TOWN OF BOWMAR

Ordinance No. 230, Proposed by Doug Means, Building Commissioner

AN ORDINANCE FOR REGULATION OF BUILDING AND CONSTRUCTION BY THE TOWN OF BOW MAR, COLORADO, FOR THE PURPOSE OF PROVIDING REGULATIONS FOR THE BUILDING OF RESIDENCES AND OTHER STRUCTURES WITHIN SUCH TOWN THAT WILL BE CONSISTENT WITH CURRENT RESIDENTIAL BUILDING CODES USED THROUGHOUT THE STATE OF COLORADO AND THE NATION, INCLUDIING: THE INTERNATIONAL CODE COUNCIL'S 2000 INTERNATIONAL BUILDING CODE; THE INTERNATIONAL CODE COUNCIL'S 2000 INTERNATIONAL MECHANICAL CODE; THE INTERNATIONAL CODE COUNCIL'S 2000 INTERNATIONAL RESIDENTIAL CODE; THE INTERNATIONAL CODE COUNCIL'S 2000 INTERNATIONAL PLUMBING CODE; THE INTERNATIONAL CODE COUNCIL'S 2000 INTERNTIONAL FUEL GAS CODE; THE INTERNATIONAL CODE COUNCIL'S 2000 INTERNATIONAL FIRE CODE; AND PROVIDING FOR FEES FOR THE ISSUANCE OF BUILDING PERMITS AND RELATED PERMITS, AND ALL MATTERS RELATED THERETO; AND PROVIDING FOR THE RECODIFICATION OF THAT ORDINANCE PREVIOUSLY ADOPTED BUT IMPROPERLY CODIFIED AS SECTION 16-19 OF THE MUNICIPAL CODE OF THE TOWN OF BOW MAR.

BE IT ORDAINED BY THE BOARD OF TRUSTEES OF THE TOWN OF BOW MAR, COLORADO, PURSUANT TO TITLE 31, ARTICLE 16, PART 2 OF THE COLORADO REVISED STATUTES, AS AMENDED:

Section 1.

a. Section 18-8(a) of the Municipal Code of the Town of Bow Mar shall be repealed and shall be replaced with language reading as follows:

"Adoption of Building Code by Reference. The International Building Code of 2000 (the "Building Code"), including Appendix Chapters C and I, all as promulgated by the International Code Council, 5630 S. Workman Mill Road, Whittier, California, 90601, is hereby adopted and enacted by reference, with the same force and effect as though fully set forth herein, as the Building Code of the Town, with intended comprehensive regulation of the erection, construction, enlargement, alteration, repair, moving, removal, demolition, conversion. occupancy, equipment, use, height, area and maintenance of all buildings of structures within the Town. Two (2) certified copies of said Building Code, as amended or revised by the Town, shall be on file in the Office of the Town Clerk, and may be inspected during regular business hours, or copies of said Code, as so amended or revised, may be procured from the Town Clerk upon prior payment of such photocopying fees as may be levied therefor."

b. Section 18-8(b) of the Municipal Code of the Town of Bow Mar shall be repealed and shall be replaced with language reading as follows:

"The following amendments to and revisions of the Building Code that has been adopted by the Town, by reference, are applicable:

1. Subsection 106.2 of the Building Code is amended to read:

   a. Work Exempt from Permit: A building permit shall NOT be required for the following:

      i. Movable cases, counter and partition not over 5 feet high.
      ii. Painting, papering and similar work (does not include kitchen cabinets and countertops, which does require a building permit).

iii. Window awnings supported by an exterior wall of Group R, Division 3 and Group U Occupancies when projecting not more than 54 inches.

2. Subsection 105.2 of the Building Code is amended to include the following paragraphs:

a. Every Permit issued by the Building Official under the provisions of this Code shall expire one year from the date of issuance, unless extended by the Building Official. If the building or work authorized by the permit is not completed within the one-year period of time, then before the work can be recommenced, a new permit shall be first obtained, and the fee shall be based upon the amount of work remaining to be completed.

b. A Permit may be canceled by the Building Official when no request for inspection has been made for a period of sixty (60) days, upon reasonable prior notice, unless such 60-day period is extended by the Building Official.

3. Section 106 of the Building Code is amended by the addition of a new Paragraph 106.2.1:

a. The foundation design shall be based on an address-specific soils report. The design shall be wet stamped and signed by a registered Colorado engineer.

4. Subsection 108.2 of the Building Code is amended to read as follows:

a. Permit Fees: The fees for Building and related Permit(s) shall be as set forth herein:

i. Any Building Permit fee that would otherwise be calculated on the basis of the Total Valuation of the dwelling, building or structure to be constructed or renovated shall be set at 200% ( ) of the fee that would otherwise result from resort to the Building Permit Fee Schedule set forth in the Code.

ii. Determinations of 'value' or 'valuation', for the purposes of calculating the Building Permit Fee shall be made by the Building Official under any applicable provisions of the Code, or under any other reasonable method adopted or established, from time to time, by the Building Official.

iii. Inspection and re-inspection fees shall be $60.00 per inspection, or such other amount as may be established, from time to time, by the Building Official.

iv. The fee(s) for permits for certain discrete home improvements that may necessitate one or more inspections by professionals of specific competencies shall be as established, from time to time, by the Building Official. Such discrete home improvements include, but are not limited to:

(a) Roof replacement;
(b) Water heater or furnace replacement;
(c) Evaporative cooler or air conditioner installation or replacement;
(d) Gas log heater or fireplace insert installation or replacement;
(e) Outdoor, 'permanent' gas grill installation or replacement;
(f) Outdoor, gas-fired 'pit' or chiminea-style installation or replacement;
(g) Swimming pool installation or replacement;
(h) Hot tub or sauna installation or replacement;
(i) Stucco application or replacement;
(j) Garden shed installation or replacement;
(k) Deck installation or replacement; and
(l) Fence installation or replacement.

v. On a site- or project-specific basis, as shall be determined by the Building Official in the exercise of such Official's sound discretion, any one or more of the following 'special use' permits may be required, each such permit to be issued on the basis of such fee as the Building Official may determine to be appropriate in each such case:

(a) Demolition permit;
(b) Grading permit;

(c) Hazardous materials inspection and/or removal permit;
(d) Non-hazardous material removal and haulage permit; and
(e) Extraordinary road damage and/or repair permit.

b. For any project where the Building Official reasonably expects that the Building Permit and any related fees will exceed $5,000, in total, the Building Official will discuss such project with the Trustees of the Town before issuing any of the project-related permits.

5. The Building Code is amended by the addition of Appendix K, Excavation and Grading:

SECTION K101 – PURPOSE

The purpose of this Appendix to the Code is to safeguard life, limb, property and the public welfare by regulating grading on private property.

SECTION K102 – SCOPE

This appendix sets forth rules and regulations to control excavation, grading and earthwork construction, including fills and embankments; establishes the administrative procedure for issuance of permits; and ht standards listed below are recognized standards.

1. Testing.
   1.1 ASTM D 1557, Moisture-density Relations of Soils and Soil Aggregate mixtures
   1.2 ASTM D 1556, In Place Density of Soils by the Sand Cone Method
   1.3 ASTM D 2167, In Place Density of Soils by the Rubber Balloon Method
   1.4 ASTM D 2937, In Place Density of Soils by the Drive Cylinder Method
   1.5 ASTM D 2922 and D3017, In Place Moisture Contact and Density of Soils by Nuclear Methods

SECTION K103 – PERMITS REQUIRED

K103.1 Permits Required. Except as specified in Section k103.2 of this section, no person shall do any grading without first having obtained a grading permit from the Building Official. A grading permit may be issued by the Building Official for excavation, filling or grading within any project to be completed in phases, provided that a final site development plan has been submitted, approved and recorded for the entire project or the first phase of a project, in which case a grading plan shall include maps indicating: existing and proposed topography at no greater than two foot contour intervals unless otherwise approved by the Building Official; all existing trees greater than 4" diameter (MBH), with clear designation of those that are to be retained and those that are to be removed; existing structures, with clear designation of those to be retained and to be removed; the location, type and size of all existing public utilities, and those proposed for relocation; and an erosion/sediment control plan prepared in accordance with the City of Littleton's Storm Drainage Design and Technical Criteria Manual. The grading plan shall be compatible with the final site development plan as approved or recommended by the Architectural Control Committee of BMOI, and such grading plan shall also bear the stamp of a competent professional who is registered and in good standing in the State of Colorado prior to issuance by the Building Official of a grading permit. When required erosion/sediment control facilities will not be installed contemporaneously with the completion of grading, the Building Official may require a financial guarantee in an amount sufficient to guarantee installation, construction, and operation of such erosion/sediment control facilities, plus twenty-five percent of such estimated amount. Said guarantee shall be cash, a letter of credit, surety bond, or suitable guarantee in a form satisfactory to the Building Official.

K103.2 Exempted Work. A grading permit is not required for the following:

1. If previously approved by the Building Official, any grading in an isolated, self-contained area that involves no danger to people or property.
2. An excavation below finished grade for basements and footings of a building, retaining wall or other structure already authorized by a valid Building Permit. This provision shall not exempt any

fill made with the material from such excavation or exempt any excavation having an unsupported height greater than 5 feet (1524 mm) after the completion of such structure.

Exemption from the permit requirements of this chapter shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this chapter or any other laws or ordinances of this jurisdiction.

SECTION K104 – HAZARDS

Whenever the Building Official determines that any existing excavation or embankment or fill on private property has become a hazard to life and limb, or endangers property, or adversely affects the safety, use or stability of a public way or drainage channel, the owner of the property upon which the excavation or fill is located, or other person or agent in control of said property, upon receipt of notice in writing from the Building Official, shall, within the period specified therein repair or eliminate such excavation or embankment to eliminate the hazard and to be in conformance with the requirements of the Code.

SECTION K105 – DEFINITIONS

For the purposes of this appendix, the definitions listed hereunder shall be applicable:

APPROVAL shall mean that the proposed work or completed work conforms to this chapter, in the Building Official's.

AS-GRADED is the extent of surface conditions on completion of grading.

BEDROCK is in-place solid rock

BENCH is a relatively level step excavated into earth material on which fill is to be placed.

BORROW is earth material acquired from an off-site location for use in grading on a site.

CIVIL ENGINEER is a professional engineer registered in the state to practice in the field of civil works.

CIVIL ENGINEERING is the application of the knowledge of the forces of nature, principles of mechanics and the properties of materials to the evaluation, design and construction of civil works.

COMPACTION is the densification of a fill by mechanical means.

EARTH MATERIAL is any rock, natural soil or fill or any combination thereof.

ENGINEERING GEOLOGIST is a geologist experienced and knowledgeable in engineering geology.

ENGINEERING GEOLOGY is the application of geologic knowledge and principles in the investigation and evaluation of naturally occurring rock and soil for use in the design of civil works.

EROSION is the wearing away of the ground surface as a result of the movement of wind, water or ice.

EXCAVATION is the mechanical removal of earth material.

FILL is a deposit of earth material placed by artificial means.

GEOTECHNICAL ENGINEER. See Soils Engineer

GRADE is the vertical location of the ground surface.

EXISTING GRADE is the grade prior to grading.

FINISH GRADE is the final grade of the site that conforms to the approved plan.

ROUGH GRADE is the stage at which the grade approximately conforms to the approved plan.

GRADING is any excavation or filling or combination thereof.

KEY is a designed compacted fill placed in a trench excavated in earth material beneath the toe of a proposed fill slope.

PROFESSIONAL INSPECTION is the inspection required by this code to be performed by the civil engineer, soils engineer or engineering geologist. Such inspections include those performed by persons supervised by such engineers or geologists and shall be sufficient to form an opinion relating to the conduct of the work.

SITE is any lot or parcel of land or contiguous combination thereof, under the same ownership, where grading is performed or permitted.

SOIL is naturally occurring superficial deposits overlying bedrock.

SOILS ENGINEER (GEOTECHNICAL ENGINEER) is an engineer experienced and knowledgeable in the practice of soils engineering (geotechnical) engineering.

SOILS ENGINEERING (GEOTECHNICAL ENGINEERING) is the application of the principles of soils mechanics in the investigation, evaluation and design of civil works involving the use of earth materials and the inspection or testing of the construction thereof.
TERRACE is a relatively level step constructed in the face of a graded slope surface for drainage and maintenance purposes.

SECTION K106 – GRADNG PERMIT REQUIREMENTS

K106.1 Permits Required. Except as exempted by Section 3306 of the Code, no person shall do any grading without first obtaining a grading permit from the Building Official. A separate permit shall be obtained for each site, and may cover both excavations and fills.

K106.2 Application. The provisions of Section 106.3.1 are applicable to grading. Additionally, the application shall state the estimated quantities of work involved.

K106.3 Grading Designation. Grading in excess of 5,000 cubic yards (3825 m3) shall be performed in accordance with the approved grading plan prepared by a civil engineer, and shall be designated as "engineered grading." Grading involving less than 5,000 cubic yards (3825 m3) shall be designated "regular grading" unless the permittee chooses to have the grading performed as engineered grading, or the building official determines that special conditions or unusual hazards exist, in which case grading shall conform to the requirements for engineered grading.

K106.4 Engineered Grading Requirements. Application for a grading permit shall be accompanied by two sets of plans and specifications and supporting data consisting of a soils engineering report and engineering geology report. The plans and specifications shall be prepared and signed by an individual licensed by the state to prepare such plans or specifications when required by the Building Official.

Specifications shall contain information covering construction and material requirements.

Plans shall be drawn to scale upon substantial paper or cloth and shall be of sufficient clarity to indicate the nature and extent of the work proposed, and show, in detail, that the work will conform to the provisions of this Code and all relevant laws, ordinances, rules and regulations. The first sheet of each set of plans shall give location of the work, the name and address of the owner, and the person by whom they were prepared.

The plans shall include the following information:

1. General vicinity of the proposed site.
2. Property limits and accurate contours of existing ground and details of terrain and area drainage.
3. Limiting dimensions, elevations or finish contours to be achieved by the grading, and proposed drainage channels and related construction.
4. Detailed plans of all surface and subsurface drainage devices, walls, cribbing, dams and other protective devices to be constructed with, or as a part of, the proposed work, together with a map showing the drainage area and the estimated runoff of the area served by any drains.
5. Location of any buildings or structures on the property where the work is to be performed and the location of any buildings or structures on land of adjacent owners that are within 15 feet (4572 mm) of the property or that may be affected by the proposed grading operations.
6. Recommendations included in the soils engineering report and the engineering geology report shall be incorporated n the grading plans or specifications. When approved by the Building Official, specific recommendations contained in the soils engineering report and the engineering geology report, which is applicable to grading, may be included by reference.
7. The dates of the soils engineering and engineering geology reports together with the names, addresses and phone numbers of the firms or individuals who prepared the reports.

K106.5 Soils Engineering Report. The soils engineering report required by Section 3309.4 shall include data regarding the nature, distribution and strength of existing soils, conclusions and recommendations for grading procedures and design criteria for corrective measures, including buttress fills, when necessary, and

opinions on adequacy for the intended use of sites to be developed by the proposed grading as affected by soils engineering factors, including the stability of slopes.

K106.6 Engineering Geology Report. The engineering geology report required by Section K106.4 shall include an adequate description of the geology of the site, conclusions and recommendations regarding the effect of geologic conditions on the proposed development, and opinion on the adequacy for the intended use of sites to be developed by the proposed grading, as affected by geologic factors.

K106.7 Liquefaction Study. The Building Official may require a geotechnical investigation and if, during the course of the investigation, all of the following conditions are discovered, the report shall address the potential liquefaction:

1. Shallow ground water, 50 feet (15240 mm)
2. Unconsolidated sandy alluvium.
3. Seismic Zones 3 and 4.

K106.8 Regular Grading Requirements. Each application for a grading permit shall be accompanied by a plan in sufficient clarity to indicate the nature and extent of he work. The plans shall give the location of the work, the name of he owner and the name of the person who prepared the plan. The plan shall include the following information:

1. General vicinity of the proposed site.
2. Limiting dimensions and depth of cut and fill.
3. Location of any buildings or structures where work is to be performed and the location of any buildings or structures within 15 feet (4572 mm) of the proposed grading.

K106.9 Issuance. The provisions of Section 106.4 are applicable to grading permits. The Building Official may require that grading operations and project designs be modified if delays occur which incur weather-generated problems not considered at the time the permit was issued. The Building Official may require professional inspection and testing by the soils engineer. When the Building Official has cause to believe that geologic factors may be involved, the grading will be required to conform to engineered grading.

SECTION K107-GRADING AND OTHER PERMIT FEES

K107.1 General. Fees for a grading and related permits shall be as established by the Building Official, from time to time.

K107.2 Plan Review Fees. When a plan or other data are required to be submitted, a separate plan review fee may be levied by the Building Official, in such Official's discretion.

K107.3 Retaining Wall Permit Fees. Separate permits and fees shall apply to retaining walls or major drainage structures as required elsewhere in this Code. There shall be no separate charge for standard terrace drains and similar facilities.

SECTION K108 – BONDS

The Building Official may require bonds in such form and amounts as may be deemed necessary to ensure that the work, if not completed in accordance with the approved plans and specifications, will be corrected to eliminate hazardous conditions.

In lieu of a surety bond the applicant may file a cash bond or instrument of credit with the Building Official in an amount equal to that which would be required in the surety bond.

SECTION K109 – CUTS

K109.1 General. Unless otherwise recommended in the approved soils engineering or engineering geology report, cuts shall conform to the provisions of this section.

In the absence of an approved soils engineering report, these provisions may be waived for minor cuts not intended to support structures.

K109.2 Slope. The slope of cut surfaces shall be no steeper than is safe for the intended use and shall be no steeper than 1 unit vertical in 2 units horizontal (50% slope) unless the permittee furnishes a soils engineering or an engineering geology report, or both, stating that the site has been investigated and giving an opinion that a cut at a steeper slope will be stable and not create a hazard to public or private property.

SECTION K110 – FILLS

K110.1 General. Unless otherwise recommended in the approved soils engineering report, fills shall conform to the provisions of this section.

In the absence of an approved soils engineering report, these provisions may be waived for minor fills not intended to support structures.

K110.2 Preparation of Ground. Fill slopes shall not be constructed on natural slopes steeper than 1 unit vertical in 2 units horizontal (50% slope). The ground surface shall be prepared to receive fill by removing vegetation, noncom plying fill, topsoil and other unsuitable materials scarifying to provide a bond with the new fill and, where slopes are steeper than 1 unit vertical in 5 units horizontal (20% slope) and the height is greater than 5 feet (1524 mm), by benching into sound bedrock or other competent material as determined by the soils engineer. The bench under the toe of a fill on a slope steeper than 1 unit vertical in 5 units horizontal (20% slope) shall be at least 10 feet (3048 mm) wide. The area beyond the toe of fill shall be sloped for sheet overflow or a paved drain shall be provided. When fill is to be placed over a cut, the bench under the toe of fill shall be at least 10 feet (3048 mm) wide, the cut shall be made before placing the fill and acceptance b the soils engineer or engineering geologist or both as a suitable foundation for fill.

K103.3 Fill Material. Detrimental amounts of organic material shall not be permitted in fills. Except as permitted by the Building Official, no rock or similar irreducible material with a maximum dimension greater than 12 inches (305mm) shall be buried or placed in fills.

Exception: The Building Official may permit placement of larger rock when the soils engineer properly devises a method of placement, and continuously inspects its placement and approves the fill stability. The following conditions shall apply:

1. Prior to issuance of the grading permit, potential rock disposal areas shall be delineated on the grading plan.
2. Rock sizes greater than 12 inches (305mm) in maximum dimension shall be 10 feet (3048 mm) or more below grade, measured vertically.
3. Rocks shall be placed so as to assure filling of all voids with well-graded soil.

K110.4 Compaction. All fills shall be compacted to a minimum of 90 percent of maximum density.

K110.5 Slope. The slope of fill surfaces shall be no steeper than is safe for the intended use. Fill slopes shall be no steeper than 1 unit vertical in 2 units horizontal (50% slope).

SECTION K111 – SETBACKS

K111.1 General. Cut and fill slopes shall be set back from site boundaries in accordance with this section. Setback dimensions shall be horizontal distances measured perpendicular to the site boundary. Setback dimensions shall be as shown in Figure A-33-1.

K111.2 Top of Cut Slope. The top of cut slopes shall not be made nearer to a site boundary line than one fifth of the vertical height of cut with a minimum of 2 feet (610 mm) and a maximum of 10 feet (3048 mm). The setback may need to be increased for any required interceptor drains.

K111.3 Toe of Fill Slope. The toe of fill slope shall be made not nearer to the site boundary line than one half the height of the slope with minimum of 2 feet (610mm) and a maximum of 20 feet (6096 mm). Where a fill slope is to be located near the site boundary and the adjacent off-site property is developed, special precautions shall be incorporated in the work as the Building Official deems necessary to protect the adjoining property from damage as a result of such grading. These precautions may include but are not limited to:

1. Additional setbacks.
2. Provision for retaining or slough walls.
3. Mechanical or chemical treatment of the fill slope surface to minimize erosion.
4. Provisions for the control of surface waters.

K111.4 Modification of Slope Location. The Building Official may approve alternate setbacks. The Building Official may require an investigation and recommendation by a qualified engineer or engineering geologist to demonstrate that the intent of this section has been satisfied.

SECTION K112 – DRAINAGE AND TERRACING

K112.1 General. Unless otherwise indicated on the approved grading plan, drainage facilities and terracing shall conform to the provisions of this section for cut or fill slopes steeper than 1 unit vertical in 3 units horizontal (33.3% slope).

K112.2 Terrace. Terraces at least 6 feet (1829 mm) in width shall be established at not more than 30-foot (9144 mm) vertical intervals on all cut or fill slopes to control surface drainage and debris except that where only one terrace is required, it shall be at midheight. For cut or fill slopes greater than 60 feet (18288 mm) and up t 120 feet (36576 mm) in vertical height, one terrace at approximately midheight shall be 12 feet (3658 mm) in width. Terrace widths and spacing for cut and fill slopes greater than 120 feet (36576 mm) in height shall be designed by the civil engineer and approved by the Building Official. Suitable access shall be provided to permit proper cleaning and maintenance.

Swales or ditches on terraces shall have a minimum gradient of 5 percent and must be paved with reinforced concrete not less than 3 inches (76mm) in thickness or an approved equal paving. They shall have a minimum depth at the deepest point of 1 foot (305mm) and a minimum paved width of 5 feet (1524 mm).

A single run of swale or ditch shall not collect runoff from a tributary area exceeding 13,500 square feet (1254.2 m2) (projected) without discharging into a primary drainage ditch.

K112.3 Subsurface Drainage. Cut and fill slopes shall be provided with subsurface drainage as necessary for stability.

K112.4 Disposal. All drainage facilities shall be designed to carry waters to the nearest practicable drainage way approved by the Building Official or as a safe place to deposit such waters. Erosion of ground in the area of discharge shall be prevented by installation of nonerosive downdrains or other devices.

Building pads shall have a drainage gradient of 2 percent toward approved drainage facilities, unless waived by the Building Official.

EXCEPTION: The gradient from the building pad may be 1 percent if all of he following conditions exist throughout the permit area:

1. No existing slope faces steeper than 1 unit vertical in 10 units horizontal (10% slope) have a vertical height in excess of 10 feet (3048 mm).
2. No proposed fills are greater than 10 feet (3048mm) in maximum depth.
3. No proposed finish cut or fill slope faces have a vertical height in excess of 10 feet (3048mm).
4. No existing slope faces steeper than 1 unit vertical in 10 units horizontal (10% slope) have a vertical height in excess of 10 feet (3048mm).

K112.5 Interceptor Drains. Paved interceptor drains shall be installed along the top of all cut slopes where the tributary drainage area above slopes toward the cut and has a drainage path greater than 40 feet (12192mm) measured horizontally. Interceptor drains shall be paved with a minimum of 3 inches (76mm) of concrete or gunite and reinforced. They shall have a minimum depth of 12 inches (305mm) and a minimum paved width of 30 inches (762mm) measured horizontally across the drain. The slope of drain shall be approved by the Building Official.

SECTION K113 – EROSION CONTROL

113.1 Slopes. The faces of cut and fill slopes shall be prepared and maintained to control against erosion. This control may consist of effective planting. The protection for the slopes shall be installed as soon as practicable and prior to calling for final approval. Where cut slopes are not subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted.

K113.2 Other Devices. Where necessary, check dams, cribbing, riprap or other devices or methods shall be employed to control erosion and provide safety.

SECTION K114 – GRADING INSPECTION

K114.1 General. Grading operations for which a permit is required shall be subject to inspection by the Building Official. Professional inspection of grading operations shall be provided by the civil engineer, soils engineer and the engineering geologist retained to provide such services in accordance with Section K114.5 for engineered grading and as required by the Building Official for regular grading.

K114.2 Civil Engineer. The civil engineer shall provide professional inspection within such engineer's area of technical specialty, which shall consist of observation and review as to the establishment of line, grade and surface drainage of the development area. If revised plans are required during the course of the work they shall be prepared by the civil engineer.

K114.3 Soils Engineer. The soils engineer shall provide professional inspection within such engineer's area of technical specialty, which shall include observation during grading and testing for required compaction. The soils engineer shall provide sufficient observation during the preparation of the natural ground and placement and compaction of the fill to verify that such work is being performed in accordance with the conditions of the approved plan and the appropriate requirements of this chapter. Revised recommendations relating to conditions differing from the approved soils engineering and engineering geology reports shall be submitted to the permittee, the Building Official and the civil engineer.

K114.4 Engineering Geologist. The engineering geologist shall provide professional inspection within such engineer's area of technical specialty, which shall include professional inspection of the bedrock excavation to determine if conditions encountered area in a conformance with the approved report. Revised recommendations relating to conditions differing from the approved engineering geology report shall be submitted to the soils engineer.

K114.5 Permittee. The permittee shall be responsible for the work to be performed in accordance with the approved plans and specifications and in conformance with the provisions of this code, and the permittee shall engage consultants, if required, to provide professional inspections on a timely basis. The permittee shall act as a coordinator between the consultants, the contractor and the Building Official. In the event of changed conditions, the permittee shall be responsible for informing the Building Official of such change and shall provide revised plans for approval.

K114.6 Building Official. The Building Official, or his or her designee, shall inspect the project at the various stages of work requiring approval to determine that adequate control is being exercised by the professional consultants. As used herein, "Building Official" is the term for the Trustee of the Town of Bow Mar who has been assigned the authority and responsibility to discharge all relevant duties under Chapters 16 and 18 of the Municipal Code of the Town. Such Trustee is also sometimes referred to as the 'Building Commissioner'.

K114.7 Notification of Noncompliance. If, in the course of fulfilling their respective duties under this chapter, any of the civil engineer, the soils engineer or the engineering geologist find that the work is not being done in conformance with this chapter or the approved grading plans, the discrepancies shall be reported immediately in writing to the permittee and to the Building Official.

K114.8 Transfer of Responsibility. If any of the civil engineer, the soils engineer, or the engineering geologist of record is changed during grading, the work shall be stopped until the replacement has agreed in writing to accept responsibility within the area of technical competence for approval upon completion of the work. It shall be the duty of the permittee to notify the Building Official in writing of such change prior to the recommencement of work.

SECTION K115 – COMPLETION OF WORK

K115.1 Final Reports. Upon completion of the rough grading work and at the final completion of the work, the following reports and drawings and supplements thereto are required for engineered grading or when professional inspection is performed for regular grading.

An as-built grading plan prepared by the civil engineer retained to provide such services in accordance with Section 3317.5 showing original ground surface elevations, as-graded ground surface elevations, lot drainage patterns, and the locations and elevations of surface drainage facilities and of the outlets of subsurface drains. As-constructed locations, elevations and details of the subsurface drains shall be shown as reported by the soils engineer. Civil engineers shall state that the work within their area of responsibility was done in accordance with the final approved grading plan.

A report prepared by the soils engineer retained to provide such services in accordance with Section 3317.3, including locations and elevations of field density tests, summaries of field and laboratory tests, other substantiating data, and comments on any change made during grading and their effect on the recommendations made in the approved soils engineering investigation report. Soils engineers shall submit a statement that the work within their area of responsibilities is in accordance with the approved soils engineering report and applicable provisions of this chapter.

A report prepared by the engineering geologist retained to provide such services in accordance with Section 3317.5, including a final description of the geology of the site and any new information disclosed during the grading and the effect of same on recommendations incorporated in the approved grading plan. Engineering geologists shall submit a statement that the work within their area of responsibility is in accordance with the approved engineering geologist report and applicable provisions of this chapter.

The grading contractor shall submit in a form prescribed by the Building Official a statement of conformance to said as-built plan and the specifications.

K115.2 Notification of Completion. The permittee shall notify the Building Official when the grading operation is ready for final inspection. Final approval shall not be given until all work, including installation of all drainage facilities and their protective devices, and all erosion-control measures have been completed in accordance with the final approved grading plan, and the required reports have been submitted."

c. Section 18-8(c) of the Municipal Code of the Town of Bow Mar (a new section) shall read:

"Adoption of By Reference of Residential Code, and of Plumbing Code, and of Mechanical Code, and of Fuel Gas Code, and of Fire Code. The International Residential Code of 2000, including, Appendix Chapters A, B, C, D, E, G, H and K; and the International Plumbing Code of 2000, and the International Mechanical Code of 2000, and the International Fuel Gas Code of 2000, and the International Fire Code of 2000, all as promulgated by the International Code Council, 5630 S. Workman Mill Road, Whittier, California, 90601, are hereby adopted and enacted by reference with the same force and effect as though fully set forth herein as (as applicable) the Residential, Plumbing, Mechanical, Fuel Gas and Fire Codes of

the Town of Bow Mar, for regulating, inter alia, the erection, construction, enlargement, alteration, repair, moving, removal, demolition, conversion, occupancy, equipment, use, height, area and maintenance of all residential buildings or structures in the Town of Bow Mar; providing for the issuance of relevant permits and the fixing of penalties for violations thereof. Two (2) certified copies of each such Code, as hereafter amended or revised by the Town, shall be on file in the Office of the Town Clerk, and may be inspected during regular business hours, or copies of any such Code, as so amended or revised, may be procured from the Town Clerk upon prior payment of such photocopying fees as may be levied therefor."

d. Section 18-8(d) of the Municipal Code of the Town of Bow Mar (a new section) shall read:

"The following amendments to and revisions of the Residential Code that has been adopted by the Town, by reference, are applicable:

1. Subsection R105.2 is hereby amended to read

   a. Work Exempt from permit: A building permit shall NOT be required for the following:
      i. Movable cases, counter and partition not over 5 feet high.
      ii. Painting, papering and similar work. (Does not include kitchen cabinets and countertops, which does require a permit.)
      iii. Window awnings supported by an exterior wall of Group R, division 3 and Group U Occupancies when projecting not more than 54 inches.

   b. Electrical: Repairs and maintenance: A permit shall not be required for minor repair work, including the replacement of lamps or the connection of approved portable electrical equipment to approved permanently installed receptacles.

   c. Gas: A permit shall not be required for portable heating, cooking or clothes drying appliances, and replacement of any minor parts, provided such replacement that does not alter approval of equipment or make such equipment unsafe.

   d. Mechanical: A permit shall not be required for: portable heating appliances; portable ventilation appliances; portable cooling appliances; steam, hot or chilled water piping within any heating or cooling equipment regulated by this Residential Code; replacement of any minor part that does not alter approval of equipment or make such equipment unsafe; portable evaporative cooler; and self contained refrigeration systems containing 10% or less of refrigerant or that actuated by motors of 1 horsepower or less.

   e. Plumbing: A permit shall not be required for: the stopping of leaks in drains, water, soil, waste or vent piping; provided, however, that if any concealed trap, drainpipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a permit shall be obtained and inspections made as provided in this Residential Code. Likewise, the clearing of stoppages or the repairing of leaks in pipes, valves or fixtures, and the removal and reinstallation of water closets, shall not require a permit provided that any such repairs or replacements do not involve or require the replacement or rearrangement of valves, pipes or fixtures.

4. Subsection R105.3.1.1 is hereby deleted in its entirety and without substitution.

5. Subsection R108.2 is hereby amended to read: All applicable fees shall be levied by the Building Official, as set forth in Section 18-3(e) of the Municipal Code of the Town of Bow Mar.

6. Paragraph R109.1.1 is hereby amended to read: All new foundation types and systems for habitable buildings and structures shall be inspected and approved under the supervision of a registered Colorado structural engineer, prior to the placement of concrete. A wet stamped copy of the inspection and acceptance report shall be supplied to the Building Official as soon after the inspection as practical, but in no case later than the requested framing inspection.

7. Table R301.2 (1) is hereby amended to read:

Roof snow load	30 psf
Wind speed	85 mph
Frost depth	36 inches
Seismic Design Category	B
Termite	Slight to moderate
Decay	None to slight
Weathering	Severe
Degree heating days	6200
Ice shield underlayment required	yes

8. Subsection R305.1 is hereby amended to read: The minimum ceiling height shall be 7 feet-6 inches. Hallways, corridors, bathrooms, toilet rooms, and similar spaces shall have a ceiling height of not less than 7 feet. The required height shall be measured from the finished floor to the lowest projection from the ceilings.

   Exceptions:

   1. Beams and girders spaced not less than 4 feet on center may project not more than 6 inches below the required ceiling height.
   2. The lowest projection below beams and girders in a basement finish shall not be less than 6 feet 8 inches above the finished floor. Ducts and other obstructions may project to within 6 feet, 4 inches of the finished floor.
   3. Not more than 50 percent of the required floor area if a room or space is permitted to have a sloped ceiling less than 7 feet, 6 inches in height with no portion of the required floor area less than 5 feet in height.

9. Subsection R309.1 is hereby amended by the addition of the following sentence to be the last sentence thereof: Such doors shall be equipped with a self-closing device.

10. Subsection R309.2 is hereby amended to read: The garage shall be separated from the residence and its attic area by not less than 5/8 type 'X' inch gypsum board applied to the garage side. Where the separation is a floor-ceiling assembly, the structure supporting the separation shall also be protected by not less than 5/8 type 'X' inch gypsum board or equivalent.

11. Subsection R310.1 is hereby amended to read: Basements and every sleeping room shall have at least one operable emergency escape and rescue window or exterior door opening for emergency escape and rescue. Where openings are provided as a means of escape and rescue they shall have a sill height of not more than 44 inches above the floor. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section R310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the window or door opening from the inside. Escape or rescue window openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2.

12. Section R310 is hereby amended by the addition of a new Paragraph R310.1.5 which shall read: Window replacements in bedrooms, in existing buildings, shall meet the egress requirements stated in this Section, as amended.

13. Subsection R401.4 is hereby amended to read: In the Town of Bow Mar, which has areas likely to have expansive, compressible, shifting or unknown soils characteristics, a site-specific soils report, prepared by a geo-technical engineer, shall be submitted with the building permit application for all new, or substantially renovated, habitable structures. Any soils test referred to in any such report shall be made by an approved agency using an approved method.

14. Paragraph R401.4.1 is hereby deleted in its entirety without substitution.

15. Section R408 is hereby amended by the addition of a new subsection R408.7, which shall read: Under Structural Floor Ventilation. A registered Colorado engineer shall design the ventilation of spaces under structural floors. The design considerations shall include the mitigation of moisture, mildew and mold. Such design shall provide a minimum five-air change per hour; be controlled by a humidistat; and exhaust to the outside.

16. Subparagraph R905.2.7.1 is hereby amended to read: an ice barrier that consists of at least two layers of underlayment and extends from the eave's edge to a point at least 24 inches inside the exterior wall line of the building.

17. Subsection R903.2 is hereby amended by the addition of a new Paragraph R905.2.2, which shall read: Drip edge. Provide drip edge at eaves and gables of shingle roofs. Overlap to be a minimum of 2 inches. Eave drip edges shall extend ¸ inch below sheathing and extend back on the roof a minimum of 2 inches. Drip edge shall be mechanically fastened a maximum of 12 inches on center. A cricket or saddle shall be installed on the ridge side of any chimney greater than 30 inches wide. Cricket or saddle coverings shall be sheet metal or of the same material as the roof covering.

18. Subsection R1004.4 is hereby deleted in its entirety without substitution.

19. Chapter 11 is hereby deleted in its entirety. Energy conservation requirements shall be as follows:
    a. Insulation: exterior walls above grade R-19; basement walls R-11; attic R-38; crawl space walls R-20; crawl space floors R-21.
    b. Weather stripping: all exterior openings, such as but not limited to, doors, windows, and interior attic access openings shall have weather stripping installed in such a manner to prevent the passage of air.
    c. Calking and sealants: exterior joints, seams or penetrations in the building envelope shall be sealed with a durable calking material to prevent the passage of air.
    d. Windows: all glass openings exposed to the exterior side, shall be a minimum of double pane glazing.
    e. Heating and Cooling Equipment: all heating and cooling equipment shall comply with federal mandated energy efficiency standards.
    f. Other: ductwork for heating and cooling equipment in unconditioned spaces shall have R-8 insulation.

20. Section M1414 is hereby amended by the addition of a new subsection which shall read:

    M1414.3 Decorative appliances in solid-fuel masonry or factory built fireplaces: Notwithstanding anything contained in this chapter to the contrary, any new or remodeled fireplace shall be one of the following:
    a. A gas appliance;
    b. An electric device; or
    c. A fireplace or fireplace insert that meets the most stringent emissions standards for wood stoves established by the Air Quality Control Commission of the Department of Health of the State of Colorado, or any other clean burning device that is approved by said Commission.

    Any person who installs or constructs any fireplace insert or fireplace shall provide evidence of a certificate issued by the Air Pollution Control Division of the Department of Health of the State of Colorado for such fireplace, and in the case of site-built fireplaces, shall demonstrate compliance with the certificate. Such demonstration of compliance shall include inspection by the Building Official, or his or her designee, of the new fireplace installation. The owner of any site-built fireplace shall be responsible for the payment of all costs of such inspection.

21. Subsection G2424.8 is hereby amended by the deletion of Item #1, Ranges, and the deletion of Item #7, Room heaters listed for unvented use.

22. Section G2443 is hereby deleted in its entirety and without substitution.

23. Paragraph P2503.5.1 is hereby amended to read: DWV systems shall be tested on completion of the rough plumbing installation by water or air with no evidence of leakage. Either test shall be applied to the drainage system in its entirety or in sections after rough piping has been installed as follows:
    1. Water test. Each section shall be filed with water to a point not less than 10 feet above the highest fitting connection in that section, or to the highest point in the completed system. Water shall be held in the section under test for 15 minutes before inspection. Site-built shower pans shall be water tested after the membrane and drain are installed but prior to the placement of mortar. The system shall prove leak free by visual inspection.
    2. Air test. The portion under test shall be maintained at a gauge pressure of 5 psi or 10 inches of mercury column. This pressure shall be held without introduction of additional air for a period of 15 minutes.

24. Appendix G, subsection AG105.2, Item 1 is hereby amended to read:
    The top of the barrier shall be at least 60 inches above grade measured on the side of the barrier, which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches measured on the side of the barrier, which faces away from the swimming pool. Where the top of the pool structure is above grade, such as an aboveground pool, the barrier may be mounted at ground level, such as the pool structure, or mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches. In addition, a powered safety cover, complying with ASTM F1436, is required, without regard to whether the hereinbefore-described barrier is attached to the residential structure, or not.

25. Subsection AG105.2, Paragraph 9, subparagraph 9.1 is hereby deleted in its entirety and without substitution.

26. Grading, excavating and erosion/sediment control provisions for residential construction shall be in accordance with Appendix K of the Building Code."

Section 2.

It is the sense of the Board of Trustees of the Town of Bow Mar that Ordinance 221, which was duly considered and acted upon by the Board of Trustees in duly-noticed public meetings occurring on August 18, 2004 and October 20, 2004, has been improperly codified at Section 16-19 of the Municipal Code of the Town of Bow Mar, and it is the desire of the Trustees that all of the language of such Ordinance, which deals with the manner in which an applicant for variance from the restrictions of any zoning ordinance must bring the matter to the attention of the Building Commissioner and the other Trustees, should rather be codified in a new Section 18-3(d) of the Municipal Code of the Town of Bow Mar, and that purported Section 16-19 of such Municipal Code should be simultaneously struck.

Section 3.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF TRUSTEES OF THE TOWN OF BOW MAR, COLORADO:

Section 1. The Town Clerk shall cause notice of contents of this Ordinance to be published in the Littleton Independent, said newspaper being a weekly newspaper of general circulation in the Town of Bow Mar and being duly qualified for publishing legal notices and advertisements within the meaning of the laws of the State of Colorado.

Section 2. Introduced as Ordinance No. 230 at a regular meeting of the Board of Trustees of the Town of Bow Mar on the 20th day of June, 2005, and passed on final reading at a regular meeting of the Board of Trustees of the Town of Bow Mar by a vote 6 to 0 on the 15th day of August, 2005.

Adopted this 15th day of June, 2005.

ATTEST:

Alma F. Bergmann
Mayor

Patricia A. Hoffman
Town Clerk and Treasurer

PROOF OF PUBLICATION

I certify that the foregoing ordinance was published in the Littleton Independent, a legal newspaper within the Town of Bow Mar, Colorado, on the 15th *day of* Sept, *2005.*

Patricia A. Hoffman