

SECTION 400 SOIL EROSION & SEDIMENTATION CONTROL

- 401 General Requirements**
 - 402 Construction Sequence and Schedule**
 - 403 Seeding & Mulching**
 - 404 Construction Entrances**
 - 405 Inlet Protection**
 - 406 Computations**
 - 407 Temporary Matting/Blankets**
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401 General Requirements

Temporary soil erosion and sedimentation control (S&E) measures shall be provided in accordance with the S&E plan approved by the Town of Apex. After the performance guarantee has been paid and the perimeter silt/tree fence has been inspected by the zoning compliance officer the S&E letter of plan approval will be issued to permit the CONTRACTOR to grade only enough as to install the S&E measures. The contractor/developer must receive a certificate of coverage from the North Carolina Department of Environmental Quality (NCDEQ) prior to installing measures. Once the S&E measures are installed and found to be acceptable with the approved S&E plan, a certificate of compliance will be issued so the CONTRACTOR can continue land disturbing activities on the applicable phase of the site. The S&E plan shall be in accordance with the North Carolina Division of Energy, Mineral and Land Resources (NCDEMLR) Erosion and Sediment Control Planning and Design manual (latest revisions) and the Town of Apex Standard Specifications and Details. The CONTRACTOR/DEVELOPER should also be familiar with the Town of Apex S&E Ordinance. The approved S&E Plan shall be kept on site by the CONTRACTOR at all times while work is being performed. For land disturbing projects equaling 1 acre or more, the NPDES Stormwater Discharge Permit (NCG 010000) issued by the NCDEQ shall be maintained on site and adhered to. The Town Construction Site Waste Management Plan is issued with the letter of plan approval and must be followed for the life of the project.

For areas of single-family development within a project, all logging and grading activities are limited to a maximum of 20 acres at one time.

Prior to logging and grading operations, all S&E measures shall be installed in order to be issued a Certificate of Compliance by the TOWN. Areas where active construction

ceases, meaning no substantial or significant progress is made in any area for more than 14 calendar days, all disturbed areas must be seeded and mulched unless written approval is granted by the TOWN. Ground cover shall be established in graded slopes and fills within 14 calendar days for slopes 3:1 or flatter and within 7 calendar days for slopes steeper than 3:1. Incidental grading shall not constitute substantial or significant progress in construction activity.

S&E measures shall be coordinated with all other work on the project to ensure economical, effective, and continuous S&E throughout the construction and post construction period and to minimize siltation of streams, lakes, reservoirs, and other water impoundments, ground surfaces, roadways, or other properties.

Minimum design criteria for S&E devices shall be the following:

1. Required Volume – 3600 ft³ per disturbed acre.
2. Required Surface Area – Shall be based on 435.6 ft²/cfs and the peak flow rate from a 25-year, 24-hour storm event (Q₂₅).
3. The outlet structure from a sediment basin shall only withdraw water from the surface.
4. Prior to the issuance of the Certificate of Compliance, the permanent outlet structure for all temporary sediment basins (future Stormwater Control Measures - SCM's) must be installed with the skimmer attached to the bottom drain.

402 Construction Sequence and Schedule

The PROJECT ENGINEER will include a construction sequence schedule or work schedule that coordinates the timing of the land-disturbing activities and the installation of erosion and sedimentation control measures. See the Town's website for the standard construction sequence.

403 Seeding & Mulching

Seeding and mulching shall be carried out immediately behind construction in accordance with the following specifications:

SHOULDERS, SIDE DITCHES, SLOPES (3:1 and Flatter)

Date	Type	Planting/Acre
Aug 15 - Nov 1	Tall Fescue	300 lbs.
Nov 1 - Mar 1	Tall Fescue & Abruzzi Rye	300 lbs.
Mar 1 - Apr 15	Tall Fescue	300 lbs.
Apr 15 - June 30	Hulled Common Bermuda grass	25 lbs.
July 15 - Aug 15	Tall Fescue <i>and</i>	35 lbs.
	*** Brown top Millet <i>or</i>	

	*** Sorghum-Sudan Hybrids	
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SHOULDERS, SIDE DITCHES, SLOPES (3:1 to 2:1)

Date	Type	Planting/Acre
Mar 1 - April 15	Tall Fescue <i>and</i>	120 lbs.
Mar 1 - June 30	ADD German or Browntop Millet <i>or</i>	10 lbs.
Mar 1 - June 30	ADD Hulled Common Bermuda Grass	25 lbs.
June 1 - Sep 1	*** Tall Fescue <i>and</i>	120 lbs.
	*** Brown top Millet <i>or</i>	35 lbs.
	*** Sorghum-Sudan Hybrids	30 lbs.
Sep 1 - Mar 1		
	Tall Fescue	120 lbs.
Nov 1 - Mar 1	ADD Rye Grain	25 lbs.

***Temporary – Re-seed according to optimum season for desired permanent vegetation. Do not allow temporary cover to grow over 12 inches in height before mowing, otherwise fescue may be shaded out.

A Conservation Engineer or Natural Resources Conservation Service (NRCS) shall be consulted for additional information concerning other alternatives for vegetation of denuded areas. The above vegetation rates are those which do well under local conditions; other seeding rate combinations are possible. Any variation from this list shall be pre-approved by the TOWN.

SEEDBED PREPARATION

1. Chisel compacted areas and spread topsoil 3 inches deep over adverse soil conditions, with stockpiled topsoil. CONTRACTOR shall reserve sufficient topsoil for seedbed preparation.
2. Rip the entire area to 6 inch depth.
3. Remove all loose rock, roots, and other obstructions leaving surface reasonably smooth and uniform.
4. Apply agricultural lime, fertilizer, and super-phosphate uniformly and mix with soil (see below*).
5. Continue tillage until a well-pulverized, firm, reasonably uniform seedbed is prepared 4 to 6 inches deep.

6. Seed on a freshly prepared seedbed and cover seed lightly with seeding equipment or cultipack after seeding.
7. Mulch immediately after seeding and anchor mulch.
8. Inspect all seeded areas and make necessary repairs or reseeding within the planting season, if possible. If stand is less than 60% established, the entire area shall be reseeded according to specifications using the original lime, fertilizer and seeding rates.
9. Consult a Conservation Inspector on maintenance treatment and fertilization after permanent cover is established.

*Apply: Agricultural Limestone - 2 tons/acre (3 tons/acre in clay soils)
 Fertilizer - 1,000 lb/acre - 10-10-10 (Fall) – 5-10-10 (Spring)
 Super-phosphate - 500 lb/acre - 20% analysis
 Mulch - 2 tons/acre - small grain straw
 Anchor - Asphalt Emulsion @ 300 gals/acre

404 Construction Entrances

Gravel construction entrance pads (see detail 400.06) shall be constructed at each point of construction access to the site, including residential lots. The gravel pads shall be maintained in such a manner as to prevent the deposition of mud and debris onto existing public roadways or properties adjacent to the site.

Special Note: It shall be the developer's responsibility to see that the construction entrance pads are properly maintained so that mud is not tracked onto adjacent streets. In the event that the gravel construction entrances are not properly maintained, or are otherwise ineffective, the TOWN may issue a Notice of Violation, Stop Work Order, and/or assess a penalty which shall remain in effect until such time as the pads are restored and replenished and until any resulting mud and debris has been removed from the adjacent streets by the CONTRACTOR.

405 Inlet Protection

In addition to the inlet protection standard details presented herein and to further protect the water quality of receiving streams, filtering inlet protection devices shall be used at all catch basins along roadways that have just received the first lift of asphalt. The devices shall be installed across the grate and throat and must be a product approved by the TOWN Stormwater Engineering Manager or his/her designee. The filtering inlet protection device will be subject to periodic inspection and must be properly maintained throughout construction.

For stub streets and street phasing lines draining away from the site, and other areas as directed by the TOWN, asphalt diversions or other TOWN approved alternative shall be installed to direct runoff into inlets until the final lift of asphalt is installed. Cold patch asphalt shall not be used.

Unless inlets are located at the street stub, erosion control measures shall be installed at the edge of stub streets draining away from the site to prevent erosion.

406 Computations

All computations and assumptions used to formulate an S&E plan shall be reviewed by the TOWN. S&E measures, structures and devices shall be planned, designed and constructed to control the calculated peak runoff from a 25-year frequency storm. Runoff rates shall be calculated using the USDA Soil Conservation Service Method, the Rational Method or other acceptable calculation procedures. Runoff computations shall be based on rainfall data published by the National Weather Service for this area.

407 Temporary Matting/Blankets

All temporary matting/blankets used shall be made of biodegradable materials that do not contain plastic netting.