This electronic collection of documents is provided for the convenience of the user and is Not a Certified Document –

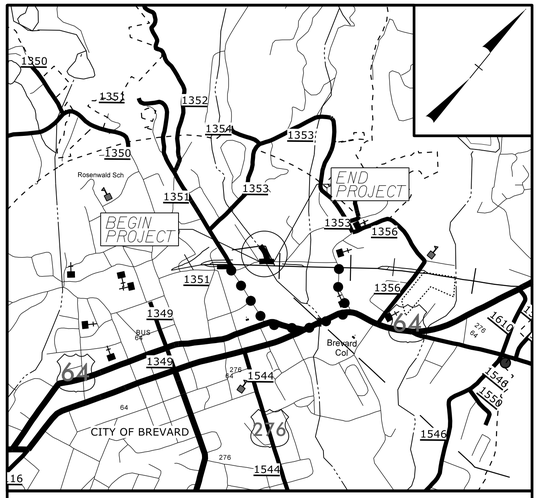
The documents contained herein were originally issued and sealed by the individuals whose names and license numbers appear on each page, on the dates appearing with their signature on that page.
This file or an individual page shall not be considered a certified document.

09/08/99

TIP PROJECT: B–5550

CONTRACT: DN01008

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



VICINITY MAP

DETOUR ROUTE

N.T.S.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSYLVANIA COUNTY

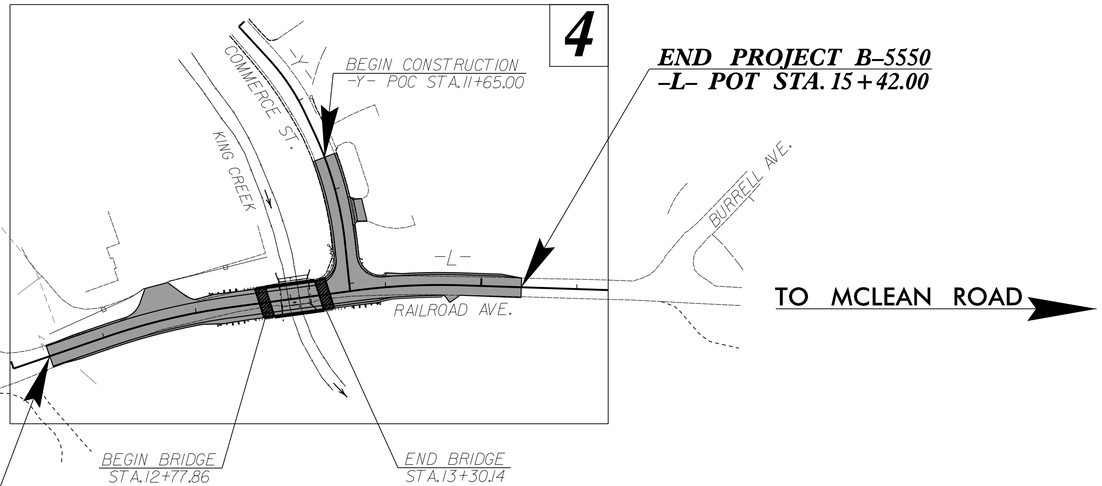
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B–5550	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
43653.1.F1	1402011	P.E.
43653.2.1	1402011	ROW & UTILITIES
43653.3.1	1402011	CONST.

LOCATION: REPLACE BRIDGE 870102 OVER KING CREEK ON SR 1351 (RAILROAD AVENUE)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

NAD 83/NA 2011



END PROJECT B–5550
–L– POT STA. 15+42.00

BEGIN PROJECT B–5550
–L– POT STA. 10+40.00

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

20 10 0 20 40
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

4 2 0 4 8
PROFILE (VERTICAL)

DESIGN DATA

ADT 2016 = 3,000 VPD
ADT 2036 = 5,200 VPD
DHV = 10 %
D = 60 %
T = 5 % *
V = 30 MPH
* TTST = 4% DUAL 1%
FUNC CLASS = COLLECTOR
SUB–REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B–5550 = 0.085 MILES
LENGTH BRIDGE TIP PROJECT B–5550 = 0.010 MILES

TOTAL LENGTH TIP PROJECT B–5550 = 0.095 MILES

Prepared In the Office of:

CDM Smith

CDM Smith Inc.
4600 Park Road
Suite 240
Charlotte, NC 28209-3730
NC COA No. F-1255

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 25, 2018

LETTING DATE:
FEBRUARY 28, 2023

KIT A. PERSIANI, PE
PROJECT ENGINEER

TRUNG T. NGUYEN, PE
PROJECT DESIGN ENGINEER

WES JAMISON, PE
NCDOT CONTACT
DIVISION PROJECT DEVELOPMENT ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26971 ENGINEER PAMELA C. DALTON

DocuSigned by: Pamela Dalton
SIGNATURE: *P.E.* 1/12/2023

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 021655 ENGINEER KIT A. PERSIANI

DocuSigned by: kit A. Persiani
SIGNATURE: *P.E.* 1/12/2023

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

SYSTIME
...\Roadway\Proj\B5550_Rdy_tsn.dgn
USER: PERSIANIK

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C	SURVEY CONTROL SHEET
2A-1 THRU 2A-2	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B-1	ROADWAY DETAILS
2C-1 THRU 2C-3	SPECIAL DETAILS
3B-1	ROADWAY SUMMARIES
3D-1	DRAINAGE SUMMARIES
4-5	PLAN AND PROFILE SHEETS
TMP-1 THRU TMP-3	TRANSPORTATION MANAGEMENT PLANS
PMP-1	PAVEMENT MARKING PLAN
SIGN-1	SIGNING PLAN
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
UC-1 THRU UC-5	UTILITY CONSTRUCTION PLANS
X-1 THRU X-6	CROSS-SECTION INDEX SHEET, SUMMARY SHEET AND CROSS-SECTIONS
S-1 THRU S-15	STRUCTURE PLANS

GENERAL NOTES:

2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

GRADING AND SURFACING:

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

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FOOT RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

STREET TURNOUT:

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

GUARDRAIL:

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

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

END BENTS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE POWER: DUKE ENERGY DISTRIBUTION,

POWER: DUKE ENERGY TRANSMISSION, TELEPHONE: COMPORIUM (FORMERLY CITIZENS TELEPHONE),

WATER & SEWER: CITY OF BREVARD PUBLIC WORKS, GAS: PSNC

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.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01-16-2018
REV.

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.02	Bridge Approach Fills - Type II Modified Approach Fill
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
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
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

9/10/2021

PROJECT REFERENCE NO.	SHEET NO.
B-5550	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
- RR Signal Milepost
- 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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

- Head and End Wall
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB
- 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

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

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line
- Above Ground 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.
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

09/08/99

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5550	1C	

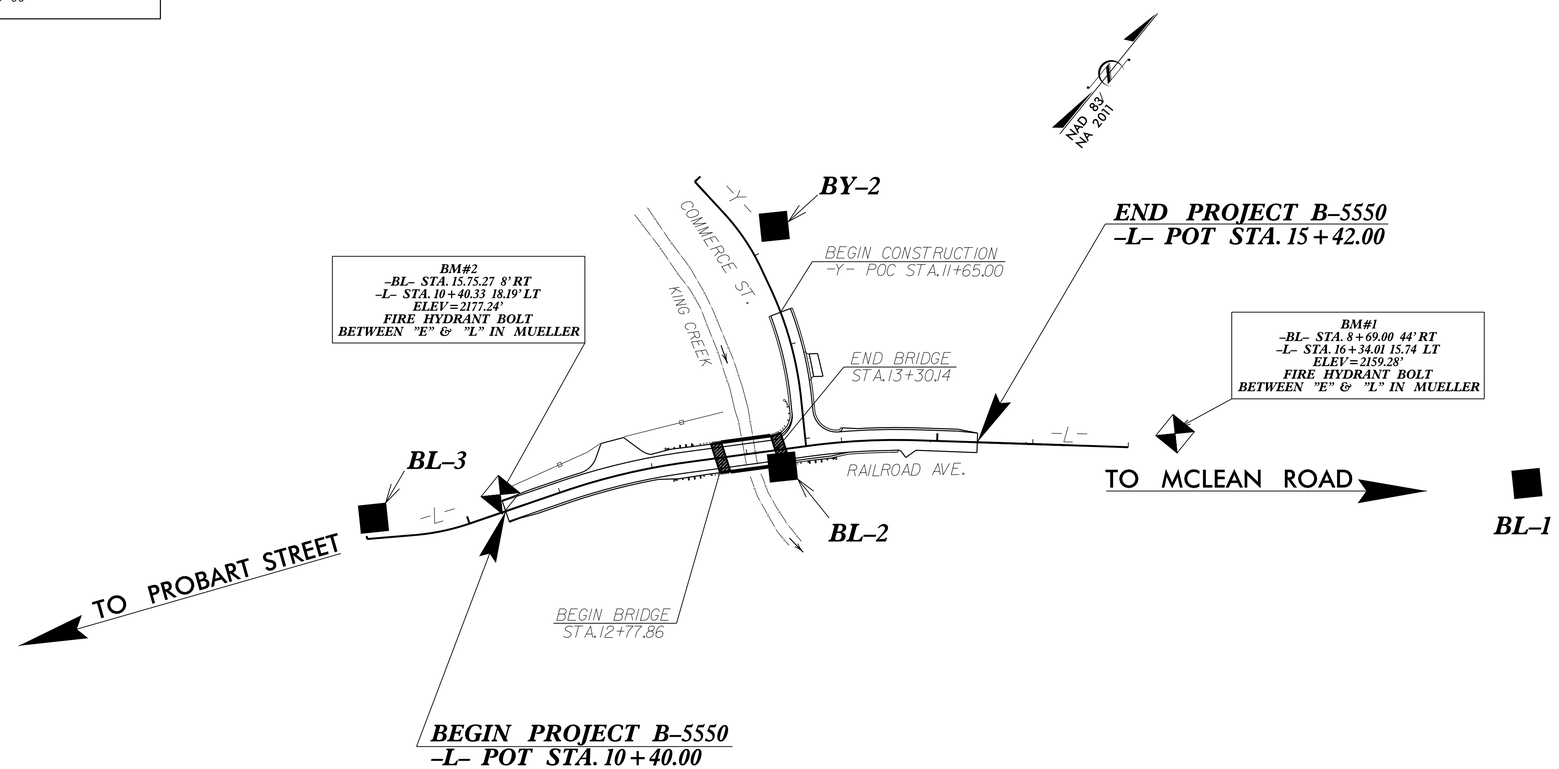
B-5550 SURVEY CONTROL SHEET

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY CHE FOR MONUMENT "BL-1"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 563854.260(ft) EASTING: 885826.670(ft)
ELEVATION: 2158.514(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999872607
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-3" TO -L- STATION 11+50.00 IS N 47^ 46' 16.2" E 139.79'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

■ ***:INDICATES CONTROL REBAR WITH CAP USED OR SET FOR HORIZONTAL AND VERTICAL PROJECT BY CH ENGINEERING. PROJECT CONTROL ESTABLISHED USING NCGS VIRTUAL REFERENCE STATION (VRS) NETWORK***

DRAWING NOT TO SCALE



BASELINE DATA

DESC.	NORTHING	EASTING	ELEVATION
BL–1	563854.26	885826.67	2158.51
BL–2	563376.69	885211.21	2160.75
BL–3	563065.41	884912.86	2178.29
BY–2	563566.67	885045.92	2164.37

-SYSTIME
::Proj\B5550_Rdy_psh_IC.dgn
USER: NAFSIM

PROJECT REFERENCE NO.	SHEET NO.
B-5550	2A-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 021655 ENGINEER KIT A. PERSIANI

12/10/2022

CDM Smith
CDM Smith Inc.
4600 Park Road
Suite 240
Charlotte, NC 28209-3730
NC COA No. F-1255

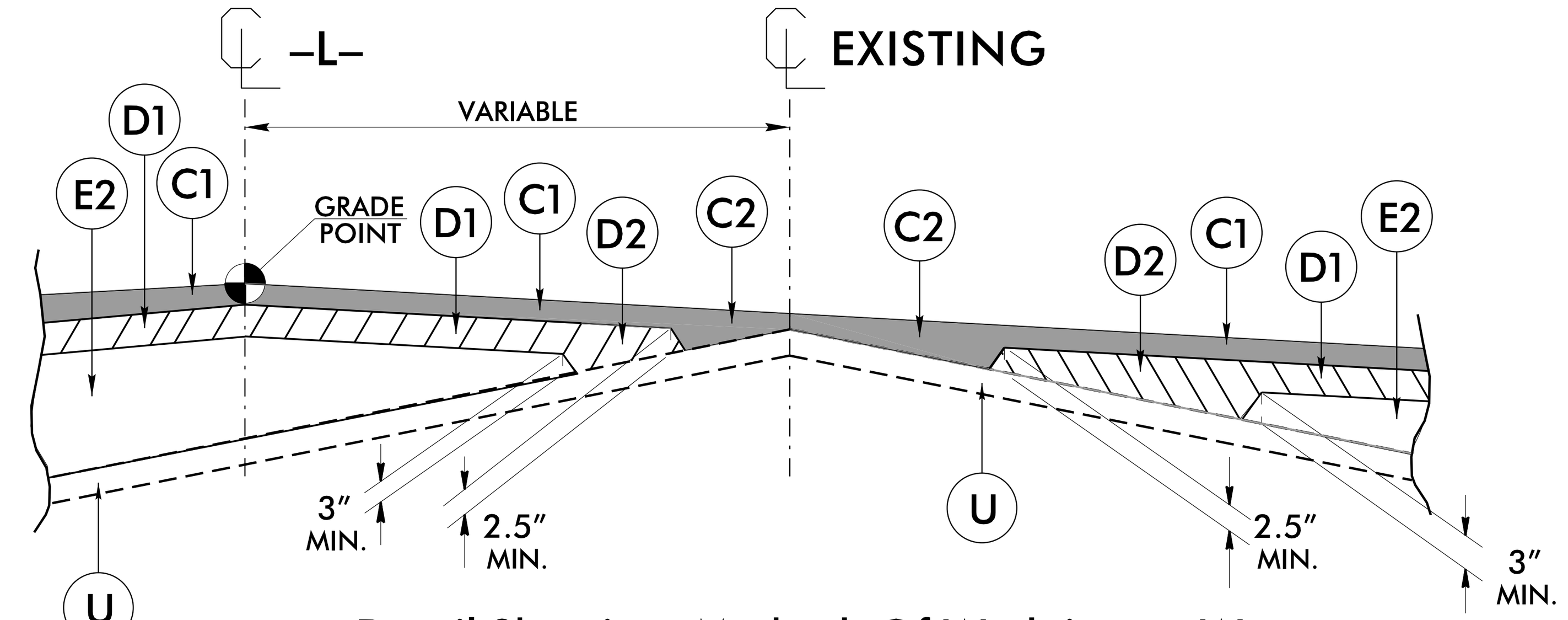
NC DEPARTMENT OF TRANSPORTATION
PAVEMENT MANAGEMENT UNIT
1593 MAIL SERVICE CENTER
RALEIGH, NC 27699-1593

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

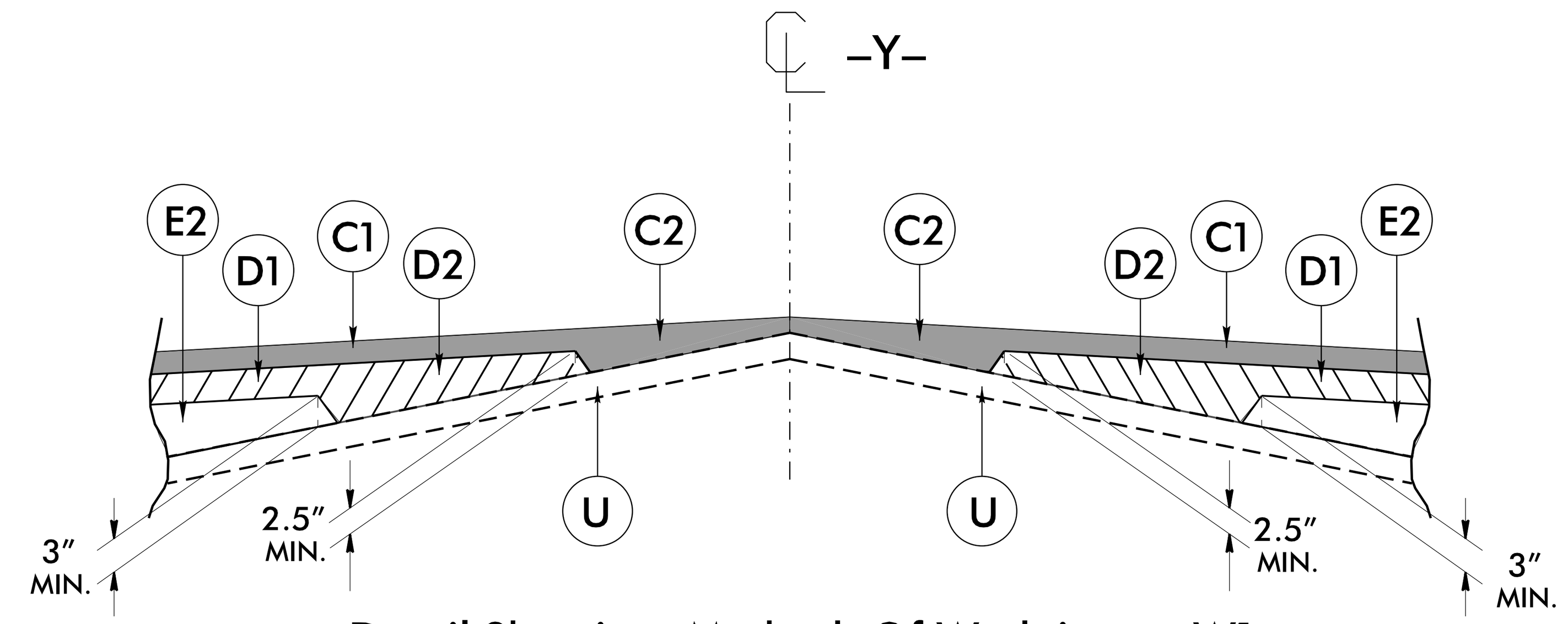
PAVEMENT SCHEDULE

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
C3	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	INCIDENTAL MILLING.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE -L- WEDGING DETAIL)
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE -Y- WEDGING DETAIL)

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

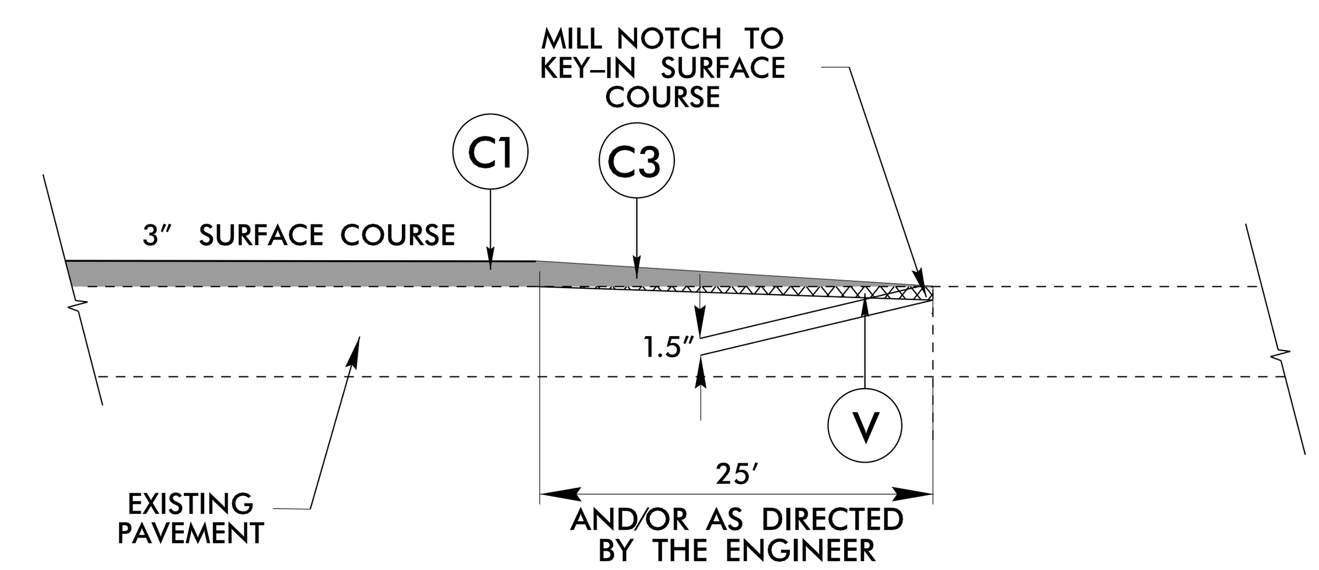


Detail Showing Method Of Wedging - W
-L-

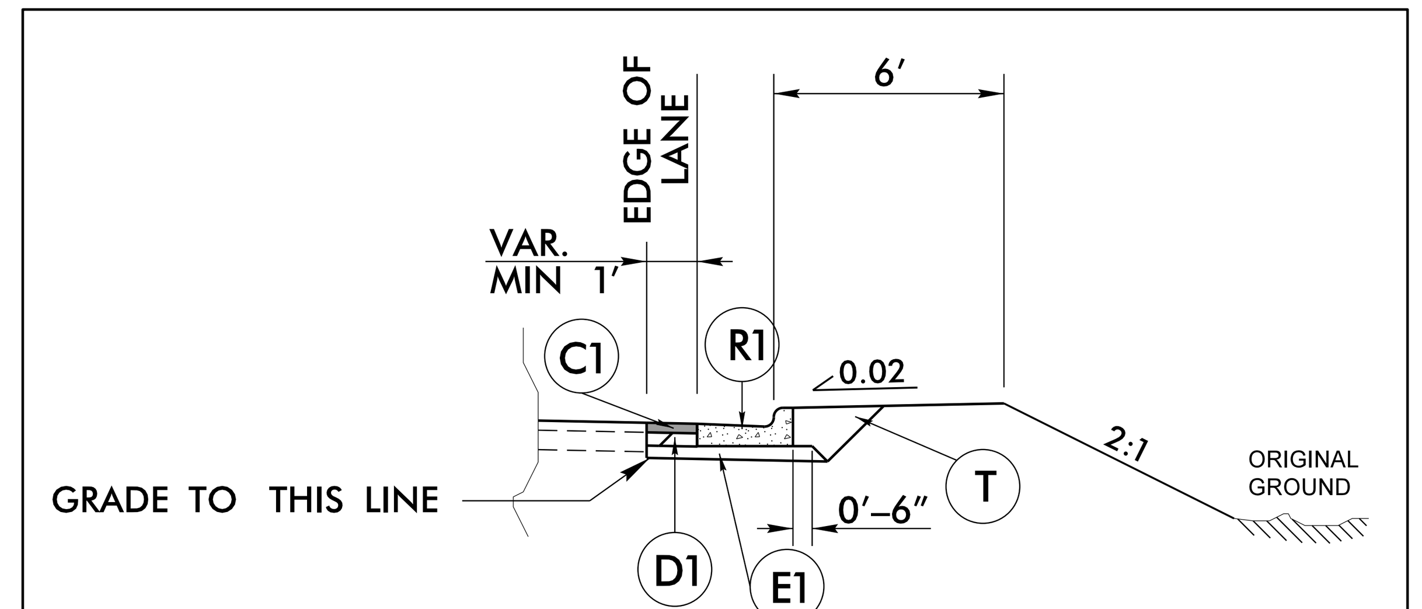


Detail Showing Method Of Wedging - W1
-Y-

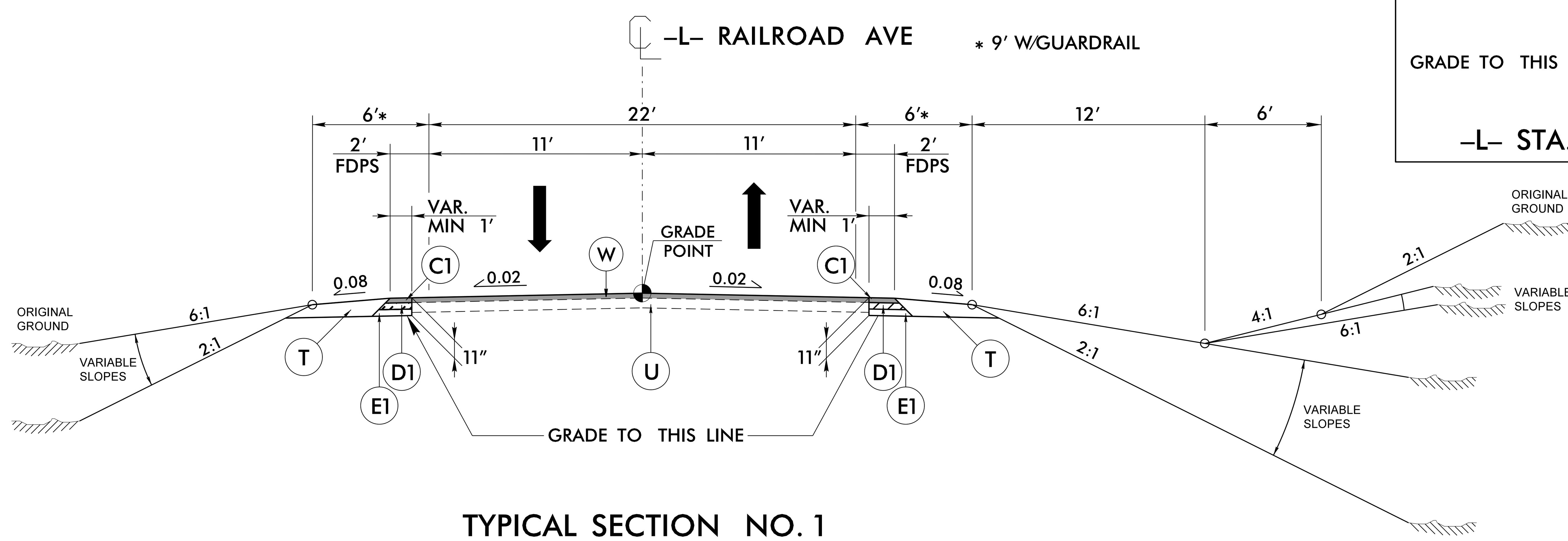
MILLING DETAIL
INCIDENTAL MILLING AT BEGIN/END FOR TIE-INS



-L- STA. 10+40.00 TO STA. 10+65.00
-L- STA. 15+17.00 TO STA. 15+42.00
-Y- STA. 11+65.00 TO STA. 11+90.00



-L- STA. 14+06.15 TO STA 14+59.10 (RT)



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

-L- STA. 10+40.00 TO STA. 10+75.00
-L- STA. 14+25.00 TO STA. 15+42.00

PROJECT REFERENCE NO.	SHEET NO.
B-5550	2A-2

ROADWAY DESIGN ENGINEER

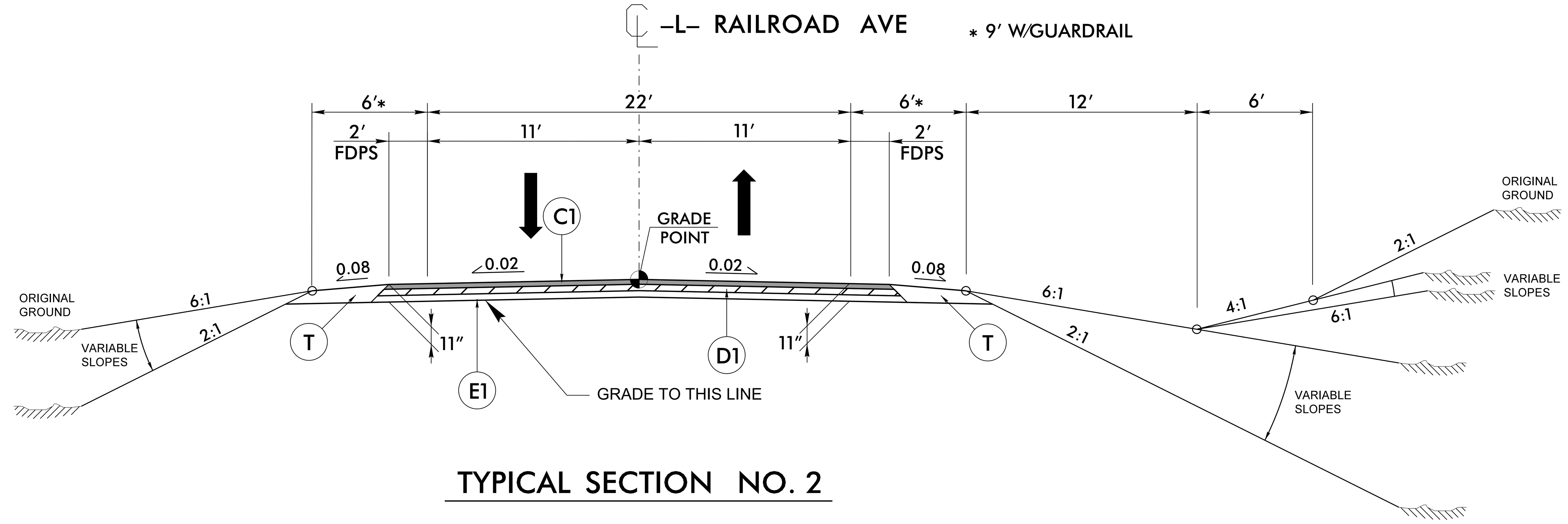
NORTH CAROLINA PROFESSIONAL SEAL 021655 ENGINEER KIT A. PERSIANI 12/10/2022

CDM Smith
CDM Smith Inc. 4600 Park Road Suite 240 Charlotte, NC 28209-3730 NC COA No. F-1255
NC DEPARTMENT OF TRANSPORTATION PAVEMENT MANAGEMENT UNIT 1593 MAIL SERVICE CENTER RALEIGH, NC 27699-1593

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

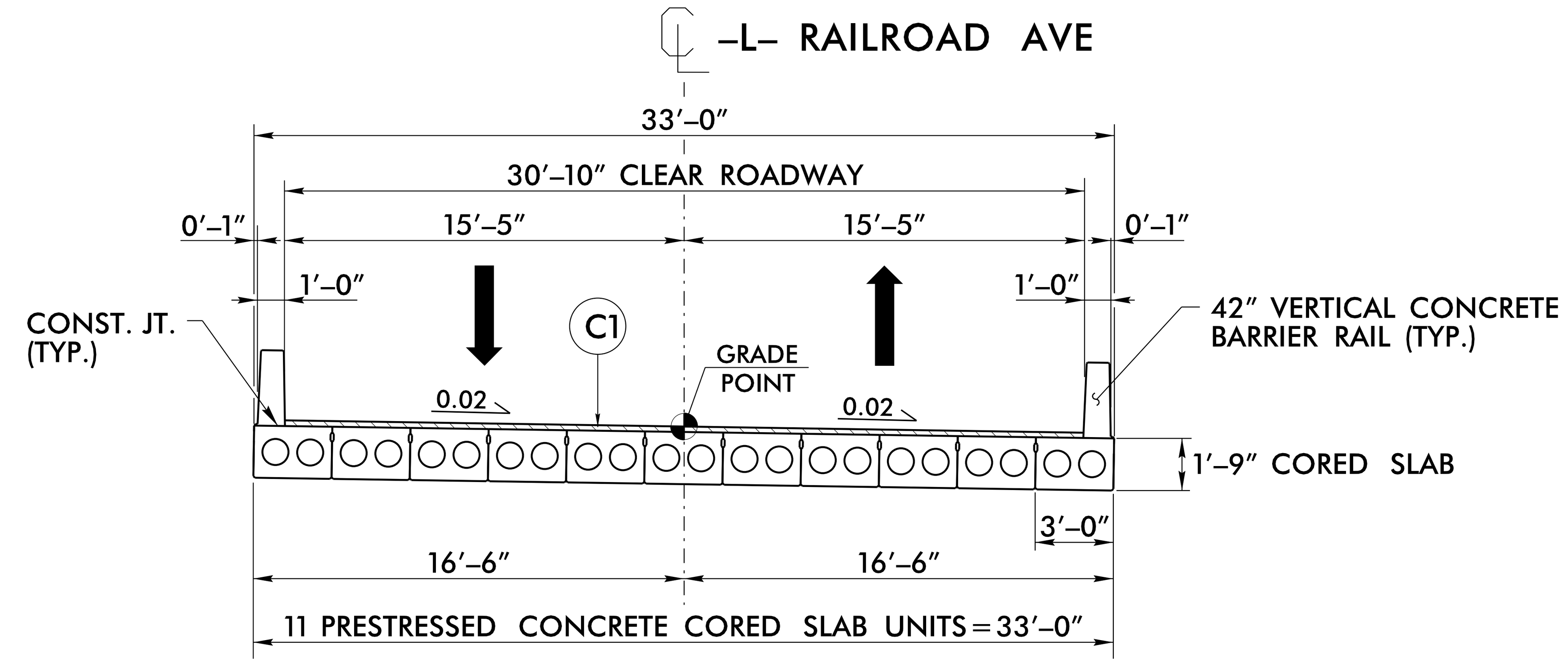
PAVEMENT SCHEDULE	
C1	3" S9.5B
C2	VAR. S9.5B
C3	1½" S9.5B
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
R1	2'-6" C&G
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V	INCIDENTAL MILLING
W	WEDGING
W1	WEDGING

PAVEMENT EDGESLOPES 1:1 UNLESS NOTED OTHERWISE



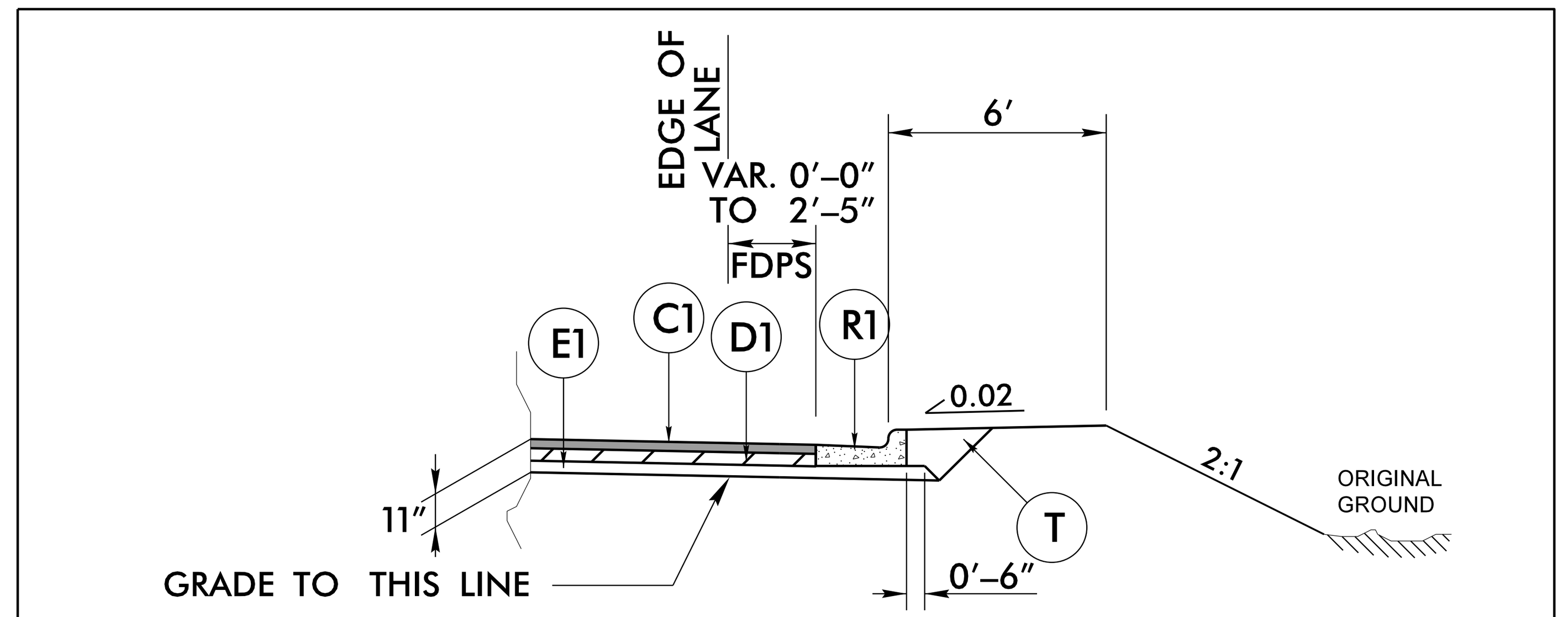
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
-L- STA. 10+75.00 TO STA. 12+77.86 (BEGIN BRIDGE)
-L- STA. 13+30.14 (END BRIDGE) TO STA 14+25.00

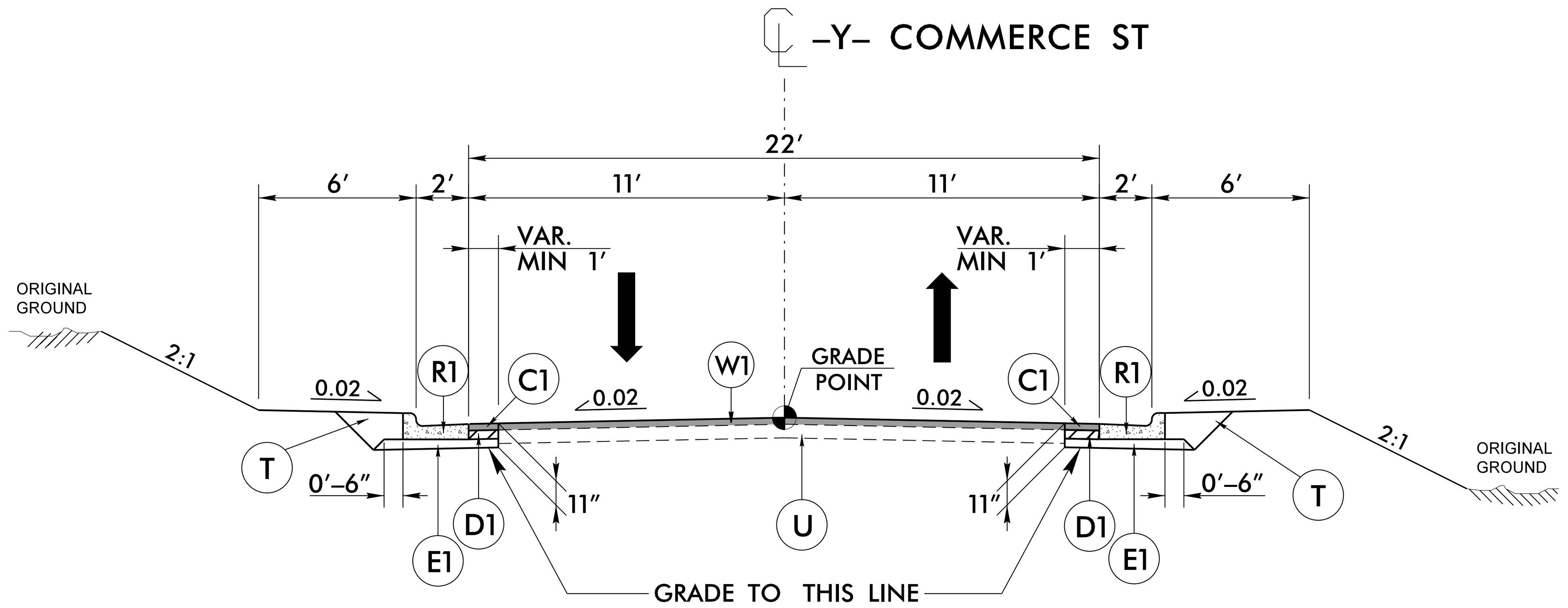


BRIDGE TYPICAL SECTION

USE BRIDGE TYPICAL SECTION
-L- STA. 12+77.86 (BEGIN BRIDGE) TO STA. 13+30.14 (END BRIDGE)

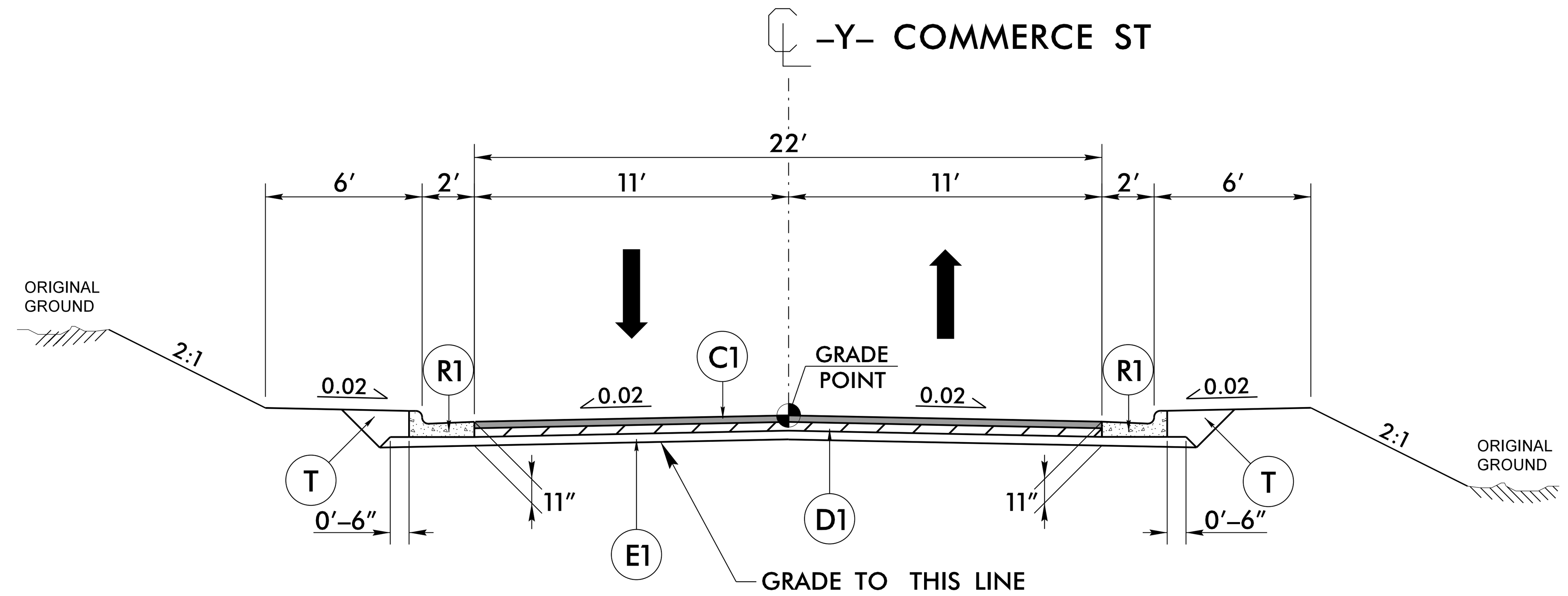


-L- STA. 13+30.14 (END BRIDGE) TO STA 14+06.15 (RT)



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
-Y- STA 11+65.00 TO STA. 12+50.00



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
-Y- STA 12+50.00 TO STA. 12+97.13

PROJECT REFERENCE NO.	SHEET NO.
B-5550	2B-1
RW SHEET NO.	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ROADWAY DESIGN ENGINEER

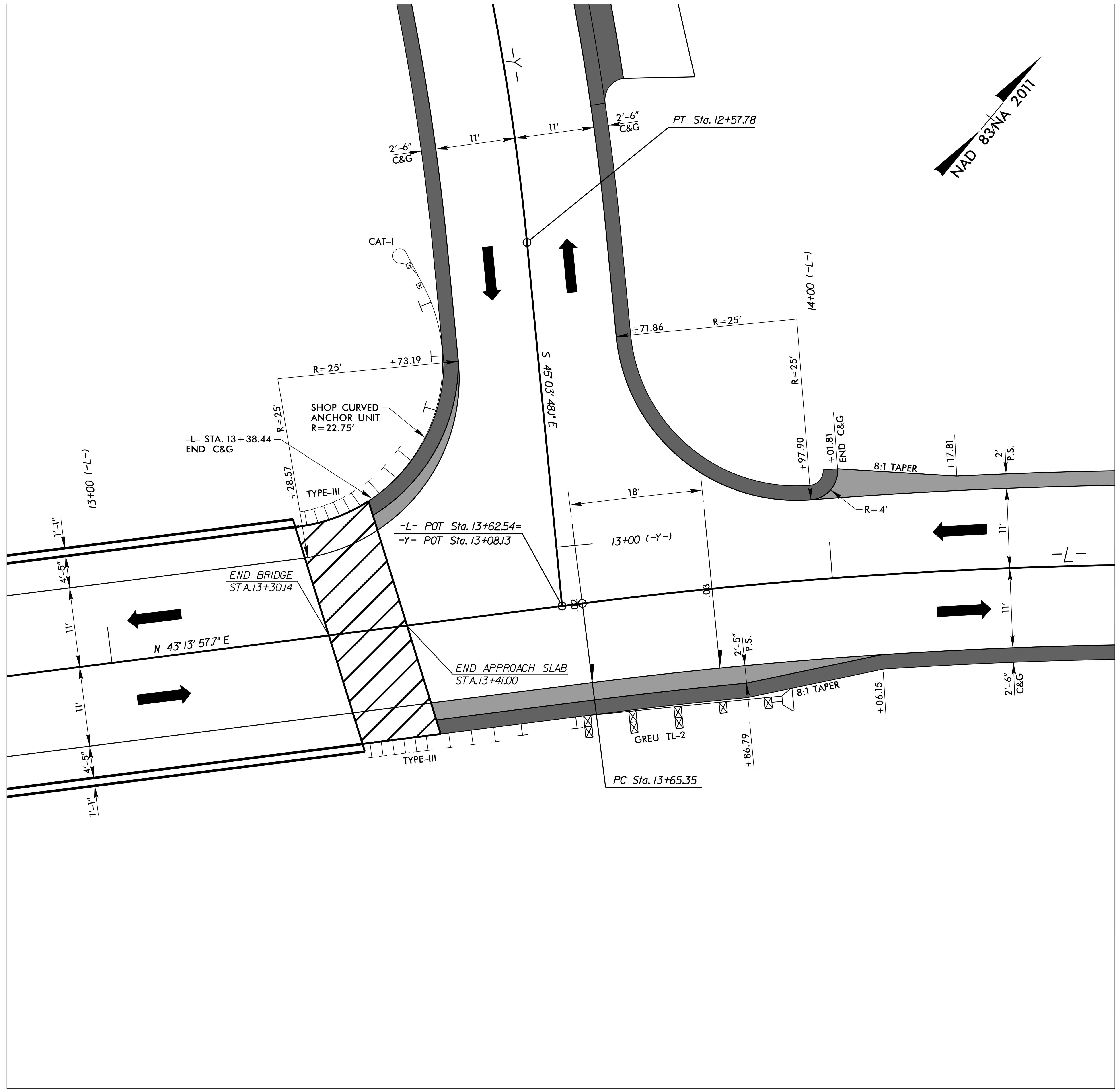
NORTH CAROLINA PROFESSIONAL SEAL 021655 ENGINEER KIT A. PERSIANI

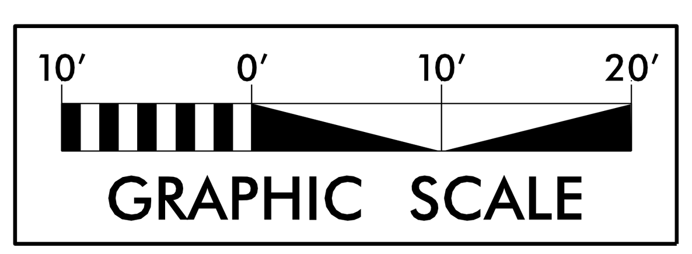
12/10/2022

CDM Smith

CDM Smith Inc.
4600 Park Road
Suite 240
Charlotte, NC 28209-3730
NC COA No. F-1255

INTERSECTION DETAIL
-L-(RAILROAD AVE.)/-Y- (COMMERCE ST.)





SEE SHEET 4 FOR PLAN VIEW

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-5550	2C-1

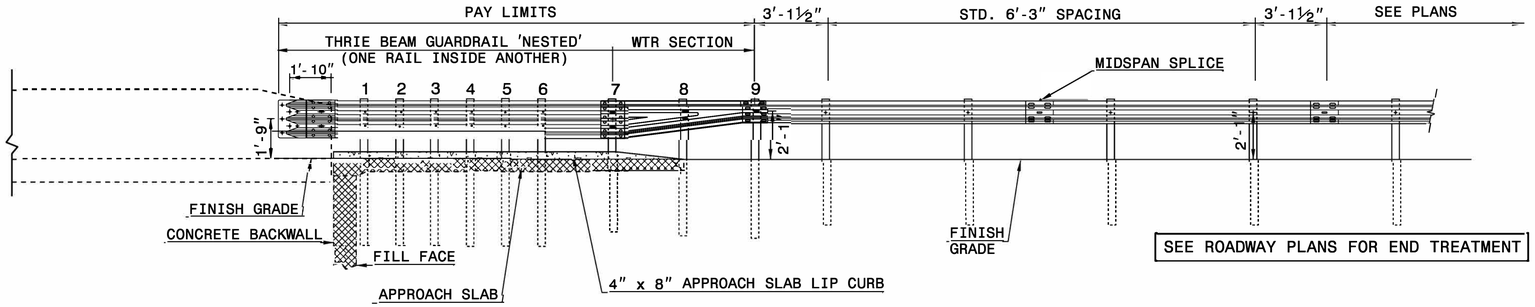
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

TYPE III - SHOP CURVED STRUCTURE ANCHOR UNIT

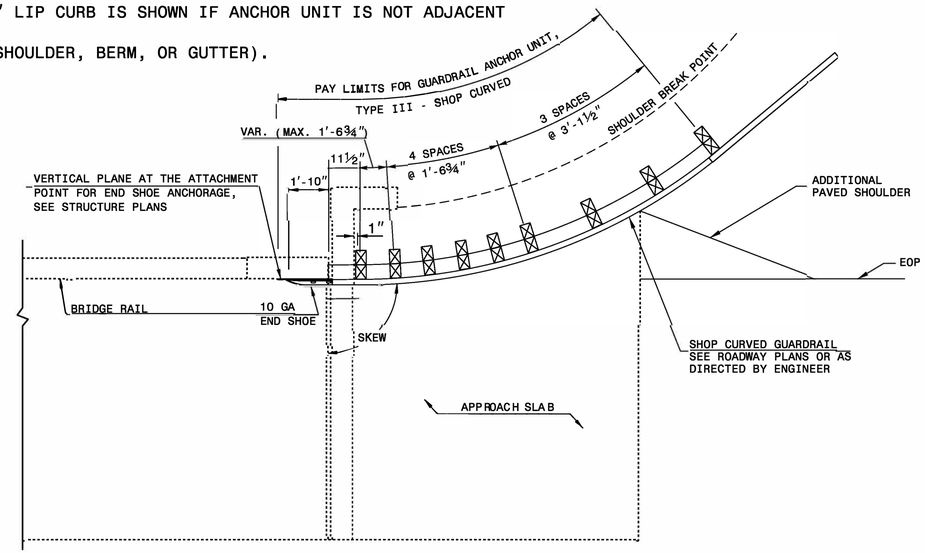
SHEET 1 OF 1

TYPE III SC



ELEVATION

NOTE:
**POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
-USE NO STEEL POSTS WITHIN THE GUARDRAIL ANCHOR UNIT LIMITS.
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE STANDARD 862.03 SHEET 4 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

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

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

ENGLISH DETAIL DRAWING FOR

TYPE III - SHOP CURVED STRUCTURE ANCHOR UNIT

SHEET 1 OF 1

TYPE III SC

01-FEB-2018 08:09
S:\Contracts\Contracts\Special Details\jhowerton\Guardrail\31 inch Guardrail\type iii sc.dgn
jhowerton
AI CSD-292595

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

SEE PLATE FOR TITLE

ORIGINAL BY: E.E.Ward DATE: 4-4-02
MODIFIED BY: T.S.Spell DATE: 2-01-18
CHECKED BY: DATE:
FILE SPEC.: \jhowerton\guardrail\31inguardrail\typeiiisc.dgn

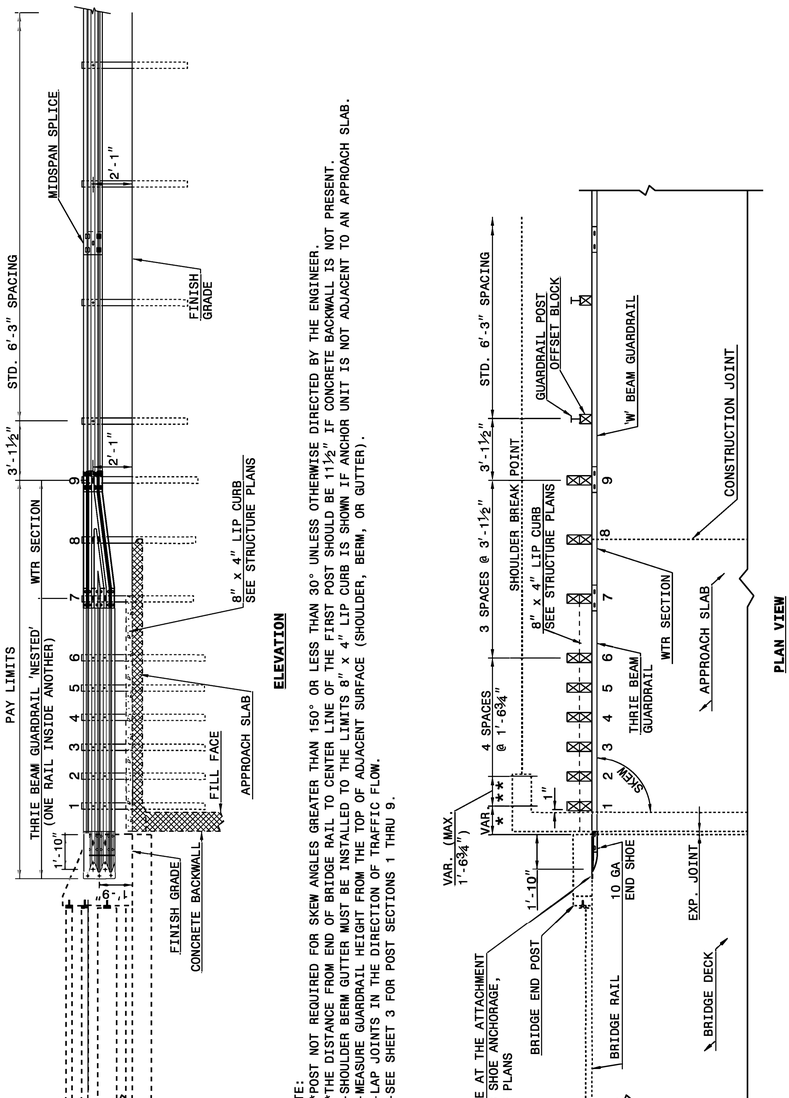
12/15/2022

PROJECT REFERENCE NO.	SHEET NO.
B-5550	2C-2

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

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

SHEET 1 OF 7
862D03



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

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

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

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

SHEET 2 OF 7
862D03

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

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

NORTH CAROLINA PROFESSIONAL SEAL 33144 ENGINEER NICOLE M HACKLER
12/15/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

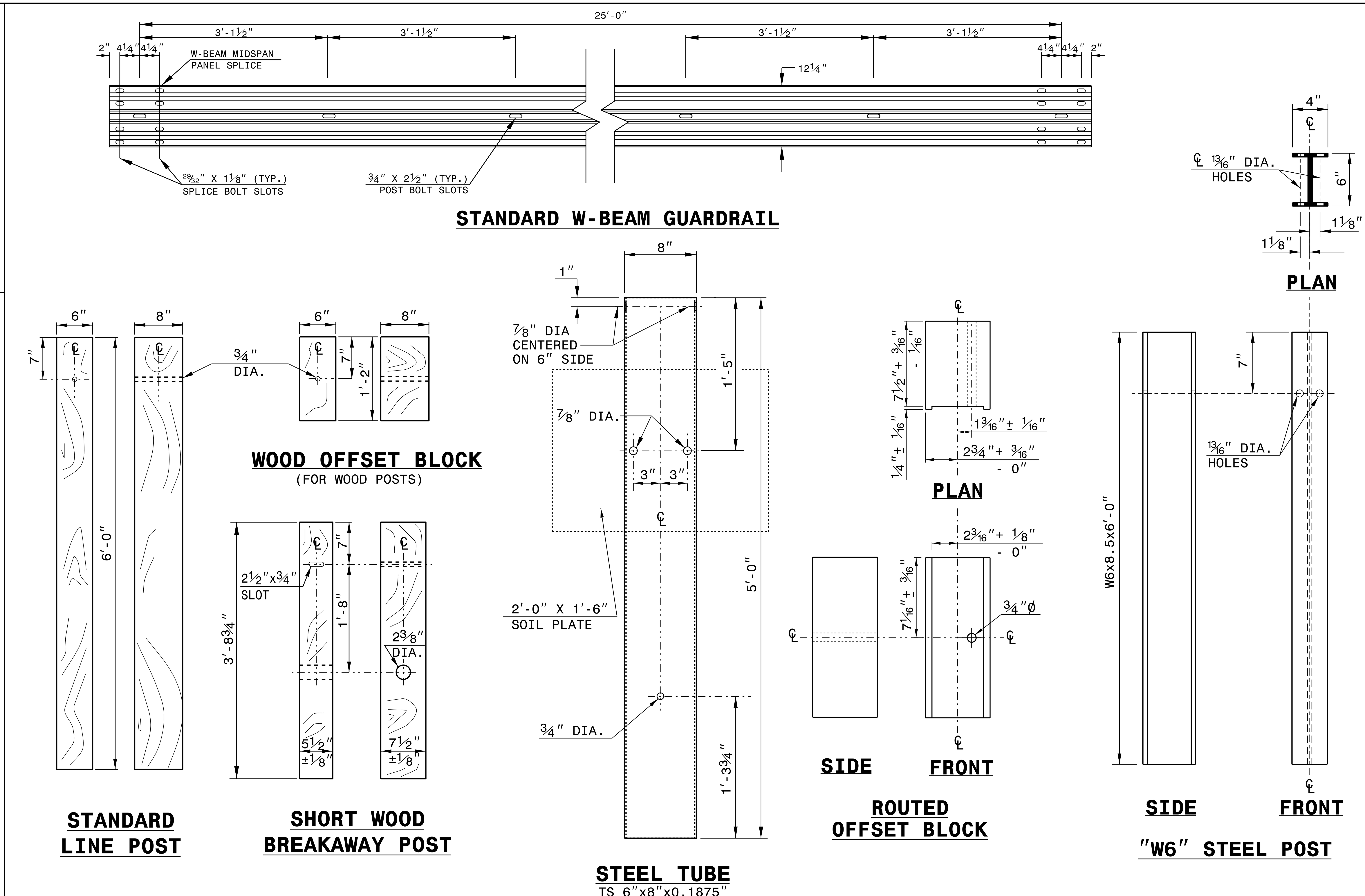
ORIGINAL BY: J HOWERTON DATE: 06-22-12
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

PROJECT REFERENCE NO.	SHEET NO.
B-5550	2C-3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION



SYSTEM PARTS

SHEET 6 OF 8
862D02

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

SEAL 33144
12/15/2022

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

SEE TITLE BLOCK

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

6/21/08

COMPUTED BY: T. NGUYEN DATE: 12/6/2022
CHECKED BY: K. PERSIANI DATE: 12/6/2022

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-5550	3B-1

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

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GREU TL-3	III	GREU TL-2	B-77	CAT-1	SHOP CURVED III				EA	G	NG				
-L-	12+18.89	12+75.14	LT	56.25				12+75.14	4.42	8.00		25.00		0.50		1	1													
-L-	12+24.33	12+80.58	RT	56.25			12+80.58		4.42	8.00	25.00		0.50			1	1													
-L-	13+32.86	13+89.11	RT	56.25				13+32.86	4.42	8.00		25.00		0.50		1	1													
-L-	13+27.94	13+48.00	LT		50.00		13+27.94		4.42	8.00									1	1										
			SUBTOTALS	168.75												3	3		1	1										
			TYPE III, 4@18.75'	-56.25	-18.75																									
			GREU TL-2, 3@25.00'	-75.00																										
			CAT-1, 1@6.25'		-6.25																									
			PROJECT TOTALS	37.50	25.00											3	3		1	1										
			SAY	37.50	25.00											3	3		1	1										
ADDITIONAL GUARDRAIL POSTS = 10 EA																														

SUMMARY OF EARTHWORK (CY)

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
-L- 10+40.00 - 12+77.86	161		174	13	
-L- 13+30.14 - 15+42.00	212		154		58
SUBTOTAL	373		328	13	58
-Y- 11+65.00 - 12+97.13	48		25		23
SUBTOTAL	48		25		23
TOTAL	421		353	13	81
MATERIAL FOR SHOULDER CONSTRUCTION					
LOSS DUE TO CLEARING & GRUBBING					
ADDITIONAL UNDERCUT					
ROCK WASTE TO REPLACE BORROW					
ADJUST FOR ROCK WASTE					
WASTE IN LIEU OF BORROW				-13	-13
PROJECT TOTAL	421		353		68
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					
GRAND TOTAL	421		353		68
SAY	500				

SHOULDER BORROW = 80 CUBIC YARDS

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

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

SUMMARY OF PAVEMENT REMOVAL (SY)

LINE	STATION - STATION	LOCATION	REMOVAL (SY)
-L-	STA. 10+75.00 TO STA. 12+90.50	CL	648
-L-	STA. 13+19.19 TO STA. 14+25.00	CL	216
-Y-	STA. 12+50.00 TO STA. 12+97.13	CL	163
GRAND TOTAL			1027
SAY			1030

$$SYSTIME$$ ...\B5550_Rdy_sum_3B-1.dgn

DocuSign Envelope ID: BD66AA29-069F-4420-863B-B40524FA959F

JOSHHP-NEW

COMPUTED BY:	Randal C. Howard, PE	**DATE:**	11/28/2022
CHECKED BY:	Joshua G. Dalton, PE	**DATE:**	11/28/2022

PROJECT NO.	SHEET NO.
B-5550	3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION SIZE THICKNESS OR GAUGE	OFFSET		STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G	
L 13+46	15	RT	0402		2161.5																				1			1		1		
			0402	0406		2156.5	2154.9			12																						
Y 12+76	14	RT	0403		2161.2																				1			1	1			
			0403	0402		2156.7	2156.5											48														
Y 12+76	13	LT	0404		2161.2																				1			1	1			
			0404	0403		2156.9	2156.7											24														
			0405	0404		2157.0	2156.9			28																						
L 13+45	29	RT	0406		2160.0																				1	0.1						
			0406	0401		2154.9	2154.3					24																				
Y (12+17 - 12+85)	80	LT																														
L (13+15 - 14+34)	24	LT																														
SHEET TOTALS										40		24						72							4	0.1		3	2	1		
PROJECT TOTALS										40		24						72							4	0.1		3	2	1		

LINE & STATION	FROM	TO	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	CONCRETE BRIDGE APPROACH D.I. STD. 840.13	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	T.B.D.I. FOR STEEL GRATES STD. 840.36	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	##" SPRING BOX PIPE	SPRING BOX STD. 840.41
L 13+46	0402																													
	0402	0406																												
Y 12+76	0403																													
	0403	0402																												
Y 12+76	0404																													
	0404	0403																												
	0405	0404																												
L 13+45	0406						1	1																						
	0406	0401																												
Y (12+17 - 12+85)																														
L (13+15 - 14+34)																														
SHEET TOTALS							1	1																						
PROJECT TOTALS							1	1																						

LINE & STATION	FROM	TO		M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54		##" x ##" x ##" PERF. C.S.P. TEE RISER ##" THICK	##" x ##" x ##" PERF. C.S.P. TEE RISER ##" THICK		##" PIPE END SECTION	##" PIPE END SECTION	##" PIPE END SECTION	##" PIPE END SECTION		CONVERT EXISTING C.B. TO J.B.	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	ADJUST C.B.	ADJUST D.I.		MODIFIED CONCRETE FLUME	PREFORMED SCOUR HOLE (PER EACH)	ENERGY DISSIPATION BASIN		FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 13+46	0402																													
	0402	0406																												
Y 12+76	0403																													
	0403	0402																												
Y 12+76	0404																													
	0404	0403																												
	0405	0404																												
L 13+45	0406																													
	0406	0401																												
Y (12+17 - 12+85)																													12	4" PVC
L (13+15 - 14+34)																													122	30" RCP
SHEET TOTALS																													134	
PROJECT TOTALS																													134	

ABBREVIATIONS

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

PROJECT REFERENCE NO.	SHEET NO.
B-5550	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 026655 — ENGINEER MATTHEW A. PERSIAN — 12/10/2022

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 46917 — ENGINEER JOSHUA G. DALTON — 12/10/2022

CDM Smith — CDM Smith Inc. 4600 Park Road Suite 240 Charlotte, NC 28209-3730 NC COA No. F-1255

SUNGATE DESIGN GROUP, P.A. 915 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 NC COA No. C-0890

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ADT IN HUNDREDS

2016/2036 -Y- COMMERCE ST

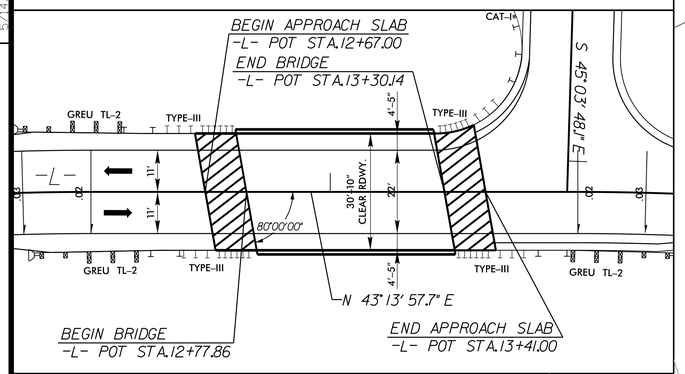
17/19 — 30/52 — 10/12 — 7/7 — 27/47 — 20/40

-L- RAILROAD AVE

REVISIONS

5/14/99

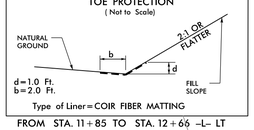
BRIDGE PAVEMENT RELATIONSHIP SKETCH -L-



-L-	
PI Sta 11+70.36	PI Sta 14+22.26
△ = 11° 13' 04.7" (RT)	△ = 9° 33' 15.2" (RT)
D = 8° 24' 48.5"	D = 8° 24' 48.5"
L = 133.33'	L = 113.56'
T = 66.88'	T = 56.91'
R = 681.00'	R = 681.00'
E = 0.03	E = 0.03

-Y-	
PI Sta 10+80.42	PI Sta 11+98.37
△ = 17° 38' 31.7" (RT)	△ = 19° 06' 30.0" (RT)
D = 25° 20' 21.9"	D = 15° 55' 49.6"
L = 69.62'	L = 119.95'
T = 35.09'	T = 60.54'
R = 226.11'	R = 359.66'
E = NC	E = NC

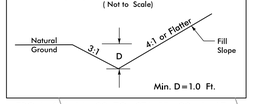
DETAIL 1
TOE PROTECTION
(Not to Scale)



Type of Liner=COIR FIBER MATTING

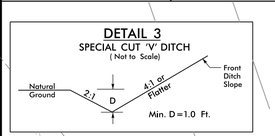
FROM STA. 11+85 TO STA. 12+65 -L- LT

DETAIL 2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 14+00 TO STA. 15+20 -L- LT

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



FROM STA. 15+20 TO STA. 15+42 -L- LT

1 CITIZENS TELEPHONE CO. dba COMPORIUM DB 153 PG 92 DB 153 PG 94 DB 454 PG 181 DB 480 PG 29 (CERTIFICATE OF ASSUMED NAME) SHOWN PER GIS PIN: 8586-43-9322

1 CITIZENS TELEPHONE CO. dba COMPORIUM DB 290 PG 292 DB 480 PG 29 (CERTIFICATE OF ASSUMED NAME) PIN: 8586-43-7194

1 REMAINDER OF COMPORIUM DB 452 PG 122 PIN: 8586-43-7194

3 STEVEN E. STOUT, TRUSTEE ETAL DB 747 PG 497 PIN: 8586-53-2526

GREGORY K. COCHRAN DB 742 PG 138 REF: DB 222 PG 580 (TRACT I) REF: DB 310 PG 341 PIN: 8586-53-1004 (SEE OCD DB 452 PG 288)

GREGORY K. COCHRAN DB 310 PG 341 DB 222 PG 580 DB 452 PG 288 PF 19 PG 105 PIN: 8586-53-2177

AEGIS DEVELOPMENT LLC DB 142 PG 451

TRACT TWO 153/94

PROPERTY TO BE CONVEYED TO THE CITY OF BREVARD PER PF 19 SLIDE 115

PROPERTY TO BE CONVEYED TO GREGORY K. COCHRAN PER PF 19 SLIDE 105

ABANDONED NORFOLK SOUTHERN RAILROAD COMPANY (TRACKS REMOVED) SHOWN FOR CLARITY

KING CREEK

RAILROAD AV. VARIABLE BST

RAILROAD AV. 19' BST

COMMERCE ST 22' BST

PC Sta. 10+45.34

POT Sta. 10+00.00

PC Sta. 11+03.48

PT Sta. 11+14.96

PC Sta. 11+37.83

BEGIN CONSTRUCTION -Y- POC STA. 11+65.00

BEGIN C&G +65.00

PT Sta. 12+57.78

-L- POT Sta. 13+62.54= -Y- POT Sta. 13+08.13

-L- (-Y-) 5+00

PT Sta. 14+78.91

END C&G -L- STA. +37.88

END C&G +01.81

END C&G +59.10 (TIE TO EXIST.)

FENCE RELOCATION BY OTHERS

PT Sta. 12+36.81

SHOP CURVED ANCHOR UNIT PER = 22.75'

TOE PROTECTION EST 40 SY SEE DETAIL 1

REMOVE 12 LF OF 4" PVC DAYLIGHT TO DITCH SLOPE

SPEC. 'V' DITCH SEE DETAIL 2 & 3

21' TAPER LT

10" PLASTIC

15" RCP-III

30" RCP

36" RCP

15" RCP-IV

CB 15" RCP-IV CB

REMOVE 30" RCP

8:1 TAPER

R=4'

R=25'

GRADE TO DRAIN TO DROP INLET

GRADE TO DRAIN

LANDSCAPING

PC Sta. 13+65.35

RETAIN

RETAIN DI

RETAIN EXISTING RIPRAP EMBANKMENTS

CL II RIPRAP (STRUCTURE PAY ITEM)

EXCAVATE TO NG EL. 2158.0

EXCAVATE TO NG EL. 2156.5

INV=2154.40'

INV=2149.45'

INV=2170.76'

42" HDPE

RETAIN 42" HDPE

BEGIN APPROACH SLAB STA.12+67.00

BEGIN BRIDGE STA.12+77.86

END APPROACH SLAB STA.13+41.00

END BRIDGE STA.13+30.14

N 43°13'57.7" E

N 32°00'53.0" E

N 52°47'12.9" E

S 81°48'49.6" E

S 64°10'18.1" E

S 45°03'48.1" E

S 53°07'39" W

N 53°07'39" E

N 77°40'48" W

N 12°42'48" W

S 12°48'00" E

N 53°09'45" E

S 52°50'09" W

N 50°54'46" E

S 50°54'46" E

MATCH LINE -L- POT STA. 15+80.00

INSET A

END ROW B-5550 -L- POT STA. 16+40.56

BEGIN PROJECT B-5550 -L- POT STA. 10+40.00

END PROJECT B-5550 -L- POT STA. 15+42.00

MATCH LINE SEE INSET A -L- POT STA. 15+80.00

CITY OF BREVARD BIKE PATH AND DEPOT PROJECT (LOCATION OF FEATURES APPROXIMATE)

CITY OF BREVARD BIKE PATH AND DEPOT PROJECT (LOCATION OF FEATURES APPROXIMATE)
THE CITY OF BREVARD PER BOOK: PF 17 PG 387 NO DEED REFERENCE FOUND PIN: 8586-53-2377 BOUNDARY AGREEMENT DB 1PG 551 DB 1PG 554 PF 8 SL 514 PORTION OF DB 153 PG 92 TRI PORTION PIN: 8586-49-9322

COORDINATE WITH CITY OF BREVARD PRIOR TO ANY DISTURBANCE TO LANDSCAPING

NAD 83/NA 2011

20' 0' 20' 40' GRAPHIC SCALE

SEE SHEET 5 FOR -L- PROFILE
SEE SHEET 5 FOR -Y- PROFILE
CONSTRUCT ALL DRIVEWAYS WITH 3" ACSC TYPE S9.5B AND 6" ABC

SYSTIME: 05550 Rdy.psh.04.dgn
USER: DFRANTZ

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-5550	5

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 021655 ENGINEER MATTHEW A. PERSIANI — 12/10/2022

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 29371 ENGINEER JOSHUA G. DALTON — 12/10/2022

CDM Smith — CDM Smith Inc. 4600 Park Road Suite 240 Charlotte, NC 28209-3730 NC COA No. F-1255

SUNGATE DESIGN GROUP, P.A. — 915 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 NC COA No. C-0890

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–L–

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 930	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2158.7	FT
BASE DISCHARGE	= 1530	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2160.7	FT
OVERTOPPING DISCHARGE	= 1800	CFS
OVERTOPPING FREQUENCY	= -500	YRS
OVERTOPPING ELEVATION	= 2161.9	FT
	@ STA. 13+60	-L-
DATE OF SURVEY	= 7-28-2015	
W.S. ELEVATION AT DATE OF SURVEY	= 2154.2	FT

BEGIN GRADE
–L– STA. 10+40.00
EL. 2174.81'

PI = 11+65.00
EL = 2,165.17'
VC = 220'
K = 38
DS = 30 MPH

(–)7.7065%

(–)1.8600%

BEGIN BRIDGE
STA. 12+77.86

EXISTING BRIDGE TO BE REMOVED

END BRIDGE
STA. 13+30.14

EXCAVATE TO APPROX. NG EL. AT CL 2158.0 EST. 120 CY

EXCAVATE EX. FILL TO TOP OF BERM

CL II RIPRAP 1.5:1 NORMAL 1.52:1 SKEWED TO EL. 2154.7

WS ON 7-28-2015 = NWS = 2154.2

CL II RIPRAP 1.5:1 NORMAL 1.52:1 SKEWED TO EL. 2154.7

EXCAVATE TO APPROX. NG EL AT CL 2156.5 EST. 80 CY

BEG SPEC LAT 'V' DITCH STA 14+00 EL=2157.00'

–L– STA. 13+62.54=
–Y– STA. 13+08.13

(+)0.4000%

(–)1.8600%

(+)1.4286%

(–)0.6000%

END GRADE
–L– STA. 15+42.00
EL. 2158.56'

PI = 15+10.00
EL = 2,158.76'
VC = 60'
K = 48
DS = 30 MPH

END SPEC LAT 'V' DITCH BEG SPEC CUT 'V' DITCH STA 15+20 EL=2157.69'

END SPEC CUT 'V' DITCH STA 15+42 EL=2158.00'

PI=15+00.000 EL.=2157.400'

BM#1
–L– STA. 16+34.01
15.74' LT
EL.=2159.28'

LEFT DITCH — - — - —
RIGHT DITCH ---------

BM#2
–L– STA. 10+40.33
18.19' LT
EL.=2177.24'

NOTE: SEE SHEET 4 FOR PLAN

–Y–

PI = 12+50.00
EL = 2,161.56'
VC = 80'
K = 40
DS = 30 MPH

(–)1.6500%

(+)0.3487%

BEGIN GRADE
–Y– STA. 11+65.00
EL. 2162.96'

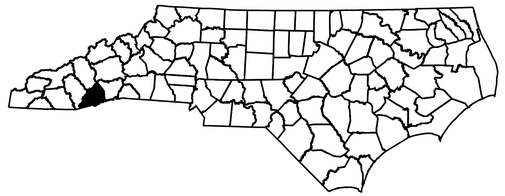
END GRADE
–Y– STA. 12+97.13
EL. 2161.72'

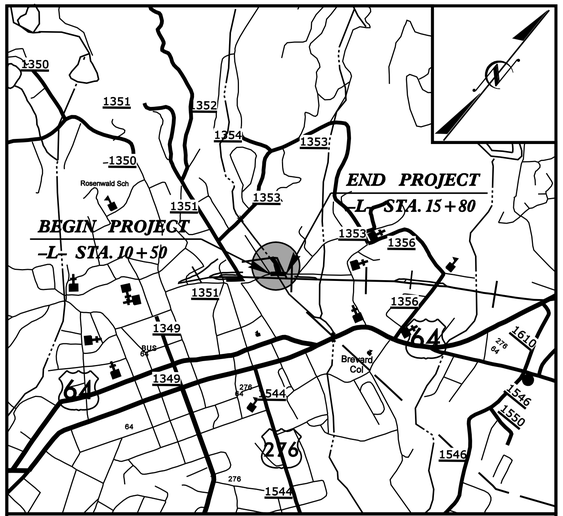
NOTE: SEE SHEET 4 FOR PLAN

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

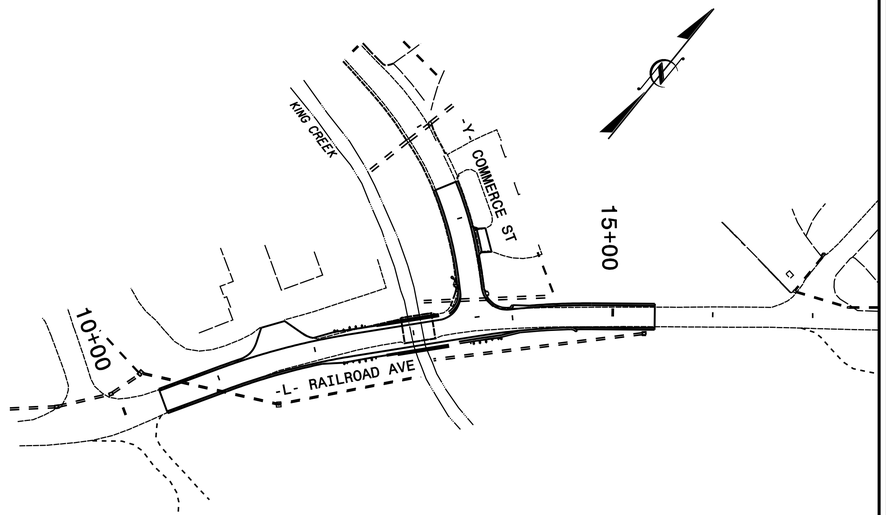
TRANSYLVANIA COUNTY





VICINITY MAP

N.T.S.



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (PROJECT NOTES AND PHASING)
TMP-2	OFFSITE DETOUR ROUTE
TMP-3	TEMPORARY TRAFFIC CONTROL DETAILS AND SPECIAL SIGN DESIGN

SHEET NO.
TMP-1

B-5550

TIP PROJECT:

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

PLANS PREPARED BY:

PROGRESSIVE DESIGN GROUP, INC.
NC License: C-3176
9736 Bartlett Road
Charlotte, NC 28227
704.573.3003

NCDOT CONTACTS:

DON A. PARKER, P.E.
PROJECT ENGINEER

PROJECT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: Tim Are
DATE: 11/18/22

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM ARE

PROJ. REFERENCE NO.	SHEET NO.
B-5550	TMP-1A

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1180.01	SKINNY - DRUMS

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL
- TEMPORARY PAVEMENT WEDGING

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN
- TRAFFIC SIGNAL

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS
NC License: C-3176
9736 Bartlett Road
Charlotte, NC 28227
704.573.3003

APPROVED: Tim Arey

DATE: 11/18/22

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BEAUTIFUL BREVARD — FOUNDED 1855 — "THE LAND OF WATERFALLS" — INDUSTRY • FLOWERS • RECREATION • OPPORTUNITY • ARTS • EDUCATION

ROADWAY STANDARD DRAWINGS & LEGEND

PROJ. REFERENCE NO.	SHEET NO.
B-5550	TMP-1B

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

A) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

PAVEMENT EDGE DROP OFF REQUIREMENTS

C) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

E) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 100 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

F) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

PROJECT NOTES & PHASING

SIGNING

G) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

H) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

I) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

J) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

K) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

L) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PHASING

STEP 1: INSTALL WORK ZONE ADVANCE WARNING SIGNS AS SHOWN ON ROADWAY STANDARD DRAWING NO. 1101.01. (SEE LOCAL NOTE #1)

STEP 2: INSTALL OFFSITE DETOUR SIGNS AS SHOWN ON TCP-2 AND ACTIVATE OFFSITE DETOUR.

STEP 3: CONSTRUCT PROPOSED -L-, -Y-, AND BRIDGE OVER KING CREEK AS SHOWN ON SHEET TMP-3 AND THE ROADWAY DESIGN PLANS.

STEP 4: INSTALL FINAL PAVEMENT MARKINGS AND MARKERS ON -L- AND -Y- AND OPEN PROPOSED -L- AND -Y- TO THE FINAL TRAFFIC PATTERN. REMOVE ALL TEMPORARY TRAFFIC CONTROL DEVICES.

LOCAL NOTES

1) ENSURE TRANSYLVANIA COUNTY EMERGENCY SERVICES AND SCHOOLS ARE CONTACTED AT LEAST ONE MONTH PRIOR TO CONSTRUCTION.

2) ACCESS TO ADJACENT BUSINESSES AND/OR RESIDENCES SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT THE DURATION OF THE PROJECT.

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS
NC License: C-3176
9736 Bartlett Road
Charlotte, NC 28227
704.573.3003

APPROVED: Tim Arey

DATE: 11/18/22

SEAL

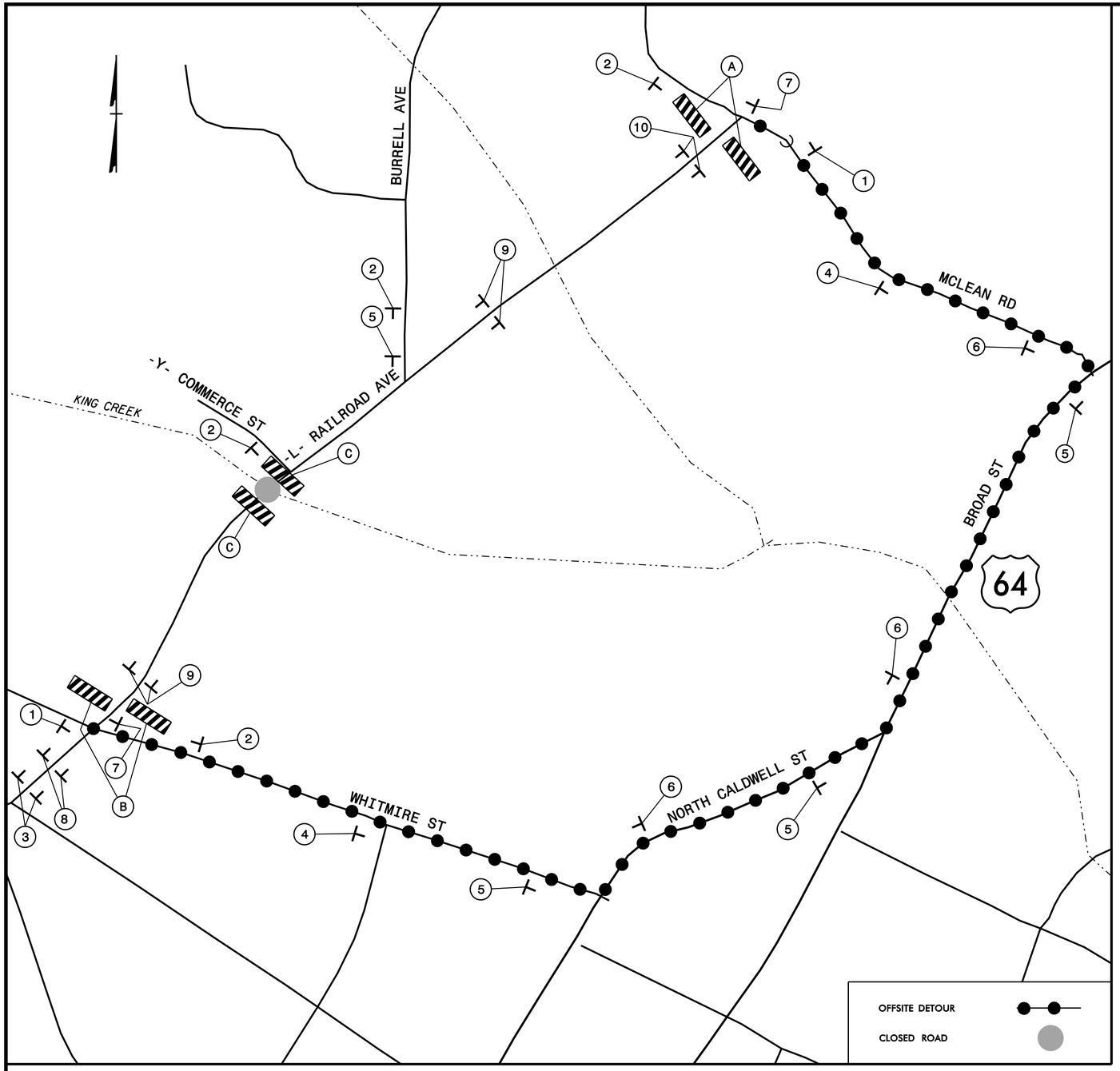
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM ARE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BB BEAUTIFUL BREVARD — FOUNDED 1961 — "THE LAND OF WATERFALLS" — INDUSTRY • FLOWERS • RECREATION • OPPORTUNITY • ARTS • EDUCATION

TRANSPORTATION OPERATIONS PLAN

PROJ. REFERENCE NO.	SHEET NO.
B-5550	TMP-2



1 ROAD CLOSED AHEAD W20-3 48" X 48"
NEXT LEFT SP-4L 48" X 12"

2 ROAD CLOSED AHEAD W20-3 48" X 48"
NEXT RIGHT SP-4R 48" X 12"

3 ROAD CLOSED AHEAD W20-3 48" X 48"

4 RAILROAD AVE *36" X 18"
DETOUR M4-8 24" X 12"
M6-3 21" X 15"

5 RAILROAD AVE *36" X 18"
DETOUR M4-8 24" X 12"
M6-1 L 21" X 15"

6 RAILROAD AVE *36" X 18"
DETOUR M4-8 24" X 12"
M6-1 R 21" X 15"

7 END DETOUR M4-8 A 24" X 18"

8 DETOUR AHEAD W20-2 48" X 48"

9 ROAD CLOSED 500 FT W20-3 48" X 48"

10 ROAD CLOSED 1000 FT W20-3 48" X 48"

A R11-4 60" X 30"
ROAD CLOSED TO THRU TRAFFIC
DETOUR
M4-10L 48" x 18"
TYPE III BARRICADE

B R11-4 60" X 30"
ROAD CLOSED TO THRU TRAFFIC
DETOUR
M4-10R 48" x 18"
TYPE III BARRICADE

C R11-2 48" X 30"
ROAD CLOSED
TYPE III BARRICADE(S)

NOTE:
* SEE SHEET TMP-3 FOR SPECIAL SIGN DESIGN.

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS
NC License: C-3176
9736 Bartlett Road
Charlotte, NC 28227
704.573.3003

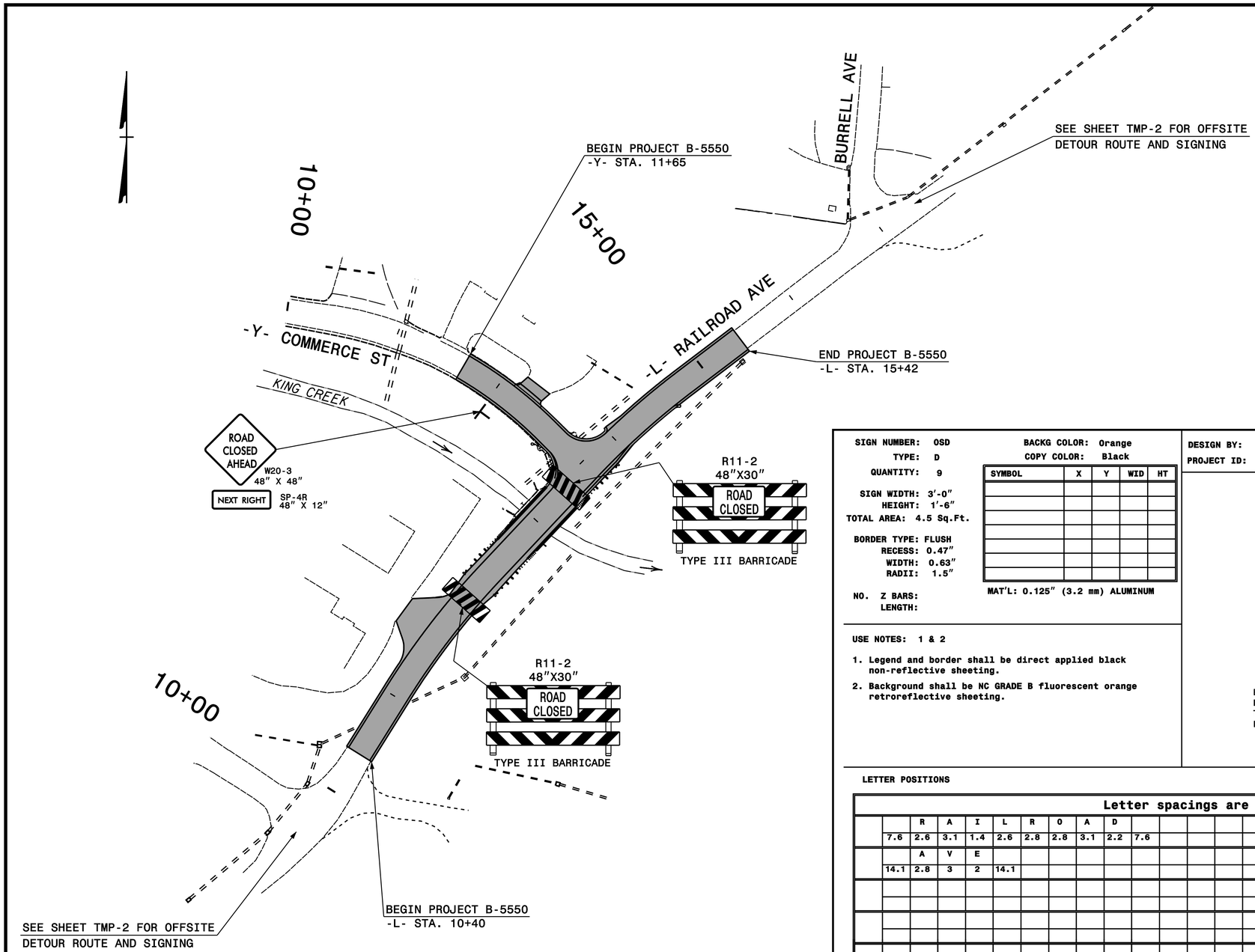
APPROVED: Tim Arey
DATE: 11/18/22
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

88 BEAUTIFUL BREVARD FOUNDED 1880 "THE LAND OF WATERFALLS" INDUSTRY FLOWERS RECREATION OPPORTUNITY ARTS EDUCATION

TRANSPORTATION MANAGEMENT PLAN OFFSITE DETOUR ROUTE

PROJ. REFERENCE NO.	SHEET NO.
B-5550	TMP-3



SIGN NUMBER: OSD
TYPE: D
QUANTITY: 9

SIGN WIDTH: 3′-0″
HEIGHT: 1′-6″
TOTAL AREA: 4.5 Sq.Ft.

BORDER TYPE: FLUSH
RECESS: 0.47″
WIDTH: 0.63″
RADII: 1.5″

NO. Z BARS:
LENGTH:

BACKG COLOR: Orange
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L: 0.125″ (3.2 mm) ALUMINUM

USE NOTES: 1 & 2

1. Legend and border shall be direct applied black non-reflective sheeting.
2. Background shall be NC GRADE B fluorescent orange retroreflective sheeting.

DESIGN BY: PDG
PROJECT ID: B-5550
CHECKED BY:
DIV:
DATE: May 14, 2018

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

																										Series/Size Text Length
		R	A	I	L	R	O	A	D																	C 2000
	7.6	2.6	3.1	1.4	2.6	2.8	2.8	3.1	2.2	7.6																20.8
		A	V	E																						C 2000
	14.1	2.8	3	2	14.1																					7.9

FILENAME: Offsite Sign Designs

NORTH CAROLINA D.O.T. SIGN DETAIL

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS
NC License: C-3176
9736 Bartlett Road
Charlotte, NC 28227
704.573.3003

APPROVED: Tim Arey
DATE: 11/18/22
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TRANSPORTATION MANAGEMENT PLAN
TRAFFIC CONTROL DETAILS

PROJ. REFERENCE NO.	SHEET NO.
B-5550	PMP-1

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
ALL	THERMOPLASTIC	NON-CAST IRON SNOWPLOWABLE

B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

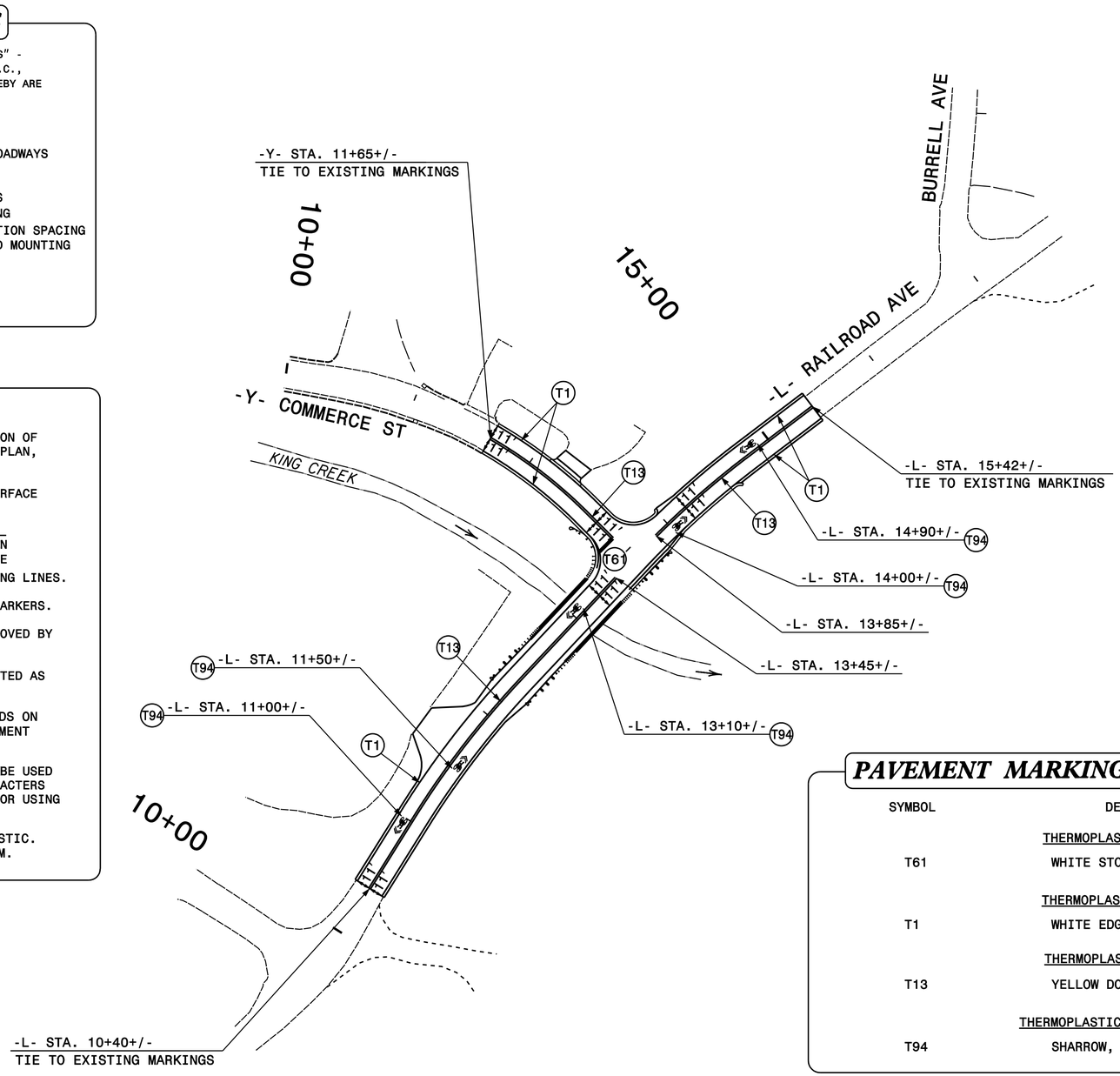
D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

E) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.

F) REMOVE ALL RESIDUE AND SURFACE LAITANCE BY ACCEPTABLE METHODS ON CONCRETE BRIDGE DECKS PRIOR TO PLACING (THERMOPLASTIC) PAVEMENT MARKING MATERIAL.

G) UNLESS OTHERWISE SPECIFIED, HEATED-IN-PLACE THERMOPLASTIC MAY BE USED IN LIEU OF EXTRUDED THERMOPLASTIC FOR STOP BARS, SYMBOLS, CHARACTERS AND DIAGONALS. IF HEATED-IN-PLACE IS USED, IT SHALL BE PAID FOR USING THE EXTRUDED THERMOPLASTIC PAY ITEM.

H) ALL BICYCLE LANE SYMBOLS SHALL BE HEATED-IN-PLACE THERMOPLASTIC. SYMBOLS SHALL BE PAID FOR USING THE HEATED-IN-PLACE PAY ITEM.



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
	THERMOPLASTIC (24", 90 MILS)
T61	WHITE STOPBAR
	THERMOPLASTIC (4", 90 MILS)
T1	WHITE EDGELINE
	THERMOPLASTIC (4", 90 MILS)
T13	YELLOW DOUBLE CENTERLINE
	THERMOPLASTIC CHARACTERS (90 MILS)
T94	SHARROW, HEATED-IN-PLACE

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS
NC License: C-3176
9736 Bartlett Road
Charlotte, NC 28227
704.573.3003

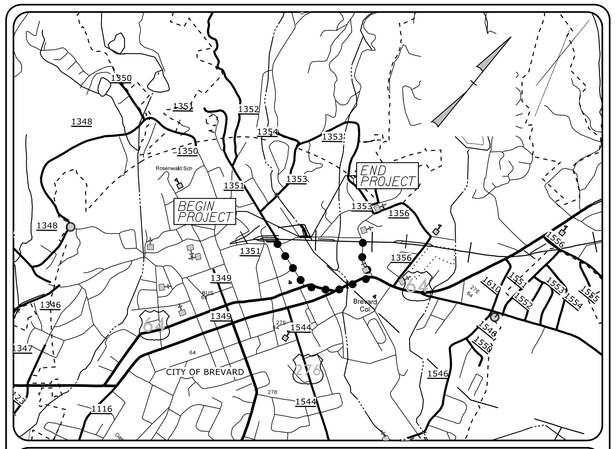
APPROVED: Tim Arey
DATE: 01/05/23
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM ARE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

88 BEAUTIFUL BREVARD — FOUNDED 1963 — "THE LAND OF WATERFALLS" — INDUSTRY • FLOWERS • RECREATION • OPPORTUNITY • ARTS • EDUCATION

FINAL PAVEMENT MARKING PLAN

TIP PROJECT: B-5550



VICINITY MAP
NOT TO SCALE

●—●—● DETOUR ROUTE

N.T.S.

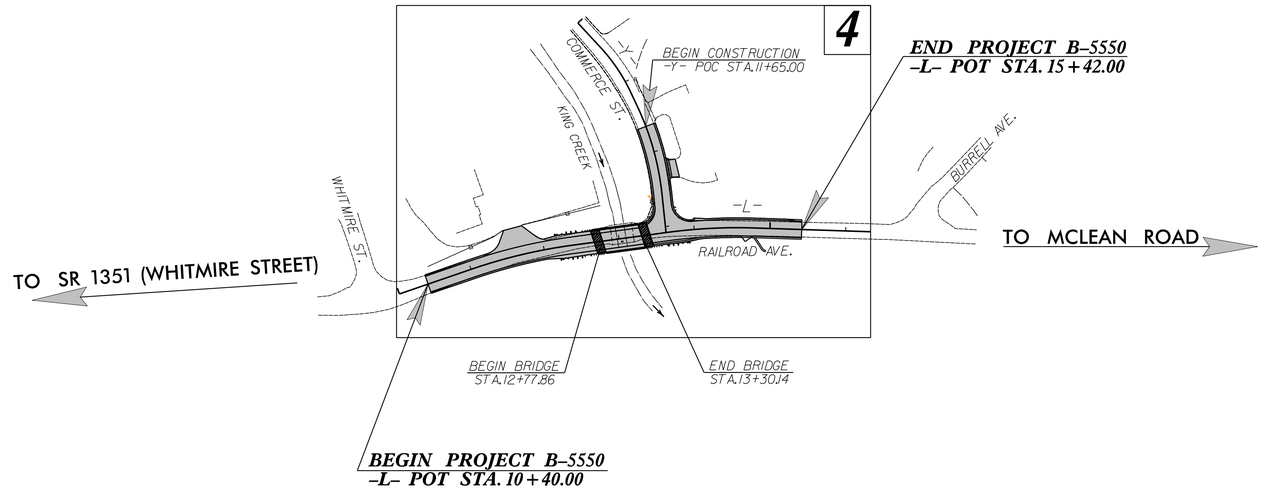
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED HIGHWAY EROSION CONTROL

TRANSYLVANIA COUNTY

NAD 83/2011

LOCATION: REPLACE BRIDGE 870102 OVER KING CREEK ON SR 1351 (RAILROAD AVENUE)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5550	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
43653.1.F1	1402011	P.E.
43653.2.1	1402011	ROW & UTILITIES
43653.3.1	1402011	CONST.

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	EW CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	SK
	Tiered Skimmer Basin	SK
	Infiltration Basin	

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.

GRAPHIC SCALE

20 10 0 20 40

PLANS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE APPLICABLE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.

Prepared In the Office of:

SUNGATE DESIGN GROUP, P.A.

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

Designed by:

MATTHEW C. EDWARDS, PE 3992

NAME *LEVEL III CERTIFICATION NO.*

Roadway Standard Drawings

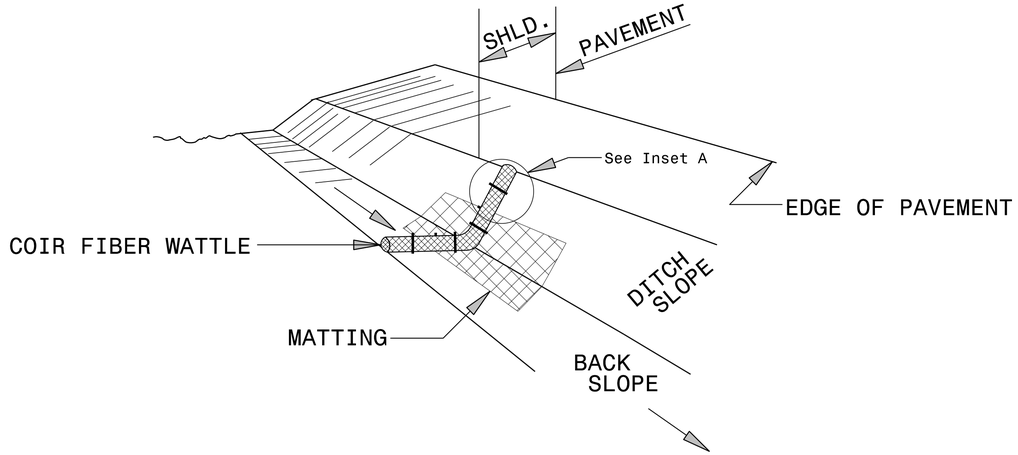
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

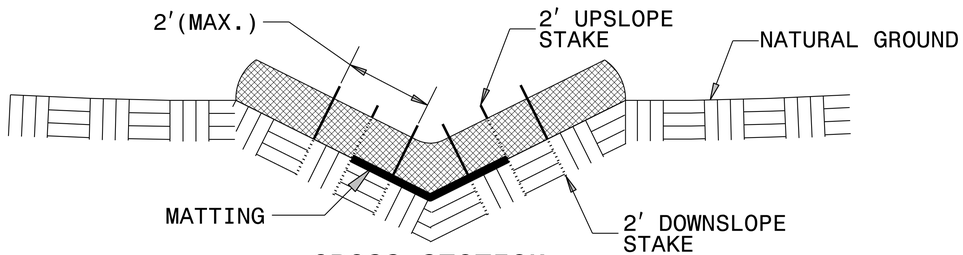
1/13/2023
B5550_EC_dsn_psh_01.dgn
mevans

PROJECT REFERENCE NO.	SHEET NO.
B-5550	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

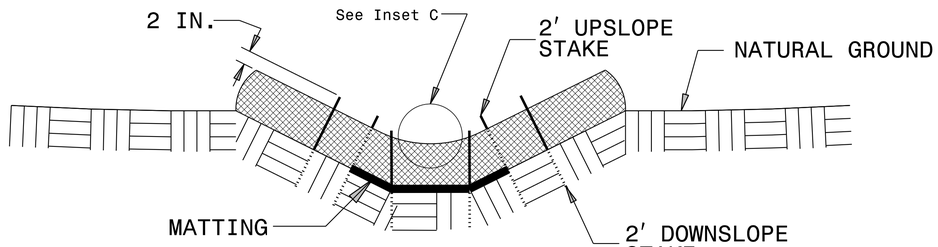
COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

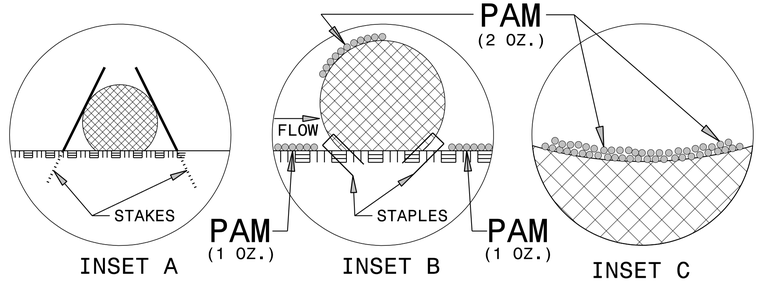
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

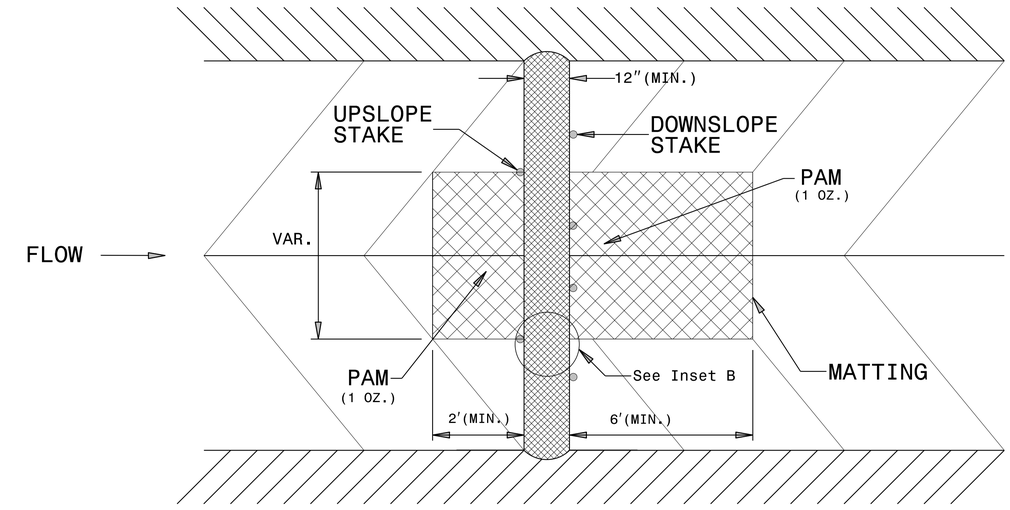
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

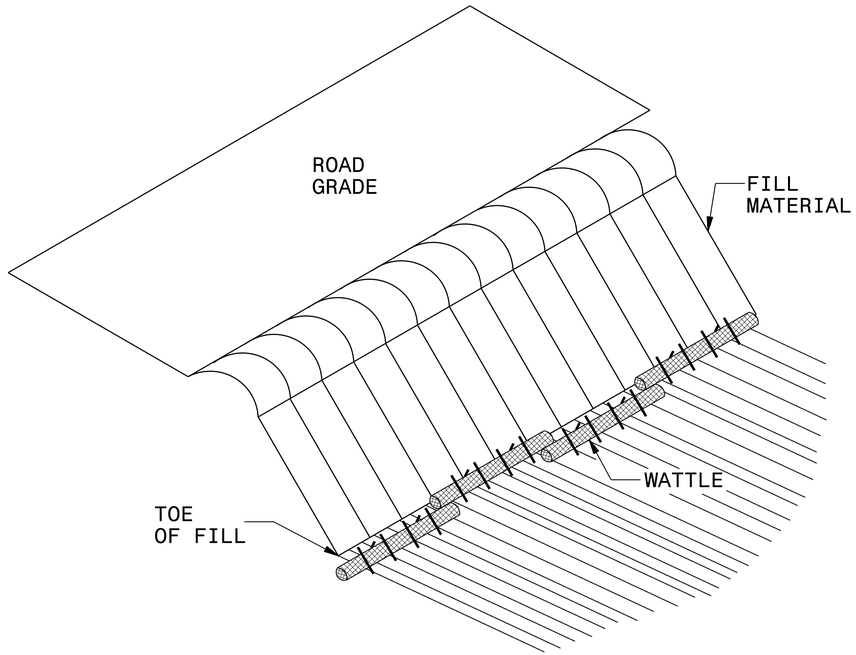




TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
B-5550	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER WATTLE BARRIER DETAIL



ISOMETRIC VIEW

NOTES:

USE MINIMUM 18 IN. NOMINAL DIAMETER COIR FIBER (COCONUT) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 2 TO 3 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLES ON TOE OF SLOPE.

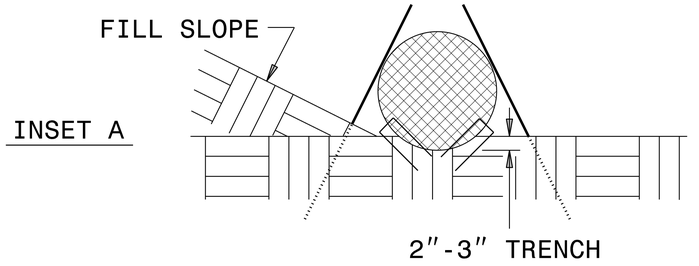
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

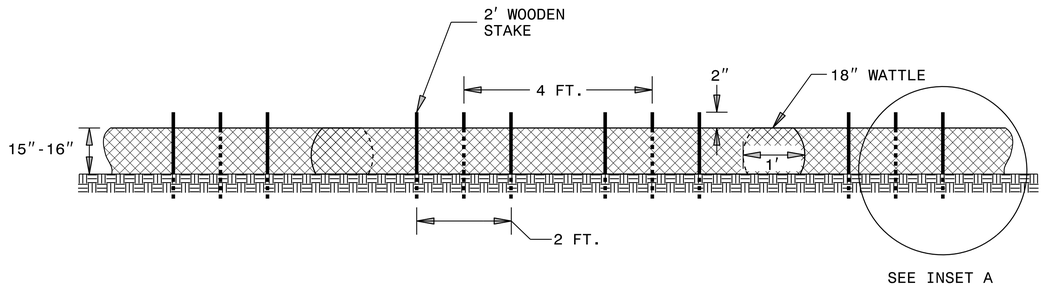
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

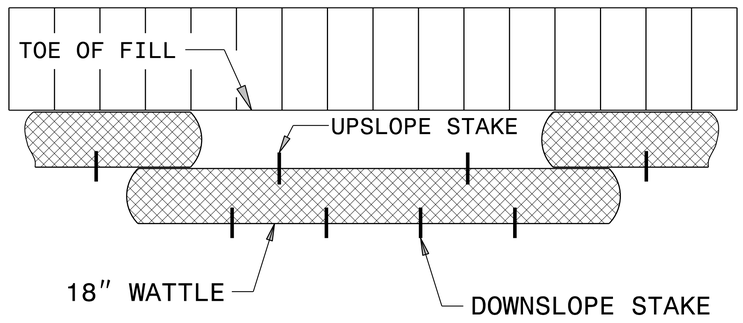
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 25 FT.





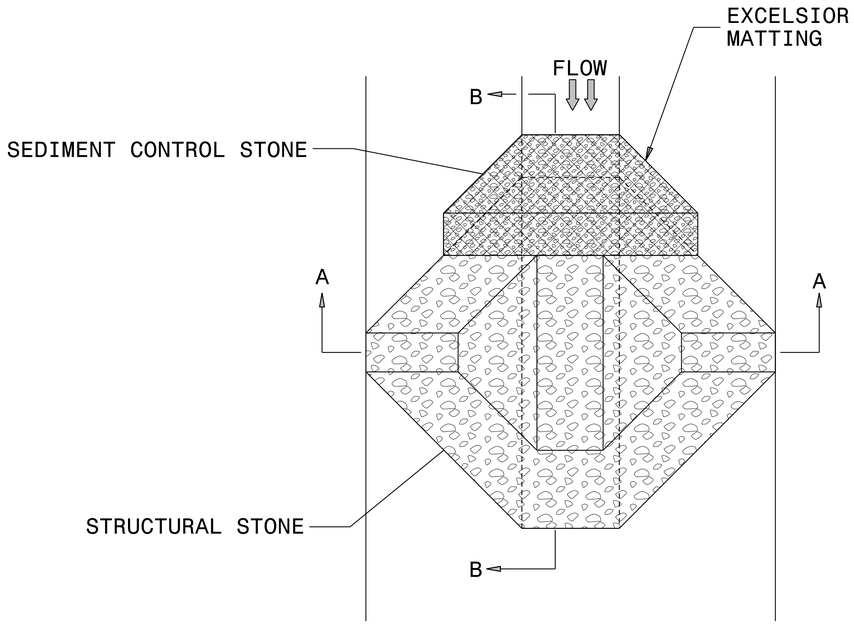
FRONT VIEW



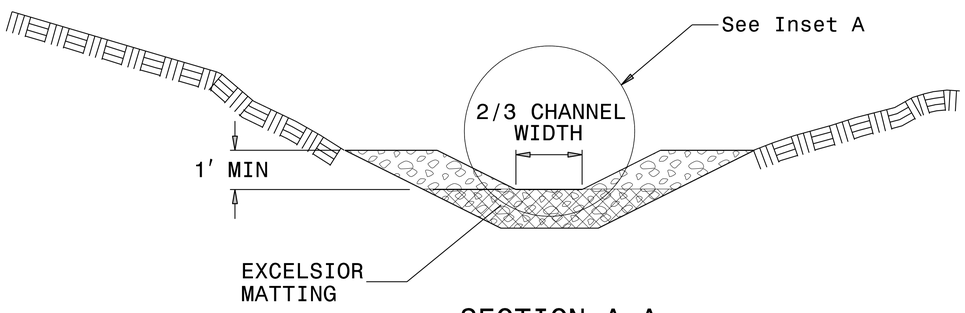
TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
B-5550	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN



SECTION A-A

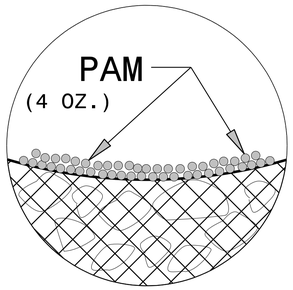
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

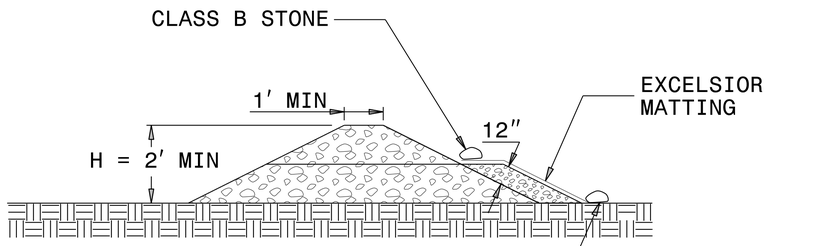
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION B-B

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-5550	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL (STRAW)

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	10+50	10+66	LT	25
4	-L-	14+00	15+42	LT	105
4	-L-	13+57	14+02	RT	60

MATTING FOR EROSION CONTROL (EXCELSIOR)

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	11+85	12+66	LT	40
			SUBTOTAL FOR STRAW		190
			SUBTOTAL FOR EXCELSIOR		40
	MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER				270
				TOTAL	500
				SAY	500

PROJECT REFERENCE NO.	SHEET NO.
B-5550	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

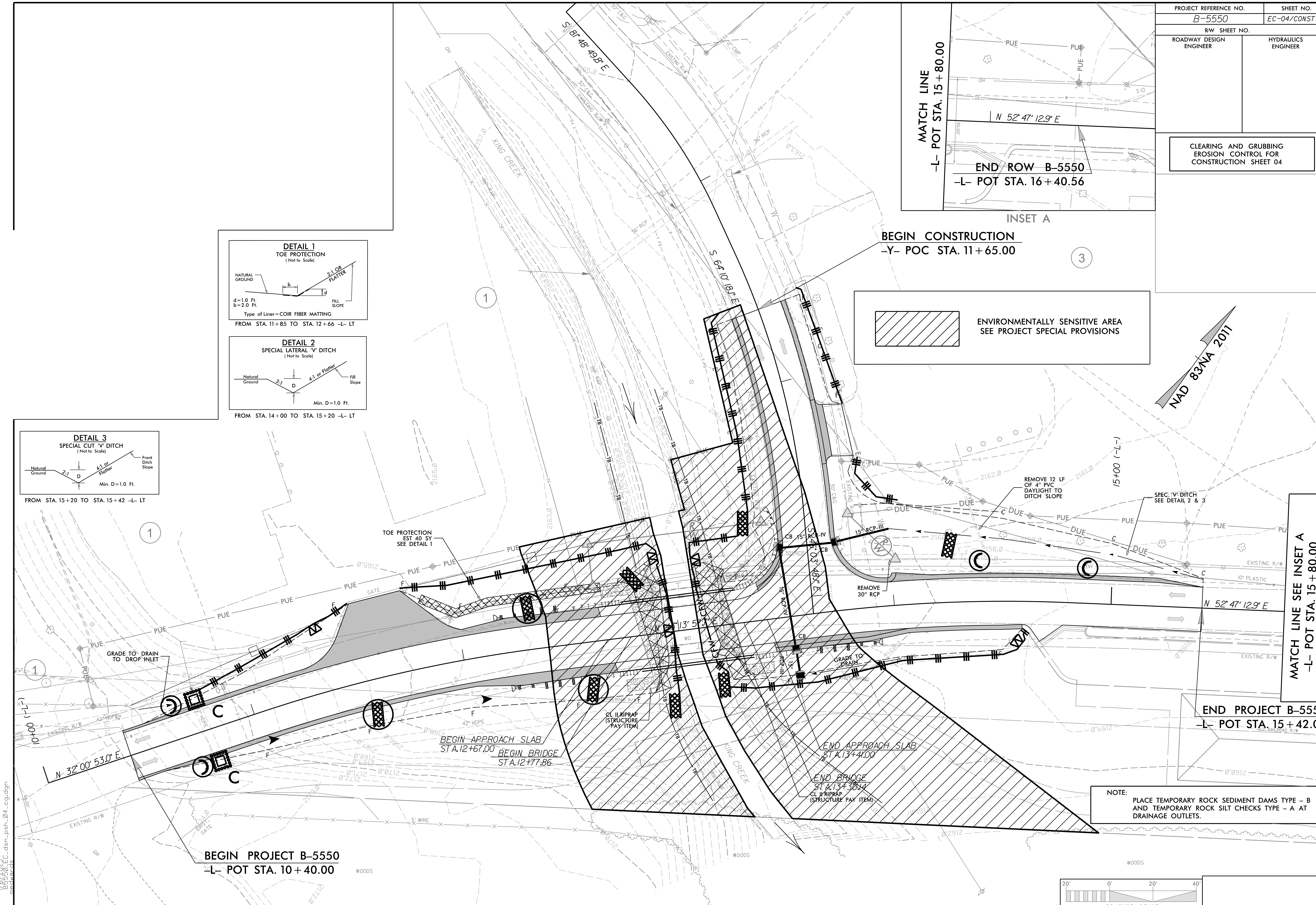
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

PROJECT REFERENCE NO.	SHEET NO.
B-5550	EC-04/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04



ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

DETAIL 1
TOE PROTECTION
(Not to Scale)

Natural Ground; 2:1 OR FLATTER; Fill Slope
d=1.0 Ft.
b=2.0 Ft.
Type of Liner=COIR FIBER MATTING

FROM STA. 11+85 TO STA. 12+66 -L- LT

DETAIL 2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Natural Ground; 3:1; D; 4:1 or Flatter; Fill Slope
Min. D=1.0 Ft.

FROM STA. 14+00 TO STA. 15+20 -L- LT

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

Natural Ground; 2:1; D; 4:1 or Flatter; Front Ditch Slope
Min. D=1.0 Ft.

FROM STA. 15+20 TO STA. 15+42 -L- LT

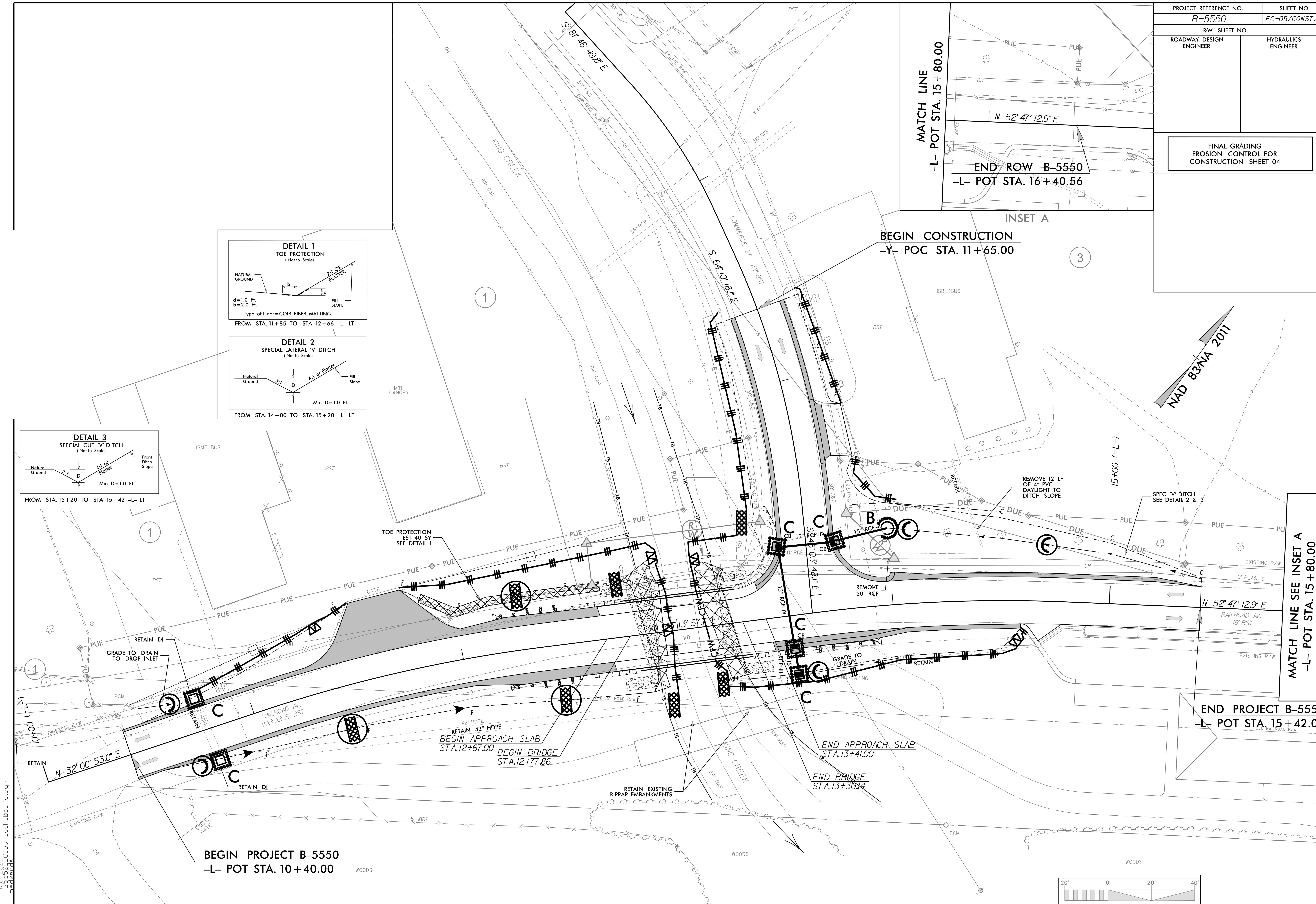
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

GRAPHIC SCALE (20' 0' 20' 40')

B5550_EC_dsn_psh_04_cg.dgn

PROJECT REFERENCE NO.	SHEET NO.
B-5550	EC-05/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FINAL GRADING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04



MATCH LINE -L- POT STA. 15+80.00
N 52° 47' 12.9" E
END ROW B-5550
-L- POT STA. 16+40.56
INSET A
BEGIN CONSTRUCTION
-Y- POC STA. 11+65.00
DETAIL 1
TOE PROTECTION
(Not to Scale)
NATURAL GROUND
2:1 OR FLATTER
d=1.0 Ft.
b=2.0 Ft.
FILL SLOPE
Type of Liner=COIR FIBER MATTING
FROM STA. 11+85 TO STA. 12+66 -L- LT
DETAIL 2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
4:1 or Flatter
Fill Slope
Min. D=1.0 Ft.
FROM STA. 14+00 TO STA. 15+20 -L- LT
DETAIL 3
SPECIAL CUT 'V' DITCH
(Not to Scale)
Natural Ground
4:1 or Flatter
Front Ditch Slope
Min. D=1.0 Ft.
FROM STA. 15+20 TO STA. 15+42 -L- LT
S 81° 48' 49.8" E
S 64° 10' 18" E
KING CREEK
COMMERCE ST 22' BST
NAD 83/NA 2011
REMOVE 12 LF OF 4" PVC DAYLIGHT TO DITCH SLOPE
SPEC. 'V' DITCH SEE DETAIL 2 & 3
TOE PROTECTION EST 40 SY SEE DETAIL 1
REMOVE 30" RCP
RETAIN DI
GRADE TO DRAIN TO DROP INLET
RAILROAD AV. VARIABLE BST
RAILROAD AV. 19' BST
RETAIN 42" HDPE
BEGIN APPROACH SLAB STA.12+67.00
BEGIN BRIDGE STA.12+77.86
END APPROACH SLAB STA.13+41.00
END BRIDGE STA.13+30.14
RETAIN EXISTING RIPRAP EMBANKMENTS
N 32° 00' 53.0" E
MATCH LINE SEE INSET A -L- POT STA. 15+80.00
END PROJECT B-5550
-L- POT STA. 15+42.00
BEGIN PROJECT B-5550
-L- POT STA. 10+40.00
GRAPHIC SCALE
20' 0' 20' 40'

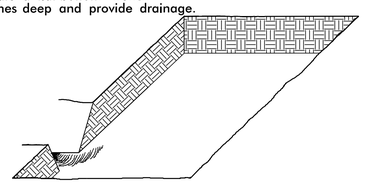
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B–5550	RF–1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

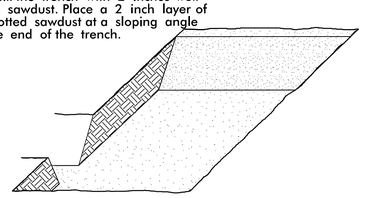
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

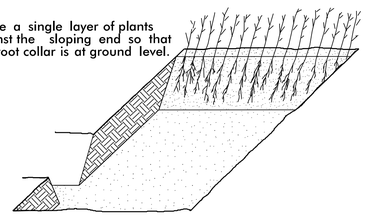
1. Locate a healing–in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



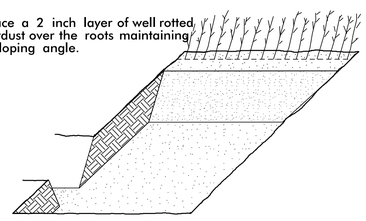
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

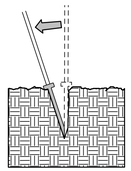


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

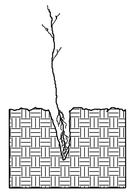


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

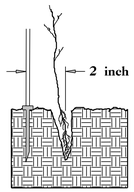
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



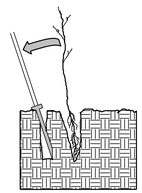
1. Insert planting bar as shown and pull handle toward planter.



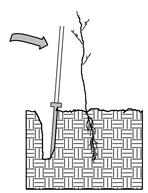
2. Remove planting bar and place seedling at correct depth.



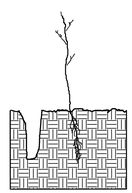
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.

KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.

ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

☐ TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

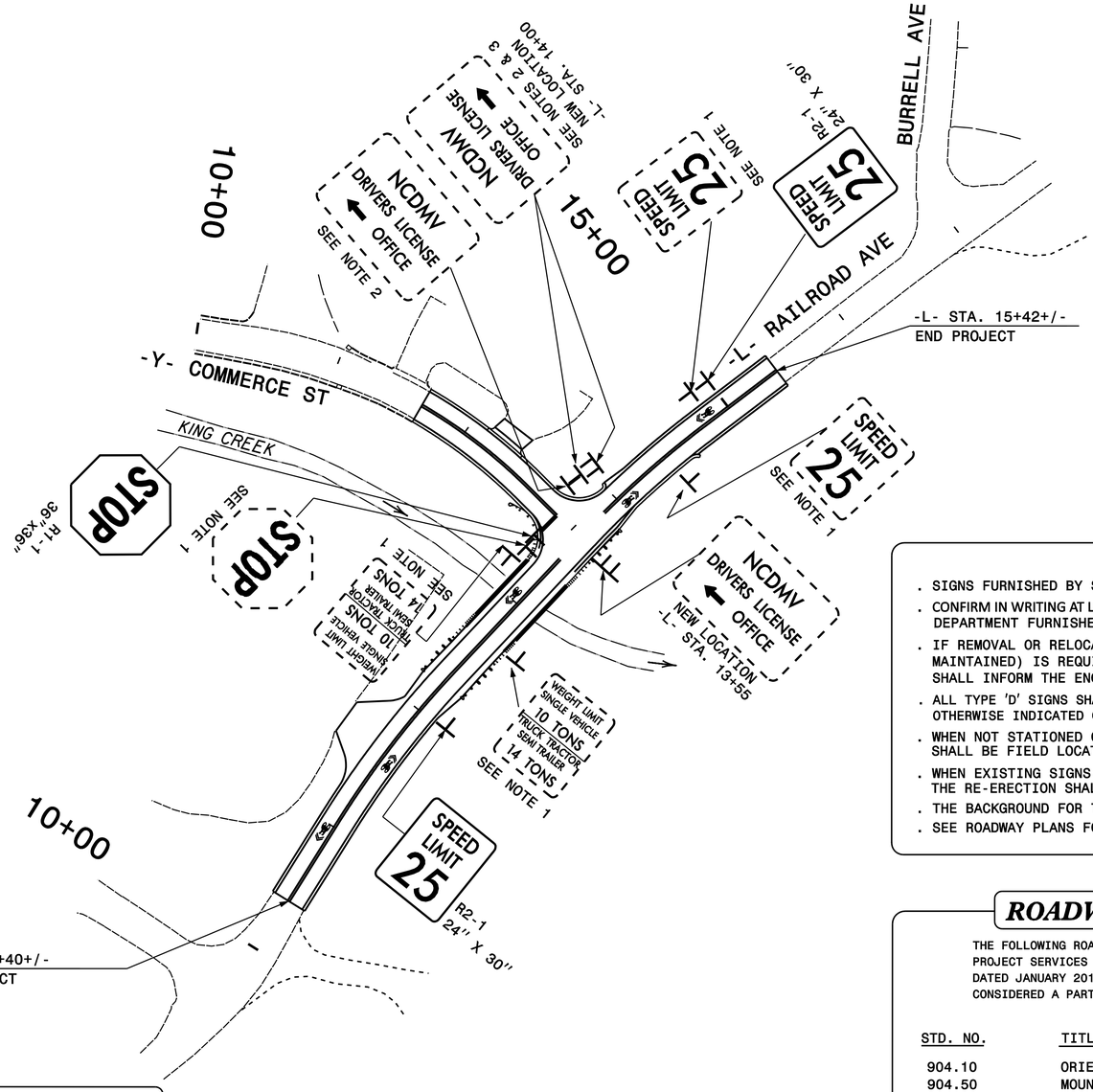
MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

33%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in – 18 in BR
33%	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in – 18 in BR
34%	BETULA NIGRA	RIVER BIRCH	12 in – 18 in BR

REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

PROJ. REFERENCE NO.	SHEET NO.
B-5550	SIGN-1



PROJECT NOTES

1 DISPOSE OF SIGN SYSTEM, U-CHANNEL
2 RELOCATE SIGN TYPE D SIGN
3 DISPOSE OF SUPPORT, U-CHANNEL

GENERAL NOTES

. SIGNS FURNISHED BY STATE
. CONFIRM IN WRITING AT LEAST 4 MONTHS IN ADVANCE, THE ACTUAL DATE THE DEPARTMENT FURNISHED SIGNS WILL BE REQUIRED.
. IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.
. ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.
. WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER
. WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.
. THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.
. SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS

SUMMARY OF QUANTITIES

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL	100	L.F.
4102000000	904	SIGN ERECTION, TYPE E	3	EA.
4116100000	904	SIGN ERECTION, RELOCATE SIGN TYPE D	2	EA.
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	5	EA.
4192000000	907	DISPOSAL OF SUPPORT, U-CHANNEL	1	EA.

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS
NC License: C-3176
9736 Bartlett Road
Charlotte, NC 28227
704.573.3003

APPROVED: Tim Arey
DATE: 11/18/22
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM ARE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BB BEAUTIFUL BREVARD — FOUNDED 1963 — "THE LAND OF WATERFALLS" — INDUSTRY • FLOWERS • RECREATION • OPPORTUNITY • ARTS • EDUCATION

SIGNING PLAN

TIP PROJECT: B-5550

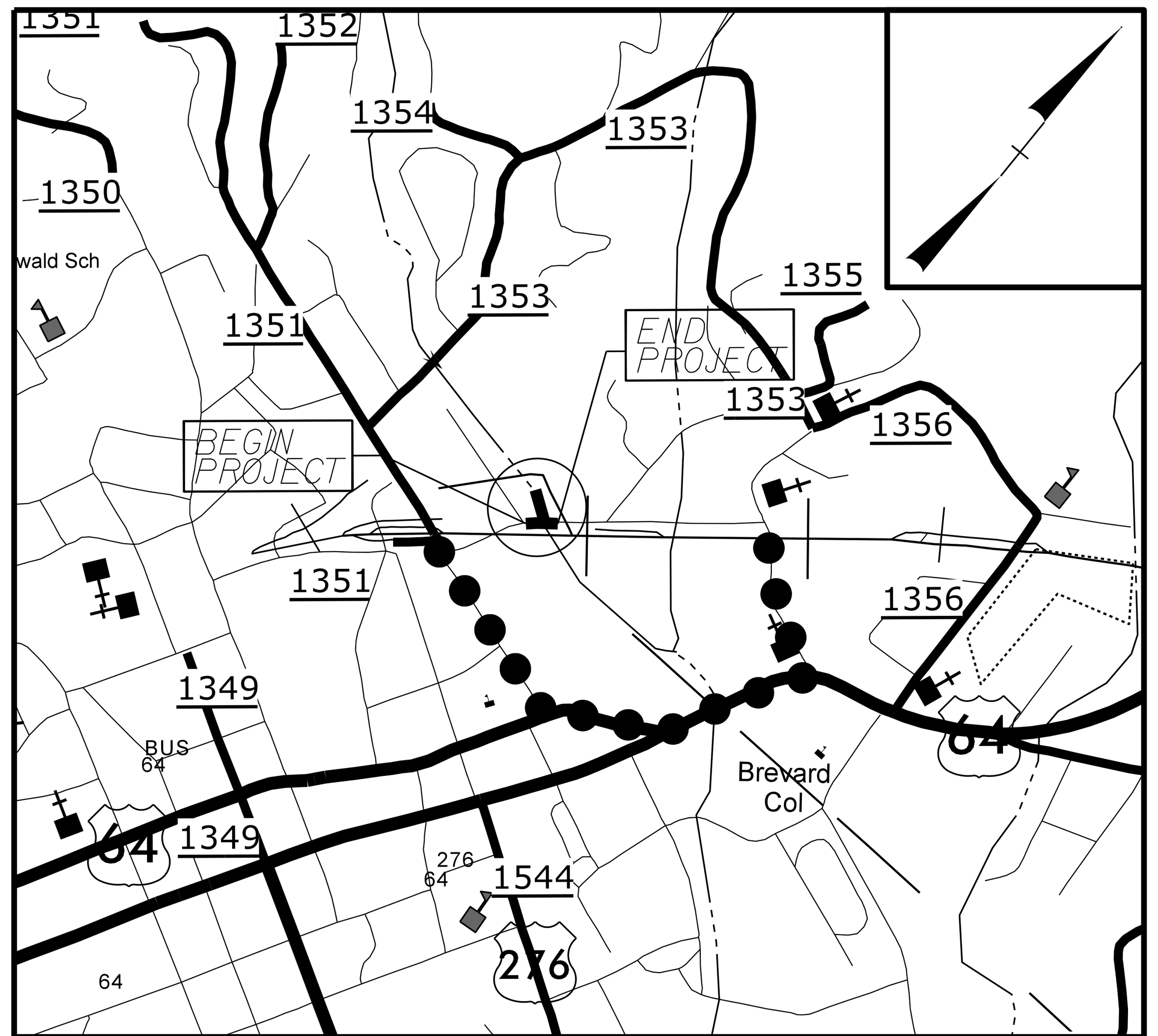
T.I.P. NO.	SHEET NO.
B-5550	UC-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS TRANSYLVANIA COUNTY

LOCATION: REPLACE BRIDGE 870102 OVER KING CREEK ON RAILROAD AVENUE

TYPE OF WORK: WATER AND SEWER MAIN RELOCATION

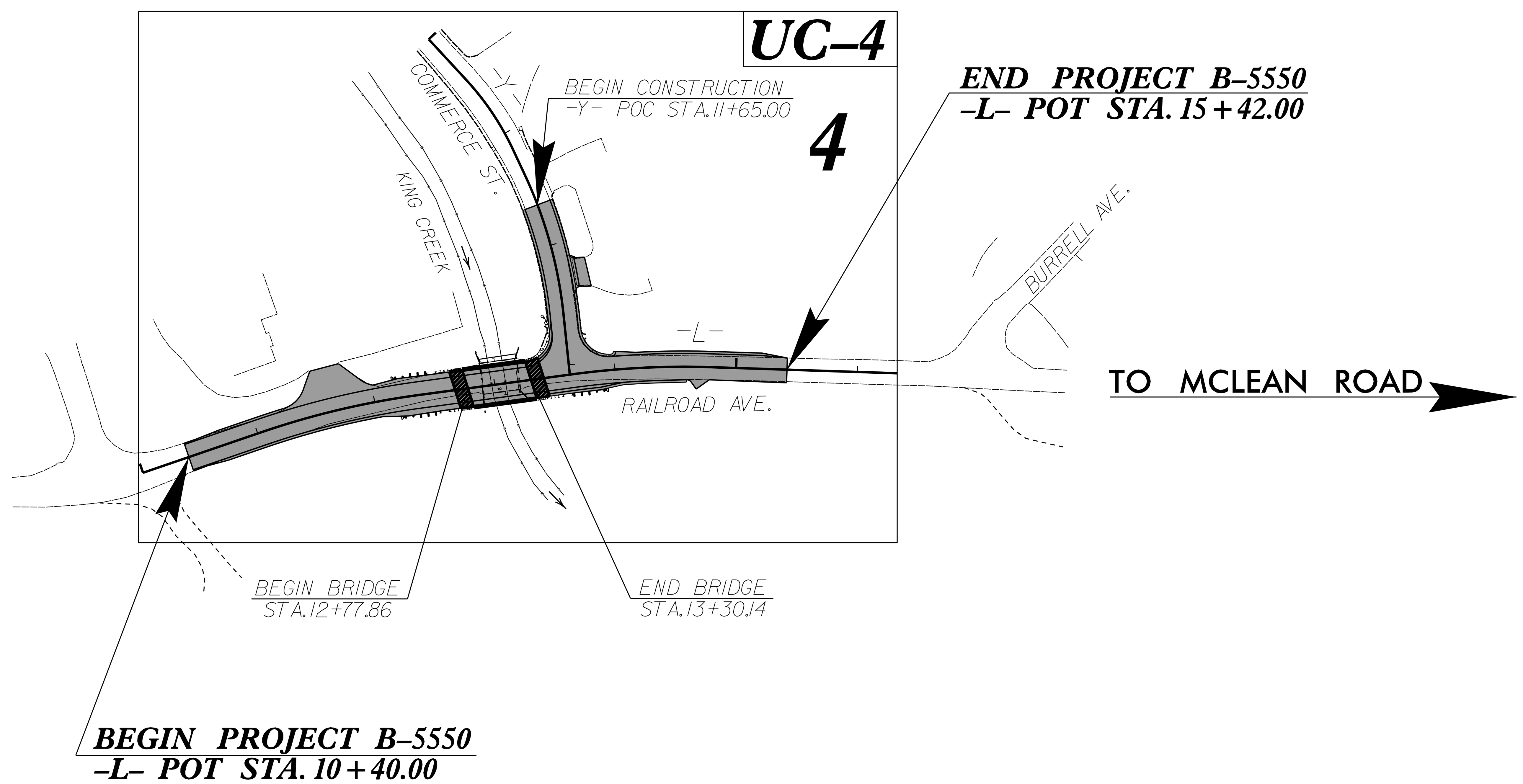


VICINITY MAP

DETOUR ROUTE

N.T.S.

NAD 83/ NA 2011



DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

GRAPHIC SCALES

20 10 0 20 40
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

4 2 0 4 8
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A THRU UC-3C	DETAILS
UC-4	UTILITY CONSTRUCTION SHEET
UC-5	PROFILE SHEET

WATER AND SEWER OWNER ON PROJECT

(A) CITY OF BREVARD

PREPARED IN THE OFFICE OF

CDM Smith

CDM Smith Inc.
4600 Park Road
Suite 240
Charlotte, NC 28209-3730
NC COA No. F-1255

LAURIN KENNEDY, PE	CONSULTANT CONTACT #1
KIT PERSIANI, PE	CONSULTANT CONTACT #2
MOHAMED NAFSI	CONSULTANT CONTACT #3

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 030770 ENGINEER LAURIN B. KENNEDY

DocuSigned by: Laurin B. Kennedy

12/12/2022

DIVISION OF HIGHWAYS
DIVISION 14
253 WEBSTER ROAD
SYLVA NC 28779
PHONE (828) 586-2141
FAX (828) 586-4043

DONALD HAMPTON	UTILITIES REGIONAL ENGINEER
BOB GOLDING	UTILITIES ENGINEER
	UTILITIES AREA COORDINATOR
BOB GOLDING	UTILITIES COORDINATOR

09/08/99
$$SYSTIME$$
...\Proj\B5550_Ut_tsh_UC1.psh.dgn
USER: PERSIANIK

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-5550	UC-2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

- Water Line (Sized as Shown) — 8" WL
- 11¼ Degree Bend
- 22½ Degree Bend
- 45 Degree Bend
- 90 Degree Bend
- Plug
- Tee
- Cross
- Reducer
- Gate Valve — GV
- Butterfly Valve — BV
- Tapping Valve — TGV
- Line Stop — LS
- Line Stop with Bypass — LS/BP
- Blow Off — BO
- Fire Hydrant — PFH
- Relocate Fire Hydrant — RFH
- Remove Fire Hydrant — REM FH
- Water Meter — PWM
- Relocate Water Meter — RWM
- Remove Water Meter — REM WM
- Water Pump Station — PS(W)
- RPZ Backflow Preventer — PBPZ
- DCV Backflow Preventer — PBFP
- Relocate RPZ Backflow Preventer — RRPZ
- Relocate DCV Backflow Preventer — RBFP

PROPOSED SEWER SYMBOLS

- Gravity Sewer Line (Sized as Shown) — 8" SS
- Force Main Sewer Line (Sized as Shown) — 8" FSS
- Manhole (Sized per Note)
- Sewer Pump Station — PS(SS)

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Telephone Pedestal — TEL PED
- Utility Line by Others (Type as Shown) — PROP O/H POW LINES
- Trenchless Installation — 12" TL INSTALL
- Encasement by Open Cut — 16" ENCAS BY OC
- Encasement — 16" ENCASEMENT
- Thrust Block
- Air Release Valve — AR
- Utility Vault — UV
- Concrete Pier — CP
- Steel Pier — SP
- Plan Note — NOTE
- Pay Item Note — PAY ITEM

EXISTING UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Utility Pole
- Utility Pole with Base
- H-Frame Pole
- Power Transmission Line Tower
- Water Manhole — W
- Power Manhole — P
- Telephone Manhole — T
- Sanitary Sewer Manhole — SS
- Hand Hole for Cable — HH
- Power Transformer
- Telephone Pedestal — T
- CATV Pedestal — C
- Gas Valve
- Gas Meter
- Located Miscellaneous Utility Object
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.
- *Underground Power Line — P
- *Underground Telephone Cable — T
- *Underground Telephone Conduit — TC
- *Underground Fiber Optics Telephone Cable — T FO
- *Underground TV Cable — TV
- *Underground Fiber Optics TV Cable — TV FO
- *Underground Gas Pipeline — G
- Aboveground Gas Pipeline — A/G Gas
- *Underground Water Line — W
- Aboveground Water Line — A/G Water
- *Underground Gravity Sanitary Sewer Line — SS
- Aboveground Gravity Sanitary Sewer Line — A/G Sanitary Sewer
- *Underground SS Forced Main Line — FSS
- Underground Unknown Utility Line — ?UTL
- SUE Test Hole
- Water Meter
- Water Valve
- Fire Hydrant
- Sanitary Sewer Cleanout

*For Existing Utilities

- Utility Line Drawn from Record (Type as Shown) — W
- Designated Utility Line (Type as Shown) — W

SYSTIME
N:\PROJECTS\B-5550\Ut_sym_UC2_psh.dgn
USER:psmith

REV: 2/1/2012

PROJECT REFERENCE NO.	SHEET NO.
B-5550	UC-3

DESIGNED BY:	SRM
DRAWN BY:	JCC
CHECKED BY:	MKS
APPROVED BY:	MKS
REVISED:	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES ENGINEERING SEC.
PHONE: (919)707-6690
FAX: (919)250-4151

DocuSigned by: Laurin B. Kennedy
F85A3C2DA65640F...
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030770 LAURIN B. KENNEDY
12/12/2022

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

UTILITY CONSTRUCTION

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2018.

2. THE EXISTING WATER AND SANITARY SEWER UTILITIES BELONG TO THE CITY OF BREVARD, NC.

3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.

4. THE UTILITY OWNER OWNS THE EXISTING WATER AND SANITARY SEWER UTILITY FACILITIES AND WILL OWN THE NEW WATER AND SANITARY SEWER UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.

5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.

7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.

8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY AT NO ADDITIONAL COST TO OWNER.

9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

LIST OF STANDARD DRAWINGS

1515.01	WATER METER
1515.02	FIRE HYDRANT
1520.01	SEWER CLEAN OUT

PROJECT SPECIFIC NOTES:

1. ALL PIPE FOR OPEN TRENCH CONSTRUCTION SHALL BE ANSI/AWWA C151/A21.51 PRESSURE CLASS 350 RATED FOR AT LEAST 200 PSI OR GREATER.

2. DUCTILE IRON PIPE JOINTS SHALL BE PUSH ON TYPE WITH RUBBER GASKETS. GASKET MATERIALS SHALL CONFORM TO AWWA C111. GASKETS SHALL BE OF STYRENE BUTADIENE RUBBER (SBR) UNLESS OTHERWISE SPECIFIED.

3. ALL FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT, CLASS 350, AWWA C110 AND RESTRAINED WITH APPROVED RETAINER GLANDS.

4. GATE VALVES SHALL BE RESILIENT SEAT GATE VALVES CONFORMING TO AWWA C509 OR C515 OR LATEST VERSION AND THEY SHALL BE NSF 61 CERTIFIED AND SHALL BE RESTRAINED WITH APPROVED RETAINER GLANDS.

5. THE GATE VALVES SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE NCDOT SPECIFICATIONS AND MANUFACTURERS RECOMMENDATIONS.

6. ENCASEMENT PIPE SHALL BE NEW AND IN ACCORDANCE WITH ASTM A139 (GRADE B HOT-DIP GALVANIZED) AND A283. MINIMUM WALL THICKNESS SHALL BE 0.375 INCHES. ALTERNATIVE CORROSION PROTECTION METHOD SHALL BE COMPOSED OF THE FOLLOWING THREE APPLICATIONS:

   A. PRIME AND STRIPE COAT: TNEMEC 94H20 (ZINC-RICH PRIMER) OR APPROVED EQUAL
   B. INTERMEDIATE AND STRIPE COAT: TNEMEC SERIES N69 OR APPROVED EQUAL
   C. TOP COAT: TNEMEC SERIES 73 OR APPROVED EQUAL

5/14/99
$$SYSTIME$$
...\Utt_notes_UC3_psh.dgn
$$USERNAME$$

PROJECT REFERENCE NO.	SHEET NO.
B-5550	UC-3A

DESIGNED BY:	SRM
DRAWN BY:	JCC
CHECKED BY:	MKS
APPROVED BY:	MKS
REVISED:	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES ENGINEERING SEC.
PHONE: (919)707-6690
FAX: (919)250-4151

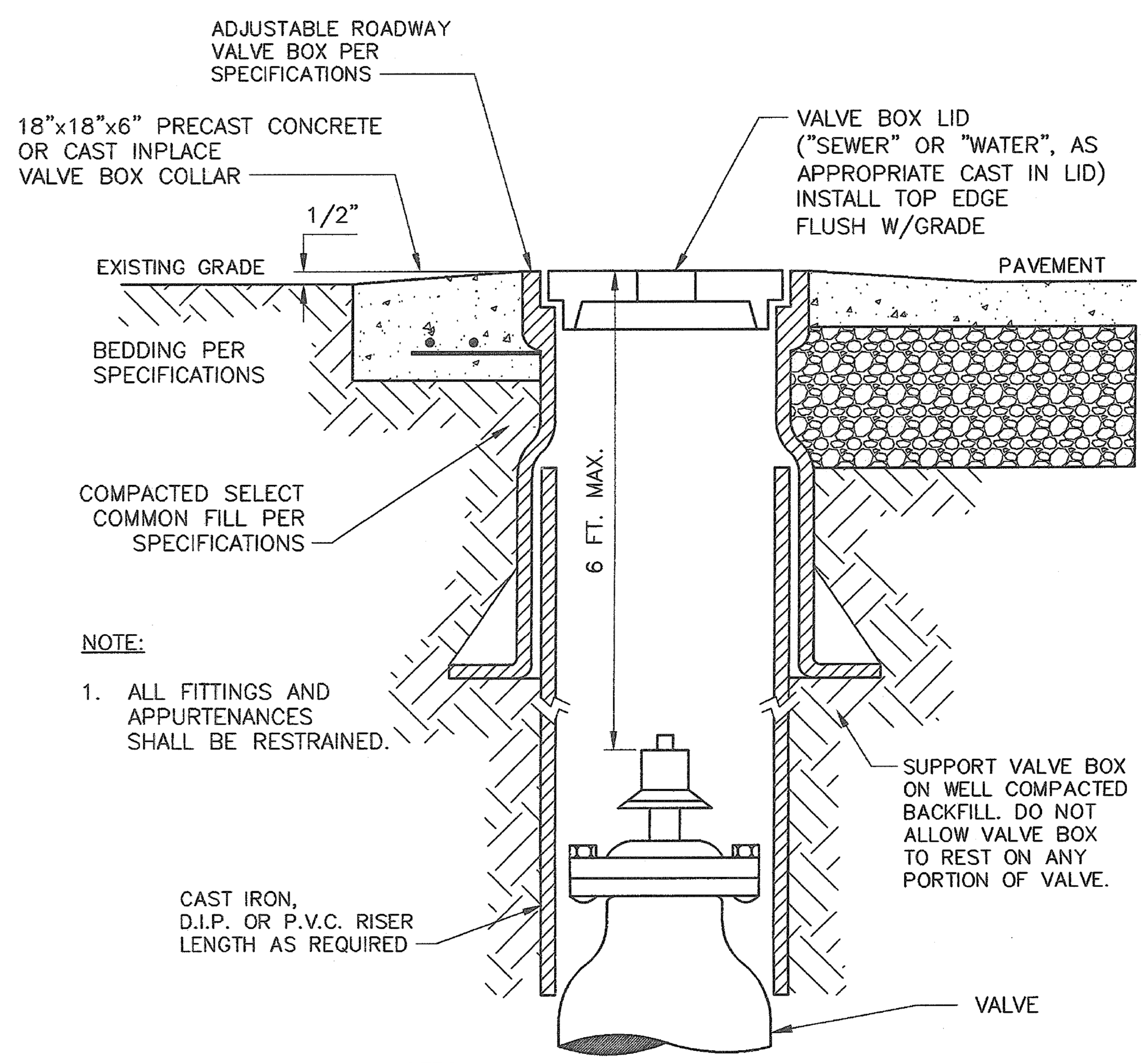
NORTH CAROLINA PROFESSIONAL SEAL 030770 ENGINEER LAURIN B. KENNEDY 12/12/2022

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

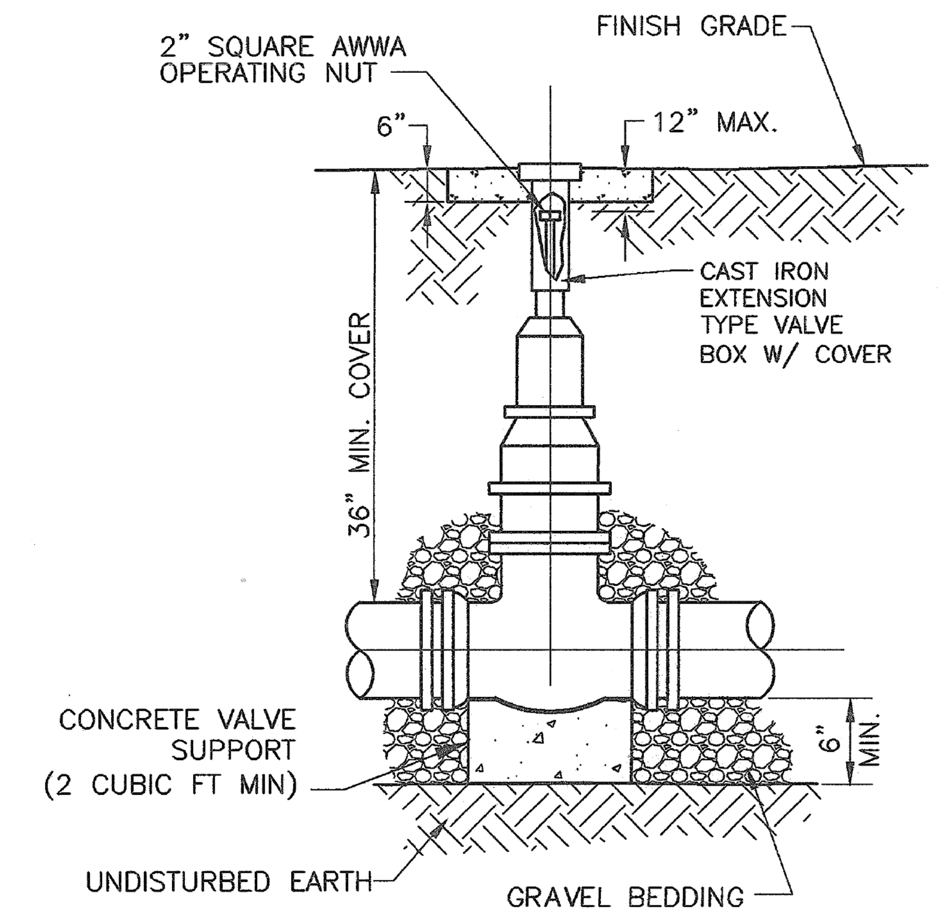
PROJECT TYPICAL DETAILS



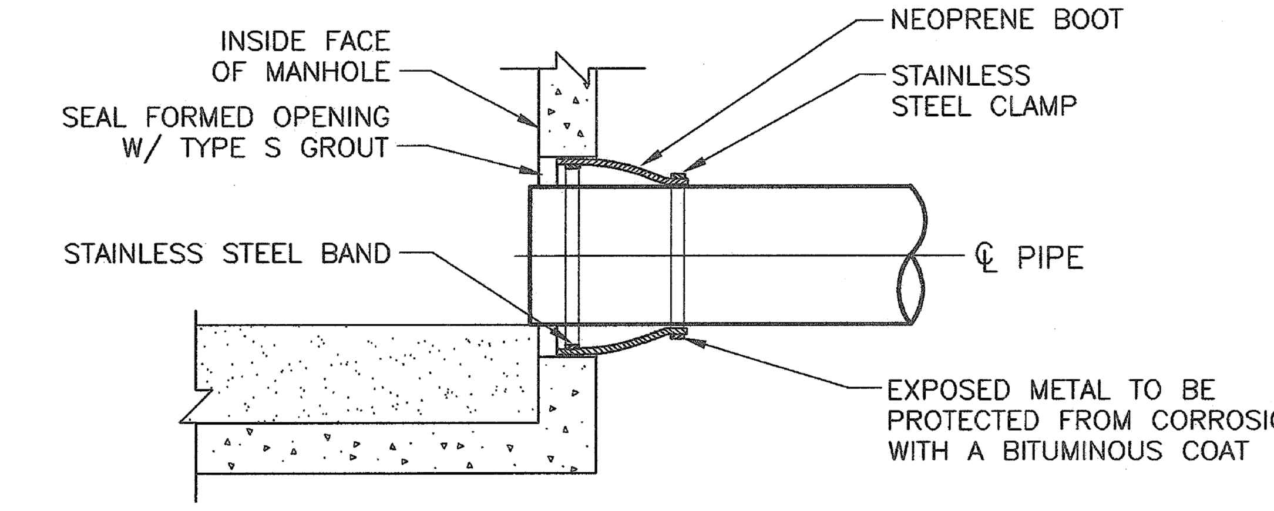
NOTES:

1. CENTER VALVE BOX OVER OPERATING NUT TO INSURE FREE VALVE OPERATION.
2. USE 6" RISER PIPE ON 4" & 6" VALVES.
3. USE 8" RISER PIPE ON 8" VALVES AND LARGER.

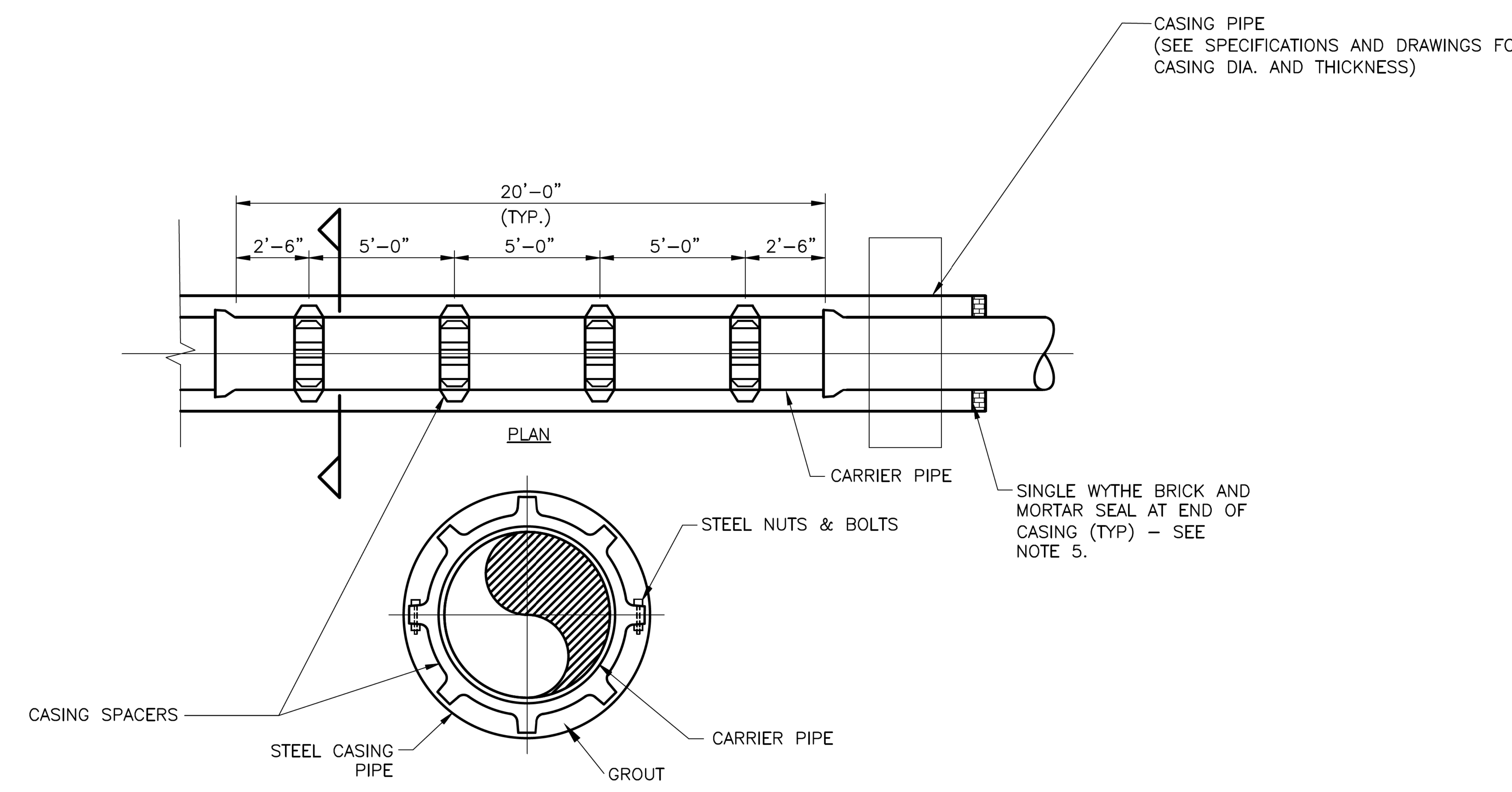
STANDARD VALVE BOX



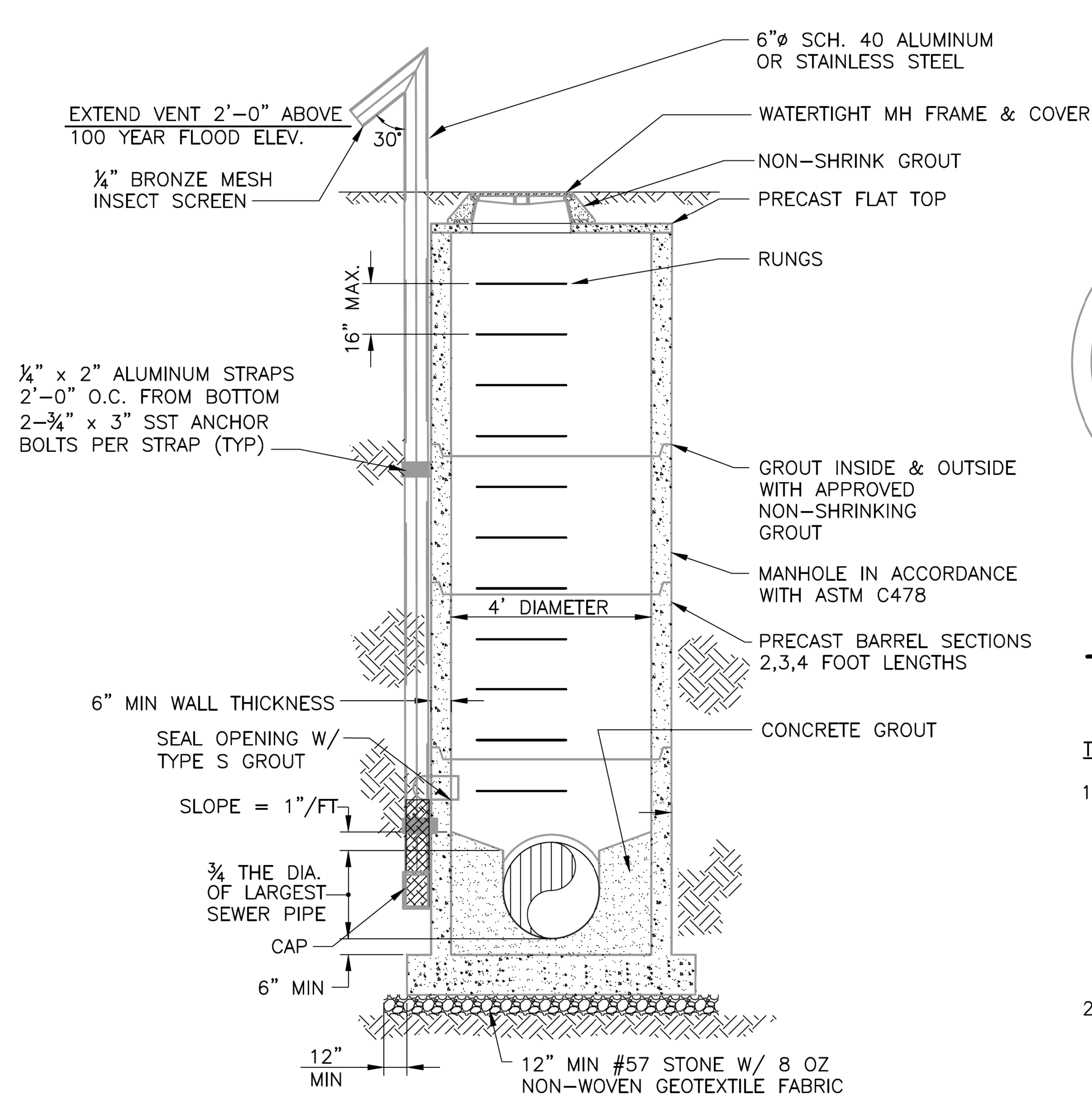
VERTICAL VALVE W/ BELOW GROUND OPERATOR



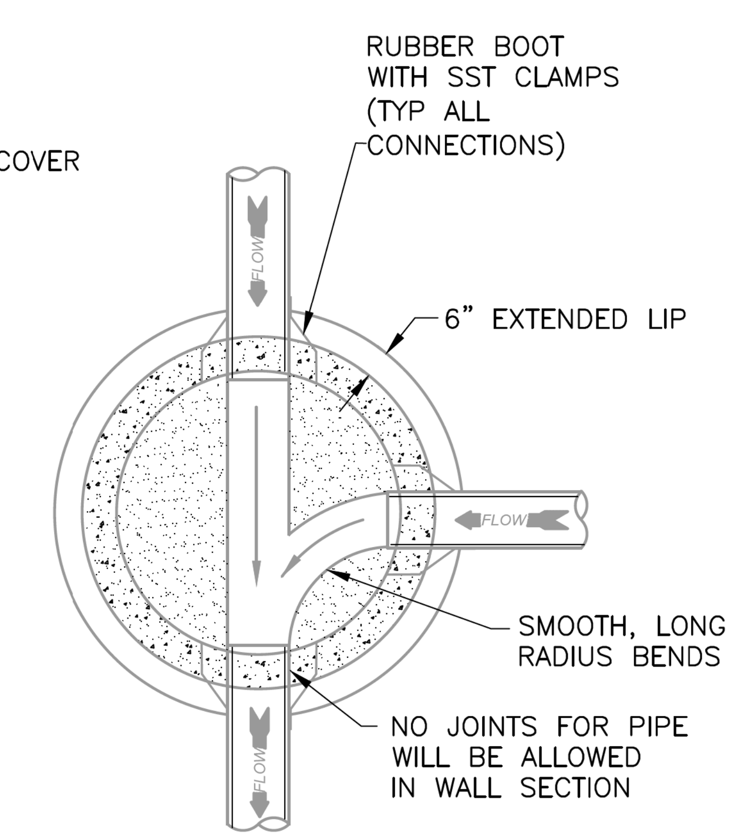
NEW PRECAST CONCRETE MANHOLE/PIPE CONNECTION



SINGLE CARRIER PIPE IN CASING



TYPICAL MANHOLE



FLOOR PLAN

NOT TO SCALE

TYPICAL PRECAST STRUCTURE NOTES:

1. THE STRUCTURES SHALL BE DESIGNED TO PREVENT FLOTATION WITHOUT THE BENEFIT OF SKIN FRICTION WHEN THE GROUND WATER LEVEL IS AT FINISHED GROUND SURFACE. FLOTATION FORCES SHALL BE RESISTED BY THE DEAD LOAD OF THE STRUCTURE AND SOIL DIRECTLY ABOVE THE STRUCTURE. WEIGHT OF EQUIPMENT AND PIPING WITHIN THE STRUCTURE AND SOIL FRICTIONAL FORCES SHALL NOT BE CONSIDERED AS BEING EFFECTIVE IN RESISTING FLOTATION FORCES.
2. IF THE DESIGN OF THE STRUCTURE REQUIRES A CONCRETE PAD TO PREVENT FLOTATION, THE COST OF DESIGNING, FURNISHING AND INSTALLING A REINFORCED CONCRETE PAD SHALL BE INCLUDED IN THE PRICE FOR THE STRUCTURE. DETAILS OF THE DESIGN OF THE CONCRETE PAD (IF REQUIRED) SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

NOTES:

1. ENCASEMENTS SHALL EXTEND AT LEAST FROM DITCH LINE TO DITCH LINE IN CUT SECTIONS, 5' BEYOND TOE OF SLOPES IN FILL SECTIONS, AND 10' BEYOND EDGE OF PAVEMENT IN SECTIONS WITH NO DITCH OR FILL AREA.
3. CONTRACTOR SHALL USE BENDS TO FIELD CONNECT CARRIER PIPE FROM SHAFTS ALIGNMENT SHOWN ON PLAN.
4. CASING PIPE SHALL BE SLOPED TO DRAIN TOWARDS THE LAUNCH SHAFT AT EACH CROSSING LOCATION.
5. CONTRACTOR MAY USE TYPE C END SEALS WITH STAINLESS STEEL BANDS AS MANUFACTURED BY PIPELINE SEAL AND INSULATOR, INC IN PLACE OF BRICK AND MORTAR SEAL. ANNULAR SPACE GROUTING SHALL BE COMPLETED AS SPECIFIED PRIOR TO END SEAL INSTALLATION.

PROJECT REFERENCE NO.	SHEET NO.
B-5550	UC-3B

DESIGNED BY: SRM
DRAWN BY: JCC
CHECKED BY: MKS
APPROVED BY: MKS
REVISED:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES ENGINEERING SEC.
PHONE: (919)707-6690
FAX: (919)250-4151

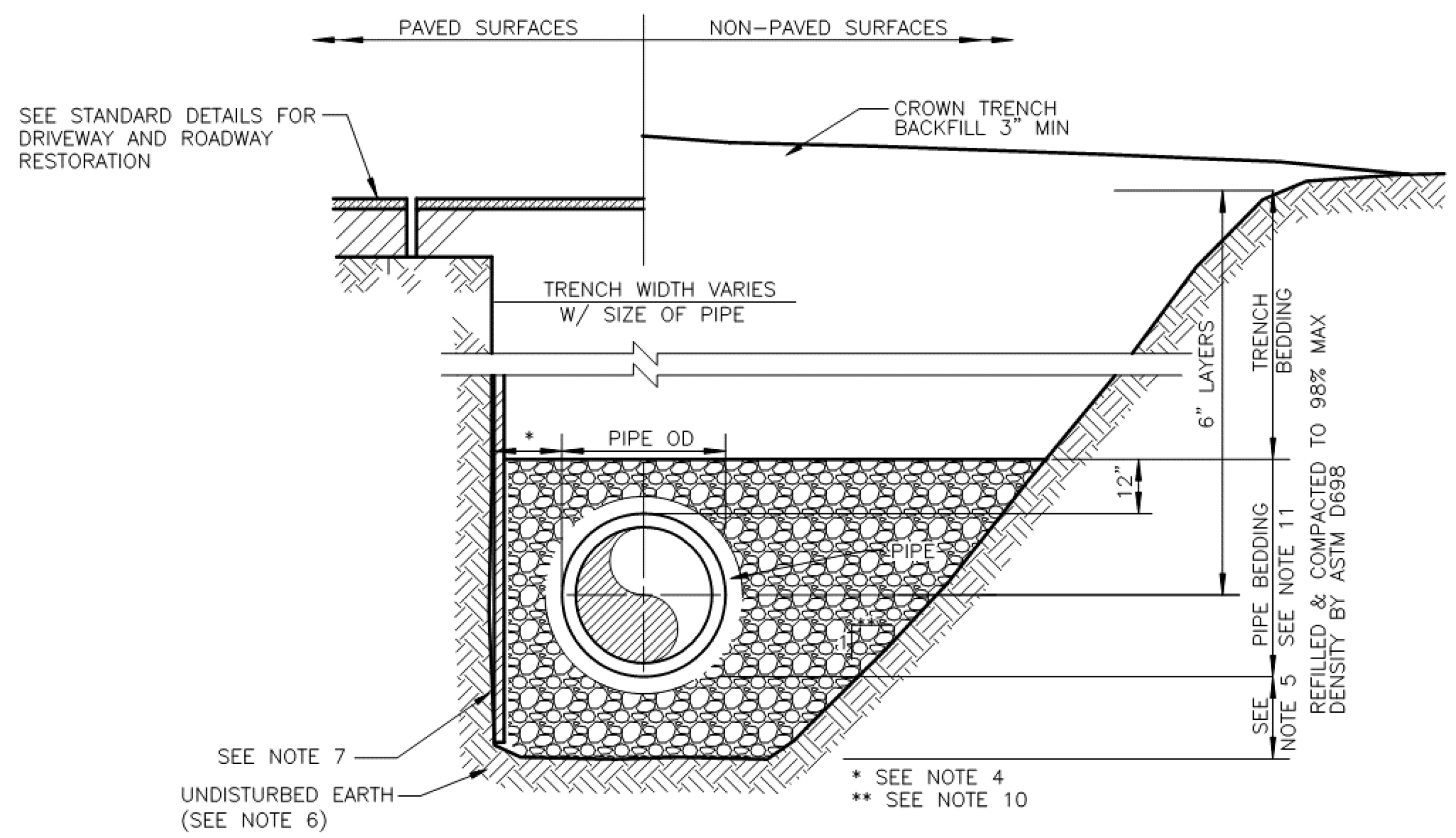
NORTH CAROLINA PROFESSIONAL SEAL 030770 ENGINEER LAURIN B. KENNEDY
1/16/2023

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

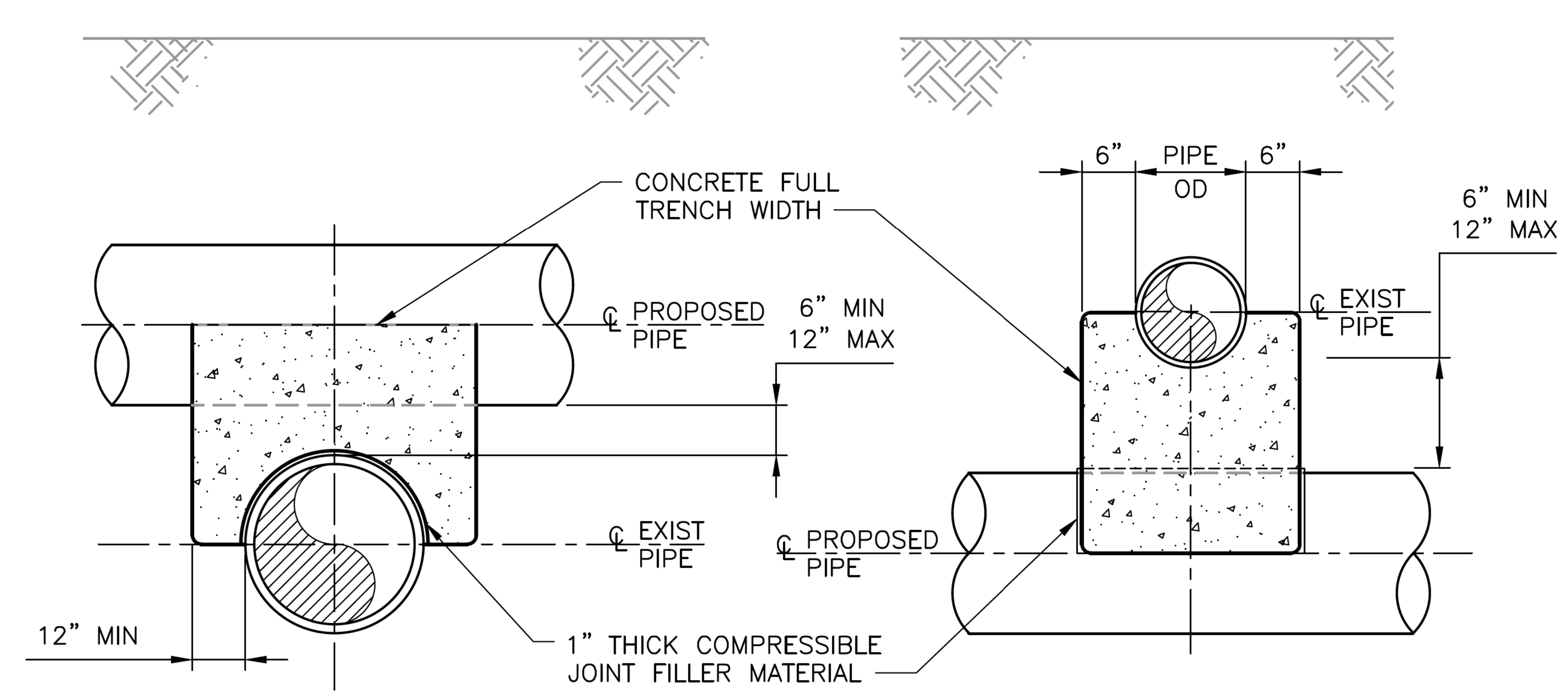
PROJECT TYPICAL DETAILS



NOTES:

1. PIPE BEDDING & TRENCH BACKFILL – COMPACTED IN LAYERS TO 98% MAXIMUM DENSITY AS PER ASTM D698 (STANDARD PROCTOR), EXCEPT TRENCH BEDDING WHERE NOT UNDER ROADS CAN BE 95% MAX. DENSITY PER ASTM D698.
2. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION. DEWATER AS NECESSARY.
3. GRAVITY PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF FLOW.
4. MINIMUM 18" BEYOND PIPE OD.
5. MINIMUM 6" LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.
6. IF UNSUITABLE FOUNDATION IS ENCOUNTERED REMOVE UNSUITABLE MATERIAL TO REACH SUITABLE FOUNDATION, OR TO A DEPTH OF 3 FEET MAX CONFIRM WITH ENGINEER. REPLACE WITH STRUCTURAL FILL, SEE SPECIFICATIONS.
7. SHEETING SHALL BE DRIVEN BELOW THE UTILITY INVERT IF REQUIRED FOR LATERAL SUPPORT OR UNSUITABLE MATERIAL REMOVAL. WHERE DRIVEN BELOW PIPE SPRINGLINE. SHEETING SHALL BE CUT OFF A MIN OF 12" ABOVE TOP OF PIPE OR HIGHER, AS AUTHORIZED BY THE ENGINEER, AND LEFT IN PLACE. IN NO CASE SHALL SHEETING LEFT IN PLACE EXTEND HIGHER THAN 18" BELOW SURFACE GRADE UNLESS SPECIFICALLY APPROVED. BRACING SHALL BE PROVIDED AS REQUIRED.
8. EXCAVATED MATERIALS MIXED WITH DELETERIOUS SUBSTANCES DURING CONSTRUCTION SHALL NOT BE USED FOR BACKFILLING.
9. FOR INSTALLATIONS IN PAVEMENT, ALL EXISTING PAVEMENT SHALL BE CUT SQUARELY WITH A SAW. WEARING SURFACE SHALL BE SAME TYPE AND THICKNESS AS THE EXISTING PAVEMENT.
10. TRENCH SLOPES SHALL BE AS REQUIRED BY OSHA AND SHALL NOT EXCEED 1:1 NEXT TO ROADS – USE TRENCHBOXES AND SHEETING AS REQUIRED.
11. SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 INSTALLED AND COMPACTED IN 4" LIFTS.
12. TRENCH BOXES SHALL NOT EXTEND BELOW THE SPRINGLINE OF THE PIPE, UNLESS APPROVED BY THE ENGINEER ON A PER-CASE BASIS.

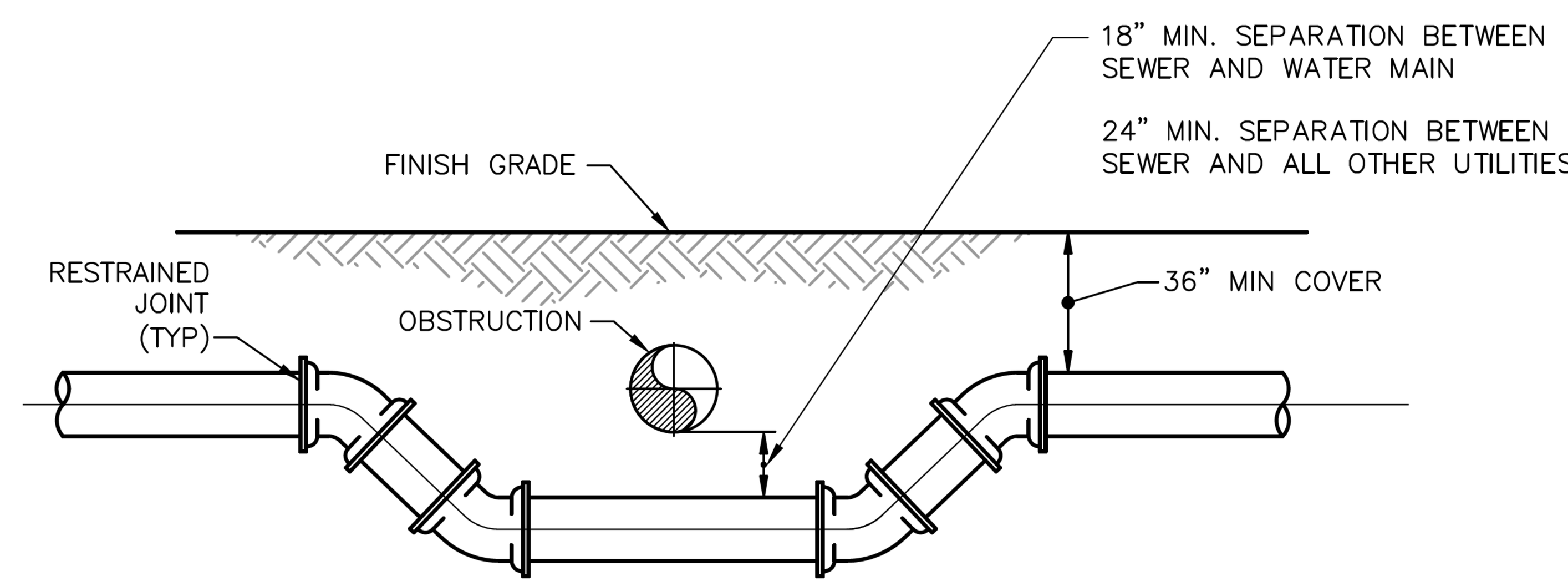
PIPE BEDDING



PROPOSED PIPELINE OVER EXISTING PIPE

PROPOSED PIPELINE UNDER EXISTING PIPE

CONCRETE PIPE CRADLE



STANDARD WATER AND SEWER SEPARATION STATEMENT:

1. LATERAL SEPARATION OF SEWERS AND WATER MAINS. WATER MAINS SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWERS, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10-FOOT LATERAL SEPARATION--IN WHICH CASE:

A. THE WATER MAIN IS LAID IN A SEPARATE TRENCH, WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER; OR:

B. THE WATER MAIN IS LAID IN THE SAME TRENCH AS THE SEWER WITH THE WATER MAIN LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH, AND WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.

2. CROSSING A WATER MAIN OVER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER, THE WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 18 INCH VERTICAL SEPARATION--IN WHICH CASE BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.

3. CROSSING A WATER MAIN UNDER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND THE SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.

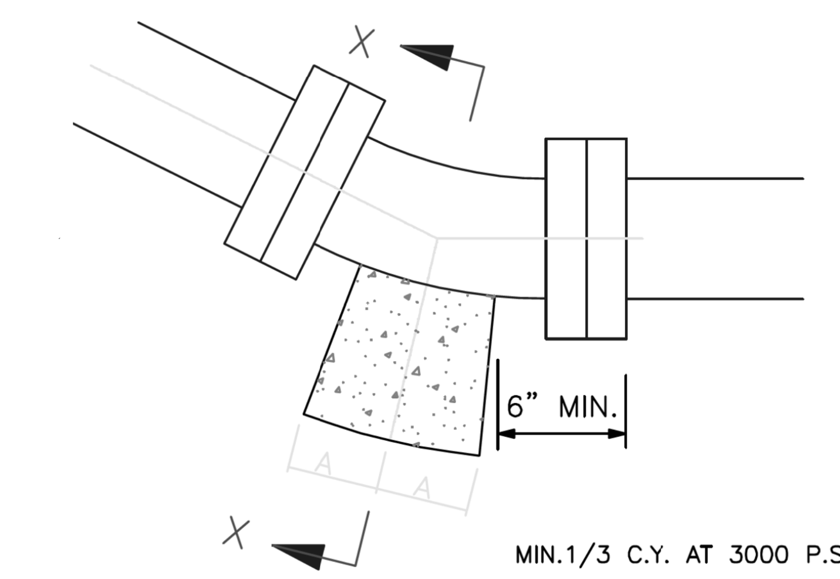
4. A VERTICAL DISTANCE OF TWENTY-FOUR INCHES SHALL BE MAINTAINED FOR ALL OTHER UTILITY CROSSINGS.

UILITY CROSSING

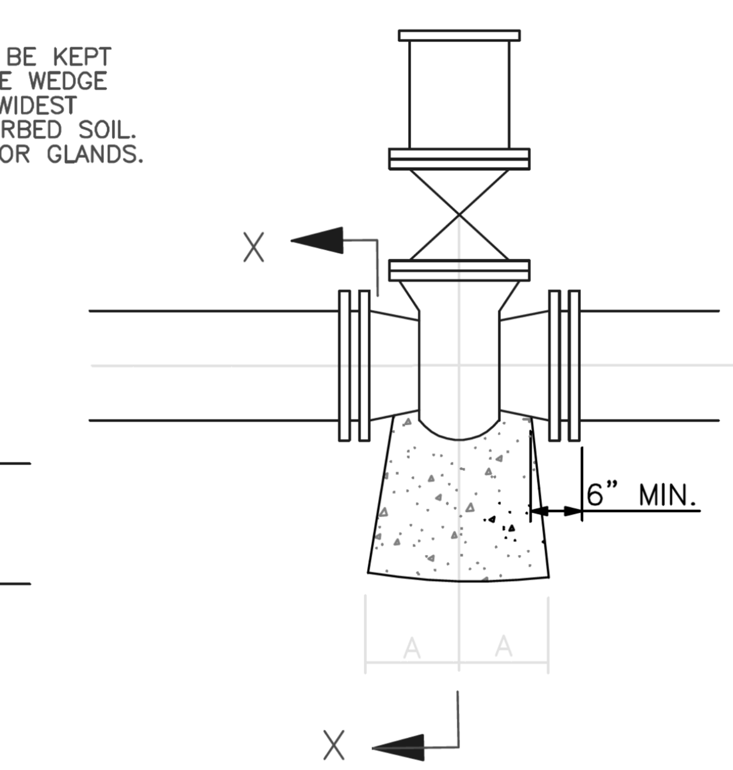
DETAIL (A / –)

NTS

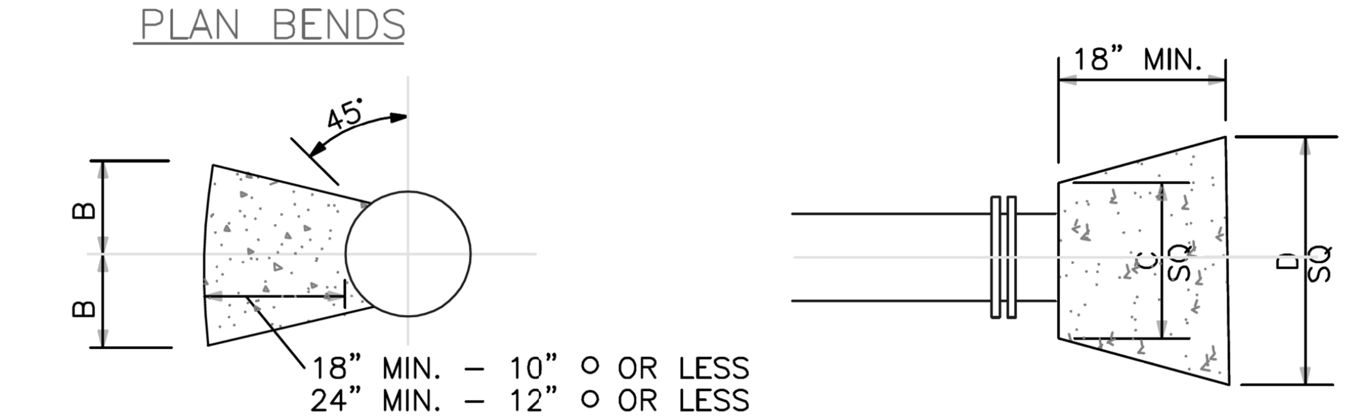
NOTES:
1. CONCRETE SHALL BE 3,000 PSI MIN.
2. CONCRETE FOR THRUST BLOCKING SHALL BE KEPT FAIRLY DRY, THUS MAKING THE CONCRETE WEDGE SHAPE MORE EASILY FORMED WITH THE WIDEST PART (BLOCKING AREA) AGAINST UNDISTURBED SOIL.
3. NO CONCRETE SHALL COVER ANY BOLTS OR GLANDS.



PLAN BENDS



HYDRANT TEE
PLAN TEES



PIPE SIZE	90° BEND		45° BEND		221/2° BEND		11/4° BEND		TEE		PLUG	
	A	B	A	B	A	B	A	B	A	B	C	D
4"	8"	12"	8"	8"	6"	6"	6"	6"	8"	9"	10"	16"
6"	10"	12"	8"	10"	8"	8"	8"	8"	10"	10"	12"	18"
8"	15"	13"	10"	10"	8"	8"	8"	8"	10"	12"	12"	24"
10"	16"	14"	10"	12"	6"	10"	6"	10"	11"	14"	14"	25"
12"	20"	16"	12"	14"	8"	12"	8"	12"	14"	16"	16"	30"
14"	22"	18"	14"	16"	10"	14"	10"	14"	16"	18"	18"	34"
16"	26"	20"	16"	18"	12"	16"	12"	16"	18"	20"	20"	36"

TYPICAL THRUST BLOCK DETAIL

5/14/99

$$SYSTIME$$ $$FILE$$ ut_notes_UC3_psh.dgn USER: PERSTANIK

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-5550	UC-3C

DESIGNED BY: SRM
DRAWN BY: JCC
CHECKED BY: MKS
APPROVED BY: MKS
REVISED:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES ENGINEERING SEC.
PHONE: (919)707-6690
FAX: (919)250-4151

NORTH CAROLINA PROFESSIONAL SEAL 036223 ENGINEER JUSTIN S. BOGGS
1/16/2023
UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT TYPICAL DETAILS

DESIGN CRITERIA:

CODES:

- AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION
- NORTH CAROLINA STATE BUILDING CODE, 2018 EDITION
- ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"
- AISC MANUAL OF STEEL CONSTRUCTION, FOURTEENTH EDITION

GENERAL CONDITIONS:

THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE FACILITY. SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH THE WORK.

ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSE-WHERE ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

STRUCTURAL STEEL:

DESIGN, FABRICATION, ERECTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST AISC SPECIFICATIONS AND DESIGN DRAWINGS

ALL STRUCTURAL STEEL:

HP SHAPES –	ASTM A572
STAINLESS STEEL PLATES –	ASTM A240, TYPE 316L
STAINLESS STEEL BOLTS –	ASTM F593, TYPE 316
NUTS –	ASTM F594, TYPE 316
HARDENED STEEL WASHER –	TYPE 316

SHOP AND ERECTION DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

WELDED CONNECTIONS SHALL BE IN ACCORDANCE WITH THE LATEST AWS STRUCTURAL WELDING CODE REQUIREMENTS. REFER TO NCDOT STANDARD SPECIFICATIONS, SECTION 440-7 FOR FIELD WELDING. ALL WELDS SHALL BE INSPECTED BY AWS D-1.1 AND D-1.6 CERTIFIED WELDING INSPECTOR. ALL WELDS SHALL BE PERFORMED WITH E70XX WELDING RODS.

ABBREVIATIONS:

ø	DIAMETER
#	NUMBER
MIN	MINIMUM
MAX	MAXIMUM
STIF	STIFFENER
TYP	TYPICAL
SS	STAINLESS STEEL

ABBREVIATIONS AND DESIGNATIONS FOR STEEL MEMBERS MAY BE FOUND IN THE CURRENT MANUAL OF STEEL CONSTRUCTION BY AISC

WELDING SYMBOLS AND ABBREVIATIONS MAY BE FOUND IN AWS 2 4

PILE BENT INSTALLATION NOTES:

1. PIPE SLOPES AND INVERTS ARE TO BE AS DESIGNED. CONTRACTOR TO DETERMINE PILE CUT OFF ELEVATIONS WITH CONSIDERATION FOR PIPE SLOPES.
2. H-PILES SHALL BE HP12x53 ASTM A572, GRADE 50, MINIMUM.
3. A TOTAL OF TWO (2) PILE BENTS SHALL BE INSTALLED AS SHOWN. PILE BENTS SHALL BE SPACED 48 FEET MAXIMUM CENTER-TO-CENTER OF PILE BENTS.
4. H-PILES SHALL BE DESIGNED AND INSTALLED TO AN ALLOWABLE CAPACITY OF 7 5 TONS IN COMPRESSION AND 1 TONS UPLIFT. HP12x53 PILES TO BE EMBEDDED A MINIMUM OF 25 FEET BELOW EXISTING GRADE. MINIMUM FACTORS OF SAFETY OF 2 0 AND 3 0 SHOULD BE CONSIDERED FOR COMPRESSION AND UPLIFT, RESPECTIVELY.
5. THE PILES SHOULD BE DRIVEN WITH A DRIVING SHOE TO PROTECT THE TIP AND AID IN PENETRATION INTO AND THROUGH CEMENTED OR HARD SOIL LAYERS
6. A SPECIALTY FIRM EMPLOYED BY THE CONTRACTOR SHOULD PROVIDE CAPWAP ANALYSIS TO EVALUATE DRIVING STRESSES PRIOR TO DRIVING PILES. FOR THE FIRST PILE INSTALLATION, THE SPECIALTY FIRM SHOULD PROVIDE HIGH STRAIN DYNAMIC TESTING (HSDT) TO ESTABLISH DRIVING CRITERIA PRIOR TO DRIVING REMAINING PILES. A SECOND HSDT MAY BE DIRECTED BY THE ENGINEER IF DRIVING CONDITIONS VARY SIGNIFICANTLY BETWEEN BENT LOCATIONS
7. DRIVABILITY AND SELECTION OF THE PILE DRIVING HAMMER IS THE RESPONSIBLITY OF THE CONTRACTOR THE CHOSEN HAMMER AND CUSHION SYSTEM MUST BE SUFFICIENT TO ADVANCE THE PILE TO MINIMUM DESIGN DEPTHS WHILE MAINTAINING DRIVING STRESSES WITHIN THE PILE AT ACCEPTABLE LEVELS

FOUNDATIONS:

1. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA SPECIALIZING IN GEOTECHNICAL ENGINEERING TO PROVIDE DESIGN DOCUMENTS FOR THE PILE FOUNDATIONS. SUBSURFACE INVESTIGATION SHALL BE PERFORM, IF REQUIRED BY THE PILE FOUNDATION DESIGNER. REFER TO ADDITIONAL REQUIREMENTS IN THE PROJECT SPECIAL PROVISIONS.

GEOTECHNICAL REPORT:

1. STRUCTURE SUBSURFACE INVESTIGATION, BRIDGE ON -L- (RAILROAD AVE) OVER KING CREEK, PREPARED FOR THE STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT, BY SUMMIT DESIGN AND ENGINEERING SERVICES, PLLC DATED MAY 2018.
2. FOUNDATION RECOMMENDATIONS, BRIDGE NO. 102 OVER KING CREEK ON RAILROAD AVENUE (SR 1402) BY HAROLD D. PRUITT DATED MAY 2018

CONCRETE:

ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318 REQUIREMENTS.

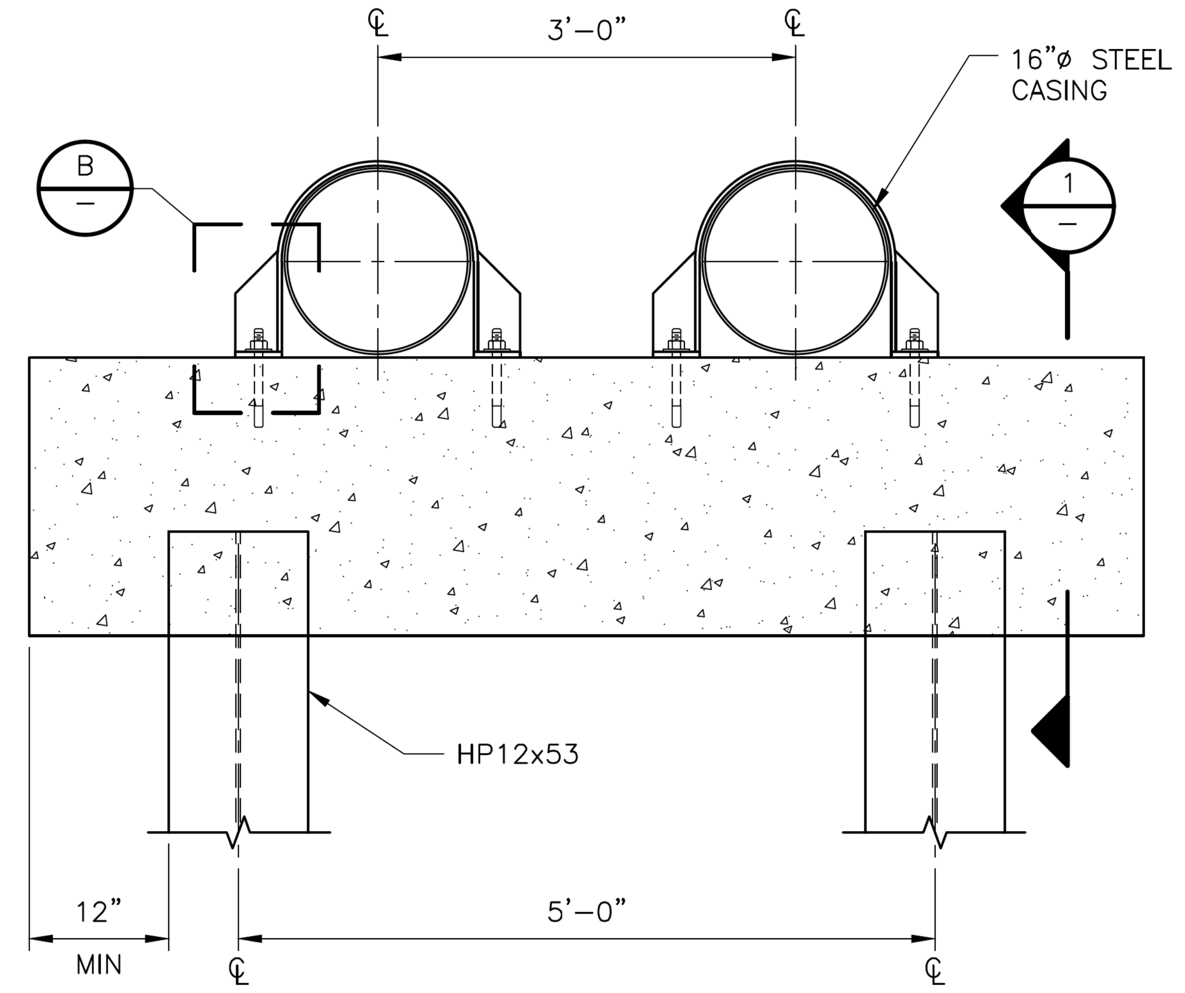
ALL CONCRETE SHALL BE AIR-ENTRAINED, CLASS AA CONCRETE (4500 PSI). SEE NCDOT STANDARD SPECIFICATION 1000 FOR ALL REQUIREMENTS OF PORTLAND CEMENT CONCRETE

REINFORCING STEEL:

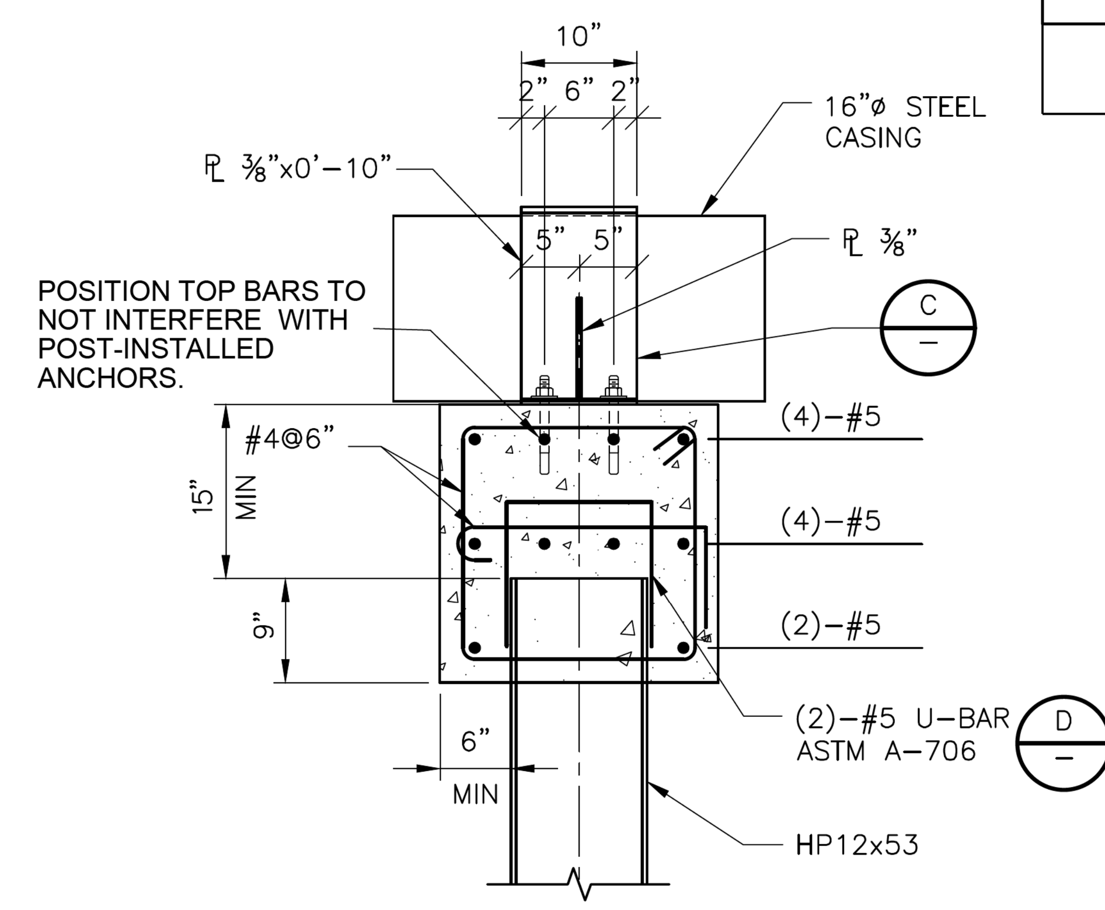
REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60 REQUIREMENTS AND TO NCDOT STANDARD SPECIFICATIONS SECTION 1070, UNLESS OTHERWISE NOTED.

SUBMITTALS:

1. PILE SUBMITTALS SHALL BE IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS AND INCLUDE THE FOLLOWING:
   - SUBMIT PILE DETAILS INCLUDING DETAILS OF THE TOP CONNECTION TO THE STRUCTURE AND PILE TIP REINFORCEMENT OR POINTS.
   - SUBMIT DESCRIPTION OF PROPOSED PILE DRIVING EQUIPMENT, INCLUDING CRANE, LEADS, HAMMER, CAP BLOCK, CUSHION AND ANVIL. DATA PROVIDED SHALL INCLUDE HAMMER MAKE AND MODEL, RAM MASS, ANVIL MASS, RATED STROKE, RATED ENERGY RANGE, RATED SPEED, STEAM OR AIR PRESSURE, PILE DRIVING CAP, MAKE AND MASS, CUSHION BLOCK DIMENSIONS AND MATERIAL TYPE, AND ALL OTHER APPLICABLE DATA ALL EQUIPMENT IS SUBJECT TO SATISFACTORY FIELD PERFORMANCE
   - SUBMIT RESULTS OF PRELIMINARY WAVE EQUATION ANALYSIS FOR THE PILE TYPE AND PROPOSED PILE DRIVING SYSTEM. SUBMIT PRELIMINARY CORRESPONDING DRIVING STRESSES AND OVERALL INSTALLATION PROCEDURES. INSTALLATION PROCEDURES SHALL INCLUDE PROVISIONS TO LIMIT DRIVING STRESSES TO MITIGATE PILE DAMAGE. SUFFICIENT ANALYSIS SHALL BE PERFORMED TO ADDRESS THE VARIABILITY IN PILE LENGTHS ANTICIPATED ON THE PROJECT. THE WAVE EQUATION ANALYSIS SHALL BE PERFORMED BY THE SPECIALTY FIRM HIRED BY THE CONTRACTOR AND SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE NORTH CAROLINA
   - SUBMIT QUALIFICATIONS OF CONTRACTOR'S ENGINEER
   - SUBMIT RESULTS OF PILE TESTING AND ANALYSES PERFORMED BY THE CONTRACTOR FOR INFORMATION
2. STRUCTURAL STEEL SUBMITTALS SHALL BE IN ACCORDANCE NCDOT STANDARD SPECIFICATIONS AND INCLUDE THE FOLLOWING:
   - ERECTION DRAWINGS, DETAILED SHOP DRAWINGS, SCHEDULES, DATA FOR ALL STRUCTURAL STEEL, CONNECTION TO OTHER MEMBERS AND METHOD OF ASSEMBLY. APPROVAL WILL BE FOR STRENGTH ONLY AND SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR PROPER FIT OF MEMBERS AND FOR SUPPLYING ALL MATERIAL REQUIRED BY THE CONTRACT DOCUMENTS. CLEARLY IDENTIFY THE PORTION OF THE WORK REPRESENTED BY THE SHOP DRAWINGS, AND CLEARLY IDENTIFY THE PLACEMENT OF EACH PIECE SHOWN ON THE DETAIL DRAWINGS. IDENTIFY ALL WELDS IN CONFORMANCE WITH AWS A2. 4. MARK NUMBERS PAINTED ON THE SHOP ASSEMBLED PIECES OF STEEL SHALL BE THE SAME MARK NUMBERS USED ON THE DETAILED SHOP AND ERECTION DRAWINGS.
   - CERTIFIED COPY OF MILL TEST REPORTS ON EACH STEEL OR STAINLESS STEEL PROPOSED FOR USE SHOWING THE PHYSICAL PROPERTIES AND CHEMICAL ANALYSIS
   - DOCUMENTATION OF WELD INSPECTIONS BY AWS D-1. 1 AND D-1.6 CERTIFIED WELDING INSPECTOR.



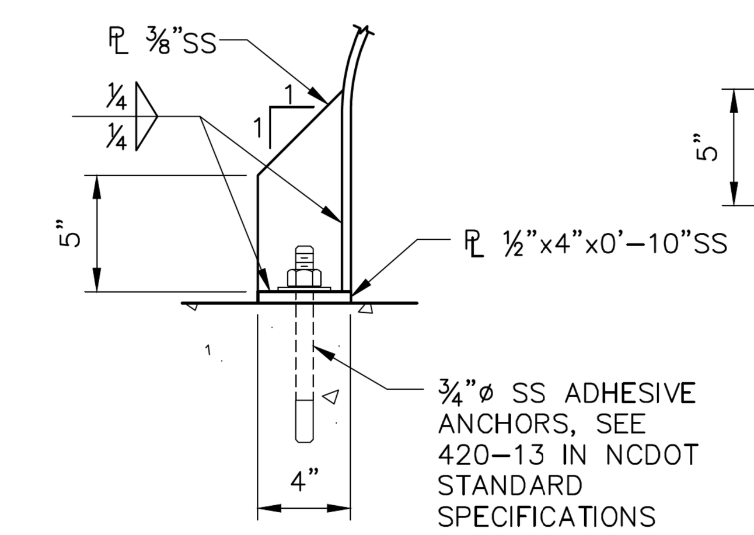
DETAIL A
3/4" = 1'-0"



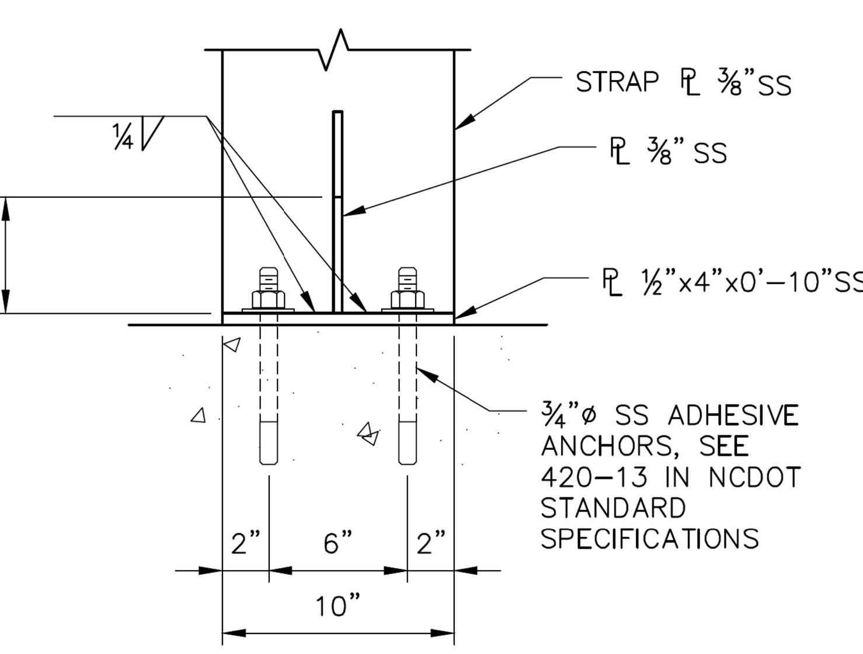
SECTION 1
3/4" = 1'-0"

NOTES:

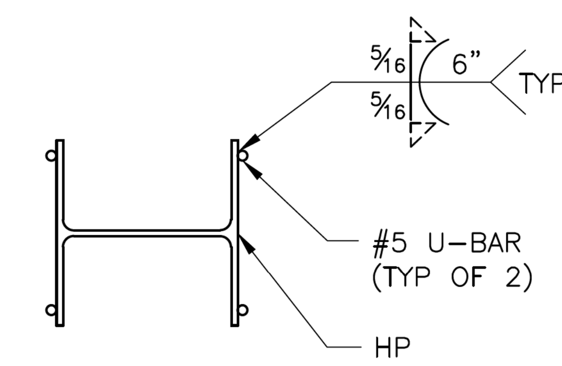
1. STEEL AND STAINLESS STEEL IN CONTACT WITH CONCRETE TO BE COATED WITH BITUMINOUS PAINT.
2. STAINLESS STEEL IN CONTACT WITH STEEL TO BE ISOLATED WITH 1/8" MIN NEOPRENE GASKET.



DETAIL B
3/4" = 1'-0"



DETAIL C
3/4" = 1'-0"



DETAIL D
3/4" = 1'-0"

PROJECT REFERENCE NO.	SHEET NO.
B-5550	UC-4

DESIGNED BY:	SRM
DRAWN BY:	JCC
CHECKED BY:	MKS
APPROVED BY:	MKS
REVISED:	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES ENGINEERING SEC.
PHONE: (919)707-6690
FAX: (919)250-4151

NORTH CAROLINA PROFESSIONAL SEAL 030770 ENGINEER LAURIN B. KENNEDY
1/16/2023

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTE:

1. ELEVATION OF EXISTING 8″ WATERLINE AT PROPOSED WATERLINE TIE-IN LOCATIONS IS ASSUMED TO BE 3 FEET BELOW EXISTING GRADE. CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE EXISTING WATERLINE PRIOR TO BEGINNING ANY PIPE INSTALLATION AND DEFLECT PIPE AS NEEDED LEADING UP TO CONNECTION.

2. CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE EXISTING SEWER LINE AT THE TIE IN LOCATIONS PRIOR TO ORDERING MANHOLES AND ADJUST MANHOLE INVERT ELEVATIONS AS NEEDED.

3. ALL PROPOSED DUCTILE IRON WATER PIPE SHALL BE RESTRAINED JOINT PIPE. ALL PROPOSED DUCTILE IRON SEWER PIPE SHALL BE UNRESTRAINED JOINT PIPE AND SHALL BE INTERIOR LINED WITH CERAMIC EPOXY LINING. ALL RESTRAINED PIPE JOINTS AND FITTINGS SHALL BE RESTRAINED USING MECHANICAL JOINT GLANDS.

4. CONTRACTOR SHALL RESTRAIN THE EXISTING WATERLINE BY EXCAVATION AND INSTALLING A THRUST BLOCK BEHIND THE CONNECTING TEE. THRUST BLOCKS SHALL BE CONSTRUCTED ACCORDING TO DETAIL ON SHEET UC-3B.

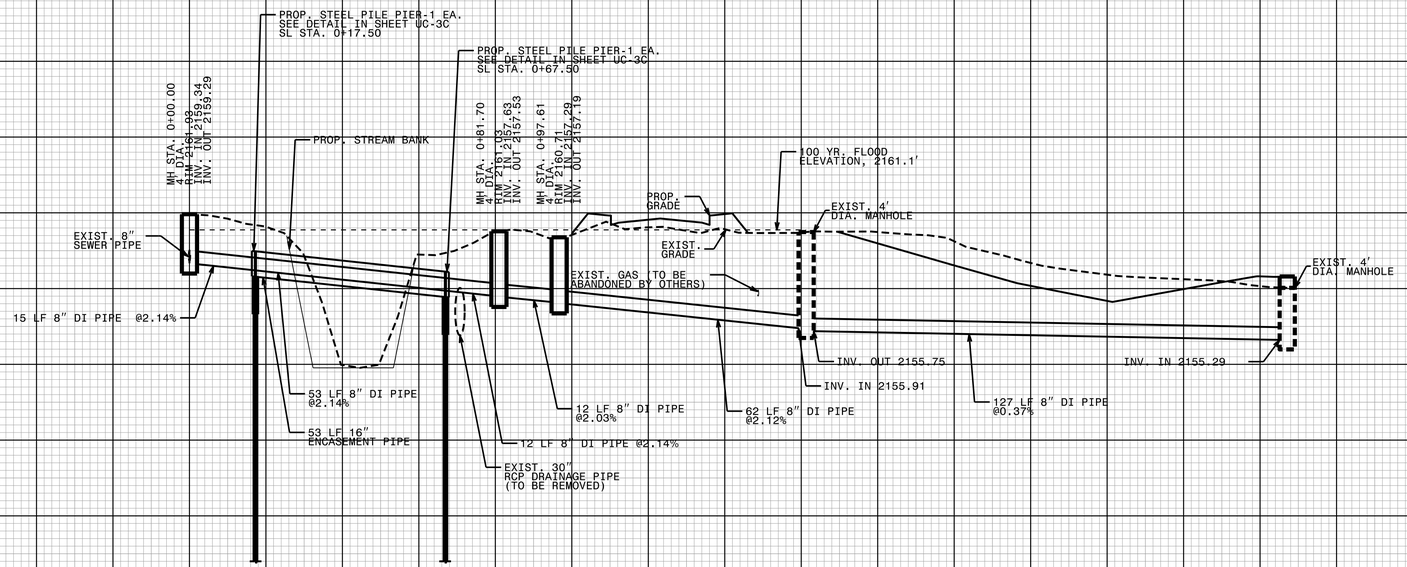
5. EACH END OF THE PROPOSED ENCASEMENT PIPES SHALL BE PLUGGED IN ACCORDANCE WITH NCDOT STANDARD DRAWING 840.71, CONCRETE AND BRICK PIPE PLUG.

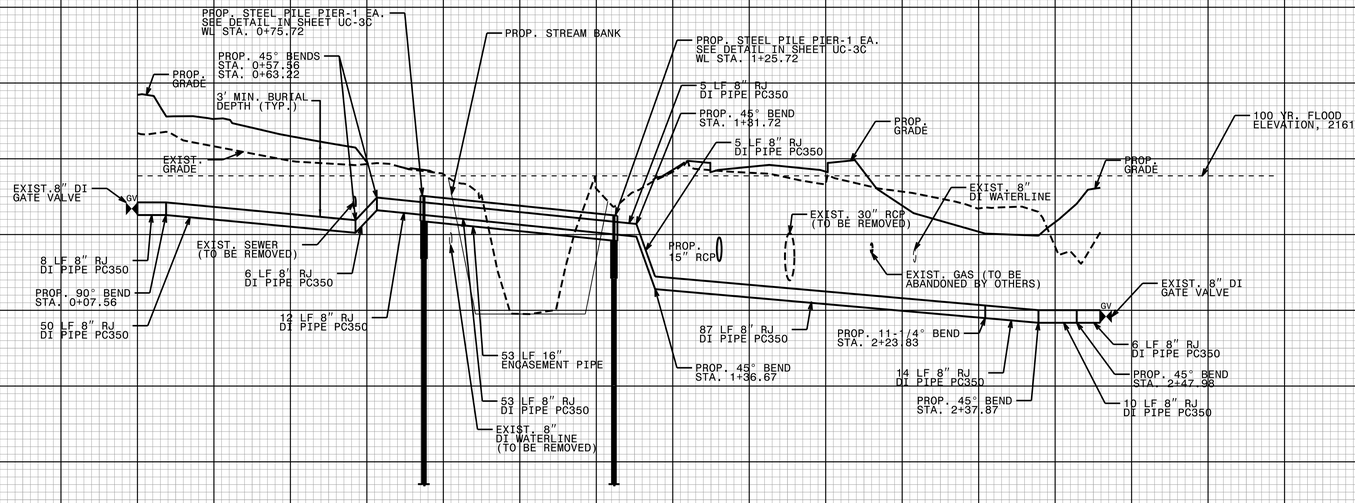
6. THE CARRIER PIPE WITHIN THE ENCASEMENT PIPES SHALL BE SUPPORTED WITH THE APPROPRIATE TYPE AND QUANTITY OF STEEL SPACERS APPROVED OR DIRECTED BY THE ENGINEER.

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS IS 985 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.


20′ 10′ 0′ 20′ 40′
PLANS
NAD 83/NA 2011
AEGIS DEVELOPMENT LLC
KING CREEK
COMMERCE ST 22′ BST
3
STEVEN E. STOUT, TRUSTEE ETAL
1
ITIZENS TELEPHONE CO. dba COMPORIUM
CITIZENS TELEPHONE CO. dba COMPORIUM
REMAINDER OF COMPORIUM
PROPERTY TO BE CONVEYED TO THE CITY OF BREVARD
PROPERTY TO BE CONVEYED TO GREGORY K. COCHRAN
GREGORY K. COCHRAN
ABANDONED NORFOLK SOUTHERN RAILROAD COMPANY (TRACKS REMOVED) SHOWN FOR CLARITY
RAILROAD AV. VARIABLE BST
RAILROAD AV. 19′ BST
PROP. 4′ DIA. UTILITY MANHOLE #3 - 1 EA. SL STA. 0+97.61
12 LF 8″ SANITARY GRAVITY SEWER DI PIPE PC350
PROP. 4′ DIA. UTILITY MANHOLE #2 - 1 EA. SL STA. 0+81.70
12 LF 8″ SANITARY GRAVITY SEWER DI PIPE PC350
PROP. STEEL PILE PIER - 1 EA. SEE DETAIL IN SHEET UC-3C SL STA. 0+67.50 WL STA. 1+25.72
53 LF 8″ SANITARY GRAVITY SEWER DI PIPE PC350
53′ - 16″ ENCASEMENT PIPE
PROP. STEEL PILE PIER - 1 EA. SEE DETAIL IN SHEET UC-3C SL STA. 0+17.50 WL STA. 0+75.72
53′ - 16″ ENCASEMENT PIPE
15 LF 8″ SANITARY GRAVITY SEWER DI PIPE PC350
PROP. 4′ DIA. UTILITY MANHOLE #1 - 1 EA. SL STA. 0+00.00
50 LF 8″ WATER LINE RJ DI PIPE PC 350
PROP. 90° BEND -WL- STA. 0+07.56 INSTALL THRUST BLOCK SEE DETAIL ON SHEET UC-3B
8 LF 8″ WATER LINE RJ DI PIPE PC350
6 LF 8″ WATER LINE RJ DI PIPE PC 350
PROP. 45° BEND -WL- STA. 0+57.56
EXIST. 8″ TAPPING SLEEVE & VALVE WL STA. 0+00.00 INSTALL THRUST BLOCK SEE DETAIL ON SHEET UC-3B
PROP. 8″ LINE STOP
CUT AND CAP EXISTING 8″ WATERLINE WITH 8″ RJ CAP
PROP. 45° BEND -WL- STA. 0+63.22
12 LF 8″ WATER LINE RJ DI PIPE PC 350
53 LF 8″ WATER LINE RJ DI PIPE PC 350
ABANDON 89.7 LF OF 8″ UTILITY PIPE BY REMOVAL
62 LF 8″ SANITARY GRAVITY SEWER DI PIPE PC350
EXIST MH SL STA. 1+62.81
87 LF 8″ WATER LINE RJ DI PIPE PC 350
PROP. 11-1/4° BEND -WL- STA. 2+23.83
14 LF 8″ WATER LINE RJ DI PIPE PC 350
PROP. 45° BEND -WL- STA. 2+37.87
10 LF 8″ WATER LINE RJ DI PIPE PC 350
PROP. 45° BEND -WL- STA. 2+47.98
6 LF 8″ WATER LINE RJ DI PIPE PC 350
127 LF 8″ SANITARY GRAVITY SEWER DI PIPE PC350
ABANDON 127 LF OF 8″ UTILITY PIPE BY REMOVAL
PROP. 8″ LINE STOP
CUT AND CAP EXISTING 8″ WATERLINE WITH 8″ RJ CAP
ABANDON 53.6 LF OF 8″ UTILITY PIPE
ABANDON 182.5 LF OF 8″ UTILITY PIPE
PROP. 45° BEND -WL- STA. 1+36.67
5 LF 8″ WATER LINE RJ DI PIPE PC 350
PROP. 45° BEND -WL- STA. 1+31.72
5 LF 8″ WATER LINE RJ DI PIPE PC 350
ABANDON 127 LF OF 8″ UTILITY PIPE BY REMOVAL
EXIST. 8″ TAPPING SLEEVE & VALVE WL STA. 2+54.20 INSTALL THRUST BLOCK SEE DETAIL ON SHEET UC-3B
PLUG 8″ INVERT WHERE EXISTING SEWER IS TO BE ABANDONED
THE CITY OF BREVARD PER BOOK: PF 17 PG 387 NO DEED REFERENCE FOUND PIN: 8586-53-2377 BOUNDARY AGREEMENT DB 1 PG 551 DB 1 PG 554 PF 8 SL 514 PORTION OF DB 153 PG 92, TRI PORTION PIN: 8586-49-9322
WOODS

5/14/99





5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-5550	UC-5

DESIGNED BY: SRM
DRAWN BY: JCC
CHECKED BY: MKS
APPROVED BY: MKS
REVISED:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES ENGINEERING SEC.
PHONE: (919)707-6690
FAX: (919)250-4151

DocuSigned by:
Laurin B. Kennedy
F85A3C2DA65640F...

SEAL 030770
LAURIN B. KENNEDY
1/16/2023

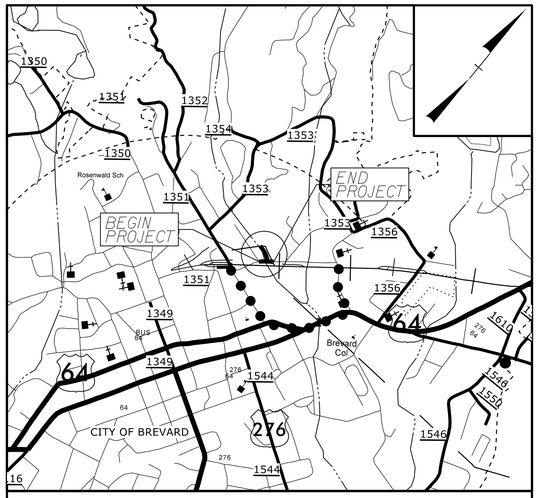
UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

09/08/99

TIP PROJECT: B–5550



VICINITY MAP

DETOUR ROUTE

N.T.S.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS
TRANSYLVANIA COUNTY

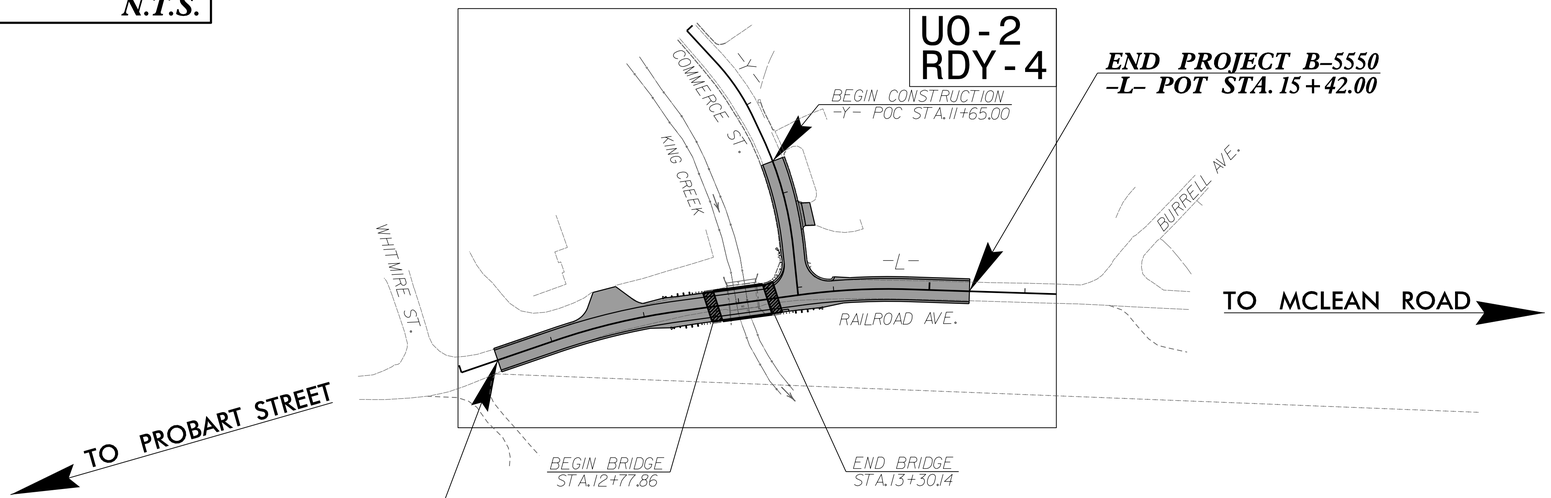
T.I.P. NO.	SHEET NO.
B–5550	UO–1

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

LOCATION: REPLACE BRIDGE 870102 OVER KING CREEK ON RAILROAD AVENUE

TYPE OF WORK: POWER, TELEPHONE, AND GAS RELOCATIONS

NAD 83/ NA 2011



END PROJECT B–5550
–L– POT STA. 15+42.00

BEGIN PROJECT B–5550
–L– POT STA. 10+40.00

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

20 10 0 20 40
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

4 2 0 4 8
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.:	*DESCRIPTION:*
UO–1	*TITLE SHEET*
UO–2	*UBO PLAN SHEETS*

UTILITY OWNERS WITH CONFLICTS

(A) POWER (DISTRIBUTION) – DUKE ENERGY CAROLINAS
(B) POWER (TRANSMISSION) – DUKE ENERGY CAROLINAS
(C) TELEPHONE – COMPORIUM
(D) TELEPHONE – ERC
(E) GAS – PSNC

PREPARED IN THE OFFICE OF:

CH ENGINEERING

3220 GLEN ROYAL RD. RALEIGH, NC 27617
TELE 919.788.0224 FAX 919.788.0232
NC LICENSE #P-0189

UTILITIES PROJECT ENGINEER
Mary Jo Lee, P.E.

DIVISION OF HIGHWAYS
DIVISION 14

253 Webster Road
Sylva, NC 28779

BOB GOLDING	*DIVISION CONTACT #1*
XXXX	*DIVISION CONTACT #2*
XXXX	*DIVISION CONTACT #3*
XXXX	*DIVISION CONTACT #4*

9/10/2018
R:\Utilities\Engineering\UBO\Proj\B5550_ut_tsh_U001_psh.dgn
USERNAME

8/17/99

NAD 83/NA 2011

PROJECT REFERENCE NO.	SHEET NO.
B-5550	U0-2

THIS SHEET CORRESPONDS TO RDY- 04

UTILITIES BY OTHERS

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TELE 919.788.0224 FAX 919.788.0232
NC LICENSE #P-0189

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INSET A

DUKE ENERGY CAROLINAS
UPGRADE EXISTING POLES

MATCH LINE
–L– POT STA. 15+80.00

END ROW B-5550
–L– POT STA. 16+40.56

BEGIN CONSTRUCTION
–Y– POC STA. 11+65.00

COMPORIUM U/G FIBER

ERC U/G FIBER

DUKE ENERGY CAROLINAS (DISTRIBUTION) RETAINED

DUKE ENERGY CAROLINAS (TRANSMISSION) RETAINED

DUKE ENERGY CAROLINAS (DISTRIBUTION) UPGRADED EXISTING POLE

DUKE ENERGY CAROLINAS COMPORIUM ERC

PSNC RETAINED

COMPORIUM U/G COPPER

DUKE ENERGY CAROLINAS COMPORIUM

PSNC

PSNC ABANDONED

PSNC RETAINED

PSNC ABANDONED

BEGIN PROJECT B–5550
–L– POT STA. 10+40.00

END PROJECT B–5550
–L– POT STA. 15+42.00

MATCH LINE SEE INSET A
–L– POT STA. 15+80.00

1 CITIZENS TELEPHONE CO
DB 454 PG 181
SHOWN PER GIS
PIN: 8586-43-9322

1 CITIZENS TELEPHONE CO
DB 290 PG 292
PIN: 8586-43-7194

3 STOUT STEVEN E TRUSTEE ETAL
DB 74 PG 573
PIN: 8586-53-2526

GREGORY K. COCHRAN
DB 742 PG 138
DB 222 PG 580 (TRACT I)
REF: DB 310 PG 341
PIN: 8586-53-1004
(E OCD DB 452 PG 288)

GREGORY K. COCHRAN
DB 310 PG 341
PIN: 8586-53-2177
REF: 452 PG 288
REF: DB 222 PG 580

THE CITY OF BREVARD
PER BOOK: PF 17 PG 387
NO DEED REFERENCE FOUND
PIN: 8586-53-2377
BOUNDARY AGREEMENT
DB 1PG 551
DB 1PG 554
PF 8 SL 514
PORTION OF DB 153 PG 92, TRI
PORTION PIN: 8586-49-9322

AEGIS DEVELOPMENT LLC
DB 142 PG 451

S 8° 48' 49.8" E

S 64° 10' 18.1" E

N 43° 13' 57.7" E

S 03° 03' 48.1" E

N 52° 47' 12.9" E

N 32° 00' 53.0" E

BEGIN C&G +63.00

BEGIN C&G +65.00

END C&G –L– STA. +37.88

END C&G +01.81

BEGIN APPROACH SLAB
STA.12+67.00

BEGIN BRIDGE
STA.12+77.86

END APPROACH SLAB
STA.13+41.00

END BRIDGE
STA.13+30.14

SHOP CURVED ANCHOR UNIT L=22.75'

TOE PROTECTION EST 50 SY SEE DETAIL 1

SPEC. 'V' DITCH SEE DETAIL 2 & 3

CL II RIPRAP (STRUCTURE PAY ITEM) EST 2 TONS

CL B RIPRAP EST 7 SY GFD

EXCAVATE TO NG EL. 2158.0

EXCAVATE TO NG EL. 2156.5

RETAIN EXISTING RIPRAP EMBANKMENTS

REMOVE 12 LF OF 4" PVC DAYLIGHT TO DITCH SLOPE

REMOVE 30" RCP

REMOVE 24" CMP

REMOVE DI

RETAIN DI'S

RETAIN 18" RCP

PROP U/G GAS LINE

PROP O/H POW TEL & FO LINES

KING CREEK

ABANDONED NORFOLK SOUTHERN RAILROAD COMPANY (TRACKS REMOVED) SHOWN FOR CLARITY

RAILROAD AV. VARIABLE WIDTH

COMMERCE ST 22' BST

8:1 TAPER

2% S

R=25'

R=4'

15+00 (–L–)

10+00

8/10/2018
K:\Projects\Engineering\DBO\Proj\B5550_Lyr_dy4_U002_Portn.dgn