

Carvana Fountain, CO - New Parking Area

Geologic Hazard Report

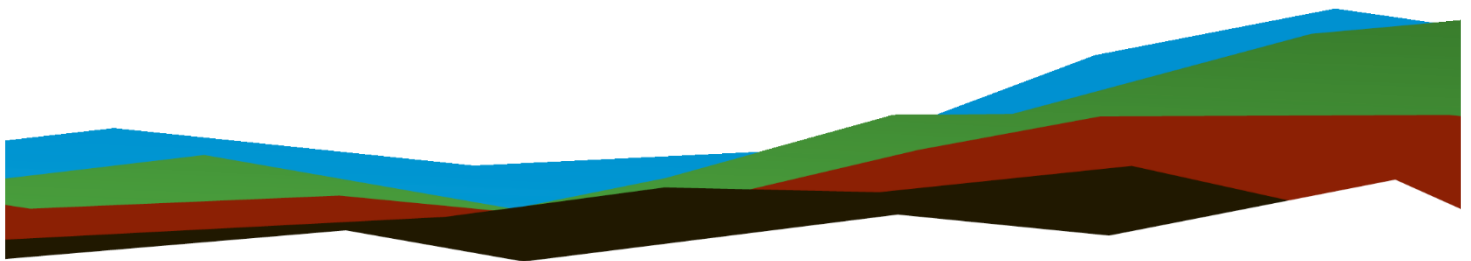
Northwest of the Intersection of South Charter Oak Ranch
Road and Champlin Drive

Fountain, Colorado

April 23, 2026 | Terracon Project No. 23265036A

Prepared for:

ATWELL, LLC
5847 50th Street
Lubbock, Texas 79424



Nationwide
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- Facilities
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April 23, 2026

ATWELL, LLC
5847 50th Street
Lubbock, Texas 79424

Attn: Ramzi Georges, P.E., CFM
P: (480) 586-2105
E: rgeorges@atwell.com

Re: Geologic Hazard Report
Carvana Fountain, CO - New Parking Area
Northwest of the Intersection of South Charter Oak Ranch Road and Champlin Drive
Fountain, Colorado
Terracon Project No. 23265036A

Mr. Georges:

Terracon Consultants, Inc. (Terracon) has prepared this Geologic Hazard report for the project referenced above. This investigation was performed in general accordance with Purchase Order No. 20260783 dated April 13, 2026, which references Terracon Proposal No. P23265036A dated April 2, 2026. This report presents our findings related to potential geologic hazards for the proposed project site.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,

Terracon

A handwritten signature in blue ink, appearing to read "Nick M. Novotny".

Nick M. Novotny, P.G., C.E.G.
Geotechnical Department Manager

A handwritten signature in blue ink, appearing to read "Eric D. Bernhardt".

Eric D. Bernhardt, P.E.
Regional Geotechnical Manager

Table of Contents

Report Summary i

Introduction..... 1

Site Conditions 1

Project Description..... 2

Geotechnical Characterization 3

 Regional Geology 3

 Site Specific Geology 4

Potential Geologic Hazards 4

 Unstable or Potentially Unstable Slopes and Landslide Areas 4

 Landfill, Uncontrolled, or Undocumented Fill Activity 5

 Debris Flow and Debris Fan 5

 Rockfall 6

 Shallow Water Tables and Groundwater Springs 6

 Flood Prone Areas 7

 Expansive Soils and Bedrock 7

 Collapsible Soils 7

 Steeply dipping Bedrock 8

 Radon 8

 Hazard Faults 8

 Shallow Bedrock 9

 Erosion 9

General Comments 9


Attachments

Site Location

Site Overview with Aerial Image

Site-Specific Geologic Map

Photography Log

Note: This report was originally delivered in a web-based format. **Blue Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the  logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

Refer to each individual Attachment for a listing of contents.

Report Summary

We understand the proposed project will consist of the design and construction of a new parking area, a new culvert bridge, new detention tanks, and access roads in Fountain, Colorado. This Geologic Hazard investigation has been performed for the proposed project site. We offer the following comments regarding potential geologic hazards:

- Based on our review of the available geologic literature, our site observations, and our experience in the area, geologic hazards have been reviewed that may impact the site.
 - Based on our observations and review of publicly available data, we consider the risk for potentially unstable slopes, and/or landslides to be low for this site. The potential for unstable slopes and landslides should be considered when developing the design and construction plans for this project.
 - Based on our review of the publicly available data and our experience in the vicinity of the project site, it is our opinion that the risk of encountering undocumented man-made fill, expansive soils and bedrock, and shallow bedrock on site is moderate to high. The possibility of encountering undocumented fill and shallow bedrock should be considered when developing the geotechnical design and construction plans for this project.
- The site is considered suitable for the proposed development provided the geologic hazards discussed herein are appropriately mitigated during the design and construction phases of the project.

This summary should be used in conjunction with the entire report. It should be recognized that details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein. The section titled **General Comments** should be read for an understanding of the report limitations.

Introduction

This report presents the results of our Geologic Hazard investigation performed for the Carvana Fountain, CO - New Parking Area project to be located northwest of the intersection of South Charter Oak Ranch Road and Champlin Drive in Fountain, Colorado. The purpose of these services is to provide Geologic Hazard information in accordance with the City of Colorado Springs City Code relative to, but not limited to:

- Unstable or potentially unstable slopes
- Landslide or potential landslide areas
- Undocumented fill soils and landfills
- Ground subsidence and mining activity
- Debris flow and debris fans
- Rockfall
- Expansive soils and expansive rock
- Shallow water tables
- Flood prone areas
- Collapsible soils
- Steeply dipping bedrock
- Faults
- Radon

Site Conditions

The following description of surficial site conditions is derived from our site visit and our review of publicly available aerial and topographic maps.

Item	Description
Parcel Information	The project is located northwest of the intersection of South Charter Oak Ranch Road and Champlin Drive in Fountain, Colorado. Latitude/Longitude (approximate): 38.6817° N, 104.7180° W See Site Location

Item	Description
<p>Existing Improvements</p>	<p>Based on review of available aerial imagery, historical imagery, and our experience at the site, the majority of the site appears to be generally undeveloped. Undocumented soil stockpiles appear to cover the southern portion of the proposed new parking area, with an apparent access roadway boarding the southernmost extent of the stockpiles. A small drainage culvert was found at the westernmost extent of the apparent access road and seems to drain south into the nearby creek. The southernmost extent of the proposed access road appears to have been previously graded. A transmission line borders the site to the east.</p>
<p>Current Ground Cover</p>	<p>Ground cover on the site consists of light to moderate vegetation with native grass, weeds, shrubs and trees. The nearby creek appears to be overgrown with weeds and tall grass.</p>
<p>Existing Topography</p>	<p>Based on review of available topographic information, the site appears to slope down to the south and east with an elevation difference of about 60 feet across the site. A small depression appears to exist in the northeast corner of the site. Steep sloped drainage features appear to occupy the southern portion of the site along the proposed roadway to connect the new parking area with the existing parking area.</p> <p>The box culvert is intended to span the large drainage feature on the southern portion of the site. This drainage feature appears to connect runoff from Fort Carson to the west to Fountain Creek to the east. Flow rate from this drainage feature is anticipated to be about 4,328 cubic feet per second.</p>

We also collected photographs at the time of our site reconnaissance. Representative photographs are provided in our [Photography Log](#).

Project Description

Our final understanding of the project conditions are as follows:

Item	Description
Project Description	We understand the proposed project consists of the design and construction of a new parking area and access roads. The southern access road will include a new, approximately 4,250 square feet, box culvert to connect with the existing Carvana parking area. We also understand new detention tanks are planned in the southeastern corner of the new parking lot for stormwater drainage.
Proposed Construction	We anticipate the new box culvert will consist of either pre-cast or cast-in-place concrete construction with associated wingwalls. We anticipate new detention tanks will consist of corrugated galvanized steel construction. We understand the new detention tanks will be about 10 feet in diameter and are anticipated to be installed to a depth of about 14 feet below finished grade.
Excavation Depth	We anticipate excavation depths will be on the order of about 2.5 feet for frost-depth foundations and up to 15 feet for the proposed detention tanks.
Below-Grade Structures	We understand the proposed detention tanks are anticipated to be installed to a depth of about 14 feet below finished grade.
Wing Walls	We anticipate wing walls for the box culvert will be on the order of about 15 feet in height. The proposed wing walls will likely consist of concrete cantilever walls.
Pavements	New pavements will likely consist of flexible asphalt and rigid concrete pavement.

Terracon should be notified if any of the above information is inconsistent with the planned construction, particularly the assumed grading efforts, as revised and/or additional geotechnical recommendations may be required.

Geotechnical Characterization

Regional Geology

The project site is located within the Colorado Piedmont section of the Great Plains geomorphic province. The Colorado Piedmont, formed during Late Tertiary and Early quaternary time (approximately two-million years ago), is a broad, erosional trench which separates the Southern Rocky Mountains from the High Plains. During the Late Mesozoic and Early Cenozoic Periods (approximately seventy million years ago), intense tectonic activity occurred, causing the uplifting of the Front Range. Relatively flat

uplands and broad valleys characterize the present-day topography of the Colorado Piedmont in this region.

Site Specific Geology

Surficial geologic conditions at the site, as mapped by the Colorado Geological Survey (CGS) (¹White, et al., 2017), consist of Holocene to Pleistocene-age Alluvial deposits, Old Alluvial Fan deposits, and Artificial Fill. The Alluvial deposits in this area have been reported to consist of sand, clayey to silty sand, sandy clay, and occasional thin gravel lenses. The clay minerals in the Alluvial deposits are reported to be prone to swelling. The Old Alluvial Fan deposits in this area have been reported to consist sands and gravels in a clayey matrix, and the Artificial Fill in the area has been reported to consist of fill soils and waste rock.

Bedrock underlying the mapped surficial units and occupying the northeast corner of the site consists of the Pierre Shale Formation of Upper Cretaceous age. The Pierre Shale within this area has been reported to include dark-gray to tan-gray to olive-gray shale. CGS mapping indicates the Pierre Shale is particularly susceptible to slope instability in steep areas.

A site-specific geologic map is included as an attachment to this report.

Potential Geologic Hazards

Our investigation considered the following potential geologic hazards and their risk to impact the project site.

Unstable or Potentially Unstable Slopes and Landslide Areas

The Colorado Geological Survey (CGS) Landslide Inventory indicates evidence of landslide susceptibility are not mapped on or within the immediate vicinity of the project site; however, evidence of landslide susceptibility has been mapped about 1 mile south and southwest of the project site boundary. We also reviewed the CGS Landslide Inventory maps for the project area (<https://cologeosurvey.maps.arcgis.com>), which indicate no landslides are mapped on site.

¹White, J.L., Lindsey K.O., Morgan, M.L., and Mahan, S.A., 2017 **Geologic Map of the Fountain Quadrangle, El Paso County, Colorado**, Colorado Geological Survey, Open-File Report OF-17-05.

Evidence of landslides was observed on or within the immediate vicinity of the project site during our site observations. Soil movement features such as sloughing and mass wasting were observed at the southwestern edge of the site near the existing creek.

Based on our observations at the site and review of publicly available data, we consider the risk for unstable slopes, potentially unstable slopes, and/or landslides to impact the proposed project to be low for this site. The potential for unstable slopes and landslides should be considered when developing the design and construction plans for this project.

Landfill, Uncontrolled, or Undocumented Fill Activity

Based on our review, landfills were not shown to be located within the vicinity of the project site on environmental maps from the Colorado Department of Health and Environment (CDPHE) (<https://cdphe.colorado.gov/hm/gis-data>). However, surficial geologic conditions at the site, as mapped by CGS (¹White, et al., 2017), include Artificial (manmade) fill of uppermost Holocene age.

Based on our review of the available historical aerial imagery of the site and our site observations, no evidence of historical landfill operations or existing landfill debris was observed. However, our observations indicate placement of undocumented soil and rock stockpiles began in 2006, was completed by 2011, and the stockpiles still exist on-site.

Based on historical imagery of the site, our experience at the site, and our review of the geologic map of the site, it is our opinion that the risk of encountering undocumented man-made fill on site is moderate to high. The possibility of encountering undocumented fill should be considered when developing the geotechnical report, design, and construction plans for this project.

Based on our review of the publicly available data from the CDPHE and our site observations, it is our opinion the risk of encountering landfills or landfill debris at the site is low. Therefore, the relative risk for landfills to impact the proposed development is low.

Debris Flow and Debris Fan

Based on our review of the publicly available data from the CGS, the site is not located in an area mapped with conditions favorable for the generation and deposition of debris flows (²McCoy, Morgan, & Berry, 2018). In addition, we reviewed the CGS Landslide

¹White, J.L., Lindsey K.O., Morgan, M.L., and Mahan, S.A., 2017 **Geologic Map of the Fountain Quadrangle, El Paso County, Colorado**, Colorado Geological Survey, Open-File Report OF-17-05.

²McCoy, K.M., Morgan, M.L., & Berry, K.A., 2018, **Debris Flow Susceptibility Map of El Paso County, Colorado**, Colorado Geological Survey, Open-File Report 18-11, scale 1:24,000.

Inventory maps for the project area (<https://cologeosurvey.maps.arcgis.com>), which indicate no debris flows or fans are mapped at the site. However, there are areas mapped with conditions favorable for the generation and deposition of debris flows about 1,000 feet northeast, 1 mile north, and 1 mile south of the project site.

Evidence of debris flows and/or debris fans were not observed on or within the immediate vicinity of the project site during our site observations.

Based on our observations at the site and review of publicly available data, we consider the risk for debris flows or debris fans to impact the proposed project to be low for this site.

Rockfall

Evidence of rockfall was not observed on or within the immediate vicinity of the project site during our site visits. In addition, we reviewed the CGS Landslide Inventory maps for the project area (<https://cologeosurvey.maps.arcgis.com>), which indicate no rockfall hazards are mapped on or adjacent to the project site.

Exposed rock outcroppings were not observed overhanging the project site or located in areas that have the potential for rockfall. Therefore, we conclude the potential for rockfall to affect the site to be very low.

Shallow Water Tables and Groundwater Springs

Based upon review of U.S. Geological Survey (USGS) depth to water table maps (³Hillier and Hutchinson, 1980), regional groundwater is expected to be encountered in alluvial deposits that are not perennially saturated, in addition zones of perched and/or trapped groundwater may also occur at times in the subsurface soils overlying bedrock, on top of the bedrock surface or within permeable fractures in the bedrock materials. The USGS data also indicates groundwater table changes seasonally from depths of about 5 to 20 feet below ground surface.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors. Therefore, groundwater levels during construction or at other times in the life of the structures may be higher or lower than reported in the geological survey maps.

³Hillier, D.E., and Hutchinson, E.C., 1980, **Depth to Water Table in the Colorado Springs – Castle Rock Area, Front Range Urban Corridor, Colorado**, United States Geological Survey, Miscellaneous Investigation Series Map I-857-H, scale 1:100,000

Based on our review of the publicly available data from the USGS and our experience in the area, the risk of shallow groundwater to impact the project site is considered to be low to moderate. The possibility of groundwater level fluctuations impacting the proposed site development should be considered when developing the design and construction plans for the project.

Flood Prone Areas

Based on a review of the Federal Emergency Management Agency (FEMA) flood map 08041C0962G dated December 7, 2018, the project site is not located in a 500-year floodplain. Therefore, we consider the risk of flooding to impact the proposed site development to be low.

Expansive Soils and Bedrock

Mapping completed by the Colorado Geological Survey (⁴Hart, 1972), indicates the site is in an area of low to moderate swell potential. Based on our review of the geologic map of the area by CGS (¹White, et al., 2017), bedrock underlying the mapped surficial units consists of the Pierre Shale Formation of Upper Cretaceous age. Based on our experience in the area and published information, Pierre Shale could have low to high swell potential.

Therefore, we consider the risk of expansive soils and bedrock to impact the proposed site development to be low to high.

Collapsible Soils

Based on our review of the CGS Collapsible Soils of Colorado Map (<https://cologeosurvey.maps.arcgis.com>), the site is not mapped in an area of collapsible soil susceptibility. Therefore, we consider the risk of collapsible soils to impact the proposed site development to be low.

⁴Hart, Stephen S., 1972, **Potentially Swelling Soil and Rock in the Front Range Urban Corridor, Colorado**, Colorado Geological Survey, Sheet 3 of 4.

¹White, J.L., Lindsey K.O., Morgan, M.L., and Mahan, S.A., 2017 **Geologic Map of the Fountain Quadrangle, El Paso County, Colorado**, Colorado Geological Survey, Open-File Report OF-17-05.

Steeply dipping Bedrock

The site is not within an area mapped (⁵Himmelreich Jr, and Noe, 1999) as susceptible to differential heave in expansive, steeply dipping bedrock. However, the site is about 200 feet northeast of an area mapped as susceptible to differential heave in expansive, steeply dipping bedrock.

Based on our review of the geologic map of the area by CGS (¹White, et al., 2017), bedrock underlying the mapped surficial units consists of the Pierre Shale Formation of Upper Cretaceous age. Based on our experience in the area, Pierre Shale could have low to high swell potential.

Therefore, we conclude the risk of differential heave due to expansive, steeply dipping bedrock to be low. The possibility of encountering expansive soils and bedrock should be considered when developing the geotechnical report, design, and construction plans for the project.

Radon

We are not aware of basements or low-lying areas being incorporated into the design of the proposed site development. Radon is often found in basements, crawl spaces, or other low-lying, poorly ventilated areas.

The risk for radon contamination to impact the development is likely low. However, we recommend the owner solicit the services of a radon specialist to confirm this opinion.

Hazard Faults

Based on our review of the CGS Colorado Earthquake and fault map for the project area (<https://cologeosurvey.maps.arcgis.com>), no Quaternary faults are currently intersecting or relatively near the proposed project site. CGS mapping indicates the Ute Pass Fault Zone to be located about 6½ miles west of the project site. Based on our review of the publicly available data for the Ute Pass Fault, we understand the fault is

⁵Himmelreich Jr., J.W., Noe, D.C., 1999, **Map of Areas Susceptible to Differential Heave in Expansive, Steeply Dipping Bedrock, City of Colorado Springs, Colorado**, Colorado Geological Survey, Map Series 32, scale 1:24,000. ¹White, J.L., Lindsey K.O., Morgan, M.L., and Mahan, S.A., 2017 **Geologic Map of the Fountain Quadrangle, El Paso County, Colorado**, Colorado Geological Survey, Open-File Report OF-17-05.

¹White, J.L., Lindsey K.O., Morgan, M.L., and Mahan, S.A., 2017 **Geologic Map of the Fountain Quadrangle, El Paso County, Colorado**, Colorado Geological Survey, Open-File Report OF-17-05.

middle to late Quaternary in age and has an estimated slip rate of less than 0.2 mm per year.

Based on the proximity to the site and relatively low rate of movement associated with the Ute Pass Fault Zone, we consider the risk of fault hazards to impact the site to be low.

Shallow Bedrock

Based upon our experience in the area and our review of the 2014 National Soil Survey Geographic Database (SSURGO) Depth to Bedrock Map, shallow bedrock may be encountered at the site.

Therefore, we consider the risk of shallow bedrock impacting the site development to be low to moderate. The possibility of encountering shallow bedrock should be considered when developing the geotechnical report, design, and construction/excavation plans for the project.

Erosion

Based on our site observations and experience in the area, the surficial soils may be susceptible to wind and water erosion. It is our opinion that the risk of erosion impacting the site is low if disturbed areas are re-vegetated after construction. However, additional regrading and maintenance may be required if erosion affects site grades after construction.

General Comments

Our analysis and opinions are based upon our understanding of the project, the geological, geotechnical, and environmental conditions in the area, and the data obtained from site observations, publicly available data and experience in the area. Terracon should be retained to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Geologic Hazard Report

Carvana Fountain, CO - New Parking Area | Fountain, Colorado
April 23, 2026 | Terracon Project No. 23265036A



Our services and any correspondence are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly affect excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety and cost estimating including excavation support and dewatering requirements/design are the responsibility of others. Construction and site development have the potential to affect adjacent properties. Such impacts can include damages due to vibration, modification of groundwater/surface water flow during construction, foundation movement due to undermining or subsidence from excavation, as well as noise or air quality concerns. Evaluation of these items on nearby properties are commonly associated with contractor means and methods and are not addressed in this report. The owner and contractor should consider a preconstruction/precondition survey of surrounding development. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

Geologic Hazard Report

Carvana Fountain, CO - New Parking Area | Fountain, Colorado
April 23, 2026 | Terracon Project No. 23265036A



Attachments

Contents:

Site Location
Site Overview with Aerial Image
Site-Specific Geologic Map

Note: All attachments are one page unless noted above.

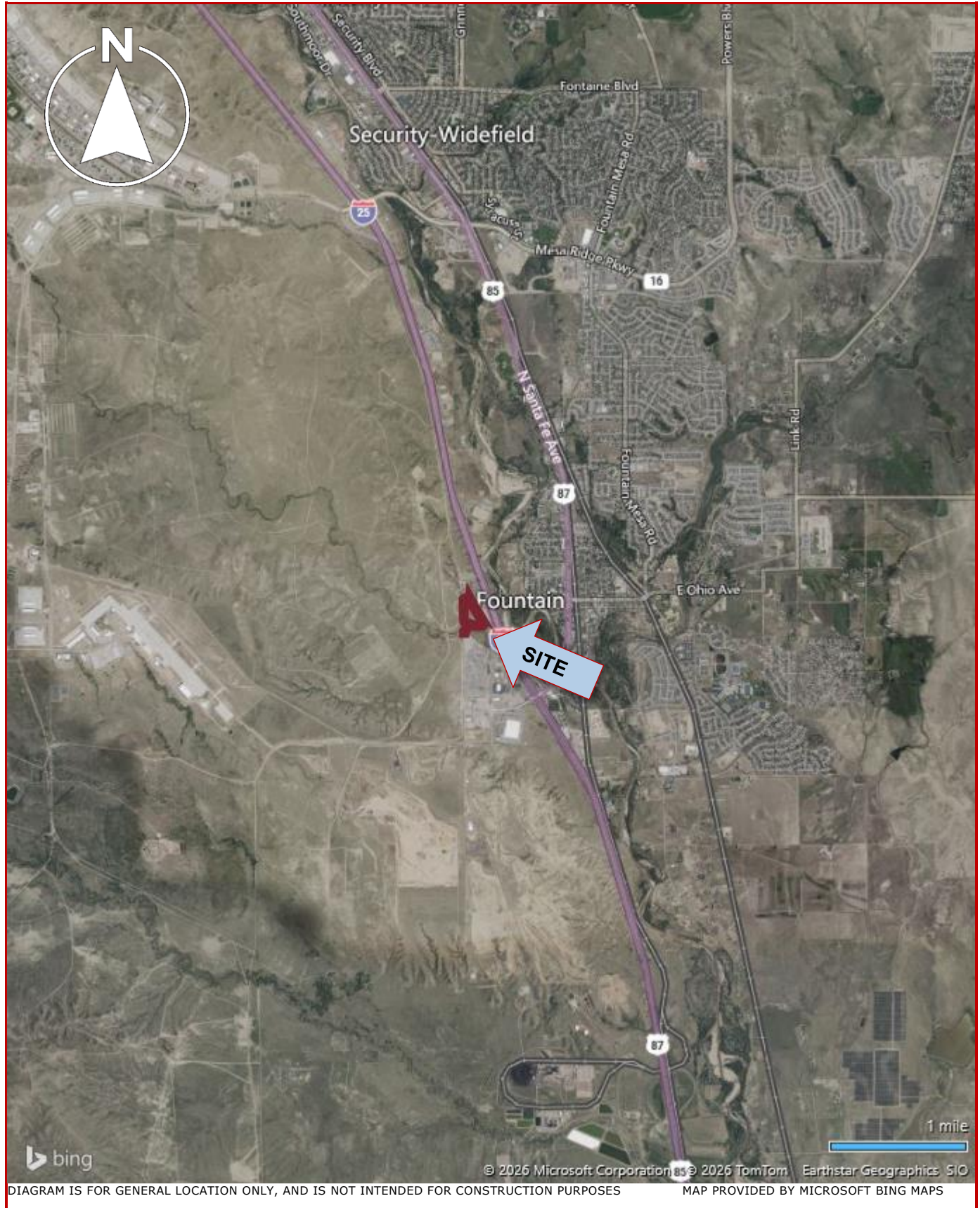
Geologic Hazard Report

Carvana Fountain, CO – North Site New Parking Area | Fountain, Colorado

April 23, 2026 | Terracon Project No. 23265036A



Site Location



Site Overview with Aerial Image

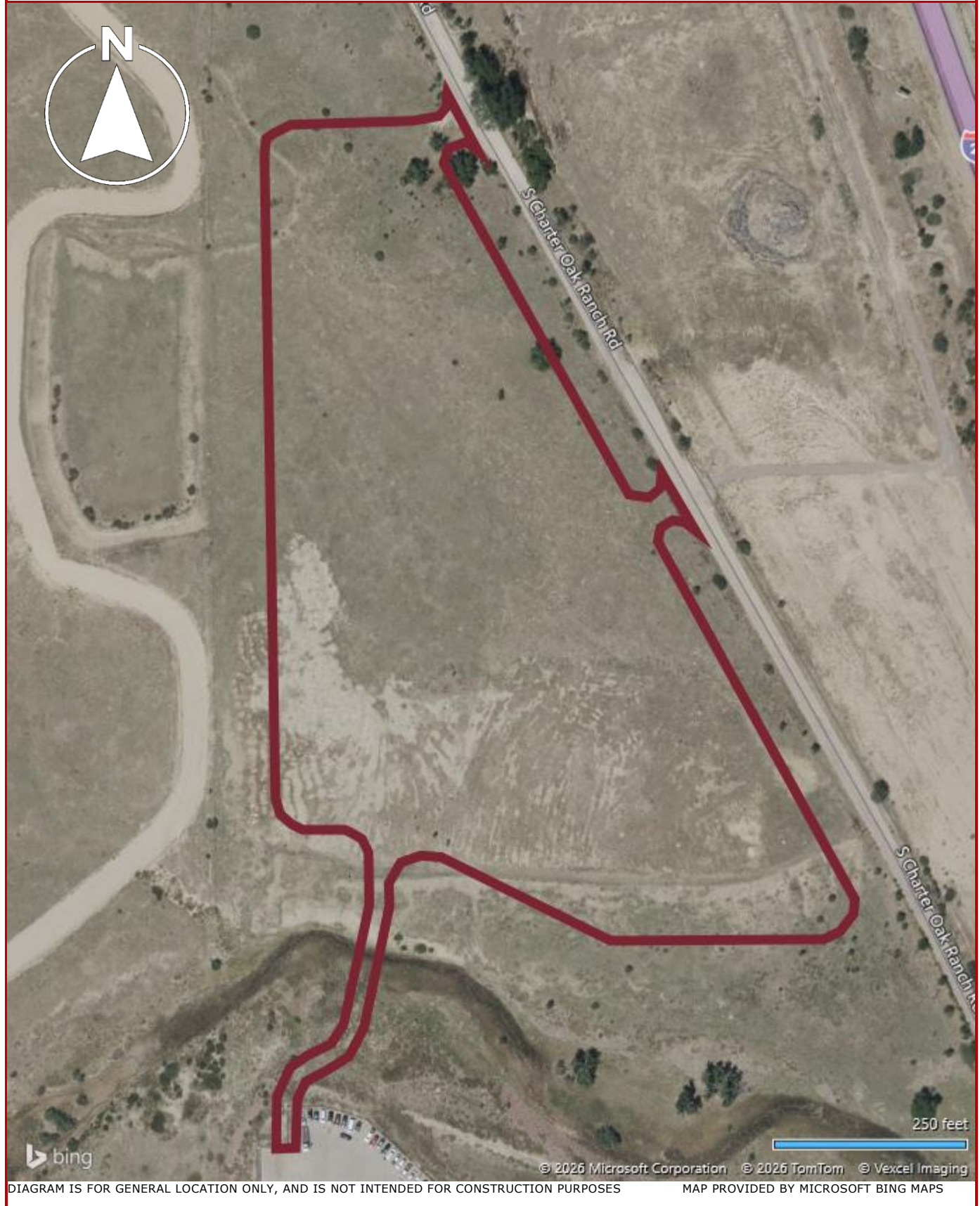
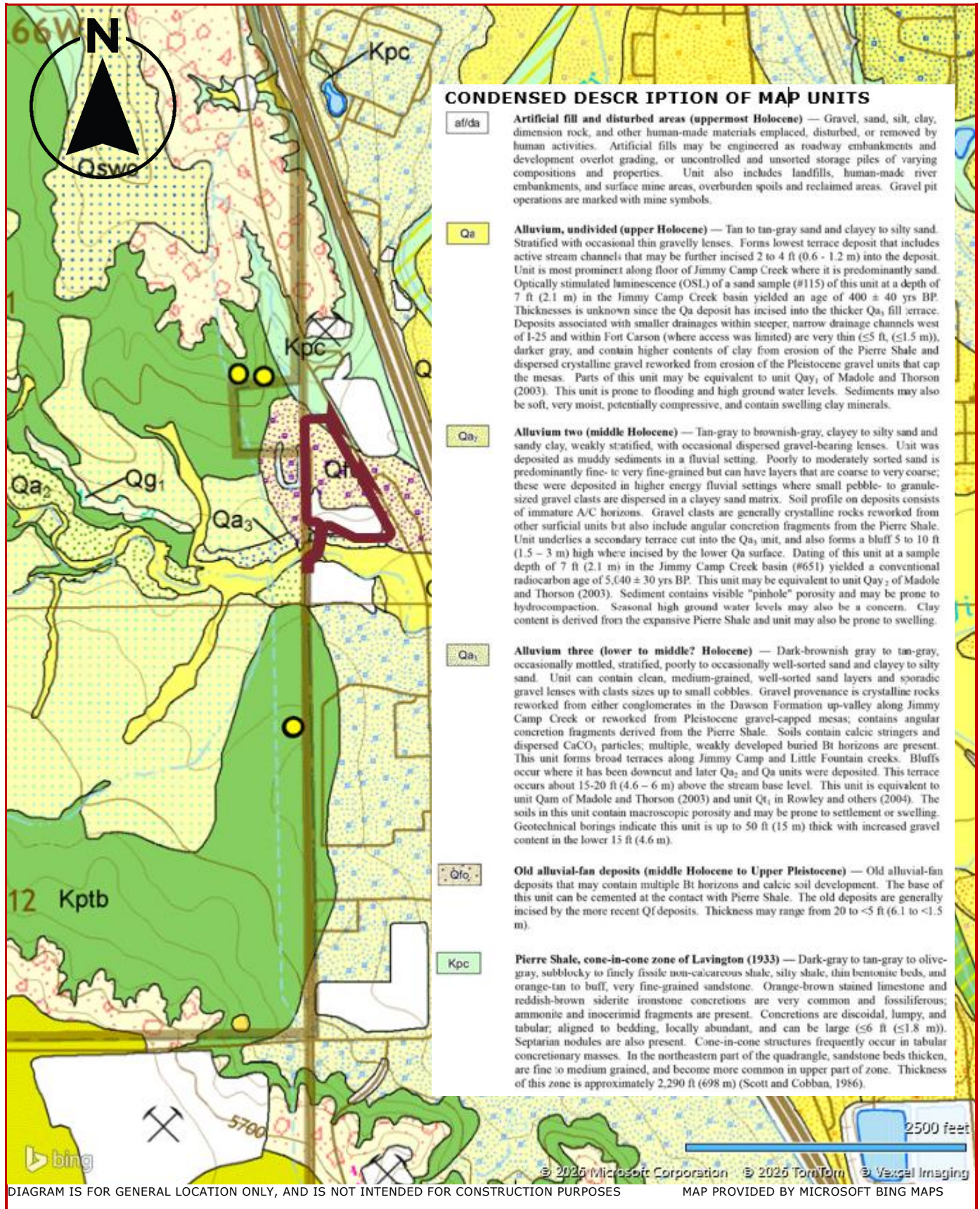


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Site-Specific Geologic Map



Geologic Hazard Report

Carvana Fountain, CO - New Parking Area | Fountain, Colorado
April 23, 2026 | Terracon Project No. 23265036A



Photography Log

Geologic Hazard Report

Carvana Fountain, CO – North Site New Parking Area | Fountain, Colorado

April 23, 2026 | Terracon Project No. 23265036A



Photo 1
Direction: East



Photo 2
Direction: South



Photo 3
Direction: South



Photo 4

Geologic Hazard Report

Carvana Fountain, CO – North Site New Parking Area | Fountain, Colorado

April 23, 2026 | Terracon Project No. 23265036A



Photo 5
Direction: Southwest



Photo 6
Direction: West



Photo 7
Direction: North



Photo 8
Direction: North

Geologic Hazard Report

Carvana Fountain, CO – North Site New Parking Area | Fountain, Colorado

April 23, 2026 | Terracon Project No. 23265036A



Photo 9
Direction: South



Photo 10
Direction: West



Photo 11
Direction: North



Photo 12
Direction: South

Geologic Hazard Report

Carvana Fountain, CO – North Site New Parking Area | Fountain, Colorado

April 23, 2026 | Terracon Project No. 23265036A



Photo 13
Direction: South



Photo 14
Direction: South



Photo 15



Photo 16
Direction: Northwest

Geologic Hazard Report

Carvana Fountain, CO – North Site New Parking Area | Fountain, Colorado

April 23, 2026 | Terracon Project No. 23265036A



Photo 17
Direction: East



Photo 18
Direction: South



Photo 19
Direction: Northwest



Photo 20
Direction: Southeast

Geologic Hazard Report

Carvana Fountain, CO – North Site New Parking Area | Fountain, Colorado

April 23, 2026 | Terracon Project No. 23265036A



Photo 21
Direction: South



Photo 22
Direction: North



Photo 23
Direction: East



Photo 24
Direction: Southwest

Geologic Hazard Report

Carvana Fountain, CO – North Site New Parking Area | Fountain, Colorado

April 23, 2026 | Terracon Project No. 23265036A



Photo 25
Direction: East



Photo 26
Direction: West



Photo 27
Direction: North



Photo 28
Direction: South