

Re: Shoreline Protection Permit for the City of Norfolk's Watershed Properties

Dear Homeowner:

Thank you for your interest in restoring and sustaining the shoreline of one of the City of Norfolk's reservoirs. The reservoir located behind your property is a vital part of the drinking water supply to almost one million residents of Hampton Roads and it is the responsibility of the Department of Utilities to maintain and protect the system.

New Construction or Modification of an existing structure

If you would like to apply for a permit to build or modify an existing structure to protect the shoreline, construct a pier or similar structure or a fence, we have developed minimum standards by which all owners/applicants must comply. You will need to complete the attached application in its entirety, including all applicable drawings and appendices. All structures built on City of Norfolk property require an Erosion and Sediment Control Plan & Narrative (Appendix A) and a Landscape Plan (Appendix B). The Owner/Applicant is also required to obtain and keep in force liability insurance as described below.

Existing Structures

If you are a new homeowner and there is an existing structure on City of Norfolk property behind your property, such as a bulkhead, riprap revetment, pier or fence, a permit is required to acknowledge responsibility for the maintenance and upkeep of the structure. Complete pages 7 through 9 of the application and obtain and keep in force liability insurance as described below. Following inspection to ensure the structure is in good repair and meets Building Guidelines, a permit will be issued. Any structure not in compliance or in disrepair will need to be brought into compliance or repaired before a permit will be issued.

A Checklist has been provided on the following pages to assist you in submitting a completed application.

The property owner must obtain and keep in affect liability insurance in the minimum amount of \$400,000 combined personal injury/property damage per occurrence. The City of Norfolk must be listed as a named-insured party on the proposed structure. This is normally part of your Homeowners Insurance Policy, not an additional policy. The City shall also receive proof of insurance annually. This is required for protecting both the City of Norfolk and you as the responsible party.

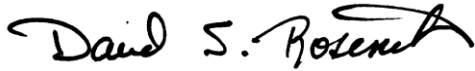
The insurance policy should read:

City of Norfolk
Department of Utilities
Division of Water Resources
6040 Waterworks Road
Norfolk, Virginia 23502

You are also required to obtain all applicable permits from other local, state and federal agencies.

Please review the attached documentation and contact us if you have any questions. Your cooperation will enhance reservoir water quality and ensure a safe and sustainable environment.

Sincerely,

A handwritten signature in black ink that reads "David S. Rosenthal". The signature is fluid and cursive, with a large, stylized "A" at the end.

David S. Rosenthal, CLM
Reservoir Manager

**Local State and Federal Agency
Addresses and Phone Numbers**

City of Norfolk
Department of Utilities
6040 Waterworks Road Norfolk,
Virginia 23502
(757) 441-5678
NorfolkReservoirs@norfolk.gov

City of Norfolk
Development Services Center
Building Permits
(757) 664-6565
<https://norfolkvapermits.force.com/>

U.S. Army Corps of Engineers
Norfolk District
803 Front Street
Norfolk, Virginia 23510
(757) 201-7652

City of Virginia Beach
Permits and Inspections
2875 Sabre Street
Suite 500
Virginia Beach, Virginia 23452
(757) 385-4211
PermlInsp@vbgov.com

City of Suffolk
Community Development/Inspections
442 W. Washington Street
Suffolk, Virginia 23434
(757) 514-4150

Isle of Wight Inspections Department
P.O. Box 80
17140 Monument Cir.
Isle of Wight, Virginia 23397
(757) 365-6215

How to obtain a Norfolk Shoreline Protection Permit

Mail the completed application to:

City of Norfolk
Shoreline Permits
6040 Waterworks Road
Norfolk, VA 23502

Email an electronic copy to:

Norfolkreservoirs@norfolk.gov

Subject: Shoreline Permits

Requirements:

Incomplete applications will not be reviewed until all the required submittals are received, including insurance documentation.

An onsite meeting with the City, Owner/Applicant, and Contractor is required upon submittal of an application.

Answer all applicable questions and fill in all the blanks required on all the application forms.

1. The proposed alignment of all projects shall be staked in the field at the time the application is submitted. Stake the lakeward extent of the proposed structure at each angle and the landward end of each return. Clearly label all stakes. Long pieces of white PVC work well, especially if there is tall vegetation or deep water.
 - a. For riprap, stake the lakeward toe.
 - b. For piers, stake all corners.
2. Submit good quality legible drawings, on nothing larger than 8.5" X 14" paper, on the fewest number of sheets necessary to adequately illustrate the project.
3. Lettering must be legible. Refrain from abbreviations.
4. For each submittal or resubmittal provide complete, accurate and consistent title blocks on all pages of the application drawings, including consistent revised dates on all pages of the drawings.
5. All dimension lines on the application drawings must be labeled.
6. Specify the datum (NAVD 88) used for the project on each drawing.

7. Only the work shown on the plans approved by the Department of Utilities Water Resources is authorized to be performed. Field changes without approval are not allowed. If after a permit is issued there is a need, for whatever reason, to change, modify, improve, alter, delete, add, or increase any activity shown on the approved plan, express consent must be first obtained from Water Resources. There are no exceptions. If there is any doubt, ask first. The steps necessary to grant such changes vary from site to site depending on the nature of the project and the significance of the change. Accordingly, extreme care should be used in the original design of each project. Contractors, agents, engineers and consultants should thoroughly discuss the wants and needs of the owner/applicant prior to the original submittal to avoid unrealistic expectations and the need for changes after the plan is approved.
8. The Department of Utilities Water Resources shall be notified a minimum of one (1) week prior to the beginning of construction at (757) 441-5678.
9. The Department of Utilities Water Resources shall be notified at the completion of the construction at (757) 441-5678. A Final Inspection will be performed at this time.
 - a. The Landscape Mitigation plantings will receive a Final Inspection one (1) year following project completion to ensure vegetation and tree survival. Replanting may be required.

PLAN VIEW REQUIREMENTS

1. Show and label, with dimensions, all property lines for the project site as shown on a legally recorded plat. The use of match lines is acceptable for large lots.
2. Specify the scale and provide a graphic scale bar on each drawing.
3. Show and label the location of all easements and all adjacent property owners.
4. Show and label the existing physical features at the project site. Where applicable, clearly label existing waterfront structures. Specify if the existing structures will remain or be removed.
5. Show and label the location of the Normal water level. See *Table 1* below.
6. Show and label the City of Norfolk property.
7. Show and label all proposed structures, specifically waterfront structures, at the project site. Where appropriate, clearly label structures to be altered.
8. Provide tie down distances to the lakeward toe of proposed riprap; and to the landward and lakeward corner of a proposed pier, starting from an existing permanent point of reference, readily recoverable in the field such as house corners and property pins. If additional reference points or control stakes are used, provide tie down distances to each as required above.
9. Indicate a single construction access way to the project area. Indicate the limits of construction and all land disturbing activities along the entire limit of the construction footprint and provide the square footage of the disturbed area.

CROSS SECTION VIEW REQUIREMENTS

1. Provide the appropriate number of cross sections to accurately depict the proposed project and the different conditions within the project area.
2. Provide accurate cross sections, drawn to scale, with appropriate grade elevations showing existing and proposed bank and bottom profiles for all proposed riprap and pier projects.
3. Specify the limits and maximum depth of proposed fill and the proposed elevation to match existing grade.
4. Show the length of the existing slope, height of the bank, and the distance from the toe of the slope to the toe of riprap.
5. Specify the proposed slope for riprap structures and the square footage above Normal water level (See *Table 1*).
6. Specify if the existing structures will remain or be removed.
7. Specify the size and type of all construction materials, including size and type of riprap material to be used.
8. Provide specifications for treatment of all construction materials (e.g. treatment retention of 2.5 pcf CCA for lumber, Hot Dipped Galvanizing for hardware) in accordance with industry standards.
9. Specify the location of filter fabric for riprap projects.
10. Provide a comprehensive construction sequence of events and time schedule specific to the proposal.
11. The following notes shall be placed on the application cross section drawings:
 - a) "All erosion and sediment control measures shall be installed and maintained in accordance with the Virginia Erosion Control Handbook, and as required by the City Inspectors."
 - b) "All excavated material and construction debris will be disposed of in a lawful manner."
 - c) "All manufactured structures or products will be used and/or installed pursuant to the manufacture's specifications and recommendations."
12. All plan and section views must be drawn to scale (NTS or plus or minus distances are unacceptable). Relying on dimensions is not sufficient.

Table 1. Reservoir Spillway Elevations

Reservoir	Normal Elevation Feet (NAVD 88)
Lake Prince	25.7
Burnt Mills	33.7
Western Branch Reservoir	19.7
Lake Smith	7.16
Little Creek Reservoir	5.92
Lake Whitehurst	5.92
Lake Lawson	7.16

**BASIC APPLICATION FORM
RESERVOIR SHORELINE PROTECTION PERMIT
CITY OF NORFOLK, VIRGINIA - DEPARTMENT OF UTILITIES**

1. Owner/Applicant's name and complete address:
Mr., Mrs., Ms. (circle one)

Telephone numbers:

Mobile: _____

Work: _____

Email: _____

2. Authorized agent's name
and complete address (if applicable):

Telephone numbers:

Mobile: _____

Work: _____

Email: _____

3. Have you obtained a contractor for the project? ____ Yes ____ No. If your answer is "Yes", complete the remainder of this question and submit the Applicant's and Contractor's Acknowledgement Form with your application.

Contractor's name and complete address:

Telephone numbers:

Mobile: _____

Work: _____

Email: _____

4. Please give the name of the waterbody at the project site, the city the project is located in:

Waterbody _____ is located in _____
City

5. State the project purpose and provide a brief description of the project.

6. a. State the area of City property impacted by project _____ square feet.

b. Will the project impact wetlands?

_____ Yes _____ No _____ Uncertain

If your answer is "YES":

Vegetated wetland area(s) to be impacted _____ square feet.

7. Does proposed project involve any existing structures that are on City of Norfolk Property?

_____ Yes _____ No If your answer is "Yes", provide the following information:

a. Type of structure: _____

b. Approximate age of structure _____

c. Did the City of Norfolk issue an authorization permit?

_____ Yes _____ No _____ Unsure If Yes, date issued _____

d. Date the property was purchased: Month _____ Year _____

8. Have you previously had a site visit, applied to, or obtained a permit from any agency (Federal, State, or Local) for any portion of the project described in this application or *any other* project at the site?

_____ Yes _____ No If your answer is "Yes", provide the following information:

Name of Representative: _____

Agency

Activity

Application Number

Action Taken (check the appropriate box)

___ Issued ___ Denied

___ Withdrawn ___ Site Visit

Date Action taken: _____

9. a. Has any work commenced or has any portion of the project for which you are seeking a permit been completed?

_____ Yes _____ No

b. Are you submitting this application at the direction of any state, local or federal agency?

_____ Yes _____ No

If your answer to either question above is "Yes", give details below stating when the work was completed, who performed the work, and which agency (if any) directed you to submit the application. (Please clearly differentiate on your application drawings that portion of the work that has been completed from that which is proposed.)

10. Approximately how long will it take to complete the project after all required permits have been issued? _____ months.
11. List the name and complete mailing address of each adjacent property owner to the project.
12. Have you obtained and enclosed a public liability insurance policy with the City of Norfolk as named-insured, in the minimum amount of \$400,000 combined personal injury/property damage per occurrence on the proposed structure? _____ Yes _____ No. **A permit cannot be issued until insurance is obtained.** If No, please explain:

As an owner/applicant, I/we _____ certify that I/we have read and understand the authorization ordinance (Sec. 46.1-58 et al) and will meet all of its requirements. The owner/applicant(s) also certifies that the residence and ownership requirements stated in Sec 46.1-61 have been met. The owner/applicant(s) declares that in consideration of the City of Norfolk permitting me/us to build and/or maintain a structure on its property subject to the authorization ordinance referred to in this application, hereby, to hold and serve the City of Norfolk harmless as stated in Sec 46.1-62. The owner/applicant(s) certifies that all information contained herein is true, accurate and complete.

OWNER/APPLICANT'S SIGNATURE	DATE
OWNER/APPLICANT'S SIGNATURE	DATE

APPENDIX A EROSION AND SEDIMENT CONTROL & NARRATIVE

All Shoreline Projects require an Erosion and Sediment Control Narrative. Any project with land disturbance in excess of 2,500 square feet will also require a *Land Disturbing Permit* from the appropriate locality in addition to any other required permits.

SAMPLE EROSION CONTROL PLAN NARRATIVE

Homeowners, John and Jane Doe, propose to construct a 400 L.F. riprap revetment along the shoreline of the reservoir to provide erosion control. A 25'x 6' pier will be built from the shore to provide access to the reservoir for recreational fishing and boating. The pier materials to be used will be pressure-treated lumber and all hardware will be hot-dipped galvanized.

The terrain in the area that will be disturbed slopes very gently to the lake. The fall over the area is about 4 feet over the width of land owned by the City of Norfolk. The soil on this slope bears a heavy growth of deciduous trees and shrubs with a dense root system that are native to the area. At the present time, there is evidence in certain areas of moderate to severe bank erosion. The most severe erosion conditions are on the northeast corner of the property.

A construction entrance will be provided for ingress and egress of construction equipment. This will eliminate tracking of on-site materials onto the roadway. Prior to any land disturbing activity, silt fence will be installed along the upper portion of property to prevent any sedimentation into the reservoir by any land disturbance from equipment. A turbidity curtain will be placed in the water the entire length of the proposed revetment to provide sediment protection for the lake from the upslope land disturbance. Tree protection will be provided around all trees that are not to be removed. Upon completion of the revetment and pier construction, the area will be properly graded, and native vegetation planted as detailed in the Landscape Plan. The silt fence will remain in place until permanent vegetation is established.

APPENDIX B
LANDSCAPE PLAN
REQUIRED FOR ALL SHORELINE PROTECTION PROJECTS

The City of Norfolk, Division of Water Resources is tasked with protecting approximately 200 miles of shoreline surrounding our drinking water reservoirs. Most of the shoreline next to City of Norfolk property is bordered by private property owners that would like to enjoy the reservoirs for recreation and visual appeal. As such, the shoreline has been altered over the years by the removal of native vegetation and ground cover which can ultimately lower the quality of the water in the reservoirs. The City of Norfolk has undertaken an effort to reverse this trend and now requires Landscape Plans for all Shoreline Protection Permits.

For all land disturbing activities, including Shoreline Protection projects, the City of Norfolk requires that adjacent landowners restore an area at a ratio of 1:1 of altered area to native vegetation. If a Shoreline Protection project impacts 100 square feet of City property, 100 square feet of native vegetation will be replanted. If an adjacent property owner requests to remove undesirable vegetation (briars, etc.) to enhance the view of the reservoir, restoration may also be required.

The area to be restored shall be City of Norfolk property or contiguous areas, if needed. The restoration should focus on minimizing turf grass and the establishment of natural vegetation for water quality protection of the reservoir.

When determining the proper amount and type of vegetation to be planted, the following guidelines shall be used. The number of plants from each category (trees, shrubs and herbaceous plants or woody groundcover) depends on the total square footage to be restored. The City of Norfolk's rule requires replacement of plants of like category based for every 100 square foot of disturbance:

- One (1) tree @ 1 ½" – 2" caliper, 6-8' tall.
- Four (4) shrubs, at least 24" tall.
- Ten (10) herbaceous plants or woody groundcover, planted in clumps of 2 to 3 OR a native plant seed mix at the recommended coverage rate.
- Turf grass will be minimized on City of Norfolk property.

All Landscape Plans shall be prepared and stamped by a Registered Landscape Architect, Certified Landscape Designer or Virginia Certified Horticulturist. Checkout lawn care tip #9 from our partners at askHRGreen.org to learn more.

LANDSCAPE PLAN
REQUIRED WITH ALL PLANS

PLEASE COMPLETE THE CHECKLIST. THE DRAWING MUST CONTAIN THE FOLLOWING INFORMATION OR THEY WILL BE RETURNED AS INCOMPLETE:

Plan View Drawing

- ☐ north arrow
- ☐ adjacent waterway name
- ☐ existing structures
- ☐ benchmarks showing distances to fixed points of reference
- ☐ normal water elevation
- ☐ location of vegetated wetlands at the project site
- ☐ shoreline, property lines, and location of adjacent property owners (if in a cove or the waterway is less than 100 feet wide, also show the location of the property owner across from the site)
- ☐ City of Norfolk property line
- ☐ proposed landscaping

Cross Section Drawing

- ☐ proposed landscaping
- ☐ normal water elevation
- ☐ existing contours of the shoreline and/or bank
- ☐ proposed grading of existing bank relative to normal water elevation
- ☐ erosion and sediment control measures (e.g. silt fence)

- ☐ **Vicinity Map** The name of the map from which the vicinity map was taken and the exact location of the project site must be included (U.S.G.S. quad sheet, street map, or county map is preferred).

**APPENDIX C
PRIVATE PIERS**

PLEASE COMPLETE THE CHECKLIST. THE DRAWINGS MUST CONTAIN THE FOLLOWING INFORMATION OR THEY WILL BE RETURNED AS INCOMPLETE:

Plan View Drawing

- ___ north arrow
- ___ adjacent waterway name
- ___ existing structures
- ___ benchmarks showing distances to fixed points of reference
- ___ normal water elevation
- ___ location of vegetated wetlands at the project site
- ___ shoreline, property lines, and location of adjacent property owners (if in a cove or the waterway is less than 100 feet wide, also show the location of the property owner across from the site)
- ___ City of Norfolk property line
- ___ distance the proposed structure will be located from the adjoining property lines
- ___ width of the waterway (measuring from normal water elevation)
- ___ channelward encroachment relative to normal water elevation
- ___ dimensions of pier and all L/T-head section, platform, or deck

Side View Drawing

- ___ existing contours of the bottom and wetland surface
- ___ normal water elevation
- ___ height of pier over existing bottom or wetland surface
- ___ erosion and sediment control measures (e.g. silt fence)

- ___ **Vicinity Map** The name of the map from which the vicinity map was taken and the exact location of the project site must be included (U.S.G.S. quad sheet, street map, or county map is preferred).

1. What portion of the project will be placed on wetlands or subaqueous land?

	Nontidal
Vegetated wetlands	sf
Subaqueous land	sf

2. Total impact to City property: _____ sf.

APPENDIX D RIPRAP REVETMENT

PLEASE COMPLETE THE CHECKLIST AND ANSWER THE QUESTIONS. THE DRAWING MUST CONTAIN THE FOLLOWING INFORMATION OR THEY WILL BE RETURNED AS INCOMPLETE:

Plan View Drawing

- ☐ north arrow
- ☐ adjacent waterway name
- ☐ existing structures
- ☐ benchmarks showing distances to fixed points of reference
- ☐ normal water elevation
- ☐ location of vegetated wetlands at the project site
- ☐ shoreline, property lines, and location of adjacent property owners (if in a cove or the waterway is less than 100 feet wide, also show the location of the property owner across from the site)
- ☐ City of Norfolk property line
- ☐ channelward encroachment relative to normal water elevation
- ☐ connection with existing bulkhead or riprap structures (if applicable)
- ☐ proposed backfill
- ☐ proposed landscaping
- ☐ length of revetment

Cross Section Drawing

- ☐ proposed backfill
- ☐ proposed landscaping
- ☐ normal water elevation
- ☐ existing contours of the shoreline and/or bank
- ☐ dimensions of proposed revetment
- ☐ filter cloth
- ☐ buried toe or riprap apron
- ☐ proposed grading of existing bank relative to normal water elevation
- ☐ erosion and sediment control measures (e.g. silt fence)

☐ **Vicinity Map** The name of the map from which the vicinity map was taken and the exact location of the project site must be included (U.S.G.S. quad sheet, street map, or county map is preferred).

1. What will be the average amount of material placed below the plane of normal water elevation per linear foot of shoreline? _____ cu. yd(s) per ft. OR _____ ton(s) per ft.
2. What type of material will be used for construction of the riprap revetment (e.g. quarry stone, etc.)?

3. What will be the average weight of the:
 - a. Core material (bottom layers) _____ pounds per stone
 - b. Armor material (top 2 layers) _____ pounds per stone.
4. If the revetment will be backfilled, describe the composition of the material to be used (e.g. 80% sand, 15% clay and 5% silt):
5. What is the source of the backfill material?
6. What portion of the project will be placed on wetlands or subaqueous land?

	Nontidal
Vegetated wetlands	sf
Subaqueous land	sf

7. Total impact to City property: _____ sf.

APPENDIX E BOAT STORAGE RAMP

PLEASE COMPLETE THE CHECKLIST AND ANSWER THE QUESTIONS. THE DRAWING MUST CONTAIN THE FOLLOWING INFORMATION OR THEY WILL BE RETURNED AS INCOMPLETE:

Plan View Drawing

- ☐ north arrow
- ☐ adjacent waterway name
- ☐ existing structures
- ☐ benchmarks showing distances to fixed points of reference
- ☐ normal water elevation
- ☐ location of vegetated wetlands at the project site
- ☐ shoreline, property lines, and location of adjacent property owners (if in a cove or the waterway is less than 100 feet wide, also show the location of the property owner across from the site)
- ☐ City of Norfolk property line
- ☐ channelward encroachment relative to normal water elevation
- ☐ connection with existing structures (if applicable)
- ☐ dimensions of boat storage ramp

Cross Section Drawing

- ☐ materials to be used for construction
- ☐ normal water elevation
- ☐ existing contours of the shoreline and/or bank
- ☐ erosion and sediment control measures (e.g. silt fence)

☐ **Vicinity Map** The name of the map from which the vicinity map was taken and the exact location of the project site must be included (U.S.G.S. quad sheet, street map, or county map is preferred).

1. Will any other structures be installed concurrently with the boat storage ramp ☐ Yes ☐ No.
If Yes, list the other structures.

2. What portion of the project will be placed on wetlands or subaqueous land?

	Nontidal
Vegetated wetlands	sf
Subaqueous land	sf

Total impact to City property: _____ sf.

AGENT CERTIFICATION OF AUTHORIZATION

I, _____, hereby certify that I have authorized _____ to act on my
(OWNER/APPLICANT'S NAME) (AGENT'S NAME)
behalf and take all actions to the processing, issuance, and acceptance of this permit and any and all standard
and special conditions attached.

We hereby certify that the information submitted in this application is true and accurate to the best of our
knowledge.

OWNER/APPLICANT'S SIGNATURE

AGENT'S SIGNATURE

DATE

DATE

**Completion of this form will allow the agent to sign all future application correspondence. Also, please
provide the name(s) and complete address(es) of all legal property owner(s) as shown on your recorded
deed.**

ADJACENT PROPERTY OWNER'S ACKNOWLEDGEMENT FORM

I, _____, own land next to or across the water from
(ADJACENT PROPERTY OWNER'S NAME)
the land of _____. I have reviewed the applicant's project drawings dated
(OWNER/APPLICANT'S NAME)
_____ to be submitted for all necessary Local, State, and Federal permits.
(DATE)

I _____ HAVE NO COMMENT _____ DO NOT OBJECT _____ DO OBJECT to the project.

The owner/applicant has agreed to contact me for additional comments if the proposal changes prior to construction of the project.

(Before signing this form, please be sure you have checked the appropriate box above.)

ADJACENT PROPERTY OWNER'S SIGNATURE

DATE

NOTE: IF YOU OBJECT TO THE PROPOSAL - THE REASONS YOU OPPOSE THE PROJECT MUST BE SUBMITTED TO THE CITY OF NORFOLK IN WRITING. AN OBJECTION WILL NOT NECESSARILY RESULT IN DENIAL OF THE PROJECT, BUT, VALID COMPLAINTS WILL BE GIVEN FULL CONSIDERATION DURING THE PERMIT REVIEW PROCESS.

NOTE: Please photocopy this form if additional copies are needed.

APPLICANT'S AND CONTRACTOR'S ACKNOWLEDGEMENT FORM

I, _____, have contracted _____
(OWNER/APPLICANT'S NAME) (CONTRACTOR/COMPANY NAME)
to perform the work described in the application signed and dated _____.
(DATE)

We will read and abide by all conditions as set forth in all Local, State, and Federal permits as required for this project. We understand that failure to follow the conditions of the permits may constitute a violation of applicable Local, State, and Federal statutes and that will be liable for any civil and/or criminal penalties imposed by these statutes.

In addition, we agree to make available a copy of any permit to any regulatory representative visiting the project site to ensure permit compliance. If we fail to provide the applicable permit upon request, we understand that the representative will have the option of stopping our operation until it has been determined that we have a properly signed and executed permit and are in full compliance with all terms and conditions.

OWNER/APPLICANT'S SIGNATURE

DATE

CONTRACTOR'S SIGNATURE AND TITLE

DATE

CONTRACTOR'S NAME OR NAME OF FIRM
(PRINTED/TYPED)

CONTRACTOR'S OR FIRM'S ADDRESS

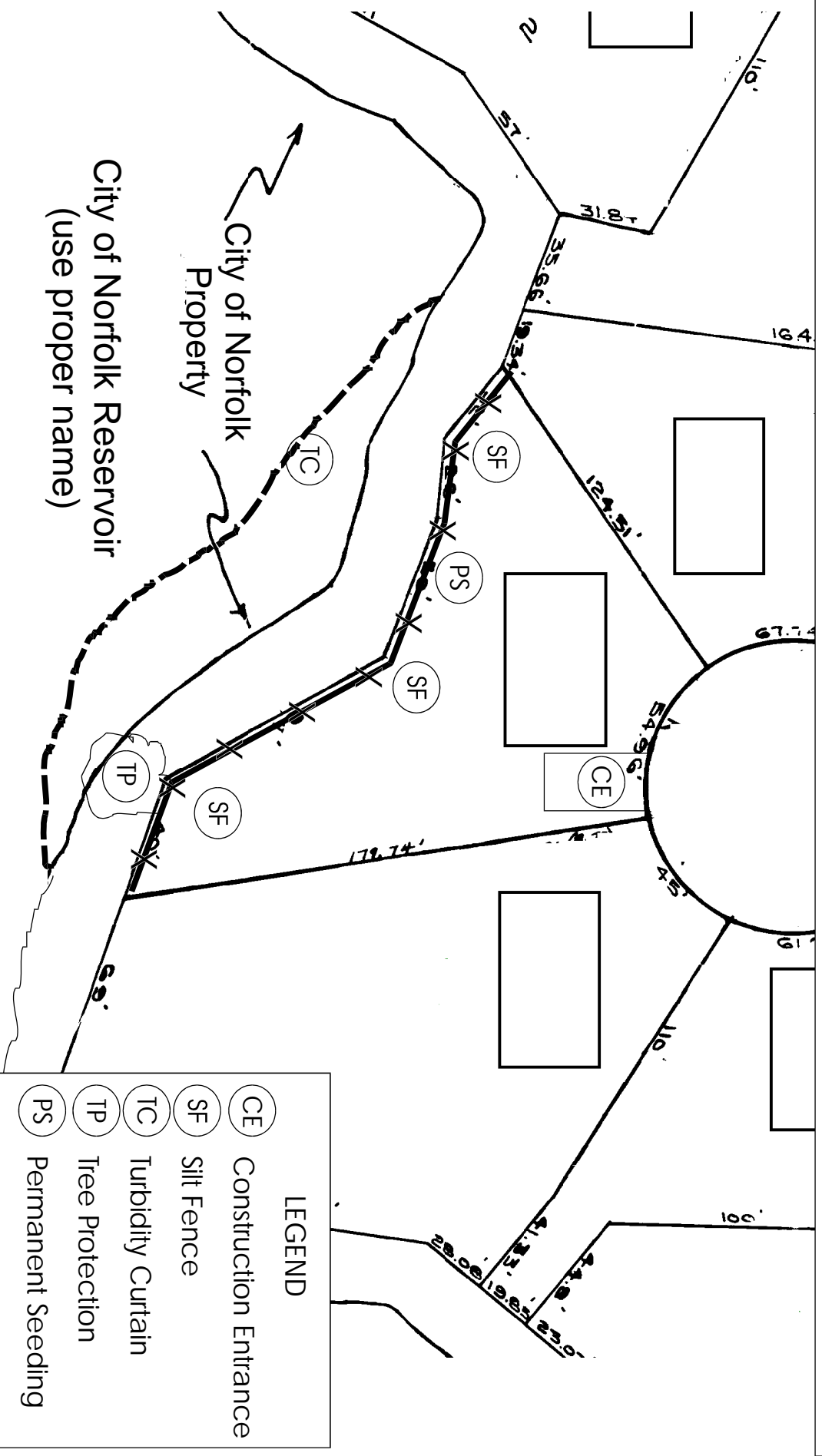
VIRGINIA CONTRACTOR LICENSE NUMBER

BUILDING GUIDELINES

The following pages are building guidelines as established by the City of Norfolk for structures that may be allowed on City of Norfolk property surrounding the reservoirs.

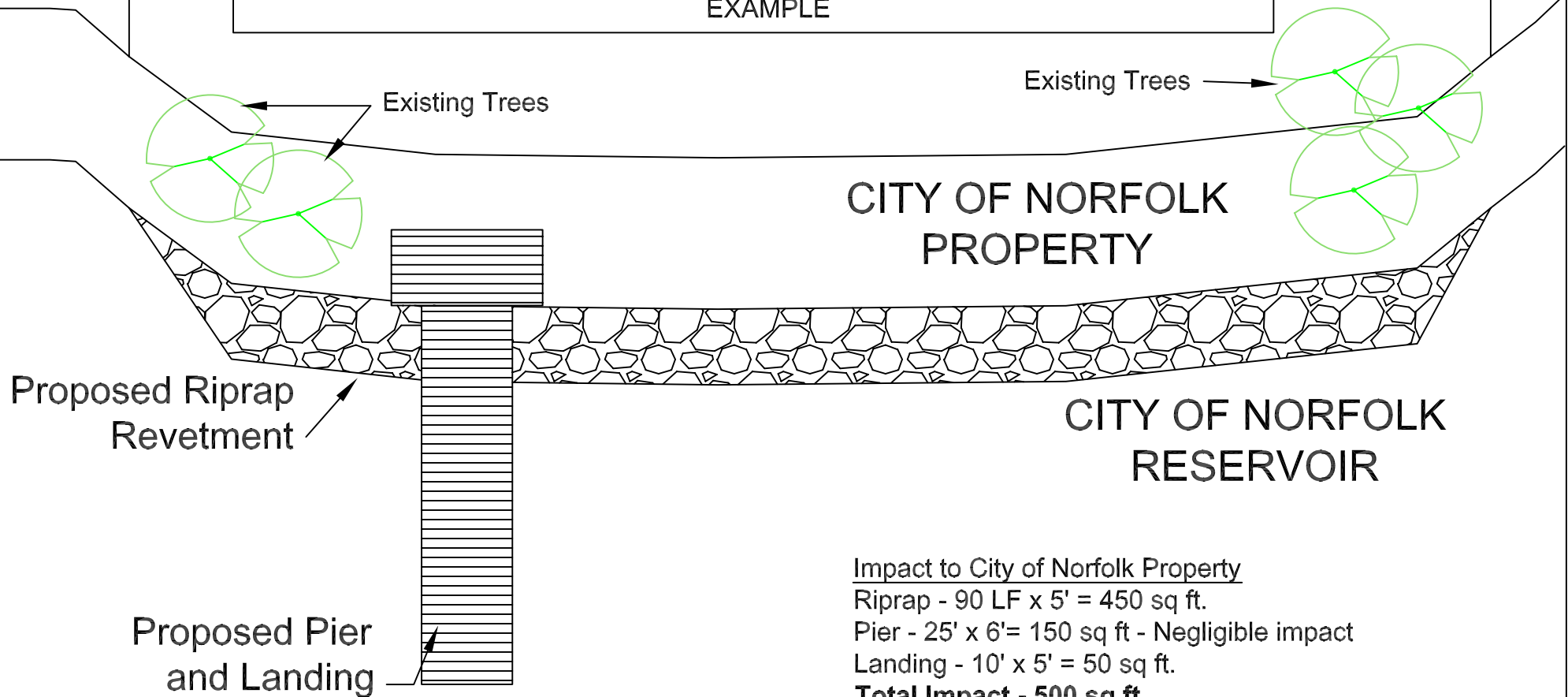
SAMPLE EROSION & SEDIMENT CONTROL PLAN

CITY OF NORFOLK UTILITIES



CITY OF NORFOLK LANDSCAPE PLAN REQUIREMENTS*

EXAMPLE



Scale - 1" = 10'

* All Landscape Plans shall be prepared and stamped by a Registered Landscape Architect, Certified Landscape Designer or Virginia Certified Horticulturist.

Impact to City of Norfolk Property

Riprap - 90 LF x 5' = 450 sq ft.

Pier - 25' x 6' = 150 sq ft - Negligible impact

Landing - 10' x 5' = 50 sq ft.

Total Impact - 500 sq ft.

Landscape Plan Minimum

1 sapling per 100 sq ft = 5

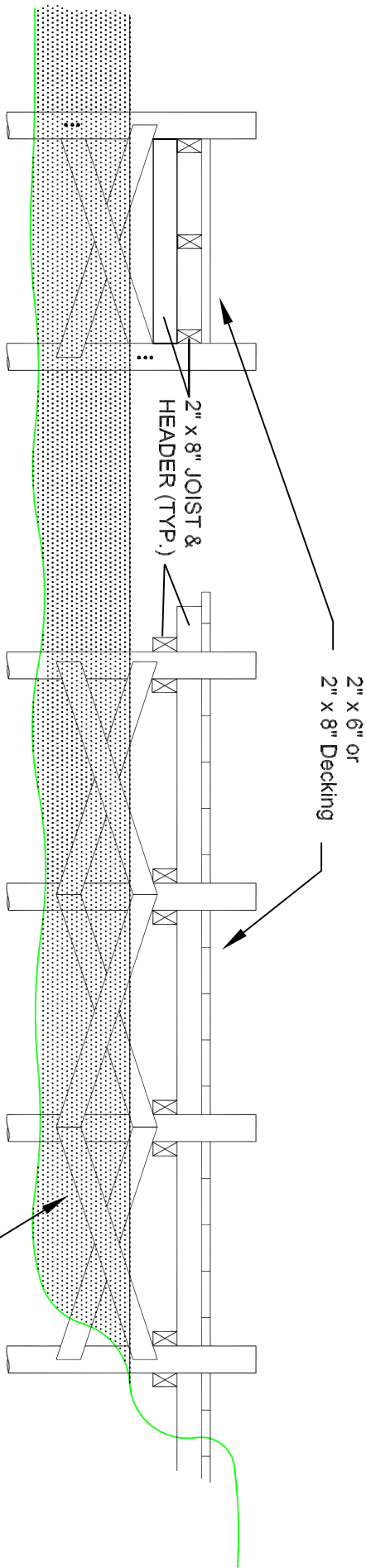
4 shrubs per 100 sq ft = 20

10 herbaceous plants per 100 sq ft = 50

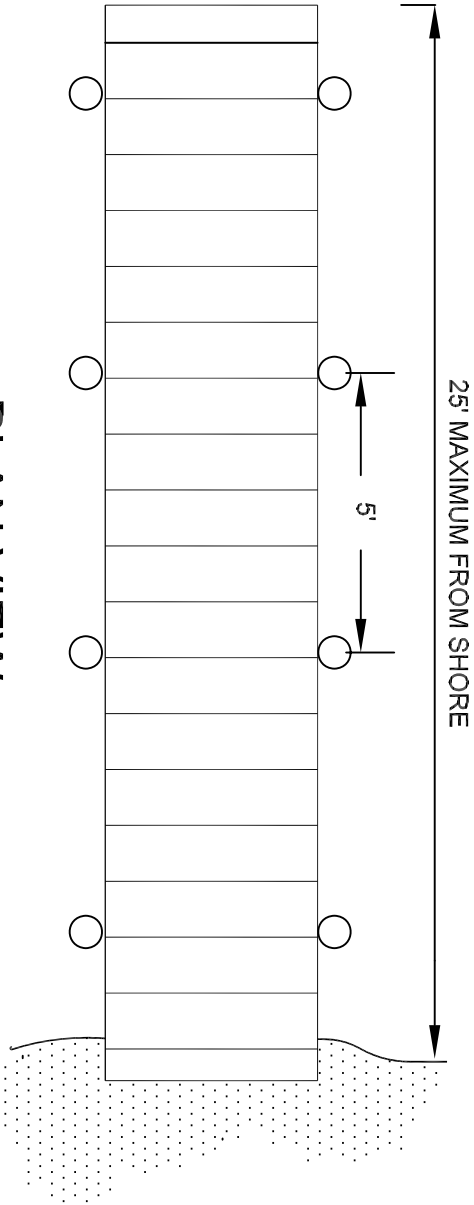
Mulch beds around all plants

Sapling minimum 6-8' tall; Shrub minimum 24" tall; Herbaceous plants in clumps of 2 to 3

END VIEW

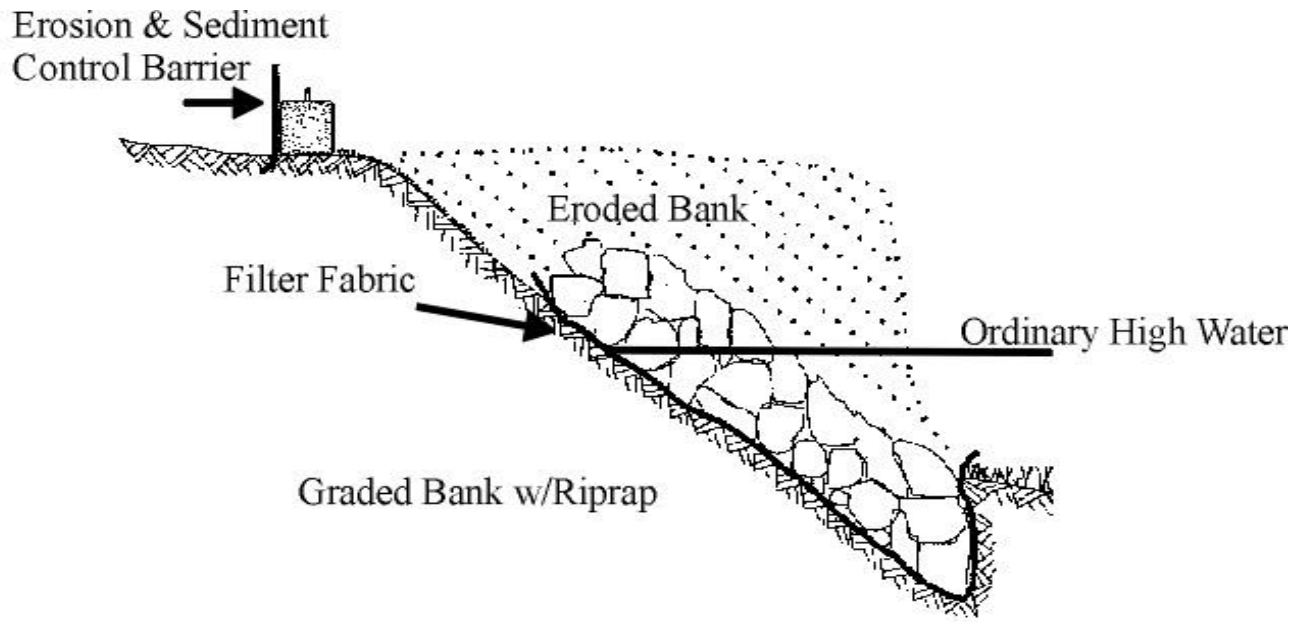


SIDE VIEW



PLAN VIEW

- NOTES
1. Materials - Pressure treated timber only.
 2. All headers to be fastened with minimum 1/2" hot-dipped galvanized bolts, nuts and washers. Braces and decking may be fastened with nails.
 3. 150 square foot maximum.
 4. 25 feet maximum distance from shore.
 5. Maximum height of decking above normal pool elevation is to be 5.0 feet.
 6. Depth of piles to be determined in field.
 7. Configuration of pier may vary from this example as long as it does not exceed the above dimensions.



PLAN VIEW

(Not to Scale)

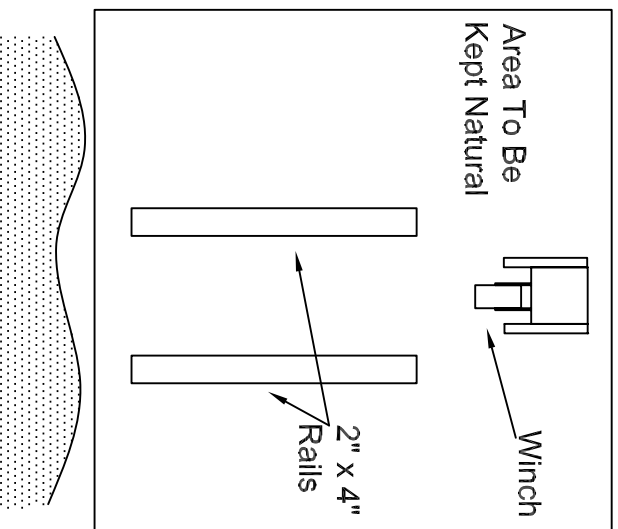
1. Materials -- VDOT Class AI stone ("man-size). Broken concrete and premixed concrete bags are not allowed.
2. All riprap revetments shall be constructed using the proper application of filter fabric.
3. Slope to be 2:1 or 3:1 typical

City of Norfolk, Department of Utilities

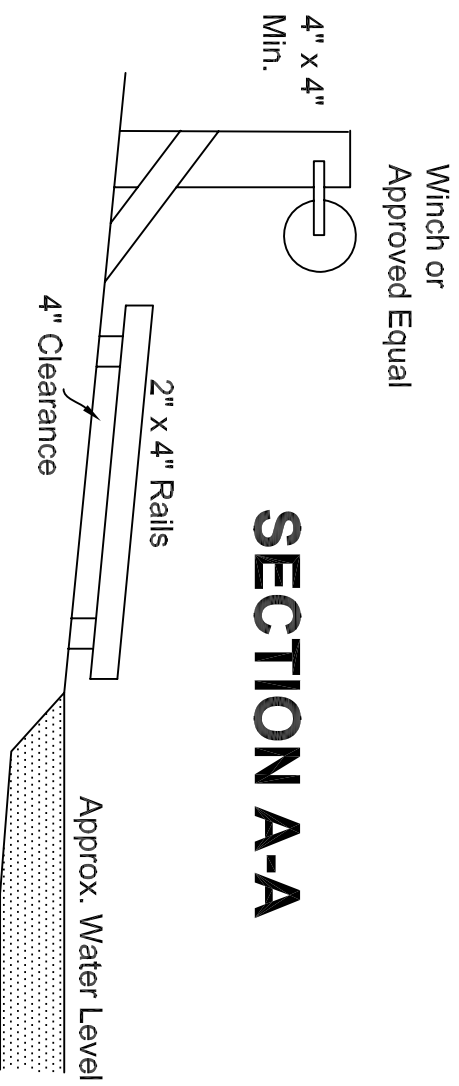
RIPRAP DETAIL

(Not to Scale)

CITY OF NORFOLK DEPT OF UTILITIES
BOAT STORAGE RAMP DETAIL
(NOT TO SCALE)



PLAN VIEW



1. Materials - Pressure treated timber only. A creosote or tar based timber is not allowed.
2. All fasteners to be hot-dipped galvanized.
3. Land under and around the Boat Storage Ramp must be kept in a pervious (natural) state.
4. Boat to be attached to winch by cable or strap.
5. Boat must remain free of standing water