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# DEVIATION REQUEST AND DECISION FORM

Updated: 7/6/2019

LSC Responses to EPC Deviation Redline Comments

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## PROJECT INFORMATION

Project Name : Silverado Ranch, Filing 2  
Schedule No.(s) : 3516000001  
Legal Description : N2 SEC 16-15-63 EX TH PT PLATTED TO SILVERADO RANCH FILING NO 1

## APPLICANT INFORMATION

Company :  
Name : Mr. Stan Searle  
 Owner  Consultant  Contractor  
Mailing Address : 18911 Cherry Springs Ranch Drive  
Monument, CO 80132  
Phone Number : 719-649-9590  
FAX Number : N/A  
Email Address : stansearle@gmail.com

## ENGINEER INFORMATION

Company : LSC Transportation Consultants, Inc.  
Name : Jeffrey C. Hodsdon  
Mailing Address : 2504 E. Pikes Peak Ave, Suite 304  
Colorado Springs, CO 80909  
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Email Address : jeff@LSCtrans.com  
Colorado P.E. Number : 31684

# LSC Responses to EPC Deviation Redline Comments

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Page: 1

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Number: 1 Author: jchodsdon Subject: Text Box Date: 10/6/2024 14:17:07  
[LSC Responses to EPC Deviation Redline Comments](#)

**OWNER, APPLICANT, AND ENGINEER DECLARATION**

To the best of my knowledge, the information on this application and all additional or supplemental documentation is true, factual and complete. I am fully aware that any misrepresentation of any information on this application may be grounds for denial. I have familiarized myself with the rules, regulations and procedures with respect to preparing and filing this application. I also understand that an incorrect submittal will be cause to have the project removed from the agenda of the Planning Commission, Board of County Commissioners and/or Board of Adjustment or delay review until corrections are made, and that any approval of this application is based on the representations made in the application and may be revoked on any breach of representation or condition(s) of approval.

\_\_\_\_\_  
Signature of owner (or authorized representative)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Engineer's Seal, Signature  
And Date of Signature

Sign and stamp the document <sup>1</sup>

**DEVIATION REQUEST** (Attach diagrams, figures, and other documentation to clarify request)

A deviation from the standards of or in Section **D.5.6** of the *Engineering Criteria Manual (ECM)* is requested. The applicant requests that all roads in Silverado Ranch be allowed to be constructed with crushed asphalt (reclaimed asphalt pavement (RAP)) surfacing instead of the ECM standard material of compacted gravel. Note: The roads have been approved to be private and maintained by the HOA.

Identify the specific ECM standard which a deviation is requested:

**D.5.6 Gravel for Gravel Roads Table D-7**

Gravel described in this section shall be used for gravel shoulders, repairing gravel surfaces, or in cases where gravel roads are allowed. The gradation specification for this material is listed in Table D-7.

**Appendix F - Standard Drawing SD 2-10 Rural Gravel Local Roadway**

This standard drawing calls out "Gravel/Low Grade Pavement" for the roadway surface.


State the reason for the requested deviation:

Please refer to the attached applicant reason for the request.

Explain the proposed alternative and compare to the ECM standards (May provide applicable regional or national standards used as basis):


- The proposed alternative is to construct and maintain the subdivision roads utilizing a design which incorporates reclaimed asphalt pavement (RAP) material rather than exclusively gravel with prescribed material specification called out in Table D-7 of ECM Section D.3.6.
- ECM Section D.3.6 Gravel Roads indicates a minimum thickness of 6 inches shall be used on all newly constructed gravel roads meeting material specifications presented in Table D-7.
- Please refer to the attachment supplement by the applicant.
- The following are publications which address the use of RAP. Applicable references relate to the use of RAP material for use in gravel roadway construction and maintenance, rather than as a base material for roadways with rigid or flexible pavement
  - **GRAVEL ROADS CONSTRUCTION & MAINTENANCE GUIDE** (August 2015 USDOT FHWA) - Section 3.5 Recycled Asphalt – **PLEASE REFER TO ATTACHED SUPPLEMENT WITH SOME EXCERPTS**
    - [ots15002.pdf \(dot.gov\)](#)
  - [Reclaimed Asphalt Pavement - Material Description - User Guidelines for Waste and Byproduct Materials in Pavement Construction - FHWA-RD-97-148 \(dot.gov\)](#)
  - <https://www.fhwa.dot.gov/pavement/recycling/>
  - <https://www.fhwa.dot.gov/publications/research/infrastructure/structures/97148/rap134.cfm>

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 Number: 1      Author: Bret      Subject: Engineer      Date: 7/11/2024 16:48:00

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[Sign and stamp the document](#)

 Author: jchodsdon      Subject: Sticky Note      Date: 10/2/2024 12:28:38  
LSC Response: Added as requested.

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**LIMITS OF CONSIDERATION**

(At least one of the conditions listed below must be met.)

- The ECM standard is inapplicable to the proposed design objective.
- Topography, right-of-way, or other site conditions make the standard infeasible and an equivalent alternative that can accomplish the same design objective is available and does not compromise public safety or accessibility.
- A change to a standard is required to address a specific design or construction problem, and if not modified, the standard will impose an undue hardship on the applicant with little or no material benefit to the public.

Meeting the gradation criteria of this table could be difficult as most crushed asphalt is processed and close to a single gradation; Please provide a gradation for the proposed material to assess the material properties

1.)

undue hardship and an equivalent alternative that can accomplish the same design objective is available and does not compromise public safety or accessibility.

Provide justification:

Silverado Ranch, as an equestrian community, has a specific road design issue. Crushed asphalt is a superior alternative for Silverado Ranch as an equestrian community with respect to safety for horses and riders (see veterinarian quote above), and other factors. Please refer to attachment by the applicant. Absent the deviation, ECM-standard gravel roads present a hardship and an increased safety risk to horses and riders.

**The justification would be met, provided:**

The proposed gravel material meets the ECM criteria for depth and material specifications called out in Table D-7 of ECM Section D.3.6. while accounting for any necessary variations in the specifications which should be applied to the use of RAP. Variations would be based on applicable elements of guidance in the FHWA publications and manuals referenced above being followed (with respect to the use of RAP material for use in gravel roadway construction and maintenance).

AND/OR

Include discussion of existing subgrade and the suitability of placing crushed asphalt on this material

(if required) A design by a geotechnical engineer (with qualifying expertise in unpaved/gravel road design) is submitted and approved, which indicates a RAP alternative and specifies that it can accomplish the same design objectives and does not compromise public safety or accessibility with respect to vehicles and other roadway users – passenger motor vehicles, the occasional trucks of type typically associated with low-volume, local residential roads, fire district vehicles, pedestrians, bicycles, and equestrians.

**CRITERIA FOR APPROVAL**

Per ECM section 5.8.7 the request for a deviation may be considered if the request is **not based exclusively on financial considerations**. The deviation must not be detrimental to public safety or surrounding property. The applicant must include supporting information demonstrating compliance with **all of the following criteria**:

The deviation will achieve the intended result with a comparable or superior design and quality of improvement.

The deviation would be superior for a site-specific intended user of the roadways – equestrian riders/horses (an equestrian community). Please refer to the attached supplement by the applicant.

**These criteria would be met, provided:**

The proposed gravel material meets the ECM criteria for depth and material specifications called out in Table D-7 of ECM Section D.3.6. while accounting for any necessary variations in the specifications which should be applied to the use of RAP. Variations would be based on applicable elements of guidance in the FHWA publications and manuals referenced above being followed (with respect to the use of RAP material for use in gravel roadway construction and maintenance).

AND/OR

(if required) A design by a geotechnical engineer (with qualifying expertise in unpaved/gravel road design) is submitted and approved, which indicates a RAP alternative and specifies that it can accomplish the same design objectives and does not compromise public safety or accessibility with respect to vehicles and other roadway users – passenger motor vehicles, the occasional trucks of type typically associated with low-volume, local residential roads, fire district vehicles, pedestrians, bicycles, and equestrians.

When placed on a road in hot weather, the recycled asphalt can take on the characteristic of pavement. It can become so tightly bound blade maintenance cannot be done. But it will be a weak pavement due to the oxidized condition of most recycled asphalt. It will often develop potholes and will be hard to maintain. To help overcome this problem, the material should be placed at a minimum 3-inch compacted depth and only on a road that has a strong subgrade. A better option is to mix the recycled asphalt with new surface gravel.

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☰ Number: 1 Author: Bret Subject: Engineer Date: 7/12/2024 09:13:58

Meeting the gradation criteria of this table could be difficult as most crushed asphalt is processed and close to a single gradation; Please provide a gradation for the proposed material to asses the material properties

↩ Author: jchodsdon Subject: Sticky Note Date: 10/2/2024 12:28:31

LSC Response: The deviation has been revised to address this comment. Note: Input from *Entech Engineering* has been incorporated into the revised deviation.

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☰ Number: 2 Author: Bret Subject: Engineer Date: 7/12/2024 09:19:04

Include discussion of existing subgrade and the suitability of placing crushed asphalt on this material

↩ Author: jchodsdon Subject: Sticky Note Date: 10/2/2024 12:28:25

LSC Response: The deviation has been revised to address this comment. Note: Input from *Entech Engineering* has been incorporated into the revised deviation.

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☰ Number: 3 Author: Bret Subject: Engineer Date: 7/12/2024 08:42:33

When placed on a road in hot weather, the recycled asphalt can take on the characteristic of pavement. It can become so tightly bound blade maintenance cannot be done. But it will be a weak pavement due to the oxidized condition of most recycled asphalt. It will often develop potholes and will be hard to maintain. To help overcome this problem, the material should be placed at a minimum 3-inch compacted depth and only on a road that has a strong subgrade. A better option is to mix the recycled asphalt with new surface gravel.

↩ Author: jchodsdon Subject: Sticky Note Date: 10/2/2024 12:28:18

LSC Response: The deviation has been revised to address this comment. Note: Input from *Entech Engineering* has been incorporated into the revised deviation.

This suggests that a blend of RAP and aggregate could be used. If so, please provide a comment. The FHWA document suggests that as a better product than pure RAP

The deviation will not adversely affect safety or operations.

- The deviation would be superior for safety of a site-specific intended user of the roadways – equestrian riders/horses (an equestrian community). Please refer to the attached supplement by the applicant.
- The applicant intends to utilize a roadway material which incorporates RAP, to achieve health and safety benefits relative to lower levels of airborne dust caused by high winds in this area of the County, when compared to ECM standard gravel roadways.

**These criteria would be met, provided:**

The proposed gravel material meets the ECM criteria for depth and material specifications called out in Table D-7 of ECM Section D.3.6. while accounting for any necessary variations in the specifications which should be applied to the use of RAP. Variations would be based on applicable elements of guidance in the FHWA publications and manuals referenced above being followed (with respect to the use of RAP material for use in gravel roadway construction and maintenance).

AND/OR

(if required) A design by a geotechnical engineer (with qualifying expertise in unpaved/gravel road design) is submitted and approved, which indicates a RAP alternative and specifies that it can accomplish the same design objectives and does not compromise public safety or accessibility with respect to vehicles and other roadway users – passenger motor vehicles, the occasional trucks of type typically associated with low-volume, local residential roads, fire district vehicles, pedestrians, bicycles, and equestrians.

The deviation will not adversely affect maintenance and its associated cost.

There is no impact on EPC operations as these are private roads built to EPC standards (except for the surfacing) with no EPC maintenance responsibilities. The crushed asphalt road surface will improve long term maintenance costs for the homeowner's association.

The deviation will not adversely affect aesthetic appearance.

No impact on aesthetics is anticipated.

The deviation meets the design intent and purpose of the ECM standards.

- The intent is to provide a roadway surface which performs comparable to or superior to ones with an ECM-standard gravel surface, while being superior for safety of a site-specific intended user of the roadways – equestrian riders/horses (an equestrian community).

**The intent and purpose of the ECM standards would be met, provided:**

The proposed gravel material meets the ECM criteria for depth and material specifications called out in Table D-7 of ECM Section D.3.6. while accounting for any necessary variations in the specifications which should be applied to the use of RAP. Variations would be based on applicable elements of guidance in the FHWA publications and manuals referenced above being followed (with respect to the use of RAP material for use in gravel roadway construction and maintenance).

AND/OR

(if required) A design by a geotechnical engineer (with qualifying expertise in unpaved/gravel road design) is submitted and approved, which indicates a RAP alternative and specifies that it can accomplish the same design objectives and does not compromise public safety or accessibility with respect to vehicles and other roadway users – passenger motor vehicles, the occasional trucks of type typically associated with low-volume, local residential roads, fire district vehicles, pedestrians, bicycles, and equestrians.

The deviation meets the control measure requirements of Part I.E.3 and Part I.E.4 of the County's MS4 permit, as applicable.


- The requested deviation meets control-measure requirements of Part I.E.3 and Part I.E.4 of the MS4 Permit.

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Number: 1 Author: Bret Subject: Engineer Date: 7/12/2024 08:40:03

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This suggests that a blend of RAP and aggregate could be used. If so, please provide a comment. The FHWA document suggests that as a better product than pure RAP

 Author: jchodsdon Subject: Sticky Note Date: 10/2/2024 12:28:07

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LSC Response: The deviation has been revised to address this comment. Note: Input from *Entech Engineering* has been incorporated into the revised deviation.