

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/](http://www.dnr.state.md.us/criticalarea/)

May 21, 2008

Cheril Thomas  
Town Manager  
Town of St. Michaels  
300 Mill Street  
P.O. Box 206  
St. Michaels, MD 21663

Re: Muskrat Park Redevelopment

Dear Ms. Thomas:


At its meeting on May 7, 2008, the Critical Area Commission for the Chesapeake and Atlantic Coastal Bays unanimously approved the Muskrat Park Redevelopment project with the following conditions:

1. Prior to the start of construction, the Town will receive and submit to Critical Area Commission staff the necessary permits for Sediment and Erosion Control and MDE stormwater management.
2. Prior to the start of construction, the Town shall amend the Buffer Management Plan to include a vegetated buffer strip between the walkway and boardwalk and submit it to Commission staff for review and approval.

These conditions will be satisfied once the Town of St. Michaels submits the necessary permits and provides to this office an updated Buffer Management Plan for review and approval.

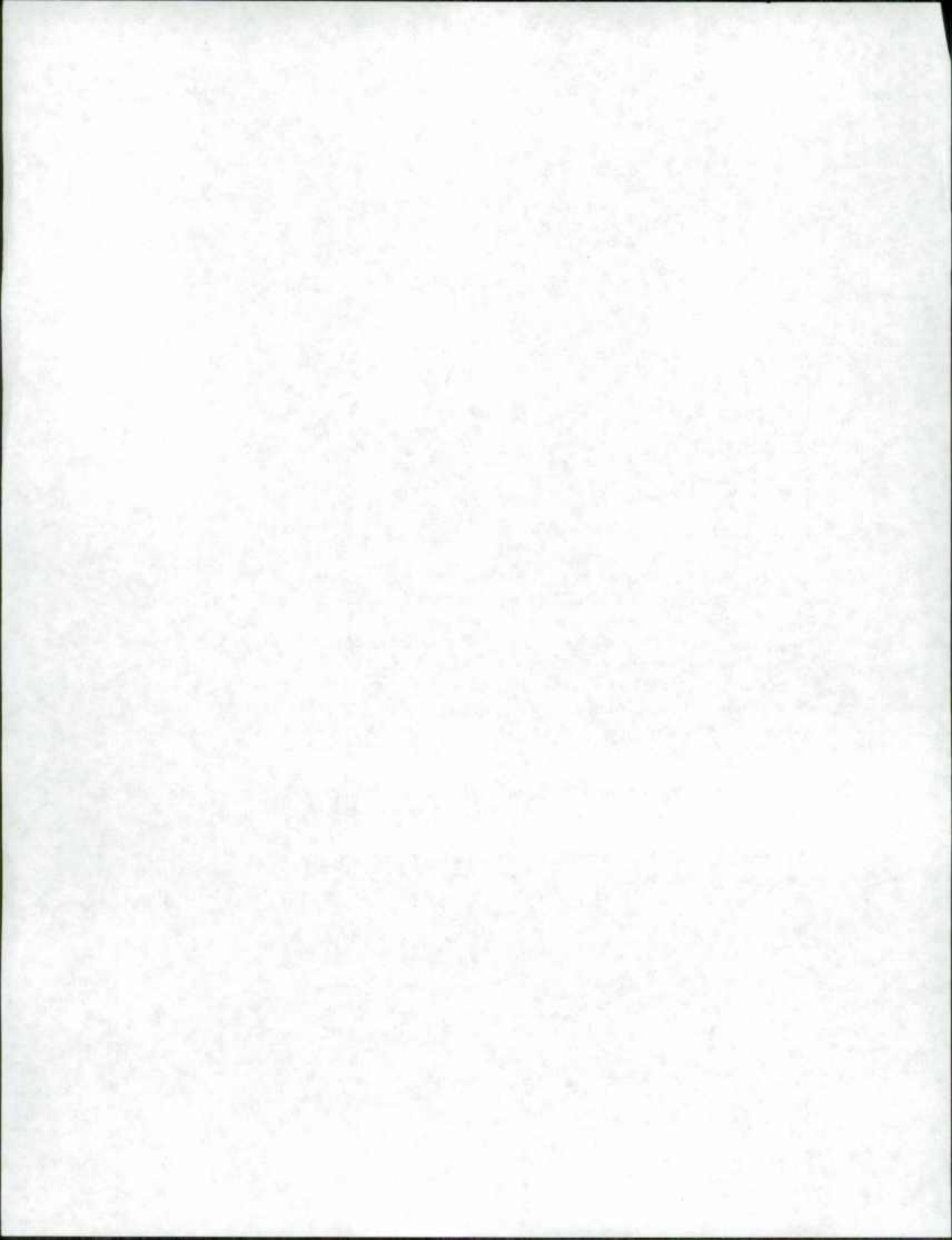
Thank you for all your help in providing information for this project. If you have any questions, please call me at (410) 260-3483.

Sincerely,

  
for

Nick Kelly  
Natural Resource Planner

cc: file  
Roby Hurley, Critical Area Commission Circuit Rider



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April 10, 2008

Deborah A. Renshaw  
Zoning Inspector  
Town of St. Michaels  
300 Mill Street  
P.O. Box 206  
St. Michaels, MD 21663

Re: **Muskrat Park Renovation**

Dear Ms. Renshaw:

At the April 2, 2008 Critical Area Commission Meeting, the Project Subcommittee discussed proposed renovations to Muskrat Park. The Town of St. Michaels is proposing to upgrade the Muskrat Park area to create an environmentally friendly park with handicap accessibility. The parcel is located between Church and Green Streets and fronts the Miles River. The site is designated as an Intensely Developed Area (IDA) and a Buffer Exemption Area (BEA).

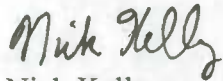
The information session focused on concerns over the location of the proposed boardwalk, the pervious nature of the proposed brick pavers, the location of impervious surface within the Buffer, and the proposed Living Shoreline. The Project Subcommittee provided the following comments on these topics:

1. While one subcommittee member mentioned concerns about the proposed boardwalk, the general consensus among the Project Subcommittee was that the proposed boardwalk would be acceptable. However, the Project Subcommittee requested that a filter strip be provided between the wooden walkway and the bulkhead to provide pre-treatment to any surface runoff prior to being discharged into the Harbor. The filter strip should be planted with native salt-tolerant and/or perennial grasses, and the grade should be such that stormwater is directed away from the Harbor.
2. All brick located onsite will be considered impervious, including the proposed "permeable" brick pavers.
3. The proposed picnic tables should be placed over existing impervious surface within the 100-foot Buffer or, *more preferably*, be located entirely outside of the 100-foot Buffer.

4. The proposed plantings for the Living Shoreline project should be both native and salt-tolerant.

We thank the Town of St. Michaels for taking the opportunity to speak with the Project Subcommittee for guidance. Please include this letter in your file. If you have any additional questions, please feel free to contact me at (410) 260-3483.

Sincerely,



Nick Kelly

Natural Resource Planner

cc: Roby Hurley, Critical Area Circuit Rider, Town of St. Michaels

## *Critical Area Commission*

### **STAFF REPORT**

**May 7, 2008**

**APPLICANT:** Town of St. Michaels

**PROPOSAL:** Muskrat Park Redevelopment

**COMMISSION ACTION:** Vote

**STAFF RECOMMENDATION:** Approval with Conditions

**STAFF:** Nick Kelly  
Roby Hurley

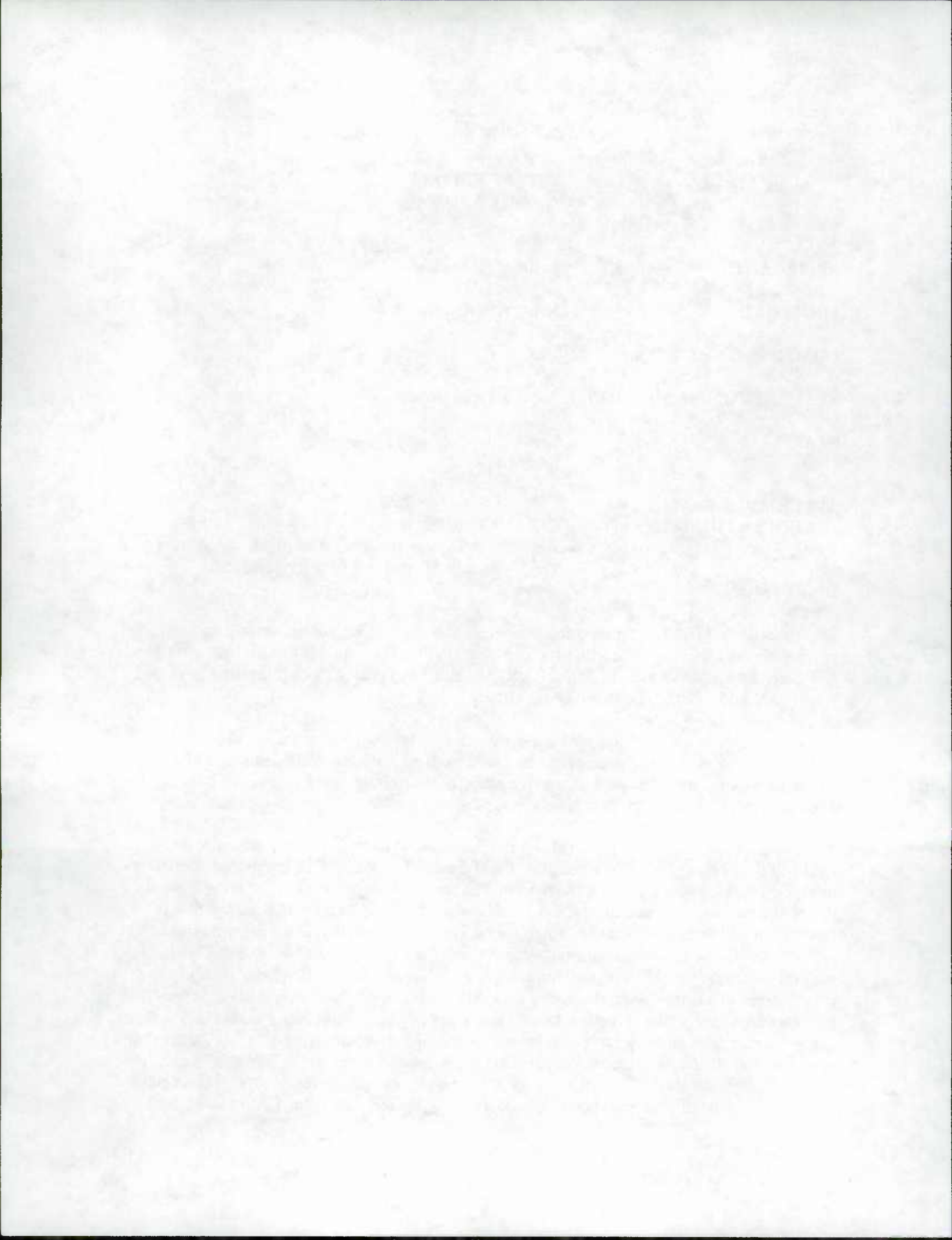
**APPLICABLE LAW/  
REGULATIONS:** COMAR 27.02.02 State and Local Agency Actions  
Resulting in Development of Local Significance on Private  
Lands or Lands Owned by Local Jurisdictions

### **DISCUSSION:**

The Town of St. Michaels is proposing to upgrade the Muskrat Park area to create an environmentally friendly park with handicap accessibility. The parcel is located between Church and Green Streets and fronts the Miles River. The site is designated as an Intensely Developed Area (IDA) and a Buffer Exemption Area (BEA).

The western portion of the Muskrat Park site was formerly occupied by the St. Michaels Fire Station. The fire station has since been razed, and the location is currently composed of a sand and stone parking area. The park area of the property is currently developed with a building, gazebo, picnic table pads, brick sidewalk, and park bench pad.

The Town proposes to create a road and parking area in the location of the former fire house; the road will be composed of yellow pea gravel, and the parking area will be composed of brick. A total of 18 parking spaces will be created, and this area will also be used as the Town Square during the Farmers' Market. In addition, a millstone with the Muskrat Park logo and date of installation will be established adjacent to the parking lot. Within the park area, two brick walkways will be constructed. One path will connect the parking area to the existing brick walkway located onsite. The second brick pathway will split from the first brick walkway and create access to a nature walk; the nature walk will consist of pervious wooden boards and provide user access to the shoreline. In addition, a wooden boardwalk with benches is proposed along the shoreline, and two bioretention areas will be installed within the 100-foot Buffer (but outside of the 30-foot BEA setback area). Two picnic tables, one of which is located partially within the 100-foot Buffer, will be removed from the site and will be replaced with two new picnic tables that will be located entirely outside of the Buffer. Finally, a "Living Shoreline



Area" is proposed along a portion of St. Michaels Harbor, directly adjacent to Muskrat Park. A site plan is attached to this report (Attachment A).

Total site acreage for Muskrat Park is 1.30 acres. Total impervious surface onsite is currently 0.61 acres (47.0%). Upon completion of this project, total impervious surface will be reduced to 0.39 acres (30.0%). Soils onsite are mapped as Keyport silt loam, a Type C soil.

### **10% Pollutant Removal and Stormwater Management**

The Town is meeting the 10% Phosphorus Removal requirement within the IDA by reducing the amount of impervious surface onsite by 17%.

Town staff is currently working with the engineers for this project to address MDE Stormwater Management requirements.

### **Buffer Management Plan**

Buffer impacts for this project include a brick sidewalk, a wooden nature walkway, and a boardwalk. A total of 0.07 acres (3,093 square feet) of Buffer disturbance will occur, necessitating mitigation at the BEA mitigation rate of 2:1, or 6,186 square feet. Mitigation will be provided onsite in the form of 400-foot landscaping clusters within the 100-foot Buffer and adjacent to the Buffer. A total of 16 clusters (6,400 square feet) will be provided; 10 clusters will be located completely within the 100-foot Buffer, two will be located partially within the Buffer, and four will be located in areas adjacent to the Buffer. In addition, the two proposed bioretention areas will provide supplementary Buffer plantings. Attached to this report are a copy of the Buffer Management Plan (Attachment B) and a list of the plantings proposed for the entire site (Attachment C).

### **Habitat Protection Areas**

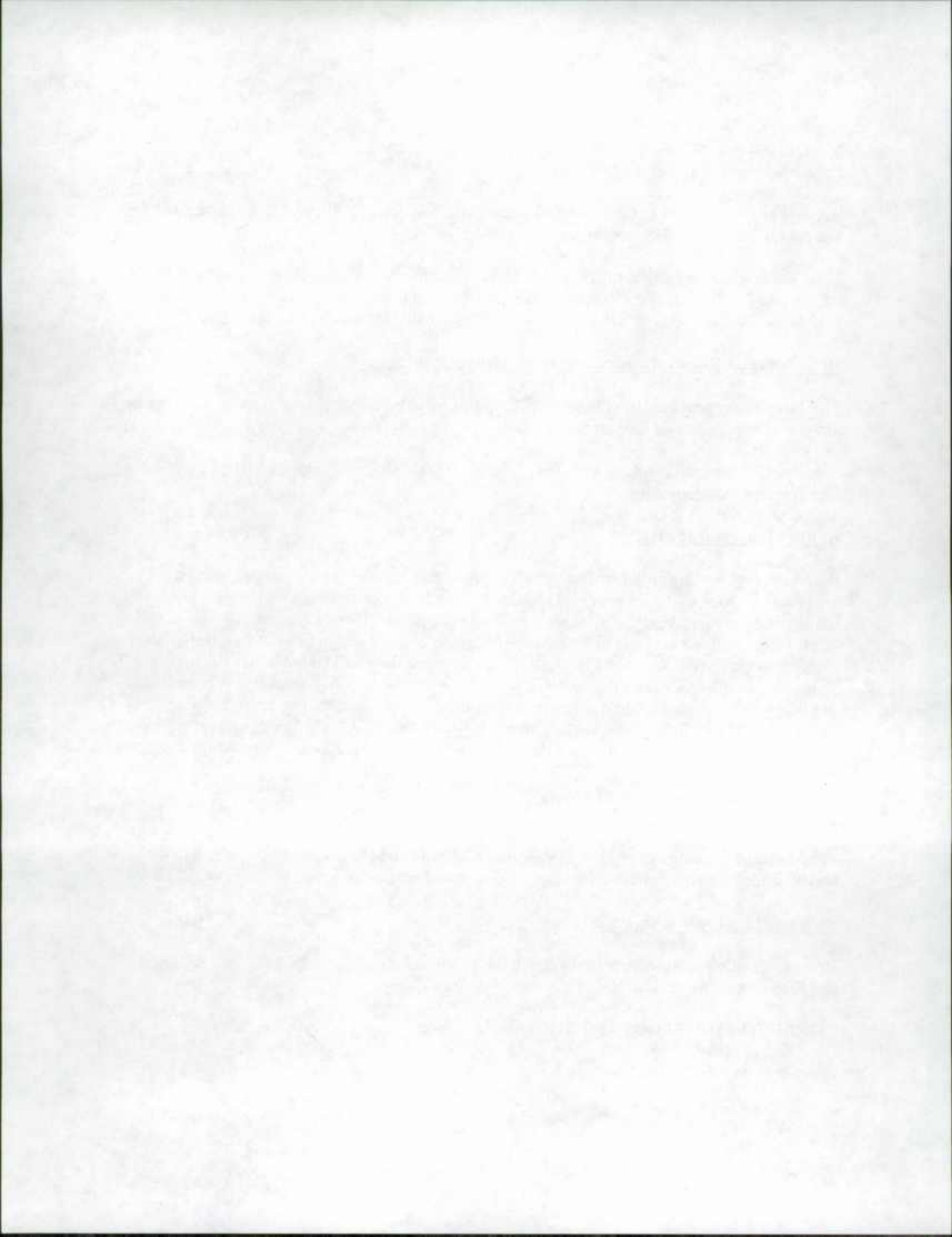
The Maryland Department of Natural Resources Wildlife and Heritage Service (WHS) has reviewed the property and has found that no rare, threatened, or endangered species exist onsite.

### **Sediment and Erosion Control**

Upon finalization of the construction detail, the Town will submit an application for Sediment and Erosion Control review.

### **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. Responses were supplied by the Town of St. Michaels:*

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

The intent of this project is to delineate parking and establish park connection, provide delineated walking paths, promote open space use and improve access to the water. The site is currently occupied by a small park and an impervious area where the St. Michaels Fire Station formerly existed. Avoiding Buffer impacts are nearly impossible, based on the current location of the park. As such, there is no practical manner of redeveloping the Park outside of the Buffer.

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

The public benefits of this project include shoreline access, recognized in § 8-1808 (c)(viii) of the Critical Area Law, which describes designation of shoreline areas suitable for parks and public access. Additionally, the area will have improved water quality through the reduction in impervious surfaces and the use of bioretention areas.

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

Except for intrusion into the 100-foot Buffer, the project conforms to Critical Area regulations.

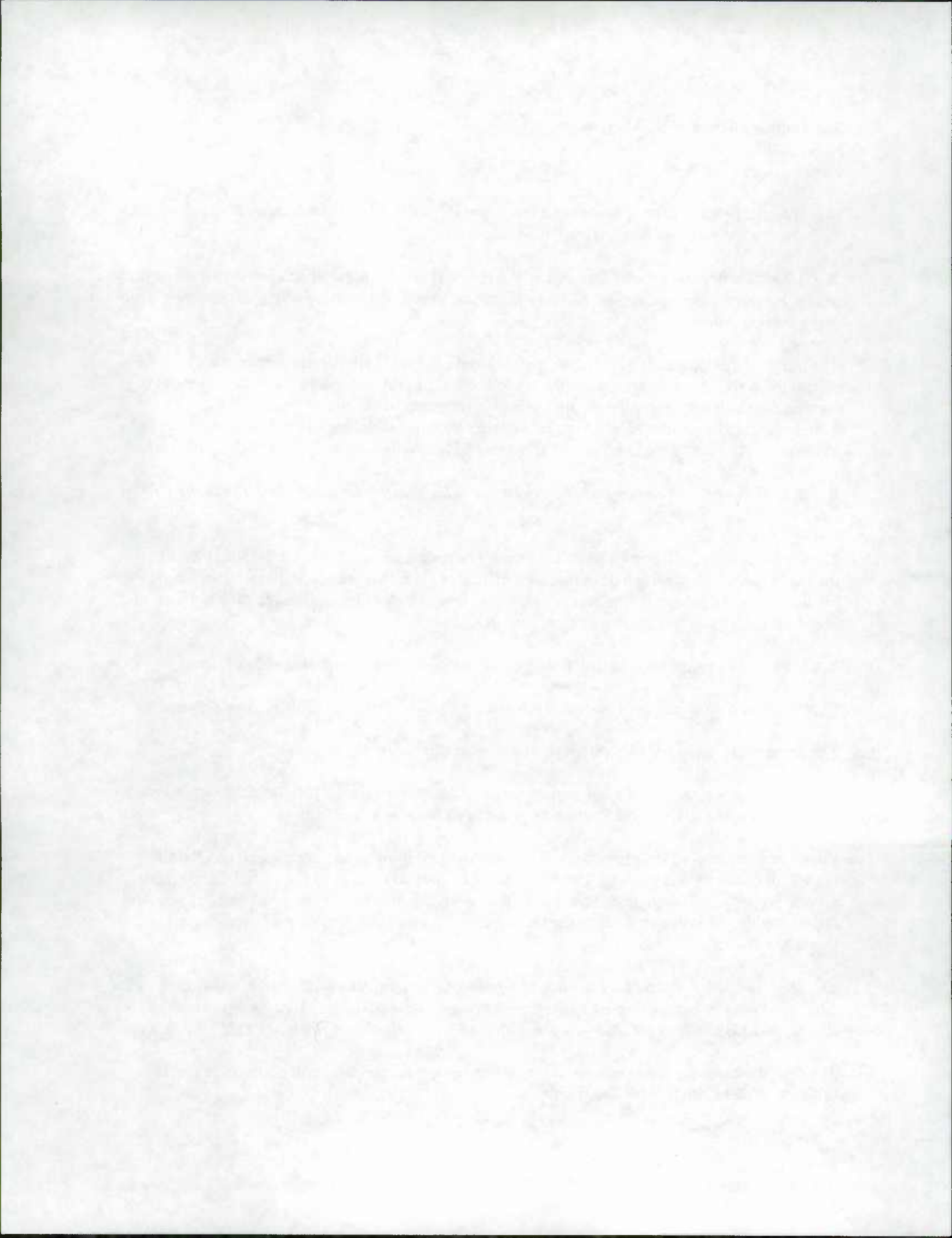
*The conditional approval request shall, at a minimum, contain the following:*

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

Literal enforcement of the provisions of this subtitle will limit public open space and shoreline access for residents and visitors. The park cannot be located outside of the Buffer due to roads, private property, and associated structures. The park is located on the site of a previous park and is designed to minimize impacts to the Buffer as well as mitigate for any proposed Buffer impacts.

***C. (2) A proposed process by which the program or project could be so conducted as to conform, insofar as possible, with the approved local Critical Area program or if the development is to occur on State-owned lands, with the criteria set forth in COMAR 27.02.05;***

The disturbance is the minimum necessary for the proposed park and will conform to the Town of St. Michaels Critical Area Program.



Muskrat Park-Town of St. Michaels

May 7, 2008

Page 4

***C. (3) Measures proposed to mitigate adverse effects of the project or program or an approved local Critical Area program or, if on State-owned lands, on the criteria set forth in COMAR 27.02.05.***

Mitigation measures include clusters of native tree and shrub plantings. A total of 6,400 feet of cluster planting will be provided onsite, with most clusters located within the 100-foot Buffer. Additional vegetation within the Buffer will be provided through the installation of two bioretention areas, plantings will be located outside of the 100-foot Buffer as well, and a Living Shoreline is proposed.

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

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

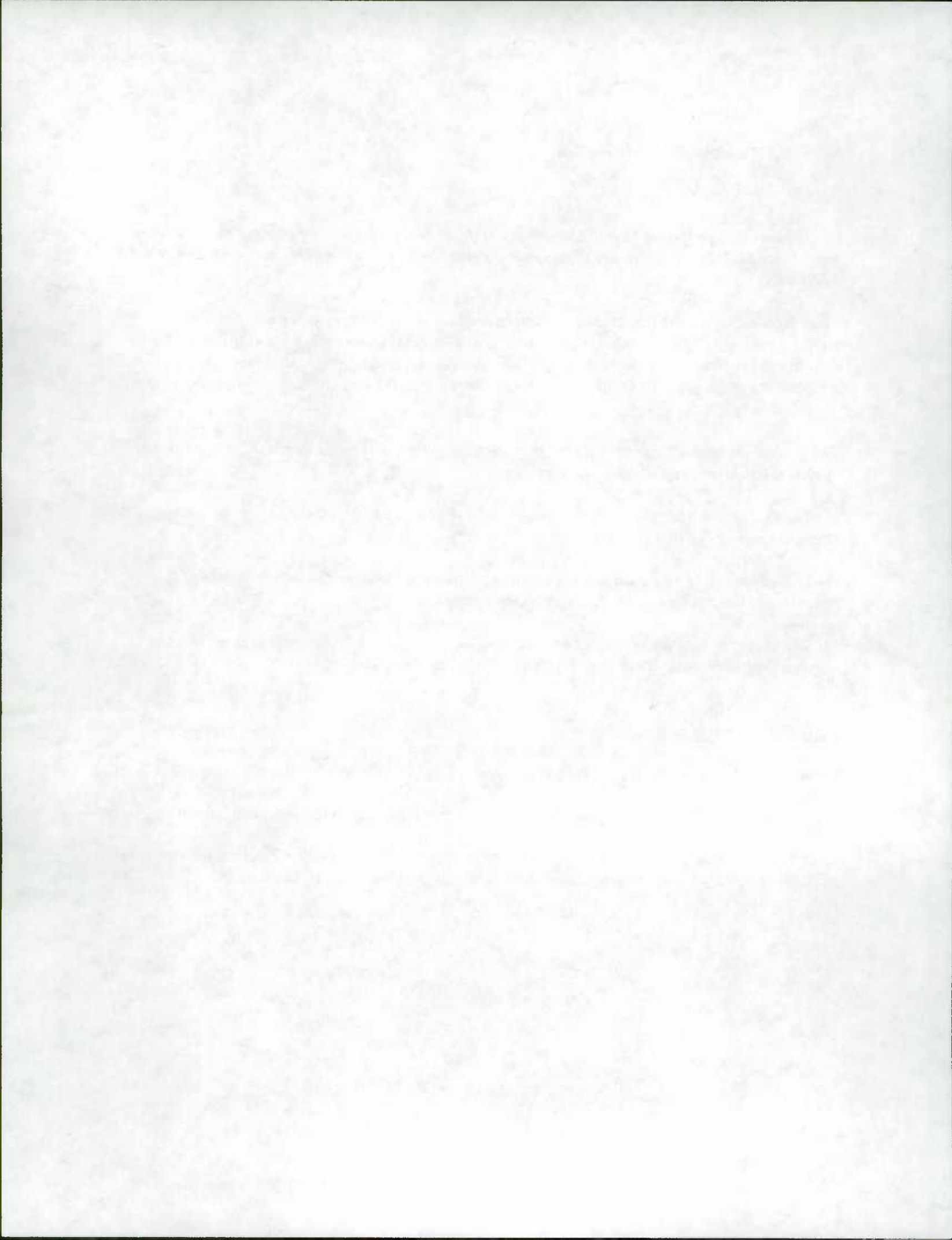
***(2) The adequacy of any mitigation measures proposed to address the requirements of this subtitle that cannot be met by the project or program; and***

***(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**

Based on the fact that the project is improving water quality by reducing impervious surface and installing bioretention areas, and given that the site is providing the public benefit of shoreline access, Commission Staff recommends approval of this project with the following condition:

***Prior to the start of construction, the Town will receive and submit to Critical Area Commission staff the necessary permits for Sediment and Erosion Control and MDE stormwater management.***



1/02

## CRITICAL AREA BUFFER MANAGEMENT PLAN

The following form should be completed by the property owner, or responsible party, for any disturbance of natural vegetation or construction within the Critical Area Buffer. Once completed, and approved, this form will constitute your Buffer Management Plan and will provide our office with an official record of your proposed Buffer impacts and the way in which you plan to meet any required offsets (mitigation).

### Property Background Information

Property Owner (or Contact): Cheril S. Thomas, Town Manager  
Ben Taylor, Town Engineer (Davis Bowen Friedel, Inc.)

Property Owner's address: 300 Mill Street, St. Michaels, Maryland 21663

Property Owner's (or Contact's) Phone: Town (410) 745-9535, Engineer (410)770-4744

Project Address (if different): \_\_\_\_\_

Tax Map # \_\_\_\_ Block # \_\_\_\_ Parcel # \_\_\_\_ Section # \_\_\_\_ Lot # \_\_\_\_

### Proposed Buffer Disturbance

New development/redevelopment (e.g., new building, addition to home, replacement of structures).

Shore erosion control

Shore access

Other (Please explain) \_\_\_\_\_

Is the property in a designated Buffer Exemption Area (BEA)? Yes  No

Are there any special plat notes or restrictions concerning your Buffer (e.g., wetlands, habitat protection areas, conservation easements)? Yes  No

If yes, please explain:  
\_\_\_\_\_

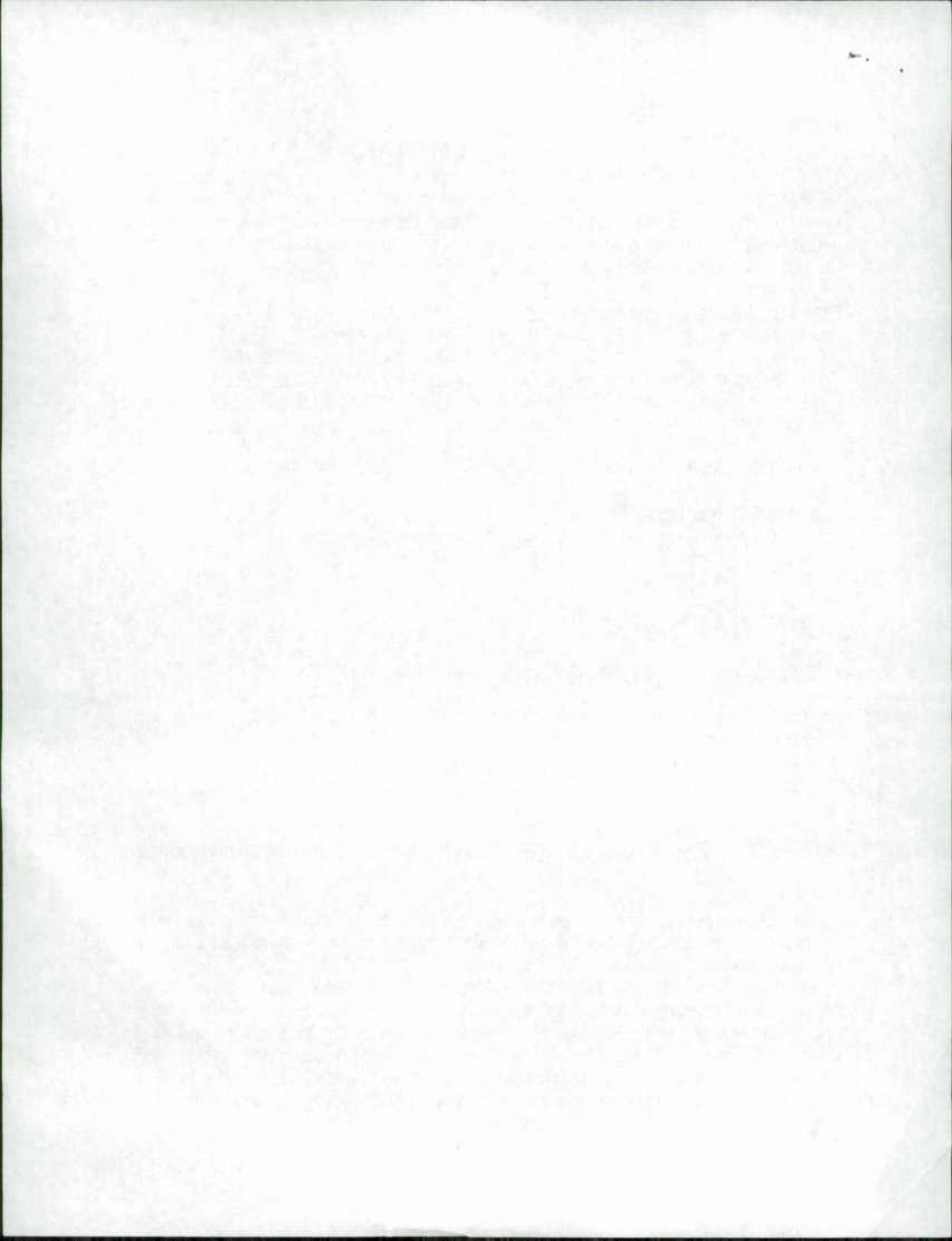
Please provide a brief explanation of your proposed project in the space below. Include area and/or number of trees cleared as well as the type of equipment that will be used.

Three examples follow:

1) 600 square feet partially cleared for shore access with hand tools; canopy will be maintained; disturbance will be limited to three saplings and several shrubs; and path will consist of wood chips.

2) Removal of poison ivy from 2,000 square feet area along shore access path; method of removal includes hand pulling and chemical spraying of individual plants with an approved herbicide; any resulting bare areas will be mulched to prevent soil erosion and to prevent reestablishment of invasives. There will be no removal of trees or shrubs.

3) A variance was granted to build a new house on a grandfathered lot in the Buffer. The area permanently impacted in the Buffer will be 4,000 square feet, including the



area of the house and a 15-foot clearing around the house. The lot is entirely forested. A bulldozer will be used for site preparation.

Proposed Project: This project will revitalize an existing public park with the installation of new landscaping, walkways, and installation of BMP (Bioretention). Portions of site will be graded and will receive topsoil, seed, plantings and mulch. Additional work on site (non Buffer) to include parking lot renovations. No trees will be cleared. Light machinery and hand tools will be used for construction.

Justification: This project will convert impervious surface of the former Fire house to useable parking and green space and connect it to the existing public park. Renovations will bring park to ADA standards and improve storm water management for public benefit.

What are the long-term management plans for this area? \_\_\_\_\_  
\_\_\_\_\_

### **Calculation of Mitigation**

The following three-step process is used to compute the amount of mitigation needed for impacts to the Buffer. For the purposes of this Buffer Management Plan, mitigation is defined as plantings or similar offsets which will help to negate the effect of the Buffer disturbance. To determine the amount to mitigation for your Buffer disturbance you need to determine the following:

1. Amount of Buffer disturbed for clearing, grading and placement of new structures, etc.;
2. Mitigation ratio for the type of Buffer impact;
3. Mitigation amount calculated by multiplying the area disturbed by the mitigation ratio.

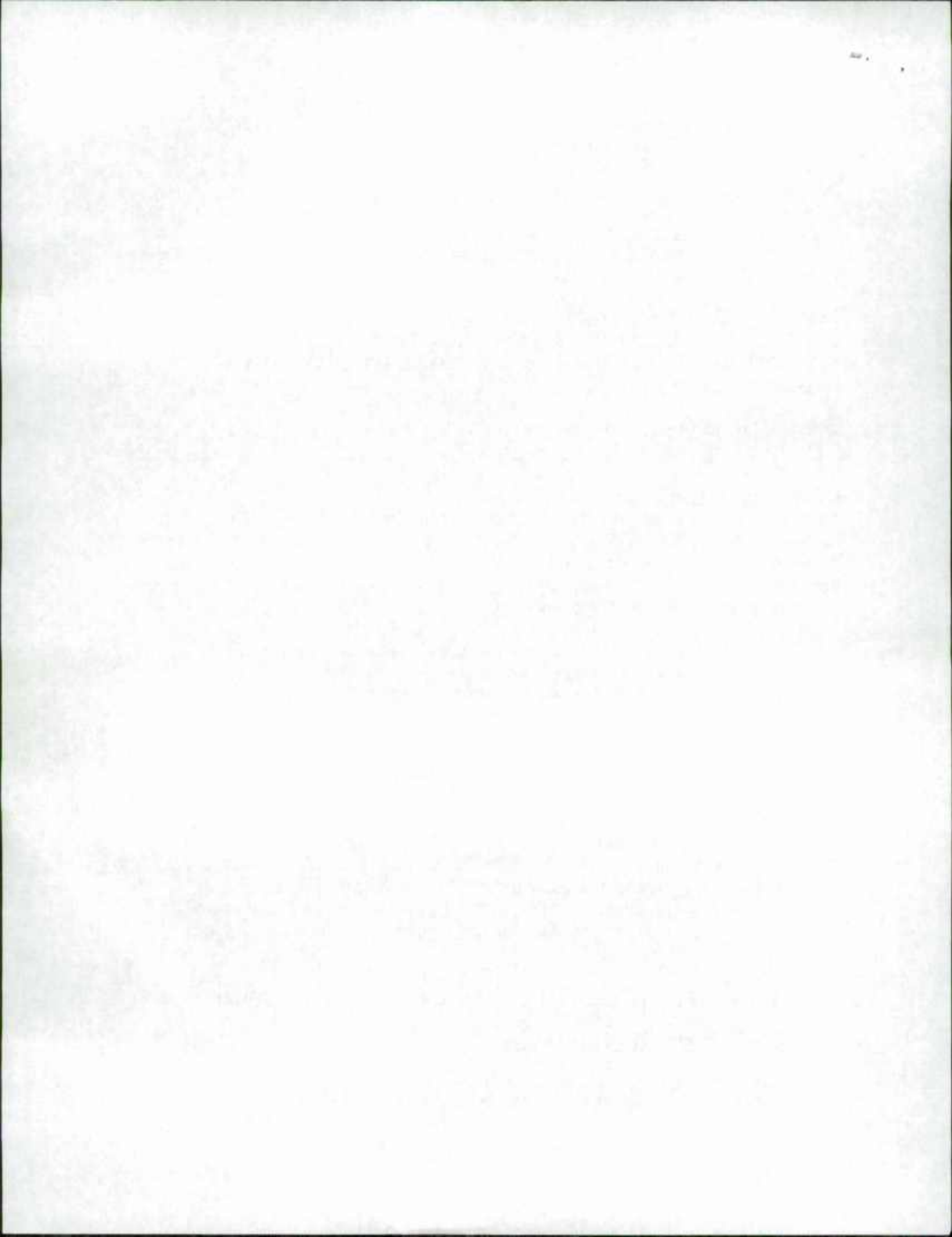
### **Step 1 Amount of Buffer disturbance**

There are two ways to calculate the amount of disturbance in the Buffer. Buffer disturbance is based on either the area disturbed or the number of individual trees that will be cut. It is recommended that when an area to be disturbed more closely resembles a natural forest (i.e., canopy cover with multi-layer understory) or when structures or other impervious surfaces are placed within the Buffer or a BEA, even if no trees are cleared, you should quantify the disturbance amount in *area cleared*. On the other hand, if your site more closely resembles a park setting (i.e., scattered trees with little or no understory), it is recommended that you count the *number of trees removed*.

**AREA OF BUFFER CLEARED OR DISTURBED:   3093   SQUARE FEET**

- or -

**NUMBER OF TREES CLEARED: \_\_\_\_\_**





## Step 2 Mitigation Ratios

Different types of Buffer management activities require different mitigation ratios. Higher ratios are used for activities that have a greater impact upon the Buffer. The purpose of the mitigation is to improve the Buffer functions where possible. The table below provides the mitigation ratio for different types of Buffer management activities.

Type of Buffer Disturbance	Mitigation Ratio
New development/redevelopment (non-BEA)	3:1
New development/redevelopment (BEA)	2:1
Shore erosion control	1:1
Shore access	2:1
Non-native replacement	1:1
Other	*

\*Please consult with your local government Critical Area Planner if the purpose of your Buffer disturbance is in the "Other" category.

**Mitigation Ratio = 2:1 (From the above table)**

## Step 3 Mitigation Amount

**Mitigation Amount** = (Sq. ft. or number of trees) x (mitigation ratio) = **6,186 Sq. ft.**  
or # trees.

**NOTE:** In addition a 3 ft. vegetated strip will be provided between the bulkhead and the proposed board walk as identified on site plan CA2.

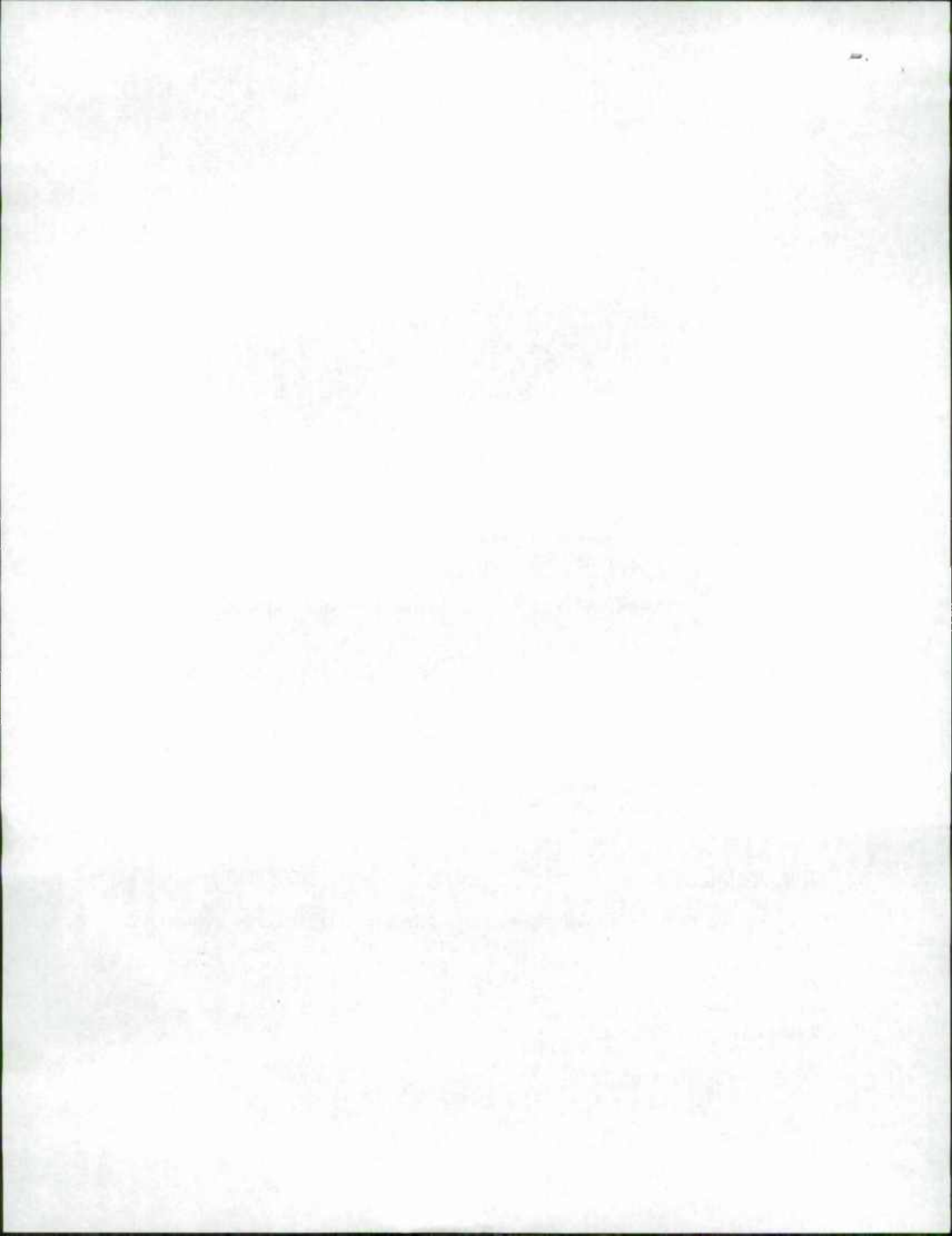
### **Buffer Planting Plan**

This section is to help you provide more specific details on your mitigation location and plantings.

#### Planting Location

All mitigation shall be with native species and located within the Critical Area in the following order of preference:

- 1-On-site within the Buffer



- 2-On-site adjacent to existing Buffer
- 3-On-site within the Critical Area
- 4-Off-site(follow order of preference 1-3 above)
- 5-Fee-in-lieu payment

**PLANT SPACING AND MITIGATION CREDITS FOR VARIOUS SIZE TREES AND SHRUBS\***

Credit Square Feet	Plant Size	Plant Spacing
100 sq. ft.	1 tree (2-inch caliper)	10-foot center
400 sq. ft.	1 tree (minimum: 2-inch caliper and either balled and burlapped or container grown) and understory vegetation (minimum: 2 small trees or 3 shrubs)	tree- 20-ft. center understory – 10-ft. center
50 sq. ft.	1 tree (seedlings)	7-ft. center
50 sq. ft.	1 shrub	3 – 7ft. center

\*Although the Critical Area Commission recognizes natural regeneration as a method for mitigation, not all jurisdictions authorize natural regeneration. If your jurisdiction allows natural regeneration as a method for mitigation of Buffer impacts, consult with the appropriate contact to determine the area to be managed for natural growth.

**Schematic Drawing**

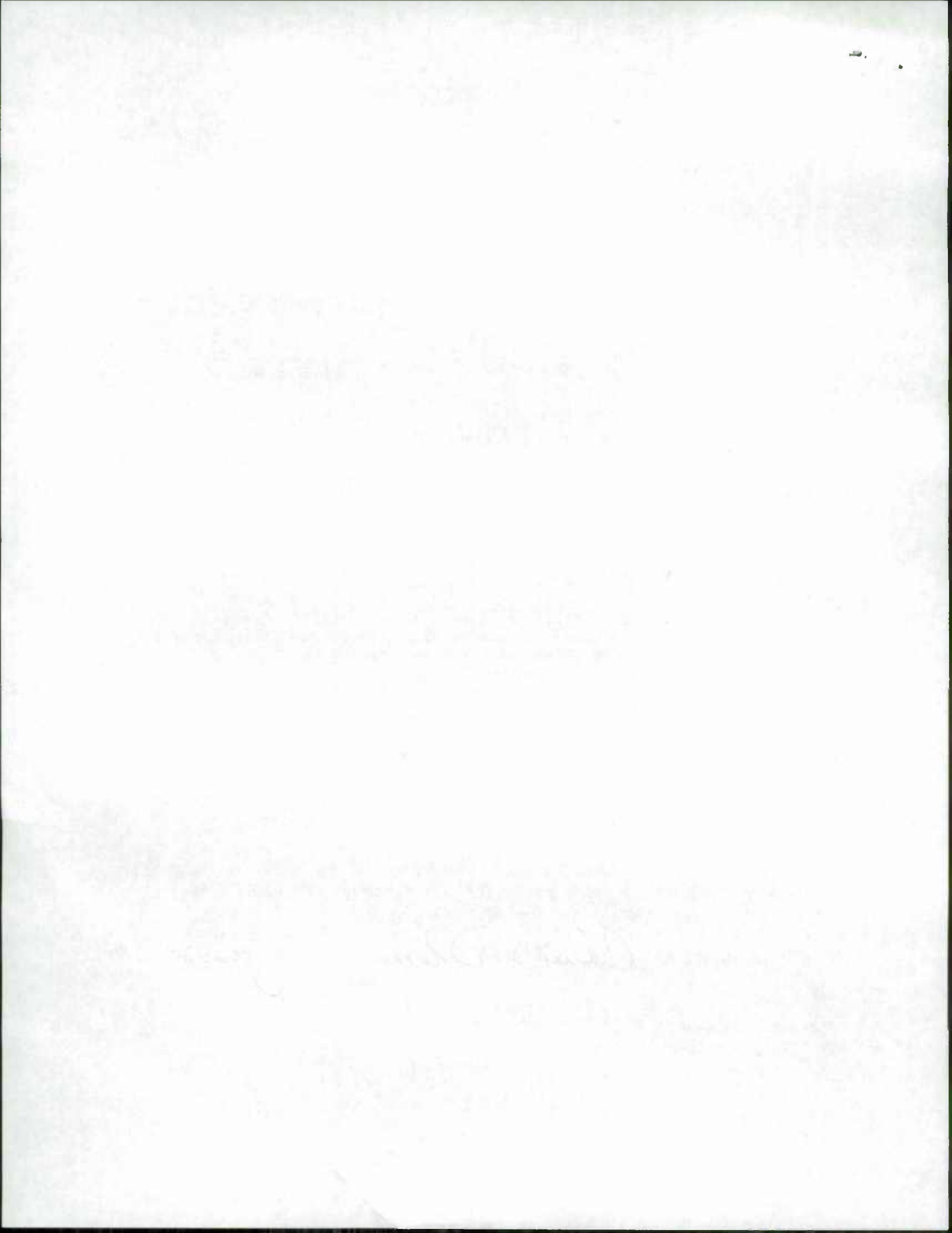
Please attach a schematic drawing to scale identifying areas of impact to the Buffer, indicate on plan the existing trees and shrubs, if possible, and the proposed location for replanting within the Buffer. Show the location of the Critical Area Buffer. Indicate on the drawing the specific types of vegetation which will be removed and the specific types and amount of native vegetation which will be used for mitigation.

*I certify these statements to be true and accurate and that any trees to be removed are on my property. I hereby grant County/Local Jurisdiction officials permission to enter my property for inspections of this Buffer Management Plan.*

**Applicant Signature** Chris S. Thomas **Date** June 20, 2008

**Approval information: FOR OFFICE USE ONLY**

This Buffer Management plan is approved as of \_\_\_\_\_



**TOWN OF ST. MICHAELS**  
**MUSCRAT PARK REDEVELOPMENT**

**CONDITIONAL APPROVAL**

**INTRODUCTION**

The Town of St. Michaels proposes to redevelop Muskrat Park and its immediate environs. The area at Green, Willow and Church Streets is Intense Development Area and includes a mapped Buffer Exemption Area. There will be impacts to the Buffer. The site historically existed as a fire house and associated parking, a pumping station and Muskrat Park. The Town has prepared a Buffer Management Plan and 10% Stormwater Management calculations.

The Town intends to generally improve the area both from a public access and environmental aspect. To do this they plan to reduce impervious coverage, provide delineated parking, expand the Park and add stormwater management. The Buffer impacts currently and proposed are a 5 ft. brick sidewalk and small concrete pads for tables and benches. Total impervious surfaces in the Buffer are 1564 sq. ft. or 3.1% of the Buffer area.

**CONDITIONAL APPROVAL PROCESS**

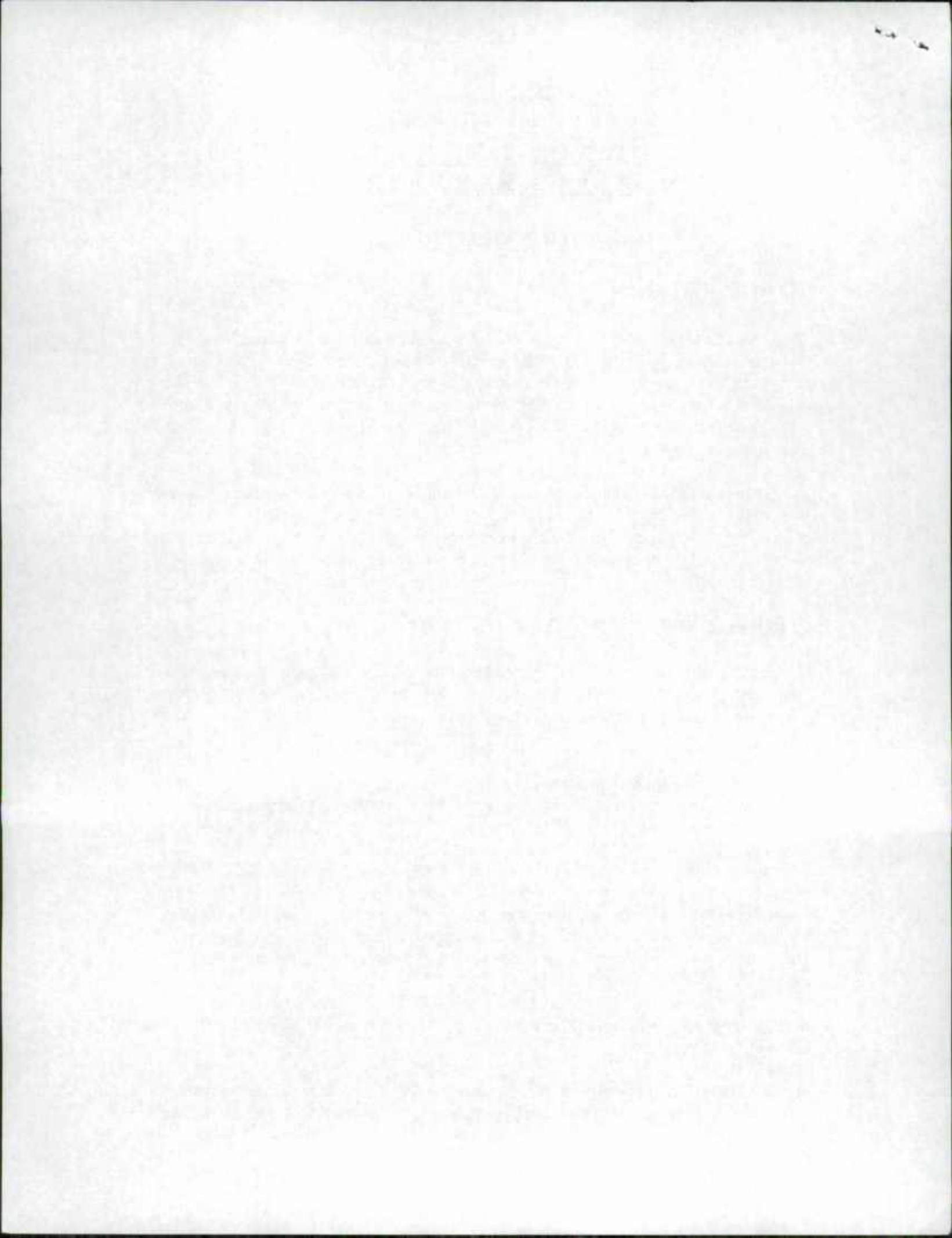
In order to qualify for consideration by the Commission for conditional approval, the proposing agency must show that the project or program has the following characteristics followed by the response offered by the applicant:

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

The intent of this project is to delineate parking and establish park connection, provide delineated walking paths, promote open space use and improve access to the water. The site already exists today as a small park so in essence its use is grandfathered. Avoiding the Buffer is impossible or nearly so (based on location) due to private property, roads and structures. As such, there is no practical manner of redeveloping the Park outside of the Buffer.

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

The public benefits of this project include shoreline access, recognized in COMAR 8-1808 (c)(viii), which describes designation of shoreline areas suitable for parks and public



access. Another public benefit is that the area will have improved water quality thru the reduction in impervious surfaces and best management practices.

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

Except for the Buffer intrusion, the project conforms in all ways to the Critical Area Program.

*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 State of local agency program or project;***

Literal enforcement of the provisions of this subtitle will limit public open space and shoreline access for residents and visitors. The Park cannot be located outside of the Buffer due to roads, private property and associated structures. The Park is located on a previous Park site and is designed to lie lightly on the land, minimize impacts to the Buffer and mitigate for those impacts.

***C. (2) A proposed process by which the program or project could be so conducted as to conform, insofar as possible, with the approved local Critical Area program or if the development is to occur on State-owned lands, with the criteria set forth in COMAR 27.02.05;***

The disturbance is the minimum necessary for the proposed Park and will conform to the Town of St. Michaels Critical Area Program.

***C. (3) Measures proposed to mitigate adverse effects of the project or program or an approved local Critical Area program or, if on State-owned lands, on the criteria set forth in COMAR 27.02.05.***

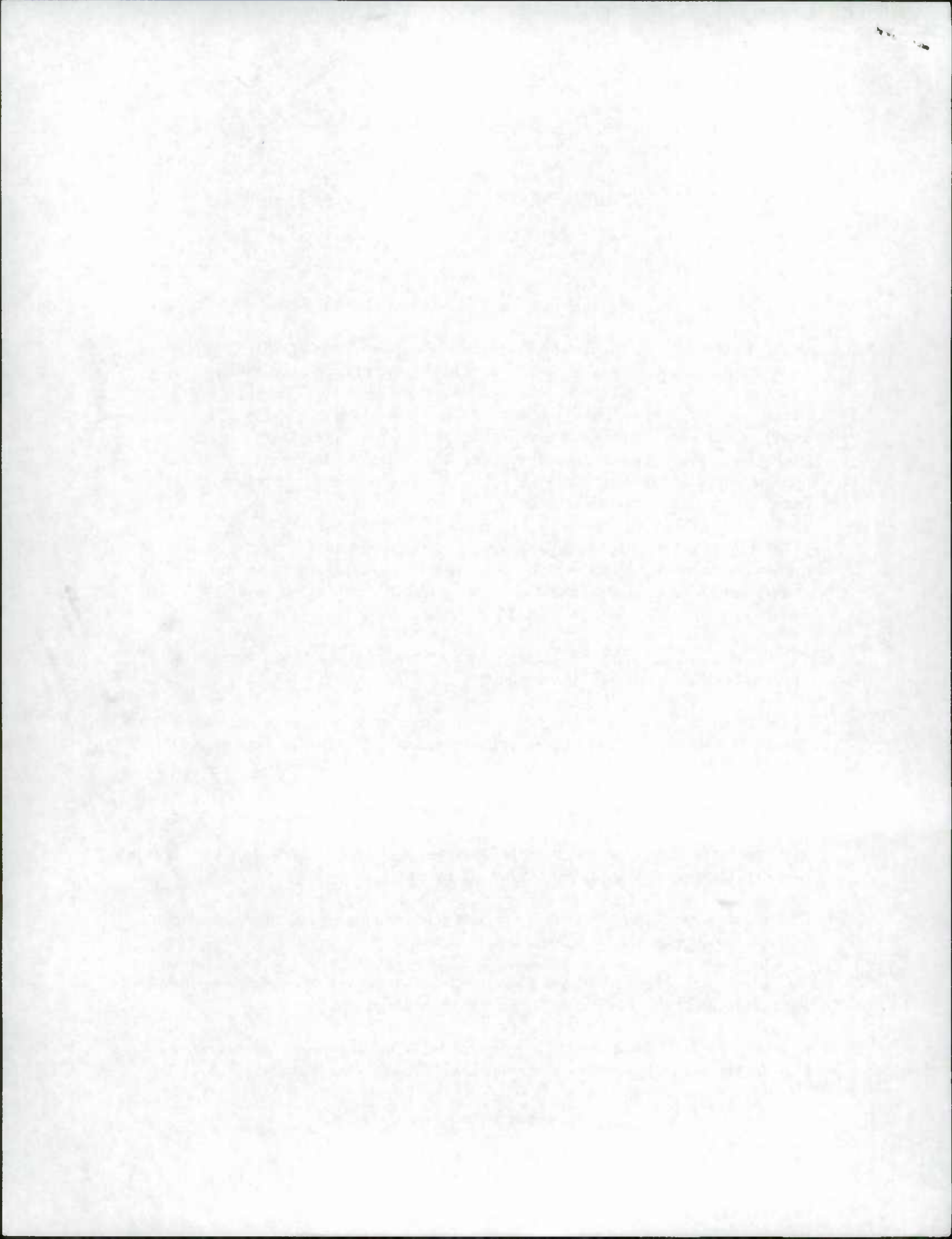
Mitigation measures include native tree and shrub plantings.

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

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

***(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***

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







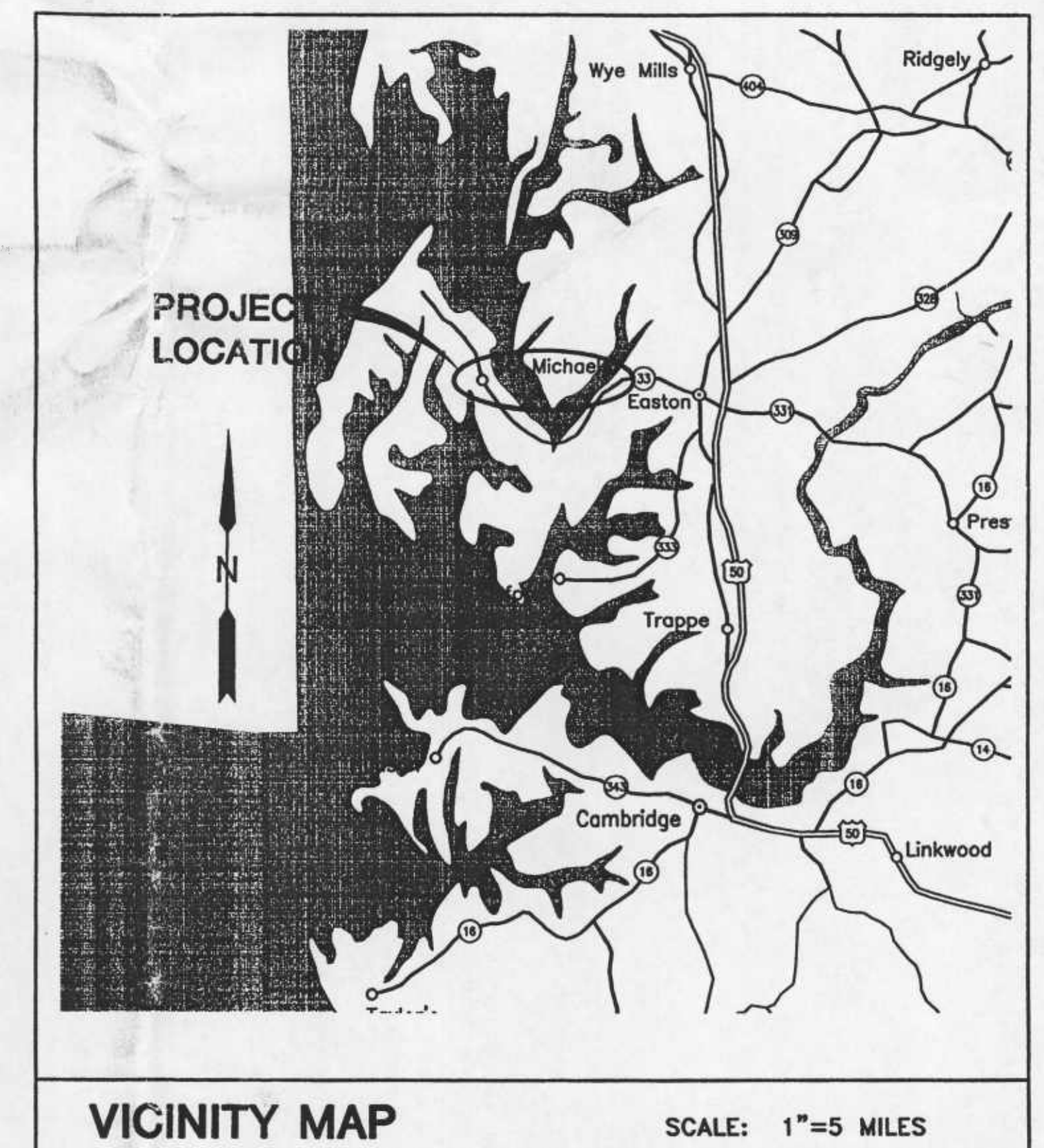
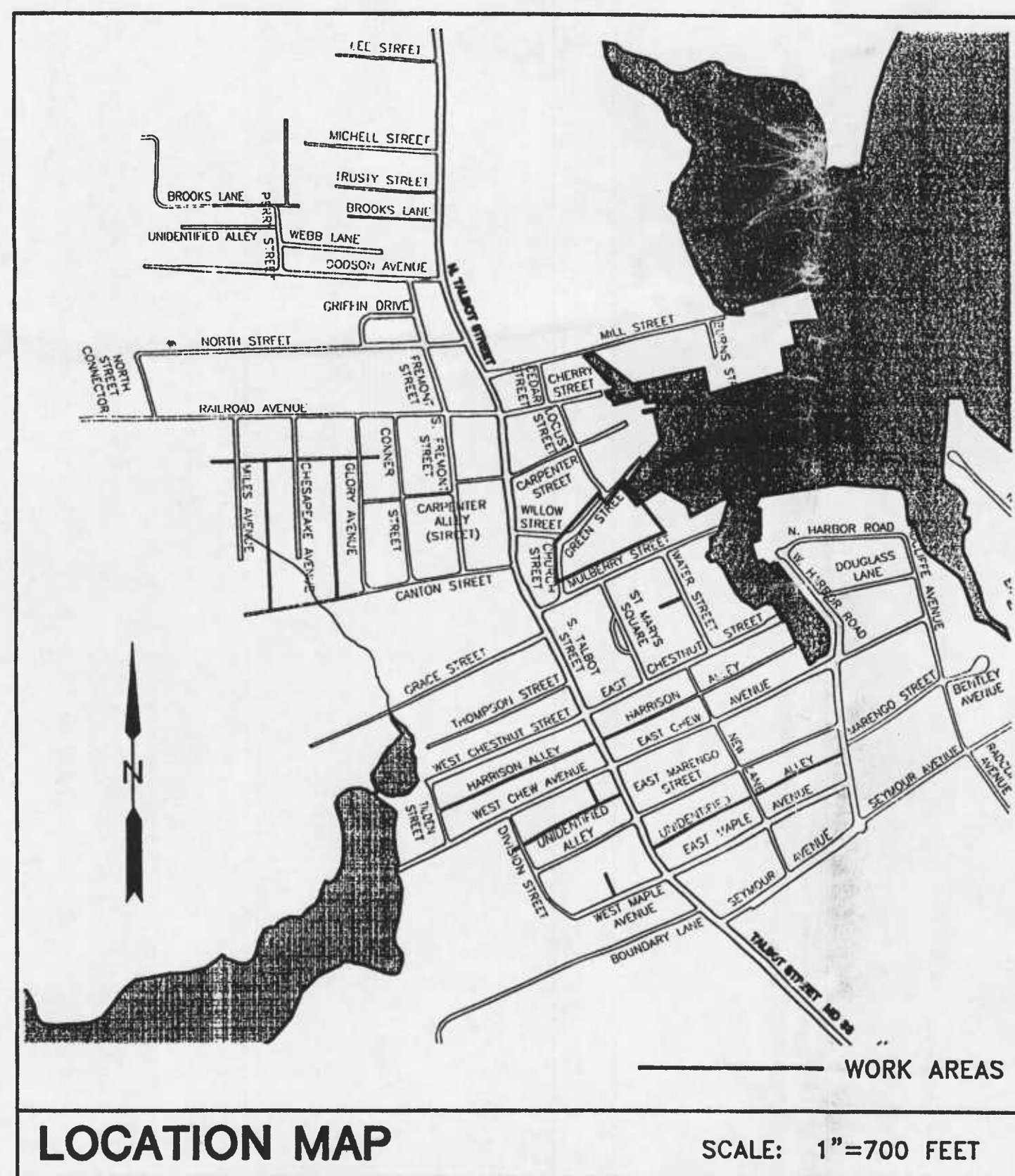
PRESENTATION DRAWING TO THE COMMUNITY OF ST. MICHAELS

# MUSKRAT PARK TOWN OF ST. MICHAELS

TALBOT COUNTY, MARYLAND  
CONTRACT NO. 1504A006  
APRIL 2008

## INDEX OF DRAWINGS:

- 1 .... TITLE SHEET
- 2 .... GENERAL NOTES AND DETAILS
- 3 .... SITE DETAILS
- 4 .... EXISTING SITE PLAN
- 5 .... PROPOSED SITE PLAN
- 6 .... LANDSCAPE PLAN
- ESC 1 .... EROSION AND SEDIMENT CONTROL PLAN
- ESC 2 .... EROSION AND SEDIMENT CONTROL  
NOTES AND DETAILS
- SWM1 .... STORMWATER MANAGEMENT PLAN
- SWM2 .... SWM NOTES AND DETAILS
- CA 1 .... CRITICAL AREA PLAN
- CA 2 .... BUFFER MANAGEMENT PLANTING PLAN



TOWN OF ST. MICHAELS  
300 MILL STREET  
ST. MICHAELS, MD 21663

*Barbara Paca* 4/30/08  
APPROVED BY DATE

LANDSCAPE ARCHITECTURE:  
BARBARA PACA, PH.D.,  
AMERICA SOCIETY OF LANDSCAPE ARCHITECTS  
BARBARA PACA ENTERPRISES, L.L.C.

**DAVIS,  
BOWEN &  
FRIEDEL, INC.**

ARCHITECTS ENGINEERS SURVEYORS  
106 N. WASHINGTON ST., SUITE 103, P.O. BOX 1005  
EASTON, MARYLAND 21601-8919  
PHONE: 410-770-4744, FAX: 410-770-4515



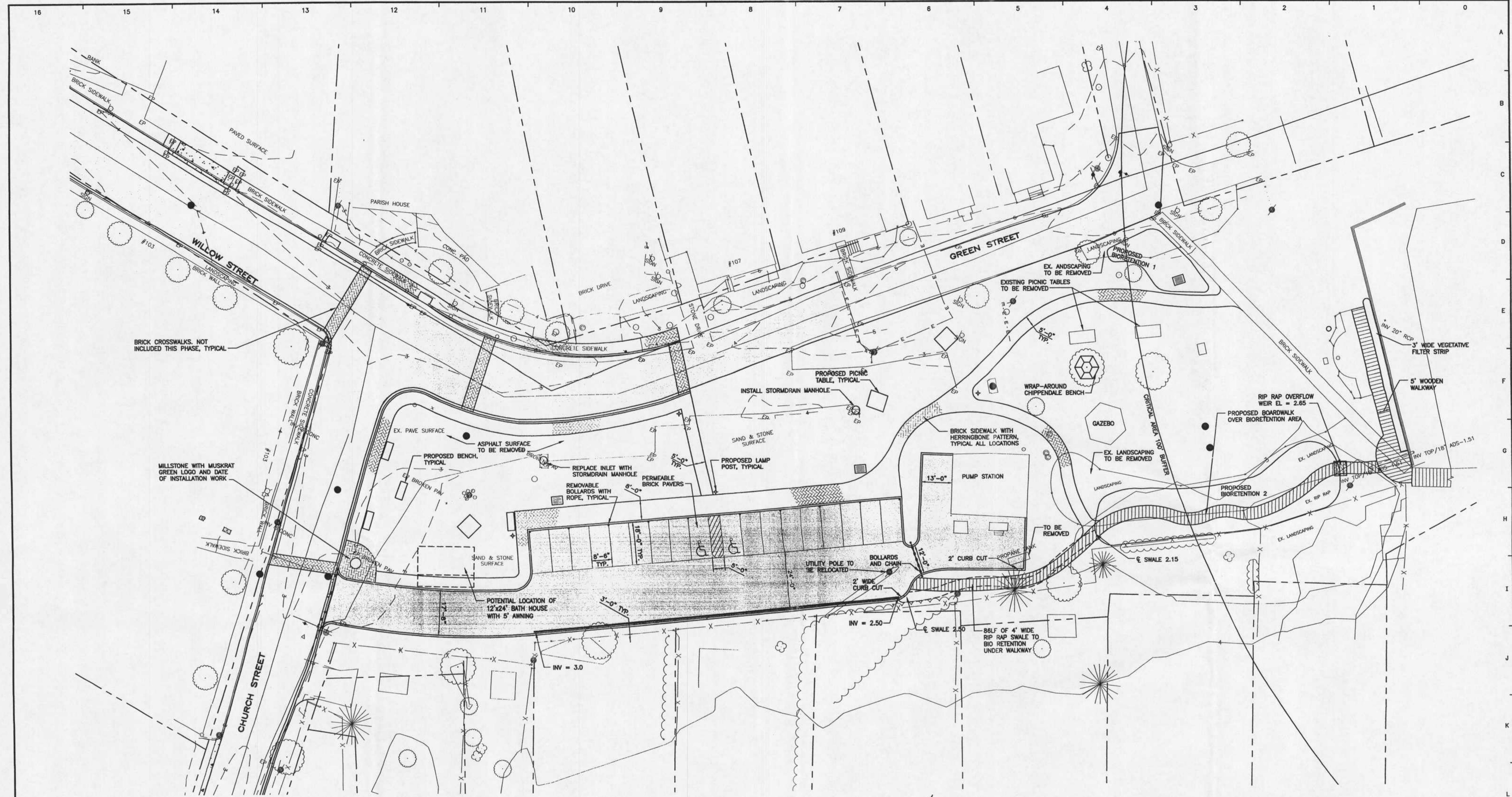
**ENGINEER CERTIFICATION**

I, Gerald G. Friedel HEREBY CERTIFY THAT I AM A REGISTERED ENGINEER IN THE STATE OF MARYLAND, THAT THE INFORMATION SHOWN HEREON HAS BEEN PREPARED UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF REPRESENTS GOOD ENGINEERING PRACTICES AS REQUIRED BY THE APPLICABLE LAWS OF THE STATE OF MARYLAND.

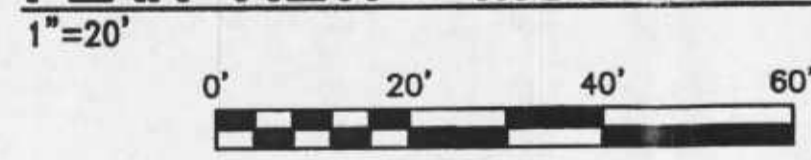
*G. Friedel* 5-6-08  
ENGINEER: DATE:  
11779 12/28/07  
LICENSE NUMBER EXP. DATE

THIS DRAWING, THE DESIGN AND CONSTRUCTION FEATURES DISCLOSED ARE PROPRIETARY TO DAVIS, BOWEN & FRIEDEL, INC., AND SHALL NOT BE ALTERED OR REUSED WITHOUT WRITTEN PERMISSION.

Y:\151504A\1504A006\DWGSET1 (Title).dwg, May 07, 2008 - 10:56am, (NCRD)



**PLAN VIEW - MUSKRAT PARK**



NOTE:  
1. REMOVE ALL PACKED SAND, STONE AND ASPHALT FROM LAWN AREAS. REPLACE WITH TOPSOIL, SAND, AND MULCH, TYPICAL ALL LOCATIONS.



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 11772, Expiration Date 12/30/09.

ARCHITECTS ENGINEERS SURVEYORS  
**DAVIS, BOWEN & FRIEDEL, INC.**  
 SALISBURY, MARYLAND (410) 843-8091  
 MILFORD, DELAWARE (302) 624-1441  
 EASTON, MARYLAND (410) 770-0742

LANDSCAPE ARCHITECTURE:  
**BARBARA PACA, PH.D.**  
 AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS  
 BARBARA PACA ENTERPRISES, L.L.C.



**MUSKRAT PARK**  
 TOWN OF ST. MICHAELS  
 TALBOT COUNTY, MARYLAND

Revisions:
Date: <b>APRIL 2008</b>
Scale: <b>1"=20'</b>
Dwn.By: <b>NMB</b>
Proj.No.: <b>1504A006</b>
Dwg.No.: <b>5</b>

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# LANDSCAPE PLANT LIST

### DECIDUOUS TREES:

- (2) 3"-4" *Carya glabra* - pignut hickory - CG
- (1) 2"-3" *Celtis occidentalis* - hackberry - CO
- (2) 8"-10" single stem *Cercis canadensis* - eastern redbud - CC
- (1) 8"-10" clump of *Cercis canadensis* - eastern redbud - CC CLUMP
- (6) 8"-10" single stem *Cercis canadensis* 'forest pansy' - burgundy foliage eastern redbud - CCFP
- (5) 8"-10" single stem *Chionanthus virginicus* - white fringe tree - CHIO
- (1) 2"-3" single stem *Cornus florida* - american dogwood - CF
- (1) 8"-10" *Crataegus crus-galli* - cockspur hawthorn - CCG
- (1) 8"-10" *Diospyros virginiana* - common persimmon - DV
- (1) 5"-6" *Fagus grandifolia* 'atropurpurea' - european copper beech - FG
- (1) 2"-3" *Gymnocladia dioica* - kentucky coffee tree - GD
- (1) 2"-3" *Koeleria paniculata* - golden rain tree - KP
- (1) 2"-3" *Liquidambar styraciflua* - american sweet gum - LS
- (1) 3"-4" *Liriodendron tulipifera* - tulip poplar - LT
- (1) 8"-10" *Magnolia virginiana* - sweetbay magnolia - MV
- (1) 2"-3" *Nyssa sylvatica* - black gum - NS
- (1) 2"-3" *Platanus occidentalis* - american sycamore - PO
- (2) 3"-4" *Quercus bicolor* - swamp white oak - QB
- (1) 2"-3" *Quercus marilandica* - blackjack oak - QM
- (1) 2"-3" *Quercus phellos* - willow oak - QP
- (1) 2"-3" *Taxodium distichum* - bald cypress - TD

### EVERGREEN TREES:

- (30) 4"-5" *Ilex x fosteri* - IF
- (3) 5"-6" *Ilex opaca* - american holly - IO
- (1) 5"-6" *Juniperus virginiana* - eastern red cedar - JV
- (3) 8"-10" *Pinus taeda* - loblolly pine - PT

### DECIDUOUS SHRUBS AND LARGE-SCALE VINES:

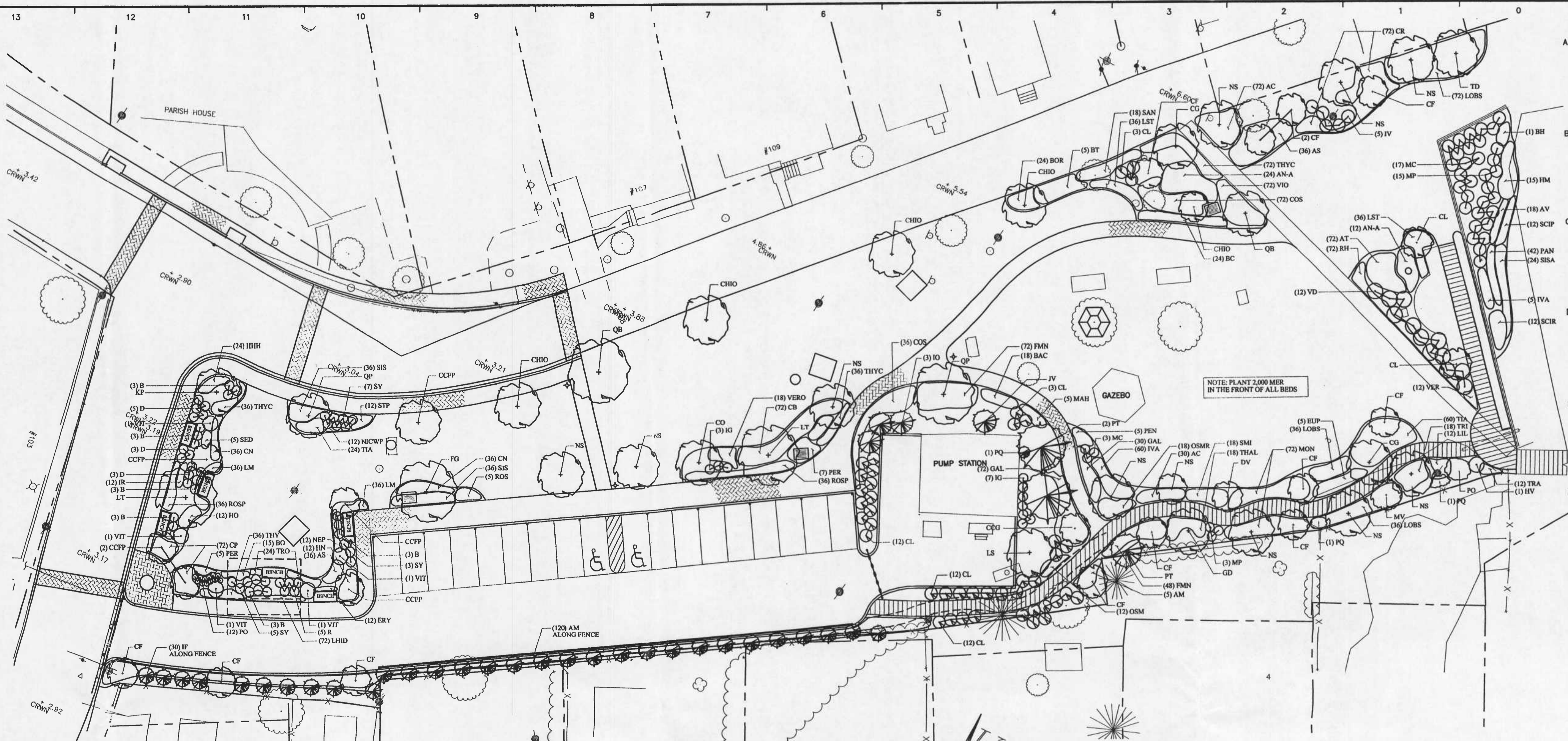
- (2) 3"-4" *Amelanchier canadensis* - shadblow - AC
- (1) 1 gallon *Campsis radicans* - trumpet creeper - CRAD
- (4) 2"-3" *Clethra alnifolia* - sweet pepperbush - CL
- (1) 3"-4" *Hamelia virginiana* - witch hazel - HV
- (5) 3"-4" *Ilex verticillata* - wisterberry - IV
- (3) 1 gallon *Parthenocissus quinquefolia* - virginia creeper - PQ
- (5) 2 gallon *Philadelphus microphyllus* - little leaf mock orange - P
- (12) 2 gallon *Potentilla fruticosa* - shrubby cinquefoil - PO
- (1) 2 gallon *Rosa x horisona* - harkness's yellow rose - R
- (2) 2 gallon *Spiraea x vanhouttei* - vanhoutte spiraea - SP
- (20) 7 gallon *Syringa vulgaris* - lilac - SY
- (12) 3"-4" *Viburnum dentatum* - southern arrowwood - VD
- (5) 7 gallon *Vitex agnus-castus* - chaste tree - VIT

### EVERGREEN SHRUBS:

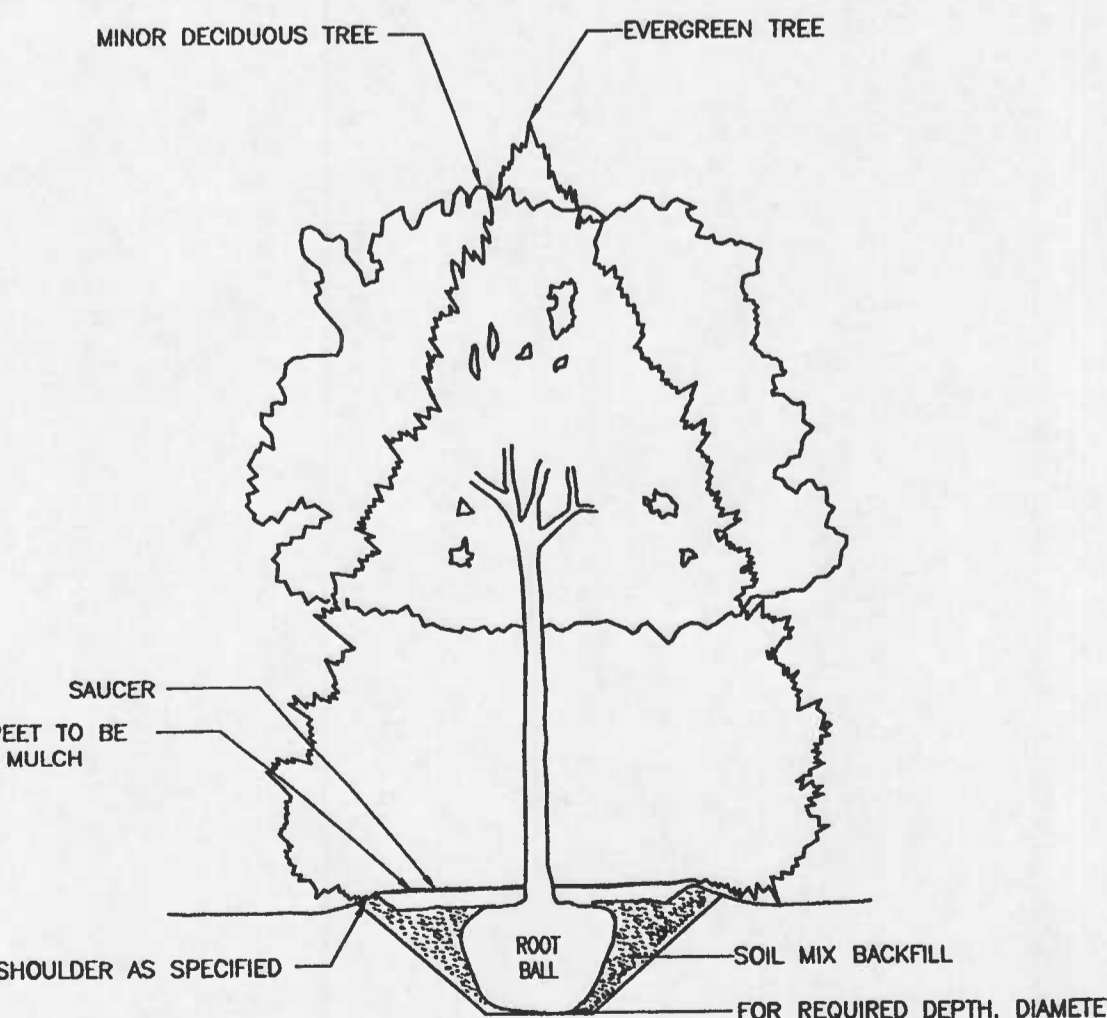
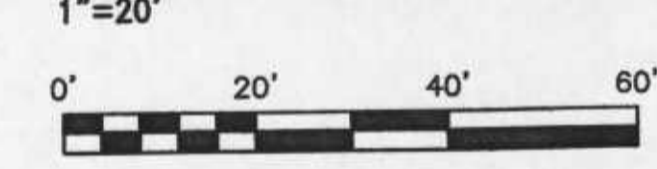
- (18) 2' *Buxus sempervirens* - american boxwood - B
- (5) 12" *DaphneCarol mackie* - daphne - D
- (7) 3 gallon *Ilex glabra* - holly - IG
- (20) 3 gallon *Myrica cerifera* - wax myrtle - MC
- (18) 3 gallon *Myrica pensylvanica* - bayberry - MP

### NATIVE GRASSES, PERENNIALS, ANNUALS, BULBS AND BARE ROOT WILDFLOWERS - ALL AREAS ARE HATCHMARKED TO INDICATE PLANTING BED (NON LAWN) LOCATIONS:

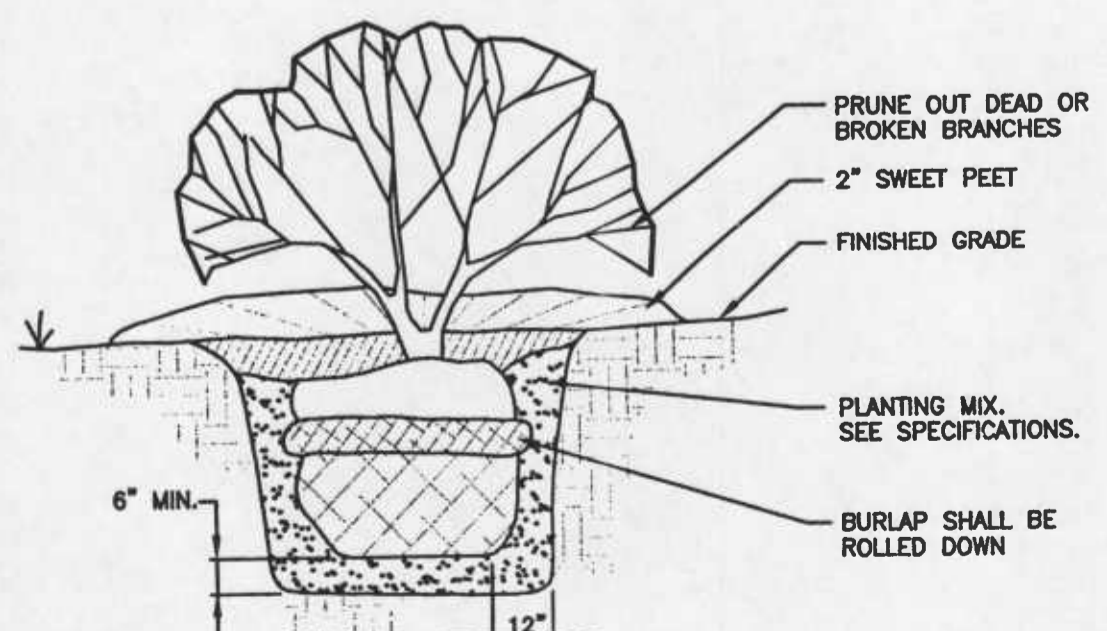
- (125) 1 gallon *Acanthus mollis* - bear's breeches - AM
- (72) plugs of *Alchemilla mollis* - lady's mantle - LM
- (18) 1 quart *Andropogon virginicus* - broomrape - AV
- (102) plugs of *Asplenium platyneuron* - native columbine - AC
- (72) plugs of *Aster tuberosus* - butterfly weed - AT
- (36) 1 gallon *Aster novae-angliae* - new england aster - AN-A
- (72) plugs of *Aurinia saxatilis* - basket of gold - AS
- (1) 5"-6" *Baccharis halimifolia* - groundsel tree - BH
- (5) 1 gallon *Baptisia tinctoria* - wild indigo - BT
- (24) 1 gallon *Bergenia cordifolia* - cordflower - BC
- (39) 1 quart *Borago officinalis* - borage - BO
- (20) plugs of *Brunnera macrophylla* - forget-me-not - FMN
- (72) plugs of *Campanula carpatica* - carpathian bellflower - CB
- (72) plugs of *Campanula poscharskyana* - siberian bellflower - CP
- (72) plugs of *Campanula rotundifolia* - bluebells of Scotland - CR
- (18) 1 quart *Centaurea cyamus* - bachelor's button - BAC
- (72) plugs of *Cerastium tomentosum* - snow-in-summer - SIS
- (72) plugs of *Chamaemelum nobile* - chamomile - CN
- (108) 1 *Cosmos bipinnatus* (annual) - cosmos - COS
- (12) 1 gallon *Eryngium maritimum* - sea holly - ERY
- (3) 1 quart *Eupatorium fistulosum* - joe pye weed - EUP
- (12) 1 gallon *Iris hybrids* - iris - IR
- (102) plugs of *Galium odoratum* - sweet woodruff - GAL
- (24) 1 gallon *Helleborus 'hellen ballard'* - burgundy hellebore - HHH
- (12) 1 gallon *Helleborus niger* - Christmas rose - HN
- (12) 1 gallon *Helleborus orientalis* - lenten rose - HO
- (15) 1 gallon *Hibiscus moscheutos* - marsh hibiscus - HM
- (5) 3 gallon *Iva frutescens* - high tide bush (at mean water - high zone) - IVA
- (72) plugs of *Lavandula angustifolia 'hidcote'* - english lavender - LHID
- (72) plugs of *Lavandula stoechas* - french lavender - LST
- (12) 1 gallon *Lilium superbum* - turk's cap lily - LIL
- (72) plugs of *Lobelia cardinalis* - cardinal flower - LOB
- (72) plugs of *Lobelia siphilitica* - great blue lobelia - LOBS
- (5) 1 gallon *Mahonia repens* - creeping mahonia - MAH
- (2,000) bare root *Mertensia virginica* - virginia bluebells - MER
- (72) plugs of *Monarda fistulosa* - wild bergamot - MON
- (12) 1 gallon *Nepeta x faasseni* - catmint - NEP
- (12) 1 quart *Nicotiana glauca* 'white perfume' - old fashioned flowering tobacco - NICW
- (12) 1 quart *Nicotiana glauca* 'chartruse' old fashioned flowering tobacco - NIC
- (12) 1 gallon *Osmunda cinnamomea* - cinnamon fern - OSM
- (18) 1 gallon *Osmunda regalis* - royal fern - OSMR
- (42) 1 quart *Panicum virgatum* - switchgrass - PAN
- (12) 1 gallon *Perovskia atriplicifolia* - russian sage - PER
- (5) 1 gallon *Pentstemon species* - pentstemon - PEN
- (5) 1 quart *Rosmarinus officinalis* - rosemary - ROS
- (72) plugs of *Rosmarinus prostratus* - creeping rosemary - ROSP
- (72) 1 quart *Rudbeckia hirta* - black-eyed susan - RH
- (12) 1 quart *Salvia officinalis* - salvia - SAL
- (18) 1 gallon *Santolina chamaecyparissus* - lavender cotton - SAN
- (12) 1 quart *Scirpus pungens* - common three-square - SCP
- (12) 1 quart *Scirpus rostratus* - stout bulrush - SCR
- (5) 1 gallon *Sedum spectabile* - showy stonecrop - SED
- (24) 1 quart *Sisyrinchium atlanticum* - coastal blue-eyed grass - SISA
- (18) 1 gallon *Smilacina racemosa* - false solomon's seal - SMI
- (3) 1 gallon *Solidago caesia* - blue-stem goldenrod - SOL
- (24) 1 quart *Spartina alterniflora* - marsh grass - SPAR
- (18) 1 quart *Spartina patens* - salt marsh hay - SPARP
- (12) 1 quart *Stachys lanata* - ham's tea - ST
- (12) 1 quart *Tanacetum densum* - patchouli - TAN
- (18) 1 gallon *Thalictrum polygamum* - tall meadow rue - THAL
- (72) plugs of *Thymus pseudolanuginosus* - woolly thyme - THY
- (72) plugs of *Thymus x citriodorus 'creeping'* - lemon thyme - THYC
- (120) 1 quart *Tiarela cordifolia* - foam flower - TIA
- (12) 1 quart *Tradescantia virginiana* - virginia spiderwort - TRA
- (18) 1 quart *Trillium grandiflorum* - white trillium - TRI
- (24) 1 quart *Tropaeolum majus 'blaska'* - nasturtium - TRO
- (12) 1 quart *Verbena hastata* - blue vervain - VER
- (18) 1 gallon *Veronica pectinata* - blue woolly speedwell - VERO
- (72) plugs of *Viola pedata* - bird's foot violet - VIO
- (36) 1 quart *Zinnia angustifolia* - narrowleaf zinnia - ZIN



## LANDSCAPE PLAN



SECTION TREE PLANTING DETAIL



SHRUB PLANTING DETAIL

## BUFFER AREA REGULATIONS

**MITIGATION AMOUNT**  
 AMOUNT OF DISTURBANCE: 495 SF NEW IMPERVIOUS SURFACE  
 MITIGATION RATIO: 2:1  
 MITIGATION AMOUNT REQUIRED: (495 SF) x 2 = 990 SF  
 MITIGATION AMOUNT PROVIDED:  
 100 SF = 1 ACER RUBRUM  
 100 SF = 1 ACER RUBRUM  
 400 SF = 1 ACER RUBRUM, 2 CERCIS CANADENSIS  
 400 SF = 1 ACER RUBRUM, 2 CERCIS CANADENSIS  
 10,000 SF TOTAL

## GENERAL LANDSCAPE NOTES

1. QUALITY AND SIZE OF PLANTS, SPREAD OF ROOTS, AND SIZE OF BALLS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN "AMERICAN STANDARDS FOR NURSERY STOCK".
2. CONTRACTOR SHALL BE REQUIRED TO GUARANTEE ALL PLANT MATERIALS FOR A PERIOD OF ONE YEAR AFTER INSTALLATION IS COMPLETE AND FINAL ACCEPTANCE OF SITE WORK HAS BEEN GIVEN. AT THE END OF ONE YEAR ALL PLANT MATERIAL WHICH IS DEAD OR DYING SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE AS ORIGINALLY SPECIFIED.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND MAY MAKE MINOR ADJUSTMENTS IN SPACING AND/OR LOCATION OF PLANT MATERIALS. CONTRACTOR TO VERIFY "AS BUILT" LOCATION OF ALL UTILITIES.
4. NO SUBSTITUTIONS SHALL BE MADE WITHOUT APPROVAL OF THE OWNER.
5. ALL AREAS NOT STABILIZED IN PAVING OR PLANT MATERIALS SHOULD BE SEEDED AND MULCHED. (SEE EROSION & SEDIMENT CONTROL PLAN.)
6. EVERGREEN TREES SHALL HAVE A FULL, WELL-BRANCHED, CONICAL FORM TYPICAL OF THE SPECIES.
7. ALL DECIDUOUS SHADE TREES SHALL BRANCH A MINIMUM OF 7'-0" ABOVE GROUND LEVEL. TREES SHALL BE PLANTED AND STAKED IN ACCORDANCE WITH THE STAKING DETAIL SHOWN.
8. THE FULL EXTENT OF ALL PLANTING BEDS SHALL RECEIVE 4" OF TOPSOIL AND 2" OF SWEET PEET.
9. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTINGS SHOWN ON THIS DRAWING AND AS SPECIFIED.
10. ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANTS ORIGINAL GRADE BEFORE DIGGING.
11. THE CONTRACTOR SHALL WATER ALL PLANTS THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING, AND THEN WEEKLY OR MORE OFTEN, IF NECESSARY, DURING THE FIRST GROWING SEASON.
12. ALL ABOVE GROUND UTILITY BOXES WILL BE LANDSCAPED USING EVERGREEN SHRUBS OF SUFFICIENT HEIGHT AND SPREAD AT THE TIME OF PLANTING TO SCREEN THEM FROM VIEW.
13. LANDSCAPE BEDS NOT DEFINED BY CURBS, SIDEWALKS, WALLS OR OTHER STRUCTURES SHALL BE ENCLOSED BY ALUMINUM EDGING UNLESS OTHERWISE INDICATED. (SEE LANDSCAPE PLAN)



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 ARCHITECTS ENGINEERS SURVEYORS  
 SALISBURY, MARYLAND (410) 543-8000  
 MILFORD, DELAWARE (302) 424-1441  
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