

# NORTH CAROLINA STANDARD SEDIMENT AND EROSION CONTROL PLAN FOR SMALL RESIDENTIAL LOTS

PROJECT NAME: \_\_\_\_\_

PROJECT NUMBER: \_\_\_\_\_

DATE OF APPROVAL: \_\_\_\_\_

## NOTES AND APPLICABILITY TO LOT DEVELOPMENT

1. This plan is for lots with an Individual disturbed area of 0.50 acre or less, and a total site disturbance of not more than 5.0 acres for individual single family or multi-family dwellings.
2. A vicinity map showing the boundaries of the project and access to the site is to either be shown on this standard plan or to accompany this standard plan.
3. A subdivision plat or plan showing numbered lots and the Limits of Disturbance (LoD) is to accompany this standard plan. The LoD includes lots, access to measures, staging areas, and utilities that may extend off-site.
4. Lots are "Finished", or at final grade. Mass grading with full stabilization has already occurred or mass grading is not to occur.
5. The property does not contain nor have jurisdictional waters within 100 feet of the lots.
6. The site is not located in a High Quality Water Zone.
7. No discharges are allowed into impaired waters.
8. Onsite vehicle or equipment washing is not allowed.
9. This site involves no off-site material storage, waste disposal, or borrow areas.
10. All disturbed areas not built upon shall be provided with permanent ground cover.
11. As of April 1, 2019, applicant must apply online at [deq.nc.gov/NCG01](http://deq.nc.gov/NCG01) for the NCG01 permit, if applicable.
12. The NCDEQ reserves the right to require a site-specific erosion control plan to be prepared and submitted for the 30-day review cycle.

## GENERAL CONSTRUCTION SEQUENCE FOR SMALL RESIDENTIAL LOT EROSION AND SEDIMENT CONTROL

1. Upon receipt of a Certificate of Plan Approval, notify the appropriate Land Quality office at least 5 business days prior to construction
2. Install construction entrances(s).
3. Install check dams and /or erosion control blankets in roadside ditch, where exists.
4. Install yard inlet protection and perimeter controls (silt fence, silt fence outlets, etc.) according to the plan. For contiguous lots with different builders or land owners, it is suggested that each builder/owner install their own silt fence along the shared parcel boundary. If silt fence is not required along the front of the lot due to the drainage layout, the builder must provide a measure to limit access through the construction entrance. Ensure inlets downgrade of disturbances are protected from siltation.
5. Proceed with individual lot construction.
6. Maintain erosion and sedimentation controls during construction.
7. Provide for ground stabilization after completion of any phase of grading in accordance with the NPDES timeframes table. Persons responsible for land disturbing activities are responsible for phased inspections to ensure the approved erosion and sedimentation control plan is being followed. All erosion control measures shall be inspected at least once per week and after each storm event of 1.0 inches or more in a 24-hour period. The self-inspection report, as well as instructions for the self-inspection program, can be found at [deq.nc.gov/NCG01](http://deq.nc.gov/NCG01).
8. Remove any temporary driveway pipe and temporary construction entrance immediately prior to constructing permanent driveway.
9. Once construction is complete and all areas are stabilized, remove any remaining erosion or sedimentation controls and stabilize any areas disturbed by their removal.
10. Once the last approved lot is complete, notify the appropriate Land Quality office for a close-out inspection.

NOTE - FOR ANY PERFORMANCE RESERVATIONS REGARDING THE SEDIMENT CONTROL  
PLAN (PERFORMANCE BASED) OR CRITICAL AREAS, A FIELD REVISION OR A CUSTOM PLAN  
MAY BE REQUIRED

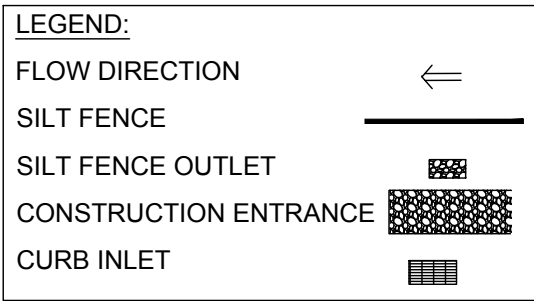
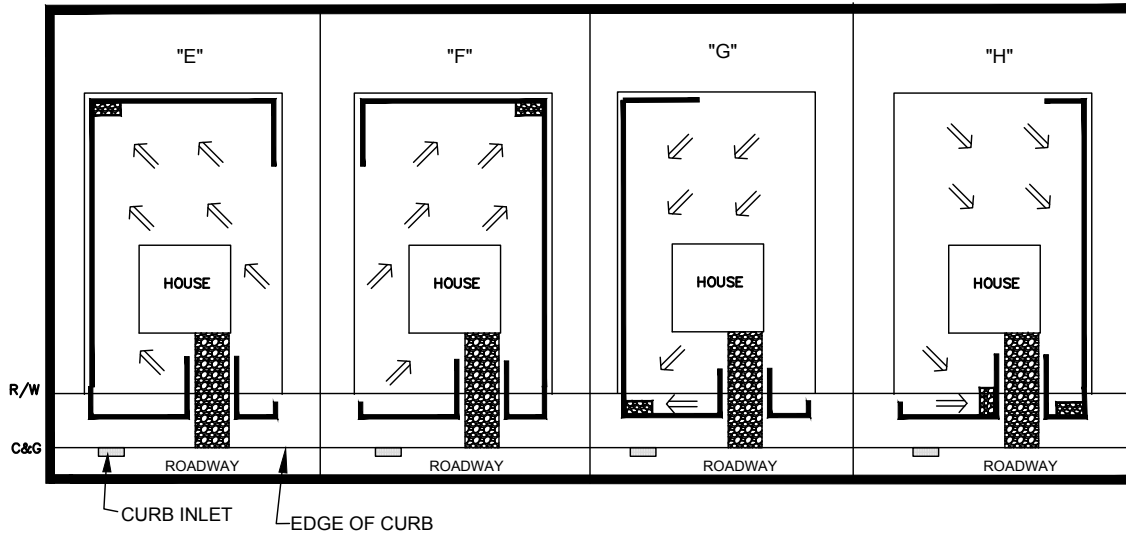
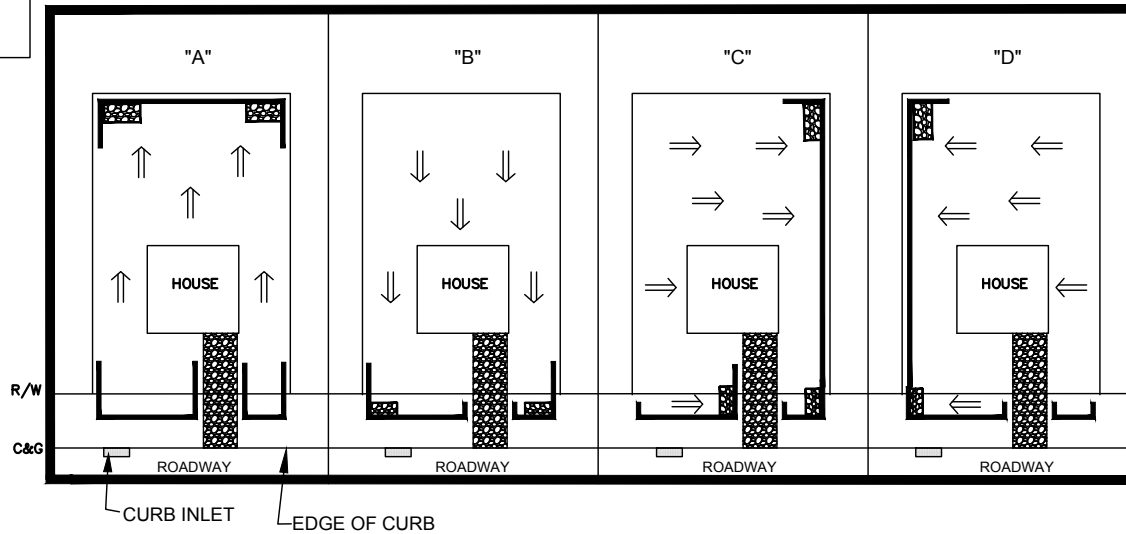
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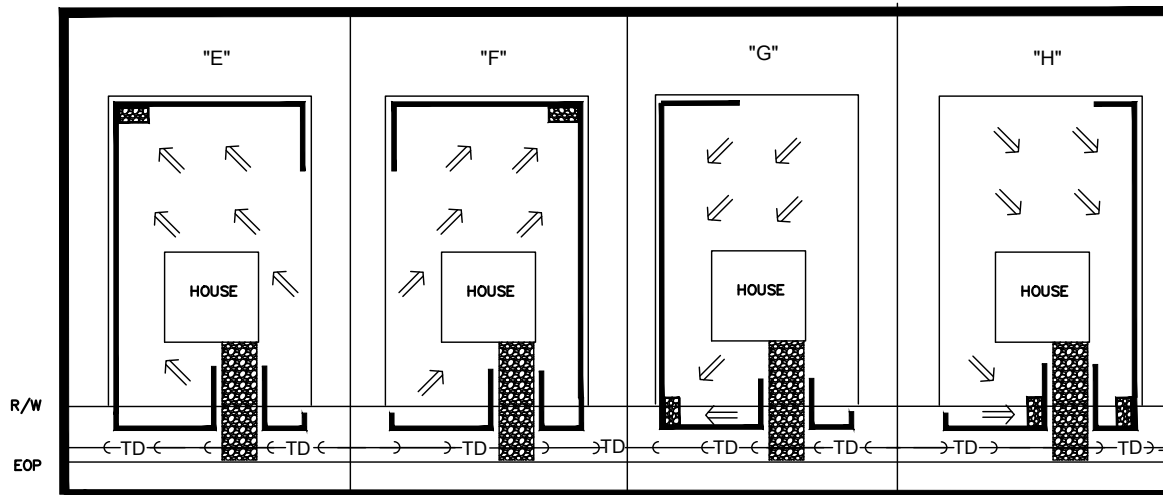
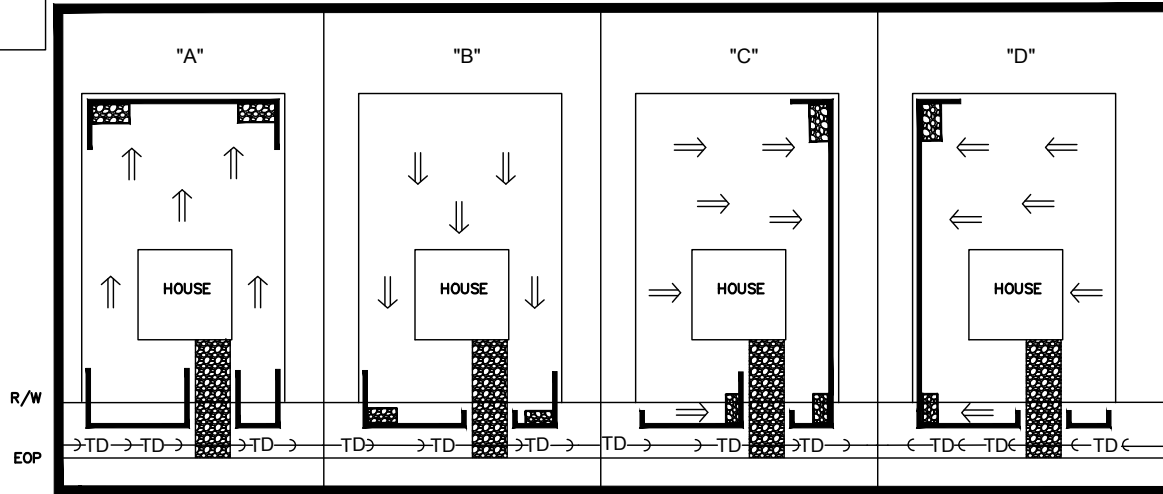






**Notes:**

1. If needed, Tree Protection fencing should be installed along the buffer zone, wetland boundary and/or around protected trees, providing a radius of at least 1.25 feet for each inch of trunk diameter.
2. Install Silt Fence on the low elevation sides of each lot. Install Silt Fence outlets shown on schematic/diagram and field adjusted, if necessary, for placement at low points. If lots are contiguous and have different land owners or builders, each lot should have individual Silt Fences.
3. Install required Silt Fence within 10 feet of property line to ensure there is no conflict with septic system. It is the responsibility of the builder to ensure the installation of sediment control measures does not impact the septic system and repair area(s).
4. At least one Construction Entrance/Exit is to be installed per lot.
5. Waste bins and other areas dedicated for managing building material waste shall be at least 50 feet away from storm drain inlets or drainage ditches unless it can be shown that no other alternative exists. If this separation cannot be achieved, these areas must be contained behind Silt Fence.
6. Inlets downstream of disturbances should be protected; streets should be swept when sediment from the construction activity is present.
7. Details for Silt Fence, Silt Fence Outlets, Construction Entrances and other measures are provided on additional sheets. Erosion and sediment control details are not drawn to scale.



**LEGEND:**

- FLOW DIRECTION
- SILT FENCE
- DIVERSION DITCH
- WADDLE/ SILT SOCKS
- SILT FENCE OUTLET
- CONSTRUCTION ENTRANCE

**Notes:**

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**PART II, SECTION G, ITEM (4)  
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR  
CLOSE OUT**

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

- (a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
- (b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
- (c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
- (d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
- (e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
- (f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

**PART III**

**SELF-INSPECTION, RECORDKEEPING AND REPORTING  
SECTION A: SELF-INSPECTION**

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record. See Self Inspection Timeframes table to the right for guidelines on frequency of inspections and required aspects of records.

**Self Inspection Timeframes**

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend on holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (this will determine if a site inspection is needed). days on which no rainfall occurred shall be recorded as "Zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event $\geq$ 1.0 inch in 24 hours	1. Identification of the measures inspected 2. Date and Time of the inspection 3. Name of the person performing the inspection 4. Indication of whether the measures were operating properly 5. Description of maintenance needs for the measure 6. Description, Evidence, and date of corrective actions taken
(3) Stormwater discharge outfalls(SDOs)	At least once per 7 calendar days and within 24 hours of a rain event $\geq$ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected 2. Date and Time of the inspection 3. Name of the person performing the inspection 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration 5. Indication of visible sediment leaving the site 6. Description, Evidence, and date corrective actions taken
(4) Perimeter of Site	At least once per 7 calendar days and within 24 hours of a rain event $\geq$ 1.0 inch in 24 hours	If visible Sedimentation is found outside site limits, then record of the following shall be made: 1) Actions taken to clean up or stabilize sediment that has left the site limits 2) Description, Evidence and date of corrective actions taken 3) An explanation as to the actions taken to control future releases
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event $\geq$ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or has visible increased turbidity from the construction activity, then a record of the following shall be made: 1) Description, Evidence and date of corrective actions taken 2) Records of required reports to the appropriate Division Regional Office per Part III, Section C, Item(2)(a) of this permit
(6) Ground Stabilization Measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover) 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or assurance that they will be provided as soon as possible

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.



**PART III  
SELF-INSPECTION, RECORDKEEPING AND REPORTING  
SECTION B: RECORDKEEPING**

Item to Document	Document Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) the maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action

**1. E&SC Plan Documentation**

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

**2. Additional Documentation to be Kept on Site**

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

- (a) This General Permit as well as the Certificate of Coverage, after it is received.
- (b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

**3. Documentation to be Retained for Three Years**

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

**PART III  
SELF-INSPECTION, RECORDKEEPING AND REPORTING  
SECTION C: REPORTING**

**1. Occurrences that Must be Reported**

Permittees shall report the following occurrences:

- (a) Visible sediment deposition in a stream or wetland.
- (b) Oil spills if:
  - They are 25 gallons or more,
  - They are less than 25 gallons but cannot be cleaned up within 24 hours,
  - They cause sheen on surface waters (regardless of volume), or
  - They are within 100 feet of surface waters (regardless of volume).
- (c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
- (d) Anticipated bypasses and unanticipated bypasses.
- (e) Noncompliance with the conditions of this permit that may endanger health or the environment.

**2. Reporting Timeframes and Other Requirements**

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframe (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	<ul style="list-style-type: none"> <li>• Within 24 hours, an oral or electronic notification.</li> <li>• Within 7 Calendar Days, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis.</li> <li>• If the stream is named on the NC 303(d) list as impaired for sediment-related caused, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.</li> </ul>
(b) Oil spills and release of hazardous substances per item 1(b)-(c) above	<ul style="list-style-type: none"> <li>• Within 24 Hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release</li> </ul>
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> <li>• A report at least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass.</li> </ul>
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> <li>• Within 24 Hours, an oral or electronic notification</li> <li>• Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass.</li> </ul>
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(l)(7)]	<ul style="list-style-type: none"> <li>• Within 24 Hours, an oral or electronic notification</li> <li>• Within 7 calendar days, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6).</li> <li>• Division staff may waive the requirement for a written report on a case-by-case basis.</li> </ul>





**SECTION E: GROUND STABILIZATION**

Required Ground Stabilization Timeframes		
Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10 feet or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

**Note:** After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

**GROUND STABILIZATION SPECIFICATION**

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
<ul style="list-style-type: none"> <li>Temporary grass seed covered with straw or other mulches and tackifiers.</li> <li>Hydroseeding</li> <li>Rolled erosion control products with or without temporary grass seed</li> <li>Appropriately applied straw or other mulch</li> <li>Plastic sheeting</li> </ul>	<ul style="list-style-type: none"> <li>Permanent grass seed covered with straw or other mulches and tackifiers</li> <li>Geotextile fabrics such as permanent soil reinforcement matting</li> <li>Hydroseeding</li> <li>Shrubs or other permanent plantings covered with mulch</li> <li>Uniform and evenly distributed ground cover sufficient to restrain erosion</li> <li>Structural methods such as concrete, asphalt or retaining walls</li> <li>Rolled erosion control products with grass seed</li> </ul>

**GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT**

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

**EARTHEN STOCKPILE MANAGEMENT**

- Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
- Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
- Provide stable stone access point when feasible.
- Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

**HERBICIDES, PESTICIDES AND RODENTICIDES**

- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
- Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
- Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
- Do not stockpile these materials onsite.

**POLYACRYLAMIDES (PAMS) AND FLOCCULANTS**

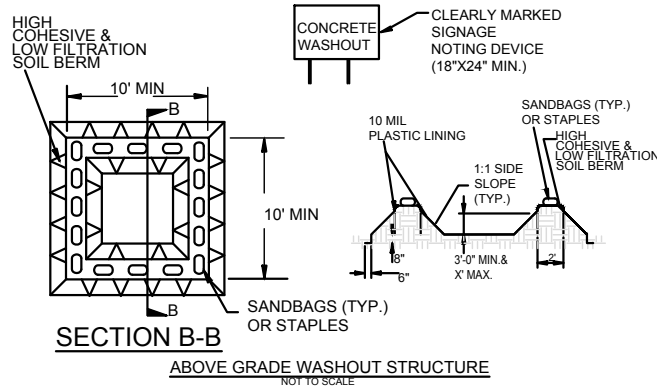
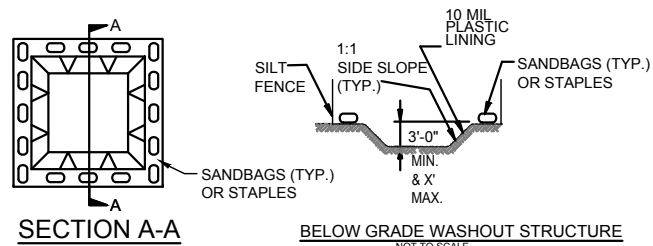
- Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
- Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
- Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
- Provide ponding area for containment of treated Stormwater before discharging offsite.
- Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

**EQUIPMENT AND VEHICLE MAINTENANCE**

- Maintain vehicles and equipment to prevent discharge of fluids.
- Provide drip pans under any stored equipment.
- Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
- Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
- Remove leaking vehicles and construction equipment from service until the problem has been corrected.
- Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.



### ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



#### NOTES:

1. ACTUAL LOCATION DETERMINED IN FIELD
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.
3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

#### NOTES:

1. ACTUAL LOCATION DETERMINED IN FIELD
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

### CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

### PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

### PAINT AND OTHER LIQUID WASTE

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

### HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

### LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.





TEMPORARY SEEDING RECOMMENDATIONS  
FOR LATE WINTER AND EARLY SPRING

**Seeding Mixture**

Species	Rate (lb/acre)
Rye (grain)	120
Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains)	50

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

**Seeding Dates**

Mountains—Above 2500 feet: Feb. 15 - May 15  
Below 2500 feet: Feb. 1- May 1

Piedmont—Jan. 1 - May 1

Coastal Plain—Dec. 1 - Apr. 15

**Mulch**

Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

**Maintenance**

Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING  
RECOMMENDATIONS FOR SUMMER

**Seeding Mixture**

Species	Rate (lb/acre)
German millet	40

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb/acre.

**Seeding Dates**

Mountains—May 15 - Aug. 15

Piedmont—May 1 - Aug. 15

Coastal Plain—Apr. 15 - Aug. 15

**Mulch**

Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

**Maintenance**

Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING  
RECOMMENDATIONS FOR FALL

**Seeding Mixture**

Species	Rate (lb/acre)
Rye (grain)	120

**Seeding Dates**

Mountains—Aug. 15 - Dec. 15

Coastal Plain and Piedmont—Aug. 15 - Dec. 31

**Mulch**

Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

**Maintenance**

Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extend temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

**SEED BED PREPARATION:**

**LIMING-** Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1 to 1½ tons/acre on coarse-textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

**FERTILIZER-** Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700-1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

**SURFACE ROUGHENING-** If recent tillage operations have resulted in a loose surface additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by raking, harrowing, or other suitable methods for fine grading. The finished grade shall be a smooth even soil surface with a loosen uniformly fine texture. All ridges and depressions shall be removed and filled to provide the approved surface drainage. Planting is to be done immediately after finished grades are obtained and seedbed preparation is completed.



NON-INVASIVE PERMANENT SEEDING  
RECOMMENDATIONS FOR SUMMER**SEEDING MIXTURE**

Species	Rate
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre*

\*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

**Seeding Dates**

Mountains - July 15- Aug 15  
Piedmont - Aug 15 - Oct 15

**Maintenance:**

Indian Woodoats and Virginia Wild Rye are both sun and shade tolerant.

**SEEDING MIXTURE**

Species	Rate
Hard Fescue	15 lbs/acre
Switchgrass	2.5-3.5 lbs/acre*
Indian Grass	5-7 lbs/acre*
Big Bluestem	5-7 lbs/acre*
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre*

\*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

**Seeding Dates**

Mountains - Hard Fescue- Aug 1 - June 1  
Mountains- Switchgrass, Indian Grass, Big Bluestem-  
Dec 1 - April 15  
Piedmont and Coastal- Switchgrass, Indian Grass, Big  
Bluestem- Dec 1 - April 1  
Coastal- Indian Woodoats and Virginia Wild Rye-  
Sept 1 - Nov 1

**Maintenance:**

Hard Fescue is not recommended for slopes > 5%.  
Prefers shade.

NON-INVASIVE PERMANENT SEEDING  
RECOMMENDATIONS FOR LATE  
WINTER AND EARLY SPRING**SEEDING MIXTURE**

Species	Rate
Centipede	5 lbs/acre
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre*

\*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

**Seeding Dates**

Coastal or Eastern Piedmont for Centipede- Sept. 1 -  
May 1  
Coastal and Piedmont for Indian Woodoats and Virginia  
Wild Rye- Feb 15 - April 1  
Mountains for Indian Woodoats and Virginia Wild Rye-  
March 1 - May 15

**Maintenance:**

Significant maintenance may be required to obtain  
desired cover once centipede is planted. Acceptable for  
sodding.

**SEED BED PREPARATION:**

**LIMING-** Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1 to 1 ½ tons/acre on coarse-textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

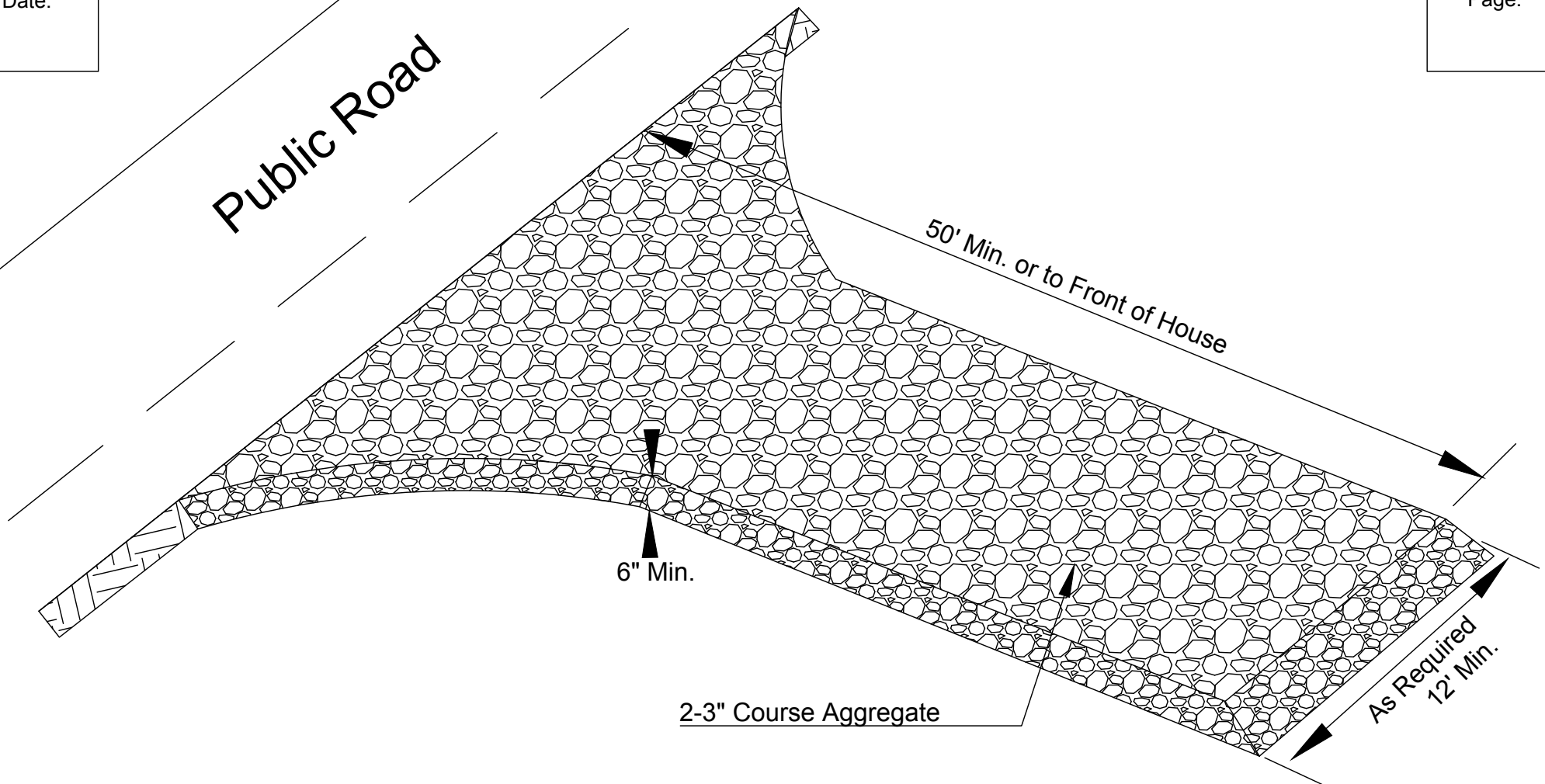
**FERTILIZER-** Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700-1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

**SURFACE ROUGHENING-** If recent tillage operations have resulted in a loose surface additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by raking, harrowing, or other suitable methods for fine grading. The finished grade shall be a smooth even soil surface with a loosen uniformly fine texture. All ridges and depressions shall be removed and filled to provide the approved surface drainage. Planting is to be done immediately after finished grades are obtained and seedbed preparation is completed.

**NOTES:**

1. Permanent seeding, sodding or other means of stabilization are required when all construction work is completed according to the NPDES timeframe's table.
2. A North Carolina Department of Agriculture soils test (or equal) is highly recommended to be obtained for all areas to be seeded, sprigged, sodded or planted.
3. Use a seeding mix that will produce fast growing nurse crops and includes non-invasive species that will eventually provide a permanent groundcover. Soil blankets may be used in lieu of nurse crops. Mat, tack or crimp mulch, as needed to stabilize seeded areas until root establishment. Mulch must be applied uniformly over the soil with a cover density of at least 80%.
4. Ground cover shall be maintained until permanent vegetation is established and stable against accelerated erosion.



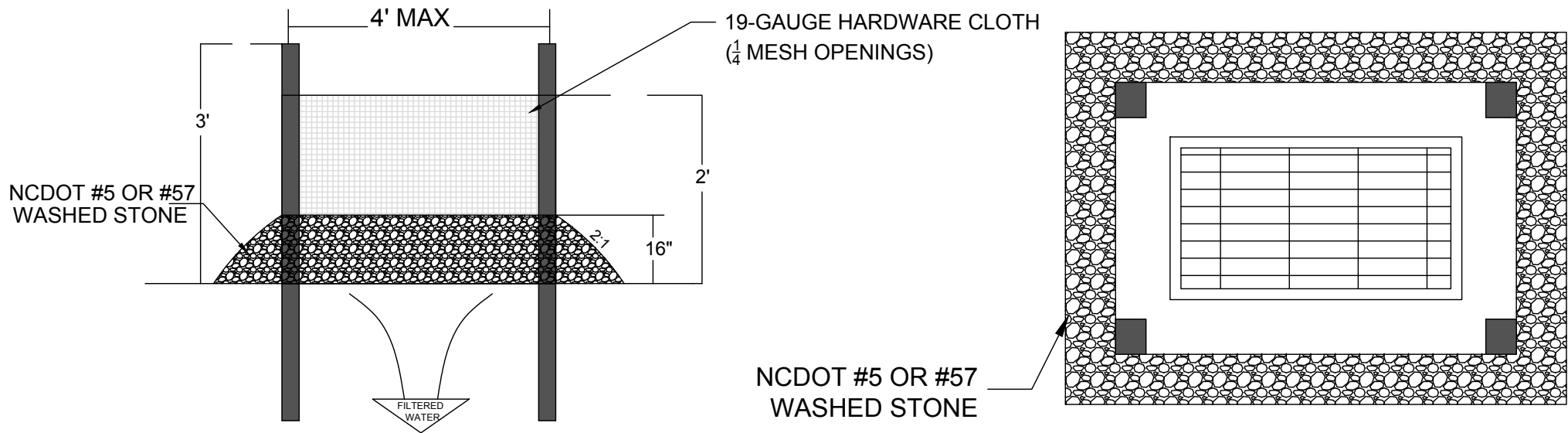
**Construction:**

1. Clear the entrance and exit area of all vegetation, roots, and other objectionable material and properly grade it.
2. Place the gravel to the specific grade and dimensions shown on the plans, and smooth it.
3. Provide drainage to carry water to a sediment trap or other suitable outlet.
4. Use geotextile fabrics in order to improve stability of the foundation in locations subject to seepage or high water table.

**Maintenance:**

1. Per NCG-01 inspect at least once a week and after each 1 inch or greater rainfall; make any required repairs immediately.
2. Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site. This may require periodic tpadding with 2 inch stone.
3. Immediately remove all objectionable materials spilled, washed or tracked onto public roadways.





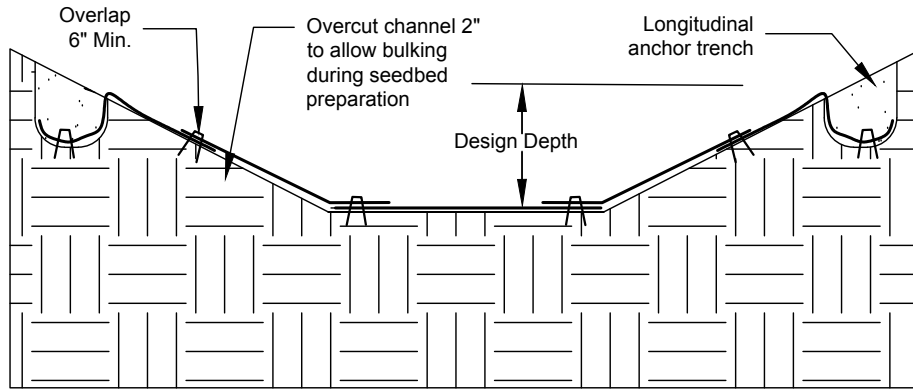
#### Construction:

1. Uniformly grade a shallow depression approaching the inlet.
2. Drive 5-foot steel posts 2 feet into the ground surrounding the inlet. Space posts evenly around the perimeter of the inlet, a maximum of 4 feet apart.
3. Surround the posts with wire mesh hardware cloth. Secure the wire mesh to the steel posts at the top, middle, and bottom. Placing a 2-foot flap of the wire mesh under the gravel for anchoring is recommended.
4. Place clean gravel (NC DOT #5 or #57 stone) on a 2:1 slope with a height of 16 inches around the wire, and smooth to an even grade.
5. Once the contributing drainage area has been stabilized, remove accumulated sediment, and establish final grading elevations.
6. Compact the area properly and stabilize with groundcover.

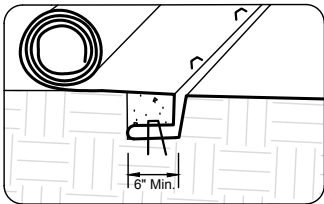
#### Maintenance:

1. Inspect sediment fences at least once a week and after each 1 inch or greater rainfall. Make any required repairs immediately.
2. Clear the mesh wire of any debris or other objects to provide adequate flow for subsequent rains. Take care not to damage or undercut the mesh during sediment removal.
3. Replace stone as needed.

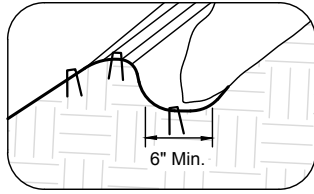




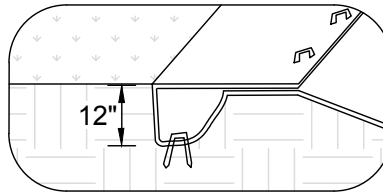
Typical installation with erosion control blankets or turf reinforcement mats



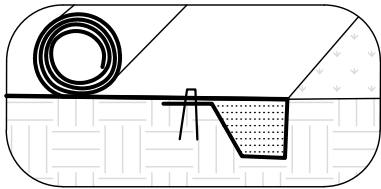
Intermittent check slot



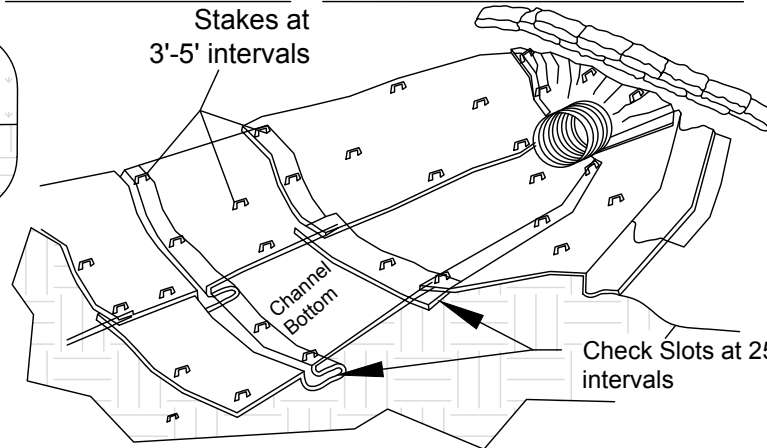
Longitudinal anchor trench



Terminal slope and channel anchor trench

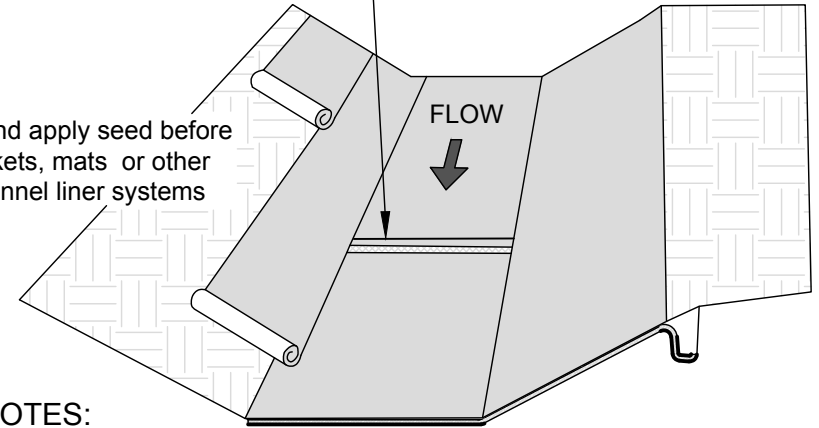


Initial channel anchor trench



Single-lap spliced ends or begin new roll in an intermittent check slot

Prepare soil and apply seed before installing blankets, mats or other temporary channel liner systems



#### NOTES:

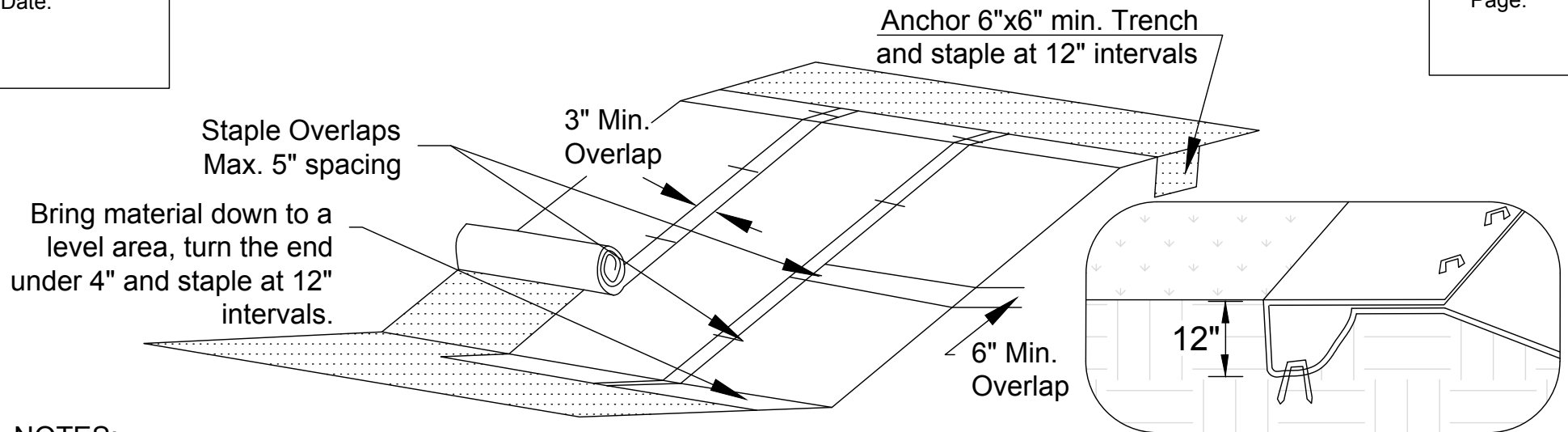
1. Terminal anchor trenches are required at RECP ends and intermittent check slots must be constructed across channels at 25 foot intervals. Terminal anchor trenches should be a minimum of 12 inches in depth and 6 inches in width. Intermittent check slots should be 6 inches deep and 6 inches wide.
2. Design velocities exceeding 2 feet/second require temporary blankets, mats or similar liners to protect seed and soil until vegetation becomes established
3. Grass-lined channels with design velocities exceeding 6 feet/second should include turf reinforcement mats.
4. Check slots to be constructed per manufacturers specifications.
5. Staking or stapling layout per manufacturers specification.
6. 11 gauge, at least 6 inch by 1 inch staples or 12 inch minimum length wooden stakes are recommended for anchoring.
7. Do not stretch blankets/matting tight-allow the rolls to conform to any irregularities.

#### MAINTENANCE:

1. Inspect Rolled Erosion Control Products at least weekly and after each significant (1 inch or greater) rainfall event; repair immediately.
2. Good contact with the ground must be maintained, and erosion must not occur beneath the RECP.
3. Any areas of the RECP that are damaged or not in close contact with the ground shall be repaired and stapled.
4. If erosion occurs due to poorly controlled drainage, the problem shall be fixed and the eroded area protected.
5. Monitor and repair the RECP as necessary until ground cover is established.





**NOTES:**

1. Lime, fertilizer and seed before installation. Planting of shrubs, trees, etc. should occur after installation
2. Slope surface shall be smooth before placement for proper soil contact.
3. For installation on a slope, place RECP 2-3 feet over the top of the slope and into an excavated end trench measuring approximately 12 inches deep by 6 inches wide. Pin the RECP at 1 foot intervals along the bottom of the trench, backfill and compact. Unroll the RECP down the slope maintaining direct contact between the soil and RECP.
4. Pin RECP to the ground using staples or pins in a 3 foot center-to-center pattern.
5. Design velocities exceeding 2 feet/second require temporary blankets, mats or similar liners to protect seed and soil until vegetation becomes established.
6. If there is a berm at the top of slope, anchor upslope of the berm.
7. Staking or stapling layout per manufacturers specification.
8. 11 gauge, at least 6 inch by 1 inch staples or 12 inch minimum length wooden stakes are recommended for anchoring.
9. Do not stretch blankets/matting tight, allow the rolls to conform to any irregularities.
10. For slopes less than 3H:1V, rolls may be placed in horizontal strips.

**Terminal slope and channel anchor trench****MAINTENANCE:**

1. Inspect Rolled Erosion Control Products at least weekly and after each rain 1.0 inch or greater; repair immediately.
2. Good contact with the ground must be maintained, and erosion must not occur beneath the RECP.
3. Any areas of the RECP that are damaged or not in close contact with the ground shall be repaired and stapled.
4. If erosion occurs due to poorly controlled drainage, the problem shall be fixed and eroded area protected.
5. Monitor and repair the RECP as necessary until ground cover is established.



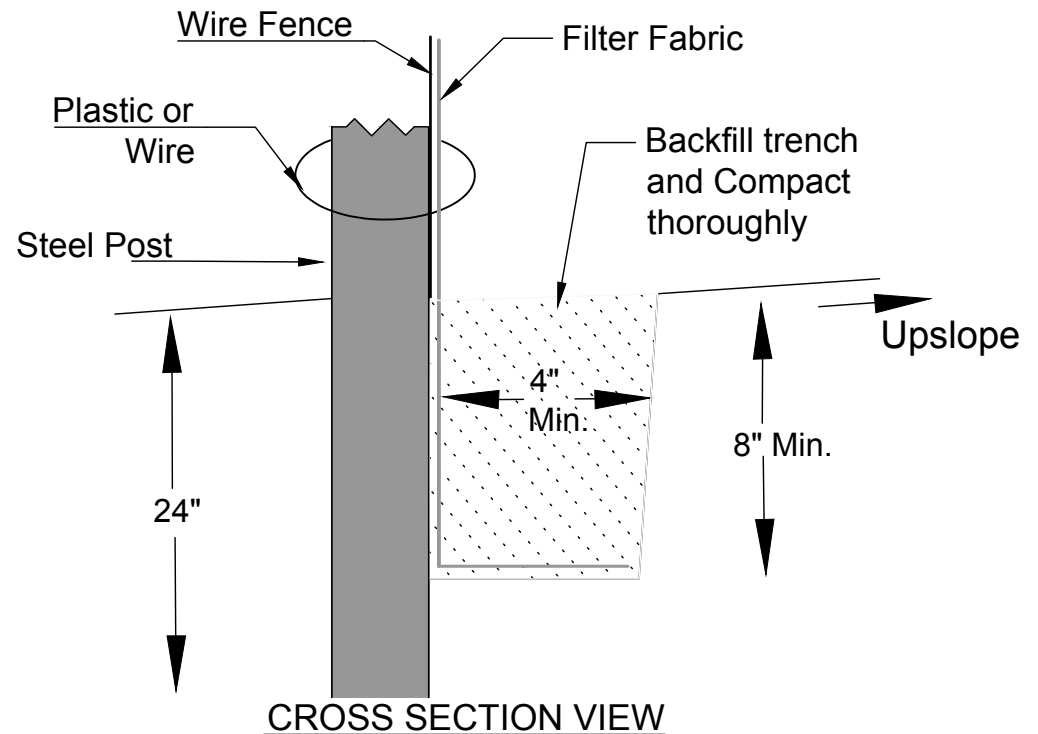
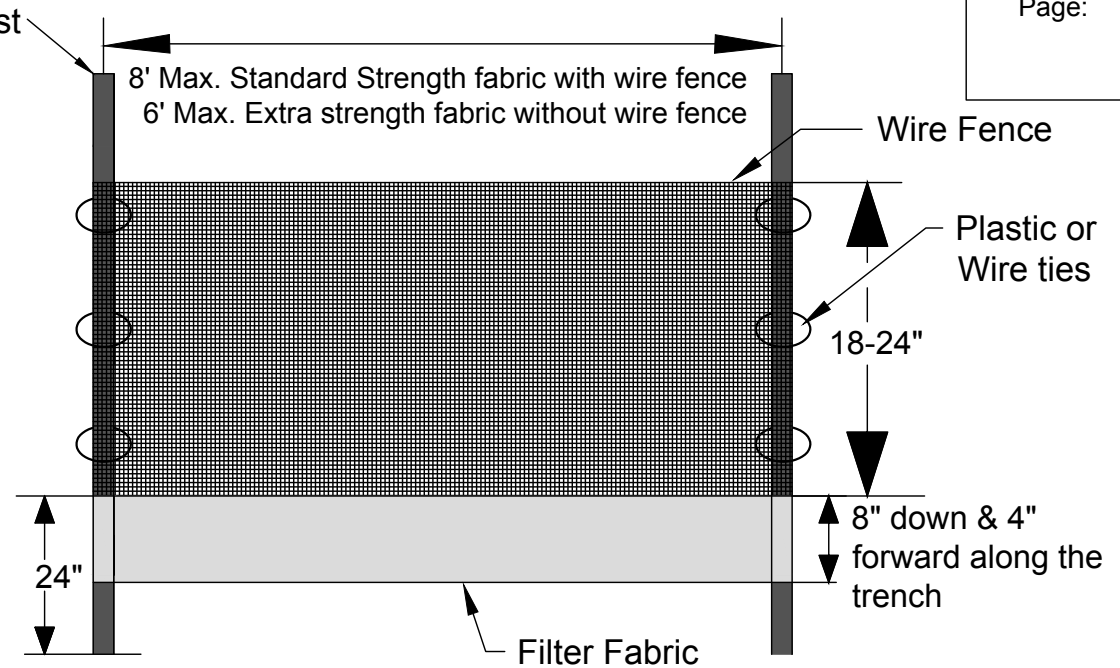
## Construction:

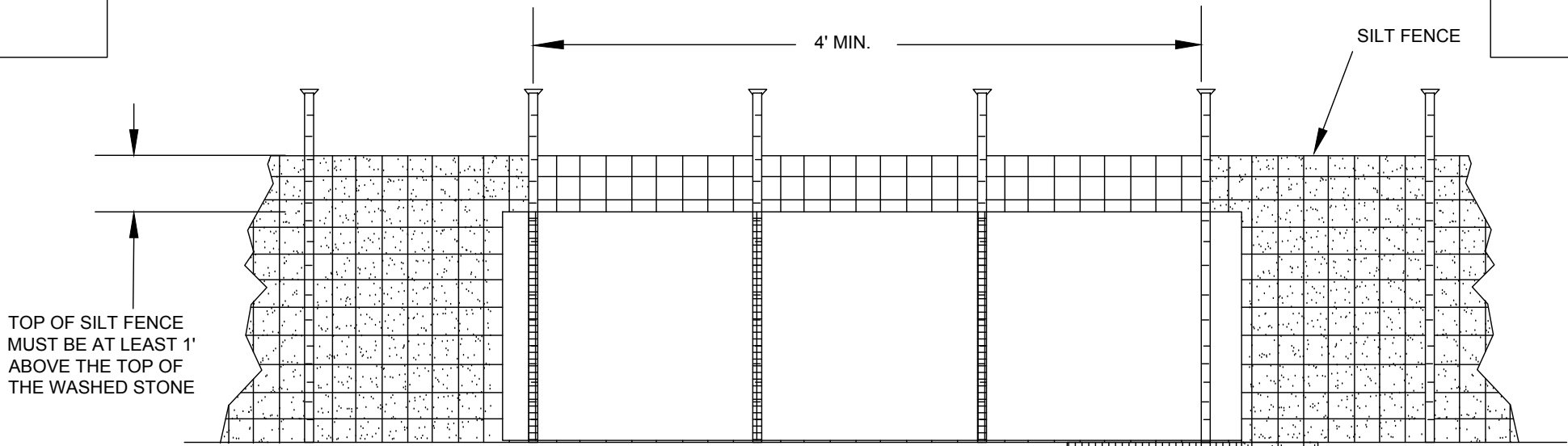
1. Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics.
2. Ensure that the height of the sediment fence does not exceed 24 inches above the ground. (Higher fences may impound volumes of water sufficient to cause failure of the structure.)
3. Construct the filter fabric from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with 4 feet minimum overlap to the next post.
4. Support standard strength filter fabric by wire mesh fastened securely to the upslope side of the posts. Extend the wire mesh support to the bottom of the trench. Fasten the wire reinforcement, then fabric on the upslope side of the fence post. Wire or plastic zip ties should have a minimum 50 pound tensile strength.
5. When a wire mesh support fence is used, space posts a maximum of 8 feet apart. Supports should be driven securely into the ground a minimum of 24 inches.
6. Extra strength filter fabric with 6 feet post spacing does not require wire mesh support fence. Securely fasten the filter fabric directly to posts. Wire or plastic zip ties should have a minimum of 50 pound tensile strength.
7. Excavate the trench approximately 4 inches wide and 8 inches deep along the proposed line of the posts and upslope from the barrier.
8. Place 12 inches of fabric along the bottom and side of the trench.
9. Backfill the trench with soil placed over the filter fabric and compact. Thorough compaction of the backfill is critical to silt fence performance.
10. Do not attach filter fabric to existing trees.

## Maintenance:

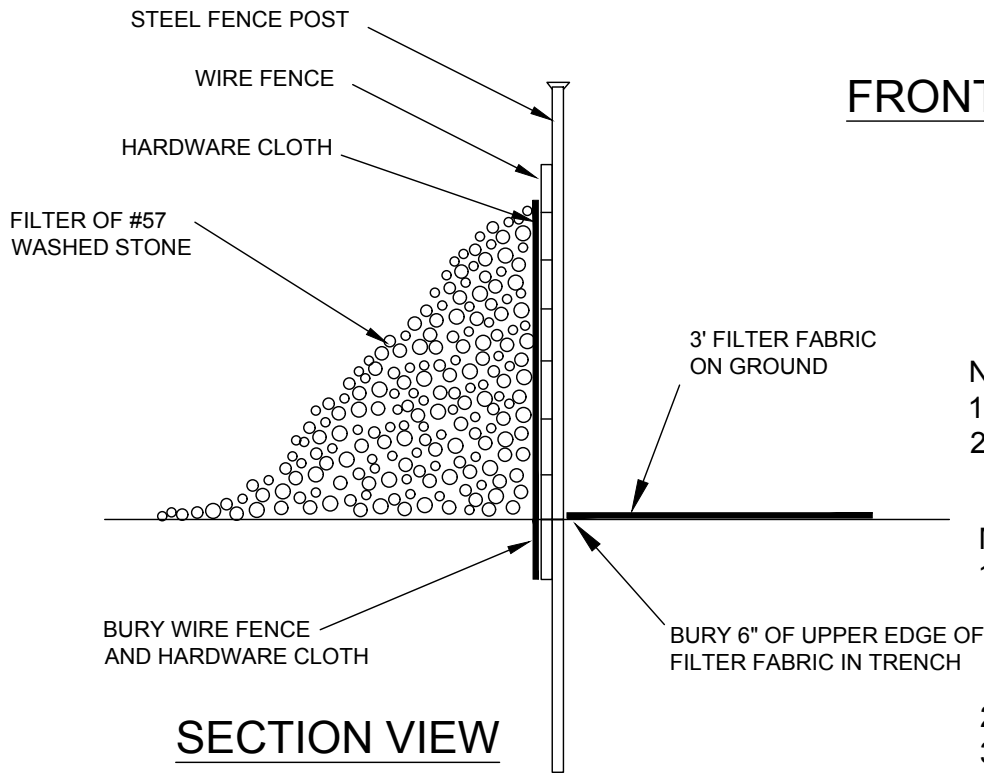
1. Inspect sediment fences at least once a week and after each 1 inch rainfall. Make any required repairs immediately.
2. Should the fabric of a sediment fence collapse, tear, decompose, or become ineffective, replace it promptly.
3. Remove sediment deposits as necessary to provide adequate storage volume for the next rain and reduce pressure on the fence. Take care to avoid undermining the fence during cleanout.
4. Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

Steel Post

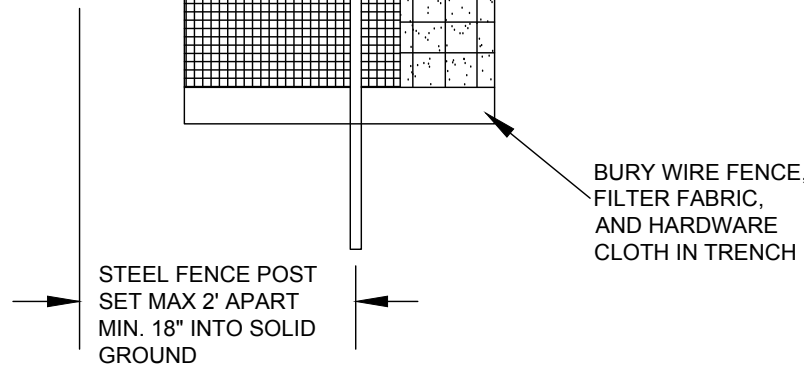
**CROSS SECTION VIEW****SILT FENCE**TOWN of  
WAKE FOREST



**FRONT VIEW**



**SECTION VIEW**

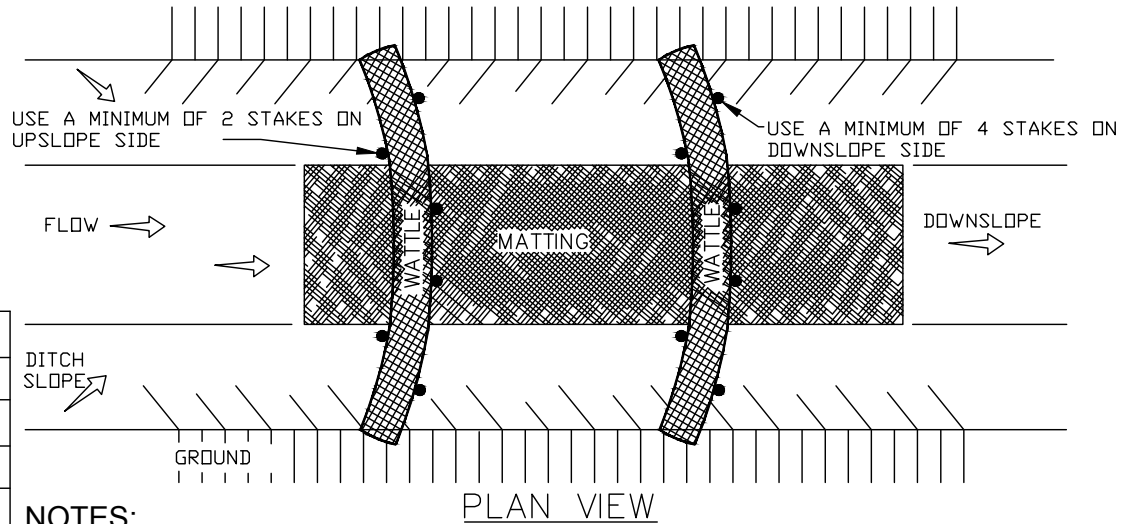
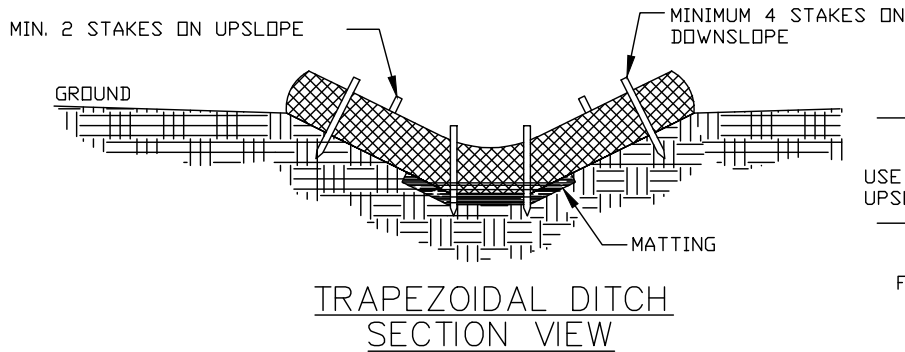
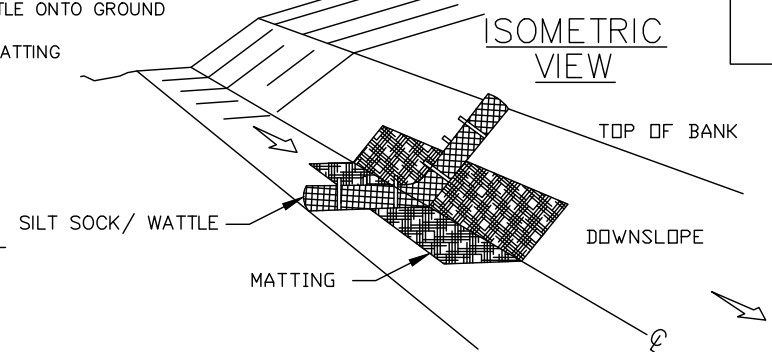
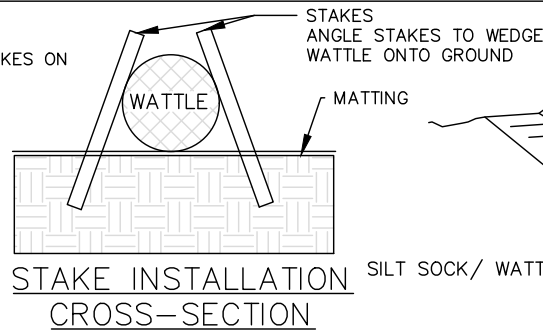
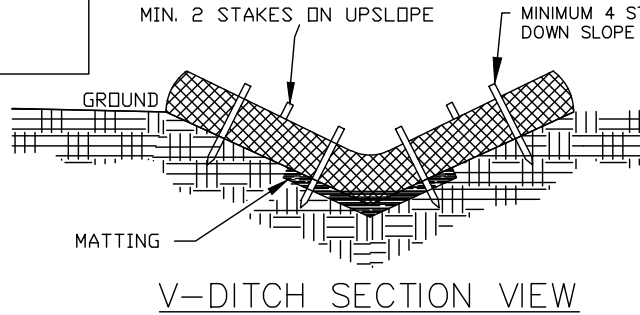


**NOTES:**

1. Hardware cloth and gravel should overlay the silt fence at least 12 inches.
2. Stone outlets should be placed on low elevation areas of silt fence and based on field conditions.

**MAINTENANCE:**

1. Per NCG-01, inspect outlet at least once a week and after each 1 inch or greater rainfall event. Complete any required repairs immediately. Freshen stone when sediment accumulation exceeds 6 inches. Keep mesh free of debris to provide adequate flow.
2. Remove sediment when half of stone outlet is covered.
3. Replace stone as needed to facilitate de-watering.



**Ditch Spacing For 12 Inch Silt Sock/Wattle**

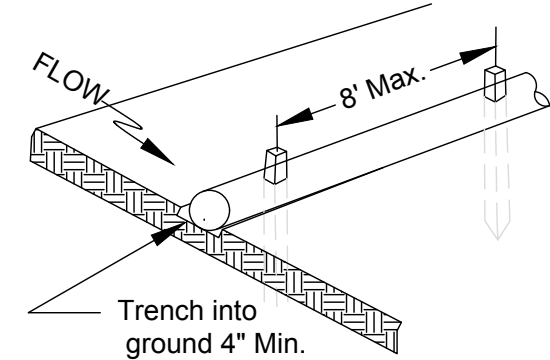
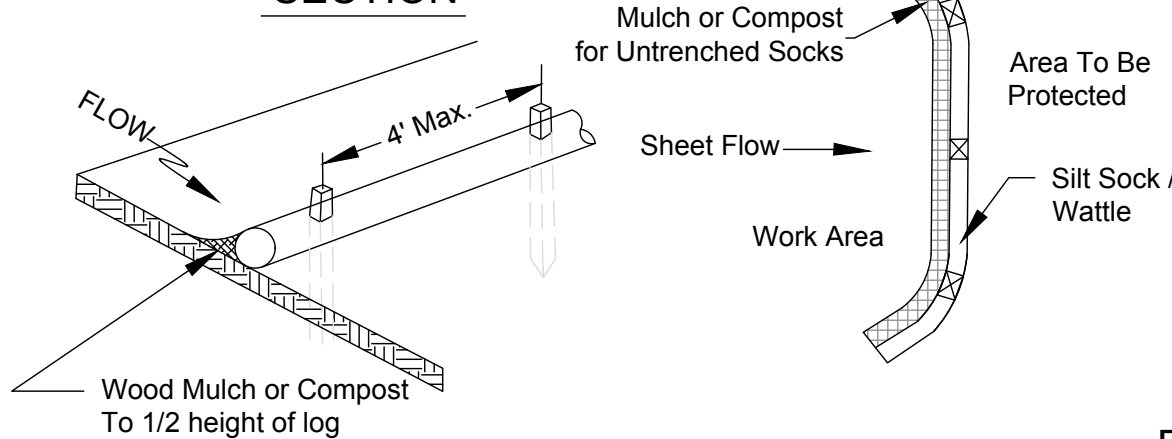
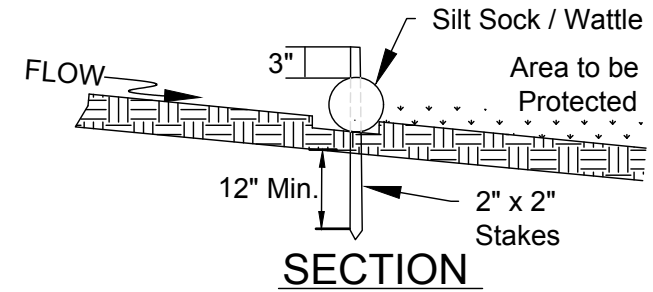
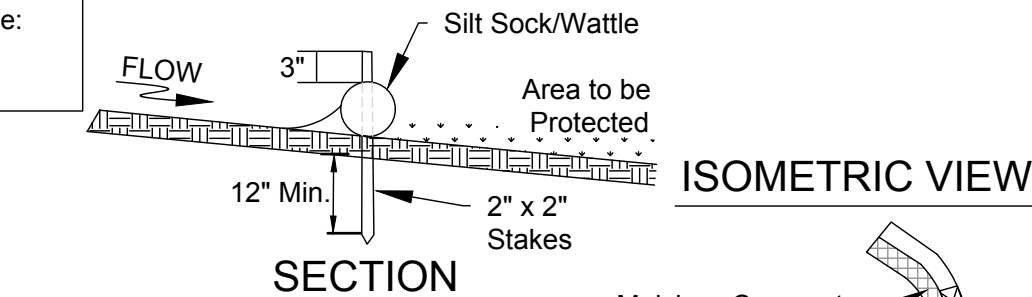
Channel Slope (%)	Space Between Silt Socks/ Wattles (Feet)
1	100
2	50
3	33
4	25
5	20

**MAINTENANCE:**

1. Inspect silt sock/wattle(s) weekly and after each 1 inch or greater rain. Remove accumulated sediment and any debris.
2. Silt sock/Wattle must be replaced if clogged or torn.
3. If ponding becomes excessive, the silt sock/wattle may need to be replaced with a larger diameter or a different measure.
4. Reinstall if damaged or dislodged.
5. Silt socks/Wattles shall be inspected until land disturbance is complete and the area above the measure is permanently stabilized.

**NOTES:**

1. Other materials providing equivalent protection against erosive velocities may be substituted for use in silt socks or wattles.
2. Use a minimum 12 inch diameter silt sock/wattle.
3. Fill silt sock/wattle netting uniformly to the desired length such that logs do not deform.
4. Use 24 inch long wooden stakes with a 2 inch x 2 inch nominal cross section.
5. Install silt sock/wattle(s) to a height on slope so flow will not wash around silt sock/wattle and scour slopes, or as directed.
6. Install a minimum of two upslope stakes and four downslope stakes at an angle to wedge silt sock/wattle to ground at bottom ditch.
7. The use of Polyacrylamide (PAM) is recommended. Apply 2-3 ounces of anionic PAM on top of sock/wattle. Apply 1-2 ounces to matting on either side of sock/wattle. Reapply after each 1.0 inch rain event.



**UNTRENCHED INSTALLATION**

**ENTRENCHED INSTALLATION\***

\*THIS APPLICATION MAY NOT BE USED WITH COMPOST SOCKS SMALLER THAN 12".

**NOTE:**

1. Other materials providing equivalent protection against erosive velocities may be substituted for use in silt socks or wattles.
2. Fill silt sock/wattle netting uniformly to the desired length such that logs do not deform.
3. Silt sock/ Wattle should be installed parallel to and a minimum of 10 feet beyond the toe of a graded slope. Silt sock/Wattles located below flat areas should be located at the edge of the land disturbance. The ends of the silt sock/wattles should be turned slightly upslope to prevent runoff from going around the ends of the silt sock/wattles.
4. Oak or other durable hardwood stakes with a 2 inch x 2 inch cross section should be driven vertically plumb, through the center of the silt sock/wattle. Stakes should be placed at a maximum interval of 4 feet or a maximum interval of 8 feet if the silt sock/wattle is placed in a 4 inch trench.
5. In the event staking is not possible (ie. when silt socks/wattles are used on pavement) heavy concrete blocks shall be used behind the silt sock/wattle to hold it in place during runoff events.

COMPOST SOCK INITIAL FLOW RATES					
Compost Sock Design Diameter	8 Inch (200 nm)	12 Inch (300 nm)	18 Inch (450 nm)	24 Inch (600 nm)	32 Inch (750 nm)
Maximum Slope Length (<2%)	600 Feet (183 m)	750 Feet (229 m)	1,00 Feet (305 m)	1,300 Feet (305 m)	1,650 Feet (500 m)
Hydraulic Flow Through Rate	7.5 gpm/ft (941 l/m/m)	11.3 gpm/ft (141 l/m/m)	15.0 gpm/ft (188 l/m/m)	22.5 gpm/ft (281 l/m/m)	30.0 gpm/ft (374 l/m/m)

**MAINTENANCE:**

1. Inspect Silt sock/wattle weekly and after each rain of 1 inch or greater. Remove accumulated sediment and any debris as needed to allow for adequate flow.
2. Silt sock/Wattle must be replaced if clogged or torn.
3. If ponding becomes excessive, the silt sock/wattle may need to be replaced with a larger diameter or a different measure.
4. Reinstall if damaged or dislodged.
5. Silt socks/Wattles shall be inspected until land disturbance is complete and the area above the measure has been permanently stabilized.

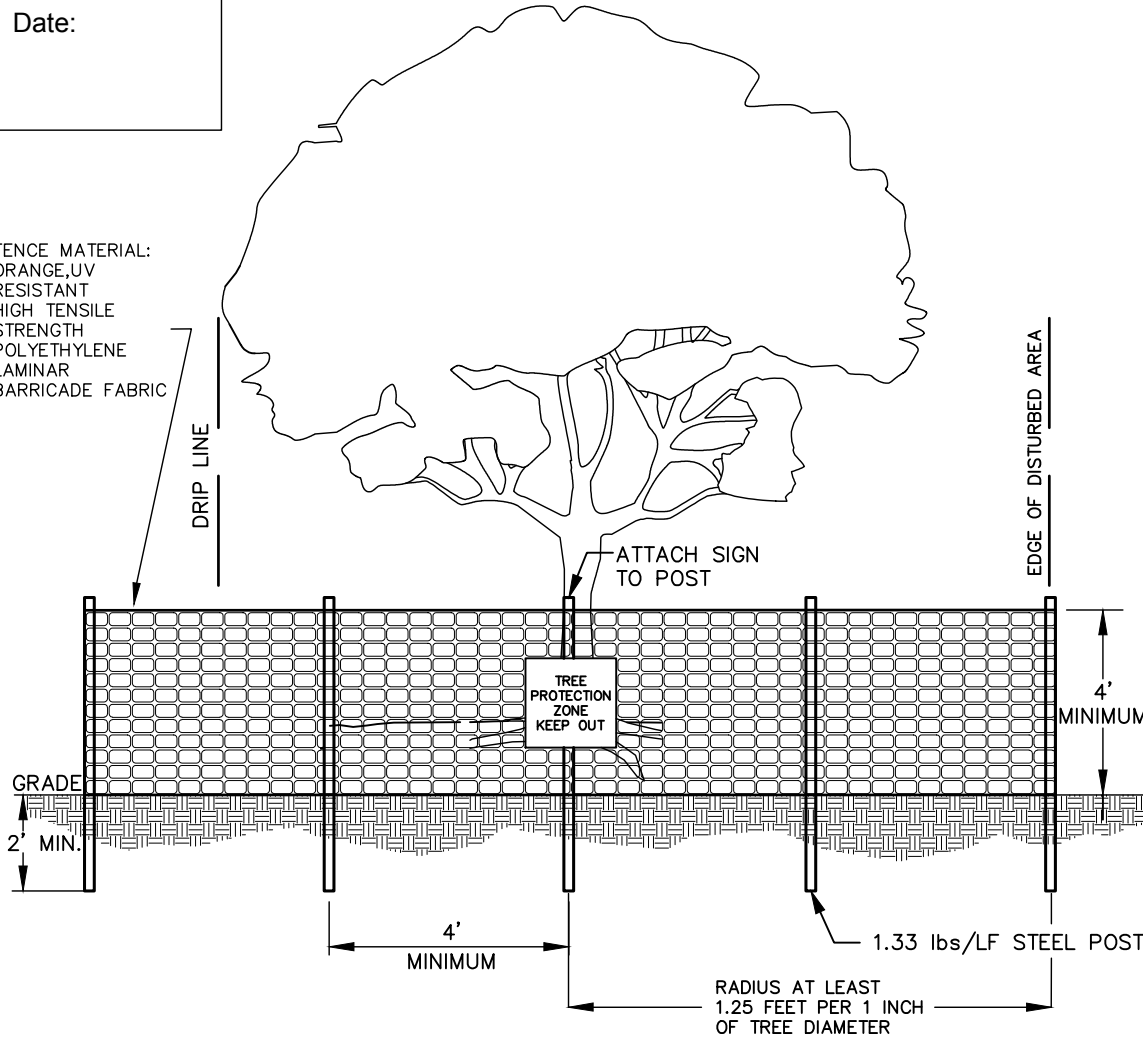


TOWN of WAKE FOREST

**SILT SOCK / WATTLE FOR PERIMETER AND INLET PROTECTION**



FENCE MATERIAL:  
ORANGE,UV  
RESISTANT  
HIGH TENSILE  
STRENGTH  
POLYETHYLENE  
LAMINAR  
BARRICADE FABRIC



### MATURE TREE PROTECTION ZONE RADIUS

TRUNK DIAMETER	GOOD PROTECTION	BETTER PROTECTION	BEST PROTECTION
8 INCHES	10 FEET	12 FEET	20 FEET
12 INCHES	15 FEET	18 FEET	30 FEET
16 INCHES	20 FEET	24 FEET	40 FEET
20 INCHES	25 FEET	30 FEET	50 FEET

### NOTES:

1. Leave critical areas (such as flood plains, steep slopes and wetlands) with desirable trees in their natural condition or only partially cleared.
2. Select trees to be preserved before siting roads, buildings or other structures.
3. Minimize trenching in areas with trees. Place several utilities in the same trench.
4. Prohibit or restrict access to tree protection zones(TPZ). Post "Keep Out" signs on all sides of fencing and do not store construction equipment or materials in TPZ.
5. Monitor trees using a professional or train your staff to monitor tree health during and after construction on a regular, frequent basis.
6. Assign a crew member to weekly TPZ fence integrity checks. Repair and replace TPZ fencing as needed.

### MAINTENANCE:

1. Prune any damaged trees. In spite of precautions, some damage to protected trees may occur. In such cases, repair any damage to the crown, trunk, or root system immediately.
2. Repair roots by cutting off the damaged areas and painting them with tree paint. Spread peat moss or moist topsoil over exposed roots.
3. Repair damage to bark by trimming around the damaged area, taper the cut to provide drainage and paint with tree paint.
4. Cut off all damaged tree limbs above the tree collar at the trunk or main branch. Use three separate cuts to avoid peeling bark from healthy areas of the tree.

