

Approval
6/7/07
K.S.

8/25

PD 494-06 Port Deposit ~~WMP~~ 222
Site Plan *interceptor*

MSA-S. 1829-5903

Martin O'Malley
Governor

Anthony G. Brown
Lt. Governor



Margaret G. McHale
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/

June 7, 2007

Ms. Mary Ann Skilling
Maryland Department of Planning
210 Inverness Drive
Church Hill, Maryland 21623

Re: Port Deposit Replacement Sewer Line and Interceptor – State Highway 222

Dear Ms. Skilling:

The purpose of this letter is to officially notify you of the Critical Area Commission's action on the above referenced project. On June 6, 2007, the Critical Area Commission unanimously approved the Port Deposit Water and Sewer Authority's proposal and site plan to install a replacement sewer line and interceptor to the existing waste water treatment plan in the Town of Port Deposit, Maryland. This approval included the following conditions:

- (1) By September 5, 2007, the Town shall submit a mitigation plan for review and approval by Commission staff. The plan shall demonstrate compliance with the required 3:1 mitigation ratio for forest clearing, an area totaling 6,750 square feet; and
- (2) The Town of Port Deposit shall provide appropriate mitigation for temporary impacts and impacts to existing impervious areas to be determined at the time the Commission reviews the replacement of the wastewater treatment plant.

A planting agreement form has been included for Condition #1. In fulfillment of the above conditions, please also notify the Commission once the mitigation plantings have been implemented. Please note that should any changes to the site plan be proposed in the future, additional review and approval by the full Commission will be required. Should you have any questions, please feel free to contact me at 410-260-3475.

Sincerely,

A handwritten signature in cursive script that reads "Kate Schmidt".

Kate Schmidt
Natural Resources Planner

Cc: Ms. Sharon Weygand, Town of Port Deposit

TTY for the Deaf
Annapolis: (410) 974-2609 D.C. Metro: (301) 586-0450

Critical Area Commission

STAFF REPORT

June 6, 2007

APPLICANT: State Highway Administration / Port Deposit Water and Sewer Authority

JURISDICTION: Town of Port Deposit

PROPOSAL: Port Deposit Wastewater Treatment Plant Replacement Sewer Line and Interceptor – State Highway 222

COMMISSION ACTION: Vote

STAFF RECOMMENDATION: Approve with Conditions

STAFF: Mary Ann Skilling/Kate Schmidt

**APPLICABLE LAW/
REGULATIONS:** COMAR 27.02.06 Conditional Approval of State or Local Agency Programs in the Critical Area

DISCUSSION:

The Town of Port Deposit Water and Sewer Authority (PDWSA), a quasi-jurisdictional entity, in conjunction with the State Highway Administration (SHA), is seeking approval to install a replacement sewer line and interceptor along Route 222. The sewer line will provide upgraded service from the Bainbridge property (former federal land) to the existing wastewater treatment plant in Port Deposit. The proposal is the first phase of a multi-phase project which involves improving wastewater treatment and increasing capacity for the Town. PDWSA is currently in the process of developing plans to construct a new wastewater treatment plant outside of the 100-year floodplain within the boundaries of Port Deposit. The replacement of the sewer line is necessary in order to handle the expected capacity and development at the Bainbridge site prior to completion of the new wastewater treatment plant.

Existing Conditions

State Highway Route 222 is considered an area of intense development. The applicant proposes to directionally bore partially within the existing State Highway right-of-way in order to install the new line and interceptor. There will be three areas of temporary disturbance where boring pits will be installed using jack and bore techniques to minimize impact. One of these areas will be located within the existing road bed, and the remaining two along the vegetated road shoulder. Vegetation is varied but consists mainly of mowed grass. Approximately 2,250 square feet of

shrubby forest edge will be cleared. This area includes young black locust, black cherry, red maple, tulip poplar, and box elder, as well as multiflora rose and bush honeysuckle.

Proposed Impacts

The three staging areas of temporary impacts are as follows:

| Manholes | Location | Area of Disturbance (square feet) | Removed Forest (square feet) | Disturbed Grass (square feet) |
|----------|--------------------|--------------------------------------|---------------------------------|----------------------------------|
| 1 & 2 | Vegetated Shoulder | 8,700 | 2,250 | 6,450 |
| 3 | Vegetated Shoulder | 3,780 | 0 | 3,780 |
| 4 | Roadbed | 2,790 | 0 | 0 |

The total impact of these three staging areas is 15,270 square feet. The applicant proposes to restore the disturbed areas once work is completed.

A storm ditch running adjacent to the Route 222 has been determined to be an intermittent stream. Therefore, the 15,270 square feet of temporary impact is within the 100-foot Buffer.

The applicant has obtained sediment and erosion control approval from the Cecil Soil Conservation District and control practices will be in place. The applicant has also obtained a Utility Access permit from SHA. There are no other State or Federal permits required. The applicant is proposing 3:1 mitigation for the 2,250 square feet of clearing of forest vegetation within the 100-foot tributary stream Buffer.

Conditional Approval Process

In order to qualify for consideration by the Commission for conditional approval, it shall be shown by the proposing or sponsoring agency that the project has the following characteristics:

B.(1) That there exist special features of a site or there are other special circumstances such that the literal enforcement of these regulations would prevent a project or program from being implemented;

In order to provide sewer service to the Bainbridge site, the existing sewer lines need to be upgraded and extended up Route 222.

B.(2) That the project otherwise provides substantial public benefits to the Critical Area Program;

This is the first step in upgrading the existing waste treatment plant. A new plant is being designed to replace the existing plant that is located along the waterfront and is subject to

flooding. The new plant will be located farther from the waterfront outside of the 100-foot Buffer to the Susquehanna River. The plant will meet all standards for new wastewater treatment plants and will ultimately provide capacity for the expected build out of Bainbridge.

B.(3) That the project is otherwise in conformance with this subtitle;

The proposed work otherwise meets all other requirements of this subtitle. The work will comply with an approved Sediment and Erosion Control plan. No other habitat protection areas will be impacted.

The conditional approval request shall, at a minimum, contain the following:

C. (1) A showing that the literal enforcement of the provisions of this subtitle would prevent the conduct of an authorized local agency program or project;

A literal enforcement of the provisions of this subtitle would prevent the needed upgrade of the present water treatment facility and future connections to the new plant.

waste

C. (2) A proposed process by which the project could be so conducted as to conform, insofar as possible, with the approved local Critical Area program;

The project will be using direct boring to minimize impacts and work is limited to the existing roadway or road shoulder. Most of the road right-of-way is primarily grassed.

C. (3) Measures proposed to mitigate adverse effects of the project.

The mitigation is proposed to occur at Marina Park, a Town park, and at the site of the existing wastewater treatment plan once it is removed. The clearing of trees associated with the interceptor project will be mitigated at a ratio of 3:1, totaling 6,750 square feet. The Town is requesting that the Commission consider the temporary impact, and use of direct boring to minimize impacts, in determining mitigation. It is the Town's belief that all measures have been implemented for temporary impacts that must be performed in an effort to upgrade an old facility prior to constructing a new facility. Present temporary impacts will total 15,270 square feet.

The Commission shall approve, deny, or request modifications to the request for conditional approval based on the following factors:

E.(1) The extent to which the project or program is in compliance with the requirements of the relevant chapters of this subtitle;

E.(2) The adequacy of any mitigation measures proposed to address the requirements of this subtitle that cannot be met by the project or program; and

E.(3) The extent to which the project or program, including any mitigation measures, provides substantial public benefits to the overall Critical Area Program.

Staff Recommendation

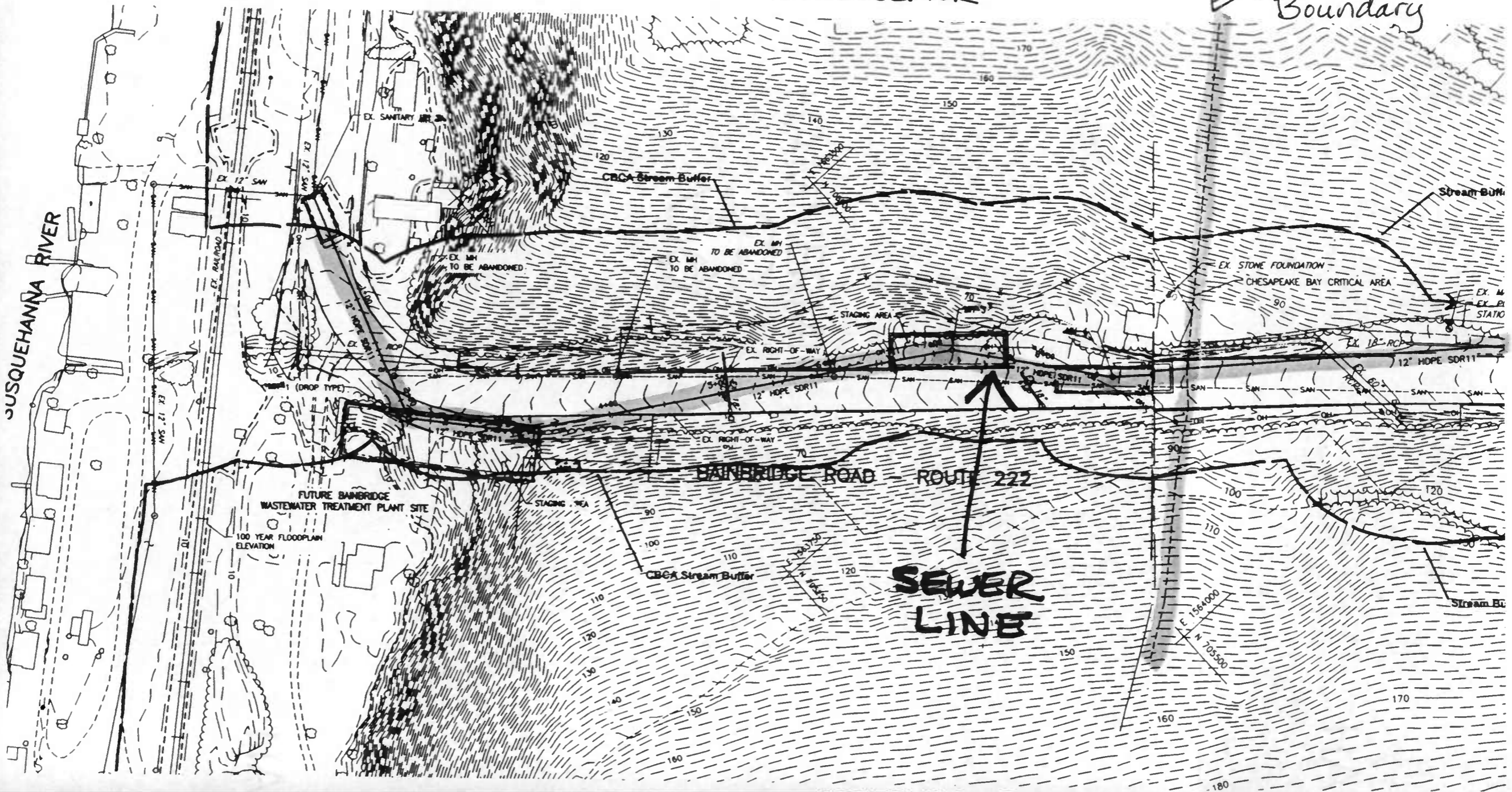
1. The Town of Port Deposit shall provide mitigation at a ratio of 3:1 for clearing of trees and forested areas totaling 6,750 square feet. The Town shall submit an acceptable mitigation plan for staff approval by September 5, 2007 to meet this requirement.
2. The Town of Port Deposit shall provide appropriate mitigation for temporary impacts and impacts to existing impervious areas to be determined at the time the Commission reviews the replacement of the wastewater treatment plant.

CECIL COUNTY - PORT DEPOSIT RT. 222

INTERCEPTOR

1,000 ft.

Critical Area Boundary



Planting Agreement for State/Local Projects

State/Local Agency

Port Deposit Water & Sewer Authority

Project Number

494-06

Agency Contact

James Dieter

Phone Number

Commission Approval Date

6-Jun-07

CAC Planner

Kate Schmidt

Project Name

Sewer Line Replacement & Interceptor - Route 222

Project Location

Port Deposit

Square Feet Cleared Outside 100ft Buffer

Mitigation Ratio for Clearing Outside Buffer

Mitigation Calculation Outside Buffer

Square Feet Disturbed/Cleared Within Buffer*

2250*

Mitigation Ratio for Disturbance/Clearing Within Buffer*

3:1

15% Afforestation Requirement Met?

N/a

Mitigation Calculation Within Buffer

6,750

Total Mitigation Requirement

6,750

Planting and Natural Regeneration Plan (attach additional sheets if necessary)

*Mitigation for temporary impacts to be determined at WWTP approval stage.

Planting Date

Year

First Site Visit Date

Completed by

Second Site Visit Date

Completed By

Date Mitigation Complete

Responsible Contact for Mitigation (Print)

Signature

Date

I. INTRODUCTION

Eco-Science Professionals, Inc. was contracted by, MTPM LLC, to perform a Critical Area Environmental Assessment of the proposed Bainbridge Wastewater Treatment Plant and Route 222 Sewer Interceptor. The project will involve the development of a new waste water treatment facility on the Logan Property, the removal of the existing waste water treatment facility from within the 100 year floodplain of the Susquehanna River, and the construction of a replacement sewer interceptor within Route 222. The work associated with the new construction removal of the existing waste water treatment facility and a portion of the sewer line installation will occur within the Chesapeake Bay Critical Area.

II. EXISTING CONDITIONS

The implementation of the development plan will impact the Logan property and the existing waste water treatment plant (WWTP) property. The Logan Property is roughly 2.7 acres comprised of two parcels that are located off of Route 222 on the north side of the existing railroad tracks. The existing WWTP occurs within a 0.3 ± acre fenced area along the shoreline of the Susquehanna River and is separated from the Logan Property by the railroad right of way.

The Logan Property contains an abandoned homesite, former lawn areas, scattered trees and steep forested slopes. The level portions of the property have been previously developed for the home and associated railroad facilities. Currently no active uses appear to be ongoing on the site. Soils on the site are well drained but many samples revealed a stone bed 4-6 inches deep. This stone bed appears to be comprised of cobble/gravel sized material. It is not clear if this material is native or had been imported to the site as part of the past development. The property is separated from the 100 year floodplain of the Susquehanna River by the elevated railroad tracks that run along the southwestern edge of the site. No wetlands are present on this property. The forested slopes are severe and occupy approximately 1.1 acres of the site. There is some evidence of slope failure and erosion along the slope face. The forest on the slopes varies from young oak poplar to black locust dominated areas on steeper/eroded soils.

The onsite forest occurs primarily on steep slopes in the rear of the lot. This forest has been determined to be part of a larger forest habitat that provided forest interior habitat by the Department of Natural Resources. The onsite forest does not likely provide actual forest interior habitat as it is located along the outer edge of the stand. The entire onsite stand is impacted by

the edge effect. Given the steepness of the slopes, the edge effect may actually extend beyond the standard 100 foot width. However, since the onsite forest is connected to a larger forested matrix that includes interior habitat on the adjacent properties and steep slopes it is considered to be Forest Interior Habitat for the purposes of the Chesapeake Bay Critical Area regulations.

The isolated and narrow forested areas that occur on the terrace are not part of the contiguous forest slope habitat and would not be defined as interior habitat. This forest does not provide buffer or add any related benefit to the forest interior function of the forested slopes.

The existing WWTP occurs within the 100 year floodplain of the river. The facility includes wastewater tanks, sludge drying beds, and associated infrastructure. The facility is fenced. Areas inside the fence are intensely used. Adjacent areas within the floodplain are maintained as gravel parking lots.

The shoreline of the Susquehanna River has been historically armored with stone, concrete rubble, and poured concrete. No tidal wetlands are present along the shoreline. Some aquatic vegetation was observed floating offshore, it could not be determined if there are SAV beds along the shoreline at the time of this visit.

The proposed sewer interceptor has been designed to utilize the Route 222 right of way. The work will occur within the State right of way and will occur within the paved sections and along the vegetated road shoulder. Vegetation along the shoulder is varied and includes mowed grass and shrubby forest edge. Woody vegetation along the shoulder includes young black locust, black cherry, red maple, tulip poplar and box elder. Multiflora rose and bush honeysuckle are typically dense in the shrub layer. A stream system is present along the road shoulder. This system is confined within a deeply incised channel and does not support adjacent wetlands. The stream is piped as it travels back and forth across the right of way.

*no seen
bush
flow*

III. CRITICAL AREA ENVIRONMENTAL ASSESSMENT

The subject property occur within the Chesapeake Bay Critical Area. The CBCA zoning class for the property is IDA- Intensely Developed Area. As such development of the site will require compliance with the CBCA 10 percent pollutant reduction.

The project engineer has completed an assessment of the existing and proposed conditions for the proposed waste water treatment facility. This will include removal of existing home and driveway and construction of the facility. Existing impervious has been calculated at 0.085 acres. The proposed construction will result in the creation of 0.61 acres of impervious surface. In accordance with the 10 percent reduction calculation requirements the existing site conditions result in an average of 1.35 lbs of additional phosphorus runoff from the site each

year. The proposed development will create 1.67 lbs of phosphorus runoff per year in accordance with the calculations. Following Step 4 of the 10 percent reduction form, it is determined that the project must be designed to reduce phosphorus runoff by 0.45 lbs per year. The calculation forms are attached.

This pollutant reduction requirement can be addressed in one of four ways. The proposed alternatives include:

1. Creation of a bio-retention facility in the area of the WWTP to be removed
2. Creation of bio-retention facilities at the proposed stormwater management inlets
3. Creation of a bio-retention facility that will address run-off enter the site from Route 222
4. Payment of a fee-in-lieu.

The first three alternatives can be designed in accordance with the State's 2000 Stormwater Management Guidelines to meet the pollutant reduction requirements. These techniques will likely include a rain garden, grassed waterways or some combination thereof. The use of Alternate 1 provides the greatest flexibility to meet this goal but may not be feasible. The Town's plan for the area occurring in the within the limits of the WWTP to be removed. Alternates 2 and 3 can be designed to meet the State's water quality requirements.

Alternate 4 is being proposed because the credit for the 10 percent reduction may provide greater benefit elsewhere in the Town. The subject property is not likely to generate substantial pollutant runoff due to the use of the site. Areas with existing parking and commercial/ industrial uses in the Town may contribute more pollutant runoff per acre than the proposed development. Utilization of the fee-in-lieu to meet the 10 percent reduction obligation for this site could potentially address existing run-off problems of greater impact.

The final disposition of the 10 percent rule will be addressed in the final site plans that will be submitted for grading permit approval.

In addition to the efforts made to specifically address the 10 percent reduction requirements, it should be noted that the removal of the existing WWTP from within the 100 year floodplain will provide substantial potential for water quality improvements. Removing the existing facility from within the 100 year floodplain will greatly reduce the possibility for flood induced release of untreated waste occurring. The new facility will be located outside the floodplain and should have a much greater risk of this event.

Development of the sites may impact a portion of the forested slopes and will require clearing of trees on the level portion of the Logan Property. In accordance with the CBCA regulations, the clearing of forest interior habitat requires 1:1 replacement. Based on the current

site design 1,750 sq.ft. of forest associated with the forest interior habitat will be disturbed by this project. The forest clearing will impact the outer margin of the forest and will not directly impact forest utilized by interior dwelling bird species. The clearing may impact the buffer function of the forest.

To mitigate for the clearing required for grading and site development, the project proposes 1,800 sq.ft. of reforestation along the edge of the existing forest. This will expand the forest buffer along approximately 150 linear feet of the forest edge and meet the CBCA's reforestation requirement for clearing of forest interior habitat on IDA zoned properties.

The plans provided indicate that grading is proposed within the 100 year floodplain. This work, in addition to the removal of the WWTF, will require approval from the Maryland Department of the Environment's (MDE) Waterway Construction Program.

No impacts to wetlands and no permanent impacts to waters only resources are anticipated for this project. The project will not impact colonial nesting waterbird habitat, rare threatened or endangered species or their habitat. The project will have no impact on anadromous fish habitat.

IV. CONCLUSIONS

The proposed relocation of the waste water treatment plant will be designed to meet the Chesapeake Bay Critical Area requirements. The project can include techniques to meet the 10 percent pollutant reduction requirements in several ways. Final development plans will include specific techniques designed to address the pollutant runoff reduction requirements or documentation of the fee-in-lieu payment acceptance by the Critical Area Commission.

The required reforestation of forest interior habitat to be cleared can be performed onsite. This reforestation will be located along the outer edge of the existing forest limits and will replace the buffer function impacted by the proposed forest clearing. The proposed use of the development site should be of a low intensity that will not have indirect impact to adjacent forest interior habitat function of value.

The project will not impact priority wetland or water of the US resource areas within the Critical Area and will result in the relocation of the waste water treatment plan facilities from within the 100 year floodplain.

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

V. AUTHORSHIP

This study was performed by John Canoles and Henry Leskinen. Co-founders of Eco-Science Professionals, Inc., 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. Marys College of Maryland in St. Marys 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 (Appendix D). Mr. Canoles is certified by the MD DNR as a Qualified Observer of Forest Interior Dwelling Birds.

Worksheet A: Standard Application Process**Calculating Pollutant Removal Requirements¹****Step 1: Calculate Existing and Proposed Site Imperviousness****A. Calculate Percent Imperviousness**

- 1) Site Area within the Critical Area IDA, A = 2.70 acres
- 2) Site Impervious Surface Area, Existing and Proposed, (See Table 4.1 for details)

| | (a) Existing (acres) | (b) Proposed (acres) |
|-------------------------|----------------------|----------------------|
| Roads | <u>0.06 ac</u> | <u>0</u> |
| Parking lots | <u>0</u> | <u>0.40</u> |
| Driveways | <u>0</u> | <u>0</u> |
| Sidewalks/paths | <u>0</u> | <u>0.038</u> |
| Rooftops | <u>0.025 ac</u> | <u>0.17</u> |
| Decks | <u>0</u> | <u>0</u> |
| Swimming pools/ponds | <u>0</u> | <u>0</u> |
| Other | <u>0</u> | <u>0</u> |
| Impervious Surface Area | <u>0.085 ac</u> | <u>0.61 ac</u> |

- 3) Imperviousness (I)

$$\begin{aligned}
 \text{Existing Imperviousness, } I_{\text{pre}} &= \text{Impervious Surface Area / Site Area} \\
 &= (\text{Step 2a}) / (\text{Step 1}) \\
 &= (0.085) / (2.70) \\
 &= 0.139 = 13.9\%
 \end{aligned}$$

$$\begin{aligned}
 \text{Proposed Imperviousness, } I_{\text{post}} &= \text{Impervious Surface Area / Site Area} \\
 &= (\text{Step 2b}) / (\text{Step 1}) \\
 &= (0.61) / (2.70) \\
 &= 0.2259 = 22.59\%
 \end{aligned}$$

B. Define Development Category (circle)

- 1) New Development: Existing imperviousness less than 15% I (Go to Step 2A)
- 2) Redevelopment: Existing imperviousness of 15% I or more (Go to Step 2B)
- 3) Single Lot Residential Development: Single lot being developed or improved; single family residential development; and more than 250 square feet of impervious area and associated disturbance (Go to Section 5, Residential Approach, for detailed criteria and requirements).

¹ NOTE: All acreage used in this worksheet refers to areas within the IDA of the Critical Area only.

Step 2: Calculate the Predevelopment Load (L_{pre})

A. New Development

$$\begin{aligned}
 L_{pre} &= (0.5) (A) \\
 &= (0.5) (\underline{2,70}) \\
 &= \underline{1,35} \text{ lbs /year of total phosphorus}
 \end{aligned}$$

Where:

- L_{pre} = Average annual load of total phosphorus exported from the site prior to development (lbs/year)
- 0.5 = Annual total phosphorus load from undeveloped lands (lbs/acre/year)
- A = Area of the site within the Critical Area IDA (acres)

B. Redevelopment

$$\begin{aligned}
 L_{pre} &= (R_v) (C) (A) (8.16) \\
 R_v &= 0.05 + 0.009 (I_{pre}) \\
 &= 0.05 + 0.009 (\underline{\hspace{2cm}}) = \underline{\hspace{2cm}} \\
 L_{pre} &= (\underline{\hspace{2cm}}) (\underline{\hspace{2cm}}) (\underline{\hspace{2cm}}) (8.16) \\
 &= \underline{\hspace{2cm}} \text{ lbs/year of total phosphorus}
 \end{aligned}$$

Where:

- L_{pre} = Average annual load of total phosphorus exported from the site prior to development (lbs/year)
- R_v = Runoff coefficient, which expresses the fraction of rainfall which is converted into runoff
- I_{pre} = Pre-development (existing) site imperviousness (i.e., $I = 75$ if site is 75% impervious)
- C = Flow-weighted mean concentration of the pollutant (total phosphorus) in urban runoff (mg/l) = 0.30 mg/l
- A = Area of the site within the Critical Area IDA (acres)
- 8.16 = Includes regional constants and unit conversion factors

| |
|--|
| Step 3: Calculate the Post-Development Load (L_{post}) |
|--|

A. New Development and Redevelopment:

$$L_{post} = (R_v) (C) (A) (8.16)$$

$$R_v = 0.05 + 0.009 (I_{post})$$

$$= 0.05 + 0.009 (\underline{22.59}) = \underline{0.25}$$

$$L_{post} = (\underline{0.25}) (\underline{0.30}) (\underline{2.70}) (8.16)$$

$$= \underline{1.67} \text{ lbs/year of total phosphorus}$$

Where:

L_{post} = Average annual load of total phosphorus exported from the post-development site (lbs/year)

R_v = Runoff coefficient, which expresses the fraction of rainfall which is converted into runoff

I_{post} = Post-development (proposed) site imperviousness (i.e., $I = 75$ if site is 75% impervious)

C = Flow-weighted mean concentration of the pollutant (total phosphorus) in urban runoff (mg/l) = 0.30 mg/l

A = Area of the site within the Critical Area IDA (acres)

8.16 = Includes regional constants and unit conversion factors

| |
|--|
| Step 4: Calculate the Pollutant Removal Requirement (RR) |
|--|

$$RR = L_{post} - (0.9) (L_{pre})$$

$$= (\underline{1.67}) - (0.9) (\underline{1.35})$$

$$= \underline{0.45} \text{ lbs/year of total phosphorus}$$

Where:

RR = Pollutant removal requirement (lbs/year)

L_{post} = Average annual load of total phosphorus exported from the post-development site (lbs/year)

L_{pre} = Average annual load of total phosphorus exported from the site prior to development (lbs/year)

Step 5: Identify Feasible BMP(s)

Select BMP Options using the screening matrices provided in the Chapter 4 of the 2000 Maryland Stormwater Design Manual. Calculate the load removed for each option.

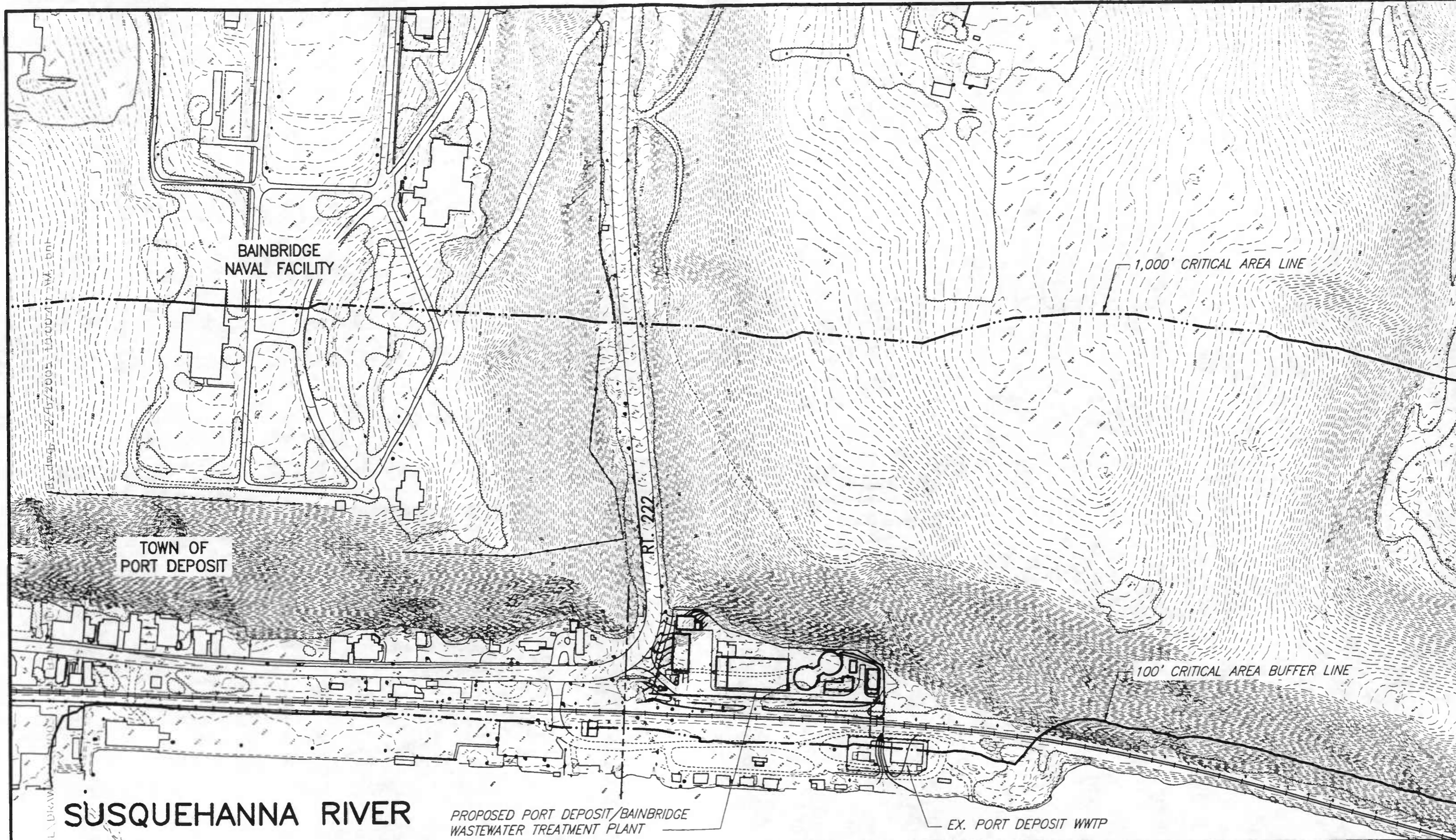
| BMP Type | (L _{post}) | x | (BMP _{RE}) | x | (% DA Served) | = | LR |
|---------------|----------------------|---|----------------------|---|---------------|---|----------------|
| Bio-retention | 2.71 | x | 50% | x | 35% | = | 0.47 lbs/year |
| _____ | _____ | x | _____ | x | _____ | = | _____ lbs/year |
| _____ | _____ | x | _____ | x | _____ | = | _____ lbs/year |
| _____ | _____ | x | _____ | x | _____ | = | _____ lbs/year |
| | | | | | | Load Removed, LR (total) = | 0.47 lbs/year |
| | | | | | | Pollutant Removal Requirement, RR (from Step 4) = | 0.45 lbs/year |

Where:

- Load Removed, LR = Annual total phosphorus load removed by the proposed BMP (lbs/year)
- L_{post} = Average annual load of total phosphorus exported from the post-development site (lbs/year)
- BMP_{RE} = BMP removal efficiency for total phosphorus, Table 4.8 (%)
- % DA Served = Fraction of the site area within the critical area IDA served by the BMP (%)
- RR = Pollutant removal requirement (lbs/year)

If the Load Removed is equal to or greater than the Pollutant Removal Requirement computed in Step 4, then the on-site BMP complies with the 10% Rule.

Has the RR (pollutant removal requirement) been met? Yes No



12-6572005-1A000712W.dwg

GMB/BIN/E/L/DRW

BAINBRIDGE
NAVAL FACILITY

TOWN OF
PORT DEPOSIT

1,000' CRITICAL AREA LINE

100' CRITICAL AREA BUFFER LINE

RT. 222

SUSQUEHANNA RIVER

PROPOSED PORT DEPOSIT/BAINBRIDGE
WASTEWATER TREATMENT PLANT

EX. PORT DEPOSIT WWTP

VICINITY MAP
SCALE: 1" = 200'

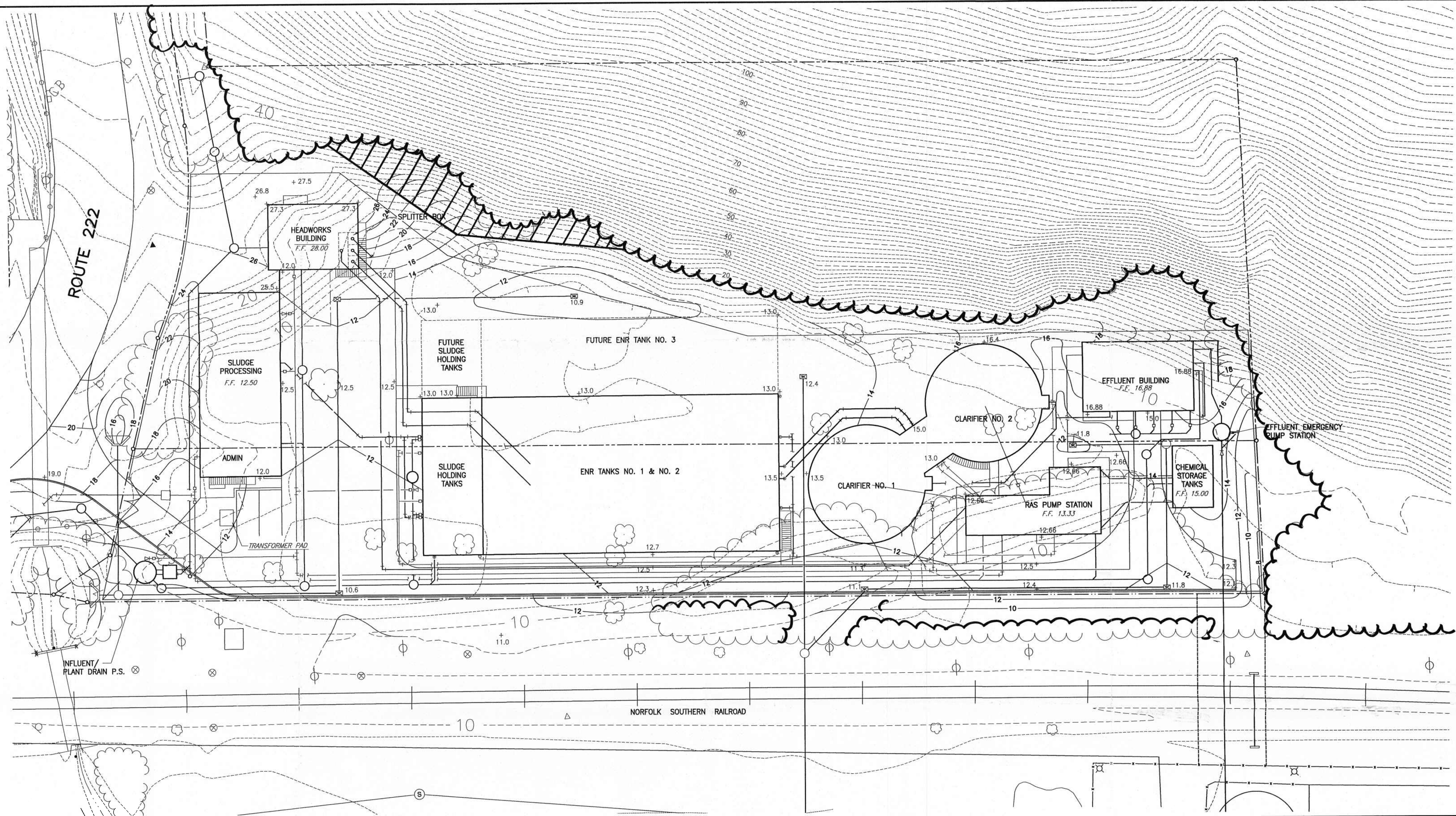


GMB
GEORGE, MILES & BUHR, LLC
ARCHITECTS & ENGINEERS
SALISBURY · BALTIMORE · LEWES · YORK

DATE: DECEMBER, 2005
SCALE: 1" = 200'

BAINBRIDGE WWTP
FOR THE TOWN OF PORT DEPOSIT
CECIL COUNTY, MARYLAND

SKETCH
1



- Legend -**
- Existing Contours
 - Existing Forest Limits
 - Proposed Forest Limits/Treeline
 - Proposed Reforestation Area

NOTES:

1. A TEMPORARY GRADING EASEMENT WILL BE REQUIRED BETWEEN THE PROPOSED PROPERTY LINE AND THE RAILROAD TRACKS TO ADDRESS DRAINAGE CONCERNS.

PROPOSED GRADING PLAN

SCALE: 1" = 20'



CBCA Notes

1. The subject property has a CBCA zoning of IDA.
2. The MD DNR has determined that the forested slopes on the site are part of a Forest Interior Dwelling Bird habitat.
3. The proposed development will require clearing of 1,750 sq.ft. of forest interior habitat. The applicant will provide 1,800 sq.ft. of onsite reforestation. Final planting plans and specifications will be provided on the Final Site Development/Grading Plan for the project.
4. The project has been designed to include techniques that will allow the development to meet the 10 percent pollutant reduction requirements. Final design and specification of the appropriate stormwater management facilities will be provided on the Final Site Development/Grading Plan for the project.

Eco-Science Professionals, Inc.
 Consulting Ecologists
 P.O. Box 5906 Glen Arm, Maryland 21057 Telephone (410) 592-6752 Fax (410) 832-2488

| NO. | DATE | REVISIONS |
|-----|------|-----------|
| | | |
| | | |
| | | |

**BAINBRIDGE
 WASTEWATER TREATMENT PLANT
 FOR THE TOWN OF PORT DEPOSIT**

GMB
 GEORGE, MILES & BUHR, LLC
 ARCHITECTS & ENGINEERS
 SALISBURY • BALTIMORE • LEWES • SEAFORD • YORK
 www.gmbnet.com

| PROPOSED GRADING PLAN | | SHEET NO. |
|-----------------------|---------------|-------------------|
| DESIGN | DRS | C-6 |
| DRAWN | BNL | |
| CHECKED | JK | |
| JOB | 2003.120B | |
| DATE | OCTOBER, 2006 | DRAWING 11 OF 107 |

