Swale Illustration

The illustration below is one example of swales. Swale designs vary, depending upon the lot.
8.0
Section 8 addresses the Residential Drainage, Erosion and Sediment Control (DESC) Regulations:

Section 8.1 Purpose, states the purpose of the DESC requirements.

Section 8.2 Applicability, states the application of this Chapter.

Section 8.3 DESC Permit Requirements, lists information required when applying for a DESC permit.

Section 8.4 DESC Plan Submittal, lists detailed information to include on a DESC Plan and associated attachments.

Section 8.5 Minimum Erosion and Sediment Control Requirements, describes the minimum requirements that the Permittee must comply with after receiving an approved DESC permit.

Section 8.6 Minimum Drainage Requirements for Finished Grade, identifies the design parameters that must be met before a Certificate of Occupancy can be issued.

Section 8.7 DESC Program Inspection and Enforcement, discusses inspections related to the Town’s DESC Permitting Program and identifies steps in the construction process that required mandatory inspections and acceptance before work may proceed.

Section 8.8 Stop Work Orders, provides general guidance regarding the Town’s enforcement process.

Section 8.9 Compliance with Other Laws, Regulations, Ordinances, Standards, describes compliance with the DESC regulations in relation to other laws, regulations, ordinances and standards.

Section 8.10 Town of Castle Rock not Responsible, removes liability from the Town under these regulations.

Section 8.11 DESC Permit Fees, describes fees associated with the DESC Permit.
Section 8. Residential Drainage, Erosion and Sediment Control (DESC)

8.1
The purpose of this chapter is to establish minimum drainage, erosion and sediment control requirements for residential lot construction in conformance with this manual and as follows:

- Protect to the greatest extent practicable, life, property and the environment from loss, injury and damage by stormwater runoff. Erosion, sediment transport, ponding, flooding, landslides, accelerated soil creep, settlement and subsidence, excessive dust and other potential hazards, caused by grading, construction activities and denuded soils.
- Protect surface waters, public right-of-way, private property, drainage systems, wetlands and watercourses from sediment loads.
- Protect the public interest in drainage control including lot drainage, drainage basins, drainage infrastructure and watercourses.

8.2
Effective June 15, 2004, all residential lot construction shall comply with the regulations set forth in this manual. This Section applies to drainage, erosion and sediment control for:

- Any new single-family residential construction and new construction requiring a building permit, including but not limited to additions and construction areas, and accessory structures on existing single-family residential lots.
- Multi-family structures, requiring a building permit, shall comply to the same requirements as single family residential construction projects.
- Grading, excavating and stockpiling of earth and landscape materials, for residential lots (not specifically limited to new construction) which results in the transport of any of these materials off site by any means including, but not limited to, wind or water erosion and vehicular tracking.

No residential building permits shall be issued until a DESC Permit is issued. The permittee is responsible for and is subject to any liability for drainage, erosion and sediment control for the permitted site. This Section shall apply to all residential building permit applications filed with the Town.

8.3.
Refer to Sections 4.13 and 6.2.3 for applicable GESC transfer requirements prior to issuance of building permits. A DESC permit application must be filled out with the town prior to any initial DESC inspections being done on residential building projects.

Permittee shall compile for submittal, a copy of DESC permit application and one (1) copy of the DESC plan, designed by registered design professional, to the Town for initial plan review.
After initial plan review approval, a signed copy of the DESC permit guidelines, a copy of the approved DESC plan, and the DESC permit must be posted at the job site or lot with visible address for an initial DESC inspection.

DESC permit must be posted at the job site at all times during construction. DESC inspections will be completed in conjunction with each individual building inspection that is scheduled. Cancellation of building inspections will not nullify DESC inspections.

8.4 The DESC plan shall be prepared by a registered design professional. Where special conditions exist, the Town may require additional information to the information required below. The DESC plan may be a plot plan modified to meet the requirements of this Chapter. The DESC plan will be reviewed for compliance with this Chapter and, when applicable, the approved drainage patterns set forth in the "overlot grading plan" approved by the Town.

A DESC plan shall be prepared and submitted for Town approval. One (1) hard copy or (1) electronic copy (Adobe pdf format), for each parcel, shall be submitted with the DESC permit application. The following items shall be clearly illustrated on the DESC plan:

- Illustrate all property lines, easements and setbacks.
- Illustrate planned improvements and permanent structures such as sidewalks, patios, swimming pools, driveways, porches, retaining walls, lined swales, etc.
- FEMA Floodplain limits shall be shown if lot is adjacent to a floodplain. See Town of Castle Rock municipal code, section 18, for Flood plain regulations.
- Provide a north arrow, the street address, subdivision, filing, lot and block (Section, Township and Range, if unplatted).
- The plan size for lot sizes of one (1) acre or less shall be 8.5" x 11" to 8.5" x 14". The plan size for lots greater than one (1) acre shall be 24" x 36" or 11" x 17".
- A scale of one (1) inch equals twenty (20) feet shall be used unless the lot does not fit on legal paper; then a scale of one (1) inch equals thirty (30) feet may be used. Illustrate the scale used on all pages submitted.
- Spot elevations and drainage arrows shall be illustrated on the DESC plan in sufficient quantities to accurately illustrate the site drainage patterns. For sites one (1) acre or larger, these may be grouped around the foundation area (within one hundred [100] feet of the foundation or to the limits of disturbance).
- Illustrate high points and drainage arrows with percent slope twenty-five-foot intervals along drainage swales.

- Illustrate all slopes to the nearest one-tenth percent (.1%) in critical areas. Illustrate all elevations to the nearest one-tenth (1/10) foot.

- Illustrate top of foundation at each elevation change and driveway elevations at the garage entrance and at the point of discharge.

- Illustrate where storm water runoff enters the lot and discharges to adjacent rights-of-way, properties and easements. Illustrate all structural BMPs to be used and their locations. Include a schedule of nonstructural BMPs to be used.

- Include this general note on the plan: “All off-site disturbances and structural BMPs associated with the construction of the specific lot must be maintained in effective operating condition at all times and are subject to inspection and enforcement under the DESC Permit for this property.”

- Check subdivision drainage plan to ensure drainage patterns are consistent with the approved plan.

- Attach GESC Standard Notes and Details on 11”x17” or larger (See Appendix B).

### 8.5

#### 8.5.1 DESC Plan Approval

Lot specific and associated off-site structural and/or nonstructural BMPs that comply with this manual, shall be submitted to the Town for approval to reduce erosion and sediment transport on construction sites. The BMPs must be sufficient to prevent the transport of sediment and other pollutants offsite to a degree that causes any negative impact on adjacent and/or downstream properties, rights-of-ways, public improvements (including but not limited to storm sewers) and watercourses. Upon approval of the DESC Plan, the Permittee install or shall implement the BMPs as shown on the Plan.

#### 8.5.2 Initial DESC Inspection

After installing or implementing BMPs, permittee shall request an initial DESC Inspection. Building inspections shall not occur until passing the initial DESC Inspection for all on- and off-site BMPs.

#### 8.5.3 Inspections by Permittee

Permittee shall inspect and maintain all BMPs including off-site BMPs as identified on the DESC Plan at least every fourteen (14) days and after any precipitation, snowmelt or runoff event that causes surface erosion, sediment transport or vehicular tracking. All erosion and sediment control practices must be maintained in effective operating condition at all times.
8.5.4 Corrections to the BMPs. If drainage, erosion or sediment problems become apparent during construction, such as when off-site sedimentation occurs, the DESC Inspector may require the BMP to be reevaluated and reimplemented by permittee in an effective manner.

8.5.5 Stop Work Orders. If earth materials or other pollutants are tracked, spilled, or washed onto streets, permittee shall clean the streets in accordance with Town approved methods, or as directed by the DESC Inspector. Failure to clean up tracking of material onto streets will result in an immediate stop work order.

Permittee shall not stockpile, place or store on streets, sidewalks or storm water flow lines earth materials and landscape materials, such as sod, compost, dirt, rock and mulch. Stockpiling of such materials in the right-of-way will result in an immediate stop work order.

Permittee shall not store construction materials, roll off containers, dumpsters, portable toilets, trailers or any other item(s) on streets or sidewalks. These items shall be stored on the construction site(s) or designated staging area(s) as shown on the approved DESC Plan.

8.5.6 Final DESC Inspection. The permittee shall be responsible for all drainage, erosion and sediment control related to the permitted site and all associated off-site BMPs as shown on the approved DESC Plan until a certificate of occupancy is issued. Prior to issuance of a certificate of occupancy, the following items must be completed:

- All off-site disturbances as shown on the DESC Plan are to be reclaimed in accordance with this Manual unless it can be demonstrated that these areas are required as part of another open DESC permit.
- Final grade on the property is to be established in accordance with the approved DESC Plan and requirements as set forth in Section 8.6.
- A Final Drainage Certificate is to be submitted and approved by the Town per Section 8.6.
- Temporary erosion and sediment control shall be properly designed and installed to remain effective until permanent erosion control is installed.

In cases where final grade cannot be established because of weather constraints at the time of the final inspection, the permittee may post a Fiscal Surety through the Town bonding policies until all items are completed and approved by the Town. Temporary sediment controls are required at all times regardless of weather conditions.
8.5.7 Permanent Erosion Control. After issuance of a certificate of occupancy, the DESC permit is transferred to the property owner and drainage, erosion, and sediment control is the sole responsibility of the property owner. This does not absolve the home builder from applicable warranty issues associated with drainage and site work. The DESC Permit shall remain active until permanent erosion control is installed and a certificate of completion is issued. Temporary erosion and sediment controls are to be inspected and maintained by the property owner in accordance with Section 8.5.3 until permanent erosion control is installed.

Permanent erosion control measures must be in place within one hundred eighty (180) days from issuance of a certificate of occupancy. Failure to install permanent erosion control measures within that time frame shall constitute a violation of this chapter. The storm water engineering manager may grant an extension of up to ninety (90) days upon written request by the permittee. No more than two (2) extensions may be granted. Failure by the permittee to request an extension prior to the deadline or installation of permanent erosion control measures shall constitute a violation of the provisions of this chapter and each day after the expiration date shall be punishable as a separate offense.

8.6 8.6.1 Minimum Slopes. A minimum slope of ten percent (10%) and a maximum of thirty-three percent (33%) in the first ten (10) feet away from the foundation walls and window wells shall be established for pervious surfaces except when limited by property lines or when vegetation is to be preserved and documentation of adequate drainage is provided. All other pervious areas shall have a minimum of two percent (2%) slope (a two-and-a-half-percent (2.5%) slope is recommended for grassy areas) away from the foundation. All pervious and impervious areas shall slope continuously to the lowest point where storm water discharges from the lot. At this point, the discharge water shall be directed in a manner as to not cause harm to downslope properties. Where minimum slopes cannot be attained, another means to adequately convey the water from the lot shall be designed by a registered design professional and submitted for Town approval.

Impervious surfaces other than driveways adjacent to the foundation shall have adequate drainage away from the foundation as determined by a registered design professional (see International Residential Code for specific requirements under Chapter 4 Section R40 3.1.7 thru R40 3.1.9 as amended).

Driveways shall have a minimum slope of two percent (2%) away from the foundation for a minimum distance of 5 feet to allow adequate drainage away from the garage entrance as determined by a registered design professional.

8.6.2 Drainage Swales. Drainage swales shall not be located within the foundation backfill zones unless limited by property lines. Drainage
swales shall have adequate depth, width and longitudinal gradient to convey the storm water off the lot in an effective, non-damaging manner. Drainage swales shall be designed to spread flows out as much as possible. Privacy fences shall be installed in a manner that will not affect approved drainage patterns and flow paths.

8.6.3 Retaining Wall(s). Manmade slopes greater than 33% grade require a properly designed retaining wall(s) when other approved means of stabilization cannot be achieved. Retaining walls shall not encroach onto adjacent properties. Retaining walls taller than four (4) feet (including footing) require a building permit and shall be designed by a registered design professional. Refer to current building codes for additional requirements. All retaining walls will be inspected by the DESC inspector to ensure that final grade meets plan requirements. All instances where means of stabilization other than retaining walls are proposed must be submitted to the Town of Castle Rock Stormwater Engineering Manager for approval.

8.6.4 Downspouts and Sump Pumps. Downspouts and sump pumps shall discharge a minimum of five (5) feet away from the foundation wall and outside the foundation backfill zone unless limited by property lines. For tract housing projects, downspouts shall be oriented in the general direction of the drainage swale flow (not perpendicular to or against the flow). Downspouts shall not directly discharge onto adjacent properties. Downspouts and sump pumps shall not discharge directly onto rights-of-way unless the discharge is associated with the implementation of a temporary BMP and appropriate safety precautions are implemented.

8.6.5 Allow for Overflow. Where catch basins or inlets are installed, finished grade elevations of adjoining areas shall provide for emergency surface overflow so that, in the event of failure of catch basins or inlets, building and window wells shall be protected against flooding.

8.6.6 Final Drainage Certificate. To ensure proper site drainage, adequate drainage away from the foundation and off the lot, a Final Drainage Certificate shall be certified by a registered design professional and approved by the Town before a certificate of occupancy can be issued. The following items shall be clearly illustrated on the Final Drainage Certificate:

- All vertical and horizontal deviations to grades, drains, spot elevations, slopes and drainage patterns throughout the lot as shown on the approved DESC Plan.
- Location of the sump pump discharge, if applicable.
- The plan shall be signed and stamped by a registered design professional.

8.7 The inspection process for the Town’s DESC Program includes selected inspections by Town of Castle Rock DESC Administrators that include, but are not limited to, the following:
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**DESC Program Inspection and Enforcement, continued**

- Proactive inspections by a DESC Administrator that occur randomly during construction.
- Mandatory inspections including initial, rough, and final for all DESC permitted sites.
- A post-construction inspection is performed to verify that permanent erosion control measures have been installed.
- Complaint-generated inspections based on input from the general public or referrals from Town Staff.

Enforcement of the DESC Program shall include re-inspection fees, notices of violation, Stop Work Orders, and/or criminal or civil prosecution in accordance with the DESC ordinance, as amended.

**8.8**

Failure to meet the requirements of this Section may result in the issuance of a stop work order. The stop work order shall remain in effect until all items have been remediated and approved by the Town.

**8.8.1 Penalties and Enforcement.** Any person found to have violated any of the provisions of this Section shall be charged with a violation of Chapter 15.10 of the Town of Castle Rock Municipal Code, as amended, and may constitute a violation of the Federal Clean Water Act and the Colorado Water Quality Control Act, Section 25-8-101, et seq., CRS ("Act"). A violation of the Town provision may result in penalties under the Municipal Code of not more than one thousand dollars ($1,000) or by imprisonment not to exceed one (1) year, or by both such fine and imprisonment. Each such person shall be guilty of a separate offense for each and every day during any portion of which any violation of any provision of this Chapter is committed. (Ord. 2004-28 §1, 2004).

**8.9**

8.9.1 The requirements of these regulations are minimum requirements. They do not replace, repeal, abrogate, supersede or affect any other more stringent requirements, rules, regulations, covenants, standards or restrictions. Where these regulations impose requirements that are more protective of human health or the environment that those set forth elsewhere, the provisions of these regulations shall prevail.

8.9.2 Approvals and permits granted under these regulations are not waivers of the requirements of any other laws nor do they indicate compliance with any other laws. Compliance is still required with all applicable federal, state and local laws and regulations.

8.10 Nothing contained in these regulations is intended to be nor shall be construed to create or form the basis for any liability on the part of the Town, its officers, employees or agents for any injury or damage resulting from the failure of responsible parties to comply with the provisions of these regulations, or by reason or in consequence of any inspection, notice,
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order, certificate, permission or approval authorized or issued or done in connection with the implementation or enforcement of these regulations, or by reason of any action or inaction on the part of the Town related in any manner to the enforcement of these regulations by its officers, employees or agents. The Chief Building Official, DESC inspector or any employee charged with the enforcement of these regulations, acting in good faith and without malice on behalf of the Town, shall not be personally liable for any damage that may accrue to persons or property as a result of any action required by the Town, or by reason of any act or omission in the discharge of these duties.

8.11 DESC Permit Fees
Every entity and person applying for a permit shall pay fees as set forth and published in the most recent Development Services fee schedule, as amended.