Erosion and Sediment Control and Stormwater Management
Training for Contractors
February 10, 2016
Hampton Roads Planning District Commission

8:00 Check-in and breakfast

8:30 Welcome, Intro to E&S and SW – Noah Hill, DEQ

9:00 Local Inspector Perspectives - Common E&S Violations and Remedies

Seamus McCarthy and Odell Glenn, City of Norfolk

- construction entrance
- inlet protection
- silt fence
- dewatering
- street sweeping

Tara Fisher, City of Chesapeake

- temporary sediment trap basins
- temporary diversions

10:15 Break

10:30 Local Inspector Perspectives – Common E&S Violations and Remedies Continued

Ryan Hunt, City of Suffolk

- tree protection
- topsoiling and seeding

11:00 Stormwater Pollution Prevention: SWPPPs and Good Housekeeping – Tara Fisher, City of Chesapeake, and Seamus McCarthy, City of Norfolk

11:30 DEQ Compliance Monitoring Strategy – Noah Hill, DEQ

12:00 Wrap-up

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Introduction to E&S and SWM
Hampton Roads Plan District Commission
February 10, 2016

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History of the E&S and Stormwater

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Federal

- Federal Water Pollution Control Act of 1948 was the first major law to address water pollution
- Referenced clean water as a resource
- As a result of citizen pressure, scientific evidence and other influences, Congress passed the Clean Water Act of 1972

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Federal

- The amended Act consolidated control of water pollution under the newly created Environmental Protection Agency (EPA)

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Federal- 1987

- Incorporation of stormwater requirements in 2 phases
- Phase I: industrial stormwater discharges; construction greater than 5 acres; Large and medium municipal separate storm sewer system (MS4); approximately 1992
- Phase II: construction threshold to 1 acre; Small MS4s; approximately 2003

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State History

1938 - VA Soil and Water Conservation District Law (Title 21)

- Mainly concerned with agricultural practices
- Voluntary programs were not very effective

1973 - E&S Law

- The Law required the Soil & Water Conservation Commission to establish criteria to control erosion
- Localities/districts had to develop local E&S programs (164)
- Counties, Towns, Cities

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1986 Appropriations Act

- Required DSWC to conduct a review of local compliance with the E&S Law
- The Department produced a report which became House Document 15 and was presented to the GA in 1987
- 1988 Law change required the SWC Board to promulgate regulations for controlling erosion

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Chesapeake Bay Preservation Act

- Passed in 1988 with the expressed purpose of protecting "the public interest in the Chesapeake Bay, its tributaries, and other state waters."
- First law to regulate water quality (nutrients) on different land uses

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1989 First Stormwater Management Act Passed

- All state agencies were required to meet its requirements

- Local governments were given the option, but not required to adopt a local program – few actually adopted programs

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1993- E&S Law

- General Assembly strengthened the Law
- The Soil and Water Conservation Board could decertify the local program if deficient

1995- E&S Law

- New regulations
- Added certification program
- Better outlined the enforcement process

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2001 Amendment

Effective July 1, 2001

A Certified Responsible Land Disturber (RLD) must be named as a prerequisite to plan approval. The RLD is the person who is in charge of and responsible for carrying out the land disturbing activity.

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2003 Amendment

A Certified Responsible Land Disturber (RLD) must be named as a prerequisite to engaging in land disturbing activities.

Plan-approving authorities have the option to waive the RLD requirement for an agreement in lieu of a plan for construction of a single family residence provided that no erosion and sediment control violation occurs.

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2004 - VA Stormwater Management Act

Construction Stormwater

Municipal Stormwater

- adopt regulations that specify minimum technical criteria
- establish minimum design criteria to control nonpoint source pollution and localized flooding
- encourage low impact development designs, regional and watershed approaches, and nonstructural means for controlling SW
- promote the reclamation and reuse of SW to protect state waters and public health and to minimize the direct discharge of pollutants into state waters
- establish a statewide permit fee schedule

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2012 Integration Bill (House Bill 1065)

- Amends **and Reenacts:**
  - **(1) The Erosion and Sediment Control Act;**
  - **(2) The Chesapeake Bay Preservation Act; and**
  - **(3) The Stormwater Management Act**
- The amendments remove contradictions between the three acts

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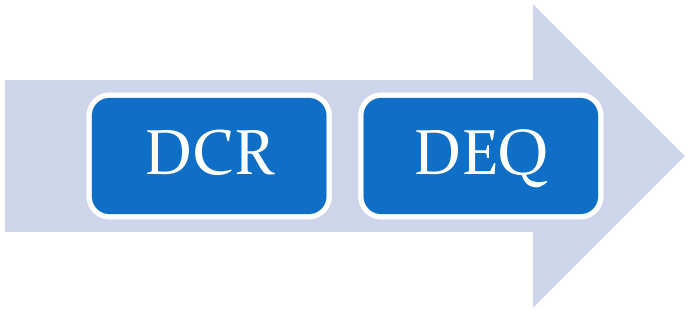
2013 - Consolidation Bill



- Erosion and Sediment Control
- Stormwater
- Chesapeake Bay Preservation
- MS4
- TMDL

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What is a Land Disturbing Activity?

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Stormwater Management Act

- "Land disturbance" or "land-disturbing activity" means a man-made change to the land surface *that potentially changes its runoff characteristics* including clearing, grading, or excavation, except that the term shall not include those exemptions specified in § 62.1-44.15:34.

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Exemptions

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Erosion & Sediment Control Act

- "Land-disturbing activity" means any man-made change to the land surface *that may result in soil erosion from water or wind and the movement of sediments into state waters or onto lands in the Commonwealth*, including, but not limited to, clearing, grading, excavating, transporting, and filling of land, except that the **term shall not include:**

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shall not include

- Minor land-disturbing activities such as:
  - home gardens
  - landscaping
  - repairs and maintenance work

- Individual Service Connections
- Installation, maintenance or repair of any underground public utility lines on an existing hard surface road, street or sidewalk confined to that area
- Septic tank or drainage field lines unless included in an overall plan

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shall not include

- Permitted Surface or deep mining
  - Permitted exploration or drilling for oil or gas including the well site, roads, feeder lines and off site disposal

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shall not include

- Tilling, planting, or harvesting of agricultural or horticultural, or forest crops
- Feed lot operations
- Engineering operations
- As additionally set forth by the Board in regulation

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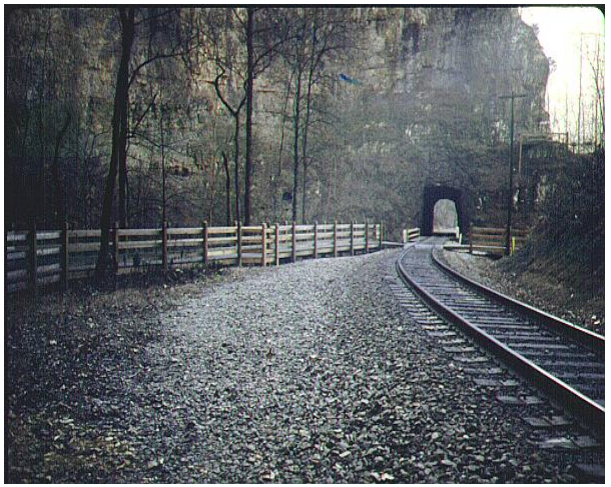
shall not include

- Repairing or rebuilding of tracks, right-of-ways, bridges, etc. of a railroad company



- Agricultural engineering operations
  - Terraces
  - De-silting basins
  - Contour cultivating
  - Irrigation ponds

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shall not include

- If disturbed land:
  - < 10,000 square feet* (outside Chesapeake Bay Preservation Area (CBPA))
  - <2,500 square feet (land subject to CPBA)
  - *Authorized by law to reduce this amount

- Installation of fence or sign posts

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shall not include

- Shore erosion control projects on tidal waters - when within the regulatory authority of local wetlands boards, COE, VMRC ….

- Emergency work to protect life, limb, or property

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Regulatory Thresholds

	Applicable LDA
• Erosion & Sediment Control Act →	10,000 s/f < 1 acre
• Stormwater Management Act	
◦ Chesapeake Bay LDA →	2,500 s/f < 1 acre
◦ Construction General Permit (VSMP) →	1 acre*

*or part of a larger common plan of development or sale that is ≥ 1 acre

It's just a little dirt we're dealing with....

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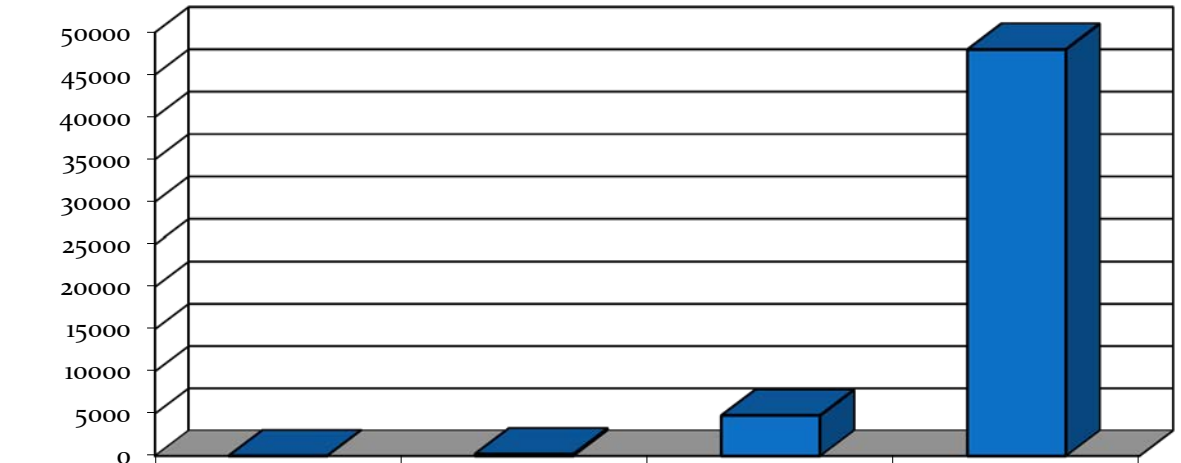
Overview to the Virginia Erosion and Sediment Control

Sediment Volume from Land Disturbance Activities



	Forest	Grass land	Crop land	Construction
T/SqMi/Y	24	240	4,800	48,000

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It's more than just a little dirt we're dealing with

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It's more than just a little dirt we're dealing with

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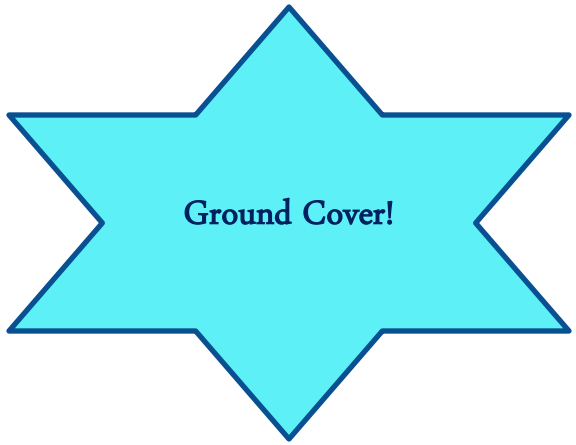
It's more than just a little dirt we're dealing with

Two Principles of Erosion & Sediment Control

Erosion Control - **first** line of defense. "If there is no erosion, there can be no sediment."

- Prevents damages associated with both erosion and sediment control



Sediment Control - backup for erosion control; second line of defense.

- Minimizes damages associated with both erosion and sediment control

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Principles of Erosion & Sediment Control

Erosion Control

- Inexpensive
- Easy
- Vegetative
- Surface Cover

VS

Sediment Control

- Expensive
- Varies in complexity
- Structural
- Perimeter Controls

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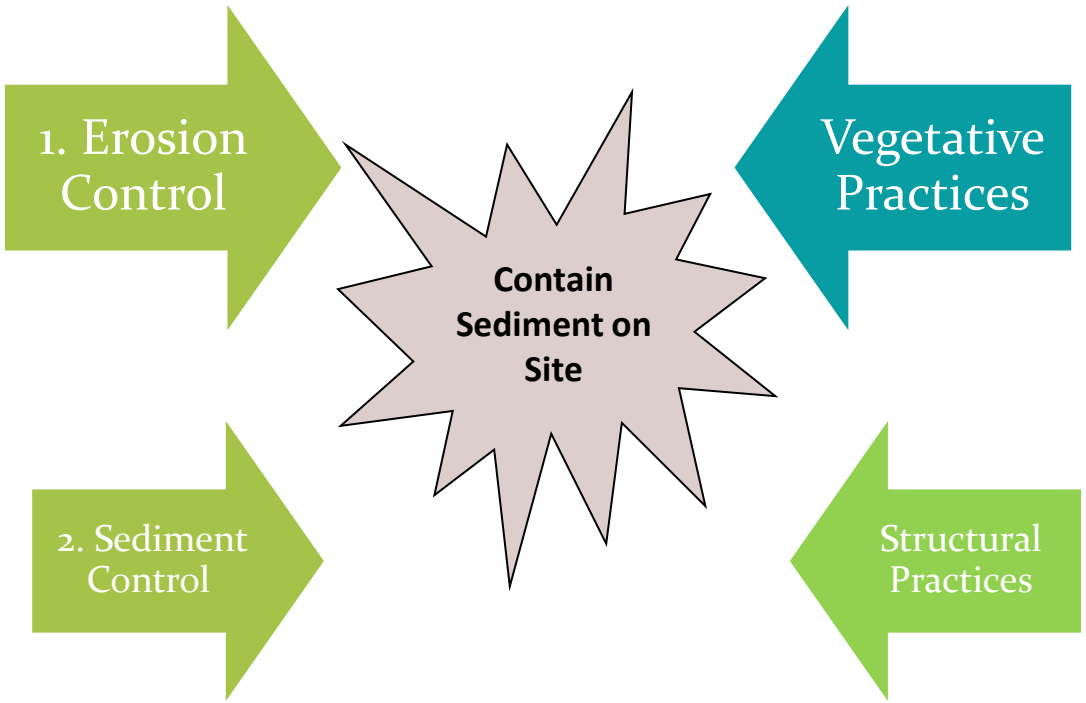
The two Principles of ESC come together



Quick Overview of ESC Minimum Standards

Minimum Standards

MS-1 Stabilization of denuded areas at final grade or dormant for more than days 14 must be done within 7 days.

MS-2 Soil stockpiles on and off-site must be stabilized or protected with sediment trapping measures.

MS-3 Permanent vegetation shall be established that is uniform, mature, and will survive to inhibit erosion.

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Minimum Standards

MS-4 Sediment basins and traps, barriers etc. shall be installed as a first step in land disturbance.

MS-5 Stabilization of earthen structures must be done immediately after construction.

MS-6 Sediment basins and traps shall have a storage capacity of 134 cubic yards per acre of drainage… 3 acres or more a basin is required

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Minimum Standards

MS-7 Cut and fill slopes must be designed and constructed in a manner to minimize erosion…Those eroding within one year shall have additional measures applied.

MS-8 Concentrated runoff form slopes shall be in a pipe, slope drain or flume.

MS-9 Water seeps on the face of a slope must have adequate stabilization applied.

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Minimum Standards

MS-10 All storm sewer inlets must have inlet protection if system is in use before final stabilization is achieved.

MS-11 Outlet protection must be provided at the end of pipes, channels, flumes etc. to prevent erosion of channels.

MS-12 Work in watercourses …. minimize encroachment, use non-erodible materials.

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Minimum Standards

MS-13 Crossing a live stream more than twice in six months…a temporary stream crossing is required.

MS-14 All applicable state, local and federal regulations also apply to working in watercourses.

MS-15 The bed and banks of a watercourse shall be stabilized immediately after work is completed.

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Minimum Standards

MS-16 Underground utility work

- No more than 500 feet of open trench
- Excavated material on up-hill side
- Filter effluent from de-watering
- Backfill to be compacted
- Re-stabilize per these regulations
- Applicable safety regulations apply

MS-17 Tracking of mud onto paved or public roads prohibited. Clean at the end of the day by shoveling sweeping

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Minimum Standards

MS-18 Removal of temporary E&S measures within 30 days of final stabilization or when no longer needed.

MS-19 Protection of downstream property from sediment and stormwater runoff.

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9 Performance Requirements of the SWPPP (9VAC25-870-54)

Stormwater volume and velocity	Stormwater discharges	Soil exposure
Steep slopes	Sediment discharges	Natural buffers and vegetated areas
Soil compaction and topsoil	Stabilization	Outlet structures

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Questions?

Virginia Department of Environmental Quality

THE CITY OF NORFOLK

Bureau of Environmental Services

Overview of Regulatory Programs

Seamus McCarthy – Environmental Engineer
Odell Glenn – Construction Inspector II

Regulatory Programs

Wetlands & Sand Dunes/Beaches

Chesapeake Bay Preservation

Erosion & Sediment Control

VSMP CGP

Erosion & Sediment Control Program

State-mandated program

Goal – To prevent erosion of land and degradation of state waters

Regulates land disturbances greater than 2,500 sq. ft.

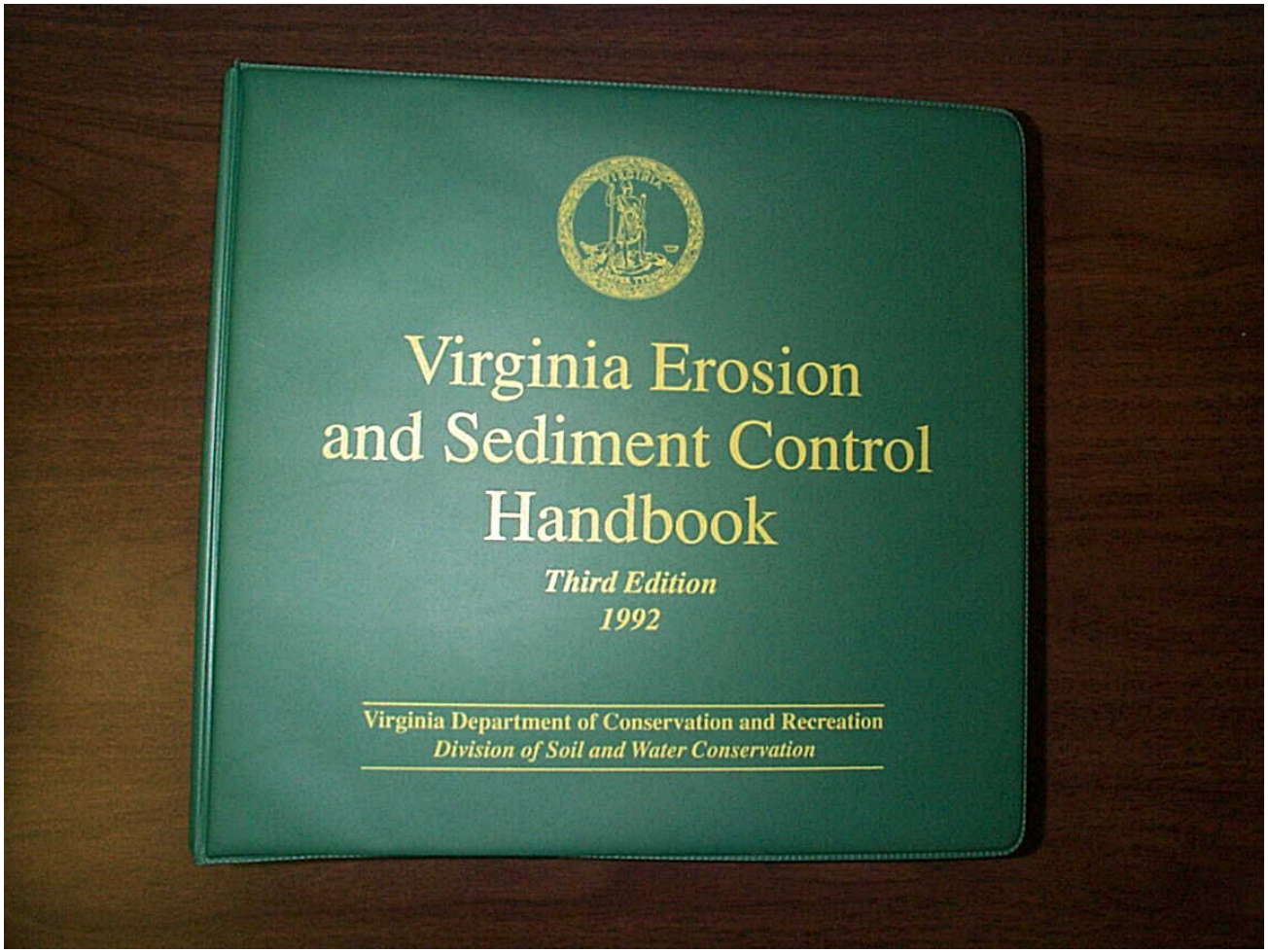
Program applies city-wide

No Erosion Control

Sediment Entering Storm Drain System

Sediment Entering Creek

Erosion & Sediment Control Handbook



City of Norfolk E&S Control Notes

City of Norfolk

City of Norfolk Standard Erosion & Sediment Control Notes

1. Unless otherwise indicated, all vegetative and structural erosion and sediment control practices will be constructed and maintained according to minimum standards and specifications of the Virginia Erosion and Sediment Control Handbook (3rd Edition, 1992) and the City of Norfolk erosion and sediment control ordinance.

2. The contractor shall contact the City of Norfolk, Bureau of Environmental Services (664-4368) at least 48 hours prior to any land disturbing activity (including demolition) so that a preconstruction conference can be scheduled.

3. The contractor shall apply permanent or temporary soil stabilization to all denuded or disturbed areas within 7 days after final grade is reached on any portion of the site. Soil stabilization must also be applied to denuded or disturbed areas which may not be at final grade but which will remain undisturbed for longer than 14 days. Soil stabilization measures include vegetative establishment, mulching and the early application of gravel base material on areas to be paved.

4. All erosion and sediment control measures are to be placed prior to or as the first step in construction.

5. The contractor shall inspect all erosion control measures periodically and after each runoff producing rainfall event. Any necessary repairs to maintain the effectiveness of the erosion control devices and cleanup of sedimentation are the responsibility of the contractor and shall be made immediately.

6. The contractor shall limit site access by construction vehicles to entrances protected by a stone construction entrance (VESCH Std. & Spec. 3.02) or an approved comparable control measure. Sediment shall be removed from paved areas on a daily basis.

7. Stock piles of soil and other erodible materials shall be stabilized or protected with sediment trapping measures. The contractor is responsible for the temporary protection and permanent stabilization for stockpiles on site as well as for materials transported from the project site.

8. The contractor shall monitor and take precautions to control dust including (but not limited to) use of water, mulch, or chemical dust adhesives and control of construction site traffic.

9. Effluent from de-watering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect adjacent properties, wetlands, waterways or the storm drainage system.

10. The contractor is responsible for installation and maintenance of any additional control measures necessary to prevent erosion and sedimentation as determined necessary by the plan approving authority.

11. Temporary erosion and sediment control measures are not to be removed until all disturbed areas are stabilized. After stabilization is complete, all measures shall be removed within 30 days. Trapped sediment shall be spread and seeded.

EPA Fines

Local developer agrees to pay $9,700 in EPA settlement

BY SCOTT HARPER
THE VIRGINIAN-PILOT

VIRGINIA BEACH — A local developer, Bishard Development Corp., has agreed to pay $9,700 to settle federal environmental violations discovered last year at a Virginia Beach site where the Coastal Walk Condominiums were being built.

According to a settlement released Wednesday by the U.S. Environmental Protection Agency, contractors hired by Bishard Development did not follow anti-pollution plans for keeping dirt, mud, oil and debris from washing off the site and tainting a small creek feeding Linkhorn Bay.

The agreement does not say whether any environmental damage resulted from the violations, only that multiple infractions of storm water and sediment-control rules were noted during an August 2004 inspection of the site on Old Virginia Beach Road.

Acting on a complaint, EPA officials found inadequate silt fences that are supposed to block muddy runoff, unprotected piles of dirt, a poorly maintained sediment trap and no proof that required self-inspections had been done, according to the settlement.

EPA officials found inadequate silt fences that are supposed to block muddy runoff, unprotected piles of dirt, a poorly maintained sediment trap and no proof that required self-inspections had been done.

Bishard Development has 180 days to pay the $9,700 penalty, which the company will do in six installments, the settlement said.

The company's president, Steven Bishard, signed the settlement last month. He did not return phone messages seeking comment Wednesday.

The EPA said the company "fully cooperated" and took "prompt action" to comply with the Clean Water Act once the violations were outlined.

Regulating sediment and storm water pollution from construction sites used to fall to the Virginia Department of Environmental Quality. That changed last year, when the task was shifted to the Virginia Department of Conservation and Recreation, as directed by state lawmakers.

The EPA got involved in this case because the federal agency was contacted directly by the complainant. The agency then contacted the state, and the two entities jointly visited the property, officials said.

Sediment can make waterways more shallow and smother aquatic life. Storm water carries such mud to public waters, as well as any fertilizers, oils, chemicals and nutrients on the land. The two pollutants are considered major obstacles to a healthier Chesapeake Bay.

■ *Reach Scott Harper at (757) 446-2340 or at* **scott.harper@pilotonline.com.**

NORFOLK

EPA Fines

SANCTIONS

Company to pay $51K fine for environmental errors

By Scott Harper
The Virginian-Pilot

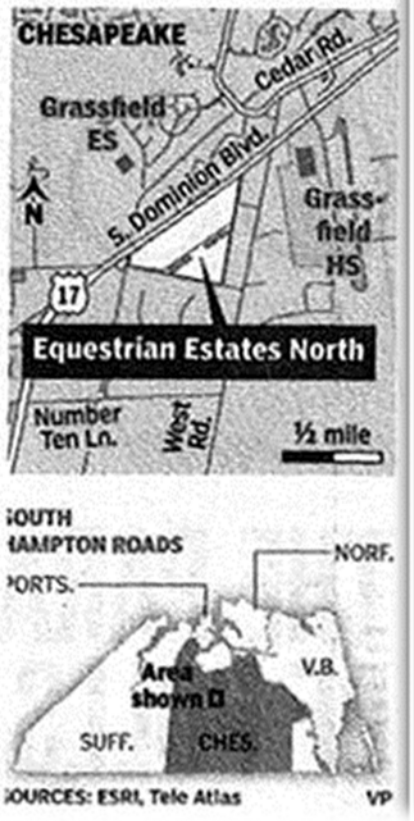
CHESAPEAKE

A development company has agreed to pay a federal fine of $51,000 for various environmental violations at a new-housing site near New Mill Creek, a branch of the Elizabeth River.

Dominion Boulevard Partners LLC, based in Virginia Beach, is paying the fine, sought by the U.S. Environmental Protection Agency, because "it was either pay ply omitted by the company.

EPA inspectors last year discovered problems at the site, known as Equestrian Estates North, on West Road off Dominion Boulevard, chiefly in how stormwater was being handled in a man-made pond and how required fencing was not adequate to block dirt and sand from washing into a nearby canal.

In one instance, a big stockpile of sand was supposed to be surrounded with a silt fence, but according to records, no fencing existed.



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Before Land Disturbance

1. Must have an **approved site plan** or a **land disturbing permit.**

2. If lay down area is not shown on approved plan contractor must contact Environmental Services to identify E&S controls to be utilized and obtain land disturbing permit.

3. Preconstruction conference at the site with Environmental services. All E&S controls must be in place. Responsible land disturber must be identified.

4. VSMP permit required if land disturbance is over an acre (look at cover sheet). SWPPP book must have all required documentation.

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Preconstruction Conference

Look at installed E&S plan to make sure it complies with approved plan

Identify Responsible Land disturber

Go over City E&S policy & expectations during construction

Responsible Land Disturber

City of Norfolk

Responsible Land Disturber Notification

Project name: _____ **Date:** _____

Project Address: _____

Site Plan Number:_____ **Land Disturbance:**_____

Responsible Land Disturber (R.L.D.) Notification

The following person _____ ***print,***

X_____***sign,***

Is identified as responsible for carrying out the land disturbing activity associated with the above- referenced project. This person meets the applicable requirements of Virginia Code Section 62.1-44.15:55 and 62.1-44.15:58 by virtue of the following:

Check the category that applies & Fill in Certificate Number:

_____ **Responsible Land Disturber Certificate #:**_____

OR

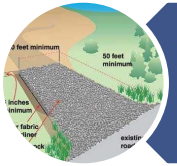
_____ **DEQ Certification for Combined Administrator,**

OR

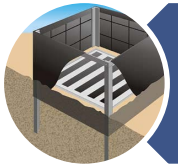
_____ **Administrator, Plan Reviewer, or Inspector**

VA Professional Engineer, Land Surveyor, Landscape Architect, or Architect.

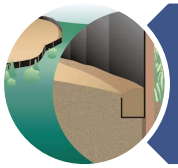
E&S Compliance



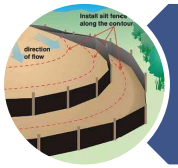
Construction Entrance at job site and laydown Areas



Inlet protection



Perimeter control – Silt Fence containing limits of disturbance



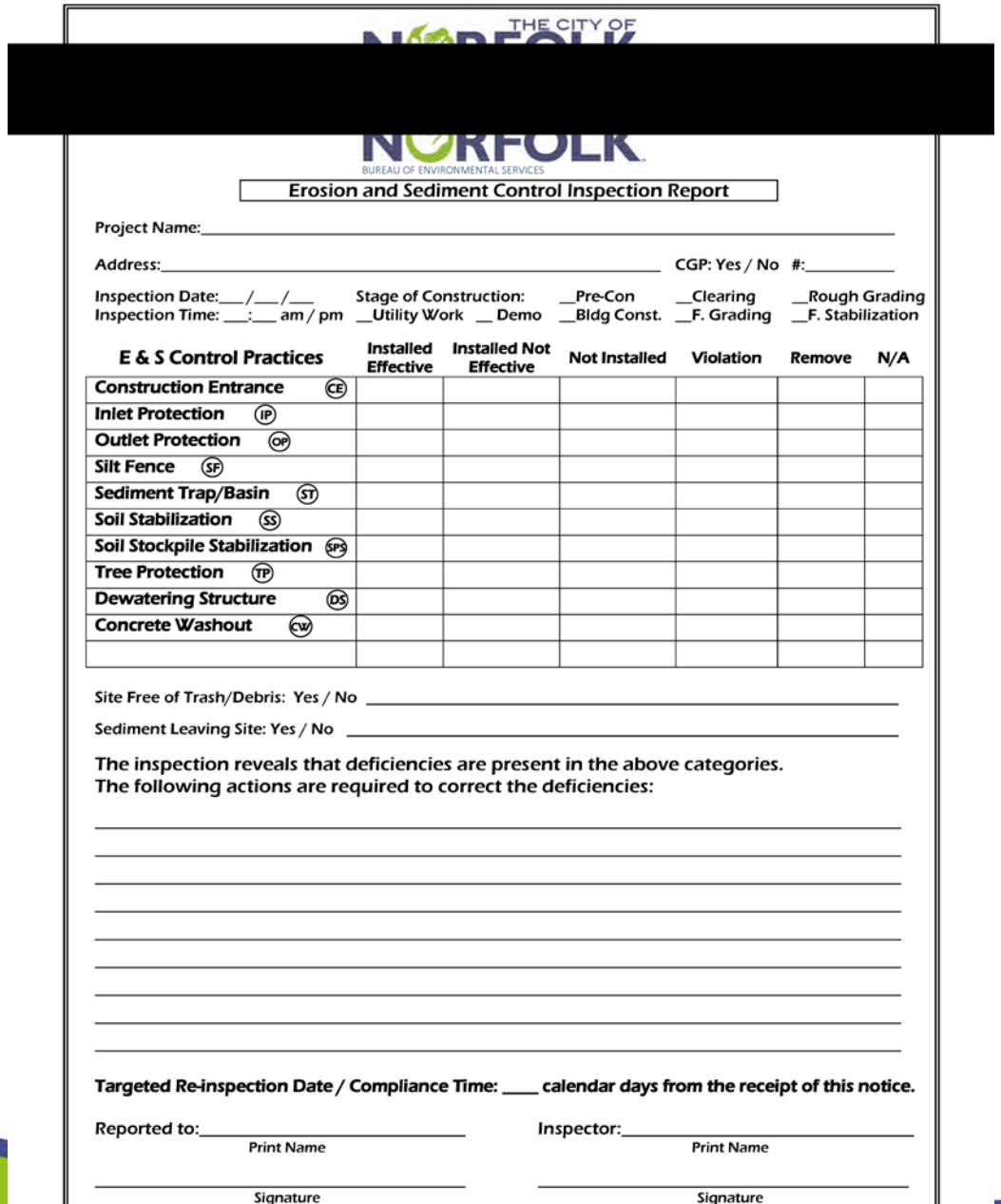
Stockpile area- separate perimeter control

All dewatering must be filtered

Street Sweeping

NORFOLK

E&S Inspection Form



THE CITY OF NORFOLK

BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name:_____

Address:_____ CGP: Yes / No #:_____

Inspection Date:___/___/___ Stage of Construction: __Pre-Con __Clearing __Rough Grading
Inspection Time: ___:___ am / pm __Utility Work __ Demo __Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)						
Inlet Protection (IP)						
Outlet Protection (OP)						
Silt Fence (SF)						
Sediment Trap/Basin (ST)						
Soil Stabilization (SS)						
Soil Stockpile Stabilization (SPS)						
Tree Protection (TP)						
Dewatering Structure (DS)						
Concrete Washout (CW)						

Site Free of Trash/Debris: Yes / No _____

Sediment Leaving Site: Yes / No _____

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

_____
_____
_____
_____
_____
_____
_____
_____
_____

Targeted Re-inspection Date / Compliance Time: ____ calendar days from the receipt of this notice.

Reported to:_____ Inspector:_____
Print Name Print Name

_____ _____
Signature Signature

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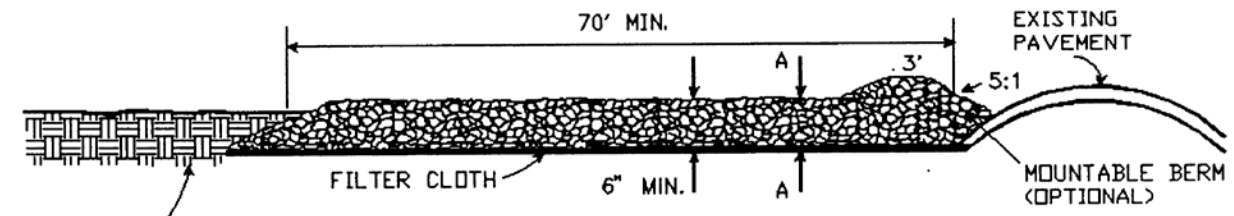
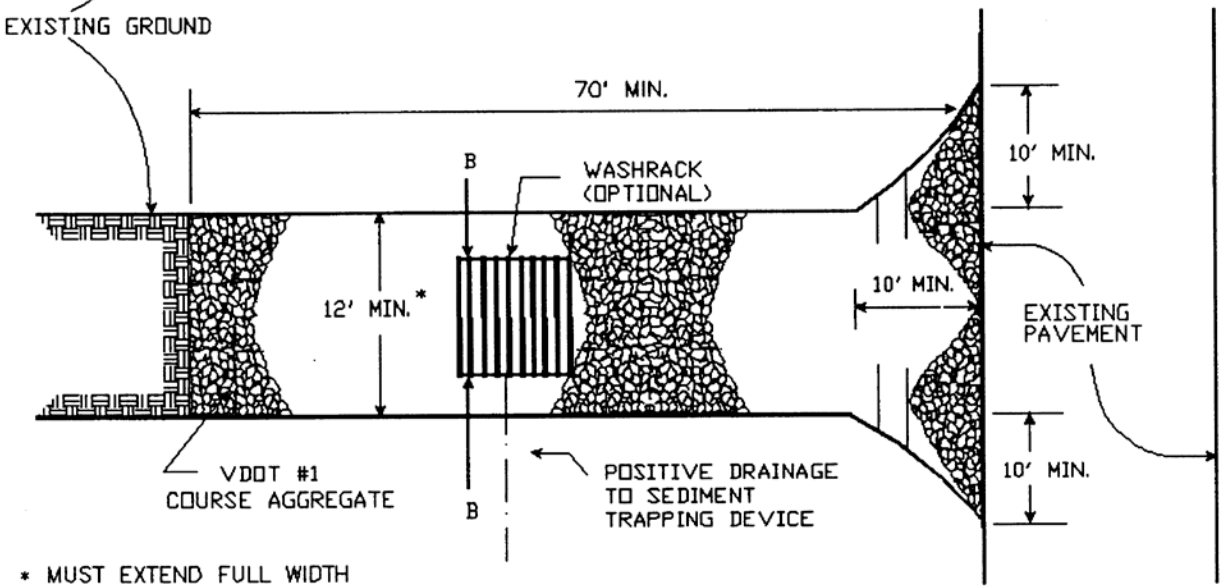
Construction Entrance

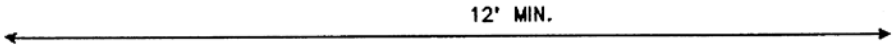
STONE CONSTRUCTION ENTRANCE



SIDE ELEVATION



PLAN VIEW



Construction Entrance

Construction Entrance

Ineffective Construction Entrance

Ineffective Construction Entrance

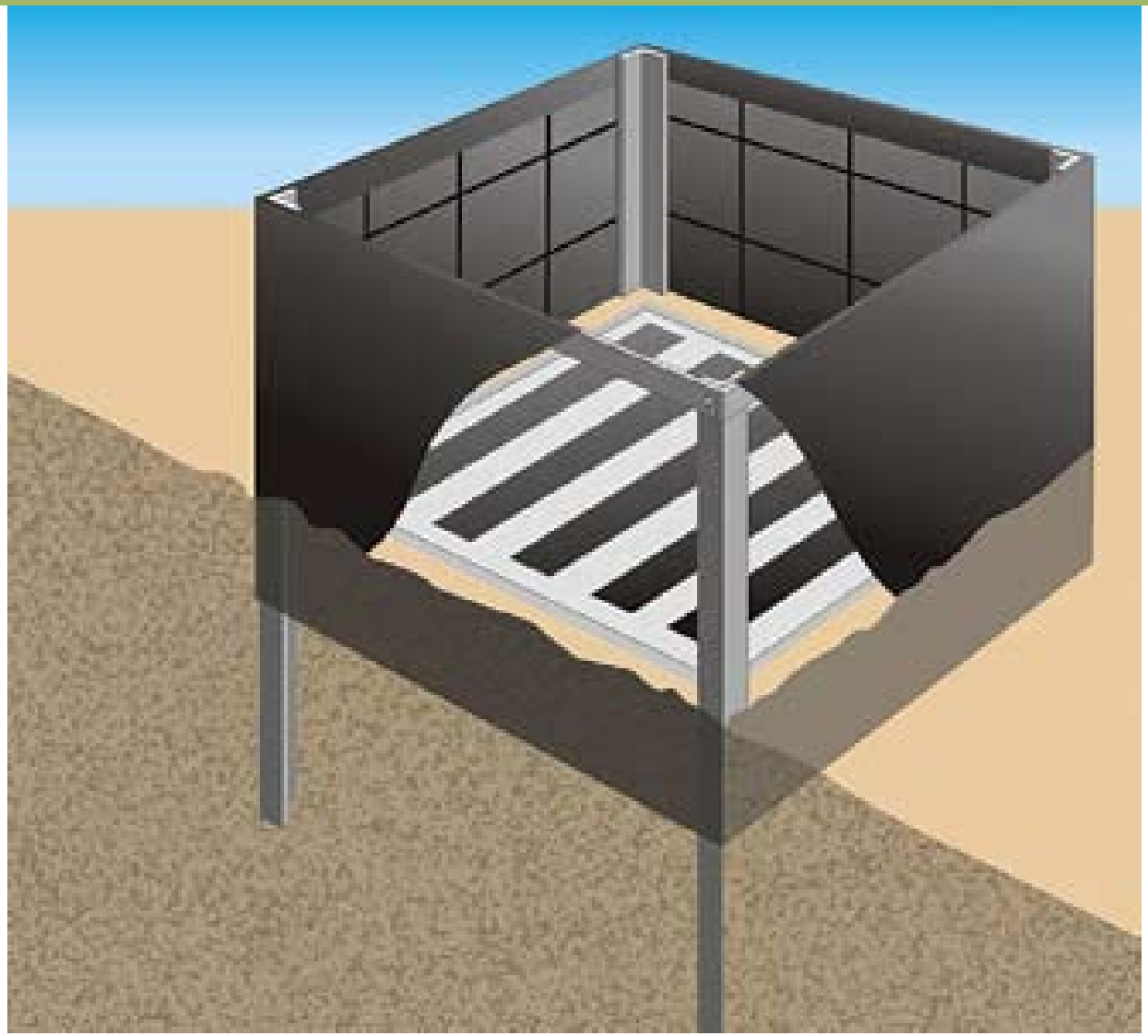
Ineffective Construction Entrance

Construction Entrance

Construction Entrance

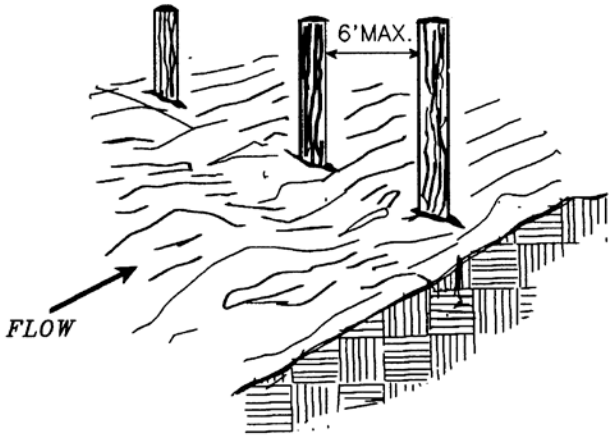
Construction Entrance

Inlet Protection

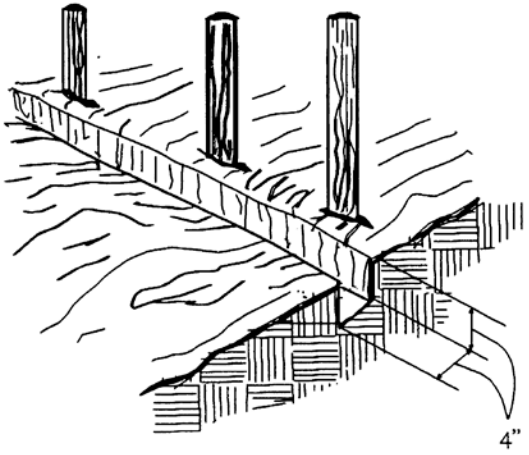


CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)

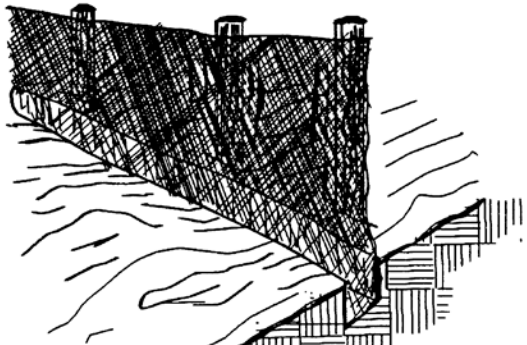
1. SET THE STAKES.



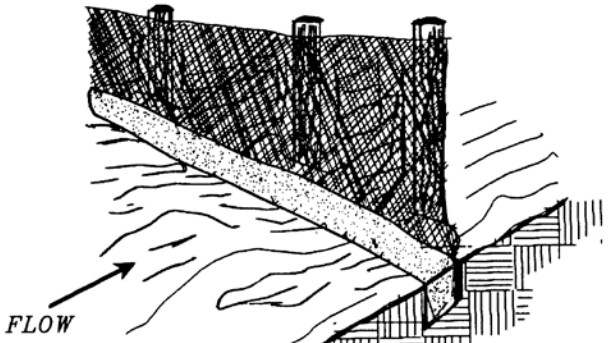
2. EXCAVATE A 4"X 4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.



3. STAPLE FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.



4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



Inlet Protection

Modified Inlet Protection

Modified Inlet Protection

No Inlet Protection

No Inlet Protection

No Inlet Protection

Ineffective Inlet Protection

Maintenance Issues

Dandy Curb Bag

Filtrexx

Grate Gator

Silt Sack

Heavy Weight Wattle

Filter Bag

Gutter Gator

Silt Saver

Dandy Pop

NORFOLK

Gutter Eels

Inlet Protection

Gutter Buddy

Inlet Protection Moved

Incorrect Inlet Protection

Inlet Protection

Gutter Buddy

Gutter Buddy

Gutter Buddy Installed Incorrectly

Gutter Buddy Installed Incorrectly

Ineffective Inlet Protection

Inlet Protection

Inlet Protection

Incorrect Inlet Protection

Corrected Inlet Protection

Effective Inlet Protection

Ineffective Inlet Protection

Reinforced Inlet Protection

Ineffective Inlet Protection

Reinforced Inlet Protection

Inlet Protection Ineffective

Inlet Protection Ineffective

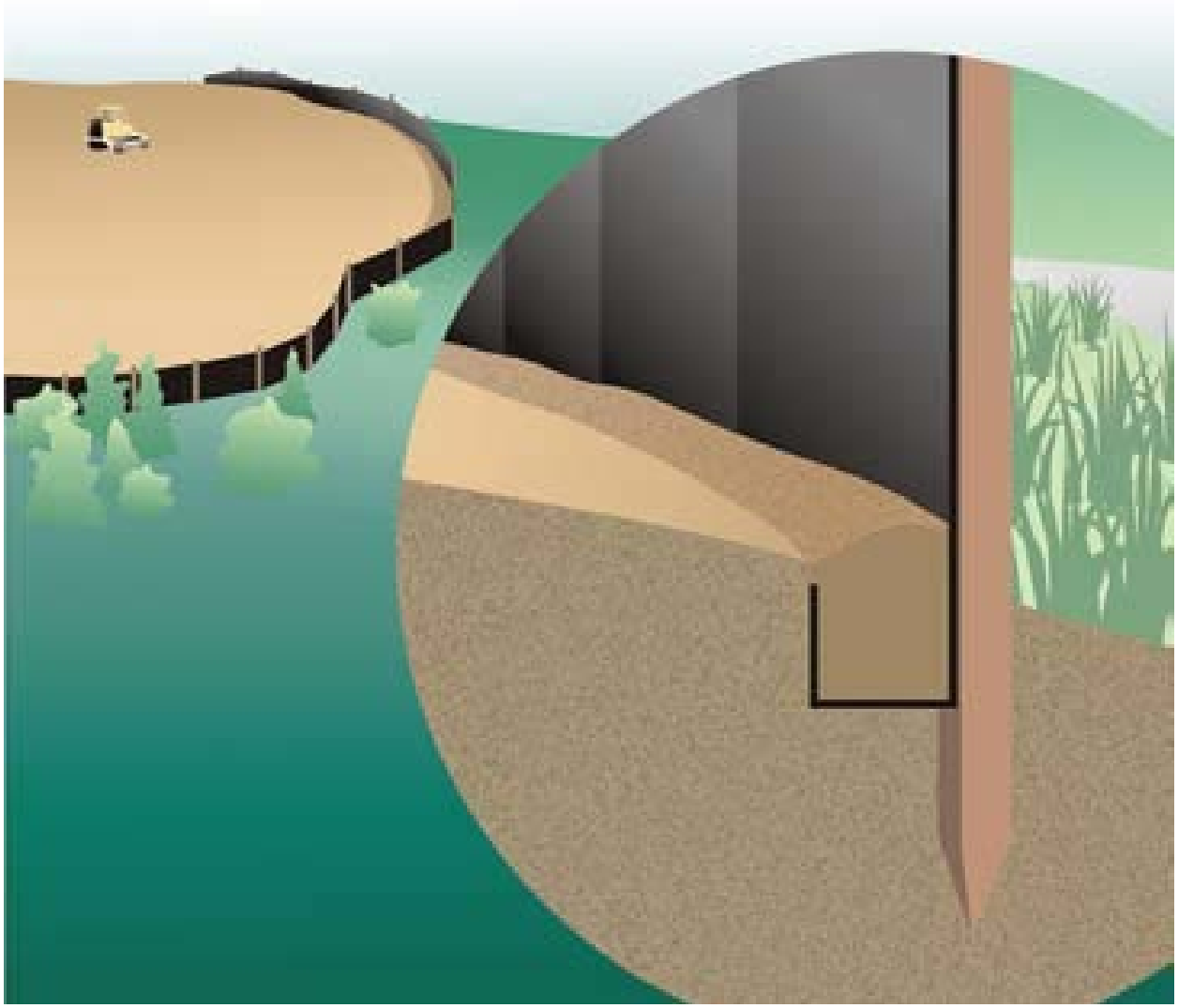
Reinforced Inlet Protection

Reinforced Inlet Protection

Reinforced Inlet Protection

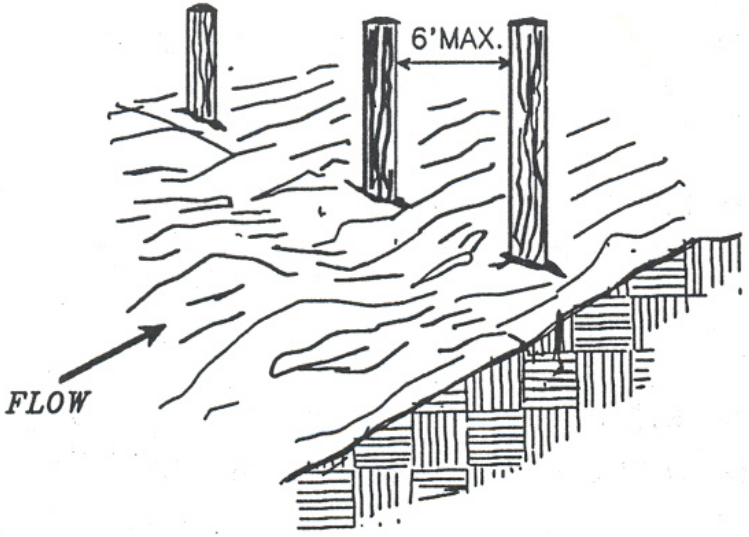
Inlet Protection

Silt Fence

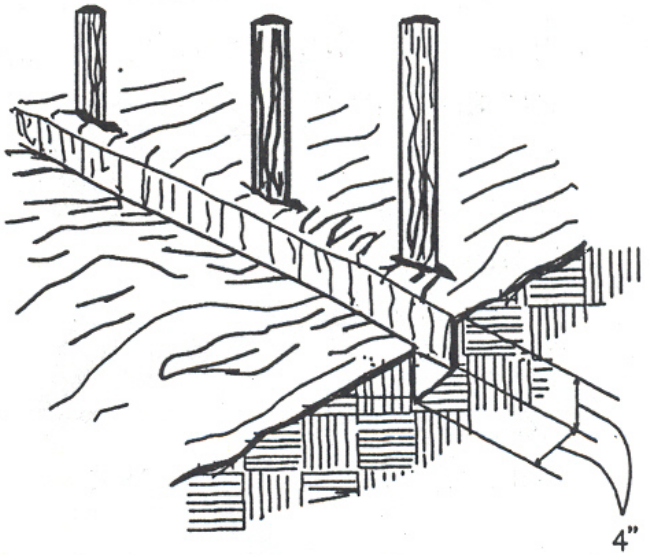


CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)

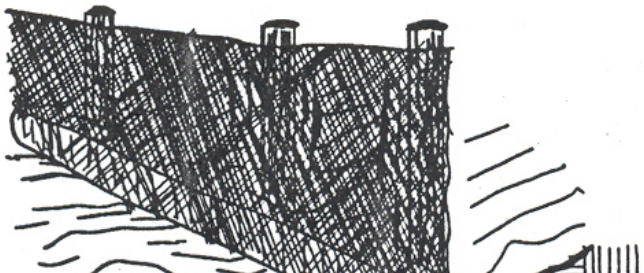
1. SET THE STAKES.



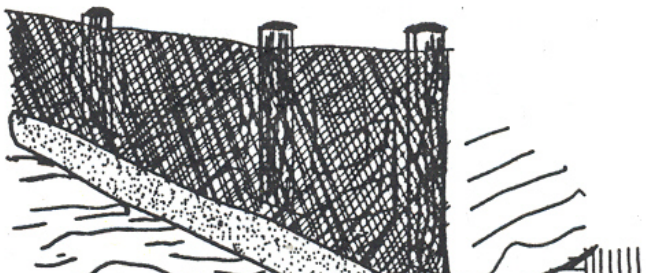
2. EXCAVATE A 4"X 4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.



3. STAPLE FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.



4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



Properly Installed Silt Fence

No Silt Fence

No Silt Fence

Properly Installed Silt Fence

Silt Fence Installed Incorrectly

Improperly Installed Silt Fence

Ineffective Silt Fence

Properly Installed Silt Fence

Common Silt Fence Violation

NORFOLK

Saftey Fence & Silt Fence

Properly Installed Silt Fence

Securely sealed at joint

Securely sealed at joint

Soil Stockpile Perimeter Control

NORFOLK

Soil Stockpile Perimeter Control

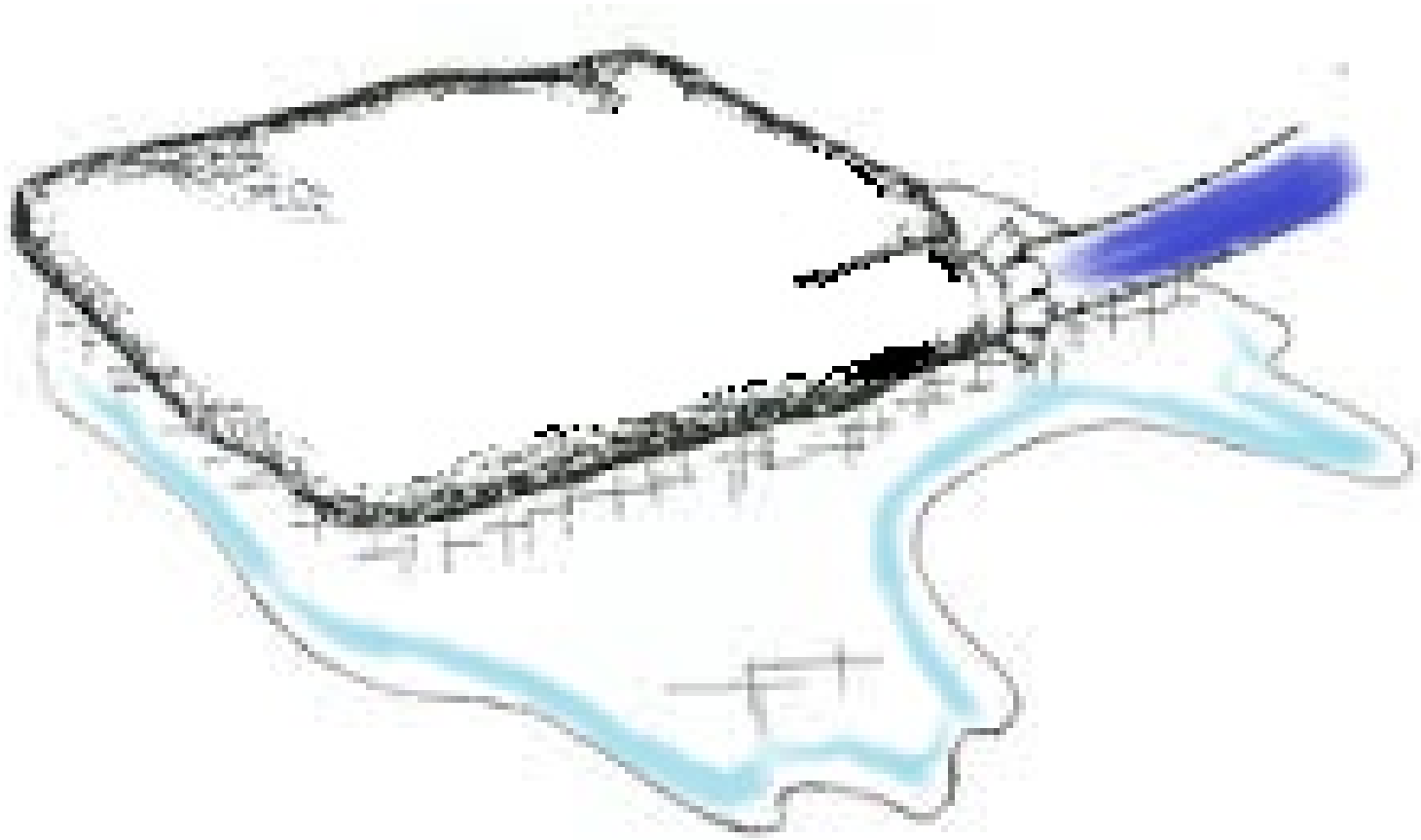
No Soil Stockpile Perimeter Control

Soil Stockpile Perimeter Control

Improper Stockpile Location

Improper Stockpile Perimeter Control

Dewatering



No Filter bag

No Filter bag

Wrong Size Filter bag

Wrong Size Filter bag

Dewatering Causing Erosion

Dewatering To Nearest Inlet

Dewatering Baffles

Filter bag in Stone

Ineffective Filter bag

Ineffective Filter bag

Dewatering Through Stockpile

Dewatering Over Large Distance

Dewatering On Stone

Dewatering to nearest inlet

No Filter bag

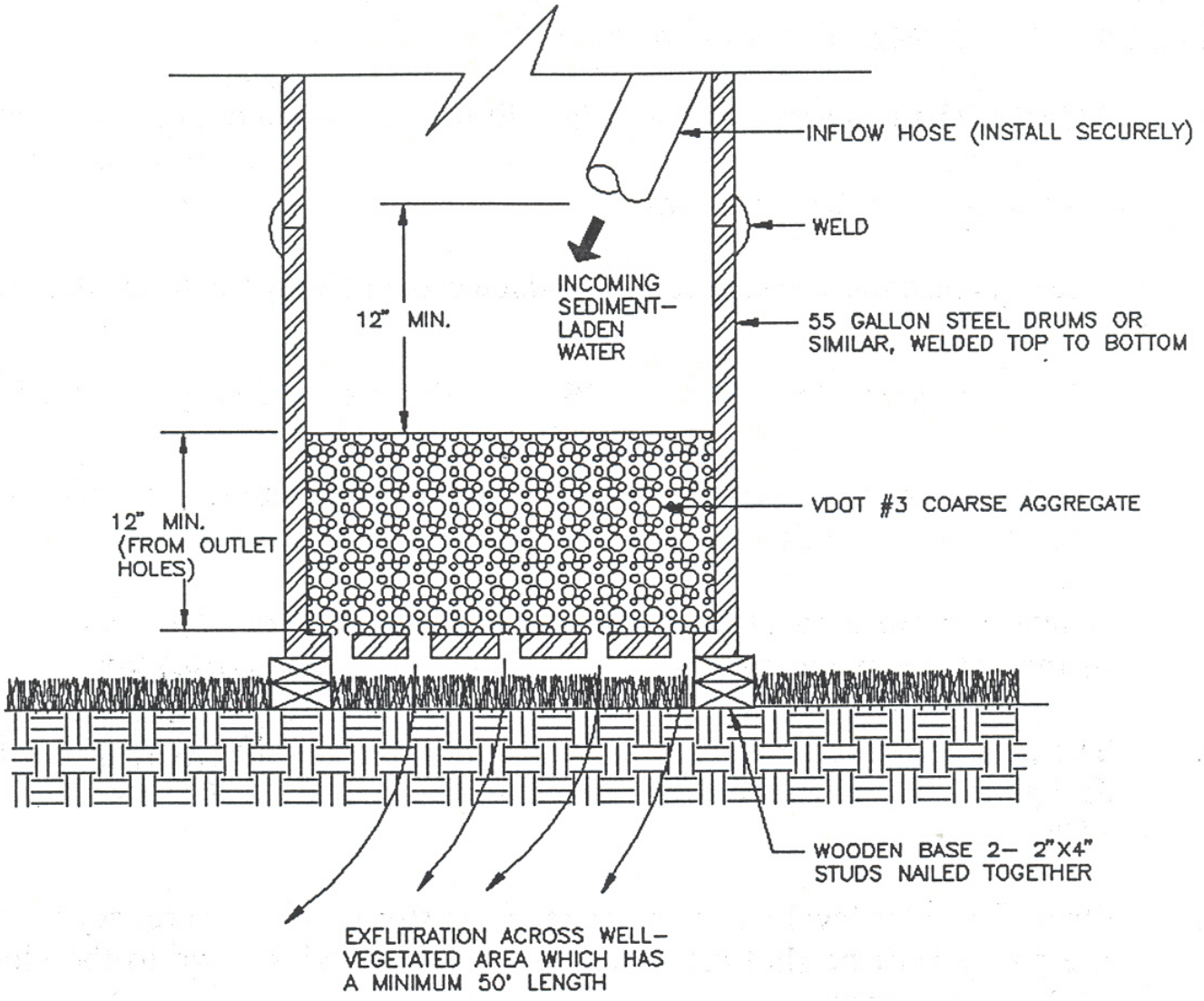
Example: Improper Filtering 'Dewatering in Creek'

Stone in Creek

Filter bag in Creek

Filter bag in Creek

Filter Box



NORFOLK

Settling tanks

Settling tanks

Settling tanks

Sediment Tracking Onto Street

Sediment Tracking onto City Streets

Sediment must be swept on a daily basis

State minimum Standard and City E&S Code

Tracking

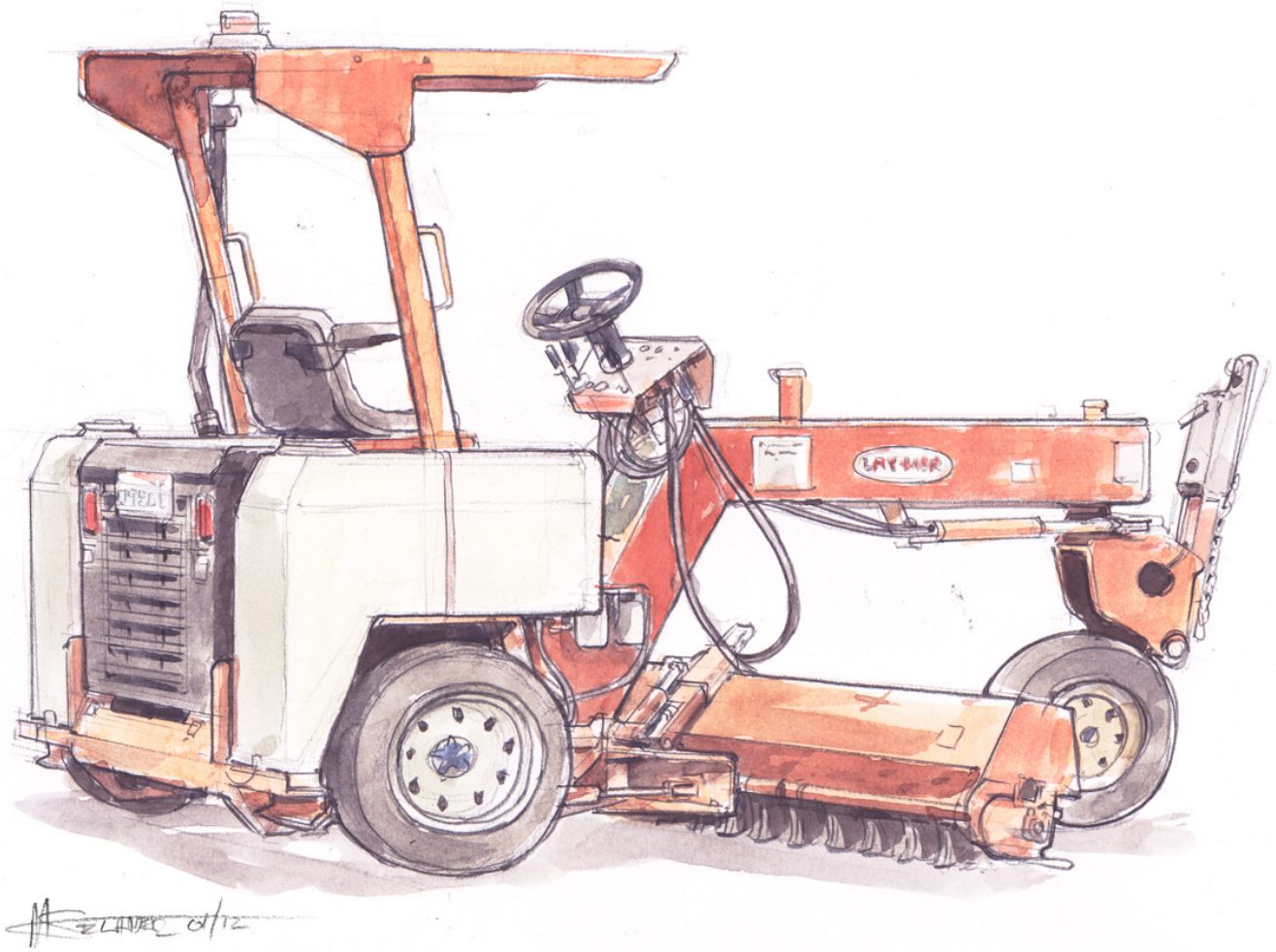
Tracking

Tracking

Tracking

Tracking

Sweeping Street



Hand Brooms

Tractors

Collection Attachment

Stabilization

Contact Information

Local Inspector Perspective –Diversions & Temporary Sediment Traps/Basins

TARA FISHER, ENVIRONMENTAL SPECIALIST I

CITY OF CHESAPEAKE PUBLIC WORKS

tfisher@cityofchesapeake.net

DIVERSIONS - (DV)
Va. Erosion & Sediment Control Handbook
STD & SPEC 3.12

- Definition: A channel constructed across a slope with a supporting earthen ridge on the lower side, to reduce slope length and to intercept and ***divert*** stormwater runoff to stabilized outlets at non-erosive velocities

Where/when might diversions be used?

- Areas where runoff from areas of higher elevation may damage property, cause erosion or interfere with the establishment of vegetation on lower areas
- Areas where surface and/or shallow subsurface flow is damaging sloping upland
- When the slope length needs to be reduced to minimize soil loss

MAINTENANCE OF DIVERSIONS:

- Prior to final stabilization, the diversion shall be inspected after every rainfall event AND at least once every two weeks
- Accumulated sediment shall be removed from the diversion channel and repairs made as needed
- Any seeded areas that have not established a vegetative cover shall be re-seeded as necessary

EXAMPLE OF DIVERSION – SITE PHOTOS

EXAMPLE OF DIVERSION

TEMPORARY SEDIMENT TRAP – ST
Va. Erosion & Sediment Control Handbook STD & SPEC 3.13

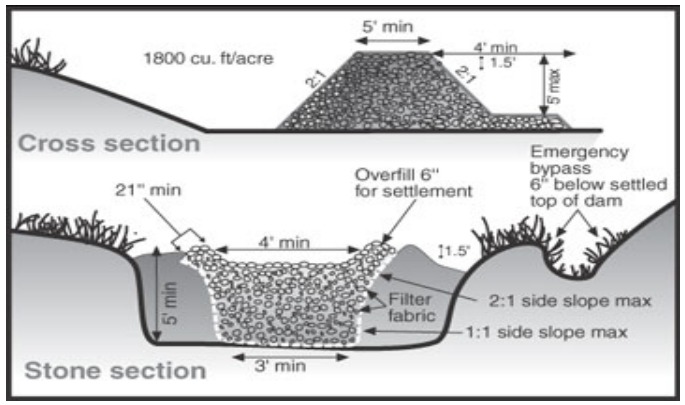
- Definition: A temporary ponding area formed by constructing an earthen embankment with a stone outlet, used to detain sediment-laden runoff from small disturbed areas long enough to allow the majority of sediment to settle out

Where/when might temporary sediment traps be used?

- Below (downstream of) disturbed areas where the total contributing drainage area is less than 3 acres
- Where the sediment trap will be utilized on site for no longer than 18 months
- Sediment traps may be constructed either independently or in conjunction with a Temporary Diversion Dike (Std. & Spec. 3.09)

MAINTENANCE OF TEMPORARY SEDIMENT TRAPS

- Sediment shall be removed when the sediment has accumulated to one-half the design volume of wet storage
- Filter stone shall be checked regularly
- Structure shall be checked regularly



EXAMPLE PHOTOS/DIAGRAM OF TEMPORARY SEDIMENT TRAP

Temporary Sediment Basins – SB
Va. Erosion & Sediment Control Handbook
Std. & Spec. 3.14

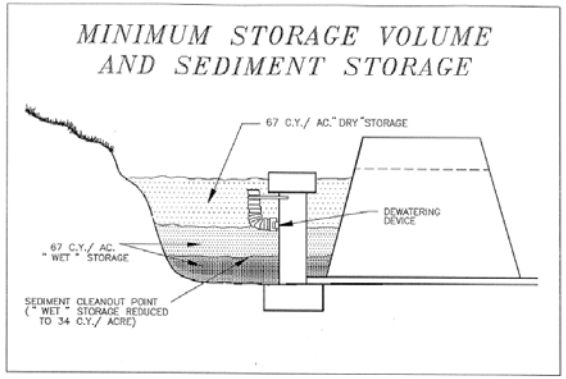
- Definition: A temporary barrier or dam with a controlled stormwater release structure formed by constructing an embankment of compacted soil across a drainageway, used to detain sediment-laden runoff from disturbed areas in “wet” and “dry” storage long enough for the majority of sediment to settle out

Where/when might temporary sediment basins be used?

- Below (downstream of) disturbed areas where the total drainage area is equal to or greater than 3 acres
- There must be sufficient space and appropriate topography for the construction of a temporary impoundment
- Structures are limited to a useful life of 18 months, unless they are designed and constructed as permanent impoundments
- Recommended that these basins be designed by a qualified professional, due to their potential to impound large volumes of water

MAINTENANCE OF TEMPORARY SEDIMENT BASINS

- Basin embankment shall be checked regularly to ensure that it is structurally sound and has not been damaged by erosion or equipment
- Emergency spillway shall be checked regularly to ensure that its lining is well established and resistant to erosion
- Basin shall be checked for sediment build-up after each runoff-producing rain event
- When sediment reaches the cleanout level, it shall be removed and properly disposed of



Source: Va. DSWC

Plate 3.14-1

EXAMPLE PHOTOS/DIAGRAM OF TEMPORARY SEDIMENT BASIN

TEMPORARY SEDIMENT BASIN – SLOPES NOT STABILIZED

City of Chesapeake Environmental Quality Services (EQS) Division

- Excluding routine daily maintenance, any E&S deficiencies will be considered an E&S violation:
  - ***Routine Daily Maintenance*** includes: reworking silt fence, inlet protection, construction entrances, removal of sediment from roadway (tracking) and removal of trash/debris on the job site
  - If an E&S violation is observed on site, the City's EQS Division will issue a Notice to Comply which gives the Operator 48 hours to correct the deficiencies
  - Stop Work Orders will be issued if 2 violations are noted on the site at any stage of construction; SWO remains in effect until all deficiencies are corrected and inspected by the City of Chesapeake EQS Division
  - Further violations will result in a summons issued by the City, with fines up to $2500 per day
  - Any Operator who fails to provide, implement, maintain or properly install any required/approved E&S control measures can be assessed a penalty of $100/violation; this civil penalty will not exceed $10,000

COMMON VIOLATIONS OBSERVED WITH RESPECT TO DIVERSIONS AND TEMPORARY SEDIMENT TRAPS & BASINS:

- Slopes need to be stabilized immediately after reaching grade
- Diversions, sediment traps and/or sediment basins shall be constructed/installed PRIOR to other land disturbing activities commencing
- Features need to be checked and maintained regularly (clean out of sediment, reworking silt fence and/or stabilization matting, clean out of rock that is clogged with sediment, etc.)

QUESTIONS?

Erosion and Sediment Control and Stormwater Management Training for Contractors

RYAN HUNT, EIT
CIVIL ENGINEER II

CITY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS

Outline

- **Tree Protection**
- **Topsoiling**
- **Temporary/Permanent Seeding**
- **Project Limits**

Source – Virginia Erosion and Sediment Control Handbook (VESCH) Chapter 3

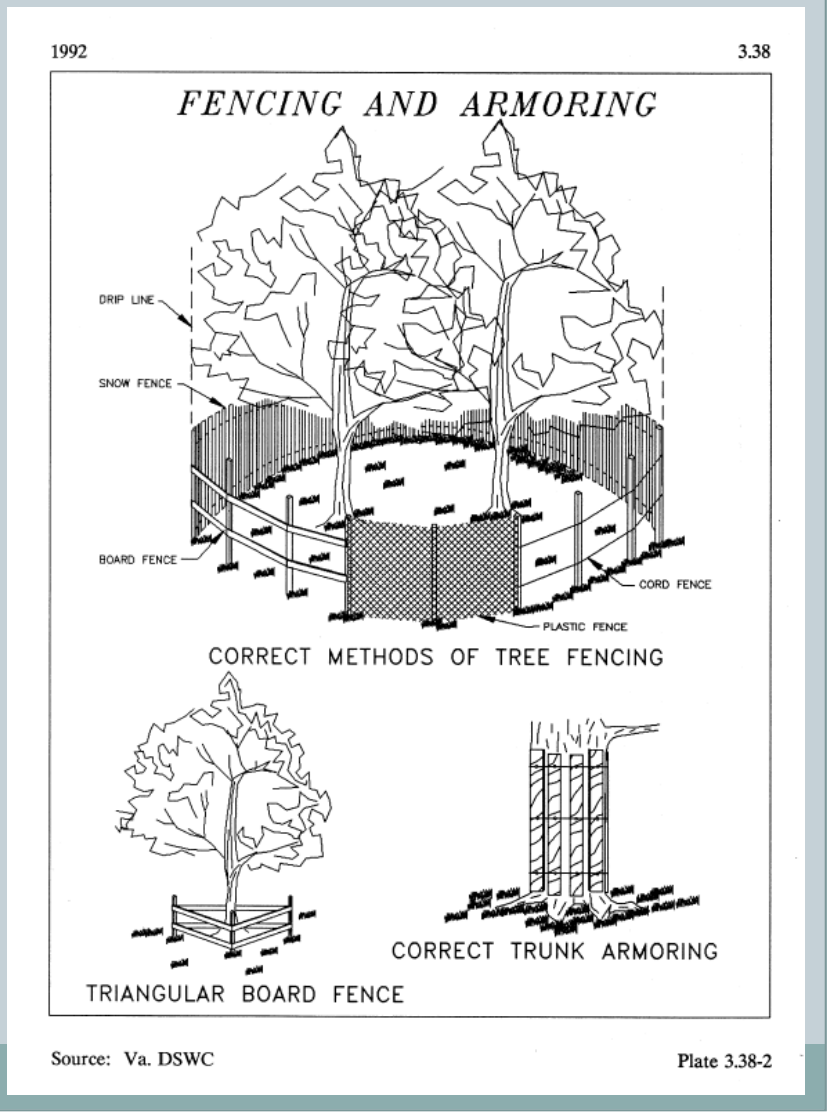
http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/Publications/ESCHandbook.aspx

Tree Protection - VESCH Std. & Spec. 3.38

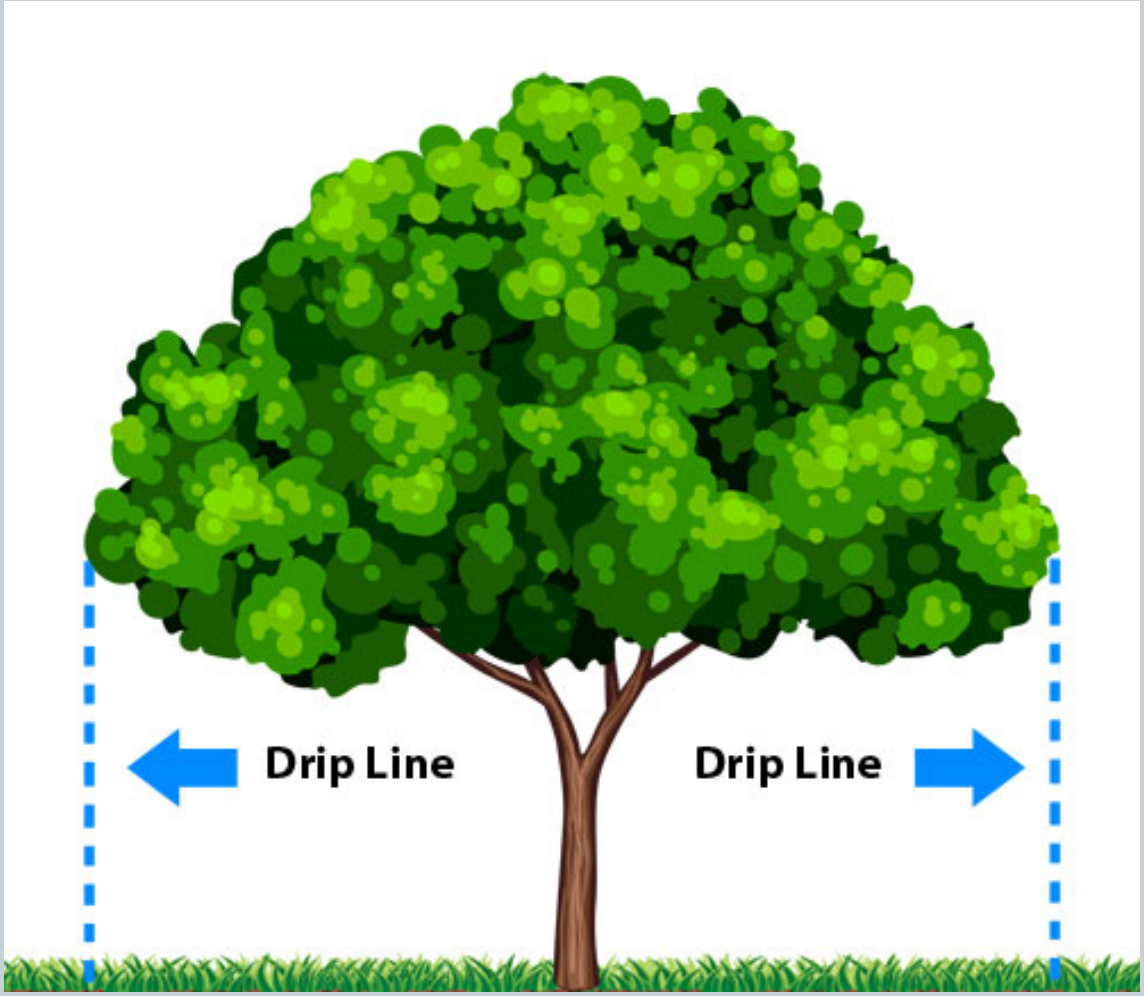
Purpose – To ensure the survival of trees identified to remain after the completion of construction

Benefits:

- Provide stabilization and minimize erosion
- Decrease stormwater runoff
- Buffer and screening



Common Issue – compaction of soil within drip line



Common Issue – compaction of soil within drip line

Common Issue – compaction of soil within drip line

Common Issue – compaction of soil within drip line

Common Issue– damage to root mass

Common Issue– damage to root mass

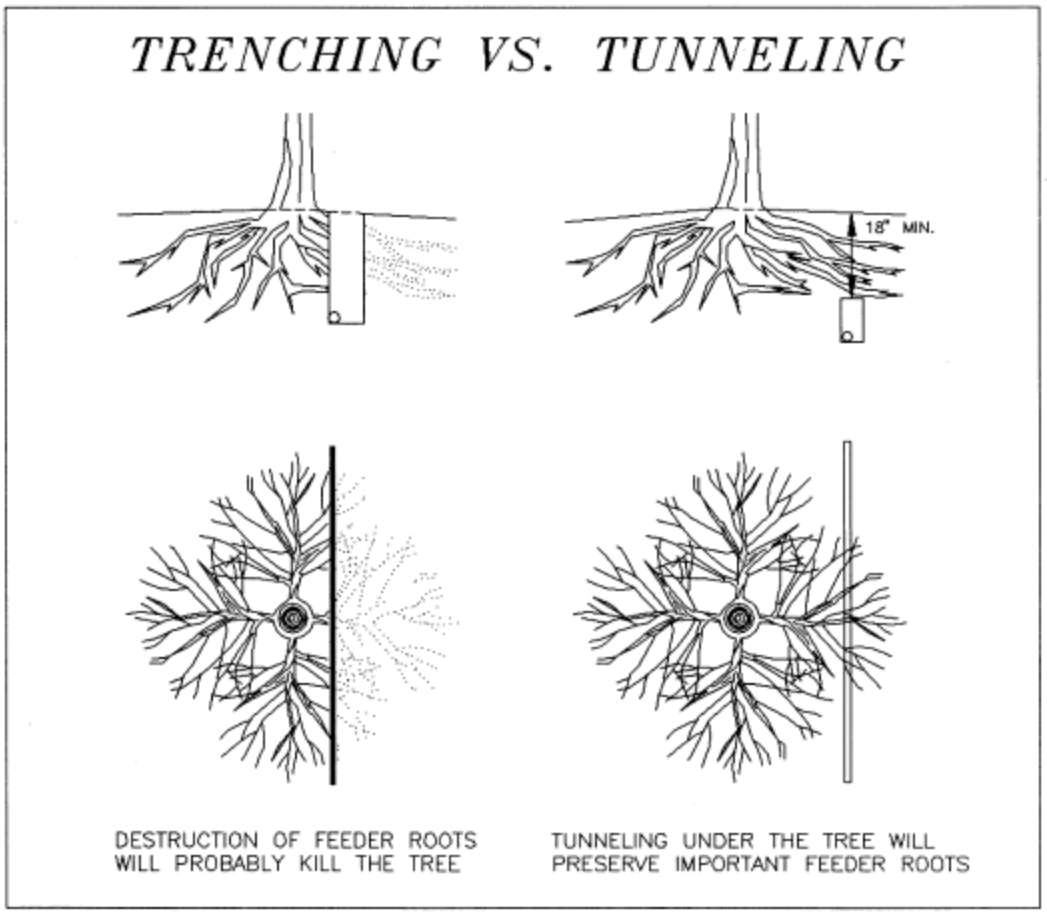
Solution– proper tree protection

Solution– proper tree protection

Solution– proper tree protection

Common Issue – utility trenches

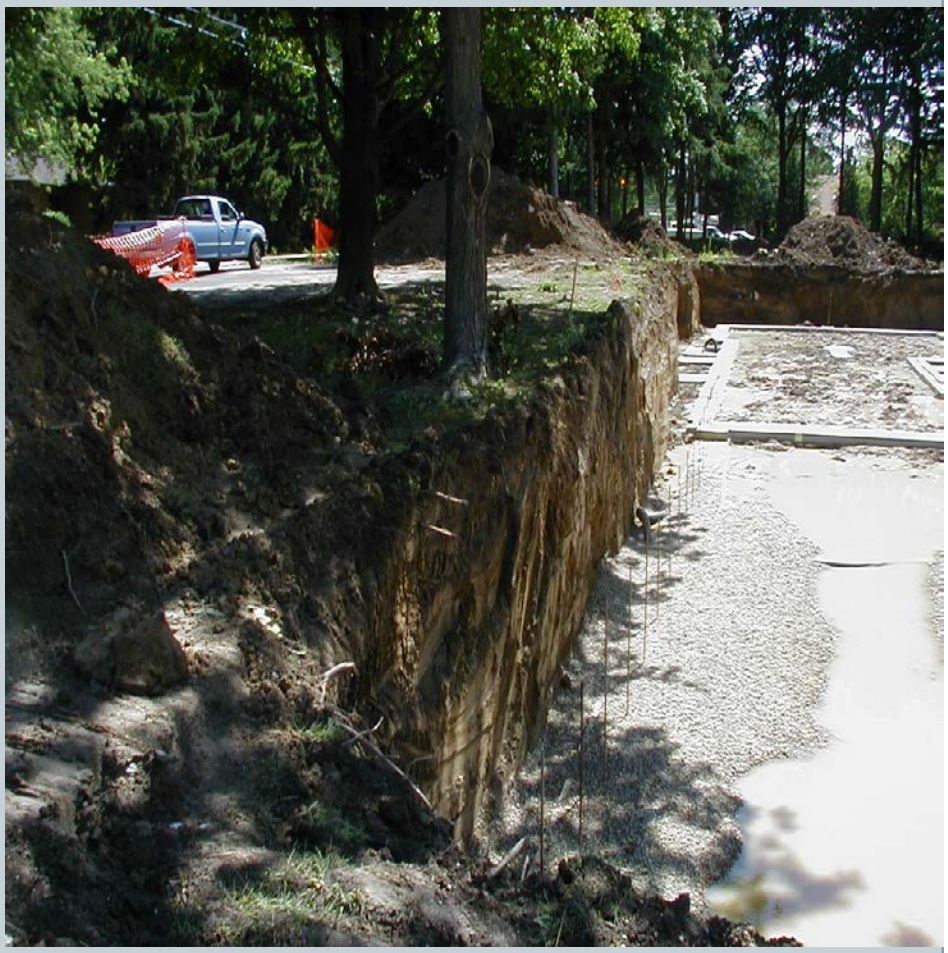
Solution – proper trench and tunneling techniques



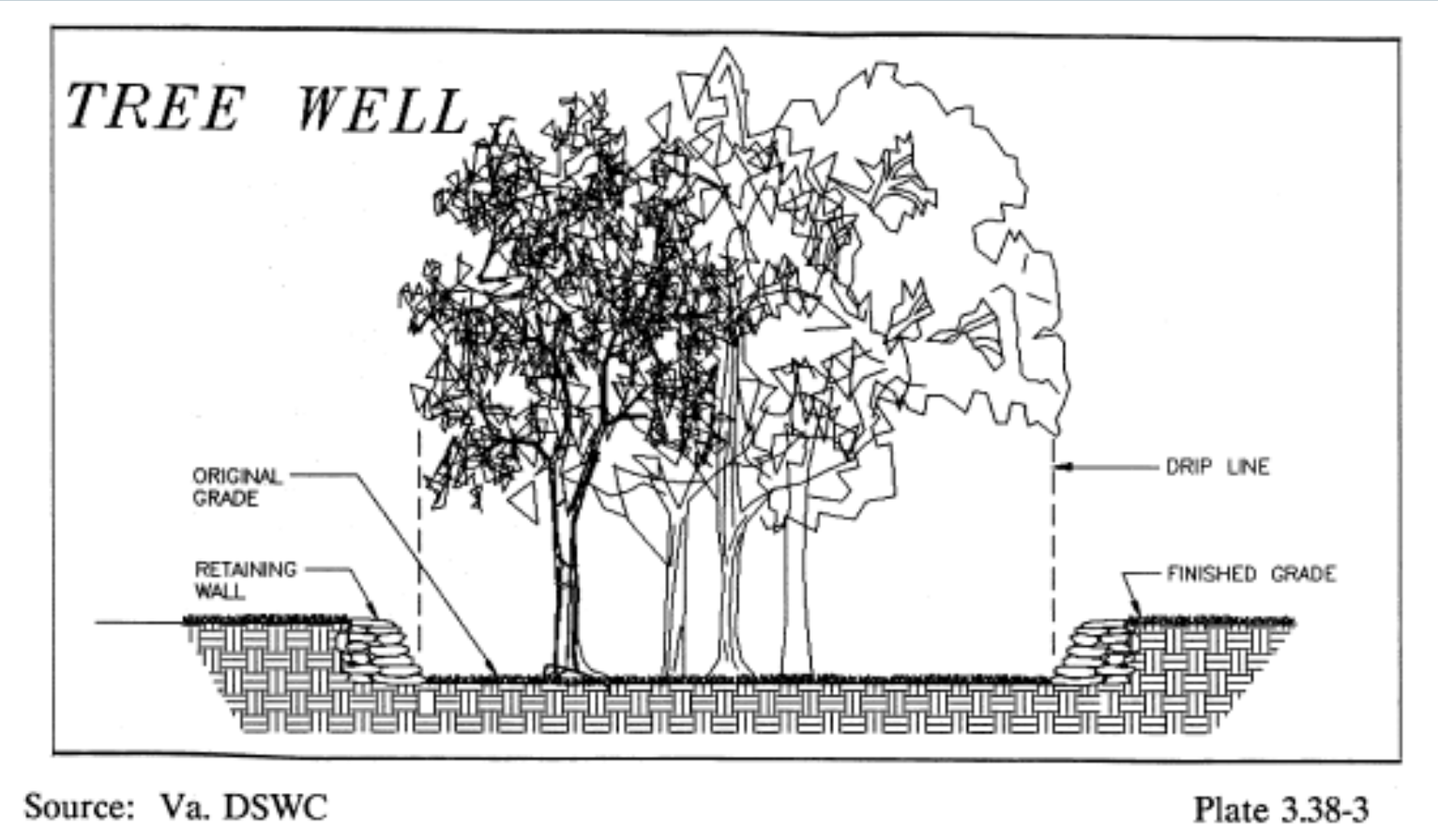
Source: Tree Maintenance, Pirone, 1979. Plate 3.38-7

Space issues

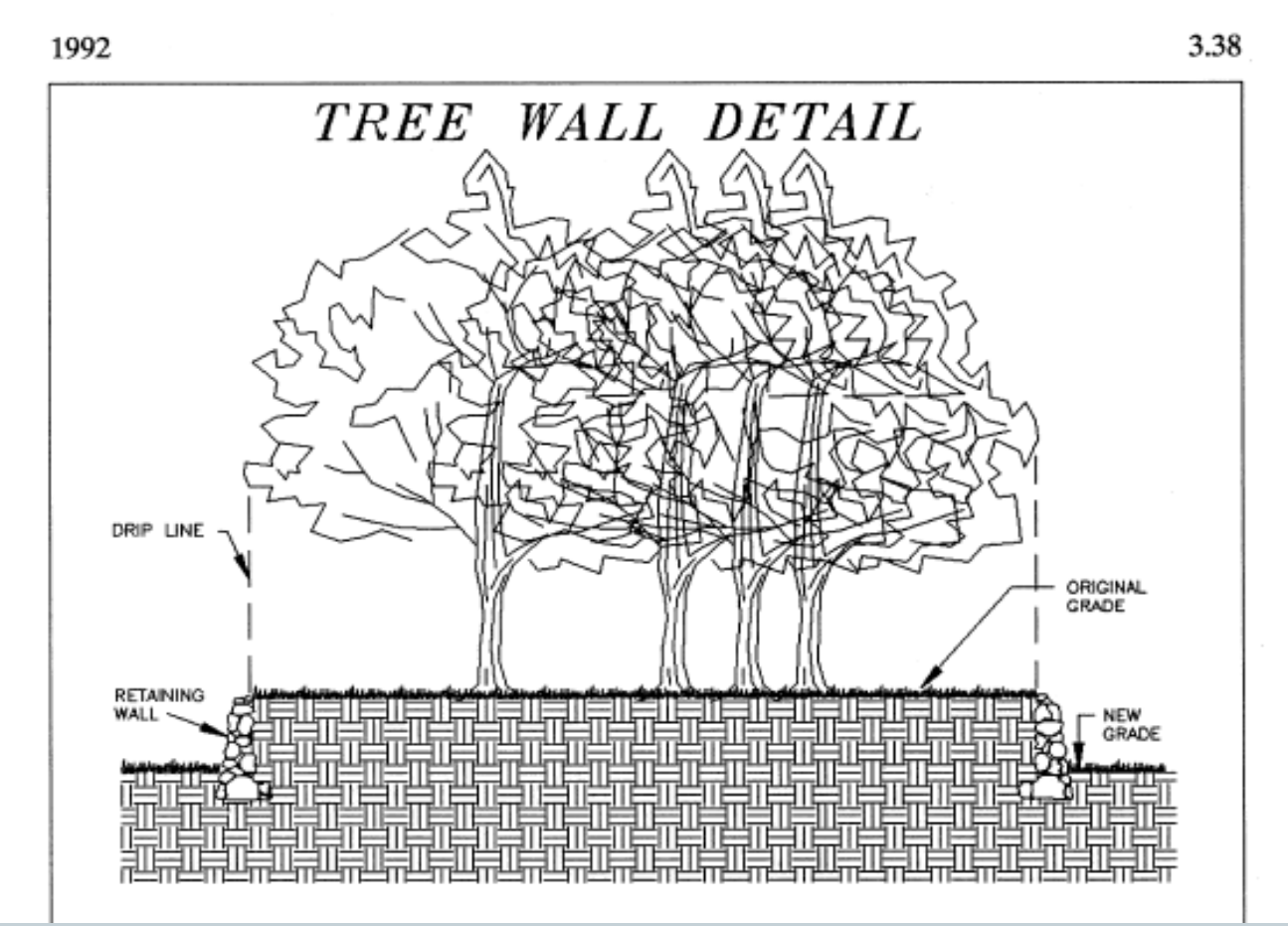
Common Issue – raising or lowering elevation



Solution– tree well and tree wall



Solution– tree well and tree wall



Tree Protection - Summary

Common Issues:

- Compaction of soil within the drip line
- Damage to root mass
- Grade changes, lowering and raising
- Maintenance

Solutions:

- Proper tree protection
- Keep equipment and materials out of the drip line
- Use tree walls and trees wells for grade adjustments
- Repair damage in accordance with VESCH

Topsoiling - VESCH Std. & Spec. 3.30

Purpose – To provide a suitable surface to stabilize a site with vegetation

Benefits:

- Organic matter and nutrient content
- Provides storage capacity for runoff

Common Issue – improper surface preparation

Common Issue – improper surface preparation

Solution– roughen or scarify surface

Solution– roughen or scarify surface

Solution– proper application of topsoil

Solution– proper application of topsoil

Topsoiling - Summary

Common Issues:

- Improper surface preparation
- Excessively wet or muddy conditions

Solutions:

- Roughen or scarify the surface (at least 2 inches)
- Place topsoil during periods of good weather
- Place in uniform depths of 2 to 4 inches

Temporary/Permanent Seeding – VESCH Std. & Spec. 3.31/3.32

Purpose – To reduce erosion and sedimentation by stabilizing disturbed areas with seed.

Benefits:

- Reduce the velocity of runoff
- Protect downstream properties from runoff

TABLE 3.32-D

SITE SPECIFIC SEEDING MIXTURES FOR COASTAL PLAIN AREA

	Total Lbs. Per Acre
Minimum Care Lawn	
- Commercial or Residential	
- Kentucky 31 or Turf-Type Tall Fescue	175-200 lbs.
or	
- Common Bermudagrass **	75 lbs.
High-Maintenance Lawn	
- Kentucky 31 or Turf-Type Tall Fescue	200-250 lbs.
or	
- Hybrid Bermudagrass (seed) **	40 lbs. (unhulled) 30 lbs. (hulled)
or	
- Hybrid Bermudagrass (by other vegetative establishment method, see Std. & Spec. 3.34)	
General Slope (3:1 or less)	
- Kentucky 31 Fescue	128 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
	150 lbs.
Low Maintenance Slope (Steeper than 3:1)	
- Kentucky 31 Tall Fescue	93-108 lbs.
- Common Bermudagrass **	0-15 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
- Sericea Lespedeza **	20 lbs.
	150 lbs.

* Use seasonal nurse crop in accordance with seeding dates as stated below:
February, March through April ..... Annual Rye
May 1st through August ..... Foxtail Millet
September, October through November 15th ..... Annual Rye
November 16th through January ..... Winter Rye

** May through October, use hulled seed. All other seeding periods, use unhulled seed. Weeping Lovegrass may be added to any slope or low-maintenance mix during warmer seeding periods; add 10-20 lbs./acre in mixes.

Temporary/Permanent Seeding – VESCH Std. & Spec. 3.31/3.32

9VAC25-840-40, MS-1:

Permanent or temporary soil stabilization shall be applied to denuded areas within **seven** days after final grade is reached on any portion of the site

Temporary Seeding – Applied within seven days to denuded areas that **may not be at final grade** but will remain dormant for longer than **14 days**

Permanent Seeding – Areas dormant for more than **one year**

Stockpile area needs additional seeding

Stockpile area properly stabilized

Poor stabilization

Good stabilization

Hydroseed

Hydroseed

Temporary/Permanent Seeding - Summary

Common Issues:

- Improper surface preparation
- Excessively wet or muddy conditions
- Stabilization not applied within required timeframes

Solutions:

- Roughen or scarify the surface (at least 2 inches)
- Reapplication may be necessary
- Stabilize in accordance with MS-1 or permit conditions

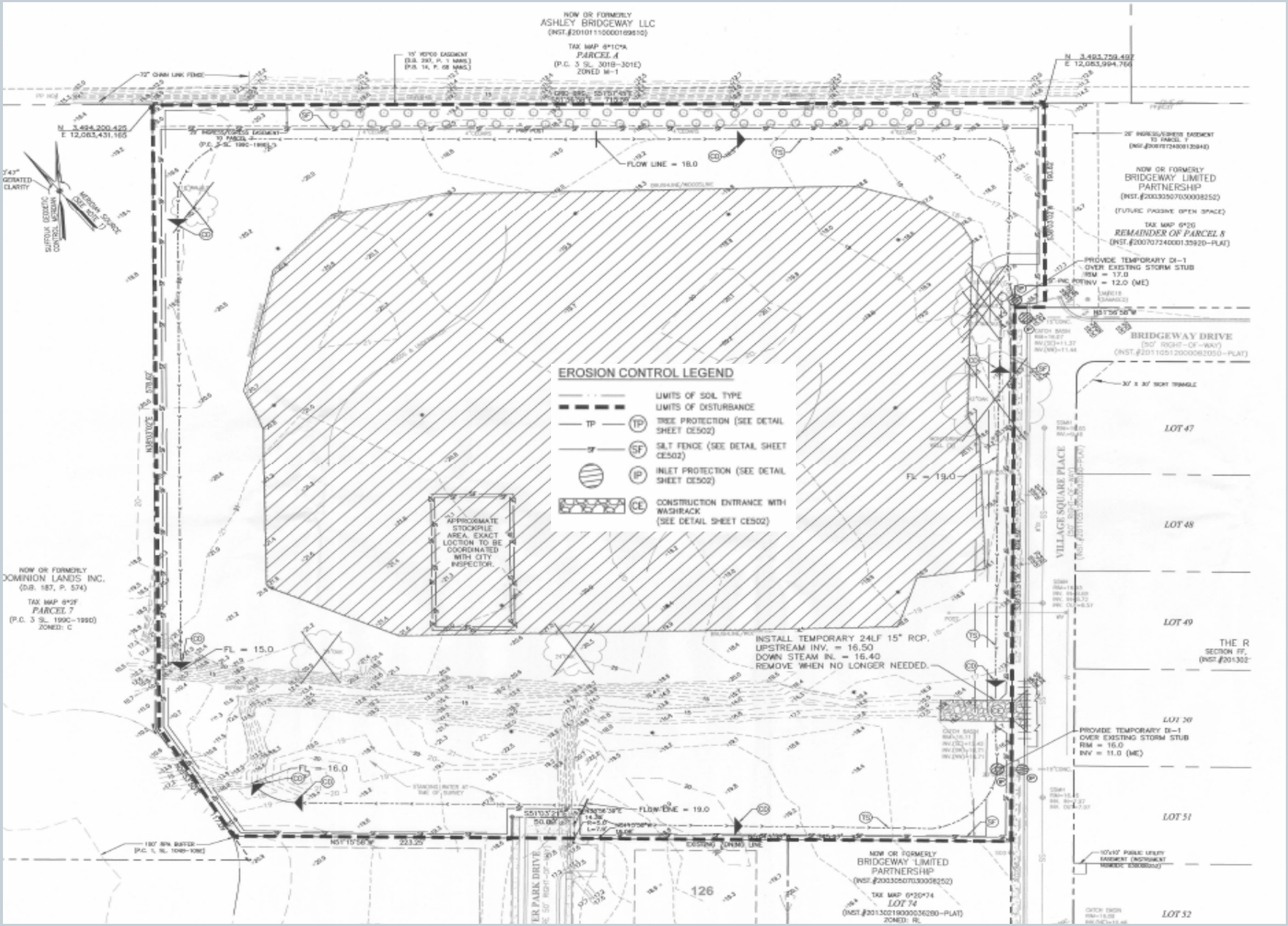
Project Limits

Limits of Disturbance – Defined limits that can be disturbed during construction

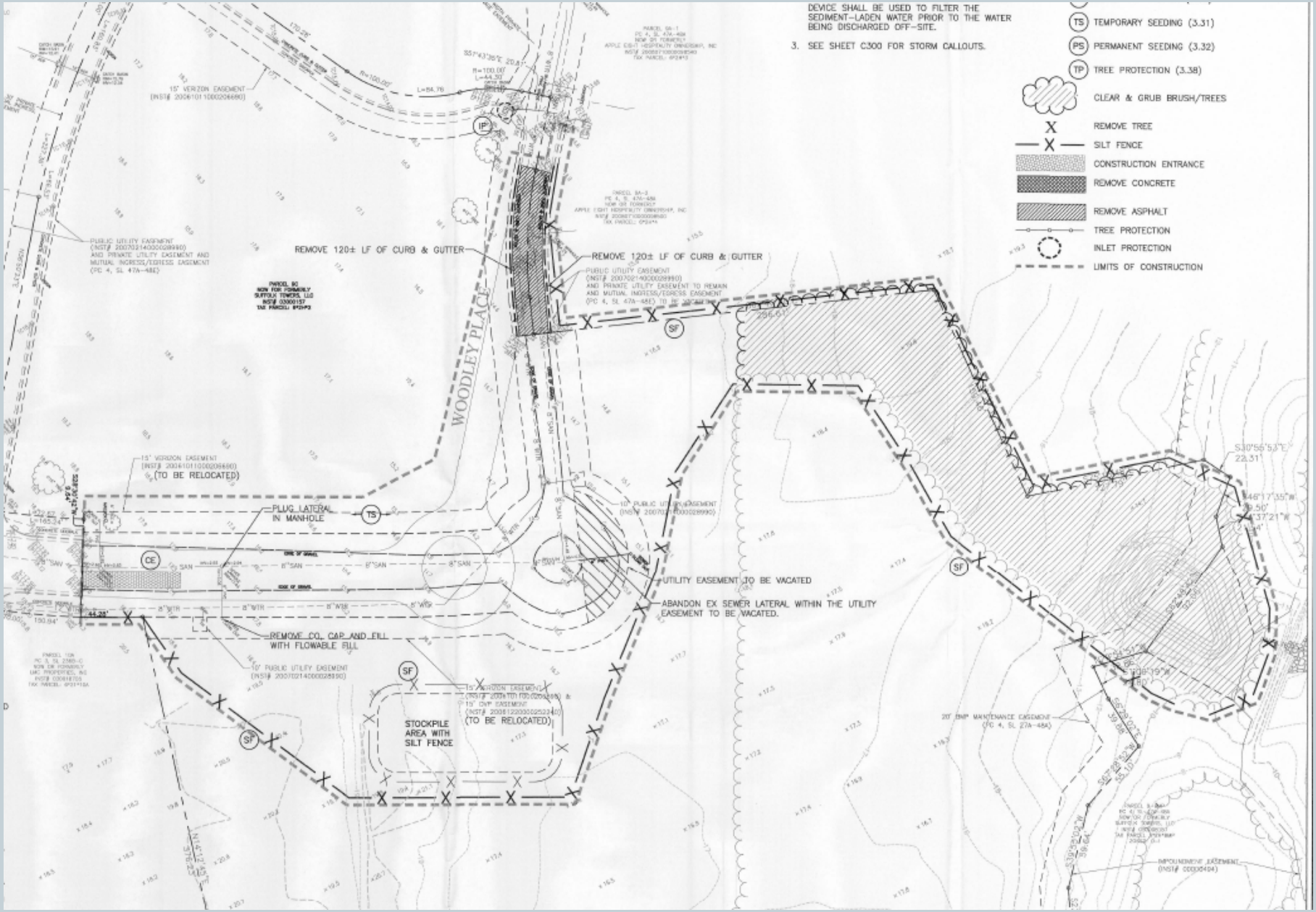
Unintended consequences:

- Local, state, and federal permits only cover a certain amount of disturbance
- You may be on another persons property
- Possible wetland or critical area impacts

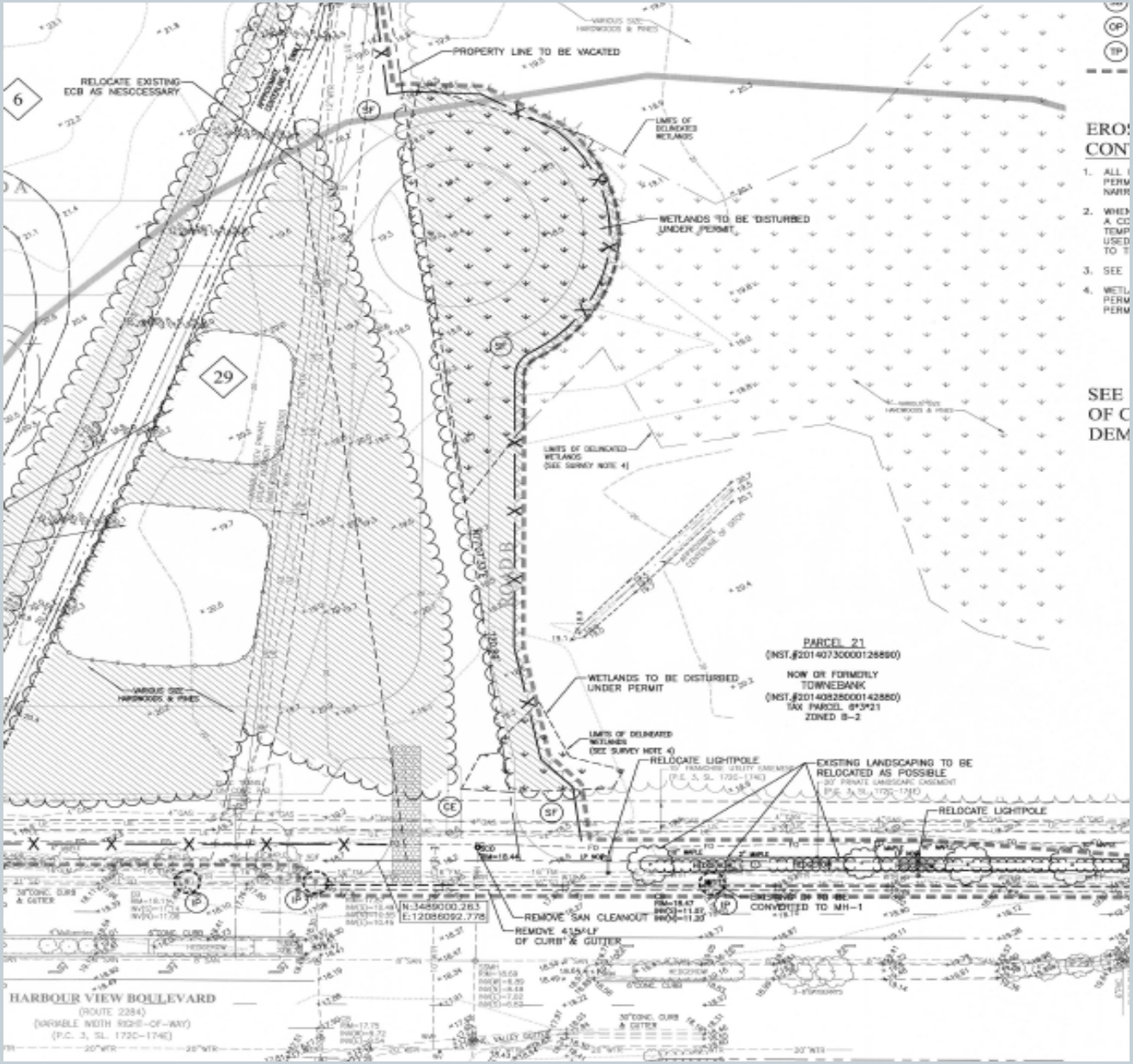
Limits of Disturbance



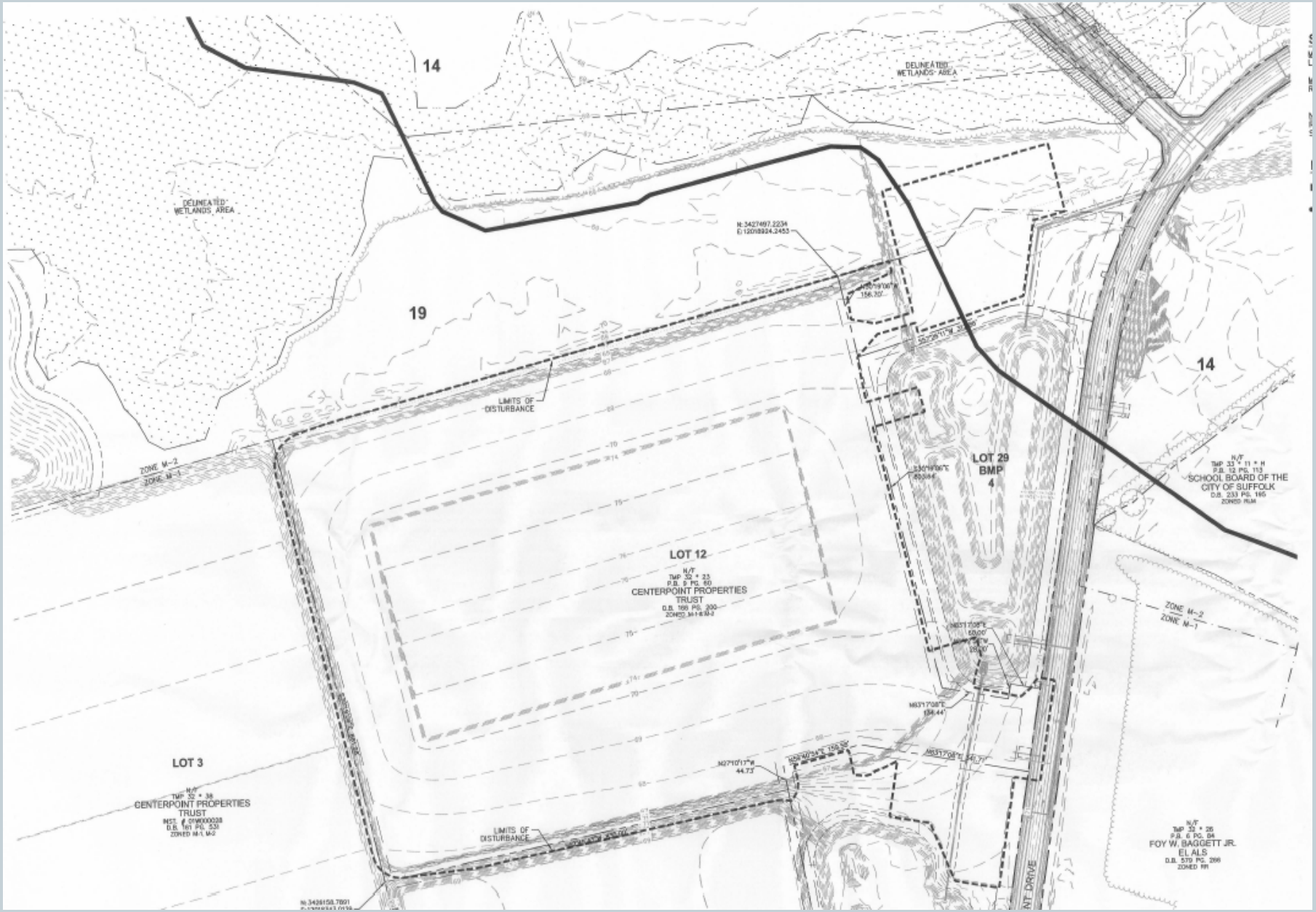
Limits of Disturbance



Wetlands


PROPERTY LINE TO BE VACATED
RELOCATE EXISTING ECB AS NESCCESSARY
LIMITS OF DELINEATED WETLANDS
WETLANDS TO BE DISTURBED UNDER PERMIT
LIMITS OF DELINEATED WETLANDS (SEE SURVEY NOTE 4)
PARCEL 21
(INST.#201407300001288B0)
NOW OR FORMERLY
TOWNEBANK
(INST.#201408280001428B0)
TAX PARCEL 6*3*21
ZONED B-2
WETLANDS TO BE DISTURBED UNDER PERMIT
LIMITS OF DELINEATED WETLANDS (SEE SURVEY NOTE 4)
RELOCATE LIGHTPOLE
EXISTING LANDSCAPING TO BE RELOCATED AS POSSIBLE
RELOCATE LIGHTPOLE
CONVERTED TO MH-1
N:3485000.263
E:12086092.778
REMOVE SAN CLEANOUT
REMOVE 415±LF OF CURB & GUTTER
HARBOUR VIEW BOULEVARD
(ROUTE 2284)
(VARIABLE WIDTH RIGHT-OF-WAY)
(P.C. 3, SL. 172C-174E)
VARIOUS SIZE HARDWOODS & PINES
29
6

Wetlands


14
DELINEATED WETLANDS AREA
19
LIMITS OF DISTURBANCE
ZONE M-2
ZONE M-1
LOT 29
BMP
4
LOT 12
N/F
TMP 32 * 23
P.B. 9 PG. 60
CENTERPOINT PROPERTIES TRUST
D.B. 199 PG. 200
ZONED M-1 & M-2
LOT 3
N/F
TMP 32 * 36
CENTERPOINT PROPERTIES TRUST
INST. # 010000038
D.B. 161 PG. 531
ZONED M-1, M-2
N/F
TMP 33 * 11 * H
P.B. 12 PG. 113
SCHOOL BOARD OF THE CITY OF SUFFOLK
D.B. 233 PG. 165
ZONED RUM
N/F
TMP 33 * 26
P.B. 6 PG. 84
FOY W. BAGGETT JR. ET ALS
D.B. 579 PG. 266
ZONED RR
ZONE M-2
ZONE M-1
N27°10'17"W
44.73'
N63°17'08"E
134.44'
N63°17'08"E
60.00'
N:34261558.7891

SWPPP and Stormwater Site Inspections

Seamus McCarthy
City of Norfolk
Environmental Engineer

VSMP CGP

- Standing permit which authorizes the discharge of stormwater from a construction site
- Administered by Norfolk Environmental Services and DEQ
- Part of Virginia Stormwater Management Program (VSMP) Formally known as VPDES Permit For Discharges Of Stormwater From Construction Activities
- a.k.a.- CGP, VAR10, or VSMP Permit
- Requires development and implementation of a Stormwater Pollution Prevention Plan (SWPPP)
- SWPPP compliance requires inspections and record keeping
- Must file for coverage under this permit. No coverage = no permit

NORFOLK

Why is VSMP CGP Compliance Important?

IT'S THE LAW

- Public expects localities to be leaders in pollution prevention
- Citizens or environmental organizations may soon get involved in compliance reviews.
- Potentially significant fines for non-compliance
- It's part of the municipality's MS4 and E&S program compliance

NORFOLK

SWCGP Applicability

Land disturbing activities that require a VSMP Stormwater Construction General Permit :

- Individually exceed 1 acre in total disturbed area which includes laydown areas
- Common plan of Development exceeds an acre – a contiguous area where separate and distinct construction activities may be taking place at different times on different schedules.

SWGP Permit Required?

NO

- Routine maintenance
- Replacement or new work < 1 acre
- Linear Development Projects returned to predevelopment conditions DEQ Guidance Memo 15-2003

YES

- Replacement or new work > 1 acre disturbance

NORFOLK

Routine Maintenance “Exemption”

- Must be less than 5 acres;
- Ditch cleaning, shoulder dressing, culvert cleanout, manhole repair, line maintenance, etc.
- Cannot be used to enlarge / expand capacity
- Erosion and sediment control, wetlands permits still required;

What exactly is a SWPPP???

STORM WATER POLLUTION PREVENTION PLAN
(SWPPP)

For: Site Plan #

Project Title

CITY OF NORFOLK, VIRGINIA

Prepared by:

SWPPP Elements

- Registration Statement
- Proof of coverage from DEQ
- Fee payment
- Storm Water Pollution Prevention Plan (SWPPP)
- SWPPP inspection program
- Site and activity description
- Permanent BMP design calcs
- Delegation of Authority
- Subcontractor Certification Forms
- Current site map(s)

VSMP Registration Statement

Registration Statement
General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10)

(Please Type or Print All Information)

1. **Construction Activity Operator:** *(General permit coverage will be issued to this operator. The Certification in Item #12 must be signed by the appropriate person associated with this operator.)*
   Name:_____
   Contact:_____
   Mailing Address:_____
   City:_____ State:_____ Zip:_____ Phone:_____
   Email address (if available):_____
   Indicate if DEQ may transmit general permit correspondence electronically: Yes ☐ No ☐
2. **Existing General Permit Registration Number (for renewals only):**_____
3. **Name and Location of the Construction Activity:**
   Name:_____
   Address (if available):_____
   City:_____ State:_____ Zip:_____
   County (if not located within a City):_____
   Latitude (decimal degrees):_____ Longitude (decimal degrees):_____
   Name and Location of all Off-site Support Activities to be covered under the general permit:
   Name:_____
   Address (if available):_____
   City:_____ State:_____ Zip:_____
   County (if not located within a City):_____
   Latitude (decimal degrees):_____ Longitude (decimal degrees):_____
4. **Status of the Construction Activity (check only one):** Federal ☐ State ☐ Public ☐ Private ☐
5. **Nature of the Construction Activity (e.g., commercial, industrial, residential, agricultural, oil and gas, etc.):**
   _____
6. **Name of the Receiving Water(s) and Hydrologic Unit Code (HUC):**
   Name:_____ Name:_____
   HUC:_____ HUC:_____
7. **If the discharge is through a Municipal Separate Storm Sewer System (MS4), the name of the MS4 operator:**
   _____
8. **Estimated Project Start and Completion Date:**
   Start Date (mm/dd/yyyy):_____ Completion Date (mm/dd/yyyy):_____
9. **Total Land Area of Development (to the nearest one-hundredth acre):**_____
   Estimated Area to be Disturbed (to the nearest one-hundredth acre):_____
10. **Is the area to be disturbed part of a larger common plan of development or sale?** Yes ☐ No ☐
11. **A stormwater pollution prevention plan (SWPPP) must be prepared in accordance with the requirements of the General VPDES Permit for Discharges of Stormwater from Construction Activities prior to submitting this Registration Statement. By signing this Registration Statement the operator is certifying that the SWPPP has been prepared.**
12. **Certification:** "I certify under penalty of law that I have read and understand this Registration Statement and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."
    Printed Name:_____ Title:_____
    Signature:_____ Date:_____
    (Please sign in INK. This Certification must be signed by the appropriate person associated with the operator identified in Item #1.)

NORFOLK

Registration Statement

- When: PRIOR to land disturbing activities
- Fees:
- Small (1 - 5 acres) $ 2700
- Large (>5 - 10 acres) $ 3400
- Large (>10-50 acres) $ 4500
- DEQ's share 28%
- Charges for Permit Modification and Transfer
- Yearly Maintenance Fee on Permit

- SWPPP:
- Must be prepared prior to permit issuance

VSMP Approval Letter

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

October 23, 2014

E T Gresham Co Inc
PO Box 1077
Norfolk, VA 23501
neike@etgresham.com

RE: Coverage under the VPDES Construction General Permit (VAR10)
General Permit No. VAR10G297
13-0095
Norfolk International Airport Phase 2 Terminal and Concourse Improvements
Transportation/Commercial - Addition and Renovation
Norfolk

Dear Permittee:

DEQ has reviewed your Registration Statement received on October 13, 2014 and determined that the proposed land-disturbing activity is covered under the General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10). The effective date of your coverage under this general permit is July 1, 2014 or the date of this letter, whichever is later.

A copy of the general permit can be obtained from DEQ's webpage at the following location:
http://www.deq.virginia.gov/Portals/0/DEQ/Water/Publications/CGP2014.pdf.
The general permit contains the applicable Stormwater Pollution Prevention Plan (SWPPP) requirements and other conditions of coverage. Please print the general permit and read it carefully as you will be responsible for compliance with all permit conditions.

DEQ staff has determined that the proposed land-disturbing activity will discharge to a surface water identified as impaired or for which a TMDL wasteload allocation has been established and approved prior to the term of the general permit for (i) sediment or a sediment-related parameter or (ii) nutrients. Therefore, the following general permit (Part I.B.4) and SWPPP requirements (Part II.A.5) must be implemented for the land-disturbing activity:

- Permanent or temporary soil stabilization shall be applied to denuded areas within seven (7) days after final grade is reached on any portion of the site;
- Nutrients (e.g., fertilizers) shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events;
- Inspections shall be conducted at a frequency of (i) at least once every four (4) business days or (ii) at least once every (5) business days and no later than 48 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 48 hours between business days, the inspection shall be conducted on the next business day; and
- Representative inspections used by utility line installation, pipeline construction, or other similar linear construction activities shall inspect all outfalls.

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VSMP Approval Letter

DEQ staff has determined that the proposed land-disturbing activity will discharge to a surface water identified as impaired or for which a TMDL wasteload allocation has been established and approved prior to the term of the general permit for (i) sediment or a sediment-related parameter or (ii) nutrients. Therefore, the following general permit (Part I.B.4) and SWPPP requirements (Part II.A.5) must be implemented for the land-disturbing activity:

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- Representative inspections used by utility line installation, pipeline construction, or other similar linear construction activities shall inspect all outfalls.

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City of Norfolk

Department of Planning and Community Development

SWPPP: Ongoing Maintenance Checklist

SWPPP Must Be Kept Onsite

- ☐ VSMP Approval Letter
  - ☐ Posted
  - ☐ Contact information

- ☐ SWPPP site map: Items to be located on plan (red-lined)
  - ☐ Modified E&S Controls
  - ☐ Concrete Washout (10 mil poly)
  - ☐ Trash Cans / Dumpster
  - ☐ Fuel Storage
  - ☐ Portable Toilets
  - ☐ Spill Kit
  - ☐ Hazardous Materials

- ☐ Permit Operator Forms
  - ☐ Permit Operator - Signed by Corporate Officer
  - ☐ Delegation form
  - ☐ Subcontractor forms

- ☐ Land Disturbance Record
  - ☐ Grading Activities
  - ☐ Stabilization

- ☐ Self inspections
  - ☐ Frequency: 5 business days & Rainfall event .25" (Must record rainfall)
  - ☐ Frequency : 4 business days
  - ☐ Weather information recorded day of inspection
  - ☐ E & S deficiencies corrected

- ☐ Upset & Bypass
  - ☐ Upset: unintentional and temporary noncompliance
  - ☐ Bypass: intentional diversion
  - ☐ 24 hour notice
  - ☐ 5 day written notice

- ☐ Spill Kit
  - ☐ Clearly marked onsite
  - ☐ List of trained individuals

- ☐ Termination Notice
  - ☐ Submit at end of construction

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Permit & Contact Posting

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Site and Activity Description

- Description of the nature of construction
- Sequence and timing of land disturbance
- Estimate of total area of disturbance
- Description of other potential pollutants
- Identification of receiving water and impairments

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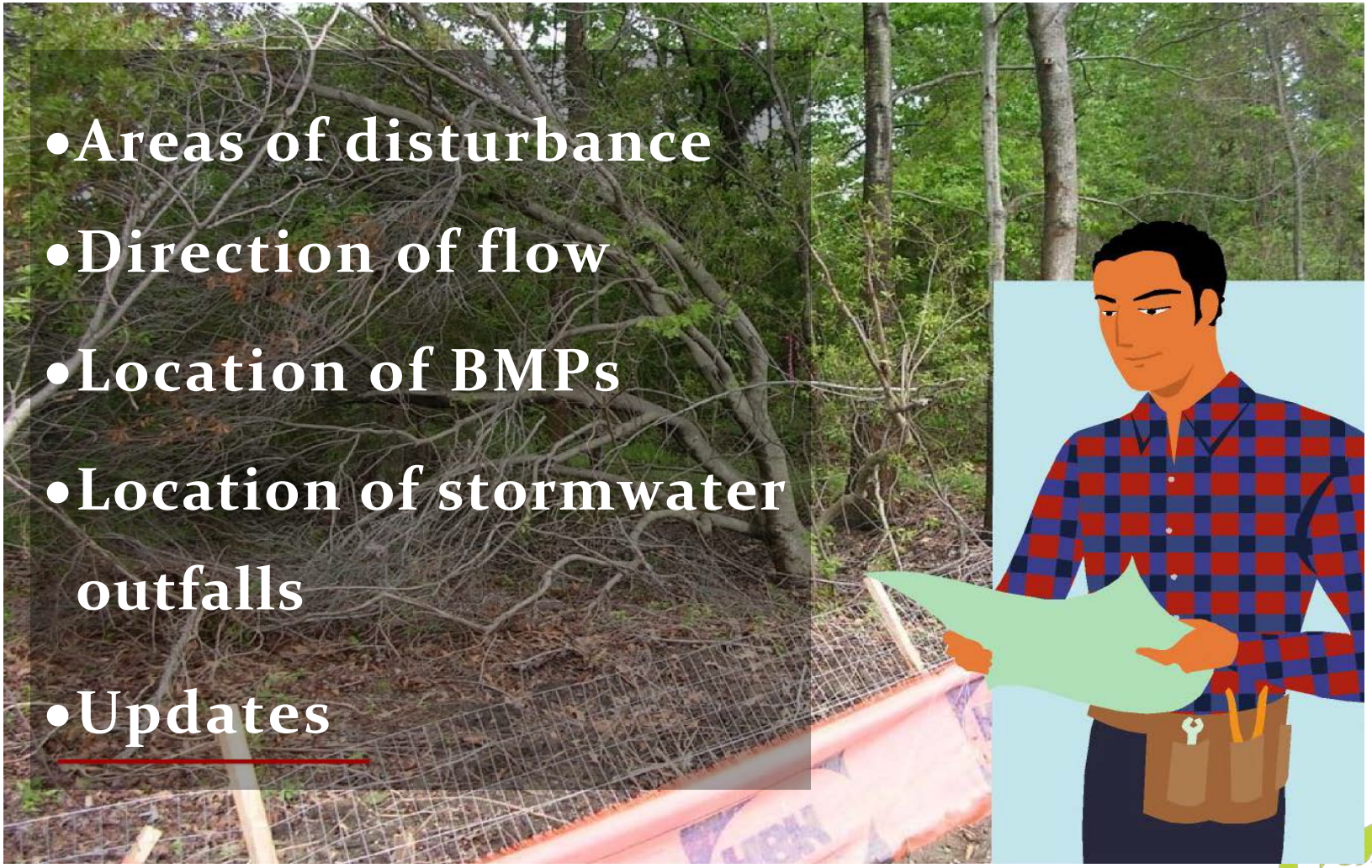
Site Map



- Areas of disturbance
- Direction of flow
- Location of BMPs
- Location of stormwater outfalls
- Updates

Plan Maintenance, Monitoring, and Inspection

- Maintain SWPPP on site
- Modify SWPPP site maps as project sections are disturbed, stabilized, and as major BMPs installed
- Amend SWPPP as any changes in design, construction, operation or maintenance occur
- Inspect measures every **4 business days** or **every 5 business days and within 48 hours or any rainfall 0.25" or greater**

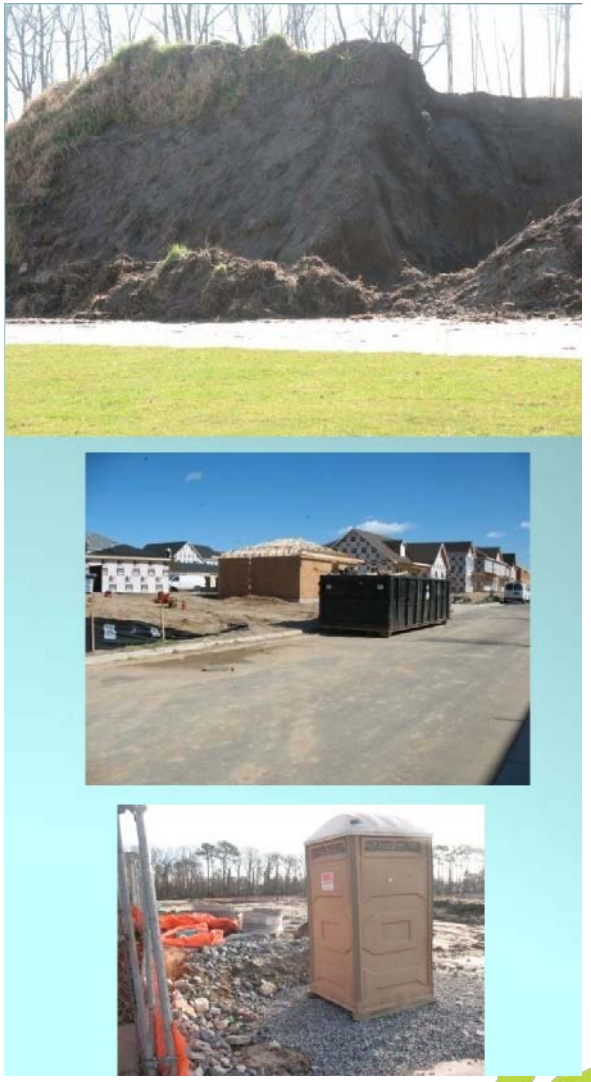
SWPPP Elements

- E&S self inspections
- Land disturbance record
- Controls to reduce pollutants in SW
- BMP Maintenance plan
- Land disturbance record keeping
- Site map updates
- Reports of upset/bypass/petroleum spills
- Notice of Termination (NOT) filing

Pre-Construction Phase

Direct contractors to update site maps (REDLINE) for:

- SWPPP posting location -Entrance
- Concrete wash out
- Mason's staging area
- Topsoil stockpile location
- Portable Toilets
- Fuel tank location
- Dumpster location
- Materials storage / Laydown area
- Equipment maintenance areas
- Additional proposed E&S measures



Site Map Updates

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Project Inspections

- Every 4 business days or 5 business days and within 48 hours of runoff producing rainfall event
- Documenting corrective actions JUST as important as documenting deficiencies
- E&S / SWPPP inspection form for use by contractors and inspectors

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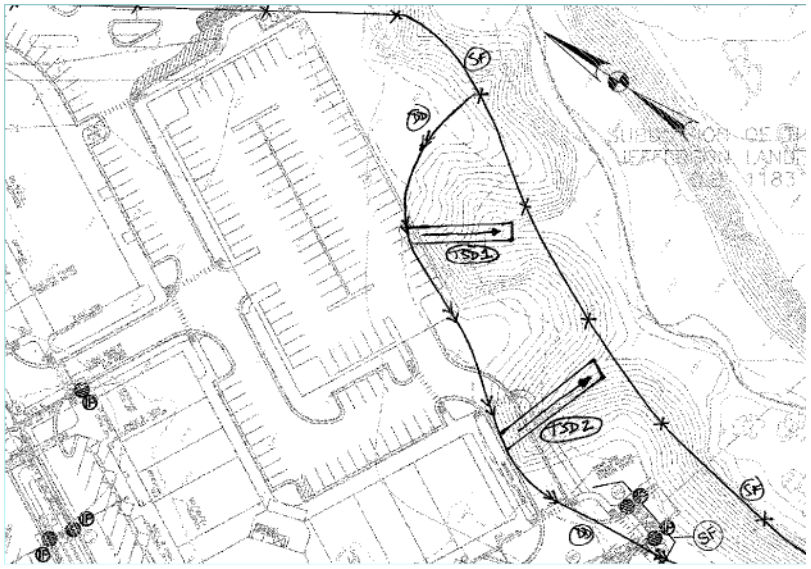
Project Inspections

All of the VESCH Minimum Standards and:

- SWPPP contractor certifications
- Inspection reports
- Solid waste facilities
- Sanitary facilities
- Fueling / spills
- Equipment maintenance
- Material storage



- Handle reports of non-compliance or bypass to Norfolk Environmental
- Construction site safety / SWPPP public inspection

Contractor Certifications

- VSMP requires ALL contractors disturbing site soil to be identified in the SWPPP
- Contractor responsibilities to be included in SWPPP
- Provides protection for GC
- Allows for subs to “check in” and “check out” of the project
- Helps establish clear contractor responsibilities

SWPPP Inspection Report

Project Name: _____

Project Address: _____

Inspection Date: ___/___/___ Inspection Time: ___:___ am / pm

Weather: _____

Reason for Inspection: ❑Regular Inspection ❑Pre-Rainfall Inspection
❑Re-Inspection ❑Post-Rainfall Inspection: _____total

Has a sediment discharge occurred since the last inspection? ❑Yes ❑No
Are the pollutant control measures in compliance with E&S regulations? ❑Yes ❑No

Item Description	*In Compliance at the Time of Inspection*		
Construction Entrances	❑ Yes	❑ No	❑ N/A
Silt Fence	❑ Yes	❑ No	❑ N/A
Inlet Protection	❑ Yes	❑ No	❑ N/A
Check Dams	❑ Yes	❑ No	❑ N/A
Tree Protection	❑ Yes	❑ No	❑ N/A
Sediment Traps / Basins	❑ Yes	❑ No	❑ N/A
Diversion Dikes	❑ Yes	❑ No	❑ N/A
Stockpile Stabilization	❑ Yes	❑ No	❑ N/A
Soil Stabilization	❑ Yes	❑ No	❑ N/A
Turbidity Curtain	❑ Yes	❑ No	❑ N/A
Chemical Storage	❑ Yes	❑ No	❑ N/A
Site Free of Trash/Litter	❑ Yes	❑ No	❑ N/A
Concrete Washout	❑ Yes	❑ No	❑ N/A
Dewatering Devices	❑ Yes	❑ No	❑ N/A
Other:	❑ Yes	❑ No	❑ N/A

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

_____

_____

_____

_____

_____

_____

_____

Inspection performed by:

_____

Print name and Title Signature

NORFOLK

Top 5 Construction stormwater permit violations

	Noncompliant		Compliant	
1 **Missing or inadequate soil stabilization**	Without proper stabilization, soil is vulnerable to erosion.		Mats, mulches, and blankets temporarily stabilize and permanently establish vegetation on disturbed soils.	
2 **Missing perimeter controls**	When perimeter controls are missing, stormwater carries sediment off site and into waters of the state.		Silt fence and other perimeter controls intercept runoff and help sediment to settle while allowing water to filter through.	
3 **Missing or inadequate inlet protection**	Missing or inadequate inlet protection allows sediment to enter the storm sewers and/or water bodies.		Inlet protection captures sediment before it enters the storm sewer.	
4 **Vehicle tracking**	Without a construction entrances, vehicles track sediment onto paved surfaces.		Rock pads and other Construction entrances knock sediment off tires before it is tracked onto paved surfaces.	
5 **Best Management Practices not maintained**	Unmaintained E&S controls do not function properly and allow sediment to escape and enter local waterways		All E&S controls must be maintained to ensure effectiveness.	

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THE CITY OF NORFOLK
BUREAU OF ENVIRONMENTAL SERVICES

SWPPP INSPECTION REPORT

Project Name: _____

Project Address: _____

Inspection Date:___/___/___ Inspection Time: ___:___ am/pm Weather:_____

Reason for Inspection: ❑ Pre-Construction ❑ Regular ❑ Re-Inspection ❑ Final

	Item Description		*In Compliance at the Time of Inspection*		
SWPPP Book	SWPPP Located On-site		❑ Yes	❑ No	
	General Site Information		❑ Yes	❑ No	
	VAR 10 in SWPPP		❑ Yes	❑ No	
	Signed Registration Statement		❑ Yes	❑ No	
	VSMP Permit Letter and SWPPP Location Information Displayed		❑ Yes	❑ No	
	SWPPP Site Map		❑ Yes	❑ No	
	Rain Gauge On-site		❑ Yes	❑ No	
	Potential Pollutants Description and Location		❑ Yes	❑ No	
	Identify Person Implementing Pollution Prevention Practices		❑ Yes	❑ No	
	Delegation of Authority		❑ Yes	❑ No	
	Qualified Personnel Conducting Inspections		❑ Yes	❑ No	
	Subcontractor Forms		❑ Yes	❑ No	
	Self Inspections		❑ Yes	❑ No	
	Land Disturbance Record		❑ Yes	❑ No	
	Stormwater Calculations for BMPs		❑ Yes	❑ No	❑ N/A
	Spill Kit On-site		❑ Yes	❑ No	❑ N/A
	Termination Notice		❑ Yes	❑ No	❑ N/A
E&S Controls	Construction Entrances	(CE)	❑ Yes	❑ No	❑ N/A
	Silt Fence	(SF)	❑ Yes	❑ No	❑ N/A
	Inlet Protection	(IP)	❑ Yes	❑ No	❑ N/A
	Check Dams	(CD)	❑ Yes	❑ No	❑ N/A
	Tree Protection	(TP)	❑ Yes	❑ No	❑ N/A
	Sediment Traps	(ST)	❑ Yes	❑ No	❑ N/A
	Stockpile Stabilization	(SPS)	❑ Yes	❑ No	❑ N/A
	Soil Stabilization	(SS)	❑ Yes	❑ No	❑ N/A
	Diversion Dikes	(DD)	❑ Yes	❑ No	❑ N/A

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Item Description (continued)		*In Compliance at the Time of Inspection*		
Turbidity Curtains	(TC)	❑ Yes	❑ No	❑ N/A
Dewatering Devices	(DW)	❑ Yes	❑ No	❑ N/A
Laydown / Storage Areas		❑ Yes	❑ No	❑ N/A
Public Roads Free of Dust and Debris		❑ Yes	❑ No	❑ N/A
Discharge Points Free of Sediment Deposits		❑ Yes	❑ No	❑ N/A
Concrete/Masonry Washout	(CW)	❑ Yes	❑ No	❑ N/A
Chemicals in Controlled Area		❑ Yes	❑ No	❑ N/A
Dumpsters Secured/Covered		❑ Yes	❑ No	❑ N/A
Temporary Fuel Tanks Secured /Contained		❑ Yes	❑ No	❑ N/A
Site Free of Trash/Litter		❑ Yes	❑ No	❑ N/A
Other:		❑ Yes	❑ No	❑ N/A
		❑ Yes	❑ No	❑ N/A

P2 Plan

Sediment Leaving Site: Yes / No _____

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

_____

_____

_____

_____

_____

_____

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_____

Reinspection Date / Compliance Time: ____ calendar days from the receipt of this notice.

Reported to:_____
Print Name

_____
Signature

_____
Phone Number Date

Inspector:_____
Print Name

_____
Signature

_____
Phone Number Date

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Solid Waste Management

- Policing trash on site
- Construction debris management
- Dumpster location shown on site maps

Concrete Wash Out Area

Temporary Wash Out Area

Sanitary Waste Management

- OSHA requires facilities for worker use
- If provided must be serviced by commercial operator
- Portable Toilet location shown on site maps
- No DEQ requirement for location of portajohn but…

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Fueling Management

- Fuel tanks must be double walled or have secondary containment
- If in a tub, make sure the drain plug is INSTALLED
- Tank location shown on site maps
- All spills must be cleaned up and may require reporting
- Tanks must be locked at the end of each day

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Material Storage

- VSMP requires hazardous materials to be stored in weatherproof area
- Lids must stay on containers
- Material storage areas should be used and shown on plans

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Response Procedures for Spills to Soil

- Stop spilling fluid immediately
- Call the City Project Inspector who will notify DEQ (>25Gallons) if required
- Excavate stained soil and place in a drum for offsite disposal
- Keep drum sealed when not adding soil
- Fill out Spill Report Form

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Compliance – Project Close Out

- Stabilization of site
- Require final submission of completed SWPPP
  - Site Map changes
  - Contractor certification forms
  - Inspection reports
  - Reports of non-compliance

Compliance – Project Close Out

- File Notice of Termination (NOT) upon final stabilization acceptance by City
- Include permanent BMP list
- Permit is terminated at midnight the day the NOT is filed
- Maintain complete SWPPP for three years

Notice of Termination
General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10)

(Please Type or Print All Information)

1. **Construction Activity Operator:**

   Name:_____

   Contact:_____

   Mailing Address:_____

   City:_____ State:_____ Zip:_____ Phone:_____

   Email address (if available):_____

2. **Name and Location of the Construction Activity:** (As listed on the Registration Statement.)

   Name:_____

   Address (if available):_____

   City:_____ State:_____ Zip:_____

   County (if not located within a City):_____

   Latitude (decimal degrees):_____ Longitude (decimal degrees):_____

3. **General Permit Registration Number:**_____

4. **Reason for Terminating Coverage Under the General Permit:** (The operator shall submit a Notice of Termination after one or more of the following conditions have been met.)

   ☐ A. Necessary permanent control measures included in the SWPPP for the site are in place and functioning effectively and final stabilization has been achieved on all portions of the site for which the operator is responsible. When applicable, long-term responsibility and maintenance requirements for permanent control measures shall be recorded in the local land records prior to the submission of a notice of termination;

   ☐ B. Another operator has assumed control over all areas of the site that have not been finally stabilized and obtained coverage for the ongoing discharge;

   ☐ C. Coverage under an alternative VPDES or state permit has been obtained; or

   ☐ D. For residential construction only, temporary soil stabilization has been completed and the residence has been transferred to the homeowner.

   The notice of termination should be submitted no later than 30 days after one of the above conditions being met. Authorization to discharge terminates at midnight on the date that the notice of termination is submitted for the conditions set forth in subsections B through D above, unless otherwise notified by the VSMP authority or the Department. Termination of authorizations to discharge for the conditions set forth in subsection A above shall be effective upon notification from the Department that the provisions of subsection A have been met or 60 days after submittal of the notice of terminations, whichever occurs first.

5. **Permanent Control Measures Installed:** (When applicable, a list of the on-site and off-site permanent control measures (both structural and nonstructural) that were installed to comply with the stormwater management technical criteria. Attach a separate list if additional space is needed.)

   Permanent Control Measure #1

   Type of Permanent Control Measure:_____

   Date Functional:_____

   Address (if available):_____

   City:_____ State:_____ Zip:_____

   County (if not located within a City):_____

   Latitude (decimal degrees):_____ Longitude (decimal degrees):_____

   Receiving Water:_____

   Total Acres Treated:_____ Impervious Acres Treated:_____

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Permanent Control Measure #2

Type of Permanent Control Measure:_____

Date Functional:_____

Address (if available):_____

City:_____ State:_____ Zip:_____

County (if not located within a City):_____

Latitude (decimal degrees):_____ Longitude (decimal degrees):_____

Receiving Water:_____

Total Acres Treated:_____ Impervious Acres Treated:_____

Permanent Control Measure #3

Type of Permanent Control Measure:_____

Date Functional:_____

Address (if available):_____

City:_____ State:_____ Zip:_____

County (if not located within a City):_____

Latitude (decimal degrees):_____ Longitude (decimal degrees):_____

Receiving Water:_____

Total Acres Treated:_____ Impervious Acres Treated:_____

6. **Participation in a Regional Stormwater Management Plan:** (When applicable, information related to the participation in a regional stormwater management plan. Attach a separate list if additional space is needed.)

Regional Stormwater Management Facility

Type of Regional Stormwater Management Facility:_____

Address (if available):_____

City:_____ State:_____ Zip:_____

County (if not located within a City):_____

Latitude (decimal degrees):_____ Longitude (decimal degrees):_____

Total Site Acres Treated:_____ Impervious Site Acres Treated:_____

7. **Perpetual Nutrient Credits:** (When applicable, information related to perpetual nutrient credits that were acquired in accordance with § 62.1-44.15:35 of the Code of Virginia. Attach a separate list if additional space is needed.)

Nonpoint Nutrient Credit Generating Entity

Name:_____

Perpetual Nutrient Credits Acquired (lbs/acre/year):_____

8. **Certification:** "I certify under penalty of law that I have read and understand this Notice of Termination and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

Printed Name:_____ Title:_____

Signature:_____ Date:_____

(Please sign in INK. This Certification must be signed by the appropriate person associated with the operator identified in Item #1.)

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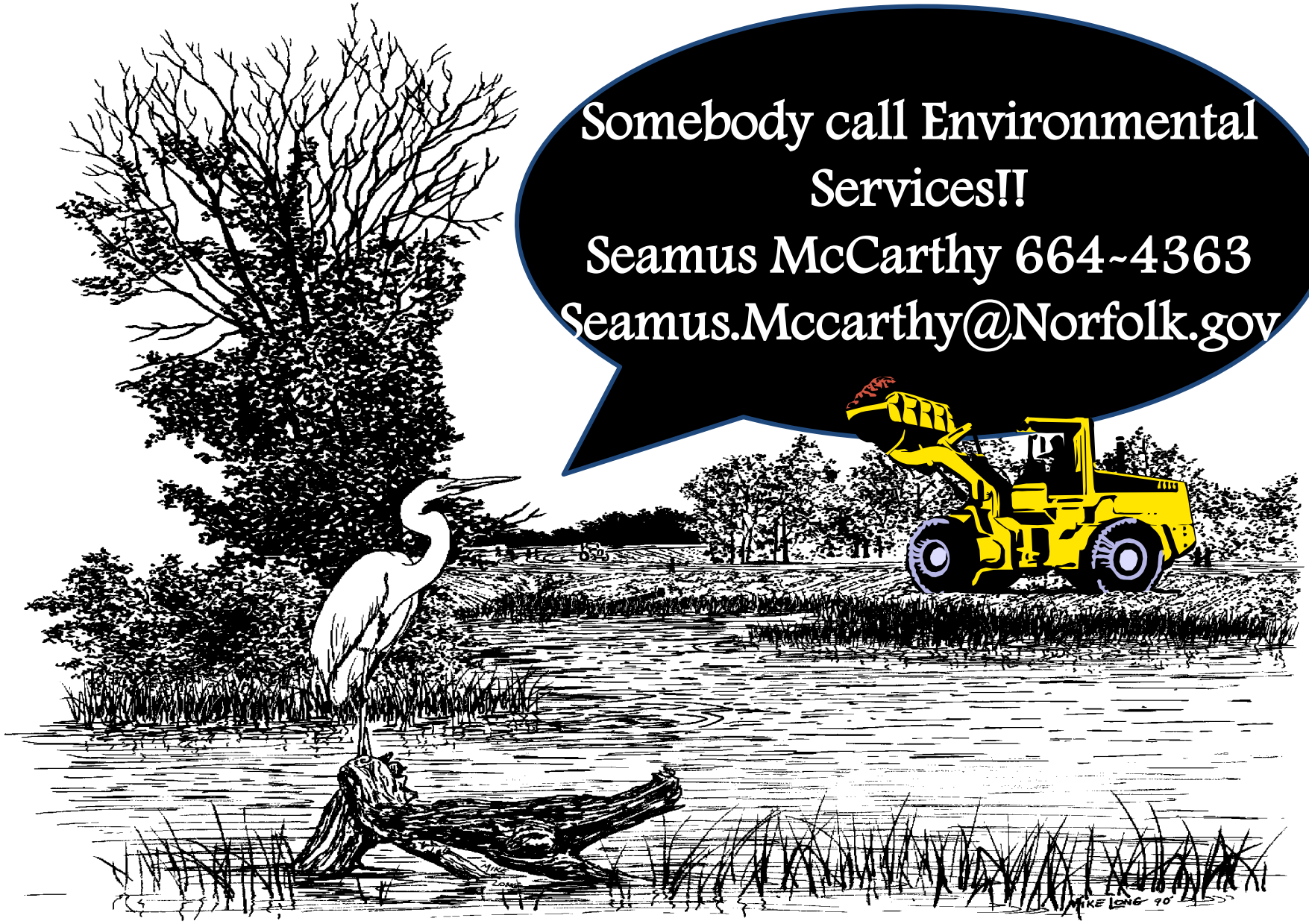
Contact Information



NORFOLK

STORMWATER POLLUTION PREVENTION – SWPPP'S AND GOOD HOUSEKEEPING

Tara Fisher

Environmental Specialist I

City of Chesapeake Public Works

tfisher@cityofchesapeake.net

(757) 382-6206

Stormwater Pollution Prevention Plans (SWPPP's):

WHO NEEDS ONE?

- **Any construction activity that involves >1 acre of new land disturbance requires the Operator to obtain a Construction General Permit and prepare a SWPPP in accordance with that permit**

WHAT IS THE PURPOSE OF THE SWPPP?

- **Identify potential sources of pollution on a construction site and controls that will be utilized to address any pollution releases**
- **Identify measures employed to control and treat stormwater runoff from construction site**
- **In general, this is a document that sets forth measures to control and treat stormwater runoff and prevent pollutants from leaving the site during the course of construction**

Stormwater Pollution Prevention Plan (SWPPP):

- **SWPPP binder must be retained ON SITE throughout the duration of the project and be available for inspection by City staff and/or DEQ staff on any given day**
- **SWPPP inspection reports must be completed at least once every 4 business days OR at least once every 5 business days AND within 48 hours of a measurable storm event (0.25” of rain as measured by the required on-site rain gauge)**
- **SWPPP Construction Site Notice and Project-Specific Authorization letter laminated and posted conspicuously on site**

PROPER NOTICES POSTED ON SITE

SWPPP BINDER IN MAILBOX ON SITE

COMMON POLLUTION PREVENTION (P2)/HOUSEKEEPING ISSUES ON RESIDENTIAL CONSTRUCTION SITES:

- **Chemicals, vehicle fuels/lubricants and/or explosives not properly labeled, stored and/or protected from the elements and construction equipment**
- **Building materials and trash on site; no covered dumpsters**
- **Insufficient or non-existent concrete washout facility**
- **AST's located on site that are not double-walled and/or do not have secondary containment**
- **Portable sanitary facilities leaking or located next to storm drains**
- **Spill Prevention, Control & Countermeasure (SPCC) Plans and/or spill kits**

EXPLOSIVES NOT LABELED AND IMPROPERLY STORED

BAD HOUSEKEEPING

CONCRETE WASHOUT AREA - GOOD

CONCRETE WASHOUT AREA - BAD

PORTABLE SANITARY FACILITY - GOOD

PORTABLE SANITARY FACILITY - BAD

INLET PROTECTION – BAD

INLET PROTECTION - GOOD

GOOD HOUSEKEEPING EXAMPLE

BAD HOUSEKEEPING EXAMPLE

EXAMPLES OF ILLICIT DISCHARGE ASSOCIATED WITH POOR CONCRETE WASHOUT PROCEDURES/FACILITY

RAIN GAUGE (SWPPP REQUIREMENT)

DOUBLE-WALLED AST

DOUBLE-WALLED AST WITH SECONDARY CONTAINMENT

FINAL COMMENTS:

- Good housekeeping practices enhance safety and improve the overall work environment, while also protecting the natural environment
- Effective “good housekeeping” program helps to improve stormwater quality
- Big brother is watching!! Be compliant and follow the rules!

QUESTIONS??

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Compliance Monitoring Strategy (CMS)
Hampton Roads Plan District Commission
February 10, 2016

State and Local Program Implementation

- Virginia delegates powers to localities through the Virginia Constitution.
- Localities can only exercise powers and authority granted to them by state law.
- Localities must carry out duties and responsibilities mandated to them.
- This legal approach is known as “Dillon’s Rule”.

State and Local Program Implementation

- Local Virginia Erosion and Sediment Control Programs (VESCP) and Virginia Stormwater Management Programs (VSMP) are approved by the Virginia State Water Board.
- Each local program must meet minimum requirements set forth by the law and Regulations.

State and Local Program Implementation

- The Department of Environmental Quality will evaluate each local VESCP & VSMP for effectiveness and consistency with the law and regulations.

Four components of a local program

1) Administration
2) Plan Review
3) Inspection
4) Enforcement

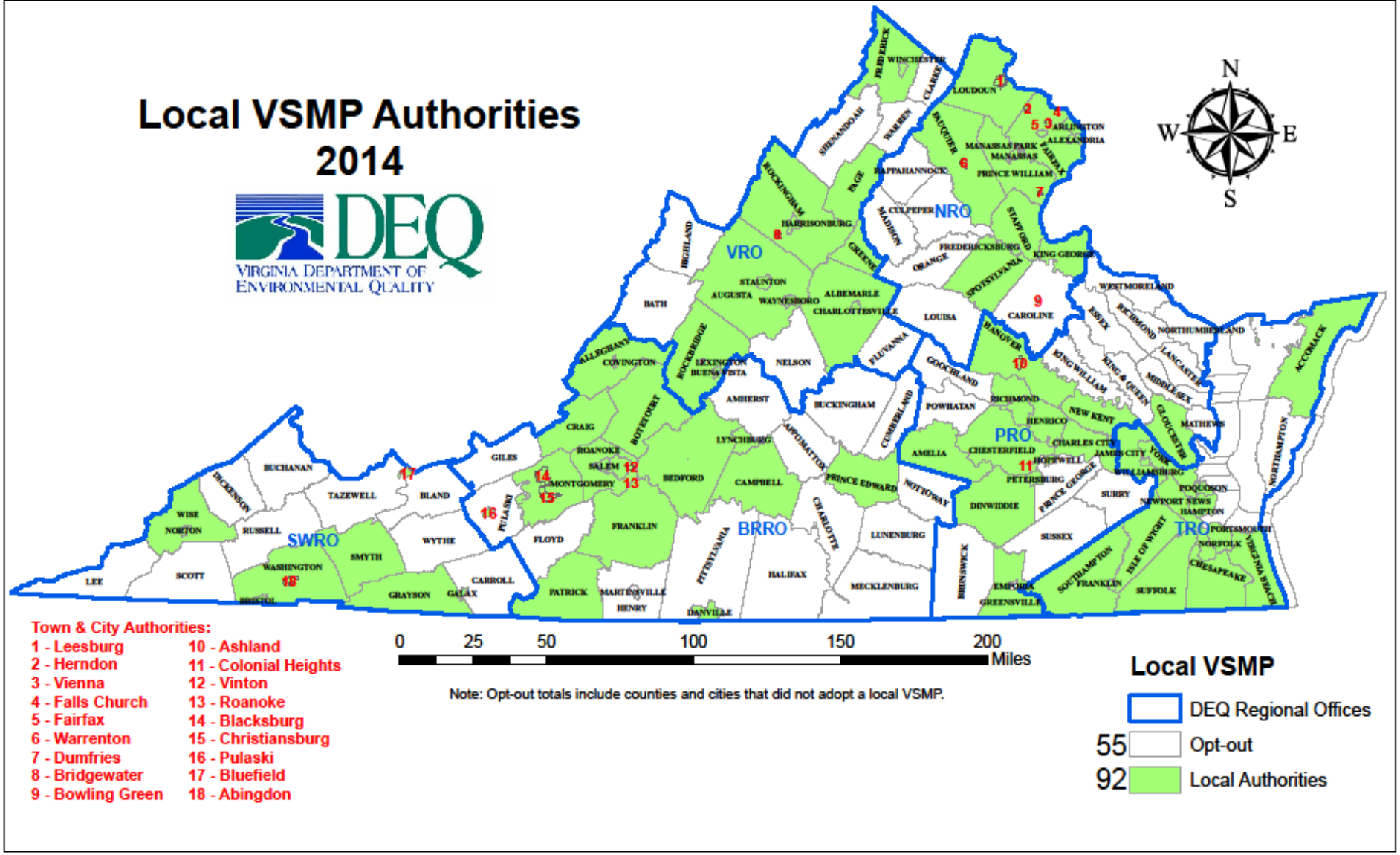
Erosion & Sediment Control Program

- All localities are required to have a state-approved program (164).
- All localities enforce the E&SC Program at the local level. The State *may* enforce the E&S Program in certain instances.
- No two localities/programs are exactly the same.
- E&SC inspections have a set frequency (e.g. every 14 days and after a rain event).

Stormwater Management Program

- Localities with a Phase I or Phase II MS4 permit were required to have a state-approved program.
- Other localities had the option to “opt-in” or “opt-out”.
- 92 Opt-in Programs and 55 Opt-out.
- No two localities/programs are exactly the same.
- Localities AND State will inspect at a frequency that shows a site is in compliance with the Construction General Permit.

Local VSMP Authorities 2014



Note: Opt-out totals include counties and cities that did not adopt a local VSMP.

Inspections

VSMP authority inspections

- Periodically inspect for:
  - ☑ Compliance with ESC plan
  - ☑ Compliance with SWM plan
  - ☑ Development, updating, implementation of P2 plan
  - ☑ Development and implementation of additional control measures to address a TMDL (when required)

DEQ Compliance Monitoring Strategy (CMS)

- Objectives:
  - Increase in Site Visits and Inspections
  - Empowerment of Local VSMP Authorities
  - Education Through Compliance Assistance
  - Compliance Through Formal Enforcement

VIRGINIA'S RISK BASED INSPECTION STRATEGY (RBIS)

- Provide a framework for compliance and to assure optimum coverage and thoroughness during inspection activities of the regulated community,
- Assure that obligations under the State Water Control Law and federal grant agreements are met,
- Provide guidance and assistance for operating plan commitments, budgeting, and resource requirements, and
- Ensure inspections are conducted in a consistent and timely manner.

Risk Based Inspection Strategy

- RBIS Qualifiers
  - Compliance History and Activity Size
  - Environmental Sensitivity
  - Multi-Media Applicability
  - Agency Exposure/Sectors
  - Oversight

Local vs. State SWM Inspections

- Both the locality and the State will inspect to determine if a site is in compliance with the 2014 Construction General Permit (CGP).
- In 2014 the State inspected most sites jointly in Hampton Roads.
- In 2015 the State inspected sites without inviting the local staff to attend.
- In 2015 State referred noncompliance to local staff for follow-up.
- In 2016 - ???? Still in Draft

2016 Construction Stormwater Inspections Reports

Level I

(Focused)

- Coverage and posting requirements
- SWPPP availability and contents
- ESC and SWM Control Measures
- Pollution control measures
- Site evaluation agency recommendation
- 20 evaluation criteria

Level II

(Comprehensive)

- Coverage and posting
- SWPPP availability and contents
- SWPPP amendments, modifications and updates
- Inspections and corrective actions
- ESC and SWM plan implementation
- Pollution prevention plan implementation
- Site evaluation and agency recommendation
- 59 evaluation criteria

A word of advice:
Read the permit!

DEQ
Virginia Department of Environmental Quality

Role in Local VSMP Authorities

- Compliance Assistance
- Inspections
  - Referrals
- Complaints
  - Referrals
- Direct Action


QUESTIONS?