RESOLUTION NO R-009-061

THE BOARD OF COUNTY COMMISSIONERS
OF THE COUNTY OF DOUGLAS, COLORADO

A RESOLUTION ADOPTING THE 2006 INTERNATIONAL BUILDING CODE, 2006 INTERNATIONAL RESIDENTIAL CODE, 2006 INTERNATIONAL PLUMBING CODE, 2006 INTERNATIONAL MECHANICAL CODE, 2006 INTERNATIONAL FUEL GAS CODE, 2006 INTERNATIONAL ENERGY CONSERVATION CODE, AND THE 2008 NATIONAL ELECTRICAL CODE, WITH AMENDMENTS THERETO

WHEREAS, section 30-28-201, C.R.S., authorizes the Board of County Commissioners ("Board") to adopt a building code consistent with the Uniform Building Code, 1988 edition, as promulgated by the International Conference of Building Officials and as revised from time to time; and

WHEREAS, the Chief Building Official has recommended that the Board adopt the 2006 INTERNATIONAL BUILDING CODE, 2006 INTERNATIONAL RESIDENTIAL CODE, 2006 INTERNATIONAL PLUMBING CODE, 2006 INTERNATIONAL MECHANICAL CODE, 2006 INTERNATIONAL FUEL GAS CODE, 2006 INTERNATIONAL ENERGY CONSERVATION CODE, and the 2008 NATIONAL ELECTRICAL CODE; including the Amendments as set forth in Exhibits A through G, attached hereto and incorporated herein (collectively the "Codes"); and

WHEREAS, on February 23, 2009, the Planning Commission held a public hearing on the adoption of the Codes; and

WHEREAS, the Planning Commission has certified the Codes to the Board with a unanimous recommendation that they be adopted for the entire unincorporated area of Douglas County; and

WHEREAS, notice of public hearing before the Board on the adoption of the codes was published once weekly for four consecutive weeks in a newspaper of general circulation in Douglas County; and

WHEREAS, on March 17, 2009, the Board conducted a public hearing on the adoption of the Codes; and

WHEREAS, the Board desires to adopt the Codes for the entire unincorporated area of Douglas County; now, therefore,

BE IT RESOLVED, by the Board of County Commissioners of the County of Douglas, State of Colorado, that the following Codes, and the Amendments thereto, are adopted for the entire unincorporated area of Douglas County:

International Building Code, 2006 Edition

International Residential Code, 2006 Edition

International Plumbing Code, 2006 Edition

International Mechanical Code, 2006 Edition

International Fuel Gas Code, 2006 Edition

International Energy Conservation Code, 2006 Edition

National Electrical Code, 2008 Edition

The International Building Code, International Residential Code, International Plumbing Code, International Mechanical Code, International Fuel Gas Code, and the International Energy Conservation Code are published by the International Code Council, 5203 Leesburg Pike, Suite 600, Falls Church, VA; and the National Electrical Code is published by the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA.

BE IT FURTHER RESOLVED that this resolution and the Codes, adopted pursuant hereto, shall become effective at 12:01 a.m. on April 1, 2009; and all prior resolutions adopting building codes and amendments thereto are repealed at 12:01 a.m. on April 1, 2009.

PASSED AND ADOPTED this 17th day of March, 2009, in Castle Rock, Douglas County, Colorado.

THE BOARD OF COUNTY COMMISSIONERS
OF THE COUNTY OF DOUGLAS, COLORADO,

BY: _____
JACK A. HILBERT, Chair

ATTEST:

_____
MELISSA A. PELLETIER
Deputy Clerk to the Board

DOUGLAS COUNTY, COLORADO SEAL EST. 1874

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EXHIBIT "A"

AMENDMENTS COMMON TO ALL ADOPTED 2006 INTERNATIONAL CODES

REFERENCED CODES NOT ADOPTED. Wherever the following codes listed below appear, or any reference is made to them, within the codes adopted by this Resolution, the code reference shall be disregarded and considered not to be adopted by Douglas County.

International Existing Building Code
International Private Sewage Disposal Code
International Property Maintenance Code
ICC Electrical Code
International Zoning Code
International Urban-Wildland Interface Code

AMENDMENTS TO THE 2006 INTERNATIONAL BUILDING CODE

1. **ADDITION (APPLICATION FOR A PERMIT) Sec. 105.9 Application. Add a new section Sec. 105.9 to read as follows:** A soils test of the building site prepared by a professional engineer registered by the State of Colorado must be submitted with the application for a building permit. A professional engineer registered by the State of Colorado must design the foundation in accordance to the soils report. When the building site is located in a hillside area, or in the opinion of the Building Official, is located in an area subject to geological hazards or steep slopes, the Building Official may require an engineering geologist, working within their field of expertise, to submit specific recommendations regarding the building site and the proposed location and design. Such recommendations shall include, but not be limited to, the relationships of site grading, structural integrity, site vegetation characteristics (or potential), location of septic drain fields, and protection of adjacent property.

2. **DELETION AND SUBSTITUTION (FEES) Sec. 108.2 Schedule of permit fees. Delete Sec. 108.2 in its entirety and substitute the following:** The fees for building, mechanical, and roofing permits shall be determined in accordance with Table 1-A of the 1997 edition of the Uniform Building Code, attached hereto as Exhibit "F". Wild Fire Mitigation Assessment fee of $120.00 will be required for structures located in hazardous areas located within the Hazardous Overlay Map. A zoning review fee of $50.00 is required for each commercial structure. Correspondingly, a townhouse/condominium unit will require a $50.00 fee as each unit is permitted individually; apartment buildings will be assessed a $50.00 fee as only one permit is issued for the building. Additionally, a fee of $30.00 will be assessed for permits for accessory structures.

   Reinspection fees: A reinspection fee may be assessed for each inspection or reinspection when such portion or work for which inspection is called is not complete or when corrections called for are not made. This section is not to be interpreted as requiring reinspection fees the first time a job is rejected for failure to comply with the

requirement of this code, but as controlling the practice of calling for inspections before the job is ready for such inspection or reinspection.

Reinspection fees may be assessed when the inspection record card is not posted or otherwise available on the work site, the approved plans are not readily available to the inspector, for failure to provide access on the date for which inspection is requested, or for deviating from plans requiring the approval of the building official.

To obtain a reinspection, the applicant shall file an application therefore in writing on a form furnished for that purpose and pay the reinspection fee in accordance with Table 1-A or as set forth in the fee schedule adopted by the jurisdiction.

In instances where reinspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.

Investigation Fees: Investigation fees shall be assessed for work commences prior to a valid permit being issued. An investigation fee may amount to two times the calculated permit fee.

The fees for electrical permits shall be as established by the State of Colorado Electrical Board, pursuant to C.R.S. 12-23-117:

3. **DELETION AND SUBSTITUTION (VALUATIONS) Sec. 108.3 Building permit valuations. Delete Sec. 108.3 in it's entirety and substitute the following:** The determination of value or valuation shall be established by the Building Official utilizing the most recent valuation schedule printed in the Building Safety Journal, published by the International Code Council, as a guide using a modifier of one (1). The value used in computing the building permit fee shall be the total value of all construction work for which the permit is issued, as well as all finish work, painting, roofing, plumbing, heating, air conditioning, electrical, elevators, fire extinguishing systems, and any other permanent equipment. The issuance of a building permit shall include the installation of these systems. Final building permit valuation shall be set by the Building Official.

4. **ADDITION (INSPECTIONS) Sec. 109.3.1 Footing and foundation inspections. Add a paragraph to Sec. 109.3.1 to read as follows:** Footings, caissons, and foundation wall inspections are to be performed by a professional engineer registered in the State of Colorado. After the inspection of the caissons or footers and the foundation wall reinforcing steel, the engineer shall provide to the Building Official a typed stamped report of the results of the inspection. Reports for the caissons must clearly state that the drilling, pouring, and reinforcement of the caissons was observed to be in compliance with the soils report and engineered design.

5. **ADDITION (CERTIFICATE OF OCCUPANCY) Sec.110.1 Use and occupancy. Add to Sec.110.1** the following: Exception: Certificates of occupancy are not required for buildings and structures permitted under Sec.312 Utility and Miscellaneous Group U.

6. **ADDITION (CERTIFICATE OF OCCUPANCY) Sec.110.4 Revocation**
Add to end of Sec. 110.4 the following: The Building Official acting under the authority of the code may cause the electrical meter to be removed from the structure when the building is occupied without a Certification of Occupancy or when in violation of this section.

7. **DELETION AND SUBSTITUTION AND ADDITIONS (BOARD OF APPEALS)**
Delete Sec. 112.2 Limitations on authority in its entirety and substitute the following: 112.2 Special Exceptions. Pursuant to Section 30-28-206, C.R.S., the Board of Appeals in appropriate cases and subject to a determination as to the suitability of alternate materials and methods of construction, may make special exceptions to the terms of the Building Code in harmony with its purpose and intent. The Board shall have no authority to waive requirements of this code or provide product approvals.

Add new Sec. 112.4 General Board as follows: 112.4 General Board. The Building Official shall be an ex officio member of and shall act as secretary to said board but shall have no vote on any matter before the board. The Board of Appeals shall operate as and perform the duties of the board of review, pursuant to Section 30-28-206, C.R.S. The Board of Appeals shall be appointed by the Board of County Commissioners, and any member of the Board of Appeals may be removed for cause by the Board of County Commissioners. The Board of Appeals shall consist of no less than five members nor more than seven members. The member's terms shall be of such length and such arrangement that the term of at least one member shall expire each year. Vacancies shall be filled for an unexpired term in the same manner as in the case of original appointments. The Board of County Commissioners shall provide for general rules to cover the organization, procedure, and jurisdiction of the Board of Appeals. The Board of Appeals may adopt supplemental rules of procedure not inconsistent with Article 28, Title 30, C.R.S. or such general rules. The Board of Appeals shall render all decisions and finding in writing to the appellant. A duplicate copy shall be sent to the Building Official.

Add new Sec. 112.5 Code Amendments as follows: Sec. 112.5 Code Amendments. Pursuant to Section 30-28-206(2), C.R.S., the Board of Appeals is authorized to formulate suggested amendments to the Douglas County Building Code for consideration by the Board of County Commissioners.

Add new Sec. 112.6 Fees as follows: Sec. 112.6 Fees. The fee for a hearing before the Board of Appeals shall be $250.00. The fee is non-refundable.

8. **ADDITION (STOP WORK ORDER) Add new Sec. 114.4 Trash and Sanitation Facilities. Add a new section to read as follows:** Every building site shall be furnished with approved sanitation facilities for workers and an appropriate enclosure or other means to contain trash and debris. Sanitary facilities and trash enclosures must be located within 300 feet of the building site. Sanitary facilities and trash enclosures shall not be located within the public right-of-way. Failure to comply with this section may cause cessation of inspections until compliance is achieved.

9. **ADDITION (CONTRACTOR LICENSING) Sec. 116 Contractor licensing requirements. Add a new section to read as follows:** Sec 116.1 General. No contractor shall hire, employ, contract with or engage another person to perform any construction work unless the person so hired, employed, contracted with or engaged to perform construction work shall be licensed or registered as provided in this section. Foundation, framing, trim, insulation, and drywall subcontractors performing work for a licensed contractor shall not be required to be licensed.

Permits will be issued only to licensed/registered contractors or their authorized representative.

A contractor shall be responsible for all work included under the scope of the contractors license/registration whether or not such work is done by the contractor directly or by a sub-contractor which is exempt pursuant to this section.

It shall be the duty of any applicant for Electrical or Plumbing Registration to furnish copies of State contractor's license and master's license and send updates as new State licenses are issued or if licensed tradespersons are replaced. No permits for electrical wiring or plumbing work may be issued to any applicant unless such State license is properly verified and registered.

Sec. 116.2 Class of license. It shall be unlawful to perform work which is not authorized under the scope or limits of work for which such license/registration was issued. License/registration classifications are as follows:

Sec. 116.2.1 Building contractor – CLASS "A". This license shall entitle the holder to contract for the construction, alteration, tenant finish or repair of any type or size of structure permitted by the International Building Code or the International Residential Code.

Sec. 116.2.2 Building contractor – CLASS "B. This license shall entitle the holder to contract for the construction, alteration, or repair of multi-family (3 or more units) structures as permitted by the International Building Code or the International Residential Code.

Sec. 116.2.3 Building contractor – CLASS "C". This license shall entitle the holder to contract for the construction, alteration, or repair of single-family homes and duplexes as permitted by the International Building Code or the International Residential Code.

Sec. 116.2.4 Building contractor – CLASS "D". This license shall entitle the holder to contract for the construction, alteration and repair of, but not limited to, garages, barns, basement finishes, alterations, decks, remodels and low voltage wiring as permitted by the International Building Code or the International Residential Code.

Sec. 116.2.5 Mechanical contractor – CLASS "A". This license shall entitle the holder to perform any work in the heating, ventilation and air-conditioning fields.

Sec. 116.2.6 Mechanical contractor – CLASS "B". This license shall entitle the holder to perform any work in the heating field that does not involve mechanical refrigerating systems and equipment.

Sec. 116.2.7 Electrical contractor. Any person, firm, co-partnership, corporation, association, or combination thereof that undertakes or offers to undertake for another the planning, layout, supervision, installation or repair of wiring apparatus and equipment for electrical light, heat, and power. A registered professional electrical engineer who plans or designs electrical installations shall not be classified as an electrical contractor, Pursuant to C.R.S. 12-23-105, electrical contractors are licensed by the State of Colorado and are only required to register with Douglas County. Electrical contractors are exempt from the fee requirements of this section.

Sec. 116.2.8 Plumbing contractor. Any person, firm, co-partnership, corporation, association, or combination thereof that undertakes or offers to undertake for another the planning, layout, supervision, installation, modification or repair of plumbing systems. In order to act as a plumbing contractor the person, firm, partnership or corporation must either be or employ full-time a master plumber. Pursuant to C.R.S. 12-58-105, plumbing contractors are licensed by the State of Colorado and as such are only required to register with Douglas County. Plumbing contractors are exempt from the fee requirements of this section.

Sec. 116.2.9 Roofing contractor. This license shall entitle the holder to contract for the replacement and repairs of existing roofs as permitted by the International Building Code or the International Residential Code.

Sec. 116.3 Contractor license fee schedule. Contractor's license fees shall be as follows:

Class "A" Contractor	$250.00
Class "B" Contractor	$250.00
Class "C" Contractor	$150.00
Class "D" Contractor	$150.00
Mechanical Contractor	$150.00
Roofing Contractor	$150.00
Electric Contractor	Exempt
Plumbing Contractor	Exempt

Sec. 116.4 Probationary license. The Building Official may issue a probationary license where the Building Official determines that qualifications must be established prior to issuance of a regular license.

Sec. 116.5 Expiration of licenses and regulations. All licenses shall expire one (1) year from the date of issuance, registrations expire (30) days after the State issue licenses, unless otherwise provided. No permits may be obtained, nor may work already under permit be continued until the license or registration has been renewed. Applicants for license renewals shall meet all current requirements for a new license.

Sec. 116.6 Insurance requirements. Prior to issuance of a license/registration, the contractor shall file with the Building Official a certificate of liability insurance and worker's Compensation insurance. The insurance certificate must be signed by an agent of an insurance company stating that the policy or policies required by this section have been issued to the licensee. The policy or policies shall state the name of the company, effective date of such polices and the expiration date of policy or policies. Each policy of insurance shall contain an endorsement to the effect that the insurance carrier shall notify the Douglas County Building Division of the effective date of a reduction or cancellation of the policy. The cancellation or reduction of insurance below the required amount of coverage shall be cause for automatic suspension of the contractor's license or registration until coverage is reinstated. All policies shall be kept in effect for the period of the license.

Single occurrence liability insurance shall be required in the following coverage amounts:

Class "A" Contractor	$1,000,000.00
Class "B" Contractor	$1,000,000.00
Class "C" Contractor	$ 500,000.00
Class "D" Contractor	$ 300,000.00
Electrical Contractor	$ 300,000.00
Plumbing Contractor	$ 300,000.00
Mechanical Contractor	$ 300,000.00
Roofing Contractor	$ 300,000.00

Sec. 116.7 License suspension and revocation. The Building Official may issue written notice to any licensed contractor to show cause why it's license should not be suspended or revoked and require such contractor to appear before the Board of Appeals for hearing of the complaint of the Building Official. At the hearing before the Board of Appeals the contractor shall have the right to present the case by oral and documentary evidence, to submit rebuttal evidence, and to conduct such cross-examination as may be required for a full and true disclosure of the facts

Suspension or revocation of a contractor's license shall not be construed to release the contractor from liabilities and obligations of completing his contract. During

the period prior to the hearing before the Board of Appeals, the contractor shall not be allowed to make application for any other projects.

The Board of Appeals, after review of the evidence presented, shall have the power to suspend or revoke a contractor's license for good cause shown. Good cause includes, but is not limited to the following:

a. Violating any provisions of the Douglas County Building Code including any code, which are adopted by reference.
b. Failure to comply with any lawful order of the Building Official or any other authorized representative of the Building Division pertaining to the administration of the building code and those codes adopted by reference.
c. Using a contractor's license to obtain a permit required under this code for any other person, corporation or legal entity.
d. Failure to reveal any material fact in the application for a contractor's license or permit or the supplying of information which is untrue or misleading as to any material fact in the application for a contractors license or permit.
e. Failure to obtain a proper permit for any work for which a permit is required.

The Board of Appeals may reinstate a license for any contractor whose license has been revoked, provided a majority of the Board votes in favor of such reinstatement for such reason as the Board may deem sufficient. In such case where the contractor's license has been revoked and the contractor is petitioning the Board for reinstatement, the petitioner shall follow the established policies for requesting such hearing and pay all applicable fees.

10. **DELETION AND SUBSTITUTION (DEFINITIONS) Sec. 502.1 GRADE PLANE. Delete GRADE PLANE definition and substitute the following:** "GRADE (Adjacent Ground Elevation) is the lowest point of elevation of the finished surface of the ground, paving or sidewalk within the area between the building and the property line or, when the property line is more than 5 feet (1524 mm) from the building, between the building and a line 5 feet (1524 mm) from the building.

11. **DELETION AND SUBSTITUTION (DEFINITIONS) Sec. 502.1 HEIGHT, BUILDING. Delete HEIGHT, BUILDING definition and substitute the following:** "HEIGHT, BUILDING is the vertical distance above a reference datum measured to the highest point of the coping of a flat roof or to the deck line of a mansard roof or to the average height of the highest gable of a pitched or hipped roof. The reference datum shall be selected by either of the following, whichever yields a greater height of building:

The elevation of the highest adjoining sidewalk or ground surface within a 5-foot (1524 mm) horizontal distance of the exterior wall of the building when such

sidewalk or ground surface is not more than 10 feet (3048 mm) above the lowest grade.

An elevation 10 feet (3048 mm) higher than the lowest grade when the sidewalk or ground surface described in Item a. is more than 10 feet (3048 mm) above lowest grade.

The height of a stepped or terraced building is the maximum height of any segment of the building."

12. **ADDITION (HEIGHT MODIFICATIONS) Sec. 504.1 General. Amend the first sentence of this Section to read:** "The heights permitted by Table 503 shall only be increased in accordance with this section, and in accordance with the Douglas County Zoning Resolution and other Douglas County adopted regulations."

13. **DELETION AND SUBSTITUTION (SOUND TRANSMISSION) Section 1207 Sound Transmission Delete Sec.1207 in its entirety and substitute the following:**

Sec. 1207.1 General. Construction of condominiums, apartments, townhomes, residential units and sleeping rooms of motels and hotels shall comply with the requirements of this section. Alternative methods may be used when such alternative methods can be demonstrated to provide equal or improved sound attenuation. Where the specific methods of this section are in conflict with structural and fire-resistive provisions of this code, the structural and fire-resistive provisions shall govern.

Sec. 1207.3 Specific Construction Methods. Structures located within the area known as The Centennial Airport Review Area Overlay Zone District and located within the noise sensitive zone or the noise mitigation zone shall be constructed in accordance with the specific methods to reduce the ambient noise level associated with aircraft operations.

Sec. 1207.3.1 Exterior Wall Assemblies. Materials used in the construction of exterior walls shall be in accordance with Chapter 6 of this code for the type of construction required. Wood stud walls shall be framed with 2X6 studs at 24 inches center to center spacing. 2X4 studs may be used in a staggered stud design at 16 inches center to center spacing.

Sec. 1207.3.2 Exterior Wall Coverings. Exterior wall coverings shall be installed in accordance with Chapter 14 of this code and shall have a minimum air space of 1 inch between exterior wall covering and the exterior sheathing material.

Sec. 1207.3.3 Exterior Wall Insulation. Wall assemblies shall be insulated in compliance with the 2006 International Energy Conservation Code or with the 2006 International Residential Code for One- and Two-Family Buildings, and such insulation shall be identified by the manufacturer as acoustical/thermal insulation.

Sec. 1207.3.4 Gypsum Board and Plaster. Gypsum wallboard application shall be as required by Chapter 25 of this code and shall be two layer application using an approved resilient channel between gypsum boards.

Sec. 1207.3.5 Windows in Exterior Walls. Windows in exterior walls shall meet the minimum prescriptive requirements specified in the 2006 International Residential Code for One- and Two-Family Buildings, or meet the minimum prescriptive requirements specified in the 2006 International Energy Conservation Code for all other buildings

Sec. 1207.3.6 Doors in Exterior Walls. Doors in exterior walls shall be tested in accordance with ASTM E1408, Standard Test Methods for Laboratory Measurements of the Sound Transmission Loss of Door Panels and Door Systems. Steel doors shall be fully grouted with a non-shrinking grout and effectively weather stripped to avoid flanking transmission. Wood doorframes shall be sealed with an approved open cell foam insulation and effectively weather stripped to avoid flanking transmission.

Sec. 1207.3.7 Roof/Ceiling Construction. Roof rafters or trusses shall have a minimum slope of 4:12 when constructed of wood. When attic ventilation is required by code, ventilation shall be by means of 50 percent soffit vents and 50 percent roof vents in accordance with Sec. 1505.3 Ventilation. Roofs in non-combustible construction shall incorporate a structural roof insulation as roof decking. Ceilings shall be an approved acoustical ceiling tile, lay-in panel, or acoustical board either suspended or mounted to furring strips or drywall. Drywall ceilings shall be minimum 5/8-inch thickness and mounted to an approved resilient channel.

Sec. 1207.3.8 Attic Insulation. Attics shall be insulated in compliance with the 2006 International Energy Conservation Code, and such insulation shall be identified by the manufacturer as acoustical/thermal insulation.

Sec. 1207.3.9 Mechanical System. Dwelling units shall be capable of being cooled to 70 degrees without the opening of windows or doors. Mechanical system ductwork and metallic vents shall incorporate the use of vibration isolators and vibration damping materials where necessary to reduce noise within roof/ceiling assemblies. Ductwork with in attics and exterior walls shall be lined with an acoustic insulation 1 inch thick and having a density of not less than 3 pounds per square foot.

Sec. 1207.3.10 Penetration Through Exterior Wall Assemblies and Roof/Ceiling Assemblies. Penetrations through walls and roof/ceilings should be minimized wherever possible and shall be effectively sound insulated in a manner that is consistent with recognized standards and acceptable to the Building Official.

Sec. 12073.11 Crawl Space Vents. Crawl space vents shall be baffled using minimum 20-gauge sheet metal or ½ inch plywood lined with semi-rigid fiberglass panel insulation. Baffles shall turn downward inside the crawl space with the vertical portion of the baffle at least 2-1/2 times the height of the crawl space opening.

14. **DELETION AND SUBSTITUTION (SNOW LOAD) Sec. 1608.2 Ground snow loads. Delete Sec. 1608.2 in its entirety and substitute the following:** Sec. 1608.2 Ground snow loads. Snow loads for those portions of Douglas County outside of the Pike National Forest boundary shall be 30 pounds per square foot for an elevation up to 6,000 feet, and shall increase 5 pounds per square foot for every 500-foot increment above 6,000 feet. Snow loads for all elevations above 8,000 feet shall be determined based on the Snow Load Design Data for Colorado recommendations prepared by the Structural Engineer's Association of Colorado. No reduction for ground snow load to flat roof snow load ($p_g = p_f$).

15. **DELETION AND SUBSTITUTION (Basic wind speed) Sec. 1609.3 Basic wind speed. Delete Sec. 1609.3 and substitute the following:** Sec. 1609.3 Basic wind speed. The basic wind speed for Douglas County is hereby designated at ninety (90) miles per hour fastest mile (105 mph 3-second gust), exposure "C", unless approved by the Building Official for exposure "B". Consideration should be given to the "Special Wind Region" along the foothills, where wind gusts may exceed 105 mph.

16. **ADDITION (FOUNDATION AND SOILS INVESTIGATIONS) Sec. 1802.4 Investigation. Add a second paragraph to Sec. 1802.4 to read as follows:** Based on soils reports for lots within the Dipping Bedrock Overlay District, as identified by the Colorado Geological Survey, the Building Official may require additional testing to determine the proper foundation design. Such additional testing may include, but not be limited to, testing for initial water content, initial dry density, grain size distribution, Atterberg Limits (liquid limit and plasticity index), percent swell and test load surcharge, swell pressure, penetration resistance (blow counts), and unconfined compressive strength.

17. **ADDITION (FOOTINGS AND FOUNDATIONS) Sec. 1805.2.1 Frost protection. Add to Sec. 1805.2.1 subsection 1. the following:** Frost depth for all areas of Douglas County shall be 36 inches minimum.

18. **ADDITION (ELEVATORS AND CONVEYING SYSTEM) Sec. 3001.2 Reference standards. Add a sentence as follows:** For the purpose of these standards, certain terms are defined as follows: ASME Code is the ASME A17.1 code, 2007 / CSA B44-07 Edition and Safety Code for Elevators, Escalators, and Dumbwaiters with Automatic Transfer Devices published by American Society of Mechanical Engineers.

19. **ADDITION (FEES) Sec. 3001.5 Fees. Add a new section to read as follows:** A fee shall be paid to the Building Official for each passenger or freight elevator or moving walk. The fee provides for bi-annual inspections for each conveyance. Each escalator or moving walk powered by one motor shall be considered a separate escalator or moving walk.

20. **ADDITION (GROUP U – AGRICULTURAL BUILDINGS) Add Appendix C:** Group U- Agricultural Buildings, as written.

21. **ADDITION (WILDFIRE MITIGATION STANDARDS) Add new Appendix Chapter 58 – Regulations Governing Development and Construction in Wildfire Hazard Areas**, as Exhibit "B" attached hereto.

22. ~~**ADDITION (STANDARD FOR WATER SUPPLIES FOR RURAL FIRE FIGHTING) Add new Appendix Chapter 59 – Standard for Water Supplies for Rural Fire Fighting**, as Exhibit "C" attached hereto.~~ REMOVED

23. **ADDITION (NATURAL LANDFORM PROTECTION AREA) Add new Appendix Chapter 60 – Residential Driveway Permit Application Procedures for Properties within the Natural Landform Protection Area**, as Exhibit "D" attached hereto.

24. **ADDITION (DOMESTIC POTABLE WATER STORAGE) Add new Installation Standard IS-22-98 – Installation Standards for Potable Water Storage Tanks and Cisterns for Domestic Use**, as Exhibit "E" attached hereto.

AMENDMENTS TO THE 2006 INTERNATIONAL RESIDENTIAL CODE

1. **DELETION (Work exempt from permit) Sec. R105.2(5)** Delete "and driveways".

2. **ADDITION (APPLICATION FOR A PERMIT) Sec. R105.3(8) Application. Add a new section Sec. R105(8)to read as follows:** Proof of ownership of the property shall be submitted with the building permit application. When access is not from a public road, proof of legal and physical access shall be submitted with the application. If legal access is in question, the Building Official may confer with the County Attorney to determine the legality of the proposed access. If physical access is in question, referral comments may be sought from the Douglas County Department of Public Works and the Fire Protection District serving the property. The Building Official shall then determine whether legal access is available and whether physical access is safe, reasonable, and adequate. If the Building Official determines that the physical access is not safe, reasonable, or adequate, he may recommend whatever improvements would be necessary to provide safe and reasonable access.

3. **ADDITION (APPLICATION FOR A PERMIT) Sec. R105.3(9) Application. Add a new section Sec. R105(9) to read as follows:** A soils test of the building site prepared by a professional engineer registered by the State of Colorado must be submitted with the application for a building permit. A professional engineer registered by the State of Colorado must design the foundation in accordance with the soils report. When the building site is located in a hillside area, or in the opinion of the Building Official, is located in an area subject to geological hazards or steep slopes, the Building Official may require an engineering geologist, working within their field of expertise, to submit specific recommendations regarding the building site and the proposed location and design. Such recommendations of site grading, structural integrity, site vegetation characteristics (or potential), location of septic drain fields, and protection of adjacent property.

4. **DELETION AND SUBSTITUTION (FEES) Sec.R108.2 Schedule of permit fees. Delete Sec. R108.2 in it's entirety and substitute the following:** The fees for building, mechanical, and roofing permits shall be determined in accordance with Table 1-A of the 1997 edition of the Uniform Building Code, attached hereto as Exhibit "F". Wild Fire Mitigation Assessment fee of $120.00 will be required for structures located in hazardous areas located within the Hazardous Overlay Map. A zoning review fee of $50.00 is required per townhouse/condominium unit as each unit is permitted individually. Additionally, a fee of $30.00 will be assessed for permits for accessory structures.

   Reinspection fees: A reinspection fee may be assessed for each inspection or reinspection when such portion or work for which inspection is called is not complete or when corrections called for are not made. This section is not to be interpreted as requiring reinspection fees the first time a job is rejected for failure to comply with the requirement of this code, but as controlling the practice of calling for inspections before the job is ready for such inspection or reinspection.

Reinspection fees may be assessed when the inspection record card is not posted or otherwise available on the work site, the approved plans are not readily available to the inspector, for failure to provide access on the date for which inspection is requested, or for deviating from plans requiring the approval of the building official.

To obtain a reinspection, the applicant shall file an application therefore in writing on a form furnished for that purpose and pay the reinspection fee in accordance with Table 1-A or as set forth in the fee schedule adopted by the jurisdiction.

In instances where reinspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.

Investigation Fees: Investigation fees shall be assessed for work commences prior to a valid permit being issued. An investigation fee may amount to two times the calculated permit fee.

The fees for electrical permits shall be as established by the State of Colorado Electrical Board, pursuant to C.R.S. 12-23-117.

Drainage, Erosion and Sediment Control (DESC) permits are required on all single-family residential development projects not covered by Section 31 of the Douglas County Zoning Resolution; and new single-family residential construction and new construction of accessory structures (e.g. additions, barns, arenas detached garages etc.) on existing single-family home sites. Fees for each DESC permit shall be determined in accordance with Table R1A.1, attached hereto as Exhibit "G".

The value to be used in computing the DESC permit and DESC plan review fees shall be the total value of all construction work for which the DESC permit is issued.

The DESC plan review fee shall be 65% of the DESC permit fee as shown in Table R1A.1.

The plan review fees specified in this section are separate fees from the DESC permit fees specified in Section 3102.01.2 and are in addition to the DESC permit fees.

Applications for which no permit is issued within 180 days following the date of application shall expire by limitation, and plans and other data submitted for review may thereafter be returned to the applicant or destroyed by the building official. The building official may extend the time for action by the applicant for a period not exceeding 180 days on written request by the applicant showing that circumstances beyond the control of the applicant have prevented action from being taken. No application shall be extended more than once. In order to renew action on an application after expiration, the applicant shall resubmit plans and pay a new plan review fee.

The building official may authorize refunding of any fee paid hereunder, which was erroneously paid or collected.

The building official may authorize refunding of not more than 80 percent of the permit fee paid when no work has been done under a permit issued in accordance with this resolution.

The building official may authorize refunding of not more than 80 percent of the plan review fee paid when an application for a permit for which a plan review fee has been paid is withdrawn or canceled before any plan reviewing is done.

The building official shall not authorize refunding of any fee paid except on written application filed by the original permittee not later than 180 days after the date of fee payment.

A wildfire mitigation assessment fee of $120.00 will be required for new structures located in wildfire hazard areas as determined by the Wildfire Hazard Overlay Map and requiring an on-site assessment and inspections.

A driveway permit shall be required for vehicular access to residential dwellings or accessory buildings thereto in areas not served by combination curb, gutter, and sidewalk, whether the roads being accessed are public or private unless a permit is deemed unnecessary by the building official. The fee for such permit is $40.00.

5. **DELETION AND SUBSTITUTION (VALUATIONS) Sec. R108.3 Building permit valuations. Delete Sec. R108.3 in it's entirety and substitute the following:** The determination of value or valuation shall be established by the Building Official utilizing the most recent edition of the Building Safety Journal's valuation publication, published by the International Code Council, as a guide using a modifier of one (1). The value used in computing the building permit fee shall be the total value of all construction work for which the permit is issued as well as all finish work, painting, roofing, plumbing, heating, air conditioning, electrical, elevators, fire extinguishing systems, and any other permanent equipment. The issuance of a building permit shall include the installation of these systems and no further permits will be required when installed in conformance with the approved plans.

6. **ADDITION (INSPECTIONS) Sec. R109.1.1 Footing and foundation inspections. Add a paragraph to Sec. R109.1.1 to read as follows:** Footings, caissons, and foundation wall inspections are to be performed by professional engineer registered in the State of Colorado. After the inspection of the caissons or footers and the foundation wall reinforcing steel the engineer shall provide to the Building Official a typed stamped report of the results of the inspection. Reports for the caissons must clearly state that the drilling, pouring, and reinforcement of the caissons was observed to be in compliance with the soils report and engineered design.

7. **DELETION AND SUBSTITUTION AND ADDITIONS (BOARD OF APPEALS)**

Delete Sec. R112.2 Limitations on authority in its entirety and substitute the following: R112.2 Special Exceptions. Pursuant to Section 30-28-206, C.R.S., the Board of Appeals in appropriate cases and subject to a determination as to the suitability of alternate materials and methods of construction, may make special exceptions to the terms of the Building Code in harmony with its purpose and intent. The Board shall have no authority to waive requirements of this code or provide product approvals.

Delete Sec. R112.4 Administration in its entirety and substitute the following: Sec. R112.4 General Board. The Building Official shall be an ex officio member of and shall act as secretary to said board but shall have no vote on any matter before the board. The Board of Appeals shall operate as and perform the duties of the board of review, pursuant to Section 30-28-206, C.R.S.. The Board of Appeals shall be appointed by the Board of County Commissioners, and any member of the Board of Appeals may be removed for cause by the Board of County Commissioners. The Board of Appeals shall consist of no less than five members nor more than seven members. The member's terms shall be of such length and such arrangement that the term of at least one member shall expire each year. Vacancies shall be filled for an unexpired term in the same manner as in the case of original appointments. The Board of County Commissioners shall provide for general rules to cover the organization, procedure, and jurisdiction of the Board of Appeals. The Board of Appeals may adopt supplemental rules of procedure not inconsistent with Article 28, Title 30, C.R.S. or such general rules. The Board of Appeals shall render all decisions and finding in writing to the appellant. A duplicate copy shall be sent to the Building Official.

Add new Sec. R112.5 Code Amendments as follows: Sec. R112.5 Code Amendments. Pursuant to Section 30-28-206(2), C.R.S., the Board of Appeals is authorized to formulate suggested amendments to the Douglas County Building Code for consideration by the Board of County Commissioners.

Add new Sec. R112.6 Fees as follows: Sec. R112.6 Fees. The fee for a hearing before the Board of Appeals shall be $250.00. The fee is non-refundable.

8. **ADDITION (RESERVED) Sec. R115 Is reserved for future amendments.**

9. **ADDITION (CONTRACTOR LICENSING) Sec. R116 Contractor licensing requirements. Add a new section to read as follows:** Sec R116.1 General. No contractor shall hire, employ, contract with or engage another person to perform any construction work unless the person so hired, employed, contracted with or engaged to perform construction work shall be licensed or registered as provided in this section. Foundation, framing, trim, insulation, and drywall subcontractors performing work for a licensed contractor shall not be required to be licensed

   Permits will be issued only to licensed/registered contractors or their authorized representative.

A contractor shall be responsible for all work included under the scope of the contractors license/registration whether or not such work is done by the contractor directly or by a sub-contractor which is exempt pursuant to this section.

It shall be the duty of any applicant for Electrical or Plumbing Registration to furnish copies of State contractor's license and master's license and send updates as new State licenses are issued or if licensed tradespersons are replaced. No permits for electrical wiring or plumbing work may be issued to any applicant unless such State license is properly verified and registered.

Sec. R116.2 Class of license. It shall be unlawful to perform work which is not authorized under the scope or limits of work for which such license/registration was issued. License/registration classifications are as follows:

Sec. R116.2.1 Building contractor – CLASS "A". This license shall entitle the holder to contract for the construction, alteration, tenant finish or repair of any type or size of structure permitted by the International Building Code or the International Residential Code.

Sec. R116.2.2 Building contractor – CLASS "B". This license shall entitle the holder to contract for the construction, alteration, or repair of multi-family (3 or more units) structures as permitted by the International Building Code or the International Residential Code.

Sec. R116.2.3 Building contractor – CLASS "C". This license shall entitle the holder to contract for the construction, alteration, or repair of single-family homes and duplexes as permitted by the International Building Code or the International Residential Code.

Sec. R116.2.4 Building contractor – CLASS "D". This license shall entitle the holder to contract for the construction, alteration and repair of, but not limited to, garages, barns, basement finishes, alterations, decks, remodels and low voltage wiring as permitted by the International Building Code or the International Residential Code.

Sec. R116.2.5 Mechanical contractor – CLASS "A". This license shall entitle the holder to perform any work in the heating, ventilation and air-conditioning fields.

Sec. R116.2.6 Mechanical contractor – CLASS "B". This license shall entitle the holder to perform any work in the heating field that does not involve mechanical refrigerating systems and equipment.

Sec. R116.2.7 Electrical contractor. Any person, firm, co-partnership, corporation, association, or combination thereof that undertakes or offers to undertake for another the planning, layout, supervision, installation or repair of wiring apparatus and equipment for electrical light, heat, and power. A registered professional electrical engineer who plans or designs electrical installations shall not be classified as an electrical contractor, Pursuant to C.R.S. 12-23-105, electrical contractors are licensed by the State of Colorado

and are only required to register with Douglas County. Electrical contractors are exempt from the fee requirements of this section.

Sec. R 116.2.8 Plumbing contractor. Any person, firm, co-partnership, corporation, association, or combination thereof that undertakes or offers to undertake for another the planning, layout, supervision, installation, modification or repair of plumbing systems. In order to act as a plumbing contractor the person, firm, partnership or corporation must either be or employ full-time a master plumber. Pursuant to C.R.S. 12-58-105, plumbing contractors are licensed by the State of Colorado and as such are only required to register with Douglas County. Plumbing contractors are exempt from the fee requirements of this section.

Sec. R116.2.9 Roofing contractor. *This license shall entitle the holder to contract for the replacement and repairs of existing roofs as permitted by the International Building Code or the International Residential Code.*

Sec. R116.3 Contractor license fee schedule. Contractor's license fees shall be as follows:

Class "A" Contractor	$250.00
Class "B" Contractor	$250.00
Class "C" Contractor	$150.00
Class "D" Contractor	$150.00
Mechanical Contractor	$150.00
Roofing Contractor	$150.00
Electric Contractor	Exempt
Plumbing Contractor	Exempt

Sec. R116.4 Probationary license. The Building Official may issue a probationary license where the Building Official determines that qualifications must be established prior to issuance of a regular license.

Sec. R116.5 Expiration of licenses and regulations. All licenses shall expire one (1) year from the date of issuance, registrations expire (30) days after the State issued licenses, unless otherwise provided. No permits may be obtained, nor may work already under permit be continued until the license or registration has been renewed. Applicants for license renewals shall meet all current requirements for a new license.

Sec. R116.6 Insurance requirements. Prior to issuance of a license/registration, the contractor shall file with the Building Official a certificate of liability insurance and worker's Compensation insurance. The insurance certificate must be signed by an agent of an insurance company stating that the policy or policies required by this section have been issued to the licensee. The policy or policies shall state the name of the company, effective date of such policies and the expiration date of policy or policies. Each policy

of insurance shall contain an endorsement to the effect that the insurance carrier shall notify the Douglas County Building Division of the effective date of a reduction or cancellation of the policy. The cancellation or reduction of insurance below the required amount of coverage shall be cause for automatic suspension of the contractor's license or registration until coverage is reinstated. All policies shall be kept in effect for the period of the license.

Single occurrence liability insurance shall be required in the following

Class "A" Contractor	$1,000,000.00
Class "B" Contractor	$1,000,000.00
Class "C" Contractor	$ 500,000.00
Class "D" Contractor	$ 300,000.00
Electrical Contractor	$ 300,000.00
Plumbing Contractor	$ 300,000.00
Mechanical Contractor	$ 300,000.00
Roofing Contractor	$ 300,000.00

Sec. R116.7 License suspension and revocation. The Building Official may issue written notice to any licensed contractor to show cause why it's license should not be suspended or revoked and require such contractor to appear before the Board of Appeals for hearing of the complaint of the Building Official. At the hearing before the Board of Appeals the contractor shall have the right to present the case by oral and documentary evidence, to submit rebuttal evidence, and to conduct such cross-examination as may be required for a full and true disclosure of the facts

Suspension or revocation of a contractor's license shall not be construed to release the contractor from liabilities and obligations of completing his contract. During the period prior to the hearing before the Board of Appeals, the contractor shall not be allowed to make application for any other projects.

The Board of Appeals, after review of the evidence presented, shall have the power to suspend or revoke a contractor's license for good cause shown. Good cause includes, but is not limited to the following:

a. Violating any provisions of the Douglas County Building Code including any codes, which are adopted by reference.
b. Failure to comply with any lawful order of the Building Official or any other authorized representative of the Building Division pertaining to the administration of the building code and those codes adopted by reference.
c. Using a contractor's license to obtain a permit required under this code for any other person, corporation or legal entity.

d. Failure to reveal any material fact in the application for a contractor's license or permit or the supplying of information which is untrue or misleading as to any material fact in the application for a contractors license or permit.
e. Failure to obtain a proper permit for any work for which a permit is required.

The Board of Appeals may reinstate a license for any contractor whose license has been revoked, provided a majority of the Board votes in favor of such reinstatement for such reason as the Board may deem sufficient. In such case where the contractor's license has been revoked and the contractor is petitioning the Board for reinstatement, the petitioner shall follow the established policies for requesting such hearing and pay all applicable fees.

10. **ADDITION (DEFINITIONS) Sec. R202 Contractor. Add a new definition to Sec. R202 to read as follows:** CONTRACTOR. A contractor is any person, firm, co-partnership, corporation, association or other organization or any combination thereof who builds, constructs, alters, adds to, or repairs any building or structure either on its' own property, or who supervises or advises on any such activity, or hires and pays subcontractors.

11. **DELETION AND SUBSTITUTION (DEFINITIONS) Sec. R202 GRADE and GRADE PLANE. Delete GRADE and GRADE PLANE definitions and substitute the following:** "GRADE (Adjacent Ground Elevation) is the lowest point of elevation of the finished surface of the ground, paving or sidewalk within the area between the building and the property line or, when the property line is more than 5 feet (1524 mm) from the building, between the building and a line 5 feet (1524 mm) from the building.

12. **DELETION AND SUBSTITUTION (DEFINITIONS) Sec. R202 HEIGHT, BUILDING. Delete HEIGHT, BUILDING definition and substitute the following:** "HEIGHT, BUILDING is the vertical distance above a reference datum measured to the highest point of the coping of a flat roof or to the deck line of a mansard roof or to the average height of the highest gable of a pitched or hipped roof. The reference datum shall be selected by either of the following, whichever yields a greater height of building:

    a. The elevation of the highest adjoining sidewalk or ground surface within a 5-foot (1524 mm) horizontal distance of the exterior wall of the building when such sidewalk or ground surface is not more than 10 feet (3048 mm) above the lowest grade.
    b. An elevation 10 feet (3048 mm) higher than the lowest grade when the sidewalk or ground surface described in Item a. is more than 10 feet (3048 mm) above lowest grade.

    The height of a stepped or terraced building is the maximum height of any segment of the building.

13. **ADDITION (DEFINITIONS) Sec. R202 Homeowner / Builder. Add a new definition to Sec. R202 to read as follows:** A homeowner / builder is a property owner who elects to act as the contractor of a residential dwelling. A homeowner / builder may

secure a permit on only one residential dwelling in a twelve (12) month period with the intent of occupying the structure upon completion. Any person who builds two or more residences in unincorporated Douglas County in any twelve month period shall be deemed to be as contractor, who must then comply with Sec. R116. This section also allows the construction of buildings or structures accessory to a residential building, intended for the homeowner's own personal use and occupancy.

14. **ADDITION (TABLE R301.2.3 CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA) Ground snow loads. Add the following to Ground snow load criteria:** Snow loads for those portions of Douglas County outside of the Pike National Forest boundary shall be 30 pounds per square foot for an elevation up to 6,000 feet, and shall increase 5 pounds per square foot for every 500 foot increment above 6,000 feet. Snow loads for all elevations above 8,000 feet shall be determined based on the Snow Load Design Data for Colorado recommendations prepared by the Structural Engineer's Association of Colorado. No reduction for ground snow load to flat roof snow load (p_g = p_f).

15. **ADDITION (TABLE R301.2(1) CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA) Wind speed. Add the following to Wind speed criteria:** The basic wind speed design criteria for Douglas County shall be ninety (90) miles per hour fastest mile (105 mph 3-second gust), exposure "C", unless approved by the Building Official for exposure "B". Consideration should be given to the "Special Wind Region" along the foothills, where wind gusts may exceed 105 mph.

16. **ADDITION (TABLE R301.2(1) CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA) Frost line depth. Add the following to Frost line depth criteria:** Frost depth for all areas of Douglas County shall be 36 inches minimum.

17. **ADDITION (Soil tests) Sec. R401.4 Add a second paragraph to Sec. R401.4 to read as follows:** Based on soils reports for lots within the Dipping Bedrock Overlay District, as identified by the Colorado Geological Survey, the Building Official may require additional testing to determine the proper foundation design. Such additional testing may include, but not be limited to, testing for initial water content, initial dry density, grain size distribution, Atterberg Limits (liquid limit and plasticity index), percent swell and test load surcharge, swell pressure, penetration resistance (blow counts), and unconfined compressive strength.

18. **ADDITION (FOUNDATION DRAINAGE) Sec. R405.1 Concrete or masonry foundations. Add the following to the end of Sec. R405.1:** "When a perimeter drain recommendation is made by an engineer, such recommendation shall be mandatory.

19. **DELETION (GYPSUM BOARD) Sec. R702.3.8 Water-resistant gypsum backing board Delete from Table R702.3.5, footnote d. the following:** "and from 1/2" to 5/8"inch for 24-inch on center framing or 1/2-inch sag-resistant gypsum ceiling board shall be used."

20. **DELETION AND SUBSTITUTION (ELECTRICAL CHAPTERS 33-42) Delete Chapters 33 – 42, inclusive and entirely, and add the following:** Chapter 33 Electrical. All structures subject to the International Residential Code for One- and Two-Family Dwellings shall comply with the National Electrical Code, as adopted by the State Electrical Board of the State of Colorado.

21. **ADDITION (WILDFIRE MITIGATION STANDARDS) Add new Appendix Chapter 58 – Regulations Governing Development and Construction in Wildfire Hazard Areas**, as Exhibit "B" attached hereto.

~~22. **ADDITION (STANDARD FOR WATER SUPPLIES FOR RURAL FIRE FIGHTING) Add new Appendix Chapter 59 – Standard for Water Supplies for Rural Fire Fighting**, as Exhibit "C" attached hereto.~~ REMOVED

23. **ADDITION (NATURAL LANDFORM PROTECTION AREA) Add new Appendix Chapter 60 – Residential Driveway Permit Application Procedures for Properties within the Natural Landform Protection Area**, as Exhibit "D" attached hereto.

24. **ADDITION (DOMESTIC POTABLE WATER STORAGE) Add new Installation Standard IS-22-98 – Installation Standards for Potable Water Storage Tanks and Cisterns for Domestic Use**, as Exhibit "E" attached hereto.

25. **ADDITION (SWIMMING POOLS, SPAS AND HOT TUBS) Add IRC Appendix G Swimming Pools, Spas and Hot Tubs. Add new sentence to end of AG101 General as follows:** "Where Appendix G conflicts with the requirements of the most recently adopted Douglas County Zoning Resolution, the Douglas County Zoning Resolution shall govern."

26. **DELETION AND SUBSTITUTION (GRAY WATER) Delete IRC Appendix O, and substitute new Appendix O, as follows:**

APPENDIX O

GRAY WATER RECYCLING SYSTEMS AS AMENDED

Note: Section P2601.2 of this code requires all plumbing fixtures that receive water or waste to discharge to the sanitary drainage system of the structure. In order to allow for the utilization of a gray water system, Section P2601.2 should be revised to read as follows:

P2601.2 Connections to drainage system.
All plumbing fixtures, drains, appurtenances and appliances used to receive or discharge liquid wastes or sewage shall be directly connected to the sanitary drainage system of the building or premises, in accordance with the requirements of this code. This section shall not be construed to prevent indirect waste systems.

Exception: Bathtubs, showers, lavatories, clothes washers and laundry trays shall not be required to discharge to the sanitary drainage system where such fixtures discharge to an approved gray water system for flushing of water closets and urinals or for subsurface landscape irrigation.

SECTION AO101
GENERAL

AO101.1 Scope.
The provisions of this appendix shall govern the materials, design, construction and installation of gray water systems for flushing of water closets and urinals and for subsurface landscape irrigation (see Figures 1 and 2).

AO101.2 Definition.
The following term shall have the meaning shown herein.

GRAY WATER. Waste discharged from lavatories, bathtubs, showers, clothes washers and laundry trays.

AO101.3 Permits.
It shall be unlawful for any person to construct, install, alter or cause to be constructed, installed, or altered any gray water system within a building or on a premises without first obtaining a permit to do such work from the Authority Having Jurisdiction.

AO101.3.1 APPROVAL.
No permit for any gray water system shall be issued until complete plumbing plans, with appropriate data satisfactory to the Authority Having Jurisdiction, have been submitted and approved. No changes or connections shall be made to either the gray water system or the potable water system within any site containing a gray water system without approval of the Authority Having Jurisdiction.

AO101.3.2 Occupancy
Before the building may be occupied, the installer shall perform the initial cross-connection test in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction. The test shall be ruled successful by the Authority Having Jurisdiction before final approval is granted.

AO101.3.3 Drawings and Specifications
The Authority Having Jurisdiction may require any or all of the following information to be included with or in the plot plan before a permit is issued for a gray water system.

(A) A plot plan drawn to scale and completely dimensioned, showing lot lines and structures, location of all present and proposed potable water supplies and meters, water wells, streams, auxiliary water supply and systems, gray water supply and meters, drain lines, and locations of private sewage disposal systems and one hundred (100) percent expansion areas or building sewer connected to the public sewer.

(B) Details of construction including riser diagrams or isometrics and a full description of the complete installation, including installation methods, construction, and materials as required by the Authority Having Jurisdiction. To the extent permitted by structural conditions, all gray water risers within the toilet room, including appurtenances such as air/vacuum relief valves, pressure reducing valves, etc., shall be installed in the opposite end of the room containing the served fixtures from the potable water risers or opposite walls, as applicable. To the extent permitted by structural conditions, gray water headers and branches off risers shall not be run in the same wall or ceiling cavity of the toilet room where potable water piping is run.

(C) Detailed initial and annual testing requirements as outlined elsewhere in this chapter.

AO101.4 Installation.
In addition to the provisions of Section AO101, systems for flushing of water closets and urinals shall comply with Section AO102 and systems for subsurface landscape irrigation shall comply with Section AO103. Except as provided for in Appendix O, all systems shall comply with the provisions of the International Residential Code.

(A) Hose bibs shall not be allowed on gray water piping systems.

(B) The gray water system and the potable water system within the building shall be provided with the required appurtenances (valves, air / vacuum relief valves, etc.) to allow for deactivation or drainage as may be required by this chapter.

(C) Gray water pipes shall not be run or laid in the same trench as potable water pipes. A ten (10) foot (3,048 mm) horizontal separation shall be maintained between pressurized, buried gray and potable water piping. Buried potable water pipes crossing pressurized gray water pipes shall be laid a minimum of twelve (12) inches (305mm) above the gray water pipes.

AO101.4.1 Inspection and Testing.

(A) Gray water piping shall be tested as outlined in this code for testing of potable water piping.

(B) An initial and subsequent annual cross-connection inspection and test shall be performed on both potable and gray water systems as follows:

(1) Visual Dual System Inspection. Prior to commencing the cross-connection testing, a dual system inspection shall be conducted by the Authority Having Jurisdiction and other authorities having jurisdiction.

(i) Meter locations of the gray water and potable water lines shall be checked to verify that no modifications were made, and that no cross-connections are visible.

(ii) All pumps and equipment, equipment room signs, and exposed piping in the equipment room shall be checked.

(iii) All valves shall be checked to ensure that valve lock seals are still in place and intact. All valve control door signs shall be checked to verify that no signs have been removed.

(2) Cross-Connection Test. The following procedure shall be followed by the applicant in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction to determine whether a cross-connection occurred.

(i) The potable water system activities and pressurized. The gray water system shall be shut down and completely drained.

(ii) The potable water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the gray water system is empty. The minimum period the gray water system is to remain depressurized shall be determined on a case-by-case basis, taking into account the size and complexity of the potable and gray water distribution systems, but in no case shall that period be less than one (1) hour.

(iii) All fixtures, potable and gray, shall be tested and inspected for flow. Flow from any gray water system outlet shall indicate a cross-connection. No flow from a potable water outlet would indicate that it may be connected to the gray water system.

(iv) The drain on the gray water system shall be checked for flow during the test and at the end of the period.

(v) The potable water system shall then be completely drained.

(vi) The gray water system shall then be activated and pressurized.

(vii) The gray water system shall remain pressurized for a minimum period of by the Authority Having Jurisdiction while the potable water system is empty. The minimum period of the potable water system is to remain depressurized shall be determined on a case-by-case basis, but in no case shall that period be less than one (1) hour.

(viii) All fixtures, potable and gray, shall be tested and inspected for flow. Flow from any potable water system outlet shall indicate a cross-connection. No flow from a gray water outlet would indicate that it may be connection to the potable water system.

(ix) The drain on the potable water system shall be checked for flow during the test and at the end of the period.

(x) If there is no flow detected in any of the fixtures that would have indicated a cross-connection, the potable water system shall be re-pressurized.

(3) In the event that a cross-connection is discovered, the following procedures, in the presence of the Authority Having Jurisdiction, shall be activated immediately:

(i) Gray water piping to the building shall be shut down at the meter, and the gray water riser shall be drained.

(ii) Potable water piping to the building shall be shut down at the meter.

(iii) The cross-connection shall be uncovered and disconnected.

(iv) The building shall be retested following procedures listed in subsections (B) (1) and (B) (2) above.

(v) The potable water system shall be chlorinated with fifty (50) ppm chlorine for twenty-four (24) hours.

(vi) The potable water system shall be flushed after twenty-four (24) hours, and a standard bacteriological test shall be performed. If test results are acceptable, the potable water system may be recharged.

(C) An annual inspection of the gray water system, following the procedures listed in subsection AO101.4.1 (B) (1), shall be required. Annual cross-connection testing, following the procedures listed in subsection AO101.4.1 (B) (2), shall be required by the Authority Having Jurisdiction, unless site conditions do not require. In no event shall the test occur less often than once in four (4) years. Alternate testing requirements may be allowed by the Authority Having Jurisdiction for institutional buildings.

AO101.4.2 Sizing.
Gray water piping shall be sized as outlined in this code for sizing potable water piping.

AO101.5 Materials.
Above-ground drain, waste and vent piping for gray water systems shall conform to one of the standards listed in Table P3002.1(1). Gray water underground building drainage and vent pipe shall conform to one of the standards listed in Table P3002.2(2).

AO101.6 Tests.
Drain, waste and vent piping for gray water systems shall be tested in accordance with Section P2503.

AO101.7 Inspections.
Gray water systems shall be inspected in accordance with Section P2503.

AO101.8 Potable water connections.
Only connections in accordance with Section AO102.3 shall be made between a gray water recycling system and a potable water system.

AO101.9 Waste water connections.
Gray water recycling systems shall receive only the waste discharge of bathtubs, showers, lavatories, clothes washers or laundry trays.

AO101.10 Collection reservoir.
Gray water shall be collected in an approved reservoir constructed of durable, nonabsorbent and corrosion-resistant materials. The reservoir shall be a closed and gas-tight vessel. Access openings shall be provided to allow inspection and cleaning of the reservoir interior.

AO101.11 Filtration.
Gray water entering the reservoir shall pass through an approved filter such as a media, sand or diatomaceous earth filter.

AO101.11.1 Required valve.
A full-open valve shall be installed downstream of the last fixture connection to the gray water discharge pipe before entering the required filter.

AO101.12 Overflow.
The collection reservoir shall be equipped with an overflow pipe having the same or larger diameter as the influent pipe for the gray water. The overflow and influent pipes shall be a minimum three (3) inch diameter if the collection reservoir is accepting discharge from a clothes washer. The overflow pipe shall be indirectly connected to the sanitary drainage system.

AO101.13 Drain.
A drain shall be located at the lowest point of the collection reservoir and shall be indirectly connected to the sanitary drainage system. The drain shall be the same diameter as the overflow pipe required in Section AO101.12.

AO101.14 Vent required.
The reservoir shall be provided with a vent sized in accordance with Chapter 31 and based on the diameter of the reservoir influent pipe.

AO101.15 Signs.
(A) Room Entrance Signs. All installations using Gray water for water closets and /or urinals shall be identified with signs. Each sign shall contain one-half (1/2) inch (12.7 mm) letters of a highly visible color on a contrasting background. The location of the sign(s) shall be such that the sign(s) shall be visible to all users. The number and location of the signs shall be approved by the Authority Having Jurisdiction and shall contain the following texts:

TO CONSERVE WATER, THIS BUILDING USES GRAY WATER TO FLUSH TOILETS AND URINALS

(B) Equipment Room Signs. Each equipment room containing gray water equipment shall have a sign posted with the following wording in one (1) inch (25.4 mm) letters on a purple background:

CAUTION GRAY WATER, DO NOT DRINK. DO NOT CONNECT TO DRINKING WATER SYSTEM

NOTICE
CONTACT BUILDING MANAGEMENT / OWNER BEFORE PERFORMING ANY WORK ON THIS WATER SYSTEM

This sign shall be posted in a location that is visible to anyone working on or near gray water equipment.

(C) Where tank-type water closets are flushed with gray water, the tank shall be labeled:

GRAY WATER – DO NOT DRINK

(D) Valve Access Door Signs. Each gray water valve within a wall shall have its access door into the wall equipped with a warning sign approximately six (6) inches by six (6) inches (152 mm x 152 mm) with wording in one half (1/2) inch (12.7 mm) letters on a purple background. The size, shape, and format of the sign shall be substantially the same as that specified in subsection (B) above. The signs shall be attached inside the access door frame and shall hang in the center of the access door frame. This sign requirement shall be applicable to any and all access doors, hatches, etc., leading to gray water piping and appurtenances.

(E) Valve Seals. Each valve or appurtenance shall be sealed in a manner approved by the Authority Having Jurisdiction after the gray system has been approved and placed into operation. These seals shall be either a crimped lead wire seal or a plastic breakaway seal which, if broken after system approval shall be deemed conclusive evidence that the gray water system has been accessed. The seals shall be purple with the words “GRAY WATER”.

SECTION AO102
SYSTEMS FOR FLUSHING WATER CLOSETS AND URINALS

AO102.1 Collection reservoir.
The holding capacity of the reservoir shall be a minimum of twice the volume of water required to meet the daily flushing requirements of the fixtures supplied with gray water, but not less than 50 gallons (189 L). The reservoir shall be sized to limit the retention time of gray water to a maximum of 72 hours.

AO102.2 Disinfection.
Gray water shall be disinfected by an approved method that employs one or more disinfectants such as chlorine, iodine or ozone.

AO102.3 Makeup water.
Potable water shall be supplied as a source of makeup water for the gray water system. The potable water supply shall be protected against backflow in accordance with Section P2902. There shall be a full-open valve located on the makeup water supply line to the collection reservoir.

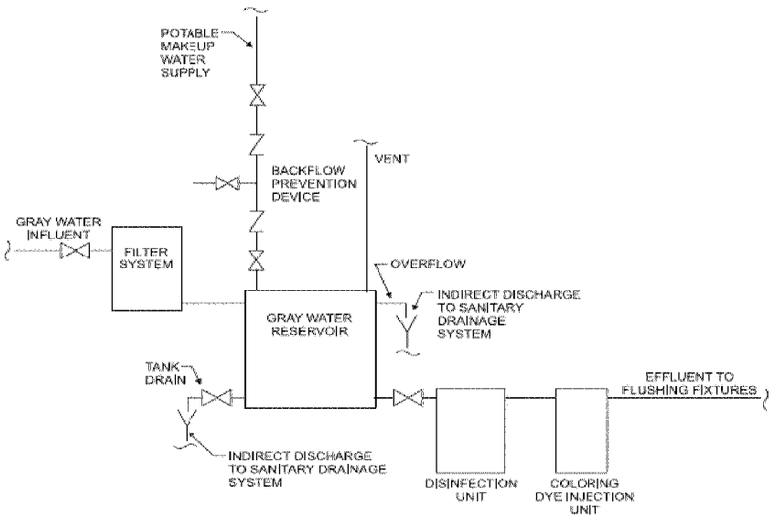
AO102.4 Coloring.
The gray water shall be dyed blue or green with a food grade vegetable dye before such water is supplied to the fixtures.

AO102.5 Materials.
Distribution piping shall conform to one of the standards listed in Table P2904.5.

AO102.6 Identification.
Distribution piping and reservoirs shall be identified as containing non-potable water. Piping identification shall be in accordance with Section 608.8 of the International Plumbing Code. Gray water piping and fittings shall be as required in this code for potable water piping and fittings. All reclaimed water pipe and fittings shall be continuously wrapped with purple-colored Mylar tape. The wrapping tape shall have a minimum nominal thickness of five ten-thousandths (0.0005) inch (0.127mm) and a minimum width of two (2) inches (51mm). Tape shall be fabricated of poly (vinyl chloride) with a synthetic rubber adhesive and a clear polypropylene protective coating or approved equal. The tape shall be purple (Pantone color #512) and shall be imprinted in nominal on-half (1/2) inch (12.7 mm) high, black uppercase letters, with the words "CAUTION: GRAY WATER, DO NOT DRINK." The lettering shall be imprinted in two (2) parallel lines, such that after wrapping the pipe with a one-half (1/2) inch width overlap, one (1) full line of text shall be visible. Wrapping tape is not required for buried PVC pipe manufactured with purple color integral to the plastic and marked on opposite sides to read "CAUTION: GRAY WATER, DO NOT DRINK" in intervals not to exceed three (3) feet (914 mm).

All valves, except fixture supply control valves shall be equipped with a locking feature. All mechanical equipment that is appurtenant to the reclaimed water system shall be painted purple to match the Mylar wrapping tape.

FIGURE 2
GRAY WATER RECYCLING SYSTEM FOR FLUSHING WATER CLOSETS AND URINALS



SECTION AO103 DELETE IN ITS ENTIRETY
SUBSURFACE LANDSCAPE IRRIGATION SYSTEMS

AMENDMENTS TO THE 2006 INTERNATIONAL MECHANICAL CODE

1. **ADDITION (VENTILATION - SECTION 401 GENERAL) to Sec. 401.1 Scope,** after "This chapter shall govern the ventilation of spaces within a building intended to be occupied.", add: "The ventilation shall meet requirements contained in this chapter or comply with ASHRAE Standard 62.1-2004, Ventilation for Acceptable Indoor Air Quality, including appendix A and appendix E. Use of this Standard shall only apply to the ventilation requirements of this chapter and is not intended to abridge safety, health or environmental requirements contained in other applicable codes or ordinances."

AMENDMENTS TO THE 2006 INTERNATIONAL PLUMBING CODE

1. **DELETION AND SUBSTITUTION (SIZE OF CONDUCTORS, LEADERS AND STORM DRAINS) Delete from Sec 1106.1 the following:** "indicated in Figure 1106.1 or on other rainfall rates determined from approved local weather data.", **and add the following:** "of 3 inches."

2. **DELETION AND SUBSTITUTION (GRAY WATER) Delete IPC Appendix C, and substitute new Appendix C, as follows:**

APPENDIX C
GRAY WATER RECYCLING SYSTEMS AS AMENDED

Note: Section 301.3 of this code requires all plumbing fixtures that receive water or waste to discharge to the sanitary drainage system of the structure. In order to allow for the utilization of a gray water system, Section 301.3 should be revised to read as follows:

301.3 Connections to drainage system.
All plumbing fixtures, drains, appurtenances and appliances used to receive or discharge liquid wastes or sewage shall be directly connected to the sanitary drainage system of the building or premises, in accordance with the requirements of this code. This section shall not be construed to prevent indirect waste systems required by Chapter 8.

Exception: Bathtubs, showers, lavatories, clothes washers and laundry trays shall not be required to discharge to the sanitary drainage system where such fixtures discharge to an approved gray water system for flushing of water closets and urinals or for subsurface landscape irrigation.

SECTION C101
GENERAL

C101.1 Scope.
The provisions of this appendix shall govern the materials, design, construction and installation of gray water systems for flushing of water closets and urinals and for subsurface landscape irrigation (see Figures 1 and 2).

C101.2 Definition.
The following term shall have the meaning shown herein.

GRAY WATER. Waste discharged from lavatories, bathtubs, showers, clothes washers and laundry trays.

C101.3 Permits.
It shall be unlawful for any person to construct, install, alter or cause to be constructed, installed, or altered any gray water system within a building or on a premises without first obtaining a permit to do such work from the Authority Having Jurisdiction.

C101.3.1 APPROVAL.
No permit for any gray water system shall be issued until complete plumbing plans, with appropriate data satisfactory to the Authority Having Jurisdiction, have been submitted and approved. No changes or connections shall be made to either the gray water system or the potable water system within any site containing a gray water system without approval of the Authority Having Jurisdiction.

C101.3.2 Occupancy
Before the building may be occupied, the installer shall perform the initial cross-connection test in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction. The test shall be ruled successful by the Authority Having Jurisdiction before final approval is granted.

C101.3.3 Drawings and Specifications
The Authority Having Jurisdiction may require any or all of the follow3ing information to be included with or in the plot plan before a permit is issued for a gray water system.

(A) A plot plan drawn to scale and completely dimensioned, showing lot lines and structures, location of all present and proposed potable water supplies and meters, water wells, streams, auxiliary water supply and systems, gray water supply and meters, drain lines, and locations of private sewage disposal systems and one hundred (100) percent expansion areas or building sewer connected to the public sewer.

(B) Details of construction including riser diagrams or isometrics and a full description of the complete installation, including installation methods, construction, and materials as required by the Authority Having Jurisdiction. To the extent permitted by structural conditions, all gray water risers within the toilet room, including appurtenances such as air/vacuum relief valves, pressure reducing valves, etc., shall be installed in the opposite end of the room containing the served fixtures from the potable water risers or opposite walls, as applicable. To the extent permitted by structural conditions, gray water headers and branches off risers shall not be run in the same wall or ceiling cavity of the toilet room where potable water piping is run.

(C) Detailed initial and annual testing requirements as outlined elsewhere in this chapter.

C101.4 Installation.
In addition to the provisions of Section C101, systems for flushing of water closets and urinals shall comply with Section C102 and systems for subsurface landscape irrigation shall comply with Section C103. Except as provided for in Appendix C, all systems shall comply with the provisions of the International Plumbing Code.

(A) Hose bibs shall not be allowed on gray water piping systems.

(B) The gray water system and the potable water system within the building shall be provided with the required appurtenances (valves, air / vacuum relief valves, etc.) to allow for deactivation or drainage as may be required by this chapter.

(C) Gray water pipes shall not be run or laid in the same trench as potable water pipes. A ten (10) foot (3,048 mm) horizontal separation shall be maintained between pressurized, buried gray and potable water piping. Buried potable water pipes crossing pressurized gray water pipes shall be laid a minimum of twelve (12) inches (305mm) above the gray water pipes.

C101.4.1 Inspection and Testing.

(A)Gray water piping shall be tested as outlined in this code for testing of potable water piping.

(B) An initial and subsequent annual cross-connection inspection and test shall be performed on both potable and gray water systems as follows:

(1) Visual Dual System Inspection. Prior to commencing the cross-connection testing, a dual system inspection shall be conducted by the Authority Having Jurisdiction and other authorities having jurisdiction.

(i) Meter locations of the gray water and potable water lines shall be checked to verify that no modifications were made, and that no cross-connections are visible.

(ii) All pumps and equipment, equipment room signs, and exposed piping in the equipment room shall be checked.

(iii) All valves shall be checked to ensure that valve lock seals are still in place and intact. All valve control door signs shall be checked to verify that no signs have been removed.

(2) Cross-Connection Test. The following procedure shall be followed by the applicant in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction to determine whether a cross-connection occurred.

(i) The potable water system activities and pressurized. The gray water system shall be shut down and completely drained.

(ii) The potable water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the gray water system is empty. The minimum period the gray water system is to remain depressurized shall be determined on a case-by-case basis, taking into account the size and complexity of the potable and gray water distribution systems, but in no case shall that period be less than one (1) hour.

(iii) All fixtures, potable and gray, shall be tested and inspected for flow. Flow from any gray water system outlet shall indicate a cross-connection. No flow from a potable water outlet would indicate that it may be connected to the gray water system.

(iv) The drain on the gray water system shall be checked for flow during the test and at the end of the period.

(v) The potable water system shall then be completely drained.

(vi) The gray water system shall then be activated and pressurized.

(vii) The gray water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the potable water system is empty. The minimum period of the potable water system is to remain depressurized shall be determined on a case-by-case basis, but in no case shall that period be less than one (1) hour.

(viii) All fixtures, potable and gray, shall be tested and inspected for flow. Flow from any potable water system outlet shall indicate a cross-connection. No flow fro a gray water outlet would indicate that it may be connection to the potable water system.

(ix) The drain on the potable water system shall be checked for flow during the test and at the end of the period.

(x) If there is no flow detected in any of the fixtures that would have indicated a cross-connection, the potable water system shall be re-pressurized.

(3) In the event that a cross-connection is discovered, the following procedures, in the presence of the Authority Having Jurisdiction, shall be activated immediately:

(i) Gray water piping to the building shall be shut down at the meter, and the gray water riser shall be drained.

(ii) Potable water piping to the building shall be shut down at the meter.

(iii) The cross-connection shall be uncovered and disconnected.

(iv) The building shall be retested following procedures listed in subsections (B) (1) and (B) (2) above.

(v) The potable water system shall be chlorinated with fifty (50) ppm chlorine for twenty-four (24) hours.

(vi) The potable water system shall be flushed after twenty-four (24) hours, and a standard bacteriological test shall be performed. If test results are acceptable, the potable water system may be recharged.

(C) An annual inspection of the gray water system, following the procedures listed in subsection C101.4.1 (B) (1), shall be required. Annual cross-connection testing, following the procedures listed in subsection C101.4.1 (B) (2), shall be required by the Authority Having Jurisdiction, unless site conditions do not require. In no event shall the test occur less often than once in four (4) years. Alternate testing requirements may be allowed by the Authority Having Jurisdiction for institutional buildings.

C101.4.2 Sizing.
Gray water piping shall be sized as outlined in this code for sizing potable water piping.

C101.5 Materials.
Above-ground drain, waste and vent piping for gray water systems shall conform to one of the standards listed in Table 702.1. Gray water underground building drainage and vent pipe shall conform to one of the standards listed in Table 702.2.

C101.6 Tests.
Drain, waste and vent piping for gray water systems shall be tested in accordance with Section 312.

C101.7 Inspections.
Gray water systems shall be inspected in accordance with Section 107.

C101.8 Potable water connections.
Only connections in accordance with Section C102.3 shall be made between a gray water recycling system and a potable water system.

C101.9 Waste water connections.
Gray water recycling systems shall receive only the waste discharge of bathtubs, showers, lavatories, clothes washers or laundry trays.

C101.10 Collection reservoir.
Gray water shall be collected in an approved reservoir constructed of durable, nonabsorbent and corrosion-resistant materials. The reservoir shall be a closed and gas-tight vessel. Access openings shall be provided to allow inspection and cleaning of the reservoir interior.

C101.11 Filtration.
Gray water entering the reservoir shall pass through an approved filter such as a media, sand or diatomaceous earth filter.

C101.11.1 Required valve.
A full-open valve shall be installed downstream of the last fixture connection to the gray water discharge pipe before entering the required filter.

C101.12 Overflow.
The collection reservoir shall be equipped with an overflow pipe having the same or larger diameter as the influent pipe for the gray water. The overflow and influent pipes shall be a

minimum three (3) inch diameter if the collection reservoir is accepting discharge from a clothes washer. The overflow pipe shall be indirectly connected to the sanitary drainage system.

C101.13 Drain.
A drain shall be located at the lowest point of the collection reservoir and shall be indirectly connected to the sanitary drainage system. The drain shall be the same diameter as the overflow pipe required in Section C101.12.

C101.14 Vent required.
The reservoir shall be provided with a vent sized in accordance with Chapter 9 and based on the diameter of the reservoir influent pipe.

C101.15 Signs.
(A) Room Entrance Signs. All installations using Gray water for water closets and /or urinals shall be identified with signs. Each sign shall contain one-half (1/2) inch (12.7 mm) letters of a highly visible color on a contrasting background. The location of the sign(s) shall be such that the sign(s) shall be visible to all users. The number and location of the signs shall be approved by the Authority Having Jurisdiction and shall contain the following texts:

TO CONSERVE WATER, THIS BUILDING USES
GRAY WATER TO FLUSH TOLIETS AND URINALS

(B) Equipment Room Signs. Each equipment room containing gray water equipment shall have a sign posted with the following wording in one (1) inch (25.4 mm) letters on a purple background:

CAUTION
GRAY WATER, DO NOT DRINK
DO NOT CONNECT TO DRINKING WATER SYSTEM

NOTICE
CONTACT BUILDING MANAGEMENT / OWNER BEFORE
PERFORMING ANY WORK ON THIS WATER SYSTEM

This sign shall be posted in a location that is visible to anyone working on or near gray water equipment.

(C) Where tank-type water closets are flushed with gray water, the tank shall be labeled:

GRAY WATER – DO NOT DRINK

(D) Valve Access Door Signs. Each gray water valve within a wall shall have its access door into the wall equipped with a warning sign approximately six (6) inches by six (6) inches (152 mm x 152 mm) with wording in one half (1/2) inch (12.7 mm) letters on a purple background. The size, shape, and format of the sign shall be substantially the same as that specified in subsection (B) above. The signs shall be attached inside the access door frame and shall hang in

the center of the access door frame. This sign requirement shall be applicable to any and all access doors, hatches, etc., leading to gray water piping and appurtenances.

(E) Valve Seals. Each valve or appurtenance shall be sealed in a manner approved by the Authority Having Jurisdiction after the gray system has been approved and placed into operation. These seals shall be either a crimped lead wire seal or a plastic breakaway seal which, if broken after system approval shall be deemed conclusive evidence that the gray water system has been accessed. The seals shall be purple with the words "GRAY WATER".

SECTION C102
SYSTEMS FOR FLUSHING WATER CLOSETS AND URINALS

C102.1 Collection reservoir.
The holding capacity of the reservoir shall be a minimum of twice the volume of water required to meet the daily flushing requirements of the fixtures supplied with gray water, but not less than 50 gallons (189 L). The reservoir shall be sized to limit the retention time of gray water to a maximum of 72 hours.

C102.2 Disinfection.
Gray water shall be disinfected by an approved method that employs one or more disinfectants such as chlorine, iodine or ozone.

C102.3 Makeup water.
Potable water shall be supplied as a source of makeup water for the gray water system. The potable water supply shall be protected against backflow in accordance with Section 608. There shall be a full-open valve located on the makeup water supply line to the collection reservoir.

C102.4 Coloring.
The gray water shall be dyed blue or green with a food grade vegetable dye before such water is supplied to the fixtures.

C102.5 Materials.
Distribution piping shall conform to one of the standards listed in Table 605.4.

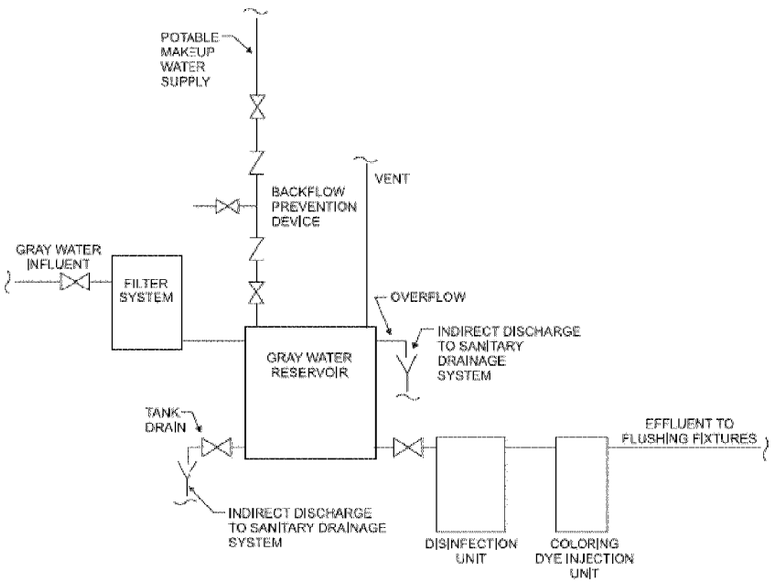
C102.6 Identification.
Distribution piping and reservoirs shall be identified as containing non-potable water. Piping identification shall be in accordance with Section 608.8.

Gray water piping and fittings shall be as required in this code for potable water piping and fittings. All reclaimed water pipe and fittings shall be continuously wrapped with purple-colored Mylar tape. The wrapping tape shall have a minimum nominal thickness of five ten-thousandths (0.0005) inch (0.127mm) and a minimum width of two (2) inches (51mm). Tape shall be fabricated of poly (vinyl chloride) with a synthetic rubber adhesive and a clear polypropylene protective coating or approved equal. The tape shall be purple (Pantone color #512) and shall be imprinted in nominal on-half (1/2) inch (12.7 mm) high, black uppercase letters, with the words

"CAUTION: GRAY WATER, DO NOT DRINK." The lettering shall be imprinted in two (2) parallel lines, such that after wrapping the pipe with a one-half (1/2) inch width overlap, one (1) full line of text shall be visible. Wrapping tape is not required for buried PVC pipe manufactured with purple color integral to the plastic and marked on opposite sides to read "CAUTION: GRAY WATER, DO NOT DRINK" in intervals not to exceed three (3) fee (914 mm).

All valves, except fixture supply control valves shall be equipped with a locking feature. All mechanical equipment that is appurtenant to the reclaimed water system shall be painted purple to match the Mylar wrapping tape.

FIGURE 2
GRAY WATER RECYCLING SYSTEM FOR FLUSHING WATER CLOSETS AND URINALS



SECTION C103 DELETE IN ITS ENTIRETY
SUBSURFACE LANDSCAPE IRRIGATION SYSTEMS

3. **ADDITION (SIZING OF WATER PIPING SYSTEM) Add Appendix E Sizing of Water Piping System, as written.**

AMENDMENTS TO THE 2006 INTERNATIONAL FUEL GAS CODE

1. **ADDITION (APPLIANCE LOCATION) Sec. 303.2 Hazardous locations, add new Sec. 303.2.1 LPG Appliances.** Liquified petroleum gas-burning appliances shall not be installed in a pit, basement (except walk-out basement) or similar location where heavier-than-air gas might collect. Appliances so fueled shall not be installed in an above-grade under-floor space or basement unless such location is provided with approved means for removal of unburned gas.

2. **DELETE Sec. 303.3 Prohibited locations. Exceptions 3. and 4.(Unvented room heaters)** Delete Sec.303.3 Exceptions 3. and 4. in their entirety.

3. **DELETE Sec. 501.8 Equipment not required to be vented. Exception 8.** Delete Sec. 501.8 Exception 8 in its entirety.

4. **DELETION AND SUBSTITUTION (LOG LIGHTERS) Sec. 603** Delete Sec. 603 in its entirety and replace with the following: Sec. 603. Log lighters are prohibited.

5. **DELETION AND SUBSTITUTION (UNVENTED ROOM HEATERS) Sec. 621** Delete Sec. 621 in its entirety and replace with the following: Sec. 621. Unvented Room Heaters. Installation of unvented room heaters and unvented log heaters is prohibited.

6. **DELETE EXCEPTION Sec. 410.3 Venting of regulators. Exception.** Delete the Exception for Sec. 410.3 in its entirety.

EXHIBIT "B"

DOUGLAS COUNTY, COLORADO WILDFIRE MITIGATION STANDARDS

Appendix Chapter 58

REGULATIONS GOVERNING DEVELOPMENT AND CONSTRUCTION IN WILDFIRE HAZARD AREAS

NOTE: New Appendix Chapter to the International Building Code

GENERAL

Sec. 5801 (a). Purpose. The provisions of this appendix chapter are intended to promote public safety and welfare by reducing the risk of fire-induced damages to property and the environment.

(b). Scope. This chapter applies to all property, buildings and structures located within wildfire hazard areas as determined by the Wildfire Overlay District Map and site-specific rating and analysis. Buildings or conditions in existence at the time of the adoption of this standard are allowed to have their use or occupancy continued, if such condition, use or occupancy was legal at the time of the adoption of this standard.

(c). Design and Construction. The design and construction of buildings and structures located within the boundaries of a Wildfire Hazard Area shall be in accordance with the standard set forth below.

Chapter 1 – Introduction

1-1 Scope. This standard presents minimum planning criteria for the protection of life and property from wildfire. It includes information on safe procedures and practices at the wildland/urban interface or intermix.

1-2 Purpose. The purpose of this standard is to provide criteria for fire agencies, land use planners, architects, developers, forestry consultants and local government for development in areas that may be threatened by wildfire.

1-3 Definitions. For the purpose of this standard, the following terms have the meanings shown below:

Access Routes. Principal vehicular ingress and egress to a structure or through a development, crossing more than one parcel, including public and private roads, streets and lanes, that extend to and intersect with a publicly maintained road, street, or lane.

Accessory Building or Structure. Any building or structure used incidentally to another building or structure and which is located on the same lot or parcel.

Aerial Fuels. Standing and supported live and dead combustibles not in direct contact with the ground and consisting mainly of foliage, twigs, branches, stems, cones, bark, and vines.

Approved. Acceptable to the "authority having jurisdiction."

Aspect. Direction towards which the slope faces.

Authority Having Jurisdiction. The "authority having jurisdiction" shall be the Building Official. When matters of joint interest are involved, the Building Official may request referral comments from other organizations, offices, or individuals.

Average Daily Traffic (ADT). The average daily volume of vehicles traveling on a given road.

Brush. Shrubs and scrub vegetation or other vegetative growth heavier than grass but not full tree size.

Building. Any structure used or intended for supporting any use or occupancy.

Classified Roof. A roof constructed with a roof covering that is listed as meeting the requirements for Class A, B, or C roof covering materials (see NFPA 256, Standard Methods of Fire Tests of Roof Coverings).

Combustible. Any material that, in the form in which it is used and under the condition anticipated will ignite and burn or will add appreciable heat to an ambient fire.

Defensible Space. An area either natural or man-made, where material capable of allowing a fire to spread unchecked has been treated, cleared or modified to slow the rate and intensity of an advancing wildfire and to create an area for fire suppression operations to occur.

Development. Human-made improvement of property.

Driveway. A vehicular access for private use that serves one lot or parcel connecting a house, garage, or other allowed use to the public or private road.

Dwelling Unit. Any building or structure, or portion thereof, that contains living facilities with provisions for sleeping, eating, cooking, and sanitation for not more than one family.

Fire Hydrant. A valved connection on a piped water supply system having one or more outlets and that is used to supply hose and fire department pumpers with water.

Fuel Break. An area, usually a long strip strategically located, wherein vegetative fuels are reduced in volume and maintained to cause a reduction of fire intensity if ignited by a wildland fire.

Fuel Loading. The volume of fuel in a given area, generally expressed in tons per acre.

Fuel Modification. The removal of fuels, increased spacing of individual plants or reduction of fuel loading.

Fuels. All combustible materials within the wildland/urban interface or wildland/urban intermix, including, but not limited to, vegetation and structures.

Ground Fuels. Any native or landscape vegetation not considered a tree and generally in contact with the ground, including, but not limited to, duff layer and loose surface litter.

Hammerhead-T. A roadway that provides a "T" shaped three-point turnaround for emergency equipment, being no narrower than the road it serves, with the top of the "T" being a minimum of ninety (90) feet long.

Listed. Equipment or materials included in a list published by an organization acceptable to the "authority having jurisdiction" and concerned with product evaluation, that maintains periodic inspection of production of listed equipment or materials and whose listing states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

Noncombustible. A material that, in the form in which it is used and under the conditions anticipated, will not aid combustion or add appreciable heat to an ambient fire.

Occupancy. The purpose for which a building, or part thereof, is used or intended to be used.

Roads, Streets, Private Lanes. Land intended primarily for vehicular traffic and providing the principal means of access to property, including a roadway, lane, drive, avenue, highway, boulevard, or any other thoroughfare other than a driveway as defined by this standard.

Roadway. Any surface improved, designed, or ordinarily used for vehicular travel other than a driveway as defined in this Standard.

Shoulder. Surface of the road adjacent to the traffic lane.

Slope. Upward or downward incline or slant, usually calculated as a percent of slope [rise or fall per one hundred (100) feet of horizontal distance].

Standard. This Appendix 58, Regulations Governing Development and Construction in Wildfire Hazard Areas.

Street or Road Signage. Any sign containing words, numbers, directions, or symbols that provides information to emergency responders and the general public.

Structure. That which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner.

Traffic Lane. That portion of a roadway that provides a single lane of vehicle travel in one direction.

Traveled Way. The portion of a roadway that provides for vehicular travel in all permitted directions.

Turnaround. A portion of a roadway or driveway unobstructed by parking, that allows for a safe reversal of direction for emergency equipment.

Turnouts. A widening in a roadway or driveway of sufficient length and width to allow vehicles to pass one another.

Wildland/Urban Interface. An area where development and wildland fuels meet at a welldefined boundary.

Wildland/Urban Intermix. An area where development and wildland fuels meet with no clearly defined boundary.

Wildfire. An unplanned and unwanted fire requiring suppression action; an uncontrolled fire, usually spreading through vegetative fuels but often threatening structures.

Chapter 2 - Wildland/Urban Interface and Wildland/Urban Intermix Analysis

2-1 General. The analysis of the wildland/urban interface or wildland/urban intermix will help identify and document local problem areas and guide the application of standards and establishment of priorities relative to fire danger.

2-2 Analysis Ratings. The authority having jurisdiction shall perform a wildland fire hazard analysis of all developments, existing or planned, to determine wildland fire protection ratings. The ratings developed under the authority of this section shall be the basis for the implementation of fire conscious design and construction criteria. The higher the relative value, the higher the wildland/urban interface or wildland/urban intermix hazard rating. Analysis ratings of sixteen (16) or higher shall be required to comply with the requirements of this Standard, as amended. Extreme hazard severity classifications shall be defined as medium size or heavy, large fuels in combination with slopes twenty-one percent (21%) or greater.

2-3 Analysis Components. The analysis shall contain the following components:

(a) Wildland/urban interface or wildland/urban intermix boundaries

(b) Slope hazard rating

(c) Structure hazard rating

(d) Additional factors rating

(e) Wildland/urban interface or wildland/urban intermix hazard rating

(f) Fuel Hazard Rating

2-3.1 Mapping Wildland/Urban Interface or Mapping Wildland/Urban Intermix Areas.
Areas shall be delineated as logical units or areas and given a name or number.

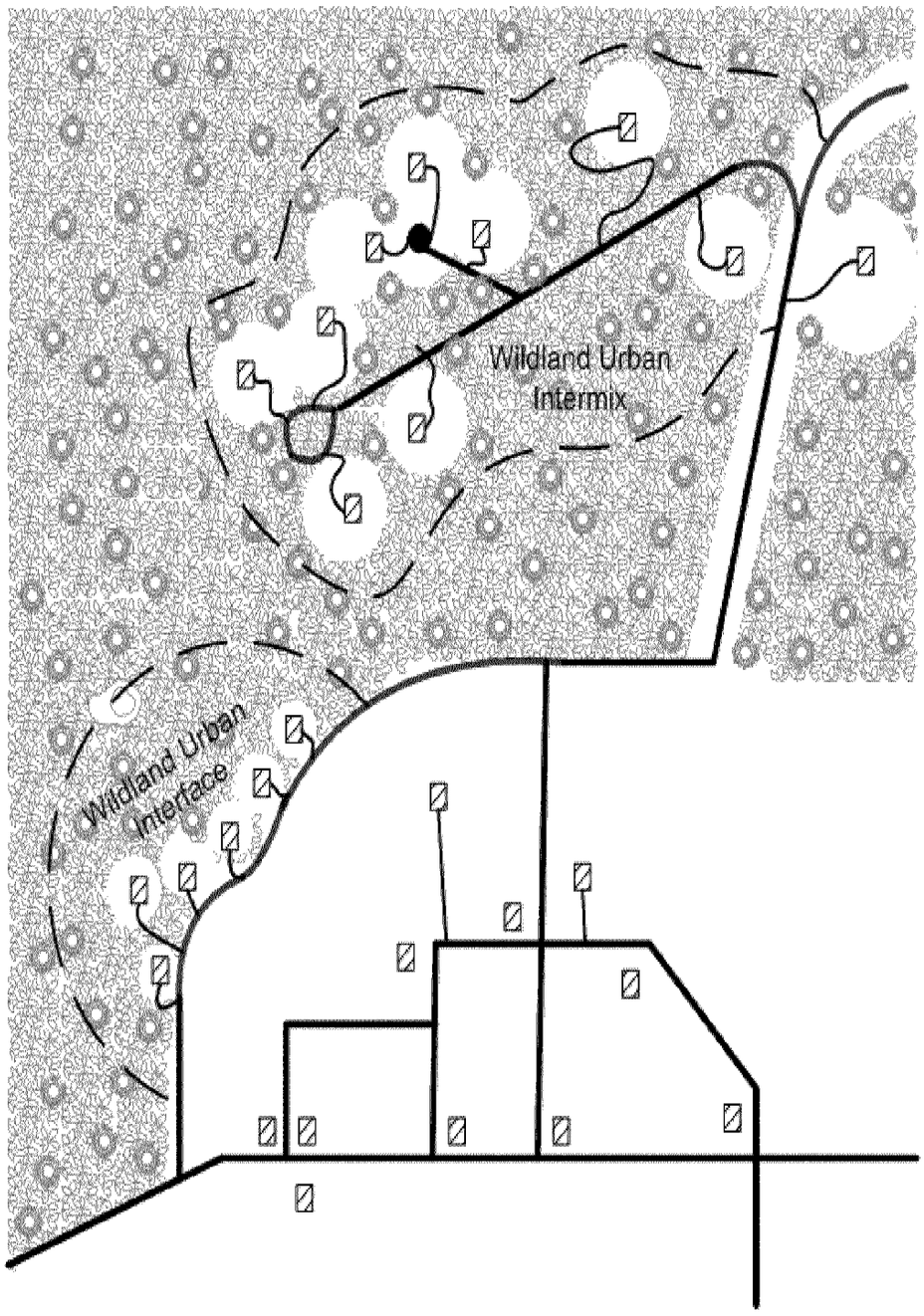


Figure 2-3.1 Wildland/urban interface and wildland/urban intermix

2-3.2 Assigning a Fuel Hazard Rating. For each area wildland/urban interface and wildland/urban intermix area, a fuel hazard rating shall be assigned based on Table 2-3.2.where fuel types vary within an area, the rating assigned for an area shall be that which best represents the fuel type.

Table 2-3.2 Fuel Hazard Rating

Type	Rating
Small, light fuels (grass, weeds, shrubs)	1
Medium size fuels (brush, large shrubs, small trees)	2
Heavy, large fuels (woodland, timber, heavy large brush)	3

2-3.3 Assigning a Slope Hazard Rating. For each wildland/urban interface and wildland/urban intermix area, a slope hazard rating shall be assigned based on Table 2-3.3. Where slopes vary within an area, the rating for the area shall be that which best represents the slope range.

Table 2-3.3 Slope Hazard Rating

Slope	Rating
Mild slopes (0-5%)	1
Moderate slopes (6-20%)	2
Steep slopes (21-40%)	3
Extreme slopes (41% and greater)	4

2-3.5 Assigning an Additional Factor Rating. Where other factors influence community needs and where determined to be appropriate by the authority having jurisdiction, an additional factor rating shall be assigned based on Table 2-3.5. Other factors shall be permitted to be considered in addition to those listed in the table include: water supplies, access, and fire behavior. NFPA 1141, Standard for Fire Protection in Planned Building Groups, and Appendix Chapter 59 of the International Building Code, as amended**,** Standard on Water Supplies for Rural Fire Fighting, shall be permitted to be utilized.

Table 2-3.5 Additional Factor Rating

Additional Factor	Rating
Areas having a history of fire occurrence higher than the surrounding area due to special situations such as lightning, railroads, escaped debris burning, arson, etc.	+3
Areas that are periodically exposed to unusually severe weather such as strong winds.	+2
Existing areas where fuel modifications or fuel breaks provide usable fire control points or protection to structures or wildland.	-3
Areas where local municipal type water services exist and are served by hydrants approved by a local fire protection district or fire department with an ISO (Insurance Service Organization) rating class of 1, 2, 3, 4, or 5.	-2
Areas where local municipal type water services exist and are served by hydrants approved by a local fire protection district or fire department with an ISO (Insurance Service Organization) rating of Class 6, 7, 8, or 9.	-1

2-3.6 Calculating the Wildland/Urban Interface or Wildland/Urban Intermix Hazard Rating. The wildland/urban interface or wildland/urban intermix hazard rating shall be calculated for each area by multiplying the fuel hazard rating by the slope hazard rating, adding the structure hazard rating to the subtotal, and then adding or subtracting the additional factor rating from the total.

2-4 Establishing Wildland/Urban Interface or Wildland/Urban Intermix Planning Priorities. The relative wildland/urban interface or wildland/urban intermix hazard of each area shall be rated from highest to lowest.

2-5 Review and Appeals. Reviews of the applicability of this standard for individual sites within a subdivision shall be requested in writing upon application for a building permit with reasons and justification for review. The Building Official shall review such request and provide approval, denial, or approval with conditions. Decisions may be appealed to the Douglas County Board of Appeals as provided for by International Building Code Sec. 112.

Chapter 3 - Fuel Modification Planning

3-1 General. This chapter will provide guidance in the mitigation measures associated with fuel hazards and special hazard conditions. Fuel modifications shall be the primary mitigation measure. New developments shall complete the hazardous fuel reduction and mitigation work outlined in the Douglas County approved forest management or wildfire mitigation plan submitted by the applicant, if required, prior to the issuance of building permits for habitable structures within the development. The Douglas County Wildfire Mitigation Specialist shall determine whether a wildfire mitigation or forest management plan is required based on current forest conditions.

3-2 Evaluation Factors. As prescribed in Chapter 2 of this Standard, a comprehensive assessment of the fuel hazard shall be made. Factors that shall be considered in the assessment and designated on maps include:

(a) Fuel-type identification

(b) Fuel loading (volume)

(c) Size of fuel bed (acres)

(d) Slope and aspect

3-2.1 Fuel-type Identification. All fuel, natural vegetation, as well as other flammable materials existing within the area shall be identified and rated as to its potential to increase the hazard. The ease of ignition and ability to assist in the spread of fire are important factors.

3-2.2 Fuel Loading. The volume of fuels, both presently existing and likely to be present under expected development, shall be estimated and included on maps.

3-2.3 Slope. Percent of slope and aspect shall be determined and indicated on maps.

3-2.4 Fuel Modification. The purpose of the fuel modification effort shall be to reduce the volume of vegetative fuel to protect structures from approaching wildfire as well as to reduce the potential for a structure fire from spreading to the wildland. The fuel modification shall be initially provided by the developer prior to building permit issuance for habitable structures, through the implementation of a Douglas County approved wildfire mitigation or forest management plan and shall be maintained by the property owner. Additional fuel modification may be required when buildings or structures are proposed through the building permit process to create defensible space management zones around buildings or structures.

3-2.5 Maintenance of Defensible Space.

Responsibility. Persons owning, leasing, controlling, operating or maintaining buildings or structures are responsible for maintenance of defensible space. Maintenance of the defensible space includes modifying or removing non-fire resistive vegetation and keeping leaves, needles and other dead vegetative material regularly removed from roofs of buildings and structures.

Trees. Prune tree branches extending to within ten (10) feet of any structure to maintain a minimum horizontal clearance of ten (10) feet. Prune tree branches within the defensible space to remove limbs located less than ten (10) feet above the ground surface adjacent to trees.

Prune portions of tree branches that extend within ten (10) feet of the outlet of a chimney to maintain a minimum horizontal clearance of ten (10) feet.

3-3 Defensible Space Management Zones.

Zone 1 is the area of maximum modification and treatment. It consists of a distance of fifteen (15) feet around the structure in which all flammable native vegetation is removed. This fifteen (15) feet is measured from the outside edge of the building or structure's eaves and any attached structures, such as decks.

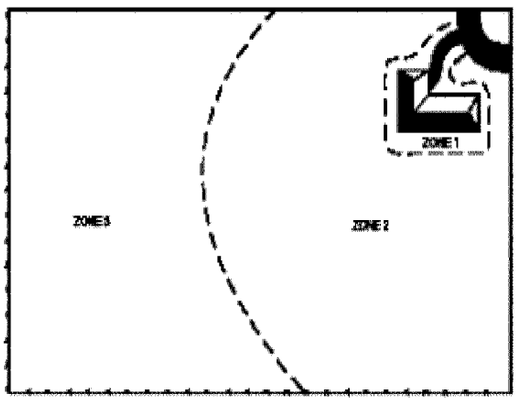


Figure 3-3(a): Forested property showing the three fire-defensible zones around a home or other structure.

Zone 2 is an area of fuel reduction. It is a transitional area between Zones 1 and 3. The size of Zone 2 depends on the slope of the ground where the structure is built. Typically, the defensible zone shall extend at least seventy (70) feet from the structure unless limited by property boundaries. See Figure 3-3(b) for the appropriate distance for defensible space. Within this zone, the continuity and arrangement of vegetation is modified. Remove stressed, diseased, dead or dying trees and shrubs. Thin and prune the remaining larger trees and shrubs. Extend thinning along either side of the driveway all the way to the main access road. These actions help eliminate the continuous fuel surrounding a structure while enhancing safety and the aesthetics of the property.

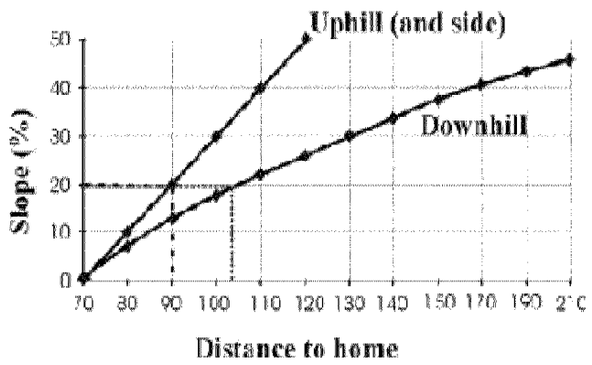


Figure 3-3(b): This chart indicates the minimum required dimensions for defensible zones from the structure to the outer edge of Zone 2. For example, if the structure is

situated on a twenty percent (20%) slope, the minimum defensible space dimensions would be ninety (90) feet uphill and to the sides of the home and one hundred four (104) feet downhill from the structure.

Zone 3 is an area of traditional forest management and is of no particular size. It extends from the edge of the defensible space zone to the property boundaries.

3-3.1 Modification of Fuel Types. Where consistent with ecological factors, less fire-prone vegetation shall be encouraged.

3-3.2 Reduction of Fuel Loading. Trees and brush shall be cleared away from structures for a distance that is in accordance with this section to prevent ignition of either the structure or the vegetation, should the other burn. Vegetation existing away from the immediate area of the structure shall be thinned and pruned to prevent a fire from being carried toward or away from the structure. Annual grasses shall be mowed to six (6) inches or less in accordance with Figure 6. Ground litter shall be removed annually. Over-mature; dead and dying trees shall be evaluated as to their potential to ignite and to carry fire. All trees determined to contain such potential shall be removed.

3-3.3 Mitigation of Slope and Aspect Impact. Slope and aspect greatly affect the potential for carrying fire, and very little opportunity exists to modify them directly. Where the degree of slope or aspect is determined to affect the hazards, greenbelts or fuel breaks shall be provided.

3-3.4 Building Envelope Siting. Building envelope siting shall comply with Chapter 3 of this Standard. If proper building envelope siting cannot be or is not met as required by Chapter 3, the Building Official, in his or her sole discretion, may approve alternative mitigation methods to include, but not be limited to, private fire protection systems, classified siding, Class "A" roofing, or triple pane windows.

Chapter 4 - Roads, Streets, and Ways

4-1 General. Roads, streets, and ways, whether public or private, shall provide for safe simultaneous access for emergency fire equipment and civilian evacuation. The authority having jurisdiction shall be permitted to allow modification of access requirements where the structures being protected are provided with private fire protection systems. When building envelope siting conflicts occur, the Building Official may consider proposed alternative mitigation methods at the time of plan review.

4-2 Roads, Streets, and Ways. Roads, streets, and ways shall provide for unobstructed traffic circulation during an emergency. Access to fuel breaks and greenbelts, where required by the authority having jurisdiction, shall be provided from roads, streets and ways. All vehicular access and gates servicing such access shall meet the specifications provided herein. All roads shall be designed and constructed according to the Douglas County Roadway Design and Construction Standards manual, as amended. Where requirements within this chapter conflict with the requirements of the Douglas County

Roadway Design and Construction Standards manual, as amended, the requirements of the Douglas County Roadway Design and Construction Standards manual, as amended, shall govern.

4-3 Private Roads, Streets and Ways, Fire Lanes, Parking Lots and Driveways. All fire lanes, private streets, parking lots and driveways shall be designed and constructed in accordance with this Standard, as amended herein, and the Douglas County Roadway Design and Construction Standards manual, as amended.

4-3.1 Development Standards for Private Roads.

(A) In addition to the Roadway Design and Construction Standards manual as amended, construction of private roads in wildfire hazard areas shall comply with the following criteria:

1. Douglas County Wildfire Mitigation Standards Chapter 4, and NFPA 1141.

2. Designs shall be stamped by a Colorado registered professional engineer.

3. Flood plain applicability as determined by the Douglas County Engineering Division.

4. All construction determined to be within a drainageway, and not a floodplain, shall conform to the Douglas County Storm Drainage Design and Technical Criteria manual as amended. If construction is proposed within a floodplain, a Floodplain Development Permit will be required. Design flow minimums shall reflect a ten (10) year storm event, armor for the one hundred (100) year event.

5. Road surface design shall comply with all applicable design standards. If gravel, an allweather driving surface (six (6) inch class six road base) will be used as a minimum. If paved, the pavement section shall conform to the Douglas County Roadway Design and Construction Standards manual, as amended.

6. Grading, Erosion and Sediment Control (GESC) permits shall be obtained from the Douglas County Engineering Division.

7. An access permit shall be obtained from Douglas County Engineering for private road access to a public road.

8. Vehicular access gates of the swinging type shall open inward and shall be set back a minimum of thirty (30) feet from the roadway, so as to permit entry without interfering with traffic on the primary roadway serving the gated vehicular access.

9. Vehicular access gates and monumental entries shall comply with Douglas County Building Division permit processes.

10. Douglas County Storm Drainage Design and Technical Criteria manual, as amended.
11. Alternate road standards may be proposed for private roads in accordance with the provisions set forth in the Douglas County Roadway Design and Construction Standards manual, as amended.

12. Other requirements may be deemed necessary by the Building Official.

(B) Certification and Acceptance of Private Roads, Streets, and Ways.

1. Sufficient guarantee must be given to the Engineering Division in the form of test reports, field reports, and as-built drawings in conformance with the requirements of the Douglas County Roadway Design and Construction Standards manual, as amended (including geo-technical data, road base thickness, sub-grade moisture content, density, and compaction reports). All submittals relating to the construction of private roads, streets, and ways shall be submitted to the Douglas County Engineering Division for review and acceptance, prior to release of building permits.

(C) Maintenance of Private Roads, Streets, Ways, and Fire Lanes shall comply with the following:

1. A special district, or homeowners' association, as defined by the Douglas County Zoning Resolution, shall be responsible for all road maintenance, including, but not limited to, emergency access and evacuation ways.

2. Appropriate fire district personnel shall have the authority to direct special districts, and homeowners' associations as to additional required maintenance, if deemed necessary, in addition to ongoing periodic maintenance.

3. All homeowners' associations shall be established and legally recorded with the Douglas County Clerk and Recorder, prior to submittals for building permits.

4-4 Specific Design Requirements.

4-4.1 Access Routes. All developments shall have more than one access route. The design of access routes shall consider traffic circulation and shall employ looped road networks. The requirement for two separate and distinct points of access shall be determined at the sole discretion of the Building Official, to permit independent use of either access. Entries divided by a median shall not satisfy the minimum requirement of two separate access points. Emergency access and/or evacuation routes may qualify as a second point of access.

4-4.2 Public Vehicular Easements and Rights-of-Way. All public road construction shall comply with the most current edition of the Douglas County Roadway Design and Construction Standards manual, as amended.

4-4.3 Road Surface. All roads and road structures shall be graded and surfaced and of sufficient design to support the weight of twenty (20) ton vehicles.

4-4.4 Width of Traveled Way. Simultaneous access for emergency vehicles and evacuation of residents shall be provided for by a traveled way of not less than twenty-four (24) feet. (see Figure 4-4.4)

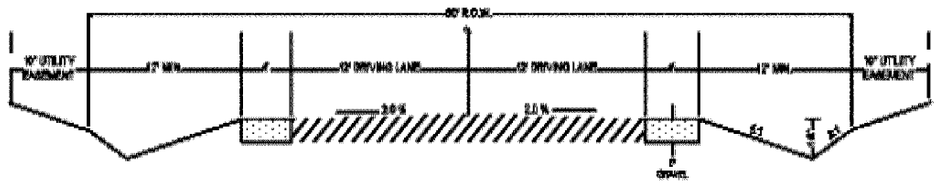


Figure 4-4.4

4-4.5 Maximum Grades. Grades shall be no greater than ten percent (10%), except the authority having jurisdiction shall be permitted to allow steeper grades where mitigation measures are approved by the Fire Chief and the County Engineer.

4-4.6 Minimum Grades. Roads shall have a minimum grade of not less than 0.5 percent in order to prevent pooling of water in the traveled way. Drainage shall be provided to protect a primary road where it intersects with a secondary road.

4-4.7 Curve Radius. No roads shall be constructed with a curvature radius of less than one hundred (100) feet, measured at the centerline.

4-4.8 Shoulders.

(a) Improved gravel shoulder width shall be a minimum of four (4) feet on each side of the traveled surface.

(b) On roads with an average daily traffic in excess of 1,000 cars per day, shoulders shall be constructed to the same specifications as the traveled way.

4-4.9 Parking. Where parking is to be allowed along the traveled way, at least nine (9) feet of improved width shall be provided. If curbs are not provided, the shoulder shall be constructed according to 4-4.8.

4-4.10 Dead-End Roads.

(a) Dead end roads (cul-de-sacs) may have a maximum length of 1,200 feet, or a maximum of forty (40) dwelling units (whichever is more restrictive). Dead-end roads longer than 600 feet, or with more than twenty-five (25) dwelling units, may require all units to be provided with automatic fire suppression systems in accordance with NFPA- 13D.

(b) All dead-end roads shall have a turnaround at the closed end of at least one hundred (100) feet in diameter, measured at the outside of the traveled way. However, the authority having jurisdiction shall be permitted to approve a hammerhead-T designed turnaround to provide emergency vehicles with 3-point turnaround capability.

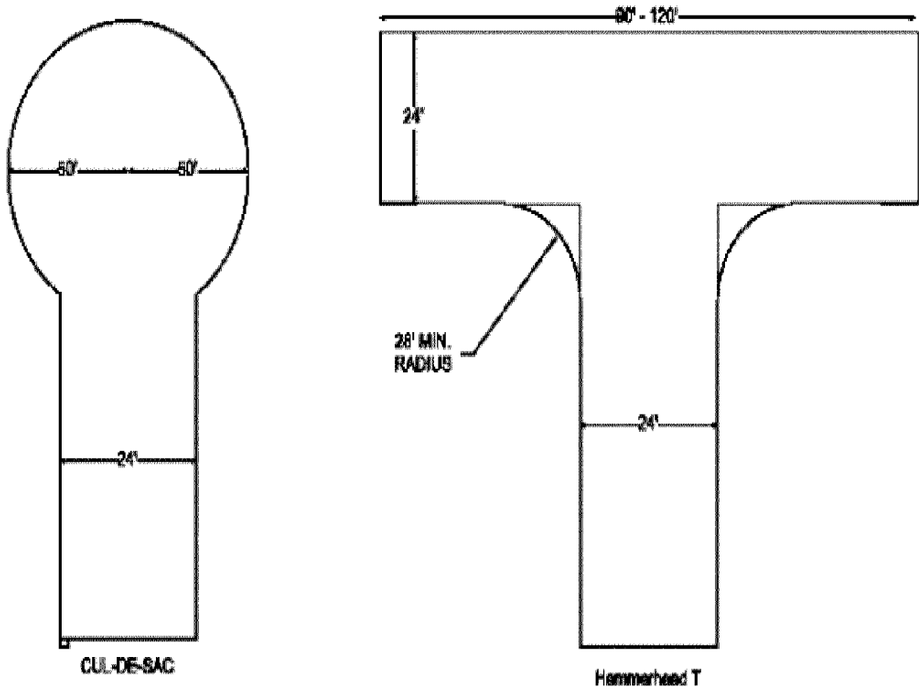


Figure 4-4.10 Cul-de-sac and Hammerhead-T turnarounds

4-4.11 Driveways.

(A) All driveways shall provide a minimum unobstructed all-weather driving surface width of twelve (12) feet and a minimum unobstructed vertical and horizontal clearance of fifteen (15) feet.

(B) No driveway shall be constructed with a curvature radius of less than thirty-six (36) feet, measured at the centerline of the driveway.

(C) Grades shall not be steeper than ten percent (10%), except that the building official shall be permitted to allow steeper grades where alternative mitigation measures have been submitted and approved by the building official.

(D) Driveways shall be maintained and shall have an all-weather driving surface to support the heaviest fire apparatus likely to be driven upon it. The driveway shall be accessible anytime of the year, day or night. For the purpose of this section, an all-weather driving surface shall be class six (6) road base or equivalent.

(E) A vehicular turnaround shall be provided at all building or structure sites when the driveway that provides access to the building or structure exceeds one hundred fifty (150) feet in developed length and shall be within fifty (50) feet of the building or structure.

4-4.12 Gated Entrances.

(a) The clear opening provided through the gate shall be two (2) feet wider than the traveled way and provide a minimum unobstructed vertical clearance of fifteen (15) feet.

(b) All gates shall be located at least thirty (30) feet from the public right-of-way or private road. Swinging gates shall open inward, allowing a vehicle to stop without obstructing traffic on the public or private road.

Gated vehicular entrances not shown on the submitted site plan, shall be subject to the following criteria:

1. Application for an individual permit for construction of the proposed gate, including construction plans and foundation or footing engineering, if applicable.

2. Electrical permit, if applicable.

3. Site plan submittal to Douglas County Planning and Zoning for review of easements, setbacks or other applicable criteria.

Chapter 5 - Standards for Signage of Streets, Roads, and Buildings

5-1 General. To facilitate the locating of a fire and to avoid delays in response, all roads, streets, and buildings shall be designated by names or numbers on signs clearly visible and legible from the roadway on which it is addressed.

5-2 Traffic Control Devices. All traffic control devices shall conform to the most recent version of the Federal Manual on Uniform Traffic Control Devices (MUTCD), the "Colorado Supplemental MUTCD", the Douglas County Roadway Design and Construction Standards manual, as amended, and the "Douglas County Signage and Striping Supplement". Additional specifications and illustrations are located in the Colorado Department of Transportation (CDOT) "M and S Standards".

5-3 Size of Numbers, Letters, and Symbols for Signs. All letters, numbers, and symbols shall be a minimum of four (4) inches in height, with a one-half (½) inch stroke, and shall be reflectorized and contrasting with the background color of the sign.

5-4 Signs Indicating Special Conditions. On other than through-traffic roads, signs identifying pertinent information shall be placed at the entrance to such roads.

5-5 Addresses for Buildings. All buildings shall be issued an address and street number by the authority having jurisdiction. Accessory structures may be required to have a separate address.

5-6 Size of Letters, Numbers, and Symbols. Letters, numbers, and symbols indicating addresses shall be a minimum of four (4) inches in height with a one-half (½) inch stroke, shall be contrasting with background color, and shall be visible from the road.

Chapter 6 - Emergency Water Supplies

Where, in any specific case, the amount of water storage for fire fighting is in conflict with International Fire Code, the requirements of IBC Appendix Chapter 59 shall govern.

6-1 General. This chapter describes the process by which provisions for emergency water supplies shall be evaluated, designed, constructed, and maintained.

6-2 Notification. The authority having jurisdiction shall be notified in writing before any water system is constructed, altered, or removed and before site development or construction of any structure commences so that fire protection can be evaluated and ample water supply capabilities pertinent to such construction can be established.

6-3 Evaluation of Water Supply Needs.

6-3.1 Authority. The fire protection agency having jurisdiction shall evaluate all buildings, proposed and existing, to obtain information required for computing minimum water supply. Information obtained from plans or on-site surveys and determinations made and recorded shall reflect the water supply category required. The computation of minimum water supplies for other than municipal, domestic, or fixed fire protection systems shall be in accordance with Appendix Chapter 59 of the International Building Code, as amended.

6-3.2 Design, Construction, and Maintenance. Based upon the water supply evaluation, the authority having jurisdiction shall approve the design, construction, and maintenance of water supplies and distribution systems to ensure that the fire protection concerns have been addressed and adequate water supplies and access thereto have been provided.

6-4 Minimum Water Supply Requirements. Water shall be available to provide a minimum fire flow of 250 gallons per minute for a two (2) hour duration in accordance with I.B.C. Appendix Chapter 59.

6-5 Static Water Supplies. The design and construction of and access to static water supplies shall be in accordance with Appendix Chapter 59, of the International Building Code, as amended.

6-6 Signage of Water Supplies. When required by the authority having jurisdiction, each fire hydrant or access to water shall be identified as follows:

(a) A reflectorized marker, with a minimum dimension of three (3) inches, shall be located on the driveway address sign signifying the hydrant location and on a fireretardant post located near the fire hydrant, and;

(b) A fire retardant reflectorized sign with the words "DRAFT WATER" or "PRESSURE WATER" having letters a minimum of four (4) inches in height, with one-half (½) inch stroke, reflectorized and contrasting to the background color, shall be located near the hydrant or access to water.

(c) The signpost shall be within three (3) feet of said fire hydrant or access to water, with the sign neither less than three (3) feet nor greater than five (5) feet above the ground and visible from the driveway.

Chapter 7 - Structural Design and Construction

7-1 General. All proposed buildings in the wildland/urban interface or the wildland/urban intermix having an analysis rating sixteen (16) or higher, as determined by Chapter 2, shall be designed and constructed to comply with the requirements of this Chapter and with this Standard. All buildings and structures located in the National Forest shall be required to comply with the requirements of this Chapter and with this Standard. Agricultural properties, not located in a subdivision, shall have the applicability of this Standard determined upon application for a building permit.

7-1.1 Minimum Requirements. Structures and developments in or adjacent to wildland fire hazard areas shall be located, designed, and constructed in a manner to minimize the possibility of ignition from a wildfire and to minimize the spread of a structural fire to the wildland.

7-2 Roofing. Only listed roof covering, tested and rated in accordance with NFPA 256, Standard Methods of Fire Tests of Roof Coverings; ASTM E 108, Standard Test Methods for Fire Tests of Roof Coverings; or equivalent, shall be used. Subdivision covenants, conditions, and restrictions shall not require the use of roof covering materials that do not meet this Standard.

7-2.1 Wood Shakes and Wood Shingles. Wood Shakes and Wood Shingles are prohibited within the boundaries of the Wildfire Hazard Overlay District.

7-2.2 Replacement or Repair of Roof Coverings. The roof covering on buildings or structures in existence prior to the adoption of this standard that are replaced or have twenty-five percent (25%) or more replaced in a twelve (12) month period shall be replaced with a roof covering required for new construction in accordance with Chapter 7 of this Standard.

7-3 Vents. Vents for attic and subfloor ventilation shall be screened with a corrosionresistant, noncombustible wire mesh with the mesh not to exceed nominal one-fourth (¼) inches in size.

7-4 Exterior Vertical Walls. Exterior vertical walls shall be constructed of at least one-half (½) inch nominal sheathing or equivalent material and shall extend from the top of the foundation to the roof line.

7-5 Chimneys and Flues.

7-5.1 Outlet Screen. Every chimney, flue, or vent shall be provided with an approved spark arrester consisting of twelve (12) gauge welded or woven wire mesh not exceeding one-half (½) inch.

7-5.2 Construction. Chimney or flue outlets shall be constructed with ten (10) foot clearance from all vegetation and obstructions.

7-6 Manufactured Homes. Manufactured homes shall meet all applicable construction and safety standards. Permanently located mobile and manufactured homes with an open space beneath shall be provided with full skirting constructed of noncombustible material or a fire resistive assembly having a minimum fire resistive rating of twenty (20) minutes.

7-6.1 Any enclosed space beneath the mobile or manufactured home shall be vented according to 7-3.

7-7 Location of LP Fuel Storage Tanks. Location of LP fuel storage tanks shall be in accordance with the International Fire Code.

Chapter 8 - Public Fire Prevention and Fire Safety Information and Education

8-1 Information and Education Plan. The authority having jurisdiction shall prepare a year-round fire prevention and fire safety public information/education plan. The plan, at a minimum, shall identify and analyze:

(a) Specific hazards

(b) Risks

(c) Fire causes

(d) Applicable prevention and safety programs

(e) Target audiences

(f) Activities

The plan shall utilize a variety of communication techniques to achieve desired objectives.

Chapter 9 - Referenced Publications

9-1 The following documents or portions thereof are referenced within this Standard and shall be considered part of the requirements of this document.

9-1.1 NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 1144, Standard for Reducing Structure Ignition Hazards from Wildland Fire, 2008 Edition.

NFPA 256, Standard Methods of Fire Tests of Roof Coverings, 2003 edition.

NFPA 1141, Standard for Fire Protection in Planned Building Groups, 2003 edition.

Appendix Chapter 59 of the International Building Code, as amended, Standard on Water Supplies Rural Fire Fighting.

9-1.2 International Code Council

International Wildland-Urban Interface Code 2006 edition

9-1.3 Colorado State Forest Service

Standard for Creating Defensible Zones No. 6.302.

Commentary on Defensible Space Zone Prescriptions

Descriptions

Zone 1

The size of Zone 1 is fifteen (15) feet, measured from the edges of the structure. Remove all native vegetation from Zone 1 to reduce fire hazards. If you do keep a tree, consider it part of the structure and extend the distance of the entire defensible space accordingly. Isolate the tree from any other surrounding trees. Prune it to at least ten (10) feet above the ground. Remove any branches that interfere with the roof or are within ten (10) feet of the chimney. Remove all "ladder fuels" from beneath the tree. Ladder fuels are vegetation with vertical continuity that allows fire to burn from ground level up into the branches and crowns of trees. Ladder fuels are potentially very hazardous but are easy to mitigate. No ladder fuels can be allowed under tree canopies. In all other areas, prune all branches of shrubs or trees up to a height of ten (10) feet above ground (or one-half (1/2) the height, whichever is the least).

Zone 2

Zone 2 is an area of fuel reduction designed to reduce the intensity of any fire approaching a building or structure. Follow these management steps.

Thin trees and large shrubs so there is at least ten (10) feet between crowns. Crown separation is measured from the furthest branch of one tree to the nearest branch on the next tree (Figure 3). On steep slopes, allow more space between tree crowns. (See Figure 4 for minimum required spacing for trees on steep slopes.) Remove all ladder fuels from under these remaining trees. Carefully prune trees to a height of at least ten (10) feet.

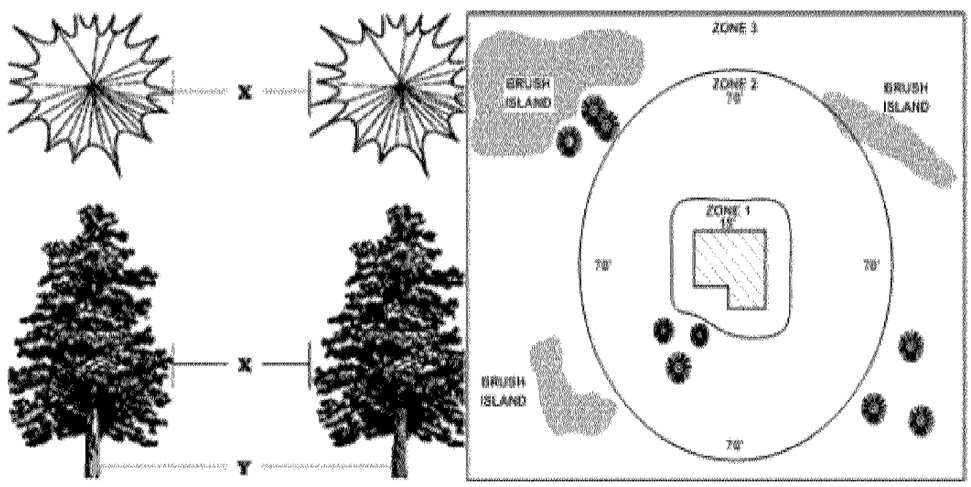


Figure 3: X = crown spacing; Y = stem spacing. Do not measure between stems for crown spacing, measure between the edges of tree crowns.

Small clumps of two (2) to three (3) trees may be occasionally left in Zone 2. Leave more space between the crowns of these clumps and surrounding trees.

Because Zone 2 forms an aesthetic buffer and provides a transition between zones, it is necessary to blend the requirements for Zones 1 and 3. Thin the portions of Zone 3 adjacent to Zone 2 more heavily than the outer portions.

Zone 3

This zone is of no specified size. It extends from the edge of the defensible space to the property lines.

Forest management in Zone 3 is an opportunity to increase the health and growth rate of the forest in this zone. Keep in mind that root competition for available moisture limits tree growth and ultimately the health of the forest.

A greater number of wildlife trees can remain in Zone 3. Make sure that dead trees pose no threat to power lines or vehicular access.

Mowing is not necessary in Zone 3.

Any approved method of slash treatment is acceptable for this zone, including chipping or lop-and-scatter.

Grasses

Keep dead, dry or curing grasses mowed to less than six (6) inches. Defensible space size where grass is the predominant fuel can be reduced. Use *Figure 6* when applying this practice.

Figure 4: Minimum tree crown and shrub clump spacing

% slope	Tree Crown Spacing	Brush and Shrub Clump Spacing
0 -10 %	10′	2 1/2 x shrub height
11 - 20%	15′	3 x shrub height
21 - 40%	20′	4 x shrub height
> 40%	30′	6 x shrub height

Figure 5: Minimum tree spacing for Zone 3.

Tree Diameter (in inches)	Average Stem Spacing Between Trees (in feet)
3	10
4	11
5	12
6	13
7	14
8	15
9	16
10	17
11	19
12	21
13	23
14	24
15	26
16	28
17	29
18	31
19	33
20	35
21	36
22	38
23	40
24	42

Figure 6: Minimum defensible space size for grass fuels.

% slope	D-space size (uphill, downhill, sidehill)
0 - 20 %	30 Feet
21 - 40%	50 Feet
> 40%	70 Feet

Exhibit "C"

Addition to the 2006 International Building Code
Appendix Chapter 59
Standard for Water Supplies for Rural Fire Fighting

THIS SECTION HAS BEEN REMOVED –
IT WILL BE PRESENTED TO THE BOARD OF COUNTY COMMISSIONERS AT A FUTURE DATE

Exhibit "D"

Addition to the 2006 International Residential Code

Appendix Chapter 60

Residential Driveway Permit Application

Procedures for Properties within the

Natural Landform Protection Area

Purpose:
The designation of the Natural Landform Protection Area ("Protection Area") for the purpose of reviewing residential driveway permit applications is intended to protect and conserve Douglas County's most scenic, visible, natural features, such as buttes, mesas and the foothills. The property included within the Protection Area is described on Attachment A, attached hereto and incorporated herein. Most of the property contained within the Protection Area is also contained within Class 3 Environmental Constraint areas, which consist of significant environmental and geologic hazards, such as unstable slopes, subsiding soils, expansive soils and rock slides. The Douglas County Comprehensive Master Plan, as amended, generally discourages development in these areas. The intent of these regulations is to minimize the visual and physical impacts that residential driveways and associated uses will have on the Protection Area, as well as surrounding areas.

Approval Criteria:
The following criteria shall be considered in the review of all applications for residential driveways within the Protection Area.

1. Class 3 Environmental Hazard areas or visually exposed portions of the applicant's property shall be avoided, to the maximum extent possible. If a Class 3 Environmental Hazard area or visually exposed portion of the applicant's property cannot be avoided, site and impact specific mitigation shall be required.

2. Natural contours shall be utilized to avoid unnecessary or excessive site disturbance, to the maximum extent possible, to minimize site disturbance, grading and use of retaining walls. As a result, longer driveways may be required. When required, retaining walls shall be constructed of materials that complement the background landscape.

3. Locations that will negatively impact sensitive view sheds shall be avoided, to the maximum extent possible.

Application Process:
Applications for residential driveway permits located within the Protection Area and subject to these regulations shall include the following:

- Driveway site plan showing the proposed location of the driveway;
- Geotechnical analysis performed by a professional geologist or geotechnical engineer;
- Vicinity map with a 2-mile radius around the site;
- Grading plan, which may include, but is not limited to:
    - Retainage information, including building materials and finishes, retaining wall elevations and photo simulations
    - Reclamation and screening plan
    - Cut/fill slopes and proposed grade;
- Cost estimate for driveway construction and reclamation; and
- Fiscal security

The application requirements referenced above will be reviewed by the Building Division, Engineering Division and/or the Planning Division (collectively referred to as "Divisions" and individually as "Division").

Review Process:
All application materials will be accepted by a designated contact person in the Building Division and distributed to the designated contact person from each Division. The Review Team, which shall make a determination with regard to the residential driveway permit application, shall consist of each designated contact person from the Divisions. The Review Team shall have twenty-one (21) days from the time the permit application is considered complete in the sole discretion of the Review Team, to review the residential driveway permit application and make its determination. The Building Division will provide the applicant, in writing, within seven (7) days from the receipt of a residential driveway permit application, a detailed list of application requirements. If a determination is not made by the Review Team within the twenty-one (21) day time frame, the application shall be deemed approved.

The Building Division shall issue a residential driveway permit upon approval of the application by the Review Team. If the Review Team denies the application, and the applicant requests to appeal the denial, then the applicant shall comply with the appeal procedures set forth in these regulations.

Exemption from Regulations:
A site visit shall be performed by the Review Team within seven (7) days from the receipt of a residential driveway permit application to assess the proposed driveway site. If the Review Team determines that the driveway location is not within a Class 3 Environmental Constraint area and not within a sensitive view shed, then such driveway is exempt from these regulations.

Inspections and Compliance:
If the Review Team determines that the driveway location is within a Class 3 Environmental Constraint area and within a sensitive view shed, the Building Division will provide the applicant, in writing, within seven (7) days from the receipt of a residential driveway permit application, a detailed list of application requirements to complete and submit in order to obtain a residential driveway permit.

Once the permit is issued and the construction of the residential driveway is completed, the permittee may request an inspection of the driveway. Within fourteen (14) days of such request, the Review Team shall perform a site visit to determine whether all requirements have been met. If all requirements have been met to the satisfaction of the Review Team, the fiscal security shall be released.

All of the requirements imposed by these regulations do not supersede and **are in addition to the existing regulatory requirements for residential access** as enforced by the Building Division. Please contact the Building Division for the typical driveway construction requirements at 303-660-7497.

Appeal Process:
An applicant may appeal a Review Team denial to the County Manager or his or her designee, in writing, within fifteen (15) days from the date of denial. At that time, the County Manager or his or her designee will review the application and the basis for the denial recommendation and will make a determination within fifteen (15) days from the receipt of the appeal request. If the County Manager or his or her designee upholds the decision of the Review Team, the denial of the application may be appealed to the Board of Appeals, in writing, and submitted to the

Building Division within fifteen (15) days of denial by the County Manager or his or her designee. The Building Division shall then schedule the appeal for a public meeting of the Board of Appeals. If the appeal is denied by the Board of Appeals, the submittal of a new application and processing fee shall be required in order to pursue a residential driveway permit.

Upon failure to appeal in accordance with these regulations, the denial becomes final. The submittal of a new application and processing fee shall be required in order to pursue a residential driveway permit.

Fiscal Security Requirements:

The amount of fiscal security will be based on the estimated cost of driveway construction and reclamation of the disturbed area. Douglas County accepts the following forms of fiscal security:

1. Cashier's check
2. Irrevocable letter of credit
3. Cash
4. Any other security arrangement acceptable to the County

If the applicant chooses to use an irrevocable letter of credit, an approved form will be provided upon request. All financial institutions shall be local, or provision shall be made for traveling expenses to the out-of-state financial institution. Non-certified funds must clear the financial institution prior to issuance of the residential driveway permit(s).

The conditions of each form of security shall allow for the security to be held by Douglas County for a minimum of one (1) year, allowing for the completion of the driveway. If the construction period takes longer than one (1) year, the permittee shall extend the security a minimum of fourteen (14) days prior to the expiration date. Failure to extend the fiscal security, for a minimum of six (6) months, prior to the fourteen (14) day deadline shall result in the County drawing upon the funds. If the construction period takes less than one (1) year and the Review Team determines that all requirements have been met, then the fiscal security shall be released at such time. If the Review Team determines that the driveway is substantially complete, the Review Team may release financial security in an amount that equals the value of the items complete based on project specific circumstances (i.e. inclement weather or project phasing).

*All days referenced within these regulations are calendar days.

Exhibit D, IRC Appendix Chapter 60, Attachment A

STATE_PARC	ACCTTYPE	PROPADD	PROPADD2	OWNERNAME	OWNERNAME2	Acres
222733000004	Exempt	11054 WATERTON RD	LITTLETON CO 80125	CITY & COUNTY OF DENVER		141.933
222734301001	Exempt		CO	RAVENNA METRO DISTRICT		113.406
235321000006	Agricultural	4416 MUSTANG CIR	SEDALIA CO 80135	KEVIN M DICKEY	ANN M DICKEY	36.032
235321000007	Agricultural	4477 MUSTANG CIR	SEDALIA CO 80135	WILLIAM BRADLEY ENSIGN & GINGER BOYES		35.113
235329004008	Exempt		CO 0000000	DOUGLAS COUNTY BOARD OF	COMMISSIONERS	47.995
235331100001	Agricultural	3485 N STATE HIGHWAY 67	SEDALIA CO 80135	R I HERITAGE INN OF OKLAHOMA CITY INC	ETAL	737.588
235332100001	Agricultural		CO 0000000	R I HERITAGE INN OF OKLAHOMA CITY INC	ETAL	296.683
235503103018	Exempt		CO	RAVENNA METRO DISTRICT		50.694
235503400002	Residential	7007 PUMA TRL	LITTLETON CO 80125	WILLIAM C SUMNER & BARBARA H SUMNER		39.945
235503400003	Residential	7001 PUMA TRL	LITTLETON CO 80125	RICHARD J LAWRENCE & POLLY P LAWRENCE		39.643
235514200003	HOA		CO 0000000	ROXBOROUGH PARK FOUNDATION		59.274
235523102030	HOA		CO 0000000	EAGLES NEST OWNERS ASSOCIATION INC		46.061
235525200001	Agricultural		CO 0000000	DAVID A GOODWIN TRUST &	NANCY O GOODWIN TRUST	70.156
250305000009	Residential	7225 BOX CANYON	SEDALIA CO 80135	LAUREN NYLUND		36.793
250305000024	Residential		CO 0000000	LOVE FAMILY TRUST		64.127
250305000036	Residential	2833 N STATE HIGHWAY 67	SEDALIA CO 80135	CARRIE H WILLIAMS UND 1/2 INT		246.880
250305000039	Agricultural	2835 N STATE HIGHWAY 67	SEDALIA CO 80135	RANDALL A WHIPPLE &	TAMBRA S WHIPPLE	35.290
250306000020	Agricultural		CO 0000000	THOMAS FAMILY LLC		37.018
250306000027	Agricultural		CO 0000000	FREDERICK W YOUNG	& MARY DOUGLAS YOUNG TRUST	34.619
250306000038	Residential	2595 N STATE HIGHWAY 67	SEDALIA CO 80135	PETER V DENISON & LISA DENISON		41.359
250306300033	Commercial	2539 N STATE HIGHWAY 67	SEDALIA CO 80135	@CONTACT LLC		50.334
250306300039	Commercial		CO 0000000	MAS STAVROPOULOS PROPERTIES LLC		64.700
250306400042	Agricultural	2770 N STATE HIGHWAY 67	SEDALIA CO 80135	DAVID L & CLARA W OCKEN		53.333
250307000002	Vacant Land	747 MADGE GULCH RD	SEDALIA CO 80135	GLEN P ROUSE &	PEGGY M WYKES	35.052
250307000037	Agricultural	2550 N STATE HIGHWAY 67	SEDALIA CO 80135	ROBERT A WIEDEMAN & BEVERLY J WIEDEMAN		45.552
250307000038	Agricultural	2550 N STATE HIGHWAY 67	SEDALIA CO 80135	ROBERT A WIEDEMAN & BEVERLY J WIEDEMAN		39.900
250307000040	Residential		CO 0000000	RUTH M SAMUELSON ETAL		164.764
250308000010	Vacant Land		CO 0000000	SCHMIDT CONSTRUCTION CO		164.253
250308100018	Agricultural		CO 0000000	DMI CAPITAL LLC		37.626
250308200006	Agricultural	1100 MADGE GULCH RD	SEDALIA CO 80135	GLEN P ROUSE & PEGGY M WYKES		42.953
250308200016	Agricultural	535 MADGE GULCH RD	SEDALIA CO 80135	CARL M HENDREN &	BRENDA L HENDREN	36.235
250309300001	Agricultural		CO 0000000	DMI CAPITAL LLC		711.228

250317000005	Vacant Land		CO 0000000	ELEANOR ANN VON BARGEN		43.721
250317000006	Vacant Land		CO 0000000	SCHMIDT CONSTRUCTION CO A TRADEMARK	FOR EDW C LVEY CO	164.286
250317000007	Residential	7549 JACKSON CREEK RD	SEDALIA CO 80135	WILLIAM J GREEN & KAREN L GREEN		42.843
250317000008	Vacant Land		CO 0000000	SCHMIDT CONSTRUCTION CO		118.255
250318000001	Agricultural		CO 0000000	CURTIS FAMILY PARTNERSHIP	C/O DAVID A CURTIS	543.489
250318000002	Agricultural		CO 0000000	CURTIS FAMILY PARTNERSHIP	C/O DAVID A CURTIS	42.484
250318000004	Vacant Land		CO 0000000	SCHMIDT CONSTRUCTION CO A TRADEMARK FOR	EDW C LVEY CO	74.750
250319000001	Agricultural	0	CO 0000000	SHAMBALLA ASHRAMA INC		91.332
250319000003	Residential	8775 JACKSON CREEK RD	SEDALIA CO 80135	MARK R WUERTHELE		39.341
250319000014	Agricultural	8771 JACKSON CREEK RD	SEDALIA CO 80135	JOHN H BAER & DIANE BAER		45.313
250319000015	Agricultural	8771 JACKSON CREEK RD	SEDALIA CO 80135	JOHN H BAER & DIANE BAER		173.544
250319000018	Agricultural	8773 JACKSON CREEK RD	SEDALIA CO 80135	JOHN H BAER & DIANE BAER		162.046
250319400020	Residential	8765 JACKSON CREEK RD	SEDALIA CO 80135	RAYMOND D CHILDERS & SANDRA M CHILDERS		39.911
250320000002	Agricultural		CO 0000000	SHAMBALLA ASHRAMA INC		82.244
250320000005	Agricultural	7250 JACKSON CREEK RD	SEDALIA CO 80135	CENTENNIAL LIMITED LIABILITY CO III		97.468
250320000006	Agricultural	7300 JACKSON CREEK RD	SEDALIA CO 80135	SARA L BERRY		47.597
250320300025	Agricultural	1945 HIDDEN VALLEY RD	SEDALIA CO 80135	SHAMBALLA ASHRAMA INC		519.831
250321000003	Agricultural	5680 JACKSON CREEK RD	SEDALIA CO 80135	CENTENNIAL LIMITED LIABILITY CO III		1,294.185
250329000002	Agricultural		CO 0000000	ADAM E ALCOTT & MAXINE CUTTS ALCOTT		88.733
250329000003	Agricultural	2602 HIDDEN VALLEY RD	SEDALIA CO 80135	ADAM ALCOTT &	MAXINE CUTTS ALCOTT	39.387
250329000006	Vacant Land	2700 HIDDEN VALLEY RD	SEDALIA CO 80135	JAMES W HAYWOOD & CHERYL L HAYWOOD		38.565
250330100004	Agricultural	1827 HIDDEN VALLEY RD	SEDALIA CO 80135	SHAMBALLA ASHRAMA INC		837.200
250331000001	Agricultural		CO 0000000	BROTHERHOOD OF THE WHITE TEMPLE INC		43.590
250331000002	Residential	9010 JACKSON CREEK RD	SEDALIA CO 80135	WILLIAM A OSTHOFF		40.933
250331000005	Residential	3749 HIDDEN VALLEY RD	SEDALIA CO 80135	JEANETTE S GILBERT TRUST		48.725
250331000007	Agricultural		CO 0000000	DONNA JEAN BARRETT REVOCABLE TRUST		39.351
250331000008	Vacant Land	3739 HIDDEN VALLEY RD	SEDALIA CO 80135	JOHN E MISSEL % MR & MRS SVIGEL JR		165.269
250331000010	Vacant Land	3755 HIDDEN VALLEY RD	SEDALIA CO 80135	GEORGE F ADAM		40.041
250331000011	Vacant Land		CO 0000000	GEORGE F ADAM JR		43.054
250331000014	Agricultural		CO 0000000	CHRISTOPHER PETERSON &	JACLYNN PETERSON	41.381
250331000015	Vacant Land	3731 HIDDEN VALLEY RD	SEDALIA CO 80135	DOUGLAS R KINGMAN		41.107
250331400001	Vacant Land	3725 HIDDEN VALLEY RD	SEDALIA CO 80135	MARY T LOTT		37.214

250332000015	Vacant Land	3371 HIDDEN VALLEY RD	SEDALIA CO 80135	DANIEL L BROTZMAN	DIANE M BROTZMAN	36.894
250332000029	Agricultural	3041 HIDDEN VALLEY RD	SEDALIA CO 80135	DARRIN S & LORI J EISELE		38.870
250332000030	Residential	3350 MAJESTIC MOUNTAIN RD	SEDALIA CO 80135	JOHN G HALLETT SR &	JUDITH A HALLETT	38.738
250332000033	Agricultural	3161 MAJESTIC MOUNTAIN RD	SEDALIA CO 80135	BROOKS FREEMAN & CHAD FREEMAN &	TRUDY FREEMAN & TANJA FREEMAN	47.051
250332000044	Agricultural		CO 0000000	ALAN S DAVIS & SUSAN P DAVIS		81.420
250332000048	Agricultural	3561 HIDDEN VALLEY RD	SEDALIA CO 80135	DARREN J EISELE &	LORI J EISELE	47.103
250333000003	Residential	3122 MAJESTIC MOUNTAIN RD	SEDALIA CO 80135	SCHAMEL TRUST DATED 06-05-2003		35.323
250333000006	Residential	3210 MAJESTIC MOUNTAIN RD	SEDALIA CO 80135	GARY M SHEPHERD JR		36.979
250334300001	Agricultural	7010 DAKAN RD	SEDALIA CO 80135	JOULE INC FKA JINX INC		1,009.736
260732000004	Vacant Land	10010 S COUNTY HIGHWAY 105	LARKSPUR CO 80118	VANCE JEFFREY NEUMANN	& ELIZABETH PACE NEUMANN	154.184
260733000010	Agricultural		CO 0000000	JOEL DEAN HARDING & CANDACE MARY HARDING		39.189
260905000004	Residential	4352 MAJESTIC MOUNTAIN LN	SEDALIA CO 80135	CAROL B RICH		36.740
260905000005	Agricultural	4504 MAJESTIC MOUNTAIN LN	SEDALIA CO 80135	DAKAN RANCH LLC		44.222
260909000006	Agricultural		CO 0000000	DAKAN RANCH LLC		1,226.255
260917100007	Agricultural		CO 0000000	WINDFIELD ENTERPRISES LLC		58.866
260917100008	Agricultural		CO 0000000	WINDFIELD ENTERPRISES LLC		91.272
260922301007	Residential		CO 0000000	TERRY MORGAN DRAPER		49.004
260928104001	Vacant Land		CO 0000000	MANNO LLC		85.677
260934000023	Residential		CO 0000000	HAYSTACK RANCH LLC		197.197
260935000024	Agricultural		CO 0000000	HAYSTACK RANCH LLC		125.683
260935000024	Agricultural		CO 0000000	HAYSTACK RANCH LLC		393.950
260935000025	Agricultural		CO 0000000	AR SANDSTONE LLC	C/O THE M3 COMPANIES	223.761
276901000001	Agricultural	3500 VALLEY PARK DR	LARKSPUR CO 80118	AR SANDSTONE LLC	C/O THE M3 COMPANIES	244.771
276901000002	Agricultural		CO 0000000	AR SANDSTONE LLC	C/O THE M3 COMPANIES	324.404
277107004035	Agricultural		CO 0000000	THE FERRIS F HAMILTON FAMILY TRUST		142.726
277107300001	Agricultural		CO 0000000	SARA HUMBERT &	DARREN HUMBERT	82.623
277107300002	Agricultural	2476 VALLEY PARK DR	LARKSPUR CO 80108	SARA HUMBERT &	DARREN HUMBERT	38.669
277118000002	Exempt	12163 S COUNTY HIGHWAY 105	LARKSPUR CO 80118	GRIFFITH CENTERS FOR CHILDREN	LARKSPUR ASSET MANAGEMENT LLC	91.572
277118000014	Residential		CO 0000000	ROBERT F PAGEL & SOOZEE PAGEL		69.133
277118000016	Agricultural	11737 S COUNTY HIGHWAY 105	LARKSPUR CO 80118	ERIC CHRISTOPHER GABEL &	NOAH GABEL	354.013

277118001001	Residential		CO 0000000	THE FERRIS F HAMILTON FAMILY TRUST		39.349
277119200001	Agricultural		CO 0000000	GODROMA COMPANY		43.726
277119200002	Agricultural		CO 0000000	GODROMA COMPANY		50.040
277119300001	Vacant Land	13633 SPRUCE CREEK CIR	LARKSPUR CO 80118	PETER J RAYMOND & DOROTHY G RAYMOND		43.521
277119300002	Residential	13939 FOREST LN	LARKSPUR CO 80118	ERNEST L EDGAR & JUDITH L PASSMAN		39.590
277128000053	Agricultural		CO 0000000	SPRUCE MOUNTAIN PROPERTIES LLC		78.228
277130000002	Residential	14535 FOREST LN	LARKSPUR CO 80118	JOHN D MANNING		35.301
277130000004	Agricultural		CO 0000000	SWANK FAMILY PROPERTIES LLC		38.533
277130000005	Agricultural		CO 0000000	SWANK FAMILY PROPERTIES LLC		79.174
277130100001	Vacant Land		CO 0000000	JOHN A DUNCAN & ILLONA M DUNCAN		36.582
277130100004	Vacant Land		CO 0000000	V MARK CHACON		35.940
277130100007	Vacant Land		CO 0000000	HEATHER FENNIMORE		107.653
277130200001	Agricultural	14119 FOREST LN	LARKSPUR CO 80118	CECIL I CRAFT &	MARTHA E JOHNSON	44.971
277130200002	Vacant Land		CO 0000000	CARL E SCHAEFER & PAULINE A SCHAEFER		37.234
277130200003	Agricultural		CO 0000000	CECIL I CRAFT &	MARTHA E JOHNSON	37.375
277130200004	Vacant Land		CO 0000000	ELVERA E WINN AS TRUSTEE OF THE	ELVERA WINN REVOCABLE TRUST	37.749
277130400002	Agricultural		CO 0000000	CHRISTOPHER S WILLIAMS	CAROL A WILLIAMS	71.114
277130400004	Vacant Land	15365 S COUNTY HIGHWAY 105	LARKSPUR CO 80118	LYNETTE KAY LUND BENSON	PETER MERRILL BENSON	211.319
277131000008	Agricultural		CO 0000000	SWANK FAMILY PROPERTIES LLC		38.332
277131000010	Agricultural		CO 0000000	SWANK FAMILY PROPERTIES LLC		39.632
277131000012	Agricultural		CO 0000000	SWANK FAMILY PROPERTIES LLC		38.718
277131000014	Agricultural		CO 0000000	SWANK FAMILY PROPERTIES LLC		150.815
277131000015	Agricultural		CO 0000000	SWANK FAMILY PROPERTIES LLC		74.072
277131000016	Agricultural		CO 0000000	SWANK FAMILY PROPERTIES LLC		39.594
277131000049	Agricultural		CO 0000000	SWANK FAMILY PROPERTIES LLC		189.835
277132000003	Agricultural	15027 S COUNTY HIGHWAY 105	LARKSPUR CO 80118	RUSSELL HIGGINSON & AMELIA HIGGINSON	TRUST 11-20-98 RUSSELL AND AMELIA HIGGIN	79.315
277132000027	Agricultural		CO 0000000	DUANE AHLERS & CAROL J AHLERS		36.128
277132200005	Residential		CO 0000000	BONNIE R FRANCELLA		38.908
277132200006	Residential	15365 S COUNTY HIGHWAY 105	LARKSPUR CO 80118	BONNIE R FRANCELLA		38.055
277132200007	Residential		CO 0000000	BONNIE R FRANCELLA		40.611
277315000050	Agricultural		CO 0000000	DORIS BELL MORFIT FAMILY	PARTNERSHIP LLP	198.219

277328000002	Residential	5462 BESTWOOD RD	LARKSPUR CO 80118	RICHARD L SHELLENBERGER	& RAEOLA S SHELLENBERGER	37.893
277328000003	Agricultural	5002 LORRAINE RD	LARKSPUR CO 80118	PATRICIA BERNARD HICKS		41.337
277328000006	Agricultural	5257 LORRAINE RD	LARKSPUR CO 80118	PATRICIA BERNARD HICKS		38.445

EXHIBIT "E"

Installation Standards

For

Potable Water Storage Tanks and Cisterns for Domestic Use

IS - 22 – 98

This standard shall govern the installation of potable water storage tanks and underground cisterns for domestic water use in dwellings. This standard includes both interior and exterior underground installations and establishes minimum standards for installation. Interior installations are recommended because they are more suitable for periodic inspection and maintenance by the homeowner.

This standard shall apply to all new dwellings and additions or alterations where bedrooms are being added. In cases where existing wells are being used, a well test must be performed to indicate the gallons per minute flow from the well.

301.1 Minimum Standards

301.1.1 Potable water above ground storage tanks and underground cisterns shall be of materials that are listed for potable use and approved by FDA Title 21, NSF, or AWWA. Steel and concrete tanks must be properly prepared and painted on the inside using an NSF epoxy paint. Additionally, underground steel tanks must be asphaltic coated or epoxy coated on the outside to retard rusting.

301.1.2 Concrete cisterns or vaults shall be of such design that there are no seams below the fill line of the tank or vault. Concrete cisterns or vaults shall be properly prepared and coated on the inside using an NSF approved epoxy paint.

301.1.3 All piping, fittings, and valves must meet the mandatory referenced standards included in Chapter 13 of the 2003 International Plumbing Code.

301.1.4 The minimum capacity of water storage required for a single family dwelling shall be based upon a formula using 80 gallons of water per day, per person. Homes served by wells producing less than .5 gallons per minute shall be sized for a minimum 5-day supply. Homes served by wells producing .5 gallons per minute and greater shall be sized for 3-day supply. The number of persons shall be based on a bedroom count assuming that the first bedroom will count for two people and additional bedrooms counting for one person (i.e. 3 bedroom house counts for 4 people and requires 960 gallons storage if gpm is .5 gpm or greater and 1600 gallons of storage if less than .5 gallons). The actual storage capacity of the pressure tank and the water heater may be taken into consideration for the total amount of water storage required.

301.1.5 Buried tanks shall be placed upon and completely surrounded with pea gravel or other manufacturer's approved material and shall not be less than 12 inches in thickness at any point.

301.1.6 All tanks shall be placed in a fashion to permit periodic maintenance, inspection, and repair. This shall include, but not be limited to:

1) Minimum 22 inches manway access into the cistern.

2) Vent piping to the atmosphere must be brass-screened mesh #24 and terminate not less than 36 inches above grade.

3) All connections of wet piping to the cistern shall be made with approved flexible couplings permitting independent movement of the tank due to seismic activity or shrink/swell movement of the soils.

301.1.7 Cisterns must be located at least 25 feet from buildings, 50 feet away from sewer lines or septic tanks, and at least 100 feet from sewage disposal field.

301.1.8 No structure or traffic path may be constructed over a buried tank system unless required and must be approved by the tank manufacturer.

301.2 All installations shall conform to applicable codes and regulations adopted by the jurisdiction and shall be reviewed for compliance and approved by the building official prior to commencement of work.

301.3 Water storage cisterns and associated piping shall not be used for bonding of the electrical system. An alternative method of bonding, compatible with the most current edition of the National Electrical Code shall be used.

301.4 All such systems and associated piping shall be cleaned and sanitized prior to being placed into service.

301.5 All storage vessels shall be new and have been used for no other purpose.

301.6 All systems shall be capable of being filled from an outside source.

301.7 All systems shall be tested for leaks by filling the system with water. No system shall be tested using air pressure (hydrostatic). The test shall incorporate the use of either the vent pipe or fill pipe as a water column with no increase or decrease of more than one inch in the water column over a 24-hour period.

302.1 Interior Water Storage

302.1.1 Interior spaces where water storage tanks are located shall be a conditioned space to prevent freezing. Tanks and piping shall be accessible for removal, replacement, inspection, and repair. Interior spaces where tanks are located shall be provided with a floor drain. Pumps, pressure vessels, controls, and associated equipment shall be listed by an approved testing agency and approved by the Building Official.

302.1.2 Tanks shall be securely mounted into position. Vertical, upright positioned tanks exceeding 5 feet in height shall be provided with at least two wall mounted supports, one at the top and one at the bottom of the tank.

303.1 Exterior Buried Cisterns

303.1.1 Exterior buried vessels shall be positioned at least one foot below frost line. The average frost line in Douglas County has been established at 36 inches. A minimum 22" diameter manway and extension with gasketed, bolted cover shall extend to 6 inches above grade for service and maintenance.

303.1.2 Penetrations of the cistern walls, connections or joints of any kind in any buried cistern for piping and manways shall incorporate the use of flanged, bolted connections.

Explanatory Notes.

Tanks and cisterns are an acceptable means of providing water to a residence where the water well may be a low producing well or in cases where wells have become non-producing. This should not be considered an alternative to being served by a water district or other reliable source of water.

Locating storage tanks within a conditioned space should be strongly considered to eliminate the need for frost protection. The system can be installed in a multiple tank configuration, which allows the owner or occupant the opportunity to clean and provide maintenance on one tank at a time without taking the entire potable water system out of service. Inside translucent polyethylene tank systems can be more easily monitored for visual volume and quality of the water that is being used. Any type of system will eventually accumulate silt particles in the bottom of the tank over a period of time. Exterior buried systems will be much more difficult to clean and maintain and likely will have a higher silt accumulation over a period of time when compared to inside installations

Water quality should be checked at regular intervals. Water should be tested for bacteria and other harmful waterborne agents. Bacteria or minerals can usually be removed or destroyed with proper treatment technology should such a situation be identified after testing.

Individuals may find that the minimum amount of water storage required by regulation is insufficient and may want to install a larger capacity storage tank. Consideration should also be taken into account that you may see a reduction in the quality of water that has been stored for too long a period of time.

Another issue that should be considered is pump protection for low producing wells. Well pumps can be wired into protective switches that shut off the pump when the pump is running free (i.e. not pumping water because there is no water to pump). Such a condition can shorten the life of a pump and replacement of a well pump usually involves pulling the pump, which can be expensive, even with a shallow well.

Exhibit "F"

TABLE 1-A (1997 UNIFORM BUILDING CODE)

TOTAL VALUATION	BUILDING PERMIT FEE
$1.00 to $500.00	$23.50
$501.00 to $2,000.00	$23.50 for the first $500.00 plus $3.05 for each additional $100.00, or fraction thereof, to and including $2,000,00
$2001.00 to $25,000.00	$69.25 for the first $2,000.00 plus $14.00 for each additional $1,000.00, or fraction thereof, to and including $25,000,00
$25,001.00 to $50,000.00	$391.25 for the first $25,000.00 plus $10.10 for each additional $1,000.00, or fraction thereof, to and including $50,000,00
$50,001.00 to $100,000.00	$643.75 for the first $50,000.00 plus $7.00 for each additional $1,000.00, or fraction thereof, to and including $100,000,00
$100,001.00 to $500,000.00	$993.75 for the first $100,000.00 plus $5.60 for each additional $1,000.00, or fraction thereof, to and including $500,000,00
$500,001.00 to $1,000,000.00	$3,233.75 for the first $500,000.00 plus $4.75 for each additional $1,000.00, or fraction thereof, to and including $1,000,000,00
$1,000,001.00 and up	$5,608.75 for the first $1,000,000.00 plus $3.65 (as adopted) for each additional $1,000.00, or fraction thereof

Other Inspections and Fees:

1 Inspections outside of normal business hours.....$47.00 per hour (A)
(minimum charge - two hours)

2. Reinspection fees assessed under provisions of Section 108.2 IBC or R108.2 IRC as amended.....$47.00 per hour (A)

3. Inspections for which no fee is specifically indicated.....$47.00 per hour (A)
(minimum charge - one-half hour)

4. Additional plan review required by changes, additions or revisions to plans.....$47.00 per hour (A)
(minimum charge - one-half hour)

5. For use of outside consultants for plan checking and inspections, or both.....Actual costs (B)

6. Investigation fees assessed under provisions of Section 108.2 IBC or R108.2 IRC as amended

(A) Or the total hourly cost to the jurisdiction, whichever is greatest. The cost shall include supervision, overhead, equipment, hourly wages and fringe benefits of the employees involved.

(B) Actual costs include administrative and overhead costs.

Exhibit "G"

Table R1A.1

DESC Permit Fee based on the following valuations:			
VALUE	$0 to $25.000	$25.00	
	$25.001 to $50,000	$35.00	
	$50,001 to $100,000	$50.00	
	$100,001 and over	$50.00	plus $32.00 per $100,000 of valuation or fraction thereof over $100,000.

DESC PLAN REVIEW FEE	65%	of DESC Permit Fee

VALUATION		PERMIT FEE	REVIEW FEE	TOTAL FEES
$0.00	$25,000.00	$25.00	$16.25	$41.25
$25,001.00	$50,000.00	$35.00	$22.75	$57.75
$50,001.00	$100,000.00	$50.00	$32.50	$82.50
$100,001.00	$200,000.00	$82.00	$53.30	$135.30
$200,001.00	$300,000.00	$114.00	$74.10	$188.10
$300,001.00	$400,000.00	$146.00	$94.90	$240.90
$400,001.00	$500,000.00	$178.00	$115.70	$293.70
$500,001.00	$600,000.00	$210.00	$136.50	$346.50
$600,001.00	$700,000.00	$242.00	$157.30	$399.30
$700,001.00	$800,000.00	$274.00	$178.10	$452.10
$800,001.00	$900,000.00	$306.00	$198.90	$504.90
$900,001.00	AND UP	$338.00	$219.70	$557.70