

# TABLE OF CONTENTS

INTRODUCTION..... 1

SECTION 1: PERMITS..... 1

SECTION 2: INSPECTIONS..... 4

SECTION 3: SINGLE-FAMILY RESIDENTIAL DEVELOPMENT ..... 5

SECTION 4: MULTI-FAMILY, COMMERCIAL & INDUSTRIAL ..... 8

SECTION 5: EROSION & SEDIMENT CONTROL ..... 9

SECTION 6: RIGHTS-OF-WAY..... 11

SECTION 7: FLOODPLAINS..... 12

SECTION 8: ENVIRONMENTALLY SENSITIVE AREAS ..... 12

SECTION 9: STEEP SLOPES..... 13

SECTION 10: STANDARDS AND CODE REFERENCES ..... 14

    APPENDICES ..... 17

    APPENDIX A – CONTACT INFORMATION ..... 18

    APPENDIX B – CODE CHAPTER 5 ..... 19

    APPENDIX C – CODE CHAPTER 6 ..... 26

    APPENDIX D – CODE CHAPTER 7 ..... 41

    APPENDIX E – RETAINING WALL DETAIL ..... 50

    APPENDIX F – EROSION CONTROL DETAILS..... 52

    APPENDIX G – GRADING PERMIT APPLICATION ..... 54

## **INTRODUCTION**

The Summit County Land Use and Development Code (hereafter “Code”), with amendments and revisions as approved by the Summit County Board of County Commissioners (hereafter “BOCC”), is the governing document in Summit County that promulgates the regulations and standards applied to all development, including but not limited to single- and multi- family residential, commercial and industrial construction. **Chapter 6: Grading and Excavation Regulations** of the Code establishes the Engineering Department as the administrative authority for grading and excavation regulations, and §6004: Grading Manual states that the Engineering Department shall publish a grading manual that establishes the requirements, guidelines, interpretations and policies that establish the rules for grading and excavation in the County. Included in this Grading and Excavation Manual (hereafter “Manual”) are those rules, interpretations, and policies, with references to specific Code standards where applicable, which are necessary to administer these regulations for all County development projects.

In the event that a specific section of the Code is amended or revised, the Engineering Department will make every effort to maintain consistency and refer to the most current revision. There may be cases, however, when a revision to the Code is not referenced in this Manual, and in those cases an applicant or developer who recognizes a discrepancy shall bring that discrepancy to the attention of the Engineering Department immediately so that it can be remedied. In the rare circumstance where a discrepancy is discovered, the most recent BOCC approved edition of the Code shall govern.

The appendices include contact information for Engineering Department staff, staff contact information for other departments in Summit County Government, and commonly used contacts for agencies outside of Summit County Government. Should it appear that contact information needs to be changed or updated, please notify the Engineering Department as soon as possible so that the information herein can be maintained as current and correct as possible.

The Summit County Engineering Department thanks you for your attention to the information presented in this Manual. We recognize that Summit County is a very desirable place to visit and live, and with your cooperation we can continue to provide an atmosphere of harmony and community that will entice visitors and residents for generations to come.

## **SECTION 1: PERMITS**

There are a multitude of permit types and responsible agencies within Summit County Government. All building permits (including plumbing, mechanical, and electrical sub-permits, among others) are administered by the Building Inspection Department. Other departments, including Engineering, Planning, Road & Bridge, and Environmental Health may be required signatories for approval of permits and certificates of occupancy or completion, but do not have any authority in the actual

administration of those permits. As such, each department may have its own permit(s) with associated processes and requirements, e.g. right-of-way permits by the Road & Bridge Department, septic permits by the Environmental Health Department, and grading and excavation permits by the Engineering Department.

Prior to the commencement of construction or reconstruction of any road, bridge or recpath improvements, or work within the public road rights-of-way, the project proponent must obtain at least one of the following permits as determined by the County:

1. An access permit (§5300 of the Code)
  - Access permits must be obtained whenever a developer, contractor, property owner or other individual proposes to connect a driveway to an existing public or private roadway or recpath in unincorporated Summit County.
2. A right-of-way permit (§5400 of the Code)
  - Right-of-way permits shall be obtained whenever a developer, contractor, property owner, utility company or other individual proposes to install utility lines, culverts or any other work requiring signage or disturbance within County rights-of-way or recpath easement(s).
3. A grading permit (§6000 of the Code)
  - Grading permits must be obtained whenever a developer, contractor, property owner or other individual proposes to undertake earth-disturbing activity involving 500 or more square feet of surface area.

No new parcels shall be created in Summit County within any floodplain or floodway. In those cases where a parcel exists within the floodplain, and development is proposed on that parcel, a floodplain development permit shall be obtained from the County Engineer in accordance with §4110 of the Code before any site plan is approved, any grading or building permit is issued or any construction is commenced for development within the Floodplain Overlay District.

Soil disturbance and structures are prohibited within 25 feet of a wetland area with the exceptions found in §7105.01 of the Code. Where all or part of a wetland area or the associated setback is proposed to be disturbed or substantially altered by development, an applicant for development review shall submit a wetlands disturbance plan to the Engineering Department in accordance with §7105.04 of the Code.

The bulk of this Manual will discuss the processes and standards that apply to grading and excavation (hereafter “GE”) permits as they pertain to the Engineering Department. In addition to the Engineering Department, all GE permits must receive the approval of the Planning Department prior to being issued. As such, any submittal requirements of the Planning Department must be satisfied prior to issuance of a GE permit. For a complete list of the requirements and standards of the Planning Department as related to GE permits, please refer to the Code or contact the Planning Department directly (see Appendix A).

If a building permit is required for a project, then the applicant(s) must first obtain approval for a GE permit. Please refer to the Building Inspection Department’s web page or contact them directly for specifics on their submittal requirements for

permits, standards, and other department and outside agency approval requirements.

Grading and excavation permits will generally be issued only for proposed work that is associated with a complete, approved building permit or on property that was previously developed in accordance with all applicable regulatory requirements. Please refer to the Building Inspection Department's web page or contact them directly for specifics on their submittal requirements. Grading project work will generally not be permitted for preliminary development on undeveloped property, including subdivided lots, where the primary use of the property has not been proposed and approved in accordance with applicable Summit County regulations. This limitation on preliminary development grading and excavation specifically includes driveway installations, site preparation for building sites, septic and leach field installations, and drainage work. However, there are circumstances where a grading permit may be authorized by the Development Code in the absence of an approved building permit, including but not limited to situations where such work is for timber harvesting or other forest management activity, or for projects which have received subdivision or site plan approval and require significant overlot grading or utility installations and are accompanied with an improvements agreement. Depending on the scope and duration of the work proposed in any of these special circumstances, the Engineering Department may require a financial guarantee. For timber harvest or forest management activities, the Engineering Department may require a forest management plan that is prepared by a qualified professional, or is otherwise approved by the Colorado State Forest Service or other fire mitigation official, and which is in accordance with the Summit County Community Wildfire Protection Plan.

GE permits will generally not be issued during the winter months, when sites are not visible due to snow cover. In the event that a project's scheduling requires that excavation begin in the winter months, an inspection of the property should be performed prior to snow covering the lot, and a specific winter conditions development plan shall be submitted to the Engineering Department for review. This winter conditions plan must include construction BMP specifics, phasing of erosion control measures and excavation procedures, as necessary, to prevent sediment discharge from the site during the runoff/snow melt season. Phased erosion control inspections will be required. The plan shall also include specific provisions for backfill of walls and subgrades in order to prevent backfilling with frozen or snow laden material. Failure to comply with any conditions imposed on a project will be grounds for County enforcement as provided for in §6003 depending on the severity of the impacts of failure to comply with these conditions. The County Engineer reserves the right to deny or postpone approval of any project that proposes to begin in the winter months.

All grading and excavation projects that propose to require or generate fill must provide, in the application or on the site plan, the source or destination of the fill received or generated. No fill may be disposed of on a site where there is no active GE permit, or that is not approved to receive fill. Fill may be disposed of at projects that have active GE permits and require fill, at approved stockyards, or at the County Landfill. Any time fill is observed on a property with no GE permit, the owner of that property will be held liable for the removal of the material, the restoration of the property, and all associated costs. The County is not able to, and will not attempt to

track the source of such fill. In these cases a letter will be sent to the property owner describing the procedures and timeframe required for compliance with this regulation. It is the owner's responsibility to track the source of the material and negotiate any cost sharing or acceptance of liability with the party responsible for depositing the material.

Feel free to contact the Engineering Department with any questions you have regarding development and permit requirements in Summit County. If, for any reason, we are not able to answer your questions we will make every effort to direct you to the proper authority to answer the question at hand or research your question and provide an answer directly.

## **SECTION 2: INSPECTIONS**

In any case where a GE permit is required, a final inspection by the Engineering Department will be required. There are cases where intermediate inspections are required or desirable. For example, when a driveway is proposed to be paved, it is recommended that the Engineering Department inspect the placement of compacted base course prior to the placement of asphalt or concrete. This "pre-inspection" is advised to verify the depth and suitability of the base course, and is an opportunity to verify the grade of the driveway to avoid costly repairs to non-compliant conditions after concrete or asphalt has been placed. Also, prior to any earth disturbing activities on any project, an erosion control inspection may be required. Failure to schedule a required erosion control inspection prior to excavation shall be grounds for revocation or suspension of permits, additional inspection fees, fines, or legal action, depending on the severity and impacts of the work performed. If an erosion control inspection is not necessary, specific approval to begin excavation without the inspection must be given in writing.

It is understood that some minor deviations from the approved site plan may be necessary based on site conditions that do not exactly match the survey or circumstances that were not anticipated in the planning and approval process. At the time of the final inspection by the Engineering Department, all site conditions not previously approved on a site plan must be in conformance with the standards established in the Code and the standards, policies and regulations established in this Manual. The contractor shall notify the Engineering Department of any changes to an approved plan prior to final inspection of the project. Additional procedures for scheduling inspections and requirements at the time of the inspection are established in §6302.08: Inspection of Project Grading Work of the Code.

Inspections requested between November 1<sup>st</sup> and April 30<sup>th</sup> may be declined due to inclement weather at the discretion of the Engineering Department. In such cases, final approval by the Engineering Department shall be withheld until the site is visible, or the owner posts a financial guarantee in the form of an irrevocable Letter of Credit (LOC) or cash, and executes a site plan improvements agreement. The financial guarantee shall not be released until the improvements on the site have been completed by the contractor/owner, and subsequently inspected and approved by the Engineering Department.

**SECTION 3: SINGLE-FAMILY RESIDENTIAL DEVELOPMENT**

The grading and excavation standards that apply to single-family residential development are presented herein as they would be addressed in a typical development.

For the purposes of differentiating, there are four different classes of permits for single-family developments defined here. Submittal requirements shall be applied to each development proposal at the sole discretion of the County Engineer. The classes of permits are:

1. New single-family residence or major addition (SFR or Major)
2. New single-family attached residence (Duplex)
3. Garage or medium addition/modification (Medium)
4. Minor addition or site improvement (Minor)

New SFR, Duplex developments and Major additions shall have the same submittal requirements. Garage and Medium Additions will typically be treated on a case-by-case basis, with the submittal requirements established based on the size of the garage/addition and the existing conditions of the property. Minor additions and site improvement projects will also be dealt with on a case-by-case basis, with minimum submittal requirements that must be met. Standard submittal requirements are as follows:

<p><b><u>Site Plan, to engineering scale (1:10 or 1:20)</u></b>          Clearly show the <u>north arrow</u> and <u>scale</u>.          Include a statistical inventory showing what is existing and what is proposed of the site coverage (impervious and building), open space, snow storage, etc.</p>
<p>Site Plan Requirements</p>
<p><b>Legal description</b> (i.e. subdivision name, lot, block, filing) and <b>Physical Street Address</b>. To find the legal description, address zoning, or other pertinent information about a property, please utilize the County’s Real Property and Maps online service which can be accessed at:  <a href="http://gis.summitcountyco.gov/Map/">http://gis.summitcountyco.gov/Map/</a></p>
<p><b>Zoning development standards</b> – (Figure 3-5 of the Code):</p> <ul style="list-style-type: none"> <li>▪ Show lot square footage and acreage as zoning requires a minimum.</li> </ul>
<p><b>Plat compliance</b> – Show property lines, lot dimensions, easements, and compliance with all plat notes.</p> <ul style="list-style-type: none"> <li>▪ To obtain a copy of the plat, contact the Clerk and Recorder’s at 453-3470 or the Planning Department at 668-4200</li> <li>▪ For duplexes, show the location of the proposed property line and label as such.</li> </ul>
<p><b>Setbacks</b> – Review §3505.13 of the Code for setback requirements. Also note that there are road setback requirements which trump property line setback requirements if the road setback is more restrictive. To access setback requirements for each zoning district other than PUD’s see Figure 3-6 of the Code. For Setbacks in PUD’s, please review the PUD. Contact the Planning Department with any questions about setbacks.</p> <ul style="list-style-type: none"> <li>▪ Clearly show setbacks from all property lines. If there is a building envelope and/or disturbance envelope, then show and ensure that the structure is within those designated areas.</li> <li>▪ The foundation and roofline must be shown on the site plan and clearly differentiated.</li> <li>▪ Any permanent construction over 18” above ground is not allowed in the setbacks, including but</li> </ul>

- not limited to decks, stairs, cantilevered construction, eaves, and architectural accents.
- For exceptions to setback requirements for structures including but not limited to sheds, hot tubs, railings, and solar systems, see §3505.13.G of the Code.

**Utilities**

- Public Utilities: Show existing and proposed location of all utilities and connections including existing utility boxes/poles for electric, gas, cable, telephone, sewer and water. Show and label utility easements.
- On-site Wastewater Treatment Systems: Show leach field grades based on approved design.
- Wells: Show the location of any existing or proposed wells.

**Grading and drainage**

- Show existing and proposed topography at 2-foot contour intervals.
  - If topography on the site has greater than a 10% slope, or if the height of the structure is within 5 feet of the maximum allowed, a topographic survey prepared and stamped by a registered land surveyor shall be submitted.
- Maximum 2:1 slope allowed on all finished contours or retain.
- Retaining wall maximum = 4 feet without an engineered design (submit cross-section diagram).
  - Retaining walls > 4 feet in height require design and certification by a Colorado licensed Professional Engineer.
  - Engineered systems must be 8 feet maximum and stepped a minimum of 4 feet.
  - See §3505.17.D of the Code for more details.
- Show foundation drain location and daylight.
- Show all culverts and indicate direction of drainage flow including drainage details.

**Height calculation** (refer to §3505.06 of the Code)

- Measured vertically from any point on a proposed or existing roof to the natural or finished grade (whichever is the more restrictive) directly below said point of the roof (see Height Info Sheet: <http://www.co.summit.co.us/DocumentCenter/View/11357>)
  - Show elevation reference points for garage slab and ridge height in USGS.
- Building height maximum
  - See Figure 3-5 of the Code for the maximum height allowed in each zoning district or refer to your PUD. Please also check the plat as some subdivisions have more restrictive height maximums that are noted on the plat.
  - Some subdivisions use the UBC standards for height maximum (most of these subdivisions are located in Keystone).
  - Chimneys may exceed ridge height by 10% of maximum height of structure.

**Landscaping**, if proposed, including walkways, hardscape and landscape features.

- Preserve existing vegetation using orange construction fencing – show location.
- Show existing tree stands and other significant vegetation, (e.g. willows).
- See §3602.A.4 of the Code for applicability of landscaping requirements.
- See §3604 of the Code for mandatory landscape design standards.
- See §3605 of the Code for plan requirements for landscaping.

**Driveway**

- Maximum 8% grade for the first 25 feet from the roadway, and 10% at any point thereafter, measured along the centerline of the driveway
- Driveway widths, serving one single-family residence (See Table 5-6 of the Code):
  - Driveway less than 200 feet in length = 12 feet wide minimum
  - Driveway greater than 200 feet in length = 14 feet wide minimum
  - Provision for emergency vehicle turn around on driveways longer than 400 feet
- Driveway opening width = 18-24 feet at flares and;
  - Perpendicular to road through the right-of-way
  - Opening not higher than shoulder until beyond the road-side ditch
  - Uphill lots require a culvert, swale or drainage pan before the connection to the roadway
- Driveway surface: 4" compacted road base for single-family residence, 4" compacted road base and 2" asphalt for duplexes accessing off of paved roads
  - Vehicle tracking control = min. 50 feet of 2"-3" aggregate min 6" thick before excavation

- One driveway access allowed onto County road system, unless 250 feet of separation provided (i.e., horseshoe driveways not allowed)
  - Minimum 30 feet separation from adjacent driveway
  - Minimum 50 feet separation from nearest intersection
  - Minimum sight distance (200 feet for local access road or 400 feet for collector road)
- Snow storage area = 25% of and adjacent to driveway and parking areas (See §3505.19 of the Code for additional snow storage requirements and for details relating to uphill snow storage areas)
  - Show calculations of total driveway and parking surface areas including those areas located in the right-of-way
  - Show calculations and location of proposed snow storage adjacent to the driveway and parking area surfaces
  - Snow storage area is not allowed in the right-of-way
- Proof of access:
  - If the driveway crosses neighboring properties then legal, recorded easements are required to be submitted
  - If access is within an easement or shown on a plat, identify and verify proposed access is within the recorded easement
  - If an un-platted common driveway is proposed, submit an easement signed by all affected property owners

**Steep slopes** (See §7102 and §7102.01 of the Code)

- Show calculations of slopes  $\geq 30\%$  on the entire property and all the proposed disturbance (including leach field)
- Area with slopes  $\geq 30\%$  intended to be used for roads, driveways or structures shall be approved for such use by a geologist or engineer in a soils report. All roads, driveways and foundations shall be designed by a licensed engineer consistent with the soils report.
- An erosion control plan, urban run-off control plan and utility plan may be required and all such plans must be designed by a Colorado licensed Professional Engineer, and financial guarantee may be required prior to issuing a GE permit.
- A revegetation plan may be required and must be designed by a licensed landscape architect.

**Streams and drainage ditches**

- Show any streams or intermittent streams and drainage ditches
  - Soil disturbance is prohibited within 25 feet of a lake, stream, or intermittent stream. See Section 7103 of the Code for details.
  - For more grading, excavating and water quality control regulations, contact the Engineering Department at (970) 668-4200, see Chapters 6 & 7 of the Code, or see Section 5 and Appendix F of this Manual

**Wetlands** (see the County's wetland regulations in Chapter 7 of the Code)

- Single-family and duplex development on lots platted prior to February 26, 1996 may be exempt from the County's wetland setback regulations but are not exempt from the disturbance of wetlands.
- Any wetlands on a property must be delineated by a wetlands consultant. The wetland delineation shall be surveyed and shown on the plans. Any accompanying wetland reports shall also be submitted.
- Any disturbance to wetlands or the wetland setback which is not exempt from the County's wetland requirements must meet all applicable provisions set forth in Chapter 7 of the Code including but not limited to:
  - A statement on compliance with each Criteria set for in §7105.03 of the Code;
  - A wetland disturbance plan in accordance with §7105.04 of the Code;
  - A mitigation plan in accordance with §7105.05 of the Code; and
  - A financial guarantee in accordance with §7105.06 of the Code
- Any disturbance to wetlands must also include evidence of compliance with Section 404 of the Federal Clean Water Act (i.e. ASOE Permit or non-jurisdictional determination)
- Show all erosion control measures and mitigation recommendations by the wetlands professional or project engineer

<ul style="list-style-type: none"> <li>▪ Wetlands delineations are considered valid for five years from the date of the report. If a wetland delineation has expired, a new or updated delineation will be required</li> </ul>
<b>Trail(s)</b> <ul style="list-style-type: none"> <li>▪ Identify any significant existing trails or proposed connections</li> </ul>
<b>Significant natural or historical features</b> <ul style="list-style-type: none"> <li>▪ Identify any potential features</li> </ul>

Based on the review of the application and site plan, the Engineering Department may require additional information. Certain information or standards as related to the site plan may be waived based on the scale and scope of the proposed project.

Once all of the above items and any other conditions in the Code are satisfied, along with any other conditions or standards that are required by the Planning Department, the Engineering Department will issue a GE permit for the project which must be kept with the approved plans onsite at all times. The full permit fee must be paid before the permit can be issued, and before any work may commence unless specifically directed or approved by the Engineering Department.

For more details regarding any Engineering aspect of any level of single-family development, please feel free to contact the Engineering Department directly.

**SECTION 4: MULTI-FAMILY, COMMERCIAL & INDUSTRIAL**

Multi-family, commercial, and industrial developments will typically undergo a very specific review and approval process through the Planning Department. As a part of that process, the Engineering Department is referred the proposed plans and asked to comment. Specific requirements and standards that will be applied to these developments will be addressed by the Engineering Department in that referral process.

In general, these development applications will require engineered site plans, drainage studies, traffic impact studies, geotechnical reports for pavement designs for access and parking areas, floodplain and wetland delineations (where applicable), and road designs (where applicable) to be completed by a CO PE or certified consultant for review by the Engineering Department. The Engineering Department should be contacted directly with any questions about the applicability of any of these or other submittal requirements. We will be happy to discuss the need for any of these based on Code requirements, engineering judgment and historical, existing and proposed conditions.

Engineered site plans for multi-family, commercial, or industrial proposals shall be completed by a CO PE with details and specifications as needed according to standard engineering practice and the conditions on the site, and drawn to the maximum engineer’s scale that shows all proposed improvements on the site. Drainage studies will be completed by a CO PE in accordance with the regulations in §8152: Drainage Design Criteria of the Code. For the purposes of all new developments in the County, the design storm shall be the 25-year, 24-hour event, with a rainfall depth of 2.2 inches, unless otherwise agreed upon by the County Engineer (see §7100:

Development Standards for Control of Water Quality in the Code for details). All new developments shall provide facilities which limit developed runoff rates to historic rates for the design storm. In the event that an engineer wishes to use a different method than those prescribed in §8152 or §5103.03.D of the Code, special written approval from the County Engineer must be obtained.

The site design standards for these developments are similar to those for single-family, with the most notable exception being that accesses for most of these projects must meet a maximum 6% grade rather than 8% (per §5107.03.E of the Code) and the minimum width is 22-feet (per Table 5-6 of the Code). The fact that these projects must include engineered site plans along with site specific drainage and traffic studies generally leads to less confusion, because the development standards in the Code and the Manual are based upon standard engineering practices, and if for some reason an engineer needs to deviate from those standards a well documented justification is provided for their own comfort and insurance purposes, in order to prevent any action being taken against their professional license.

## **SECTION 5: EROSION & SEDIMENT CONTROL**

The Summit County Engineering Department administers all water quality control regulations in unincorporated Summit County by and through the authority granted in the Code and in state statutes. This is to control pollution of surface waters entering Green Mountain and Dillon reservoirs and their tributaries, as well as to avoid overwhelming roadway drainage systems, culverts, and other stormwater conveyances that may exist in the County. The water quality control regulations established in the Code, in the Water Quality Control Manual (per §7004 of the Code, titled “Erosion and Sediment Control During Construction”), and in this Manual are created in order to prevent such pollution, and to prevent sedimentation of wetlands, protect creeks and streams and their associated floodplains, and to limit as much as possible civil disputes arising from unlawful trespasses in the form of erosion and sedimentation. All of these effects can be affected by the proper implementation of the standards presented in this Manual, in the Code, in the Water Quality Control Manual, and in supplemental reference materials (e.g. the Urban Drainage and Flood Control District (UDFCD) publication “Urban Storm Drainage Criteria Manual, Volume III” (USDCM VIII)). The Water Quality Control Manual presents a relatively in-depth discussion of the merits of, and justification behind, the standards and policies presented here. For that reason, this Manual will focus on specifics regarding the County standards, procedures, and policies applied to specific development projects. Any questions regarding these standards or their specific application to a project may be directed to the Engineering Department.

The primary goal of all water quality control is to limit the amount of erosion and/or sediment carried offsite in storm runoff. To that end, before any earth disturbing activities are undertaken, the first step is to plan the scheduling and coordination of the project such that the majority of disturbance is completed during the season when the probability of a significant rainfall event is at a minimum. In Summit County,

depending on your location within the County, the excavation season typically ranges from about eight months (in the lowest elevations) to five months (at the highest elevations). This can become a very significant and costly constraint if it is not taken into consideration when planning and scheduling a project. Ideally, all excavation in the County should begin between May 1 and June 15, depending on seasonal conditions and location, and all excavations would be “buttoned up” no later than September 30. Buttoned up, in this context, means all excavated areas are backfilled, all grading for landscaping is completed in this timeframe, and revegetation (at least temporary) is installed. Adhering to this timeframe will allow for corrections and modifications to be made in the month prior to the first permanent snow of a season, and for those years where a late spring snowmelt prevents an earlier start. While we recognize that this may not be possible because of the myriad of other constraints and factors that dictate when a project begins or ends, this should be a guideline used to begin planning a project.

Limiting the amount of disturbance involved in a project is equally effective in the prevention of erosion and sediment discharge. The State of Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division (WQCD) requires Stormwater Construction Permits for any project involving over five acres of disturbance, and most projects involving over one acre of disturbance. Although the CDPHE permits do not apply to most single family permits, they do apply to most multi-family, commercial, industrial, institutional, and highway projects in the state. As part of the application for these permits a Storm Water Management Plan (SWMP) must be submitted to the CDPHE WQCD. Where a SWMP is required by the state, a copy of that plan and permit should be submitted to the Engineering Department for our records. On single-family projects, and projects where a SWMP is not required, the applicant/owner/contractor must follow similar guidelines to those that would be included in a SWMP for a state permit. In those cases where a SWMP is not submitted, the applicant shall submit plans to the County showing how they will limit disturbance to the minimum amount required for the project, protect those disturbed areas from erosion, prevent any erosion or sediment from leaving the project site boundaries, and permanently stabilize all disturbed areas from future erosive impacts.

Commonly referred to as Best Management Practices (BMP's), the steps taken to limit erosion can be very simple or very complicated, based on the required disturbance and duration of a project. The first and most effective BMP is limiting disturbance. Once a disturbance limit is established, there are many possible structural BMP's that may be implemented on a project during construction. These include, but are not limited to silt fencing, straw wattles (aka straw logs), gravel check dams, sedimentation ponds, concrete washout areas, vehicle tracking control pads (VTC), terracing, slope drains, grass buffers or swales, and run-on diversion. A fairly thorough discussion of these and other BMP's can be found in the USDCM Vol. III published by the UDFCD or the Water Quality Control Manual published by the Summit County Engineering Department. At a minimum, all projects in Summit County should incorporate a VTC, silt fence or straw wattles (depending on slope and size of project), orange construction fence (OCF) or some other means of delineating a disturbance area, and concrete washout areas. Where a project drains to a County roadside ditch, gravel

check dams should also be included in the ditch line periodically to the lowest hydrologic point of the project. Appendix F includes some details of commonly used BMP's in the County. In addition to the details provided here, the USDCM Vol. III provides a comprehensive bank of details and procedures.

Prior to issuance of any GE permit, an erosion control inspection is required for the inspection of the construction BMP's and/or evaluation of the applicability of specific BMP's. There may be cases where it is not logical to install certain BMP's at the beginning of a project. For example, it is not reasonable to expect that a VTC is installed before the access to the project is constructed. In such cases, follow-up inspections at specified stages of the project are appropriate and will be required. Failure to schedule inspection at the appropriate stages of a project may be grounds for cancelled inspections, stop-work orders, fines, or other legal action depending on the severity of the impacts of the transgression.

The final inspection of any project (as required and with procedures specified in §6302.08: Inspection of Project Grading Work of the Code) will include inspection of the final structural BMP's as well, including drainage structures (swales, channels, check dams, etc...), detention ponds, revegetation, and slope netting. Slope netting will be required on all finished grades with slopes steeper than 3:1. All disturbed areas of a site shall be revegetated with a native, weed-free grass seed mix prior to final approval by the Engineering Department. In areas where the native soil or site fill does not appear to be capable of fostering seed growth, topsoil or compost augmentation may be required. Re-inspection of failed items will be charged a re-inspection fee in accordance with the fee schedule approved by the BOCC and published on the County website, or available at the Planning and Engineering Department offices.

## **SECTION 6: RIGHTS-OF-WAY**

The Summit County Road & Bridge Department administers all work in public rights-of-way. Any public or private utility connections, culvert installations, road construction or improvements, or any other work that requires disturbance of a County right-of-way shall be subject to a right-of-way permit. In general, private utilities such as individual water or sewer services, leach fields, propane tanks or lines, or heated driveways are not permitted in public rights-of-way. There may be certain cases where such private services Right-of-way permits shall be obtained from the Road & Bridge Department and shall be subject to the terms and conditions of that permit, and the standards established in Chapter 5: Road & Bridge Standards of the Code (see Appendix B). Contact information for the Road & Bridge Department can be found in Appendix A or on the County website. There may be circumstances where the Road & Bridge Department cooperates with the Engineering Department with regard to standards, right-of-way/private property interface, financial guarantees, or decisions regarding unusual or special circumstances, but ultimately the authority for administration of permits and construction in the right-of-way lies with the Road and Bridge Department.

## **SECTION 7: FLOODPLAINS**

No new development in Summit County shall be permitted within any floodplain or floodway. All floodplain regulations can be found in Chapter 4: Zoning Regulations/Overlay Districts of the Code and in the FEMA National Flood Insurance Program (NFIP) regulations and guidelines. In the event that there is a parcel that exists within a floodplain and development is proposed on that parcel, a Floodplain Development Permit will be obtained and work will be performed in accordance with §4110: Floodplain Development Permits of the Code. If you are not sure whether your property is located in a floodplain, or if a floodplain is located on your property, please contact the Engineering Department to review the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) at the location of your property.

## **SECTION 8: ENVIRONMENTALLY SENSITIVE AREAS**

The Summit County Government has taken a proactive approach to the protection of environmentally sensitive areas in order to protect the values and critical functions they provide to the environment, its community, and all beneficiaries, including wildlife and the general public. Environmentally sensitive areas include wetlands, streams, lakes, ponds, and other special wildlife habitat areas. The Engineering Department is the authority under the Code with the responsibility of protecting and preserving surface waters and wetlands within unincorporated Summit County. As impacts to these resources affect other regions, the County works in conjunction with the Summit Water Quality Committee, Environmental Protection Agency (EPA), Army Corps of Engineers (USACE), State Engineer's office Water Commissioner, and the Natural Resource Conservation Service (NRCS). Chapter 7: Water Quality Control Regulations (see Appendix D) and §4200: Wildlife Habitat Overlay District of Chapter 4: Zoning Regulations/Overlay Districts in the Code establish the submittal requirements and standards for development in the vicinity of these sensitive areas.

All development related activity, specifically any earth-disturbing activities, shall be subject to a minimum 25-foot setback from any wetland or surface water in accordance with the provisions established in §7103 and §7105.01 of the Code. In circumstances where a property was created prior to the development of the Code or the specific regulations contained therein, disturbance of the setback areas or wetlands may be required in order to make reasonable use of the inherent property rights associated with the parcel. In those cases, wetland development permits may be required from the County in addition to permits from the USACE in accordance with §404 of the EPA Clean Water Act. Typical conditions of a County wetland development permit, or grading project where wetland disturbance is permitted, will be 1:1 wetland mitigation, chain link fencing at disturbance limits in lieu of OCF, more significant erosion control measures than on standard projects, and a financial guarantee for the erosion control construction BMP's and any wetland mitigation requirements, and wetland or surface water setback enhancement measures intended to provide permanent wildlife buffer

zones and water quality protection.

The Engineering Department can and will make any conditions or requirements of development in environmentally sensitive areas deemed necessary or appropriate at the time of permitting for the associated project. Any questions regarding the application of the standards established in the Code or discussed here shall be directed to the Engineering Department staff. The goal of establishing these conditions, again, is the protection of those environmentally sensitive areas for the benefit of future inhabitants and visitors, and conditions of development in these areas shall be strictly adhered to. Any failure to comply with conditions established in the permit(s) for a project may result in forfeiture of financial guarantees, additional fees, fines, or legal action, depending on the severity of the impacts of the transgression(s).

## **SECTION 9: STEEP SLOPES**

One of the most attractive features of Summit County is its mountainous environment, but it is this environment that can present some of the most dangerous and challenging conditions for recreation and development. For that reason, there are very specific requirements and conditions placed on the development of steep lots. The goal of all conditions and regulations is to ensure that development in steep areas does not cause unstable conditions during construction or in the long-term. When special conditions on a property are identified, special follow-up requirements or conditions may be implemented or imposed, such as periodic inspections by a geotechnical engineer, site evaluations by specialized engineers, and final site condition assessment letters from the geotechnical or design engineer.

In accordance with §7102 of the Code, disturbance of slopes greater than 3.33:1 (30%) are allowed only with specific approval of the County Engineer. If a lot contains slopes in excess of 3.33:1, and 15% or more of those slopes are proposed to be disturbed, then a geotechnical report for slope stability will be required. Roadway embankment slopes shall be included in the slope analysis of a property, and disturbance of roadway embankments may be grounds for the requirement of a slope stability report, depending on the extent and severity of the proposed impacts. In circumstances where slopes of 3.33:1 or greater exist but there is little to no likelihood of slope instability being induced by development, the County Engineer may waive the requirement for a geotechnical report. If the County Engineer chooses not to waive this requirement, then permit review will be ceased until the report is provided. The geotechnical report for slope stability shall include recommendations and information necessary to protect the area from construction induced instability, including limiting erosion potential, stabilizing fill placement, identifying lateral earth pressures (active, passive, and equivalent fluid pressure) for use in the design of foundations, controlling runoff, and methods of anchoring structures proposed on the property. The slope stability report shall reflect all proposed improvements. Any changes to the proposed plans may necessitate follow-up reviews and amendments to the report by the geotechnical engineer. The submittal of any proposal involving development of a lot with steep slopes shall include a slope analysis plan sheet, graphically depicting the location of steep slopes and those slopes

proposed to be disturbed.

Where any development is proposed, finished grades shall be shown clearly on the plans as prescribed in this Manual and the Code. Where finished grades exceed 3:1 slope netting or some other means of temporary stabilization will be required, along with additional temporary erosion and sediment control measures as deemed necessary and appropriate. On slopes in excess of 30% finished grades shall be furrowed perpendicular to the slope in order to slow runoff down the slope and limit seeds being washed down the slope. In all cases the maximum slope of un-retained finished grades will be 2:1. Retaining walls will be constructed in accordance with engineering practices and the design provided. Retaining walls over 4-feet tall shall be engineered, and shall be certified by an engineer prior to final approval. Inspections must be performed as required by the engineer. In the event that a wall exceeds 4-feet tall but was not engineered a certification letter or as-built must still be provided. If the engineer has not observed the wall construction as needed then the wall must be dismantled and reconstructed with observations as required. Per §3505.17.D of the Code, retaining walls over 8-feet tall will not be permitted unless topographic constraints drive such design. Walls over 8-feet tall may be approved at the discretion of the County Engineer. Final inspection of projects with retaining walls over 4-feet tall will not be performed until the certificate of approval from the engineer has been provided.

Any questions regarding the existence of, or regulations and standards pertaining to steep slopes shall be directed to the Engineering Department (see Appendix A for contact information).

## **SECTION 10: STANDARDS AND CODE REFERENCES**

Listed in this section are the standards defined here and in the Code, with reference to the applicable section of the Code, that are subject to review by the Engineering Department. This list is intended to be used as a guideline for site design and planning, but does not include all of the regulations that may be applied by other agencies or departments. Be advised that any errors or omissions in this section shall not be construed to relieve the requirement of those standards. As always, the Engineering Department is available to discuss our regulations and how they are applied to any specific development proposal.

### **Grading Standards:**

- 2:1 max. slope or retain
  - Retaining walls over 4-feet must be designed by a CO PE
  - Retaining walls over 4-feet onsite must be approved in a letter or as-built drawing by a CO PE
- Positive drainage
  - Directed away from all structures
  - Directed towards appropriate destination (i.e. County road-side ditch, river, lake, or stream)
  - Drain daylighting must occur 50 feet from the County road-side ditches

- Slope protection provided
  - Netting
  - Slope drains
  - Benching of fill
  - Furrows perpendicular to slope
  - Rip-rap or concrete swales
- Proper grading procedures
  - Compacted fill to appropriate density and moisture content
  - Clean topsoil at top 6"
  - Finished grades to clean lines and grades, per plan
  - Include all utilities and any leach field finished grades

Driveway Standards (§5107.03: Standards for Driveway Design):

- Location/separation (§5107.03.A & §5107.03.B)
  - 30-ft from adjacent driveway, measured from flare edge to flare edge
  - 50-ft from intersection, measured from driveway flare edge to edge of right-of-way for local access
  - Per left turn stacking distance for higher functional classifications
- Grade (§5107.03.E)
  - 6% max. multi-family, commercial, institutional or industrial
  - 8% max. residential for first 25 feet from road, 10% thereafter
  - Up to 12% in backcountry zoning, to limit disturbance
- Driveway Width (Table 5-6 in Chapter 5: Road & Bridge Standards)
  - 22-ft min. for multi-family, commercial; 65' min. centerline radius of curvature
  - 12-ft min. for residential driveway w/length<200-ft serving one unit
  - 14-ft min. for residential driveway w/length>200-ft serving one unit, or w/length<200-ft serving 2-4 units; 40' min. centerline radius of curvature
  - 16-ft min. for residential driveway w/length>200-ft serving 2-4 units; with 40' min. centerline radius of curvature
- Driveway Openings (Table 5-6)
  - Openings are to be perpendicular to the right of way (§5107.03.M)
  - Min. 18' to max. 24' width at flares for lots serving on unit
  - Min. 20' to max 30' width at flares for lots serving 2 to 4 units
  - Min. 24' to max 30' width at flares for Multi-family lots
  - Min. 24' width at flares for Commercial lots
  - Shared openings must have recorded easements
- Turnouts and Turnarounds for Emergency Equipment (Table 5-6)
  - Length <400 feet - no turnouts required
  - Length 400-800 feet - one 8' x 30' turnout at midway point; one turnaround for emergency equipment within 150' of dwelling unit

- Length >800 feet – every 400 feet, place 8' x 30' turnout; one turnaround for emergency equipment within 150' of dwelling unit
- Multifamily, Industrial, Commercial – one turnaround as specified in Figure 5-6 if the driveways dead end
- Surfacing (§5107.03.G)
  - Aggregate base course or recycled asphalt, 4" min. depth, on SFR's or duplexes on gravel roads
  - Paved for duplexes and multi-family, commercial, etc... w/ 4" compacted base course and 2" min Hot Mix Asphalt (HMA), in accordance with §5103.03.C and §5203.09
- Sight distance (§5107.03.I)
  - 200-ft min. on local access roads
  - 400-ft min. on collectors
- Drainage (§5107.03.H and per this manual)
  - Away from structure, towards appropriate destination
  - Culvert per right-of-way permit
    - 15"Ø min.
    - 4" min. cover
    - Or as required by Road and Bridge Department
- Snow storage (§3505.19 and §5107.03.L)
  - 25% of driving surfaces to be provided as snow storage
  - Must be in logical, accessible location, separate but adjacent to driving surfaces
  - Must be provided off right-of-way, on owners property

Wetlands and surface water standards (Chapter 7: Water Quality Control Regulations)

- 25-foot setback applies at all locations
- Strict erosion control standards will apply in all cases where grading is proposed adjacent to surface waters, wetlands, or their setbacks
- A financial guarantee for the cost of wetland mitigation or setback enhancement will be required prior to issuance of a GE permit on any project where wetland disturbance or surface water impacts are required, unless specifically waived in writing by the County Engineer
- Exemptions may be granted per §7200 at the sole discretion of the County Engineer

## **APPENDICES**

# APPENDIX A – CONTACT INFORMATION

## PHONE NUMBERS FOR COUNTY DEPARTMENTS:

ENGINEERING DEPARTMENT .....	(970) 668-4200
Staff:	
Engineering Technician	
Stoy Streepey .....	(970) 668-4208
Engineer I	
Paul Geiger.....	(970) 668-4243
County Engineer	
Robert Jacobs .....	(970) 668-4212
LANDFILL.....	(970) 468-9263
ENVIRONMENTAL HEALTH DEPARTMENT .....	(970) 668-4070
BUILDING INSPECTION DEPARTMENT .....	(970) 668-3170
PLANNING DEPARTMENT .....	(970) 668-4200
ROAD & BRIDGE DEPARTMENT .....	(970) 668-3590
OPEN SPACE & TRAILS DEPARTMENT .....	(970) 668-4060
OUTSIDE AGENCIES:	
U.S. ARMY CORPS of ENGINEERS	
GRAND JUNCTION OFFICE .....	(970) 243-1199
STATE ENGINEERS LOCAL OFFICE .....	(970) 945-5665
NWCCOG .....	(970) 468-0295
USFS.....	(970) 468-5400

## **APPENDIX B – CODE CHAPTER 5**

# SUMMIT COUNTY LAND USE AND DEVELOPMENT CODE

**Excerpts from:**

## **CHAPTER 5: ROAD & BRIDGE STANDARDS**

Adopted: September 12, 1988(Resolution #88-52) Effective: October 1, 1988

**5107: Driveways and Parking Areas**

**5107.01: Requirement for Access Permit**

Whenever a property owner, developer, contractor or other individual proposes to connect a driveway or parking area to a public roadway, they must obtain an access permit from the Engineering Department prior to commencing construction. The submittal requirements and procedure for obtaining access permits are stated in Section 5300 et seq. of this Code.

**5107.02: Requirement for Grading Permit**

Whenever construction of a road, Recpath, trail, driveway or parking area results in earth disturbance, the individual responsible for the construction must obtain a grading permit from the Engineering Department prior to commencing construction. The submittal requirements and procedure for obtaining grading permits are stated in Section 6300 et seq. of this Code.

**5107.03: Standards for Driveway Design**

A driveway is an access way for vehicles providing a connection from a public or private roadway to either 1) individual single-family or duplex dwellings; or 2) a parking lot serving multi-family dwellings, commercial development, industrial development or other non-residential development. Driveways under category 1 above may serve no more than four (4) single-family dwellings or two duplex structures (four (4) dwelling units in two (2) duplex structures). If an access way serves more than four (4) individual single-family dwellings, it shall be classified as a roadway rather than a driveway and must meet the County’s standards and requirements for road construction. An access way serving a working ranch or farm and any associated residence regardless of length shall be considered a driveway, and shall meet only such standards as are necessary for public health and safety and as outlined in Section 5107.

- A. **Location of Driveways Relative to Intersections:** Driveways shall be placed so the following minimum distances are maintained to any street intersection, including a T-intersection on the opposite side of the street from a property where a driveway is proposed:
  - 1. Where the driveway connects to a local access or low volume road, a minimum distance of 50 feet from curve return to edge of right-of-way at the intersection shall be maintained.
  - 2. Where a driveway connects to a collector or larger road, a minimum distance consisting of the left turn stacking distance plus 20 feet as measured from the driveway curve return to the intersection curve return, shall be maintained. The left turn stacking distance shall be determined by the Engineering Department based on available data from an acceptable traffic study. If a traffic study is not available, or data provided is incomplete, the Engineering Department shall estimate the length of the left turn stacking distance using the following formula:

$$\text{Peak Hour Traffic} = \frac{\text{ADT}}{10}$$

Peak hour left turns = 1/6 of peak hour traffic for 4-way intersections

Peak hour left turns = ¼ of peak hour traffic for T-intersections

[1.5 x peak hour left turns x 20'] + 20' = driveway to intersection spacing x 30

The Engineering Department may make adjustments in the factors used in this formula for a typical situation. Examples of such situations include the intersection of low volume roads with very high volume roads, or where adjacent land uses like the Copper Mountain or Keystone Resort areas cause traffic patterns to be skewed. If an applicant disagrees with the left turn stacking distance determined by the Engineering Department, they may propose a different distance if substantiated by a traffic study which is acceptable to the Engineering Department.

- B. **Spacing of Driveways:** Driveway openings shall be separated by at least 30 feet, as measured from curve return to curve return, or else shall be combined. More spacing may be required for traffic safety and proper traffic operation.

- C. **Shared Driveways:** Developers or property owners proposing the use of shared driveways shall record an easement defining the location of the driveway and either a covenant, deed restriction or plat note requiring construction of the driveway at that location. When additions or modifications requiring a Grading permit are proposed on structures for which the access crosses one (1) or more adjacent properties, an easement or other agreement acceptable to the County Engineer that provides access, shall be provided prior to the issuance of any permits.
- D. **Driveway Widths:** The dimensions of driveway widths, openings and centerline curve radii, turnout spacing for driveways, and driveway turnarounds for emergency equipment shall be as shown in Table 5-6. In addition to the requirements in Table 5-6, the Road & Bridge Department may require an increased width in the public right-of-way at their discretion, as a part of the right-of-way permit.
- E. **Driveway Grades:** Driveways for single-family residences shall have a maximum grade of eight percent (8%) for the first 25-feet from the connection to the County Road, and shall not exceed ten percent (10%) after that. Minor deviations from the maximum grades of driveways for single-family residences established in this standard (up to 12% for distances of less than 10-feet) may be approved if the County Engineer determines that no detriment to public health, safety, and welfare will result and no reasonable solution exists. In determining the reasonableness of a proposed deviation, the cost shall not be a factor. Driveways for multi-family, industrial, and commercial developments shall not exceed six percent (6%). All driveways shall maintain a grade equal to or less than the crown slope of the road from the point where the driveway meets the road to where the driveway crosses the ditch line. This transition is needed to eliminate plows catching their blades on driveways with abrupt grade changes in the vicinity of the roadway.
- F. **Vehicle Turnarounds:** All driveways exiting onto collector roads or roadways with average daily counts greater than 1,000 vehicles per day shall be designed with a vehicle turnaround to avoid vehicles having to back onto the roadway when exiting. Single-family residence driveways in excess of 400 feet in length shall provide an adequate turnaround for emergency equipment within 150 feet of the dwelling unit. Driveways that access single family residences off of the County recreational pathway system shall utilize turnarounds to the greatest extent practicable to avoid vehicles having to back onto the rec. path. Driveways serving multi-family, industrial, or commercial development shall provide a turnaround as specified in Figure 5-6 if the driveways dead-end.
- G. **Surfacing of Driveways:** Driveways serving single-family residences may be either graveled or paved. Where roads are paved, shared driveways serving duplexes must be paved.
  - 1. Where a driveway is to be graveled, the surface shall be constructed in accordance with Section 5203.08 and shall consist of a minimum four (4) inch depth of compacted aggregate base course. Alternative all-weather surfaces (e.g. recycled asphalt) may be approved with specific installation standards as deemed appropriate by the County Engineer.
  - 2. Where a driveway is to be paved, the surface shall be constructed in accordance with Section 5203.09 and shall consist of a minimum four (4) inch depth of compacted aggregate base course and two (2) inch mat of Hot Mix Asphalt (HMA), which can be placed in one lift.
  - 3. Driveways serving multi-family residences or commercial uses must be designed and paved in accordance with Section 5103.03.C, and 5203.09.
- H. **Provision for Drainage:** Driveway design shall make adequate provision for drainage and prevention of erosion.
  - 1. Drainage from driveways shall be diverted to roadside ditches or other appropriate drainage way(s). Drainage from driveways shall not flow onto roads.
  - 2. When necessary to handle roadside drainage, driveways shall use culverts, drainage pans or other devices suitable for the conveyance of roadside drainage. Final approval for the types of drainage items used and the locations of such items shall be at the discretion of the County Engineer or his delegate.
  - 3. Culverts shall be corrugated metal pipes, or other material types approved by the Road & Bridge Department. In addition, culvert design and installation shall be in compliance with the following:
    - a. Culverts shall have either flared end sections or shall have end treatments per Figure 5-9 of these standards.
    - b. There shall be a minimum of four (4) inches of road-base cover over culverts serving driveways.
    - c. Culverts lengths greater than 30 feet are not allowed.
    - d. Culverts installed for driveways shall be sized and installed subject to the provisions of the required right-of-way access permit issued for the installation, but in all cases the minimum diameter for these culverts shall be 15-inches.
  - 4. Drainage pans shall be designed per Figure 5-11. Concrete for drainage pans shall be Class D as specified

in the latest edition of the Colorado Department of Transportation Standard Specifications for Road and Bridge Construction.

1. Property owners shall be responsible for keeping their culverts clean and ice-free. The Road & Bridge Department may require owners to heat tape their culvert to ensure flow during the winter months to minimize the potential of ice forming on roadways (see Section 5507.02).
- I. **Minimum Sight Distance:** Driveways shall be designed and located to provide a minimum sight distance clear of all obstructions, natural or man-made, for at least 200 feet in either direction on local access roads and 400 feet on collector roads.
- J. **Signage at Junction with Roadway:** Stop signs shall be installed at the junction of a driveway with a roadway for all driveways serving ten (10) or more residential units, commercial shopping areas, or when required by the County Engineer for the protection of public safety.
- K. **Number of Driveway Accesses:** Only one (1) access point per single-family or duplex lot onto the County road system is allowed unless a minimum separation of 250 feet can be provided. Otherwise, looped driveways are not allowed. Where a lot has two (2) different roads to provide driveway access, access or accesses shall be drawn from a single roadway and always onto the road with the lowest functional classification. Where a property's access is proposed on a state highway, an approved CDOT access permit and associated notice to proceed must be provided prior to issuance of a grading and excavation permit for the project.
- L. **Snow Storage:** Snow storage for driveways shall be provided on the owner's property. Use of the right-of-way for snow storage by private individuals or companies is prohibited (C.R.S. 43-5-303 et seq.). Snow storage is not allowed in wetland areas.
- M. **Connection to Roads:** The portion of driveway through the right-of-way connecting the property with the physical roadway shall be the shortest perpendicular distance possible. The Road & Bridge or Engineering Department may approve minor deviations from this standard where this condition would cause excessive earth disturbance and where approval of such deviation would not pose a hazard to public health, safety, or welfare.
- N. **Retaining Walls:** If earth disturbance results in cut or fill slopes steeper than 2.0 feet horizontal to 1.0 feet vertical (2:1), a retaining structure or other engineered system shall be required. If the proposed retaining system is less than 4.0 feet in height, a detail of the proposed retaining system must be provided to the County Engineer for his approval, prior to installation. If the retaining system is over 4.0 feet in height, the retaining system must be designed by a Colorado Licensed Professional Engineer and must be submitted to the County Engineer for his approval prior to installation. In addition, prior to any occupancy permits being authorized by the County Engineer, a certification from the design engineer must be submitted to the County Engineer, stating that construction of the retaining system was in conformance with the approved design and these standards.
- O. **Upgrading of Driveways:** A driveway must be upgraded to meet current County standards any time that an owner proposes improvements that require modifications to a driveway or changes to a use on a property including but not limited to garage additions (detached or attached), accessory apartments, voluntary changes to access configurations, substantial improvements to structures or properties as defined by this Code, or any time that a non-conforming situation is deemed to present a hazard to the public health, safety or welfare.

#### **5107.04: Standards for Parking Areas**

- A. **Parking Standards:** See Section 3700 et seq. of this Code for standard parking requirements for development.
- B. **Parking Area Grades:** Parking areas shall have a maximum grade of four percent (4%) and a minimum grade of one-half percent (0.5%) to facilitate drainage.
- C. **Surfacing of Parking Areas:** Paving is not required for parking areas and driveways serving single-family units. Paving is not required for parking areas and driveways for duplexes where the road providing access is not paved. Where an access road to a duplex lot is paved, parking areas and drives for the duplex must be paved. Parking areas and drives for all other types of development must be paved. Paved parking areas for all other development shall be designed in accordance with Section 5103.03.C and 5203.09 et seq.
- D. **Provision for Drainage in Parking Areas:** Parking area design shall make adequate provision for drainage and prevention of erosion. Drainage from parking areas shall flow to roadside ditches or other approved drainage ways. Drainage from parking areas shall not flow onto roadways. Collection points for runoff across parking areas shall be provided to minimize sheet flow.
- E. **Placement of Parking Areas on Fill:** If a parking area is to be placed on fill, the fill used shall be a suitable material as specified by a licensed geotechnical engineer. The fill shall be compacted to at least 95% of the maximum dry density at +/- two percent (2%) of optimum moisture content as determined by AASHTO T-180

with slopes at no more than three to one (3:1) and protected by rip-rap to prevent erosion from snow storage. Parking areas on fill may be designed using retaining walls as an alternative in accordance with the County's Zoning Regulations and approval of the County Engineer.

- F. **Snow Storage:** Snow storage for parking areas shall be provided on the associated private property as required by Section 3700 et seq. of this Code. Use of the right-of-way for snow storage by private individuals or companies is prohibited (C.R.S. Section 43-5-301 et seq.).

#### **5108: Landscaping**

- A. Whenever roadways, driveways, parking areas, bridges, recpaths or other types of construction results in earth disturbance, revegetation and/or landscaping is required.
- B. Revegetation and/or landscaping work shall be in accordance with Chapter 3 of this Code and in accordance with the plans and specifications approved as part of any permit issuance.
- C. Earth cuts, embankment slopes and all other areas where the ground cover has been disturbed during the course of construction shall be revegetated and landscaped equal to or better than conditions existing prior to construction.
- D. Landscaping and revegetation material shall be installed in accordance with Chapter 3, Section 3600 et seq. of this Code and the approved plans and specifications, and shall be fertilized, mulched and otherwise treated to provide an established stand of vegetation by the end of the first full growing season after completion of construction.
- E. The individual responsible for construction may be required to post a performance bond guaranteeing the revegetation and/or landscaping for at least two (2) full growing seasons following installation. The County Engineer and/or the Road & Bridge Director may waive this requirement if the relief will not result in:
  - 1. Substantial detriment to public health, safety and welfare, and,
  - 2. Significant erosion potential from drainage across bare earth, and,
  - 3. Substantial impairment of this chapter and all other chapters of this Code, and,
  - 4. The granting of any special privilege or use.
- F. Areas not disturbed by construction shall be left in their present vegetative state, except that thinning of trees may be required. In no case shall landscaping in the right-of-way or on private property impede the normal maintenance operations of the Road & Bridge Department or the normal flow and operations of traffic.

**TABLE 5-6 Driveway Criteria**

Type of Service	Minimum Driveway Width	Opening Width (including flares)		Minimum Centerline Radius of Curvature
		Minimum	Maximum	
<b>COMMERCIAL</b>	22 feet	24 feet	*	65 feet
<b>RESIDENTIAL</b>				
Single-Family				
< 200' in length	12 feet	18 feet	24 feet	N/A
> 200' in length	14 feet	18 feet	24 feet	40 feet
Serving two to four units				
< 200' in length	14 feet	20 feet	30 feet	N/A
> 200' in length	16 feet	20 feet	30 feet	40 feet
Multi-family	22 feet	24 feet	30 feet	65 feet

<b>TURNOUT SPACING FOR DRIVEWAYS</b>	
LENGTH	TURNOUTS (8' x 30')
< 400 feet	None
400 - 800 feet	One turnout at midway point of driveway
>800 feet	Every 400 feet
<b>DRIVEWAY TURNAROUNDS FOR EMERGENCY EQUIPMENT</b>	
LENGTH	TURNAROUNDS
RESIDENTIAL	
< 400 feet	None
> 400 feet	One to within 150 feet of dwelling unit
MULTI-FAMILY, INDUSTRIAL, COMERCIAL	One turnaround as specified in Figure 5-6 if the driveways dead end

\*To be determined at time of site plan review.

## **APPENDIX C – CODE CHAPTER 6**

# SUMMIT COUNTY LAND USE AND DEVELOPMENT CODE

## **CHAPTER 6: GRADING AND EXCAVATION** **REGULATIONS**

Adopted: September 12, 1988 (Resolution#88-52) Effective: July 24, 2012

## **6000: INTRODUCTION**

### **6001: Purpose and Intent**

It is the purpose and intent of the Grading and Excavation Regulations to safeguard the public health, safety and welfare by requiring analysis of site conditions and soils in designing site work, controlling the amount of site disturbance and how disturbed areas are revegetated and providing a means of enforcing County standards for road, driveway, parking area and drainage design in the field. In addition, the purpose of these regulations is to control the quality of runoff water from private and public property and to reduce the amount of phosphorus reaching Dillon and Green Mountain Reservoirs from runoff. The Colorado Water Quality Control Commission (“WQCC”) has established limits on the amount of phosphorus entering these reservoirs. Phosphorus is added to these reservoirs by runoff from disturbed ground. Phosphorus in excess of certain levels will result in denial of permits to expand sewage treatment plants. Thus, Summit County is implementing controls on grading and erosion in order to insure its ability to grow.

### **6002: Applicability and Scope**

These regulations apply to any earth-disturbing activity. Earth-disturbing activity involving 500 or less square feet of surface area is exempt from permitting requirements, but still must comply with applicable regulations. Earth-disturbing activity includes grading, excavating, clearing timber or vegetation and construction, except as provided in Section 6400. In later sections of these regulations, earth-disturbing activities are referred to as grading and such references are intended to be all-inclusive. These regulations establish procedures for the review of grading plans and issuance of grading permits, establish requirements for the maintenance of graded or disturbed property and provide for inspection of grading to insure the requirements and standards contained in these regulations are met.

### **6003: Authority**

Summit County is authorized by Colorado State Statutes to plan for and regulate the use of land so as to provide planned and orderly use of land and protection of the environment in a manner consistent with constitutional rights [C.R.S. § 29-20-104(1)(h)]; plan for and regulate the uses of land for trade, industry, recreation or other purposes (C.R.S. § 30-28-111); and to provide for enforcement through necessary guarantees, alterations, maintenance or use of property (C.R.S. §§ 30-28-114, 30-28-124, and 30-28-137).

The adoption of the Summit County Grading and Excavation Regulations is based on this authority.

### **6004: Grading Manual**

The Engineering Department, as the administrative authority for these regulations, shall formulate such rules, procedures and interpretations, design criteria and guidelines as may be necessary to administer these regulations. Such requirements, interpretations and guidelines shall be published in the form of a manual and be made available to the public. In the event of any conflict between the grading manual and the Grading and Excavation Regulations, these regulations shall govern.

## **6100: RESPONSIBILITIES OF QUALIFIED PROFESSIONALS**

### **6101: Preparation of Plans and Reports**

The qualified professionals responsible for preparation of the grading plans and specifications and technical reports associated with grading design shall have the following responsibilities.

#### **6101.01: Professionals Responsible for Grading Plan**

It is the responsibility of the civil engineer or other qualified professional who prepares the grading plan to incorporate all recommendations from the geotechnical engineer's report into the grading plan and specifications.

#### **6101.02: Geotechnical Engineer**

The geotechnical engineer's area of responsibility shall include, but need not be limited to, preparation of a geotechnical report analyzing soil and geologic conditions on site and recommending how ground is to be prepared to receive fills, how fill slopes are to be designed and compacted and the design of buttress fills and cut slopes to be allowed with respect to these conditions. The geotechnical engineer shall also include in this report an analysis of hydrologic conditions on the site, the need for and design of subdrains or other groundwater drainage devices and how surface drainage is to be controlled.

### **6102: Supervision of Field Work**

The permit holder has primary responsibility for supervision of grading work in the field to make certain such work conforms to approved plans and specifications. The qualified professionals retained by the permit holder shall observe grading work as it is performed in the field, and shall make recommendations as follows.

#### **6102.01: Professionals Responsible for Grading Plan**

- A. The civil engineer or other qualified professional who prepares the grading plan shall observe the establishment of line, grade and drainage of the graded area and shall recommend to the permit holder whether or not such work conforms to the approved plans and specifications.
- B. Upon completion of fieldwork, the qualified professional shall issue a written statement of substantial completion and compliance with approved plans. Alternately, the qualified professional may submit revised as-built plans and a written statement of compliance with original design intent.

#### **6102.02: Geotechnical Engineer**

The geotechnical engineer shall conduct field tests for required compaction and field observations of all subdrain and surface drainage installations and shall recommend to the permit holder whether or not such work conforms to the approved geotechnical report and grading plans. The responsibility for conducting field tests for required compaction may be assigned to an engineering firm having experience in soils testing where compacting tests will be conducted under the supervision of a licensed engineer.

### **6200: GRADING STANDARDS**

#### **6201: Conformance with Road & Bridge Standards**

Summit County has adopted road and bridge design and construction standards that appear in this Code as Chapter 5. These standards specify requirements for the following:

1. Road Grades (Section 5103.03.A.2).
2. Geometric Cross Sections for Roads (Section 5103.03.B).
3. Drainage Design (Section 5103.03.D).
4. Driveway Design and Grades (Section 5107.03).
5. Parking Area Design and Grades (Section 5107.04).
6. Landscaping and Revegetation (Section 5108).
7. Construction Standards for Roads (Section 5203).

Grading plans and specifications submitted in compliance with these regulations and earth-disturbing activities subject to these regulations must conform to the standards in Chapter 5.

### **6202: Compliance with Grading Manual**

These regulations allow for the publication of a grading manual containing rules, procedures and interpretations, design criteria and guidelines necessary for the administration of these regulations. Grading plans and specifications submitted for the purpose of obtaining a grading permit and any earth-disturbing activity done on site must comply with the grading manual.

### **6203: Consistency with Geotechnical Report**

Persons applying for grading permits shall be required to submit a geotechnical report unless this requirement is waived by the County Engineer. Where a report is required, it is the responsibility of the civil engineer or other qualified professional who prepares the grading plans and specifications to incorporate the recommendations contained in the report into these plans and specifications.

### **6204: Consistency with Approved Plans**

- A. Where a final plat has been approved for a site for which grading permits are requested, the grading plans submitted shall be in substantial compliance with any improvement plans approved with the plat. The location and design of roads, trails, sidewalks, pathways, drainage improvements and utility lines shall be consistent with the improvement plans, unless allowance is made by the County Engineer for changes based on additional information on field conditions. Changes to improvement plans must meet County design standards (Chapter 5), unless a variance from these standards is granted. Changes to plans for utility lines must also be approved by the affected utility.
- B. Where a site plan, conditional use permit, variance or other development review having a site plan has been approved for a project for which grading permits are requested, the location of building pads, parking areas, driveways, roadways, trails, sidewalks, pathways, drainage improvements, berms and other site work shown on the grading plans shall be in substantial compliance with the approved plans. If a developer proposes a grading plan that differs from the approved site plan, the grading plan shall be referred to the Planning Department for a determination whether or not a revision or modification is needed. If a revision or modification is needed, approval shall be obtained prior to issuance of any grading permit.

### **6205: Conformance and Water Quality Control Regulations**

Summit County has adopted Water Quality Control Regulations that appear in this Code as Chapter 7. These regulations specify requirements for the following:

- A. Performance Standards for Construction Activities (Section 7101).
- B. Limitations on Construction in Steep Slope Areas (Section 7102).
- C. Streamside Setbacks (Section 7103).
- D. Stream Crossings by Roads and Utilities (Section 7104).
- E. Limitations on Construction in Wetlands Areas (Section 7105).

Grading plans and specifications submitted in compliance with these regulations and earth-disturbing activities subject to these regulations must conform to the standards in Chapter 7.

### **6206: Conformance with Zoning Regulations**

Summit County has adopted Landscaping Regulations, which appear in Chapter 3 of this Code. All earth-disturbing activity subject to the Grading and Excavation Regulations shall also meet the requirements of the County's Zoning Regulations, including all those regulations pertaining to landscaping as referenced herein.

## **6207: Responsibility for Preparation of Plans and Specifications**

Grading plans and specifications shall be prepared and signed by an engineer licensed in the State of Colorado having knowledge and experience in civil engineering, except that plans and specifications for single-family dwellings on slopes of less than three to one (3:1) may be prepared by a licensed engineer or other qualified professional. The requirement for use of a licensed engineer may be extended to plans and specifications for single-family dwellings when, in the opinion of the County Engineer, critical drainage or geological factors may be involved and there is a need for engineering design and control.

## **6300: GRADING PERMITS**

Grading permits must be obtained whenever a developer, contractor, property owner or other individual proposes to undertake earth-disturbing activity involving 500 or more square feet of surface area, except as provided in Section 6400. Grading permits for a site must be obtained before building permits can be issued.

### **6301: Types of Grading Permits**

The County has established two (2) types of grading permits: project and general.

#### **6301.01: Project Grading Permits**

- A. Project permits are intended to cover all earth-disturbing activities within a project site or subdivision such as road grading, site work, installation and/or maintenance of snowmaking lines, laying of water, sewer, and utility lines and construction of septic systems. The developer of a project or subdivision is responsible for obtaining the project grading permit on behalf of any contractor, utility company or other individual who will be conducting earth-disturbing activities within the project or subdivision. They may designate a particular contractor or other individual as their agent responsible for obtaining the project grading permit.
- B. It is the County's intent in establishing project grading permits to have a master grading plan for the project site or subdivision rather than individual grading plans from each contractor or utility company. The master grading plan may be submitted in phases, to correspond with project phases, with the approval of the County Engineer.

#### **6301.02: General Grading Permits**

General permits are intended for use by 1) public utilities to cover the laying of new utility lines or work needed on existing utility lines during a particular construction season, unless such line is otherwise approved by the County per the 1041 Regulations contained in Chapter 10, when such work is not covered by a project grading permit, 2) installing and/or maintaining snowmaking lines within the boundaries of a ski resort Planned Unit Development ("PUD"), 3) mining operations in the M-1 zone district related to the extraction of minerals allowed under Local, State and Federal mining permits, or 4) any other similar ongoing large scale project if such project is approved for a general permit by the County Engineer. It is the County's intent in establishing general permits to eliminate the need by public utilities, resorts, mine owners, or other similar entities proposing large-scale operations to apply for a project permit for each individual job. General permits cannot be used for projects involving structures for which building permits are required. Such projects must obtain a project grading permit. Emergency work on utility lines shall be exempt from the requirement for general grading permits as provided in Section 6303.06.

## **6302: Project Grading Permit Procedures**

This section states procedures and requirements for the following:

- A. Submittal and review of applications for project grading permits.
- B. Expiration of applications for project grading permits.
- C. Issuance of project grading permits.
- D. Expiration and renewal of project grading permits.
- E. Posting of a financial guarantee for project grading work.
- F. Supervision of project grading work.
- G. Inspection of project grading work.

### **6302.01: Submittal Requirements for Project Permits**

The following information shall be submitted with any application for a project grading permit, unless specific items are waived by the County Engineer as unnecessary. In particular, the requirement for a geotechnical report may be waived, depending on the size and scope of the project and site conditions. Prior to submittal, the applicant may request a determination from the County Engineer which items may be omitted from an application for a project grading permit.

- A. Plan review and inspection fees as required by resolution of the Board of County Commissioners (“BOCC”).
- B. Written material.
  - 1. Application Form.
  - 2. Geotechnical Report meeting the requirements of Section 6102.
- C. Plans and Specifications.
  - 1. Precise Grading Plans.
  - 2. Grading and Construction Specifications.
  - 3. Subdrain and Surface Drainage Plans.
  - 4. Erosion Control Plans as provided in Section 7102.05.
  - 5. Revegetation Plans as provided in Section 7102.06.
  - 6. Urban Runoff Control Plans as provided in Section 7102.07.
- D. Additional information deemed necessary by the County Engineer.

### **6302.02: Evaluation of Geotechnical Report**

If a geotechnical report is required as part of a submittal, the Engineering Department shall evaluate the report received from the applicant and determine whether or not it is adequate. The Engineering Department may request additional information or an analysis of alternatives prior to accepting the report for purposes of project design.

### **6302.03: Action on Project Permits**

- A. Applications for project grading permits must be submitted 15 calendar days prior to commencement of earth-disturbing activity, unless the activity is exempted from permit requirements (see Section 6400). Activities requiring project grading permits cannot commence without permit approval. The County Engineering Department is responsible for review and action on project grading permit applications. Action shall be taken in accordance with the time limits in the project review schedule adopted by the BOCC.
- B. Approval shall be granted only if the proposed activity meets the grading standards, and by reference, the standards in Chapters 5 and 7, the required fee has been paid and surety has been posted if required (see Section 6302.06). Approval of a grading permit may be accompanied by any conditions deemed reasonable by the Engineering Department to insure protection of public health, safety and welfare and compliance with these regulations. The Engineering Department may identify points in the grading process when inspections are required as a condition of permit approval.
- C. A project grading permit must be signed by the County Engineer for it to be approved. Whenever a building permit or septic system permit is needed for a project where a grading permit is also required, neither the building permit nor septic system permit shall be issued until approval is granted for the needed grading permit.

### **6302.04: Expiration of Applications for Project Permits**

- A. **Time Limit:** If no project grading permit is issued within 180 calendar days from the date of application the application shall expire by limitation. Any plans submitted for checking may thereafter be returned to the applicant or destroyed by the Engineering Department.
- B. **Extensions:** The Engineering Department may extend the time for action by the applicant for a period not to exceed 180 calendar days upon written request by the applicant if circumstances beyond the applicant's control have prevented action on the project permit from being taken.
- C. **Resubmittal:** If an application has expired, the applicant may resubmit plans and pay a new plan review fee for review.

### **6302.05: Expiration and Renewal of Project Permits**

- A. **Time Limit:** Each project grading permit shall be valid for a period of one (1) year from the date issued. If a permit holder presents satisfactory evidence that unusual difficulties have prevented work from being started within 30 calendar days and completed within one (1) year or continued without being suspended for 120 calendar days, the Engineering Department may grant written extensions of time necessary by reason of such difficulties. In no case shall extensions of time exceed a total of one (1) year.
- B. **Expiration with Change in Ownership:** A project grading permit issued hereunder shall expire upon a change of ownership if the grading work for which the permit was issued has not been completed. A new permit shall be required for completion of work by the new owner.
- C. **Renewal:** If no changes have been made to the grading plans and specifications last submitted, no charge shall be made for the issuance of a new project grading permit. If, however, changes have been made to the plans and specifications last submitted to the Engineering Department, additional fees shall be charged to the permit applicant for any additional plan checking and inspection required.

**6302.06: Posting of Financial Guarantee for Project Permits**

**Requirement for Financial Guarantee:** Due to unique site considerations, the County Engineer may require that an applicant submit an executed site improvements agreement and financial guarantee acceptable to the Engineering Department prior to issuing a grading permit. Unique site considerations include, but are not limited to (1) hazardous conditions that are likely to occur as a result of incomplete or improper grading; (2) potential adverse effects on the surrounding environment, properties or community as a result of incomplete or improper grading; and (3) adverse geological or environmental impacts as a result of incomplete or improper grading. The purpose of the site improvements agreement and financial guarantee is to assure that grading work, if not completed in conformance with approved plans and specifications, will be corrected to eliminate hazardous conditions, drainage and erosion control devices will be constructed, disturbed areas will be revegetated and any adverse impacts of such work is mitigated. The site improvements agreement and financial guarantee shall meet the requirements of Section 12607 and the provisions of these regulations.

**6302.07: Supervision of Project Grading Work**

- A. **Role of Qualified Professionals:** Grading work shall be under the supervision of the permit holder. During construction, the permit holder shall exercise adequate control over grading work to ensure it conforms to the approved plans and specifications and to any required geotechnical report. In performing this responsibility, the permit holder may retain and consult with qualified professionals. The responsibilities of these professionals are stated in Section 6100.
- B. **Change in Qualified Professionals or Contractor:** If, in the course of fulfilling their responsibility under these regulations, the civil engineer, geotechnical engineer, testing agency or other qualified professional responsible for grading plans and specifications or the contractor of record are changed during the course of the work, the work shall be stopped unless:
  - 1. The permit holder submits a letter of notification verifying the change in the responsible professional; and,
  - 2. The new responsible professional submits in writing that he has reviewed all prior reports and plans (specified by date and title) and work performed by the prior responsible professional, and that he concurs with the findings, conclusions and recommendations and is satisfied with the work performed.

The new responsible professional may modify or revise recommendations, specifications or work performed if accompanied by supporting data and approval is granted by the Engineering Department. He must state that he assumes responsibility within his purview as of a specified date. All exceptions must be justified to the satisfaction of the Engineering Department.

Where it is clear it is a consulting firm, and not an individual engineer or geologist, which is the contracting party, the designated engineer or geologist may be reassigned and another engineer or geologist within the firm may assume responsibility for a grading project without submitting a letter of notification.

**6302.08: Inspection of Project Grading Work**

- A. **Posting of Permits:** The Engineering Department shall supply a copy of an approved project permit to the permit holder. The permit holder is responsible for posting the permit at the job site so it is visible from the roadway and available for use by the Engineering Department for noting results of inspections.
- B. **Permit Holder's Supervision of Grading Work:** During the staking of improvement locations and site grading,

the permit holder shall exercise adequate control over the work and conduct inspections necessary to insure the locations and grade elevations of roads, driveways, parking areas, drainage improvements, building pads, foundations and other site improvements conform to the approved grading plan, approved site plan and final plat and applicable Zoning Regulations. The permit holder may contract with qualified professionals to conduct field observations, but the ultimate responsibility for quality control shall rest with the permit holder.

- C. **Commencement of Construction:** After grading permit approval by the Engineering Department, the permit holder may apply to obtain a "foundation only" permit from the Building Department. No inspection of the foundation forms by the Building Department shall be conducted until the Engineering Department has approved the location of site improvements as provided in Section 6302.08.D.
- D. **Approval of Location of Site Improvements:** The Engineering Department is responsible for verifying that the location of site improvements conforms to approved plans and applicable Zoning Regulations. Verification may be accomplished either by a site inspection conducted by the Engineering Department or by the Engineering Department's review of a construction survey submitted by the permit holder. Verification must be obtained from the Engineering Department prior to inspection of the foundation forms by the Building Department.

The procedures to be used for each method are stated in Sections 6302.08.D.1 and 2 below. The Engineering Department shall determine which method is to be used as provided in Section 6302.08.E.

1. **Site Inspection by Engineering Department:**

- a. **Permit Holder's Responsibility for Pinning Corners and Flagging Property Lines:** Prior to requesting an inspection of site improvement locations, the permit holder shall have a surveyor licensed by the State of Colorado pin the corners of each lot where structures are to be built. The pins shall carry caps denoting the surveyor's license number. The permit holder shall also flag property lines between the pins.
- b. **Request for Inspection:** Prior to requesting an inspection of the foundation forms from the Building Department, the permit holder shall contact the Engineering Department for an inspection of improvement locations. It is recommended that this inspection be requested prior to setting of foundation forms to minimize the cost of relocating site improvements if the inspection reveals they have not been located according to approved plans and applicable Zoning Regulations. If an inspection is requested after forms have been set, or after foundations have been poured, and these improvements must be relocated, the cost of such relocation shall be borne by the permit holder.
- c. **Inspection of Site Improvements:** Engineering Department shall inspect the location and elevation of site improvements to determine if they conform to the approved grading plan, approved site plan and final plat and applicable Zoning Regulations.
- d. **Continuation of Construction:** If the Engineering Department's inspection of site work shows the location and elevation of site improvements conforms to approved plans and specifications and to applicable Zoning Regulations, they shall notify the Building Department. The permit holder may proceed with further construction subject to the Building Department regulations. If the Engineering Department's inspection shows that the location and elevation of site improvements does not conform, such work shall be brought to the attention of the permit holder, both verbally and in writing, and the permit holder shall make corrections so improvement locations and elevations do conform. The permit holder may not proceed with further construction until the Engineering Department has determined that improvement locations and elevations are acceptable.

2. **Submittal of Construction Survey:**

- a. **Submittal of Survey:** After grading permit approval by the Engineering Department, the permit holder may apply to obtain a "foundation only" permit from the Building Department. After the location of the foundation forms is staked, foundation forms are set, or foundations are in place, the permit holder shall have a surveyor licensed by the State of Colorado prepare a construction survey showing the location and elevation of the foundation staking or forms or foundations and shall submit this survey to the Engineering Department. The survey shall include property lines and any platted or recorded easements. The Engineering Department shall determine if location of foundation forms or foundations conform to the approved grading plan, approved site plan and final plat and applicable Zoning Regulations. Engineering shall also conduct a field inspection to verify that adequate control is being exercised over the placement of site improvements other than foundations.
- b. **Continuation of Construction:** If the construction survey and inspection show grading work conforms with approved plans and specifications and with applicable Zoning Regulations, Engineering shall notify the Building Department. The permit holder may proceed with further construction subject to Building Department regulations. If the improvement location survey and inspection show grading work does not conform, such work shall be brought to the attention of the permit holder, both verbally and in writing,

and the permit holder shall make corrections so improvement locations and elevations do conform. The permit holder may not proceed with further construction until the improvement survey and inspection shows that foundations and other site improvements are acceptable.

- E. **Selection of Method for Verifying Site Improvement Locations:** The Engineering Department shall determine which method is to be used for verifying site improvement locations. It is assumed that inspection by the Engineering Department, as provided in Section 6302.08.D.1 will be used. However, a construction survey may be required, as provided in Section 6302.08.D.2, if determined to be necessary by the County Engineer. This determination shall be based on the size and scope of the project and site conditions. It may also be required if, after conducting a site inspection, the Engineering Department has reason to believe a problem exists with the location and/or elevation of site improvements which cannot be verified or resolved without a construction survey.
- F. **Construction Period:** During the construction period, the permit holder shall exercise adequate control over grading work to ensure it conforms to the approved plans and specifications, and to any approved geotechnical report and applicable Zoning Regulations. In performing this responsibility, the permit holder may retain and consult with qualified professionals. The responsibilities of these professionals are stated in Section 6100. The County Engineer may inspect the project at periodic intervals to verify that the permit holder is fulfilling his responsibilities and that grading work is in compliance with approved plans and specifications. Any work that does not conform shall be brought to the attention of the permit holder, both verbally and in writing, and the permit holder shall make corrections as needed. If corrections are not made, further project construction shall be stopped.
- G. **Field Changes:** If, during construction, the permit holder finds it necessary to make changes in grading work because of field conditions, they shall contact the County Engineer prior to making such changes. The County Engineer shall determine whether the work may proceed with verbal approval or if the permit holder must obtain approval for an amended grading plan before proceeding with the work. The County Engineer may elect to conduct an inspection of field conditions before making a decision. If verbal approval is given, the permit holder shall submit as-built grading plans showing approved changes if required to do so by the County Engineer. If the County Engineer requires amended grading plans prior to work being done, action on amended grading plans shall be in accordance with the time limits in the project review schedule adopted by the BOCC.
- H. **Final Inspection:** At the conclusion of grading work and prior to requesting occupancy permits for completed structures, the permit holder shall request final inspection by the Engineering Department. The final inspection shall occur between May 1 and October 31. Prior to final inspection being granted, the County Engineer may require from the permit holder any written approvals, reports, drawings and supplements thereto as specified in the County's grading manual.

All work including installation of all drainage facilities and their protective devices and all erosion and urban runoff control measures must be completed in accordance with the approved grading plans and specifications and with the County's Grading and Excavation Regulations. Locations of structures shall comply with the approved final plat and site plan and with applicable Zoning Regulations. If no site plan was required, the locations of structures shall comply with Zoning Regulations concerning setbacks. Structures shall not extend into required setbacks, except as provided in Section 3505.13.D. The County Engineer may require the permit holder to submit an Improvement Location Certificate ("ILC") survey, prepared by a surveyor licensed by the State of Colorado, upon completion of a structure to verify that it does not encroach into any required setback yard.
- I. **Issuance of Occupancy Permits:** No occupancy permit may be issued for a graded site, or if no structures are involved, no use of a graded site may commence, until the County Engineer has inspected and approved the final grading and building placement and notified the Building Department of such approval.

Occupancy permits may be granted prior to completion of grading work if the permit holder posts an irrevocable Letter of Credit ("LOC") with the County in an amount sufficient to complete the grading work so it conforms to approved plans and specifications. The term of the LOC shall be no less than one (1) additional construction season. If the permit holder fails to complete the grading work in a satisfactory manner by a date 45 calendar days before the date the LOC expires, the County shall draw upon the LOC and complete the work. Posting of a financial guarantee does not assure the issuance of occupancy permits. The permit holder must still meet the requirements of the Building Department and the agencies they contact for clearances before occupancy permits may be issued.
- J. **Concealment of Work:** Whenever any work on which inspections are required is covered or concealed by additional work without first being inspected, the County Engineer may require such work to be exposed for examination unless the developer provides either certified as built plans or a letter from the project engineer verifying that the work in question has been installed in accordance with the approved plans, such letter to be stamped with the Colorado Professional Engineer Seal and executed by the project engineer.
- K. **Postponement of Work:** If, at any time, the County Engineer finds soil or other conditions not as stated in the

approved plans, approved geotechnical report or as in additional information which was required for issuance of the grading permit, the work may be postponed until approval is obtained for a revised grading plan which conforms to actual conditions.

- L. **Responsibility for Corrective Grading Work:** If any grading inspection reveals work which does not conform to approved plans and specifications, approved geotechnical report, the approved site plan and final plat and any applicable Zoning Regulations, the permit holder shall be responsible, at his expense, for all corrective work necessary to bring work into conformance. If the permit holder fails to perform such work, the County shall use the permit holder's financial guarantee to do such corrective work as is necessary to eliminate hazardous conditions, complete drainage, erosion control and urban runoff control devices and revegetate disturbed areas.

### **6303: General Grading Permit Procedures**

This section states procedures and requirements for the following:

- A. Pre-Application Meeting.
- B. Submittal and Review of Applications for General Grading Permits.
- C. Expiration of General Grading Permits.
- D. Additions to General Grading Permits.
- E. Emergency Work on Utility Lines.
- F. Posting of Financial Guarantee for General Grading Work.
- G. Inspection of General Grading Work.

#### **6303.01: Pre-application Meeting**

Prior to submitting a request for a general grading permit, it is the responsibility of the applicant to arrange a meeting with the County Engineering Department. The purpose of the meeting is to review the applicant's overall construction plans for the upcoming season and for the engineering staff to identify its concerns and how these concerns are to be addressed in the applicant's submittal.

#### **6303.02: Submittal Requirements for General Permits**

The following information must be submitted with any application for a general grading permit, unless specific items are waived by the County Engineer as unnecessary (Prior to submittal, the applicant may request a determination from the County Engineer which items may be omitted from an application for a general grading permit).

- A. Plan review and inspection fees as required by resolution of the BOCC.
- B. Written Material.
  - 1. Application form.
  - 2. Description of each project to be covered by the permit including location and construction schedule.
  - 3. Description of methods to be used to ensure erosion from open trenches and site work is minimized.
  - 4. Description of revegetation methods to be used.
  - 5. Assignment of responsibility for each project.
- C. Plans and Specifications.
  - 1. Maps showing the location of each project.
  - 2. Plans and specifications to be followed in construction of projects.
  - 3. Erosion control plan for each project.
  - 4. Revegetation plan for each project.
  - 5. Plans for detention areas for dewatering of excavations.
- D. Additional information deemed necessary by the County Engineer.

#### **6303.03: Action on General Permits**

- A. Applications for general grading permits must be submitted six (6) weeks prior to commencement of any project to be covered by the permit. Projects to be covered by a general grading permit cannot commence without permit approval. The County Engineering Department is responsible for review and action on general grading permit applications. Action shall be taken in accordance with the time limits in the project review schedule adopted by the BOCC.

- B. Approval shall be granted only if the proposed activity meets the grading standards, and by reference, the standards in Chapters 5 and 7, the required fee has been paid and surety has been posted if required (see Section 6303.07). Approval of a general grading permit may be accompanied by any conditions deemed reasonable by the Engineering Department to ensure protection of public health, safety and welfare and compliance with these regulations. The Engineering Department may identify points in the grading process when inspections are required as a condition of permit approval.
- C. A general grading permit must be signed by the County Engineer for it to be approved.

#### **6303.04: Expiration of General Permits**

General grading permits shall be valid for one (1) construction season only and shall expire by December 31 of the year in which they were issued. Projects which were covered by a general grading permit, but which were not constructed during that time period, cannot be constructed in a subsequent year without receiving approval as part of a new general permit.

#### **6303.05: Additions to General Permits**

If, during a particular construction season, a permit holder desires to add a project to a general grading permit not anticipated when the permit was issued, the permit holder may apply to the Engineering Department to amend the permit. The applicant shall provide such written material and plans and specifications as required by the County Engineer. Approval of an amendment shall be granted on the same basis and with the same allowance for conditions as an original permit (see Section 6303.03). An amended permit must be approved, signed by the County Engineer and the appropriate fees paid, prior to commencement of construction of the added project. Action shall be taken in accordance with the time limits in the project review schedule adopted by the BOCC.

#### **6303.06: Emergency Work on Utility Lines**

If a true emergency exists where work must be done which would usually require a general grading permit, and where time is not available to follow the procedures for obtaining this permit, a public utility or entity responsible for maintaining private utility lines may proceed with grading work as long as verbal notification is given to the Engineering Department on the first working day following the emergency. At that time, the Engineering Department shall indicate at what point inspection will be required. Under no circumstances shall work be completed without required inspections being conducted.

#### **6303.07: Posting of Financial Guarantee for General Permits**

- A. **Requirement for Financial Guarantee:** Applicants for general grading permits shall post a financial guarantee in the same manner and under the same conditions as applicants for project grading permits (see Section 6302.06.A), except that this requirement may be waived as provided in Section 6303.07.B below.
- B. **Waiver of Guarantee for General Grading Permits:** The Engineering Department may waive the financial guarantee requirement for corrective grading work for any public utility requesting a general grading permit if they have undertaken such work during the previous two (2) years and have completed such work in a satisfactory manner.
- C. **No Waiver:** In no event shall the financial guarantee covering construction of drainage and erosion control devices or revegetation of disturbed areas be waived.

#### **6303.08: Inspection Procedures for General Grading Permits**

- A. **Posting of Permits:** The Engineering Department shall supply a copy of an approved general permit for each project covered by the permit to the permit holder. The permit holder is responsible for posting a copy of the permit at each job site so it is visible from the roadway and available for use by the Engineering Department for noting results of inspections.
- B. **Construction Period:** During the construction period for any project approved as part of a general grading permit, the public utility shall exercise adequate control over grading work to insure it conforms to the approved plans and specifications and to the County's grading standards (see Section 6200). The County Engineer may inspect projects at periodic intervals to determine that the public utility is fulfilling this responsibility. Any work which does not conform shall be brought to the attention of the permit holder, both verbally and in writing, and

the permit holder shall make corrections as needed. If corrections are not made, further project construction shall be stopped.

- C. **Field Changes:** If, during construction, the public utility finds it necessary to make changes in grading work because of field conditions, they shall contact the County Engineer prior to making such changes. The County Engineer shall determine whether the work may proceed with verbal approval or if the utility must obtain approval for an amended grading plan before proceeding with the work. The County Engineer may elect to conduct an inspection of field conditions before making a decision. If verbal approval is given, the utility shall submit as-built grading plans showing approved changes, if required to do so by the County Engineer. If the County Engineer requires amended grading plans prior to work being done, action on the amended grading plans shall be in accordance with the time limits in the project review schedule adopted by the BOCC.
- D. **Final Inspection:** At the conclusion of the grading work for any project approved as part of a general grading permit, the permit holder shall request final inspection by the Engineering Department. The final inspection shall occur between May 1 and October 31. Prior to final inspection being granted, the public utility shall certify that the grading work conforms to the approved plans and specifications and to the County's grading standards. The County Engineer may require submittal of as-built grading plans prior to conducting final inspection. All work including installation of all drainage facilities and their protective devices, all erosion control measures and all revegetation must be completed in conformance with the approved plans, specifications and standards of the County Engineer to grant approval of final inspection.
- E. **Concealment of Work:** Whenever any work on which inspections are required is covered or concealed by additional work without first being inspected, the County Engineer may require such work be exposed for examination.
- F. **Responsibility for Corrective Grading Work:** If any grading inspection reveals work which does not conform to approved plans and specifications or to the County's grading standards, the permit holder shall be responsible, at his expense, for all corrective work necessary to bring work into conformance. If the permit holder fails to perform such work, the County shall use the permit holder's financial guarantee to eliminate hazardous situations, complete drainage and erosion control devices and revegetate disturbed areas.

#### **6400: EXCEPTIONS TO GRADING PERMIT REQUIREMENT**

##### **6401: Waiver of Requirement**

- A. An individual proposing to construct a single family residential unit may request a waiver of the requirement to obtain a grading permit. Such requests shall be submitted in writing to the Engineering Department along with a site plan showing the following:
  - 1. Legal description of the lot where the unit is to be built.
  - 2. Location and dimensions of the lot boundaries.
  - 3. Any recorded or platted easements
  - 4. Location of proposed structures.
  - 5. Location of proposed driveway and any parking areas.
- B. An applicant requesting a waiver shall pay the fee required for plan review and permit for custom lots for single-family homes stated on the fee schedule adopted by the BOCC.
- C. A waiver may be granted if:
  - 1. The entire subdivision is provided with central erosion and runoff controls such as a community desilting pond for all drainage from the subdivision.
  - 2. The Engineering Department determines that exempting construction will not have a significant impact on water quality.
- D. Prior to taking action on requests for waivers, the Engineering Department may conduct a field visit to the site to examine the topography, presence or absence of watercourses, vegetation and other factors to determine the effect of construction on water quality. The County Engineer shall be responsible for taking action on request for waivers. If a waiver is granted, the Engineering Department shall provide the applicant with a project grading permit stamped "waived" or other such form indicating waiver of the permit requirement and the applicant shall post this form as required by Section 6302.08.A. The Engineering Department shall also notify the Building Department that the requirement for a grading permit has been waived. No building permits shall be issued until either a waiver is granted or a grading permit is issued.
- E. Regardless of whether or not the permit requirement is waived, the applicant is still required to obtain approval for the location and elevation of site improvements prior to continuing construction, as provided in Section 6302.08.

#### **6402: Exemptions from Requirement**

- A. The following activities shall be exempt from requirements to obtain grading permits:
  - 1. Agricultural operations on land in the County's Agricultural ("A-1") Zoning District.
  - 2. Routine road maintenance such as snow removal, grading of gravel roads, and cleaning drainage ditches.
  - 3. Any earth-disturbing activity involving less than 500 square feet of surface area; however, if the Engineering Department has determined an activity of this type will result in water quality impacts, the requirement for obtaining a grading permit shall be met. The criteria for making such determinations shall be stated in the County grading manual.
  - 4. Any earth-disturbing activity necessary for the installation or renovation of landscaping associated with a single-family or duplex unit. Landscape berms with a volume in excess of 50 cubic yards are beyond the scope of this exemption and require grading permits.
  - 5. Any activity specifically covered by an approved road cut or access permit issued by the Summit County Road & Bridge Department.
  - 6. Any emergency work on utility lines as provided in Section 6303.06.
- B. These exemptions do not alter any obligation to comply with other regulations contained within this Code, including but not limited to the Zoning Regulations contained in Chapter 3 and Water Quality Regulations contained in Chapter 7.

#### **6500: VARIANCES**

- A. Exceptions to the grading design standards may be granted by the County Manager, or in his absence, the Assistant to the County Manager, where by reason of exceptional topographic or physical conditions, or other extraordinary and exceptional situations or conditions, the strict application of these regulations would result in peculiar and exceptional practical difficulties to, or exceptional and undue hardship upon, the individual proposing to conduct grading activities provided the relief from such difficulties or hardship and will not result in substantial detriment to public health, safety and welfare or substantial impairment of the Grading and Excavation Regulations.
- B. Prior to the County Manager taking action, he shall obtain the recommendation of the County Engineer on whether or not a variance should be granted.
- C. If the individual requesting the variance is dissatisfied with the determination of the County Manager, they may appeal his decision to the BOCC for a determination. Action on an appeal to the BOCC shall be made at a regular or at a special meeting called for this purpose and their determination shall be final.

#### **6600: DEFINITIONS**

The following definitions are provided herein for the sole purpose of interpreting, administering and implementing the County's Grading and Excavation Regulations. For the purposes of these Grading and Excavation Regulations only, the definitions set forth herein shall control and take precedence over any definitions set forth in Chapter 15 or other chapters of this Code:

- A. **Approved Plans:** Current grading plans that have been approved and signed by the County Engineer.
- B. **Approved Testing Agency:** A facility whose testing operations are controlled and monitored by a civil engineer and which is equipped to perform and certify the tests required by these regulations or by the grading manual.
- C. **As Graded:** Topography of a site on completion of grading.
- D. **Bench:** A relatively level step excavated into earth material on which fill may be placed.
- E. **Borrow:** Earth material acquired from an off-site location for use in grading a site.
- F. **Civil Engineer:** A professional engineer licensed in the State of Colorado having knowledge and experience in the field of civil engineering.
- G. **Civil Engineering:** The application of the knowledge of the forces of nature, principles of mechanics and properties of materials for the evaluation, design and construction of civil work for the beneficial use of mankind.
- H. **Clearing, Brushing and Grubbing:** Removal of vegetation such a grass, brush, trees and similar plant types by mechanical means.
- I. **County Engineer:** The director of the Summit County Engineering Department or his authorized representative.
- J. **Earth-Disturbing Activity:** Mechanical removal of any rock, natural soil, fill or any combination thereof, the placement or stockpiling of fill or the clearing of trees and vegetation for the purpose of constructing roads, site

improvements or structures, installing utility lines or making use of the land in other than its natural state.

- K. **Erosion Control System:** A combination of desilting facilities and erosion protection, including effective planting, to protect property, watercourses, public and private facilities and receiving waters from an abnormal deposition of sediment or dust.
- L. **Excavation:** The mechanical removal of earth material.
- M. **Fill:** A deposit of earth material placed by artificial means.
- N. **Geotechnical Engineering:** The application of geologic, soils and hydrologic knowledge and principles in the investigation and evaluation of naturally occurring rock, soil, ground and surface water for use in the design of civil works.
- O. **Grade:** The number of feet of horizontal distance traveled for every one (1) foot of vertical rise in the ground surface expressed as a ratio (e.g. a 3:1 grade means three (3) feet of horizontal distance is traveled for every one (1) foot of vertical rise in the ground surface).
- P. **Grade, Existing:** The ground surface prior to grading.
- Q. **Grade, Finish:** The final grade of a site that conforms to the approved plan and provides final site drainage.
- R. **Grade, Natural:** The ground surface unaltered by artificial means.
- S. **Hazardous Condition:** A condition when the state of any natural ground, natural slope, excavation, fill or drainage device, which exists on private or public property, is a menace to life or limb, a danger to public safety or endangers or adversely affects the safety, usability or stability of adjacent property, structures or public or private facilities.
- T. **Public Utility:** Any firm, partnership, association, cooperative, company, corporation, governmental agency, special or metropolitan district and the directors, trustees or receivers thereof, whether elected or appointed, which are engaged in providing electric, rural electric, telephone, telegraph, communications, cable television, gas pipeline carrier, water, sewerage or pipeline facilities and services.
- U. **Agricultural Operations:** Operations associated with the growing of timber or crops and raising of livestock including but not limited to such activities as plowing, planting, scarifying soils, construction and clearing or irrigation ditches, burning fields or irrigation ditches, construction of roads, buildings and stock ponds within farm or ranch boundaries. The exemption from grading permits for agricultural operations applies only to land in the County's A-1 Zoning District.

**APPENDIX D – CODE CHAPTER 7**

**SUMMIT COUNTY  
LAND USE AND DEVELOPMENT CODE**

**CHAPTER 7: WATER QUALITY CONTROL  
REGULATIONS**

Adopted: September 12, 1988 (Resolution #88-52) Effective: July 24, 2012

## **7000: INTRODUCTION**

### **7001: Purpose and Intent**

- A. The purpose of the Water Quality Control Regulations is to prevent degradation of water quality in Dillon and Green Mountain Reservoirs by reducing the amount of phosphorus contributed from run-off and erosion. Phosphorus above certain levels will lead to eventual eutrophication of these reservoirs, thus undermining their value as recreational and aesthetic resources for Summit County (“County”). The reservoirs play an important role in the County's summertime economy and are essential to its continued prosperity.
- B. Phosphorus levels in Dillon Reservoir have reached the point where the Colorado Water Quality Control Commission (“WQCC”) has established limits on the amount of phosphorus that can be discharged from point sources such as wastewater treatment plants. The WQCC has, however, agreed to a trade-off program whereby reductions in the amount of phosphorus reaching Dillon Reservoir through the control of non-point source loading, such as run-off from parking lots and roads, and from soil disturbance and erosion, will allow increases in the amount of phosphorus contributed by point sources. Continued growth in the County depends on the ability of wastewater treatment plants to expand, and thus on increases in phosphorus allocated to these plants. These regulations will enable the County to implement a trade-off program and to provide for continued growth.

### **7002: Authority**

The County is authorized by Colorado State Statutes (C.R.S.) to plan for and regulate the use of land to provide planned and orderly use of land, and protection of the environment in a manner consistent with constitutional rights [C.R.S. § 29-20-104(1)(h)]; to plan for and regulate the uses of land for trade, industry, recreation or other purposes [C.R.S. § 30-28-111]; and to provide for enforcement through necessary guarantees, penalties and appropriate action to abate or remove unlawful alterations, maintenance or use of property [C.R.S. § 30-28-114, C.R.S. § 30-28-124 and C.R.S. § 30-28-137]. The adoption of the County Water Quality Control Regulations (Chapter 7) is based on this authority.

### **7003: Requirement for Grading Permit**

- A. A grading permit must be obtained from the County Engineering Department prior to conducting any earth-disturbing activity, with the exceptions as provided in Section 6400 and as referenced in Section 7202. Grading plans and specifications approved in conjunction with the issuance of a grading permit must comply with the Water Quality Control Regulations herein. The application requirements and procedures for obtaining a grading permit shall be as set forth in Chapter 6 of this Code.
- B. Activities exempt from grading permit requirements are not exempt from meeting the requirements of the Water Quality Control Regulations except as provided in Section 7200.

### **7004: Water Quality Control Manual**

The Engineering Department, as the administrative authority for these regulations, shall formulate such rules, procedures and interpretations, design criteria and guidelines as may be necessary to administer these regulations. Such requirements, interpretations and guidelines may be published in the form of a manual and be made available to the public. Any earth-disturbing activity that must comply with the Water Quality Control Regulations must also comply with the water quality control manual. In the event of any conflict between the manual and the Water Quality Control Regulations, these regulations shall govern.

## **7100: DEVELOPMENT STANDARDS FOR CONTROL OF WATER QUALITY**

### **7101: Performance Standards for Construction Activities**

#### **7101.01: Plan Requirements**

Prior to final approval of a proposed subdivision, site plan or issuance of any building permit for a development proposal, plans that meet one or more of the following standards shall be submitted to and approved by the Engineering Department:

- A. Prevention of soil loss from the construction site as a result of erosion produced by a 25-year, 24-hour design storm (2.2 inches). This standard shall be met both during and after construction.
- B. Prevention of any increase in the historic rate of run-off from the development site produced by the 25-year, 24-hour design storm (2.2 inches). This standard shall be met both during and after construction.

- C. Prevention of any direct discharge of storm water to a lake, stream or intermittent stream.
- D. Provision for revegetation which:
  - 1. Provides for site coverage of disturbed areas after development equal to or better than vegetative coverage prior to development, where such areas are not intended to be used for roads, driveways or parking areas; and,
  - 2. Provides for coverage with native species, or alternatively, other hardy species provided with an irrigation system.
- E. Diversion of run-off from snow storage areas into detention facilities.
- F. Provision for adequately sized detention facilities where dewatering of excavations is needed.

**7101.02: Financial Guarantee**

A site improvements agreement or a subdivision improvements agreement, and associated financial guarantee, shall be posted by the permit holder to ensure the provisions of Chapter 7 are met when a site plan improvements agreement or subdivision improvements agreement is required by the provisions of this Code. Such improvement agreements and the associated financial guarantees shall be in accordance with the applicable regulations contained within Sections 8109 and 12607 et seq. of this Code. If a site plan or subdivision improvements agreement is not required by other provisions of this Code, the County may require that a site plan improvements agreement and associated financial guarantee be posted in accordance with the provisions of Section 12607 et seq. to ensure a site is constructed in accordance with these Water Quality Control Regulations.

**7102: Slope Limitations**

With respect to development that is permitted by zoning, construction is allowed on 3.33:1 (30 percent (“%”)) or steeper slopes only if (1) such disturbance is sought at the time of site plan review, or grading permit review for a legally created lot or parcel; and (2) the provisions of Sections 7102.01 through 7102.09 are met.

**7102.01: Extent of Site Disturbance**

Site disturbance shall not exceed 15% of that portion of a site where slopes are 3.33:1 or greater, unless evidence can be presented to the satisfaction of the County Engineer that no water quality impacts will occur. The area to remain undisturbed shall be protected by a barrier (e.g., snow fencing) to prevent its disturbance. Lots platted or legally created prior to September 1986 may be exempted from this requirement if:

- A. The disturbance limitation of 15% would prevent reasonable use of the lot for construction; and,
- B. The remaining standards in Sections 7102.02 through 7102.09 are met as deemed necessary by the Engineering Department.

**7102.02: Design of Roads and Driveways**

All roads and driveways shall comply with County requirements as set forth by the Summit County Road & Bridge Standards (Chapter 5 of this Code).

**7102.03: Compliance with Soils Report**

Areas intended to be used for roads, driveways or structures shall be approved for such use by a geologist in a soils report. The permit holder is responsible for submitting a soils report as part of their application for subdivision, or if no subdivision is involved, at the time application for grading permits is made (the soils report is to be submitted as part of the geotechnical report required in grading permit applications). All roads, driveways and foundations shall be designed by a licensed engineer consistent with the soils report. The County Engineer shall approve designs of roads and driveways prior to the issuance of grading permits. The County Building Official shall approve foundation designs prior to issuance of building permits. Inspections shall be conducted in accordance with the County's Grading and Excavation Regulations (Chapter 6 of this Code) and the applicable Building Code to ensure site work and construction conform to approved plans.

**7102.04: Design of Utilities**

All utilities shall be designed by a licensed engineer.

**7102.05: Erosion Control Plan**

An erosion control plan for the site that meets the standards set forth in Sections 7101.01.A through 7101.01.C and 7101.01.F shall be prepared by a licensed engineer having knowledge and experience in civil engineering and hydrology. Approval of the erosion control plan shall be obtained from the County Engineer prior to issuance of any grading or building permits for the site. The Engineering Department shall inspect the site periodically during construction to ensure compliance with the approved plan and must inspect and approve long-term erosion control measures before a Certificate of Occupancy (“CO”) is granted.

#### **7102.06: Revegetation Plan**

A revegetation plan that meets the standards set forth in Section 7101.01.D shall be prepared by an individual having a degree in landscape architecture or comparable expertise, and sufficient experience in landscaping installation and maintenance to ensure the success of the plans they propose. Approval of the revegetation plan shall be obtained from the Engineering Department prior to issuance of any grading or building permits for the site. The Engineering Department shall inspect the site periodically for four (4) years from the date revegetation work is done to ensure compliance with the plan.

#### **7102.07: Urban Run-Off Control Plan**

An Urban Run-Off Control Plan which meets the standards set forth in Section 7101.01.B, 7101.01.C and 7101.01.E shall be prepared by a licensed engineer having knowledge and experience in civil engineering and hydrology. Approval of an Urban Run-Off Control Plan shall be obtained from the County Engineer prior to issuance of any grading or building permits for the site. The Engineering Department shall inspect the site periodically during construction to ensure compliance with the approved plan and must inspect and approve long-term urban run-off control measures before a CO is granted.

#### **7102.08: Financial Guarantee**

The County may require that a site plan improvements agreement and associated financial guarantee be posted in accordance with Section 7101.02.

#### **7102.09: Compliance with Other County Requirements**

In addition to the requirements of this Section 7102, development proposals must comply with all other County standards applicable to construction or soil disturbance on slopes greater than 3.33:1.

#### **7103: Streamside Setbacks**

##### **7103.01: Restrictions on Soil Disturbance Adjacent to Water Bodies**

Soil disturbance is prohibited within 25 feet of a lake, stream or intermittent stream except when approved by the Engineering Department and when the water body or intermittent stream is hydrologically isolated from all earth disturbance according to the following procedures:

- A. **Installation of Cofferdam:** An acceptable coffer dam is installed to isolate the water body from construction and is maintained in place until revegetation and bank stabilization is complete and permission is granted by the Engineering Department to remove the dam.
- B. **Containment of Stream:** If a stream or intermittent stream is involved, the stream is completely contained during construction from 50 feet upstream of any site disturbance to 50 feet downstream of any site disturbance. For streams and intermittent streams, the conveyance shall be sized for a minimum flow with a ten percent (10%) chance of occurrence. The conveyance shall be installed prior to any construction and shall be removed only when permission is granted by the Engineering Department.
- C. **Alternative Methods:** An alternative method for protection of water bodies to those required in Sections 7103.01.A and 7103.01.B may be used if approved by the County Engineer.

##### **7103.02: Placement of Cantilevered Structures**

A cantilevered structure may overhang the streamside setback, but not any required wetland setback per the Wetland Regulations as set forth in Section 7105 et seq., as long as no disturbance occurs within the setback area, floodplain requirements are met, and approval is granted by the Engineering Department.

##### **7103.03: Exemption for Work Authorized by the Division of Wildlife**

Work within a lake, stream or river corridor is exempt from the requirements in Section 7103.01 if the purpose of the work is to restore the wildlife habitat, the work will be done under the supervision of the Colorado Division of Wildlife (DOW), and the DOW has granted approval for the work to be done under the auspices of the DOW's nationwide 404 permit. Evidence of approval from the DOW must be submitted to the Engineering Department prior to commencement of any work.

#### **7104: Stream Crossings by Roads and Utilities**

The number of stream crossings by roads and utilities shall be minimized. In designing such crossings, the standards set forth in Section 7103.01 shall be met.

#### **7105: Wetland Regulations**

Purpose and Intent: The wetland regulations set forth in this section are intended to complement and operate in conjunction with the distinct jurisdictional wetland disturbance process set forth in Section 404 of the Federal Clean Water Act and administered by the U.S. Army Corps of Engineers. Accordingly, the wetland disturbance provisions of this Code may apply notwithstanding the determination of the jurisdictional nature of the wetlands by the U.S. Army Corps.

Independent Survey Requirements: In light of the purpose and intent of this section, if there is any evidence that a site subject to disturbance may contain wetlands as such term is defined in Chapter 15 of this Code, the County may require the developer to obtain and submit a wetlands survey by an independent third party consultant specializing in wetlands delineations as recognized by the U.S. Army Corps of Engineers on its periodically updated "Wetlands Delineation Consultants List".

#### **7105.01: Disturbance of Wetland Areas or Wetland Setbacks**

- A. Soil disturbance and structures are prohibited within 25 feet of a wetland area as such term is defined in Chapter 15 of this Code, and recognized as such by the County, notwithstanding any contrary determination by the U.S. Army Corps of Engineers. Single-family and duplex developments on lots that were platted prior to February 26, 1996 (the date of the adoption of the County's first Wetland Regulations) shall be exempt from the 25-foot setback requirement, but not the prohibition as it applies to the disturbance of the wetlands themselves. After February 26, 1996, the County applied the Wetland Regulations to all development reviews acted on by a Commission, the Board of Adjustment ("BOA") or the Board of County Commissioners ("BOCC").
- B. The Review Authority may reduce the 25-foot setback if the disturbance of the wetland area or the wetland setback is minimized using the criteria listed in Sections 7105.03, 7105.04 and 7105.05. Unless an activity is exempt from the wetland setback regulations as provided for in this section, the wetland setback impacts and/or other relevant concerns shall be evaluated concurrently with each type of development review as provided for in this Code, including but not limited to zoning amendments, Planned Unit Development ("PUD") modifications, non-conforming parcel plan reviews, site plan reviews, conditional use permits and temporary use permits.
- C. Work in a wetland area or a wetland setback is exempt from this requirement if 1) the work is to re-vegetate the setback to a natural, weed-free state without extensive grading; 2) the work is water dependent such as docks and piers; 3) necessary to achieve either vehicular or utility access to property, and no other access route avoiding the wetland areas or the associated setbacks is technically feasible, provided the impacts of such access shall be mitigated in conformance with the standards contained in Section 7105.05; 4) activities directly related to farming, ranching and silviculture; or 5) the purpose of the work is to restore the wildlife habitat, and the work will be done under the supervision of the Colorado DOW and the DOW has granted approval for the work to be done under the auspices of the Division's nationwide 404 permit. Evidence of approval from the DOW must be submitted to the Planning or Engineering Department prior to commencement of any work conducted under this exemption.

#### **7105.02: Compliance with Disturbance and Mitigation Plans and Applicable 404 Permit Requirements**

Prior to final approval of a subdivision, site plan or grading plan, the project proponent shall submit a plan to meet the standards set forth in Section 7105.04 and 7105.05. If the site contains areas deemed a jurisdictional wetland by the U.S. Army Corps of Engineers, the applicant must either present evidence of compliance with Section 404 of the Federal Clean Water Act ("CWA"), or present evidence that work will be done under the auspices of the Colorado DOW nationwide 404 permit as provided in Section 7105.01. Documentation and compliance with all potential Section 404 matters shall remain the sole and ongoing responsibility of the project proponent, and any failure to maintain such compliance may lead to suspension or revocation of any approvals provided under this Code.

### **7105.03: Criteria for Disturbing Wetland Areas and the Associated Setbacks**

The Review Authority may allow disturbance of wetland areas or the wetland setback if the disturbance activity to the wetland area and the associated setback meet all of the following criteria:

- A. A wetland or the associated wetland setback cannot have soil disturbance unless there is no practicable alternative to avoiding a wetland or the wetland setback, and such activity is to either: 1) meet a master plan policy; or 2) meet a policy of this Code; or 3) allow reasonable use of the property.
- B. The project will limit the degree of impact on the wetland area and the associated setback to the greatest extent practical using the mitigation procedures outlined in Section 7105.05.
- C. The impact on the wetland area or the required setbacks will be mitigated by preservation and maintenance operations.
- D. The loss of a wetland area will be compensated for by replacing or substituting the wetland resource lost in terms of quantity and quality.
- E. The project's discharges will not violate other applicable regulations and laws (e.g., state water quality standards, Endangered Species Act, National Environmental Policy Act), or significantly degrade the waters of the United States or any other wetland as such term is defined in Chapter 15 of this Code and recognized as such by the County.

### **7105.04: Submittal Requirements for a Wetlands Disturbance Plan**

Where all or part of a wetland area or the associated setback is proposed to be disturbed or substantially altered by development, an applicant for development review shall submit a wetlands disturbance plan which shows:

- A. The amount, location and acreage of wetland fill, removal or other alteration proposed;
- B. The proposed mitigation improvements, including those wetland areas to be restored or created in accordance with Section 7105.05;
- C. A grading and erosion control plan, including plant material to be used for revegetation and soil stabilization measures; and,
- D. A narrative explaining how a proposed activity in the wetland setback or a wetland area will meet the criteria contained in Section 7105.03.

### **7105.05: Mitigation Procedures for Developing Within or Adjacent to Wetlands Areas**

A mitigation plan shall be required, in accordance with Section 7105.04, for any unavoidable earth disturbing activities within wetland areas or the associated setbacks. Any earth disturbance within any wetland areas or the associated setbacks shall use the following mitigation and be drawn in accordance with the guidelines for temporary and permanent control measures set forth in the Guide to Water Quality Protection and Erosion Control (prepared for the Summit Water Quality Committee):

- A. Time grading and construction to minimize soil exposure during periods of snowmelt and rainy periods;
- B. Retain and protect natural vegetation; strip only the area required for construction in stages;
- C. Infiltrate runoff from impervious surfaces by locating infiltration trenches below driplines, walkways, parking areas and driveways;
- D. Minimize length and steepness of exposed slopes by designing with the natural topography; prevent erosion on exposed slopes by placing barriers, such as straw bale dikes;
- E. Keep runoff velocities low to prevent high erosive powers by using flow barriers (vegetation, rip-rap, etc.);
- F. Protect drainage ways and outlets from increased flows by using rip-rap;
- G. Trap sediment on-site by using straw bales, filter fences and sand bags;
- H. Any disturbed areas must be replanted with native vegetation;
- I. Natural hydrologic flows will be maintained through the site;
- J. Minimize earth movement by avoiding cut and fill slopes;
- K. Foundations shall be stepped down the slope to minimize cut and fill;
- L. Any structure or fill authorized shall be properly maintained, including maintenance to ensure public safety;
- M. Appropriate erosion and sedimentation prevention measures must be used and maintained in effective operating condition during construction, and all exposed soil and other fills must be permanently stabilized at the earliest practicable date;
- N. No activity may substantially disrupt the movement of those species of aquatic life indigenous to the water body, including those species which normally migrate through the area, unless the activities primary purpose is to impound water;

- O. Heavy equipment working in wetlands must be placed on mats or other measures must be taken to minimize soil disturbance; and,
- P. Any other appropriate measure as deemed necessary by the County Engineer, the Planning Department, the Planning Commission, or the BOCC.

#### **7105.06: Financial Guarantee**

A subdivision improvements agreement or site plan improvements agreement and associated financial guarantee to ensure the requirements of the Wetland Regulations are met shall be posted in accordance with Section 8109 et seq. or Section 12607 et seq. or as otherwise provided for in this Code. Notwithstanding the forgoing, the term of the financial guarantee for the period following installation shall be a minimum of three (3) years in order to ensure that successful, stable plant establishment is achieved for all wetland plantings.

#### **7106: Road Construction and Maintenance Standards**

Any private or public road construction in the County shall meet the standards set forth in Sections 7101.01.A, B, D, and F, Sections 7102, 7103, 7104, and 7105. Routine road and recreation path maintenance, such as snow removal, grading of gravel roads and cleaning drainage ditches shall be exempted from complying with the provisions contained within these sections.

#### **7200: EXEMPTIONS FROM WATER QUALITY CONTROL REQUIREMENTS**

##### **7201: Single-Family Construction**

Construction of single family residential units shall be exempt from these regulations if:

- A. The entire subdivision is provided with central erosion and run-off controls such as a community desilting pond for all drainage from the subdivision; or,
- B. The Engineering Department determines that exempting construction will not have a significant impact on water quality.

The Engineering Department retains the authority to apply these standards when water quality impacts are likely to be significant, such as, but not limited to, construction on slopes greater than 3.33:1, construction within 25 feet of a lake, stream or river or if wetland disturbance will result.

##### **7202: Activities Exempted from Grading Permits**

Activities exempt from the requirement to obtain a grading permit are also exempt from compliance with these Water Quality Control Regulations, except if the Engineering Department determines the location, method of construction or other factors associated with a particular activity will cause water quality impacts. The criteria for making such determinations may be stated in the County Water Quality Control Manual.

Activities exempt from grading permit requirements include:

- A. Regular agricultural operations on land in the County's Agricultural ("A-1") Zoning District.
- B. Routine road and recreation path maintenance such as snow removal, grading of gravel roads and cleaning of drainage ditches.
- C. Any earth disturbing activity involving less than 500 square feet of surface area; however, if the Engineering Department has determined an activity of this type will result in water quality impacts, the requirement for obtaining a grading permit shall be met. The criteria for making such determinations shall be stated in the County water quality control manual.
- D. Any activity specifically covered by an approved road cut or access permit issued by the Summit County Road & Bridge Department.
- E. Any emergency work on utility, water and sewer lines as provided in Section 6303.06.

##### **7300: REQUIRED FEES**

Applicants for grading permits shall pay fees for plan review and inspections as required by a resolution adopted by the BOCC. The cost of plan review and inspection necessary to enforce these Water Quality Control Regulations

shall be included in the grading permit fees.

## **7400: ENFORCEMENT OF WATER QUALITY CONTROL REGULATIONS**

### **7401: Requirement for Improvements Agreement**

A grading and drainage plan shall be approved in conjunction with each development review approved by the County. This plan shall show drainage improvements necessary to meet the requirements of these Water Quality Control Regulations. A subdivision improvements agreement or site plan improvements agreement and associated financial guarantee shall be posted in accordance with Section 8109 et seq. or Section 12607 et seq.

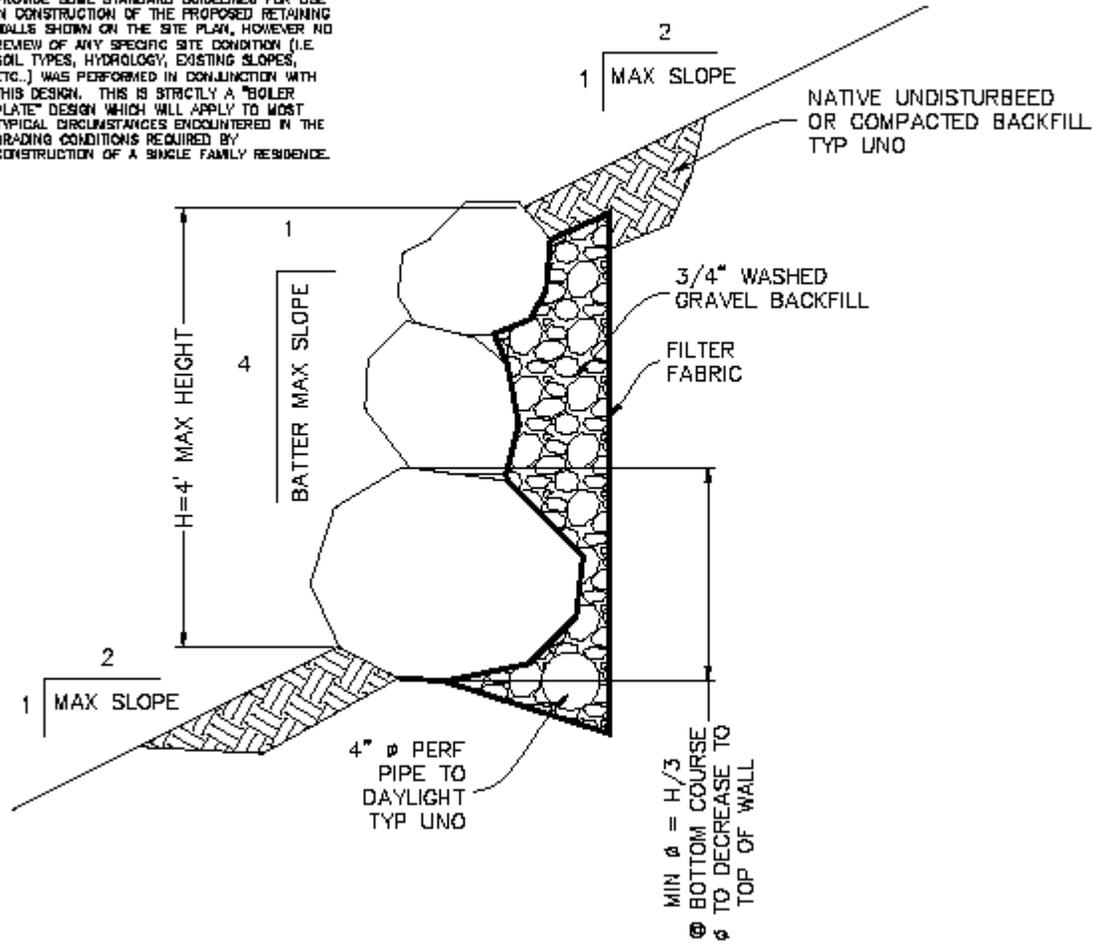
### **7402: Guarantee of Grading Work**

Grading plans required by Chapter 6 of this Code shall be approved only if they include drainage improvements necessary to meet the requirements of these Water Quality Control Regulations. Grading permits may not be issued unless the applicant first executes a site plan improvements agreement in accordance with Section 12607 et seq. of this Code, and also posts a Letter of Credit (“LOC”) or cash escrow with the County if required by the Engineering Department. The purpose of this financial guarantee is to assure drainage and water quality control devices will be constructed and disturbed areas will be revegetated as required by the approved grading plans and these regulations.

**APPENDIX E – RETAINING WALL DETAIL**

**GENERAL NOTES:**

1. THIS RETAINING WALL DESIGN IS INTENDED FOR USE AS A GUIDANCE DOCUMENT AND DOES NOT CONSTITUTE AN ENGINEERED EARTH RETENTION SYSTEM. SUMMIT COUNTY GOVERNMENT TAKES NO LIABILITY FOR ANY FAILURE OF A SOIL RETENTION SYSTEM INSTALLED IN ACCORDANCE WITH THESE GUIDELINES, REGARDLESS OF APPROVAL.
2. THIS DESIGN IF INSTALLED AS SHOWN WILL EFFECTUALLY STABILIZE SOILS TO THE HEIGHT SHOWN PROVIDED NO UNUSUAL CIRCUMSTANCES ARE ENCOUNTERED IN THE SUBGRADE, AND NO ABNORMAL SURCHARGES ARE IMPOSED ON THE WALL.
3. THE SUMMIT COUNTY ENGINEERING DEPARTMENT HAS PROVIDED THIS DESIGN AS A SERVICE TO THE APPLICANT IN ORDER TO PROVIDE SOME STANDARD GUIDELINES FOR USE IN CONSTRUCTION OF THE PROPOSED RETAINING WALLS SHOWN ON THE SITE PLAN, HOWEVER NO REVIEW OF ANY SPECIFIC SITE CONDITION (I.E. SOIL TYPES, HYDROLOGY, EXISTING SLOPES, ETC.) WAS PERFORMED IN CONJUNCTION WITH THIS DESIGN. THIS IS STRICTLY A "BOILER PLATE" DESIGN WHICH WILL APPLY TO MOST TYPICAL CIRCUMSTANCES ENCOUNTERED IN THE GRADING CONDITIONS REQUIRED BY CONSTRUCTION OF A SINGLE FAMILY RESIDENCE.



<table border="1"> <tr> <td>DATE</td> <td>DESCRIPTION</td> </tr> <tr> <td>12/18/07</td> <td>1</td> </tr> </table>	DATE	DESCRIPTION	12/18/07	1	<table border="1"> <tr> <td>DATE</td> <td>DESCRIPTION</td> </tr> <tr> <td>12/18/07</td> <td>1</td> </tr> </table>	DATE	DESCRIPTION	12/18/07	1	<p>RETAINING WALL</p>	<p>4-FT MAX HT. WALL TYPICAL SCHEMATIC SUMMIT COUNTY, CO</p>	<table border="1"> <tr> <td>DATE</td> <td>DESCRIPTION</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	DATE	DESCRIPTION							<p>Summit County Government</p>
DATE	DESCRIPTION																				
12/18/07	1																				
DATE	DESCRIPTION																				
12/18/07	1																				
DATE	DESCRIPTION																				

## **APPENDIX F – EROSION CONTROL DETAILS**



**APPENDIX G – GRADING PERMIT  
APPLICATION**



# ENGINEERING DEPARTMENT

970.668.4200

[www.SummitCountyCO.gov](http://www.SummitCountyCO.gov)

0037 Peak One Dr. PO Box 5660

Frisco, Colorado 80443

## GRADING & EXCAVATION PERMIT APPLICATION

### CONTACT INFORMATION

APPLICANT:	OWNER:
ADDRESS:	ADDRESS:
EMAIL:	EMAIL:
PHONE:	PHONE:
CONTRACTOR:	CIVIL ENGINEER:
ADDRESS:	ADDRESS:
EMAIL:	EMAIL:
PHONE:	PHONE:

### PROJECT LOCATION

PHYSICAL ADDRESS:

SUBDIVISION, LOT, AND BLOCK:

### PROJECT DESCRIPTION

[Large empty area for project description]

The undersigned certifies that the information provided is correct and that this application does not authorize site grading until a grading and excavation permit is granted.

Applicant: \_\_\_\_\_

Date: \_\_\_\_\_

**ENGINEERING DEPARTMENT - INFORMATION FOR GRADING AND EXCAVATION PERMIT**

*Land use and other prior development approvals:*

Include case numbers from any variance, plat, special or temporary use, accessory apartment, or special zoning privileges or approvals:

*Excavation Mass Balance calculations (net cut/fill volume resulting from this project):*

Total Cut Volume:

Total Fill Volume:

Net Volume for project (cut or fill):

What is the source (for net fill) or destination (for net cut) of the material required or generated by your project?

Will the overall development plan involve disturbance of more than one acre of land?

Yes

No

If yes, a copy of the Colorado Department of Public Health and Environment (CDPHE) State Stormwater Construction permit must be submitted prior to issuance of the Grading and Excavation permit by the Engineering Department.

Is wetland disturbance proposed as part of the development plan?

Yes

No

If yes, then a Jurisdictional Determination (JD) from the US Army Corps of Engineers (ACOE) must be submitted. If the JD acknowledges ACOE jurisdiction, then a 404 or other appropriate permit or approval from the ACOE must be submitted prior to issuance of a permit. If the JD states that the wetlands are not in the jurisdiction of the ACOE, then County approvals and/or separate permit will be required. If wetland disturbance is proposed, then a financial guarantee may be required.

Will there be any disturbance or improvements located in the County right-of-way?

Yes

No

If yes, a separate right-of-way permit must be obtained from the County Road and Bridge Department.

Will there be any development or grading in a 100-year Floodplain?

Yes

No

If yes, then a Floodplain Development permit must be obtained from the County Engineering Department in accordance with Federal Emergency Management Agency regulations.

Will excavation begin during winter months?

Yes

No

If yes, then a winter conditions plan must be submitted identifying how property boundaries will be located and preserved, how erosion controls will be implemented and phased in or out during the runoff season, how fill material will be placed so that ice and snow are not contaminating the backfill, how snow storage will be provided during construction, how staging of contractors' vehicles and materials will be accommodated, and any other information that may apply to a specific project as seen fit by the owner, contractor, engineer, or County Staff.