

Section 8. Vertical Residential Drainage and TESC Requirements

Overview of Section 8

8.0

The modified 6-step process provided in this section applies to Vertical Residential Construction jointly under a Standard TESC Permit and individual Building Permits.

Section 8.1 **Applicability and Authority.**

Step 15a. Apply for a Standard TESC Permit for Vertical Residential Construction by submitting a TESC Drawing and Report, TESC Permit Application, Permit Fee and Fiscal Surety (see Section 8.2).

Step 15b. Submit individual Plot Plans for each lot under respective Building Permits (see Section 8.3 and 8.4)

Step 16a. Complete the TESC Manager assignments, schedule a preconstruction meeting, install temporary control measures and pass initial inspection (see Section 8.5).

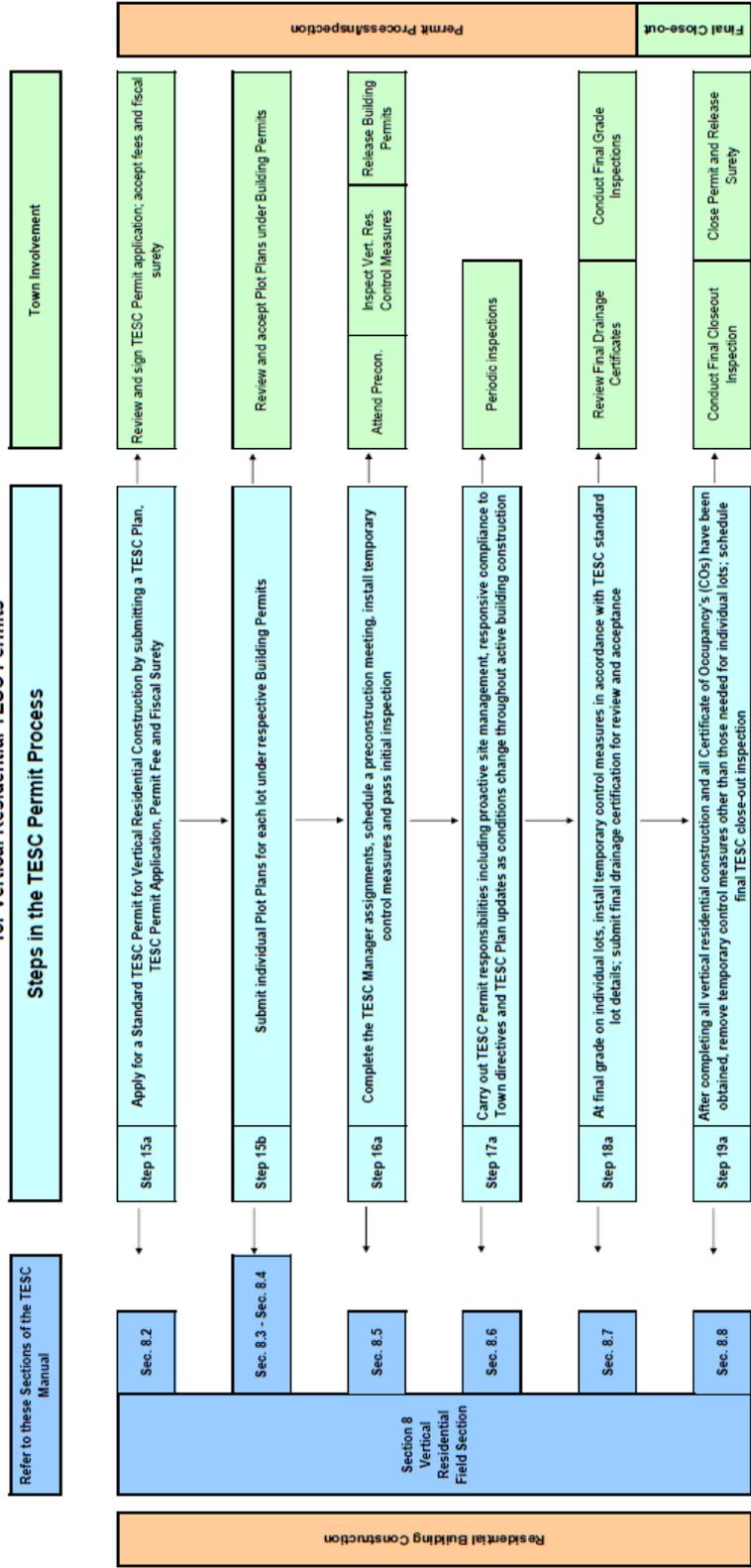
Step 17a. Carry out TESC Permit responsibilities including proactive site management, responsive compliance to Town directives and TESC Plan updates as conditions change throughout active building construction (see Section 8.6).

Step 18a. At final grade on individual lots, install temporary control measures in accordance with TESC standard lot details; submit final drainage certification for review and acceptance (see Section 8.7).

Step 19a. After completing all vertical residential construction and all Certificate of Occupancy's (COs) have been obtained, remove temporary control measures other than those needed for individual lots; schedule final TESC close-out inspection (see Section 8.8).

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Figure 8.1
Town of Castle Rock TESC Permit Process
for Vertical Residential TESC Permits



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Applicability and Authority

8.1

8.1.1 Applicability. The purpose of this section is to establish minimum drainage and temporary erosion and sediment control (TESC) requirements for single-family vertical residential lot construction. This section applies to any new single-family residential construction on vacant lots and new construction on existing lots including, but not limited to, additions and accessory structures requiring a Building Permit and which alter the final grade or drainage on the lot.

8.1.2 Authority. Minimum drainage requirements set forth in this section are enforceable under the Building Permits for individual lots. Temporary erosion and sediment control requirements are enforceable through a Standard TESC Permit for vertical residential construction of multiple lots under a common plan of development and a Low Impact TESC Permit for custom residential lots (refer to Section 7 for Low Impact TESC Permit requirements).

Step 15a. Apply for a Standard TESC Permit for Vertical Residential Construction by submitting a TESC Drawing and Report, TESC Permit Application, Permit Fee and Fiscal Surety

TESC Permit Requirements

8.2

8.2.1 Standard TESC Permit Requirements. A signed Standard TESC Permit application must be submitted to Development Services, along with an approved Vertical Residential TESC Drawing, TESC Report, Permit Fees and Fiscal Surety and the applicant must pass the initial TESC inspection prior to issuance of the first Building Permit within a subdivision.

1. Refer to Section 3.20.5 for Vertical Residential TESC Drawing requirements.
2. Refer to Section 3.19 for TESC Report requirements.
3. Refer to Section 4 for submittal requirements.

8.2.2 TESC Permit Requirements for Custom Home Construction. A signed Low Impact TESC Permit application must be submitted to the Building Department, along with a Low Impact TESC Plan and Permit Fee prior to issuance of a Building Permit. The permittee must pass the initial TESC inspection prior to beginning construction.

Step 15b. Submit individual Plot Plans for each lot under respective Building Permits

Drainage Requirements under the Building Permit

8.3

As a condition of Building Permit approval, permittee shall submit for review a Plot Plan according to the requirements set forth below.

8.3.1 Plot Plan Submittal Requirements. The Plot 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 plot plan shall meet the requirements of this section

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Drainage Requirements under the Building Permit, continued

and will be reviewed for compliance with this section and, when applicable, the approved drainage patterns set forth in the "overlot grading plan" approved by the Town.

A plot plan shall be prepared and submitted for Town approval. One (1) electronic copy (PDF format), for each parcel, shall be submitted with the Building Permit application. The following items shall be clearly illustrated on the plot 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. Demonstrate required 2-foot freeboard has been met for properties in or adjacent to a floodplain. All properties within the floodplain require a floodplain development permit prior to issuance of a building permit. An elevation certificate may also be required.
- Provide a north arrow, the street address, subdivision, filing, lot and block.
- The plan size for lot sizes of one (1) acre or less shall be 8.5" x 11" to 8.5" x 14".
- 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 plot 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 retaining walls including elevations for top and bottom of wall. Provide maximum height of retaining wall(s), including footing. Retaining walls taller than four (4) feet (including footing height) require a separate building permit and shall be designed by a registered design professional. Reference permit number for retaining wall on plot plan.

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Drainage Requirements under the Building Permit

- Illustrate where storm water runoff enters the lot and discharges to adjacent rights-of-way, properties and easements.

Include these general notes on the plan:

- ANY ADJUSTMENTS WHICH MUST BE MADE TO UTILITY POLES, STREET LIGHT STANDARDS, FIRE HYDRANTS, CATCH BASINS OR INLETS, TRAFFIC SIGNS AND SIGNALS, OR OTHER PUBLIC IMPROVEMENTS OR INSTALLATIONS WHICH ARE NECESSARY AS THE RESULT OF THE CURB OPENINGS OR DRIVEWAYS SHALL BE ACCOMPLISHED WITHOUT ANY COST TO THE TOWN. DRIVEWAYS SHALL NOT INTERFERE WITH OPERATIONS OR LOCATIONS OF ANY DRAINAGE APPURTENANCES OR ADA RAMPS.
- THIS PLAN IS IN CONFORMANCE WITH THE MINIMUM REQUIREMENTS AS SET FORTH IN THE [LEGAL DESCRIPTION] SUBDIVISION GRADING PLAN AS APPROVED BY THE TOWN OF CASTLE ROCK ON [MM/DD/YEAR] UNDER APPROVAL NO. [CDXX-XXXX].
- THIS LOT IS COVERED UNDER STANDARD TESC PERMIT NO. [TSCXX-XXXX].

Minimum Drainage Requirements for Finished Grade

8.4

8.4.1 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. 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 Chapter 4, as amended, for specific requirements).

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.

8.4.2 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.

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Minimum Drainage Requirements for Finished Grade, continued

8.4.3 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 instances where means of stabilization other than retaining walls are proposed must be submitted to the Town of Castle Rock Stormwater Manager for approval.

8.4.4 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. Downspouts, sump pump and drainage pipes shall not extend beyond the property line and be a minimum of 10 feet away from the Town sidewalk.

8.4.5 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, buildings and window wells shall be protected against flooding.

Step 16a. Complete the TESC Manager assignments, schedule a preconstruction meeting, install temporary control measures and pass initial inspection.

Preconstruction Meeting and Initial Inspection

8.5

8.5.1 Preparing for the Preconstruction Meeting. Refer to Sections 5.1 through 5.3 for responsibilities the permittee must perform prior to scheduling the preconstruction meeting.

8.5.2 Preconstruction Meeting. Refer to Sections 5.4 for preconstruction meeting requirements.

8.5.3 Initial TESC Inspection. Refer to Section 5.5 for initial TESC inspection requirements prior to start of construction.

Step 17a. Carry out TESC Permit responsibilities including proactive site management, responsive compliance to Town directives and TESC Plan updates as conditions change throughout active building construction.

Important!

Verify that all fees, fiscal surety, plans and permits are in place prior to calling for the initial TESC inspection. If any of these items are found to be missing the inspection will fail and a re-inspection fee will be assessed. Building permits will not be issued until the Initial TESC Inspection passes.

8.6

8.6.1 Proactive site management by Permittee. All erosion and sediment control practices must be maintained in effective operating condition at all times. Permittee shall inspect and maintain all control measures as identified on the TESC Drawing at least every fourteen (14) days and after any precipitation, snowmelt or runoff event that causes surface erosion, sediment transport or vehicular tracking. Refer to Section 5.7 and 5.8 for further information on ensuring control measures are correctly installed and maintained and for general requirements during construction.

8.6.2 Inspections, Violations and Enforcement. Town inspections, violations and enforcement shall be in accordance with Sections 5.9 and 5.10. Further guidance is provided below for common violations on active vertical residential construction sites.

TESC Inspections, Violations and Enforcement

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If sediment 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 Stormwater 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 may result in an immediate stop work order.

Permittee shall ensure that all concrete washout areas are properly installed, posted and cleaned such that all wastewater is contained and does not enter the storm drain system. Failure to properly maintain concrete washout areas such that a discharge occurs will result in a stop work order and/or an immediate cleanup order.



Permittee shall ensure that all sanitary facilities are properly secured to the ground to prevent toppling and discharge of liquid waste. Failure to properly secure sanitary facilities will result in a violation.

Permittee shall ensure that the TESC Plan remains updated with current field conditions. Failure to maintain the TESC Plan may result in enforcement action.

8.7

Step 18a. At final grade on individual lots, install temporary control measures in accordance with TESC standard lot details; submit final drainage certificate for review and acceptance.

Field Change Orders and Final Drainage Certification

8.7.1 Field Change Orders for Drainage. Field changes may arise during the construction process for individual lots that alter final grade. Major revisions to lot grading and drainage patterns during construction will require prior Town approval. Builder is to resubmit a new Plot Plan through Development Services for review and acceptance prior to the changes being implemented in the field. Failure to obtain Town acceptance prior to field changes could result in a Stop Work Order and/or withholding of CO.

8.7.2 Preparing Lots for Final Grade. Prior to issuance of a certificate of occupancy, the following items must be completed:

- Final grade on the property is to be established in accordance with the approved Plot Plan and requirements as set forth in Section 8.4.
- A Final Drainage Certificate is to be submitted and accepted by the Town.
- Temporary erosion and sediment controls shall be properly installed per the TESC Standard Details.
- Pass Final Drainage Inspection.

In cases where final grade cannot be established because of weather constraints at the time of the final inspection, the permittee may request

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Final Drainage Certificate

approval to obtain CO by posting a Fiscal Surety until all items are completed and approved by the Town. Temporary sediment controls are required at all times regardless of weather conditions.

8.7.3 Final Drainage Certificate. Individual lots require a Final Drainage Certificate prepared by a registered design professional and reviewed by the Town before a certificate of occupancy can be issued. The Final Drainage Certification is required to demonstrate the minimum drainage requirements per Section 8.4 have been met including proper site drainage and adequate drainage away from the foundation and off the lot. 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 Plot Plan.
- Location of the sump pump discharge, if applicable.
- The plan shall be signed and stamped by a registered design professional.

Step 19a. After completing all vertical residential construction and all Certificate of Occupancy's (COs) have been obtained, remove temporary control measures other than those needed for individual lots; schedule final TESC close-out inspection.

Final Close-out

8.8

8.8.1 Removal of On-site Control Measures. After obtaining the certificate of occupancy for the last lot under the TESC Permit, the remaining on-site control measures not associated with individual lots shall be removed and properly disposed. All streets and storm drains shall be cleaned. Areas of disturbance outside individual lots shall be seeded and mulched in accordance with Section 5. If seeded and mulched areas are substantial, the Town may require that the permit and fiscal surety remain in place until vegetation reaches the coverage requirements in Section 6.4.

8.8.2 Final Close-out Inspection. The Stormwater Inspector will check the removal of control measures and either accept the work or stipulate the corrections that have to be made. If corrections are substantial, the Stormwater Inspector may require that a follow-up inspection be scheduled with the Town.

8.8.3 Release of Fiscal Surety. Once final Close-out Acceptance has been obtained, the project's Fiscal Surety will be released and the permit will be closed.