

Comments
11/19/07 KS

CE 653-07 Furnace Bay
Site Plan

S1829-6528

Martin O'Malley
Governor

Anthony G. Brown
Lt. Governor



Margaret G. McHale
Chair

Ren Serey
Executive Director

STATE OF MARYLAND
CRITICAL AREA COMMISSION
CHESAPEAKE AND ATLANTIC COASTAL BAYS

1804 West Street, Suite 100, Annapolis, Maryland 21401
(410) 260-3460 Fax: (410) 974-5338
www.dnr.state.md.us/criticalarea/

November 19, 2007

Ms. Amanda Gordon
Cecil County Office of Planning and Zoning
129 E. Main Street, Room 300
Elkton, MD 21921

Re: Furnace Bay Mining Facility – Reclamation Site Plan
Local Project #052130

Dear Ms. Gordon:

Thank you for submitting the above referenced site plan for review and comment. Constellation Power Source Generation is proposing to reclaim an existing mining pit using non-hazardous coal ash as a structural fill material. The property is shown as Tax Map 35 Parcel 121 and consists of 138 acres of which a portion is located within the Resource Conservation Area (RCA).

Surface mining operations are allowed within the Critical Area provided they meet the requirements of COMAR 27.01.07 and the Cecil County Critical Area Program. Further, COMAR 27.07.07.02B encourages reclamation of existing mining operations as soon as possible and to the extent possible. The Critical Area report included in this submittal states the purpose of the activity is to reclaim the quarry with coal ash and to create a natural area that would support re-establishment of a natural community. The fill facility will be lined and installed with a leachate collection system that will pump any leachate into a treatment area. The leachate treatment area will be partially located within the 110-foot Buffer to tidal waters. Additionally, an area of fill will occur within the 110-foot Buffer; however the report states that fill material in this area will be limited to clean fill.

Based on the information provided, I have the following comments:

1. The leachate treatment lagoon must be located completely outside the 110-foot Buffer. While the Criteria and the Cecil County Critical Area Program recognize existing quarry operations may impact the Buffer and encourage reclamation, the proposed lagoon is to be located in an area that is not currently mined. Further, the lagoon is a new



development activity. New development activities, including mining and related facilities are prohibited within the Critical Area Buffer.

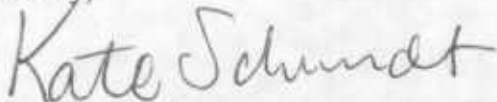
2. Cecil County Zoning Code Section 196.3 states existing sand and gravel operations should establish a Buffer to the maximum extent possible. Prior to issuance of any permits, the applicant should prepare a Buffer Management Plan that will demonstrate the planting and establishment of the entire Buffer to occur as part of any reclamation activities.

Prior to final site plan approval, the applicant should forward to this office a response to the following comments and questions:

1. How much fill is proposed to be placed within the 110-foot Buffer? The report indicates this fill will be for open mining areas, however these areas not indicated on the site plan. The areas of fill within the Buffer appear to be currently developed with roads, stockpile areas and other uses to support the mining operation. Further detail should be provided as to why these areas must be filled.
2. The site plan indicates two discharge point facilities located in the 110-foot Buffer but no other information is provided. Please have the applicant describe the use of these facilities in more detail. The response should include information regarding how these facilities will not affect the tidal habitats which contain the state-listed endangered species water horsetail and vetchling.
3. It is unclear what reclamation activities, if any, are proposed for the areas on the site plan marked settling pond #2 and #3. Portions of the dirt road surrounding these facilities are within the 110-foot Buffer. Will these areas be established in vegetation or otherwise reclaimed?
4. How is the leachate proposed to be treated? Are there any necessary facilities associated with the treatment lagoon? Please have the applicant provide further details regarding the requirements for treatment and the process for treatment.

Thank you for the opportunity to provide comments. We look forward to reviewing the above information once it is submitted. If you have any questions, please contact me at (410) 260-3475.

Sincerely,



Kate Schmidt
Natural Resource Planner

CE653-07

Robert L. Ehrlich, Jr.
Governor

Michael S. Steele
Lt. Governor



Martin G. Madden
Chairman

Ren Serey
Executive Director

**STATE OF MARYLAND
CRITICAL AREA COMMISSION
CHESAPEAKE AND ATLANTIC COASTAL BAYS**

1804 West Street, Suite 100, Annapolis, Maryland 21401
(410) 260-3460 Fax: (410) 974-5338
www.dnr.state.md.us/criticalarea/

July 20, 2006

Ms. Yvonne Dedrickson
Constellation Generation Group Environmental
Constellation Energy Group
1005 Brandon Shores Road
Baltimore, Maryland 21226

Re: Critical Area Requirements for Reclamation of the Furnace Bay Sand and Gravel Mine with Coal Ash

Dear Ms. Dedrickson:

This letter is in response to your request for staff at the Critical Area Commission to make a determination on the use of "fly-ash" in the Critical Area as a component of the proposed mine reclamation project at Furnace Bay Sand and Gravel Mine. The Furnace Bay Sand and Gravel Mine is located in Cecil County off Mountain Hill Road. A portion of the site lies within the Cecil County Critical Area and is designated Resource Conservation Area (RCA).

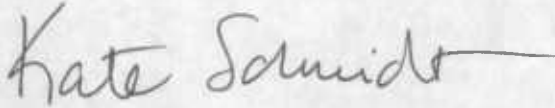
Based upon preliminary information you have provided, the reclamation process will involve the use of coal fly-ash to reclaim the existing mining pit. As you are aware, Critical Area regulations play a role in land use activities. Specifically, surface mining activities and reclamation must comply with Cecil County Critical Area zoning law. Initially, this office had concerns that the use of "fly-ash" might be considered a solid or hazardous waste, or that the reclamation site could be interpreted as a collection or disposal facility which would be regulated under COMAR 27.01.02.02G.. In response to our inquiries with Maryland Department of the Environment, Mr. Ed Dexter, Administrator of the Solid Waste Program provided us with the following information:

- MDE regulates flyash under discharge permits rather than landfill permits based on an interpretation of the Pozzolan Act.
- The Pozzolan Act states that flyash can be used for, among other things, land reclamation, if it exhibits pozzolanic qualities and sediment and erosion control regulations and other permits apply.
- COMAR 26.04.07.04C(7) provides an exemption in the solid waste regulations for pozzolans and does not require a solid waste permit.
- Environment Article Section 9-1701 provides that a recyclable material is not a solid waste if it is being returned to the market place as a raw material or product, such as for reclamation or as a soil amendment.

Based upon the above information and that in this instance the use of flyash meets the "pozzolan exemption" staff at the Critical Area Commission concur that flyash may be used in the Critical Area for this sand and gravel mine reclamation project.

Please remember, that the proposed project will require approval and permits from Cecil County, for among other things, compliance with Critical Area regulations. If you have further questions regarding Cecil County's requirements please contact Mr. Joe Johnson at 410-996-5220. You may also contact me at anytime at 410-260-3475.

Sincerely,

A handwritten signature in cursive script that reads "Kate Schmidt". The signature is written in dark ink and includes a horizontal flourish at the end.

Kate Schmidt
Natural Resource Planner

Cc: Mr. Eric Sennstrom, Director, Cecil County Dept of Planning and Zoning
Mr. Joe Johnson, Cecil County Dept. of Planning and Zoning

FURNACE BAY

Existing Conditions & Critical Area Environmental Assessment Report

Prepared for:

Constellation Power Source Generation
2030 Brandon Shore Road
Baltimore, MD 21226
(410) 787-6928

Prepared by:



KCE ENGINEERING, INC.

KCE Engineering, Inc.
Executive Center
3300 North Ridge Road, Suite 315
Ellicott City, Maryland 21043
(410) 203-9800

October 19, 2007

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I. INTRODUCTION

KCE Engineering, Inc. was contracted by Constellation Power Source Generation to perform a Critical Area Environmental Assessment of the existing Stancill Quarry (Furnace Bay) facility. The purpose of the assessment is to determine the existing resource constraints of the Site and determine the potential impacts that could result from reclamation of the mining pit using non-hazardous coal ash as a structural fill material. The subject property is located off of Mountain Hill Road in the Perryville section of Cecil County, Maryland.

To complete this assessment a field review and delineation of the sites resources were completed. The delineation of wetland and water resources was limited to those areas occurring on the property but outside the limits of the active mining permit. Wetland/waters resources occurring within the limits of the permit are considered non-jurisdictional. Wetland and waters resources occurring within 100 feet of the site have been estimated on the plans.

II. EXISTING CONDITIONS

The subject property is currently developed and utilized as a sand and gravel quarry. The site is situated between Mountain Hill Road and Furnace Bay. The property is shown on County Tax Map 35 as Parcel 121 and occupies 138± acres.

The property includes active quarry, support and processing facilities, storage areas, undisturbed forested buffers and vacant land. The quarry operation includes the excavation of sand, gravel and clay from an open hillside along the southern edge of the property. These are trucked through the site to processing areas on the northern end of the site. Quarried material is processed and stored at the site before being transported offsite for use. Trucking and heavy equipment use are standard activities on the site. Previously quarried portions of the site are used for water storage for processing water and for stilling of wash material. At the time of our visits water from a holding pond had been released into the quarry basin and a portion of the quarry was flooded. The stilling ponds are generally colonized by common reed. The quarry operation has been ongoing on the site since at least 1972.

The majority of the site occurring within the limits of the active mining permit are devoid of any natural/native vegetation. An area of natural regeneration has developed on a 4.0± acre portion of the sites western edge, along Furnace Branch. This area appears to have been previously disturbed and contains small stockpiles and old equipment. Natural regeneration in these areas is dominated by black locust, sweet gum, multiflora rose and red cedar. Scattered locust, sweet gum, red cedar and multiflora rose colonization occurs within the limits of the active mining permit. This vegetation is young and no trees 12 inches or greater in diameter were observed within the quarry limits.

Principio Creek flows into Furnace Bay along the northwest corner of the site. A steep wooded hillside extends up from the rivers edge to the developed portions of the site. This area is

dominated by a regeneration forest stand that includes red maple, American sycamore, black locust, sweet gum and multiflora rose. Some wetland development is present along the floodplain terrace. These wetlands are dominated by wool grass, soft rush and river birch. These wetland resources appear to be offsite.

A tributary to Principio Creek located north of the site, flows in westerly direction. This stream channel has been impacted by beavers who have constructed a low dam across the stream valley. The stream valley now contains a large open water pond with emergent wetland development occurring above and below the ponded area. Water lilies are common in the open water areas of the system. The emergent wetlands contain diverse communities. Upstream of the beaver pond the wetlands are typified by soft rush, woolgrass, seedbox, sweet flag, common reed, sweet pepper bush and cinnamon fern. Downstream of the dam the wetlands include cattails, hibiscus, numerous sedges, soft rush and woolgrass. The bank that extends up from the wetland/stream system to the site is short and steep. Vegetation includes red maple, red cedar, sycamore and sweet gum.

The outer edge of the active quarry is buffered from the adjacent properties and Mountain Hill Road by a narrow strip of forest. This forest is generally typical of the mixed oak stands that also occur on the adjacent properties. The canopy stand includes white oak, chestnut oak, black oak, red oak, tulip poplar, red maple, beech and black cherry. The understory of the stand includes red maple, black cherry, sassafras and black gum. The shrub layer contains thickets of paw-paw, mountain laurel, spicebush, multiflora rose, arrowwood and black haw. The stand is dominated by canopy trees that are 8-14 inches in diameter at breast height.

In the southeast corner of the site a small wetland/stream resource enters the property from a small pipe under Mountain Hill Road. Along the off-site east side of the road, the system includes a seep with adjacent wetlands that are typified by highbush blueberry and red maple. Onsite, the wetlands occur both beyond and within the limits of the mining permit. The wetlands outside the permit area were flagged A 1-6 and are best described as shrub dominated. Sweet pepper bush and arrowwood are common in this area. The vegetation appears to be routinely impacted by maintenance of the road shoulder and the overhead lines. The wetland drains into the active mining permit area and is piped through the perimeter road.

A second wetland system is located in the southwestern corner of the site. This forested wetland system area includes a vernal pool feature. The system occurs within the wooded fringe of the quarry. The vernal pool sits within a slight depression in the landscape. The system appears to receive its water from a combination of groundwater and seasonal surface water accumulation. Red maple occur within and adjacent to the vernal pool. The vernal pool sits above the adjacent wetlands that drain to the edge of the active quarry. The wetlands in this location are generally dominated by emergent vegetation though the character of the landscape is forested. The vegetation within the body of the wetlands is dominated by stilt grass, woolgrass and arrow-leaved tear thumb. This wetland system was field flagged B 1-12.

A tidal/nontidal wetland system extends onto the site through a narrow, steeply bounded draw from Furnace Branch. The open water, tidal portion of the wetland extends into the draw where the system becomes vegetated. The vegetative cover transitions from emergent to forested.

The lower end of the system is dominated by cattails, sweet flag and woolgrass. As the hydro-period of the wetland system decreases woody vegetation becomes more dominant. Winterberry, sweet pepper bush, red maple, black gum, and river birch are common in the forested body of the system. An intermittent stream meanders through the lower portion of the wetland system. This stream may have been a perennial prior to the initiation of the quarry excavation as the topography suggests that the stream drained through the site. The excavation has intercepted the base flow of the upper portion of the remnant channel. This system was flagged with flag line C 1-34.

The surrounding land use is generally low density residential, forest and agriculture. The offsite forest is dominated by mixed oak communities that are similar to the onsite forest. A large agricultural property is present to the south of the subject site. An active eagle nest is located to the north of the subject property on a wooded hillside north of the beaver pond. This nest was constructed in 2005 and produced two young in 2006.

III. PROPOSED DEVELOPMENT

The proposed development of the site includes reclamation of the quarry with coal ash as a structural fill to create a natural area supporting re-establishment of a natural community on the site. It is our understanding that the development of the coal ash fill will include a liner and stormwater control facilities.

A 6 inch clay liner with permeability of less than 1×10^{-7} cm/sec covered by a synthetic liner or an alternative liner system designed to provide equal or greater protection will be placed over a prepared sub-base at the bottom of the cell receiving coal ash. Leachate from the bottom of the cell and runoff which has any contact with coal ash will be pumped into a leachate treatment area. Leachate generated from contact with coal ash will be treated for any contaminants before being released into the receiving stream. The treatment of the leachate will conform to the quality of effluent regulated by a NPDES Permit.

The coal ash will be trucked to the site for placement. The coal ash will be contoured to mimic pre-quarry conditions of the property, capped and planted with natural vegetation. Appropriate sediment and erosion control techniques will be utilized during the active ash placement period of the project. All work associated with the reclamation activities will occur within the limits of the active mining permits.

IV. CRITICAL AREA ENVIRONMENTAL ASSESSMENT

The Chesapeake Bay Critical Area (CBCA) program identifies several factors that must be considered during the development of a property. As part of the assessment of the development proposal, each factor has been identified and the potential impacts highlighted:

110 Foot Buffer

The CBCA regulates a 110 foot buffer from all tidal wetland/water limits. The existing land uses, including the active mining permit area, extend into the 110 foot buffer in several locations. These areas would be included in the proposed limits of disturbance for the proposed project. Work occurring within the buffer would be related to restoration of the buffer and no permanent developed improvements are proposed within the buffer. Any fill needed to restore the mining pit within the 110 foot buffer will be accomplished with native soils or clean fill; no coal ash will be placed within the critical area buffer. Appropriate sediment and erosion control measures will be utilized during development of the site to replace the function of the reduced buffer.

25 Foot Nontidal Wetland Buffer

The State regulates a 25 foot buffer from the wetland limits. In areas outside the active mining permit, the buffers will be retained and undisturbed. Areas within the limits of the mining permit are not subject to the 25 foot buffer requirements. Coal ash will not be used as fill material within the 25 foot nontidal wetland buffer.

Rare, Threatened or Endangered Species

Endangered Species means any species of plant or animal that has been designated as such by regulations by the Secretary of the Maryland Department of Natural Resources, or which has been determined to be "endangered" species pursuant to the Federal Endangered Species Act, U.S.C. Subsection 1531 Et Seq., and which inhabits the State of Maryland during some part of its life cycle.

Threatened Species means any species of plant or animal designated as such by regulation by the Secretary of the Department of Natural resources, or which has been determined to be a "threatened" species pursuant to the Federal Endangered Species Act, cited above.)

Species in Need of Conservation means any species of plant or animal that has been designated as such by regulation by the Secretary of the Department of Natural resources pursuant to Natural Resources Article, Subsection 10-2A-03 and 4-2A-03, Annotated Code of Maryland.

Natural Heritage Area means any communities of plants or animals that are considered to be among the best statewide examples of their kind, and are designated by regulation by the Secretary of the Department of Natural Resources.

A letter has been forwarded to the Maryland Department of Natural Resources to determine the status of any known or potential RTE species populations on or adjacent to the site. The bald eagle nest adjacent to the site would be considered a Habitat Protection Area.

Bald Eagle nests are normally afforded a 1/4 mile protection zone. Typically pre-occurring activities that exist within the protection zone are allowed as long as no direct threat is proposed to the nest tree. Given that the conversion from quarry operations to reclamation activities will not significantly change the activity level or type of activity on the site, the proposed project should not adversely impact the eagle nest. The MD DNR has reviewed the eagle issue at this site and responded that, "The Maryland Department of Natural Resources will not require any restrictions be imposed on the proposed ash reclamation project within the current limits of disturbance of the surface mining operations due to the nesting bald eagles." A copy of the letter from Mr. Glenn Therres of the MD DNR is attached as Appendix A.

Riparian Forest/Interior Dwelling Bird Habitat

Forest Interior Dwelling Birds (FIDS) means the species of birds identified by the Maryland Forest, Park, and Wildlife Service that require relatively large forested tracts in order to breed successfully such as various species of flycatchers, warblers, vireos, and woodpeckers.

In Maryland, studies have indicated that areas of 100 acres or larger are usually necessary to support viable populations of forest interior dwelling birds (Bushman and Therres 1988).

Given that the proposed development will not disturb any forest, the project should have no detrimental impact on FIDS habitat. At the completion of the project, the FIDS habitat function in the area of the subject property will be enlarged and enhanced.

Colonial Nesting Waterbird Nesting Site

Colonial Nesting Water Birds means herons, egrets, terns, and/or glossy ibis, which for purposes of nesting, congregate (that is "colonize") in relatively few areas, at which time the regional populations of these species are highly susceptible to local disturbances.

The State of Maryland has been monitoring the nesting sites of colonial water birds since 1984 (Gates 1985).

The proposed project will not impact colonial nesting waterbird habitat.

Historic Waterfowl Staging Areas

Wintering and Migrating Waterfowl Habitat means an area of open water and land where adjacent fowl gather during migration and throughout the winter season. These areas are said to be "historic" in the sense that their location is common knowledge and because these areas have been used regularly during recent times.

The proposed project will not impact colonial historic waterfowl staging areas

Anadromous Fish Propagation Waters

Anadromous fish means fish that travel upstream (from their primary habitat in the ocean) to fresh waters in order to spawn.

The identification of fish spawning areas was performed by the MD Department of Natural Resources between 1970-1975 (O'Dell, et al. 1975). Additional work was performed by the Natural Resources Institute for the University of Maryland (Lippson 1973). The Department of Natural Resources maintains ongoing sampling of State waters to monitor anadromous fish spawning activity.

Anadromous fish spawning habitat requires continuous surface waters connected to tidal water. There is no anadromous spawning habitat within the limits of the project area and therefore, the project will have no adverse impact.

V. CONCLUSIONS

The proposed conversion of the quarry operation to a coal ash disposal site will not adversely impact the regulated resources that occur on and adjacent to the property. The ultimate reclamation of the site will enhance the environmental characteristics of the property and surrounding lands. The reclamation of the site should incorporate native plantings that will complement the adjacent vegetative communities.

The project meets the goals and intent of the Critical Area Regulations.

VI. AUTHORSHIP

This study was performed by John Canoles and Henry Leskinen. They have extensive experience in natural resources assessments and inventories. Mr. Canoles received his Bachelor of Sciences degree in Natural Science with an Environmental Conservation Concentration from Towson State University in Towson, Maryland. Mr. Leskinen received his Bachelor of Sciences degree from St. Mary's College of Maryland in St. Mary's City, Maryland. Messrs. Canoles and Leskinen have attended the Maryland State Forestry Conservation Act workshop and have been accepted as Qualified Professionals by MD DNR Public Lands and Forestry (see Appendix B).

APPENDIX A



Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
John R. Griffin, Secretary
Eric Schwaab, Deputy Secretary

March 15, 2007

Yvonne F. Abernethy
Constellation Generation Group, LLC
6330 Woodside Executive Court
Aiken, SC 29803

RE: Environmental Review for Site on Furnace Bay, Cecil County, Maryland.

Dear Ms. Abernethy

This is in response to your request for an environmental review for a potential ash reclamation project site in Cecil County, Maryland. The property under consideration is the Stancill mine property off Mountain Hill Road in Perryville. Your proposal is to reclaim the surface mine site over the next 20-25 years with coal ash from Constellation's electric generating facilities in Baltimore.

As you are aware, there is a bald eagle nest on the north end of the property along the shoreline of the long lit car pond. The nest is within close proximity of the operational buildings and parking area for the surface mine. The standard bald eagle nest protection guidelines are as follows:

1. Establish a protection area of $\frac{1}{4}$ mile radius around the nest tree. Within this area, establish three zones of protection: Zone 1 extends from the nest tree to a radius of 330 feet, Zone 2 extends from 330 feet to 660 feet in radius, and Zone 3 extends from 660 feet to $\frac{1}{4}$ mile (1320 ft).
2. No land use changes, including development or timber harvesting, should occur in Zone 1.
3. Construction activities, including clearing, grading, building, etc., should not occur within Zones 1 and 2 and ideally no closer than 750 feet from the nest.
4. Selective timber harvesting may occur in Zone 2, but clearcutting should be avoided.
5. No construction or timber harvesting activities should occur within the $\frac{1}{4}$ mile protection zone during the eagle nesting season, which is from December 15 through June 15.

However, since this pair of bald eagles selected their nest location in close proximity to the active surface mine and the proposed ash reclamation activities will be similar to those of the mining operations (i.e., daily truck and heavy equipment, maintenance, parking, workers onsite), adherence to the standard protection guidelines is not warranted. Provided no ash reclamation

Tawes State Office Building • 580 Taylor Avenue • Annapolis, Maryland 21401

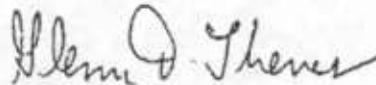
410.260.8D JR or toll free In Maryland 877.620.8DNR • www.dnr.maryland.gov • TTY users call via Maryland Relay

activities are conducted any closer to the nest than the current surface mining activities, the nesting eagles will not be adversely impacted. The Maryland Department of Natural Resources will not require any restrictions be imposed on the proposed ash reclamation project within the current limits of disturbance of the surface mining operations due to the nesting bald eagles. Consultation with the U.S. Fish & Wildlife Service regarding this matter is recommended since the bald eagle is also protected by the federal government.

The Wildlife and Heritage Service's database also indicates that there are records for state-listed endangered plants water horsetail (*Equisetum fluviatile*) and vetchling (*Lathyrus palustris*) that occur within close proximity to the project site, to the west of Principio Creek in tidal marsh habitat. If the appropriate habitat is present for these species they could potentially occur on the project site itself. Since populations of these native plants have declined historically we would encourage efforts to help conserve them across the state. Provided no alterations to the wetlands on the north end of your property occur, there should not be any impacts to potential habitat. Feel free to contact us if you would like technical assistance regarding the conservation of these important species.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8572.

Sincerely,



Glenn D. Therres
Wildlife and Heritage Service
MD Dept. of Natural Resources

cc: L. Byrne, DNR
C. Kappic, USFWS

ER #2007.0654.ce

APPENDIX B



William Donald Schaefer
Governor

Maryland Department Of Natural Resources

Public Lands and Forestry
Tawes State Office Building
580 Taylor Avenue
Annapolis, MD 21401

Torrey C. Brown, M.D.
Secretary

January 12, 1993

Mr. John Canoles
Eco-Science Professionals, Inc.
P.O. Box 5006
Glen Arm, MD 21057

Dear Mr. Canoles,

We of the Maryland Department of Natural Resources have reviewed your application for qualified professional status for the purpose of developing Forest Stand Delineations and Forest Conservation Plans. We are happy to inform you that our review found you met the requirements of COMAR 08.19.06.01 for this status. Your name will be included on a list of qualified professionals to be sent to jurisdictions with power to review Forest Stand Delineations and Forest Conservation Plans.

Participation by professionals like you is key to successful implementation of the Forest Conservation Act. Thank you for submitting your application.

Sincerely,

Eric Schwaab
Director, Forestry Programs

c:\letters\qualpro.apr

Telephone: _____
DNR TTY for the Deaf: 410-974-3683



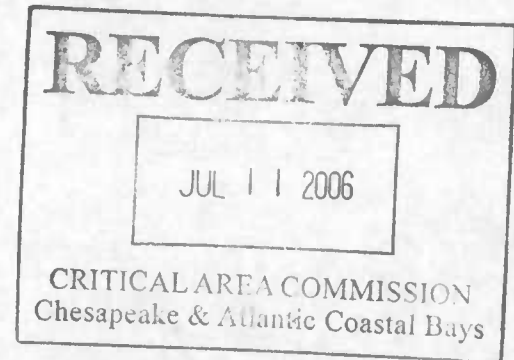
1005 Brandon Shores Road
Baltimore, Maryland 21226



July 6, 2006

Eric Sennstrom
Director of Planning, Zoning, Parks and Recreation
Cecil County Department of Planning and Zoning
129 East Main Street, Room 300
Elkton, MD 21921

Mary Owens
Chief, Program Implementation Division
Critical Area Commission
1804 West Street, Suite 100
Annapolis, MD 21401



Subject: Critical Area Requirements for Reclamation of the Furnace Bay Sand and Gravel Mine with Coal Ash

Dear Mr. Sennstrom and Ms. Owens :

Constellation Power Source Generation, Inc. ("Constellation") is working with the owner of the Furnace Bay Sand and Gravel Mine located off Mountain Hill Road in Cecil County to reclaim the mining area with coal ash. A sizable portion of the mining pit extends into the critical area and therefore, Constellation is requesting clarification and approval to reclaim the existing mining pit inside the critical area using coal ash. The 1992 Maryland Department of the Environment (MDE) approved reclamation plan includes reclamation in these areas and lists ash as a potential reclamation material. Our intent is to reclaim the mined land with compacted non-hazardous coal ash to approximate original grade and return the land to beneficial use. Compacted coal ash is a stable structural fill material that is suitable for creation of open space, or construction of recreational facilities or buildings for business development. We have a completed ash fill site in Anne Arundel County that is now a thriving business park and recreational area with ball fields.

Pollution prevention requirements for ash placement will be included as part of a revised Mining Permit to be approved by MDE. We met with MDE's Dr. Tien, Water Management Administration, and Mr. Larrimore, Office of Surface Mining, and proposed the following environmental controls:

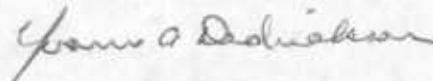
- At least four feet of separation will be maintained between ash and seasonal high groundwater level.
- No ash placement will occur within the 100 year flood plain.
- Stable, erosion resistant slopes of 3:1 or less will be used with at least a 2% grade to prevent ponding and minimize infiltration.
- The ash will be compacted to at least 95% of its maximum dry density to provide a stable building medium and to minimize leachate generation.
- Dust control will be provided by moisture conditioning the ash prior to transport and the use of an on-site water truck.

- A clay cap, at least 12 inches thick with a permeability of 10^{-7} cm/sec or less, covered with at least 12 inches of vegetated soil will be used to minimize infiltration and erosion.
- A clay liner (or equivalent) with a leachate collection and treatment system will be installed to prevent groundwater degradation. The discharge of the treatment system will be permitted under a new NPDES permit.
- No more than 5 acres of ash will be exposed to weather at any time. Fill areas will be capped within 30 days of reaching final grade.
- Groundwater wells will be monitored quarterly for State of Maryland inorganic drinking water MCLs (antimony, arsenic, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, selenium, thallium, nitrate, nitrite). Nickel, sulfate, chloride, TSS, and pH would also be monitored.

The ability to reclaim the mining pit within the critical area is an essential part of our plans. If we cannot place ash inside the critical area it will not be economical for us to proceed with this beneficial use project. We would greatly appreciate a timely response with a determination of whether or not ash placement within the previously mined critical area will be allowed.

Thank you for your consideration. I can be reached by email at yvonne.a.dedrickson@constellation.com or by phone at 410-787-5456 if you have questions or need additional information.

Sincerely,



Yvonne A. Dedrickson
Lead Engineer
Constellation Generation Group Environmental

cc: Joseph Johnson, Jr., Resource Plans Reviewer, Cecil County Office of Planning and Zoning
Regina Esslinger, Chief, Project Evaluation Division, Maryland Critical Area Commission
Kate Schmidt, Natural Resources Planner (Cecil County), Maryland Critical Area Commission

Schmidt, Katherine

From: Barbara Cook [b.cook25@verizon.net]
Sent: Tuesday, July 11, 2006 11:34 AM
To: Dedrickson, Yvonne A; Schmidt, Katherine
Cc: Tracey, Edward F; Bose, Salil; Jeffcoat, John L; Basciano, John M; tds@stancills.com; esw@stancills.com; Burkman, Jim; Johansen, Bonnie L
Subject: Re: Fly ash or Pozzolan relating regulations in COMAR



MDE letter p1.JPG (472 KB)



MDE letter p2.JPG (178 KB)



COMAR15-407.JPG (196 KB)

Kate,

I just wanted to follow up with a little more documentation of coal ash regulatory status for your use.

Attached is a 1995 letter from MD Dept of Environment, Water Management Administration, to the owner of a sand/gravel mine where ash placement is currently ongoing, clarifying that "under State law flyash is not regulated as a hazardous waste and that, as a pozzolan material, it is exempt from regulation as a solid waste. The Department considers mine reclamation a beneficial use of flyash..." [see second paragraph of letter]

As Dr. Tien of MDE noted in his e-mail of 5/31/06, the "pozzolan exemption" in COMAR 26.04.07.04.C(7) exempts from solid waste permitting any "Pozzolan management activities conducted pursuant to Natural Resources Article, 7-464 Annotated Code of Maryland", since renumbered as 15-407. See attachment. According to this rule, the only restrictions on uses of coal ash for land reclamation or landfill are that sound engineering practices be followed, and that dust and silt control be implemented.

Hope this is helpful.

Barbara E. Cook, P.E.
GeoEnvironmental Group, LLC
216 Northwest Terrace
Silver Spring, MD 20901
301-681-4442
b.cook25@verizon.net

----- Original Message -----

From: "Dedrickson, Yvonne A" <Yvonne.A.Dedrickson@constellation.com>
To: "Schmidt, Katherine" <KSchmidt@dnr.state.md.us>
Sent: Friday, July 07, 2006 5:12 PM
Subject: RE: Fly ash or Pozzolan relating regulations in COMAR

Kate,

Thank you for your response. Hopefully the attached letter we refer to as the "pozzolan exemption" letter will help demonstrate that pozzolan management activities (which include mine reclamation with coal ash) are not considered to be nor are they regulated as solid waste. I am not in my office so I can't easily locate additional supporting regulatory material at this time but I will ask Barbara Cook, our consultant, to forward additional regulatory language to you.

Also, please note that the mined area already extends into the critical areas and we are reclaiming this land to the original approximate grade. Reclamation is required to restore the mined area to pre-mining conditions.

I am trying to set up a meeting with Eric Sennstrom of Cecil County Planning and Zoning

for the week of July 30. I don't have a date set yet, but I will let you know when it is incase you and/or others from the Commission would like to attend.

Yvonne

Barbara - If you have additional ash regulatory information or citations available, please send them to Kate in my absence.

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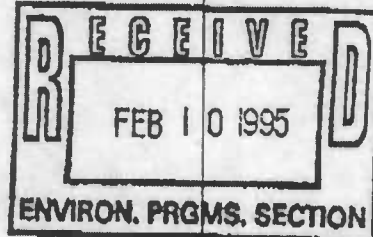
MARYLAND DEPARTMENT OF
MDE 2500 Broening Highway • Baltimore,
(410) 631-3000

Post-it Fax Note	7671	Date 2-16-95	# of pages 2
To	B. COOK	From	G. NILSEN
Co./Dept.		Co.	
Phone #		Phone #	
Fax #	656-8059	Fax #	

Parris N. Glendening
Governor

David A.C. Carroll
Secretary

February 7, 1995



Mr. Thomas I. Baldwin, President
BBSS, Inc.
1 Church View Road
Millersville MD 21108

Dear Mr. Baldwin:

Thank you for advising me of your plans to use flyash to reclaim the surface mine in Gambrills. As the Director of the Water Management Administration (WMA), Secretary Carroll has asked that I respond to you directly.

We agree that under State law flyash is not regulated as a hazardous waste and that, as a pozzolan material, it is exempt from regulation as a solid waste. The Department considers mine reclamation a beneficial use of flyash and agrees that the BGE flyash fill sites have been successfully reclaimed without detriment to the environment.

Your mine reclamation project is an opportunity to restore a gravel pit to an environmentally stable condition. It is our determination that an individual discharge permit will not be required.

As you have discussed with members of my staff, stormwater coverage will be provided under our general permit. Since a condition of the general permit requires the development and implementation of a pollution prevention plan for activities on the site, any necessary conditions relating to possible monitoring and operational plans and procedures can be incorporated into this document. Design and operational plans can be developed to ensure that the reclamation process proceeds in a manner that is not detrimental to ground or surface waters. Enclosed is an application for stormwater coverage under our general permit. This will supersede your original application to EPA, since that agency is not issuing stormwater permits in Maryland.

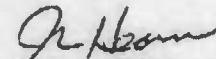
We would like to meet with you to discuss the pollution prevention plan which needs to be developed prior to the placement of ash at the site. Working together we can ensure that the reclamation of your site proceeds with minimal environmental impact. Once

Mr. Thomas I. Baldwin
Page 2

agreement has been reached on the pollution prevention plan, we envision executing a letter of agreement confirming its implementation.

If you would like to discuss this further, please call Dane Bauer, Deputy Director, Water Management Administration, at (410) 631-3512 or Jeffrey Rein, Environmental Program Manager, Wastewater Discharge Permit Program, at (410) 631-3752.

Sincerely,


J.L. Hearn, Director
Water Management Administration

JLH/shf

Enclosure

cc: Ron Nelson
~~Ken~~ Wesselman, Baltimore Gas and Electric ✓
Keith

Document 1 of 1**Source:**

Maryland Code/ENVIRONMENT /TITLE 15. MINES AND MINING/SUBTITLE 4. RULES AND REGULATIONS GOVERNING MINING ACTIVITY /§ 15-407. Pozzolan.

§ 15-407. Pozzolan.

(a) *Definition.* - In this section "pozzolan" means the finely divided residue which results from combustion of ground or powdered coal and is released by combustion gases, as defined by the test methods published by the American Society for Testing Methods.

(b) *Restrictions on permissible uses.* -

(1) Any person who uses pozzolan for landfill shall do so in a manner which complies with sound engineering practices.

(2) Any person who uses pozzolan for landfill, structural building, soil improvement, agriculture, soil conditioning, or land reclamation shall minimize dust and wind erosion and shall comply with all silt control regulations and permit requirements of the Department.

[1975, ch. 532, § 2; 1983, ch. 198; 1987, ch. 306, § 3; 1995, ch. 488, §§ 2, 8.]

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Schmidt, Katherine

From: Ed Dexter [edexter@mde.state.md.us]
Sent: Monday, July 10, 2006 10:17 AM
To: Schmidt, Katherine; Edmon Larrimore
Cc: Esslinger, Regina; Ching-Tzone Tien
Subject: Re: Furnace Bay Mine Reclamation

Greetings,

Fly ash is a somewhat unique material in that it is the subject of a law, called the Pozzolan Act. Because of that statute, flyash is generally regulated under Discharge Permits, not under landfill permits. Here's a summary of my understanding of the regulatory situation:

1). Flyash repositories did used to be required have landfill permits but the Department made the decision in the early 1980s to regulate them under discharge permits. The decision was based on an interpretation of the Pozzolan Act (which at that time was still a Natural Resources Article).

2). The Pozzolan Act was passed in 1975 and is now embodied in Env. Art. Section 15-407 (that's part of the Mining Article, that came into the Environment Article from DNR in 1995 when the Mining Program did, although it was amended in 1987 to reference MDE's regs), which says that you can use flyash for, among other things, "landfill, structural building, soil improvement, agriculture, soil conditioning, or land reclamation" if it exhibits pozzolanic qualities as determined by unspecified ASTM tests (and ASTM does have tests for characterizing the extent to which a flyash sets up into I think 4 categories of pozzolan); you follow "sound engineering practices" (whatever they are); and you comply with the "silt control regulations and permit requirements of the Department."

3). This is interpreted to allow it for use in filling or reclaiming land. The last sentence is interpreted to mean the sediment and erosion control regs, and whatever permit requirements the Department chooses to apply.

4). In keeping with the law, an exemption in the solid waste regulations for pozzolans (then COMAR 10.17.11, as we were part of DHMH at that time) was added in 1982. (I suspect that that is when DHMH first became aware of the Act, or else it would have been included in the original version of the regs promulgated in 1980). This was included in our later set of regs and can now be viewed as COMAR 26.04.07.04C(7):

" C. Exceptions. Permits issued under these regulations are not required for the following: ...

(7) Pozzolan management activities conducted pursuant to Natural Resources Article, § 7-464, Annotated Code of Maryland. " (That is the old citation, it needs to be updated).

5). At that time both discharge and solid waste permitting were both under DHMH/OEP/Waste Management Administration/Technical Services Program, so it was no harder than saying "OK, this division is going to handle these instead of that division." Also, at that time, while Solid Waste handled "public" landfills, Discharge Permits was handling a host of other "private" landfill-like activities under the old "217" (later 9-224) industrial waste permit program. That program effectively ended with the statutory reformation of 1987-8, which did away with the parrallel-track industrial waste landfill permit program and just made any new ones regulated under 9-204. At that time, due to the formation of MDE our of bits of DHMH and DNR with concomitant administrative reorganization, industrial waste permitting and enforcement was moved over into Water Management Administration, and oversight of flyash went with them.

6). So, since then, flyash fills and other flyash utilizations have been handled by WMA, usually through an NPDES or GW discharge permit as was considered appropriate, not as waste disposal activities. The utilization aspect was usually handled by Jeff Rein, or now Ed Stone, and he devolved reviews of projects to staff. Also, in the case of placement in a mine, Ed Larrimore is involved.

7). Also, Environment Article Section 9-1701 provides that a recyclable material is NOT a solid waste if it is being returned to the market place as a raw material or product. So,

if you are using fly ash to reclaim properties or as a soil amendment, then it isn't a waste.

8). My personal view has been that if a coal ash generator were to come in and tell us that they absolutely positively were going to dispose of this stuff with no hope of future recovery, then we could legally give them an industrial waste landfill permit as the "use" wording in the Pozzolan Act would not be applicable, and therefore the regulatory exemption would not apply. In that case they would have to have a liner and etc. as required by COMAR 26.04.07.19 & .20. However, if they say that they are either using it for a purpose allowed in the Pozzolan Act or were working on possible uses of this stuff and they believed that they could go back in and mine the sites in the future, then the permit exemption was applicable, and that it is up to you guys to control the potential for pollution. I know that EPA is pushing for increased use of flyash in highway construction and other 'beneficial uses' - so this may yet come to pass.

I hope this historical stuff is helpful. As my memory is always suspect I verified the dates I gave you (e.g., when the regs were changed, etc.) to the extent I could, and indicated doubt where I wasn't sure.

Edward M. Dexter, P.G., Administrator
Solid Waste Program
Maryland Department of the Environment
1800 Washington Blvd., Suite 605
Baltimore MD 21230-1719
Phone (410) 537-3318
Facsimile (410) 537-3842

>>> Edmon Larrimore 07/10/06 9:31 AM >>>

Thanks Kate. I do not think that we would classify fly ash as a solid waste in that it is being used in a beneficial manner here in the reclamation of this site. Although we will look at impacts to ground and surface waters, I don't think we would treat it as a waste. I will ask Ed Dexter from our Solid Waste Management Program to weigh in on this as well since his program has direct involvement with all solid waste disposals.

>>> "Schmidt, Katherine" <KSchmidt@dnr.state.md.us> 07/07/06 10:43 AM

>>> >>>

Hi Ed:

I was discussing the Furnace Bay mine reclamation project with Regina and she has a few more questions about the definition and use of fly-ash.

I was forwarded the relevant COMAR regs defining fly-ash as not a hazardous waste. However, can it still be defined as a "solid waste" AND is a mine reclamation site, when fly-ash is used, defined as a "disposal facility" or "collection facility".

Here's the specific reg I am looking at:

COMAR 27.01.02.02(G)

Certain new development activities or facilities, or the expansion of certain existing facilities, because of their intrinsic nature, or because of their potential for adversely affecting habitat and water quality, may not be permitted in the Critical Area unless no environmentally acceptable alternative exists outside the Critical Area, and these development activities or facilities are needed in order to correct an existing water quality or wastewater management problem. These include:

- (1) Solid or hazardous waste collection or disposal facilities; or
- (2) Sanitary landfills

Also, I wouldn't presume to know if fly-ash is also the only available material here either. But I think we need some of these questions answered to move forward.

Any assistance you can provide would be appreciated.

Thank you,

Kate Schmidt
Natural Resource Planner
Critical Area Commission for the
Chesapeake and Atlantic Coastal Bays
1804 West Street, Suite 100
Annapolis, MD 21401
410-260-3475

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<<<<GWIASIG 0.07>>>>

Schmidt, Katherine

From: Dedrickson, Yvonne A [Yvonne.A.Dedrickson@constellation.com]
Sent: Thursday, June 08, 2006 3:06 PM
To: Schmidt, Katherine
Cc: Tracey, Edward F; Burkman, Jim; Bose, Salil; b.cook25@verizon.net; Basciano, John M; Jeffcoat, John L; Pittaway, Beth
Subject: RE: Fly ash or Pozzolan relating regulations in COMAR

Thanks for the information Kate. Jim Burkman stopped by the county office and picked up the critical area maps. Does it look like we'll be able to beneficially place ash in the critical area as long as we use proper environmental controls and stay out of the buffer area?

Yvonne

-----Original Message-----

From: Schmidt, Katherine [mailto:KSchmidt@dnr.state.md.us]
Sent: Thursday, June 08, 2006 2:35 PM
To: Dedrickson, Yvonne A
Subject: RE: Fly ash or Pozzolan relating regulations in COMAR

Yvonne:

The Critical Area is the 1000' line that was established on the 1976 state wetland maps. These maps are maintained at the county offices. The Critical Area Buffer refers to the 100' boundary established in the field from Mean High Water (MHW). The Critical Area regulations mandate that jurisdictions implement a number of policies related the 100-foot Buffer, which are intended to recognize the role that the Buffer plays in protecting water quality, shoreline habitat, etc. The 100' Buffer may also be expanded based upon steepness of slope and/or soil conditions. This is why the Buffer is not shown on maps but is established in the field on a project by project basis.

I'll be in touch again soon.

Kate

-----Original Message-----

From: Dedrickson, Yvonne A [mailto:Yvonne.A.Dedrickson@constellation.com]
Sent: Monday, June 05, 2006 11:36 AM
To: Schmidt, Katherine
Cc: Bose, Salil; Tracey, Edward F
Subject: RE: Fly ash or Pozzolan relating regulations in COMAR

Kate,

Thank you for carrying back our discussion of beneficial use ash reclamation within the critical areas to your supervisor for resolution and discussing the county review process with Joe Johnson. Please let me know if you have any additional questions or need for any additional beneficial use regulatory information. The resolution of this is critical to the advancement of this project. Please let me know how your internal review is proceeding.

I need clarification on what you are referring to as the Critical Area Buffer? Are you taking about within 1000 feet of mean high water line or 100 feet?

Thanks,
Yvonne

-----Original Message-----

From: Schmidt, Katherine [mailto:KSchmidt@dnr.state.md.us]
Sent: Monday, June 05, 2006 11:04 AM
To: Dedrickson, Yvonne A
Subject: RE: Fly ash or Pozzolan relating regulations in COMAR

Yvonne:

Thank you for the e-mail and information. I will share this with other staff and my supervisor so that we know this issue is resolved for the future. A second question raised at the meeting was in regards to county review and how critical area review would be triggered. I spoke with Joe Johnson and it will be dependent upon the ultimate proposal as to what type of review the county will require. Regardless, when that review takes place, critical area issues will be covered. Based upon the information you provided last week in the meeting, the most significant potential issue would be if anything is proposed to take place in the Critical Area Buffer. If you would like me to pass along the regulations regarding the Buffer let me know. Just something to keep in mind as you proceed.

Thanks for keeping us posted!

Kate

-----Original Message-----

From: Dedrickson, Yvonne A [mailto:Yvonne.A.Dedrickson@constellation.com]
Sent: Wednesday, May 31, 2006 4:30 PM
To: Schmidt, Katherine
Subject: FW: Fly ash or Pozzolan relating regulations in COMAR

Kate,

Thanks again for attending the meeting today. Hopefully this is helpful for you in determining that the use of ash for mine reclamation is considered to be beneficial use and not waste management. Please let me know if you need any additional information on the regulation of ash.

Thank you,
Yvonne
410-787-5456

-----Original Message-----

From: Ching-Tzone Tien [mailto:ctien@mde.state.md.us]
Sent: Wednesday, May 31, 2006 4:13 PM
To: Dedrickson, Yvonne A; Edmon Larrimore
Subject: Re: Fly ash or Pozzolan relating regulations in COMAR

For your information, the following COMAR are relating to fly ash

(I) COMAR 26.04.07.04 Sanitary Landfills -General

Under C. Exception. Permit issued under these regulations are not required for the following:

(7) Pozzolan management activities conducted pursuant Natural Resources Article, 7-464 Annotated Code of Maryland

(II) COMAR 26.13.02.04-1 Solid wastes Which are not Hazardous Wastes

(4) Fly ash waste, bottom ash waste.....

>>> Edmon Larrimore 05/18/06 12:42 PM >>>

FYI and thanks for mentioning it Yvonne. I am not sure we had that covered.

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<<<<GWIASIG 0.07>>>>

Schmidt, Katherine

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To: Schmidt, Katherine
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Subject: RE: Fly ash or Pozzolan relating regulations in COMAR

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Thanks,
Yvonne

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Sent: Monday, June 05, 2006 11:04 AM
To: Dedrickson, Yvonne A
Subject: RE: Fly ash or Pozzolan relating regulations in COMAR

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To: Schmidt, Katherine
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To: Dedrickson, Yvonne A; Edmon Larrimore
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PLANTING CREDITS			
COMMON NAME	SQ. FT / TREE	QTY.	TOTAL SQ. FTG.
Red maple	435	23	10,005
Willow oak	435	24	10,440
Silky Dogwood	218	12	2,616
Red-pancled Dogwood	218	9	1,962
Witch Hazel	218	5	1,090
Sweet Pepperbush	125	35	4,375
		TOTAL	30,488
		NEEDED	30,141

PLANT LIST					
KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
TREES/SHRUBS					
AR	23	Acer rubrum	Red Maple	1.5" - 2"	B+B
QP	24	Quercus phellos	Willow Oak	1.5" - 2"	B+B
CA	9	Cornus omomum	Silky Dogwood	5 gal. or 1" caliber	
CR	18	Cornus rocemoso	Red-pancled Dogwood	5 gal. or 1" caliber	
HV	11	Hamamelis virginano	Witch Hazel	5 gal. or 1" caliber	
CA	35	Clethro olifolia	Sweet Pepperbush	2 - 3 gallon	

PLANT LEGEND	
KEY	SYMBOL
AR	
QP	
CA	
CR	
HV	
CA	

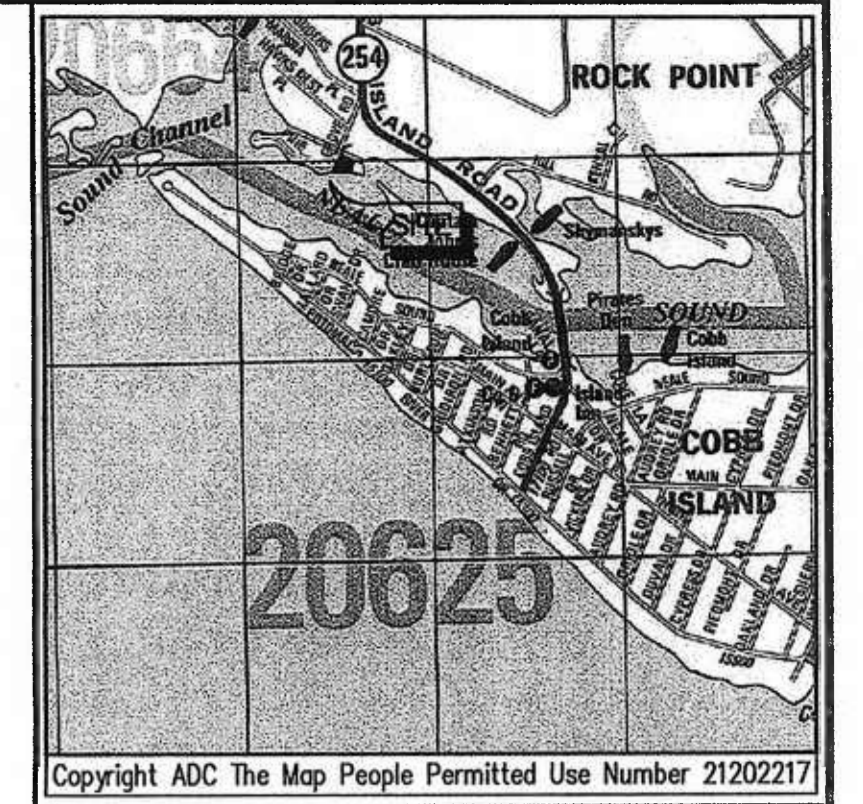
GENERAL NOTES

- The field-run topography shown hereon was performed by Bolton & Associates, LLC, on 8/10-11/08. Topography is based on an assumed datum of 10,000, 10,000, 100 which was established at point #1.
- Soil data obtained from Natural Resources Conservation Service, Charles County Soil Survey dated July, 1974.
- This plan was prepared without the benefit of a Title Report which may reveal additional conveyances, easements, rights-of-way or building restriction lines not shown, nor is it to be used to locate property lines.
- This plan does not provide for the accurate identification of property boundary lines. Bolton & Associates used the best information to establish metes and bounds hereon and recommends a boundary survey.
- Environmental features assessed by Bolton & Associates, LLC. on August 2, 2006.
- Soil boring tests have been performed by Bolton & Associates, LLC. on August 2, 2006.
- All filling and grading activities on the site are completed and site is stabilized with lawn grasses.
- Entire Site is with in the 100' Critical Area Buffer.

SITE TABS

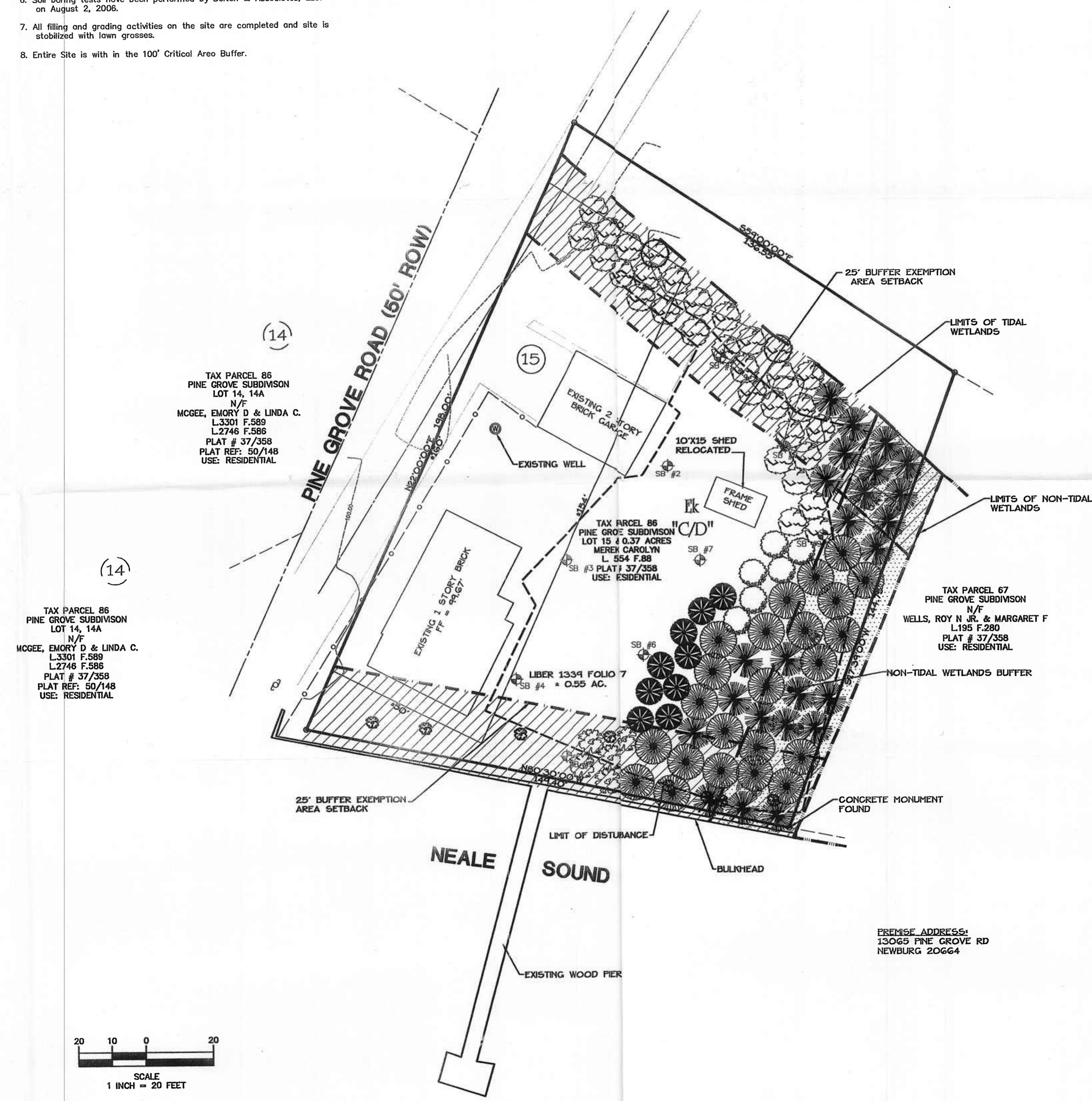
Total lot area:.....0.55 AC.
 Total disturbed area:.....0.23 AC.
 Non-tidal wetlands area:.....0.04 AC.
 Total Mitigation Required:.....0.69 AC

SOIL	SYMBOL	HYDRIC	HIGHLY ERODABLE
Elkton Silt Loam	Ek	Yes	Yes (0.43)



VICINITY MAP SCALE: 1"=2,000'
 TAX MAP: 88 GRID: 13 PARCEL: 86 LOT: 15

LEGEND	
PROPERTY LINE	
ADJOINING PROPERTY LINE	
RIGHT-OF-WAY	
FENCE	
BUILDING	
EDGE OF PAVEMENT	
EXISTING WELL	
UTILITY POLE & NO. (WITH GUY WIRE)	
EXISTING TREE	
BUFFER EXEMPTION AREA	
NON-TIDAL WETLANDS	
25' WETLANDS BUFFER	
WETLANDS BUFFER	
SOIL BORING	



SITE PLAN
BELLE PROPERTY
 5th ELECTION DISTRICT
 CHARLES COUNTY, MARYLAND



BOLTON & ASSOCIATES, LLC
 CIVIL ENGINEERS
 LAND PLANNERS
 LAND SURVEYORS

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 1301 392-0787 • Fax: (301) 392-8019 • 107 Centennial Street • La Plata, MD 20646
 Internet: www.boltonandassociates.com • Email: info@boltonandassociates.com

If the engineer's seal is not red colored, the plan is a copy that should be assumed to contain unauthorized alterations. The certification contained on this document shall not apply to any copies.

Bolton & Associates, LLC
 by Michelle B. Bolton

Michelle B. Bolton, P.E.
 State of Maryland No. 30705
 Director of Engineering

CLIENT:
 JACK A. BELLE
 7453 ROBIN RD.
 LA PLATA MD 20646
 (240) 349-1234

DESIGN	L&W	SHEET	1	OF	1
DRAWN	CJL	DATE	12-20-06	C8813-0601	
CHECKED	SLB	SCALE	1" = 20'	C8813GB	

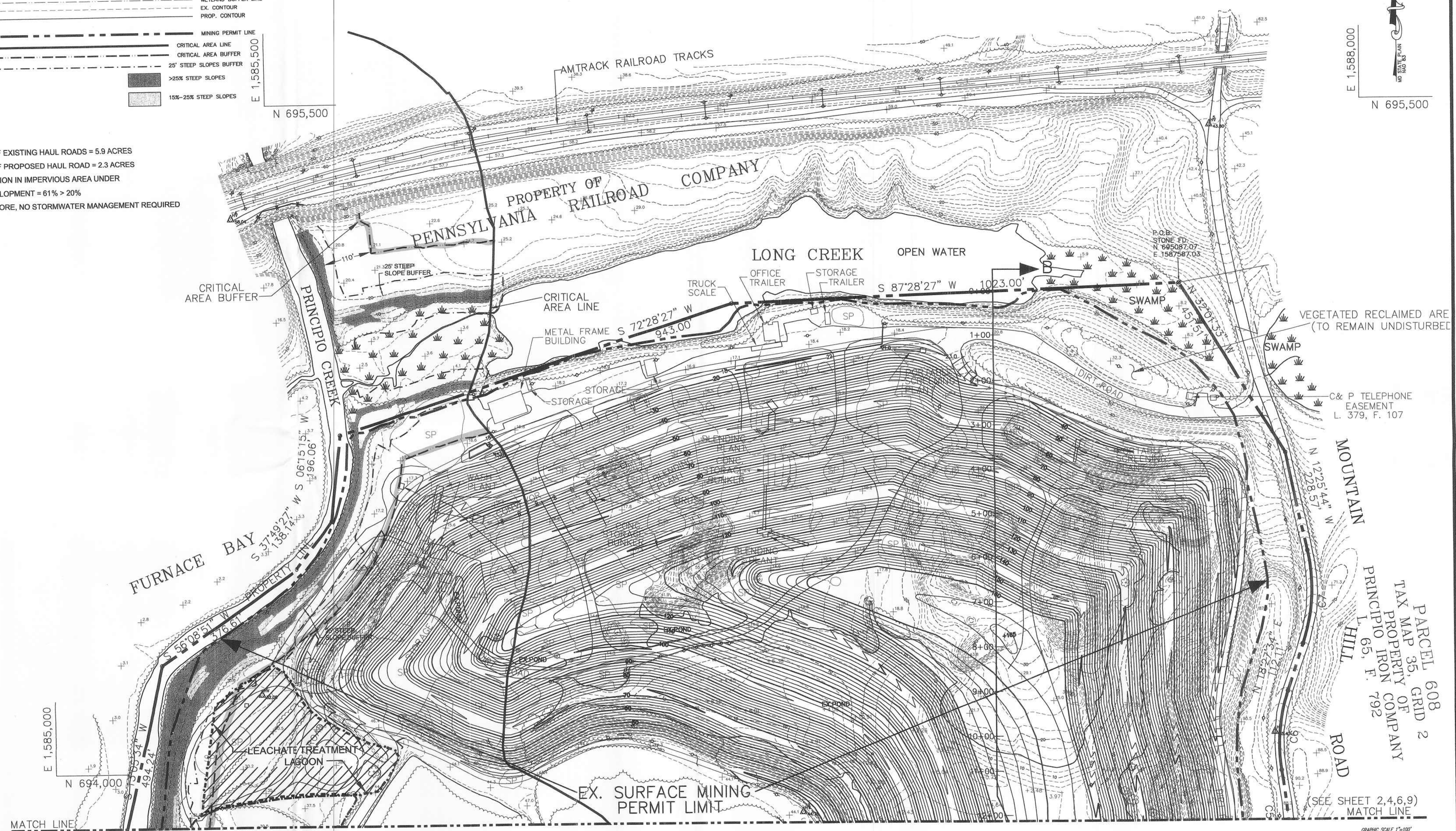
LEGEND
 UTILITY POLE
 EDGE OF WOODED AREA
 SAND, GRAVEL OR SOIL STOCKPILE
 WETLAND
 EX. SPOT ELEVATION
 PROPERTY LINE
 WETLAND BUFFER LINE
 EX. CONTOUR
 PROP. CONTOUR

MINING PERMIT LINE
 CRITICAL AREA LINE
 CRITICAL AREA BUFFER
 25' STEEP SLOPES BUFFER
 >25% STEEP SLOPES
 15%-25% STEEP SLOPES

E 1,585,500
 N 695,500

AREA OF EXISTING HAUL ROADS = 5.9 ACRES
 AREA OF PROPOSED HAUL ROAD = 2.3 ACRES
 REDUCTION IN IMPERVIOUS AREA UNDER REDEVELOPMENT = 61% > 20%
 THEREFORE, NO STORMWATER MANAGEMENT REQUIRED

E 1,588,000
 N 695,500



VEGETATED RECLAIMED AREA (TO REMAIN UNDISTURBED)

C & P TELEPHONE EASEMENT L. 379, F. 107

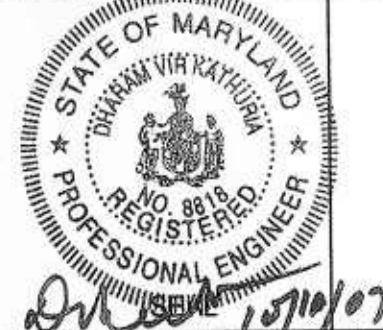
PARCEL 608
 TAX MAP 35, GRID 2
 PROPERTY OF
 PRINCIPIO IRON COMPANY
 L. 65, F. 792

(SEE SHEET 2, 4, 6, 9)
 MATCH LINE

GRAPHIC SCALE 1"=100'

DESIGNED BY:	DATE	REVISIONS	
		DATE	DESCRIPTION
DRAWN BY:	DATE	BY	DESCRIPTION
CHECKED BY:	DATE		
APPROVED BY:	DATE		

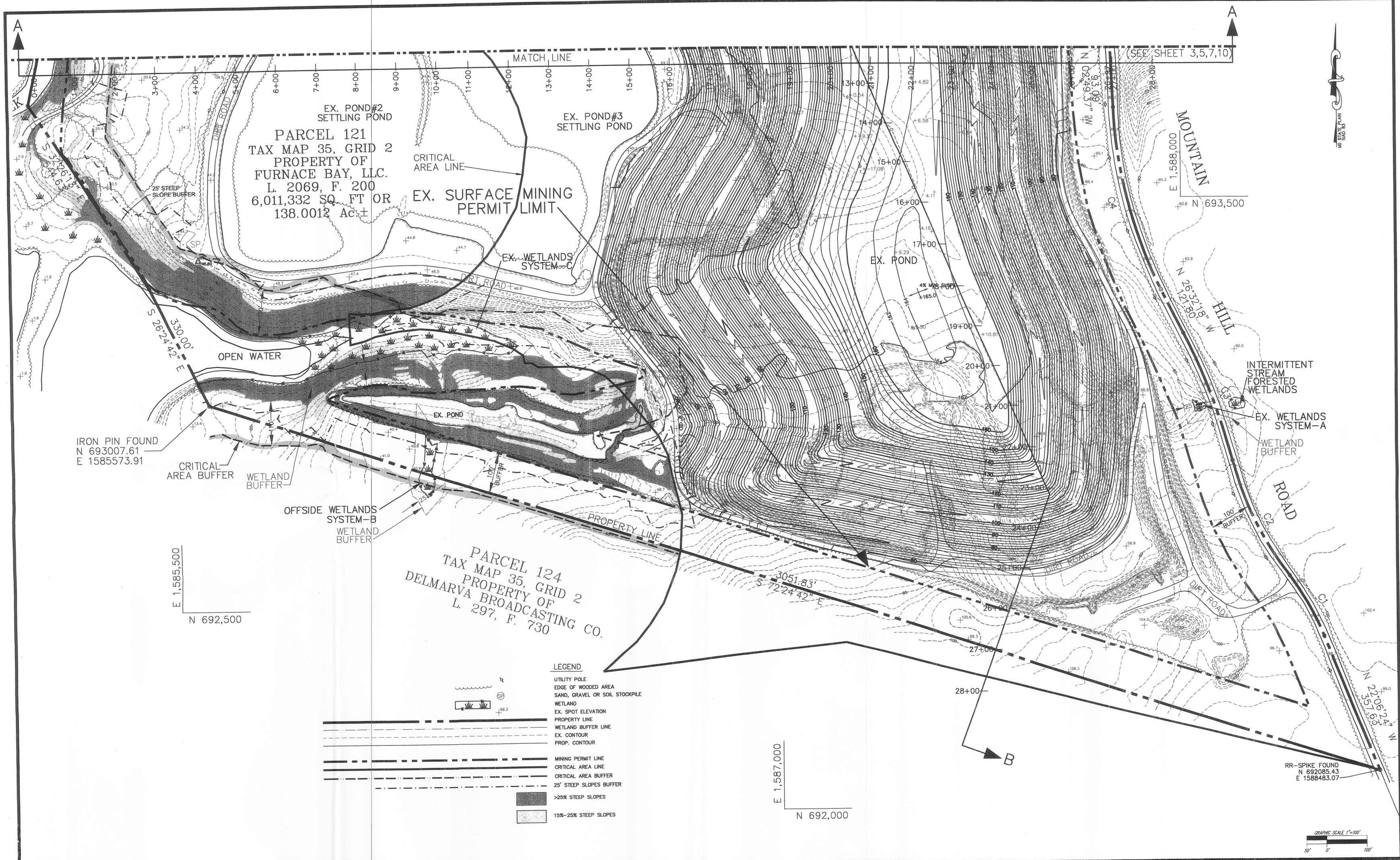
KCE ENGINEERING, INC.
 EXECUTIVE CENTER
 3300 NORTH RIDGE ROAD, SUITE 315
 ELLICOTT CITY, MARYLAND 21043
 PHONE (410) 203-9800 FAX (410) 203-9228



OWNER
 FURNACE BAY, LLC
 499 MOUNTAIN HILL ROAD
 PERRYVILLE, MD 21093
 CONTACT PERSON: TERRY D. STANCILL
 TELEPHONE NO.: (410) 939-2224

DEVELOPER/CONTRACT PURCHASER
 CONSTELLATION POWER SOURCE GENERATION
 2030 BRANDON SHORES ROAD
 BALTIMORE, MD 21226
 CONTACT PERSON: JOHN JEFFCOAT
 TELEPHONE NO.: (410) 787-6928

RECLAMATION PLAN - I
FURNACE BAY
 MINING AND RECLAMATION
 449 MOUNTAIN HILL ROAD, PERRYVILLE
 5th ASSESSMENT DISTRICT, CECIL COUNTY, MARYLAND
 SCALE: 1"=100' CONTRACT NO. DATE: 5/29/07 SHEET: 6 OF 11



EX. POND#2
SETTLING POND

PARCEL 121
TAX MAP 35, GRID 2
PROPERTY OF
FURNACE BAY, LLC.
L. 2069, F. 200
6,011,332 SQ. FT OR
138.0012 Ac ±

EX. SURFACE MINING
PERMIT LIMIT

EX. WETLANDS
SYSTEM-C

PARCEL 124
TAX MAP 35, GRID 2
PROPERTY OF
DELMARVA BROADCASTING CO.
L. 297, F. 730

- LEGEND**
- UTILITY POLE
 - EDGE OF WOODED AREA
 - SAND, GRAVEL OR SOIL STOCKPILE
 - WETLAND
 - EX. SPOT ELEVATION
 - PROPERTY LINE
 - WETLAND BUFFER LINE
 - EX. CONTOUR
 - PROP. CONTOUR
 - MINING PERMIT LINE
 - CRITICAL AREA LINE
 - CRITICAL AREA BUFFER
 - 25' STEEP SLOPES BUFFER
 - >25% STEEP SLOPES
 - 15%-25% STEEP SLOPES

DESIGNED BY:	DATE	REVISIONS	
		DATE	DESCRIPTION
DRAWN BY:	DATE	BY	DESCRIPTION
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APPROVED BY:	DATE		

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PERRYVILLE, MD 21203
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DEVELOPER/CONTRACT PURCHASER
CONSTELLATION POWER SOURCE GENERATION
2030 BRANDON SHORES ROAD
BALTIMORE, MD 21226
CONTACT PERSON: JOHN JEFFCOAT
TELEPHONE NO.: (410) 787-6928

RECLAMATION PLAN - II
FURNACE BAY
MINING AND RECLAMATION
449 MOUNTAIN HILL ROAD, PERRYVILLE
5th ASSESSMENT DISTRICT, CECIL COUNTY, MARYLAND
SCALE: 1"=100' CONTRACT NO. DATE: 6/29/07 SHEET: 7 OF 11

FURNACE BAY MINING AND RECLAMATION PLAN

DRAWING INDEX

TITLE	SHEET
Title Sheet	1
Environmental Features Plan - I	2
Environmental Features Plan - II	3
Excavation Plan-I	4
Excavation Plan-II	5
Reclamation Plan-I	6
Reclamation Plan-II	7
Sections	8
Sediment and Erosion Control Plan-I	9
Sediment and Erosion Control Plan-II	10
Sediment and Erosion Control Notes and Details	11

CURVE TABLE

CURVE	ARC	RADIUS	DELTA	CHORD	CHORD BEARING
C1	171.97'	680.99'	14°28'08"	171.51'	N 29°20'28" W
C2	321.96'	845.86'	21°48'30"	320.02'	N 25°56'06" W
C3	337.44'	1729.08'	11°10'54"	336.91'	N 20°56'52" W
C4	469.45'	1070.79'	25°07'10"	465.70'	N 14°20'35" W
C5	165.92'	1203.60'	07°53'54"	165.79'	N 05°45'42" W
C6	182.14'	384.48'	27°08'35"	180.44'	N 04°54'48" E
C7	211.04'	390.69'	30°56'57"	208.48'	N 03°13'03" E

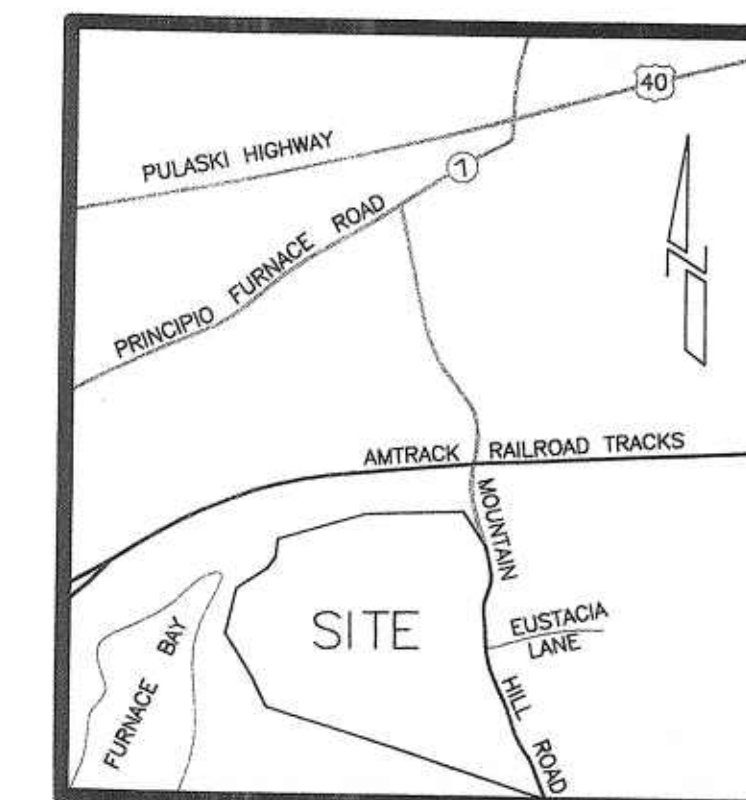
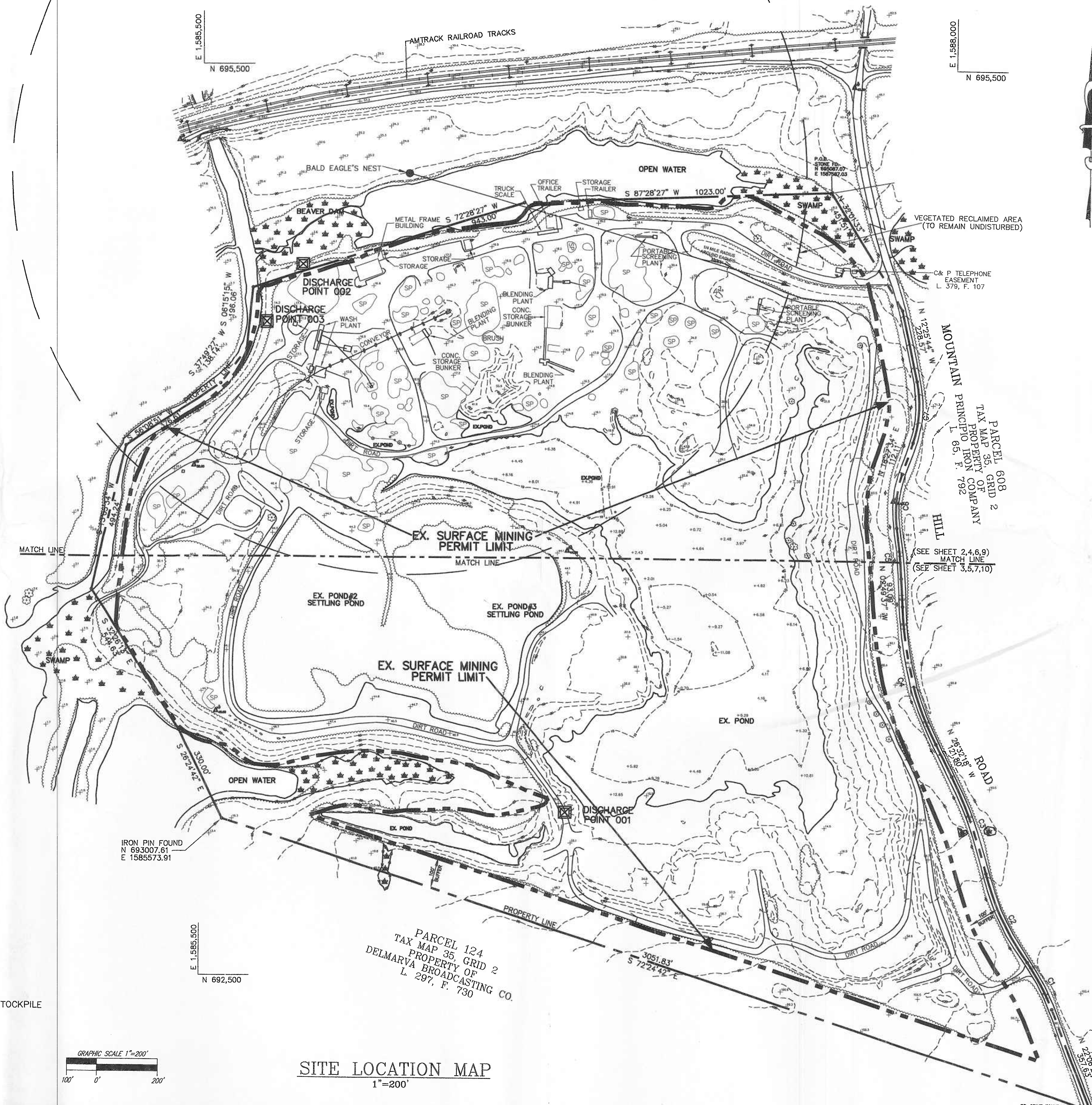
LEGEND

- UTILITY POLE
- EDGE OF WOODED AREA
- SAND, GRAVEL OR SOIL STOCKPILE
- WETLAND
- EX. SPOT ELEVATION
- PROPERTY LINE
- MINING PERMIT LINE

GRAPHIC SCALE 1"=200'
0' 100' 200'

SITE LOCATION MAP

1"=200'



VICINITY MAP
SCALE: 1"=2000'
ADC MAP PAGE 15 GRID C-2
TAX MAP 35, GRID 2 PARCEL 121

Developer's Certification:

I/We hereby certify that all clearing, grading, construction and/or development will be done pursuant to this plan and that any responsible personnel involved in the construction project will have a certification of training at a Maryland Department of the Environment approved training program for the control of sediment and erosion before beginning the project. I hereby authorize the right of entry for periodic on-site evaluation by the Cecil Soil Conservation District or their representatives and the State of Maryland, Department of the Environment, Compliance Inspectors.

I hereby certify that development and/or construction will be done according to this plan of development and plan of erosion and sediment control.

Developer's Signature _____ Date _____

Printed Name and Title _____

Design Certification:

I hereby certify that all sediment and erosion control measures shown on these plans have been designed in accordance with the 1994 MD Standards and Specifications for Soil Erosion and Sediment Control or current revisions thereof.

Designer's Signature *Dharam Vir Kauthria* 10/11/07
Date

Dharam Vir Kauthria
Printed Name
MD Registration No. 8818
P.E. R.L.S., or R.L.A. (circle one)

APPROVED: OFFICE OF PLANNING & ZONING

ZONING ADMINISTRATOR _____ Date _____

Reviewed for Cecil S.C.D. and meets Technical Requirements
Signature _____ Date _____
Plan is valid for 5 years from date of approval
Natural Resources Conservation Service

Cecil Soil Conservation District
Erosion and Sediment Control Plan
Approved _____ Date _____
Plan is valid for 5 years from date of approval

NPDES PERMIT APPLICATION NO. 07-DP-3581

DESIGNED BY:	DATE	REVISIONS
DRAWN BY:	DATE	DESCRIPTION
CHECKED BY:	DATE	
APPROVED BY:	DATE	

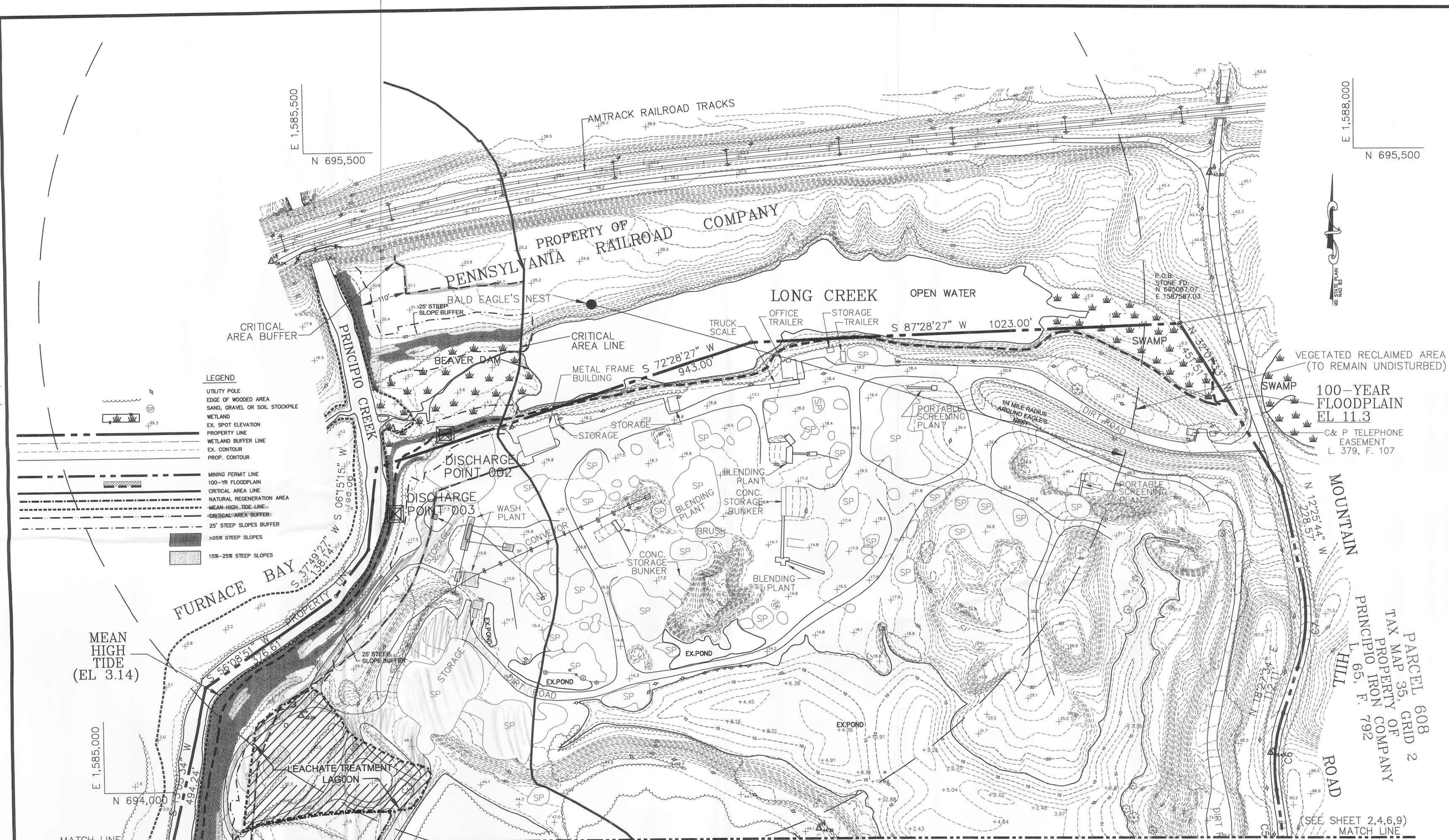
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OCT 24 2007
CRITICAL AREA COMMISSION
Chesapeake & Atlantic Coastal Bays

KCE ENGINEERING, INC.
EXECUTIVE CENTER
3300 NORTH RIDGE ROAD, SUITE 315
ELLCOTT CITY, MARYLAND 21043
PHONE (410) 203-9800 FAX (410) 203-9228

OWNER
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499 MOUNTAIN HILL ROAD
PERRYVILLE, MD 21093
CONTACT PERSON: TERRY D. STANCILO
TELEPHONE NO.: (410) 939-2224

DEVELOPER/CONTRACT PURCHASER
CONSTELLATION POWER SOURCE GENERATION
2030 BRANDON SHORES ROAD
BALTIMORE, MD 21226
CONTACT PERSON: JOHN JEFFCOAT
TELEPHONE NO.: (410) 787-6928

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OCT 24 2007
TITLE SHEET
FURNACE BAY
MINING AND RECLAMATION
499 MOUNTAIN HILL ROAD, PERRYVILLE
SESSMENT DISTRICT, CECIL COUNTY, MARYLAND
SCALE: AS SHOWN CONTRACT NO. DATE: 5/29/07 SHEET: 1 OF 11



- LEGEND**
- UTILITY POLE
 - EDGE OF WOODED AREA
 - SAND, GRAVEL OR SOIL STOCKPILE
 - WETLAND
 - EX. SPOT ELEVATION
 - PROPERTY LINE
 - WETLAND BUFFER LINE
 - EX. CONTOUR
 - PROP. CONTOUR
 - MINING PERMIT LINE
 - 100-YR FLOODPLAIN
 - CRITICAL AREA LINE
 - NATURAL REGENERATION AREA
 - MEAN HIGH TIDE LINE
 - CRITICAL AREA BUFFER
 - 25' STEEP SLOPES BUFFER
 - >25% STEEP SLOPES
 - 15%-25% STEEP SLOPES

MEAN HIGH TIDE (EL 3.14)

VEGETATED RECLAIMED AREA (TO REMAIN UNDISTURBED)

100-YR FLOODPLAIN EL 11.3

C & P TELEPHONE EASEMENT L. 379, F. 107

PARCEL 608
TAX MAP 35, GRID 2
PROPERTY OF
PRINCIPIO IRON COMPANY
L. 65, F. 792

(SEE SHEET 2,4,6,9)
MATCH LINE

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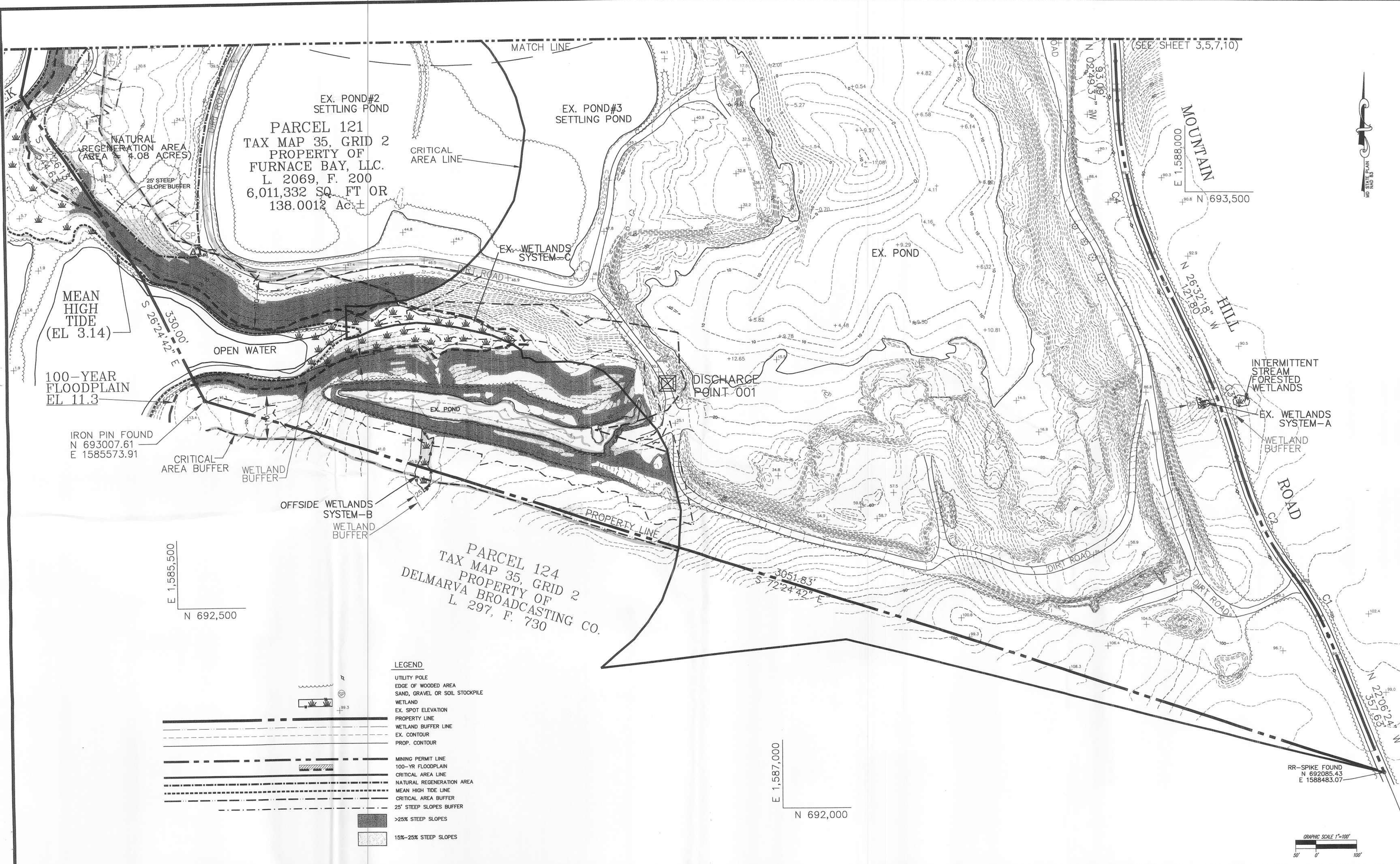
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BALTIMORE, MD 21226
CONTACT PERSON: JOHN JEFFCOAT
TELEPHONE NO.: (410) 787-6928

ENVIRONMENTAL FEATURES PLAN - I
FURNACE BAY
MINING AND RECLAMATION
449 MOUNTAIN HILL ROAD, PERRYVILLE
5th ASSESSMENT DISTRICT, CECIL COUNTY, MARYLAND
SCALE: 1"=100' CONTRACT NO. DATE: 5/29/07 SHEET: 2 OF 11



EX. POND#2
SETTLING POND

PARCEL 121
TAX MAP 35, GRID 2
PROPERTY OF
FURNACE BAY, LLC.
L. 2069, F. 200
6,011,332 SQ. FT OR
138.0012 Ac.±

EX. POND#3
SETTLING POND

CRITICAL
AREA LINE

EX. WETLANDS
SYSTEM-C

EX. POND

MEAN
HIGH
TIDE
(EL 3.14)

100-YEAR
FLOODPLAIN
EL 11.3

IRON PIN FOUND
N 693007.61
E 1585573.91

CRITICAL
AREA BUFFER

WETLAND
BUFFER

OFFSIDE WETLANDS
SYSTEM-B
WETLAND
BUFFER

DISCHARGE
POINT-001

INTERMITTENT
STREAM
FORESTED
WETLANDS

EX. WETLANDS
SYSTEM-A

WETLAND
BUFFER

PARCEL 124
TAX MAP 35, GRID 2
PROPERTY OF
DELMARVA BROADCASTING CO.
L. 297, F. 730

LEGEND

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- EDGE OF WOODED AREA
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- 25' STEEP SLOPES BUFFER
- >25% STEEP SLOPES
- 15%-25% STEEP SLOPES

E 1,585,500
N 692,500

E 1,587,000
N 692,000

GRAPHIC SCALE 1"=100'
50' 0' 100'

DESIGNED BY:	DATE	REVISIONS	
		DATE	DESCRIPTION
DRAWN BY:	DATE	BY	DESCRIPTION
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ENVIRONMENTAL FEATURES PLAN - II
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5th ASSESSMENT DISTRICT, CECIL COUNTY, MARYLAND
SCALE: 1"=100' CONTRACT NO. DATE: 5/29/07 SHEET: 3 OF 11