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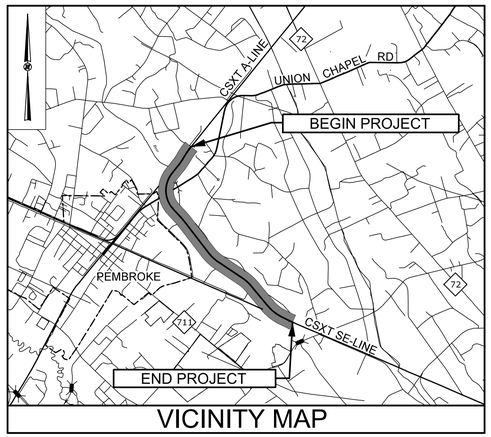
TIP PROJECT: P–4900A

CONTRACT: C203632

SEE SHEET 1A FOR INDEX OF SHEETS



VICINITY MAP

STATE OF NORTH CAROLINA
NCDOT RAIL DIVISION

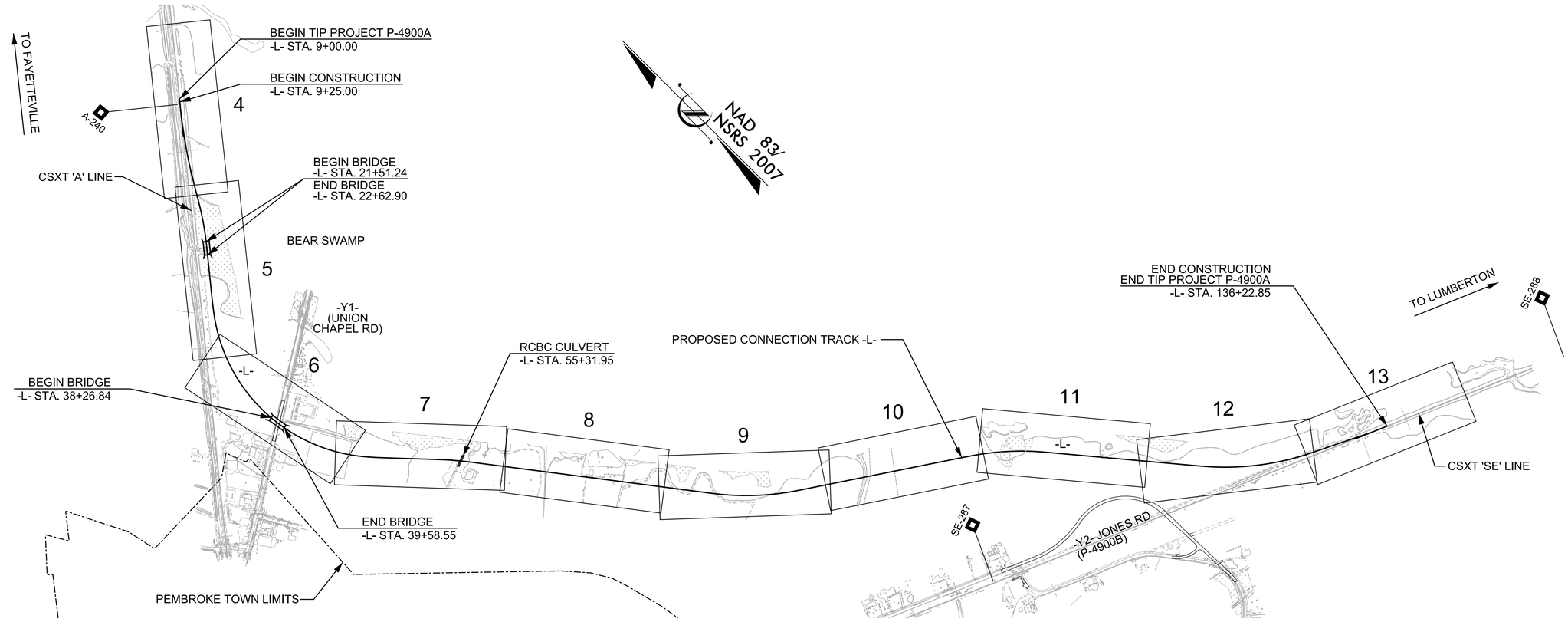
ROBESON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P-4900A	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
41099.1.S3		P.E. / UTIL P.E. / ROW
41099.3.S2		CONST./UTIL CONST.

LOCATION: RAILROAD BYPASS OF PEMBROKE

TYPE OF WORK: RAILROAD ROADBED, GRADING, DRAINAGE, STRUCTURES



NAD 83/
NSRS 2007

GRAPHIC SCALES

50 0 50 100
PLAN

50 0 50 100
PROFILE (HORIZONTAL)

10 0 10 20
PROFILE (VERTICAL)

PROJECT LENGTH

LENGTH OF RAIL TIP PROJECT	2.364 MILES
LENGTH OF STRUCTURES TIP PROJECT	0.046 MILES
TOTAL LENGTH OF RAIL TIP PROJECT	2.410 MILES

NCDOT CONTACT: BRAD SMYTHE, P.E.
NCDOT PROJECT MANAGER

Prepared in the Office of:
HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 30, 2014

LETTING DATE:
AUGUST 18, 2015

COREY VERNIER, P.E.
RAIL PROJECT ENGINEER
ENRICO ROQUE, P.E.
ROADWAY PROJECT DESIGN ENGINEER
DAVID HAWKINS, P.E.
STRUCTURE PROJECT ENGINEER
JAMES BYRD, P.E.
HYDRAULICS PROJECT ENGINEER
BRAD SMYTHE, P.E.
NCDOT PROJECT MANAGER

RAIL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 037992 ENGINEER COREY P. VERNIER

6/29/2015

DocuSigned by:
Corey P. Vernier P.E.
SIGNATURE:

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 15764 ENGINEER JAMES A BYRD

6/30/2015

DocuSigned by:
James A. Byrd P.E.
SIGNATURE:

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

NC DEPARTMENT OF TRANSPORTATION
RAIL DIVISION
DESIGN AND CONSTRUCTION

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: JANUARY 19, 2015

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	1A
R/W SHEET NO.	

RAILROAD DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 037992 ENGINEER COREY P VENTER

DocuSigned by: Corey P. Venter 2/9/2015
2CC1E0B62D39449...

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 07-30-2012

CLEARING:

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

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: TOWN OF PEMBROKE, PIEDMONT NATURAL GAS, DUKE ENERGY, LUMBEE RIVER EMC, AT&T, TIME WARNER

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

RIGHT-OF-WAY MARKERS:

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

GENERAL NOTES FOR RAILROAD GRADING:

THIS CONTRACT INCLUDES ALL WORK REQUIRED TO CONSTRUCT THE RAILROAD ROADBED UP TO AND INCLUDING THE SUBBALLAST LAYER. CONSTRUCTION OF TRACK, INCLUDING BALLAST AND SIGNALS, WILL BE DONE BY OTHERS AND IS DEPICTED FOR REFERENCE ONLY.

THE PROPOSED GRADE LINES SHOWN DENOTE THE FINAL ELEVATION OF THE PROPOSED TOP OF LOW RAIL AT THE CENTERLINE OF TRACK AS SHOWN ON THE TYPICAL SECTIONS. WHERE NO PROPOSED GRADE LINES ARE SHOWN, THE PROFILES SHOWN DEPICT THE EXISTING TOP OF LOW RAIL.

RAILROAD OPERATIONS:

THE CONTRACTOR SHALL NOT ENTER ONTO RAILROAD RIGHT OF WAY WITHOUT PERMISSION FROM THE OWNER AND AN APPOINTED CSXT FLAGMAN ON DUTY.

THE CONTRACTOR SHALL NOT INTERRUPT THE OPERATIONS OF THE RAILROAD WITHOUT PRIOR APPROVAL OF THE RAILROAD REPRESENTATIVE.

2012 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, 2012 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
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.27	Reinforced Concrete Endwall - for Single 60" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

INDEX OF SHEETS

8:19:00 AM
1/30/2015
$$$$USERNAME$$$$
P-4900_Pembroke_psh_01A.dgn

Note: Not To Scale

**S.U.E. = Subsurface Utility Engineering*

STATE OF NORTH CAROLINA
RAIL DIVISION

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	1B
R/W SHEET NO.	

DATE: JANUARY 19, 2015

CONVENTIONAL PLAN SHEET SYMBOLS

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

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

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 Marker — RW
- 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 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 Wheel Chair Ramp — WCR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- 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 — HH
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

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

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (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
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

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

STATE OF NORTH CAROLINA
RAIL DIVISION

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	1C
R/W SHEET NO.	

DATE: JANUARY 19, 2015

CONVENTIONAL PLAN SHEET SYMBOLS AND ABBREVIATIONS

RAILROADS:

Existing Track to be Retained

Existing Track to be Shifted

Existing Track to be Removed

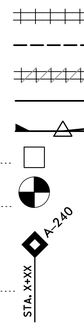
Proposed Track

Proposed Turnout

Turnout Label

Profile Grade Line

Milepost



ABBREVIATIONS:

TRACK ALIGNMENT - HORIZONTAL:

CD	Cant Deficiency
CS	Curve to Spiral
Dc	Degree of Curvature
Ea	Actual Superelevation (Inches)
Eu	Unbalance Elevation (Inches)
I	Curve Intersection Angle
L	Length of Curve
Ls	Length of Spiral
PI	Point of Intersection
PI/TO	Point of Intersection / Turnout
POL	Point on Line
PS	Point of Switch
PT	Point on Tangent
R	Radius
SC	Spiral to Curve
ST	Spiral to Tangent
TO	Turnout
TS	Tangent to Spiral
X	Spiral Tangent Length to Offset
Y	Spiral Tangent Offset

TRACK ALIGNMENT - VERTICAL:

EL	Elevation
L	Vertical Curve Length
R	Rate of Change
T/R	Top of Rail
VPC	Vertical Point of Curve
VPI	Vertical Point of Intersection
VPT	Vertical Point of Tangent

DRAINAGE:

CIP	Cast Iron Pipe
BCCMP	Bituminous Coated Corrugated Metal Pipe
INV.	Invert
PSRM	Permanent Soil Reinforcement Matting
RCB	Reinforced Concrete Box Culvert
RCP	Reinforced Concrete Pipe
WSP	Welded Steel Pipe
STB	Stone Box Culvert
SYFF	Square Yards Filter Fabric

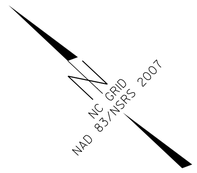
MISCELLANEOUS:

ABS	Absolute
AEI	Automatic Equipment Identification
AVE	Avenue
AH	Ahead
BK	Back
℄	Baseline
BLDG	Building
BLVD	Boulevard
CB	Catch Basin
℄	Centerline
CLR	Clear
CONC	Concrete
CP	Control Point
CSXT	CSX Transportation
DWG	Drawing
E	East
EL	Elevation
ESMT	Easement
EXIST	Existing
EB	East Bound
FT	Feet
FND	Foundation
GRD	Ground
HW	Headwall
HORIZ	Horizontal
LT	Left
LH	Lefthand
MIN	Minimum
MP	Milepost
MPH	Miles Per Hour
N	North
N/A	Not Applicable
NB	North Bound
NO.	Number
OTM	Other Track Material
PAV'T	Pavement
PGL	Profile Grade Line
PROP	Proposed
RD	Road
RT	Right
RR	Railroad
RH	Righthand
R/W	Right-of-Way
REQ'D	Required
S	South
SEG	Segment
STA	Station
SR	State Route
SHLDR	Shoulder
SHT	Sheet
SWM	Storm Water Management
TRK	Track
V	Velocity (MPH)
VERT	Vertical
W	West
W/	With
WB	West Bound

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	I-D
Location and Surveys	

SURVEY CONTROL SHEET P-4900A

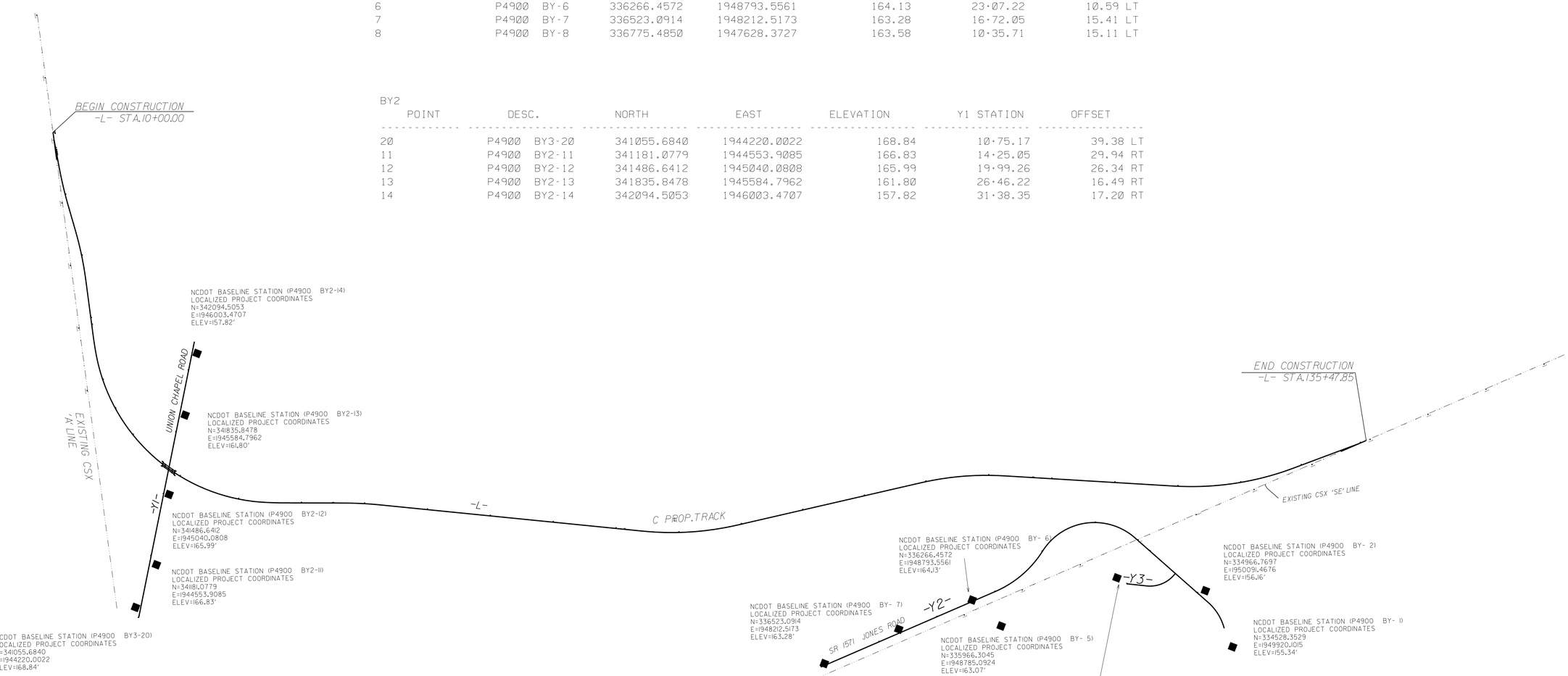


BY

POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
1	P4900 BY-1	334528.3529	1949920.1015	155.34	OUTSIDE PROJECT LIMITS	
2	P4900 BY-2	334966.7697	1950091.4676	156.16	45+40.79	35.04 LT
3	P4900 BY-3	335534.4356	1949685.3764	163.79	39+60.82	353.28 RT
4	P4900 BY-4	335809.4216	1949072.9187	163.84	26+78.72	323.53 RT
5	P4900 BY-5	335966.3045	1948785.0924	163.07	24+18.64	268.25 RT
6	P4900 BY-6	336266.4572	1948793.5561	164.13	23+07.22	10.59 LT
7	P4900 BY-7	336523.0914	1948212.5173	163.28	16+72.05	15.41 LT
8	P4900 BY-8	336775.4850	1947628.3727	163.58	10+35.71	15.11 LT

BY2

POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
20	P4900 BY3-20	341055.6840	1944220.0022	168.84	10+75.17	39.38 LT
11	P4900 BY2-11	341181.0779	1944553.9085	166.83	14+25.05	29.94 RT
12	P4900 BY2-12	341486.6412	1945040.0808	165.99	19+99.26	26.34 RT
13	P4900 BY2-13	341835.8478	1945584.7962	161.80	26+46.22	16.49 RT
14	P4900 BY2-14	342094.5053	1946003.4707	157.82	31+38.35	17.20 RT



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCGS FOR MONUMENT "PROSPECT"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 372029.5512(ft) EASTING: 1938868.6682(ft)
ELEVATION: 196.92(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.99991940
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"PROSPECT" TO -L- STATION 10+00.00 IS
N 15^ 18' 43.77" W 28949.9515'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT: HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/*

   THE FILES TO BE FOUND ARE AS FOLLOWS: TIP####_LS_CONTROL_DATE.HTML

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

© *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION
SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

$$$$ USERNAME $$$$ SYSTIME $$$$

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	1E
Location and Surveys	

SURVEY CONTROL SHEET P-4900A

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	40+71.82	-86.33	341462.5805	1945316.2344
L	31+64.39	110.00	342372.0450	1945184.0191
L	28+62.27	-110.00	342537.7952	1945517.7312
L	21+27.29	-110.00	343106.5662	1945970.1321
L	15+65.11	-110.00	343589.3458	1946281.3779
L	13+06.94	-110.00	343797.3371	1946419.0482
L	41+95.00	-110.00	341359.9487	1945372.7010
L	46+46.14	110.00	340861.4325	1945397.5421
L	46+40.56	-110.00	340999.9853	1945568.5215
L	49+19.56	-110.00	340798.2478	1945745.2166
L	49+19.56	110.00	340648.1061	1945584.4140
L	53+88.51	-110.00	340453.8248	1946066.0970
L	52+95.51	-110.00	340523.4568	1946001.7896
L	53+88.51	110.00	340306.3127	1945902.8789
L	55+73.02	-110.00	340307.6387	1946189.9024
L	56+66.02	-80.00	340214.4865	1946224.1904
L	76+53.02	-80.00	338637.8037	1947433.4240
L	77+77.02	-80.00	338541.7966	1947508.4285
L	77+77.02	80.00	338441.0268	1947384.1488
L	76+53.02	80.00	338540.4322	1947306.4642
L	85+24.88	80.00	337929.5087	1947957.8143
L	85+24.88	-80.00	338062.4390	1948046.8624
L	84+00.88	-80.00	338131.1465	1947946.2526
L	84+00.88	80.00	338000.6734	1947853.6418
L	100+21.85	80.00	337096.6717	1949199.1102
L	100+21.85	-80.00	337227.1448	1949291.7211
L	105+55.09	-80.00	336858.4504	1949700.7243
L	105+55.09	80.00	336752.8469	1949580.5248
L	106+79.09	-80.00	336762.1933	1949782.2773
L	106+79.09	80.00	336659.8795	1949659.2656
L	119+08.98	-80.00	335816.6270	1950568.7423
L	119+08.98	80.00	335714.3132	1950445.7305
L	122+12.49	80.00	335483.4250	1950655.2465
L	128+68.20	-80.00	335227.2529	1951276.9872
L	98+97.85	-80.00	337298.3095	1949187.5485
L	98+97.85	80.00	337165.3792	1949098.5005
L	12+44.94	-110.00	343846.5765	1946454.9842
L	10+56.79	-110.00	343993.7779	1946563.1226
L	9+00.00	-109.99	344115.3465	1946662.1415
L	9+00.00	-64.99	344143.7673	1946627.2522
L	16+27.11	-110.00	343537.0280	1946250.0927
L	17+47.11	-110.00	343433.8451	1946188.8286
L	18+71.11	-110.00	343325.4570	1946123.2658
L	22+51.29	-110.00	343007.8205	1945890.7863
L	25+83.27	-110.00	342750.7521	1945680.7298
L	52+95.51	110.00	340373.3151	1945840.9871
L	120+32.98	-80.00	335723.6596	1950647.4830
L	120+32.98	80.00	335618.0561	1950527.2836
L	55+85.00	110.00	340161.8732	1946024.6848
L	129+92.20	-80.00	335172.3595	1951385.7519
L	130+86.06	-80.00	335130.8226	1951469.9137
L	57+10.61	80.00	340081.7322	1946124.3674
L	55+73.02	110.00	340170.9372	1946017.5287
L	56+07.88	54.48	340178.4288	1946082.2113

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y2	37+96.75	-80.00	335719.1083	1950110.7143
Y2	30+02.33	-80.00	336204.1288	1949442.8301
Y2	25+03.18	-80.00	336252.3543	1949000.9671
Y2	23+21.99	-80.00	336324.2992	1948834.6713
Y2	23+22.60	-31.44	336279.4940	1948815.9450
Y2	40+06.84	-70.00	335501.5404	1950109.8788
Y2	46+15.67	-70.00	334893.0032	1950128.7319
Y2	46+59.25	-65.93	334842.4135	1950123.5798
Y2	39+43.38	65.00	335560.7934	1949972.9784
Y2	41+50.00	65.00	335354.2728	1949979.3765
Y2	46+75.00	-30.00	334828.2555	1950086.1771

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y3	12+78.96	-74.43	335328.2010	1949945.1675
Y3	11+24.42	-30.00	335381.0937	1949824.1156

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	105+92.99	80.39	336724.7800	1949604.2967
L	106+57.96	80.18	336675.9561	1949645.6492

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y2	28+46.74	-80.00	336190.4567	1949303.0529
Y2	29+25.34	-80.00	336194.0980	1949373.9845

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	344107.2825	1946513.7059
POT	10+59.54	344061.1188	1946476.1010
TS	12+44.94	343911.7012	1946366.3345
SC	13+06.94	343861.6195	1946329.7859
CS	15+65.11	343646.3976	1946187.3295
ST	16+27.11	343593.1868	1946155.5084
TS	17+47.11	343490.0039	1946094.2443
SC	18+71.11	343383.9016	1946030.0766
CS	21+27.29	343174.0741	1945883.2835
ST	22+51.29	343077.4226	1945805.6068
TS	25+83.27	342820.3542	1945595.5503
SC	28+62.27	342598.7858	1945426.1902
CS	46+40.56	340933.0863	1945481.2030
ST	49+19.56	340723.1770	1945664.8153
TS	52+95.51	340448.3859	1945921.3884
SC	53+88.51	340380.0687	1945984.4879
CS	55+73.02	340239.2880	1946103.7155
ST	56+66.02	340165.8008	1946160.7105
TS	76+53.02	338589.1179	1947369.9441
SC	77+77.02	338491.4118	1947446.2887
CS	84+00.88	338065.9099	1947899.9472
ST	85+24.88	337995.9738	1948002.3383
TS	98+97.85	337231.8444	1949143.0245
SC	100+21.85	337161.9082	1949245.4156
CS	105+55.09	336805.6486	1949640.6245
ST	106+79.09	336711.0364	1949720.7715
TS	119+08.98	335765.4701	1950507.2364
SC	120+32.98	335670.8579	1950587.3834
CS	128+68.20	335156.4980	1951239.6542
ST	129+92.20	335100.6208	1951350.3463
POT	134+88.31	334881.0584	1951795.2225
POT	135+47.85	334857.4079	1951849.8656

Y1

TYPE	STATION	NORTH	EAST
POT	10+00.00	340982.6073	1944176.8547
POT	32+25.00	342154.7750	1946068.0575

Y2

TYPE	STATION	NORTH	EAST
POT	10+00.00	336775.7934	1947589.5945
PC	25+03.18	336178.9311	1948969.2019
PRC	30+02.33	336125.5820	1949458.0091
PT	38+41.73	335664.4107	1950034.7994
PC	46+15.67	334890.8356	1950058.7654
PT	48+56.69	334661.1436	1949997.8076

Y3

TYPE	STATION	NORTH	EAST
POT	10+00.00	335462.1982	1949725.1145
PC	11+57.93	335336.2684	1949820.4163
PT	13+96.41	335237.2525	1950027.5067
POT	14+16.93	335237.8878	1950048.0134

NOTE: DRAWING NOT TO SCALE

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$
$$$$$USERNAME$$$$

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NC License No: C-1554

DATE: JANUARY 19, 2015

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	2
R/W SHEET NO.	

RAILROAD DESIGN ENGINEER

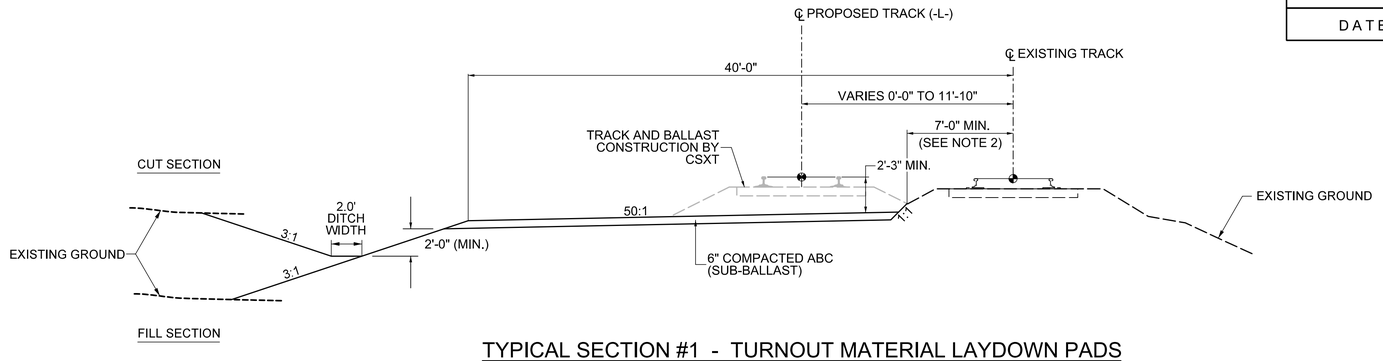
NORTH CAROLINA PROFESSIONAL SEAL 037992 ENGINEER COREY P. VENNER

DocuSigned by: Corey P. Venner 1/21/2015
2CC1E0B62D39449...

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 15764 ENGINEER JAMES A. BYRD

DocuSigned by: James A. Byrd 1/21/2015
23592959E54F47C...



TYPICAL SECTION #1 - TURNOUT MATERIAL LAYDOWN PADS

-L- STA. 9+25 TO STA. 13+00
-L- STA. 132+50 TO STA. 136+22.85

NOTES

1. EMBANKMENT TO BE CONSTRUCTED WITH A 2:1 SIDE SLOPE ON THE LEFT AND/OR RIGHT SIDE AS FOLLOWS:

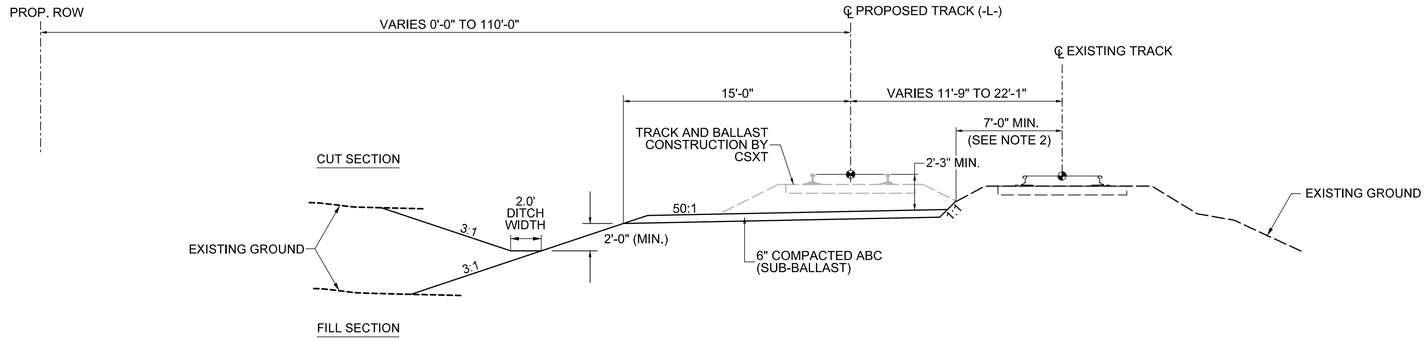
-L- STA. 18+00 TO STA. 21+54 (LT & RT)
-L- STA. 22+62 TO STA. 25+50 (LT & RT)
-L- STA. 55+00 TO STA. 56+50 (LT & RT)
-L- STA. 102+00 TO STA. 105+00 (LT)

2. ACTUAL LOCATION OF EXCAVATION IS TO BE BASED ON FIELD CONDITIONS AS DETERMINED BY THE CSXT REPRESENTATIVE.

3. SEE SPECIAL PROVISIONS FOR ABC (SUB-BALLAST) PLACEMENT AND COMPACTION REQUIREMENTS.

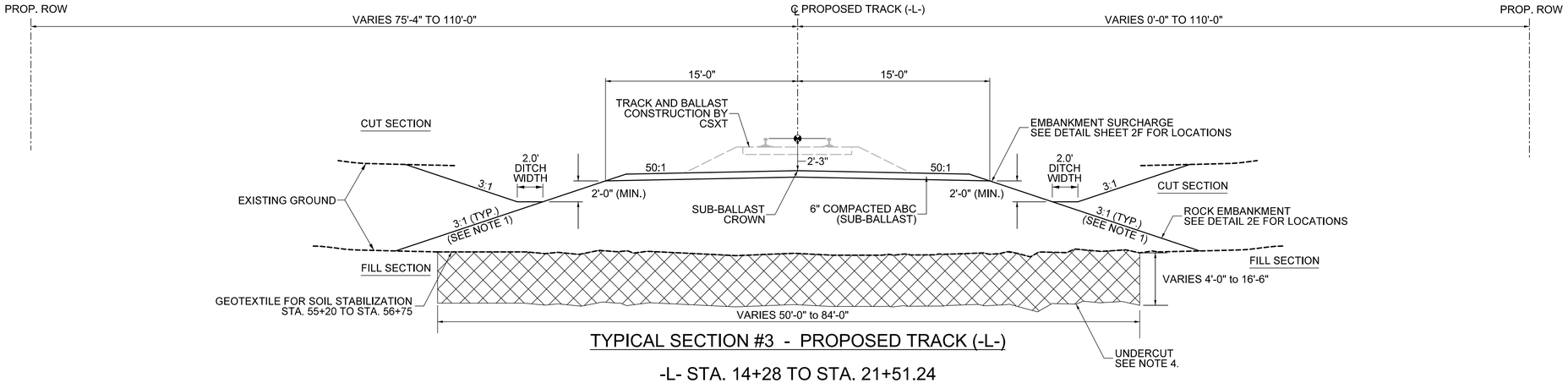
4. UNDERCUT TO DEPTH AND WIDTH AS COORDINATED WITH ENGINEER AS FOLLOWS:

-L- STA. 18+50 TO STA. 21+75
-L- STA. 22+35 TO STA. 24+25
-L- STA. 55+20 TO STA. 56+75



TYPICAL SECTION #2 - PROPOSED TRACK (-L-) ADJACENT TO EXISTING TRACK

-L- STA. 13+00 TO STA. 14+28
-L- STA. 130+48 TO STA. 132+50



TYPICAL SECTION #3 - PROPOSED TRACK (-L-)

-L- STA. 14+28 TO STA. 21+51.24
-L- STA. 22+62.90 TO STA. 38+26.84
-L- STA. 39+58.55 TO STA. 130+48

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P-4900A	2A
R/W SHEET NO.	

RAILROAD DESIGN ENGINEER

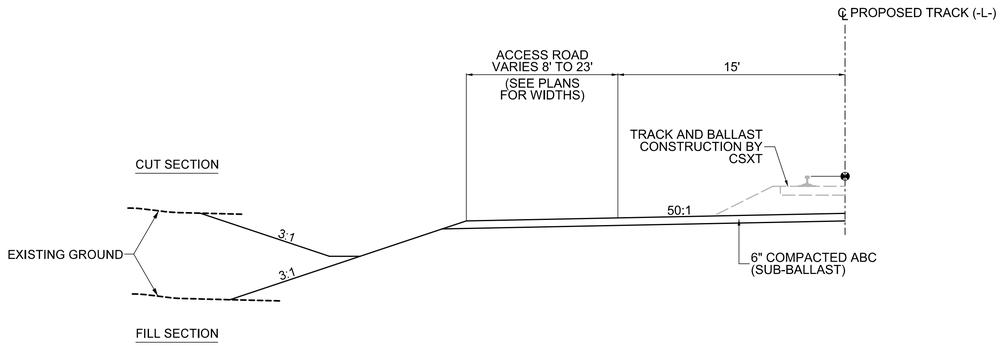
NORTH CAROLINA PROFESSIONAL SEAL 037992 ENGINEER COREY P. VERNIER

DocuSigned by: Corey P. Vernier 1/27/2015
2CC1E0B62D39449...

HYDRAULICS ENGINEER

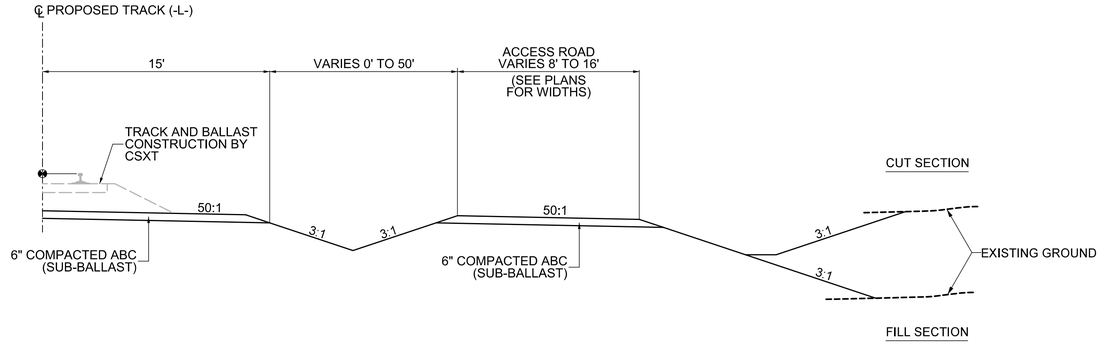
NORTH CAROLINA PROFESSIONAL SEAL 15764 ENGINEER JAMES A. BYRD

DocuSigned by: James A. Byrd 1/27/2015
23592959E54F47C...



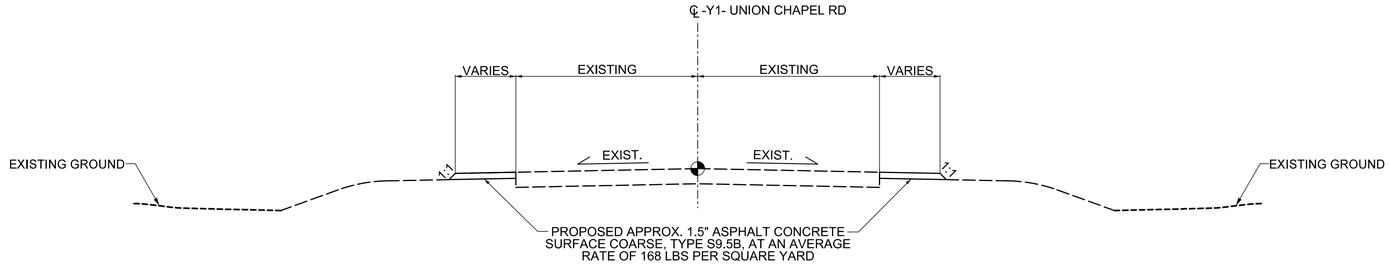
PARTIAL SECTION #1

-L- STA. 126+95 TO STA. 132+50



PARTIAL SECTION #2

-L- STA. 124+85 TO STA. 126+95



TEMPORARY ASPHALT PAD DETAIL

(SEE SHEET TMP-4 FOR LOCATIONS)

8:25:53 AM
1/27/2015
$$$$USERNAME$$$$
c:\projects\...\pembroke_psh_02A.dgn

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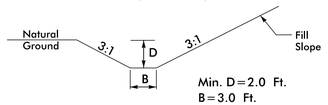
DATE: JANUARY 19, 2015

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 15764 ENGINEER JAMES A BYRD

DocuSigned by: James A. Byrd 1/27/2015
23592959E54F47C...

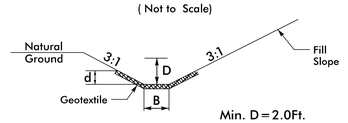
DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D = 2.0 Ft.
B = 3.0 Ft.

FROM –L– STA. 9+25 TO STA. 18+00 LT.
FROM –L– STA. 28+00 TO STA. 34+00 LT.
FROM –L– STA. 40+00 TO STA. 54+90 RT.
FROM –L– STA. 46+50 TO STA. 51+00 LT.
FROM –L– STA. 53+00 TO STA. 55+56 LT.
FROM –L– STA. 55+56 TO STA. 58+00 LT.
FROM –L– STA. 58+00 TO STA. 62+64 LT.
FROM –L– STA. 58+00 TO STA. 62+72 RT.
FROM –L– STA. 62+72 TO STA. 70+00 RT.
FROM –L– STA. 63+50 TO STA. 66+44 LT.
FROM –L– STA. 66+44 TO STA. 73+00 LT.
FROM –L– STA. 70+00 TO STA. 74+38 RT.
FROM –L– STA. 73+00 TO STA. 74+38 LT.
FROM –L– STA. 74+38 TO STA. 76+00 RT.
FROM –L– STA. 74+38 TO STA. 76+00 LT.
FROM –L– STA. 76+00 TO STA. 81+02 RT.
FROM –L– STA. 76+00 TO STA. 81+02 LT.
FROM –L– STA. 81+02 TO STA. 88+00 RT.
FROM –L– STA. 82+50 TO STA. 88+00 LT.
FROM –L– STA. 88+00 TO STA. 90+31 RT.
FROM –L– STA. 88+00 TO STA. 90+58 LT.
FROM –L– STA. 90+31 TO STA. 93+00 RT.
FROM –L– STA. 90+58 TO STA. 96+00 LT.
FROM –L– STA. 93+00 TO STA. 102+70 RT.
FROM –L– STA. 96+00 TO STA. 102+00 LT.
FROM –L– STA. 102+70 TO STA. 109+18 RT.
FROM –L– STA. 105+50 TO STA. 112+00 LT.
FROM –L– STA. 109+18 TO STA. 116+29 RT.
FROM –L– STA. 112+00 TO STA. 116+29 LT.
FROM –L– STA. 116+29 TO STA. 120+15 RT.
FROM –L– STA. 116+29 TO STA. 120+00 LT.
FROM –L– STA. 120+15 TO STA. 122+07 RT.
FROM –L– STA. 122+07 TO STA. 125+00 RT.
FROM –L– STA. 125+50 TO STA. 132+00 LT.
FROM –L– STA. 124+00 TO STA. 128+00 RT.

DETAIL B
SPECIAL LATERAL BASE DITCH
(Not to Scale)

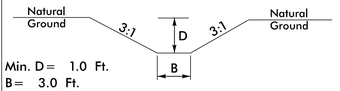


Min. D = 2.0Ft.
Max. d = 1.0Ft.
B = 2.0Ft.

Type of Liner = CL I Rip–Rap

FROM –L– STA. 24+50 TO STA. 25+50 RT.

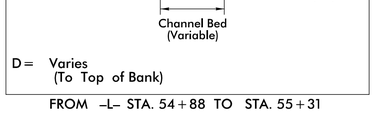
DETAIL C
STANDARD BASE DITCH
(Not to Scale)



Min. D = 1.0 Ft.
B = 3.0 Ft.

FROM –L– STA. 18+00 TO 19+23 LT.
FROM –L– STA. 27+72 TO 28+00 LT.
FROM –L– STA. 51+00 TO 51+56 LT.
AT –L– STA. 66+44 LT.
AT –L– STA. 74+38 LT.
AT –L– STA. 81+02 LT.
FROM –L– STA. 82+30 TO 82+50 LT.
FROM –L– STA. 102+00 TO 102+46 LT.
AT –L– STA. 102+70 RT.
FROM –L– STA. 105+03 TO 105+50 LT.
AT –L– STA. 116+29 LT.
AT –L– STA. 122+06 LT.

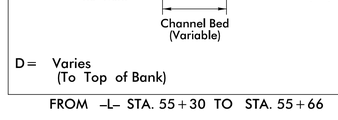
DETAIL D
TOE PROTECTION
(Not to Scale)



Type of Liner = PSRM

FROM –L– STA. 55+25 TO STA. 57+00 RT.
FROM –L– STA. 20+50 TO STA. 21+00 RT.
FROM –L– STA. 23+12 TO STA. 24+50 RT.

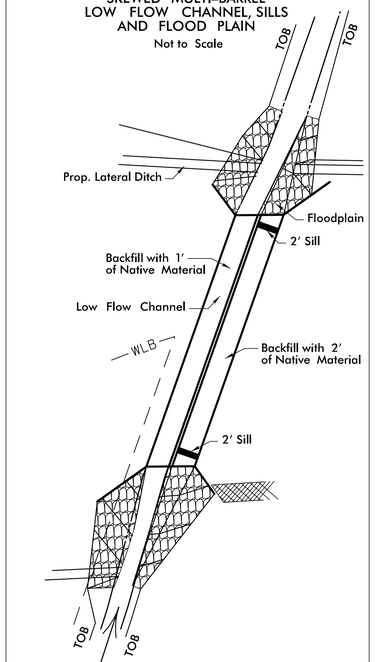
DETAIL E
SPECIAL LATERAL BASE DITCH
(Not to Scale)



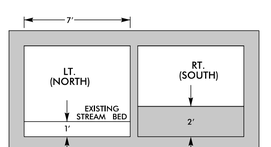
Min. D = 2.0 Ft.
B = 2.0 Ft.

FROM –L– STA. 25+50 TO STA. 34+50 RT.

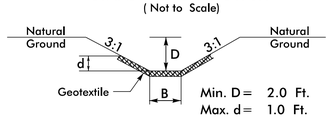
DETAIL L
SKEWED MULTI-BARREL
LOW FLOW CHANNEL, SILLS
AND FLOOD PLAIN
Not to Scale



PLAN VIEW:
–L– 55+32
2 @ 7' X 6' RCBC



DETAIL F
STANDARD BASE DITCH
(Not to Scale)

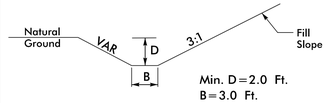


Min. D = 2.0 Ft.
Max. d = 1.0 Ft.
B = 3.0 Ft.

Type of Liner = CL I Rip–Rap

FROM –L– STA. 132+00 TO STA. 132+50 LT.

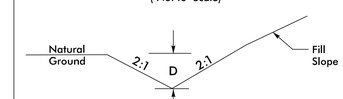
DETAIL G
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D = 2.0 Ft.
B = 3.0 Ft.

FROM –L– STA. 15+50 TO STA. 20+73 RT.

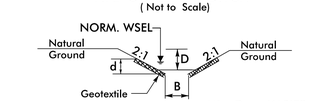
DETAIL H
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D = 1.0 Ft.

FROM –L– STA. 39+11.6 TO STA. 40+69.19 LT

DETAIL I
PIPE OUTLET W/ DITCH
(Not to Scale)



*When B is > 6.0'
Std. No. 876.01

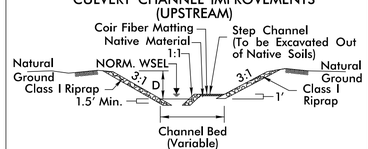
Min. D = VARIES
(To Top Of Bank)
Max. d = 4.0 Ft.
B = VARIES

Type of Liner = CL I Rip–Rap

AT –L– STA. 62+60 LT.
AT –L– STA. 62+76 RT.
AT –L– STA. 90+14 RT.
AT –L– STA. 90+61 LT.

DETAIL J
(Not to Scale)

CULVERT CHANNEL IMPROVEMENTS
(UPSTREAM)

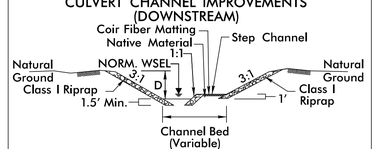


D = Varies
(To Top of Bank)

FROM –L– STA. 54+88 TO STA. 55+31

DETAIL K
(Not to Scale)

CULVERT CHANNEL IMPROVEMENTS
(DOWNSTREAM)



D = Varies
(To Top of Bank)

FROM –L– STA. 55+30 TO STA. 55+66

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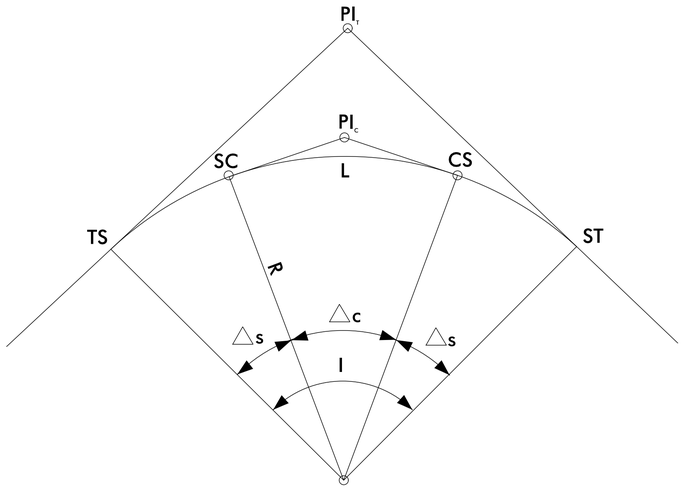
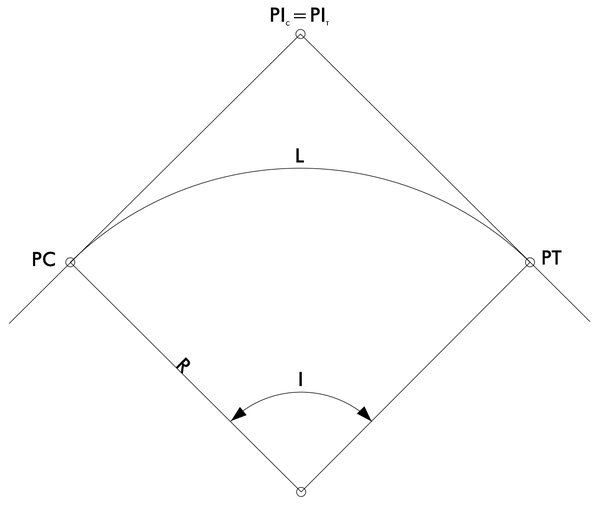
P-4900A	2C
R/W SHEET NO.	

RAILROAD HORIZONTAL ALIGNMENT GEOMETRY





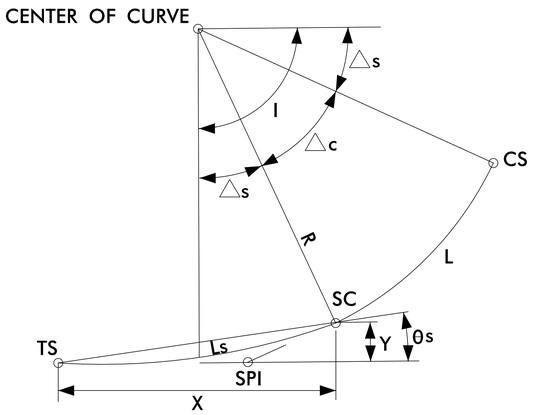


FIGURE A

CIRCULAR CURVE WITH
SPIRAL TRANSITION CURVES

FIGURE B

SIMPLE CIRCULAR CURVE

FIGURE C

SPIRAL TRANSITION CURVE

FIGURE D

DEFLECTION BETWEEN TANGENTS

R	RADIUS OF CURVATURE	PI_c	POINT OF INTERSECTION (CIRCULAR CURVE)
Dc	DEGREE OF CURVATURE (CHORD DEFINED)	PI_T	POINT OF INTERSECTION (TANGENT)
L	LENGTH OF CURVE (CHORD DEFINED)	SPI	POINT OF INTERSECTION (SPIRAL)
I	TOTAL INTERSECTION ANGLE	PC	TANGENT TO CIRCULAR CURVE
△c	CURVE ANGLE	PT	CIRCULAR CURVE TO TANGENT
△s	SPIRAL ANGLE	TS	TANGENT TO SPIRAL
θs	SPIRAL DEFLECTION	SC	SPIRAL TO CIRCULAR CURVE
Ls	LENGTH OF SPIRAL	CS	CIRCULAR CURVE TO SPIRAL
X	SPIRAL TANGENT LENGTH TO OFFSET	ST	SPIRAL TO TANGENT
Y	SPIRAL TANGENT OFFSET	PINC	POINT OF INTERSECTION NO CURVE

RAILROAD HORIZONTAL ALIGNMENT GEOMETRY

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NC License No: C-1554

DATE: JANUARY 19, 2015

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P-4900A	2D
R/W SHEET NO.	

RAILROAD DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 037992 ENGINEER COREY P VENTER

DocuSigned by: Corey P. Venter 1/27/2015
2CC1E0B62D39449...

TRACK GEOMETRY CURVE DATA

PROPOSED CONNECTION TRACK (-L-)

FEATURE NO.	DESC.	STATION	NORTHING	EASTING	BEARING	DISTANCE (FT)	R (FT)	Dc (CHORD)	L (FT)	T (FT)	I	DELTA (CURVE)	DELTA (SPIRAL)	THETA	Ls* (FT)	X (FT)	Y (FT)	Ea (in)
	POT	9+00.00	344184.8135	1946576.8626														
					S 39° 09' 58.47" W	100.0000												
1	PS	10+00.00	344107.2825	1946513.7059														
					S 39° 09' 58.47" W	59.5417												
NO. 20 LH	PITO	10+59.54	344061.1188	1946476.1010														
					S 36° 18' 07.47" W	185.4031												
	TS	12+44.94	343911.7012	1946366.3345									0° 32' 32.92" (LT)	0° 10' 50.97"	62.00	61.9994	0.1957	
	SC	13+06.94	343861.6195	1946329.7859														
101	PI	14+36.09	343756.8181	1946254.3130			3274.1718	1° 45' 00"	258.1644	129.1491	5° 36' 09.56" (LT)	4° 31' 03.72" (LT)						1.00"
	CS	15+65.11	343646.3976	1946187.3295														
	ST	16+27.11	343593.1868	1946155.5084									0° 32' 32.92" (LT)	0° 10' 50.97"	62.00	61.9994	0.1957	
					S 30° 41' 57.90" W	120.0000												
	TS	17+47.11	343490.0039	1946094.2443									1° 23' 41.68" (RT)	0° 27' 53.88"	124.00	123.9927	1.0062	
	SC	18+71.11	343383.9016	1946030.0766														
102	PI	19+99.31	343275.2930	1945961.9615			2546.6427	2° 15' 00"	256.1857	128.2010	8° 33' 13.07" (RT)	5° 45' 49.71" (RT)						1.75"
	CS	21+27.29	343174.0741	1945883.2835														
	ST	22+51.29	343077.4226	1945805.6068									1° 23' 41.68" (RT)	0° 27' 53.88"	124.00	123.9927	1.0062	
					S 39° 15' 10.96" W	331.9757												
	TS	25+83.27	342820.3542	1945595.5503									5° 34' 43.92" (LT)	1° 51' 34.10"	279.00	278.7356	9.0492	
	SC	28+62.27	342598.7869	1945426.1887														
103	PI	38+86.68	341746.2682	1944858.1844			1432.6854	4° 00' 00"	1778.2920	1024.4106	82° 17' 21.88" (LT)	71° 07' 54.04" (LT)						4.25"
	CS	46+40.56	340933.0863	1945481.2030														
	ST	49+19.56	340723.1770	1945664.8153									5° 34' 43.92" (LT)	1° 51' 34.10"	279.00	278.7356	9.0492	
					S 43° 02' 10.92" E	375.9519												
	TS	52+95.51	340448.3859	1945921.3884									0° 55' 47.83" (RT)	0° 18' 35.94"	93.00	92.9976	0.5031	
	SC	53+88.51	340380.0687	1945984.4880														
104	PI	54+80.80	340311.5987	1946046.3693			2864.9344	2° 00' 00"	184.5067	92.2900	5° 33' 00.15" (RT)	3° 41' 24.49" (RT)						1.25"
	CS	55+73.02	340239.2880	1946103.7155														
	ST	56+66.02	340165.8008	1946160.7105									0° 55' 47.83" (RT)	0° 18' 35.94"	93.00	92.9976	0.5031	
					S 37° 29' 10.78" E	1987.0014												
	TS	76+53.02	338589.1179	1947369.9441									1° 32' 59.56" (LT)	0° 30' 59.84"	124.00	123.9909	1.1180	
	SC	77+77.02	338491.4117	1947446.2886														
105	PI	80+90.91	338247.5964	1947643.9816			2292.0130	2° 30' 00"	623.8539	313.8923	18° 41' 45.97" (LT)	15° 35' 46.85" (LT)						2.00"
	CS	84+00.88	338065.9099	1947899.9472														
	ST	85+24.88	337995.9738	1948002.3383									1° 32' 59.56" (LT)	0° 30' 59.84"	124.00	123.9909	1.1180	
					S 56° 10' 56.75" E	1372.9744												
	TS	98+97.85	337231.8444	1949143.0245									1° 32' 59.56" (LT)	0° 30' 59.84"	124.00	123.9909	1.1180	
	SC	100+21.85	337161.9083	1949245.4156														
106	PI	102+89.70	337006.8711	1949463.8369			2292.0130	2° 30' 00"	533.2416	267.8514	16° 25' 50.85" (RT)	13° 19' 51.74" (RT)						2.00"
	CS	105+55.09	336805.6486	1949640.6245														
	ST	106+79.09	336711.0364	1949720.7715									1° 32' 59.56" (LT)	0° 30' 59.84"	124.00	123.9909	1.1180	
					S 39° 45' 05.89" E	1229.8873												
	TS	119+08.98	335765.4701	1950507.2364									1° 32' 59.56" (LT)	0° 30' 59.84"	124.00	123.9909	1.1180	
	SC	120+32.98	335670.8579	1950587.3833														
107	PI	124+55.31	335353.5837	1950866.1304			2292.0130	2° 30' 00"	835.2250	422.3303	23° 58' 49.36" (LT)	20° 52' 50.25" (LT)						2.00"
	CS	128+68.20	335156.4980	1951239.6542														
	ST	129+92.20	335100.6208	1951350.3463									1° 32' 59.56" (LT)	0° 30' 59.84"	124.00	123.9909	1.1180	
					S 63° 43' 55.25" E	496.1073												
2	PITO	134+88.31	334881.0584	1951795.2225														
					S 66° 35' 46.25" E	59.5417												
NO. 20 RH	PS	135+47.85	334857.4079	1951849.8656														
					S 66° 35' 46.25" E	75.0000												
	POT	136+22.85	334827.6186	1951918.6921														

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	2E

GEOTECHNICAL ENGINEER

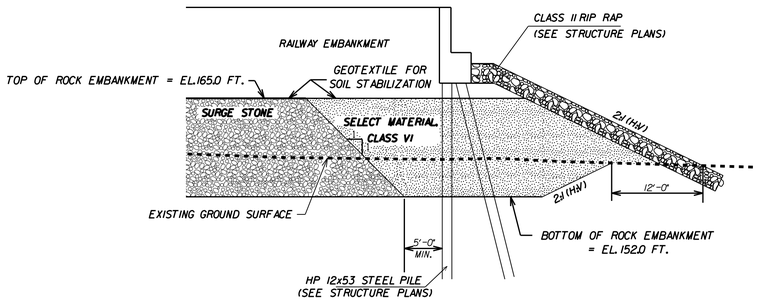
NORTH CAROLINA PROFESSIONAL SEAL 032672 ENGINEER MICHAEL D. VALIQUETTE

DocuSigned by: Michael Valiquette 20FDC306E2F640B... 1/18/2015

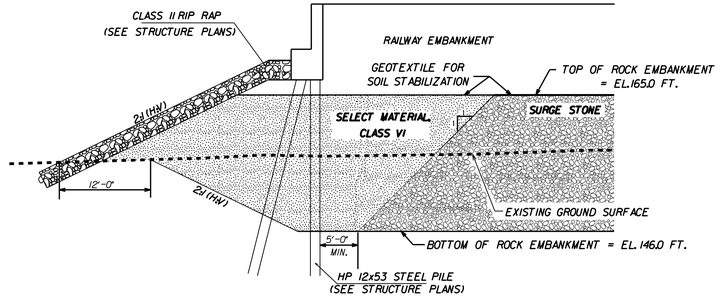
SIGNATURE DATE

ENGINEER

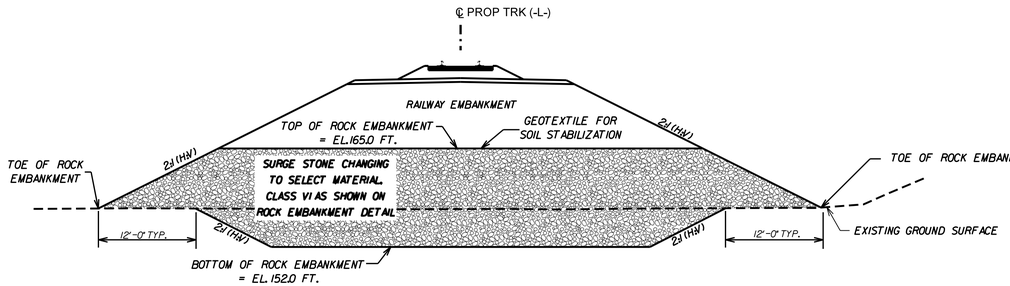
SIGNATURE DATE



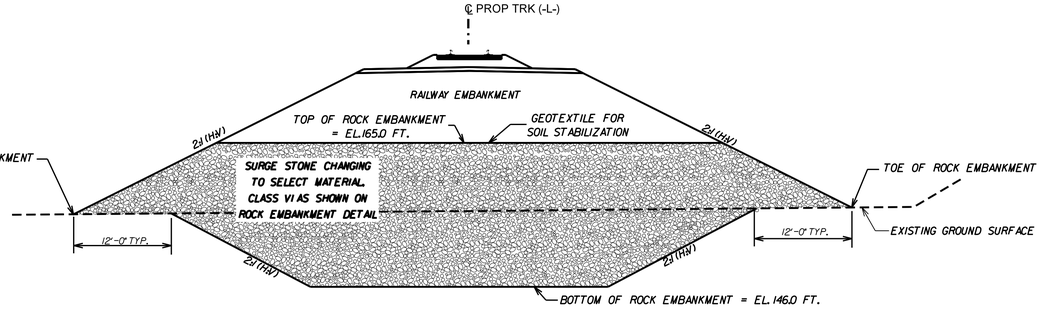
ROCK EMBANKMENT DETAIL
STA 18+50 -L- TO STA 21+75 +/- -L-
N.T.S.



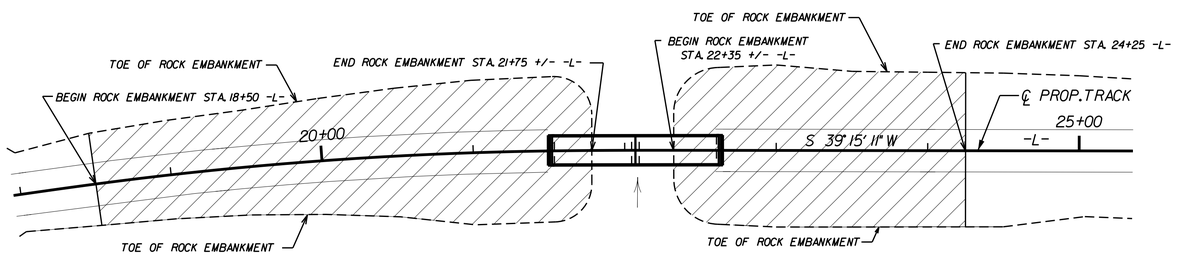
ROCK EMBANKMENT DETAIL
STA 22+35 +/- -L- TO STA 24+25 -L-
N.T.S.



ROCK EMBANKMENT TYPICAL SECTION
STA 18+50 -L- TO STA 21+75 -L-
N.T.S.



ROCK EMBANKMENT TYPICAL SECTION
STA 22+35 +/- -L- TO STA 24+25 -L-
N.T.S.



ROCK EMBANKMENT PLAN VIEW
N.T.S.

ROCK EMBANKMENT LOCATIONS	
BEGIN STATION	END STATION
18+50 -L-	21+75 +/- -L-
22+35 +/- -L-	24+25 -L-

ESTIMATED QUANTITIES	
SURGE STONE	22,000 TONS
SELECT MATERIAL, CLASS VI	3000 TONS
GEOTEXTILE FOR SOIL STABILIZATION	3700 S.Y.

NOTES

1. FOR ROCK EMBANKMENTS, SEE ROCK EMBANKMENT SPECIAL PROVISION.

PREPARED BY: M. VALIQUETTE	DATE: 1-2015
REVIEWED BY: C. KREIDER	DATE: 1-2015

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

ROCK EMBANKMENT

REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	2F

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032672 ENGINEER MICHAEL D. VALIQUETTE

DocuSigned by: Michael Valiquette 6/30/2015 20FDC306E2F640B...

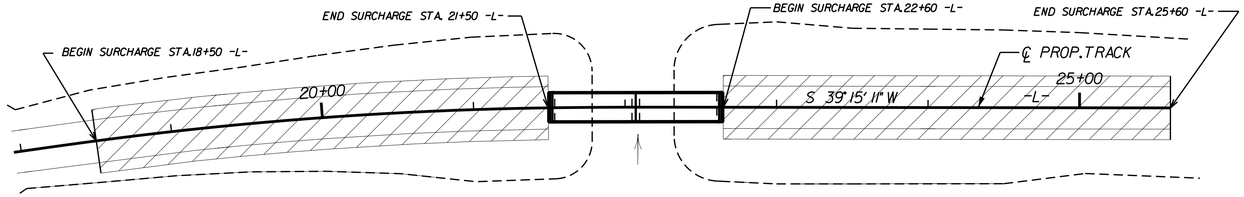
SIGNATURE DATE

ENGINEER

SIGNATURE DATE

NOTES

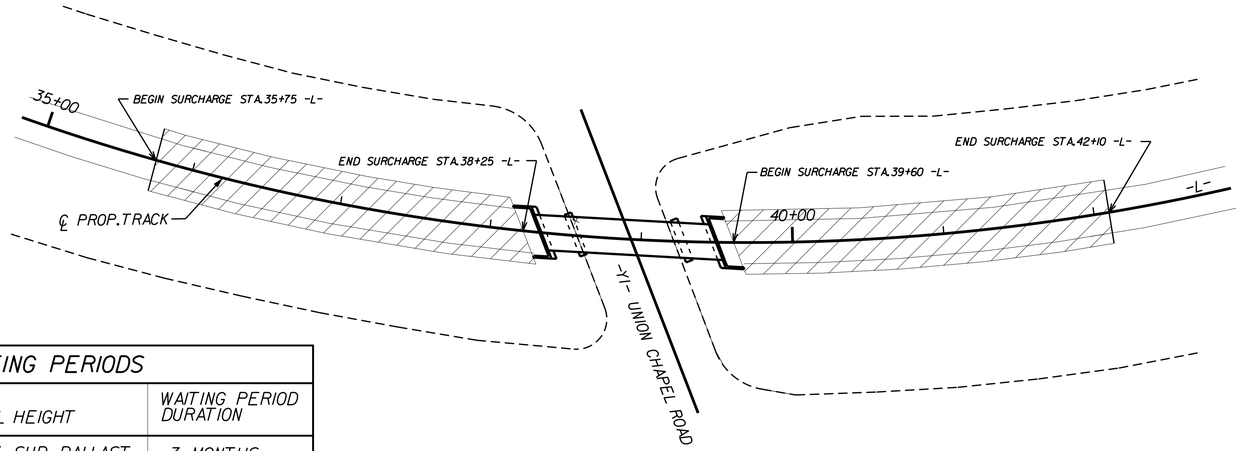
1. FOR SURCHARGES AND WAITING PERIODS.SEE SURCHARGE SPECIAL PROVISION.
2. MAINTAIN THE SURCHARGE ELEVATIONS THROUGHT THE WAITING PERIODS.
3. FOR EMBANKMENT SETTLEMENT GAUGES,SEE EMBANKMENT SETTLEMENT MONITORING DETAIL SHEET AND SURCHARGE SPECIAL PROVISION.
4. EACH WAITING PERIOD BEGINS AFTER CONSTRUCTING THE EMBANKMENT OR SURCHARGE TO THE HEIGHT SPECIFIED IN THE EMBANKMENT AND SURCHARGE WAITING PERIODS SUMMARY TABLE AND SHOWN ON THE SURCHARGE TYPICAL SECTIONS.
5. DO NOT PLACE SURCHARGES FROM 18+50 -L- TO 21+50 -L- AND FROM 22+60 -L- TO 25+60 -L-UNTIL AFTER COMPLETING EMBANKMENT WAITING PERIODS FROM 18+50 -L- TO 21+50 -L- AND FROM 22+60 -L- TO 25+60 -L-.
6. PLACE PERMANENT SOIL REINFORCMENT MAT (PSRM) ON SURCHARGE SIDE SLOPES. FOR PERMANENT SOIL REINFORCMENT MAT,SEE PERMANENT SOIL REINFORCMENT MAT SPECIAL PROVISION.
7. DO NOT PLACE SUB-BALLAST STONE UNTIL AFTER SURCHARGE REMOVAL.



SURCHARGE PLAN VIEW
STA 18+50 -L- TO STA 21+50 -L-
STA 22+60 -L- TO STA 25+60 -L-
N.T.S.

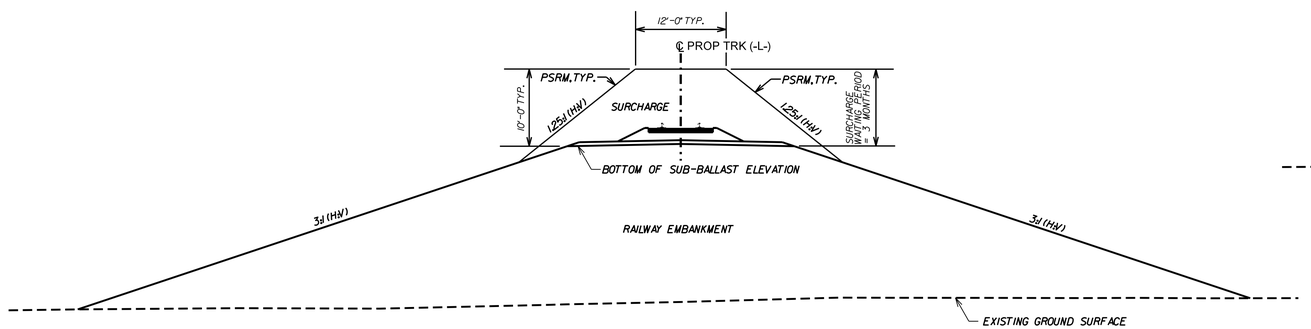
SURCHARGE LOCATIONS	
BEGIN STATION	END STATION
18+50 -L-	21+50 -L-
22+60 -L-	25+60 -L-
35+75 -L-	38+25 -L-
39+60 -L-	42+10 -L-

ESTIMATED QUANTITIES	
BORROW EXCAVATION	10,000 C.Y.
UNCLASSIFIED EXCAVATION	10,000 C.Y.
PERMANENT SOIL REINFORCEMENT MAT	5800 S.Y.

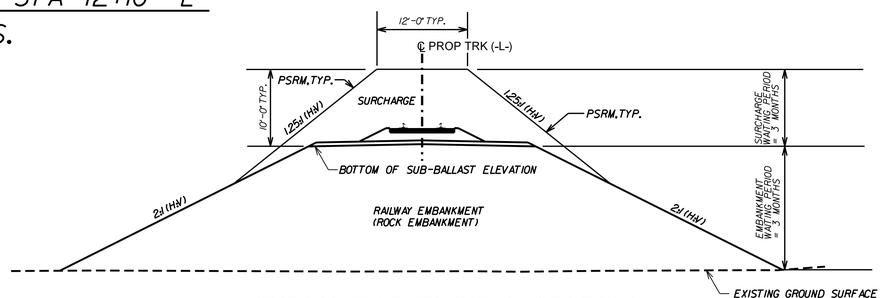


SURCHARGE PLAN VIEW
STA 35+75 -L- TO STA 38+25 -L-
STA 39+60 -L- TO STA 42+10 -L-
N.T.S.

EMBANKMENT AND SURCHARGE WAITING PERIODS				
TYPE	BEGIN STATION	END STATION	FILL HEIGHT	WAITING PERIOD DURATION
EMBANKMENT WAITING PERIODS	18+50 -L-	21+50 -L-	BOTTOM OF SUB-BALLAST	3 MONTHS
	22+60 -L-	25+60 -L-	BOTTOM OF SUB-BALLAST	3 MONTHS
SURCHARGE WAITING PERIODS	18+50 -L-	21+50 -L-	TOP OF SURCHARGE	3 MONTHS
	22+60 -L-	25+60 -L-	TOP OF SURCHARGE	3 MONTHS
	35+75 -L-	38+25 -L-	TOP OF SURCHARGE	3 MONTHS
	39+60 -L-	42+10 -L-	TOP OF SURCHARGE	3 MONTHS



SURCHARGE TYPICAL SECTION
STA 35+75 -L- TO STA 38+25 -L-
STA 39+60 -L- TO STA 42+10 -L-
N.T.S.



SURCHARGE TYPICAL SECTION
STA 18+50 -L- TO STA 21+50 -L-
STA 22+60 -L- TO STA 25+60 -L-
N.T.S.

PREPARED BY: M. VALIQUETTE	DATE: 6-2015
REVIEWED BY: C. KREIDER	DATE: 6-2015

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

SURCHARGE

REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	2G

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032672 ENGINEER MICHAEL D. VALIQUETTE

DocuSigned by: Michael Valiquette 20FDC306E2F640B...

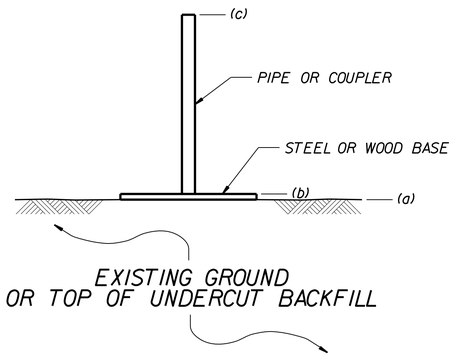
1/18/2015

SIGNATURE DATE

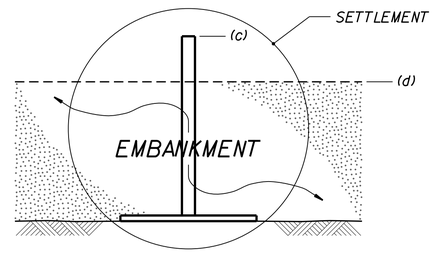
ENGINEER

SIGNATURE DATE

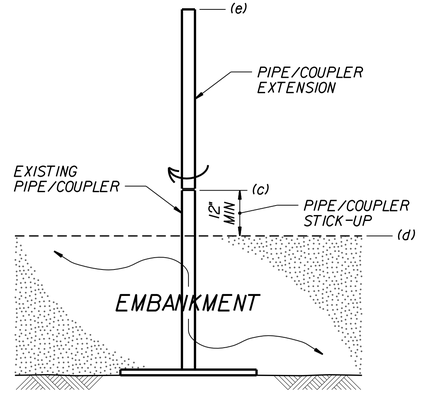
EMBANKMENT MONITORING SEQUENCE



1. PLACE STEEL/WOOD BASE AT APPROXIMATE GAUGE LOCATIONS SHOWN IN THE PLANS AS DETERMINED BY THE ENGINEER.
2. SET BASE ON LEVEL GROUND SO PIPE/COUPLER IS PLUMB.
3. BEFORE CONSTRUCTING EMBANKMENT, NOTIFY ENGINEER TO SURVEY AND RECORD THE FOLLOWING:
   (a) EXISITING GROUND ELEVATION.
   (b) TOP OF BASE ELEVATION AND
   (c) TOP OF PIPE ELEVATION.



4. MAKE SETTLEMENT GAUGE HIGHLY VISIBLE SO GAUGE IS NOT HIT OR DAMAGED.
5. PLACE AND COMPACT FILL MATERIAL AROUND SETTLEMENT GAUGE WITHOUT DISTURBING GAUGE.
6. NOTIFY ENGINEER WEEKLY TO SURVEY AND RECORD THE FOLLOWING:
   (c) TOP OF PIPE ELEVATION AND
   (d) EMBANKMENT ELEVATION.



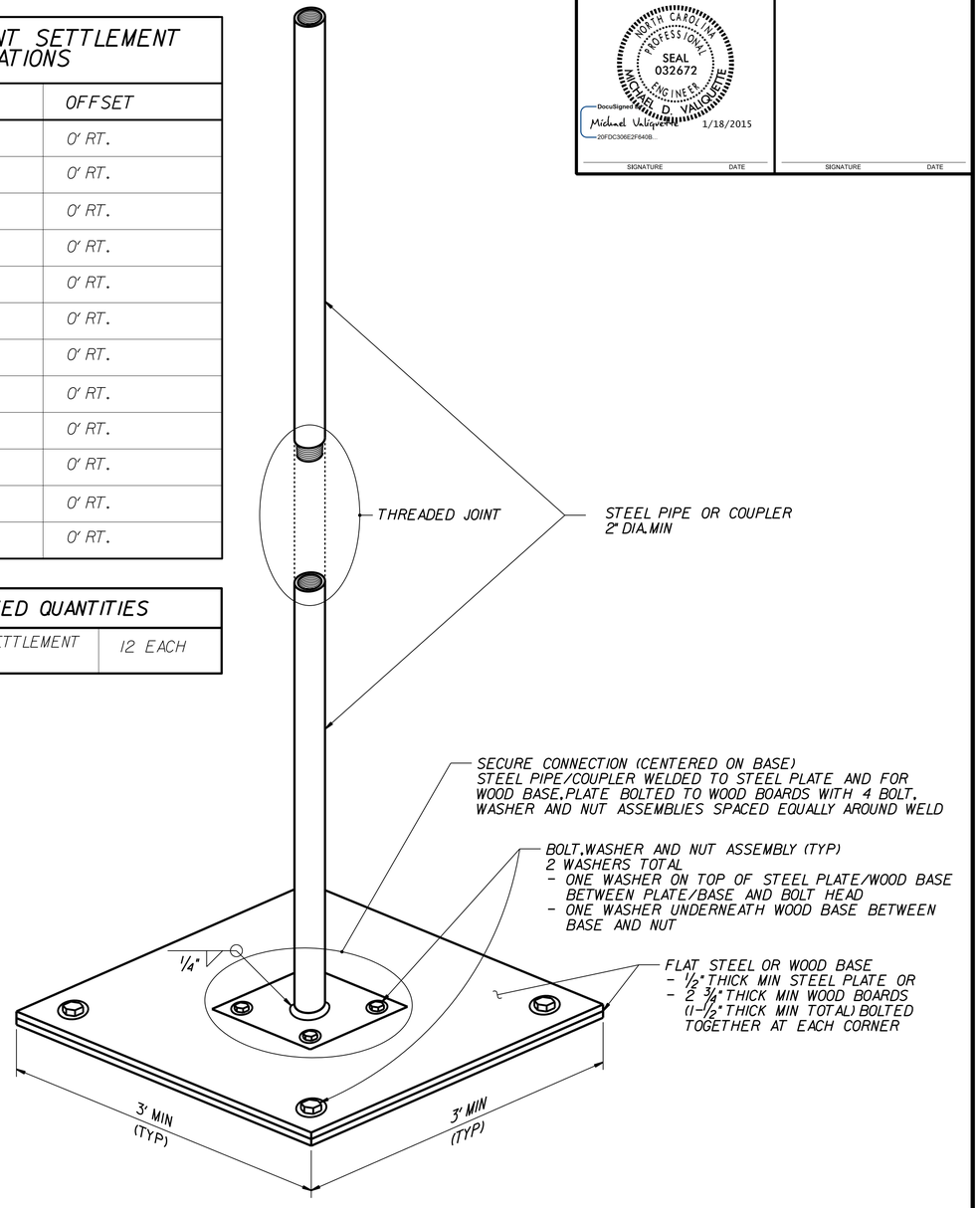
7. CONNECT PIPE/COUPLER EXTENSION TO EXISTING PIPE/COUPLER AS NEEDED TO MAINTAIN A PIPE/COUPLER STICK-UP OF AT LEAST 12" WHILE MONITORING SETTLEMENT.
8. SCREW PIPES/COUPLERS TOGETHER HAND TIGHT AND THEN TIGHTEN 2 TO 3 FULL TURNS WITH A WRENCH.
9. NOTIFY ENGINEER TO SURVEY AND RECORD THE FOLLOWING:
   (c) TOP OF PIPE ELEVATION.
   (d) EMBANKMENT ELEVATION AND
   (e) TOP OF EXTENSION ELEVATION.
10. RETURN TO STEP 4 WITH NEW TOP OF PIPE ELEVATION EQUAL TO TOP OF EXTENSION ELEVATION.

EMBANKMENT SETTLEMENT GAUGE LOCATIONS

STATION	OFFSET
19+00 -L-	0' RT.
20+00 -L-	0' RT.
21+00 -L-	0' RT.
23+00 -L-	0' RT.
24+00 -L-	0' RT.
25+00 -L-	0' RT.
36+00 -L-	0' RT.
37+00 -L-	0' RT.
38+00 -L-	0' RT.
39+75 -L-	0' RT.
40+75 -L-	0' RT.
41+75 -L-	0' RT.

ESTIMATED QUANTITIES

EMBANKMENT SETTLEMENT GAUGES	12 EACH



NOTES:

1. FOR EMBANKMENT SETTLEMENT GAUGES, SEE SURCHARGE SPECIAL PROVISION.
2. FOR EMBANKMENT SETTLEMENT GAUGES LOCATED IN ROCK FILLS, INSTALL SETTLEMENT GAUGES AFTER PERFORMING AND BACKFILLING REQUIRED UNDERCUT BUT BEFORE CONSTRUCTING EMBANKMENTS.
3. FOR ALL OTHER EMBANKMENT SETTLEMENT GAUGES, INSTALL GAUGES AFTER CLEARING AND GRUBBING BUT BEFORE CONSTRUCTING EMBANKMENTS.

PREPARED BY: M. VALIQUETTE	DATE: 1-2015
REVIEWED BY: C. KREIDER	DATE: 1-2015

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

EMBANKMENT SETTLEMENT MONITORING

REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

DRAINAGE SUMMARY SHEET

HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: JANUARY 19, 2015

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	3A
R/W SHEET NO.	

RALD046

COMPUTED BY:	JFW	DATE:	9/23/14
CHECKED BY:	BRC	DATE:	9/26/14

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48	54	60	66	72	78	84
L 62+68.2	CL	R0801	OUT		156.27	155.26															
L 74+37.9	CL	R0901	OUT		158.07	157.71	0.5														
L 81+02.2	CL	R0902	OUT		153.99	152.48															
L 102+72.4	CL	R1101	OUT		153.07	152.71	0.5														
L 116+29.1	CL	R1201	OUT		152.81	149.65															
L 122+07.1	CL	R1202	OUT		156.42	156.10	0.5														
L 125+04.6	51 RT	R1203	OUT		158.54	158.26					32										
L 22+45.0	102 RT	R0501	OUT		159.0	159.0															
							SHEET TOTALS				32										
							PROJECT TOTALS				32										

LINE & STATION	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	54	60	66	72	78	84
L 62+68.2														
L 74+37.9														
L 81+02.2														
L 102+72.4														
L 116+29.1														
L 122+07.1														
L 125+04.6														
L 22+45.0														
SHEET TOTALS														
PROJECT TOTALS														

LINE & STATION	R. C. PIPE CLASS V (Under RR) 12	15	18	24	30	36	42	48	54	60	66	72	78	84
L 62+68.2							92							
L 74+37.9						72								
L 81+02.2						98								
L 102+72.4								68						
L 116+29.1						92								
L 122+07.1						64								
L 125+04.6														
L 22+45.0														
SHEET TOTALS						326	92	68						
PROJECT TOTALS						326	92	68						

LINE & STATION	36" WELDED STEEL PIPE 0.532" THICK, GRADE B (UNDER RR) (in soil)	36" WELDED STEEL PIPE 0.532" THICK, GRADE B (UNDER RR) (not in soil)	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 (UNLESS NOTED OTHERWISE) CY	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	CONCRETE BRIDGE APPROACH D.I. STD. 840.13	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.2	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.2	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.2	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.2	PIPE REMOVAL LIN. FT.	REMARKS
L 62+68.2						9.000																			
L 74+37.9						6.800																			
L 81+02.2						6.800																			
L 102+72.4						12.000																			
L 116+29.1						6.800																			
L 122+07.1						6.800																			
L 125+04.6																									
L 22+45.0	39	39																							
SHEET TOTALS	39	39				48.200																			
PROJECT TOTALS	39	39				48.200																			

ABBREVIATIONS

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

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DRAINAGE SUMMARY SHEET

HNTB
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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: JANUARY 19, 2015

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	3B
R/W SHEET NO.	

RALD046

COMPUTED BY: JFW DATE: 9/23/14

CHECKED BY: BRC DATE: 9/26/14

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54 INCHES & OVER)

LINE & STATION SIZE THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	R. C. PIPE CLASS III															R. C. PIPE CLASS IV															R. C. PIPE CLASS V (Under RR)															STRUCTURAL PLATE PIPE					ENDWALLS STD. 838.01 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G		CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	PIPE REMOVAL LIN. FT.	ABBREVIATIONS REMARKS
								12	15	18	24	30	36	42	48	54	60	66	72	78	84		12	15	18	24	30	36	42	48	54	60	66	72	78	84		12	15	18	24	30	36	42	48	54	60	66	72	78	84		60	66	72																	
L 90+44.2	CL	R1001	OUT		156.47	154.76																																										80												11.200													
SHEET TOTALS																																																80												11.200													
PROJECT TOTALS																																																80												11.200													

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
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W.S.	WIDE SLOT

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DATE: JANUARY 19, 2015

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	3C
R/W SHEET NO.	

PARCEL INDEX

PARCEL NUMBER	PLAN SHEET NUMBER	PROPERTY OWNER NAME
1	4, 5	JAMES AND LINDA SAMPSON
2	5, 6	SHIRLEY AND JOSEPH LOCKLEAR
3	6	ETHA C. HARRIS
4	6, 7	SAMUEL R. LOCKLEAR
5	6, 7	CHARLES MAYNOR AND WIFE SHELIA
6	7	CECIL A. BUTLER AND WIFE FRANCIS
7	7, 8	EUPHORIA, LTD.
8	8, 9	SHIRLEY LOCKLEAR AND HUSBAND JOSEPH
9	8, 9	MARY PAUL FRECHETTE
10	--	NOT USED
11	9, 10	ADOLPH L. DIAL ENTERPRISES, INC.
12	10	TINA JONES LOCKLEAR
13	10	DORIS JONES LOCKLEAR
14	10, 11	JOHN ROBERT JONES FAMILY TRUST
15	11, 12	DANNY BULLARD

PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS

LOCATION	REMOVAL OF ASPHALT PAVEMENT	BREAKING OF ASPHALT PAVEMENT
-L- STA. 38+75 TO 39+11 LT	75	
GRAND TOTAL	75	
SAY	80	

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PROJECT REFERENCE NO.	SHEET NO.
P-4900A	3D
R/W SHEET NO.	

SUMMARY OF EARTHWORK
(IN CUBIC YARDS)

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT +%	BORROW	WASTE
SUMMARY #1					
-M1- STA 9+25 TO STA 21+51.24	4,739	3,200	16,569	11,830	5,102
#1 TOTAL	4,739	3,200	16,569	11,830	5,102
SUMMARY #2					
-M1- STA 22+62.90 TO STA 38+26.84	2,813	4,100	109,024	106,211	5,929
#2 TOTAL	2,813	4,100	109,024	106,211	5,929
SUMMARY #3					
-M1- STA 39+58.55 TO STA 69+00	11,063	3,700	140,905	129,842	4,505
#3 TOTAL	11,063	3,700	140,905	129,842	4,505
SUMMARY #4					
-M1- STA 69+00 TO STA 99+00	13,971	0	38,957	26,157	1,171
#4 TOTAL	13,971	0	38,957	26,157	1,171
SUMMARY #5					
-M1- STA 99+00 TO STA 129+00	16,045	0	21,807	11,103	5,341
#5 TOTAL	16,045	0	21,807	11,103	5,341
SUMMARY #6					
-M1- STA 129+00 TO STA 136+22.85	3,323	0	215	0	3,108
#6 TOTAL	3,323	0	215	0	3,108
SUMMARIES 1-6 TOTAL	51,954	11,000	327,477	285,143	25,156
ADDITIONAL UNDERCUT		5,000	6,250	6,250	5,000
BORROW EXCAVATION FOR SURCHARGE			12,500	12,500	
UNCLASSIFIED EX. TO REMOVE SURCHARGE	10,000				10,000
LOSS DUE TO CLEARING AND GRUBBING	-500			500	
SURGE STONE IN LIEU OF UNDERCUT BACKFILL			-20,000	-20,000	
ROCK EMBANKMENT IN LIEU OF BORROW			-11,500	-11,500	
WASTE TO REPLACE BORROW				-2,156	-2,156
PROJECT TOTAL	61,454	16,000	314,727	270,737	38,000
ESTIMATE 5% TO REPLACE TOPSOIL ON BORROW PIT				13,537	
GRAND TOTAL	61,454	16,000	314,727	284,274	38,000
SAY	61,500	16,000		284,300	

EST. DDE = 620 CY
EST. 35,000 TN OF SURGE STONE
EST. 3000 TN OF CLASS VI SELECT MATERIAL
* THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEER.

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PROJECT REFERENCE NO.	SHEET NO.
P-4900A	3E
R/W SHEET NO.	

GEOTECHNICAL SUMMARY

GEOTEXTILE FOR SOIL STABILIZATION

ALIGNMENT	BEGIN STATION	END STATION	QUANTITY	UNITS
-L-	18+50.00	21+75.00	2,200	SY
-L-	22+35.00	24+25.00	1,500	SY
-L-	55+20.00	56+75.00	1,500	SY
CONTINGENCY	-	-	5,000	SY
		TOTAL	10,200	SY

SURGE STONE

ALIGNMENT	BEGIN STATION	END STATION	QUANTITY	UNITS
-L-	18+50.00	21+75.00	10,500	TONS
-L-	22+35.00	24+25.00	11,500	TONS
-L-	55+20.00	56+75.00	5,500	TONS
CONTINGENCY	-	-	7,500	TONS
		TOTAL	35,000	TONS

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DATE: JANUARY 19, 2015

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	4
R/W SHEET NO.	

RAILROAD DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 037992 ENGINEER COREY P. VENNER
DocuSigned by: Corey P. Venner 1/21/2015
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HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 15764 ENGINEER JAMES A. BYRD
DocuSigned by: James Byrd 1/21/2015
235929598E74F47C...

TO FAYETTEVILLE

TO LUMBERTON

JAMES SAMPSON AND WIFE LINDA DB 749 PG 31

PROPOSED CONTROL POINT (BY CSXT)

EXISTING CSXT R/W

BEGIN CONSTRUCTION -L- STA.9+25.00

APPROXIMATE SIGNAL CABINET LOCATION (BY CSXT)

+00.00 -L- 110.00' LT

3' SPECIAL LAT. BASE DITCH SEE DETAIL A

PS NO.20 LH TURNOUT Sta. 10+00.00

PI NO.20 LH TURNOUT Sta. 10+59.54

+56.79 -L- 110.00' LT

+44.94 -L- 110.00' LT

+06.94 -L- 110.00' LT

+65.11 -L- 110.00' LT

+27.11 -L- 110.00' LT

CHORD -L- +00.00 27.80' LT

R = 3,164.17'

PROPOSED TURNOUT MATERIAL LAYDOWN PAD

TS Sta.12+44.94

SC Sta.13+06.94

CS Sta.15+65.11

ST Sta.16+27.11

110'

40'

+00.00 -L- 65.00' LT

-L- +25.00 40.00' LT

-L- +25.00 7.00' LT

9+00

10+00

S 39° 09' 58" W

S 36° 18' 07" W

S 30° 41' 58" W

15+00 -L-

12660+00

12665+00

12670+00

EXISTING CSXT 'A' LINE

PROP.NO.20 LH TURNOUT (BY CSXT)

-L- +00.00 5.14' RT

15' CLEAR POINT

PROPOSED NORTHBOUND MAST SIGNALS (BY CSXT)

℄ PROP.TRACK

3' SPECIAL LAT. BASE DITCH SEE DETAIL G

MATCHLINE STA.17+00 SEE SHEET NO.5

BEGIN PROJECT P-4900A -L- STA.9+00.00

-L- POL STA.9+00.00

VAL STA.12663+81

A-240

PROPOSED SOUTHBOUND MAST SIGNAL (BY CSXT)

ALL BALLASTED TRACK CONSTRUCTED BY CSXT.

-L- (CURVE 101)

PIs Sta 12+86.28	PI Sta 14+36.09	PIs Sta 15+85.78
△s = 0° 32' 32.9" (LT)	△c = 4° 31' 03.7" (LT)	△s = 0° 32' 32.9" (LT)
Ls = 62.00'	Dc = 1° 45' 00.0"	Ls = 62.00'
LT = 41.33'	L = 258.16'	LT = 41.33'
ST = 20.67'	T = 129.15'	ST = 20.67'
	R = 3,274.17'	
	Ea = 1.00"	

EXIST.T/R
PROP.T/R

BEGIN GRADE -L- STA.9+25.00

PS NO.20 LH TURNOUT STA 10+00.00 ELEV= 172.57'

NO.20 LH TURNOUT

VC = 510'
R= 0.23

VPC STA.12+81.31 ELEV=171.87'

EXISTING CSXT A-LINE T/R

PROP. -L- T/R PROFILE

(−) 0.2475%

(−) 1.4200%

(−) 0.4000%

(+)0.9100%

(−) 1.1800%

(−) 2.8281%

EXISTING GROUND

VPI STA.15+36.31 ELEVATION 171.24

BEGIN SPECIAL LAT. BASE DITCH LT PI =9+25.00 EL = 167.41

BEGIN SPECIAL LAT. BASE DITCH RT PI =15+50.00 EL = 167.51

PI =12+00.000 ET = 163.50

PI =16+50.000 EI = 166.33

PI =17+00.000 ET = 161.50

172.69	172.45 / 172.57	172.22 / 172.32	170.04 / 172.07	169.50 / 171.83	168.64 / 171.74	168.24 / 171.88	166.58 / 172.24	167.28 / 172.83

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00

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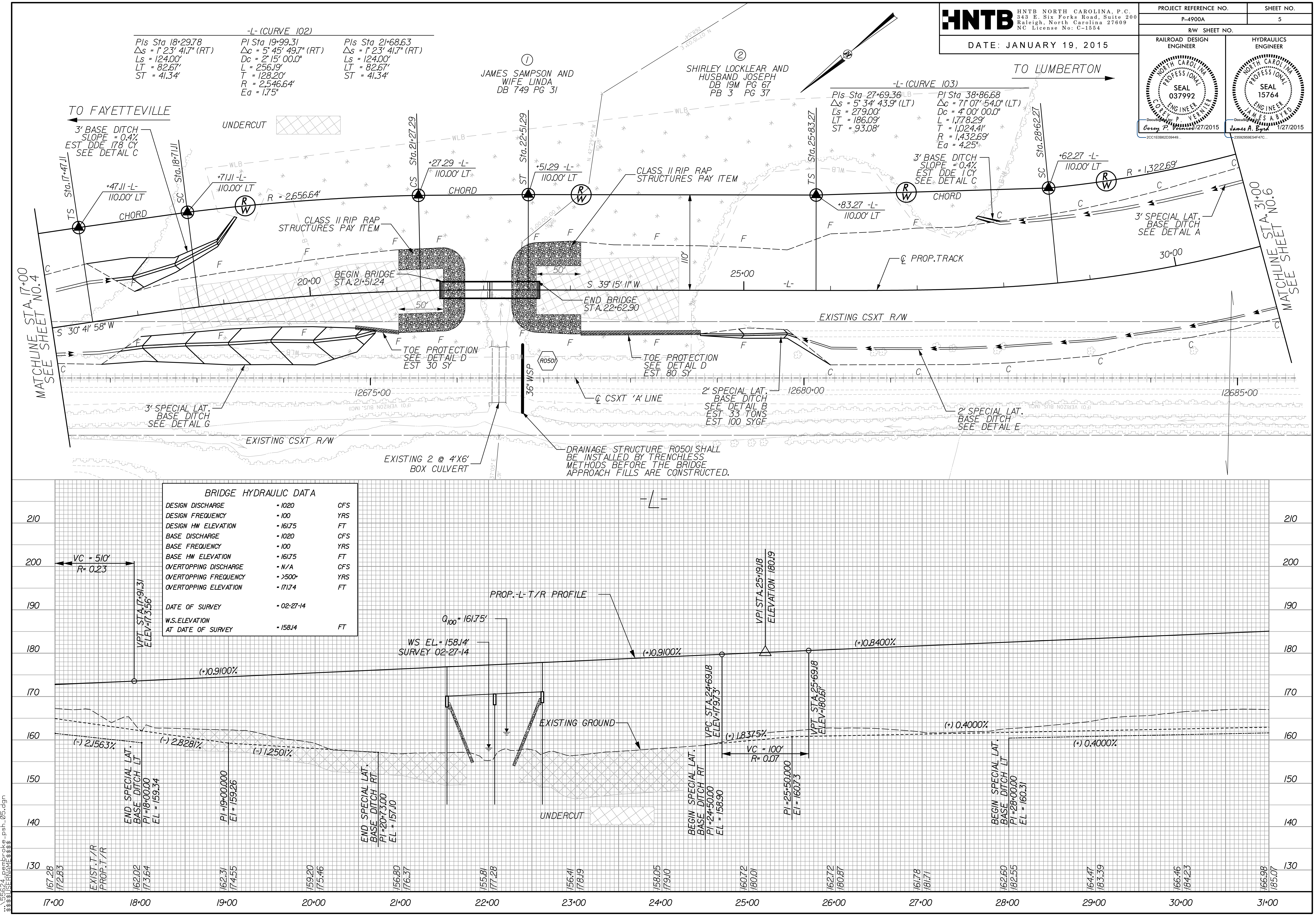
NC License No: C-1554

DATE: JANUARY 19, 2015

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	5
R/W SHEET NO.	

RAILROAD DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 037992 COREY P. VERNIER	SEAL 15764 JAMES A. BYRD
DocuSigned by: Corey P. Vernier 1/27/2015 2CC1E0B62D39449...	DocuSigned by: James A. Byrd 1/27/2015 23592959E54F47C...



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1020	CFS
DESIGN FREQUENCY	= 100	YRS
DESIGN HW ELEVATION	= 161.75	FT
BASE DISCHARGE	= 1020	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 161.75	FT
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING FREQUENCY	= >500+	YRS
OVERTOPPING ELEVATION	= 171.74	FT
DATE OF SURVEY	= 02-27-14	
W.S. ELEVATION AT DATE OF SURVEY	= 158.14	FT

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DATE: JANUARY 19, 2015

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	6
R/W SHEET NO.	

RAILROAD DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 037992 ENGINEER COREY P. VENNER

Corey P. Venner 1/21/2015

DocuSigned by: 2CC1E0B62D39449...

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 15764 ENGINEER JAMES A. BYRD

James A. Byrd 1/21/2015

DocuSigned by: 23592959E54F47C...

TO FAYETTEVILLE

TO LUMBERTON

MATCHLINE STA. 31+00 SEE SHEET NO.5

MATCHLINE STA. 45+00 SEE SHEET NO.7

3' SPECIAL LAT. BASE DITCH SEE DETAIL A

-L- (CURVE 103)
PI Sta 38+86.68
△c = 71° 07' 54.0" (LT)
Dc = 4° 00' 00.0"
L = 1,778.29'
T = 1,024.41'
R = 1,432.69'
Ea = 4.25'

RETAIN

-Y1- UNION CHAPEL ROAD

+03.22 -L- 110.00' LT

+86.78 -L- 84.86' LT

+91.32 -L- 75.34' LT

+71.82 -L- 86.33' LT

+17.58 -L- 95.70' LT

+95.00 -L- 110.00' LT

R = 1,322.69'

220'

-L-

35+00

45+00

+64.39 -L- 110.00' RT

EXISTING CSXT 'A' LINE

2' SPECIAL LAT. BASE DITCH SEE DETAIL E

℄ PROP. TRACK

PROPOSED BALLAST DECK BRIDGE OVER UNION CHAPEL ROAD

R = 1,542.69'

BEGIN BRIDGE -L- STA. 38+26.84

TEMPORARY SHORING (SEE SHEET TMP-4)

SPECIAL LAT. 'V' DITCH SEE DETAIL H

REMOVE PAVEMENT

40+00

REMOVE STRUCTURE

END BRIDGE -L- STA. 39+58.55

EXISTING CSXT R/W

+09.14 -L- 110.00' RT

RETAIN

+67.50 -L- 110.00' RT

+72.81 -L- 125.00' RT

RETAIN

TDE

3' SPECIAL LAT. BASE DITCH SEE DETAIL A

③ ETHA C HARRIS DB 507 PG 316

—L—

VPI STA. 38+90.00
ELEVATION 191.70

(+)0.8400%

(−)0.8400%

PROP.-L- T/R PROFILE

MVC = 15'-1"

℄ UNION CHAPEL RD

EXISTING GROUND

VPC STA. 35+20.00
ELEV=188.59'

VPT STA. 42+60.00
ELEV=188.59'

(+) 0.4000%

(+) 0.4000%

(−) 0.4695%

(−) 0.4000%

VC = 7.40'
R= 0.23

BEGIN SPECIAL LAT. 'V' DITCH LT
PI =39+11.6
EL = 164.56

END SPECIAL LAT. BASE DITCH LT
PI =34+00.00
EL = 162.82

END SPECIAL LAT. BASE DITCH RT
PI =34+50.00
EL = 164.33

BEGIN SPECIAL LAT. BASE DITCH RT
PI =40+00.00
EL = 163.20

END SPECIAL LAT. DITCH LT
PI =40+69.19
EL = 163.82

EXIST. T/R	166.98	167.08	165.70	164.06	164.60	165.70	166.13	166.41	166.80	165.93	166.04	166.00	165.39	165.42
PROP. T/R	165.07	165.91	166.75	187.59	188.43	189.9	189.74	190.06	190.15	190.01	189.65	188.26	187.42	186.58

220 210 200 190 180 170 160 150 140

31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00

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PROJECT REFERENCE NO.	SHEET NO.
P-4900A	7
R/W SHEET NO.	

DATE: JANUARY 19, 2015

RAILROAD DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 037992 ENGINEER — Corey P. Warren — DocuSigned by: Corey P. Warren 1/27/2015 — 2CC1E0B62D39449...

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 15764 ENGINEER — James A. Byrd — DocuSigned by: James A. Byrd 1/27/2015 — 23592959E54F47C...

TO FAYETTEVILLE

-L- (CURVE 103)
PI Sta 38+86.68
Δc = 71° 07' 54.0" (LT)
Dc = 4° 00' 00.0"
L = 1,778.29'
T = 1,024.41'
R = 1,432.69'
Ea = 4.25"

PIs Sta 47+33.65
Δs = 5° 34' 43.9" (LT)
Ls = 279.00'
LT = 186.09'
ST = 93.08'

-L- (CURVE 104)
PIs Sta 53+57.51
Δs = 0° 55' 47.8" (RT)
Ls = 93.00'
LT = 62.00'
ST = 31.00'

PI Sta 54+80.80
Δc = 3° 41' 24.5" (RT)
Dc = 2° 00' 00.0"
L = 184.51'
T = 92.29'
R = 2,864.93'
Ea = 1.25"

PIs Sta 56+04.02
Δs = 0° 55' 47.8" (RT)
Ls = 93.00'
LT = 62.00'
ST = 31.00'

UNDERCUT

TO LUMBERTON

④ SAMUEL R LOCKLEAR DB 18M PG 54 PB 3 PG 37

MATCHLINE STA. 45+00 SEE SHEET NO.6

CS Sta.46+40.56

+40.56 -L- 110.00' LT

R = 1,322.69'

3' SPECIAL LAT. BASE DITCH SEE DETAIL A

ST Sta.49+19.56

+19.56 -L- 110.00' LT

3' BASE DITCH SLOPE = 0.4% EST DDE 6 CY SEE DETAIL C

TS Sta.52+95.51

+95.51 -L- 110.00' LT

SC Sta.53+88.51

+88.51 -L- 110.00' LT

R = 2,974.93'

CLASS 'I' RIP RAP EST 50 TONS EST 165 SYGF NO RIP RAP IS TO BE PLACED IN STREAM BED SEE DETAIL K

CS Sta.55+73.02

+73.02 -L- 110.00' LT

ST Sta.56+66.02

+66.02 -L- 80.00' LT

3' SPECIAL LAT. BASE DITCH SEE DETAIL A

CHORD

℄ PROP. TRACK

50+00

220'

S 43° 02' 11" E

-L-

45+00

55+00

2 @ 7' x 6' RCBC W/ 2' SILLS SEE DETAIL L

HW

6' RCBC

+34.04 -L- 90.00' LT

EXISTING POND TO BE DRAINED AND FILLED

S 37° 29' 11" E

TOE PROTECTION SEE DETAIL D EST 115 SY

160'

MATCHLINE STA. 59+00 SEE SHEET NO.8

R070I

+46.14 -L- 110.00' RT

3' SPECIAL LAT. BASE DITCH SEE DETAIL A

+19.56 -L- 110.00' RT

+95.51 -L- 110.00' RT

+88.51 -L- 110.00' RT

R = 1,542.69'

R = 2,754.93'

+46.57 -L- 125.00' RT

+19.56 -L- 125.00' RT

+07.88 -L- 54.48' RT

+83.80 -L- 110.00' RT

+78.97 -L- 121.74' RT

+85.00 -L- 110.00' RT

+73.02 -L- 110.00' RT

+10.61 -L- 80.00' RT

+50.00 -L- 80.00' RT

+50.00 -L- 90.00' RT

⑤ CHARLES MAYNOR AND WIFE SHELIA DB 674 PG 579

⑥ CECIL A BUTLER AND WIFE FRANCIS, CHARLES MAYNOR AND WIFE SHELIA, AND JEFF COLLINS AND WIFE SYBIL DB 696 PG 30

CLASS I RIP RAP EST 45 TONS EST 115 SYGF NO RIP RAP IS TO BE PLACED IN STREAM BED SEE DETAIL J

DO NOT DISTURB CEMETERY

⑦ EUPHORIA, LTD DB 1776 PG 168 PB 46 PG 35

NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED OR FLOODPLAIN AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CULVERT BARREL. RIP-RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL IN THE HIGH FLOW CULVERT BARREL. IF RIP-RAP IS USED TO LINE THE HIGH FLOW CULVERT BARREL, NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. R070I

DRAINAGE AREA	= 199	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 310	CFS
DESIGN HW ELEVATION	= 159.51	FT
100 YEAR DISCHARGE	= 310	CFS
100 YEAR HW ELEVATION	= 159.51	FT
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING DISCHARGE	= -	CFS
OVERTOPPING ELEVATION	= 163.3	FT

PROP. -L- T/R PROFILE

EXISTING GROUND

VPI STA.49+70.11 ELEVATION 182.63

VPC STA.49+20.11 ELEV=183.05'

VPT STA.50+20.11 ELEV=182.77'

VC = 100'
R= 0.08

(-)0.8400%

(-)0.9200%

(-) 0.4000%

(-) 0.4000%

(-) 0.8157%

(-) 0.4000%

(+) 0.4000%

(+) 3.3036%

(-) 0.4000%

(-) 0.4000%

2 @ 7' x 6' RCBC

BEGIN SPECIAL LAT. BASE DITCH RT PI =58+00.00 EL = 159.21

END SPECIAL LAT. BASE DITCH RT PI =54+90.14 EL = 154.79

UNDERCUT

	BEGIN SPECIAL LAT. BASE DITCH LT PI =46+50.00 EL = 160.80	PI =49+00.000 EI = 159.60	END SPECIAL LAT. BASE DITCH LT PI =51+00.00 EL = 159.00	BEGIN SPECIAL LAT. BASE DITCH LT PI =53+00.00 EL = 155.00	BEGIN/END SPECIAL LAT. BASE DITCH LT PI =55+55.91 EL = 153.98	PI =57+00.000 EI = 154.56	BEGIN/END SPECIAL LAT. BASE DITCH LT PI =58+00.00 EL = 157.86
EXIST. T/R PROP. T/R	165.42 186.58	165.63 185.74	165.85 184.90	165.33 184.06	164.32 183.22	162.89 182.35	161.62 181.43
	161.4 180.51	161.76 179.59	160.40 178.67	156.38 177.75	155.91 176.83	159.50 175.91	162.35 174.99
	163.16 174.07						

45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00 53+00 54+00 55+00 56+00 57+00 58+00 59+00

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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: JANUARY 19, 2015

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	8
R/W SHEET NO.	

RAILROAD DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 037992 ENGINEER COREY P. PENNOCK

DocuSigned by: Corey P. Pennock 1/21/2015
2CC1E0B62D39449...

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 15764 ENGINEER JAMES A BYRD

DocuSigned by: James A. Byrd 1/21/2015
23592959E54F47C...

TO FAYETTEVILLE

TO LUMBERTON

NO VEHICULAR OR PEDESTRIAN ACCESS TO PARCEL REMNANTS NORTH OF PROPOSED RAILROAD RIGHT-OF-WAY.

MATCHLINE STA. 59+00 SEE SHEET NO.7

MATCHLINE STA. 73+00 SEE SHEET NO.9

SHIRLEY LOCKLEAR AND HUSBAND JOSEPH DB 623 PG 222

SEE DETAIL I
EST 25 TONS
EST 70 SYGF
EST DDE 44 CY
NO RIP RAP IS TO BE PLACED IN STREAM BED

3' SPECIAL LAT. BASE DITCH SEE DETAIL A

3' BASE DITCH SLOPE = 0.3% EST DDE 5 CY SEE DETAIL C

CLASS 'I' RIP RAP EST 17 TONS EST 45 SYGF

REMOVE STRUCTURE

TDE — RW — C — F — HW — R080I — 42" RCP-V — 60+00 — 65+00 — 70+00 — 160' — -L- — S 37° 29' 11" E — ℄ PROP. TRACK — 3S ELEC WIRE — ISFD — WLB — ML B — 99.00' — S 41°45'00" E — 25.19' — S 54°15'00" E — 99.30' — S 60°30'00" E — 85.80' — S 66°00'00" E — 22.20' — S 44°00'00" E — 80.20' — S 28°00'00" E — 188.10' — S 08°45'00" E — 201.50'

⑦ EUPHORIA, LTD DB 1776 PG 168 PB 46 PG 35

⑧ SHIRLEY LOCKLEAR AND HUSBAND JOSEPH DB 19M PG 67

⑨ MARY PAUL FRECHETTE DB 1646 PG 399 DB 8H PG 31

+00.00 -L- 80.00' RT

+00.00 -L- 90.00' RT

REMOVE STRUCTURE

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. R080I

DRAINAGE AREA	= 16.5	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 36	CFS
DESIGN HW ELEVATION	= 159.9	FT
100 YEAR DISCHARGE	= 36	CFS
100 YEAR HW ELEVATION	= 159.9	FT
OVERTOPPING FREQUENCY	= >500+	YRS
OVERTOPPING DISCHARGE	=	CFS
OVERTOPPING ELEVATION	= 161.4	FT

VPC STA.62+03.02 ELEV=171.29

VC = 400' R= 0.23

VPT STA.66+03.02 ELEV=169.43

VPI STA.64+03.02 ELEVATION 169.45

PROP. -L- T/R PROFILE

EXISTING GROUND

42" RCP

(-)0.9200%

(-)0.0100%

(-) 0.4000%

(+) 0.4000%

(-) 1.2172%

(+) 1.0419%

END SPECIAL LAT. BASE DITCH LT PI =62+63.87 EL = 156.00

BEGIN/END SPECIAL LAT.BASE DITCH RT PI =62+71.50 EL = 157.32

BEGIN SPECIAL LAT. BASE DITCH LT PI =63+50.00 EL = 154.22

BEGIN/END SPECIAL LAT.BASE DITCH LT PI =66+44.00 EL = 153.04

PI =69+00.000 EL = 154.06

BEGIN/END SPECIAL LAT.BASE DITCH RT PI =70+00.000 EL = 160.23

PI =70+50.000 EL = 159.62

BEGIN/END SPECIAL LAT.BASE DITCH LT PI =73+00.00 EL = 158.23

163.16	163.33	162.93	161.84	159.74	159.79	159.76	159.67	159.34	159.71	160.42	161.46	161.29	160.74	160.32
174.07	EXIST. T/R 173.15 PROP. T/R	172.23	171.31	170.50	169.91	169.56	169.43	169.42	169.41	169.40	169.39	169.38	169.37	169.36
59+00	60+00	61+00	62+00	63+00	64+00	65+00	66+00	67+00	68+00	69+00	70+00	71+00	72+00	73+00

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Raleigh, North Carolina 27609
NC License No: C-1554

DATE: JANUARY 19, 2015

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	9
R/W SHEET NO.	

RAILROAD DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 037992 ENGINEER COREY P. WARREN — DocuSigned by: Corey P. Warren 1/21/2015 — 2CC1E0B62D39449...

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 15764 ENGINEER JAMES A. BYRD — DocuSigned by: James A. Byrd 1/21/2015 — 23592959E54F47C...

-L- (CURVE 105)

PI Sta 77+35.69
Δs = 1° 32' 59.6" (LT)
Ls = 124.00'
LT = 82.67'
ST = 41.34'

PI Sta 80+90.91
Δc = 15° 35' 46.9" (LT)
Dc = 2° 30' 00.0"
L = 623.85'
T = 313.89'
R = 2,292.01'
Ea = 2.00"

PI Sta 84+42.21
Δs = 1° 32' 59.6" (LT)
Ls = 124.00'
LT = 82.67'
ST = 41.34'

TO FAYETTEVILLE

TO LUMBERTON

NO VEHICULAR OR PEDESTRIAN ACCESS TO PARCEL REMNANTS NORTH OF PROPOSED RAILROAD RIGHT-OF-WAY.

MATCHLINE STA. 73+00 SEE SHEET NO. 8

MATCHLINE STA. 87+00 SEE SHEET NO. 10

CLASS 'I' RIP RAP EST 15 TONS EST 40 SYGF

3' BASE DITCH SLOPE = 0.3% EST DDE 1 CY SEE DETAIL C

3' SPECIAL LAT. BASE DITCH SEE DETAIL A

+37.85 -L- 90.00' LT

+37.85 -L- 80.00' LT

TS Sta.76+53.02

+53.02 -L- 80.00' LT

SC Sta.77+77.02

+77.02 -L- 80.00' LT

CHORD

R = 2,212.01'

CLASS 'I' RIP RAP EST 15 TONS EST 28 SYGF

+89.28 -L- 90.00' LT

+89.34 -L- 80.00' LT

3' BASE DITCH SLOPE = 0.43% EST DDE 2 CY SEE DETAIL C

3' BASE DITCH SLOPE = 0.3% EST DDE 1 CY SEE DETAIL C

+27.80 -L- 90.00' LT

+15.30 -L- 90.00' LT

+15.24 -L- 80.00' LT

+00.00 -L- 80.00' LT

℄ PROP. TRACK

CS Sta.84+00.88

+00.84 -L- 90.00' LT

+00.88 -L- 80.00' LT

ST Sta.85+24.88

+24.88 -L- 90.00' LT

+24.88 -L- 80.00' LT

S 37° 29' 11" E

S 56° 10' 57" E

75+00

80+00

85+00

-L-

160'

36" RCP-Y

R0901

R0902

HW

PDE

TDE

CHORD

R = 2,372.01'

+53.02 -L- 80.00' RT

+77.02 -L- 80.00' RT

+00.00 -L- 80.00' RT

+00.00 -L- 100.00' RT

+53.20 -L- 100.00' RT

+77.02 -L- 100.00' RT

+00.88 -L- 80.00' RT

+24.88 -L- 80.00' RT

+01.22 -L- 100.00' RT

+24.69 -L- 100.00' RT

3' SPECIAL LAT. BASE DITCH SEE DETAIL A

CLASS 'I' RIP RAP EST 15 TONS EST 31 SYGF

CLASS 'I' RIP RAP EST 15 TONS EST 28 SYGF

⑧ SHIRLEY LOCKLEAR AND HUSBAND JOSEPH DB 19M PG 67

⑨ MARY PAUL FRECHETTE DB 1646 PG 399 DB 8H PG 31

⑪ ADOLPH L DIAL ENTERPRISES, INC DB 530 PG 9

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. R0901

DRAINAGE AREA	= 4.8	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 16	CFS
DESIGN HW ELEVATION	= 160.0	FT
100 YEAR DISCHARGE	= 16	CFS
100 YEAR HW ELEVATION	= 160.0	FT
OVERTOPPING FREQUENCY	= >500+	YRS
OVERTOPPING DISCHARGE	= -	CFS
OVERTOPPING ELEVATION	= 161.4	FT

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. R0902

DRAINAGE AREA	= 6.0	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 20	CFS
DESIGN HW ELEVATION	= 156.0	FT
100 YEAR DISCHARGE	= 20	CFS
100 YEAR HW ELEVATION	= 156.0	FT
OVERTOPPING FREQUENCY	= >500+	YRS
OVERTOPPING DISCHARGE	= -	CFS
OVERTOPPING ELEVATION	= 162.2	FT

PROP.-L- T/R PROFILE

EXISTING GROUND

(-)0.0100%

36" RCP

(+)0.4000%

(-)0.4000%

(-)3.1008%

(-)4.2508%

(+)0.4312%

BEGIN/END SPECIAL LAT. BASE DITCH RT PI =74+38.00 EL = 158.07

BEGIN/END SPECIAL LAT. BASE DITCH LT PI =74+38.00 EL = 157.68

BEGIN/END SPECIAL LAT. BASE DITCH RT PI =76+00.00 EL = 158.72

BEGIN/END SPECIAL LAT. BASE DITCH LT PI =76+00.00 EL = 158.33

PI =77+00.000 EI = 154.08

PI =77+00.00 EI = 155.62

END SPECIAL LAT. BASE DITCH LT PI =81+02.00 EL = 152.47

BEGIN/END SPECIAL LAT. BASE DITCH RT PI =81+02.00 EL = 154.01

BEGIN SPECIAL LAT. BASE DITCH LT PI =82+50.00 EL = 153.66

PI =87+00.000 EI = 156.40

EXIST. T/R
PROP. T/R

160.32	159.38	159.18	160.44	159.58	158.92	158.81	158.82	158.03	159.16	158.90	161.19	160.78	161.95			
169.36	169.35	169.34	169.33	169.32	169.31	169.30	169.29	169.28	169.27	169.26	169.25	169.24	169.23	169.22		
73+00	74+00	75+00	76+00	77+00	78+00	79+00	80+00	81+00	82+00	83+00	84+00	85+00	86+00	87+00		

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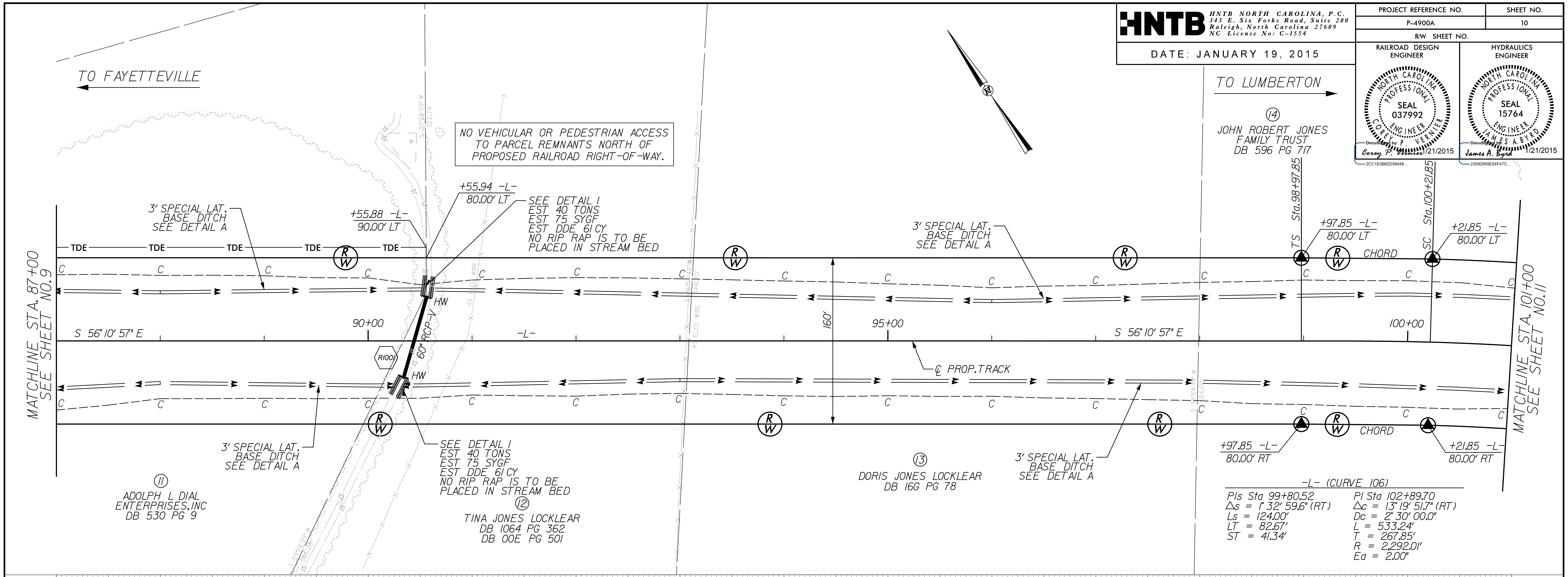
NC License No: C-1554

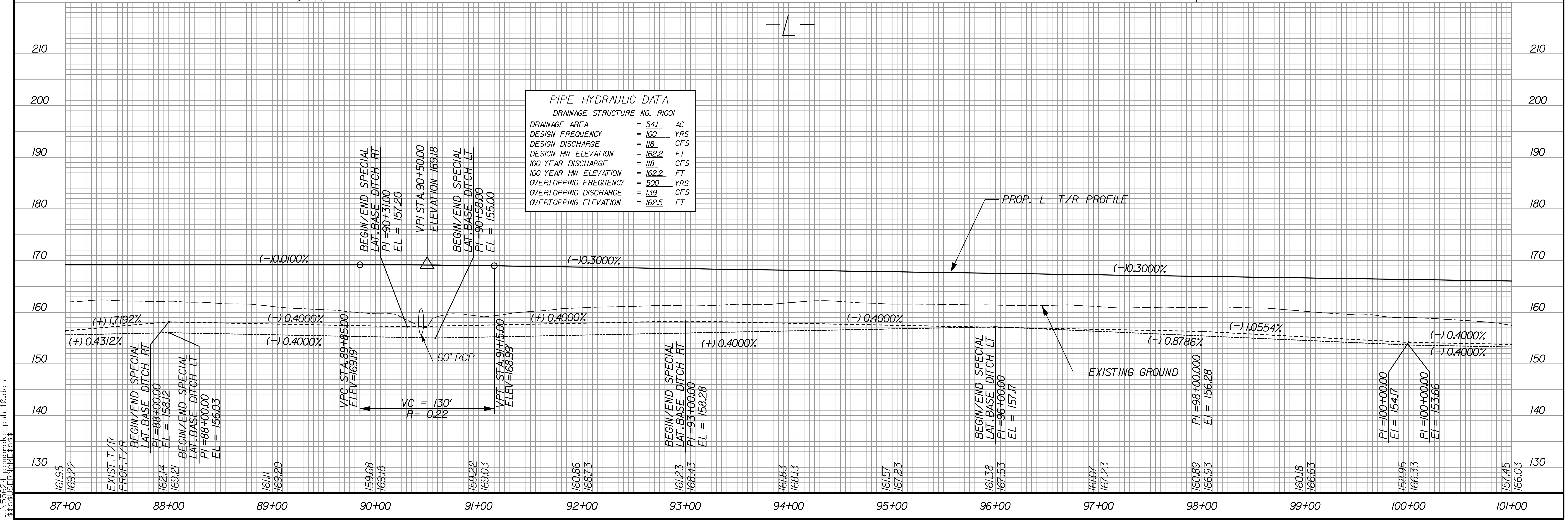
DATE: JANUARY 19, 2015

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	10
R/W SHEET NO.	

RAILROAD DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 037992 COREY P. VERNIER DocuSigned by: Corey P. Vernier 1/21/2015 2CC1E0B62D39449...	SEAL 15764 JAMES A. BYRD DocuSigned by: James A. Byrd 1/21/2015 23592959E54F47C...



-L- (CURVE 106)
PIs Sta 99+80.52
Δs = 1° 32' 59.6" (RT)
Ls = 124.00'
LT = 82.67'
ST = 41.34'
PI Sta 102+89.70
Δc = 13° 19' 51.7" (RT)
Dc = 2° 30' 00.0"
L = 533.24'
T = 267.85'
R = 2,292.01'
Ea = 2.00"



PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. R1001

DRAINAGE AREA	=	54.1	AC
DESIGN FREQUENCY	=	100	YRS
DESIGN DISCHARGE	=	118	CFS
DESIGN HW ELEVATION	=	162.2	FT
100 YEAR DISCHARGE	=	118	CFS
100 YEAR HW ELEVATION	=	162.2	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	139	CFS
OVERTOPPING ELEVATION	=	162.5	FT

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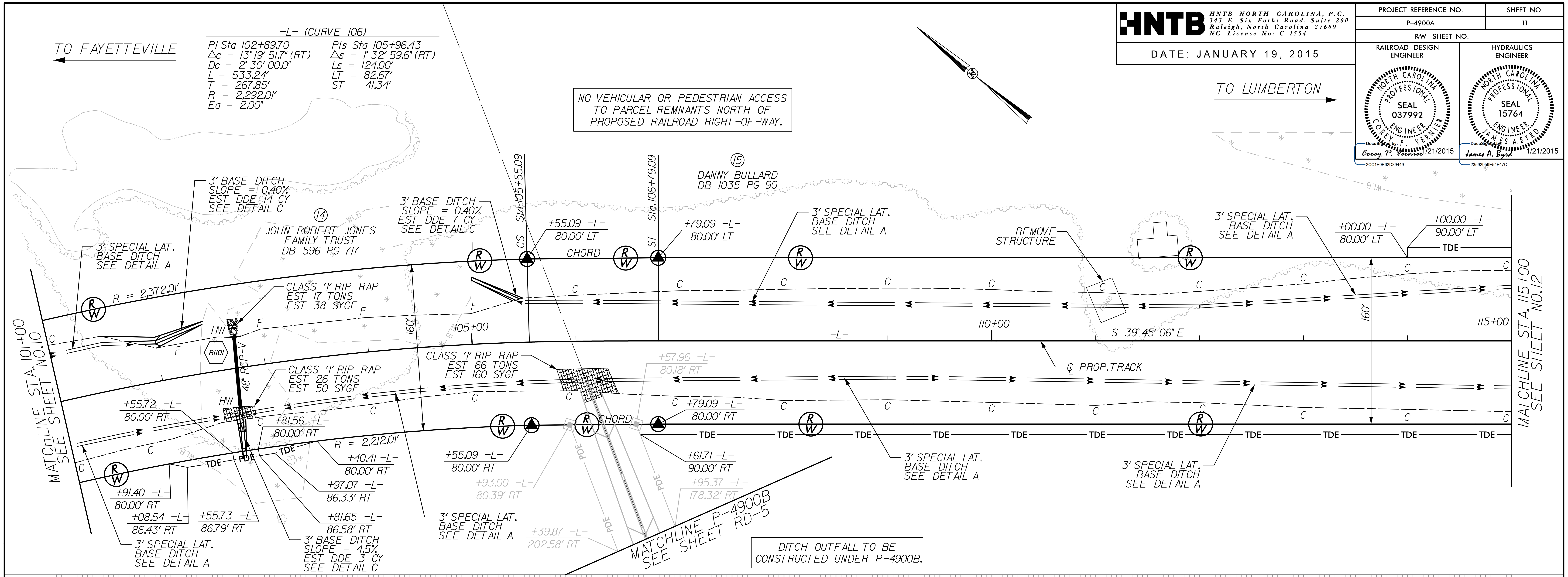
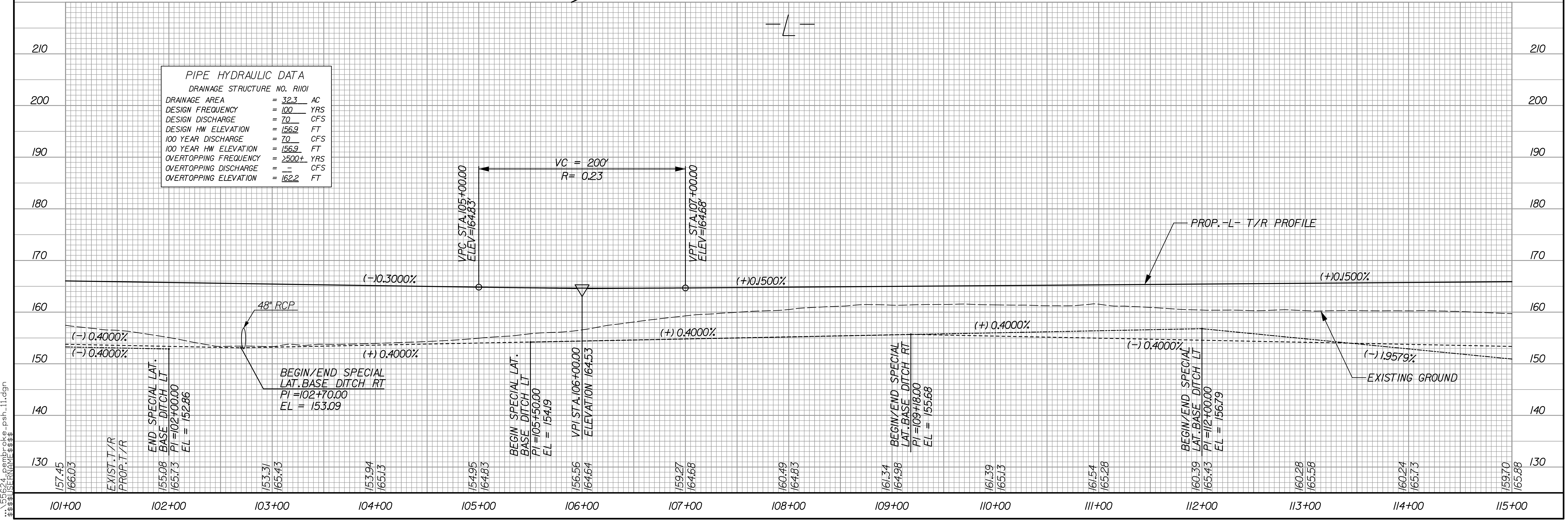
NC License No: C-1554

DATE: JANUARY 19, 2015

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	11
R/W SHEET NO.	

RAILROAD DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 037992 COREY P. VERNIER DocuSigned by: Corey P. Vernier 1/21/2015 2CC1E0B62D39449...	SEAL 15764 JAMES A. BYRD DocuSigned by: James A. Byrd 1/21/2015 23592959E54F47C...





PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. R1101

DRAINAGE AREA	=	32.3	AC
DESIGN FREQUENCY	=	100	YRS
DESIGN DISCHARGE	=	70	CFS
DESIGN HW ELEVATION	=	156.9	FT
100 YEAR DISCHARGE	=	70	CFS
100 YEAR HW ELEVATION	=	156.9	FT
OVERTOPPING FREQUENCY	=	>500+	YRS
OVERTOPPING DISCHARGE	=	-	CFS
OVERTOPPING ELEVATION	=	162.2	FT

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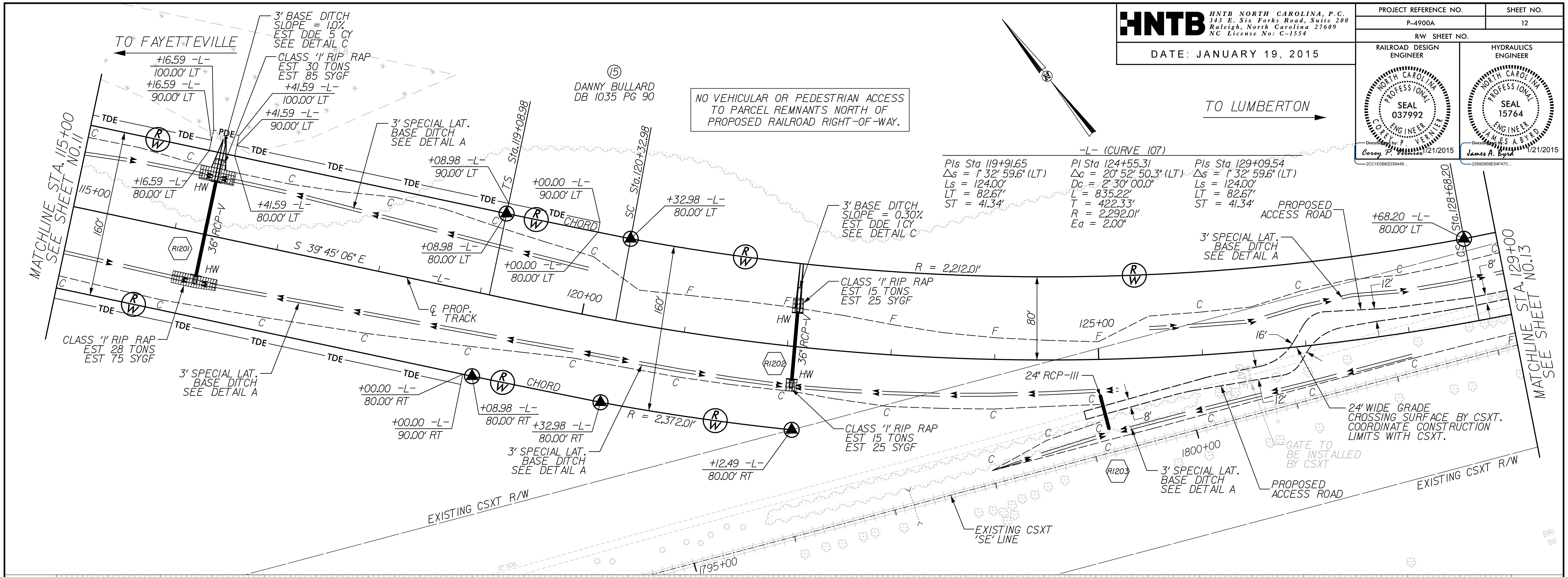
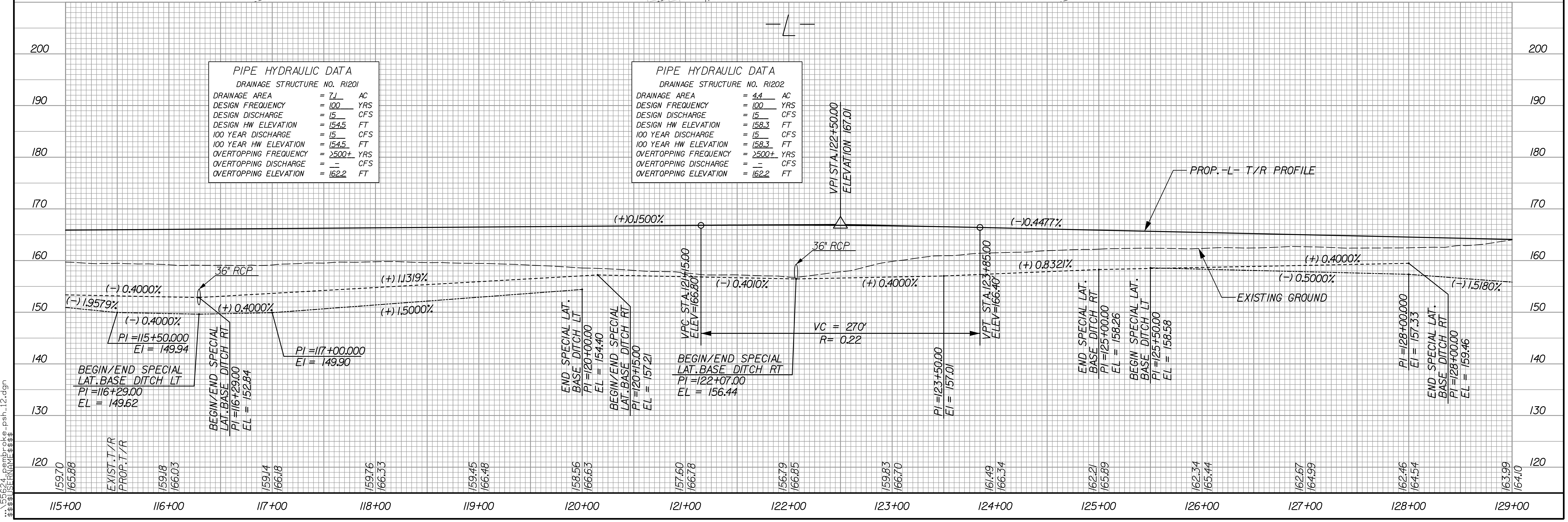
DATE: JANUARY 19, 2015

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	12
R/W SHEET NO.	

RAILROAD DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 037992 DocuSigned by: Corey P. Vernier 1/21/2015 2CC1E0B62D39449...	SEAL 15764 DocuSigned by: James A. Byrd 1/21/2015 23592959E54F47C...





PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. RI201

DRAINAGE AREA	=	7.1	AC
DESIGN FREQUENCY	=	100	YRS
DESIGN DISCHARGE	=	15	CFS
DESIGN HW ELEVATION	=	154.5	FT
100 YEAR DISCHARGE	=	15	CFS
100 YEAR HW ELEVATION	=	154.5	FT
OVERTOPPING FREQUENCY	=	>500+	YRS
OVERTOPPING DISCHARGE	=	-	CFS
OVERTOPPING ELEVATION	=	162.2	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. RI202

DRAINAGE AREA	=	4.4	AC
DESIGN FREQUENCY	=	100	YRS
DESIGN DISCHARGE	=	15	CFS
DESIGN HW ELEVATION	=	158.3	FT
100 YEAR DISCHARGE	=	15	CFS
100 YEAR HW ELEVATION	=	158.3	FT
OVERTOPPING FREQUENCY	=	>500+	YRS
OVERTOPPING DISCHARGE	=	-	CFS
OVERTOPPING ELEVATION	=	162.2	FT

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NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
P-4900A	13
R/W SHEET NO.	

DATE: JANUARY 19, 2015

RAILROAD DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 037992 ENGINEER COREY P. [illegible]

DocuSigned by: Corey P. [illegible] 1/21/2015
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HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 15764 ENGINEER JAMES A. BYRD

DocuSigned by: James A. Byrd 1/21/2015
23592959E54F47C...

TO FAYETTEVILLE

TO LUMBERTON

3' SPECIAL LAT. BASE DITCH SEE DETAIL A

PROPOSED ACCESS ROAD

3' BASE DITCH SLOPE = 1.9% SEE DETAIL F EST 25 TONS EST 61 SYGF EST DDE 178 CY

PROPOSED CONTROL POINT (BY CSXT)

1710' +/- TO MP SE-288

APPROXIMATE SIGNAL CABINET LOCATION (BY CSXT)

MATCHLINE STA. 129+00 SEE SHEET NO.12

Sta.129+92.20

+92.20 -L- 80.00' LT

+86.06 -L- 80.00' LT

CHORD

EXISTING CSXT R/W

PROPOSED TURNOUT MATERIAL LAYDOWN PAD

-L- +50.00 28.13' LT

PI NO.20 RH TURNOUT Sta.134+88.31

PS NO.20 RH TURNOUT Sta.135+47.85

-L- +22.85 40.00' LT

-L- +22.85 7.00' LT

130+00

135+00

S 63° 43' 55" E

S 66° 35' 46" E

-L- +50.00 4.91' RT

1805+00

1810+00

1815+00

℄ PROP. TRACK

PROPOSED EASTBOUND MAST SIGNALS (BY CSXT)

15' CLEAR POINT

PROP. NO.20 RH TURNOUT (BY CSXT)

PROPOSED WESTBOUND MAST SIGNAL (BY CSXT)

END CONSTRUCTION
END PROJECT P-4900A
-L- STA.136+22.85

EXISTING CSXT 'SE' LINE

-L- POL STA.136+22.85

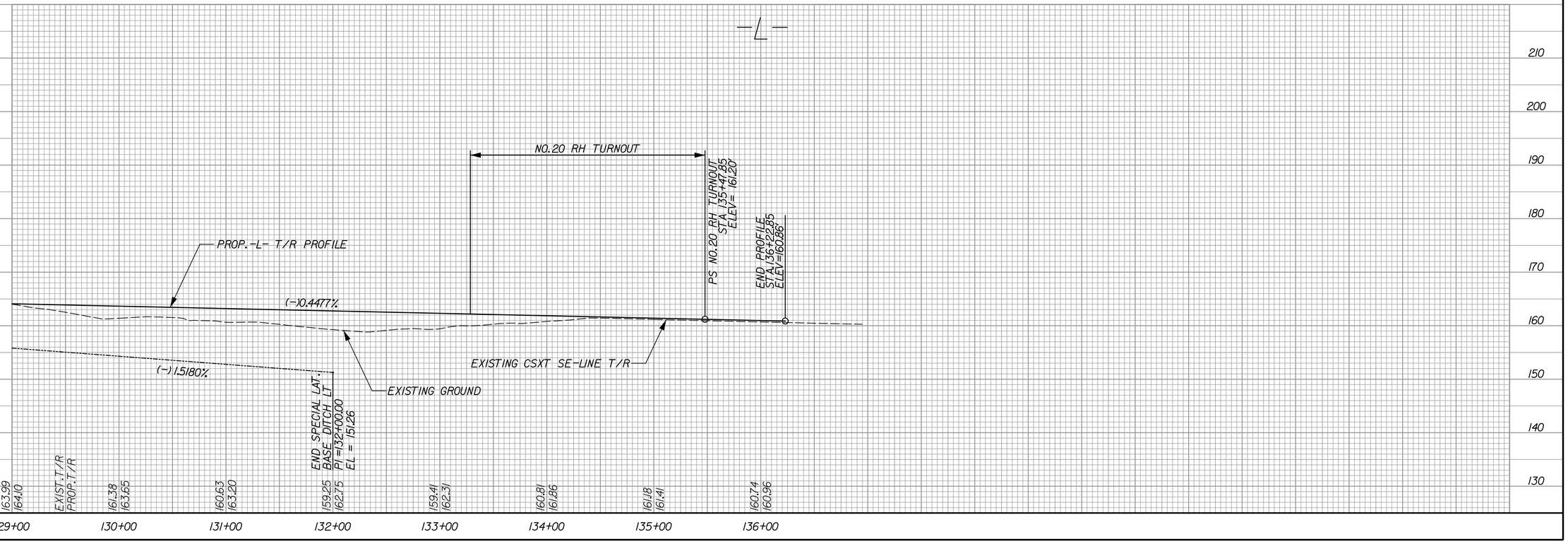
EXISTING CSXT R/W

-L- (CURVE 107)
PIs Sta 129+09.54
△s = 1° 32' 59.6" (LT)
Ls = 124.00'
LT = 82.67'
ST = 41.34'

BRUCE BRAYBOY DB 529 PG 249

N. SCHEWE R.

S. SCHEWE R.



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