

U.S. Army Corps  
of Engineers  
Baltimore District

# Joint Public Notice



**In Reply to Application Number  
CENAB-OP-RMN (MD DNR Fisheries - Harris Creek Oyster  
Restoration) 2007-03659  
Maryland Tidal Wetlands License # 12-WL-1231**

**PN 13-03**

**Comment Period: January 15, 2013 to March 21, 2013**

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THE PURPOSE OF THIS PUBLIC NOTICE IS TO SOLICIT COMMENTS FROM THE PUBLIC ABOUT THE WORK DESCRIBED BELOW AND TO ANNOUNCE THE DATE OF A CORPS PUBLIC INFORMATION MEETING/MARYLAND DEPARTMENT OF THE ENVIRONMENT PUBLIC INFORMATION HEARING ON THE SUBJECT APPLICATION. AT THIS TIME, NO DECISION HAS BEEN MADE AS TO WHETHER OR NOT AUTHORIZATIONS WILL BE ISSUED. THE CORPS PUBLIC INFORMATION MEETING/MDE PUBLIC INFORMATION HEARING WILL BE HELD:

**Tuesday, February 12, 2013  
Inclement Weather Date: Tuesday, February 19, 2013  
6:00 pm to 9:00 pm  
Easton High School  
723 Mecklenburg Avenue  
Easton, Maryland 21601**

The Corps public information meeting/MDE public information hearing provides members of the public the opportunity to present views, opinions, and information which will be considered by the U.S. Army Corps of Engineers, Baltimore District (Corps) and the Maryland Department of the Environment (MDE) in evaluating the permit application. A poster session/display will be available from 6:00 PM to 7:00 PM where project drawings can be reviewed. Agency representatives will also be available to answer questions. From 7:00 PM to 9:00 PM, a project presentation will be given followed by public testimony. A time limit of three minutes per speaker may be set, depending on the number of speakers, to ensure that all interested parties have an opportunity to voice their views.

Anyone who is hearing impaired and/or is non-English speaking; who wishes to attend this public meeting/hearing should notify Mrs. Mary Frazier at the address/telephone number listed near the end of this public notice. All requests for an oral, sign language, or non-English language interpreter must be received by February 1, 2013. To the extent possible and feasible, an interpreter will be provided.

The Corps 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), to restore natural, self-sustaining, oyster populations and oyster bottom habitat in Harris Creek, Talbot County, Maryland. MDE has also received an application for a Tidal Wetlands License from the Maryland Board of Public Works pursuant to Title 16 of the Environment Article, Annotated Code of Maryland.

**APPLICANT:** Mr. Michael D. Naylor  
Maryland Department of Natural Resources  
Fisheries Service  
580 Taylor Avenue, B-2  
Annapolis, Maryland 21409

**LOCATION AND WATERWAY:** In Harris Creek, a tributary of the Choptank River, Talbot County, Maryland.

**BACKGROUND:**

On September 19, 2008, the Baltimore District approved a Department of the Army (DA) authorization, CENAB-OP-RMN (MD DNR/Alternate Materials) 2007-03659, to place alternate materials (non-oyster shell), within Maryland chartered oyster bars for the purpose of rehabilitating oyster bar habitats and re-establishing self-sustaining oyster populations. This authorization restricted work to within areas of natural, historic oyster bars and required that the project provide for an 8 foot minimum vertical clearance at mean low water (MLW). This permit stipulation, to provide for an 8 ft. vertical clearance at MLW requires that the approved work be located within waters at least 9 feet deep. The areas currently authorized in Harris Creek (90 acres) by the Department of the Army authorization, are shown on the enclosed drawings. Please be aware that some work has already occurred in this 90 acre area, with additional work planned in the near future.

According to MD DNR, a large portion of the restorable bottom in Harris Creek is located within areas that are shallower than 9 feet MLW. However, these areas are not currently authorized by the Department of the Army under the existing Corps permit. Therefore, MD DNR has requested a permit modification, as described below under Proposed Work, to add 184 acres of shallower water in Harris Creek for the placement of alternate materials for oyster restoration. The proposed 184 acres of oyster restoration work, when combined with the previously permitted oyster restoration work, results in a total of 274 acres of chartered oyster bars in Harris Creek that are proposed to be restored (90 acres under the existing Corps permit; 184 acres proposed by this permit modification). The major goal of this effort is to restore oyster bars to their historic extent where possible.

**PROPOSED WORK:**

The applicant proposes, in accordance with the attached plans, to deposit, in various locations within Harris Creek, totaling approximately 184 acres within areas comprised wholly of existing Maryland State designated Natural Oyster Bars (NOBs), and within water depths of approximately -6 to -9 feet at mean lower low water (MLLW), approximately 307,798 cubic yards of various materials/alternative substrates, including oyster shell, clam shell, concrete rubble, stone, marl, brick, crushed cinderblock, and/or slag, to an approximate depth of 12 inches, as well as planting on this restored bottom, oyster spat on shell (seeded with eastern oyster, *Crassostrea virginica*, obtained from University of Maryland Horn Point hatchery and/or from MD DNR Piney Point hatchery, at a density of 5 million spat per acre) to a thickness of

approximately 1 inch. Therefore, in total, 13 inches is proposed as the overall depth of deposited materials, including the oyster spat on shell. Post construction, final vertical clearances of approximately 5 - 8 feet MLLW will exist, above the elevation of restored bottom habitat.

The basic project purpose is oyster restoration. The overall project purpose is to restore, natural, self-sustaining, oyster populations and oyster bottom habitats in Harris Creek as part of federal and state coordinated strategy for oyster restoration. The application is supported by (1) President Obama's May 2009, Chesapeake Bay Protection and Restoration Executive Order 13508, which identified that historical efforts were not showing sufficient progress in restoring the health of the Chesapeake Bay and its watershed and focused on oyster restoration, specifically called for restoring native oyster populations in 20 Chesapeake Bay tributaries by 2025; (2) Maryland's Oyster Restoration and Aquaculture Development Plan, announced by Governor O'Malley in December of 2009, which called for the restoration of oyster bars in Maryland's portion of Chesapeake Bay; and (3) the May 2010 Strategy for Protecting and Restoring the Chesapeake Bay Watershed.

A multi-agency workgroup continues to work on actions to meet the goals of restoring 20 Chesapeake Bay tributaries. In Maryland, the lead participating agencies are MD DNR, the National Oceanic and Atmospheric Administration, and the Corps. A number of other Federal, state, and non-profit groups have devoted considerable time and resources to improve oyster habitat in Maryland. Previous efforts to restore oyster bars have been conducted in Maryland's waters at a small scale, but have not resulted in the large ecological benefits intended given the scale of the Bay. This project represents the first attempt at oyster restoration on a tributary-scale.

Growth and survivorship of oysters will be monitored by MD DNR a few months after planting, and at one year, three years and six years post-planting. Monitoring will allow for adaptive management, adding more oysters in case of mortality, and suspending plantings where natural spat set has occurred.

The proposed restoration sites within Harris Creek as shown on the plans were based on the availability of restorable bottom (bottom that can support substrate --substrate in the proposed construction areas consists of hard sand, shell, and sand or mud mixed with shell), adequate dissolved oxygen, historic spat set, hydrodynamics favoring larval retention, and an intermediate salinity that balances the reproduction of high salinity waters with the disease refuge of low salinity waters. All work would occur on natural oyster bars as defined by statute in the Annotated Code of Maryland.

Areas of Harris Creek were excluded from project consideration if they were (1) located outside of areas where NOBs previously existed; (2) composed of mud bottoms or shell bottom with live oysters; (3) located in areas that had a density of live oysters greater than 51 square meters in size; (4) located within areas designated as Active Oyster Leases; or (5) located within 250 ft of any marinas, within 250 ft. of any aids to navigation, or within 150 ft. of the edge of a navigation channel.

Oysters generally improve water quality by filtering, and provide habitat for both resident and transient estuarine species. However, it is likely, based upon analysis of larval transport models that some oyster larvae originating from Harris Creek may settle in the adjacent waterways, Broad Creek and the Choptank River.

Tables 1 and 2 describe the permitted and proposed alternate substrate sites in Harris Creek:

**Table 1. Corps Previously Authorized MD DNR Alternative Substrate Sites [90 acres]**

Site	Centroid Latitude	Centroid Longitude	Area (acres)	Clearance with substrate (ft.)	Distance to Shore (ft.)	Substrate Volume (cu. yds.)
31c	38.7742	-76.278099	0.73	8.9	591	1,174
30b	38.7738	-76.280296	1.12	9.7	329	1,814
29b	38.773102	-76.282204	2.16	10.4	404	3,490
28b	38.772598	-76.284698	1.93	9.6	406	3,119
27g	38.771801	-76.288399	3.66	10.1	588	5,899
64e	38.769798	-76.295998	1.93	10.1	294	3,120
25	38.766701	-76.297997	2.46	13.7	580	3,969
36c	38.765099	-76.3013	0.36	9.4	1,336	579
22b	38.762299	-76.301498	1.47	8.8	1,021	2,369
67c	38.760502	-76.313301	0.27	8.4	653	434
20c	38.7575	-76.310204	4.66	9.3	948	7,524
83	38.754501	-76.306999	0.36	9.1	1,048	581
19c	38.7542	-76.310699	4.72	10.7	575	7,614
18	38.751099	-76.3097	1.62	13.4	773	2,614
69c	38.750599	-76.310997	0.41	9.7	553	668
82g	38.7505	-76.3069	0.32	7.6	831	522
45c	38.7463	-76.307701	0.99	9.8	1,140	1,602
16d	38.7458	-76.310204	1.45	11.3	614	2,336
43c	38.7439	-76.301399	2.62	8.5	1,051	4,232
81c	38.7411	-76.299698	1.20	8.5	1,002	1,930
58b	38.7397	-76.305099	2.09	10.9	2,264	3,376
57b	38.738098	-76.303596	2.45	10.1	1,855	3,945
53b	38.738098	-76.302803	1.18	9.3	1,684	1,909
41c	38.7356	-76.302597	6.66	11.0	1,498	10,750
42c	38.735199	-76.307899	1.00	8.4	1,334	1,609
75e	38.729801	-76.305397	1.44	13.1	1,875	2,324
55c	38.726898	-76.306801	2.13	12.9	1,940	3,433
40c	38.7258	-76.307999	1.83	9.5	1,935	2,952
9b	38.723999	-76.303299	3.88	8.8	1,214	6,263
76c	38.721401	-76.315102	0.66	8.7	1,927	1,057

71b	38.721199	-76.305801	7.99	9.2	1,610	12,882
34e	38.720901	-76.304001	3.59	8.4	1,210	5,788
54a	38.7187	-76.307404	5.39	10.7	2,161	8,701
77c	38.717098	-76.316704	0.42	9.0	2,013	671
3	38.716599	-76.314796	5.28	10.8	2,308	8,517
78c	38.715599	-76.318199	0.36	8.2	1,796	584
62	38.715401	-76.316902	1.59	9.8	2,269	2,560
1b	38.712399	-76.318802	0.96	8.7	2,476	1,544
79	38.712299	-76.3162	0.81	11.1	3,179	1,299
49b	38.710499	-76.318199	2.97	9.2	2,789	4,784

**Table 2.MD DNR Proposed Alternative Substrate Sites [184 acres]**

Site	Centroid Latitude	Centroid Longitude	Area (acres)	Clearance with substrate (ft.)	Distance to Shore (ft.)	Substrate Volume (cu. Yds.)
85b	38.787998	-76.270599	6.85	6.1	421	11,048
86	38.786598	-76.271202	1.28	6.4	205	2,063
35b	38.781898	-76.272903	0.97	5.6	754	1,561
38b	38.777699	-76.2743	1.67	5.9	506	2,700
63b	38.7742	-76.280296	1.19	6.2	195	1,921
31b	38.7738	-76.277901	0.63	6.5	732	1,021
29a	38.772999	-76.281898	0.44	8.1	387	714
37b	38.7728	-76.284897	1.63	6.6	374	2,636
27e	38.771702	-76.289703	1.07	6.6	581	1,732
27f	38.771702	-76.287697	0.93	7.4	550	1,503
64d	38.77	-76.295998	2.35	6.5	240	3,797
84d	38.766701	-76.299797	1.01	6.1	650	1,632
36b	38.765099	-76.301804	1.44	6.6	1,246	2,320
48b	38.764801	-76.305	5.44	6.3	736	8,780
66a	38.761398	-76.309998	3.99	6.1	929	6,431
22a	38.7612	-76.301697	3.04	6.6	887	4,905
67b	38.7598	-76.313499	1.35	6.7	480	2,178
47a	38.758099	-76.3032	6.09	5.9	925	9,822
20b	38.757198	-76.310699	0.68	8.0	927	1,102
32b	38.756802	-76.311501	3.76	6.5	691	6,057
19b	38.7547	-76.311302	3.36	6.9	513	5,415
82h	38.754501	-76.306602	1.35	6.3	903	2,173
69a	38.750702	-76.311203	0.33	6.8	493	531

82c	38.750702	-76.306801	0.91	5.9	802	1,468
45a	38.747002	-76.306999	2.62	6.5	879	4,224
16c	38.745701	-76.310699	0.89	7.5	493	1,431
44a	38.744999	-76.307198	0.96	5.8	1,432	1,543
43a	38.7449	-76.301697	11.26	6.5	810	18,158
73b	38.743599	-76.312401	0.96	5.5	478	1,556
81a	38.740501	-76.2994	3.40	6.3	866	5,479
58a	38.739201	-76.305298	1.30	6.9	2,352	2,101
53a	38.737801	-76.302902	1.93	7.1	1,699	3,112
41a	38.736301	-76.301498	1.32	6.3	1,276	2,132
42a	38.734699	-76.309196	9.75	7.0	777	15,722
80a	38.7323	-76.300102	10.39	5.9	1,028	16,754
55b	38.727699	-76.307602	1.70	6.6	1,704	2,738
40b	38.726501	-76.309402	5.58	6.2	1,476	9,005
39b	38.7257	-76.313904	12.92	6.3	1,221	20,833
9a	38.723999	-76.302902	0.90	7.7	1,192	1,447
76b	38.721699	-76.315598	4.43	6.3	1,737	7,144
71a	38.720699	-76.306602	2.76	7.8	1,915	4,453
34d	38.719299	-76.304001	45.58	6.5	977	73,522
77b	38.7178	-76.318298	5.36	6.4	1,259	8,641
78b	38.715698	-76.319504	7.71	6.4	1,493	12,434
33b	38.711102	-76.319397	5.14	6.3	2,550	8,293
49a	38.710499	-76.318497	0.78	8.0	2,779	1,252
68b	38.7094	-76.318802	1.44	6.2	2,928	2,317

**ADDITIONAL INFORMATION:**

**Past and Future Oyster Restoration Work in Harris Creek**

Since 1997, the USACE, Baltimore District and MD DNR have been partnering for oyster restoration in the Chesapeake Bay. This Corps work is being conducted as part of the Corps Civil Works Program, under the authority of Section 704(b) of the Water Resources Development Act of 1986. To date, substrate placement locations have included a number of the Maryland tributaries on both the Western and Eastern Shores. Most recently, in May –July 2012 the Corps placed substrate on eight sites in Harris Creek, totaling approximately 22 acres. Quahog shell, mixed shell and granite were used in this oyster restoration work; a description of this work can be found at:

[http://www.nab.usace.army.mil/Wetlands%20Permits/PublicNotice/ChesBay/OysterRecovery/C\\_B\\_OysterConstructionSummary1012.docx](http://www.nab.usace.army.mil/Wetlands%20Permits/PublicNotice/ChesBay/OysterRecovery/C_B_OysterConstructionSummary1012.docx)

For 2013, the USACE, Baltimore District has a contract to place granite/mixed shell substrate on an additional 30 acres in Harris Creek. This work is scheduled to begin in early February 2013

and continue through mid-spring. The substrate sites under construction are noted on the attached plans.

For more information on the USACE oyster restoration program, please go to this link:  
<http://www.nab.usace.army.mil/Factsheets/PDFs/Civil/MD-VA-ChesapeakeBayOysters-CG.pdf>

In addition to the USACE construction efforts, for the past several years, USACE, with the assistance of the non-Federal sponsors (MD DNR and Virginia Marine Resource Commission) and the Federal cooperating agencies, have been working on a long-term master plan for native oyster restoration for the entire Chesapeake Bay. This master plan was completed in September 2012. You can find the master plan report at:

[http://www.nab.usace.army.mil/Wetlands%20Permits/PublicNotice/ChesBay/OysterRecovery/CB\\_OysterMasterPlan\\_Oct2012\\_FINAL.pdf](http://www.nab.usace.army.mil/Wetlands%20Permits/PublicNotice/ChesBay/OysterRecovery/CB_OysterMasterPlan_Oct2012_FINAL.pdf)

[http://www.nab.usace.army.mil/Wetlands%20Permits/PublicNotice/ChesBay/OysterRecovery/CB\\_OysterMasterPlan\\_Appendix\\_Oct2012\\_FINAL.pdf](http://www.nab.usace.army.mil/Wetlands%20Permits/PublicNotice/ChesBay/OysterRecovery/CB_OysterMasterPlan_Appendix_Oct2012_FINAL.pdf)

Listed below are other helpful links regarding oyster restoration:

<http://www.usace.army.mil/Media/FactSheets/FactSheetArticleView/tabid/219/Article/92/environmental-programs.aspx>

<http://www.dnr.state.md.us/fisheries/recreational/articles/oysterrestoration.html>

<http://chesapeakebay.noaa.gov/oysters/oyster-restoration-in-harris-creek>

MDNR has reconstructed two oyster reefs totaling approximately 1.5 acres under DA shell reclamation permit, CENAB-OP-RMN (MD DNR/Fisheries Service/Shell Recovery Program) 2007-03638. See link for additional information about the Harris Creek Oyster Sanctuary.  
[http://www.dnr.state.md.us/fisheries/oysters/eco\\_resto/harris\\_creek/index.asp](http://www.dnr.state.md.us/fisheries/oysters/eco_resto/harris_creek/index.asp)

### **REQUEST FOR COMMENTS:**

By this public notice, the Corps and MDE are soliciting comments regarding the applicant's proposed work, as described above, to place alternate substrate materials into waters of the U.S., to restore, within approximately 184 acres of Harris Creek and within water depths of approximately – 6 to –9 feet at MLLW, a natural, self-sustaining, oyster population and oyster bottom habitats to their former historic conditions.

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

The Corps and MDE are 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 Corps and MDE to determine whether to issue, modify, condition or deny a permit or license for this proposal. To make these decisions, comments are used to assess impacts on navigation, 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 overall public interest of the proposed activity.

All work is proposed to be completed in accordance with the attached plan(s). If you have any questions, or would like to submit written comments, please contact or write to:

Mrs. Mary Frazier  
ATTN: CENAB-OP-RMN  
Baltimore District, Corps of Engineers  
P.O. Box 1715  
Baltimore, MD 21203-1715  
Phone: 410-962-5679  
Email: [mary.a.frazier@usace.army.mil](mailto:mary.a.frazier@usace.army.mil)

Mr. Woody Francis  
ATTN: CENAB-OP-RMN  
Baltimore District, Corps of Engineers  
P.O. Box 1715  
Baltimore, MD 21203-1715  
Phone: 410-962-5689  
Email: [woody.francis@usace.army.mil](mailto:woody.francis@usace.army.mil)

Questions or comments pertaining to the State's Tidal Wetlands License should be directed to:

Mr. Justin Berezna  
Tidal Wetlands Division  
Wetlands and Waterways Program  
Maryland Department of the Environment  
1800 Washington Blvd., Ste. 430  
Baltimore, MD 21230-1708  
Phone: 410-537-3782  
Email: [jberezna@mde.state.md.us](mailto:jberezna@mde.state.md.us)

**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 (NMFS) on all actions, or proposed actions, permitted, funded, or undertaken by the agency that may adversely affect essential fish habitat (EFH).

The project site is adjacent to EFH as described under MSFCMA for *Scophthalmus aquosus* (windowpane flounder) juvenile and adult; *Pomatomus saltatrix* (blue fish) juvenile and adult; *Paralichthys dentatus* (summer flounder) juvenile and adult; and eggs, larvae, juvenile, and adult stages of *Sciaenops ocellatus* (red drum), *Scomberomorus cavalla* (king mackerel), *Scomberomorus maculatus* (Spanish mackerel), and *Rachycentron canadum* (cobia), all managed species under the MSFCMA.

The project has the potential to adversely affect EFH or the species of concern by alteration of spawning, nursery, forage and/or shelter habitat. The project may have an adverse effect on approximately 184 acres of Essential Fish Habitat as described under the Magnuson-Stevens Fishery Conservation and Management Act for the species and life stages identified above. This habitat consists of a variety of substrate materials (e.g., sand, silt and shell). The Baltimore District has made a preliminary determination that site-specific impacts would not be substantial and an abbreviated consultation will be conducted with NMFS. This determination may be modified if additional information indicates otherwise and would change the preliminary determination.

**SECTION 401 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 Tidal Wetlands Division, Wetlands and Waterways Program, Maryland Department of the Environment, Montgomery Park Business Center, 1800 Washington Boulevard, Suite 430, Baltimore, Maryland 21230-1708 within the comment period as specified above to receive consideration. The Section 401 certifying agency has a statutory limit of one year from the date of this public notice to make its decision.

**COASTAL ZONE MANAGEMENT PROGRAMS:** The applicant has certified in this application that the proposed activity complies with and will be conducted in a manner consistent with the State's federally-approved Coastal Zone Management Program (CZMP). By this public notice, we are requesting the State's concurrence or objection to the applicant's consistency certification statement. It should be noted that Maryland's CZMP has a statutory limit of 6 months to make its consistency determination.

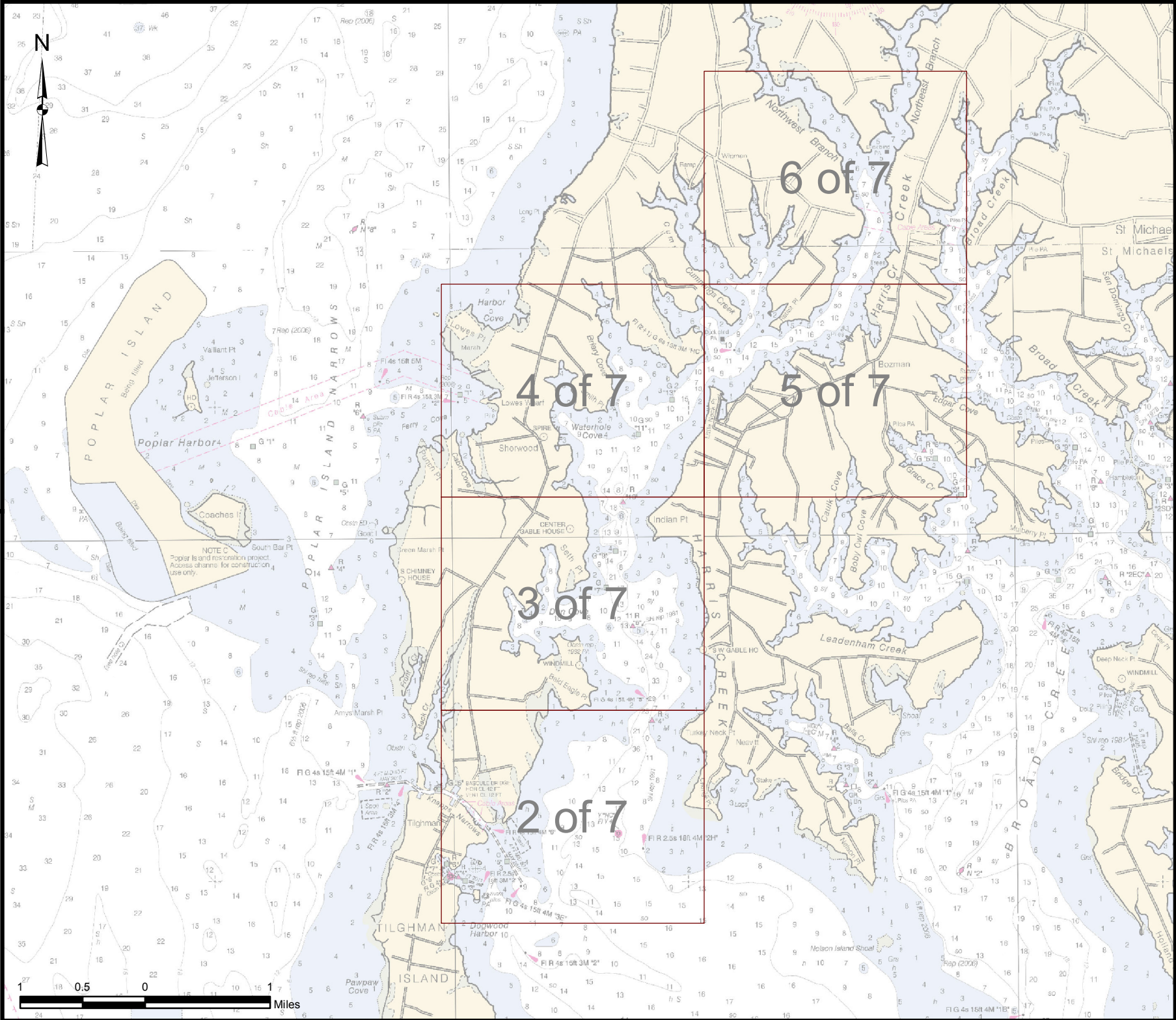
The applicant must obtain any State or local government permits, which may be required.

A preliminary review of this application indicates that the proposed work will not affect listed 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.

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.

Any person who has an interest which may be adversely affected by the issuance of this permit may request a public hearing. The request, which must be in writing, must be received by the District Engineer, U.S. Army Corps of Engineers, Baltimore District, [Attn: Mrs. Mary Frazier, CENAB-OP-RMN], P.O. Box 1715, Baltimore, Maryland 21203-1715, within the comment period as specified as above to receive consideration. Also, it must clearly state forth the interest which may be adversely affected by this activity in the manner in which the interest may be adversely affected.

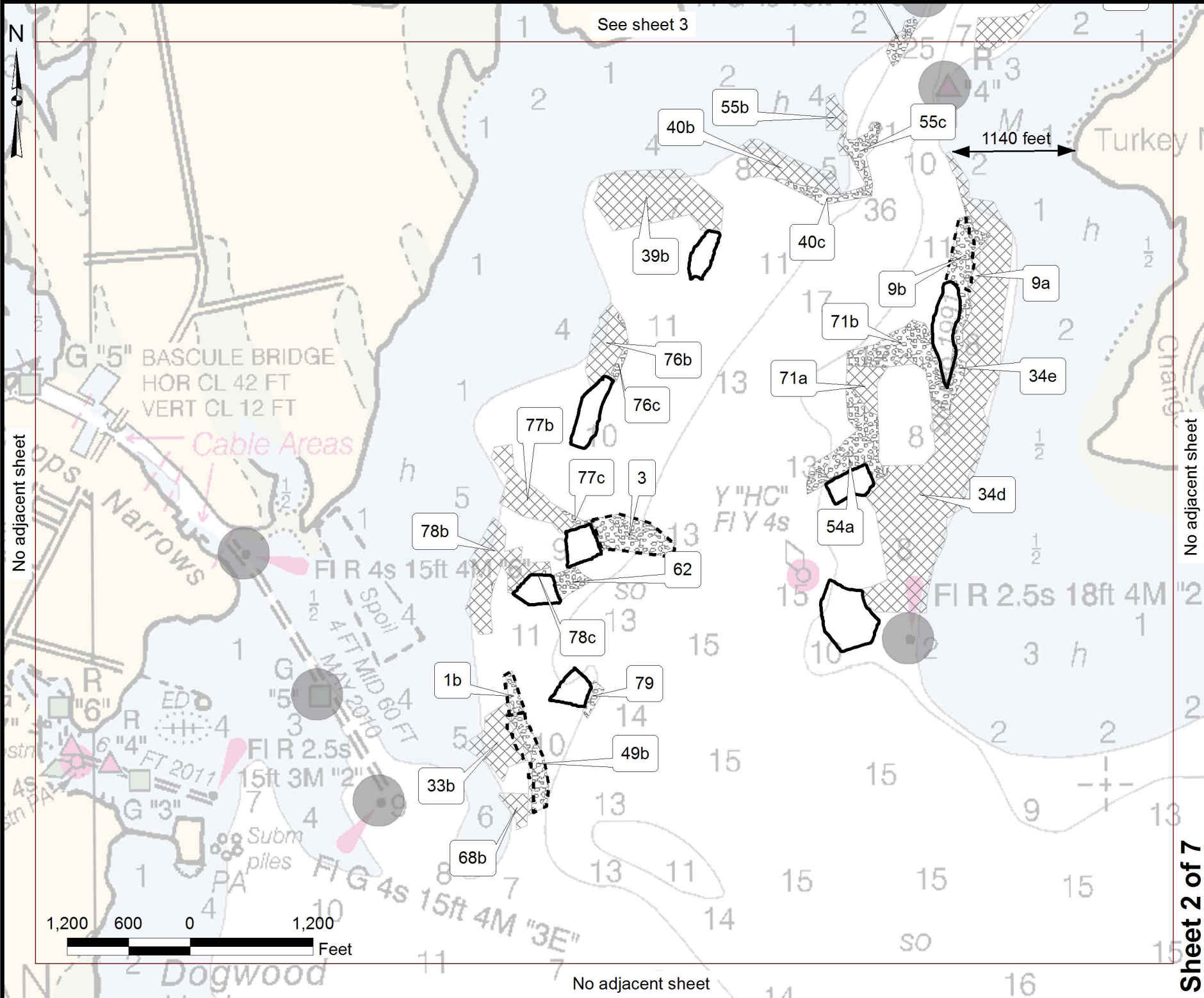
It is requested that you communicate the foregoing information concerning the proposed work to any persons known by you to be interested and not being known to this office, who did not receive a copy of this notice.



NOTE C  
Poplar Is and restoration project.  
Access channels for construction  
use only.

**NAB-2007-03659**  
**DNR Harris Creek Oyster Restoration**

Sheet 1 of 7



No adjacent sheet

No adjacent sheet



No adjacent sheet

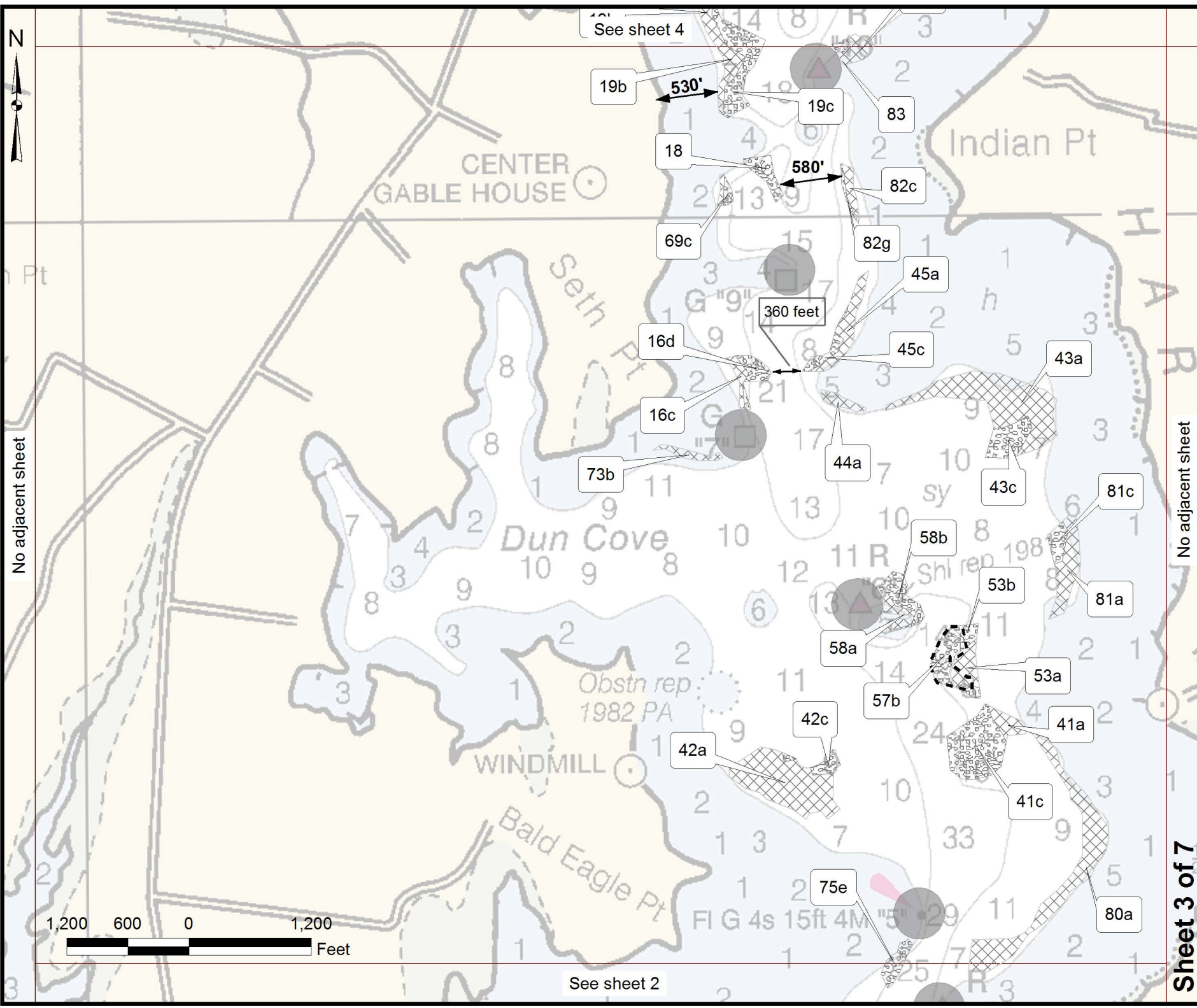
Sheet 2 of 7

**NAB-2007-03659**  
**DNR Harris Creek Oyster Restoration**

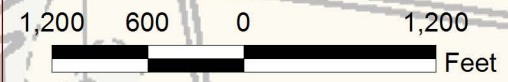
Jan 2013

site id 99a

USACE Built (2012) Reefs  
 USACE Proposed (2013) Reefs  
 250' buffer for navigational aids  
 Corps-permitted DNR Alternate Substrate  
 DNR Proposed Alternate Substrate



No adjacent sheet



See sheet 2

Sheet 3 of 7

No adjacent sheet

**NAB-2007-03659**  
**DNR Harris Creek Oyster Restoration**

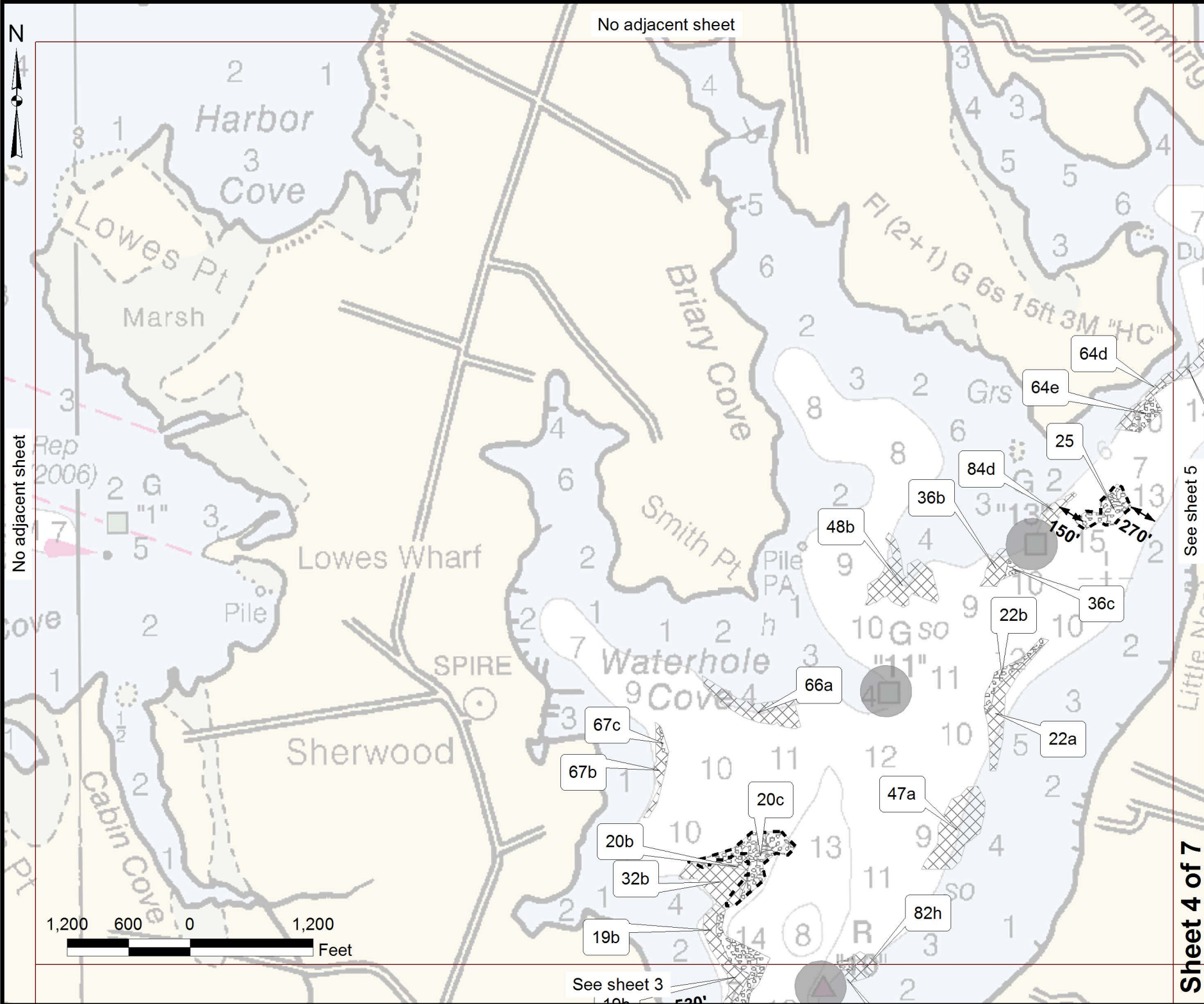
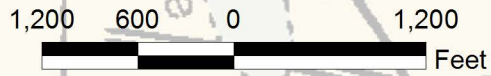
Corps-permitted DNR Alternate Substrate  
 DNR Proposed Alternate Substrate  
 99a site id  
 250' buffer for navigational aids  
 USACE Proposed (2013) Reefs  
 USACE Built (2012) Reefs

Jan 2013



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
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Sheet 4 of 7

See sheet 5

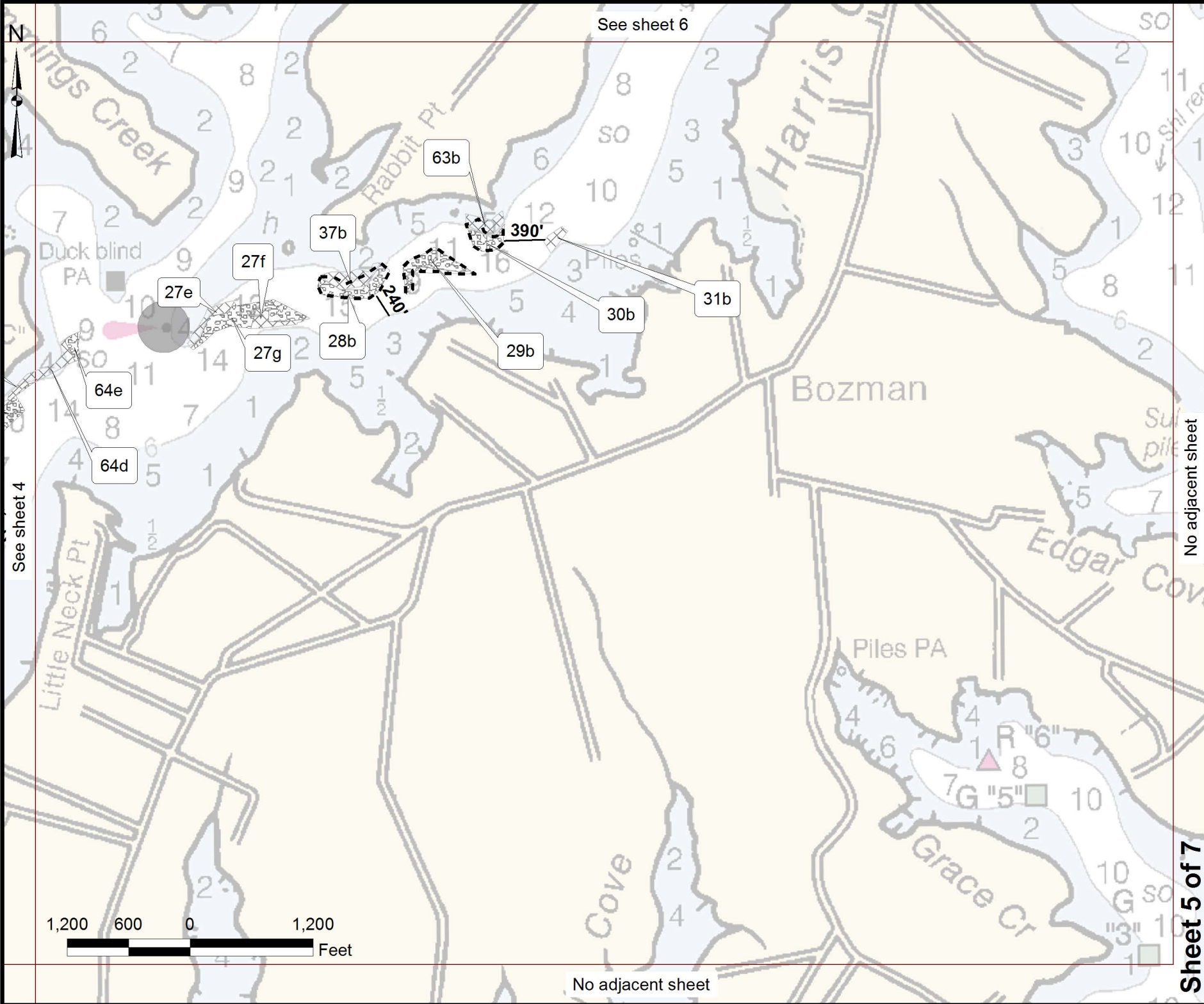
See sheet 3

-  Corps-permitted DNR Alternate Substrate
-  DNR Proposed Alternate Substrate
-  99a site id

-  250' buffer for navigational aids
-  USACE Proposed (2013) Reefs
-  USACE Built (2012) Reefs

**NAB-2007-03659**  
**DNR Harris Creek Oyster Restoration**

Jan 2013






Sheet 5 of 7



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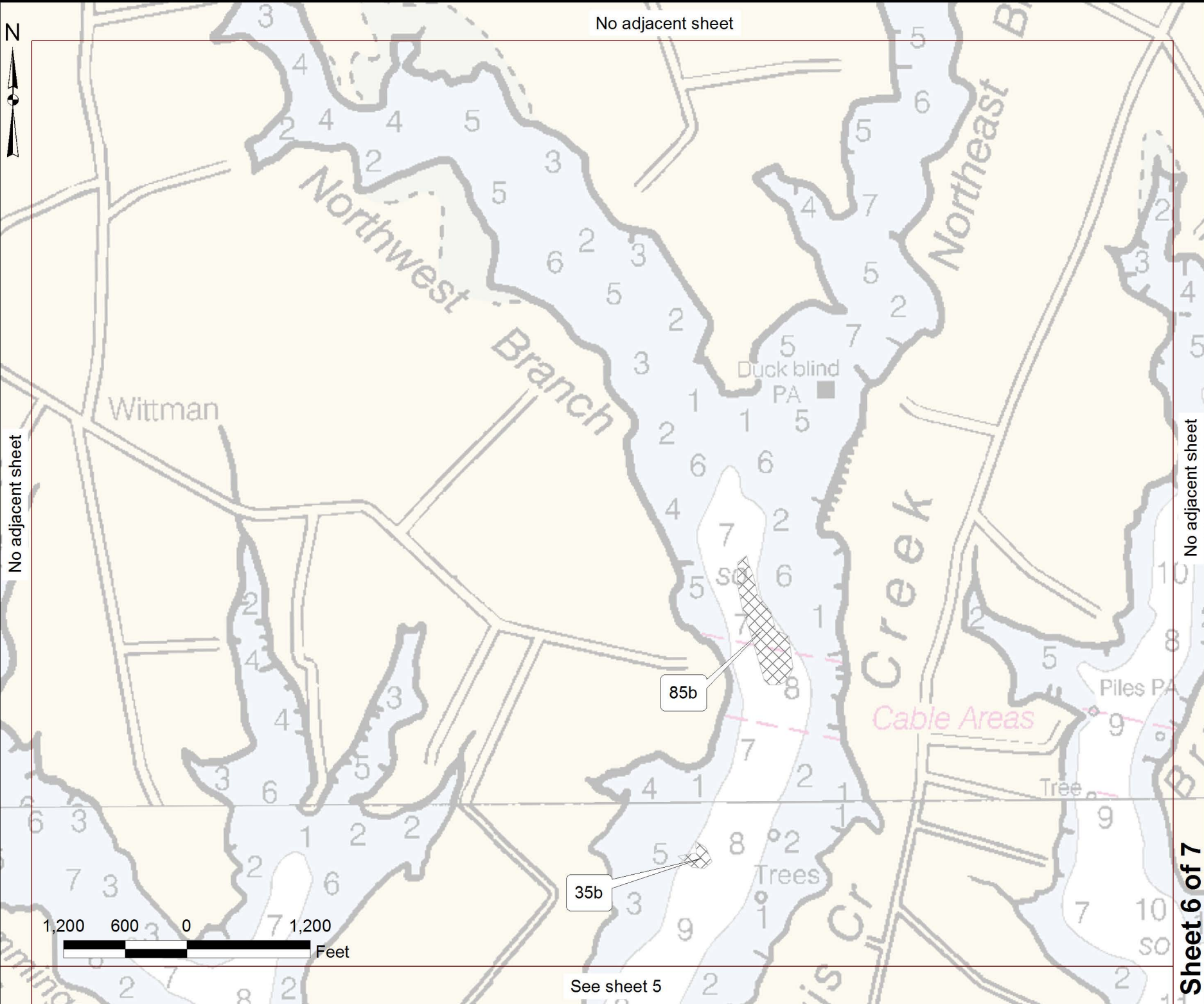
# NAB-2007-03659

DNR Harris Creek Oyster Restoration

-  250' buffer for navigational aids
-  USACE Proposed (2013) Reefs
-  USACE Built (2012) Reefs

-  Corps-permitted DNR Alternate Substrate
-  DNR Proposed Alternate Substrate
-  99a site id

Jan 2013



No adjacent sheet

No adjacent sheet

No adjacent sheet

See sheet 5

Sheet 6 of 7

# NAB-2007-03659

DNR Harris Creek Oyster Restoration

250' buffer for navigational aids

USACE Proposed (2013) Reefs

USACE Built (2012) Reefs



Corps-permitted DNR Alternate Substrate



DNR Proposed Alternate Substrate

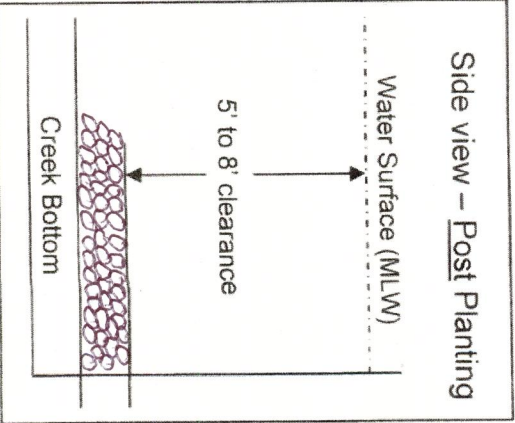
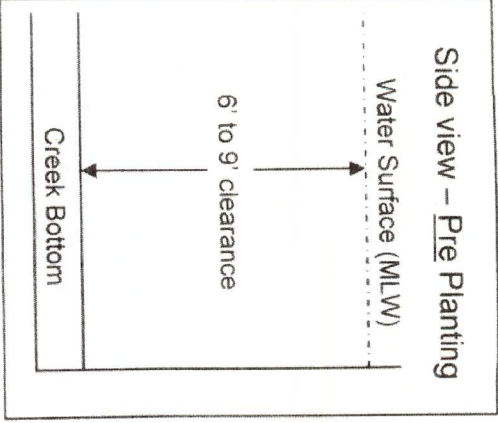
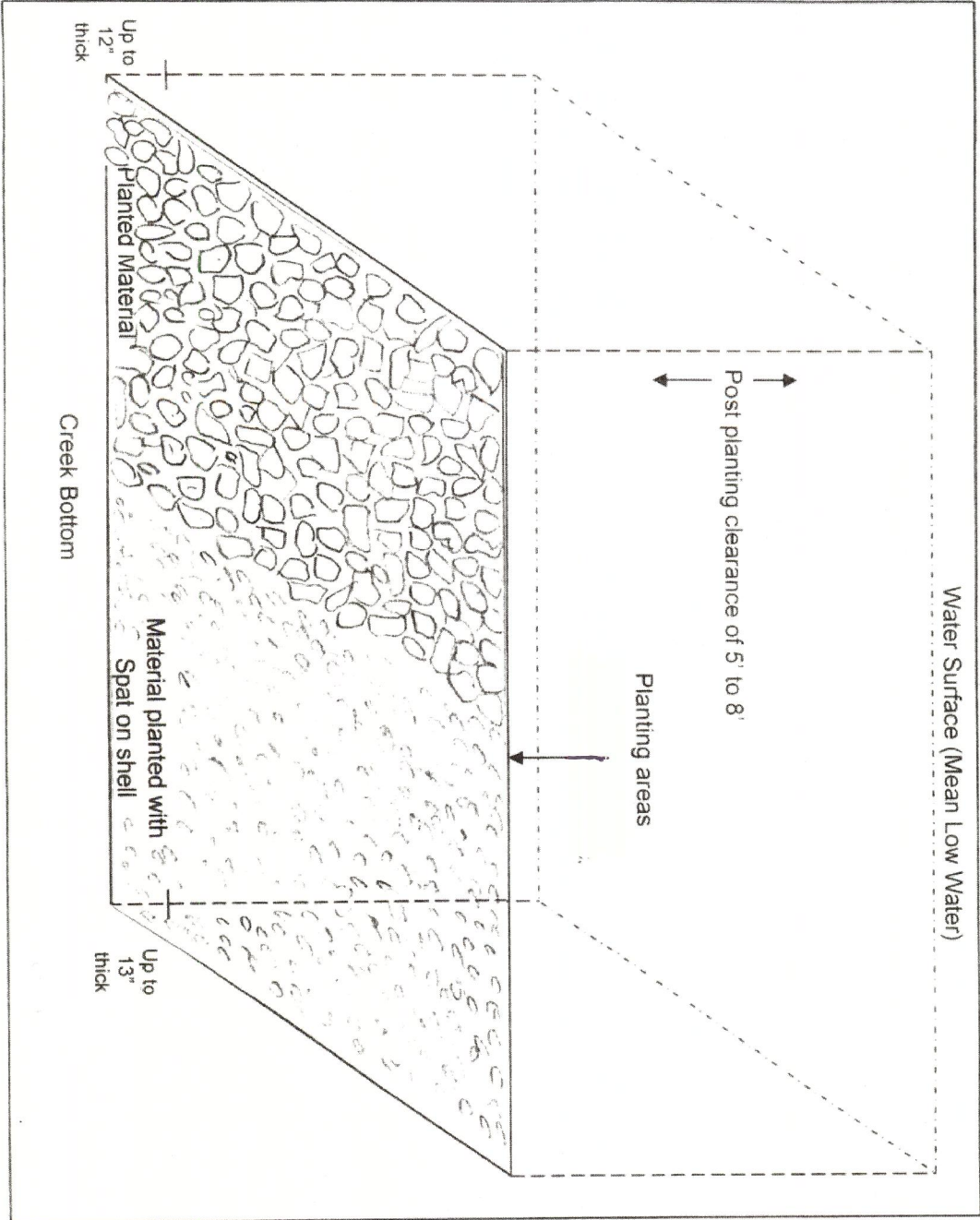


site id

Jan 2013



Application By:  
 Maryland Department of Natural Resources  
 Fisheries Service  
 580 Taylor Avenue, B-2  
 Annapolis, MD 21401



Typical Section