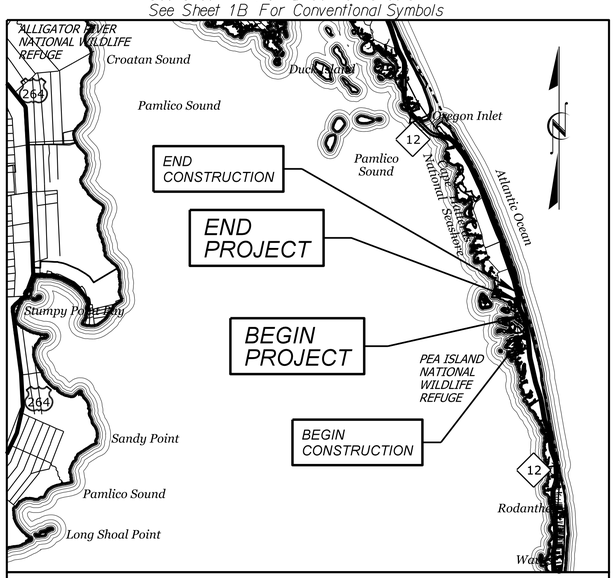
09/08/99

TIP PROJECT: B–2500AB

CONTRACT: C203756

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

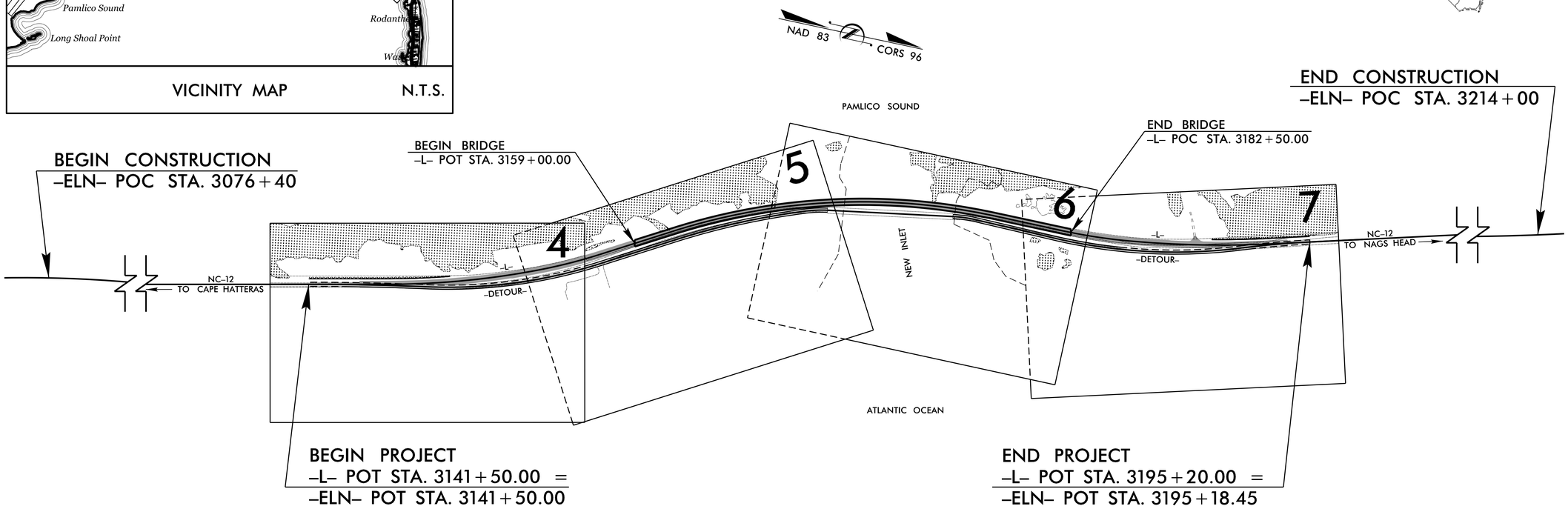
DARE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B–2500AB	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
32635.1.3	BRNHF–0012(62)	P.E.
32635.3.9	BRNHF–0012(62)	CONSTR.

LOCATION: PHASE II, NC–12 SHORT–TERM IMPROVEMENTS AT PEA ISLAND

TYPE OF WORK: GRADING, PAVING, DRAINAGE & STRUCTURE



GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA
(B–2500A DATA)

ADT 2012 = 7,300
ADT 2032 = 10,900
K = N/A %
D = N/A %
T = 6% % **
* V = 55 MPH
** (TTST 1%, DUAL 5%)

FUNC CLASS = COLLECTOR

REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B–2500AB = 0.572 MILES
LENGTH STRUCTURE TIP PROJECT B–2500AB = 0.445 MILES

TOTAL LENGTH TIP PROJECT B–2500AB = 1.017 MILES

Prepared In the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh, NC 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
N/A

LETTING DATE:
OCTOBER 20, 2015

GARY LOVERING, PE
PROJECT ENGINEER

CHRISTOPHER H. LEE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024897 ENGINEER John W. Twisdale JR

DocuSigned by: John W. Twisdale, 8/12/2015
P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING

DocuSigned by: Gary Lovering 8/12/2015
P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

12-AUG-2015 14:54
R:\Roadway\Proj\B2500AB_Rdy_tsh.dgn
$$$$USERNAME$$$$

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING

DocuSigned by: Gary Lovering 8/12/2015

INDEX OF SHEETS

2012 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01-17-2012
REV. 10-30-2012

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
862.01	Guardrail Placement
862.02	Guardrail Installation

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 10-31-2014

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 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

GUARDRAIL:

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

TEMPORARY SHORING:

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

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.

04/06/15

PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	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
- 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
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — 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:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

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.

09/08/99

PROJECT REFERENCE NO.	SHEET NO.
B–2500AB	1C–1
LOCATION AND SURVEYS	

SURVEY CONTROL SHEET NC 12 PEA ISLAND

NAD 83 CORS 96

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
PI05	(GPS MON PI-05)	707203.9790	3047429.4700	N/A	OUTSIDE PROJECT LIMITS	
PI06	(GPS MON PI-06)	708280.0310	3047075.3970	N/A	OUTSIDE PROJECT LIMITS	
PI11	MAG NAIL SOUTH	722079.1485	3043980.8226	5.58	3169+45.78	18.91 RT
PI12	MAG NAIL NORTH	722733.2830	3043873.8479	5.54	3176+14.06	22.78 RT
PI07	(GPS MON PI-07)	730386.4500	3041823.4330	3.15	OUTSIDE PROJECT LIMITS	
PI08	(GPS MON PI-08)	731430.2710	3041444.3720	3.60	OUTSIDE PROJECT LIMITS	

NCDOT GPS STATION PI05
LOCALIZED COORDINATES
N = 707203.9790
E = 3047429.4700
HORIZONTAL CONTROL ONLY

PI11
LOCALIZED COORDINATES
N = 722079.1485
E = 3043980.8226
ELEV = 5.58'

PI12
LOCALIZED COORDINATES
N = 722733.2830
E = 3043873.8479
ELEV = 5.54'

NCDOT GPS STATION PI07
LOCALIZED COORDINATES
N = 730386.4500
E = 3041823.4330
ELEV = 3.15'

PAMLICO SOUND

BEGIN BRIDGE
–L– POT STA. 3159+00.00

END BRIDGE
–L– POC STA. 3182+50.00

NC–12
TO CAPE HATTERAS

NC–12
TO NAGS HEAD

N18°12'49"W
1132.81'

N19°57'30"W
1110.52'

–L–
–DETOUR–

NEW INLET

NOTE
1.1 MI FROM PI06 TO THE BEGIN OF THE PROJECT

NOTE
0.9 MI FROM END OF THE PROJECT TO PI07

BEGIN PROJECT
B–2500AB
–L– POT STA. 3141+50.00
LOCALIZED COORDINATES
N = 719479.9603
E = 3044959.6423

END PROJECT
B–2500AB
–L– POT STA. 3195+20.00
LOCALIZED COORDINATES
N = 724615.5811
E = 3043628.7557

ATLANTIC OCEAN

NCDOT GPS STATION PI06
LOCALIZED COORDINATES
N = 708280.0310
E = 3047075.3970
HORIZONTAL CONTROL ONLY

NCDOT GPS STATION PI08
LOCALIZED COORDINATES
N = 731430.2710
E = 3041444.3720
ELEV = 3.60'

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR "CENTROID1" WITH NAD 83 (CORS96) STATE PLANE GRID COORDINATES OF NORTHING: 710200.000(ft) EASTING: 3045900.000(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999025167
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "CENTROID1" TO –L– STATION 3141+50.00 IS N 5° 47' 10" W 9,327.4828 FT.
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

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

FILE: b2500ab_ls_control.txt

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

INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED UTILIZING GLOBAL POSITIONING SYSTEM.

07-AUG-2015 10:41
R:\Roadway_Proj\b2500ab_ls_lc-1.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
B–2500AB	*1C–2*
LOCATION AND SURVEYS	

SURVEY CONTROL SHEET NC 12 PEA ISLAND DESIGN ALIGNMENTS

L

TYPE	STATION	NORTH	EAST
POT	3130+00.00	718355.6437	3045201.3285
PC	3145+68.66	719889.2749	3044871.6549
PCC	3153+68.66	720651.0786	3044631.2877
PT	3157+05.77	720953.1292	3044482.0572
PC	3161+18.89	721312.0106	3044277.4171
PT	3178+38.99	722956.5849	3043844.1302
PC	3182+06.45	723324.0414	3043845.2365
PCC	3185+51.82	723668.6212	3043825.2999
PT	3193+05.55	724408.3151	3043683.7781
POT	3203+01.55	725370.9718	3043428.2239

DETOUR

TYPE	STATION	NORTH	EAST
POT	10+00.00	719333.3103	3044991.1666
PC	11+57.38	719487.1755	3044958.0913
PRC	17+75.61	720094.2214	3044841.2663
PT	27+02.38	720962.4509	3044530.8459
PC	31+26.43	721330.8158	3044320.7981
PCC	38+34.01	721973.8352	3044027.8272
PT	39+45.54	722081.7837	3044000.3803
PC	46+12.55	722740.1464	3043893.3454
PT	47+34.69	722861.8137	3043884.6488
PC	51+63.71	723290.7685	3043892.5652
PRC	61+59.21	724268.4924	3043735.4681
PT	65+22.38	724615.5358	3043628.7678
POT	68+02.43	724886.2075	3043556.9132

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR "CENTROID1"
WITH NAD 83 (CORS96) STATE PLANE GRID COORDINATES OF
NORTHING: 710200.000(ft) EASTING: 3045900.000(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999025167
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "CENTROID1" TO -L- STATION 3141+50.00 IS N 5° 47' 10" W 9,327.4828 FT.
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES:

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

FILE: b2500ab_ls_control.txt

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

INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED UTILIZING GLOBAL POSITIONING SYSTEM.

PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	2A-1

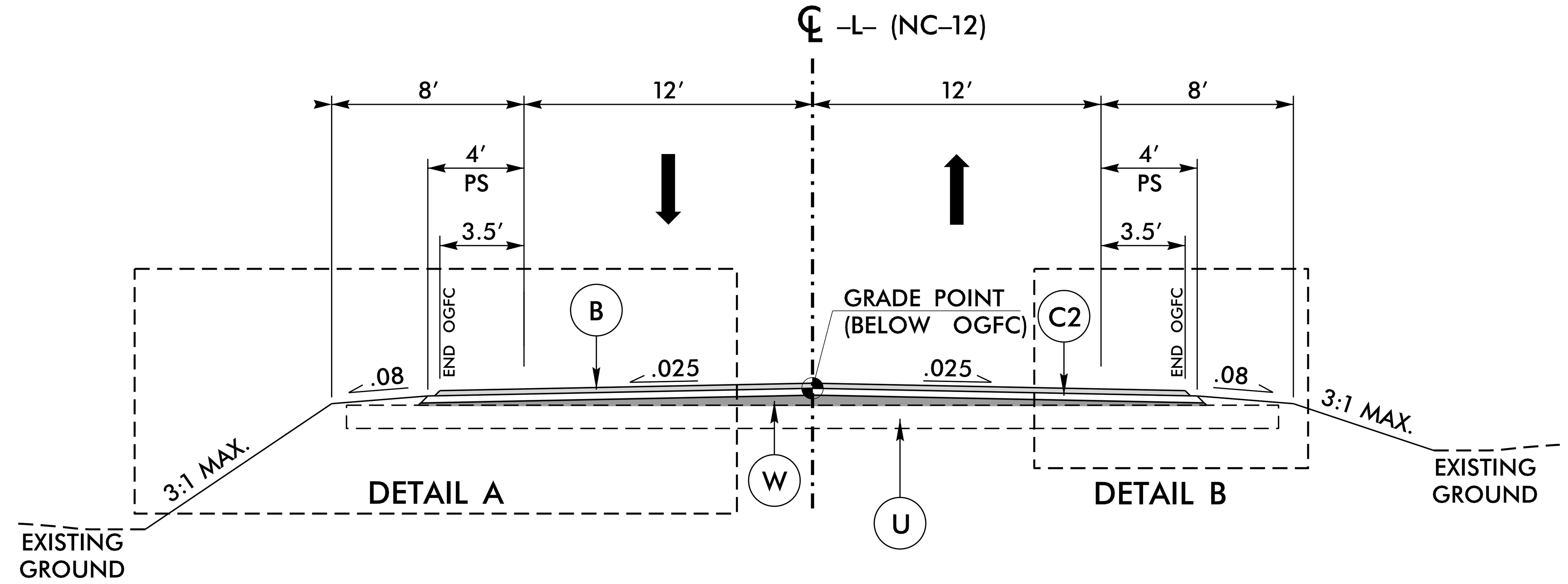
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 025873 GARY R. LOVERING — DocuSigned by: Gary Lovering 8/14/2015 — DFD76F34A8BD425...

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022896 CLARK S. MORRISON — DocuSigned by: Clark S. Morrison 8/13/2015 — B0A110DD1E004C4...

PAVEMENT SCHEDULE (MAY 18, 2015)

B	PROP. APPROX. 0.75" OPEN-GRADED ASPHALT FRICTION COURSE (OGFC), TYPE FC-2 MODIFIED, AT AN AVERAGE RATE OF 90 LBS. PER SQ. YD.
C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ.YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ.YD.
E2	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ.YD.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ.YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 4" OR GREATER THAN 5.5" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	VARIABLE DEPTH MILLING (0" TO 6")
V2	VARIABLE DEPTH MILLING (0" TO 4")
W	VARIABLE DEPTH ASPHALT (SEE WEDGING DETAIL THIS SHEET)

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



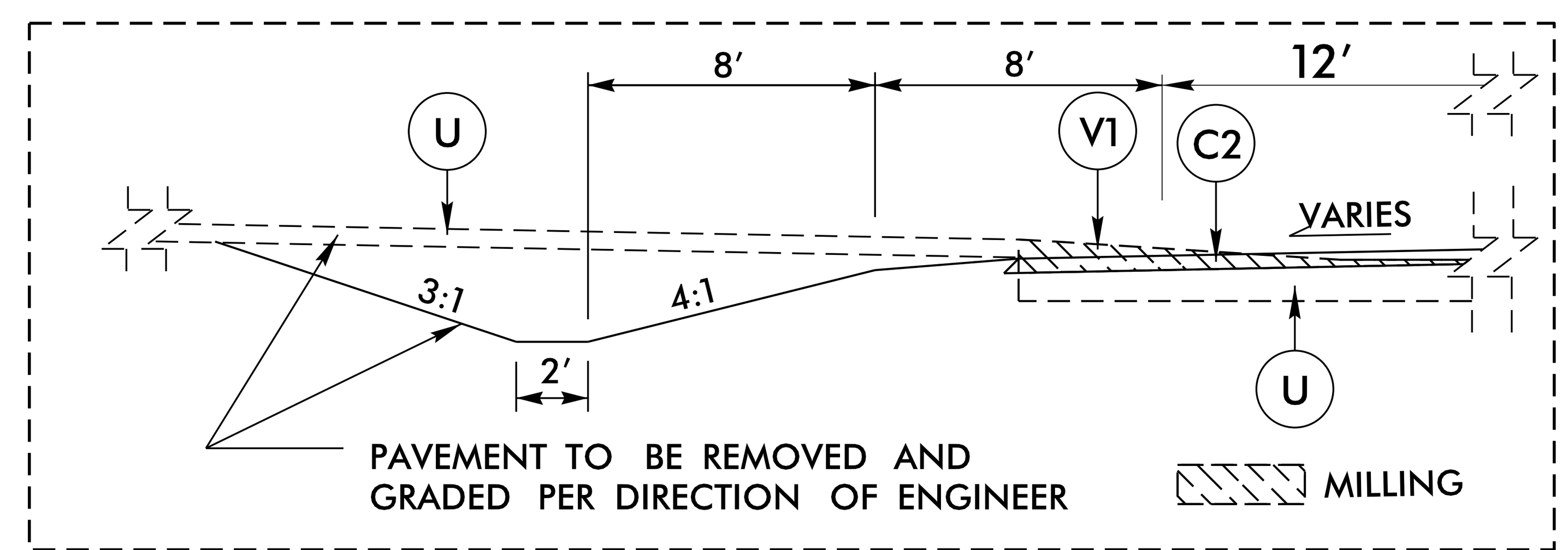
TYPICAL SECTION NO. 1

TYPICAL SECTION NO. 1

-L- STA. 3144+20.00 TO STA. 3154+00.00

-L- STA. 3186+00.00 TO STA. 3194+00.00

DETAIL A

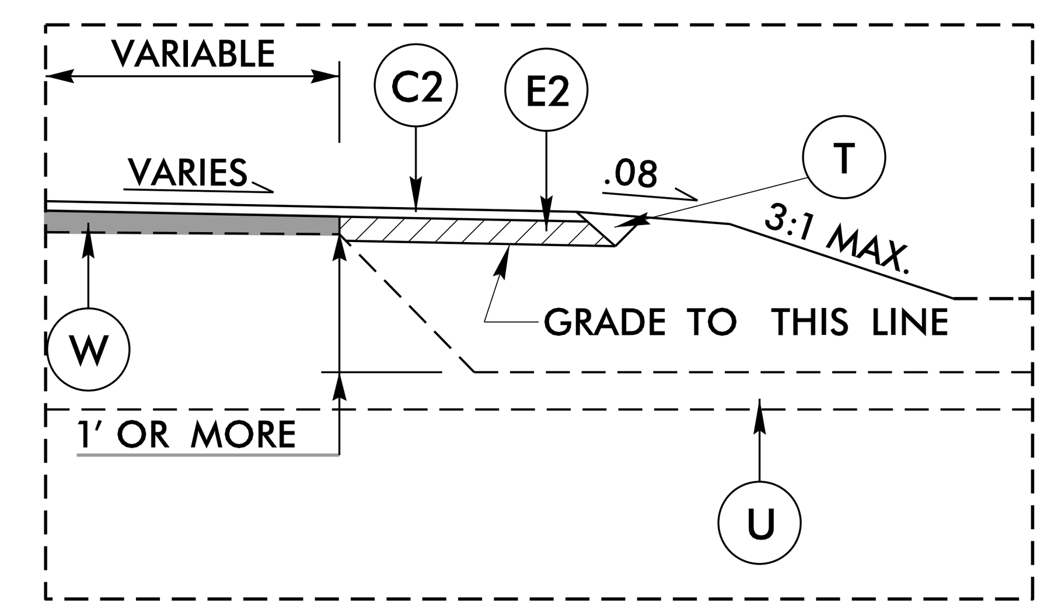


DETAIL A:

-L- STA. 3144+20.00 (-ELN- STA. 3144+20.00) TO STA. 3149+00.00 LT

-L- STA. 3190+00.00 TO STA. 3194+00.00 (-ELN- STA. 3193+98.45) LT

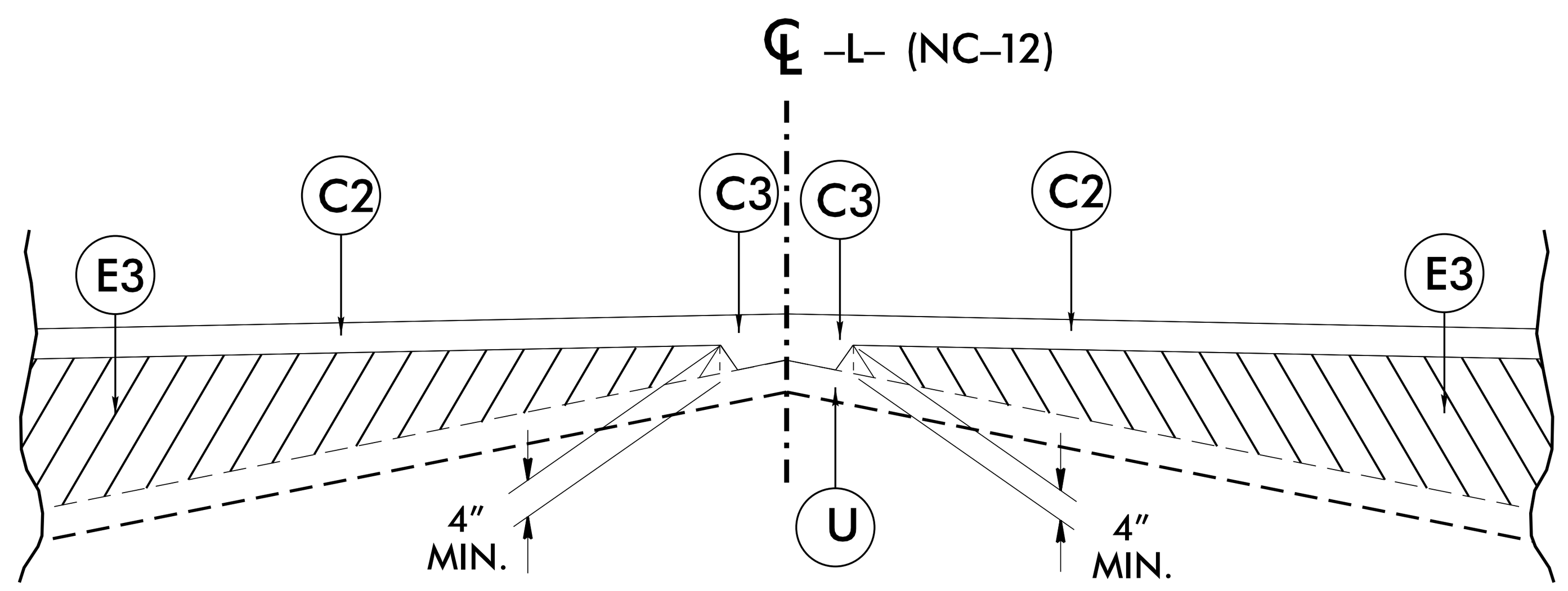
DETAIL B



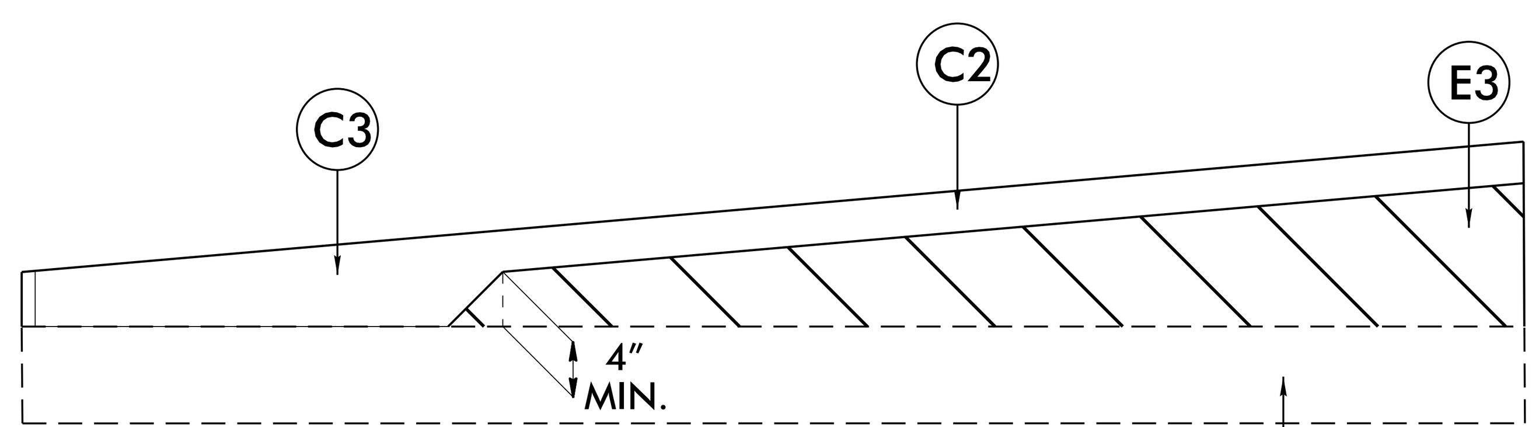
DETAIL B:

-L- STA. 3152+00.00 TO STA. 3154+00.00 RT

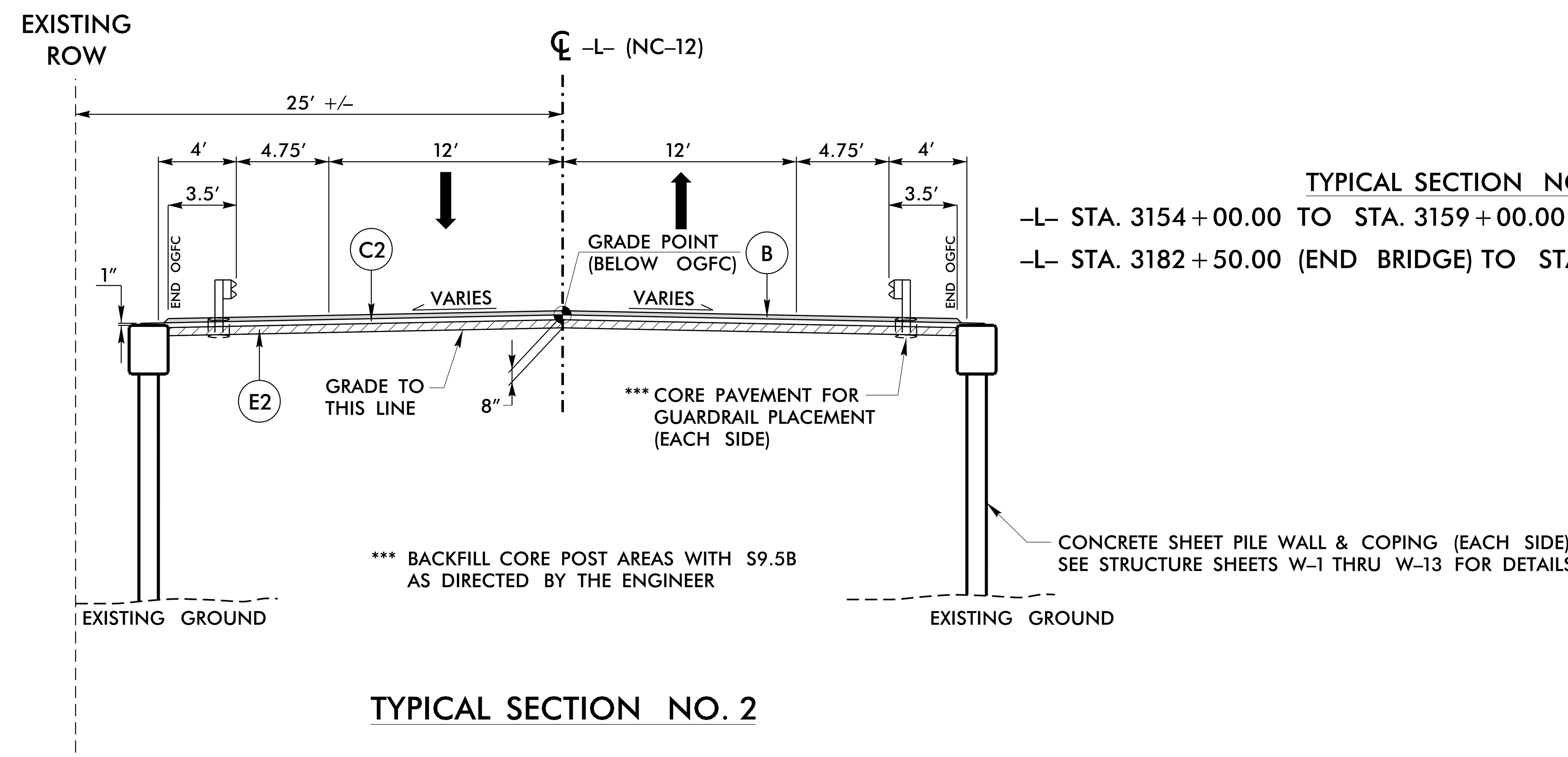
-L- STA. 3186+00.00 TO STA. 3188+50.00 RT



Detail Showing Method of Wedging



Wedging Detail For Resurfacing (U)



TYPICAL SECTION NO. 2

TYPICAL SECTION NO. 2

-L- STA. 3154+00.00 TO STA. 3159+00.00 (BEGIN BRIDGE)

-L- STA. 3182+50.00 (END BRIDGE) TO STA. 3186+00.00

6/2/99

07-AUG-2015 10:46
R:\Roadway\Proj\B2500AB_Rdy_typ.dgn
$$$$USERNAME$$$$

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	2A-2

ROADWAY DESIGN ENGINEER

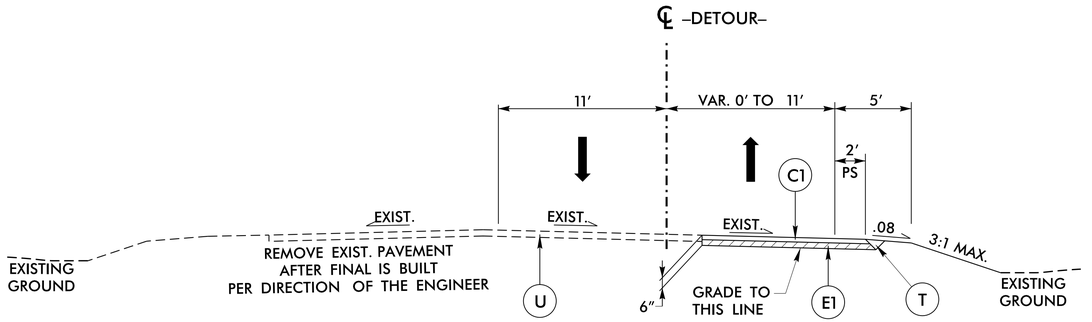
NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING

DocuSigned by: Gary Lovering 8/14/2015
DFD76F34A6BD425...

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

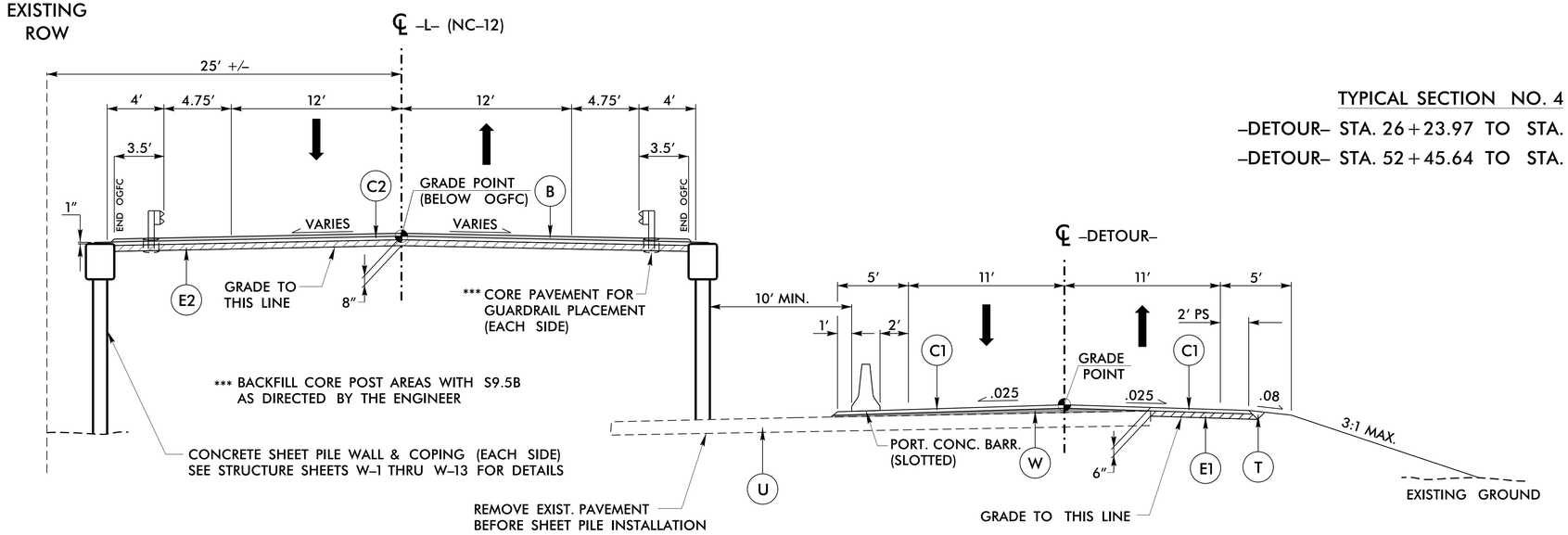
DocuSigned by: Clark S. Morrison 8/13/2015
B0A110DD1E004C4...



TYPICAL SECTION NO. 3

TYPICAL SECTION NO. 3

–DETOUR– STA. 11+57.38 TO STA. 26+23.97
–DETOUR– STA. 55+13.50 TO STA. 65+22.38



TYPICAL SECTION NO. 4

TYPICAL SECTION NO. 4

–DETOUR– STA. 26+23.97 TO STA. 29+06.50
–DETOUR– STA. 52+45.64 TO STA. 55+13.50

PAVEMENT SCHEDULE	
B	0.75″ FC-2
C1	2″ S9.5B
C2	3″ S9.5B
C3	VAR. S9.5B
E1	4″ B25.0B
E2	5″ B25.0B
E3	VAR. B25.0B
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	VARIABLE DEPTH MILLING (0″ - 6″)
V2	VARIABLE DEPTH MILLING (0″ - 4″)
W	WEDGING (SEE WEDGING DETAILS SHEET 2A-1)

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

07-AUG-2015 10:46
R:\Roadway\Typicals\B2500AB_Rdy_typ.dgn
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6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	2A-3

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING

DocuSigned by: Gary Lovering 8/14/2015
DFD76F34A6BD425...

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

DocuSigned by: Clark S. Morrison 8/13/2015
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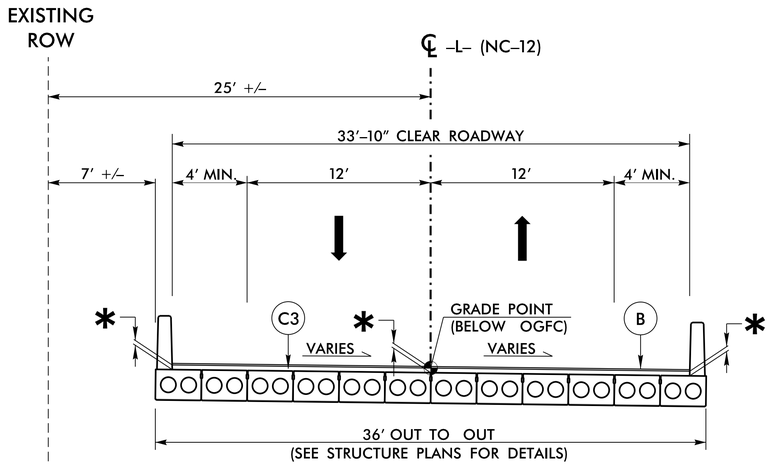
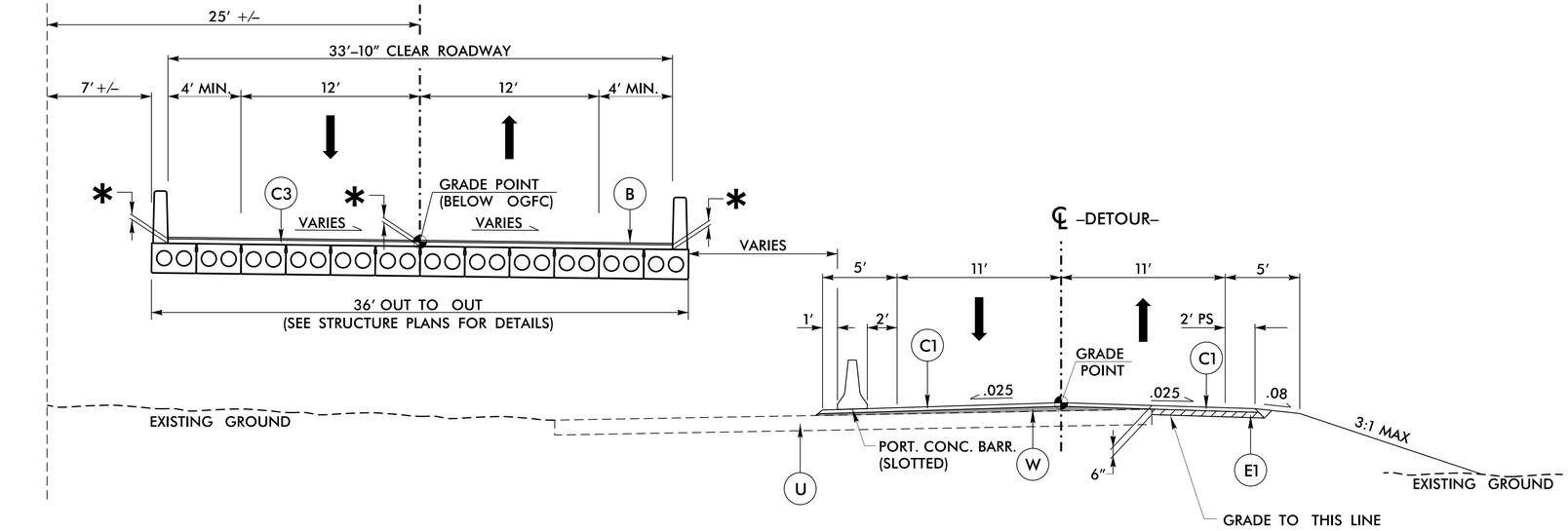


TYPICAL SECTION NO. 5

TYPICAL SECTION NO. 5

–L– STA. 3159 + 00.00 (BEGIN BRIDGE) TO STA. 3182 + 50.00 (END BRIDGE)

✱ SEE STRUCTURE PLANS FOR PAVEMENT DEPTHS



TYPICAL SECTION NO. 6

TYPICAL SECTION NO. 6

–DETOUR– STA. 29 + 06.50 TO STA. 39 + 46.67 (BEGIN EXIST. BRIDGE)

–DETOUR– STA. 46 + 11.90 (END EXIST. BRIDGE) TO STA. 52 + 45.64

PAVEMENT SCHEDULE	
B	0.75″ FC-2
C1	2″ S9.5B
C2	3″ S9.5B
C3	VAR. S9.5B
E1	4″ B25.0B
E2	5″ B25.0B
E3	VAR. B25.0B
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	VARIABLE DEPTH MILLING (0″ - 6″)
V2	VARIABLE DEPTH MILLING (0″ - 4″)
W	WEDGING (SEE WEDGING DETAILS SHEET 2A-1)

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

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6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	2A-4

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING
DocuSigned by: Gary Lovering 8/14/2015
DFD76F34A6BD425...

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON
DocuSigned by: Clark S. Morrison 8/13/2015
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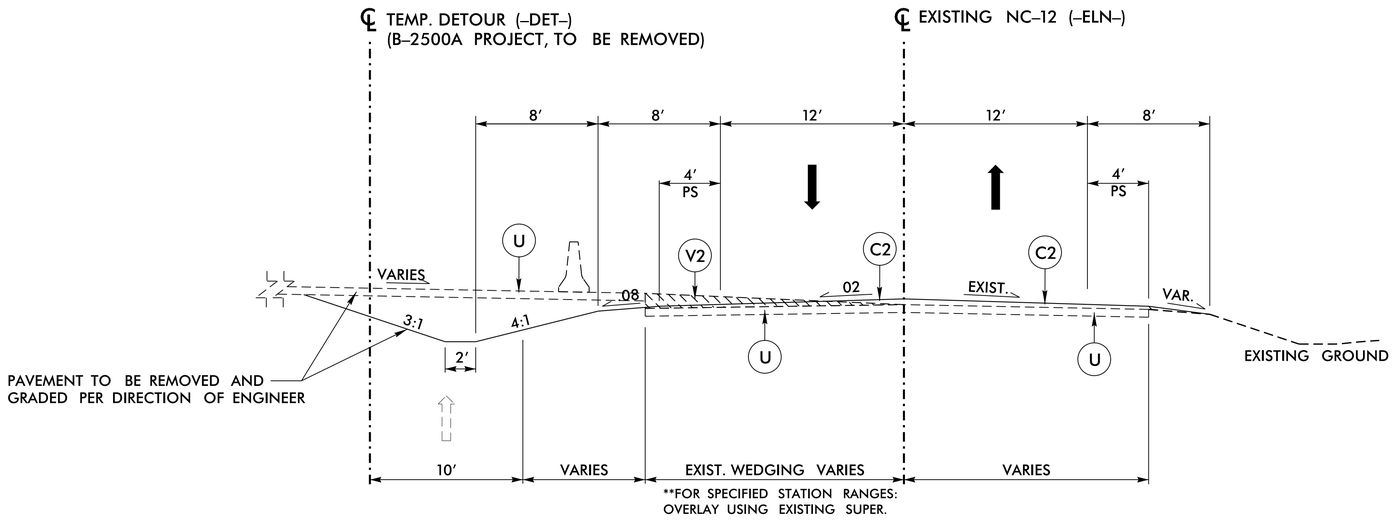
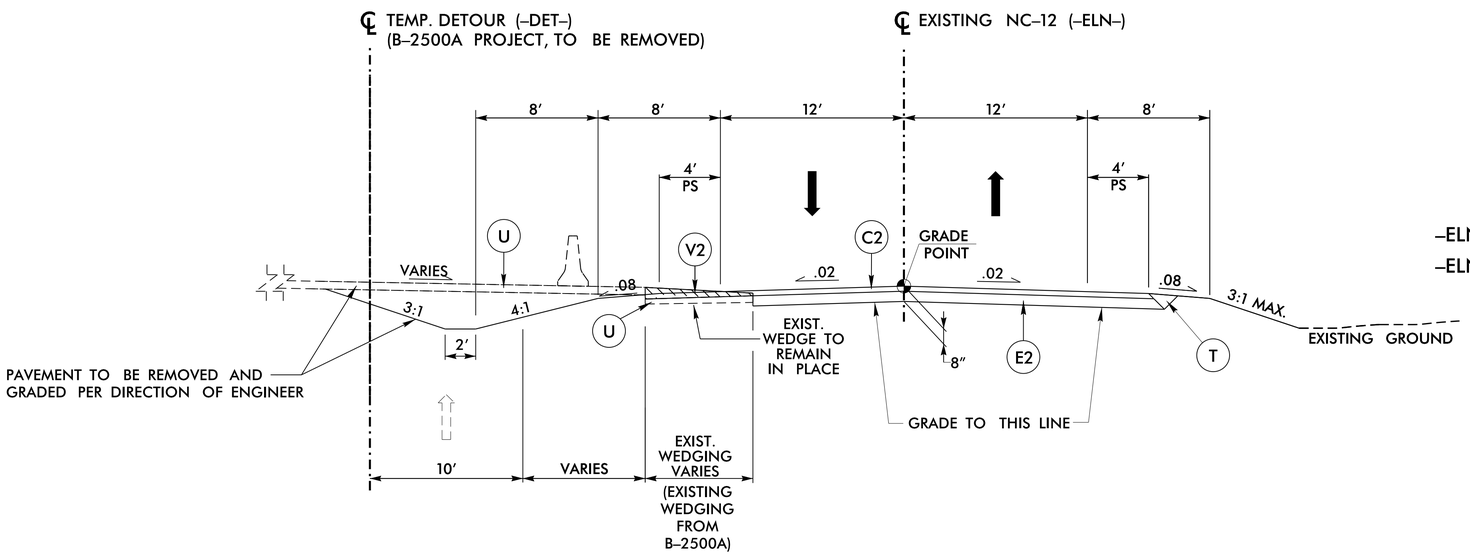
REPAIR EXISTING NC–12



TYPICAL SECTION NO. 7

TYPICAL SECTION NO. 7
–ELN– STA. 3076+40 TO 3087+00
–ELN– STA. 3089+00 TO 3109+20
–ELN– STA. 3127+72 TO 3144+20 (–L– STA. 3144+20)
** –ELN– STA. 3193+98.45 (–L– STA. 3194+00.00) TO –ELN– STA. 3214+00



TYPICAL SECTION NO. 8

TYPICAL SECTION NO. 8
–ELN– STA. 3087+00 TO 3089+00
–ELN– STA. 3109+20 TO 3127+72

PAVEMENT SCHEDULE	
B	0.75″ FC-2
C1	2″ S9.5B
C2	3″ S9.5B
C3	VAR. S9.5B
E1	4″ B25.0B
E2	5″ B25.0B
E3	VAR. B25.0B
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	VARIABLE DEPTH MILLING (0″ - 6″)
V2	VARIABLE DEPTH MILLING (0″ - 4″)
W	WEDGING (SEE WEDGING DETAILS SHEET 2A-1)

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

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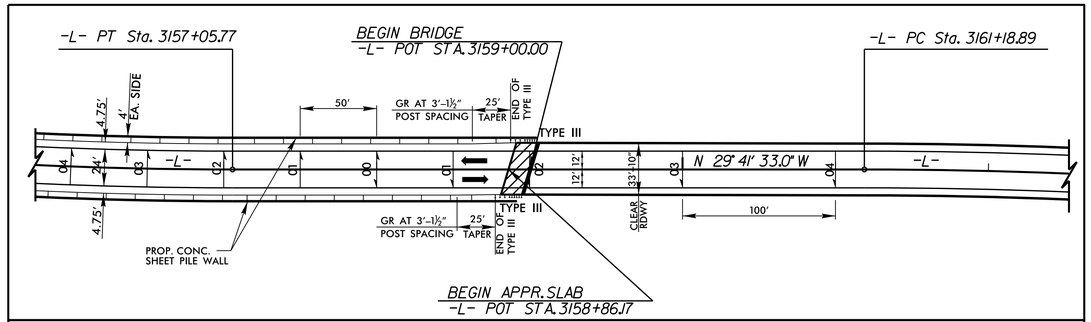
PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	2B-1

ROADWAY DESIGN ENGINEER

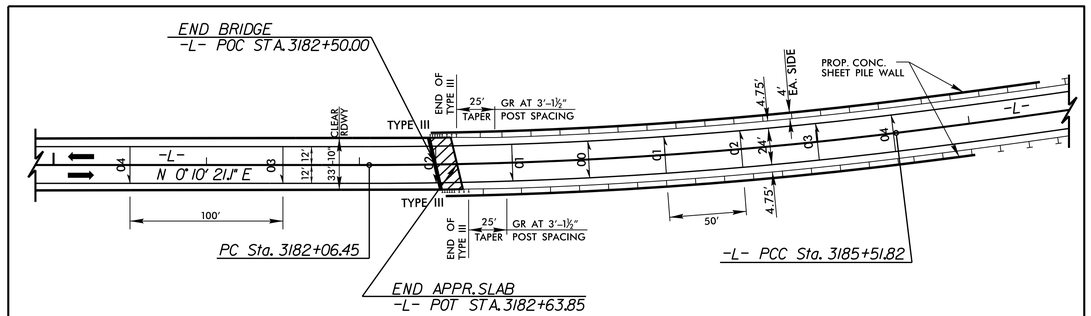
NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING

8/7/2015

DocuSigned by:
Gary Lovering
DFD76F34A6BD425...



SKETCH SHOWING PAVEMENT/BRIDGE RELATIONSHIP (SOUTH END)



SKETCH SHOWING PAVEMENT/BRIDGE RELATIONSHIP (NORTH END)

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PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	2B-2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING
DocuSigned by: Gary Lovering
PLAN SHEET FOR DETOUR REMOVAL AND NC-12 PAVEMENT REPAIR ONLY.
NAD 83/CORS 96
BEGIN CONSTRUCTION -ELN- POC STA. 3076+40
UNITED STATES OF AMERICA
-ELN- N 13° 01' 28.7" W
PC Sta. 3075+64.66
-ELN- PI Sta 3080+28.62 Δ = 8° 09' 52.7" (RT) D = 0° 52' 53.0" L = 926.34' T = 463.96' R = 6,500.63'
PT Sta. 3084+91.00
-ELN- N 4° 51' 36.0" W
BEGIN GRADE & MILLING -ELN- STA. 3087+00
MATCHLINE SEE SHEET 2B-3 -ELN- STA. 3088+00.00
PAVEMENT REMOVAL
-ELN-
BEGIN CONSTRUCTION -ELN- STA. 3076+40
REPAIR EXISTING NC-12: MILL AND OVERLAY AS NEEDED -ELN- STA. 3076+40 TO STA. 3087+00
BEGIN GRADE & MILLING -ELN- STA. 3087+00, EL. 3.31'
(+)0.1300%
20
10
0
-10
3075
3076
3077
3078
3079
3080
3081
3082
3083
3084
3085
3086
3087
3088

8/17/99

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	2B-3
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING
8/7/2015
DocuSigned by: Gary Lovering DFD76F34A6BD425...

PLAN SHEET FOR DETOUR REMOVAL AND NC-12 PAVEMENT REPAIR ONLY.

MATCHLINE THIS SHEET

NAD 83/CORS 96

UNITED STATES OF AMERICA

3090 3095 3100

MATCHLINE SEE SHEET 2B-2 -ELN- STA. 3088+00.00

MATCHLINE SEE SHEET 2B-4 -ELN- STA. 3102+00.00

50' POWER LINE EASEMENT

+99.66 60.00'

+99.66 55.00'

+21.66 55.00'

+31.66 55.00'

EXIST R/W

4' PS

24'

02 02

EX 02

100.00'

-ELN- N 4° 51' 36.0" W

F 27'

END GRADE & MILLING
BEGIN OVERLAY & MILLING
-ELN- STA. 3089+00

MATCHLINE THIS SHEET

+21.66 821.00'

+31.66 821.00'

NAD 83/CORS 96

UNITED STATES OF AMERICA

PAVEMENT REMOVAL

-ELN-

END GRADE & MILLING
BEGIN OVERLAY & MILLING
-ELN- STA. 3089+00, EL. 3.57'

(+)0.300%

REPAIR EXISTING NC-12:
MILL AND OVERLAY EXISTING PAVEMENT
-ELN- STA. 3089+00 TO STA. 3109+20

20 10 0 -10

3088 3089 3090 3091 3092 3093 3094 3095 3096 3097 3098 3099 3100 3101 3102

07-AUG-2015 11:02
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$$USERNAME$$

PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	2B-4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING 8/12/2015

DocuSigned by: Gary Lovering

PLAN SHEET FOR DETOUR REMOVAL
AND NC-12 PAVEMENT REPAIR ONLY.
NAD 83/CORS 96
UNITED STATES OF
3105
3110
3115
PC Sta. 3113+05.78
+05.78
55.00'
50' POWER LINE EASEMENT
EXIST R/W
-ELN-
N 4° 51' 36.0" W
MATCHLINE SEE SHEET 2B-3
-ELN- STA. 3102+00.00
MATCHLINE SEE SHEET 2B-5
-ELN- STA. 3116+00.00
END OVERLAY & MILLING
BEGIN GRADE & MILLING
-ELN- STA. 3109+20
UNITED STATES OF AMERICA
PAVEMENT REMOVAL
-ELN-
END OVERLAY & MILLING
BEGIN GRADE & MILLING
-ELN- STA.3109+20, EL.2.95'
REPAIR EXISTING NC-12:
MILL AND OVERLAY EXISTING PAVEMENT
-ELN- STA.3089+00 TO STA.STA.3109+20
PI = 3112+00.00
EL = 3.19'
VC = 180'
K = 1703
(+)0.0857%
(-)0.0200%
20
10
0
-10
3102
3103
3104
3105
3106
3107
3108
3109
3110
3111
3112
3113
3114
3115
3116

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$$$$USERNAME$$$$

8/17/99

PROJECT REFERENCE NO.
B-2500AB
SHEET NO.
2B-5
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING
Gary Lovering
8/17/99
PLAN SHEET FOR DETOUR REMOVAL AND NC-12 PAVEMENT REPAIR ONLY.
NAD 83/CORS 96
UNITED STATE
3120
3125
3130
PT Sta. 3119+16.32
+16.32
55.00'
50' POWER LINE EASEMENT
MATCHLINE SEE SHEET 2B-4 -ELN- STA. 3116+00.00
MATCHLINE SEE SHEET 2B-6 -ELN- STA. 3130+00.00
-ELN-
N 12° 07' 54.6" W
4' PS
24'
27'
EXIST R/W
-ELN-
PI Sta 3116+11.46
Δ = 7° 16' 18.6" (LT)
D = 1° 11' 27.8"
L = 610.53'
T = 305.68'
R = 4,810.47'
END GRADE & MILLING
BEGIN OVERLAY & MILLING
-ELN- STA. 3127+72
UNITED STATES OF AMERICA
PAVEMENT REMOVAL
-ELN-
PI = 3119+50.00
EL = 3.04'
VC = 180'
K = 1059
PI = 3122+50.00
EL = 3.49'
VC = 180'
K = 738
END GRADE & MILLING
BEGIN OVERLAY & MILLING
-ELN- STA. 3127+72, EL. 3.00'
REPAIR EXISTING NC-12:
MILL AND OVERLAY EXISTING PAVEMENT
-ELN- STA. 3127+72.00 TO STA. 3144+20.00 =
-L- STA. 3144+20.00
(-)0.0200%
(+)0.1500%
(+)0.1500%
(-)0.0939%
20
10
0
-10
3116
3117
3118
3119
3120
3121
3122
3123
3124
3125
3126
3127
3128
3129
3130
07-AUG-2015 11:05
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	2B-6
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING
7/2015
DocuSigned by: Gary Lovering DFD76F34A68D425...

NAD 83/CORS 96

PLAN SHEET FOR DETOUR REMOVAL AND NC-12 PAVEMENT REPAIR ONLY.

PROPOSED DETOUR WORK

MATCHLINE SEE SHEET 2B-5
-ELN- STA. 3130+00.00

MATCHLINE SEE SHEET 2B-7
-ELN- STA. 3140+00.00

3130 3135 3140

+25.29 55.00' 163.06'
+50.24 211.00' 256.00'
+73.24 213.00' 256.00'
-ELN- +37.24 95.00' 151.00'

50' POWERLINE EASEMENT
BST
EO
EXIST
EX 02
24'
4' PS
-ELN-
N 12° 07' 54.6" W

PROPOSED DETOUR WORK

PAVEMENT REMOVAL

-ELN-

REPAIR EXISTING NC-12:
MILL AND OVERLAY EXISTING PAVEMENT
-ELN- STA. 3127+72.00 TO STA. 3144+20.00 =
-L- STA. 3144+20.00

20 10 0 -10

3130 3131 3132 3133 3134 3135 3136 3137 3138 3139 3140

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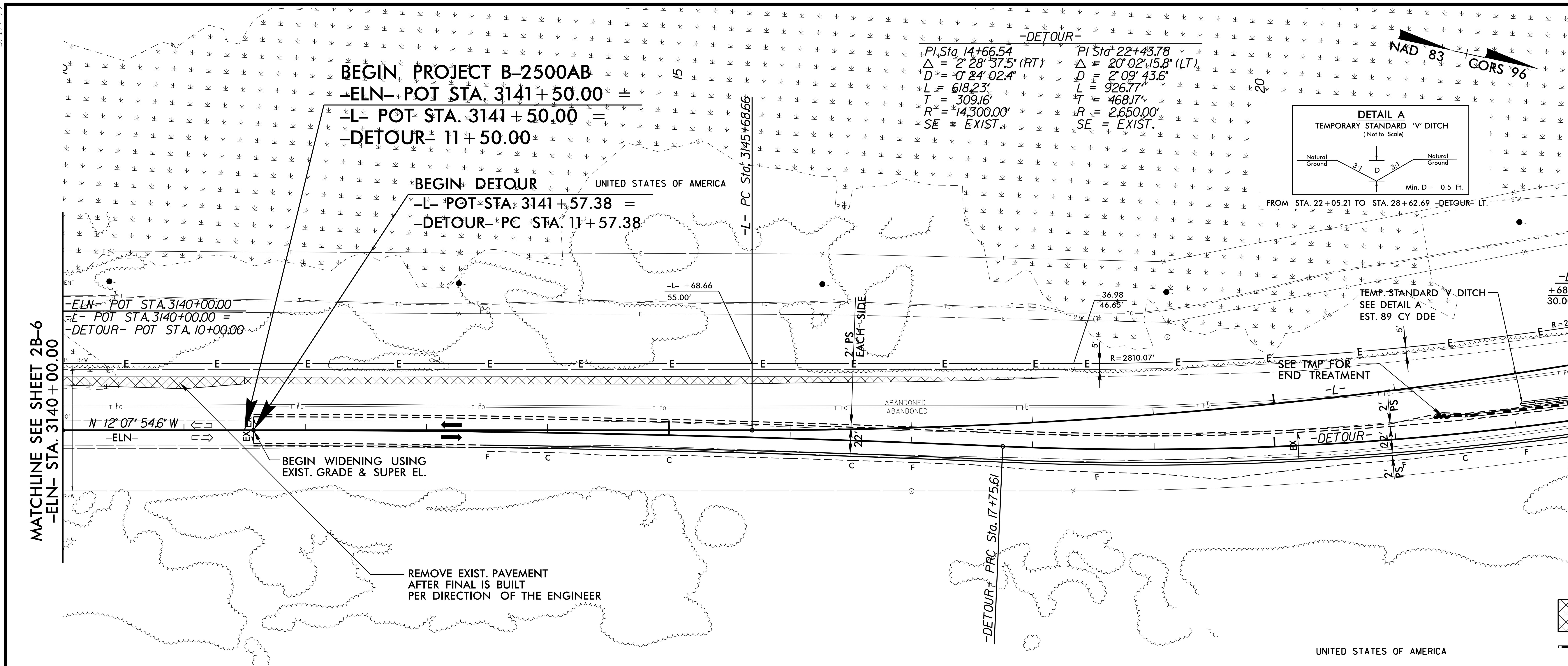
$$USERNAME$$

PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	2B-7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024897 ENGINEER John W. Twisdale, Jr.



NAD 83 / CORS 96
BEGIN PROJECT B-2500AB
-ELN- POT STA. 3141+50.00 =
-L- POT STA. 3141+50.00 =
-DETOUR- 11+50.00
BEGIN DETOUR
-L- POT STA. 3141+57.38 =
-DETOUR- PC STA. 11+57.38
UNITED STATES OF AMERICA
-L- PC Sta. 3145+68.66
-DETOUR-
PI Sta 14+66.54
Δ = 2° 28' 37.5" (RT)
D = 0° 24' 02.4"
L = 618.23'
T = 309.16'
R = 14,300.00'
SE = EXIST.
PI Sta 22+43.78
Δ = 20° 02' 15.8" (LT)
D = 2° 09' 43.6"
L = 926.77'
T = 468.17'
R = 2,650.00'
SE = EXIST.
DETAIL A
TEMPORARY STANDARD 'V' DITCH
(Not to Scale)
Natural Ground
Min. D= 0.5 Ft.
FROM STA. 22+05.21 TO STA. 28+62.69 -DETOUR- LT.
-ELN- POT STA. 3140+00.00
-L- POT STA. 3140+00.00 =
-DETOUR- POT STA. 10+00.00
MATCHLINE SEE SHEET 2B-6
-ELN- STA. 3140+00.00
N 12° 07' 54.6" W
-ELN-
BEGIN WIDENING USING
EXIST. GRADE & SUPER EL.
-L- +68.66
55.00'
2' PS EACH SIDE
+36.98
46.65'
R=2810.07'
SEE TMP FOR
END TREATMENT
-L-
-DETOUR-
TEMP. STANDARD 'V' DITCH
SEE DETAIL A
EST. 89 CY DDE
+89.88
35.00'
30.00'
-L- PCC Sta. 3153+68.66
+68.66
30.00
MATCHLINE SEE SHEET 2B-8
-DETOUR- STA. 24+00.00
-DETOUR- PRC Sta. 17+75.61
REMOVE EXIST. PAVEMENT
AFTER FINAL IS BUILT
PER DIRECTION OF THE ENGINEER
PAVEMENT REMOVAL
SLOTTED TEMP. BARRIER
UNITED STATES OF AMERICA

-DETOUR-
DITCH LEGEND
LEFT DITCH
-ELN- STA. 3141+50.00 =
-DETOUR- STA. 11+50.00
BEGIN DETOUR WIDENING
STA. 11+57.38
WIDEN USING EXISTING GRADE AND SUPER ELEVATION
-DETOUR- STA. 11+57.38 TO STA. 26+23.97
(+) 0.0791%
(-) 0.0396%
(-) 1.4441%
(-) 0.0788%
BEGIN 'V' DITCH LT
STA. 22+05.21
El = 4.53
STA. 22+55.75
El = 4.57
STA. 23+06.30
El = 4.55
STA. 23+56.85
El = 3.82
20
10
0
-10
3140
3141
12
13
14
15
16
17
18
19
20
21
22
23
24

PROJECT REFERENCE NO. B-2500AB
SHEET NO. 2B-8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024897 ENGINEER John W. Twisdale, Jr.
NAD 83 CORS 96
DETAIL A
TEMPORARY STANDARD 'V' DITCH
(Not to Scale)
Natural Ground
Min. D= 0.5 Ft.
FROM STA. 22+05.21 TO STA. 28+62.69 -DETOUR- LT.
UNITED STATES OF AMERICA
50' POWER LINE EASEMENT
-DETOUR- STA. 26+23.97
END WIDENING USING EXIST. GRADE & SUPER EL.
BEGIN PROPOSED GRADE & SUPER EL.
TEMP. STANDARD V DITCH
SEE DETAIL A
EST. 89 CY DDE
-L- PT Sta. 3157+05.77
-L- PC Sta. 3161+18.89
REMOVE EXIST. GUARDRAIL DURING PLACEMENT OF PCB
GRADE TO DRAIN
N 29° 41' 33.0" W
-DETOUR-
-L-
MATCHLINE SEE SHEET 2B-7 -DETOUR- STA. 24+00.00
MATCHLINE SEE SHEET 2B-9 -DETOUR- STA. 38+00.00
EXIST. STONE 300-400 LB.
15' INC.
17' INC.
-DETOUR- PT Sta. 27+02.38
-DETOUR- PC Sta. 31+26.43
REMOVE & RESET EXIST. GUARDRAIL
R=3219.36'
-DETOUR-
PI Sta 22+43.78
Δ = 20° 02' 15.8" (LT)
D = 2° 09' 43.6"
L = 926.77'
T = 468.17'
R = 2,650.00'
SE = EXIST.
PI Sta 34+81.19
Δ = 10° 23' 43.1" (RT)
D = 1° 28' 08.8"
L = 707.59'
T = 354.77'
R = 3,900.00'
SE = NC
PAVEMENT REMOVAL
SLOTTED TEMP. BARRIER
-DETOUR-
DITCH LEGEND
LEFT DITCH
BEGIN GRADE
STA. 26+23.97
EL = 5.94'
WIDEN USING EXISTING GRADE AND SUPER ELEVATION -DETOUR-
STA. 11+57.38 TO STA. 26+23.97
PI = 29+00.00
EL = 6.44'
VC = 100'
K = 452
PI = 36+00.00
EL = 6.16'
VC = 100'
K = 345
PI = 38+00.00
EL = 6.66'
VC = 100'
K = 68
(+)0.1811%
(-)0.0400%
(-)0.0400%
(+)0.2500%
(+)0.2500%
(-)0.1574%
(-)0.0393%
(+)0.1967%
(+)0.3541%
(+)0.3738%
(+)0.3344%
(+)0.2196%
(+)0.1800%
(+)0.1600%
STA. =24+07.58 El = 3.78
STA. =24+58.42 El = 3.70
STA. =25+09.25 El = 3.68
STA. =25+60.09 El = 3.78
STA. =26+10.93 El = 3.96
STA. =26+61.76 El = 4.15
STA. =27+12.59 El = 4.32
STA. =27+62.69 El = 4.43
STA. =28+12.69 El = 4.52
END V DITCH LT STA. =28+62.69 El = 4.60
20
10
0
-10
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
8/17/99

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	2B-9
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING
DocuSigned by: Gary Lovering 8/12/2015

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024897 ENGINEER John W. Tweddle
DocuSigned by: John W. Tweddle 8/12/2015

NAD 83 CORS 96

UNITED STATES OF AMERICA

TIE PCB TO GUARDRAIL USING TRANSITION PANEL (SEE SHEET 2C-2 FOR DETAILS)

REMOVE EXIST. GUARDRAIL DURING PLACEMENT OF PCB (UP TO TRANSITION PANEL)

-L- PT Sta. 3178+38.99

-L- PC Sta. 3182+06.45

+80.78 25.00'

+91.98 40.00'

+64.41 40.00'

EXIST R/W

FIBER PED

2 ROWS OF SANDBAGS

GRADE TO DRAIN

MATCHLINE SEE SHEET 2B-10 -DETOUR- STA. 52+00.00

MATCHLINE SEE SHEET 2B-8 -DETOUR- STA. 38+00.00

TIE PCB TO GUARDRAIL USING TRANSITION PANEL (SEE SHEET 2C-2 FOR DETAILS)

REMOVE EXIST. GUARDRAIL DURING PLACEMENT OF PCB (UP TO TRANSITION PANEL)

EXIST. STONE 300-400 LB.

15' INC.

5' PS

STEEL SHEET PILING

MTL. CHECKER PLATE

N 9° 14' 03.1" W

-DETOUR- STA. 39+46.67 END PROPOSED GRADE & SUPER EL. AT EXIST. STRUCTURE

-DETOUR- PT Sta. 39+45.54

REMOVE & RESET EXIST. GUARDRAIL

-DETOUR- PCC Sta. 38+34.01

-DETOUR- STA. 46+11.90 BEGIN PROPOSED GRADE & SUPER EL. AT EXIST. STRUCTURE

-DETOUR- PC Sta. 46+12.55

-DETOUR- PT Sta. 47+34.69

+38.82 80.00'

REMOVE & RESET EXIST. GUARDRAIL

+19.69

+18.39

17' INC.

2' PS

N 1° 03' 26.2" E

-DETOUR- PC Sta. 51+63.71

SLOTTED TEMP. BARRIER

-DETOUR-

PI Sta 38+89.92	PI Sta 46+73.78
△ = 10° 03' 46.8" (RT)	△ = 10° 17' 29.4" (RT)
D = 9° 01' 22.6"	D = 8° 25' 33.1"
L = 111.53'	L = 122.14'
T = 55.91'	T = 61.24'
R = 635.00'	R = 680.00'
SE = .03	SE = .03

-DETOUR-

END GRADE AT EXIST. BRIDGE
STA. 39+46.67
EL. 9.17'

BEGIN GRADE AT EXIST. BRIDGE
STA. 46+11.90
EL = 9.27'

PI = 38+00.00
EL = 6.66'
VC = 100'
K = 68

PI = 47+50.00
EL = 6.55'
VC = 100'
K = 56

PI = 49+50.00
EL = 6.19'
VC = 100'
K = 189

PI = 51+70.00
EL = 6.96'
VC = 100'
K = 175

EXISTING BRIDGE

(+)1.7113%
(-)1.9696%
(-)0.1800%
(-)0.1800%
(+)0.3500%
(-)0.2200%
(+)0.3500%

20
10
0
-10

38 39 40 41 42 43 44 45 46 47 48 49 50 51 52

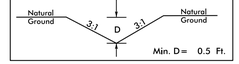
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	2B-10
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING
DocuSigned by: Gary Lovering 12/2015

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024897 ENGINEER John W. Twisdale
DocuSigned by: John W. Twisdale 12/2015

DETAIL A
TEMPORARY STANDARD 'V' DITCH
(Not to Scale)



Min. D= 0.5 Ft.

FROM STA. 52+91.97 TO STA. 57+48.04 –DETOUR– LT.

NAD 83 / CORS 96

MATCHLINE SEE SHEET 2B-9
–DETOUR– STA. 52+00.00

+06.45
35.00'
31.37'

TEMP. STANDARD V DITCH
SEE DETAIL A
EST. 78 CY DDE

–L– PCC Sta. 3185+51.82

+51.82
35.00'

+60.10
35.00'
31.05'

R=2810.07'

+29.17
36.49'

+81.82
47.91'

+75.58
110.73'

+09.30
117.03'

+22.94
50.55'

+75.80
54.06'

+76.35
50.14'

REMOVE EXIST. PAVEMENT
AFTER FINAL IS BUILT
PER DIRECTION OF THE ENGINEER

SEE TMP FOR
END TREATMENT

+05.94
80.00'

R=2920.07'

–L– +34.97
74.98'

–L– +34.88
79.98'

–DETOUR– STA. 55+13.50
END PROPOSED GRADE
& SUPER EL.

BEGIN WIDENING USING
EXIST. GRADE & SUPER EL.

UNITED STATES OF AMERICA

UNITED STATES OF AMERICA

UNITED STATES OF AMERICA

–L– PT Sta. 3193+05.55

–L– +05.55
55.00'

–DETOUR– PT Sta. 65+22.38

END PROJECT B-2500AB
–DETOUR– POT STA. 65+22.43 =
–L– POT STA. 3195+20.00
–ELN– POT STA. 3195+18.45

END DETOUR
–DETOUR– PT STA. 65+22.38 =
–L– POT STA. 3195+19.95

N 14° 52' 02.1" W

MATCHLINE SEE SHEET 2B-11
–ELN– STA. 3196+00.00

–DETOUR–
PRC Sta. 61+59.21

–DETOUR–

PI Sta 56+66.77	PI Sta 63+40.89
△ = 20° 22' 14.5" (LT)	△ = 4° 26' 46.1" (RT)
D = 2° 02' 46.6"	D = 1° 13' 27.4"
L = 995.50'	L = 363.17'
T = 503.06'	T = 181.67'
R = 2,800.00'	R = 4,680.00'
SE = .025 ,EXIST.	SE = EXIST.

PAVEMENT REMOVAL

SLOTTED TEMP. BARRIER

–DETOUR–

DITCH LEGEND
LEFT DITCH

END GRADE
STA. 55+13.50
EL = 5.80'

PI = 53+70.00
EL = 6.52'
VC = 100'
K = 355

WIDEN USING EXISTING GRADE AND SUPER ELEVATION
–DETOUR– STA. 55+13.50 TO STA. 65+22.38

END DETOUR WIDENING
–DETOUR– STA. 65+22.38

–DETOUR– POT STA. 65+22.43 =
–L– POT STA. 3195+20.00 =
–ELN– POT STA. 3195+18.45

(–)0.2200%
(–)0.2200%
(–)0.5017%
(–)0.1573%
(–)0.4916%
(+)0.6096%
(–)0.4720%
(–)0.1770%
(–)0.0793%
(+)1.2289%
(+)0.0595%

BEGIN V DITCH LT
STA. =52+49.97
EL = 4.38

STA. =53+42.32
EL = 4.30

STA. =53+93.67
EL = 4.06

STA. =54+44.52
EL = 3.74

STA. =54+95.37
EL = 3.50

STA. =55+46.22
EL = 3.41

STA. =55+96.69
EL = 3.37

STA. =56+47.14
EL = 3.99

END V DITCH LT
STA. =57+48.04
EL = 4.05

20
10
0
–10

52 53 54 55 56 57 58 59 60 61 62 63 64 65

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	2B-11
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING
8/7/2015
DocuSigned by: Gary Lovering
DFD76F34A6BD425...

PROPOSED DETOUR WORK

PLAN SHEET FOR DETOUR REMOVAL AND NC-12 PAVEMENT REPAIR ONLY.

NAD 83/CORS 96

3200

3205

MATCHLINE SEE SHEET 2B-10
-ELN- STA. 3196+00.00

50' POWER LINE EASEMENT

EXIST R/W

N 14° 52' 02.1" W

100.00'

-ELN-

24'

4' PS

EX EX

-ELN- +29.12
55.00'

+74.36
55.00'

+74.16
60.00'

+51.84
60.00'

-ELN- +76.83
50.00'

-ELN- +28.01
50.00'

-ELN- +28.17
55.00'

-ELN- +59.25
50.00'

-ELN- +59.55
55.00'

PC Sta. 3203+29.12

-ELN-
PI Sta 3206+22.41
△ = 2° 55' 55.1" (RT)
D = 0° 29' 59.8"
L = 586.45'
T = 293.29'
R = 11,460.27'

PRC Sta. 3209+15.57

MATCHLINE SEE SHEET 2B-12
-ELN- STA. 3210+00.00

PROPOSED DETOUR WORK

PAVEMENT REMOVAL

-ELN-

REPAIR EXISTING NC-12:
MILL AND OVERLAY EXISTING PAVEMENT
-L- STA. 3194+00.00 = -ELN- STA. 3193+98.45
TO -ELN- STA. 3214+00

20
10
0
-10

3196 3197 3198 3199 3200 3201 3202 3203 3204 3205 3206 3207 3208 3209 3210

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$$$$USERNAME$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	2B-12
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING
8/17/2015
DocuSigned by: Gary Lovering DFD76F34A6BD425...

END CONSTRUCTION
–ELN– POC STA. 3214+00

PLAN SHEET FOR DETOUR REMOVAL AND NC-12 PAVEMENT REPAIR ONLY.

NAD 83/CORS 96

3215

3220

UNITED STATES OF AMERICA

UNITED STATES OF AMERICA

UNITED STATES OF AMERICA

MATCHLINE SEE SHEET 2B-11
–ELN– STA. 3210+00.00

50' POWER LINE EASEMENT

EXIST R/W

EXIST R/W

100.00'

–ELN–

NC 12 30' BST

4' PS

24'

EX

EX

EX

C

C

F

F

–ELN–
PI Sta 3217+14.09
△ = 7° 58' 17.4" (LT)
D = 0° 29' 59.8"
L = 1,594.46'
T = 798.52'
R = 11,460.29'

PAVEMENT REMOVAL

–ELN–

REPAIR EXISTING NC-12:
MILL AND OVERLAY EXISTING PAVEMENT
-L- STA. 3194+00.00 = -ELN- STA. 3193+98.45
TO -ELN- STA. 3214+00

20
10
0
–10

3210 3211 3212 3213 3214 3215 3216 3217 3218 3219 3220

07-AUG-2015 11:27
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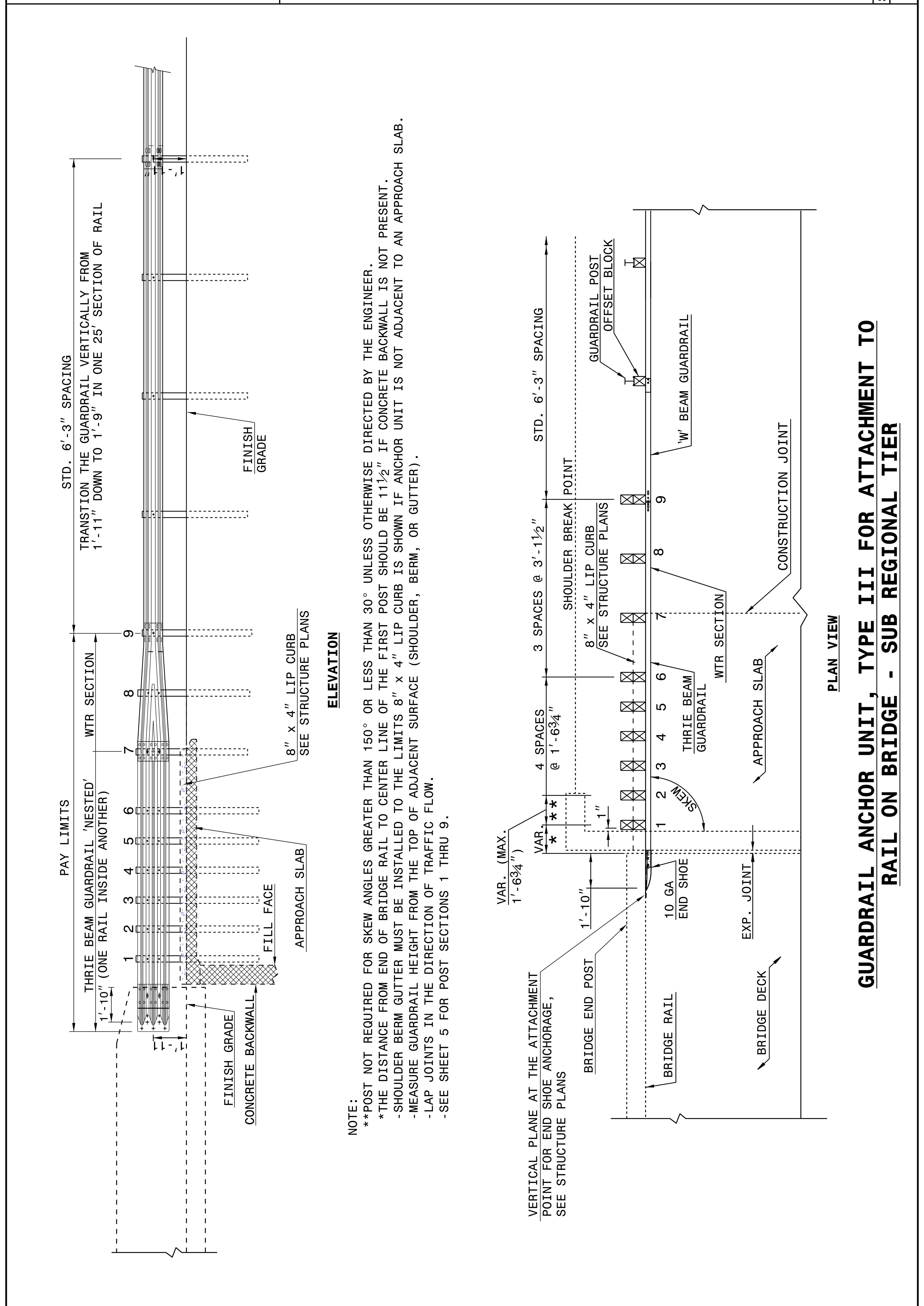
ashelton
USER:ashelton

PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	2C-1

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

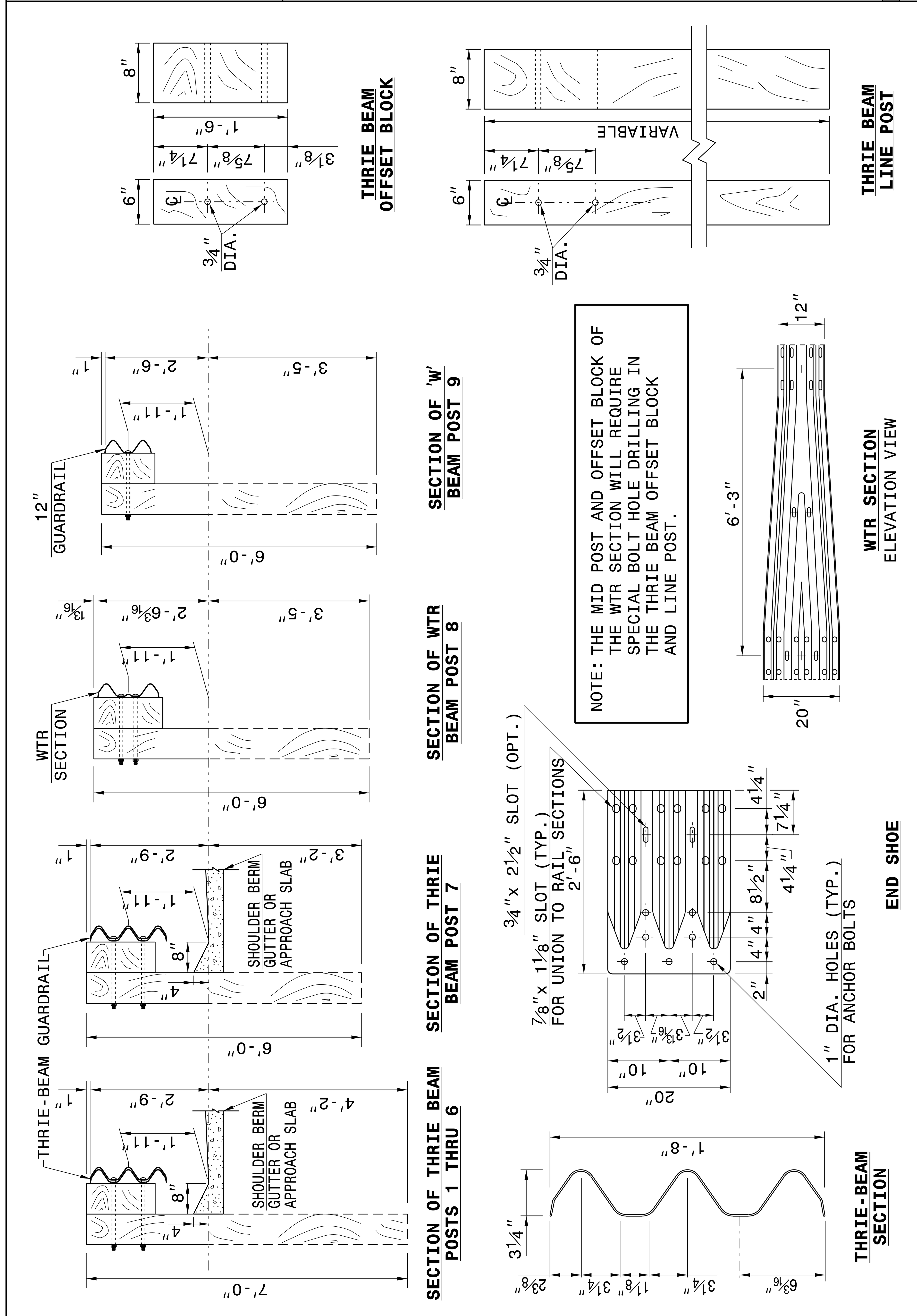


STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH 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**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III
SHEET 3 OF 7 862d03



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

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7 **862d03**

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton
DocuSigned by: Joel Howerton
8/11/2015

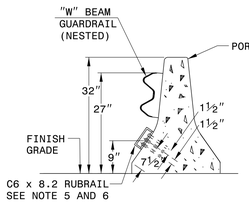
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

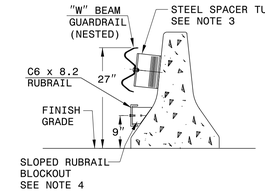
SEE TITLE BLOCK

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

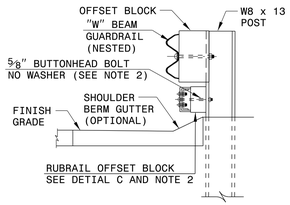
PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	2C-2



SECTION A-A



SECTION B-B



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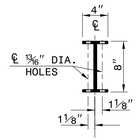
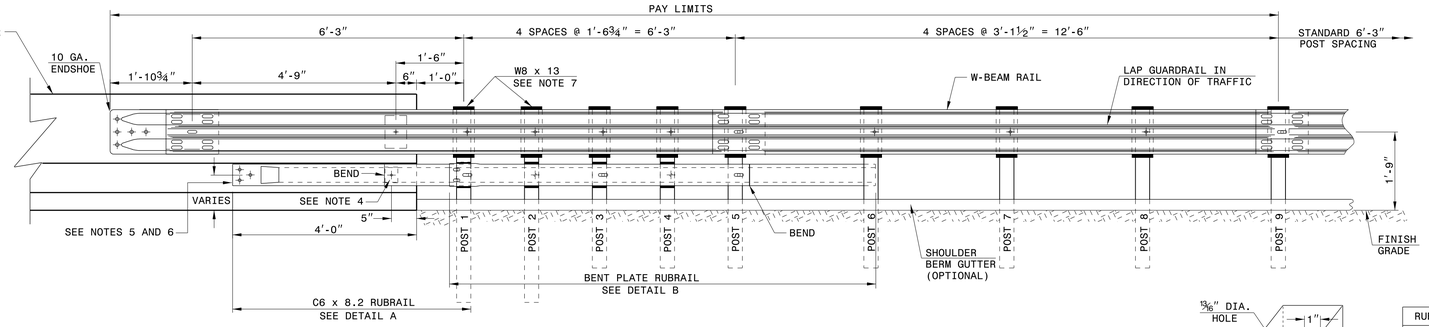


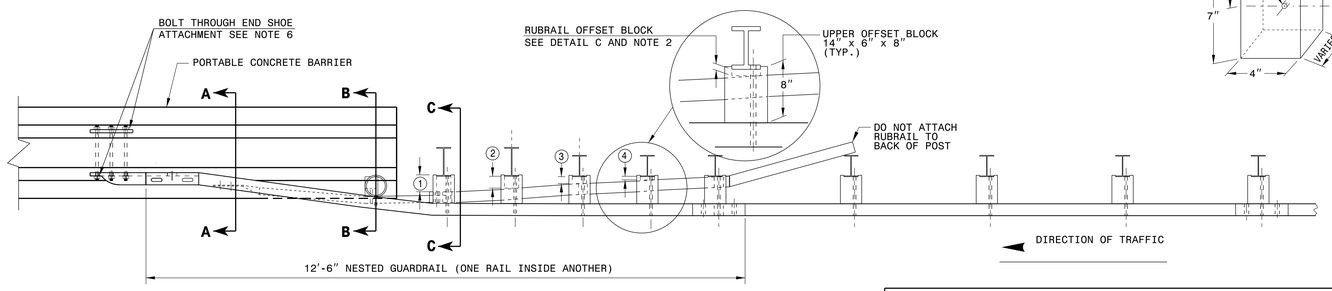
PLAN

SIDE FRONT

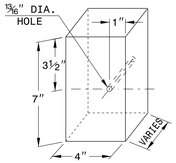
DETAIL F
"W8 X 13 X 7'-6". STEEL POST



ELEVATION



PLAN

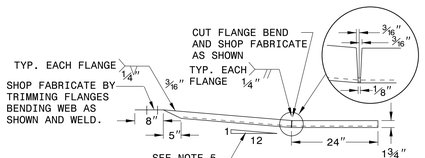


RUBRAIL BLOCKS 7" HIGH x 4" WIDE		
POST	THICKNESS	BOLT LENGTH
①	4¼"	9"
②	3¼"	5" *
③	2"	6"
④	1"	3" *

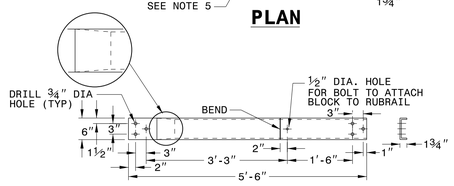
* BOLTS FOR POSTS 2 AND 4 ARE USED TO ATTACH BLOCK TO POST. RUBRAIL NOT ATTACHED TO BLOCK.

DETAIL C
RUBRAIL BLOCKOUT

GENERAL NOTES:
1) POSTS 1 THROUGH 5 REQUIRE AN ADDITIONAL HOLE TO ATTACH LOWER BLOCKOUTS AND/OR RUBRAIL.
2) RUBRAIL BLOCKOUTS LOCATED ON POSTS 1 THROUGH 4 ARE OFFSET DRILLED AND SECURED WITH ⅝" BUTTONHEAD BOLTS (SEE CHART FOR BOLT LENGTHS). SECURE BLOCKS ONLY TO POSTS 2 AND 4. SECURE RUBRAIL AND BLOCKOUTS TO POSTS 1 AND 3. RUBRAIL IS SECURED TO POST 5 WITH A ⅝" x 4½" BUTTONHEAD BOLT. RUBRAIL IS FLARED TO BACK OF POST 6 AND NOT SECURED.
3) STEEL SPACER TUBE IS A SCHEDULE 40 GALVANIZED PIPE 6" INSIDE DIAMETER x 9" LONG. ATTACH TUBE TO GUARDRAIL ONLY WITH ⅝" x 1¼" LONG BUTTONHEAD BOLT AND RECTANGULAR PLATE WASHER.
4) SEE DETAIL D FOR SLOPED RUBRAIL BLOCKOUT. BLOCKOUT IS ATTACHED TO RAIL ELEMENT ONLY. USE ⅜" x 3" LAG BOLT WITH FLAT WASHER.
5) SHOP FABRICATE THE C6 x 8.2 RUBRAIL END TO BE CONSISTENT WITH THE SLOPE OF THE JERSEY SHAPE AND ATTACH FLUSH WITH THE SLOPED TOE OF THE BARRIER OR BRIDGE RAIL.
6) ANCHORAGE:
   (a) AT PORTABLE CONCRETE BARRIER, ANCHOR RUBRAIL USING THREE ⅝" x 6" CHEMICALLY ANCHORED BOLTS WITH WASHERS.
   (b) AT PORTABLE CONCRETE BARRIER, ANCHOR THE W-BEAM END SHOE USING A 4 BOLT HOLD-DOWN PLATE AS SHOWN. INSTALL THE W-BEAM END SHOE BEHIND THE NESTED W-BEAM ELEMENTS.
7) POSTS 1 AND 2 ARE W8 x 13, 7'-6" LONG. ALL OTHER POSTS IN THE ANCHOR UNIT ARE W6 x 8.5.

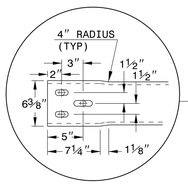


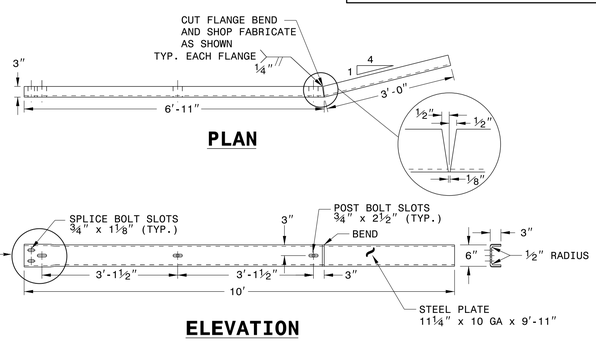
PLAN



ELEVATION

DETAIL A
C6 x 8.2 RUBRAIL



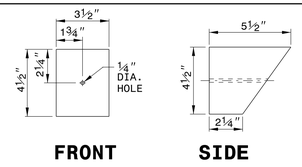


PLAN

ELEVATION

DETAIL B
BENT PLATE RUBRAIL

DETAIL E
LAG BOLT

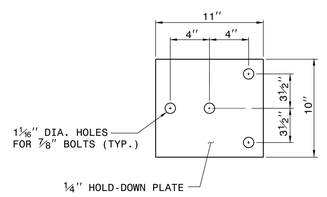


FRONT SIDE

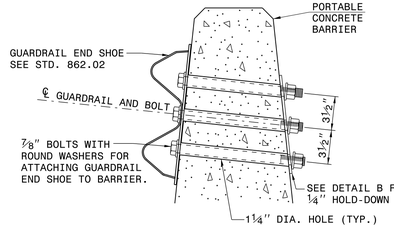
DETAIL D
SLOPED RUBRAIL BLOCKOUT

NOTES FOR 4 BOLT HOLD DOWN PLATE

1) THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A ¼" HOLD DOWN PLATE AND 4 - ⅞" DIA. BOLTS WITH NUTS AND WASHERS.
2) THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.
3) AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL. THE 1¼" DIA. HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



4 BOLT HOLD DOWN PLATE



PART SECTION OF BARRIER OR RAIL
THRU END SHOE SECTION AND 4 BOLT HOLD DOWN PLATE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022966 JOEL S. HOWERTON

DocuSigned by: Joel Howerton 8/11/2015

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS & DEVELOPMENT UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-250-4128 FAX 919-250-4119

TEMPORARY GUARDRAIL ANCHOR UNIT TYPE B-77

ORIGINAL BY: E.E. WARD DATE: 04-07-04
MODIFIED BY: E.E. WARD DATE: 07-14-05
CHECKED BY: DATE:
FILE SPEC.:

$$$$SYSTIME$$$$
$$$$FNAME$$$$
$$$$USERNAME$$$$

COMPUTED BY: HN DATE: 06/25/2015

CHECKED BY: TLS DATE: 08/10/15

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
B-2500AB	3B-1

SUMMARY OF EARTHWORK

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
DETOUR, BEGIN DETOUR TO EXIST. MABEY BRIDGE					
-L- 3141+57.38	-L- 3169+44.26	266	920	654	
(DET. STA. 11+57.38)	(DET. BEGIN EXIST. BRIDGE)				
	SUBTOTAL 1	266	920	654	
DETOUR, EXIST. MABEY BRIDGE TO END DETOUR					
-L- 3176+19.06	-L- 3195+19.95	480	581	101	
(DET. END EXIST. BRIDGE)	(DET. STA. 65+22.38)				
	SUBTOTAL 2	480	581	101	
L, BEGIN -L- TO BEGIN BRIDGE					
-L- 3141+50.00	-L- 3159+00.00	1,103	4,641	3,538	
(BEGIN PROJECT)	(BEGIN BRIDGE)				
	SUBTOTAL 3	1,103	4,641	3,538	
L, END BRIDGE TO END -L-					
-L- 3182+50.00	-L- 3195+20.00	494	3,286	2,792	
(END BRIDGE)	(END PROJECT)				
	SUBTOTAL 4	494	3,286	2,792	
DETOUR REMOVAL (Before Existing Bridge)					
-L- 3141+57.38	-L- 3169+44.26	708	-	-	708
(DET. STA. 11+57.38)	(DET. BEGIN EXIST. BRIDGE)				
*-L- 3167+87	*-L-3169+47	*1550	-	-	*1550
*(BEGIN STEEL SHEET PILING)	*(END STEEL SHEET PILING))				
	SUBTOTAL 5	2,258	-	-	2,258
DETOUR REMOVAL (After Existing Bridge)					
-L- 3176+19.06	-L- 3195+19.95	447	-	-	447
(DET. END EXIST. BRIDGE)	(DET. STA. 65+22.38)				
*-L- 3176+14	*-L-3177+70	*950			*950
*(BEGIN STEEL SHEET PILING)	*(END STEEL SHEET PILING))				
	SUBTOTAL 6	1,397	-	-	1,397
SUBTOTALS 1 THRU 6		5,998	9,428	7,085	3,655

* Noted approximate quantities (1,550 & 950 CY) are between existing steel sheet piles. This waste earth material shall be stockpiled at the Old US Coast Guard Station on SR 1257 (Life Boat Station Rd) approximately 6.2 miles north of the project.

SUMMARY OF EARTHWORK

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
NC-12 REPAIR, South End - Proposed Pavement Areas					
-ELN- 3076+40	-ELN- 3106+40	278	142	-	136
	SUBTOTAL 7	278	142	-	136
NC-12 REPAIR, South End - Proposed Pavement Areas					
-ELN- 3106+40	-ELN- 3141+50	450	129	-	321
	SUBTOTAL 8	450	129	-	321
NC-12 REPAIR, South End - Pavement Removal Areas					
-ELN- 3076+40	-ELN- 3106+40	5,241	40	-	5,201
	SUBTOTAL 9	5,241	40	-	5,201
NC-12 REPAIR, South End - Pavement Removal Areas					
-ELN- 3106+40	-ELN- 3141+50	4,564	1	-	4,563
	SUBTOTAL 10	4,564	1	-	4,563
NC-12 REPAIR, North End - Proposed Pavement Areas					
-ELN- 3195+18.45	-ELN- 3214+00	46	43	-	3
(-L- 3195+20.00)					
	SUBTOTAL 11	46	43	-	3
NC-12 REPAIR, North End - Proposed Removal Areas					
-ELN- 3195+18.45	-ELN- 3214+00	1,404	16	-	1,388
(-L- 3195+20.00)					
	SUBTOTAL 12	1,404	16	-	1,388
SUBTOTALS 7 THRU 12		11,983	371	-	11,612
PROJECT TOTALS:		17,981	9,799	7,085	*15,267
EST 5% TO REPLACE TOP SOIL ON BORROW BIT				354	
GRAND TOTALS:		17,981	9,799	7,439	*15,267
SAY:		18,000		7,500	

UNDERCUT EXC. = 1,000 CY CONTINGENCY
SHALLOW UNDERCUT = 100 CY CONTINGENCY
EST. DDE = 500 CY

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

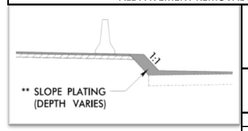
Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Removal of Existing Concrete Pavement and Clearing and Grubbing will be paid for at the contract lump sum price for grading.

PAVEMENT REMOVAL SUMMARY
(B-2500A PROJECT)

SURVEY LINE	Station	Station	LOCATION LT/RT/CL	ASPHALT REMOVAL (SY)
DETOUR PAVEMENT				
-ELN-	3078+13	3141+50	CL	19,942.79
-ELN-	3195+20	3214+00	CL	5,029.44
TEMPORARY WIDENING				
-ELN-	3112+80	3122+20	RT	633.34
-ELN-	3195+20	3195+80	RT	20.00
** DETOUR RIGHT SLOPE PLATING				
-ELN-	3085+40	3090+50	RT	137.08
-ELN-	3096+00	3104+00	RT	86.29
-ELN-	3109+00	3119+80	RT	165.01
-ELN-	3140+50	3141+50	RT	5.56
			TOTAL:	26,019.51

** DETOUR RIGHT SLOPE PLATING, SEE FIGURE BELOW FOR DETAILS

ALL PAVEMENT REMOVAL SHALL BE DONE UNDER THE DIRECTION OF THE ENGINEER.



PAVEMENT REMOVAL SUMMARY
(B-2500AB PROJECT)

SURVEY LINE	Station	Station	LOCATION LT/RT/CL	ASPHALT REMOVAL (SY)	CONCRETE REMOVAL (SY)
-L-	3141+50	3153+80	LT,CL,RT	2,707.47	
-L-	3149+04	3154+00	RT	523.64	
-L-	3154+00	3168+64	RT	3,774.71	
-L-	3177+02	3186+00	RT	1,855.23	
-L-	3181+15	3186+00	LT,CL	1,364.19	
-L-	3186+00	3190+20	RT	466.03	
-L-	3186+50	DRIVE	LT	254.38	
-L-	DRIVE	3194+00	LT,CL,RT	1,726.06	
-DETOUR-	13+38	26+24	LT,CL,RT	2,773.14	
-DETOUR-	26+24	39+47	LT,CL,RT	4,262.03	
-DETOUR-	46+12	55+14	LT,CL,RT	2,905.16	
-DETOUR-	55+14	64+02	LT,CL,RT	2,051.82	
PARKING LOT, RIGHT OF -DETOUR-					
-DETOUR-	24+90	27+23	RT	2,658.92	
-DETOUR-	25+38	26+89	RT		325.46
BURIED PAVEMENT BETWEEN EXISTING STEEL SHEET PILING					
-L-	3167+87	3169+47	RT	533.33	
-L-	3176+14	3177+70	RT	520.00	
B-2500AB PAVEMENT REMOVAL			TOTAL	28,376.12	325.46
B-2500A PAVEMENT REMOVAL			TOTAL	26,019.51	
			GRAND TOTAL:	54,395.63	325.46
			SAY:	54,400	330

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
GUARDRAIL SUMMARY

"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

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH (LF) STRAIGHT	LENGTH (LF) SHOP CURVED	LENGTH (LF) 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 TYPE III	ANCHORS TEMP. B-77	ANCHORS GRAU 350	IMPACT ATTENUATOR TYPE 350 G	IMPACT ATTENUATOR TYPE 350 NG	SINGLE FACED CONCRETE BARRIER	REMOVE GUARDRAIL	REMOVE & RESET EXIST. GUARDRAIL	REMARKS
L	3152+87.62	3159+06.37	LEFT	618.75				3154+00.00	4.75	8.75		50		1	1		1						
L	3152+27.53	3158+96.28	RIGHT	668.75			3153+49.24		4.75	8.75	50		1		1		1						3'-1.5" POST SPACING FOR 25' TAPER STARTING AT END OF TYPE III STRUCTURE ANCHOR UNIT.
L	3182+44.98	3187+63.73	LEFT	518.75			3186+49.52		4.75	8.75	50		1		1		1						
L	3182+52.45	3187+21.20	RIGHT	468.75				3186+01.23	4.75	8.75		50		1	1		1						
DETOUR	36+69.23	39+46.67	LEFT													1					282		SEE DETAIL 2C-2 IN ROADWAY PLANS (TRANSITION PANEL ON TMP PLANS)
DETOUR	36+62.74	39+46.67	RIGHT																		282	282	REMOVE & RESET EXISTING GUARDRAIL, REMOVE AFTER FINAL IS BUILT
DETOUR	46+11.74	48+57.83	LEFT													1					250		SEE DETAIL 2C-2 IN ROADWAY PLANS (TRANSITION PANEL ON TMP PLANS)
DETOUR	46+11.90	48+44.56	RIGHT							EXTRA POSTS											231	231	REMOVE & RESET EXISTING GUARDRAIL, REMOVE AFTER FINAL IS BUILT
										@ 3'-1.5" POST SPACING : 10 POST IS NEEDED FOR A 25' RUN													
		LESS ANCHOR DEDUCTIONS								4 x 25' (1/2 post runs) = 100'													
			GRAU 350 : 4 x 50	-200							TOTAL POSTS NEEDED FOR 4 x 25' RUNS = 10 x 4 = 40 POSTS												
			TYPE III : 4 x 18.75'	-75																			
			TOTAL	2,000																	1,045	513	
			SAY	2,050											SAY:	4	2	4				1,050	520	
				ADDITIONAL GUARDRAIL POSTS = 45 EA.																			

COMPUTED BY: JLS DATE: 6/19/15
CHECKED BY: MDV DATE: 6/19/15

(4-21-15)

PROJECT NO.	SHEET NO.
B-2500AB	3G-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

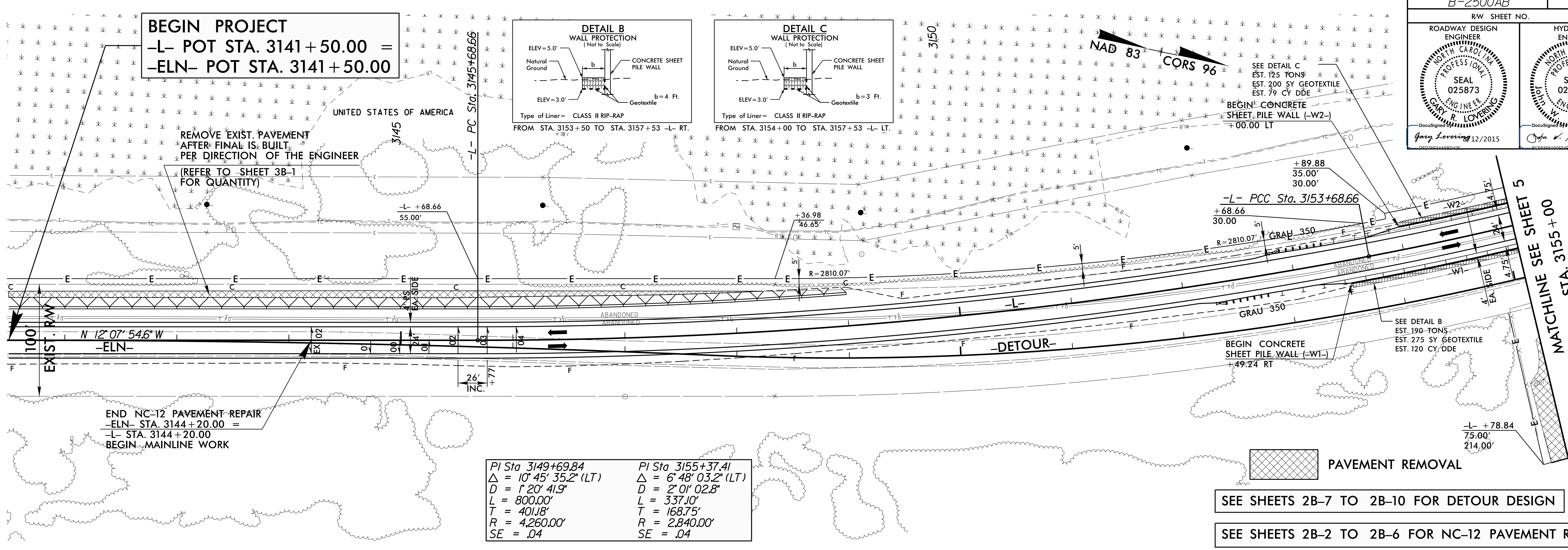
LINE	Station	Station	Aggregate Type ASU/AST	Aggregate Thickness INCHES	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY			AST						750
CONTINGENCY			ASU	12	100	190	300		
			TOTAL CY/TONS/SY:		100	190	300*	0	750

ASU = Aggregate Subgrade, AST = Aggregate Stabilization
***Total square yards of Geotextile for Soil Stabilization is only the estimated quantity for ASU/AST and may only represent a portion of the geotextile quantity shown in the Item Sheets of the Proposal.**

PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	4
RW SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING — Gary Lovering 12/2015

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024897 ENGINEER W. Twisdale — 12/2015



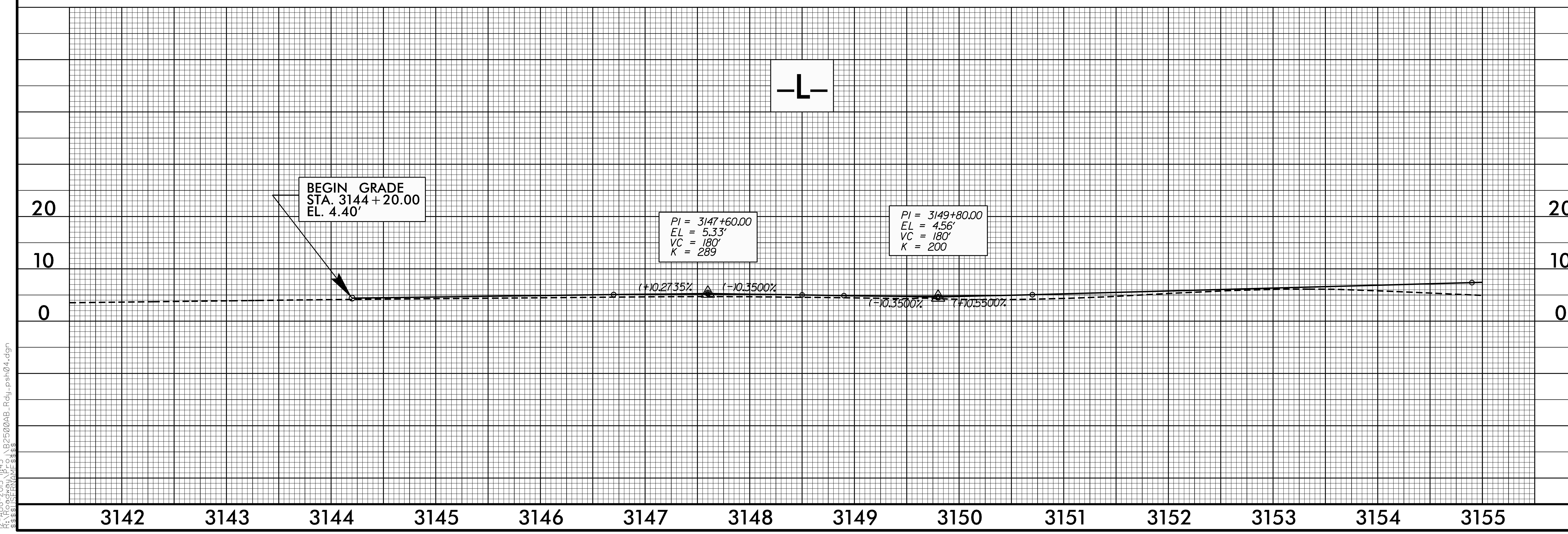
BEGIN PROJECT
-L- POT STA. 3141+50.00 =
-ELN- POT STA. 3141+50.00
DETAIL B
WALL PROTECTION
(Not to Scale)
ELEV=5.0'
Natural Ground
CONCRETE SHEET PILE WALL
ELEV=3.0'
Geotextile
b=4 Ft.
Type of Liner= CLASS II RIP-RAP
FROM STA. 3153+50 TO STA. 3157+53 -L- RT.
DETAIL C
WALL PROTECTION
(Not to Scale)
b=3 Ft.
FROM STA. 3154+00 TO STA. 3157+53 -L- LT.
NAD 83 CORS 96
UNITED STATES OF AMERICA
REMOVE EXIST. PAVEMENT
AFTER FINAL IS BUILT
PER DIRECTION OF THE ENGINEER
(REFER TO SHEET 3B-1
FOR QUANTITY)
-L- PC Sta. 3145+68.66
3145
3150
SEE DETAIL C
EST. 125 TONS
EST. 200 SY GEOTEXTILE
EST. 79 CY DDE
BEGIN CONCRETE
SHEET PILE WALL (-W2-)
+00.00 LT
+89.88
35.00'
30.00'
-L- PCC Sta. 3153+68.66
+68.66
30.00
R=2810.07'
GRAU 350
-L- +68.66
55.00'
+36.98
46.65'
R=2810.07'
-L-
-DETOUR-
-ELN-
N 12°07'54.6" W
EXIST. R/W
100'
26'
INC.
ABANDONED
SEE DETAIL B
EST. 190 TONS
EST. 275 SY GEOTEXTILE
EST. 120 CY DDE
BEGIN CONCRETE
SHEET PILE WALL (-W1-)
+49.24 RT
MATCHLINE SEE SHEET 5
-L- STA. 3155+00
-L- +78.84
75.00'
214.00'
END NC-12 PAVEMENT REPAIR
-ELN- STA. 3144+20.00 =
-L- STA. 3144+20.00
BEGIN MAINLINE WORK
PI Sta 3149+69.84
Δ = 10° 45' 35.2" (LT)
D = 1° 20' 41.9"
L = 800.00'
T = 401.18'
R = 4,260.00'
SE = .04
PI Sta 3155+37.41
Δ = 6° 48' 03.2" (LT)
D = 2° 01' 02.8"
L = 337.10'
T = 168.75'
R = 2,840.00'
SE = .04

PAVEMENT REMOVAL

SEE SHEETS 2B-7 TO 2B-10 FOR DETOUR DESIGN

SEE SHEETS 2B-2 TO 2B-6 FOR NC-12 PAVEMENT REPAIR

SEE SHEETS W-1 TO W-13 FOR WALL DETAILS



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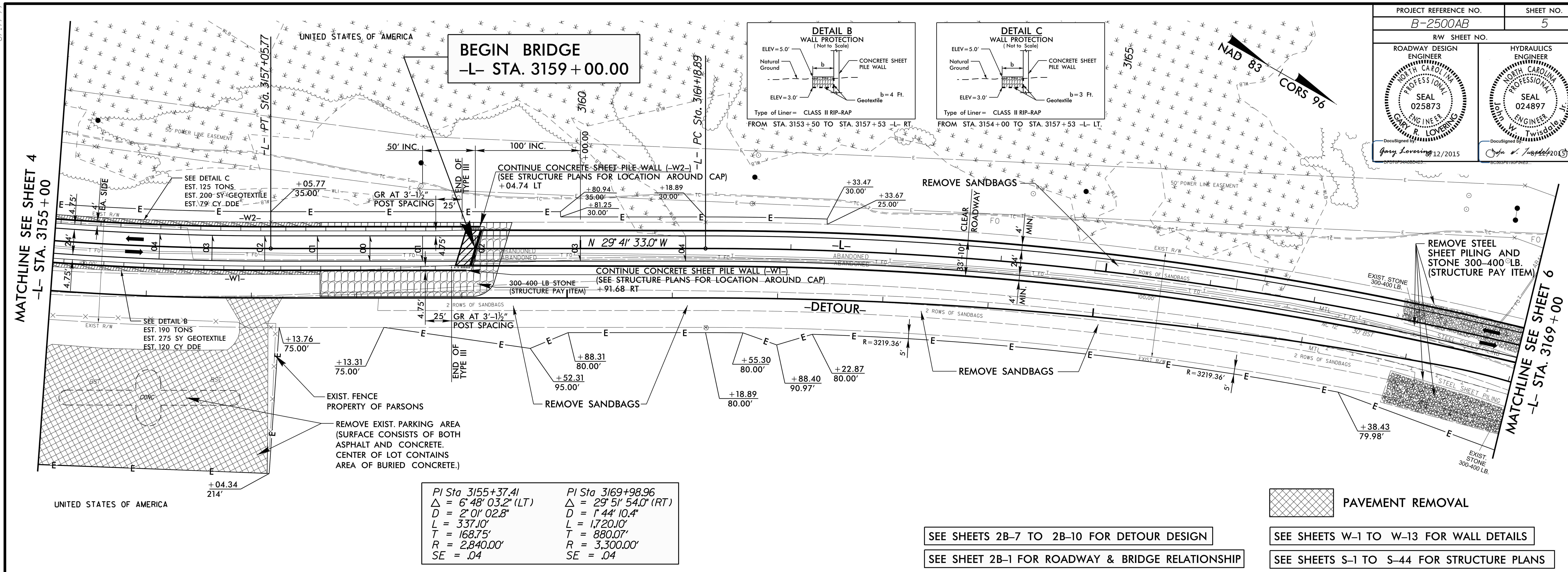
PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	5
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — SEAL 025873, Gary R. Lovering, 8/12/2015

HYDRAULICS ENGINEER — SEAL 024897, John W. Twisdale, Jr., 8/12/2015



UNITED STATES OF AMERICA
BEGIN BRIDGE
-L- STA. 3159+00.00
DETAIL B
WALL PROTECTION
(Not to Scale)
ELEV = 5.0'
Natural Ground
CONCRETE SHEET PILE WALL
ELEV = 3.0'
Geotextile
b = 4 Ft.
Type of Liner = CLASS II RIP-RAP
FROM STA. 3153+50 TO STA. 3157+53 -L- RT.
DETAIL C
WALL PROTECTION
(Not to Scale)
b = 3 Ft.
FROM STA. 3154+00 TO STA. 3157+53 -L- LT.
NAD 83 CORS 96
-L- PT Sta. 3157+05.77
-L- PC Sta. 3161+18.89
50' INC.
100' INC.
CONTINUE CONCRETE SHEET PILE WALL (-W2-)
(SEE STRUCTURE PLANS FOR LOCATION AROUND CAP)
+04.74 LT
SEE DETAIL C
EST. 125 TONS
EST. 200 SY GEOTEXTILE
EST. 79 CY DDE
GR AT 3'-1½" POST SPACING
END OF TYPE III
REMOVE SANDBAGS
CLEAR ROADWAY
N 29° 41' 33.0" W
-L-
-W2-
-W1-
-DETOUR-
CONTINUE CONCRETE SHEET PILE WALL (-W1-)
(SEE STRUCTURE PLANS FOR LOCATION AROUND CAP)
+91.68 RT
300-400 LB STONE
(STRUCTURE PAY ITEM)
SEE DETAIL B
EST. 190 TONS
EST. 275 SY GEOTEXTILE
EST. 120 CY DDE
EXIST. FENCE
PROPERTY OF PARSONS
REMOVE EXIST. PARKING AREA
(SURFACE CONSISTS OF BOTH ASPHALT AND CONCRETE. CENTER OF LOT CONTAINS AREA OF BURIED CONCRETE.)
REMOVE STEEL SHEET PILING AND STONE 300-400 LB. (STRUCTURE PAY ITEM)
EXIST. STONE 300-400 LB.
R=3219.36'
MATCHLINE SEE SHEET 4 -L- STA. 3155+00
MATCHLINE SEE SHEET 6 -L- STA. 3169+00
UNITED STATES OF AMERICA

PI Sta 3155+37.41	PI Sta 3169+98.96
Δ = 6° 48' 03.2" (LT)	Δ = 29° 51' 54.0" (RT)
D = 2° 01' 02.8"	D = 1° 44' 10.4"
L = 337.10'	L = 1,720.10'
T = 168.75'	T = 880.07'
R = 2,840.00'	R = 3,300.00'
SE = .04	SE = .04

PAVEMENT REMOVAL

SEE SHEETS 2B-7 TO 2B-10 FOR DETOUR DESIGN

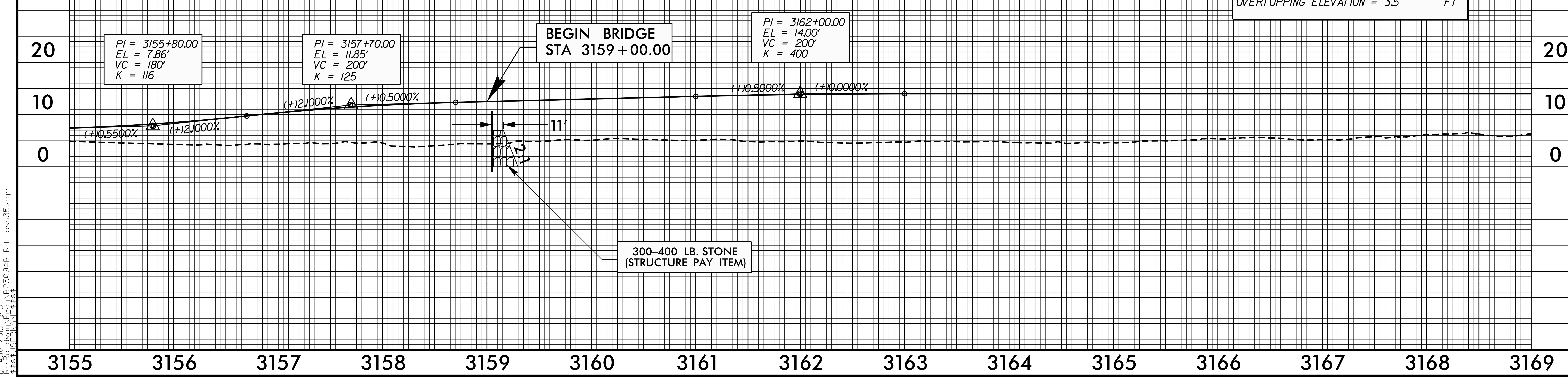
SEE SHEET 2B-1 FOR ROADWAY & BRIDGE RELATIONSHIP

SEE SHEETS W-1 TO W-13 FOR WALL DETAILS

SEE SHEETS S-1 TO S-44 FOR STRUCTURE PLANS

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 12,000	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 7.4	FT
BASE DISCHARGE	= 14,000	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 7.7	FT
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING ELEVATION	= 3.5	FT



-L-
PI = 3155+80.00
EL = 7.86'
VC = 180'
K = 116
PI = 3157+70.00
EL = 11.85'
VC = 200'
K = 125
BEGIN BRIDGE
STA 3159+00.00
PI = 3162+00.00
EL = 14.00'
VC = 200'
K = 400
(+)0.5500%
(+)2.1000%
(+)0.5000%
(+)0.0000%
11'
2:1
300-400 LB. STONE
(STRUCTURE PAY ITEM)
20
10
0
3155
3156
3157
3158
3159
3160
3161
3162
3163
3164
3165
3166
3167
3168
3169

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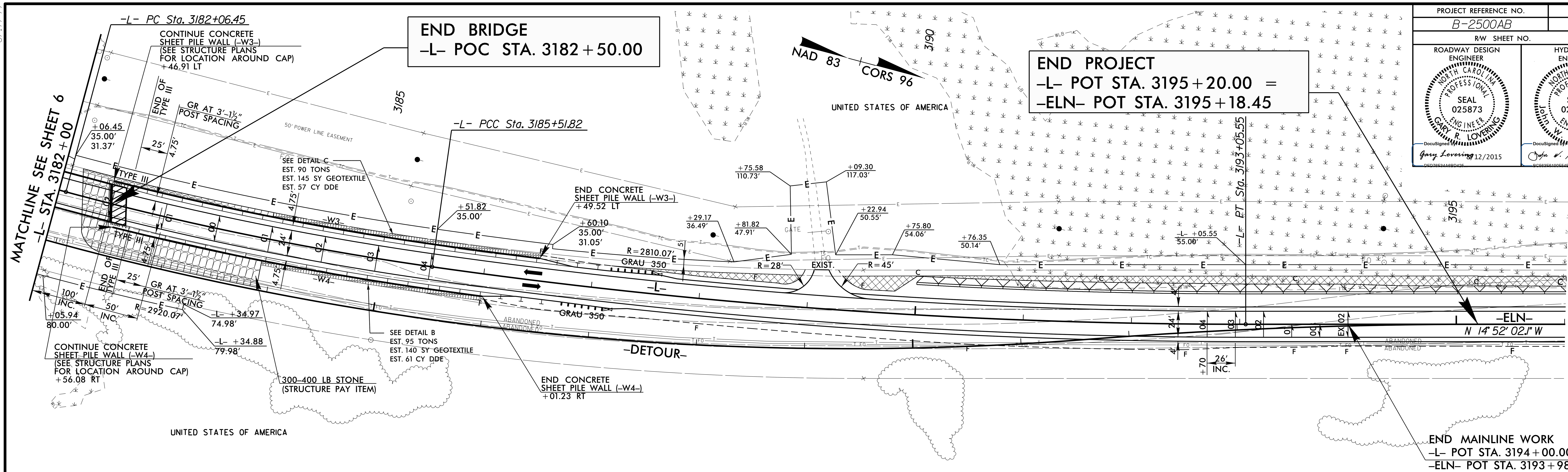
PROJECT REFERENCE NO. B-2500AB
SHEET NO. 6
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING
NORTH CAROLINA PROFESSIONAL SEAL 024897 ENGINEER John W. Twisdale, Jr.
PI Sta 3169+98.96
Δ = 29° 51' 54.0" (RT)
D = 1° 44' 10.4"
L = 1,720.10'
T = 880.07'
R = 3,300.00'
SE = .04
UNITED STATES OF AMERICA
NAD 83 CORS 96
-L- PT Sta. 3178+38.99
MATCHLINE SEE SHEET 5 -L- STA. 3169+00
MATCHLINE SEE SHEET 7 -L- STA. 3182+00
CLEAR ROADWAY
4' MIN.
24'
33'-10"
N 0° 10' 21.1" E
-L-
-DETOUR-
EXIST. STONE 300-400 LB.
REMOVE STEEL SHEET PILING AND STONE 300-400 LB. (STRUCTURE PAY ITEM)
REMOVE EXISTING BRIDGE (STRUCTURE PAY ITEM)
REMOVE STEEL SHEET PILING (STRUCTURE PAY ITEM)
REMOVE SANDBAGS
2 ROWS OF SANDBAGS
+80.78 25.00'
+91.08 40.00'
+64.41 40.00'
+38.82 80.00'
+50.00
100' INC.
SEE SHEETS 2B-7 TO 2B-10 FOR DETOUR DESIGN
SEE SHEETS S-1 TO S-44 FOR STRUCTURE PLANS
SEE SHEET 2B-1 FOR ROADWAY & BRIDGE RELATIONSHIP
-L-
PI = 3179+50.00
EL = 14.00'
VC = 200'
K = 286
(+)0.0000%
(-)0.7000%
20
10
0
3169
3170
3171
3172
3173
3174
3175
3176
3177
3178
3179
3180
3181
3182

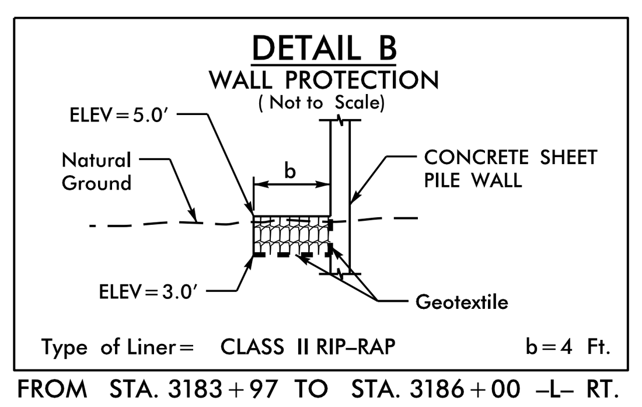
PROJECT REFERENCE NO.	SHEET NO.
B-2500AB	7

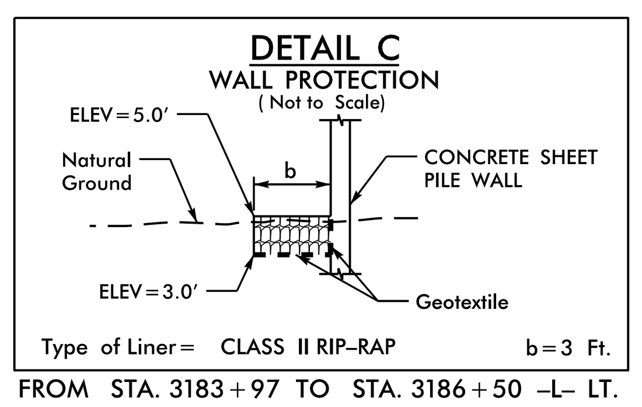
RW SHEET NO.

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 025873 ENGINEER GARY R. LOVERING — DocuSigned by: Gary Lovering 8/12/2015

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024897 ENGINEER John W. Twisdale, Jr. — DocuSigned by: John W. Twisdale, Jr. 8/12/2015







PI Sta 3183+79.35	PI Sta 3189+29.31
Δ = 6° 58' 03.6" (LT)	Δ = 8° 04' 19.6" (LT)
D = 2° 01' 02.8"	D = 1° 04' 15.4"
L = 345.37'	L = 753.73'
T = 172.90'	T = 377.49'
R = 2,840.00'	R = 5,350.00'
SE = .04	SE = .04

SEE SHEETS 2B-7 TO 2B-10 FOR DETOUR DESIGN

SEE SHEETS 2B-11 TO 2B-12 FOR NC-12 PAVEMENT REPAIR

SEE SHEET 2B-1 FOR ROADWAY & BRIDGE RELATIONSHIP

SEE SHEETS W-1 TO W-13 FOR WALL DETAILS

SEE SHEETS S-1 TO S-44 FOR STRUCTURE PLANS

PAVEMENT REMOVAL

8/17/99

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