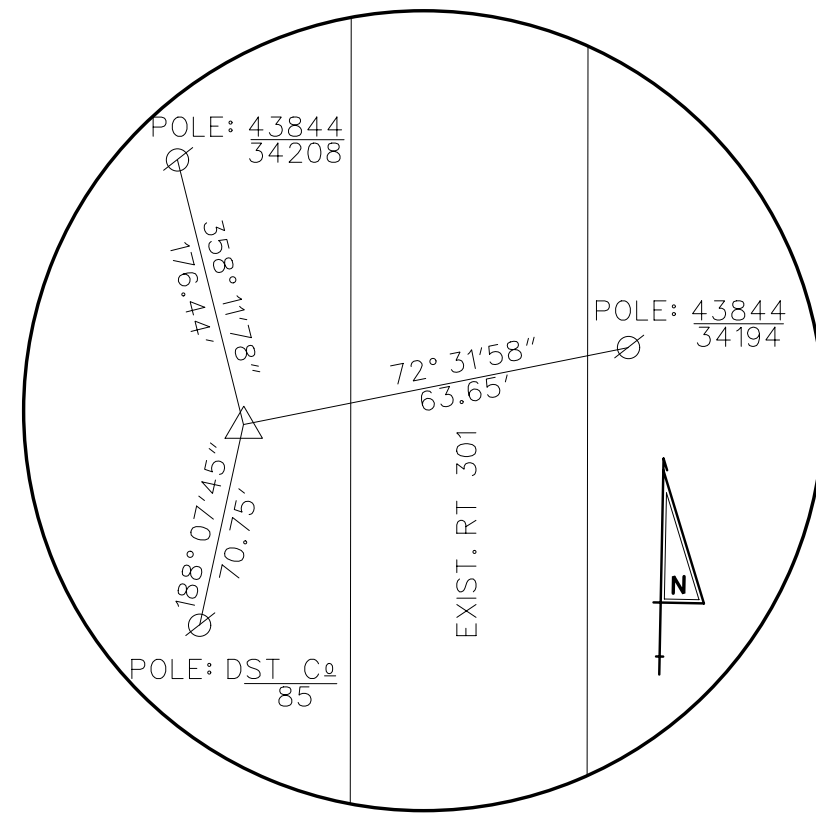


HORIZONTAL / VERTICAL CONTROL DATA					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
31	NA*	NA*	543623.5425	571721.6281	69.62'
B45	NA*	NA*	542621.3018	571397.1794	63.60'
33	NA*	NA*	541184.1316	570995.4651	67.31'

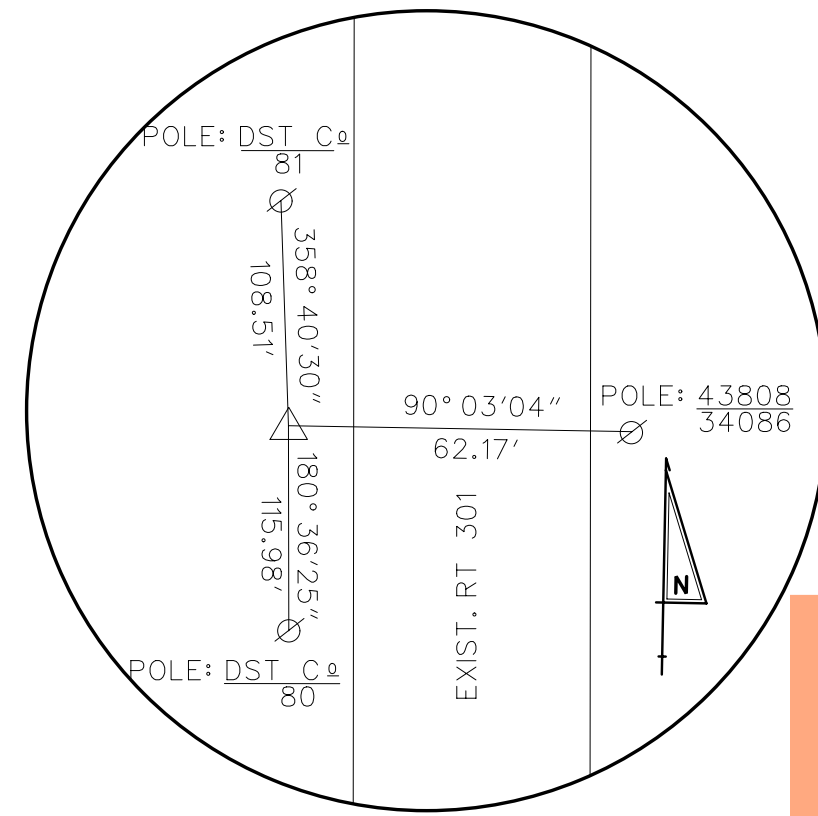
\* POINTS LOCATED BEYOND THE LIMITS OF CONTRACT 1C

CONSTRUCTION ALIGNMENT CONTROL					
POINT	STATION	OFFSET	NORTHING	EASTING	
3000	493+00.0000	0.0000	542701.2868	571847.7395	
3001	608+83.3146	0.0000	543603.9914	573212.9431	
3003	633+62.2870	0.0000	544945.5067	575297.4876	
3050	600+00.0000	0.0000	543116.7967	572476.1351	
3051	605+00.0000	0.0000	543392.5731	572893.2051	

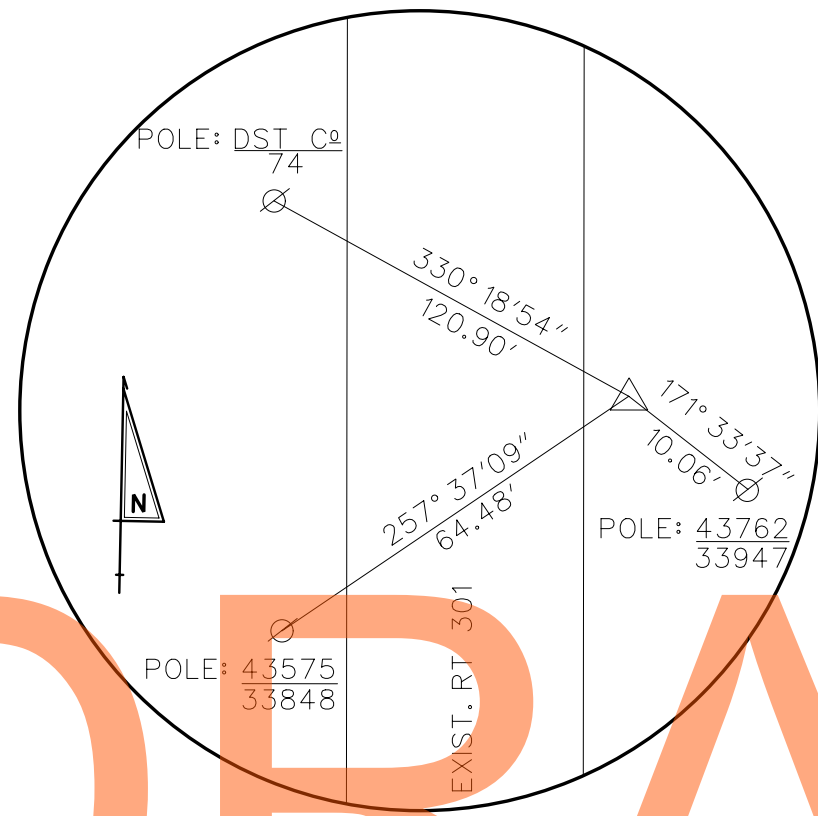
CIRCULAR CURVE NO. ①				
	STATION	NORTHING	EASTING	
PC (	3001)	608+83.3146	543603.9914	573212.9431
PI (	3002)	621+22.8643	544287.6685	574246.9010
CC (	)	633+62.2870	544945.5067	575297.4876
PT (	3003)	633+62.2870	544945.5067	575297.4876
	Radius:		100000.0000	
	Delta:		1° 25' 13.2475" Right	
	Degree of Curvature (Arc):		0° 03' 26.2648"	
	Length:		2478.9724	
	Tangent:		1239.5497	
	Chord:		2478.9089	
	Middle Ordinate:		7.6815	
	External:		7.6821	
	Tangent Direction:		N 56° 31' 35.0000" E	
	Radial Direction:		S 33° 28' 25.0000" E	
	Chord Direction:		N 57° 14' 11.6238" E	
	Radial Direction:		S 32° 03' 11.7525" E	
	Tangent Direction:		N 57° 56' 48.2475" E	



TP - 31  
CAPPED REBAR



TP - B45  
NGS CONCRETE MONUMENT



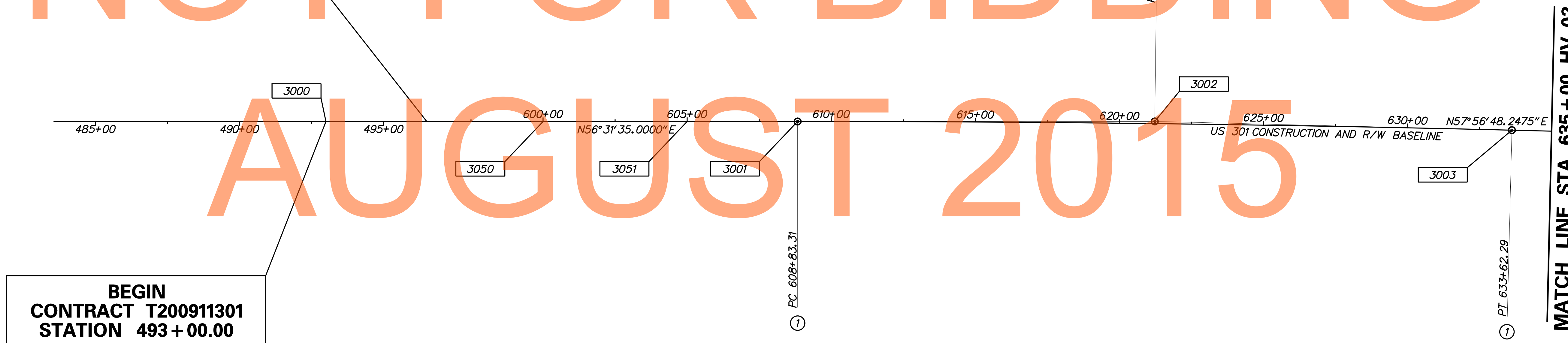
TP - 33  
CONCRETE MONUMENT

DRAFT

NOT FOR BIDDING

AUGUST 2015

POE STA 496+50.00 US 301 (CONTRACT T200911304) BK =  
POB STA 595+96.65 US 301 (CONTRACT T200911301) AH



- NEGATIVE OFFSET DENOTES LEFT OF BASELINE

- DATUM REFERENCE:

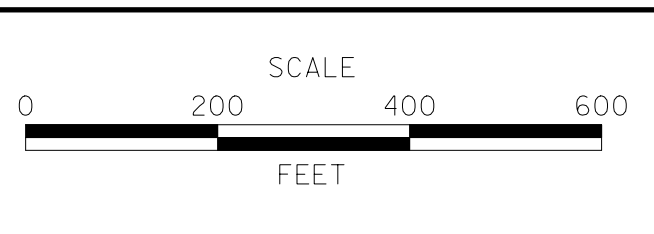
HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM (NAD 83-2007)

VERTICAL - THIS PROJECT IS REFERENCED TO NATIONAL GEODETIC SURVEY (N. A. V. D. 88) BASED ON THE FOLLOWING STATE OF DELAWARE BENCHMARK:

POINT	ELEVATION
JU1066	64.03



ADDENDUMS / REVISIONS	

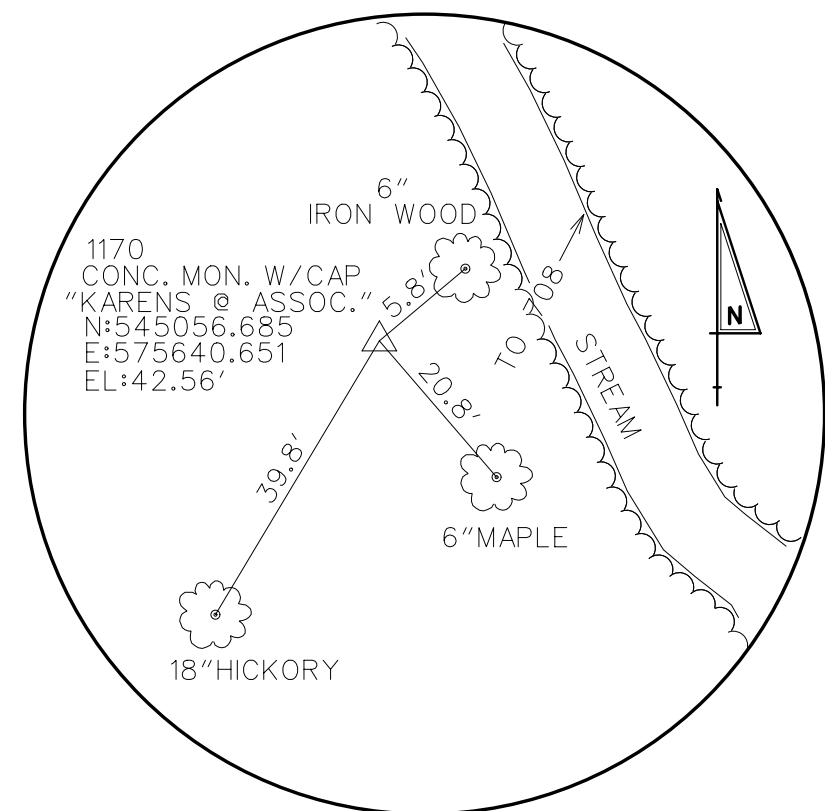


US 301,  
NORFOLK SOUTHERN RR TO SR 896

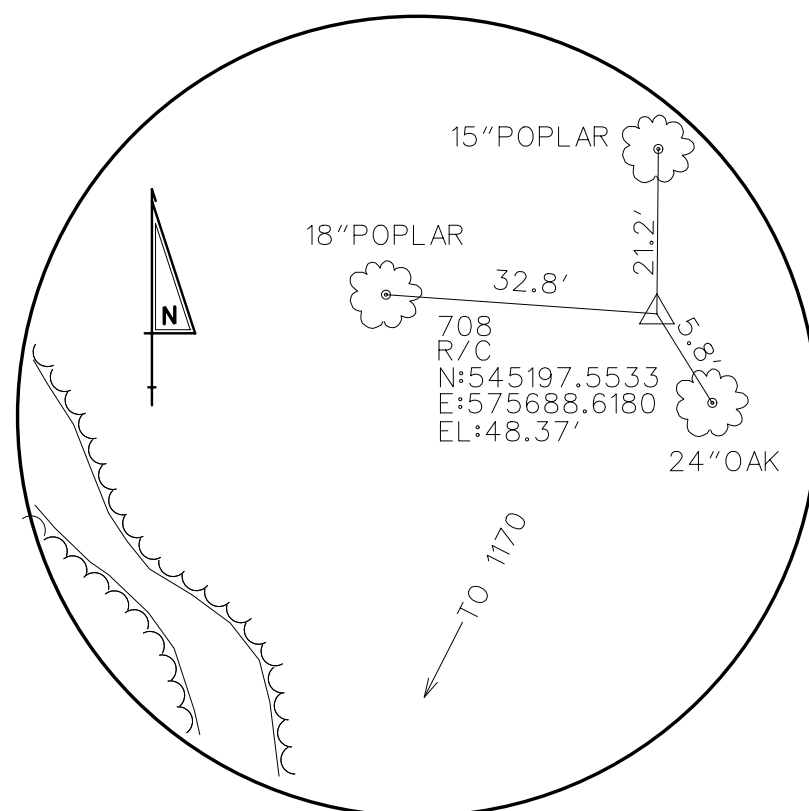
CONTRACT	BRIDGE NO.	
T200911301	DESIGNED BY:	WJD
COUNTY	CHECKED BY:	MAA
NEW CASTLE		

HORIZONTAL AND VERTICAL CONTROL	
SHEET NO.	15
TOTAL SHTS.	240

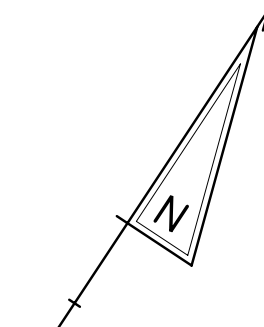
HV-01



TP - 1170  
CONC. MONUMENT WITH CAP

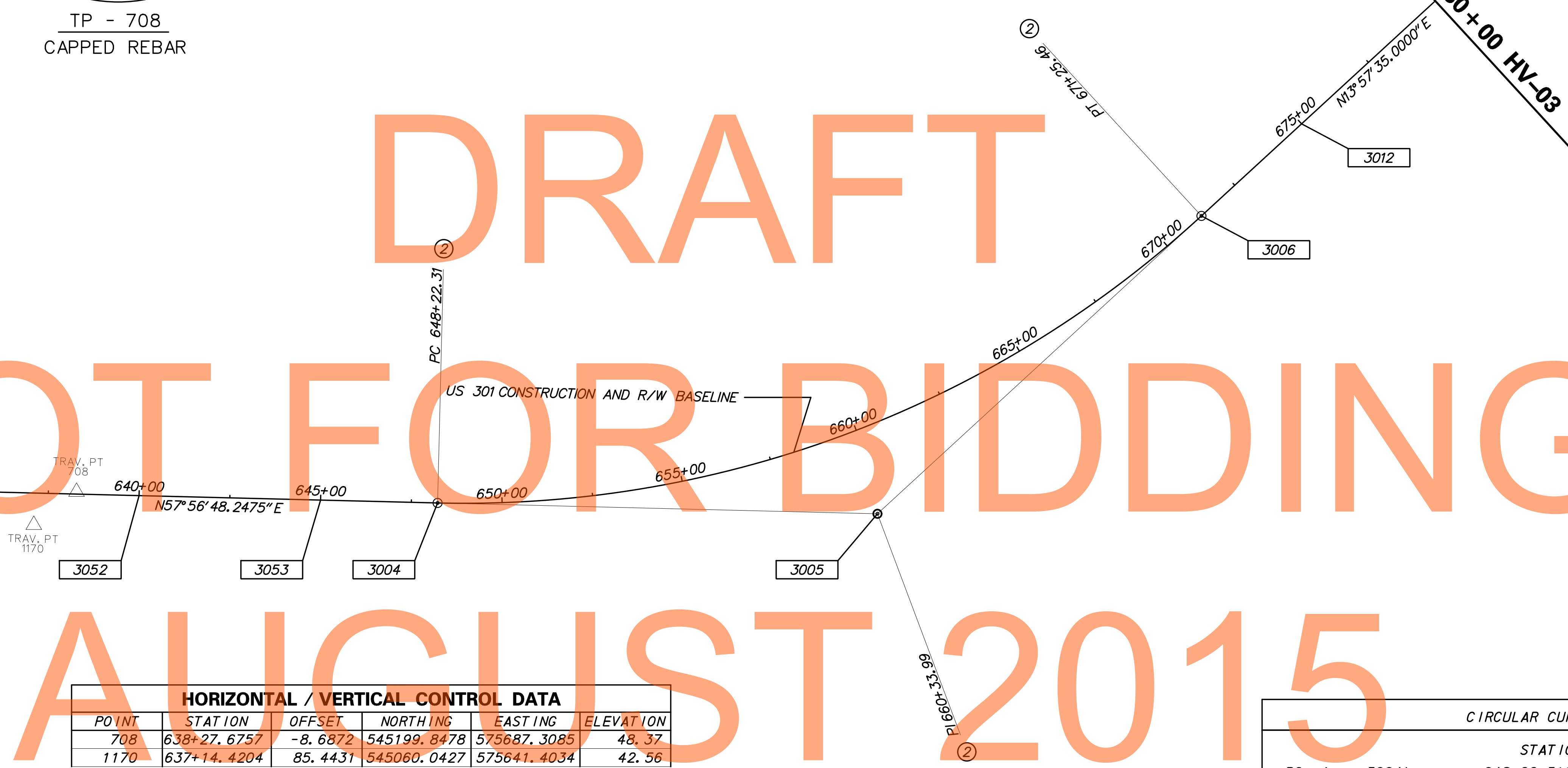


TP - 708  
CAPPED REBAR



DRAFT  
NOT FOR BIDDING  
AUGUST 2015

MATCH LINE STA 635+00 HV-01



HORIZONTAL / VERTICAL CONTROL DATA					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
708	638+27.6757	-8.6872	545199.8478	575687.3085	48.37
1170	637+14.4204	85.4431	545060.0427	575641.4034	42.56

CONSTRUCTION ALIGNMENT CONTROL					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
3004	648+22.3102	0.0000	545720.3518	576534.9377	
3006	671+25.4648	0.0000	547539.2979	577854.2121	
3012	675+00.0000	0.0000	547902.7716	577944.5649	
3052	640+00.0000	0.0000	545283.9457	575837.9846	
3053	645+00.0000	0.0000	545549.2995	576261.7621	

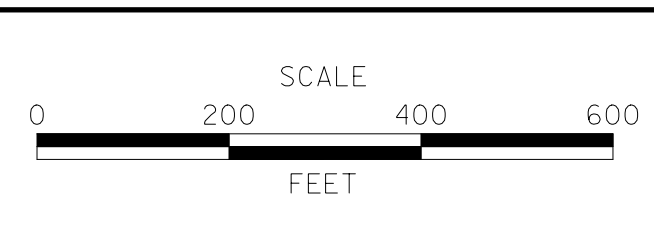
- NEGATIVE OFFSET DENOTES LEFT OF BASELINE  
 - DATUM REFERENCE:  
 HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM (NAD 83-2007)  
 VERTICAL - THIS PROJECT IS REFERENCED TO NATIONAL GEODETIC SURVEY (N.A.V.D. 88) BASED ON THE FOLLOWING STATE OF DELAWARE BENCHMARK:  
 POINT ELEVATION  
 JU1066 64.03

CIRCULAR CURVE NO. ②			
	STATION	NORTHING	EASTING
PC ( 3004)	648+22.3102	545720.3518	576534.9377
PI ( 3005)	660+33.9934	546363.4011	577561.9060
CC ( )		548263.0171	574942.8155
PT ( 3006)	671+25.4648	547539.2979	577854.2121
	Radius:	3000.0000	
	Delta:	43° 59' 13.2475" Left	
	Degree of Curvature (Arc):	1° 54' 35.4935"	
	Length:	2303.1546	
	Tangent:	1211.6832	
	Chord:	2247.0091	
	Middle Ordinate:	218.3211	
	External:	235.4561	
	Tangent Direction:	N 57° 56' 48.2475" E	
	Radial Direction:	S 32° 03' 11.7525" E	
	Chord Direction:	N 35° 57' 11.6238" E	
	Radial Direction:	S 76° 02' 25.0000" E	
	Tangent Direction:	N 13° 57' 35.0000" E	

\$FILES \$DATES



ADDENDUMS / REVISIONS



**US 301,  
NORFOLK SOUTHERN RR TO SR 896**

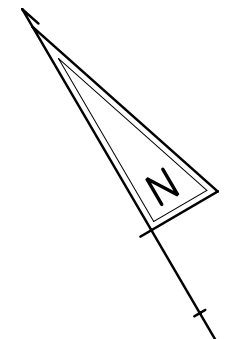
CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

**HORIZONTAL AND  
VERTICAL CONTROL**

HV-02
SHEET NO. 16
TOTAL SHTS. 240

EXISTING RIGHT OF WAY ALIGNMENT				
3014	40+68.6058	-236.4825	550503.9015	577019.5385
3020	61+98.1300	110.6036	548706.2748	578374.5020
200169	21+86.7400	0.0000	550602.9615	575140.2817
200170	30+01.3600	0.0000	550560.0805	575953.7723
200172	49+98.7783	0.0000	549651.6419	577661.9303
200173	53+89.8300	0.0000	549351.7507	577887.9737
200174	69+66.3703	0.0000	548405.7560	579124.8601
200175	86+24.8603	0.0000	547789.1441	580664.4636

CONSTRUCTION ALIGNMENT CONTROL				
POINT	STATION	OFFSET	NORTHING	EASTING
3007	694+56.0380	0.0000	549801.0390	578416.4390
3009	711+74.0238	0.0000	551499.8299	578649.3752
3011	9000+00.0000	0.0000	550592.4148	575348.6661
3013	9005+93.6385	0.0000	550565.5273	575941.6954
3017	9024+88.8109	0.0000	549720.6957	577572.4363
3019	9030+16.5228	0.0000	549303.8439	577896.0323
3023	9044+90.7978	0.0000	548427.8425	579060.2766
3025	9055+96.1222	0.0000	548018.4573	580086.9927
3034	9013+64.0129	0.0000	550397.3824	576689.4314
3035	686+17.7195	0.0000	548987.4797	578214.2033
3036	685+93.5947	0.0000	548964.0674	578208.3834
3054	680+00.0000	0.0000	548388.0043	588065.1848
3055	685+00.0000	0.0000	548873.2370	578185.8046
3056	690+00.0000	0.0000	549358.4698	578306.4245
3060	262+00.0000	0.0000	548650.3640	578440.8815
3061	262+99.0000	0.0000	548730.7021	578498.7408



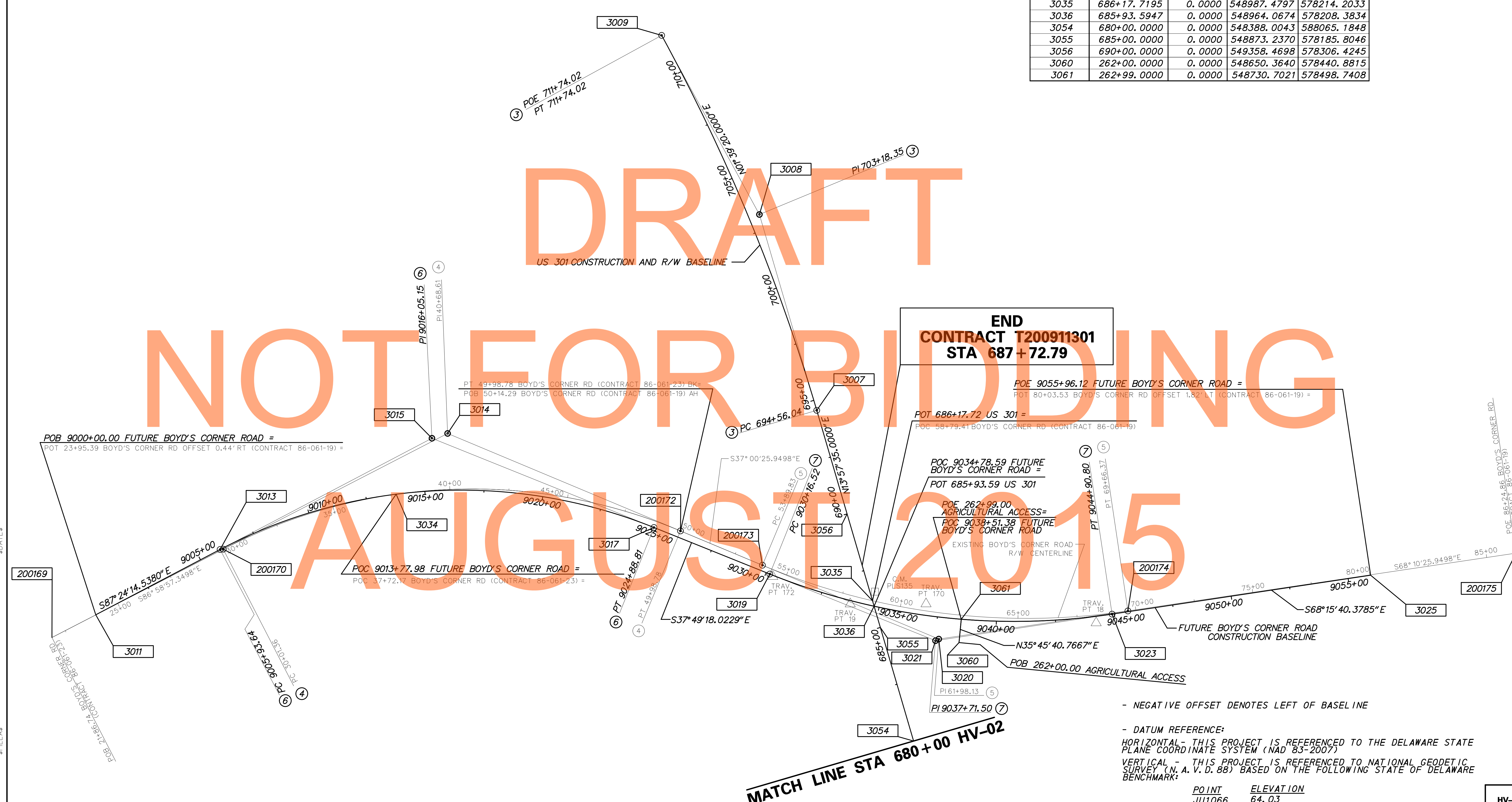
DRAFT

NOT FOR BIDDING

AUGUST 2015

US 301 CONSTRUCTION AND R/W BASELINE

**END CONTRACT T200911301 STA 687+72.79**



- NEGATIVE OFFSET DENOTES LEFT OF BASELINE

- DATUM REFERENCE:  
HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM (NAD 83-2007)  
VERTICAL - THIS PROJECT IS REFERENCED TO NATIONAL GEODETIC SURVEY (N. A. V. D. 88) BASED ON THE FOLLOWING STATE OF DELAWARE BENCHMARK:

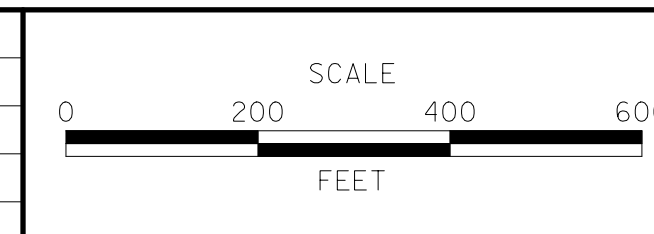
POINT	ELEVATION
JU1066	64.03

\$DATES

\$FILES



ADDENDUMS / REVISIONS



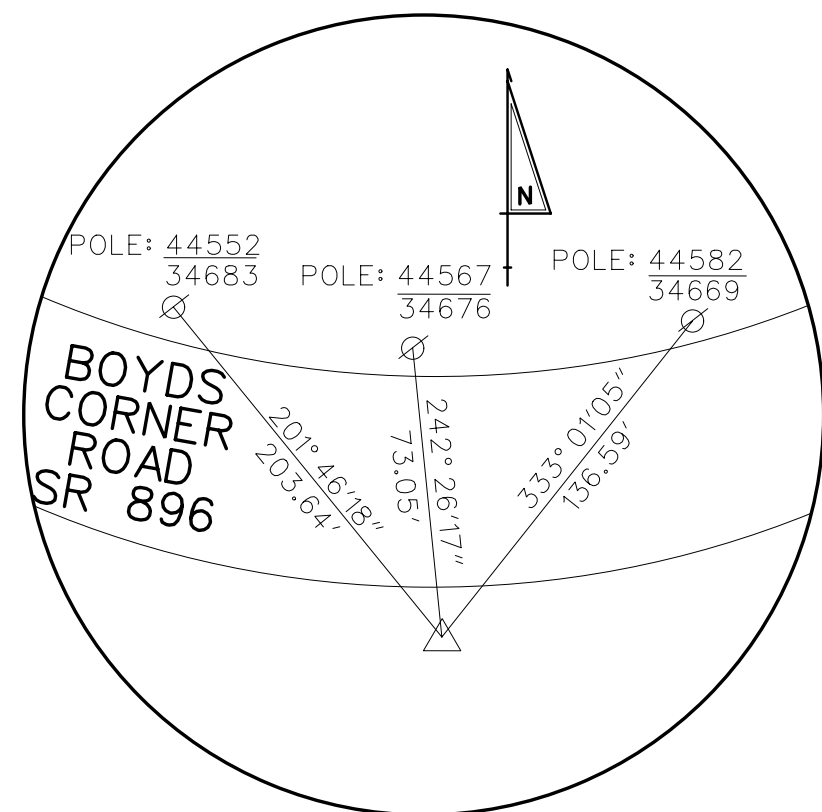
**US 301, NORFOLK SOUTHERN RR TO SR 896**

CONTRACT T200911301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: WJD
	CHECKED BY: MAA

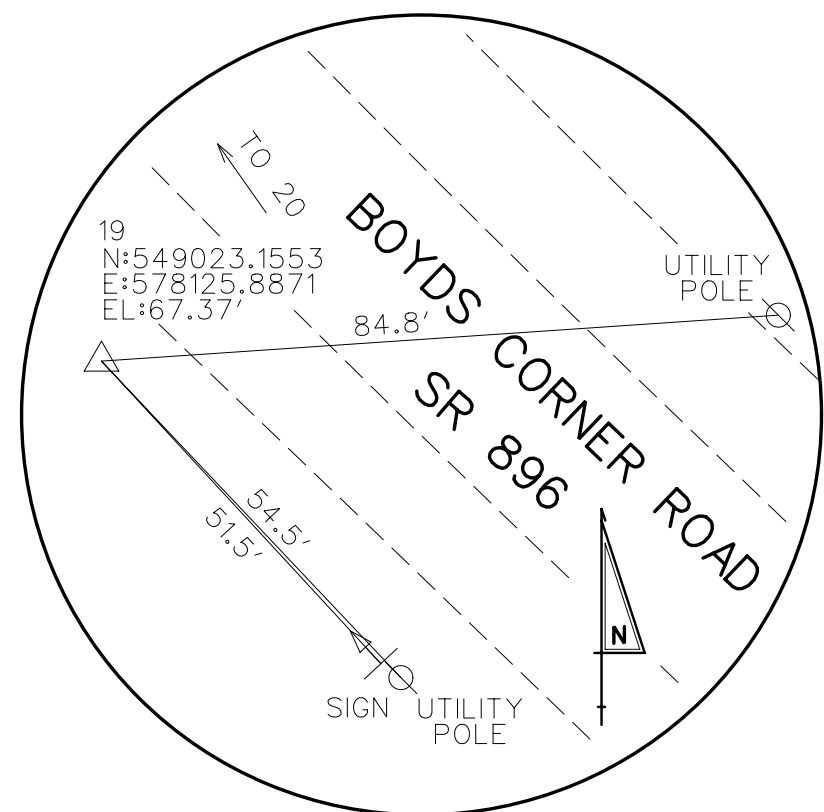
**HORIZONTAL AND VERTICAL CONTROL**

SHEET NO.
17
TOTAL SHTS.
240

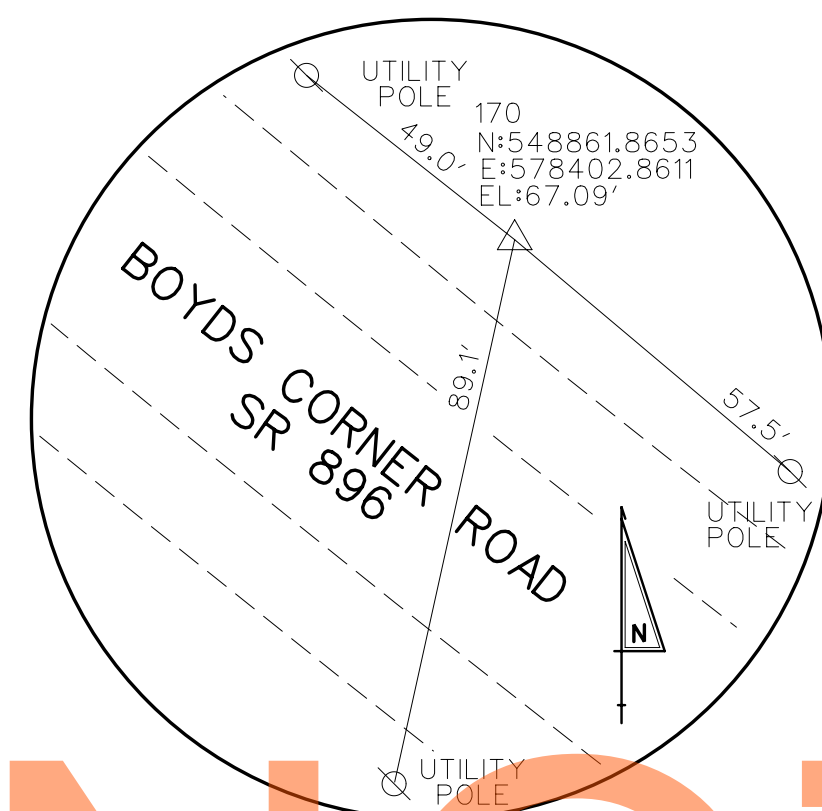
HV-03



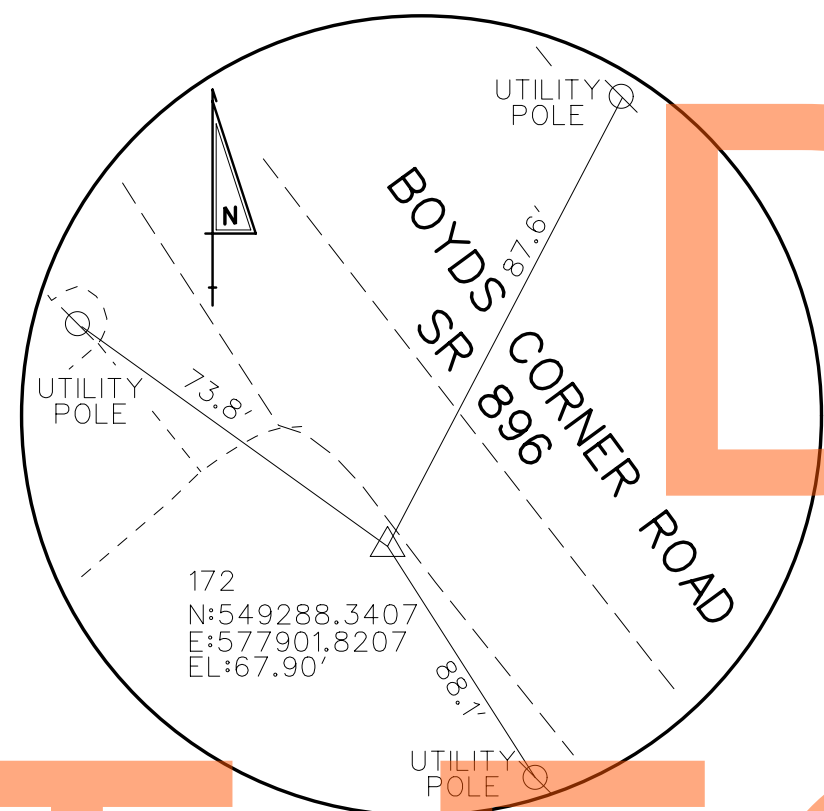
TP - 18  
CAPPED REBAR



TP - 19  
CAPPED REBAR



TP - 170  
NAIL SET



TP - 172  
NAIL SET

HORIZONTAL / VERTICAL CONTROL DATA					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
18	682+62.1913	881.0251	548429.9136	578983.4403	67.23
19	686+31.0361	-94.3142	549023.1553	578125.8871	67.37
170	685+41.3268	213.3891	548861.8653	578402.8611	67.09
172	688+34.3356	-375.7361	549288.3407	577901.8207	67.90

- NEGATIVE OFFSET DENOTES LEFT OF BASELINE

- DATUM REFERENCE:

HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM (NAD 83-2007)

VERTICAL - THIS PROJECT IS REFERENCED TO NATIONAL GEODETIC SURVEY (N. A. V. D. 88) BASED ON THE FOLLOWING STATE OF DELAWARE BENCHMARK:

POINT	ELEVATION
JU1066	64.03

CIRCULAR CURVE NO. ③

	STATION	NORTHING	EASTING
PC (	3007)	694+56.0380	549801.0390
PI (	3008)	703+18.3474	550637.8805
CC (	)		551730.9569
PT (	3009)	711+74.0238	551499.8299
		Radius:	8000.0000
		Delta:	12° 18' 15.0000" Left
		Degree of Curvature (Arc):	0° 42' 58.3101"
		Length:	1717.9858
		Tangent:	862.3093
		Chord:	1714.6865
		Middle Ordinate:	46.0725
		External:	46.3394
		Tangent Direction:	N 13° 57' 35.0000" E
		Radial Direction:	S 76° 02' 25.0000" E
		Chord Direction:	N 7° 48' 27.5000" E
		Radial Direction:	S 88° 20' 40.0000" E
		Tangent Direction:	N 1° 39' 20.0000" E

CIRCULAR CURVE NO. ④

	STATION	NORTHING	EASTING
PC (	200170)	30+01.3600	550560.0805
PI (	3014)	40+68.6058	550503.9015
CC (	200171)		548273.2554
PT (	200172)	49+98.7783	549651.6419
		Radius:	2290.0000
		Delta:	49° 58' 31.4000" Right
		Degree of Curvature (Arc):	2° 30' 07.1968"
		Length:	1997.4183
		Tangent:	1067.2458
		Chord:	1934.7001
		Middle Ordinate:	214.3474
		External:	36.4925
		Tangent Direction:	S 86° 58' 57.3498" E
		Radial Direction:	S 3° 01' 02.6502" W
		Chord Direction:	S 61° 59' 41.6498" E
		Radial Direction:	S 52° 59' 34.0502" W
		Tangent Direction:	S 37° 00' 25.9498" E

CIRCULAR CURVE NO. ⑥

	STATION	NORTHING	EASTING
PC (	3013)	9005+93.6385	550565.5273
PI (	3015)	9016+05.1516	550519.7133
CC (	)		548377.7748
PT (	3017)	9024+88.8109	549720.6957
		Radius:	2190.0000
		Delta:	49° 34' 56.5151" Right
		Degree of Curvature (Arc):	2° 36' 58.4843"
		Length:	1895.1724
		Tangent:	1011.5131
		Chord:	1836.5882
		Middle Ordinate:	201.8260
		External:	222.3140
		Tangent Direction:	S 87° 24' 14.5380" E
		Radial Direction:	S 2° 35' 45.4620" W
		Chord Direction:	S 62° 36' 46.2805" E
		Radial Direction:	S 52° 10' 41.9771" W
		Tangent Direction:	S 37° 49' 18.0229" E

CIRCULAR CURVE NO. ⑤

	STATION	NORTHING	EASTING
PC (	200173)	53+89.8300	549351.7507
PI (	3020)	61+98.1300	548706.2748
CC (	200167)		551096.2583
PT (	200174)	69+66.3703	548405.7560
		Radius:	2898.2600
		Delta:	31° 10' 00.0000" Left
		Degree of Curvature (Arc):	1° 58' 36.8496"
		Length:	1576.5403
		Tangent:	808.3000
		Chord:	1557.1750
		Middle Ordinate:	106.5379
		External:	110.6036
		Tangent Direction:	S 37° 00' 25.9498" E
		Radial Direction:	S 52° 59' 34.0502" W
		Chord Direction:	S 52° 35' 25.9498" E
		Radial Direction:	S 21° 49' 34.0502" W
		Tangent Direction:	S 68° 10' 25.9498" E

CIRCULAR CURVE NO. ⑦

	STATION	NORTHING	EASTING
PC (	3019)	9030+16.5228	549303.8439
PI (	3021)	9037+71.5020	548707.4684
CC (	)		551005.4903
PT (	3023)	9044+90.7978	548427.8425
		Radius:	2775.0000
		Delta:	30° 26' 22.3556" Left
		Degree of Curvature (Arc):	2° 03' 52.9660"
		Length:	1474.2750
		Tangent:	754.9792
		Chord:	1456.9980
		Middle Ordinate:	97.3305
		External:	100.8683
		Tangent Direction:	S 37° 49' 18.0229" E
		Radial Direction:	S 52° 10' 41.9771" W
		Chord Direction:	S 53° 02' 29.2007" E
		Radial Direction:	S 21° 44' 19.6215" W
		Tangent Direction:	S 68° 15' 40.3785" E

DRAFT  
NOT FOR BIDDING  
AUGUST 2015

ADDENDUMS / REVISIONS

NOT TO SCALE

US 301,  
NORFOLK SOUTHERN RR TO SR 896

CONTRACT	BRIDGE NO.
T200911301	
COUNTY	DESIGNED BY: WJD
NEW CASTLE	CHECKED BY: MAA

HORIZONTAL AND  
VERTICAL CONTROL

HV-04

SHEET NO.

18

TOTAL SHTS.

240