

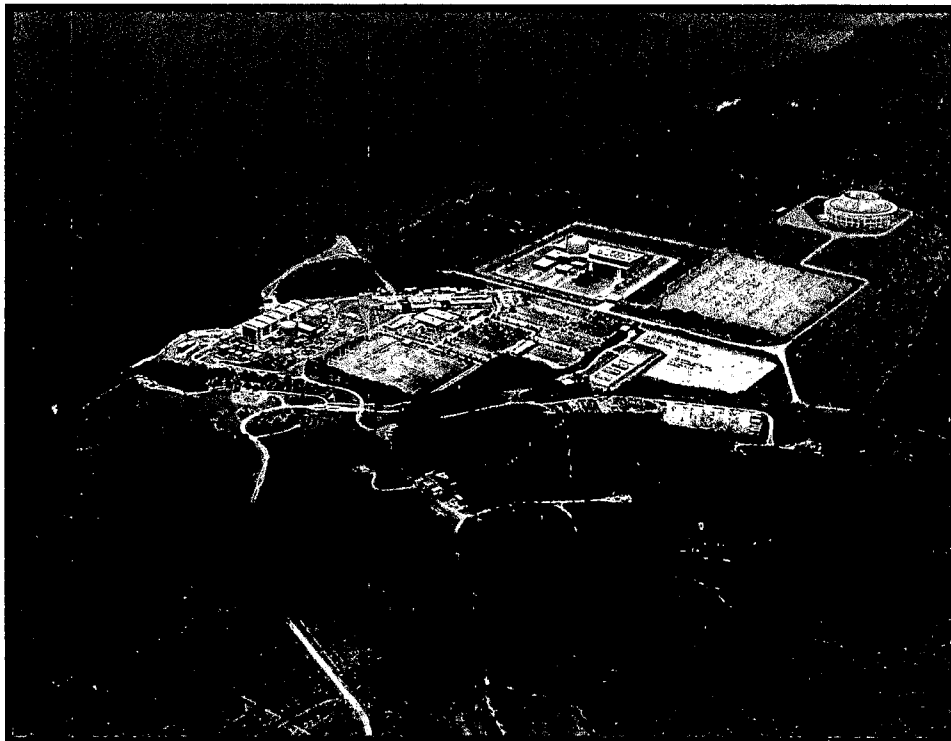
Enclosure 3

**Calvert Cliffs Nuclear Power Plant Unit 3
Alternate Site Evaluation, Revision 1
August 29, 2009**

Calvert Cliffs Nuclear Power Plant Unit 3

Alternate Site Evaluation v.[1]

[•] August 2009



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1. Introduction

UniStar Nuclear Energy has submitted a COLA for constructing and operating a U.S. Evolutionary Power Reactor (EPR) nuclear power station on the Calvert Cliffs Campus (*Proposed Site*). The deployment of a nuclear power facility is a major federal action which is subject to the National Environmental Policy Act (NEPA). In order to confirm the *Proposed Site* selected is the best location for the proposed nuclear power station, an alternatives analysis was conducted as required by the National Environmental Policy Act of 1969 (NEPA) and Code of Federal Regulations (CFR), Title 10, Part 51.45 (10 CFR 51.45).

Because of the large number and variety of factors that were considered in the site selection process, it was essential to develop and document the framework for conducting this process. In addition, it was important to develop an approach for weighing factors and assessing sites based on the relative contribution of each factor to the applicant's overall objectives.

The following were used as general guidelines in developing and documenting the site selection process. Any deviations from the regulatory guidelines are noted in the text.

- NRC guidance: NUREG-1555, Environmental Standard Review Plan (ESRP), Section 9.3: Site Selection Process (NRC, 2007). This document formed the basis for the site selection process, as discussed later in this report.
- Regulatory Guide 4.2, Rev. 2, "Preparation of Environmental Reports for Nuclear Power Stations" (NRC, 1976). This guide was used in comparing the alternative sites to the proposed site. According to the guide, a cost-effectiveness analysis of realistic alternatives in terms of both economic and environmental costs can be conducted, if needed, to show why the proposed site is preferred over the alternative sites. In order to determine a suitable site, expected environmental impacts are appraised for each site. Quantifying impacts, while desirable, may not be possible for most factors because of a lack of adequate data. Under such circumstances, qualitative and general comparative statements supported by documentation may be used. The guide suggests various criteria that may be used for comparing the alternatives and the proposed nuclear power station, including the following:
 - Engineering and environmental factors: Meteorology; geology; seismology; hydrology; population density in site environments; access to road, rail, and water transportation; fuel supply and waste disposal routes; cooling water supply; water quality; sensitivity of aquatic and terrestrial habitats affected; commitment of resources; dedicated areas; projected recreational usage; and scenic values
 - Transmission hookup factors: Access to transmission system in place, problems of routing new transmission lines, problems of transmission reliability, and minimization of transmission losses
 - Construction factors: Access for equipment and materials, housing for construction workers
 - Land use factors: Land use types (including compatibility with zoning or use changes)
 - Cost factors: Construction costs, including transmission, fuel (annual), and operating and maintenance (annual) costs
 - Operating factors: Load-following capability
 - Alternative site cost factors: Land and water rights; base station facilities; main condenser cooling system; main condenser cooling intake structures and discharge system; transmission and substation facilities; access roads and railroads; and site preparation including technical investigations
- Regulatory Guide 4.7, Rev. 2, "General Site Suitability for Nuclear Power Stations" (NRC, 1998). This guide discusses the major site characteristics related to public health and safety and environmental issues that the NRC staff considers in determining the

suitability of candidate sites for nuclear power stations. The safety issues that the NRC considers in its evaluation include geologic/seismic, hydrologic, and meteorological characteristics of proposed sites; exclusion areas and low population zones; population considerations as they relate to protecting the general public from the potential hazards of serious accidents; potential effects on a station from accidents associated with nearby industrial, transportation, and military facilities; emergency planning; and security plans. The environmental issues that the NRC considers in its evaluation include potential impacts on ecological systems, water use, land use, the atmosphere, aesthetics, and socioeconomics (social, cultural, and economic features [including environmental justice]).

- CFR, Title 10, Part 100, "Reactor Site Criteria," (NRC, 1996). This document requires that criteria, such as population density, use of site environments (including proximity to man-made hazards), and physical characteristics of the site be used as exclusionary criteria at a higher level to determine the acceptability of a site for a nuclear power reactor.
- Electric Power Research Institute (EPRI), Siting Guide: Site Selection and Evaluation Criteria for an Early Site Permit Application, Final Report (EPRI, 2002). The siting guide serves as a roadmap and tool and provides the methodology and framework for developing a detailed and specific process to meet the needs of early site permit (ESP) applicants for site selection. The siting guide is the industry standard for site selection and ESP preparation, and it is also appropriate to use with combined operating license applications. The siting guide describes a four-step site selection process involving sequential application of exclusionary, avoidance, and suitability criteria, as well as incorporation of preferences (or weighting factors) that are applied to the suitability criteria. Steps 1 and 2 of the siting process are areal in nature; screening of a relatively large region of interest (ROI) is performed to identify a number of discrete "site-sized" parcels for evaluation as a potential nuclear power station site. These steps are accomplished using mappable information. Steps 3 and 4 compare individual sites based on their relative suitability. This portion of the process begins with the use of mapped and other published information and concludes with detailed information collected through onsite investigations, as necessary. Step 4 culminates in selecting a proposed site.

Applicable State siting regulations were reviewed to see if there were relevant criteria that needed to be incorporated into this site selection process and they are summarized as follows:

- State of Maryland – The Power Plant Research Program (PPRP) of the Maryland Department of Natural Resources (MDNR) was established under the Power Plant Siting and Research Act of 1971 (PPRP, 2006). The PPRP coordinates and receives recommendations from various federal, state, and local agencies regarding the Certificate of Public Convenience and Necessity (CPCN) application with ultimate disposition of these recommendations and the application itself by the Maryland Public Services Commission (PSC) (COMAR, 2007). Among other functions, the PPRP evaluates potential impacts of the proposed facility on environmental resources, including air, surface water and groundwater, terrestrial resources, cultural and historic resources, and socioeconomics, while assessing overall site suitability. This evaluation is for all proposed power facilities, including new plants, expansions of existing plants, and transmission lines (PPRP, 2006). These environmental considerations are consistent with the criteria included in this site selection process

2. Alternative Site Evaluation Process

Consistent with the special case note in NUREG-1555 (1999), Section III (8) which states:

"Recognize that there will be special cases in which the proposed site was not selected on the basis of a systematic site-selection process. Examples include plants proposed to be constructed on the site of an existing nuclear power plant previously found acceptable on the basis of a NEPA review and/or demonstrated to be environmentally satisfactory on the basis of operating experience, and sites assigned or allocated to an applicant by a State government from a list of State-approved power-plant sites. For such cases, the reviewer should analyze the applicant's site-selection process only as it applies to candidate sites other than the proposed site, and the site-comparison process may be restricted to a site-by-site comparison of these candidates with the proposed site. As a corollary, all nuclear power plant sites within the identified region of interest having an operating nuclear power plant or a construction permit issued by the NRC should be compared with the applicant's proposed site."

This alternative site evaluation process for Calvert Cliffs Unit 3 implements the special case and will proceed with a systematic site-selection process search for alternatives to a *Proposed Site* submitted to the NRC as the proposed location for the nuclear plant, and then will compare the *Alternative Sites* to the *Proposed Site* in regard to environmental impacts to identify if environmental preference can be established for an alternate site. If environmental preference is established, then a second tier of evaluations is conducted based on other factors including commercial and financial criteria.

The process/procedure will follow NUREG-1555 utilizing elements of EPRI Guide and is depicted in Figures 2-1 and 2-2 and is delineated as follows:

- Establish the Region of Interest (ROI)
 - Establish the basis for the ROI and define the ROI
 - Develop the basis for establishing a pool of sites to evaluate
 - Establish an initial base pool of sites to evaluate
- Determine *Candidate Areas* within the ROI
 - Establish exclusionary criteria (e.g., population centers)
 - Apply the exclusionary criteria to the ROI
- Identify list of *Potential Sites*
 - Establish de-select criteria (e.g., < 420 ac (170 ha))
 - Apply de-select criteria to sites located within *Candidate Areas* to establish *Potential Sites*
- Identify list of *Candidate Sites*
 - Confirm *Potential Sites* are licensable and otherwise viable sites for constructing a new nuclear power station to establish *Candidate Sites*
- Identify list of *Alternate Sites*
 - Score *Potential Sites* based on non-commercial weighted criteria (i.e., environmental basis)
 - Establish scoring criteria and basis
 - Establish weighting criteria and basis
 - Score *Candidate Sites*
 - Select the top 3 to 5 ranked *Candidate sites* as *Alternate Sites*
- Compared *Alternate Sites* to *Proposed Site*
 - Apply weighted scoring to *Proposed Site*
 - Evaluate if any *Alternate Sites* are "Environmentally Preferred" to the *Proposed Site*
 - If one or more of the *Alternate Sites* is significantly higher, then apply commercial scoring criteria to evaluate whether an *Alternate Site* is "Obviously Superior" to *Proposed Site*

The following subsections define and describe the detailed components of the alternative site evaluation-process for the subject new nuclear power plant.

Appendix F contains supporting environmental information that was submitted to the Maryland Department of the Environment (MDE) and the U.S. Army Corps of Engineers (USACE) as part of the Joint Permit Application (JPA).

Figure 2-1
Alternative Site Evaluation Process

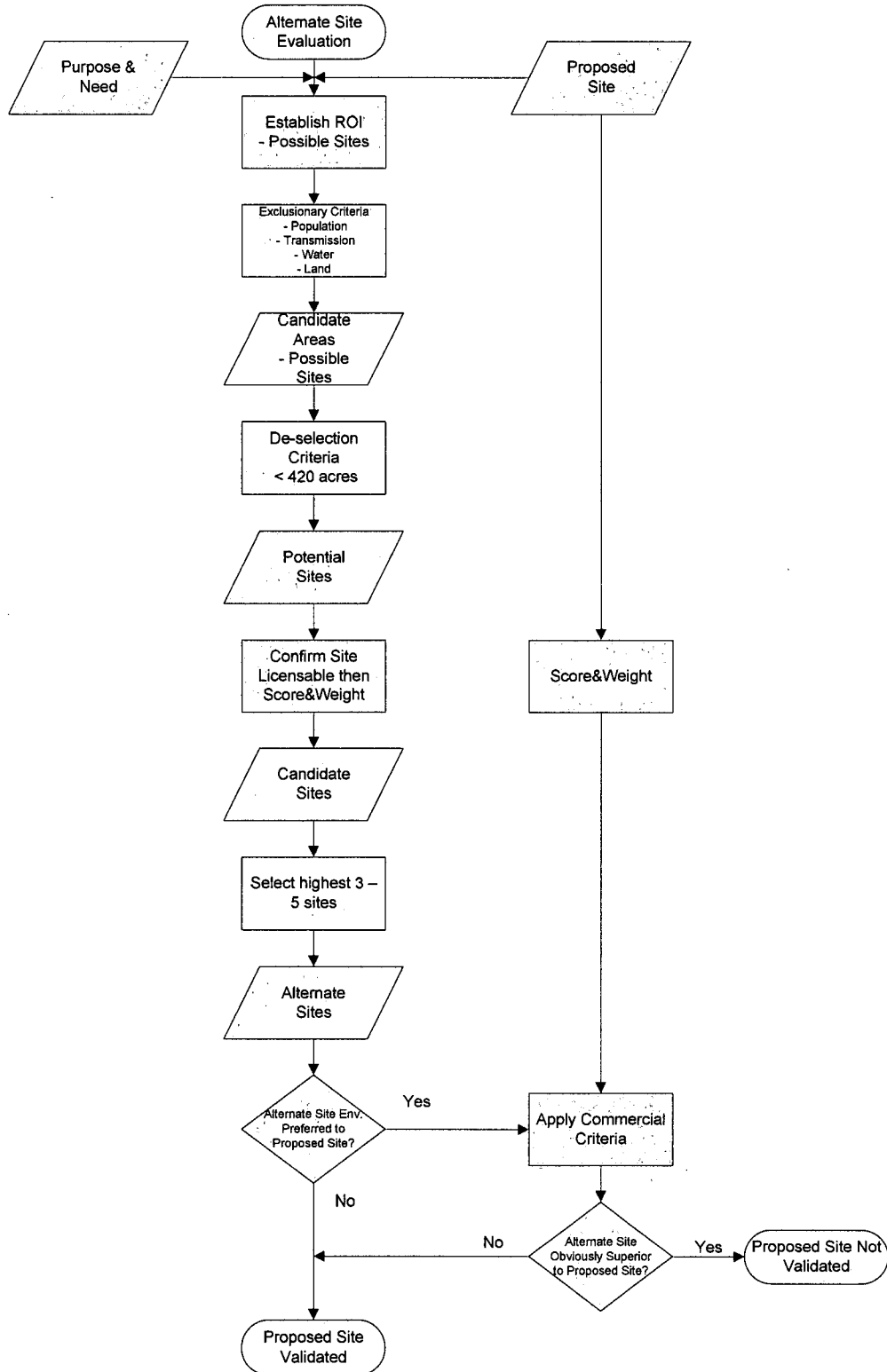
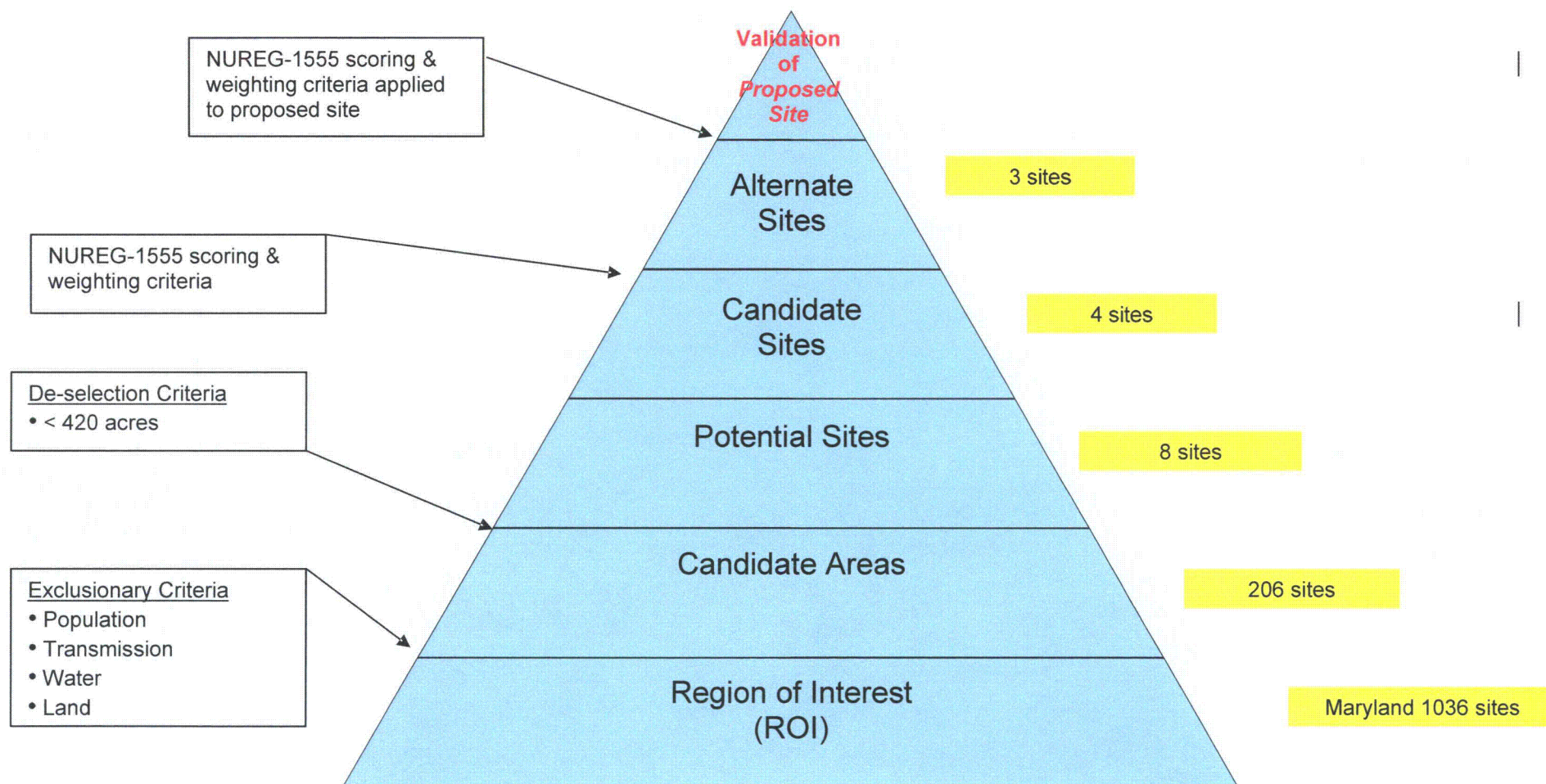


Figure 2-2
Alternative Site Evaluation Process Overview



3. Region of Interest (ROI)

The first step in the site selection process was to define and identify the ROI. As defined in ESRP 9.3 (NRC, 2007), the ROI is the largest area considered and is the geographic area within which sites suitable for the size and type of nuclear power generating facility proposed by the applicant are evaluated. Furthermore, ESRP 9.3 states that the ROI can be a state. The "Purpose and Need" stated in Part 3 of the Calvert Cliffs Nuclear Power Plant Unit 3 (CCNPP3) COLA is:

"The purpose is to build and operate a large baseload merchant power plant that will generate needed power for Maryland."

Furthermore, the Maryland Public Service Commission (PSC) (Ref.17 and 18) has identified that "Maryland suffers from a State-wide shortfall in net generating capacity", that nuclear provides the highest cumulative economic value added ("EVA") compared to the costs of all other energy scenarios, and an expectation that the needed electric power, to meet in-state demand, should not be imported into the state (i.e., generation from within the state boundary of MD) to ensure reliable and cost-effective power to the Maryland consumer. In addition, the PSC's Final Order in Case No. 9127 granting a Certificate of Public Convenience and Necessity (CPCN), References 19 and 20, for construction of Calvert Cliffs Unit 3 states that:

"The plant will constitute a new large source of power that would be of benefit to the citizens and State of Maryland, with record showing that such plant location at the site of an existing nuclear plant campus will reduce impacts, and with conditions accepted herein will meet all applicable environmental standards and requirements."

Based on the aforementioned, the ROI is defined as the state of Maryland (Figure 3-1) and is consistent with the requirements of ESRP 9.3.

The initial pool of possible sites within the ROI was established from two sources, the Maryland Department of the Environment's *Brownfields, Voluntary Cleanup Programs and State Remediation Site* database, as well as the U.S. Energy Information Administration *State Energy Profile* database. These sources included:

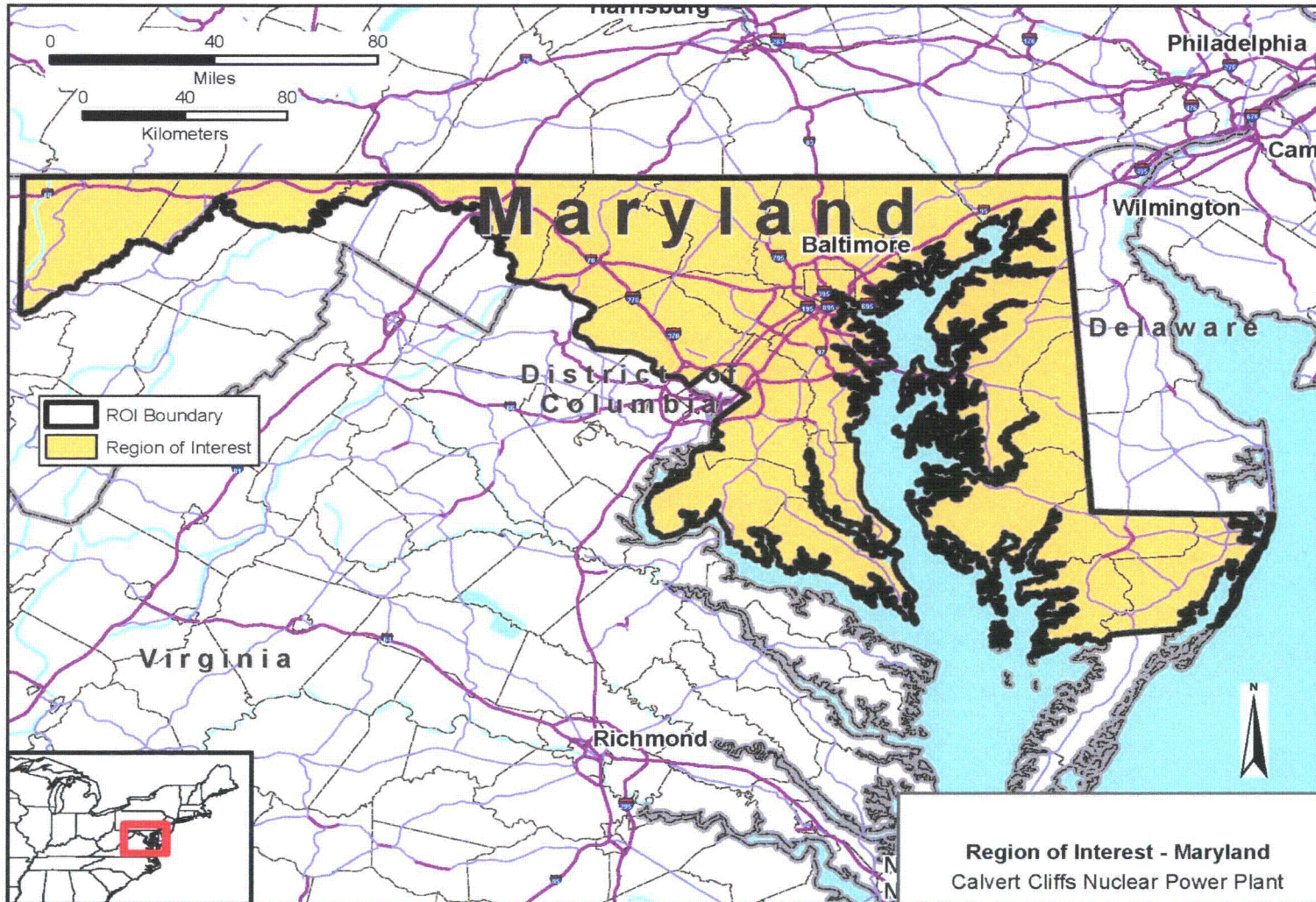
- Brownfield sites
- Remediation sites, including Voluntary Cleanup Program sites, National Priority List sites, and Federal Facilities undergoing remediation
- Power facilities

These two databases in their entirety (i.e., without any additional filtering or screening) established the initial pool of 1036 possible sites which are subsequently used in the CCNPP3 alternate site selection process.

Greenfield sites were not included in either database and hence this pool of sites does not include any such sites. Greenfield sites are being addressed on a generic basis in the Environmental Report.

A detailed discussion of the need for power in Maryland is provided in Chapter 8 of the Environmental Report.

FIGURE 3-1
Region of Interest



4. Candidate Areas

The next step in the site selection process was to identify suitable candidate areas by screening the ROI using exclusionary criteria. *Candidate Areas* refer to one or more areas within the ROI that remain after unsuitable areas have been removed. ROI screening was performed at a high level with the purpose of quickly identifying areas within the ROI that would not be suitable for the siting of a nuclear power station. The criteria used in the identification of the candidate areas are consistent with those identified in ESRP 9.3 (NRC, 2007) and the EPRI siting guide (EPRI, 2002). These exclusionary criteria are identified in Table 4-1 below. The exclusionary areas are shown individually graphically on Figures 4-1 through 4-4 and cumulatively in Figure 4-5. The *Candidate Areas* are those not within these exclusionary areas and are shown graphically in Figure 4-6 and 4-7. There are 206 possible sites within the *Candidate Areas*.

TABLE 4-1
Exclusionary ROI Screening Criteria to Establish Candidate Areas

Criteria	Detail
Population	Densely populated areas (that is, not located in an area with greater than or equal to 300 ppsm [or 300 persons per 2.6 km ²])
Transmission	Lack of 345 kV or higher transmission lines within 30 mi [48.3 km]. The 345 kV or higher transmission lines are needed for the EPR standard grid connection design.
Water	Lack of a cooling water source capable of supplying 50 MGD or more within 15 mi [24.1 kilometers].
Land	Dedicated land (that is, not located within national or state parks, , or tribal lands)

The exclusionary criterion pertaining to population density used in this siting evaluation is more specific and more conservative than what is presented in 10 CFR 100. The information presented in 10 CFR 100 does not specify a permissible population density or total population within this zone because the situation may vary from case to case. NRC Regulatory Guide 4.7, Rev. 2 (NRC, 1998) contains the same information as presented in 10 CFR 100, but adds the following specific criteria:

Preferably a reactor would be located so that, at the time of initial site approval and within about 5 years thereafter, the population density, including weighted transient population, averaged over any radial distance out to 20 miles (cumulative population at a distance divided by the circular area at that distance), does not exceed 500 persons per square mile [ppsm]. A reactor should not be located at a site whose population density is well in excess of the above value.

In addition, the EPRI siting guide contains the most conservative criterion with regard to population density and proximity to major population centers (that is, not located in an area with greater than or equal to 300 ppsm [or 300 persons per 2.6 km²]) (EPRI, 2002). This siting evaluation used the conservative population criterion (300 ppsm) as an exclusionary criterion in the identification of candidate areas to be in alignment with current industry objectives.

Information gathered from the initial screening was used to identify areas not affected by the exclusionary screening criteria. The results of screening the ROI yielded those *Candidate Areas* identified in Figure 4-6 and 4-7.

Figure 4-1
Exclusionary Criteria – Population Center

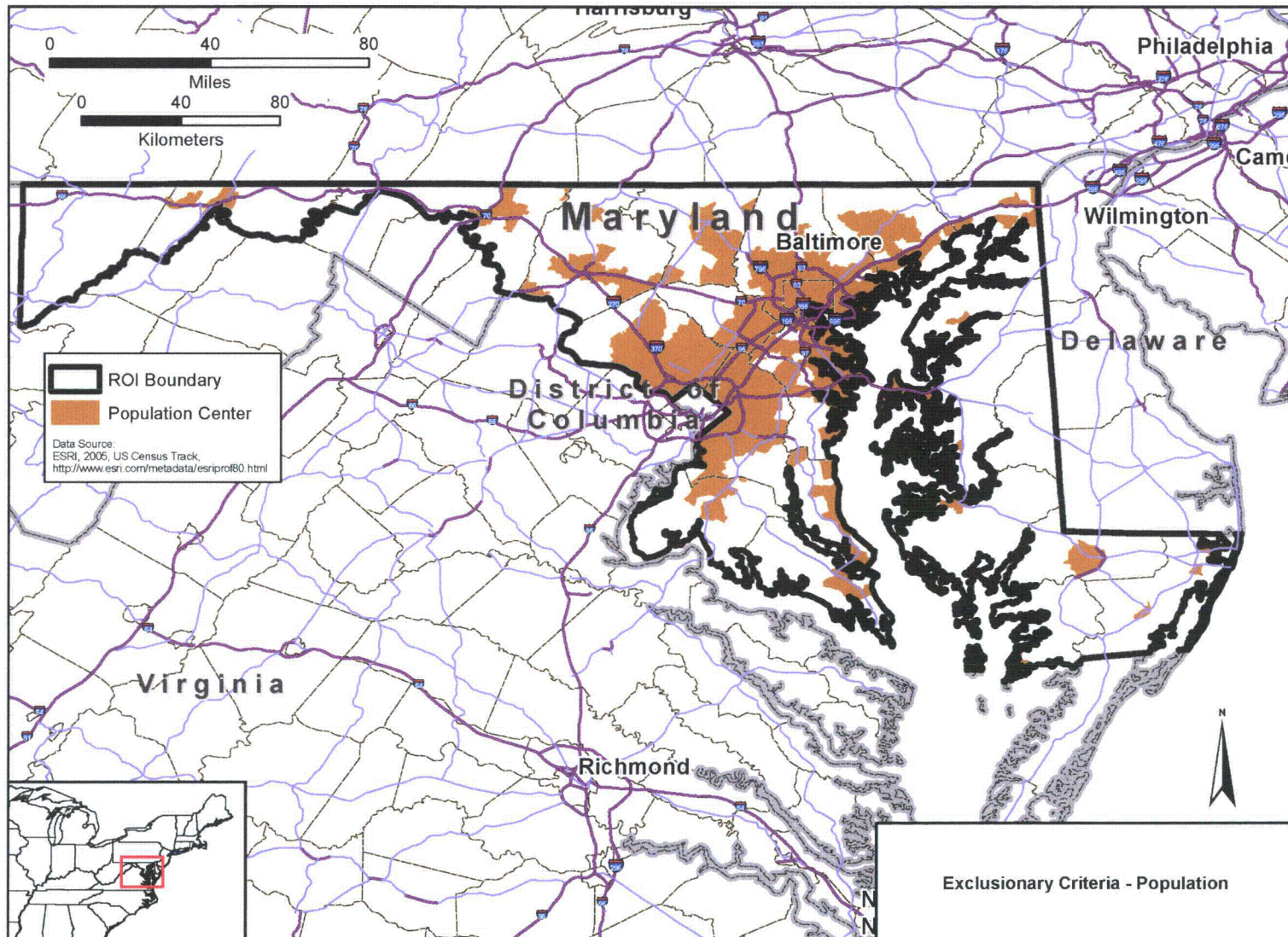


Figure 4-2
Exclusionary Criteria – Transmission Line Exclusion Area

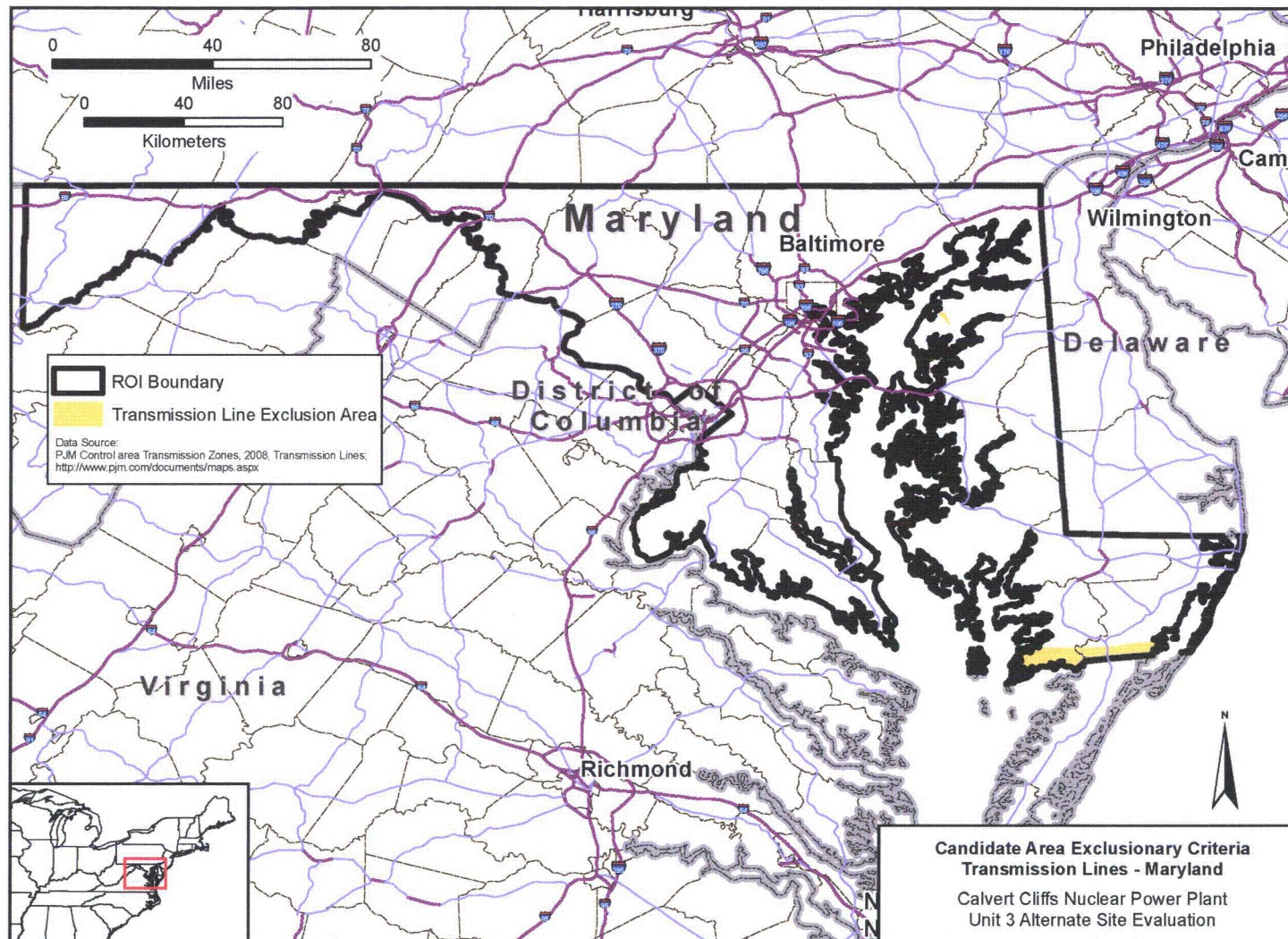


Figure 4-3
Exclusionary Criteria – Waterway Exclusion Area

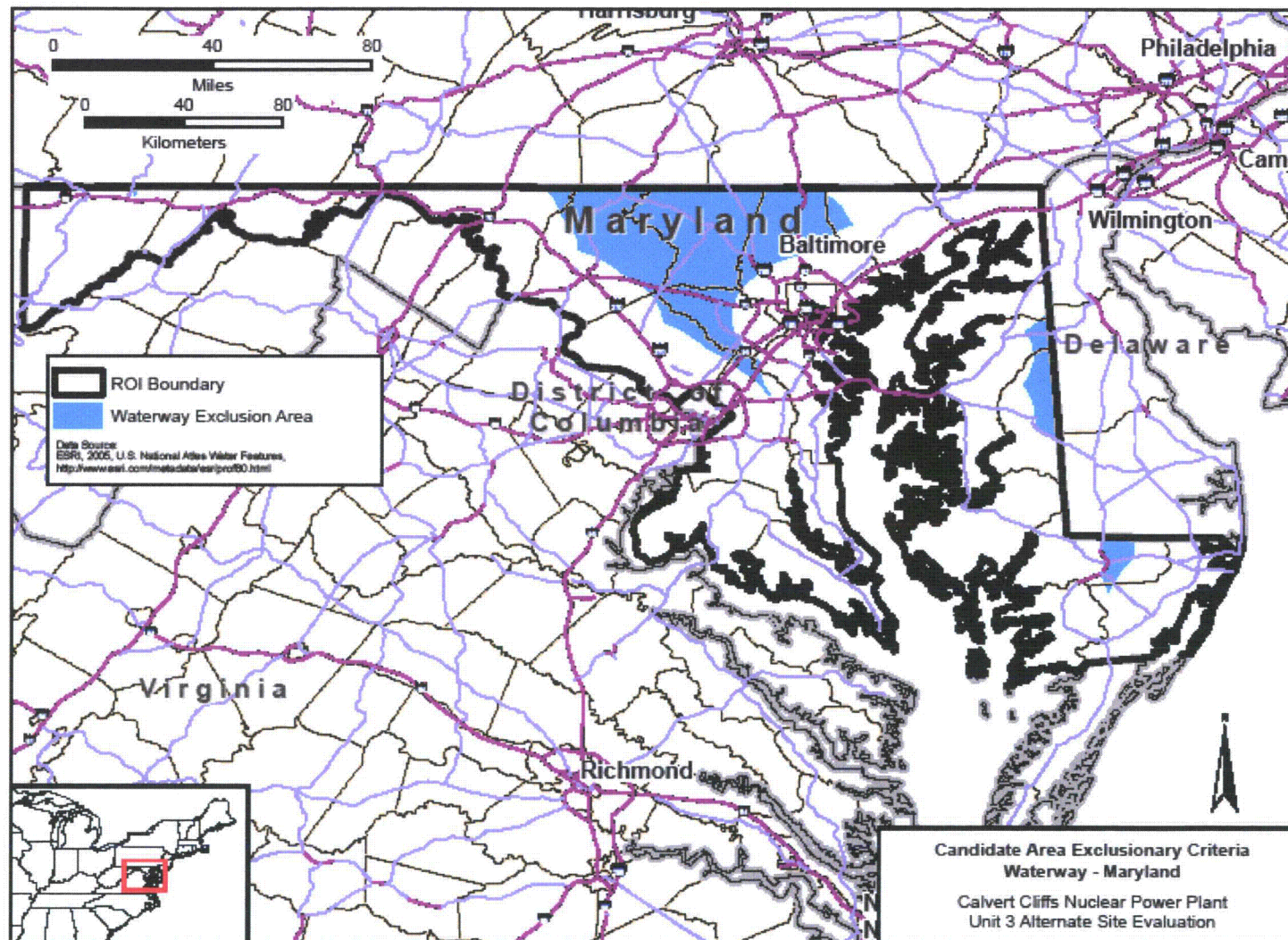


Figure 4-4
Exclusionary Criteria – Dedicated Land

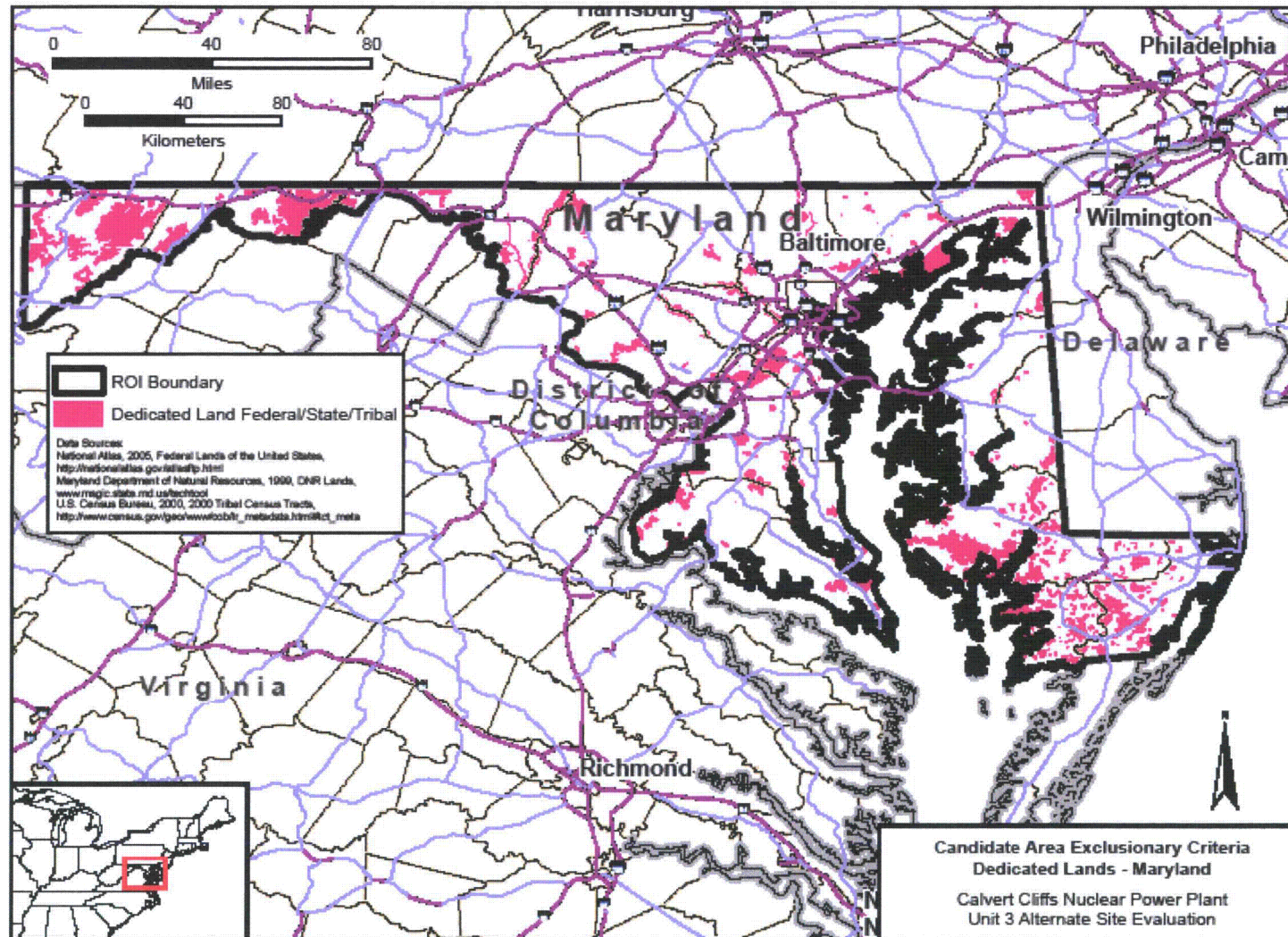
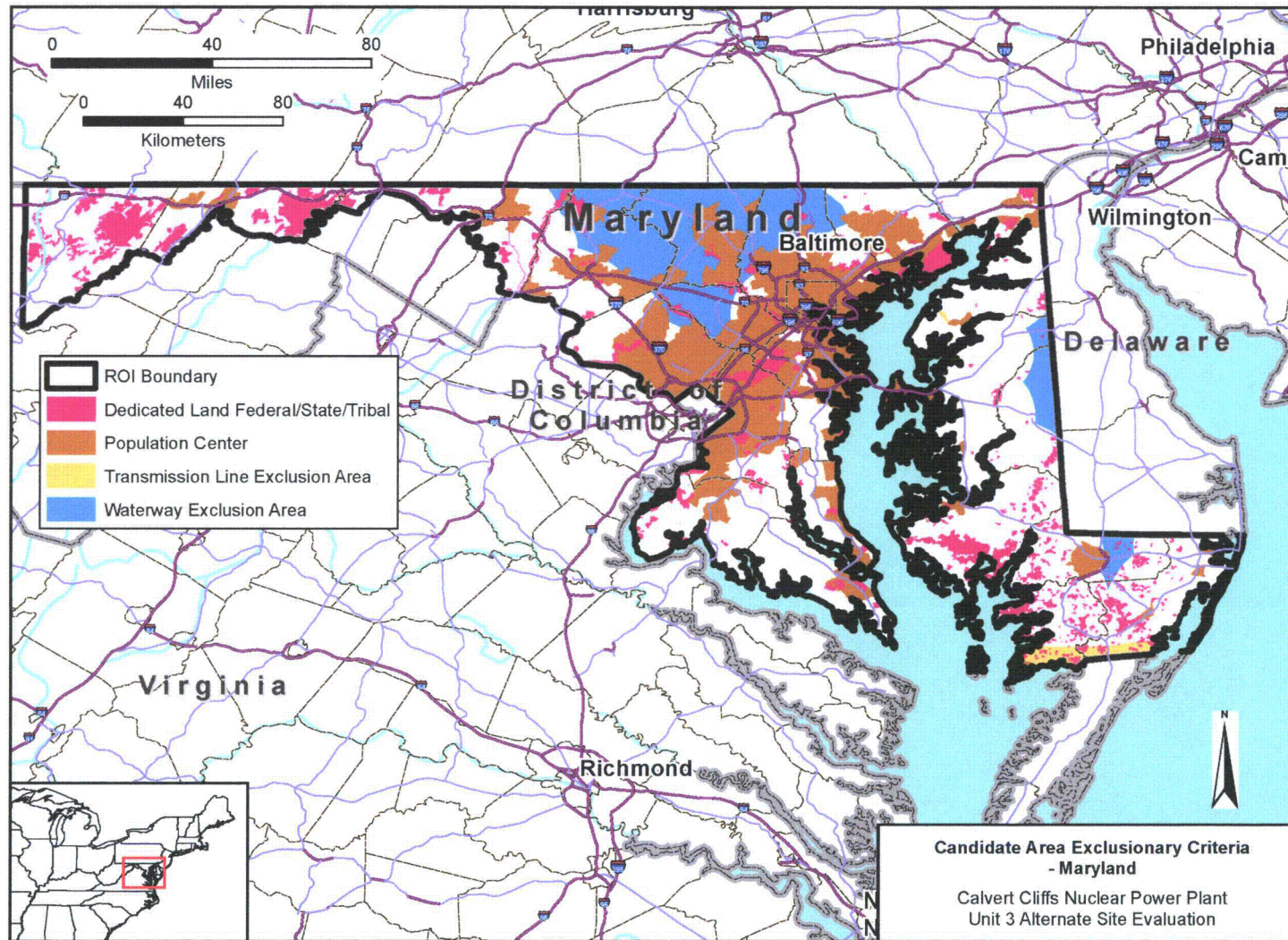


Figure 4-5
Candidate Area Exclusionary Criteria - Composite



**Figure 4-6
Candidate Areas**

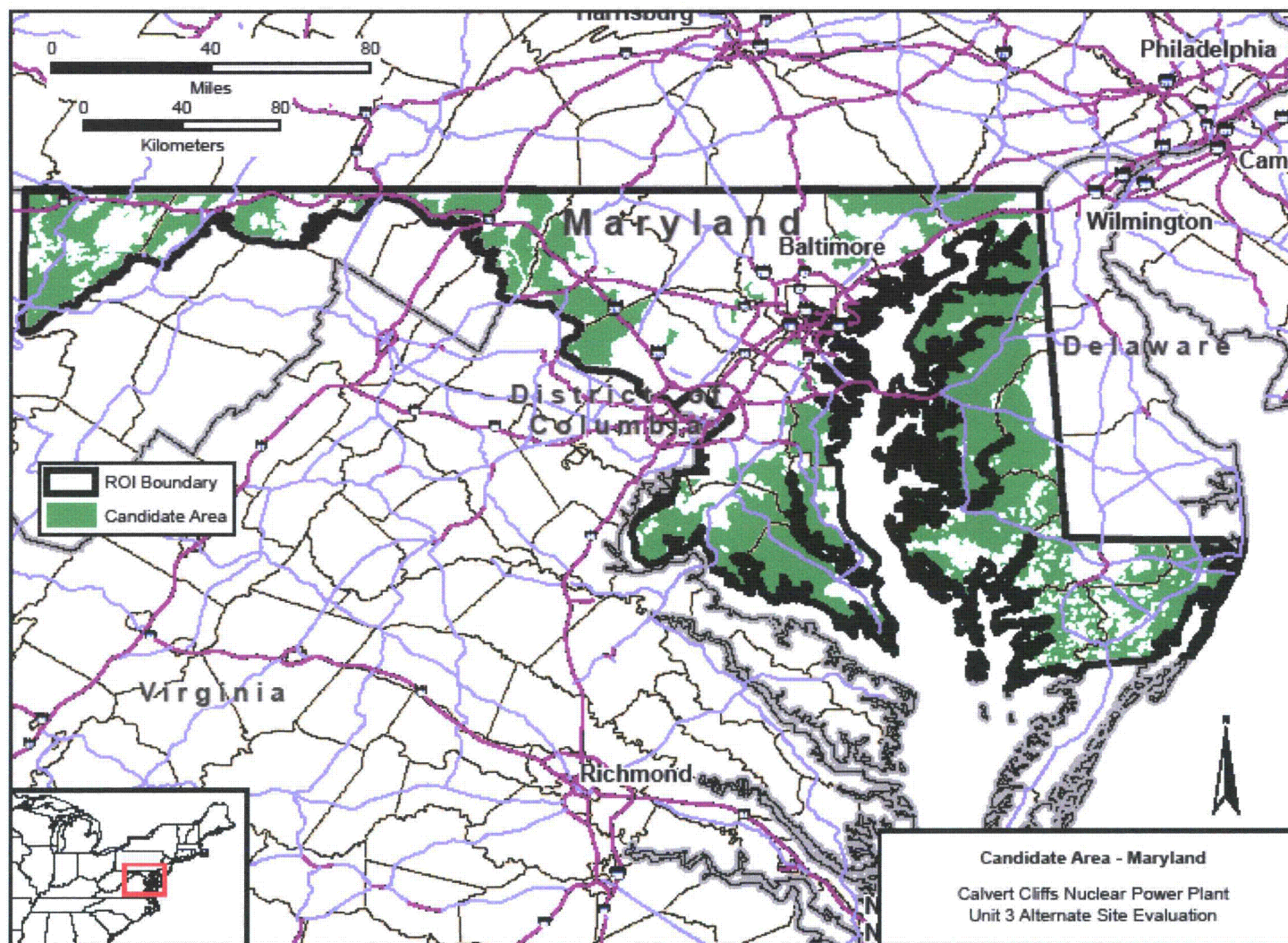
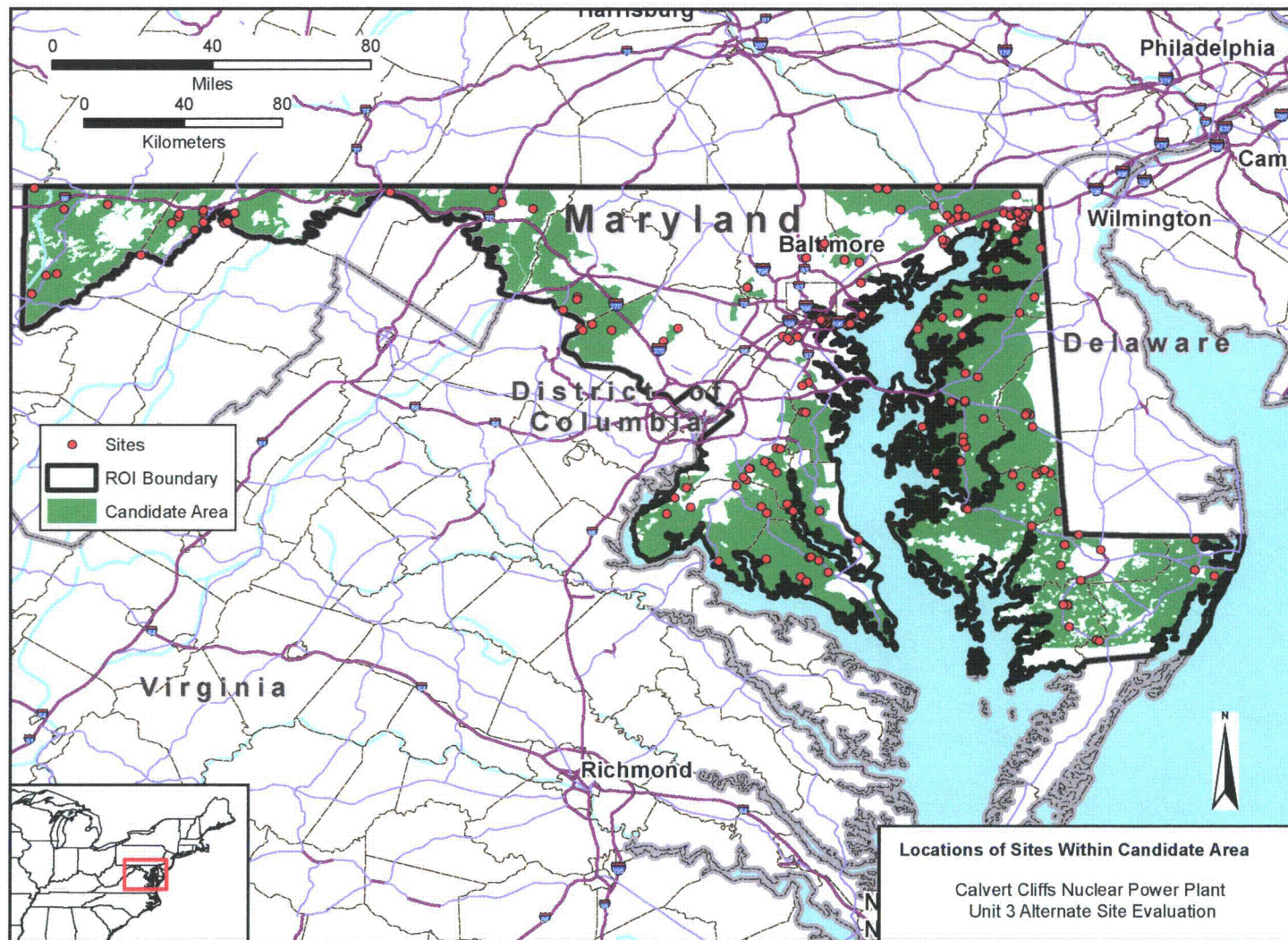


Figure 4-7
Sites in Candidate Areas



5. Potential and Candidate Sites

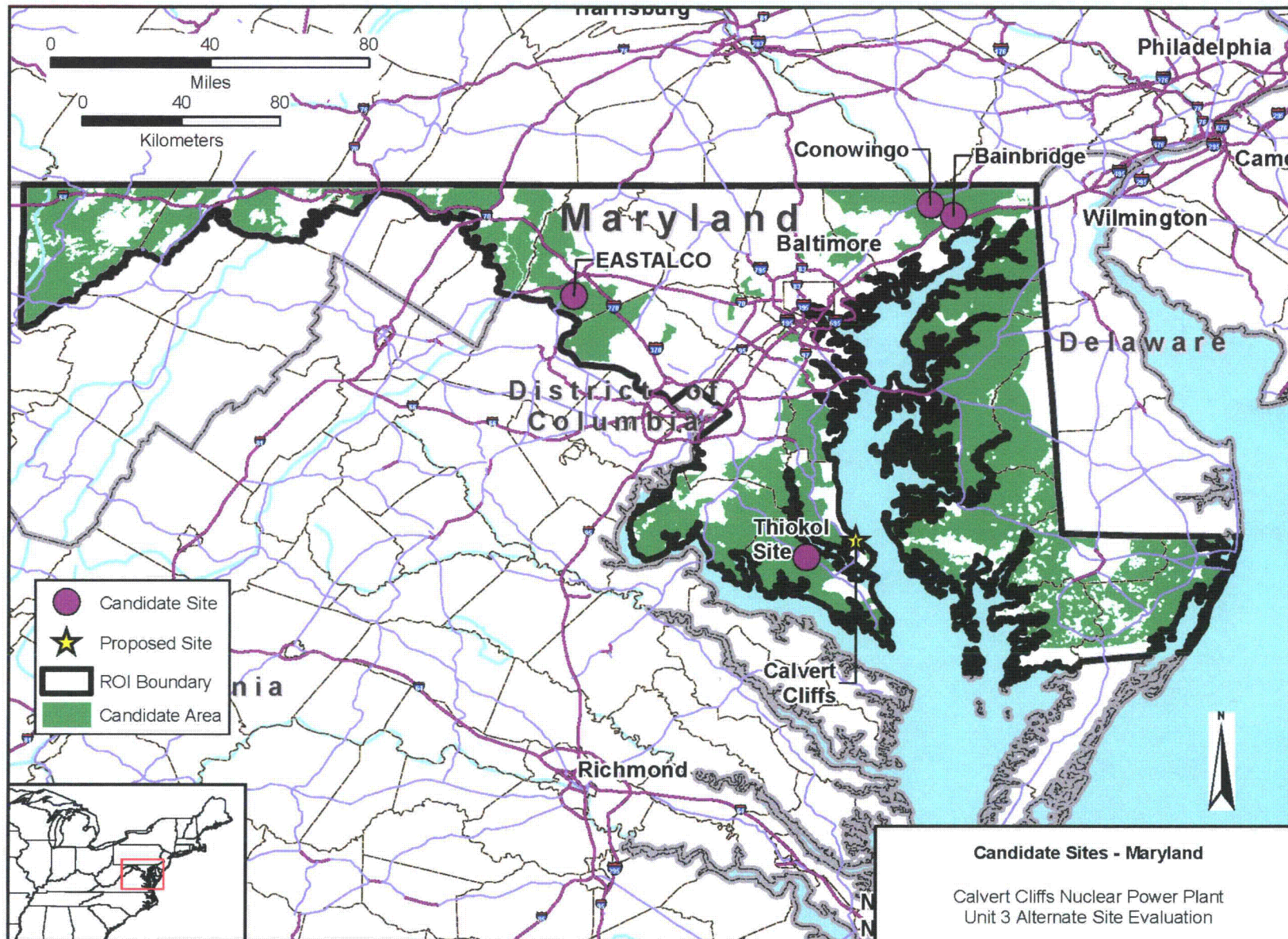
The next step in the site selection process was to screen the candidate areas using refined discretionary criteria to identify potential geographic locations for the placement of the proposed nuclear power station. A de-select criteria, as allowed for in NUREG-1555 and EPRI Guide, was applied to the possible sites within the *Candidate Areas* to further screen down to *Potential Sites*. All sites less than 420 acres were screened out in this step. 420 acres has been identified as the minimum contiguous site size needed to construct the US EPR.

Eight (8) *Potential Sites* were identified after applying the de-select criteria of 420 acres. Of these, the BWI Airport site was determined not to be licensable due to its proximity to a commercial airport. The Sparrows Point site was determined not to be licensable due to being within a 20 mile proximity to a population center greater than 300 ppsm [or 300 persons per 2.6 km²]. The Morgantown site was determined not to be a viable option based on the fact that utilizing Morgantown as the site does not meet the "need for power". That is, removing an existing/operating 1486MW facility such as Morgantown to replace it with 1600MW for a net addition of 114MW does not increase electric supply significantly and, as such, does not meet the need for power. The Beiler site was determined not to be a viable option after obtaining reconnaissance level information (needed to support scoring) and cursory evaluation identified that; 1) the nearest water source, Sassafras Creek, does not meet 7Q10 volume requirements, and 2) the next nearest water source, the confluence of Sassafras and Chesapeake Bay, which is over 12 miles away at its nearest point is too shallow to support an inlet structure and would require significant dredging several more miles out which would be beyond the 15 mile exclusionary criterion. As a result, the following four (4) sites were identified as licensable and viable for continuing as *Candidate Sites* (Figure 5-1) for the next step of the process.

Candidate Sites

- Bainbridge
- Conowingo
- EASTALCO
- Thiokol Site

**Figure 5-1
Candidate Sites**



6. Alternate Site Identification

The next step in the process was to identify *Alternative Sites* by scoring the *Candidate Sites* based on a set of non-commercial (i.e., environmental) criteria. The major criteria categories defined in NUREG -1555 were utilized for this purpose and were augmented with sub-criteria developed by a Delphi panel. A total of 16 major criteria comprised of 42 sub-criteria are utilized to score each *Candidate Site*. The environmental scoring criteria basis is described in Appendix A. Appendix B provides the rationale for inclusion of individual criteria in the site evaluation process based upon their relative importance to the site evaluation process. The scores applied to each sub-criteria are rolled up into an average for the major criteria and are then multiplied by a weighting factor established for each of the major criteria. The weighting values were established by a Delphi panel. The weighting factors as well as the composition of the Delphi panel are described in Appendix D.

According to Regulatory Guide 4.2, Rev. 2 (NRC, 1976):

The applicant is not expected to conduct detailed environmental studies at alternative sites; only preliminary reconnaissance-type investigations need be conducted.

As such, the panel used readily available reconnaissance-level information sources which included publicly available data, information available from UniStar and CEG files and personnel, and GoogleEarth™ images in order to evaluate, score, and rank the potential sites. Additional information and clarification of map and literature data were supplemented with site investigations as needed.

Following the weighting/scoring process a smaller pool of *Candidate Sites* was selected as *Alternate Sites* based upon the highest weighted scores. For this evaluation process it was determined to continue the evaluation with 3 *Alternative sites* (Figure 6-1) as listed below:

Alternate Sites

- Bainbridge
- EASTALCO
- Thiokol Site

The results of the scoring process are shown in Table 6-1.

**Figure 6-1
Alternative Sites**

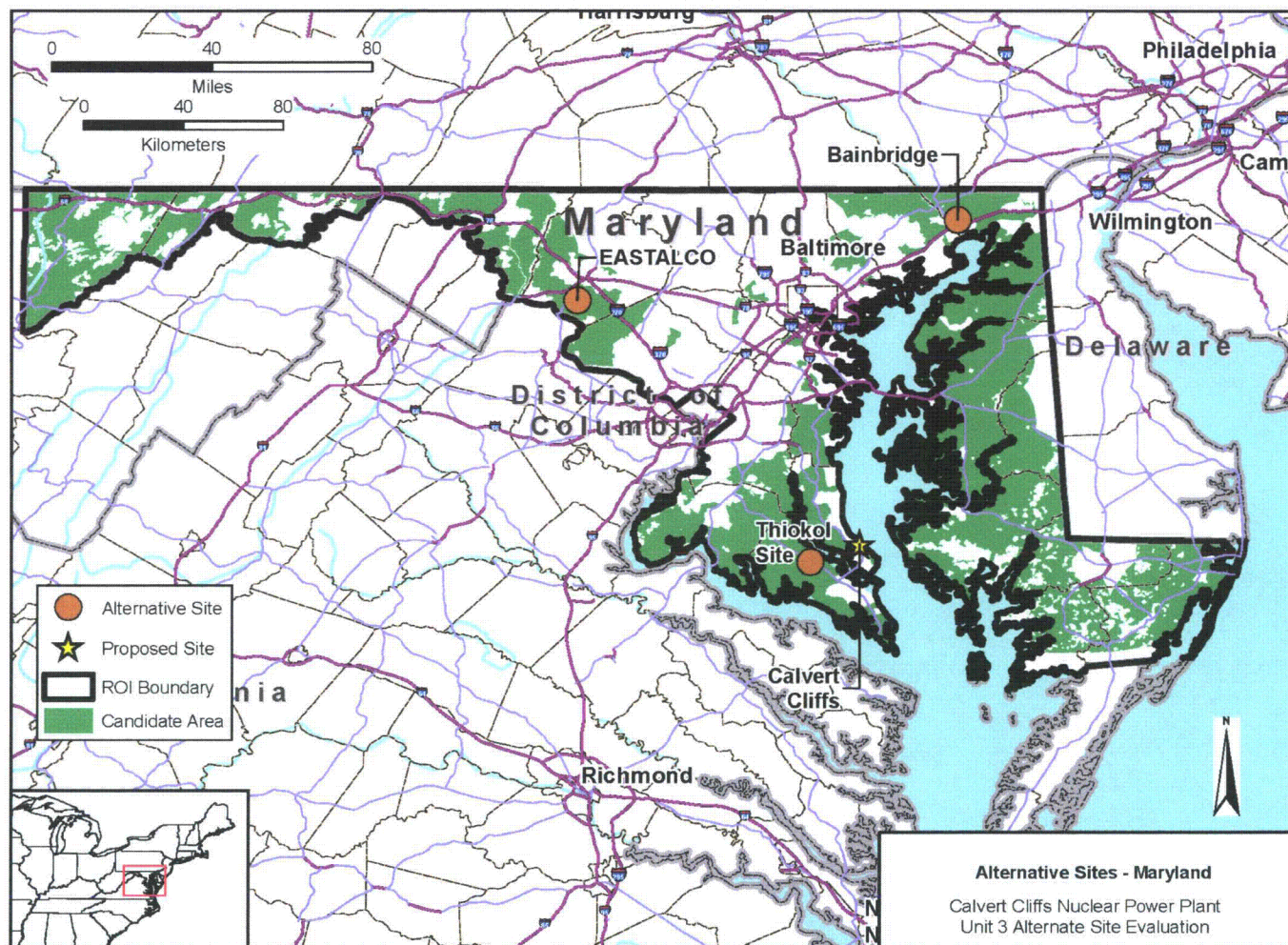


Table 6-1
Weighted Scoring & Ranking to Determine Alternative Sites

Criteria ¹	Weight	Bainbridge		Conowingo		EASTALCO		Thiokol	
		Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score
1. Land use, including availability, and areas requiring special consideration	6.33	3.1	19.9	3.6	22.9	3.7	23.7	3.1	19.4
1a. Land Area and Existing Facilities: Ability to support the combined EPR footprint including the protected area, cooling towers, ponds, switchyard, construction support areas		5.0		5.0		5.0		5.0	
1b. Special Areas: Hazardous waste or spoils areas		2.3		5.0		2.7		2.8	
1c. Zoning		2.0		4.8		5.0		2.1	
1d. Distance to dedicated land		2.8		1.0		1.0		1.0	
1e. Topography		3.6		2.3		5.0		4.4	
2. Hydrology, water quality, and water availability	9.0	4.7	42.0	4.7	42.0	5.0	45.0	4.0	36.0
2a. Water Quality (chemistry)		4.0		4.0		5.0		2.0	
2b. Receiving Body Water Quality		5.0		5.0		5.0		5.0	
2c. Volume		5.0		5.0		5.0		5.0	
3. Terrestrial resources (including endangered species)	7.28	2.5	18.2	2.5	18.2	4.0	29.1	2.5	18.2
3a. Endangered/threatened habitats		1.0		1.0		3.0		1.0	
3b. Floodplains		4.0		4.0		5.0		4.0	
4. Aquatic biological resources (including endangered species)	7.28	1.0	7.3	1.0	7.28	3.0	21.8	1.0	7.28
4a. Endangered/threatened habitats		1.0		1.0		3.0		1.0	
4b. Thermal Discharge Sensitivity		1.0		1.0		3.0		1.0	
5. Socioeconomics (including aesthetics, demography, and infrastructure)	5.50	4.0	22.0	4.4	24.2	5.0	27.5	3.6	19.8
5a. Emergency services		5.0		5.0		5.0		5.0	
5b. Construction traffic		5.0		5.0		5.0		5.0	
5c. Construction workforce		5.0		5.0		5.0		5.0	
5d. Housing and necessities		1.0		3.0		5.0		1.0	
5e. Schools		4.0		4.0		5.0		2.0	
6. Environmental Justice	4.72	4.0	18.9	4.0	18.9	2.5	11.8	2.0	9.44
6a. Minority population		4.0		4.0		1.0		2.0	
6b. Low-income population		4.0		4.0		4.0		3.0	
7. Historic and Cultural Resources	4.94	1.0	4.94	1.0	4.94	2.0	9.88	4.0	19.76
7a. Historic properties		1.0		1.0		1.0		3.0	
7b. Historic districts		1.0		1.0		3.0		5.0	
8. Air Quality	4.00	3.5	14.0	3.5	14.0	4.0	16.0	4.5	18.0
8a. Climate and Meteorology: Weather risks/conditions		4.0		4.0		5		4.0	
8b. Class 1 Areas, Attainment / non-attainment Area		3.0		3.0		3		5.0	
9. Human Health	6.06	1.0	6.1	2.0	12.0	2.7	16.2	3.3	20.0
9a. Emergency preparedness program— proximity of residences/businesses for exclusion zone		1.0		4.0		2.0		4.0	

Table 6-1
Weighted Scoring & Ranking to Determine Alternative Sites

Criteria ¹	Weight	Bainbridge		Conowingo		EASTALCO		Thiokol	
		Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score
9b. Radiological pathways – water		1.0		1.0		5.0		5.0	
9c. Radiological pathways - food		1.0		1.0		1.0		1.0	
10. Postulated Accidents(a)	4.56	1.0	4.6	1.0	4.6	1.0	4.6	3.0	13.7
10a. Distance to nearby potential hazards [per definition of Reg Guide 4.7]		1.0		1.0		1.0		3.0	
11. Transport of Radioactive Material (a)	3.00	2.0	6.0	2.0	6.0	1.0	3.0	2.0	6.0
11a. Operations/ Transportation: Support/challenges to transport of nuclear fuel and wastes		2.0		2.0		1.0		2	
12. Transmission corridors (land used, feasibility, and resources affected)	7.72	4.0	30.9	3.5	27.0	4.0	30.9	3.0	23.2
12a. Environmental impact of proposed transmission interconnection		4.0		3.5		4.0		3.0	
13. Population distribution and density	8.67	2.5	21.7	2.5	21.7	1.5	13.0	4.5	39.0
13a. Distance to population centers		3.0		2.0		1.0		5.0	
13b. Population density		2.0		3.0		2.0		4.0	
14. Facility costs	5.50	4.7	25.6	2.2	11.8	3.2	17.6	1.6	8.5
14a. Transportation: Barge access and capacity – distance, construction, or upgrade requirements		4.7		1.9		1.4		1.7	
14b. Transportation: Rail line access and capacity – distance, spur requirements, line capacity, or upgrade requirements		4.6		2.4		5.0		1.4	
15. Geology/Seismology	7.11	4.0	28.4	4.5	32.0	3.8	26.7	3.8	26.7
15a. Geology/ Seismology: Vibratory ground motion – seismic peak ground acceleration		5.0		5.0		5.0		5.0	
15b. Geology/Seismology: Depth to bedrock, soil stability, and compaction		3.0		5.0		4.0		2.0	
15c. Geology/Seismology: Surface faulting and deformations		5.0		5.0		5.0		5.0	
15d. Geology/Seismology: Other geological hazards		3.0		3.0		1.0		3.0	
16. Wetlands	8.33	5.0	41.7	4.3	36.0	5.0	41.7	3.7	30.5
16a. Total wetlands		5.0		5.0		5.0		5.0	
16b. Wetlands Component of Site		5.0		3.0		5.0		1.0	
16c. High Quality Wetlands		5.0		5.0		5.0		5.0	
Total			312.0		298.2		338.3		318.0
Alternative Site? (Yes/No)²		YES		NO		YES		YES	

¹ Yellow highlighted row is from Ref NUREG-1555 Subject Areas for Candidate Site Selection and Screening. No fill is Functional Evaluation Elements [Ref EPRI Siting Study]

² The three sites with the highest score.

7. Validation of Preferred Site

Following identification of the *Alternative Sites*, the next step in the site evaluation process is to screen and evaluate the *Alternative Sites* as compared to the *Proposed Site* to determine whether an *Alternative Site* is "Environmentally Preferable" to the *Proposed Site*. As noted in Section 2 of this report, this evaluation implements the special case note in NUREG-1555 (1999), Section III (8) in which the *Proposed Site* was not selected on the basis of a systematic site-selection process but is proposed to be constructed on or adjacent to the site of an existing nuclear power plant previously found acceptable on the basis of a NEPA review and/or demonstrated to be environmentally satisfactory on the basis of operating experience. As such, the *Proposed Site* is introduced in this step in the evaluation process, and is scored to the exact same 42 sub-criteria used in the previous section for *Potential Sites*. The *Proposed Site* score was then compared to the *Alternate Sites* scores. Table 7-1 presents the summary of this evaluation.

Evaluation of the *Alternative Sites* presented in Table 7-1 is based upon a maximum score of 500 points. The range of scores for the *Alternative Sites* is 312.0 (Bainbridge) to 338.3 (EASTALCO). CCNPP3, the *Proposed Site*, received a score of 333.2, slightly less than the 338.3 received by the highest scoring *Alternative Site*, EASTALCO.

One standard deviation of the *Alternative Site* scores is 16.2 points. The difference between the EASTALCO score and the score for CCNPP Unit 3, the *Proposed Site*, is 5.1 points or less than 2 percent different from the CCNPP3 score. This level of difference between the scores was considered to be insignificant, and consequently, none of the *Alternative Sites* were found to be "Environmentally Preferable" to the *Proposed Site* following scoring and ranking with the selected environmental criteria. Consequently, commercial criteria were not used in the overall alternate site evaluation.

Table 7-1
Evaluation for “Environmentally Preferred”

Criteria ¹	Weight	Calvert Cliffs		Bainbridge		EASTALCO		Thiokol	
		Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score
1. Land use, including availability, and areas requiring special consideration	6.33	4.1	26.1	3.7	23.7	3.6	22.9	3.1	19.4
1a. Land Area and Existing Facilities: Ability to support the combined EPR footprint including protected area, cooling towers, ponds, switchyard, construction support areas		5.0							
1b. Special Areas: Hazardous waste or spoils areas		4.8							
1c. Zoning		5.0							
1d. Distance to dedicated land		1.4							
1e. Topography		4.4							
2. Hydrology, water quality, and water availability	9.00	4.0	36.0	4.7	42.0	5.0	45.0	4.0	36.0
2a. Water Quality (chemistry)		2.0							
2b. Receiving Body Water Quality		5.0							
2c. Volume		5.0							
3. Terrestrial resources (including endangered species)	7.28	3.0	21.8	2.5	18.2	4.0	29.1	2.5	18.2
3a. Endangered/threatened habitats		1.0							
3b. Floodplains		5.0							
4. Aquatic biological resources (including endangered species)	7.28	1.0	7.3	1.0	7.3	3.0	21.8	1.0	7.3
4a. Endangered/threatened habitats		1.0							
4b Thermal Discharge Sensitivity		1.0							
5. Socioeconomics (including aesthetics, demography, and infrastructure)	5.50	3.4	18.7	4.0	22.0	5.0	27.5	3.6	19.8
5a. Emergency services		3.0							
5b. Construction traffic		5.0							
5c. Construction workforce		5.0							
5d. Housing and necessities		1.0							
5e. Schools		3.0							
6. Environmental Justice	4.72	3.5	16.52	4.0	18.9	3.0	14.2	2.0	9.4
6a. Minority population		3.0							
6b. Low-income population		4.0							
7. Historic and Cultural Resources	4.94	3.0	14.8	1.0	4.9	2.0	9.9	4.0	19.8
7a. Historic properties		1.0							
7b. Historic districts		5.0							
8. Air Quality	4.00	3.5	14.0	3.5	14.0	4.0	16.0	4.5	18.0
8a. Climate and Meteorology: Weather risks/conditions		4.0							
8b. Class 1 Areas, Attainment / non-attainment Area		3.0							

Table 7-1
Evaluation for “Environmentally Preferred”

Criteria ¹	Weight	Calvert Cliffs		Bainbridge		EASTALCO		Thiokol	
		Score	Wt. Score	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score
9. Human Health	6.06	3.0	18.2	1.0	6.1	2.7	16.2	3.3	20.2
9a. Emergency preparedness program– proximity of residences/businesses for exclusion zone		3.0							
9b. Radiological pathways – water		5.0							
9c. Radiological pathways – food		1.0							
10. Postulated Accidents(a)	4.56	1.0	4.6	1.0	4.6	1.0	4.6	3.0	13.7
10a. Distance to nearby potential hazards [per definition of Reg Guide 4.7]		1.0							
11. Fuel Cycle Impacts(a)	3.00	2.0	6.0	2.0	6.0	1.0	3.0	2.0	6.0
11a. Operations/ Transportation: Support/challenges to transport of nuclear fuel and wa		2.0							
12. Transmission corridors (land used, feasibility, and resources affected)	7.72	4.5	34.7	4.0	30.9	4.0	30.9	3.0	23.2
12a. Environmental impact of proposed transmission interconnection		4.5							
13. Population distribution and density	8.67	4.5	39.0	2.5	21.7	1.5	13.0	4.5	39.0
13a. Distance to population centers		5.0							
13b. Population density		4.0							
14. Facility costs (environmental)	5.50	3.0	16.5	4.7	25.6	3.2	17.6	1.6	8.5
14a. Transportation: Barge access and capacity – distance, construction, or upgrade requirem		5.0							
14b. Transportation: Rail line access and capacity – distance, spur requirements, line capacity, upgrade requirements		1.0							
15. Geology/Seismology	7.11	4.0	28.4	4.0	28.4	3.8	26.7	3.8	26.7
15a. Geology/ Seismology: Vibratory ground motion – seismic peak ground acceleration		5.0							
15b. Geology/Seismology: Depth to bedrock, soil stability, and compaction		3.0							
15c. Geology/Seismology: Surface faulting and deformations		5.0							
15d. Geology/Seismology: Other geological hazards		3.0							
16. Wetlands	8.33	3.7	30.5	5.0	41.7	5.0	41.7	3.7	30.5
16a. Total wetlands		5.0							
16b. Wetlands Component of Plot		1.0							
16c. High Quality Wetlands		5.0							
Total			333.2		312.0		338.3		318.0
Is Alternate Site “Environmentally Preferred”? (Yes/No)				NO		NO		NO	

8. Results of the Alternative Site Evaluation Process

The alternate site evaluation process discussed above was implemented in order to validate the selected *Proposed Site* for the location of UniStar's proposed nuclear power station within the identified ROI. The results of the alternate site evaluation process validated the Calvert Cliffs Nuclear Power Plant Unit 3 site as the *Proposed Site*.

The evaluation and comparison of the *Alternative Sites* to the *Proposed Site* verified that none of the *Alternative Sites* are "Environmentally Preferable" to the *Proposed Site* and, thus, no further evaluation is required.

9. References

1. American Society of Civil Engineers (ASCE), 2005. "Minimum Design Loads for Buildings and Other Structures," Publication 7-05.
2. Code of Maryland Regulations (COMAR), 2007. Annotated Code of Maryland, COMAR 20.79.03, Details of Filing Requirements.
3. Electric Power Research Institute (EPRI), 2005. "Program on Technology Innovation: Assessment of Performance-Based Approach for Determining Seismic Ground Motions for New Plant Sites," Volume 2: Seismic Hazard Results at 29 Sites.
4. Electric Power Research Institute (EPRI), 2002. Siting Guide: Site Selection and valuation Criteria for an Early Site Permit Application, Final Report. March 2002.
5. Energy Information Administration (EIA), 2008a. "State Energy Profiles: Maryland," Website: http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=MD, accessed May 27, 2008.
6. International Code Council, 2006. "International Building Code."
7. Maryland Department of the Environment (MDE), 2008. "Maryland Brownfields, Voluntary Cleanup Programs and State Remediation Sites," Website: http://www.mde.state.md.us/Programs/LandPrograms/ERRP_Brownfields/home/index.asp, accessed June 18, 2008.
8. Maryland Public Services Commission (MDPSC), 2006. "Ten-Year Plan (2006-2015) of Electric Companies in Maryland," Maryland Public Service Commission, Prepared for the Maryland Department of Natural Resources, December 2006, Website: <http://www.psc.state.md.us/psc/Reports/2006-10YrPlan.pdf>, accessed April 11, 2007.
9. Maryland Geological Survey, 1981. "A Brief Description of the Geology of Maryland," Pamphlet prepared by Jonathan Edwards, Jr., Website: <http://www.mgs.md.gov/esic/brochures/mdgeology.html>, accessed June 25, 2008.
10. Power Plant Research Program (PPRP), 2006. "Maryland Power Plants and the Environment: A Review of the Impacts of Power Plants and Transmission Lines on Maryland's Natural Resources," PPRP CEIR-13, MDNR Publication Number 12-9202005-57, Power Plant Research Program, January 2006.
11. UniStar Nuclear Development, LLC, 2008. "Calvert Cliffs Unit 3 COLA Final Safety Analysis Report," Rev. 2. March 14.
12. U.S. Nuclear Regulatory Commission (NRC), 2007. NUREG-1555, "Environmental Standard Review Plan, Section 9.3: Site Selection Process," July.
13. U.S. Nuclear Regulatory Commission (NRC), 1998. Regulatory Guide 4.7, Rev. 2, General Site Suitability for Nuclear Power Stations."
14. U.S. Nuclear Regulatory Commission (NRC), 1998. Title 10, Part 50, "Domestic Licensing of Production and Utilization Facilities."
15. U.S. Nuclear Regulatory Commission (NRC), 1996. Title 10, Part 100, "Reactor Site Criteria."

16. U.S. Nuclear Regulatory Commission (NRC), 1976. Regulatory Guide 4.2, Rev. 2, "Preparation of Environmental Reports for Nuclear Power Stations."
17. Maryland Public Service Commission (PSC), "Interim Report Of The Public Service Commission Of Maryland To The Maryland General Assembly", December 3, 2007.
18. "Analysis of Options for Maryland's Energy Future", prepared by Kaye Scholer LLP, Levitan & Associates, Inc. and Semcas Consulting Associates for the Maryland Public Service Commission (November 30, 2007)
19. In the Matter of the Application of UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC for a Certificate of Public Convenience and Necessity to Construct a Nuclear Power Plant at Calvert Cliffs in Calvert County, Maryland, Before the Public Service Commission of Maryland, Case No. 9127, Public Service Commission of Maryland, April 28, 2009.
20. Order Granting Applicants' Motion to Dismiss Appeals and Denying Untimely Petitions to Intervene, In the Matter of the Application of UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC for a Certificate of Public Convenience and Necessity to Construct a Nuclear Power Plant at Calvert Cliffs in Calvert County, Maryland, Before the Public Service Commission of Maryland, Case No. 9127, Order No. 82741, June 26, 2009.

Appendix A—Environmental Scoring Criteria Basis

Ranking Criteria ¹	Metric ²	Scoring Basis ²
1. Land use, including availability, and areas requiring special consideration		
1a. Ability to support the combined EPR footprint including the protected area, cooling towers, ponds, switchyard, construction support areas SCORED BY EXPERT PANEL ⁴	Size and configuration of site	5 = No changes needed in layout and no restrictions for construction work area 3 = Limited changes needed in layout and/or some restrictions for construction work area 1 = Substantive changes needed in layout and/or substantive restrictions for construction work area
1b. Hazardous waste or spoils areas SCORED BY EXPERT PANEL ⁴	Based on anticipated need for environmental remediation at the site or interconnects due to known current or previous uses (i.e. listed RCRA, CERCLIS, LUST or other designation)	5 = No/limited anticipated environmental remediation necessary 3 = Unknown if site needs environmental remediation 1 = Expected environmental remediation necessary
1c. Zoning SCORED BY EXPERT PANEL ⁴	Compatibility with existing land use planning and proposed development	5 = Area zoned for industrial facilities/operations; no zoning restrictions; known ownership 3 = Area unzoned or unclear if zoning would be an issue; no known zoning restrictions for nuclear/industrial facilities; known ownership 1 = Area zoned for use other than industrial facilities/operations; likely zoning restrictions for nuclear/industrial facilities if zoning change is attempted; ownership unclear, or unknown
1d. Dedicated land SCORED BY EXPERT PANEL ⁴	Distance to dedicated land (e.g., Federal, State, Tribal) from site	5 = No dedicated land within 10 miles of the site 3 = Dedicated land located greater than or equal to 5 but less than 10 miles of site 1 = Dedicated lands located within 5 miles of the site
1e. Topography SCORED BY EXPERT PANEL ⁴	Site topography and resulting cut-and-fill requirements for construction	5 = Site topography is flat or has less than 50 feet of relief; no/limited cut-and-fill required. 3 = Site topography is hilly with greater than or equal to 50 feet but less than 100 feet of relief in the area to be developed; significant amounts of cut-and-fill required 1 = Site has steep topography with greater than 100 feet of relief in the area of the site to be developed
Hydrology, water quality, and water availability		
2a. Water Quality (chemistry) SCORED BY EXPERT PANEL ⁴	Applicable State water quality standards (salt, brackish, fresh, polluted) as related to condenser CT cycles prior to blowdown	5 = Fresh water 4 = Fresh/Tidal water 3 = Oligohaline water 2 = Mesohaline water 1 = Salt or gray water

Ranking Criteria ¹	Metric ²	Scoring Basis ²
2b. Receiving Body Water Quality SCORED BY EXPERT PANEL ⁴	Applicable State water quality classification Tier I, Tier II (as described and defined in COMAR 28.02.08.04-1) and Tier III (Outstanding National Resource Waters [ONRW] as described and defined in COMAR 28.02.08.04-2)	5 = Tier I waters (i.e., no special state classification) 3 = Tier II waters (i.e., require antidegradation review of new or amended water/sewer plans and discharges) 1 = Tier III waters (i.e., ONRW)
2c. Water Availability SCORED BY EXPERT PANEL ⁴	Metric based on lowest 7-day average flow in a ten year period (i.e., 7Q10) and need for 50 mgd water supply	5 = Source water body exceeds 7Q10 by 6-to 10% or equal to 10 times the needed volume for the annual requirement [182,500 MGD] 3 = Source water body exceeds 7Q10 by 2 to 5% or source water body is less than or equal to 5 times the needed volume for the annual requirement [91,250 MGD] 1 = Source water body 7Q10 does not meet 50 mgd or source water body is below needed volume for the annual requirement [18,250 MGD]
3. Terrestrial resources (including endangered species)		
3a. T&E habitats SCORED USING SCREENING DATA	Existence of mapped Federal and State T&E species habitat on or adjacent to site	5 = No T&E estimated habitat types onsite 3 = T&E estimated habitat types mapped within 1 mile of the site but not onsite 1 = T&E estimated habitat types onsite
3a. Floodplains SCORED USING SCREENING DATA	Existence of mapped Federal Emergency Management Area (FEMA) 100 or 500 year floodplain or State floodplain zones affecting site footprint	5 = No 100 or 500 year FEMA floodplain or State floodplain zones affecting approximate footprint of site 4 = 100 or 500 year FEMA floodplain or State floodplain zones affecting less than 10% of site footprint 3 = 100 or 500 year FEMA floodplain or State floodplain zones affecting 11% to 20% of site footprint 2 = 100 or 500 year FEMA floodplain or State floodplain zones affecting 21% to 30% of site footprint 1 = 100 or 500 year FEMA floodplain or State floodplain zones affecting greater than 30% of site footprint
4. Aquatic biological resources (including endangered species)		
4a. T&E habitats SCORED USING SCREENING DATA	Existence of mapped Federal and State T&E species habitat on or adjacent to site	5 = No T&E estimated habitat types onsite 3 = T&E estimated habitat types mapped within 1 mile of the site but not onsite 1 = T&E estimated habitat types onsite

Ranking Criteria ¹	Metric ²	Scoring Basis ²
4b. Thermal Discharge Sensitivity SCORED USING SCREENING DATA	Designated finfish/shellfish and/or other resource areas within intake or discharge waters	5 = No designated aquatic resources or habitats located within intake or discharge waters 3 = Designated warm water aquatic resources located within intake or discharge waters 1 = Designated cold water or marine aquatic resources located within intake or discharge waters
5. Socioeconomics (including aesthetics, demography, and infrastructure)		
5a. Emergency services SCORED BY EXPERT PANEL ⁴	Availability of existing emergency services infrastructure (police, fire, emergency medical service (EMS), and hospital services) to support increased construction and operation workforce	5 = At least two or more of each full time police, fire, EMS, and hospital services within the county of the proposed site 3 = At least one of each police, fire, EMS, and hospital services within the county of the proposed site 1 = At least one of any of the services part-time or volunteer police, fire, EMS, and hospital services within the county of the proposed site. Some services (e.g., hospital may require flights to other communities).
5b. Construction traffic SCORED BY EXPERT PANEL ⁴	Ability of existing transportation infrastructure to support construction traffic	5 = State route or interstate highway within 1 mile 3 = State route or interstate highway greater than 1 but less than 5 miles 1 = State route or interstate highway greater than 5 miles
5c. Construction workforce SCORED BY EXPERT PANEL ⁴	Availability of local construction workforce based on State, County, or local planning, zoning and industrial development commission databases. Availability of suitable population within commuting distance from which to draw the construction workforce.	5 = Workforce needed represents less than 5% of construction workforce within 50-mile region. 3 = Workforce needed represents 5 to 20% of construction workforce within 50-mile region. 1 = Workforce needed represents greater than 20% of construction workforce within 50-mile region.

Ranking Criteria ¹	Metric ²	Scoring Basis ²
5d. Housing and necessities SCORED BY EXPERT PANEL ⁴	Availability of housing units, shopping and other services to support the peak construction workforce	5 = Number of vacant housing units is greater than 10 times the projected peak construction workforce within the counties in a 50 mile radius of the site and population centers of 25,000 or more are located within 5 miles of the site 3 = Number of vacant housing units is greater than 5 times but less than 10 times the projected peak construction workforce within the counties within a 50 mile radius of the site and population centers of 25,000 or more are located within 10 miles of the site. 1 = Number of vacant housing units is less than 5 times the projected peak construction workforce within the counties in a 50 mile radius of the site and population centers of 25,000 or more are located greater than 10 miles from site.
5e. Schools SCORED BY EXPERT PANEL ⁴	Availability of existing schools to support increased construction and operation workforce	5 = Greater than 1,000 public and/or private high, middle, and elementary schools within a 50 mile radius of the site. 4 = 751 to 1,000 public and/or private high, middle, and elementary schools within a 50 mile radius of the site. 3 = 501 to 750 public and/or private high, middle, and elementary schools within a 50 mile radius of the site. 2 = 251 to 500 public and/or private high, middle, and elementary schools within a 50 mile radius of the site. 1 = Less than or equal to 250 public and/or private high, middle, and elementary schools) within a 50 mile radius of the site.

Ranking Criteria ¹	Metric ²	Scoring Basis ²
<p>6. Environmental Justice (EJ)</p> <p>6a. Minority population</p> <p>SCORED USING SCREENING DATA</p>	<p>Presence of minority population within or abutting site</p>	<p>5 = Minority population in census block group (or adjacent census block group) less than 5 percent and minority population percentage in census block group less than 5 percentage points higher than county or state minority population percentage</p> <p>4 = Minority population in census block group (or adjacent census block group) greater than 5 but less than 20 percent or minority population percentage in census block group greater than 5 but less than 10 percentage points higher than county or state minority population percentage</p> <p>3 = Minority population in census block group (or adjacent census block group) greater than 20 but less than 35 percent or minority population percentage in census block group greater than 10 but less than 15 percentage points higher than county or state minority population percentage</p> <p>2 = Minority population in census block group (or adjacent census block group) greater than 35 but less than 50 percent or minority population percentage in census block group greater than 15 but less than 20 percentage points higher than county or state minority population percentage</p> <p>1 = Minority population in census block group (or adjacent census block group) greater than 50 percent or minority population percentage in census block group greater than 20 percentage points higher than county or state minority population percentage</p>

Ranking Criteria ¹	Metric ²	Scoring Basis ²
<p>6b. Low-income population</p> <p>SCORED USING SCREENING DATA</p>	<p>Presence of low-income population within or abutting site</p>	<p>5 – Low income population in census block group (or adjacent census block group) less than 5 percent and low income population percentage in census block group less than 5 percentage points higher than county or state low income population percentage</p> <p>4 = Low income population in census block group (or adjacent census block group) greater than 5 but less than 20 percent or low income population percentage in census block group greater than 5 but less than 10 percentage points higher than county or state low income population percentage</p> <p>3 = Low income population in census block group (or adjacent census block group) greater than 20 but less than 35 percent or low income population percentage in census block group greater than 10 but less than 15 percentage points higher than county or state low income population percentage</p> <p>2 = Low income population in census block group (or adjacent census block group) greater than 35 but less than 50 percent or low income population percentage in census block group greater than 15 but less than 20 percentage points higher than county or state low income population percentage</p> <p>1 = Low income population in census block group (or adjacent census block group) greater than 50 percent or low income population percentage in census block group greater than 20 percentage points higher than county or state low income population percentage</p>
7. Historic and Cultural Resources		
<p>7a. Historic buildings, structures, objects and sites</p> <p>SCORED USING SCREENING DATA</p>	<p>Distance to site and number of National Register of Historic Places (NRHP) listed buildings, structures, objects and sites</p>	<p>5 = 0 NRHP buildings, structures, objects and sites within 1 mile or less from site</p> <p>3 = Less than 5 NRHP buildings, structures, objects and sites within >1 to 5 miles from site</p> <p>1 = 5 or more NRHP buildings, structures, objects and sites within >1 to 5 miles from site</p>
<p>7b. Historic districts</p> <p>SCORED USING SCREENING DATA</p>	<p>Distance to mapped NRHP listed historic districts from site</p>	<p>5 = 0 historic districts within 1 mile or less from site</p> <p>3 = 1 historic district within >1 to 5 miles from site</p> <p>1 = Greater than 1 historic district within >1 to 5 miles from site</p>

Ranking Criteria ¹	Metric ²	Scoring Basis ²
8. Air Quality (Climate & Meteorology)		
8a. Weather risks/conditions SCORED USING SCREENING DATA	Estimation of potential severe weather impacts on operation of a new nuclear station	5 = Area exposed to a low frequency of occurrence or less severe tornadoes ³ and/or hurricanes 4 = Low frequency of occurrence of potentially damaging storms 3 = Moderate frequency of occurrence of area storms 2 = High frequency of occurrence of less severe area storms 1 = Area exposed to a high frequency or more severe tornadoes ³ and/or hurricanes
8b. Prevention of Significant Deterioration (PSD) Class I Area, Attainment / Non-attainment Area SCORED USING SCREENING DATA	In or out of an attainment / non-attainment area and Prevention of Significant Deterioration (PSD) Class I area	5 = In attainment area and outside PSD Class I area 3 = In non-attainment area and not in PSD Class I area 1 = In non-attainment area and/or within PSD Class I area
Human Health		
9a. Emergency preparedness program-- proximity of residences/businesses for exclusion zone SCORED BY EXPERT PANEL ⁴	Ability to evacuate area around site in event of an emergency	5 = 25 or less residences or businesses within 1 mile of site, and no schools or hospitals within 1 mile of site 3 = Greater than 25 and less than or equal to 75 residences or businesses within 1 mile of site, and no schools or hospitals within 1 mile of site 1 = Greater than 75 residences or businesses within 1 mile of site, or one or more schools or hospitals within 1 mile of site
9b. Radiological Pathways – Water SCORED USING SCREENING DATA	Based on distance to drinking water supply from site (ground and surface)	5 = Distance to any primary source aquifer or public water supply intake greater than 5 miles from the site 4 = Distance to any primary source aquifer or public water supply intake greater than 3 miles but less than or equal to 5 miles from the site 3 = Distance to any primary source aquifer or public water supply intake greater than 2 miles but less than or equal to 3 miles from the site 2 = Distance to any primary source aquifer or public water supply intake greater than 1 mile but less than or equal to 2 miles from the site 1 = Distance to any primary source aquifer or public water supply intake less than 1 mile from the site

Ranking Criteria ¹	Metric ²	Scoring Basis ²
9c Radiological Pathways – Food SCORED USING SCREENING DATA	Distance to food pathways (e.g., shellfish beds, farms,)	5 = Agricultural land (based on land use/zoning map) or shellfish beds (measured by distance to bay) greater than 5 mile from site 4 = Agricultural land or shellfish beds greater than 3 mile and less than or equal to 5 mi from site 3 = Agricultural land or shellfish beds greater than 2 mile and less than or equal to 3 mi from site 2 = Agricultural land or shellfish beds greater than 1 mi and less than or equal to 2 mile from site 1 = Agricultural land or shellfish beds less than or equal to 1 mile from site
10. Postulated Accidents		
10a.Distance to nearby potentially hazardous facilities SCORED USING SCREENING DATA	Distance to hazardous facilities (e.g., military facilities, such as munitions storage or ordnance test ranges; chemical plants; refineries; mining and quarrying operations; oil and gas wells; gas and petroleum product installations; or air, waterway, pipeline or rail transport facilities for hazardous materials) and major airports	5 = No potentially hazardous facilities within 5 miles from site or no major airports within 10 miles from site 3 = Potentially hazardous facilities greater than 2 miles but less than 5 miles from site or major airports 5 miles to less than 10 miles from site 1 = Potentially hazardous facilities less than or equal to 2 miles from site or major airports within 5 miles from site
11. Fuel Cycle Impacts (Transport of Radioactive Material)		
11a.Transport of nuclear fuel and wastes SCORED USING SCREENING DATA	Distance and route to low level disposal site(s) and spent fuel repository (i.e., Yucca Mountain) from site	5 = Site is adjacent to disposal sites. 4 = Distance to Yucca Mountain is less than 1000 mi, and distance to low-level waste disposal site(s) is less than 500 mi. 3 = Distance to Yucca Mountain is less than 2000 mi, and distance to low-level waste disposal site(s) is less than 1000 mi. 2 = Distance to Yucca Mountain is greater than 2000 mi, and distance to low-level waste disposal site(s) is greater than 1000 mi. 1 = Distance to Yucca Mountain is greater than 2000 mi, and distance to low-level waste disposal site(s) is greater than 1000 mi, AND population densities within first 10 mi of route(s) are greater than 2,601 person/mi ² .

Ranking Criteria ¹	Metric ²	Scoring Basis ²
12. Transmission corridors (land used, feasibility, and resources affected)		
12a. Environmental impact of proposed transmission interconnection SCORED BY EXPERT PANEL ⁴	Length of proposed right-of-way (ROW) from site to point of transmission interconnection, including assessment of environmental impact (i.e., existing ROW vs. greenfield)	5 = 345 kV or greater transmission on site. 4 = Point of interconnection (POI) less than or equal to 5 miles with no existing ROW or less than or equal to 10 miles with existing ROW requiring expansion 3 = POI greater than 5 miles but less than or equal to 10 miles with no existing ROW or greater than 10 miles but less than or equal to 30 miles with existing ROW requiring expansion 2 = POI greater than 10 miles but less than or equal to 20 miles with no existing ROW or greater than or equal to 30 miles with existing ROW requiring expansion 1 = POI less than 30 miles with no existing ROW
13. Population distribution and density		
13a. Distance to population centers SCORED USING SCREENING DATA	Distance to US Census Populated Places population centers of 25,000 or more persons from site	5 = No population centers within 20 miles 4 = One or more population centers greater than 15 miles but less than or equal to 20 miles 3 = One or more population centers greater than 10 miles but less than or equal to 15 miles 2 = One or more population centers greater than 5 miles but less than or equal to 10 miles 1 = One or more population centers within 5 miles
13b. Population density SCORED USING SCREENING DATA	Existing population density within 20 mi radius of site	5 = Population density within 20 mi radius less than or equal to 50 persons per square mile (ppsm) 4 = Population density within 20 mi radius greater than 50 ppsm but less than or equal to 200 ppsm 3 = Population density within 20 mi radius greater than 200 ppsm but less than or equal to 350 ppsm 2 = Population density within 20 mi radius greater than 350 ppsm but less than or equal to 500 ppsm 1 = Population density within 20 mi radius greater than 500 ppsm
14. Facility costs [Transportation Access]		
14a. Barge access and capacity – distance, construction, or upgrade requirements SCORED BY EXPERT PANEL ⁴	Availability of nearest barge access or ability to construct new barge landing	5 = Viable barge access existing at site 3 = No existing barge access at site, but existing barge access within 5 mi or landing may be built at site 1 = No barge access possible at or within 5 mi of site

Ranking Criteria ¹	Metric ²	Scoring Basis ²
<p>14b. Rail line access and capacity – distance, spur requirements, line capacity, or upgrade requirements</p> <p>SCORED BY EXPERT PANEL⁴</p>	Estimated distance and condition of nearest accessible active rail line	<p>5 = Active rail line less than 1 mile from site</p> <p>4 = Rail line less than 1 mile from site but inactive or needing refurbishment</p> <p>3 = Active rail line 1 mile to less than 5 mile from site</p> <p>2 = Rail line 1 mile to less than 5 mile from site but inactive or needing refurbishment and needing refurbishment</p> <p>1 = Rail line greater than or equal to 5 mile from site</p>
15. Geology/Seismology		
<p>15a. Vibratory ground motion – seismic peak ground acceleration</p> <p>SCORED USING SCREENING DATA</p>	Peak ground acceleration (PGA)	<p>5 = PGA is < 0.10g with a 2% probability of exceedance in 50 years (4×10^{-4})</p> <p>4 = PGA is 0.10 to 0.15g with a 2% probability of exceedance in 50 years (4×10^{-4})</p> <p>3 = PGA is 0.15 to 0.25g with a 2% probability of exceedance in 50 years (4×10^{-4})</p> <p>2 = PGA is 0.25 to 0.30g with a 2% probability of exceedance in 50 years (4×10^{-4})</p> <p>1 = PGA is > 0.30g with a 2% probability of exceedance in 50 years (4×10^{-4})</p>
<p>15b. Depth to bedrock soil stability</p> <p>SCORED USING SCREENING DATA</p>	Depth to bedrock; soil stability including liquefaction potential, bearing strength and general foundation conditions	<p>5 = Bedrock or recognized highly competent soil at or within 20 feet of the ground surface</p> <p>3 = Tertiary-aged or older soil at or within 20 feet of the ground surface</p> <p>1 = Quaternary-aged soil extends greater than 20 feet below the ground surface</p>
<p>15c. Surface faulting and deformations</p> <p>SCORED USING SCREENING DATA</p>	Presence of surface faulting based on USGS Quaternary fault database	<p>5 = Site greater than 100 mi from any capable fault</p> <p>4 = Site 100 to 50 mi from any capable fault</p> <p>3 = Site 50 to 25 mi from any capable fault</p> <p>2 = Site 25 to 5 mi from any capable fault</p> <p>1 = Site with capable or questionable aged fault(s) within 5 mi</p>
<p>15d. Other geological hazards</p> <p>SCORED USING SCREENING DATA</p>	Presence of other geologic hazards, such as karst features, subsurface mines, and volcanoes	<p>5 = Hazards present or likely within 50 miles of the site</p> <p>4 = Hazards present or likely within 20 miles of the site</p> <p>3 = Hazards present or likely within 10 miles of the site</p> <p>2 = Hazards present or likely within 3 miles of the site or a moderate risk</p> <p>1 = Hazards present or likely at or within 0.5 miles of the site or a serious risk</p>

Ranking Criteria ¹	Metric ²	Scoring Basis ²
16. Wetlands		
16a. Total Wetlands Within Property Boundary SCORED USING SCREENING DATA	Percent of wetlands within property boundary	5 = Less than 10% of site classified as wetlands based on National Wetland Inventory (NWI) or state-mapped wetlands 4 = Greater than or equal to 10% and less than 20% of site classified as wetlands based on NWI or state-mapped wetlands 3 = Greater than or equal to 20% and less than 30% of site classified as wetlands based on NWI or state-mapped wetlands 2 = Greater than or equal to 30% and less than 40% of site classified as wetlands based on NWI or state-mapped wetlands 1 = Greater than or equal to 40% of site classified as wetlands based on NWI or state-mapped wetlands
16b. Total Acres of Wetlands Within Site SCORED USING SCREENING DATA	Acres of wetlands onsite	5 = Less than 1 acre of site classified as wetlands based on NWI or state-mapped wetlands 3 = Greater than 1 acre and less than 5 acres of site classified as wetlands based on NWI or state-mapped wetlands 1 = Greater than 5 acres of site classified as wetlands based on NWI or state-mapped wetlands
16c. High Quality Wetlands Within Site SCORED USING SCREENING DATA	Presence of state-designated high quality wetlands onsite	5 = No high quality wetlands onsite 1 = High quality wetlands onsite

¹ Yellow highlighted row is from Ref NUREG-1555 Subject Areas for Candidate Site Selection and Screening. No fill is Functional Evaluation Elements [Ref EPRI Siting Study].

² Unless otherwise indicated, distances are calculated from the center point of a parcel or "site" of approximately 420 acres within the property boundary.

³ Based on NRC Regulatory Guide 1.76, Table 1 classifications by geography.

⁴ Delphi process used to develop score. It should be noted that in some cases the panel could not come to convergence on unanimous score. In these instances the panel chose to use the median value which resulted in fractional values (i.e., not whole numbers) for some scores.

Appendix B—Scoring Criteria Rationale

Ranking Criteria ¹	Metric	Rationale
1. Land use, including availability, and areas requiring special consideration		
1a. Land Area and Existing Facilities: Ability to support the combined EPR footprint including the protected area, cooling towers, ponds, switchyard, construction support areas	Size and configuration of plot	Adequate land area within a single location to accommodate EPR development is critical to avoiding impacts to greenfield sites, fragmentation of natural habitat, safety during facility construction and operation, and for optimization of plant operations, including appropriately designed features to protect the environment such as stormwater management systems, wastewater treatment facilities, waste storage areas, and emissions control systems.
1b. Hazardous waste or spoils areas	Based on the site's anticipated need for environmental remediation due to known current or previous uses.	Avoidance of unremediated hazardous waste facilities prevents inadvertent release of toxic materials to the environment and disruptions to the site development process resulting from discovery of unanticipated waste sources.
1c. Zoning	Current Zoning and Ownership based on the site's existing zoning classification(s) by area community (ies)	Individual communities implement zoning ordinances to protect the integrity and character of a town, including environmental resources. Conformance with zoning preserves lands with documented values to a community and socioeconomic benefits associated with designated land uses.
1d. Distance to dedicated land	Proximity to federal, state, county and local parks, forests, preserves, historic sites, Native American Reservations, National Parks, Monuments, Forests, wildlife refuges, scenic river parkways, recreation areas and other significant sites based on the linear distance from the site boundary.	In accordance with regulatory standards, the siting of industrial facilities such as a nuclear power station is preferred at locations not encroaching upon dedicated lands whose aesthetics, recreational opportunities, access, or integrity may be diminished in perception or in fact by nearby development.
1e. Topography	Site topography and resulting cut-and fill requirements for amount of site preparation required for proposed facility construction	Flat to moderate relief is critical to avoidance of large scale land disturbance (cut and fill) actions requiring excessive blasting, earth management including off site materials disposal, and potential secondary impacts such as erosion and sedimentation.
2. Hydrology, water quality, and water availability		
2a. Water Quality	Ground and surface water intake water quality (salt, brackish, fresh, polluted) based on US EPA or State classifications Candidate site must have access to 50 MGD or more makeup	Increased water source purity lends to reduced particulate emissions, and avoids the need to pre-treat the cooling water source via desalinization or other energy-requiring filtration operations.
2b. Receiving Body Water Quality	Applicable State water quality classification Tier I, Tier II (as described and defined in COMAR 28.02.08.04-1) and Tier III (Outstanding National Resource Waters [ONRW] as described and defined in COMAR 28.02.08.04-2)	Consideration of cooling water source quality is made to discourage impacts to protected or high quality water bodies, as well as those waters already impaired by other uses or contaminant sources.

Ranking Criteria ¹	Metric	Rationale
2c. Water availability	"Metric based on lowest 7-day average flow with a ten year return frequency (i.e., 7Q10) and need for 50 mgd water supply	Adequate water volume is necessary to accommodate the consumptive use proposed and to avoid potential impacts to aquatic biota, wetlands, water quality, and other downstream uses when a water source is drawn beyond its safe yield.
3. Terrestrial resources (including endangered species)		
3a. Endangered/threatened habitats	Existence of mapped T&E species habitat on or adjacent to site	Documented T&E species and their habitats must be avoided in accordance with state and federal law and to respect their intrinsic value.
3b. Floodplains	Existence of mapped FEMA 100 or 500 year floodplain affecting site footprint	Federally mapped floodplains serve to accommodate floodwaters and protect downstream property, and represent a potential safety risk.
4. Aquatic biological resources (including endangered species)		
4a. Endangered/threatened habitats	Existence of mapped T&E species habitat in makeup/ cooling water supply, or on or adjacent to site	Documented T&E species and their habitats must be avoided in accordance with state and federal law and to respect their intrinsic value.
4b. Thermal Discharge Sensitivity	Designated finfish/shellfish and/or other resource areas within intake or discharge waters	Considers potential impacts to sensitive aquatic biota that may be impacted by a high temperature discharge to a cooling water a source.
5. Socioeconomics (including aesthetics, demography, and infrastructure)		
5a. Emergency services	Availability of existing emergency services (police, fire, EMS, hospital services) based on full-time, part-time or volunteer local or county police, fire and emergency response services	Emphasizes project siting in communities with increasingly comprehensive emergency services.
5b. Construction traffic	Ability of existing transportation infrastructure to support construction traffic	Evaluates the infrastructure and efficacy of existing roadways and traffic to prioritize siting within areas where construction traffic will not exacerbate poor transportation infrastructure conditions.
5c. Construction workforce	Availability of local construction workforce based on State, County, or local planning, zoning and industrial development commission databases Availability of suitable population within commuting distance from which to draw the construction workforce	Evaluates construction workforce available and ranks sites based on worker availability, emphasizing use of local labor forces.
5d. Housing and necessities	Availability of housing units, shopping and other services to support the peak construction workforce	Considers existing available housing, prioritizing sites with increasing nearby housing facilities (based on vacancy) and supporting infrastructure availability.

Ranking Criteria ¹	Metric	Rationale
5e. Schools	Availability of existing schools to support increased construction and operation workforce	Prioritizes sites with comprehensive or high ranking educational facilities to accommodate needs of construction workforce.
6. Environmental Justice (EJ)		
6a. Minority population	Presence of minority population within or abutting site	Seeks to avoid unnecessary impacts to minority populations by prioritizing development outside of areas with predominant minority residents based on census block group data.
6b. Low-income population	Presence of low-income population within or abutting site	Seeks to avoid unnecessary impacts to low-income populations by prioritizing development outside of areas with predominant low-income residents based on census block group data.
7. Historic and Cultural Resources		
7a. Historic buildings, structures, objects and sites	Distance to site and number of National Register of Historic Places (NRHP) listed buildings, structures, objects and sites	Considers potential aesthetic and other associated impacts to historic sites based upon nearby facility siting, and prioritizes site selection in areas lacking in documented NHRP listed buildings, structures, objects and sites.
7b. Historic districts	Distance to mapped NRHP listed historic districts from site	Considers potential aesthetic and other associated impacts to a historic district based upon nearby facility siting, and prioritizes site selection in areas lacking in/further from listed historic districts.
8. Air Quality (Climate & Meteorology)		
8a. Weather risks/conditions	Estimation of potential severe weather impacts on operation of a new nuclear station	Prioritizes plant siting in locations with reduced frequency of weather conditions potentially hazardous to nuclear plant operation.
8b. Prevention of Significant Deterioration (PSD) Class I Area, Attainment / Non-attainment Area	In or out of an attainment / non-attainment area and Prevention of Significant Deterioration (PSD) Class I area	Seeks to preserve air quality by discouraging plant siting within a non-attainment area for one or more pollutants or within a Class I PSD mapped location.
9. Human Health		
9a. Emergency preparedness program—proximity of residences/businesses for exclusion zone	Ability to evacuate area around site in event of an emergency	Prioritizes plant siting in areas where a full exclusion zone may be established without inclusion of nearby residences or businesses.
9b. Radiological pathways - water	Distance to drinking water supply from site (ground and surface)	Promotes avoidance of potential human ingestion of contaminated water in the case of an accident.

Ranking Criteria ¹	Metric	Rationale
9c. Radiological pathways - food	Distance to food pathways from site (e.g., shellfish beds, farms)	Promotes avoidance of potential human ingestion of contaminated food sources in the case of an accident.
10. Postulated Accidents(a)		
10a. Distance to nearby potentially hazardous facilities	Distance to hazardous facilities (e.g., military facilities, such as munitions storage or ordnance test ranges; chemical plants; refineries; mining and quarrying operations; oil and gas wells; gas and petroleum product installations; or air, waterway, pipeline or rail transport facilities for hazardous materials) and major airports	Prioritizes plant siting in locations where risk of exacerbating an accident starting at the generation facility from a missile impact or inadvertent release of hazardous materials may affect nearby hazardous facilities.
11. Fuel Cycle Impacts (Transport of Radioactive Material)		
11a. Support/challenges to transport of nuclear fuel and wastes	Distance and route to low level disposal site(s) and spent fuel repository (i.e., Yucca Mountain) from site	Ease of transport based on road conditions and distance to disposal locations is evaluated with the assumption that shorter routes on major arteries have less potential hazard to human health and the environment.
12. Transmission corridors (land used, feasibility, and resources affected)		
12a. Proximity/availability of power corridors	Based upon proximity of adequate (345/500 kV) transmission.	Considers the likely potential for expanded land clearing and impact to undeveloped lands and biota resulting from construction of new or significantly widened transmission corridor.
13. Population distribution and density		
13a. Distance to population centers	Distance to US Census Populated Places population centers of 25,000 or more persons from site	In accordance with regulatory standards, the siting of a nuclear power station is discouraged nearby centers of high population.
13b. Population density	Existing population density within 20 mi radius of site	In accordance with regulatory standards, the siting of a nuclear power station is discouraged nearby regions with high population density.
14. Facility costs [Transportation Access]		
14a. Barge access and capacity – distance, construction, or upgrade requirements	Based upon availability of nearest barge access or ability to construct new landing.	Use of existing barge slips reduces environmental impact associated with the need for slip construction of alternate means of site access. Criteria promotes sites with existing barge access.

Ranking Criteria ¹	Metric	Rationale
14b. Rail line access and capacity – distance, spur requirements, line capacity, or upgrade requirements	Based upon estimated distance and condition of nearest active rail line.	Use of existing rail lines reduces environmental impact associated with the need for line construction of alternate means of site access. Criteria promotes sites with existing active rail access.
15. Geology/Seismology		
15a. Vibratory ground motion – seismic peak ground acceleration	Peak ground acceleration (PGA)	Criteria promotes siting in locations where PGA does not represent a significant potential hazard to reactor stability.
15b. Depth to bedrock, soil stability, and compaction	Depth to bedrock; soil stability including liquefaction potential, bearing strength and general foundation conditions	Criteria promotes siting in locations where bedrock and soil conditions are optimal for reactor construction and safety.
15c. Surface faulting and deformations	Presence of surface faulting based on USGS Quaternary fault database	Criteria promotes siting in locations where surface faults and fault activity do not represent a significant potential hazard to reactor stability.
15d. Other geological hazards	Presence of other geologic hazards, such as karst features, subsurface mines, and volcanoes	Criteria promotes avoidance of locations considered intrinsically hazardous based upon subsurface conditions.
16. Wetlands		
16a. Total Wetlands Within Property Boundary	Percent of wetlands within property boundary	Considers net total acreage of wetlands for comparison among sites and prioritization of sites without regulatory wetlands and waterways.
16b. Total Acres of Wetlands Within Site	Acres of wetlands onsite	In order to avoid sites comprised predominantly of wetlands, percent wetlands is considered to allow promotion of locations with reduced wetland acreage in comparison to the entire property.
16c. High Quality Wetlands Within Site	Presence of state-designated high quality wetlands onsite	Considers wetlands of exceptional value and promotes impact avoidance in site selection.

¹ Yellow highlighted row is from Ref NUREG-1555 Subject Areas for Candidate Site Selection and Screening. No fill is Functional Evaluation Elements [Ref EPRI Siting Study]

Appendix C—Environmental Scoring Justification

Bainbridge		
Ranking Criteria ¹	Score	Justification
1. Land use, including availability, and areas requiring special consideration		
1a. Ability to support the combined EPR footprint including the protected area, cooling towers, ponds, switchyard, construction support areas	5	Facility could be accommodated on an approximate 420-acre site within the property with limited changes needed to the layout and/or some restrictions for construction work area.
1b. Hazardous waste or spoils areas	2.3	The site contains two areas where previous contamination has not been completely removed. The selected remedies for these locations are institutional controls (deed restrictions on the landfill cap and ground water use).
1c. Zoning	2	Site is zoned as BSU – Bainbridge Special Use and is located within the State of Maryland's Cecil County Enterprise Zone.
1d. Distance to dedicated land	2.8	The nearest dedicated land, Deer Creek Park, is located approximately 6.9 miles from the site.
1e. Topography	3.6	While there is a significant degree of topographic relief at the site (262 feet total), the great majority of this grade change occurs near or along the bluff adjacent to the Susquehanna River (the bluff itself is approximately 142 feet high). This would not significantly affect development of the 420 EPR site, which is relatively flat across approximately 70 percent of the site. The score of 3.6 (rather than 1) reflects the expert panel's consideration of the limited cut and fill operations to build a power plant on the 420 acre site considering the limited area within the site that is impacted by steeper relief.
2. Hydrology, water quality, and water availability		
2a. Water Quality	4	The segment of the Susquehanna River that would be the source of cooling water is designated as tidal fresh water estuary. This portion of the Northern Chesapeake Bay (CB1TF2) surface water segment is part of the Lower Susquehanna River Area Sub-Basin [COMAR 26.08.02.08(B)(2)(a)].
2b. Receiving Body Water Quality	5	The segment of the Lower Susquehanna River Sub-Basin considered as a potential cooling water source does not have a special water quality classification and is considered a Tier I water. The Surface Water Use Designation for the Northern Chesapeake Bay (CB1TF2) segment is Use II-P: Support of Estuarine and Marine Aquatic Life and Shellfish Harvesting and Public Water Supplies [COMAR 26.08.02.03-3(C-1)].
2c. Water availability	5	The main source of water for the site would be the Susquehanna River. The lowest 7-day average flow with a ten year return frequency (7Q10) for the period of record (42 years) for the river at the nearest United States Geological Survey (USGS) gage (01578310) is approximately 2452 million gallons per day (mgd). The total water usage at the site is estimated to be 50 mgd.

Bainbridge		
Ranking Criteria ¹	Score	Justification
3. Terrestrial resources (including endangered species)		
3a. Endangered/threatened habitats	1	One known location of federally-listed species and one location of state-listed species were identified onsite; all locations consisted of some terrestrial habitat. (Species identification is not available at this reconnaissance level.)
3b. Floodplains	4	The 100 or 500 year FEMA floodplain or state floodplain zones affect approximately 1 percent of the site.
4. Aquatic biological resources (including endangered species)		
4a. Endangered/threatened habitats	1	One known location of federally-listed species was identified onsite and encompasses some mapped wetlands. (Species identification is not available at this reconnaissance level.)
4b. Thermal Discharge Sensitivity	1	This site would use the freshwater portion of the Susquehanna River for cooling water and this segment of the river is designated as tidal fresh water estuary. This portion of the Northern Chesapeake Bay (CB1TF2) surface water segment is part of the Lower Susquehanna River Area Sub-Basin (COMAR 26.08.02.08(B)(2)(a)). The Surface Water Use Designation for the Northern Chesapeake Bay (CB1TF2) segment is Use II-P: <i>Support of Estuarine and Marine Aquatic Life and Shellfish Harvesting and Public Water Supplies</i> (COMAR 26.08.02.03-3(C-1)). Maryland's antidegradation policy classifies this portion of the Susquehanna River as Tier 1.
5. Socioeconomics (including aesthetics, demography, and infrastructure)		
5a. Emergency services	5	Approximately three hospitals, eight police stations, and 18 fire stations or departments (including volunteer stations) are located within Cecil County. Cecil County has an office of emergency services that coordinates disaster, mitigation, preparedness response, and recovery.
5b. Construction traffic	5	State Highway 276 is adjacent to the north of the site and U.S. Highway 222 is adjacent to the south of the site. Other roads within one mile of the site include State Highway 275, State Highway 269. Interstate 95 is also located within five miles southeast of the site.
5c. Construction workforce	5	<p>According to occupational projections for 2004 through 2014, there appears to be a general upward trend for construction and extraction employment within the Susquehanna Workforce Investment Area (WIA), which includes Cecil and Harford counties. An increase in employment indicates additional competition in acquiring workforce for the construction of the project. In addition, according to 2014 projections, the construction workforce required for the project, assumed to be similar to the estimated maximum workforce for the Calvert Cliffs Unit 3, would represent approximately 34 percent of the total construction workforce within the WIA.</p> <p>According to May 2008 U.S. Department of Labor (DOL), Bureau of Labor Statistics (BLS) metropolitan and non-metropolitan area data within 50 miles of the site, the construction workforce required for the project would represent less than 2 percent of the total construction workforce.</p>

Bainbridge		
Ranking Criteria ¹	Score	Justification
5d. Housing and necessities	1	According to the census tract data, a total of 243,587 housing units are vacant or not occupied, which represents more than 61 times the projected construction workforce, assumed to be similar to the estimated maximum workforce for the Calvert Cliffs Unit 3. The nearest population center greater than 25,000 is Bel Air South, which is just over 10 miles away.
5e. Schools	4	Approximately 812 public and private elementary, middle, and high schools are located within a 50 mile radius of the site.
6. Environmental Justice (EJ)		
6a. Minority population	4	The site is located in CT 31201 BG 3. CT 31201 BG 3 has a lower percentage of minority residents (8.6 percent) compared to one of the two adjacent CTs, and the State of Maryland (36.0 percent) and a slightly higher percentage of minority residents compared to the other adjacent CT and Cecil County (6.4 percent). CT 31201 BG 2, an adjacent CT/BG to the project site, has the highest minority population (17.4 percent) of the CT/BGs at or adjacent to the site.
6b. Low-income population	4	The percent of poverty for CT 31201 BG 3 is slightly higher (9.5 percent) but comparable to the Cecil County (7.2 percent) and the State of Maryland (8.5 percent) and lower than the two adjacent CTs. CT 31201 BG 2, an adjacent CT/BG to the project site, has the highest low-income population (11.6 percent) of the CT/BGs at or adjacent to the site.
7. Historic and Cultural Resources		
7a. Historic buildings, structures, objects and sites	1	Based on data available from the Maryland Historical Trust (MHT) and the National Register of Historic Places (NRHP), there are a total of 12 NRHP listed properties within 5 miles of the site; 2 properties are within one mile of the site. The 2 properties located within a mile of the site are: the Paw Paw Building, and the Edward W. Haviland House. Due to the site's location, both Cecil and Harford County were considered when reviewing the MHT's database.
7b. Historic districts	1	Based on data available through the NRHP and MHT, there are 4 NRHP listed historic districts within 5 miles of the site, 2 of which are less than 1 mile from the site.
8. Air Quality (Climate & Meteorology)		
8a. Weather risks/conditions	4	Based on NRC Regulatory Guide 1.76, Figure 1, the site has a low expected occurrence of tornadoes that are only expected to be moderate in intensity (<200 mph). Based on hurricane strike data reported by the National Hurricane Center, the site is in an area that has experienced approximately 2 to 6 hurricanes since 1900, a very low frequency of occurrence.
8b. Prevention of Significant Deterioration (PSD) Class I Area, Attainment / Non-attainment Area	3	The site is located Cecil County, which is identified by U.S. EPA as a non-attainment area for 8-hr ozone. The site is not located in a PSD Class I Area.
9. Human Health		
9a. Emergency preparedness program— proximity of residences/businesses for exclusion zone	1	There are approximately 263 total residences and businesses within 1 mile of the site based on a review of aerial maps. In addition, there are 3 schools within 1 mile of the site. There are no hospitals within 1 mile of the site.

Bainbridge		
Ranking Criteria ¹	Score	Justification
9b. Radiological pathways - water	1	The nearest surface water (Susquehanna River) is less than 1 mile from the site (0.91 miles), is freshwater, and is designated as a public water supply. This portion of the Northern Chesapeake Bay (CB1TF2) surface water segment is part of the Lower Susquehanna River Area Sub-Basin [COMAR 26.08.02.08(B)(2)(a)]. The Surface Water Use Designation for the Northern Chesapeake Bay (CB1TF2) segment is Use II-P: <i>Support of Estuarine and Marine Aquatic Life and Shellfish Harvesting and Public Water Supplies</i> [COMAR 26.08.02.03-3(C-1)]. The nearest sole source aquifer is greater than 5 miles from the site (24 miles).
9c. Radiological pathways - food	1	Agricultural land is located approximately 0.24 miles from the site. Shellfish beds are approximately 5.1 miles from the site.
10. Postulated Accidents(a)		
10a. Distance to nearby potentially hazardous facilities	1	A Consolidated Rail Corporation (Conrail) rail line (0.9 miles from the center of the site) and the Susquehanna River (1.3 miles from the center of the site) border the western edge of the site. Interstate-95 is 2.2 miles from this site. Hooker Chemical and Plastics Corporation, manufacturer of plastics materials, synthetic resins, and non-vulcanized elastomers, is 3.2 miles from the site. There are no major airports or naval air stations within 10 miles.
11. Fuel Cycle Impacts (Transport of Radioactive Material)		
11a. Support/challenges to transport of nuclear fuel and wastes	2	The distance from the site to the National Repository at Yucca Mountain is greater than 2000 miles and the distance to the nearest low-level waste disposal site, Waste Control Specialists in Andrews, Texas, is greater than 1000 miles, whether by rail or road. There are two census tracts, one each along the rail and the truck routes, with population densities greater than 2601 people per square mile (ppsm). These census tracts are located greater than the first 10 miles but less than the first 20 miles from the site.
12. Transmission corridors (land used, feasibility, and resources affected)		
12a. Proximity/availability of power corridors	4	There are four existing 500 kV transmission lines available for possible interconnection: two are about 5 mi north of the site, two lines are about 13 mi from the site, and the other 500 kV line is about 23 mi away from the site. Therefore, the nearest viable transmission line to be considered for a potential point of intersection (POI) is a 500 kV transmission line located about 4.9 mi away from the site.
13. Population distribution and density		
13a. Distance to population centers	3	Based on the U.S. Census Populated Place Areas, the nearest population center of 25,000 or more, Bel Air South, is located 10.2 miles from the site.
13b. Population density	2	The population density within a 20-mile radius of the site, based on 2007 U.S. Census Bureau data, is 395 ppsm.
14. Facility costs [Transportation Access]		
14a. Barge access and capacity – distance, construction, or upgrade requirements	4.7	There is existing barge access at the site on the Susquehanna River.
14b. Rail line access and capacity – distance, spur requirements, line capacity, or upgrade requirements	4.6	There is an existing Conrail rail line along the western border of the site.

Bainbridge		
Ranking Criteria ¹	Score	Justification
15. Geology/Seismology		
15a. Vibratory ground motion – seismic peak ground acceleration	5	Based on the USGS' 2008 National Seismic Hazard Map, the Peak Ground Acceleration (PGA) with 2 percent probability of exceedance in 50 years at this site is 0.089g. The center of Aberdeen Proving Grounds is located approximately 11 miles from the center of the site. Ordinance testing is performed at Aberdeen, but data is not currently available to evaluate the magnitudes and locations of detonations associated with this testing. However, it is not anticipated that this testing would cause unacceptable ground motions at the site, and it has therefore not been incorporated in the rating for this subcriteria.
15b. Depth to bedrock, soil stability	3	Based on the available information from the Maryland Geologic Survey (MGS), the United States Department of Agriculture (USDA), and the Maryland Department of the Environment (MDE), the bedrock at this site may be within 20 feet of the existing ground surface, or quaternary soils could extend greater than 20 feet below ground surface (bgs).
15c. Surface faulting and deformations	5	Based on the USGS Earthquake Hazards Program/Quaternary Fault and Fold Database, the distance between the site and the closest fault area (the Central Virginia Seismic Zone) is greater than 100 miles.
15d. Other geological hazards	3	Queries of the United States Department of the Interior (USDI) "National Mine Map Repository" database identified one underground mine within Cecil county, in which the site resides, and numerous underground mines in adjacent counties to the north and west. Based on this information, underground mines may be present within 10 miles of the site. The site is located approximately 20 miles from the closest identified potential karst susceptible area, the Long Green Valley. Potentially karstic Coastal Plain Unconsolidated (CPU) sediments are not indicated within 20 miles of the site.
16. Wetlands		
16a. Total Wetlands Within Property Boundary	5	According to the National Wetlands Inventory (NWI) database, approximately 0.4 percent, or 4.6 acres of the 1,069 acre property are wetlands.
16b. Total Acres of Wetlands Within Site	5	According to the NWI database, the 423-acre site does not contain any wetlands.
16c. High Quality Wetlands Within Site	5	This site does not contain any state-designated high-quality wetlands.

EASTALCO		
Ranking Criteria ¹	Score	Justification
1. Land use, including availability, and areas requiring special consideration		
1a. Ability to support the combined EPR footprint including the protected area, cooling towers, ponds, switchyard, construction support areas	5	The facility could be accommodated on an approximate 420-acre site within the property with limited changes needed to the layout and/or some restrictions for construction work area.
1b. Hazardous waste or spoils areas	2.7	This property is listed on the state's State-Master List of sites of the MDE, Land Restoration Program, Internet Mapping System database and it is unknown if the site needs environmental remediation.
1c. Zoning	5	This site is zoned GI – General Industry and A-Agricultural.
1d. Distance to dedicated land	1	The nearest dedicated land, Monocacy Natural Resources Management Area, is located approximately 3.5 miles from the site.
1e. Topography	5	There is approximately 33 feet of relief across the site. The topography is generally flat and has less than 50 feet of relief, with limited cut-and-fill requirements.
2. Hydrology, water quality, and water availability		
2a. Water Quality	5	The portion of the Potomac River that would be the source of cooling water is considered to be fresh water. This segment of the Potomac River is designated as part of the Middle Potomac River Area Sub-Basin surface water segment [COMAR 26.08.02.08(P)(1)].
2b. Receiving Body Water Quality	5	The area of the Middle Potomac River considered as a potential cooling water source does have a drinking water supply special water quality use classification and is considered a Tier I water. The Surface Water Use Designation for the Middle Potomac River Area Sub-Basin segment is Use I-P: Water Contact Recreation, Protection of Nontidal Warmwater Aquatic Life and Public Water Supply [COMAR 26.08.02.03-3(B)].
2c. Water availability	5	The main source of water for the proposed site will be the northerly portion of the main stem of the Potomac River. The 7Q10 for the period of record (114 years) for the river at the nearest USGS gage (01638500) is approximately 3715 mgd. The total water usage at the site is estimated to be 50 mgd.
3. Terrestrial resources (including endangered species)		
3a. Endangered/threatened habitats	3	One known location of state-listed species was identified about 1 mile south of the site boundary. This location encompasses terrestrial habitats. (Species identification is not available at this reconnaissance level.)
3b. Floodplains	5	No 100 or 500 year FEMA floodplain or state floodplain zones affect the site footprint.
4. Aquatic biological resources (including endangered species)		
4a. Endangered/threatened habitats	3	One known location of state-listed species was identified about 1 mile south of the site boundary. This location encompasses mapped aquatic habitats consisting of streams. (Species identification is not available at this reconnaissance level.)

EASTALCO		
Ranking Criteria ¹	Score	Justification
4b. Thermal Discharge Sensitivity	3	This site would use the Potomac River for cooling water and this portion of the river is considered to be fresh waters. This segment of the Potomac River is designated as part of the Middle Potomac River Area Sub-Basin surface water segment (COMAR 26.08.02.08(P)(1)). The Surface Water Use Designation for the Middle Potomac River Area Sub-Basin segment is Use I-P: <i>Water Contact Recreation, Protection of Nontidal Warmwater Aquatic Life and Public Water Supply</i> (COMAR 26.08.02.03-3(B)). Maryland's antidegradation policy classifies this portion of the Potomac River as Tier 1.
5. Socioeconomics (including aesthetics, demography, and infrastructure)		
5a. Emergency services	5	Approximately five hospitals, five police stations, and 22 stations or departments (including volunteer stations) are located within Frederick County. Frederick County has a division of emergency management that coordinates disaster mitigation, preparedness, and recovery.
5b. Construction traffic	5	State Highway 351 is located just off of the site to the west. Interstate 70 (to the north), Interstate 270 (to the east) and U.S. Highway 15 (to the west) are also located within five miles of the site.
5c. Construction workforce	5	<p>According to occupational projections for 2004 through 2014, there appears to be a general upward trend for construction and extraction employment within the Frederick County WIA. An increase in employment indicates additional competition in acquiring workforce for the construction of the project. In addition, according to 2014 projections, the construction workforce required for the project, assumed to be similar to the estimated maximum workforce for the Calvert Cliffs Unit 3, would represent approximately 33 percent of the total construction workforce within the WIA.</p> <p>According to May 2008 BLS metropolitan and non-metropolitan area data within 50 miles of the site, the construction workforce required for the project would represent less than 2 percent of the total construction workforce.</p>
5d. Housing and necessities	5	According to the census tract data, a total of 189,404 housing units are vacant or not occupied, which represents approximately 48 times the projected construction workforce, assumed to be similar to the estimated maximum workforce for the Calvert Cliffs Unit 3. The nearest population center greater than 25,000 is Frederick, which is approximately 4 miles away.
5e. Schools	5	Approximately 1113 public and private elementary, middle, and high schools are located within a 50 mile radius of the site.
6. Environmental Justice (EJ)		
6a. Minority population	1	The site is located in CT 7523 BG 2. CT 7523 BG 2 has a lower percentage (11.5 percent) of minority residents compared to two of the five adjacent CTs and the State of Maryland (36.0 percent) and a higher percentage compared to Frederick County (10.7 percent). CT 7510 BG 4, an adjacent CT/BG to the project site, has the highest minority population (40.4 percent) of the CT/BGs at or adjacent to the site and had a percent minority population over 30 percent greater than Frederick County, MD.

EASTALCO		
Ranking Criteria ¹	Score	Justification
6b. Low-income population	4	The percent of poverty for CT 7523 BG 2 is slightly higher (5.9 percent) when compared to two of the five adjacent CTs and Frederick County (4.5 percent). CT 7523 BG 2 is lower than three of the five adjacent CTs and the State of Maryland (8.5 percent). CT 7523 BG 4, an adjacent CT/BG to the project site, has the highest low-income population (7.7 percent) of the CT/BGs at or adjacent to the site.
7. Historic and Cultural Resources		
7a. Historic buildings, structures, objects and sites	1	According to data available through the MHT and the NRHP, there are 17 NRHP list properties within 5 miles of the site; 1 property is less than 1 mile from the site (Carrollton Manor).
7b. Historic districts	3	According to data available through the MHT and the NRHP, there is 1 historic district within 5 miles of the site, the Buckeystown Historic District. It is more than 1 mile from the site.
8. Air Quality (Climate & Meteorology)		
8a. Weather risks/conditions	5	Based on NRC Regulatory Guide 1.76, Figure 1, the site has a low expected occurrence of tornadoes that are only expected to be moderate in intensity (<200 mph). The site is located approximately 80 miles inland and not in a coastal area subject to hurricane strikes.
8b. Prevention of Significant Deterioration (PSD) Class I Area, Attainment / Non-attainment Area	3	The site is located Frederick County, which is identified by U.S. EPA as a non-attainment area for 8-hr ozone and PM2.5. The site is not located in a PSD Class I Area.
9. Human Health		
9a. Emergency preparedness program— proximity of residences/businesses for exclusion zone	2	There are approximately 33 total residences and businesses within 1 mile of the site based on a review of aerial maps. In addition, there are no schools or hospitals within 1 mile of the site.
9b. Radiological pathways - water	5	The nearest sole source aquifer is greater than 5 miles from the site (5.9 miles). The nearest surface water is the Potomac River and portions are freshwater. The segment of the Potomac River closest to the site is designated as part of the Middle Potomac River Area Sub-Basin surface water segment [COMAR 26.08.02.08(P)(1)]. This area of the Middle Potomac River does have a drinking water supply special water quality use classification. The Surface Water Use Designation for the Middle Potomac River Area Sub-Basin segment is Use I-P: <i>Water Contact Recreation, Protection of Nontidal Warmwater Aquatic Life and Public Water Supply</i> [COMAR 26.08.02.03-3(B)]. However, the distance to the Potomac River is greater than 5 miles from the site (5.5 miles).
9c. Radiological pathways - food	1	Agricultural land is located approximately 0.08 miles from the site. Shellfish beds are approximately 43.5 miles from the site.
10. Postulated Accidents(a)		
10a.Distance to nearby potentially hazardous facilities	1	A Baltimore and Ohio (B&O) rail line and spur are 0.7 and 0.5 miles from the site, respectively. McCormick Paint Works, a paint, resin, enamel, and lacquer manufacturer, and Trans-Tech, Inc., a manufacturer of ceramics and advanced electronic materials, are located 1.9 and 2.0 miles, respectively, from the site. Capricorn Pharmaceuticals, a pharmaceutical preparations corporation, is 2.4 miles away. Interstate-70 and I-270 are 4.6 and 4.8 miles, respectively, from the site. There are no major airports or naval air stations within 10 miles of this site.

EASTALCO		
Ranking Criteria ¹	Score	Justification
11. Fuel Cycle Impacts (Transport of Radioactive Material)		
11a. Support/challenges to transport of nuclear fuel and wastes	1	The distance from site to the National Repository at Yucca Mountain is greater than 2000 miles and the distance to the nearest low-level waste disposal site, Waste Control Specialists in Andrews, Texas, is greater than 1000 miles, whether by rail or road. There is one census tract along the truck route with a population density greater than 2601 ppsm. This census tract is located within the first 10 miles from the site.
12. Transmission corridors (land used, feasibility, and resources affected)		
12a. Proximity/availability of power corridors	4	There are seven existing 500 kV transmission lines near the site, all within 5 mi of the site. The nearest viable transmission line to be considered for a potential POI is a 500 kV transmission line, located about 3.5 mi away from the site.
13. Population distribution and density		
13a. Distance to population centers	1	Based on the U.S. Census Populated Place Areas, the nearest population center of 25,000 or more, Frederick, is located 4.3 mi from the site.
13b. Population density	2	The population density within a 20-mile radius of the site, based on 2007 U.S. Census Bureau data, is 474 ppsm.
14. Facility costs [Transportation Access]		
14a. Barge access and capacity – distance, construction, or upgrade requirements	1.4	The nearest barge access to the site is located 45.8 miles from the site.
14b. Rail line access and capacity – distance, spur requirements, line capacity, or upgrade requirements	5	A B&O Railroad line is located 0.7 miles from the site with a spur of the railroad located 0.5 miles from the site.
15. Geology/Seismology		
15a. Vibratory ground motion – seismic peak ground acceleration	5	Based on the USGS 2008 National Seismic Hazard Map, the PGA with 2 percent probability of exceedance in 50 years at this site is 0.058g.
15b. Depth to bedrock, soil stability	4	Based on available information from MGS, NRCS, and MDE, the bedrock at this site may be within 20 feet of the existing ground surface in some areas, though bedrock surface undulations may be expected in a karst environment.
15c. Surface faulting and deformations	5	Based on the USGS Earthquake Hazards Program/Quaternary Fault and Fold Database, the distance between site and the closest fault area (the Central Virginia Seismic Zone) is greater than 50 miles.
15d. Other geological hazards	1	Queries of the USDI "National Mine Map Repository" database identified one mine of undefined type within Frederick county, in which the site resides, and a few underground mines in adjacent counties to the east, north, and west. Based in this information, underground mines may be present within 10 miles of the site. There is a potential for karst features within 0.5 miles of the site.
16. Wetlands		
16a. Total Wetlands Within Property Boundary	5	According to the NWI database, approximately 2 percent, or 21 acres of the 1,742 acre property are wetlands.
16b. Total Acres of Wetlands Within Site	5	According to the NWI database, the identified 425-acre site does not contain any wetlands.

EASTALCO		
Ranking Criteria ¹	Score	Justification
16c. High Quality Wetlands Within Site	5	This site does not contain any state-designated high-quality wetlands.

Thiokol		
Ranking Criteria ¹	Score	Justification
1. Land use, including availability, and areas requiring special consideration		
1a. Ability to support the combined EPR footprint including the protected area, cooling towers, ponds, switchyard, construction support areas	5	This site could be accommodated on an approximate 420-acre site within the property with limited changes needed to the layout and/or some restrictions for construction work area.
1b. Hazardous waste or spoils areas	2.8	This site was formerly a munitions manufacturing facility and is listed on MDE's Voluntary Cleanup Program and the state's Non-Master List of sites. Remediation activities were conducted at the site in the 1990s to locate and subsequently remove unexploded ordnance (UXO). As a precautionary measure, the property contains covenants that restrict residential development in two areas that total approximately 67 acre in size and encompass potential burial sites of UXO. In December 1999, MDE confirmed that no significant chemical contamination exists above acceptable risk levels.
1c. Zoning	2.1	This site is zoned as Rural Preservation District.
1d. Distance to dedicated land	1	The nearest dedicated land, Greenwell State Park, is located approximately 4.3 miles from the site.
1e. Topography	4.4	The site has approximately 33 feet of relief across the site. The topography is generally flat and has less than 50 feet of relief, with limited cut-and-fill requirements.
2. Hydrology, water quality, and water availability		
2a. Water Quality	2	The segment of the Patuxent River that would be the source of cooling water for the site is designated as mesohaline waters. This portion of the Lower Patuxent River Mesohaline 1 (PAXMH1) surface water segment is part of the Patuxent River Area Sub-Basin [COMAR 26.08.02.08(M)(2)(d)].
2b. Receiving Body Water Quality	5	The Lower Patuxent River Mesohaline 1 (PAXMH1) segment of the Patuxent River Area Sub-Basin that is the area proposed for the source of cooling water for the site does not have special water quality classifications and is considered a Tier I water. The Surface Water Use Designation for the Lower Patuxent River Mesohaline 1 (PAXMH1) is Use II: Support of Estuarine and Marine Aquatic Life and Shellfish Harvesting [COMAR 26.08.02.03-3(C)].
2c. Water availability	5	The main source of water for the proposed site will be the Lower Patuxent River Mesohaline 1 segment. The 7Q10 for the period of record (32 years) for the river at the nearest USGS gage [01594440] is approximately 181 mgd. The total water usage at the site is estimated to be 50 mgd.
3. Terrestrial resources (including endangered species)		
3a. Endangered/threatened habitats	1	This entire site falls within a known location of a federally-listed species. The site contains terrestrial habitat. (Species identification is not available at this reconnaissance level.)
3b. Floodplains	4	The 100 or 500 year FEMA floodplain or state floodplain zones affects approximately 6 percent of the site footprint.

Thiokol		
Ranking Criteria ¹	Score	Justification
4. Aquatic biological resources (including endangered species)		
4a. Endangered/threatened habitats	1	This entire site falls within a known location of a federally-listed species. The site contains aquatic habitat including mapped streams and wetlands. (Species identification is not available at this reconnaissance level.)
4b. Thermal Discharge Sensitivity	1	This site would use the tidally influenced portion of the Patuxent River as its main cooling water source and this portion of the river is designated as mesohaline waters. This portion of the Lower Patuxent River Mesohaline 1 (PAXMH1) surface water segment is part of the Patuxent River Area Sub-Basin (COMAR 26.08.02.08(M)(2)(d)). The Surface Water Use Designation for the Lower Patuxent River Mesohaline 1 (PAXMH1) is Use II: SUPPORT OF ESTUARINE AND MARINE AQUATIC LIFE AND SHELLFISH HARVESTING (COMAR 26.08.02.03-3C). Maryland's antidegradation policy classifies this portion of the Patuxent River as Tier 1.
5. Socioeconomics (including aesthetics, demography, and infrastructure)		
5a. Emergency services	5	Approximately two hospitals, one police station, and nine fire stations or departments (including volunteer stations) are located within St. Mary's County. St. Mary's County has an emergency communication division that coordinates disaster preparedness response.
5b. Construction traffic	5	State Highway 235 is adjacent to the north of the site. State Highway 472 is also located just outside of one mile north of the site.
5c. Construction workforce	5	<p>According to occupational projections for 2004 through 2014, there appears to be a general upward trend for construction and extraction employment within the Southern Maryland WIA which includes Calvert, Charles and St. Mary's counties. An increase in employment indicates additional competition in acquiring workforce for the construction of the project. In addition, according to 2014 projections, the construction workforce required for the project, assumed to be similar to the estimated maximum workforce for the Calvert Cliffs Unit 3, would represent approximately 38 percent of the total construction workforce within the WIA.</p> <p>According to May 2008 BLS metropolitan and non-metropolitan area data within 50 miles of the site, the construction workforce required for the project would represent less than 2 percent of the total construction workforce.</p>
5d. Housing and necessities	1	According to the census tract data, a total of 145,957 housing units are vacant or not occupied, which represents approximately 37 times the projected construction workforce, assumed to be similar to the estimated maximum workforce for the Calvert Cliffs Unit 3. The nearest population center of greater than 25,000 is St. Charles, which is approximately 20 miles away.
5e. Schools	2	Approximately 499 public and private elementary, middle, and high schools are located within a 50 mile radius of the site.

Thiokol		
Ranking Criteria ¹	Score	Justification
6. Environmental Justice (EJ)		
6a. Minority population	2	The site is located in CT 9956 BG 3. CT 9956 BG 3 has a lower percentage (6.3 percent) of minority residents compared to four out of the five adjacent CTs, St. Mary's County (18.4 percent) and the State of Maryland (36.0 percent). CT 9956 BG 4, an adjacent CT/BG to the project site, has the highest minority population (36.4 percent) of the CT/BGs at or adjacent to the site.
6b. Low-income population	3	CT 9956 BG 3 has a higher percent poverty level (21.7 percent) than all adjacent CTs, St. Mary's County (7.2 percent) and the State of Maryland (8.5 percent). CT 9956 BG (project site), has the highest low-income population (21.7 percent) of the CT/BGs at or adjacent to the site.
7. Historic and Cultural Resources		
7a. Historic buildings, structures, objects and sites	3	There are 3 NRHP listed properties less than 5 miles but more than 1 mile from the site. Although the site is located in St. Mary's County, both the MHT and the NRHP databases were utilized to determine if any historic properties in Calvert County, MD were within 5 miles of the site.
7b. Historic districts	5	There are no NRHP listed historic districts within 1 mile of the site, nor are there any NRHP listed historic districts less than 5 miles from the site. Although the site is located in St. Mary's County, both the MHT and the NRHP databases were also checked to determine if any historic districts in Calvert County, MD were within 5 miles of the site. There were no additional historic districts in Calvert County within 5 miles of the site.
8. Air Quality (Climate & Meteorology)		
8a. Weather risks/conditions	4	Based on NRC Regulatory Guide 1.76, Figure 1, the site has a low expected occurrence of tornadoes that are only expected to be moderate in intensity (<200 mph). Based on hurricane strike data reported by the National Hurricane Center, the site is in an area that has experienced approximately 2 to 6 hurricanes since 1900, a very low frequency of occurrence.
8b. Prevention of Significant Deterioration (PSD) Class I Area, Attainment / Non-attainment Area	5	The site is located St. Mary's County, which is identified by U.S. EPA as in attainment for all pollutants. The site is not located in a PSD Class I Area.
9. Human Health		
9a. Emergency preparedness program— proximity of residences/businesses for exclusion zone	4	There are approximately 116 total residences and businesses within 1 mile of the site based on a review of aerial maps. In addition, there are no schools or hospitals within 1 mile of the site.
9b. Radiological pathways - water	5	The nearest sole source aquifer is greater than 5 miles from the site (57 miles). Although the nearest surface water (Patuxent River) is approximately 2.7 miles from the site, only portions of the Patuxent River are freshwater and it is not designated as a public water supply. The segment of the Patuxent River closest to the site is the Lower Patuxent River Mesohaline 1 (PAXMH1) surface water segment which is part of the Patuxent River Area Sub-Basin [COMAR 26.08.02.08(M)(2)(d)]. The Surface Water Use Designation for the Lower Patuxent River Mesohaline 1 (PAXMH1) is Use II: <i>Support of Estuarine and Marine Aquatic Life and Shellfish Harvesting</i> [COMAR 26.08.02.03-3(C)].

Thiokol		
Ranking Criteria ¹	Score	Justification
9c. Radiological pathways - food	1	Agricultural land is located approximately 0.23 miles from the site and shellfish beds are located approximately 2.7 miles from the site.
10. Postulated Accidents(a)		
10a. Distance to nearby potentially hazardous facilities	3	Leonardtown Armory is located 4.9 miles from the site. The site is located 2.7 miles from the Patuxent River. There are no rail lines within 5 miles and no airports or naval air stations within 10 miles.
11. Fuel Cycle Impacts (Transport of Radioactive Material)		
11a. Support/challenges to transport of nuclear fuel and wastes	2	The distance from the site to the National Repository at Yucca Mountain is greater than 2000 miles and the distance to the nearest low-level waste disposal site, Waste Control Specialists in Andrews, Texas, is greater than 1000 miles, whether by rail or road. The population densities along the transportation routes within the first 10 miles of the site are less than 2601 ppsm.
12. Transmission corridors (land used, feasibility, and resources affected)		
12a. Proximity/availability of power corridors	3	There are five existing 500 kV transmission lines: three are within 10 mi and are located at the existing Calvert Cliffs Nuclear Power Plant in Calvert County, one line is about 14 mi away, and the other 500 kV transmission line is about 25 mi to the north-northwest of the site. The most viable transmission line to be considered for a potential POI is a 500 kV transmission line located about 13.92 mi away from the site.
13. Population distribution and density		
13a. Distance to population centers	5	Based on the U.S. Census Populated Place Areas, the nearest population center of 25,000 or more, St. Charles, is located 20.3 miles from the site.
13b. Population density	4	The population density within a 20-mile radius of the site, based on 2007 U.S. Census Bureau data, is 150 ppsm.
14. Facility costs [Transportation Access]		
14a. Barge access and capacity – distance, construction, or upgrade requirements	1.7	The nearest barge access is 17.9 miles from the site, on the Potomac River.
14b. Rail line access and capacity – distance, spur requirements, line capacity, or upgrade requirements	1.4	The nearest rail line is 16.3 miles from the site.
15. Geology/Seismology		
15a. Vibratory ground motion – seismic peak ground acceleration	5	Based on the USGS 2008 National Seismic Hazard Map, the PGA with 2 percent probability of exceedance in 50 years at this site is 0.052g.
15b. Depth to bedrock, soil stability	2	Based on available information from the MGS, NRCS, and MDE, the bedrock at this site is likely too deep for founding the proposed plant structures on rock. The soils above rock may be either quaternary or tertiary in age.
15c. Surface faulting and deformations	5	Based on the USGS Earthquake Hazards Program/Quaternary Fault and Fold Database, the distance between site and the closest fault area (the Central Virginia Seismic Zone) is greater than 50 miles.

Thiokol		
Ranking Criteria ¹	Score	Justification
15d. Other geological hazards	3	Queries of the USDI "National Mine Map Repository" database did not identify any reported underground mines in St. Mary's county, in which the site resides, or in any of the adjacent counties. Based on this information, the potential for underground mines is not identified within 20 miles of the site. The potential for significant bedrock karst features is not identified within 50 miles of the site. However, potentially karstic CPU sediments may be present within 10 miles of the site. The potential for significant karst complications associated with CPU sediments may not be as great as for bedrock karst, but sufficient information is not readily available to evaluate the potential risk.
16. Wetlands		
16a. Total Wetlands Within Property Boundary	5	According to the NWI database, approximately 8 percent, or 50 acres of the 620 acre property are wetlands.
16b. Total Acres of Wetlands Within Site	1	According to NWI database, the 421-acre site contains approximately 34 acres of wetlands.
16c. High Quality Wetlands Within Site	5	This site does not contain any state-designated high-quality wetlands.

Calvert Cliffs 3		
Ranking Criteria ¹	Score	Justification
1. Land use, including availability, and areas requiring special consideration		
1a. Ability to support the combined EPR footprint including the protected area, cooling towers, ponds, switchyard, construction support areas	5	Proposed layout plan can be accommodated on the site as shown in the Environmental Report with little changes needed in the layout and no restrictions for construction work areas.
1b. Hazardous waste or spoils areas	4.8	MDE Land Restoration Program Internet Mapping System database did not identify any hazardous waste areas on the site or in the vicinity and no environmental remediation is anticipated.
1c. Zoning	5	Site is zoned for a combination of light industrial and farm and forest district uses. No zoning restrictions were identified based on Section 1-2 of the Calvert County Zoning Ordinance exempting qualified commercial power generating facilities from the requirements of the zoning ordinances as they are regulated by the State and Federal Government. A qualified commercial power generating facility is a facility that has been issued a Certificate of Public Convenience and Necessity by the Maryland Public Service Commission.
1d. Distance to dedicated land	1.4	The Calvert Cliffs State Park is the nearest dedicated land and is located approximately 0.7 miles from the site.
1e. Topography	4.4	There are approximately 98 feet of relief across the site. The topography is hilly with less than 100 feet of relief, with significant amounts of cut-and-fill required.
2. Hydrology, water quality, and water availability		
2a. Water Quality	2	The Middle Central Chesapeake Bay segment of the Chesapeake Bay would be the source of cooling water and this segment is designated as mesohaline waters.
2b. Receiving Body Water Quality	5	The segment of the Chesapeake Bay being considered as the source of cooling water does not have a special water quality classification and is considered a Tier I water. The Surface Water Use Designation for the Middle Central Chesapeake Bay (CB4MH) segment is Use II: Support of Estuarine and Marine Aquatic Life and Shellfish Harvesting [COMAR 26.08.02.03-3(C)].
2c. Water availability	5	According to USGS data, the estimated mean monthly flow to the Chesapeake Bay was 1617 mgd. Additionally, the Chesapeake Bay holds more than 15 trillion gallons of water.
3. Terrestrial resources (including endangered species)		
3a. Endangered/threatened habitats	1	Multiple locations of known federally-listed T&E species were identified onsite; all of these locations include terrestrial habitats. Additionally, a Maryland Natural Heritage Area was identified onsite.
3b. Floodplains	5	No 100 or 500 year FEMA floodplain or state floodplain zones affect the site footprint.
4. Aquatic biological resources (including endangered species)		
4a. Endangered/threatened habitats	1	Multiple locations of known federally-listed species were identified onsite; all of these locations encompassed mapped aquatic habitats including streams and wetlands. Additionally a Maryland Natural Heritage Area was identified onsite, which does encompass mapped aquatic habitats.

Calvert Cliffs 3		
Ranking Criteria ¹	Score	Justification
4b. Thermal Discharge Sensitivity	1	This site would use the Middle Central Chesapeake Bay (CB4MH) segment of the Chesapeake Bay proposed for the source of cooling water. This water body is designated as mesohaline waters. The Surface Water Use Designation for the Middle Central Chesapeake Bay (CB4MH) segment is Use II: <i>Support of Estuarine and Marine Aquatic Life and Shellfish Harvesting</i> (COMAR 26.08.02.03-3(C)). Maryland's antidegradation policy classifies this portion of the Chesapeake Bay as Tier 1.
5. Socioeconomics (including aesthetics, demography, and infrastructure)		
5a. Emergency services	3	Approximately one hospital, two police stations, and seven fire stations or departments (including volunteer stations) are located within Calvert County. Calvert County has an emergency management and safety division that coordinates disaster preparedness planning.
5b. Construction traffic	5	Existing roads are present adjacent the west side of the site, including State Highway 4 and State Highway 2. One other major road, State Highway 765, is located within one mile of the site.
5c. Construction workforce	5	<p>According to occupational projections for 2004 through 2014, there appears to be a general upward trend for construction and extraction employment within the Southern Maryland WIA, which includes Calvert, Charles and St. Mary's Counties. An increase in employment indicates additional competition in acquiring workforce for the construction of the project. In addition, according to 2014 projections, the construction workforce required for the project, an estimated maximum construction workforce of 3,950 employees, would represent approximately 38 percent of the total construction workforce within the WIA.</p> <p>According to May 2008 BLS metropolitan and non-metropolitan area data within 50 miles of the site, the construction workforce required for the project would represent less than 2 percent of the total construction workforce.</p>
5d. Housing and necessities	1	According to the census tract data, a total of 172,269 housing units are vacant or not occupied within the counties in a 50-mile radius of the site, which represents more than 43 times the projected construction workforce, an estimated maximum of 3,950 employees. The nearest population center greater than 25,000 is St. Charles, which is approximately 25 miles away.
5e. Schools	3	Approximately 538 public and private elementary, middle, and high schools are located within a 50 mile radius of the site.
6. Environmental Justice (EJ)		
6a. Minority population	3	The site is located in CT 861001 BG 1. CT 861001 BG 1 has a lower percentage of minority residents (9.5 percent) compared to all adjacent CTs, Calvert County (16.1 percent) and the State of Maryland (36.0 percent). CT 8609 BG 1, an adjacent CT/BG to the project site, has the highest minority population (28.8 percent) of the CT/BGs at or adjacent to the site.
6b. Low-income population	4	CT 861001-BG 1 has 0 percent of its population below the poverty level, which is lower than all adjacent CTs, Calvert County (4.4 percent) and the State of Maryland (8.5 percent). CT 8609 BG 1, an adjacent CT/BG to the project site, has the highest low-income population (7.1 percent) of the CT/BGs at or adjacent to the site.

Calvert Cliffs 3		
Ranking Criteria ¹	Score	Justification
7. Historic and Cultural Resources		
7a. Historic buildings, structures, objects and sites	1	Based on the information available from both the MHT and the NRHP, there are no NRHP listed properties within 1 mile of the site. There are 5 NRHP listed properties within 5 miles of the site.
7b. Historic districts	5	No NRHP-listed historic districts are located within 5 miles of the site and there are no NRHP listed historic districts within a mile of the site, according to the MHT and the NRHP.
8. Air Quality (Climate & Meteorology)		
8a. Weather risks/conditions	4	Based on NRC Regulatory Guide 1.76, Figure 1, the site has a low expected occurrence of tornadoes that are only expected to be moderate in intensity (<200 mph). Based on hurricane strike data reported by the National Hurricane Center, the site is in an area that has experienced approximately 2 to 6 hurricanes since 1900, a very low frequency of occurrence.
8b. Prevention of Significant Deterioration (PSD) Class I Area, Attainment / Non-attainment Area	3	The site is located Calvert County, which is identified by U.S. EPA as a non-attainment area for 8-hr ozone. The site is not located in a PSD Class I Area.
9. Human Health		
9a. Emergency preparedness program— proximity of residences/businesses for exclusion zone	3	There are approximately 26 total residences and businesses within 1 mile of the site based on a review of aerial maps. There are no schools or hospitals within 1 mile of the site.
9b. Radiological pathways - water	5	The nearest sole source aquifer is greater than 5 miles from the site (52 miles). The nearest surface water (Chesapeake Bay) is approximately 0.64 miles from the site. However, the water is brackish and is not designated as a public water supply. The segment of the Chesapeake Bay adjacent to the site (CB4MH) has a Surface Water Use Designation of Use II: <i>Support of Estuarine and Marine Aquatic Life and Shellfish Harvesting</i> [COMAR 26.08.02.03-3(C)].
9c. Radiological pathways - food	1	Agricultural land is approximately 0.5 miles from the site and potential shellfish beds are located approximately 0.64 miles from the site.
10. Postulated Accidents(a)		
10a.Distance to nearby potentially hazardous facilities	1	Calvert Cliffs Nuclear Power Plant Units 1 and 2 are located 0.6 miles from the site. Cove Point Liquid Natural Gas plant is located 3.2 miles away. The Chesapeake Bay is 0.8 miles from the site. There are no major airports or naval air stations within 10 miles.
11. Fuel Cycle Impacts (Transport of Radioactive Material)		
11a.Support/challenges to transport of nuclear fuel and wastes	2	The distance from the site to the National Repository at Yucca Mountain is greater than 2000 miles and the distance to the nearest low-level waste disposal site, Waste Control Specialists in Andrews, Texas, is greater than 1000 miles, whether by rail or road. The population densities along the transportation routes within the first 10 miles of the site are less than 2601 ppsm.
12. Transmission corridors (land used, feasibility, and resources affected)		
12a. Proximity/availability of power corridors	4.5	There are three existing 500 kV transmission lines within 0.5 mi of the site and one 500 kV line about 15.8 mi of the site. The nearest viable transmission line to be considered for a potential POI is a transmission line located about 0.47 mi away from the site.

Calvert Cliffs 3		
Ranking Criteria ¹	Score	Justification
13. Population distribution and density		
13a. Distance to population centers	5	Based on the U.S. Census Populated Place Areas, the nearest population center of 25,000 or more, St. Charles, is located 25.3 miles from the site.
13b. Population density	4	The population density within a 20 mile radius of the site, based on 2007 U.S. Census Bureau data, is 135 ppsm.
14. Facility costs [Transportation Access]		
14a. Barge access and capacity – distance, construction, or upgrade requirements	5	There is an existing barge unloading facility at the site.
14b. Rail line access and capacity – distance, spur requirements, line capacity, or upgrade requirements	1	The nearest rail line is located 27.5 miles from the site.
15. Geology/Seismology		
15a. Vibratory ground motion – seismic peak ground acceleration	5	Based on the USGS 2008 National Seismic Hazard Map, the PGA with 2 percent probability of exceedance in 50 years at this site is 0.050g.
15b. Depth to bedrock, soil stability	3	Based on available information from the MGS, USDA, and NRCS, the bedrock at this site is likely too deep for founding the proposed plant structures on rock. The soils above rock are tertiary in age.
15c. Surface faulting and deformations	5	Based on the USGS Earthquake Hazards Program/Quaternary Fault and Fold Database, the distance between the site and the closest fault area (the Central Virginia Seismic Zone) is greater than 50 miles.
15d. Other geological hazards	3	<p>Within the Coastal Plain Physiographic Province on which this site sits, bedrock is buried by thick deposits of unconsolidated sediments. Calcareous sediment deposits are present within the Coastal Plain in southern and central Maryland, and are indicated as potentially karstic CPU calcareous sediments on a recent draft karst map. Potential CPU sediments are indicated near the site.</p> <p>Queries of the USDI "National Mine Map Repository" database did not identify any reported underground mines in Calvert or adjacent counties.</p> <p>Based on this information, the potential for significant bedrock karst features or underground mines is not identified within 20 miles of the site. However CPU sediments may be present within 10 miles of the site. The potential for significant karst complications associated with CPU sediments may not be as great as for bedrock karst, but sufficient information is not readily available to evaluate the potential risk. Due to the extent of previous subsurface investigations at the site, the potential for CPU karst complications is relatively more defined than at other sites in the Coastal Plain.</p>

Calvert Cliffs 3		
Ranking Criteria ¹	Score	Justification
16. Wetlands		
16a. Total Wetlands Within Property Boundary	5	According to the NWI database, approximately 8 percent, or 173 acres of the 2,057 acre property are wetlands.
16b. Total Acres of Wetlands Within Site	1	According to the NWI database, the approximately 421-acre site contains approximately 7 acres of wetlands.
16c. High Quality Wetlands Within Site	5	This site does not contain any state-designated high-quality wetlands.

¹ Yellow highlighted row is from Ref NUREG-1555 Subject Areas for Candidate Site Selection and Screening. No fill is Functional Evaluation Elements [Ref EPRI Siting Study].

Appendix D—Weighting Criteria

In evaluating the inevitable trade-offs between suitability criteria, it is necessary to assign a relative importance (i.e., weight) to each criterion in selecting a power plant site. As such, weighting factors were assigned to each of the 16 major criteria topics using the Delphi process with a nine member panel. This panel was developed, based on their knowledge, skills, and specific areas of expertise, to conduct the evaluation of the *Potential Sites*. This panel established the weighting factors and evaluated specific criteria that were defined to be subjective in nature.

The Delphi Panel responsible for development of the Calvert Cliffs Nuclear Power Plant Unit 3 siting evaluation included two members from CH2MHILL, two members from AREVA, and five members from UniStar (comprised of an attorney, finance lead, developer, commercial lead, and project management). In addition, subject matter experts (SME), from CH2MHILL and AREVA, were available to discuss and provide input as requested by panel members for further clarification during the session.

Panel members rated the importance of each criterion and assigned weights relative to the other criteria, which are presented in the table below.

Criteria Topic	Weight
1. Land use, including availability, and areas requiring special consideration	6.33
2. Hydrology, water quality, and water availability	9.00
3. Terrestrial resources (including endangered species)	7.28
4. Aquatic biological resources (including endangered species)	7.28
5. Socioeconomics (including aesthetics, demography, and infrastructure)	5.50
6. Environmental Justice	4.72
7. Historic and Cultural Resources	4.94
8. Air Quality	4.00
9. Human Health	6.06
10. Postulated Accidents(a)	4.56
11. Fuel Cycle Impacts(a)	3.00
12. Transmission corridors (land used, feasibility, and resources affected)	7.72
13. Population distribution and density	8.67
14. Transportation Access	5.50
15. Geology/Seismology	7.11
16. Wetlands	8.33

Appendix E—Acronyms and Abbreviations

ac	acre
ASCE	American Society of Civil Engineers
CEG	Constellation Energy Group, Incorporated
CFR	Code of Federal Regulations
COMAR	Code of Maryland Regulations
CPCN	Certificate of Public Convenience and Necessity
DOE	U.S. Department of Energy
EIA	Energy Information Administration
EPA	U.S. Environmental Protection Agency
EPR	Evolutionary Power Reactor
EPRI	Electric Power Research Institute
ESP	early site permit
ESRP	Environmental Standard Review Plan
FDR	Franklin D. Roosevelt
FEMA	Federal Emergency Management Agency
GIS	geographic information system
ha	hectare
km	kilometer
km ²	square kilometer
kV	kilovolt
MDNR	Maryland Department of Natural Resources
MDE	Maryland Department of the Environment
MDPSC	Maryland Public Services Commission
mi	mile
mi ²	square mile
NEPA	National Environmental Policy Act of 1969
NRC	U.S. Nuclear Regulatory Commission
NUREG	U.S. Nuclear Regulatory Commission: Reports or brochures on regulatory decisions, results of research, results of incident investigations, and other technical and administrative information.
ppsm	persons per square mile
PPRP	Power Plant Research Program
PSC	Public Services Commission
PSL	Public Service Law
RCRA	Resource Conservation and Recovery Act
rem	roentgen equivalent man
ROI	region of interest
SEQRA	State Environmental Quality Review Act
TEDE	total effective equivalent dose
UniStar	UniStar Nuclear Operating Services

Appendix F—US Army Corps of Engineers (USACE) Information

This appendix contains information submitted to the Maryland Department of the Environment (MDE) and USACE as part of the Joint Permit Application (JPA) and is comprised of three sections: 1) Project Purpose, 2) the JPA package, and 3) Supplemental Environmental Resource Report siting sections.

Section F1 - Purpose

The basic project purpose for the project is to generate electricity for additional baseload capacity.

The overall purpose of the project is to construct a nuclear power plant facility to provide for additional baseload electrical generating capacity to meet the growing demand in the State of Maryland.

Section F2 – Documentation

The following table list the items submitted in the JPA and identifies those documents included herein.

Document	Content	
Joint Federal/State Application for the Alteration of Any Floodplain, Waterway, Tidal or Non-Tidal Wetland in Maryland, Dated May 16, 2008	Cover Letter	Copy in App F
	Detailed Work Descriptions for Impacts to Tidal and Non-Tidal Wetlands	
	Tidal and Non-Tidal Figures 1-28	
	Supplemental Environmental Resource Report w/Appendices A, B, and C.	Copy in App F
	Three Volumes of Environmental Reports Including - Final Flora Survey Report, Final Rare Plant Survey, Final Faunal Survey & related correspondence between UniStar and U.S. Fish and Wildlife Service, National Marine Fisheries Service, and Maryland DNR, Current Status of Two Federally Threatened Tiger Beetles at Calvert Cliffs Nuclear Power Plant, 2006, Aquatic Field Studies, Submerged Aquatic Vegetation Surveys, Final Wetland Delineation Report	Copy in App F
Update supplementing the 5/16/2008 Joint Permit Application Submittal, dated July 14, 2008	Stormwater Management Plan and associated documents prepared by Bechtel Engineering. Cover Letter	Copy in App F
	Revised Work Descriptions for Impacts to Tidal and Non-Tidal Wetlands	Copy in App F
	Additional and Updated Figures for the Tidal portions of the application, including Figures 1-6, 3A-B, 4A, 5A-D, 6A-H, Key Plan	Copy in App F
	Additional and Updated Figures for the Non-Tidal Portions of the Application including Figures 1-10, 6A-B, 7A-F, 9A-D, and 10A-H	Copy in App F
	Concept Site Plan	Copy in App F
	11" X 17" Color Site Plan	Copy in App F

Section F3 - Supplemental Environmental Resource Report

May 20, 2008

Ms. Terry J. Romine
Executive Secretary
Maryland Public Service Commission
William Donald Schaefer Tower
6 St. Paul Street, 16th Floor
Baltimore, Maryland 21202

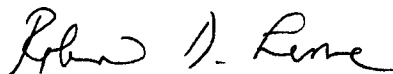
Re: In the Matter of the Application of UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC for a Certificate of Public Convenience and Necessity to Construct a Nuclear Power Plant at Calvert Cliffs in Calvert County, Maryland – Case No. 9127

Dear Executive Secretary Romine:

Please find enclosed for filing in this proceeding the original and 16 copies of the *Joint Federal/State Application for the Alteration of Any Floodplain, Waterway, Tidal or Nontidal Wetland in Maryland* ("Joint Application") filed on behalf of the Co-Applicants as a supplement to the CPCN application. Also enclosed is an extra paper copy, which we ask that you date stamp and return in the envelope provided.

The Joint Application has been e-filed and served on all parties on the Commission's service list. In addition, all interested persons identified on the Commission's service list will be notified that the Joint Application has been e-filed and served.

Very truly yours,

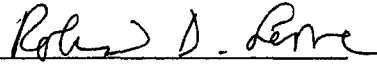

Robin D. Leone
For the Co-Applicants

Enclosures

cc: Bryan Moorhouse, Chief Hearing Examiner
Lisa M. Decker, Esquire (letter only)
Deborah E. Jennings, Esquire (letter only)
Service List Parties

CERTIFICATE OF SERVICE

I, Robin D. Leone, hereby certify that on this 20th day of May 2008, the foregoing *Joint Federal/State Application for the Alteration of Any Floodplain, Waterway, Tidal or Nontidal Wetland in Maryland* filed on behalf of the Co-Applicants was served on all parties on the attached service list via hand delivery.


Robin D. Leone

SERVICE LIST - CASE NO. 9127

May 5, 2008

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(for the Department of Natural Resources,
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(for Maryland Public Interest Research Group
(Maryland PIRG), Nuclear Information
Resource Service, and Beyond Nuclear)



May 16, 2008

VIA HAND DELIVERY

Mrs. Kathy B. Anderson
Project Manager
U.S. Army Corps of Engineers
Baltimore District
10 South Howard Street
Baltimore, Maryland 21201

**Subject: USACE Application Number NAB-2007-08123-M05
Calvert Cliffs Nuclear Power Plant – Unit 3
Calvert County, Maryland**

Dear Mrs. Anderson:

Calvert Cliffs 3 Nuclear Project, LLC (CC3) (Co-Applicant) is seeking approval to construct a proposed new nuclear power unit on the existing Calvert Cliffs Nuclear Power Plant (CCNPP) site. The new unit will be designated as CCNPP Unit 3. UniStar Nuclear Operating Services, LLC (Co-Applicant) will be the operator of CCNPP Unit 3.

Attached for your review are the following:

- 1) Work descriptions for proposed activities;
- 2) Environmental Reports (3 Volumes) submitted to the Critical Area Commission;
- 3) Stormwater Management Plan and associated documents prepared by Bechtel Power Corporation.

If you have any questions regarding the above information, please call me at (410) 470-5524.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Lutchenkov", with a long horizontal line extending to the right.

Dimitri Lutchenkov
UniStar

Enclosures

August 1, 2008

Ms. Terry J. Romine
Executive Secretary
Maryland Public Service Commission
William Donald Schaefer Tower
6 St. Paul Street, 16th Floor
Baltimore, Maryland 21202

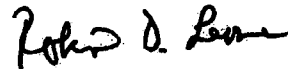
Re: In the Matter of the Application of UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC for a Certificate of Public Convenience and Necessity to Construct a Nuclear Power Plant at Calvert Cliffs in Calvert County, Maryland – Case No. 9127

Dear Executive Secretary Romine:

Please find enclosed for filing in this proceeding the original and 16 copies of revised figures requested by the U.S. Army Corps of Engineers to supplement (the "Supplement") the *Joint Federal/State Application for the Alteration of Any Floodplain, Waterway, Tidal or Nontidal Wetland in Maryland* ("Joint Application") filed on behalf of the Co-Applicants as a supplement to the CPCN application. Also enclosed is an extra paper copy, which we ask that you date stamp and return in the envelope provided.

The Supplement to the Joint Application has been e-filed and served on all parties on the Commission's Service List. In addition, all interested persons identified on the Commission's Service List will be notified that the revision has been e-filed and served.

Very truly yours,



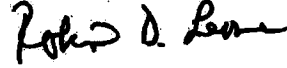
Robin D. Leone
For the Co-Applicants

Enclosures

cc: Joel M. Bright, Hearing Examiner
Lisa M. Decker, Esquire
Deborah E. Jennings, Esquire
Service List

CERTIFICATE OF SERVICE

I, Robin D. Leone, hereby certify that on this 1st day of August 2008, the foregoing Supplement to the *Joint Federal/State Application for the Alteration of Any Floodplain, Waterway, Tidal or Nontidal Wetland in Maryland* filed on behalf of the Co-Applicants was served on all parties on the attached service list via first class mail.

A handwritten signature in black ink, appearing to read "Robin D. Leone", written over a horizontal line.

Robin D. Leone

SERVICE LIST - CASE NO. 9127

July 28, 2008

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750 E. Pratt Street
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May 30, 2008

Ms. Kathy B. Anderson
Biologist and Project Manager
U.S. Army Corps of Engineers – Baltimore District
10 S. Howard Street
Baltimore, Maryland 21201

UN#08-017

Subject: Joint Federal/State Application of Calvert Cliffs 3 Nuclear Project, LLC and UniStar Nuclear Operating Services, LLC, Calvert Cliffs Nuclear Power Plant Site, Lusby, Calvert County, Maryland, USACE Tracking No. NAB-2007-08123-M05

Dear Ms. Anderson:

I am writing on behalf of (i) Calvert Cliffs 3 Nuclear Project, LLC (CC3), a special purpose entity subsidiary of UniStar Nuclear Energy, LLC (UniStar) created for the purpose of owning the proposed new nuclear plant (Calvert 3), and (ii) UniStar Nuclear Operating Services, LLC (UNO), the proposed operator of Calvert 3 (collectively, the Co-Applicants). This letter supplements the Joint Federal/State Application for the Alteration of Any Floodplain, Waterway, Tidal or Nontidal Wetland in Maryland filed by the Co-Applicants at the Maryland Department of the Environment on May 16, 2008.

The Co-Applicants are seeking a Maryland Nontidal Wetlands Permit and an individual U.S. Army Corps of Engineers (USACE) permit pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbor Act¹ and respectfully request that this letter be added to the administrative record for the above-referenced application and project number (NAB-2007-08123-M05).

A UniStar parent company, Constellation Energy Nuclear Group, LLC,² and UNO have also submitted an application to the U.S. Nuclear Regulatory Commission (NRC) for authorization to construct and operate Calvert 3 adjacent to the existing Calvert Cliffs Nuclear Power Plant. There will be a full Environmental Impact Statement (EIS) relating to the proposed Calvert 3, the preparation of which will be led by the NRC. UniStar does not expect a decision by the NRC on its application before March 2011.

As you may know, the NRC recently revised its regulations to clarify the scope of its jurisdiction over preliminary and non-radiological health and safety related activities at proposed reactor sites. Specifically, the NRC has determined that certain activities are not "construction" within the meaning of its statute, are outside of that agency's regulatory authority, and thus do not require NRC authorization. Those preliminary activities include clearing, excavation, site preparation, building of roads, dredging, procurement of components of the proposed facility, etc. 10 CFR 50.10(a)(2).

UniStar and UNO have applied for a Certificate of Public Convenience and Necessity from the Maryland Public Service Commission that would authorize construction of the facility (as defined by Maryland law), including the activities described above, for which NRC authorization is not required. In order to achieve the full benefits of the Energy Policy Act of 2005 – which are vital to the feasibility of the project – the Co-Applicants would need to begin these activities by the end of 2008. This authorization is essential in order to have the site ready for commencement of NRC-authorized, safety-related construction activities in April 2011. If these activities begin as planned, the plant could be operational by 2015.

¹ Previous authorizations include NABOP-P112 for the existing intake area and NABOP-P135 for the barge facilities.

² Formerly known as Constellation Generation Group, LLC.

Meeting this timeline is especially important because the Maryland Public Service Commission has recently found that there is a demonstrated future need for additional base-load electric capacity in the region that includes the State of Maryland. This nuclear power plant would provide 1,600 megawatts of baseload power, an important component of the region's overall energy needs. If the Co-Applicants cannot begin these preliminary activities outside the NRC's jurisdiction until NRC approval of the project is obtained, the project and the power it would produce for the region would be significantly delayed.

The Co-Applicants recognize that the USACE authorizations are federal actions that require compliance with the National Environmental Policy Act. However, the preliminary site activities for which the Co-Applicants seek the USACE authorizations are outside the jurisdiction of the NRC, and constitute a small part of the much larger project that will subsequently be reviewed by the NRC. Specifically, the clearing, grading and dredging activities are only a small fraction of the multi-billion dollar cost of the entire project. Any preliminary activities conducted by the Co-Applicants would be included by the NRC as part of its cumulative impact analysis, and addressed when evaluating the environmental impacts of construction and operation of the proposed nuclear power plant. 72 Fed. Reg. 52,427 (October 9, 2007). The Co-Applicants acknowledge that they would be conducting such preliminary activities at their own risk and that their ability to construct and operate the proposed Calvert 3 nuclear plant will depend on receiving authorization from the NRC. In addition, the Co-Applicants commit to redress and/or provide mitigation to address any adverse environmental impacts in the event an NRC license is not obtained.

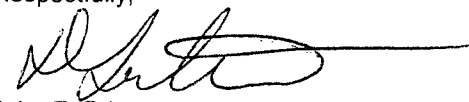
The Co-Applicants believe that this request is comparable to and governed by the authority of *North Carolina v. City of Virginia Beach*, 951 F.2d 596 (1991). In that case, Virginia Beach obtained approval from the USACE to build portions of a pipeline that were outside the jurisdiction of the Federal Energy Regulatory Commission (FERC), acknowledging that it would subsequently seek FERC authorization for the larger project and that a full EIS for the larger project would be required. In that case, the United States Court of Appeals for the 4th Circuit reversed an injunction against the planned, preliminary work. The Fourth Circuit noted that Virginia Beach planned:

to perform relatively minor work on aspects of the pipeline outside FERC's jurisdiction that will save precious time and money if the project is approved. . . . To argue that any work wherever planned in connection with the project should be enjoined because it unduly influences FERC's decision-making reaches far too broadly to justify the extraordinary writ of injunction. . . .

951 F.2d at 602.

Similar to *Virginia Beach*, the Co-Applicants seek approval to conduct preliminary site preparation activities that the NRC has determined are outside the scope of its jurisdiction. The Co-Applicants seek USACE authorization and specifically request that the USACE conduct its own NEPA compliance review with respect to the authorizations sought. The Co-Applicants believe that the impacts described in their Joint Application are relatively minor and may be eligible for a Finding of No Significant Impact. The Co-Applicants urge the USACE to undertake and fulfill the NEPA requirements associated with this preliminary work so as to allow this work to begin and "save precious time" in the years that precede the conclusion of the NRC review and EIS associated with the jurisdictional actions of the NRC. In urging USACE to proceed in this fashion, we believe that our commitment to redress any adverse impacts and restore the area should the NRC, in the future, determine not to issue the requested license, alleviates any concerns regarding prematurely influencing future action, foreclosing meaningful consideration of alternatives and impermissible segmentation.

Respectfully,


for John E. Price
Regulatory Affairs, COLA Coordinator

May 30, 2008
UN#08-017
Page 3

cc: Mr. C. Jeff Lorenz, Assistant District Counsel
Mr. Adam Snyder, Assistant Attorney General
Mr. Gary T. Setzer, Wetlands & Waterways Program
Mr. Elder A. Ghigarelli, Jr., Coastal Zone Consistency Division
Mr. John Rycyna, NRC
Mr. Thomas L. Fredrichs, NRC

**JOINT FEDERAL/STATE APPLICATION FOR THE ALTERATION OF ANY FLOODPLAIN,
WATERWAY, TIDAL OR NONTIDAL WETLAND IN MARYLAND**

FOR AGENCY USE ONLY

Application Number _____	Date Determined Complete _____
Date Received by State _____	Date(s) Returned _____
Date Received by Corps _____	Date of Field Review _____
Type of State permit needed _____	Agency Performed Field Review _____
Type of Corps permit needed _____	

- +++++
- Please submit 1 original and 4 copies of this form, required maps and plans to the Wetlands and Waterways Program as noted on the last page of this form.
 - Any application which is not completed in full or is accompanied by poor quality drawings may be considered incomplete and result in a time delay to the applicant.

Please check one of the following:

RESUBMITTAL: _____ APPLICATION AMENDMENT: _____ MODIFICATION TO AN EXISTING PERMIT: _____
JURISDICTIONAL DETERMINATION ONLY _____ APPLYING FOR AUTHORIZATION X
PREVIOUSLY ASSIGNED NUMBER (RESUBMITTALS AND AMENDMENTS) USACOE Tracking No. NAB-2007-08123-M05
DATE 16 May 2008

1. APPLICANT INFORMATION:

APPLICANT NAME: (CO-APPLICANTS)*

A. Name: *CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC B. Daytime Telephone: 410-495-2614
C. Company: _____
D. Address: 1650 CALVERT CLIFFS PARKWAY
E. City: LUSBY State: MD Zip: 20657
*UNISTAR NUCLEAR OPERATING SERVICES, LLC, 750 W. PRATT STREET, BALTIMORE, MD 21202

AGENT/ENGINEER INFORMATION:

A. Name: THOMAS E. ROBERTS B. Telephone: 410-495-2614
C. Company: CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
D. Address: 1650 CALVERT CLIFFS PARKWAY
E. City: LUSBY State: MD Zip: 20657

ENVIRONMENTAL CONSULTANT:

A. Name: RICHARD HARMON B. Telephone: 919-831-8003
C. Company: MACTEC ENGINEERING AND CONSULTING, INC.
D. Address: 3301 ATLANTIC AVENUE
E. City: RALEIGH State: NC Zip: 27604

CONTRACTOR (If known):

A. Name: _____ B. Telephone: _____
C. Company: _____
D. Address: _____
E. City: _____ State: _____ Zip: _____

PRINCIPAL CONTACT:

A. Name: DIMITRI LUTCHENKOV B. Telephone: 410-470-5524
C. Company: UNISTAR NUCLEAR OPERATING SERVICES, LLC
D. Address: 750 E. PRATT STREET, 14th FLOOR
E. City: BAITMORE State: MD Zip: 21202

a. GIVE WRITTEN DESCRIPTION OF PROJECT:

Has any portion of the project been completed? Yes X No If yes, explain _____

b. ACTIVITY: Check all activities that are proposed in the wetland, waterway, floodplain, and nontidal wetland buffer as appropriate.

- Area for item(s) checked: Wetland 510,088 (sq. ft.) Buffer (Nontidal Wetland Only) 1,343,826* (sq. ft.)

Expanded Buffer (Nontidal Wetland Only) _____ (sq. ft.)

Area of stream impact 25,050 (sq. ft.)
Length of stream affected 8,350 (linear feet)

For each activity, give overall length and width (in feet), in columns 1 and 2. For multiple activities, give total area of disturbance in square feet in column 3. For activities in tidal waters, give maximum distance channelward (in feet) in column 4. For dam or small ponds, give average depth (in feet) for the completed project in column 5. Give the volume of fill or dredged material in column 6.

974051.10 5/16/08

Vb. X Dredging (New) 750 220 97,500 750 50,000
1. X New 2. X Maintenance 3. Hydraulic 4. X Mechanical
W. Other (explain)

d. **PROJECT PURPOSE:** Give brief written description of the project purpose:

The purpose of the proposed nuclear power unit, i.e., CCNPP Unit 3, is to generate additional electricity for sale. The new nuclear power unit will be designed to produce approximately 1,710 MWe of gross generation capacity or approximately 1,600 MWe of net output for sale. The construction of CCNPP Unit 3 will add electrical supply to the rapidly growing demand in the Baltimore-Washington metropolitan areas. Additional information on the purpose and need of the project can be found in Section 2.0 of the enclosed Supplemental Environmental Resource Report

3. PROJECT LOCATION:

a. LOCATION INFORMATION:

A. County: CALVERT B. City: LUSBY C. Name of waterway or closest waterway CHESAPEAKE BAY

D. State stream use class designation: II

E. Site Address or Location: 1650 CALVERT CLIFFS PARKWAY, LUSBY, MD 20657

F. Directions from nearest intersection of two state roads: Located on MD Route 2 & 4 (Louis L. Goldstein Hwy)
When headed south on Route 2 & 4, property entrance is approximately 6,000 feet north of MD Route 765 on the left.

G. Is your project located in the Chesapeake Bay Critical Area (generally within 1,000 feet of tidal waters or tidal wetlands)?:
X Yes No

H. County Book Map Coordinates (Alexandria Drafting Co.); Excluding Garrett and Somerset Counties:

Map: 16 Letter: K Number: 5 (to the nearest tenth)

I. FEMA Floodplain Map Panel Number (if known):

J. 1. 38.42688 latitude 2. -76.44136 longitude

b. **ACTIVITY LOCATION:** Check one or more of the following as appropriate for the type of wetland/waterway where you are proposing an activity:

A. X Tidal Waters F. 100-foot buffer (nontidal wetland of special State concern) H. X 100-year floodplain (outside stream channel)
B. X Tidal Wetlands G. X In stream channel I. X River, lake, pond
C. Special Aquatic Site (e.g., mudflat, vegetated shallows) J. Other (Explain)
D. X Nontidal Wetland
E. X 25-foot buffer (nontidal wetlands only)

c. LAND USE:

A. Current Use of Parcel Is: 1. Agriculture: Has SCS designated project site as a prior converted cropland?
 Yes No 2. X Wooded 3. X Marsh/Swamp 4. X Developed
5. X Other Existing nuclear power plant.

B. Present Zoning Is: 1. Residential 2. X Commercial/Industrial 3. Agriculture 4. Marina 5. X Other
Other - Light Industrial, Farm, and Forest

C. Project complies with current zoning Yes No N/A - CPCN Proceeding

Project is exempt from County Zoning per Zoning Ordinance Section 12.02

THE FOLLOWING INFORMATION IS REQUIRED BY THE STATE (blocks 4-7):

4. REDUCTION OF IMPACTS: Explain measures taken or considered to avoid or minimize wetland losses in F. Also check Items A-E if any of these apply to your project.

A. X Reduced the area of disturbance B. Reduced size/scope of Project C. X Relocated structures
D. X Redesigned project

- E. ☒ Other Extensive evaluation process to locate structures on property to minimize wetland impacts; balanced cut and fill to minimize areas of disturbance.

F. Explanation

A site layout for CCNPP Unit 3 was originally chosen based upon an extensive site layout study that was undertaken in preparation for the Combined License Application (COLA) to the U.S. NRC. The objective of this study was to determine a site layout that would most practicably avoid and minimize impacts to jurisdictional waters and wetlands. Following the selection of the COLA proposed alternative, the proposed impacts to wetlands and streams on the CCNPP Unit 3 site were further reduced through the relocation or reconfiguration of facility components. The resulting redesign of the site layout and relocation of structures is proposed in this application. Several primary site design features that reduce impacts to jurisdictional waters are associated with siting and required location of switchyard facilities in relation to the adjacent power block and transmission lines. See section 4.0 of the Supplemental Environmental Resource Report (SERR) for additional information (Table 4.3-1).

Describe reasons why impacts were not avoided or reduced in Q. Also check Items G-P that apply to your project.

- | | | |
|---|--|--|
| G. <input type="checkbox"/> Cost | K. <input type="checkbox"/> Parcel size | N. <input checked="" type="checkbox"/> Safety/public welfare issue |
| H. <input checked="" type="checkbox"/> Extensive wetlands on site | L. <input checked="" type="checkbox"/> Other regulatory requirement | O. <input type="checkbox"/> Inadequate zoning |
| I. <input checked="" type="checkbox"/> Engineering/design constraints | M. <input checked="" type="checkbox"/> Failure to accomplish project purpose | P. <input checked="" type="checkbox"/> Other <u>Security</u> |
| J. <input checked="" type="checkbox"/> Other natural features | | |

Q. Description Project siting was limited by design constraints, which allowed integration with the existing CCNPP Units 1 and 2. Security and exclusion zones were considered in order to meeting the project goal. Extensive wetlands cover the site and affected wetland acreage was reduced to the extent practical by design alterations and relocation of supporting facilities. Regulatory requirements from the NRC were considered as part of the siting process. Project was sited to avoid impacts to then-known bald eagle nests, to the extent possible.

5. LETTER OF EXEMPTION: If you are applying for a letter of exemption for activities in nontidal wetlands and/or their buffers, explain why the project qualifies:

- | | |
|---|--|
| A. <input type="checkbox"/> No significant plant or wildlife value and wetland impact | B. <input type="checkbox"/> Repair existing structure/fill |
| 1. <input type="checkbox"/> Less than 5,000 square feet | C. <input type="checkbox"/> Mitigation Project |
| 2. <input type="checkbox"/> In an isolated nontidal wetland less than 1 acre in size | D. <input type="checkbox"/> Utility Line |
| | 1. <input type="checkbox"/> Overhead |
| | 2. <input type="checkbox"/> Underground |

E. Other (explain)

F. ☒ Check here if you are not applying for a letter of exemption.

IF YOU ARE APPLYING FOR A LETTER OF EXEMPTION, PROCEED TO BLOCK 11

6. ALTERNATIVE SITE ANALYSIS: Explain why other sites that were considered for this project were rejected in M. Also check any items in D-L if they apply to your project. (If you are applying for a letter of exemption, do not complete this block):

- | | | |
|------------------------------------|--|---|
| A. <input type="checkbox"/> 1 site | B. <input checked="" type="checkbox"/> 2 - 4 sites | C. <input type="checkbox"/> 5 or more sites |
|------------------------------------|--|---|

Alternative sites were rejected/not considered for the following reason(s):

- | | | |
|--|---|-----------------------------------|
| D. <input type="checkbox"/> Cost | H. <input checked="" type="checkbox"/> Greater wetlands impact | L. <input type="checkbox"/> Other |
| E. <input type="checkbox"/> Lack of availability | I. <input type="checkbox"/> Water dependency | |
| F. <input checked="" type="checkbox"/> Failure to meet project purpose | J. <input type="checkbox"/> Inadequate zoning | |
| G. <input type="checkbox"/> Located outside general/market area | K. <input checked="" type="checkbox"/> Engineering/design constraints | |

M. Explanation:

The CCNPP Unit 3 has been sited adjacent to the existing Units 1 and 2 to reduce overall impacts. Some onsite alternatives were eliminated based on engineering, design, and construction constraints as well as their potential to have greater environmental impacts. The alternatives analysis for this project is provided as Section 4.0 of the attached SERR.

7. **PUBLIC NEED:** Describe the public need or benefits that the project will provide in F. Also check Items in A-E that apply to your project. (If you are applying for a letter of exemption, do not complete this block):

A. ☒ Economic

C. ☒ Health/welfare

E. ☐ Other

B. ☐ Safety

D. ☐ Does not provide public benefits

F. Description Project will meet demonstrated future need for additional base-load electric capacity in the rapidly growing Baltimore-Washington metropolitan region that includes the State of Maryland. Project will also provide significant economic benefits to Calvert County and the State of Maryland. See Sections 2.1 and 2.2 of the SERR for additional information on the purpose and need for the proposed project.

8. **OTHER APPROVALS NEEDED/GRANTED:**

A. Agency	B. Date Sought	C. Decision		D. Decision Date	E. Other Status
		1. Granted	2. Denied		
MPSC/CPCN	11/2007				
MDE - Coastal Zone Consistency Determination	5/2008				
MDE - Water Quality Certification	5/2008				
Critical Area Approval - CPCN	5/2008				
Calvert County Grading Permit	TBD				

9. **MITIGATION PLAN:** Please provide the following information:

a. Description of a monetary compensation proposal, if applicable (for state requirements only). Attach another sheet if necessary.

No monetary compensation is being considered for the proposed project. On-site and in-kind mitigation has been proposed and is described in Section 7 of the attached SERR.

b. Give a brief description of the proposed mitigation project.

The mitigation strategy chosen for the CCNPP Unit 3 project includes on-site and in-kind mitigation. This strategy, or global mitigation action, would include a combination of onsite wetland enhancement and creation as well as onsite stream restoration and enhancement. Wetland creation activities will provide approximately 0.9 acre of open water habitat, 1.3 acres of freshwater marsh habitat, and 7.2 acres of bottomland hardwood forest. Wetland enhancement activities will provide approximately 18.1 acres of wetland enhancement (see attached SERR, Figure 7.2-1). See Section 7.2 of the SERR for additional wetland mitigation information. Stream restoration activities will provide approximately 6,283 linear feet of restored stream channels. Stream enhancement activities will provide approximately 4,146 linear feet of enhanced stream channels (see attached SERR Figure 7.2-1). See SERR Section 7.3 for additional stream mitigation information.

c. Describe why you selected your proposed mitigation site, including what other areas were considered and why they were rejected.

The mitigation areas were chosen after a mitigation site selection process was conducted. This process initially identified four general global mitigation strategies: (1) onsite and in kind; (2) onsite and not in kind; (3) offsite and in kind; and (4) offsite and not in kind. The mitigation strategy chosen was onsite and in kind mitigation. This strategy, or mitigation action, would replace nontidal wetland acreage and functional losses more effectively than the other three options evaluated. The proposed wetland and stream impacts occur within the same hydrologic units as the proposed mitigation actions. The geographic relationship between the areas of nontidal wetland and stream losses and the proposed mitigation areas provide an opportunity to mitigate impacts at an upper watershed level (see SERR Figure 7.2-1). The mitigation areas are located adjacent to, or within one quarter mile of proposed impact areas. The watershed approach used in the design of the compensatory mitigation plan is consistent with ongoing natural resource activities that have been implemented at CCNPP over the years and USACE mitigation guidance. See SERR Section 7.2.1 for additional information.

d. Describe how the mitigation site will be protected in the future.

The wetland and stream mitigation areas will be protected into perpetuity through establishment of a legally-binding deed restriction. These deed restrictions will generally follow the standard USACE model for such instruments. Long-term management and maintenance of the mitigation sites will be partially assured through the placement of the protection mechanism on the mitigation areas. Ownership of the mitigation areas will likely reside with CCNPP, Inc., CC3 or their respective assigns, until such a time as the property is sold or donated to a public agency or private conservation organization. See SERR Sections 7.2.5.3 through 7.2.5.4 and Sections 7.3.4.3 through 7.3.4.4 for additional information.

10. HAVE ADJACENT PROPERTY OWNERS BEEN NOTIFIED?: A. ☐ Yes B. ☒ No

Provide names and mailing addresses below (Use separate sheet, if necessary): Notification of adjacent property owners is in process. See attached Adjacent Boundaries Property Data Chart (Attachment 1).

a. _____ b. _____ c. _____

11. HISTORIC PROPERTIES: Is your project located in the vicinity of historic properties? (For example: structures over 50 years old, archeological sites, shell mounds, Indian or Colonial artifacts). Provide any supplemental information in Section 13.

A. ☒ Yes B. ☐ No C. ☐ Unknown

Phase 1 and subsequent Phase 2 Cultural Resources investigations have been completed and further investigations are ongoing. Coordination with the State Historic Preservation Office (SHPO) is ongoing. All impacts to cultural resources will be completed only after approval from the SHPO. See section 9.0 of the attached SERR for specific information on cultural resources and consultation with the SHPO.

12. ADDITIONAL INFORMATION: Use this space for detailed responses to any of the previous items. Attach another sheet if necessary:

The Supplemental Environmental Resource Report contains additional information on threatened and endangered species (Section 8), essential fish habitat (Section 10) and cultural resources (Section 9).

Check box if data is enclosed for any one or more of the following (see checklist for required information):

A. ☐ Soil borings D. ☐ Field surveys G. ☒ Site plan
B. ☐ Wetland data sheets E. ☒ Alternate site analysis H. ☒ Avoidance and
C. ☐ Photographs F. ☐ Market analysis minimization analysis

I. ☒ Other (explain) The wetland data sheets and accompanying photographs have previously been submitted to MDE, USACE – Baltimore District, and Critical Areas Commission for the Chesapeake and Atlantic Coastal Bays as part of the Final Wetland Delineation Report dated May 2007. For additional copies of this report please contact Mr. Jim Burkman of Constellation at 410-787-5130. The SERR includes an alternate site analysis and avoidance and minimization analysis as part of Section 4.0 Alternatives Analysis and Appendix A. The site plan is Figure 6.1-1 of the SERR. Also attached to this application are 29 figures which depict the location of tidal and nontidal wetland impacts.

CERTIFICATION:

I hereby designate and authorize the agent named above to act on my behalf in the processing of this application and to furnish any information that is requested. I certify that the information on this form and on the attached plans and specifications is true and accurate to the best of my knowledge and belief. I understand that any of the agencies involved in authorizing the proposed works may request information in addition to that set forth herein as may be deemed appropriate in considering this proposal. I certify that all Waters of the United States have been identified and delineated on site, and that all jurisdictional wetlands have been delineated in accordance with the Federal Manual for Identifying and Delineating Jurisdictional Wetlands. I grant permission to the agencies responsible for authorization of this work, or their duly authorized representative, to enter the project site for inspection purposes during working hours. I will abide by the conditions of the permit or license if issued and will not begin work without the appropriate authorization. I also certify that the proposed works are consistent with Maryland's Coastal Zone Management Plan. I understand that none of the information contained in the application form is confidential and that I may request that additional required information be considered confidential under applicable laws. I further understand that failure of the landowner to sign the application will result in the application being deemed incomplete.

CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC * by:

LANDOWNER MUST SIGN: E.P. Haman

DATE: 5/16/2008

*Title to the property will be transferred to Co-Applicant, Calvert Cliffs 3 Nuclear Project, LLC, in June, 2008.

ITEM 2(c) ATTACHMENT – PROJECT DIMENSIONS

B. Revetment

(a) Armor Protection Intake Wedge

L - 75'
W - 112'
A - n/a
MCE - 312'
V - 5858 cu yds

(b) Removal and Replacement In Kind

L - 45'
W - 10'
A - n/a
MCE - 0
V - n/a

M. Outfall Construction

(a) Discharge Pipe

L - 550'
W - 4'
A - 14,410 sq ft
MCE - 550'
V - 7,500 cu yds

(b) Stream Outfall

L - 20'
W - 40'
A - 480 sq ft
MCE - 20'
V - 27 cu yds

(c) Fish Return Outfall

L - 30'
W - 1.5'
A - n/a
MCE - 30'
V - .7 cu yds

DRAFT WORK DESCRIPTION

The applicants propose, in accordance with the attached plans, to impact approximately 11.72 acres of nontidal wetlands and 6 acres of tidal open waters for the purpose of performing site preparation activities and construction of supporting facilities, for which a license from the Nuclear Regulatory Commission is not required, at the site of a proposed nominal 1,710 MW nuclear power generation station (Unit 3) in Calvert County, Maryland. The proposed nuclear power generation station would generate electricity for sale at wholesale. There is a demonstrated future need for additional base-load electric capacity in the region that includes the State of Maryland.

Work in Nontidal Areas:

Power Block:

To clear and grade for construction of a power block, including reactor, turbine and associated structures, permanently impacting 2,470 square feet (0.06 acres) along 617 linear feet of stream bed.

Laydown Areas:

To clear and grade for construction of five construction laydown areas in various locations, permanently impacting 95,832 square feet (2.20 acres) of nontidal forested wetlands; 52,708 square feet (1.21 acres) of emergent wetlands; 114,563 square feet (2.63 acres) of open water; and 1,535 square feet (0.04 acres) along 384 linear feet of stream bed.

Cooling Tower:

To clear and grade for construction of a cooling tower, permanently impacting 32,670 square feet (0.75 acres) of nontidal forested wetlands and 5,780 square feet (0.13 acres) along 1,445 linear feet of stream bed.

Switchyard:

To clear and grade for construction of a switchyard, permanently impacting 179,903 square feet (4.13 acres) of nontidal forested wetlands and 16,710 square feet (0.38 acres) along 4,178 linear feet of stream bed.

Construction Access Road:

To clear and grade for construction of the Unit 3 construction access road will require three separate road crossings. The first road crossing is 200 linear feet of 30-inch diameter reinforced concrete pipe (RCP); the second road crossing is 100 linear feet of 36-inch diameter RCP; and the third road crossing is 520 linear feet of two 54-inch diameter RCP. The invert of each pipe will be depressed to match the slope and invert of the stream or wetland being crossed. The work will include the emplacement of a 15-foot by 15-foot riprap scour pad at two of the road crossings and a 40-foot by 40-foot riprap scour pad at the third road crossing. All of the aforementioned work will permanently impact 31,363 square feet (0.72-acre) area of nontidal forested wetlands and 4,336 square feet (0.10 acres) along 1,084 linear feet of stream bed.

Heavy Haul Road:

To clear and grade for construction of a heavy haul road leading from the barge slip to the construction site, permanently impacting 2,570 square feet (0.06 acres) along 642 linear feet of stream bed.

Work in Tidal Areas:

New Sheet Pile, Armor Removal, Armor Installation for Intake at Existing Forebay:

To construct the new Unit 3 intake, install a sheet pile wall extending approximately 180 linear feet from the existing shoreline to existing baffle wall and extending approximately 90 feet channelward of the approximate mean high water shoreline creating an approximately 9,000 square foot wedged shaped pool. To install the new sheet pile wall, approximately 50 feet of existing shoreline armor protection will be removed. Once the new sheet pile wall is in place, approximately 60-feet of armor within the wedged shape pool will be removed and temporary upland sheet piling will be installed along the make up water pipe routing. This upland sheet piling will extend out into the wedge shaped pool approximately 30 feet to facilitate dewatering, installation of the pipe and the

associated trash rack. The area within the wedged shaped pool surrounded by the pipe line sheet piling will be dewatered and dredged by mechanical method to create an approximately 30-feet wide by 30-feet long by 25-feet deep area, resulting in approximately 900 cubic yards of sand and gravel, which will be deposited at an existing upland (non-wetland), environmentally controlled area at the Lake Davies laydown area onsite. After dredging, two 60-inch intake pipes with trash racks at the pipe openings, extending approximately 20 feet channelward to a bottom elevation of -25 feet mean low water, will be installed. After installation of the pipes and associated trash racks, shoreline armor protection along the shore approximately 80 linear feet and extending 10 feet channelward will be restored within the wedged shaped area. In addition, armor protection will extend out beyond the new sheet pile wall approximately 75 linear feet and extend approximately 205 feet channelward. As a final step, the temporary sheet pile wall, around the 60-inch intake pipes will be removed allowing the area to flood and submerge the pipes.

Discharge Pipe:

A 30-inch high density polyethylene (HDPE) discharge pipe with a three single port diffuser outfall structure approximately 550 linear feet channelward and depressed 4 feet below the bay bottom will be installed using mechanical dredging methods. The discharge point will be elevated 3 feet above the bay bottom. This installation will temporarily impact approximately 45,000 square feet, approximately 1.0 acres, along 550 linear feet of the bay bottom. Additionally, a 20-foot by 40-foot riprap scour pad will be installed at the diffuser outfall permanently impacting 800 square feet, 0.02 acres. Approximately 7,000 cubic yards of existing material dredged for the pipe installation will be reused as trench fill (approximately 5,800 cubic yards) with the remainder (approximately 1,200 cubic yards) being deposited at an existing upland (non-wetland), environmentally controlled area at the Lake Davies laydown area onsite. (Note: the pipe will be installed with a minimum of 4 feet of cover to protect it from storms and snagging by small boat anchors. Turbidity curtains are anticipated during the work to contain suspended sediments.)

Restoration of Barge Unloading Facility including Maintenance and New Dredging:

To facilitate receipt of equipment and materials for the construction of the plant, two existing pile cap crane supports and one mooring bollard will be removed. The existing barge slip will be restored and extended to re-establish use of an approximately 1,500-foot by 130-foot (average width), 195,000 square foot area to a bottom elevation of -16 feet mean low water, requiring approximately 50,000 cubic yards of mechanical dredging. Approximately 1,065-feet of the dredging is considered maintenance, and the remaining 435-feet is an extension beyond the original dredging limits and is required to reach the bottom elevation of -16 feet mean low water. Of the approximately 50,000 cubic yards of dredging required, 45,000 cubic yards are considered maintenance dredging, and 5,000 cubic yards are considered new dredging. Ten-year maintenance dredging is requested.

The dredge material will be characterized prior to use. The dredge material removed from the barge slip will either be used during the plant construction as sand bedding for underground pipe installation or deposited at an existing upland (non-wetland) environmentally controlled disposal area onsite. Suspended sediments resulting from this work are anticipated to be contained by a floating turbidity curtain.

As a part of the restoration, a new sheet pile wall will be installed along the shore line in front of the existing bulk head which was built as a part of the original design. The bulk head will consist of a new sheet pile wall driven immediately in front of the existing remaining bulk head. This bulk head will be approximately 90 feet in length starting from the barge slip extending south to an existing outfall culvert. On the land side of the new sheet pile bulk head, a concrete apron will be placed along with a gravel apron to allow equipment to be off-loaded from barges with wheeled mounted transporters.

Near shore maintenance dredging will require removal of sediment which has mounded up over the past 30 years and will include restoration of an existing culvert outfall. Due to silt build up over the years, the discharge from this outfall meanders in a north-south direction prior to discharging into the barge slip area. The restoration activities in this area will include the installation of a 40-foot x 40-foot x 2-foot deep riprap apron extending approximately 40 feet channelward will be placed directly in front the existing outfall allowing the discharge to flow directly in the bay as originally designed. The existing waterway depths range from approximately 0 feet to -16 feet elevation within the work area.

Unit 3 Fish Return:

A fish return system will be provided as a part of the intake design. This design will be similar to the existing Unit1/Unit 2 fish return and will be finalized as a part of the detailed design effort and in conjunction with the purchase of intake pumps and screens.

To construct the proposed fish return outfall, an 18-inch diameter HDPE pipe will be installed in a mechanically excavated trench. The pipe will be installed 4 feet below the bay bottom and will emerge from the bay bottom 40 feet channelward. The outfall location will be protected with a 10-foot by 10-foot riprap apron extending approximately 48 feet channelward. To install the pipe, approximately 40 linear feet of the existing shoreline revetment will be removed, and approximately 500 cubic yards of material will be dredged within the work area. The dredged material will be returned to the trench after the pipe is placed, and the existing shoreline revetment will be restored to its original design after pipe installation. Turbidity curtains are anticipated during the work to contain suspended sediments.

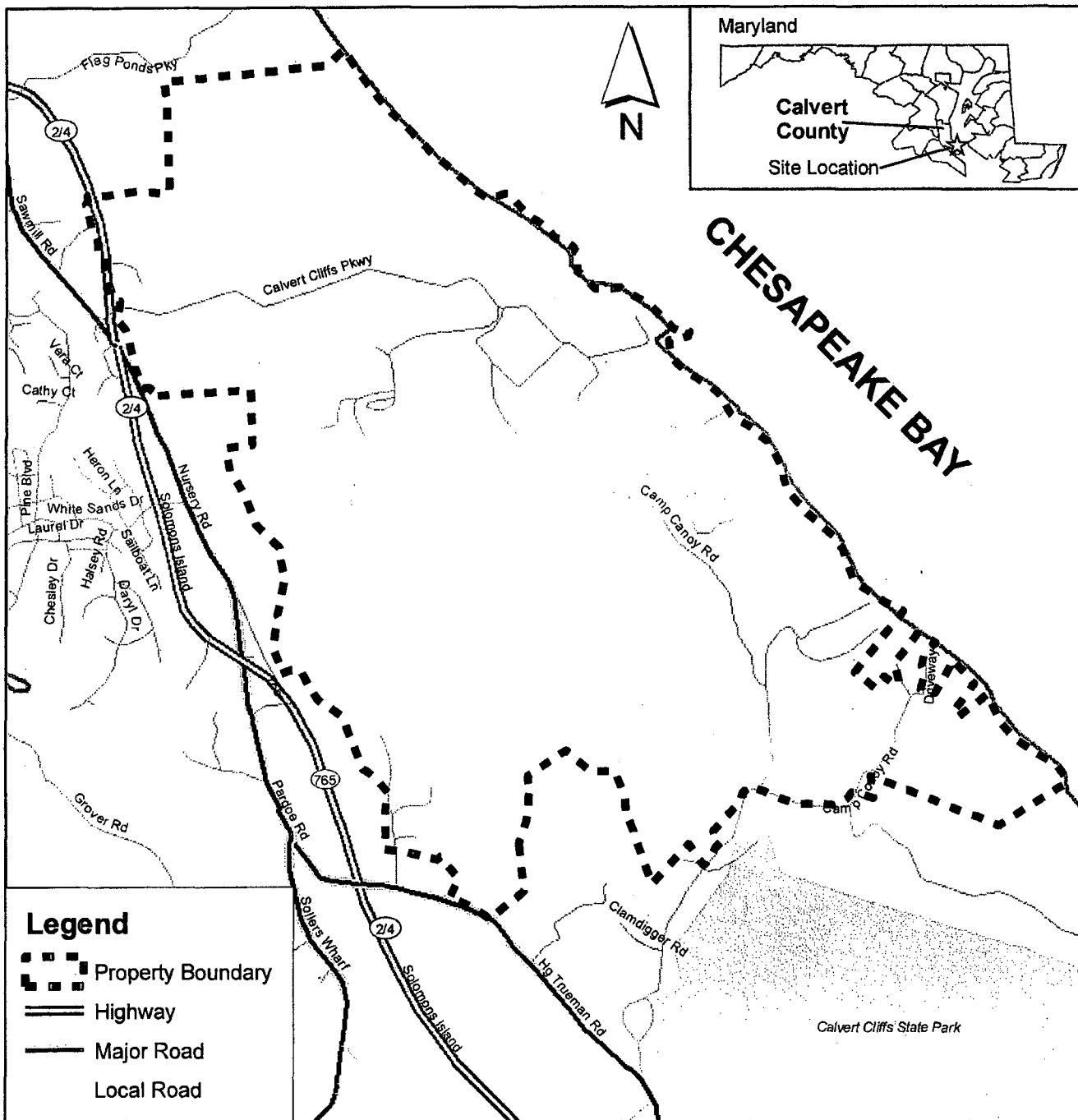
Total Proposed Project Impact:

The total proposed project would permanently impact 343,253 square feet, 7.88 acres, of forested nontidal wetlands; 52,707 square feet, 1.21 acres, of emergent nontidal wetlands; 114,563 square feet, 2.63 acres, of non-tidal open water; 33,400 square feet, 0.77 acres, along 8,350 linear feet stream bed portions; and 239,600 square feet, 5.5 acres, of tidal open waters (approximately 138,500 square feet, 3.2 acres, of the tidal open water impacts are maintenance dredging; approximately 101,100 square feet, 2.3 acres, is new dredging; approximately 43,560 square feet, 1.0 acres, of the new dredging will be backfilled).

This work includes a total of 3,485 square feet, 0.08-acre area, of isolated forested wetland impact.

**Joint Federal/State Application to the
United States Army Corps of Engineers and the
Maryland Department of the Environment
for the
Alteration of any Floodplain, Waterway,
Tidal or Nontidal Wetland in Maryland**

FIGURES



Legend

- Property Boundary
- Highway
- Major Road
- Local Road

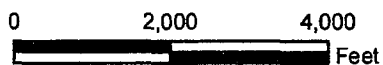
PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598

SITE LOCATION FIGURE 1

SCALE IN FEET



CALVERT CLIFFS NUCLEAR POWER PLANT

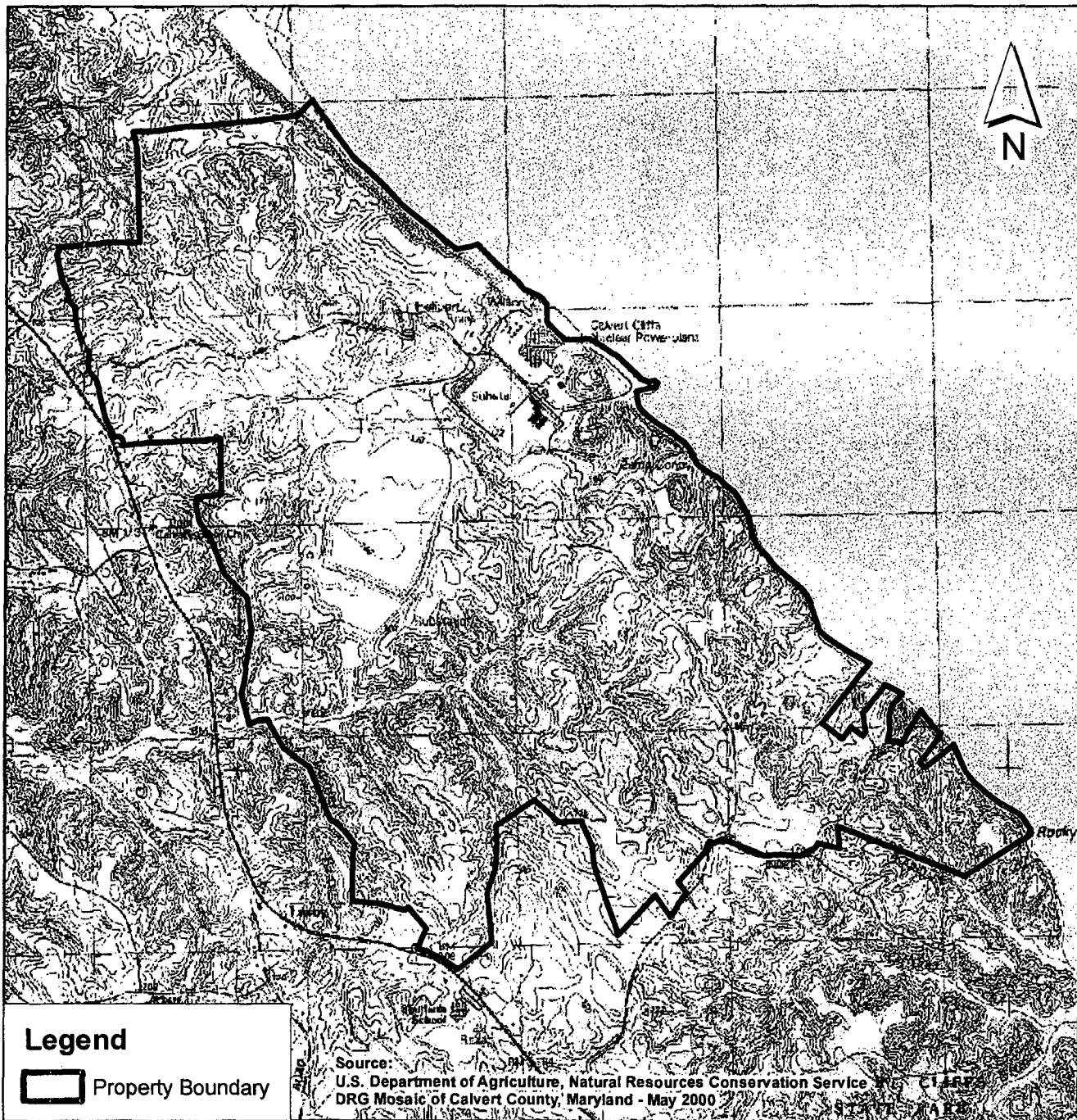
IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 1 OF 29

DATE: 05/12/08

Map Document (G:\Calvert Cliffs\Calvert_5_1_08\404\mxd\fig2_USGS_Topo.mxd)
5/12/2008 - 10:20:55 AM



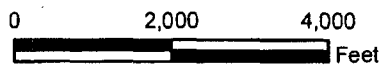
PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598

**USGS 7.5 MINUTE
TOPOGRAPHIC QUADRANGLE
FIGURE 2**

SCALE IN FEET



**CALVERT CLIFFS NUCLEAR
POWER PLANT**

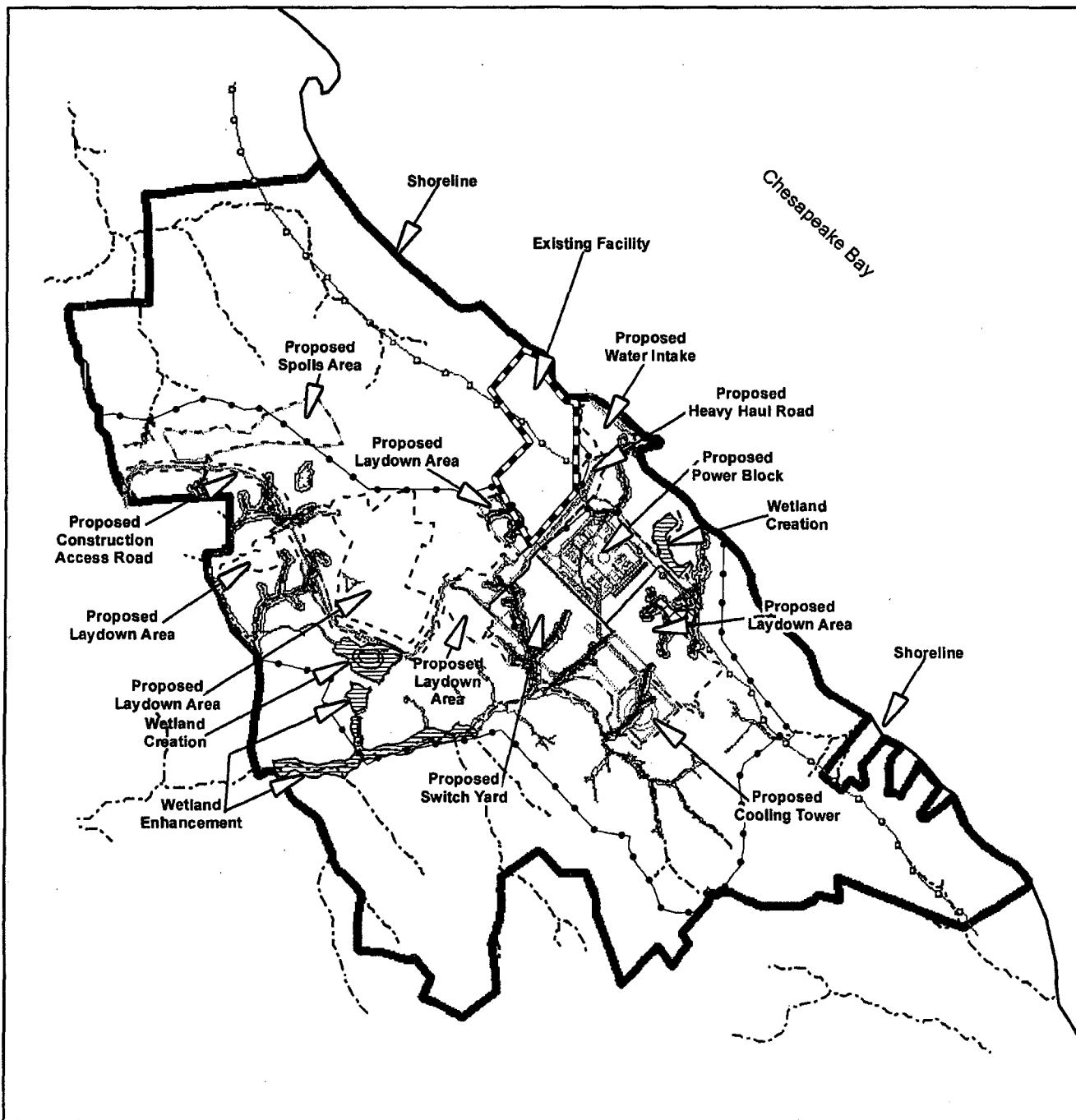
IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 2 OF 29

DATE: 05/12/08

Map Document: (G:\Calvert Cliffs\Frozen_5_1_08\404\mxd\figure3_SITE_PLAN.mxd)
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PURPOSE: PLANT EXPANSION

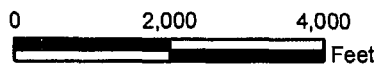
DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
 38.424133
 -76.441598



SITE PLAN FIGURE 3

SCALE IN FEET



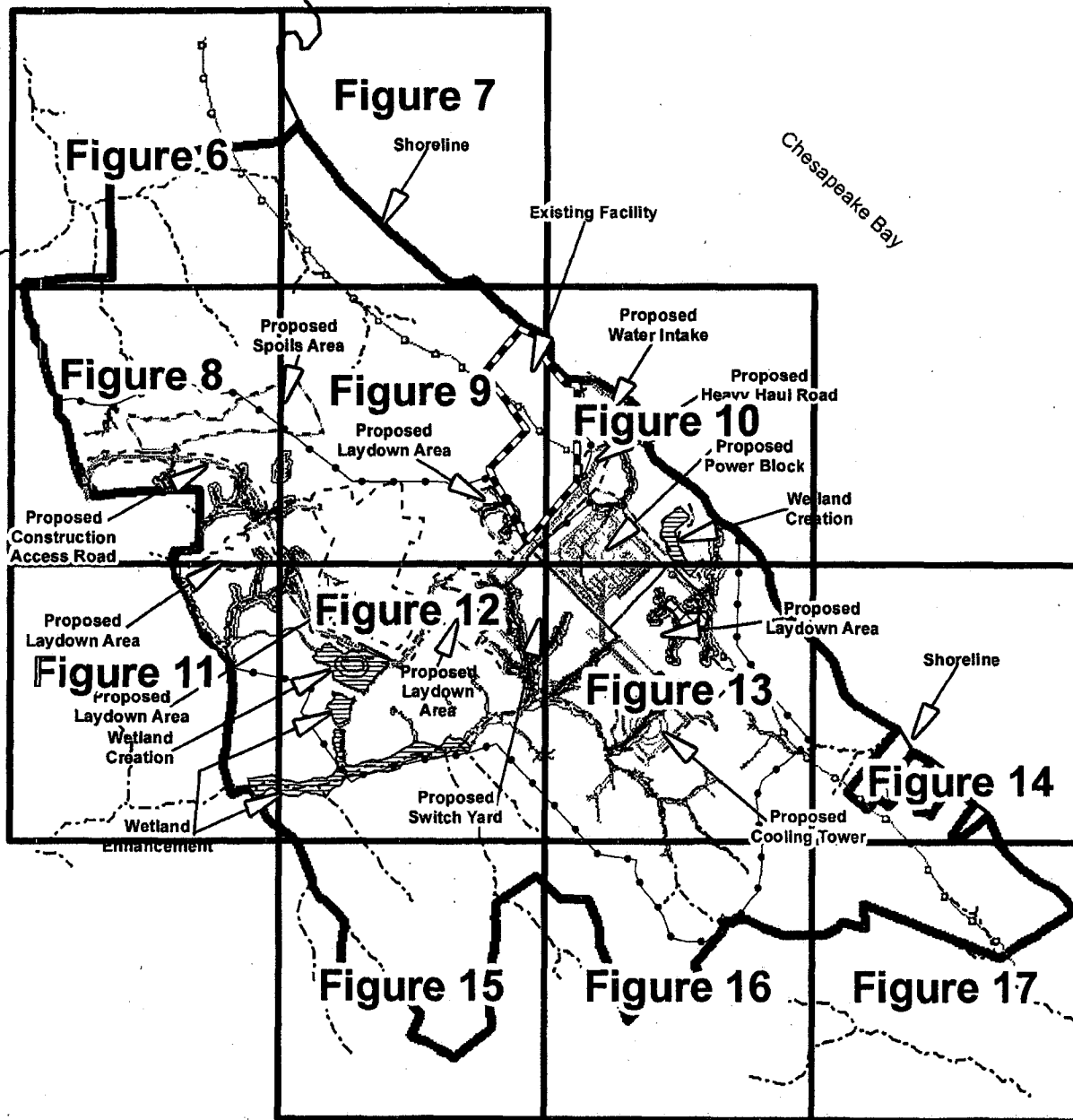
CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
 PATUXENT / WEST CHESAPEAKE BAY
 COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
 UNISTAR NUCLEAR ENERGY

SHEET 3 OF 29

DATE: 5/9/08



PURPOSE: PLANT EXPANSION

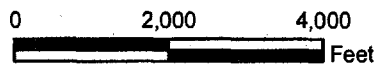
DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



KEY PLAN FIGURE 4

SCALE IN FEET



CALVERT CLIFFS NUCLEAR POWER PLANT


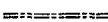


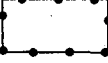




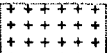
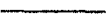




IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 4 OF 29

DATE: 5/9/08

Legend

-  100 Year Floodplain
-  Existing Pond
-  Impacted Stream
-  Stream to Remain
-  Wetland Study Area
-  Final Grading Plan
-  Wetland Mitigation Area
-  Impacted Wetland
-  Delineated Wetlands to Remain
-  50 Foot Buffer to Remain
-  Impacted 50 Foot Buffer
-  Proposed Site Features
-  Critical Area Boundary
-  Property Boundary
-  Protected Wetland
-  Protected Wetland Buffer
-  Stormwater Detention Basin

PURPOSE: PLANT EXPANSION

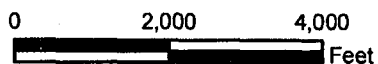
DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



LEGEND FIGURE 5

SCALE IN FEET



CALVERT CLIFFS NUCLEAR POWER PLANT

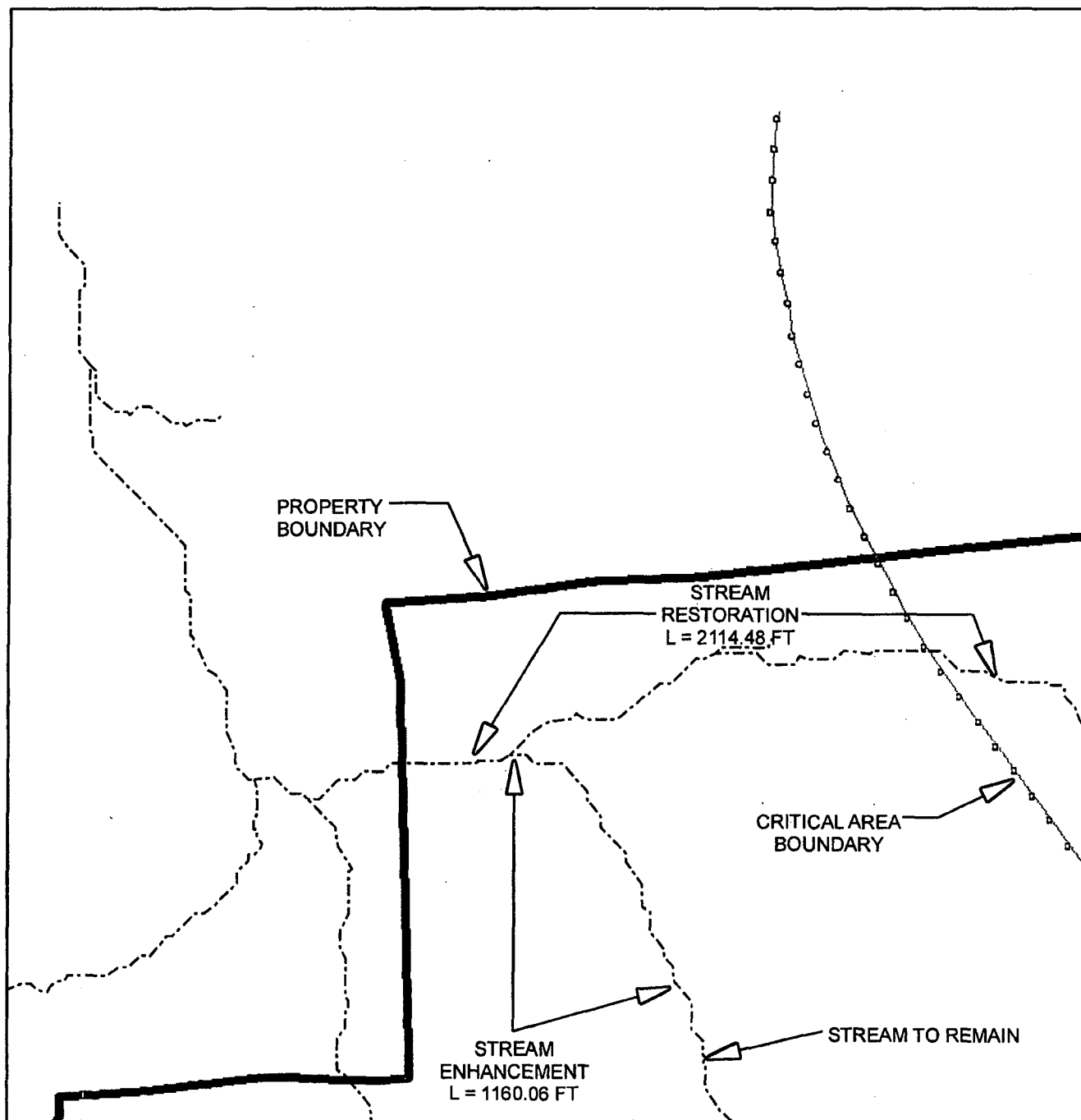
IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 5 OF 29

DATE: 5/9/08

Map Document: (S:\Calvert Cliffs\Frozen_5_1_08\MD4\mxd\figure6.mxd)
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PURPOSE: PLANT EXPANSION

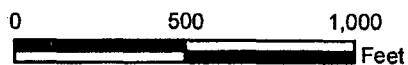
DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
 38.424133
 -76.441598



SITE LAYOUT FIGURE 6

SCALE IN FEET



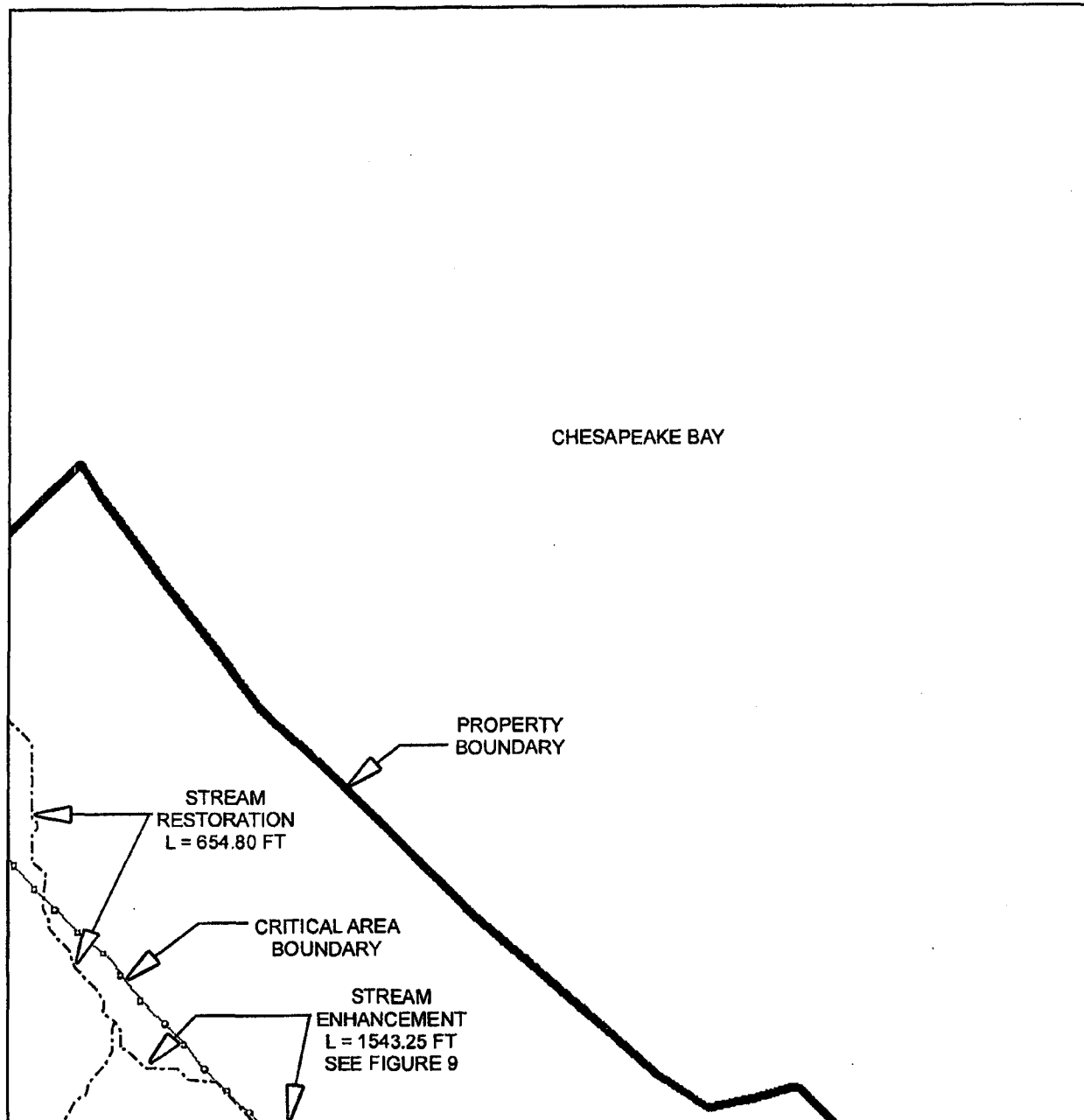
CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
 PATUXENT / WEST CHESAPEAKE BAY
 COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
 UNISTAR NUCLEAR ENERGY

SHEET 6 OF 29

DATE: 5/9/08



PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 7

SCALE IN FEET



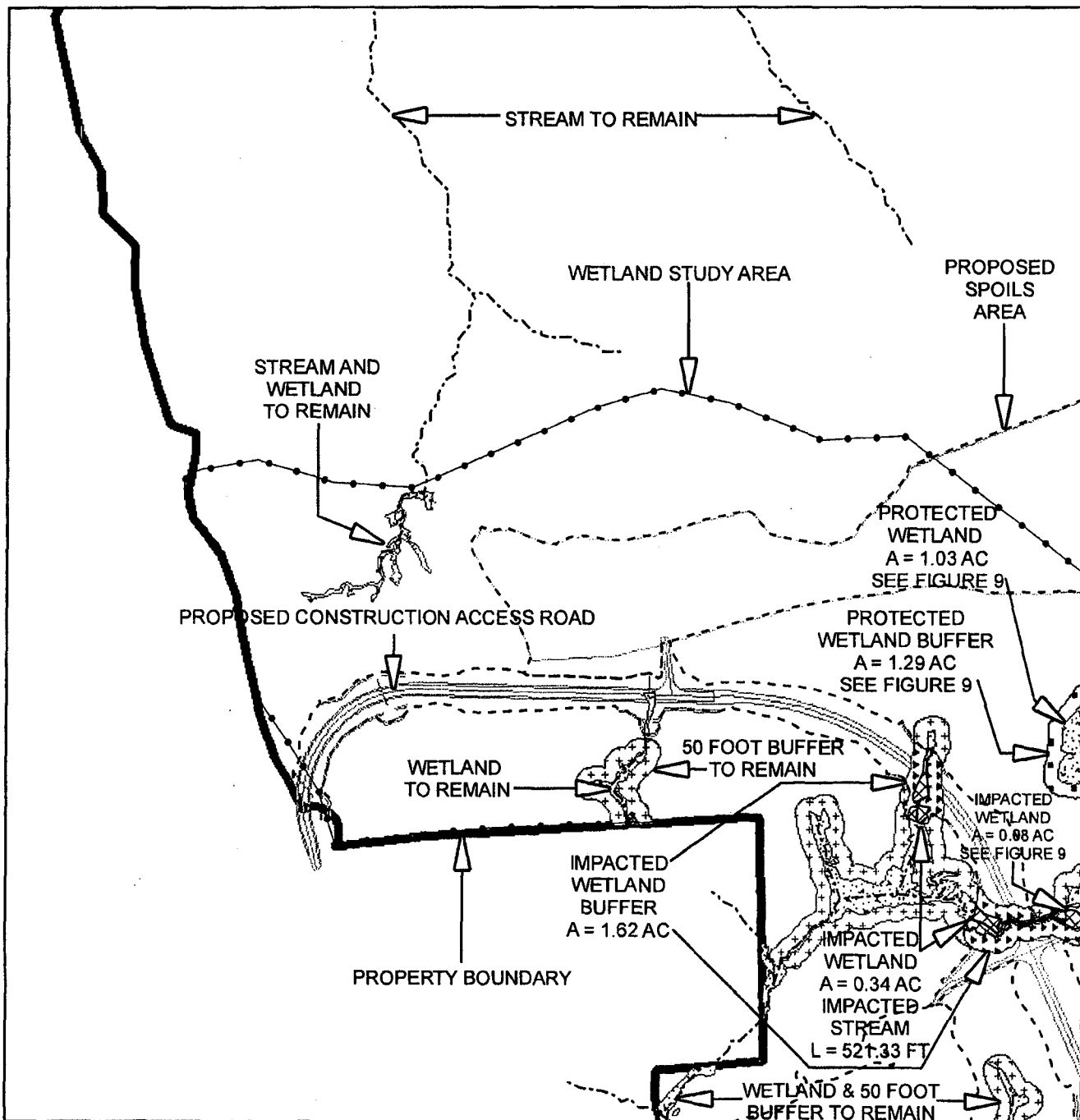
CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 7 OF 29 DATE: 5/9/08

Map Document: (G:\Calvert Cliffs\Frozen_S_1_081404\mxd\figure8.mxd)
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PURPOSE: PLANT EXPANSION

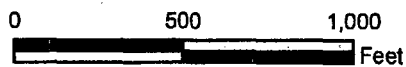
DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 8

SCALE IN FEET



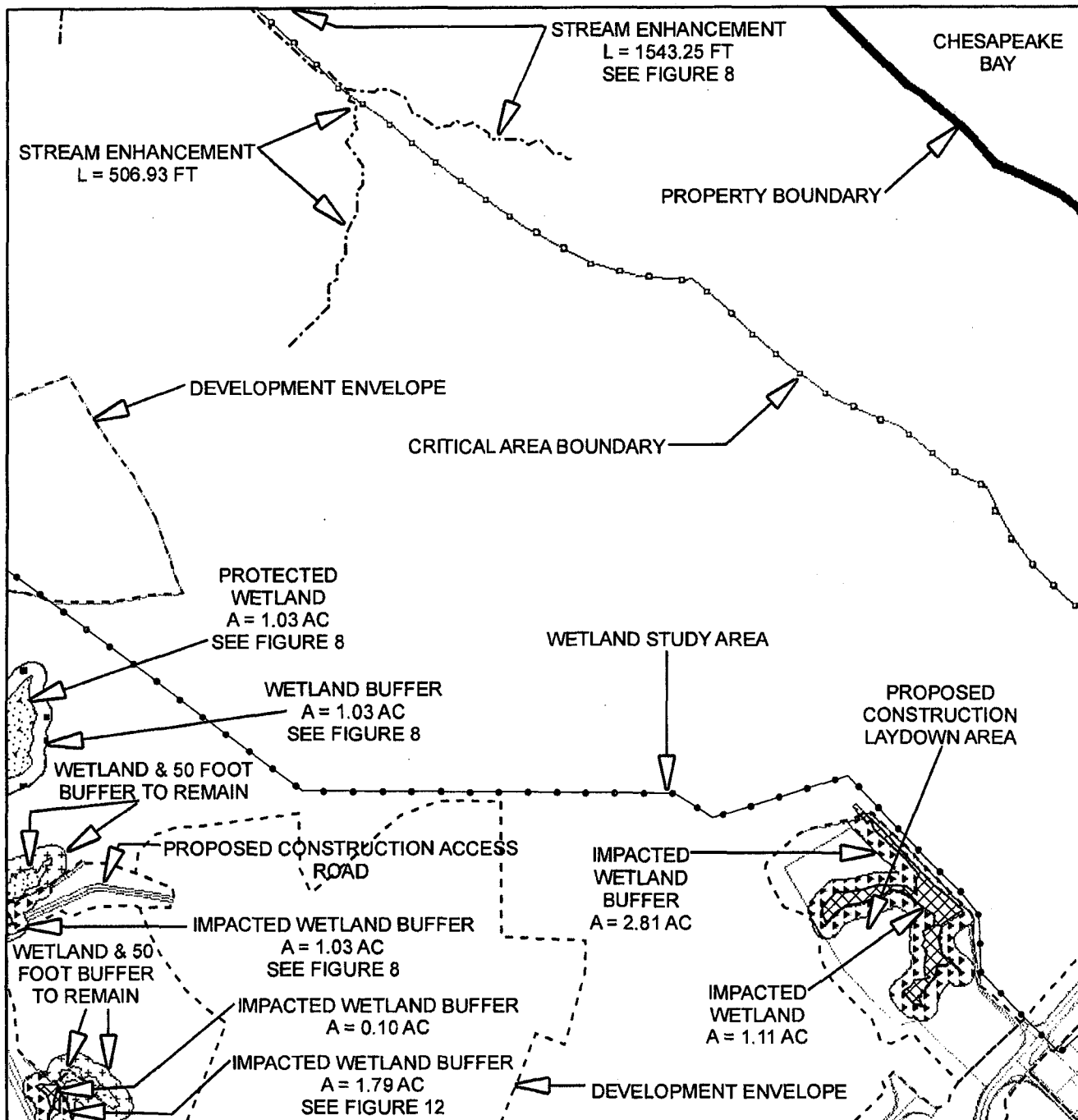
CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 8 OF 29

DATE: 5/9/08



PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 9

SCALE IN FEET



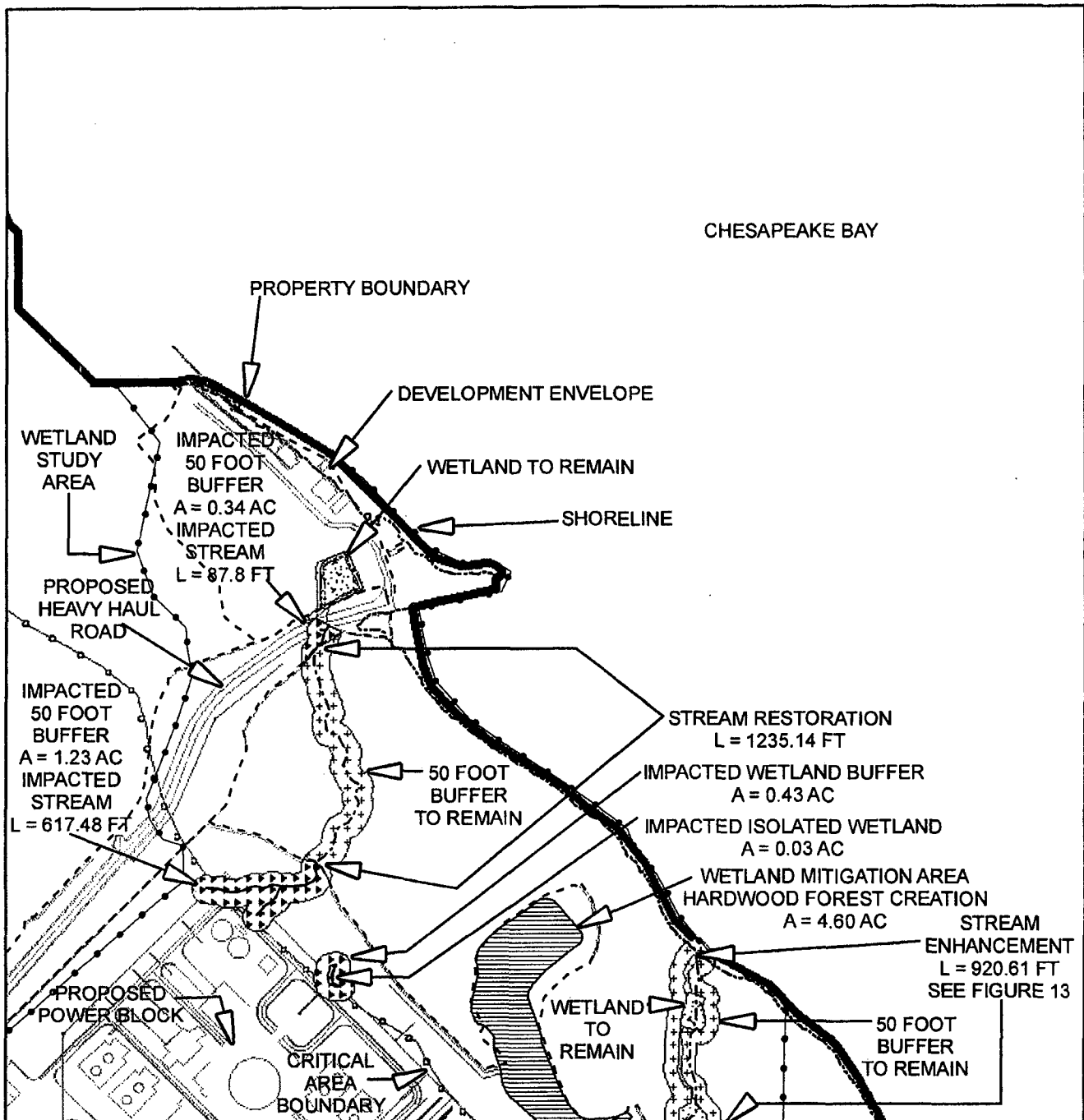
CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 9 OF 29

DATE: 5/9/08



PURPOSE: PLANT EXPANSION

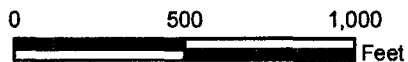
DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 10

SCALE IN FEET



CALVERT CLIFFS NUCLEAR POWER PLANT

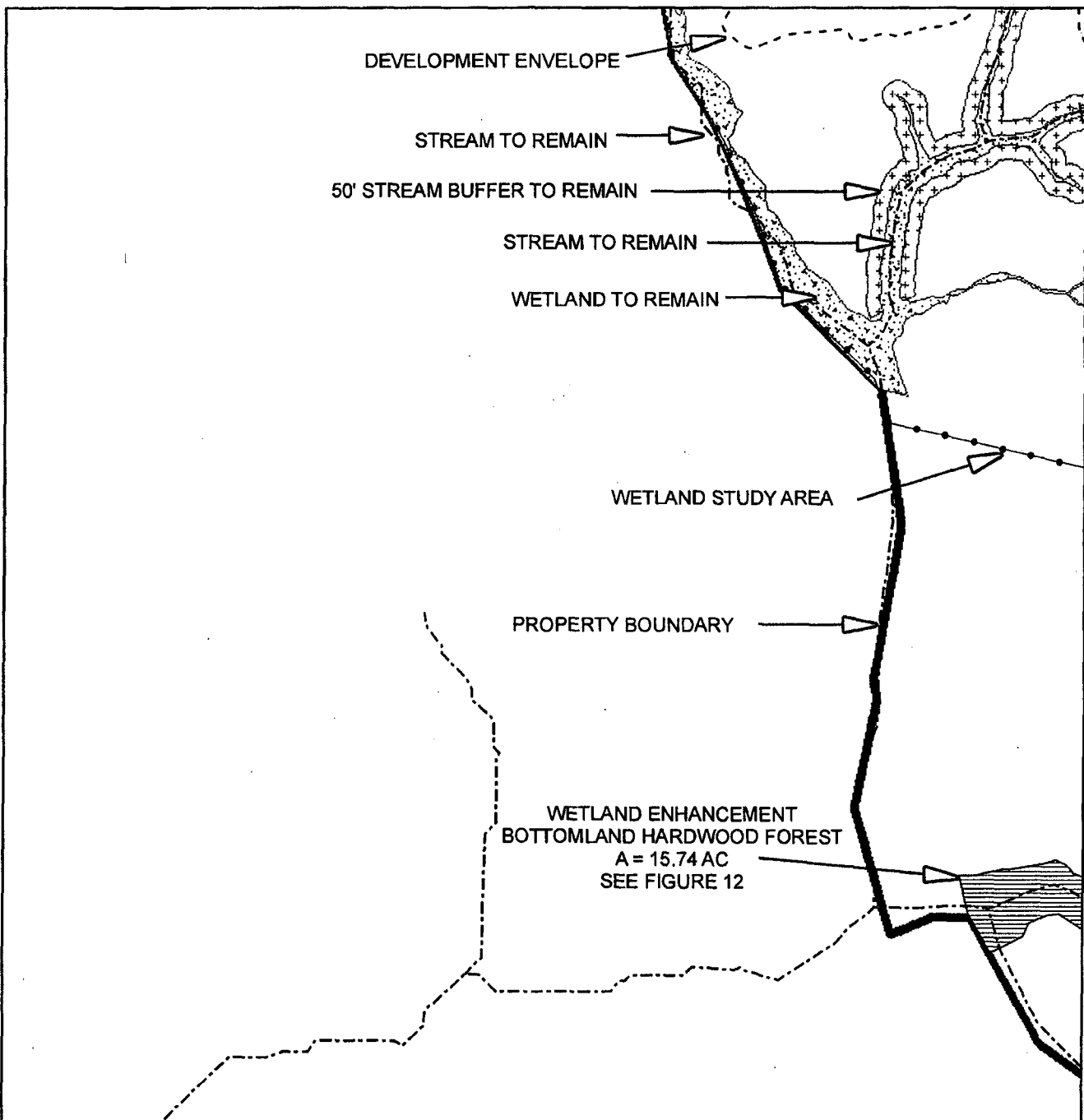
IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 10 OF 29

DATE: 5/9/08

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PURPOSE: PLANT EXPANSION

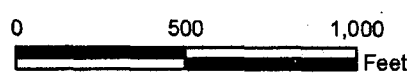
DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



**SITE LAYOUT
FIGURE 11**

SCALE IN FEET

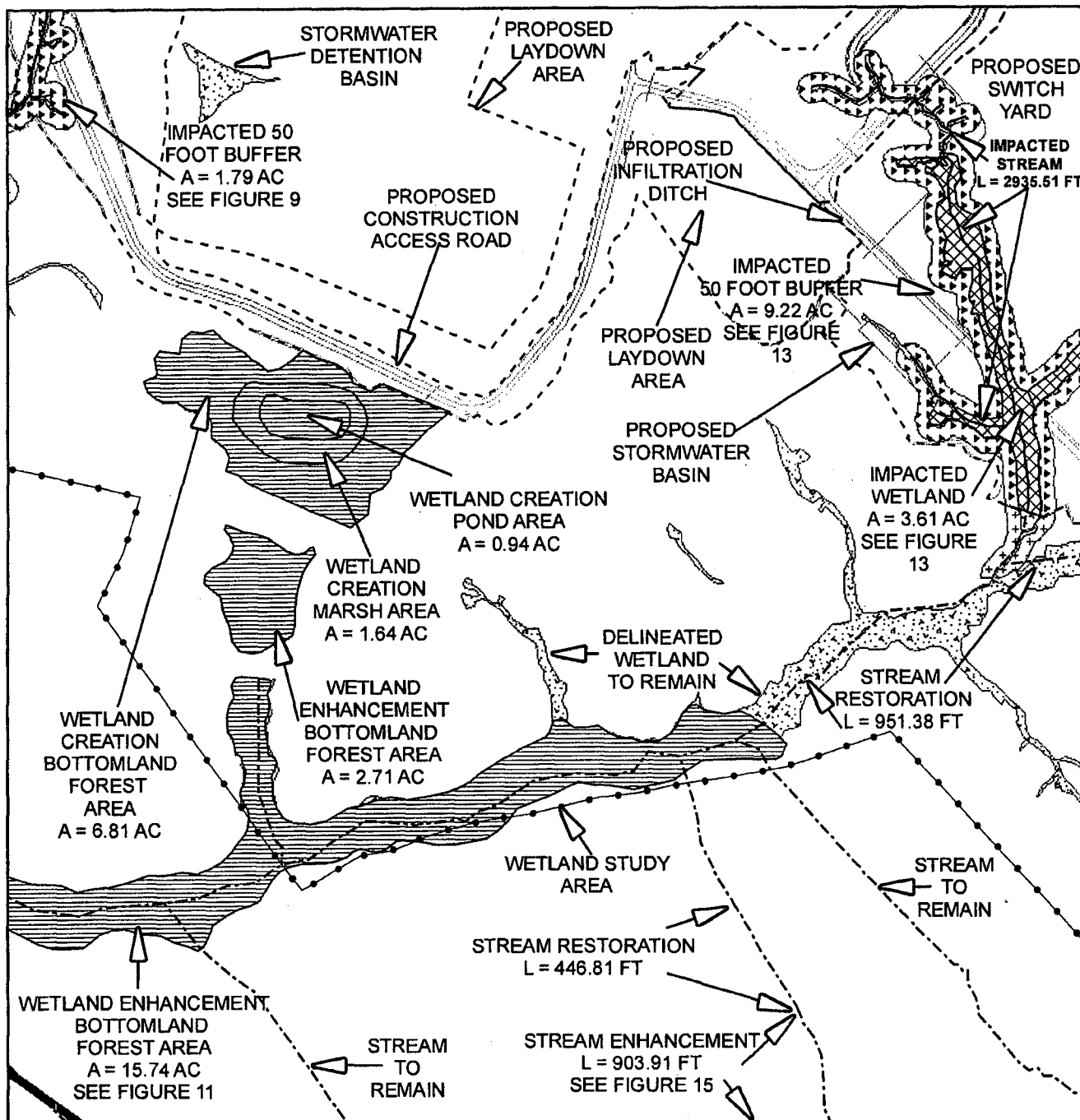


**CALVERT CLIFFS NUCLEAR
POWER PLANT**

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 11 OF 29 DATE: 5/9/08



PURPOSE: PLANT EXPANSION

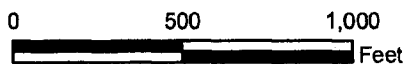
DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 12

SCALE IN FEET

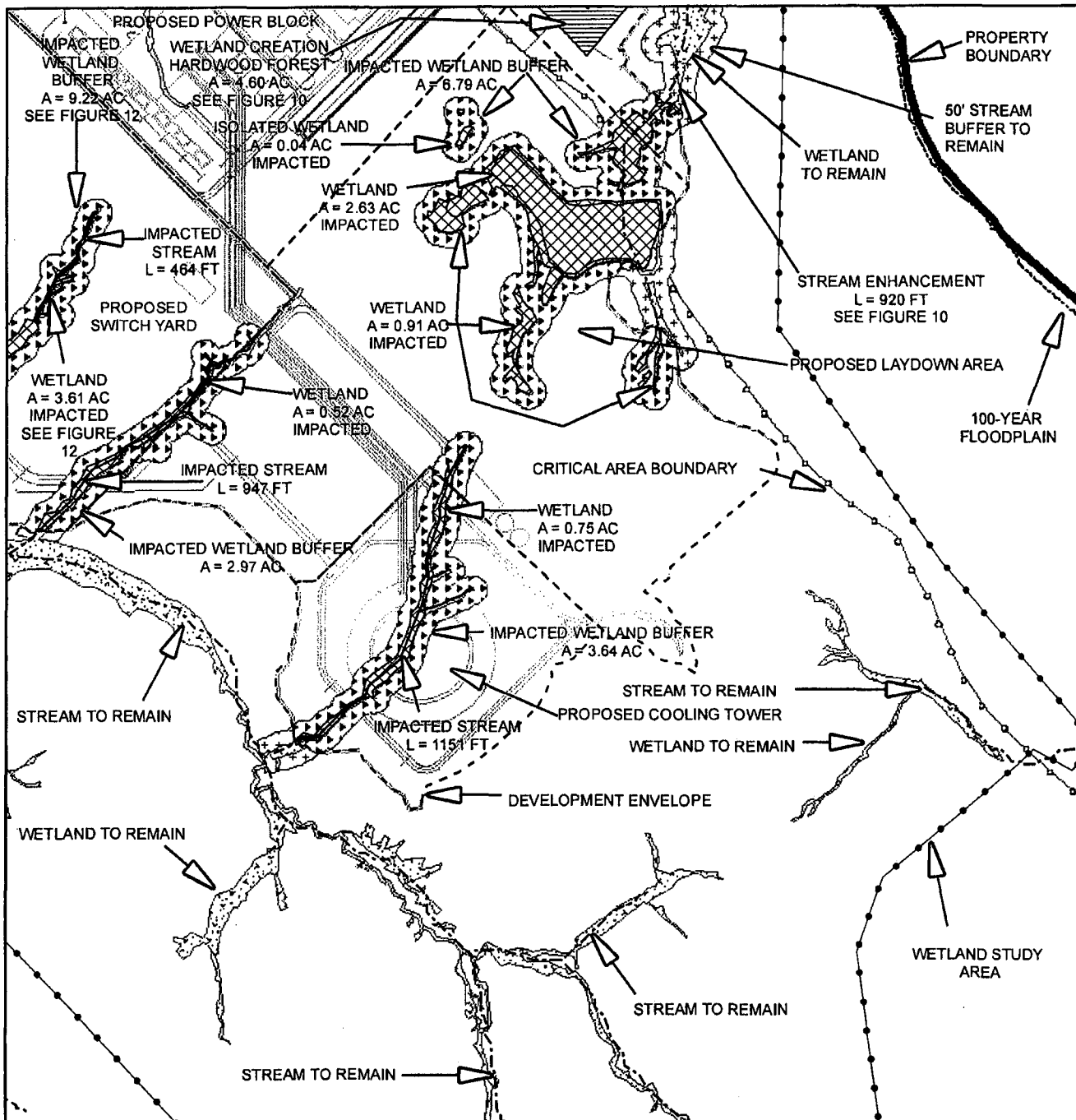


CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 12 OF 29 DATE: 5/9/08



PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 13

SCALE IN FEET



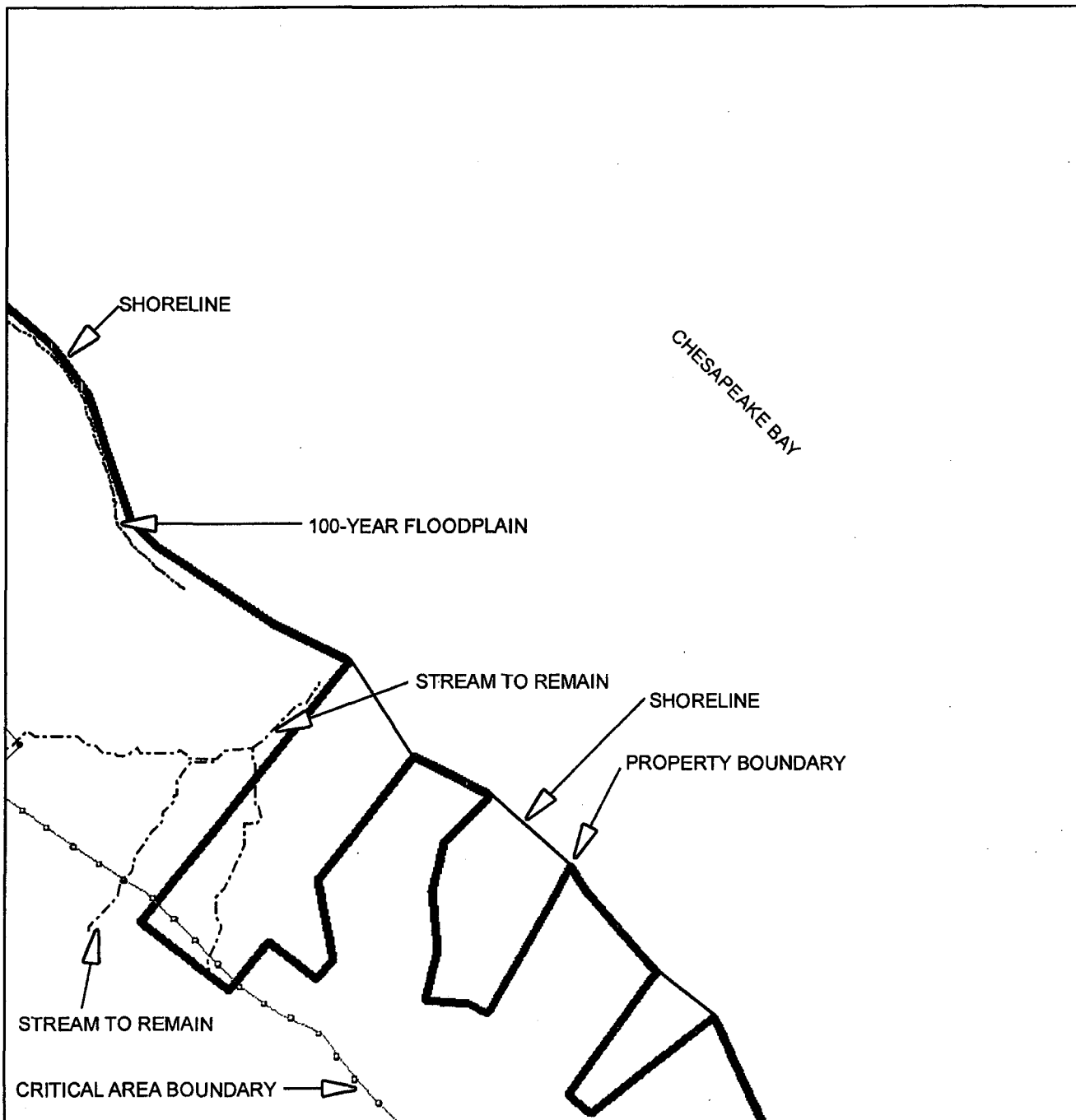
CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 13 OF 29

DATE: 5/9/08



PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 14

SCALE IN FEET



CALVERT CLIFFS NUCLEAR POWER PLANT

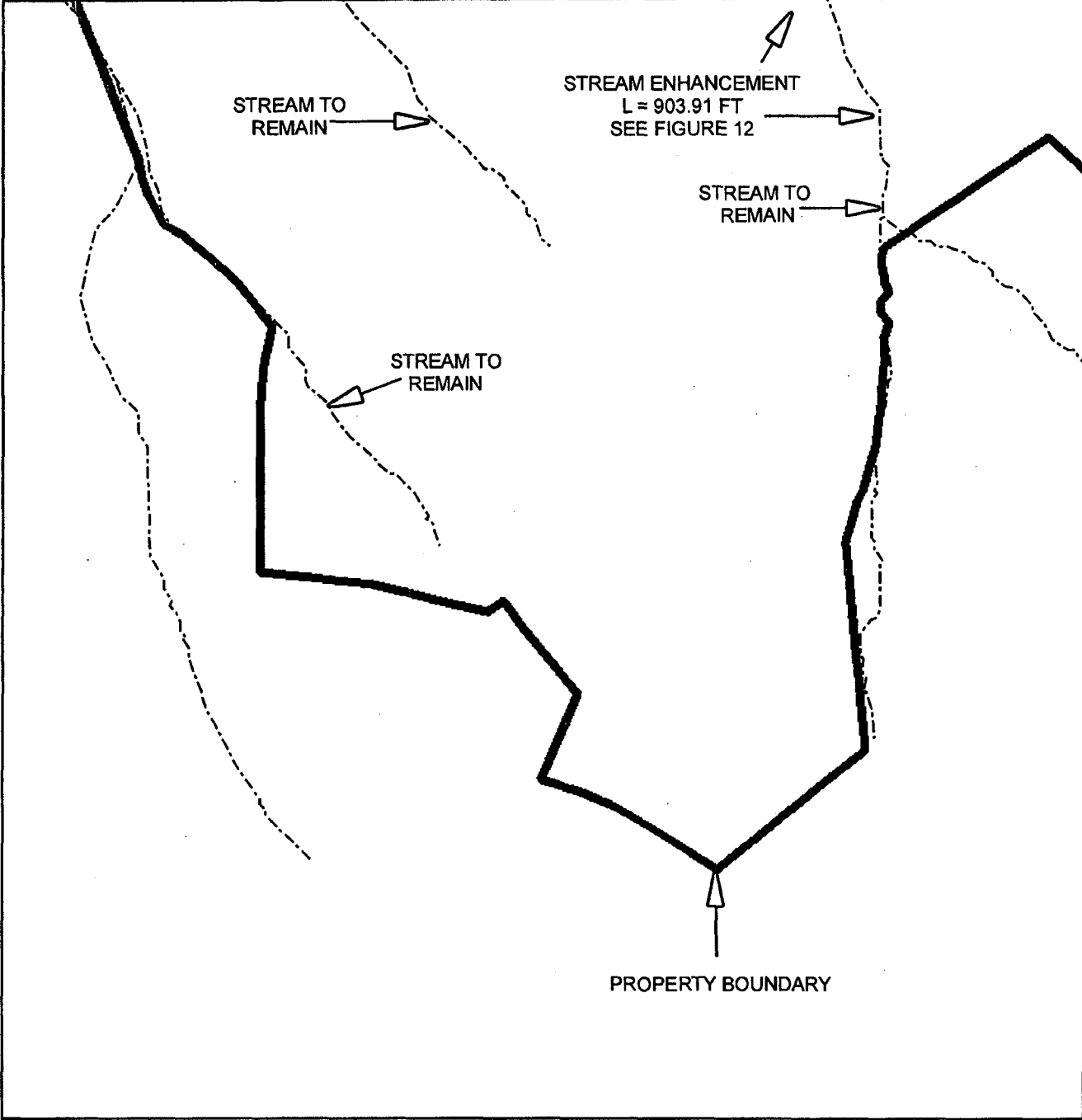
IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

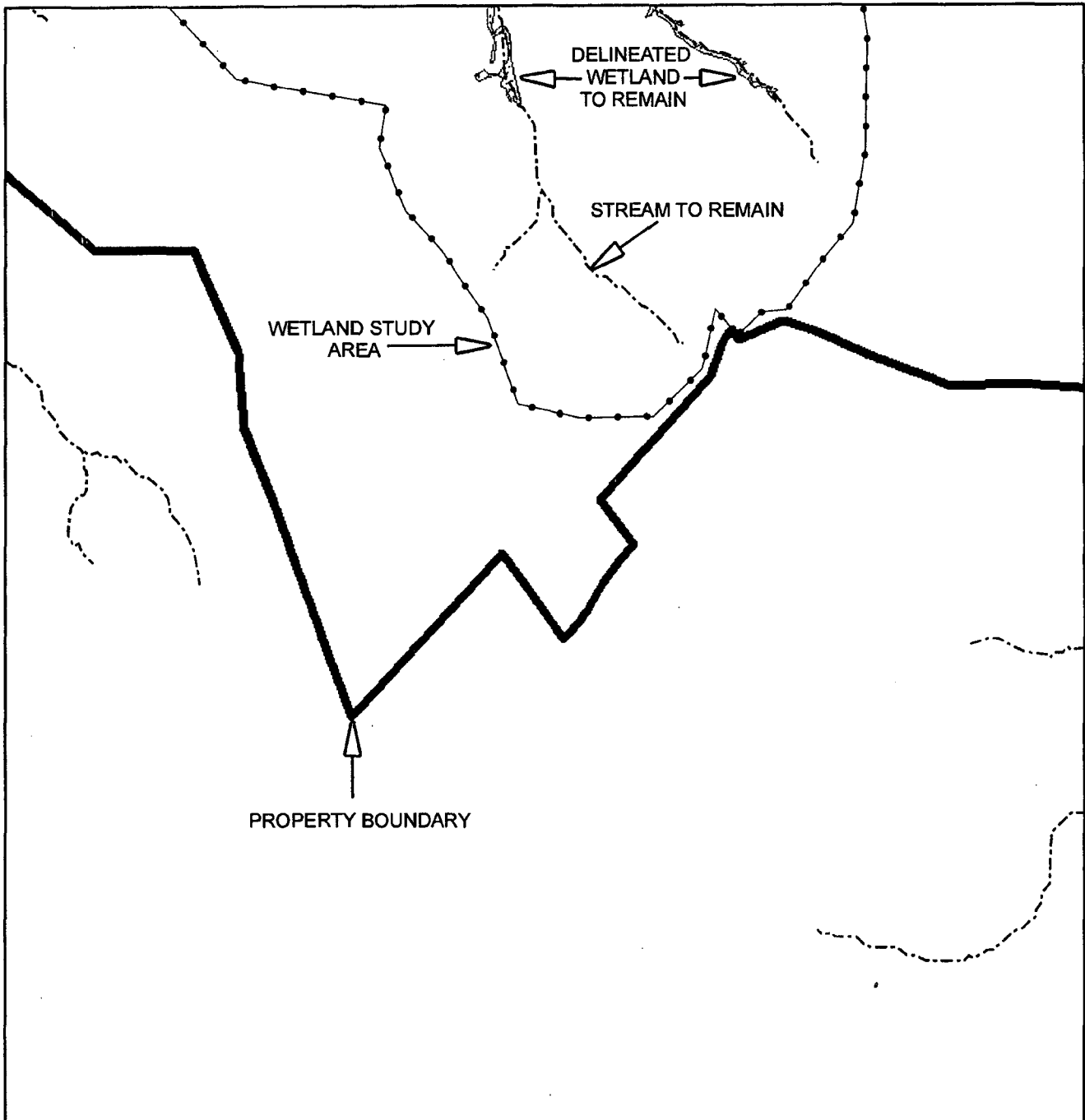
SHEET 14 OF 29

DATE: 5/9/08

Map Document: (G:\Calvert Cliffs\Frozen_5_1_08\404\mxd\figure15.mxd)
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<p>PURPOSE: PLANT EXPANSION</p> <p>DATUM: (NAVD 27)</p> <p>PROJECT LATITUDE/LONGITUDE: 38.424133 -76.441598</p> <p>N</p>	<p>SITE LAYOUT FIGURE 15</p> <p>SCALE IN FEET</p> <p>0 500 1,000 Feet</p>	<p>CALVERT CLIFFS NUCLEAR POWER PLANT</p> <p>IN: PATUXENT / WEST CHESAPEAKE BAY</p> <p>COUNTY OF: CALVERT STATE: MD</p> <p>APPLICATION BY: UNISTAR NUCLEAR ENERGY</p> <p>SHEET 15 OF 29 DATE: 5/9/08</p>
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PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 16

SCALE IN FEET



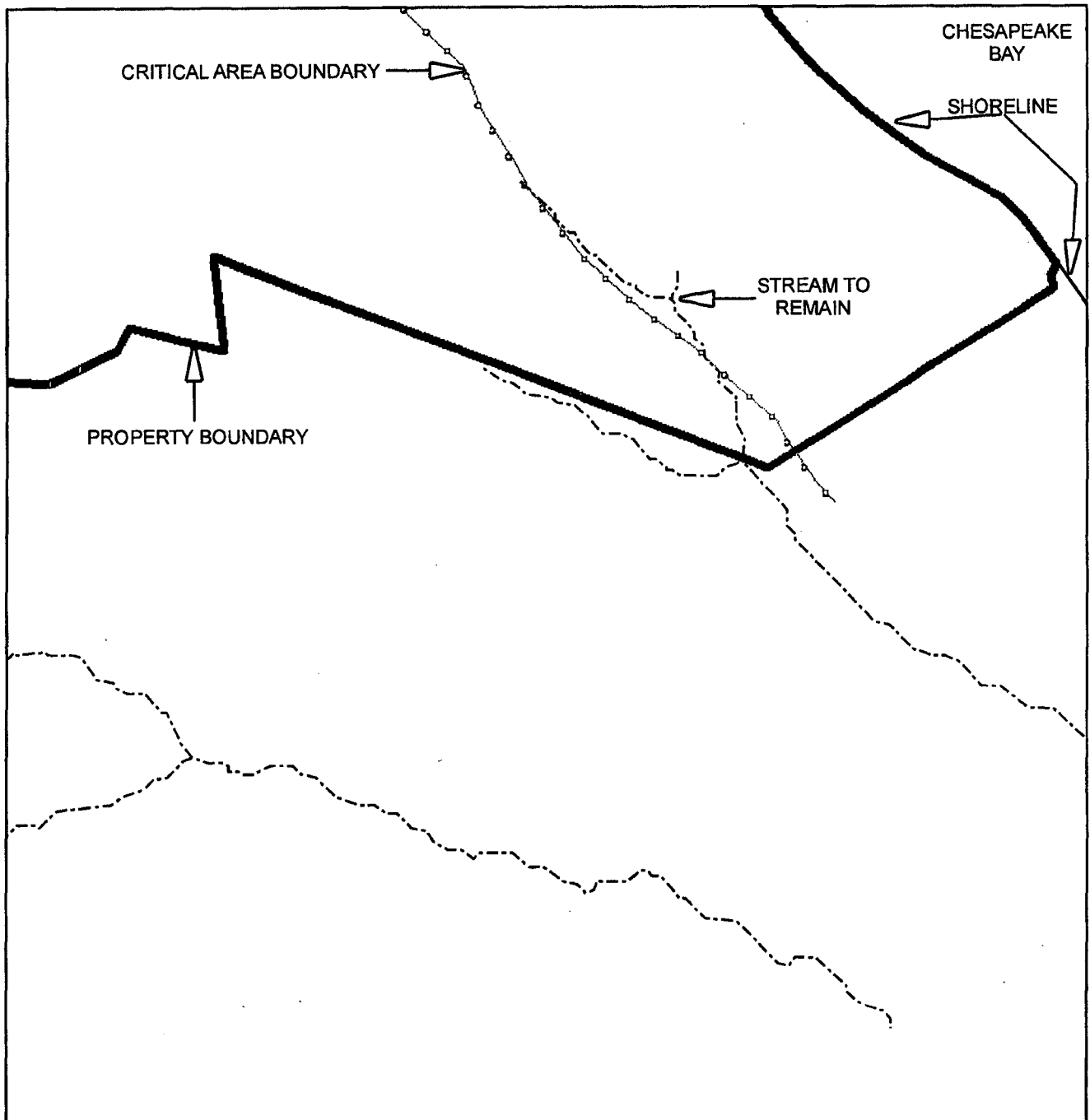
CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 16 OF 29

DATE: 5/9/08



PURPOSE: PLANT EXPANSION

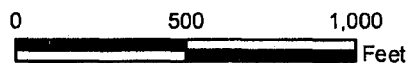
DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 17

SCALE IN FEET



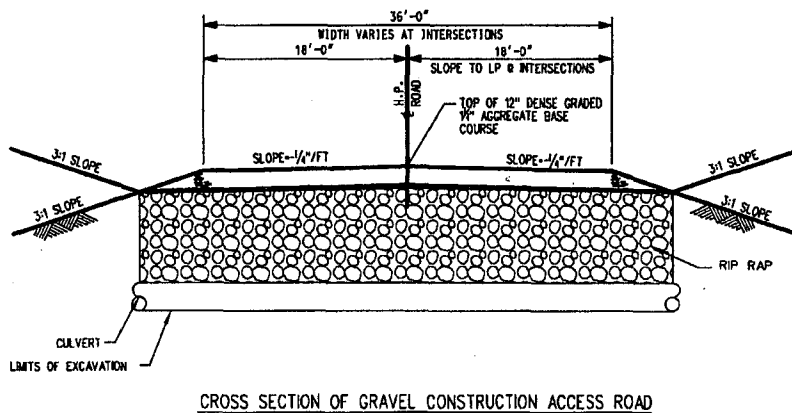
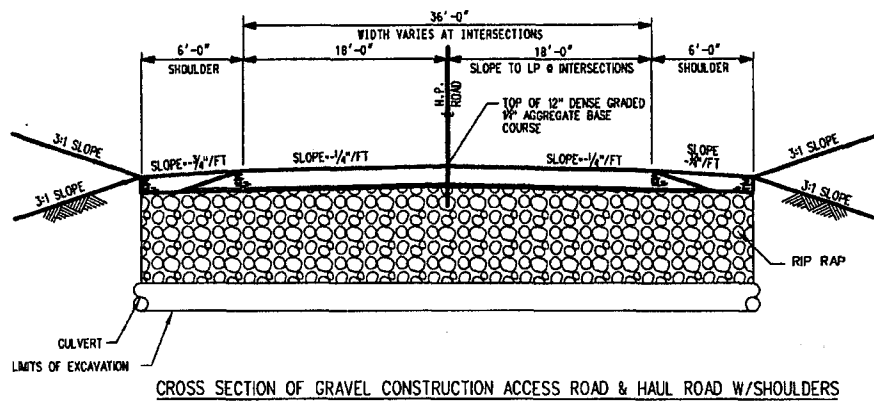
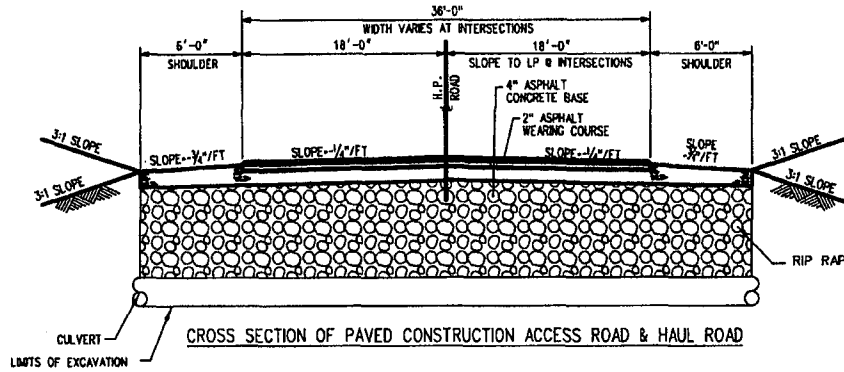
CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

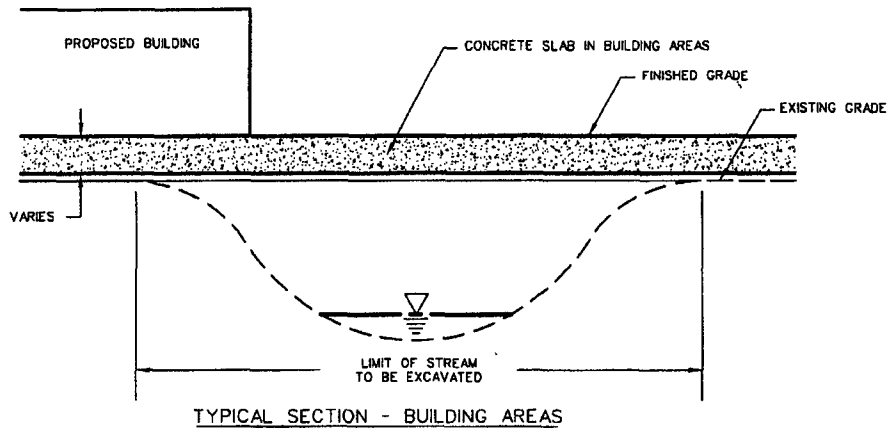
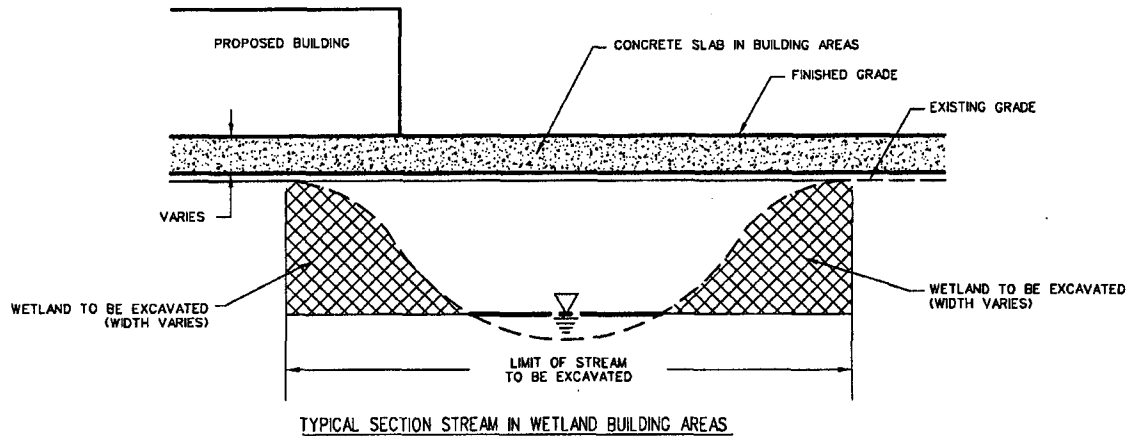
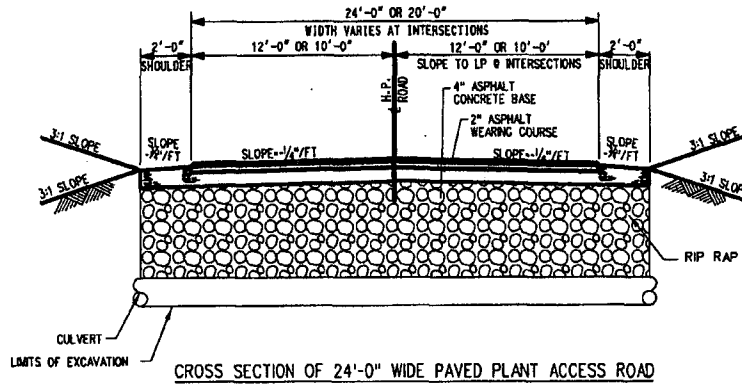
SHEET 17 OF 29

DATE: 5/9/08



NOTE: EXCAVATION DEPTH IS 1 FOOT BELOW EXISTING GRADE FOR WETLANDS
EXCAVATION DEPTH IS 1 FOOT BELOW STREAM INVERT

<p>PURPOSE: PLANT EXPANSION</p> <p>DATUM: (NAVD 27)</p> <p>PROJECT LATITUDE/LONGITUDE: 38.424133 -76.441598</p>	<p>CROSS SECTIONS FIGURE 18</p> <p>SCALE: N.T.S.</p>	<p>CALVERT CLIFFS NUCLEAR POWER PLANT</p> <p>IN: PATUXENT / WEST CHESAPEAKE BAY</p> <p>COUNTY OF: CALVERT STATE: MD</p> <p>APPLICATION BY: UNISTAR NUCLEAR ENERGY</p> <p>SHEET 18 OF 29 DATE: 05/12/2008</p>
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NOTE: EXCAVATION DEPTH IS 1 FOOT BELOW EXISTING GRADE FOR WETLANDS
EXCAVATION DEPTH IS 1 FOOT BELOW STREAM INVERT

PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE: 38.424133
-76.441598

CROSS SECTIONS FIGURE 19

SCALE: N.T.S.

CALVERT CLIFFS NUCLEAR POWER PLANT

IN: PATUXENT / WEST CHESAPEAKE BAY

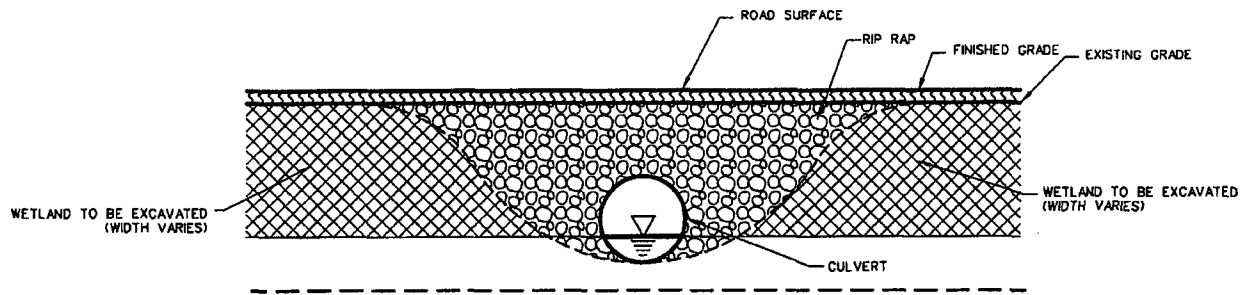
COUNTY OF: CALVERT

STATE: MD

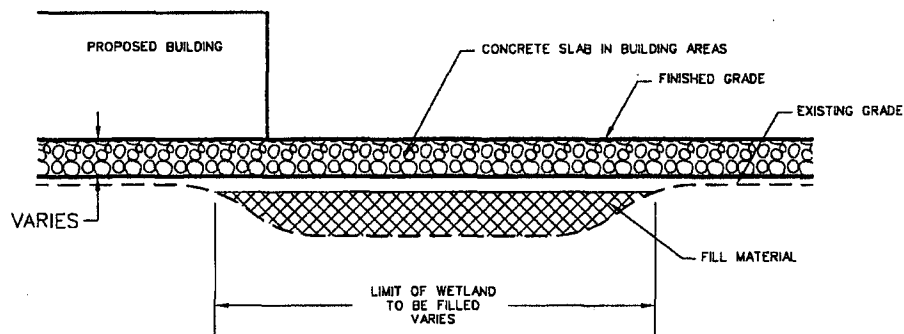
APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 19 OF 29

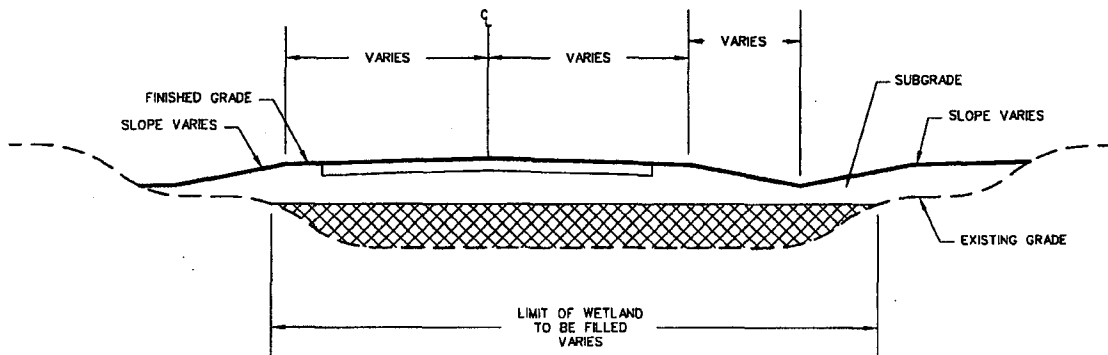
DATE: 05/12/2008



TYPICAL SECTION - STREAM CROSSING IN
WETLAND CONSTRUCTION ROAD



TYPICAL SECTION - BUILDING AREAS



TYPICAL SECTION - ACCESS ROAD

NOTE: EXCAVATION DEPTH IS 1 FOOT BELOW EXISTING GRADE FOR WETLANDS
EXCAVATION DEPTH IS ONE FOOT BELOW STREAM INVERT

PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE: 38.424133
-76.441598

CROSS SECTIONS FIGURE 20

SCALE: N.T.S.

CALVERT CLIFFS NUCLEAR POWER PLANT

IN: PATUXENT / WEST CHESAPEAKE BAY

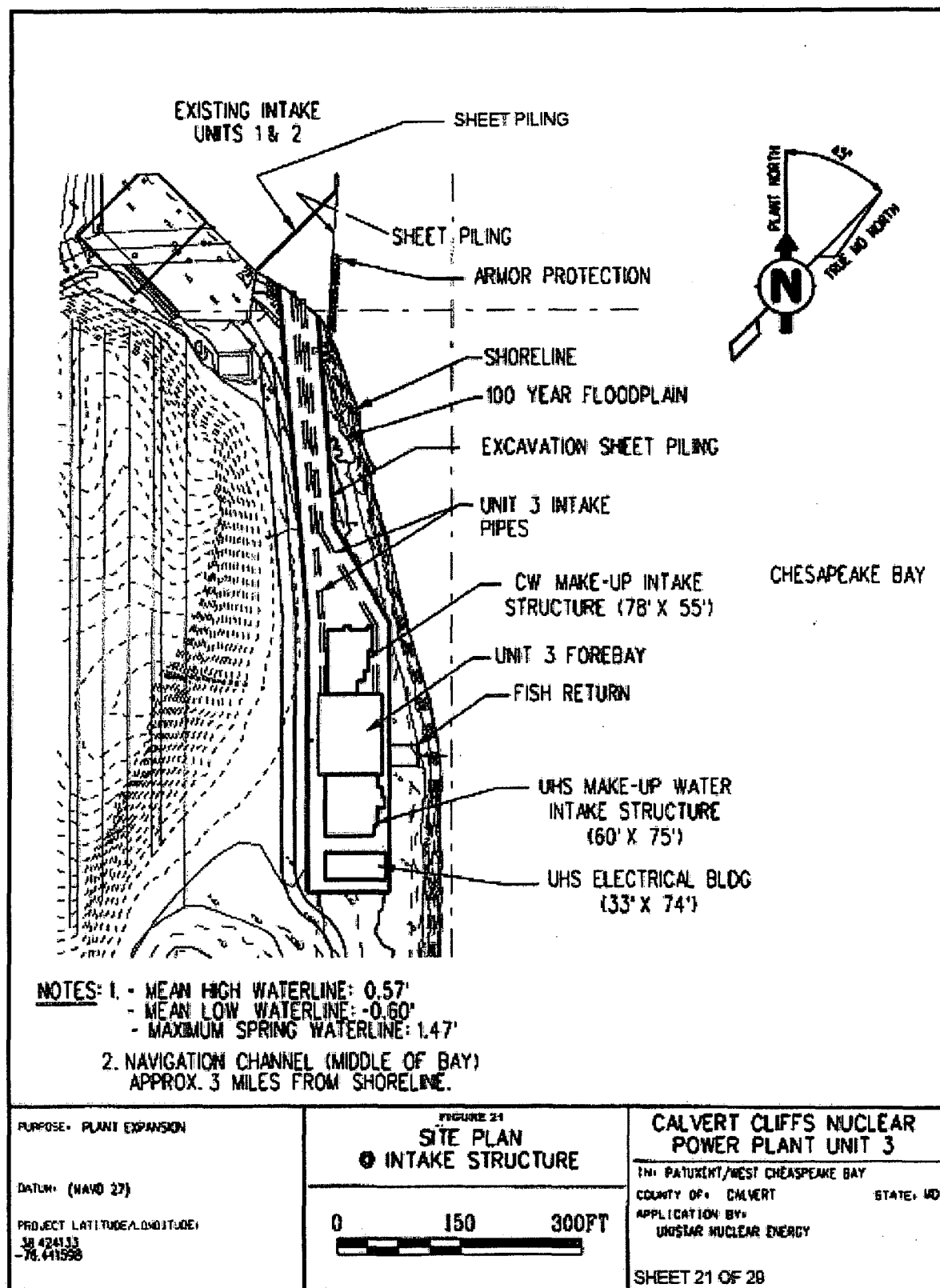
COUNTY OF: CALVERT

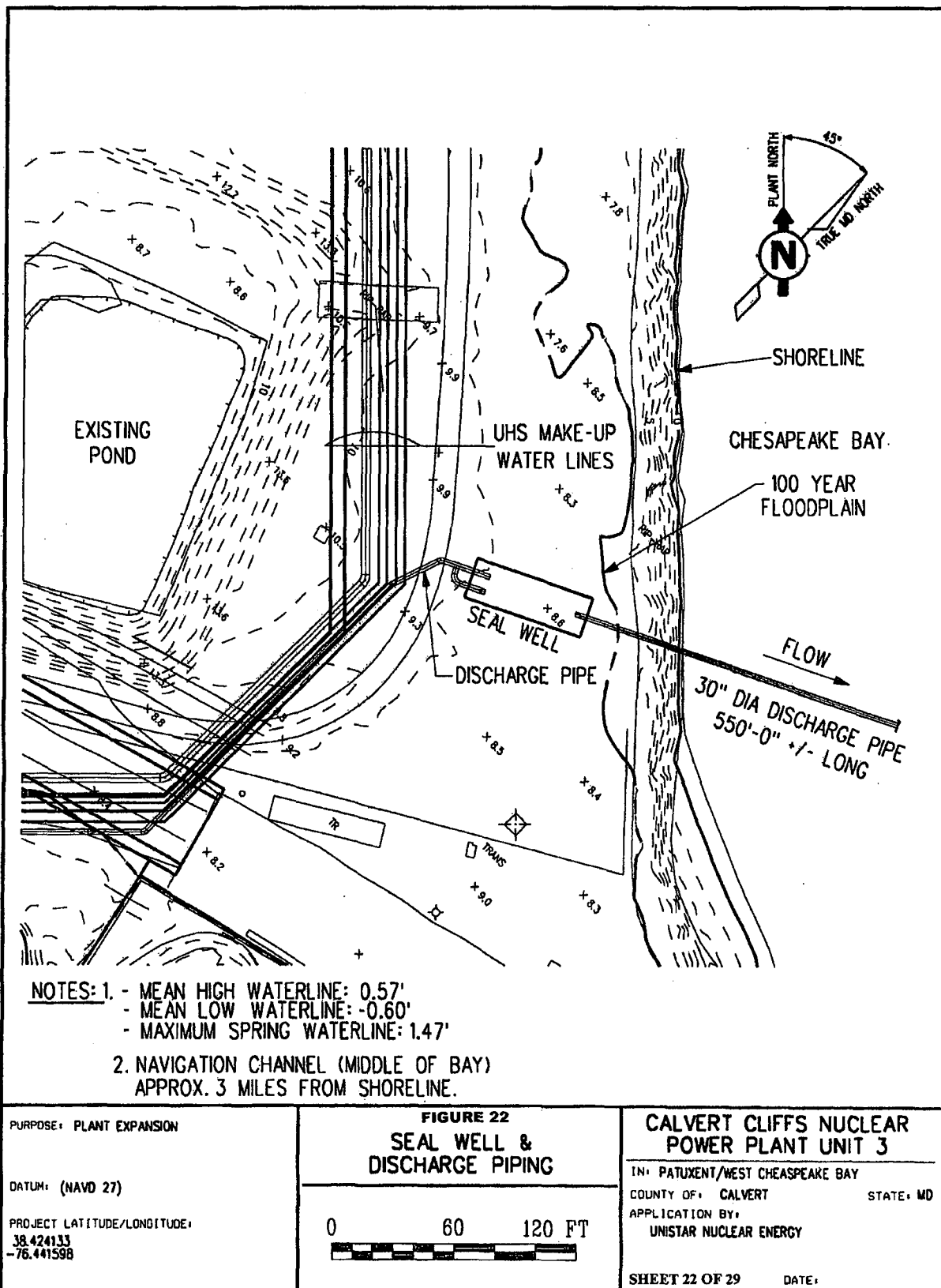
STATE: MD

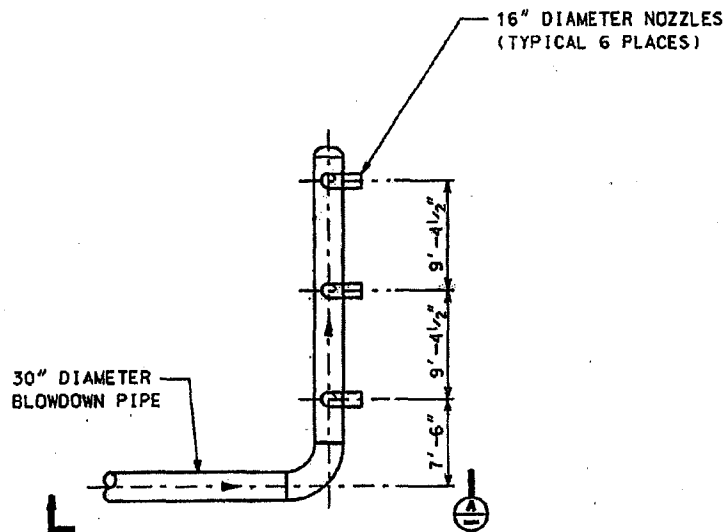
APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 20 OF 29

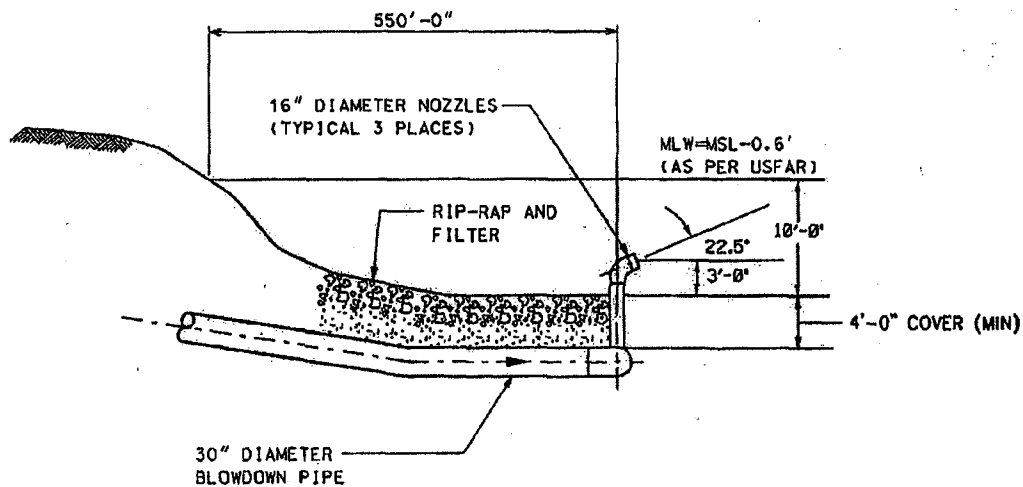
DATE:







DIFFUSER PLAN VIEW



SECTION A-A

PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598

FIGURE 23

DISCHARGE OUTFALL DETAILS

NOT TO SCALE

**CALVERT CLIFFS NUCLEAR
POWER PLANT UNIT 3**

IN: PATUXENT/ WEST CHESAPEAKE BAY

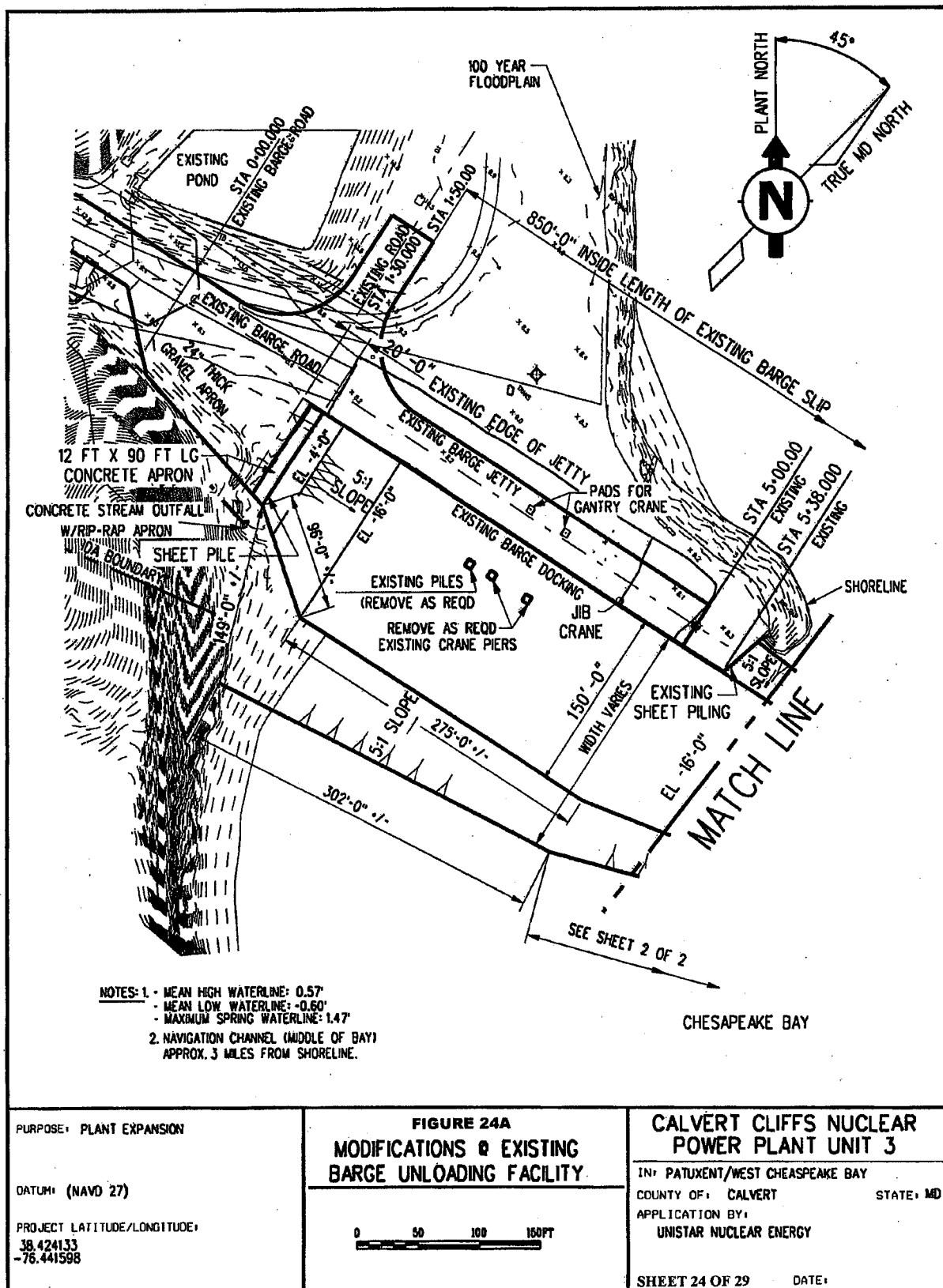
COUNTY OF: CALVERT

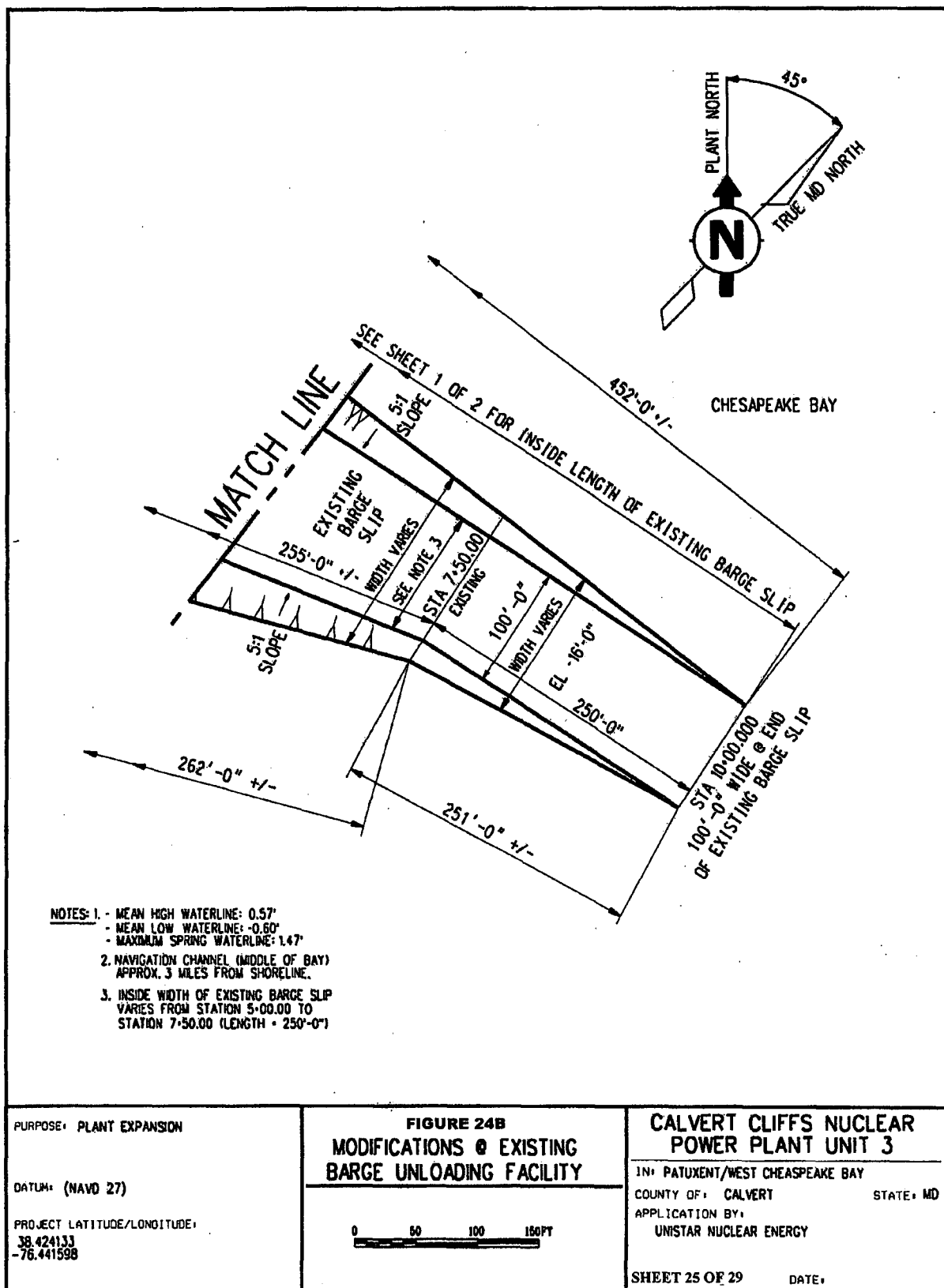
STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 23 OF 29

DATE: 4/30/08





PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
 38.424133
 -76.441598

FIGURE 24B
MODIFICATIONS @ EXISTING
BARGE UNLOADING FACILITY

0 50 100 150 FT

CALVERT CLIFFS NUCLEAR
POWER PLANT UNIT 3

IN: PATUXENT/WEST CHEASPEAKE BAY

COUNTY OF: CALVERT

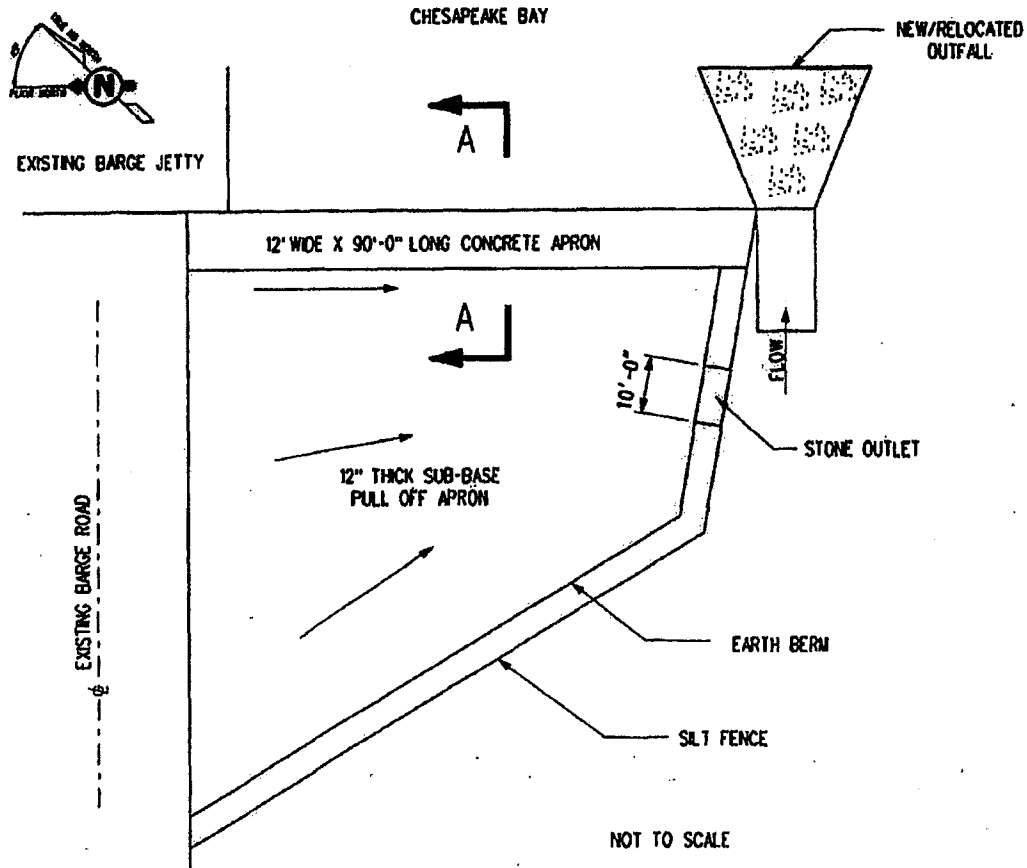
STATE: MD

APPLICATION BY:

UNISTAR NUCLEAR ENERGY

SHEET 25 OF 29

DATE:



PLANE EARTH BERM & STONE OUTLET

PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598

FIGURE 25

**MODIFICATIONS TO NEW
BULKHEAD & APRON**

NOT TO SCALE

**CALVERT CLIFFS NUCLEAR
POWER PLANT UNIT 3**

IN: PATUXENT/ WEST CHESAPEAKE BAY

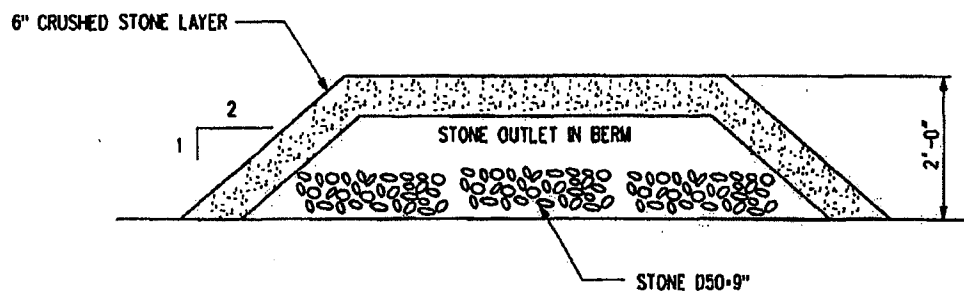
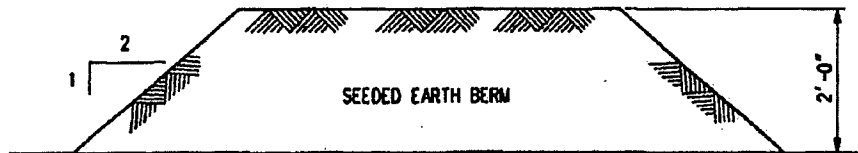
COUNTY OF: CALVERT

STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 26 OF 29

DATE: 4/30/08



EARTH BERM & STONE OUTLET DETAILS

PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598

FIGURE 26
STONE OUTLET &
EARTH BERM DETAILS

NOT TO SCALE

CALVERT CLIFFS NUCLEAR
POWER PLANT UNIT 3

IN: PATUXENT/ WEST CHESAPEAKE BAY

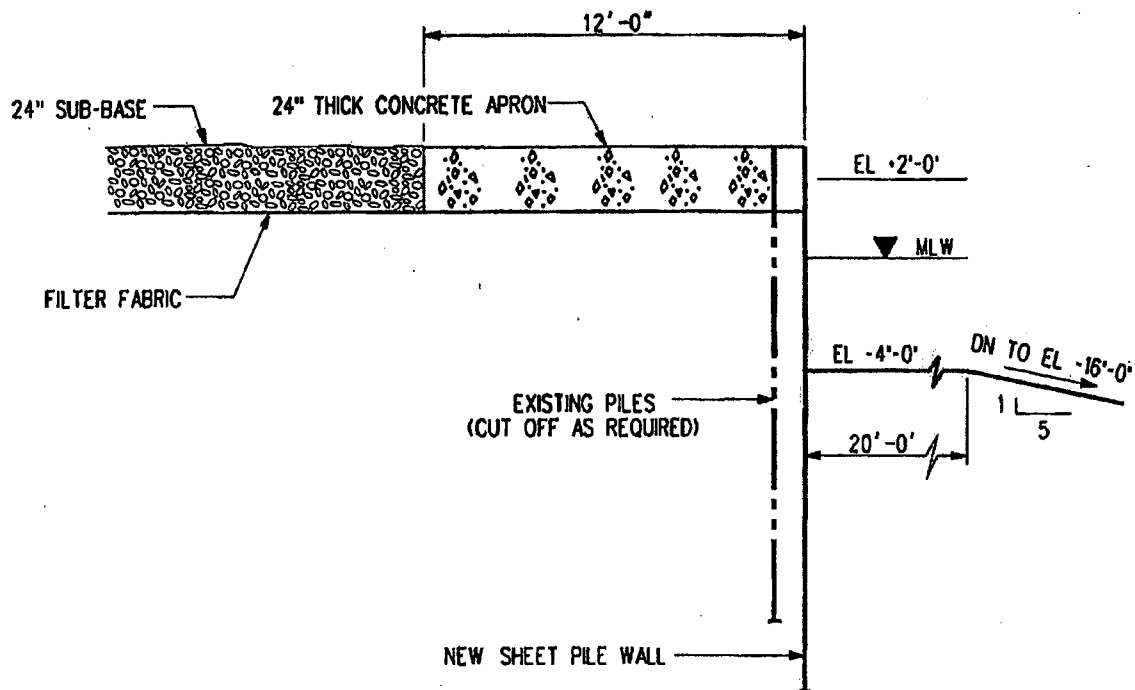
COUNTY OF: CALVERT

STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 27 OF 29

DATE: 4/30/08



SECTION A-A

PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598

FIGURE 27
SECTION A-A
THRU CONCRETE APRON

NOT TO SCALE

**CALVERT CLIFFS NUCLEAR
POWER PLANT UNIT 3**

IN: PATUXENT/ WEST CHESAPEAKE BAY

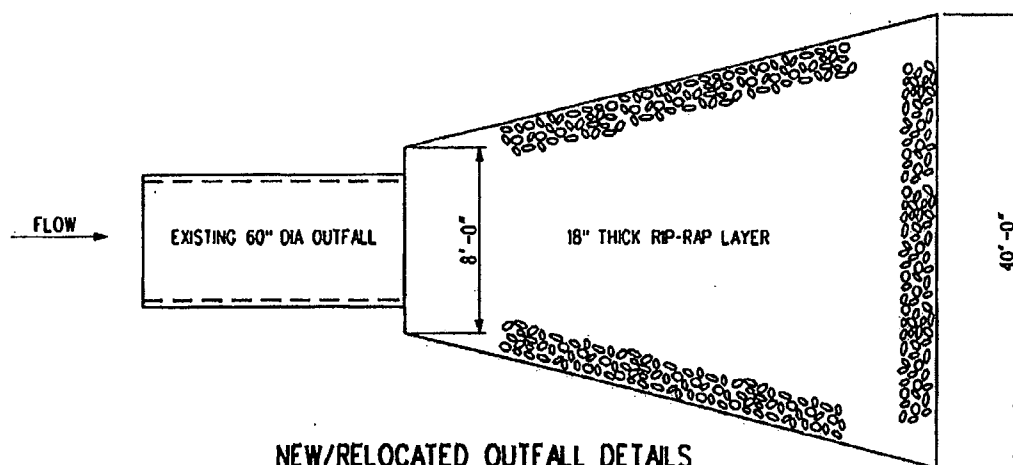
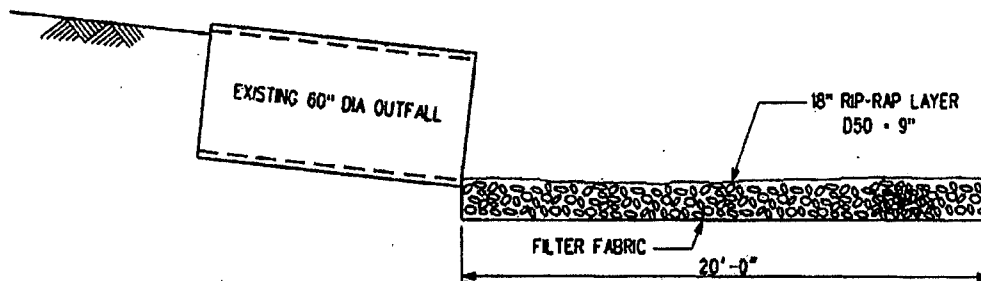
COUNTY OF: CALVERT

STATE: MD

APPLICATION BY:
UNISTAR NUCLEAR ENERGY

SHEET 28 OF 29

DATE: 4/30/08

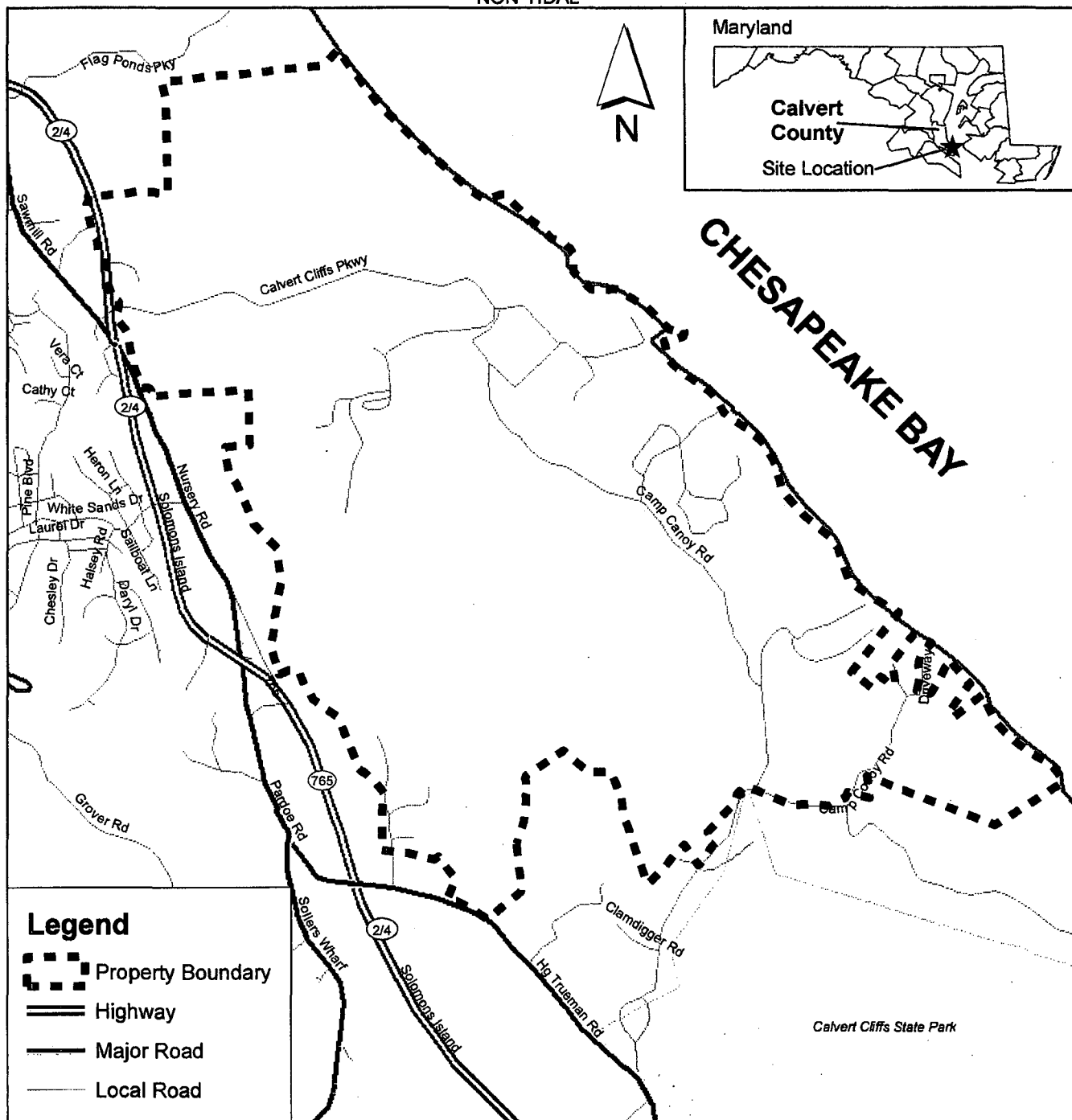


NEW/RELOCATED OUTFALL DETAILS

NOT TO SCALE

PURPOSE: PLANT EXPANSION	<p align="center">FIGURE 28</p> <p align="center">STREAM OUTFALL DETAILS</p>	<p align="center">CALVERT CLIFFS NUCLEAR POWER PLANT UNIT 3</p>	
DATUM: (NAVD 27)		IN: PATUXENT/ WEST CHESAPEAKE BAY	
PROJECT LATITUDE/LONGITUDE:	<p align="center">NOT TO SCALE</p>	COUNTY OF: CALVERT	STATE: MD
38.424133		APPLICATION BY:	
-76.441598		UNISTAR NUCLEAR ENERGY	
		SHEET 29 OF 29	DATE: 4/30/08

NON-TIDAL



Legend

- Property Boundary
- Highway
- Major Road
- Local Road

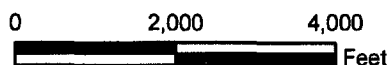
PURPOSE: PLANT EXPANSION

DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598

SITE LOCATION FIGURE 1

SCALE IN FEET



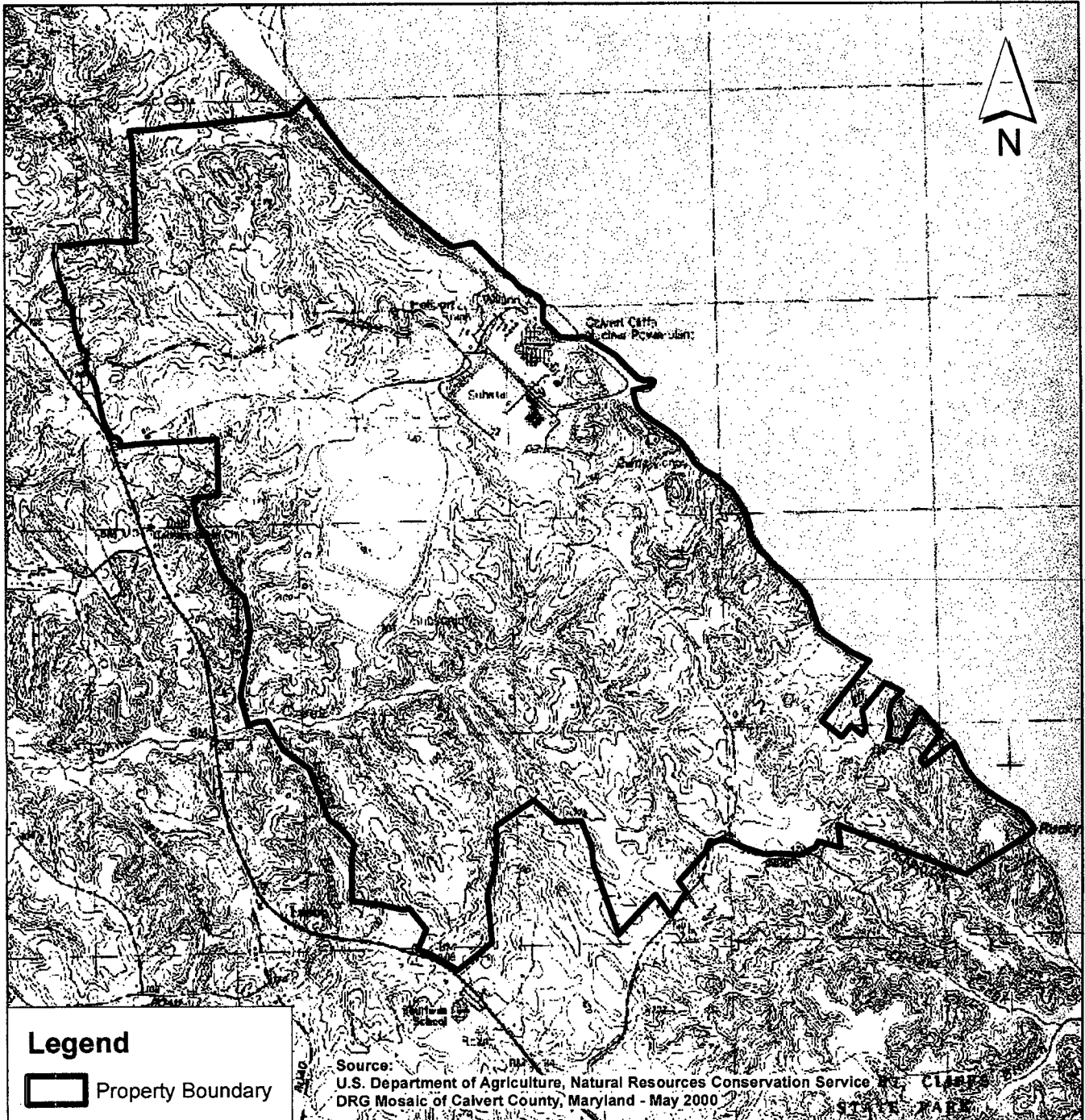
CALVERT CLIFFS NUCLEAR POWER PLANT

IN: PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08

NON-TIDAL



Legend

 Property Boundary


PURPOSE: PLANT EXPANSION

DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598

USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE FIGURE 2

SCALE IN FEET

0 2,000 4,000
 Feet

CALVERT CLIFFS NUCLEAR POWER PLANT










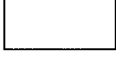

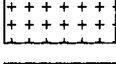



IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08

NON-TIDAL

Legend

-  100 Year Floodplain
-  Impacted Stream
-  Stream to Remain
-  Proposed Site Features
-  Critical Area Boundary
-  Wetland Study Area
-  Limit of Disturbance
-  Jurisdictional Wetland Impacted
-  Open Water Impacted
-  Delineated Wetlands to Remain
-  Jurisdictional Wetlands to Remain
-  50 Foot Wetland/Stream Buffer to Remain
-  Impacted 50 Foot Wetland/Stream Buffer
-  Property Boundary
-  Protected Wetland

PURPOSE: PLANT EXPANSION

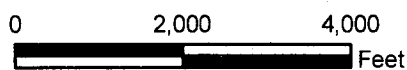
DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



LEGEND FIGURE 3

SCALE IN FEET



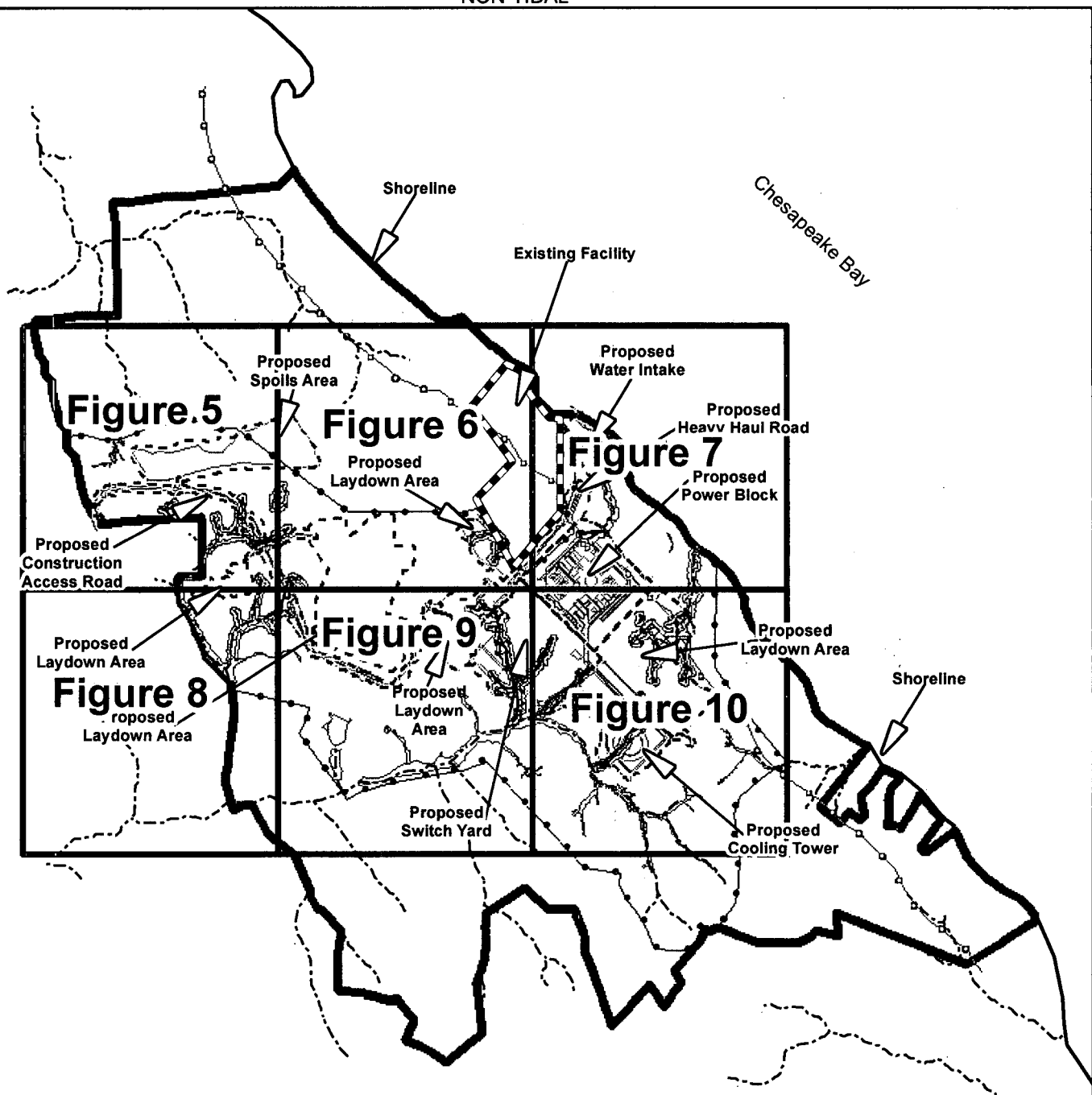
CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08

NON-TIDAL



PURPOSE: PLANT EXPANSION

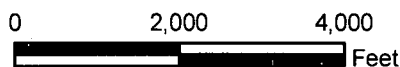
DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



KEY PLAN FIGURE 4

SCALE IN FEET



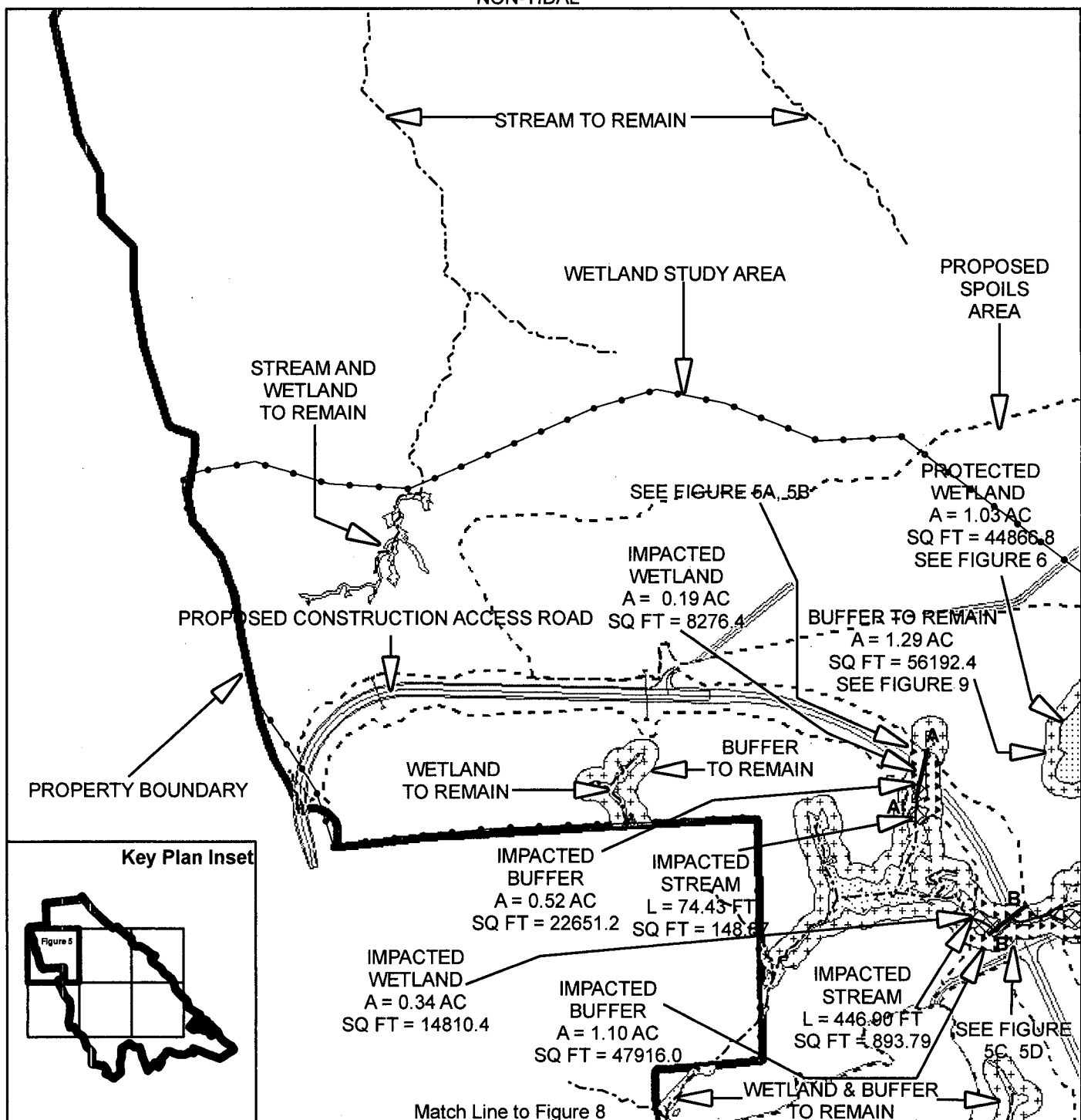
CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08

NON-TIDAL



PURPOSE: PLANT EXPANSION

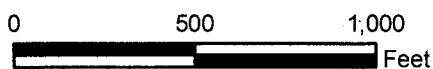
DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 5

SCALE IN FEET



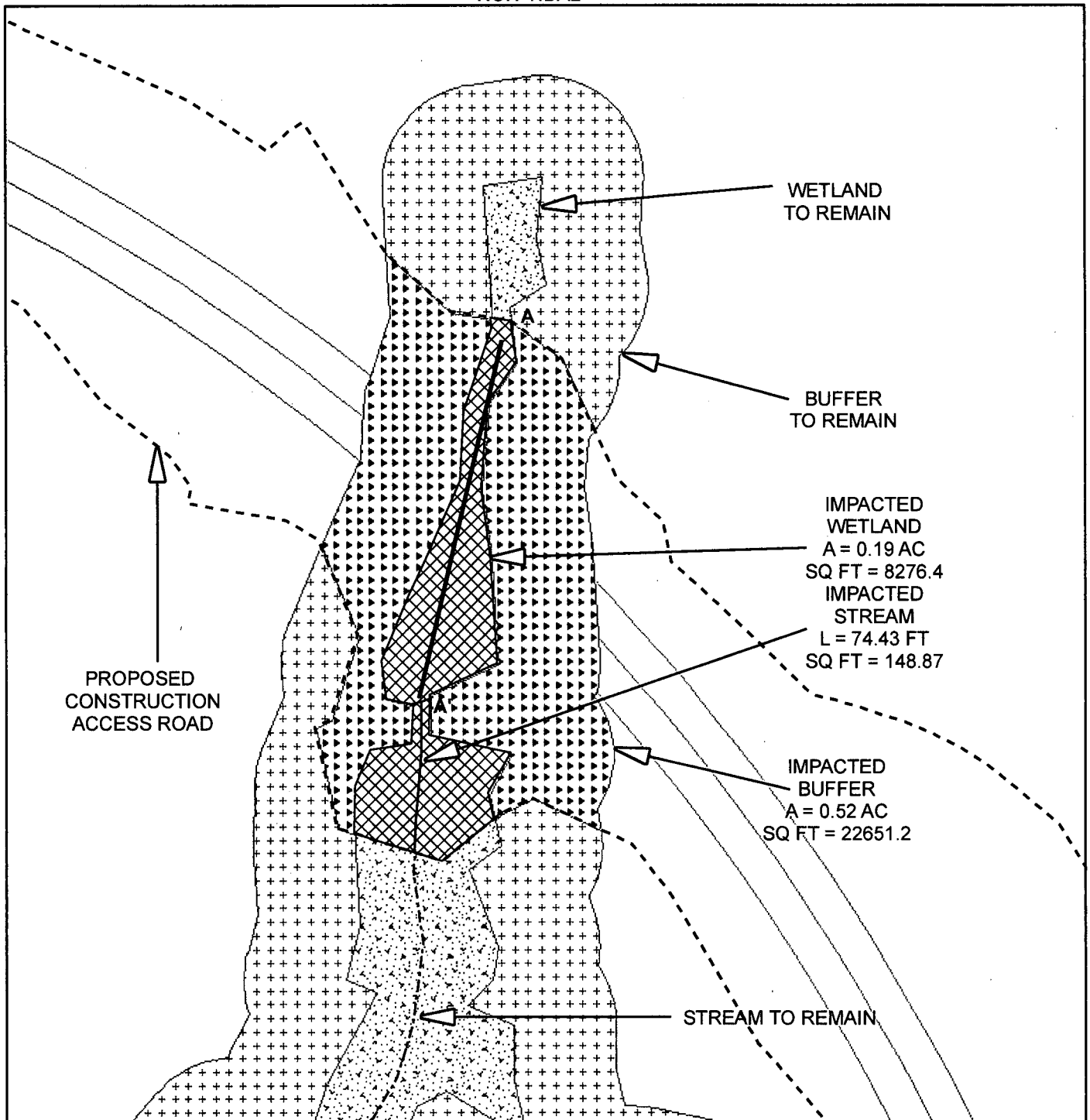
CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08

NON-TIDAL



PURPOSE: PLANT EXPANSION

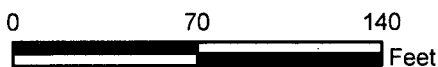
DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 5A

SCALE IN FEET

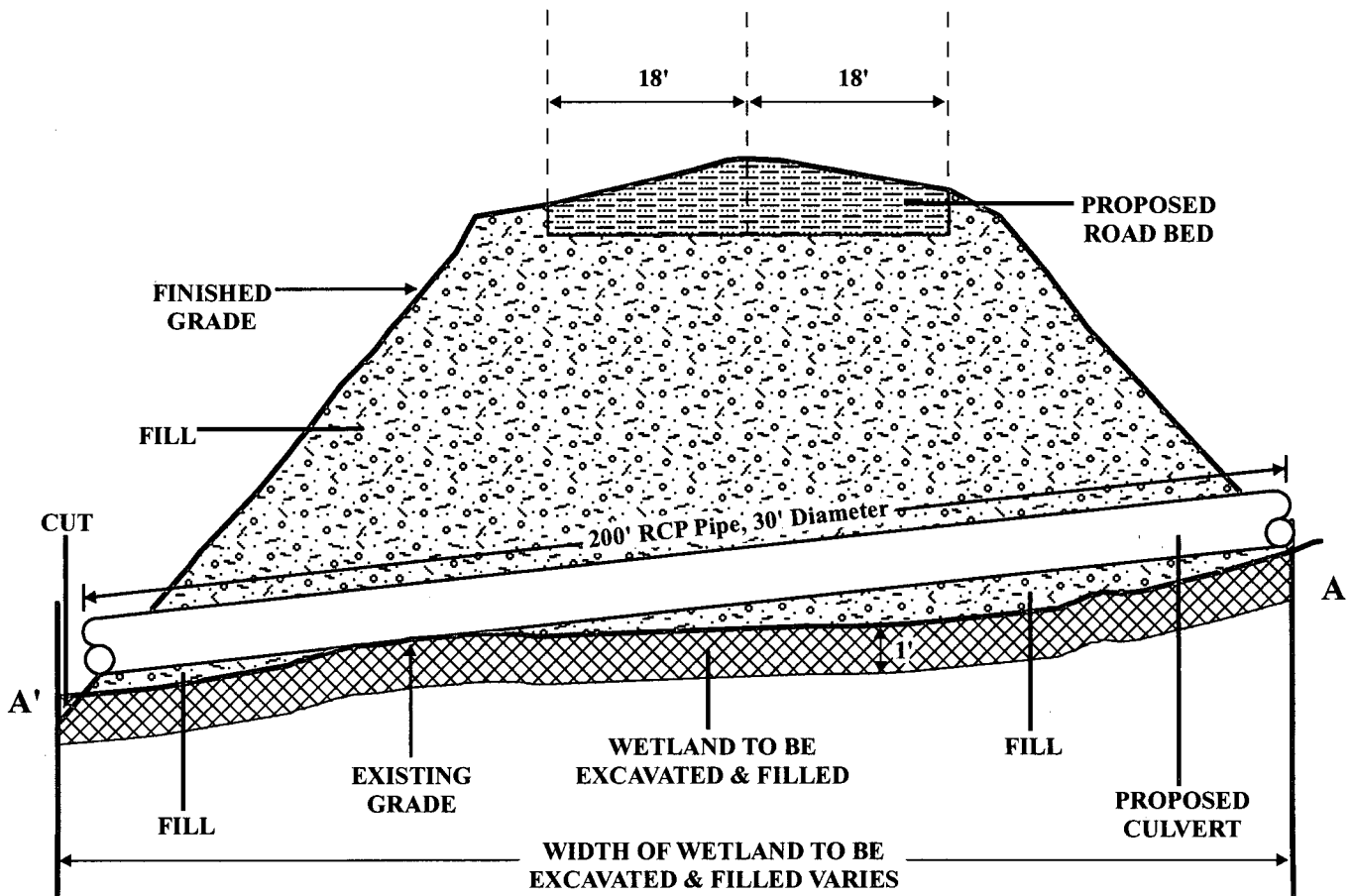


CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08



VERTICAL EXAGGERATION x 4

PURPOSE: PLANT EXPANSION

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



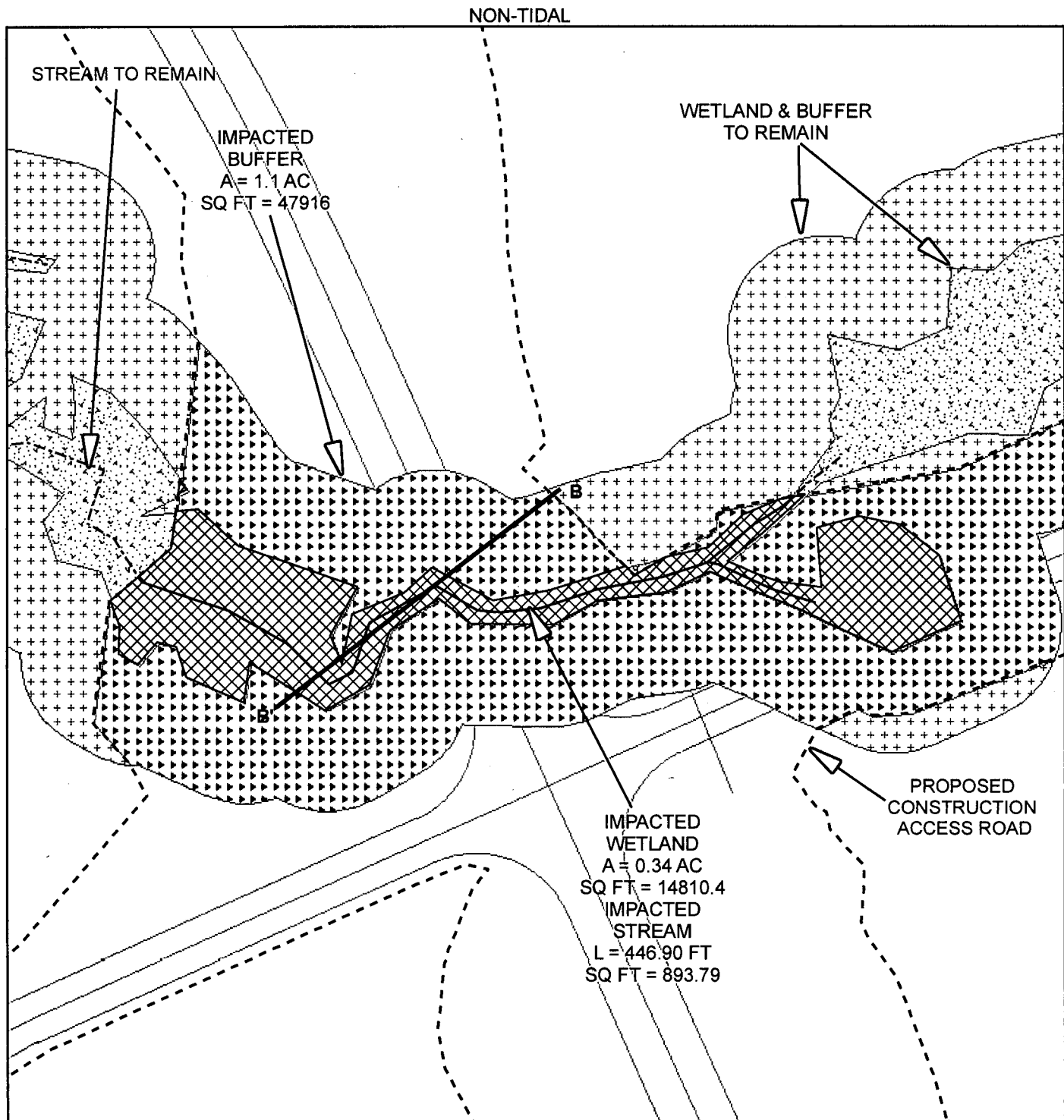
CROSS SECTION Figure 5B

NOT TO SCALE

CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD
APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08



PURPOSE: PLANT EXPANSION

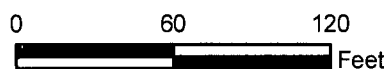
DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 5C

SCALE IN FEET

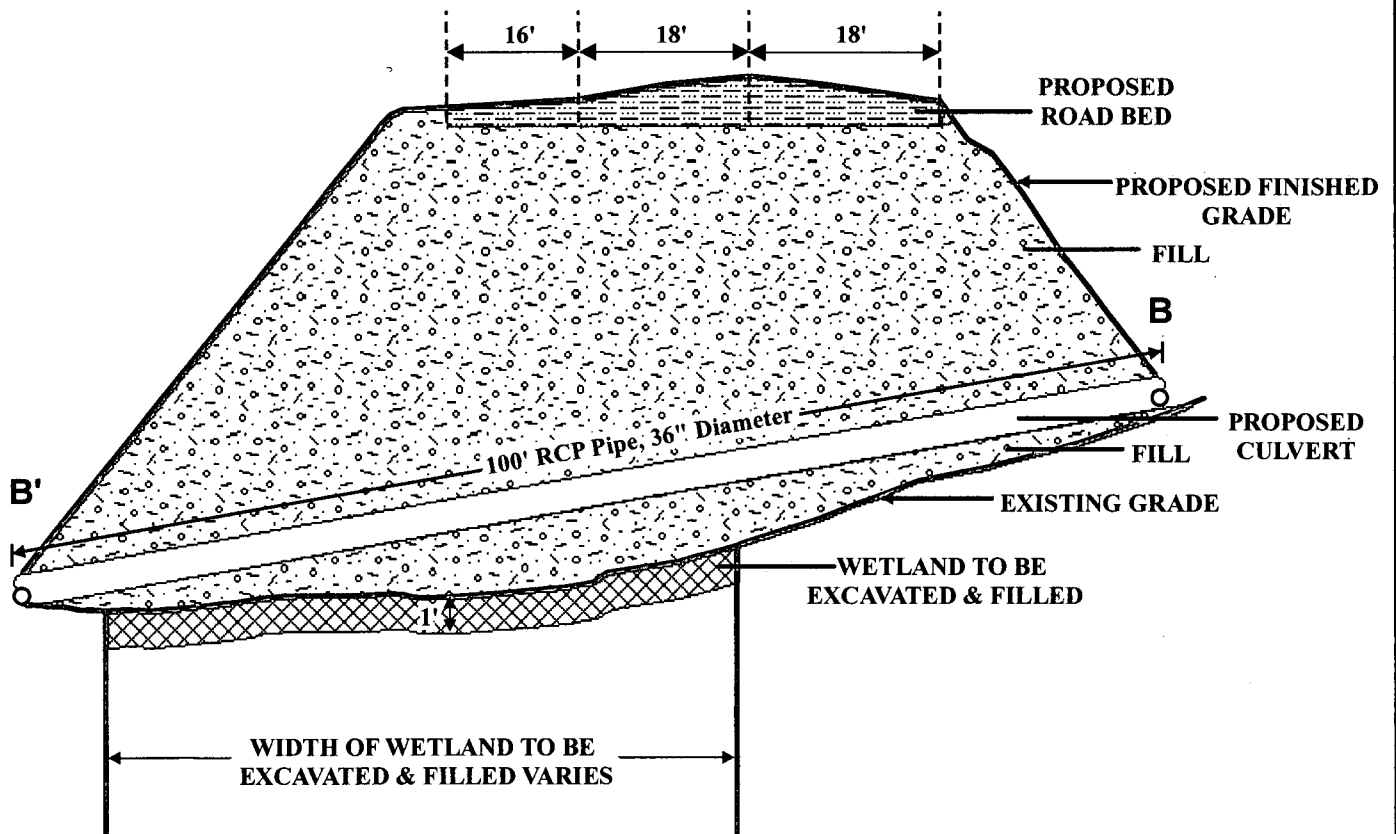


CALVERT CLIFFS NUCLEAR POWER PLANT

IN: PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08



VERTICAL EXAGGERATION x 4

PURPOSE: PLANT EXPANSION

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



CROSS SECTION
Figure 5D

NOT TO SCALE

**CALVERT CLIFFS NUCLEAR
POWER PLANT**

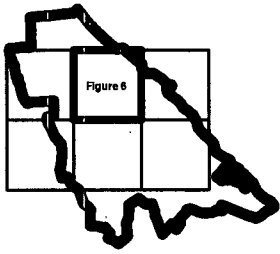
IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD
APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08

NON-TIDAL

CHESAPEAKE BAY

Key Plan Inset



PROPERTY BOUNDARY

LIMIT OF DISTURBANCE

CRITICAL AREA BOUNDARY

PROTECTED WETLAND

A = 1.03 AC

SQ FT = 44866.8

SEE FIGURE 5

BUFFER

TO REMAIN
SEE FIGURE 5

WETLAND & BUFFER
TO REMAIN

PROPOSED CONSTRUCTION ACCESS
ROAD

IMPACTED WETLAND BUFFER
SEE FIGURE 5

WETLAND & BUFFER
TO REMAIN

IMPACTED WETLAND
SEE FIGURE 9

IMPACTED BUFFER
SEE FIGURE 9

WETLAND STUDY AREA

IMPACTED BUFFER
A = 2.56 AC
SQ FT = 111513.6

IMPACTED WETLAND
A = 1.11 AC
SQ FT = 48351.6

LIMIT OF DISTURBANCE

PROPOSED CONSTRUCTION
LAYDOWN AREA

SEE FIGURE
6A, 6B

Match Line to Figure 9

Match Line for Figure 7

PURPOSE: PLANT EXPANSION

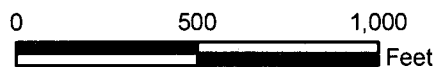
DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 6

SCALE IN FEET

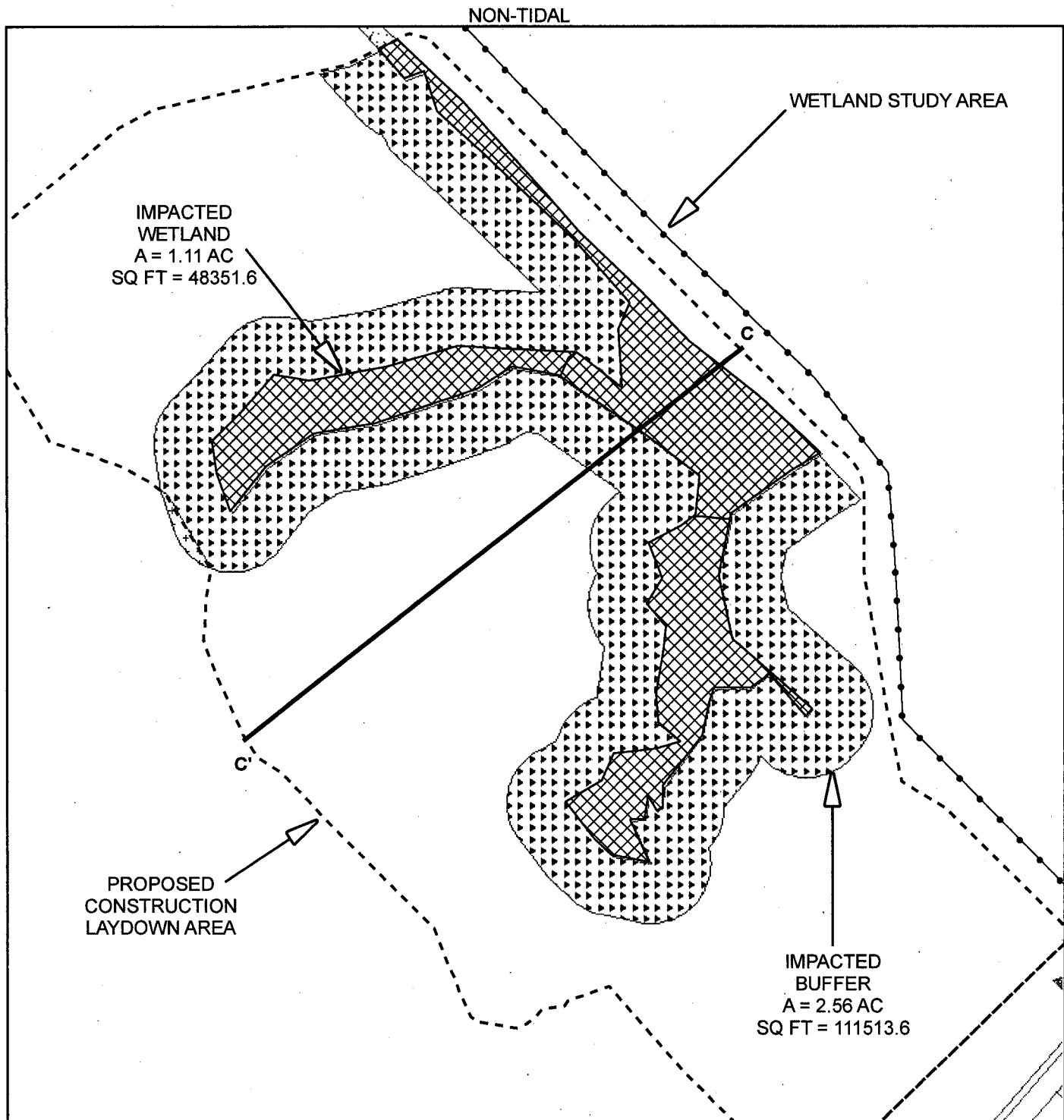


CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08



PURPOSE: PLANT EXPANSION

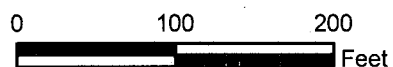
DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 6A

SCALE IN FEET

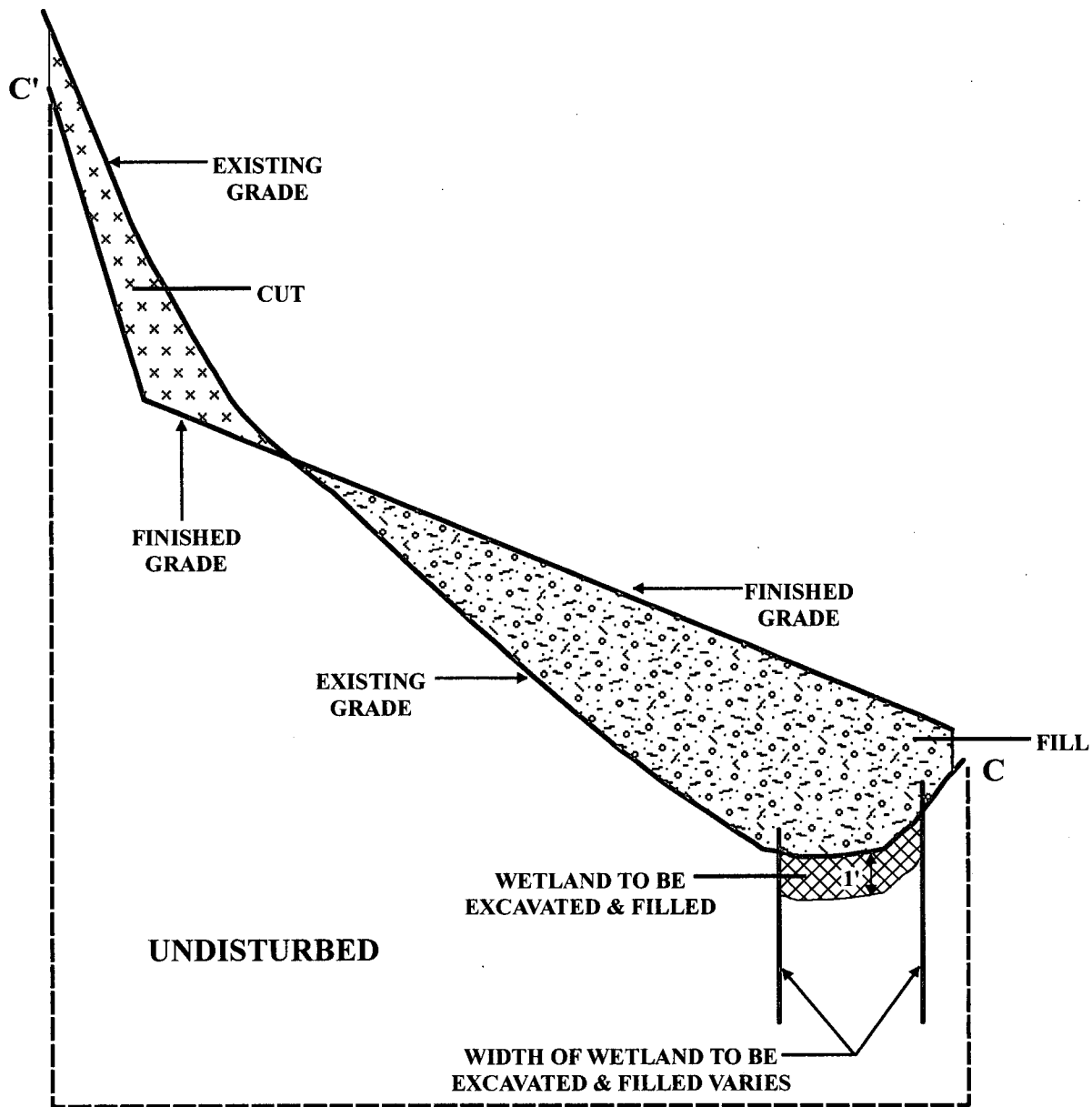


CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08



VERTICAL EXAGGERATION x 10

PURPOSE: PLANT EXPANSION

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



CROSS SECTION
Figure 6B

NOT TO SCALE

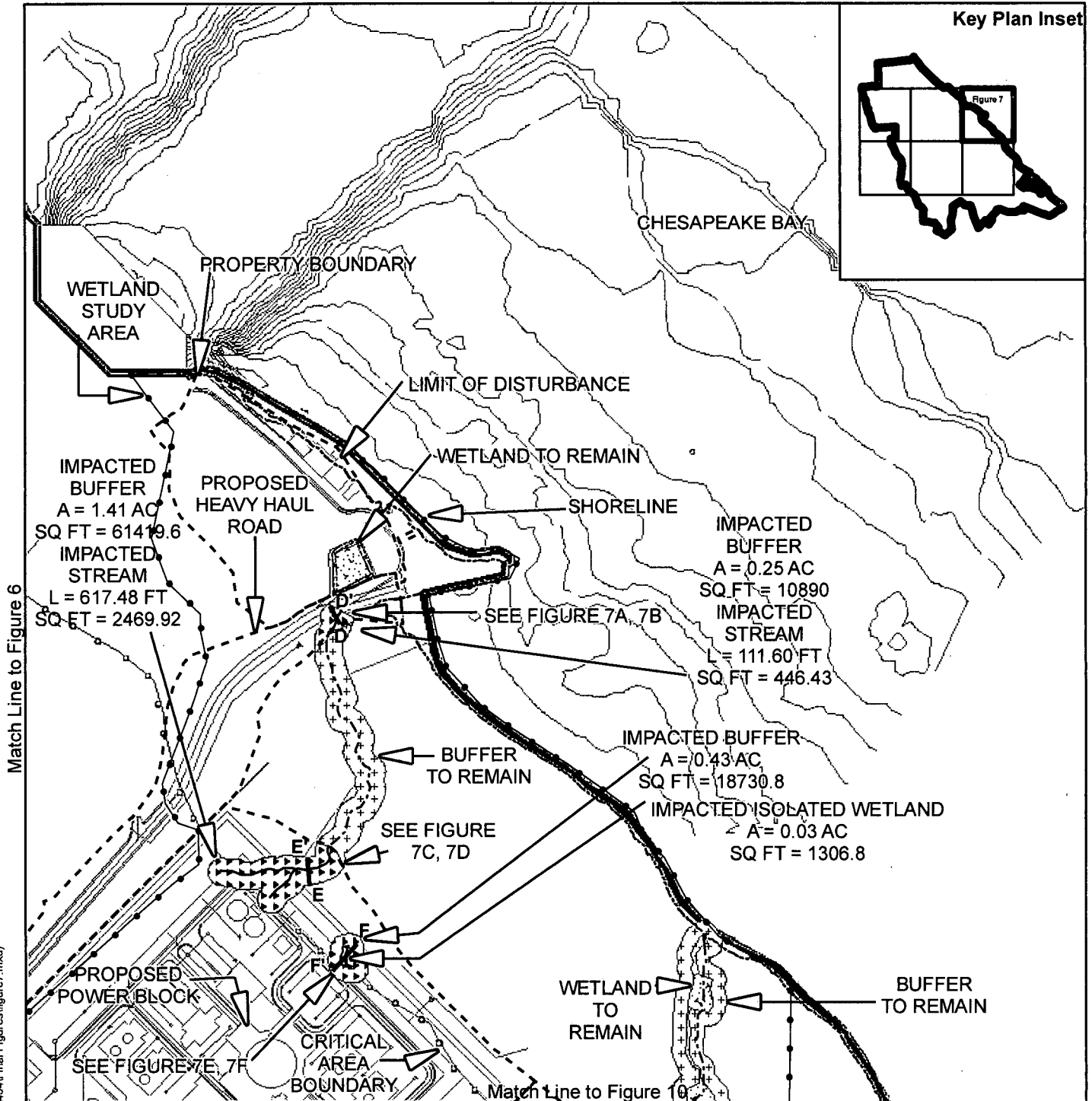
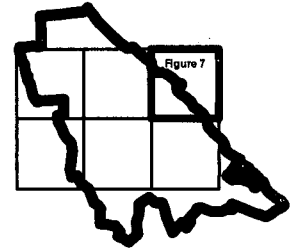
CALVERT CLIFFS NUCLEAR
POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD
APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08

NON-TIDAL - FIGURE DEPICTS NON-TIDAL WORK ONLY

Key Plan Inset



PURPOSE: PLANT EXPANSION

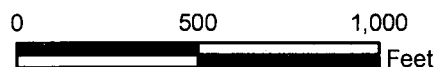
DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT
FIGURE 7

SCALE IN FEET



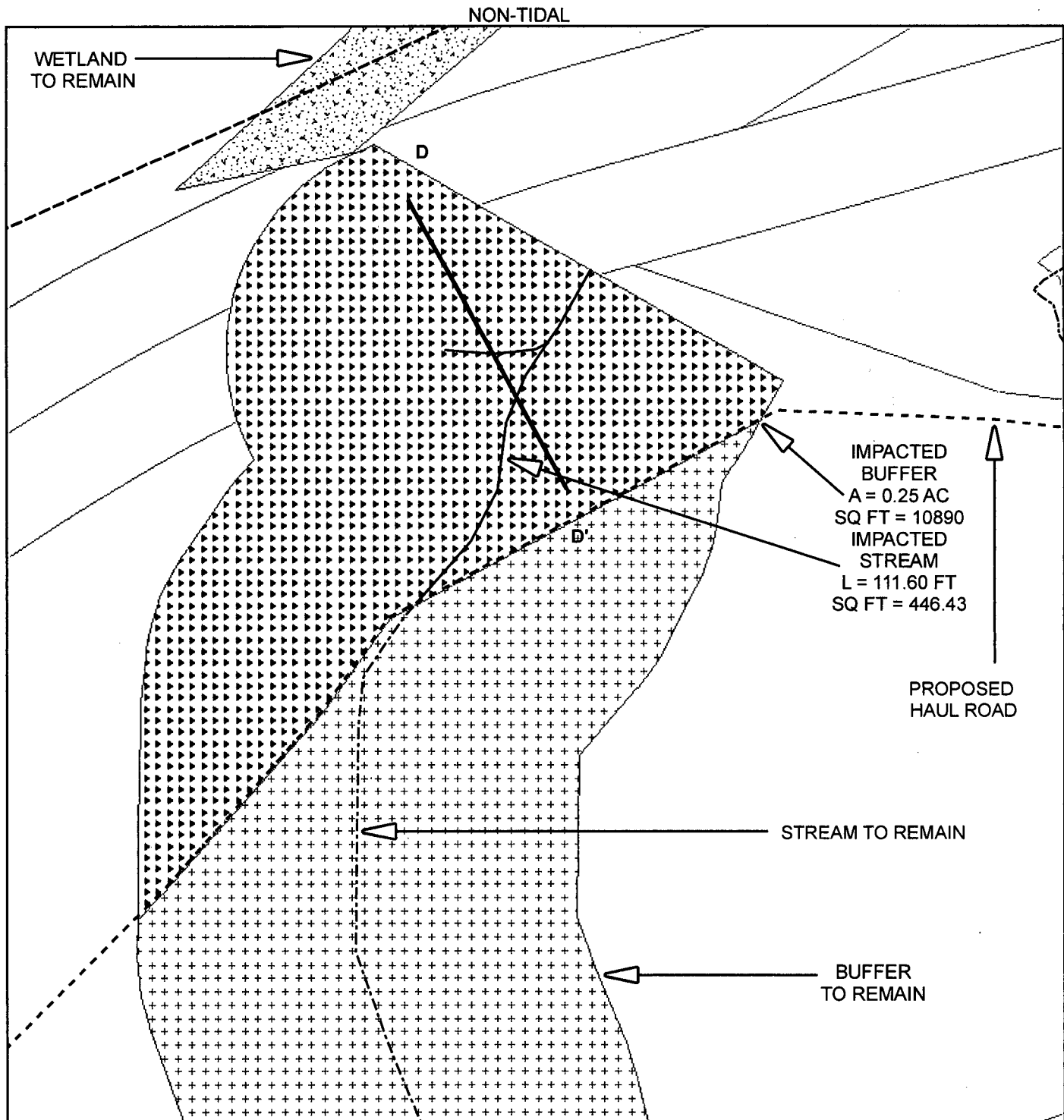
CALVERT CLIFFS NUCLEAR
POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08

Map Document: (G:\Calvert Cliffs\Frozen_5_1_08\404\Final Figures\Figure7A.mxd)
6/19/2008 -- 10:24:28 AM



PURPOSE: PLANT EXPANSION

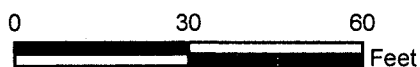
DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 7A

SCALE IN FEET

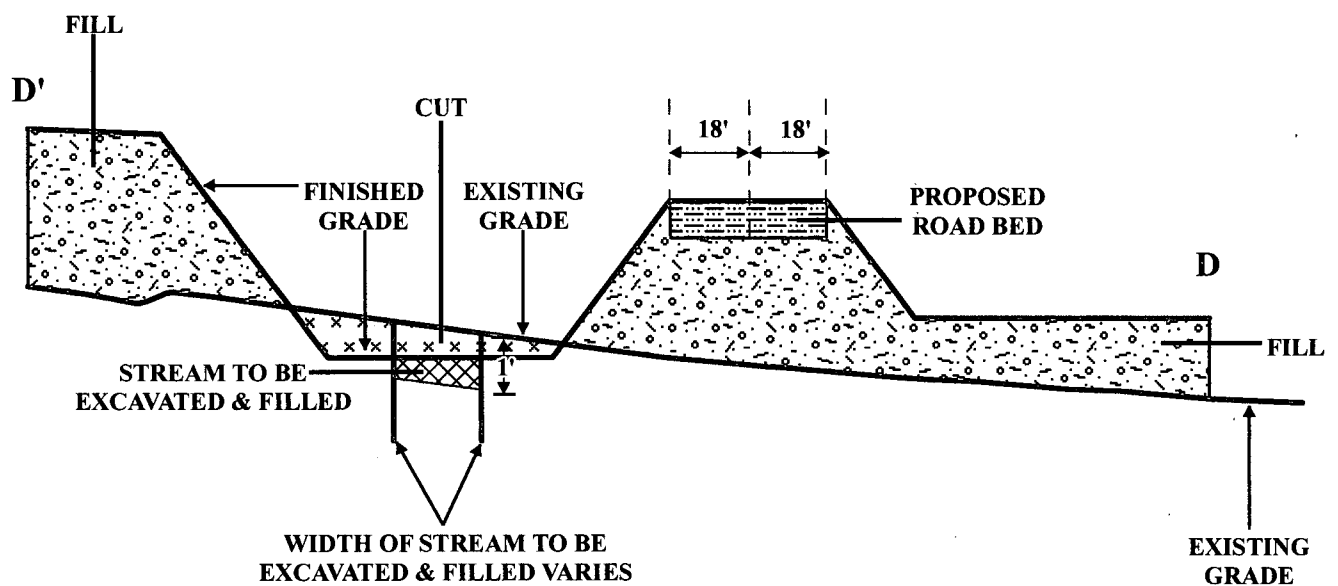


CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08



PURPOSE: PLANT EXPANSION

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



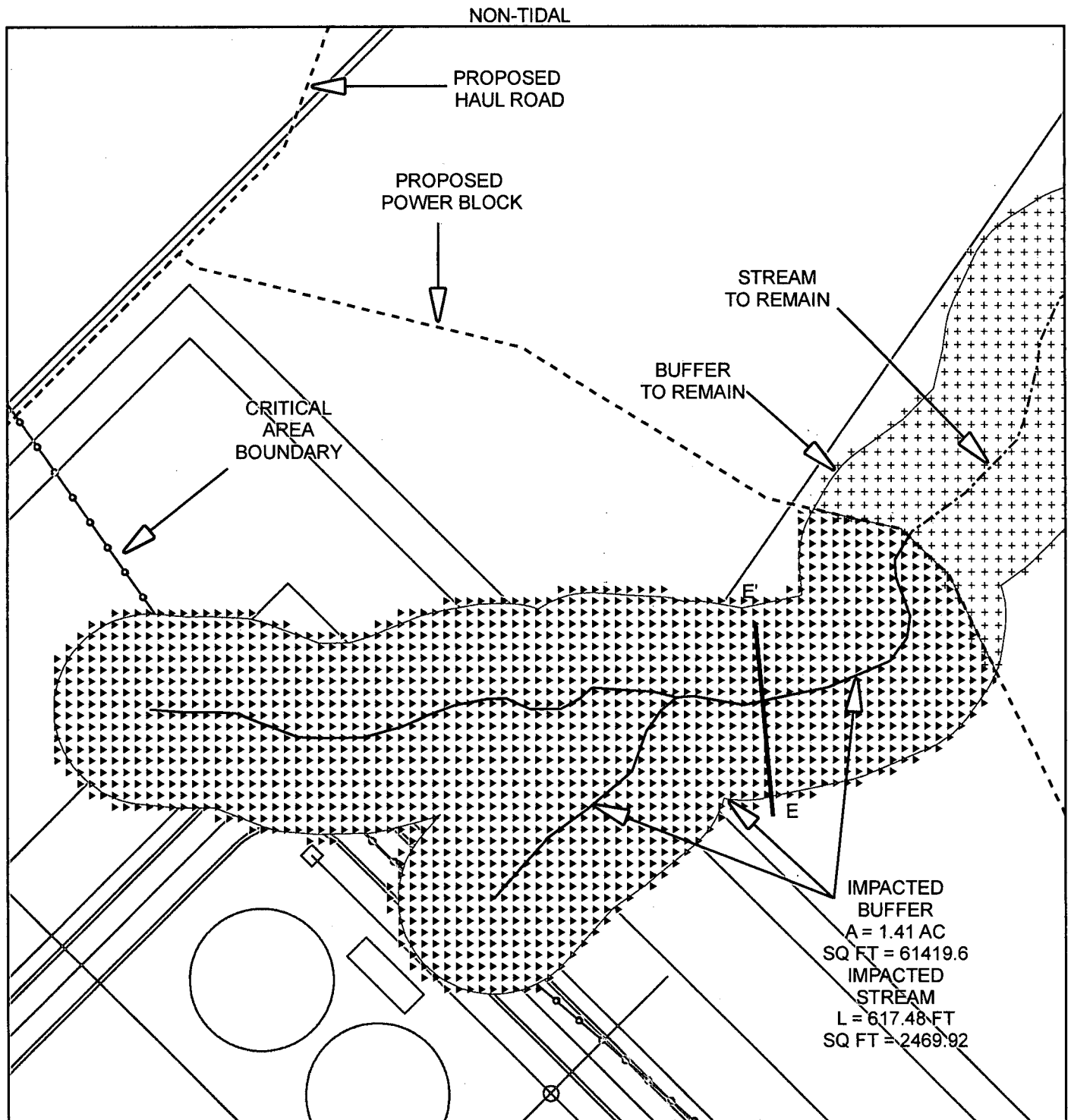
CROSS SECTION Figure 7B

NOT TO SCALE

CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD
APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08



PURPOSE: PLANT EXPANSION

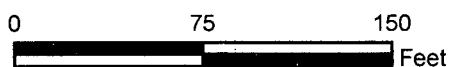
DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
 38.424133
 -76.441598



SITE LAYOUT FIGURE 7C

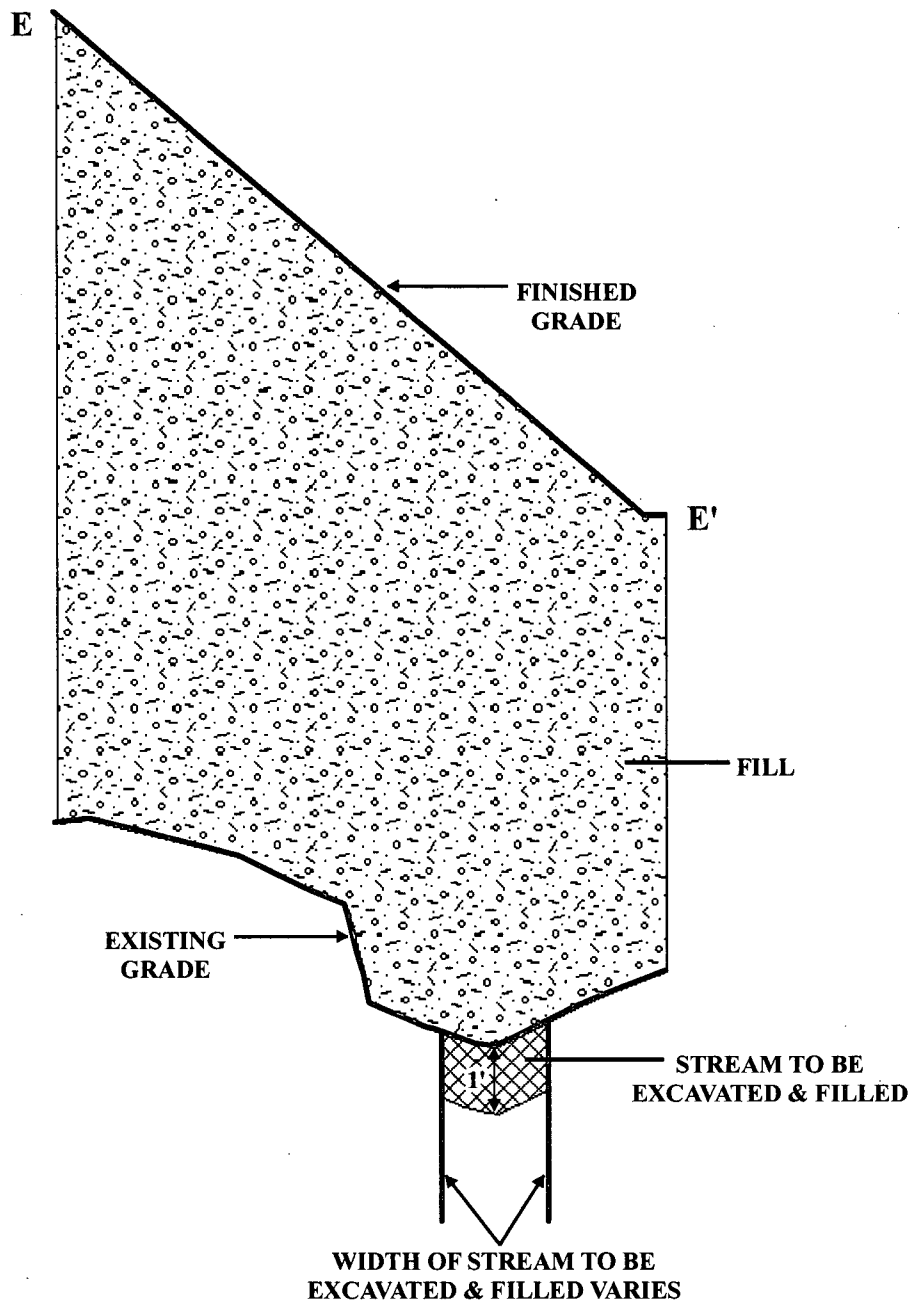
SCALE IN FEET



CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
 PATUXENT / WEST CHESAPEAKE BAY
 COUNTY OF: CALVERT STATE: MD
 APPLICATION BY:
 CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
 AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08



VERTICAL EXAGGERATION x 4

PURPOSE: PLANT EXPANSION

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



CROSS SECTION
Figure 7D

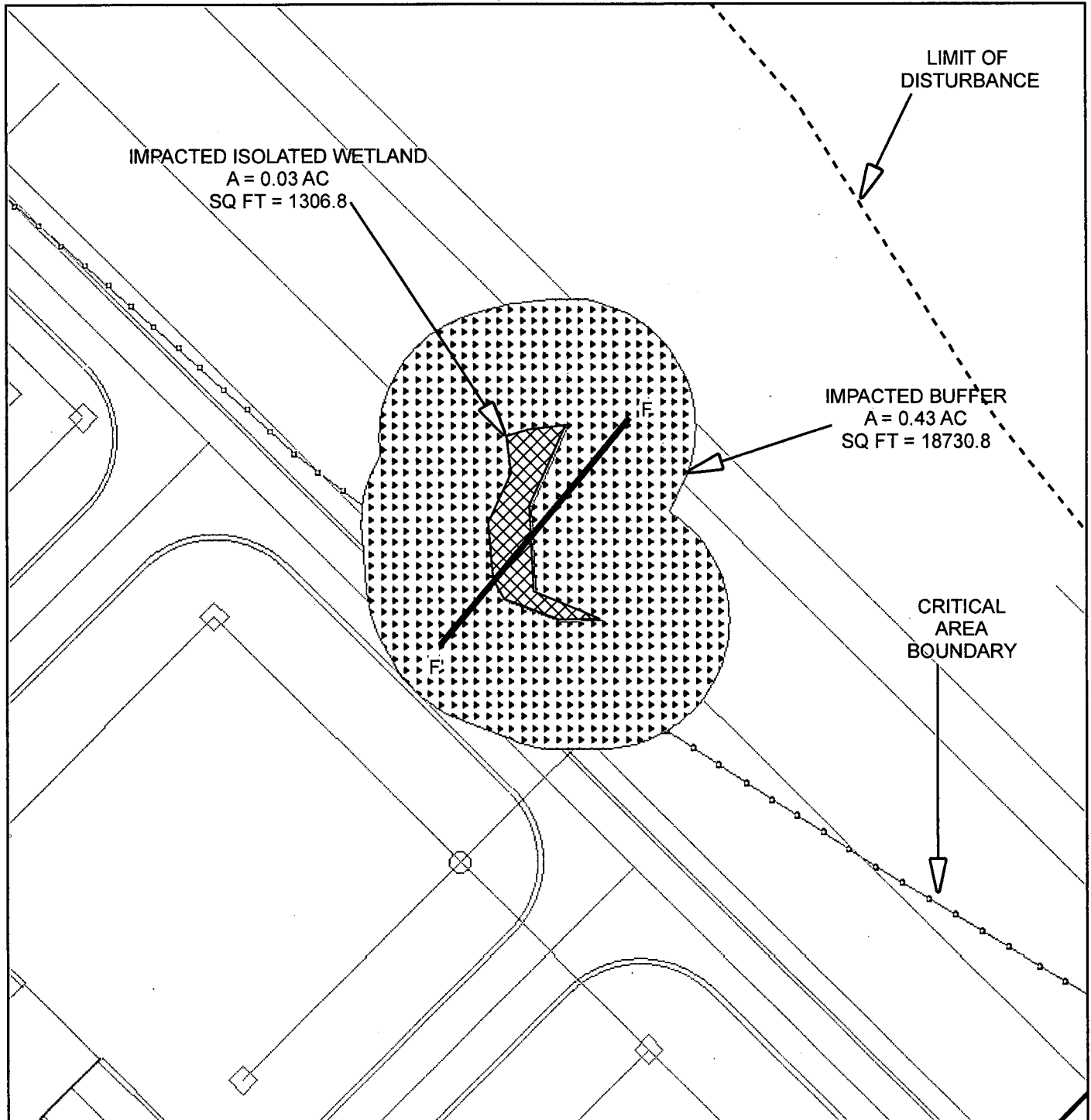
NOT TO SCALE

CALVERT CLIFFS NUCLEAR
POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD
APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08

NON-TIDAL



PURPOSE: PLANT EXPANSION

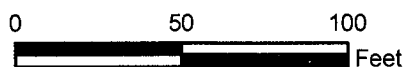
DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 7E

SCALE IN FEET

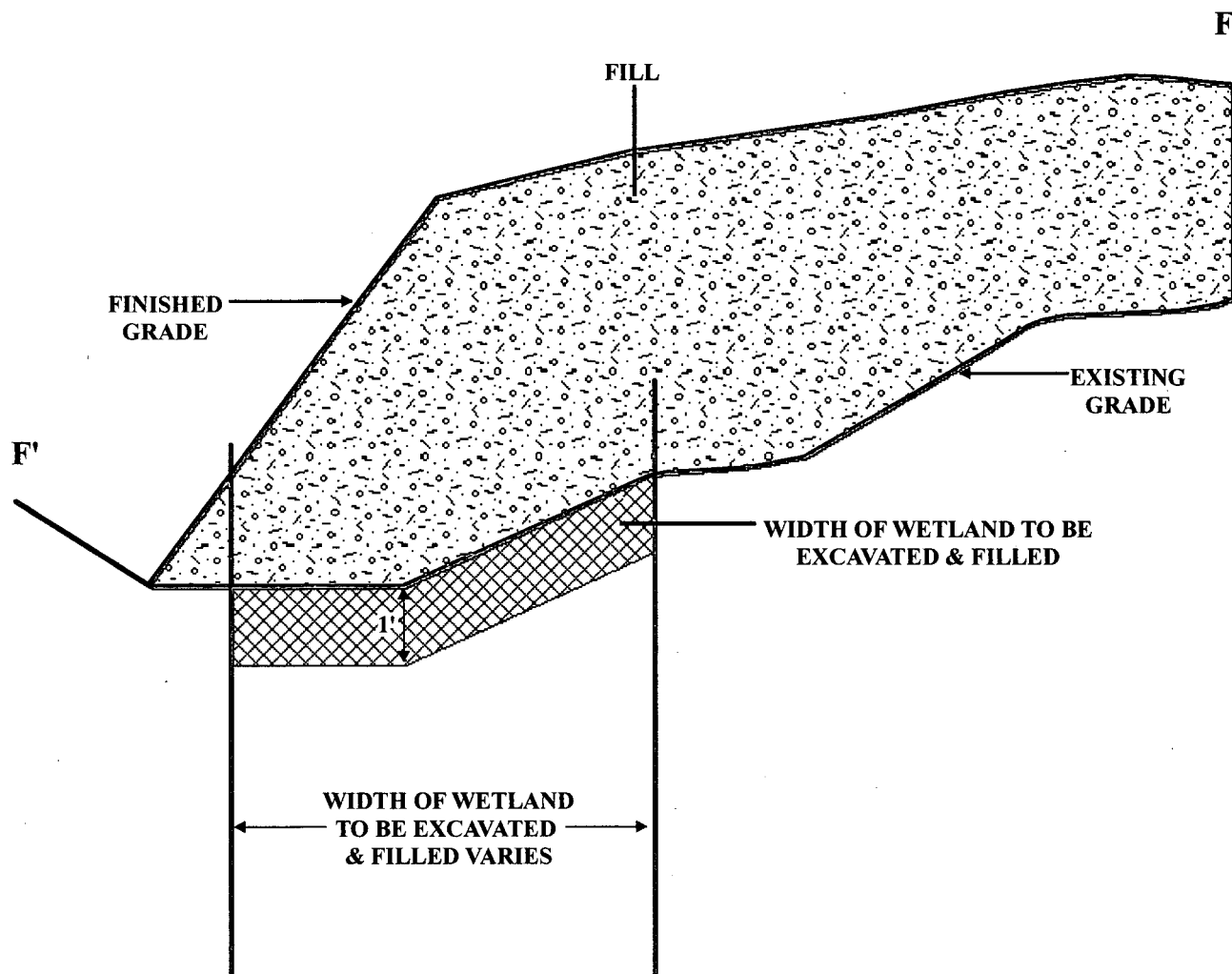


CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08



VERTICAL EXAGGERATION x 4

PURPOSE: PLANT EXPANSION

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



CROSS SECTION
Figure 7F

NOT TO SCALE

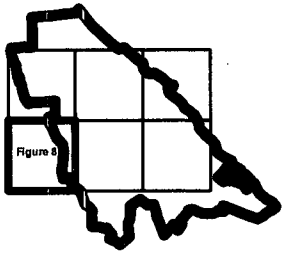
CALVERT CLIFFS NUCLEAR
POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT **STATE:** MD
APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 **REV1** 7/14/08

NON-TIDAL
Match Line to Figure 5

Key Plan Inset



LIMIT OF DISTURBANCE

STREAM TO REMAIN

BUFFER
TO REMAIN

STREAM TO REMAIN

WETLAND TO REMAIN

WETLAND STUDY AREA

PROPERTY BOUNDARY

Match Line to Figure 9

PURPOSE: PLANT EXPANSION

DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 8

SCALE IN FEET



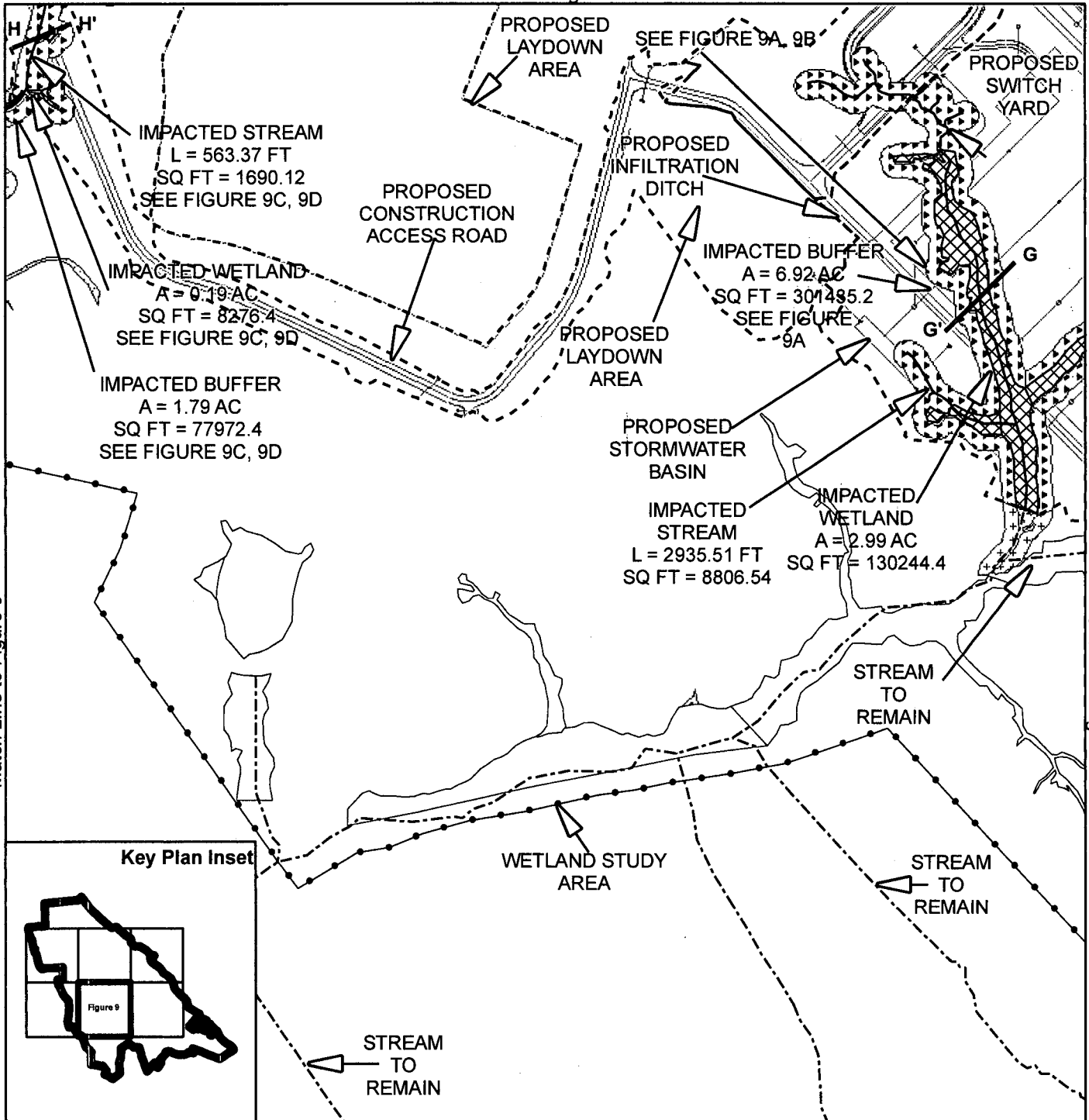
CALVERT CLIFFS NUCLEAR POWER PLANT

IN:
PATUXENT / WEST CHESAPEAKE BAY
COUNTY OF: CALVERT STATE: MD

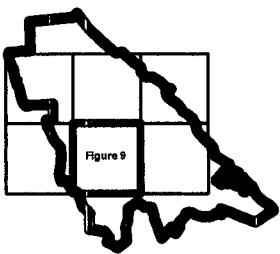
APPLICATION BY:
CALVERT CLIFFS 3 NUCLEAR PROJECT, LLC
AND UNISTAR NUCLEAR OPERATING SERVICES, LLC

DATE: 5/09/08 REV1 7/14/08

NON-TIDAL
Match Line to Figure 6



Key Plan Inset



PURPOSE: PLANT EXPANSION

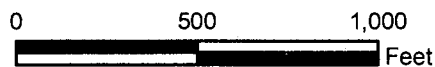
DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 9

SCALE IN FEET

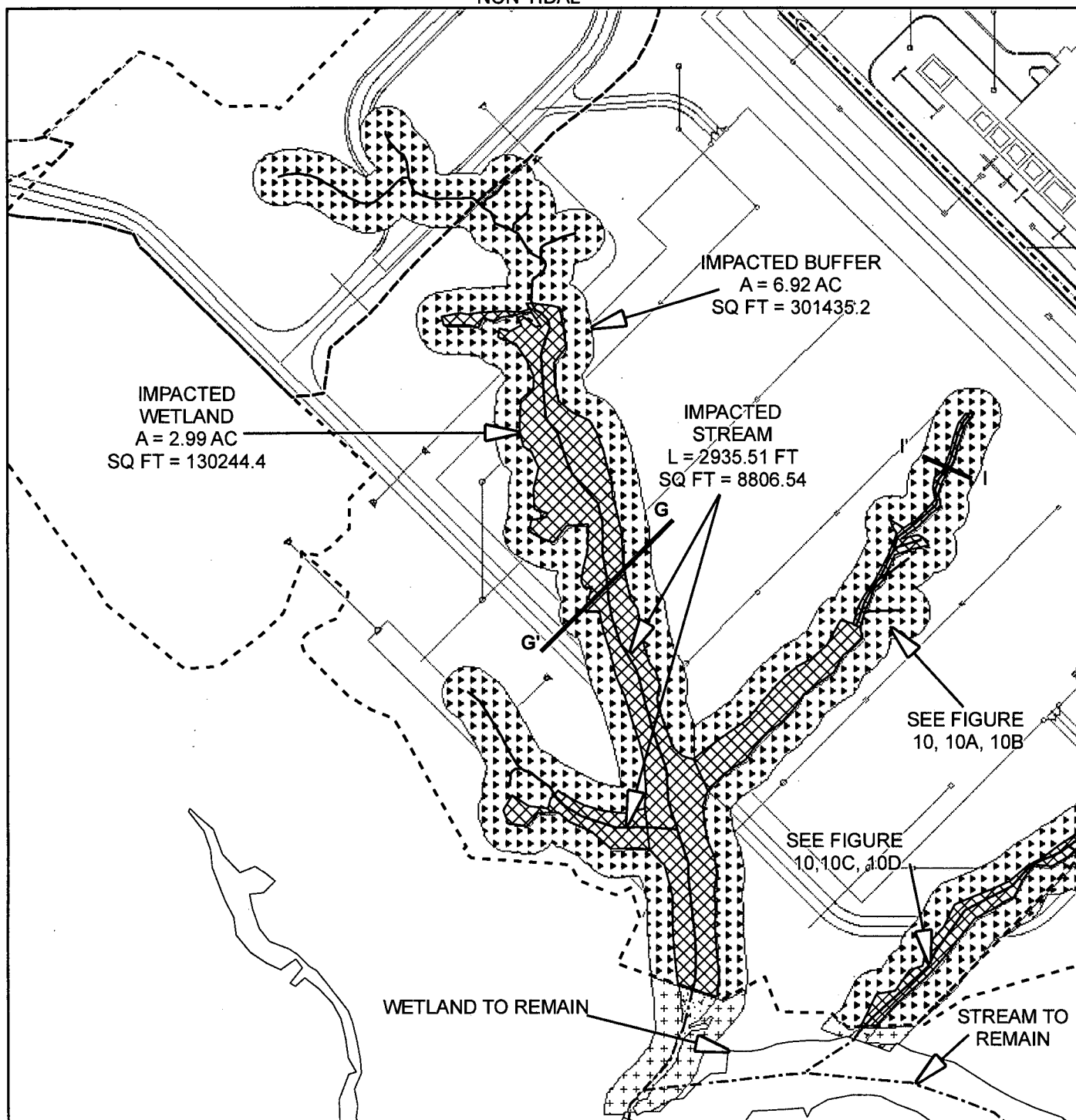


CALVERT CLIFFS NUCLEAR POWER PLANT

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NON-TIDAL



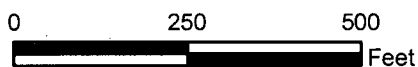
PURPOSE: PLANT EXPANSION

DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598

SITE LAYOUT FIGURE 9A

SCALE IN FEET

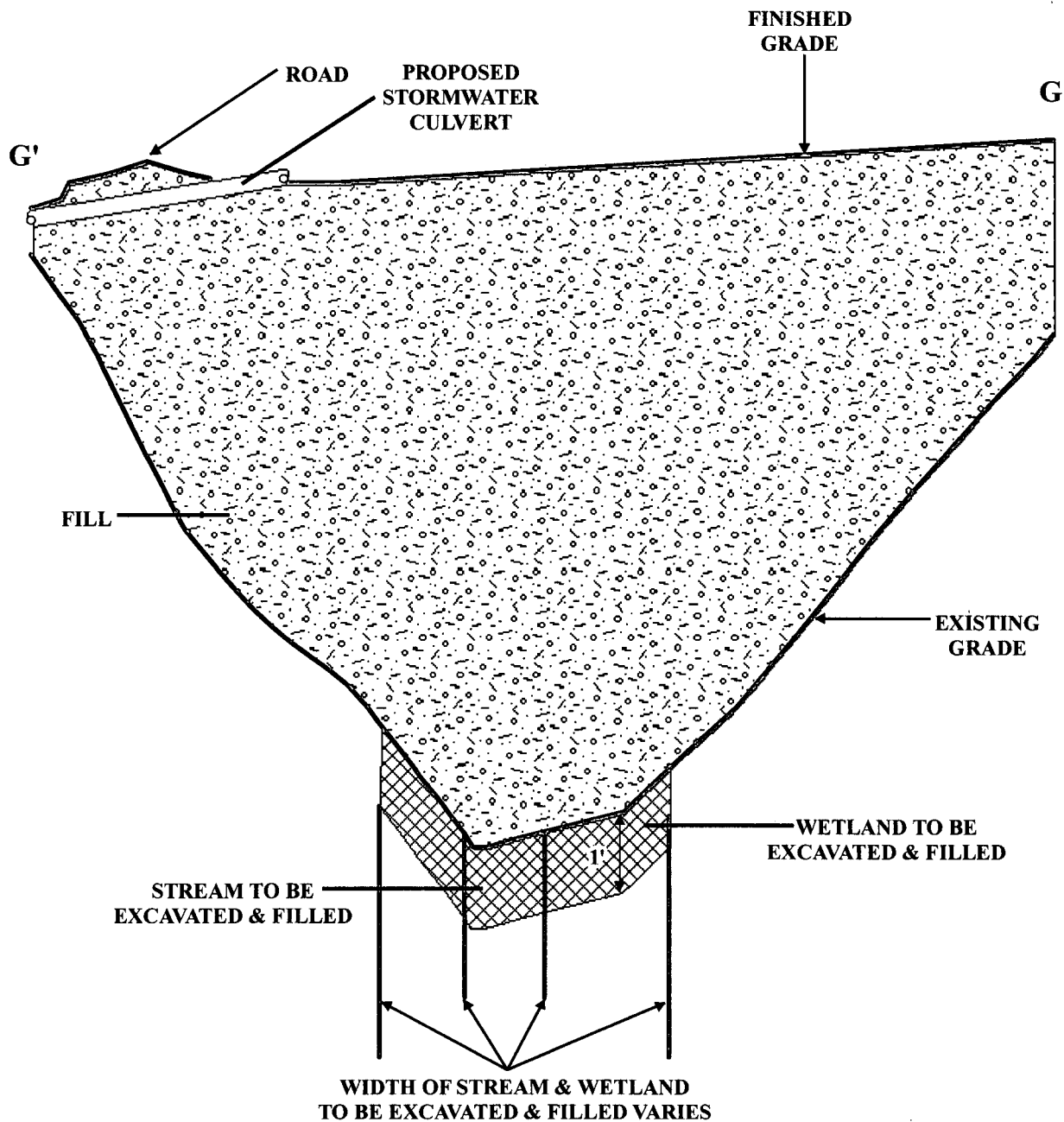


CALVERT CLIFFS NUCLEAR POWER PLANT

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VERTICAL EXAGGERATION x 6

PURPOSE: PLANT EXPANSION

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



CROSS SECTION
Figure 9B

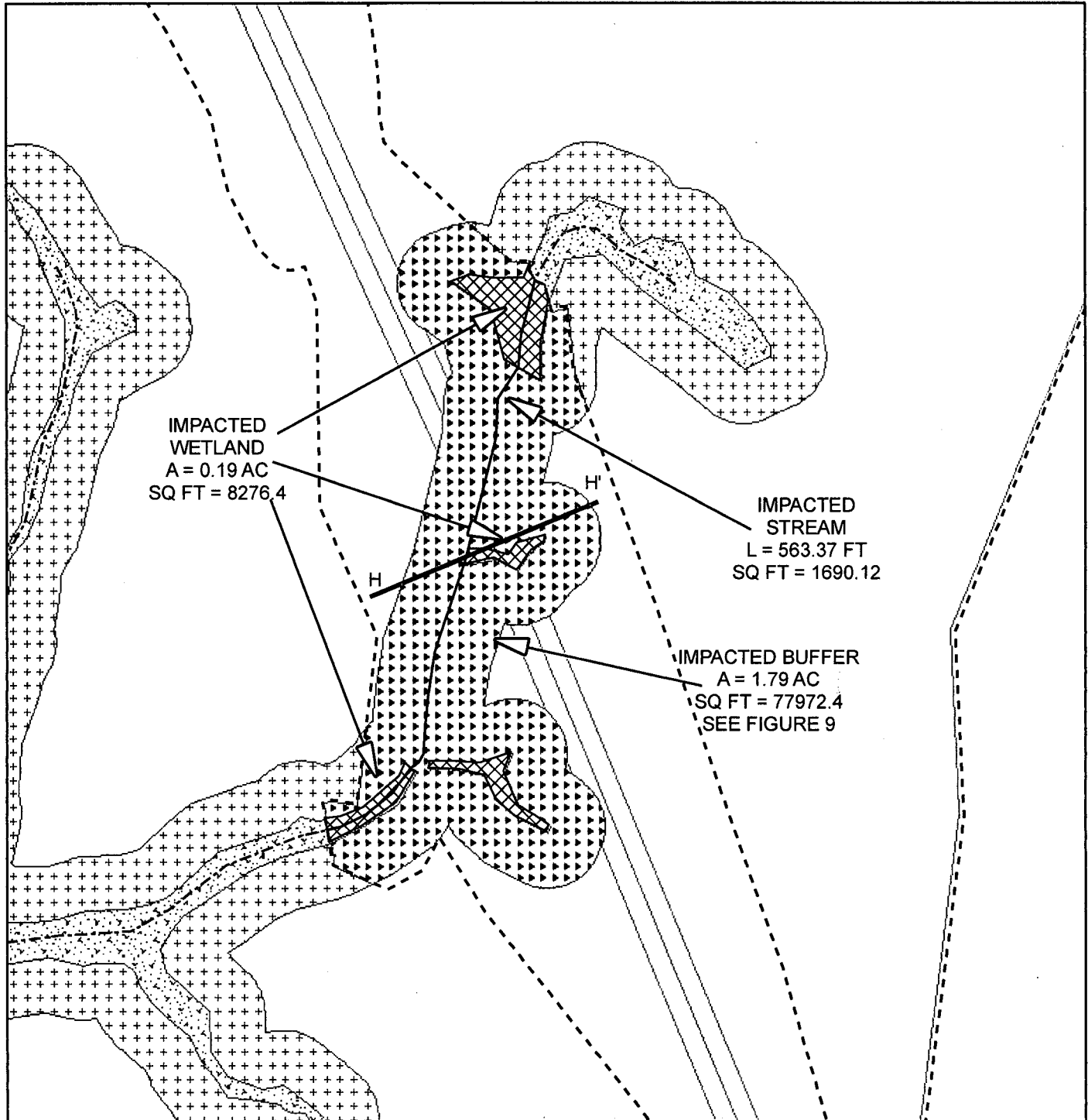
NOT TO SCALE

**CALVERT CLIFFS NUCLEAR
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NON-TIDAL



PURPOSE: PLANT EXPANSION

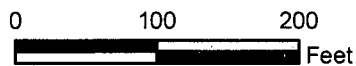
DATUM: (NGVD 29)

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38.424133
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SITE LAYOUT FIGURE 9C

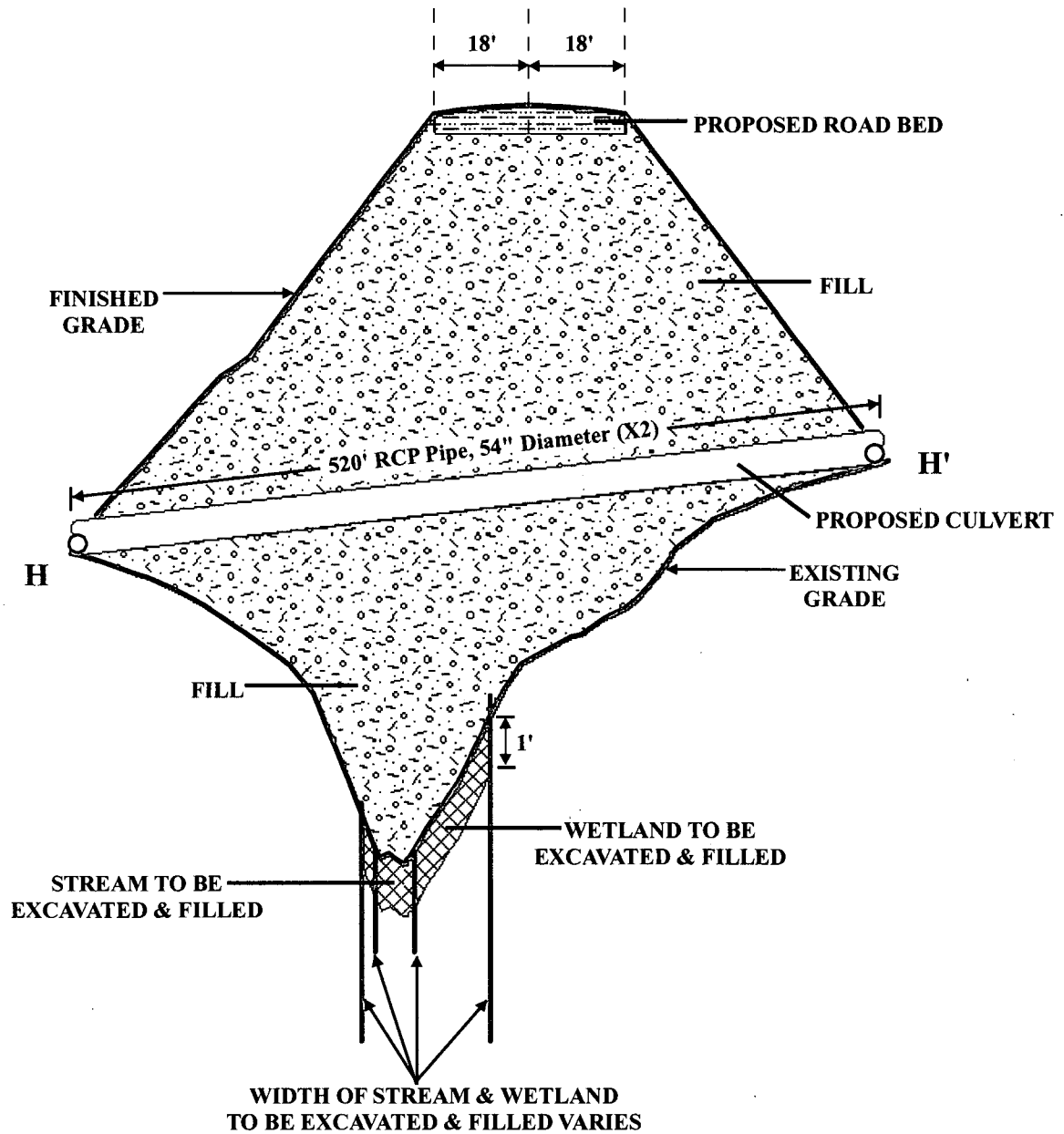
SCALE IN FEET



CALVERT CLIFFS NUCLEAR POWER PLANT

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VERTICAL EXAGGERATION x 4

PURPOSE: PLANT EXPANSION

PROJECT LATITUDE/LONGITUDE:
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CROSS SECTION Figure 9D

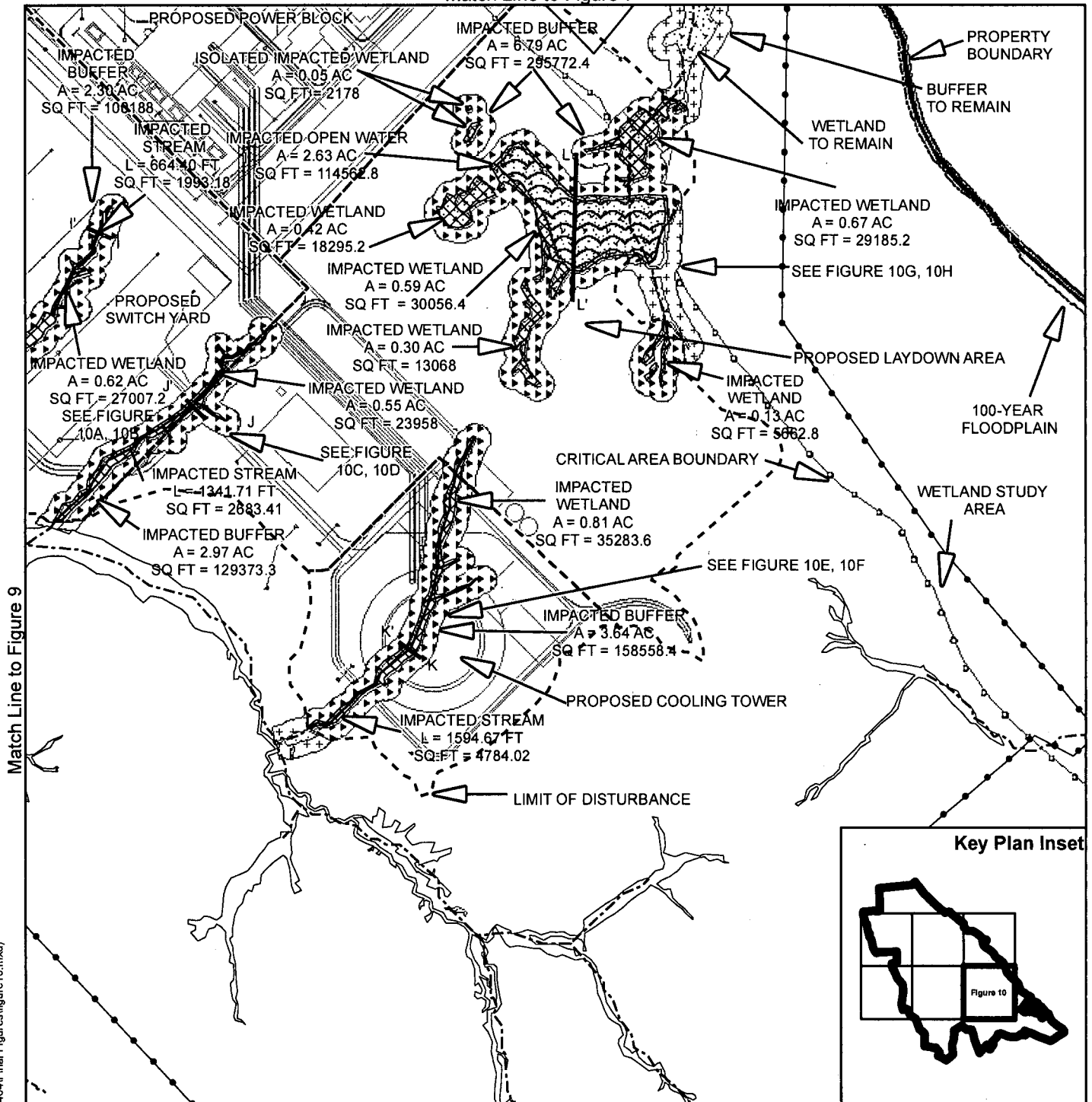
NOT TO SCALE

CALVERT CLIFFS NUCLEAR POWER PLANT

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NON-TIDAL
Match Line to Figure 7



PURPOSE: PLANT EXPANSION

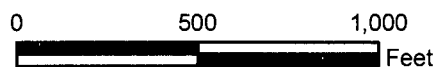
DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



**SITE LAYOUT
FIGURE 10**

SCALE IN FEET



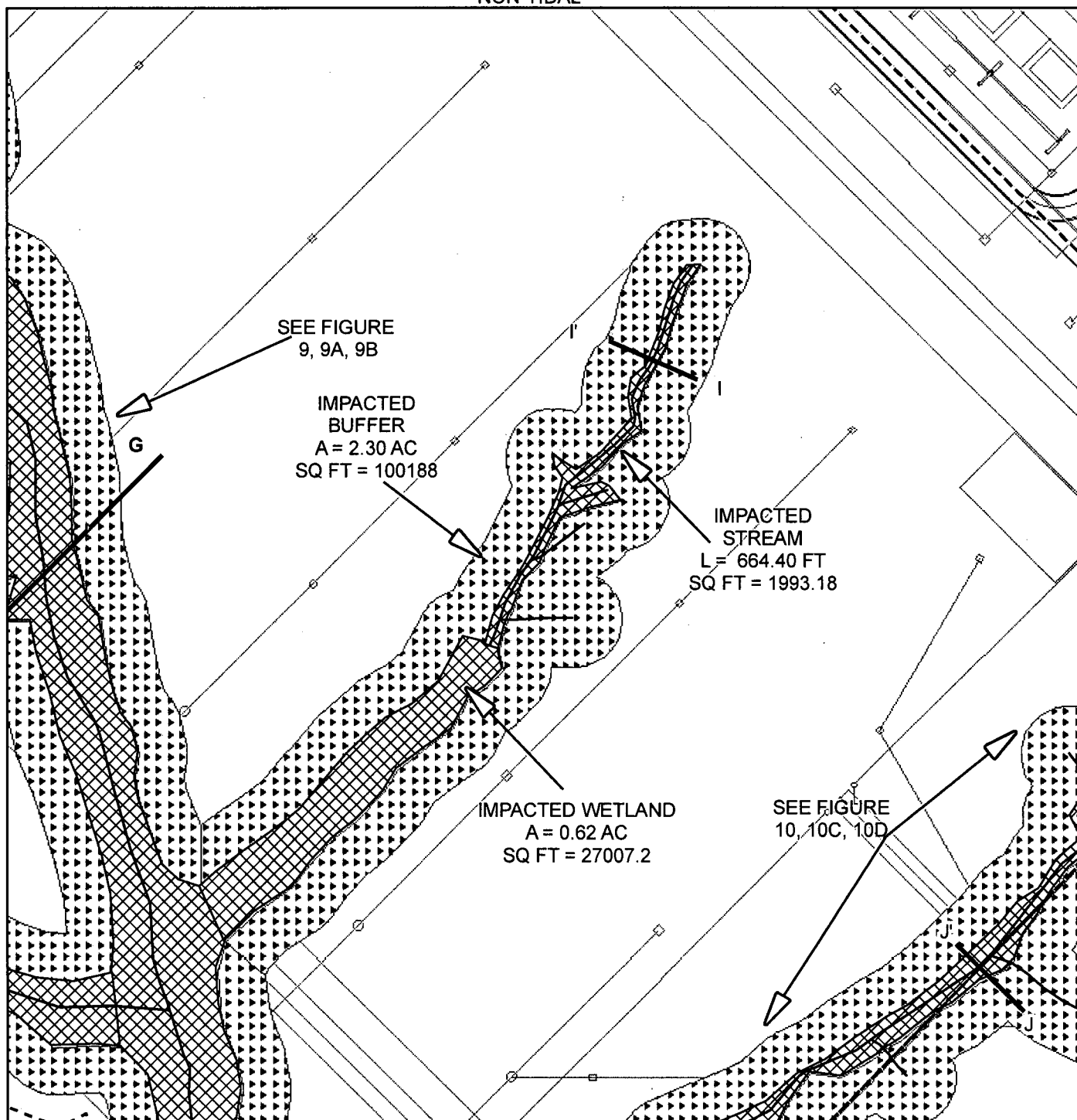
**CALVERT CLIFFS NUCLEAR
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NON-TIDAL



PURPOSE: PLANT EXPANSION

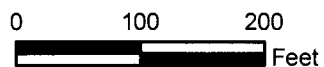
DATUM: (NGVD 29)

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38.424133
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SITE LAYOUT FIGURE 10A

SCALE IN FEET

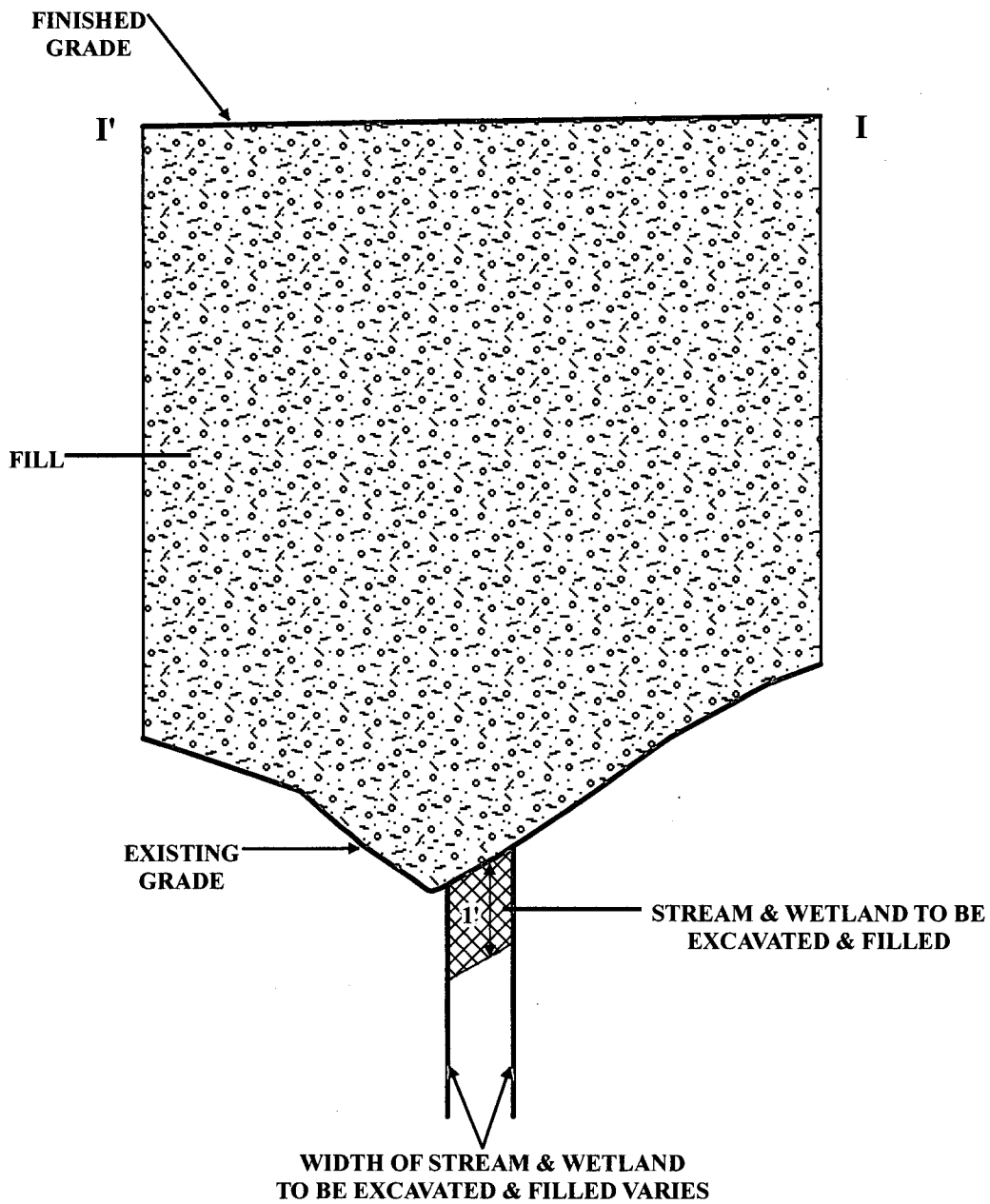


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PURPOSE: PLANT EXPANSION

PROJECT LATITUDE/LONGITUDE:
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CROSS SECTION Figure 10B

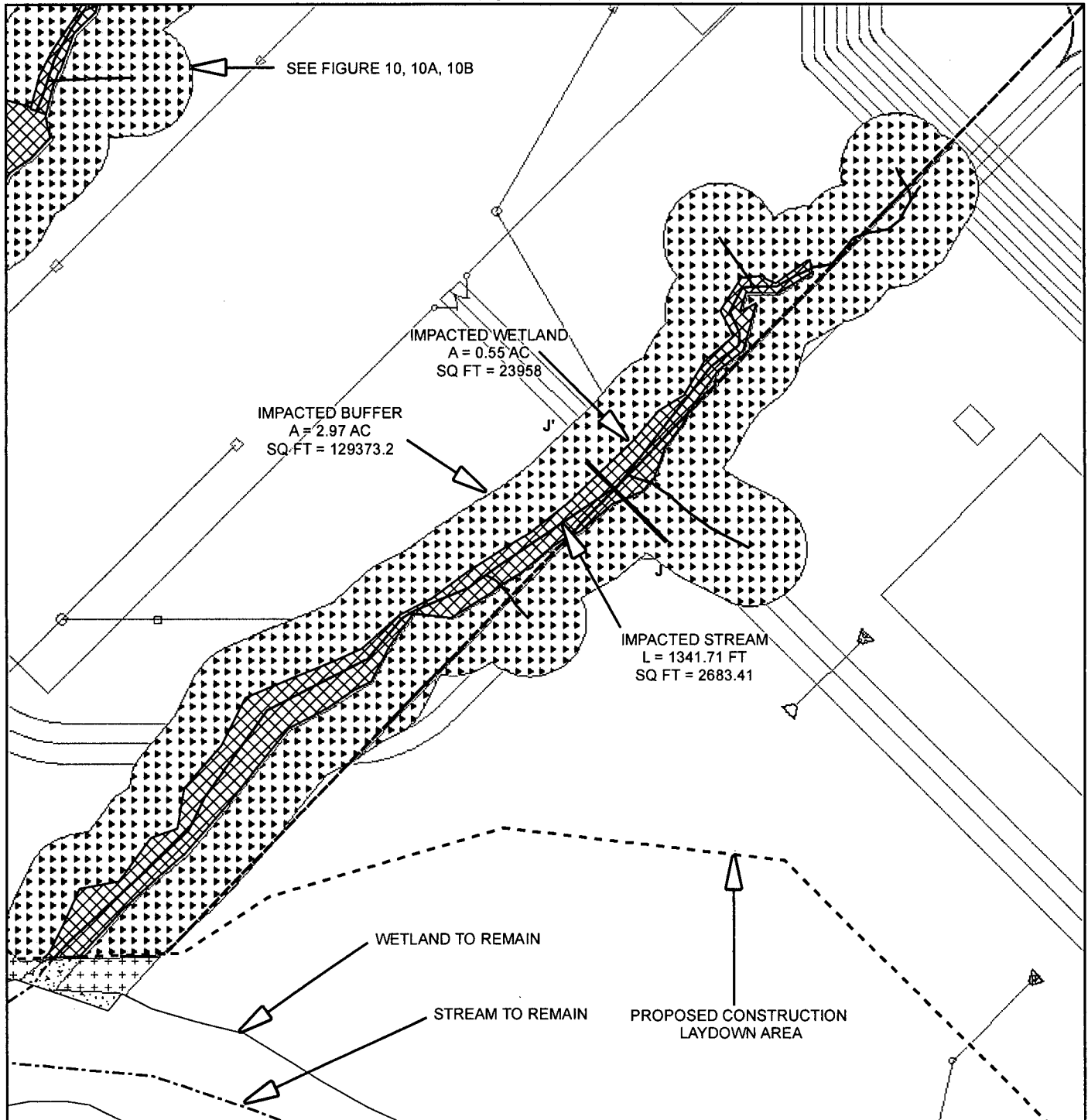
NOT TO SCALE

CALVERT CLIFFS NUCLEAR POWER PLANT

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NON-TIDAL



PURPOSE: PLANT EXPANSION

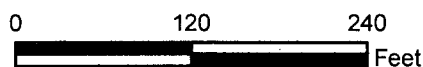
DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



SITE LAYOUT FIGURE 10C

SCALE IN FEET

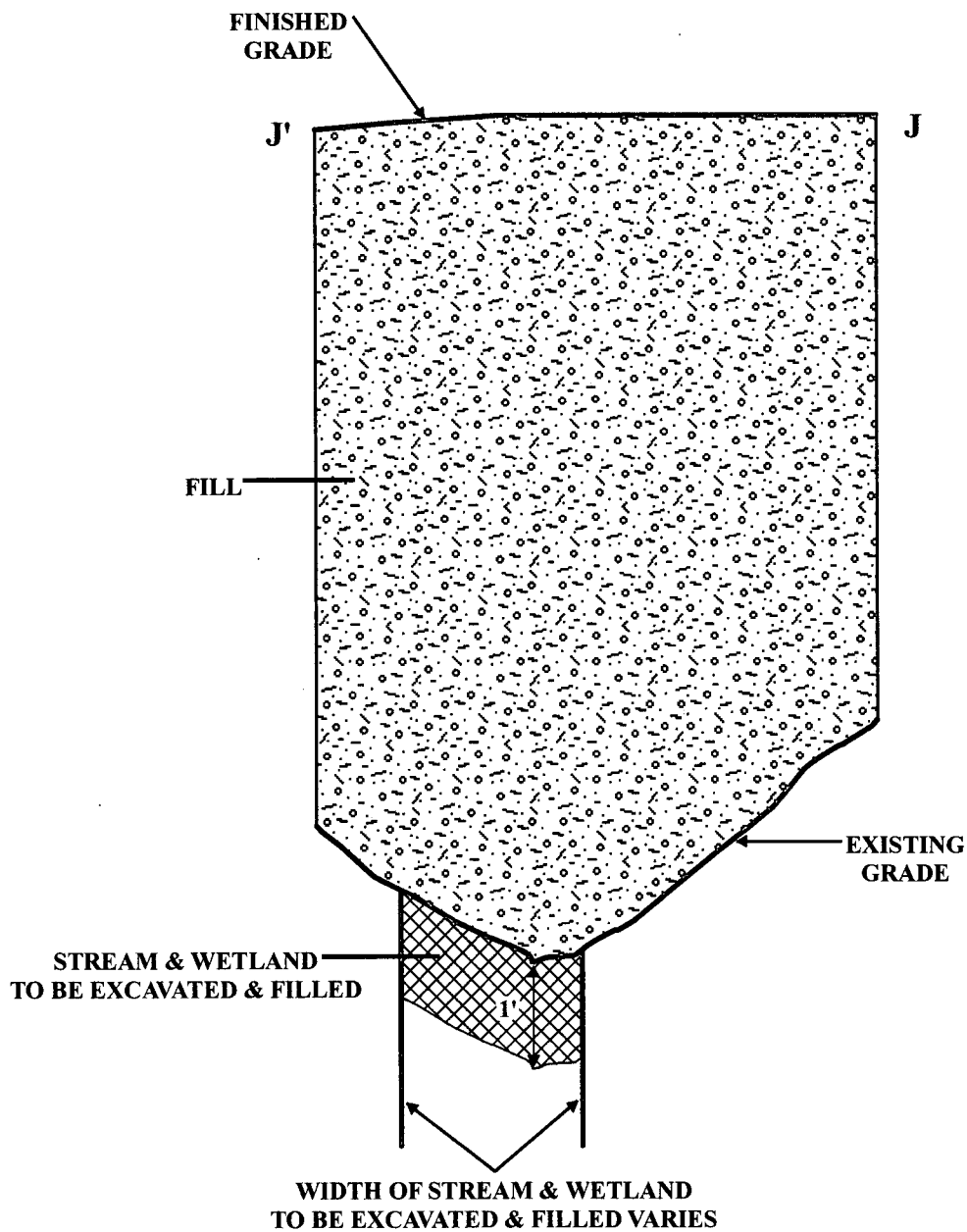


CALVERT CLIFFS NUCLEAR POWER PLANT

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VERTICAL EXAGGERATION x 4

PURPOSE: PLANT EXPANSION

PROJECT LATITUDE/LONGITUDE:
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CROSS SECTION
Figure 10D

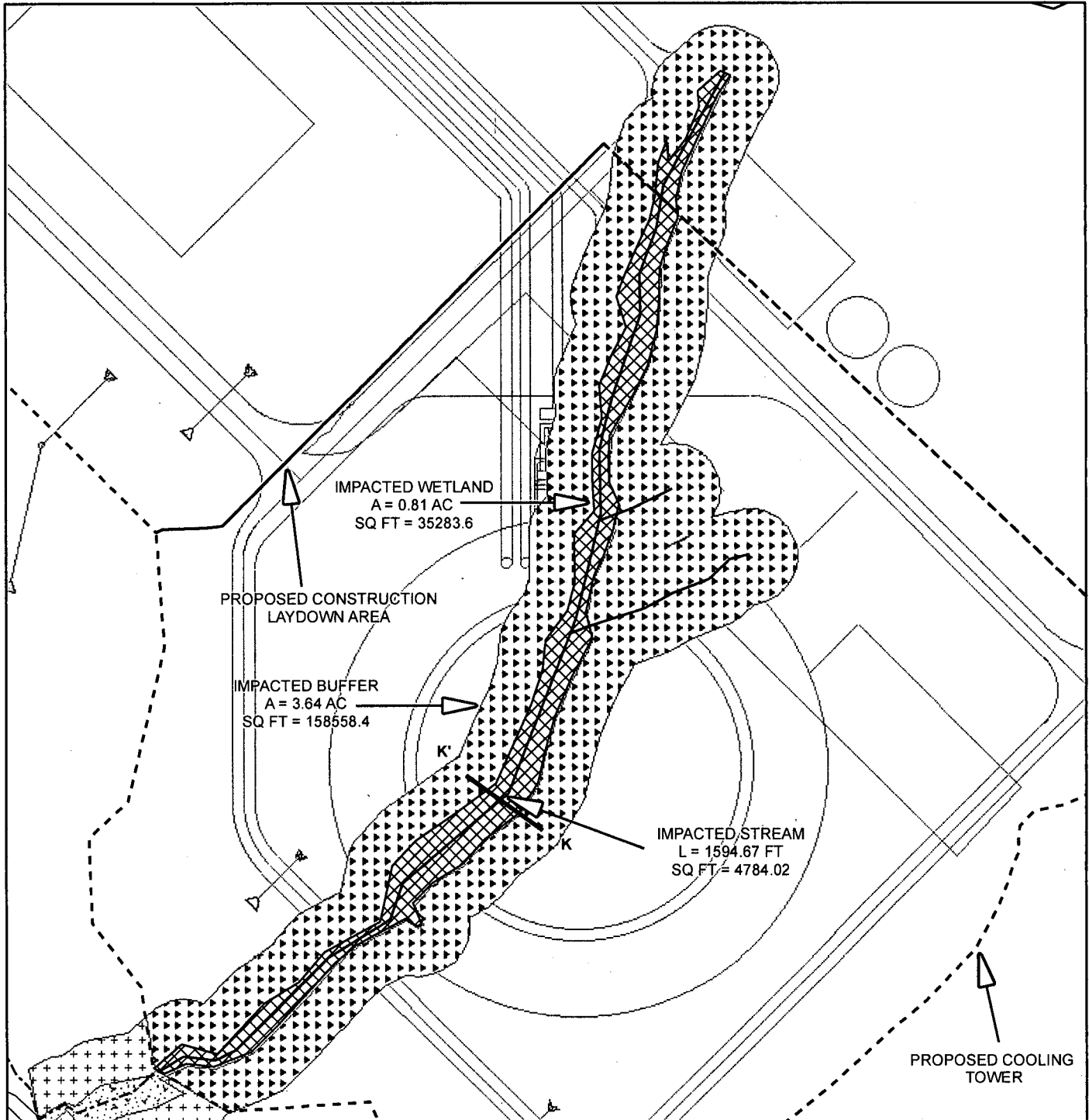
NOT TO SCALE

**CALVERT CLIFFS NUCLEAR
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NON-TIDAL



PURPOSE: PLANT EXPANSION

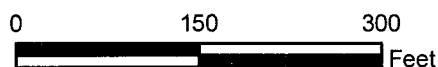
DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
38.424133
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SITE LAYOUT FIGURE 10E

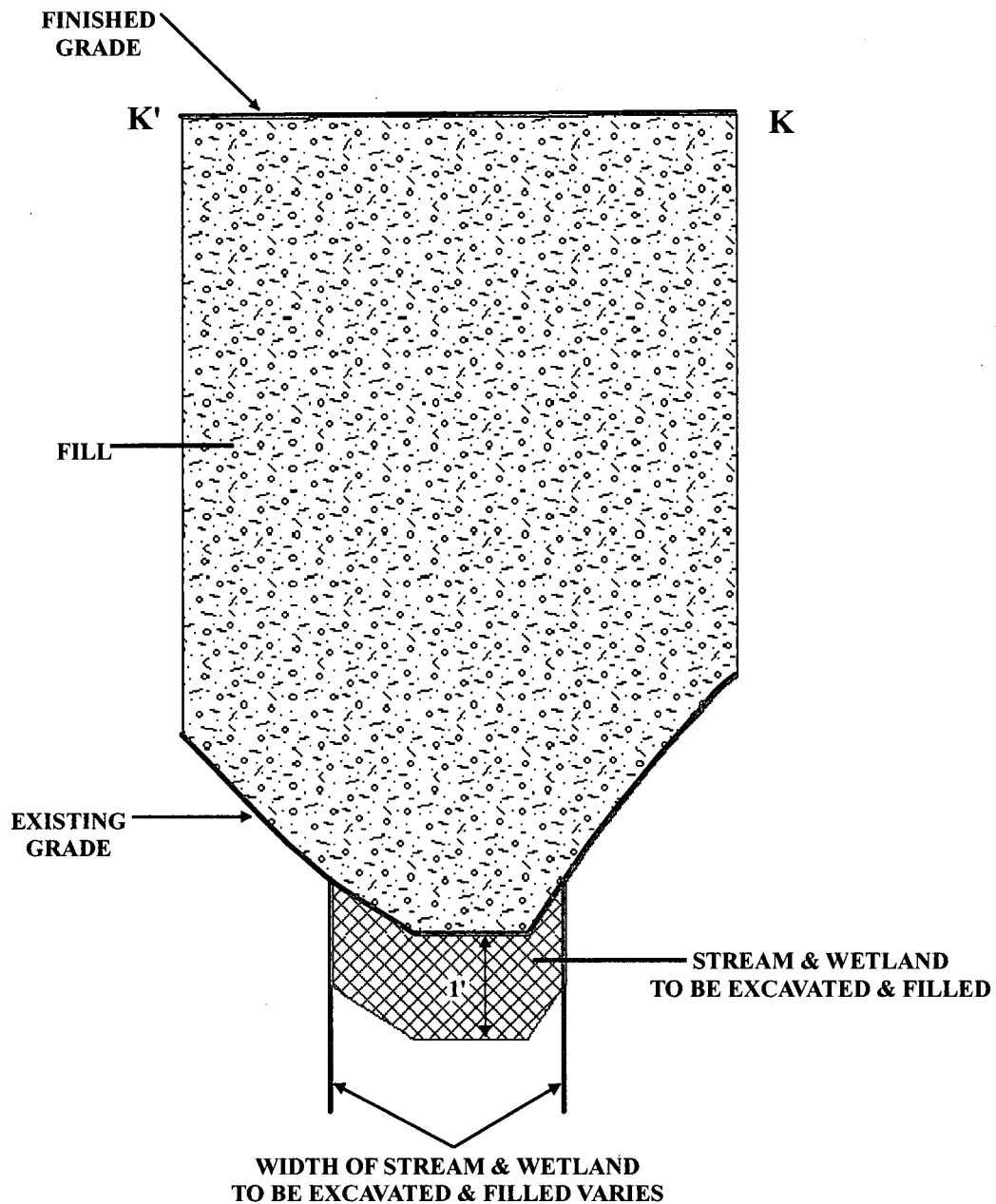
SCALE IN FEET



CALVERT CLIFFS NUCLEAR POWER PLANT

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VERTICAL EXAGGERATION x 4

PURPOSE: PLANT EXPANSION

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



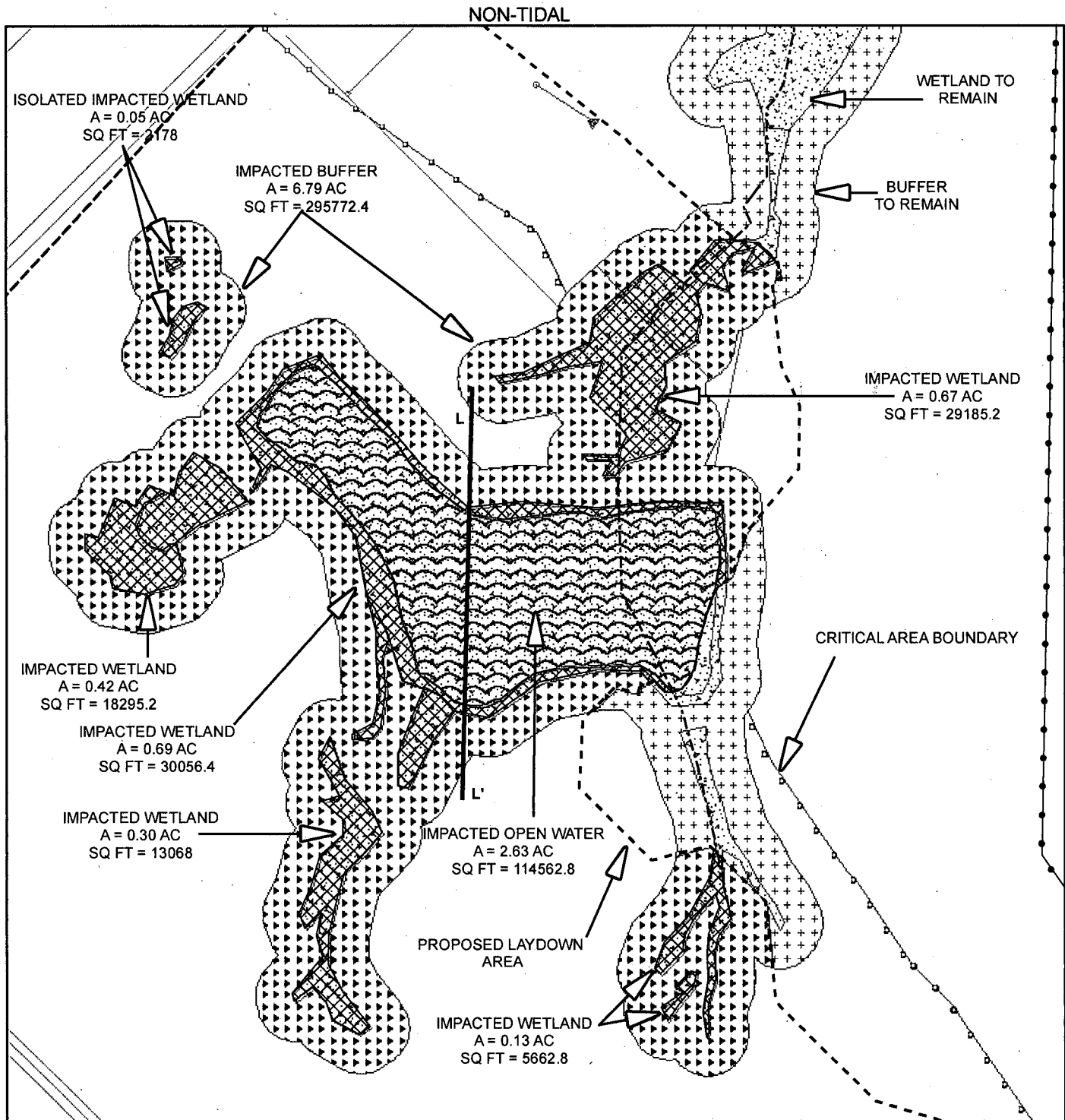
CROSS SECTION
Figure 10F

NOT TO SCALE

CALVERT CLIFFS NUCLEAR
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DATE: 5/09/08 REV1 7/14/08



PURPOSE: PLANT EXPANSION

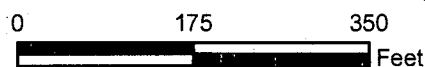
DATUM: (NGVD 29)

PROJECT LATITUDE/LONGITUDE:
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SITE LAYOUT FIGURE 10G

SCALE IN FEET

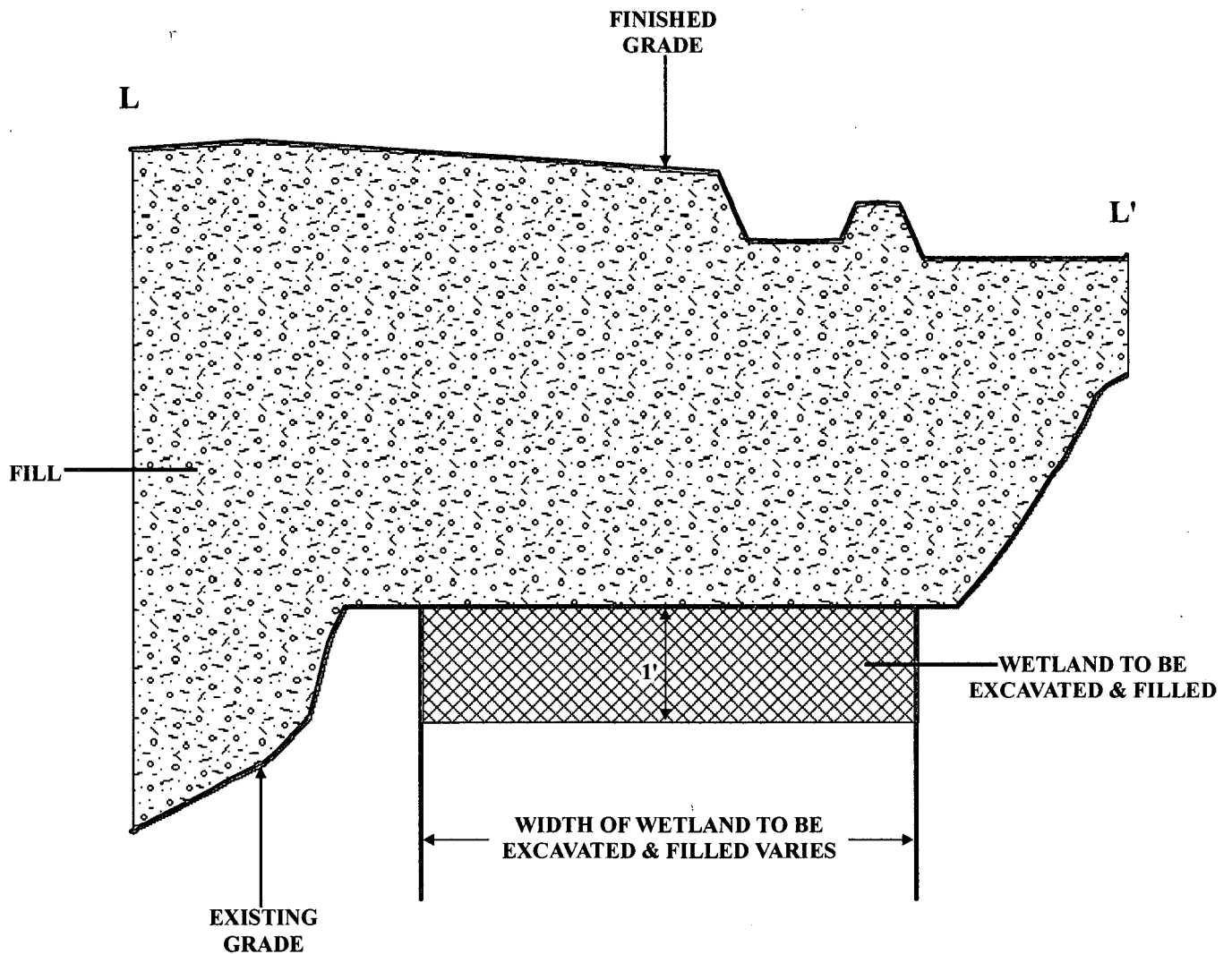


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VERTICAL EXAGGERATION x 10

PURPOSE: PLANT EXPANSION

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598



CROSS SECTION
Figure 10H

NOT TO SCALE

**CALVERT CLIFFS NUCLEAR
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