

U.S. Army Corps
of Engineers

Baltimore District
PN 19-28

Public Notice

In Reply to Application Number
NAB-2018-61509-P09 (Anne Arundel County DPW/Boat Launch
Facility at Solley Cove Park)

Comment Period: May 17, 2019 – June 16, 2019

THE PURPOSE OF THIS PUBLIC NOTICE IS TO SOLICIT COMMENTS FROM THE PUBLIC ABOUT THE WORK DESCRIBED BELOW. AT THIS TIME, NO DECISION HAS BEEN MADE AS TO WHETHER OR NOT A PERMIT WILL BE ISSUED.

The Baltimore District has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act (33 U.S.C. 1344), as described below:

APPLICANT: Anne Arundel County Department of Public Works
c/o Chris Rager
Bayland Consultants & Designers, Inc.
7455 New Ridge Road, Suite T
Hanover, Maryland 21076

WATERWAY AND LOCATION: All work is proposed in Curtis Creek, and in an intertidal zone contiguous with Curtis Creek, at Solley Cove Park, off of the Patapsco River, Anne Arundel County, Maryland.

PROPOSED WORK AND PURPOSE: The applicant proposes, in accordance with the attached plans, to improve public access to waterways throughout the county, and reduce traffic and congestion at nearby marinas and boat ramps. The improvements will involve the following construction phases: (1) to remove 2 dilapidated piers, 31 pilings and an existing boat launch; (2) build one 54' x 21' ramp, along with an adjacent littoral drift wall and an adjacent 75' x 6' floating pier; (3) improve an existing "soft launch" site by mechanically dredging 38 cubic yards of sediment to a maximum depth of -2' mean low water (MLW) and replace with 35 cubic yards of firm sand; (4) emplace 298 square feet of landscape stones to retain the sand; (5) mechanically dredge 87 cubic yards of material from the boat launch area to a maximum depth of -5' MLW; (6) construct 410 linear feet of stone breakwaters around the entire site; and (7) plant 12,188 square feet of marsh vegetation landward of the breakwaters. All dredged material will be transported by trucks to the Anne Arundel County Rock Creek Dredge material Placement facility located off of Water Oak Point Road, approximately 5 miles from the proposed construction site.

As part of the planning process for the proposed project, steps were taken to ensure avoidance and minimization of impacts to aquatic resources to the maximum extent practicable based on the existing site conditions. No compensatory mitigation is proposed since no wetland fill impacts are proposed.

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, and, in general, the needs and welfare of the people.

The evaluation of the impacts of the work described above on the public interest will include application of the Clean Water Act 404(b)(1) Guidelines promulgated by the Administrator, U.S. Environmental Protection Agency, under authority of Section 404 of the Clean Water Act.

The U.S. Army Corps of Engineers is soliciting comments from the public; federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the U.S. Army Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Written comments concerning the work described above related to the factors listed above or other pertinent factors must be received by the District Engineer, U.S. Army of Engineers, Baltimore District, [Attn: Matthew Gall, CENAB-OPR-P], 1631 South Atherton Street, Suite 101, State College, Pennsylvania 16801 or matt.gall@usace.army.mil, within the comment period specified above.

ESSENTIAL FISH HABITAT: The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 04-267), requires all federal agencies to consult with the National Marine Fisheries Service on all actions, or proposed actions, permitted, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH). The project site lies in or adjacent to EFH as described under MSFCMA for adult Little Skate and Winter Skate; juvenile and adult Bluefish, Scup, Windowpane Flounder, Black Sea Bass, Atlantic Herring, and Clearnose Skate; larvae, juveniles and adult Summer Flounder; and, adult, eggs, larvae and juvenile stages of Red Hake, all managed species under the MSFCMA. According to the Maryland Department of Natural Resource's Merlin on-line database, the proposed lease site has been identified as being EFH for spawning yellow perch.

The project has the potential to adversely affect EFH or the species of concern by the alteration of spawning, nursery, forage and/or shelter habitat. The project may have an adverse effect on approximately 0.56 acre of EFH as described under the MSFCMA for the species and life stages identified above. This habitat consists of a mostly mud/silt substrate which does not support submerged aquatic vegetation. The project area is not a Habitat Area of Particular Concern. According to the Virginia Institute of Marine Science survey maps, there was no submerged aquatic vegetation within the area. The Baltimore District has made a preliminary determination that site-specific impacts would not be substantial and an abbreviated consultation will be conducted with National Marine Fisheries Service. No mitigative measures are recommended at this time to minimize adverse effects on EFH. This preliminary determination may be modified if additional information indicates otherwise and could change the U.S. Army Corps of Engineers' preliminary determination.

WATER QUALITY CERTIFICATION: The applicant is required to obtain a water quality certification in accordance with Section 401 of the Clean Water Act from the Maryland Department of the Environment. Any written comments concerning the work described above which relate to water quality certification must be received by the Maryland Department of the Environment, Tidal Wetlands Division, Montgomery Park Business Center, 1800 Washington Blvd., Suite 430, Baltimore, Maryland 21230 within the comment period as specified above to receive consideration. The 401 certifying agency has a statutory limit of one year to make its decision.

COASTAL ZONE MANAGEMENT PROGRAM: The applicant has certified in this application that the proposed activity complies with and will be conducted in a manner consistent with the Maryland Coastal Zone Program. This certification statement is available for inspection in the District Office; however, public comments relating to

consistency must be received by the Tidal Wetlands Division, Maryland Department of the Environment, Montgomery Park Business Center, 1800 Washington Blvd. Suite 430, Baltimore, Maryland 21230, within the comment period as specified above. It should be noted that the MDE has a statutory limit of six months in which to make its consistency determination.

The applicant must obtain any state or local government permits which may be required.

ENDANGERED SPECIES ACT: A preliminary review of this application indicates that the proposed work may affect, but is not likely to adversely affect, federal listed threatened or endangered species or their critical habitat, pursuant to Section 7 of the Endangered Species Act, as amended. As the evaluation of this application continues, additional information may become available which could modify this preliminary determination.

NATIONAL HISTORIC PRESERVATION ACT: Review of the latest published version of the National Register of Historic Places indicates that no registered properties listed as eligible for inclusion therein are located at the site of the proposed work. Currently unknown archeological, scientific, prehistoric, or historical data may be lost or destroyed by the work to be accomplished under the requested permit.

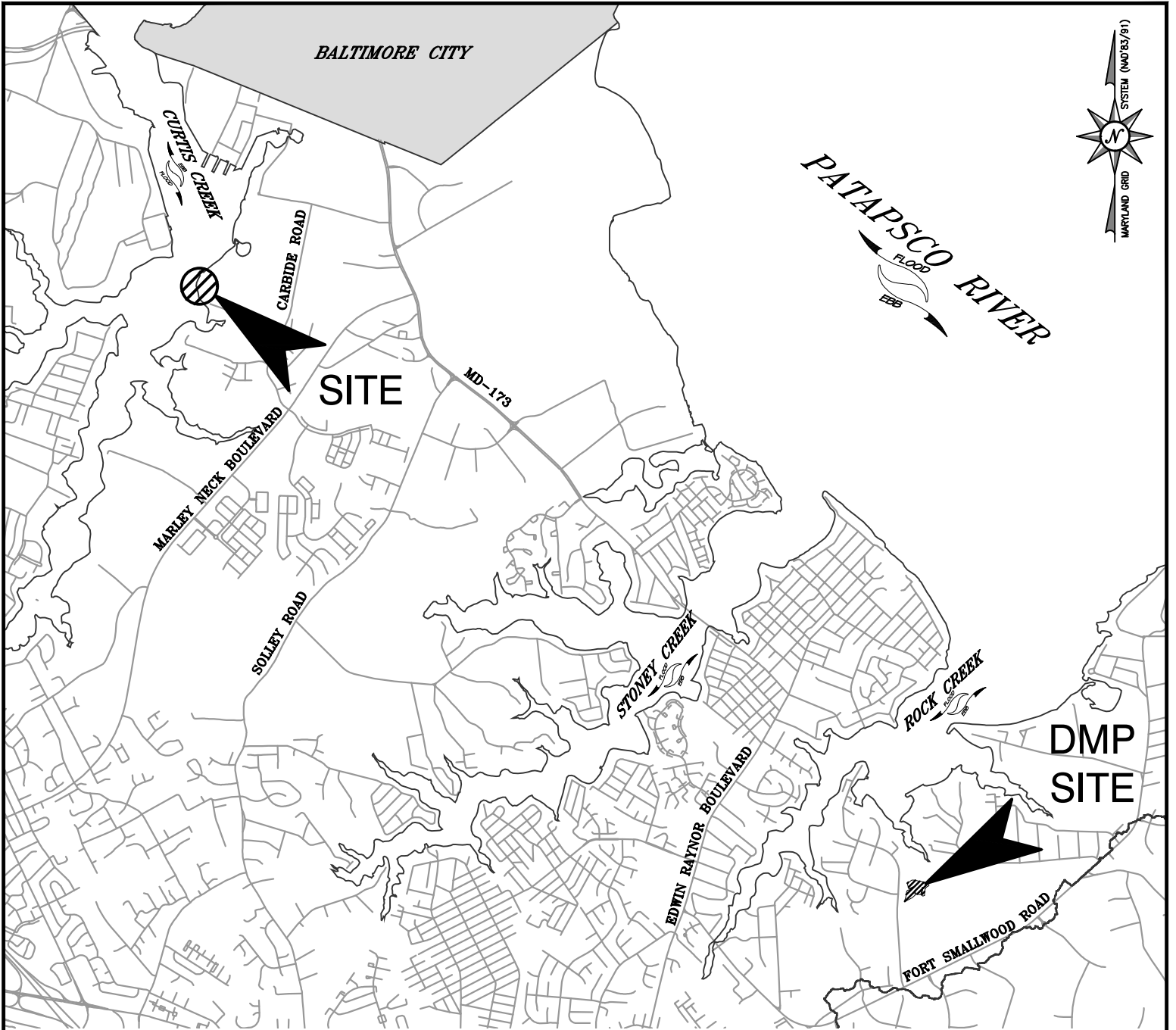
The evaluation of the impact of the work described above on the public interest will include application of the guidelines promulgated by the Administrator, U.S. Environmental Protection Agency, under authority of Section 404 of the Clean Water Act. Any person who has an interest, which may be adversely affected by the issuance of this permit, may request a public hearing. The District Engineer must receive the request, which must be in writing, to the U.S. Army Corps of Engineers, Baltimore District, 1631 South Atherton Street, Suite 101 State College, Pennsylvania 16801, within the comment period as specified as above to receive consideration. Also, it must clearly state the interest that may be adversely affected by this activity and the manner in which the interest may be adversely affected.

It is requested that you communicate the foregoing information concerning the proposed work to any persons known by you to be interested and not being known to this office, who did not receive a copy of this notice.

If you have any questions concerning this matter, please contact the U.S. Army Corps of Engineers Project Manager, Mr. Matt Gall, by phone at 814-235-1762 or by e-mail at matt.gall@usace.army.mil; or submit them in writing by mailing to U.S. Army Corps of Engineers of Engineers, Baltimore District; Regulatory Branch, Pennsylvania Section; ATTN: Mr. Matthew Gall, 1631 South Atherton Street, Suite 101, State College, PA 16801.

FOR THE DISTRICT ENGINEER:

Wade B. Chandler
Chief, Pennsylvania Section
Regulatory Branch

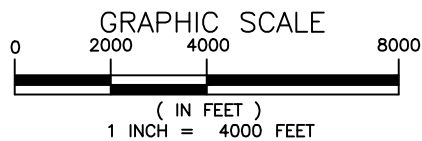


**BOAT LAUNCH FACILITY
AT
SOLLEY COVE PARK
ANNE ARUNDEL COUNTY, MD**

APPL. BY: ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

VICINITY MAP

DATE: January 2019 SHEET 1 OF 10



NOTE:
BASEMAP TAKEN FROM ANNE ARUNDEL COUNTY
2016 PLANIMETRICS AND 2017 IMAGERY.

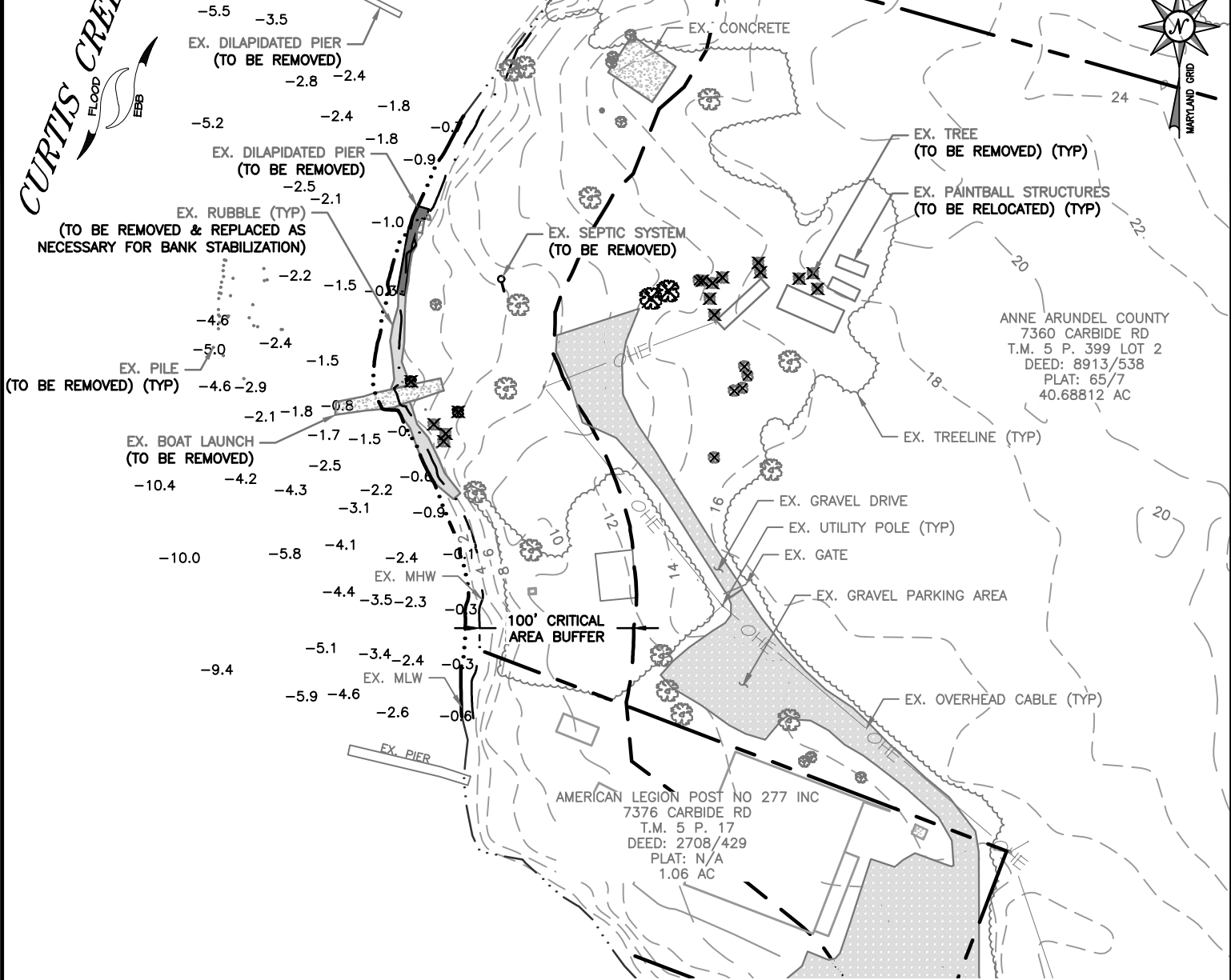
Bayland
Consultants & Designers, Inc.
"Integrating Engineering and Environment"

7455 New Ridge Road, Suite 1 Phone: (410) 694-9401
Hanover, Maryland 21076 Fax: (410) 694-9405
www.baylandinc.com

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CURTIS CREEK
 FLOOD EBB

UNION CARBIDE IND GASES INC
 7350 CARBIDE RD
 T.M. 5 P. 399
 DEED: 4782/708
 PLAT: 65/7
 34.07649 AC



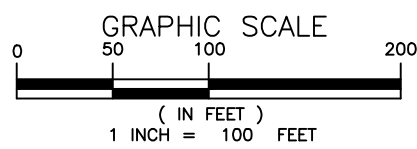
**BOAT LAUNCH FACILITY
 AT
 SOLLEY COVE PARK
 ANNE ARUNDEL COUNTY, MD**

APPL. BY: ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS

EXISTING CONDITIONS

DATE: January 2019 SHEET 2 OF 10

NOTE:
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 2016 PLANIMETRICS AND 2017 IMAGERY.



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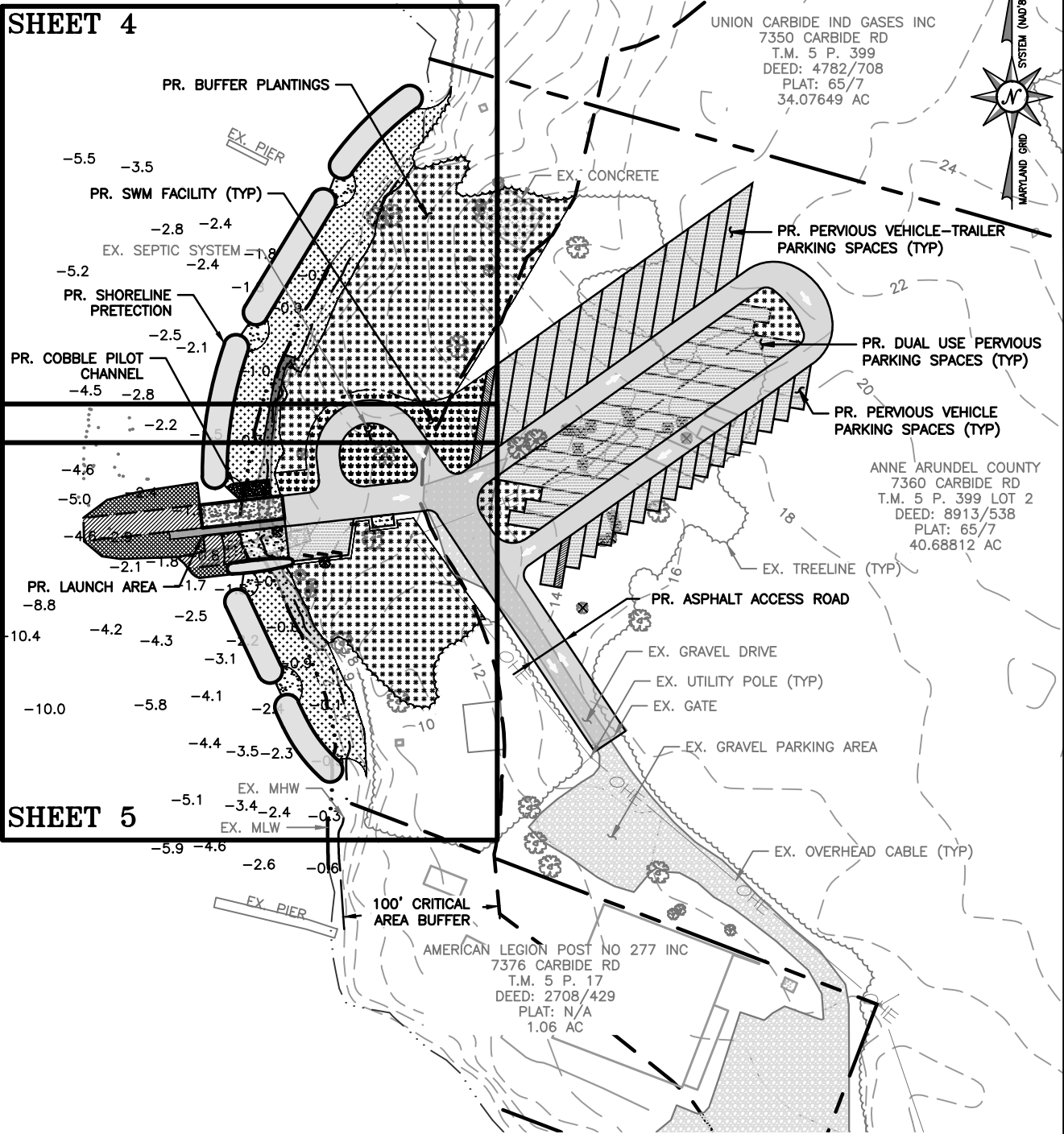
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CURTIS CREEK
FLOOD EBB

SHEET 4

SHEET 5



UNION CARBIDE IND GASES INC
7350 CARBIDE RD
T.M. 5 P. 399
DEED: 4782/708
PLAT: 65/7
34.07649 AC

ANNE ARUNDEL COUNTY
7360 CARBIDE RD
T.M. 5 P. 399 LOT 2
DEED: 8913/538
PLAT: 65/7
40.68812 AC

AMERICAN LEGION POST NO 277 INC
7376 CARBIDE RD
T.M. 5 P. 17
DEED: 2708/429
PLAT: N/A
1.06 AC

LEGEND

	PR. MARSH PLANTINGS		PR. PERVIOUS SURFACE
	PR. SAND		PR. CONCRETE
	PR. BUFFER PLANTINGS		PR. DREDGING
	PR. SWM FACILITY		PR. DREDGING SLOPE

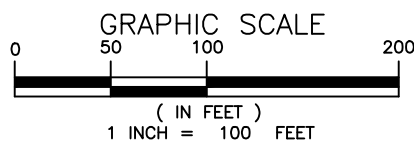
**BOAT LAUNCH FACILITY
AT
SOLLEY COVE PARK
ANNE ARUNDEL COUNTY, MD**

APPL. BY: ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

SITE PLAN

DATE: January 2019 SHEET 3 OF 10

NOTE:
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2016 PLANIMETRICS AND 2017 IMAGERY.




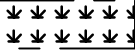
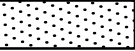





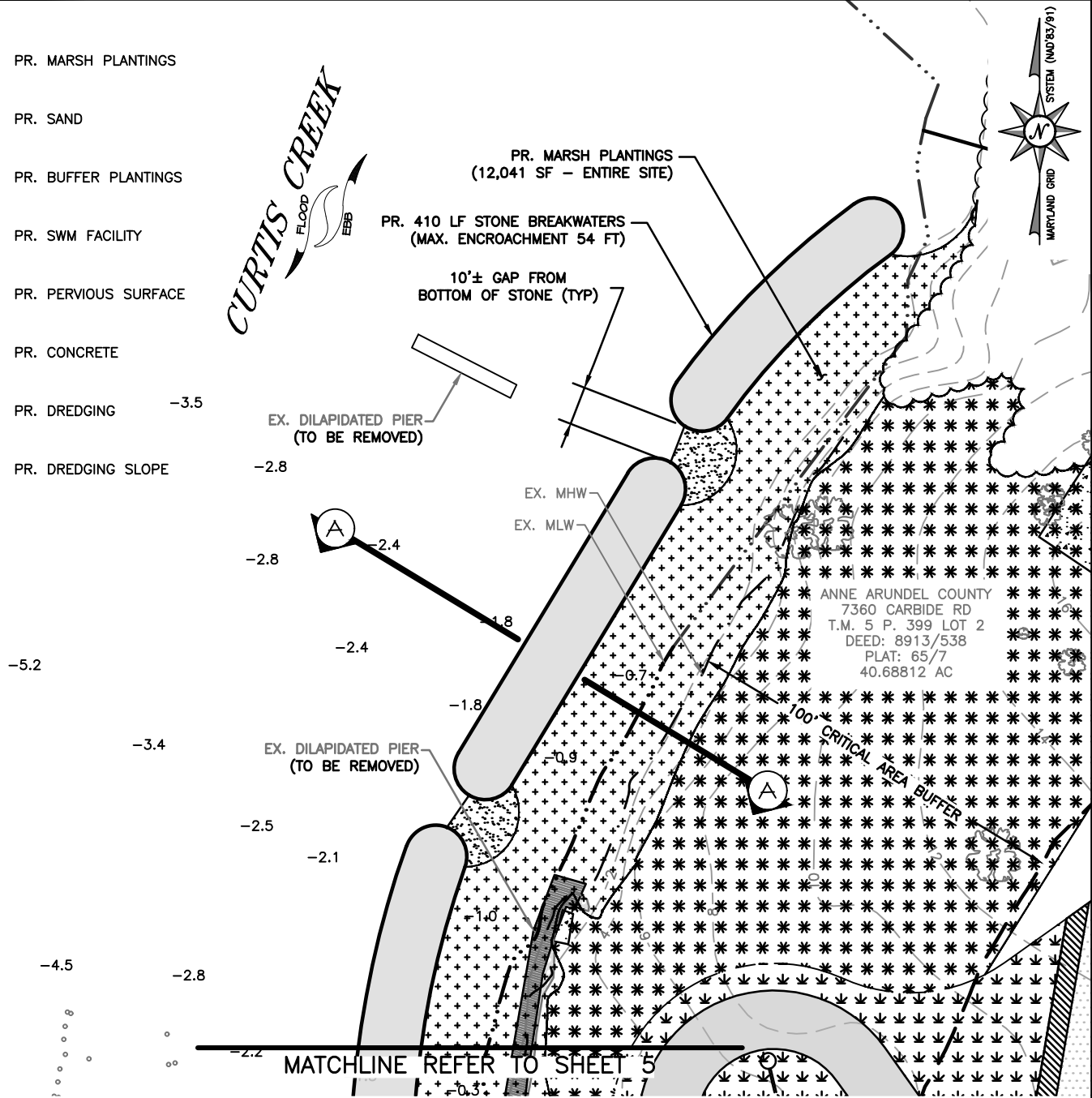
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LEGEND

-  PR. MARSH PLANTINGS
-  PR. SAND
-  PR. BUFFER PLANTINGS
-  PR. SWM FACILITY
-  PR. PERVIOUS SURFACE
-  PR. CONCRETE
-  PR. DREDGING -3.5
-  PR. DREDGING SLOPE



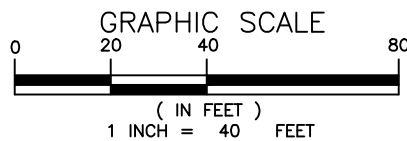
**BOAT LAUNCH FACILITY
AT
SOLLEY COVE PARK
ANNE ARUNDEL COUNTY, MD**

APPL. BY: ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

SHORELINE PLAN

DATE: January 2019 SHEET 4 OF 10

NOTE:
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CURTIS CREEK
 FLOOD
 EBB

MATCHLINE REFER TO SHEET 4



EX. RUBBLE (TYP)
 (TO BE REMOVED & REPLACED AS
 NECESSARY FOR BANK STABILIZATION)

PR. 26 LF COBBLE PILOT CHANNEL

PR. 54'x21' CONCRETE BOAT
 RAMP W/ LITTORAL DRIFT WALLS

EX. PILE
 (TO BE REMOVED)
 (TYP)

PR. 77' X 15' DREDGING TO
 -5.0' MLW W/ 3:1 SLOPE
 (1,155 SF, 100 CY)

PR. DREDGING TO -2.0' MLW W/ 3:1 SLOPE
 (641 SF, 38 CY)

EX. BOAT LAUNCH
 (TO BE REMOVED)

PR. 75'x6' FLOATING PIER

PR. SAND SOFT LAUNCH
 (828 SF, 35 CY)

PR. LANDSCAPE STONES

PR. 410 LF STONE BREAKWATERS
 (MAX. ENCROACHMENT 54 FT)

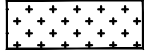
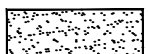
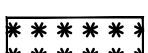
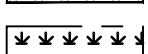


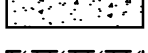

10'± GAP FROM
 BOTTOM OF STONE

PR. MARSH PLANTINGS
 (12,041 SF - ENTIRE SITE)

100' CRITICAL AREA BUFFER

ANNE ARUNDEL COUNTY
 7360 CARBIDE RD
 T.M. 5 P. 399 LOT 2
 DEED: 8913/538
 PLAT: 65/7
 40.68812 AC

LEGEND

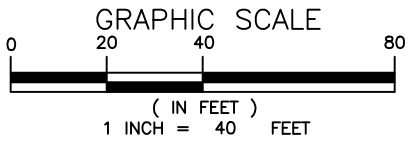
-  PR. MARSH PLANTINGS
-  PR. SAND
-  PR. BUFFER PLANTINGS
-  PR. SWM FACILITY
-  PR. PERVIOUS SURFACE
-  PR. CONCRETE
-  PR. DREDGING
-  PR. DREDGING SLOPE

**BOAT LAUNCH FACILITY
 AT
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 ANNE ARUNDEL COUNTY, MD**

APPL. BY: ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS

SHORELINE & BOAT LAUNCH FACILITY PLAN

DATE: January 2019 SHEET 5 OF 10

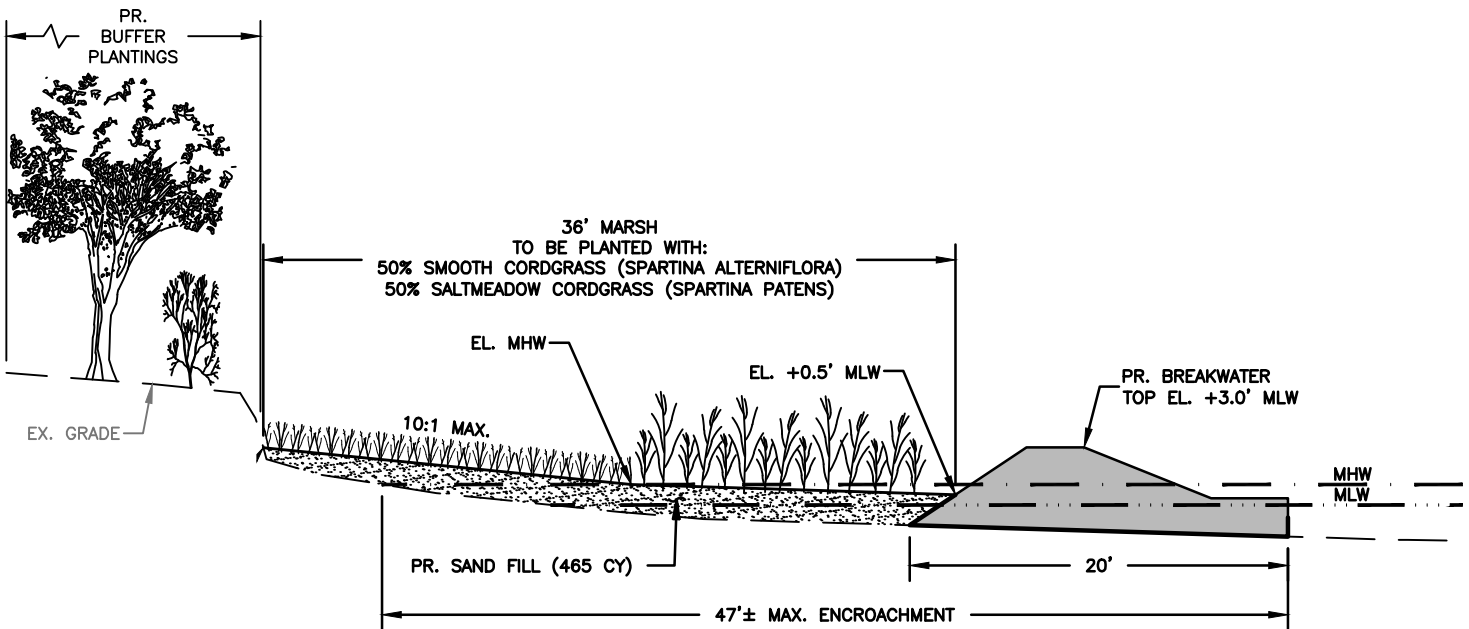


NOTE:
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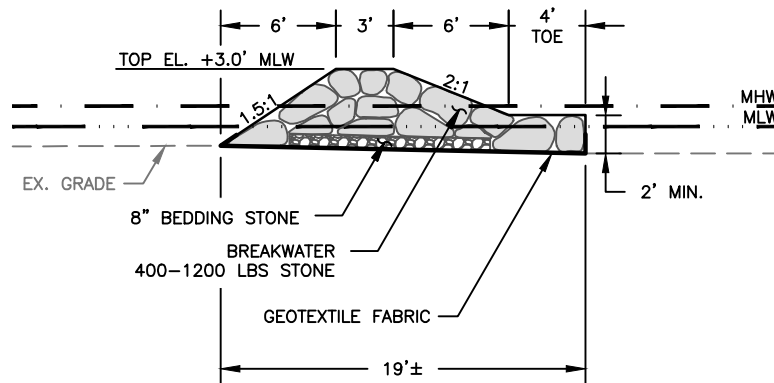
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 Hanover, Maryland 21076 Fax: (410) 694-9405
 www.baylandinc.com

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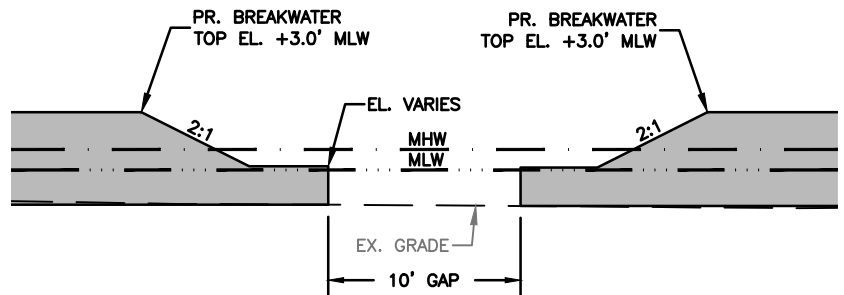
STONE BREAKWATER SECTION A

SCALE: NTS



TYPICAL BREAKWATER SECTION

SCALE: NTS



TYPICAL VENT SECTION

SCALE: NTS

**BOAT LAUNCH FACILITY
AT
SOLLEY COVE PARK**

ANNE ARUNDEL COUNTY, MD

APPL. BY: ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

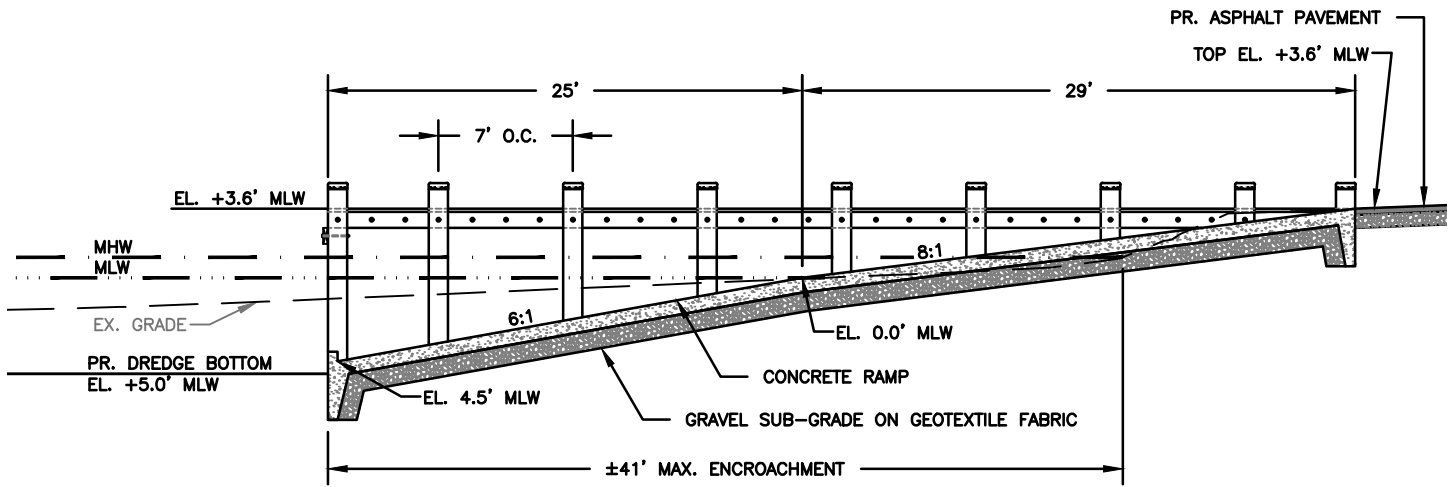
BREAKWATER SECTIONS

DATE: January 2019 SHEET 6 OF 10

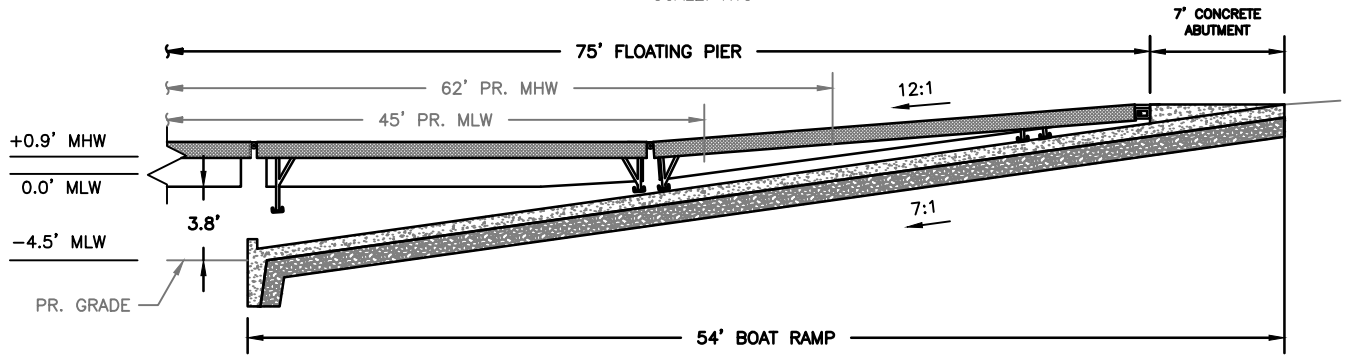
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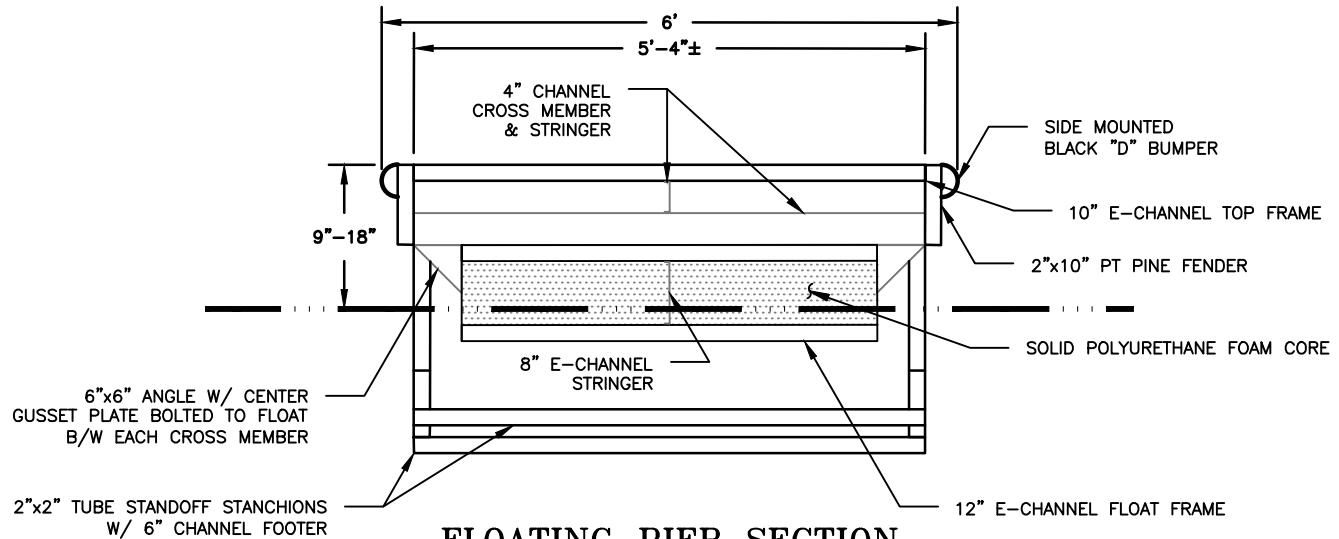
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BOAT RAMP SECTION B
SCALE: NTS



FLOATING PIER PROFILE DETAIL
SCALE: NTS



FLOATING PIER SECTION
SCALE: NTS

**BOAT LAUNCH FACILITY
AT
SOLLEY COVE PARK
ANNE ARUNDEL COUNTY, MD**

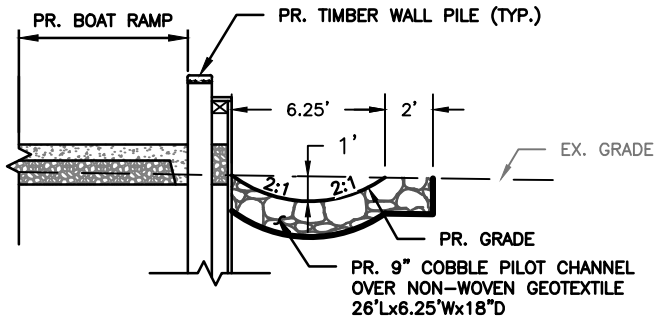
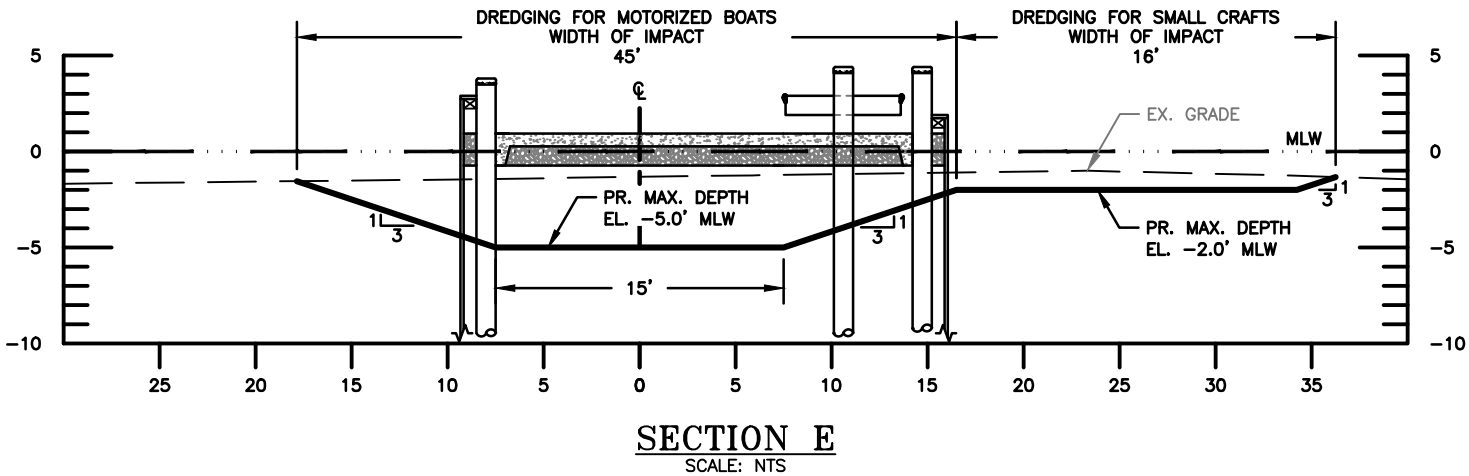
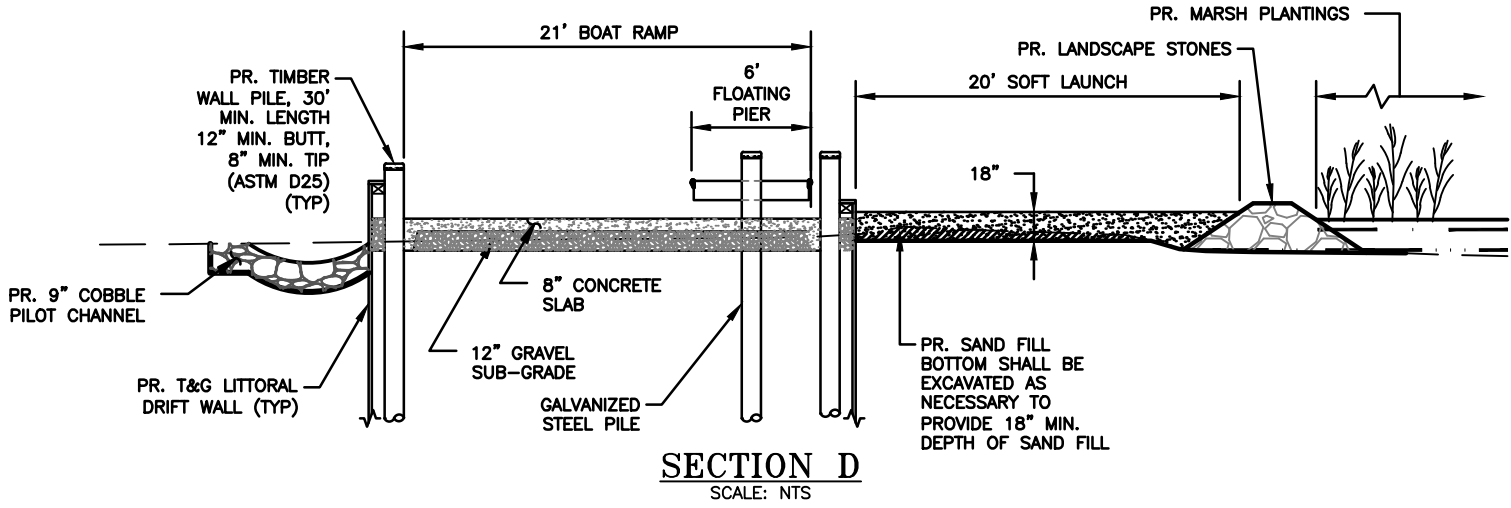
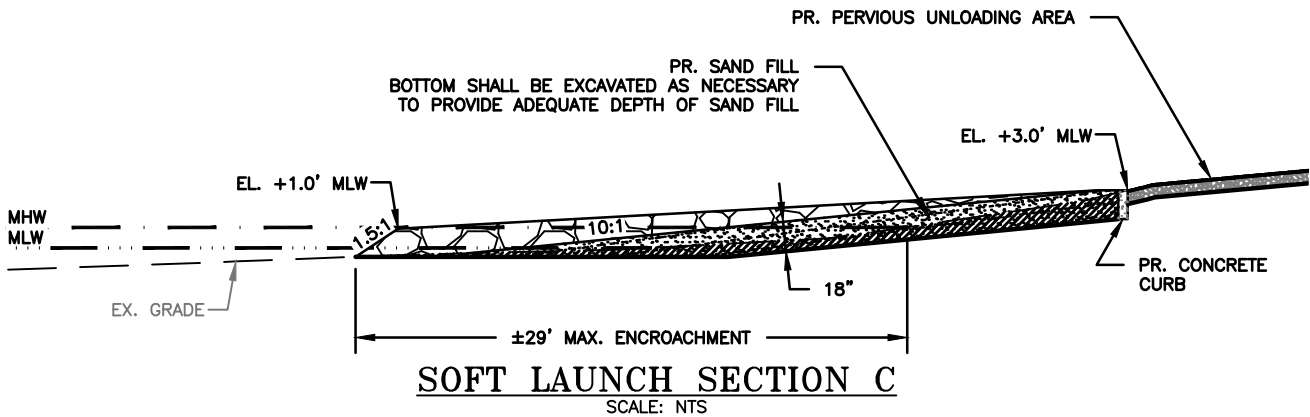
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BOAT RAMP & PIER SECTIONS

DATE: January 2019 SHEET 7 OF 10


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BOAT LAUNCH FACILITY
AT
SOLLEY COVE PARK
ANNE ARUNDEL COUNTY, MD

APPL. BY: ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

PILOT CHANNEL TYPICAL SECTION
SCALE: NTS

CROSS SECTIONS

DATE: January 2019 SHEET 8 OF 10

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EX. EMBANKMENT

EX. WEIR BOX & OUTFALL
STRUCTURE TO BE MAINTAINED

LIMIT OF
CONTAINMENT AREA

WATER OAK POINT RD

EX. ACCESS ROAD

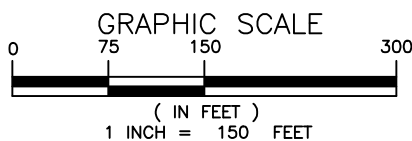
CURRENT AVAILABLE CAPACITY: 20,000 CY

**BOAT LAUNCH FACILITY
AT
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ANNE ARUNDEL COUNTY, MD**

APPL. BY: ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

DREDGE MATERIAL PLACEMENT SITE

DATE: January 2019 SHEET 9 OF 10



NOTE:
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2016 PLANIMETRICS AND 2017 IMAGERY.



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DREDGING

AVERAGE LENGTH:

BOAT RAMP = 77 FT
SAND SOFT LAUNCH = 53 FT

AVERAGE WIDTH:

BOAT RAMP = 15 FT
SAND SOFT LAUNCH = 20 FT

AREA OF CHANNEL:

BOAT RAMP = 1,155 SF
SAND SOFT LAUNCH = 641 SF

TOTAL AREA OF IMPACT (INCLUDING 3:1 SIDE SLOPES):

BOAT RAMP = 3,081 SF (0.07 AC)
SAND SOFT LAUNCH = 800 SF (0.02 AC)

DEPTH:

BOAT RAMP = -5.0 FT
SAND SOFT LAUNCH = -2.0 FT

TOTAL ESTIMATED VOLUME:

BOAT RAMP = 100 CY
SAND SOFT LAUNCH = 38 CY

TOTAL IMPACT TO SAV: 0 SF = 0 AC

AVAILABLE CAPACITY AT DMP SITE: 20,000 CY

DEMOLITION DETAILS OF EX. WATERWARD STRUCTURES

PIER: 416 SF

PILES: 31

BOAT LAUNCH: 706 SF

TOTAL AREA OVER THE WATER TO BE REMOVED: 1,122 SF

PR. STRUCTURES OVER THE WATER TO BE CONSTRUCTED

PIER (75'x6'): 450 SF

BOAT RAMP (54'x21'): 1,134 SF

SAND SOFT LAUNCH: 828 SF

LANDSCAPE STONES: 298 SF

STONE BREAKWATER: 6,285 SF (410 LF)

COBBLE PILOT CHANNEL: 224 SF

MARSH PLANTINGS: 12,041 SF

TOTAL SAND FILL: 490 CY

TOTAL IMPACTS TO TIDAL WATERS: 20,860 SF

STONE SCOUR PROTECTION (UNDER PIER): 24 CY

TOTAL EXCAVATION FOR CONSTRUCTION OF ACCESS STRUCTURES: 140 CY

NOTES:

1. BASEMAP COMPILED FROM ANNE ARUNDEL COUNTY 2016 PLANIMETRICS AND 2017 IMAGERY.
2. TIDAL RANGE IS 1.07 FOOT.
3. WATER DEPTHS ARE IN FEET AND REFER TO MLW.
4. SURVEY WAS CONDUCTED BY BAYLAND ON OCTOBER 30, 2017.
5. THESE ARE PERMIT DRAWINGS ONLY AND ARE NOT INTENDED TO BE USED FOR CONSTRUCTION PURPOSES. DESIGN DRAWINGS WILL BE PREPARED SEPARATELY.

BOAT LAUNCH FACILITY AT SOLLEY COVE PARK

ANNE ARUNDEL COUNTY, MD

APPL. BY: ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

PROJECT SUMMARY AND NOTES

DATE: January 2019 SHEET 10 OF 10



Consultants & Designers, Inc.

"Integrating Engineering and Environment"

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BUFFER MANAGEMENT PLAN CALCULATIONS

STEP 1: ESTABLISHMENT OR MITIGATION

DISTURBANCE TO THE 100-FOOT AND/OR EXPANDED BUFFER? IF YES, MITIGATION IS REQUIRED, PROCEED TO STEP 2. OTHERWISE, SKIP TO STEP 5. (YES / NO)

SELECT	ACTIVITY	ACTION
	PROJECT COMPLETELY OUTSIDE BUFFER, NO BUFFER IMPACTS	ESTABLISHMENT
	DISTURBANCE TO BUFFER OR VEGETATION REMOVAL IN BUFFER	MITIGATION
X (SEE STEP 5)	SOME DISTURBANCE IN BUFFER AND SOME OUTSIDE BUFFER	ESTABLISHMENT & MITIGATION

STEP 2, 3 & 4: DETERMINING MITIGATION FOR WORK IN THE BUFFER

SELECT	ACTIVITY	MITIGATION RATIO
X	SHORE EROSION CONTROL	1:1
X	RIPARIAN WATER ACCESS (PERMANENT)	2:1
X	RIPARIAN WATER ACCESS (TEMPORARY)	1:1
	WATER-DEPENDENT FACILITIES	2:1
	VARIANCE	3:1
	VIOLATION	4:1

MITIGATION CALCULATIONS

TEMPORARY DISTURBANCE AREA	MITIGATION REQUIREMENT	AREA, SF
WATER ACCESS (SAND FILL FOR SOFT LAUNCH)	1:1	286
SUBTOTAL		286
PERMANENT DISTURBANCE AREA		
WATER ACCESS (ASPHALT ROAD, BOAT RAMP, & PIER)	2:1	3,845
SHORE EROSION CONTROL (LOW PROFILE STONE GROUT)	1:1	59
SUBTOTAL (WITH MULTIPLIERS)		7,749
TREE REMOVAL MITIGATION (DBH X 100 SF)		
TR 117 - 24"		2,400
TR 118 - 22.5"		2,250
SUBTOTAL		4,650
TOTAL MITIGATION REQUIRED FOR BUFFER DISTURBANCE		12,885
IMPERVIOUS AREA REMOVAL DEDUCTION		13,414
NET MITIGATION REQUIRED FOR BUFFER DISTURBANCE		0

STEP 5: ESTABLISHMENT FOR DEVELOPMENT

ESTABLISHMENT REQUIRED? (YES / NO)

BUFFER WILL BE FULLY ESTABLISHED AFTER IMPLEMENTATION OF THIS PROJECT.

YEAR LOT CREATED: PRIOR TO 1988 (ANNE ARUNDEL COUNTY PROGRAM ADOPTION)

SELECT	DEVELOPMENT CATEGORY	BEFORE PROGRAM DATE	AFTER PROGRAM DATE
	NEW DEVELOPMENT ON VACANT LOT	TOTAL LOT COVERAGE	FULL ESTABLISHMENT
	NEW SUBDIVISION OR NEW LOT	FULL ESTABLISHMENT	
	NEW LOT WITH EXISTING DWELLING UNIT	ESTABLISHMENT = TOTAL LOT COVERAGE	
	CONVERSION OF LAND USE TO ANOTHER LAND USE	FULL ESTABLISHMENT	
	ADDITION OR ACCESSORY STRUCTURE	ESTABLISHMENT = INCREASE IN LOT COVERAGE	
YES	SUBSTANTIAL ALTERATION	ESTABLISHMENT = TOTAL LOT COVERAGE	

STEP 6: ADJUST FOR EXISTING FOREST COVER

FULL ESTABLISHMENT OF BUFFER REQUIRED? (YES/NO)

BUFFER ESTABLISHMENT CALCULATIONS

DISTURBANCE OUTSIDE 100' CRITICAL AREA BUFFER	MITIGATION RATIO	AREA, SF
NET INCREASE IN LOT COVER OUTSIDE BUFFER	1:1	26,638
TOTAL MITIGATION REQUIRED FOR NON-BUFFER DISTURBANCE		26,638
IMPERVIOUS AREA REMOVAL DEDUCTION		9,728
NET MITIGATION REQUIRED FOR NON-BUFFER DISTURBANCE		20,910
TOTAL PLANTING TO FULLY ESTABLISH BUFFER		20,910

STEP 7: ELIGIBILITY FOR NATURAL REGENERATION

IF THE PROJECT REQUIRES BUFFER ESTABLISHMENT GREATER THAN ONE ACRE, THEN 50% OF THE AREA REQUIRED CAN BE ESTABLISHED THROUGH NATURAL REGENERATION, AS LONG AS IT IS WITHIN 50 FEET OF MATURE FOREST, AND A SUPPLEMENTAL PLANTING PLAN & FINANCIAL ASSURANCE ARE PROVIDED. IF ELIGIBLE, IDENTIFY THE NATURAL REGENERATION AREA ON THE PLAN AND REDUCE THE PLANTING REQUIREMENT BY THE NATURAL REGENERATION SQUARE FOOTAGE.

TOTAL AREA OF BUFFER REQUIRED TO BE ESTABLISHED (STEP 5 OR STEP 6): 20,910 SF

TOTAL ESTABLISHMENT > 1 ACRE? (YES / NO)

NATURAL REGENERATION PERMITTED? (IF ESTABLISHMENT > 1 ACRE, YES; OTHERWISE, NO)

STEP 8: DETERMINE STOCKING

- IDENTIFY AREAS OF NATURAL REGENERATION
- USE TABLE BELOW TO EVALUATE THE AREA THAT MUST BE PLANTED USING LANDSCAPING STOCK AND AREA THAT MAY BE PLANTED USING FLEXIBLE STOCKING

SELECT	AMOUNT	OPTIONS
MITIGATION		
X	LESS THAN 1 ACRE	LANDSCAPING STOCK
	1 ACRE OR MORE	MIN. 50% LANDSCAPING STOCK, REMAINDER FLEXIBLE

MITIGATION REQUIREMENT:

STOCKING REQUIREMENT: LANDSCAPE STOCK: 100% x 0.48 (ACRES) = 0.48 (ACRES)
FLEXIBLE STOCK: 0% x X (ACRES) = 0 (ACRES)

STEP 9: CLUSTER PLANTING EVALUATION (N/A)

STEP 10: PLANTING SCHEDULES & AREAS SEE THIS SHEET

FOREST PLANTING AREA SCHEDULE

SCIENTIFIC NAME	COMMON NAME	IND STATUS	SIZE	QUANTITY	TOTAL CREDIT (SF)	
CANOPY TREES - 3/4" CALIPER						
100 SF CREDIT PER UNIT						
DIOSPYROS VIRGINIANA	COMMON PERSIMMON	FAC	3/4" CAL	17	1,700	
JUNIFERIS VIRGINIANA	EASTERN RED CEDAR	FACU	3/4" CAL	15	1,500	
NYSSA SYLVATICA	BLACK OAK	FAC	3/4" CAL	17	1,700	
QUERCUS FALCATA	SOUTHERN RED OAK	FACU	3/4" CAL	15	1,500	
QUERCUS PHELLOS	WILLOW OAK	FACW	3/4" CAL	17	1,700	
QUERCUS RUBRA	NORTHERN RED OAK	FACU	3/4" CAL	15	1,500	
3/4" CALIPER CREDIT % 33.86%						
UNDERSTORY TREES						
75 SF CREDIT PER UNIT						
AMELANCHIER CANADENSIS	SERVOEBERRY	FAC	3/4" CAL	26	1,875	
CERIS CANADENSIS	EASTERN REDBUD	UPL	3/4" CAL	20	1,500	
CHIONANTHUS VIRGINICUS	WHITE FRINGETREE	FACU	3/4" CAL	26	1,875	
CORNUS FLORIDA	FLOWERING DOGWOOD	FACU	3/4" CAL	20	1,500	
ILEX OPACA	AMERICAN HOLLY	FAC	3/4" CAL	20	1,500	
UNDERSTORY CREDIT % 29.10%						
LARGE SHRUBS						
50 SF CREDIT PER UNIT						
CLETHRA ALNIFOLIA	COASTAL SWEETPEPPERBUSH	FACW	36" CONT.	35	1,750	
PHOTONIA MELANOCARPA	BLACK CHOKECHERRY	FAC	36" CONT.	35	1,750	
VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	FACW	36" CONT.	35	1,750	
VIBURNUM PRUNIFOLIUM	BLACK HAW	FACU	36" CONT.	35	1,750	
LARGE SHRUB CREDIT % 24.69%						
SMALL SHRUBS						
25 SF CREDIT PER UNIT						
CLETHRA ALNIFOLIA	COASTAL SWEETPEPPERBUSH	FACW	18" CONT.	35	875	
PHOTONIA MELANOCARPA	BLACK CHOKECHERRY	FAC	18" CONT.	35	875	
VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	FACW	18" CONT.	35	875	
VIBURNUM PRUNIFOLIUM	BLACK HAW	FACU	18" CONT.	35	875	
SMALL SHRUB CREDIT % 12.35%						
TOTAL					486	26,350

MITIGATION & ESTABLISHMENT SUMMARY

IMPACT OR MITIGATION TYPE	AREA
REQUIREMENTS	
NET MITIGATION REQUIRED FOR BUFFER DISTURBANCE	0 SF
BUFFER ESTABLISHMENT REQUIREMENT	20,910 SF
TOTAL MITIGATION & ESTABLISHMENT REQUIRED	20,910 SF
MITIGATION/ESTABLISHMENT PROVIDED	
FOREST PLANTING	26,350 SF
TOTAL PLANTING PROVIDED	26,350 SF
BUFFER REQUIREMENTS SATISFIED	YES

SEQUENCE OF IMPLEMENTATION

- CONTRACTOR SHALL ARRANGE PRE-PLANTING MEETINGS WITH COUNTY PLANNING & ZONING DEPARTMENT STAFF AT LEAST 5 DAYS IN ADVANCE OF DISTURBANCES OF ANY LAND ON SITE.
- REMOVE/ELIMINATE TURF GRASS AND TILL AREAS UNFORESTED AREAS TO BE PLANTED TO A DEPTH OF 12 INCHES.
- USE TREE SHELTER TUBES WITH MESH TOPS FOR SEEDLINGS PLANTING TO REDUCE ANIMAL DAMAGE.
- MULCH AROUND LANDSCAPING STOCK TO REDUCE COMPETITION FROM INVASIVE SPECIES.
- MONITOR THE PLANTINGS OFTEN TO REDUCE PLANT STRESS SUCH AS WATER DEFICIENCY, NUTRIENT DEFICIENCY, INVASIVE SPECIES COMPETITION, PEST DAMAGE, AND DISEASE.
- THE CONTRACTOR SHALL OBSERVE MINIMAL SITE PREPARATION/DISTURBANCE, PROTECTION OF PLANTS AFTER DELIVERY UNTIL THEY ARE PLANTED, PROPER DIGGING AND HANDLING OF PLANT MATERIALS, PROPER EXCAVATION OF PLANTING AREAS, PLANTING OPERATIONS, STABILIZATION OF THE PLANTING AREAS WITH MULCH AFTER PLANTING, STAKING AND PRUNING, AND INSTALLATION OF BUFFER PROTECTION SIGNAGE.

BUFFER MANAGEMENT & PROTECTION STANDARDS

- REMOVAL OF VEGETATION WITHIN THE 100-FOOT BUFFER AND EXPANDED BUFFER IS PROHIBITED, CUTTING AND CLEARING OF NATURAL VEGETATION WITHIN THE BUFFER AND EXPANDED BUFFER SHALL BE AS SHOWN ON THIS BUFFER MANAGEMENT PLAN AS SUBMITTED AND OR AS SUBSEQUENTLY AMENDED, SUBJECT TO APPROVAL BY THE COUNTY PLANNING AND ZONING OFFICE. ADDITIONAL INFORMATION CAN BE OBTAINED BY CONTACTING THE PLANNING AND ZONING OFFICE AT 2884 RVA ROAD, ANNAPOLIS MARYLAND 21401.
- THE BUFFER ON THIS PARCEL SHALL BE PLANTED IN ACCORDANCE WITH THIS PLAN. ALL EXISTING AND PLANTED VEGETATION WITHIN THE BUFFER SHALL BE MAINTAINED AND SURVIVAL OF PLANTED AND NATURALLY OCCURRING REGENERATED AREAS OF THE BUFFER SHALL BE AS DESCRIBED IN THIS PLAN.
- NEW LAWN AREAS SHALL NOT BE CREATED WITHIN THE BUFFER OR EXPANDED BUFFER UNLESS SPECIFICALLY ADDRESSED IN THIS BUFFER MANAGEMENT PLAN.
- THE CONTRACTOR SHALL OBSERVE MINIMAL SITE PREPARATION/DISTURBANCE, PROTECTION OF PLANTS AFTER DELIVERY UNTIL THEY ARE PLANTED, PROPER DIGGING AND HANDLING OF PLANT MATERIALS, PROPER EXCAVATION OF PLANTING AREAS, PLANTING OPERATIONS, STABILIZATION OF THE PLANTING AREAS WITH MULCH AFTER PLANTING, STAKING, PRUNING, AND INSTALLATION OF BUFFER PROTECTION SIGNAGE.

LANDSCAPE NOTES

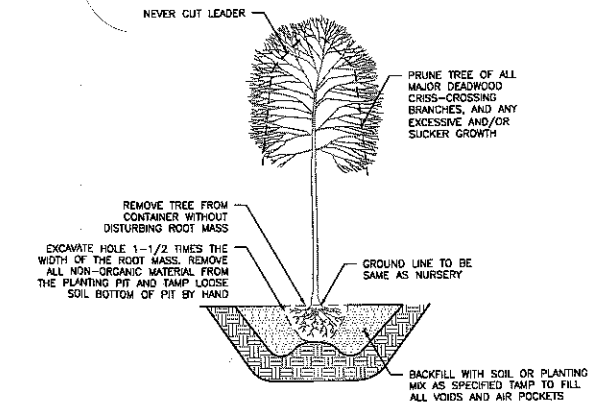
- ALL PLANT SPECIES SHALL BE NATIVE TO THE CHESAPEAKE AND ATLANTIC COASTAL BAYS REGION BASED ON THE U.S. FISH AND WILDLIFE SERVICE PUBLICATION, NATIVE PLANTS FOR WILDLIFE HABITAT AND CONSERVATION LANDSCAPING.
- SPECIES CLASSIFICATION (CANOPY TREE, UNDERSTORY TREE, ETC.) IS IN ACCORDANCE WITH MATURE HEIGHTS AS SET FORTH IN THE U.S. FISH AND WILDLIFE SERVICE PUBLICATION, NATIVE PLANTS FOR WILDLIFE HABITAT AND CONSERVATION LANDSCAPING.
- SPECIES HAVE BEEN SELECTED BASED ON AN ANALYSIS OF SURROUNDING NATIVE FOREST AND DEVELOPED WOODLAND COVER.
- SHRUB SPECIES PROPOSED WITHIN THE FOREST PLANTING AREAS COMPRISE 18 PERCENT OF THE PROPOSED PLANTING, WHICH DOES NOT EXCEED 50 PERCENT OF THE OVERALL PLANTING.
- THE QUANTITY OF ANY SINGLE SPECIES DOES NOT EXCEED 20 PERCENT OF THE OVERALL PLANTING.

MONITORING & SURVIVAL REQUIREMENTS

- PLANTINGS SHALL BE MONITORED TWICE A YEAR FOR A PERIOD OF TWO YEARS AFTER PLANT INSTALLATION.
- MONITORING SHALL BE PERFORMED ONCE DURING APRIL/MAY AND ONCE AUGUST/SEPTEMBER DURING EACH MONITORING YEAR.
- MONITORING SHALL INCLUDE AN ASSESSMENT OF PLANT SURVIVAL, GENERAL CONDITION OF PLANTED VEGETATION, INVASIVE SPECIES PRESENCE, EVIDENCE OF PESTS OR PREDATION, AND RECOMMENDATIONS TO IMPROVE PLANT CONDITION.
- AT THE END OF THE 2-YEAR MONITORING PERIOD, PLANT SURVIVAL SHALL BE 100% IN ACCORDANCE WITH ANNE ARUNDEL COUNTY CODE AND COMAR 27.01.09.01-20. ANY SURVIVAL DEFICIENCY SHALL BE REQUIRED TO BE REPLACED TO MEET THE MINIMUM REQUIREMENT.
- THE REQUIREMENT FOR REPLACEMENT PLANTINGS MAY EXTEND THE MONITORING PERIOD BEYOND 2-YEARS.

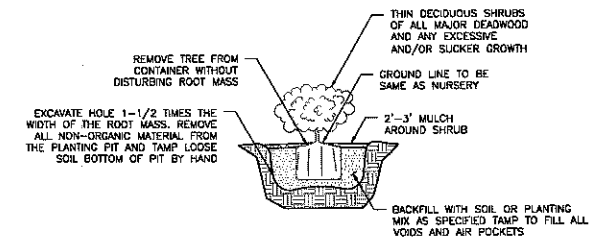
MAINTENANCE REQUIREMENTS

- CONTRACTOR SHALL MONITOR PLANTINGS OFTEN TO REDUCE STRESS SUCH AS WATER AND/OR NUTRIENT DEFICIENCY, INVASIVE SPECIES, PEST DAMAGE, AND DISEASE.
- WATER ONLY AS NECESSARY BUT AT LEAST ONCE EVERY 10 DAYS WITHOUT RAINFALL FROM MAY THROUGH SEPTEMBER FOR THE FIRST GROWING SEASON AFTER PLANTING.
- USE OF LOW NITROGEN AND SLOW RELEASE FERTILIZER MAY BE UTILIZED. APPLICATION SHALL BE COMPLETED IN EARLY SPRING OR LATE FALL.
- INSPECTIONS FOR SURVIVAL SHALL BE PERFORMED IN ACCORDANCE WITH MONITORING AND SURVIVAL REQUIREMENTS.
- DEER PROTECTION SHALL BE REMOVED AT THE CLOSE OF THE REQUIRED MONITORING PERIOD.



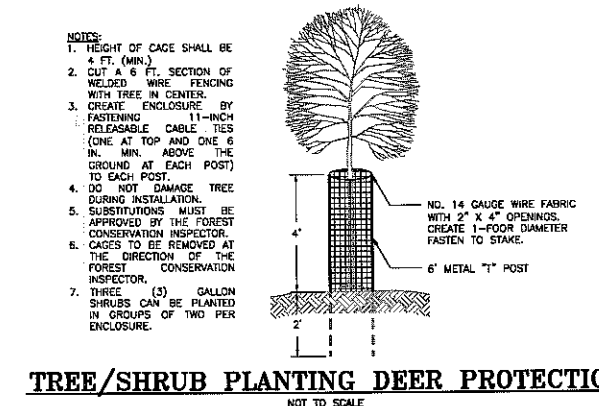
TREE PLANTING - CONTAINER GROWN

NOT TO SCALE



SHRUB PLANTING - CONTAINER GROWN

NOT TO SCALE



TREE/SHRUB PLANTING DEER PROTECTION

NOT TO SCALE

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BAYLAND JOB NO. 5-15401

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY	APPROVED DATE	APPROVED DATE
		CHIEF ENGINEER	PROJECT MANAGER
		APPROVED	APPROVED
		ASSISTANT CHIEF ENGINEER	CHIEF, RIGHT OF WAY SERVICES

SCALE: AS SHOWN
DESIGNED BY: KRN 8/20/18
DRAWN BY: KRN 8/20/18
CHECKED BY: 8/20/18
SHEET NO. 2 OF 2
PROJECT NO. 9_99999
PROPOSAL NO. 9_99999

SOLLEY COVE PARK
BOAT LAUNCH
DRAFT BUFFER
MANAGEMENT PLAN