

STATE OF DELAWARE



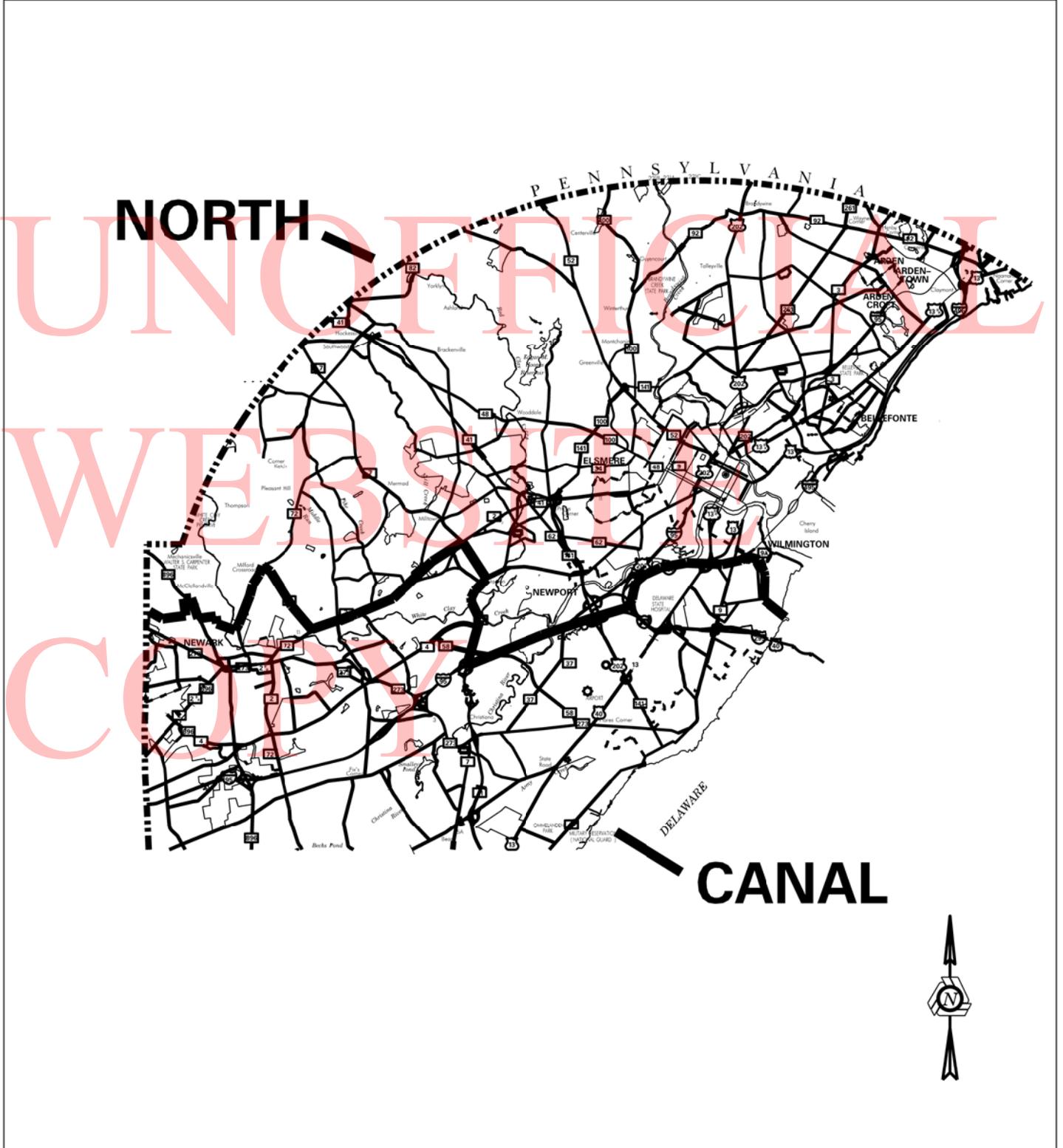
DEPARTMENT OF TRANSPORTATION
STATEWIDE SUPPORT SERVICES
PLANS AND SPECIFICATIONS FOR:

CONTRACT NO: T201280201 P3E NO: 10-20100
CONTRACT TITLE: STORMWATER BMP MAINTENANCE, FY 2012
PLANS PREPARED BY: LATONYA GILLIAM (NPDES ENGINEER)
PLANS REVIEWED BY: [Signature] DATE: 8/24/11
NPDES PROGRAM MANAGER

<p>DATE RECOMMENDED: <u>30 Aug 2011</u></p> <p>ND DESIGN ENGINEER: ASSISTANT MAINT. ENGINEER: <u>[Signature]</u></p>	
<p>DATE RECOMMENDED: <u>8/30/11</u></p> <p>NORTH DISTRICT ENGINEER: <u>[Signature]</u></p>	
<p>DATE APPROVED: <u>8/31/11</u></p> <p>ASSISTANT DIRECTOR, STATEWIDE SUPPORT SERVICES <u>[Signature]</u></p>	

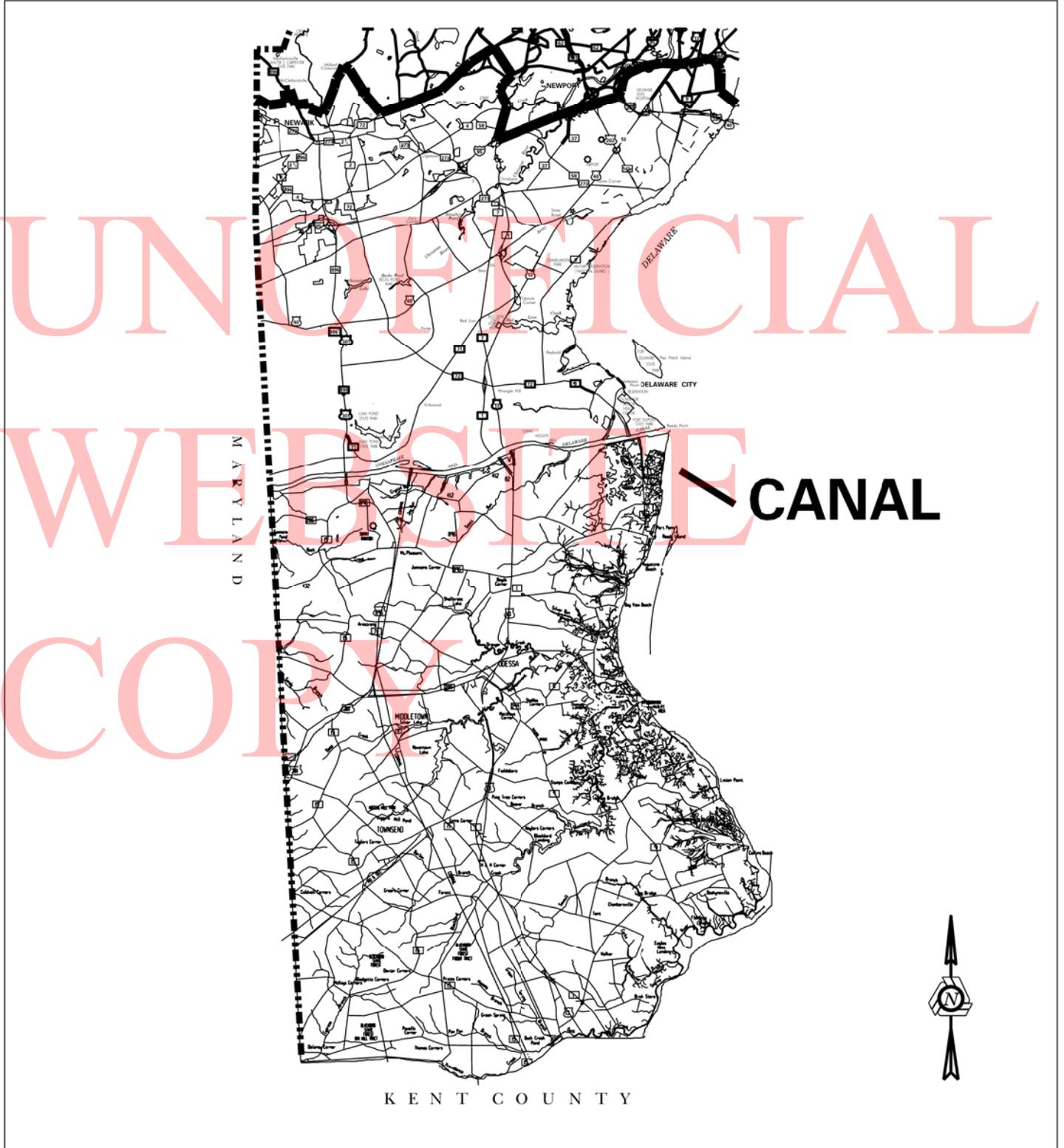
STORMWATER BMP MAINTENANCE, FY 2012

DISTRICT MAP



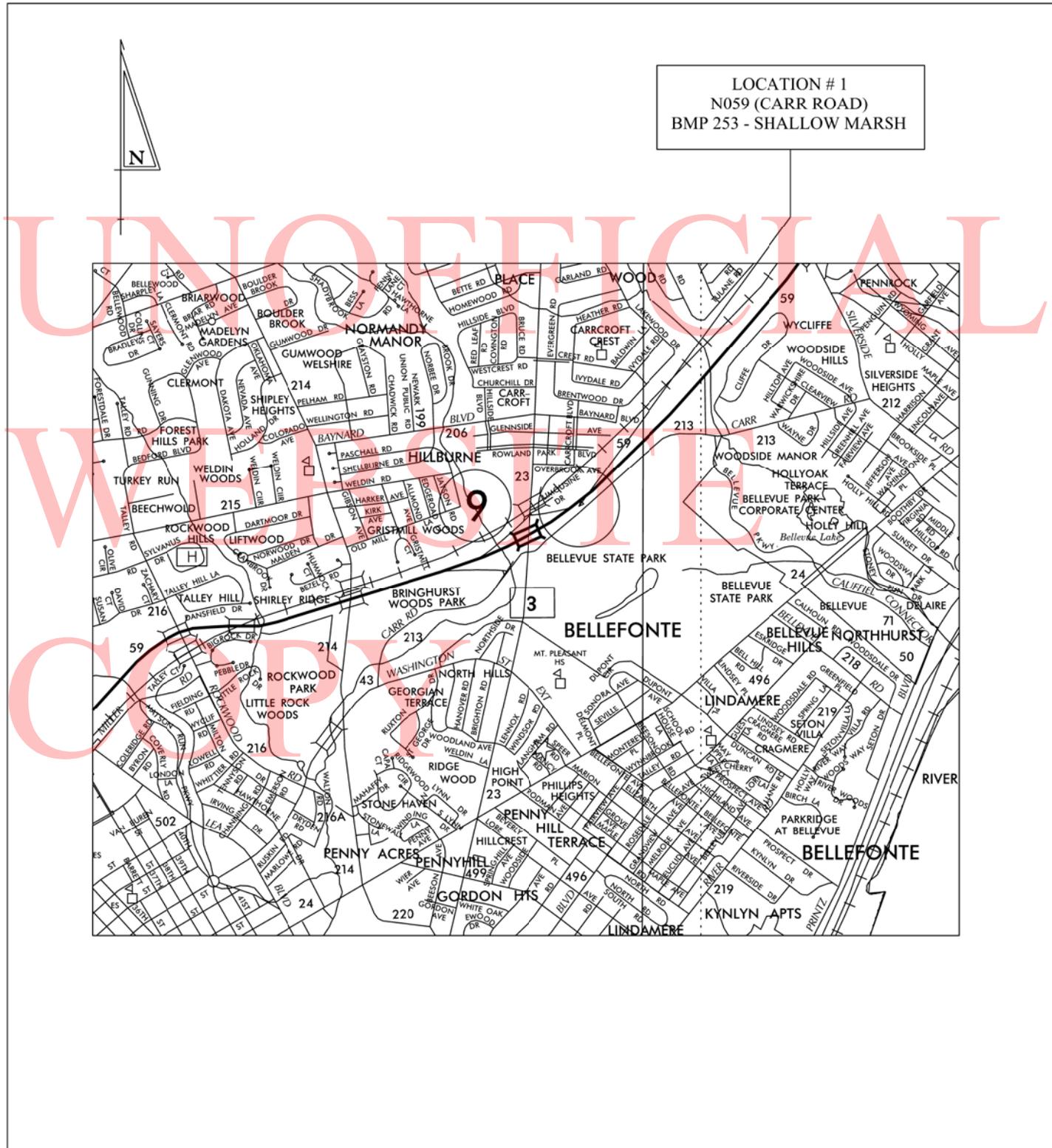
STORMWATER BMP MAINTENANCE, FY 2012

DISTRICT MAP



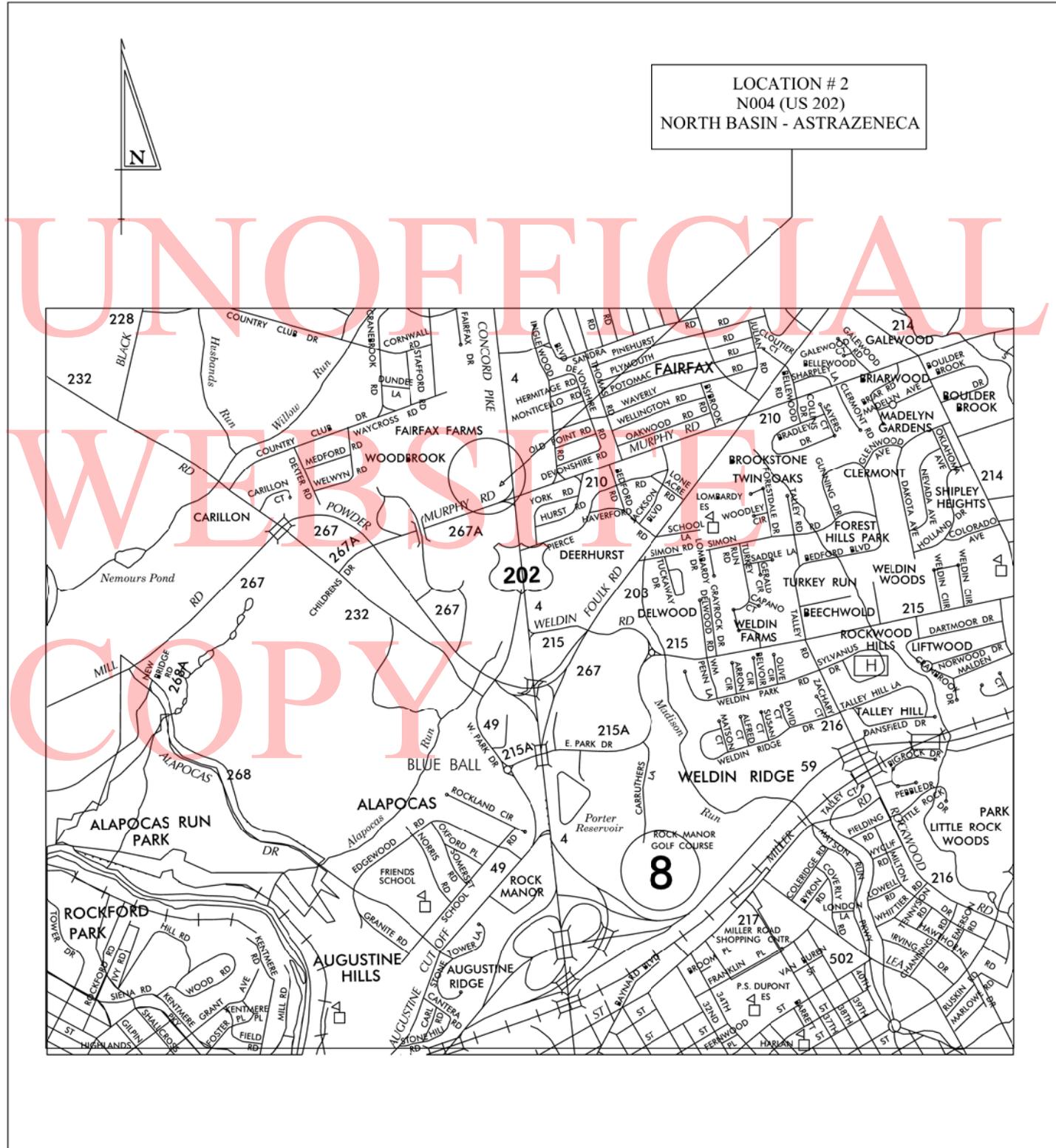
STORMWATER BMP MAINTENANCE, FY 2012

LOCATION MAP



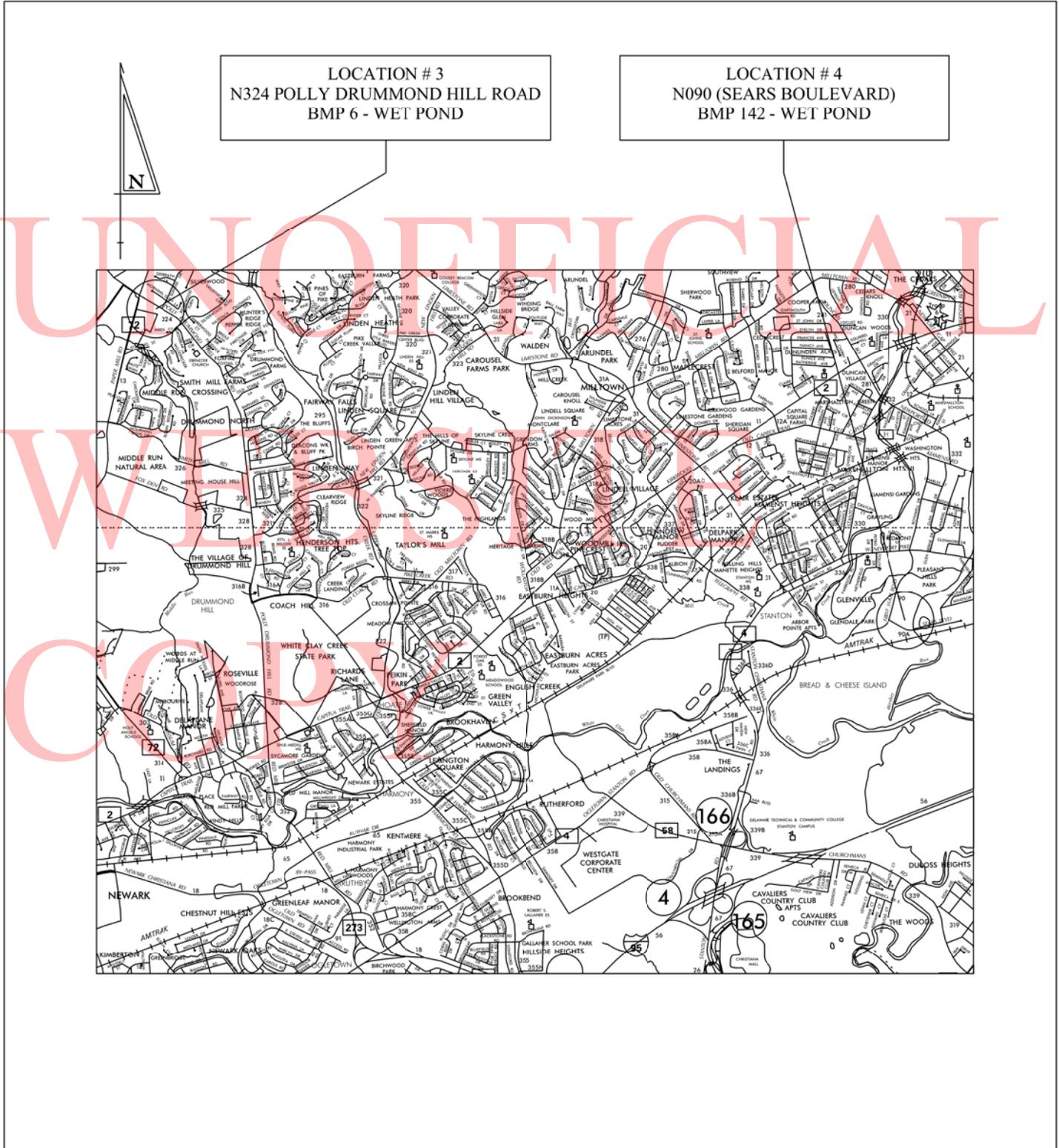
STORMWATER BMP MAINTENANCE, FY 2012

LOCATION MAP



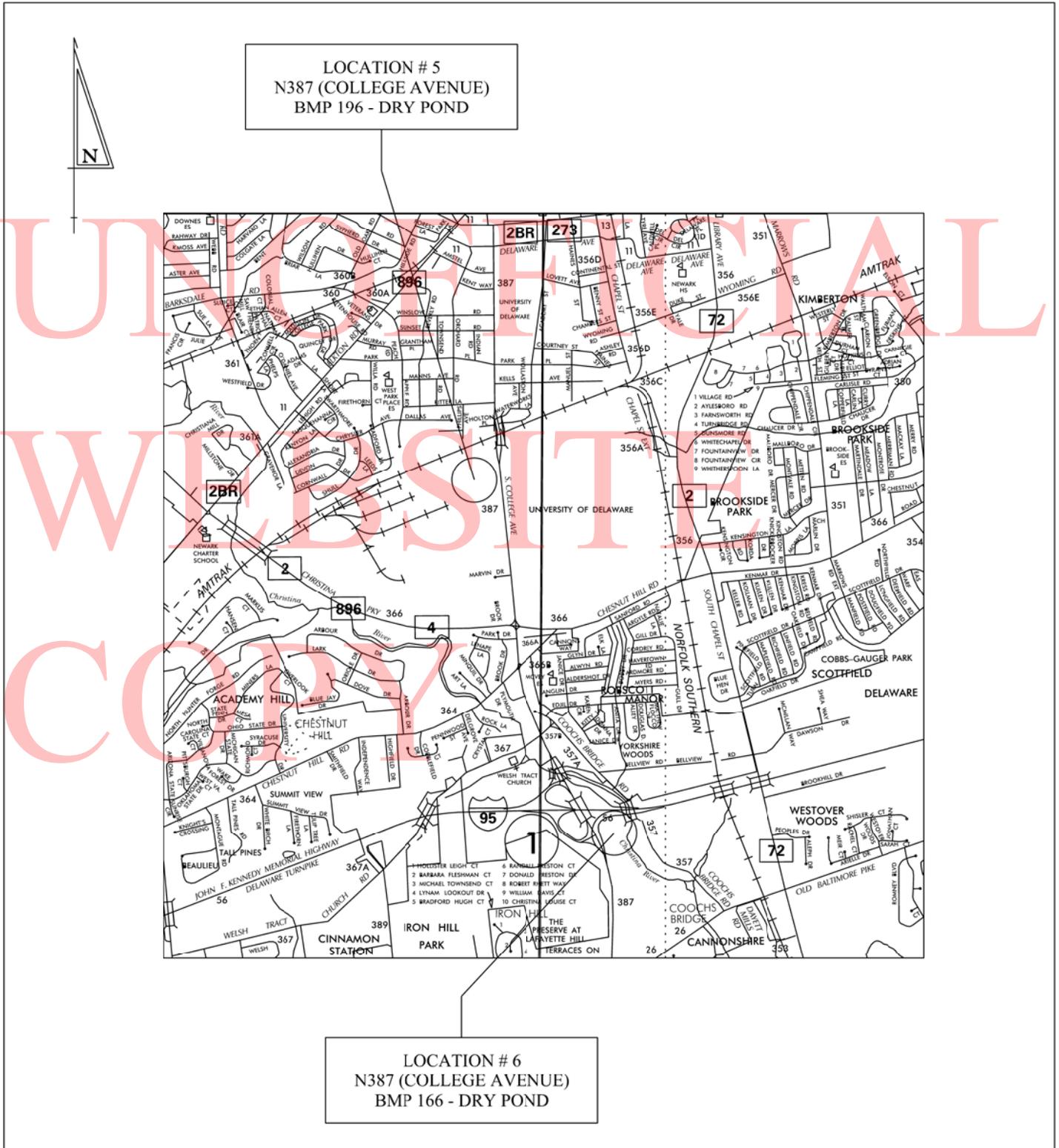
STORMWATER BMP MAINTENANCE, FY 2012

LOCATION MAP



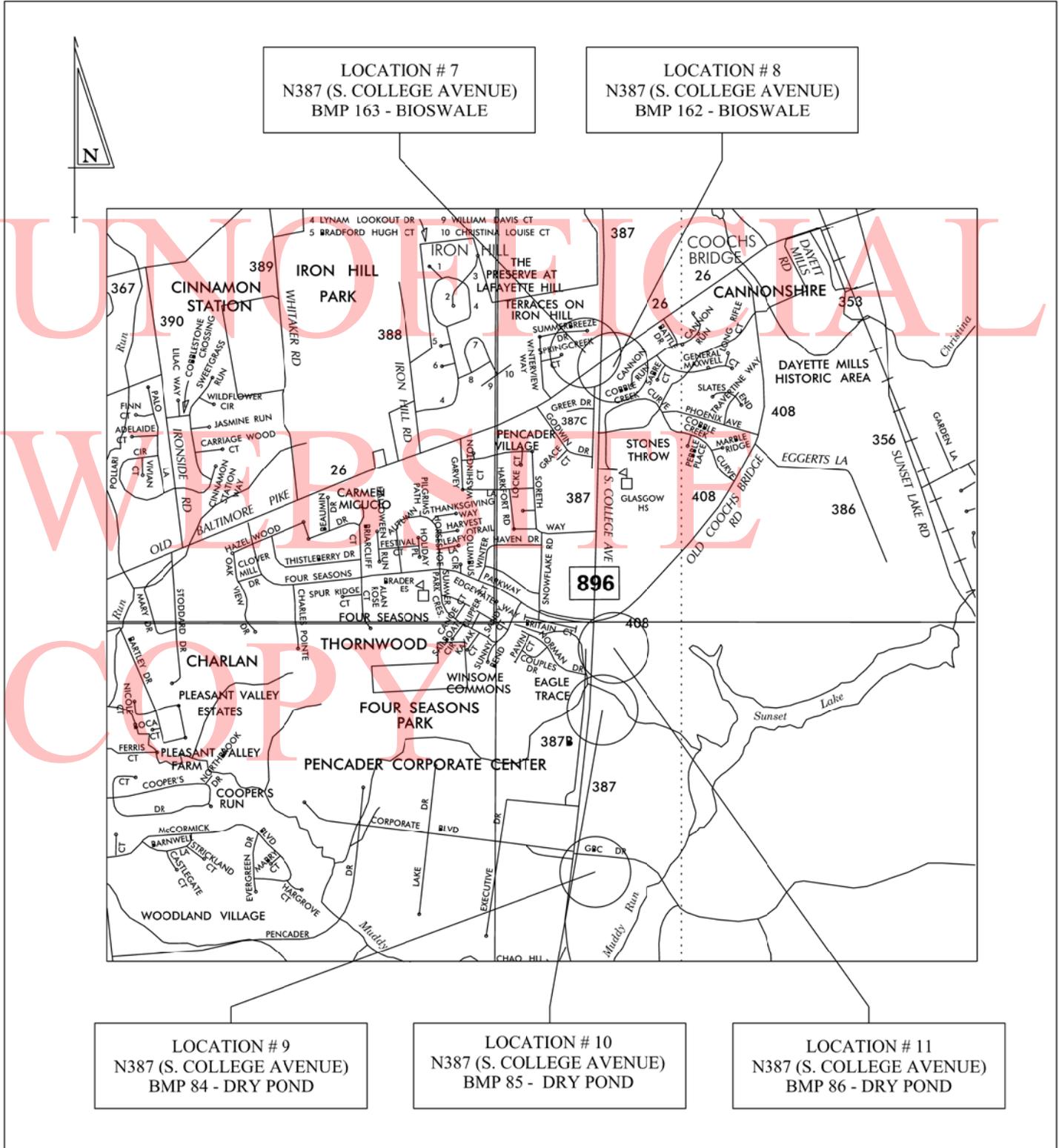
STORMWATER BMP MAINTENANCE, FY 2012

LOCATION MAP



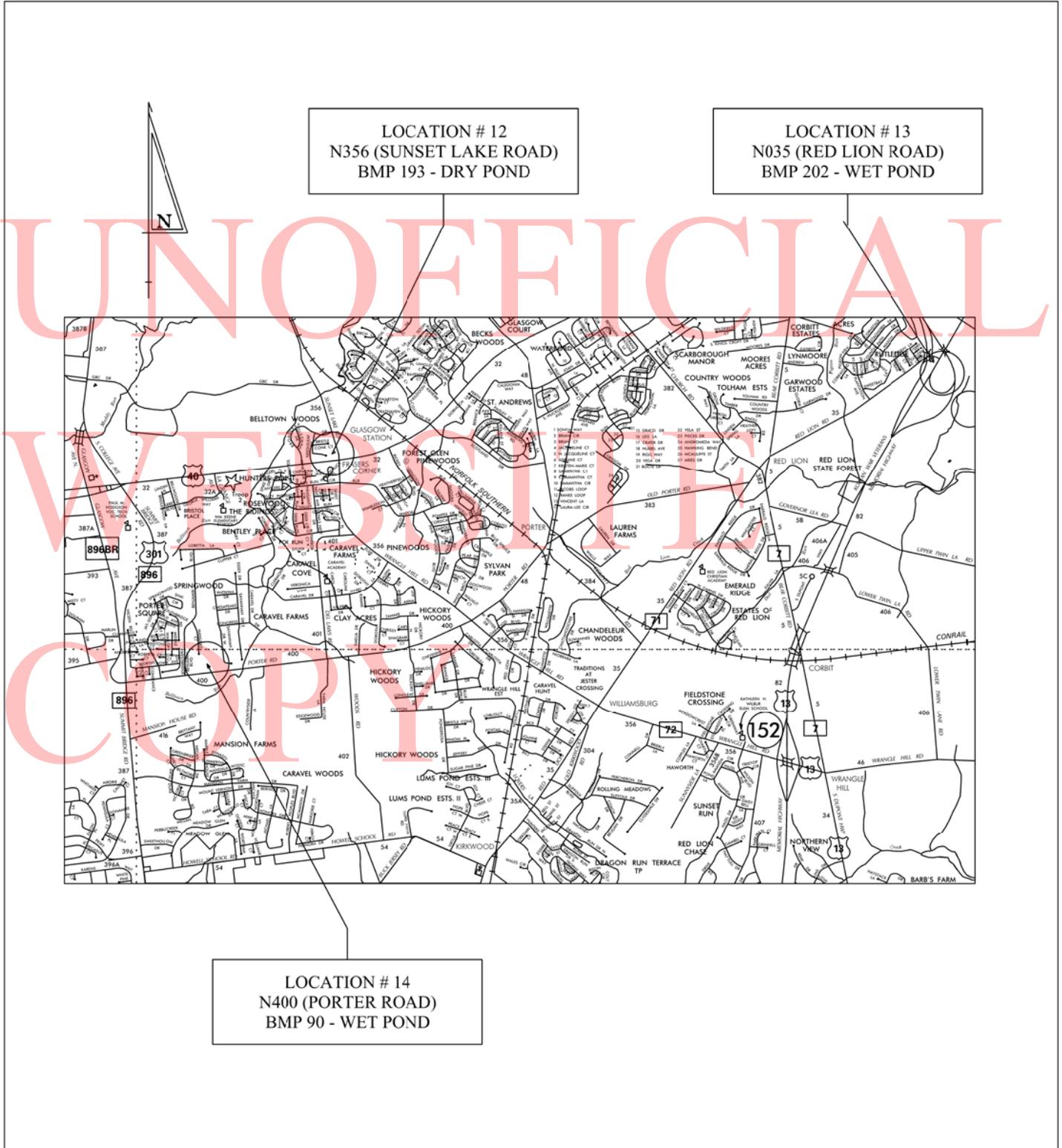
STORMWATER BMP MAINTENANCE, FY 2012

LOCATION MAP



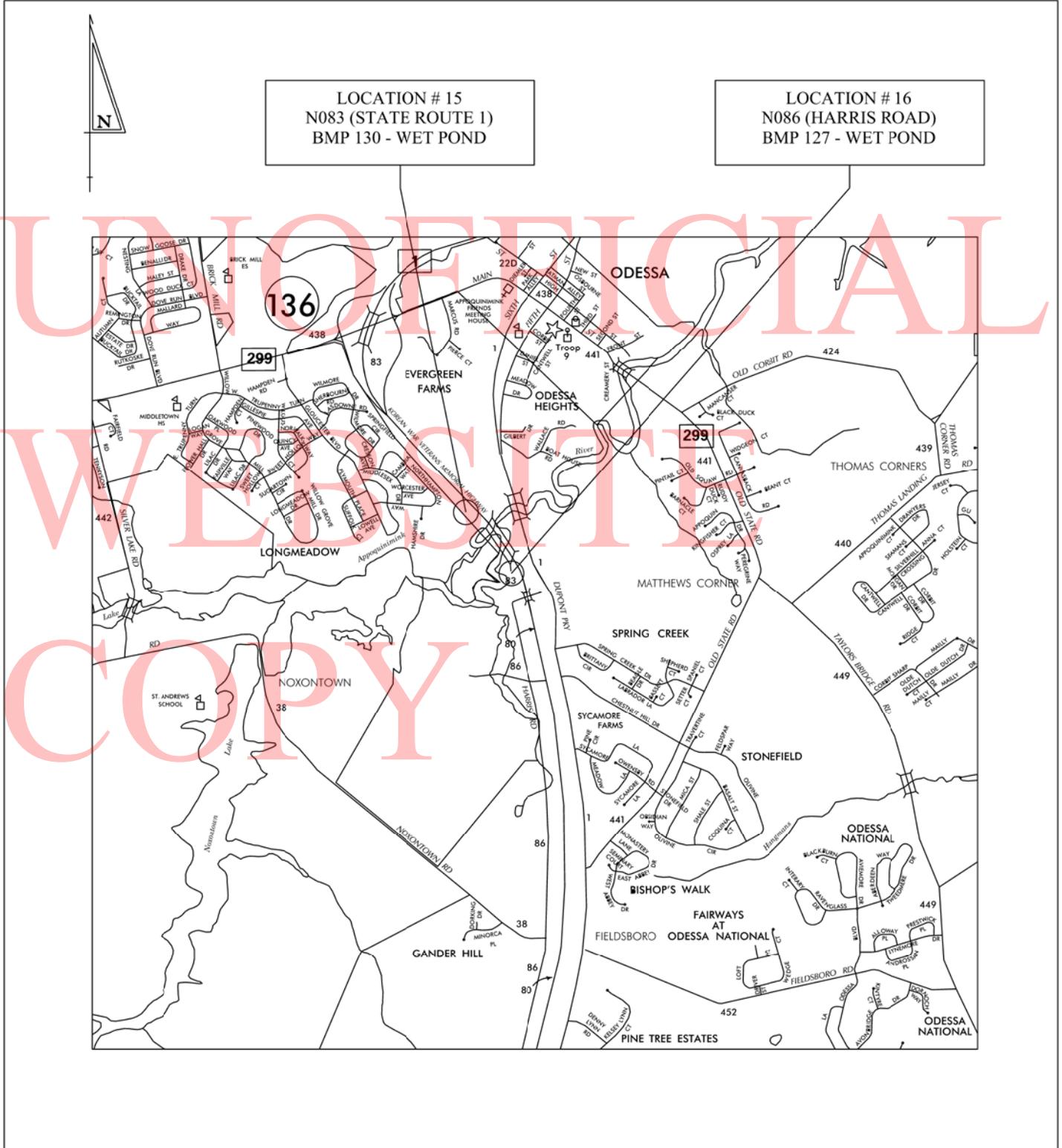
STORMWATER BMP MAINTENANCE, FY 2012

LOCATION MAP



STORMWATER BMP MAINTENANCE, FY 2012

LOCATION MAP



GENERAL CONTRACT PLAN NOTES

GENERAL

1. CONSTRUCTION OF THIS CONTRACT SHALL CONFORM TO DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED AUGUST, 2001 AS AMENDED BY THE SUPPLEMENTAL SPECIFICATIONS, THE SPECIAL PROVISIONS, THE MOST RECENT STANDARD CONSTRUCTION DETAILS, THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THESE PLANS.
2. THE PURPOSE OF THIS CONTRACT IS TO MAKE GENERAL IMPROVEMENTS TO ROADS AND/OR STREETS WITHIN THE DISTRICT HEREIN SPECIFIED. DEPENDING ON FUND AVAILABILITY, THE DEPARTMENT RESERVES THE RIGHT TO ADD OR DELETE LOCATIONS AND/OR QUANTITIES FOR THIS CONTRACT. SUCH LOCATION OR QUANTITY ADDITIONS OR DELETIONS SHALL NOT BE CAUSE FOR AN INCREASE OR DECREASE IN ANY CONTRACT UNIT BID PRICES. NO ITEM PRICES ARE TO BE RENEGOTIATED DUE TO EITHER AN INCREASE OR DECREASE IN QUANTITY USAGE RESULTING FROM SAID ADDITIONS OR DELETIONS.
3. THE CONTRACTOR SHALL PROVIDE ALL RESIDENTS AND BUSINESSES WHO LIVE ADJACENT TO THE WORK ZONE A MINIMUM 48 HR. PRIOR WRITTEN NOTICE FOR THE START OF CONSTRUCTION WORK. THIS NOTIFICATION SHALL INCLUDE THE SCOPE OF WORK, WORKING HOURS, ANTICIPATED START AND COMPLETION DATES, CONTRACTOR NAME AND ADDRESS, AND DELDOT CONTACT NUMBERS. FAILURE TO GIVE PROPER NOTICE WILL RESULT IN A SUSPENSION OF WORK REQUIRING NOTICE, UNTIL PROPER NOTICE IS PROVIDED. ACCESS TO ALL BUSINESSES AND RESIDENCES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THIS CONTRACT.
4. THE CONTRACTOR SHALL SUBMIT THE REQUIRED COPIES OF A DETAILED PROGRESS SCHEDULE (PSC) AS OUTLINED IN STANDARD SPECIFICATION 108.04 PRIOR TO OR AT THE PRECONSTRUCTION MEETING. DETAILS SHALL INCLUDE A DESCRIPTION OF EACH WORK ACTIVITY, THE PLANNED DAYS OF WORK, MULTIPLE CREWS OR SHIFTS, AND SCHEDULED WORKING HOURS. DURING THE CONTRACT THE CONTRACTOR SHALL SUBMIT TWO-WEEK (OR AS REQUIRED) "LOOK AHEAD SCHEDULE IS TO BE SUBMITTED TO THE INSPECTOR NO LATER THAN NOON OF EACH THURSDAY. FAILURE TO COMPLY WILL RESULT IN A SUSPENSION OF ALL CONTRACT WORK WITH TIME CHARGES CONTINUING TO BE ASSESSED.
5. THE CONTRACTOR IS REMINDED THAT SECTION 105.07 OF THE STANDARD SPECIFICATIONS REQUIRES THE GENERAL CONTRACTOR TO HAVE A COMPETENT SUPERINTENDENT OR FOREMAN ON THE PROJECT AT ALL TIMES.
6. LOCATION LISTINGS INDICATE GENERAL LIMITS OF CONSTRUCTION, MAJOR TYPES OF IMPROVEMENTS, AND ESTIMATED QUANTITIES. DURING THE BIDDING PERIOD, ANY QUESTIONS PERTAINING TO LOCATIONS SHALL BE DIRECTED TO THE CONTRACT ADMINISTRATOR. AFTER THE AWARD SUCH QUESTIONS SHALL BE

GENERAL CONTRACT PLAN NOTES

REFERRED TO THE APPROPRIATE DISTRICT ENGINEER OR HIS REPRESENTATIVE.

7. ANY AND ALL CONSTRUCTION ENGINEERING SHALL BE INCIDENTAL TO THE CONTRACT.
8. STOCKPILING OF EXCAVATED MATERIAL WILL NOT BE ALLOWED. THE CONTRACTOR SHALL PROCURE DISPOSAL SITES. SUCH DISPOSAL SITES SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER PRIOR TO UTILIZATION BY THE CONTRACTOR. ALL PERMITS SUCH AS THOSE REQUIRED BY THE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC) AND THE U.S. ARMY CORPS OF ENGINEERS SHALL BE MET BY THE CONTRACTOR WHEN PREPARING AND UTILIZING OFF-SITE DISPOSAL AREAS.
9. THERE ARE NO ENVIRONMENTAL PERMITS ASSOCIATED WITH THIS PROJECT. AS SUCH, AN ENVIRONMENTAL COMPLIANCE SHEET WAS NOT PREPARED.
10. UNDERGROUND UTILITIES MAY BE PRESENT AT ALL LOCATIONS. THEREFORE, ALL STANDARD PRACTICES AND PROCEDURES FOUND IN THE LATEST VERSION OF THE DELDOT UTILITY MANUAL SHALL BE FOLLOWED. THE CONTRACTOR IS REQUIRED TO CONTACT MISS UTILITY TO HAVE THE UTILITIES MARKED OUT PRIOR TO BEGINNING WORK AT ANY LOCATION.

MAINTENANCE OF TRAFFIC

11. ALL WORK SHALL BE PERFORMED IN A MANNER THAT WILL REASONABLY PROVIDE THE LEAST PRACTICAL OBSTRUCTION TO ALL ROAD USERS, INCLUDING VEHICULAR, PEDESTRIAN, AND BICYCLE TRAFFIC, AND SHALL CONFORM TO THE REQUIREMENTS OF THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 6, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT FOR BIDS.
12. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN, INCLUDING THE NECESSARY NCHRP 350 CERTIFICATIONS FOR ALL DEVICES THAT WILL BE UTILIZED, FOR EACH LOCATION BEFORE THE START OF THE PRE-CONSTRUCTION MEETING. WRITTEN APPROVAL MUST BE RECEIVED BEFORE THE START OF WORK AT EACH AND EVERY LOCATION.
13. ALL TRAFFIC CONTROL DEVICES SHALL BE IN NEW OR REFURBISHED CONDITION AND SHALL BE IN COMPLIANCE WITH THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND NCHRP 350 AS DEFINED IN SECTION “6A.01” OF THE MANUAL. THE DEVICES SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE AND SHALL BE MAINTAINED IN GOOD CONDITION FOR THE DURATION OF THE CONTRACT.

GENERAL CONTRACT PLAN NOTES

14. ALL DRUMS USED ON THIS PROJECT SHALL CONSIST OF FLOURESCENT ORANGE AND WHITE PRISMATIC RETROREFLECTIVE SHEETING. LIGHTS SHALL NOT BE USED ON DRUMS.

15. AN AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) CERTIFIED TRAFFIC CONTROL SUPERVISOR SHALL BE REQUIRED FOR ALL LOCATIONS SPECIFIED IN THE CONTRACT PLANS.

16. THE CONTRACTOR SHALL MAINTAIN ACCESS TO AND ALONG PEDESTRIAN FACILITIES AT ALL TIMES DURING CONSTRUCTION. EARTH, STONE AND GRAVEL SURFACES ARE NOT ACCEPTABLE FOR PROVIDING PEDESTRIAN ACCESS. WHERE PEDESTRIAN ROUTES ARE CLOSED OR BLOCKED, ALTERNATE PEDESTRIAN ACCESS SHALL BE PROVIDED USING CASE 16 OF THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES OR TO THE SATISFACTION OF THE ENGINEER AND SHALL BE ADA COMPLIANT. THE COST FOR ANY PROVISIONS SHALL BE INCIDENTAL TO ITEM 763643 – MAINTENANCE OF TRAFFIC, ALL INCLUSIVE.

PROJECT

17. THE CONTRACTOR IS REQUIRED TO HAVE A MINIMUM OF TWO WORKING CREWS READILY AVAILABLE TO WORK ON THIS CONTRACT SIMULTANEOUSLY AS WORK WARRANTS, WITH THE ABILITY TO PROVIDE ADDITIONAL WORKING CREWS IF REQUESTED BY THE ENGINEER.

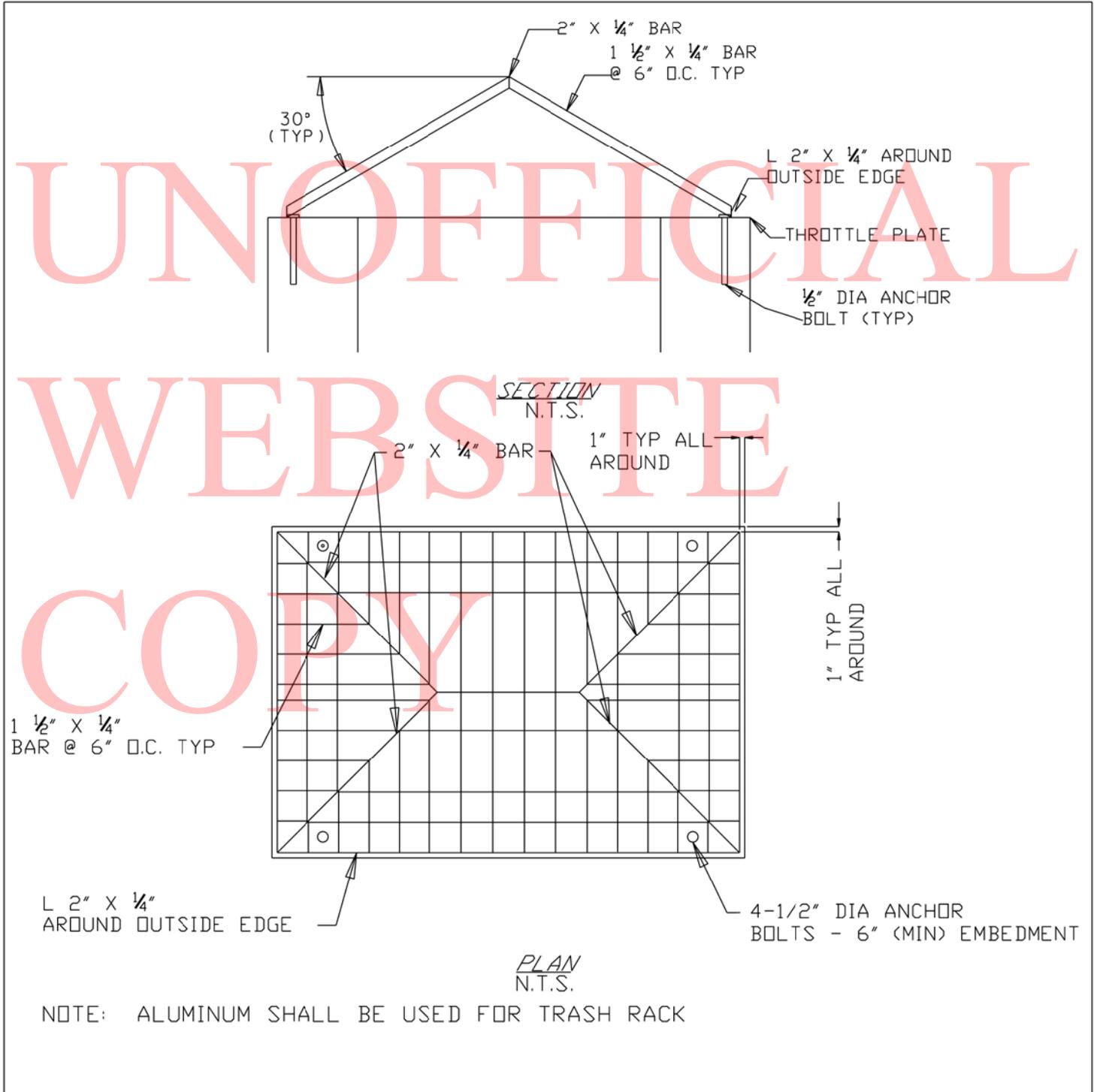
18. THE FOLLOWING CHANGES TO THE STANDARD SPECIFICATIONS ARE APPLICABLE TO THIS CONTRACT:

- (a) DELETE THE SECOND SENTENCE OF SUBSECTION 104.05 AND SUBSECTIONS A THROUGH E.
- (b) SECTION 101.91(4) IS AMENDED. THERE WILL NOT BE A WINTER SHUTDOWN FROM DECEMBER 16TH TO MARCH 15TH. THE DEPARTMENT RESERVES THE RIGHT TO ISSUE WORK AND CHARGE TIME BETWEEN THESE DATES.

19. THE CONTRACTOR SHALL ACQUIRE ALL NECESSARY MATERIALS AND EQUIPEMENT PRIOR TO STARTING WORK AT A SPECIFIC LOCATION. THE EQUIPMENT AND MATERIAL SHALL REMAIN ACCESSIBLE AND ON-SITE THROUGH TO THE COMPLETION OF WORK AT THAT PARTICULAR LOCATION UNLESS PRIOR APPROVAL FROM THE ENGINEER IS GIVEN.

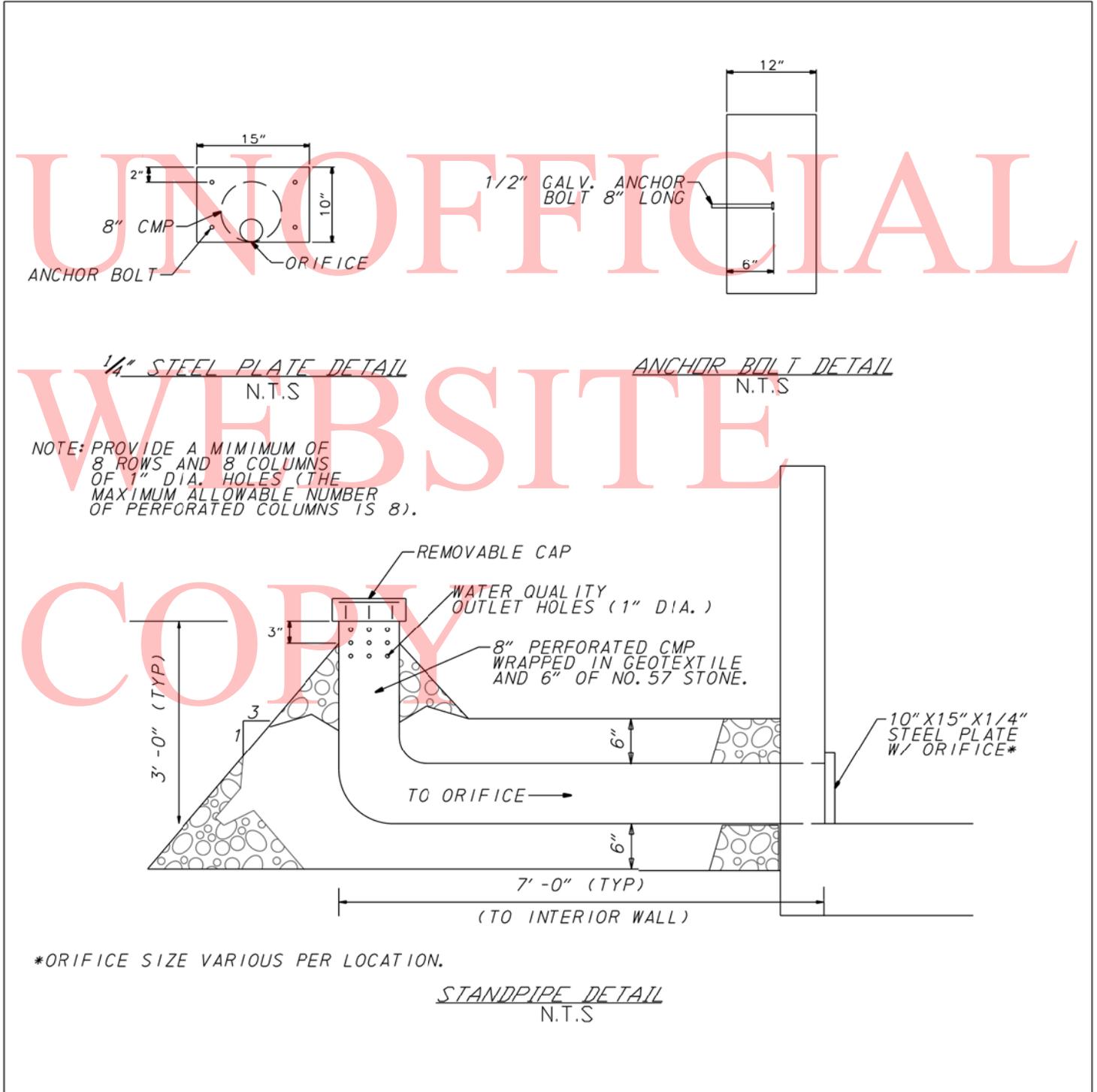
DETAILS

LOCATION 6 (BMP 166)
ITEM 272503 - TRASH RACK



DETAILS

VARIOUS LOCATIONS
ITEM 272513 - RISER PIPE ASSMBLY FOR OUTLET STRUCTURE



DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT T201280201

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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 1 I-95 NORTHBOUND NEAR CARR ROAD INTERCHANGE (BMP 253)

GENERAL IMPROVEMENTS
STORMWATER FACILITY MAINTENANCE

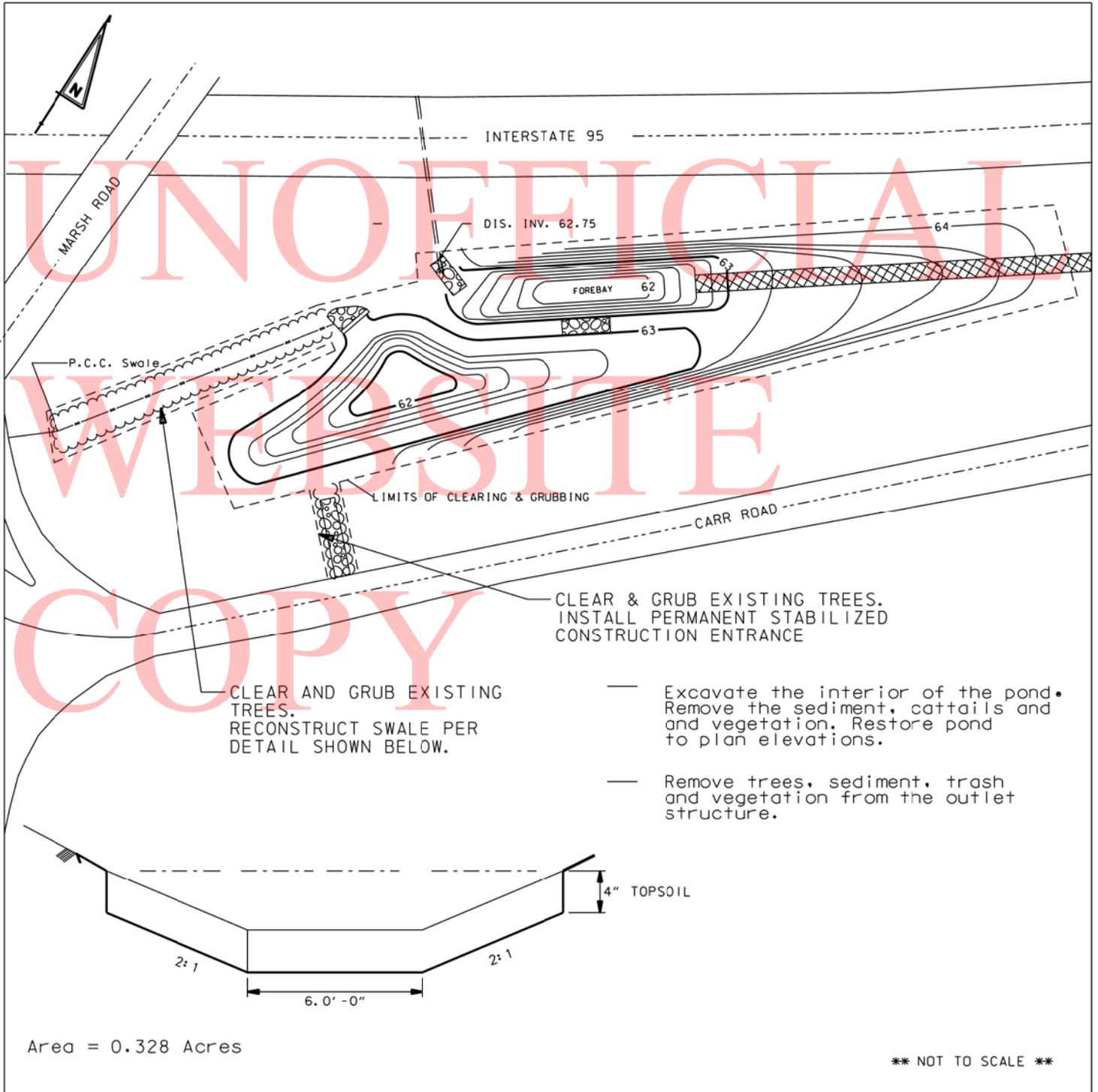
COMMENTS:

Remove trees at the plan locations in order to install the maintenance access road and reconstruct the outlet swale.
Install the Stabilized Construction Entrance.
Remove Sediment, Cattails, Trash, Debris and Trees from all components of the pond up to elevation 64.0.
Reconstruct the outlet swale. Topsoil, seed and mulch the swale.
Seed and mulch the interior of the pond and disturbed areas.
Refresh the stabilized construction entrance for use as permanent maintenance access.
Mow the area in and around the stormwater management pond to a height of 4" to 6".

MATERIAL ESTIMATE FOR LOCATION 1

202000	EXCAVATION AND EMBANKMENT	300.00 C.Y.
268000	STABILIZED CONSTRUCTION ENTRANCE	27.00 TON
732000	TOPSOIL, 4" DEPTH	860.00 S.Y.
734013	PERMANENT GRASS SEEDING, DRY GROUND	860.00 S.Y.
735533	SOIL RETENTION BLANKET MULCH, TYPE III	860.00 S.Y.
743003	ARROWPANEL, TYPE C	7.00 EA-DY
743053	**FLAGGER, NEW CASTLE COUNTY, HEAVY	140.00 HOUR
743068	**FLAGGER, NEW CASTLE COUNTY, HEAVY, OVERTIME	28.00 HOUR
763612	JOB ORDER MOBILIZATION, NORTH DISTRICT	1.00 EACH

** DENOTES FIXED PRICE ITEM



DELAWARE DEPARTMENT OF TRANSPORTATION

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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 2 U.S. 202 CONCORD PIKE (ASTRAZENECA CAMPUS NORTH BASIN)

GENERAL IMPROVEMENTS
STORMWATER FACILITY MAINTENANCE

COMMENTS:

Clear and grub the area in and around the pond to the top of the pond bank.
Remove Sediment, Cattails, Phragmites, Trash, Debris, Trees, etc. from the pond interior, riser structure and riprap spillways.
Reconstruct RipRap Spillways at the inflow pipes.
Re-seed and mulch interior of the pond up to elevation 340.0 with permanent grass seeding, wet ground .

MATERIAL ESTIMATE FOR LOCATION 2

202000	EXCAVATION AND EMBANKMENT	45.00 C.Y.
712005	RIPRAP, R-4	51.00 S.Y.
713003	GEOTEXTILES, RIPRAP	51.00 S.Y.
734015	PERMANENT GRASS SEEDING, WET GROUND	425.00 S.Y.
743003	ARROWPANEL, TYPE C	2.00 EA-DY
743053	**FLAGGER, NEW CASTLE COUNTY, HEAVY	40.00 HOUR
743068	**FLAGGER, NEW CASTLE COUNTY, HEAVY, OVERTIME	8.00 HOUR
763612	JOB ORDER MOBILIZATION, NORTH DISTRICT	1.00 EACH

** DENOTES FIXED PRICE ITEM

DELAWARE DEPARTMENT OF TRANSPORTATION

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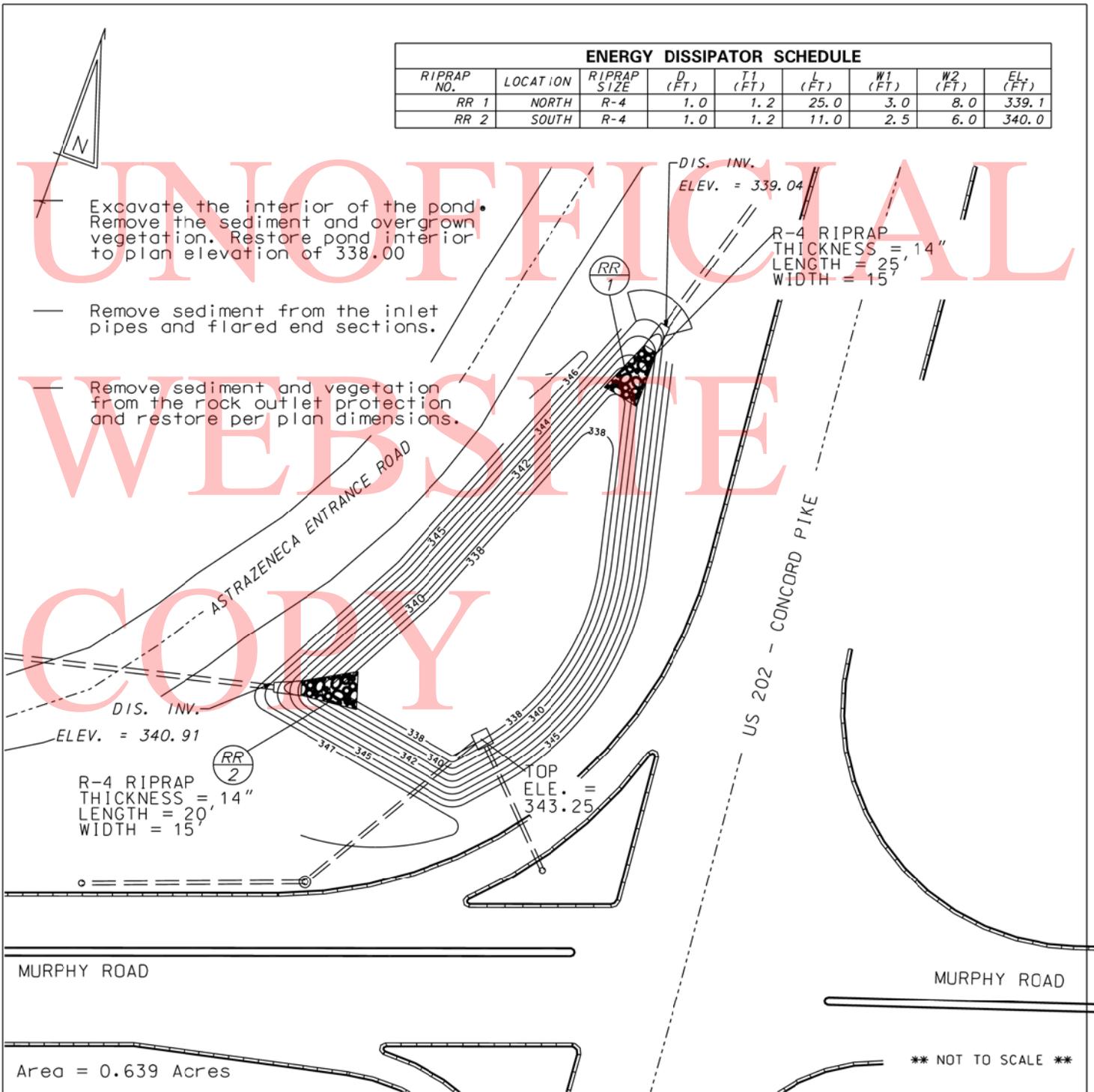
NORTH MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 2

U.S. 202 CONCORD PIKE (ASTRAZENECA CAMPUS - NORTH BASIN)

ENERGY DISSIPATOR SCHEDULE								
RIPRAP NO.	LOCATION	RIPRAP SIZE	D (FT)	T1 (FT)	L (FT)	W1 (FT)	W2 (FT)	EL. (FT)
RR 1	NORTH	R-4	1.0	1.2	25.0	3.0	8.0	339.1
RR 2	SOUTH	R-4	1.0	1.2	11.0	2.5	6.0	340.0



DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT T201280201

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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 3 INTERSECTION OF POLLY DRUMMOND HILL ROAD AND PAPER MILL ROAD (BMP 6)

GENERAL IMPROVEMENTS
STORMWATER FACILITY MAINTENANCE

COMMENTS:

Remove Sediment, Cattails, Phragmites, Trash, Debris and Clear & Grub the interior of the pond up to elev. 215.0.
Remove all trees from elevation 213.0 to top of bank.
Reconstruct RipRap Spillways at the inflow pipes.
Seed and mulch the interior of the pond up to elevation 215.0 with permanent grass seed, wet ground.
Mow the grass in and around the stormwater pond up to the edge of roadway to a height of 4" to 6".

MATERIAL ESTIMATE FOR LOCATION 3

202000	EXCAVATION AND EMBANKMENT	210.00 C.Y.
712005	RIPRAP, R-4	188.00 S.Y.
713003	GEOTEXTILES, RIPRAP	188.00 S.Y.
732000	TOPSOIL, 4" DEPTH	812.00 S.Y.
734015	PERMANENT GRASS SEEDING, WET GROUND	812.00 S.Y.
743003	ARROWPANEL, TYPE C	5.00 EA-DY
743053	**FLAGGER, NEW CASTLE COUNTY, HEAVY	100.00 HOUR
743068	**FLAGGER, NEW CASTLE COUNTY, HEAVY, OVERTIME	20.00 HOUR
763612	JOB ORDER MOBILIZATION, NORTH DISTRICT	1.00 EACH

** DENOTES FIXED PRICE ITEM

DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT T201280201

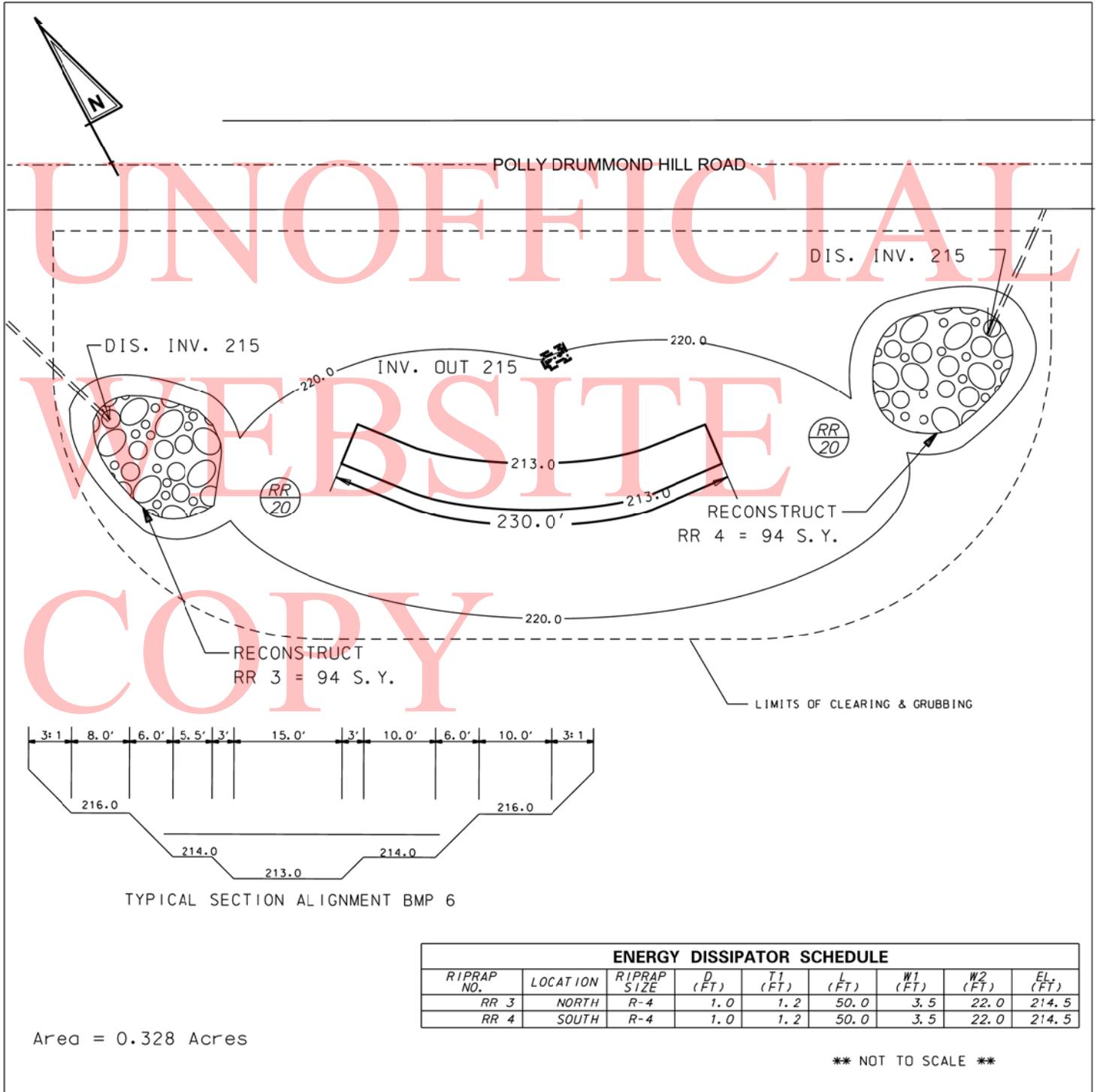
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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 3

INTERSECTION OF POLLY DRUMMOND HILL ROAD AND PAPER MILL ROAD (BMP 6)



DELAWARE DEPARTMENT OF TRANSPORTATION

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**NORTH
MAINTENANCE**

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 4 INTERSECTION OF FIRST STATED BLVD AND SEARS BLVD (BMP 142)

GENERAL IMPROVEMENTS
STORMWATER FACILITY MAINTENANCE

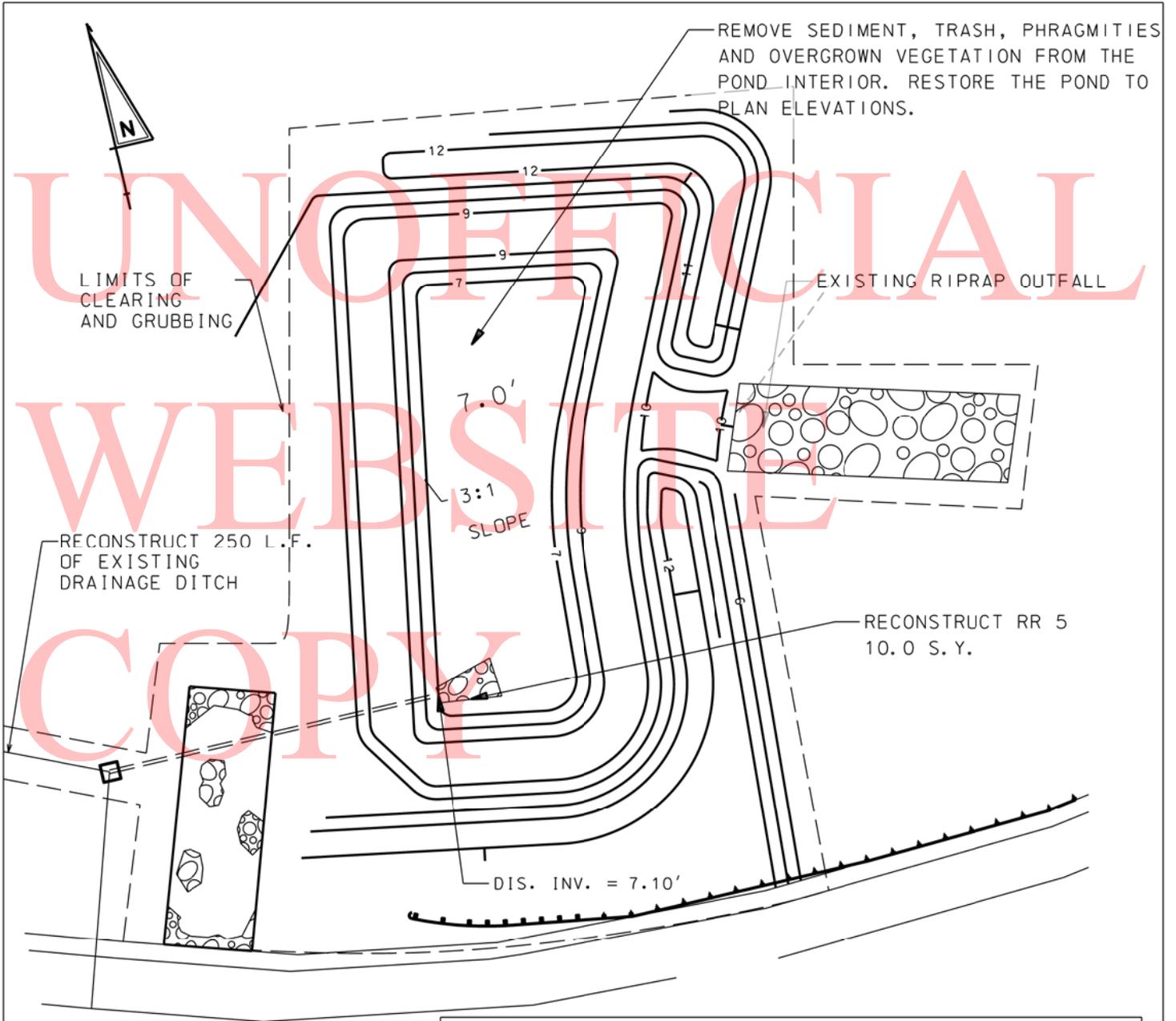
COMMENTS:

Remove Sediment, Cattails, Phragmites, Trash, Debris, Trees, etc. from the pond interior.
Reconstruct Drainage swale leading to BMP 142, triangular shape with 4:1 side slopes. Inv. Elev. 9.0 to Dis. Ele. 7.5.
Reconstruct RipRap Spillways at the inflow pipes.
Seed and mulch the interior of the pond up to elevation 9.0 with wet-ground seed.
Mow the area in and around the stormwater management pond up to the guardrail to a height of 4" to 6".

MATERIAL ESTIMATE FOR LOCATION 4

202000	EXCAVATION AND EMBANKMENT	260.00 C.Y.
268000	STABILIZED CONSTRUCTION ENTRANCE	84.00 TON
712005	RIPRAP, R-4	6.00 S.Y.
713003	GEOTEXTILES, RIPRAP	6.00 S.Y.
732000	TOPSOIL, 4" DEPTH	1200.00 S.Y.
734013	PERMANENT GRASS SEEDING, DRY GROUND	300.00 S.Y.
734015	PERMANENT GRASS SEEDING, WET GROUND	900.00 S.Y.
743003	ARROWPANEL, TYPE C	7.00 EA-DY
743053	**FLAGGER, NEW CASTLE COUNTY, HEAVY	140.00 HOUR
743068	**FLAGGER, NEW CASTLE COUNTY, HEAVY, OVERTIME	28.00 HOUR
763612	JOB ORDER MOBILIZATION, NORTH DISTRICT	1.00 EACH

** DENOTES FIXED PRICE ITEM



ENERGY DISSIPATOR SCHEDULE									
RIPRAP NO.	LOCATION	RIPRAP SIZE	D (FT)	T1 (FT)	L (FT)	W1 (FT)	W2 (FT)	EL. (FT)	
RR 5	BMP 142	R-4	1.0	1.2	10.0	2.0	7.5	7.0	

Area = 0.39 Acres
 Area btw Guardrail and pond = 0.09 Acres

** NOT TO SCALE **

DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT T201180201

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**NORTH
MAINTENANCE**

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 5 SOUTH COLLEGE AVENUE NEAR THE CHRSLER PLANT (BMP 196)

GENERAL IMPROVEMENTS
STORMWATER FACILITY MAINTENANCE

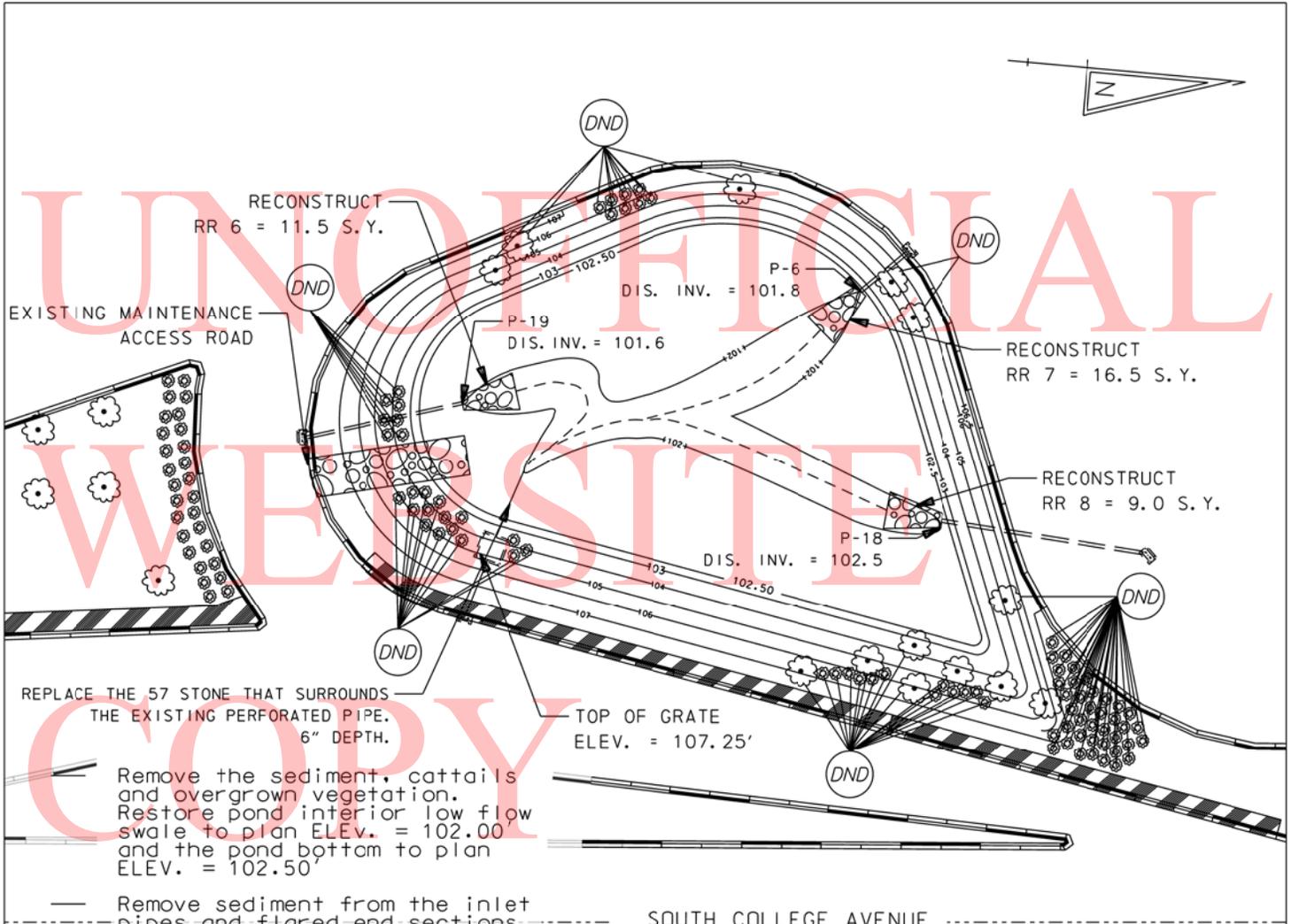
COMMENTS:

Repair erosion near the inflow pipes.
Remove Sediment, Cattails, Trash, Debris and Clear & Grub the interior of the pond up to the back of curb.
Remove all trees from elevation 102.00 to top of bank not marked as DND.
Reconstruct RipRap Spillways at the inflow pipes.
Replace the 57 stone around the 12" perforated PVC pipe attached to the outlet structure.
Seed and mulch the interior of the pond up to elevation 103.25 with wet ground seed.
Mow the area in and around the pond up to the back of sidewalk to a height of 4" to 6".

MATERIAL ESTIMATE FOR LOCATION 5

202000	EXCAVATION AND EMBANKMENT	280.00 C.Y.
302510	DELAWARE NO. 57 STONE	24.00 SY-IN
712005	RIPRAP, R-4	38.00 S.Y.
713003	GEOTEXTILES, RIPRAP	38.00 S.Y.
732000	TOPSOIL, 4" DEPTH	921.00 S.Y.
734015	PERMANENT GRASS SEEDING, WET GROUND	921.00 S.Y.
743003	ARROWPANEL, TYPE C	6.00 EA-DY
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	6.00 EA-DY
743053	**FLAGGER, NEW CASTLE COUNTY, HEAVY	120.00 HOUR
743068	**FLAGGER, NEW CASTLE COUNTY, HEAVY, OVERTIME	24.00 HOUR
763612	JOB ORDER MOBILIZATION, CANAL DISTRICT	1.00 EACH

**** DENOTES FIXED PRICE ITEM**



ENERGY DISSIPATOR SCHEDULE

RIPRAP NO.	LOCATION	RIPRAP SIZE	D (FT)	T1 (FT)	L (FT)	W1 (FT)	W2 (FT)	EL (FT)
RR 6	P-19	R-4	1.0	1.2	NA	NA	NA	101.5
RR 7	P-6	R-4	1.0	1.2	4.5	2.0	10.0	101.5
RR 8	SOUTH	R-4	1.0	1.2	NA	NA	NA	101.5

Area = 0.219 Acres

** NOT TO SCALE **

DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT T201280201

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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 6 RAMP TO I-95 NORTHBOUND FROM SOUTH COLLEGE AVENUE (BMP 166)

GENERAL IMPROVEMENTS
STORMWATER FACILITY MAINTENANCE

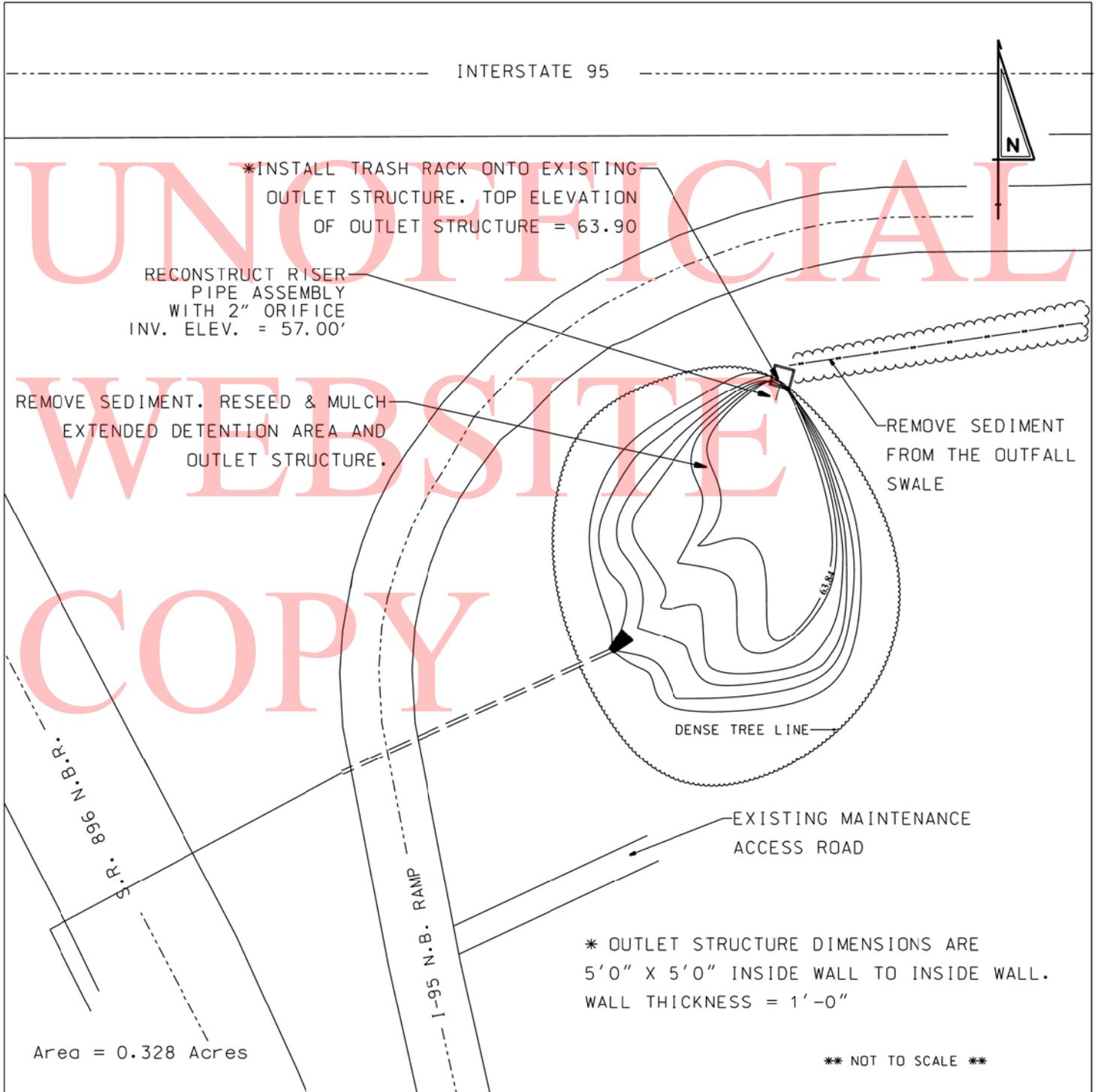
COMMENTS:

Repair erosion near the inflow pipe and along the side slopes of the BMP.
Remove Sediment, Cattails, Trash, Debris and Clear & Grub the interior of the pond up to elevation 63.84.
Install trash rack onto the existing outlet structure.
Reconstruct low-flow riser pipe assembly.
Seed and mulch interior of the pond up to elevation 63.84 with permanent grass seeding, wet ground.
Reconstruct outfall ditch.

MATERIAL ESTIMATE FOR LOCATION 6

202000	EXCAVATION AND EMBANKMENT	60.00 C.Y.
272513	RISER PIPE ASSEMBLY FOR OUTLET STRUCTURE	1.00 EACH
272503	TRASH RACK	1.00 EACH
734015	PERMANENT GRASS SEEDING, WET GROUND	1482.00 S.Y.
743003	ARROWPANEL, TYPE C	4.00 EA-DY
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR	4.00 EA-DY
743053	**FLAGGER, NEW CASTLE COUNTY, HEAVY	80.00 HOUR
743068	**FLAGGER, NEW CASTLE COUNTY, HEAVY, OVERTIME	16.00 HOUR
763612	JOB ORDER MOBILIZATION, CANAL DISTRICT	1.00 EACH

**DENOTES FIXED PRICE ITEM



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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 7 INTERSECTION OF SOUTH COLLEGE AVE. & OLD BALTIMORE PIKE (BMP 163)

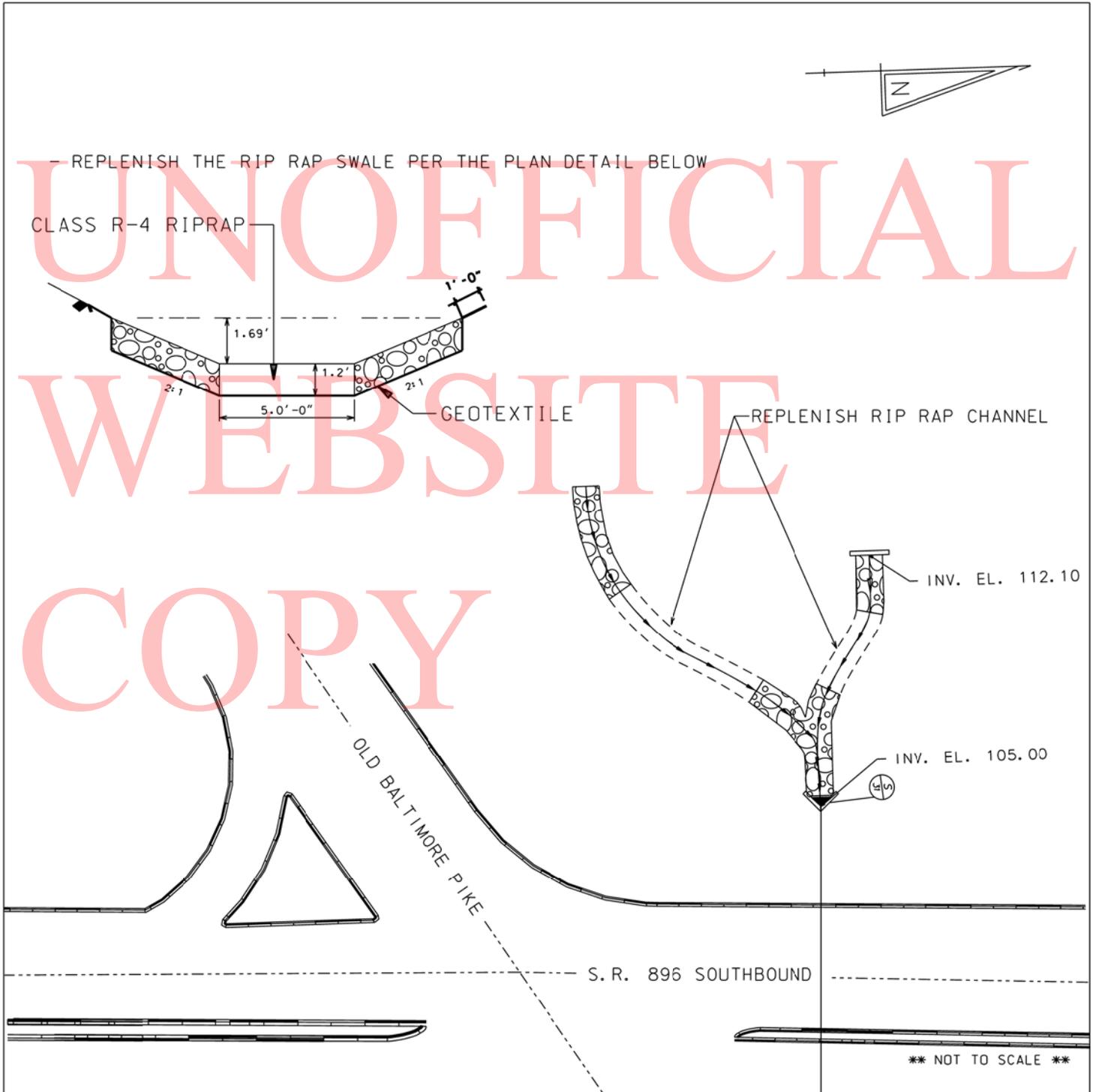
GENERAL IMPROVEMENTS
STORMWATER FACILITY MAINTENANCE

COMMENTS:
Please see attached sheets for comments

MATERIAL ESTIMATE FOR LOCATION 8

712020	RIPRAP, R-4	18.00 TON
713003	GEOTEXTILES, RIPRAP	18.00 S.Y.
743003	ARROW PANEL, TYPE C	1.00 EA-DY
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	1.00 EA-DY
743053	**FLAGGER, NEW CASTLE COUNTY, HEAVY	20.00 HOUR
743068	**FLAGGER, NEW CASTLE COUNTY, HEAVY, OVERTIME	4.00 HOUR
763612	JOB ORDER MOBILIZATION, CANAL DISTRICT	1.00 EACH

** DENOTES FIXED PRICE ITEM



DELAWARE DEPARTMENT OF TRANSPORTATION

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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 8 INTERSECTION OF SOUTH COLLEGE AVE. & OLD BALTIMORE PIKE (BMP 162)

GENERAL IMPROVEMENTS
STORMWATER FACILITY MAINTENANCE

COMMENTS:

Clear and Grub the area in order to reinstall the RipRap Swale per plan.
Reinstall the RipRap Swale per plan details.
Topsoil, Seed and Mulch the disturbed area surrounding the Swale.

MATERIAL ESTIMATE FOR LOCATION 7

202000	EXCAVATION AND EMBANKMENT	110.00 C.Y.
712006	RIPRAP, R-5	194.00 S.Y.
713003	GEOTEXTILES, RIPRAP	194.00 S.Y.
732000	TOPSOIL, 4" DEPTH	120.00 S.Y.
734013	PERMANENT GRASS SEEDING, DRY GROUND	120.00 S.Y.
743003	ARROWPANEL, TYPE C	6.00 EA-DY
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR	6.00 EA-DY
743053	**FLAGGER, NEW CASTLE COUNTY, HEAVY	120.00 HOUR
743068	**FLAGGER, NEW CASTLE COUNTY, HEAVY, OVERTIME	24.00 HOUR
763612	JOB ORDER MOBILIZATION, CANAL DISTRICT	1.00 EACH

** DENOTES FIXED PRICE ITEM

DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT T201280201

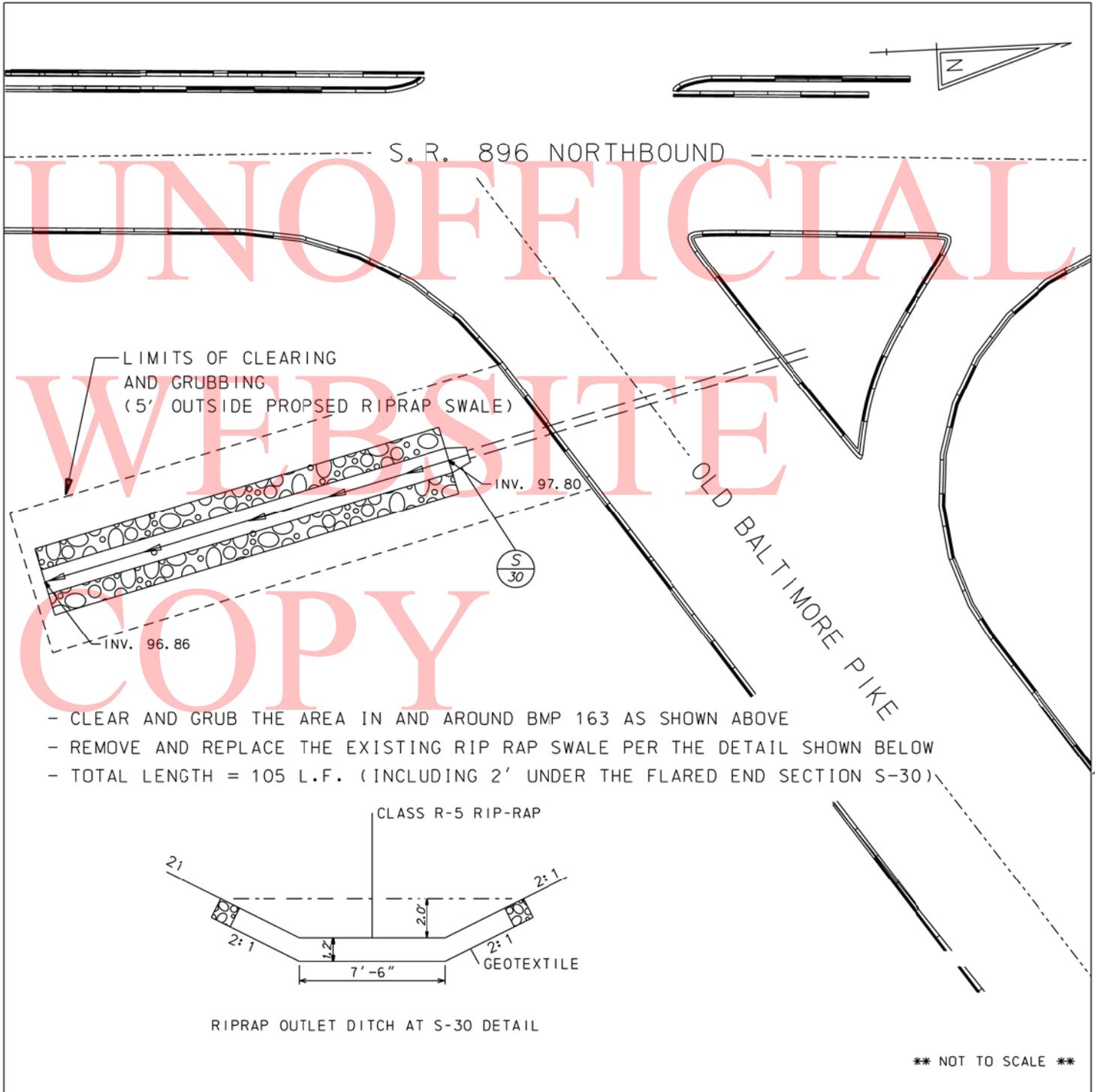
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NORTH MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 8

INTERSECTION OF SOUTH COLLEGE AVE. & OLD BALTIMORE PIKE (BMP 162)



DELAWARE DEPARTMENT OF TRANSPORTATION

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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 9 INTERSECTION OF SOUTH COLLEGE AVE. AND CORPORATE BLVD. (BMP 84)

GENERAL IMPROVEMENTS
STORMWATER FACILITY MAINTENANCE

COMMENTS:

Repair erosion near inflow pipe.
Remove Sediment, Trash, Organic Debris and Clear & Grub from the interior of the pond up to the top of slope.
Reconstruct RipRap Spillway at the inflow pipe.
Reconstruct the riser pipe assembly.
Seed and mulch the interior of the pond up to elevation 56.0 with permanent seeding, dry ground.

MATERIAL ESTIMATE FOR LOCATION 9

202000	EXCAVATION AND EMBANKMENT	82.00 C.Y.
272513	RISER PIPE ASSEMBLY FOR OUTLET STRUCTURE	1.00 EACH
712005	RIPRAP, R-4	34.00 S.Y.
713001	GEOTEXTILES, RIPRAP	34.00 S.Y.
734013	PERMANENT GRASS SEEDING, DRY GROUND	980.00 S.Y.
743003	ARROW PANEL, TYPE C	4.00 EA-DY
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR	4.00 EA-DY
743053	**FLAGGER, NEW CASTLE COUNTY, HEAVY	80.00 HOUR
743068	**FLAGGER, NEW CASTLE COUNTY, HEAVY, OVERTIME	16.00 HOUR
763612	JOB ORDER MOBILIZATION, CANAL DISTRICT	1.00 EACH

** DENOTES FIXED PRICE ITEM

DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT T201280201

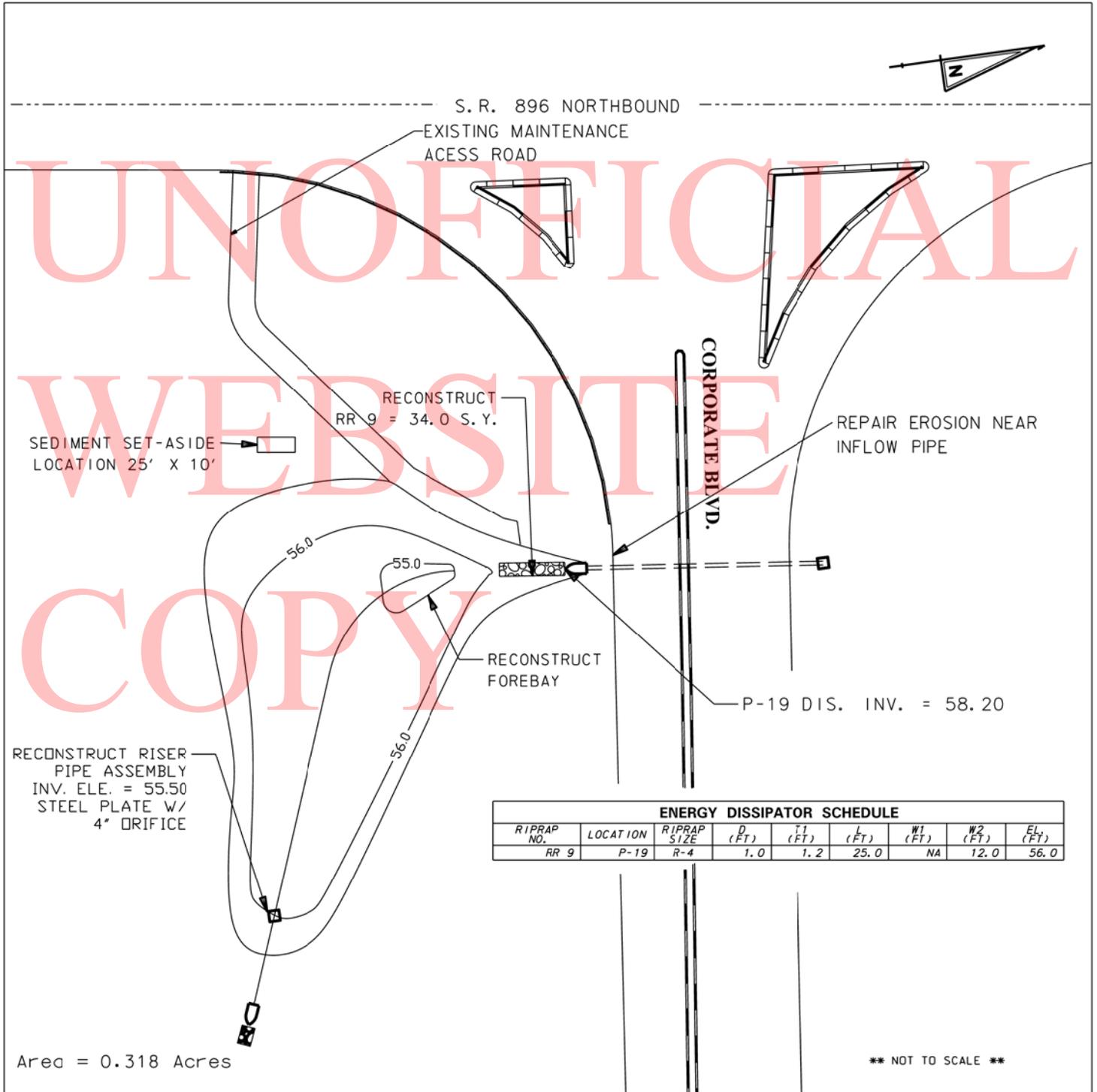
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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 9

INTERSECTION OF SOUTH COLLEGE AVE. AND CORPORATE BLVD. (BMP 84)



ENERGY DISSIPATOR SCHEDULE								
RIPRAP NO.	LOCATION	RIPRAP SIZE	D (FT)	T1 (FT)	L (FT)	W1 (FT)	W2 (FT)	EL (FT)
RR 9	P-19	R-4	1.0	1.2	25.0	NA	12.0	56.0

DELAWARE DEPARTMENT OF TRANSPORTATION

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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 10 SOUTH COLLEGE AVE. ACROSS FROM FOUR SEASONS PARK (BMP 85)

GENERAL IMPROVEMENTS
STORMWATER FACILITY MAINTENANCE

COMMENTS:

Remove sediment, brush and debris from the outfall structure.
Clear and grub all trees in and around the BMP to the back of the guardrail.
Mow the grass area in and around the pond to a height of 4"-6".

MATERIAL ESTIMATE FOR LOCATION 10

202000	EXCAVATION AND EMBANKMENT	12.00 C.Y.
712005	RIPRAP, R-4	14.00 S.Y.
713003	GEOTEXTILES, RIPRAP	14.00 S.Y.
743003	ARROWPANEL, TYPE C	1.00 EA-DY
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	1.00 EA-DY
743053	**FLAGGER, NEW CASTLE COUNTY, HEAVY	20.00 HOUR
743068	**FLAGGER, NEW CASTLE COUNTY, HEAVY, OVERTIME	4.00 HOUR
763612	JOB ORDER MOBILIZATION, CANAL DISTRICT	1.00 EACH

**DENOTES FIXED PRICE ITEM

DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT T201280201

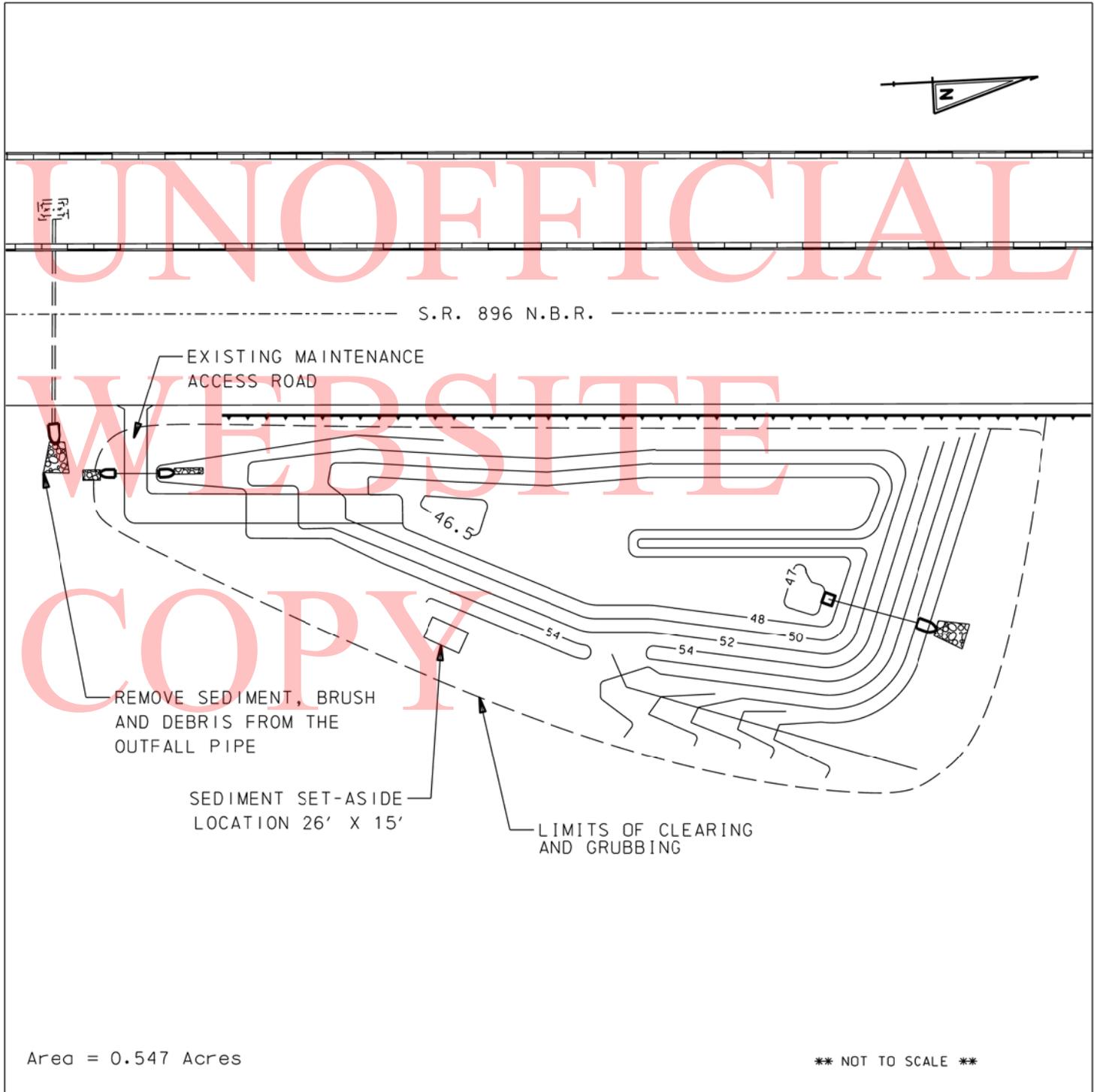
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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 10

SOUTH COLLEGE AVENUE ACROSS FROM FOUR SEASONS PARK (BMP 85)



DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT T201280201

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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 11 SOUTH OF NORMAN AVENUE ON THE EAST SIDE OF SOUTH COLLEGE AVE. (BMP 86)

GENERAL IMPROVEMENTS
STORMWATER FACILITY MAINTENANCE

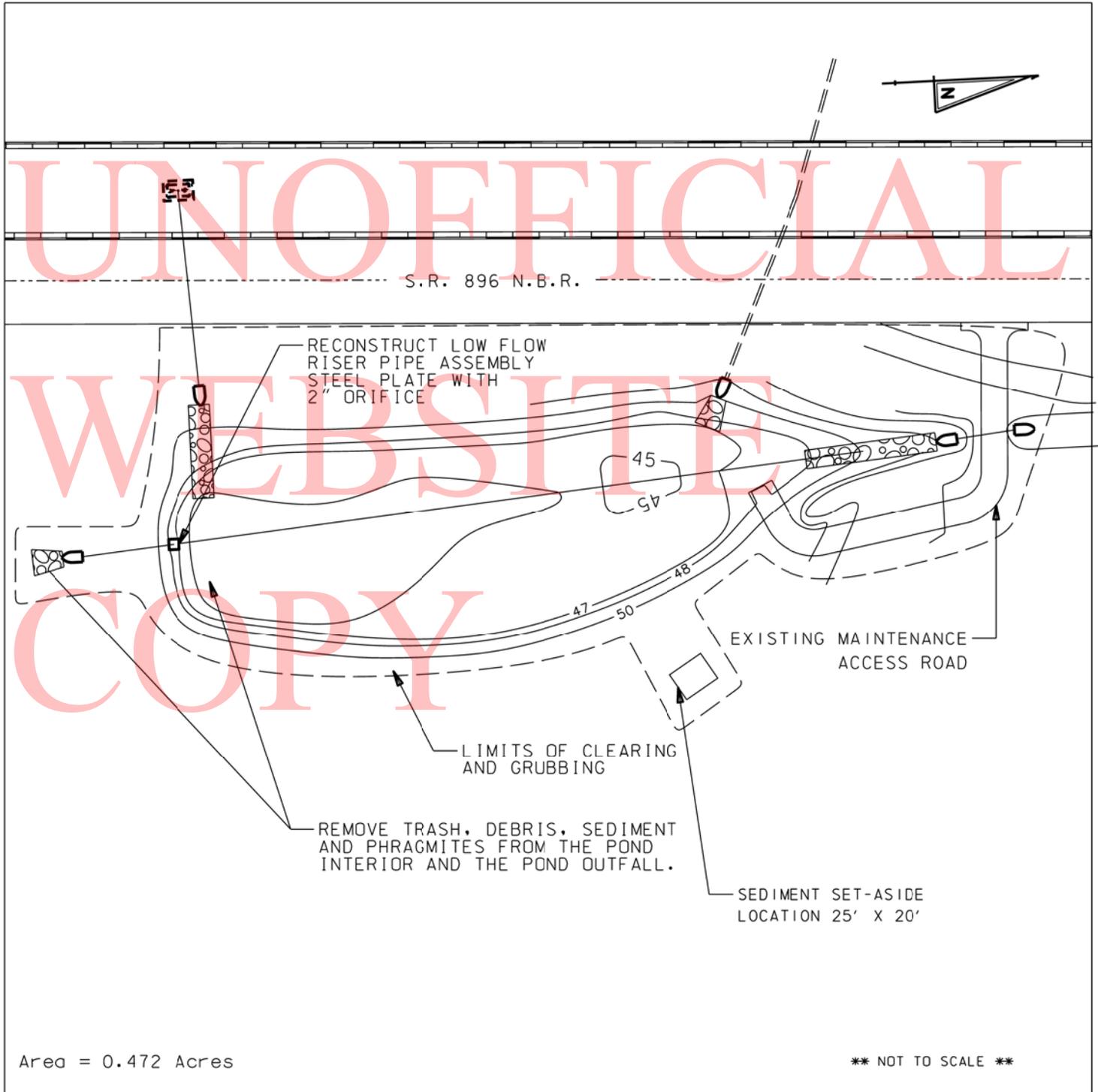
COMMENTS:

Remove Sediment, Cattails, Phragmites, Trash, Debris, Trees, etc. from the pond interior, maintenance access road and pond outfall.
Reconstruct the low flow riser pipe assembly at the outlet structure.
Seed and mulch the interior of the pond up to elevation 9.0 with permanent seeding, dry ground.
Mow the grass in and around the stormwater pond to a height of 4" - 6".

MATERIAL ESTIMATE FOR LOCATION 11

202000	EXCAVATION AND EMBANKMENT	480.00 C.Y.
272513	RISER PIPE ASSEMBLY FOR OUTLET STRUCTURE	1.00 EACH
732000	TOPSOIL, 4" DEPTH	1435.00 S.Y.
734013	PERMANENT GRASS SEEDING, DRY GROUND	1435.00 S.Y.
743003	ARROWPANEL, TYPE C	5.00 EA-DY
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR	5.00 EA-DY
743053	**FLAGGER, NEW CASTLE COUNTY, HEAVY	100.00 HOUR
743068	**FLAGGER, NEW CASTLE COUNTY, HEAVY, OVERTIME	20.00 HOUR
763612	JOB ORDER MOBILIZATION, CANAL DISTRICT	1.00 EACH

** DENOTES FIXED PRICE ITEM



DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT T201180201

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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 12 INTERSECTION OF S.R. 40 WESTBOUND & SUNSET LAKE ROAD (BMP 193)

GENERAL IMPROVEMENTS
STORMWATER FACILITY MAINTENANCE

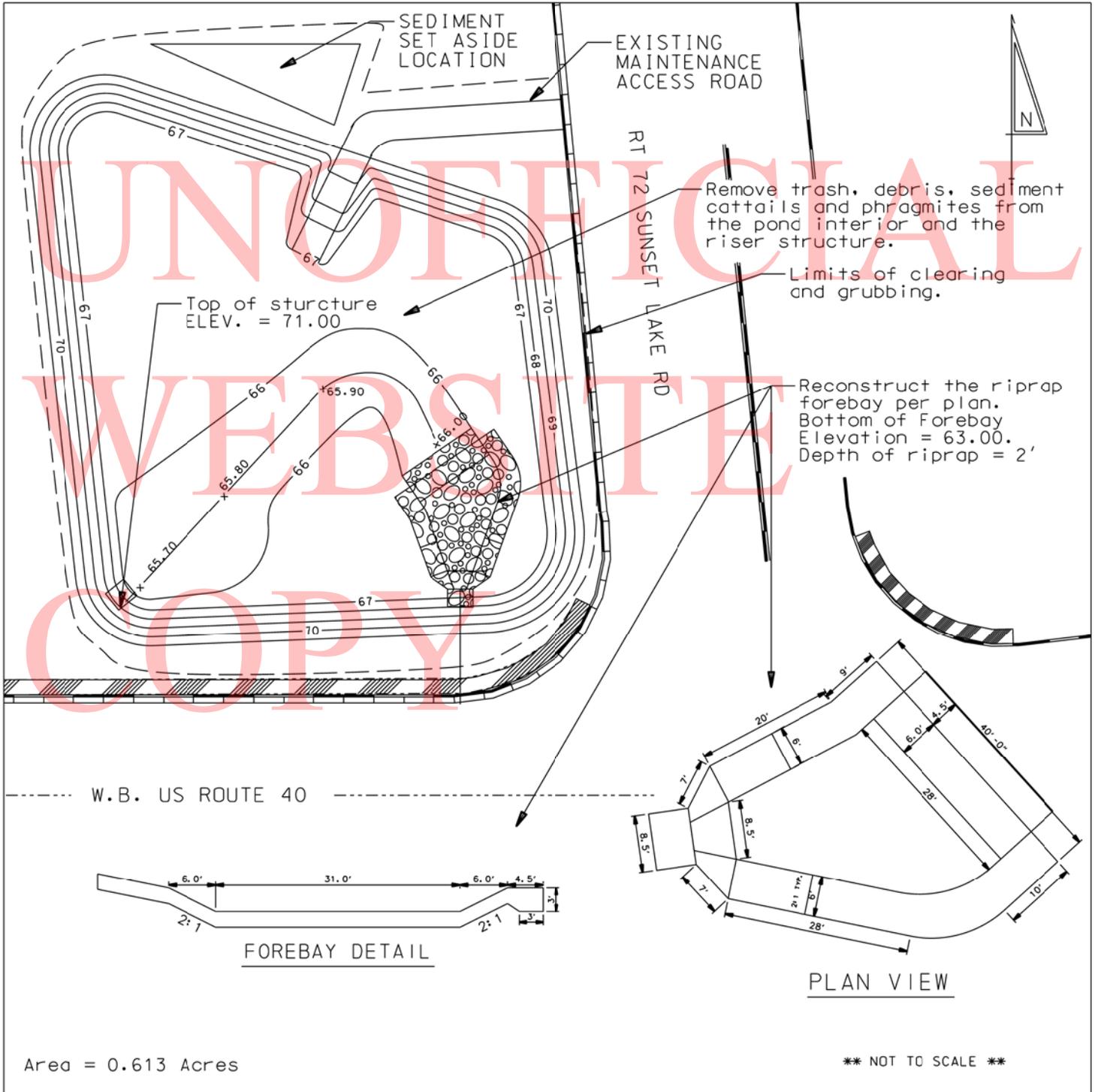
COMMENTS:

Remove Sediment, Cattails, Phragmites, Trash, Debris, Trees, etc. from the pond interior, maintenance access road and outlet structure.
Reconstruct the riprap forebay per plan dimensions.
Re-seed and mulch the pond interior from the pond bottom to elevation 68.0 with permanent grass seeding, wet ground.
Mow the grass in and around the stormwater pond to a height of 4" - 6".

MATERIAL ESTIMATE FOR LOCATION 12

202000	EXCAVATION AND EMBANKMENT	450.00 C.Y.
712005	RIPRAP, R-4	1500.00 S.Y.
713003	GEOTEXTILES, RIPRAP	1500.00 S.Y.
732000	TOPSOIL, 4" DEPTH	2710.00 S.Y.
734015	PERMANENT GRASS SEEDING, WET GROUND	2710.00 S.Y.
743003	ARROWPANEL, TYPE C	13.00 EA-DY
743053	**FLAGGER, NEW CASTLE COUNTY, HEAVY	260.00 HOUR
743068	**FLAGGER, NEW CASTLE COUNTY, HEAVY, OVERTIME	52.00 HOUR
763612	JOB ORDER MOBILIZATION, CANAL DISTRICT	1.00 EACH

** DENOTES FIXED PRICE ITEM



DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT T201280201

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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 13 INTERSECTION OF S.R. 71 AND U.S. 13 SOUTHBOUND (BMP 202)

GENERAL IMPROVEMENTS
STORMWATER FACILITY MAINTENANCE

COMMENTS:

Clear and grub the area in and around the pond to the top of the pond bank. Elev. 54.0.
Remove Sediment, Cattails, Phragmites, Trash, Debris, Trees, etc. from
the pond interior, maintenance access road, riser structure and riprap spillway.
Stabilize the drainage swales and slopes between the off-ramp and pond.
Reconstruct RipRap Spillways at the inflow pipes.
Re-seed and mulch interior of the pond up to elevation 45.0 with seed.
Mow the grass in and around the stormwater pond to a height of 4" to 6".

MATERIAL ESTIMATE FOR LOCATION 13

202000	EXCAVATION AND EMBANKMENT	425.00 C.Y.
712005	RIPRAP, R-4	130.00 S.Y.
713003	GEOTEXTILES, RIPRAP	130.00 S.Y.
732000	TOPSOIL, 4" DEPTH	1300.00 S.Y.
734013	PERMANENT GRASS SEEDING, DRY GROUND	30.00 S.Y.
734015	PERMANENT GRASS SEEDING, WET GROUND	1275.00 S.Y.
743003	ARROWPANEL, TYPE C	7.00 EA-DY
743053	**FLAGGER, NEW CASTLE COUNTY, HEAVY	140.00 HOUR
743068	**FLAGGER, NEW CASTLE COUNTY, HEAVY, OVERTIME	28.00 HOUR
763612	JOB ORDER MOBILIZATION, CANAL DISTRICT	1.00 EACH

** DENOTES FIXED PRICE ITEM

DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT T201280201

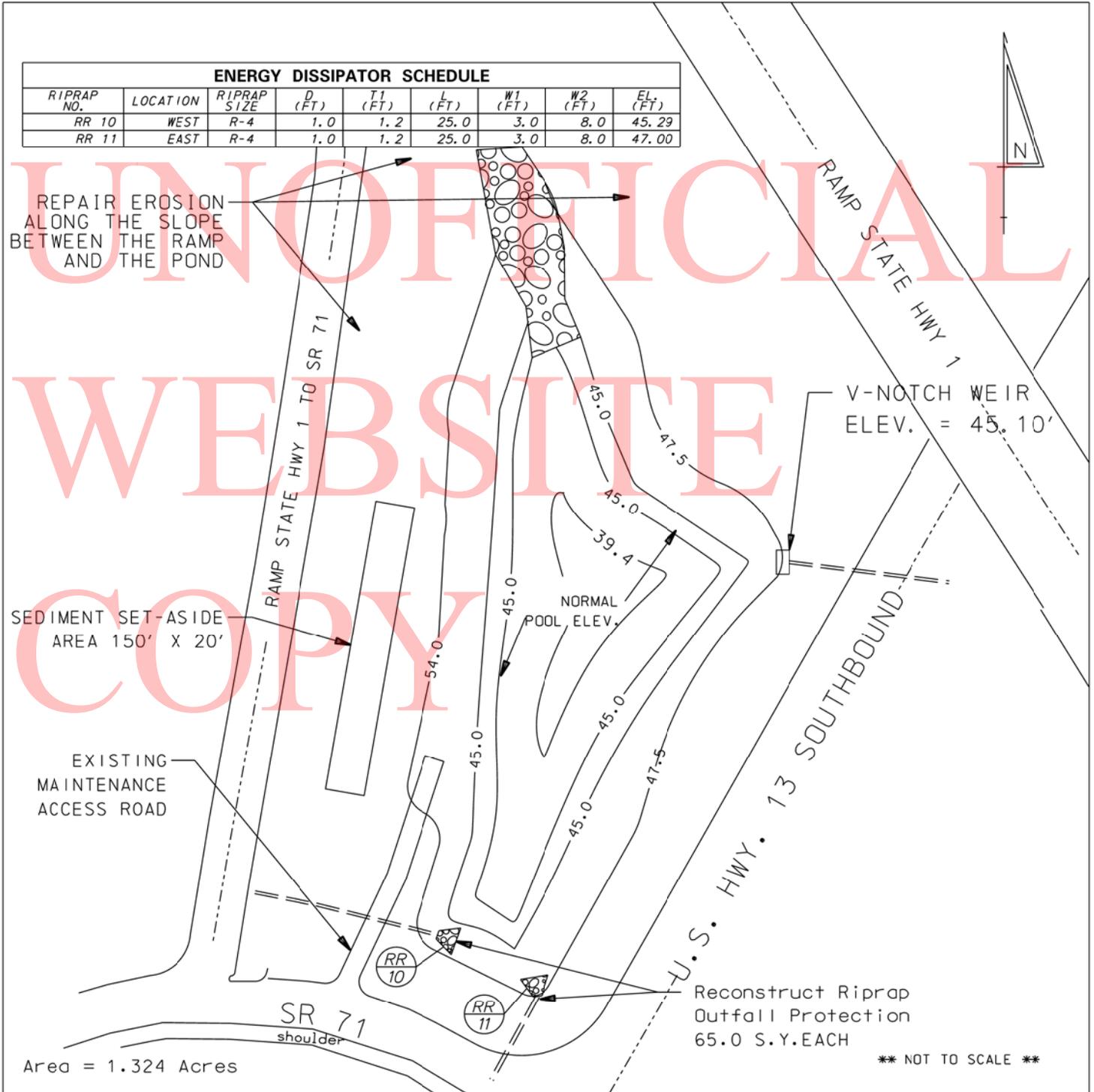
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NORTH MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 13

INTERSECTION OF S.R. 71 AND U.S. 13 SOUTHBOUND (BMP 202)



DELAWARE DEPARTMENT OF TRANSPORTATION

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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 14 INTERSECTION OF PORTER ROAD AND BENJAMIN BLVD. (BMP 90)

GENERAL IMPROVEMENTS
STORMWATER FACILITY MAINTENANCE

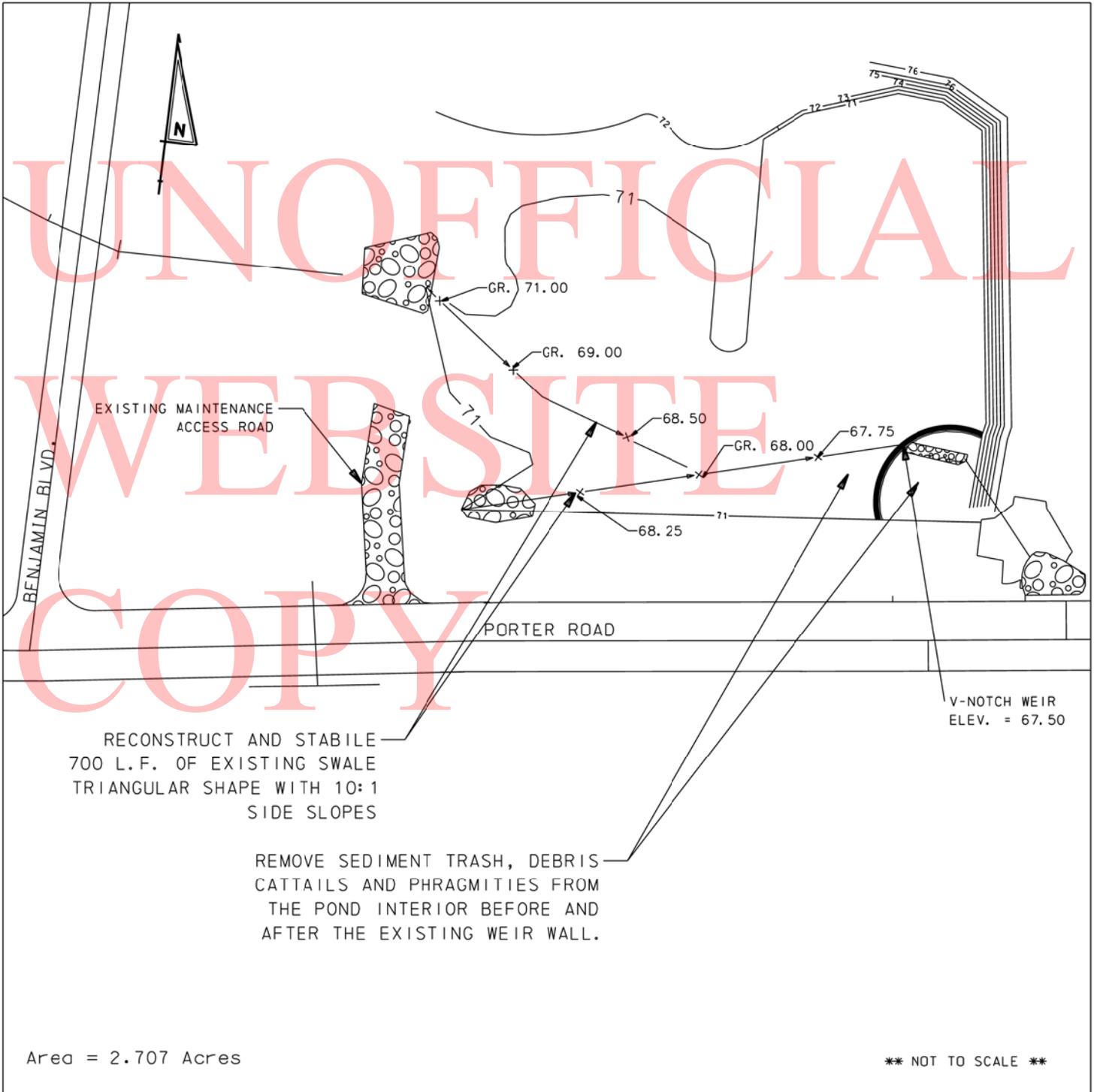
COMMENTS:

Clear and grub the area in and around the pond before and after the weir structure.
Remove Sediment, Cattails, Phragmites, Trash, Debris, Trees, etc. from
the pond interior, maintenance access road, riser structure and riprap spillway.
Reconstruct and Stabilize the drainage swales ensuring positive drainage to the weir structure.
Re-seed and mulch disturbed areas of the pond with wet ground seed.
Mow the grass in and around the stormwater pond to the edge of roadway to a height of 4" to 6".

MATERIAL ESTIMATE FOR LOCATION 14

202000	EXCAVATION AND EMBANKMENT	200.00 C.Y.
714003	DITCHING	700.00 L.F.
732000	TOPSOIL, 4" DEPTH	2325.00 S.Y.
734015	PERMANENT GRASS SEEDING, WET GROUND	2325.00 S.Y.
743003	ARROWPANEL, TYPE C	5.00 EA-DY
743053	**FLAGGER, NEW CASTLE COUNTY, HEAVY	100.00 HOUR
743068	**FLAGGER, NEW CASTLE COUNTY, HEAVY, OVERTIME	20.00 HOUR
763612	JOB ORDER MOBILIZATION, CANAL DISTRICT	1.00 EACH

** DENOTES FIXED PRICE ITEM



DELAWARE DEPARTMENT OF TRANSPORTATION

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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 15 S.R. 1 SOUTHBOUND, NORTH OF THE APPOQUINIMINK RIVER (BMP 130)

GENERAL IMPROVEMENTS
STORMWATER FACILITY MAINTENANCE

COMMENTS:

Clear and grub the area in and around the pond to the top of the pond bank, elevation 12.0.
Remove Sediment, Cattails, Phragmites, Trash, Debris, Trees, etc. from
the forebay, pond interior, maintenance access road, riser structure and riprap spillway.
Reconstruct RipRap Spillway at the inflow pipe.
Re-seed and mulch interior of the pond up to elevation 4.0 with wet ground seed.
Mow the grass in and around the stormwater pond up to the guardrail to a height of 4" to 6".

MATERIAL ESTIMATE FOR LOCATION 15

202000	EXCAVATION AND EMBANKMENT	345.00 C.Y.
712005	RIPRAP, R-4	14.00 S.Y.
713003	GEOTEXTILES, RIPRAP	14.00 S.Y.
732000	TOPSOIL, 4" DEPTH	1235.00 S.Y.
734015	PERMANENT GRASS SEEDING, WET GROUND	1235.00 S.Y.
743003	ARROWPANEL, TYPE C	7.00 EA-DY
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR	7.00 EA-DY
763612	JOB ORDER MOBILIZATION, CANAL DISTRICT	1.00 EACH

DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT T201280201

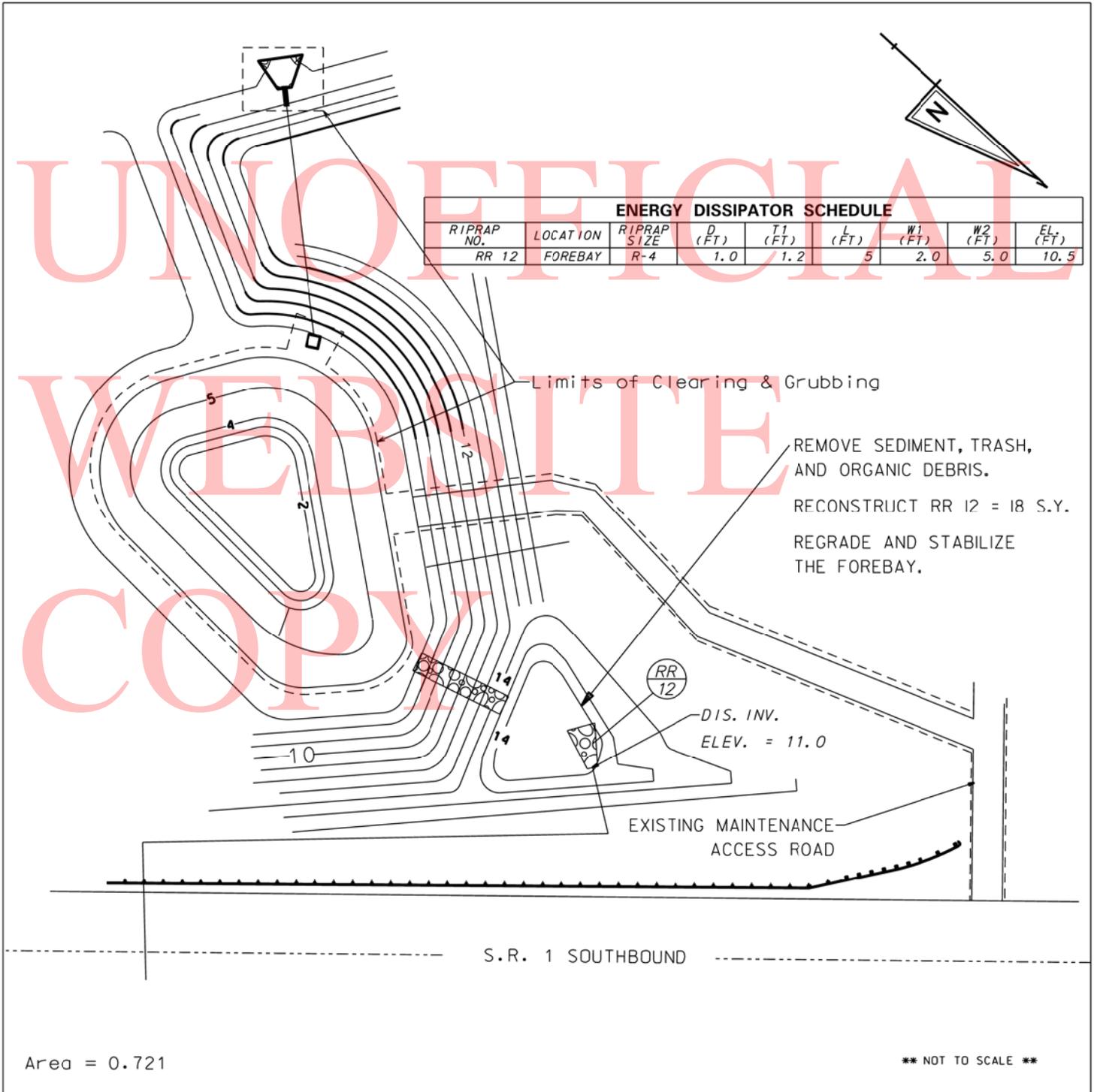
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NORTH
MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 15

S.R. 1 SOUTHBOUND, NORTH OF THE APPOQUINIMINK RIVER (BMP 130)



DELAWARE DEPARTMENT OF TRANSPORTATION

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**NORTH
MAINTENANCE**

STORMWATER BMP MAINTENANCE, FY 2012

LOCATION 16 S.R. 1 SOUTHBOUND (BMP 127)

GENERAL IMPROVEMENTS
STORMWATER FACILITY MAINTENANCE

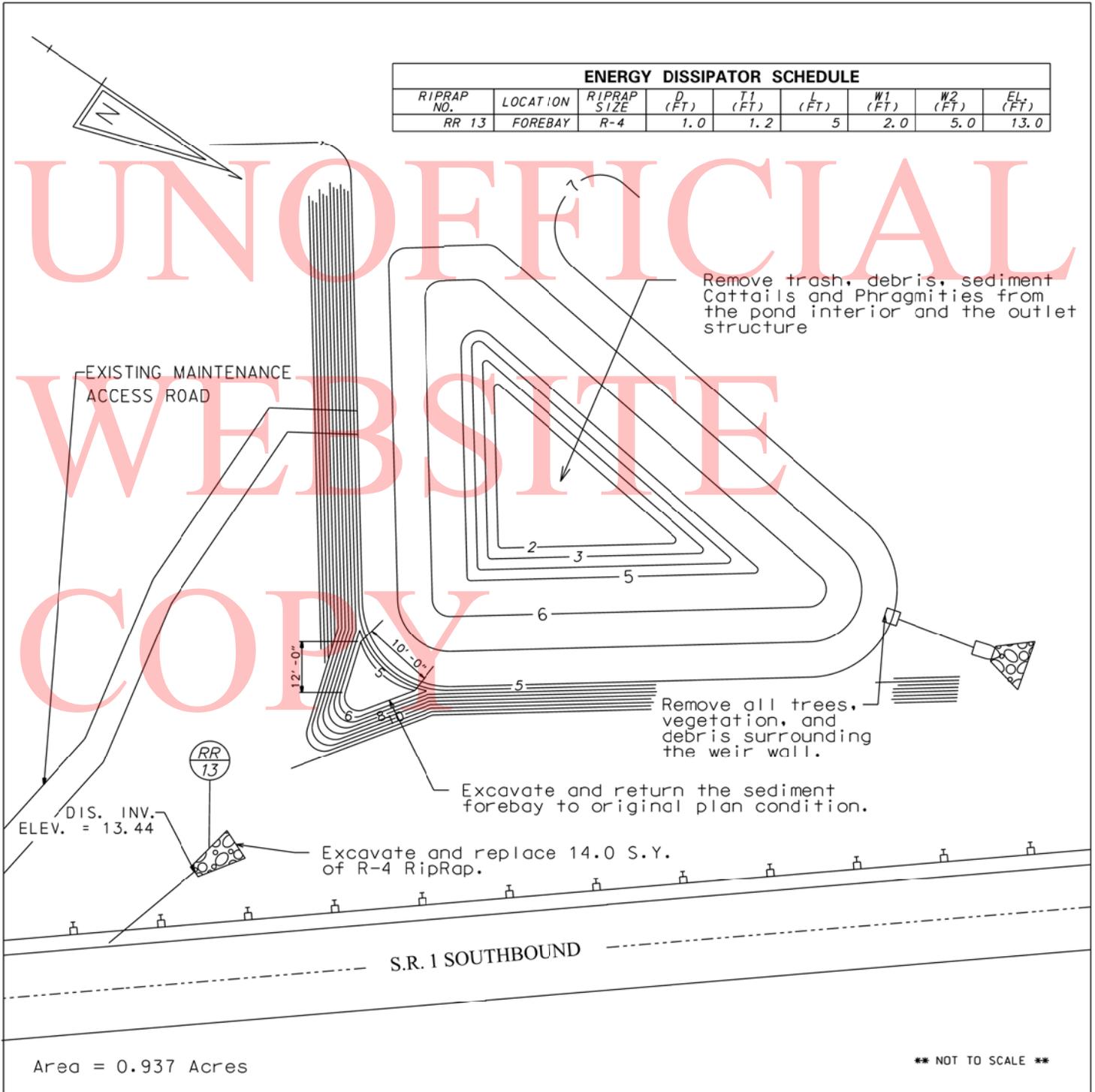
COMMENTS:

Clear and grub the area in and around the pond to the top of the pond bank. Elev. 12.0.
 Remove Sediment, Cattails, Phragmites, Trash, Debris, Trees etc. from the pond interior, riser structure, rip rap spillway and maintenance access road.
 Reconstruct the Riprap spillway at the inflow pipe.
 Reconstruct the pond forebay to original condition.
 Re-seed and mulch the pond interior with permanent seeding, wet ground up to Elev. 6.0.
 Mow the grass in and around the stormwater management pond up to the back of guardrail to a height of 4" to 6".

MATERIAL ESTIMATE FOR LOCATION 16

202000	EXCAVATION AND EMBANKMENT	210.00 C.Y.
712005	RIPRAP, R-4	14.00 S.Y.
713003	GEOTEXTILES, RIPRAP	14.00 S.Y.
732000	TOPSOIL, 4" DEPTH	1200.00 S.Y.
734015	PERMANENT GRASS SEEDING, WET GROUND	1200.00 S.Y.
743003	ARROW PANEL, TYPE C	13.00 EA-DY
743053	**FLAGGER, NEW CASTLE COUNTY, HEAVY	260.00 HOUR
743068	**FLAGGER, NEW CASTLE COUNTY, HEAVY, OVERTIME	52.00 HOUR
763612	JOB ORDER MOBILIZATION, CANAL DISTRICT	1.00 EACH

**** DENOTES FIXED PRICE ITEM**



DELAWARE DEPARTMENT OF TRANSPORTATION

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STATEWIDE MAINTENANCE

STORMWATER BMP MAINTENANCE, FY 2012

CONTRACT QUANTITIES SUMMARY SHEET

201000	CLEARING AND GRUBBING	LUMP SUM
202000	EXCAVATION AND EMBANKMENT	3469.00 C.Y.
268000	STABILIZED CONSTRUCTION ENTRANCE	111.00 TON
271501	DEWATERING OF EXISTING SWM PONDS	LUMP SUM
272503	TRASH RACK	1.00 EACH
272513	RISER PIPE ASSEMBLY FOR OUTLET STRUCTURE	3.00 EACH
302510	DELAWARE NO. 57 STONE	24.00 SY-IN
712005	RIPRAP, R-4	1993.00 S.Y.
712006	RIPRAP, R-5	194.00 S.Y.
712020	RIPRAP, R-4	18.00 TON
713003	GEOTEXTILES, RIPRAP	2187.00 S.Y.
732000	TOPSOIL, 4" DEPTH	15,098.00 S.Y.
734013	PERMANENT GRASS SEEDING, DRY GROUND	3,720.00 S.Y.
734015	PERMANENT GRASS SEEDING, WET GROUND	13,285.00 S.Y.
736502	MOWING	10.00 ACRE
743003	ARROWPANELS, TYPE C	85.00 EA-DY
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	47.00 EA-DY
743053	**FLAGGER, NEW CASTLE COUNTY, HEAVY	1,560.00 HOUR
743068	**FLAGGER, NEW CASTLE COUNTY, HEAVY, OVERTIME	312.00 HOUR
763000	INITIAL EXPENSE	LUMP SUM
763501	CONSTRUCTION ENGINEERING	LUMP SUM
763612	JOB ORDER MOBILIZATION, NORTH DISTRICT	4.00 EACH
763613	JOB ORDER MOBILIZATION, CANAL DISTRICT	12.00 EACH
763643	MAINTENANCE OF TRAFFIC, ALL INCLUSIVE	LUMP SUM

** DENOTES FIXED PRICE ITEM