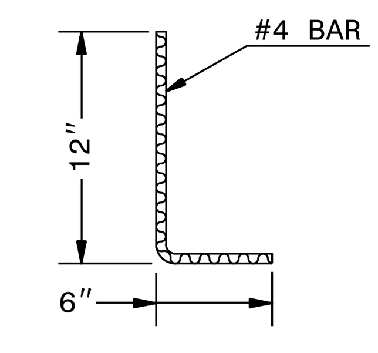
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
CONCRETE GRATED DROP INLET TYPE 'A'
MINIMUM DEPTH
12" THRU 72" PIPE

SHEET 1 OF 2
840d17



PLAN



DOWEL-A

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL GRATED 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.

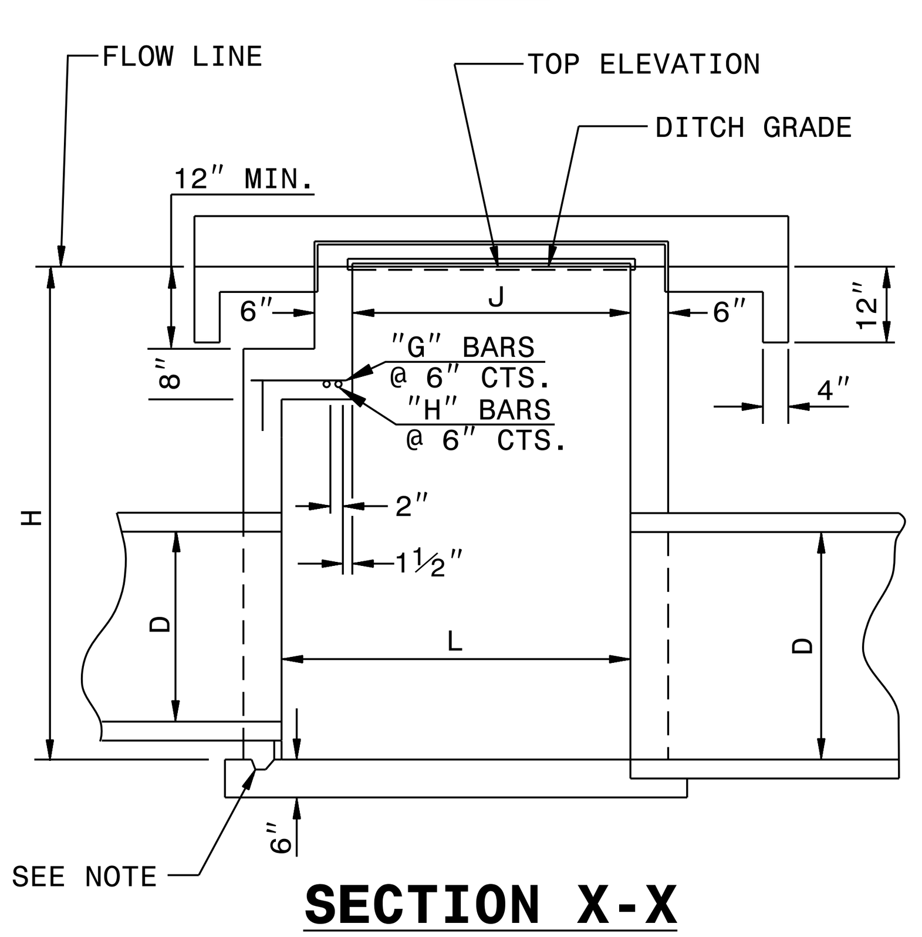
USE STANDARD FRAMES AND GRATES 840.22 (SHOWN), 840.24(SHOWN), 840.20 (NOT SHOWN) OR 840.29 (NOT SHOWN).

SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES.

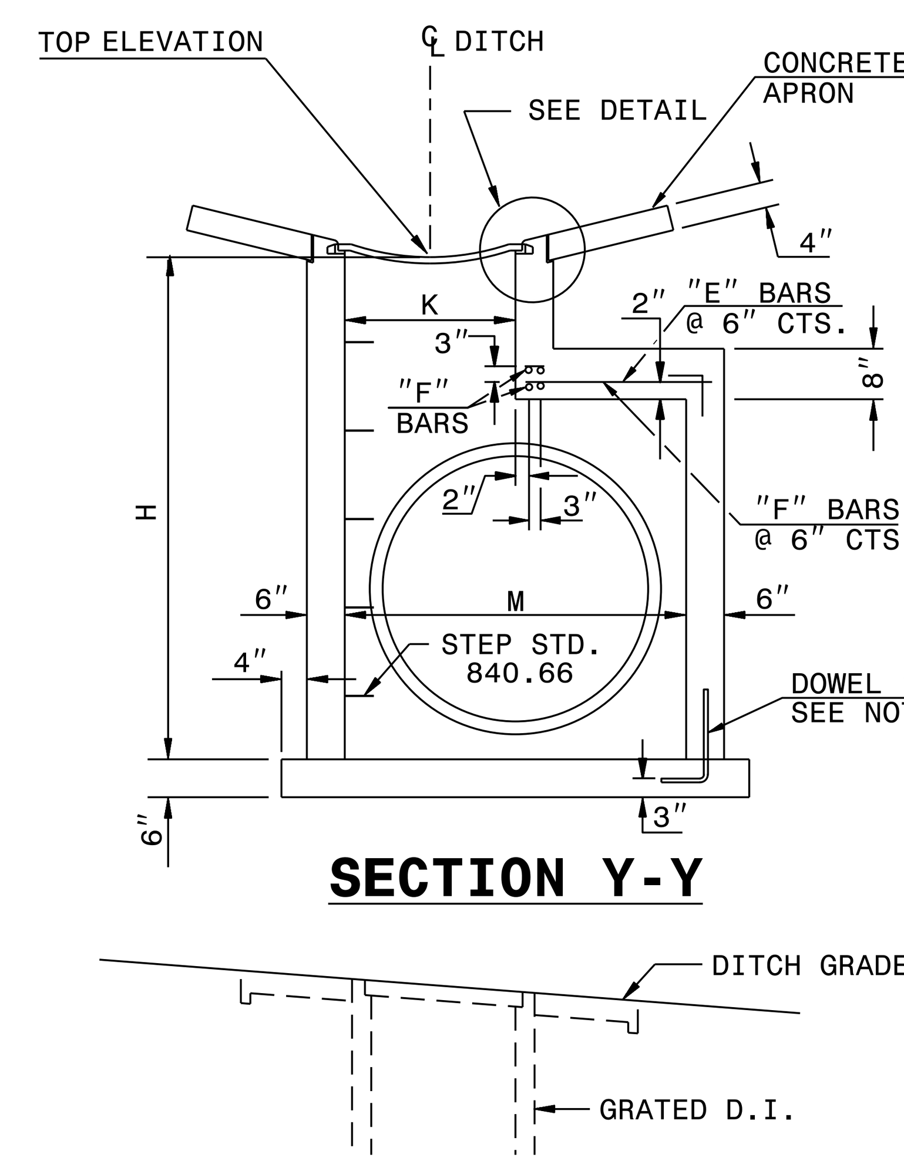
CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

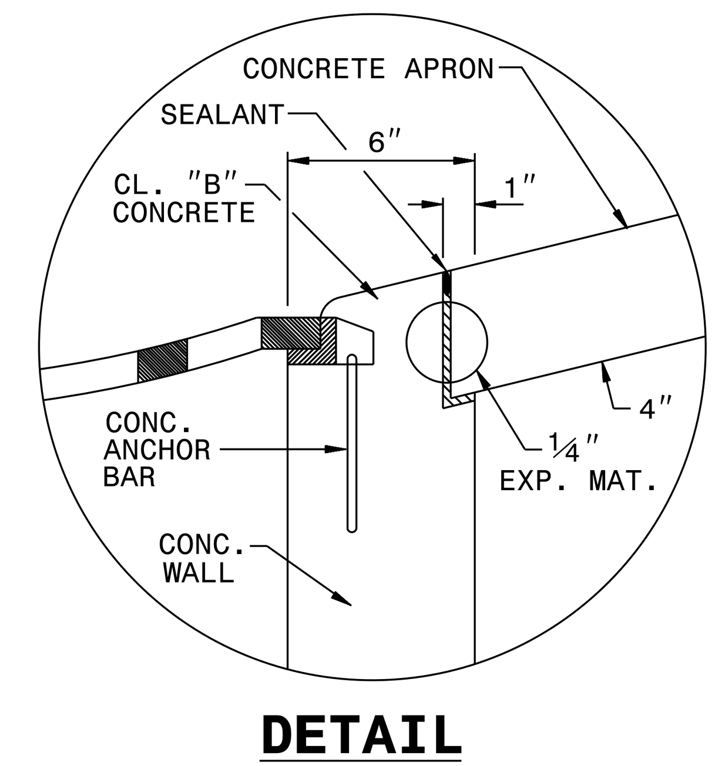
MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.



SECTION X-X



SECTION Y-Y

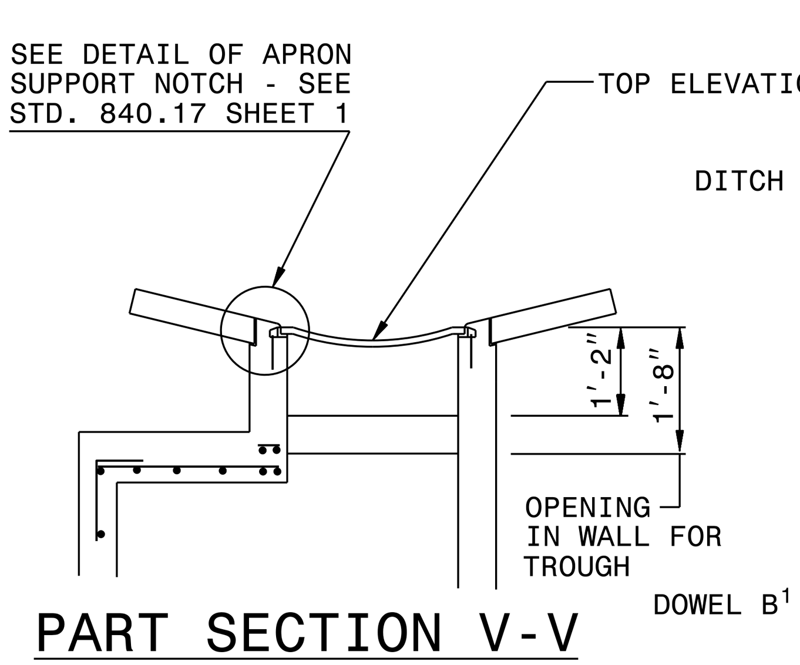


DETAIL
(APRON SUPPORT NOTCH)

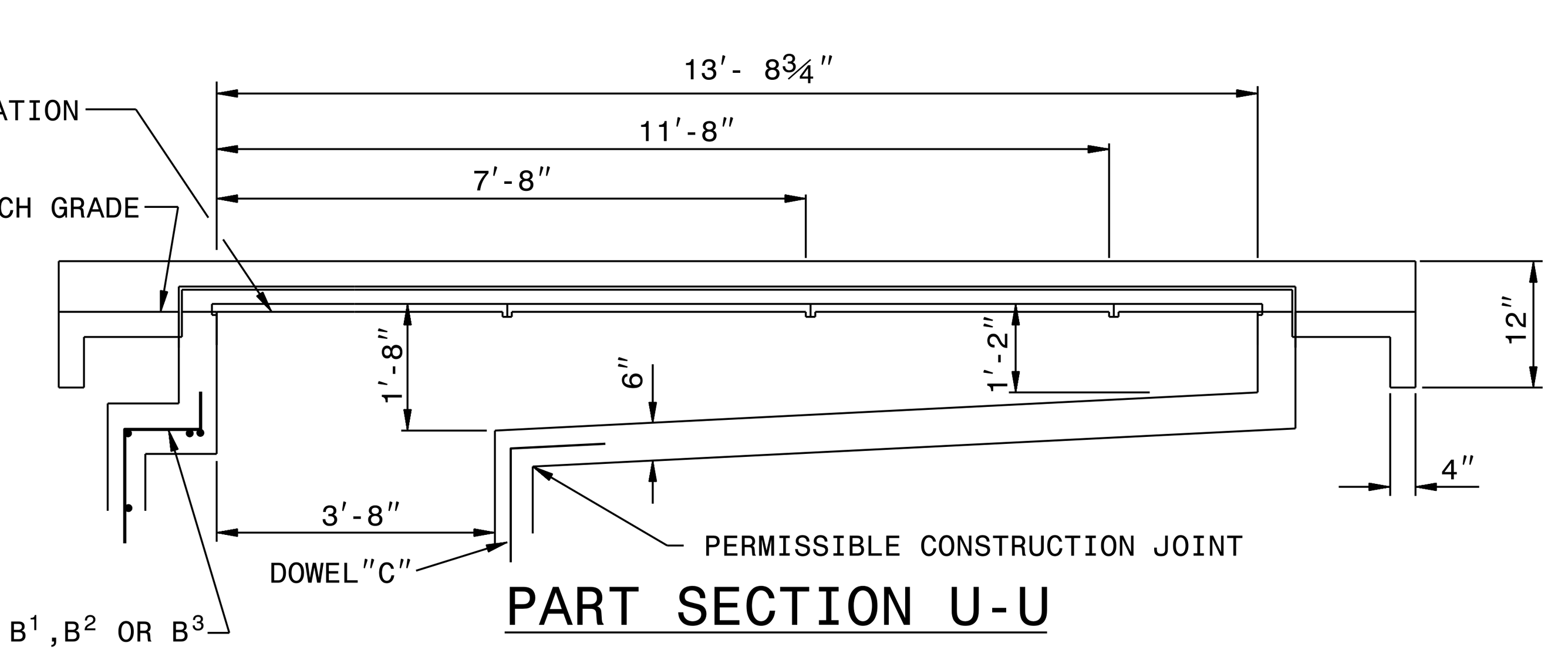
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
CONCRETE GRATED DROP INLET TYPE 'A'
MINIMUM DEPTH
12" THRU 72" PIPE

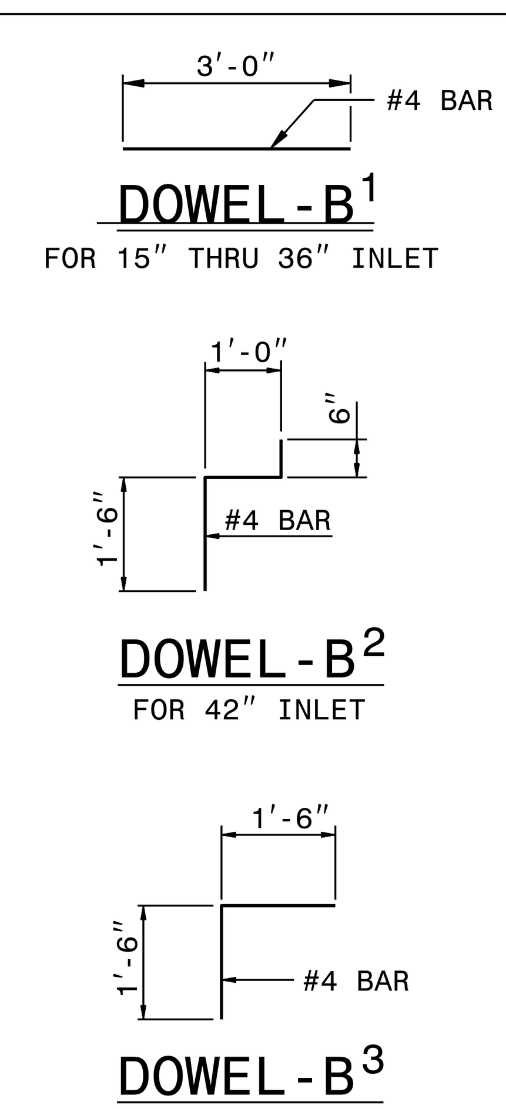
SHEET 2 OF 2
840d17

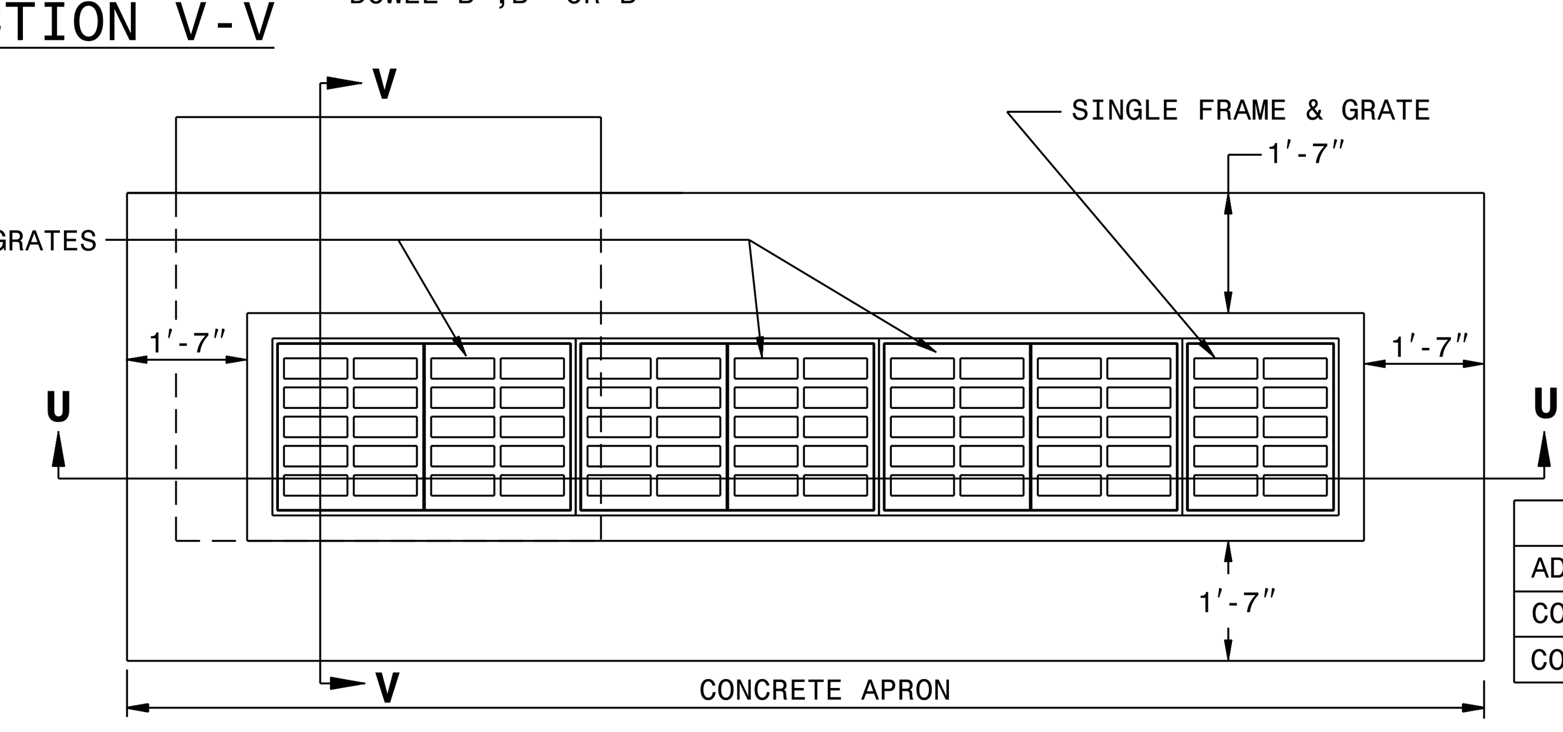


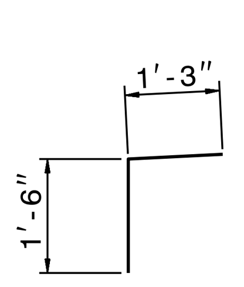
PART SECTION V-V



PART SECTION U-U







DOWEL-C

QUANTITY TO BE ADDED FOR EACH 2' INCREMENT INLET OPENING

ADDITIONAL INLETS	2'-0"	4'-0"	6'-0"	8'-0"	10'-0"	12'-0"
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 D	SPAN J	WIDTH K	SPAN L	WIDTH M	HEIGHT H	BARS E NO.	BARS E LENGTH	BARS F NO.	BARS F LENGTH	BARS G NO.	BARS G LENGTH	BARS H NO.	BARS H LENGTH	TOTAL LBS.	BOTTOM SLAB	H TOTAL	H PER FT HT	APRON	TOTAL	C.S.	R.C.
12"	3'-8"	2'-0"	3'-8"	2'-0"	2'-3"	—	—	—	—	—	—	—	—	—	0.362	0.926	0.247	0.395	1.683	0.015	0.024
15"	3'-8"	2'-0"	3'-8"	2'-0"	2'-5"	—	—	—	—	—	—	—	—	—	0.362	0.988	0.247	0.395	1.745	0.023	0.036
18"				2'-0"	2'-8"	—	—	—	—	—	—	—	—	—	0.362	1.050	0.247		1.807	0.033	0.049
24"				2'-10"	3'-3"	8	1'-5"	6	4'-9"	—	—	—	—	27	0.444	1.362	0.278		2.201	0.059	0.085
30"			3'-8"	3'-5"	3'-10"	8	2'-0"	7	4'-9"	—	—	—	—	33	0.502	1.644	0.288		2.541	0.092	0.127
36"			4'-0"	4'-0"	4'-4"	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"	5'-0"	10	3'-1"	9	5'-7"		1'-5"	3	5'-7"	67	0.704	2.500	0.370		3.677	0.180	0.243
48"			5'-4"	5'-4"	5'-6"	11	3'-7"	10	6'-1"		1'-11"	4	6'-1"	87	0.823	3.013	0.407		4.315	0.235	0.317
54"			6'-0"	6'-0"	6'-0"	12	4'-1"	11	6'-7"		2'-5"	5	6'-7"	107	0.951	3.589	0.444		5.072	0.297	0.401
60"			6'-6"	6'-6"	6'-7"	13	4'-9"	12	7'-3"		3'-1"	6	7'-3"	135	1.311	4.539	0.494		6.170	0.367	0.495
66"			7'-2"	7'-2"	7'-1"	14	5'-4"	14	7'-10"		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"	7'-8"	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

6/30/2022 | 3:43 PM EDT

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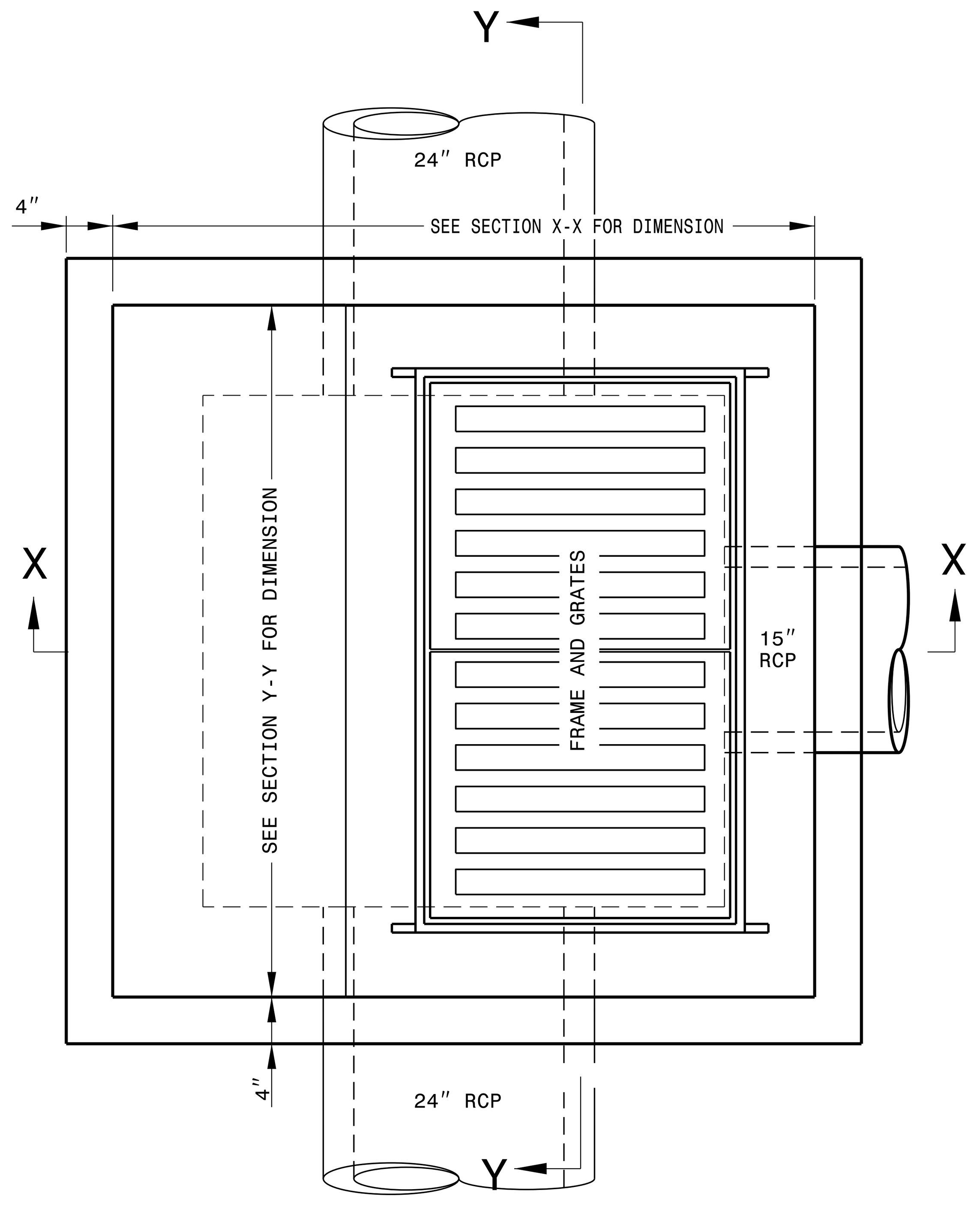
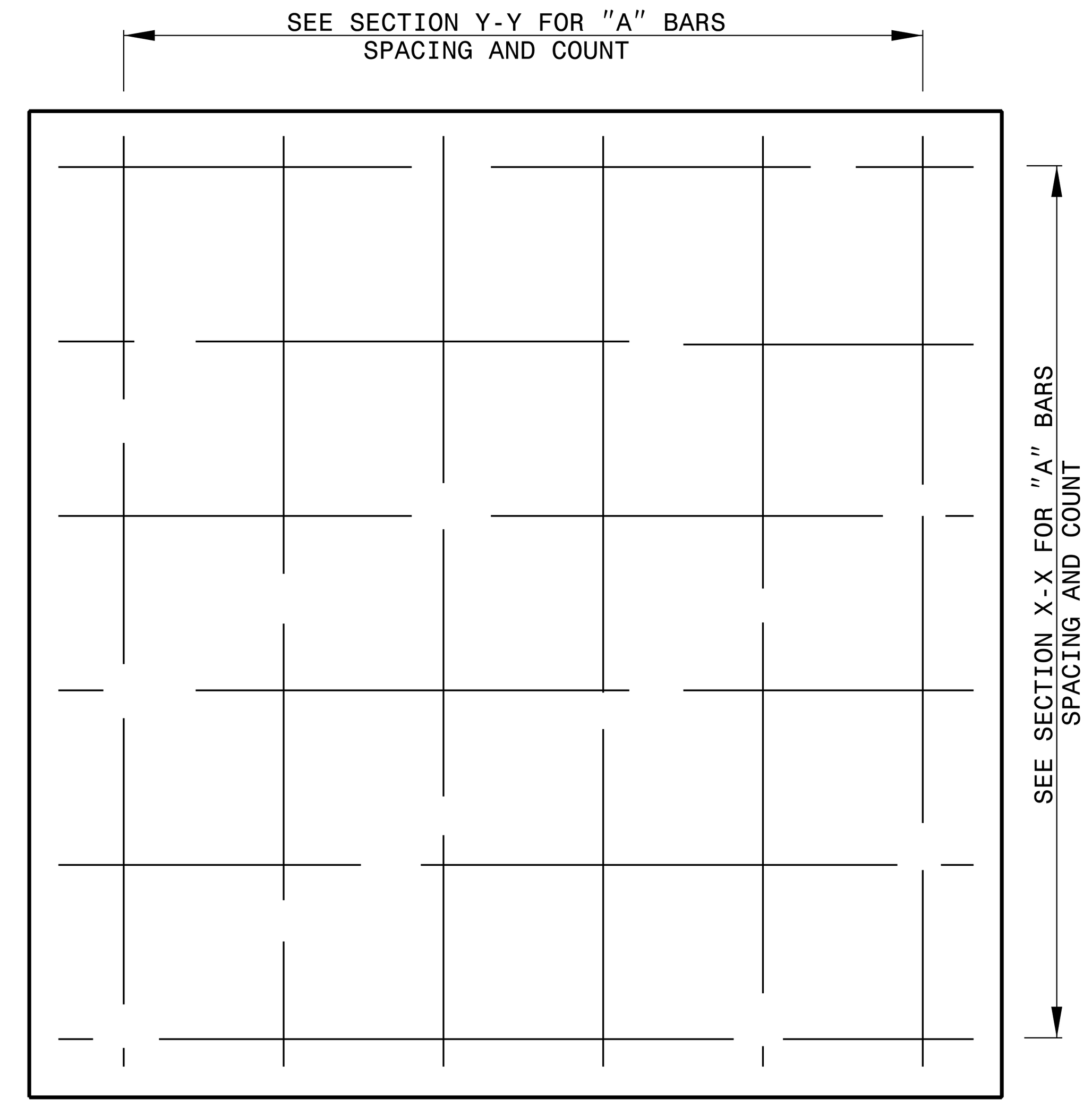
SEE TITLE BLOCK

ORIGINAL BY: J. Howerton DATE: 1/22/14
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: jhowerton\minimum depth type A.dgn



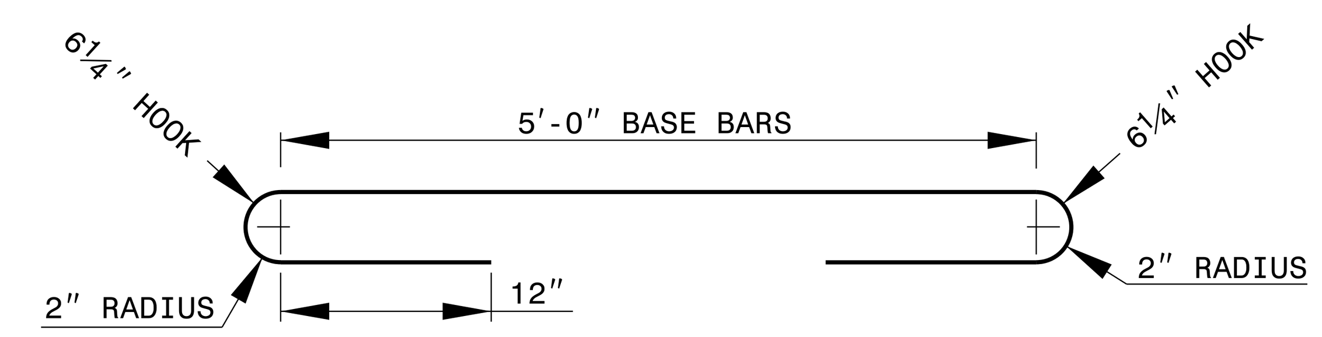
PLAN



PLAN OF BASE

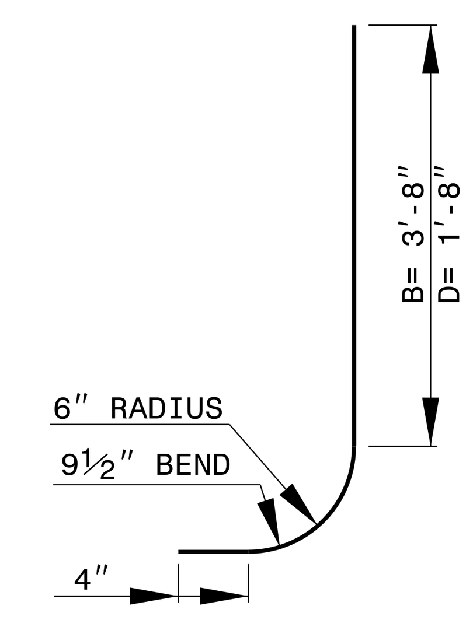
GENERAL NOTES:
- USE CLASS 'AA' CONCRETE FOR CAST IN PLACE CONCRETE BOX.
- USE CLASS 'M' CONCRETE IN THE WALL CAVITY FOR REINFORCED BRICK CONSTRUCTION AND CLASS 'AA' FOR THE FOOTING BASE.
- CHAMFER ALL EXPOSED CONCRETE CORNERS 1".
- USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
- IF PIPES ARE SET IN THE BASE FOLLOW CONSTRUCTION PROCEDURES SHOWN BY STD. DWG. 840.00.
- PRECAST UNITS MADE OF CLASS 'AA' CONCRETE MAY BE USED IN LIEU OF BRICK MASONRY CONSTRUCTION.
- INCLUDE REINFORCING STEEL COST IN THE UNIT OR LINEAR FOOT BID PRICE FOR "MASONRY DRAINAGE STRUCTURE".
- REFERENCE STD. DWG. 840.25 FOR FRAME ANCHORAGE.
- CONCRETE BRICK, JUMBO BRICK AND 4" SOLID CONCRETE BLOCK WILL BE PERMITTED.
- CONCRETE FOR BRICK BOX REFER TO SECTION 832 OF THE STANDARD SPECIFICATIONS.
- PROVIDE GRATED DROP INLETS OVER 3'-6" DEEP WITH STEPS SPACED 12" ON CENTER AS DIRECTED BY STD. DWG. 840.66.
- FRAME AND GRATES ARE SEPARATE CONTRACT ITEMS.

STRAIGHT BARS

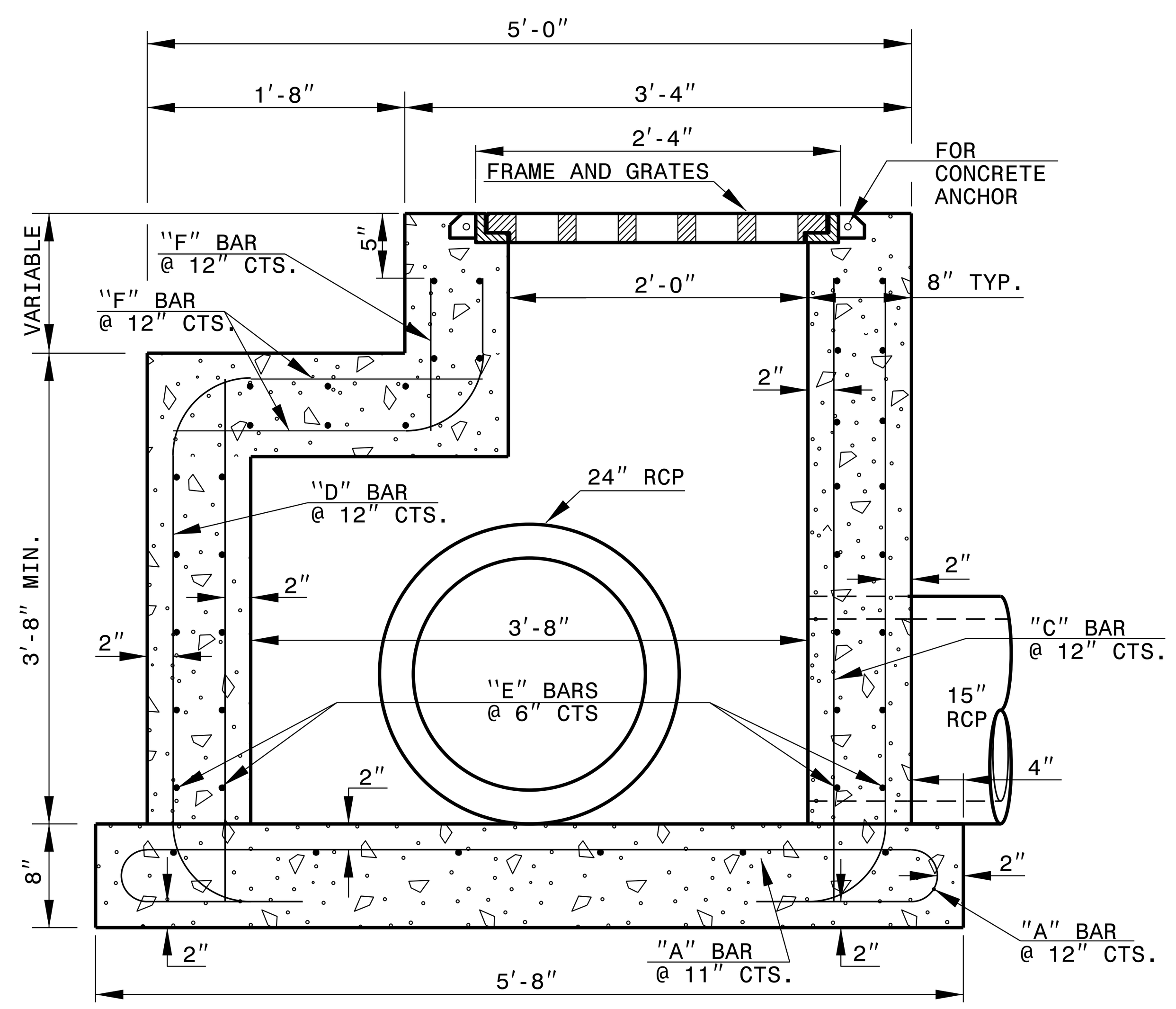


BASE BARS

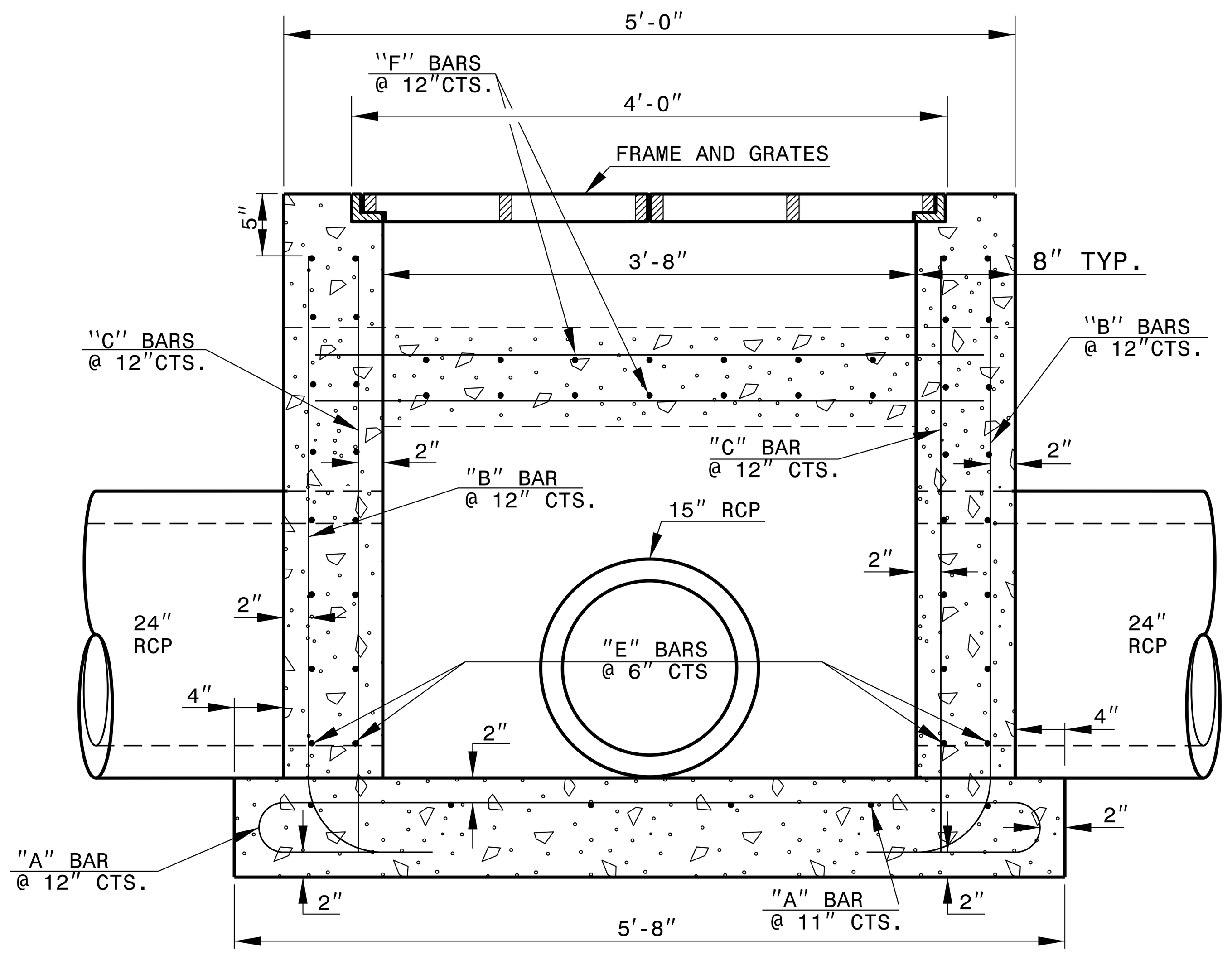
"A" BARS



CORNER BARS



SECTION X-X



SECTION Y-Y

BILL OF MATERIALS

BAR	SIZE	LENGTH	QUANTITY	WEIGHT
A	#5	8'-0½"	12	100.6
B	#5	4'-9½"	20	99.6
C	#5	5'-6"	20	114.7
D	#5	2'-9½"	16	46.6
E	#5	4'-8"	68	331.0
F	#5	2'-0"	44	91.8
REINF. STEEL (TOTAL WEIGHT LBS.)				784.3
CONCRETE IN BASE CLASS 'AA' (CUBIC YARDS)				0.79
CONCRETE IN WALLS CLASS 'AA' (CUBIC YARDS)				2.30
CONCRETE TOTAL (CUBIC YARDS)				3.09
CONC. CUBIC YARDS IN WALL/FOOT OF HEIGHT				0.46
LBS. OF REINF. STEEL IN WALL/FOOT OF HEIGHT				128.9

* PIPE DEDUCTIONS AND INLET OPENING DEDUCTION HAVE BEEN MADE.

NOTES:
- HORIZONTAL AND VERTICAL DIMENSIONS MAY BE ADJUSTED AS THE FIELD CONDITIONS AND/OR ALTERNATE DESIGN REQUIRE.
- MAXIMUM HEIGHT FOR THIS STRUCTURE SHALL BE 20'-0".
- ALL ADJUSTMENTS ARE TO BE MADE AS DIRECTED BY THE ENGINEER.
- DEPTH OF STEEL GRATE WILL REQIURE DEEPER SEAT ALONG SHORT WALLS.

NORTH CAROLINA PROFESSIONAL SEAL 022071 ENGINEER

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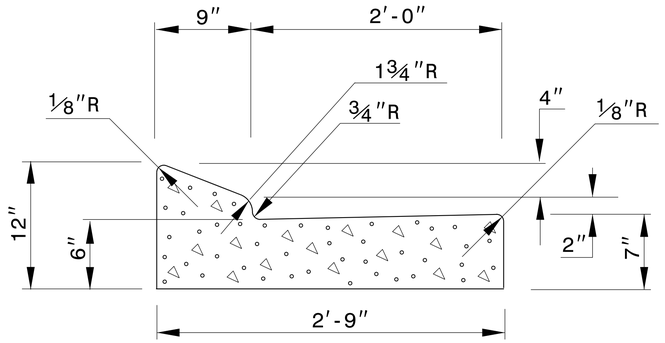
TRAFFIC BEARING DROP INLET TYPE "A"

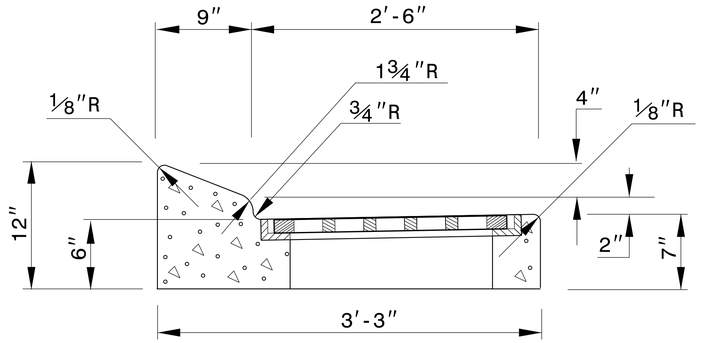
ORIGINAL BY: tsspell DATE: 7-15-08
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: s:tspell/details/840d35_a0011bb.dgn

5/14/99

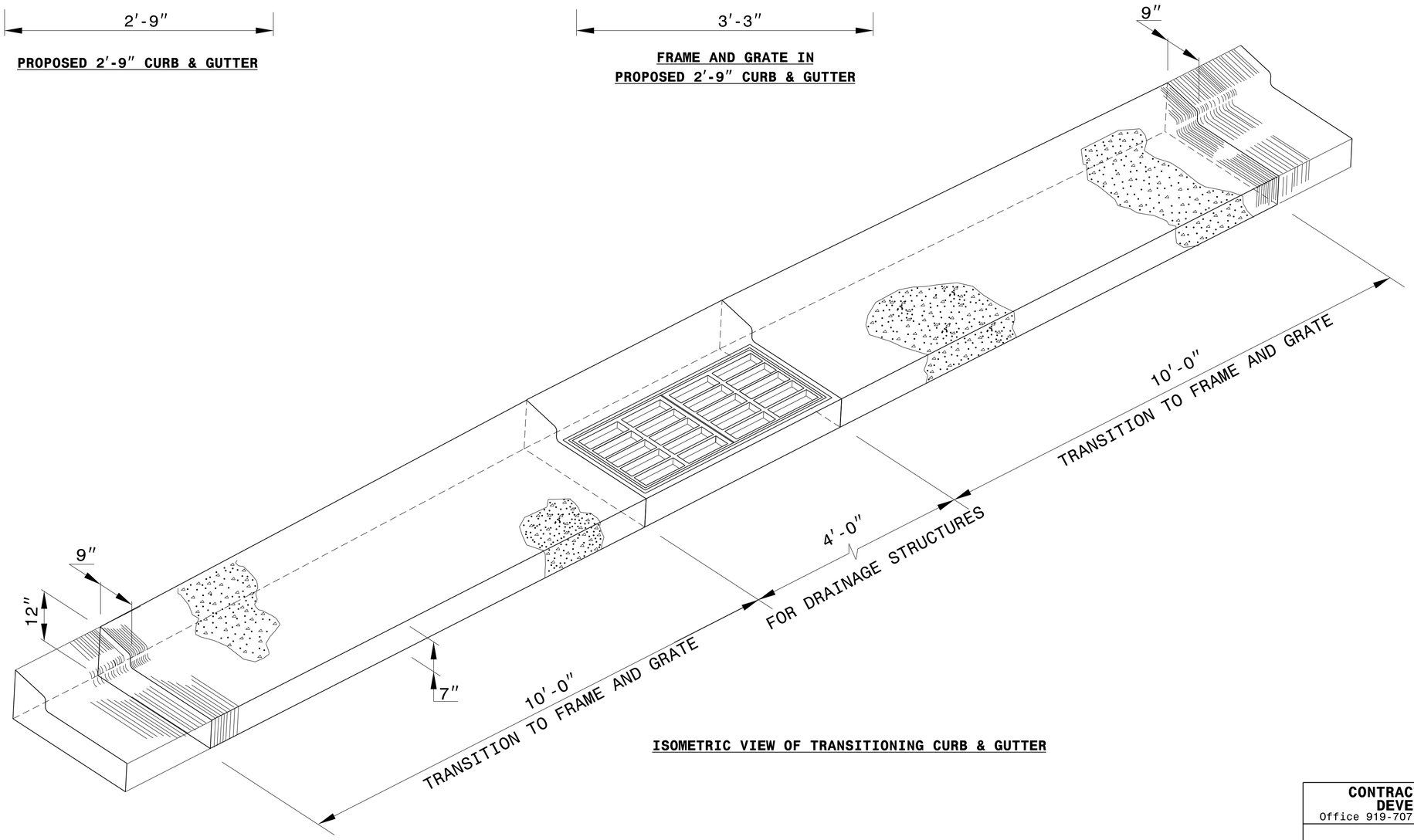
PROJECT REFERENCE NO.	SHEET NO.
R-3830	2C-9



PROPOSED 2′-9″ CURB & GUTTER



FRAME AND GRATE IN
PROPOSED 2′-9″ CURB & GUTTER



ISOMETRIC VIEW OF TRANSITIONING CURB & GUTTER

Donald Ellis Davenport, Jr.
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022071
6/30/2022 | 3:43 PM EDT

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DETAIL OF 2′-9″ TO FRAME AND GRATE

ORIGINAL BY:_____ DATE:_____
MODIFIED BY:_____ DATE:_____
CHECKED BY:_____ DATE:_____
FILE SPEC.: kkempf/english/curb gutter transition.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2C-10

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

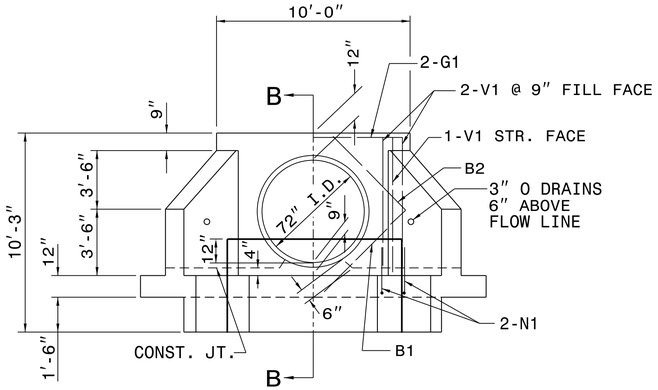
ENGLISH DETAIL DRAWING FOR

REINFORCED CONCRETE ENDWALL

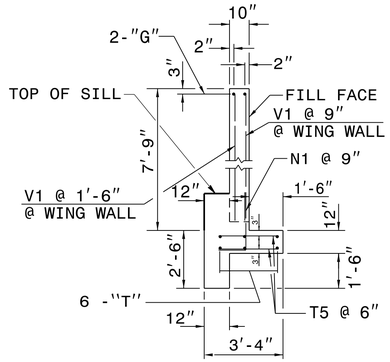
FOR SINGLE 72" PIPE 90° SKEW

SHEET 1 OF 2

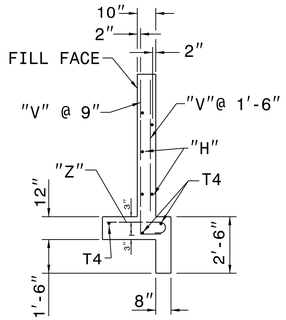
838D39



ELEVATION



SECTION - BB

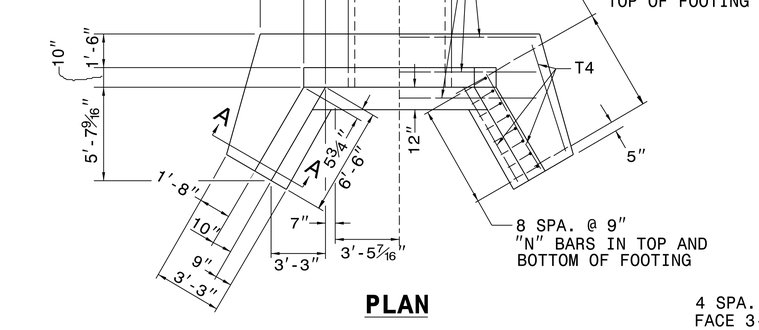


SECTION - AA

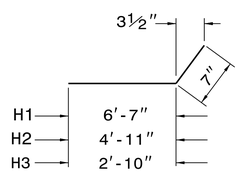
SEE STD.# 838.45 FOR GENERAL NOTES.

BILL OF MATERIAL FOR ENDWALL

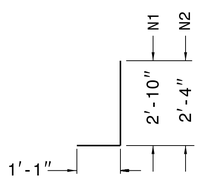
REINF. STEEL			1 PIPE	
BAR	SIZE	LENGTH	NO.	WEIGHT
B1	#4	5'-6"	4	15
B2	#4	4'-6"	4	12
G1	#7	9'-8"	2	40
H1	#4	7'-2"	10	48
H2	#4	5'-6"	2	7
H3	#4	3'-5"	4	9
N1	#5	3'-11"	14	57
N2	#4	3'-5"	8	18
T1	#4	14'-6"	6	58
T4	#4	6'-9"	6	27
T5	#4	2'-6"	40	67
V1	#4	7'-3"	6	29
V2	#4	5'-10"	10	39
V3	#4	5'-0"	6	20
V4	#4	4'-1"	6	16
V5	#4	3'-2"	6	13
Z1	#6	4'-8"	6	42
Z2	#5	4'-0"	6	25
Z3	#4	3'-4"	6	13
REINF. STEEL LBS.			X	555
CON./R.C. CU. YDS				7.1



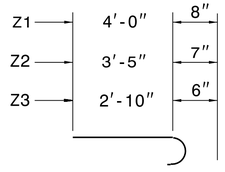
PLAN



"H" BARS

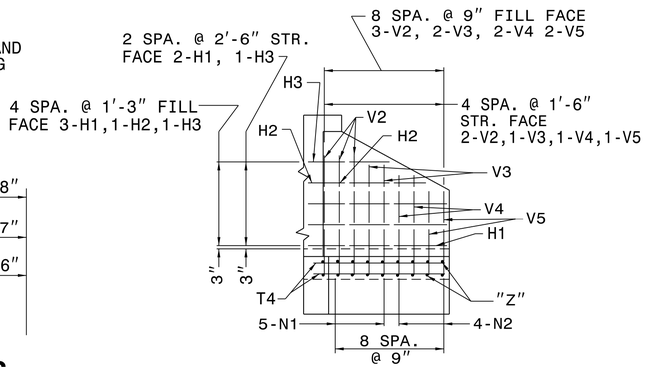


"N" BARS



"Z" BARS

"H", "N", & "Z" BAR DIMENSIONS ARE OUT TO OUT.



WING ELEVATION

STATE OF
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RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

REINFORCED CONCRETE ENDWALL

FOR SINGLE 72" PIPE 90° SKEW

SHEET 1 OF 2

838D39

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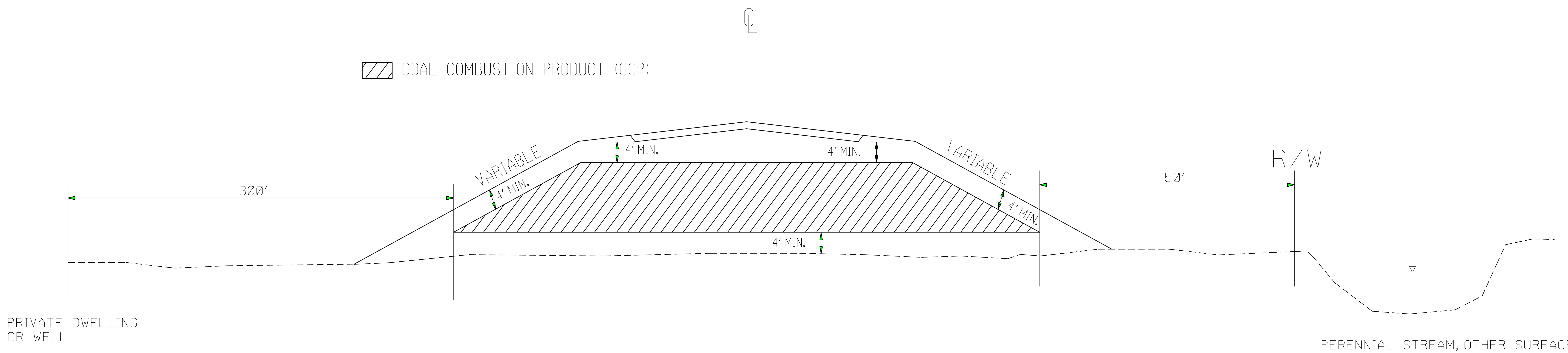
DETAIL OF REINFORCED CONCRETE ENDWALL SILL

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: K. KEMPF DATE: 2/9/17
CHECKED BY: _____ DATE: _____
FILE SPEC.: details\kkempf\english\838d39015ill.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2C-11

COAL COMBUSTION PRODUCT PLACEMENT



PLACE CCP IN HATCHED AREA IN ACCORDANCE WITH THE PROJECT SPECIAL PROVISIONS

PLACE CCP A MINIMUM OF 5' ABOVE SEASONAL HIGH GROUND WATER

PLACE AT LOCATIONS AS APPROVED BY THE ENGINEER

PLACE SOIL BORROW MATERIAL ON THE OUTSIDE OF CCP AS EACH LIFT OF CCP IS PLACED

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Ronald Elton Davenport, Jr.
SEAL 022071
6/30/2022 | 3:43 PM EDT

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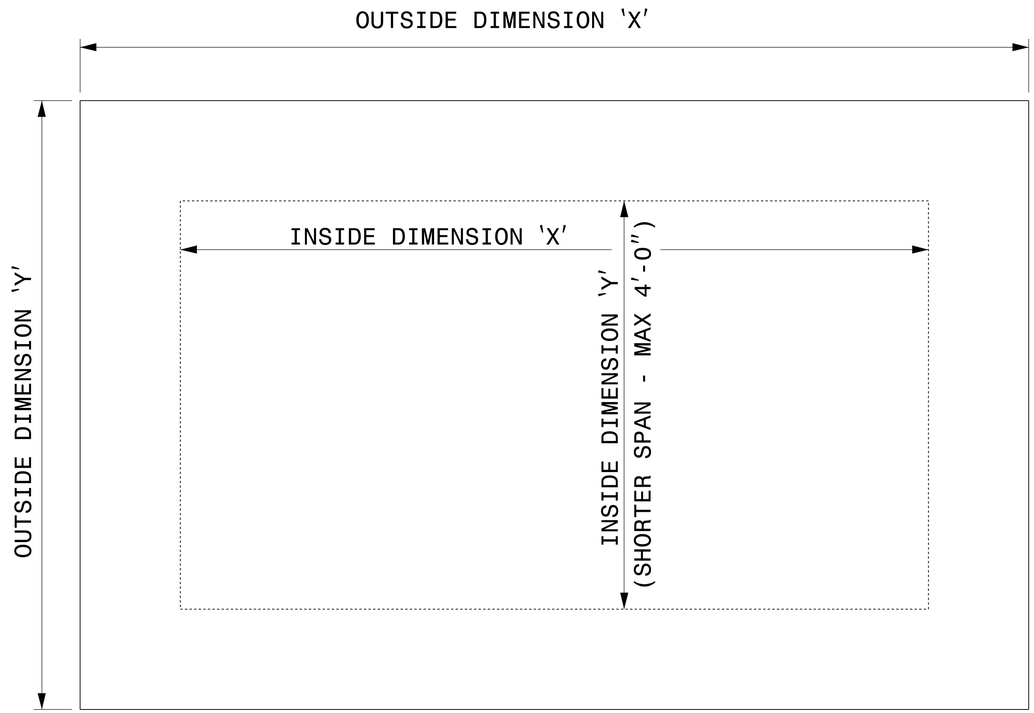
COAL COMBUSTION PRODUCT PLACEMENT DETAIL

ORIGINAL BY: J.S.H. DATE: 3/16/15
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: joel/coal combustion material detail.dgn

07-SEP-2017 08:21
S:\Contracts\Contracts Special Details\jhowerton\Coal Combustion Product Detail.dgn
jhowerton AT CSD-212595

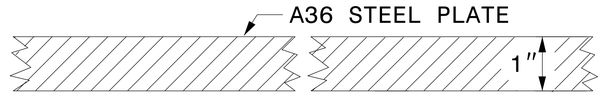
PROJECT REFERENCE NO.	SHEET NO.
R-3830	2C-12



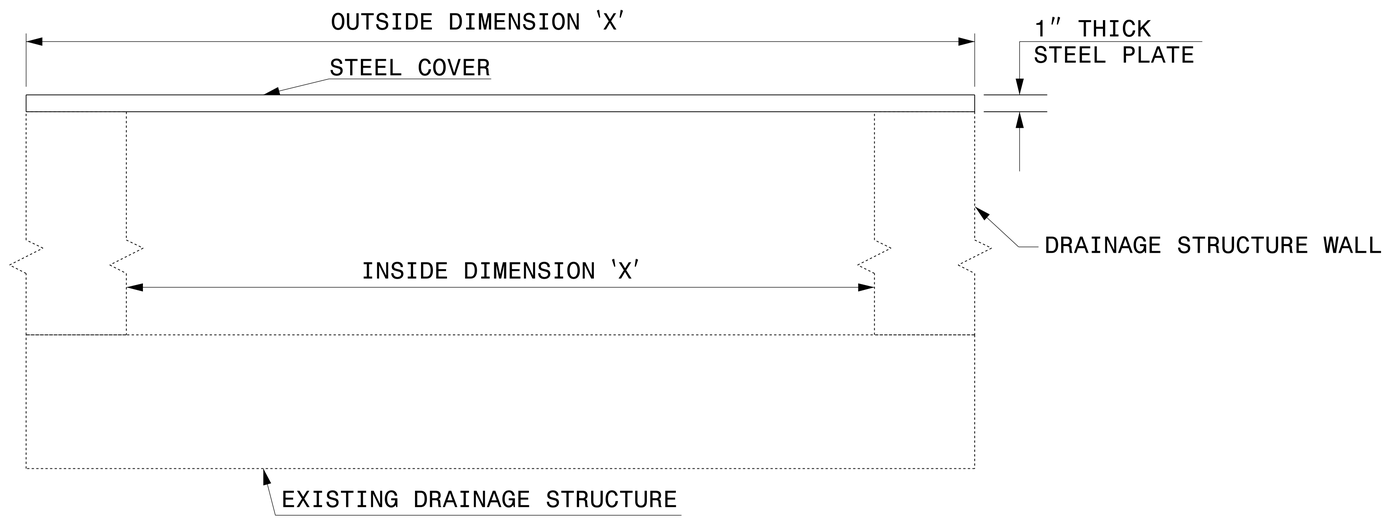
PLAN VIEWS

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

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022071 ERIC ELTON DAVENPORT
Eric Elton Davenport, Jr.
6/30/2022 | 3:43 PM EDT

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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

$$$$ SYSTIME $$$$
$$$$ SYSNAME $$$$
$$$$ USERNAME $$$$

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2C-13
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STATE OF NORTH CAROLINA
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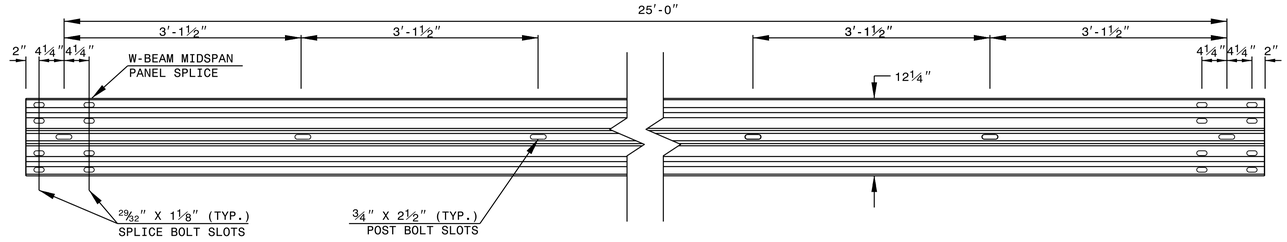
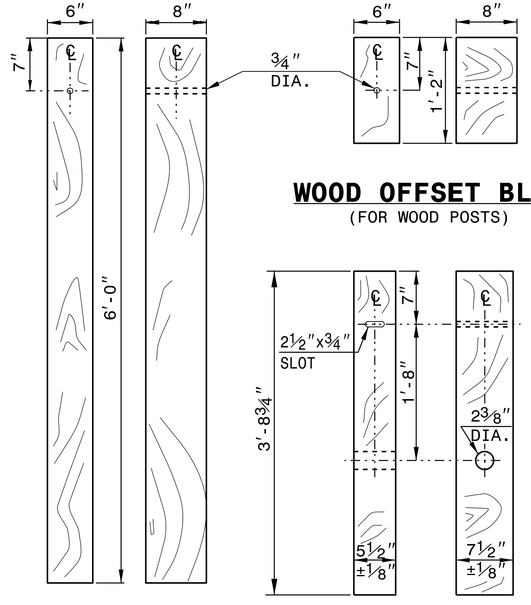
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



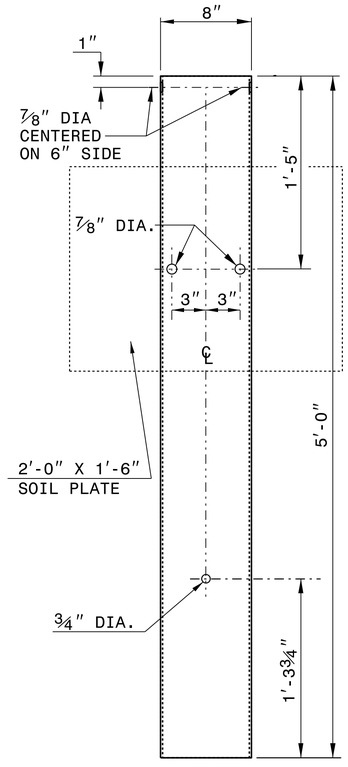
STANDARD W-BEAM GUARDRAIL



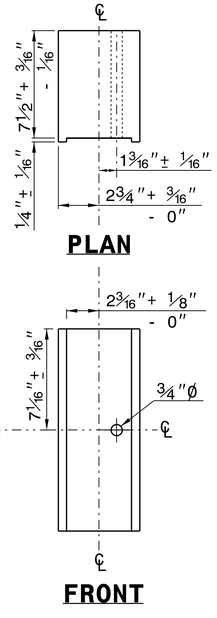
WOOD OFFSET BLOCK
(FOR WOOD POSTS)

STANDARD LINE POST

SHORT WOOD BREAKAWAY POST



STEEL TUBE
TS 6"x8"x0.1875"

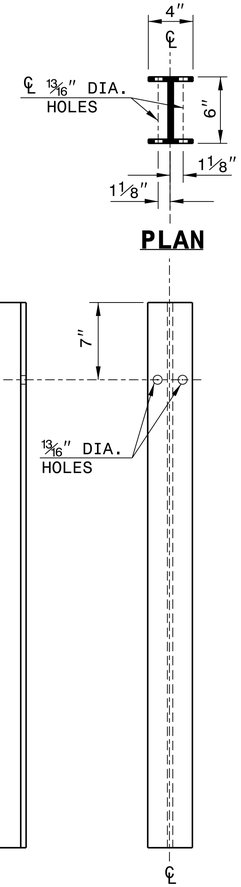


PLAN

SIDE

FRONT

ROUTED OFFSET BLOCK



PLAN

SIDE

FRONT

"W6" STEEL POST

SYSTEM PARTS

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022071 — Bradley Ethan Davenport, Jr. — 6/30/2022 | 3:43 PM EDT

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
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SEE TITLE BLOCK

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

PROJECT REFERENCE NO.	SHEET NO.
R-3830	2G-1

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

DocuSigned by: Scott A. Hidden 04/27/2022
F760CAEB96FC4D3...
SIGNATURE DATE

ENGINEER

SIGNATURE DATE

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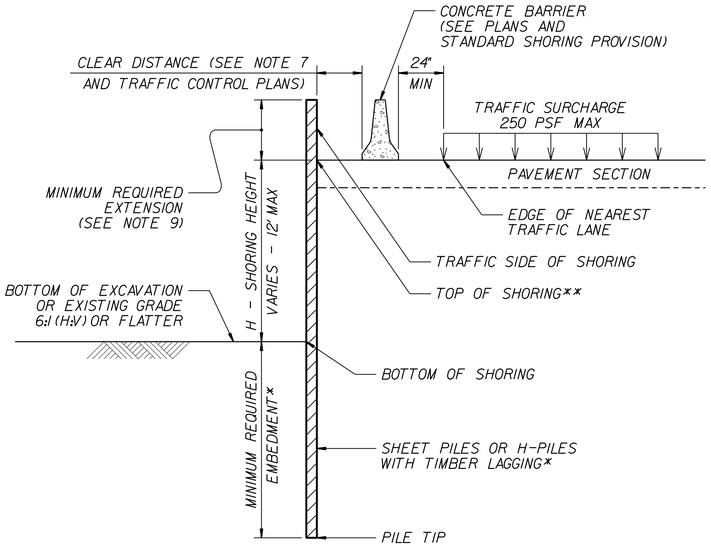
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS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

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

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

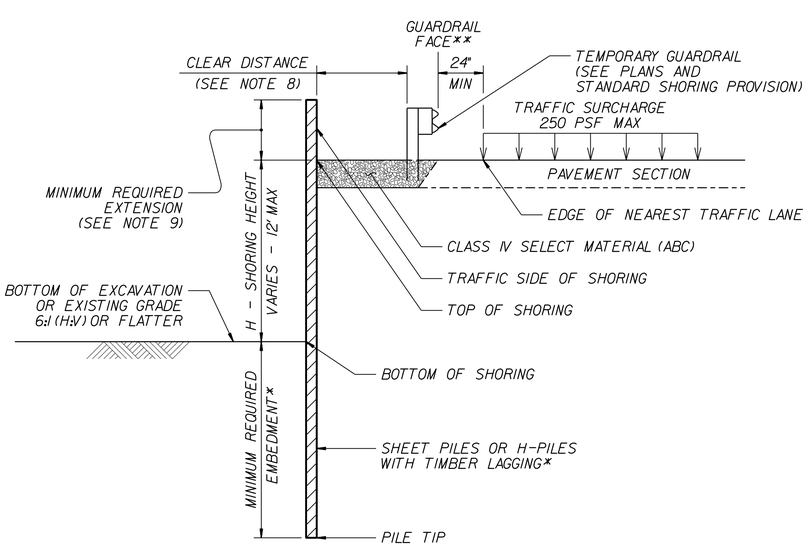
NOTES:

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



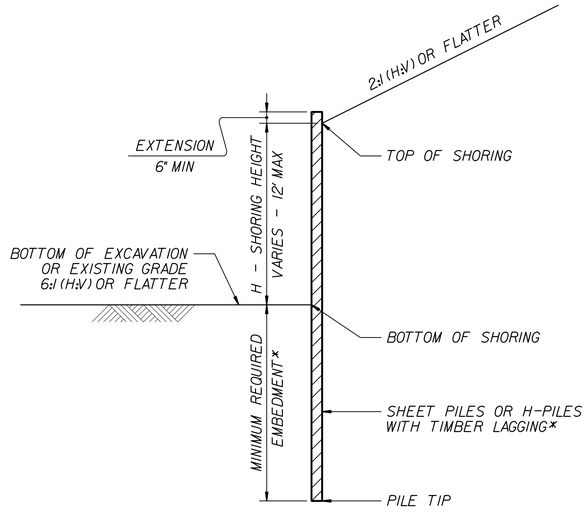
CONCRETE BARRIER

**TOP OF SHORING = EDGE OF PAVEMENT



TEMPORARY GUARDRAIL

**GUARDRAIL FACE = EDGE OF PAVEMENT



STANDARD TEMPORARY SHORING

(SLOPE CASE)
*SEE TABLE ABOVE.

STANDARD TEMPORARY SHORING

(SURCHARGE CASE)
*SEE TABLE ABOVE.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

STANDARD DETAIL NO. 1801.01

STANDARD TEMPORARY SHORING

DATE: 11-19-13