

UN#09-333

Enclosure 1
Critical Area Commission Tree Planting Mitigation Plan
Replacement Pages
Calvert Cliffs Nuclear Power Plant
Calvert County, Maryland
dated July 2009
(Hard Copy + 2 CDs)

Critical Area Commission Submittal Replacement Pages August 4, 2009		
FIDS Protection Plan, August 4, 2008 (16 pages)	Section 5.1.2	Replace entire section
Critical Area Impacts Exhibit, Sheet 1 of 2; Critical Area Impacts Exhibit, Sheet 2 of 2	Exhibit E Tab	Replace entire exhibit
Table 2: Critical Area Impact Quantities (2 pages)	Exhibit F Tab	Replace entire exhibit
Critical Area FIDS Impacts Exhibit and Wetlands/Wetland Buffers, Sheet 1 of 2; Critical Area FIDS Impacts Exhibit and Wetlands/Wetland Buffers, Sheet 2 of 2	Exhibit H Tab	Replace entire exhibit
Steep Slopes Exhibit, Sheet 1 of 2; Steep Slopes Exhibit, Sheet 2 of 2;	Exhibit I Tab	Replace entire exhibit
Forested Areas Exhibit, Sheet 1 of 2; Forested Areas Exhibit, Sheet 2 of 2;	Exhibit J Tab	Replace entire exhibit
Existing IDA Impervious Areas	Exhibit L Tab	Replace entire exhibit
Proposed IDA Impervious Areas	Exhibit M Tab	Replace entire exhibit

Revision II
Chesapeake Bay Critical Area FIDS Mitigation Plan
Proposed Calvert Cliffs Nuclear Power Plant Unit 3
Paul C. Myers
Tetra Tech NUS, Germantown, Maryland
August 4, 2009

The following outlines a plan for mitigating impacts to forest-interior dwelling bird (FIDS) habitat in the Chesapeake Bay Critical Area (CBCA) caused by construction of the proposed Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 by UniStar Nuclear Energy (UNE). The CBCA comprises lands within 1,000 feet of the mean high tide elevation of the Chesapeake Bay and its tidal tributaries. UNE has submitted a combined construction and operating license application (COLA) to the Nuclear Regulatory Agency (NRC) calling for construction of CCNPP Unit 3 south of the existing CCNPP Units 1 and 2 in a portion of the 2,070-acre CCNPP Site in Calvert County, Maryland commonly referred to as Camp Conoy (Figure 1). The proposed construction site currently comprises lawns and recreation facilities associated with Camp Conoy, as well as adjoining forested areas. Construction activities have been designed to minimize encroachment into the CBCA. However, UNE will have to construct a heavy haul road across the CBCA from an existing barge dock to the construction site. UNE will also develop certain forested wetlands within the CBCA.

UNE met with the Chesapeake Bay Critical Area Commission (CAC) on May 1, 2008 to discuss a draft version of the FIDS mitigation plan. The following final version of the plan incorporates comments made by the CAC personnel at the meeting and in subsequent discussions.

Existing CBCA Vegetation: Figure 2 (Existing Vegetation Cover and FIDS Habitat) depicts existing vegetation cover and FIDS habitat in the CBCA in the immediate vicinity of the proposed CCNPP Unit 3 construction site. A *Final Flora Survey Report* (Tetra Tech NUS, 2007) mapped and qualitatively characterized vegetation throughout the CCNPP Site, including the proposed CCNPP Unit 3 construction site. Aerial photographs and ground truthing were used to map vegetation for the report using the following vegetation type names:

- Lawns and Developed Areas;
- Old Field;
- Mixed Deciduous Forest;
- Mixed Deciduous Regeneration Forest;
- Well-Drained Bottomland Deciduous Forest;
- Poorly Drained Bottomland Deciduous Forest;
- Bottomland Deciduous Forest;

- Herbaceous Marsh Vegetation; and
- Successional Forest Vegetation.

Of these, the Mixed Deciduous Forest, Mixed Deciduous Regeneration Forest, Well-Drained Bottomland Deciduous Forest, Poorly Drained Bottomland Deciduous Forest, and Successional Forest Vegetation meet the definition of "Forest" established under the Maryland Forest Conservation Act.

UNE has completed a forest stand delineation (FSD) quantitatively evaluating existing forest cover in that part of the CCNPP Site within and directly adjacent to the proposed CCNPP Unit 3 construction site, including but not limited to the CBCA. Forest cover in the area addressed by the FSD was designated using the stand names shown in Figure 2 and summarized in Table 1. Most of the CBCA forest cover at the site consists of closed canopy forest dominated by tulip poplar and sweet gum trees between 6 and 30 inches diameter at breast height (DBH). Forest cover in that part of the CBCA located southeast of Camp Conoy (Stands 2-7, 2-8, and 2-8a) consists of closed canopy forest dominated by tulip poplar, chestnut oak, and black oak trees between 6 and 30 inches DBH.

Forest Interior Habitat: The Chesapeake Bay Critical Area Commission (CAC) defines forest interior habitat as forest cover more than 300 feet from a forest edge (CAC, 2000). The CAC provided direction at a meeting on May 1, 2008 stating that the forest edge at the top of the bayside cliffs is not interpreted as "edge" for the purpose of identifying forest interior habitat. Forest cover within 300 feet of a man-made forest edge is therefore excluded as forest interior habitat, but forest cover within 300 feet of the edge to the cliffs (or other natural forest boundaries) may still qualify as forest interior habitat if it is not also within 300 feet of a man-made edge.

Two patches of forest interior habitat are present in the CBCA near the proposed CCNPP Unit 3 construction site. The first consists of approximately 12.2 acres comprising portions of Stands 1-1, 1-3, 1-4, and 2-3 (Figure 2 and Table 1). The second consists of approximately 18.8 acres comprising portions of Stands 2-4, 2-5, 2-6, 2-7, 2-8, and 2-8a. Both patches are contiguous to larger areas of forest interior habitat extending out of the CBCA.

FIDS Habitat: The Chesapeake Bay CAC defines FIDS habitat as either 1) areas of at least 50 contiguous acres of forest cover with a minimum of 10 acres of forest-interior habitat, or 2) riparian forest cover more than 300 feet wide associated with a perennial stream (CAC, 2000).

No riparian areas associated with perennial streams are present in the CBCA in the vicinity of the proposed CCNPP Unit 3 construction site. Stands 1-1, 1-2, 1-3, 1-4, and 2-3, when combined with forest interior outside of the CBCA, together form more than 50 contiguous acres of forest cover and contain more than 10 acres of forest interior habitat. Likewise, Stands 2-4, 2-5, 2-6, 2-7, 2-8, and 2-8a are contiguous to several hundred acres of forest to the south, including several hundred acres of forest-interior habitat. All CBCA areas in Stands 1-1, 1-3, 1-4, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, and 2-8a therefore meet the criteria for FIDS habitat.

Note that although the criteria for designating FIDS habitat require a consideration of forest-interior habitat, FIDS habitat is not limited only to forest-interior habitat. It also includes forest edge habitat, i.e. forest cover within 300 feet of an opening, which is contiguous to forest-interior habitat. The total forest-interior habitat in the CBCA within the proposed project area is approximately 31.0 acres. The total FIDS habitat in the CBCA on the Project Site is approximately 68.3 acres. The total FIDS habitat includes the 31.0 acres of forest-interior habitat plus contiguous forest edge habitat of approximately 37.3 acres. The only areas in the CBCA on the Project Site that are not FIDS habitat are non-forested areas and Stand 1-5, which consists of an isolated patch of only about 8.8 acres of forest. Because Stand 1-5 is not contiguous to forest-interior habitat, it is unlikely to be used as habitat by FIDS.

Proposed CBCA Impacts: Grading to construct the proposed CCNPP Unit 3 will require clearing approximately 21.3 acres of forest cover from the CBCA (Figure 3 and Table 2). Approximately 9.5 acres of mixed deciduous forest will be cleared from Stands 1-1, 1-2, 1-3, and 1-4 to construct the heavy haul road. Approximately 7.0 acres of mixed deciduous forest (non-FIDS habitat) will be cleared from Stand 1-5 to construct improvements at the existing barge dock needed to deliver materials to the construction area. Approximately 4.5 acres of mixed deciduous forest will be cleared from Stands 2-2, 2-3, 2-4, 2-5, and 2-7 and approximately 0.3 acres of bottomland deciduous forest will be cleared from Stand 2-6 to construct embankments and mitigation wetlands immediately east of the new power block.

The proposed forest clearing will result in the loss of approximately 13.5 acres of forest-interior habitat in the CBCA. Those losses include both direct clearing and conversion of forest-interior habitat to forest-edge habitat. Approximately 17.2 acres of the forest-interior habitat will remain.

The proposed forest clearing will result in the loss of approximately 38.1 acres of FIDS habitat in the CBCA. This result accounts not only for direct losses of forest cover in stands originally qualifying as FIDS habitat, but also for the fact that the remaining remnants of forest cover in

Stands 1-3, 1-4, and 2-3 will be too small and isolated following construction to continue to qualify as FIDS habitat. Even though approximately 5.5 acres of forest-interior habitat will remain in Stands 1-3, 1-4, and 2-3, the combined forest patch will be substantially below the requisite 50 acre minimum overall extent necessary for FIDS habitat.

Proposed Mitigation: Appendix A is a worksheet presenting calculations of mitigation requirements established by the Chesapeake Bay CAC for the proposed impacts (CAC, 2000). While UNE strived to minimize impacts to the CBCA, it was unable to achieve the Site Design Guidelines established by the Chesapeake Bay CAC for development in the CBCA. While UNE was able to construct the power block outside of the CBCA, it was unable to construct a usable heavy haul road to, and construct necessary improvements to, the existing CCNPP barge dock without clearing forested areas in the CBCA (specifically, portions of Stands 1-1, 1-2, 1-3, 1-4, and 1-5). UNE was also unable to construct embankments for mitigation wetlands without some forest clearing in Stands 2-4, 2-5, 2-6, and 2-7.

UNE proposes four CBCA mitigation actions to address impacts to forest cover and FIDS habitat in the CBCA (Figure 4). They include:

1. Creation of forested wetlands in the open field areas of Camp Conoy in the CBCA (Area 1);
2. Planting upland forest vegetation in gaps associated with the Eagle's Den (Area 2);
3. Planting upland forest vegetation in CBCA open field area north of CCNPP Units 1 and 2 (Area 3); and
4. Preservation of existing forest cover in the CBCA elsewhere on the CCNPP Site.

CBCA Forest Planting Area 1 - Forested Wetlands: The forested wetlands have been designed as part of a wetland mitigation plan addressing permitted wetland impacts associated with the CCNPP Unit 3 project. Approximately 6.6 acres of forested wetland and forested side slope will be created in the CBCA. Once the planted trees mature, the forested wetlands and side slope will link the remaining portions of Stands 1-3, 1-4, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, and 2-8A into a single, contiguous closed canopy forest. The remnants of Stands 1-3, 1-4, and 2-3, which will initially constitute too small a patch of forest cover to function as FIDS habitat, will again function as such.

Tree and shrub species will be planted at a density that meets the requirements for areas greater than five (5) acres. These requirements include:

- 10% of the overall plantings provided shall be nursery stock size, of either
 - Canopy trees with 2-inch caliper and eight feet high, for 200 square feet of credit, or
 - Canopy trees with 1-inch caliper and six feet high, for 100 square feet of credit
- For the remaining 90% of plantings, the applicant can choose one or a combination of methods from the following:
 - Bare root seedlings or whip, 700 stems per acre, monitor for five years, 80% survival rate after five years, with average height reached greater than three feet
 - Container grown, ½-inch caliper and at least four feet high, 450 stems per acre, monitor for four years, 85% survival rate after four years
 - Container grown, ¾-inch caliper and at least five feet high, 350 stems per acre, monitor for three years, 90% survival rate after three years
- General conditions for the plantings as a whole
 - At least 50% of the total number of proposed trees (regardless of size when planted) must be canopy species
 - A single species may not exceed 20% of the total number of proposed plantings
 - Shrubs may not exceed 40% of the total number of proposed plantings

Plant material will be representative of the species composition of intact forested wetlands on the CCNPP Site and native to the region. The selected trees and shrubs will consist of containerized stock protected by tree shelters (i.e.: TUBEX® or Miracle Tube tree shelters). The tree shelters will provide protection from wildlife depredation, wind, or other influences. The tree material will include species such as willow oak (*Quercus phellos*), water oak (*Quercus nigra*), black gum (*Nyssa sylvatica*), green ash (*Fraxinus pennsylvanica*), red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), and/or tulip poplar (*Liriodendron tulipifera*). The shrub material will include species such as silky dogwood (*Cornus amomum*), inkberry (*Ilex glabra*), shadbush (*Amelanchier canadensis*), highbush blueberry (*Vaccinium corymbosum*), possum-haw (*Viburnum nudum*), elderberry (*Sambucus canadensis*), and Virginia willow (*Itea virginica*).

CBCA Forest Planting Area 2 - Upland Forest at Eagle's Den: The cabin designated as the Eagle's Den will be removed, along with a gravel access road and parking lot and a

garage/maintenance shed. The areas previously occupied by these features will be planted with upland forest resembling that of adjoining Stands 1-3 and 2-3. The planted area will comprise approximately 2.9 acres. Although the existing clearings are generally less than 50 feet in width and thus do not function to fragment the overall tree canopy, eliminating the clearings will improve the closed canopy qualities of the adjoining forest.

As describe for Planting Area 1 above, tree and shrub species will be planted at a density that meets the requirements for areas greater than five (5) acres. The plant material will be representative of the species composition of Stands 1-3 and 2-3 and native to the region. The planted trees and shrubs will consist of containerized stock protected by tree shelters (i.e.: TUBEX® or Miracle Tube tree shelters). The tree shelters will provide protection from wildlife depredation, wind, or other influences. The tree material will include species such as tulip poplar (*Liriodendron tulipifera*), sweetgum (*Liquidambar styraciflua*), chestnut oak (*Quercus prinus*), white oak (*Quercus alba*), black oak (*Quercus velutina*), black gum (*Nyssa sylvatica*), flowering dogwood (*Cornus florida*), and/or sassafras (*Sassafras albidum*). The shrub material will include species such as American holly (*Ilex opaca*) and mountain laurel (*Kalmia latifolia*).

CBCA Forest Planting Area 3 - Upland Forest North of CCNPP Units 1 and 2: Upland forest will be planted in an area of old field vegetation in the CBCA north of Units 1 and 2. The proposed planting area, comprising approximately 12.4 acres, will be situated immediately north of an existing chain-link security fence. The new forest will be spatially linked to existing CBCA forest cover in the northern part of the CCNPP Site. The planting composition will be as described for the upland areas near the Eagle's Den.

CBCA Forest Preservation Area – UNE will designate a portion of the remaining forest cover in the CBCA in the south part of the CCNPP Site for preservation to meet its remaining mitigation requirement. The CAC informally agreed with the concept of preservation to meet additional mitigation requirements not met by the proposed tree planting. A preservation area of approximately 87.6 acres is proposed.

The worksheet calls for a mitigation requirement of approximately 65.7 acres. Of this, approximately 21.9 acres will be met through the proposed CBCA forest planting areas. The remaining 43.8 acres of the mitigation requirement will be met by FIDS habitat preservation. The CAC allows preservation of FIDS habitat to meet mitigation requirements, but credits only 1 acre toward the mitigation requirement for each 2 acres preserved. A total of approximately 87.6

acres of preservation is therefore needed to meet the leftover 43.8 acres of mitigation requirements. The proposed preservation area encompasses approximately 87.6 acres and therefore equals the area needed to meet the minimum mitigation requirements.

The result of the mitigation will be the establishment of approximately 21.9 acres of forest cover in the CBCA (Table 3). The CCNPP Unit 3 project will result in a net increase of approximately 0.6 acres of forest cover in the CBCA. The project will result in a net decrease of approximately 1.0 acres of forest-interior habitat in the CBCA; and it will result in a net increase of approximately 7.6 acres of FIDS habitat in the CBCA.

References

CAC (Chesapeake Bay Critical Area Commission). 2000. *A Guide to the Conservation of Forest Interior Dwelling Birds in the Chesapeake Bay Critical Area*. June 2000.

Tetra Tech NUS. 2007. *Final Flora Survey Report for Proposed UniStar Nuclear Power Plant Site and Remainder of Calvert Cliffs Nuclear Power Plant, Calvert County, Maryland*. May 2007.

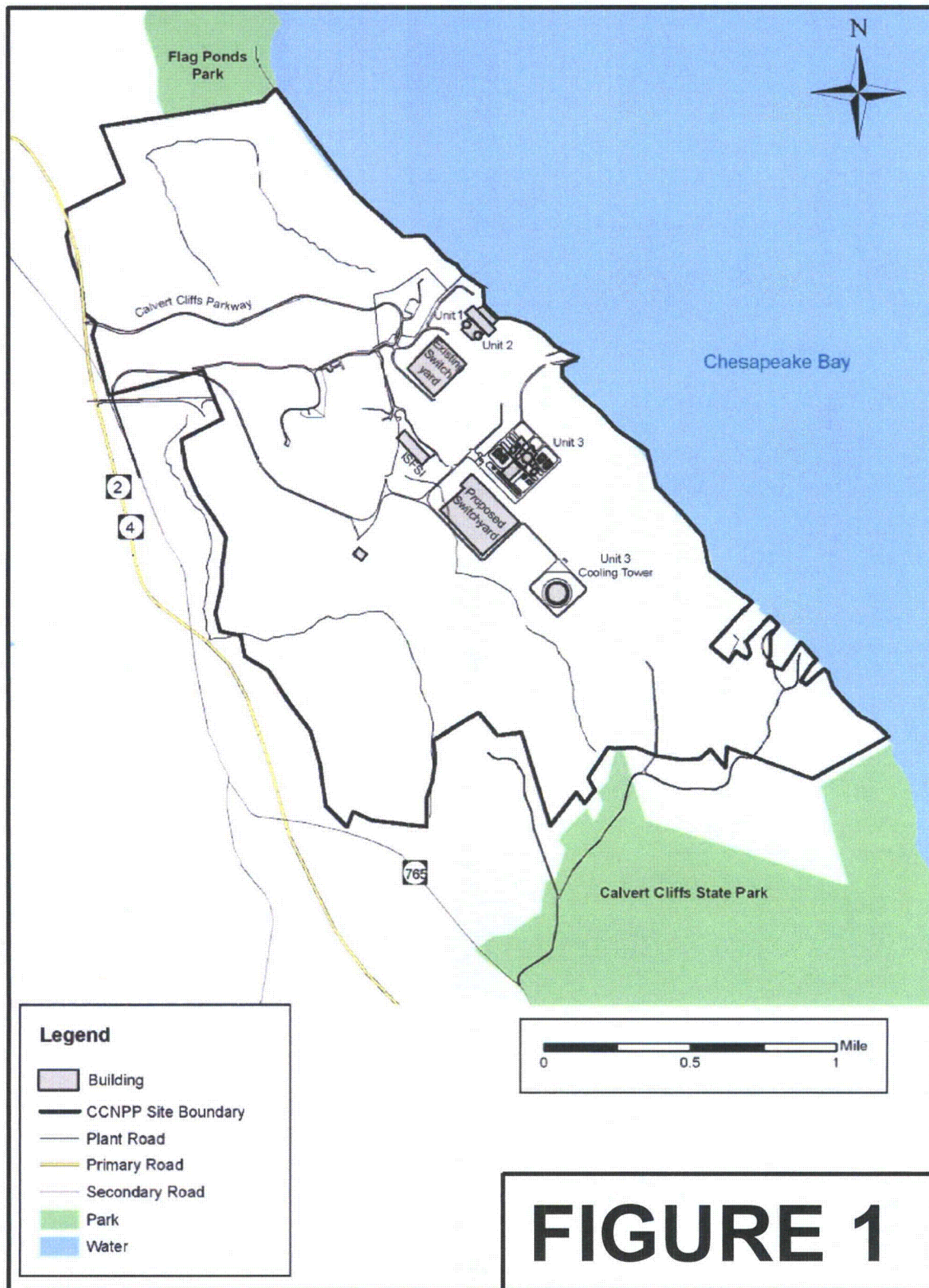


Table 1
Summary of Existing Forest Cover and FIDS Habitat
Chesapeake Bay Critical Area at Proposed CCNPP Unit 3 Construction Site

Stand	Vegetation Type	Description	Acres	Acres (in CBCA)	Forest Interior Acres (in CBCA)	FIDS Habitat Acres (in CBCA)
1-1	Mixed Deciduous Forest	Closed canopy forest dominated by tulip poplar and sweet gum trees between 6 and 20 inches DBH.	13.7	1.2	0.6	1.2
1-2	Mixed Deciduous Forest	Closed canopy forest dominated by tulip poplar and sweet gum trees between 6 and 20 inches DBH.	14.1	0.1	0	0.1
1-3	Mixed Deciduous Forest	Closed canopy forest dominated by tulip poplar and sweet gum trees between 6 and 20 inches DBH.	12.6	12.4	6.5	12.4
1-4	Mixed Deciduous Forest	Closed canopy forest dominated by tulip poplar and sweet gum trees between 6 and 20 inches DBH.	15.2	14.3	3.8	14.3
1-5	Mixed Deciduous Forest	Closed canopy forest dominated by tulip poplar and sweet gum trees between 6 and 20 inches DBH.	8.8	8.8	0	0
2-2	Mixed Deciduous Forest	Closed canopy forest dominated by tulip poplar and sweet gum trees between 6 and 20 inches DBH.	6.8	0.5	0	0.5
2-3	Mixed Deciduous Forest	Closed canopy forest dominated by tulip poplar and sweet gum trees between 6 and 20 inches DBH.	6.1	6.1	1.3	6.1
2-4	Successional Forest Vegetation	Closed canopy forest dominated by Virginia pine, sweet gum, and chestnut oak trees between 6 and 20 inches DBH.	5.4	5.4	0.4	5.4
2-5	Mixed Deciduous Forest	Closed canopy forest dominated by tulip poplar and sweet gum trees between 6 and 20 inches DBH.	6.6	5.0	1.0	5.0
2-6	Poorly Drained Bottomland Deciduous Forest	Closed canopy forest dominated by sweet gum and red maple trees between 6 and 20 inches DBH.	0.7	0.4	0	0.4
2-7	Mixed Deciduous Forest	Closed canopy forest dominated by tulip poplar, chestnut oak, and black oak trees between 6 and 20 inches DBH.	17.6	17.3	13.6	17.3
2-8	Mixed Deciduous Forest	Closed canopy forest dominated by tulip poplar, chestnut oak, and black oak trees between 6 and 20 inches DBH.	11.0	4.7	2.9	4.7

2-8a		0.9	0.9	0.9	0.9
Total		119.5	77.1	31	68.3

Table 2
Summary of Proposed Impacts to Existing Forest Cover and FIDS Habitat
Chesapeake Bay Critical Area at Proposed CCNPP Unit 3 Construction Site

Stand	Vegetation Type	Forest Cover Loss in CBCA (Acres)	Forest Cover Remaining in CBCA (Acres)	Forest Interior Loss in CBCA (Acres) (Direct+Convsn. to Edge)	Forest Interior Remaining in CBCA (Acres)	FIDS Habitat Loss in CBCA (Acres)	FIDS Habitat Remaining in CBCA (Acres)
1-1	Mixed Deciduous Forest	0.9	0.3	0.3	0	0.9	0.3
1-2	Mixed Deciduous Forest	0.1	0	0	0	0.1	0
1-3	Mixed Deciduous Forest	1.7	10.7	3.0	3.5	12.4	0
1-4	Mixed Deciduous Forest	6.8	7.5	2.9	0.9	14.3	0
1-5	Mixed Deciduous Forest	7.0	1.8	0	0	0	0
2-2	Mixed Deciduous Forest	0.5	0	0	0	0.5	0
2-3	Mixed Deciduous Forest	0.5	5.6	0.2	1.1	6.1	0
2-4	Successional Forest Vegetation	1.4	4.0	0.3	0.1	1.4	4.0
2-5	Mixed Deciduous Forest	1.1	3.9	0.6	0.4	1.1	3.9
2-6	Poorly Drained Bottomland Deciduous Forest	0.3	0.1	0	0	0.3	0.1
2-7	Mixed Deciduous Forest	1.0	16.3	3.5	10.1	1.0	16.3
2-8	Mixed Deciduous Forest	0	4.7	1.8	1.1	0	4.7
2-8a		0	0.9	0.9	0	0	0.9
Total		21.3	55.8	13.5	17.2	38.1	30.2

Table 3
Summary of Proposed Impacts and Mitigation to Existing Forest Cover and FIDS Habitat
Chesapeake Bay Critical Area at Proposed CCNPP Unit 3 Construction Site

	Forest Cover (Acres)	Forest Interior (Acres)	FIDS Habitat (Acres)
Baseline	77.1	31.0	68.3
After Impact; Before Mitigation	55.8	17.5	29.9
After Mitigation	77.7	30.0	75.9

APPENDIX A

FIDS CONSERVATION WORKSHEET

Parcel size	<u>2,070</u>	Total acreage (Entire CCNPP Site)
	<u>344.2</u>	Critical Area acreage (Entire CCNPP Site)

Existing

Forest cover	<u>1,619</u>	Total contiguous acreage (Entire CCNPP Site)
Forest cover	<u>77.1</u>	Total acres CA (CCNPP Unit 3 Site)
FIDS habitat*	<u>68.3</u>	Total acres CA (CCNPP Unit 3 Site)
FIDS interior	<u>31.0</u>	Acres CA (CCNPP Unit 3 Site)

Calculate interior by subtracting out a 300 ft. edge.**

If available:	<u>>5,000</u>	Acreage of contiguous forest area both in and out of the CA within a 3-mile radius
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Post development

Forest cover	<u>55.8</u>	Total acres CA (CCNPP Unit 3 Site)
FIDS habitat	<u>30.2</u>	Total acres CA (CCNPP Unit 3 Site)
Interior habitat remaining	<u>17.2</u>	Acres CA (CCNPP Unit 3 Site)

***How to Identify FIDS Habitat**

Assume FIDS habitat is present if a forest meets either of the following minimum conditions:

Forests at least 50 acres in size with 10 or more acres of forest interior (see below to calculate interior) habitat. The majority of the forest tracts should be dominated by pole-sized or larger trees (5 inches or more in diameter at breast height), or have a closed canopy; or

Riparian forests at least 50 acres in size with an average total width of at least 300 feet. The stream within the riparian forest should be perennial, based on field surveys or as indicated on the most recent 7.5 minute ISGS topographic maps. The majority of the forest tracts should be dominated by pole-sized or larger trees, or have a closed canopy.

In lieu of using the above criteria for determining if FIDS habitat is present, a FIDS survey may be done by a qualified FIDS observer. See page 12 of the Guidance Document for the procedures to be followed. You may contact the Maryland Department

of Natural Resources, Forest Wildlife Divisions or the Critical Area Commission for a list of qualified observers.

****How to Measure the amount of forest interior and forest edge**

To determine the amount of interior in a forest, the edge of 300 feet is subtracted from the total contiguous forest. The area left is forest interior provided it is at least ten acres in size.

When measuring forest edge, do not include natural forest edges such as those adjacent to open water, nonforested wetlands and streams. Riparian forests of 300 feet or greater are considered interior habitat when calculating FIDS habitat in the Critical Area provided that they have a minimum of 50 continuous acres or are connected to a forest that has been determined to be FIDS habitat.

Please answer the following questions regarding the FIDS Site Design Guidelines and how they are applied to the project.

1. Has development (e.g., house, septic reserve areas, driveway) been restricted to nonforested areas? Yes ___ No X

If no, explain

Need for heavy haul road to connect existing barge dock to new power block site and stormwater management

2. If development has not been restricted to nonforested areas, has Development been restricted to:
- a. perimeter of the forest within 300 feet of the forest edge? Yes ___ No X
 - b. thin strips of upland forest less than 300 feet wide? Yes ___ No X
 - c. isolated forests less than 50 acres in size? Yes ___ No X
 - d. portions of the forest with low quality FIDS habitat, (e.g., areas that are heavily fragmented, relatively young, Exhibit low structural diversity, etc.)? Yes ___ No X
3. Have new lots been restricted to existing nonforested areas And/or forest as described in #2 above? Yes ___ No X

If no, please explain how property owners will be prevented from clearing in the FIDS habitat on their property (i.e., protective covenants/easements)?

Not Applicable. All affected areas will remain under the control and management of UNE

4. Will forest removal be limited to the footprint of the house and that which will be necessary for the placement of roads and driveways and, stormwater management basins? Yes No
5. Have the number and lengths of roads been minimized? Yes No
6. Have the width of roads and driveways been reduced to 25 feet and 15 feet respectively? Yes No

If no, explain

Greater width is necessary for trucks using proposed new heavy haul road

7. Will the forest canopy be maintained over roads and driveways? Yes No
8. Will the forest canopy be maintained up to the edge of roads and driveways? Yes No
9. Will at least 80% of the forest interior be maintained after development? Yes No

If no, indicate percentage of forest interior that will be maintained? 59 %

10. Are there special conditions on the site that limit where houses and other development activities may be located such as wetlands, steep slopes, etc? If so, please identify and explain.

The project has been designed to minimize encroachment into wetlands, wetland and buffers, streams, stream buffers, steep slopes, and floodplains; both inside of outside of the CBCA

11. Do you believe that the *Site Design Guidelines* have been followed and that FIDS habitat has been conserved on this site? Yes No

To the extent conducive to a power generation project such as CCNPP Unit 3

MITIGATION REQUIREMENTS

If the *Site Design Guidelines* have been followed the required mitigation will be the creation of FIDS habitat equal to the acreage being directly cut or disturbed. (See pages 27 – 28 for specific mitigation options and criteria.)

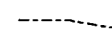
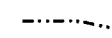

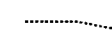
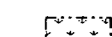
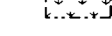

Enter acreage of FIDS habitat that is being directly impacted _____ acres.

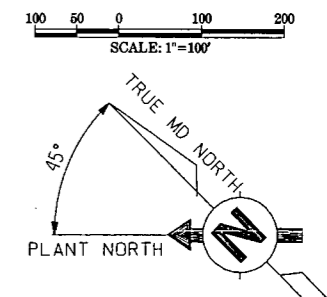
THIS IS YOUR MITIGATION REQUIREMENT WHEN THE SITE DESIGN GUIDELINES ARE FOLLOWED.

If the *Site Design Guidelines* have not been followed, complete the following.

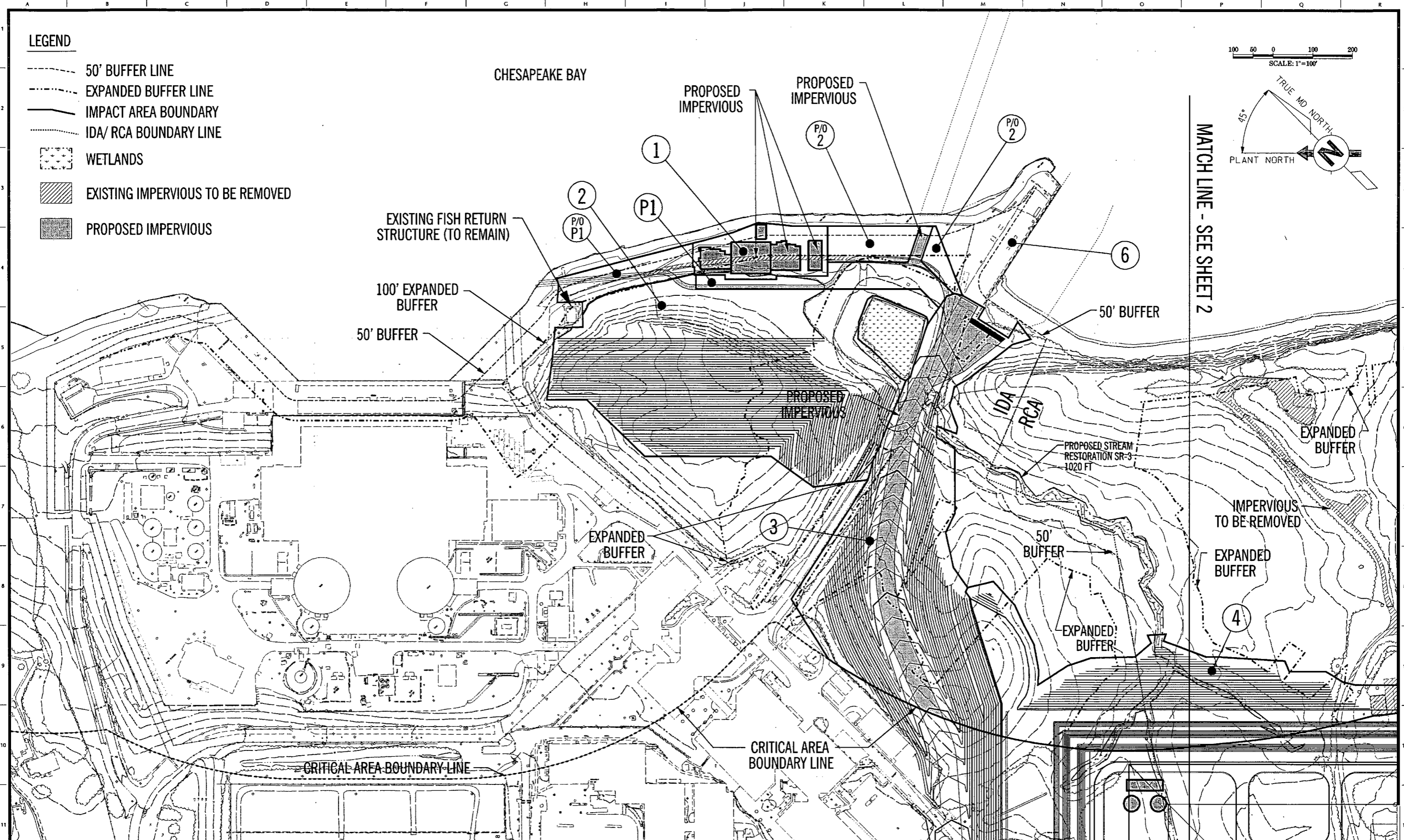
A. Pre-development FIDS habitat	<u>68.3</u>	acres.
B. Post development FIDS habitat	<u>30.2</u>	acres.
C. Pre-development FIDS habitat interior	<u>31.0</u>	acres.
D. Post development FIDS habitat interior	<u>17.2</u>	acres.
E. FIDS habitat being directly impacted (Subtract B from A)	<u>38.1</u>	acres.
F. Interior lost due to development (Subtract D from C)	<u>13.8</u>	acres.
G. Multiply F. times two (2) <u>25.2</u> Acres and add to E. =	<u>65.7</u>	acres.

LEGEND

-  50' BUFFER LINE
-  EXPANDED BUFFER LINE
-  IMPACT AREA BOUNDARY
-  IDA/ RCA BOUNDARY LINE
-  WETLANDS
-  EXISTING IMPERVIOUS TO BE REMOVED
-  PROPOSED IMPERVIOUS



MATCH LINE - SEE SHEET 2



OWNER/DEVELOPER:
 CALVERT CLIFFS 3
 NUCLEAR PROJECT, LLC
 100 CONSTELLATION WAY
 BALTIMORE, MD 21202
 (410) 470-5857

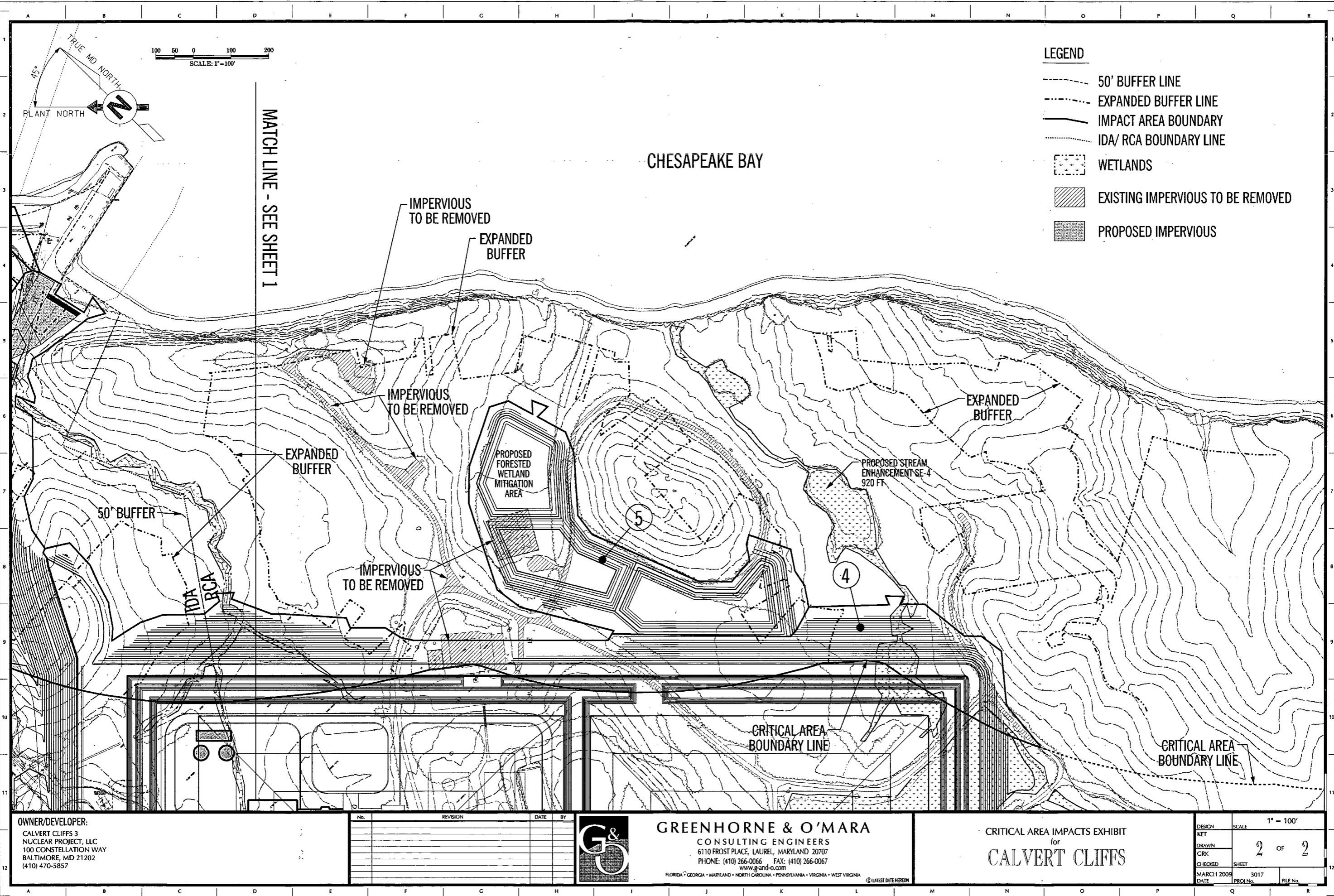
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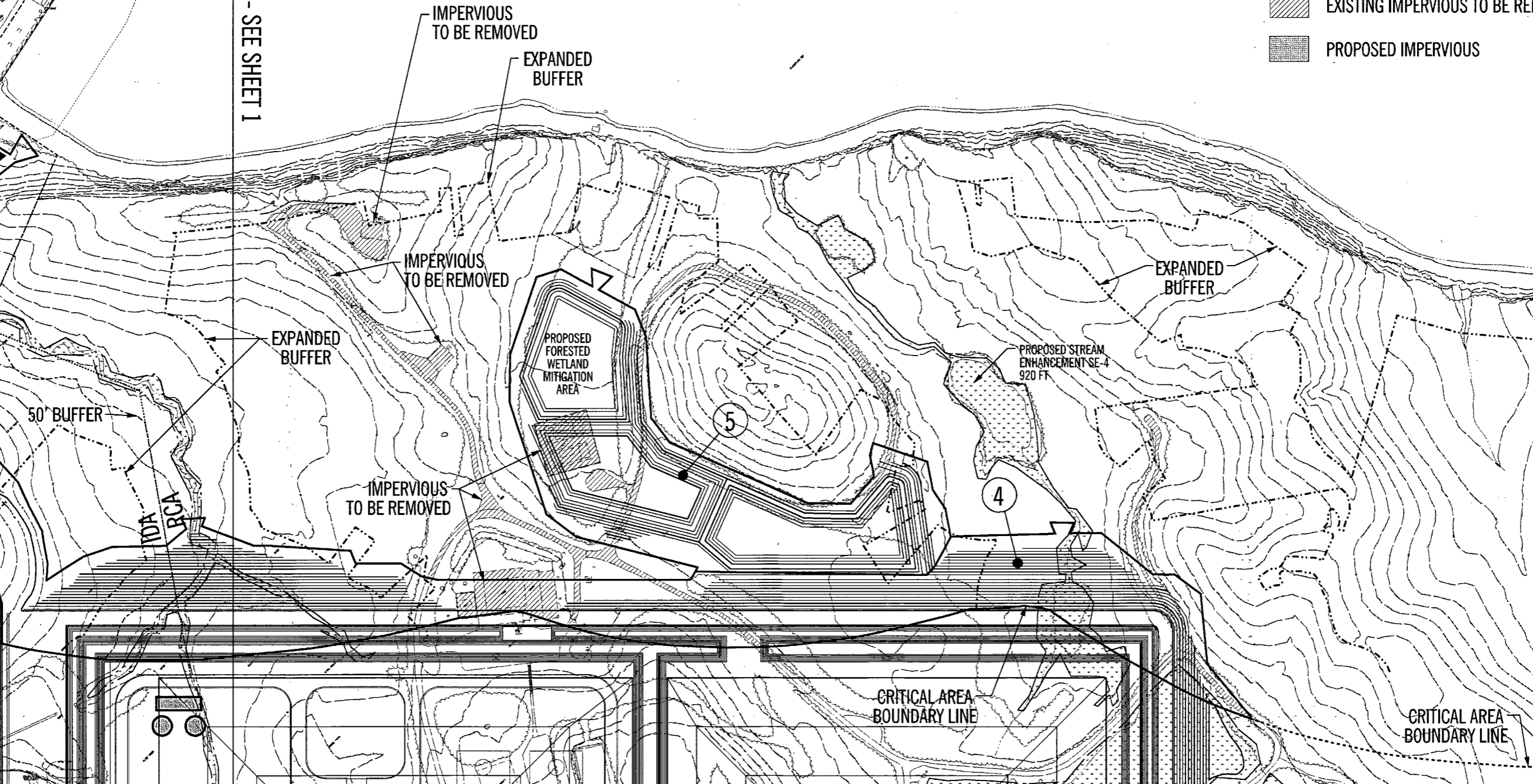
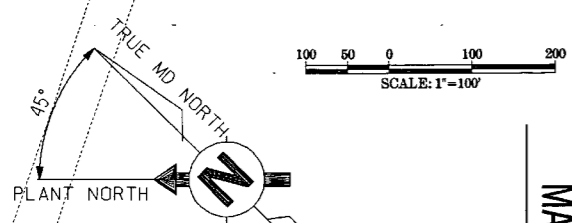
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DATE	PROJ No.	FILE No.



- LEGEND**
- 50' BUFFER LINE
 - - - - - EXPANDED BUFFER LINE
 - IMPACT AREA BOUNDARY
 - ... IDA/ RCA BOUNDARY LINE
 - [Stippled Box] WETLANDS
 - [Hatched Box] EXISTING IMPERVIOUS TO BE REMOVED
 - [Solid Grey Box] PROPOSED IMPERVIOUS

CHESAPEAKE BAY

MATCH LINE - SEE SHEET 1



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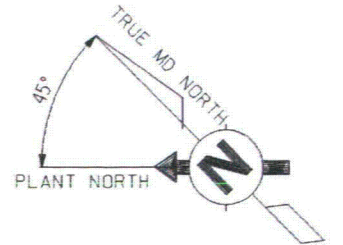
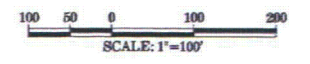
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LEGEND

-  WETLANDS
-  WETLAND BUFFER LINE
-  FIDS HABITAT WITHIN IMPACT AREA
-  FIDS HABITAT BOUNDARY
-  PROPOSED BUFFER YARD PLANTINGS AREA

CHESAPEAKE BAY

PROPOSED DREDGING AREA



MATCH LINE - SEE SHEET 2

PROPOSED BUFFER YARD PLANTINGS AREA (AREA = 0.30 ACRES)

PROPOSED BUFFER YARD PLANTINGS AREA (AREA = 0.12 ACRES)

PROPOSED DREDGING AREA

EXPANDED BUFFER
50' BUFFER

IDA
RCA

WETLAND BUFFER

100' EXPANDED BUFFER

EXPANDED BUFFER

FIDS HABITAT WITHIN IMPACT AREA

FIDS HABITAT

CRITICAL AREA BOUNDARY LINE

FIDS HABITAT WITHIN IMPACT AREA

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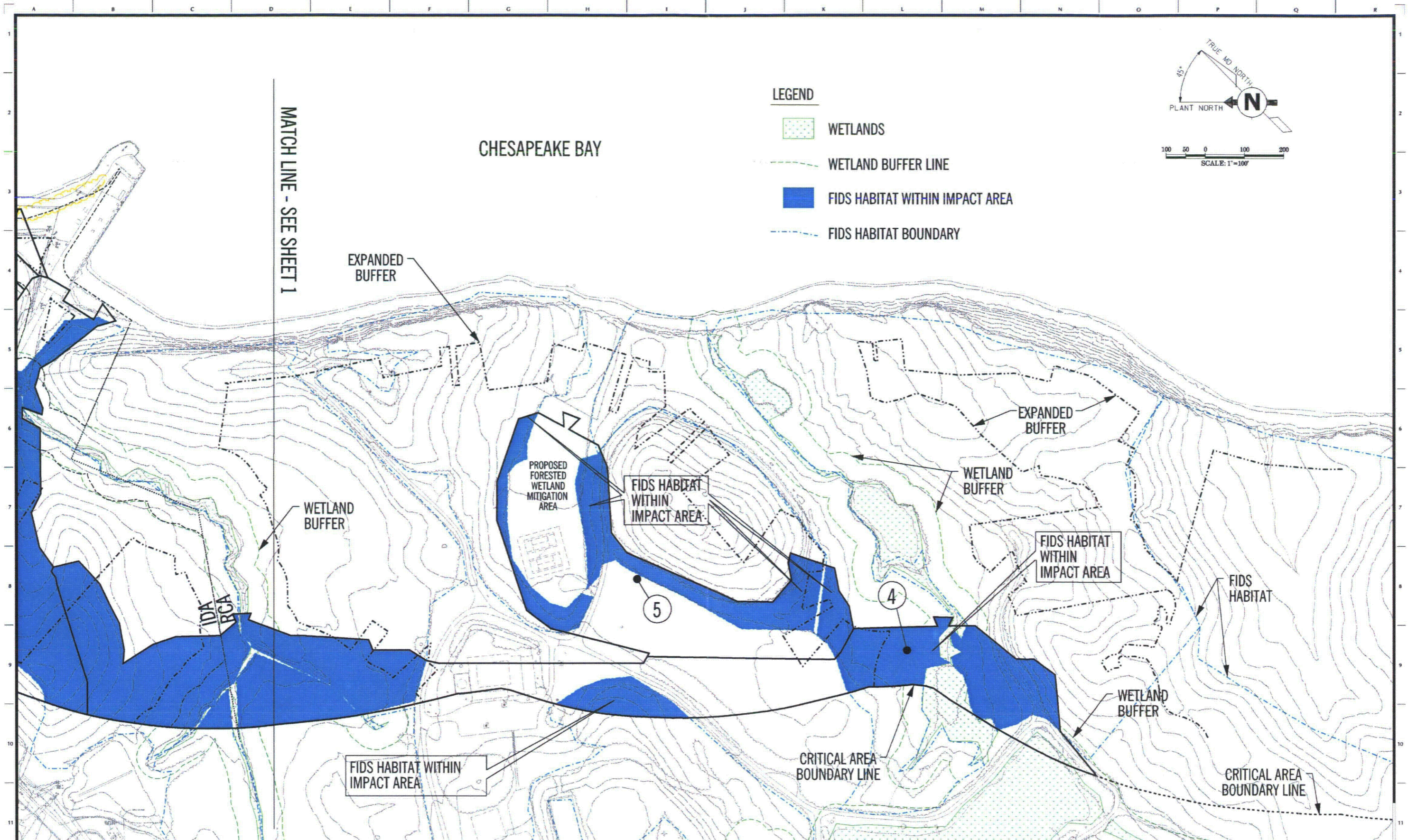
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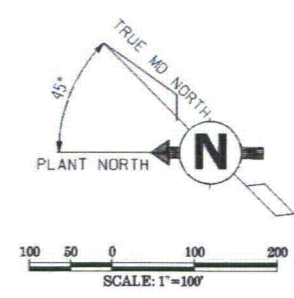
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CRITICAL AREA FIDS IMPACTS EXHIBIT
AND WETLANDS/WETLAND BUFFERS
for
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DESIGN	SCALE	1" = 100'
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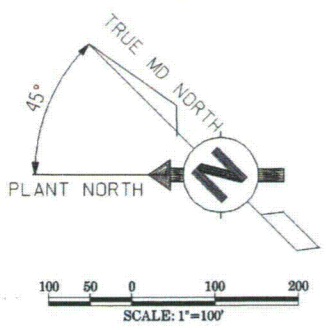
- LEGEND**
- WETLANDS
 - WETLAND BUFFER LINE
 - FIDS HABITAT WITHIN IMPACT AREA
 - FIDS HABITAT BOUNDARY



MATCH LINE - SEE SHEET 1

CHESAPEAKE BAY

<p>OWNER/DEVELOPER: CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC 100 CONSTELLATION WAY BALTIMORE, MD 21202 (410) 470-5857</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="font-size: 8px;">No.</th> <th style="font-size: 8px;">REVISION</th> <th style="font-size: 8px;">DATE</th> <th style="font-size: 8px;">BY</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	No.	REVISION	DATE	BY													<p>GREENHORNE & O'MARA CONSULTING ENGINEERS 6110 FROST PLACE, LAUREL, MARYLAND 20707 PHONE: (410) 266-0066 FAX: (410) 266-0067 www.g-and-o.com</p> <p style="font-size: 8px; text-align: center;">FLORIDA • GEORGIA • MARYLAND • NORTH CAROLINA • PENNSYLVANIA • VIRGINIA • WEST VIRGINIA © LATEST DATE HEREON</p>	<p>CRITICAL AREA FIDS IMPACTS EXHIBIT AND WETLANDS/ WETLAND BUFFERS for CALVERT CLIFFS</p>	<p>DESIGN SCALE 1" = 100'</p> <p>KET</p> <p>DRAWN 2 OF 2</p> <p>CRK</p> <p>CHECKED SHEET</p> <p>DATE MARCH 2009 3017</p> <p>PROJ No. FILE No.</p>
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<p>DATE: 3/16/2009 SCALE: 100' NOT TO SCALE</p>																				



MATCH LINE - SEE SHEET 2

LIMITS OF CLEARING WITHIN FORESTED CRITICAL AREA

FORESTED AREA

FORESTED AREA

LIMITS OF CLEARING WITHIN FORESTED CRITICAL AREA

LIMITS OF CLEARING WITHIN FORESTED CRITICAL AREA

CRITICAL AREA BOUNDARY LINE

CRITICAL AREA BOUNDARY LINE

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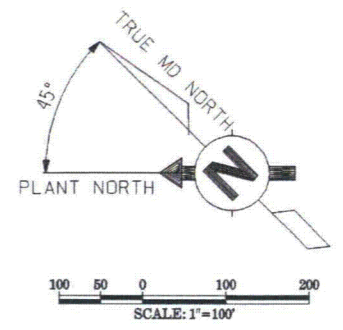
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MATCH LINE - SEE SHEET 1

CHESAPEAKE BAY

FORESTED AREA

FORESTED AREA

FORESTED AREA

FORESTED AREA

LIMITS OF CLEARING WITHIN FORESTED CRITICAL AREA

LIMITS OF CLEARING WITHIN FORESTED CRITICAL AREA

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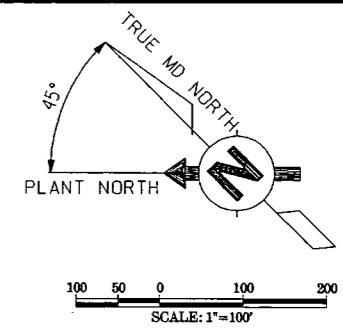
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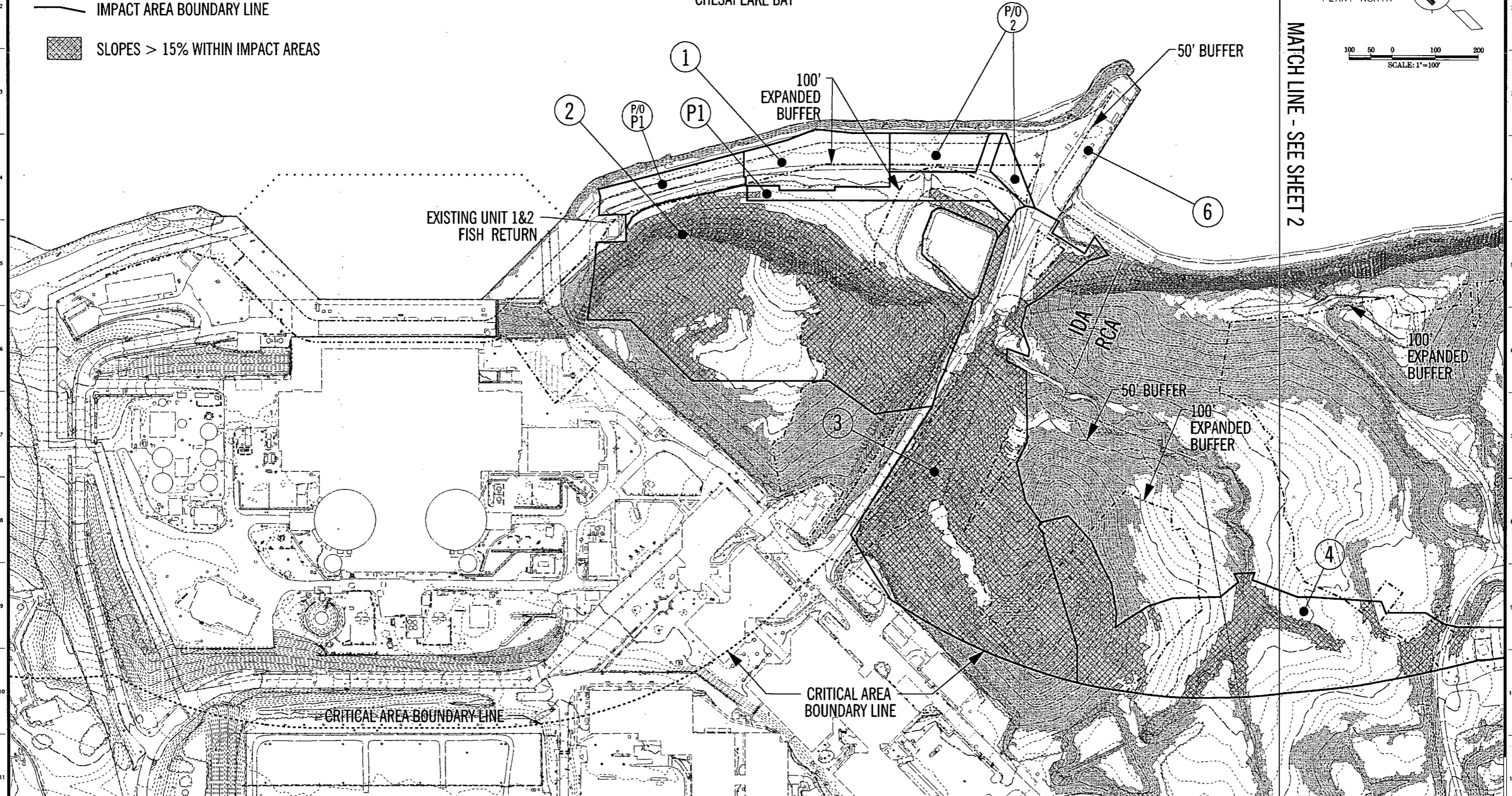
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DATE	PROJ No.	3017
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LEGEND

-  SLOPES > 15%
-  IMPACT AREA BOUNDARY LINE
-  SLOPES > 15% WITHIN IMPACT AREAS



CHESAPEAKE BAY



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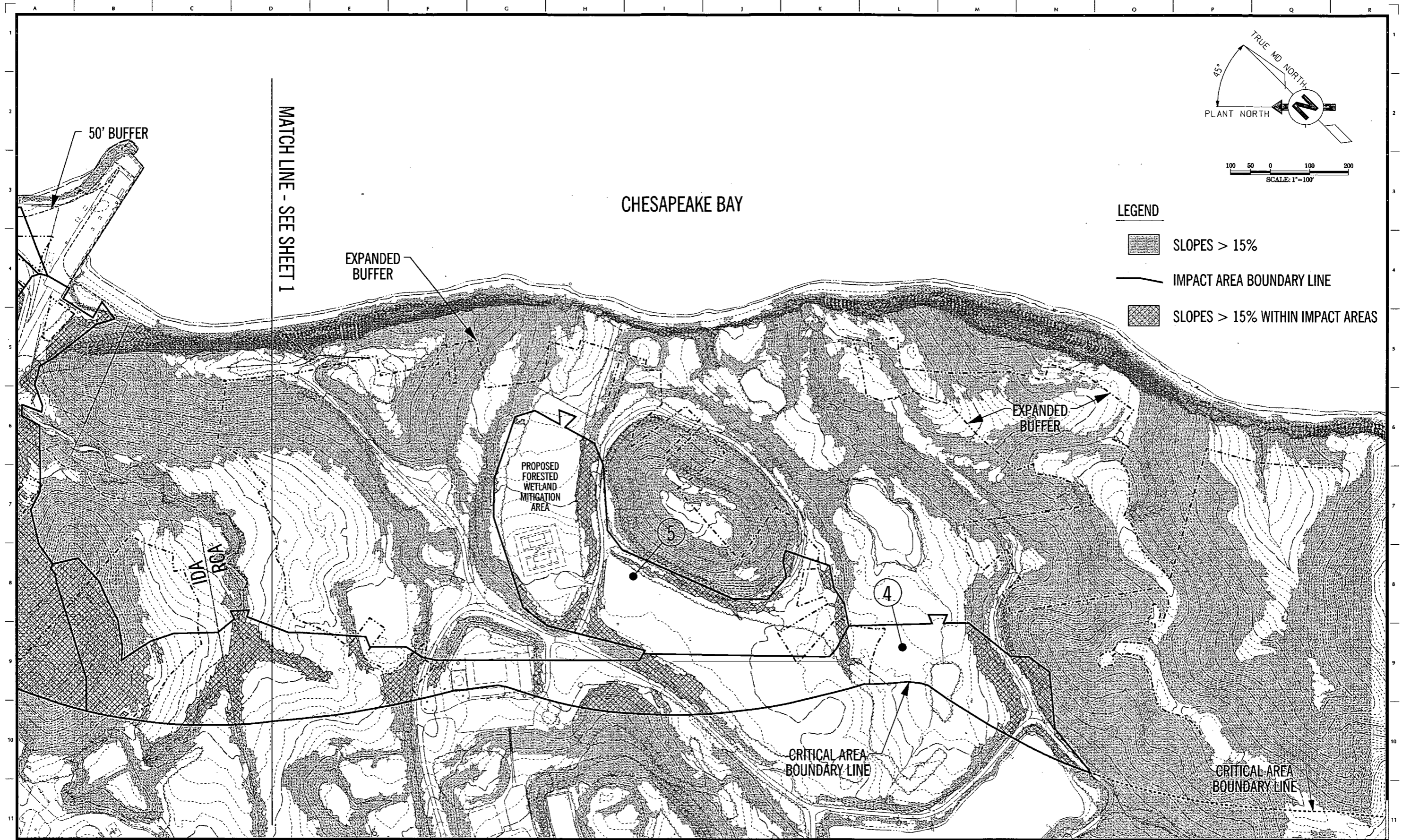
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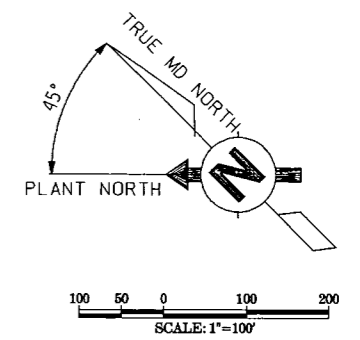
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STEEP SLOPES EXHIBIT
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


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DATE	FILE No.	



CHESAPEAKE BAY



LEGEND

-  SLOPES > 15%
-  IMPACT AREA BOUNDARY LINE
-  SLOPES > 15% WITHIN IMPACT AREAS

MATCH LINE - SEE SHEET 1

50' BUFFER

EXPANDED BUFFER

PROPOSED FORESTED WETLAND MITIGATION AREA

EXPANDED BUFFER

IDA
RCA

CRITICAL AREA BOUNDARY LINE

CRITICAL AREA BOUNDARY LINE

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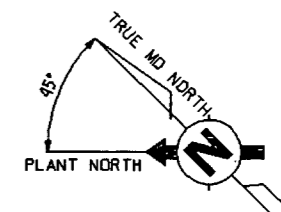
STEEP SLOPES EXHIBIT
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DATE	PROJ No.	FILE No.

CHESAPEAKE BAY

200 100 0 200 400

SCALE: 1"=200'



EXISTING FISH RETURN STRUCTURE
INTAKE STRUCTURE AREA = 0.03 AC.

EXISTING CONCRETE AREA
INTAKE STRUCTURE AREA = 0.45 AC.

EXISTING BARGE AREA
BARGE AREA = 0.45 AC.

EXISTING ROADS
ROADS AREA = 0.60 ACRES

IDA
RCA

CRITICAL AREA BOUNDARY LINE

CRITICAL AREA BOUNDARY LINE

DESIGN	SCALE	1" = 200'
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FILE NO.		

EXISTING IDA IMPERVIOUS AREAS
for
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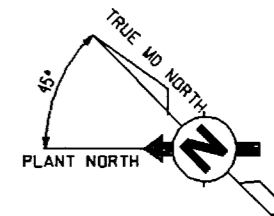


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DATE=7/29/2009 SCALE=200 ROT=90

CHESAPEAKE BAY

PROPOSED SEAL WELL
INTAKE STRUCTURE AREA = 0.03 AC.



PROPOSED FISH RETURN STRUCTURE
INTAKE STRUCTURE AREA = 0.02 AC.

PROPOSED INTAKE FOREBAY
INTAKE STRUCTURE AREA = 0.18 AC.

EXISTING BARGE AREA
BARGE AREA = 0.45 AC.

EXISTING ROADS (TO REMAIN)
ROADS AREA = 0.07 ACRES

EXISTING FISH RETURN STRUCTURE (TO REMAIN)
INTAKE STRUCTURE AREA = 0.03 AC.

PROPOSED BARGE AREA
BARGE AREA = 0.26 AC.

EXISTING INTAKE STRUCTURE (TO REMAIN)
INTAKE STRUCTURE AREA = 0.45 AC.

PROPOSED INTAKE STRUCTURES
INTAKE STRUCTURE AREA = 0.26 AC.

PROPOSED ROAD AREA
ROAD AREA = 0.29 AC.

EXISTING ROADS (TO REMAIN)
ROADS AREA = 0.16 ACRES

PROPOSED HAUL ROAD
ROADS AREA = 1.21 AC.

PROPOSED FLOOD WALL
SIDEWALKS/ PATHS/
WALLS AREA = 0.01 AC.

CRITICAL AREA BOUNDARY LINE

CRITICAL AREA BOUNDARY LINE

SCALE	1" = 200'
DESIGN	1 OF 1
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PROJECT	013017
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PROPOSED IDA IMPERVIOUS AREAS
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DATE-7/29/2009 SCALE-200 ROT-0

Table 2: Critical Area Impact Quantities

Impact No.	TOTAL Impact Area (sf)	TOTAL Impact Area (Ac)	New Impervious Impact Area (Ac)	Pervious Impact Area (Ac)	Impacts Within IDA (Ac)	Impacts Within RCA (Ac)	Impacts Within Tree Line (Ac)	Impacts Within Expanded Buffer (Ac) RCA	Impacts Within 50' Buffer (Ac) IDA	Impacts Within Expanded Buffer (Ac) IDA	TOTAL Impact Area Within Buffer Areas (Ac)
1	40616	0.93	0.46	0.47	0.93	0.00	0.05	0.00	0.21	0.40	0.61
2	365435	8.39	0.08	8.31	8.39	0.00	6.90	0.00	0.79	2.44	3.23
3	281138	6.45	1.32	5.14	6.45	0.00	5.31	0.00	0.78	3.35	4.13
4	429067	9.85	0.01	9.84	2.27	7.58	6.99	4.32	0.39	0.57	5.28
5	253188	5.81	0.00	5.81	0.00	5.81	1.55	0.43	0.00	0.00	0.43
6	12741	0.29	0.00	0.29	0.29	0.00	0.22	0.00	0.16	0.13	0.29
P1	58190	1.34	0.18	1.15	1.34	0.00	0.20	0.00	0.25	0.73	0.98
TOTAL	1440375	33.07	2.04	31.03	19.67	13.39	21.22	4.75	2.58	7.62	14.95

Total Areas Summary Table	
TOTAL Critical Area (Ac)	344.02
TOTAL Area Within IDA (Ac)	63.55
TOTAL Area Within RCA (Ac)	280.47
TOTAL Project Area Within Critical Area (Ac)	98.13
TOTAL Project Area Within IDA (Ac)	29.30
TOTAL Project Area Within RCA (Ac)	68.83
TOTAL Impact Area (Ac)	33.07
TOTAL Impact Area Within IDA (Ac)	19.67
TOTAL Impact Area Within RCA (Ac)	13.39
TOTAL Impact Area Within Buffer Areas (Ac)	14.95
TOTAL Impact Area Within Expanded Buffer (Ac) RCA	4.75
TOTAL Impact Area Within 50' Buffer (Ac) IDA	2.58
TOTAL Impact Area Within Expanded Buffer (Ac) IDA	7.62
TOTAL Impact Area Within IDA with slopes > 15% (Ac)	12.12
TOTAL Impact Area Within RCA with slopes > 15% (Ac)	2.87

NonTidal Wetland Impacts (Ac)		
Impact No.	Impacts Within Wetlands (Ac)	Impacts Within Wetland Buffers (Ac)
1	0.00	0.00
2	0.07	0.56
3	0.07	0.70
4	0.55	2.24
5	0.00	0.00
6	0.00	0.00
P1	0.00	0.06
TOTAL	0.69	3.57

Steep Slopes Impacts (Ac)		
Impact No.	Slopes > 15% Within IDA Impact Areas (Ac)	Slopes > 15% Within RCA Impact Areas (Ac)
1	0.00	0.00
2	5.33	0.00
3	5.28	0.00
4	1.45	1.98
5	0.00	0.89
6	0.03	0.00
P1	0.03	0.00
TOTAL	12.12	2.87

Tidal Wetland Impacts (Ac)	
Impact Area	Acres
Barge Area Dredging	4.20
Discharge Outfall Dredging	0.63
TOTAL	4.83

Existing Impervious (Ac)		IDA	RCA
Roads	1.77	0.78	0.99
Intake Structures	0.56	0.56	0.00
Pool/Pond	0.39	0.00	0.39
Tennis Courts	0.28	0.00	0.28
Buildings	0.07	0.00	0.07
Barge Pier	0.52	0.52	0.00
TOTAL (Ac)	3.58	1.86	1.72

Impervious To Be Removed (Ac)		IDA	RCA
Roads*	1.27	0.28	0.99
Intake Structures	0.00	0.00	0.00
Pool/Pond	0.39	0.00	0.39
Tennis Courts	0.28	0.00	0.28
Buildings	0.07	0.00	0.07
Barge Pier	0.00	0.00	0.00
TOTAL (Ac)	2.00	0.28	1.72

* 4310 LF Roads to be Removed.

Proposed Impervious (Ac)		IDA	RCA
Roads	1.70	1.70	0.00
Intake Structures	0.96	0.96	0.00
Flood Wall	0.01	0.01	0.00
Barge Pier	0.78	0.78	0.00
TOTAL (Ac)	3.45	3.45	0.00

Stream Restoration / Enhancement Areas		
ID	Length (ft)	Area* (Acres)
SR-3	1020	0.70
SE-4	920	0.80

Mitigation required for Stream Impacts @ 1:1 ratio with mitigation within streams corridors

*Width of total LOD varies, not to exceed 50'

MITIGATION REQUIREMENTS

Impact Type	Impact Area Ac	Impact Area sf	Required Mitigation Plantings	Mitigation Required Ac	Mitigation Required sf
RCA Buffer Impacts	4.75	206868	3:1	14.25	620604
100 Foot / Expanded Buffer RCA	4.75				
IDA Buffer Impacts	7.62	332034	2:1	15.24	664068
100 Foot / Expanded Buffer IDA	5.74	250141			
Buffer Disturbance for Water-Dependant Facilities* (100 Foot / Expanded Buffer IDA)	1.88	81893			
TOTAL				29.49	1284672
Less Proposed Plantings to Connect to FIDS Interior Habitat			FIDS Guidelines	21.86	952222
			TOTAL ***	7.63	332450

* Area 1, P1 and 6, Intake Buildings and Barge Area / Pier

** All on-site mitigation not feasible due to pipe line installation, maintenance, etc., mitigation to be provided in proposed buffer yard plantings area where possible, as shown on Critical Area FIDS Impact Exhibit (0.42 Ac.) and the remainder off-site

¹ For FIDS Impacts and Proposed Mitigation information, See Chesapeake Bay Critical Area Mitigation Plan by Tetra Tech NUS

Impact Type	Impact Area Ac	Impact Area sf	Required Mitigation Plantings	Mitigation Required Ac	Mitigation Required sf
Slopes > 15% within RCA ²	0.51	22066	3:1	1.52	66198

² Steep Slopes Impacts NOT in FIDS and NOT Buffer

Impact Type	Impact Area Ac	Impact Area sf	Required Mitigation Plantings	Mitigation Required Ac	Mitigation Required sf
Tree Clearing within RCA ³	0.10	4196	1:1	0.10	4196

³ Tree Clearing Impacts NOT in FIDS, Not in Buffer and NOT in Steep Slopes

TOTAL MITIGATION REQUIRED	9.25	402844
----------------------------------	-------------	---------------

Mitigation Plantings - Buffer Impacts		
Square Feet of Mitigation	Large Tree	Shrubs
332450	831	2493

For every 400 sf of impact, 1 large tree in a cluster of 3 shrubs shall be planted

Square Feet of Mitigation	Large Tree	Shrubs
66198	165	496

For every 400 sf of impact, 1 large tree in a cluster of 3 shrubs shall be planted

Mitigation Plantings - Tree Clearing		
Square Feet of Mitigation	Large Tree	Shrubs
4196	10	31

For every 400 sf of impact, 1 large tree in a cluster of 3 shrubs shall be planted

Proposed 25' Bufferyard w/in 50' Special Buffer		
Square Feet Planting Area	Acreage Planting Area	
18488	0.42	