ENDWALL SCHEDULE				
NO.	SIZE/TYPE	STATION	OFFSET	INVERT
401	48" RCP	853+23.28	121.11	30.00

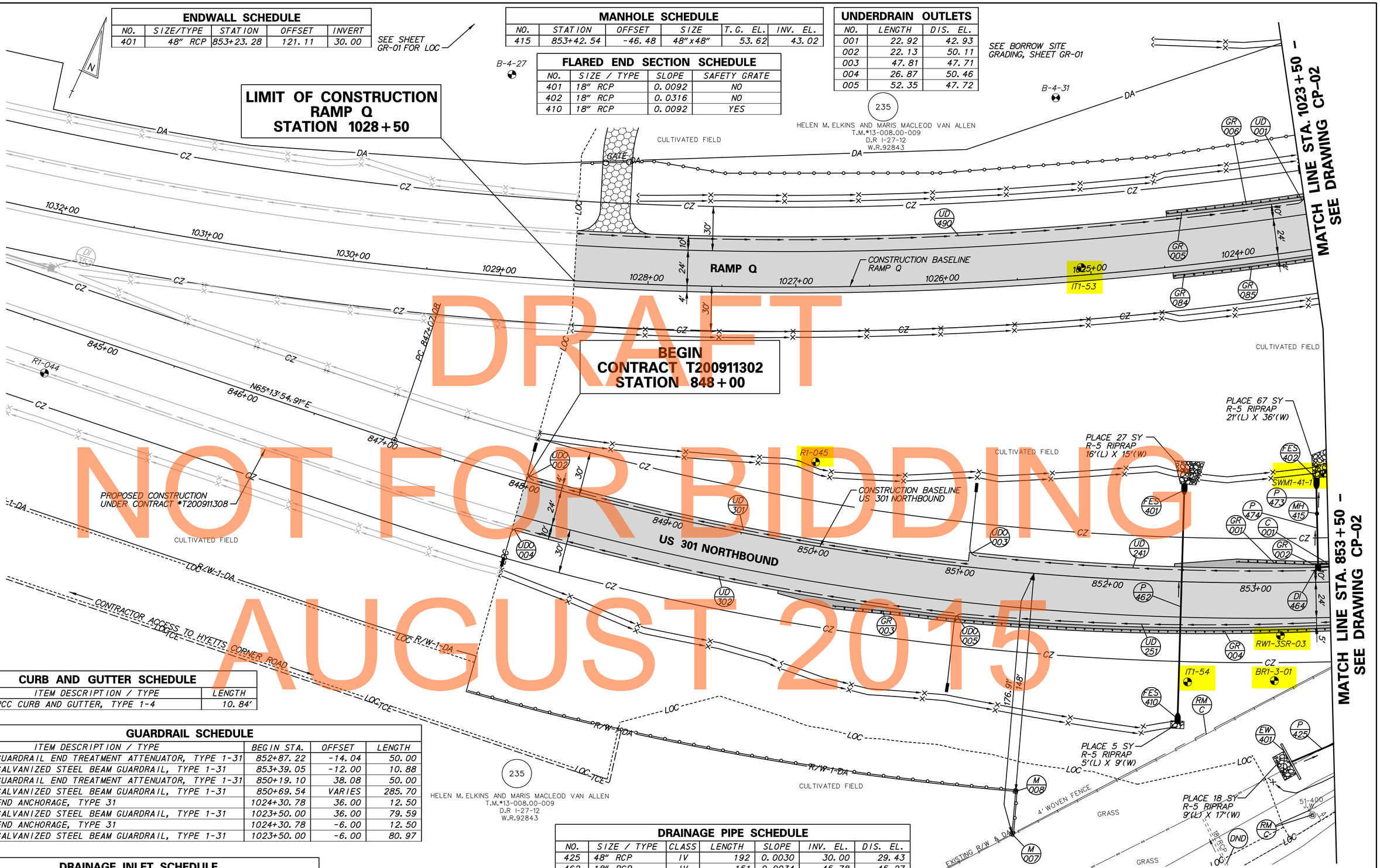
SEE SHEET GR-01 FOR LOC

MANHOLE SCHEDULE					
NO.	STATION	OFFSET	SIZE	T.G. EL.	INV. EL.
415	853+42.54	-46.48	48"x48"	53.62	43.02

FLARED END SECTION SCHEDULE			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
401	18" RCP	0.0092	NO
402	18" RCP	0.0316	NO
410	18" RCP	0.0092	YES

UNDERDRAIN OUTLETS		
NO.	LENGTH	DIS. EL.
001	22.92	42.93
002	22.13	50.11
003	47.81	47.71
004	26.87	50.46
005	52.35	47.72

SEE BORROW SITE GRADING, SHEET GR-01



CURB AND GUTTER SCHEDULE		
NO.	ITEM DESCRIPTION / TYPE	LENGTH
001	PCC CURB AND GUTTER, TYPE 1-4	10.84'

GUARDRAIL SCHEDULE				
NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
001	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	852+87.22	-14.04	50.00
002	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	853+39.05	-12.00	10.88
003	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	850+19.10	38.08	50.00
004	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	850+69.54	VARIES	285.70
005	END ANCHORAGE, TYPE 31	1024+30.78	36.00	12.50
006	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	1023+50.00	36.00	79.59
084	END ANCHORAGE, TYPE 31	1024+30.78	-6.00	12.50
085	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	1023+50.00	-6.00	80.97

DRAINAGE INLET SCHEDULE						
NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
464	853+42.53	-12.00	48"x30"	2	64.63	54.13

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
425	48" RCP	IV	192	0.0030	30.00	29.43
462	18" RCP	IV	151	0.0034	45.78	45.27
473	18" RCP	IV	16	0.0100	43.02	42.86
474	18" RCP	IV	33	0.0996	54.13	50.90

N:\36653-000\CONTRACT 1B\CADD\CP001\J301_1B.dgn
2/16/2015 3:29:21 PM

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 30 60 90
FEET

US 301 &
SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	BR1-433
T200911302	DESIGNED BY: J.A.D.	
COUNTY		
NEW CASTLE	CHECKED BY: B.R.T.	

BORING LOCATION PLAN
Sheet 1 of 12

CP-01

SHEET NO.
36
TOTAL SHTS.
491

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
007	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	853+50.00	-12.00	189.12
008	GUARDRAIL TO BARRIER CONN., APPROACH TYPE 1-31	855+40.37	-12.00	19.75
009	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	853+50.00	VARIES	39.30
010	GUARDRAIL TO BARRIER CONN., APPROACH TYPE 1-31	853+88.64	30.391	19.75
011	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	1021+89.75	36.00	157.91
012	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	1021+37.50	36.00	50.00
013	END ANCHORAGE, TYPE 31	1782+05.82	-137.00	12.50
014	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	1782+19.33	-135.19	200.00
015	GUARDRAIL TO BARRIER CONN., EXIT TYPE 31	1784+17.31	-107.16	11.50
086	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	1021+19.04	-6.00	231.53
087	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	1020+67.72	-6.00	50.00

BARRIER SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
201	CONCRETE SINGLE FACE BARRIER, TYPE 2	1784+28.73	-105.82	118.10
202	BARRIER WALL 1	1785+46.26	-94.25	121.00

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
450	855+45.23	-12.00	48"x30"	2	69.37	63.75

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
402	18" RCP	IV	31	0.0993	37.95	34.88
409	18" RCP	IV	198	0.0239	63.75	59.01
450	48" RCP	IV	150	0.0030	29.23	28.78
466	48" RCP	IV	242	0.0030	28.58	27.85

CURB AND GUTTER SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
002	PCC CURB AND GUTTER, TYPE 1-4	209.10'

MANHOLE SCHEDULE

NO.	STATION	OFFSET	SIZE	T.G. EL.	INV. EL.
*403	854+97.37	55.06	66"x66"	40.50	29.23
421	854+96.60	-99.70	66"x66"	37.59	28.58

*MANHOLE SHALL BE CAST IN PLACE TO CONNECT TO EXISTING PIPES AS SHOWN & IN ACCORDANCE WITH STANDARD D-5

ENDWALL SCHEDULE

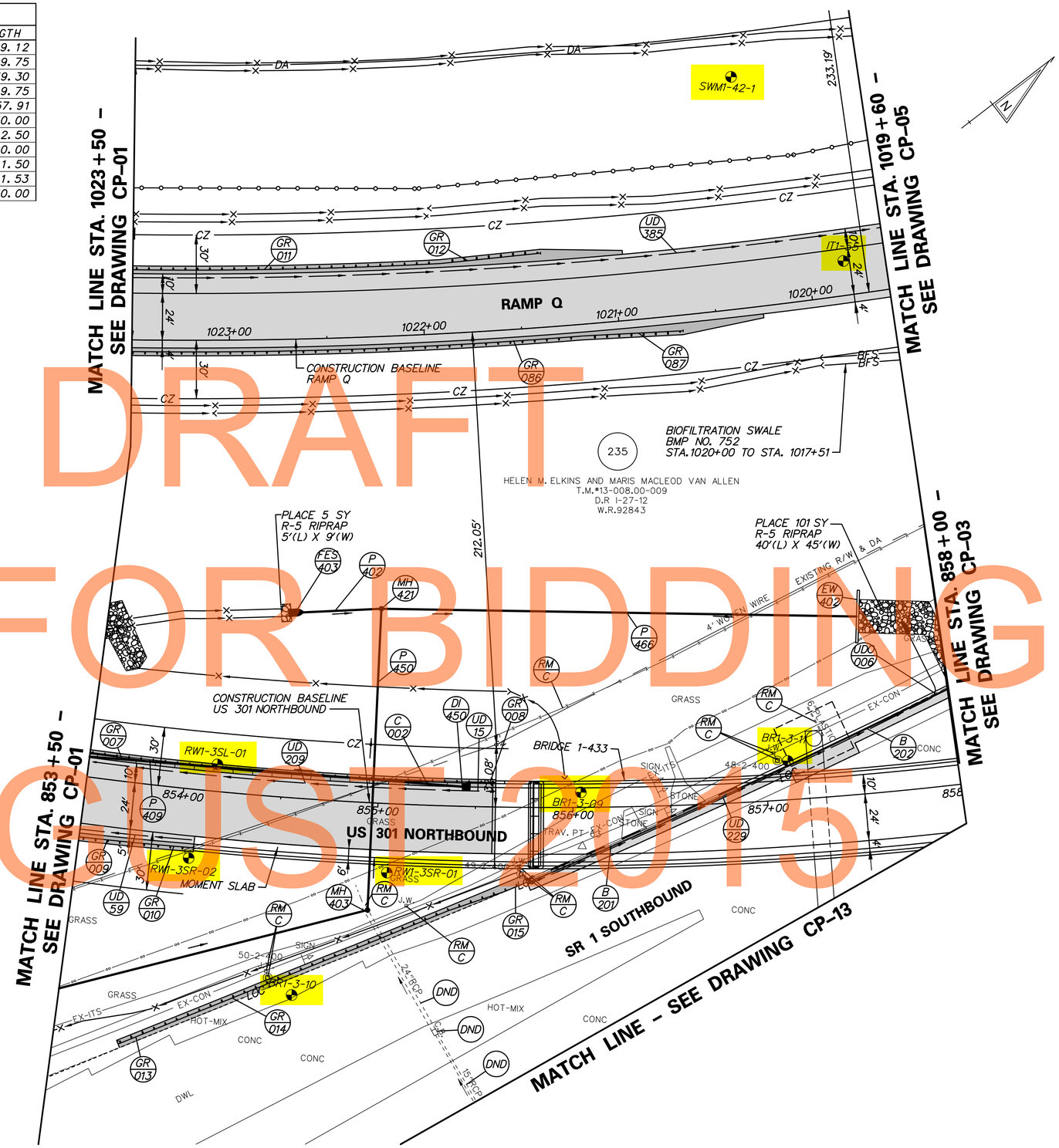
NO.	SIZE/TYPE	STATION	OFFSET	INVERT
402	48" RCP	837+53.83	-91.09	27.85

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
403	18" RCP	0.0993	YES

UNDERDRAIN OUTLETS

NO.	LENGTH	DIS. EL.
006	40.40	28.23



DRAFT
NOT FOR BIDDING
AUGUST 2015

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

US 301 & SR 1 INTERCHANGE

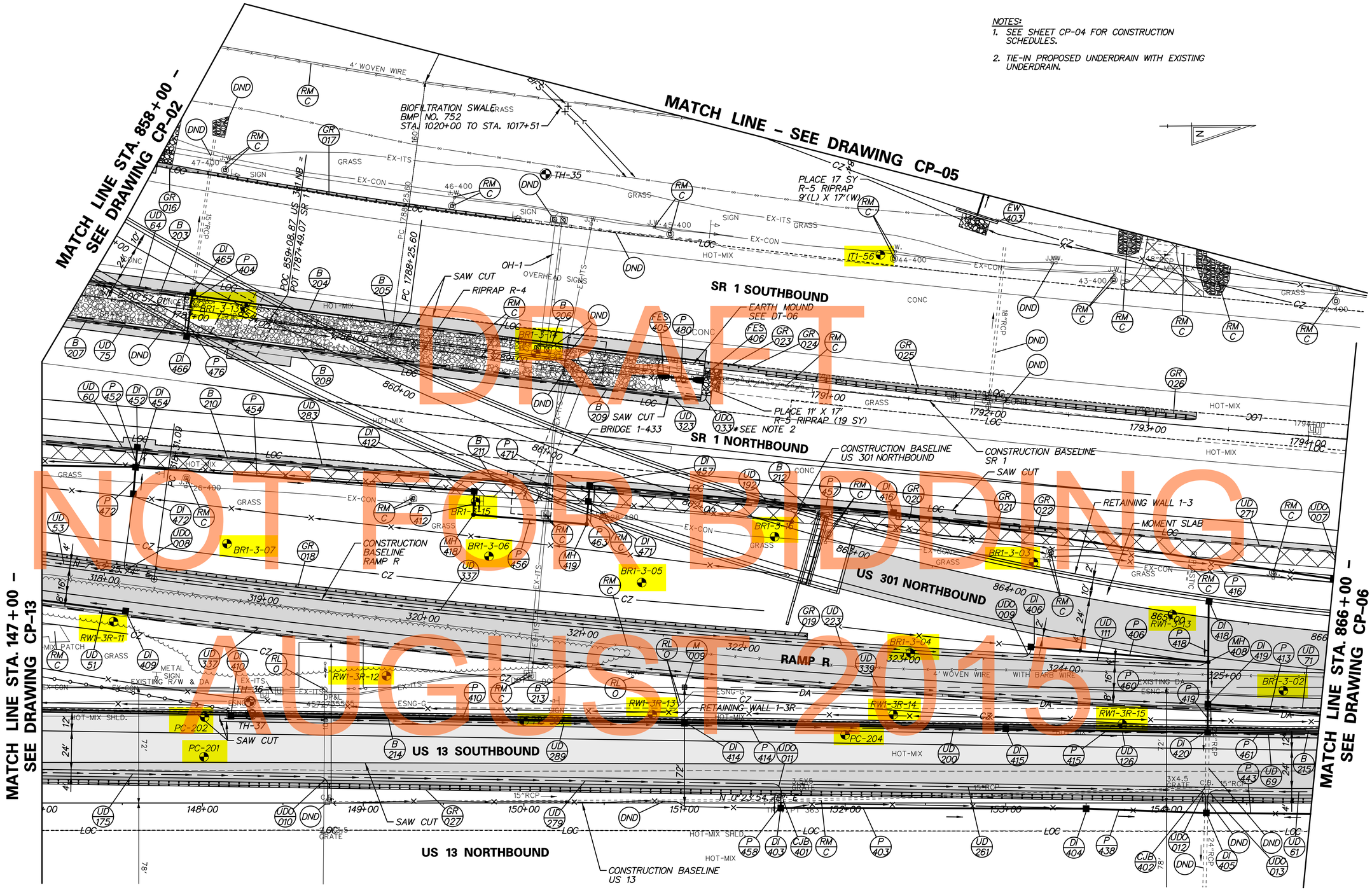
CONTRACT	BRIDGE NO. BR1-433
T200911302	DESIGNED BY: J.A.D.
COUNTY	
NEW CASTLE	CHECKED BY: B.R.T.

BORING LOCATION PLAN
Sheet 2 of 12

CP-02
SHEET NO. 37
TOTAL SHTS. 491

r:\38653-000\contract tb\cadd\CP002U301_TB.dgn
5/30/2013 11:54:45 AM

NOTES:
1. SEE SHEET CP-04 FOR CONSTRUCTION SCHEDULES.
2. TIE-IN PROPOSED UNDERDRAIN WITH EXISTING UNDERDRAIN.



DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 30 60 90 FEET	US 301 & SR 1 INTERCHANGE	CONTRACT T200911302 / COUNTY NEW CASTLE	BRIDGE NO. BR1-433, RW1-3 & RW1-3R / DESIGNED BY: J.A.D. / CHECKED BY: B.R.T.

BORING LOCATION PLAN
Sheet 3 of 12

CP-03
SHEET NO. 38
TOTAL SHTS. 491

n:\31653-000\contract th\cadd\CP003U301_1B.dgn
5/30/2013 11:54:52 AM

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
417	48" RCP	IV	20	0.1030	25.20	23.16
464	48" RCP	IV	223	0.0078	22.96	21.23
465	2' x 4' RCB	*	60	0.0031	21.23	21.05
483	2' x 4' RCB	*	60	0.0031	21.23	21.05

* SEE CONTRACT SPECIAL PROVISIONS.

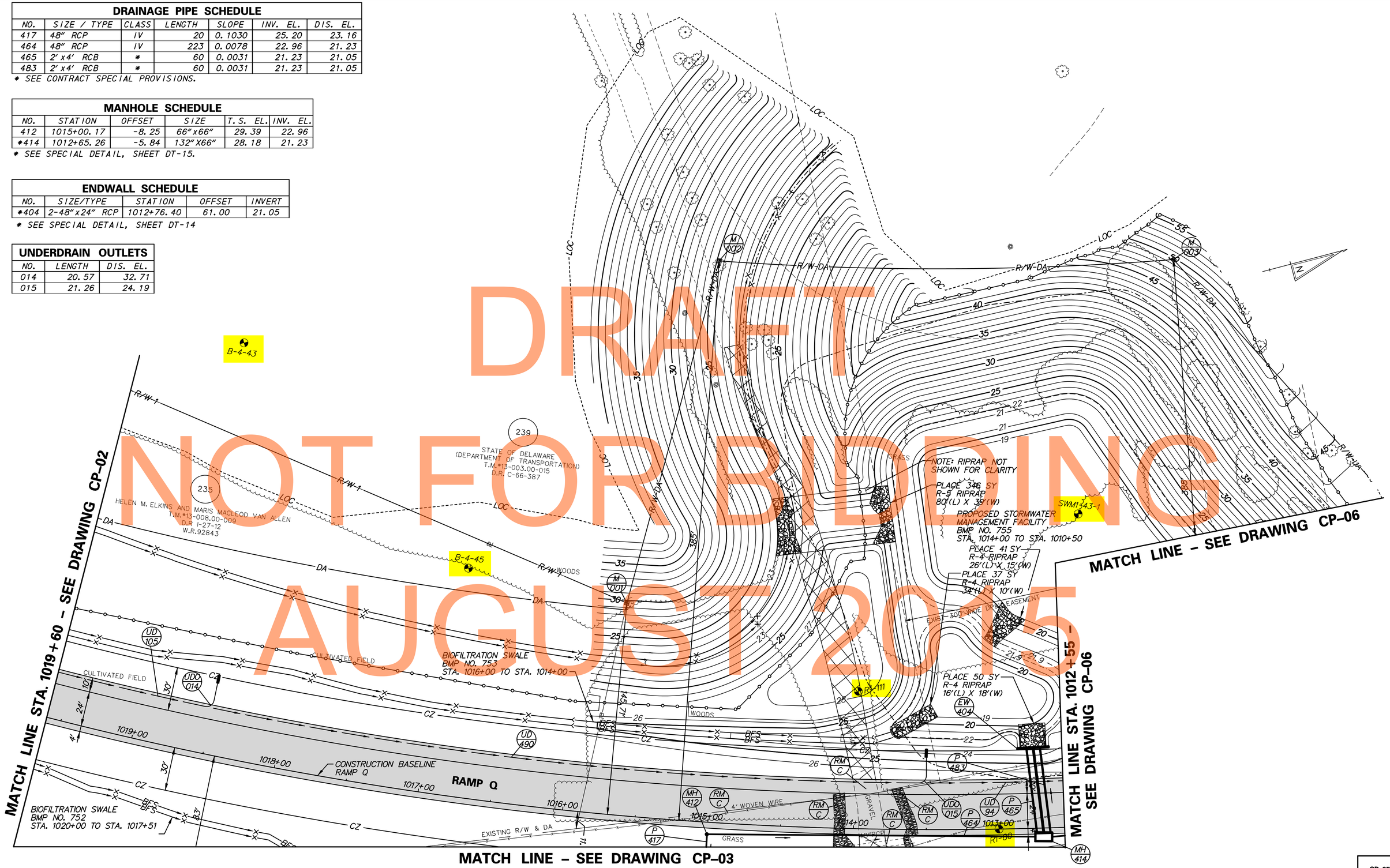
MANHOLE SCHEDULE					
NO.	STATION	OFFSET	SIZE	T.S. EL.	INV. EL.
412	1015+00.17	-8.25	66"x66"	29.39	22.96
*414	1012+65.26	-5.84	132"X66"	28.18	21.23

* SEE SPECIAL DETAIL, SHEET DT-15.

ENDWALL SCHEDULE				
NO.	SIZE/TYPE	STATION	OFFSET	INVERT
*404	2-48"x24" RCP	1012+76.40	61.00	21.05

* SEE SPECIAL DETAIL, SHEET DT-14

UNDERDRAIN OUTLETS		
NO.	LENGTH	DIS. EL.
014	20.57	32.71
015	21.26	24.19



DRAFT
NOT FOR BIDDING
AUGUST 2015

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

US 301 & SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.
T200911302	DESIGNED BY: J.A.D.
COUNTY	
NEW CASTLE	CHECKED BY: B.R.T.

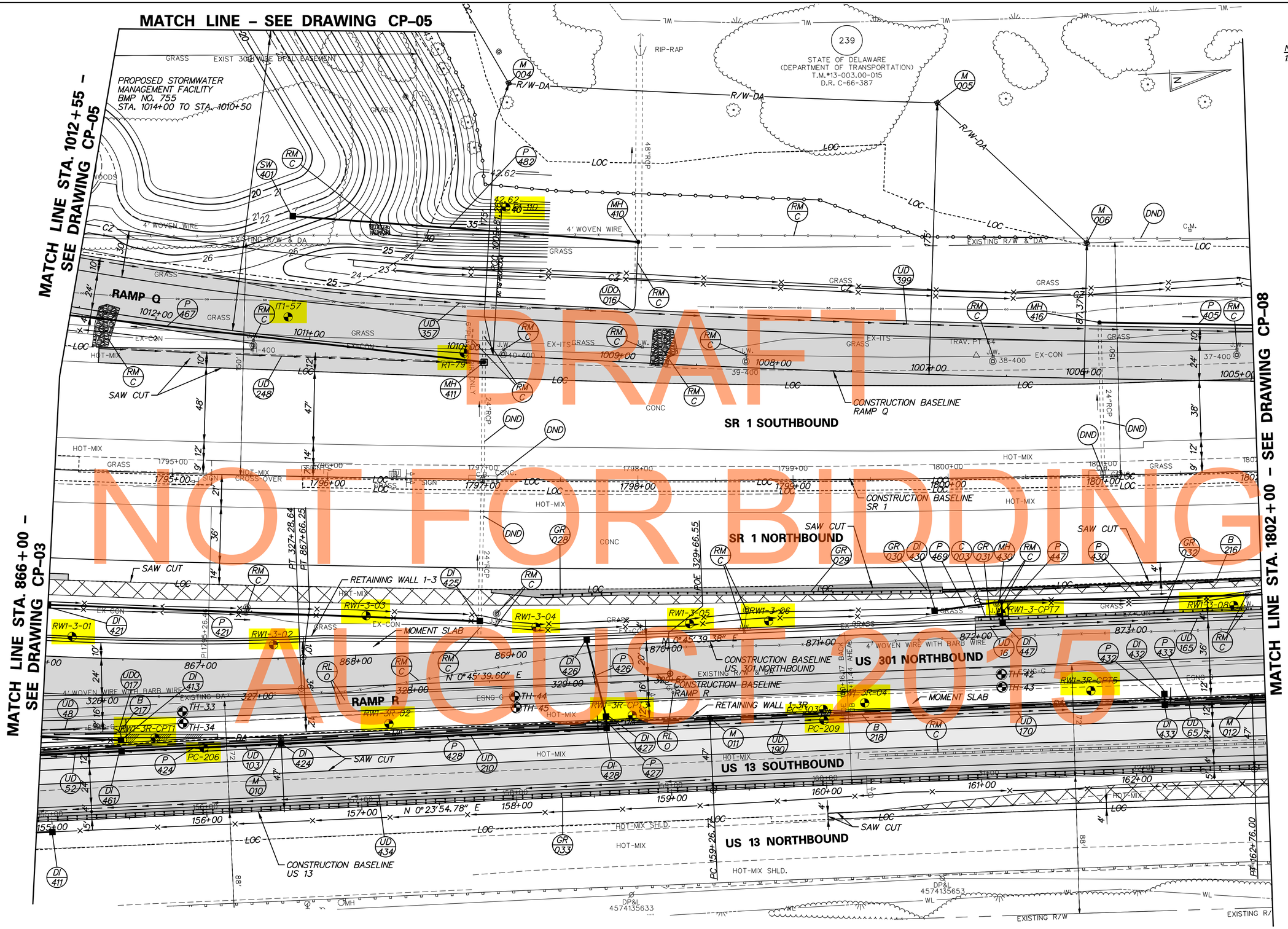
BORING LOCATION PLAN
Sheet 4 of 12

CP-05

SHEET NO. 40

TOTAL SHTS. 491

rt\33653-000\contract tb\cadd\CP005U301_TB.dgn
5/30/2013 11:55:05 AM



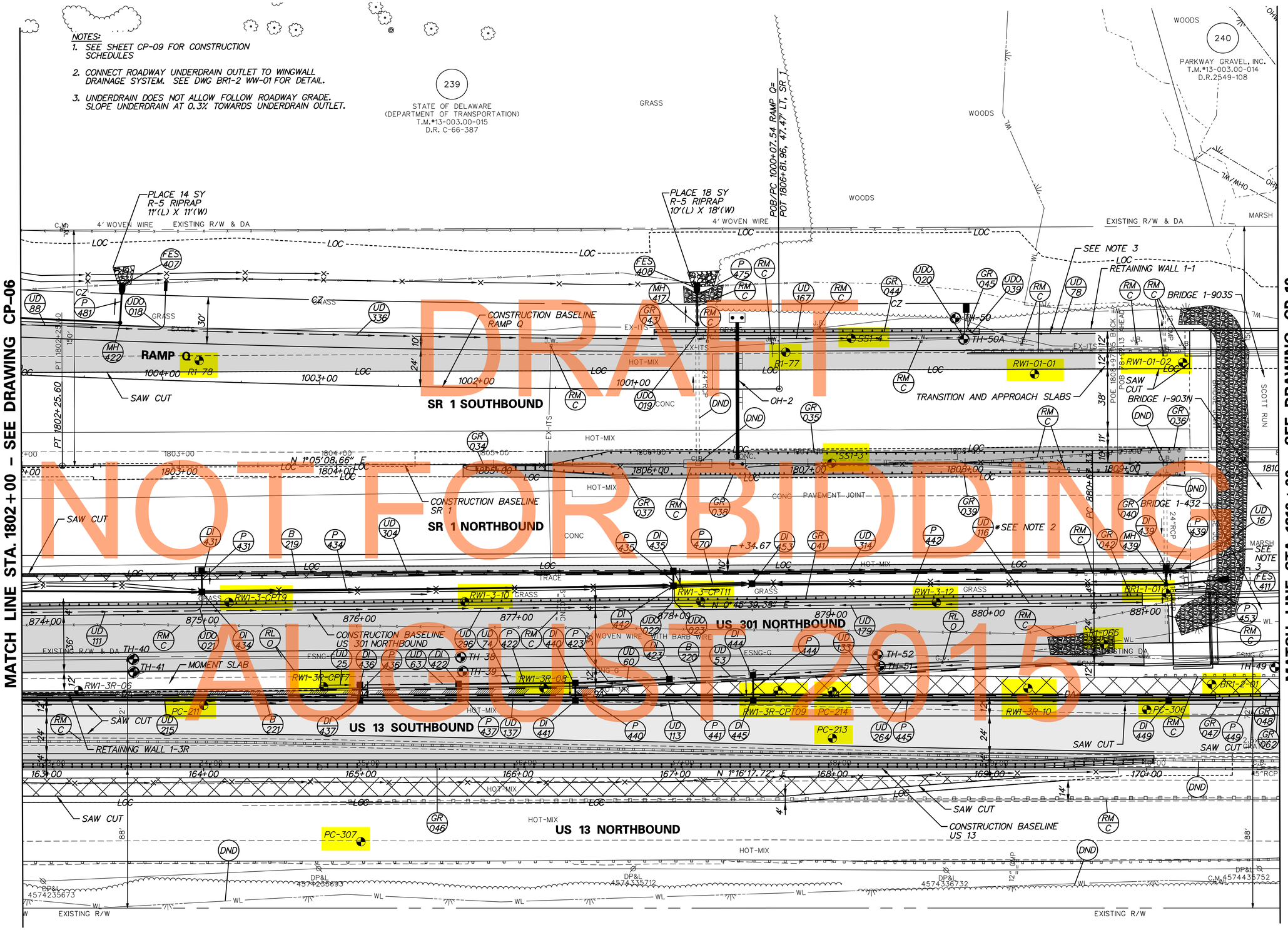
NOTES:
1. SEE SHEET CP-07 FOR CONSTRUCTION SCHEDULES

CP-06

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 30 60 90 FEET	US 301 & SR 1 INTERCHANGE	CONTRACT T200911302	BRIDGE NO. RW1-3 & RW1-3R	BORING LOCATION PLAN Sheet 5 of 12	SHEET NO. 41
				COUNTY NEW CASTLE	DESIGNED BY: J.A.D.		TOTAL SHTS. 491
					CHECKED BY: B.R.T.		

n:\31653-000\contract 1b\cadd\CP006U301_1B.dgn
5/30/2013 11:55:12 AM

NOTES:
1. SEE SHEET CP-09 FOR CONSTRUCTION SCHEDULES
2. CONNECT ROADWAY UNDERDRAIN OUTLET TO WINGWALL DRAINAGE SYSTEM. SEE DWG BR1-2 WW-01 FOR DETAIL.
3. UNDERDRAIN DOES NOT ALLOW FOLLOW ROADWAY GRADE. SLOPE UNDERDRAIN AT 0.3% TOWARDS UNDERDRAIN OUTLET.



DRAFT
NOT FOR BIDDING
AUGUST 2015

N:\31653-000\CONTRACT 1B\CADD\CP008U301_1B.dgn
2/17/2015 10:31:18 AM

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 30 60 90 FEET	US 301 & SR 1 INTERCHANGE	CONTRACT T200911302 / COUNTY NEW CASTLE	BRIDGE NO. BR1-903N, BR1-903S, BR1-432, RW1-1 & RW1-3R / DESIGNED BY: J.A.D. / CHECKED BY: B.R.T.

BORING LOCATION PLAN
Sheet 6 of 12

CP-08
SHEET NO. 43
TOTAL SHTS. 491

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
049	GUARDRAIL TO BARRIER CONN., APPROACH TYPE 1-31	1817+79.55	-83.56	19.75
050	GUARDRAIL TO BARRIER CONN., EXIT TYPE 31	882+97.23	36.77	11.50
051	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	883+08.69	36.90	462.50
052	END ANCHORAGE, TYPE 31	887+70.25	36.18	12.50
053	GUARDRAIL TO BARRIER CONN., EXIT TYPE 31	1811+02.88	68.84	11.50
054*	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	1811+14.38	68.84	112.50
055	END ANCHORAGE, TYPE 31	1812+26.66	62.31	12.50
056	GUARDRAIL TO BARRIER CONN., EXIT TYPE 31	882+97.72	-6.02	11.50
057	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	883+09.22	-5.88	100.00
058	END ANCHORAGE, TYPE 31	884+09.29	-6.00	12.50
059	GUARDRAIL TO BARRIER CONN., APPROACH TYPE 1-31	172+45.15	-45.95	19.75
060	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	172+64.90	-45.95	225.00
061	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	174+89.59	-55.40	50.00
063	GUARDRAIL TO BARRIER CONN., EXIT TYPE 31	171+70.29	-45.98	11.50
082	GUARDRAIL OVER CULVERT, TYPE 3-31	170+84.42	-45.55	73.21
083	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	171+57.80	-45.94	12.5

*INCLUDES GUARDRAIL TYPE 1-27 TO TYPE 1-31 TRANSITION SECTION PER STANDARD DETAIL B-7 TO BE MEASURED FOR PAYMENT UNDER ITEM 720050 GALVANIZED STEEL BEAM GUARDRAIL TYPE 1-31.

BARRIER SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
222	CONCRETE SINGLE FACE BARRIER, TYPE 2	171+81.79	-46.00	63.36
223	CONCRETE SINGLE FACE BARRIER, TYPE 1	1811+02.60	-83.58	61.85
*224	CONCRETE SINGLE FACE BARRIER, TYPE 1	1811+64.44	-83.75	285.56
*225	BIFURCATED CONC MEDIAN BARRIER (MOD.)	1814+50.00	-83.75	329.55

*SLOTTED DRAIN THROUGH BARRIER, SEE DT-05.

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
401	18" RCP	IV	92	0.0403	13.52	9.84
407	24" RCP	IV	215	0.0044	4.51	3.57
411	24" RCP	IV	30	0.0030	4.80	4.71
420	24" RCP	IV	26	0.0639	6.68	5.03
*429	24" RCP	IV	113	0.0049	3.35	2.80
478	18" RCP	IV	19	0.0200	12.11	11.73

* FOR CONNECTION TO CULVERT, SEE DT-18

ROADWAY CORE SCHEDULE

NO.	STATION	OFFSET	DESCRIPTION
PC-218	174+50.00	27.95' LT.	15" HMA, 8" PCC
PC-219	174+50.00	41.91' LT.	13.25" HMA, 8.25" PCC

240

PARKWAY GRAVEL, INC.
T.M.#13-003.00-014
D.R.2549-108

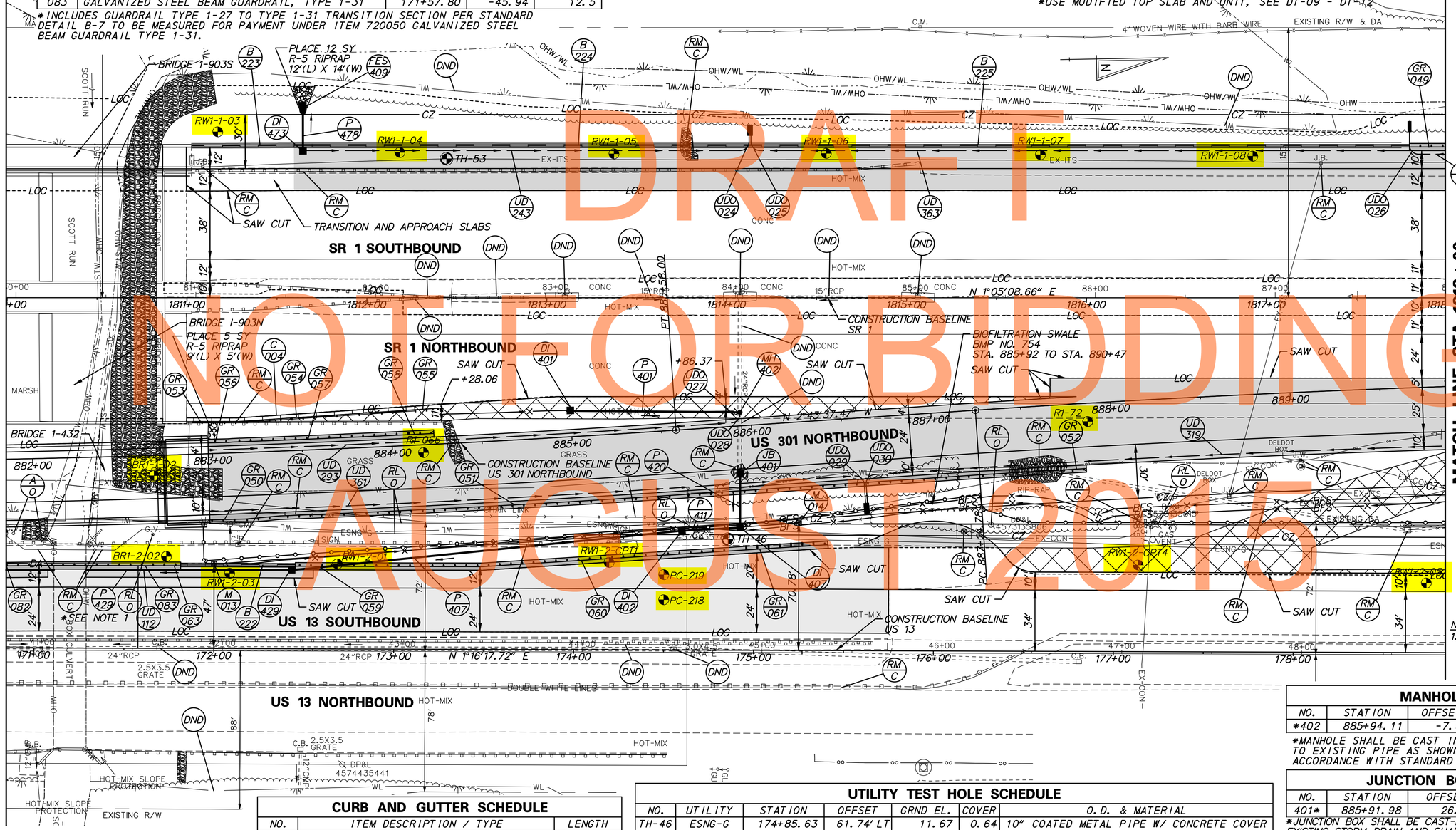
FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
409	18" RCP	0.0200	NO

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
401	885+00.00	-14.63	2 - 72"x24"	2	16.83	13.52
402	174+60.00	-67.30	34"x18"	2	10.30	4.51
407	885+89.98	56.34	48"x48"	2	10.08	4.80
429	172+43.24	-45.99	* 48"x48"	1	11.61	3.35
473	1811+64.44	-83.75	* 34"x24"	2	17.83	12.11

*USE MODIFIED TOP SLAB AND UNIT, SEE DT-09 - DT-12



UNDERDRAIN OUTLETS

NO.	LENGTH	DIS. EL.
024	14.60	12.75
025	14.60	12.75
026	18.66	14.19
*027	2.73	14.56
028	6.80	14.87
029	21.78	11.19
030	21.78	11.19

*OUTFALL EXISTING UNDERDRAIN TO MANHOLE. EXISTING UNDERDRAIN TO REMAIN FROM STA. 1811+00 TO STA. 814+04.

NOTES:
1. SEE SHEET DT-13 FOR EXISTING GAS LINE REMOVAL DETAILS

MANHOLE SCHEDULE

NO.	STATION	OFFSET	SIZE	T.G. EL.	INV. EL.
*402	885+94.11	-7.58	48"x48"	17.43	9.64

*MANHOLE SHALL BE CAST IN PLACE TO CONNECT TO EXISTING PIPE AS SHOWN AND SHALL BE IN ACCORDANCE WITH STANDARD D-5

JUNCTION BOX SCHEDULE

NO.	STATION	OFFSET	T.C. EL.	INV. EL.
401*	885+91.98	26.60	17.76	6.68

*JUNCTION BOX SHALL BE CAST-IN-PLACE TO CONNECT TO EXISTING STORM DRAIN AND SHALL BE IN ACCORDANCE WITH STANDARD D-5

CURB AND GUTTER SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
004	PCC CURB AND GUTTER, TYPE 1-4	126.84

UTILITY TEST HOLE SCHEDULE

NO.	UTILITY	STATION	OFFSET	GRND EL.	COVER	O.D. & MATERIAL
TH-46	ESNG-G	174+85.63	61.74' LT	11.67	0.64	10" COATED METAL PIPE W/ CONCRETE COVER
TH-53	EX-ITS	1812+44.28	77.17' LT	16.78	1.51	4" BLACK PLASTIC CONDUIT

NOT FOR BIDDING
AUGUST 2015

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

US 301 & SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	BR1-903N, BR1-903S, BR1-432 & RW1-1
T200911302	DESIGNED BY: J.A.D.	
COUNTY		
NEW CASTLE	CHECKED BY: B.R.T.	

BORING LOCATION PLAN
Sheet 7 of 12

CP-10

SHEET NO. 45
TOTAL SHTS. 491

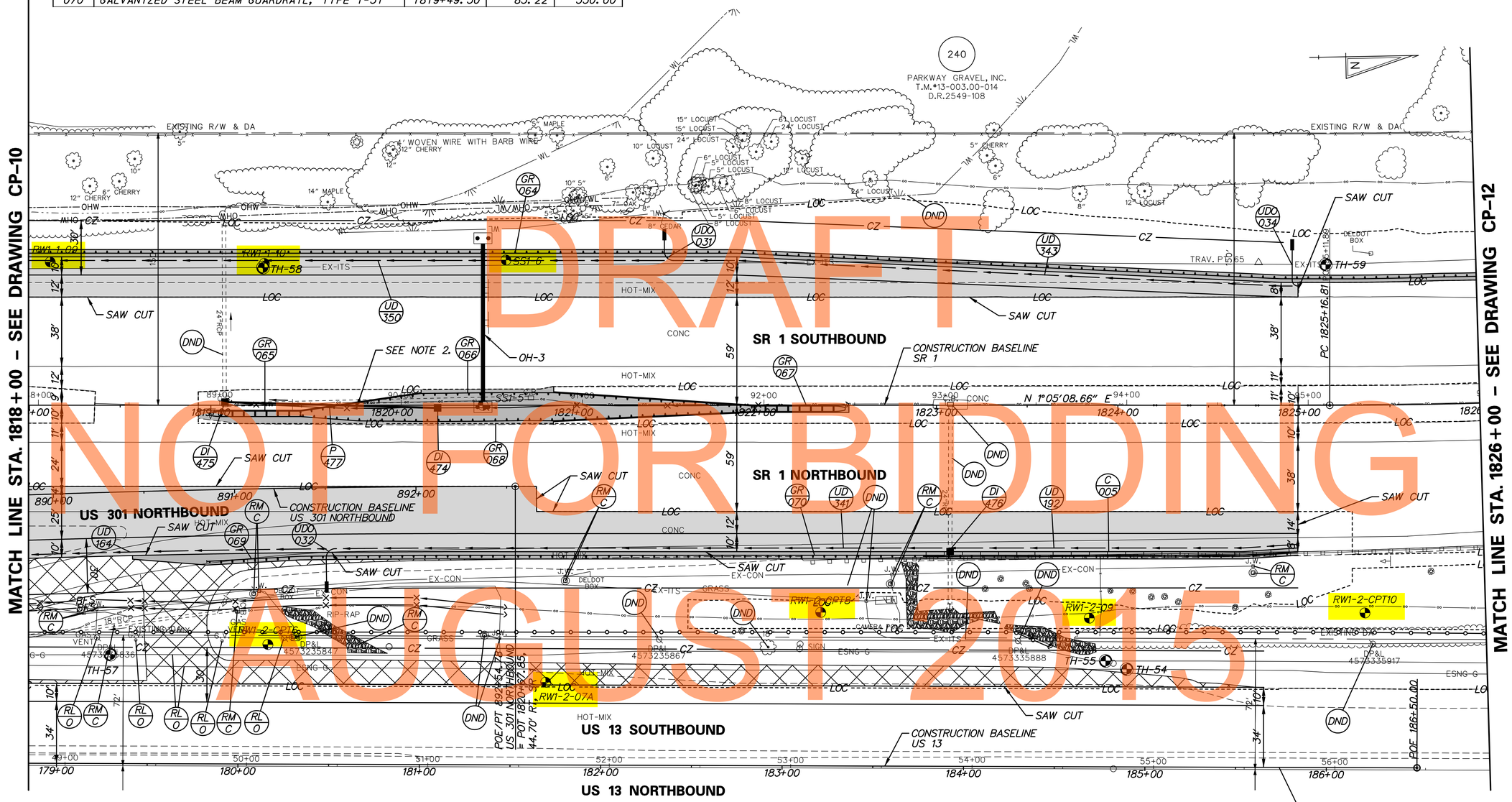
N:\31653-000\CONTRACT 1B\CADD\CP010U301_1B.dgn
2/17/2015 10:44:14 AM

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
064	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	1818+00.00	-83.57	798.93
065	END TREATMENT ATTENUATOR, TYPE 3-31	1818+99.68	4.76	50.00
066	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	1819+49.68	3.26	250.56
067	END TREATMENT ATTENUATOR, TYPE 3-31	1821+99.28	2.00	50.00
068	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	1819+49.68	6.26	249.80
069	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 2-31	1818+99.30	86.05	50.00
070	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	1819+49.30	83.22	550.00

UTILITY TEST HOLE SCHEDULE

NO.	UTILITY	STATION	OFFSET	GRND EL.	COVER	O.D. & MATERIAL
TH-54	ESNG-G	184+89.84	53.83' LT	31.05	4.72	16" COATED METAL PIPE
TH-55	ESNG-G	184+78.18	58.32' LT	30.92	3.66	10" COATED METAL PIPE W/ CONCRETE COVER
TH-57	ESNG-G	179+29.49	60.00' LT	20.37	3.00	10" COATED METAL PIPE
TH-58	EX-ITS	1819+28.75	75.84' LT	21.95	1.02	3" BLACK PLASTIC CONDUIT
TH-59	EX-ITS	1825+14.61	77.53' LT	37.47	2.45	4" BLACK PLASTIC CONDUIT



DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
474	1820+25.00	1.44	34"x24"	2	23.91	20.62
*475	1819+07.76	-1.69	34"x24"	2	21.97	15.08
*476	1823+07.54	80.65	34"x24"	2	34.02	25.32

*DRAINAGE INLET SHALL BE CAST IN PLACE TO CONNECT TO EXISTING PIPE AS SHOWN AND SHALL BE IN ACCORDANCE WITH STANDARD D-5

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
477	18" RCP	IV	116	0.0167	20.62	18.69

CURB AND GUTTER SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
005	PCC CURB AND GUTTER, TYPE 1-4	206.45

UNDERDRAIN OUTLETS

NO.	LENGTH	DIS. EL.
031	17.55	23.53
032	21.40	20.53
034	21.41	34.51

NOTES:

1. CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE ITMS CONDUITS INSTALLED IN PHASE 1. CONTRACTOR SHALL TEST PIT AS NECESSARY PRIOR TO ANY WORK IN THIS AREA. CONTRACTOR SHALL SUPPORT AND PROTECT THESE CONDUITS DURING W-BEAM AND STORM DRAIN INSTALLATION.

LIMIT OF CONSTRUCTION
US 13
STATION 185+74

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

US 301 & SR 1 INTERCHANGE

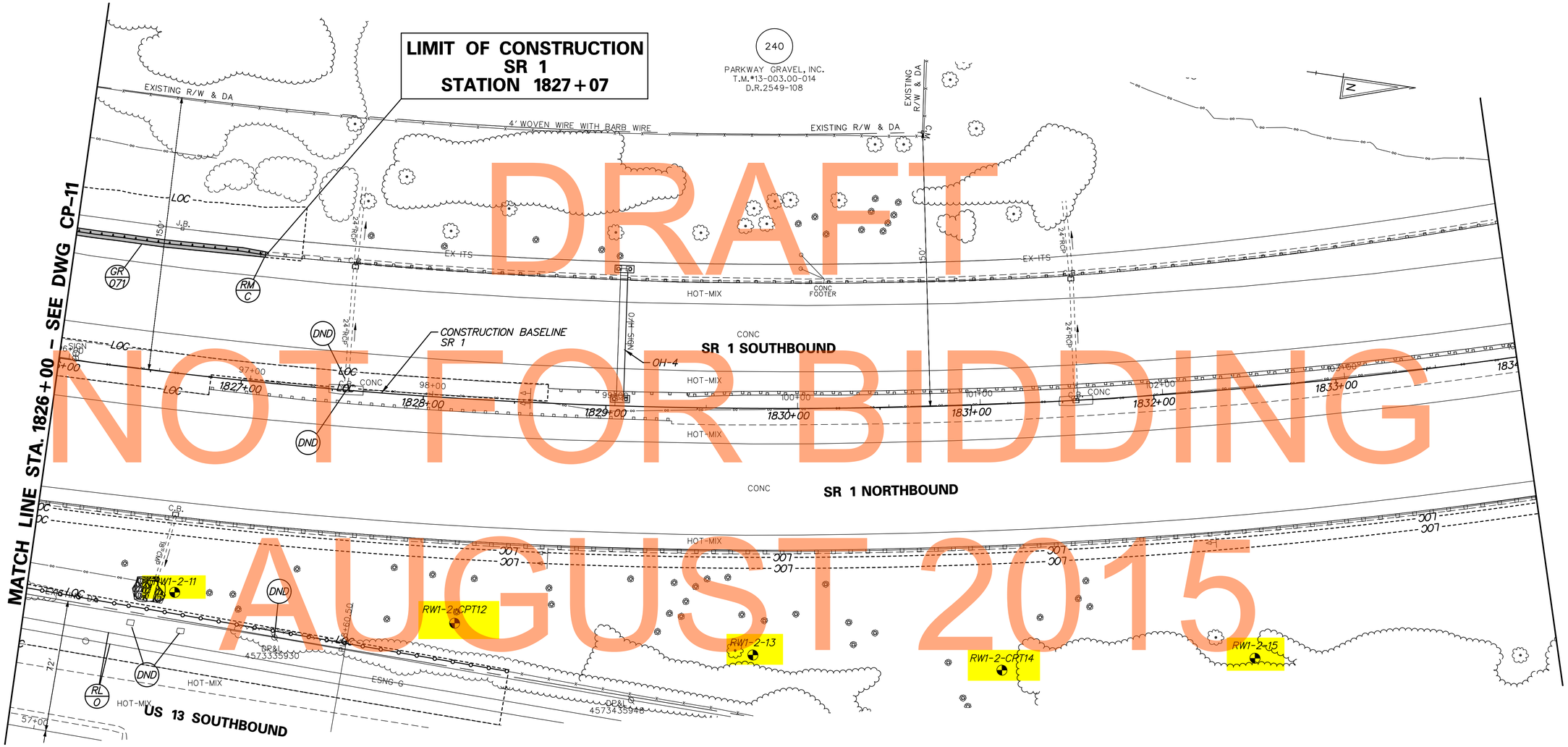
CONTRACT	BRIDGE NO.
T200911302	DESIGNED BY: J.A.D.
COUNTY	
NEW CASTLE	CHECKED BY: B.R.T.

BORING LOCATION PLAN
Sheet 8 of 12

CP-11
SHEET NO. 46
TOTAL SHTS. 491

n:\33653-000\contract tb\cadd\CP011U301_1B.dgn 5/30/2013 11:56:00 AM

GUARDRAIL SCHEDULE				
NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
071	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	1826+00.00	-69.89	104.05



DRAFT
NOT FOR BIDDING
AUGUST 2015

SEE FIELD OFFICE, STOCKPILE, AND STAGING AREA, SEE SHEET GR-02

n:\31653-000\contract 1b\cadd\CP012U301_1B.dgn
5/30/2013 11:56:08 AM

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 30 60 90 FEET	US 301 & SR 1 INTERCHANGE	CONTRACT T200911302	BRIDGE NO.	BORING LOCATION PLAN Sheet 9 of 12	CP-12 SHEET NO. 47
				COUNTY NEW CASTLE	DESIGNED BY: J.A.D.		TOTAL SHTS. 491
					CHECKED BY: B.R.T.		

UNDERDRAIN OUTLETS		
NO.	LENGTH	DIS. EL.
036	20.98	30.67
037	19.55	29.61
038	40.17	31.86

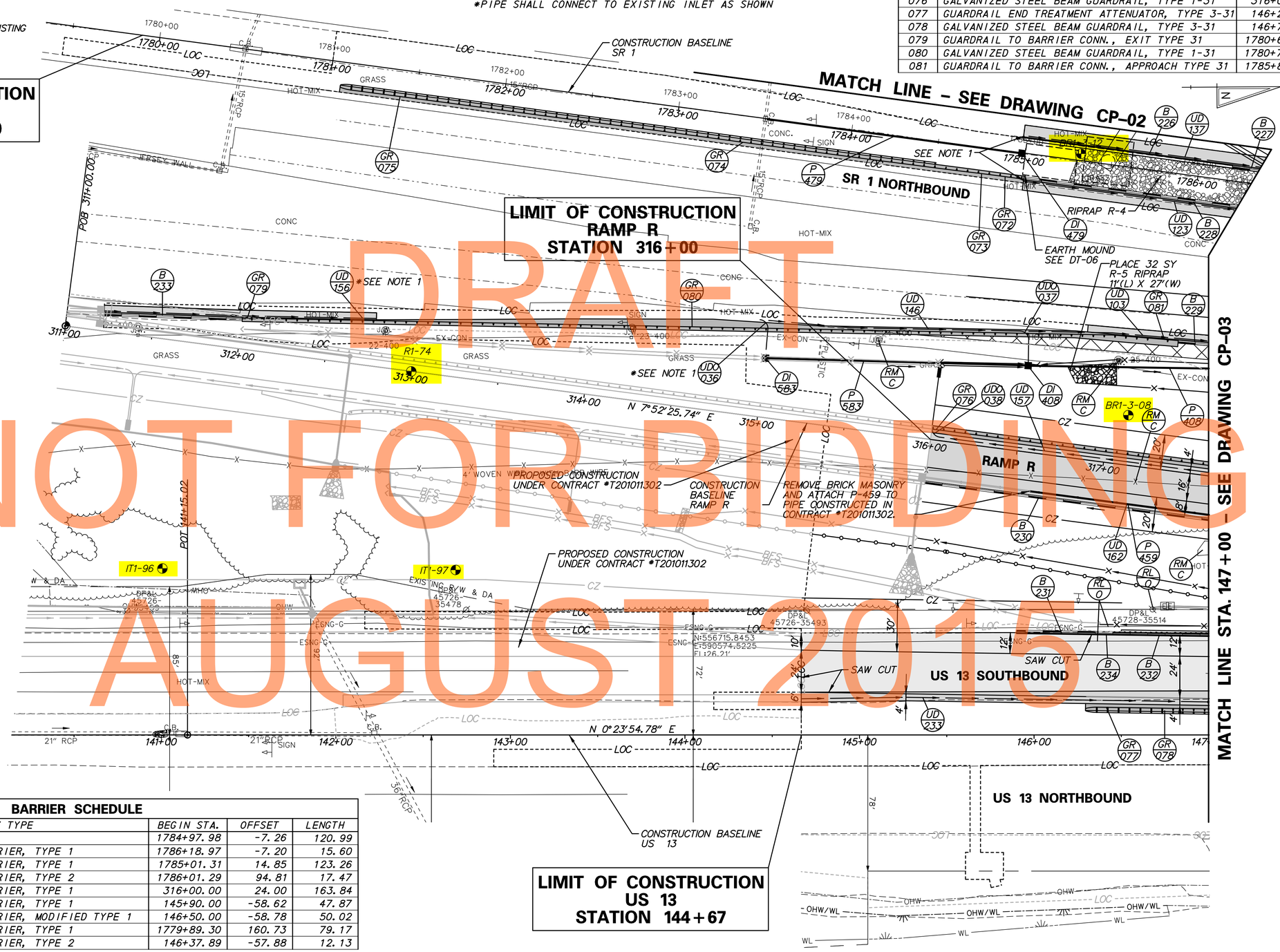
DRAINAGE INLET SCHEDULE						
NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
408	316+50.05	-49.32	48" x 30"	2	31.11	27.79
479	1784+98.31	0.30	34" x 24"	2	33.95	31.15
583	315+00.58	-33.64	34" x 24"	2	32.16	28.84

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
408	18" RCP	IV	160	0.0030	27.79	27.31
459	18" RCP	IV	154	0.0468	52.12	44.91
*479	15" RCP	IV	146	0.0029	31.15	30.72
583	18" RCP	IV	148	0.0057	28.84	27.99

*PIPE SHALL CONNECT TO EXISTING INLET AS SHOWN

GUARDRAIL SCHEDULE				
NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
072	GUARDRAIL TO BARRIER CONN., APPROACH TYPE 1-31	1784+81.56	14.85	19.75
073	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	1784+50.31	15.14	31.25
074	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 3-31	1781+56.56	14.33	293.75
075	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 3-31	1781+16.56	14.38	50.00
076	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	316+00.00	-6.00	159.90
077	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 3-31	146+29.95	-16.00	50.00
078	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 3-31	146+79.95	-15.23	20.03
079	GUARDRAIL TO BARRIER CONN., EXIT TYPE 31	1780+68.09	153.06	11.50
080	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	1780+79.52	151.76	505.19
081	GUARDRAIL TO BARRIER CONN., APPROACH TYPE 31	1785+81.56	97.89	19.75

NOTES:
1. TIE-IN PROPOSED UNDERDRAIN WITH EXISTING UNDERDRAIN.



DRAFT
NOT FOR BIDDING
AUGUST 2015

BARRIER SCHEDULE				
NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
226	BARRIER WALL II	1784+97.98	-7.26	120.99
227	CONCRETE SINGLE FACE BARRIER, TYPE 1	1786+18.97	-7.20	15.60
228	CONCRETE SINGLE FACE BARRIER, TYPE 1	1785+01.31	14.85	123.26
229	CONCRETE SINGLE FACE BARRIER, TYPE 2	1786+01.29	94.81	17.47
230	CONCRETE SINGLE FACE BARRIER, TYPE 1	316+00.00	24.00	163.84
231	CONCRETE SINGLE FACE BARRIER, TYPE 1	145+90.00	-58.62	47.87
232	CONCRETE SINGLE FACE BARRIER, MODIFIED TYPE 1	146+50.00	-58.78	50.02
233	CONCRETE SINGLE FACE BARRIER, TYPE 1	1779+89.30	160.73	79.17
234	CONCRETE SINGLE FACE BARRIER, TYPE 2	146+37.89	-57.88	12.13

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 30 60 90
FEET

US 301 &
SR 1 INTERCHANGE

CONTRACT	BRIDGE NO. RW1-3R
T200911302	DESIGNED BY: J.A.D.
COUNTY	
NEW CASTLE	CHECKED BY: B.R.T.

BORING LOCATION PLAN
Sheet 10 of 12

CP-13
SHEET NO. 48
TOTAL SHTS. 491

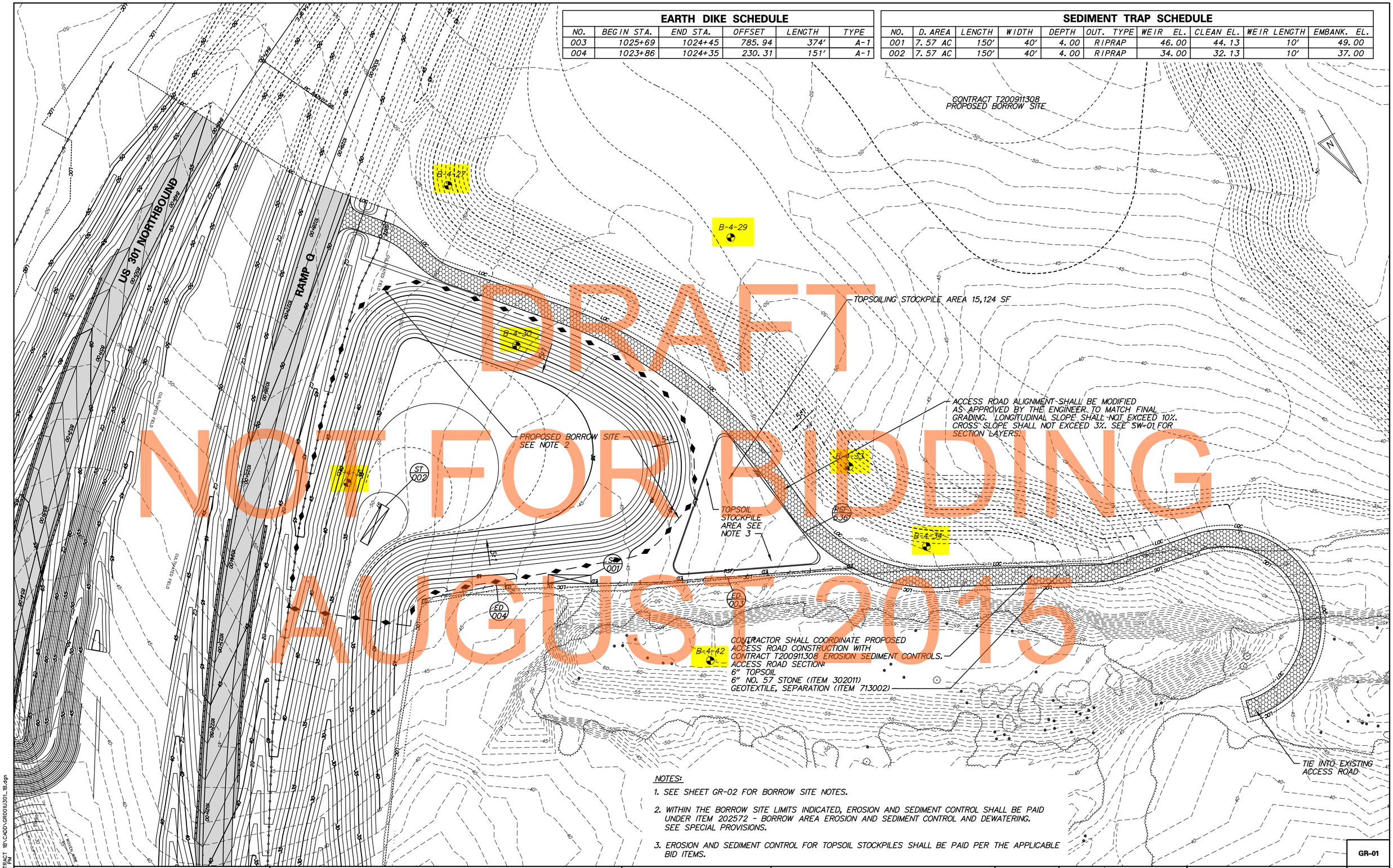
r:\31653-000\contract_tb\cadd\CP013U301_TB.dgn
5/30/2013 11:56:13 AM

EARTH DIKE SCHEDULE

NO.	BEGIN STA.	END STA.	OFFSET	LENGTH	TYPE
003	1025+69	1024+45	785.94	374′	A-1
004	1023+86	1024+35	230.31	151′	A-1

SEDIMENT TRAP SCHEDULE

NO.	D. AREA	LENGTH	WIDTH	DEPTH	OUT. TYPE	WEIR EL.	CLEAN EL.	WEIR LENGTH	EMBANK. EL.
001	7.57 AC	150′	40′	4.00	RIPRAP	46.00	44.13	10′	49.00
002	7.57 AC	150′	40′	4.00	RIPRAP	34.00	32.13	10′	37.00



NOTES:

1. SEE SHEET GR-02 FOR BORROW SITE NOTES.
2. WITHIN THE BORROW SITE LIMITS INDICATED, EROSION AND SEDIMENT CONTROL SHALL BE PAID UNDER ITEM 202572 - BORROW AREA EROSION AND SEDIMENT CONTROL AND DEWATERING. SEE SPECIAL PROVISIONS.
3. EROSION AND SEDIMENT CONTROL FOR TOPSOIL STOCKPILES SHALL BE PAID PER THE APPLICABLE BID ITEMS.

N:\31653-000\CONTRACT 1B\CADD\GR001U301_1B.dgn
2/25/2015 2:19:38 PM

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 50 100 150 FEET

US 301 & SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.
T200911302	DESIGNED BY: KAH
COUNTY	CHECKED BY: BRT
NEW CASTLE	

BORING LOCATION PLAN
Sheet 11 of 12

GR-01

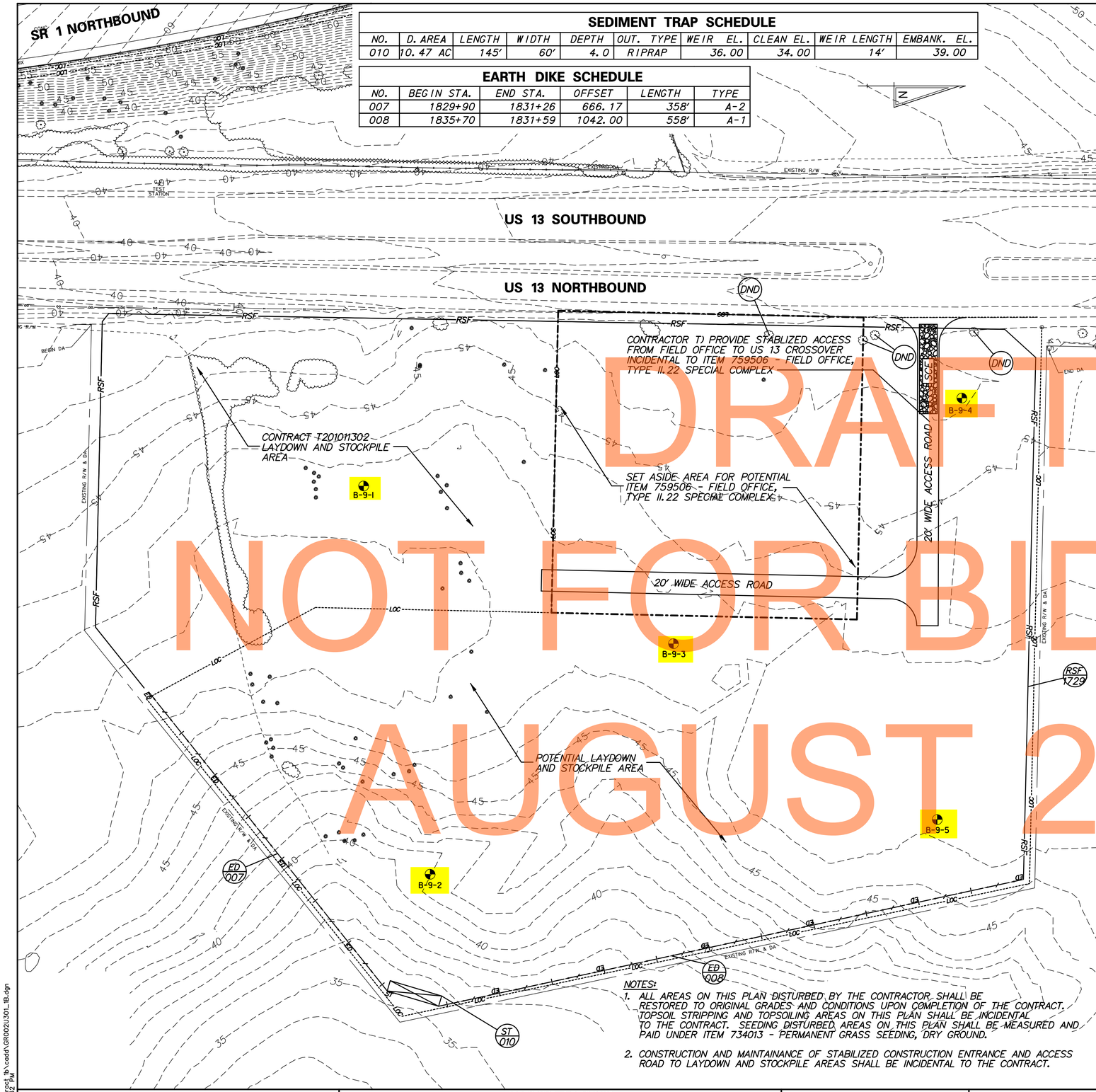
SHEET NO. 82
TOTAL SHTS. 491

SEDIMENT TRAP SCHEDULE

NO.	D. AREA	LENGTH	WIDTH	DEPTH	OUT. TYPE	WEIR EL.	CLEAN EL.	WEIR LENGTH	EMBANK. EL.
010	10.47 AC	145'	60'	4.0	RIPRAP	36.00	34.00	14'	39.00

EARTH DIKE SCHEDULE

NO.	BEGIN STA.	END STA.	OFFSET	LENGTH	TYPE
007	1829+90	1831+26	666.17	358'	A-2
008	1835+70	1831+59	1042.00	558'	A-1



DRAFT
NOT FOR BIDDING
AUGUST 20

NOTES:

1. ALL AREAS ON THIS PLAN DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO ORIGINAL GRADES AND CONDITIONS UPON COMPLETION OF THE CONTRACT. TOPSOIL STRIPPING AND TOPSOILING AREAS ON THIS PLAN SHALL BE INCIDENTAL TO THE CONTRACT. SEEDING DISTURBED AREAS ON THIS PLAN SHALL BE MEASURED AND PAID UNDER ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND.
2. CONSTRUCTION AND MAINTAINANCE OF STABILIZED CONSTRUCTION ENTRANCE AND ACCESS ROAD TO LAYDOWN AND STOCKPILE AREAS SHALL BE INCIDENTAL TO THE CONTRACT.

BORROW SITE NOTES (SEE GR_01):

1. THE LIMITS OF GRADING FOR THE BORROW SITES AS SHOWN ON GR-01 SHALL BE CONSIDERED THE MAXIMUM LIMITS OF FINAL GRADING FOR THE BORROW SITE. SHOULD LESS BORROW MATERIAL BE REQUIRED, THE SITE SHALL BE EXCAVATED TO A SHALLOWER ELEVATION OR THE LIMITS OF GRADING SHALL BE REDUCED. THE CONTRACTOR SHALL SUBMIT A REVISED FINAL GRADING PLAN TO THE ENGINEER FOR APPROVAL.
2. EXCAVATION OR DEWATERING SHALL NOT AFFECT THE LOCAL GROUND WATER TABLE. THE BOTTOM LIMIT OF EXCAVATION OR ANY OTHER WORK CANNOT EXCEED 12" BELOW THE FINAL GRADING SHOWN ON GR-01, OR ELEVATION 27, WHICHEVER IS LESS, IN ACCORDANCE WITH STIPULATIONS CONTAINED IN THE PROJECT'S BIOLOGICAL ASSESSMENT, PERMITS, AND RECORD OF DECISION. TRENCHING FOR CONSTRUCTION OF UTILITIES OR PIPES INCLUDED IN THE CONTRACT DOCUMENTS IS EXCLUDED FROM THIS REQUIREMENT. TRENCHING OR OTHER METHODS FOR DEWATERING THE BORROW SITES IS INCLUDED IN THIS REQUIREMENT.
3. NO EXCAVATION IS TO OCCUR WITHIN 50 FEET OF ANY WOODS LINE OR PROPERTY LINE, EXCEPT AS SHOWN ON GR-01. HEDGEROWS AND OLD FIELDS ARE NOT CONSIDERED TO BE WOODS LINES.
4. EXISTING BORROW SITE TOPSOIL AND AGRICULTURAL SOIL SHALL BE STRIPPED, STOCKPILED, AND QUARANTINED FOR RE-USE ON THE BORROW SITE. AGRICULTURAL SOIL IS DEFINED AS THE TOP 9-INCHES OF SOIL OBTAINED FROM AN ACTIVE FARM FIELD OR RECENTLY ABANDONED FARM FIELD (LESS THAN 2 YEARS FALLOW OR ABANDONED). AGRICULTURAL SOILS SHALL BE TREATED AS TOPSOIL AS DESCRIBED IN SECTION 202. THE SOURCE OF THE AGRICULTURAL SOIL MUST HAVE BEEN IN CROP. NO TOPSOIL OR AGRICULTURAL SOIL REMOVED FROM THE BORROW SITE SHALL BE PLACED IN ANOTHER LOCATION. ALL OF THE TOPSOIL AND AGRICULTURAL SOIL SHALL BE RE-USED ON THE SITE.
5. FINAL INTERNAL BORROW SITE SIDE SLOPE GRADES SHALL BE A MAXIMUM OF 5:1. WITH THE APPROVAL OF THE ENGINEER, SLOPES MAY BE OVEREXCAVATED TO 3:1 AND BACKFILLED WITH TOPSOIL, AGRICULTURAL SOIL, ROOTMAT, OR UNSUITABLE SOILS TO CREATE A FINAL SLOPE OF 5:1. OVEREXCAVATED SLOPES SHALL ALSO INCLUDE A BENCH AS APPROVED BY THE ENGINEER TO PREVENT SLIPPAGE OF MATERIALS SUBSEQUENTLY PLACED. UNSUITABLE SOIL IS DEFINED AS A-4, A-5, A-6, OR A-7 SOILS, AASHTO CLASSIFICATION. AGRICULTURAL SOIL, ROOTMAT AND UNSUITABLE SOILS MAY BE IMPORTED TO THE BORROW SITE FROM WITHIN THE CONTRACT LIMITS AND PLACED ABOVE THE MAXIMUM EXCAVATION LIMITS AS DEFINED IN NOTE 2. UNSUITABLE SOILS AND ROOTMAT SHALL BE BURIED A MINIMUM OF 18 INCHES BELOW FINAL GRADE WITH THE 18 INCHES CONSISTING OF TOPSOIL OR AGRICULTURAL SOILS. UNSUITABLE SOILS AND ROOTMAT SHALL BE PLACED SUCH THAT INTERNAL SLOPES AND GRADING WITHIN THE BORROW SITES SHALL BE CONTINUOUS SMOOTH LINES AND GRADES REPRESENTING A NATURALIZED CONDITION AND SHALL NOT APPEAR DISTURBED, MOUNDED, OR PILED, AS SOLELY DETERMINED BY THE ENGINEER. MATERIALS PLACED IN THESE OVER-EXCAVATED AREAS SHALL BE APPROVED BY THE ENGINEER AND COMPACTED AS DIRECTED BY THE ENGINEER. TOPOGRAPHIC SURVEY ON THE FINAL OVEREXCAVATED SLOPES FOR MEASUREMENT OF FINAL EXCAVATED QUANTITIES SHALL BE PERFORMED BEFORE PLACING ANY UNSUITABLE MATERIALS OR ROOTMAT. TOPOGRAPHIC SURVEY ON THE FINAL SLOPES OF THE UNSUITABLE MATERIALS OR ROOTMAT PLACED SHALL BE PERFORMED PRIOR TO PLACING ANY TOPSOIL OR AGRICULTURAL SOIL TO ENSURE THAT THESE MATERIALS ARE BURIED A MINIMUM OF 18" BELOW FINAL GRADES. THE CONTRACTOR SHALL SUBMIT A REVISED GRADING PLAN TO THE ENGINEER FOR APPROVAL.
6. TRASH, CONSTRUCTION DEBRIS, PILE CUTOFFS, ASPHALT MILLINGS, ROCKS AND STONES AND OTHER CONSTRUCTION WASTE GENERATED ON THE CONTRACT SHALL NOT BE BURIED IN THE BORROW SITE OR THE SIDE SLOPES OF THE BORROW SITE. WITH PERMISSION AND UNDER THE DIRECTION OF THE ENGINEER, TREE STUMPS AND LARGE SECTIONS OF TREE TRUNKS CAN BE PLACED ON THE FINAL SOIL SURFACE. THE MINIMUM DISTANCE BETWEEN THE PLACED STUMPS/TRUNKS SHALL BE 35 FEET. STUMPS AND TRUNKS SHALL NOT BE PLACED IN PILES. TREE STUMP PLACEMENT IS OPTIONAL AND NOT MANDATORY.
7. UNDER FINAL CONDITIONS THE BORROW SITE SHALL BE GRADED TO DRAIN. WATER SHOULD NOT STAND ON THE FOLLOWING RAIN EVENTS BUT SHALL BE CONVEYED VIA STABLE CHANNELS, SWALES, OR STABLE OVERLAND FLOW TO ADJACENT WETLANDS AND FORESTED AREAS. THE CONTRACTOR SHALL NOT CHANGE THE BORROW SITE OUTFALL LOCATION.
8. FOLLOWING EXTRACTION OF BORROW, AND PRIOR TO SECTION 733 - TOPSOILING, SUBSOILS SHALL BE TILLED AS SPECIFIED IN SPECIAL PROVISION 202555 - SUBSOIL TILLAGE, THROUGHOUT THE EXTENT OF THE BORROW SITE.
9. A MINIMUM OF 6 INCHES OF TOPSOIL SHALL BE PLACED OVER ALL EXCAVATED AND DISTURBED AREAS IN CONFORMANCE WITH SECTION 733 - TOPSOILING. LOCAL AGRICULTURAL SOILS GENERATED WITHIN THE CONTRACT LIMITS SHALL BE CONSIDERED ACCEPTABLE TOPSOIL MATERIAL. WITH THE PERMISSION OF THE ENGINEER, THE TOPSOILING DEPTH MAY EXCEED THE MINIMUM 6-INCH DEPTH, BUT THE FINAL ELEVATION AT ANY LOCATION SHALL NOT EXCEED THE ORIGINAL GROUND ELEVATION AT THE START OF THE PROJECT. FOLLOWING THE FINAL TOPSOILING, INTERNAL SLOPES AND GRADING WITHIN THE BORROW SITE SHALL BE CONTINUOUS SMOOTH LINES AND GRADES REPRESENTING A NATURALIZED CONDITION AND SHALL NOT APPEAR DISTURBED, MOUNDED, OR PILED, AS SOLELY DETERMINED BY THE ENGINEER. NO INTERNAL GRADE SHALL EXCEED 5:1.
10. AT THE CONCLUSION OF ALL GRADING AND TOPSOIL PLACEMENT OPERATIONS, ALL DISTURBED AREAS SHALL BE SEEDED WITH ITEM 734551 - NATIVE GRASS SEEDING - NO MOW MIX. TIMING FOR THE SEEDING OPERATIONS SHALL BE PER THE SPECIFICATION, SEPTEMBER 1ST TO NOVEMBER 15TH. SEED SHALL BE DISCED INTO THE SOIL A MINIMUM OF 6 INCHES DEEP IN THREE PASSES WITH EACH PASS 90 DEGREES TO THE PREVIOUS PASS. THE COST OF DISCING SHALL BE INCIDENTAL TO ITEM 734551 * NATIVE GRASS SEEDING: NO MOW MIX.
11. SOILS MEETING GRADATION REQUIREMENTS FOR BORROW TYPES A, C, D, AND F ARE AVAILABLE IN THE BORROW SOURCES FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE LOCATION OF QUALIFYING MATERIALS AND SORTING AND STOCKPILING THESE MATERIALS AS NEEDED TO COMPLETE THE WORK. NO COMPENSATION WILL BE PROVIDED FOR ACTIVITIES ASSOCIATED WITH ACQUISITION OF THESE MATERIALS FROM OFF-SITE DUE TO A FAILURE TO USE MATERIAL AVAILABLE ON-SITE. GEOTECHNICAL DATA WILL BE PROVIDED BY THE DEPARTMENT TO ASSIT IN THE LOCATION OF BORROW TYPES, BUT IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE GRADATION OF THE MATERIALS.
12. MEASUREMENT AND PAYMENT:
    - A. ALL EXCAVATION INCLUDING STRIPPING AND STOCKPILING OF TOPSOIL AND AGRICULTURAL SOILS SHALL BE CALCULATED AND PAID FOR UNDER ITEM 202000, EXCAVATION AND EMBANKMENT. DOUBLE HANDLING FOR STOCKPILING AND SORTING OF MATERIAL TYPES FOR USE ON THE PROJECT SHALL NOT BE MEASURED BUT SHALL BE INCIDENTAL TO ITEM 202000. MATERIALS OTHER THAN TOPSOIL, AGRICULTURAL SOILS OR UNSUITABLE MATERIALS EXCAVATED FROM THE BORROW SITES AND NOT USED ELSEWHERE FOR THE CONSTRUCTION OF THE PROJECT SHALL BE INCORPORATED BACK INTO THE BORROW SITE. STOCKPILES OF THE UNUSED MATERIALS SHALL BE MEASURED BY THE ENGINEER BEFORE THE CONTRACTOR MOVES THE MATERIAL BACK INTO THE BORROW SITE AND THE ENGINEER SHALL MEASURE THE FINAL GROUND AT THE STOCKPILE AFTER THE MATERIALS HAVE BEEN REMOVED. THE MEASURED QUANTITY OF THE STOCKPILES SHALL BE DEDUCTED FROM THE FINAL QUANTITY PAID UNDER ITEM 202000. THE UNUSED MATERIALS SHALL BE INCORPORATED INTO THE BORROW SITE IN ACCORDANCE WITH THESE PROJECT NOTES AND AS DIRECTED BY THE ENGINEER.
    - B. CLEARING AND GRUBBING OF THE BORROW SITE SHALL BE INCIDENTAL TO ITEM 201000. PLACEMENT OF STUMPS AND TREE TRUNKS, IF ELECTED AND APPROVED, SHALL BE INCIDENTAL TO ITEM 201000.
    - C. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PAID FOR UNDER ITEM 202572 - BORROW AREA EROSION AND SEDIMENT CONTROL AND DEWATERING.
    - D. PLACEMENT OF UNSUITABLE SOILS OR ROOTMAT SHALL BE INCIDENTAL TO THE ITEMS FOR THEIR REMOVAL.
    - E. SUBSOIL TILLAGE SHALL BE MEASURED AND PAID UNDER ITEM 202555.
    - F. TOPSOILING SHALL BE PAID UNDER ITEM 733002 UNDER SPECIFICATION SECTION 733. THE SURFACE OF THE FINAL TOPSOIL AREA SHALL BE MEASURED ONCE FOR PAYMENT AND PAID UNDER THE SPECIFIED ITEM REGARDLESS OF THE ACTUAL DEPTH PLACED. THE CONTRACTOR SHALL MEET ALL TOPSOILING REQUIREMENTS WITH TOPSOIL OR AGRICULTURALSOILS REMOVED FROM THE BORROW SITE. TOPSOIL REMOVED FROM ELSEWHERE WITHIN THE CONTRACT LIMITS THAT IS IN EXCESS OF THE TOPSOILING NEEDED FOR THE PROJECT MAY BE DISPOSED OF AT THE BORROW SITE WITH THE PERMISSION OF THE ENGINEER. ANY OTHER TOPSOIL NEEDED AT THE BORROW SITE DUE TO THE CONTRACTOR'S OPERATIONS, SUCH AS BURYING UNSUITABLE MATERIALS, SHALL BE PROVIDED BY THE CONTRACTOR AT NO EXPENSE TO THE DEPARTMENT.
    - G. NATIVE GRASS SEEDING SHALL BE MEASURED AND PAID UNDER ITEM 734551.
13. MONITORING WELLS SHALL BE ABANDONED BY A WELL DRILLER LICENSED IN DELAWARE IN ACCORDANCE WITH THE PROVISIONS IN ITEM 211521 - ABANDONMENT OF WELLS. PHYSICAL REMOVAL AND DISPOSAL OF THE ABANDONED WELLS ENCOUNTERED DURING EXCAVATION SHALL INCIDENTAL TO ITEM 202000- EXCAVATION AND EMBANKMENT.
14. SEDIMENT REMOVED FROM SEDIMENT CONTROL DEVICES SHALL BE TREATED PER NOTE 5 ABOVE.

GR-02

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 50 100 150 FEET

US 301 & SR 1 INTERCHANGE

CONTRACT	BRIDGE NO.	
T200911302	DESIGNED BY: NSP	
COUNTY	CHECKED BY: BRT	
NEW CASTLE		

BORING LOCATION PLAN
Sheet 12 of 12

SHEET NO. 83
TOTAL SHTS. 491

n:\31653-000\contract tp\cadd\GR002U301_1B.dgn
2/6/2013 12:20:32 PM