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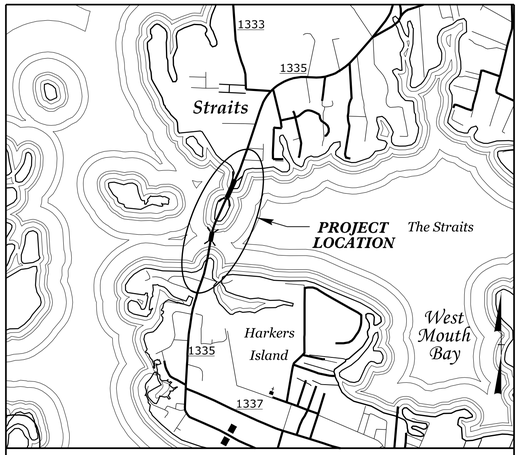
09/08/99

TIP PROJECT: B-4863

CONTRACT: C204372

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CARTERET COUNTY

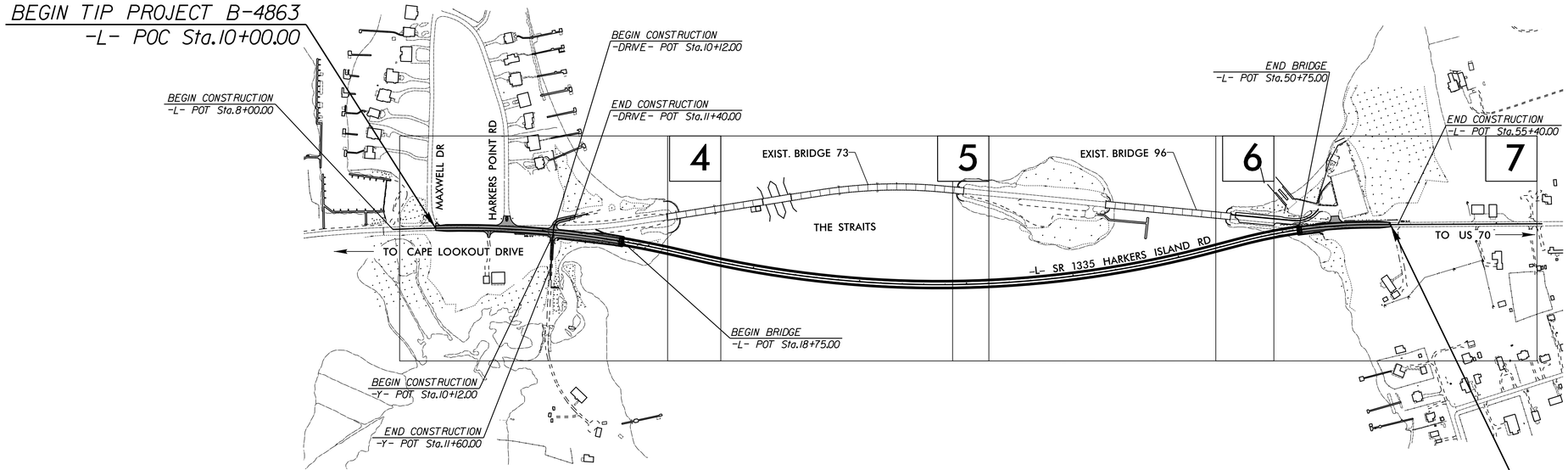
LOCATION: REPLACEMENT OF BRIDGE NOS. 73 AND 96 CARRYING SR 1335 (HARKERS ISLAND RD) OVER THE STRAITS

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4863	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
40212.1.3	BRSTP-1335(3)	PE
40212.2.2	BRSTP-1335(4)	R/W, UTL
40212.3.1	N/A	CONST.

NAD 83/
NA 2011



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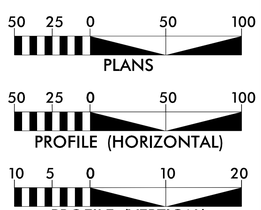
GRAPHIC SCALES



DESIGN DATA

ADT 2020 = 3,350
ADT 2040 = 4,200
K = 10 %
D = 60 %
T = 4 % *
V = 50 MPH
*(TTST=2% + DUAL=2%)
FUNC CLASS = MAJOR COLLECTOR
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4863 = 0.247 MILE
LENGTH STRUCTURE TIP PROJECT B-4863 = 0.606 MILE
TOTAL LENGTH TIP PROJECT B-4863 = 0.853 MILE

PLANS PREPARED BY:

RS&H

1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203
NC FIRM LICENSE No: F-0493

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 10, 2018

LETTING DATE:
JULY 20, 2021

JENNIFER FARINO, PE
PROJECT ENGINEER

DREW MORROW, PE
PROJECT DESIGN ENGINEER

HON YEUNG, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

DocuSigned by:
5CB217383F9B475...
SIGNATURE:

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 018442 JENNIFER S. FARINO
P.E. 4/7/2021

ROADWAY DESIGN ENGINEER

DocuSigned by:
679D1E857D98415...
SIGNATURE:

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030952 JENNIFER S. FARINO
P.E. 4/7/2021

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4863	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FARING

Digitally signed by

4/7/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H

NC FIRM LICENSE No: F-0493

INDEX OF SHEETS

GENERAL NOTES

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

GRADE LINE:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

SUBSURFACE DRAINS:

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

GUARDRAIL:

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

TEMPORARY SHORING:

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

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 CCEMC, CenturyLink, Spectrum,

Conterra Broadband

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

STANDARD DRAWINGS

EFF. 01-16-2018
REV.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
275.01	Rock Plating (Use in Conjunction with Sheet 2C-8)
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
840.00	Concrete Base Pad for Drainage Structures
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.52	Precast Manhole - 4', 5' and 6' Diameter
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

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12/2/2016

PROJECT REFERENCE NO.	SHEET NO.
B-4863	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY & PROJECT CONTROL:

- Secondary Horiz and Vert Control Point
- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Exist Permanent Easement Pin and Cap
- New Permanent Easement Pin and Cap
- Vertical Benchmark
- Existing Right of Way Marker
- Existing Right of Way Line
- New Right of Way Line — RW
- New Right of Way Line with Pin and Cap — RW
- New Right of Way Line with Concrete or Granite R/W Marker — RW
- New Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- New Control of Access — CA
- Existing Easement Line — E
- New Temporary Construction Easement — E
- New Temporary Drainage Easement — TDE
- New Permanent Drainage Easement — PDE
- New Permanent Drainage / Utility Easement — DUE
- New Permanent Utility Easement — PUE
- New Temporary Utility Easement — TUE
- New Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:

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

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PROJECT REFERENCE NO.	SHEET NO.
B-4863	1C-1
Location and Surveys	
NEW BERN LOCATION & SURVEYS	

SURVEY CONTROL SHEET B-4863

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4863-P6"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 361317.806(ft) EASTING: 2728104.005(ft)
ELEVATION: 5.849(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99992130
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4863-P6" TO -L- STATION 10+00.00 IS
S16°44'15"W 2598.00 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

REVISIONS 6/2/99

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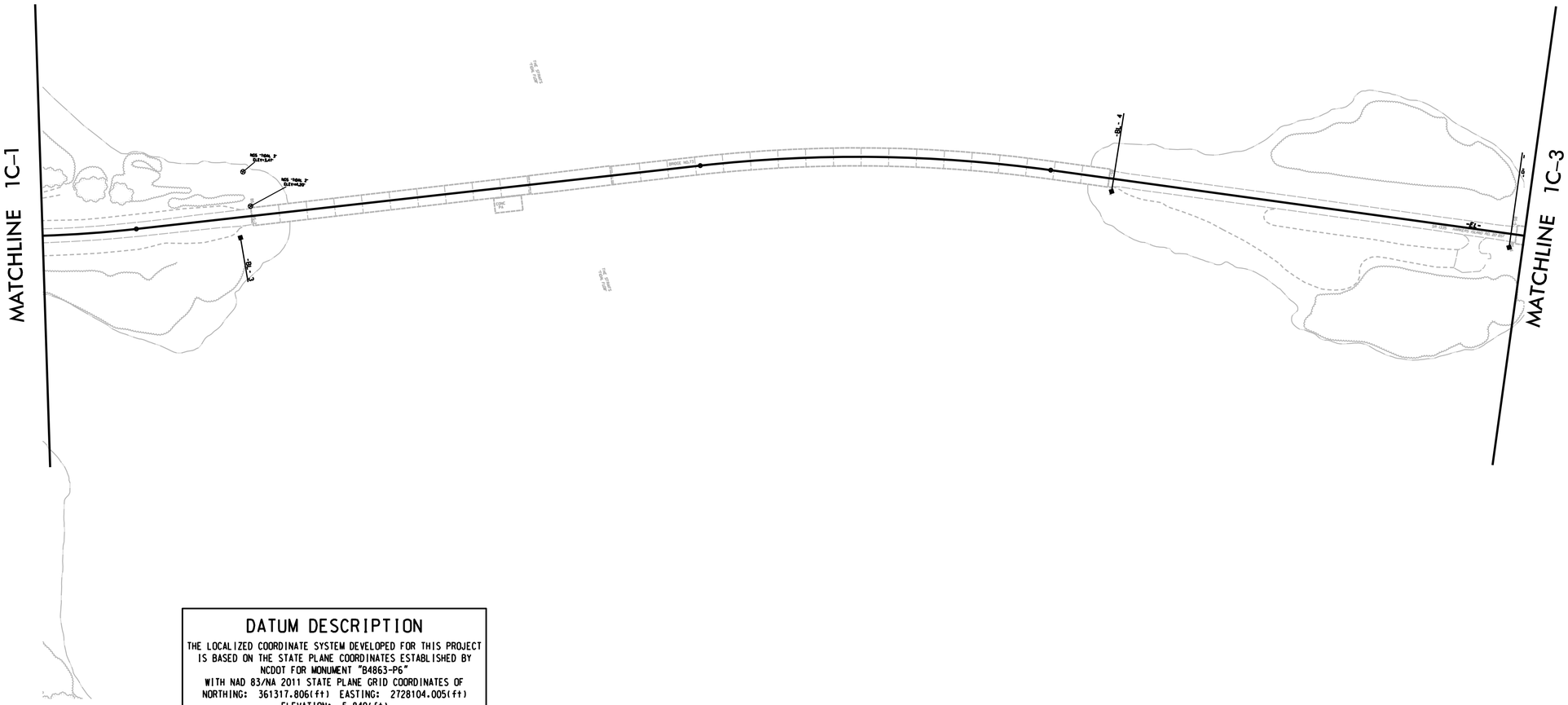
REVISIONS

SURVEY CONTROL SHEET B–4863

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
B–4863	1C–2
Location and Surveys	
NEW BERN LOCATION & SURVEYS	

NC GRID
NAD 83 NA 2011



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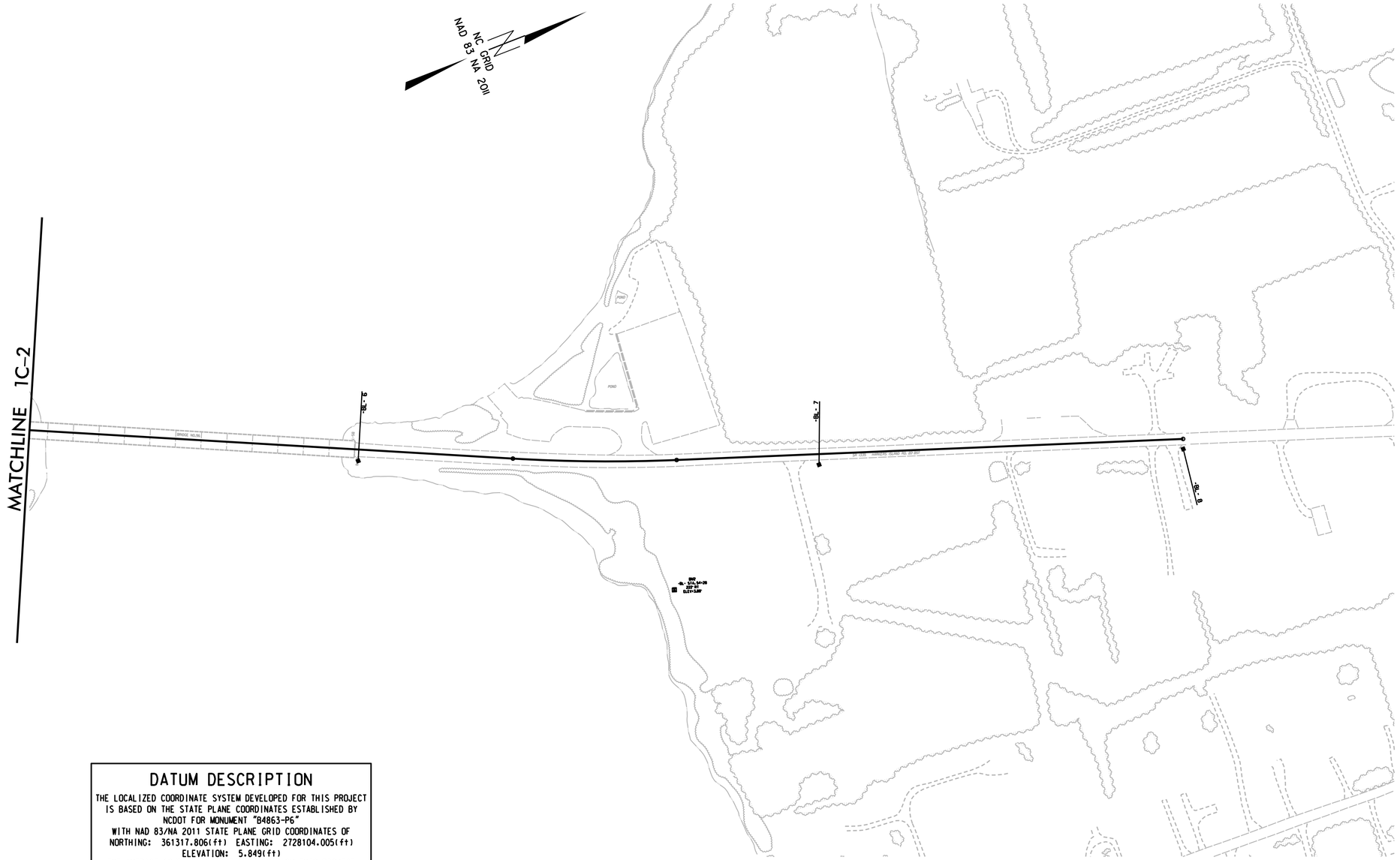
SURVEY CONTROL SHEET B–4863

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
B-4863	1C-3
Location and Surveys	
NEW BERN LOCATION & SURVEYS	



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REVISIONS
6/2/99

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PROJECT REFERENCE NO.	SHEET NO.
B-4863	1C-4
Location and Surveys	
NEW BERN LOCATION & SURVEYS	

SURVEY CONTROL SHEET B-4863

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

EXISTING ALIGNMENT

EL POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	357247.120	2727052.682							
LINE			N 03°55'02.9" E	119.84					
PC	357366.685	2727060.870							
CURVE			N 07°49'16.5" E	785.21	07°48'27.4"(RT)	00°59'36.8"	785.82	393.52	5766.73
PT	358144.595	2727167.724							
LINE			N 11°43'30.2" E	38.54					
PC	358182.326	2727175.555							
CURVE			N 14°23'57.8" E	409.98	05°20'55.2"(RT)	01°18'14.9"	410.13	205.21	4393.34
PT	358579.425	2727277.509							
LINE			N 17°04'25.4" E	166.01					
PC	358738.115	2727326.248							
CURVE			N 17°57'10.1" E	108.31	01°45'29.4"(RT)	01°37'23.6"	108.31	54.16	3529.73
PT	358841.150	2727359.632							
LINE			N 18°49'54.8" E	74.34					
PC	358911.509	2727383.628							
CURVE			N 19°01'51.2" E	37.91	00°23'52.8"(RT)	01°02'59.8"	37.91	18.95	5457.07
PT	358947.345	2727395.989							
LINE			N 19°13'47.7" E	475.99					
PC	359396.772	2727552.760							
CURVE			N 14°48'08.1" E	295.86	08°51'19.1"(LT)	02°59'24.4"	296.15	148.37	1916.18
PT	359682.813	2727628.347							
LINE			N 10°22'28.5" E	919.22					
PC	360587.003	2727793.882							
CURVE			N 17°31'09.8" E	567.74	14°17'22.5"(RT)	02°30'37.4"	569.22	286.09	2282.35
PT	361128.413	2727964.790							
LINE			N 24°39'51.1" E	1625.94					
PC	362606.020	2728643.294							
CURVE			N 21°47'29.5" E	287.93	05°44'43.1"(LT)	01°59'40.5"	288.05	144.14	2872.57
PT	362873.370	2728750.181							
LINE			N 18°55'07.9" E	891.43					
POT	363716.646	2729039.209							

BASELINE

BL

POINT	DESC.	NORTH	EAST	ELEVATION
1	BL-1	358218.8650	2727163.0600	4.38
2	BL-2	359102.2850	2727468.6220	5.08
3	BL-3	359840.2340	2727690.5780	12.47
4	BL-4	361212.7820	2728026.3230	8.10
5	BL-5	361803.1150	2728298.9210	5.98
6	BL-6	362350.9930	2728548.2820	6.65
7	BL-7	363103.7120	2728848.8010	5.11
8	BL-8	363710.4440	2729055.7420	5.09

BENCHMARKS

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*****************************************
BM1       ELEVATION = 5.70
N 359302      E 2727692
RAILROAD SPIKE SET IN BASE OF 18" PINETREE
*****************************************
*****************************************
BM2       ELEVATION = 3.88
N 362787      E 2728961
RAILROAD SPIKE SET IN BASE OF 24"CYPRESS
*****************************************
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DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4863-P6" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 361317.806(ft) EASTING: 2728104.005(ft) ELEVATION: 5.849(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99992130 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4863-P6" TO -L- STATION 10+00.00 IS S16°44'15"W 2598.00 (ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

REVISIONS

6/2/99

12-FEB-2018 15:54
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PROPOSED ALIGNMENT CONTROL SHEET B–4863

PROJECT REFERENCE NO.	SHEET NO.
B–4863	1D–1
Location and Surveys	
NEW BERN LOCATION & SURVEYS	

L

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	358639.085	2727295.832							
LINE			N 17°04'25.4" E	103.59					
PC	358738.111	2727326.247							
CURVE			N 17°51'22.1" E	96.41	01°33'53.3"(RT)	01°37'23.2"	96.41	48.21	3530.00
PT	358829.872	2727355.808							
LINE			N 18°38'18.8" E	71.36					
PC	358897.490	2727378.614							
CURVE			N 25°20'20.2" E	1050.10	13°24'02.8"(RT)	01°16'23.7"	1052.49	528.66	4500.00
PT	359846.560	2727828.027							
LINE			N 32°02'21.6" E	128.36					
PC	359955.369	2727896.122							
CURVE			N 18°18'19.7" E	2374.12	27°28'03.8"(LT)	01°08'45.3"	2397.01	1222.00	5000.00
PT	362209.350	2728641.793							
LINE			N 04°34'17.8" E	152.99					
PC	362361.852	2728653.987							
CURVE			N 11°44'42.8" E	599.41	14°20'50.1"(RT)	02°23'14.4"	600.98	302.07	2400.00
PT	362948.709	2728776.003							
LINE			N 18°55'07.9" E	811.79					
POT	363716.644	2729039.208							

PARK

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	362349.731	2728516.818							
LINE			N 24°39'51.1" E	302.66					
PC	362624.779	2728643.117							
CURVE			N 06°24'44.6" W	129.05	62°09'11.3"(LT)	45°50'11.8"	135.60	75.34	125.00
PT	362753.017	2728628.705							

Y

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	359342.045	2727555.395							
LINE			S 65°16'02.1" E	18.55					
PC	359334.282	2727572.247							
CURVE			S 66°25'26.6" E	48.45	02°18'49.0"(LT)	04°46'28.7"	48.46	24.23	1200.00
PT	359314.903	2727616.655							
LINE			S 67°34'51.1" E	157.71					
POT	359254.757	2727762.441							

DRIVE

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	359342.045	2727555.395							
LINE			N 65°16'01.9" W	21.00					
PC	359350.831	2727536.321							
CURVE			N 29°40'59.5" W	46.55	71°10'05.0"(RT)	143°14'22.0"	49.68	28.62	40.00
PT	359391.274	2727513.269							
LINE			N 05°54'03.0" E	134.85					
POT	359525.409	2727527.132							

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATINO REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

REVISIONS

6/2/99

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RIGHT OF WAY CONTROL SHEET B–4863

PROJECT REFERENCE NO.	SHEET NO.
B–4863	1E–1

NEW BERN
LOCATION & SURVEYS

REVISIONS

6/2/99

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST	
L	10+00.00	45.00	358815.4906	2727398.4475	WD. STAKE SET
L	10+00.00	30.00	358820.2846	2727384.2342	
L	10+71.36	45.00	358883.1081	2727421.2539	
L	12+94.74	-33.28	359119.4831	2727424.2622	
L	12+95.49	-42.00	359123.3836	2727416.4246	
L	14+48.05	-42.00	359265.6726	2727475.2563	
L	15+09.88	45.00	359287.0720	2727579.8119	
L	15+21.59	-48.07	359336.0365	2727499.8009	
L	15+80.00	35.00	359354.3955	2727599.7283	
L	16+09.14	-87.48	359433.2422	2727501.5212	
L	16+11.83	-57.29	359422.7064	2727529.9523	
L	16+16.75	-100.00	359445.6480	2727493.5767	
L	16+33.96	-100.00	359461.4939	2727501.2001	
L	18+45.08	-45.00	359627.2838	2727647.9977	
L	18+75.00	45.00	359610.3397	2727741.3143	
L	18+75.00	35.00	359615.1681	2727732.5572	
L	21+23.86	-45.00	359870.4325	2727789.8808	NOT SET WATER
L	21+23.86	45.00	359822.6874	2727866.1724	NOT SET WATER
L	22+52.22	45.00	359931.4962	2727934.2676	NOT SET WATER
L	22+52.22	-45.00	359979.2413	2727857.9760	NOT SET WATER
L	46+49.23	45.00	362205.7633	2728686.6502	NOT SET WATER
L	46+49.23	-45.00	362212.9368	2728596.9365	NOT SET WATER
L	48+02.21	-45.00	362365.4384	2728609.1304	NOT SET WATER
L	48+02.21	45.00	362358.2650	2728698.8441	NOT SET WATER
L	49+23.00	-45.00	362487.7992	2728622.0200	NOT SET WATER
L	51+70.00	60.00	362710.9364	2728769.6011	
L	51+70.00	45.00	362714.4004	2728755.0065	
L	53+75.00	60.00	362903.2024	2728824.0027	
L	53+75.00	45.00	362907.8988	2728809.7569	
L	54+03.19	45.00	362934.1191	2728818.5720	
L	55+12.46	30.00	363042.3491	2728839.8106	
L	55+15.46	45.00	363040.3262	2728854.9739	

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y	10+54.56	40.00	359282.8951	2727589.5301
Y	10+67.01	7.00	359308.4314	2727613.9860
Y	11+70.00	40.00	359238.6475	2727696.6061
Y	11+70.00	7.00	359269.1534	2727709.1916

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST	
L	13+17.93	118.31	359084.9624	2727573.6417	
L	13+29.11	135.10	359088.7930	2727593.2715	
L	13+72.70	65.65	359154.4943	2727545.0730	
L	13+79.10	79.14	359155.1419	2727559.9466	
L	13+85.98	98.68	359153.8550	2727580.5750	
L	14+17.04	45.00	359202.8617	2727542.9672	
L	14+53.36	106.30	359211.4499	2727613.3939	
L	14+56.04	81.95	359223.5764	2727592.1127	
L	16+55.00	-63.24	359464.6839	2727543.6270	
L	16+55.00	-76.96	359470.7121	2727531.3055	
L	17+12.63	-109.47	359537.8636	2727528.3819	
L	18+56.61	-111.41	359669.3327	2727595.2808	
L	19+00.08	-62.88	359684.6670	2727659.1848	
L	20+04.59	-68.23	359779.2866	2727707.3326	
L	20+93.86	-84.42	359865.3887	2727740.3391	NOT SET WATER
L	35+51.93	-370.26	361243.0171	2728081.6821	NOT SET WATER
L	36+04.75	-392.23	361296.0804	2728074.7928	
L	36+20.98	-344.21	361296.9071	2728125.1088	NOT SET WATER
L	37+05.63	-377.98	361381.6853	2728114.1018	
L	37+17.96	-436.93	361408.1699	2728060.2400	
L	38+19.43	-420.56	361493.7748	2728099.5490	
L	38+30.04	-478.06	361517.0728	2728046.1009	
L	38+52.47	-432.34	361525.9468	2728095.3721	
L	49+55.95	-97.43	362528.5700	2728574.7182	
L	49+59.48	-116.23	362534.9268	2728556.6396	
L	53+96.42	-72.59	362965.6403	2728705.0816	
L	54+14.44	-217.34	363029.8183	2728574.0525	
L	54+16.03	-69.89	362983.5169	2728714.0515	
L	54+34.28	-214.84	363047.7795	2728582.8499	
L	55+77.68	-30.00	363123.4998	2728804.1982	
L	56+08.47	30.00	363133.1748	2728870.9406	
L	58+86.02	30.00	363395.7279	2728960.9293	
L	59+06.73	109.82	363389.4400	2729043.1517	WD. STAKE SET

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

12-FEB-2018 15:58
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PROJECT REFERENCE NO.	SHEET NO.
B-4863	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
SEAL 030952, 4/7/2021	SEAL 033798, 4/8/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

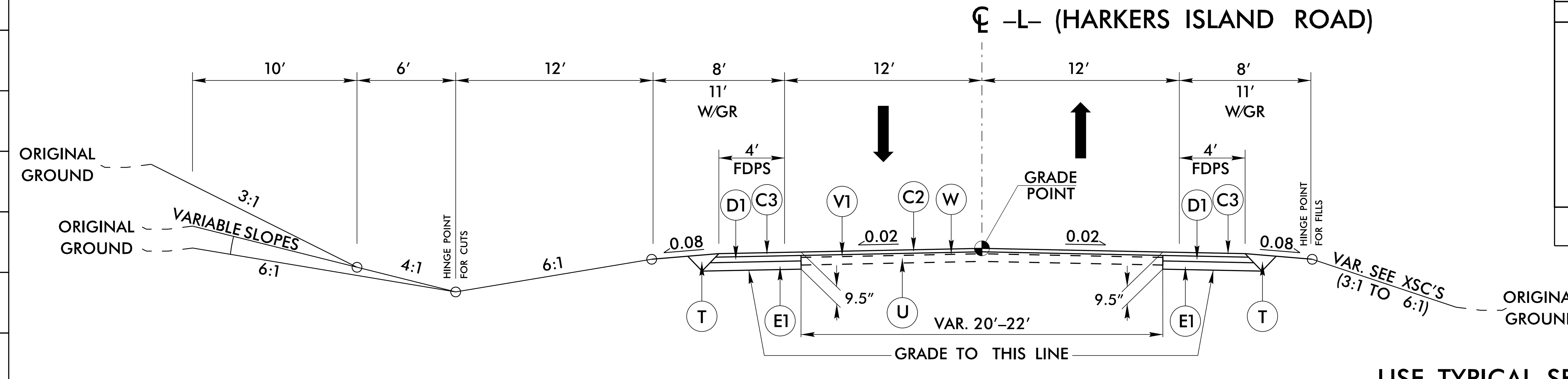
RS&H
NC FIRM LICENSE No: F-0493

6/2/99

PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 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.
J1	2½" AGGREGATE BASE COURSE.
J2	8" AGGREGATE BASE COURSE.
J3	VARIABLE DEPTH AGGREGATE BASE COURSE.
P	PRIME COAT.
R1	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	INCIDENTAL MILLING (SEE INCIDENTAL MILLING DETAIL SHEET 2A-3).
V2	MILLING, 0" - 3" (SEE MILLING DETAIL SHEET 2A-3).
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL SHEET 2A-3).
Y	PERMEABLE PAVER GRID SYSTEM.

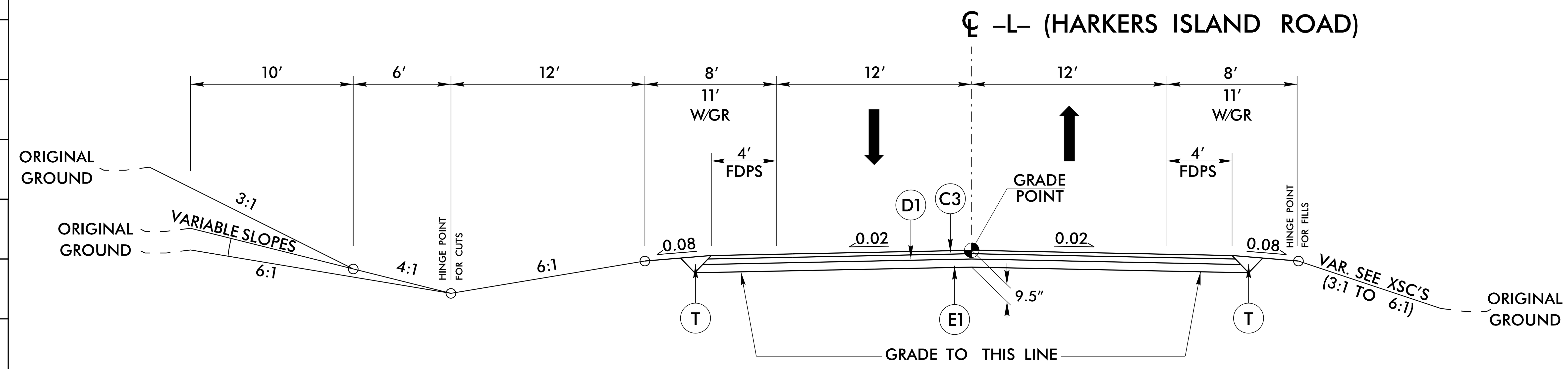
NOTE: ALL PAVEMENT SLOPES AND TRENCH SLOPES 1:1 UNLESS NOTED OTHERWISE



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

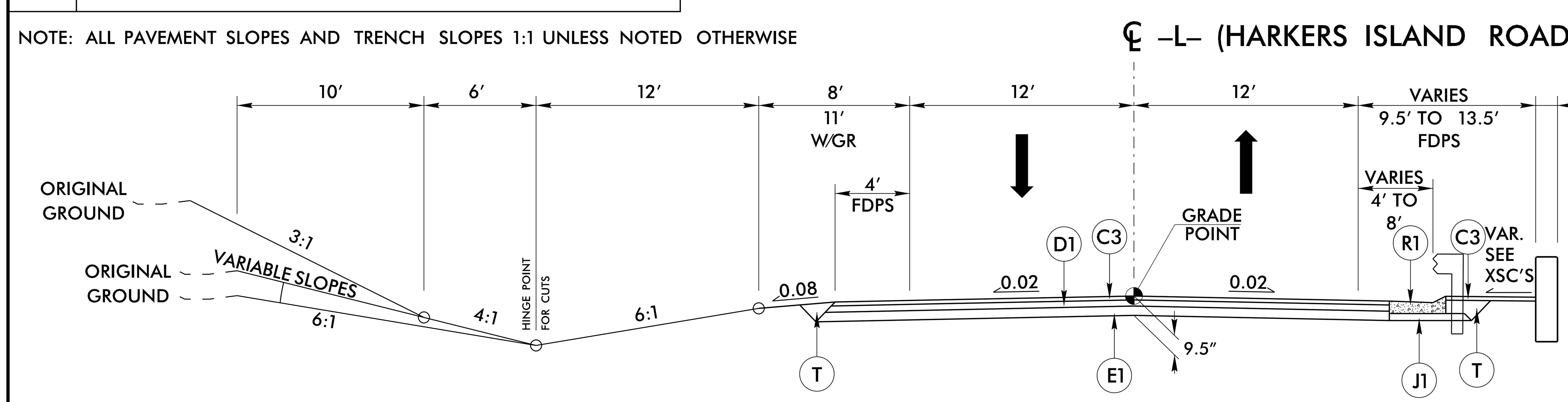
-L- STA. 10+00.00 TO -L- STA. 14+20.00
-L- STA. 52+60.00 TO -L- STA. 55+05.00
MILL AND OVERLAY EXISTING WITH 1½" S9.5C FROM -L- STA 8+00 TO -L- 10+00, FOR TEMPORARY PAINT REMOVAL.



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

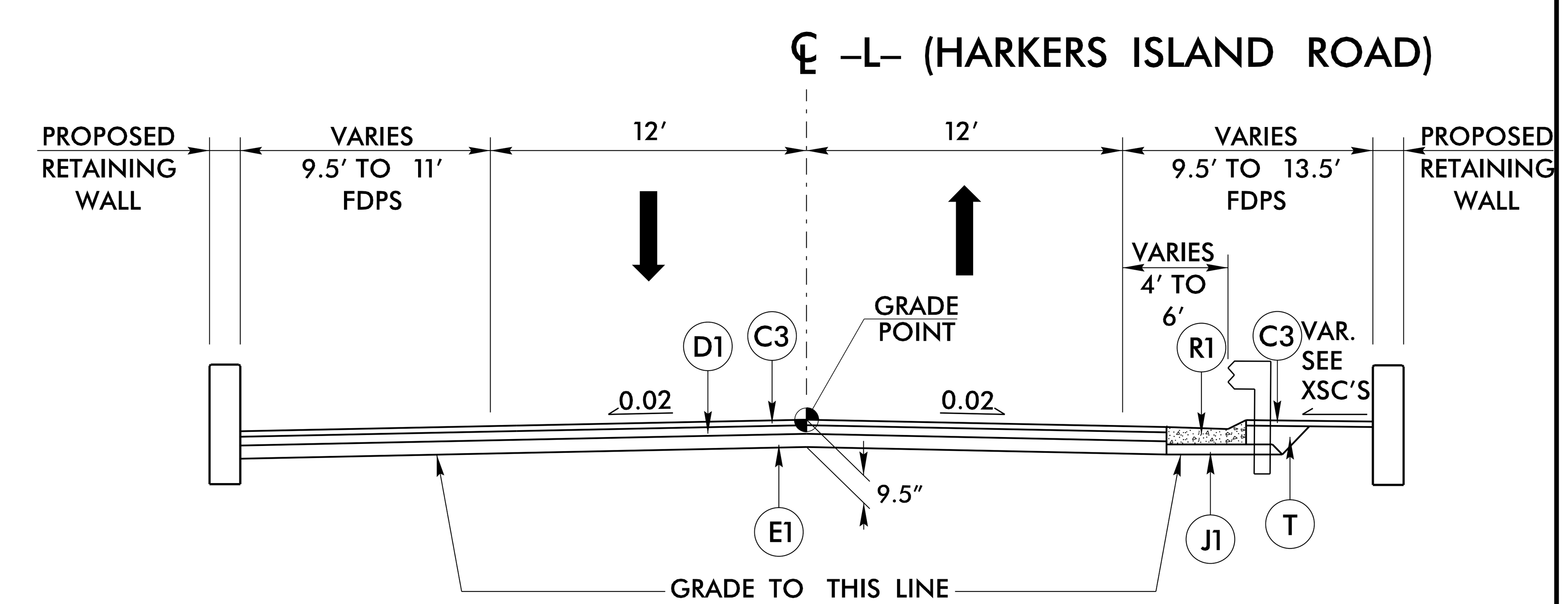
-L- STA. 14+20.00 TO -L- STA. 15+72.00
-L- STA. 51+87.00 TO -L- STA. 52+60.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-L- STA. 15+72.00 TO STA. 17+45.00
-L- STA. 50+75.00 TO STA. 51+87.00



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

-L- STA. 17+45.00 TO STA. 18+75.00

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6/2/99

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 2″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 1½″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1½″ IN DEPTH OR GREATER THAN 2″ IN DEPTH.
D1	PROP. APPROX. 2.5″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 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.
J1	2½″ AGGREGATE BASE COURSE.
J2	8″ AGGREGATE BASE COURSE.
J3	VARIABLE DEPTH AGGREGATE BASE COURSE.
P	PRIME COAT.
R1	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	INCIDENTAL MILLING (SEE INCIDENTAL MILLING DETAIL SHEET 2A-3).
V2	MILLING, 0″ - 3″ (SEE MILLING DETAIL SHEET 2A-3).
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL SHEET 2A-3).
Y	PERMEABLE PAVER GRID SYSTEM.

NOTE: ALL PAVEMENT SLOPES AND TRENCH SLOPES 1:1 UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
B-4863	2A-2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FAHNZ

4/7/2021

PAVEMENT DESIGN ENGINEER

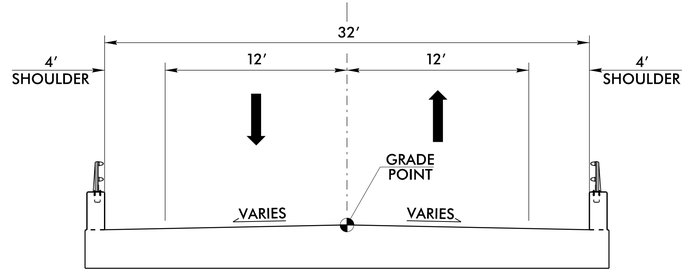
NORTH CAROLINA PROFESSIONAL SEAL 030799 ENGINEER WILLIAM C. KINCANNON

4/8/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

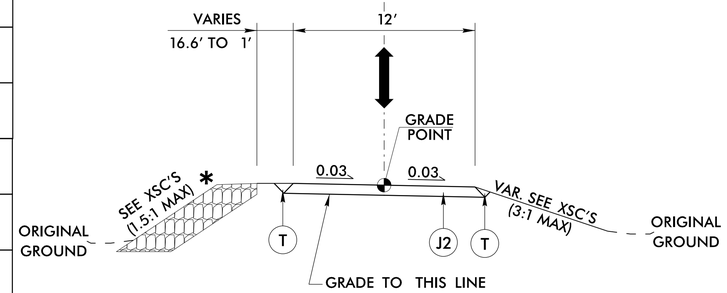
℄ –L– (HARKERS ISLAND ROAD)



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5
–L– STA. 18+75.00 TO –L– STA. 50+75.00

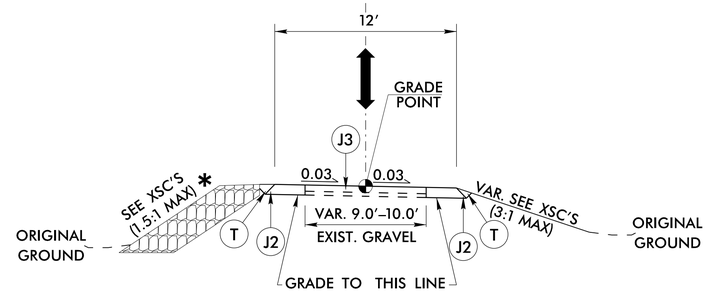
℄ –Y– (SPARKS ROAD)



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6
–Y– STA. 10+12.00 TO –Y– STA. 10+78.00

℄ –Y– (SPARKS ROAD)

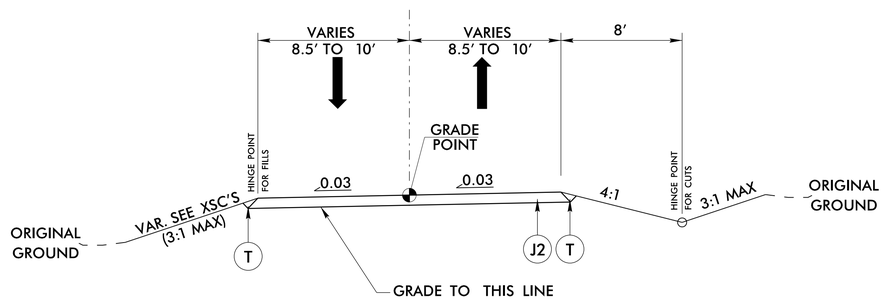


TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7
–Y– STA. 10+78.00 TO –Y– STA. 11+30.00

* CLASS II ROCK PLATING ON LEFT SIDE FROM APPROXIMATELY –Y– 10+35 TO –Y– 11+60

℄ –DRIVE– (BEACH ACCESS)



TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8
–DRIVE– STA. 10+12.00 TO –DRIVE– STA. 11+40.00

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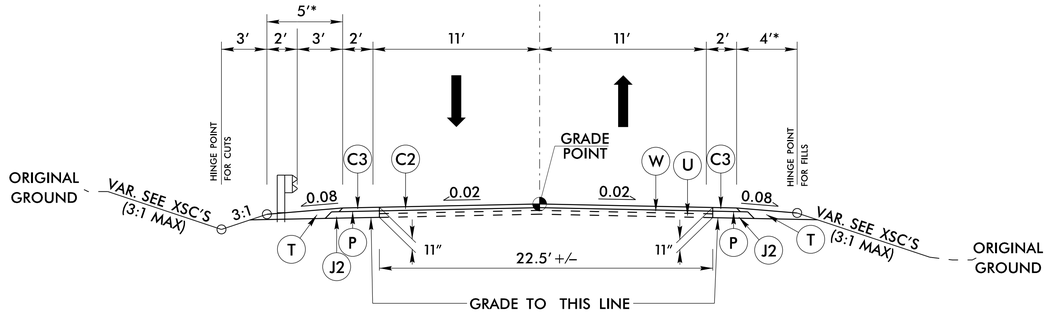
6/2/99

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 2″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 1½″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1½″ IN DEPTH OR GREATER THAN 2″ IN DEPTH.
D1	PROP. APPROX. 2.5″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 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.
J1	2½″ AGGREGATE BASE COURSE.
J2	8″ AGGREGATE BASE COURSE.
J3	VARIABLE DEPTH AGGREGATE BASE COURSE.
P	PRIME COAT.
R1	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	INCIDENTAL MILLING (SEE INCIDENTAL MILLING DETAIL THIS SHEET).
V2	MILLING, 0″ - 3″ (SEE MILLING DETAIL THIS SHEET).
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL THIS SHEET).
Y	PERMEABLE PAVER GRID SYSTEM.

NOTE: ALL PAVEMENT SLOPES AND TRENCH SLOPES 1:1 UNLESS NOTED OTHERWISE

℄ –DETOUR– (HARKERS ISLAND ROAD DETOUR)



TYPICAL SECTION NO. 9

PROJECT REFERENCE NO.	SHEET NO.
B-4863	2A-3

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FAHNER

4/7/2021

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 038782 ENGINEER WILLIAM C. KINCANNON

4/8/2021

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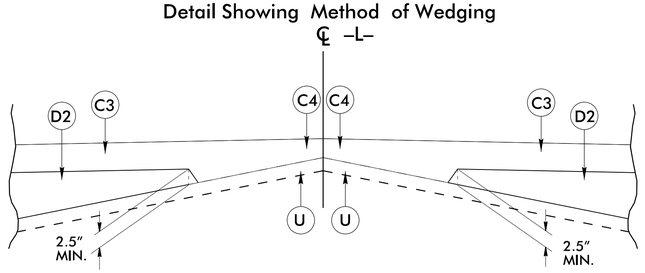
RS&H
NC FIRM LICENSE No: F-0493

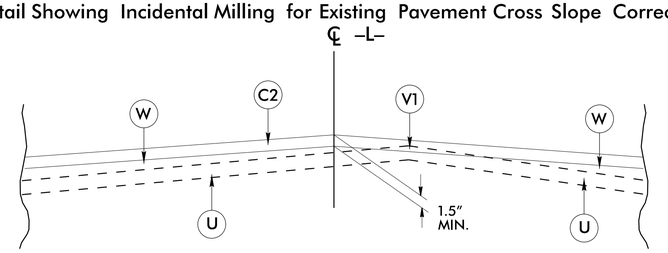
USE TYPICAL SECTION NO. 9
–DETOUR– STA. 10+03.00 TO –DETOUR– STA. 16+68.48
* 4′ TURF SHOULDER WIDTH WITHOUT GUARDRAIL

Detail Showing Method of Wedging

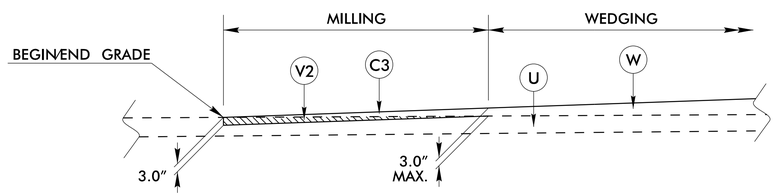


SEE PLANS FOR ALL WEDGING LOCATIONS

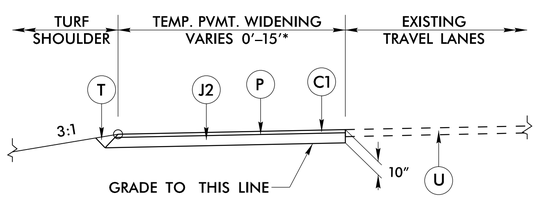
Detail Showing Incidental Milling for Existing Pavement Cross Slope Correction



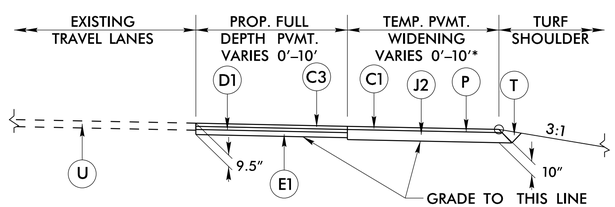
–L– STA. 11+50.00 TO –L– STA. 13+00.00



DETAIL OF 0″ – 3″ MILLING AT PAVEMENT TIE–INS
–L– STA. 10+00.00 TO –L– STA. 11+50.00
–L– STA. 53+00.00 TO –L– STA. 55+05.00



TEMPORARY WIDENING DETAIL A
–L– STA. 8+00± TO –L– STA. 19+00+/– LT
* WIDTH INCLUDES 2′ PAVED SHOULDER



TEMPORARY WIDENING DETAIL B
–L– STA. 8+00± TO –L– STA. 13+85+/– RT
* WIDTH INCLUDES 2′ PAVED SHOULDER

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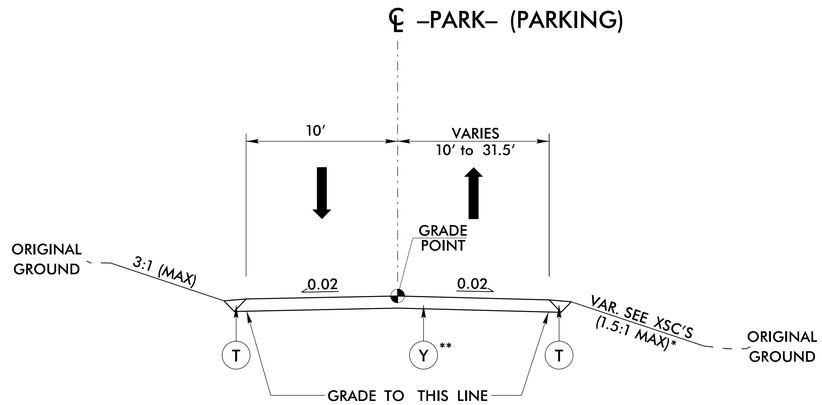
6/2/99

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 2″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 1½″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1½″ IN DEPTH OR GREATER THAN 2″ IN DEPTH.
D1	PROP. APPROX. 2.5″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 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.
J1	2½″ AGGREGATE BASE COURSE.
J2	8″ AGGREGATE BASE COURSE.
J3	VARIABLE DEPTH AGGREGATE BASE COURSE.
P	PRIME COAT.
R1	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	INCIDENTAL MILLING (SEE INCIDENTAL MILLING DETAIL SHEET 2A-3).
V2	MILLING, 0″ - 3″ (SEE MILLING DETAIL SHEET 2A-3).
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL SHEET 2A-3).
Y	PERMEABLE PAVER GRID SYSTEM.

NOTE: ALL PAVEMENT SLOPES AND TRENCH SLOPES 1:1 UNLESS NOTED OTHERWISE



TYPICAL SECTION NO. 10

PROJECT REFERENCE NO.	SHEET NO.
B-4863	2A-4

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FARINO

4/7/2021

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 033798 ENGINEER WILLIAM C. KINCANNON

4/8/2021

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RS&H
NC FIRM LICENSE No: F-0493

USE TYPICAL SECTION NO. 10

–PARK– STA. 10+20.00 TO –PARK– STA. 14+14.48

*SLOPES STEEPER THAN 3:1 WILL REQUIRE SLOPE PROTECTION

**THE PAVEMENT DESIGN FOR TYPICAL SECTION NO. 10 WILL NOT BE SEALED BY THE ROADWAY AND PAVEMENT DESIGN ENGINEERS SHOWN ON SHEETS 2A–1 THRU 2A–3. SEE SHEETS 2B–4 THRU 2B–6 FOR PERMEABLE PAVER DESIGN.

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8/17/99

REVISIONS

SHEAR POINT DIAGRAM

PROJECT REFERENCE NO.	SHEET NO.
B-4863	2B-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FARINO

DocuSigned by: [redacted] 4/7/2021

HYDRAULICS ENGINEER

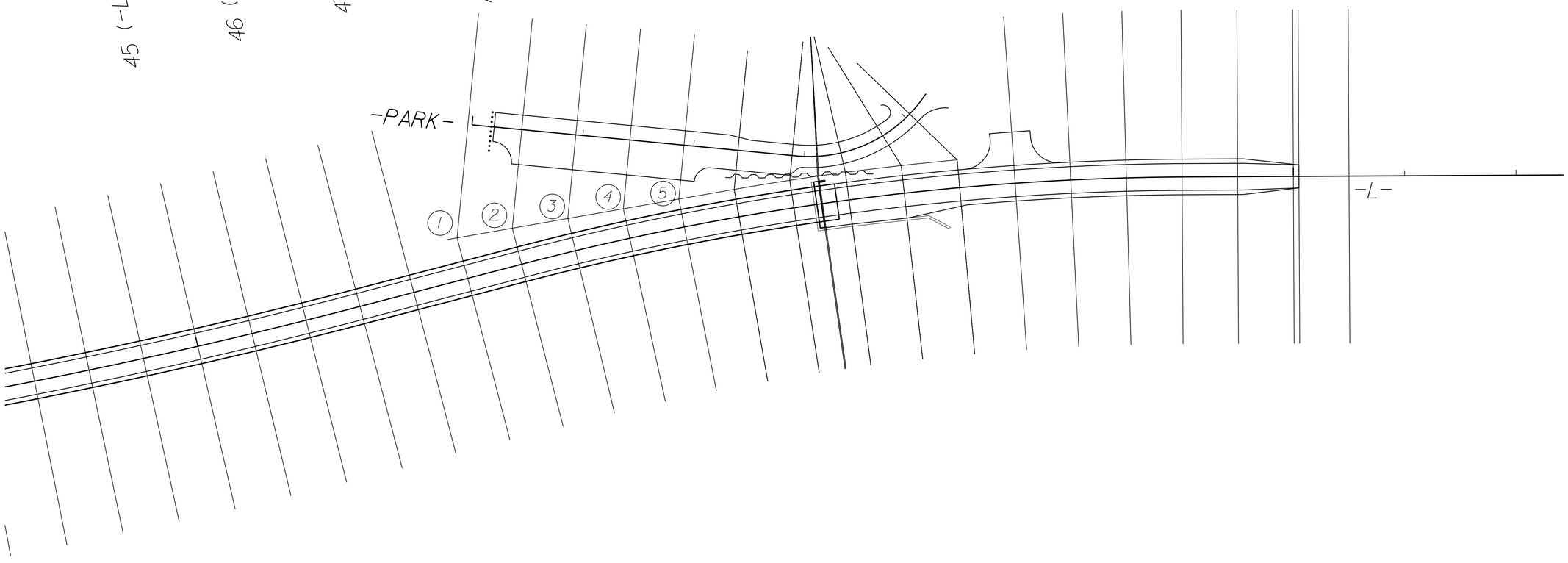
NORTH CAROLINA PROFESSIONAL SEAL 018442 ENGINEER RICHARD LEON BOLLINGER

DocuSigned by: [redacted] 4/7/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H

NC FIRM LICENSE No: F-0493



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8/17/99

–DETOUR– DETAIL

PROJECT REFERENCE NO.	SHEET NO.
B-4863	2B-2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FARINO — Digitally signed by: Jennifer D. Farino — 4/7/2021

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 018442 ENGINEER RICHARD LEON BOLLINGER — Digitally signed by: Richard Leon Bollinger — 4/7/2021

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RS&H
NC FIRM LICENSE No: F-0493

NAD 83/NA 2011

-DETOUR- PRC Sta. 12+32.78
-DETOUR- PT Sta. 15+54.26
-DETOUR- POT Sta. 16+68.82
-L- PT Sta. 46+49.23
-DETOUR- PC Sta. 11+03.04
-DETOUR- POT Sta. 10+00.00
BEGIN GRADE
-DETOUR- POT Sta. 10+03.00
N 24° 39' 51.1" E
N 4° 34' 17.8" E
-DETOUR- PRC Sta. 14+18.27
N 18° 55' 07.9" E
-L- N 18° 55' 07.9" E
REMOVE AND RESET EXISTING SIGN -L- PT Sta. 54+03.19
CUT DITCH SEE DETAIL A
END GRADE
-DETOUR- POT Sta. 16+68.82
-L- POT Sta. 55+05.00

END PROJECT
B-4863 STA. 55+05.00
END CONSTRUCTION
B-4863 STA. 55+40.00

CARTERET COUNTY
DB 1616 PG 390

JEFFREY L. CHADWICK, et ux
DB 1306 PG 131
MB 31PG 650

STATE OF NORTH CAROLINA NDR

SR 1335 HARKERS ISLAND RD. 20' BST

DETAIL A
CUT DITCH
(Not to Scale)
Natural Ground — 3:1 — D — 3:1 — Front Ditch Slope
Min. D= 1.0 Ft.
FROM –DETOUR– STA. 14+36 TO STA. 15+96 LT

-DETOUR- CURVE DATA

PI Sta 11+68.05	PI Sta 13+25.94	PI Sta 14+86.43
Δ = 9° 17' 29.4" (LT)	Δ = 13° 17' 06.9" (RT)	Δ = 9° 44' 20.6" (LT)
D = 7° 09' 43.1"	D = 7° 09' 43.1"	D = 7° 09' 43.1"
L = 129.73'	L = 185.50'	L = 135.98'
T = 65.01'	T = 93.17'	T = 68.16'
R = 800.00'	R = 800.00'	R = 800.00'
SE = NC	SE = NC	SE = NC
INC = 18'	INC = 18'	INC = 18'

-DETOUR-

BEGIN GRADE
-DETOUR-
STA. 10+03.00
ELEV. = 7.74'

PI = 10+53.00
EL = 7.98'

PI = 11+00.00
EL = 8.12'
VC = 80'
K = 99

PI = 13+00.00
EL = 7.11'
VC = 110'
K = 537

PROPOSED GRADE
EXISTING GROUND

PI = 16+18.82
EL = 6.15'

END GRADE
-DETOUR-
STA. 16+68.82
ELEV. = 6.00'

(+)0.4758%
(+)0.3000%
(–)0.5047%
(–)0.5047%
(–)0.3000%
(–)0.3000%
(–)0.2400%
(–)0.2174%
(–)0.3131%

BEGIN CUT DITCH GRADE -DETOUR- STA. 14+36 LT EL = 6.00
(–)4.5000%
PI = 14+50.000 EL = 5.37'
PI = 15+00.000 EL = 5.22'
PI = 15+50.000 EL = 5.10'
END CUT DITCH GRADE -DETOUR- STA. 15+96 LT EL = 5.00'

LEFT DITCH

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–PARK– DETAIL

PROJECT REFERENCE NO.	SHEET NO.
B-4863	2B-3
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FARINO
4/7/2021

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 018442 ENGINEER RICHARD LEON BOLLINGER
4/7/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

NAD 83/
NA 2011

10 (–PARK–)
11 (–PARK–)
12 (–PARK–)
50 (–L–)
13 (–PARK–)
14 (–PARK–)

RETAIN EXISTING PAVEMENT BETWEEN PERMEABLE PAVEMENT AND EXISTING BRIDGE

9 PROPOSED EMERGENCY ACCESS STEEL BOLLARDS SEE SHEET 2C-4

PROPOSED PERMEABLE PAVERS SEE SHEETS 2B-4 THRU 2B-6

REMOVE EXISTING 36" WOOD RAIL

N 24° 39' 51.05" E

–PARK–

–L–

3'
18'
20'
13'
10'
+51.00
+94.12
+86.50
+98.43
+89.33
+20.50
+00.50
+03.50
+38.50
+56.50

R = 18.5'
R = 13.5'
R = 7'
R = 30'
R = 4'

16 PERPENDICULAR PARKING SPACES W/PRECAST CONCRETE PARKING CURB SEE DETAIL SHEET 2C-5

3 PARALLEL PARKING SPACES W/PRECAST CONCRETE PARKING CURB SEE DETAIL SHEET 2C-5

★ NOTE: EXISTING VEGETATION SHOWN IN THE SURVEY IN THIS AREA HAS BEEN CLEARED AND IT IS CURRENTLY BEING USED FOR FOR NCWRC BOAT RAMP TRAFFIC.

20 10 0 20 40
PLANS

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
_B-4863__	2B-4
R/W SHEET NO.	____
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT BENJAMIN D. SIMPSON 2019

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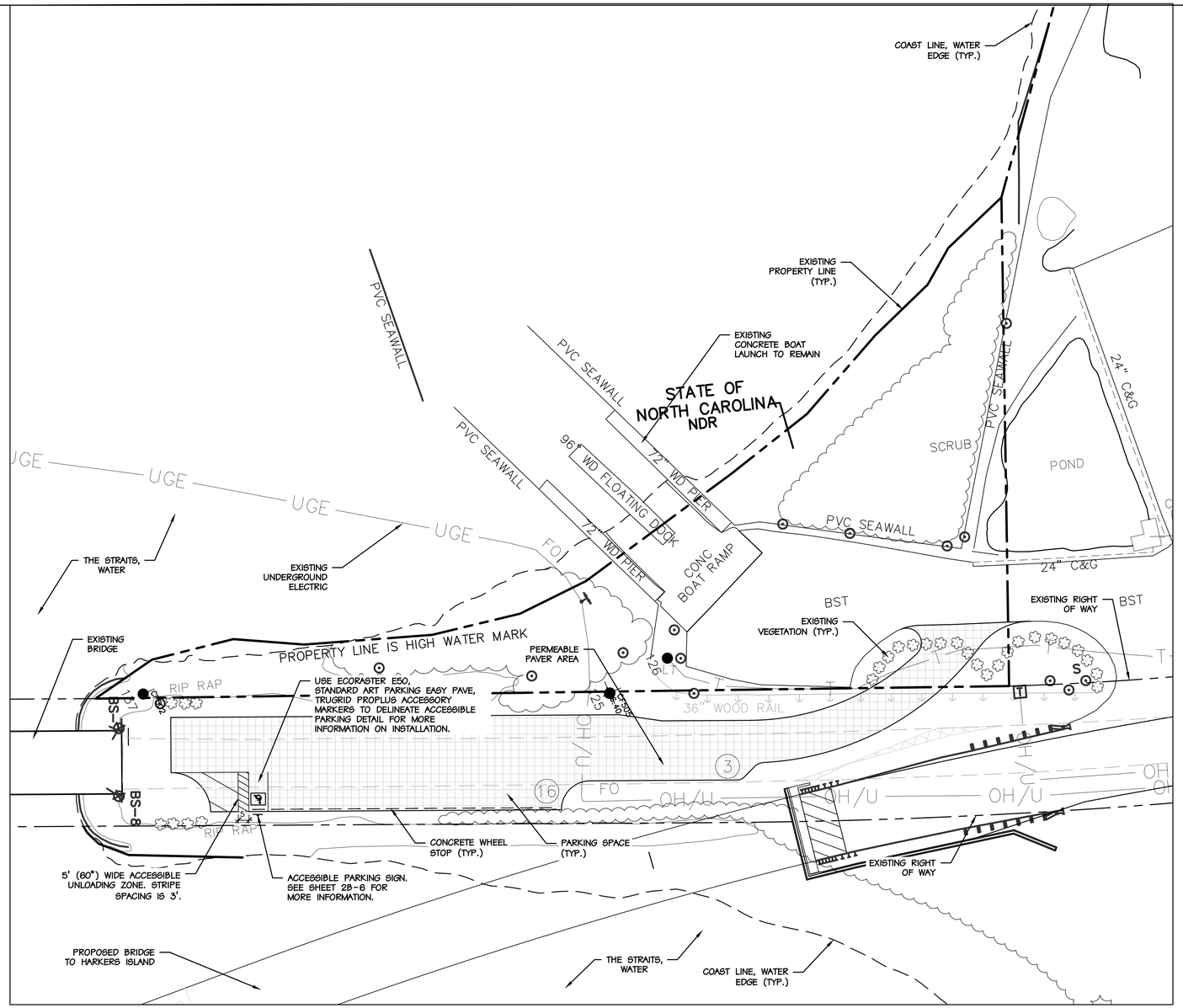

CONSTRUCTION SEQUENCE

1. SAW CUT EXISTING ASPHALT PAVEMENT AND REMOVE PAVEMENT, CURB & GUTTER OFF SITE. DISPOSE MATERIAL IN AN APPROVED LANDFILL PROPERLY.
2. EXCAVATE AREA 11.5" (MIN). GRAVEL AND SOIL MATERIAL MAY BE USED ELSEWHERE ON SITE WHEN PROPERLY PLACED AND STABILIZED WITH OWNERS PRIOR APPROVAL.
3. INSTALL NONWOVEN GEOTEXTILE FABRIC OVER COMPACTED SUBGRADE. OVERLAP COURSES OF FABRIC 2' MIN AND SECURE WITH JUTE STAPLES INTO SUBGRADE 1 PER SQ YD.
4. COMPACT SUBGRADE TO 95% MINIMUM STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD) AS PER ASTM D698.
5. INSTALL GRANULAR BASE MATERIAL (NCDOT #57 STONE). COMPACT SUB BASE MATERIALS.
6. GRADE SUBGRADE AND GRANULAR BASE TO A 1.5% (MIN) TO MAINTAIN POSITIVE DRAINAGE AWAY FROM STRUCTURES.
7. INSTALL 1½" SCREED LEVELING LAYER (NCDOT #78M STONE). MAINTAIN POSITIVE DRAINAGE AT 1.5% SLOPE.
8. INSTALL PERMEABLE PAVING GRID UNITS OVER AREA AND ANCHOR IN PLACE PER DETAIL.
9. FILL PERMEABLE PAVING GRID SYSTEM (NCDOT #78M STONE) OVER FILLED AS REQUIRED. TO ENSURE FLUSH CONDITION WITH GRID SYSTEM UPON COMPACTION.
10. PERMEABLE GRID AND AGGREGATES SHALL BE COMPACTED IN PLACE WITH A VIBRATING PLATE TAMPER TO ALLOW FOR SMALLER AGGREGATES TO SETTLE.
11. INSTALL CONCRETE WHEEL STOPS WHERE SHOWN IN SITE PLAN, FOLLOW SPECIAL PROVISION FOR MORE INFORMATION.
12. SEE DETAIL SHEETS 2B-5 & 2B-6 FOR ADDITIONAL REQUIRED INFORMATION.
13. SEE THE –PARK– DESIGN INFORMATION ON SHEET 2B-3

LEGEND

	EXISTING SIGN		EXISTING CURB AND GUTTER
	PROPOSED SIGN		PROPERTY LINE
	EXISTING LIGHT POLE	E	EXISTING EASEMENT
	EXISTING UTILITY POLE	x x x	EXISTING FENCE
R/W	RIGHT-OF-WAY	OH/U	EXISTING OVERHEAD UTILITY LINE
	ACCESSIBLE SPACE		EXISTING ASPHALT PAVEMENT
	EXISTING TREE TO REMAIN		PROPOSED PERMEABLE PAVER
#	# OF PARKING SPACES		

811 Know what's below. Call before you dig.

NORTH

30 0 15 30 60

SCALE: 1"=30'

PROJECT REFERENCE NO.	SHEET NO.
_B-4863__	2B-5
R/W SHEET NO.	____
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT BENJAMIN D. SIMPSON 2019

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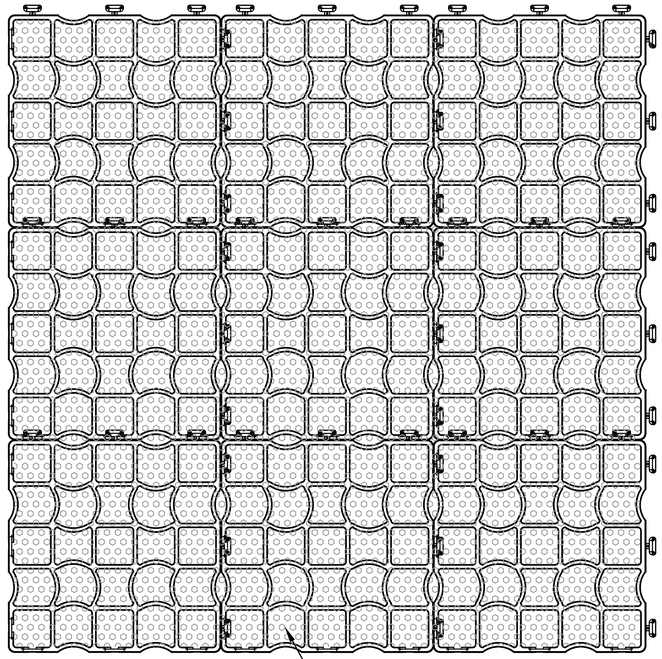
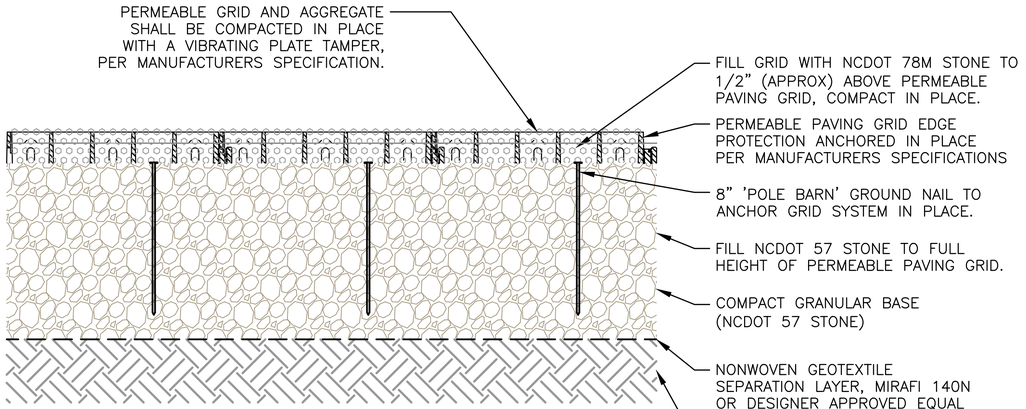


AGGREGATE FILLED PERMEABLE PAVING GRID SYSTEM: FILLED WITH NCDOT 78M STONE AND COMPACTED IN PLACE



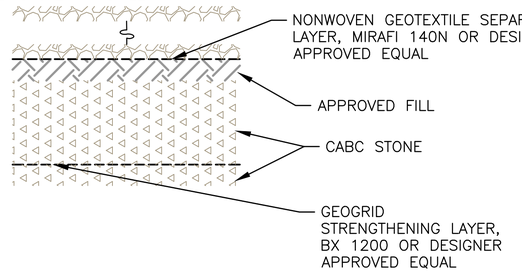
1 AGGREGATE FILLED PERMEABLE PAVING SYSTEM
NTS

NOTES

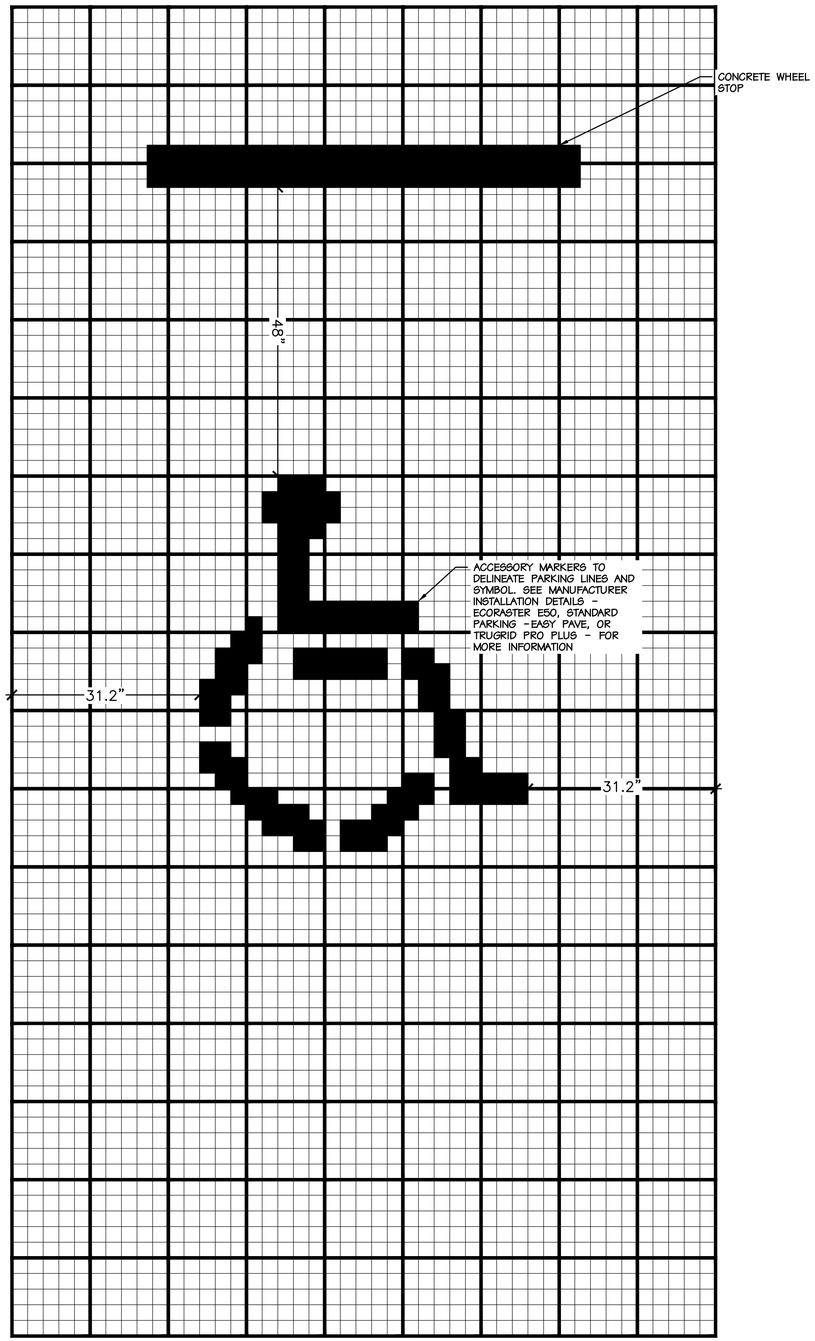
1. PROVIDE ADEQUATE DRAINAGE FROM EXCAVATED AREA WHEN AREA HAS POTENTIAL TO COLLECT WATER.
2. GRADE SUBGRADE TO MIN 1.5% SUCH THAT INFILTRATED RUNOFF WILL BE ABLE TO FLOW IN THE REQUIRED DIRECTION TO DRAIN AWAY FROM THE PERMEABLE PAVERS.
3. ENSURE IN-SITU SOILS ARE DRY AND FREE FROM STANDING WATER.
4. COMPACT SUBGRADE TO 95% MINIMUM STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD) AS PER ASTM D698. FOR UNSUITABLE CONDITION ALSO CONSULT SPECIAL PROVISION.
5. PLACE PACKAGING UNITS/LAYERS (3 X 4 UNITS PRE-CONNECTED) WITH THE CONNECTOR (INTERLOCKING NOTCHES) TO THE GROUND AND THE OPEN CELLS FACING UP, PER MANUFACTURERS SPECIFICATION.
6. ENSURE THAT UNITS ARE INSTALLED 2" FROM ADJACENT FIXED EDGES.
7. TO PREVENT RISING OR LIFTING, THE GRID UNIT SHALL BE ANCHORED WITH GROUND NAILS, PER MANUFACTURER'S SPECIFICATIONS.
8. FRAMING GRID AND AGGREGATE SHALL BE COMPACTED IN PLACE WITH A VIBRATING PLATE TAMPER.

NOTES

1. IF SOIL IS DEEMED UNSTABLE OR OTHERWISE UNSUITABLE EXCAVATE TO A DEPTH OF NO MORE THAN 2' (FEET) BELOW SUBGRADE (SUBGRADE=STONE BASE LAYER).
2. INSTALL 2" (MIN) CABC STONE.
3. INSTALL GEOGRID (NOT NON-WOVEN TEXTILE).
4. INSTALL 8" (MIN) CABC AND COMPACT TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY.
5. INSTALL APPROVED FILL (ABOVE THE 8" CABC COMPACTED LAYER) TO LEVEL OF MIRAFI 140N (GEOTEXTILE) LAYER AND RESUME CONSTRUCTION OF PERMEABLE GRID SYSTEM PROFILE.



2 UNSUITABLE SOIL REPLACEMENT
NTS



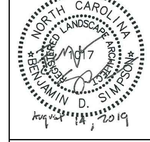
NOTES

1. SNAP PARKING LOT MARKERS INTO PLACE AFTER ECORASTER OR EQUIVALENT HAS BEEN IN-FILLED WITH AGGREGATES.
2. REMOVE SOME AGGREGATE BY HAND (ONLY WHERE MARKERS NEED TO SNAP IN) IF PARKING LOT MARKERS ARE NOT FULLY SNAPPING INTO PLACE.
3. COORDINATE CONSTRUCTION TO COMPLY WITH LOCAL AND FEDERAL ADA STANDARDS.
4. ACCESSIBLE SIGN SHALL BE MOUNTED AT 7 FEET FROM GRADE TO BOTTOM EDGE OF SIGN FACE (R7-8e) (MUTCD).
5. REFER TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (MUTCD) U.S. DEPARTMENT OF TRANSPORTATION AND NORTH CAROLINA DEPARTMENT OF TRANSPORTATION SUPPLEMENT.

PROJECT REFERENCE NO.	SHEET NO.
_B-4863__	2B-6
R/W SHEET NO.	____

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER



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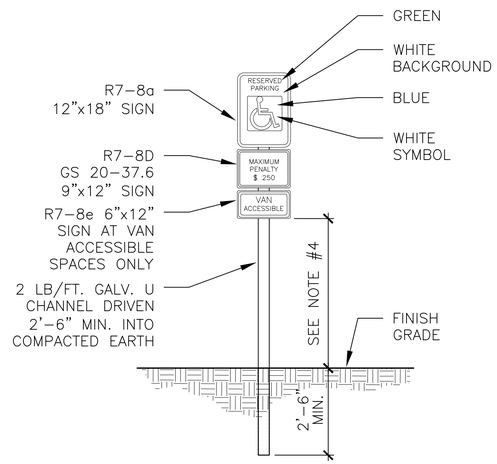

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PROJECT REFERENCE NO.	SHEET NO.
B-4863	2C-1

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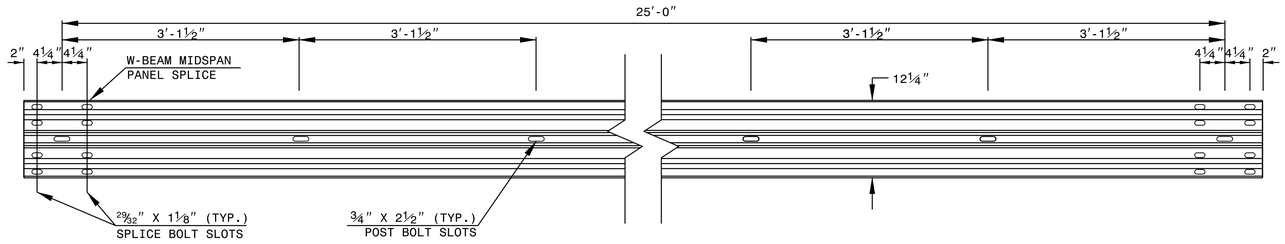
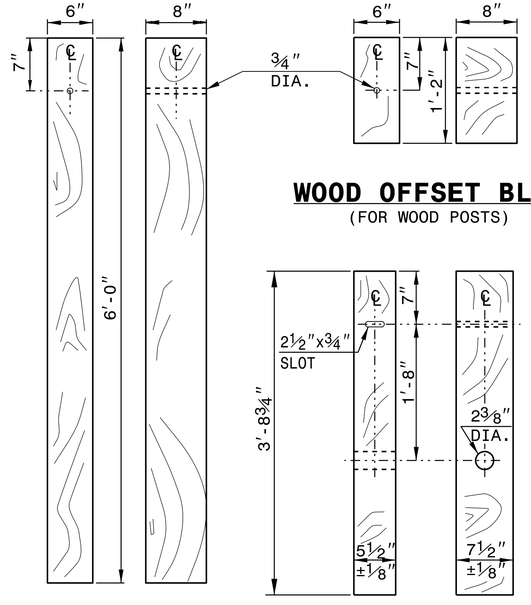
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



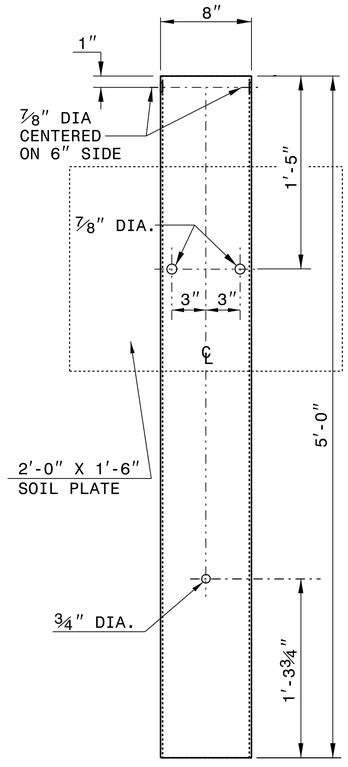
STANDARD W-BEAM GUARDRAIL



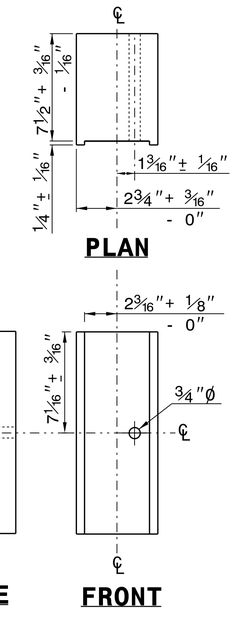
WOOD OFFSET BLOCK
(FOR WOOD POSTS)

STANDARD LINE POST

SHORT WOOD BREAKAWAY POST



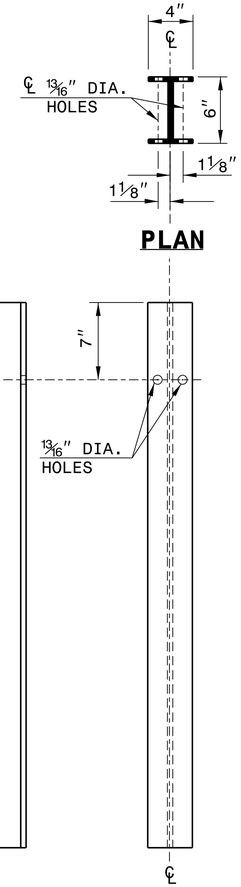
STEEL TUBE
TS 6"x8"x0.1875"



PLAN

SIDE **FRONT**

ROUTED OFFSET BLOCK



PLAN

SIDE **FRONT**

"W6" STEEL POST

SYSTEM PARTS

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

NORTH CAROLINA PROFESSIONAL SEAL 022961 ENGINEER JOHN S. HOWERTON
Docusigned by:
4/7/2021

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

SEE TITLE BLOCK

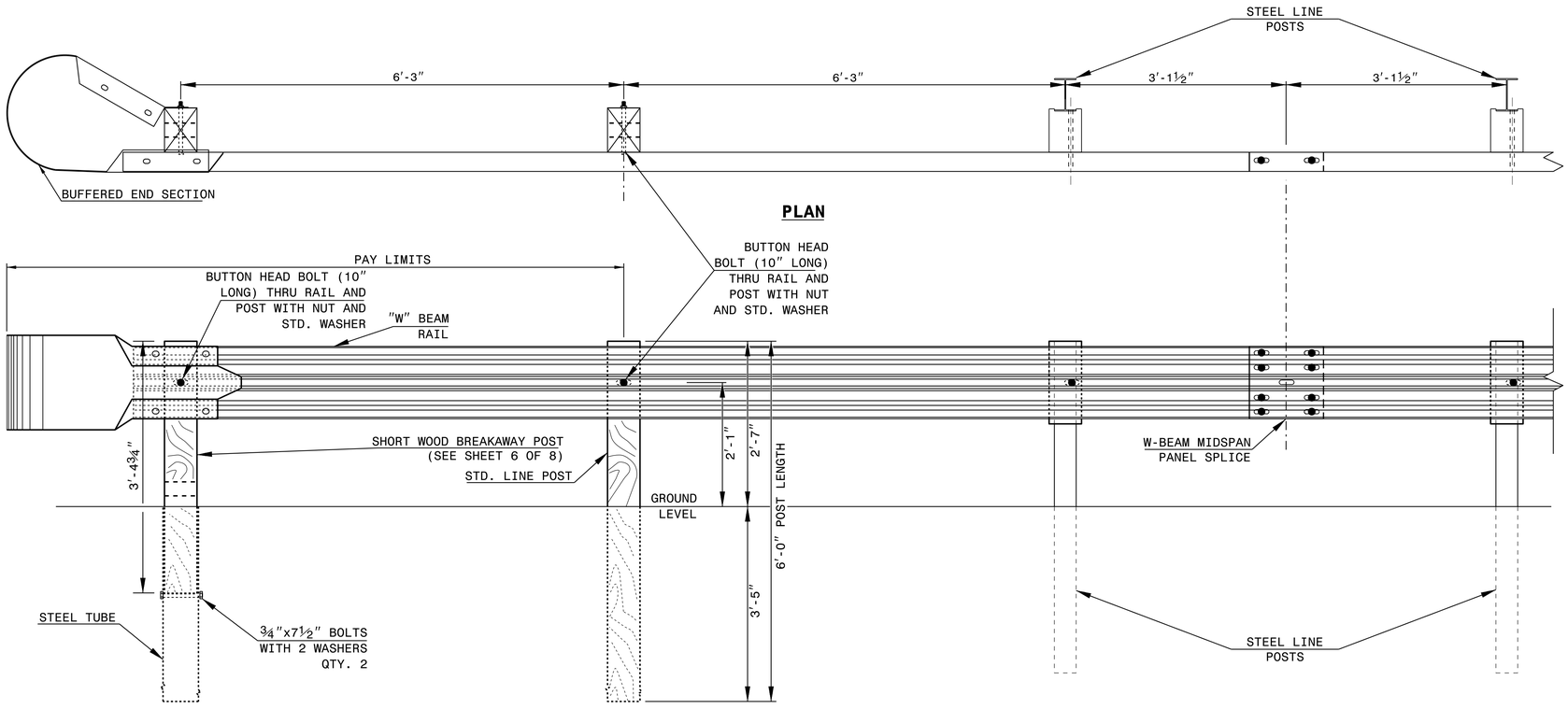
ORIGINAL BY: J.HOWERTON DATE: 3-7-2018
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

DocuSign Envelope ID: 5827B963-9A58-4E78-AA5A-0259BDCA65F0

PROJECT REFERENCE NO.	SHEET NO.
B-4863	2C-2

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION



TRAILING END UNIT ASSEMBLY

A.T.-1 SYSTEM

SHEET OF

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET OF

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 027966 DAVID S. HOWERTON

4/7/2021

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A.T.-1 SYSTEM

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
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PROJECT REFERENCE NO.	SHEET NO.
B-4863	2C-3

STATE OF
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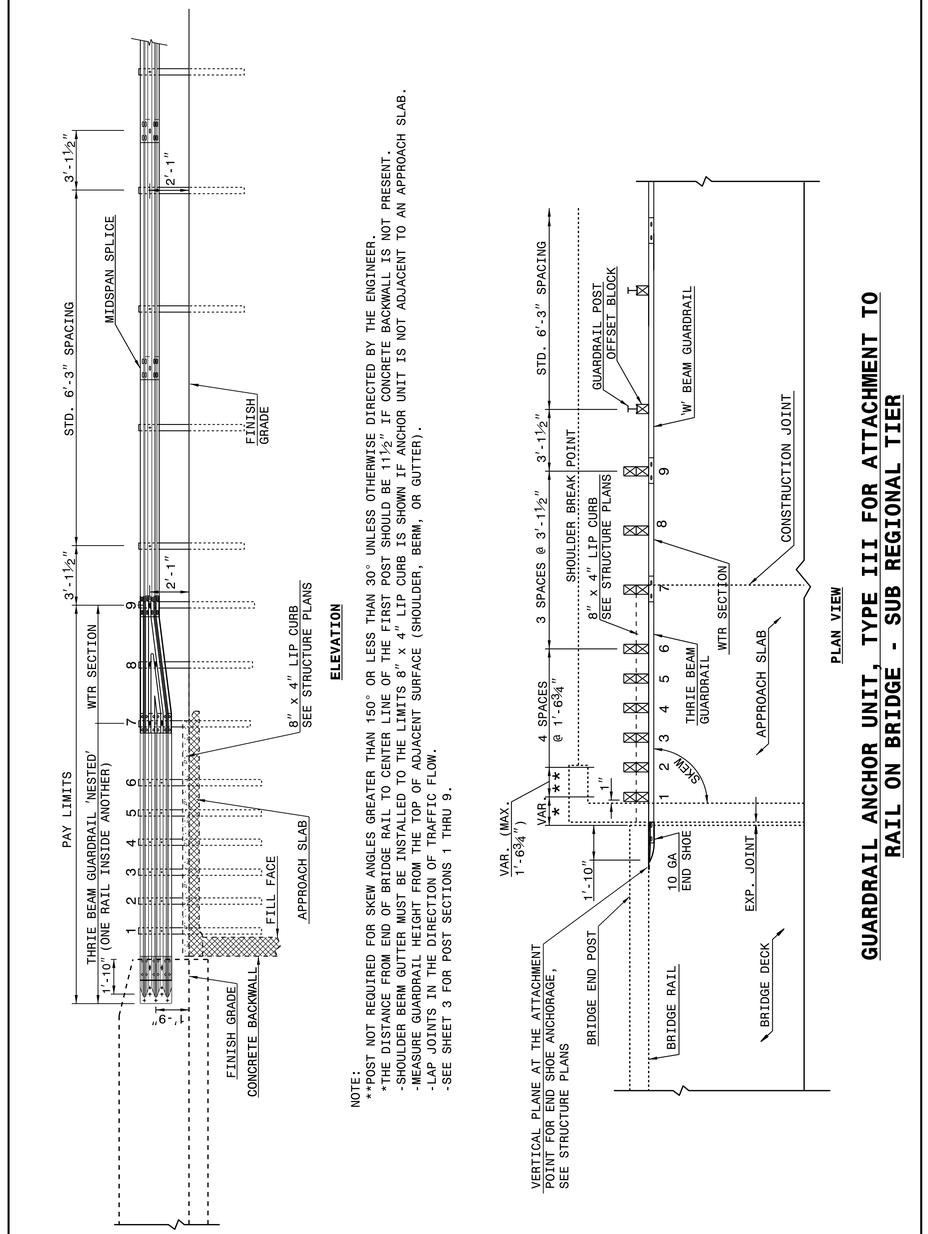
RALEIGH, N.C.

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



ELEVATION

PLAN VIEW

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

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.

STATE OF
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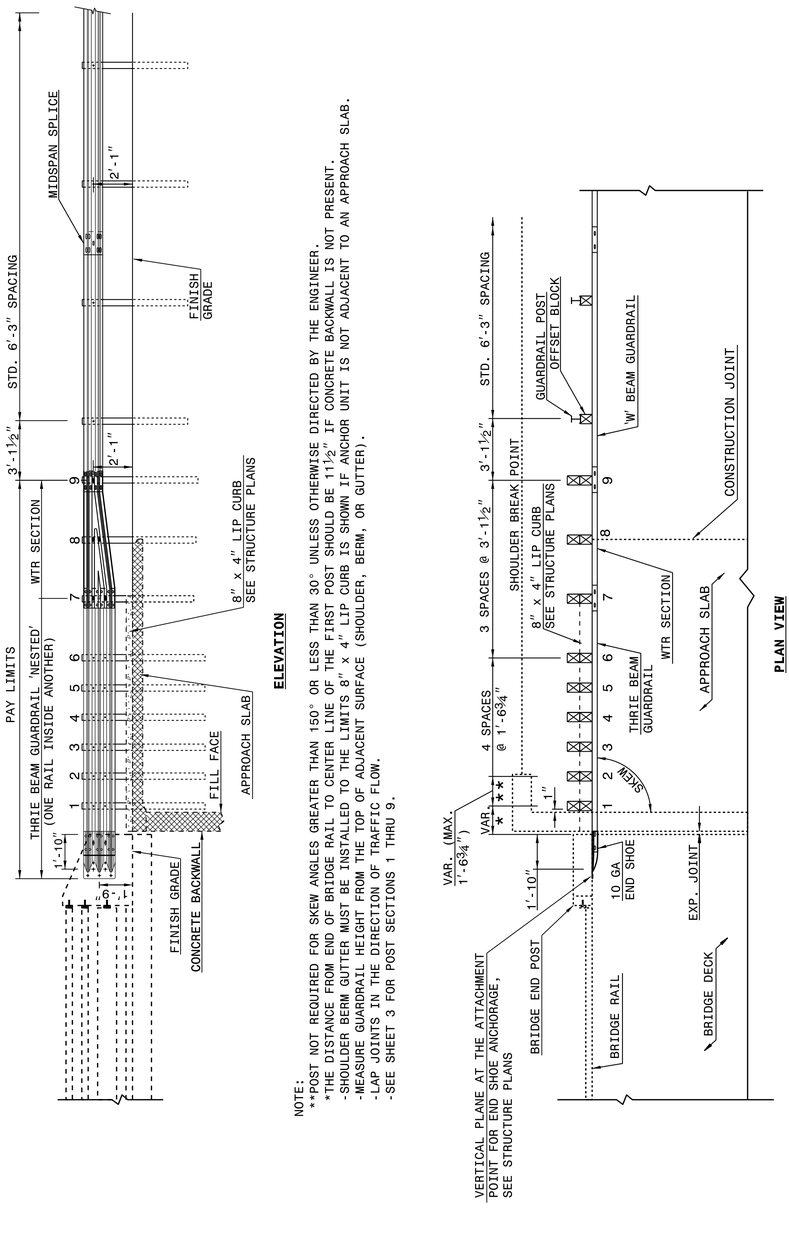
RALEIGH, N.C.

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

SHEET 1 OF 7
862D03



ELEVATION

PLAN VIEW

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

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.

STATE OF
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DEPARTMENT 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

STATE OF
NORTH CAROLINA
DEPARTMENT 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

Digitally signed SEAL 030961 NORTH CAROLINA PROFESSIONAL ENGINEER Daniel S. Howerton
4/7/2021
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CONTRACT STANDARDS
AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

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MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

14-DEC-2017 10:36
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jhowerton AT CSD-2425965

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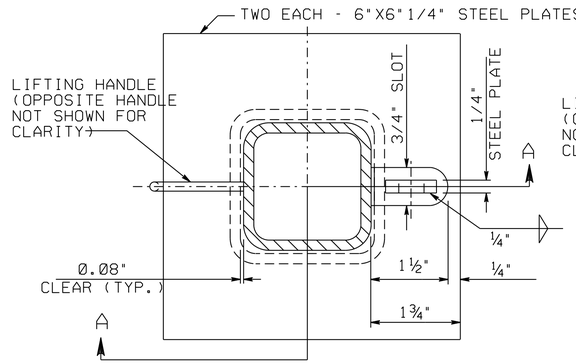
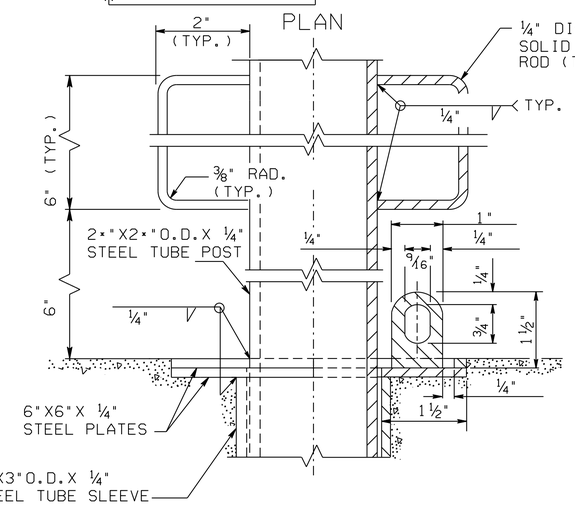
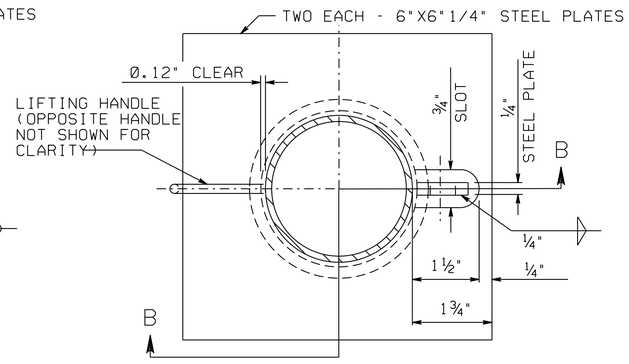
PROJECT REFERENCE NO.	SHEET NO.
B-4863	2C-4

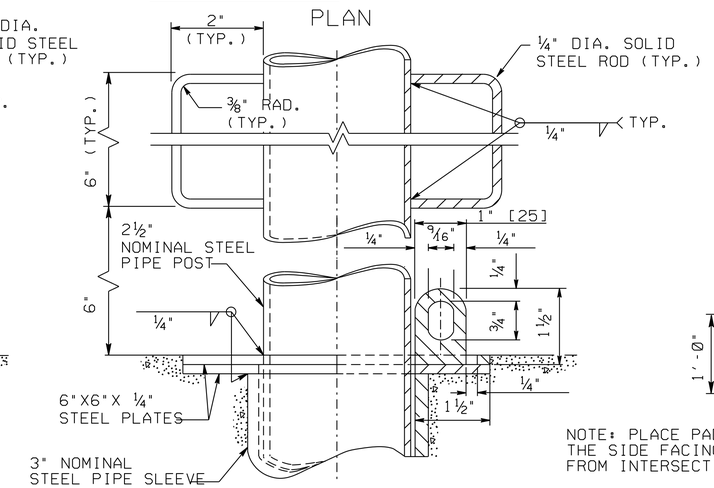




SECTION A-A

REMOVABLE SQUARE BOLLARD





SECTION B-B

REMOVABLE ROUND BOLLARD

NOTES

GENERAL: MOUNT ALL BOLLARD SLEEVES FLUSH WITH THE PAVEMENT.

CONCRETE ENCASEMENT: SLEEVE ENCASEMENT SHALL BE SQUARE AS SHOWN, IN CONCRETE PAVEMENT, BUT MAY BE SQUARE OR ROUND IN FLEXIBLE PAVEMENT. ROUND ENCASEMENT SHOULD BE 1'-0" DIAMETER.

PREFORMED EXPANSION JOINT FILLER: IS REQUIRED WHEN BOLLARDS ARE SET IN CONCRETE PAVEMENT.

STEEL PIPE: ASTM A 53 SCHEDULE 40.,

CONCRETE: USE CLASS B CONCRETE.

GALVANIZING: AFTER FABRICATING, HOT-DIP GALVANIZE ALL STEEL PARTS, INCLUDING STEEL PIPE, AS SPECIFIED IN ASTM A 123.

ALUMINUM: ALL STEEL COMPONENTS MAY BE REPLACED BY ALUMINUM COMPONENTS MEETING THE FOLLOWING ASTM SPECIFICATIONS: B 209 (PLATE), B 210 OR B 241 (DRAWN SEAMLESS TUBES & PLATES), B 211 (RODS), AND F 901 (BOLTS).

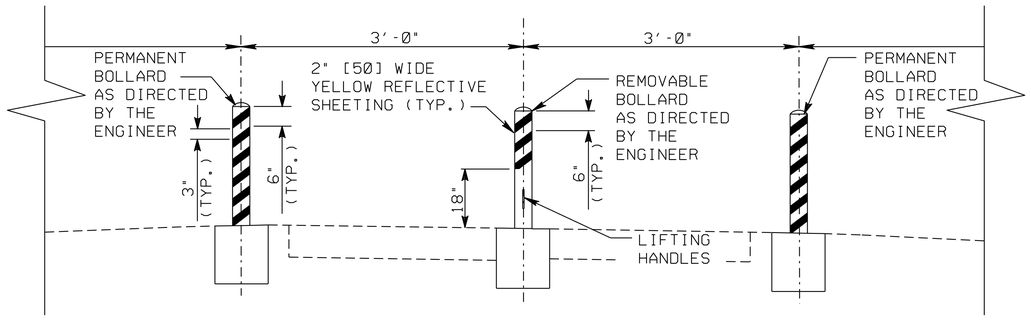
PERMANENT BOLLARDS: PERMANENT BOLLARDS SHALL BE THE SAME AS REMOVABLE BOLLARDS, EXCEPT THAT THE STEEL PLATES, SLEEVES AND LIFTING HANDLES SHALL BE OMITTED. ENCASE POSTS DIRECTLY IN CONCRETE.

LIFTING HANDLES NOT SHOWN FOR CLARITY

DETAIL "A"
PLAN VIEW

DETAIL "A"
ELEVATION VIEW

REMOVABLE BOLLARD



BOLLARD PLACEMENT - ELEVATION VIEW

NORTH CAROLINA PROFESSIONAL SEAL 022696 ENGINEER Joel S. Howerton

Digitally signed by Joel S. Howerton

4/7/2021

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STANDARDS AND SPECIAL DESIGN
Office 919-707-6950 FAX 919-250-4119

STEEL BOLLARDS

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: nbritt\english\misc\bollards steel.dgn

05-MAR-2019 13:51
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kkempf AT CSD-292696

DocuSign Envelope ID: 5827B963-9A58-4E78-AA5A-0259BDCA65F0

PROJECT REFERENCE NO.	SHEET NO.
B-4863	2C-5

STATE OF
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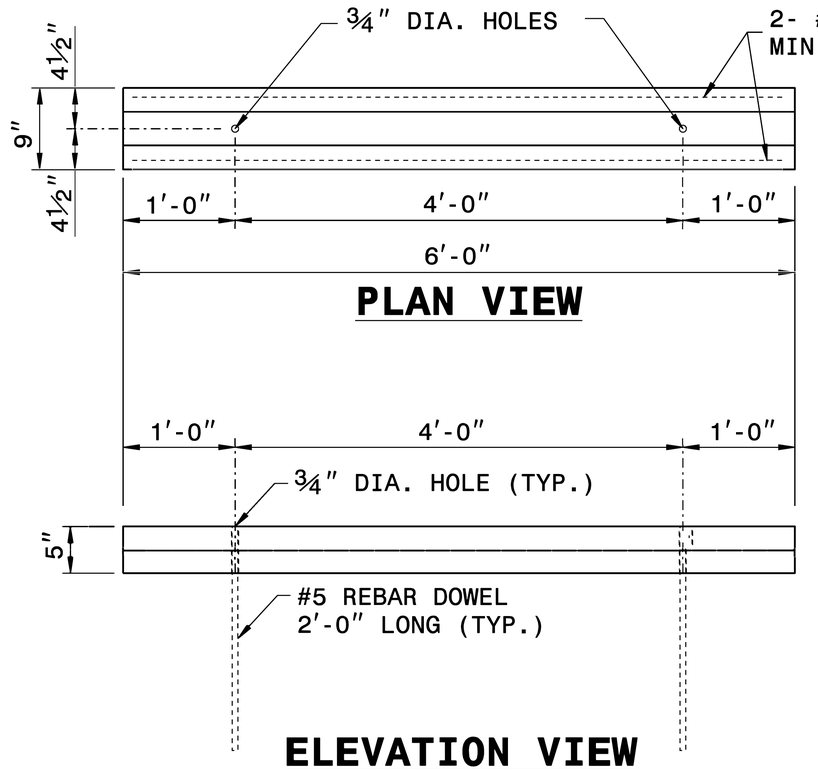
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

PRECAST CONCRETE PARKING CURB

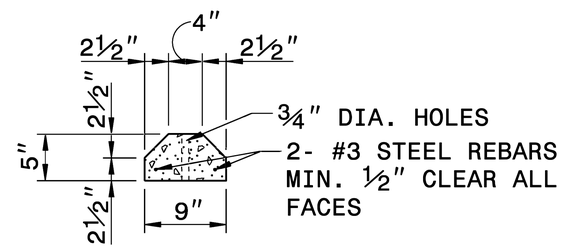
SHEET 1 OF 1

PRCSTCRB



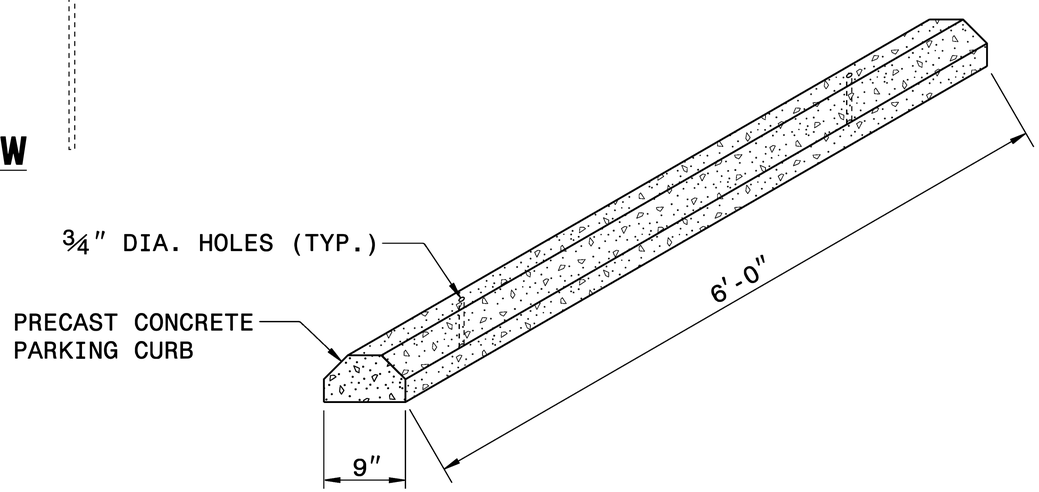
PLAN VIEW

ELEVATION VIEW



END VIEW

CENERAL NOTES:
-CONCRETE COMPRESSIVE STRENGTH
4000psi MIN.
-ASTM A615M - GRADE 400 REINFORCING
STEEL.



ISOMETRIC VIEW

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

ENGLISH DETAIL DRAWING FOR

PRECAST CONCRETE PARKING CURB

SHEET 1 OF 1

PRCSTCRB

4/7/2021

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

SEE PLATE FOR TITLE

ORIGINAL BY: E.E. WARD DATE: 5-97
MODIFIED BY: DATE:
CHECKED BY: DATE:
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30-NOV-2018 13:30
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jhowerton
AT CSD-292995

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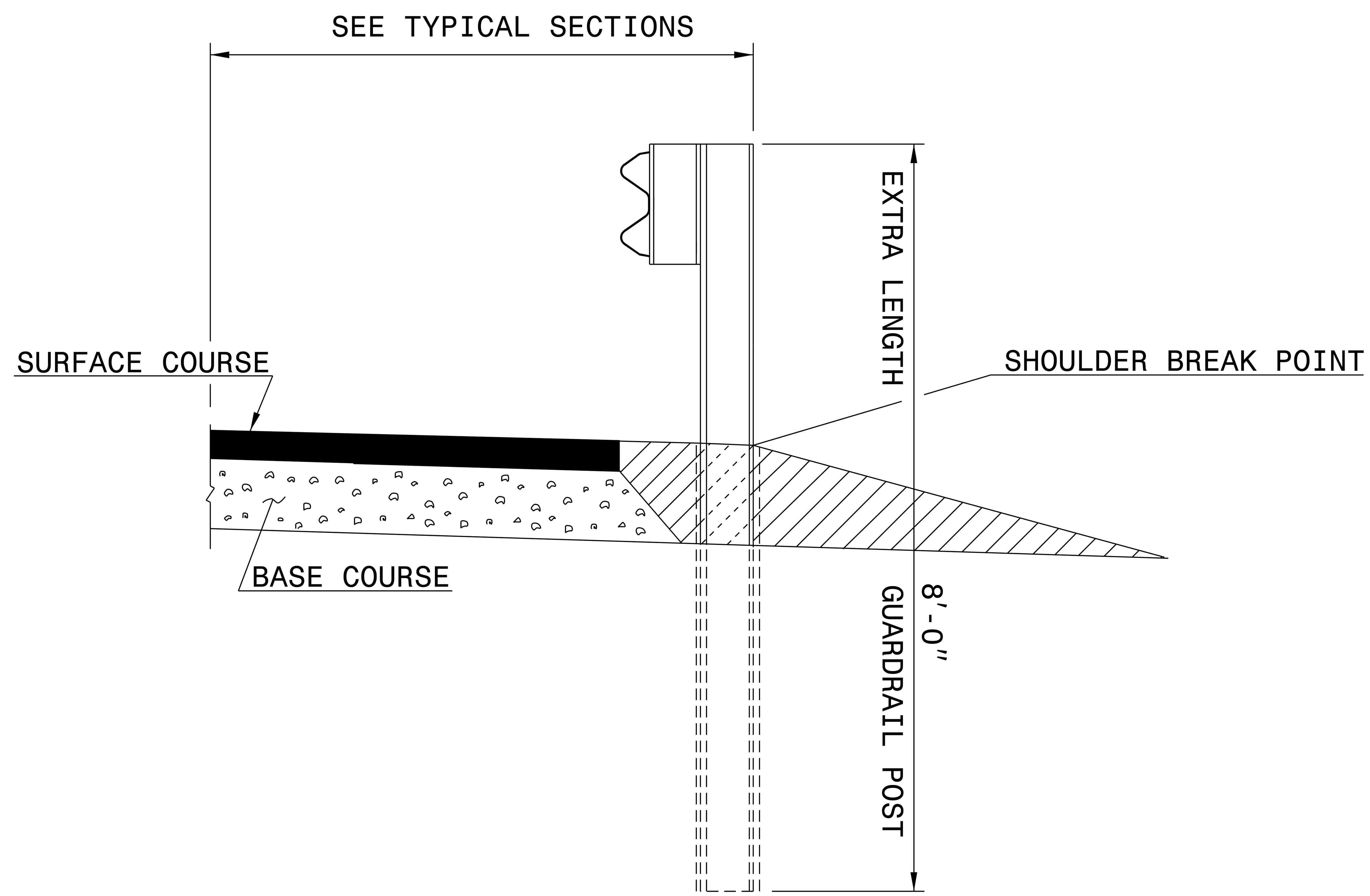

SEAL 022866 NORTH CAROLINA PROFESSIONAL ENGINEER Joel S. Howerton

4/7/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

8′ GUARDRAIL POST

ORIGINAL BY: L. Robinson DATE: 1995
MODIFIED BY: L. Robinson DATE: Feb. 1996
CHECKED BY: DATE:
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09-MAY-2018 14:21
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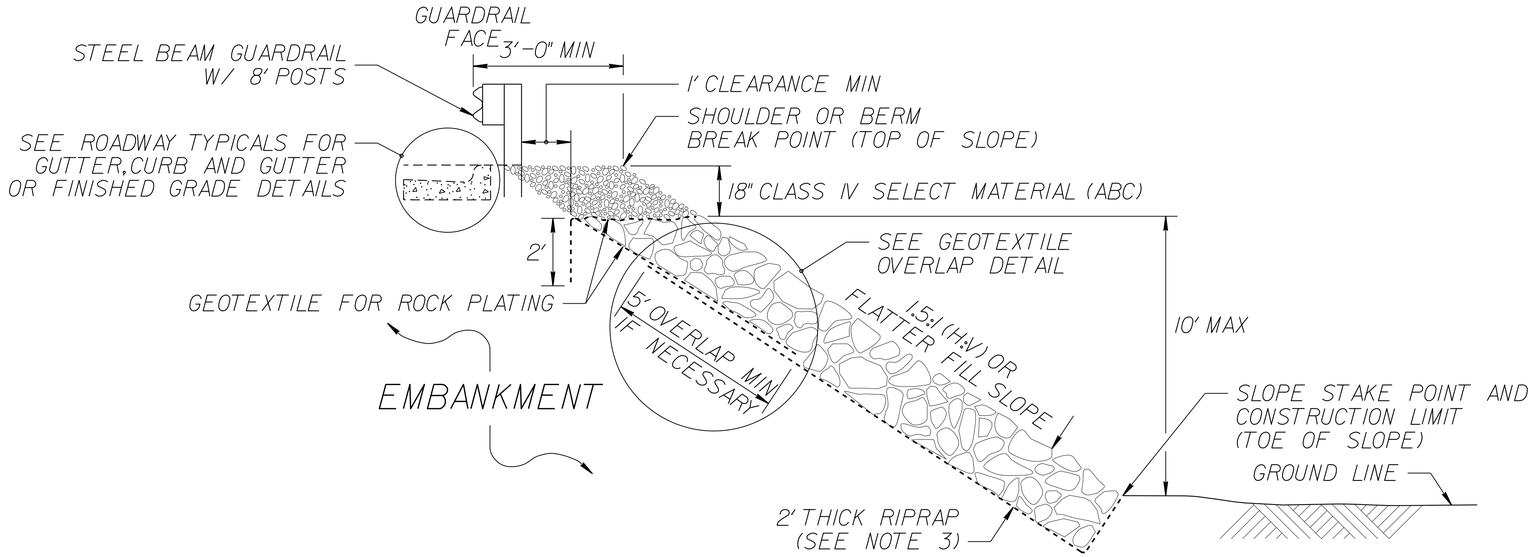
jhowerton AT CSD-242595

DocuSign Envelope ID: 5827B963-9A58-4E78-AA5A-0259BDCA65F0

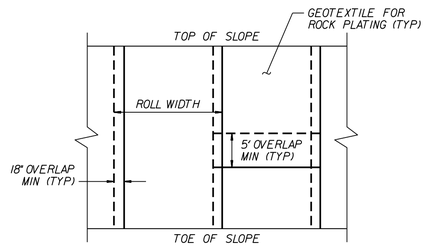
PROJECT REFERENCE NO.	SHEET NO.
B-4863	2C-7



ROCK PLATING DETAIL NO. 1 – TYPICAL SECTION

NOTES:

1. SEE ROADWAY PLANS AND SUMMARY SHEETS FOR ROCK PLATING LOCATIONS.
2. FOR ROCK PLATING, SEE SECTION 275 OF THE STANDARD SPECIFICATIONS.
3. USE CLASS I, 2 OR B RIPRAP UNLESS REQUIRED OTHERWISE IN THE ROADWAY SUMMARY SHEETS.



GEOTEXTILE OVERLAP DETAIL
(PLAN VIEW)

DocuSigned by: SEAL 031946 Engineer Daniel S. Howerton
4/7/2021

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

ROCK PLATING

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: jhowerton DATE: 02-26-19
CHECKED BY: _____ DATE: _____
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kkempf AT USD-292596

DocuSign Envelope ID: 5827B963-9A58-4E78-AA5A-0259BDCA65F0

PROJECT REFERENCE NO.	SHEET NO.
B-4863	2G-1

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030943 ENGINEER THEIN TUN ZAN

DocuSigned by: Thein Tun Zan 4/7/2021
857CD6166A3B4A7... SIGNATURE DATE

ENGINEER

SIGNATURE DATE

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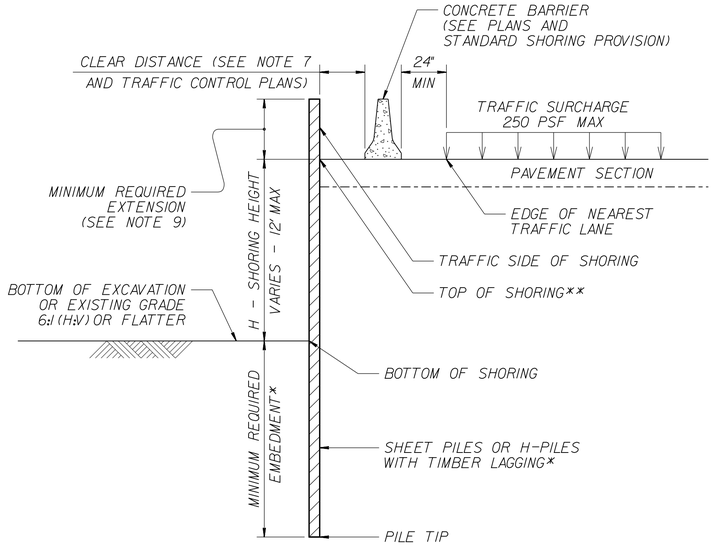
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS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

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

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

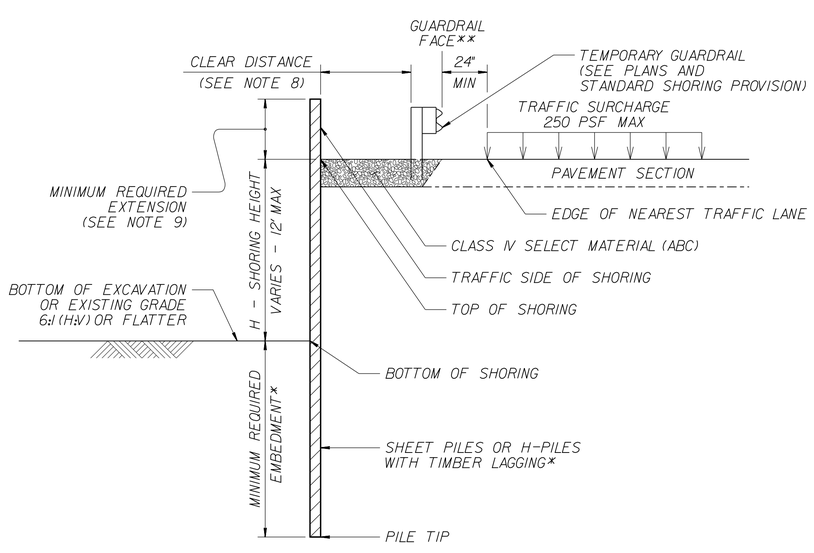
NOTES:

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



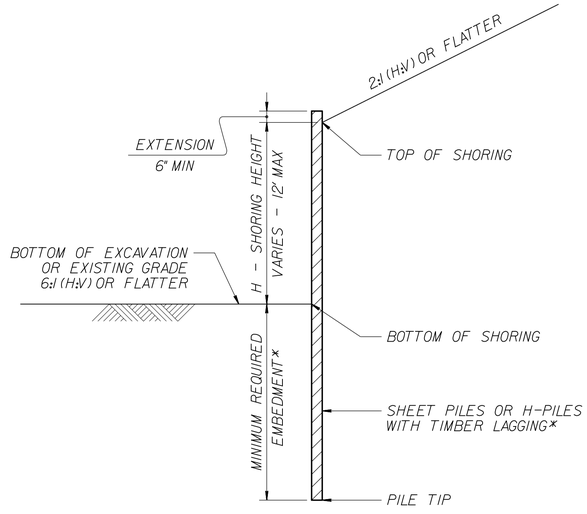
CONCRETE BARRIER

****TOP OF SHORING = EDGE OF PAVEMENT**



TEMPORARY GUARDRAIL

****GUARDRAIL FACE = EDGE OF PAVEMENT**



STANDARD TEMPORARY SHORING

(SLOPE CASE)
***SEE TABLE ABOVE.**

STANDARD TEMPORARY SHORING

(SURCHARGE CASE)
***SEE TABLE ABOVE.**

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

STANDARD DETAIL NO. 1801.01

STANDARD TEMPORARY SHORING

DATE: 11-19-13

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12/06/07

COMPUTED BY: ANK DATE: 1/28/2020
CHECKED BY: DDM DATE: 1/28/2020

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-4863	3B-1

SUMMARY OF EARTHWORK

IN CUBIC YARDS

STATION	STATION	TOTAL UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
–DETOUR– PHASE 1					
10+03.00	16+68.81	270	0	0	270
SUBTOTALS:		270	0	0	0
–L– PHASE 2					
10+00.00	18+75.00 (BR)	249	4,953	4,704	0
50+75.00 (BR)	55+05.00	175	952	777	0
SUBTOTALS:		424	5,905	5,481	0
–L– PHASE 3					
13+00.00	15+50.00	0	29	29	0
51+50.00	53+00.00	0	29	29	0
SUBTOTALS:		0	58	58	0
PHASE 4					
–L– 10+00.00	–L– 14+00.00	6	86	80	0
–L– 52+00.00	–L– 55+05.00	11	148	137	0
–Y– 10+12.00	–Y– 11+60.00	62	105	43	0
–DRIVE– 10+12.00	–DRIVE– 11+40.00	94	29	0	65
–PARK– 10+20.00	–PARK– 14+14.48	402	95	0	307
SUBTOTALS:		575	463	260	372
–EL– 48+55±	–EL– 50+50±	1,000	0	0	1,000
SUBTOTALS:		1,000	0	0	1,000
TOTALS:		2,269	6,426	5,799	1,642
LOSS DUE TO CLEARING & GRUBBING		–500		500	
WASTE IN LIEU OF BORROW				–642	–642
PROJECT TOTALS:		1,769	6,426	5,657	1,000
EST. 5% TO REPLACE SOIL IN BORROW PIT				283	
GRAND TOTALS:		1,769	6,426	5,940	1,000
SAY:		1,800		6,240	

EST 20 CY DDE (FROM HYDRO)

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

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
–EL–	25+37	32+01	CL	1,700.02
–EL–	45+97	51+20	CL	1,363.63
–EL–	58+49	63+53	CL	1,263.76
–L–	52+66	52+85	LT	5.90
–DETOUR–	10+03	13+88	LT	389.69
–DETOUR–	10+03	12+08	RT	61.31
–DETOUR–	14+36	14+97	LT	21.27
–L–	8+00	13+86	RT	435.21
–L–	8+44	19+04	LT	1,414.75
			TOTAL:	6,655.54
			SAY:	6,660

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH (LF)
–L–	15+72.92	18+61.00	288.08
–L–	50+89.00	51+46.24	57.24
		TOTAL:	345.32
		SAY:	346

"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 LAUARDRAIL 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

TEMPORARY GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH: STRAIGHT	LENGTH: SHOP CURVED	LENGTH: DOUBLE FACED	WARRANT POINT: APPROACH END	WARRANT POINT: TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH: APPROACH END	FLARE LENGTH: TRAILING END	W: APPROACH END	W: TRAILING END	ANCHORS: GREU TL–3	ANCHORS: GRAU TYPE III	ANCHORS: AT–1	IMPACT ATTENUATOR TYPE 350: EA	IMPACT ATTENUATOR TYPE 350: G	IMPACT ATTENUATOR TYPE 350: NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
–DETOUR–	10+50.00	13+62.42	LT	312.50				12+50.00	3'–0"	6'–0"	50.00	50.00	1.00	1.00	2									TEMPORARY GUARDRAIL FOR TRAFFIC CONTROL
–DETOUR–	14+24.78	16+27.25	LT	181.25	37.50			14+50.00	5'–0"	8'–0"	50.00		1.00		1		1							TEMPORARY GUARDRAIL FOR TRAFFIC CONTROL
			SUBTOTALS	493.75	37.50																			
			ANCHOR DEDUCTION	156.25	0.00																			
			TOTAL	337.50	37.50																			
			SAY	350.00	50.00																			

ANCHOR DEDUCTION
GREU TL–3: 3 @ 50' = 150'
AT–1: 1 @ 6.25' = 6.25'
GRAND TOTAL = 156.25'

"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: STRAIGHT	LENGTH: SHOP CURVED	LENGTH: DOUBLE FACED	WARRANT POINT: APPROACH END	WARRANT POINT: TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH: APPROACH END	FLARE LENGTH: TRAILING END	W: APPROACH END	W: TRAILING END	ANCHORS: GREU TL–3	ANCHORS: GRAU TYPE III	ANCHORS: AT–1	IMPACT ATTENUATOR TYPE 350: EA	IMPACT ATTENUATOR TYPE 350: G	IMPACT ATTENUATOR TYPE 350: NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
–L–/–Y–	13+69.27	10+51.19	RT	156.25	37.50		18+75.00 (BR)		8'–0"	11'–0"	50.00		1.00		1		1							
–Y–/–L–	10+52.23	18+75.00 (BR)	RT	300.00	37.50		18+75.00 (BR)		4'–0"	11'–0"	200.00		4.00			1	1							
–L–	17+31.81	18+75.00 (BR)	LT	143.75				18+75.00 (BR)	4'–0"	11'–0"		62.50		1.25	1	1								
–L–	50+75.00 (BR)	52+05.26	LT	131.25			50+75.00 (BR)		4'–0"	11'–0"	50.00		1.00		1	1								USE 22 8' GUARDRAIL POSTS, SEE DETAIL SHEET 2C–6
–L–	50+75.00 (BR)	51+94.57	RT	118.75				50+75.00 (BR)	4'–0"	11'–0"		50.00		1.00	1	1								
–L–	52+90.94	55+40.00	LT	250.00				53+30.00	8'–0"	11'–0"					2									
–EL–	52+62.89	58+48.65	LT & RT																			1175		REMOVE 1175 LF OF EXIST. GUARDRAIL FROM OLD BRIDGE NO. 96
			SUBTOTALS	1100.00																				
			ANCHOR DEDUCTION	387.50																				
			TOTAL	712.50	75.00																			
			SAY	725.00	87.50																			

ANCHOR DEDUCTION
GREU TL–3: 6 @ 50' = 300'
GRAU TYPE III: 4 @ 18.75' = 75'
AT–1: 2 @ 6.25' = 12.5'
GRAND TOTAL = 387.5'
ADDITIONAL GUARDRAIL POSTS = 5

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12/06/07

COMPUTED BY:	ABN	DATE:	1/28/2020
CHECKED BY:	CMB	DATE:	1/28/2020

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-4863	3D-1

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

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) SIZE	DRAINAGE PIPE THICKNESS OR GAUGE	C.S. PIPE (UNLESS NOTED OTHRWISE) SIZE	C.S. PIPE THICKNESS OR GAUGE	CLASS IV R.C. PIPE (UNLESS OTHERWISE NOTED)	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) R.C.P. CU. YDS.	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) C.S.P. CU. YDS.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') LIN. *FT. A	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') LIN. *FT. B	C.B. STD. 840.01 OR STD. 840.02 PER EACH (0' THRU 5.0')	C.B. STD. 840.01 OR STD. 840.02 5.0' THRU 10.0'	C.B. STD. 840.01 OR STD. 840.02 10.0' AND ABOVE	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE F	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE G	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	T.B.D.I. STD. 840.35	PRECAST MANHOLE 4', 5', AND 6' DIAMETER STD. 840.52	MANHOLE FRAME AND COVER STD. 840.54	REMARKS
								12"		12"		12"																
								15"		15"	.064	15"																
								18"		18"	.064	18"																
								24"		24"	.064	24"																
								30"		30"	.079																	
								36"		36"	.079																	
								42"		42"	.109																	
								48"		48"	.109																	
–L– 18+55	16LT	0401		18.10																1						1	1	
		0401	0402		14.00	13.00						32																
–L– 18+55	16RT	0402		16.90																1						1	1	
		0402	0403		12.00	4.00						280																
–L– 15+76	21RT	0403		7.70																1						1	1	
		0403	0404		3.90	3.10						44																
–L– 15+34	24RT	0404		6.80																1								1 1
		0404	0405		3.00	2.80						28																
–L– 50+95	16LT	0701		10.50																1						1	1	
		0701	0702		5.50	5.10						32																
–L– 50+95	16RT	0702		9.60																1						1	1	
		0702	0703		5.00	3.80						52																
–L– 51+44	17RT	0703		8.40																1						1	1	
		0703	0704		3.70	2.80						204																
–L– 53+50	20RT	0704		5.60																1								1 1
		0704	0705		2.70	2.51						12																
		DD SYS	0401			14.10																						*CLOSED DECK DRAIN PIPE INVERT ELEVATION (STRUCTURE PAY ITEM)
		DD SYS	0402			13.00																						*CLOSED DECK DRAIN PIPE INVERT ELEVATION (STRUCTURE PAY ITEM)
		DD SYS	0701			7.00																						*CLOSED DECK DRAIN PIPE INVERT ELEVATION (STRUCTURE PAY ITEM)
		DD SYS	0702			6.00																						*CLOSED DECK DRAIN PIPE INVERT ELEVATION (STRUCTURE PAY ITEM)
TOTALS												684								8						6	6	2 2

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

*THE INVERTS SHOWN REPRESENT THE INVERT ELEVATION OF THE CLOSED DECK DRAIN PIPE AS IT ENTERS THE 2GI. SLIGHT FIELD ADJUSTMENT MAY BE REQUIRED.
THE CLOSED DECK DRAIN PIPE IS A STRUCTURE PAY ITEM. PLEASE REFER TO THE STRUCTURE PLANS FOR MORE INFORMATION REGARDING THE CLOSED DECK DRAIN PIPE.

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COMPUTED BY: Scott Hunsberger DATE: 2/7/2018
CHECKED BY: Jeremy Hamm DATE: 2/7/2018

(12-17-19)

PROJECT NO.	SHEET NO.
B-4863	3G-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

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

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

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY			AST	3					200
CONTINGENCY			ASU	12	125	250	375		
			TOTAL CY/TONS/SY:		125	250**	375**	0	200

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

SUMMARY OF ROCK PLATING

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
-PARK-	2.5:1 (H:V)	11+90	2.5:1 (H:V)	11+95	LT	1	B	20
-PARK-	2.5:1 (H:V)	12+80	2.5:1 (H:V)	13+40	RT	SP. DTL.	B	105
-Y-	1.5:1 (H:V)	10+35	1.5:1 (H:V)	11+60	LT	2	2	98
							TOTAL SY:	223

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

SUMMARY OF BRIDGE WAITING PERIODS

Bridge Description	End Bent/ Bent No.	MONTHS
Bridge No. 73 over the Straits at Harkers Island on SR 1535	EB1, EB2	1

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PROJ. REFERENCE NO.	SHEET NO.
B-4863	3P-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	HALLIS L. BATSON, et ux
2	4	LAWRENCE F. BALDWIN, et ux
3	4	HARKERS POINT OWNERS ASSN INC
4	4	PATRICIA TESTA
5Z	4	HALLIS L. BATSON, et al
6	4	CARTERET COUNTY
7	4	STATE OF NORTH CAROLINA
8	5, 6	STATE OF NORTH CAROLINA
9	7	STATE OF NORTH CAROLINA
10	7	STATE OF NORTH CAROLINA
11	7	JEFFREY L. CHADWICK, et ux
12	7	CARTERET COUNTY
13	7	JEFFREY L. CHADWICK, et ux

PARCEL No.	SHEET No.	PROPERTY OWNER NAME

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8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-4863	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FARINO
4/7/2021

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 018442 ENGINEER RICHARD LEON BOLLINGER
4/7/2021

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RS&H
NC FIRM LICENSE No: F-0493

DETAIL A
STANDARD "V" DITCH
(Not to Scale)
DDE = 8 CY Min. D= 1.0 Ft.
FROM –L– STA. 10+50 TO STA. 10+82 RT

DETAIL B
CUT DITCH
(Not to Scale)
Min. D= 1.0 Ft.
FROM –L– STA. 10+82 TO STA. 12+25 RT
FROM –L– STA. 13+00 TO STA. 14+50 RT

DETAIL C
SPECIAL LATERAL "V" DITCH
(Not to Scale)
Min. D= 2.0 Ft.
FROM –L– STA. 14+50 TO STA. 15+29 RT

DETAIL D
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft. B= 4 Ft.
FROM –Y– STA. 10+50 TO STA. 11+30 RT

DETAIL E
STANDARD BASE DITCH
(Not to Scale)
Min. D= 0.5 Ft. B= 4 Ft. DDE = 8 CY
FROM –Y– STA. 11+30 TO STA. 11+60 RT

* NOTE: BEGIN CONSTRUCTION –L– STA 8+00. MILL AND OVERLAY EXISTING WITH 11/2" S9.5C FROM –L– STA 8+00 TO –L– STA 10+00 FOR TEMPORARY PAINT REMOVAL.

Δ IF CL II ROCK PLATING CAN NOT BE INSTALLED AND STABILIZED FROM –Y– 11+20 TO 11+60 AS SHOWN IN PLAN AND XSC DUE TO FIELD CONDITIONS BEING DIFFERENT THAN EXISTING TOPOGRAPHY IN SURVEY, EXTEND PROPOSED ROCK EMBANKMENT AT 1.5:1 SLOPE (MAX) UNTIL IT CAN BE EFFECTIVELY TIED INTO THE EXISTING GROUND. DO NOT EXTEND ROCK EMBANKMENT PAST POE.

NAD 83/NA 2011

DO NOT DISTURB
HARKERS POINT CEMETERY PARCEL

BEGIN PROJECT *

B-4863 –L– Sta. 10+00.00

HARKERS POINT CEMETERY
DB 772 PG 212

–L– PT Sta. 10+00.00

RECONSTRUCTION OF EXIST. 24" CURB OUTSIDE OF PROP. ROW LIMITS TO BE PERFORMED BY OTHERS

DO NOT DISTURB EXIST. STONE COLUMN

–DRIVE– PT Sta. 10+70.68

–DRIVE– PC Sta. 10+21.00

–DRIVE– POT Sta. 12+05.53
N 5° 54' 03.0" E

END CONSTRUCTION –DRIVE– Sta. 11+40.00

REMOVE EXIST. WOOD POSTS

PROPOSED RETAINING WALL (AVG. HT. 13')

BRIDGE NO. 73 TO BE REMOVED

HUBQUARTER PARTNERSHIP DB 797 PG 290

HARKERS POINT OWNERS ASSN INC (PER CARTERET COUNTY GIS)

PATRICIA TESTA DB 950 PG 348

CARTERET COUNTY DB 787 PG 542

HOLLIS L. BATSON, et ux DB 927 PG 47 MB 29 PG 938 (1)

HOLLIS L. BATSON, et al DB 872 PG 168 MB 29 PG 649 MB 29 PG 938 (2)

LAWRENCE F. BALDWIN, et ux DB 927 PG 46 MB 29 PG 938

STATE OF NORTH CAROLINA NDR

N 18° 38' 18.8" E
EST 2 TON CL B RIP RAP
EST 7 SY GEOTEXTILE

N 17° 04' 25.4" E
–L– PC Sta. 9+03.59
–L– PC Sta. 10+71.36

S 65° 16' 02.1" E
SPECIAL LATERAL BASE DITCH
SEE DETAIL D
EST 5 TON CL B RIP RAP
EST 14 SY GEOTEXTILE

S 67° 34' 51.1" E

FIELD LOCATED MHW

–L– POI Sta. 15+50.00
–Y– POT Sta. 10+00.00
–DRIVE– POT Sta. 10+00.00
–Y– PC Sta. 10+18.35

BEGIN CL II ROCK PLATING STD. 275.01 DETAIL NO. 2 –Y– STA 10+35.5 +/– LT
TOP OF RIP RAP TO BE FLUSH WITH TOP OF RETAINING WALL
–Y– PT Sta. 10+67.01

END CL II ROCK PLATING STD. 275.01 DETAIL NO. 2 –Y– STA 11+60+/– LT

–Y– POT Sta. 12+24.72

–L– PT Sta. 21+23.86
N 32° 02' 21.6" E

30' BUFFER FROM FIELD LOCATED MHW

LIMIT OF AREA OF ENVIRONMENTAL CONCERN (75' OFFSET FROM FIELD LOCATED MHW)

EXIST. SUBAQUATIC VEGETATION (SAV) BOUNDARY (AS SURVEYED ON JULY 27, 2017

MEAN HIGH WATER MARK PLOTTED FROM MB 29 PG 938

BMI –BL– STA. 16+91.156' RT ELEV=5.70'

NGS "TIDAL 3" ELEV=3.47'

NGS "TIDAL 2" ELEV=14.20'

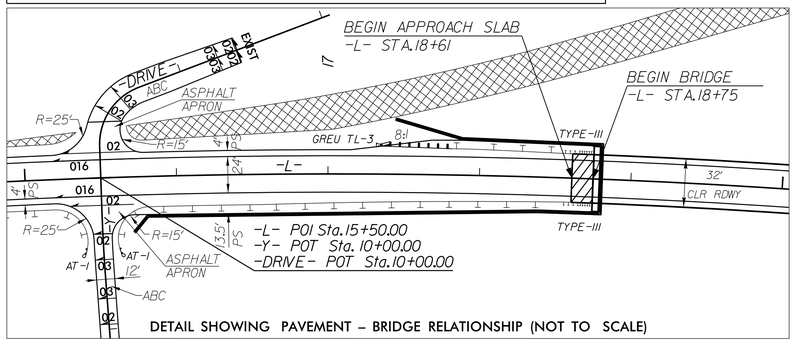
NO ASSOCIATED RECORDS OR UTILITY LINES FOUND FOR THIS WATER VALVE

NO ASSOCIATED RECORDS FOUND FOR THIS STRUCTURE

FIBER PEDESTAL DESTROYED

MATCH TO SHEET 5 –L– STA. 22+00

FOR –L– PROFILE, SEE SHEET NO. 8	
FOR –Y– PROFILE, SEE SHEET NO. 12	
FOR –DRIVE– PROFILE, SEE SHEET NO. 12	
BRIDGE APPROACH SLAB	
PAVEMENT REMOVAL	
FOR STRUCTURE PLANS, SEE SHEETS S–1 THRU S–205	
FOR RETAINING WALL PLANS, SEE SHEETS W–1 THRU W–27	



DETAIL SHOWING PAVEMENT – BRIDGE RELATIONSHIP (NOT TO SCALE)

–L– CURVE DATA
PI Sta 9+51.80
Δ = 1° 33' 53.3" (RT)
D = 1° 37' 23.2"
L = 96.41'
T = 48.21'
R = 3,530.00'
SE = EXIST.
INC = EXIST.

–L– CURVE DATA
PI Sta 16+00.02
Δ = 13° 24' 02.8" (RT)
D = 1° 16' 23.7"
L = 1,052.49'
T = 528.66'
R = 4,500.00'
SE = 03
INC = VARIES

–Y– CURVE DATA
PI Sta 10+42.79
Δ = 2° 18' 49.0" (LT)
D = 4° 46' 28.7"
L = 48.46'
T = 24.23'
R = 1,200.00'
SE = 03
INC = 13'

–DRIVE– CURVE DATA
PI Sta 10+49.62
Δ = 71° 10' 05.0" (RT)
D = 143° 14' 22.0"
L = 49.68'
T = 28.62'
R = 40.00'
SE = 03
INC = 13'

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PROJECT REFERENCE NO.	SHEET NO.
B-4863	5

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — SEAL 030952 — 4/7/2021

HYDRAULICS ENGINEER — SEAL 018442 — 4/7/2021

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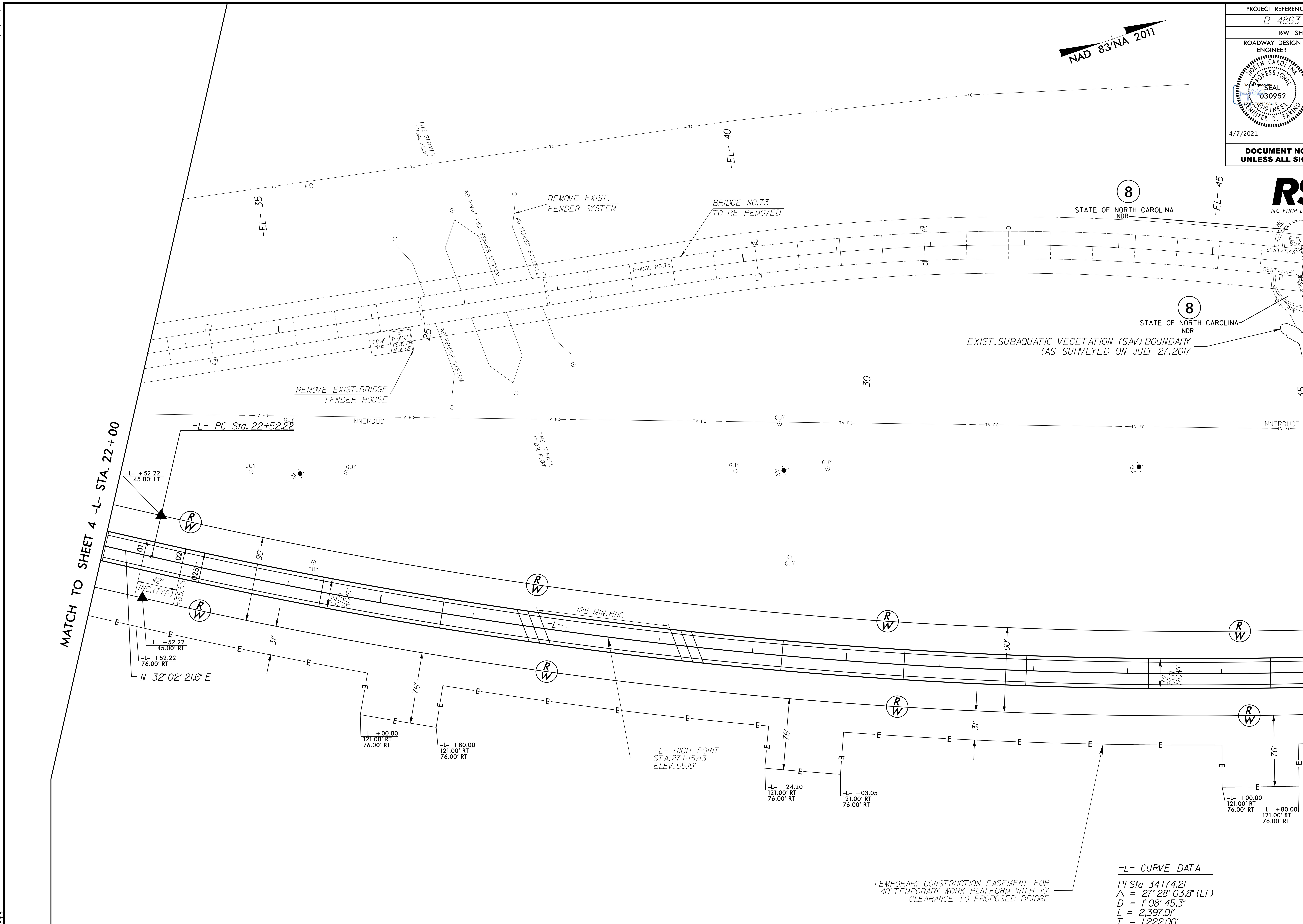
NC FIRM LICENSE No: F-0493



-L- CURVE DATA

PI Sta 34+74.21
Δ = 27° 28' 03.8" (LT)
D = 1° 08' 45.3"
L = 2,397.01'
T = 1,222.00'
R = 5,000.00'
SE = .025
INC = VARIES

FOR -L- PROFILE, SEE SHEET NO. 9

FOR STRUCTURE PLANS, SEE SHEETS S-1 THRU S-205

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PROJECT REFERENCE NO.	SHEET NO.
B-4863	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 030952 — 4/7/2021	SEAL 018442 — 4/7/2021

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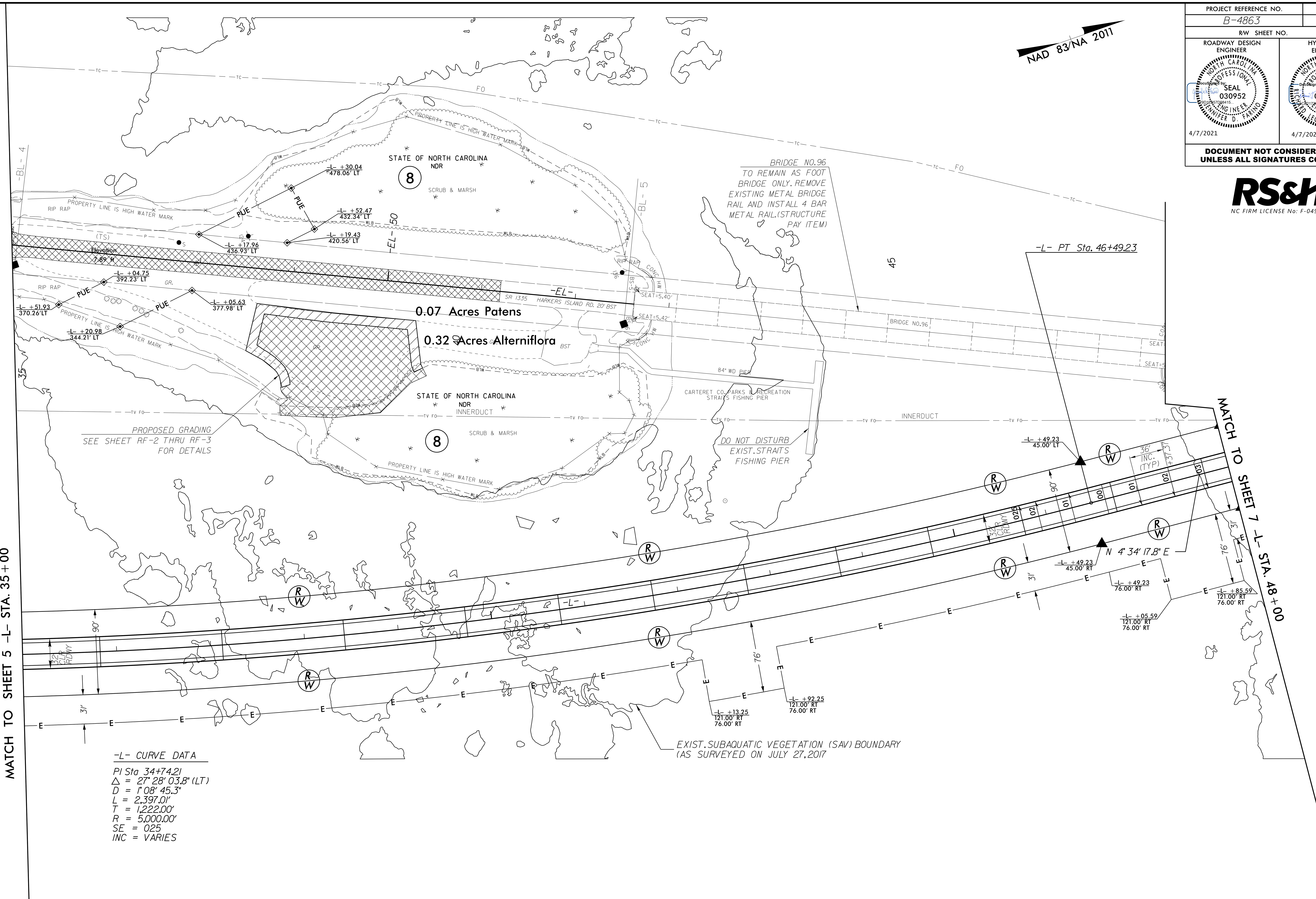

FOR -L- PROFILE, SEE SHEET NO. 10

PAVEMENT REMOVAL

FOR STRUCTURE PLANS, SEE SHEETS S-1 THRU S-205

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PROJECT REFERENCE NO.	SHEET NO.
B-4863	7

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — SEAL 030952 — 4/7/2021

HYDRAULICS ENGINEER — SEAL 018442 — 4/7/2021

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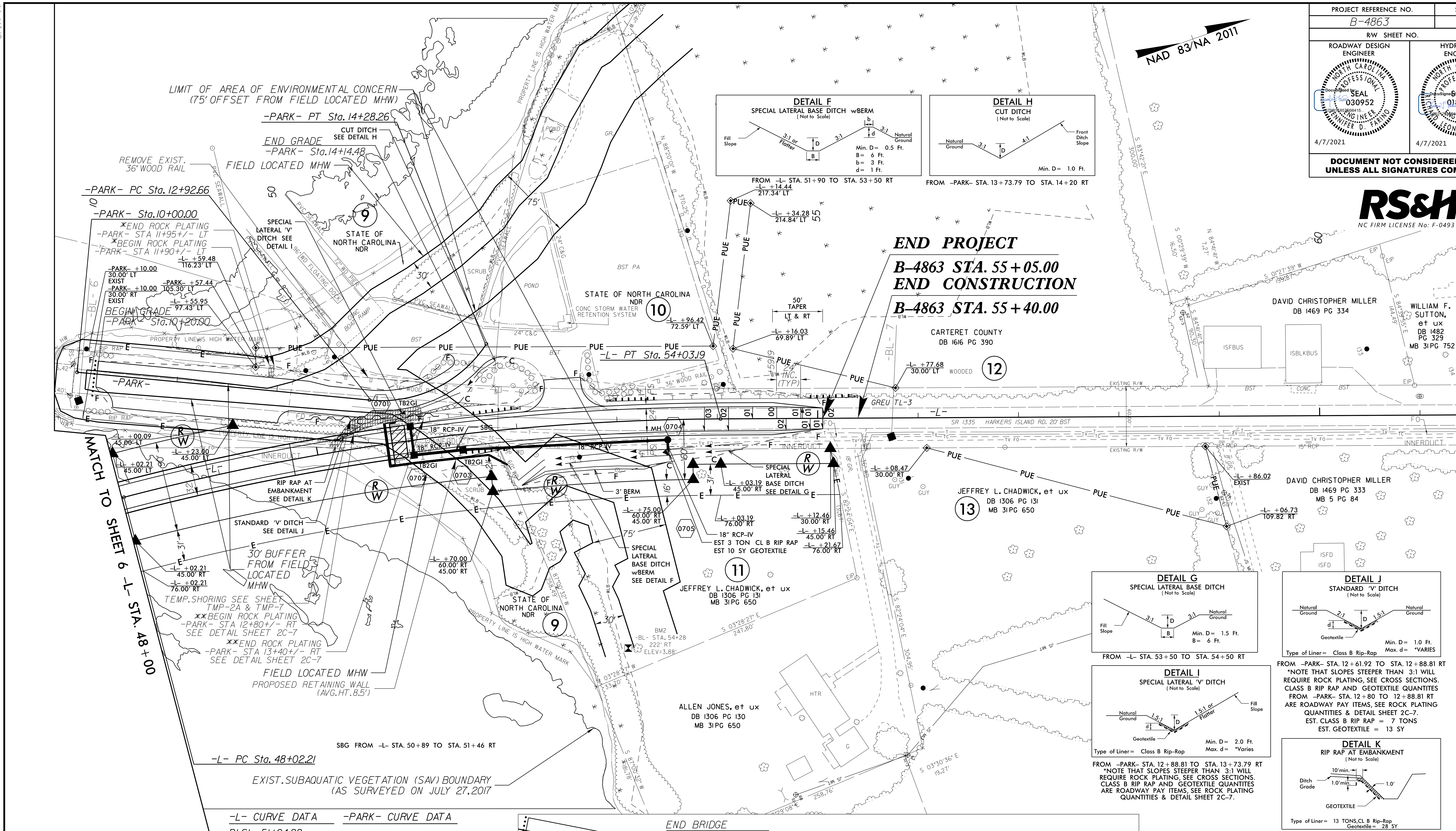
NC FIRM LICENSE No: F-0493

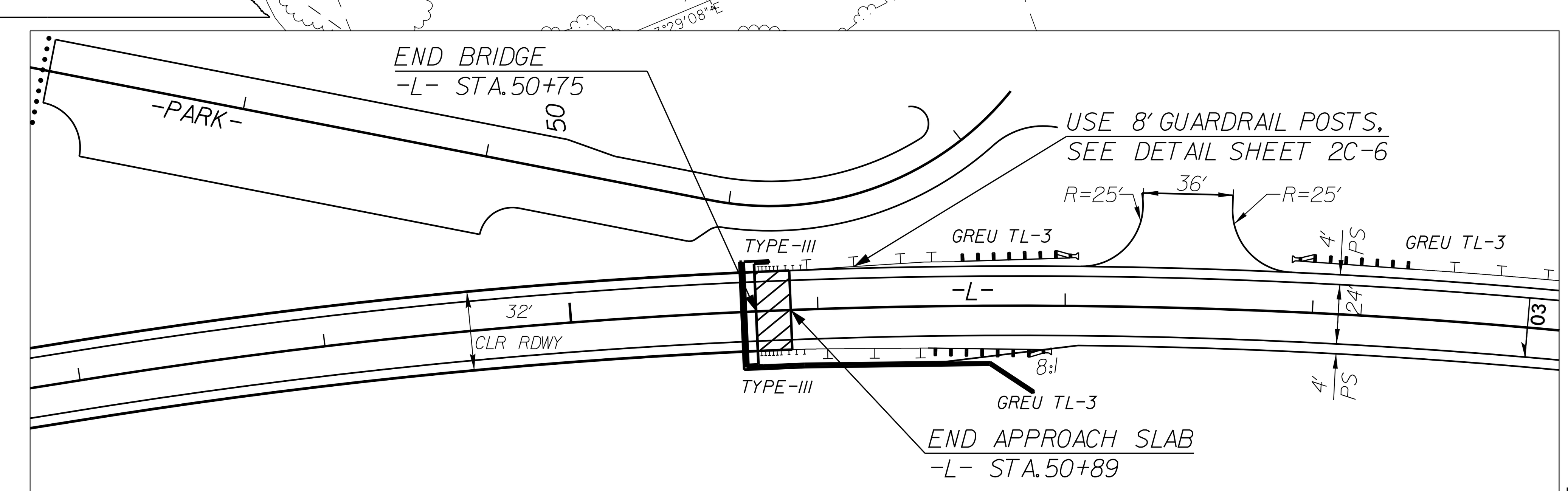


NAD 83/NA 2011
END PROJECT
B-4863 STA. 55+05.00
END CONSTRUCTION
B-4863 STA. 55+40.00
LIMIT OF AREA OF ENVIRONMENTAL CONCERN (75' OFFSET FROM FIELD LOCATED MHW)
-PARK- PT Sta. 14+28.26
END GRADE -PARK- Sta.14+14.48
FIELD LOCATED MHW
REMOVE EXIST. 36' WOOD RAIL
-PARK- PC Sta. 12+92.66
-PARK- Sta.10+00.00
BEGIN GRADE -PARK- Sta.10+20.00
-L- PT Sta. 54+03.19
-L- PC Sta. 48+02.21
MATCH TO SHEET 6 -L- STA. 48+00
STATE OF NORTH CAROLINA NDR
CARTERET COUNTY DB 1616 PG 390
DAVID CHRISTOPHER MILLER DB 1469 PG 334
DAVID CHRISTOPHER MILLER DB 1469 PG 333 MB 5 PG 84
WILLIAM F. SUTTON, et ux DB 1482 PG 329 MB 31PG 752
JEFFREY L. CHADWICK, et ux DB 1306 PG 131 MB 31PG 650
ALLEN JONES, et ux DB 1306 PG 130 MB 31PG 650
SR 1335 HARKERS ISLAND RD. 20' BST
30' BUFFER FROM FIELD LOCATED MHW
TEMP. SHORING SEE SHEET TMP-2A & TMP-7
PROPOSED RETAINING WALL (AVG.HT.8.5')
SBG FROM -L- STA. 50+89 TO STA. 51+46 RT
EXIST. SUBAQUATIC VEGETATION (SAV) BOUNDARY (AS SURVEYED ON JULY 27, 2017)
DETAIL F — SPECIAL LATERAL BASE DITCH w/BERM (Not to Scale) — Min. D= 0.5 Ft. B= 6 Ft. b= 3 Ft. d= 1 Ft. — FROM -L- STA. 51+90 TO STA. 53+50 RT
DETAIL H — CUT DITCH (Not to Scale) — Min. D= 1.0 Ft. — FROM -PARK- STA. 13+73.79 TO STA. 14+20 RT
DETAIL G — SPECIAL LATERAL BASE DITCH (Not to Scale) — Min. D= 1.5 Ft. B= 6 Ft. — FROM -L- STA. 53+50 TO STA. 54+50 RT
DETAIL I — SPECIAL LATERAL 'V' DITCH (Not to Scale) — Type of Liner= Class B Rip-Rap — Min. D= 2.0 Ft. Max. d= *Varies
FROM -PARK- STA. 12+88.81 TO STA. 13+73.79 RT *NOTE THAT SLOPES STEEPER THAN 3:1 WILL REQUIRE ROCK PLATING, SEE CROSS SECTIONS. CLASS B RIP RAP AND GEOTEXTILE QUANTITES ARE ROADWAY PAY ITEMS, SEE ROCK PLATING QUANTITIES & DETAIL SHEET 2C-7.
DETAIL J — STANDARD 'V' DITCH (Not to Scale) — Type of Liner= Class B Rip-Rap — Min. D= 1.0 Ft. Max. d= *VARIES
FROM -PARK- STA. 12+61.92 TO STA. 12+88.81 RT *NOTE THAT SLOPES STEEPER THAN 3:1 WILL REQUIRE ROCK PLATING, SEE CROSS SECTIONS. CLASS B RIP RAP AND GEOTEXTILE QUANTITES FROM -PARK- STA. 12+80 TO 12+88.81 RT ARE ROADWAY PAY ITEMS, SEE ROCK PLATING QUANTITIES & DETAIL SHEET 2C-7. EST. CLASS B RIP RAP = 7 TONS EST. GEOTEXTILE = 13 SY
DETAIL K — RIP RAP AT EMBANKMENT (Not to Scale) — Type of Liner= 13 TONS,CL B Rip-Rap Geotextile= 28 SY — FROM -L- STA. 50+13 TO STA. 50+27 LT

-L- CURVE DATA	-PARK- CURVE DATA
PI Sta 51+04.28	PI Sta 13+41.32
Δ = 14° 20' 50.1" (RT)	Δ = 24° 02' 42.4" (LT)
D = 2° 23' 14.4"	D = 22° 55' 05.9"
L = 600.98'	L = 104.92'
T = 302.07'	T = 53.24'
R = 2,400.00'	R = 250.00'
SE = 03	SE = NC
INC = VARIES	INC = N/A

✗ NOTE: USE ROCK PLATING FROM -PARK- STA. 11+90+/- TO STA.11+95+/-.LEFT AND CARRY ROCK PLATING TO 2.5:1 (H:V) SLOPE AND USE ROCK PLATING DETAIL NO.1 OF ROADWAY STANDARD DRAWING NO.275.01.

✗✗ NOTE: USE ROCK PLATING FROM -PARK- STA. 12+80+/- TO STA.13+40+/-.RIGHT AND CARRY ROCK PLATING TO 2.5:1 (H:V) SLOPE AND USE ROCK PLATING DETAIL WITH 8' GUARDRAIL POSTS ON ROADWAY PLAN SHEET NO.2C-7.



DETAIL SHOWING PAVEMENT - BRIDGE RELATIONSHIP (NOT TO SCALE)

FOR -L- PROFILE, SEE SHEET NO. 11

FOR -PARK- DTL. SHEET, SEE SHEET 2B-3

FOR -PARK- PROFILE, SEE SHEET NO. 12

BRIDGE APPROACH SLAB

PAVEMENT REMOVAL

ROCK PLATING

FOR STRUCTURE PLANS, SEE SHEETS S-1 THRU S-205

FOR RETAINING WALL PLANS, SEE SHEETS W-1 THRU W-27

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PROJECT REFERENCE NO.	SHEET NO.
B-4863	8

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FATINO

DocuSigned by: [illegible]

4/7/2021

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 018442 ENGINEER LEON ROLLINGS IV

DocuSigned by: [illegible]

4/7/2021

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RS&H
NC FIRM LICENSE No: F-0493

BM #1
RAILROAD SPIKE SET IN BASE OF 18" PINE TREE
-BL- STA 16+91.56' RIGHT
-L- STA 15+71.65 140.58' RIGHT
ELEV.= 5.70'

NOTE: OVERLAY EXISTING -L- FROM -L- STA 8+00 TO 10+00.

-L-

BEGIN GRADE
-L- STA.10+00.00
ELEV.= 4.44'

-L- STA.15+50.00 =
-Y- STA.10+00.00 =
-DRIVE- STA.10+00.00
ELEV.= 7.79'

BEGIN BRIDGE
-L- STA.18+75.00
ELEV.= 18.60'

PROPOSED GRADE

PI = 17+05.00
EL = 7.93'
VC = 5.30'
K = 96

MHW ELEV.= 1.60'

(+)6.0000%

(+)0.4950%

(+)0.5000%

(-)0.6000%

EXISTING GROUND

BEGIN STANDARD 'V' DITCH GRADE -L- STA.10+50 RT EL= 2.75'

END STANDARD 'V' DITCH GRADE
BEGIN CUT DITCH GRADE
-L- STA.10+82 RT
EL= 2.91'

(+)1.4500%

PI =12+00.000
EL = 3.50'

(+)1.0089%

END CUT DITCH GRADE
-L- STA.12+25 RT
EL= 4.92'

BEGIN CUT DITCH GRADE
-L- STA.13+00 RT
EL= 4.77'

(-)1.1740%

PI =13+50.000
EL = 3.90'

END CUT DITCH GRADE
BEGIN SPECIAL LATERAL 'V' DITCH GRADE
-L- STA.14+50 RT
EL= 3.30'

(-)0.6000%

PI =15+00.000
EL = 3.00'

(-)1.1689%

END SPECIAL LATERAL 'V' DITCH GRADE
-L- STA.15+29 RT
EL= 2.80'

FOR -L- ALIGNMENT, SEE SHEET NO. 4
RIGHT DITCH ----------

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PROJECT REFERENCE NO.	SHEET NO.
B-4863	9

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FATINO

4/7/2021

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 018442 ENGINEER RICHARD LEON ROLLINGS

4/7/2021

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RS&H
NC FIRM LICENSE No: F-0493

—L—

PI = 27+05.00
EL = 67.93'
VC = 930'
K = 84

(+)6.0000%

(−)5.0400%

(+)6.0000%

(−)5.0400%

(−)5.0400%

PROPOSED GRADE

HORIZONTAL CLEARANCE MIN. 125'

MIN. 45' VERTICAL CLEARANCE FROM MHW ELEV.

MIN. 45' VERTICAL CLEARANCE

MHW ELEV. = 1.60'

EXISTING GROUND

60 50 40 30 20 10 0 −10

22 23 24 25 26 27 28 29 30 31 32 33 34 35

FOR –L– ALIGNMENT, SEE SHEET NO. 5

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PROJECT REFERENCE NO.	SHEET NO.
B-4863	10

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FATINO

DocuSigned by: [illegible]

4/7/2021

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 018442 ENGINEER LEON BOLLINGER

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4/7/2021

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RS&H
NC FIRM LICENSE No: F-0493

—L—

PI = 35+30.00
EL = 26.35'
VC = 450'
K = 99

(-)5.0400%

(-)0.5000%

PROPOSED GRADE

PI = 46+90.00
EL = 20.55'
VC = 250'
K = 120

(-)0.5000%

(-)2.5792%

MHW ELEV. = 1.60'

EXISTING GROUND

60 50 40 30 20 10 0 –10

35 36 37 38 39 40 41 42 43 44 45 46 47 48

FOR –L– ALIGNMENT, SEE SHEET NO. 6

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BM #2
RAILROAD SPIKE SET IN BASE OF 24" CYPRESS
-BL- STA 54+28 222' RIGHT
-L- STA 53+00.34 225.94' RIGHT
ELEV. = 3.88'

-L-

PI = 46+90.00
EL = 20.55'
VC = 250'
K = 120

END BRIDGE
-L- STA 50+75.00
ELEV. = 10.62'

PI = 52+20.00
EL = 6.88'
VC = 220'
K = 97

END GRADE
-L- STA 55+05.00
ELEV. = 6.00'

(-)2.5792%

MHW ELEV. = 1.60'

PROPOSED GRADE

(-)2.5792%

(-)0.3088%

(+) 0.3200%

3' MIN. VERTICAL CLEARANCE FOR BRIDGE INSPECTION/ MAINTENANCE

EXISTING GROUND

BEGIN SPECIAL LATERAL BASE DITCH w/BERM GRADE
-L- STA 51+90 RT
(+)0.3000%
EL = 2.00'

PI = 52+00.000
EL = 2.03'

END SPECIAL LATERAL BASE DITCH w/BERM GRADE
BEGIN SPECIAL LATERAL BASE DITCH GRADE
-L- STA 53+50 RT
EL = 2.51'

(+)2.0000%

PI = 54+00.000
EL = 3.51'

(+)4.3200%

END SPECIAL LATERAL BASE DITCH GRADE
-L- STA 54+50 RT
EL = 4.17'

FOR -L- ALIGNMENT, SEE SHEET NO. 7

RIGHT DITCH ----------

PROJECT REFERENCE NO.	SHEET NO.
B-4863	11

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER D. FATINO

4/7/2021

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 018442 ENGINEER LEON ROLLINGS III

4/7/2021

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NC FIRM LICENSE No: F-0493

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PROJECT REFERENCE NO.	SHEET NO.
B-4863	12

ROADWAY DESIGN ENGINEER — SEAL 030952 — NORTH CAROLINA PROFESSIONAL ENGINEER — JENNIFER D. FARINO — 4/7/2021

HYDRAULICS ENGINEER — SEAL 018442 — NORTH CAROLINA PROFESSIONAL ENGINEER — LEON BOLLINGER, JR. — 4/7/2021

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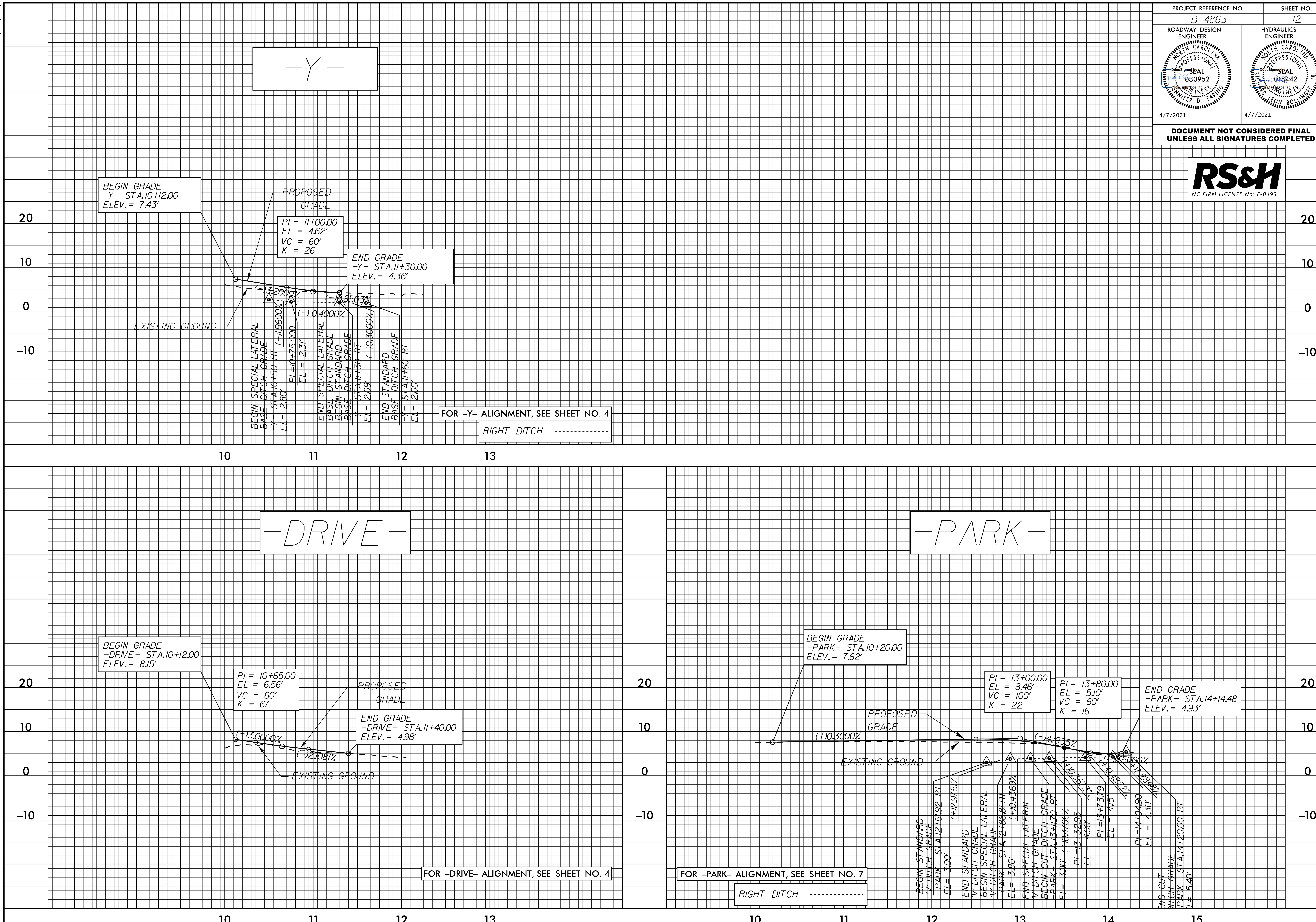
NC FIRM LICENSE No: F-0493



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