

THE STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY
UNITS



CONSTRUCTION PLANS FOR:

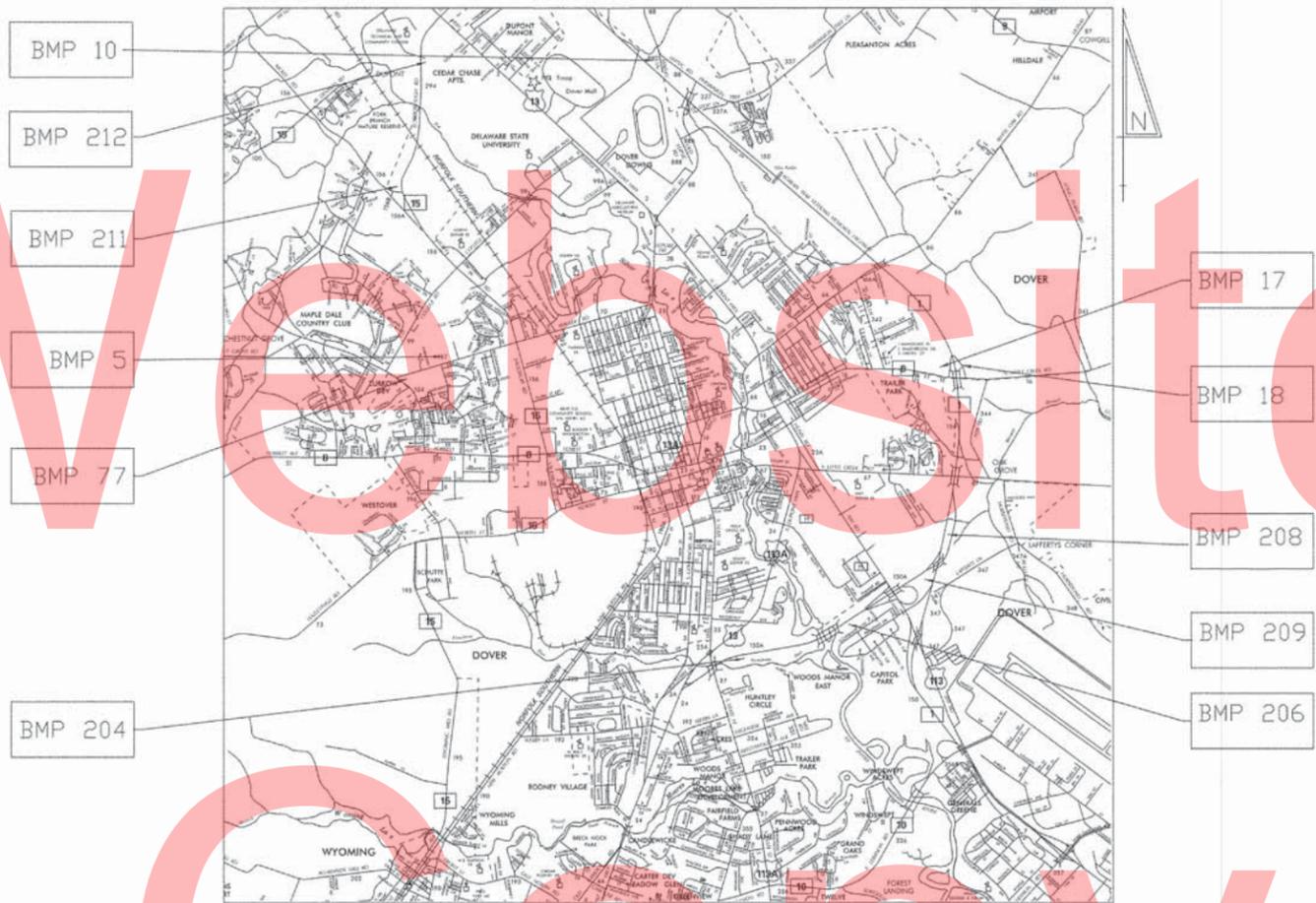
STORMWATER POND MAINTENANCE, CENTRAL

CONTRACT NUMBER: T201280204

COUNTY: KENT AGREEMENT NUMBER N/A

DESIGN DESIGNATION		
FUNCTIONAL CLASS: N/A	D.H.V. PROJECTED: N/A	YEAR: N/A
TYPE OF CONSTRUCTION: STORMWATER BMP MAINTENANCE		DESIGN SPEED: N/A
A.A.D.T. CURRENT: N/A	YEAR: N/A	TRUCKS: N/A %
A.A.D.T. PROJECTED: N/A	YEAR: N/A	DIRECTION OF DISTRIBUTION: N/A %

INDEX OF SHEETS	
SHEET NO	TITLE
1	TITLE
2	LEGEND
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4	CONSTRUCTION DETAILS
5-7	BMPs 5 and 77
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18-20	BMPs 211 and 212



LOCATION MAP
SCALE: N.T.S.

TOTAL SHEETS: 20

APPROVED DESIGN EXCEPTIONS			
DESIGN PARAMETER	REQUIRED	PROVIDED	DATE
N/A			

ADDENDA & REVISIONS	
DESCRIPTION	NAME & DATE

ASSOCIATED CONTRACTS	
CONTRACT NO.	CONTRACT NAME
83-012-01	SCARBOROUGH RD., MCKEE RD. TO US RT 13
89-110-02	SR 1, LAFFERTY LANE TO NORTH OF DENNY'S ROAD
91-110-13	SR 1, PUNCHEON RUN, CONNECTOR TO US 13
92-110-13	SR 1, DOVER LANDSCAPING & SR 8 EMERGENCY ACCESS RAMPS
20-045-01	WALKER ROAD, KENTON ROAD TO SAULSBURY ROAD

PLAN PREPARED JULY 15, 2014

RECOMMENDED

[Signature] 9/5/14
MAINTENANCE ENGINEER DATE

[Signature] 9/4/14
DISTRICT ENGINEER DATE

[Signature] 9/4/14
NPDES ENVIRONMENTAL PROGRAM MANAGER DATE

[Signature] 9/3/14
ASSISTANT DIRECTOR STATEWIDE SUPPORT SERVICES DATE

[Signature] 9/9/14
DIRECTOR MAINTENANCE AND OPERATIONS DATE

RECOMMENDED AS TO PROCESS

[Signature]
CHIEF ENGINEER

DATE 9/5/14

~~**RECOMMENDED**~~

~~STORMWATER ENGINEER~~

~~DATE~~ ~~SEAL~~

RECOMMENDED

[Signature]
NPDES ENGINEER

DATE 9/3/2014

[Seal]
LITONIA GILLIAM
LICENSE
No. 14861
DELAWARE
PROFESSIONAL ENGINEER
SEAL

EXISTING SYMBOLS

DRAINAGE	
	DITCH OR STREAM CENTERLINE
	DIRECTIONAL STREAM FLOW ARROW
	DRAINAGE INLET
	DRAINAGE JUNCTION BOX
	DRAINAGE MANHOLE
	DRAINAGE PIPE AND FLOW ARROW
	DRAINAGE PIPE HEADWALL
	RIPRAP - AREA FEATURE
	RIPRAP - LINEAR FEATURE
	P.C.C. SIDEWALK - 4"
	P.C.C. SIDEWALK - 6" (USE 8" DEPTH FOR CHANNELIZATION ISLANDS.)
	PIPE & DIRECTIONAL FLOW ARROW
	GUARDRAIL, TYPE 1
	GUARDRAIL, TYPE 2

NATURAL ROADSIDE FEATURES	
	TREE - CONIFEROUS
	TREE - DECIDUOUS
	SHRUBBERY
	DELINEATED WETLAND BOUNDARY LINE
	WOODS LINE BOUNDARY

PROPOSED SYMBOLS

CONSTRUCTION	
	LIMIT OF CONSTRUCTION
	RIPRAP
	DITCH

IDENTIFIERS	
	DO NOT DISTURB
	ENERGY DISSIPATOR
	PIPE
	REMOVE BY CONTRACTOR
	REMOVE BY OTHERS
	UNDERDRAIN / LENGTH
	UNDERDRAIN OUTLET PIPE

EROSION & SEDIMENT CONTROL	
	STABILIZED CONSTRUCTION ENTRANCE
	SILT FENCE

OTHER	
	EXISTING / FINAL CONTOUR

Unofficial Website Copy

LAST REVISED: 01/09/2014 G:\HWYOPS\HQ\GROUPS\NPDES\PROGRAM ELEMENTS\STORMWATER BMPS\BMP MAINTENANCE\BMP CONTRACTED WORK\T201280204\PLANS\CD_02.DGN

GENERAL NOTES

- THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS", DATED AUGUST 2001 AND THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD CONSTRUCTION DETAILS", DATED 2001, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT.
- SITE REVIEWER - AN EROSION CONTROL SITE REVIEWER SHALL BE A PERSON FROM THE CONTRACTOR'S STAFF ASSIGNED TO EROSION AND SEDIMENT CONTROL IMPLEMENTATION AND MAINTENANCE AND SHALL BE REQUIRED ON SPECIFIC PROJECTS. THE NAME AND DNREC CERTIFICATION NUMBER OF EACH SITE REVIEWER SO REQUIRED SHALL BE SUBMITTED TO THE DEPARTMENT PRIOR TO THE EXECUTION OF THE CONTRACT. THE NAME OF THE DELAWARE REGISTERED PROFESSIONAL ENGINEER PROVIDING DIRECTION AND SUPERVISION OF THE SITE REVIEWER, AS REQUIRED IN SECTION 12.3 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS, SHALL ALSO BE SUBMITTED TO THE DEPARTMENT PRIOR TO THE EXECUTION OF THE CONTRACT. THE SITE REVIEWER REQUIREMENTS IN EFFECT ON THIS PROJECT SHALL BE MARKED WITH AN "X" BELOW:

EROSION POTENTIAL FOR THIS PROJECT	SITE REVIEWER REQUIREMENT
() INSIGNIFICANT	NONE
() MINOR	CONTRACTOR CERTIFICATION COURSE TRAINING ONLY, AS DEFINED IN SECTION 13 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
() MEDIUM	THE SUPERINTENDENT OR A SEPARATE INDIVIDUAL FROM THE CONTRACTOR'S STAFF SHALL BE A CERTIFIED CONSTRUCTION REVIEWER (CCR), AS DEFINED IN SECTION 12 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
(X) MAJOR	SUPERINTENDENT AND AN INDIVIDUAL FROM CONTRACTOR'S STAFF SHALL BE CCR. ONE INDIVIDUAL FROM THE CONTRACTOR'S STAFF MUST BE A CCR PRIOR TO THE EXECUTION OF THE CONTRACT. THE SUPERINTENDENT MUST BECOME A CCR WITHIN ONE YEAR AFTER THE AWARD OF CONTRACT.

- ELECTRONIC PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR, INCLUDE:

(X)	NONE
()	ASCII DATA FILES WITH COORDINATES AND ELEVATIONS FOR PROPOSED POINTS AS SELECTED BY THE ENGINEER.
()	ALL PLAN SHEETS, IN PDF FORMAT.
()	EXISTING DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
()	PROPOSED DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
()	DESIGN FILE, IN .DGN FILE FORMAT, CONTAINING ONLY THE PROPOSED 3D TRIANGLES OF THE PROPOSED DIGITAL TERRAIN MODEL (DTM).

NOTE: THE DOCUMENT ENTITLED "RELEASE FOR DELIVERY OF DOCUMENTS IN ELECTRONIC FORM TO A CONTRACTOR" MUST BE SIGNED BY ALL PARTIES PRIOR TO THE DELIVERY OF ANY ELECTRONIC PROJECT FILES.

- PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE CONTRACTOR, INCLUDE:

()	CROSS SECTIONS
()	RIGHT-OF-WAY PLANS (WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR)

- AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) CERTIFIED TRAFFIC CONTROL SUPERVISOR REQUIREMENT FOR THIS PROJECT.

()	THE CONTRACTOR SHALL NOT BE REQUIRED TO HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT.
(X)	THE CONTRACTOR SHALL HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. THE CONTRACTOR'S GENERAL SUPERINTENDENT FOR THIS PROJECT OR ANOTHER ATSSA CERTIFIED MEMBER OF THE CONTRACTOR'S PROJECT STAFF MAY BE THE ATSSA SUPERVISOR. PAYMENT FOR ATSSA SUPERVISOR IS INCIDENTAL TO ITEM 743000.
()	THE CONTRACTOR SHALL HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. THE ATSSA SUPERVISOR'S SOLE JOB SHALL BE SUPERVISION OF THE INSTALLATION, OPERATION AND MAINTENANCE OF TRAFFIC CONTROL DEVICES FOR THIS PROJECT. THE CONTRACTOR'S GENERAL SUPERINTENDENT FOR THIS PROJECT SHALL NOT BE THE ATSSA SUPERVISOR. PAYMENT FOR ATSSA SUPERVISOR SHALL BE PAID FOR UNDER ITEM 743031.

- THE DISTURBED AREA FOR THIS PROJECT IS --n/a-- ACRES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADHERING TO THE CONSTRUCTION SITE POLLUTION PREVENTION SPECIFICATIONS AS DETAILED IN SECTION 3.6 OF THE "DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK". ALL COSTS ASSOCIATED WITH ADHERING TO THE STANDARDS SHALL BE INCIDENTAL TO THE OVERALL CONTRACT COSTS.
- THE EROSION AND SEDIMENT CONTROL PLANS HAVE BEEN APPROVED BY DELDOT'S STORMWATER ENGINEER UNDER DELDOT'S DELEGATED AUTHORITY. THE EROSION AND SEDIMENT CONTROL PLANS ARE VALID FOR A THREE YEAR PERIOD, BEGINNING ON THE DATE THE STORMWATER ENGINEER SIGNED THE CONSTRUCTION TITLE SHEET. IF THE FINAL ACCEPTANCE OF THE PROJECT IS ANTICIPATED TO EXTEND BEYOND THE THREE YEARS, THE CONTRACTOR SHALL INFORM THE ENGINEER THREE MONTHS PRIOR TO THE EXPIRATION OF THE EROSION AND SEDIMENT CONTROL PLAN APPROVAL. DELDOT WILL REVIEW THE CURRENT EROSION AND SEDIMENT CONTROL PLAN AND ISSUE AN EXTENSION WITH ANY APPROPRIATE MODIFICATIONS.

PROJECT NOTES

SECTION 100

- THE DEPARTMENT RESERVES THE RIGHT TO INCREASE OR DECREASE THE QUANTITIES OF PAY ITEMS SPECIFIED FOR THE LOCATIONS LISTED IN THIS CONTRACT. SUCH ADDITIONS OR DELETIONS SHALL NOT BE CAUSE FOR AN INCREASE OR DECREASE IN ANY CONTRACT UNIT BID PRICES. THE "CHANGE" THRESHOLD OF PLUS OR MINUS 25%, AS DESCRIBED IN SECTION 104.05 OF THE DELDOT STANDARD SPECIFICATIONS, SHALL NOT APPLY TO THIS CONTRACT.
- ANY DAMAGE TO ITEMS NOTED TO BE RELOCATED OR RESET BY THE CONTRACTOR, AT THE DISCRETION OF THE ENGINEER, SHALL BE REPAIRED AND/OR REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
- 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.

MISCELLANEOUS

- THE CONTRACTOR SHALL CONTACT MICHAEL ELLER, THE CHIEF OF SCHEDULING FOR DART FIRST STATE, 14 DAYS PRIOR TO THE START OF CONSTRUCTION AT 302-576-6061.
- 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 REFERRED TO THE DISTRICT ENGINEER OR HIS REPRESENTATIVE.
- ALL WORK SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY.
- A SEMI-FINAL INSPECTION WILL BE PERFORMED ON EACH LOCATION AFTER THE DEPARTMENT DETERMINES THAT SUBSTANTIAL COMPLETION HAS BEEN ACHIEVED. ALL WORK MUST MEET THE DEPARTMENT'S SPECIFICATIONS AND THE REQUIREMENTS AS OUTLINED IN THE NOTES AND PLANS. THE CONTRACTOR MUST COMPLETE ALL PUNCHLIST WORK WITHIN (30) CALENDAR DAYS OF THE ISSUANCE OF THE SEMI-FINAL INSPECTION PUNCHLIST PROVIDED UNLESS THE ENGINEER APPROVES OTHERWISE.
- PROPER DISPOSAL OF CONSTRUCTION RELATED WASTES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE STATE REGULATIONS.
- TRASH, RUBBISH, DEBRIS OR BRUSH THAT HAMPERS REPAIR, OR MAINTENANCE WORK IN THIS CONTRACT (AS DETERMINED BY THE ENGINEER) SHALL BE REMOVED WITHIN THE PROJECT LIMITS, AND SHALL BE INCIDENTAL TO PAY ITEM 763000 (INITIAL EXPENSE).
- UNDERGROUND UTILITIES MAY BE PRESENT AT ALL LOCATIONS,, THEREFORE, ALL STANDARD PRACTICES AND PROCEDURES REGARDING UTILITIES SHALL BE FOLLOWED. SEE SUBSECTION 105.09 OF THE STANDARD AND SUPPLEMENTAL SPECIFICATIONS. THE CONTRACTOR SHALL CONTACT MISS UTILITY OF DELAWARE PRIOR TO STARTING EACH BMP LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUPPORT AND PROTECTION OF ALL UTILITIES WHEN EXCAVATING. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING PROPER CLEARANCES, INCLUDING SAFETY CLEARANCES, FROM OVERHEAD UTILITIES FOR CONSTRUCTION EQUIPMENT. THE CONTRACTOR IS ADVISED TO CHECK THE SITE FOR ACCESS PURPOSES FOR HIS EQUIPMENT.
- NO ENVIRONMENTAL PERMITS ARE REQUIRED FOR THIS WORK PROVIDED NO JURISDICTIONAL WETLANDS OR WATERS ARE IMPACTED. IF THERE IS ANY QUESTION AS TO WHETHER OR NOT A WATER OR WETLAND IS JURISDICTIONAL, CONTACT CENTRAL DISTRICT WHO WILL COORDINATE AS NEEDED WITH THE DELDOT ENVIRONMENTAL STUDIES SECTION AT (302) 760-2264.

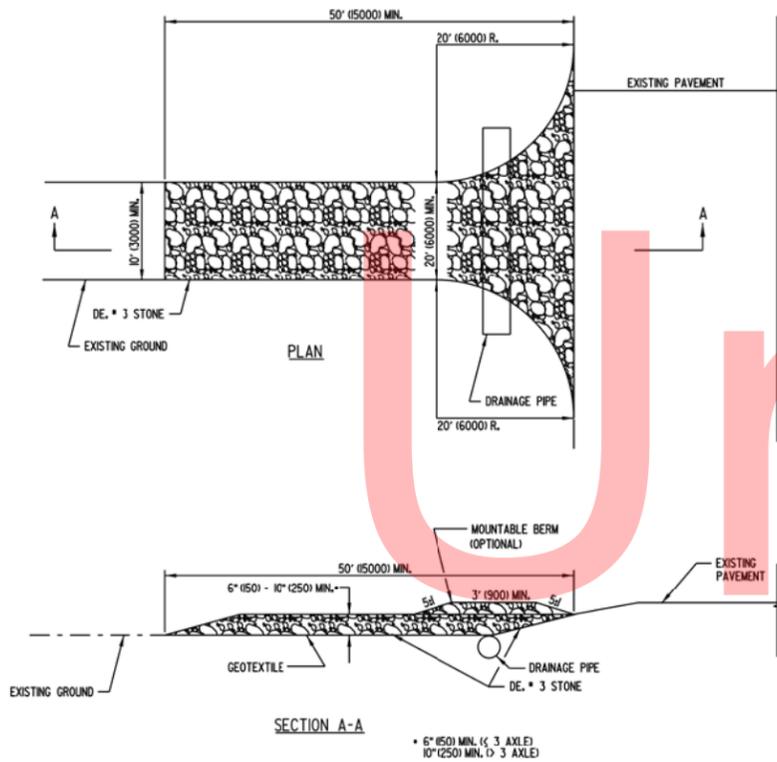
EROSION AND SEDIMENT CONTROL NOTES

- STAGING AREAS: PROPER EROSION AND SEDIMENT CONTROL MEASURES AS DETERMINED BY THE ENGINEER SHALL BE INSTALLED IN ALL STAGING AREAS. ALL AREAS USED BY THE CONTRACTOR FOR STAGING OPERATIONS SHALL BE FULLY RESTORED BY THE CONTRACTOR UPON COMPLETION OF THE PROJECT. IF THE STAGING AREA IS UNPAVED, IT SHALL BE RE-GRADED, TOP SOILED, SEEDED AND MULCHED IN ACCORDANCE WITH THE DELAWARE STANDARD SPECIFICATIONS 732, 734, AND 735, FOR TOPSOIL, SEED AND MULCH RESPECTIVELY, TO THE SATISFACTION OF THE ENGINEER. ALL COSTS ASSOCIATED WITH RESTORATION OF THE STAGING AREA SHALL BE AT THE CONTRACTOR'S EXPENSE. IF THE ENGINEER DETERMINES THAT A SATISFACTORY STAND OF GRASS DOES NOT EXIST AT THE TIME OF FINAL INSPECTION, ALL COSTS ASSOCIATED WITH RE-ESTABLISHING A SATISFACTORY STAND OF GRASS SHALL BE AT THE CONTRACTOR'S EXPENSE.
- EROSION AND SEDIMENT CONTROL DEVICES WILL BE MAINTAINED IN PLACE AND WILL ONLY BE REMOVED WHEN NO LONGER NECESSARY TO PROVIDE FOR THE DESIGNATED FUNCTIONS AS APPROVED BY THE ENGINEER.
- STABILIZED CONSTRUCTION ENTRANCES ARE TO BE PLACED AS NOTED IN THE PLANS.

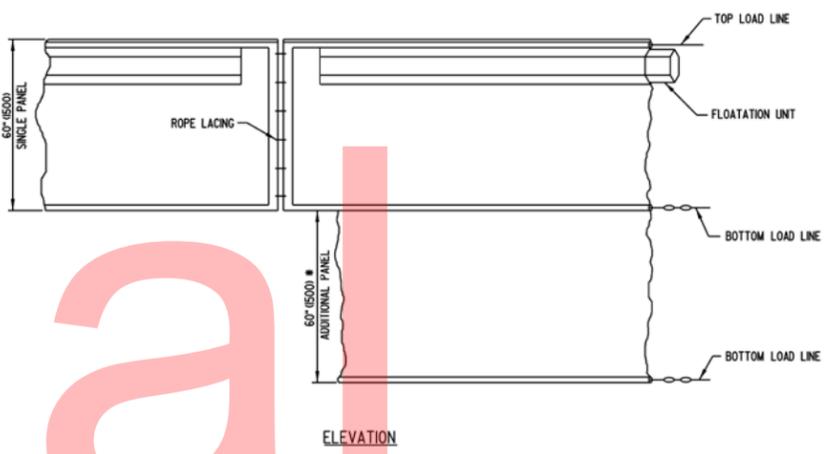
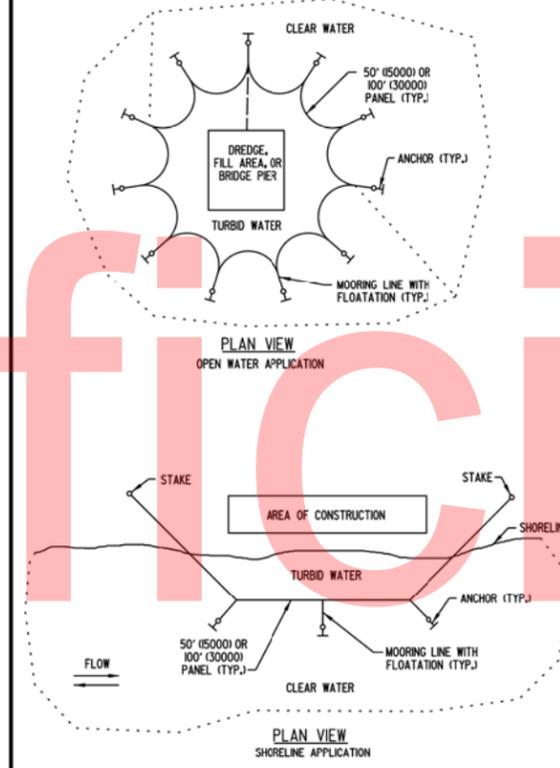
MOT NOTES

- TRAFFIC SHALL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH SUBSECTIONS 104.09, 107.07, AND 104.02 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR IS REQUIRED TO CONTACT DELDOT TRANSPORTATION MANAGEMENT CENTER (TMC) AT 302-659-4600 NOTIFYING THEM OF EACH LANE RESTRICTION. INFORMATION NEEDED WILL BE LOCATION OF WORK AS WELL AS DURATION OF THE CLOSURE. TMC SHALL ALSO BE NOTIFIED WHEN THE LANE RESTRICTION IS COMPLETED AND NO LONGER NECESSARY.
- ALL WORK SHALL BE PERFORMED IN A MANNER THAT WILL REASONABLY PROVIDE THE LEAST PRACTICABLE 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.
- ALL TRAVEL LANE CLOSURES ON ROADS SHALL BE PERFORMED MONDAY THROUGH FRIDAY, DAY-TIME HOURS BETWEEN 9:00AM TO 3:00PM, AS DIRECTED BY THE ENGINEER. TIMES MAY BE ADJUSTED DEPENDING ON SPECIFIC SITE VOLUMES AND CONDITIONS.
- NO LANE CLOSURES WILL BE PERMITTED ON HOLIDAYS OR HOLIDAY WEEKENDS, UNLESS APPROVED BY THE ENGINEER WITH CONSULTATION WITH THE SAFETY SECTION. THIS REQUIREMENT APPLIES TO ALL ROADS IMPACTED.
- TRAFFIC CONTROL DEVICES SHALL BE PROVIDED AND PLACED IN ACCORDANCE WITH THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). THE CONTRACTOR SHALL PREPARE AND SUBMIT A TRAFFIC CONTROL PLAN FOR EACH BMP SITE TO DELDOT FOR APPROVAL. THE TRAFFIC CONTROL PLAN MUST CLEARLY INDICATE ORIENTATION OF TRAFFIC CONTROL DEVICES TO BE USED FOR EACH SITE. THE PLAN MUST BE APPROVED BY THE DELDOT SAFETY OFFICER AND DELDOT ENGINEER PRIOR TO COMMENCEMENT OF WORK ON EACH BMP. MAINTENANCE OF TRAFFIC TYPICAL APPLICATIONS IS DESCRIBED IN THE DELAWARE MUTCD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE APPLICABLE TYPICAL APPLICATION FOR EACH WORK APPLICATION. THE PROPOSED TRAFFIC PLAN MUST BE SUBMITTED TO DELDOT A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO COMMENCEMENT OF WORK AT EACH LOCATION.
- NO LANE CLOSURES OR SHOULDER CLOSURES WILL BE PERMITTED UNLESS APPLICABLE WORK ACTIVITY IS TAKING PLACE.
- ALL REPAIR/MAINTENANCE EQUIPMENT SHALL BE REMOVED FROM THE JOB SITES ON A DAILY BASIS, EXCEPT WHEN APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL FOLLOW GUIDELINES SET FORTH BY THE DELAWARE MUTCD FOR STORAGE OF MATERIALS.
- FOR LOCATIONS REQUIRING A FLAGGING OPERATION, THE FLAGGER WILL BE PAID THE FIXED HOURLY RATE PER ITEMS 743054 & 743069 (KENT COUNTY) RESPECTIVELY.
- ALL FLAGGERS UTILIZED BY THE CONTRACTOR FOR THIS PROJECT SHALL BE ATSSA CERTIFIED. ALL FLAGGERS SHALL HAVE THEIR CERTIFICATION CARDS WITH THEM WHILE WORKING. ABSENCE OF A CERTIFICATION CARD WILL BE JUSTIFICATION FOR FLAGGER DISMISSAL FROM THE SITE AND CORRESPONDING SUSPENSION OF WORK. ALL CONSTRUCTION AND CONTRACTOR VEHICLES AND EQUIPMENT SHALL BE EQUIPPED WITH AN OPERATING ROOF MOUNTED AMBER FLASHING STROBE LIGHT. ALL WORKERS SHALL WEAR A RETROREFLECTIVE ANSI TYPE 3 OR EQUIVALENT SAFETY VEST WHILE THEY ARE WITHIN THE RIGHT-OF-WAY OR ADJACENT TO IT.
- IF A ROAD CLOSURE IS REQUIRED AT RAMP LOCATIONS, THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT THE PROPOSED DETOUR ROUTE TO THE DELDOT SAFETY OFFICER FOR APPROVAL. THE PROPOSED DETOUR PLAN MUST BE SUBMITTED TO THE SAFETY OFFICER A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO COMMENCEMENT OF WORK AT THE LOCATION. PAYMENT FOR DETOUR PLAN PREPARATIONS SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 763643 (MAINTENANCE OF TRAFFIC, ALL INCLUSIVE). THE CONTRACTOR SHALL ALSO COORDINATE THE CLOSURE WITH THE DEPARTMENT. THE DEPARTMENT WILL COORDINATE WITH THE SAFETY SECTION AND BE RESPONSIBLE FOR THE NECESSARY EMERGENCY NOTIFICATIONS. THE DETOUR ROUTE REQUIRES APPROVAL BY THE DEPARTMENT PRIOR TO CLOSURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND MAINTAINING THE MAINTENANCE OF TRAFFIC APPARATUS AT THE CLOSURE (I.E. TYPE II BARRICADE, ROAD CLOSED SIGNS, ETC.) AND ALL ADVANCE WARNING SIGNS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACEMENT OF DETOUR TRAILBLAZERS. IF NECESSARY, THE ENGINEER WILL ASSIGN THE DETOUR ROUTE.
- NO SEPARATE PAYMENT WILL BE MADE FOR THE USE OF TRAFFIC CONES. TRAFFIC CONES AND/OR WORK ASSOCIATED WITH THEIR USE, SUCH AS SET UP, REMOVAL, CLEANING, ETC., SHALL BE INCIDENTAL TO THE WORK FOR WHICH THEY PROTECT. CONES SHALL NOT BE USED FOR TRAFFIC CONTROL DURING NIGHT TIME OPERATIONS.
- A TRUCK MOUNTED ATTENUATOR; TYPE I (ITEM 743009) AND OR TYPE II (ITEM 743010) SHALL BE REQUIRED ON ROADS FOR SHOULDER WORK, TRAVEL LANE WORK AND OTHER OPERATIONS AS OUTLINED IN THE DELAWARE MUTCD, OR AS DIRECTED BY THE ENGINEER.
- PEDESTRIAN FACILITIES SHALL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH THE DE-MUTCD AND BY USING APPROVED PEDESTRIAN MATERIALS AND DEVICES.

LAST REVISED: 10/22/2013 G:\VHW\YOP\SHO_GROUPS\NPDES\PROGRAM_ELEMENTS\STORMWATER_BMPS\BMP_MAINTENANCE\BMP_CONTRACTED_WORK\1201280204\PLANS\PM.DGN



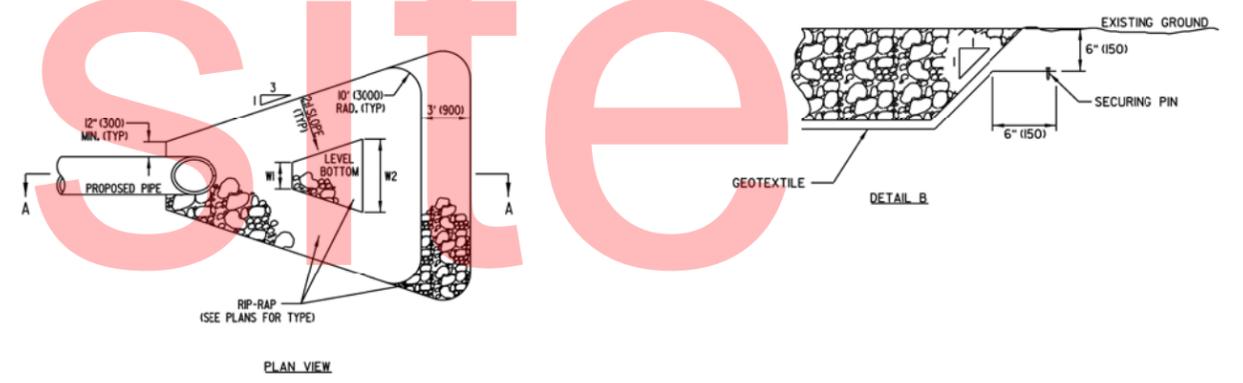
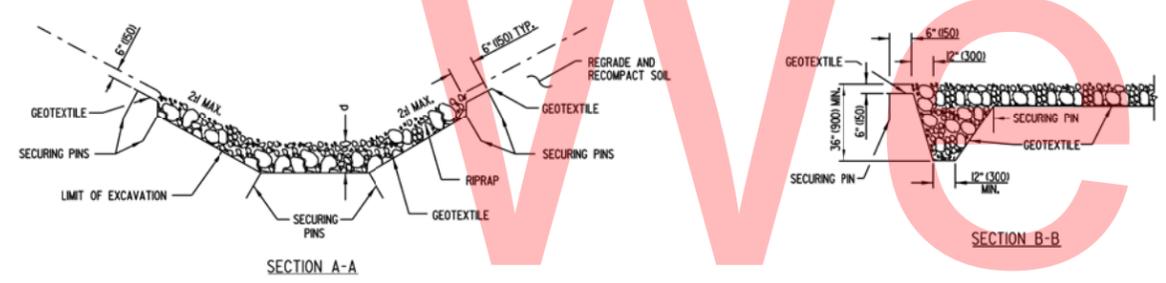
- NOTES:
1. ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED UNDER THE ENTRANCE. IF NECESSARY, A MOUNTABLE BERM WITH 5:1 SLOPES SHALL BE ALLOWED TO FACILITATE PLACEMENT OF PIPES IN SHALLOW CONDITIONS.
 2. THE LOCATION AND NUMBER OF STABILIZED CONSTRUCTION ENTRANCES SHALL BE AS INDICATED ON THE PLANS. ANY CHANGE IN LOCATION, ADDITION, OR DELETION OF AN ENTRANCE SHALL BE APPROVED IN ADVANCE BY THE ENGINEER.
 3. DRAINAGE PIPE, IF UTILIZED, SHALL BE PAID FOR SEPARATELY UNDER THE APPROPRIATE BID ITEM.
 4. THE TOP 2\"/>



- FLOATING TURBIDITY CURTAIN**
- NOTE: 1.) ADDITIONAL PANEL REQUIRED FOR DEPTHS GREATER THAN 5' (1500).
 2.) FLOATING TURBIDITY CURTAIN SHALL REACH BOTTOM UP TO DEPTHS OF 10' (3000) BY USING TWO PANELS. DEPTHS GREATER THAN 10' (3000) SHALL REQUIRE SPECIAL DEPTH CURTAINS SPECIFICALLY CALLED FOR IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

STABILIZED CONSTRUCTION ENTRANCE

TURBIDITY CURTAIN



- NOTES:
1. RIPRAP IS TO BE PLACED PRIOR TO PLACING PIPE.
 2. PLACE DELAWARE NO. 3 STONE UNDER PIPE.
 3. ELEVATION (EL.) SHOULD NOT BE HIGHER THAN PIPE INVERT.
 4. REFER TO THE PIPE ENERGY DISSIPATOR SCHEDULE ON THE CONSTRUCTION PLANS FOR THE VALUE OF DIMENSION VARIABLES.

- NOTES:
1. SECURING PINS ARE TO BE PLACED AT LOCATIONS SHOWN AND AT 24\"/>

ADDENDUMS / REVISIONS	

NOT TO SCALE

STORMWATER POND MAINTENANCE, CENTRAL

CONTRACT	BRIDGE NO.	n/a
1201280204	DESIGNED BY: N/A	
COUNTY	CHECKED BY: L.G.	
KENT		

CONSTRUCTION DETAILS	SHEET NO.
	4
	TOTAL SHTS.
	20

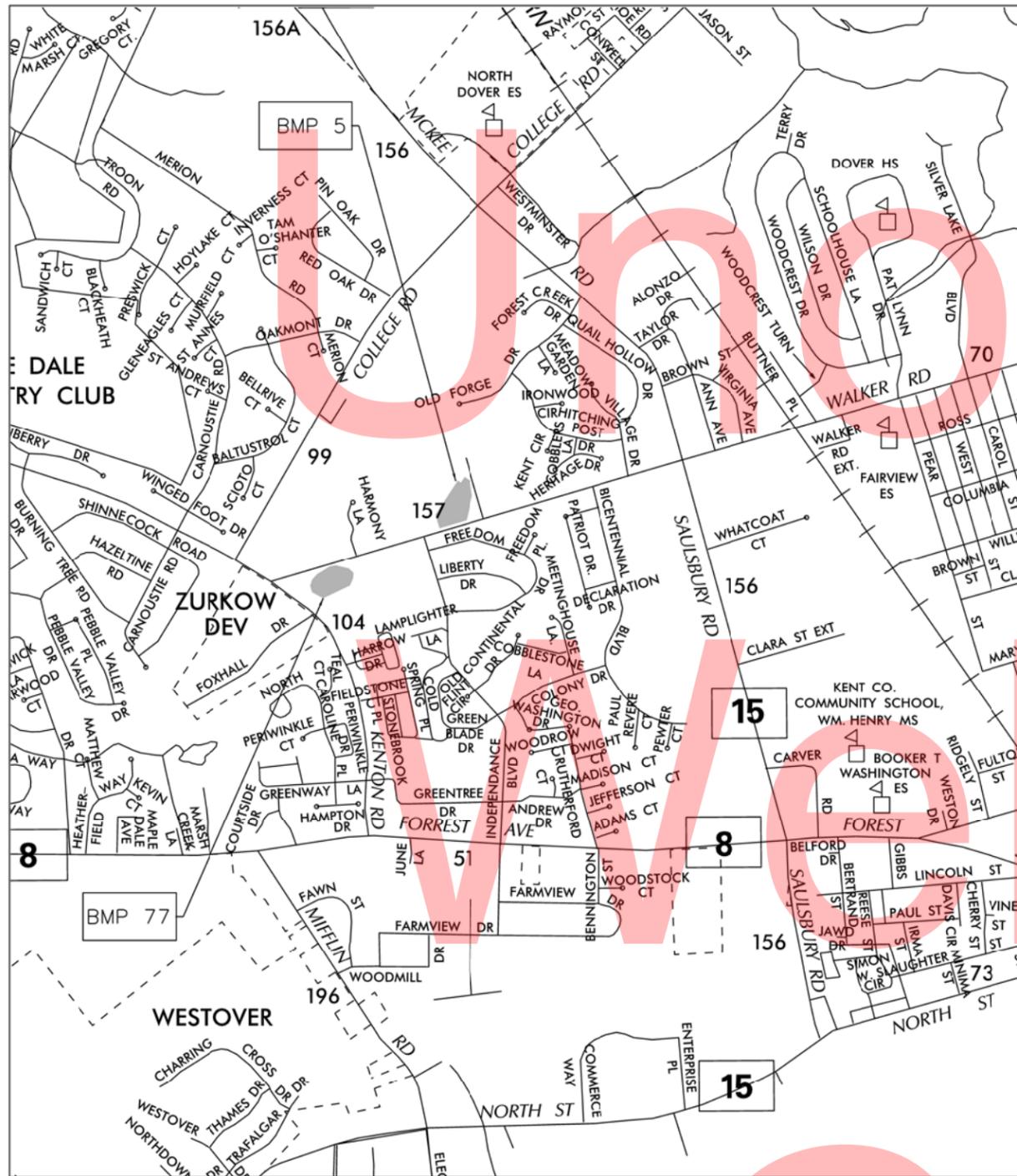
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BMP 5 QUANTITIES

ITEM	U. O. M.	ITEM DESCRIPTION	QUANTITY
201000	L. S.	CLEARING AND GRUBBING	1
202000	C. Y.	EXCAVATION AND EMBANKMENT	165
268000	L. S.	STABILIZED CONSTRUCTION ENTRANCE	45
270500	EACH	DEWATERING BAG	1
271501	L. S.	DEWATERING OF EXISTING STORMWATER PONDS	1
712006	S. Y.	RIPRAP, R-5	132.5
713003	S. Y.	GEOTEXTILES, RIPRAP	159
732000	S. Y.	TOPSOIL, 4" DEPTH	454
734015	S. Y.	PERMANENT GRASS SEEDING, DRY GROUND	454
734015	S. Y.	PERMANENT GRASS SEEDING, WET GROUND	990
736502	ACRE	MOWING	0.30
743054	HOURLY	FLAGGER, KENT COUNTY, HEAVY, STATE	16
743069	HOURLY	FLAGGER, KENT COUNTY, HEAVY, STATE, OVERTIME	4
763000	L. S.	INITIAL EXPENSE	1
763501	L. S.	CONSTRUCTION ENGINEERING	1
763614	EACH	JOB ORDER MOBILIZATION, CENTRAL DISTRICT	1
763643	L. S.	MAINTENANCE OF TRAFFIC, ALL INCLUSIVE	1

BMP 77 QUANTITIES

ITEM	U. O. M.	ITEM DESCRIPTION	QUANTITY
201000	L. S.	CLEARING AND GRUBBING	1
202000	C. Y.	EXCAVATION AND EMBANKMENT	20
270500	EACH	DEWATERING BAG	1
271501	L. S.	DEWATERING OF EXISTING STORMWATER PONDS	1
712005	S. Y.	RIPRAP, R-4	52
713003	S. Y.	GEOTEXTILES, RIPRAP	65
734015	S. Y.	PERMANENT GRASS SEEDING, DRY GROUND	50
736502	ACRE	MOWING	0.30
743054	HOURLY	FLAGGER, KENT COUNTY, HEAVY, STATE	16
743069	HOURLY	FLAGGER, KENT COUNTY, HEAVY, STATE, OVERTIME	4
763000	L. S.	INITIAL EXPENSE	1
763501	L. S.	CONSTRUCTION ENGINEERING	1
763614	EACH	JOB ORDER MOBILIZATION, CENTRAL DISTRICT	1
763643	L. S.	MAINTENANCE OF TRAFFIC, ALL INCLUSIVE	1

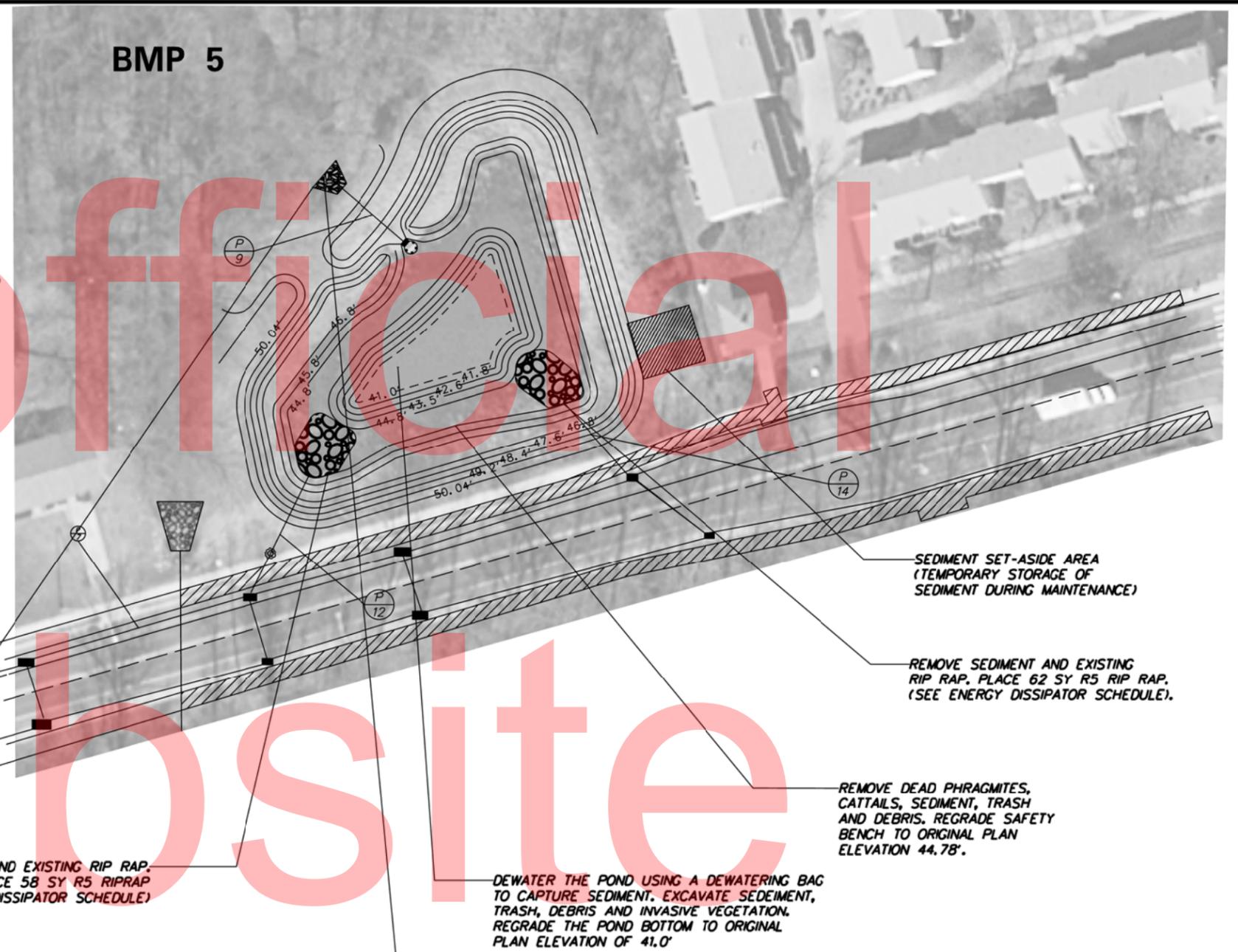


LOCATION PLAN
BMP 5 AND BMP 77

POND MAINTENANCE SEQUENCE AND NOTES

1. PEDESTRIAN ACCESS MUST BE MAINTAINED WHILE WORKING AT THIS LOCATION. (INCIDENTAL TO ITEM 763643)
2. CLEAR AND GRUB ANY AND ALL TREES (THAT ARE NOT TAGGED) IN AND AROUND THE POND SLOPES, POND INTERIOR AND FOREBAY AREAS; WITHIN 10' ON EITHER SIDE OF DRAINAGE PIPES ENTERING OR EXISTING THE POND; AND STRUCTURES. FOR TREES ABOVE PIPES AND NEAR STRUCTURES, FLUSH CUT THE TREE AND BASIL TREAT THE STUMPS (ITEM 201000).
3. DEWATER THE POND AS NECESSARY IN ORDER TO REMOVE THE ACCUMULATED SEDIMENT, CATTAILS, TRASH AND DEBRIS, FROM THE POND BOTTOM, BENCHES AND FOREBAYS. (ITEM 271501)
4. SURVEY THE POND TO DETERMINE AREAS WHERE SEDIMENT REMOVAL IS NECESSARY. (ITEM 763501)
5. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION OF 41.0 ON THE POND BOTTOM AND FOREBAYS, AND 44.8' AND 46.8' ON THE SAFETY BENCHES (ITEM 763501)
6. REMOVE SEDIMENT FROM THE POND INTERIOR, FOREBAYS AND SAFETY BENCHES, TO THE ORIGINAL POND LINE AND GRADES. (ITEM 202000)
7. REMOVE CONCRETE PIPE DEBRIS NEAR THE POND OUTLET SWALE. (INCIDENTAL TO 763000)
8. RECONSTRUCT FOREBAYS TO ORIGINAL PLAN DIMENSIONS. (ITEM 202000)
9. RECONSTRUCT RIPRAP ENERGY DISSIPATORS. (ITEMS 712005 AND 713003)
10. STABILIZE ALL DISTURBED AREAS ABOVE THE PERMANENT POOL ELEVATION (25.0) WITH PERMANENT SEEDING, DRY GROUND (ITEM 734013); BELOW ELEVATION 25.0, PERMANENT SEEDING, WET GROUND SHALL BE USED (ITEM 734015). SOIL RETENTION MULCH BLANKET, TYPE 3 SHALL BE USED TO MULCH THE PREPARED SEED BEDS. (INCIDENTAL TO ITEMS 734013 AND 734015)

BMP 5



ENERGY DISSIPATOR SCHEDULE								
NO.	STATION	QUANTITY	RIPRAP SIZE	D (FT)	T1 (FT)	L (FT)	#1 (FT)	#2 (FT)
1	•	58.0	R-5	2.0	2.2	10.5	12.0	15.0
2	•	62.0	R-5	2.0	2.2	12.5	11.0	15.0
3	•	12.5	R-5	1.0	2.2	2.5	7.0	8.0

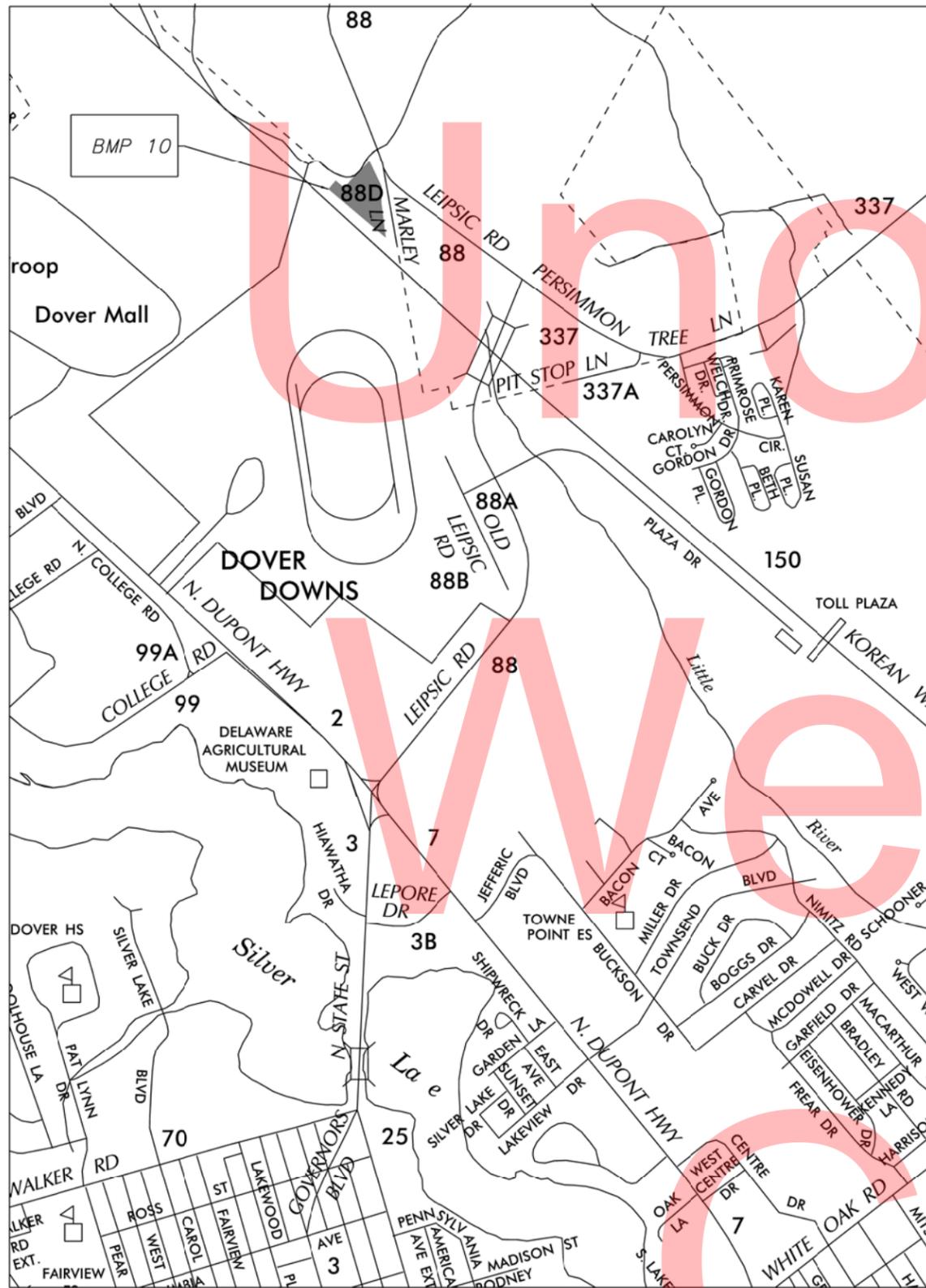
* MATCH EXISTING PIPE OUTFALL

EXISTING DRAINAGE PIPE INFORMATION							
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.	
9	24" / RCP	-	-	-	-	45.4	
12	15" / RCP	-	-	-	-	44.6	
14	18" / RCP	-	-	-	-	44.8	

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BMP 10 QUANTITIES



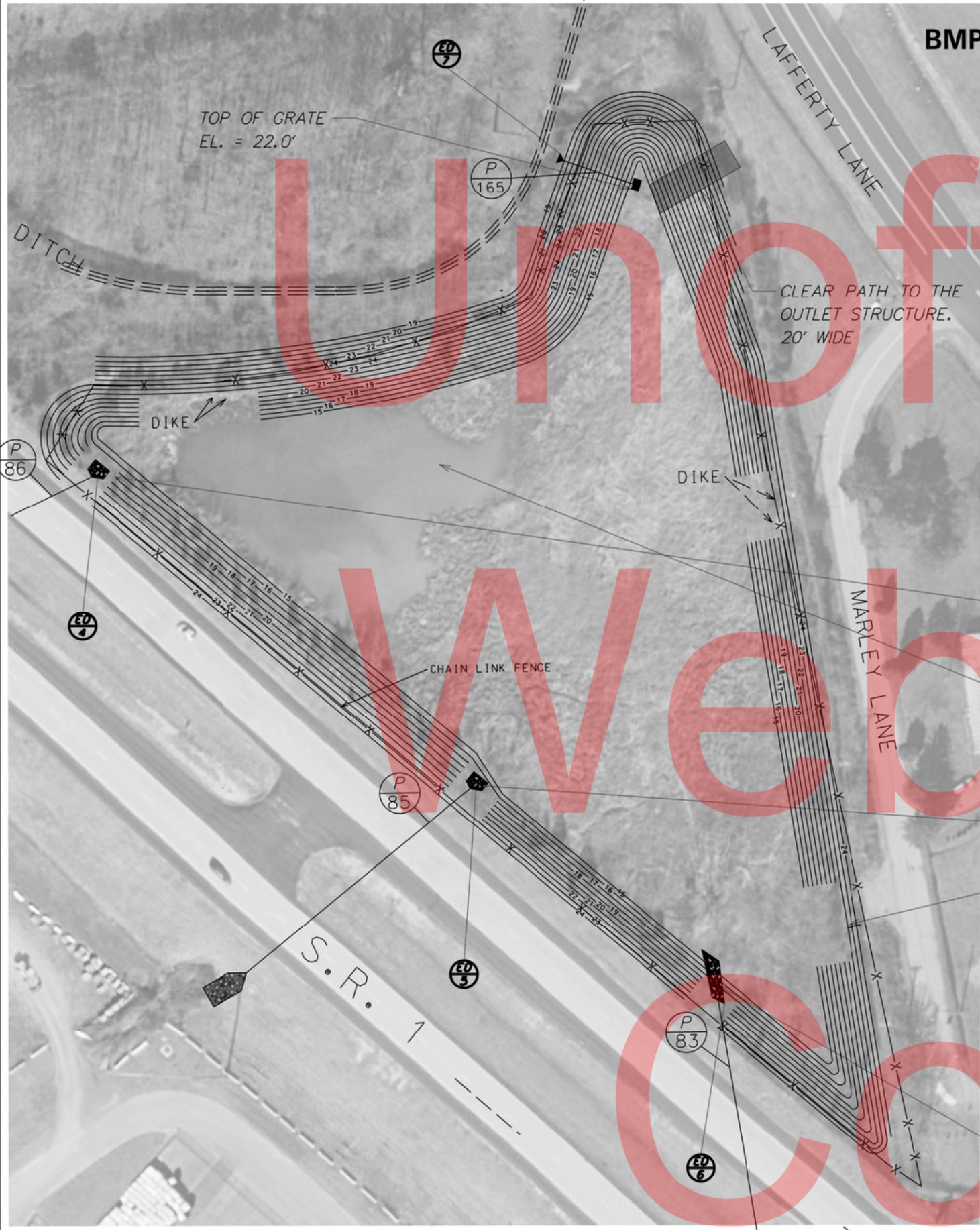
LOCATION PLAN
BMP 10

ITEM	U. O. M.	ITEM DESCRIPTION	QUANTITY
201000	L. S.	CLEARING AND GRUBBING	1
202000	C. Y.	EXCAVATION AND EMBANKMENT	4480
268000	L. S.	STABILIZED CONSTRUCTION ENTRANCE	100
270500	EACH	DEWATERING BAG	1
271501	L. S.	DEWATERING OF EXISTING STORMWATER PONDS	1
712005	S. Y.	RIPRAP, R-4	38
713003	S. Y.	GEOTEXTILES, RIPRAP	48
732000	S. Y.	TOPSOIL, 4" DEPTH	498
734015	S. Y.	PERMANENT GRASS SEEDING, DRY GROUND	498
734015	S. Y.	PERMANENT GRASS SEEDING, WET GROUND	8960
736502	ACRE	MOWING	1
763000	L. S.	INITIAL EXPENSE	1
763501	L. S.	CONSTRUCTION ENGINEERING	1
763614	EACH	JOB ORDER MOBILIZATION, CENTRAL DISTRICT	1
763643	L. S.	MAINTENANCE OF TRAFFIC, ALL INCLUSIVE	1

BMP 10

POND MAINTENANCE SEQUENCE AND NOTES

1. CLEAR AND GRUB ANY AND ALL TREES (THAT ARE NOT TAGGED) IN AND AROUND THE POND INTERIOR, DIKES AND FOREBAY AREAS; WITHIN 10' ON EITHER SIDE OF DRAINAGE PIPES ENTERING OR EXITING THE POND; AND STRUCTURES. FOR TREES ABOVE PIPES AND NEAR STRUCTURES, FLUSH CUT THE TREE AND BASIL TREAT THE STUMPS (ITEM 201000).
2. DEWATER THE POND AS NECESSARY IN ORDER TO REMOVE THE ACCUMULATED SEDIMENT, CATTAILS, TRASH AND DEBRIS, FROM THE POND BOTTOM, BENCHES AND FOREBAYS. (ITEM 271501)
3. SURVEY THE POND TO DETERMINE AREAS WHERE SEDIMENT REMOVAL IS NECESSARY. (ITEM 763501)
4. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION OF 41.0 ON THE POND BOTTOM AND FOREBAYS, AND 44.8' AND 46.8' ON THE SAFETY BENCHES (ITEM 763501)
5. REMOVE SEDIMENT FROM THE POND INTERIOR, FOREBAYS AND SAFETY BENCHES, TO THE ORIGINAL POND LINE AND GRADES. (ITEM 202000)
6. RECONSTRUCT FOREBAYS TO ORIGINAL PLAN DIMENSIONS. (ITEM 202000)
7. RECONSTRUCT RIPRAP ENERGY DISSIPATORS. (ITEMS 712005 AND 713003)
8. STABILIZE ALL DISTURBED AREAS ABOVE THE PERMANENT POOL ELEVATION (16.0') WITH PERMANENT SEEDING, DRY GROUND (ITEM 734013); BELOW ELEVATION 16.0', PERMANENT SEEDING, WET GROUND SHALL BE USED (ITEM 734015). SOIL RETENTION MULCH BLANKET, TYPE 3 SHALL BE USED TO MULCH THE PREPARED SEED BEDS. (INCIDENTAL TO ITEMS 734013 AND 734015)



REMOVE SEDIMENT AND EXISTING RIP RAP.
PLACE 7 SY R4 RIPRAP
(SEE ENERGY DISSIPATOR SCHEDULE)

DEWATER THE POND USING A DEWATERING BAG
TO CAPTURE SEDIMENT. EXCAVATE SEDIMENT,
TRASH, DEBRIS AND INVASIVE VEGETATION.
REGRADE THE POND BOTTOM TO ORIGINAL
PLAN ELEVATION OF 14.5'

REMOVE SEDIMENT AND EXISTING RIP RAP.
PLACE 6 SY R4 RIPRAP
(SEE ENERGY DISSIPATOR SCHEDULE)

CLEAR TREES (25' WIDE TO POND BOTTOM).
INSTALL STABILIZED CONSTRUCTION
ENTRANCE. REFRESH AND LEAVE IN
PLACE ONCE MAINTENANCE IS COMPLETED.

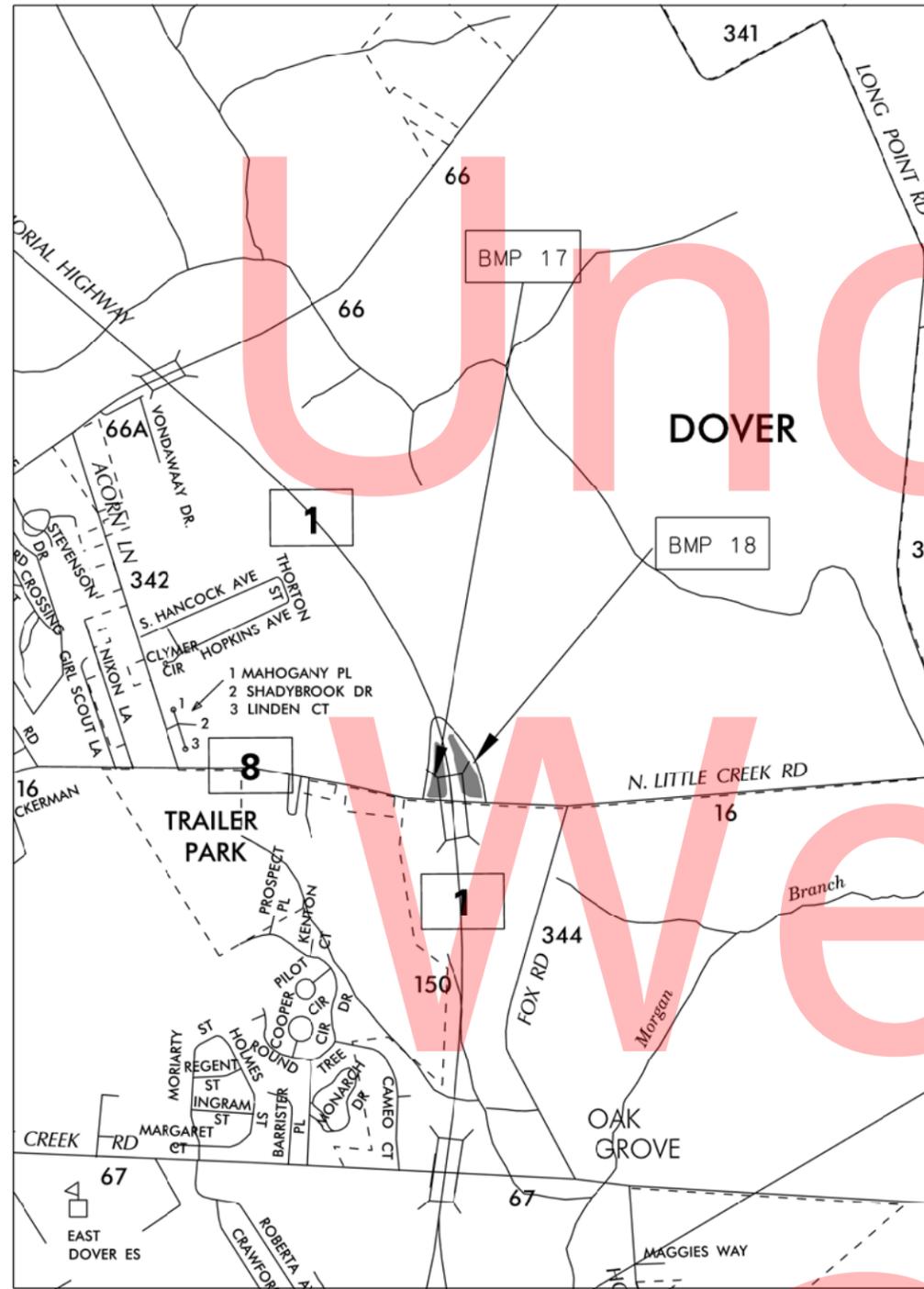
REMOVE SEDIMENT AND EXISTING RIP RAP.
PLACE 14 SY R4 RIPRAP
(SEE ENERGY DISSIPATOR SCHEDULE)

ENERGY DISSIPATOR SCHEDULE								
NO.	STATION	QUANTITY	RIPRAP SIZE	D (FT)	T1 (FT)	L (FT)	W1 (FT)	W2 (FT)
4	•	7.0	R-4	1.0	1.2	1.0	2.0	2.5
5	•	6.0	R-4	1.0	1.2	-	2.5	2.5
6	•	14.0	R-4	1.0	1.2	11.5	2.5	2.5
7	•	14.0	R-4	1.0	1.2	2.5	4.0	5.0

* MATCH EXISTING PIPE OUTFALL

EXISTING DRAINAGE PIPE INFORMATION						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
83	60" / RCP	-	-	-	-	15.3
85	24" / RCP	-	-	-	-	18.7
86	30" / RCP	-	-	-	-	16.4

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LOCATION PLAN
BMP 17 & BMP 18

BMP 17 QUANTITIES

ITEM	U. O. M.	ITEM DESCRIPTION	QUANTITY
201000	L. S.	CLEARING AND GRUBBING	1
202000	C. Y.	EXCAVATION AND EMBANKMENT	2140
266001	C. Y.	SANDBAGS	1555
268000	L. S.	STABILIZED CONSTRUCTION ENTRANCE	45
270500	EACH	DEWATERING BAG	1
271501	L. S.	DEWATERING OF EXISTING STORMWATER PONDS	1
712005	S. Y.	RIPRAP, R-4	55
713003	S. Y.	GEOTEXTILES, RIPRAP	68
734015	S. Y.	PERMANENT GRASS SEEDING, WET GROUND	780
736502	ACRE	MOWING	1
743003	EA-DY	ARROWPANELS, TYPE C	15
743010	EA-DY	FURNISH AND MAINTAIN TRUCK-MOUNTED ATTENUATOR, TYPE II	15
743054	HOURLY	FLAGGER, KENT COUNTY, HEAVY, STATE	120
743069	HOURLY	FLAGGER, KENT COUNTY, HEAVY, STATE, OVERTIME	30
763000	L. S.	INITIAL EXPENSE	1
763501	L. S.	CONSTRUCTION ENGINEERING	1
763614	EACH	JOB ORDER MOBILIZATION, CENTRAL DISTRICT	1
763643	L. S.	MAINTENANCE OF TRAFFIC, ALL INCLUSIVE	1

BMP 18 QUANTITIES

ITEM	U. O. M.	ITEM DESCRIPTION	QUANTITY
201000	L. S.	CLEARING AND GRUBBING	1
202000	C. Y.	EXCAVATION AND EMBANKMENT	2800
266001	C. Y.	SANDBAGS	1555
268000	L. S.	STABILIZED CONSTRUCTION ENTRANCE	45
270500	EACH	DEWATERING BAG	1
271501	L. S.	DEWATERING OF EXISTING STORMWATER PONDS	1
712005	S. Y.	RIPRAP, R-4	174
713003	S. Y.	GEOTEXTILES, RIPRAP	217
732000	S. Y.	TOPSOIL, 4" DEPTH	230
734015	S. Y.	PERMANENT GRASS SEEDING, DRY GROUND	230
734015	S. Y.	PERMANENT GRASS SEEDING, WET GROUND	3980
736502	ACRE	MOWING	1
743003	EA-DY	ARROWPANELS, TYPE C	15
743010	EA-DY	FURNISH AND MAINTAIN TRUCK-MOUNTED ATTENUATOR, TYPE II	15
743054	HOURLY	FLAGGER, KENT COUNTY, HEAVY, STATE	120
743069	HOURLY	FLAGGER, KENT COUNTY, HEAVY, STATE, OVERTIME	30
763000	L. S.	INITIAL EXPENSE	1
763501	L. S.	CONSTRUCTION ENGINEERING	1
763614	EACH	JOB ORDER MOBILIZATION, CENTRAL DISTRICT	1
763643	L. S.	MAINTENANCE OF TRAFFIC, ALL INCLUSIVE	1

BMP 17

POND MAINTENANCE SEQUENCE AND NOTES

1. CLEAR AND GRUB ANY AND ALL TREES ON THE FRONT SLOPE, SWALES, IN THE POND INTERIOR, AND FOREBAY AREAS; WITHIN 10' ON EITHER SIDE OF DRAINAGE PIPES ENTERING OR EXITING THE POND; AND STRUCTURES. FOR TREES ABOVE PIPES AND NEAR STRUCTURES, FLUSH CUT THE TREE AND BASIL TREAT THE STUMPS (ITEM 201000).
2. DEWATER THE POND AS NECESSARY IN ORDER TO REMOVE THE ACCUMULATED SEDIMENT, CATTAILS, TRASH AND DEBRIS, FROM THE POND BOTTOM, BENCHES AND FOREBAYS. (ITEM 271501)
3. SURVEY THE POND TO DETERMINE AREAS WHERE SEDIMENT REMOVAL IS NECESSARY. (ITEM 763501)
4. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION OF 19.5' ON THE POND BOTTOM AND 21' AT THE FOREBAY AREA (ITEM 763501)
5. REMOVE SEDIMENT FROM THE POND INTERIOR, FOREBAYS AND SAFETY BENCHES, TO THE ORIGINAL POND LINE AND GRADES. (ITEM 202000)
6. RECONSTRUCT FOREBAYS TO ORIGINAL PLAN DIMENSIONS. (ITEM 202000)
7. RECONSTRUCT RIPRAP ENERGY DISSIPATOR. (ITEMS 712005 AND 713003)
8. STABILIZE ALL DISTURBED AREAS IN THE PERMANENT POOL, BELOW ELEVATION (22.0') WITH PERMANENT SEEDING, WET GROUND SHALL BE USED (ITEM 734015). SOIL RETENTION MULCH BLANKET, TYPE 3 SHALL BE USED TO MULCH THE PREPARED SEED BEDS. (INCIDENTAL TO ITEMS 734013 AND 734015)

REMOVE SEDIMENT AND EXISTING RIP RAP.
PLACE 54.5 SY R4 RIPRAP
(SEE ENERGY DISSIPATOR SCHEDULE)

DEWATER THE POND USING A DEWATERING BAG TO CAPTURE SEDIMENT. EXCAVATE SEDIMENT, TRASH, DEBRIS AND INVASIVE VEGETATION. REGRADE THE POND BOTTOM TO ORIGINAL PLAN ELEVATION OF 19.5'

DO NOT DISTURB TREES PLANTED ABOVE ELEVATION 25.0' ON THE POND BACKSLOPE AND ALONG THE FRONTAGE OF NORTH LITTLE CREEK ROAD.

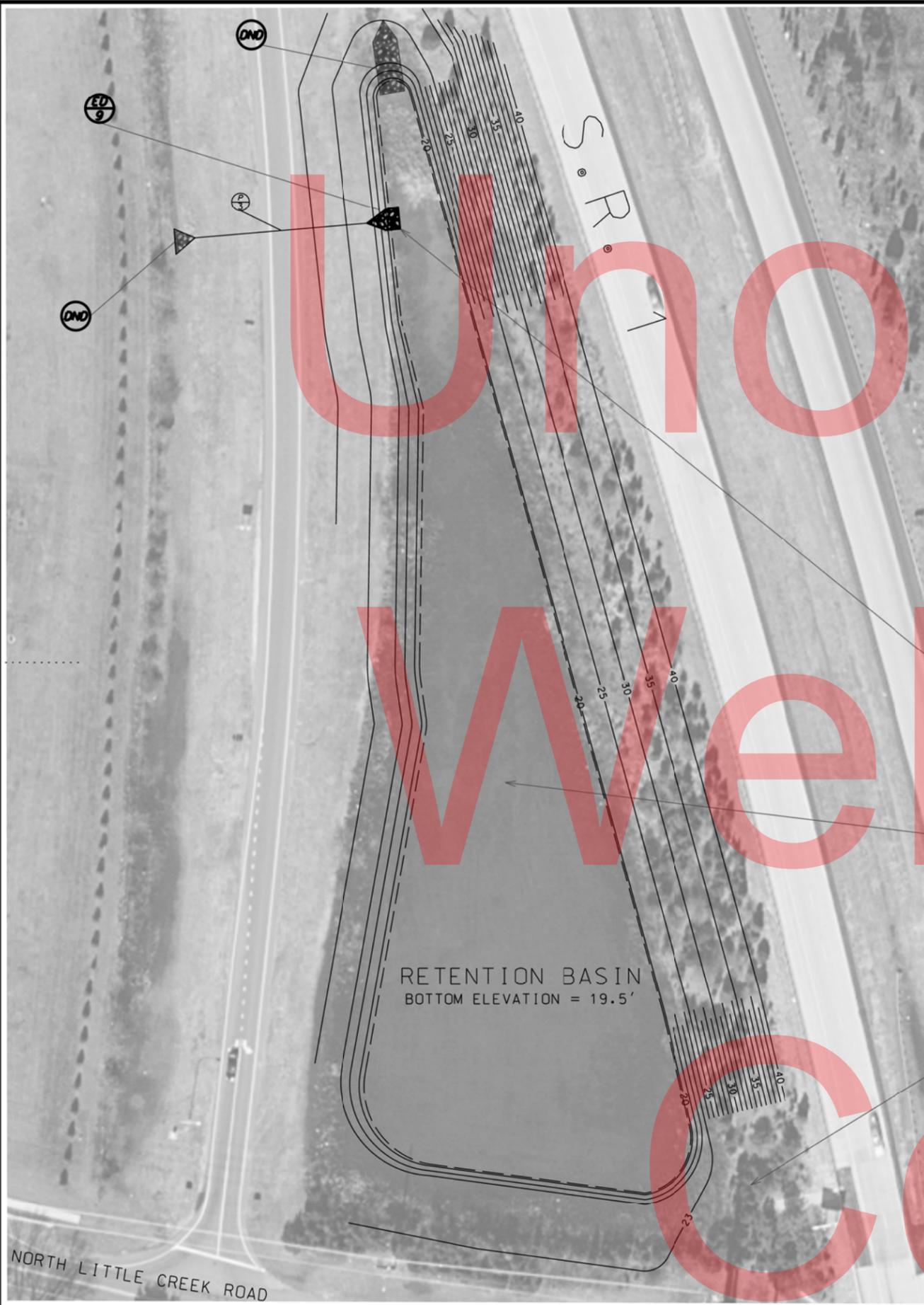
ENERGY DISSIPATOR SCHEDULE

NO.	STATION	QUANTITY	RIPRAP SIZE	D (FT)	T1 (FT)	L (FT)	W1 (FT)	W2 (FT)
8	•	54.5	R-4	2.0	1.2	12.0	10.5	14.5

* MATCH EXISTING PIPE OUTFALL

EXISTING DRAINAGE PIPE INFORMATION

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
3	24" / RCP	-	-	-	22.18	20.99



RETENTION BASIN
BOTTOM ELEVATION = 19.5'

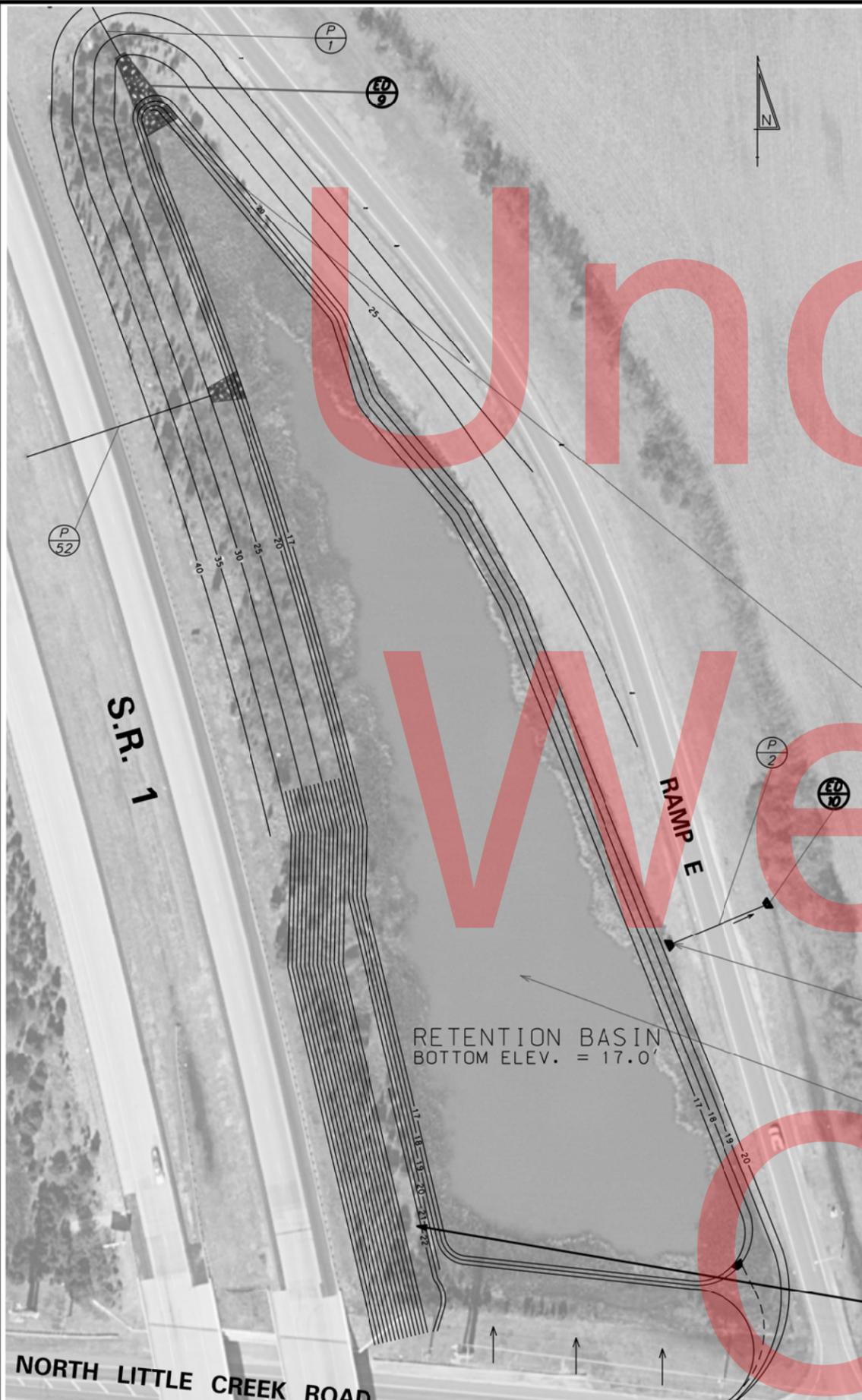
NORTH LITTLE CREEK ROAD

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BMP 18

POND MAINTENANCE SEQUENCE AND NOTES

1. CLEAR AND GRUB ANY AND ALL TREES ON THE FRONT SLOPE, SWALES, IN THE POND INTERIOR, AND FOREBAY AREAS; WITHIN 10' ON EITHER SIDE OF DRAINAGE PIPES ENTERING OR EXITING THE POND; AND STRUCTURES. FOR TREES ABOVE PIPES AND NEAR STRUCTURES, FLUSH CUT THE TREE AND BASIL TREAT THE STUMPS (ITEM 201000).
2. DEWATER THE POND AS NECESSARY IN ORDER TO REMOVE THE ACCUMULATED SEDIMENT, CATTAILS, TRASH AND DEBRIS, FROM THE POND BOTTOM, BENCHES AND FOREBAYS. (ITEM 271501)
3. SURVEY THE POND TO DETERMINE AREAS WHERE SEDIMENT REMOVAL IS NECESSARY. (ITEM 763501)
4. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION OF 17.0' ON THE POND BOTTOM AND 21' AT THE FOREBAY AREA (ITEM 763501)
5. REMOVE SEDIMENT FROM THE POND INTERIOR, FOREBAYS AND SAFETY BENCHES, TO THE ORIGINAL POND LINE AND GRADES. (ITEM 202000)
6. REMOVE SEDIMENT FROM THE OUTFALL PIPE. (ITEM 612535)
7. RECONSTRUCT FOREBAYS TO ORIGINAL PLAN DIMENSIONS. (ITEM 202000)
8. RECONSTRUCT RIPRAP ENERGY DISSIPATOR. (ITEMS 712005 AND 713003)
9. STABILIZE ALL DISTURBED AREAS IN THE PERMANENT POOL, BELOW ELEVATION (20.0') WITH PERMANENT SEEDING, WET GROUND SHALL BE USED (ITEM 734015). SOIL RETENTION MULCH BLANKET, TYPE 3 SHALL BE USED TO MULCH THE PREPARED SEED BEDS. (INCIDENTAL TO ITEM 734015)



REMOVE SEDIMENT AND EXISTING RIP RAP. PLACE 167.0 SY R4 RIPRAP (SEE ENERGY DISSIPATOR SCHEDULE)

REMOVE SEDIMENT FROM THE OUTFALL PIPE.

DEWATER THE POND USING A DEWATERING BAG TO CAPTURE SEDIMENT. EXCAVATE SEDIMENT, TRASH, DEBRIS AND INVASIVE VEGETATION. REGRADE THE POND BOTTOM TO ORIGINAL PLAN ELEVATION OF 17.0'

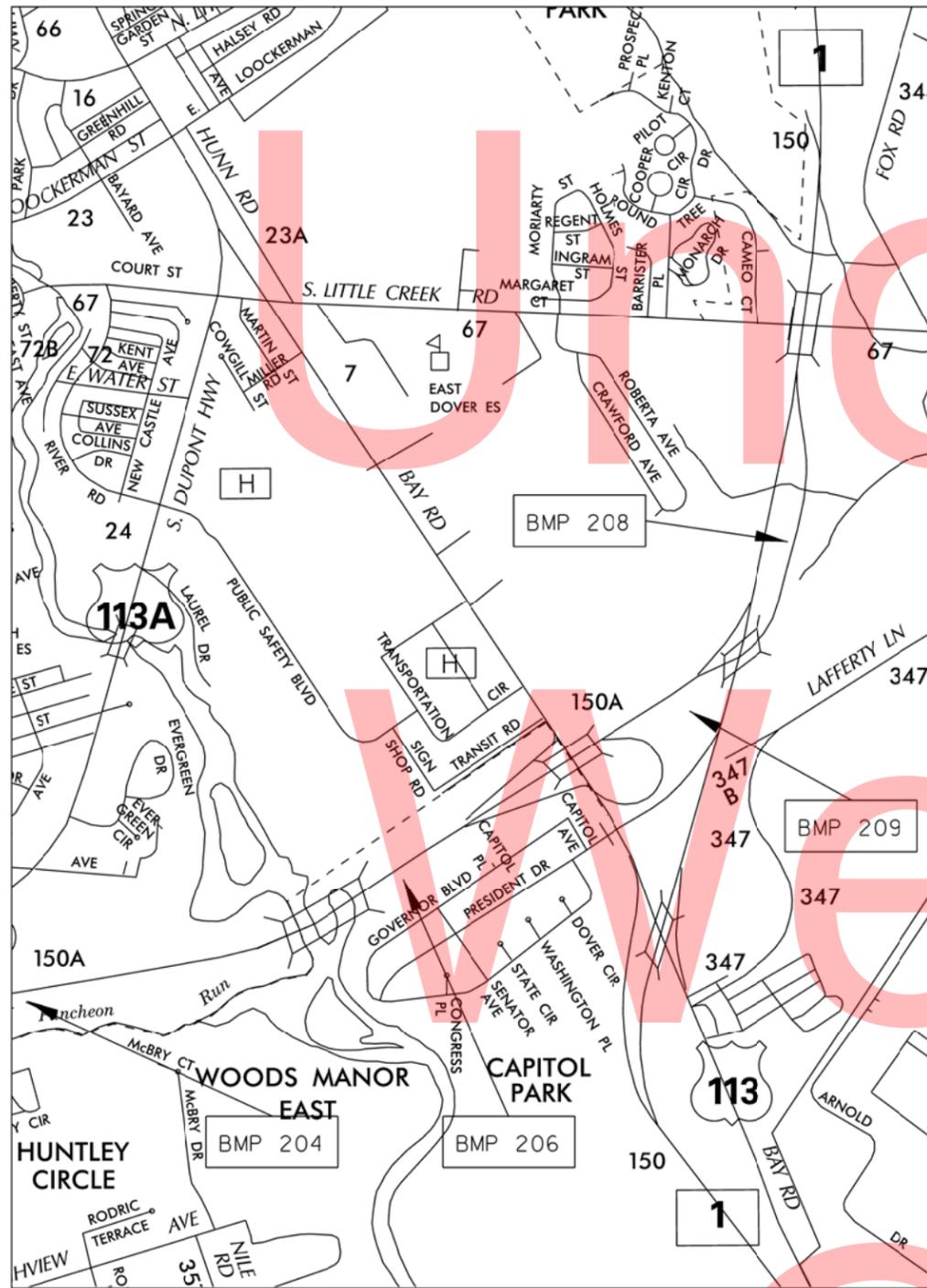
DO NOT DISTURB TREES PLANTED ABOVE ELEVATION 25.0' ON THE POND BACKSLOPE AND ALONG THE FRONTAGE OF NORTH LITTLE CREEK ROAD.

ENERGY DISSIPATOR SCHEDULE								
NO.	STATION	QUANTITY	RIPRAP SIZE	D (FT)	T1 (FT)	L (FT)	W1 (FT)	W2 (FT)
9	•	167.0	R-4	2.0	1.2	42.5	5.0	19.0
10	•	7.0	R-4	1.0	1.2	-	4.5	4.5

* MATCH EXISTING PIPE OUTFALL

EXISTING DRAINAGE PIPE INFORMATION						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
1	24" / RCP	-	-	-	24.16	23.75
2	23" x 4" / RCP	-	-	-	19.0	18.79
52	18" / RCP	-	-	-	22.18	20.99

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LOCATION PLAN
BMPs 204, 206, 208 & 209

BMP 204 QUANTITIES

ITEM	U. O. M.	ITEM DESCRIPTION	QUANTITY
201000	L. S.	CLEARING AND GRUBBING	1
202000	C. Y.	EXCAVATION AND EMBANKMENT	10
268000	L. S.	STABILIZED CONSTRUCTION ENTRANCE	45
270500	EACH	DEWATERING BAG	1
271501	L. S.	DEWATERING OF EXISTING STORMWATER PONDS	1
712005	S. Y.	RIPRAP, R-4	300
713003	S. Y.	GEOTEXTILES, RIPRAP	375
732000	S. Y.	TOPSOIL, 4" DEPTH	84
734013	S. Y.	PERMANENT GRASS SEEDING, DRY GROUND	362
736502	ACRE	MOWING	1
743003	EA-DY	ARROWPANELS, TYPE C	5
743010	EA-DY	FURNISH AND MAINTAIN TRUCK-MOUNTED ATTENUATOR, TYPE II	5
763000	L. S.	INITIAL EXPENSE	1
763501	L. S.	CONSTRUCTION ENGINEERING	1
763614	EACH	JOB ORDER MOBILIZATION, CENTRAL DISTRICT	1
763643	L. S.	MAINTENANCE OF TRAFFIC, ALL INCLUSIVE	1

BMP 206 QUANTITIES

ITEM	U. O. M.	ITEM DESCRIPTION	QUANTITY
201000	L. S.	CLEARING AND GRUBBING	1
202000	C. Y.	EXCAVATION AND EMBANKMENT	1000
268000	L. S.	STABILIZED CONSTRUCTION ENTRANCE	44
270500	EACH	DEWATERING BAG	1
271501	L. S.	DEWATERING OF EXISTING STORMWATER PONDS	1
712005	S. Y.	RIPRAP, R-4	235
713003	S. Y.	GEOTEXTILES, RIPRAP	294
732000	S. Y.	TOPSOIL, 4" DEPTH	3071
734013	S. Y.	PERMANENT GRASS SEEDING, DRY GROUND	3071
736502	ACRE	MOWING	1
763000	L. S.	INITIAL EXPENSE	1
763501	L. S.	CONSTRUCTION ENGINEERING	1
763614	EACH	JOB ORDER MOBILIZATION, CENTRAL DISTRICT	1
763643	L. S.	MAINTENANCE OF TRAFFIC, ALL INCLUSIVE	1

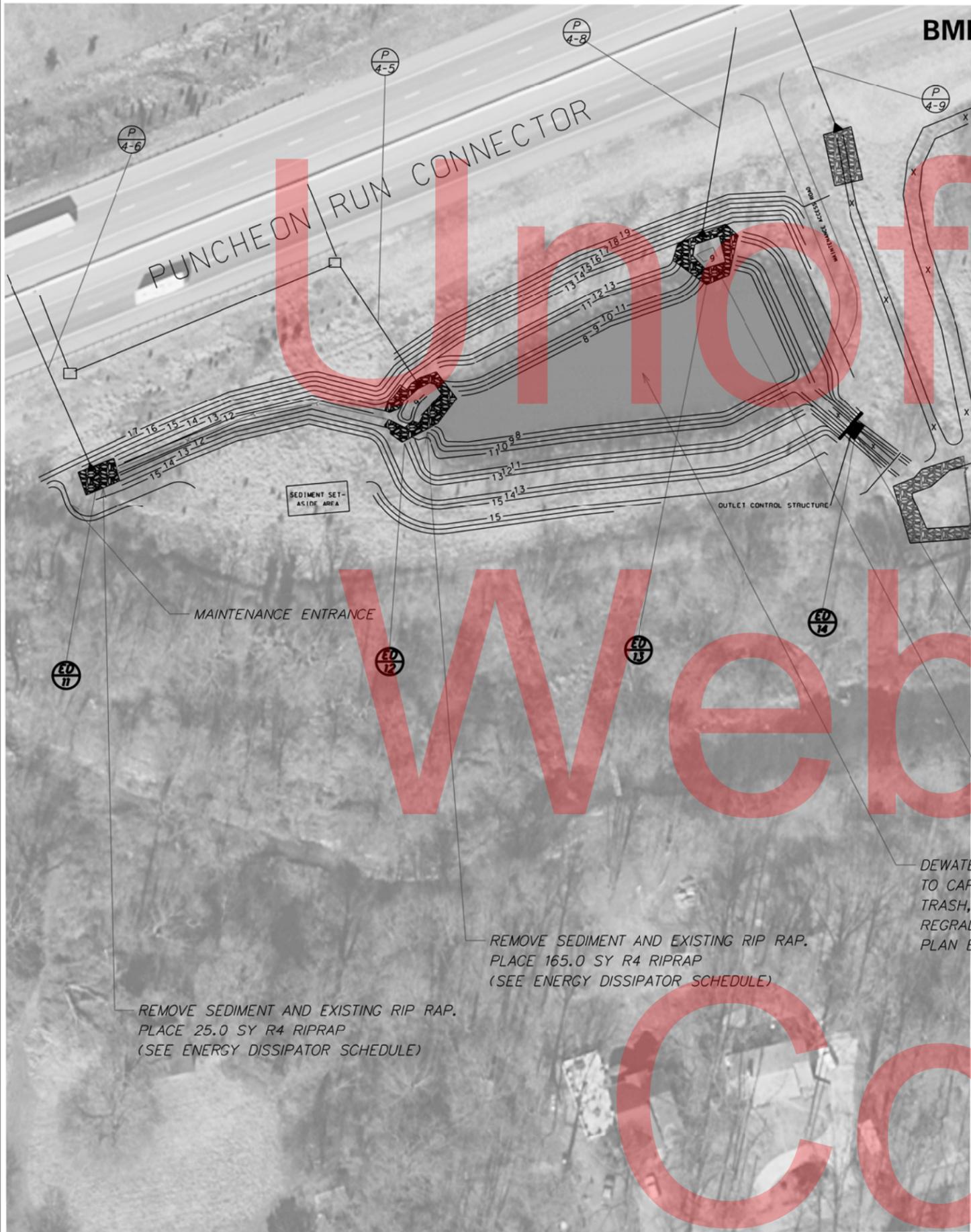
BMP 208 QUANTITIES

ITEM	U. O. M.	ITEM DESCRIPTION	QUANTITY
201000	L. S.	CLEARING AND GRUBBING	1
202000	C. Y.	EXCAVATION AND EMBANKMENT	10
268000	L. S.	STABILIZED CONSTRUCTION ENTRANCE	45
270500	EACH	DEWATERING BAG	1
271501	L. S.	DEWATERING OF EXISTING STORMWATER PONDS	1
712005	S. Y.	RIPRAP, R-4	300
713003	S. Y.	GEOTEXTILES, RIPRAP	375
732000	S. Y.	TOPSOIL, 4" DEPTH	84
734013	S. Y.	PERMANENT GRASS SEEDING, DRY GROUND	362
734015	S. Y.	PERMANENT GRASS SEEDING, WET GROUND	362
736502	ACRE	MOWING	1
743003	EA-DY	ARROWPANELS, TYPE C	5
743010	EA-DY	FURNISH AND MAINTAIN TRUCK-MOUNTED ATTENUATOR, TYPE II	5
763000	L. S.	INITIAL EXPENSE	1
763501	L. S.	CONSTRUCTION ENGINEERING	1
763614	EACH	JOB ORDER MOBILIZATION, CENTRAL DISTRICT	1
763643	L. S.	MAINTENANCE OF TRAFFIC, ALL INCLUSIVE	1

BMP 209 QUANTITIES

ITEM	U. O. M.	ITEM DESCRIPTION	QUANTITY
201000	L. S.	CLEARING AND GRUBBING	1
202000	C. Y.	EXCAVATION AND EMBANKMENT	10
268000	L. S.	STABILIZED CONSTRUCTION ENTRANCE	45
270500	EACH	DEWATERING BAG	1
271501	L. S.	DEWATERING OF EXISTING STORMWATER PONDS	1
712005	S. Y.	RIPRAP, R-4	278
713003	S. Y.	GEOTEXTILES, RIPRAP	334
732000	S. Y.	TOPSOIL, 4" DEPTH	84
734013	S. Y.	PERMANENT GRASS SEEDING, DRY GROUND	362
734015	S. Y.	PERMANENT GRASS SEEDING, WET GROUND	362
736502	ACRE	MOWING	1
743003	EA-DY	ARROWPANELS, TYPE C	5
743010	EA-DY	FURNISH AND MAINTAIN TRUCK-MOUNTED ATTENUATOR, TYPE II	5
743054	HR	FLAGGER, KENT COUNTY, HEAVY, STATE	120
743069	HR	FLAGGER, KENT COUNTY, HEAVY, STATE, OVERTIME	30
763000	L. S.	INITIAL EXPENSE	1
763501	L. S.	CONSTRUCTION ENGINEERING	1
763614	EACH	JOB ORDER MOBILIZATION, CENTRAL DISTRICT	1
763643	L. S.	MAINTENANCE OF TRAFFIC, ALL INCLUSIVE	1

BMP 204



POND MAINTENANCE SEQUENCE AND NOTES

1. CLEAR AND GRUB ANY AND ALL TREES ON THE FRONT SLOPE (THAT ARE NOT TAGGED), MAINTENANCE ACCESS ROAD, SWALES, IN THE POND INTERIOR, AND FOREBAY AREAS; WITHIN 10' ON EITHER SIDE OF DRAINAGE PIPES ENTERING OR EXITING THE POND; STRUCTURES; AND SEDIMENT SET- ASIDE AREA. FOR TREES ABOVE PIPES AND NEAR STRUCTURES, FLUSH CUT THE TREE AND BASIL TREAT THE STUMPS (INCIDENTAL TO ITEM 201000).
2. DEWATER THE POND AS NECESSARY IN ORDER TO REMOVE THE ACCUMULATED SEDIMENT, CATTAILS, TRASH AND DEBRIS, FROM THE POND BOTTOM, BENCHES AND FOREBAYS. (ITEM 271501)
3. SURVEY THE POND TO DETERMINE AREAS WHERE SEDIMENT REMOVAL IS NECESSARY. (ITEM 763501)
4. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION OF 8' ON THE POND BOTTOM AND 10' AT THE FOREBAY AREA (ITEM 763501)
5. REMOVE SEDIMENT FROM THE POND INTERIOR, FOREBAYS AND SAFETY BENCHES, TO THE ORIGINAL POND LINE AND GRADES. (ITEM 202000)
6. REMOVE SEDIMENT FROM THE OUTFALL PIPE. (ITEM 612535)
7. RECONSTRUCT FOREBAYS TO ORIGINAL PLAN DIMENSIONS. (ITEM 202000)
8. RECONSTRUCT RIPRAP ENERGY DISSIPATOR. (ITEMS 712005 AND 713003)
9. STABILIZE ALL DISTURBED AREAS ABOVE THE PERMANENT POOL ELEVATION (12.0') WITH PERMANENT SEEDING, DRY GROUND (ITEM 743013). BELOW ELEVATION (12') PERMANENT SEEDING, WET GROUND SHALL BE USED (ITEM 734015). SOIL RETENTION MULCH BLANKET, TYPE 3 SHALL BE USED TO MULCH THE PREPARED SEED BEDS. (INCIDENTAL TO ITEMS 734013 AND 734015)

REMOVE SEDIMENT, TREES AND EXISTING RIP RAP FROM THE OUTFALL SWALE. PLACE 10 S.Y. RIP RAP

REMOVE SEDIMENT AND EXISTING RIP RAP. PLACE 100.0 SY R4 RIPRAP (SEE ENERGY DISSIPATOR SCHEDULE)

DEWATER THE POND USING A DEWATERING BAG TO CAPTURE SEDIMENT. EXCAVATE SEDIMENT, TRASH, DEBRIS AND INVASIVE VEGETATION. REGRADE THE POND BOTTOM TO ORIGINAL PLAN ELEVATION OF 8.0'

REMOVE SEDIMENT AND EXISTING RIP RAP. PLACE 165.0 SY R4 RIPRAP (SEE ENERGY DISSIPATOR SCHEDULE)

REMOVE SEDIMENT AND EXISTING RIP RAP. PLACE 25.0 SY R4 RIPRAP (SEE ENERGY DISSIPATOR SCHEDULE)

ENERGY DISSIPATOR SCHEDULE								
NO.	STATION	QUANTITY	RIPRAP SIZE	D (FT)	T1 (FT)	L (FT)	W1 (FT)	W2 (FT)
11	•	25.0	R-4	1.0	1.2	2.5	14.0	15.0
12	•	165.0	R-4	3.0	1.2	12.5	38.0	43.0
13	•	100.0	R-4	3.0	1.2	5.5	31.0	33.0
14	•	10.0	R-4	1.0	1.2	1.0	5.0	5.0

* MATCH EXISTING PIPE OUTFALL

EXISTING DRAINAGE PIPE INFORMATION						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
4-6	24" / RCP	-	-	-	-	12.20
4-5	30" / CMP	-	-	-	-	12.00
4-8	15" / RCP	-	-	-	-	12.40
4-9	36" / RCP	-	-	-	-	16.00

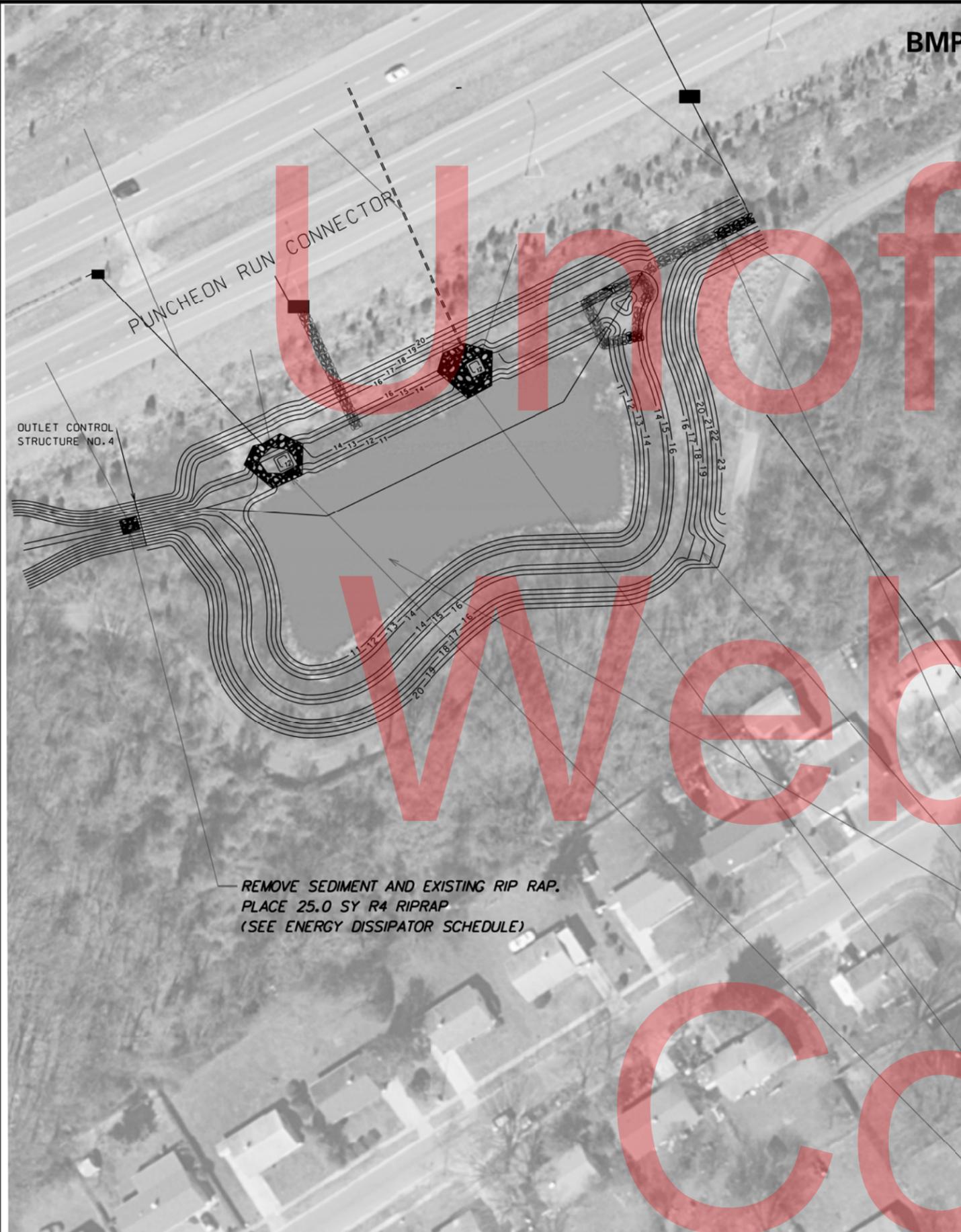
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<p>DELAWARE DEPARTMENT OF TRANSPORTATION</p>	ADDENDUMS / REVISIONS	NOT TO SCALE	STORMWATER POND MAINTENANCE, CENTRAL	CONTRACT T201280204	BRIDGE NO. N/A	MAINTENANCE PLAN	SHEET NO. 14
				COUNTY KENT	DESIGNED BY: D.V.		TOTAL SHTS. 20
				CHECKED BY: L.G.			

BMP 206

POND MAINTENANCE SEQUENCE AND NOTES

1. ACCESS TO THIS POND IS VIA THE GREENWAY PATH (ENTRANCE THRU CAPITAL PARK DEVELOPMENT). ANY DAMAGE TO THE PATH IS TO BE REPAIRED AT CONTRACTOR EXPENSE. (INCIDENTAL TO ITEM 763000)
2. MOT NOT NEEDED FOR PEDESTRAIN TRAFFIC SHALL BE INCLUDED IN THE MOT CASE SET-UP FOR THIS POND. (INCIDENTAL TO ITEM 763643)
3. CLEAR AND GRUB ANY AND ALL TREES ON THE FRONT SLOPE (THAT ARE NOT TAGGED), MAINTENANCE ACCESS ROAD, SWALES, IN THE POND INTERIOR, AND FOREBAY AREAS; WITHIN 10' ON EITHER SIDE OF DRAINAGE PIPES ENTERING OR EXITING THE POND; STRUCTURES; AND SEDIMENT SET- ASIDE AREA. FOR TREES ABOVE PIPES AND NEAR STRUCTURES, FLUSH CUT THE TREE AND BASIL TREAT THE STUMPS (INCIDENTAL TO ITEM 201000).
4. DEWATER THE POND AS NECESSARY IN ORDER TO REMOVE THE ACCUMULATED SEDIMENT, CATTAILS, TRASH AND DEBRIS, FROM THE POND BOTTOM, BENCHES AND FOREBAYS. (ITEM 271501)
5. SURVEY THE POND TO DETERMINE AREAS WHERE SEDIMENT REMOVAL IS NECESSARY. (ITEM 763501)
6. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION OF 11' ON THE POND BOTTOM AND 12' AT THE FOREBAY AREA (ITEM 763501)
7. REMOVE SEDIMENT FROM THE POND INTERIOR, FOREBAYS AND SAFETY BENCHES, TO THE ORIGINAL POND LINE AND GRADES. (ITEM 202000)
8. REMOVE SEDIMENT FROM THE OUTFALL PIPE. (ITEM 612535)
9. RECONSTRUCT FOREBAYS TO ORIGINAL PLAN DIMENSIONS. (ITEM 202000)
10. RECONSTRUCT RIPRAP ENERGY DISSIPATOR. (ITEMS 712005 AND 713003)
11. STABILIZE ALL DISTURBED AREAS ABOVE THE PERMANENT POOL ELEVATION (12.0') WITH PERMANENT SEEDING, DRY GROUND (ITEM 743013). BELOW ELEVATION (12') PERMANENT SEEDING, WET GROUND SHALL BE USED (ITEM 734015). SOIL RETENTION MULCH BLANKET, TYPE 3 SHALL BE USED TO MULCH THE PREPARED SEED BEDS. (INCIDENTAL TO ITEMS 734013 AND 734015)



- GREENWAY PATH
- REMOVE SEDIMENT AND EXISTING RIP RAP. PLACE 25.0 SY R4 RIPRAP (SEE ENERGY DISSIPATOR SCHEDULE)
- CLEAR MAINTENANCE ACCESS ROAD
- DEWATER THE POND USING A DEWATERING BAG TO CAPTURE SEDIMENT. EXCAVATE SEDIMENT, TRASH, DEBRIS AND INVASIVE VEGETATION. REGRADE THE POND BOTTOM TO ORIGINAL PLAN ELEVATION OF 11.0'
- REMOVE SEDIMENT AND EXISTING RIP RAP. PLACE 100.0 SY R4 RIPRAP (SEE ENERGY DISSIPATOR SCHEDULE) * MATCH EXISTING PIPE OUTFALL
- REMOVE SEDIMENT AND EXISTING RIP RAP. PLACE 100.0 SY R4 RIPRAP (SEE ENERGY DISSIPATOR SCHEDULE)

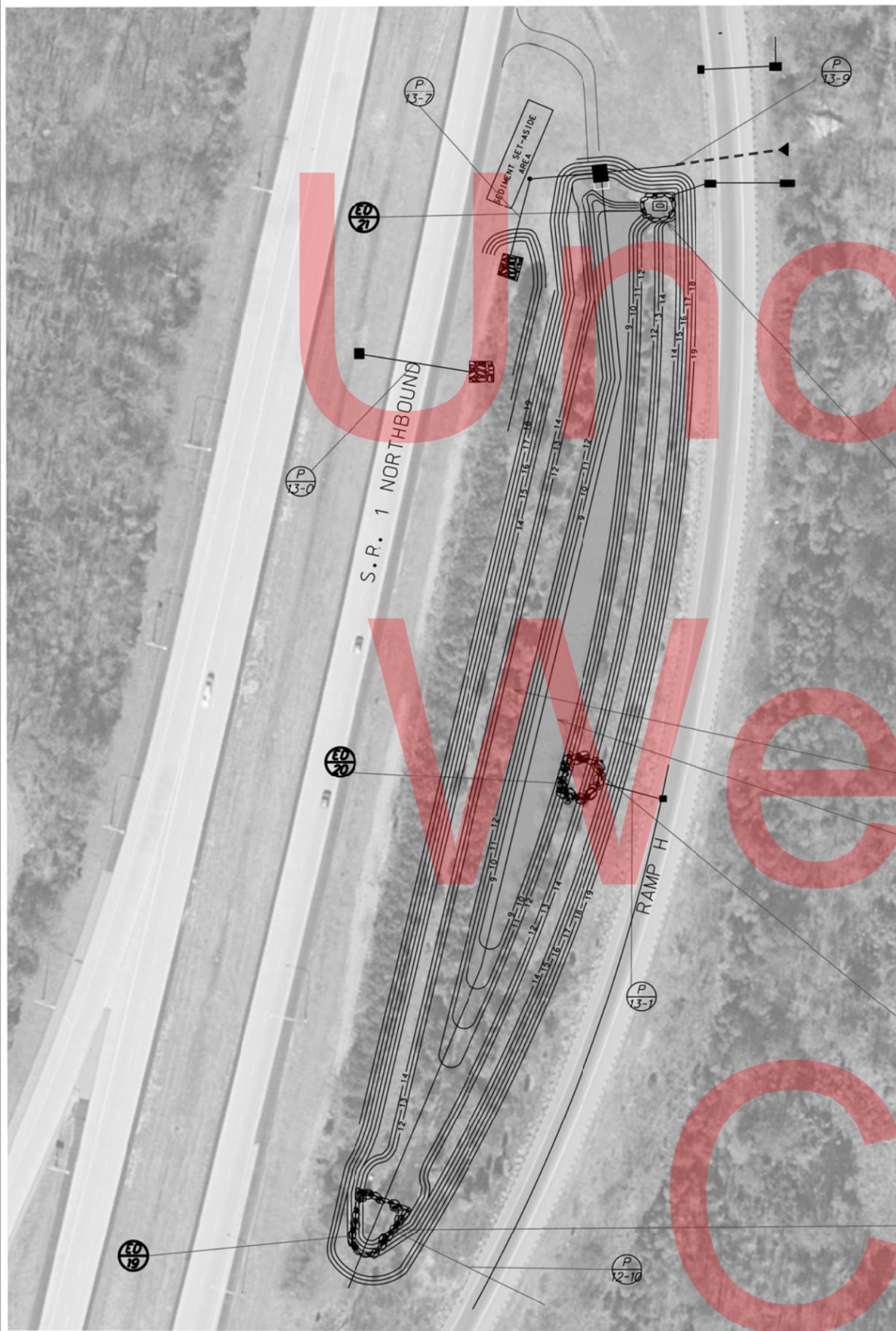
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 DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS		NOT TO SCALE	STORMWATER POND MAINTENANCE, CENTRAL	CONTRACT	BRIDGE NO.	n/a	MAINTENANCE PLAN	SHEET NO.
					1201280204	DESIGNED BY: D.V.	15		
					KENT	CHECKED BY: L.G.	TOTAL SHTS.		
							20		

BMP 208

POND MAINTENANCE SEQUENCE AND NOTES

1. CLEAR AND GRUB ANY AND ALL TREES ON THE 12' AND 14' ELEVATION SAFETY BENCHES (THAT ARE NOT TAGGED); MAINTENANCE ACCESS ROAD; SWALES, IN THE POND INTERIOR AND FOREBAY AREAS; WITHIN 10' ON EITHER SIDE OF DRAINAGE PIPES ENTERING OR EXITING THE POND; STRUCTURES; AND SEDIMENT SET- ASIDE AREA. FOR TREES ABOVE PIPES AND NEAR STRUCTURES, FLUSH CUT THE TREE AND BASIL TREAT THE STUMPS (INCIDENTAL TO ITEM 201000).
2. DEWATER THE POND AS NECESSARY IN ORDER TO REMOVE THE ACCUMULATED SEDIMENT, CATTAILS, TRASH AND DEBRIS, FROM THE POND BOTTOM, BENCHES AND FOREBAYS. (ITEM 271501)
3. SURVEY THE POND TO DETERMINE AREAS WHERE SEDIMENT REMOVAL IS NECESSARY. (ITEM 763501)
4. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION OF 9' ON THE POND BOTTOM AND 10' AT THE FOREBAY AREA (ITEM 763501)
5. REMOVE SEDIMENT FROM THE POND INTERIOR, FOREBAYS AND SAFETY BENCHES, TO THE ORIGINAL POND LINE AND GRADES. (ITEM 202000)
6. RECONSTRUCT FOREBAYS TO ORIGINAL PLAN DIMENSIONS. (ITEM 202000)
7. RECONSTRUCT RIPRAP ENERGY DISSIPATOR. (ITEMS 712005 AND 713003)
8. STABILIZE ALL DISTURBED AREAS ABOVE THE PERMANENT POOL ELEVATION (12.0') WITH PERMANENT SEEDING, DRY GROUND (ITEM 743013). BELOW ELEVATION (12') PERMANENT SEEDING, WET GROUND SHALL BE USED (ITEM 734015). SOIL RETENTION MULCH BLANKET, TYPE 3 SHALL BE USED TO MULCH THE PREPARED SEED BEDS. (INCIDENTAL TO ITEMS 734013 AND 734015)



REMOVE SEDIMENT, TREES AND EXISTING RIP RAP FROM THE OUTFALL SWALE. PLACE 115 S.Y. RIP RAP (SEE ENERGY DISSIPATOR TABLE)

CLEAR TREES FROM THE 12' AND 14' SAFETY BENCHES.

DEWATER THE POND USING A DEWATERING BAG TO CAPTURE SEDIMENT. EXCAVATE SEDIMENT, TRASH, DEBRIS AND INVASIVE VEGETATION. REGRADE THE POND BOTTOM TO ORIGINAL PLAN ELEVATION OF 9.0'

REMOVE SEDIMENT, TREES AND EXISTING RIP RAP FROM THE OUTFALL SWALE. PLACE 110 S.Y. RIP RAP (SEE ENERGY DISSIPATOR TABLE)

REMOVE SEDIMENT, TREES AND EXISTING RIP RAP FROM THE OUTFALL SWALE. PLACE 70 S.Y. RIP RAP (SEE ENERGY DISSIPATOR TABLE)

ENERGY DISSIPATOR SCHEDULE								
NO.	STATION	QUANTITY	RIPRAP SIZE	D (FT)	T1 (FT)	L (FT)	W1 (FT)	W2 (FT)
19	•	70.0	R-4	3.0	1.2	7.5	16.5	19.0
20	•	110.0	R-4	3.0	1.2	12.5	20.0	24.0
21	•	115.0	R-4	3.0	1.2	16.5	19.0	24.5

* MATCH EXISTING PIPE OUTFALL

EXISTING DRAINAGE PIPE INFORMATION							
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.	
12-10	15" / RCP	-	-	-	-	-	13.02
13-1	15" / RCP	-	-	-	-	-	13.02
13-7	30" / CMP	-	-	-	-	-	13.2
13-6	30" / CMP	-	-	-	-	-	13.27
13-9	30" / CMP	-	-	-	-	-	12.7
13-0	18" / RCP	-	-	-	-	-	14.0

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POND MAINTENANCE SEQUENCE AND NOTES

1. CLEAR AND GRUB ANY AND ALL TREES ON THE FRONT SLOPE (THAT ARE NOT TAGGED), MAINTENANCE ACCESS ROAD, SWALES, IN THE POND INTERIOR, AND FOREBAY AREAS; WITHIN 10' ON EITHER SIDE OF DRAINAGE PIPES ENTERING OR EXITING THE POND; STRUCTURES; AND SEDIMENT SET- ASIDE AREA. FOR TREES ABOVE PIPES AND NEAR STRUCTURES, FLUSH CUT THE TREE AND BASIL TREAT THE STUMPS (INCIDENTAL TO ITEM 201000).
2. DEWATER THE POND AS NECESSARY IN ORDER TO REMOVE THE ACCUMULATED SEDIMENT, CATTAILS, TRASH AND DEBRIS, FROM THE POND BOTTOM, BENCHES AND FOREBAYS. (ITEM 271501)
3. SURVEY THE POND TO DETERMINE AREAS WHERE SEDIMENT REMOVAL IS NECESSARY. (ITEM 763501)
4. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION ON THE POND BOTTOM (VARIES 18' TO 24') SEE PLANS AND 24' AT THE FOREBAY AREA (ITEM 763501)
5. REMOVE SEDIMENT FROM THE POND INTERIOR, FOREBAYS AND SAFETY BENCHES, TO THE ORIGINAL POND LINE AND GRADES. (ITEM 202000)
6. REMOVE SEDIMENT FROM THE OUTFALL PIPE. (ITEM 612535)
7. RECONSTRUCT FOREBAYS TO ORIGINAL PLAN DIMENSIONS. (ITEM 202000)
8. RECONSTRUCT RIPRAP ENERGY DISSIPATOR. (ITEMS 712005 AND 713003)
9. STABILIZE ALL DISTURBED AREAS ABOVE THE PERMANENT POOL ELEVATION (23.0') WITH PERMANENT SEEDING, DRY GROUND (ITEM 743013). BELOW ELEVATION (23') PERMANENT SEEDING, WET GROUND SHALL BE USED (ITEM 734015). SOIL RETENTION MULCH BLANKET, TYPE 3 SHALL BE USED TO MULCH THE PREPARED SEED BEDS. (INCIDENTAL TO ITEMS 734013 AND 734015)



DEWATER THE POND USING A DEWATERING BAG TO CAPTURE SEDIMENT. EXCAVATE SEDIMENT, TRASH, DEBRIS AND INVASIVE VEGETATION. REGRADE THE POND BOTTOM TO ORIGINAL PLAN ELEVATIONS. VARIES.

REMOVE SEDIMENT, TREES AND EXISTING RIP RAP FROM THE OUTFALL SWALE. PLACE 110.0 S.Y. RIP RAP (SEE ENERGY DISSIPATOR SCHEDULE)

REMOVE SEDIMENT, TREES AND EXISTING RIP RAP FROM THE OUTFALL SWALE. PLACE 168.0 S.Y. RIP RAP (SEE ENERGY DISSIPATOR SCHEDULE)

ENERGY DISSIPATOR SCHEDULE								
NO.	STATION	QUANTITY	RIPRAP SIZE	D (FT)	T1 (FT)	T2 (FT)	W1 (FT)	W2 (FT)
22	•	110.0	R-4	3.0	1.2	2.5	14.0	15.0
23	•	168	R-4	3.0	1.2	12.5	38.0	43.0

* MATCH EXISTING PIPE OUTFALL

EXISTING DRAINAGE PIPE INFORMATION						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
15	30" / RCP	-	-	-	-	24.0

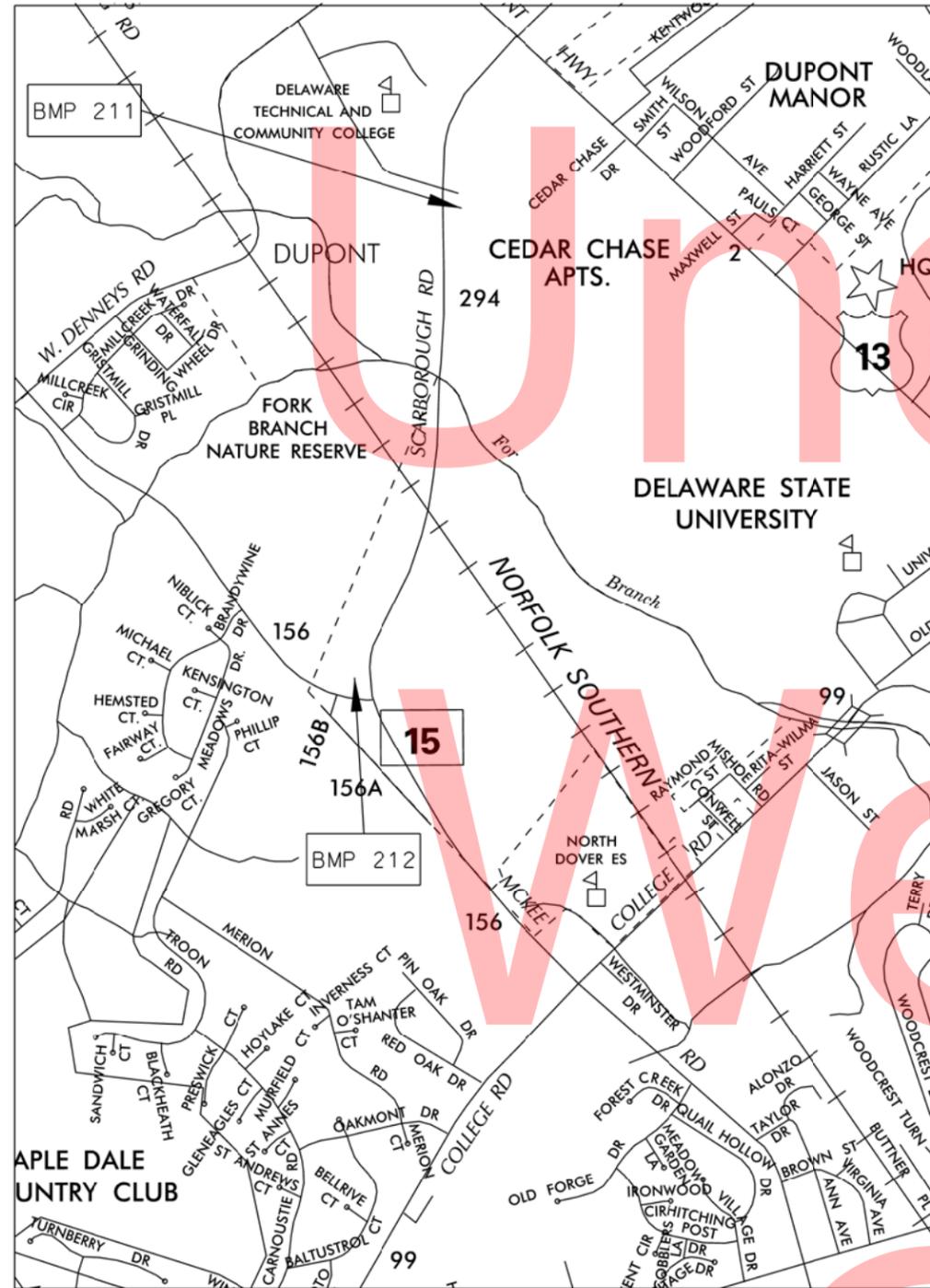
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BMP 211 QUANTITIES

ITEM	U. O. M.	ITEM DESCRIPTION	QUANTITY
201000	L. S.	CLEARING AND GRUBBING	1.0
202000	C. Y.	EXCAVATION AND EMBANKMENT	826.00
251001	L. F.	SILT FENCE	736.00
268000	L. S.	STABILIZED CONSTRUCTION ENTRANCE	45.00
270500	EACH	DEWATERING BAG	1.00
271501	L. S.	DEWATERING OF EXISTING STORMWATER PONDS	1.00
712005	S. Y.	RIPRAP, R-4	388.00
713003	S. Y.	GEOTEXTILES, RIPRAP	485.00
734015	S. Y.	PERMANENT GRASS SEEDING, DRY GROUND	819.00
734015	S. Y.	PERMANENT GRASS SEEDING, WET GROUND	8933.00
743003	EA-DY	ARROWPANELS, TYPE C	5.00
743010	EA-DY	FURNISH AND MAINTAIN TRUCK-MOUNTED ATTENUATOR, TYPE II	5.0
743054	HOURLY	FLAGGER, KENT COUNTY, HEAVY, STATE	80.00
743069	HOURLY	FLAGGER, KENT COUNTY, HEAVY, STATE, OVERTIME	15.00
763000	L. S.	INITIAL EXPENSE	1.00
763501	L. S.	CONSTRUCTION ENGINEERING	1.00
763614	EACH	JOB ORDER MOBILIZATION, CENTRAL DISTRICT	1.00
763643	L. S.	MAINTENANCE OF TRAFFIC, ALL INCLUSIVE	1.00

BMP 212 QUANTITIES

ITEM	U. O. M.	ITEM DESCRIPTION	QUANTITY
201000	L. S.	CLEARING AND GRUBBING	1.0
202000	C. Y.	EXCAVATION AND EMBANKMENT	1914.00
268000	L. S.	STABILIZED CONSTRUCTION ENTRANCE	45.00
270500	EACH	DEWATERING BAG	1.00
271501	L. S.	DEWATERING OF EXISTING STORMWATER PONDS	1.00
712005	S. Y.	RIPRAP, R-4	482.00
713003	S. Y.	GEOTEXTILES, RIPRAP	578.00
732000	S. Y.	TOPSOIL, 4" DEPTH	403.00
734015	S. Y.	PERMANENT GRASS SEEDING, DRY GROUND	403.00
734015	S. Y.	PERMANENT GRASS SEEDING, WET GROUND	5194.00
743003	EA-DY	ARROWPANELS, TYPE C	5.00
743010	EA-DY	FURNISH AND MAINTAIN TRUCK-MOUNTED ATTENUATOR, TYPE II	5.0
743054	HOURLY	FLAGGER, KENT COUNTY, HEAVY, STATE	80.00
743069	HOURLY	FLAGGER, KENT COUNTY, HEAVY, STATE, OVERTIME	15.00
763000	L. S.	INITIAL EXPENSE	1.00
763501	L. S.	CONSTRUCTION ENGINEERING	1.00
763614	EACH	JOB ORDER MOBILIZATION, CENTRAL DISTRICT	1.00
763643	L. S.	MAINTENANCE OF TRAFFIC, ALL INCLUSIVE	1.00



LOCATION PLAN
BMPs 211 & 212

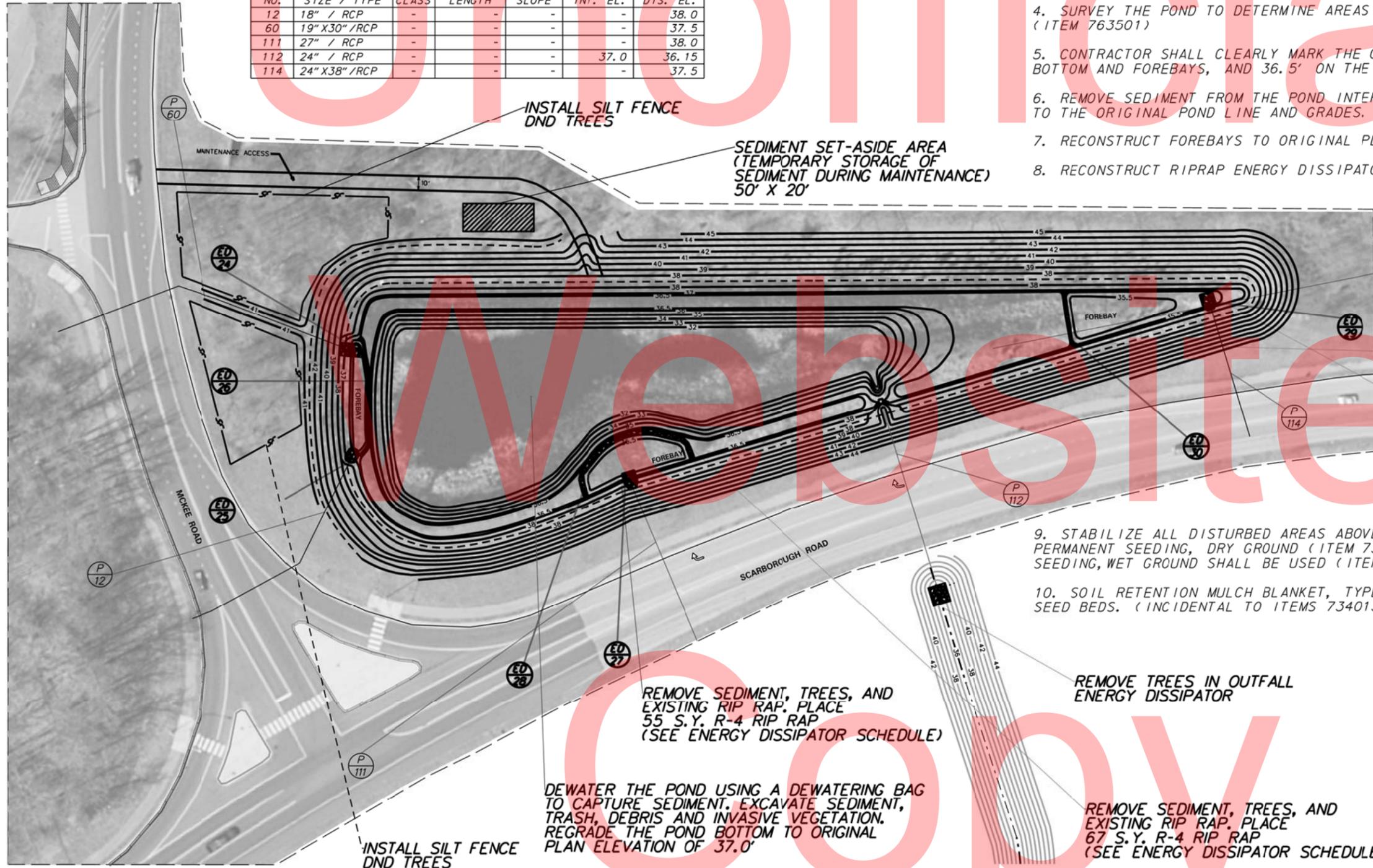
ENERGY DISSIPATOR SCHEDULE								
NO.	STATION	QUANTITY (SY)	RIPRAP SIZE	D (FT)	T1 (FT)	L (FT)	B1 (FT)	B2 (FT)
24	•	50.0	R-X	2.0	1.2	11.5	9.5	13.0
25	•	44.0	R-X	2.0	1.2	7.5	12.5	15.0
26	•	67.0	R-X	-	1.2	100	6.0	-
27	•	55.0	R-X	2.0	1.2	12.5	10.0	14.0
28	•	67.0	R-X	-	1.2	75.0	8.0	-
29	•	78.0	R-X	2.0	1.2	21.5	8.0	15.0
30	•	27.0	R-X	-	1.2	30.0	6.0	-

* MATCH EXISTING PIPE OUTFALL

DRAINAGE PIPE SCHEDULE							
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.	
12	18" / RCP	-	-	-	-	38.0	
60	19" X30" / RCP	-	-	-	-	37.5	
111	27" / RCP	-	-	-	-	38.0	
112	24" / RCP	-	-	-	37.0	36.15	
114	24" X38" / RCP	-	-	-	-	37.5	

POND MAINTENANCE SEQUENCE AND NOTES

1. INSTALL SILT FENCE TO PROTECT TREES NEAR THE POND ENTRANCE.
2. CLEAR AND GRUB ANY AND ALL TREES (THAT ARE NOT TAGGED) IN AND AROUND THE POND SLOPES, POND INTERIOR AND FOREBAY AREAS; WITHIN 10' ON EITHER SIDE OF DRAINAGE PIPES ENTERING OR EXISTING THE POND; MAINTENANCE ACCESS ROAD, SEDIMENT SET-ASIDE AREA; AND STRUCTURES. FOR TREES ABOVE OR NEAR PIPES AND STRUCTURES, FLUSH CUT THE TREE AND BASIL TREAT THE STUMPS (ITEM 201000).
3. DEWATER THE POND AS NECESSARY IN ORDER TO REMOVE THE ACCUMULATED SEDIMENT, CATTAILS, PHRAGMITES, TRASH AND DEBRIS, FROM THE POND BOTTOM, BENCHES AND FOREBAYS. (ITEM 271501)
4. SURVEY THE POND TO DETERMINE AREAS WHERE SEDIMENT REMOVAL IS NECESSARY. (ITEM 763501)
5. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION OF 37.0 ON THE POND BOTTOM AND FOREBAYS, AND 36.5' ON THE SAFETY BENCHES (ITEM 763501)
6. REMOVE SEDIMENT FROM THE POND INTERIOR, FOREBAYS AND SAFETY BENCHES, TO THE ORIGINAL POND LINE AND GRADES. (ITEM 202000)
7. RECONSTRUCT FOREBAYS TO ORIGINAL PLAN DIMENSIONS. (ITEM 202000)
8. RECONSTRUCT RIPRAP ENERGY DISSIPATORS. (ITEMS 712005 AND 713003)



REMOVE DEAD PHRAGMITES, CATTAILS, SEDIMENT, TRASH AND DEBRIS. REGRADE SAFETY BENCH TO ORIGINAL PLAN ELEVATION 36.5

REMOVE SEDIMENT, TREES, AND EXISTING RIP RAP. PLACE 27 S.Y. R-4 RIP RAP (SEE ENERGY DISSIPATOR SCHEDULE)

REMOVE SEDIMENT, TREES, AND EXISTING RIP RAP. PLACE 78 S.Y. R-4 RIP RAP (SEE ENERGY DISSIPATOR SCHEDULE)

9. STABILIZE ALL DISTURBED AREAS ABOVE THE PERMANENT POOL ELEVATION (38.0') WITH PERMANENT SEEDING, DRY GROUND (ITEM 734013); BELOW ELEVATION 38.0', PERMANENT SEEDING, WET GROUND SHALL BE USED (ITEM 734015).
10. SOIL RETENTION MULCH BLANKET, TYPE 3 SHALL BE USED TO MULCH THE PREPARED SEED BEDS. (INCIDENTAL TO ITEMS 734013 AND 734015)

REMOVE SEDIMENT, TREES, AND EXISTING RIP RAP. PLACE 55 S.Y. R-4 RIP RAP (SEE ENERGY DISSIPATOR SCHEDULE)

REMOVE TREES IN OUTFALL ENERGY DISSIPATOR

REMOVE SEDIMENT, TREES, AND EXISTING RIP RAP. PLACE 67 S.Y. R-4 RIP RAP (SEE ENERGY DISSIPATOR SCHEDULE)

DEWATER THE POND USING A DEWATERING BAG TO CAPTURE SEDIMENT. EXCAVATE SEDIMENT, TRASH, DEBRIS AND INVASIVE VEGETATION. REGRADE THE POND BOTTOM TO ORIGINAL PLAN ELEVATION OF 37.0'

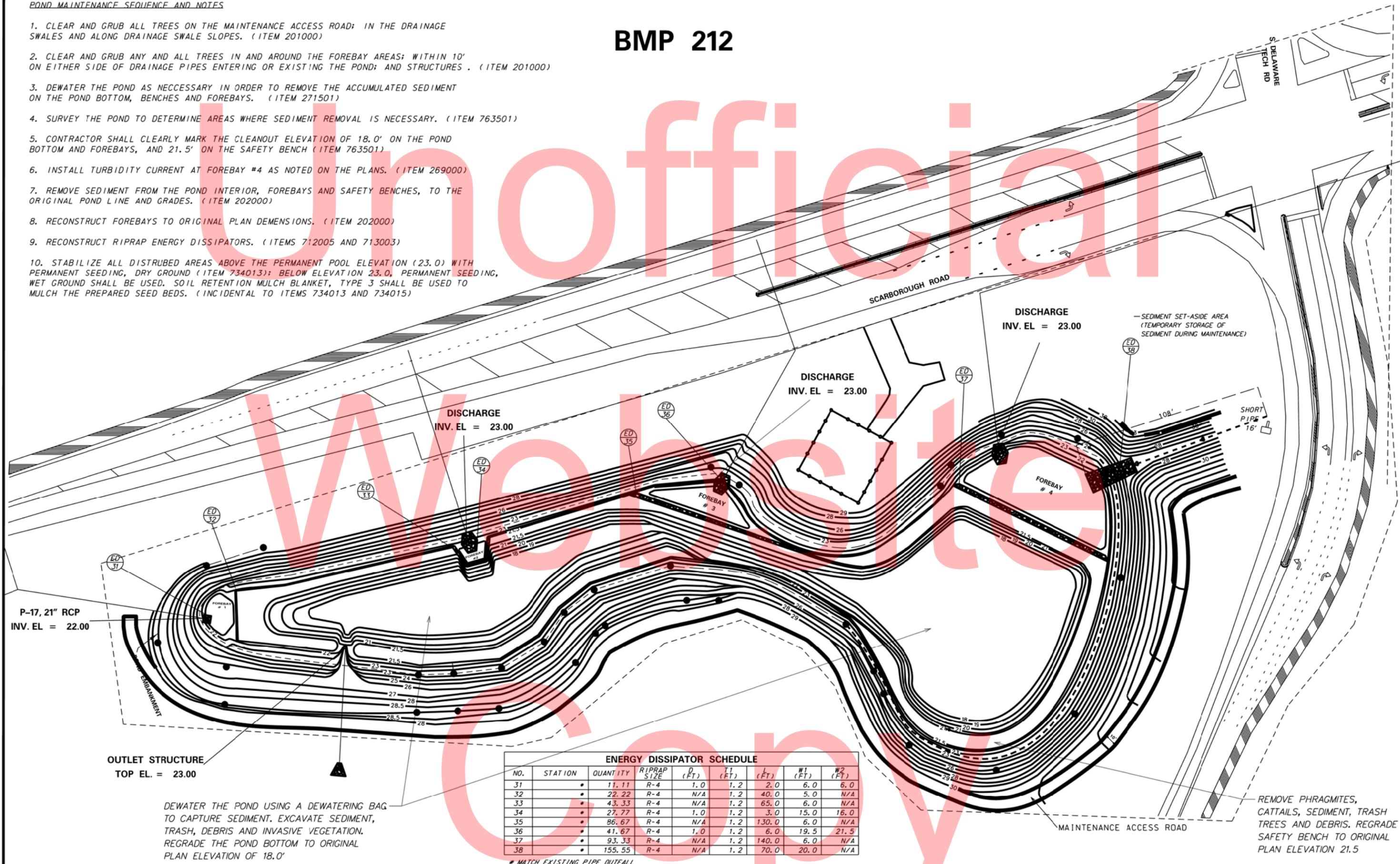
INSTALL SILT FENCE DND TREES

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POND MAINTENANCE SEQUENCE AND NOTES

1. CLEAR AND GRUB ALL TREES ON THE MAINTENANCE ACCESS ROAD; IN THE DRAINAGE SWALES AND ALONG DRAINAGE SWALE SLOPES. (ITEM 201000)
2. CLEAR AND GRUB ANY AND ALL TREES IN AND AROUND THE FOREBAY AREAS; WITHIN 10' ON EITHER SIDE OF DRAINAGE PIPES ENTERING OR EXISTING THE POND; AND STRUCTURES. (ITEM 201000)
3. DEWATER THE POND AS NECESSARY IN ORDER TO REMOVE THE ACCUMULATED SEDIMENT ON THE POND BOTTOM, BENCHES AND FOREBAYS. (ITEM 271501)
4. SURVEY THE POND TO DETERMINE AREAS WHERE SEDIMENT REMOVAL IS NECESSARY. (ITEM 763501)
5. CONTRACTOR SHALL CLEARLY MARK THE CLEANOUT ELEVATION OF 18.0' ON THE POND BOTTOM AND FOREBAYS, AND 21.5' ON THE SAFETY BENCH (ITEM 763501)
6. INSTALL TURBIDITY CURRENT AT FOREBAY #4 AS NOTED ON THE PLANS. (ITEM 269000)
7. REMOVE SEDIMENT FROM THE POND INTERIOR, FOREBAYS AND SAFETY BENCHES, TO THE ORIGINAL POND LINE AND GRADES. (ITEM 202000)
8. RECONSTRUCT FOREBAYS TO ORIGINAL PLAN DEMENSIONS. (ITEM 202000)
9. RECONSTRUCT RIPRAP ENERGY DISSIPATORS. (ITEMS 712005 AND 713003)
10. STABILIZE ALL DISTURBED AREAS ABOVE THE PERMANENT POOL ELEVATION (23.0) WITH PERMANENT SEEDING, DRY GROUND (ITEM 734013); BELOW ELEVATION 23.0, PERMANENT SEEDING, WET GROUND SHALL BE USED. SOIL RETENTION MULCH BLANKET, TYPE 3 SHALL BE USED TO MULCH THE PREPARED SEED BEDS. (INCIDENTAL TO ITEMS 734013 AND 734015)

BMP 212



ENERGY DISSIPATOR SCHEDULE									
NO.	STATION	QUANTITY	RIPRAP SIZE	D (FT)	T1 (FT)	L (FT)	W1 (FT)	W2 (FT)	
31	*	11.11	R-4	1.0	1.2	2.0	6.0	6.0	
32	*	22.22	R-4	N/A	1.2	40.0	5.0	N/A	
33	*	43.33	R-4	N/A	1.2	65.0	6.0	N/A	
34	*	27.77	R-4	1.0	1.2	3.0	15.0	16.0	
35	*	86.67	R-4	N/A	1.2	130.0	6.0	N/A	
36	*	41.67	R-4	1.0	1.2	6.0	19.5	21.5	
37	*	93.33	R-4	N/A	1.2	140.0	6.0	N/A	
38	*	155.55	R-4	N/A	1.2	70.0	20.0	N/A	

DEWATER THE POND USING A DEWATERING BAG TO CAPTURE SEDIMENT. EXCAVATE SEDIMENT, TRASH, DEBRIS AND INVASIVE VEGETATION. REGRADE THE POND BOTTOM TO ORIGINAL PLAN ELEVATION OF 18.0'

REMOVE PHRAGMITES, CATTAILS, SEDIMENT, TRASH TREES AND DEBRIS. REGRADE SAFETY BENCH TO ORIGINAL PLAN ELEVATION 21.5

* MATCH EXISTING PIPE OUTFALL

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