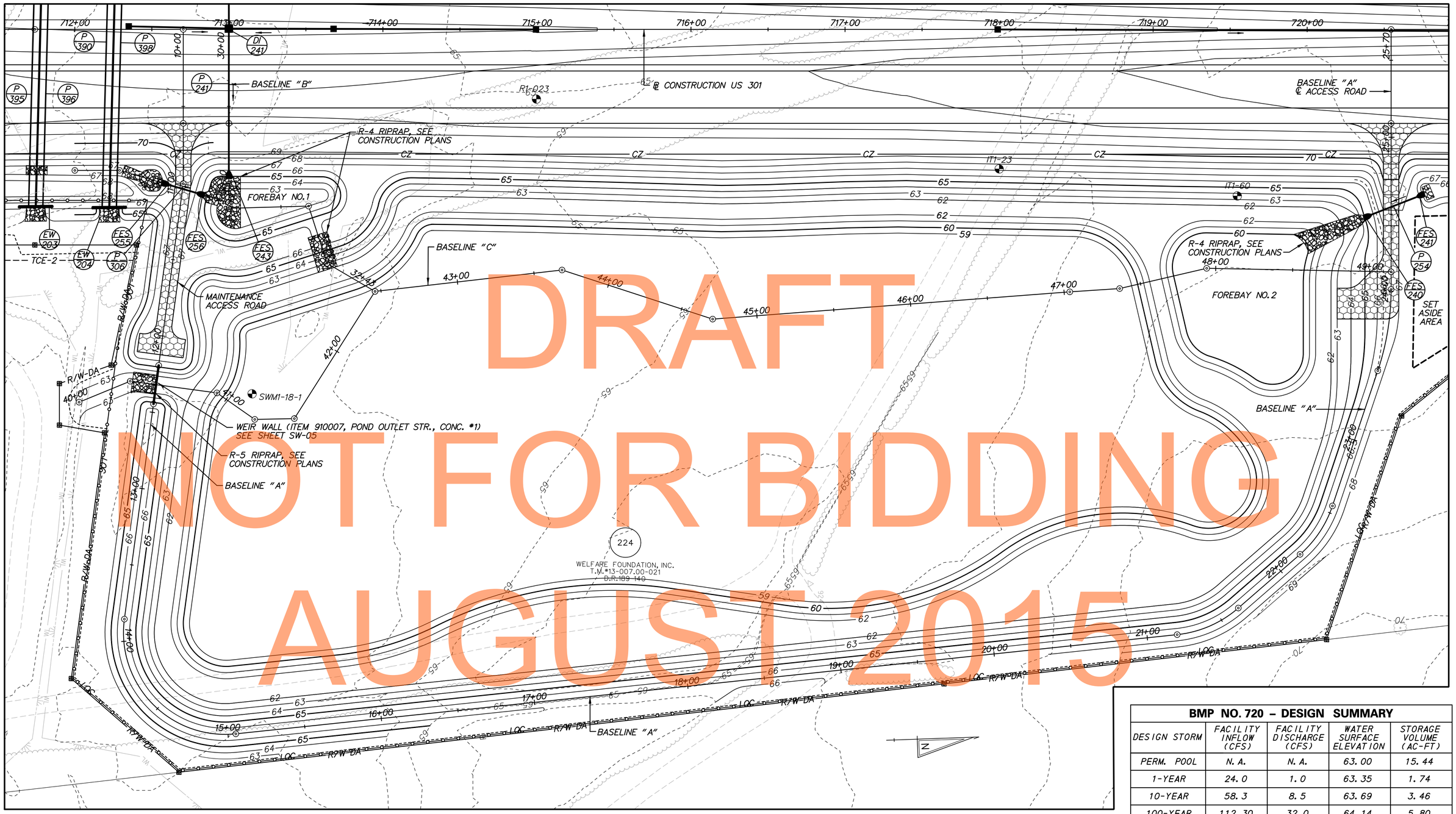


PLAN – SWM BMP NO. 720 STA. 712+50 TO STA 720+50, WET POND

SCALE: 1" = 30'

BMP NO. 720 – DESIGN SUMMARY				
DESIGN STORM	FACILITY INFLOW (CFS)	FACILITY DISCHARGE (CFS)	WATER SURFACE ELEVATION	STORAGE VOLUME (AC-FT)
PERM. POOL	N. A.	N. A.	63. 00	15. 44
1-YEAR	24. 0	1. 0	63. 35	1. 74
10-YEAR	58. 3	8. 5	63. 69	3. 46
100-YEAR	112. 30	32. 0	64. 14	5. 80

HAZARD CLASSIFICATION "A" AS PER POND CODE 378

DRAINAGE AREA TO FACILITY: 25.47 ACRES

MANAGEMENT PROVIDED BY FACILITY: WATER QUALITY CONTROL VIA EXTENDED DETENTION FOR 1-YEAR RESOURCE PROTECTION STORM AND QUANTITY CONTROL FOR THE 10 AND 100-YEAR EVENTS.

SEE SHEET SW-04 FOR NOTES.

SW-01

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 30 60 90
FEET

US 301,
SR 896 TO SR 1

CONTRACT	
T200911308	
COUNTY	
NEW CASTLE	

BRIDGE NO.

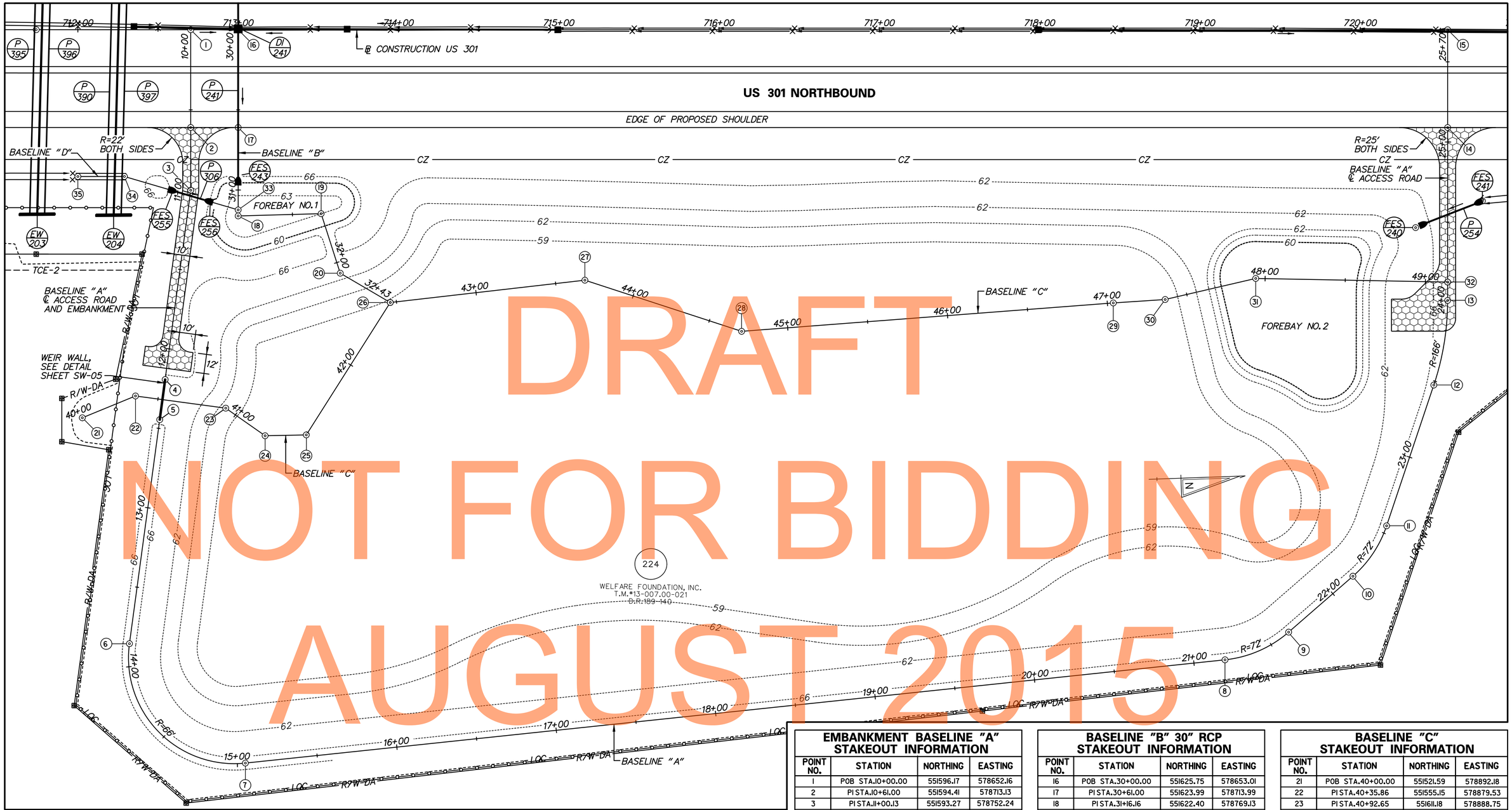
DESIGNED BY: DLH

CHECKED BY: JDC

STORMWATER MANAGEMENT PLAN
BMP 720

SHEET NO.
622
TOTAL SHTS.
875

N:\31653-000\CONTRACT 1A\CADD\SW01-T120J301_1A.dgn
5/8/2015 7:21:23 AM



STAKEOUT PLAN – SWM BMP NO. 720 STA. 712+50 TO STA. 720+50, WET POND

SCALE: 1" = 30'

P254 BASELINE STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
FES240	STA.60+58.40	552356.40	578797.57
FES241	STA.61+03.26	552398.54	578782.18

EMBANKMENT BASELINE "A" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
1	POB STA.10+00.00	551596.17	578652.16
2	PI STA.10+61.00	551594.41	578713.13
3	PI STA.11+00.13	551593.27	578752.24
4	PI STA.12+19.29	551573.92	578869.82
5	PI STA.12+44.54	551569.82	578894.74
6	PC STA.13+85.54	551546.92	579033.87
7	PT STA.15+05.01	551617.06	579110.40
8	PC STA.21+19.49	552229.76	579063.63
9	PT STA.21+63.47	552269.95	579047.51
10	PC STA.22+16.60	552311.03	579013.81
11	PT STA.22+54.85	552332.93	578983.00
12	PC STA.23+47.47	552364.91	578896.08
13	PT STA.24+01.18	552375.05	578843.56
14	PI STA.25+09.01	552378.16	578735.79
15	POE STA.25+70.01	552379.92	578674.81

BASELINE "B" 30" RCP STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
16	POB STA.30+00.00	551625.75	578653.01
17	PI STA.30+61.00	551623.99	578713.99
18	PI STA.31+16.16	551622.40	578769.13
19	PI STA.31+67.95	551674.19	578769.20
20	PI STA.32+06.95	551685.01	578806.67
26	POE STA.32+43.13	551715.69	578825.83

BASELINE "D" 18" RCP STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
33	POB STA.50+00.00	551622.51	578765.37
34	PI STA.50+73.98	551552.16	578742.47
35	POE STA.51+03.00	551523.15	578741.67

BASELINE "C" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
21	POB STA.40+00.00	551521.59	578892.18
22	PI STA.40+35.86	551555.15	578879.53
23	PI STA.40+92.65	551611.18	578888.75
24	PI STA.41+22.65	551635.25	578906.66
25	PI STA.41+48.34	551660.94	578906.87
26	PI STA.42+46.14	551715.69	578825.83
27	PI STA.43+68.33	551837.44	578815.43
28	PI STA.44+71.18	551934.25	578850.13
29	PI STA.47+03.71	552166.52	578839.11
30	PI STA.47+36.14	552198.93	578837.91
31	PI STA.47+94.14	552255.77	578826.41
32	POE STA.49+13.88	552375.38	578832.11

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 30 60 90
FEET

US 301,
SR 896 TO SR 1

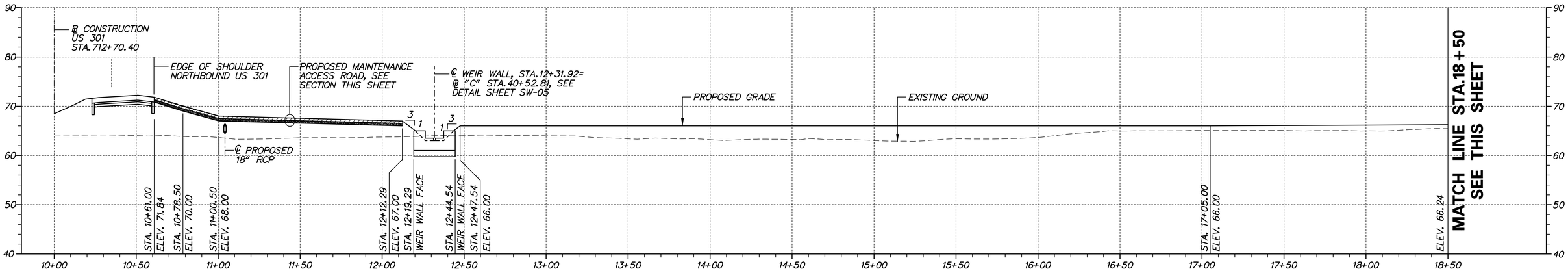
CONTRACT	BRIDGE NO.
T200911308	
COUNTY	DESIGNED BY: DLH
NEW CASTLE	CHECKED BY: JDC

STORMWATER MANAGEMENT STAKEOUT PLAN BMP 720

SW-02

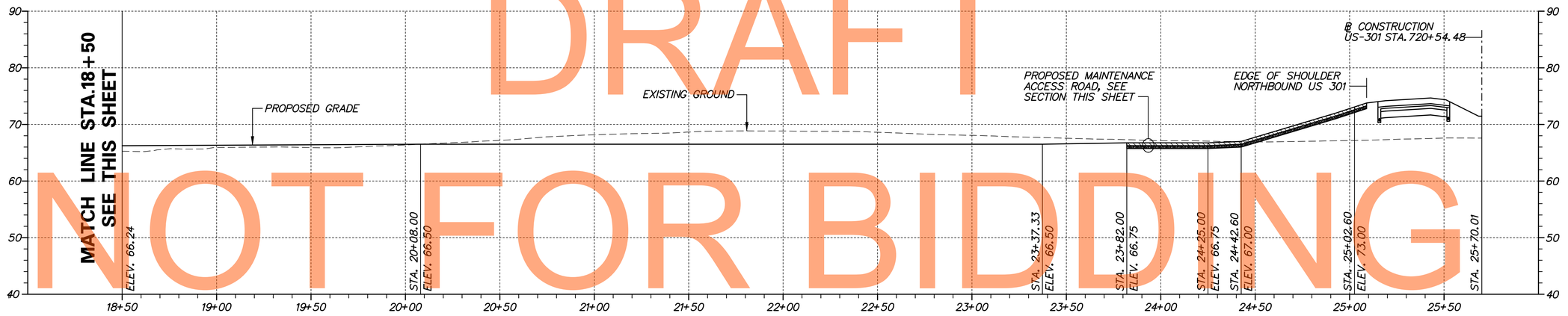
SHEET NO.	TOTAL SHTS.
623	875

n:\31653-000\contract 10\cadd\SW02-712U301_1A.dgn
10/31/2014 1:40:49 PM



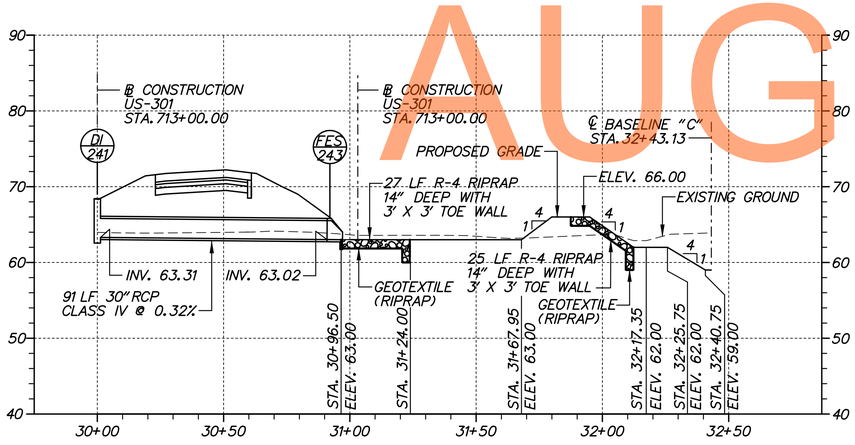
PROFILE – POND EMBANKMENT – BMP 720 BASELINE "A"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



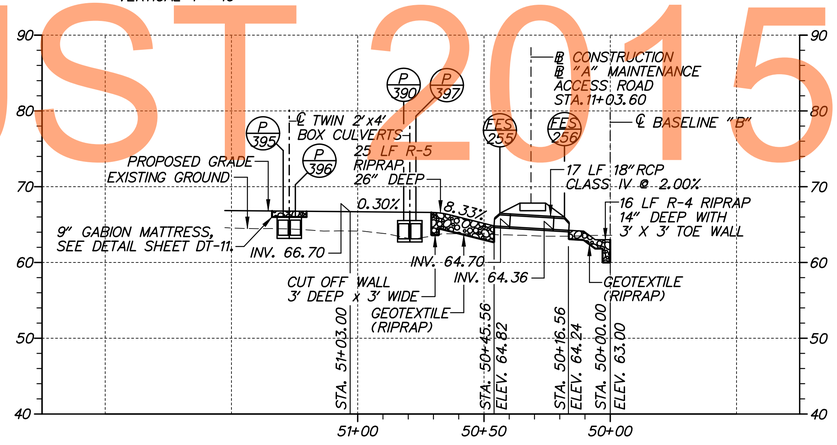
PROFILE – POND EMBANKMENT – BMP 720 BASELINE "A"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



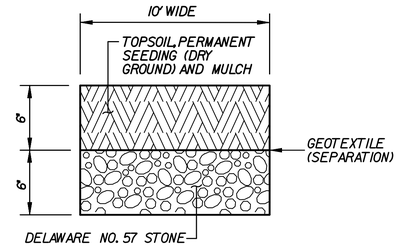
PROFILE – BMP 720 BASELINE "B"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



PROFILE – BMP 720 BASELINE "D"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



POND MAINTENANCE ACCESS ROAD

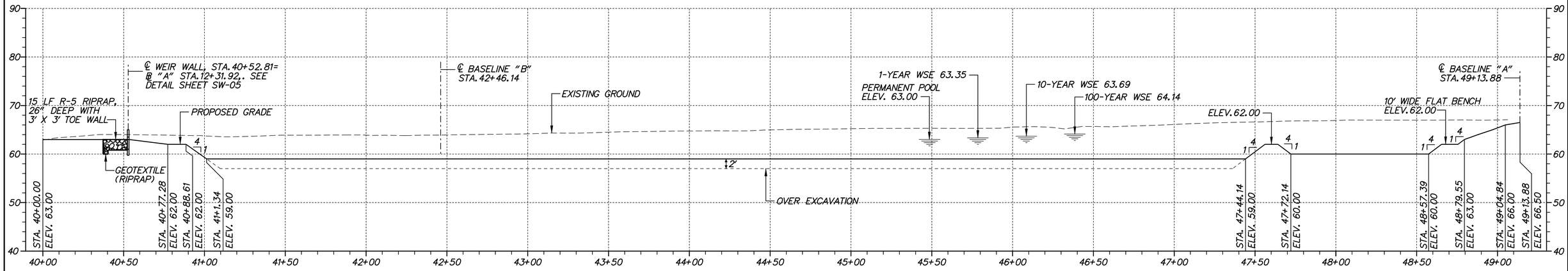
SCALE: NONE

RIPRAP NOTES:

1. RIPRAP CUTOFF AND TOE WALLS SHALL BE MEASURED BELOW THE NORMAL RIPRAP PAD DEPTH AND PAID PER TON (ITEMS 712020 AND 712021).
2. THE 26" DEPTH FOR R-5 RIPRAP SHALL CONSIST OF 20" R-5 RIPRAP AND 6" OF DE NO. 57 STONE.

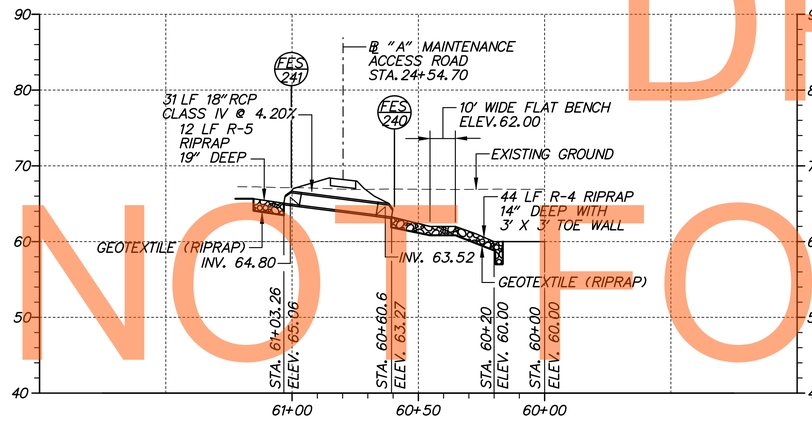
r:\31653-000\contract 1a\cadd\SW03-712U301_1A.dgn
10/31/2014 11:40:51 PM

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 30 60 90 FEET	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO.	STORMWATER MANAGEMENT PROFILES BMP 720
				COUNTY NEW CASTLE	DESIGNED BY: DLH	SW-03 / SHEET NO. 624 / TOTAL SHTS. 875
					CHECKED BY: JDC	



PROFILE – BMP 720 BASELINE "C"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



PROFILE – FES 241 TO FES 240

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'

RIPRAP NOTES:

1. RIPRAP CUTOFF AND TOE WALLS SHALL BE MEASURED BELOW THE NORMAL RIPRAP PAD DEPTH AND PAID PER TON (ITEMS 712020 AND 712021).
2. THE 26" DEPTH FOR R-5 RIPRAP SHALL CONSIST OF 20" R-5 RIPRAP AND 6" OF DE NO. 57 STONE.

POND CONSTRUCTION SEQUENCE AND NOTES:

THE STORMWATER MANAGEMENT POND SHALL FUNCTION AS A SEDIMENT BASIN DURING ROADWAY CONSTRUCTION AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE STANDARD SPECIFICATIONS:
SECTION 271 - STORMWATER MANAGEMENT POND
SECTION 272 - POND OUTLET STRUCTURE, CONCRETE

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE PER CONSTRUCTION PHASING, MOT AND EROSION AND SEDIMENT CONTROL PLANS.
2. CLEAR AND GRUB FOR INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS.
3. INSTALL PERIMETER SEDIMENT CONTROLS AS SHOWN ON THE CONSTRUCTION PHASING PLANS, MOT AND EROSION AND SEDIMENT CONTROL PLANS.
4. CLEAR AND GRUB REMAINING AREA FOR POND CONSTRUCTION.
5. CONSTRUCT POND OUTLET STRUCTURE AND RIPRAP ENERGY DISSIPATOR AT DOWNSTREAM END OF WEIR WALL. EXCAVATE AS NEEDED TO INSTALL POND OUTLET STRUCTURE, INSTALL SKIMMER DEWATERING DEVICES. DE-WATER FOUNDATION AS NEEDED IN ACCORDANCE WITH SECTION 111 AND USE SUMP PIT FOR PUMPING. LOCATION OF SUMP PIT TO BE DETERMINED IN FIELD.
6. EXCAVATE THE POND AND COMPLETE THE BASIN TO LINES, GRADES, AND DETAILS SHOWN IN THE CONSTRUCTION PLANS. OVEREXCAVATE THE BOTTOM OF THE POOL 2 FEET FOR SEDIMENT STORAGE. DURING EXCAVATION, THE CONTRACTOR SHALL SALVAGE AND STOCKPILE ANY SOILS CLASSIFIED AS CH, CL, CH, AND GM PER THE UNIFIED SOIL CLASSIFICATION SYSTEM TO BE USED TO CONSTRUCT EMBANKMENT. THE ABOVE CLASSIFIED SOILS MAY BE OBTAINED FROM ELSEWHERE WITHIN THE PROJECT LIMITS.
7. STABILIZE ALL BARE AREAS BELOW ELEV. 64.00, EXCLUDING THE POND BOTTOM, WITH WET SEED MIX AND ABOVE ELEV. 64.00 WITH DRY SEED MIX.

MAINTENANCE OF POND AS A SEDIMENT BASIN

1. SEE SHEET CS-26 FOR SB720 BASIN DETAILS. PLACE EXTERIOR GRADE PLYWOOD ACROSS WEIR OPENING IN ORDER TO FORM CREST AT ELEVATION 63.44. PLYWOOD SHALL BE AFFIXED TO WEIR WALL USING CONSTRUCTION ADHESIVE OR OTHER APPROVED MEANS. SKIMMER DEVICES SHALL BE ATTACHED TO PLYWOOD BAFFLE AT PERMANENT POOL ELEVATION 63.00. THE COST OF THE BAFFLE AND SKIMMER DEVICES AND MAINTENANCE AND/OR REPLACEMENT OF BOTH THROUGHOUT CONSTRUCTION SHALL BE INCIDENTAL TO ITEM 272500.
2. CONTRACTOR SHALL INSPECT THE BASIN IMMEDIATELY AFTER EVERY RAIN AND MAKE REPAIRS AS NEEDED.
3. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION, 63.21, ON A STAKE DRIVEN INTO THE GROUND AT A LOCATION CLEARLY VISIBLE FROM THE EMBANKMENT. SEDIMENT SHALL BE REMOVED WHEN CLEANOUT ELEVATION IS REACHED AND DISPOSED OF AT A LOCATION APPROVED BY THE ENGINEER.

CONVERSION TO PERMANENT STORMWATER MANAGEMENT POND

1. CONVERT THE BASIN INTO THE PERMANENT STORMWATER MANAGEMENT POND AFTER ALL AREAS DRAINING TO THE POND HAVE BEEN PERMANENTLY STABILIZED AND THE ENGINEER HAS APPROVED THE CONVERSION.
2. REMOVE EXCESS ACCUMULATED SEDIMENT ON THE POND BOTTOM AND BENCHES, IF ANY, TO THE SPECIFIED FINISHED LINES AND GRADES SHOWN IN THE PLAN AND DISPOSE SEDIMENT AT A LOCATION APPROVED BY THE ENGINEER. IF ELEVATION OF ACCUMULATED SEDIMENT IN POOL BOTTOMS IS BELOW THE PROPOSED FINISHED ELEVATION, ADDITIONAL FILL MATERIAL SHALL NOT BE PLACED IN POND.
3. PUMP DOWN STANDING WATER IN THE POND AS NECESSARY AND COMPLETE STABILIZATION OF ALL BARE AREAS, REMOVE EROSION AND SEDIMENT CONTROL MEASURES, AND REMOVE SKIMMER DEWATERING DEVICES AND PLYWOOD.

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS OF ALL STORMWATER MANAGEMENT FACILITIES, SUCH AS PONDS, BIOFILTRATION SWALES, BIO-RETENTION AREAS, ETC. THE "AS-BUILT" DRAWINGS SHALL SHOW THE ACTUAL FINISHED GROUND CONTOURS, OUTLET STRUCTURE DIMENSIONS AND ELEVATIONS, ETC., AS THEY EXIST AT THE COMPLETION OF THE PROJECT. THESE DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER OR LAND SURVEYOR REGISTERED IN THE STATE OF DELAWARE. ALL "AS-BUILT" DRAWINGS SHALL BE SENT TO THE DELDOT STORMWATER ENGINEER. ALL COSTS FOR THIS WORK SHALL BE INCLUDED UNDER ITEM 763501 - CONSTRUCTION ENGINEERING.
2. STORMWATER MANAGEMENT PONDS SERVING AS TEMPORARY SEDIMENT BASINS DURING CONSTRUCTION SHALL HAVE SEDIMENT REMOVED AT TIMES DETERMINED BY THE ENGINEER AND AT THE CONCLUSION OF THE PROJECT AFTER ALL AREAS DRAINING TO THE POND HAVE BEEN VEGETATIVELY STABILIZED. COST FOR SEDIMENT REMOVAL SHALL BE PAID FOR UNDER ITEM 250000 - SEDIMENT REMOVAL. ACCESS SHALL BE MAINTAINED TO ALL SEDIMENT REMOVAL CONTROL DEVICES REQUIRING MAINTENANCE UNTIL CONSTRUCTION PHASING AND VEGETATIVE STABILIZATION ALLOW THE REMOVAL OF THOSE CONTROLS, WHICH ARE NO LONGER REQUIRED.

n:\31653-000\contract 1a\cadd\SW04-712U301_1A.dgn
10/31/2014 11:40:55 PM

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

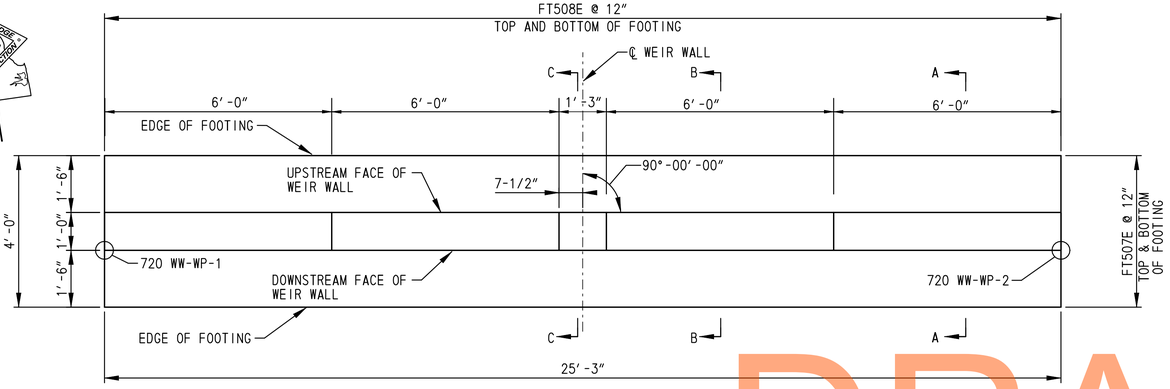
SCALE
0 30 60 90
FEET

US 301,
SR 896 TO SR 1

CONTRACT T200911308
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: DLH
CHECKED BY: JDC

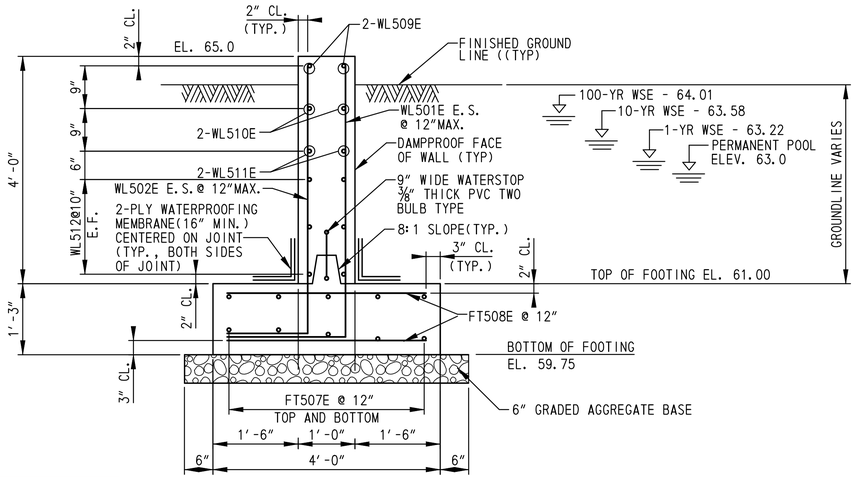
STORMWATER MANAGEMENT PROFILES BMP 720

SW-04
SHEET NO. 625
TOTAL SHTS. 875



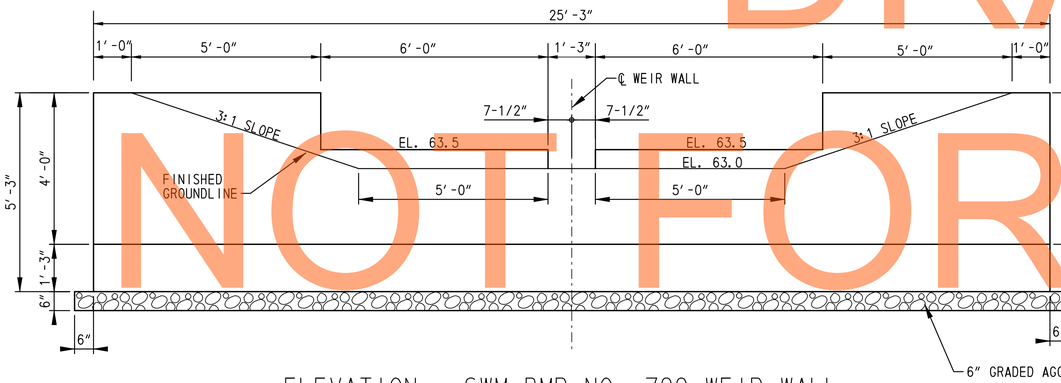
PLAN - SWM BMP NO. 720 WEIR WALL

SCALE: 1/2" = 1'



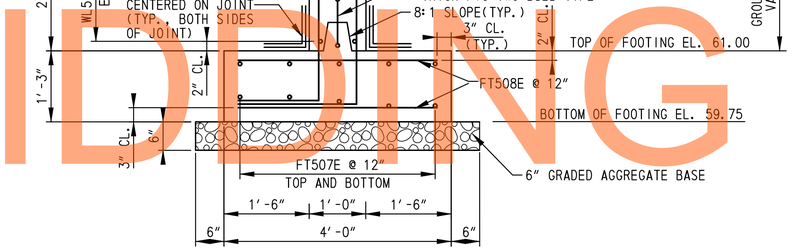
SECTION A-A

SCALE: 3/4"=1'-0"



ELEVATION - SWM BMP NO. 720 WEIR WALL

SCALE: 1/2" = 1'



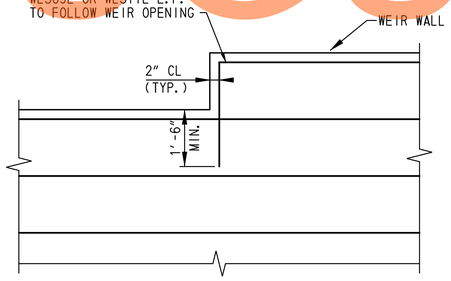
SECTION B-B

SCALE: 3/4"=1'-0"

WORKING POINT COORDINATES		
WORKING POINT	NORTHING	EASTING
720 WW-WP-1	551573.4267	578869.7436
720 WW-WP-2	551569.3256	578894.6583

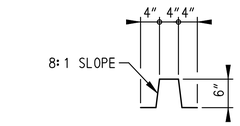
NOTES:

1. MAXIMUM FACTORED BEARING RESISTANCE FOR WEIR WALL IS 2 KSF.
2. KEYS ARE NOMINAL SIZE.
3. CONCRETE SHALL BE CLASS A, 4500 PSI.
4. RIPRAP NOT SHOWN FOR CLARITY.
5. E.F. = EACH FACE, E.S. = EQUAL SPACING.
6. SEE REINFORCING BAR LIST ON DRAWINGS SW-34 AND SW-35.
7. 6" GRADED AGGREGATE BASE BEDDING SHALL BE INCIDENTAL TO THE CONTRACT UNIT COST FOR THE WEIR WALL.



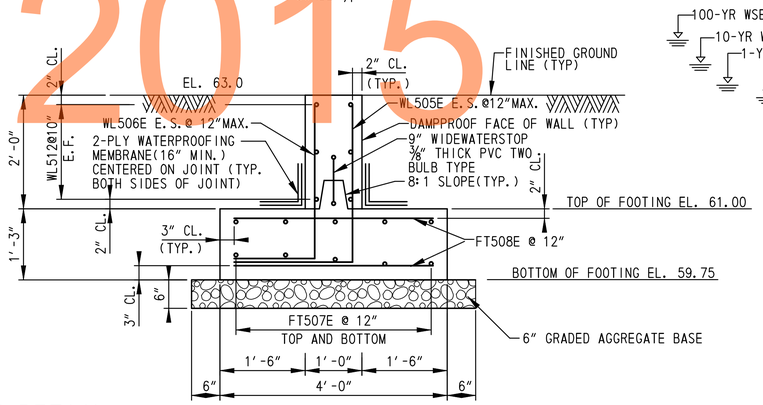
REINFORCEMENT DETAIL AT WEIR OPENING

SCALE: 3/4"=1'-0"



CONSTRUCTION JOINT DETAIL

SCALE: 3/4"=1'-0"



SECTION C-C

SCALE: 3/4"=1'-0"

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS		US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO.	STORMWATER MANAGEMENT DETAILS BMP 720	SW-05
				COUNTY NEW CASTLE	DESIGNED BY: HQ		SHEET NO. 626
					CHECKED BY: JAG		TOTAL SHTS. 875

r:\31653-000\contract to\cadd\SW05-T12U301_1A.dgn
10/31/2014 11:40:58 PM

PLAN – SWM BMP NO. 722 STA. 726+50 TO STA. 730+00, WET POND

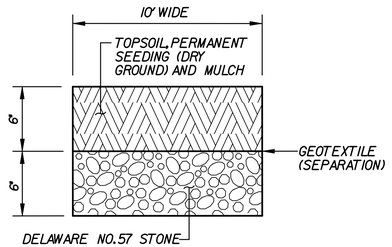
SCALE: 1" = 30'

BMP NO. 722 – DESIGN SUMMARY				
DESIGN STORM	FACILITY INFLOW (CFS)	FACILITY DISCHARGE (CFS)	WATER SURFACE ELEVATION	STORAGE VOLUME (AC-FT)
PERM. POOL	N. A.	N. A.	66. 50	0. 34
1-YEAR	3. 8	0. 4	67. 07	0. 19
10-YEAR	11. 5	2. 2	67. 76	0. 47
100-YEAR	20. 1	5. 9	68. 42	0. 78

HAZARD CLASSIFICATION "A" AS PER POND CODE 378

DRAINAGE AREA TO FACILITY: 6.12 ACRES

MANAGEMENT PROVIDED BY FACILITY: WATER QUALITY CONTROL VIA EXTENDED DETENTION FOR 1-YEAR RESOURCE PROTECTION STORM AND QUANTITY CONTROL FOR THE 10 AND 100-YEAR EVENTS.



POND MAINTENANCE ACCESS ROAD

SCALE: NONE

POND CONSTRUCTION SEQUENCE AND NOTES:

THE STORMWATER MANAGEMENT POND SHALL FUNCTION AS A SEDIMENT BASIN DURING ROADWAY CONSTRUCTION AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE STANDARD SPECIFICATIONS:
- SECTION 271 – STORMWATER MANAGEMENT POND
- SECTION 272 – POND OUTLET STRUCTURE, CONCRETE

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE PER CONSTRUCTION PHASING, MOT AND EROSION AND SEDIMENT CONTROL PLANS.
2. CLEAR AND GRUB FOR INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS.
3. INSTALL PERIMETER SEDIMENT CONTROLS AS SHOWN ON THE CONSTRUCTION PHASING PLANS, MOT AND EROSION AND SEDIMENT CONTROL PLANS.
4. CLEAR AND GRUB REMAINING AREA FOR POND CONSTRUCTION.
5. CONSTRUCT POND OUTLET STRUCTURE AND RIPRAP ENERGY DISSIPATOR AT DOWNSTREAM END OF WEIR WALL. EXCAVATE AS NEEDED TO INSTALL POND OUTLET STRUCTURE. INSTALL SKIMMER DEWATERING DEVICE. DE-WATER FOUNDATION AS NEEDED IN ACCORDANCE WITH SECTION 111 AND USE SUMP PIT FOR PUMPING. LOCATION OF SUMP PIT TO BE DETERMINED IN FIELD.
6. EXCAVATE THE POND AND COMPLETE THE BASIN TO LINES, GRADES, AND DETAILS SHOWN IN THE CONSTRUCTION PLANS. OVER EXCAVATE THE BOTTOM OF THE POOL 2 FEET FOR SEDIMENT STORAGE. DURING EXCAVATION, THE CONTRACTOR SHALL SALVAGE AND STOCKPILE ANY SOILS CLASSIFIED AS CH, CL, CH, AND GM PER THE UNIFIED SOIL CLASSIFICATION SYSTEM TO BE USED TO CONSTRUCT EMBANKMENT. THE ABOVE CLASSIFIED SOILS MAY BE OBTAINED FROM ELSEWHERE WITHIN THE PROJECT LIMITS.
7. STABILIZE ALL BARE AREAS BELOW ELEV. 67.50, EXCLUDING THE POND BOTTOM, WITH WET SEED MIX AND ABOVE ELEV. 67.50 WITH DRY SEED MIX.

MAINTENANCE OF POND AS A SEDIMENT BASIN

1. SEE SHEET CS-29 FOR SB722 BASIN DETAILS. PLACE EXTERIOR GRADE PLYWOOD ACROSS WEIR OPENING IN ORDER TO FORM CREST AT ELEVATION 67.83. PLYWOOD SHALL BE AFFIXED TO WEIR WALL USING CONSTRUCTION ADHESIVE OR OTHER APPROVED MEANS. SKIMMER DEVICE SHALL BE ATTACHED TO PLYWOOD BAFFLE AT PERMANENT POOL ELEVATION 66.50. THE COST OF THE BAFFLE AND SKIMMER DEVICE AND MAINTENANCE AND/OR REPLACEMENT OF BOTH THROUGHOUT CONSTRUCTION SHALL BE INCIDENTAL TO ITEM 272500.
2. CONTRACTOR SHALL INSPECT THE BASIN IMMEDIATELY AFTER EVERY RAIN AND MAKE REPAIRS AS NEEDED.
3. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION, 67.24, ON A STAKE DRIVEN INTO THE GROUND AT A LOCATION CLEARLY VISIBLE FROM THE EMBANKMENT. SEDIMENT SHALL BE REMOVED WHEN CLEANOUT ELEVATION IS REACHED AND DISPOSED OF AT A LOCATION APPROVED BY THE ENGINEER.

CONVERSION TO PERMANENT STORMWATER MANAGEMENT POND

1. CONVERT THE BASIN INTO THE PERMANENT STORMWATER MANAGEMENT POND AFTER ALL AREAS DRAINING TO THE POND HAVE BEEN PERMANENTLY STABILIZED AND THE ENGINEER HAS APPROVED THE CONVERSION.
2. REMOVE EXCESS ACCUMULATED SEDIMENT ON THE POND BOTTOM AND BENCHES, IF ANY, TO THE SPECIFIED FINISHED LINES AND GRADES SHOWN IN THE PLAN AND DISPOSE SEDIMENT AT A LOCATION APPROVED BY THE ENGINEER. IF ELEVATION OF ACCUMULATED SEDIMENT IN POOL BOTTOMS IS BELOW THE PROPOSED FINISHED ELEVATION, ADDITIONAL FILL MATERIAL SHALL NOT BE PLACED IN POND.
3. PUMP DOWN STANDING WATER IN THE POND AS NECESSARY AND COMPLETE STABILIZATION OF ALL BARE AREAS, REMOVE EROSION AND SEDIMENT CONTROL MEASURES, AND REMOVE SKIMMER DEWATERING DEVICE AND PLYWOOD.

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS OF ALL STORMWATER MANAGEMENT FACILITIES, SUCH AS PONDS, BIOFILTRATION SWALES, BIO-RETENTION AREAS, ETC. THE "AS-BUILT" DRAWINGS SHALL SHOW THE ACTUAL FINISHED GROUND CONTOURS, OUTLET STRUCTURE DIMENSIONS AND ELEVATIONS, ETC., AS THEY EXIST AT THE COMPLETION OF THE PROJECT. THESE DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER OR LAND SURVEYOR REGISTERED IN THE STATE OF DELAWARE. ALL "AS-BUILT" DRAWINGS SHALL BE SENT TO THE DELDOT STORMWATER ENGINEER. ALL COSTS FOR THIS WORK SHALL BE INCLUDED UNDER ITEM 763501 – CONSTRUCTION ENGINEERING.
2. STORMWATER MANAGEMENT PONDS SERVING AS TEMPORARY SEDIMENT BASINS DURING CONSTRUCTION SHALL HAVE SEDIMENT REMOVED AT TIMES DETERMINED BY THE ENGINEER AND AT THE CONCLUSION OF THE PROJECT AFTER ALL AREAS DRAINING TO THE POND HAVE BEEN VEGETATIVELY STABILIZED. COST FOR SEDIMENT REMOVAL SHALL BE PAID FOR UNDER ITEM 250000 – SEDIMENT REMOVAL. ACCESS SHALL BE MAINTAINED TO ALL SEDIMENT REMOVAL CONTROL DEVICES REQUIRING MAINTENANCE UNTIL CONSTRUCTION PHASING AND VEGETATIVE STABILIZATION ALLOW THE REMOVAL OF THOSE CONTROLS, WHICH ARE NO LONGER REQUIRED.

N:\31653-000\CONTRACT 1A\CADD\SW06-730U301_1A.dgn
5/8/2015 7:24:55 AM

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

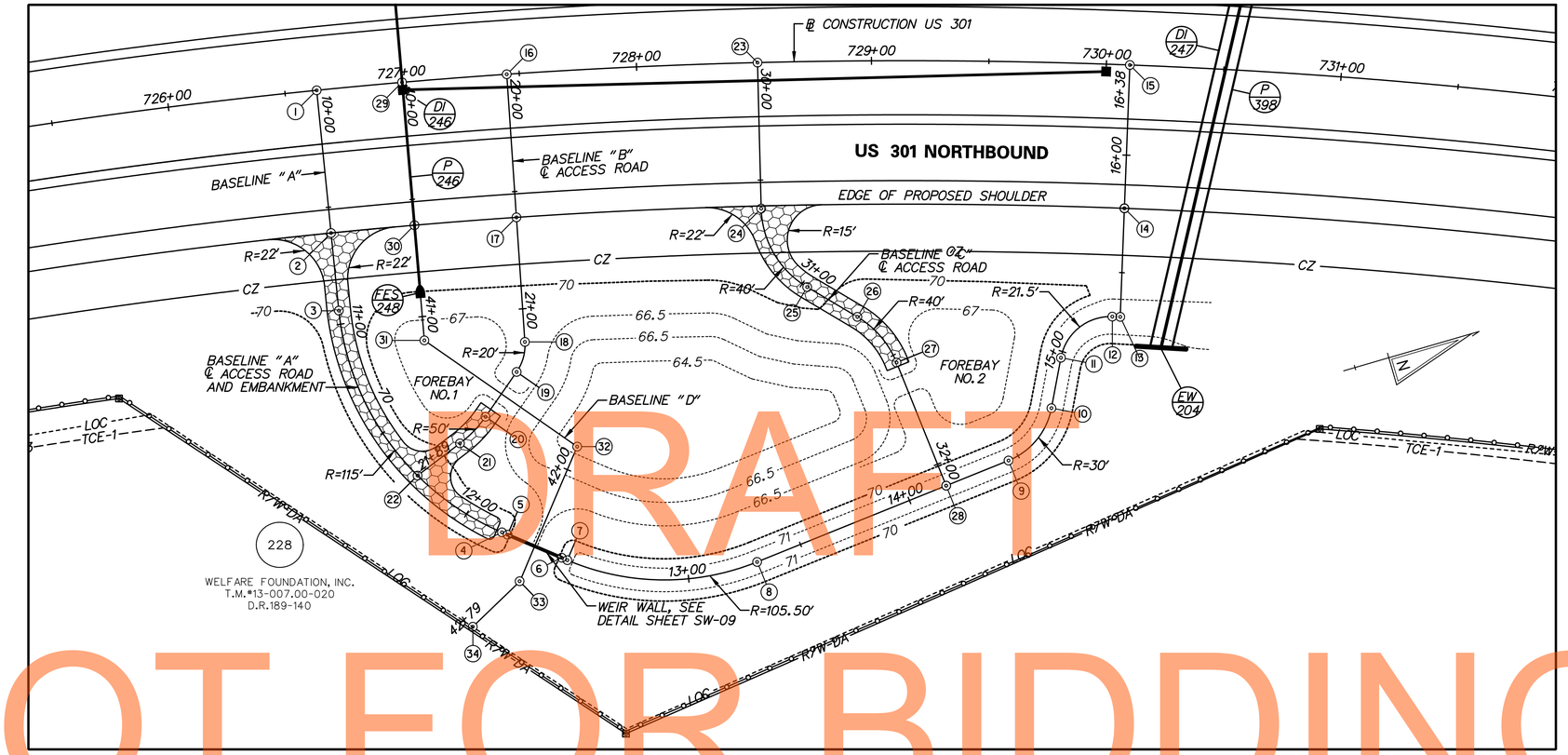
SCALE 0 30 60 90 FEET

US 301, SR 896 TO SR 1

CONTRACT T200911308 | COUNTY NEW CASTLE | BRIDGE NO. | DESIGNED BY: DLH | CHECKED BY: JDC

STORMWATER MANAGEMENT PLAN BMP 722

SW-06 | SHEET NO. 627 | TOTAL SHTS. 875



STAKEOUT PLAN – SWM BMP NO. 722 STA. 726+50 TO STA. 730+00, WET POND

SCALE: 1" = 30'

EMBANKMENT BASELINE "A" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
1	POB STA.10+00.00	552986.60	578719.27
2	PI STA.10+61.00	552975.94	578779.33
3	PC STA.10+94.16	552970.14	578811.98
4	PT STA.12+17.01	553011.20	578921.63
5	PI STA.12+19.63	553013.24	578923.27
6	PI STA.12+44.63	553032.71	578938.96
7	PC STA.12+47.25	553034.75	578940.60
8	PT STA.13+30.11	553112.23	578963.36
9	PC STA.14+45.46	553226.92	578951.03
10	PT STA.14+75.50	553250.56	578934.58
11	PC STA.14+97.32	553260.30	578915.06
12	PT STA.15+27.82	553286.10	578904.18
13	PI STA.15+31.20	553289.32	578905.21
14	PI STA.15+77.40	553303.61	578861.27
15	POE STA.16+38.40	553322.47	578803.26

ACCESS ROAD BASELINE "B" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
16	POE STA.20+00.00	553066.27	578734.76
17	PI STA.20+61.00	553053.66	578794.44
18	PC STA.21+14.10	553042.68	578846.39
19	PT STA.21+27.60	553035.80	578857.71
20	PC STA.21+50.81	553017.87	578872.44
21	PT STA.21+66.56	553004.33	578880.36
22	POE STA.21+89.23	552983.21	578888.61

ACCESS ROAD BASELINE "C" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
23	POB STA.30+00.00	553170.30	578759.07
24	PC STA.30+62.10	553154.88	578819.23
25	PT STA.31+02.50	553164.60	578856.69
26	PC STA.31+27.33	553181.69	578874.70
27	PT STA.31+53.41	553192.44	578897.96
28	POE STA.32+09.86	553198.48	578954.08

BASELINE "D" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
29	POB STA.40+00.00	553022.54	578725.92
30	PI STA.40+61.00	553010.99	578785.82
31	PI STA.41+10.15	553001.69	578834.08
32	PI STA.41+89.27	553051.89	578895.24
33	PI STA.42+51.38	553012.92	578943.59
34	POE STA.42+79.33	552988.33	578956.88

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

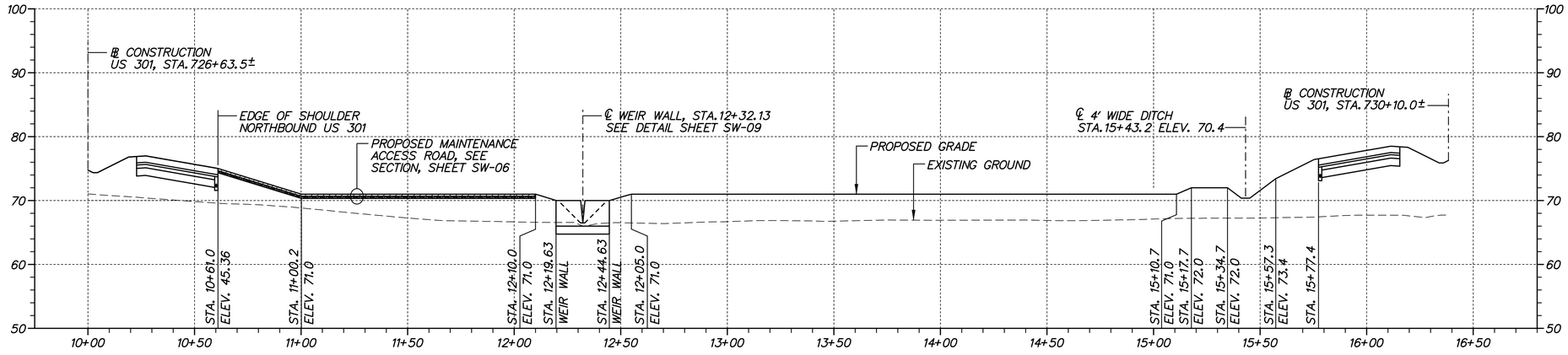
SCALE
0 30 60 90
FEET

US 301,
SR 896 TO SR 1

CONTRACT	T200911308
COUNTY	NEW CASTLE
BRIDGE NO.	
DESIGNED BY:	DLH
CHECKED BY:	JDC

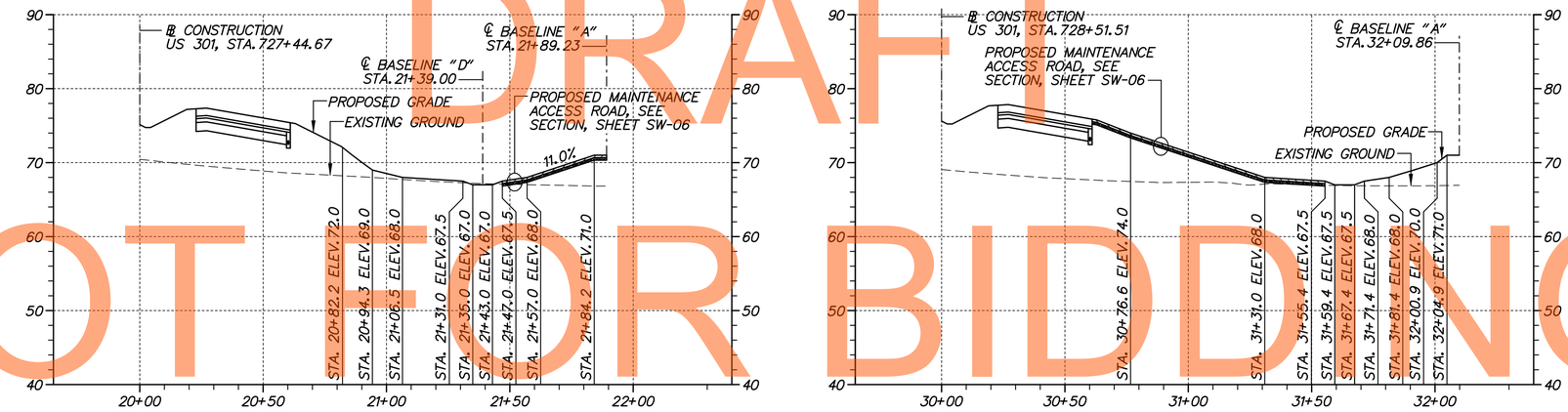
STORMWATER MANAGEMENT STAKEOUT PLAN BMP 722

	SW-07
SHEET NO.	628
TOTAL SHTS.	875



PROFILE – POND EMBANKMENT – BMP 722 BASELINE "A"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'

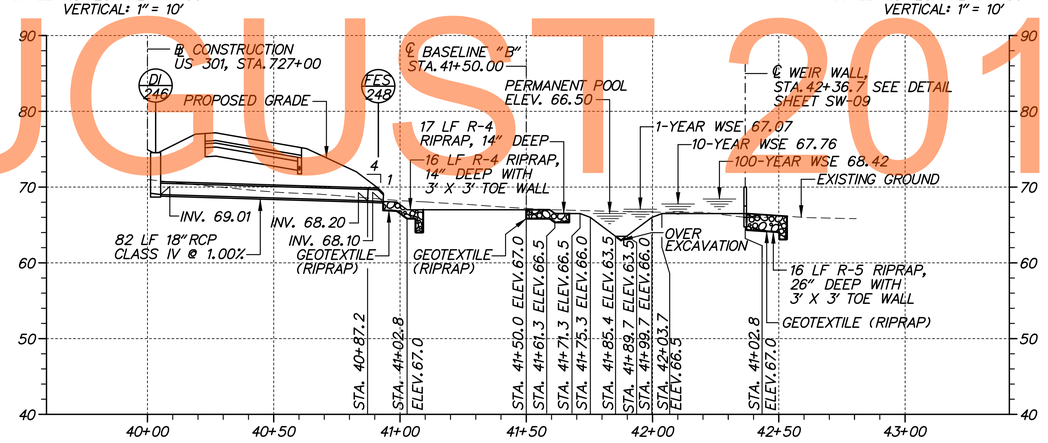


PROFILE – ACCESS ROAD – BMP 722 BASELINE "B"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'

PROFILE – ACCESS ROAD – BMP 722 BASELINE "C"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



PROFILE – BMP 722 BASELINE "D"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'

RIPRAP NOTES:

1. RIPRAP CUTOFF AND TOE WALLS SHALL BE MEASURED BELOW THE NORMAL RIPRAP PAD DEPTH AND PAID PER TON (ITEMS 712020 AND 712021).
2. THE 26" DEPTH FOR R-5 RIPRAP SHALL CONSIST OF 20" R-5 RIPRAP AND 6" OF DE NO. 57 STONE.

r:\31653-000\contract 1a\cadd\SW08-730U301_1A.dgn
10/31/2014 11:41:11 PM

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

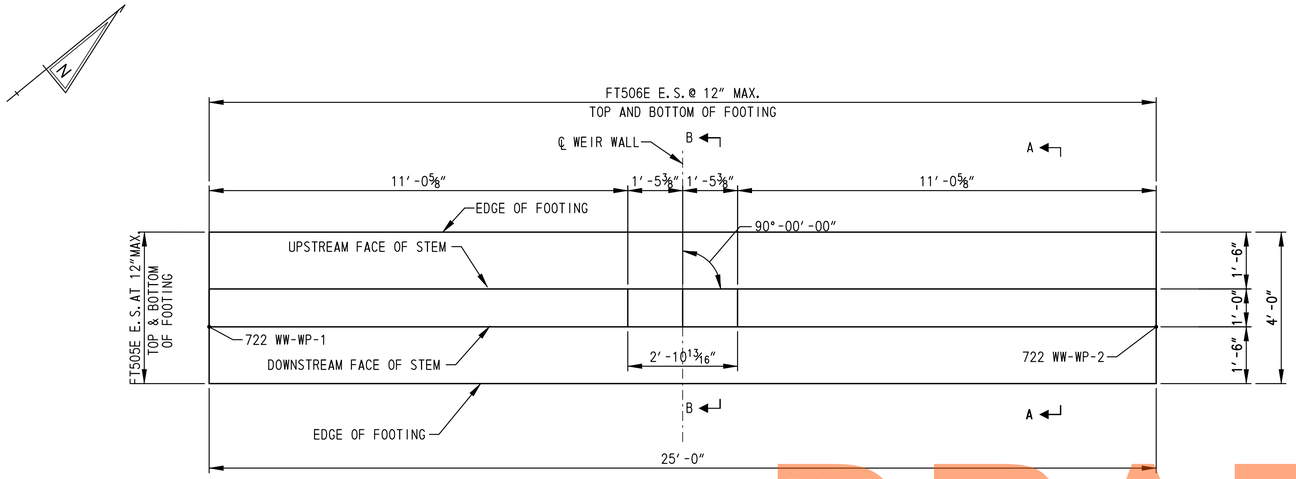
SCALE
0 30 60 90
FEET

US 301,
SR 896 TO SR 1

CONTRACT	BRIDGE NO.
T200911308	
COUNTY	DESIGNED BY: DLH
NEW CASTLE	CHECKED BY: JDC

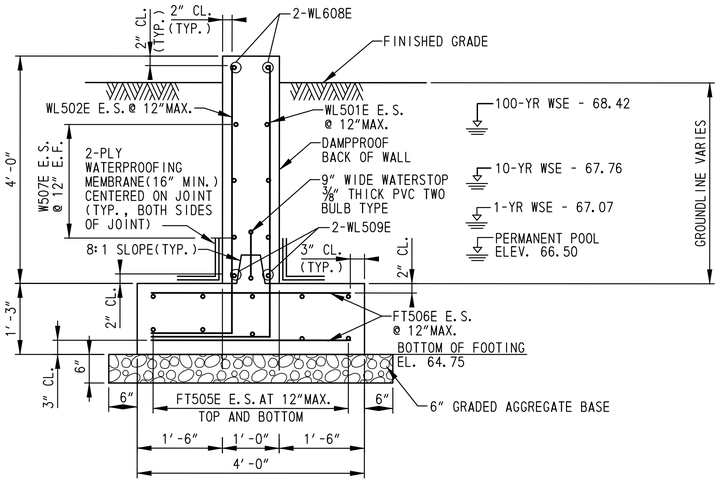
STORMWATER MANAGEMENT PROFILES BMP 722

SW-08
SHEET NO. 629
TOTAL SHTS. 875



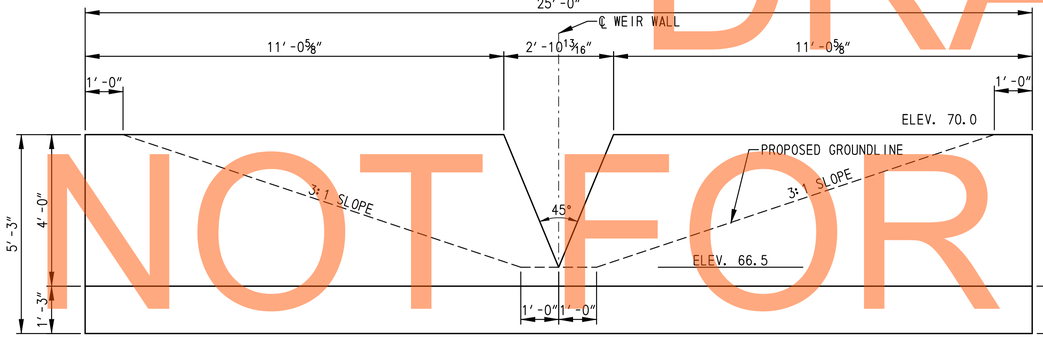
PLAN - SWM BMP NO. 722 WEIR WALL

SCALE: 1/2"=1'-0"



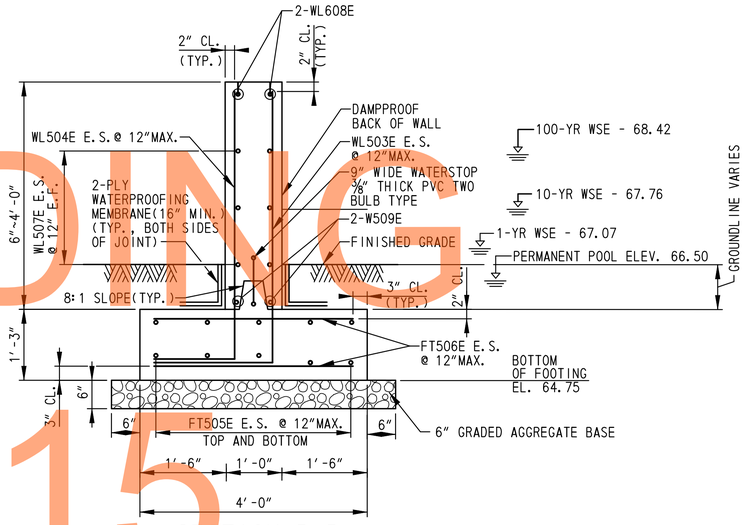
SECTION A-A

SCALE: 3/4"=1'-0"



ELEVATION - SWM BMP NO. 722 WEIR WALL

SCALE: 1/2" = 1'



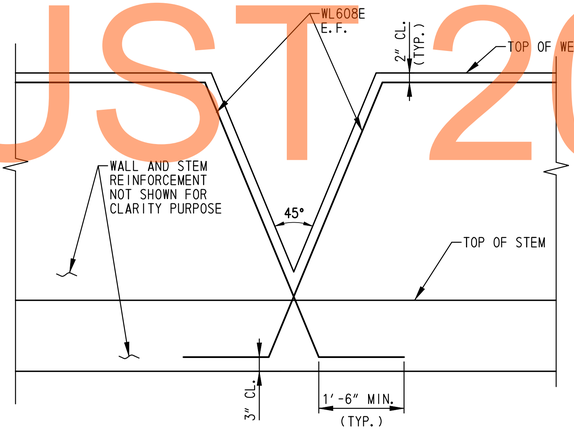
SECTION B-B

SCALE: 3/4"=1'-0"

WORKING POINT COORDINATES		
WORKING POINT	NORTHING	EASTING
722 WW-WP-1	553012.9282	578923.6624
722 WW-WP-2	553032.3937	578939.3499

NOTES:

1. MAXIMUM FACTORED BEARING RESISTANCE FOR WEIR WALL IS 2 KSF.
2. KEYS ARE NOMINAL SIZE.
3. CONCRETE SHALL BE CLASS A, 4500 PSI.
4. RIPRAP NOT SHOWN FOR CLARITY.
5. E.F. = EACH FACE, E.S. =EQUAL SPACING.
6. SEE REINFORCING BAR LIST ON DRAWINGS SW-34 AND SW-35.
7. 6" GRADED AGGREGATE BASE BEDDING SHALL BE INCIDENTAL TO THE CONTRACT UNIT COST FOR THE WEIR WALL.



ADDITIONAL REINFORCEMENT AT WEIR WALL OPENING

SCALE: 3/4" = 1'

n:\31653-000\contract to\cadd\SW09-730U301_1A.dgn
10/31/2014 1:41:13 PM

DELAWARE DEPARTMENT OF TRANSPORTATION

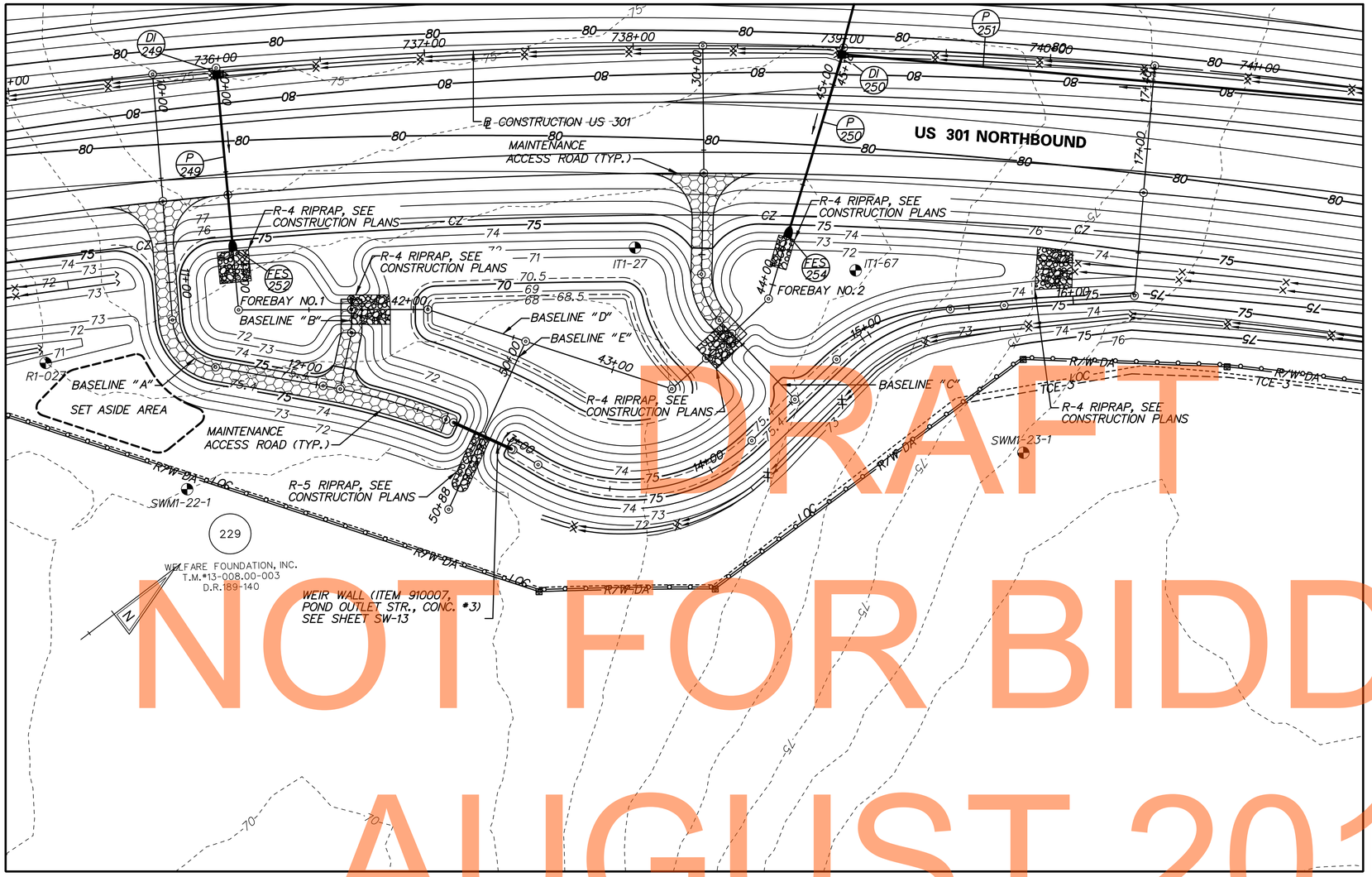
ADDENDUMS / REVISIONS

US 301, SR 896 TO SR 1

CONTRACT T200911308
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: HQ
CHECKED BY: JAG

STORMWATER MANAGEMENT DETAILS BMP 722

SW-09
SHEET NO. 630
TOTAL SHTS. 875



PLAN – SWM BMP NO. 723 STA. 735+50 TO STA. 740+00, WET POND

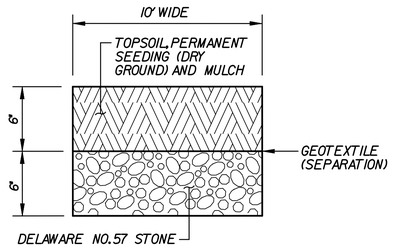
SCALE: 1" = 30'

BMP NO. 723 – DESIGN SUMMARY				
DESIGN STORM	FACILITY INFLOW (CFS)	FACILITY DISCHARGE (CFS)	WATER SURFACE ELEVATION	STORAGE VOLUME (AC-FT)
PERM. POOL	N. A.	N. A.	71. 00	0. 38
1-YEAR	6. 3	0. 5	71. 92	0. 30
10-YEAR	19. 9	3. 4	73. 05	0. 82
100-YEAR	43. 4	11. 8	74. 34	1. 66

HAZARD CLASSIFICATION "A" AS PER POND CODE 378

DRAINAGE AREA TO FACILITY: 8.89 ACRES

MANAGEMENT PROVIDED BY FACILITY: WATER QUALITY CONTROL VIA EXTENDED DETENTION FOR 1-YEAR RESOURCE PROTECTION STORM AND QUANTITY CONTROL FOR THE 10 AND 100-YEAR EVENTS.



POND MAINTENANCE ACCESS ROAD

SCALE: NONE

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS OF ALL STORMWATER MANAGEMENT FACILITIES, SUCH AS PONDS, BIOFILTRATION SWALES, BIO-RETENTION AREAS, ETC. THE "AS-BUILT" DRAWINGS SHALL SHOW THE ACTUAL FINISHED GROUND CONTOURS, OUTLET STRUCTURE DIMENSIONS AND ELEVATIONS, ETC., AS THEY EXIST AT THE COMPLETION OF THE PROJECT. THESE DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER OR LAND SURVEYOR REGISTERED IN THE STATE OF DELAWARE. ALL "AS-BUILT" DRAWINGS SHALL BE SENT TO THE DELDOT STORMWATER ENGINEER. ALL COSTS FOR THIS WORK SHALL BE INCLUDED UNDER ITEM 763501 - CONSTRUCTION ENGINEERING.
2. STORMWATER MANAGEMENT PONDS SERVING AS TEMPORARY SEDIMENT BASINS DURING CONSTRUCTION SHALL HAVE SEDIMENT REMOVED AT TIMES DETERMINED BY THE ENGINEER AND AT THE CONCLUSION OF THE PROJECT AFTER ALL AREAS DRAINING TO THE POND HAVE BEEN VEGETATIVELY STABILIZED. COST FOR SEDIMENT REMOVAL SHALL BE PAID FOR UNDER ITEM 250000 - SEDIMENT REMOVAL. ACCESS SHALL BE MAINTAINED TO ALL SEDIMENT REMOVAL CONTROL DEVICES REQUIRING MAINTENANCE UNTIL CONSTRUCTION PHASING AND VEGETATIVE STABILIZATION ALLOW THE REMOVAL OF THOSE CONTROLS, WHICH ARE NO LONGER REQUIRED.

POND CONSTRUCTION SEQUENCE AND NOTES:

THE STORMWATER MANAGEMENT POND SHALL FUNCTION AS A SEDIMENT BASIN DURING ROADWAY CONSTRUCTION AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE STANDARD SPECIFICATIONS:
SECTION 271 - STORMWATER MANAGEMENT POND
SECTION 272 - POND OUTLET STRUCTURE, CONCRETE

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE PER CONSTRUCTION PHASING, MOT AND EROSION AND SEDIMENT CONTROL PLANS.
2. CLEAR AND GRUB FOR INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS.
3. INSTALL PERIMETER SEDIMENT CONTROLS AS SHOWN ON THE CONSTRUCTION PHASING PLANS, MOT AND EROSION AND SEDIMENT CONTROL PLANS.
4. CLEAR AND GRUB REMAINING AREA FOR POND CONSTRUCTION.
5. CONSTRUCT POND OUTLET STRUCTURE AND RIPRAP ENERGY DISSIPATOR AT DOWNSTREAM END OF WEIR WALL. EXCAVATE AS NEEDED TO INSTALL POND OUTLET STRUCTURE. INSTALL SKIMMER DEWATERING DEVICE. DE-WATER FOUNDATION AS NEEDED IN ACCORDANCE WITH SECTION 111 AND USE SUMP PIT FOR PUMPING. LOCATION OF SUMP PIT TO BE DETERMINED IN FIELD.
6. EXCAVATE THE POND AND COMPLETE THE BASIN TO LINES, GRADES, AND DETAILS SHOWN IN THE CONSTRUCTION PLANS. OVEREXCAVATE THE BOTTOM OF THE POOL 2 FEET FOR SEDIMENT STORAGE. DURING EXCAVATION, THE CONTRACTOR SHALL SALVAGE AND STOCKPILE ANY SOILS CLASSIFIED AS CH, CL, CH, AND GM PER THE UNIFIED SOIL CLASSIFICATION SYSTEM TO BE USED TO CONSTRUCT EMBANKMENT. THE ABOVE CLASSIFIED SOILS MAY BE OBTAINED FROM ELSEWHERE WITHIN THE PROJECT LIMITS.
7. STABILIZE ALL BARE AREAS BELOW ELEV. 72.00, EXCLUDING THE POND BOTTOM, WITH WET SEED MIX AND ABOVE ELEV. 72.00 WITH DRY SEED MIX.

MAINTENANCE OF POND AS A SEDIMENT BASIN

1. SEE SHEET CS-30 FOR SB723 BASIN DETAILS. PLACE EXTERIOR GRADE PLYWOOD ACROSS WEIR OPENING IN ORDER TO FORM CREST AT ELEVATION 72.92. PLYWOOD SHALL BE AFFIXED TO WEIR WALL USING CONSTRUCTION ADHESIVE OR OTHER APPROVED MEANS. SKIMMER DEVICE SHALL BE ATTACHED TO PLYWOOD BAFFLE AT PERMANENT POOL ELEVATION 71.00. THE COST OF THE BAFFLE AND SKIMMER DEVICE AND MAINTENANCE AND/OR REPLACEMENT OF BOTH THROUGHOUT CONSTRUCTION SHALL BE INCIDENTAL TO ITEM 272500.
2. CONTRACTOR SHALL INSPECT THE BASIN IMMEDIATELY AFTER EVERY RAIN AND MAKE REPAIRS AS NEEDED.
3. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION, 72.09, ON A STAKE DRIVEN INTO THE GROUND AT A LOCATION CLEARLY VISIBLE FROM THE EMBANKMENT. SEDIMENT SHALL BE REMOVED WHEN CLEANOUT ELEVATION IS REACHED AND DISPOSED OF AT A LOCATION APPROVED BY THE ENGINEER.

CONVERSION TO PERMANENT STORMWATER MANAGEMENT POND

1. CONVERT THE BASIN INTO THE PERMANENT STORMWATER MANAGEMENT POND AFTER ALL AREAS DRAINING TO THE POND HAVE BEEN PERMANENTLY STABILIZED AND THE ENGINEER HAS APPROVED THE CONVERSION.
2. REMOVE EXCESS ACCUMULATED SEDIMENT ON THE POND BOTTOM AND BENCHES, IF ANY, TO THE SPECIFIED FINISHED LINES AND GRADES SHOWN IN THE PLAN AND DISPOSE SEDIMENT AT A LOCATION APPROVED BY THE ENGINEER. IF ELEVATION OF ACCUMULATED SEDIMENT IN POOL BOTTOMS IS BELOW THE PROPOSED FINISHED ELEVATION, ADDITIONAL FILL MATERIAL SHALL NOT BE PLACED IN POND.
3. PUMP DOWN STANDING WATER IN THE POND AS NECESSARY AND COMPLETE STABILIZATION OF ALL BARE AREAS, REMOVE EROSION AND SEDIMENT CONTROL MEASURES, AND REMOVE SKIMMER DEWATERING DEVICE AND PLYWOOD.

N:\33653-000\CONTRACT 1A\CADD\SW10-738U301_1A.dgn
5/8/2015 7:28:46 AM

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

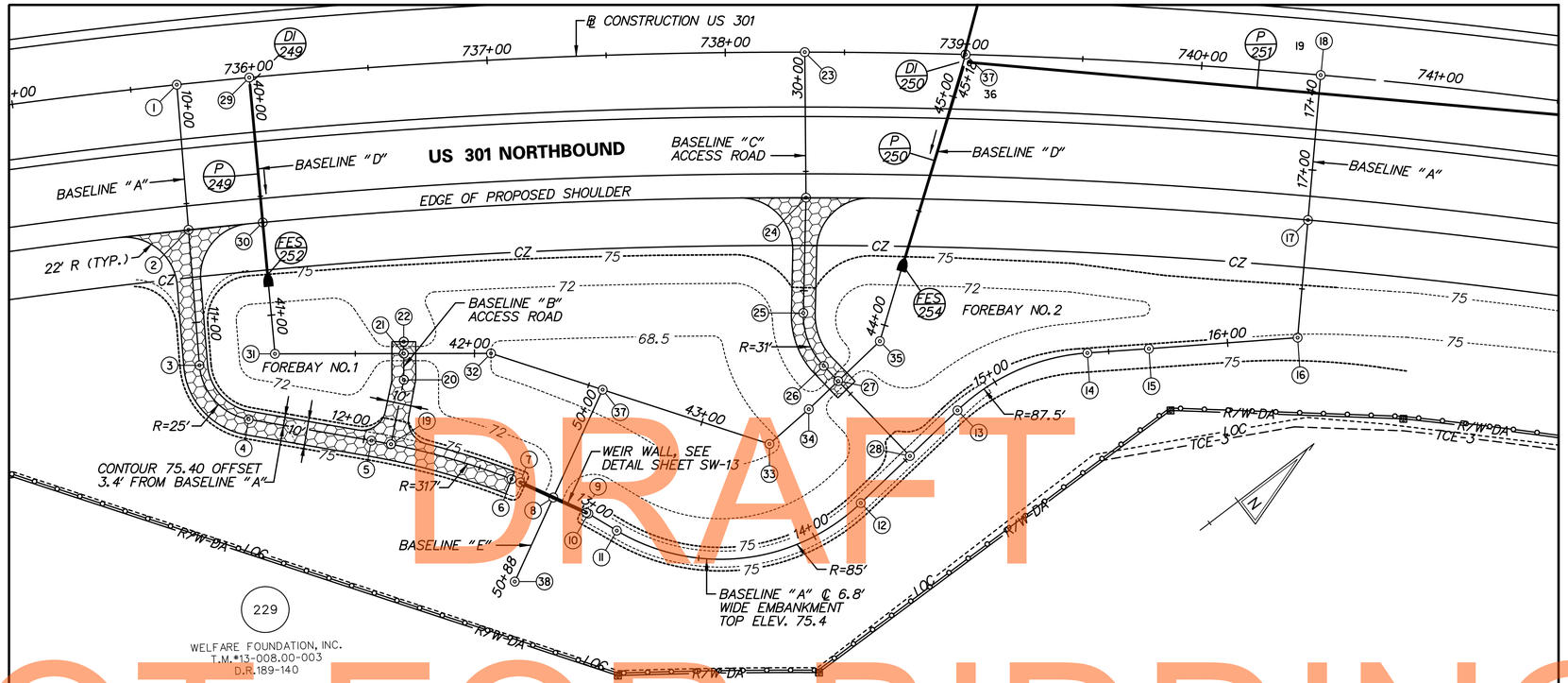
SCALE 0 30 60 90 FEET

US 301, SR 896 TO SR 1

CONTRACT T200911308 | COUNTY NEW CASTLE | BRIDGE NO. | DESIGNED BY: DLH | CHECKED BY: JDC

STORMWATER MANAGEMENT PLAN BMP 723

SW-10 | SHEET NO. 631 | TOTAL SHTS. 875



STAKEOUT PLAN - SWM BMP NO. 723 STA. 735+50 TO STA. 740+00, WET POND

EMBANKMENT BASELINE "A" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
1	POB STA.10+00.00	553830.81	579034.09
2	PI STA.10+61.02	553798.29	579085.72
3	PC STA.11+18.00	553767.93	579133.94
4	PT STA.11+50.96	553770.90	579164.42
5	PC STA.12+03.22	553806.76	579202.42
6	PT STA.12+64.26	553844.14	579250.56
7	PI STA.12+68.19	553846.24	579253.89
8	PI STA.12+83.39	553853.51	579267.24
9	PI STA.12+98.59	553860.78	579280.59
10	PI STA.12+99.58	553861.26	579281.46
11	PC STA.13+13.48	553866.54	579294.31
12	PT STA.14+24.10	553955.38	579346.39
13	PC STA.14+80.29	554011.16	579339.63
14	PT STA.15+41.03	554069.17	579353.01
15	PI STA.15+66.91	554090.90	579367.05
16	PI STA.16+29.47	554143.62	579400.74
17	PI STA.16+78.96	554176.64	579363.88
18	POE STA.17+39.96	554217.33	579318.43

ACCESS ROAD BASELINE "B" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
19	POB STA.20+00.00	553812.41	579208.57
20	PI STA.20+27.53	553832.90	579190.18
21	PI STA.20+38.53	553839.48	579181.36
22	PI STA.20+43.53	553842.46	579177.35

ACCESS ROAD BASELINE "C" STAKEOUT INFORMATION

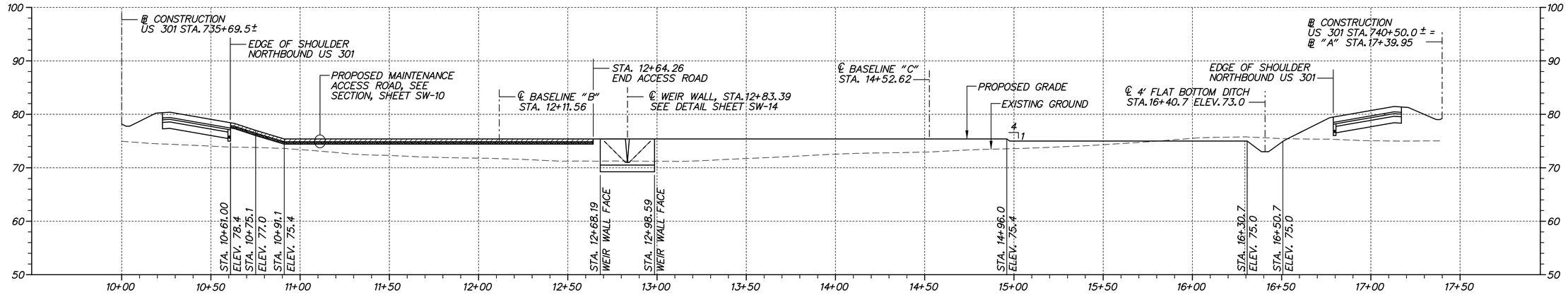
POINT NO.	STATION	NORTHING	EASTING
23	POB STA.30+00.00	554049.86	579181.05
24	PI STA.30+61.00	554013.71	579230.19
25	PC STA.31+09.36	553983.82	579268.19
26	PT STA.31+33.75	553977.41	579291.08
27	PI STA.31+42.53	553978.47	579299.79
28	POE STA.31+86.01	553983.69	579342.96

BASELINE "D" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
29	POB STA.40+00.00	553856.94	579049.90
30	PI STA.40+61.00	553825.06	579101.91
31	PI STA.41+16.30	553796.15	579149.06
32	PI STA.42+06.93	553868.80	579203.23
33	PI STA.43+29.75	553939.56	579303.63
34	PI STA.43+51.77	553961.50	579301.85
35	PI STA.43+93.02	554002.46	579296.89
36	POE STA.45+18.45	554103.28	579222.26

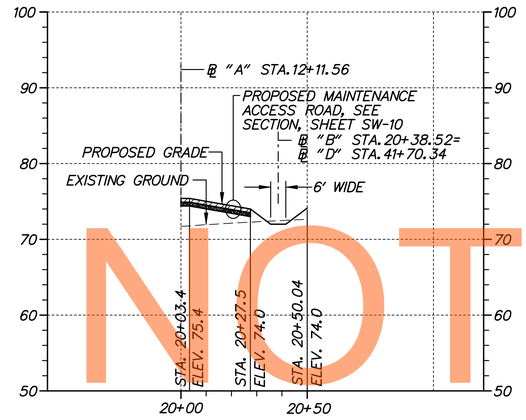
BASELINE "E" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
37	POB STA.50+00.00	553897.17	579243.49
38	POE STA.50+88.46	553819.47	579285.76



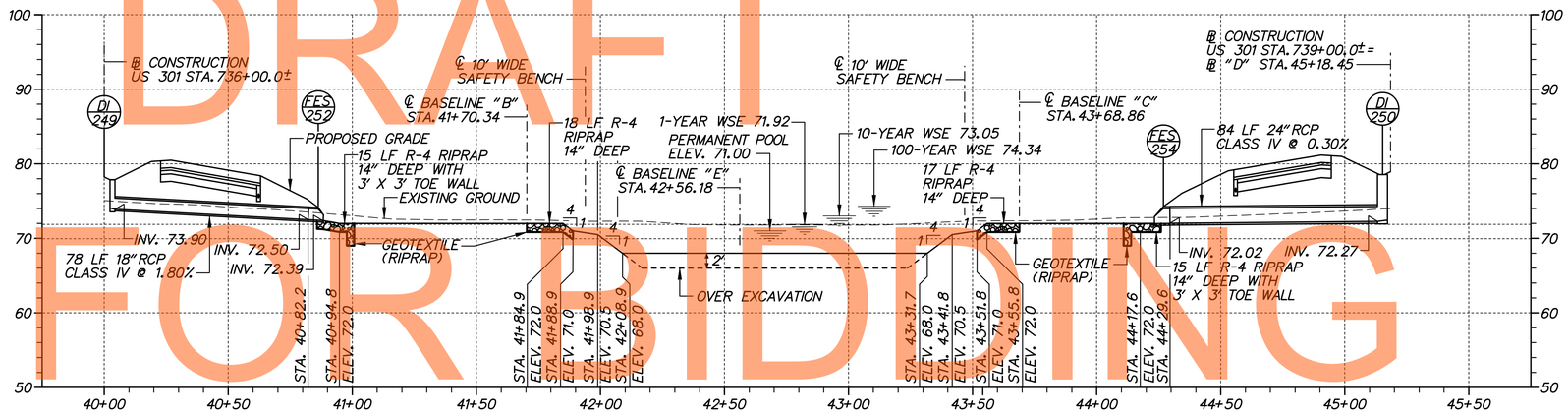
PROFILE – POND EMBANKMENT – BMP 723 BASELINE "A"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



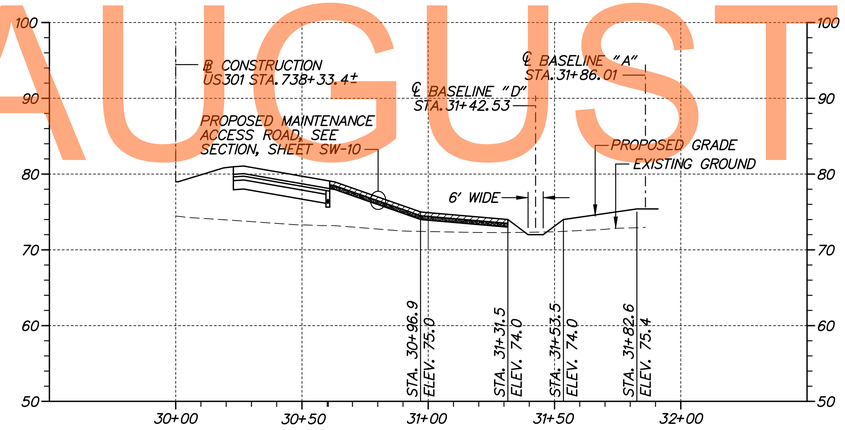
PROFILE – ACCESS ROAD – BMP 723 BASELINE "B"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



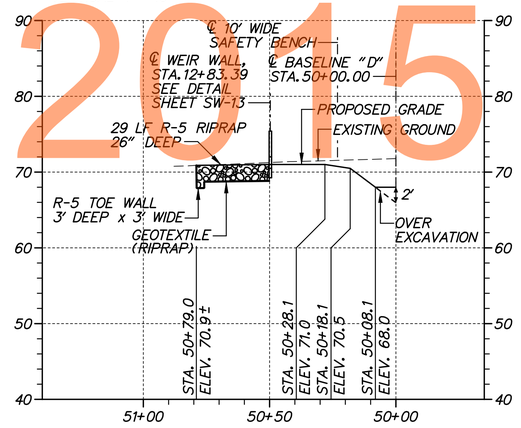
PROFILE – BMP 723 BASELINE "D"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



PROFILE – ACCESS ROAD – BMP 723 BASELINE "C"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



PROFILE – BMP 723 BASELINE "E"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'

RIPRAP NOTES:

1. RIPRAP CUTOFF AND TOE WALLS SHALL BE MEASURED BELOW THE NORMAL RIPRAP PAD DEPTH AND PAID PER TON (ITEMS 712020 AND 712021).
2. THE 26" DEPTH FOR R-5 RIPRAP SHALL CONSIST OF 20" R-5 RIPRAP AND 6" OF DE NO. 57 STONE.

n:\31653-000\contract to\cadd\SW12-738U301_1A.dgn
10/31/2014 1:41:36 PM

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

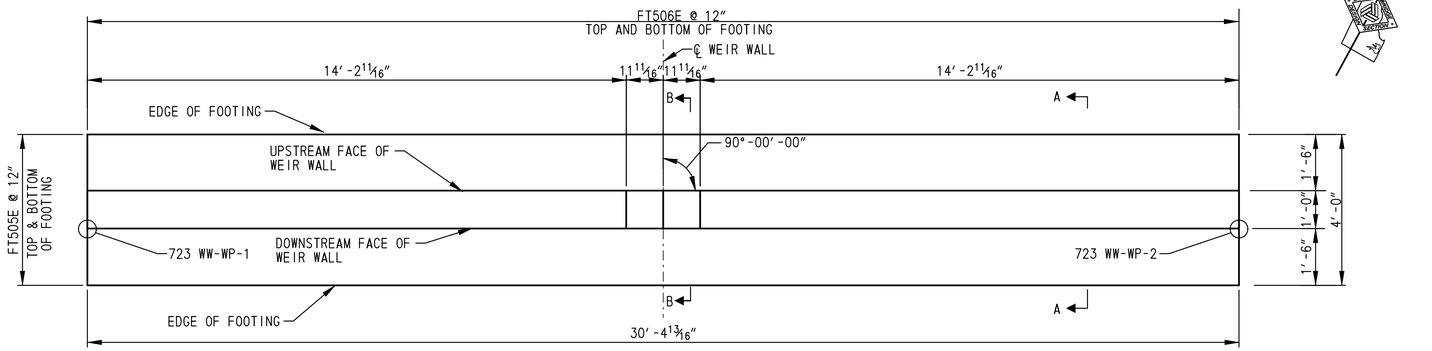
SCALE 0 30 60 90 FEET

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.
T200911308	
COUNTY	DESIGNED BY: DLH
NEW CASTLE	CHECKED BY: JDC

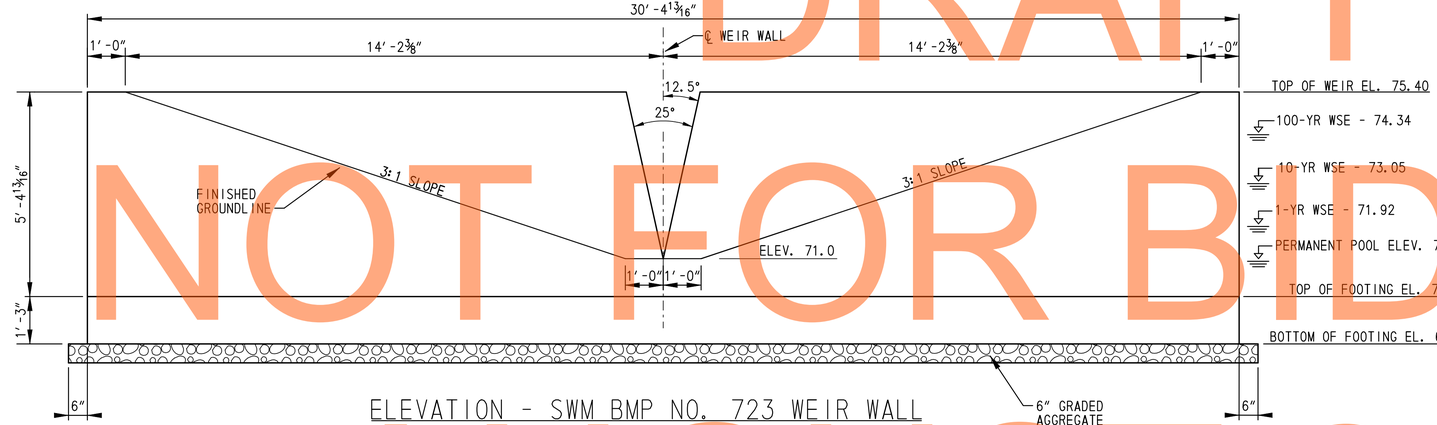
STORMWATER MANAGEMENT PROFILES BMP 723

SW-12	
SHEET NO.	633
TOTAL SHTS.	875



PLAN - SWM BMP NO. 723 WEIR WALL

SCALE: 1/2" = 1′



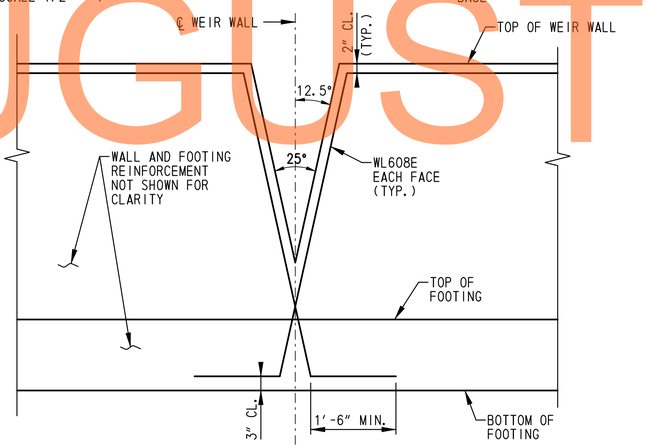
ELEVATION - SWM BMP NO. 723 WEIR WALL

SCALE: 1/2" = 1′

WORKING POINT COORDINATES		
WORKING POINT	NORTHING	EASTING
723 WW-WP-1	553845.8061	579254.1284
723 WW-WP-2	553860.3443	579280.8267

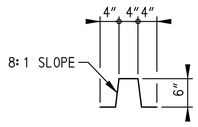
NOTES:

1. MAXIMUM FACTORED BEARING RESISTANCE FOR WEIR WALL IS 2 KSF.
2. KEYS ARE NOMINAL SIZE.
3. CONCRETE SHALL BE CLASS A, 4500 PSI.
4. RIPRAP NOT SHOWN FOR CLARITY.
5. E.F. = EACH FACE, E.S.=EQUAL SPACING.
6. SEE REINFORCING BAR LIST ON DRAWINGS SW-34 AND SW-35.
7. 6" GRADED AGGREGATE BASE BEDDING SHALL BE INCIDENTAL TO THE CONTRACT UNIT COST FOR THE WEIR WALL.



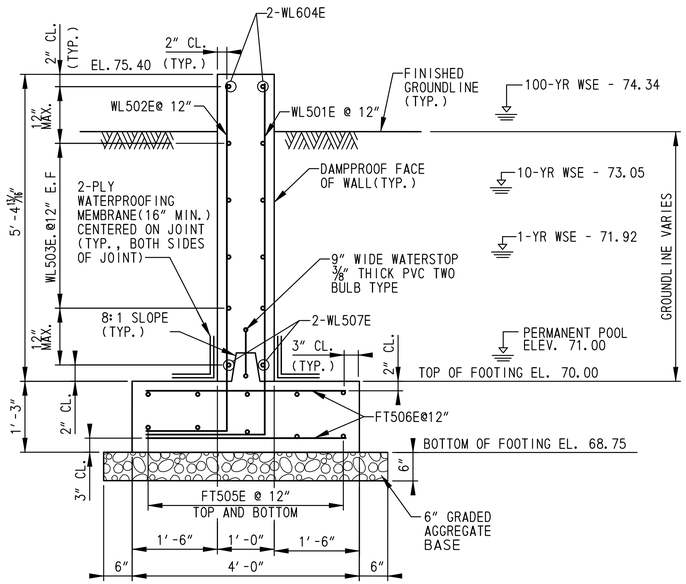
ADDITIONAL REINFORCEMENT AT WEIR WALL OPENING

SCALE: 3/4" = 1′



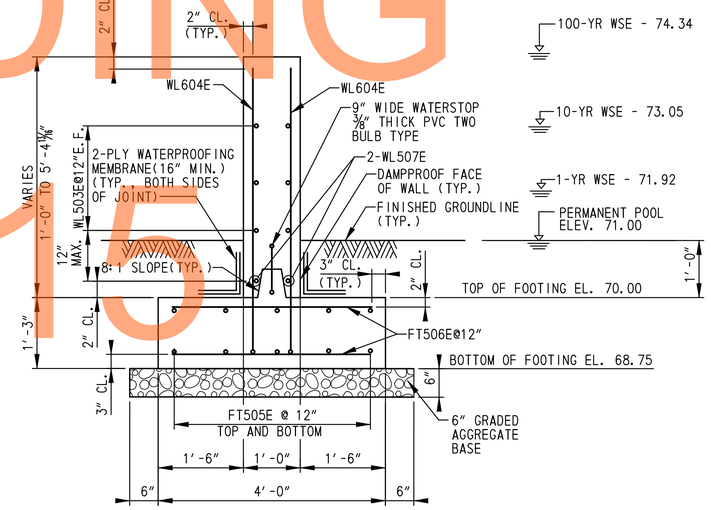
CONSTRUCTION JOINT DETAIL

SCALE: 3/4"=1′-0"



SECTION A-A

SCALE: 3/4"=1′-0"



SECTION B-B

SCALE: 3/4"=1′-0"

n:\31653-000\contract 1a\cadd\SW13-738U301_1A.dgn
10/31/2014 11:41:39 PM

DELAWARE DEPARTMENT OF TRANSPORTATION

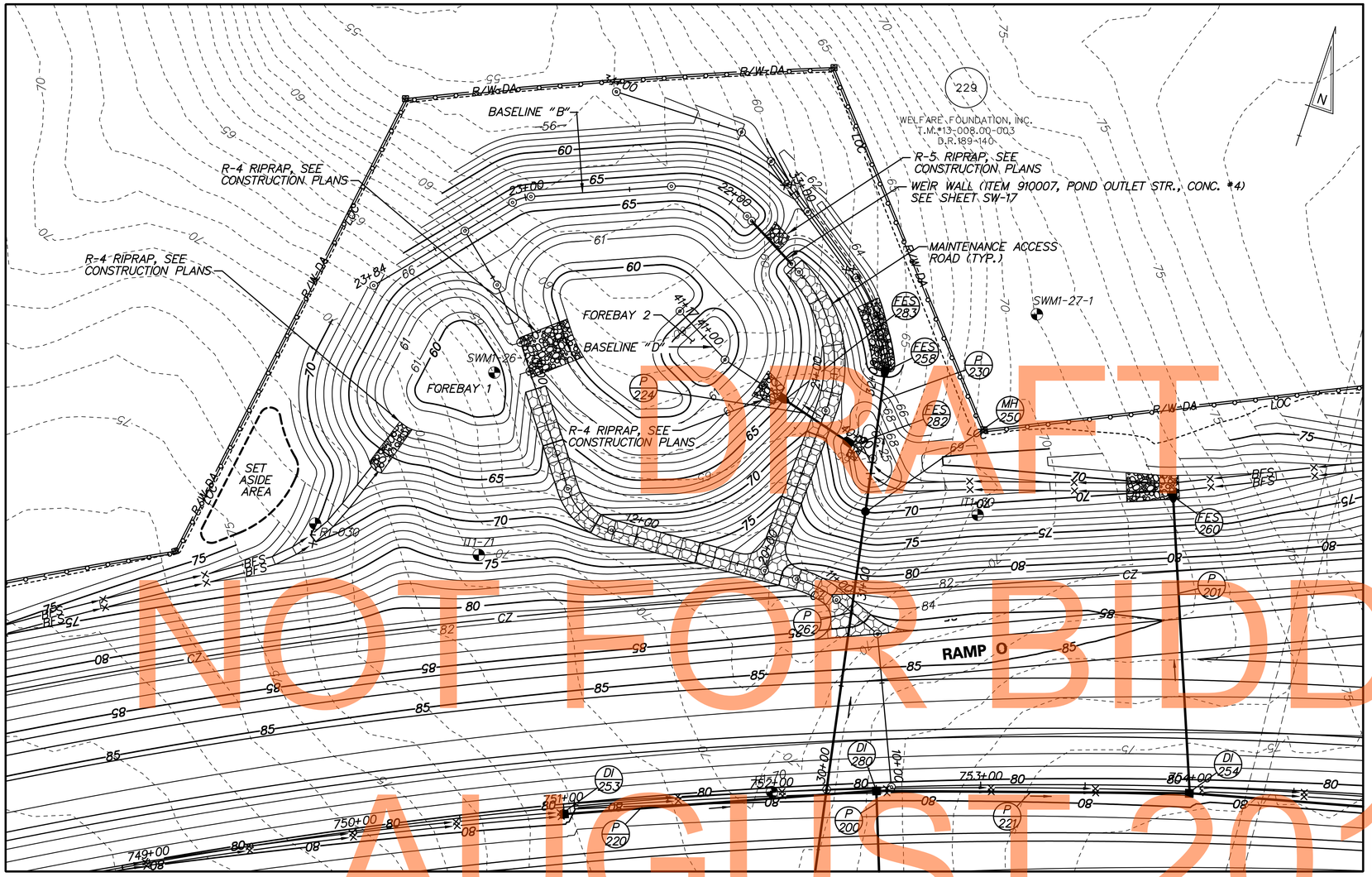
ADDENDUMS / REVISIONS	

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.
T200911308	
COUNTY	DESIGNED BY: HQ
NEW CASTLE	CHECKED BY: JAG

STORMWATER MANAGEMENT DETAILS BMP 723

SW-13
SHEET NO. 634
TOTAL SHTS. 875



PLAN – SWM BMP NO. 725 STA. 749+50 TO STA. 752+50, WET POND

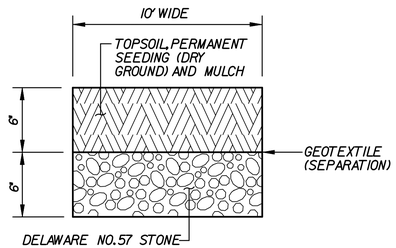
SCALE: 1" = 30'

BMP NO. 725 – DESIGN SUMMARY				
DESIGN STORM	FACILITY INFLOW (CFS)	FACILITY DISCHARGE (CFS)	WATER SURFACE ELEVATION	STORAGE VOLUME (AC-FT)
PERM. POOL	N. A.	N. A.	62. 00	0. 77
1-YEAR	5. 1	0. 5	62. 53	0. 20
10-YEAR	16. 9	3. 4	63. 50	0. 59
100-YEAR	37. 6	13. 4	64. 73	1. 16

HAZARD CLASSIFICATION "A" AS PER POND CODE 378

DRAINAGE AREA TO FACILITY: 7.23 ACRES

MANAGEMENT PROVIDED BY THE FACILITY: WATER QUALITY CONTROL VIA EXTENDED DETENTION FOR 1-YEAR RESOURCE PROTECTION STORM AND QUANTITY CONTROL FOR THE 10 AND 100-YEAR EVENTS.



POND MAINTENANCE ACCESS ROAD

SCALE: NONE

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS OF ALL STORMWATER MANAGEMENT FACILITIES, SUCH AS PONDS, BIOFILTRATION SWALES, BIO-RETENTION AREAS, ETC. THE "AS-BUILT" DRAWINGS SHALL SHOW THE ACTUAL FINISHED GROUND CONTOURS, OUTLET STRUCTURE DIMENSIONS AND ELEVATIONS, ETC., AS THEY EXIST AT THE COMPLETION OF THE PROJECT. THESE DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER OR LAND SURVEYOR REGISTERED IN THE STATE OF DELAWARE. ALL "AS-BUILT" DRAWINGS SHALL BE SENT TO THE DELDOT STORMWATER ENGINEER. ALL COSTS FOR THIS WORK SHALL BE INCLUDED UNDER ITEM 763501 - CONSTRUCTION ENGINEERING.
2. STORMWATER MANAGEMENT PONDS SERVING AS TEMPORARY SEDIMENT BASINS DURING CONSTRUCTION SHALL HAVE SEDIMENT REMOVED AT TIMES DETERMINED BY THE ENGINEER AND AT THE CONCLUSION OF THE PROJECT AFTER ALL AREAS DRAINING TO THE POND HAVE BEEN VEGETATIVELY STABILIZED. COST FOR SEDIMENT REMOVAL SHALL BE PAID FOR UNDER ITEM 250000 - SEDIMENT REMOVAL. ACCESS SHALL BE MAINTAINED TO ALL SEDIMENT REMOVAL CONTROL DEVICES REQUIRING MAINTENANCE UNTIL CONSTRUCTION PHASING AND VEGETATIVE STABILIZATION ALLOW THE REMOVAL OF THOSE CONTROLS, WHICH ARE NO LONGER REQUIRED.

POND CONSTRUCTION SEQUENCE AND NOTES:

THE STORMWATER MANAGEMENT POND SHALL FUNCTION AS A SEDIMENT BASIN DURING ROADWAY CONSTRUCTION AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE STANDARD SPECIFICATIONS:
SECTION 271 - STORMWATER MANAGEMENT POND
SECTION 272 - POND OUTLET STRUCTURE, CONCRETE

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE PER CONSTRUCTION PHASING, MOT AND EROSION AND SEDIMENT CONTROL PLANS.
2. CLEAR AND GRUB FOR INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS.
3. INSTALL PERIMETER SEDIMENT CONTROLS AS SHOWN ON THE CONSTRUCTION PHASING PLANS, MOT AND EROSION AND SEDIMENT CONTROL PLANS.
4. CLEAR AND GRUB REMAINING AREA FOR POND CONSTRUCTION.
5. CONSTRUCT POND OUTLET STRUCTURE AND RIPRAP ENERGY DISSIPATOR AT DOWNSTREAM END OF WEIR WALL. EXCAVATE AS NEEDED TO INSTALL POND OUTLET STRUCTURE. INSTALL SKIMMER DEWATERING DEVICE. DE-WATER FOUNDATION AS NEEDED IN ACCORDANCE WITH SECTION 111 AND USE SUMP PIT FOR PUMPING. LOCATION OF SUMP PIT TO BE DETERMINED IN THE FIELD.
6. EXCAVATE THE POND AND COMPLETE THE BASIN TO LINES, GRADES, AND DETAILS SHOWN IN THE CONSTRUCTION PLANS. OVEREXCAVATE THE BOTTOM OF THE POOL 2 FEET FOR SEDIMENT STORAGE. DURING EXCAVATION, THE CONTRACTOR SHALL SALVAGE AND STOCKPILE ANY SOILS CLASSIFIED AS CH, CL, CH, AND GM PER THE UNIFIED SOIL CLASSIFICATION SYSTEM TO BE USED TO CONSTRUCT EMBANKMENT. THE ABOVE CLASSIFIED SOILS MAY BE OBTAINED FROM ELSEWHERE WITHIN THE PROJECT LIMITS.
7. STABILIZE ALL BARE AREAS BELOW ELEV. 63.00, EXCLUDING POND BOTTOM, WITH WET SEED MIX AND ABOVE ELEV. 63.00 WITH DRY SEED MIX.

MAINTENANCE OF POND AS A SEDIMENT BASIN

1. SEE SHEET CS-32 FOR SB725 BASIN DETAILS. PLACE EXTERIOR GRADE PLYWOOD ACROSS WEIR OPENING IN ORDER TO FORM CREST AT ELEVATION 63.60. PLYWOOD SHALL BE AFFIXED TO WEIR WALL USING CONSTRUCTION ADHESIVE OR OTHER APPROVED MEANS. SKIMMER DEVICE SHALL BE ATTACHED TO PLYWOOD BAFFLE AT PERMANENT POOL ELEVATION 62.00. THE COST OF THE BAFFLE AND SKIMMER DEVICE AND MAINTENANCE AND/OR REPLACEMENT OF BOTH THROUGHOUT CONSTRUCTION SHALL BE INCIDENTAL TO ITEM 272500.
2. CONTRACTOR SHALL INSPECT THE BASIN IMMEDIATELY AFTER EVERY RAIN AND MAKE REPAIRS AS NEEDED.
3. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION, 62.80, ON A STAKE DRIVEN INTO THE GROUND AT A LOCATION CLEARLY VISIBLE FROM THE EMBANKMENT. SEDIMENT SHALL BE REMOVED WHEN CLEANOUT ELEVATION IS REACHED AND DISPOSED OF AT A LOCATION APPROVED BY THE ENGINEER.

CONVERSION TO PERMANENT STORMWATER MANAGEMENT POND

1. CONVERT THE BASIN INTO THE PERMANENT STORMWATER MANAGEMENT POND AFTER ALL AREAS DRAINING TO THE POND HAVE BEEN PERMANENTLY STABILIZED AND THE ENGINEER HAS APPROVED THE CONVERSION.
2. REMOVE EXCESS ACCUMULATED SEDIMENT ON THE POND BOTTOM AND BENCHE'S, IF ANY, TO THE SPECIFIED FINISHED LINES AND GRADES SHOWN IN THE PLAN AND DISPOSE SEDIMENT AT A LOCATION APPROVED BY THE ENGINEER. IF ELEVATION OF ACCUMULATED SEDIMENT IN POOL BOTTOMS IS BELOW THE PROPOSED FINISHED ELEVATION, ADDITIONAL FILL MATERIAL SHALL NOT BE PLACED IN POND.
3. PUMP DOWN STANDING WATER IN THE POND AS NECESSARY AND COMPLETE STABILIZATION OF ALL BARE AREAS, REMOVE EROSION AND SEDIMENT CONTROL MEASURES, AND REMOVE SKIMMER DEWATERING DEVICE AND PLYWOOD.

N:\31653-000\CONTRACT 1A\CADD\SW14-752U301_1A.dgn
5/8/2015 2:29:55 PM

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

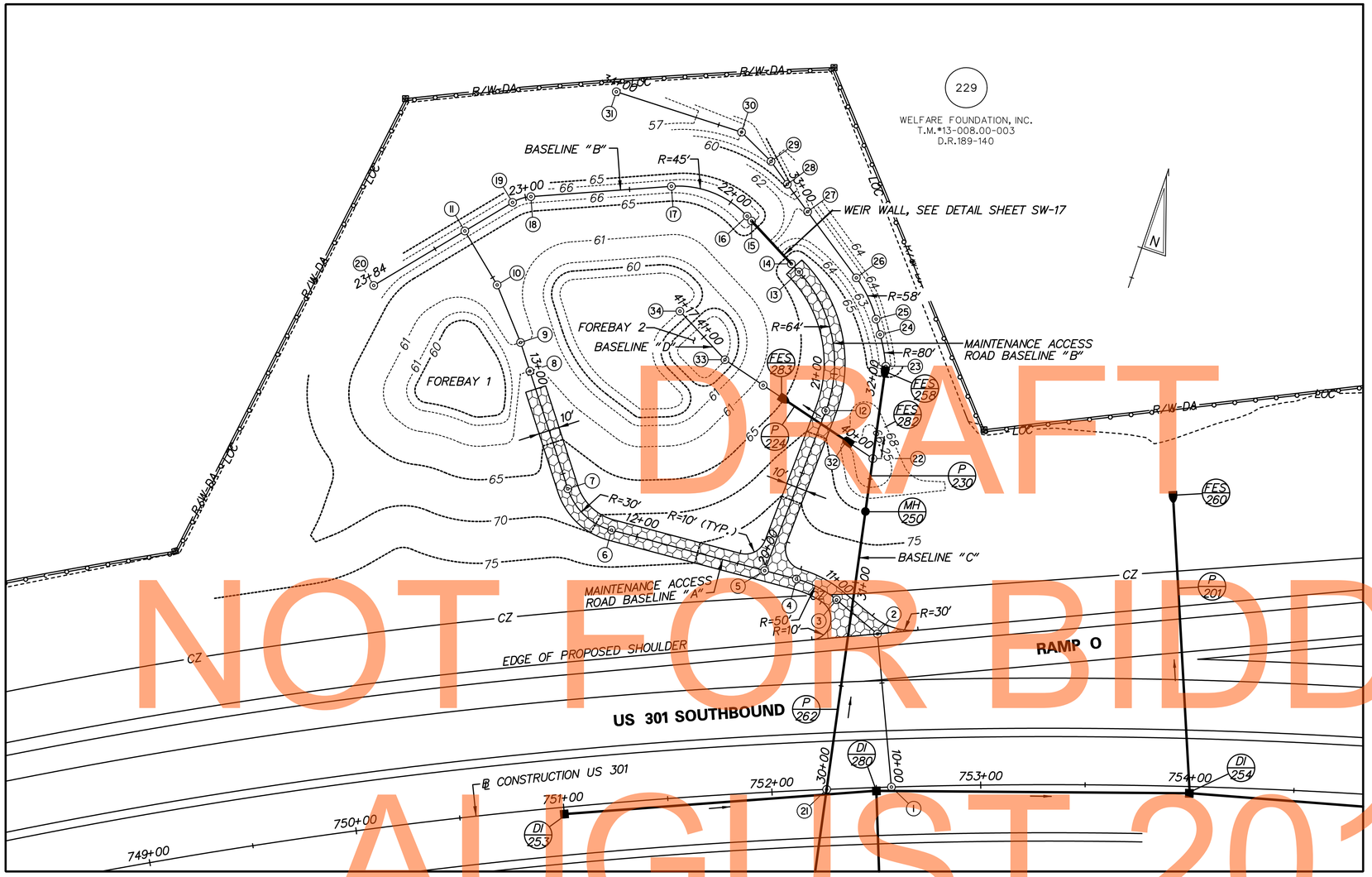
SCALE 0 30 60 90 FEET

US 301, SR 896 TO SR 1

CONTRACT T200911308
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: DLH
CHECKED BY: JDC

STORMWATER MANAGEMENT PLAN BMP 725

SW-14
SHEET NO. 635
TOTAL SHTS. 875



PLAN – SWM BMP NO. 725 STA. 749+50 TO STA. 752+50, WET POND

SCALE: 1" = 30'

ACCESS ROAD BASELINE "A" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
1	POB STA.10+00.00	554891.36	580305.80
2	PI STA.10+73.59	554958.62	580275.91
3	PC STA.10+99.09	554967.77	580252.12
4	PT STA.11+20.91	554970.98	580230.71
5	PI STA.11+36.63	554969.90	580215.02
6	PC STA.12+12.50	554964.66	580139.34
7	PT STA.12+42.50	554976.67	580113.20
8	PI STA.13+01.67	555024.13	580077.86
9	PI STA.13+16.09	555035.70	580069.26
10	PI STA. 13+45.84	555058.16	580049.75
11	POE STA.13+75.94	555077.65	580026.82

ACCESS ROAD BASELINE "B" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
5	POB STA.20+00.00	554969.90	580215.02
12	PC STA.20+81.95	555051.79	580218.12
13	PT STA.21+53.22	555110.52	580184.57
14	PI STA.21+58.47	555113.02	580179.94
15	PI STA.21+86.47	555126.32	580155.30
16	PC STA.21+89.65	555127.83	580152.51
17	PT STA.22+29.94	555129.67	580113.59
18	PC STA.22+97.39	555103.38	580051.48
19	PT STA.23+06.70	555097.92	580044.04
11	PI STA.23+33.30	555077.65	580026.82
20	POE STA.23+84.14	555038.91	579993.89

BASELINE "C" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
21	POB STA.30+00.00	554880.32	580276.80
22	PI STA.31+59.86	555037.35	580246.83
23	PC STA.32+04.44	555081.13	580238.47
24	PT STA.32+19.87	555094.65	580231.02
25	PC STA.32+27.49	555101.02	580226.82
26	PT STA.32+49.55	555116.71	580211.52
27	PI STA.32+88.84	555139.14	580179.26
28	PI STA.33+05.19	555148.48	580165.83
29	PI STA.33+18.61	555156.31	580154.94
30	PI STA.33+38.51	555165.04	580137.06
31	POE STA.34+01.51	555164.05	580074.06

BASELINE "D" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
22	POB STA.40+00.00	555037.35	580246.83
32	PI STA.40+15.14	555041.26	580232.20
33	PI STA.40+85.16	555059.36	580164.56
34	POE STA.41+16.86	555074.42	580136.66

r:\31653-000\contract 1a\cadd\SW15-752U301_1A.dgn
10/31/2014 1:41:59 PM

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

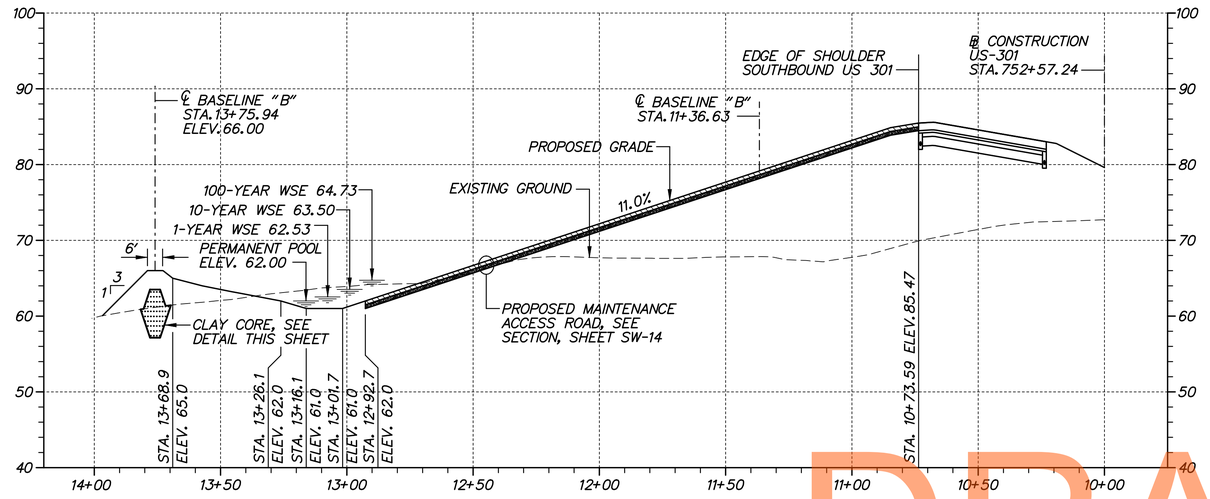
SCALE
0 30 60 90
FEET

US 301,
SR 896 TO SR 1

CONTRACT T200911308
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: DLH
CHECKED BY: JDC

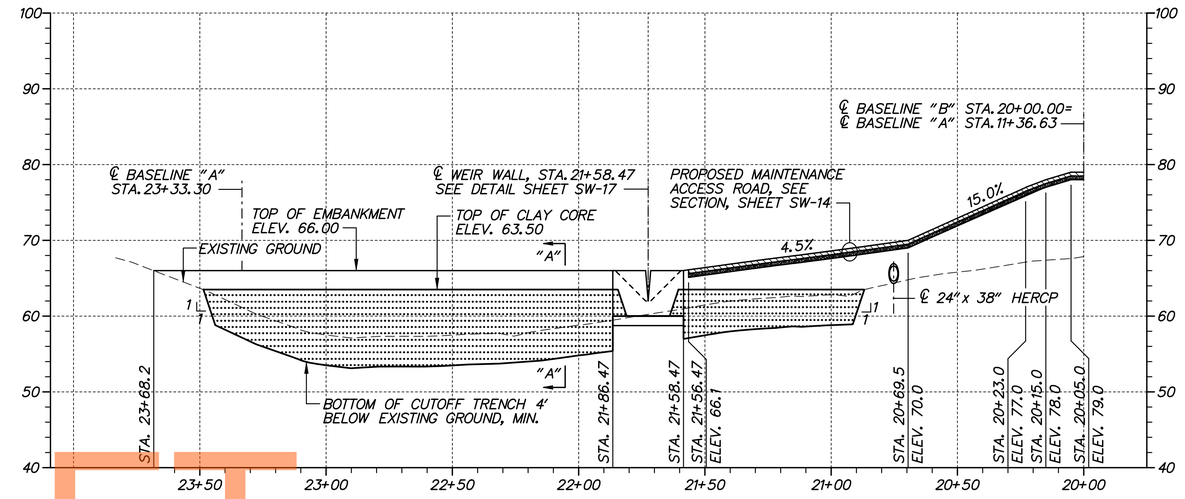
STORMWATER MANAGEMENT STAKEOUT PLAN BMP 725

SW-15
SHEET NO. 636
TOTAL SHTS. 875



PROFILE – MAINTENANCE ACCESS – BMP 725 BASELINE "A"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



PROFILE – MAINTENANCE ACCESS – BMP 725 BASELINE "B"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'

PROFILE – 24" x 38" HERCP – BMP 725 BASELINE "C"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'

PROFILE – 24" x 38" HERCP – BMP 725 BASELINE "D"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'

SECTION A–A

SCALE: 1"=5' H & V

RIPRAP NOTES:

1. RIPRAP CUTOFF AND TOE WALLS SHALL BE MEASURED BELOW THE NORMAL RIPRAP PAD DEPTH AND PAID PER TON (ITEMS 712020 AND 712021).
2. THE 26" DEPTH FOR R-5 RIPRAP SHALL CONSIST OF 20" R-5 RIPRAP AND 6" OF DE NO. 57 STONE.

n:\31653-000\contract to\cadd\SW16-752U301_1A.dgn
10/31/2014 11:20:3 PM

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

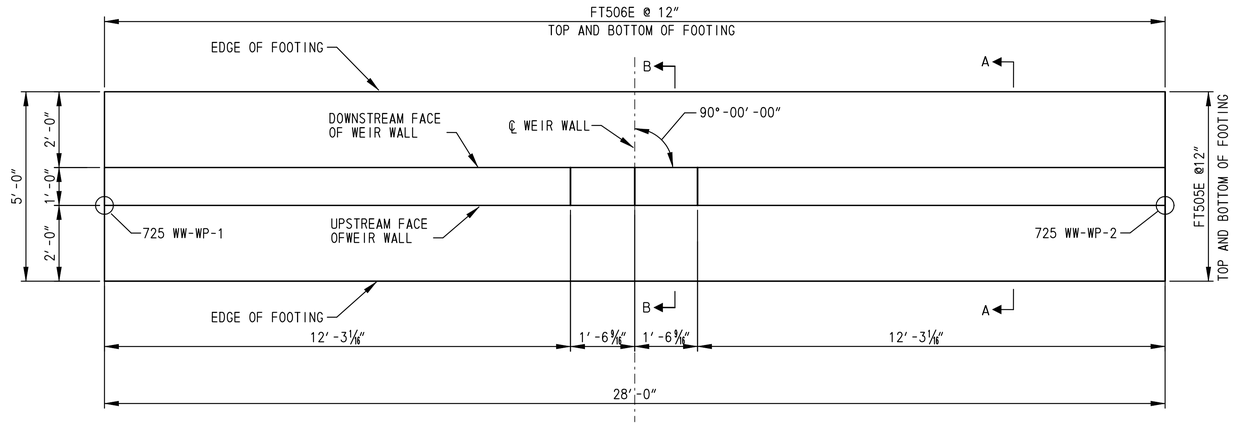
SCALE
0 30 60 90
FEET

US 301,
SR 896 TO SR 1

CONTRACT T200911308
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: DLH
CHECKED BY: JDC

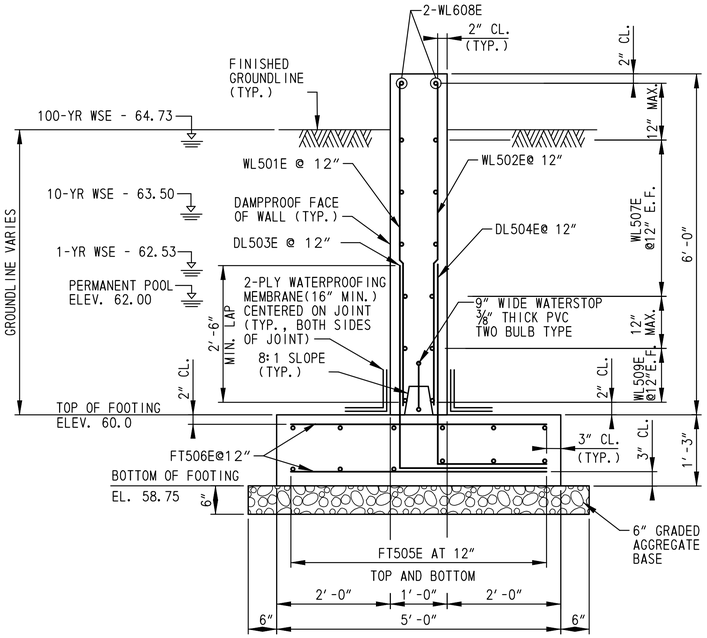
STORMWATER MANAGEMENT PROFILES BMP 725

SW-16
SHEET NO. 637
TOTAL SHTS. 875



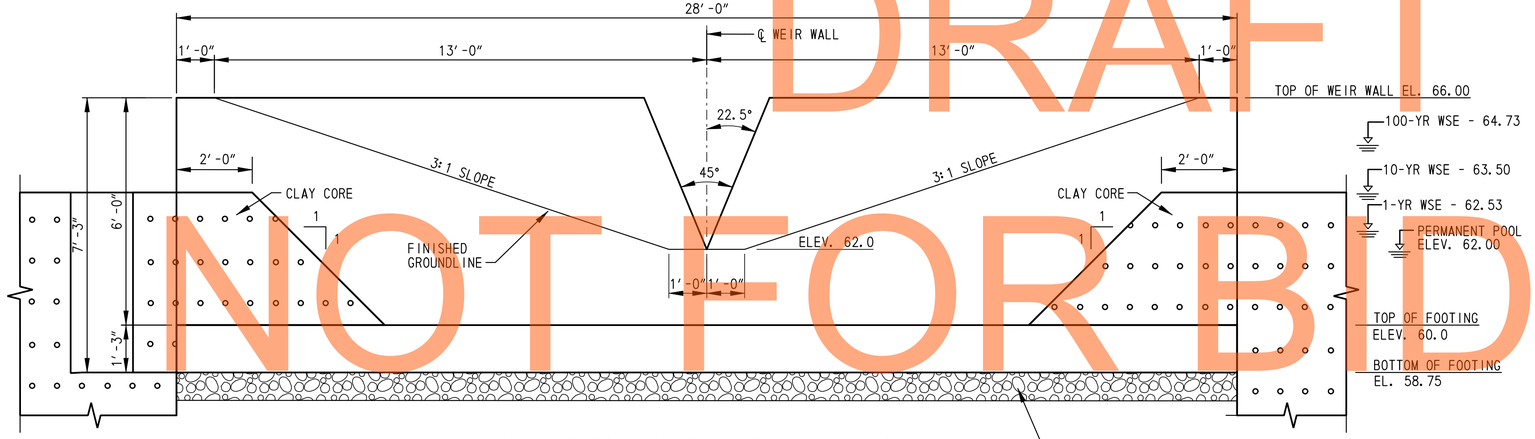
PLAN - SWM BMP NO. 725 WEIR WALL

SCALE: 1/2" = 1'



SECTION A-A

SCALE: 3/4"=1'-0"



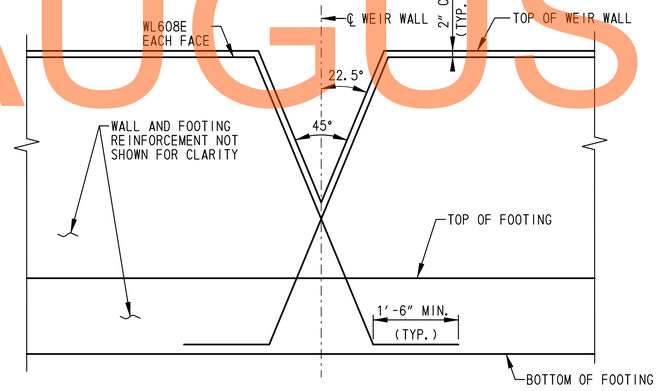
ELEVATION - SWM BMP NO. 725 WEIR WALL

SCALE: 1/2" = 1'

WORKING POINT COORDINATES		
WORKING POINT	NORTHING	EASTING
725 WW-WP-1	555125.8816	580155.0648
725 WW-WP-2	555112.5809	580179.7041

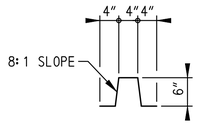
NOTES:

1. MAXIMUM FACTORED BEARING RESISTANCE FOR WEIR WALL IS 2 KSF.
2. KEYS ARE NOMINAL SIZE.
3. CONCRETE SHALL BE CLASS A, 4500 PSI.
4. RIPRAP NOT SHOWN FOR CLARITY.
5. E.F. = EACH FACE, E.S. = EQUAL SPACING.
6. SEE REINFORCING BAR LIST ON DRAWINGS SW-34 AND SW-35.
7. THE CLAY CORE SHALL BE COMPACTED TO AT LEAST 95% OF THE LABORATORY MAXIMUM DENSITY AS DETERMINED BY AASHTO T99 METHOD C FOR A DISTANCE OF 5'-0" MINIMUM ON EITHER SIDE OF THE WEIR WALL FOOTING ALONG THE CENTERLINE OF EMBANKMENT/CLAY CORE.
8. 6" GRADED AGGREGATE BASE BEDDING SHALL BE INCIDENTAL TO THE CONTRACT UNIT COST FOR THE WEIR WALL.



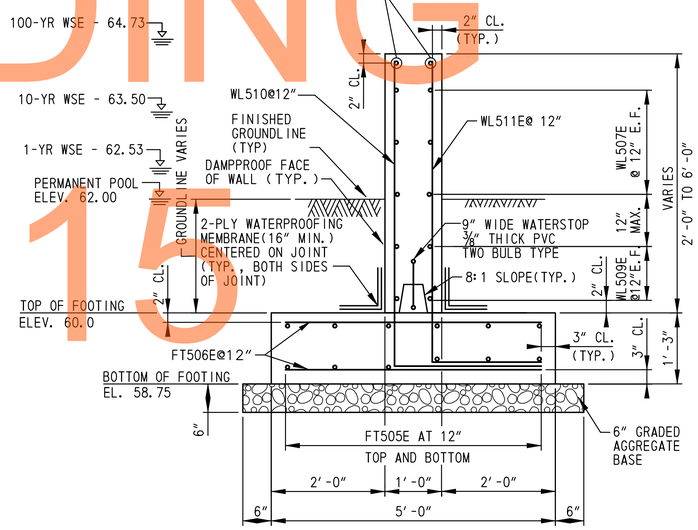
ADDITIONAL REINFORCEMENT AT WEIR WALL OPENING

N.T.S.



CONSTRUCTION JOINT DETAIL

SCALE: 3/4"=1'-0"

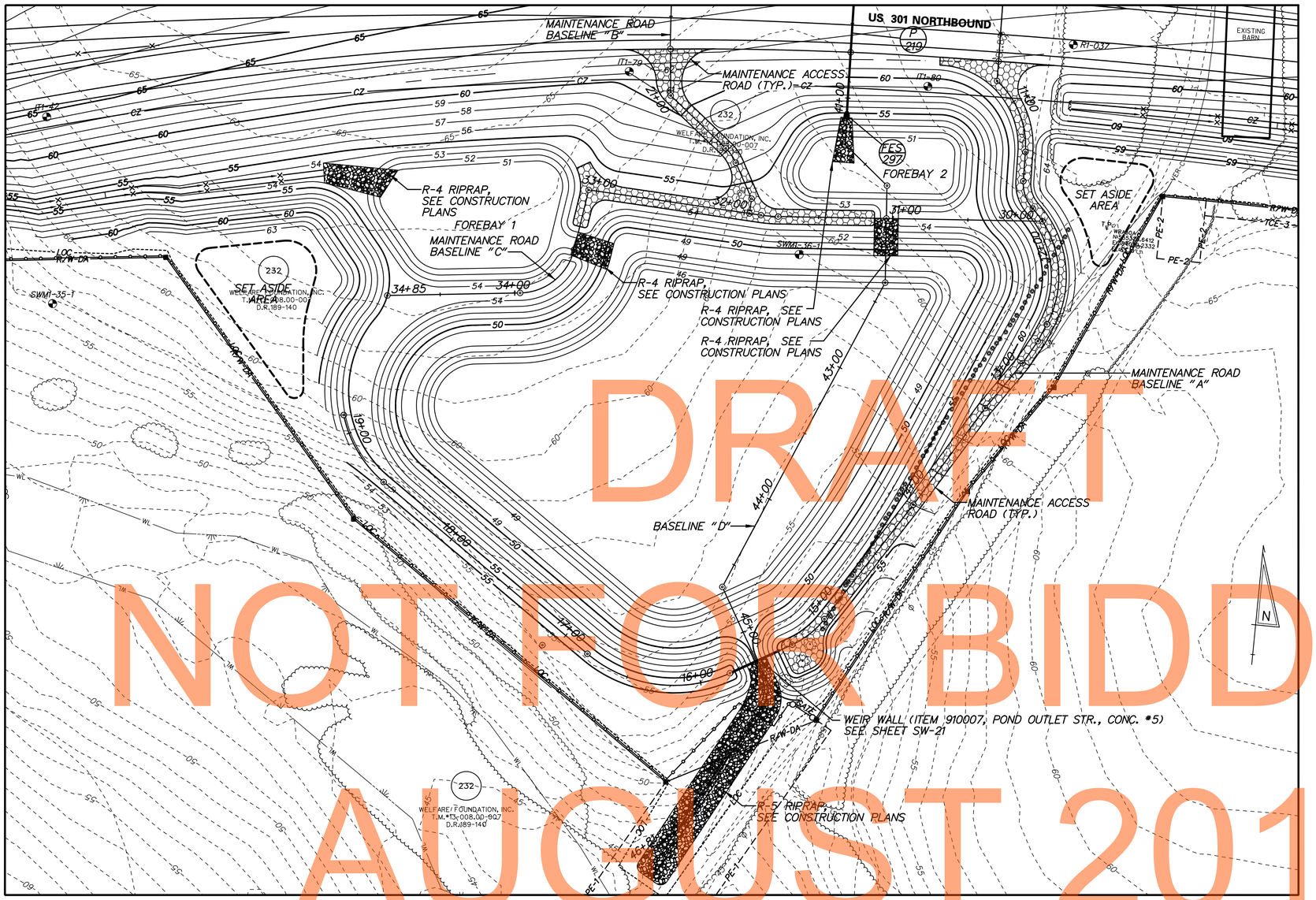


SECTION B-B

SCALE: 3/4"=1'-0"

r:\31653-000\contract to\cadd\SW17-752U301_1A.dgn
10/31/2014 11:42:10 PM

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO.	STORMWATER MANAGEMENT DETAILS BMP 725	SW-17
			COUNTY NEW CASTLE	DESIGNED BY: HQ		SHEET NO. 638
				CHECKED BY: JAG		TOTAL SHTS. 875



PLAN – SWM BMP NO. 731 STA. 783+50 TO STA. 790+00, WET POND

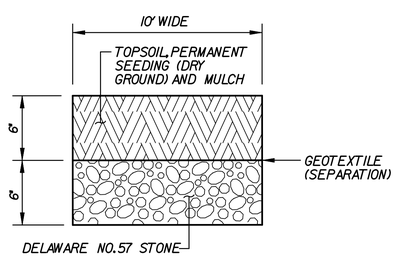
SCALE: 1" = 40'

BMP NO. 731 – DESIGN SUMMARY				
DESIGN STORM	FACILITY INFLOW (CFS)	FACILITY DISCHARGE (CFS)	WATER SURFACE ELEVATION	STORAGE VOLUME (AC-FT)
PERM. POOL	N. A.	N. A.	50. 00	7. 40
1-YEAR	22. 60	4. 0	50. 92	1. 53
10-YEAR	79. 90	30. 3	52. 13	3. 93
100-YEAR	184. 50	106. 1	53. 54	7. 11

HAZARD CLASSIFICATION "A" AS PER POND CODE 378

DRAINAGE AREA TO FACILITY: 62.49 ACRES

MANAGEMENT PROVIDED BY FACILITY: WATER QUALITY CONTROL VIA EXTENDED DETENTION FOR 1-YEAR RESOURCE PROTECTYION STORM AND QUANTITY CONTROL FOR THE 10 AND 100-YEAR EVENTS.



POND MAINTENANCE ACCESS ROAD

SCALE: NONE

POND CONSTRUCTION SEQUENCE AND NOTES:

THE STORMWATER MANAGEMENT POND SHALL FUNCTION AS A SEDIMENT BASIN DURING ROADWAY CONSTRUCTION AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE STANDARD SPECIFICATIONS:
- SECTION 271 – STORMWATER MANAGEMENT POND
- SECTION 272 – POND OUTLET STRUCTURE, CONCRETE

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE PER CONSTRUCTION PHASING, MOT AND EROSION AND SEDIMENT CONTROL PLANS.
2. CLEAR AND GRUB FOR INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS.
3. INSTALL PERIMETER SEDIMENT CONTROLS AS SHOWN ON THE CONSTRUCTION PHASING PLANS, MOT AND EROSION AND SEDIMENT CONTROL PLANS.
4. CLEAR AND GRUB REMAINING AREA FOR POND CONSTRUCTION.
5. CONSTRUCT POND OUTLET STRUCTURE AND RIPRAP ENERGY DISSIPATOR AT DOWNSTREAM END OF WEIR WALL. EXCAVATE AS NEEDED TO INSTALL POND OUTLET STRUCTURE. INSTALL SKIMMER DEWATERING DEVICES. DE-WATER FOUNDATION AS NEEDED IN ACCORDANCE WITH SECTION 111 AND USE SUMP PIT FOR PUMPING. LOCATION OF SUMP PIT TO BE DETERMINED IN FIELD.
6. EXCAVATE THE POND AND COMPLETE THE BASIN TO LINES, GRADES, AND DETAILS SHOWN IN THE CONSTRUCTION PLANS. OVEREXCAVATE THE BOTTOM OF THE POOL 2 FEET FOR SEDIMENT STORAGE. DURING EXCAVATION, THE CONTRACTOR SHALL SALVAGE AND STOCKPILE ANY SOILS CLASSIFIED AS CH, CL, CH, AND GM PER THE UNIFIED SOIL CLASSIFICATION SYSTEM TO BE USED TO CONSTRUCT EMBANKMENT. THE ABOVE CLASSIFIED SOILS MAY BE OBTAINED FROM ELSEWHERE WITHIN THE PROJECT LIMITS.
7. STABILIZE ALL BARE AREAS BELOW ELEV. 51.00, EXCLUDING THE POND BOTTOM, WITH WET SEED MIX AND ABOVE ELEV. 51.00 WITH DRY SEED MIX.

MAINTENANCE OF POND AS A SEDIMENT BASIN

1. SEE SHEET CS-18 FOR SB731 BASIN DETAILS. PLACE EXTERIOR GRADE PLYWOOD ACROSS WEIR OPENING IN ORDER TO FORM CREST AT ELEVATION 52.35. PLYWOOD SHALL BE AFFIXED TO WEIR WALL USING CONSTRUCTION ADHESIVE OR OTHER APPROVED MEANS. SKIMMER DEVICES SHALL BE ATTACHED TO PLYWOOD BAFFLE AT PERMANENT POOL ELEVATION 50.00. THE COST OF THE BAFFLE AND SKIMMER DEVICES AND MAINTENANCE AND/OR REPLACEMENT OF BOTH THROUGHOUT CONSTRUCTION SHALL BE INCIDENTAL TO ITEM 272500.
2. CONTRACTOR SHALL INSPECT THE BASIN IMMEDIATELY AFTER EVERY RAIN AND MAKE REPAIRS AS NEEDED.
3. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION, 51.47, ON A STAKE DRIVEN INTO THE GROUND AT A LOCATION CLEARLY VISIBLE FROM THE EMBANKMENT. SEDIMENT SHALL BE REMOVED WHEN CLEANOUT ELEVATION IS REACHED AND DISPOSED OF AT A LOCATION APPROVED BY THE ENGINEER.

CONVERSION TO PERMANENT STORMWATER MANAGEMENT POND

1. CONVERT THE BASIN INTO THE PERMANENT STORMWATER MANAGEMENT POND AFTER ALL AREAS DRAINING TO THE POND HAVE BEEN PERMANENTLY STABILIZED AND THE ENGINEER HAS APPROVED THE CONVERSION.
2. REMOVE EXCESS ACCUMULATED SEDIMENT ON THE POND BOTTOM AND BENCHES, IF ANY, TO THE SPECIFIED FINISHED LINES AND GRADES SHOWN IN THE PLAN AND DISPOSE SEDIMENT AT A LOCATION APPROVED BY THE ENGINEER. IF ELEVATION OF ACCUMULATED SEDIMENT IN POOL BOTTOMS IS BELOW THE PROPOSED FINISHED ELEVATION, ADDITIONAL FILL MATERIAL SHALL NOT BE PLACED IN POND.
3. PUMP DOWN STANDING WATER IN THE POND AS NECESSARY AND COMPLETE STABILIZATION OF ALL BARE AREAS, REMOVE EROSION AND SEDIMENT CONTROL MEASURES, AND REMOVE SKIMMER DEWATERING DEVICES AND PLYWOOD.

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS OF ALL STORMWATER MANAGEMENT FACILITIES, SUCH AS PONDS, BIOFILTRATION SWALES, BIO-RETENTION AREAS, ETC. THE "AS-BUILT" DRAWINGS SHALL SHOW THE ACTUAL FINISHED GROUND CONTOURS, OUTLET STRUCTURE DIMENSIONS AND ELEVATIONS, ETC., AS THEY EXIST AT THE COMPLETION OF THE PROJECT. THESE DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER OR LAND SURVEYOR REGISTERED IN THE STATE OF DELAWARE. ALL "AS-BUILT" DRAWINGS SHALL BE SENT TO THE DELDOT STORMWATER ENGINEER. ALL COSTS FOR THIS WORK SHALL BE INCLUDED UNDER ITEM 763501 – CONSTRUCTION ENGINEERING.
2. STORMWATER MANAGEMENT PONDS SERVING AS TEMPORARY SEDIMENT BASINS DURING CONSTRUCTION SHALL HAVE SEDIMENT REMOVED AT TIMES DETERMINED BY THE ENGINEER AND AT THE CONCLUSION OF THE PROJECT AFTER ALL AREAS DRAINING TO THE POND HAVE BEEN VEGETATIVELY STABILIZED. COST FOR SEDIMENT REMOVAL SHALL BE PAID FOR UNDER ITEM 250000 – SEDIMENT REMOVAL. ACCESS SHALL BE MAINTAINED TO ALL SEDIMENT REMOVAL CONTROL DEVICES REQUIRING MAINTENANCE UNTIL CONSTRUCTION PHASING AND VEGETATIVE STABILIZATION ALLOW THE REMOVAL OF THOSE CONTROLS, WHICH ARE NO LONGER REQUIRED.

N:\31653-000\CONTRACT 1A\CADD\SW18-787U301_1A.dgn
5/6/2015 7:30:57 AM

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

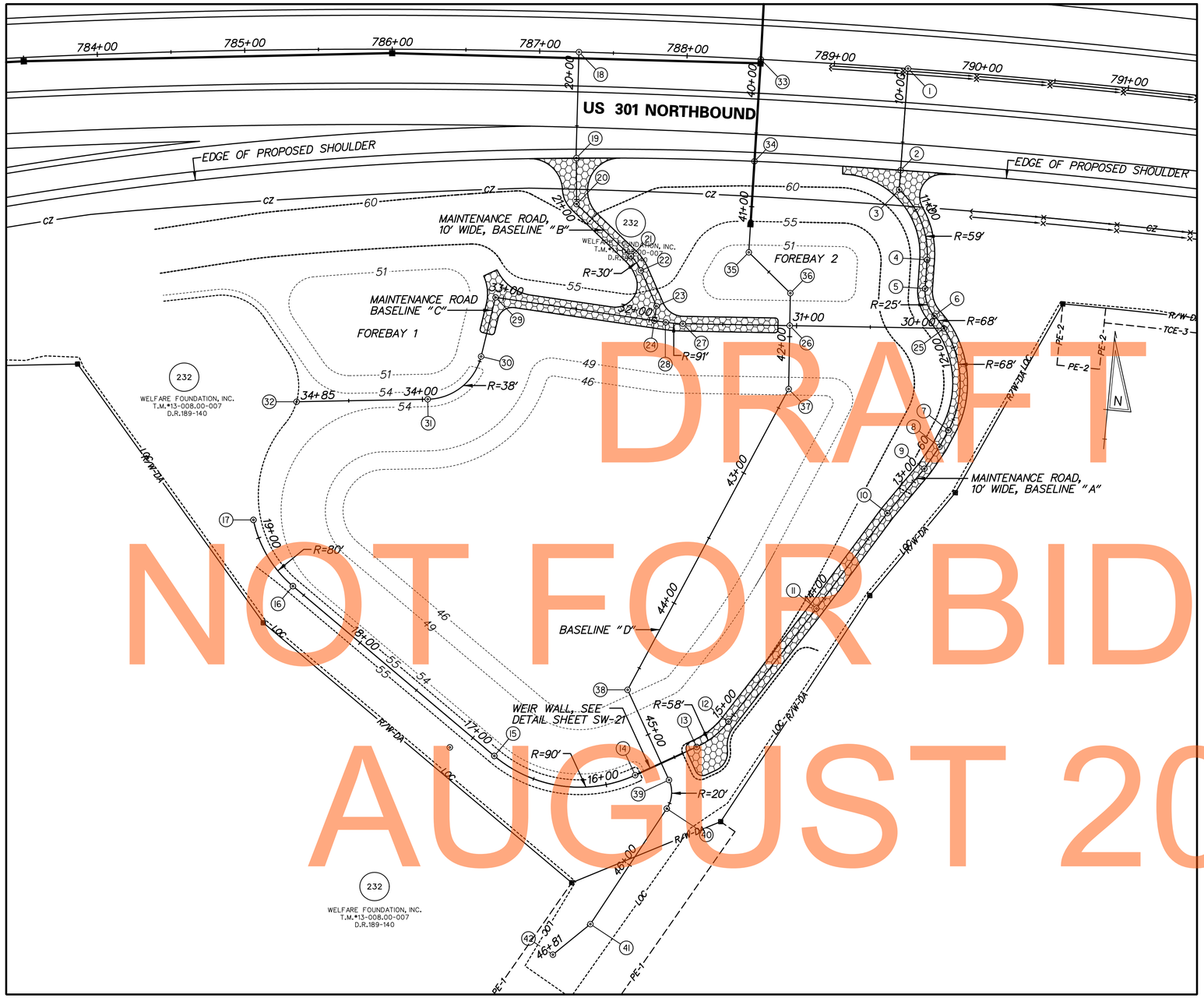
SCALE 0 40 80 120 FEET

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	
T200911308	DESIGNED BY: DLH	
COUNTY	CHECKED BY: JDC	
NEW CASTLE		

STORMWATER MANAGEMENT PLAN BMP 731

SW-18	
SHEET NO.	639
TOTAL SHTS.	875



PLAN – SWM BMP NO. 731 STA. 783+50 TO STA. 790+00, WET POND

SCALE: 1" = 40'

MAINTENANCE ROAD BASELINE "A" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
1	POB STA. 10+00.00	555499.72	583943.13
2	PI STA. 10+69.15	555430.60	583945.35
3	PC STA. 10+82.28	555417.48	583945.78
4	PT STA. 11+35.23	555372.16	583969.58
5	PC STA. 11+54.78	555352.62	583970.26
6	PRC STA. 11+74.83	555334.93	583978.49
7	PT STA. 12+57.93	555258.88	583995.94
8	PI STA. 12+70.72	555247.03	583991.14
9	PI STA. 12+88.71	555231.24	583982.51
10	PI STA. 13+27.90	555198.71	583960.65
11	PI STA. 14+08.46	555129.37	583919.65
12	PC STA. 15+05.60	555046.86	583868.36
13	PT STA. 15+33.44	555027.58	583848.66
14	PC STA. 15+79.25	555004.23	583809.24
15	PT STA. 16+80.98	555007.17	583712.89
16	PC STA. 18+59.53	555107.33	583565.08
17	PT STA. 19+12.77	555149.18	583533.77

MAINTENANCE ROAD BASELINE "B" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
18	POB STA. 20+00.00	555487.53	583720.10
19	PI STA. 20+71.85	555415.92	583725.83
20	PI STA. 21+03.04	555384.92	583729.29
21	PC STA. 21+54.16	555353.59	583769.68
22	PT STA. 21+65.96	555344.73	583777.36
23	PI STA. 21+92.27	555321.86	583790.38
24	POE STA. 22+02.28	555311.87	583789.98

MAINTENANCE ROAD BASELINE "C" STAKEOUT INFORMATION

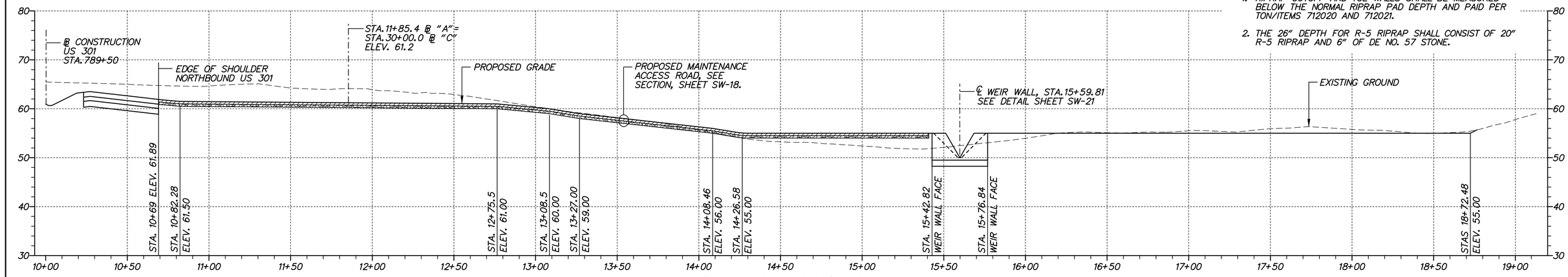
POINT NO.	STATION	NORTHING	EASTING
25	POB STA. 30+00.00	555327.20	583985.81
26	PI STA. 31+04.60	555318.12	583881.61
27	PC STA. 31+77.12	555311.82	583809.36
28	PT STA. 31+88.73	555311.55	583797.77
29	PI STA. 33+05.35	555316.29	583681.24
30	PC STA. 33+46.58	555275.44	583675.69
31	PT STA. 33+96.43	555242.84	583642.73
32	POE STA. 34+85.36	555231.86	583554.48

MAINTENANCE ROAD BASELINE "D" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
33	POB STA. 40+00.00	555495.49	583843.21
34	PI STA. 40+69.23	555426.33	583846.16
35	PI STA. 41+31.00	555364.61	583848.80
36	PI STA. 41+70.48	555340.03	583879.70
37	PI STA. 42+35.48	555275.28	583885.34
38	PI STA. 44+66.67	555061.18	583798.11
39	PC STA. 45+33.90	555003.33	583832.37
40	PT STA. 45+54.19	554983.91	583832.90
41	PI STA. 46+48.03	554900.66	583789.59
42	POE STA. 46+80.83	554877.41	583766.46

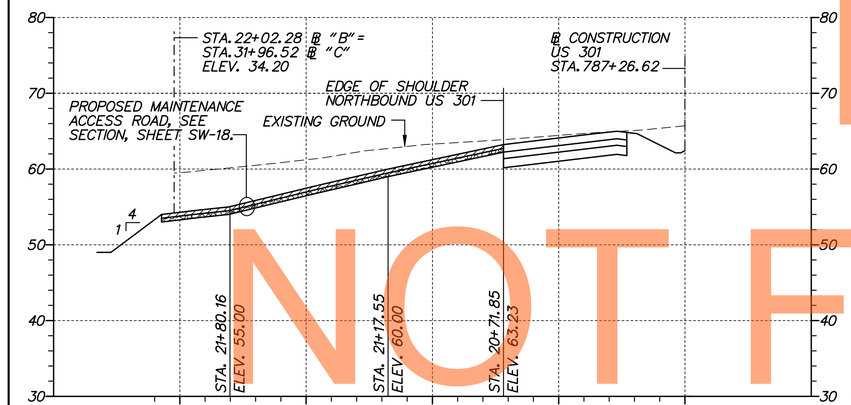
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 40 80 120 FEET	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO.	STORMWATER MANAGEMENT STAKEOUT PLAN BMP 731
				COUNTY NEW CASTLE	DESIGNED BY: HMB	SW-19
					CHECKED BY: JDC	SHEET NO. 640
						TOTAL SHTS. 875

RIPRAP NOTES:
1. RIPRAP CUTOFF AND TOE WALLS SHALL BE MEASURED BELOW THE NORMAL RIPRAP PAD DEPTH AND PAID PER TON/ITEMS 712020 AND 712021.
2. THE 26" DEPTH FOR R-5 RIPRAP SHALL CONSIST OF 20" R-5 RIPRAP AND 6" OF DE NO. 57 STONE.



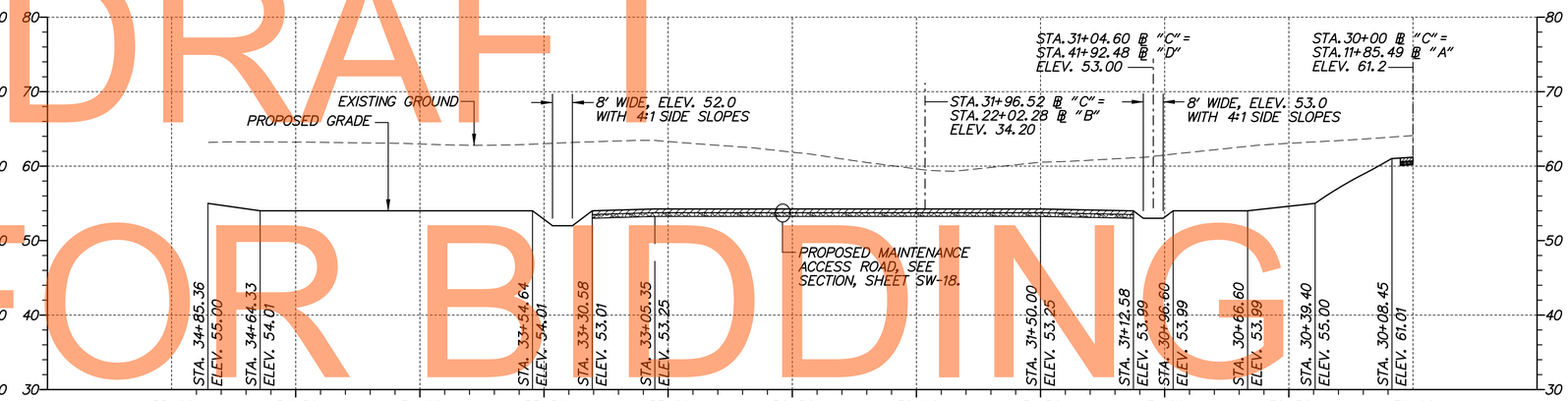
PROFILE – BMP 731 BASELINE "A"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



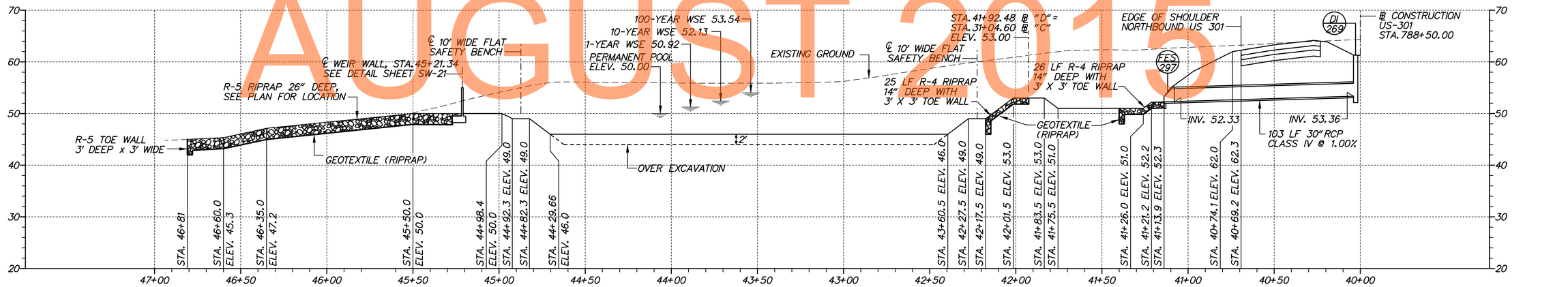
PROFILE – BMP 731 BASELINE "B"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



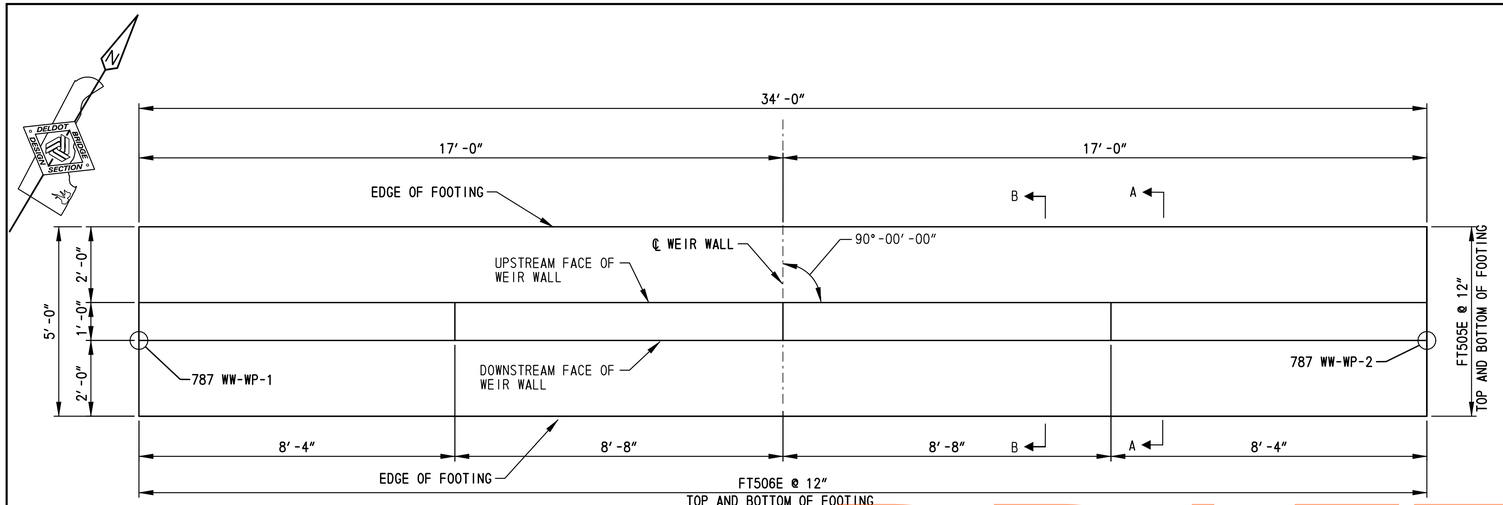
PROFILE – BMP 731 BASELINE "C"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



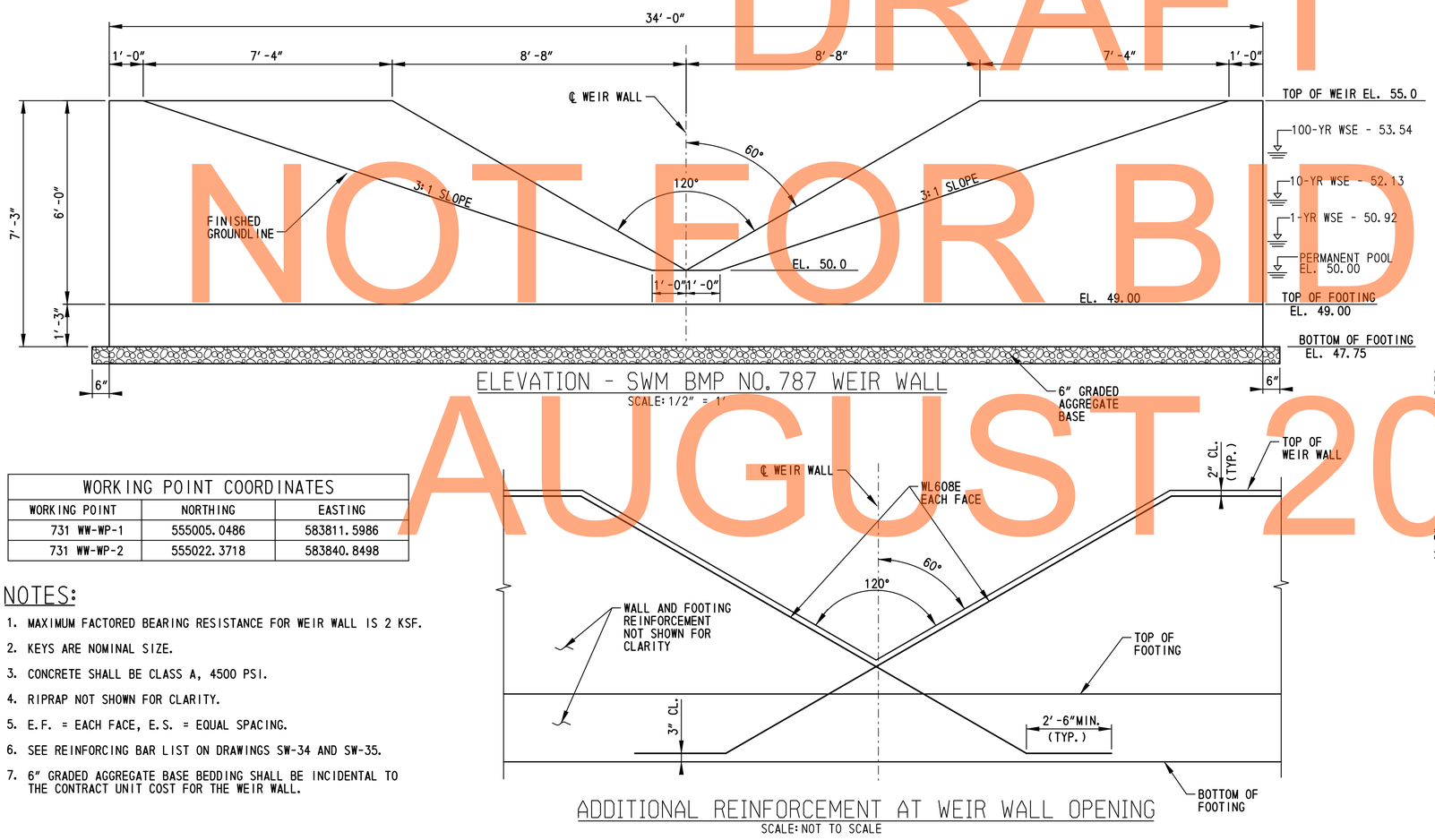
PROFILE – BMP 731 BASELINE "D"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



PLAN - SWM BMP NO. 787 WEIR WALL

SCALE: 1/2″ = 1′



ELEVATION - SWM BMP NO. 787 WEIR WALL

SCALE: 1/2″ = 1′

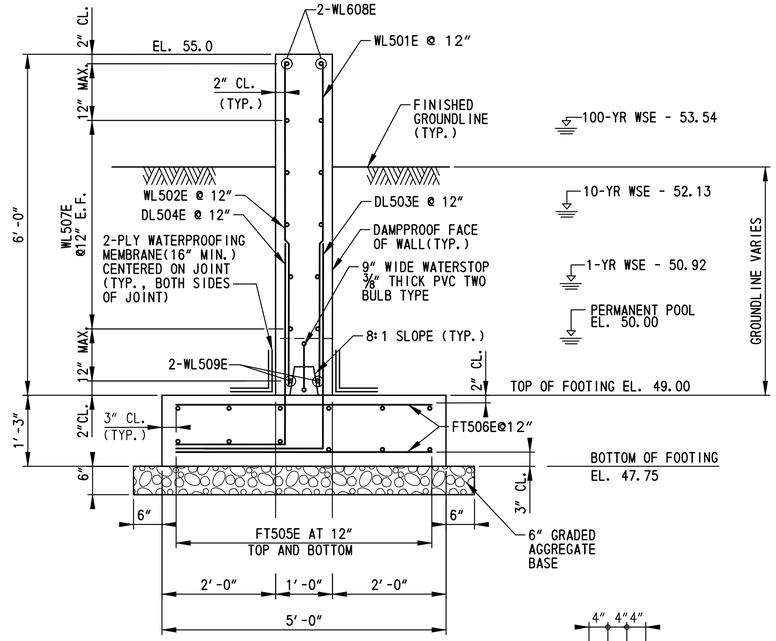
WORKING POINT COORDINATES		
WORKING POINT	NORTHING	EASTING
731 WW-WP-1	555005.0486	583811.5986
731 WW-WP-2	555022.3718	583840.8498

NOTES:

1. MAXIMUM FACTORED BEARING RESISTANCE FOR WEIR WALL IS 2 KSF.
2. KEYS ARE NOMINAL SIZE.
3. CONCRETE SHALL BE CLASS A, 4500 PSI.
4. RIPRAP NOT SHOWN FOR CLARITY.
5. E.F. = EACH FACE, E.S. = EQUAL SPACING.
6. SEE REINFORCING BAR LIST ON DRAWINGS SW-34 AND SW-35.
7. 6″ GRADED AGGREGATE BASE BEDDING SHALL BE INCIDENTAL TO THE CONTRACT UNIT COST FOR THE WEIR WALL.

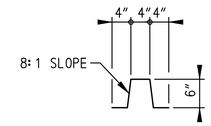
ADDITIONAL REINFORCEMENT AT WEIR WALL OPENING

SCALE: NOT TO SCALE



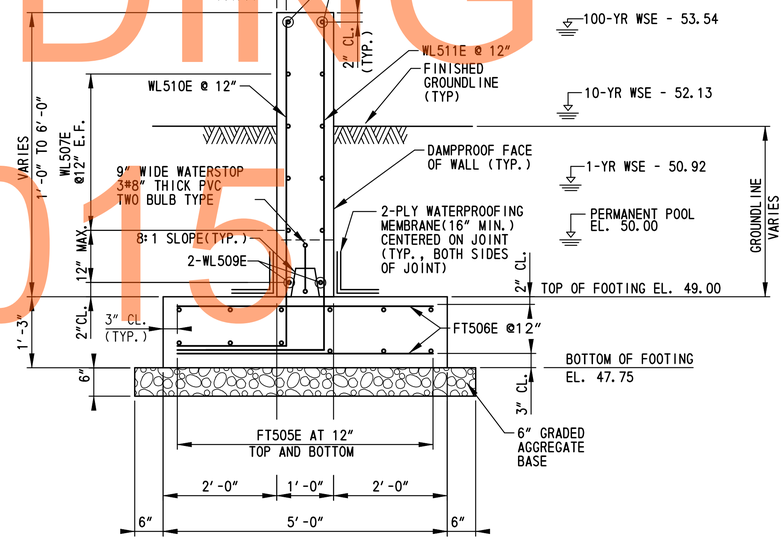
SECTION A-A

SCALE: 3/4″ = 1′



CONSTRUCTION JOINT DETAIL

SCALE: 3/4″ = 1′-0″



SECTION B-B

SCALE: 3/4″ = 1′

r:\31653-000\contract to\cadd\SW21-787U301_1A.dgn
10/31/2014 11:42:39 PM

DELAWARE DEPARTMENT OF TRANSPORTATION

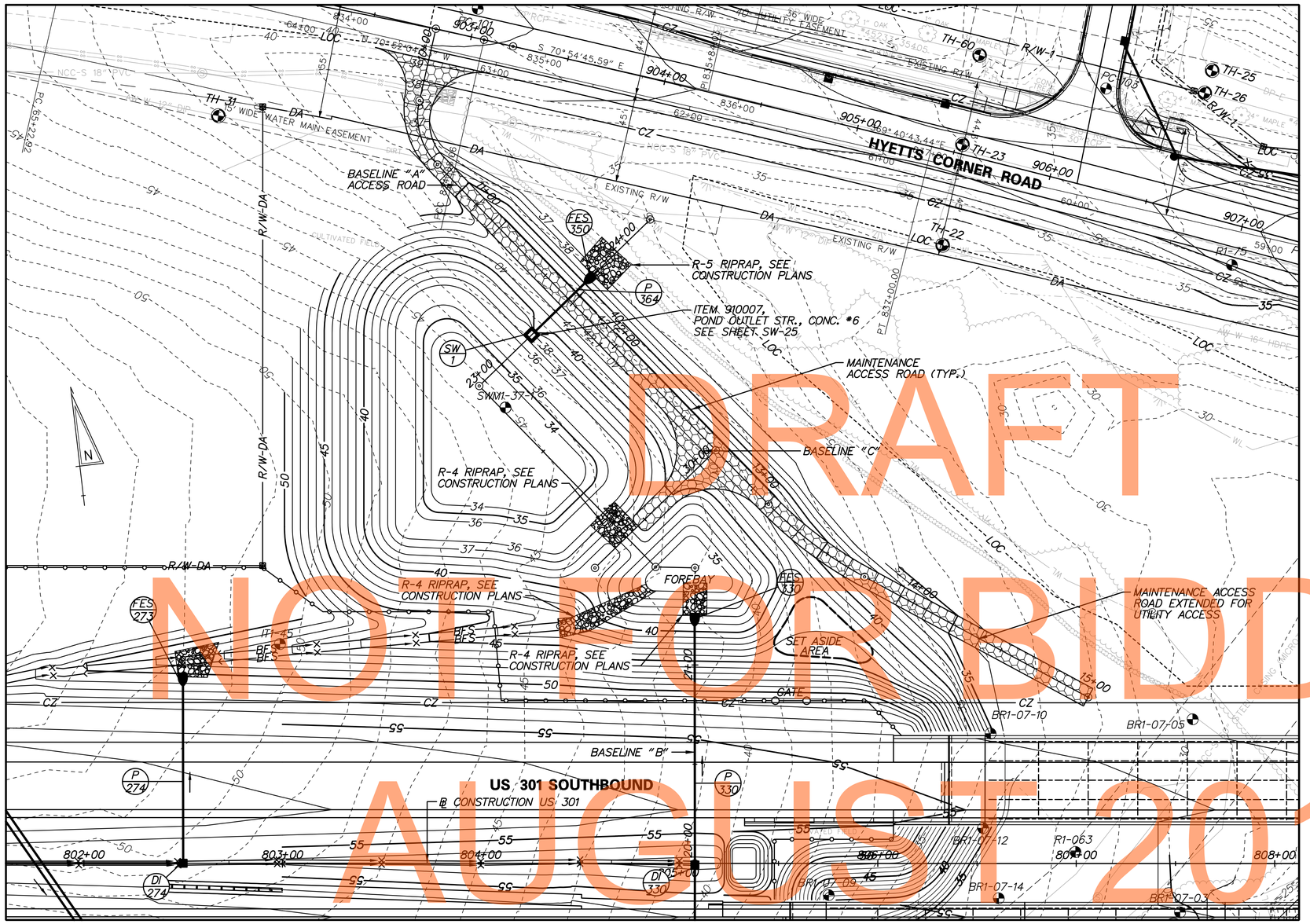
ADDENDUMS / REVISIONS

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.
T200911308	
COUNTY	DESIGNED BY: HQ
NEW CASTLE	CHECKED BY: JAG

STORMWATER MANAGEMENT DETAILS BMP 731

SW-21	
SHEET NO.	642
TOTAL SHTS.	875



PLAN – SWM BMP NO. 733, STA. 803+00 TO STA. 806+50, WET POND

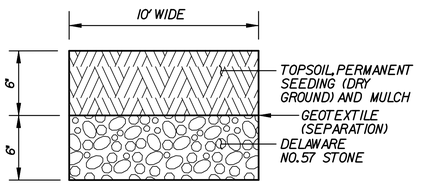
SCALE: 1" = 30'

BMP NO. 733 – DESIGN SUMMARY				
DESIGN STORM	FACILITY INFLOW (CFS)	FACILITY DISCHARGE (CFS)	WATER SURFACE ELEVATION	STORAGE VOLUME (AC-FT)
PERM. POOL	N. A.	N. A.	37. 00	0. 62
1-YEAR	5. 6	0. 6	37. 79	0. 30
10-YEAR	19. 9	7. 1	38. 83	0. 74
100-YEAR	45. 7	18. 3	40. 40	1. 55

HAZARD CLASSIFICATION "A" AS PER POND CODE 378

DRAINAGE AREA TO FACILITY: 11.22 ACRES

MANAGEMENT PROVIDED BY FACILITY: WATER QUALITY CONTROL VIA EXTENDED DETENTION FOR 1-YEAR RESOURCE PROTECTION STORM AND QUANTITY CONTROL FOR THE 10 AND 100-YEAR EVENTS.



POND MAINTENANCE ACCESS ROAD

SCALE: NONE

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS OF ALL STORMWATER MANAGEMENT FACILITIES, SUCH AS PONDS, BIOFILTRATION SWALES, BIO-RETENTION AREAS, ETC. THE "AS-BUILT" DRAWINGS SHALL SHOW THE ACTUAL FINISHED GROUND CONTOURS, OUTLET STRUCTURE DIMENSIONS AND ELEVATIONS, ETC., AS THEY EXIST AT THE COMPLETION OF THE PROJECT. THESE DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER OR LAND SURVEYOR REGISTERED IN THE STATE OF DELAWARE. ALL "AS-BUILT" DRAWINGS SHALL BE SENT TO THE DELDOT STORMWATER ENGINEER. ALL COSTS FOR THIS WORK SHALL BE INCLUDED UNDER ITEM 763501 - CONSTRUCTION ENGINEERING.
2. STORMWATER MANAGEMENT PONDS SERVING AS TEMPORARY SEDIMENT BASINS DURING CONSTRUCTION SHALL HAVE SEDIMENT REMOVED AT TIMES DETERMINED BY THE ENGINEER AND AT THE CONCLUSION OF THE PROJECT AFTER ALL AREAS DRAINING TO THE POND HAVE BEEN VEGETATIVELY STABILIZED. COST FOR SEDIMENT REMOVAL SHALL BE PAID FOR UNDER ITEM 250000 - SEDIMENT REMOVAL. ACCESS SHALL BE MAINTAINED TO ALL SEDIMENT REMOVAL CONTROL DEVICES REQUIRING MAINTENANCE UNTIL CONSTRUCTION PHASING AND VEGETATIVE STABILIZATION ALLOW THE REMOVAL OF THOSE CONTROLS, WHICH ARE NO LONGER REQUIRED.

POND CONSTRUCTION SEQUENCE AND NOTES:

THE STORMWATER MANAGEMENT POND SHALL FUNCTION AS A SEDIMENT BASIN DURING ROADWAY CONSTRUCTION AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE STANDARD SPECIFICATIONS:

SECTION 271 - STORMWATER MANAGEMENT POND
SECTION 272 - POND OUTLET STRUCTURE, CONCRETE

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE PER CONSTRUCTION PHASING, MOT AND EROSION AND SEDIMENT CONTROL PLANS.
2. CLEAR AND GRUB FOR INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS.
3. INSTALL PERIMETER SEDIMENT CONTROLS AS SHOWN ON THE CONSTRUCTION PHASING PLANS, MOT AND EROSION AND SEDIMENT CONTROL PLANS..
4. CLEAR AND GRUB REMAINING AREA FOR POND CONSTRUCTION.
5. CONSTRUCT POND OUTLET STRUCTURE, PRINCIPAL SPILLWAY AND RIPRAP ENERGY DISSIPATOR AT DOWNSTREAM END OF PRINCIPAL SPILLWAY. EXCAVATE AS NEEDED TO INSTALL POND OUTLET STRUCTURE. INSTALL SKIMMER DEWATERING DEVICE. DE-WATER FOUNDATION AS NEEDED IN ACCORDANCE WITH SECTION 111 AND USE SUMP PIT FOR PUMPING. LOCATION OF SUMP PIT TO BE DETERMINED IN FIELD.
6. EXCAVATE THE POND AND COMPLETE THE BASIN TO LINES, GRADES, AND DETAILS SHOWN IN THE CONSTRUCTION PLANS. OVEREXCAVATE THE BOTTOM OF THE POOL 2 FEET FOR SEDIMENT STORAGE. DURING EXCAVATION, THE CONTRACTOR SHALL SALVAGE AND STOCKPILE ANY SOILS CLASSIFIED AS CH, CL, CH, AND GM PER THE UNIFIED SOIL CLASSIFICATION SYSTEM TO BE USED TO CONSTRUCT EMBANKMENT. THE ABOVE CLASSIFIED SOILS MAY BE OBTAINED FROM ELSEWHERE WITHIN THE PROJECT LIMITS.
7. STABILIZE ALL BARE AREAS BELOW ELEV. 38.00, EXCLUDING THE POND BOTTOM, WITH WET SEED MIX AND ABOVE ELEV. 38.00 WITH DRY SEED MIX.

MAINTENANCE OF POND AS A SEDIMENT BASIN

1. SEE SHEET CS-21 FOR SB733 BASIN DETAILS. PLACE EXTERIOR GRADE PLYWOOD ACROSS WEIR OPENINGS IN ORDER TO FORM CREST AT ELEVATION 39.30. PLYWOOD SHALL BE AFFIXED TO RISER STRUCTURE USING CONSTRUCTION ADHESIVE OR OTHER APPROVED MEANS. SKIMMER DEVICE SHALL BE ATTACHED TO THE PERMANENT 6" ORIFICE AT PERMANENT POOL ELEVATION 37.00. THE COST OF THE BAFFLES AND SKIMMER DEVICE AND MAINTENANCE AND/OR REPLACEMENT OF BOTH THROUGHOUT CONSTRUCTION SHALL BE INCIDENTAL TO ITEM 272500.
2. CONTRACTOR SHALL INSPECT THE BASIN IMMEDIATELY AFTER EVERY RAIN AND MAKE REPAIRS AS NEEDED.
3. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION, 38.21, ON A STAKE DRIVEN INTO THE GROUND AT A LOCATION CLEARLY VISIBLE FROM THE EMBANKMENT. SEDIMENT SHALL BE REMOVED WHEN CLEANOUT ELEVATION IS REACHED AND DISPOSED OF AT A LOCATION APPROVED BY THE ENGINEER.

CONVERSION TO PERMANENT STORMWATER MANAGEMENT POND

1. CONVERT THE BASIN INTO THE PERMANENT STORMWATER MANAGEMENT POND AFTER ALL AREAS DRAINING TO THE POND HAVE BEEN PERMANENTLY STABILIZED AND THE ENGINEER HAS APPROVED THE CONVERSION.
2. REMOVE EXCESS ACCUMULATED SEDIMENT ON THE POND BOTTOM AND BENCHES, IF ANY, TO THE SPECIFIED FINISHED LINES AND GRADES SHOWN IN THE PLAN AND DISPOSE SEDIMENT AT A LOCATION APPROVED BY THE ENGINEER. IF ELEVATION OF ACCUMULATED SEDIMENT IN POOL BOTTOMS IS BELOW THE PROPOSED FINISHED ELEVATION, ADDITIONAL FILL MATERIAL SHALL NOT BE PLACED IN POND.
3. PUMP DOWN STANDING WATER IN THE POND AS NECESSARY AND COMPLETE STABILIZATION OF ALL BARE AREAS, REMOVE EROSION AND SEDIMENT CONTROL MEASURES, REMOVE SKIMMER DEWATERING DEVICE AND PLYWOOD, AND INSTALL CATCH BASIN TRAP.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

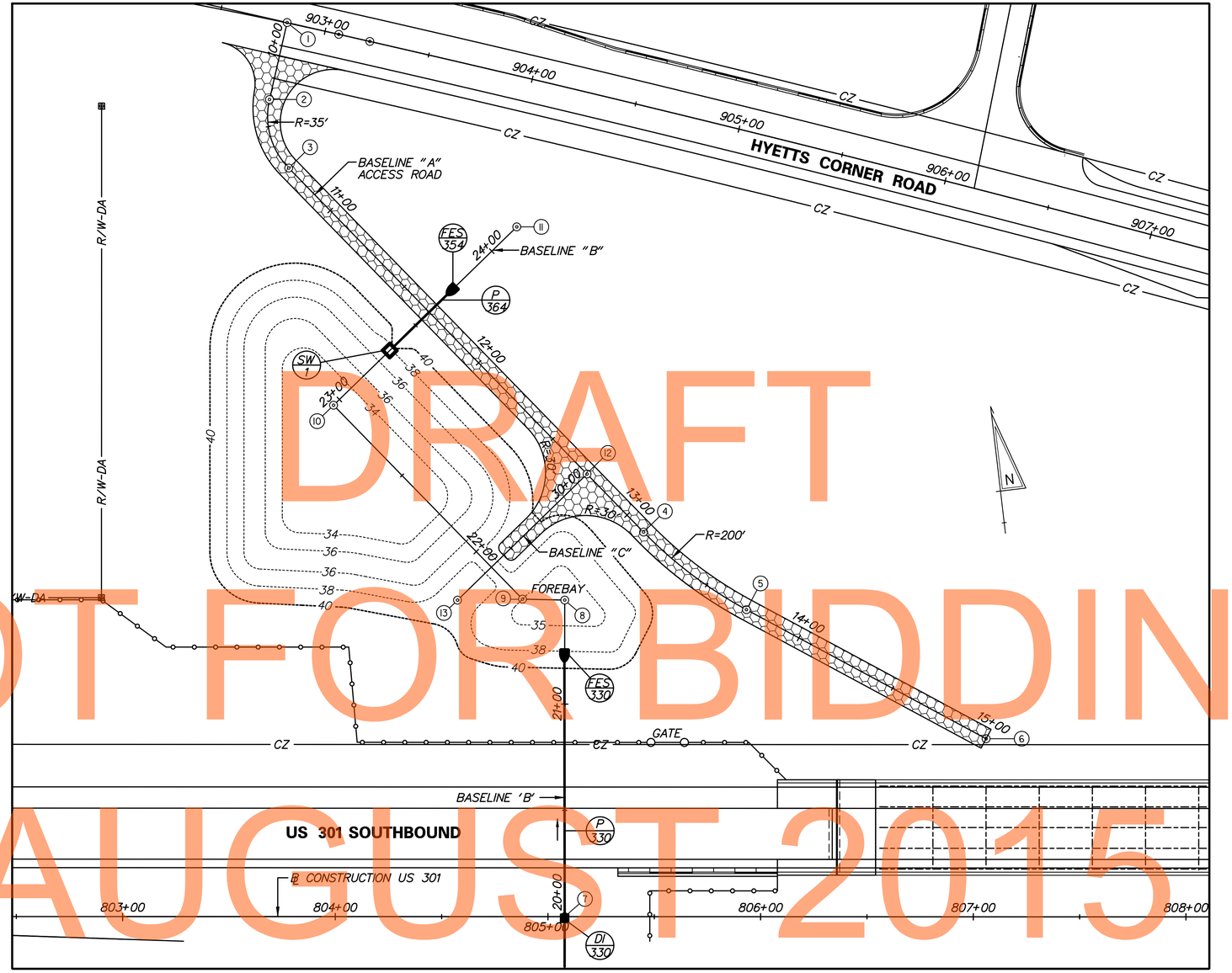
US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	
T200911308	DESIGNED BY: DLH	
COUNTY	CHECKED BY: JDC	
NEW CASTLE		

STORMWATER MANAGEMENT PLAN BMP 733

SW-22	
SHEET NO.	643
TOTAL SHTS.	875

N:\3653-000\CONTRACT 1A\CADD\SW22-BI0U301_1A.dgn
5/8/2015 7:32:25 AM



STAKEOUT PLAN – SWM BMP NO. 733 STA. 802+50 TO STA. 806+50, WET POND

SCALE: 1" = 30'

BASELINE "A" STAKEOUT INFORMATION

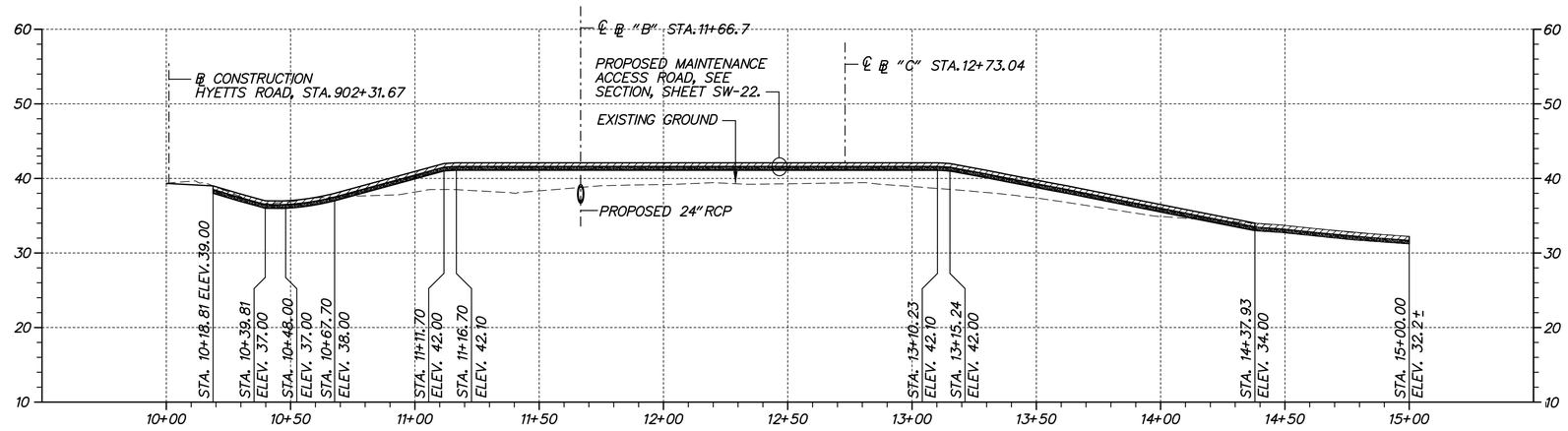
POINT NO.	STATION	NORTHING	EASTING
1	POB STA.10+00.00	555811.61	585411.01
2	PC STA.10+37.15	555776.52	585398.81
3	PT STA.10+72.06	555743.49	585404.28
4	PC STA.13+11.16	555555.01	585551.42
5	PT STA.13+71.98	555513.46	585595.50
6	POE STA.15+00.00	555440.76	585700.88

BASELINE "B" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
7	POB STA.20+00.00	555379.23	585494.73
8	PI STA.21+48.95	555527.28	585511.07
9	PI STA.21+68.79	555529.88	585491.40
10	PI STA.22+96.15	555630.27	585413.03
11	POE STA.24+16.41	555704.25	55507.84

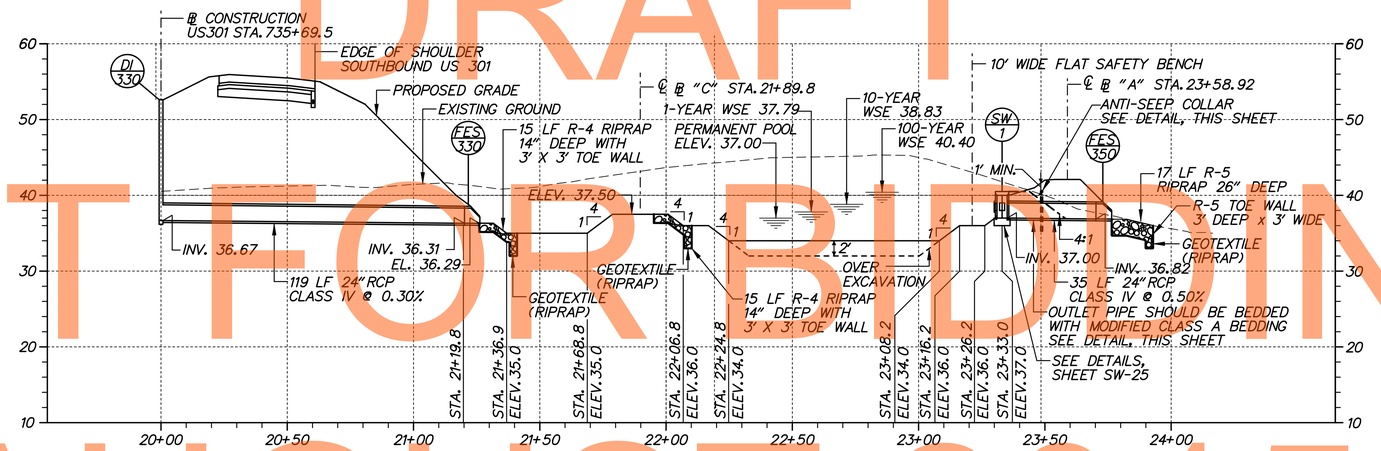
BASELINE "C" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
12	POB STA.30+00.00	555585.07	585527.96
13	POE STA.30+85.00	555532.76	585460.96



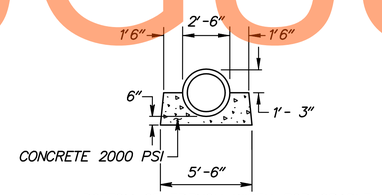
PROFILE – POND EMBANKMENT – BMP 733 BASELINE 'A'

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



PROFILE – BMP 733 BASELINE 'B'

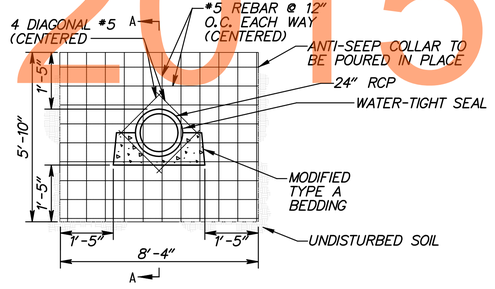
SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



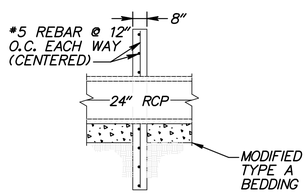
BOTTOM OF TRENCH WIDTH FOR CRADLE AND PRINCIPAL SPILLWAY INSTALLATION

MODIFIED CLASS A BEDDING

SCALE: NONE



ELEVATION



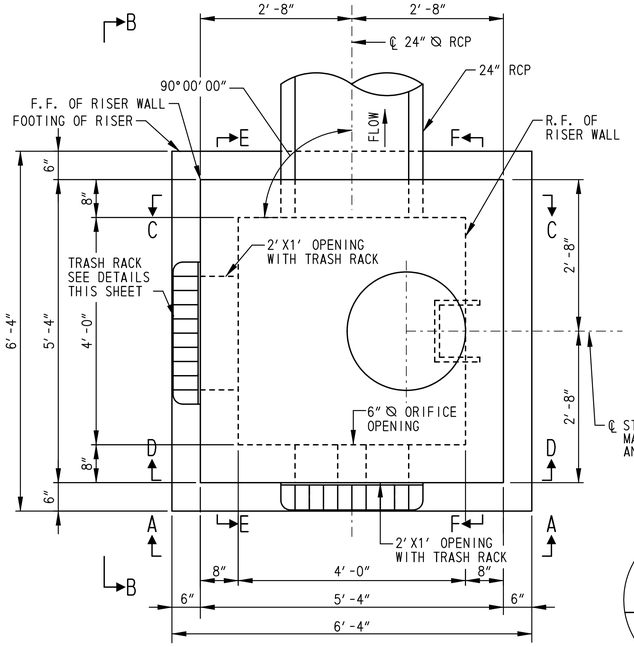
SECTION A–A

ANTI-SEEP COLLAR DETAIL

SCALE: NONE

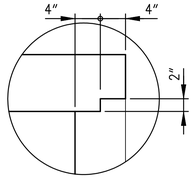
RIPRAP NOTES:

1. RIPRAP CUTOFF AND TOE WALLS SHALL BE MEASURED BELOW THE NORMAL RIPRAP PAD DEPTH AND PAID PER TON (ITEMS 712020 AND 712021).
2. THE 26" DEPTH FOR R-5 RIPRAP SHALL CONSIST OF 20" R-5 RIPRAP AND 6" OF DE NO. 57 STONE.
3. THE ANTI-SEEP COLLAR AND MODIFIED CLASS A BEDDING SHALL BE MEASURED AND PAID AS ITEM 614738 "ANTI-SEEP COLLAR."



PLAN

SCALE: ¾"=1'-0"



TOP SLAB KEY DETAIL

SCALE: 1"=1'-0"

CATCH BASIN TRAP

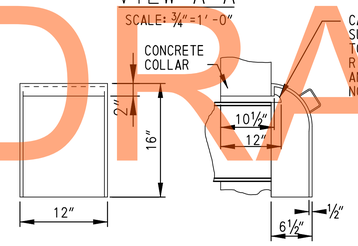
N.T.S.

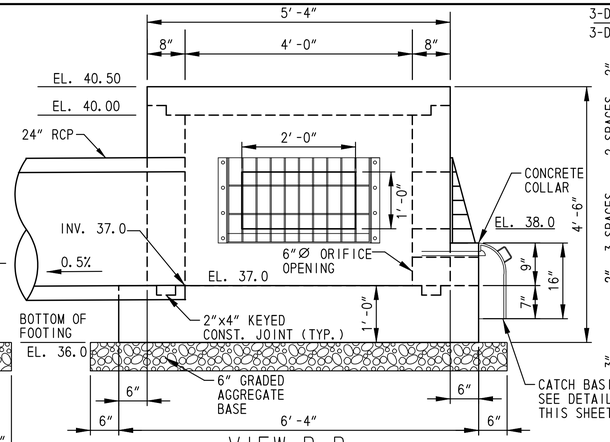
CATCH BASIN TRAP NOTES:

1. CATCH BASIN TRAP AND SUPPORT HOOKS SHALL BE FABRICATED FROM CAST IRON
2. BOTTOM OF TRAP SHALL EXTEND A MINIMUM OF 6-INCHES BELOW THE BOTTOM OF THE COVERED ORIFICE.
3. THE COST OF ALL CATCH BASIN TRAPS SHALL BE INCIDENTAL TO THE CONTRACT UNIT COST FOR THE POND OUTLET STRUCTURE.

VIEW A-A

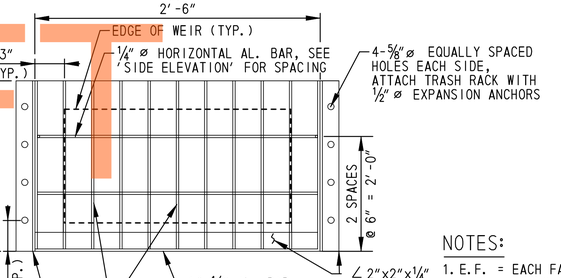
SCALE: ¾"=1'-0"





VIEW B-B

SCALE: ¾"=1'-0"

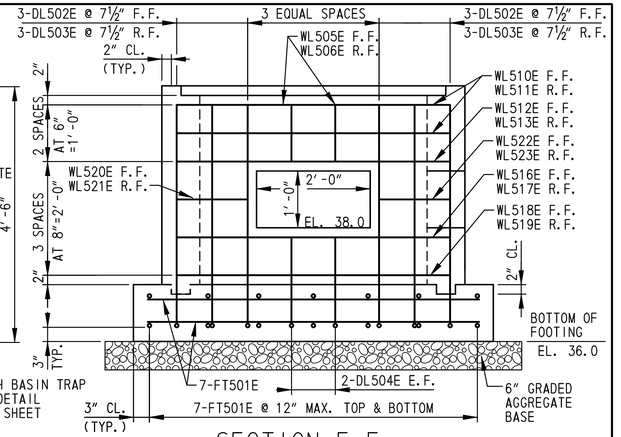


TRASH RACK 'D' - FRONT ELEVATION

N.T.S.

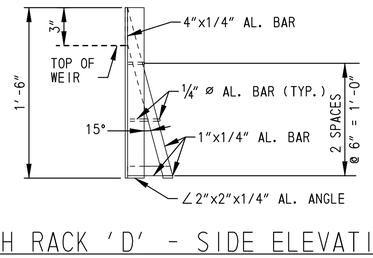
TRASH RACK NOTES:

1. EXPANSION ANCHORS SHALL CONFORM TO ASTM A510 AND SHALL HAVE A MINIMUM EMBEDMENT DEPTH OF 4" UNLESS NOTED OTHERWISE.
2. EXPANSION ANCHORS SHALL BE ZINC PLATED IN CONFORMANCE WITH ASTM B633, TYPE III FE/ZN 5.
3. ALUMINUM ANGLES SHALL CONFORM TO ASTM B308 ALLOY 6061-T6. REMAINING ALUMINUM SHALL CONFORM TO ASTM B211 ALLOY 6061-T6.



SECTION E-E

SCALE: ¾"=1'-0"

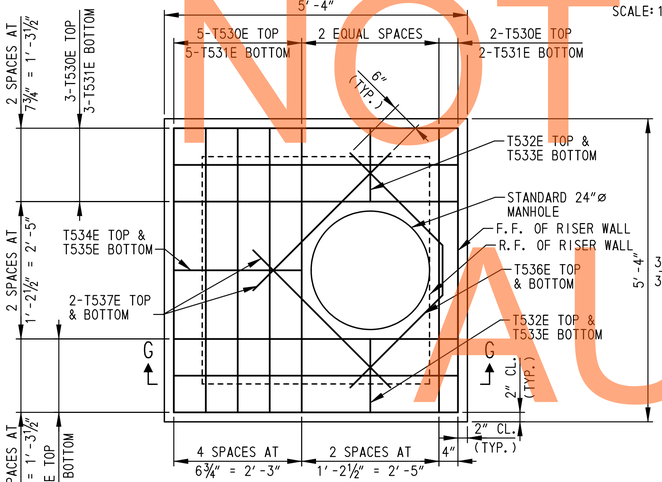


TRASH RACK 'D' - SIDE ELEVATION

N.T.S.

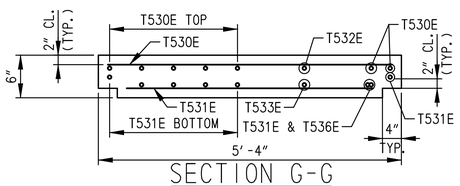
NOTES:

1. E.F. = EACH FACE
   F.F. = FRONT FACE
   R.F. = REAR FACE
2. MANHOLE STEPS NOT SHOWN IN SECTION VIEWS FOR CLARITY, SEE STANDARD CONSTRUCTION DETAILS FOR MANHOLE STEP DETAILS.
3. TOP SLAB NOT SHOWN IN SECTIONS C-C THROUGH F-F FOR CLARITY.
   TOP SLAB SHALL BE PRECAST. A WATERSTOP SHALL BE PLACED BETWEEN THE PRECAST TOP
4. SLAB AND THE CAST-IN-PLACE RISER STRUCTURE.
5. PAYMENT FOR EXCAVATION, CONCRETE, REINFORCING STEEL, HOOD, WATERSTOP, TRASH RACK, AND ALL WORK ASSOCIATED WITH CONSTRUCTION OF STORMWATER MANAGEMENT RISER STRUCTURE WILL BE MADE UNDER ITEM 910007, POND OUTLET STRUCTURE, CONCRETE NO. 6.
6. SEE REINFORCING BAR LIST ON DRAWINGS SW-34 AND SW-35.
7. 6" GRADED AGGREGATED BASE BEDDING SHALL BE INCIDENTAL TO THE CONTRACT UNIT COST FOR THE WEIR WALL.



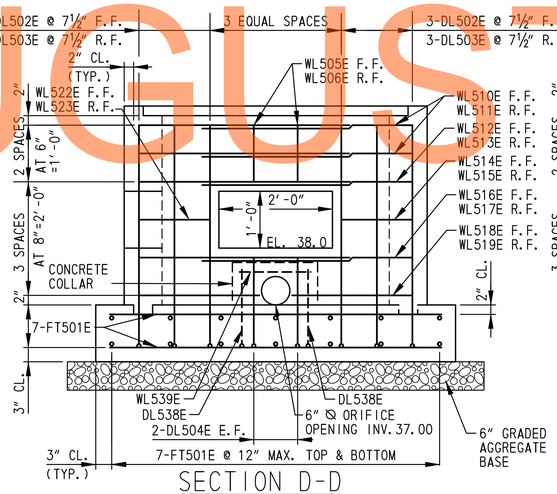
TOP SLAB - REINFORCEMENT PLAN

SCALE: ¾"=1'-0"



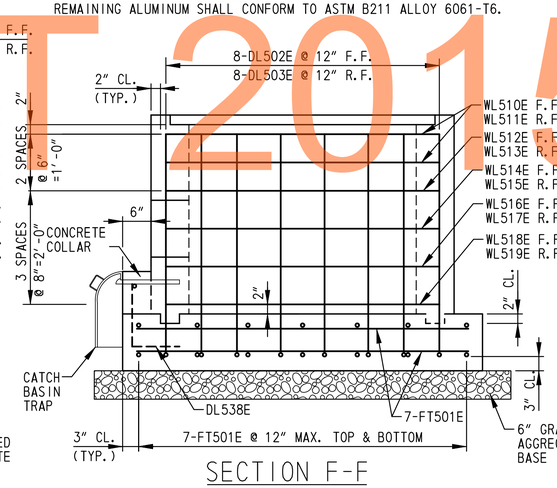
SECTION G-G

SCALE: ¾"=1'-0"



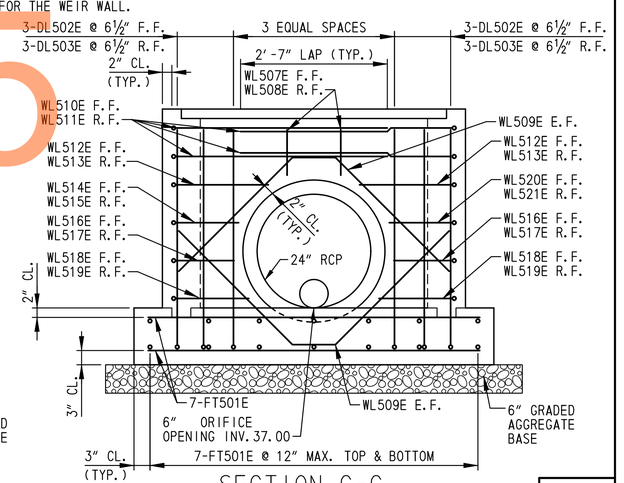
SECTION D-D

SCALE: ¾"=1'-0"



SECTION F-F

SCALE: ¾"=1'-0"



SECTION C-C

SCALE: ¾"=1'-0"

N:\31653-000\CONTRACT 1A\CADD\SW25-810U301_1A.dgn
8/18/2015 7:33:35 AM

DELAWARE DEPARTMENT OF TRANSPORTATION

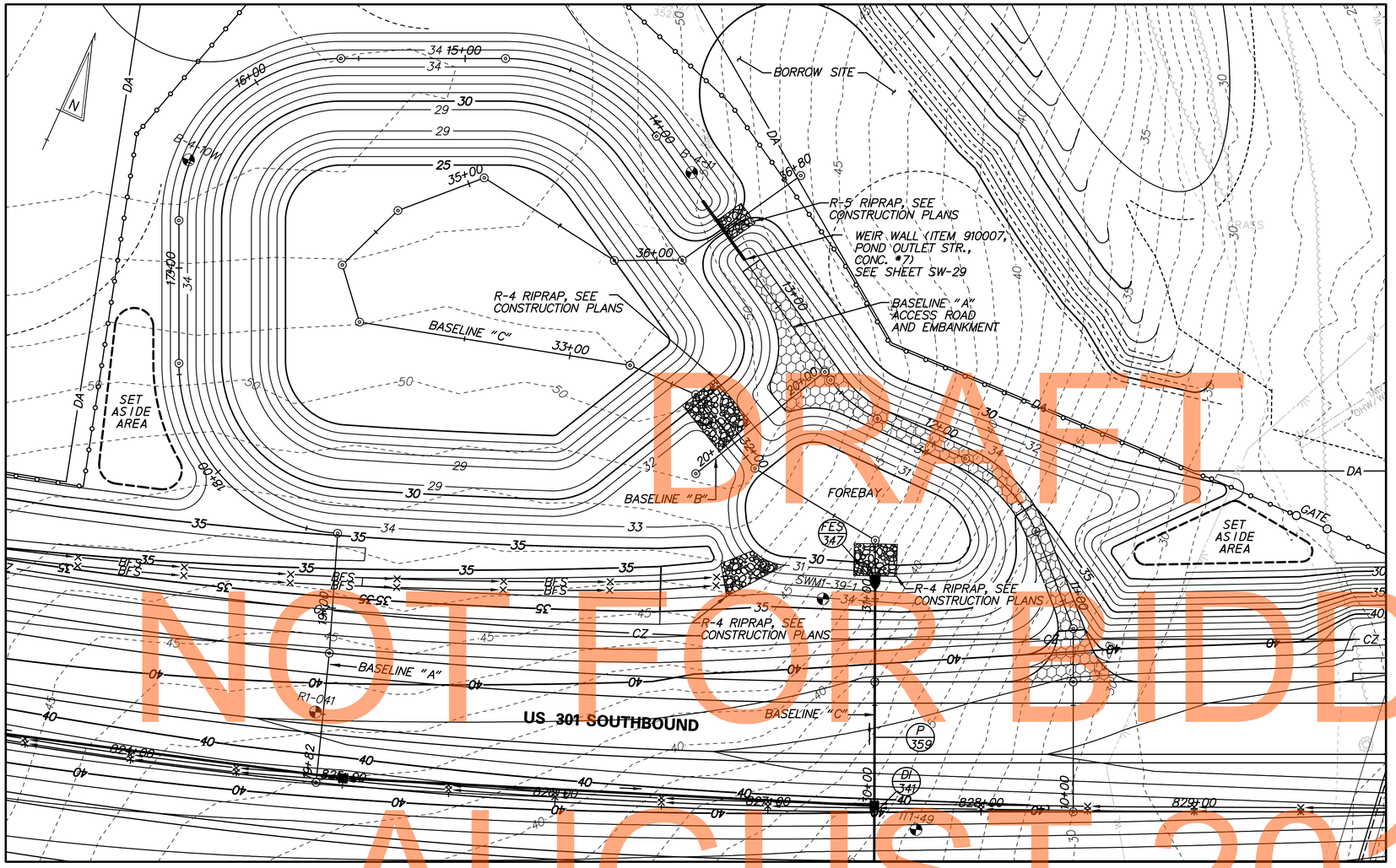
ADDENDUMS / REVISIONS	

US 301, SR 896 TO SR 1

CONTRACT	T200911308
COUNTY	NEW CASTLE
BRIDGE NO.	
DESIGNED BY:	HQ
CHECKED BY:	JAG

STORMWATER MANAGEMENT DETAILS BMP 733

	SW-25
SHEET NO.	646
TOTAL SHTS.	875



PLAN – SWM BMP NO. 734 STA. 824+00 TO STA. 829+00, WET POND

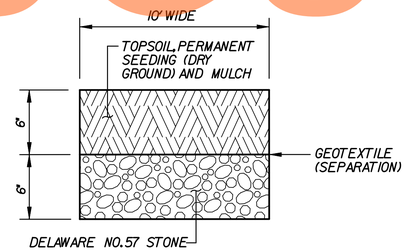
SCALE: 1" = 30'

BMP NO. 734 – DESIGN SUMMARY				
DESIGN STORM	FACILITY INFLOW (CFS)	FACILITY DISCHARGE (CFS)	WATER SURFACE ELEVATION	STORAGE VOLUME (AC-FT)
PERM. POOL	N. A.	N. A.	30. 00	2. 94
1-YEAR	9. 1	0. 6	30. 58	0. 58
10-YEAR	27. 7	3. 3	31. 47	1. 52
100-YEAR	59. 3	12. 8	32. 68	2. 96

HAZARD CLASSIFICATION "A" AS PER POND CODE 378

DRAINAGE AREA TO FACILITY: 13.64 ACRES

MANAGEMENT PROVIDED BY FACILITY: WATER QUALITY CONTROL VIA EXTENDED DETENTION FOR 1-YEAR RESOURCE PROTECTION STORM AND QUALITY CONTROL FOR THE 10 AND 100-YEAR EVENTS.



POND MAINTENANCE ACCESS ROAD

SCALE: NONE

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS OF ALL STORMWATER MANAGEMENT FACILITIES, SUCH AS PONDS, BIOFILTRATION SWALES, BIO-RETENTION AREAS, ETC. THE "AS-BUILT" DRAWINGS SHALL SHOW THE ACTUAL FINISHED GROUND CONTOURS, OUTLET STRUCTURE DIMENSIONS AND ELEVATIONS, ETC., AS THEY EXIST AT THE COMPLETION OF THE PROJECT. THESE DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER OR LAND SURVEYOR REGISTERED IN THE STATE OF DELAWARE. ALL "AS-BUILT" DRAWINGS SHALL BE SENT TO THE DELDOT STORMWATER ENGINEER. ALL COSTS FOR THIS WORK SHALL BE INCLUDED UNDER ITEM 763501 - CONSTRUCTION ENGINEERING.
2. STORMWATER MANAGEMENT PONDS SERVING AS TEMPORARY SEDIMENT BASINS DURING CONSTRUCTION SHALL HAVE SEDIMENT REMOVED AT TIMES DETERMINED BY THE ENGINEER AND AT THE CONCLUSION OF THE PROJECT AFTER ALL AREAS DRAINING TO THE POND HAVE BEEN VEGETATIVELY STABILIZED. COST FOR SEDIMENT REMOVAL SHALL BE PAID FOR UNDER ITEM 250000 - SEDIMENT REMOVAL. ACCESS SHALL BE MAINTAINED TO ALL SEDIMENT REMOVAL CONTROL DEVICES REQUIRING MAINTENANCE UNTIL CONSTRUCTION PHASING AND VEGETATIVE STABILIZATION ALLOW THE REMOVAL OF THOSE CONTROLS, WHICH ARE NO LONGER REQUIRED.

POND CONSTRUCTION SEQUENCE AND NOTES:

THE STORMWATER MANAGEMENT POND SHALL FUNCTION AS A SEDIMENT BASIN DURING ROADWAY CONSTRUCTION AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE STANDARD SPECIFICATIONS:
SECTION 271 - STORMWATER MANAGEMENT POND
SECTION 272 - POND OUTLET STRUCTURE, CONCRETE

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE PER CONSTRUCTION PHASING, MOT AND EROSION AND SEDIMENT CONTROL PLANS.
2. CLEAR AND GRUB FOR INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS.
3. INSTALL PERIMETER SEDIMENT CONTROLS AS SHOWN ON THE CONSTRUCTION PHASING PLANS, MOT AND EROSION AND SEDIMENT CONTROL PLANS.
4. CLEAR AND GRUB REMAINING AREA FOR POND CONSTRUCTION.
5. CONSTRUCT POND OUTLET STRUCTURE AND RIPRAP ENERGY DISSIPATOR AT DOWNSTREAM END OF WEIR WALL. EXCAVATE AS NEEDED TO INSTALL POND OUTLET STRUCTURE. INSTALL SKIMMER DEWATERING DEVICES. DE-WATER FOUNDATION AS NEEDED IN ACCORDANCE WITH SECTION 111 AND USE SUMP PIT FOR PUMPING. LOCATION OF SUMP PIT TO BE DETERMINED IN FIELD.
6. EXCAVATE THE POND AND COMPLETE THE BASIN TO LINES, GRADES, AND DETAILS SHOWN IN THE CONSTRUCTION PLANS. OVEREXCAVATE THE BOTTOM OF THE POOL 2 FEET FOR SEDIMENT STORAGE. DURING EXCAVATION, THE CONTRACTOR SHALL SALVAGE AND STOCKPILE ANY SOILS CLASSIFIED AS CH, CL, CH, AND GM PER THE UNIFIED SOIL CLASSIFICATION SYSTEM TO BE USED TO CONSTRUCT EMBANKMENT. THE ABOVE CLASSIFIED SOILS MAY BE OBTAINED FROM ELSEWHERE WITHIN THE PROJECT LIMITS.
7. STABILIZE ALL BARE AREAS BELOW ELEV. 31.00, EXCLUDING THE POND BOTTOM, WITH WET SEED MIX AND ABOVE ELEV. 31.00 WITH DRY SEED MIX.

MAINTENANCE OF POND AS A SEDIMENT BASIN

1. SEE SHEET CS-40 FOR SB734 BASIN DETAILS. PLACE EXTERIOR GRADE PLYWOOD ACROSS WEIR OPENING IN ORDER TO FORM CREST AT ELEVATION 31.35. PLYWOOD SHALL BE AFFIXED TO WEIR WALL USING CONSTRUCTION ADHESIVE OR OTHER APPROVED MEANS. SKIMMER DEVICES SHALL BE ATTACHED TO PLYWOOD BAFFLE AT PERMANENT POOL ELEVATION 30.00. THE COST OF THE BAFFLE AND SKIMMER DEVICES AND MAINTENANCE AND/OR REPLACEMENT OF BOTH THROUGHOUT CONSTRUCTION SHALL BE INCIDENTAL TO ITEM 272500.
2. CONTRACTOR SHALL INSPECT THE BASIN IMMEDIATELY AFTER EVERY RAIN AND MAKE REPAIRS AS NEEDED.
3. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION, 30.69, ON A STAKE DRIVEN INTO THE GROUND AT A LOCATION CLEARLY VISIBLE FROM THE EMBANKMENT. SEDIMENT SHALL BE REMOVED WHEN CLEANOUT ELEVATION IS REACHED AND DISPOSED OF AT A LOCATION APPROVED BY THE ENGINEER.

CONVERSION TO PERMANENT STORMWATER MANAGEMENT POND

1. CONVERT THE BASIN INTO THE PERMANENT STORMWATER MANAGEMENT POND AFTER ALL AREAS DRAINING TO THE POND HAVE BEEN PERMANENTLY STABILIZED AND THE ENGINEER HAS APPROVED THE CONVERSION.
2. REMOVE EXCESS ACCUMULATED SEDIMENT ON THE POND BOTTOM AND BENCHES, IF ANY, TO THE SPECIFIED FINISHED LINES AND GRADES SHOWN IN THE PLAN AND DISPOSE SEDIMENT AT A LOCATION APPROVED BY THE ENGINEER. IF ELEVATION OF ACCUMULATED SEDIMENT IN POOL BOTTOMS IS BELOW THE PROPOSED FINISHED ELEVATION, ADDITIONAL FILL MATERIAL SHALL NOT BE PLACED IN POND.
3. PUMP DOWN STANDING WATER IN THE POND AS NECESSARY AND COMPLETE STABILIZATION OF ALL BARE AREAS, REMOVE EROSION AND SEDIMENT CONTROL MEASURES, AND REMOVE SKIMMER DEWATERING DEVICES AND PLYWOOD.

N:\33653-000\CONTRACT 1A\CADD\SW26-830U301_1A.dgn
5/8/2015 7:34:47 AM

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

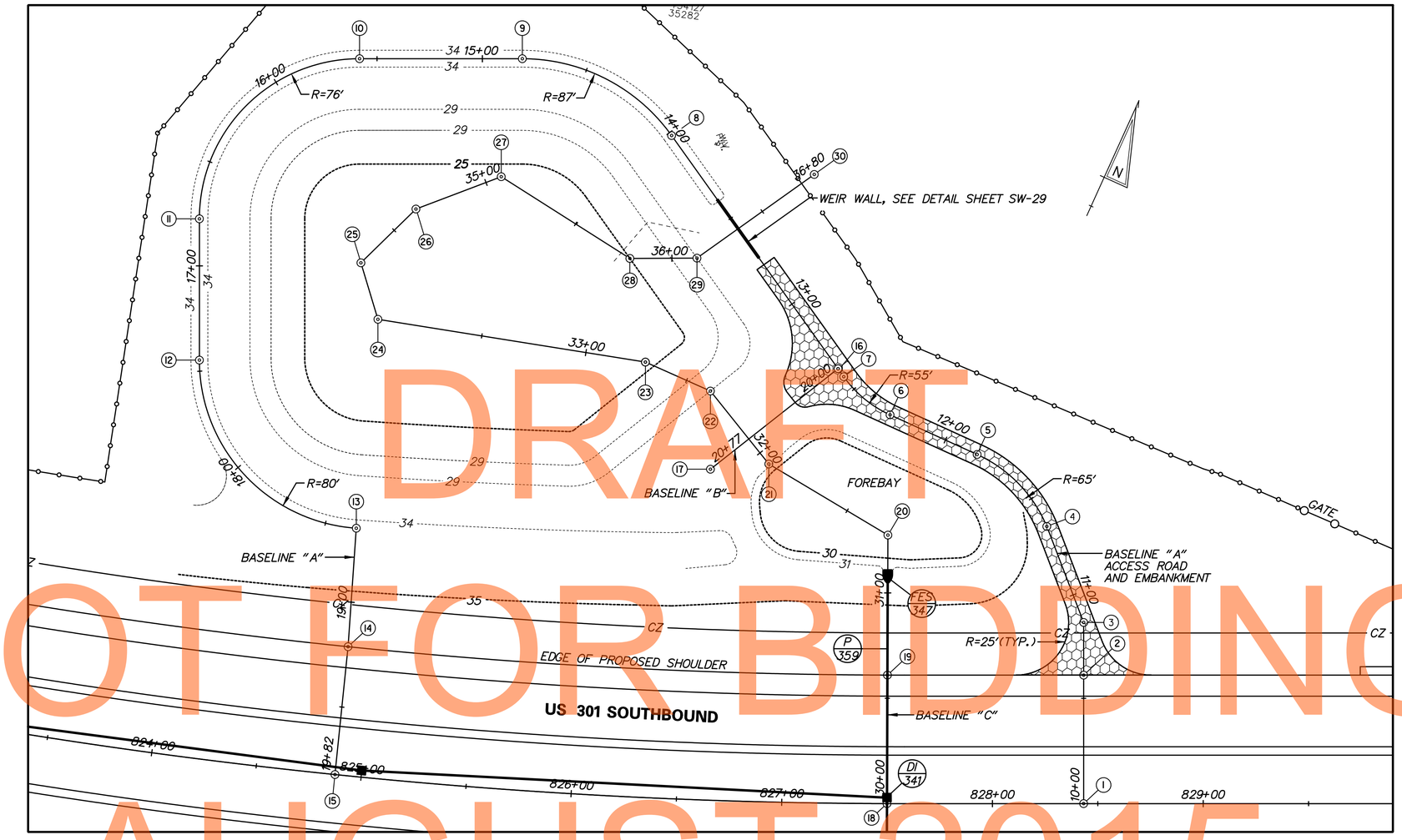
US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.
T200911308	
COUNTY	DESIGNED BY: CRH
NEW CASTLE	CHECKED BY: JDC

STORMWATER MANAGEMENT PLAN BMP 734

SW-26

SHEET NO.	TOTAL SHTS.
647	875



STAKEOUT PLAN – SWM BMP NO. 734 STA. 802+50 TO STA. 806+50, WET POND

SCALE: 1" = 30'

EMBANKMENT BASELINE "A" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
1	POB STA. 10+00.00	555553.43	587781.50
2	PI STA. 10+61.00	555608.81	587755.94
3	PI STA. 10+86.00	555631.51	587745.47
4	PC STA. 11+32.95	555664.28	587711.85
5	PT STA. 11+83.49	555682.73	587666.15
6	PC STA. 12+28.88	555682.51	587620.77
7	PT STA. 12+57.68	555689.74	587593.22
8	PC STA. 13+98.32	555759.46	587471.08
9	PT STA. 14+81.05	555762.90	587391.51
10	PC STA. 15+58.29	555730.54	587321.38
11	PT STA. 16+77.67	555629.69	587284.21
12	PC STA. 17+44.72	555568.81	587312.30
13	PI STA. 18+64.83	555527.53	587413.34
14	PI STA. 19+21.20	555474.83	587433.35
15	POE STA. 19+82.20	555417.13	587453.13

ACCESS ROAD BASELINE "B" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
16	POB STA.20+00.00	555692.04	587589.19
17	POE STA.20+77.49	555623.00	587554.00

BASELINE "C" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
18	POB STA. 30+00.00	555514.33	587696.74
19	PI STA. 30+61.00	555569.81	587671.38
20	PI STA. 31+27.46	555630.25	587643.75
21	PI STA. 31+93.28	555637.23	587578.30
22	PI STA. 32+37.63	555657.05	587538.62
23	PI STA. 32+71.39	555656.61	587504.87
24	PI STA. 33+99.94	555621.87	587381.10
25	PI STA. 34+27.94	555642.84	587362.55
26	PI STA. 34+64.45	555676.95	587375.56
27	PI STA. 35+07.74	555707.86	587405.88
28	PI STA. 35+80.05	555698.20	587477.54
29	PI STA. 36+11.90	555711.66	587506.40
30	POE STA. 36+80.27	555771.04	587540.29

n:\31653-000\contract 10\cadd\SW27-830U301_1A.dgn
10/31/2014 1:43:38 PM

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

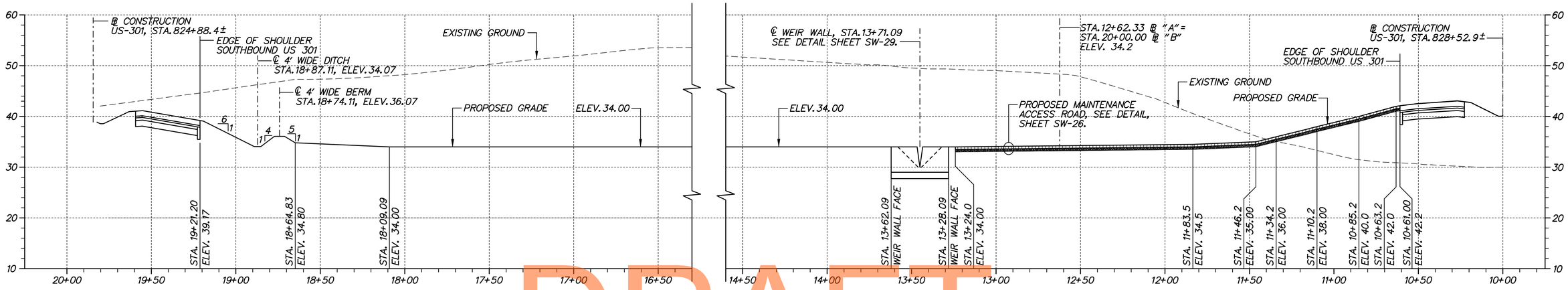
SCALE
0 30 60 90
FEET

US 301,
SR 896 TO SR 1

CONTRACT T200911308
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: CRH
CHECKED BY: JDC

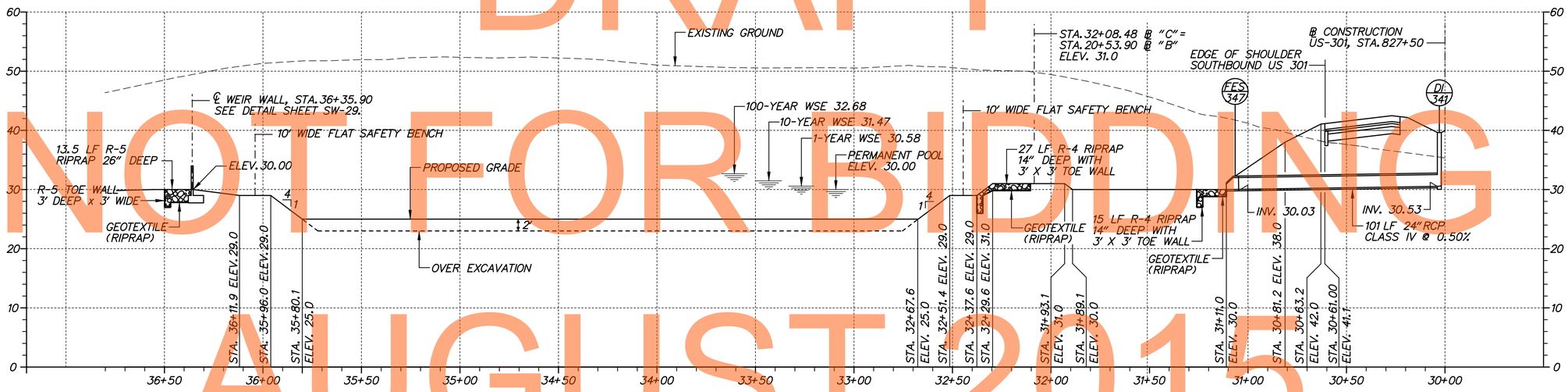
STORMWATER MANAGEMENT STAKEOUT PLAN BMP 734

SW-27
SHEET NO. 648
TOTAL SHTS. 875



PROFILE – POND EMBANKMENT – BMP 734 BASELINE "A"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'

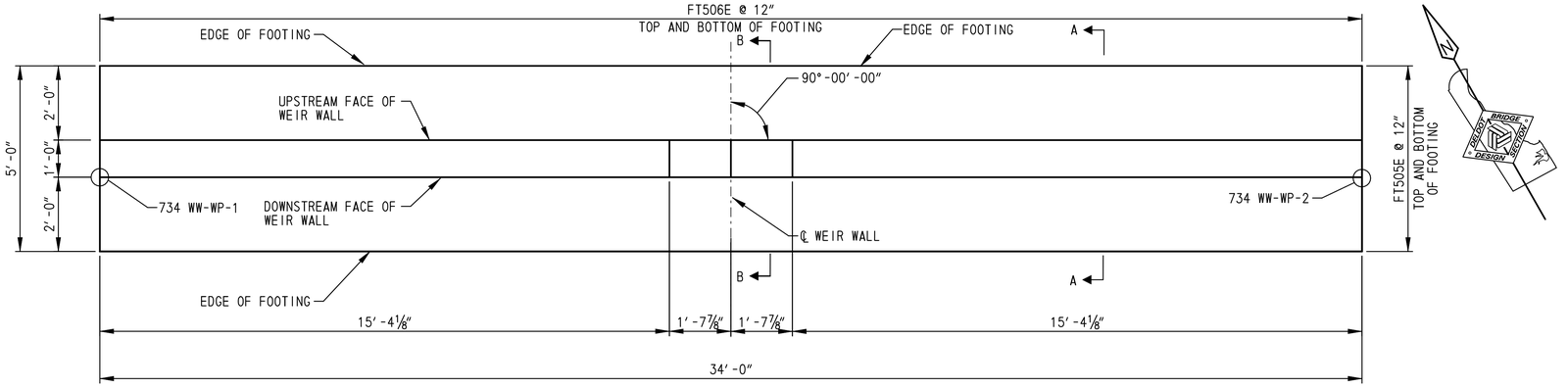


PROFILE – BMP 734 BASELINE "C"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'

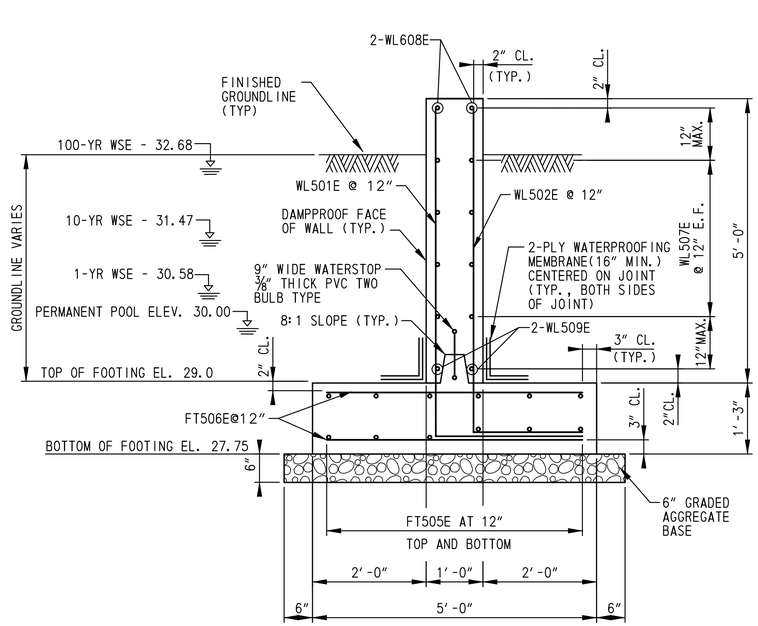
RIPRAP NOTES:

1. RIPRAP CUTOFF AND TOE WALLS SHALL BE MEASURED BELOW THE NORMAL RIPRAP PAD DEPTH AND PAID PER TON (ITEMS 712020 AND 712021).
2. THE 26" DEPTH FOR R-5 RIPRAP SHALL CONSIST OF 20" R-5 RIPRAP AND 6" OF DE NO. 57 STONE.



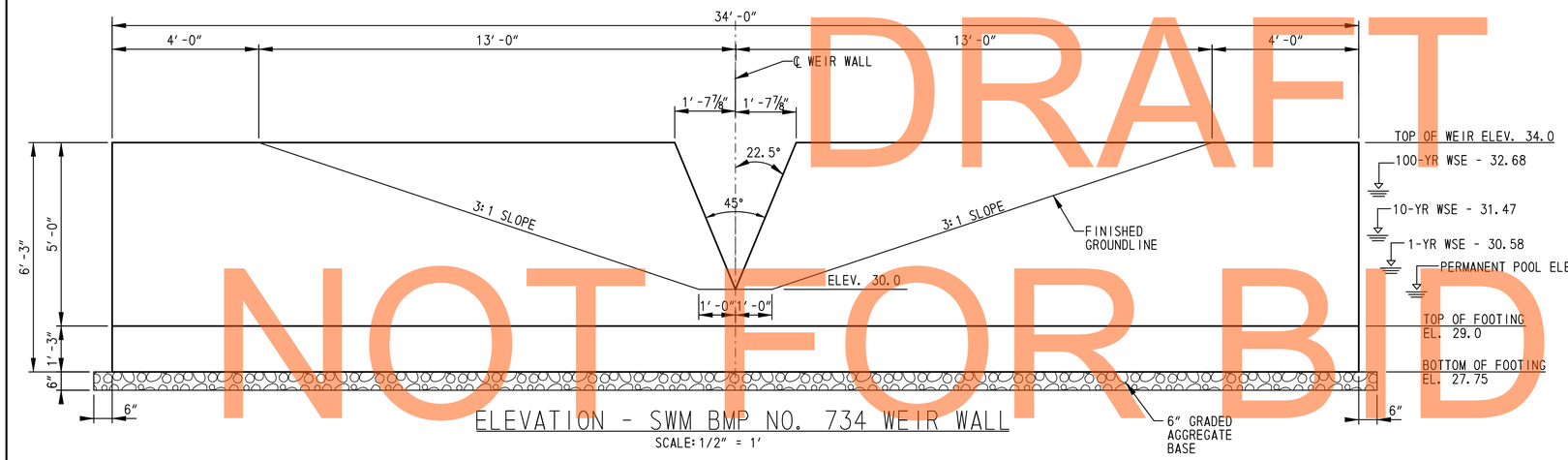
PLAN - SWM BMP NO. 734 WEIR WALL

SCALE: 1/2" = 1'



SECTION A-A

SCALE: 3/4"=1'-0"



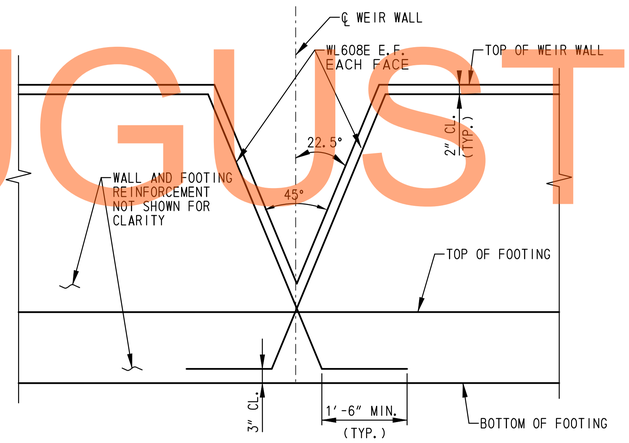
ELEVATION - SWM BMP NO. 734 WEIR WALL

SCALE: 1/2" = 1'

WORKING POINT COORDINATES		
WORKING POINT	NORTHING	EASTING
734 WW-WP-1	555740.5014	587503.2854
734 WW-WP-2	555723.6463	587532.8134

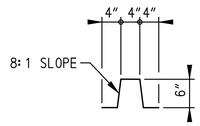
NOTES:

1. MAXIMUM FACTORED BEARING RESISTANCE FOR WEIR WALL IS 2 KSF.
2. KEYS ARE NOMINAL SIZE.
3. CONCRETE SHALL BE CLASS A, 4500 PSI.
4. RIPRAP NOT SHOWN FOR CLARITY.
5. E.F. = EACH FACE, E.S. = EQUAL SPACING.
6. SEE REINFORCING BAR LIST ON DRAWINGS SW-34 AND SW-35.
7. 6" GRADED AGGREGATE BASE BEDDING SHALL BE INCIDENTAL TO THE CONTRACT UNIT COST FOR THE WEIR WALL.



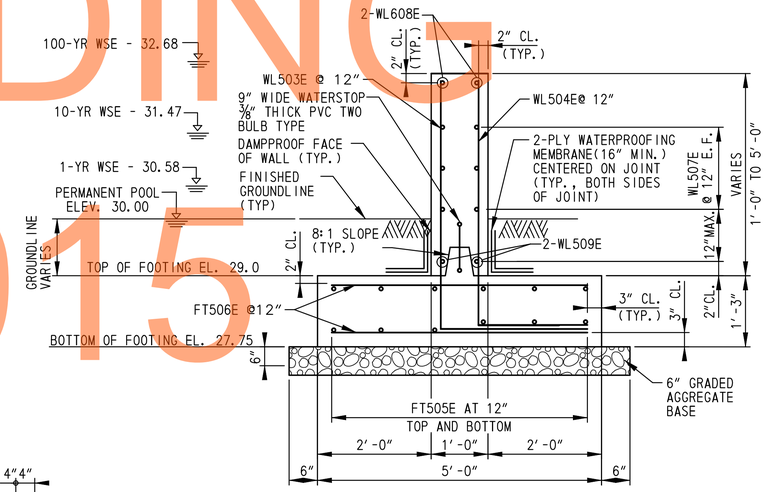
ADDITIONAL REINFORCEMENT AT WEIR WALL OPENING

N.T.S.



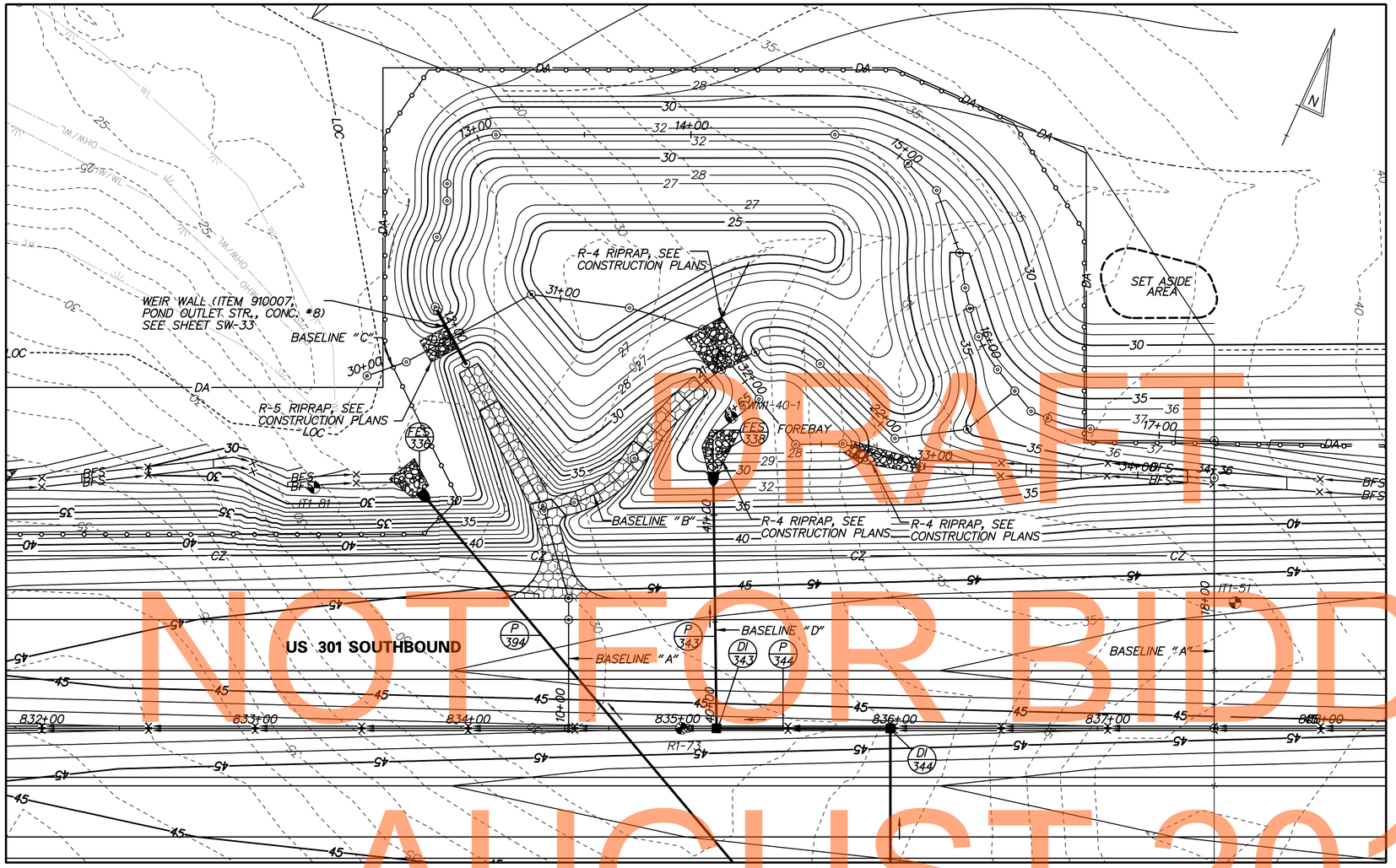
CONSTRUCTION JOINT DETAIL

SCALE: 3/4"=1'-0"



SECTION B-B

SCALE: 3/4"=1'-0"



PLAN – SWM BMP NO. 737 STA. 833+50 TO 837+50, WET POND

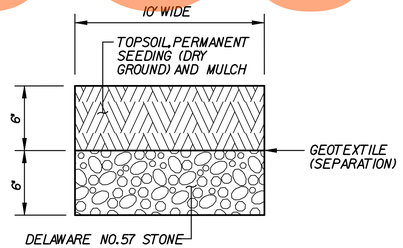
SCALE: 1" = 30'

BMP NO. 737 – DESIGN SUMMARY				
DESIGN STORM	FACILITY INFLOW (CFS)	FACILITY DISCHARGE (CFS)	WATER SURFACE ELEVATION	STORAGE VOLUME (AC-FT)
PERM. POOL	N. A.	N. A.	28. 00	0. 78
1-YEAR	6. 3	0. 6	28. 53	0. 24
10-YEAR	21. 0	3. 6	29. 53	0. 75
100-YEAR	47. 2	14. 5	30. 84	1. 52

HAZARD CLASSIFICATION "A" AS PER POND CODE 378

DRAINAGE AREA TO FACILITY: 8.94 ACRES

MANAGEMENT PROVIDED BY FACILITY: WATER QUALITY CONTROL VIA EXTENDED DETENTION FOR 1-YEAR RESOURCE PROTECTION STORM AND QUANTITY CONTROL FOR THE 10 AND 100-YEAR EVENTS.



POND MAINTENANCE ACCESS ROAD

SCALE: NONE

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS OF ALL STORMWATER MANAGEMENT FACILITIES, SUCH AS PONDS, BIOFILTRATION SWALES, BIO-RETENTION AREAS, ETC. THE "AS-BUILT" DRAWINGS SHALL SHOW THE ACTUAL FINISHED GROUND CONTOURS, OUTLET STRUCTURE DIMENSIONS AND ELEVATIONS, ETC., AS THEY EXIST AT THE COMPLETION OF THE PROJECT. THESE DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER OR LAND SURVEYOR REGISTERED IN THE STATE OF DELAWARE. ALL "AS-BUILT" DRAWINGS SHALL BE SENT TO THE DELDOT STORMWATER ENGINEER. ALL COSTS FOR THIS WORK SHALL BE INCLUDED UNDER ITEM 763501 - CONSTRUCTION ENGINEERING.
2. STORMWATER MANAGEMENT PONDS SERVING AS TEMPORARY SEDIMENT BASINS DURING CONSTRUCTION SHALL HAVE SEDIMENT REMOVED AT TIMES DETERMINED BY THE ENGINEER AND AT THE CONCLUSION OF THE PROJECT AFTER ALL AREAS DRAINING TO THE POND HAVE BEEN VEGETATIVELY STABILIZED. COST FOR SEDIMENT REMOVAL SHALL BE PAID FOR UNDER ITEM 250000 - SEDIMENT REMOVAL. ACCESS SHALL BE MAINTAINED TO ALL SEDIMENT REMOVAL CONTROL DEVICES REQUIRING MAINTENANCE UNTIL CONSTRUCTION PHASING AND VEGETATIVE STABILIZATION ALLOW THE REMOVAL OF THOSE CONTROLS, WHICH ARE NO LONGER REQUIRED.

POND CONSTRUCTION SEQUENCE AND NOTES:

THE STORMWATER MANAGEMENT POND SHALL FUNCTION AS A SEDIMENT BASIN DURING ROADWAY CONSTRUCTION AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE STANDARD SPECIFICATIONS:
SECTION 271 - STORMWATER MANAGEMENT POND
SECTION 272 - POND OUTLET STRUCTURE, CONCRETE

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE PER CONSTRUCTION PHASING, MOT AND EROSION AND SEDIMENT CONTROL PLANS.
2. CLEAR AND GRUB FOR INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS.
3. INSTALL PERIMETER SEDIMENT CONTROLS AS SHOWN ON THE CONSTRUCTION PHASING PLANS, MOT AND EROSION AND SEDIMENT CONTROL PLANS.
4. CLEAR AND GRUB REMAINING AREA FOR POND CONSTRUCTION.
5. CONSTRUCT POND OUTLET STRUCTURE AND RIPRAP ENERGY DISSIPATOR AT DOWNSTREAM END OF WEIR WALL. EXCAVATE AS NEEDED TO INSTALL POND OUTLET STRUCTURE. INSTALL SKIMMER DEWATERING DEVICE. DE-WATER FOUNDATION AS NEEDED IN ACCORDANCE WITH SECTION 111 AND USE SUMP PIT FOR PUMPING. LOCATION OF SUMP PIT TO BE DETERMINED IN FIELD.
6. EXCAVATE THE POND AND COMPLETE THE BASIN TO LINES, GRADES, AND DETAILS SHOWN IN THE CONSTRUCTION PLANS. OVEREXCAVATE THE BOTTOM OF THE POOL 2 FEET FOR SEDIMENT STORAGE. DURING EXCAVATION, THE CONTRACTOR SHALL SALVAGE AND STOCKPILE ANY SOILS CLASSIFIED AS CH, CL, CH, AND GM PER THE UNIFIED SOIL CLASSIFICATION SYSTEM TO BE USED TO CONSTRUCT EMBANKMENT. THE ABOVE CLASSIFIED SOILS MAY BE OBTAINED FROM ELSEWHERE WITHIN THE PROJECT LIMITS.
7. STABILIZE ALL BARE AREAS BELOW ELEV. 29.00, EXCLUDING THE POND BOTTOM, WITH WET SEED MIX AND ABOVE ELEV. 29.00 WITH DRY SEED MIX.

MAINTENANCE OF POND AS A SEDIMENT BASIN

1. SEE SHEET CS-41 FOR SB737 BASIN DETAILS. PLACE EXTERIOR GRADE PLYWOOD ACROSS WEIR OPENING IN ORDER TO FORM CREST AT ELEVATION 29.56. PLYWOOD SHALL BE AFFIXED TO WEIR WALL USING CONSTRUCTION ADHESIVE OR OTHER APPROVED MEANS. SKIMMER DEVICE SHALL BE ATTACHED TO PLYWOOD BAFFLE AT PERMANENT POOL ELEVATION 28.00. THE COST OF THE BAFFLE AND SKIMMER DEVICE AND MAINTENANCE AND/OR REPLACEMENT OF BOTH THROUGHOUT CONSTRUCTION SHALL BE INCIDENTAL TO ITEM 272500.
2. CONTRACTOR SHALL INSPECT THE BASIN IMMEDIATELY AFTER EVERY RAIN AND MAKE REPAIRS AS NEEDED.
3. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION, 28.81, ON A STAKE DRIVEN INTO THE GROUND AT A LOCATION CLEARLY VISIBLE FROM THE EMBANKMENT. SEDIMENT SHALL BE REMOVED WHEN CLEANOUT ELEVATION IS REACHED AND DISPOSED OF AT A LOCATION APPROVED BY THE ENGINEER.

CONVERSION TO PERMANENT STORMWATER MANAGEMENT POND

1. CONVERT THE BASIN INTO THE PERMANENT STORMWATER MANAGEMENT POND AFTER ALL AREAS DRAINING TO THE POND HAVE BEEN PERMANENTLY STABILIZED AND THE ENGINEER HAS APPROVED THE CONVERSION.
2. REMOVE EXCESS ACCUMULATED SEDIMENT ON THE POND BOTTOM AND BENCHES, IF ANY, TO THE SPECIFIED FINISHED LINES AND GRADES SHOWN IN THE PLAN AND DISPOSE SEDIMENT AT A LOCATION APPROVED BY THE ENGINEER. IF ELEVATION OF ACCUMULATED SEDIMENT IN POOL BOTTOMS IS BELOW THE PROPOSED FINISHED ELEVATION, ADDITIONAL FILL MATERIAL SHALL NOT BE PLACED IN POND.
3. PUMP DOWN STANDING WATER IN THE POND AS NECESSARY AND COMPLETE STABILIZATION OF ALL BARE AREAS, REMOVE EROSION AND SEDIMENT CONTROL MEASURES, AND REMOVE SKIMMER DEWATERING DEVICE AND PLYWOOD.

N:\36653-000\CONTRACT 1A\CADD\SW30-833U301_1A.dgn
5/8/2015 7:36:20 AM

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 30 60 90
FEET

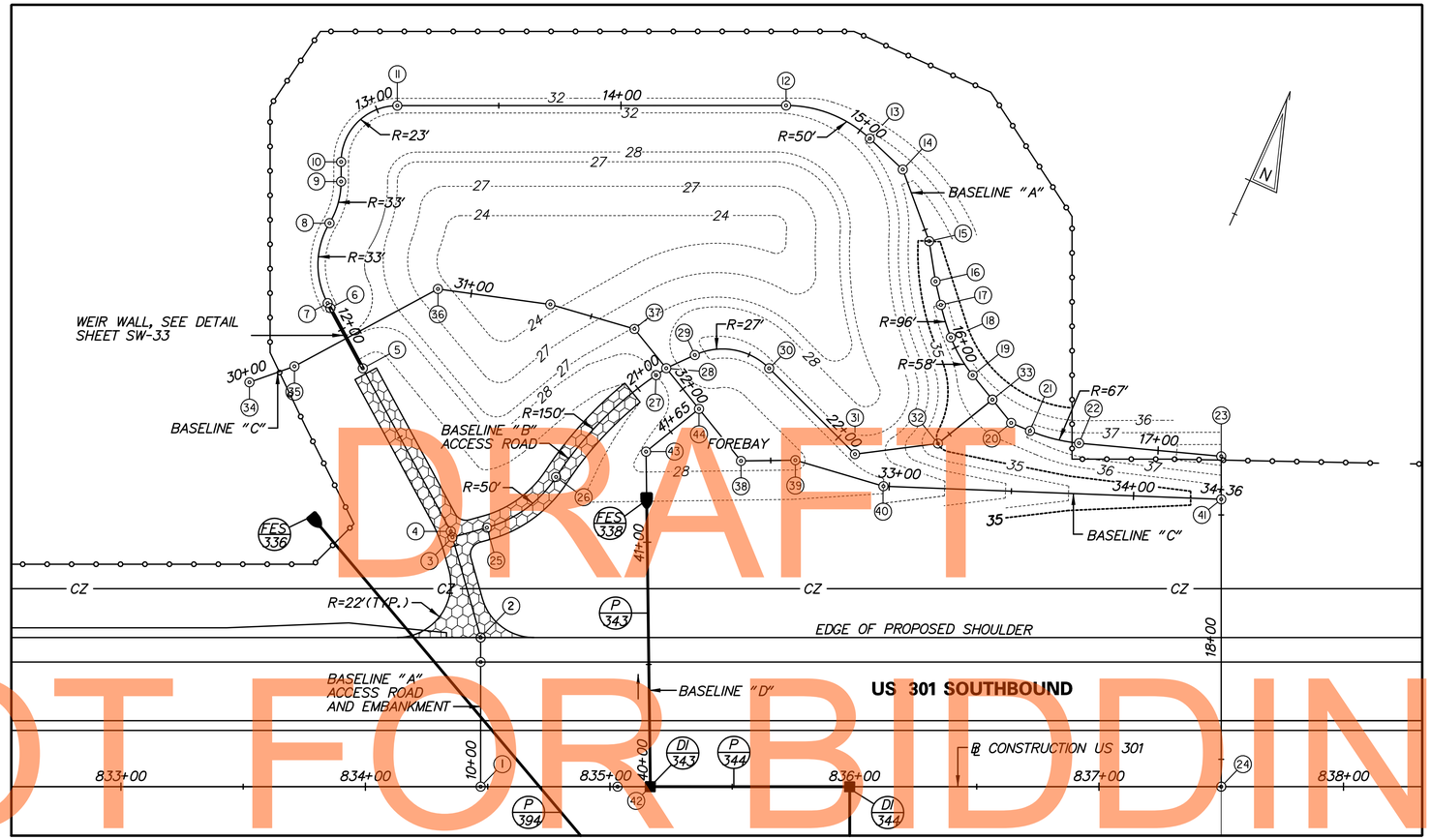
US 301,
SR 896 TO SR 1

CONTRACT	BRIDGE NO.
T200911308	
COUNTY	DESIGNED BY: C.R.H.
NEW CASTLE	CHECKED BY: D.L.H.

STORMWATER MANAGEMENT PLAN
BMP 737

SW-30

SHEET NO.	TOTAL SHTS.
651	875



STAKEOUT PLAN – SWM BMP NO. 737 STA. 833+50 TO STA. 837+50, WET POND

SCALE: 1" = 30'

EMBANKMENT BASELINE "A" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
1	POB STA.10+00.00	555806.40	588329.79
2	PI STA.10+61.00	555861.79	588304.23
3	PI STA.11+03.62	555894.22	588276.58
4	PI STA.11+06.13	555896.13	588274.95
5	PI STA.11+81.92	555941.62	588214.33
6	PI STA.12+09.92	555958.43	588191.94
7	PC STA.12+12.24	555959.82	588190.08
8	PRC STA.12+46.47	555989.84	588177.09
9	PT STA.12+64.37	556007.30	588174.25
10	PC STA.12+72.41	556014.60	588170.88
11	PT STA.13+08.53	556045.11	588182.12
12	PC STA.14+67.51	556111.79	588326.45
13	PT STA.15+05.23	556113.83	588363.23
14	PI STA.15+23.72	556107.99	588380.76
15	PI STA.15+54.95	556085.90	588402.85
16	PI STA.15+71.62	556072.04	588412.11
17	PC STA.15+81.49	556064.23	588418.13
18	PCC STA.15+95.44	556053.84	588427.42
19	PT STA.16+13.32	556043.56	588441.97
20	PI STA.16+38.39	556032.43	588464.43
21	PC STA.16+46.88	556032.71	588472.91
22	PT STA.16+67.44	556036.50	588493.04
23	PI STA.17+25.93	556056.00	588548.18
24	POE STA.18+61.08	555933.29	588604.80

ACCESS ROAD BASELINE "B" STAKEOUT INFORMATION

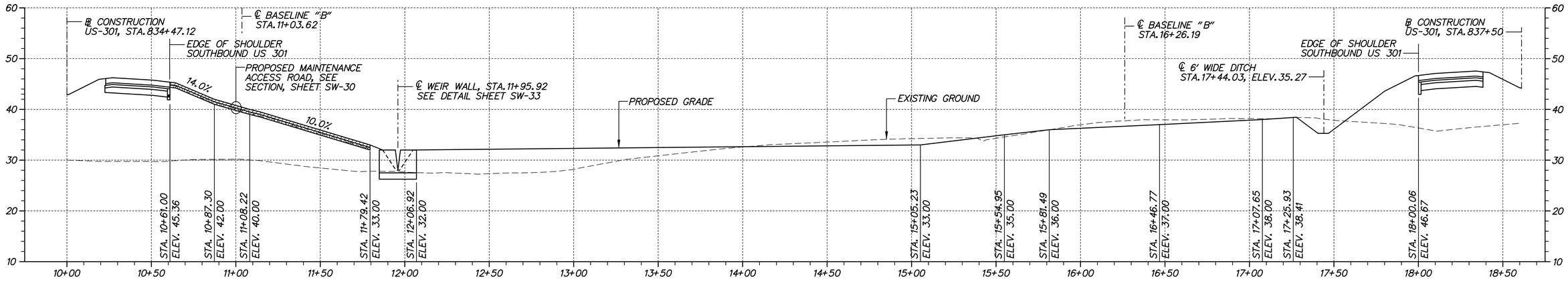
POINT NO.	STATION	NORTHING	EASTING
3	POB STA.20+00.00	555894.22	588276.58
25	PC STA.20+14.63	555903.71	588287.71
26	PRC STA.20+50.46	555934.37	588304.72
27	PT STA.21+09.19	555989.32	588324.40
28	PI STA.21+14.24	555993.65	588326.99
29	PC STA.21+27.10	556003.44	588335.33
30	PT STA.21+60.00	556011.25	588365.23
31	PI STA.22+09.65	555994.06	588411.80
32	PI STA.22+43.87	556012.24	588440.80
33	POE STA.22+72.45	556037.85	588453.50

BASELINE "C" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
34	POB STA.30+00.00	555917.01	588174.62
35	PI STA.30+19.49	555930.61	588188.57
36	PI STA.30+86.21	555983.98	588228.62
37	PI STA.31+68.23	556002.79	588308.45
38	PI STA.32+37.61	555972.01	588370.63
39	PI STA.32+59.85	555981.60	588390.70
40	PI STA.32+97.41	555987.03	588427.86
41	POE STA.34+35.66	556040.04	588555.55

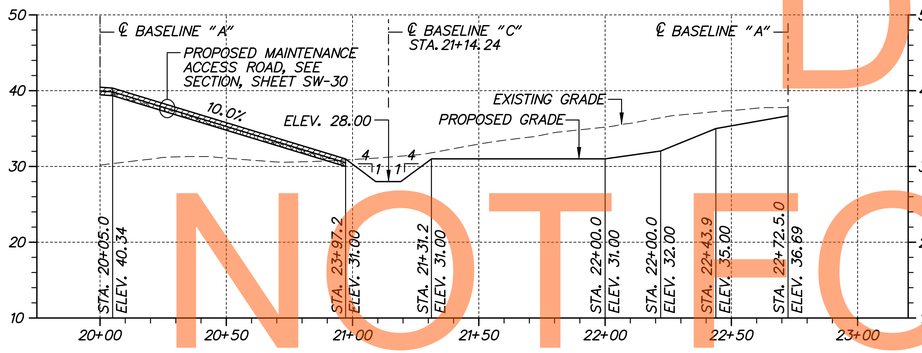
BASELINE "D" STAKEOUT INFORMATION

POINT NO.	STATION	NORTHING	EASTING
42	POB STA.40+00.00	555835.46	588392.77
43	PI STA.41+37.07	555959.19	588333.79
44	POE STA.41+64.91	555984.14	588346.13



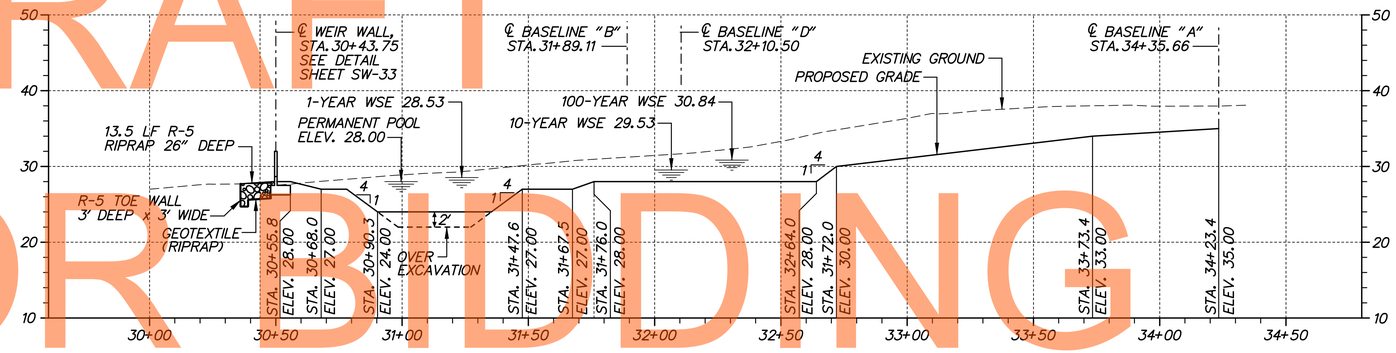
PROFILE – POND EMBANKMENT – BMP 737 BASELINE 'A'

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



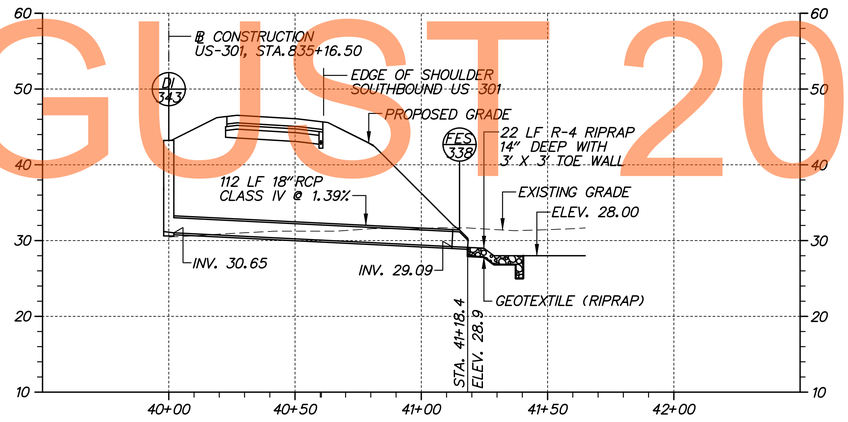
PROFILE – ACCESS ROAD – BMP 737 BASELINE "B"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



PROFILE – BMP 737 BASELINE "C"

SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'



PROFILE – BMP 737 BASELINE "D"

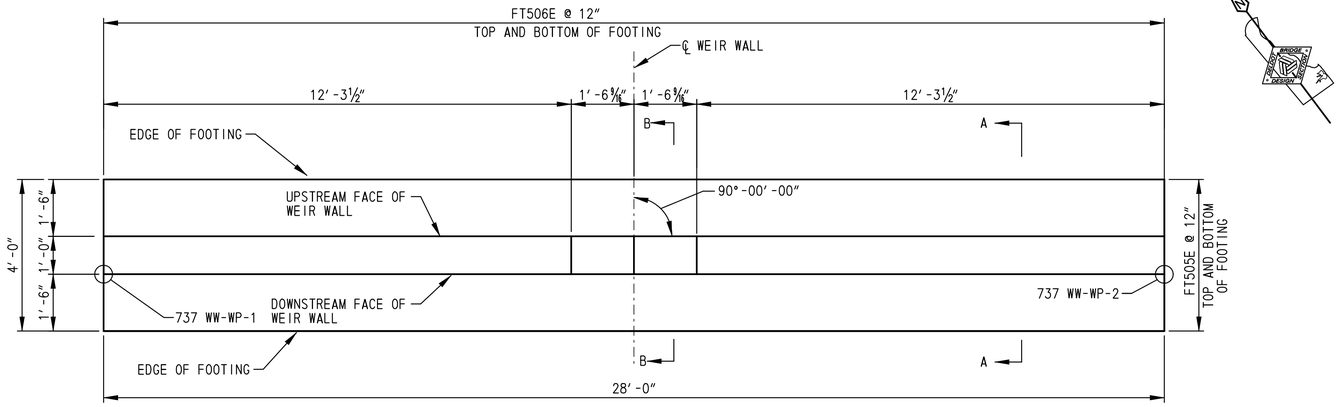
SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'

RIPRAP NOTES:

1. RIPRAP CUTOFF AND TOE WALLS SHALL BE MEASURED BELOW THE NORMAL RIPRAP PAD DEPTH AND PAID PER TON (ITEMS 712020 AND 712021).
2. THE 26" DEPTH FOR R-5 RIPRAP SHALL CONSIST OF 20" R-5 RIPRAP AND 6" OF DE NO. 57 STONE.

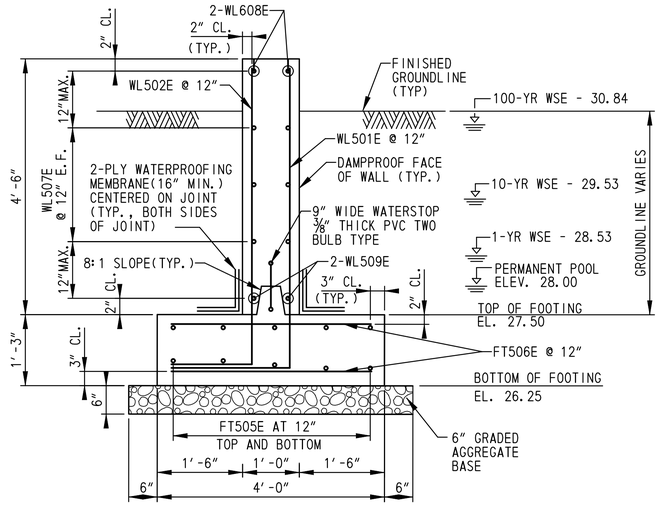
n:\31653-000\contract_10\cadd\SW32-833U301_1A.dgn
10/31/2014 11:44:04 PM

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 30 60 90 FEET	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO.	STORMWATER MANAGEMENT PROFILES BMP 737
				COUNTY NEW CASTLE	DESIGNED BY: CRH	SW-32 / SHEET NO. 653 / TOTAL SHTS. 875
					CHECKED BY: JDC	



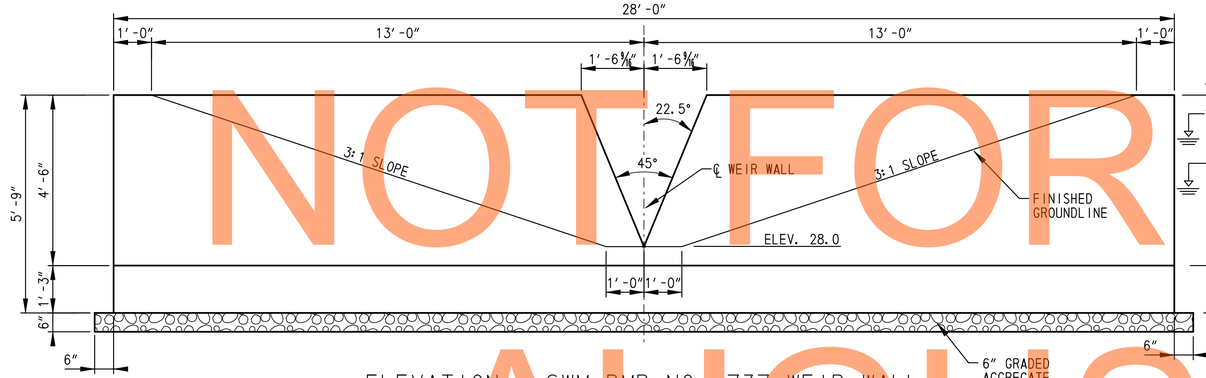
PLAN - SWM BMP NO. 737 WEIR WALL

SCALE: 1/2" = 1'



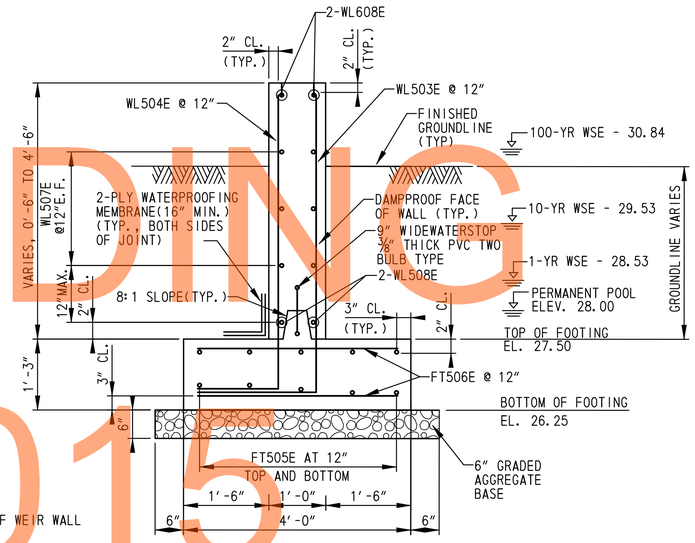
SECTION A-A

SCALE: ¾"=1'-0"



ELEVATION - SWM BMP NO. 737 WEIR WALL

SCALE: 1/2" = 1'



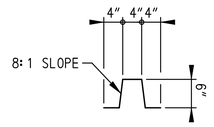
SECTION B-B

SCALE: ¾"=1'-0"

WORKING POINT COORDINATES		
WORKING POINT	NORTHING	EASTING
737 WW-WP-1	555958.0256	588191.6354
737 WW-WP-2	555941.2191	588214.0305

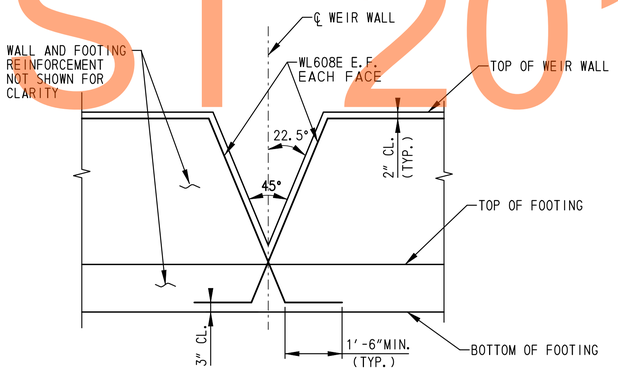
NOTES:

1. MAXIMUM FACTORED BEARING RESISTANCE FOR WEIR WALL IS 2 KSF.
2. KEYS ARE NOMINAL SIZE.
3. CONCRETE SHALL BE CLASS A, 4500 PSI.
4. RIPRAP NOT SHOWN FOR CLARITY.
5. E.F. = EACH FACE, E.S.=EQUAL SPACING.
6. SEE REINFORCING BAR LIST ON DRAWINGS SW-34 AND SW-35.
7. 6" GRADED AGGREGATED BASE BEDDING SHALL BE INCIDENTAL TO THE CONTRACT UNIT COST FOR THE WEIR WALL.



CONSTRUCTION JOINT DETAIL

SCALE: ¾"=1'-0"



ADDITIONAL REINFORCEMENT AT WEIR WALL OPENING

SCALE: NOT TO SCALE

r:\31653-000\contract no\cadd\SW33-833U301_1A.dgn
10/31/2014 11:44:07 PM

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.
T200911308	
COUNTY	DESIGNED BY: HQ
NEW CASTLE	CHECKED BY: JAG

STORMWATER MANAGEMENT DETAILS BMP 737

SW-33	
SHEET NO.	654
TOTAL SHTS.	875

(1) ANY MARK NUMBER WITH SUFFIX 'E' DENOTES EPOXY COATED REINFORCING STEEL.

(2) ALL MARK 'LOCATION PREFIXES' SHALL CONSIST OF TWO LETTERS AND ARE AS FOLLOWS: AB = ABUTMENT, AS = APPROACH SLAB, BC = BOX CULVERT, BW = BACKWALL, CL = COLUMN, DK = DECK, DL = DOWEL, FT = FOOTING, HW = HEADWALL, MS = MISC. BARS, PA = PARAPET, PR = PIER, SC = SHEETPILE CAP, SL = SLAB, TW = TOEWALL, WL = WALL (UNIQUE LOCATION), WW = WINGWALL

SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
SWM BMP NO.720 WEIR STRUCTURE															
12	5	6-11	WL501E	17		4-10	2-10								
12	5	6-3	WL502E	17		4-10	1-5								
12	5	5-5	WL503E	17		3-4	2-10								
12	5	4-9	WL504E	17		3-4	1-5								
2	5	4-11	WL505E	17		2-10	2-10								
2	5	4-3	WL506E	17		2-10	1-5								
10	5	24-9	FT507E	STR		24-9									
52	5	3-6	FT508E	STR		3-6									
4	5	8-6	WL509E	17			5-8	2-10							
4	5	5-8	WL510E	STR		5-8									
4	5	13-6	WL511E	17			11-8	1-10							
6	5	24-11	WL512E	STR		24-11									
SWM BMP NO.730 WEIR STRUCTURE															
24	5	6-11	WL501E	17		4-10	2-10								
24	5	6-3	WL502E	17		4-10	1-5								
2X2	5	3-6	WL503E	17		1-5	2-10								
		TO				TO	TO	TO							
		5-2				3-1	2-10								
2X2	5	2-10	WL504E	17		1-5	1-5								
		TO				TO	TO	TO							
		4-6				3-1	1-5								
10	5	24-6	FT505E	STR		24-6									
52	5	3-6	FT506E	STR		3-6									
4X3	5	11-2	WL507E	STR		11-2									
		TO				TO									
		12-0				12-0									
4	6	17-4	WL608E	6		1-6	4-11	10-9				1-0	3-7		2-0	14-3
2	5	24-6	WL509E	STR		24-6									
SWM BMP NO.723 WEIR STRUCTURE															
30	5	8-3	WL501E	17		6-2	2-10								
30	5	7-7	WL502E	17		6-2	1-5								
4X4	5	14-1	WL503E	STR		14-1									
		TO				TO									
		14-9				14-9									
4	6	21-9	WL604E	6		1-6	6-4	13-11				6-2		1-4	2 16-9
10	5	29-10	FT505E	STR		29-10									
31	5	3-6	FT506E	STR		3-6									

SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
2	5	30-1	WL507E	STR		30-1									
SWM BMP NO.733 RISER STRUCTURE															
28	5	5-10	FT501E	STR		5-10									
26	5	4-7	DL502E	2		3-9						0-10			
26	5	4-5	DL503E	2		3-7						0-10			
8	5	2-8	DL504E	2		1-10						0-10			
4	5	1-2	WL505E	STR		1-2									
4	5	1-0	WL506E	STR		1-0									
2	5	1-0	WL507E	STR		1-0									
2	5	0-10	WL508E	STR		0-10									
4	5	6-5	WL509E	14		2-10	0-9	2-10					2-0		2-0	4-9
4	5	12-7	WL510E	17		3-9	5-0	3-9								
4	5	11-3	WL511E	17		3-5	4-4	3-5								
2	5	10-6	WL512E	17		3-9	5-0	1-8								
2	5	9-2	WL513E	17		3-5	4-4	1-4								
1	5	7-6	WL514E	17		1-4	5-0	1-2								
1	5	6-2	WL515E	17		1-0	4-4	0-10								
2	5	9-10	WL516E	17		3-9	5-0	1-1								
2	5	8-6	WL517E	17		3-5	4-4	0-9								
2	5	11-0	WL518E	17		3-9	5-0	2-2								
2	5	9-7	WL519E	17		3-4	4-4	1-10	2							
1	5	2-6	WL520E	17		1-2	1-4									
1	5	1-10	WL521E	17		0-10	1-0									
1	5	2-8	WL522E	17		1-4	1-4									
1	5	2-0	WL523E	17		1-0	1-0									
14	5	5-0	SL530E	STR		5-0										
14	5	4-4	SL531E	STR		4-4										
2	5	1-3	SL532E	STR		1-3										
2	5	0-11	SL533E	STR		0-11										
1	5	2-3	SL534E	STR		2-3										
1	5	1-11	SL535E	STR		1-11										
2	5	5-5	SL536E	14		2-2	1-0	2-2					1-6		1-6	3 4-1
4	5	3-5	SL537E	STR		3-5										
2	5	2-2	DL538E	2		1-4						0-10				
1	5	1-2	WL539E	STR		1-2										

SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
SWM BMP NO.725 WEIR STRUCTURE															
26	5	5-8	WL501E	STR		5-8									
26	5	5-8	WL502E	STR		5-8									
26	5	6-4	DL503E	17		4-3	2-10								
26	5	5-8	DL504E	17		4-3	1-5								
12	5	27-6	FT505E	STR		27-6									
58	5	4-6	FT506E	STR		4-6									
4X4	5	12-5	WL507E	STR		12-5									
		TO				TO									
		13-7				13-7									
4	6	21-9	WL608E	6		12-0	3 8-2	2 1-6	0			7-7	0	3-1	2 16-8
4	5	27-8	WL509E	STR		27-8									
2X2	5	7-9	WL510E	17		5-8	2-10								
		TO				TO	TO	TO							
		5-8				3-7	2-10								
2X2	5	7-1	WL511E	17		5-8	1-5								
		TO				TO	TO	TO							
		5-0				3-7	1-5								
SWM BMP NO.731 WEIR STRUCTURE															
20	5	5-8	WL501E	STR		5-8									
20	5	5-8	WL502E	STR		5-8									
20	5	6-6	DL503E	17		4-5	2-10								
20	5	5-10	DL504E	17		4-5	1-5								
12	5	33-6	FT505E	STR		33-6									
72	5	4-6	FT506E	STR		4-6									
4X5	5	9-9	WL507E	STR		9-9									
		TO				TO									
		16-3				16-3									
4	6	25-9	WL608E	6		8-1	2 15-2	2-6	0			7-7	0	3-1	2 13-1
2	5	33-8	WL509E	STR		33-8									
2X9	5	8-5	WL510E	17		7-0	2 1-5	0							
		TO				TO	TO	TO							
		4-0				2-7	3 1-5	0							
2X9	5	9-1	WL511E	17		7-0	2 2-1	0							
		TO				TO	TO	TO							
		4-8				2-7	3 2-1	0							

ASTM STANDARD ENGLISH REINFORCING BARS

BAR SIZE	NOMINAL DIMENSIONS: DIAMETER (INCHES)	AREA (INCHES²)	WEIGHT (LBS./FT.)
3	0.375	0.110	0.376
4	0.500	0.200	0.668
5	0.625	0.310	1.043
6	0.750	0.440	1.502
7	0.875	0.600	2.044
8	1.000	0.790	2.670
9	1.128	1.000	3.400
10	1.270	1.270	4.303
11	1.410	1.560	5.313
14	1.693	2.250	7.650
18	2.257	4.000	13.600

RECOMMENDED END HOOKS, APPLICABLE TO ALL GRADES

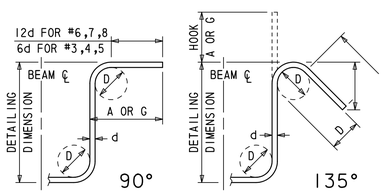
BAR SIZE	180° HOOKS: D	180° HOOKS: A OR G	180° HOOKS: J	90° HOOKS: A OR G
3	2¼"	5"	3"	6"
4	3"	6"	4"	8"
5	3¾"	7"	5"	10"
6	4½"	8"	6"	1-0"
7	5¼"	10"	7"	1-2"
8	6"	11"	8"	1-4"
9	9½"	1-3"	11¾"	1-7"
10	10¾"	1-5"	1-1¼"	1-10"
11	1-0"	1-7"	1-2¾"	2-0"
14	1-6¼"	2-3"	1-9¾"	2-7"
18	2-0"	3-0"	2-4½"	3-5"

STIRRUP AND TIE HOOKS, APPLICABLE TO ALL GRADES

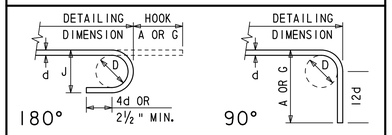
BAR SIZE	90° HOOK: D	90° HOOK: A OR G	135° HOOK: A OR G	135° HOOK: A OR G
3	1½"	4"	4"	2½"
4	2"	4½"	4½"	3"
5	2½"	6"	5½"	3¾"
6	4½"	1-0"	8"	4½"
7	5¼"	1-2"	9"	5¼"
8	6"	1-4"	10½"	6"

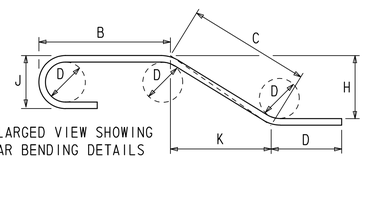
NOTES:
1. FIGURES SHOWN IN CIRCLES REPRESENT BAR BEND TYPES.
2. STANDARD BAR BENDS INCLUDE ONLY THOSE TYPES BELOW, INDICATED AS SUCH.
3. ALL DIMENSIONS OUT-TO-OUT, EXCEPT "A" AND "G" ON STD. 180° AND 135° HOOKS.
4. "J" DIMENSIONS ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD 'ACI' HOOKS ARE TO BE USED.
5. WHERE "J" IS NOT SHOWN, "J" WILL BE KEPT EQUAL TO OR LESS THAN "H" ON TYPES 3, 5 AND 22. WHERE "J" CAN EXCEED "H", IT SHALL BE SHOWN.
6. "H" DIMENSIONS OF STIRRUPS TO BE SHOWN AS NEEDED TO FIT WITHIN THE CONCRETE.
7. UNLESS OTHERWISE NOTED, DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR (EXCEPT FOR BEND TYPES 11 AND 13).
8. WHERE SLOPE DIFFERS FROM 45° OFFSET, "H" AND "K" MUST BE SHOWN.
9. WHERE BARS ARE TO BE BENT MORE ACCURATELY THAN STANDARD BENDING TOLERANCES, BENDING DIMENSIONS REQUIRING CLOSER FABRICATION SHOULD HAVE LIMITS INDICATED.
10. FOR RECOMMENDED DIAMETER "D", OF BENDS, HOOKS, ETC., REFER TO TABLE ABOVE, 'CRSI' OR 'ACI' TABLES WHERE APPLICABLE AND REQUIRED.
11. TYPE S1-S6, S11, T1-T3 AND T6-T9 APPLICABLE TO BAR SIZES #3 THROUGH #8.

STIRRUP AND TIE HOOKS

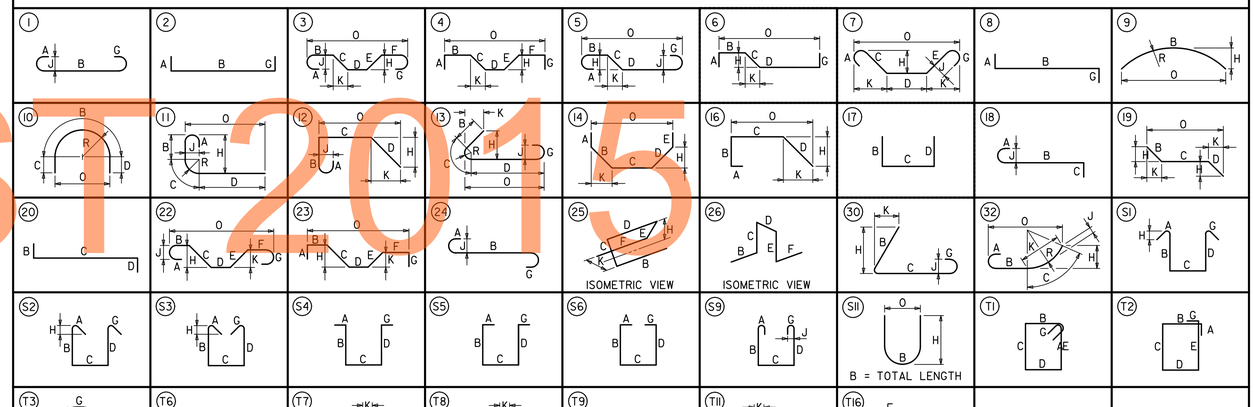


180° AND 90° END HOOKS

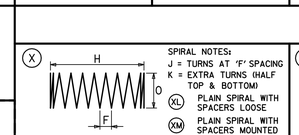




STANDARD BAR BENDS



SPECIAL BAR BENDS



DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.
T200911308	
COUNTY	DESIGNED BY: HQ
NEW CASTLE	CHECKED BY: JAG

BMP RISER STRUCTURE AND WIER WALL BAR CHART

SW-34

SHEET NO.	TOTAL SHTS.
655	875

p:\31653-000\contract 10\cadd\SW34_U301_1A.dgn
10/31/2014 11:44:12 PM

(1) ANY MARK NUMBER WITH SUFFIX 'E' DENOTES EPOXY COATED REINFORCING STEEL.

(2) ALL MARK 'LOCATION PREFIXES' SHALL CONSIST OF TWO LETTERS AND ARE AS FOLLOWS: AB = ABUTMENT, AS = APPROACH SLAB, BC = BOX CULVERT, BW = BACKWALL, CL = COLUMN, DK = DECK, DL = DOWEL, FT = FOOTING, HW = HEADWALL, MS = MISC. BARS, PA = PARAPET, PR = PIER, SC = SHEETPILE CAP, SL = SLAB, TW = TOEWALL, WL = WALL (UNIQUE LOCATION), WW = WINGWALL

SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O
SWM BMP NO.734 WEIR STRUCTURE															
32	5	7-110	WL501E	17		5-100	2-10								
32	5	7-30	WL502E	17		5-100	1-50								
2X2	5	6-10	WL503E	17		4-00	2-10								
		TO				TO	TO	TO							
		4-10				2-00	2-10								
2X2	5	5-50	WL504E	17		4-00	1-50								
		TO				TO	TO	TO							
		3-50				2-00	1-50								
12	5	33-60	WL505E	STR		33-60									
70	5	4-60	WL506E	STR		4-60									
4X4	5	15-51	WL507E	STR		15-51									
		TO				TO									
		16-70				16-70									
4	6	22-102	WL608E	6		15-03	6-33	1-60				5-100		2-50	18-113
2	5	33-80	WL509E	STR		33-80									
SWM BMP NO.737 WEIR STRUCTURE															
26	5	7-50	WL501E	17		5-40	2-10								
26	5	6-90	WL502E	17		5-40	1-50								
2X2	5	5-63	WL503E	17		3-53	2-10								
		TO				TO	TO	TO							
		3-63				1-53	2-10								
2X2	5	4-103	WL504E	17		3-53	1-50								
		TO				TO	TO	TO							
		2-103				1-53	1-50								
10	5	27-60	FT505E	STR		27-60									
58	5	3-60	FT506E	STR		3-60									
4X3	5	12-53	WL507E	STR		12-53									
		TO				TO									
		13-33				13-33									
4	6	19-40	WL608E	6		1-60	5-91	12-03				5-40		2-22	15-91
2	5	27-80	WL509E	STR		27-80									

SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O

SPECIFICATIONS					BENDING DIMENSIONS (FEET-INCHES /QUARTER INCH)										
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F/R	G	H	J	K	O

ASTM STANDARD ENGLISH REINFORCING BARS

BAR SIZE	NOMINAL DIMENSIONS: DIAMETER (INCHES)	AREA (INCHES²)	WEIGHT (LBS./FT.)
3	0.375	0.110	0.376
4	0.500	0.200	0.668
5	0.625	0.310	1.043
6	0.750	0.440	1.502
7	0.875	0.600	2.044
8	1.000	0.790	2.670
9	1.128	1.000	3.400
10	1.270	1.270	4.303
11	1.410	1.560	5.313
14	1.693	2.250	7.650
18	2.257	4.000	13.600

RECOMMENDED END HOOKS, APPLICABLE TO ALL GRADES

	180° HOOKS		90° HOOKS	
	D	A OR G	J	A OR G
3	2¼"	5"	3"	6"
4	3"	6"	4"	8"
5	3¾"	7"	5"	10"
6	4½"	8"	6"	1-0"
7	5¼"	10"	7"	1-2"
8	6"	11"	8"	1-4"
9	9½"	1-3"	11¾"	1-7"
10	10¾"	1-5"	1-1¼"	1-10"
11	1-0"	1-7"	1-2¾"	2-0"
14	1-6¼"	2-3"	1-9¾"	2-7"
18	2-0"	3-0"	2-4½"	3-5"

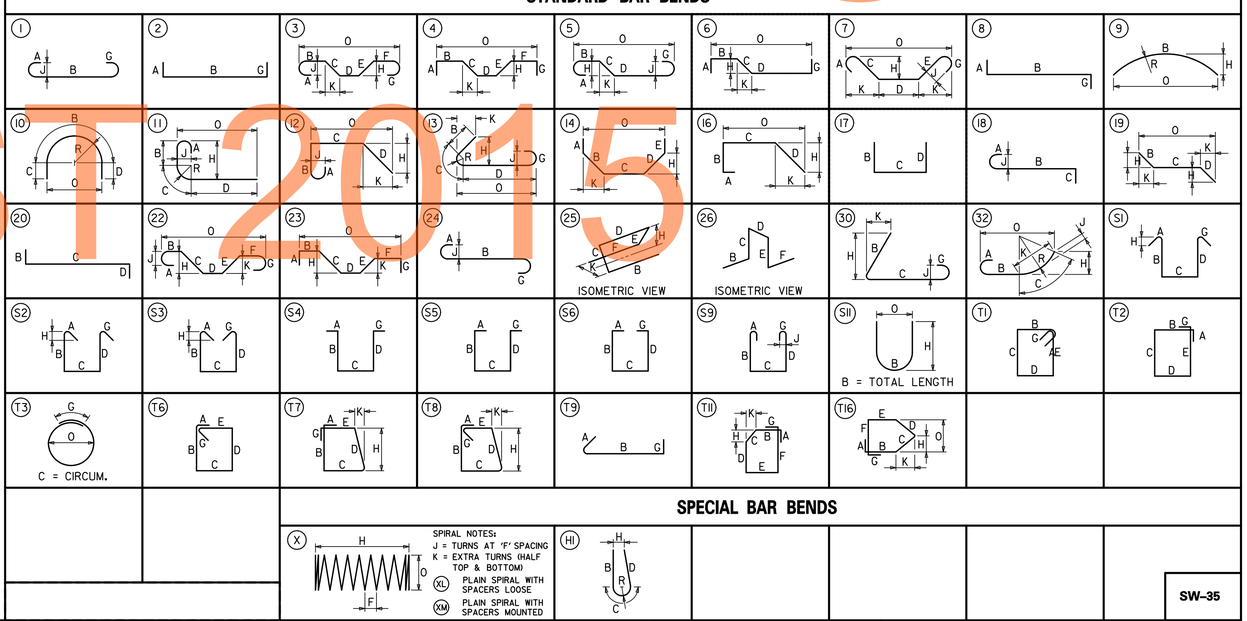
STIRRUP AND TIE HOOKS, APPLICABLE TO ALL GRADES

	90° HOOK	135° HOOK	
	D	A OR G	A OR G
3	1½"	4"	2½"
4	2½"	4½"	3"
5	2½"	5½"	3¾"
6	4½"	8"	4½"
7	5¼"	9"	5¼"
8	6"	10½"	6"

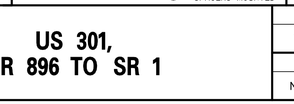
NOTES:

1. FIGURES SHOWN IN CIRCLES REPRESENT BAR BEND TYPES.
2. STANDARD BAR BENDS INCLUDE ONLY THOSE TYPES BELOW, INDICATED AS SUCH.
3. ALL DIMENSIONS OUT-TO-OUT, EXCEPT "A" AND "G" ON STD. 180° AND 135° HOOKS.
4. "J" DIMENSIONS ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD 'ACI' HOOKS ARE TO BE USED.
5. WHERE "J" IS NOT SHOWN, "J" WILL BE KEPT EQUAL TO OR LESS THAN "H" ON TYPES 3, 5 AND 22. WHERE "J" CAN EXCEED "H", IT SHALL BE SHOWN.
6. "H" DIMENSIONS OF STIRRUPS TO BE SHOWN AS NEEDED TO FIT WITHIN THE CONCRETE.
7. UNLESS OTHERWISE NOTED, DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR (EXCEPT FOR BEND TYPES 11 AND 13).
8. WHERE SLOPE DIFFERS FROM 45° OFFSET, "H" AND "K" MUST BE SHOWN.
9. WHERE BARS ARE TO BE BENT MORE ACCURATELY THAN STANDARD BENDING TOLERANCES, BENDING DIMENSIONS REQUIRING CLOSER FABRICATION SHOULD HAVE LIMITS INDICATED.
10. FOR RECOMMENDED DIAMETER "D", OF BENDS, HOOKS, ETC., REFER TO TABLE ABOVE, 'CRSI' OR 'ACI' TABLES WHERE APPLICABLE AND REQUIRED.
11. TYPE S1-S6, S11, T1-T3 AND T6-T9 APPLICABLE TO BAR SIZES #3 THROUGH #8.

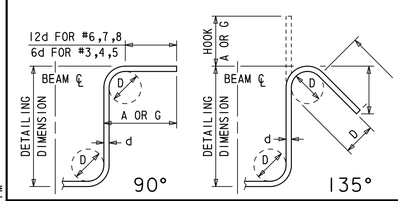
STANDARD BAR BENDS



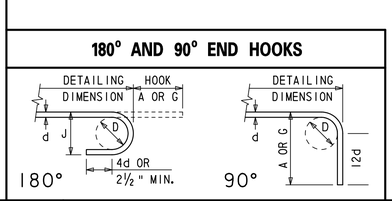
SPECIAL BAR BENDS

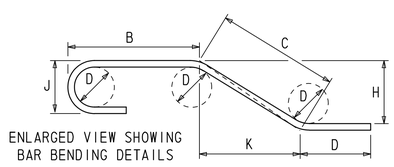


STIRRUP AND TIE HOOKS



180° AND 90° END HOOKS





DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

US 301, SR 896 TO SR 1

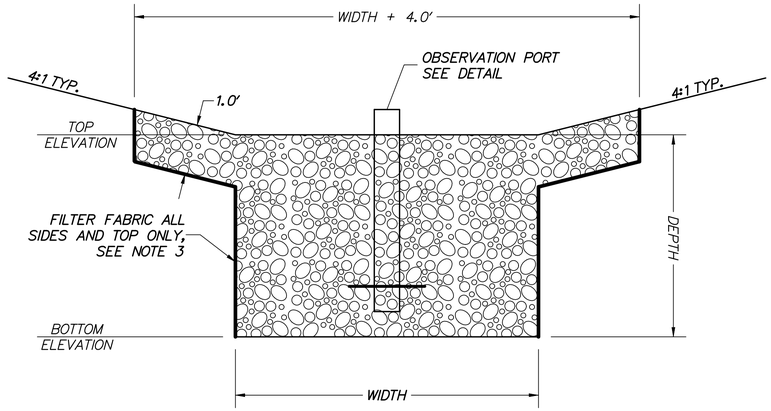
CONTRACT	BRIDGE NO.
T200911308	
COUNTY: NEW CASTLE	DESIGNED BY: HQ
	CHECKED BY: JAG

WIER WALL BAR CHART

SW-35

SHEET NO.	TOTAL SHTS.
656	875

n:\31653-000\contract 10\cadd\SW35_U301_1A.dgn
10/31/2014 11:41:15 PM

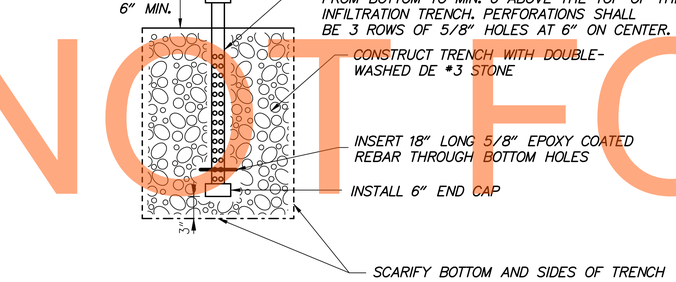


INFILTRATION TRENCH DETAIL

ID	LENGTH FT.	WIDTH FT.	DEPTH FT.	TOP ELEVATION FT.	BOTTOM ELEVATION FT.	GROUND WATER EL. FT.	MEASURED RATE IN/HR	DESIGN RATE IN/HR
BMP 726	50.0'	4.0'	3.0'	73.95'	70.95'	<68.0	3.5	1.75
BMP 712	150.0'	6.0'	3.0'	65.00'	62.00'	<57.9	6.0	3.0
BMP 713	100.0'	6.0'	4.0'	65.00'	61.00'	<59.0	10.0	5.0
BMP 744	150.0'	6.0'	5.0'	72.85'	67.85'	<65.7	3.0	1.5
BMP 745	60.0'	4.0'	3.0'	71.90'	68.90'	<67.3	2.5	1.25

NOTES:

1. FOOTPRINT OF PROPOSED INFILTRATION TRENCH PLUS 10 FEET IN ALL DIRECTIONS SHALL BE MARKED IN THE FIELD WITH CONSTRUCTION SAFETY FENCE (ITEM 727520) AT THE BEGINNING OF CONSTRUCTION. THIS AREA SHALL BE OFF LIMITS TO CONSTRUCTION EQUIPMENT UNTIL WORK ON INFILTRATION TRENCHES BEGIN. COST OF BARRIER FENCE SHALL BE INCIDENTAL TO THE CONTRACT UNIT COST FOR INFILTRATION TRENCH (ITEM 718513).
2. DURING CONSTRUCTION, THE CONTRACTOR SHALL EXERCISE CAUTION NOT TO DISTURB AND COMPACT ANY IN SITU SOIL LAYER BELOW THE PROPOSED GRADE AND WITHIN THE FOOTPRINT OF THE INFILTRATION TRENCH. THE SIDES AND BOTTOM OF THE TRENCH SHALL BE SCARIFIED PRIOR TO PLACEMENT OF THE GEOTEXTILE MATERIAL AND BACKFILLING WITH STONE.
3. FILTER FABRIC SHALL BE PLACED ALONG THE SIDE OF THE INFILTRATION TRENCH AND EXTEND OVER THE ENTIRE TOP OF THE INFILTRATION TRENCH DURING CONSTRUCTION. ONCE THE ENTIRE DRAINAGE AREA HAS BEEN STABILIZED WITH A GOOD STAND OF GRASS, THE CONTRACTOR SHALL CUT THE FILTER FABRIC AT GROUND LEVEL AND EXPOSE THE TOP SURFACE OF THE THE TRENCH. ANY BARE AREAS SHALL BE IMMEDIATELY SEEDED AND MULCHED WITH SRBM, TYPE 5. FILTER FABRIC MATERIAL SHALL CONFORM TO SECTION 827.04 OF THE STANDARD SPECIFICATIONS.
4. STONE BACKFILL FOR THE INFILTRATION TRENCH SHALL BE DE NO. 3 STONE. THE DE NO.3 STONE SHALL BE CLEAN, DOUBLE WASHED CRUSHED AGGREGATE FREE OF ROCK DUST, FINES, AND SOIL PARTICLES. STONES SHALL NOT BE CRUSHED LIMESTONE AGGREGATES. STONE BACKFILL MATERIALS DETERMINED TO BE CONTAMINATED SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.
5. AN OBSERVATION PORT SHALL BE INSTALLED IN THE CENTER OF EACH INFILTRATION TRENCH. SEE DETAIL.



OBSERVATION PORT DETAIL

n:\31653-000\contract 10\cadd\SW36-U301_1A.dgn
10/31/2014 11:41:19 PM