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October 10, 2025

City of Steamboat Springs
Fire Prevention and Public Works
137 10th Street
Steamboat Springs, CO 80477
Phone: (970)-871-8207, Fax: (970)-879-8851

RE: West Acres Ranch Subdivision
Engineering Standards and Fire Prevention Standards - Variance Request
Four Points Surveying and Engineering (FPSE)

Dear Public Works and Fire Prevention Department,

Four Points Surveying and Engineering (FPSE), DHM Design, and the property owners of the West Acres Ranch Subdivision are working collaboratively on a proposed land subdivision intended to provide both single-family and multi-family housing for the Steamboat Springs community. A primary design challenge is establishing safe and efficient access to the upper parcel while also providing two points of access in accordance with the *Steamboat Springs Fire Prevention Services Policy and Procedure Manual*, Section 1.2.

Purpose

FPSE, in collaboration with DHM Design and the property owners, respectfully submits this request for an engineering variance to allow roadway grades of up to **10% for a maximum of 500 linear feet** within the subdivision on two roadways and secondary access point separation less than the one-half required length. The West Acres Ranch Subdivision is designed to support community housing needs through a mix of single-family and multi-family residences. Due to the topography of the site, providing access to the upper parcel while meeting the City and Fire Department access requirements presents a unique design challenge. This variance request seeks to achieve compliance with intent—ensuring safety and accessibility—while accommodating the physical constraints of the site.

(Narrative): Where? There is no explanation on where this is being proposed specifically.

Applicable Standards

- 1. International Fire Code (IFC, 2021 Edition, Appendix D -**
 - Section D103.2: “Fire apparatus access roads shall not exceed 10 percent in grade.
 - Exceptions may be granted by the Fire Chief where apparatus can safely operate or when additional fire protection measures are provided.
- 2. NFPA 1 – Fire Code (2021 Edition)**
 - Requires access roads to support fire apparatus and remain accessible under all weather conditions.

(Narrative): So, are you requesting a variance for maximum grade and separation on two different locations? Unclear.

- o Maximum sustained grade generally aligns with the 10% limit set by IFC.
- 3. **NFPA 1901 – Standard for Automotive Fire Apparatus (2016 Edition)**
 - o Requires new apparatus to demonstrate starting capability on a 20% grade and maintain control on steep sustained grades.
 - o Confirms that modern apparatus can safely navigate steeper roadways, remain subject to IFC limitations.
- 4. **City of Steamboat Springs Table 4.1 – Conventional Road Standards**
 - o Local or Minor Collector – Maximum Grade: 7%
 - o Intersection Spacing (Minor Collector): 300 ft separation

(Narrative): This standard is not mentioned anywhere else in this letter. Please follow requirements for engineering variance requests. This will need to be provided via a separate variance application since it is a different/additional standard and each request shall only include one standard.

Discussion

The natural topography of the West Acres Ranch site makes strict adherence to the City roadway grade challenging. While the IFC allows up to 10% grades, this standard ensures vehicles can safely operate under typical conditions.

To balance safety, accessibility, and site preservation, FPSE and DHM Design propose:

- Allow roadway grades up to 10% for a maximum of 500 linear feet.
- Incorporate the following design and mitigation measures:
 - o Widen roadway sections in steeper areas to enhance maneuverability.

These strategies maintain compliance with the intent of City and NFPA standards while ensuring safe fire access and functional roadway design for the subdivision.

(Narrative): Be specific on which roadways/driveways.

Variance #1 – Maximum Road Grade

This variance pertains to the *City of Steamboat Springs Engineering Standards, Chapter 4 – Street Standards*, which limits roadway grades to 7%.

FPSE and the ownership team respectfully request approval to allow roadway grades up to 10% sustained for up to 500 linear feet where topographic conditions prevent lower grades. Should 10% not be suitable, requests consideration for grades of 8% or 9%.

Any roadway exceeding 7% will be:

- Straight, less than 500 feet in length.
- South-facing for improved snowmelt and safety,
- Designed to provide direct access to the upper plateau.

(Narrative): Show/describe specific locations where this is necessary as this is currently written as a generalization.

(Narrative): Be specific on which roadways/driveways.

Site-Specific Constraints

The upper parcel can only be accessed through steep terrain. Reducing grades below 10% would require excessive earthwork, increased vegetation removal, and significant disturbance to the natural landscape. The proposed alignment minimizes these impacts while maintaining safe vehicular access.

(Narrative): Show profiles with accurate length and grade.

Technical Reasoning and Supporting Analysis

- Practicality: A 10% grade represents the maximum safe and practical limit under IFC, balancing accessibility and constructability.
- Consistency: Comparable grades exist within Steamboat Springs (e.g., Laurel Lane, Ridge Road, Buckskin Drive, Broad Street, and 12th Street).
- Fire Analysis: Modern apparatus operated by Routt County agencies are capable of safely navigating grades of up to 10%. Supplemental measures further enhance safety.
- Alternatives Considered: Flatter grades via extended switchbacks were analyzed but would cause disproportionate site disturbance and reduce developable land.

(Narrative): Show proposed design on site plan.

Summary of Impacts

1. Safety: With widened lanes, negative impacts on fire or vehicular operations are limited.
2. Traffic Operations: The roadways will serve low-volume residential traffic with minimal operational impacts.
3. Environmental Preservation: Limiting steep grades to short sections minimizes grading and disturbance to existing vegetation and natural landform.

Conclusion

FPSE, DHM Design, and the property owners of West Acres Ranch Subdivision respectfully request approval of this variance to allow roadway grades up to 10% for a maximum of 500 linear feet, consistent with fire and engineering safety standards, while accommodating site constraints for development.

(Narrative): This should not be include in an Engineering Variance Request Letter as this is not an engineering standard. Please remove Variance #2 and consult Fire.

Variance #2 – Secondary Access Separation Standard and Request

This variance pertains to the *Steamboat Springs Fire Prevention Services Administrative Policy and Procedure Manual*, Section 1.2, which requires that where two access roads are provided, they shall be separated by a distance equal to not less than one-half the length of the maximum diagonal dimension of the property. FPSE and the ownership team request approval for a reduced separation equal to one-third of the maximum diagonal dimension due to site-specific constraints.

Site-Specific Constraints

Due to surrounding land uses and terrain, establishing a fully compliant secondary access is infeasible:

- North and Northeast: Adjacent to Steamboat Springs Municipal Airport; roadway construction is prohibited across runway areas.
- North Boundary: Defined by the Slate Creek drainage and canyon, making access impractical.
- West: Adjacent to the Glen Subdivision open space and residential lots.
- Northwest: Adjoins the Brown Ranch parcel owned by the Yampa Valley Housing Authority. Although discussions have occurred, no access easements or alignments can be reviewed until Brown Ranch is annexed and approved for development.
- South: The only feasible access corridor is along the Gloria Gossard Parkway, limited to 1,700 linear feet. Steep existing grades further restrict viable access points.

Technical Reasoning & Supporting Analysis

- Practicality: The steep terrain and unstable shale soils along Gloria Gossard Parkway limit access options. Planned stabilization and retaining measures will ensure the safety of the proposed westerly access.
- Consistency: Similar access conditions exist in developments such as Heritage Park and West Acres Trailer Park, where secondary access does not meet current spacing standards.
- Fire Analysis: The proposed access configuration provides two functional points of ingress and egress, supporting emergency response and evacuation capability.
- Alternatives Considered: Potential access connections through adjacent parcels were evaluated but found to be infeasible at this time.

(Narrative): Why? Please justify.

Summary of Impacts

- Safety: The proposed configuration maintains two points of access, improving emergency response capability despite reduced spacing.

Mitigation Measures

- Fire hydrant placement will meet or exceed Fire Department requirements to ensure adequate water supply and pressure coverage.

Conclusion

FPSE, DHM Design, and the property owners of the West Acres Ranch Subdivision respectfully request approval of the following variances:

1. Maximum Roadway Grade: Allow grades up to 10% for a maximum of 500 linear feet.
2. Secondary Access Separation: Allow reduced access spacing equal to one-third of the property's maximum diagonal dimension.

These requests represent a balanced approach that upholds fire safety intent, maintains emergency access, and supports responsible, feasible site development.

Sincerely;

Walter Magill, PE
Four Points Surveying and Engineering



10/29/2025

Digitally Signed by: Walter N. Magill, P.E.
Four Points Surveying and Engineering