

# TECHNICAL MEMORANDUM

**Subject:** Roadway Alignment Evaluation – Hillcamp Trail Extension (Plat Application SB25-0014)

**Prepared for:** City of Lone Tree Planning Division

**Prepared by:** JR Engineering - Kevin Rohrbough, PE

**Date:** November 20, 2025

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## 1. Purpose

This technical narrative supports the Hillcamp Trail roadway extension plat application by demonstrating how the selected roadway alignment has been thoroughly vetted and determined to be the least impactful option in accordance with the subdivision approval standards in **Sec. 17-5-20** and the purpose statements in **Sec. 17-1-20**, specifically:

- **Sec. 17-1-20(3):** Preservation and Conservation of Environmental Components
  - **Sec. 17-1-20(4):** Consideration of Natural Resource Characteristics
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## 2. Historical Context and Timeline

The following provides additional context for the selected alignment, this section summarizes the coordinated planning efforts between RRMD, the developer, and the City of Lone Tree that led to the establishment of the current roadway corridor. These efforts span multiple years and reflect a proactive approach to securing necessary rights and refining the alignment in accordance with City standards and long-term development goals.

### Key Timeline and Supporting Actions:

- **April–May 2017:**  
RRMD, in coordination with Merrick and the City's Public Works and Planning staff, developed and refined the preliminary alignment and typical section for the Cabela Drive – Hillcamp Trail extension. This included coordination with Century Communities, the developer of the Retreat.
- **2018:**  
RRMD secured Temporary Construction Easements and Drainage Easements from The Retreat at RidgeGate, LLC. These were recorded under Rec. Nos. 2018035185 and 2018045617, respectively. These easements were critical to allow for future construction and drainage infrastructure associated with the roadway extension.

- **2019:**  
Century Communities amended the RidgeGate Section 22, Filing No. 1 plat (Rec. No. 2019001939) to dedicate additional Right-of-Way (ROW) for the future Hillcamp Trail roadway extension. This amendment formalized the corridor needed for the extension and was recorded with the County.
  - RRMD, to provide transparency to the Retreat Residents, posted a large sign at the intersection of Viewside Drive and Cabela Drive that identified the future roadway extension and development.
- **2020:**  
As part of the West Open Space conveyance, RidgeGate Investments, Inc. (RGI), RRMD, and the City collaborated to transfer open space land to the City. Importantly, RGI retained a perpetual, non-exclusive, divisible, and assignable easement (Rec. No. 2020069125) over the conveyed property to preserve the right to construct and maintain roadways and utilities necessary to serve the RR-zoned residential property east of I-25. This easement was based on the previously coordinated preliminary alignment and anticipated utility extensions.

These milestones demonstrate that the current alignment reflects years of coordinated planning and proactive action. The necessary easements and ROW were secured to ensure the future extension of Cabela Drive could occur in a manner consistent with City standards and long-term development goals.

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### 3. Alignment Alternatives Considered

The Hillcamp Trail Alternatives Exhibit illustrates multiple alignments:

#### **Hillcamp Trail Roadway Alignments Exhibit Sheet 1 of 2:**

- **Green Line (Current Alignment):** Final proposed alignment that meets all City and fire access criteria. Refinements to the Blue Line were made through the detailed engineering process.
- **Blue Line (2017 Merrick Alignment):** Original preliminary alignment designed by Merrick & Company as part of the Retreat subdivision planning.

#### **Roadway Access Alternatives Exhibit Sheet 2 of 2:**

- **Green Line (Alternative 1):** The current alignment as proposed to access the development.
- **Magenta Line (Alternative 2):** A ranch road alignment recommended by the Retreat HOA.
- **Light Pink (Alternative 3):** Alternative alignment further east.

- **Light Blue Line (Alternative 4):** Evaluates a T-intersection with Cabela Drive and a roadway to access the northeast corner of the Site.
- **Dark Blue Line (Alternative 5):** Evaluates a connection from the north from behind the Cabela's commercial area.
- **Orange Line (Alternative 6):** Surrey Ridge alignment identified in the RidgeGate PD District, 7th Amendment.
- **Red Line (Alternative 7):** Surrey Ridge alignment evaluated to meet City and Fire Department roadway slope criteria.

All access points shown in the RidgeGate PDD were analyzed in greater detail, including one from the Retreat and one from Surrey Drive. The PDD document notes that **Major Circulation Elements are conceptual in nature and subject to modification and refinement.**

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## 4. Evaluation of Alternatives

### Alternative Alignment 1 – Current Alignment (Green Line)

Roadway Length = 4,077 Linear Feet, Roadway Slope = 6.0%

- Meets all City and Fire Department access criteria.
- Most direct and accessible route for emergency services to access the Site. Emergency Services including South Metro Fire Station 34, located at Yosemite and Park Meadows Drive, and South Metro Fire Station 44 located at Lincoln and Peoria will have direct access to the Site without utilizing the single-lane underpass.
- Direct access to the Sky Ridge Medical Center for emergency services.
- Provides the length needed for City standard roadway slopes to access the top of the Site.
- Refined through on-site staking of roadway alignment and field visits, allowing the design team to shift the route to the south, further away from the Retreat subdivision.
- Alignment creates a natural berm at the northern end of the alignment, which will screen a portion of the roadway from Retreat residents closest to the roadway.
- Enhanced retaining wall materials, Rosetta Stone which is similar to those used at the Cabela's Shopping Center, will be utilized to assist with blending the retaining walls appearance into the natural environment.
- Landscape screening is utilized where the road emerges from the berm to further buffer views from Retreat residents. The roadway at this location is located approximately 50-feet above the Retreat homes further reducing the sound and visual impacts.
- 3D Modeling of the roadway confirms the berming and landscape buffering will accomplish a screening of the roadway to the existing Retreat residents.

- The alignment was carefully modified to avoid dense scrub oak stands and minimize impact to the existing natural drainageway, resulting in a route that balances constructability with environmental sensitivity.
- Grading impacts are shown with green shading and a green outline and were minimized through a detailed iterative design.
- Geotechnical Studies, including borings, have been completed along the alignment. The studies are utilized to ensure the long-term stability of the roadway. An additional Slope Stability Analysis was completed by the Geotechnical Engineer utilizing the final grading plan. A Geotechnical Engineer will be on-site to monitor activities during construction.
- Strategic retaining walls were added to tie into existing grades and reduce disturbance to the natural vegetation.
- The alignment leverages existing infrastructure, connecting to the commercial area and providing future residents with direct access to the RidgeGate community and I-25. This route avoids routing through the I-25 underpass, which is a one-lane, signalized access point.

### **Merrick Alignment (Blue Line)**

Roadway Length = 4,245 Linear Feet, Roadway Slope = 6.0%

- Alignment was part of the original corridor studied during early planning phases.
- The Merrick alignment was a condition of approval for the Retreat subdivision, intended to provide a preliminary future design and was supported by signage and notification to residents.
- Right-of-way for the alignment was accounted for in the platting of the Retreat.
- At final design, the green alignment refines the preliminary Merrick alignment, making key adjustments to improve environmental performance and community compatibility.
- The blue alignment did not meet current City criteria for horizontal roadway curvature. The green alignment blends elements of traffic calming, reduces impacts to the natural vegetation, and increased separation from the Retreat residences.

### **Alternative Alignment 2 – Retreat HOA Alignment (Magenta Line)**

Roadway Length = 1,708 Linear Feet, Roadway Slope = 8.0%

- Follows an old ranch access road that historically provided steep access to the flat grazing land at the top of the hill.
- Evaluated using the same City and Fire Department criteria as other alternatives.
- Roadway does not have the adequate length to reach the top of the hill and is too steep to meet grade requirements.
- Requires extensive cut and removal of significant scrub oak habitat.
- Environmentally and technically infeasible, and did not rise to the top in comparative analysis.

- Alignment visible by the residences at the Retreat, including potential headlights and tail lights seen by traveling vehicles up and down the roadway.

### **Alternative Alignment 3 (Purple Line)**

Roadway Length = 1,179 Linear Feet, Roadway Slope = 11.9%

- Evaluates a T-intersection with Cabela Drive with an access to the northeastern corner.
- Roadway does not have the adequate length to reach the top of the hill and is too steep to meet grade requirements.
- Evaluated using the same City and Fire Department criteria as other alternatives.
- Requires extensive cut and removal of significant scrub oak habitat.
- Environmentally and technically infeasible.

### **Alternative Alignment 4 (Light Blue Line)**

Roadway Length = 1,240 Linear Feet, Roadway Slope = 12.6%

- Evaluates a T-intersection with Cabela Drive with an access to the northeastern corner.
- Roadway does not have the adequate length to reach the top of the hill and is too steep to meet grade requirements.
- Evaluated using the same City and Fire Department criteria as other alternatives.
- Requires extensive cut and removal of significant scrub oak habitat.
- Environmentally and technically infeasible.

### **Alternative Alignment 5 (Dark Blue Line)**

Roadway Length = 1,805 Linear Feet, Roadway Slope = 8.9%

- Evaluates access from the Cabela Shopping Center.
- The route does not connect to a public right-of-way, and goes across numerous private driveways within the shopping center.
- RRMD nor the City control the access along this route, and it is on adjacent private property.
- These private drives are not designed or constructed to accommodate the Hillcamp traffic.
- Untypical for residential development to utilize the rear of a shopping center for access into the Site when feasible and planned alternatives exist.
- Roadway does not have the adequate length to reach the top of the hill and is too steep to meet grade requirements.
- Evaluated using the same City and Fire Department criteria as other alternatives.
- Requires extensive cut and removal of significant scrub oak habitat.
- Non-public right-of-way access, environmental, and technically infeasible.

### **Alternative Alignment 6 – Surrey Ridge Alignment (Orange Line)**

Roadway Length = 1,786 Linear Feet, Roadway Slope = 9.8%

- Identified in the RidgeGate PD District, 7th Amendment.
- Avoided to preserve wildlife access to Happy Canyon Creek and the regional underpasses.
- Surrey Ridge Road is an existing local road with substandard roadway design criteria and access directly into the Surrey Ridge neighborhood to the south, and uses the one-way underpass with access going north.
- Wildlife reports indicate greater movement to the east, toward Happy Canyon Creek, rather than north toward existing development.
- Roadway does not have the adequate length to reach the top of the hill and is too steep to meet grade requirements.
- Evaluated using the same City and Fire Department criteria as other alternatives.
- Requires extensive cut to reach the top of the hill.
- Significant visual impact to the "bluffs-cliffs" from Interstate 25.
- Environmentally and technically infeasible.
- Choosing the Current Alignment (green) results in less impact to wildlife, as it connects to areas already developed.
- The eastern hillside can be reserved for minimal-impact trails and passive open space, supporting the East-West Trail and its connection to the regional HCC trail system.
- Provides significant emergency access concerns with connection to rural local roadway section to the south and single lane underpass to the north.

### **Alternative Alignment 7 – Surrey Ridge Alignment (Red Line)**

Roadway Length = 3,717 Linear Feet, Roadway Slope = 4.7%

- Identified in the RidgeGate PD District, 7th Amendment.
- Difficult and indirect access for emergency vehicles to access the Site. Emergency vehicles will be required to utilize single-lane underpass to access the Site.
- Avoided to preserve wildlife access to Happy Canyon Creek and the regional underpasses.
- Surrey Ridge Road is an existing local road with substandard roadway design criteria and access directly into the Surrey Ridge neighborhood to the south, and uses the one-way underpass with access going north.
- Wildlife reports indicate greater movement to the east, toward Happy Canyon Creek, rather than north toward existing development.
- Roadway will have significant environmental and visual impacts to the "bluffs-cliffs" from Interstate 25.
- Evaluated using the same City and Fire Department criteria as other alternatives.
- Requires extensive cut and removal of significant scrub oak habitat.
- Environmentally infeasible.
- The eastern hillside can be reserved for minimal-impact trails and passive open space, supporting the East-West Trail and its connection to the regional HCC trail system.

- Provides significant emergency access concerns with connection to rural local roadway section to the south and single lane underpass to the north.

## Summary Table

|             | Roadway Length (LF) | Maximum Roadway Grade | Meets Emergency Access Only Criteria | Meets Emergency Access Only Criteria |
|-------------|---------------------|-----------------------|--------------------------------------|--------------------------------------|
| Alternate 1 | 4,077               | 6.0%                  | Yes                                  | Yes                                  |
| Alternate 2 | 1,708               | 8.0%                  | No                                   | Yes                                  |
| Alternate 3 | 1,179               | 11.9%                 | No                                   | No                                   |
| Alternate 4 | 1,240               | 12.6%                 | No                                   | No                                   |
| Alternate 5 | 1,805               | 8.9%                  | No                                   | Yes                                  |
| Alternate 6 | 1,786               | 9.8%                  | No                                   | Yes                                  |
| Alternate 7 | 3,717               | 4.7%                  | Yes                                  | Yes                                  |

## 5. Conclusion

The selected green alignment has been thoroughly vetted through engineering analysis, environmental review, and community engagement. Using an **Avoid, Minimize, and Mitigate** design model, the team:

- **Avoided** sensitive areas by shifting the alignment away from the drainage draw and dense vegetation.
- **Minimized** disturbance through field staking, strategic retaining walls, and alignment refinements.
- **Mitigated** visual impacts by creating a natural berm and adding native landscaping and trees to buffer views from Retreat residents.

This alignment:

- Is the culmination of a multi-year planning effort with the City and the developer of the Retreat subdivision.
- Meets the City and Fire Department's standards and criteria.

- Provides the length needed for roadway slopes to access the top of the Site within City and Fire Department Criteria.
- Avoids significant grading cuts Preserves wildlife access and natural drainage features.
- Provides direct connectivity to existing development and the RidgeGate community.
- Enhances community integration by aligning the roadway with existing RidgeGate development and Community to the north.
- Avoids routing through the constrained I-25 underpass and the Surrey Ridge neighborhood.
- Reduces visual impacts through berming, enhanced landscaping, and planned screening.
- Enhanced retaining wall materials, Rosetta Stone which is similar to those used at the Cabela's Shopping Center, will be utilized to assist with blending the retaining walls appearance into the natural environment.
- Responds to community concerns with visual modeling and mitigation strategies.
- Is the least environmentally impactful of the alignments that meet City and Fire Department criteria.
- Supports future trail connectivity and open space preservation on the east side.
- Significant Soils Studies including a detailed Slope Stability Analysis reports have been prepared by the Geotechnical engineering to ensure the long-term stability of the roadway.
- Provides a safer and more accessible emergency access route for future residents.

This alignment best satisfies the intent of the subdivision code and supports the City's goals for responsible, connected, and environmentally sensitive development.

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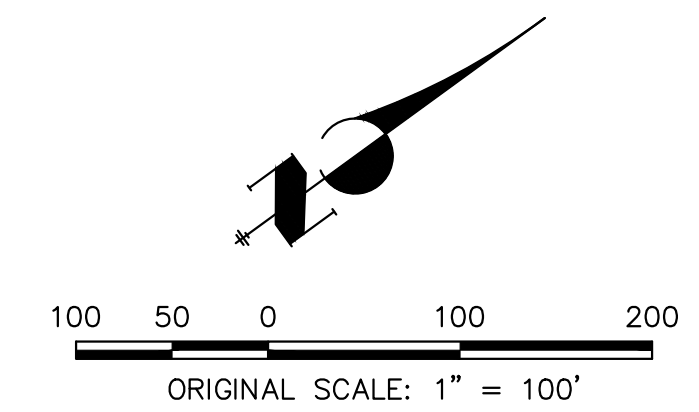
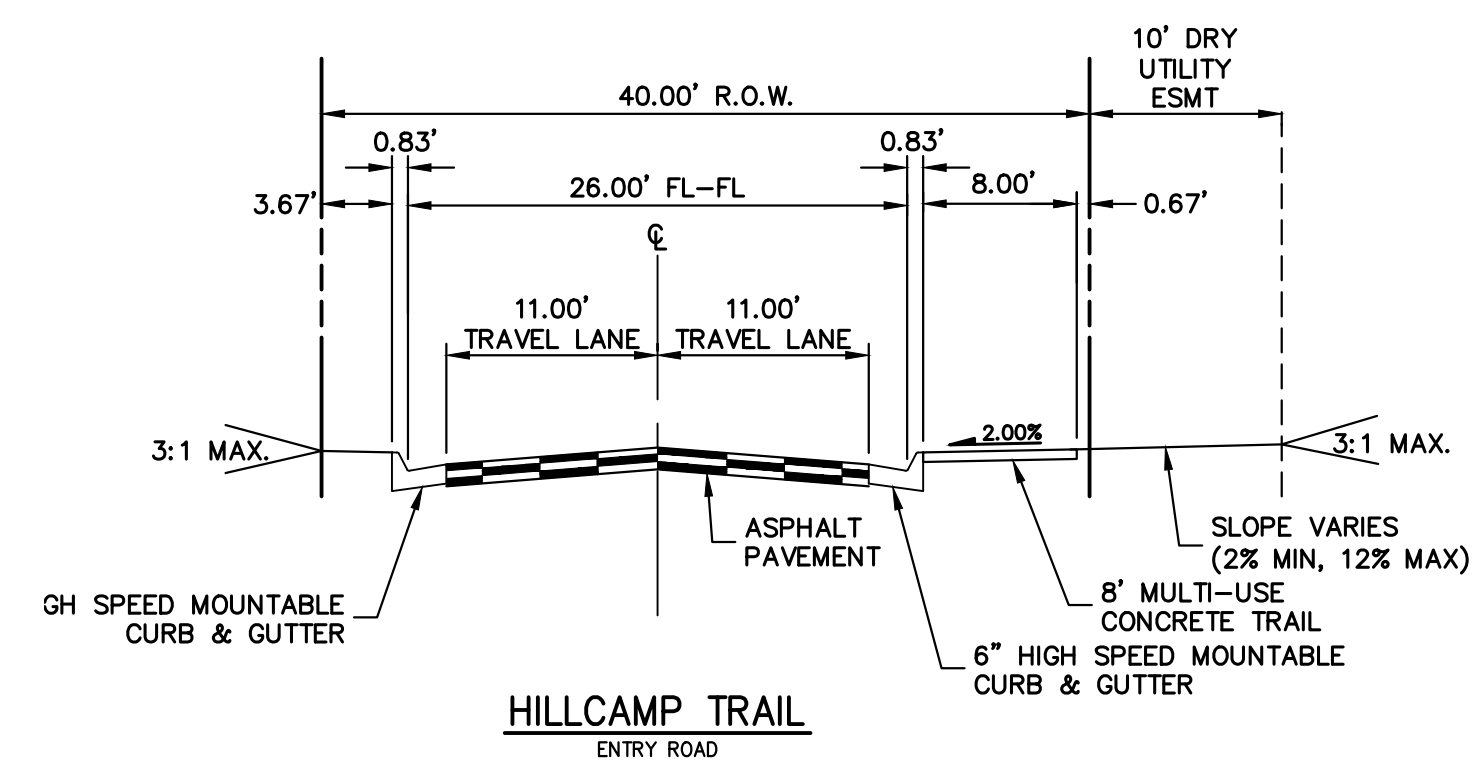
Attachments:

Hillcamp Trail Alternatives Exhibits



### LEGEND

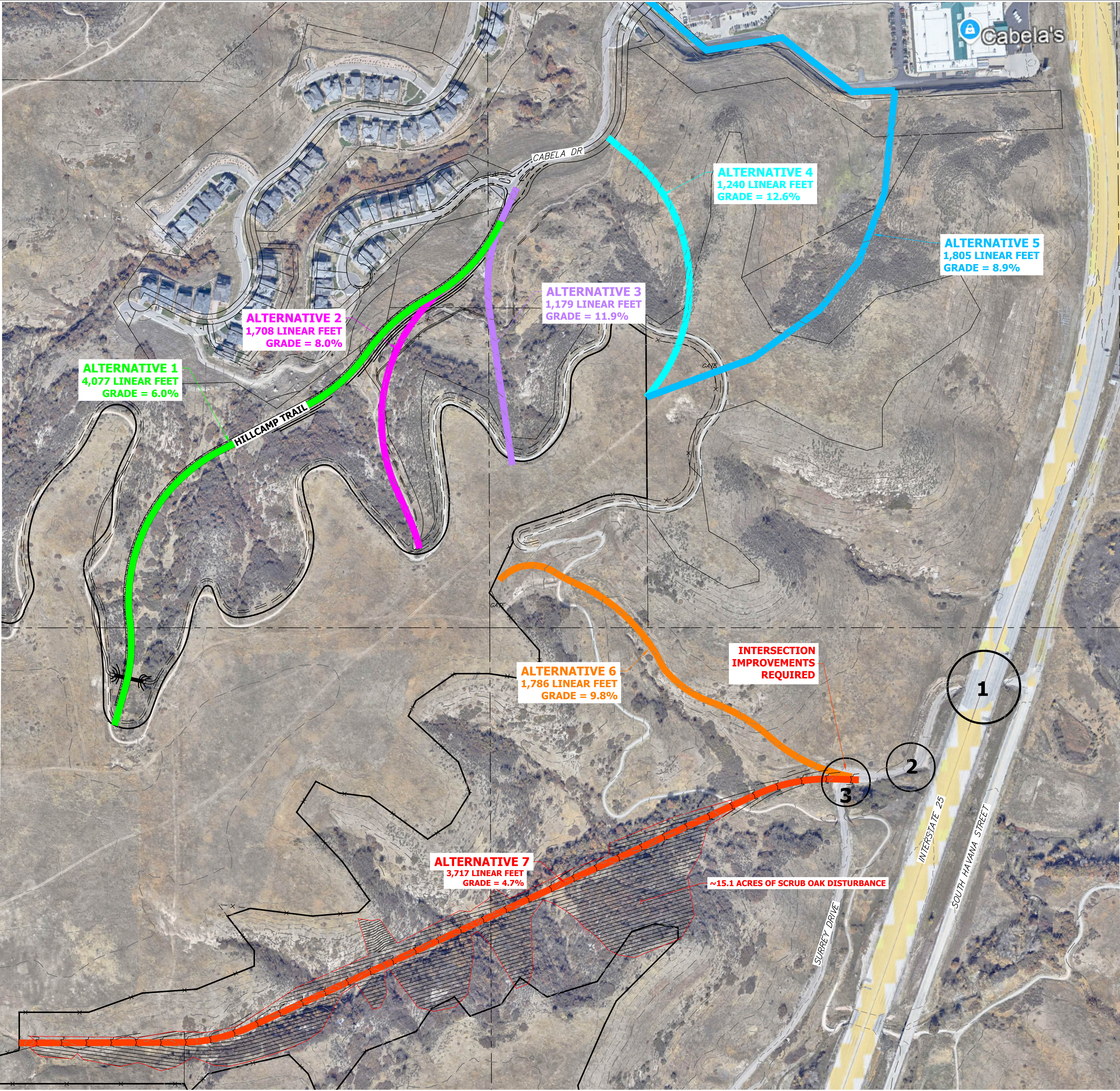
- PROPOSED ALIGNMENT & LIMITS OF DISTURBANCE
- MERRICK'S 2017 ALIGNMENT  
(AS POSTED AT CABELA DR & VIEWSIDE DR INTERSECTION)



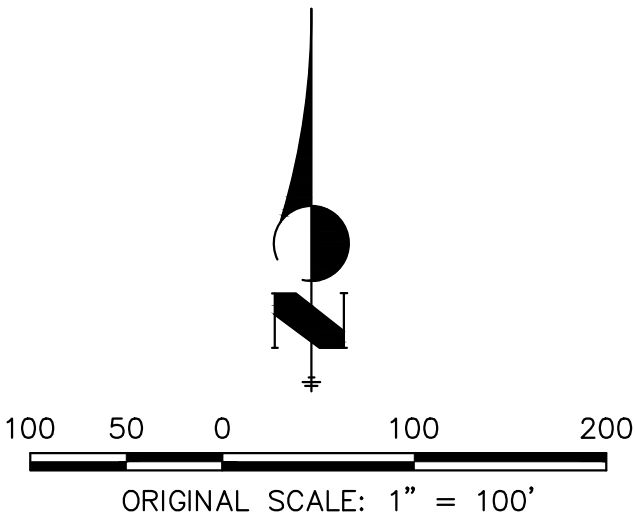
ROADWAY ALIGNMENT  
ALTERNATIVES EXHIBIT  
HILLCAMP TRAIL  
1595012  
NOVEMBER 14, 2025  
SHEET 1 OF 2



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| ALTERNATIVE SUMMARY TABLE |          |       |                      |                      |
|---------------------------|----------|-------|----------------------|----------------------|
| ALT. NUMBER               | LENGTH   | GRADE | MEETS CITY CRITERIA? | MEETS SMFR CRITERIA? |
| ALTERNATIVE 1             | 4,077 LF | 6.0%  | Yes                  | Yes                  |
| ALTERNATIVE 2             | 1,708 LF | 8.0%  | No                   | Yes                  |
| ALTERNATIVE 3             | 1,179 LF | 11.9% | No                   | No                   |
| ALTERNATIVE 4             | 1,240 LF | 12.6% | No                   | No                   |
| ALTERNATIVE 5             | 1,805 LF | 8.9%  | No                   | Yes                  |
| ALTERNATIVE 6             | 1,786 LF | 9.8%  | No                   | Yes                  |
| ALTERNATIVE 7             | 3,717 LF | 4.7%  | Yes                  | Yes                  |



ROADWAY ACCESS ALTERNATIVES EXHIBIT  
HILLCAMP TRAIL  
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SHEET 2 OF 2



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