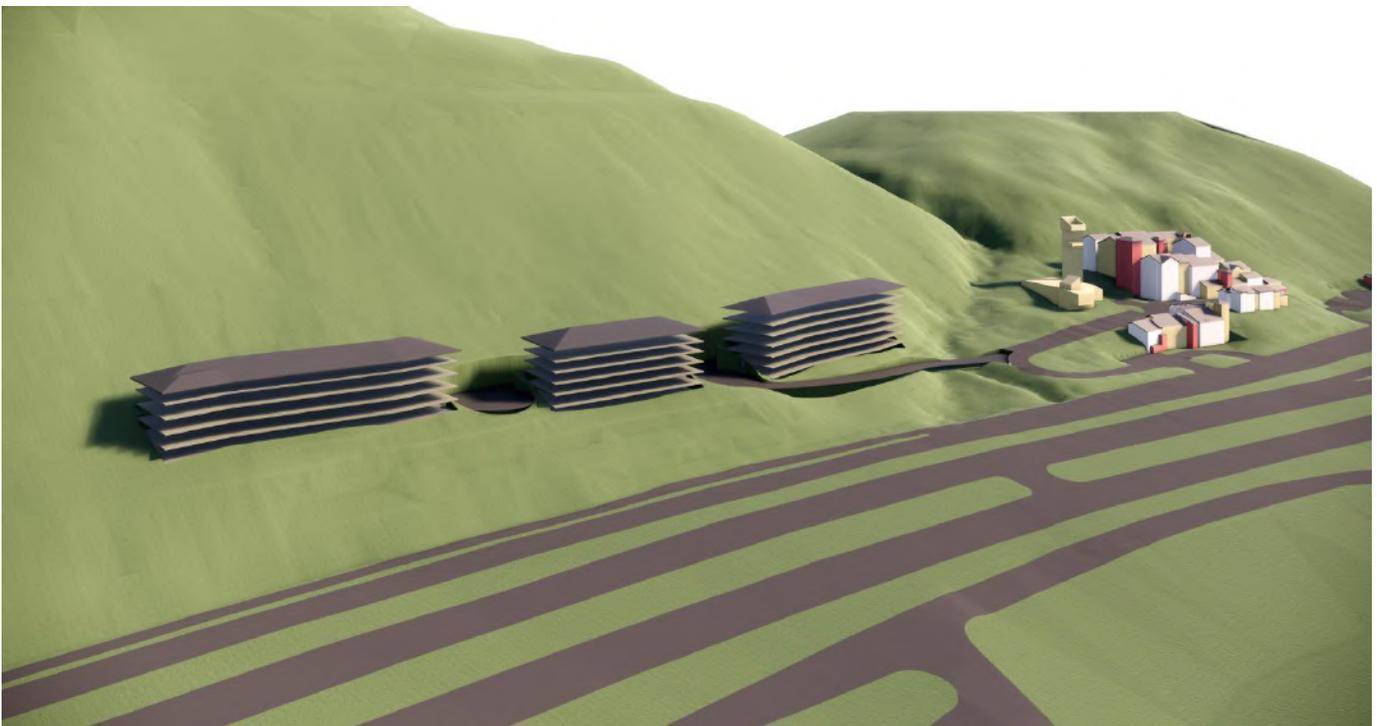


# WEST MIDDLE CREEK DEVELOPMENT

Preliminary Feasibility Study and Analysis

9.13.18



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**MEMORANDUM**

To: Vail Town Council

From: George Ruther, Housing Director

Date: May 15, 2018

Subject: Exploratory Discussion for Survey Concerning Natural Area Preservation Rezoning (Middle Creek Subdivision)

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**I. Purpose**

Vacant and available land resources and suitable sites for deed-restricted housing development within the Town of Vail remain in short supply. To that end, a conversation has started regarding a certain undeveloped property in Vail. The property in question is generally located west of the Middle Creek drainage along the northerly edge of the North Frontage Road and legally described as Tract A, Middle Creek Subdivision. To date, much of the conversation about this property and its suitability for residential development has been speculative in nature and absent any objective information or data. In addition to a number of other relevant considerations, the feasibility of residential development on the property remains a significant unanswered question. To better understand the feasibility of development additional information is needed.

The purpose of this memorandum is to:

- 1) Share background information on the property

**II. Background**

A preliminary site feasibility study was completed for Tract A, Middle Creek Subdivision in December of 2017. In summary, the study examined the opportunities and constraints of development on the property utilizing public record information found on the Town's GIS. Areas of analysis included: land use, zoning, pedestrian/vehicular circulation, geologic hazards, wildlife habitat, floodplain, utilities and open space. A complete copy of the preliminary study has been attached for reference. The study did not include more in depth objective analysis such as boundary survey, site specific topographic data, suitability of soils, vehicular access information, etc.

**III. Town Council Request**

On April 17, 2018, the Vail Town Council instructed staff to return to a future Town Council meeting with an estimated cost to obtain more in depth objective information on the property. Included is a partial boundary survey, a review of probable soils conditions based upon soils investigations completed for several adjoining properties, identification of the 100-year Middle Creek floodplain, availability of utilities consultation with a traffic engineer, and a preliminary site layout and massing study by an architect/land planner.

## I. SUMMARY

The Town of Vail Community Development Department is examining the site feasibility for future residential development on Tract A, Middle Creek Subdivision, parcel number 2101-064-09-003. The site is located west of the Vail Village (Exit 176) interchange, bounded by US Forest Service (USFS) to the north, I-70 ROW and North Frontage Road to the south, Middle Creek housing development and Mountain Bell Tower site to the south and east, a metes and bounds

±26 acre parcel owned by the Town of Vail to the east, and Solar Vail apartments to the west. The site highlighted below totals 17.87 acres and is owned by the Town of Vail.



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## II. PURPOSE

The purpose of this memo is to present the initial findings of a Site Feasibility Study. The intent of the study is to share the feasibility of potential residential development on the site. This report examined both the constraints and opportunities through Geographic Information Systems (GIS) analysis. The areas of analysis include: zoning, land use, pedestrian/vehicle circulation, steep slopes, rock fall, debris flow, debris avalanche, wildlife, floodplains, utilities, and open space.

The report investigates construction cost implications of development of site.

Town of Vail

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### III. ZONING

The site contains two types of zone districts; with 12.82 acres (72%) zoned Natural Area Preservation (NAP) and 5.05 acres (28%) zoned General Use (GU). The surrounding zone districts include:

North: N/A (US Forest Service Land)  
South: Housing (I-70)  
East: Natural Area Preservation  
West: Housing and Natural Area Preservation

The NAP district is the Town's most restrictive zone district which is intended to protect lands in their natural state. The purpose of the NAP zone district is:



*The natural area preservation district is designed to provide areas which, because of their environmentally sensitive nature or natural beauty, shall be protected from encroachment by any building or other improvement, other than those listed in section [12-8C-2](#) of this article. The natural area preservation district is intended to ensure that designated lands remain in their natural state, including reclaimed areas, by protecting such areas from development and preserving open space. The natural area preservation district includes lands having valuable wildlife habitat, exceptional aesthetic or flood control value, wetlands, riparian areas and areas with significant environmental constraints. Protecting sensitive natural areas is important for maintaining water quality and aquatic habitat, preserving wildlife habitat, flood control, protecting view corridors, minimizing the risk from hazard areas, and protecting the natural character of Vail which is so vital to the town's tourist economy. The intent shall not preclude improvement of the natural environment by the removal of noxious weeds, deadfall where necessary to protect public safety or similar compatible improvements.*

The following uses are permitted and conditional uses in the NAP district:

Permitted Uses
Nature preserves.

Conditional Uses
Equestrian trails, used only to access national forest system lands.
Interpretive nature walks.
Parking, when used in conjunction with a permitted or conditional use.
Paved and unpaved, non-motorized, bicycle paths and pedestrian walkways.
Picnic tables and informal seating areas.
Other uses customarily incidental and accessory to permitted or conditional uses and necessary for the operation thereof, with the exception of buildings.

The purpose of the GU zone district is:

*The general use district is intended to provide sites for public and quasi-public uses which, because of their special characteristics, cannot be appropriately regulated by the development standards prescribed for other zoning districts, and for which development standards especially prescribed for each particular development proposal or project are necessary to achieve the purposes prescribed in section [12-1-2](#) of this title and to provide for the public welfare. The general use district is intended to ensure that public buildings and grounds and certain types of quasi-public uses permitted in the district are appropriately located and designed to meet the needs of residents and visitors to Vail, to harmonize with surrounding uses, and, in the case of buildings and other structures, to ensure adequate light, air, open spaces, and other amenities appropriate to the permitted types of uses.*

The following uses are permitted and conditional uses in the GU district. Conditional uses shall be permitted in the GU district, subject to issuance of a conditional use permit in accordance with the provisions of [12-16-1](#).

Ordinance No. 19, Series of 1995, changed the zoning of 67 properties in the Town of Vail from their previous zoning to the NAP District, Outdoor Recreation (OR) District, or the General Use (GU) District. This was done by the Town to address legal non conforming uses, improve protection of sensitive natural resources, and to ensure the appropriate zoning of outdoor recreational areas. The Planning and Environmental Commission (PEC) reviewed the proposed zoning changes on September 24, 1995 and voted 4-2-1 to recommend approval. Town Council voted 6-1 to approve Ordinance No. 19, Series of 1995 on second reading. After the passage of Ordinance No. 19, Series of 1995, the zoning of the subject site was amended from Agricultural & Open Space (AOS) to both NAP and GU in 1995.

The subject site falls within property number 34 and 35 in Ordinance No. 19, Series of 1995, which highlights unique features of the site as moderate debris flow and medium rock fall geographic hazards for the site. The previous zoning for the site at the time of the Ordinance No. 19, Series of 1995, was Agricultural and Open Space (AOS). The current zoning designation of NAP and GU resulted from the passage of the Ordinance.

**Permitted Uses**

Bicycle and pedestrian paths.
Communications antennas and appurtenant equipment.
Employee housing units, as further regulated by chapter 13 of this title.
Passive outdoor recreation areas, and open space

**Conditional Uses (provided such use is accessory to a parking structure)**

Offices.
Restaurants.
Ski and bike storage facilities.
Sundries shops.
Tourist/guest service related facilities.
Transit/shuttle services.

**Conditional Uses**

Child daycare centers.
Equestrian trails.
Golf courses.
Healthcare facilities.
Helipad for emergency and/or community use.
Major arcades.
Plant and tree nurseries, and associated structures, excluding the sale of trees or other nursery products, grown, produced or made on the premises.
Public and private parks and active outdoor recreation areas, facilities and uses.
Public and private schools.
Public and quasi-public indoor community facilities.
Public buildings and grounds.
Public parking structure.
Public theaters, meeting rooms and convention facilities.
Public tourist/guest service related facilities.
Public transportation terminals.
Public unstructured parking.
Public utility and public service uses.
Religious institutions.
Seasonal structures or uses to accommodate educational, recreational or cultural activities.
Ski lifts, tows and runs.
Water and sewage treatment plants.

#### IV. LAND USE PLAN

The Land Use Plan was adopted in 1989 to guide development for the Town of Vail, with its primary focus on the long-term needs and desires of the Town as it progresses and matures. The adopted map of the Vail Land Use Plan shows a recommendation of Open Space for the property, which totals 17.87 acres (100%) of the site as Open Space. Land use of the adjacent properties include:

North: N/A  
South: Public/Semi-Public and High Density Residential  
East: Open Space  
West: Medium Density Residential and Open Space



The Open Space category is defined as follows:

*Passive recreation areas such as greenbelts, stream corridors and drainage ways are the types of areas in this category. Hillsides which were classified as undevelopable due to high hazards and slopes over 40% are also included in this area. These hillside areas would still be allowed types of development permitted by existing zoning, such as one unit per 35 acres, for areas in agricultural zoning. Also, permitted in this area would be institutional / public uses.*

This property was likely included in this category due to geologic hazards, including medium severity rockfall and moderate hazard debris flow areas, and due to slopes in excess of 40%. A geologic hazards figure and slope figure are shown later in the study.

Goal statements were developed from the Vail Land Use Plan and should be used in the evaluation of any development proposal. The two most applicable categories for this site include General Growth / Development and Residential. All goal statements in the Vail Land Use Plan should be reviewed for the project. Below are several examples of goal statements relevant to the property when reviewing for development:

## 1. General Growth / Development

- 1.1. Vail should continue to grow in a controlled environment, maintaining a balance between residential, commercial and recreational uses to serve both the visitor and the permanent resident.
- 1.2. Development proposals on the hillsides should be evaluated on a case by case basis. Limited development may be permitted for some low intensity uses in areas that are not highly visible from the Valley floor. New projects should be carefully controlled and developed with sensitivity to the environment.
- 1.3. Development of Town owned lands by the Town of Vail (other than parks and open space) may be permitted where no high hazards exist, if such development is for public use.
- 1.4. Town owned lands shall not be sold to a private entity, long term leased to a private entity or converted to a private use without a public hearing process.
- 1.5. Vail should accommodate most of the additional growth in existing developed areas (infill areas).

## 2. Residential

- 2.1. Additional residential growth should continue to occur primarily in existing, platted areas and as appropriate in new areas where high hazards do not exist.
- 2.2. Affordable employee housing should be made available through private efforts, assisted by limited incentives, provided by the Town of Vail, with appropriate restrictions.
- 2.3. The existing employee housing base should be preserved and upgraded. Additional employee housing needs should be accommodated at varied sites throughout the community.

## V. PEDESTRIAN / VEHICLE CIRCULATION

The five minute walk is a standard that is best described as the average distance that a pedestrian is willing to walk before choosing to drive. The average walking speed of a human is at approximately 3 miles per hour, which translates to  $\frac{1}{4}$  of a mile in five minutes. The figure below shows a transportation network walking analysis with 5, 10, and 15-20 minute walk times highlighted based on the four major routes highlighted from the site. All routes highlighted below begin from the site center point and extend south to the edge of the site. The routes shown fall within the following walk times:

### 5 Minute Walk Time

- Center point to Middle Creek bus station

### 10 Minute Walk Time

- Center point to Sandstone School bus station

### 15 - 20 Minute Walk Time

- Center point to Lionshead Parking Structure
- Center point to Vail Village Parking Structure



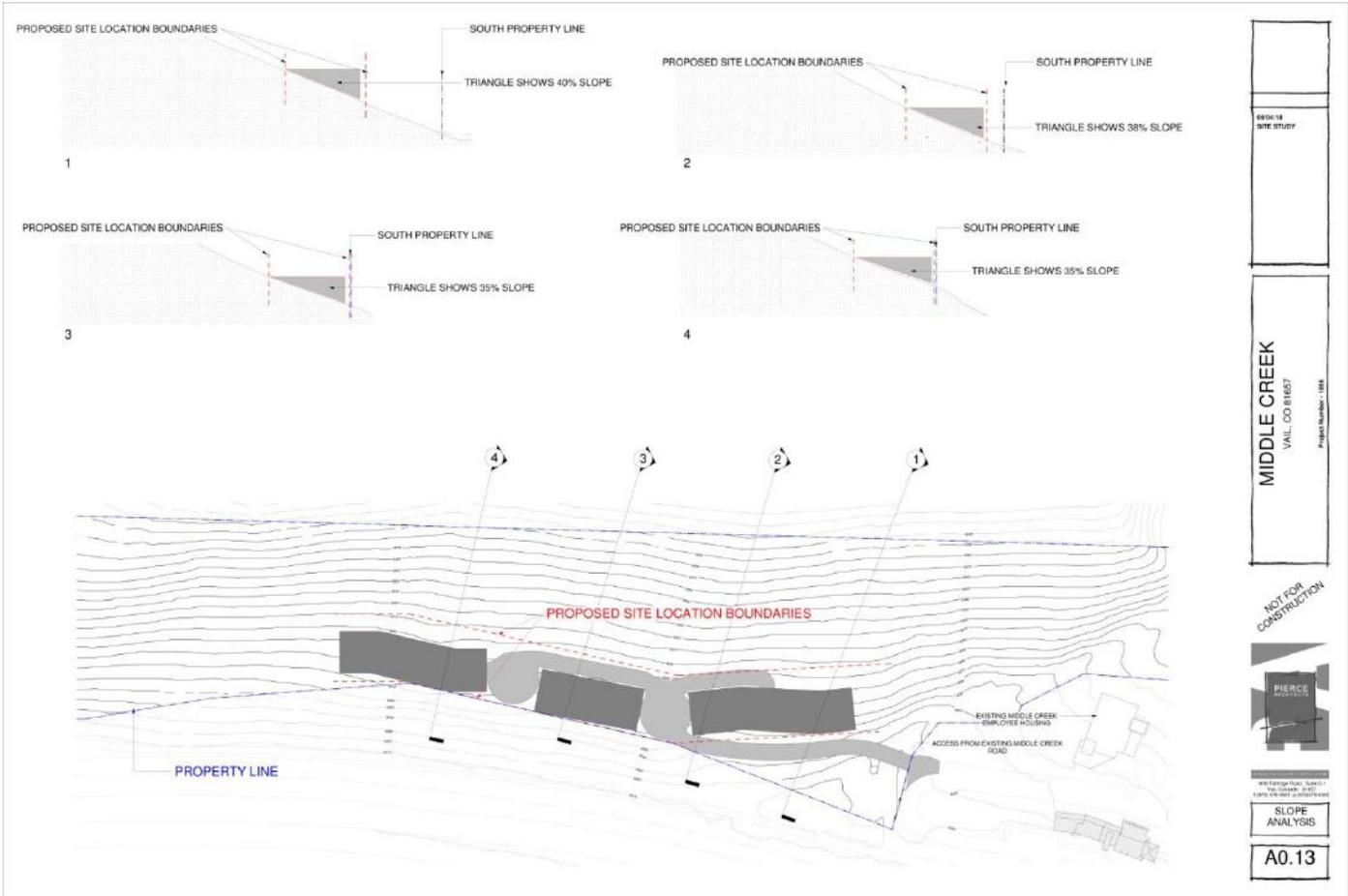
## VI. SLOPE

Slope has been divided into three categories – below 30%, 30% - 40%, and above 40%. All areas over 40% slopes are considered steep slopes per the Vail Land Use Plan. Per the Vail Town Code zoning regulations, slopes in excess of 30% slope are considered “excessive slopes”. The existing, natural gradient of the undisturbed land surface is a naturally steep site. 13.84 acres (77%) of the site are above 40% slope, 2.28 acres (13%) are 30% - 40% slope, and only 1.77 acres (10%) of the site are below 30% slope.



The Town Code states no structure shall be built on a slope of forty percent (40%) or greater except in single-family residential, two-family residential, or two-family primary/secondary residential zone districts. A variance would be required in this event to build on a slope greater than 40% due to the practical difficulty resulting from topographic conditions on the site. Additionally, not more than sixty percent (60%) of the total site area may be disturbed from present conditions by construction activities. The design review board (DRB) may approve site disturbance in excess of the sixty percent (60%) maximum if specific design criteria warrant the extent of the requested deviation.

A proposed project on the site should utilize areas less than 40% slope wherever possible. The following graphic demonstrates the optimal location for a potential project on the site.



## VII. HAZARDS

The site contains medium severity rockfall areas and moderate hazard debris flow areas. 13.72 acres (77%) of the site is within medium severity rockfall area, while 1.46 acres (8%) of the site is within moderate hazard debris flow. Due to the site containing areas identified as rockfall and debris flow, the site must undergo site specific geologic investigations. No initial application for a building permit, grading permit or major or minor subdivision shall be approved until a site specific geologic investigation is complete by a “professional geologist”. Any development on the site will require site specific studies for rockfall and debris flow with building permit application or with Design Review Board (DRB) application if it is for a multi-family or commercial development.



### Geotechnical Engineering Study

A recent geotechnical study executed in 2018 for a new employee housing development at the existing Solar Vail has confirmed favorable conditions and we can assume similar conditions for this site. This report was produced by H-P Kumar. H-P Kumar has estimated a \$6,000 – \$6,800 proposal fee to perform the necessary drilling and evaluation for this specific site.

### Excerpts from recent Solar Vail Geotechnical Engineering Study:

**Groundwater** - “No free ground water was encounter in the borings at the time of drilling and the subsoils were slightly moist to moist.”

**Soil Stability** - “The hillside above the building site is steep, at the grade of about 40% but does not show signs of instability.”

**Soil Bearing Pressure** - "Footings placed on the undisturbed natural granular soils or bedrock should be designed for an allowable bearing pressure of 5,000 psf."

## **Rockfall**

A Debris Flow and Rockfall Hazard Analysis was performed for the area above what is now Middle Creek Village in November of 1992 by Mears and Wilbur.

### **Excerpts from Flow and Rockfall Hazard Analysis for Middle Creek:**

"Rockfall is not a potential hazard to the proposed development as shown on a conceptual site plan prepared on 3-19-92 by Alpine International. This conclusion is based on the following observations:

- a. Rockfall source areas do not exist above the eastern portion of the proposed development (the East Parcel)
- b. Although rockfall may occur above the "West Parcel" it will consist of moderate-sized, rare rockfall events that will not reach the proposed building."

In conclusion our site is similar to the "eastern portion" discussed in the report and we can hope for no potential rockfall.

A rockfall study can be provided for this site by Mears and Wilbur:

"Thanks for contacting us about rockfall consulting near Middle Creek. I have contacted my partner Chris Wilbur and we have reviewed previous proposals and reports in the immediate area with similar rockfall exposure. Based on this review and our experience in Vail over the past 4 decades we estimate our consulting services (topographic modeling, site visit, application of 2D and 3D quantitative rockfall models [if needed], hazard evaluation, mitigation concepts [if needed], and report) would range from \$7,000 to \$10,000.

We hope this provides sufficient information for you at this planning stage of the project. We can provide a detailed proposal if requested. Art Mears, P"

## VIII. WILDLIFE

According to Colorado Parks and Wildlife data, the site contains the following types of wildlife:

1. Black Bear: Overall Range, Summer Concentration, Human Conflict Area
2. Boreal Toad: Overall Range
3. Elk: Summer Range, Overall Range
4. Lynx: Potential Habitat
5. Moose: Overall Range, Summer Range
6. Mountain Lion: Human Conflict Area, Overall Range
7. Mule Deer: Overall Range, Summer Range
8. Terrestrial Garter Snake: Overall Range

While the entire valley/watershed is shown as Boreal Toad and Lynx habitat based on Surveying and Mapping (SAM) maps, this site is not suitable habitat for either species due to lack of water in the case of Boreal Toads and lack of cover/presence of human disturbance and activity in the case of Lynx.

The Boreal Toad is presently listed as a state endangered species by the state of Colorado. Lynx are presently listed as a federally threatened and state endangered species. This designation does not restrict future development, due to the site providing no suitable habitat to either species. A more detailed field inspection would be needed to verify the data specifically for the site.

## IX. FLOODPLAIN

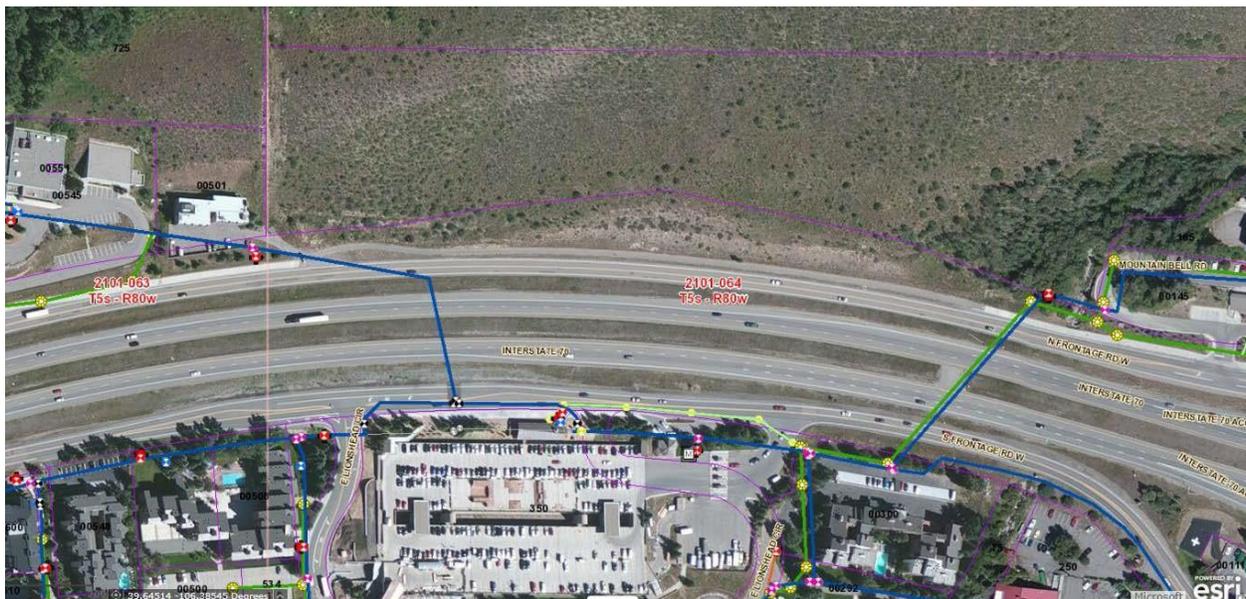
Middle Creek flows through a small portion (0.58 acres) of the site, west of the Mountain Bell Tower and Middle Creek housing development. The area is identified as a Hazard Area on the Federal Emergency Management Agency (FEMA) Flood map. Areas immediately adjacent to Middle Creek are inundated by a flood event having a one-percent chance of being equaled or exceeded in any given year. The one-percent annual chance flood is also referred to as a 100-year flood. The majority of the site (17.29 acres) is clear of the floodplain. All modifications, grading or installation of proposed improvements within the 100-year floodplain shall be in accordance with [12-21-11: Flood Hazard Zones](#). A floodplain use permit or floodplain modification permit is required depending on the circumstance and conditions.



## X. UTILITIES

Potable water and waste water are provided to the areas south, west, and east of the site by Eagle River Water and Sanitation District. Water lines are highlighted in blue, while wastewater lines are highlighted in green. Water and wastewater lines run northeast across I-70 from Vail International to the Mountain Bell site, then flow east. A wastewater line ends between the Gymnastics facility and Solar Vail, where it runs west along the CDOT ROW beyond Red Sandstone School. A water line crosses I-70 north of the Lionshead parking structure, then immediately turns northwest once it crosses North Frontage Road, through the southwestern portion of Solar Vail and through Red Sandstone School. Water, sewer, electric, gas, and communication extensions would be needed to serve the property.

### Eagle River Water & Sanitation District - Water and Sewer



Water and Sewer Locations

From email from **Micah Schuette 8/27/18**

As I mention on the phone, we may need to run a model to get an idea of system impact this development could have on existing infrastructure. In the past we have utilized either a deposit, or reimbursable agreement to conduct the evaluation. For a full explanation of this process I would direct you to Article VIII (page 63) of our Rules and Regulations main body that can be found here: <https://www.erwsd.org/resources/rules-regulations/>.

Adjacent infrastructure is not the only consideration for new developments, however. Water rights are also required to serve this larger development. From what I see on the Town of Vail Zoning Map, this parcel is currently designated as Open Space. Obviously this would be a change in use of that property, so water rights sufficient to serve the proposed new use will need to be dedicated. I don't know if the Town of Vail has acceptable water rights to dedicate

for the property, but that's something to investigate on the client end. I will also speak with our water council about the ability of the District's pool of water rights to cover this new use. Under that scenario, a cash-in-lieu of water rights dedication may be an option, if accepted by our Board (more details on this policy can be found in Article X, page 79). I'll get back to you on this as soon as I can.

Please feel free to reach out to me if you have any questions here, and we'd be happy to sit down with you to discuss this project in more detail.

Thanks,

Micah

**Micah Schuette**

Planner

**Eagle River Water & Sanitation District**

Direct: 970-477-5496 Cell: 970-401-2547

846 Forest Road, Vail, CO 81657

<http://www.erwsd.org>

**Clean Water. Quality Life.™**

**Utility Reports:**

Holy Cross - Electrical Service

“It is a simple matter to supply electricity to the proposed development. It would have to be three-phase, there is no single-phase in the area.”

Jeffery P. Vroom

## **XI. DESIGNATED OPEN SPACE**

According to the 2017 Open Lands Plan (DRAFT), the western portion zoned Natural Area Preservation is eligible for a Designated Open Space Overlay. The eastern 1.5 acre area zoned Natural Area Preservation is not currently eligible for a Designated Open Space Overlay. In order to be considered for dedication as Designation Open Space, a parcel must be owned by the Town of Vail, and zoned either Natural Area Preservation (NAP), Outdoor Recreation (OR) or Agricultural Open Space. Additionally, the parcel must be either:

1. Environmentally sensitive lands (wetlands, riparian areas, critical habitat identified by the division of wildlife, or the natural heritage program);
2. High natural hazard areas including the 100-year flood plain, red avalanche hazard area, high rock fall hazard area, and high debris flow hazard area; or
3. Town of Vail park that provides passive outdoor recreation opportunities.

Designated Open Space is an overlay designation, established within the Vail Town Charter, which can be applied by the Town Council to any Town-owned parcel that satisfies certain criteria highlighted in the Charter. Once a parcel is dedicated as Designated Open Space, it is then arguably locked as a park or open space land due to the steps needed for the disposal of Designated Open Space listed below:

*Town council may consider the sale, lease, trade, alienation, partition, granting of an exclusive license or permit, use or zone change other than one of the open space zone districts identified in this section of designated open space only upon receiving a unanimous recommendation of such action from the open space board of trustees.*

*Once such recommendation is received, the town council shall consider an ordinance referring such question of disposal of designated open space to the registered electors at a town election for their acceptance or rejection. The ordinance shall give the location of the land in question and the intended disposal thereof. Every such ordinance shall require the affirmative vote of three-fourths of the entire council for passage. The vote of the town on proposed disposal of designated open space shall be held not less than thirty days and not later than ninety days from the date of the final council vote thereon. If no regular town election is to be held within the period prescribed in this subsection, the council shall provide for a special election; otherwise, the vote shall be held at the same time as such regular election, except that the council may at its discretion provide for a special election at an earlier date within the prescribed period. Copies of the proposed ordinance to dispose of designated open space shall be made available to the public within a reasonable time before the election and also at the polls at the time of the election.*

## **XII. VEHICULAR ACCESS**

Our goal is to utilize the existing vehicular and public bus Frontage Road access to the Middle Creek Village to access the West Middle Creek site. We will add a turn off to the existing Middle Creek drive way and utilize a bridge over Middle Creek and provide vehicular access to West Middle Creek.

The bridge will also allow us to avoid the 100 year flood plain.

The impact of additional traffic to the Middle Creek Village Frontage Road access has been reviewed by Town Engineer.

“Based on the Middle Creek Apartment Traffic Study, and using the same assumptions; Assuming 142 new apartment units that have parking (doubling Middle Creek Housing)

There would potentially be the following total projected traffic at the intersection (includes a 30% reduction for transit; assumes 50/50 east /west split);

### **AM**

Entering 18 (9 Lefts in/9 Right in)

Exiting 86 (43 lefts out / 43 Rights out)

### **PM**

Entering 82 (41 lefts in/41 Rights in)

Exiting 40 (10 lefts out / 10 Rights out)

Level of Service should work fine, but should be verified by traffic engineer if this is moved forward.

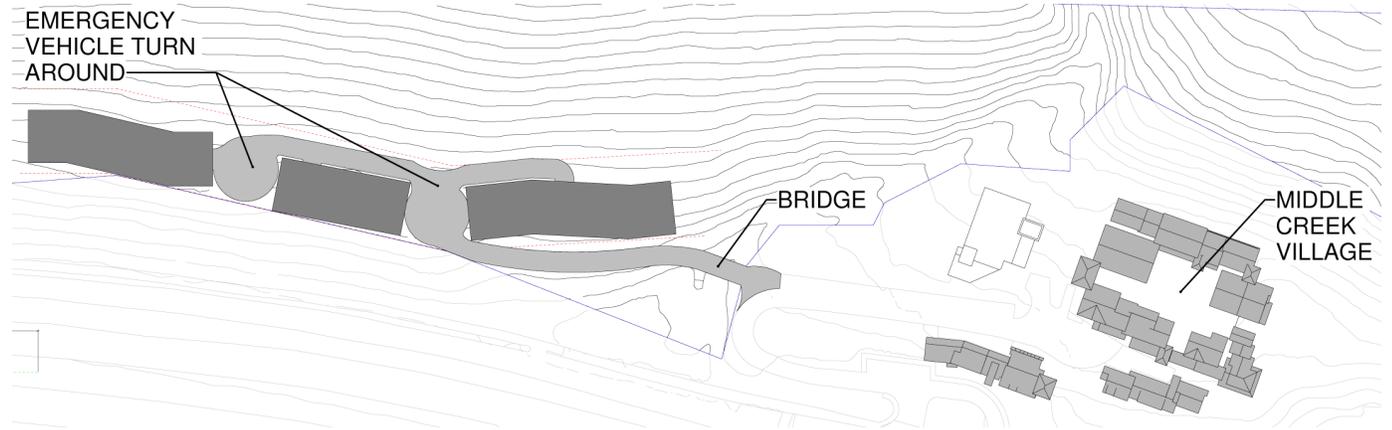
Existing left turn lane has 100' of storage and would be adequate

Assume right turn lane will be required. Assume it will need to extend full width (11') from housing access through bus turn lane access and then an additional 50', then taper back to existing curb over 110'. This would accommodate both housing access and bus access.”

Tom Kassmel, Town Engineer

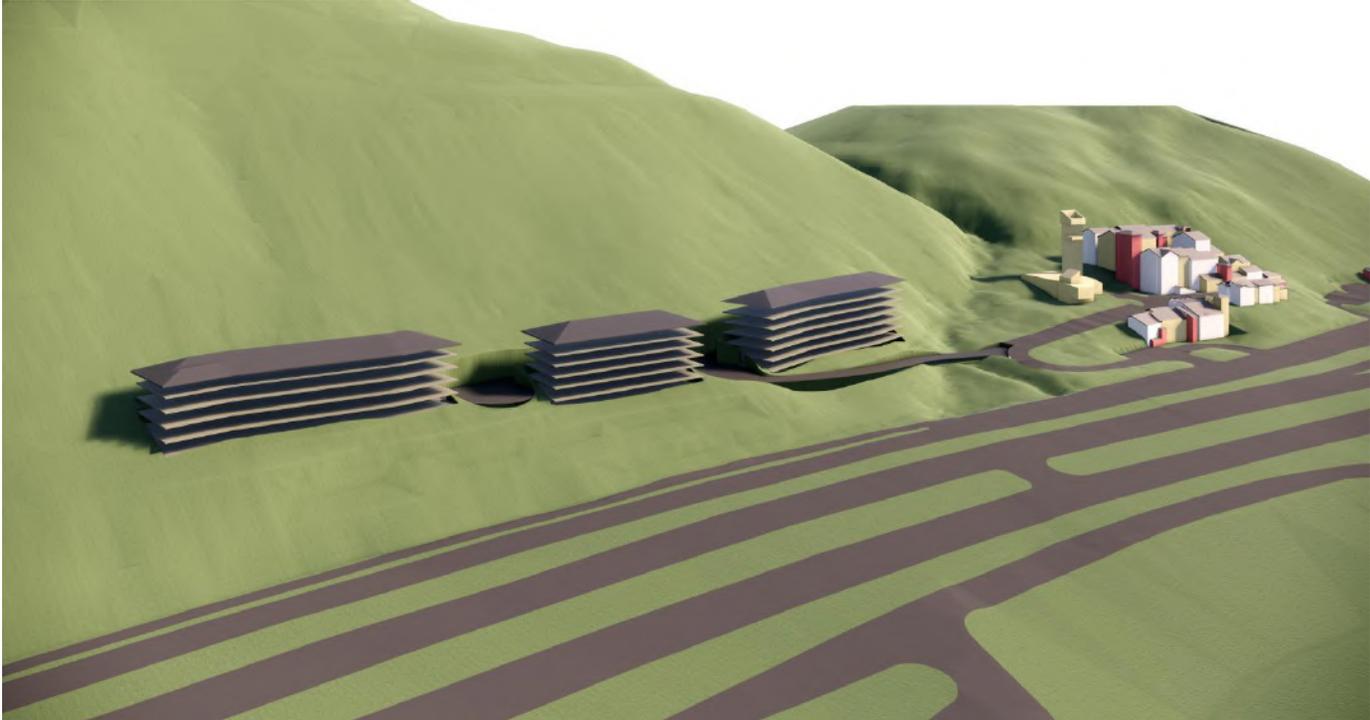
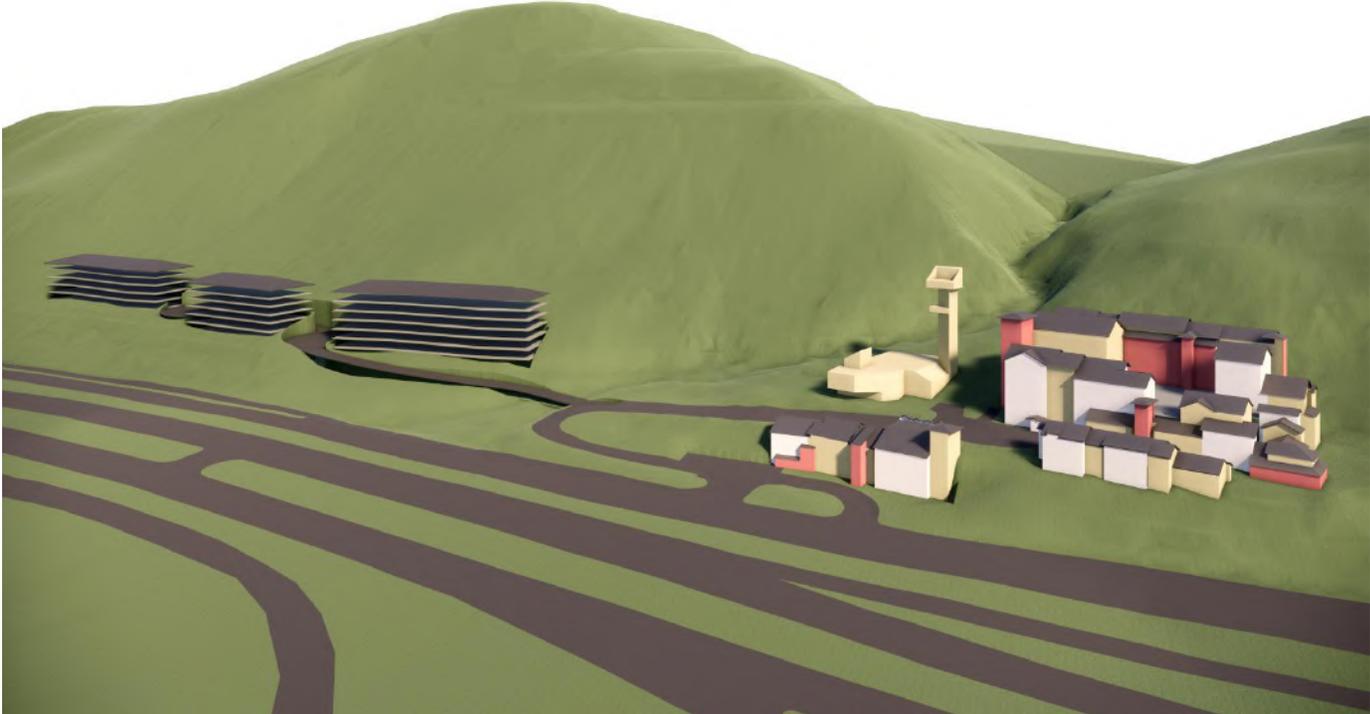
### XIII. Fire Department Access and Public Safety

The attached plan has been reviewed by the Town of Vail Fire Marshall and generally meets the appropriate access requirements pending a more comprehensive study of turning radiuses of the emergency equipment.



**XIV. Potential Development**

Preliminary studies show the possible layout of three building masses following the contours of the topography. Type IIIB construction would allow 4 levels of residential units over 2 levels of parking.



Total Parking = 59,148 SF = +/- 168 Spaces @ 350 SF/Space  
Total Residential = 138,789 SF = +/- 174 Units @ 800 SF/Unit  
Total Storage (Bldg C Only) = 2,660 SF

BLDG C

11,576 SF Parking

2,660 SF Storage

43,645 SF Residential

BLDG B

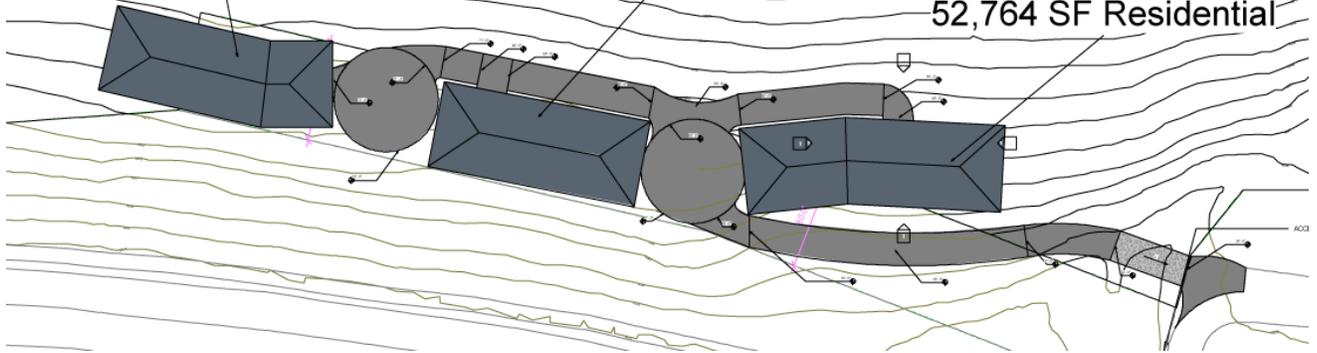
21,190 SF Parking

42,380 SF Residential

BLDG A

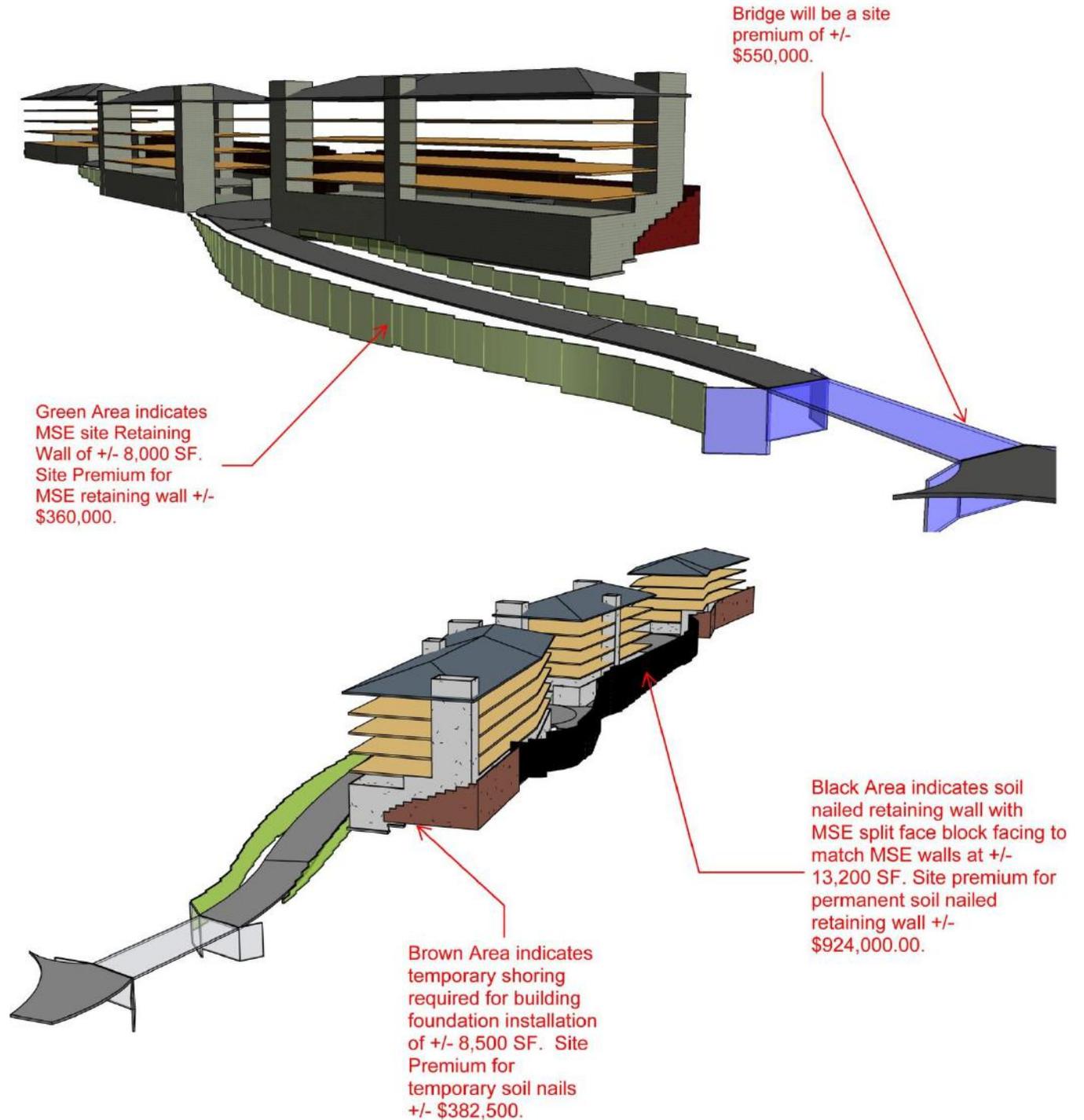
26,382 SF Parking

52,764 SF Residential



**XV. CONSTRUCTION COST ANALYSIS**

Due to the slope of the site, site conditions, site access and market conditions, the cost to develop this site must be weighed against the cost to purchase a similar lot.



## **XVI. CONCLUSION**

Highly constrained areas have limited development potential; however, the areas are not off limits when following the proper steps necessary for new construction. There is a small portion towards the center of the site to the southern side where residential development could occur within a 30-40% slope. The Town Code states no structure shall be built in any flood hazard zone or on a slope of forty percent (40%) or greater except in a single-family residential, two-family residential, or two-family primary/secondary residential zone districts. Otherwise, a variance would be required in this event to build on a slope greater than 40% due to the practical difficulty resulting from topographic conditions on the site. Variances are governed by the provisions of [12-17](#), Vail Town Code. Significant retaining walls and cuts in the grade would be needed as well. Working within such a highly constrained site will add significant costs to site grading, excavation, and construction.

## **XVII. ATTACHMENTS**

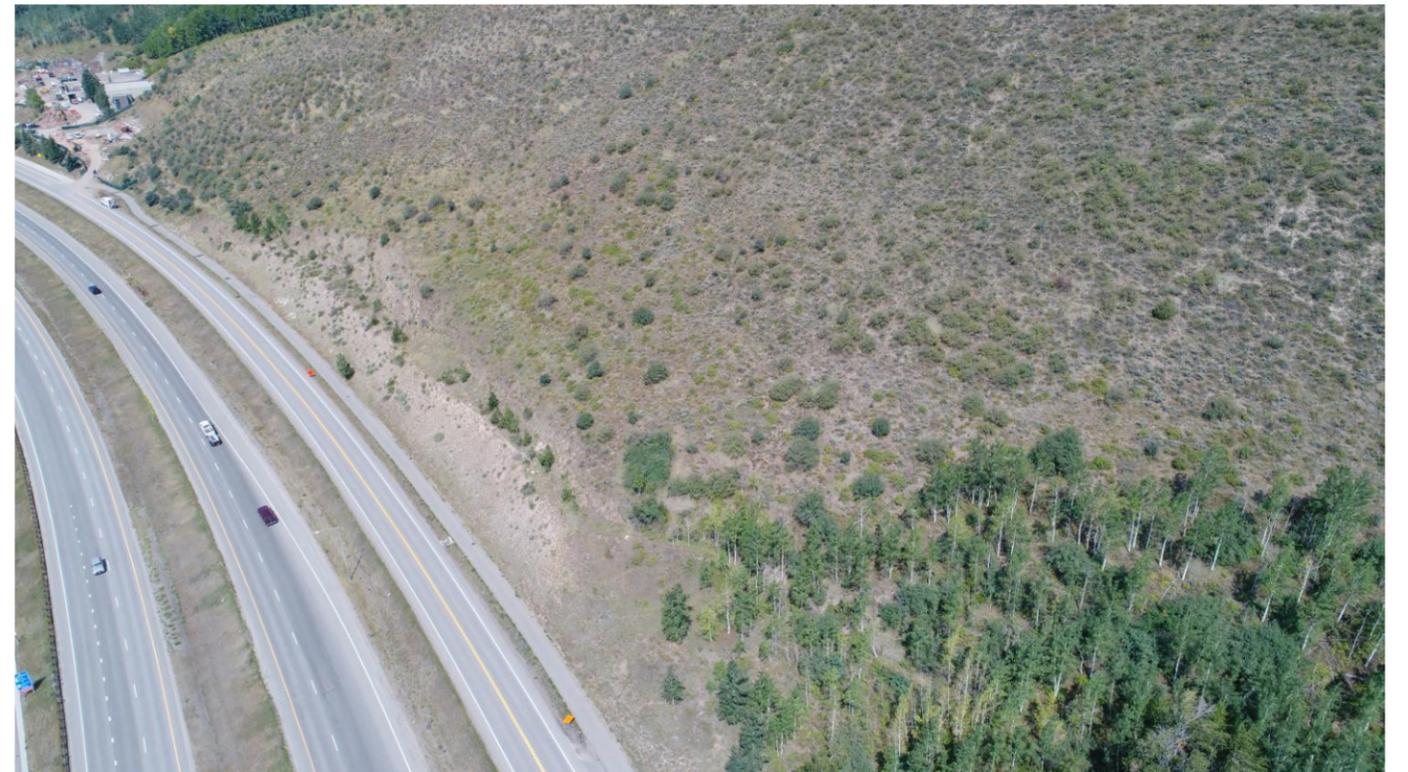
- A. Site Photos
- B. Study Area Map
- C. Zoning Map
- D. Land Use Map
- E. Pedestrian/Vehicle Circulation
- F. Steep Slopes Map
- G. Slope Analysis
- H. Hazards Map
- I. Slope Analysis
- J. Slope Analysis
- K. Town Owned Property Map
- L. FEMA Flood Hazards Map
- M. Utilities Map
- N. Fire Access
- O. Potential Development
- P. Construction Premium

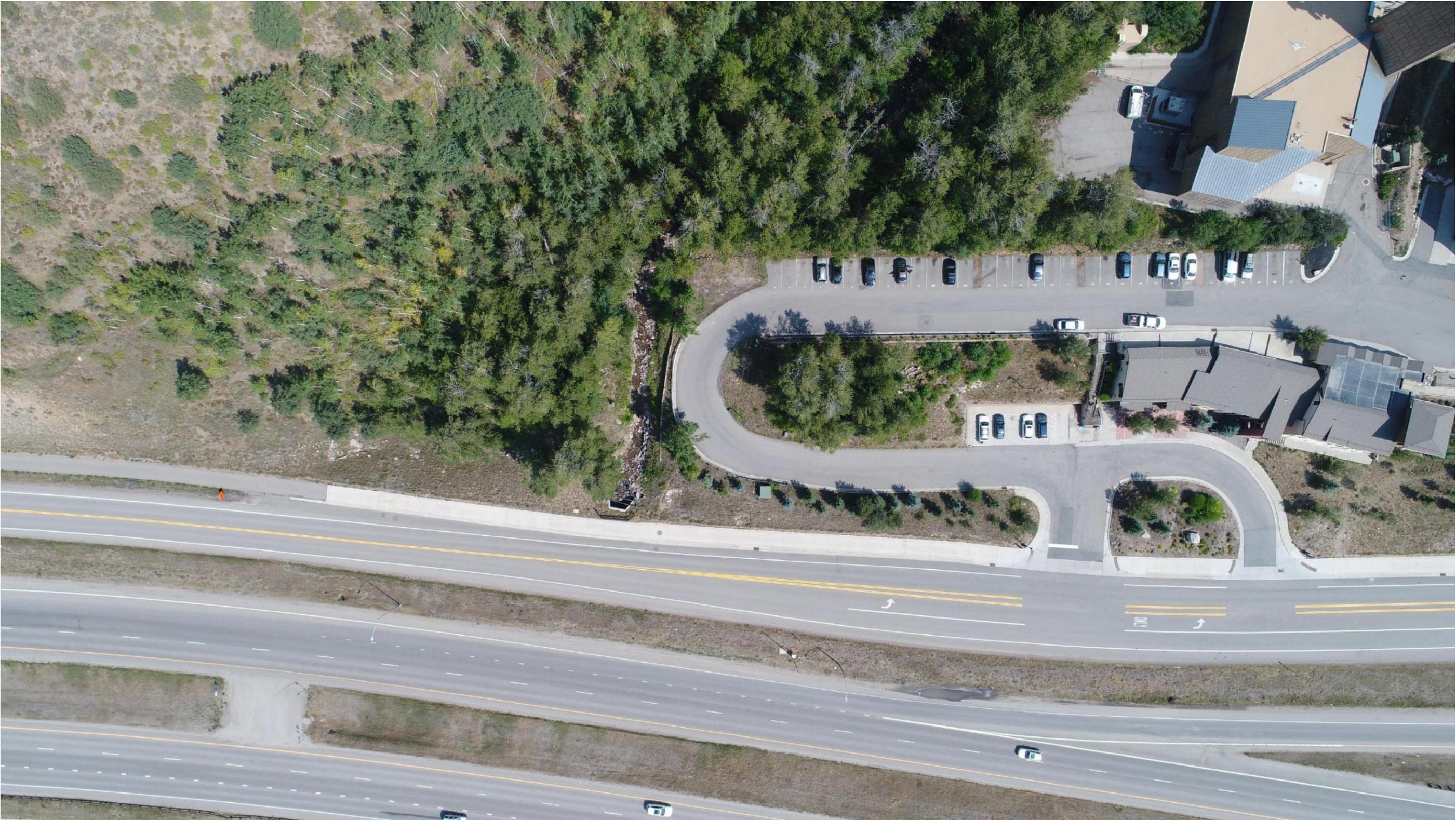
## **XVIII. APPENDIX ( NOT ATTACHED)**

- A. HP Kumar – Geotechnical Report
- B. Study Area Map
- C. HP Kumar – Proposal for Site Specific Geotech report

A. SITE PHOTOS







B. MAPPING – STUDY AREA



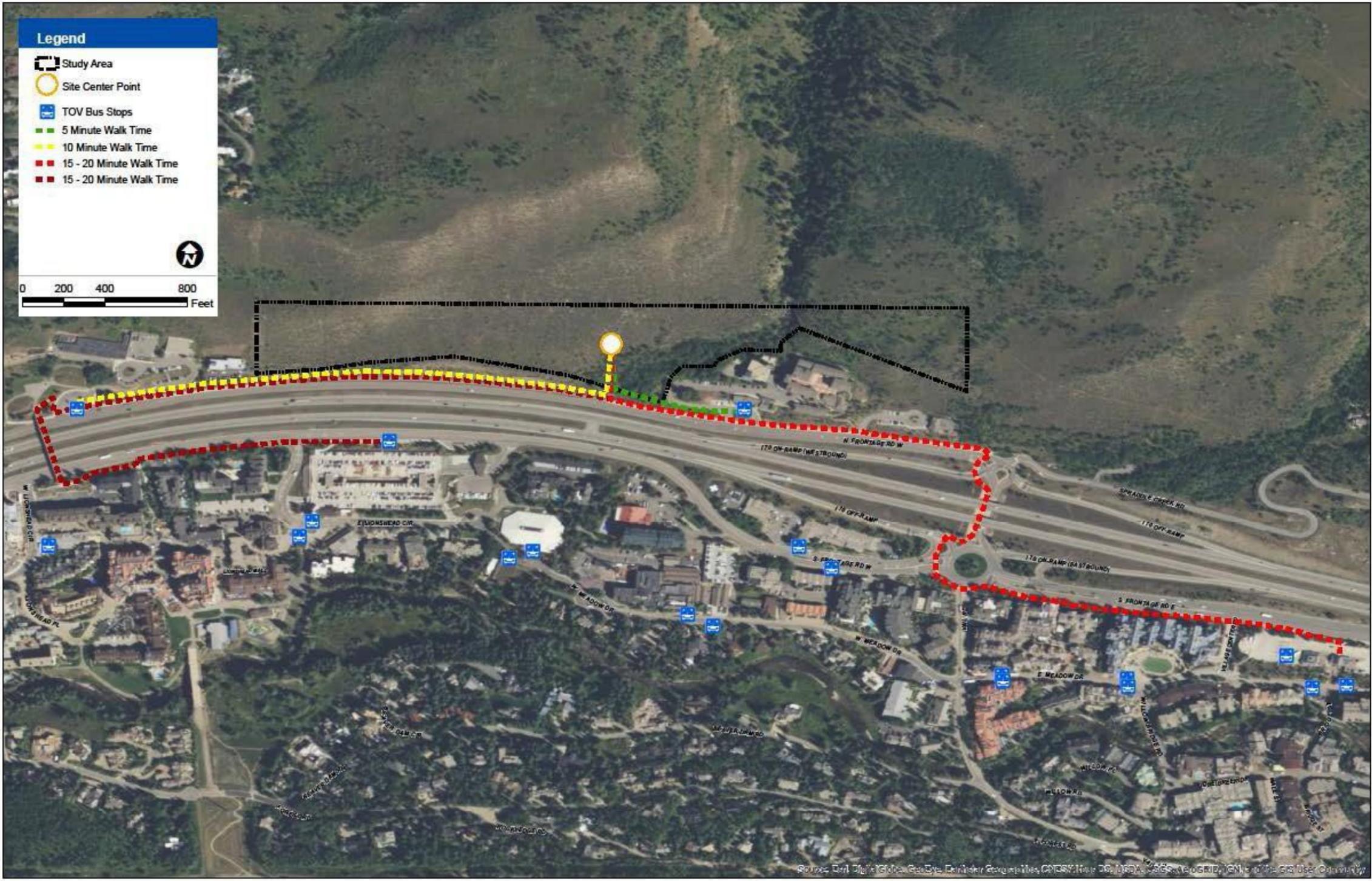
C. MAPPING – ZONING



D. MAPPING – LAND USE



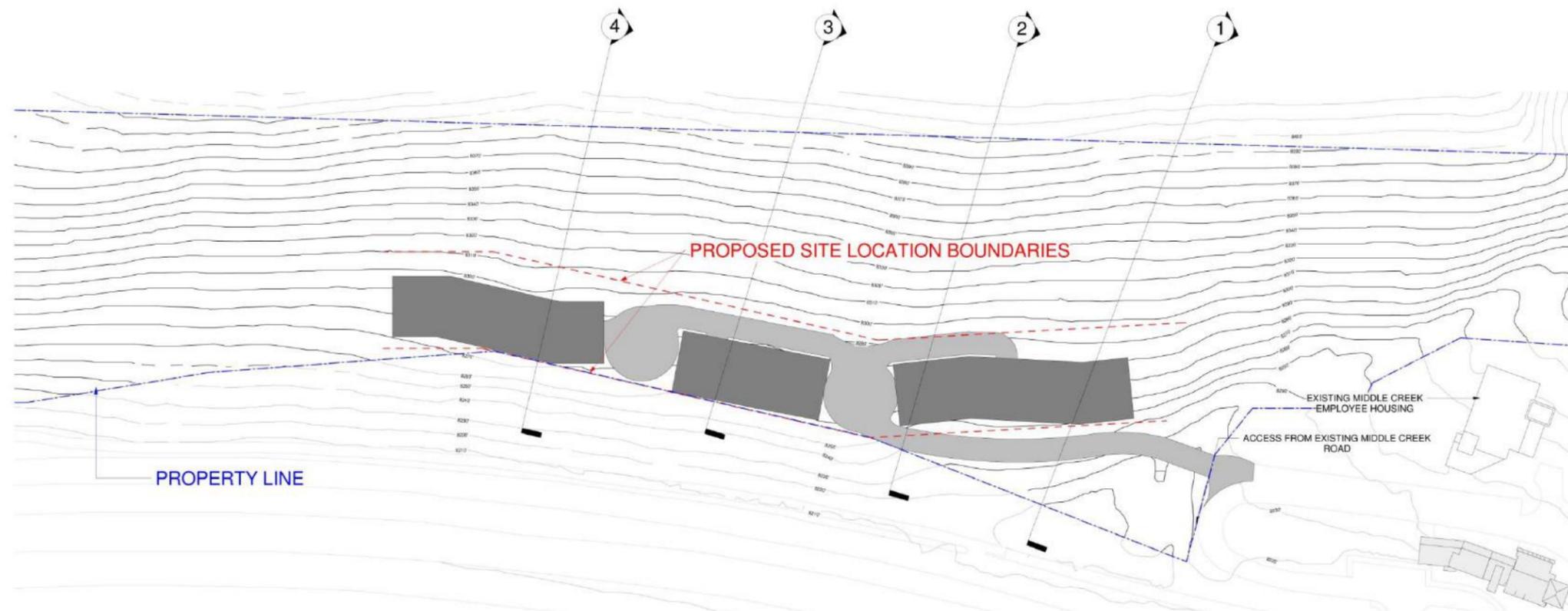
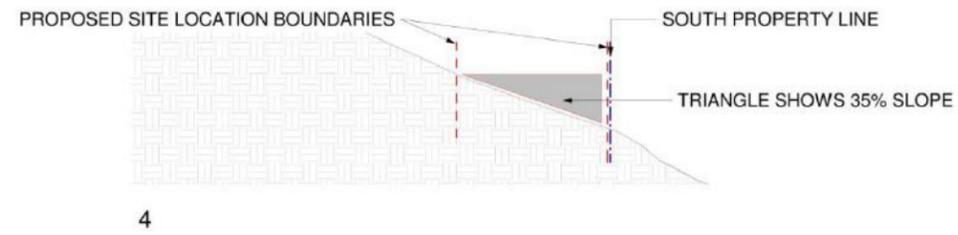
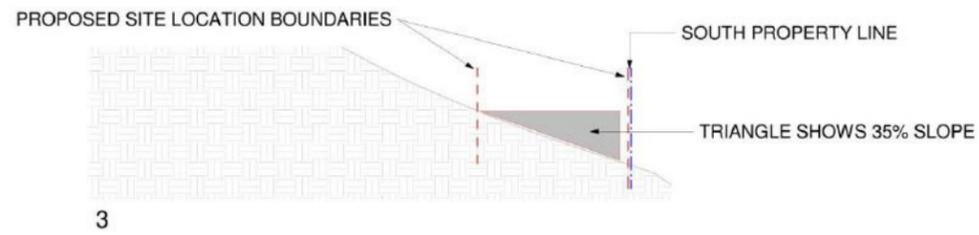
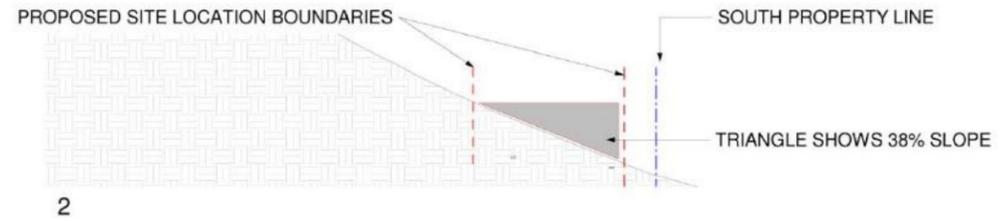
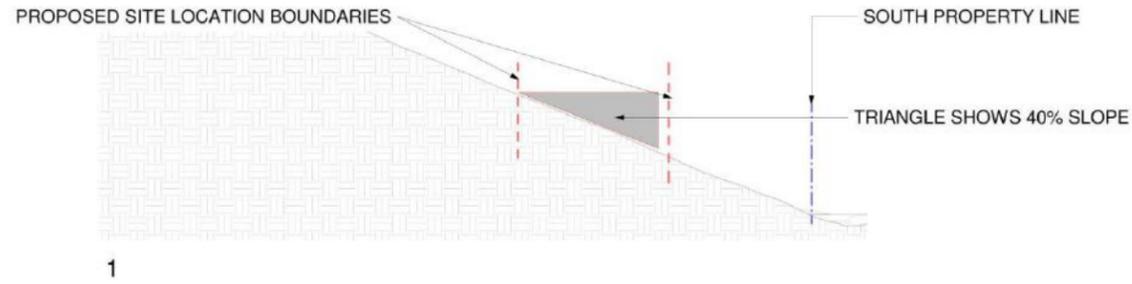
E. MAPPING – PEDESTRAIN/VEHICLE CIRCULATION



F. MAPPING – STEEP SLOPE MAP



**G. MAPPING – SLOPE ANALYSIS**



09/04/18  
SITE STUDY

MIDDLE CREEK  
VAIL, CO 81657  
Project Number - 1856

NOT FOR  
CONSTRUCTION



www.piercearchitects.com  
1650 Fairidge Road, Suite C-1  
Vail, Colorado 81657  
1.970.476-6601 p.970.476-6342

SLOPE  
ANALYSIS

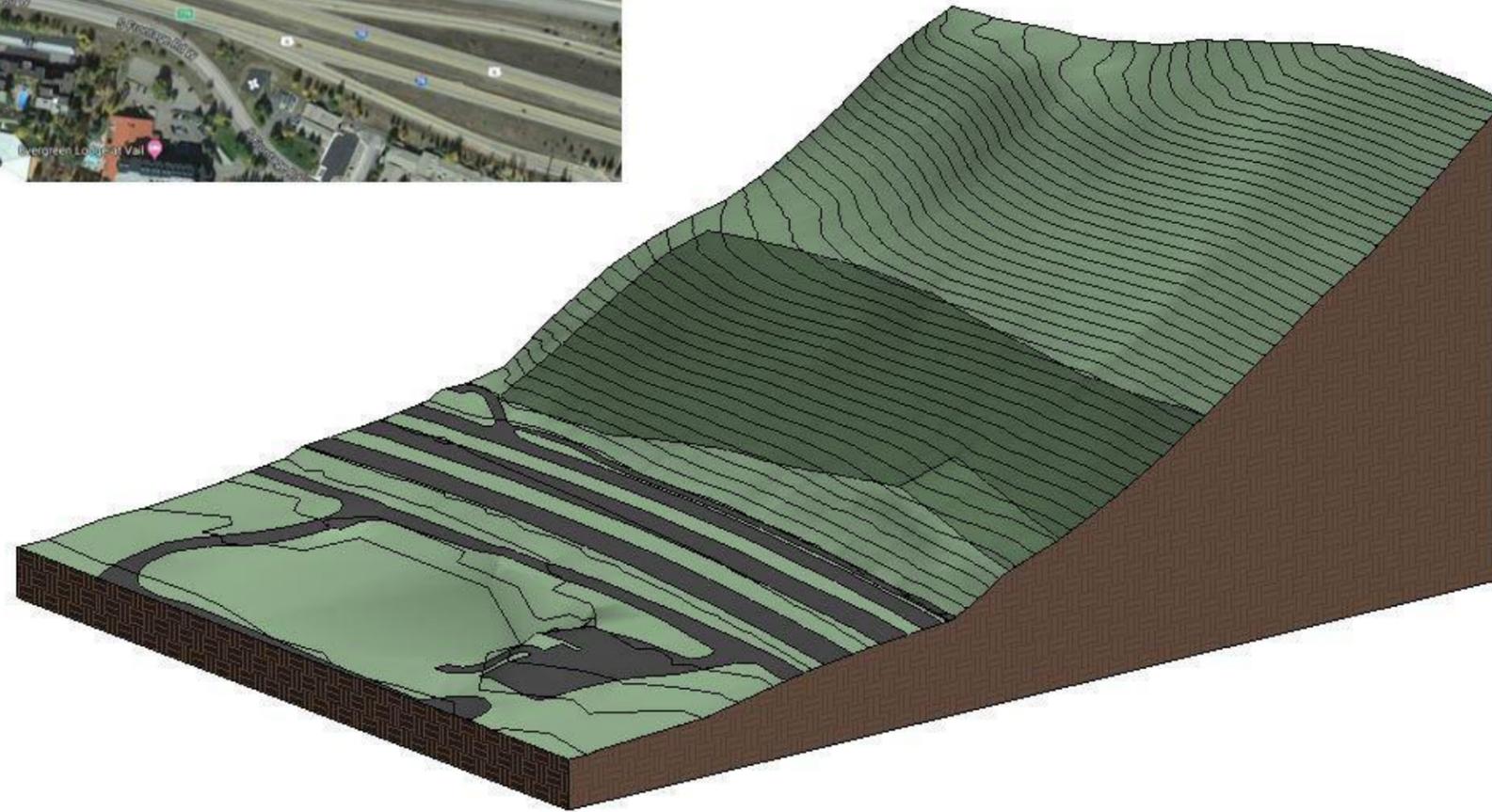
A0.13



I. MAPPING – SLOPE ANALYSIS



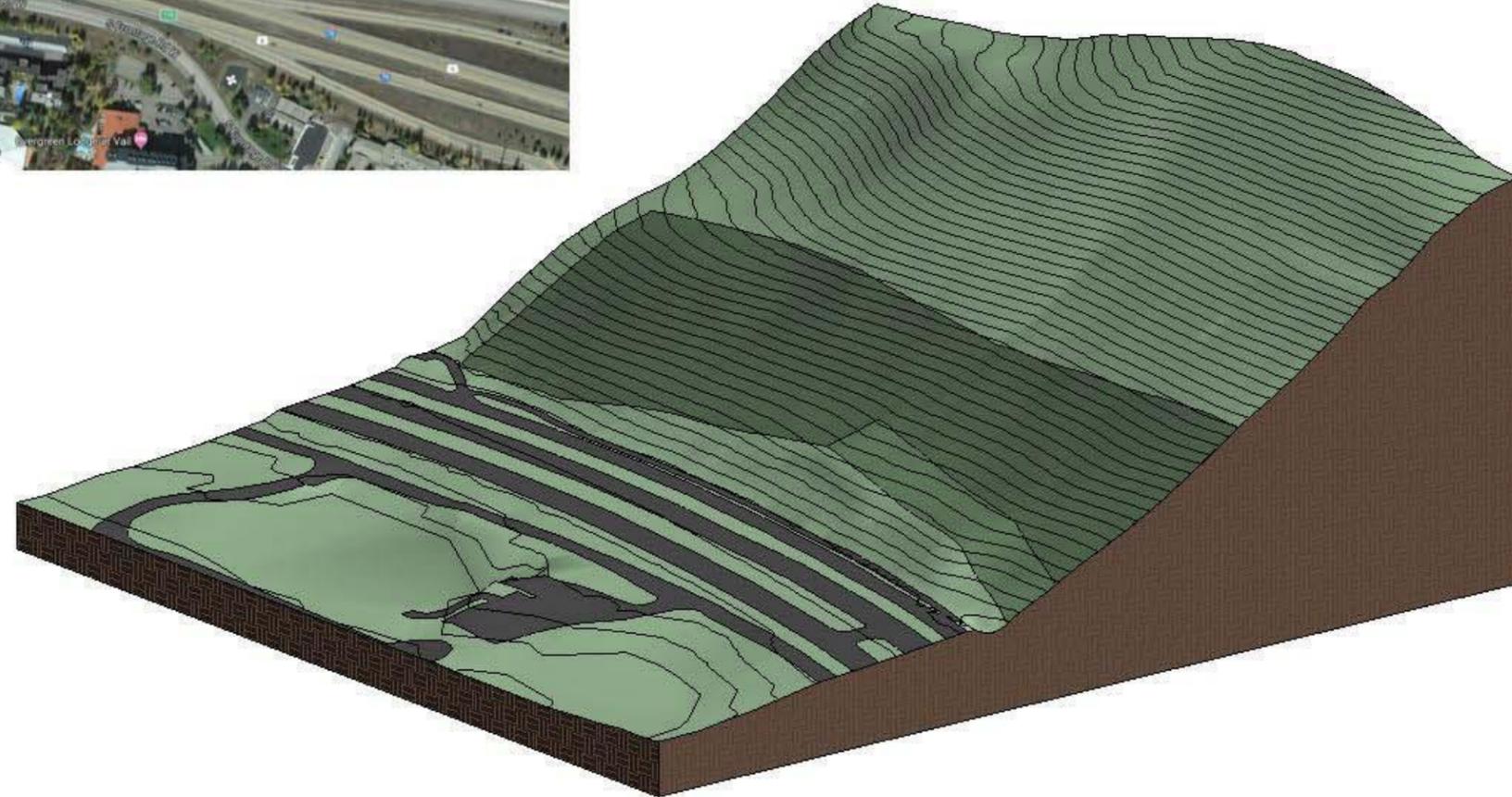
AREA MAP



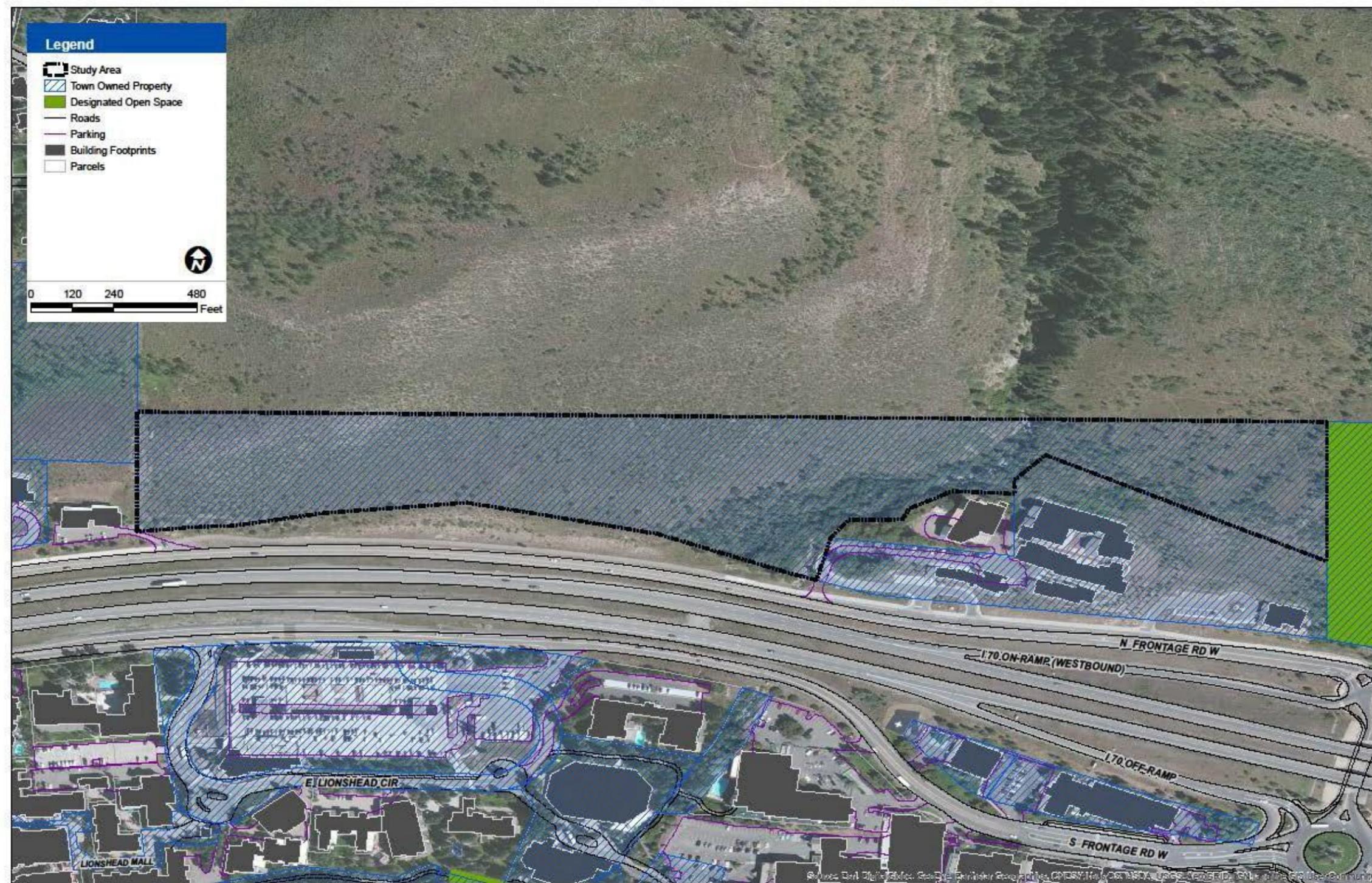
J. MAPPING – SLOPE ANALYSIS



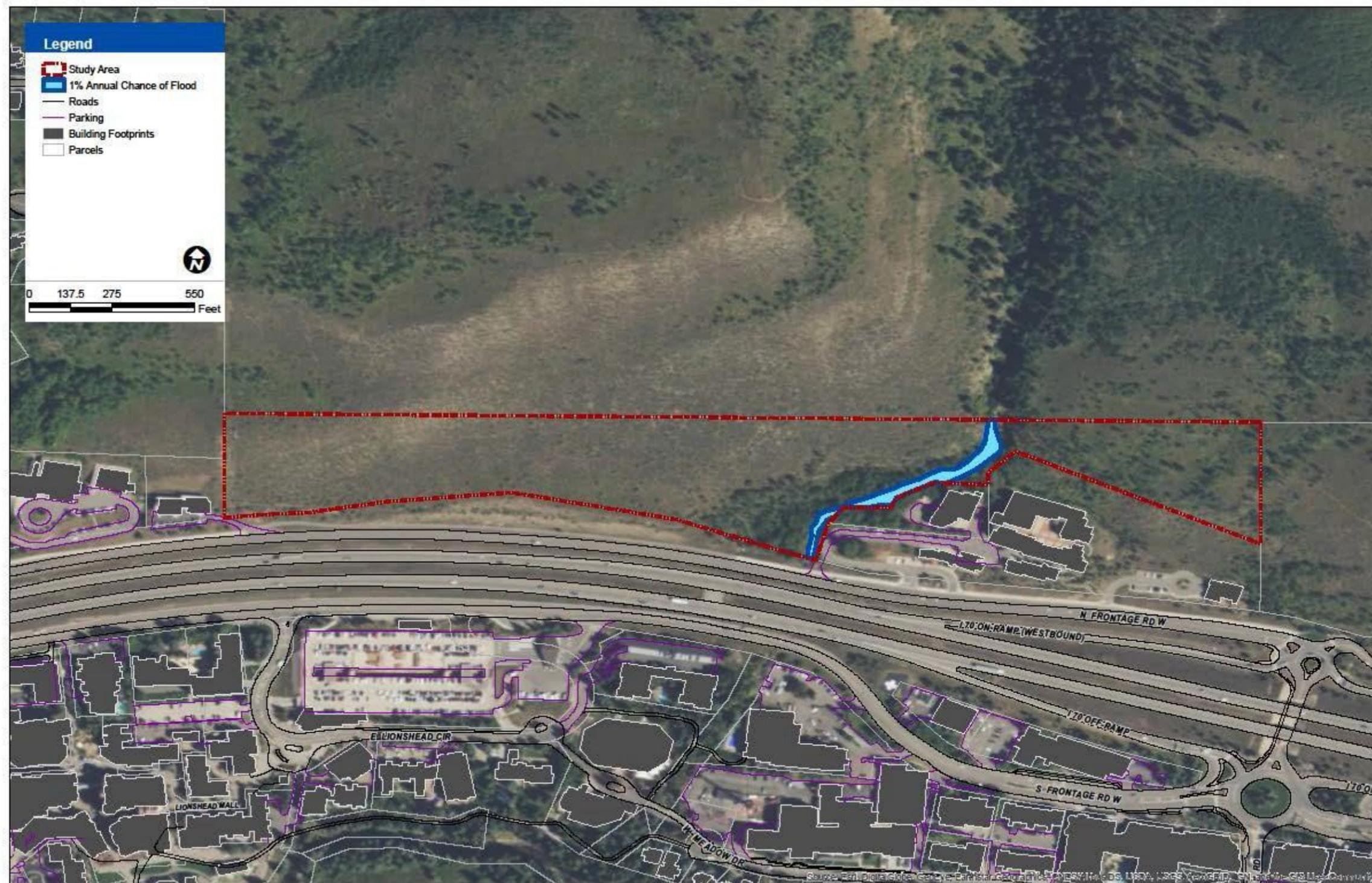
AREA MAP



# K. MAPPING – TOWN OWNED PROPERTY MAP



L. MAPPING – FEMA FLOOD HAZARDS

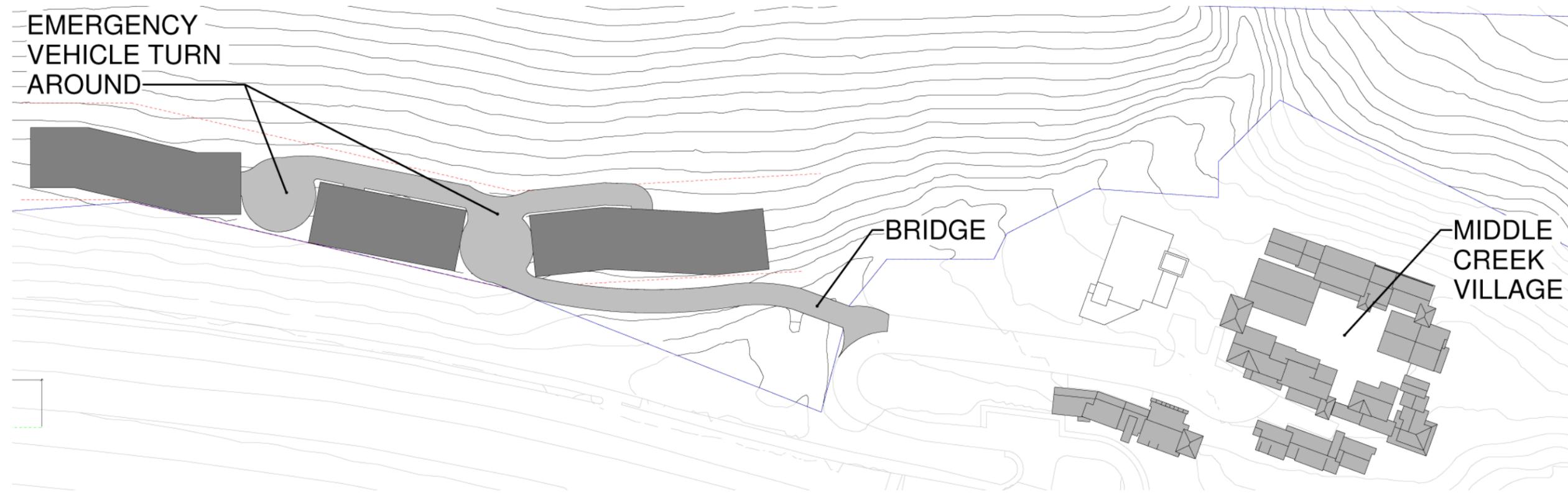


Town of Vail

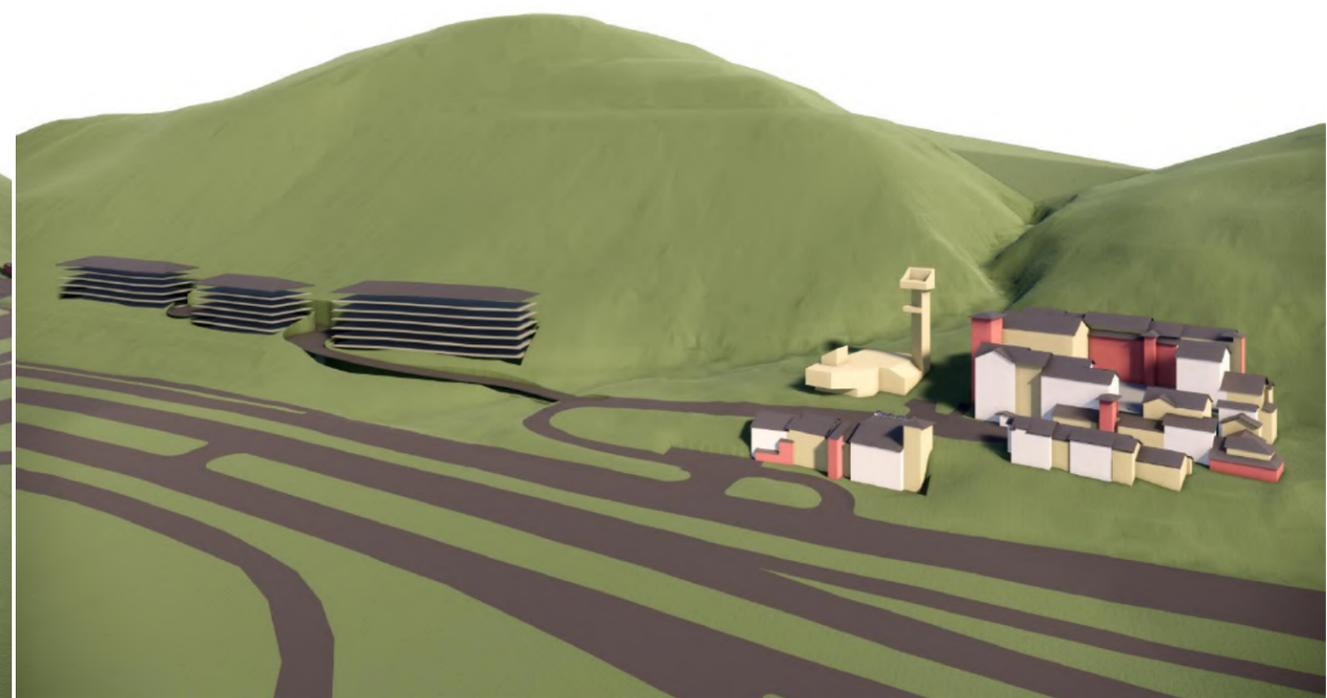
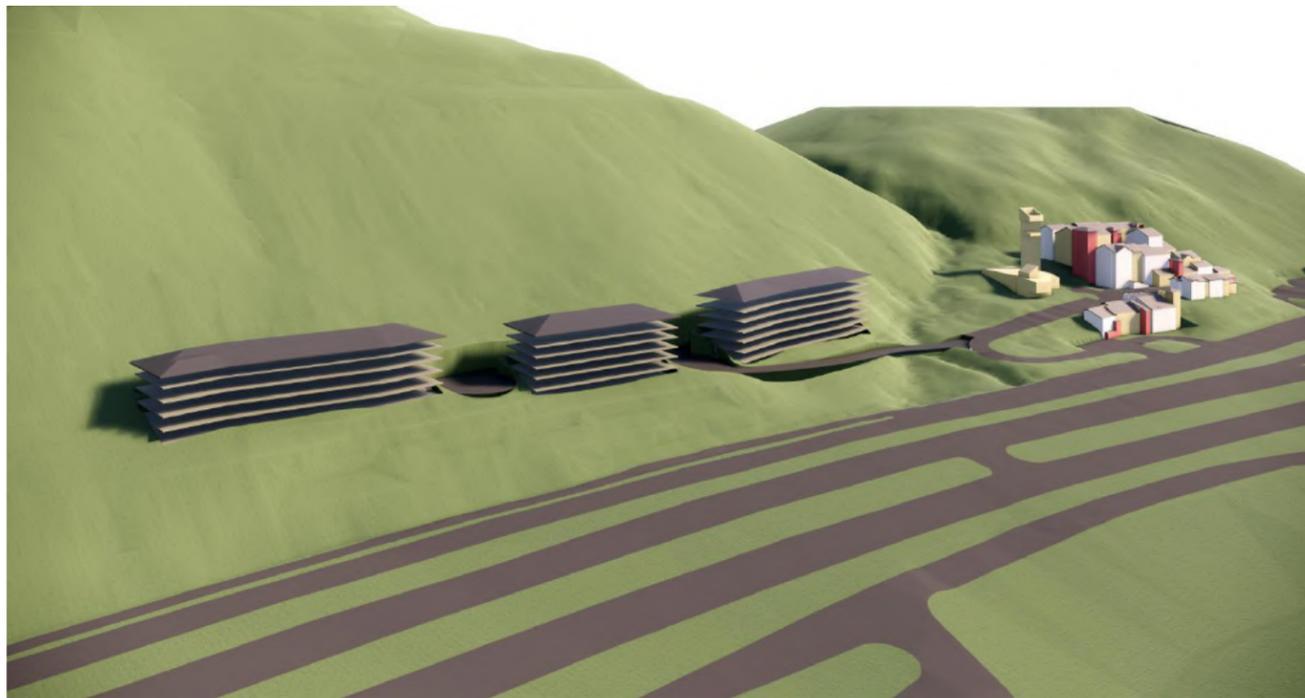
M. MAPPING – WATER AND SEWER



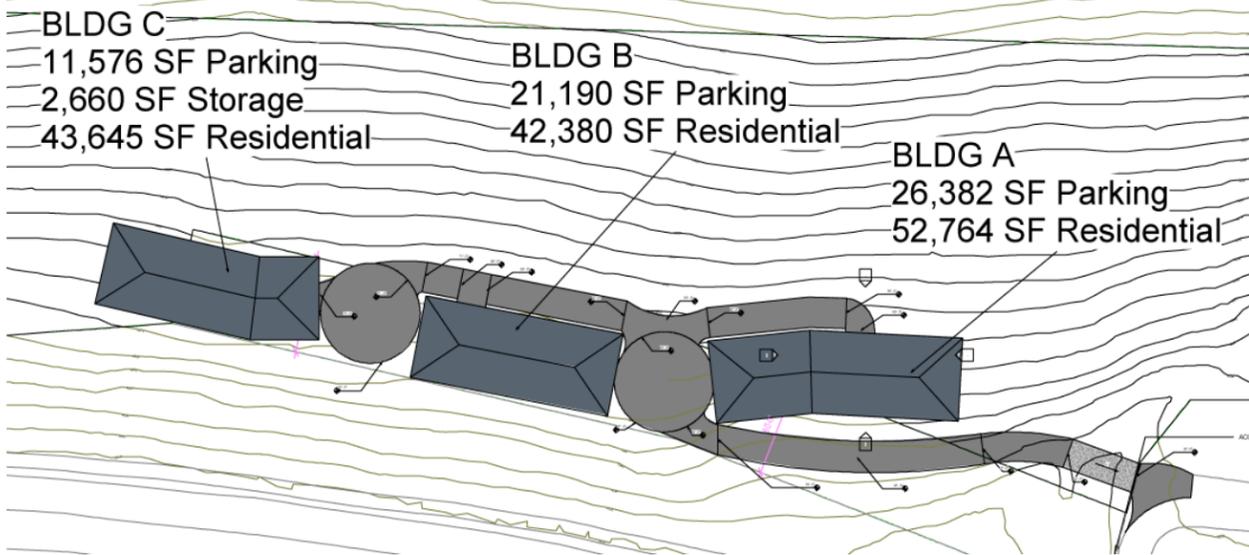
**N. MAPPING – FIRE ACCESS**



O. DIAGRAM – POTENTIAL DEVELOPEMENT



Total Parking = 59,148 SF = +/- 168 Spaces @ 350 SF/Space  
 Total Residential = 138,789 SF = +/- 174 Units @ 800 SF/Unit  
 Total Storage (Bldg C Only) = 2,660 SF



P. DIAGRAM – CONSTRUCTION PREMIUM

