

- AN 629-07 Turner Marina
~~Site Plan~~ Other

51829-6413

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 6, 2008

Sally Nash
City of Annapolis
Department of Planning and Zoning
145 Gorman Street, 3rd Floor
Annapolis, Maryland 21401

Re: Turner Marina Site Plan

Dear Ms. Nash:

Thank you for providing revised information on the above referenced project. The applicant plans to redevelop an existing lot that is designated as an Intensely Developed Area (IDA) and a Buffer Exemption Area (BEA). The property is currently developed with a dwelling, marina and parking lot and the proposed development is construction of a new commercial building, marina office and parking lot.

As you are aware, this office confirmed in my November 21, 2007 and April 18, 2008 comment letters that the applicant has addressed all of this office's previously submitted comments on this project. It does not appear that any new Critical Area issues have been raised by the most recent changes to the plans. Therefore, this office has no further comments on the project at this time.

Thank you for the opportunity to provide comments. If you have any questions, please feel free to call 410-260-3481.

Sincerely,

A handwritten signature in black ink, appearing to read "AW", written over a light blue horizontal line.

Amber Widmayer
Natural Resource Planner
AN 629-07
AN 607-07

Martin O'Malley
Governor

Anthony G. Brown
Lt. Governor



Margaret G. McHale
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April 18, 2008

Sally Nash
City of Annapolis
Department of Planning and Zoning
145 Gorman Street, 3rd Floor
Annapolis, Maryland 21401

Re: Turner Marina Site Plan

Dear Ms. Nash:

Thank you for providing revised information on the above referenced project. The applicant plans to redevelop an existing lot that is designated as an Intensely Developed Area (IDA) and a Buffer Exemption Area (BEA). The property is currently developed with a dwelling, marina and parking lot and the proposed development is construction of a new commercial building, marina office and parking lot.

As you are aware, this office confirmed in my November 21, 2007 comment letter that the applicant has addressed all of this office's previously submitted comments on this project. It does not appear that any new Critical Area issues have been raised by the most recent changes to the plans. Therefore, this office has no further comments on the project at this time.

Thank you for the opportunity to provide comments. If you have any questions, please feel free to call 410-260-3481.

Sincerely,

A handwritten signature in black ink, appearing to read "AWidmayer".

Amber Widmayer
Natural Resource Planner
AN 629-07
AN 607-07

Martin O'Malley
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Lt. Governor



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1804 West Street, Suite 100, Annapolis, Maryland 21401

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November 21, 2007

Sally Nash
City of Annapolis
Department of Planning and Zoning
145 Gorman Street, 3rd Floor
Annapolis, Maryland 21401

Re: Turner Marina Site Plan

Dear Ms. Nash:

Thank you for providing information on the above referenced site plan. The applicant plans to redevelop an existing lot that is designated as an Intensely Developed Area (IDA) and a Buffer Exemption Area (BEA). The property is currently developed with a dwelling, marina and parking lot and the proposed development is construction of a new commercial building, marina office and parking lot.

It appears that the applicant has revised the plans such that both the 10% pollutant reduction requirement and the 2:1 BEA mitigation requirement for the proposed project have been addressed. The applicant has addressed the 10% removal requirement of 0.158 pounds of phosphorous per year through an offset of plantings onsite and on the adjacent City owned property. The applicant has addressed the 2:1 BEA mitigation requirement through a combination of plantings onsite, removal of impervious surface, and through payment into the City's fee in lieu of planting fund. Therefore, the applicant has addressed this office's concerns as stated in our meeting with the applicant on October 24, 2007, and this office has no remaining comments on this project.

Thank you for the opportunity to provide comments. If you have any questions, please feel free to call 410-260-3481.

Sincerely,

A handwritten signature in black ink, appearing to read "Amber Widmayer".

Amber Widmayer
Natural Resource Planner
AN 629-07

607-07



City of Annapolis
DEPARTMENT OF PLANNING AND ZONING

Municipal Building, 145 Gorman Street, Annapolis, Maryland 21401
Annapolis 410-263-7961 • FAX 410-263-1129 • TDD 410-263-7943

Chartered 1708

JON ARASON, AICP
DIRECTOR

September 11, 2007

Chesapeake Bay Critical Area Commission
Attn: Ms. Amber Widmayer
1804 West Street, Suite 100
Annapolis, MD 21401

RE: Variance Question

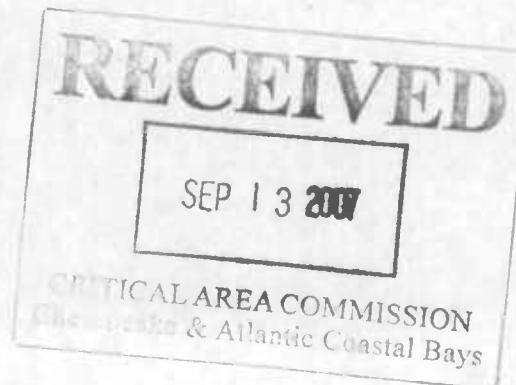
Dear Amber:

This is the project I was asking you about. Do you think this SWM would require a variance?
It's IDA/BEA. Thanks so much for looking at it for me.

If you have any questions, please feel free to call me at 410-263-7961 or email me at
snash@annapolis.gov.

Sincerely,

Sally Nash, Ph.D.
Land Use and Development Planner
Department of Planning and Zoning
City of Annapolis
145 Gorman St.
Annapolis, MD 21401



Worksheet A: Standard Application Process

Calculating Pollutant Removal Requirements

Step 1: Calculate Existing and Proposed Site Imperviousness

A. Calculate Percent Imperviousness

1) Site Area within the Critical Area (CA), A = 0.382882 Acres

2) Site Impervious Surface Area, Existing and Proposed, (See Table 4.1 for details)

| (a) Existing (acres) | (b) Proposed (acres) |
|--------------------------------|----------------------|
| Roads | 0.107487 |
| Parking Lots | 0.107487 |
| Driveways | 0.107487 |
| Roofs | 0.107487 |
| Other | 0.107487 |
| Impervious Surface Area | 0.515876 |

3) Imperviousness (I)

Existing Imperviousness, I_e = Impervious Surface Area / Site Area = 0.515876 / 0.382882 = 1.3474

Proposed Imperviousness, I_p = Impervious Surface Area / Site Area = 0.515876 / 0.382882 = 1.3474

4) Define Development Category (C) (see Table 4.2)

1) Single-Family Residential: Existing Imperviousness less than 15% (10% to Step 2A)

2) Medium-Density Residential: Existing Imperviousness of 15% or more (10% to Step 2B)

3) Single-Family Residential: 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 design and engineering)

4) Single-Family Residential: 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 design and engineering)

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

A. New Development

L_{pd} = (0.5A) / (0.5) = 0.5A

Where:

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

A = Annual total phosphorus load from underlying lands (lb/acre/year) / Area of site within the Critical Area (CA) (acres)

B. Redevelopment

L_{pd} = (R_v - R_e) / (0.5) = 0.5(R_v - R_e)

Where:

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

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

R_e = Runoff coefficient, which expresses the fraction of rainfall which is converted to runoff

C = Flow-weighted mean concentration of the pollutant (total phosphorus) in urban runoff (mg/l = 0.001 mg/l)

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

0.5 = Includes regional constants and unit conversion factors

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

A. New Development and Redevelopment

L_{pd} = (R_v - R_e) / (0.5) = 0.5(R_v - R_e)

Where:

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

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

R_e = Runoff coefficient, which expresses the fraction of rainfall which is converted to runoff

C = Flow-weighted mean concentration of the pollutant (total phosphorus) in urban runoff (mg/l = 0.001 mg/l)

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

0.5 = Includes regional constants and unit conversion factors

Step 4: Calculate the Pollutant Removal Requirements (RR)

RR = L_{pd} - L_{pd} = 0.158

Where:

RR = Pollutant removal requirement (lb/year)

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

L_{pd} = Average annual load of total phosphorus exported from the site prior to development (lb/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 (lb/year) x (BMP%) x (% DA Served) = LR

Off-site Plantings @ 400 Trees per Acre for 2 Inlets = 0.158 lb/year

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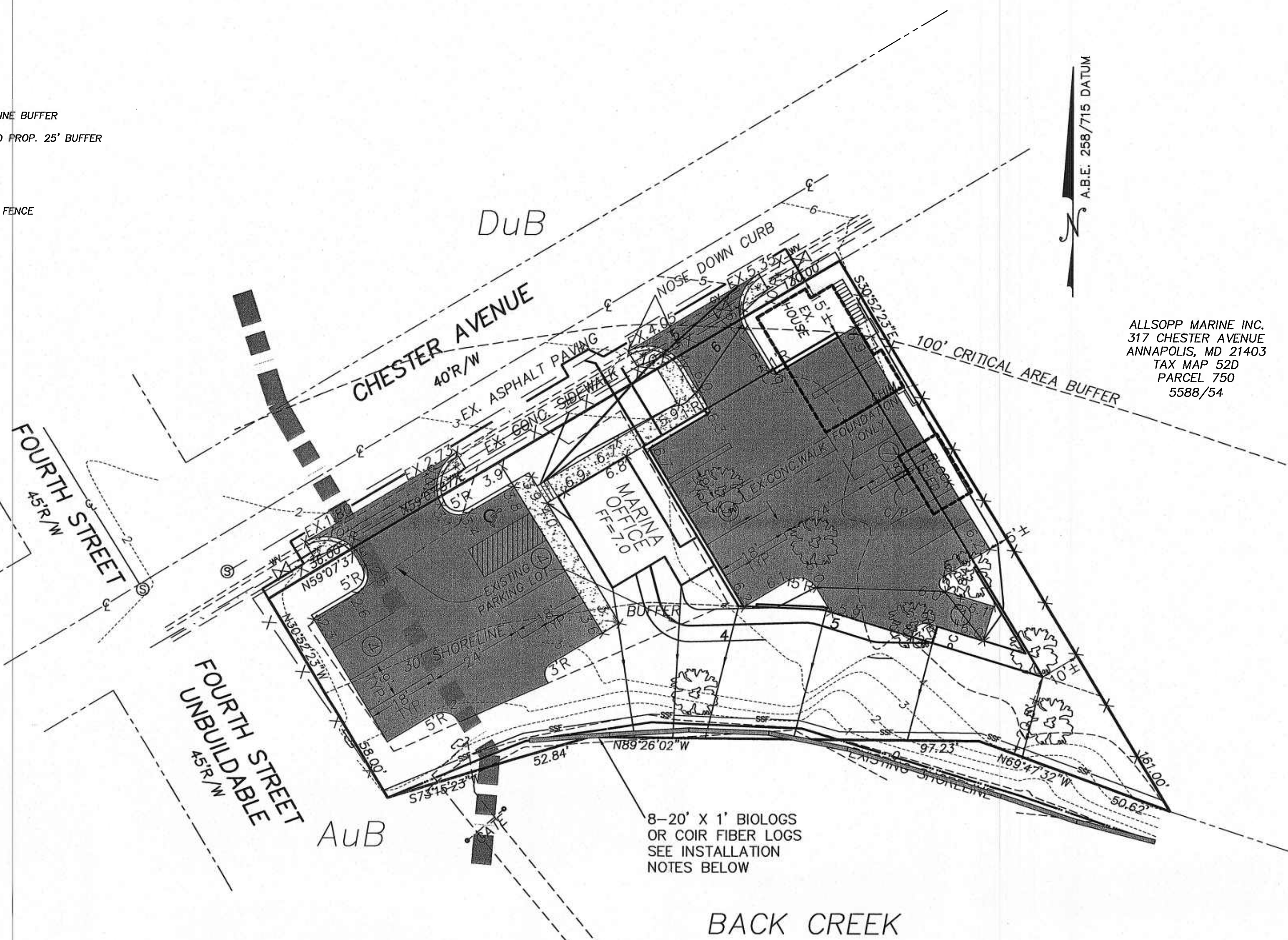
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LEGEND

- DENOTES EX. TREE LINE
- X-X-X- DENOTES EX. FENCE LINE
- - - - DENOTES EXISTING SHORELINE
- - - - DENOTES PROPOSED 30' SHORELINE BUFFER
- DENOTES EX. STEEP SLOPES AND PROP. 25' BUFFER
- DENOTES EXISTING CONTOURS
- DENOTES PROPOSED CONTOURS
- DENOTES PROPOSED SUPER SILT FENCE
- DENOTES LIMIT OF DISTURBANCE
- DENOTES SOIL BOUNDARY
- DENOTES PROPOSED CURBING

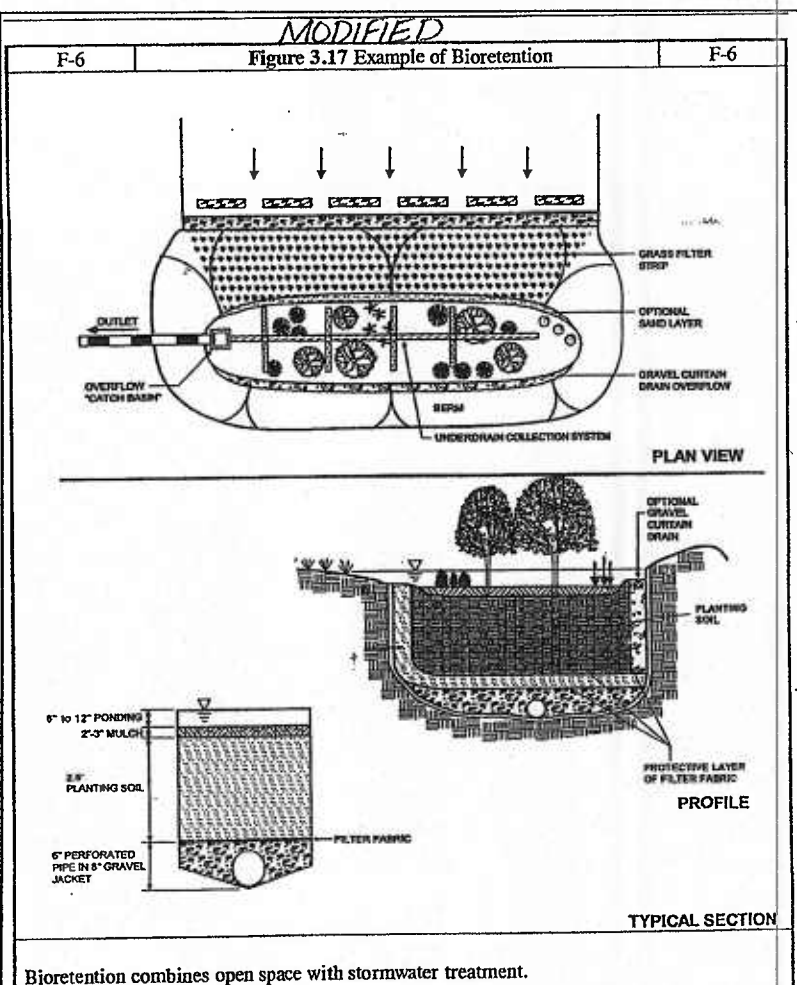


- NOTES:
- ALL RADII 5' UNLESS OTHERWISE NOTES.
 - ALL SPOT ELEVATION REFER TO FLOW LINE UNLESS OTHERWISE NOTED.
 - ALL STORM DRAIN PIPE TO BE PVC UNLESS OTHERWISE APPROVED BY THE CITY OF ANNAPOLIS.
 - ALL EXISTING STRUCTURES ARE TO BE REMOVED UNLESS OTHERWISE NOTED.

10% RULE SWM CONCEPT/STATEMENT

AS SHOWN, THE 10% RULE COMPUTATIONS INDICATE THE NEED TO PROVIDE A STORMWATER MANAGEMENT BMP IN ORDER TO REMOVE 0.158 LBS./YEAR OF POLLUTANTS. AS IS NECESSARY, DEVICES WERE REVIEWED FOR THEIR FEASIBILITY WITH PLACEMENT ONSITE AS A FIRST PRIORITY. IT WAS DETERMINED THAT ANY DEVICE IMPLEMENTED WOULD REQUIRE A CRITICAL AREA VARIANCE DUE TO THE FACT THAT THE DEVICE(S) WOULD BE LOCATED WITHIN THE 100' CRITICAL AREA BUFFER, AND MOST WOULD BE LOCATED WITHIN THE 25' SHORELINE BUFFER. OFFSITE IMPROVEMENTS TO EXISTING DEVICES WERE DETERMINED NOT TO BE FEASIBLE DUE TO THE FACT THAT NONE ARE LOCATED WITHIN THE SAME DRAINAGE AREA.

THEREFORE, IT WAS DETERMINED BY THE CRITICAL AREA COMMISSION AND THE CITY OF ANNAPOLIS REPRESENTATIVES THAT AN OFFSET WOULD BE ALLOWED FOR THIS PARTICULAR SITE DUE TO ITS SPECIFIC DESIGN CONSTRAINTS. THAT OFFSET IS THE PROVISION OF PLANTINGS AT A RATE OF 400 TREES PER ACRE TO REMOVE 2 POUNDS OF POLLUTANTS. THE REQUIRED PLANTING OF 32 TREES TO REMOVE 0.16 LBS./YEAR ARE SHOWN ON SHEET 3 OF 3.



Appendix B.3. Construction Specifications for Sand Filters, Bioretention and Open Channels

B.3.B Specifications for Bioretention

- Material Specifications**
The allowable materials to be used in bioretention areas are detailed in Table B.3.2.
- Planting Soil**
The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the bioretention area that may be harmful to plant growth, or grow a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.06.01.05.
When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.
When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.
4. Plant Material
Recommended plant material for bioretention areas can be found in Appendix A, Section A.2.3.
5. Plant Installation
Mulch should be placed to a uniform thickness of 2" to 3". Shredded hardwood mulch is the only accepted mulch. Fine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.
Root stock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8" of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground ball cover after installation.
Trees shall be banded using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers, defoliant, or a stimulant, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet.

- Underdrains**
Underdrains are to be placed on a 3'-0" wide section of filter cloth. Pipe is placed next, followed by the gravel bedding. The ends of underdrain pipes not terminating in an observation well shall be capped.
The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).
- Miscellaneous**
The bioretention facility may not be constructed until all contributing drainage area has been stabilized.

| Material | Specification | Size | Note |
|--|---|---|---|
| Plantings | see Appendix A, Table A.4 | n/a | plantings are site-specific |
| planting soil | see Appendix A, Table A.4 | n/a | USDA soil types heavy sand, sandy loam or loess (2.5' to 4' deep) |
| mulch | shredded hardwood | n/a | aged 6 months, minimum |
| see gravel (diaphragm and curtain drain) | see gravel: ASTM D-446 | see gravel: No. 6 | stone: 2" to 3" |
| geotextile | Class "C" - geotextile opening size (ASTM-D-4751), grab tensile strength (ASTM-D-4622), puncture resistance (ASTM-D-4633) | n/a | see use as necessary beneath underdrains only |
| underdrain gravel | ASTM D-446 | 0.25" to 0.75" | |
| underdrain piping | F 78, Type PS 28 or AASHTO M-29 | 4" to 6" rigid schedule 40 PVC or SDR33 | 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underdrain pipes on the bed of gravel to place concrete required. |
| power in place concrete (if required) | MSEA MA No. 3, F _c = 3000 psi @ 28 days, normal weight, air-entrained, reinforcing to meet ASTM A-640 | n/a | 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved form or load standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 308.2B; vertical loading 15-10 to 15-20; allowable horizontal loading (based on soil pressure) and analysis of potential cracking. |
| sand (1" deep) | AASHTO M-6 or ASTM C-35 | 0.075" to 0.04" | Sand substitutions such as Diabase and Gypstone #10 are not acceptable. No silicon oil-treated or colloidal sand substitutions are acceptable. No "rock dust" can be used for sand. |

SITE DEVELOPMENT PLAN
REDEVELOPMENT
AT TURNER MARINA
319 CHESTER AVENUE, ANNAPOLIS, MARYLAND 21403

WILKERSON
& ASSOCIATES INC.
ENGINEERS & SURVEYORS
Box 17, Dunkirk, Maryland
(410)957-3332, (301)955-8872

SHEET 2 OF 3
GRADING PLAN

| DATE | REVISION |
|---------------------------|-----------|
| OCT. 2007 <td></td> | |
| SCALE <td>1" = 20'</td> | 1" = 20' |
| DRAWN BY <td>MB</td> | MB |
| CHECKED BY <td>MB</td> | MB |
| FILE # <td>AA1022PDP</td> | AA1022PDP |
| DATE <td>10/1/07</td> | 10/1/07 |
| PROJECT <td>16372</td> | 16372 |

LEGEND

- DENOTES EX. TREE LINE
- DENOTES EX. FENCE LINE
- DENOTES EXISTING SHORELINE
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- DENOTES LIMIT OF DISTURBANCE
- DENOTES SOIL BOUNDARY
- DENOTES PROPOSED CURBING

FINAL LOCATION OF THESE PLANTINGS TO BE DETERMINED BY THE CITY

CRITICAL AREA BUFFER MANAGEMENT TABULATION

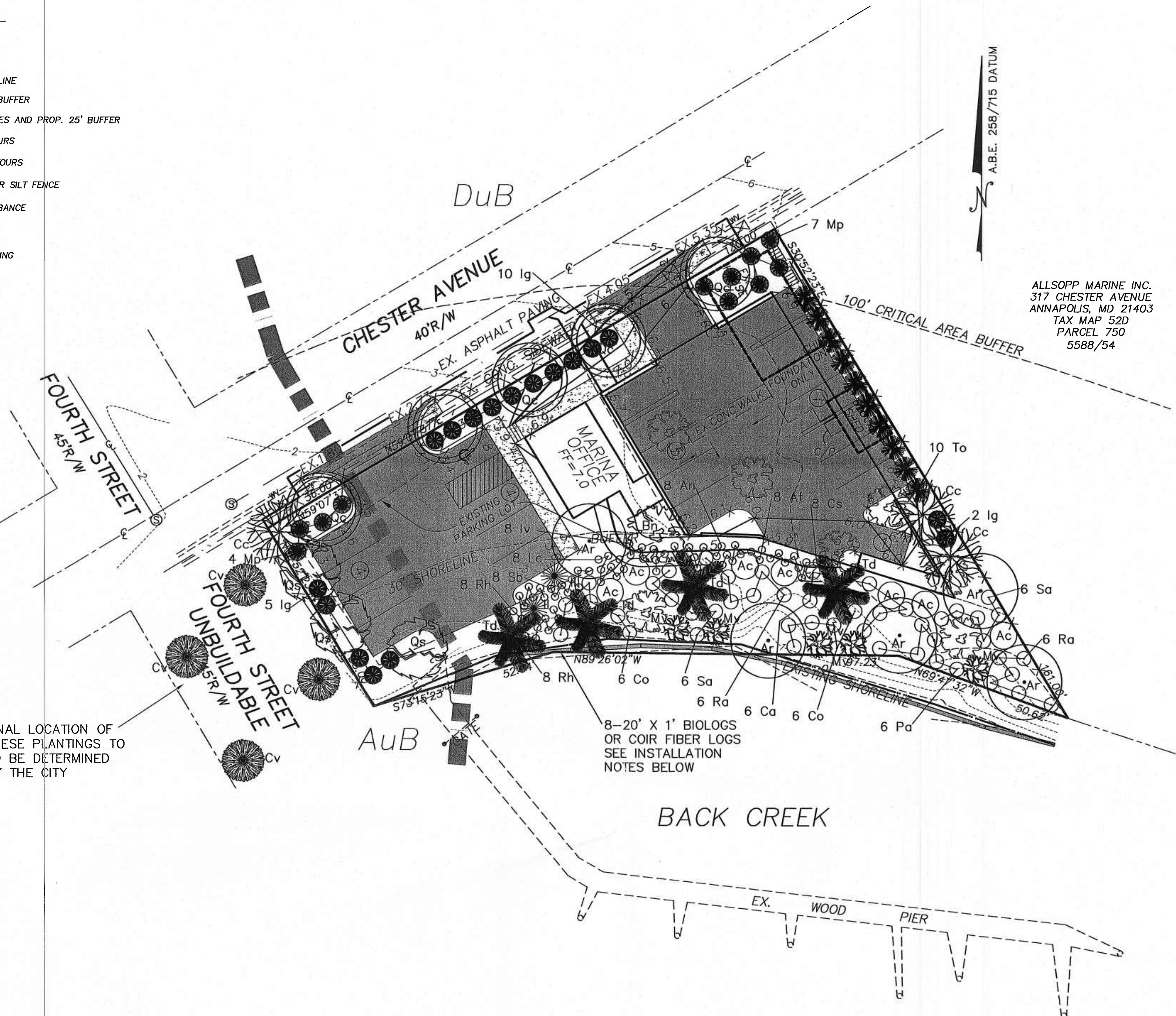
DISTURBED AREA WITHIN BUFFER: 12,058 SQUARE FEET
 BEA MITIGATION RATIO: 2:1
 MITIGATION AREA REQUIRED: 24,116 SQUARE FEET
 LESS AREA WHICH IS BEING IMPROVED: 1,057 SQUARE FEET
 REMAINING BUFFER EXEMPTION AREA: 23,059 SQUARE FEET

PLANTING PROVIDED ON-SITE:
 32 SHRUBS X 50 SQUARE FEET = 1,600 SQUARE FEET

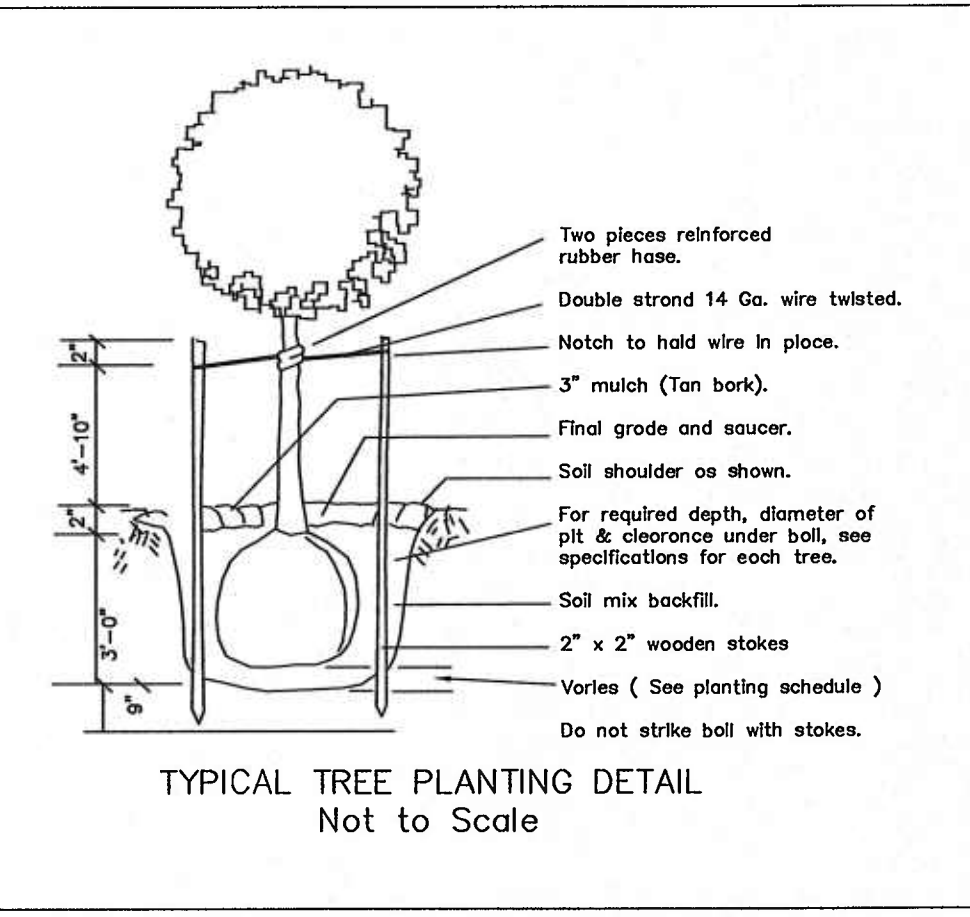
REMAINING REQUIREMENT= 21,459 SQUARE FEET

REQUIRED ADDITIONAL PLANTING:
 1 TREE + 3 SHRUBS: 53 X 400 SQUARE FEET = 21,200 SQUARE FEET
 1 TREE: 2 X 100 SQUARE FEET = 200 SQUARE FEET
 1 SHRUB: 2 X 50 SQUARE FEET: 100 SQUARE FEET
 TOTAL ADDITIONAL PLANTING REQUIREMENT: 21,500 SQUARE FEET

FEE IN LIEU AMOUNT: \$ 9,880
 (SEE ATTACHED LANDSCAPE COST ESTIMATE)

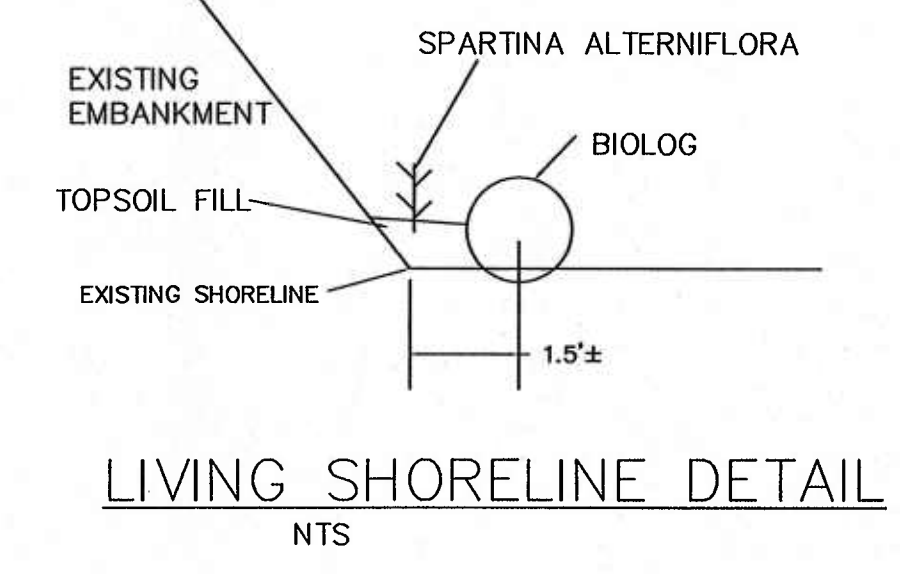


ALLSOPP MARINE INC.
 317 CHESTER AVENUE
 ANNAPOLIS, MD 21403
 TAX MAP 52D
 PARCEL 750
 5588/54



| SITE PLANTING SCHEDULE | | | | | |
|------------------------|--------|-------|------------------------|---------------------|-----------------------|
| ABBREV. | SYMBOL | QUAN. | BOTANICAL NAME | COMMON NAME | TYPE / SIZE / SPACING |
| Qc | | 5 | Quercus coccinea | Scarlet Oak | B & B 2" - 2.5" Cal. |
| Qs | | 3 | Quercus stellata | Post Oak | B & B 2" - 2.5" Cal. |
| Bn | | 1 | Betula nigra | River Birch | B & B 2" - 2.5" Cal. |
| Cc | | 3 | Cercis canadensis | Redbud | B & B 2" - 2.5" Cal. |
| To | | 10 | Thuja occidentalis | American Arborvitae | B & B 4-5 Feet |
| Mp | | 11 | Myrica pennsylvanica | Northern Bayberry | Container 3-4 Gallon |
| Ig | | 17 | Ilex glabra | Inkberry | Container 3-4 Gallon |
| Cv | | 4 | Chionanthus virginicus | White Fringtree | Container 3-4 Gallon |

| SHORELINE BUFFER PLANTING SCHEDULE | | | | | |
|------------------------------------|--------|-------|----------------------------|----------------------------|-----------------------|
| ABBREV. | SYMBOL | QUAN. | BOTANICAL NAME | COMMON NAME | TYPE / SIZE / SPACING |
| Ar | | 5 | Acer rubrum | Red Maple | B & B 2" - 2.5" Cal. |
| Td | | 4 | Taxodium distichum | Bald Cypress | B & B 2" - 2.5" Cal. |
| Ac | | 7 | Amelanchier canadensis | Shadblow | Container 3 Gallon |
| Mv | | 5 | Magnolia virginiana | Sweetbay Magnolia | Container 3 Gallon |
| Il | | 2 | Ilex laevigata | Winterberry | Container 3 Gallon |
| Ra | | 12 | Rhododendron atlanticum | Dwarf Azalea | Container 1 Gallon |
| Sa | | 12 | Spiraea alba | Narrow-leaved Meadow-sweet | Container 1 Gallon |
| Pa | | 6 | Polystichum acrostichoides | Christmas fern | Container 3 1/2" Cal. |
| Ca | | 6 | Clethra alnifolia | Sweet Pepperbush | Container 1 Gallon |
| Co | | 12 | Cephalanthus occidentalis | Button Bush | Container 1 Gallon |
| Cs | | 8 | Carex stricta | Tussock Sedge | Container 1 Quart |
| At | | 8 | Asclepias tuberosa | Butterflyweed | Container 1 Quart |
| An | | 8 | Aster novae-angliae | New England Aster | Container 1 Quart |
| Iv | | 8 | Iris versicolor | Blue Flag | Container 1 Quart |
| Lc | | 8 | Lobelia cardinalis | Cardinal Flower | Container 1 Quart |
| Sb | | 8 | Solidago bicolor | Silver Rod Goldenrod | Container 1 Quart |
| Rh | | 16 | Rudbeckia hirta | Black-eyed Susan | Container 1 Quart |



BIOLOG INSTALLATION NOTES

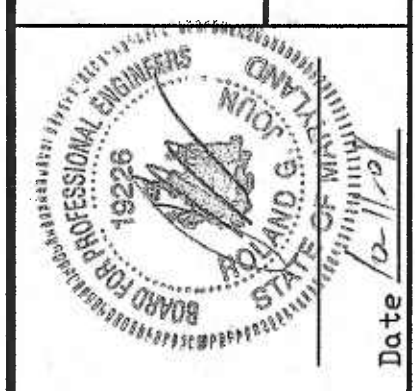
- NO DISTURBANCE IS TO BE DONE TO THE EMBANKMENT SLOPE SHOWN HEREON. LOGS ARE TO BE PLACED BEGINNING AT THE END OF THE EXISTING RETAINING WALL AND EXTENDING TO THE EDGE OF THE PROPERTY.
- PLACEMENT OF LOGS IS TO BE AT APPROXIMATELY 1.5' FROM THE EXISTING SHORELINE SHOWN HEREON AND ONLY TO BE DONE DURING MID TO LOW TIDES.
- PLACE EACH LOG UTILIZING ANCHORING DEVICES OR PLACE STAKES ON THE LOWSIDE OF THE LOGS EVERY 4'.
- BACKFILL TO AN ELEVATION OF 0.5' BEHIND LOGS WITH MOISTURE TOLERANT TOPSOIL.
- PLACE GRASSES BY HAND BEHIND BIOLOGS AT SPACING OF 15"-18" O.C. AND AT A DEPTH OF 2"-4".

LANDSCAPE PLAN

REDEVELOPMENT
 AT TURNER MARINA
 319 CHESTER AVENUE, ANNAPOLIS, MARYLAND 21403

WILKERSON & ASSOCIATES INC.
 ENGINEERS & SURVEYORS
 Box 17 Dunkirk, Maryland
 (410)257-3332, (301)855-9272

SHEET 3 OF 3
 LANDSCAPE PLAN



| DATE | REVISION |
|-----------------------------------|--------------------|
| OCT. 2008 <td>SCALE 1" = 20'</td> | SCALE 1" = 20' |
| | DRAWN BY MDB |
| | CHECKED BY ATD/SLD |
| | DATE 10/1/08 |
| | JOB # 07-16372 |