

MT. ROSE - SKI TAHOE TUBING HILL SPECIAL USE PERMIT



PREPARED FOR:



PREPARED BY:



AUGUST 8, 2023

JOB NO. 19062.02

TAB A

Washoe County Development Application

Your entire application is a public record. If you have a concern about releasing personal information, please contact Planning and Building staff at 775.328.6100.

Project Information		Staff Assigned Case No.: _____	
Project Name: Mt. Rose – Ski Tahoe Tubing Hill			
Project Description: Proposed is a tubing hill with up to 15-lanes and a conveyor belt for transporting tubers up the hill. The request constitutes an expansion to an existing Destination Resort. Requests are made for grading of the site under Article 438, Hillside Development and variations from certain grading standards and site design standards addressing parking lot design, landscaping within the parking areas and parking lot lighting.			
Project Address: 0 Mt. Rose Highway, Reno, Nevada 89511			
Project Area (acres or square feet):			
Project Location (with point of reference to major cross streets AND area locator):			
The main access to the site is +/-11.4 driving miles from the intersection of Mt. Rose Hwy and Thomas Creek Road.			
Assessor's Parcel No.(s):	Parcel Acreage:	Assessor's Parcel No.(s):	Parcel Acreage:
048-112-12	340.930		
048-112-13	41.420		
Indicate any previous Washoe County approvals associated with this application: Case No.(s). SB11-015, WSUP19-0020, WSUP19-0021			
Applicant Information (attach additional sheets if necessary)			
Property Owner:		Professional Consultant:	
Name: Mt. Rose Development Company		Name: CFA, Inc.	
Address: 22222 Mt. Rose Highway		Address: 1150 Corporate Blvd	
Reno, NV	Zip: 89511	Reno, Nevada	Zip: 89502
Phone: 775.849.0704,x-216	Fax:	Phone: 775-856-7073	Fax:
Email:		Email: dsnelgrove@cfareno.com	
Cell:	Other:	Cell: 775-737-8910	Other:
Contact Person: Greg Gavrilets, General Manager		Contact Person: R. David Snelgrove, AICP	
Applicant/Developer:		Other Persons to be Contacted:	
Name: Mt. Rose Development Company		Name: Lumos & Associates	
Address: 22222 Mt. Rose Highway		Address: 9222 Prototype Drive	
Reno, Nevada	Zip: 89511	Reno, Nevada	Zip: 89521
Phone: 775.849.0704,x-216	Fax:	Phone: 775-827-6111	Fax:
Email: ggavrilets@skirose.com		Email: ethomas@lumosinc.com	
Cell:	Other:	Cell:	Other:
Contact Person: Greg Gavrilets, General Manager		Contact Person: Ed Thomas, P.E.	
For Office Use Only			
Date Received:	Initial:	Planning Area:	
County Commission District:		Master Plan Designation(s):	
CAB(s):		Regulatory Zoning(s):	



BARBARA K. CEGAVSKE
 Secretary of State
 202 North Carson Street
 Carson City, Nevada 89701-4201
 (775) 684-5708
 Website: www.nvsos.gov
 www.nvsilverflume.gov

Annual or Amended List and State Business License Application

ANNUAL AMENDED (check one)

List of Officers, Managers, Members, General Partners, Managing Partners, Trustees or Subscribers:

MT. ROSE DEVELOPMENT COMPANY	NV19641001718
NAME OF ENTITY	Entity or Nevada Business Identification Number (NVID)

TYPE OR PRINT ONLY - USE DARK INK ONLY - DO NOT HIGHLIGHT

IMPORTANT: Read instructions before completing and returning this form.

Please indicate the entity type (check only one):

- Corporation
 - This corporation is publicly traded, the Central Index Key number is:
- Nonprofit Corporation (see nonprofit sections below)
- Limited-Liability Company
- Limited Partnership
- Limited-Liability Partnership
- Limited-Liability Limited Partnership
- Business Trust
- Corporation Sole

Filed in the Office of <i>Barbara K. Cegavske</i>	Business Number C1919-1964
Secretary of State State Of Nevada	Filing Number 20222755620
	Filed On 11/14/2022 11:54:13 AM
	Number of Pages 3

Additional Officers, Managers, Members, General Partners, Managing Partners, Trustees or Subscribers, may be listed on a supplemental page.

CHECK ONLY IF APPLICABLE

Pursuant to NRS Chapter 76, this entity is exempt from the business license fee.

- 001 - Governmental Entity
- 006 - NRS 680B.020 Insurance Co, provide license or certificate of authority number

For nonprofit entities formed under NRS chapter 80: entities without 501(c) nonprofit designation are required to maintain a state business license, the fee is \$200.00. Those claiming an exemption under 501(c) designation must indicate by checking box below.

- Pursuant to NRS Chapter 76, this entity is a 501(c) nonprofit entity and is exempt from the business license fee. Exemption Code 002

For nonprofit entities formed under NRS Chapter 81: entities which are Unit-owners' association or Religious, Charitable, fraternal or other organization that qualifies as a tax-exempt organization pursuant to 26 U.S.C § 501(c) are excluded from the requirement to obtain a state business license. Please indicate below if this entity falls under one of these categories by marking the appropriate box. If the entity does not fall under either of these categories please submit \$200.00 for the state business license.

- Unit-owners' Association
- Religious, charitable, fraternal or other organization that qualifies as a tax-exempt organization pursuant to 26 U.S.C. §501(c)

For nonprofit entities formed under NRS Chapter 82 and 80: Charitable Solicitation Information - check applicable box

Does the Organization intend to solicit charitable or tax deductible contributions?

- No - no additional form is required
- Yes - the "Charitable Solicitation Registration Statement" is required.
- The Organization claims exemption pursuant to NRS 82A 210 - the "Exemption From Charitable Solicitation Registration Statement" is required

****Failure to include the required statement form will result in rejection of the filing and could result in late fees.****



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 Secretary of State
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Annual or Amended List and State Business License Application - Continued

Officers, Managers, Members, General Partners, Managing Partners, Trustees or Subscribers:

CORPORATION, INDICATE THE PRESIDENT:

KURT BUSER		USA	
Name		Country	
22222 MT. ROSE HWY	RENO	NV	89511
Address	City	State	Zip/Postal Code

CORPORATION, INDICATE THE DIRECTOR:

ROLF BUSER		USA	
Name		Country	
22222 MT. ROSE HWY	Reno	NV	89511
Address	City	State	Zip/Postal Code

CORPORATION, INDICATE THE DIRECTOR:

KURT BUSER		USA	
Name		Country	
22222 MT. ROSE HWY	Reno	NV	89511
Address	City	State	Zip/Postal Code

CORPORATION, INDICATE THE TREASURER:

CAROLE LOVATO		USA	
Name		Country	
22222 Mt. Rose Hwy.	Reno	NV	89511
Address	City	State	Zip/Postal Code

CORPORATION, INDICATE THE DIRECTOR:

STEFAN THOMANN		USA	
Name		Country	
22222 MT. ROSE HWY	Reno	NV	89511
Address	City	State	Zip/Postal Code

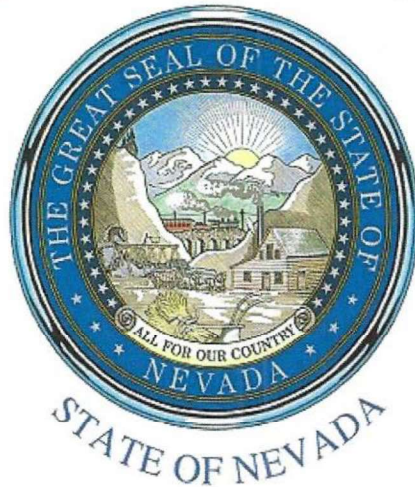
CORPORATION, INDICATE THE SECRETARY:

BRIAN SCHUSTERMAN		USA	
Name		Country	
100 West Liberty St., Tenth Floor	Reno	NV	89501
Address	City	State	Zip/Postal Code

None of the officers and directors identified in the list of officers has been identified with the fraudulent intent of concealing the identity of any person or persons exercising the power or authority of an officer or director in furtherance of any unlawful conduct.

I declare, to the best of my knowledge under penalty of perjury, that the information contained herein is correct and acknowledge that pursuant to NRS 239.330, it is a category C felony to knowingly offer any false or forged instrument for filing in the Office of the Secretary of State.

SECRETARY OF STATE



NEVADA STATE BUSINESS LICENSE

MT. ROSE DEVELOPMENT COMPANY

Nevada Business Identification # NV19641001718

Expiration Date: 11/30/2023

In accordance with Title 7 of Nevada Revised Statutes, pursuant to proper application duly filed and payment of appropriate prescribed fees, the above named is hereby granted a Nevada State Business License for business activities conducted within the State of Nevada.

Valid until the expiration date listed unless suspended, revoked or cancelled in accordance with the provisions in Nevada Revised Statutes. License is not transferable and is not in lieu of any local business license, permit or registration.

License must be cancelled on or before its expiration date if business activity ceases. Failure to do so will result in late fees or penalties which, by law, cannot be waived.



IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Great Seal of State, at my office on 11/14/2022.

Barbara K. Cegavske

Certificate Number: B202211143157591

You may verify this certificate
online at <http://www.nvsos.gov>

BARBARA K. CEGAVSKE
Secretary of State

X BRIAN SCHUSTERMAN

Secretary

11/14/2022

**Signature of Officer, Manager, Managing Member,
General Partner, Managing Partner, Trustee,
Subscriber, Member, Owner of Business,
Partner or Authorized Signer** *FORM WILL BE RETURNED IF*

Title

Date

UNSIGNED

Special Use Permit Application Supplemental Information

(All required information may be separately attached)

1. What is the project being requested?

The project requested includes using a portion of the site to create a tubing facility, ticket sales and warming hut and associated parking with some overflow parking for the overall Mt. Rose - Ski Tahoe operation. The proposed tubing hill and associated improvements will be located on a portion of APN's 048-112-12 & -13,

2. Provide a site plan with all existing and proposed structures (e.g. new structures, roadway improvements, utilities, sanitation, water supply, drainage, parking, signs, etc.)

The required site plan and detail information is provided with this application package.

3. What is the intended phasing schedule for the construction and completion of the project?

The project is proposed to be constructed in one phase.

4. What physical characteristics of your location and/or premises are especially suited to deal with the impacts and the intensity of your proposed use?

The area proposed for the tubing facility already possesses improved access from Mt. Rose Highway with right and left turn pockets and an acceleration taper that were previously developed by Mt. Rose - Ski Tahoe. The terrain in the area proposed for the tubing hill is low to moderate in its existing slope, providing an appropriate existing general grade for tubing.

5. What are the anticipated beneficial aspects or affects your project will have on adjacent properties and the community?

Mt. Rose - Ski Tahoe has been the "local's" ski area for Truckee Meadows residents for many years. With the addition of the tubing facility, Mt Rose can appeal to the "non-skier" or non-skiing family member of a skier who wishes to enjoy the area. The facility can provide an option with full amenities to visitors and locals who currently use the Tahoe Meadows for tubing. This facility can provide some relief to the intense parking and pedestrian movement issues that exist in the winter along each ide of the highway in the Tahoe Meadows.

6. What are the anticipated negative impacts or affect your project will have on adjacent properties? How will you mitigate these impacts?

Additional traffic will be generated by this new use, but the access to the site was previously improved with right and left turn pockets/lanes and a right out acceleration taper. There will be a limitation on number of tubers allowed on the hill at any one time that will moderate and spread out the the number of vehicles accessing the site at any one time.

7. Provide specific information on landscaping, parking, type of signs and lighting, and all other code requirements pertinent to the type of use being purposed. Show and indicate these requirements on submitted drawings with the application.

Landscaping will be provided around the edge of the project area (area of disturbance). Due to the higher elevation location of the facility, variation from standards parking lot landscaping and lighting are requested to provide appropriate access and movement for snow removal. One monument sign, identifying the tubing hill will be provides at the NE corner of the existing project entry. The project narrative covers each of these items in greater detail.

8. Are there any restrictive covenants, recorded conditions, or deed restrictions (CC&Rs) that apply to the area subject to the special use permit request? (If so, please attach a copy.)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
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9. Utilities:

a. Sewer Service	Washoe County
b. Electrical Service	NV Energy
c. Telephone Service	AT&T
d. LPG or Natural Gas Service	Propane
e. Solid Waste Disposal Service	Waste Management
f. Cable Television Service	Satellite TV Service
g. Water Service	2 Private Water System, Monitored by NDEP and Washoe County

For most uses, Washoe County Code, Chapter 110, Article 422, Water and Sewer Resource Requirements, requires the dedication of water rights to Washoe County. Please indicate the type and quantity of water rights you have available should dedication be required.

h. Permit #	Multiple - See Tab E	acre-feet per year	386.669 (Total combined)
i. Certificate #	Multiple - See Tab E	acre-feet per year	
j. Surface Claim #		acre-feet per year	
k. Other #		acre-feet per year	

Title of those rights (as filed with the State Engineer in the Division of Water Resources of the Department of Conservation and Natural Resources).

Mt. Rose Development Company

10. Community Services (provided and nearest facility):

a. Fire Station	Forest Service Fire Station - 16255 Mt. Rose Highway
b. Health Care Facility	Saint Mary's Galena Urgent Medical Center, 18653 Wedge Pkwy, #300
c. Elementary School	Not Applicable - no school impact
d. Middle School	Not Applicable - no school impact
e. High School	Not Applicable - no school impact
f. Parks	Toyabe National Forest
g. Library	Not Applicable - no library impact
h. Citifare Bus Stop	No bus service is provided up Mt. Rose Highway - Some Shuttle Service on Holiday/Peak Use Times

**Special Use Permit Application
for Grading
Supplemental Information**
(All required information may be separately attached)

1. What is the purpose of the grading?

Grading will be limited to areas of the site where the new facilities will be placed on currently vacant land.

2. How many cubic yards of material are you proposing to excavate on site?

33,000+/- CY

3. How many square feet of surface of the property are you disturbing?

9.27+/- acres

4. How many cubic yards of material are you exporting or importing? If none, how are you managing to balance the work on-site?

There is 8,000+/- CY of fill material that will be needed for this project. It is anticipated that final grading design (with design level topography) will bring the fill requirement lower and work on other permitted sites at Mt. Rose - Ski Tahoe is expected to be able to provide the necessary fill material.

5. Is it possible to develop your property without surpassing the grading thresholds requiring a Special Use Permit? (Explain fully your answer.)

No. As the Grading Ordinance (Article 438) is currently written, only the smallest of small projects can avoid triggering a special use permit for grading.

6. Has any portion of the grading shown on the plan been done previously? (If yes, explain the circumstances, the year the work was done, and who completed the work.)

A formal access exists but is not in use to the site. Left and right turn lanes are included at this access. Other than the previously constructed access improvements, no other work/grading has been done on this section of property.

7. Have you shown all areas on your site plan that are proposed to be disturbed by grading? (If no, explain your answer.)

Yes, all areas proposed to be disturbed by grading are shown on the project plans.

8. Can the disturbed area be seen from off-site? If yes, from which directions and which properties or roadways?

Existing forest vegetation and slopes upwards from the highway will provide only a filtered view of the proposed improvements and grading from areas off-site.

9. Could neighboring properties also be served by the proposed access/grading requested (i.e. if you are creating a driveway, would it be used for access to additional neighboring properties)?

No. The existing access connects to the Mt. Rose Development Co. properties on the eastern side of SR 431. All land and uses on that side of the highway are dedicated to the ski resort operation.

10. What is the slope (horizontal/vertical) of the cut and fill areas proposed to be? What methods will be used to prevent erosion until the revegetation is established?

Steeper graded slopes are all 3:1 with the exception of the grading between the conveyor and the tubing slopes, which will be mechanically treated 2:1 cut slopes. Fiber rolls and water bars will be use on the slopes for revegetation establishment in accordance with USFS standards.

11. Are you planning any berms?

Yes	No <input checked="" type="checkbox"/>	If yes, how tall is the berm at its highest?
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12. If your property slopes and you are leveling a pad for a building, are retaining walls going to be required? If so, how high will the walls be and what is their construction (i.e. rockery, concrete, timber, manufactured block)?

Yes, Retaining walls will be used to catch grade, where necessary. Rock from site grading will be used to create walls, providing a consistent appearance and coloring with the native soil.

13. What are you proposing for visual mitigation of the work?

The existing forest vegetation along and adjacent to Mt. Rose Highway will provide most of the visual screening. Additional trees will be planted at the development area edge to better screen areas where view openings appear to exist.

14. Will the grading proposed require removal of any trees? If so, what species, how many and of what size?

Yes. 122 evergreen trees will be removed with the proposed development.

15. What type of revegetation seed mix are you planning to use and how many pounds per acre do you intend to broadcast? Will you use mulch and, if so, what type?

USFS procedures will be followed revegetation and erosion mitigation. A dryland seed mix will be used within the project. The proposed mix and pounds per acre is identified in the project narrative.

16. How are you providing temporary irrigation to the disturbed area?

The snowmaking water line will be used for temporary irrigation.

17. Have you reviewed the revegetation plan with the Washoe Storey Conservation District? If yes, have you incorporated their suggestions?

No we have not had a review, but have reached out to WSCD. The project will confirm with USFS requirements for revegetation.

18. Are there any restrictive covenants, recorded conditions, or deed restrictions (CC&Rs) that may prohibit the requested grading?

Yes	No <input checked="" type="checkbox"/>	If yes, please attach a copy.
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TAB B

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- Proof of Property Tax Payment
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- 2012 Approval Letter – SB11-015
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Map Envelope (Paper Application, Only)

- Full Size Maps

Property Location/Site Area

Mt. Rose/Ski Tahoe is an existing destination resort ski area that is located in the southwest corner of Washoe County approximately 25 miles south of Reno and approximately 32 miles north of Carson City (refer to the Project Vicinity Map provided on page 2 of this Project Narrative).

Mt. Rose – Ski Tahoe operates on both privately held land, owned by the Mt. Rose Development Company and USFS land under a permit. The proposed project with this application is located entirely on privately held land and presents 9.27+/- acres of development on portions of 2 parcels (APN's 048-112-12 & 13)

Project Requests

This application specifically requests the following special use permits and variation or modification to some of the code standards from the Washoe County Development Code.

Special Use Permit for Use – a special use permit is requested for expansion of an existing destination resort within the TC and PR zoning districts.

Special Use Permit for Major Grading - a special use permit is requested for hillside development major grading relative to the standards set forth in Article 438 of the Washoe County Development Code (WCDC).

The specific sections that are applicable to this request include:

110.438.35 (a)(1) – Grading on slopes less than or flatter than 15%

Area - (i)(C) Grading of an area of more than four (4) acres on a parcel of any size – the overall development area of the site is 9.27 acres.

Volume (ii)(A) Excavation of five thousand (5,000) cubic yards or more whether the material is intended to be permanently located on the project site or temporarily stored on a site for relocation to another, final site.

Volume (ii)(B) Importation of five thousand (5,000) cubic yards or more whether the material is intended to be permanently located on the project site or temporarily stored on a site for relocation to another, final site.

110.438.35 (a)(2) – Grading on slopes of 15% or greater (steeper)

Area - (i)(C) Grading of more than two (2) acres on any size parcel

Volume (ii)(A) Excavation of five thousand (1,000) cubic yards or more whether the material is intended to be permanently located on the project site or temporarily stored on a site for relocation to another, final site.

Volume (ii)(B) Importation of five thousand (1,000) cubic yards or more whether the material is intended to be permanently located on the project site or temporarily stored on a site for relocation to another, final site.

110.438.35(a)(3) – Any driveway or road that traverses any slope of thirty (30) percent or greater (steeper) – Small areas of 30% or steeper slope exist just to the north of the existing access road and within the proposed parking area. These areas can be recognized in the Site and Slope Analysis Map provided in Tab C with this application.

110.438.35(a)(4) Grading to construct a permanent earthen structure greater than four and one-half (4.5) feet in height within the required front yard setback or greater than six (6) feet in height on the remainder of the property. The height of an earthen structure is measured from existing grade at the time of permit issuance. – The only aspect of this standard that needs to be addressed is the 6 foot in height outside of the front yard setback. No grading is proposed within the front setback area.

Variation from the grading standards of the following is also requested:

110.438.45(c) Finish grading varying from natural slope by more than 10 feet in elevation. Variation from this standard typically may occur through a Director's Modification, but it is understood from discussions with County staff that this may be varied through the special use permit process.

110.438.50(a) Riprap is proposed to be used on a portion of the cut slope between the conveyor grading and the tubing slopes. This area will be fully covered by snow and will create a safe, necessary and obvious grade difference between the conveyor and the tubing lanes.

Additional Requests – variation of standards

110.410.25(c) & (g) – requirements for wheel stops and for lighting of parking areas - It is requested wheel stops and curbing not be required within the proposed parking area. Additionally, it is requested that that the requirement to provide illumination of at least one (1) foot candle average also be eliminated for this project. The reason for both requests is based in challenges and damage to improvements or equipment in the process of snow clearing and removal efforts that have to occur frequently at higher elevations. of additional noted relative to lighting, in the setting of the facility (a rural area) the application of suburban/urban level lighting standards is not necessary and would present lighting pollution that would detract from the natural surroundings.

110.412.50(a) & (f) – Requirement for one tree for every 10 parking spaces and the placement of a tree no further than 12 parking spaces apart within a parking area and curbing or wheel stops around planted areas – the rationale for these requested variations from the standard is base in the need for an unobstructed surface for the clearing and removal of snow at this higher elevation than most other parts of Washoe County. 122 trees will be planted around the edge of the developed area and this will only help add to the existing forest vegetation that will remain surrounding the property after development.

Project Background

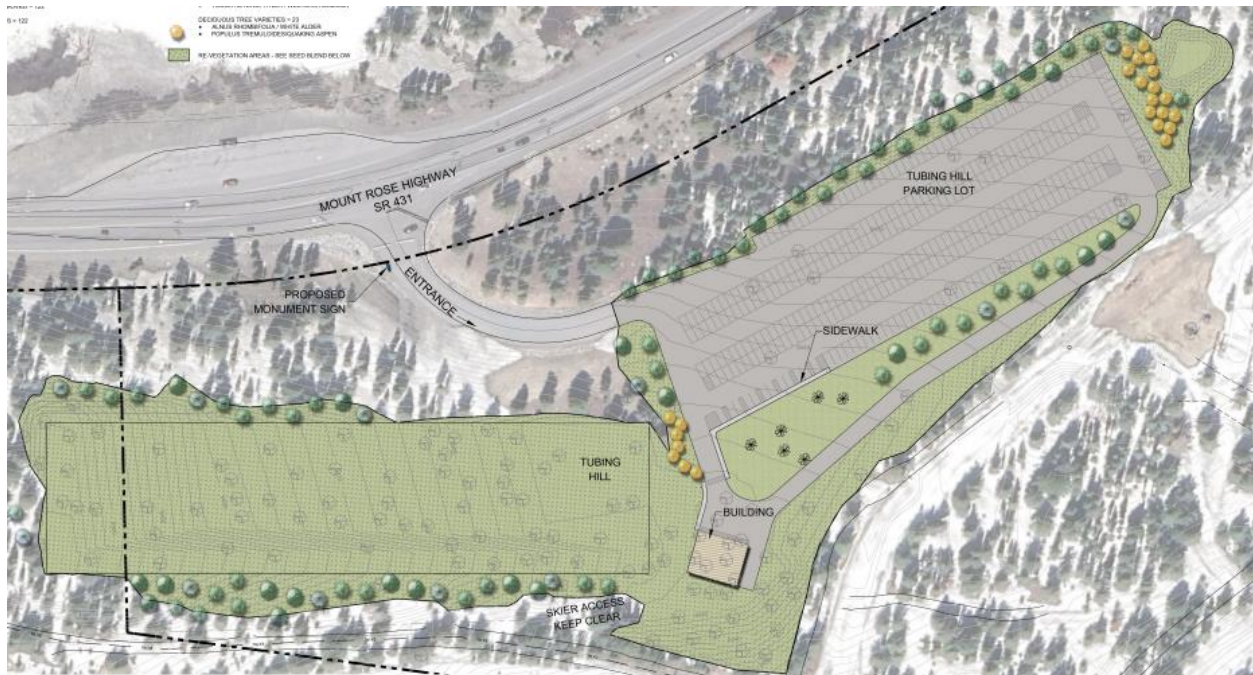
Mt. Rose Ski Tahoe has a long history dating back to the 1930's when Wayne Paulson built and operated the Mt. Rose Upski and Ski School Tyrol in the area that is now operated by the City of Reno as the Sky Tavern Ski School. During this time, devoted skiers would hike from the area that would become Sky Tavern up to the 9,700' peak of Slide Mountain and would ski the slopes that are now Mt. Rose Ski Tahoe. Over the years, the State of Nevada connected the Mt. Rose Highway all the way over the Mt. Rose Summit to Lake Tahoe, which opened the vehicular access to the area that is now Mt. Rose Ski Tahoe. Two ski areas operated at the mountain between 1964 and 1987 (The Slide Mountain Ski Area and the Mt. Rose Ski Area). The two ski areas were joined in 1987. The joined ski area continues to have a slow and steady growth.

In 2012, approval was granted by the Washoe County Board of Adjustment under SB11-015. This approval granted the following improvements to lifts, skiing terrain, expansion of the Mt. Rose Lodge building, assess improvements, and other improvements and upgrades. This special use permit approval was granted on February 2, 2012, and holds a 15-year approval timeframe due to the broad nature of the facilities for improvement or upgrade and the short construction season at the 8,260' elevation and above.

Subsequently, an additional special use permit was approved on December 5, 2019, under WSUP19-0020 and WSUP19-0021. These 2019 SUPs included the following improvements: a new Lakeview chairlift, a 5M gallon water tank, new ski patrol building, an expansion to the Winters Creek Lodge and other minor facilities and clearing in association with the project and mountain operations. Two separate applications were processed as some of the improvements included federal land while most of the improvements were held entirely on privately owned land. These approvals were granted for a period of 8 years from the date of approval to conform to the remaining timeframe for the 2012 SUP approval.

Project Overview

The Mt. Rose – Ski Tahoe Tubing Hill is proposed to include a sloped area to accommodate for up to 15 tubing lanes, a conveyor that will transport tubers up the hill, a warming hut/ticket sales building that is anticipated to be up to 9,000 SF in size, and associated parking to accommodate tubers and provide additional or overflow parking for Mt. Rose skiers.



The tubing hill is anticipated to operate Friday – Sunday (and holidays) offering sessions where people would make reservations to come up and tube. There will be a fixed capacity per session, which will keep the total number of tubers and their associated vehicles to a regulatable level, rather than everyone showing up at one time on a nice day.

The location of the ticket sales/warming hut for the Tubing Hill will provide food and beverage services to the snow tubers as well as being able to provide service to the snow skiers due to its location near the terminus of the Wizard chair lift and accessible to ski runs that can take a skier to the Mt. Rose lodge. This alternative food and bathroom location is expected to relieve some of the peak time pressure from the Mt. Rose Lodge.

The Tubing Hill will function as an additional winter sport offering by Mt. Rose – Ski Tahoe to help diversity their business and offer greater opportunities for winter recreation to locals and area visitors. The tubing hill is anticipated to relieve some of the pressure that is placed on the Tahoe Meadows and will provide a safer parking environment than is the case in the meadows along Mt. Rose Highway. A couple images are provided below of typical parking along Mt. Rose Highway during the winter.



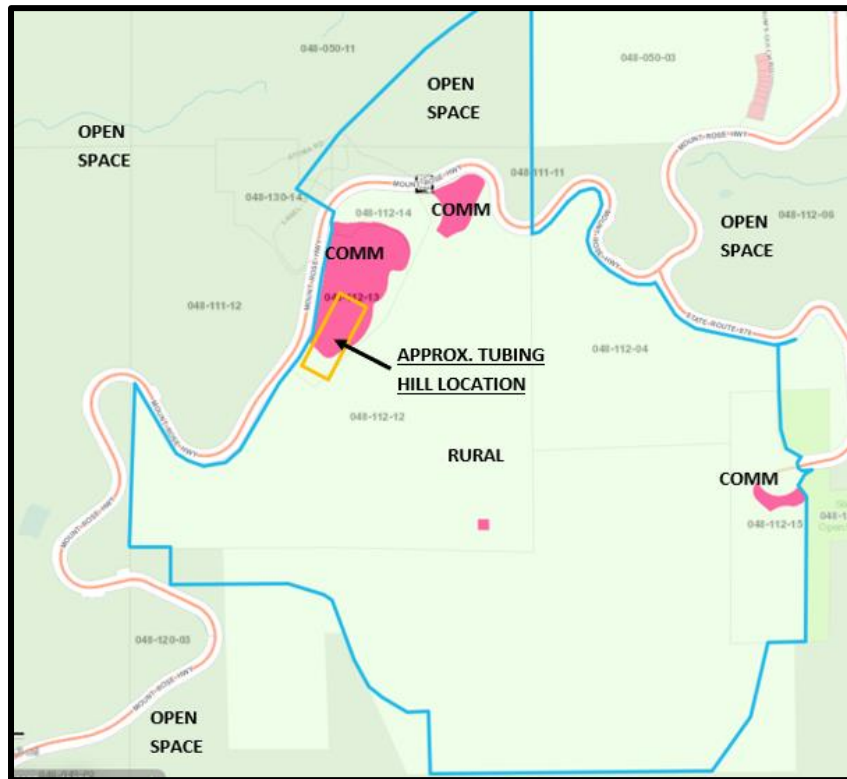
Project Schedule/Timing

The proposed tubing hill is proposed to be constructed in one building season with the goal being to construct during the 2024 construction season and be open by Thanksgiving of 2024.

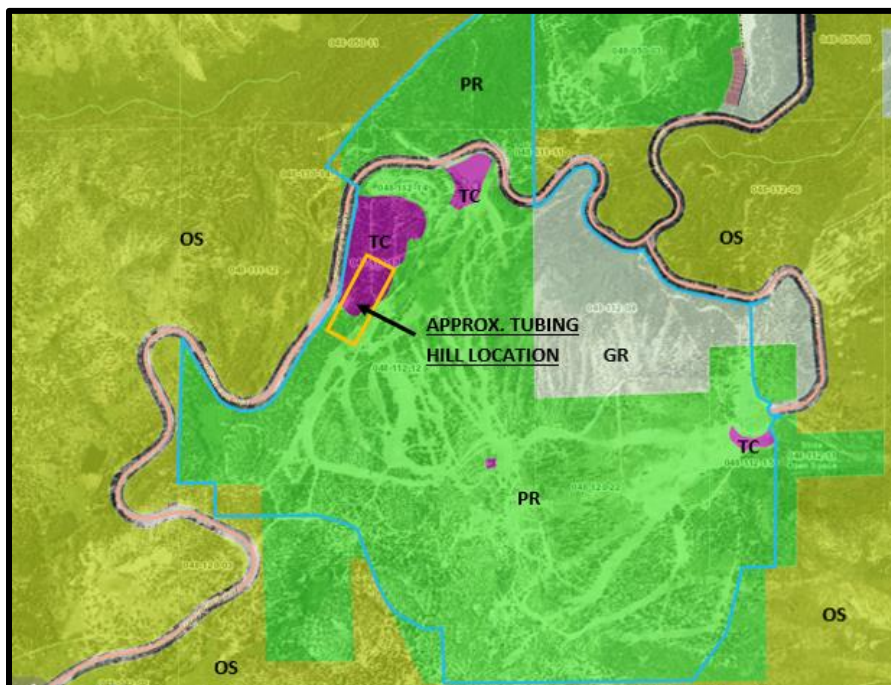
Master Plan and Zoning

The property where the Tubing Hill is proposed is Master Planned Commercial and Rural. The associated zoning designations on the proposed development area are Tourist Commercial (TC) and Parks and Recreation.(PR). The proposed use is allowed under these designations. A copy of the Washoe County Master Plan and Zoning Maps are provided as exhibits, below showing the approximate location of the proposed tubing hill as well as the Mt. Rose – Ski Tahoe boundary.

Master Plan Map Exhibit



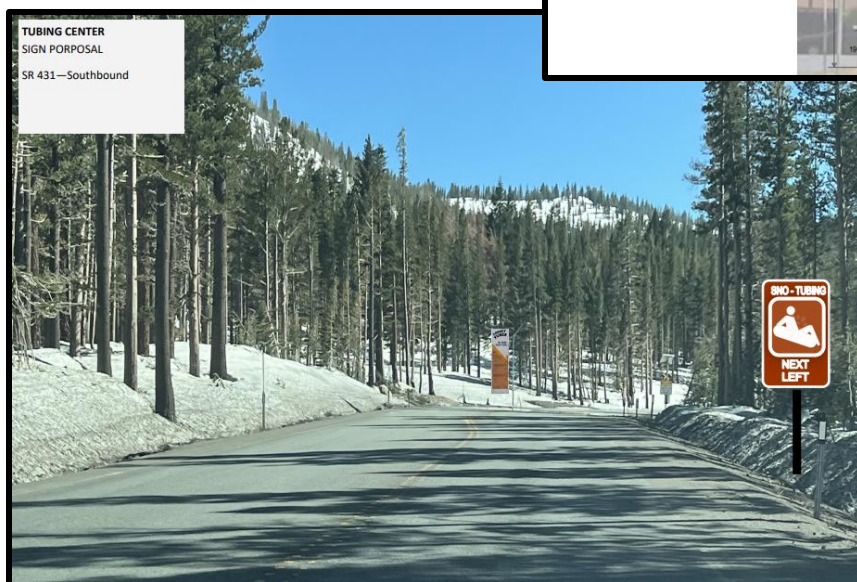
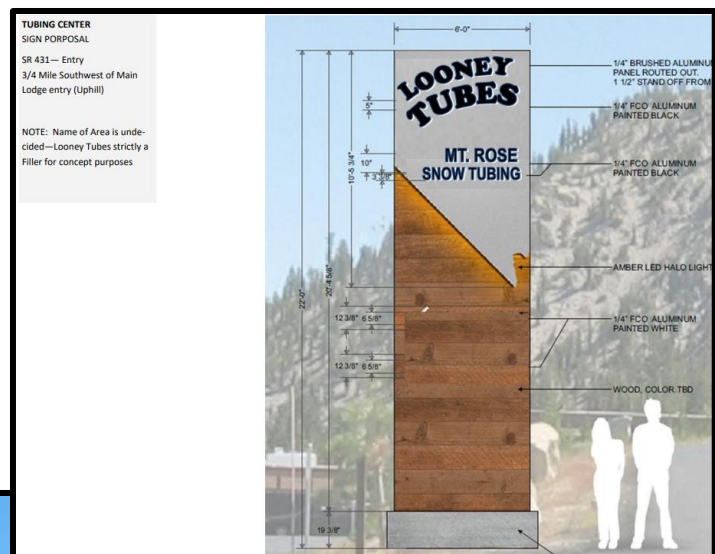
Zoning Map Exhibit



Signage and Lighting

Signage - The application proposes one new monument sign at the entry to the tubing hill facility. As noted in the Access and Traffic section of this narrative, the driveway into the parking area for the tubing hill is not proposed to be directly connected to the parking area for the downhill skiing portion of the operation. As such, appropriate signage is necessary to direct drivers to the correct access point for their intended activity. Article 505 of the Washoe County Development Code typically limits the number of freestanding signs to 1 per site for the uses of regional recreation, travel and tourism. However, the code doesn't anticipate that a site would be made up of thousands of acres of land, as is the case with Mt. Rose – Ski Tahoe with approximately 2.25 miles of highway frontage. It is because the site is so large with three different and distinct destinations (Mt. Rose Lodge, Winters Creek Lodge and the proposed tubing hill) that additional freestanding signage is requested and necessary for the purpose of way-finding for area visitors.

Following is an elevation and perspective image of the proposed monument sign. Additional information signage perspectives and an aerial view is provided in Tab B with this application.



Lighting - Lighting will be provided only where necessary and would largely be for safety and access at buildings. Any lighting that is provided will be architecturally compatible with the lighting that is currently in use at Mt. Rose - Ski Tahoe and/or compatible with the associated building architecture and will be conformant with Article 414 of the Washoe County Code. A variation to the code standard regarding lighting has been made part of this application request.

Parking

Parking for the tubing hill will be provided adjacent to and directly north of the tubing slope. A parking area containing 375 parking spaces (363 standard spaces and 12 accessible spaces) has been designed in the preliminary plans. It is expected that this parking area will be larger than will be needed for the tubing hill, alone and it is expected that some spaces in this parking area will be used by skiing customers as a ski trail exists directly to the east of the parking lot where one can ski directly to the Mt. Rose lodge to purchase a lift ticket.

Access and Traffic

Access to the tubing hill will be provided at a previously constructed access point off Mt. Rose Highway. This access is one of the three points of access that are allowed per Forest Area Plan Policy F.4.2.e. This access point has a left and right turn lane already constructed. A Traffic Entry and Access Study has been prepared with this application and is provided in Tab D with this package. The anticipated peak hour trips associated with the tubing hill are 46 AM and 76 PM trips.

Landscape & Revegetation

The 9.27+/- acre development area was assessed for existing trees. The site will need to be regraded from current conditions, which will eliminate most of the existing trees and lower-level vegetation. It is estimated that 122+/- trees currently exist within the development area. A tree count was conducted within the proposed development area with the following results. Dead or dying trees were not included in the count:

Estimated number of existing trees	Location
64+/-	Proposed Tubing Area
15+/-	Proposed Parking Area
22+/-	Proposed Building Area
15+/-	Triangle space between tubing and building
6+/-	Left of the existing dirt roadway
122+/-	Total Estimated Existing Trees

Following are a couple of photos from the interior of the site, one looking toward the proposed tubing hill and one toward the parking area.



Revegetation of graded areas will occur to the acceptance of Washoe County and the USFS (on forest service land). Following is a seed mixture that is proposed for use on the project and has been used on other areas of the Mt. Rose-Ski Tahoe site and is acceptable to the USFS.

REVEGETATION SEED MIX

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>PURE LIVE SEED</u>
<u>(LB/ACRE)</u>		
ACHNATHERUM OCCIDENTALE	WESTERN NEEDLEGRASS	1.0
ARCTOSTAPHYLOS NEVADENSIS	PINEMAT MANZANITA	3.0
CEANOTHUS VELUTINUS	TOBACCO BRUSH	2.0
ELYMUS ELYMOIDES SSP. CALIFORNICUS	SQUIRRELTAIL	1.0
POTENTILLA GRACILIS	CINQUEFOIL	0.35

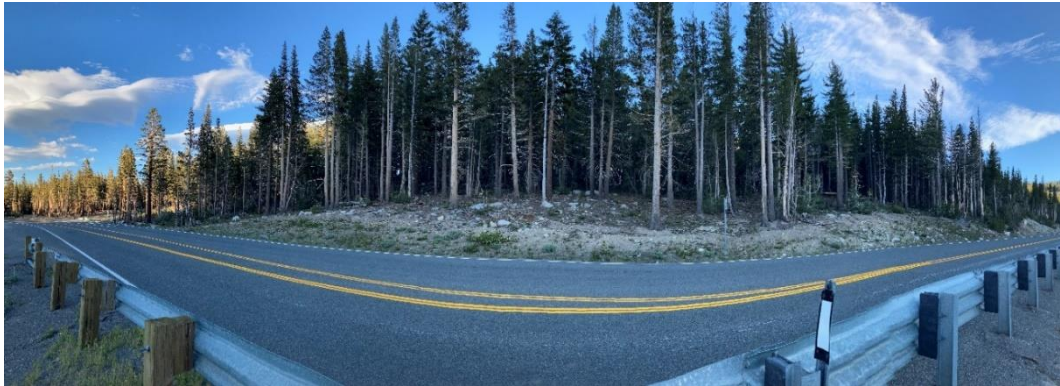
Hillside Development Considerations

The project development area contains slopes steeper than 15% on +/-25.5% of the site. As such, the project requires review under the Hillside Development ordinance (Article 424 of the WDCD). 110.424.15 of the Hillside Ordinance requires that a Site Analysis be provided. This mapping and review information is provided on the Site and Slope Analysis Map contained in Tab C with this application.

Existing Site Conditions

Following are photos of the existing site where the new tubing hill is proposed. Photos are provided from the Mt. Rose Highway corridor, viewing existing traffic access improvements and existing vegetation and screening for the future tubing hill facilities and parking.

Maintenance Building Location Site Photos



View of existing trees within and at edge of Mt. Rose Highway, view is section of highway frontage south of the existing access from highway. Tubing hill will be located within treed area of photo approximately 150 feet off highway pavement edge. Partial to full screening would be expected given the elevation difference from the highway to the tubing hill (approximately 60 feet) and remaining and proposed enhanced vegetation, after construction.



View of existing trees within and at edge of Mt. Rose Highway, view is section of highway frontage north of the existing access from highway. Parking lot area will be located within treed area of photo approximately 150 feet off highway pavement edge. Partial to full screening would be expected given the existing, remaining vegetation and proposed enhanced vegetation, after construction.

MT. ROSE/SKI TAHOE TUBING HILL

SPECIAL USE PERMIT NARRATIVE



View to the west from a point near the end of the proposed tubing hill. The existing access road and Mt. Rose Highway can be seen in the photo.



View toward the north across the flatter portion of the site where the parking lot is proposed to be located.

Special Use Permit Findings

Article 810 of the Washoe County Development Code identifies findings that must be made in order to approve a special use permit. Following is an identification of each finding and the applicant's response as to how or why this finding is met with this request.

(1) Consistency. The proposed use is consistent with the action programs, policies, standards and maps of the Master Plan and the applicable area plan;

The proposed uses and grading proposed with this special use permit are consistent with the Parks and Recreation and Tourist Commercial zoning designations which is consistent with the Rural and Commercial Master Plan Designations on the property. More specifically, the policies, and associated findings, outlined in Goal Four: Mount Rose Resort Services Area (MRRSA) are addressed. In particular, F.4.2 (a-n) (Reviewed in question #2).

(2) The proposed development is consistent with the following policies of the Forest Area Plan:

The Mt. Rose Ski Tahoe is located within the Mt. Rose Resort Service Area as defined by the Forest Area Plan of the Washoe County Comprehensive Plan

Goal Four: Mount Rose Resort Services Area (MRRSA). To preserve the important role of resort destinations in the community character of the Forest planning area and to promote the economic viability of resort destination activities, the Mount Rose Resort Services Area is designated on the Character Management Plan map. In order to achieve this goal, the following policies will apply to this area:

Goal Four and the associated policies that are applicable with this application request are met with this project.

F.4.1 The parcels designated Mt. Rose Resort Services Area are identified on the Forest Master Plan map as Parks and Recreation (PR) and Tourist Commercial (TC).

This holds true at the time of this submittal.

F.4.2 Mt. Rose Resort Services Area Conceptual Development Standards. These standards and guidelines of the Mt. Rose Resort Services Area are intended to form the basis for the future development of the Mount Rose Resort Services Area. This language is not intended to represent the only alternative for accomplishing the concept it embodies.

- a. Applicability. The Mt. Rose Resort Services Area MRRSA applies to ±477.2 acres and includes but may not be limited to the properties identified on the Forest Area Plan Character Management Plan map identified as the Mount Rose Resort Services Area.

The proposed project is within the MRRSA.

- b. Purpose and Intent. The purpose of the MRRSA is to establish and define the characteristics, uses and limitations for the long term master plan of the Mt. Rose-Ski Tahoe Resort in concert and consistent with the United States Forest Service (USFS) Plan that has been adopted by the USFS (Mt. Rose/Slide Mt. Master Development Plan, October 2003). Mt. Rose-Ski Tahoe has served for more than 44 years as the local ski resort for the residents of Washoe County. It has also benefited the tourism sector of the local economy by providing a recreational experience that is not typically found in close proximity to urban areas. The MRRSA is intended to recognize the long term needs of Mt. Rose-Ski Tahoe to modernize and remain competitive in the dynamic ski resort industry while assuring the goals and policies of the Truckee Meadows Regional Plan and the Washoe County Master Plan are achieved.

The proposed tubing hill will allow Mt. Rose – Ski Tahoe to Remain competitive in the dynamic ski resort industry with the addition of a complementary use.

- c. Procedures. Development within the MRRSA will follow the review procedures (i.e. tentative maps, special use and administrative permits) as they are established in the Washoe County Development Code for the land uses designations included in the MRRSA.

This SUP application and review process assure that this policy is being met.

- d. Land Use Designations. A possible approach to the designation of land uses is shown below. The ultimate designation of land uses will permit the establishment of various forms of lodging, including interval or timeshare units.

LAND USE DESIGNATION ACRES

Parks and Recreation 413.5 Tourist Commercial 44.7

The current SUP request does not include lodging nor timeshares

- e. Circulation and Access. Mt. Rose – Ski Tahoe will continue to obtain vehicular access, both directly and indirectly, from Mt. Rose Highway (State Highway 341). The Mt.

Rose Base Lodge side of the resort is served by a private internal loop road that will ultimately connect the Lodge, parking areas and condominiums. The Slide Lodge obtains access from a public road (State Route 878) that extend from its intersection with Mt. Rose Highway to the Slide Lodge and parking area. The existing accesses from Mt. Rose Highway to the Mt. Rose Base Lodge and Slide Bowl Lodge will remain. A third approved access to Mt. Rose, which is approximately one-quarter (1/4) mile south of the Mt. Rose Base Lodge access, will be constructed in 2009 pursuant to the approved special use permit. These three access points are designed to adequately handle the long-term needs of the resort.

The third identified access in this policy is the one that will be used for this project.

- f. Employee Transportation and Housing. Because it is located in close proximity to an urban area, Mt. Rose-Ski Tahoe creates no significant demand for on-site employee housing. The approximately 40 full time employees of the resort own homes in the Truckee Meadows and Washoe Valley. Seasonal and part time employees consist of college and high students that attend schools in the Truckee Meadows. The resort will provide on-site housing for caretaker, avalanche control and snow removal staff (3-6 units).

As necessary, sleeping arrangement can be made available for avalanche control or snow removal, but this is in major storm events and is a rare occurrence.

- g. Infrastructure. The MRRSA is currently served by a private water system, public sewerage (Washoe County) and electricity. This existing infrastructure, particularly the sewer and water improvements, is sized to meet only the level of development contemplated in the MRRSA. Therefore, it cannot promote the expansion of surrounding development outside the MRRSA.

The current water system supports the current development and the proposed additional construction with this application will not exceed the capacity of the existing systems.

- h. Primary Activity. The primary activity of the MRRSA is, and will remain, alpine skiing and associated snow sports that are a function of the elevation and topography of the site.

The proposed tubing hill is an "associated snow sport."

- i. Design Criteria. Any development applications shall include details of the design criteria and architectural details of the project and will be consistent with the development standards for the specific land use designations as they are established in the Washoe County Development Code.

Architectural elevations of the proposed buildings have been provided with the application to be consistent with the more recent existing architecture of the Mt. Rose Ski Tahoe Resort and with the design standards of the Washoe County Development Code.

- j. Development Constraints. Activities and development within areas of the MRRSA that have slopes of 30% or greater shall be limited to those associated with access, utilities and ski resort operations consistent with Policy 1.1.8 of the 2007 Truckee Meadows Regional Plan. Development within the MRRSA must be consistent with plans and procedures adopted by Washoe County to implement Policy 2.2.1 of the 2007 Truckee Meadows Regional Plan.

Design of the project is considerate of this policy. The tubing hill, where moderate to steeper grades are needed is where the 30% or steeper slopes will be disturbed. The parking area was located within an area that is predominately comprised of 0-15% slopes.

- k. Residential Development. Residential uses will be primarily intended for transient guests who will use the ski resort and will consist of not more than 440 “ski-in/ski-out” condominium units.

The current SUP request does not include lodging nor timeshares that the resort has not grown to that level, yet.

- l. Accessory Uses. Accessory uses must not meet or exceed the scale of the primary ski resort use within the MRRSA. They will be designed to meet the needs of the anticipated customer base of the resort and not be of a size or scale such that they would promote the development of properties surrounding the resort.

The tubing hill could be seen as an accessory use to the primary ski resort. This addition to the resort will help to meet the changing needs of the customers and will diversity the customer base to help with the overall economic vitality of the resort.

- m. Mt. Rose Scenic Corridor. A 100-foot open space setback along the Mt. Rose Highway frontage will be provided to implement the objectives of the Mt. Rose Scenic Corridor established in the Forest Area Plan. With the exception of the two access

driveways on Mt. Rose Highway and the existing Mt. Rose Lodge parking lot, this 100-foot setback will be retained as undisturbed open space.

No grading is proposed within 100 feet of the Mt. Rose Highway right-of-way.

- n. Sustainability. All new construction shall use construction best practices to implement “green” development standards that are appropriate for the location of the resort.

The project is designed to have a detention basin at the north end of the parking lot to collect runoff from the new, proposed impervious surface. Overall, the resort has a runoff retention system that captures stormwaters and runoff such that it can be absorbed back into the ground, thus helping to recharge the aquifer.

F.4.3 The development standards of the MRRSA shall be implemented through either the special use permit or development agreement process as established in the Washoe County Development Code.

This SUP application allows for the implementation of the development standards of the MRRSA.

Goal Six: Resources key to the preservation and implementation of the character described in the Character Statements will be protected and where possible, enhanced.

F.6.2 Washoe County will cooperate with other agencies, institutions, and local residents to ensure that recreational, educational and scientific activities based on the area’s key resources will be supported and encouraged, particularly where those activities contribute to the character of the local community and are beneficial to the broader region. Washoe County will work with private landowners and developers to ensure that the goals of the Regional Open Space Plan are met and adhered to. The County will explore alternative funding sources for acquisition, maintenance, and operation.

The Mt. Rose Ski Tahoe Resort is a unique resource for primarily recreational activities and the goal of preserving and enhancing the area dovetails with this finding to support activities that contribute to the character of the area.

Goal 8: Maintain and enhance the scenic value of the State Route 431 corridor.

F.8.1 The State Route (SR) 431 corridor through the planning area is designated a Scenic Corridor as depicted on the Forest Character Management Plan map. The intent of the Scenic Corridor is to:

- a. Promote the preservation and enhancement of the scenic nature of the corridor.

- b. Limit and manage the establishment of uses incompatible with the scenic nature of the corridor.
- c. Ensure that development within the corridor does not diminish the distant vistas available along the corridor.
- d. Ensure that development within the corridor enhances the near vistas available along the corridor and does not create a tunnel effect.
- e. Promote the corridor as a community and regional asset.

The proposed tubing hill and associated improvements will have only limited/filtered visibility from the Mt. Rose Highway due to existing, remaining forest and vegetation which will be complimented with enhanced plantings along the western side of the development area.

F.8.3 To enhance the visitor and resident experience, Washoe County will encourage recreational facilities such as trails, trailheads, and scenic viewpoints.

The proposed tubing hill will provide a diversified recreational experience for locals and area visitors.

(3) Improvements. Adequate utilities, roadway improvements, sanitation, water supply, drainage, and other necessary facilities have been provided, the proposed improvements are properly related to existing and proposed roadways, and an adequate public facilities determination has been made in accordance with Division Seven;

F.4.2(g) Infrastructure. The MRRSA is currently served by a private water system, public sewerage (Washoe County) and electricity. This existing infrastructure, particularly the sewer and water improvements, is sized to meet only the level of development contemplated in the MRRSA. Therefore, it cannot promote the expansion of surrounding development outside the MRRSA.

The Mt. Rose Ski Tahoe tubing hill is proposed to be accessed via State Route 431/Mt. Rose Highway at an existing access point that includes left and right turn lanes. Water and sewer service exists and will be extended to the development. The extension of these utility lines can be seen on the civil site/grading plan provided with this application.

(4) Site Suitability. The site is physically suitable for the type of development and for the intensity of development;

The existing contours of the site are generally good for the slopes needed for a tubing hill. It is necessary to provide grading to make sure that the natural undulation can be normalized for appropriate tubing and parking lot surfaces.

(5) Issuance Not Detrimental. Issuance of the permit will not be significantly detrimental to the public health, safety or welfare; injurious to the property or improvements of adjacent properties; or detrimental to the character of the surrounding area;

Given that there is an existing, substantially improved access to the site and the project will open outdoor winter recreational opportunities to more locals and visitors that might not try snow tubing; it is not foreseen that any detriment would be felt by the existence and operation of this proposed project.

(6) Effect on a Military Installation. Issuance of the permit will not have a detrimental effect on the location, purpose or mission of the military installation.

There are no military installations located in proximity to the proposed site area. As such, this finding is not applicable.

TAB C

LANDSCAPE DATA






JURISDICTION: WASHOE COUNTY
 • 048-112-12 = 340,930 ACRES
 • 048-112-13 = 41,420 ACRES

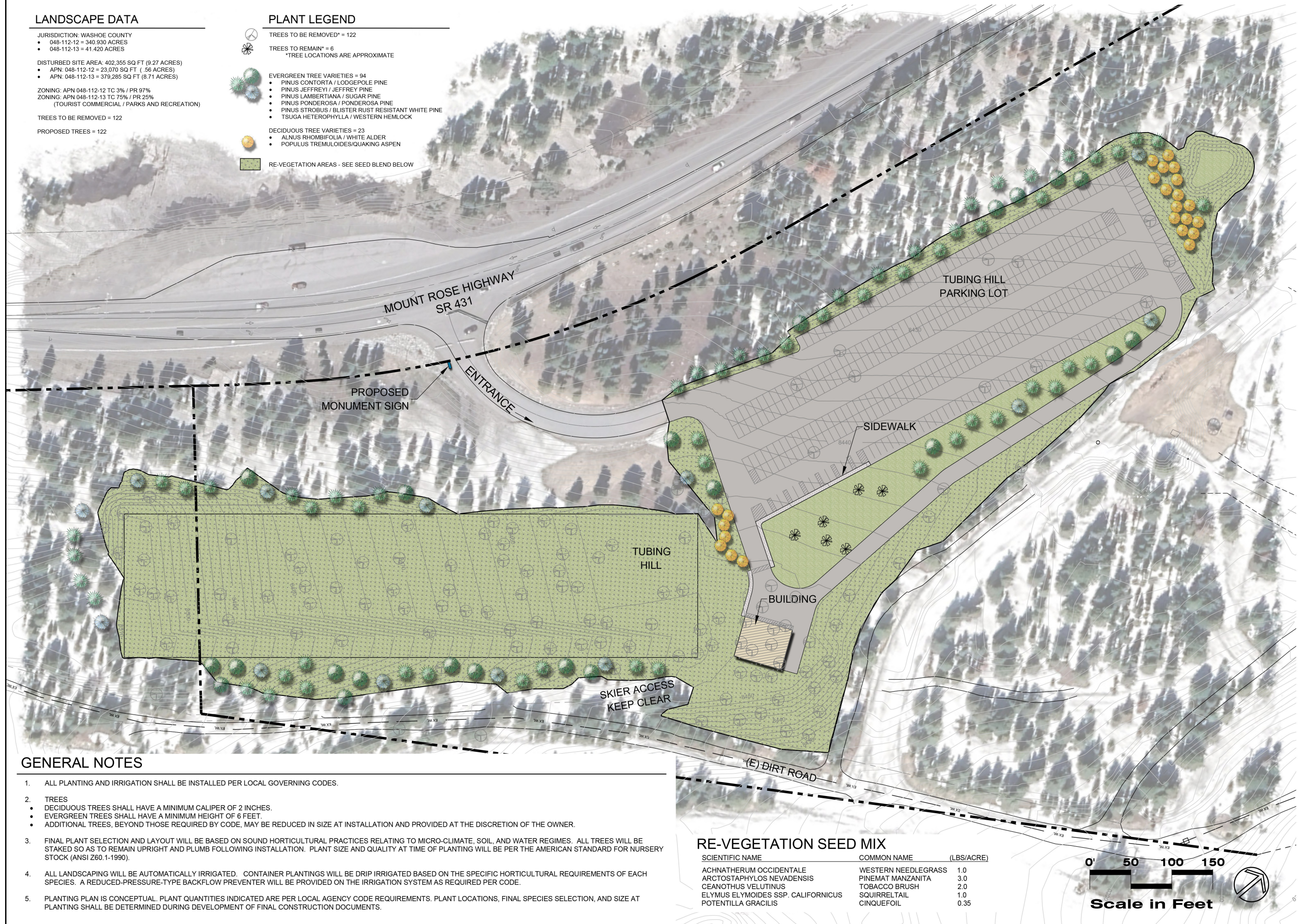
DISTURBED SITE AREA: 402,355 SQ FT (9.27 ACRES)
 • APN 048-112-12 = 23,070 SQ FT (.56 ACRES)
 • APN 048-112-13 = 379,285 SQ FT (8.71 ACRES)

ZONING: APN 048-112-12 TC 3% / PR 97%
 ZONING: APN 048-112-13 TC 75% / PR 25%
 (TOURIST COMMERCIAL / PARKS AND RECREATION)

TREES TO BE REMOVED = 122
 PROPOSED TREES = 122

PLANT LEGEND

-  TREES TO BE REMOVED* = 122
-  TREES TO REMAIN* = 6
 *TREE LOCATIONS ARE APPROXIMATE
-  EVERGREEN TREE VARIETIES = 94
 - PINUS CONTORTA / LODGEPOLE PINE
 - PINUS JEFFREYI / JEFFREY PINE
 - PINUS LAMBERTIANA / SUGAR PINE
 - PINUS PONDEROSA / PONDEROSA PINE
 - PINUS STROBUS / BLISTER RUST RESISTANT WHITE PINE
 - TSUGA HETEROPHYLLA / WESTERN HEMLOCK
-  DECIDUOUS TREE VARIETIES = 23
 - ALNUS RHOMBIFOLIA / WHITE ALDER
 - POPULUS TREMULOIDES/QUAKING ASPEN
-  RE-VEGETATION AREAS - SEE SEED BLEND BELOW



GENERAL NOTES

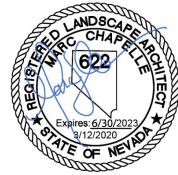
1. ALL PLANTING AND IRRIGATION SHALL BE INSTALLED PER LOCAL GOVERNING CODES.
2. TREES
 - DECIDUOUS TREES SHALL HAVE A MINIMUM CALIPER OF 2 INCHES.
 - EVERGREEN TREES SHALL HAVE A MINIMUM HEIGHT OF 6 FEET.
 - ADDITIONAL TREES, BEYOND THOSE REQUIRED BY CODE, MAY BE REDUCED IN SIZE AT INSTALLATION AND PROVIDED AT THE DISCRETION OF THE OWNER.
3. FINAL PLANT SELECTION AND LAYOUT WILL BE BASED ON SOUND HORTICULTURAL PRACTICES RELATING TO MICRO-CLIMATE, SOIL, AND WATER REGIMES. ALL TREES WILL BE STAKED SO AS TO REMAIN UPRIGHT AND PLUMB FOLLOWING INSTALLATION. PLANT SIZE AND QUALITY AT TIME OF PLANTING WILL BE PER THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-1990).
4. ALL LANDSCAPING WILL BE AUTOMATICALLY IRRIGATED. CONTAINER PLANTINGS WILL BE DRIP IRRIGATED BASED ON THE SPECIFIC HORTICULTURAL REQUIREMENTS OF EACH SPECIES. A REDUCED-PRESSURE-TYPE BACKFLOW PREVENTER WILL BE PROVIDED ON THE IRRIGATION SYSTEM AS REQUIRED PER CODE.
5. PLANTING PLAN IS CONCEPTUAL. PLANT QUANTITIES INDICATED ARE PER LOCAL AGENCY CODE REQUIREMENTS. PLANT LOCATIONS, FINAL SPECIES SELECTION, AND SIZE AT PLANTING SHALL BE DETERMINED DURING DEVELOPMENT OF FINAL CONSTRUCTION DOCUMENTS.

RE-VEGETATION SEED MIX

SCIENTIFIC NAME	COMMON NAME	(LBS/ACRE)
ACHNATHERUM OCCIDENTALE	WESTERN NEEDLEGRASS	1.0
ARCTOSTAPHYLOS NEVADENSIS	PINEMAT MANZANITA	3.0
CEANOTHUS VELUTINUS	TOBACCO BRUSH	2.0
ELYMUS ELYMOIDES SSP. CALIFORNICUS	SQUIRRELTAIL	1.0
POTENTILLA GRACILIS	CINQUEFOIL	0.35

0' 50 100 150

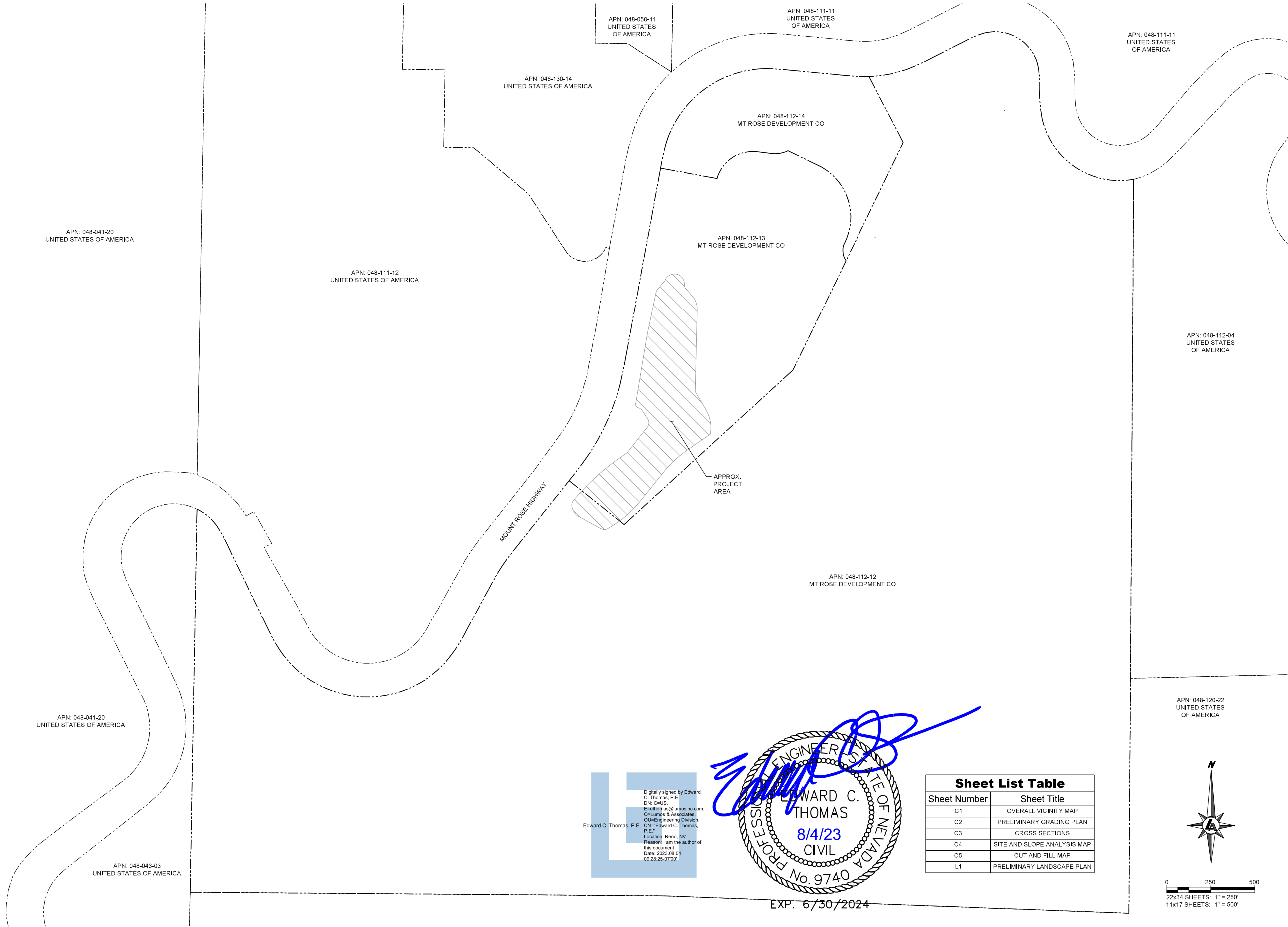
Scale in Feet



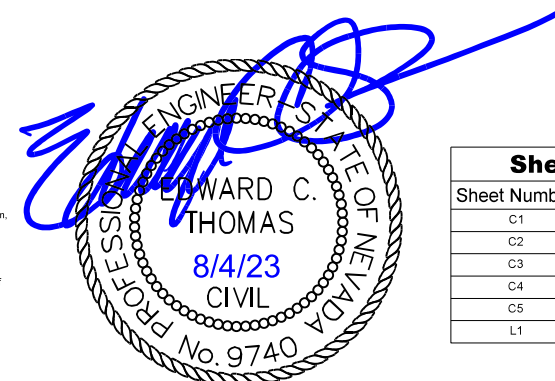
No.	Revision Date

LA No: 590-501-06-28
 Designed: KRD
 Drawn: KRD
 Checked: MAC
 Date: 08/01/2023

L:\AP\07\9764.601 - Mt. Rose Tubing Hill SUP\3-Design\DWG\Civil\Sheets\9764.601-Tubing Hill SUP.dwg;C1 OVERALL VICINITY MAP.
08/03/2023 06:00 pm rrsry

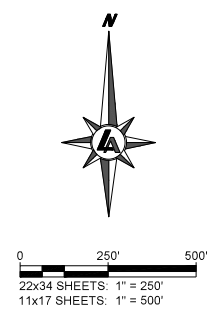


Digitally signed by Edward C. Thomas, P.E.
DN: C=US,
E=ethomas@lumosinc.com,
O=Lumos & Associates,
OU=Engineering Division,
CN=Edward C. Thomas,
P.E.
Location: Reno, NV
Reason: I am the author of
this document
Date: 2023.08.04
09:28:25-0700'



EXP: 6/30/2024

Sheet List Table	
Sheet Number	Sheet Title
C1	OVERALL VICINITY MAP
C2	PRELIMINARY GRADING PLAN
C3	CROSS SECTIONS
C4	SITE AND SLOPE ANALYSIS MAP
C5	CUT AND FILL MAP
L1	PRELIMINARY LANDSCAPE PLAN



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MT. ROSE-SKI TAHOE
**MT. ROSE WINTER SNOW TUBING HILL
SPECIAL USE PERMIT
OVERALL VICINITY MAP**
NEVADA
WASHOE COUNTY
CITY OF RENO

REV.	DATE	DESCRIPTION

BAR IS 1 INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

C1

DRAWN BY: RSP
DESIGNED BY: ECT/RSP
CHECKED BY: ECT
JOB NO.: 9764.601

**PRELIMINARY
NOT FOR CONSTRUCTION
AUGUST 8, 2023**

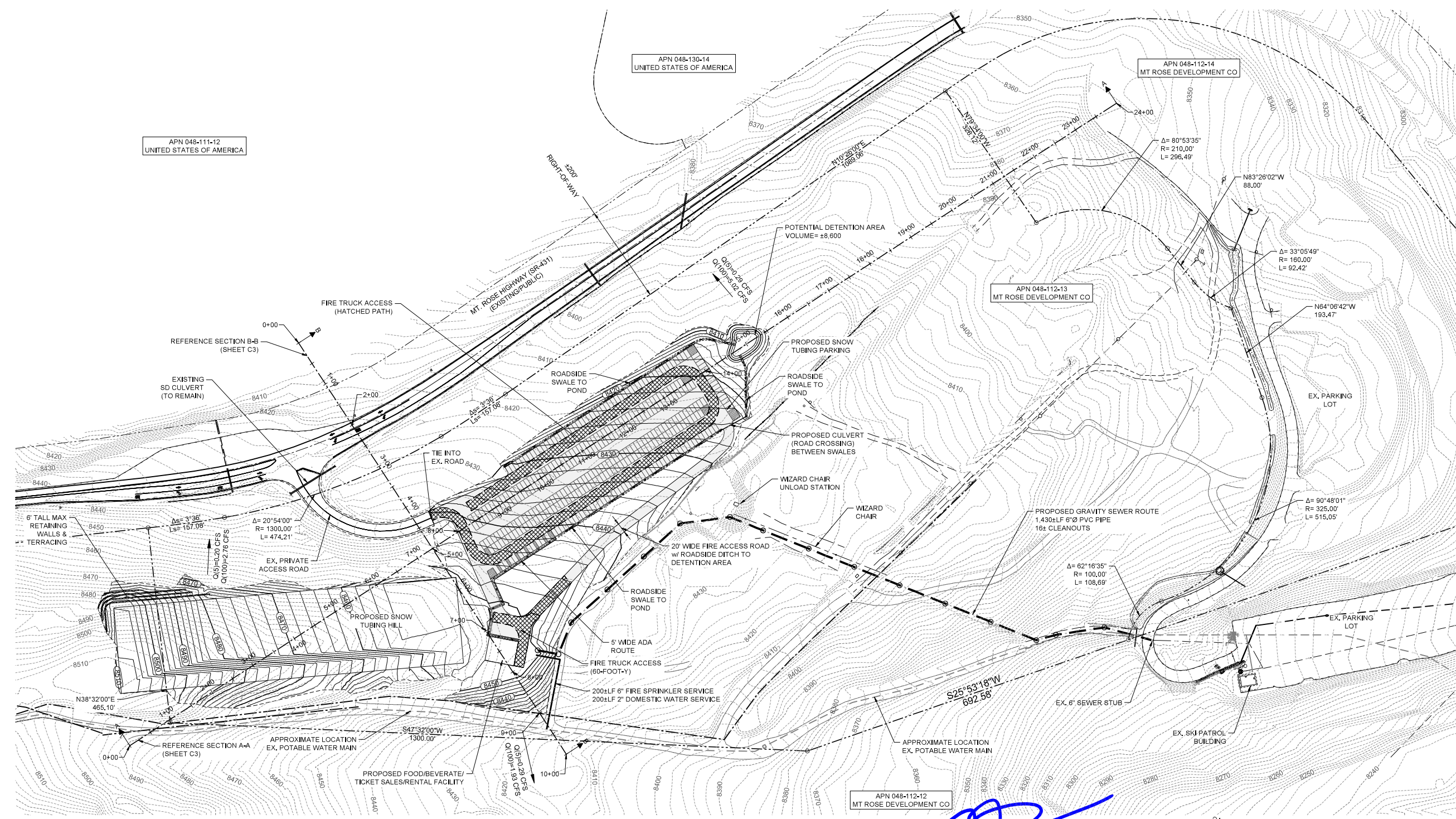
MT. ROSE-SKI TAHOE
MT. ROSE WINTER SNOW TUBING HILL
SPECIAL USE PERMIT
PRELIMINARY GRADING PLAN
CITY OF RENO
WASHOE COUNTY
NEVADA

BY: _____
DESCRIPTION: _____
REV. DATE: _____
PRELIMINARY
FOR SUP REVIEW
AUGUST 8, 2023

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C2
DRAWN BY: RSP
DESIGNED BY: ECT/RSP
CHECKED BY: ECT
JOB NO.: 9764.601



- GENERAL NOTES**
- FIRE ACCESS ROUTES DEPICTED ON THE PLAN SET ARE IN CONFORMANCE WITH THE INTERNATIONAL FIRE CODE & WASHOE COUNTY FIRE DEPARTMENT GUIDELINES. FIRE AISLE WIDTH: 20' (min)
INSIDE TURN RADII: 32'
OUTSIDE TURN RADII: 52'
 - ALL DEPICTED RETAINING WALLS ARE TO BE A MAX OF 6' IN HEIGHT AND FOLLOW THE TERRACING GUIDELINES DETAILED IN THE WASHOE COUNTY DEVELOPMENT CODE, ARTICLE 438.
 - A TOTAL OF 375 PARKING STALLS ARE PROVIDED:
STANDARD STALLS: 363
ACCESSIBLE STALLS: 12

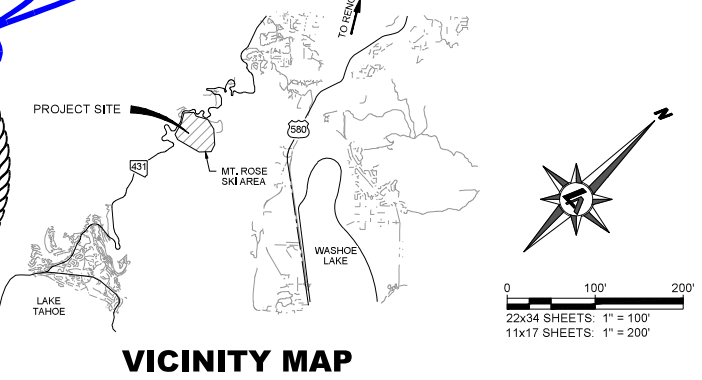
EARTHWORK SUMMARY

	AREA OF DISTURBANCE	CUT	FILL	NET
TOTAL EARTHWORK	9.27 AC	33,000± CY	41,000± CY	8,000± CY (FILL)

REVEGETATION SEED MIX

SCIENTIFIC NAME	COMMON NAME	PURE LIVE SEED (LB/ACRE)
ACHNATHERUM OCCIDENTALE	WESTERN NEEDLEGRASS	1.0
ARCTOSTAPHYLOS NEVADENSIS	PINEMAT MANZANITA	3.0
CEANOTHUS VELUTINUS	TOBACCO BRUSH	2.0
ELYMUS ELYMOIDES SSP. CALIFORNICUS	SQUIRRELTAIL	1.0
POTENTILLA GRACILIS	CINQUEFOIL	0.35

PROFESSIONAL ENGINEER
EDWARD C. THOMAS
8/4/23
CIVIL
NO. 9740
STATE OF NEVADA
EXP. 6/30/2024



L:\AP\9764.601 - Mt. Rose Tubing Hill SUP\3-Design\DWG\Civil\Sheets\9764.601-Tubing Hill SUP.dwg,C2 PRELIMINARY GRADING PLAN, 08/03/2023 06:00 pm rsoery

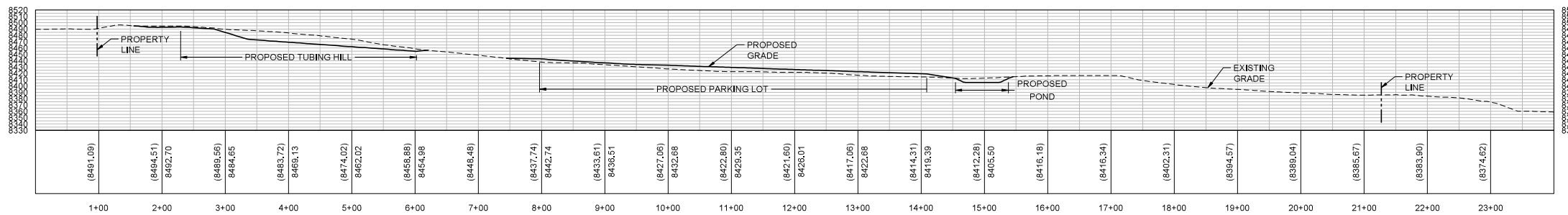
L:\AP\19764.601 - Mt. Rose Tubing Hill SUP\3-Design\DWG\Civil\Sheets\19764.601-Cross Sections.dwg,C3 CROSS SECTIONS, 08/03/2023 06:00 pm rosey



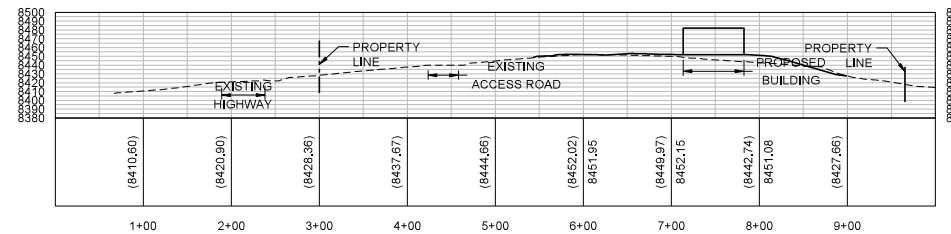
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CROSS SECTION A-A - STA:0+00 TO STA:24+00



CROSS SECTION B-B - STA:0+00 TO STA:10+00



Edward C. Thomas
 PROFESSIONAL ENGINEER
 STATE OF NEVADA
 EDWARD C. THOMAS
 8/4/23
 CIVIL
 9740

EXP. 6/30/2024

MT. ROSE-SKI TAHOE
 MT. ROSE WINTER SNOW TUBING HILL
 SPECIAL USE PERMIT
 CROSS SECTIONS
 WASHOE COUNTY
 CITY OF RENO
 NEVADA

REV.	DATE	DESCRIPTION

PRELIMINARY
 FOR SUP REVIEW
 AUGUST 8, 2023

BAR IS 1 INCH ON ORIGINAL DRAWING
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 DESIGNED BY: ECT/RSP
 CHECKED BY: ECT
 JOB NO.: 9764.601

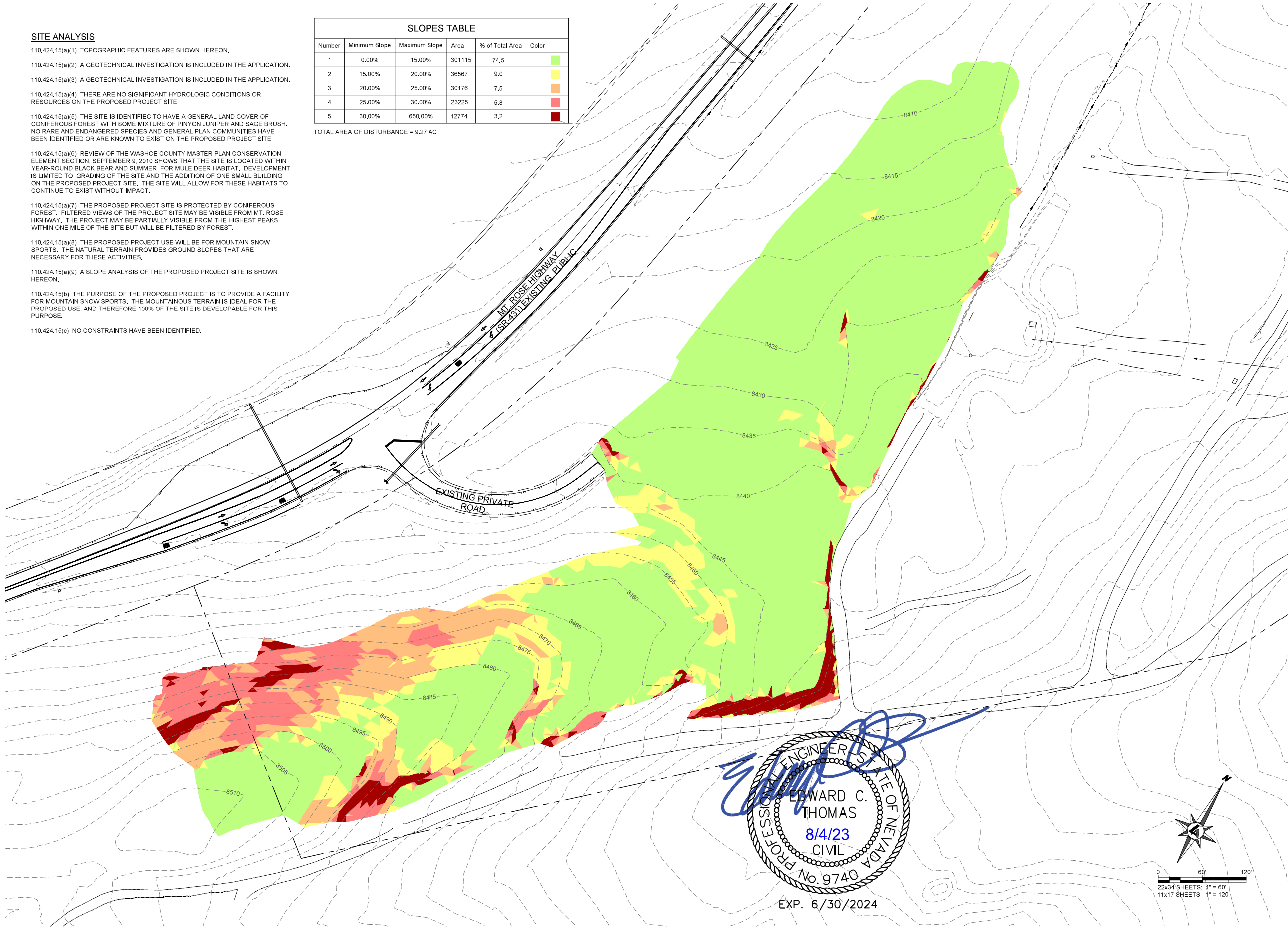
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 22x34 SHEETS: 1" = 100'
 11x17 SHEETS: 1" = 200'

SITE ANALYSIS

- 110.424.15(a)(1) TOPOGRAPHIC FEATURES ARE SHOWN HEREON.
- 110.424.15(a)(2) A GEOTECHNICAL INVESTIGATION IS INCLUDED IN THE APPLICATION.
- 110.424.15(a)(3) A GEOTECHNICAL INVESTIGATION IS INCLUDED IN THE APPLICATION.
- 110.424.15(a)(4) THERE ARE NO SIGNIFICANT HYDROLOGIC CONDITIONS OR RESOURCES ON THE PROPOSED PROJECT SITE
- 110.424.15(a)(5) THE SITE IS IDENTIFIED TO HAVE A GENERAL LAND COVER OF CONIFEROUS FOREST WITH SOME MIXTURE OF PINYON JUNIPER AND SAGE BRUSH. NO RARE AND ENDANGERED SPECIES AND GENERAL PLAN COMMUNITIES HAVE BEEN IDENTIFIED OR ARE KNOWN TO EXIST ON THE PROPOSED PROJECT SITE
- 110.424.15(a)(6) REVIEW OF THE WASHOE COUNTY MASTER PLAN CONSERVATION ELEMENT SECTION, SEPTEMBER 9, 2010 SHOWS THAT THE SITE IS LOCATED WITHIN YEAR-ROUND BLACK BEAR AND SUMMER FOR MULE DEER HABITAT. DEVELOPMENT IS LIMITED TO GRADING OF THE SITE AND THE ADDITION OF ONE SMALL BUILDING ON THE PROPOSED PROJECT SITE. THE SITE WILL ALLOW FOR THESE HABITATS TO CONTINUE TO EXIST WITHOUT IMPACT.
- 110.424.15(a)(7) THE PROPOSED PROJECT SITE IS PROTECTED BY CONIFEROUS FOREST. FILTERED VIEWS OF THE PROJECT SITE MAY BE VISIBLE FROM MT. ROSE HIGHWAY. THE PROJECT MAY BE PARTIALLY VISIBLE FROM THE HIGHEST PEAKS WITHIN ONE MILE OF THE SITE BUT WILL BE FILTERED BY FOREST.
- 110.424.15(a)(8) THE PROPOSED PROJECT USE WILL BE FOR MOUNTAIN SNOW SPORTS. THE NATURAL TERRAIN PROVIDES GROUND SLOPES THAT ARE NECESSARY FOR THESE ACTIVITIES.
- 110.424.15(a)(9) A SLOPE ANALYSIS OF THE PROPOSED PROJECT SITE IS SHOWN HEREON.
- 110.424.15(b) THE PURPOSE OF THE PROPOSED PROJECT IS TO PROVIDE A FACILITY FOR MOUNTAIN SNOW SPORTS. THE MOUNTAINOUS TERRAIN IS IDEAL FOR THE PROPOSED USE, AND THEREFORE 100% OF THE SITE IS DEVELOPABLE FOR THIS PURPOSE.
- 110.424.15(c) NO CONSTRAINTS HAVE BEEN IDENTIFIED.

SLOPES TABLE					
Number	Minimum Slope	Maximum Slope	Area	% of Total Area	Color
1	0.00%	15.00%	301115	74.5	Light Green
2	15.00%	20.00%	36567	9.0	Yellow
3	20.00%	25.00%	30176	7.5	Orange
4	25.00%	30.00%	23225	5.8	Red-Orange
5	30.00%	650.00%	12774	3.2	Dark Red

TOTAL AREA OF DISTURBANCE = 9.27 AC



PROFESSIONAL ENGINEER STATE OF NEVADA
 EDWARD C. THOMAS
 8/4/23
 CIVIL
 No. 9740

EXP. 6/30/2024



950 SANDHILL ROAD, SUITE 100
 RENO, NV 89521
 TEL: 775.827.6111
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MT. ROSE-SKI TAHOE
 MT. ROSE WINTER SNOW TUBING HILL
 SPECIAL USE PERMIT
 SITE AND SLOPE ANALYSIS MAP
 CITY OF RENO
 WASHOE COUNTY
 NEVADA

REV.	DATE	DESCRIPTION

BAR IS 1 INCH ON ORIGINAL DRAWING
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C4
 DRAWN BY: RSP
 DESIGNED BY: ECT/RSP
 CHECKED BY: ECT
 JOB NO.: 9764.601

L:\AP\9764.601 - Mt. Rose Tubing Hill SUP\3-Design\DWG\CHA\Sheets\9764601 - Slope Analysis Map.dwg, C4 SITE AND SLOPE ANALYSIS MAP, 08/03/2023 08:01 pm rsm

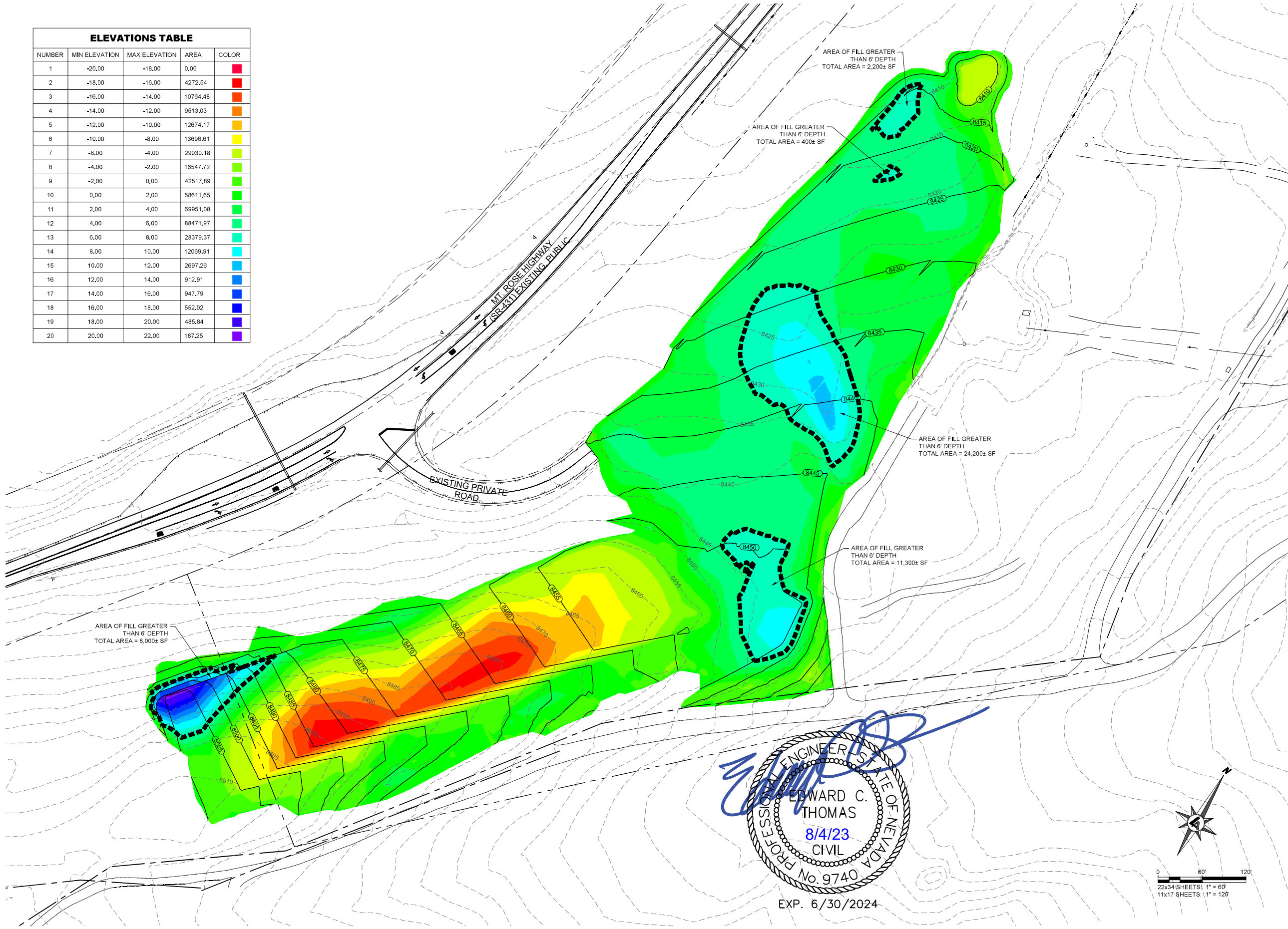
ELEVATIONS TABLE				
NUMBER	MIN ELEVATION	MAX ELEVATION	AREA	COLOR
1	-20.00	-18.00	0.00	Red
2	-18.00	-16.00	4272.54	Red
3	-16.00	-14.00	10764.48	Orange
4	-14.00	-12.00	9513.03	Orange
5	-12.00	-10.00	12674.17	Yellow
6	-10.00	-8.00	13696.61	Yellow
7	-8.00	-4.00	29030.18	Light Green
8	-4.00	-2.00	16547.72	Light Green
9	-2.00	0.00	42517.89	Light Green
10	0.00	2.00	58611.65	Light Green
11	2.00	4.00	69951.08	Light Green
12	4.00	6.00	88471.97	Light Green
13	6.00	8.00	28379.37	Light Green
14	8.00	10.00	12069.91	Light Green
15	10.00	12.00	2697.26	Light Green
16	12.00	14.00	912.91	Light Green
17	14.00	16.00	947.79	Light Green
18	16.00	18.00	552.02	Light Green
19	18.00	20.00	485.84	Light Green
20	20.00	22.00	187.25	Light Green



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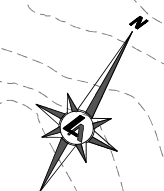
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8/4/23
CIVIL
No. 9740

EXP. 6/30/2024



0 60' 120'
22x34 SHEETS: 1" = 60'
11x17 SHEETS: 1" = 120'

MT. ROSE-SKI TAHOE
MT. ROSE WINTER SNOW TUBING HILL
SPECIAL USE PERMIT
CUT AND FILL MAP
CITY OF RENO
WASHOE COUNTY
NEVADA

REV.	DATE	DESCRIPTION

PRELIMINARY
FOR SUP REVIEW
AUGUST 8, 2023

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C5
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DESIGNED BY: ECT/RSP
CHECKED BY: ECT
JOB NO.: 9764.601

L:\AP\9764.601 - Mt. Rose Tubing Hill SUP\3-Design\DWG\Sheets\9764601 - Cut and Fill.dwg, C5 CUT AND FILL MAP, 08/03/2023 08:01 pm rsmr

MT. ROSE TUBING LODGE, NEVADA



bull stockwell allen
 ARCHITECTURE + PLANNING + INTERIORS
 300 MONTGOMERY STREET, SUITE 600
 SAN FRANCISCO CA 94104

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PROJECT DESCRIPTION

PROJECT ADDRESS:

MT. ROSE / SKI TAHOE
 22222 MT. ROSE HIGHWAY
 RENO, NV 89511

SCOPE OF WORK:

NEW LODGE BUILDING

APPLICABLE CODES:

Per Washoe County, NV

- 2018 INTERNATIONAL BUILDING CODE (IBC)
- 2018 INTERNATIONAL PLUMBING CODE (IPC)
- 2018 INTERNATIONAL MECHANICAL CODE (IMC)
- 2018 INTERNATIONAL FUEL GAS CODE (IFGC)
- 2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
- 2018 INTERNATIONAL WILDLAND-URBAN INTERFACE CODE (IWUIC)
- 2018 NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
- 2017 NATIONAL ELECTRICAL CODE (NEC)
- ADDITIONAL MUNICIPAL CODES

OCCUPANCY CLASSIFICATION AND OCCUPANT LOAD (IBC CHAPTER 510.2):

L2 - A-2
 L1 - A-3, B, M, S-1, S-2

TYPE OF CONSTRUCTION (IBC CHAPTER 510.2):

NUMBER OF STORIES:

TOTAL NUMBER OF LEVELS: 2

TOTAL GROSS AREA:

L2 - APPROXIMATELY 6,500 SQUARE FEET
 L1 - APPROXIMATELY 5,500 SQUARE FEET

PROGRAM AREA:

Total Gross Program Area

LEVEL 2 - 5,392.12 SF
 LEVEL 1 - 4,138.23 SF

TOTAL: 9530.35 SF

SHEET LIST:

- G1.00 - COVER SHEET
- A0.01 - OVERALL SITE PLAN
- A0.02 - ENLARGED SITE PLAN
- A2.01 - LEVEL 1 FLOOR PLAN
- A2.02 - LEVEL 2 FLOOR PLAN
- A2.03 - ROOF PLAN
- A3.01 - BUILDING ELEVATIONS
- A3.11 - BUILDING SECTIONS
- A4.01 - OVERALL FLOOR PLAN - LEVEL 1
- A4.02 - OVERALL FLOOR PLAN - LEVEL 2

PROGRAM AREA STUDY:

MT ROSE SKI TAHOE - TUBING LODGE

Mt. Rose Ski Tahoe - Preliminary Design Program - Reduced
 Updated: July 27 2023

Comfortable Carrying Capacity (CCC):	1350	SF Per Person	Capacity	Total SF
--------------------------------------	------	---------------	----------	----------

LEVEL 2				
Food & Beverage - 350 Seats				
Indoor Seating	12	132		1,581.15
Kitchen				1,068.84
Serveries				542.11
Bar	12	68		815.45
Entry Vestibule				119.87
Elevator Vestibule				77.64
Level Sub Total				4,205.06

LEVEL 1				
Guestation				
Ticketing/ Front Desk				314.22
Retail/ Rental/Lobby	60	19		1,151.86
Office				64.00
Entry Vestibule				135.70
Elevator Vestibule				67.62
Guestation Sub Total				1,733.40

Restrooms				
Womens Restrooms				314.35
Mens Restrooms				321.20
Family Restrooms				90.20
Restrooms Sub Total				725.75

Stairs				
8' Wide, 6"x18"				524.93
Stairs Sub Total				524.93
Level Sub Total				2,984.08

Total Program Area 7,189.14

BOH SPACES				
Mechanical (Total Required Area TBD)				302.69
Electrical (Total Required Area TBD)				543.01
Loading/Trash				138.41
Storage				78.60
Circulation @Level 1				706.03
Circulation @Level 2				30.25
Janitor Closet				124.50
Service Hallway (To BBQ)				356.53
Service Hallway (To Bar)				69.19
Elevator Pit				2,341.21

*BOH Area TBD with Consultants

Total Interior Building Area 9,530.35

3D IMAGE



DEFERRED SUBMITTALS:

DEFERRED SUBMITTALS FOR THIS PROJECT INCLUDES:

1. XXX

PROJECT DIRECTORY:

CLIENT INFORMATION

MT. ROSE / SKI TAHOE
 22222 MT. ROSE HIGHWAY
 RENO, NV 89511

CONTACT: GREG GAVRILETS
 KURT BUSER

ARCHITECT

BULL STOCKWELL ALLEN
 300 MONTGOMERY ST, SUITE 600
 SAN FRANCISCO, CA 94104

CONTACT: JOHN ASHWORTH
 TEL: 415.281.4720

LANDSCAPE ARCHITECT

DESIGN-BUILD MECH / PLUMBING ENGINEER

INTERIORS

AQUATIC

CONTRACTOR

CIVIL ENGINEER

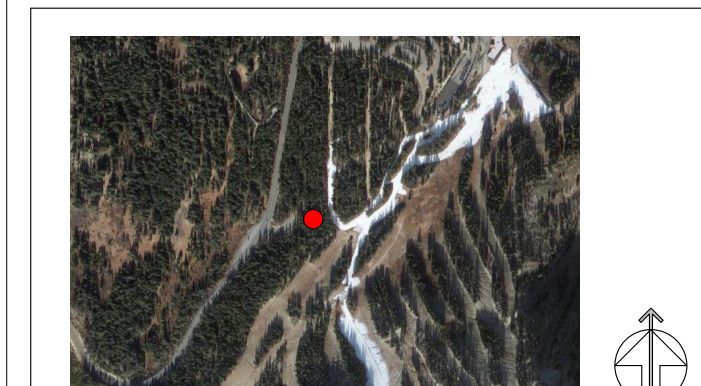
CFA, INC.
 1150 CORPORATE BLVD.
 RENO, NV 89502

STRUCTURAL ENGINEER

DESIGN-BUILD ELEC. ENGINEER

FIRE PROTECTION

VICINITY MAP



MT ROSE TUBING LODGE

ISSUE
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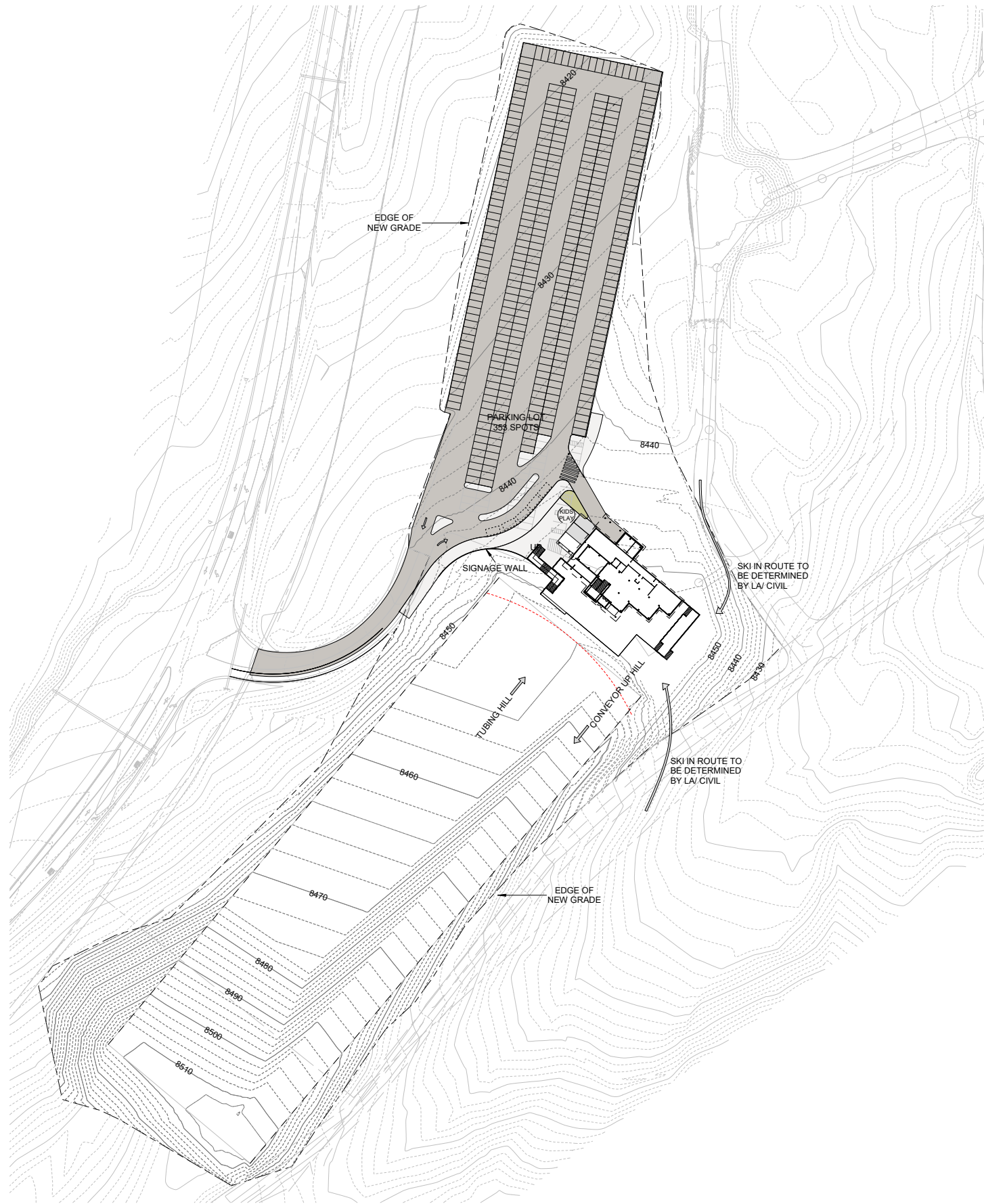
RELEASE DATE
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COVER SHEET

G1.00



1 OVERALL SITE PLAN
1" = 80'-0"



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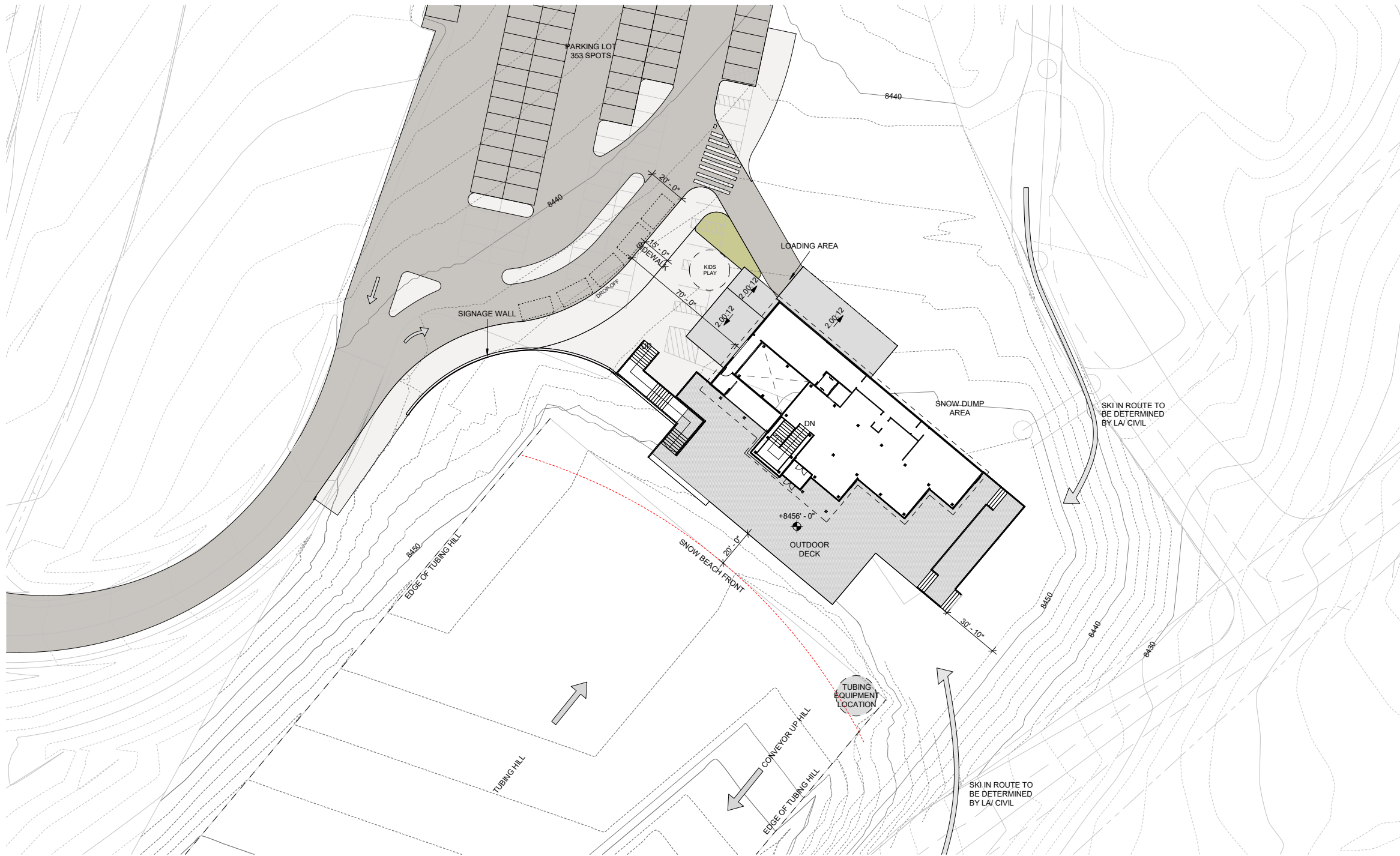
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**OVERALL SITE
PLAN**



A0.01



1 ENLARGED SITE PLAN
1" = 30'-0"



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ENLARGED SITE PLAN

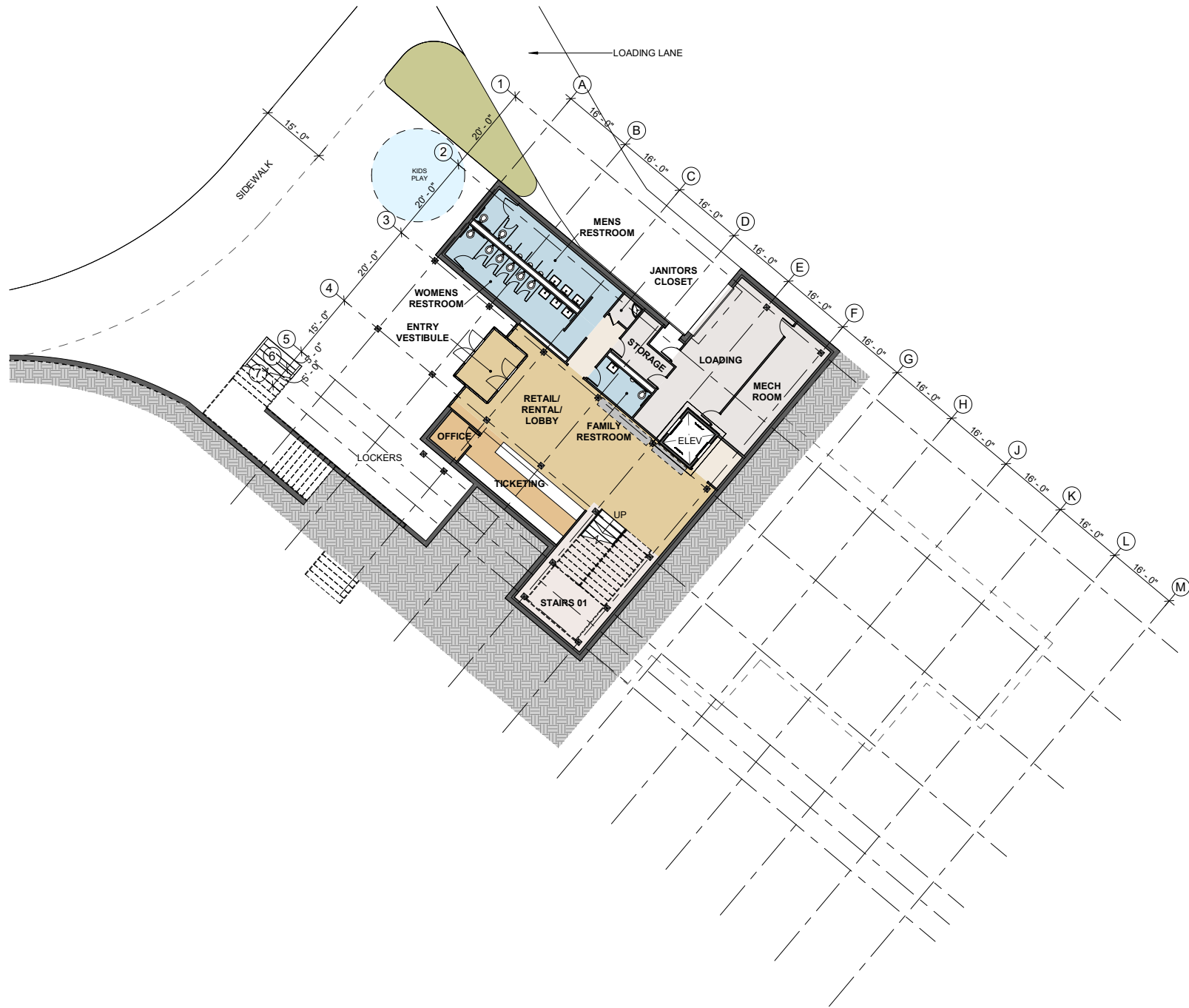


A0.02



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FLOOR PLAN



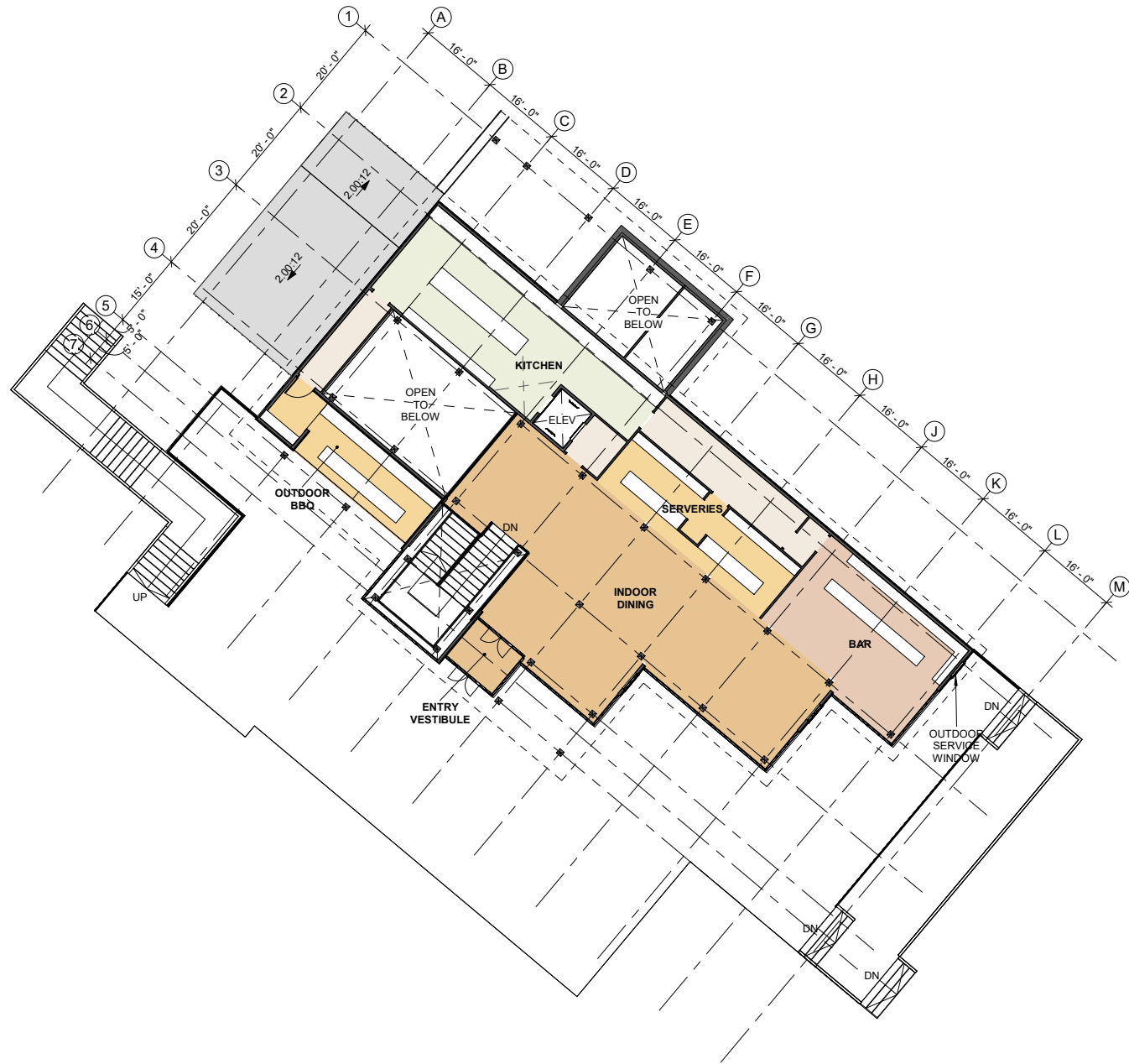
A2.01

① **LEVEL 1**
 1/16" = 1'-0"



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① LEVEL 2
 1/16" = 1'-0"



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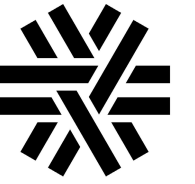
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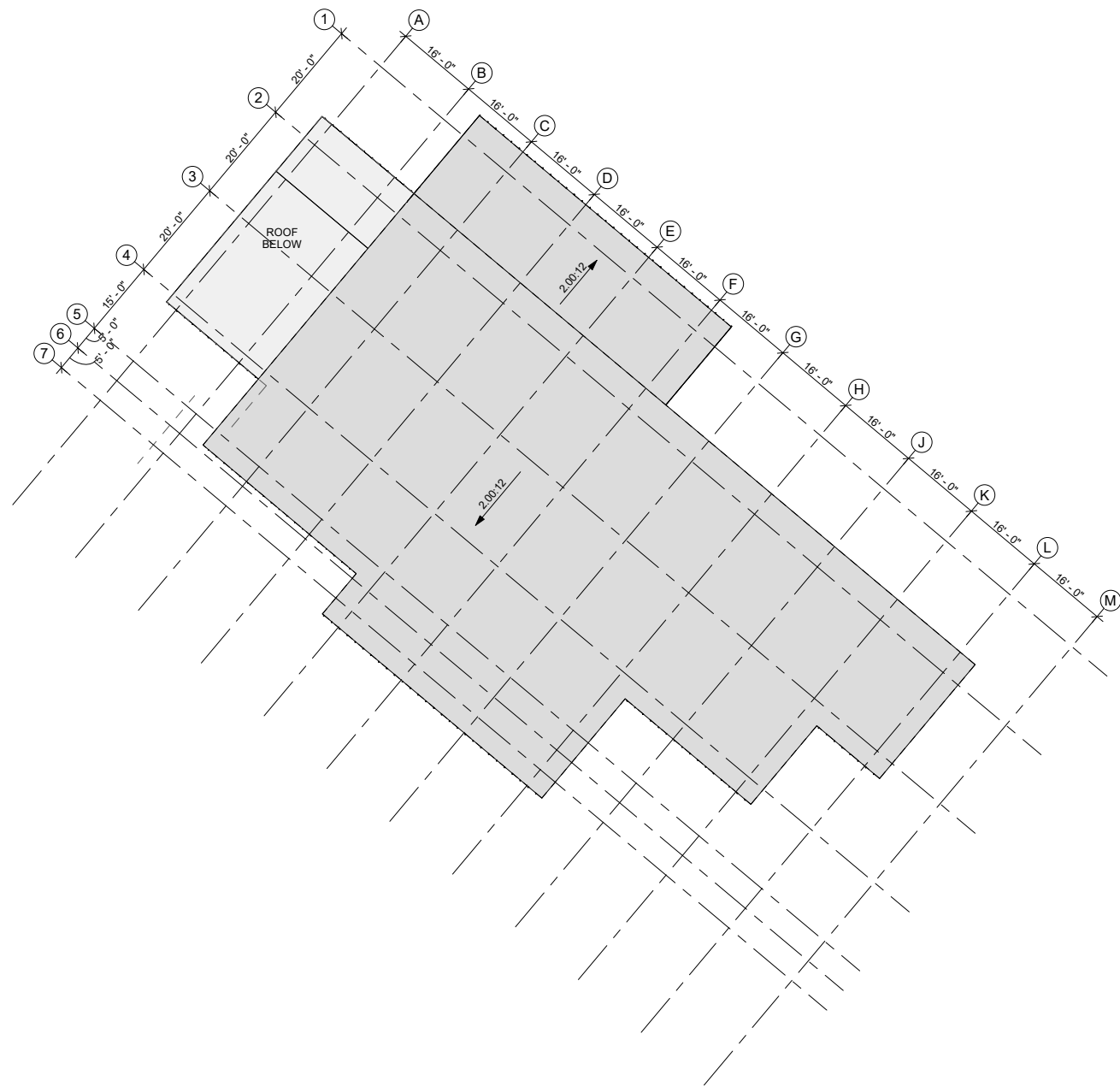
FLOOR PLAN

A2.02



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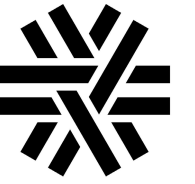
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ROOF PLAN



A2.03

1 **ROOF PLAN**
 1/16" = 1'-0"



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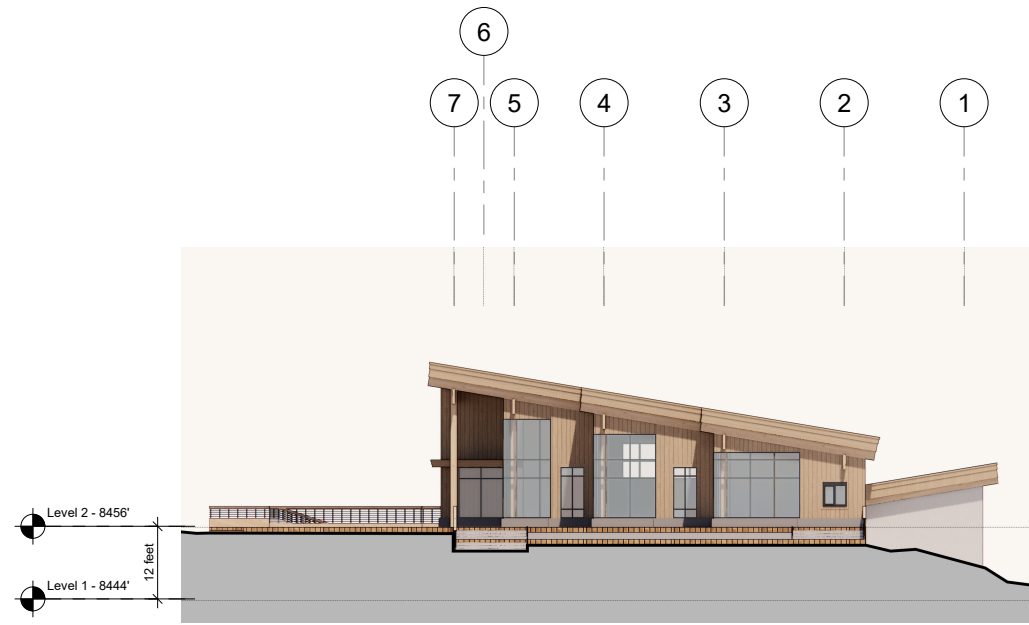
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EXTERIOR ELEVATIONS

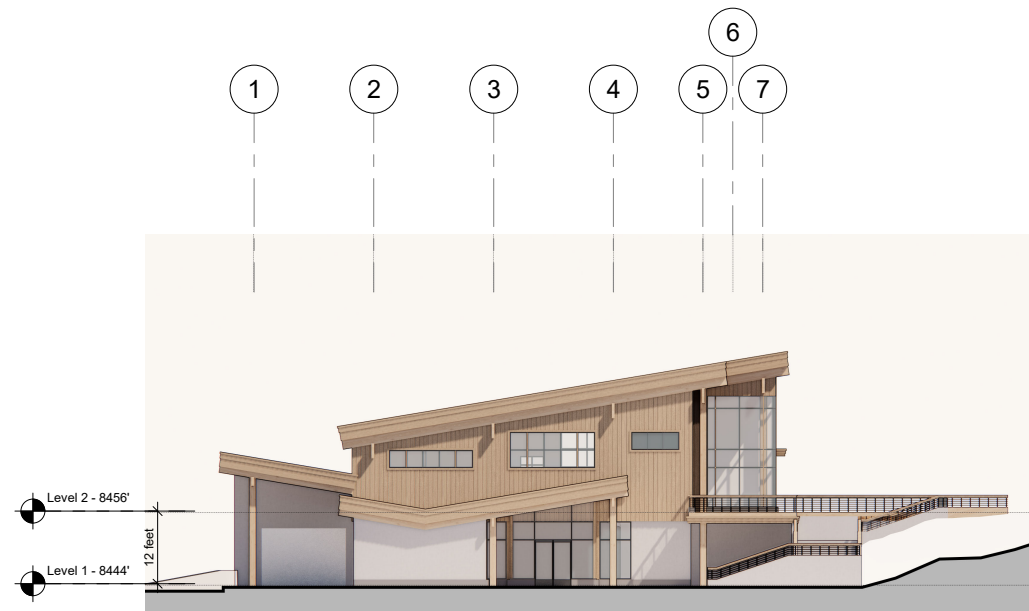
A3.01



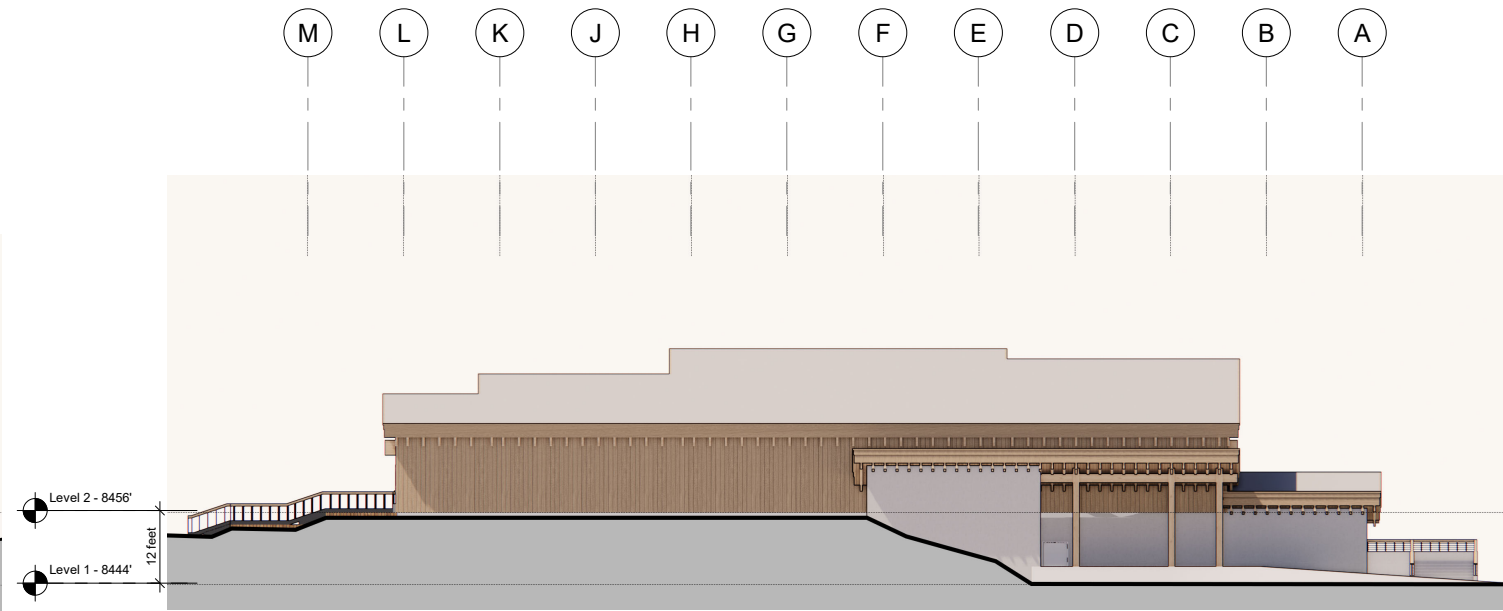
③ EAST ELEVATION - IN PROGRESS
1/16" = 1'-0"



④ SOUTH ELEVATION - IN PROGRESS
1/16" = 1'-0"



① WEST ELEVATION - IN PROGRESS
1/16" = 1'-0"



② NORTH ELEVATION - IN PROGRESS
1/16" = 1'-0"



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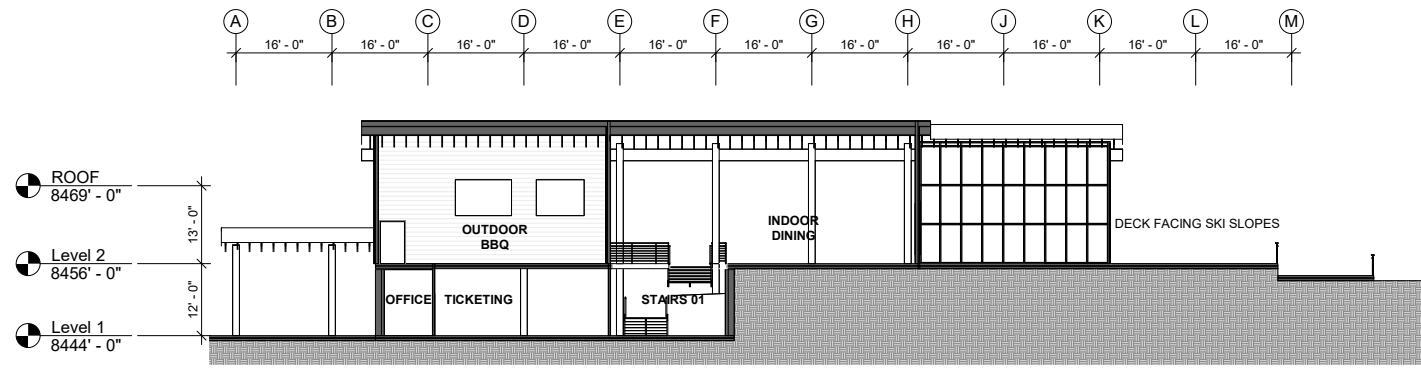
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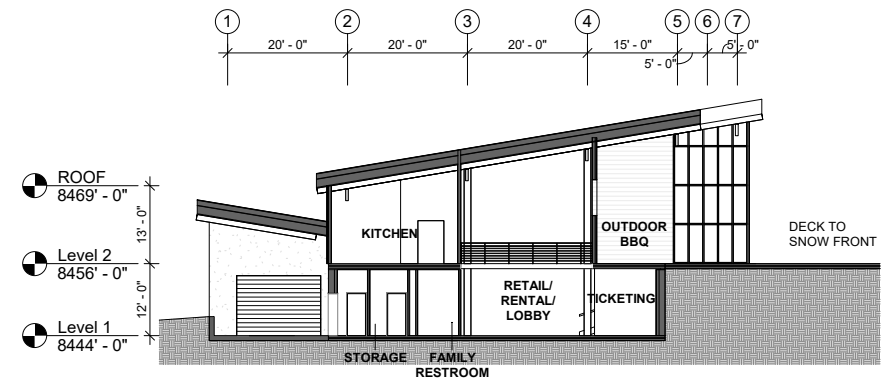
Author
Checker

BUILDING SECTIONS

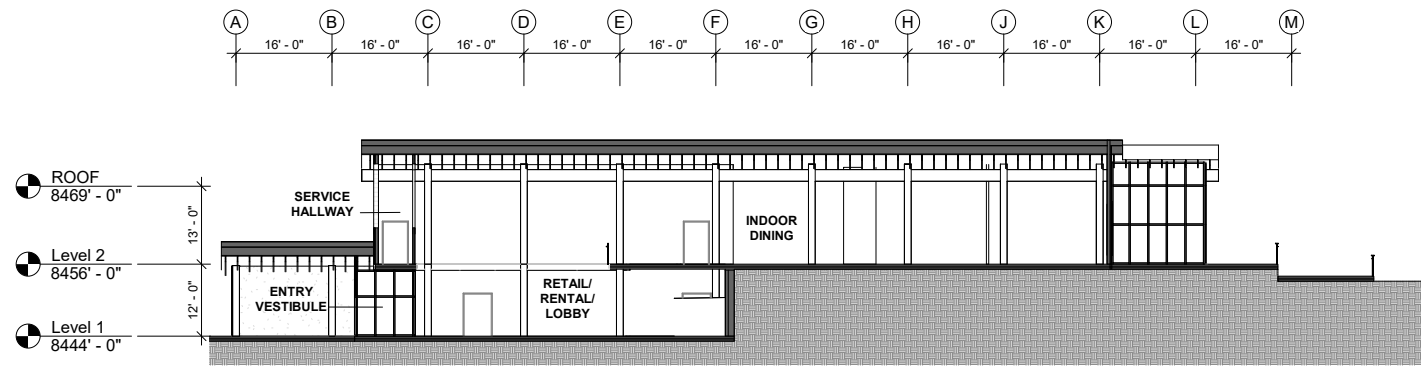
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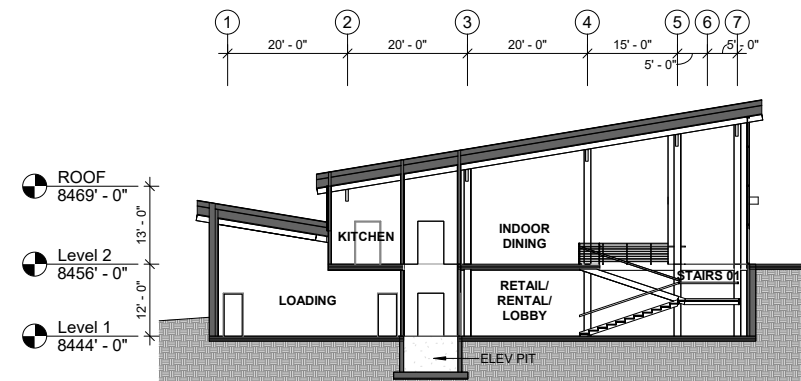
6 LONG SECTION 6
1/16" = 1'-0"



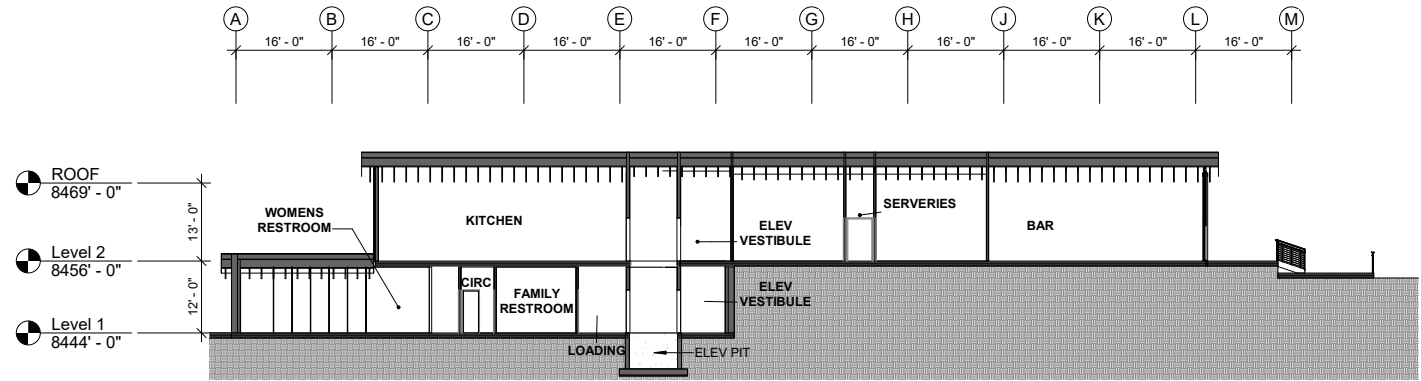
3 CROSS SECTION 3
1/16" = 1'-0"



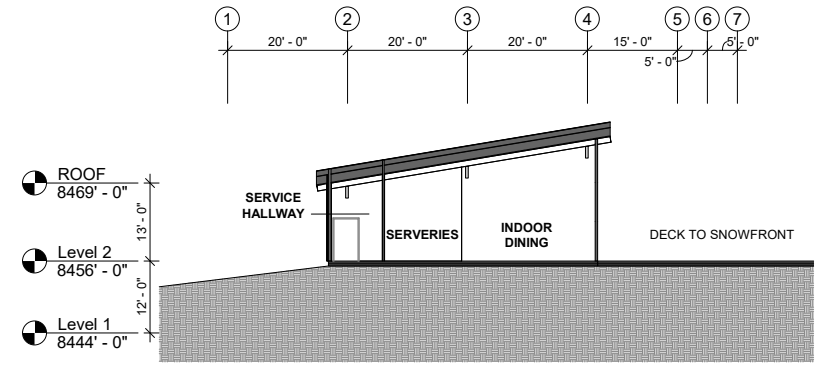
5 LONG SECTION 5
1/16" = 1'-0"



2 CROSS SECTION 2
1/16" = 1'-0"



4 LONG SECTION 4
1/16" = 1'-0"



1 CROSS SECTION 1
1/16" = 1'-0"



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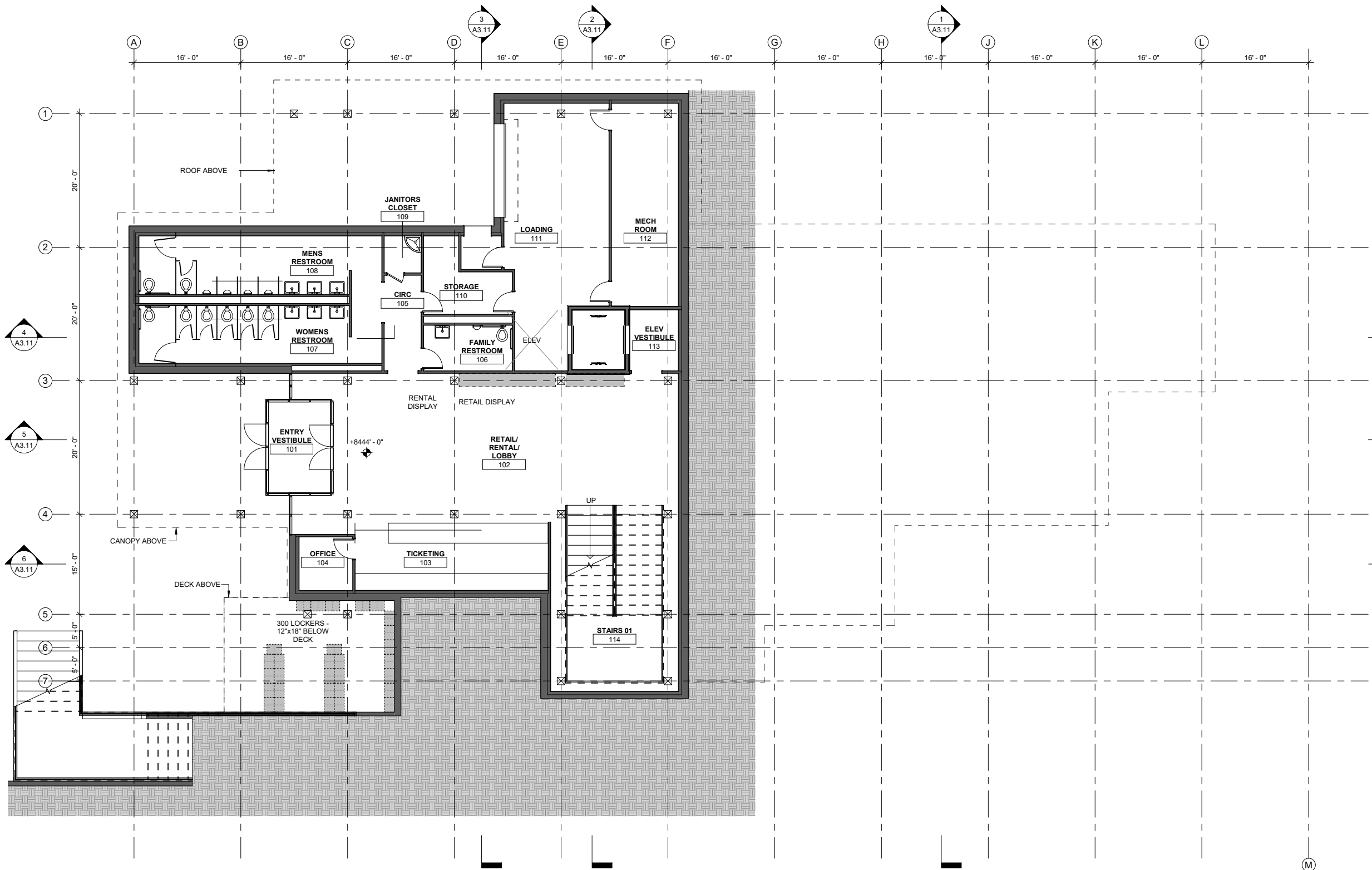
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**OVERALL
 FLOOR PLAN -
 LEVEL 1**

A4.01



1 LEVEL 1
 1/8" = 1'-0"

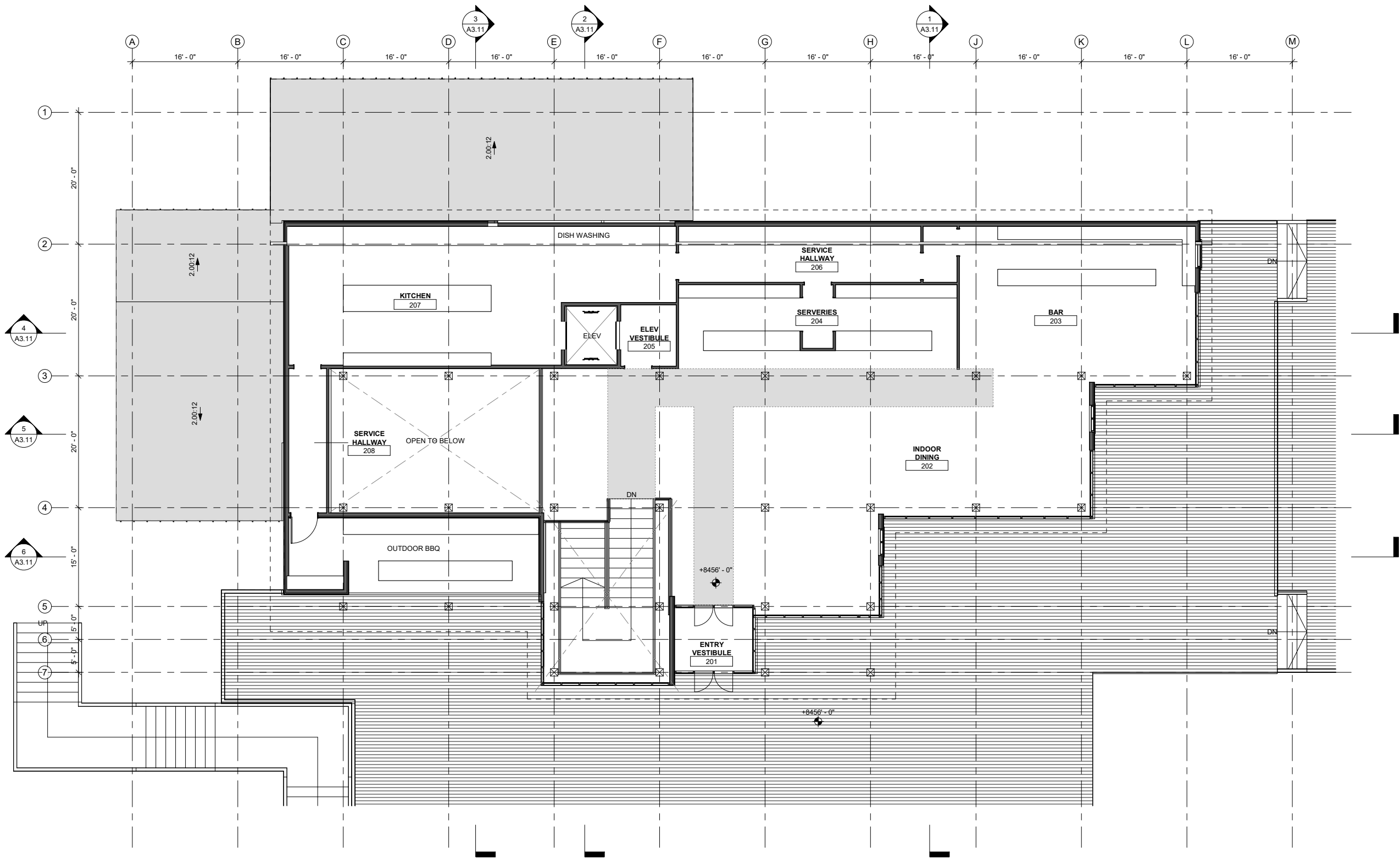




bull stockwell allen

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① LEVEL 2
1/8" = 1'-0"

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**OVERALL
FLOOR PLAN -
LEVEL 2**



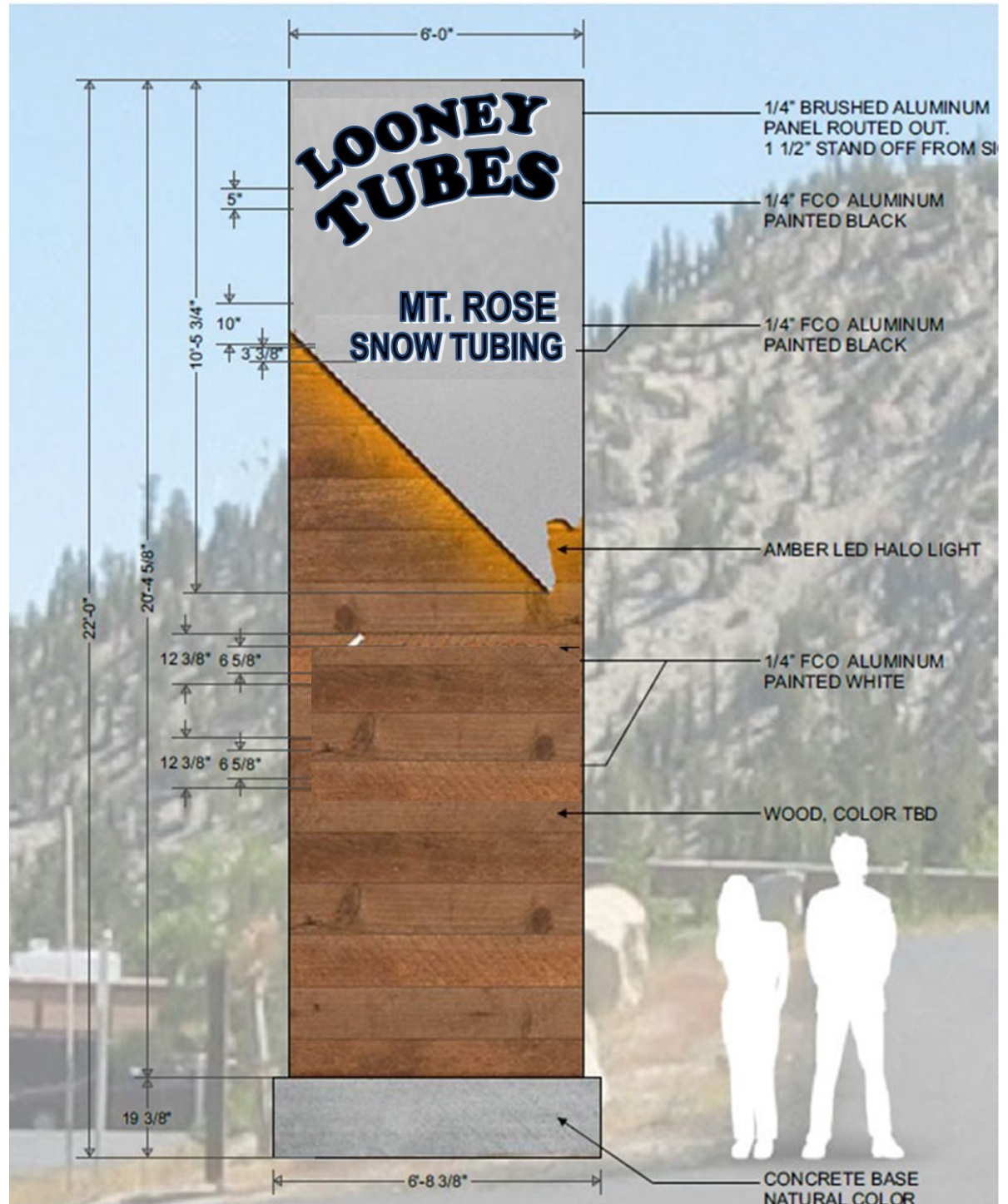
A4.02

TUBING CENTER

SIGN PORPOSAL

SR 431— Entry
3/4 Mile Southwest of Main
Lodge entry (Uphill)

NOTE: Name of Area is unde-
cided—Looney Tubes strictly a
Filler for concept purposes



TUBING CENTER

SIGN PORPOSAL

LOCATION

SR 431— Entry

3/4 Mile Southwest of Main

Lodge entry (Uphill)



TUBING CENTER
SIGN PORPOSAL
SR 431—Northbound



TUBING CENTER
SIGN PORPOSAL
SR 431—Southbound



TUBING CENTER
SIGN PORPOSAL
SR 431—Southbound B



TUBING CENTER

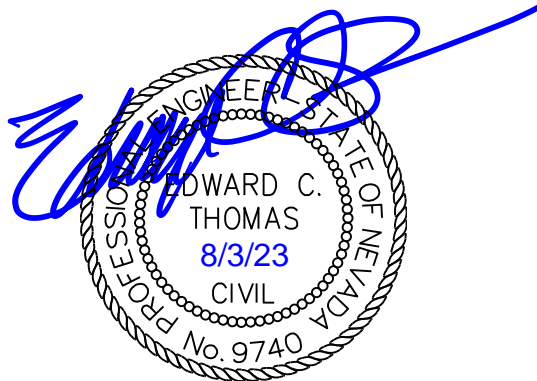
SIGN PORPOSAL

SR 431—Southbound C



TAB D

CONCEPTUAL DRAINAGE REPORT
For
MT. ROSE
SNOW TUBING HILL



EXP. 6/30/2024

Prepared For:

Mt. Rose/Ski Tahoe
22222 Mt. Rose Highway
Reno, NV 89511

Prepared By:
Ed Thomas, P.E.



Lumos & Associates, Inc.
950 Sandhill Road, Suite 100
Reno, NV 89521
(775) 827-6111

JN 9764.601
August 2023

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[File Doc: L:\LAProj\9764.400 - Galena Water Tank\Civil\Hydrology\Report\9764.400-Conceptual Drainage Report.docx]

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1. INTRODUCTION

This document is presented as a Conceptual Drainage Report in support of the proposed Snow Tubing Hill for Mt. Rose Ski Tahoe. This report is to provide support for the Special Use Permit (SUP) for the developed area as required by Washoe County.

Mt. Rose Ski Tahoe intends to develop upon assessor parcel numbers (APN) 048-112-12 and 13 (owned by Mt. Rose Development Company). The subject area is bound by Mount Rose Highway to the west and the Mt. Rose ski area to other sides. The existing Galena ski trail passes the site on the east, and the existing Merlin trail passes the site on the south. Refer to Figure 1 for a vicinity map of the area. The disturbed area accounts for approximately 9.3 acres. The entire project is within Section 19, Township 17 North and Range 19 East.

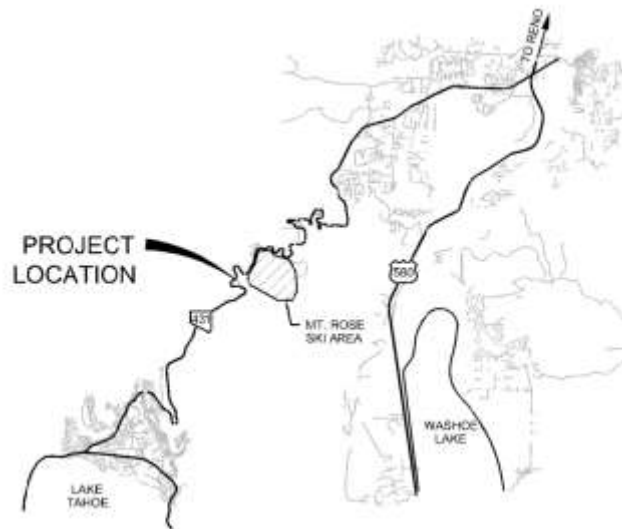


Figure 1: Vicinity Map

1.1. Existing Site Description

The site is located on the western edge of the Mt. Rose ski area between the Mt. Rose Highway (SR-431) and the existing Galena Ski Trail, just south of the unload station for the existing Wizard chair lift. An existing maintenance building and water tank are located directly north of the project site. Dirt/gravel access roads provide connectivity to the existing facilities from Mt. Rose Highway. An existing summer maintenance road borders the project site to the east (this road becomes the Galena and Merlin ski trails during ski season). An existing 275 foot long paved road connects the project site to Mt. Rose Highway. With the exception of these improvements, the rest of the project site is currently undeveloped, with groundcover consisting of forest coverings. According to the NRCS Soil Survey, all on-site soils are in Hydrologic Group A, which has very low runoff potential and high infiltration rates. The topography of the site ranges from 5 to 25 percent. A low ridgeline runs down the length of the project site and splits drainage east and west. The majority of the site drains to the west as overland flow prior to entering the Mt. Rose Highway drainage system. Culverts under the Mt. Rose Highway direct runoff toward Galena Creek. The remainder of the site drains to the east as overland flow and ultimately feeds Browns Creek.

1.2. Proposed Project Description

The proposed Mt. Rose Snow Tubing Hill will be developed upon approximately 9.3 acres. The development will include the snow tubing hill; a 7,000 +/- sq. ft. structure for ticket sales, clothing rentals, food & beverage service, and restrooms; a paved parking area for approximately 375 vehicles. The snow tubing hill will be a simple earthen slope and will be constructed using native soil. Snow tubing runs will be shaped on the snow surface using snow grooming equipment. The snow tubing hill will be revegetated using a native seed mixture, and erosion protection will be installed in accordance with US Forest Service practices currently employed on the existing ski trails. Runoff will be split between Galena Creek to the west and Browns Creek to the east similar to natural drainage patterns. Runoff from unpaved areas will not be detained prior to discharge into the existing Mt. Rose Highway culverts since only minimal changes in runoff rates are anticipated. Runoff from paved areas will be detained as needed to reduce peak runoff rates to existing levels prior to discharge into Mt. Rose Highway culverts. Runoff being directed to the east toward Browns Creek will not be significantly changed and will therefore not be detained. Drainage swales and culverts will collect runoff from or route runoff around proposed improvements as needed. Grading improvements will not impact the existing ski runs to the east or north.

1.3. FEMA FIRM Panels

Based on a review of the Flood Insurance Rate Map panel 32031C3325G dated March 16, 2009, the site is in an un-mapped area of the Federal Emergency Management Agency (FEMA). The project site is, therefore identified as Flood Hazard Zone X (unshaded), which is defined as areas determined to be outside the 500-year floodplain. A FIRMette of the project site is included in Appendix A.

2. METHODOLOGY

According to the drainage guidelines for Washoe County Development Code and Truckee Meadows Regional Drainage Manual (TMRDM), the Rational Formula Method was used to generate peak discharges for all drainage hydrologic basins [1]. The peak discharges for the project were calculated using:

$$\text{Design Discharge, } Q = C I A$$

Where:

- Q = maximum rate of runoff (cfs),
- A = contributing basin area (acres),
- C = runoff coefficient,
- I = average rainfall intensity for a duration equal to the T_c (in/hr),
- T_c = time of concentration, T_c (minutes).

Rational runoff coefficients (C-values) for the local design were applied from the TMRDM. The selected values are presented in Table 1. C-values for local subbasins were defined for the 5- and 100-year events based on the percentage of roof and natural coverage. Time of Concentration was determined from equations provided in the TMRDM. The minimum time of concentration for undeveloped areas is 10 minutes, as defined by TMRDM. Precipitation values were computed using National Oceanic and Atmospheric Administration's (NOAA's) Point Precipitation Frequency Estimates function available on the NOAA website [2].

Table 1: Selected Rational C Values

LANDCOVER CLASSIFICATION	C ₅	C ₁₀₀
FOREST	0.05	0.30
ROOF	0.87	0.90
PAVEMENT	0.88	0.93

3. HISTORIC DRAINAGE SYSTEM

Three hydrologic drainage basins were delineated based on existing topography and the locations of existing drainage culverts under Mt. Rose Highway. Two of the existing drainage basins are to the west of the project site and correspond to existing Mt. Rose Highway culverts. The southern more basin collects runoff originating to the south of the existing access road. The northern more basin collects runoff originating to the north of the existing access road. The third existing drainage basin drains to the east toward Browns Creek. A summary of the calculations is provided in Table 2. Refer to Appendix C for the existing conditions drainage exhibit.

Table 2: Existing Peak Flow Summary

Subbasin ID	Description	Area (ac)	C ₅	C ₁₀₀	T _c (min)	i ₅ (in/hr)	i ₁₀₀ (in/hr)	Q ₅ (cfs)	Q ₁₀₀ (cfs)
E1	To Highway – South Basin	2.07	0.05	0.30	11.65	2.06	4.61	0.21	2.86
E2	To Highway – North Basin	5.19	0.05	0.30	24.02	1.43	3.22	0.29	5.02
E3	To Browns Creek	2.10	0.05	0.30	16.59	1.75	3.93	0.18	2.48
	Total to Galena Creek	7.26	0.05	0.30	24.02	1.43	3.22	0.52	7.02
	Total To Browns Creek	2.10	0.05	0.30	16.59	1.75	3.93	0.18	2.48
	Project Total	9.36	0.05	0.30	24.02	1.43	3.22	0.67	9.05

As a result of the analysis, it was determined that a total of 7.02 cfs is generated from the existing project site and contributes to Galena Creek via Mt. Rose Highway in the 100-year storm event, and 2.48 cfs contributes to Browns Creek. All calculations can be found in Appendix B.

4. PROPOSED DRAINAGE SYSTEM

Development of the project will involve the construction of the earthen snow tubing hill, the ticket sales building, paved parking, and paved service roads. Runoff will be routed in a manner that attempts to mimic existing flow patterns.

The proposed drainage exhibit in Appendix C shows the proposed drainage patterns. Composite Rational C-values were determined based upon percentage of post-development land cover. The peak runoff rate calculated for the developed portion of the site is summarized in Table 3.

Table 3: Proposed Peak Flow Summary

Subbasin ID	Description	Area (ac)	C ₅	C ₁₀₀	T _c (min)	i ₅ (in/hr)	i ₁₀₀ (in/hr)	Q ₅ (cfs)	Q ₁₀₀ (cfs)
P1	To Highway – South Basin	3.17	0.05	0.30	27.92	1.28	2.91	0.20	2.76
P2	To Highway – North Basin	4.55	0.58	0.70	18.39	1.67	3.75	4.37	11.91
P3	To Browns Creek	1.62	0.12	0.35	22.26	1.50	3.38	0.29	1.93
	Total to Galena Creek	7.72	0.36	0.54	27.92	1.28	2.91	3.55	12.00
	Total to Browns Creek	1.62	0.12	0.35	22.26	1.50	3.38	0.29	1.93
	Project Total	9.34	0.32	0.50	27.92	1.28	2.91	3.80	13.67

As can be seen, there is a small reduction in peak runoff for Subbasins P1 and P3, but there is a significant change in peak runoff for Subbasin P2. The increase in runoff for Subbasin P2 is due to the large amount of impervious area on the parking lot. A detention basin will be sized to reduce peak runoff in Subbasin P2 back to existing rates. Preliminary calculations indicate that a 0.20 ac-ft detention basin will be adequate to reduce peak developed runoff to existing rates. As noted previously, all soils on the project site fall under NRCS Hydrologic Soil Group A, which indicates that the soils have high infiltration rates and low runoff potential.

5. WATER QUALITY

As required by the TMRDM, Low Impact Development (LID) methods of treating runoff will be required to address water quality. Flow-based controls will be designed to treat runoff from the 2-year storm event (WQ_F). All improvements to the site drain to a proposed swale. Riprap calculations for the swales will be performed to determine median stone diameter. The swales will be sized so that WQ_F produces a depth of flow that is less or approximately equal to the median stone diameter. The swales will effectively remove pollutants to meet the Truckee Meadows Structural Controls Design and Low Impact Development Manual [3]. The LID manual's Design Guidance Worksheets and riprap calculations are included in Appendix B. As a result, the design and analysis will provide water quality treatment of all on-site runoff.

6. CONCLUSIONS

The project, as proposed, will allow for the construction of a snow tubing hill and associated structure and parking. Drainage improvements to the site shall convey anticipated flows via a network of swales and culverts. Development of the project will result in a significant increase in impervious ground cover in one subbasin. Stormwater detention will be sized to reduce the peak flow in that basin to existing rates. No detention is proposed for the other subbasin. Water quality of the runoff will all be controlled by proposed swales and drainage ditches. The design and hydrologic studies of the proposed tank have been conducted in compliance with the drainage guidelines for Washoe County and TMRDM.

7. REFERENCES

- [1] Washoe County, "Truckee Meadows Regional Drainage Manual," Reno, 2009.
- [2] National Oceanic and Atmospheric Administration (NOAA), "Atlas 14 Precipitation-Frequency Atlas," 2018. [Online]. Available: https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk.
- [3] NCE, "Truckee Meadows Structural Controls Design and Low Impact Development Manual," Reno, NV, April 2015.
- [4] Washoe County, "Washoe County Development Code," Reno, 2019.

APPENDIX A

APPENDIX A1 - IDF CURVES



NOAA Atlas 14, Volume 1, Version 5
 Location name: Incline Village, Nevada, USA*
 Latitude: 39.3239°, Longitude: -119.8917°
 Elevation: 8456 ft**



* source: ESRI Maps
 ** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.79 (1.56-2.09)	2.23 (1.96-2.62)	2.92 (2.51-3.42)	3.55 (3.02-4.14)	4.56 (3.79-5.36)	5.46 (4.42-6.53)	6.53 (5.06-7.93)	7.82 (5.81-9.78)	9.92 (6.86-12.8)	11.9 (7.76-15.8)
10-min	1.36 (1.19-1.60)	1.70 (1.48-1.99)	2.22 (1.91-2.60)	2.70 (2.30-3.16)	3.47 (2.89-4.08)	4.16 (3.36-4.97)	4.97 (3.85-6.04)	5.96 (4.42-7.45)	7.55 (5.23-9.74)	9.05 (5.91-12.0)
15-min	1.12 (0.980-1.32)	1.40 (1.23-1.64)	1.84 (1.58-2.15)	2.23 (1.90-2.61)	2.87 (2.38-3.38)	3.44 (2.78-4.10)	4.10 (3.18-4.99)	4.92 (3.65-6.16)	6.24 (4.32-8.05)	7.48 (4.88-9.94)
30-min	0.758 (0.660-0.888)	0.944 (0.826-1.11)	1.24 (1.06-1.45)	1.50 (1.28-1.76)	1.93 (1.60-2.27)	2.32 (1.87-2.76)	2.76 (2.14-3.36)	3.31 (2.46-4.14)	4.20 (2.91-5.42)	5.04 (3.29-6.69)
60-min	0.469 (0.409-0.549)	0.584 (0.511-0.685)	0.765 (0.658-0.896)	0.930 (0.794-1.09)	1.20 (0.993-1.41)	1.43 (1.16-1.71)	1.71 (1.33-2.08)	2.05 (1.52-2.56)	2.60 (1.80-3.35)	3.12 (2.04-4.14)
2-hr	0.314 (0.280-0.353)	0.391 (0.348-0.438)	0.489 (0.432-0.548)	0.572 (0.501-0.644)	0.695 (0.593-0.783)	0.802 (0.668-0.917)	0.924 (0.750-1.08)	1.09 (0.854-1.30)	1.37 (1.02-1.69)	1.63 (1.17-2.09)
3-hr	0.263 (0.237-0.293)	0.327 (0.298-0.365)	0.399 (0.359-0.445)	0.458 (0.410-0.510)	0.536 (0.473-0.601)	0.602 (0.523-0.681)	0.672 (0.574-0.768)	0.783 (0.656-0.911)	0.965 (0.787-1.15)	1.13 (0.901-1.41)
6-hr	0.205 (0.183-0.228)	0.254 (0.228-0.284)	0.308 (0.275-0.345)	0.349 (0.309-0.392)	0.402 (0.351-0.454)	0.440 (0.380-0.500)	0.476 (0.404-0.547)	0.518 (0.433-0.602)	0.575 (0.471-0.679)	0.623 (0.503-0.750)
12-hr	0.147 (0.131-0.165)	0.184 (0.164-0.207)	0.228 (0.202-0.257)	0.263 (0.231-0.297)	0.308 (0.267-0.351)	0.343 (0.293-0.393)	0.378 (0.317-0.438)	0.412 (0.340-0.484)	0.456 (0.367-0.547)	0.489 (0.385-0.597)
24-hr	0.124 (0.108-0.146)	0.156 (0.136-0.184)	0.200 (0.173-0.234)	0.235 (0.203-0.277)	0.286 (0.244-0.336)	0.326 (0.276-0.383)	0.369 (0.309-0.437)	0.414 (0.342-0.494)	0.477 (0.386-0.573)	0.528 (0.419-0.642)
2-day	0.080 (0.068-0.096)	0.102 (0.087-0.122)	0.133 (0.113-0.160)	0.159 (0.134-0.192)	0.197 (0.164-0.238)	0.228 (0.188-0.276)	0.262 (0.213-0.318)	0.298 (0.239-0.364)	0.349 (0.274-0.433)	0.392 (0.301-0.493)
3-day	0.063 (0.054-0.075)	0.081 (0.069-0.097)	0.108 (0.092-0.129)	0.131 (0.111-0.155)	0.163 (0.137-0.194)	0.191 (0.159-0.227)	0.221 (0.181-0.264)	0.253 (0.205-0.304)	0.300 (0.238-0.366)	0.340 (0.264-0.419)
4-day	0.055 (0.047-0.065)	0.071 (0.061-0.084)	0.095 (0.082-0.113)	0.116 (0.099-0.137)	0.147 (0.124-0.173)	0.172 (0.144-0.203)	0.200 (0.166-0.237)	0.231 (0.188-0.274)	0.276 (0.220-0.333)	0.314 (0.245-0.382)
7-day	0.037 (0.032-0.044)	0.049 (0.042-0.057)	0.067 (0.057-0.079)	0.082 (0.069-0.096)	0.103 (0.087-0.121)	0.121 (0.101-0.142)	0.141 (0.116-0.166)	0.162 (0.133-0.192)	0.193 (0.155-0.232)	0.218 (0.173-0.264)
10-day	0.031 (0.026-0.036)	0.040 (0.034-0.047)	0.055 (0.047-0.064)	0.067 (0.056-0.078)	0.084 (0.070-0.098)	0.097 (0.082-0.114)	0.112 (0.093-0.132)	0.128 (0.105-0.152)	0.151 (0.122-0.181)	0.170 (0.135-0.205)
20-day	0.020 (0.018-0.024)	0.027 (0.023-0.031)	0.036 (0.031-0.042)	0.044 (0.038-0.051)	0.054 (0.047-0.063)	0.063 (0.053-0.073)	0.072 (0.061-0.083)	0.081 (0.068-0.095)	0.094 (0.078-0.111)	0.105 (0.085-0.125)
30-day	0.017 (0.014-0.019)	0.022 (0.019-0.025)	0.030 (0.026-0.034)	0.036 (0.031-0.041)	0.044 (0.038-0.051)	0.051 (0.043-0.059)	0.058 (0.049-0.068)	0.065 (0.055-0.077)	0.076 (0.062-0.090)	0.084 (0.068-0.100)
45-day	0.014 (0.012-0.015)	0.018 (0.015-0.020)	0.024 (0.021-0.027)	0.029 (0.025-0.033)	0.035 (0.030-0.041)	0.041 (0.035-0.047)	0.046 (0.039-0.053)	0.051 (0.043-0.060)	0.059 (0.049-0.069)	0.065 (0.053-0.077)
60-day	0.012 (0.010-0.014)	0.015 (0.013-0.018)	0.021 (0.018-0.024)	0.025 (0.021-0.029)	0.030 (0.026-0.035)	0.034 (0.029-0.039)	0.038 (0.032-0.044)	0.042 (0.035-0.049)	0.047 (0.039-0.056)	0.051 (0.042-0.061)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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PF graphical

National Flood Hazard Layer FIRMette

119°53'51"W 39°19'39"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE)
Zone A, V, A99
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*

OTHER AREAS OF FLOOD HAZARD

- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs *Zone D*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

Cross Sections with 1% Annual Chance Water Surface Elevation

- 20.2
- 17.5
- 8
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study

OTHER FEATURES

- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

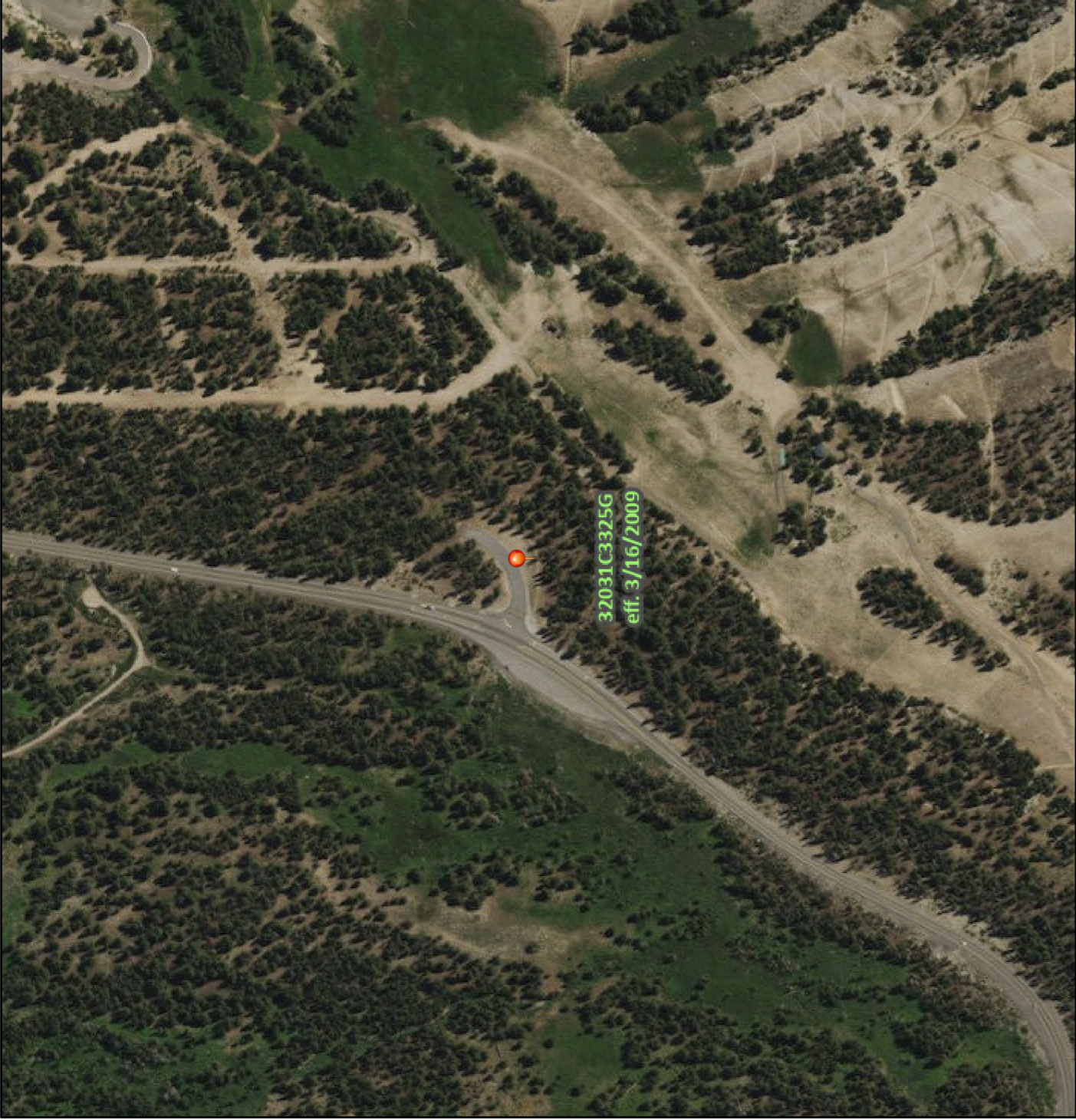
- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **7/25/2023 at 1:30 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



119°53'14"W 39°19'11"N



Basemap Imagery Source: USGS National Map 2023

APPENDIX B

APPENDIX B1 - EXISTING RUNOFF COEFFICIENTS
MT. ROSE TUBING HILL RUNOFF COEFFICIENTS - PRE-DEVELOPMENT

Landcover Classification	C ₅	C ₁₀₀
Pavement	0.88	0.93
Roof	0.87	0.90
Forest	0.05	0.30

Subbasin ID	E1	E2	E3	Galena Creek Total	Browns Creek Total	Onsite Total
Drainage Direction	SR-431 South	SR-431 North	Browns Creek			
Area, A [ac]	2.07	5.19	2.10	7.26	2.10	9.36

Composite Areas [ac]	Pavement						
	Roof						
	Forest	2.07	5.19	2.10	7.26	2.10	9.36
	0						
	0						
	0						

<i>Area Check</i>	✓	✓	✓	✓	✓	✓
-------------------	---	---	---	---	---	---

Composite C₅	0.05	0.05	0.05	0.05	0.05	0.05
Composite C₁₀₀	0.30	0.30	0.30	0.30	0.30	0.30

APPENDIX B2 - EXISTING HYDROLOGY CALCULATIONS

MT. ROSE TUBING HILL HYDROLOGY - PRE-DEVELOPMENT

	Subbasin ID	E1	E2	E3	Galena Creek Total	Browns Creek Total	Onsite Total
	Drainage Direction	SR-431 South	SR-431 North	Browns Creek	0	0	
	Area, A [sf]	90169.2	226076.4	91476	316245.6	91476	407721.6
	Area, A [ac]	2.07	5.19	2.10	7.26	2.10	9.36

Coef.	C	Composite C ₅	0.05	0.05	0.05	0.05	0.05	0.05
		Composite C ₁₀₀	0.30	0.30	0.30	0.30	0.30	0.30

Initial Overland	T _i	Flow Runoff Coefficient, C ₅ "R"	0.05	0.05	0.05	0.05	0.05	0.05
		Flow Length, L [ft] ¹	221	500	385	500	385	500
		Elevation Change	31	35	43	35	43	35
		Land Slope, s [%]	14.03	7.00	11.17	7.00	11.17	7.00
		Initial Overland Time: T_i [min]	11.65	22.09	16.59	22.09	16.59	22.09

Travel Time	T _t	Flow Length, L [ft]	0	75	0	75	0	75
		Elevation Change		5		5		5
		Channel Slope, s [%]	-	6.67	-	6.67	-	6.67
		Average Velocity, V _s [ft/s] ³		0.65		0.65		0.65
		Travel Time: T_t [min]	0.00	1.92	0.00	1.92	0.00	1.92

ToC & Intensity	T _c	Time of Concentration, T _c [min]	11.65	24.02	16.59	24.02	16.59	24.02
		Required? - Y/N	N	N	N	N	N	N
	Urban. Check	Total Length: L _{total} [ft]	-	-	-	-	-	-
		Time of Concentration, Check, T _{c,check} [min]	-	-	-	-	-	-
	T _{c,final}	Final ToC, T_{c,final} [min]	11.65	24.02	16.59	24.02	16.59	24.02
	I ²	2-yr Intensity I ₂ [in/hr]	1.53	1.10	1.34	1.10	1.34	1.10
		5-yr Intensity I ₅ [in/hr]	2.06	1.43	1.75	1.43	1.75	1.43
100-yr Intensity I ₁₀₀ [in/hr]		4.61	3.22	3.93	3.22	3.93	3.22	

Flow	Q	2-yr Flow, Q ₂ [cfs] **	0.16	0.29	0.14	0.40	0.14	0.51
		5-yr Flow, Q ₅ [cfs] **	0.21	0.37	0.18	0.52	0.18	0.67
		100-yr Flow, Q₁₀₀ [cfs] **	2.86	5.02	2.48	7.02	2.48	9.05

¹ Maximum of 500 feet

² From NOAA Atlas 14

³ From Figure 701 TMRDM

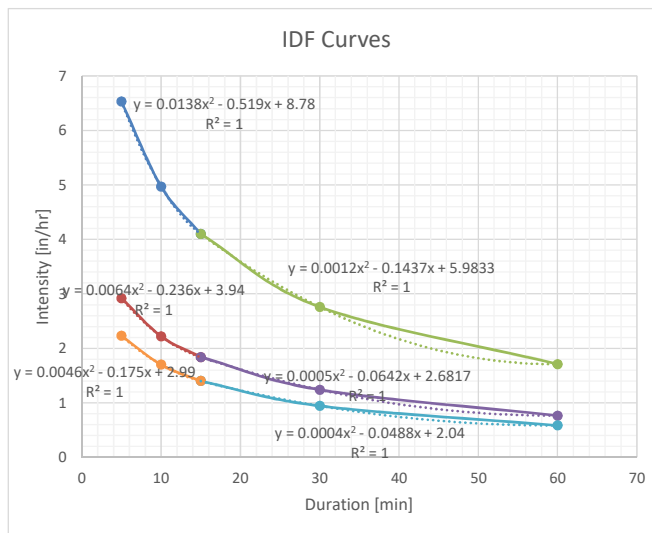
MT. ROSE TUBING HILL HYDROLOGY - PRE-DEVELOPMENT

$$T_i = \frac{1.8(1.1 - R)L_o^{1/2}}{s^{1/3}} \quad T_t = \frac{L}{60V}$$

$$T_{c,check} = \frac{L_{total}}{180} + 10$$

****Coefficients from IDF regression curves must be manually updated in these columns.**

NOAA Intensity [in/hr]			
Lat: 39.2927°, Long: -119.8282°			
Elevation: 5092.55 ft (USGS)			
Duration [min]	I2 [in/hr]	I5 [in/hr]	I100 [in/hr]
5	2.23	2.92	6.53
10	1.7	2.22	4.97
15	1.4	1.84	4.1
30	0.944	1.24	2.76
60	0.584	0.765	1.71



APPENDIX B3 - PROPOSED RUNOFF COEFFICIENTS

MT. ROSE TUBING HILL RUNOFF COEFFICIENTS - POST-DEVELOPMENT

Landcover Classification	C ₅	C ₁₀₀
Pavement	0.88	0.93
Roof	0.87	0.90
Forest	0.05	0.30

Subbasin ID	P1	P2	P3	Galena Creek Total	Browns Creek Total	Onsite Total
Drainage Direction	SR-431 South	SR-431 North	Browns Creek			
Area, A [ac]	3.17	4.55	1.62	7.72	1.62	9.34

Composite Areas [ac]	Pavement		2.88	0.06	2.88	0.06	2.94
	Roof			0.08		0.08	0.08
	Forest	3.17	1.67	1.48	4.84	1.48	6.32
	0						
	0						
	0						

<i>Area Check</i>	✓	✓	✓	✓	✓	✓
-------------------	---	---	---	---	---	---

Composite C₅	0.05	0.58	0.12	0.36	0.12	0.32
Composite C₁₀₀	0.30	0.70	0.35	0.54	0.35	0.50

APPENDIX B4 - PROPOSED HYDROLOGY CALCULATIONS

MT. ROSE TUBING HILL HYDROLOGY - POST-DEVELOPMENT

	Subbasin ID	P1	P2	P3	Galena Creek Total	Browns Creek Total	Onsite Total
	Drainage Direction	SR-431 South	SR-431 North	Browns Creek	0	0	
	Area, A [sf]	138085.2	198198	70567.2	336283.2	70567.2	406850.4
	Area, A [ac]	3.17	4.55	1.62	7.72	1.62	9.34

Coef.	C	Composite C ₅	0.05	0.58	0.12	0.36	0.12	0.32
		Composite C ₁₀₀	0.30	0.70	0.35	0.54	0.35	0.50

Initial Overland	T _i	Flow Runoff Coefficient, C ₅ "R"	0.05	0.05	0.05	0.05	0.05	0.05
		Flow Length, L [ft] ¹	500	185	500	500	500	500
		Elevation Change	50	8	40	50	40	50
		Land Slope, s [%]	10.00	4.32	8.00	10.00	8.00	10.00
		Initial Overland Time: T_i [min]	19.62	15.78	21.13	19.62	21.13	19.62

Travel Time	T _t	Flow Length, L [ft]	299	580	78	299	78	299
		Elevation Change	17	30	14	17	14	17
		Channel Slope, s [%]	5.69	5.17	17.95	5.69	17.95	5.69
		Average Velocity, V _s [ft/s] ³	0.60	3.70	1.15	0.60	1.15	0.60
		Travel Time: T_t [min]	8.31	2.61	1.13	8.31	1.13	8.31

ToC & Intensity	T _c	Time of Concentration, T _c [min]	27.92	18.39	22.26	27.92	22.26	27.92
		Required? - Y/N	N	N	N	N	N	N
	Urban. Check	Total Length: L _{total} [ft]	-	-	-	-	-	-
		Time of Concentration, Check, T _{c,check} [min]	-	-	-	-	-	-
	T _{c,final}	Final ToC, T_{c,final} [min]	27.92	18.39	22.26	27.92	22.26	27.92
	I ²	2-yr Intensity I ₂ [in/hr]	0.99	1.28	1.15	0.99	1.15	0.99
		5-yr Intensity I ₅ [in/hr]	1.28	1.67	1.50	1.28	1.50	1.28
100-yr Intensity I ₁₀₀ [in/hr]		2.91	3.75	3.38	2.91	3.38	2.91	

Flow	Q	2-yr Flow, Q ₂ [cfs] **	0.16	3.35	0.23	2.75	0.23	2.94
		5-yr Flow, Q ₅ [cfs] **	0.20	4.37	0.29	3.55	0.29	3.80
		100-yr Flow, Q₁₀₀ [cfs] **	2.76	11.91	1.93	12.00	1.93	13.67

¹ Maximum of 500 feet

² From NOAA Atlas 14

³ From Figure 701 TMRDM

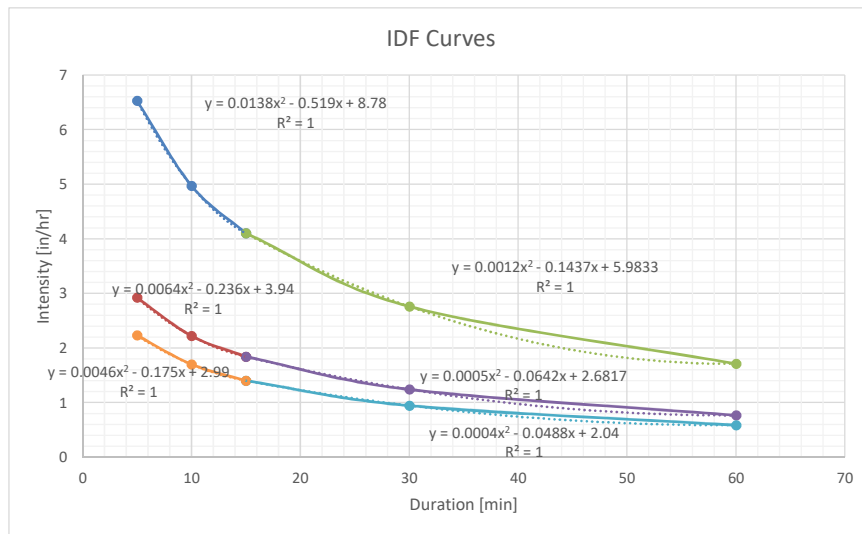
MT. ROSE TUBING HILL HYDROLOGY - POST-DEVELOPMENT

$$T_i = \frac{1.8(1.1 - R)L_o^{1/2}}{s^{1/3}} \quad T_t = \frac{L}{60V}$$

$$T_{c,check} = \frac{L_{total}}{180} + 10$$

****Coefficients from IDF regression curves must be manually updated in these columns.**

NOAA Intensity [in/hr]			
Lat: 39.2927°, Long: -119.8282°			
Elevation: 5092.55 ft (USGS)			
Duration [min]	I2 [in/hr]	I5 [in/hr]	I100 [in/hr]
5	2.23	2.92	6.53
10	1.7	2.22	4.97
15	1.4	1.84	4.1
30	0.944	1.24	2.76
60	0.584	0.765	1.71



APPENDIX B5 - SUPPLEMENTAL HYDROLOGY HAND CALCULATIONS



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Client: Mt. Rose Sheet 1 of 8

Description: SUP Hydrology

- TUBING Hill Job No. 9764.601

By: ELT Date: 7-26-23

Checked By: _____ Date: _____

Mt. ROSE TUBING Hill SUP
PRELIMINARY Hydrology

EXISTING CONDITIONS

AREA E-1 - AREAS DRAINING TO SR-431
- SOUTH OF ROAD TO NOWHERE

$A = 89,758 \text{ SF} = 2.07$

$L = 221$

$\Delta \text{ELEV} = 31 \text{ FT}$

$S_{AVE} = 14.0\%$

$C_s = 0.05$

$C_{100} = 0.30$

$T_c = 11.65 \text{ min}$

$i_2 = 1.53 \text{ "/hr}$

$i_s = 2.06 \text{ "/hr}$

$i_{100} = 4.61 \text{ "/hr}$

$Q_2 = 0.16 \text{ cfs}$

$Q_s = 0.21 \text{ cfs}$

$Q_{100} = 2.86 \text{ cfs}$



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Client: MT. ROSE Sheet 2 of 8
Description: SUP Hydrology
- TOBING HILL Job No. 976A.1601
By: ECT Date: 7-26-23
Checked By: _____ Date: _____

AREA E-2 - AREA DRAINING TO SR-431
- NORTH OF ROAD TO HOUNTERS

$$A = 225,921 \text{ SF} = 5.19 \text{ ac}$$

$$L_1 = 500 \text{ FT}$$

$$\Delta \text{ELEV}_1 = 35 \text{ FT}$$

$$\text{SAVE}_1 = 7\%$$

$$t_1 = 22.09 \text{ min}$$

$$L_2 = 75 \text{ FT}$$

$$\Delta \text{ELEV}_2 = 5 \text{ FT}$$

$$\text{SAVE}_2 = 6.67\%$$

FROM FIG 701, FOREST, $V_2 = 0.65 \text{ FT/s}$

$$t_2 = 1.92 \text{ min}$$

$$T_C = 24.02 \text{ min}$$

$$i_2 = 1.10 \text{ in/hr}$$

$$i_5 = 1.43 \text{ in/hr}$$

$$i_{100} = 3.22 \text{ in/hr}$$

$$Q_2 = 0.29 \text{ cfs}$$

$$Q_5 = 0.37 \text{ cfs}$$

$$Q_{100} = 5.02 \text{ cfs}$$



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Client: MT. ROSE Sheet 3 of 8
Description: SUP Hydrology
- TUBING HILL Job No. 9764.601
By: EJT Date: 7-26-23
Checked By: _____ Date: _____

AREA E-3 - AREA DRAINING TO BROWNS CREEK WATERSHED

$$A = 91,529 \text{ FT}^2 = 2.10 \text{ ac}$$

$$L_1 = 385 \text{ FT}$$

$$C_s = 0.05$$

$$\Delta \text{ELEV} = 43 \text{ FT}$$

$$C_{100} = 0.30$$

$$S_{\text{AVE}} = 11.17\%$$

$$T_c = 16.59 \text{ min}$$

$$i_{12} = 1.34 \text{ IN/HR}$$

$$i_5 = 1.175 \text{ IN/HR}$$

$$i_{100} = 3.93 \text{ IN/HR}$$

$$Q_2 = 0.14 \text{ cfs}$$

$$Q_5 = 0.18 \text{ cfs}$$

$$Q_{100} = 2.48 \text{ cfs}$$



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Client: Mt. Rose Sheet 4 of 8

Description: SUP Hydrology

- TUBING HILL Job No. 9764.1601

By: ECT Date: 7-26-23

Checked By: _____ Date: _____

PROPOSED CONDITIONS

AREA P-1 - AREA DRAINING TO SR-431
SOUTH OF ROAD TO NOWNHOLE

$$A = 138,017 \text{ SF} = 3.17 \text{ ac}$$

$$C_s = 0.05$$

$$C_{100} = 0.30$$

$$L_1 = 500'$$

$$\Delta \text{ELEV}_1 = 50 \text{ FT}$$

$$\text{SAVE}_1 = 10 \%$$

$$L_2 = 299 \text{ FT}$$

$$\Delta \text{ELEV}_2 = 17 \text{ FT}$$

$$\text{SAVE}_2 = 5.68 \%$$

FROM FIG 701, FOREST $V = 0.160 \text{ FT/s}$

$$TC = 27.92 \text{ min}, i_2 = 0.99 \text{ "/hr}$$

$$i_5 = 1.28 \text{ "/hr}$$

$$i_{100} = 2.91 \text{ "/hr}$$

$$Q_2 = 0.16 \text{ cfs}$$

$$Q_5 = 0.20 \text{ cfs}$$

$$Q_{100} = 2.76 \text{ cfs}$$



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Client: Mt Rose Sheet 5 of 8
Description: SUP Hydrology
- TUBING HILL Job No. 9764.1601
By: _____ Date: _____
Checked By: _____ Date: _____

AREA P-2 - AREA DRAINING TO SR-431
- NORTH OF ROAD TO OWNERS

$$A = 198466 \text{ SF} = 4.55 \text{ ac}$$

$$\text{PAVEMENT AREA} = 2.88 \text{ ac}$$

$$\text{FOREST AREA} = 1.67 \text{ ac}$$

$$C_s = 0.58$$

$$C_{100} = 0.70$$

$$L_1 = 185 \text{ FT}$$

$$\Delta \text{ELEV}_1 = 8 \text{ FT}$$

$$\text{SAVE}_1 = 4.32\%$$

$$L_2 = 580 \text{ FT}$$

$$\Delta \text{ELEV}_2 = 30 \text{ FT}$$

$$\text{SAVE}_2 = 5.17\%$$

ESTIMATE VELOCITY USING $V = 3.7 \text{ FT/S}$
3:1 V-DITCH LINED W/RIPRAP

$$T_C = 18.39 \text{ min}$$

$$i_2 = 1.28 \text{ IN/HR}$$

$$i_s = 1.67 \text{ IN/HR}$$

$$i_{100} = 3.75 \text{ IN/HR}$$

$$Q_2 = 3.35 \text{ cfs}$$

$$Q_s = 4.37 \text{ cfs}$$

$$Q_{100} = 11.91 \text{ cfs}$$



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Client: MT. ROSE Sheet 6 of 8

Description: SUP Hydrology
- TUBING Hill Job No. 9764.601

By: ELT Date: 7-26-23

Checked By: _____ Date: _____

PROPOSED CONDITIONS

AREA P-3 - AREAS DRAINING TO BROWNS CREEK
WATERSHED

$$A = 70,724 \text{ FT}^2 = 1.62 \text{ ac}$$

$$\text{ROOF AREA} = 3,500 \text{ FT}^2 = 0.08 \text{ ac}$$

$$\text{PAVEMENT AREA} = 2,442 \text{ SF} = 0.06 \text{ ac}$$

$$\text{FOREST} = 1.48 \text{ ac}$$

$$C_s = 0.12$$

$$C_{100} = 0.35$$

$$L_1 = 500 \text{ FT}$$

$$\Delta \text{ELEV}_1 = 40 \text{ FT}$$

$$S_1 = 8\%$$

$$L_2 = 18 \text{ FT}$$

$$\Delta \text{ELEV}_2 = 14 \text{ FT}$$

$$S_2 = 17.9\%$$

FROM FIG 701, FOREST, $V = 1.15 \text{ FT/s}$

$$T_c = 22.26 \text{ min}$$

$$i_2 = 1.15 \text{ IN/HR}$$

$$i_5 = 1.50 \text{ IN/HR}$$

$$i_{100} = 3.38 \text{ IN/HR}$$

$$Q_2 = 0.23 \text{ cfs}$$

$$Q_5 = 0.29 \text{ cfs}$$

$$Q_{100} = 1.93 \text{ cfs}$$



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Client: Mr. Rose Sheet: 7 of 8

Description: SUP Hydrology

- TURNING HILL Job No. 970A.001

By: ELT Date: 7-26-23

Checked By: _____ Date: _____

SIZE DETENTION POND

SUBBASIN E2

$$Q_2 = 0.29 \text{ cfs}$$

$$Q_5 = 0.37 \text{ cfs}$$

$$Q_{100} = 5.02 \text{ cfs}$$

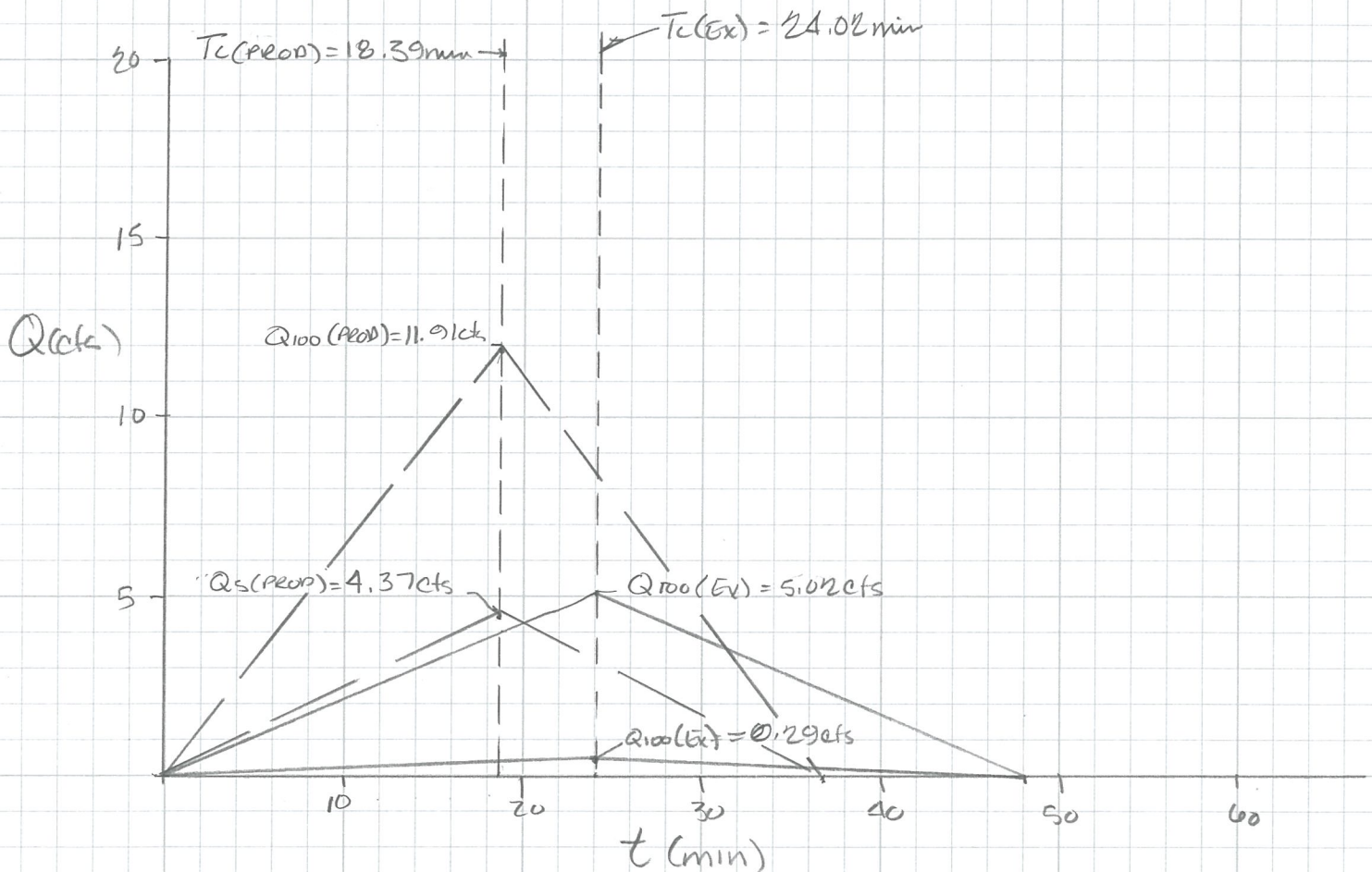
SUBBASIN P2

$$Q_2 = 3.35 \text{ cfs}$$

$$Q_5 = 4.37 \text{ cfs}$$

$$Q_{100} = 11.91 \text{ cfs}$$

ESTIMATE DETENTION USING MODIFIED RATIONAL METHOD





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Client: Mr. ROSE Sheet 8 of 8

Description: SUP Hydrology

-TUBINA Hill Job No. 9764.601

By: ELT Date: 8-3-23

Checked By: _____ Date: _____

ROUGH DETENTION ESTIMATE
USING MODIFIED RATIONAL "I" METHOD

DESIGN FOR 100-YR STORM

$$A = 4.55 \text{ ac}, T_c = 18.39 \text{ min}, C_{100} = 0.70$$

$$S = [(Q_i)(D)(60 \text{ s/min})] - [(Q_o)(D + T_c)(1/2)(60 \text{ s/min})]$$

WHERE: S = STORAGE (FT³)

Q_i = INFLOW RATE (cfs) Q_i = 0.70 (1.100) (4.55 ac)

D = RAINFALL DURATION (min)

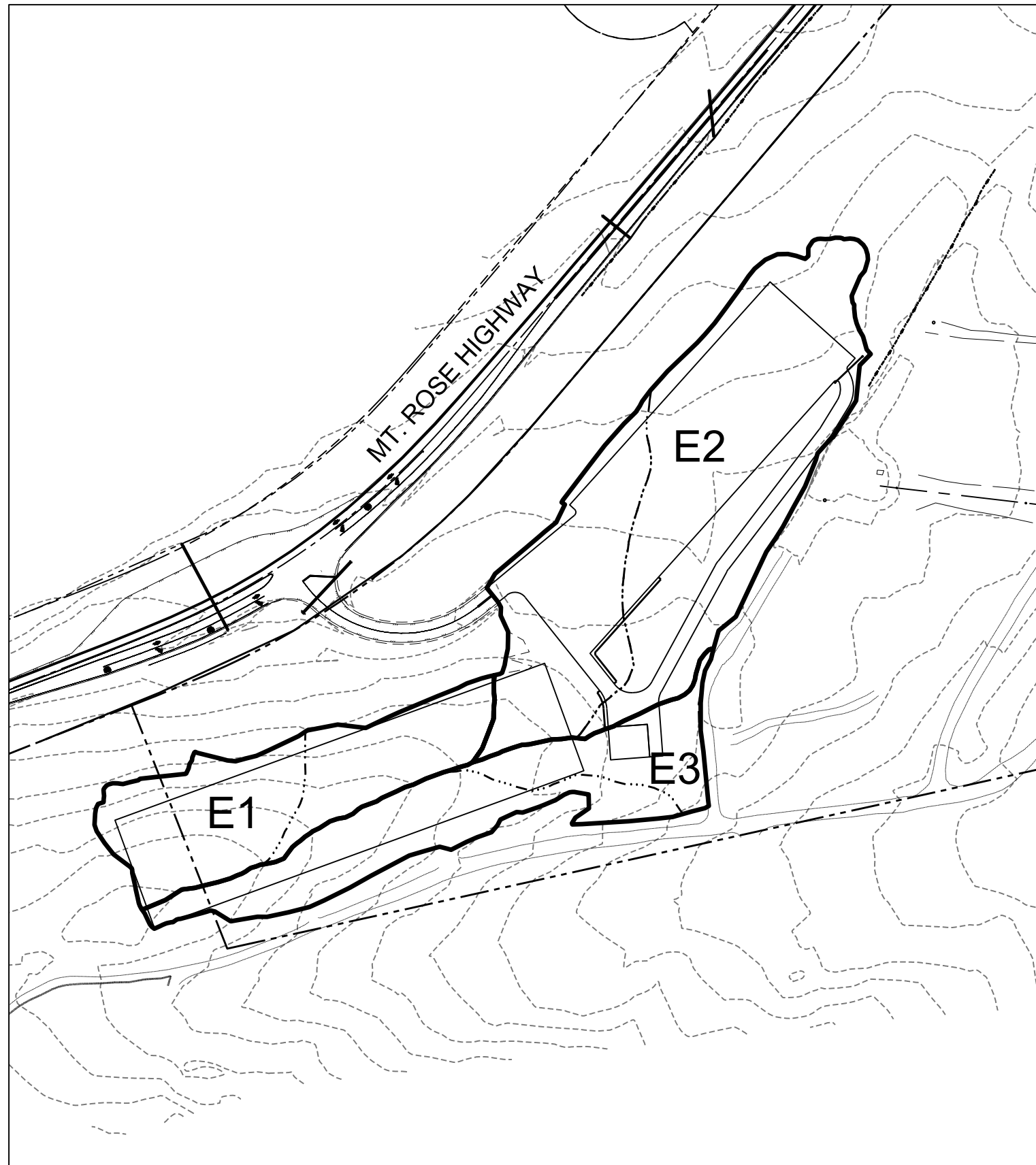
T_c = CONCENTRATION TIME (min) = 18.39 min

Q_o = OUTFLOW RATE (cfs) = 5.02 cfs

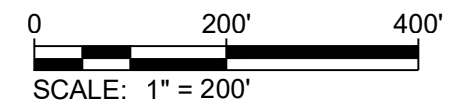
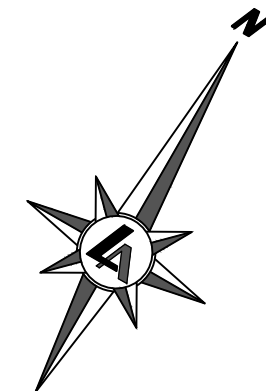
DURATION	λ_{100}	Q _i	REQUIRED STORAGE
T _c = 18.39 min	3.75	11.94	7639.67
20	3.59	11.43	7939.45
25	3.14	10.00	8466.82
30	2.75	8.76	8478.22
31	2.68	8.54	8438.45
29	2.83	9.01	8546.64
28	2.90	9.24	8530.99
28.1	2.89	9.20	8517.64
29.1	2.82	8.98	8530.65
28.2	2.89	9.20	8557.81
28.3	2.88	9.17	8543.90

∴ Max. REQUIRED STORAGE OF 8557.81 CF
OCCURS AT D = 28.2 min

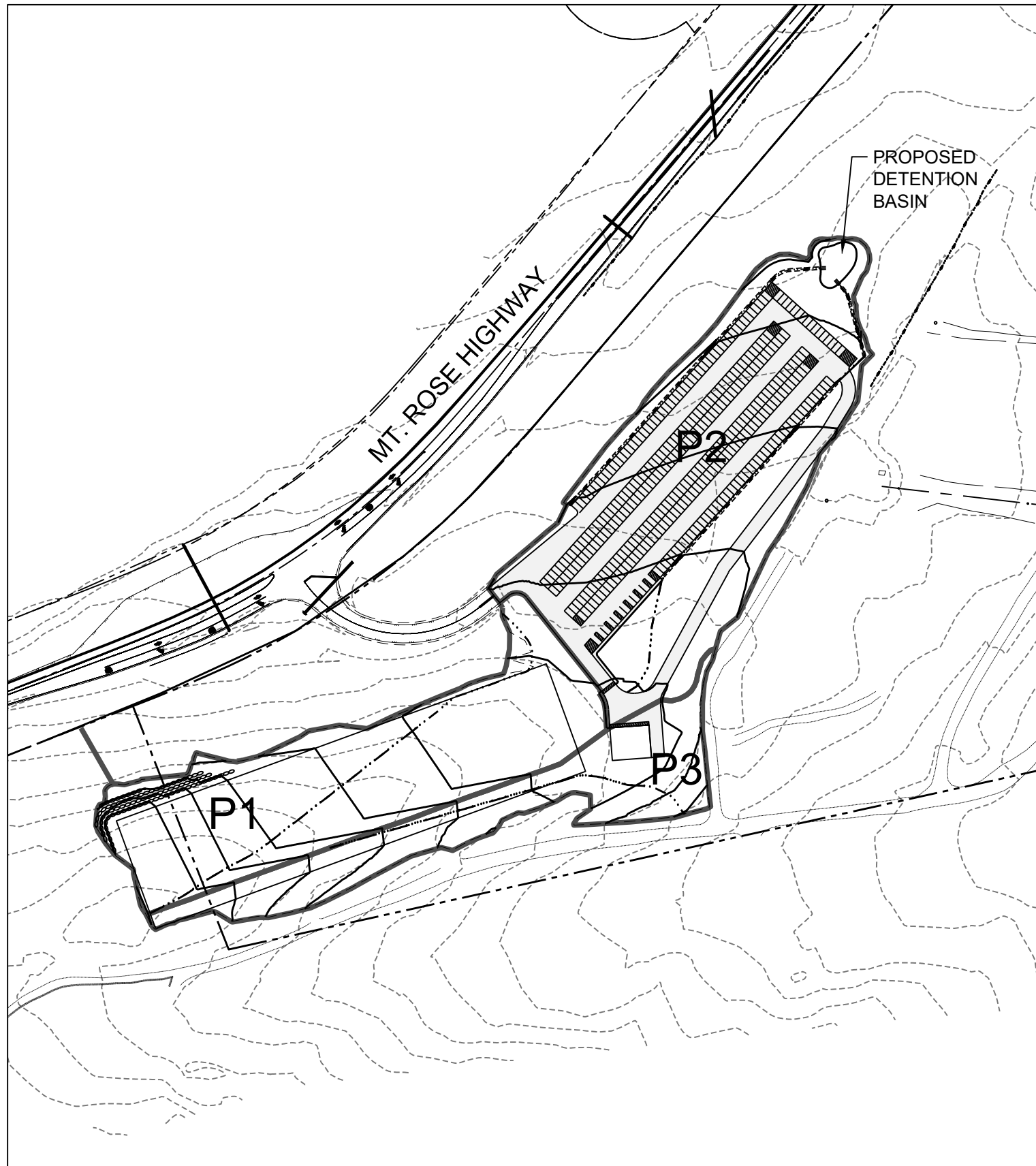
APPENDIX C



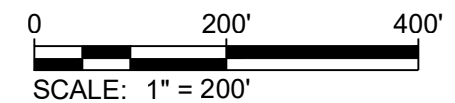
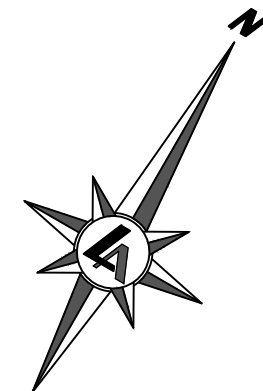
PRE-DEVELOPMENT DRAINAGE AREAS								
BASIN	AREA (AC)	C ₅	C ₁₀₀	T _c (MIN)	i ₅ (IN/HR)	i ₁₀₀ (IN/HR)	Q ₅ (CFS)	Q ₁₀₀ (CFS)
E1	2.07	0.05	0.30	11.65	2.06	4.61	0.21	2.86
E2	5.19	0.05	0.30	24.02	1.43	3.22	0.29	5.02
E3	2.19	0.05	0.30	16.59	1.75	3.93	0.18	2.48
TOTAL TO GALENA CREEK	7.26	0.05	0.30	24.02	1.43	3.22	0.52	7.02
TOTAL TO BROWNS CREEK	2.10	0.05	0.30	16.59	1.75	3.93	0.18	2.48
PROJECT TOTAL	9.36	0.05	0.30	24.02	1.43	3.22	0.67	9.05



MT. ROSE SNOW TUBING HILL
 PRELIMINARY HYDROLOGY
 EXISTING CONDITION AND DRAINAGE AREAS



POST-DEVELOPMENT DRAINAGE AREAS								
BASIN	AREA (AC)	C ₅	C ₁₀₀	T _c (MIN)	i ₅ (IN/HR)	i ₁₀₀ (IN/HR)	Q ₅ (CFS)	Q ₁₀₀ (CFS)
P1	3.17	0.05	0.30	27.92	1.28	2.91	0.20	2.76
P2	4.55	0.58	0.70	18.39	1.67	3.75	4.37	11.91
P3	1.62	0.12	0.35	22.26	1.50	3.38	0.29	1.93
TOTAL TO GALENA CREEK	7.72	0.36	0.54	27.92	1.28	2.91	3.55	12.00
TOTAL TO BROWNS CREEK	1.62	0.12	0.35	22.26	1.50	3.98	0.29	1.93
PROJECT TOTAL	9.34	0.32	0.50	27.92	1.28	2.91	3.80	13.67



MT. ROSE SNOW TUBING HILL
 PRELIMINARY HYDROLOGY
 PROPOSED CONDITION AND DRAINAGE AREAS



August 7, 2023

Greg Gavrillets
Mt. Rose Ski Tahoe, Inc.
22222 Mt. Rose Highway
Reno, NV 89511

RE: Mount Rose Ski Tahoe Tubing Hill Traffic Entry and Access Study

This letter has been prepared to provide trip generation calculations for the proposed Tubing Hill located on Mount Rose Highway (State Route 431) in Reno, Nevada within APNs 048-112-12, 048-112-13, and 048-112-14. The existing site is undeveloped. The project will comprise of the following: one (1) snow tubing hill, one (1) dedicated parking lot, and one (1) food/beverage/ticket sales/rental facility. A site plan is located in **Attachment D**.

The following section describes the anticipated trip generation for a snow tubing hill. A driveway capacity entry and access study has also been conducted for access to the site from the existing roads adjacent to the site.

TUBING HILL TRIP GENERATION

For purposes of estimating the new vehicle trips that are anticipated to be generated by the tubing hill, the ITE Trip Generation Manual, 11th Edition was used. The Trip Generation Manual does not have a specific land use for tubing hills; however, the operations of a snow ski are very similar in nature to that of a tubing hill. The Trip Generation Manual has a land use titled Snow Ski Area and defines it as an area that “typically includes chair lifts, ski runs” and “may also contain equipment rental facilities”. While there are no proposed chair lifts and ski runs, the means to access the top of the tubing hill and the tubing hill itself are akin to a chair lift and ski run. Within the Trip Generation Manual, a Snow Ski Area is designated by ITE Trip Generation Land Use Code 466. Data obtained by ITE indicate that during the Sunday peak hour, 94% of trips enter the site (AM), and during the Saturday peak hour, 72% of trips exit the site (PM). The higher distribution of trips entering the site on Sunday closely resemble the trips occurring in the AM for a typical site, and the higher distribution of trips exiting the site on Saturday closely resemble trips in the PM for a typical site. Therefore, for a conservative trip generation, the Sunday peak hour was used to represent the AM peak hour trips, and the Saturday peak hour was used to represent the PM peak hour trips. Based on this methodology, the proposed development is expected to generate 46 AM peak hour trips and 76 PM peak hour trips based on one (1) lift. ITE does not currently provide a total daily trips estimate for this land use.

The calculations are attached, and the resulting trip generation is summarized in **Table 1** for the snow tubing hill.

Table 1 – ITE Trip Generation Estimate

Land Use	Size (Units)	AM Peak Hour Trips	PM Peak Hour Trips
466 - Snow Ski Area	1 (Lift)	46	76
Total		46	76

Source: ITE Trip Generation Manual, 11th Edition

DRIVEWAY CAPACITY ANALYSIS

Synchro 11 was used to analyze the project driveways for Level of Service (LOS). Synchro is an interactive computer program that enables planners and engineers to forecast the traffic impacts of new developments; conduct area-wide traffic forecasting studies; test different mitigation measures; and compare different traffic scenarios. Synchro 11 utilizes HCM 6th methodology to analyze intersection delay and LOS. Turning movement counts were collected on Saturday, July 15, 2023 at the existing intersection location. It is important to note that for this land use the peak hours will occur during winter months. The closest NDOT TRINA count station with monthly count data is Station 0317120 which is approximately 10 miles north along Mt. Rose Highway. Based on count data from that station, volumes are highest in July (notably higher than all winter months). As such, data collected in July for existing volumes is conservative.

The project site will have one driveway that will allow vehicles to ingress and egress the project site access driveway. It is estimated that 100% of project trips will ingress and egress the project site access driveway. The project trip distribution is shown in **Attachment B**. The LOS for each access drive is summarized in **Table 2**. Calculations are shown in **Attachment C**.

Table 2 – Peak Hour LOS Analysis

Intersection	2023 Existing		2023 Existing Plus Project	
	AM	PM	AM	PM
	Delay (LOS)	Delay (LOS)	Delay (LOS)	Delay (LOS)
Mt. Rose Hwy (SR 431) and Project Access Driveway				
Unsignalized				
Westbound Left/Right	*	*	11.1 (B)	13.1 (B)
Southbound Left	*	*	1.8 (A)	8.5 (A)

* Movement does not currently have any volume.

As shown in **Table 2**, the project access drive intersections are anticipated to have acceptable LOS at project completion. The project access drive and approach lanes are anticipated to have adequate capacity.

LEFT TURN STORAGE BAY ANALYSIS

Left turn storage bay analysis was conducted for the unsignalized left turn movements anticipated to be impacted by the addition of project traffic at the study area intersection. The analysis was conducted using Synchro 11 software (HCM 6th methodology) to obtain 95th percentile queues. The left turn storage bay calculations include AM and PM peak volumes. Calculations are provided in **Attachment B**. As evaluated, the existing left turn storage bays were found to have adequate storage length to serve the existing plus project scenarios. Project traffic is not anticipated to significantly impact the left turn storage capacity at the key study intersection. As such, the existing facilities constructed at the project access drive intersection are adequate.

Please contact me at 775-200-1981 or David.Giacomin@kimley-horn.com should you have any questions regarding this analysis.

Sincerely,



David Giacomin, P.E., PTOE, RSP₁
Project Engineer

Attachments

- Attachment A – Trip Generation Calculations
- Attachment B – Project Trip Distribution
- Attachment C – LOS Calculations
- Attachment D – Site Plan



Attachment A
Trip Generation Calculations

Snow Ski Area (466)

Vehicle Trip Ends vs: Lifts
On a: Saturday, Peak Hour of Generator

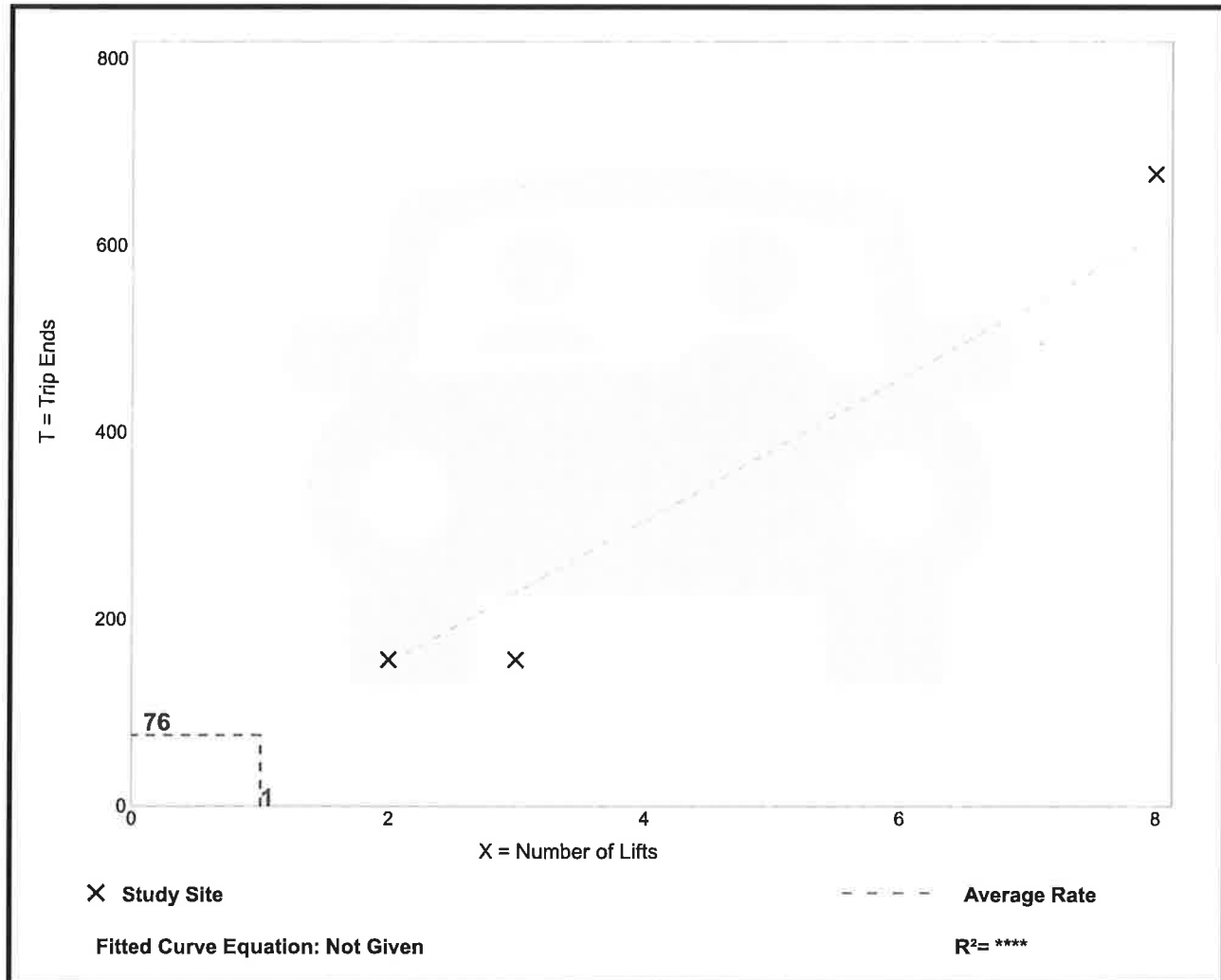
Setting/Location: Rural
 Number of Studies: 3
 Avg. Num. of Lifts: 4
 Directional Distribution: 28% entering, 72% exiting

Vehicle Trip Generation per Lift

Average Rate	Range of Rates	Standard Deviation
76.23	52.33 - 84.63	16.25

Data Plot and Equation

Caution – Small Sample Size



Snow Ski Area (466)

Vehicle Trip Ends vs: Lifts
On a: Sunday, Peak Hour of Generator

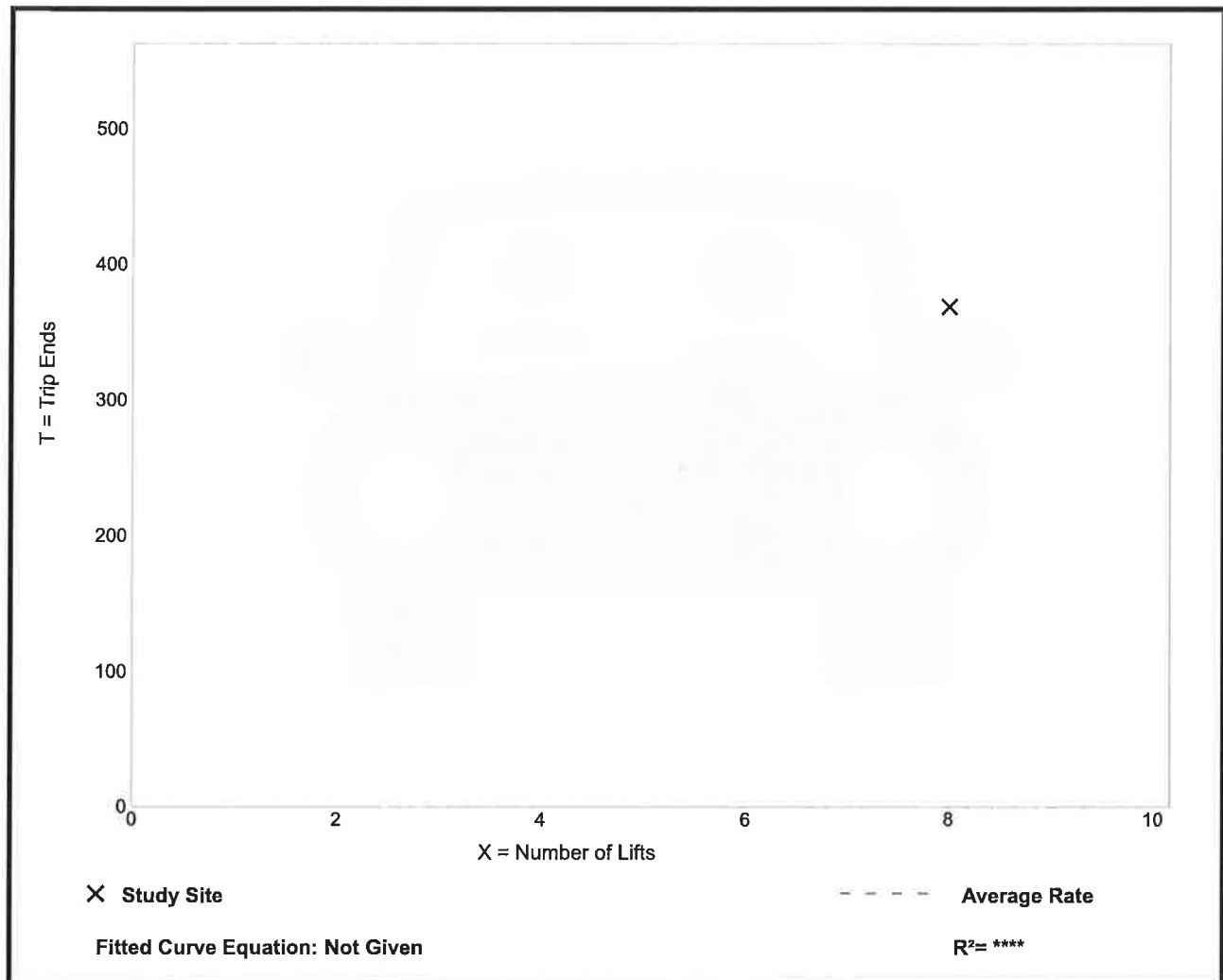
Setting/Location: Rural
Number of Studies: 1
Avg. Num. of Lifts: 8
Directional Distribution: 94% entering, 6% exiting

Vehicle Trip Generation per Lift

Average Rate	Range of Rates	Standard Deviation
46.13	46.13 - 46.13	*

Data Plot and Equation

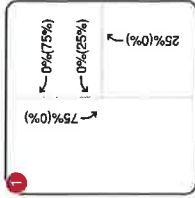
Caution – Small Sample Size



Attachment B
Project Trip Distribution



Project Trip Distribution



Legend

- 1 Study Area Key Intersection
- ←XX%(XX%) In(Out) Peak Hour Trip Distribution
- ↙↘XX%↗↔ Global Peak Hour Trip Distribution

**Mt. Rose Ski Tahoe Tubing Hill
Project Trip Distribution**

Attachment C
LOS Calculations

Intersection

Int Delay, s/veh 0.5

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations	↖	↗	↑	↖	↗	↑
Traffic Vol, veh/h	1	2	207	11	32	413
Future Vol, veh/h	1	2	207	11	32	413
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	175	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	2	220	12	34	439

Major/Minor Minor1 Major1 Major2

Conflicting Flow All	727	220	0	0	232	0
Stage 1	220	-	-	-	-	-
Stage 2	507	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	391	820	-	-	1336	-
Stage 1	817	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Platoon blocked, %						
Mov Cap-1 Maneuver	381	820	-	-	1336	-
Mov Cap-2 Maneuver	381	-	-	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	590	-	-	-	-	-

Approach WB NB SB

HCM Control Delay, s	11.1	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt NBT NBRWBLn1WBLn2 SBL SBT

Capacity (veh/h)	-	-	381	820	1336	-
HCM Lane V/C Ratio	-	-	0.003	0.003	0.025	-
HCM Control Delay (s)	-	-	14.5	9.4	7.8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	0.1	-

HCM 6th TWSC
 1: Mount Rose Hwy & Project Access Driveway

08/07/2023

Intersection

Int Delay, s/veh 1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	14	41	469	5	16	255
Future Vol, veh/h	14	41	469	5	16	255
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	175	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	45	515	5	18	280

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	831	515	0	0	520	0
Stage 1	515	-	-	-	-	-
Stage 2	316	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	340	560	-	-	1046	-
Stage 1	600	-	-	-	-	-
Stage 2	739	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	334	560	-	-	1046	-
Mov Cap-2 Maneuver	334	-	-	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	726	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	334	560	1046	-
HCM Lane V/C Ratio	-	-	0.046	0.08	0.017	-
HCM Control Delay (s)	-	-	16.3	12	8.5	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.3	0.1	-

Attachment D
Site Plan



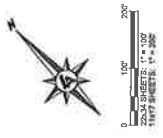
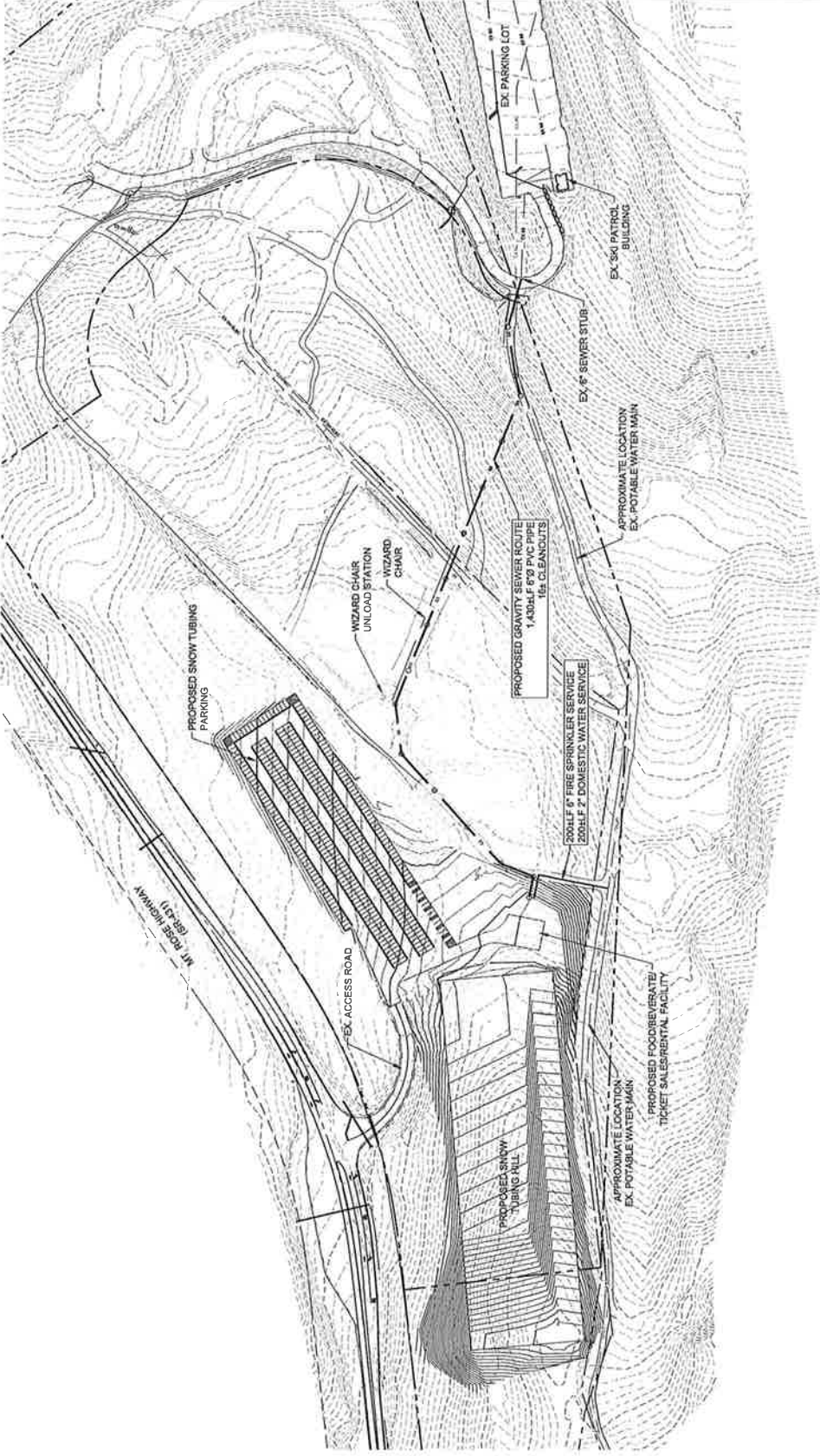
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 FAX: 617.552.1101
 EMAIL: INFO@LUMOS.COM

MT. ROSE-SKI TAHOE
 COUNTY
 WASHOE
 AND WATER CONNECTION
 SCHEMATIC SEWER
 MT. ROSE WINTER SNOW TUBING HILL

REV	DATE	DESCRIPTION

DATE: 11/20/2023
 PROJECT: MT. ROSE WINTER SNOW TUBING HILL
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 JOB NO.: [Number]

SCH-02
 2304 SHEETS: 1" x 10"
 11077 SHEETS: 1" x 20"



THIS IS A DRAFT OF THE
REPORT. IT IS NOT TO BE
USED FOR DESIGN OR
CONSTRUCTION.

Geotechnical Investigation
**Mt. Rose Tubing
Park**

Washoe County, Nevada

August 8, 2023

Prepared for
Mt. Rose Ski Tahoe



Black Eagle Consulting, Inc.
Geotechnical & Construction Services

Mr. Greg Gavrilets
Mt. Rose Ski Tahoe
22222 Mt. Rose Highway
Reno, NV 89511

August 8, 2023
Project No.: 0094-15-1

L

**RE: Geotechnical Investigation
Mt. Rose Tubing Park
Washoe County, Nevada**

Dear Mr. Greg Gavrilets:

Black Eagle Consulting, Inc. is pleased to present the results of the enclosed geotechnical investigation for the above-referenced project. Our investigation consisted of research, field exploration, laboratory testing, and engineering analysis to allow formulation of geotechnical conclusions and recommendations for design and construction of this facility.

The proposed project includes a tubing park area with associated carpet lift, cat track, snow production area, building for food, beverage, retail, and ticketing, and a parking lot with 212 spaces to accommodate visitors. The site soils are exclusively granular and will be suitable for use in cut and reuse as structural fill. Cobbles and boulders typically make up about 15 to 20 percent of the total soil mass so these oversized particles will need to be excluded during grading.

We appreciate having the opportunity to work with you on this project. If you have any questions regarding the content of the attached report, please do not hesitate to contact us.

Sincerely,

Black Eagle Consulting, Inc.

Lindsey Smith, P.E.
Project Engineer

Copies to: Addressee (PDF via email)

LS:cjr



Black Eagle Consulting, Inc.
Geotechnical & Construction Services

1345 Capital Boulevard, Suite A
Reno, Nevada 89502-7140

Tel: 775/359-6600 Fax: 775/359-7766
Email: mail@blackeagleconsulting.com

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Introduction

Presented herein are the results of Black Eagle Consulting, Inc.'s (BEC's) geotechnical investigation, laboratory testing, and associated geotechnical design recommendations for the proposed tubing park to be located within the Mt. Rose Ski Tahoe overall site. These recommendations are based on surface and subsurface conditions encountered in our explorations and on details of the proposed project as described in this report. The objectives of this study were to:

1. Determine general soil, bedrock, and groundwater conditions pertaining to design and construction of the proposed tubing park.
2. Provide recommendations for design and construction of the project as related to these geotechnical conditions.

The area covered by this report is shown on Plate 1 (Plot Plan). Our investigation included field exploration, laboratory testing, and engineering analysis to determine the physical and mechanical properties of the various on-site materials. Results of our field exploration and testing programs are included in this report and form the basis for all conclusions and recommendations.

The services described above were conducted in accordance with the BEC Professional Geotechnical Agreement dated June 16, 2023, which was signed by Mr. Greg Gavrilets of Mt. Rose Ski Tahoe.



Project Description

The proposed tubing park site consists of a portion of an irregularly shaped parcel APN no 048-112-23 of approximately 41.1 acres located in Washoe County, Nevada. The site is entirely contained in Section 19, Township 17N, Range 19E, Mount Diablo Meridian. The parcel is bordered to the west by Mt. Rose Highway, east by ski runs, and the north and south by undeveloped land. The site is presently undeveloped. Access to the site is obtained by a driveway off of Mt. Rose Highway.

Structure/Development Information

The tubing park development will consist of a tubing area that is proposed to be 600 feet long by 180 feet wide with a cat track on the west side and a carpet lift and snow production area to the east. To the northeast will be a small building for retail, food, beverage, and ticketing, approximately 120 feet by 100 feet with a deck. To the west will be an access road that leads to a parking lot with 212 spaces that is accessed from the driveway off of Mt. Rose Highway.

Grading Concepts

Final grading concepts were not available at the time of this report but minimal grading is expected for the tubing area with cuts and fills up to 5 to 7 feet expected in the building and parking lot areas.



Site Conditions

Existing Conditions, Topography, Vegetation

The site is currently undeveloped and hosts mature coniferous trees throughout. Cobbles and boulders are scattered over the site and generally slopes up to the south (tubing area) and down to the north (building and parking lot) from the bottom of the tubing area.

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Exploration

Test Pits

The site was explored on July 19, 2022 by excavating 5 test pits using a CAT® 308E trackhoe. Locations of the test pits are shown on Plate 1. The maximum depth of exploration was 9 feet below the existing ground surface. Bulk samples for index testing were collected from the trench wall sides at specific depths in each soil horizon. The test pits were backfilled immediately after exploration. Backfill was loosely placed and the area regraded to the extent possible with equipment on hand.

Material Classification

A geotechnical engineer examined and identified all soils in the field in accordance with American Society for Testing and Materials (ASTM) D2488. During test pit exploration, representative bulk samples were placed in sealed plastic bags and returned to our Reno, Nevada, laboratory for testing. Additional soil classification was subsequently performed in accordance with ASTM D2487 (Unified Soil Classification System [USCS]) upon completion of laboratory testing, as described in the **Laboratory Testing** section. Logs of the test pits are presented as Plate 2 (Test Pit Logs), and a USCS chart has been included as Plate 3 (USCS Soil Classification Chart).

Elevations shown on Plate 2 are approximate and have been estimated from the Conceptual Schematic provided by Lumos & Associates. Elevations are assumed accurate to within 2 feet. Elevations should be closely compared and converted to actual surveyed elevations on the project site once survey and grading plans are available.



Laboratory Testing

All soils testing performed in the BEC soils laboratory is conducted in general accordance with the standards and methodologies described in Volumes 4.08 and 4.09 of the ASTM Standards.

Index Tests

Samples of each significant soil type were analyzed to determine their in-situ moisture content (ASTM D2216), grain size distribution (ASTM D6913), and plasticity index (ASTM D4318). The results of these tests are shown on Plate 4 (Index Test Results). Test results were used to classify the soils according to ASTM D2487 and to verify field logs, which were then updated as appropriate. Classification in this manner provides an indication of the soil's mechanical properties and can be correlated with standard penetration testing and published charts (Bowles, 1996; Naval Facilities Engineering Command [NAVFAC], 1986a and b) to evaluate bearing capacity, lateral earth pressures, and settlement potential.



Grain Size Analysis

Chemical Tests

Chemical testing was performed on representative samples of site foundation soils to evaluate the site materials' potential to corrode steel and PCC in contact with the ground. The samples were tested for pH, resistivity, redox potential, soluble sulfates, and sulfides. The results of the chemical tests are shown on Appendix A (Chemical Test Results). Chemical testing was performed by SGS Silver State Analytical Laboratories of Reno, Nevada.



Geologic and General Soil Conditions

The site is mapped by the Nevada Bureau of Mines and Geology (NBMG) as *Glacial Deposits (Late Pleistocene)* (Hinz et al., 2014). The NBMG describes this unit as *unsorted or poorly sorted sand, gravel and boulders (till). Granitic rocks typically moderately to highly weathered. Surfaces typically smoother, with fewer preserved boulders.* The soils encountered during exploration are generally consistent with the geologic map.

Groundwater was not encountered during exploration and is expected to lie at a depth below that which would affect design or construction.

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Geologic Hazards

Seismicity

Much of the western United States is a region of moderate to intense seismicity related to movement of crustal masses (plate tectonics). By far, the most seismically active regions, outside of Alaska, are in the vicinity of the San Andreas Fault system of western California. Other seismically active areas include the Wasatch Front in Salt Lake City, Utah, which forms the eastern boundary of the Basin and Range physiographic province, and the eastern front of the Sierra Nevada mountains, which is the western margin of the province. The Mt. Rose area lies along the eastern base of the Sierra Nevada, within the western extreme of the Basin and Range. It must be recognized that there are probably few regions in the United States not underlain at some depth by older bedrock faults. Even areas within the interior of North America have a history of strong seismic activity.

The Mt. Rose – Ski Tahoe area lies within an area with a high potential for strong earthquake shaking. Seismicity within the Reno-Sparks area is considered about average for the western Basin and Range Province (Ryall and Douglas, 1976). It is generally accepted that a maximum credible earthquake in this area would be in the range of magnitude 7 to 7.5 along the frontal fault system of the eastern Sierra Nevada. The most active segment of this fault system in the Reno area is located at the base of the mountains near Thomas Creek, Whites Creek, and Mt. Rose Highway, some 5.5 miles northeast of the project.

Faults

The NBMG's *MyHazards* web-mapping tool (NBMG, 2023) show several faults over a mile away to the east and southwest from the project site. Because no faults are mapped as passing through the site or were identified during exploration, no further investigation or mitigation in the form of building setbacks are necessary for this project.

Ground Motion and Liquefaction

The United States Geological Survey seismic design maps that have been incorporated with the American Society of Civil Engineers (ASCE) Online *ASCE 7 Hazard Tool* indicate that there is a 2 percent probability that a *bedrock* ground acceleration of 0.763 g will be exceeded in any 50-year interval (ASCE, 2023). Only localized amplification of ground motion would be expected during an earthquake. Some amplification of ground motion could result from the site's location on the margin of the Great Basin physiographic province. [Basin edge effects, as they are called, are poorly understood but can be significant (Somerville, 1999).

Because the site area is underlain by dense granular soils and bedrock and groundwater is relatively deep, liquefaction potential is negligible.



Floodplains

The Federal Emergency Management Agency (FEMA) has identified the site as lying in unshaded Zone X, or outside the limits of a 500-year floodplain (FEMA, 2009).

Other Geologic Hazards

A moderate potential for dust generation is present if grading is performed in dry weather. No other geologic hazards were identified.

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Discussion and Recommendations

General Information

The proposed project includes a tubing park area with associated carpet lift, cat track, snow production area, building for food, beverage, retail, and ticketing, and a parking lot with 212 spaces to accommodate visitors. The site soils are exclusively granular and will be suitable for use in cut and reuse as structural fill. Cobbles and boulders typically make up about 15 to 20 percent of the total soil mass so these oversized particles will need to be excluded during grading.

The recommendations provided herein, and particularly under **Site Preparation, Mass Grading, Foundation, and Quality Control**, are intended to minimize risks of structural distress related to consolidation or expansion of native soils and/or structural fills. These recommendations, along with proper design and construction of the structures and associated improvements, work together as a system to improve overall performance. If any aspect of this system is ignored or is poorly implemented, the performance of the project will suffer. Sufficient quality control should be performed to verify that the recommendations presented in this report are followed.

Structural areas referred to in this report include all areas beneath buildings, concrete slabs, and exterior pavements as well as pads for any minor structures. The width of the structural area shall extend laterally from the outer edge of concrete slabs, exterior pavements and building pads at least one-half the vertical distance from native subgrade. The term engineer, as presented below, pertains to the civil or geological engineer that has prepared the geotechnical engineering report for the project or who serves as a qualified geotechnical professional on behalf of the owner.

All compaction requirements presented in this report are relative to ASTM D1557. For the purposes of this project:

- Fine-grained soils are defined as those with more than 40 percent by weight passing the number 200 sieve and a plastic index lower than 15.
- Clay soils are defined as those with more than 30 percent passing the number 200 sieve and a plastic index greater than 15.
- Granular soils are those not defined by the above criteria.

Any evaluation of the site for the presence of surface or subsurface hazardous substances is beyond the scope of this investigation. When suspected hazardous substances are encountered during routine geotechnical investigations, they are noted in the exploration logs and immediately reported to the client. No such substances were revealed during our exploration.



Site Preparation

This section describes the necessary operations to prepare the existing ground for site improvements; grading and filling are described in later sections of this report.

All vegetation shall be stripped and grubbed from structural areas and removed from the site. A stripping depth of 0.2 to 0.3 feet is anticipated. Any trees and associated roots greater than ½ inch in diameter shall be removed, where necessary, to a minimum depth of 12 inches below finished grade. Large roots (greater than 6 inches in diameter) shall be removed to the maximum depth possible. Resulting excavations shall be backfilled with structural fill compacted to 90 percent relative compaction.

The test pits were excavated by backhoe/excavator at the approximate locations shown on Plate 1. Locations were determined in the field by approximate means. All test pits were backfilled upon completion of the field portion of our study, and the backfill was compacted to the extent possible with equipment on hand. However, the backfill was not compacted to the requirements presented herein under **Mass Grading**. If structures, concrete flatwork, pavement, utilities or other improvements are to be located in the vicinity of any of the test pits, the backfill should be removed and recompacted in accordance with the requirements contained in this report. Failure to properly compact backfill could result in excessive settlement of improvements located over test pits.

All areas to receive structural fill or structural loading shall be densified to at least 90 percent relative compaction. Where less than 70 percent passes the ¾-inch sieve, soils are too coarse for standard density testing techniques. In this case, as will likely occur here, a proof rolling of a minimum 5 single passes with a minimum 10-ton roller in mass grading, or 5 complete passes with hand compactors in footing trenches, is recommended. This alternate has proved to provide adequate project performance as long as all other geotechnical recommendations are closely followed. In all cases, the final surface shall be smooth, firm, and exhibit no signs of deflection.

If wet weather is experienced, surface soils may be well above optimum moisture and impossible to compact. In some situations, moisture conditioning may be possible by scarifying the top 12 inches of subgrade and allowing it to air-dry to near optimum moisture prior to compaction. Where this procedure is ineffective or where construction schedules preclude delays, mechanical stabilization will be necessary. Mechanical stabilization may be achieved by over-excavation and/or placement of an initial 12- to 18-inch-thick lift of 12-inch-minus, 3-inch-plus, well graded, angular rock fill. The more angular and well graded the rock is, the more effective it will be. This fill shall be densified with large equipment, such as a self-propelled sheepsfoot or a large loader, until no further deflection is noted. Additional lifts of rock may be necessary to achieve adequate stability. The use of a separator geotextile will prevent mud from pumping up between the rocks, thereby increasing rock-to-rock contact and decreasing the required thickness of stabilizing fill. The separator geotextile shall meet or exceed the following minimum properties presented in Table 2 (Minimum Required Properties for Separator Geotextile).



TABLE 1 - MINIMUM REQUIRED PROPERTIES FOR SEPARATOR GEOTEXTILE

Trapezoid Strength (ASTM D4533)	80 x 80 lbs.
Puncture Strength (ASTM D4833)	500 lbs.
Grab Tensile Strength/Elongation (ASTM D4632)	200 x 200 @ 50 %

As an alternate to rock fill, a geotextile or geogrid with gravel system may be used for stabilization. Aggregate base (*Standard Specifications for Public Works Construction [SSPWC]*, 2016), Class C or D drain rock (*SSPWC*, 2016), or pit run gravels shall be placed above the geotextile. Regardless of which alternate is selected, a test section is recommended to determine the required thickness of stabilization.

Trenching, Excavation and Utility Backfill

Excavation and trenching will be possible with conventional earthwork equipment. Presence of oversized particles will make trenching more difficult and can create voids within the trench. Temporary trenches with near-vertical sidewalls should be stable to a depth of approximately 4 feet. Temporary trenches are defined as those that will be open for less than 24 hours. Excavations to greater depths will require shoring or laying back of sidewalls to maintain adequate stability. Regulations contained in Part 1926, Subpart P, of Title 29 of the Code of Federal Regulations (2010) require that temporary sidewall slopes be no greater than those presented in Table 3 (Maximum Allowable Temporary Slopes).

TABLE 2 - MAXIMUM ALLOWABLE TEMPORARY SLOPES

Soil or Rock Type	Maximum Allowable Slopes ¹ for Deep Excavations less than 20 Feet Deep ²
Stable Rock	Vertical (90 degrees)
Type A ³	3H:4V (53 degrees)
Type B	1H:1V (45 degrees)
Type C	3H:2V (34 degrees)

Notes:

¹ Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.

² Sloping or benching for excavations greater than 20 feet deep shall be designed by a registered professional engineer.

³ A short-term (open 24 hours or less) maximum allowable slope of 1H:2V ([horizontal to vertical] 63 degrees) is allowed in excavation in Type A soils that are 12 feet or less in depth. Short-term maximum allowable slopes for excavations greater than 12 feet in depth shall be 3H:4V (53 degrees).

The State of Nevada, Department of Industrial Relations, Division of Occupational Safety and Health Administration (OSHA) has adopted and strictly enforces these regulations, including the classification system and the maximum slopes. In general, Type A soils are cohesive, non-fissured soils with an



unconfined compressive strength of 1.5 tons per square foot (tsf) or greater. Type B are cohesive soils with an unconfined compressive strength between 0.5 and 1.5 tsf. Type C soils have an unconfined compressive strength below 0.5 tsf. Numerous additional factors and exclusions are included in the formal definitions. The client, owner, design engineer, and contractor shall refer to Appendix A and B of Subpart P of the previously referenced Federal Register for complete definitions and requirements on sloping and benching of trench sidewalls. Appendices C through F of Subpart P apply to requirements and methodologies for shoring.

On the basis of our exploration, the native soils are considered Type C. All trenching shall be performed and stabilized in accordance with local, state, and OSHA standards.

Utility Trench Backfill

The maximum particle size in trench backfill shall be 4 inches. Bedding and initial backfill 12 inches over the pipe will require import and shall conform to the requirements of either Class A backfill (SSPWC, 2016) or the utility having jurisdiction. Bedding and initial backfill shall be densified to at least 90 percent relative compaction. Native granular soil will provide adequate final backfill as long as oversized particles are excluded, and it shall be placed in maximum 8-inch-thick loose lifts which are compacted to a minimum of 90 percent relative compaction in all structural areas.

Dewatering

Excavations below the groundwater table will likely require dewatering. Below the waterline, bedding and backfill shall consist of compacted drain rock graded in accordance with the requirements for Class C drain backfill (SSPWC, 2016). When drain rock is used as trench backfill, it shall be considered a rock backfill (greater than 30 percent retained on the ¾-inch sieve) and shall be placed in maximum 12-inch-thick loose lifts, with each lift densified by at least 5 complete passes with approved compaction equipment and until no deflection is observed. A separator geotextile (Table 1) shall be placed between the drain rock and any native soil backfill.

Mass Grading

Grading for the building and parking lot will include cuts and fills about 5 to 7 feet deep. Native granular soils will be suitable for use in cut or reuse as structural fill provided particles larger than 4 inches are removed. Oversized rock can be stockpiled for later use as erosion protection. Grading shall not be performed with or on frozen, organic or other deleterious materials. If imported structural fill is required on this project, we recommend it satisfy the specifications presented in Table 3 (Guideline Specification for Imported Structural Fill).



TABLE 3 - GUIDELINE SPECIFICATION FOR IMPORTED STRUCTURAL FILL

Sieve Size	Percent by Weight Passing	
4 Inch	100	
3/4 Inch	70 – 100	
No. 40	15 – 70	
No. 200	5 – 30	
Percent Passing No. 200 Sieve	Maximum Liquid Limit	Maximum Plastic Index
5 – 10	50	20
11 – 20	40	15
21 – 30	35	10

These recommendations are intended as guidelines to specify a readily available, prequalified material. Adjustments to the recommended limits can be provided to allow the use of other granular, non-expansive material. Any such adjustments must be made and approved by the engineer, in writing, prior to importing fill to the site.

All fill placed on hillsides steeper than 5H:1V (horizontal to vertical) shall be keyed into existing materials in equipment-wide benches. The maximum vertical separation between benches shall be 8 feet.

Any structural fill within the building area shall be placed in maximum 8-inch-thick loose lifts each densified to at least 95 percent relative compaction. All other structural fill shall be densified to a minimum 90 percent relative compaction. Nonstructural fill shall be densified to at least 85 percent relative compaction to minimize consolidation and erosion.

The site materials will commonly have greater than 30 percent retained on the 3/4-inch sieve, such that standard density testing is not valid. These materials will be treated as rock fills with a maximum lift thickness and maximum particle size of 12 inches and 8 inches, respectively. A proof rolling program of at least 5 single passes of a minimum CAT® 815 roller in mass grading, or at least 5 complete passes with hand compactors in footing trenches, is recommended. If a CAT® 825 or larger compactor is used, it could be possible to increase both lift thickness and particle size to a maximum of 18 inches and 12 inches, respectively.

Properly constructed rock fills have a long history of excellent performance in northern Nevada. For this project, the maximum particle size contained in rock fill placed during mass grading to within 4 feet of finished subgrade elevation should be 12 inches, with a maximum lift height of 18 inches. Within 4 feet of subgrade elevations, the rock fill should exhibit a maximum particle size of 8 inches, with a maximum lift



height of 12 inches. As an alternate, the owner may wish to restrict the maximum particle size to 6 inches in the upper 2 feet to facilitate fine grading, trenching, and footing excavation. Acceptance of this rock fill is based upon observation of particle size, lift thickness, moisture content, and applied compactive effort. Compaction must continue to the satisfaction of the engineer. In all cases, the finished surface shall be firm and show no signs of deflection.

Seismic Design Parameters

The 2018 *International Building Code* ([IBC] International Code Council [ICC], 2018), adopted by Washoe County, requires a detailed soils evaluation to a depth of 100 feet to develop appropriate soils criteria. Based on our experience with the subsurface soil conditions and geology at the project site as well as our previous deep borings and geophysical surveys in the general area of the project site lying on the same or similar geological deposits, a Site Class C is appropriate. The Site Class C soil profile is for very stiff soils or soft rock with a shear velocity between 1,200 and 2,500 feet per second, or with an N (Standard Penetration Test) value greater than 50, or an undrained shear strength greater than 2,000 pounds per square foot (psf). The 2018 *IBC* seismic design loads are based on the ASCE 7-16 Standards titled *Minimum Design Loads and Associated Criteria for Buildings and Other Structures* (ASCE, 2017). The recommended seismic design criteria using the 2018 *IBC* are presented in Table 4 (Seismic Design Criteria Using 2018 *International Building Code*).

Approximate Latitude	39.3234
Approximate Longitude	-119.8925
Spectral Response at Short Periods, S_s , percent of gravity	183.4
Spectral Response at 1-Second Period, S_1 , percent of gravity	63.9
Site Class	C
Risk Category	II
Site Coefficient F_a , decimal	1.2
Site Coefficient F_v , decimal	1.4
Site Adjusted Spectral Response at Short Periods, S_{MS} , percent of gravity	220.0
Site Adjusted Spectral Response at Long Periods, S_{M1} , percent of gravity	89.5
Design Spectral Response at Short Periods, S_{DS} , percent of gravity	146.7
Design Spectral Response at Long Periods, S_{D1} , percent of gravity	59.7
Seismic Design Category	D

Foundation



Conventional Shallow Foundations

Individual column footings and continuous wall footings underlain by granular native soil or structural fill can be designed for a net maximum allowable bearing pressure of 3,000 psf, and should have minimum footing widths of 24 inches. The net allowable bearing pressure is the pressure at the base of the footing in excess of the adjacent overburden pressure. This allowable bearing value should be used for dead plus ordinary live loads. Ordinary live loads are that portion of the design live load that will be present during the majority of the life of the structure. Design live loads are loads that are produced by the use and occupancy of the building, such as by moveable objects, including people or equipment, as well as snow loads. This bearing value may be increased by one-third for total loads. Total loads are defined as the maximum load imposed by the required combinations of dead load, design live loads, snow loads, and wind or seismic loads.

With this allowable bearing pressure, total foundation movements of approximately $\frac{3}{4}$ inch should be anticipated. Differential movement between footings with similar loads, dimensions, and base elevations should not exceed two-thirds of the values provided above for total movements. The majority of the anticipated movement will occur during the construction period as loads are applied.

Lateral loads, such as wind or seismic, may be resisted by passive soil pressure and friction on the bottom of the footing. The recommended coefficient of base friction is 0.43 and has been reduced by a factor of 1.5 on the ultimate soil strength. Design values for active and passive equivalent fluid pressures are 37 and 420 psf per foot of depth, respectively. These design values are based on spread footings bearing on and backfilled with structural fill. All exterior footings should be placed a minimum 2 feet below adjacent finished grade for frost protection.

If loose, soft, wet, or disturbed soils are encountered at the foundation subgrade, these soils should be removed to expose undisturbed native soils and the resulting over-excavation backfilled with compacted structural fill. The base of all excavations should be dry and free of loose soils at the time of concrete placement.

Foundation Drainage Design Parameters

Subsurface foundation drainage must be installed along the exterior perimeter of the structure foundations. This may be accomplished by placing a non-woven geotextile/gravel system with a network of perforated drain pipes below and along the outside base of the exterior footings. The geotextile shall meet or exceed the minimum properties presented in Table 5 (Minimum Required Properties for Drainage Geotextile).



TABLE 5 - MINIMUM REQUIRED PROPERTIES FOR DRAINAGE GEOTEXTILE

Grab Tensile (ASTM D4632)	90 lbs.
Puncture Strength (ASTM D4833)	50 lbs.
Burst Strength (ASTM D3786)	150 psi.
OR IF NATIVE SOILS HAVE SHARP, ANGULAR ROCKS:	
Grab Tensile (ASTM D4632)	130 lbs.
Puncture Strength (ASTM D4833)	75 lbs.
Burst Strength (ASTM D3786)	250 psi.

A trench shall be excavated to a depth of at least 6 inches below the base and directly adjacent to the outside of the footings. A perforated, 4-inch-diameter drain pipe shall be placed in the bottom of the trench and graded to drain downslope of the building. A minimum of 12 inches of Class C drain rock (SSPWC, 2016) shall be placed above the drain pipe and around the footing, then covered by the geotextile. The permeable material should extend up above the footing/stem wall cold joint.

Subsidence and Shrinkage

Subsidence of about 0.1 feet should be anticipated from construction traffic. Granular alluvial soils excavated and recompacted in structural fills should experience quantity shrinkage of approximately 10 percent, including removal of oversized particles. In other words, 1 cubic yard of excavated granular alluvium will generate about 0.9 cubic yards of structural fill at 90 percent relative compaction.

Slope Stability and Erosion Control

Stability of cut and filled surfaces involves 2 separate aspects. The first concerns true slope stability related to mass wasting, landslides, or the en masse downward movement of soil or rock. Stability of cut and fill slopes is dependent upon shear strength, unit weight, moisture content, and slope angle. The exploration and testing program conducted during this investigation confirms 3H:1V slopes will be stable.

The second aspect of stability involves erosion potential and is dependent on numerous factors involving grain size distribution, cohesion, moisture content, slope angle, and the velocity of water or wind on the ground surface. Washoe County requires erosion control of cut and fill slopes that are 5H:1V or steeper. Slopes between 3H:1V and 5H:1V can be stabilized by hydroseeding. Slopes steeper than 3H:1V are not permitted.

Protection could be provided by a variety of methods such as rip-rap or geo-cell systems; however, vegetative stabilization would likely be the most cost effective and attractive. Any chosen product shall be placed in accordance with the recommendations of the manufacturer.



Dust potential at this site will be moderate during dry periods. Temporary (during construction) and permanent (after construction) erosion control will be required for all disturbed areas. The contractor shall prevent dust from being generated during construction in compliance with all applicable city, county, state, and federal regulations. The contractor shall submit an acceptable dust control plan to the governing agency prior to starting site preparation or earthwork. Project specifications should include an indemnification by the contractor of the owner and engineer for any dust generation during the construction period. The owner will be responsible for mitigation of dust after accepting the project.

In order to minimize erosion and downstream impacts to sedimentation from this site, best management practices with respect to stormwater discharge shall be implemented.

Site Drainage

Surface Drainage

Adequate surface drainage shall be provided so moisture is directed away from the structure. A system of roof gutters and downspouts is recommended to collect roof drainage and direct it away from the foundations unless pavement extends to the walls.

Stem wall/foundation backfill shall be thoroughly compacted to decrease permeability and reduce the potential for irrigation and stormwater to migrate below the floor slab.

The ponding of water on finished grade or at the edge of pavements shall be prevented by grading the site in accordance with *IBC* (ICC, 2018) requirements.

Concrete Slabs

All concrete slabs shall be directly underlain by imported Type 2, Class B aggregate base (*SSPWC*, 2016). The thickness of base material beneath PCC flatwork shall be 6 inches beneath curbs and gutters, 4 inches beneath sidewalks, and 4 inches beneath floor slabs and private flatwork. Aggregate base courses shall be densified to at least 95 percent relative compaction.

Final design of the floor slab shall be performed by the project structural engineer. Any interior concrete slab-on-grade floors shall be a minimum of 4 inches thick. Floor slab reinforcement, as a minimum, shall consist of No. 3 reinforcing steel placed on 24-inch centers in each direction, or flat sheets of 6x6, W4.0xW4.0 welded wire mesh (WWM). Rolls of WWM are not recommended for use because vertically centered placement of rolled WWM within a floor slab is difficult to achieve. All reinforcing steel and WWM shall be centered in the floor slab through the use of concrete dobies or an approved equivalent.

A coefficient of subgrade reaction (K-value) of 150 pounds per cubic inch shall be used for design of concrete slabs.



The structural section for exterior truck ramps shall be a minimum of 6 inches of 4,000 pounds per square inch (psi) concrete overlying 6 inches of Type 2, Class B aggregate base (*SSPWC*, 2016). Valley gutters shall include at least 6 inches of fibermesh concrete (4,000 psi). These exterior rigid pavements have been designed using the American Association of State Highway and Transportation Officials (1993) method for concrete with a 28-day flexural strength of 570 psi (approximately 4,000 psi compressive strength).

The Mt. Rose area is a region with exceptionally low relative humidity. As a consequence, concrete flatwork is prone to excessive shrinking and curling. Concrete mix proportions and construction techniques, including the addition of water and improper curing, can adversely affect the finished quality of concrete and result in cracking, curling, and the spalling of slabs. We recommend that all placement and curing be performed in accordance with procedures outlined by the American Concrete Institute (2019) and this report. Special considerations shall be given to concrete placed and cured during hot or cold weather temperatures, low humidity conditions, and windy conditions such as are common in Northern Nevada.

Proper control joints and reinforcement shall be provided to minimize any damage resulting from shrinkage, as discussed below. In particular, crack-control joints shall be installed on maximum 10-foot centers and shall be installed to a minimum depth of 25 percent of the slab thickness. Saw-cuts, zip strips, and/or trowel joints are acceptable; however, saw-cut joints must be installed as soon as initial set allows and prior to the development of internal stresses that will result in a random crack pattern.

Concrete shall not be placed on frozen in-place soils.

Any interior concrete slab-on-grade floors will require a moisture barrier system. Installation shall conform to the specifications provided for a Class B vapor restraint (ASTM E1745-97). The vapor barrier shall consist of placing a 15-mil-thick Stego® Wrap Vapor Barrier or an approved equal directly on a properly prepared subgrade surface. A 4-inch-thick layer of aggregate base shall be placed over the vapor barrier and compacted with a vibratory plate.

The base layer that overlies the moisture barrier membrane shall remain compacted and a uniform thickness maintained during the concrete pour, as its intended purpose is to facilitate even curing of the concrete and minimize curling of the slab. Extra attention shall be given during construction to ensure that rebar reinforcement and equipment do not damage the integrity of the vapor barrier. Care must be taken so that concrete discharge does not scour the base material from the vapor barrier. This can be accomplished by maintaining the discharge hose in the concrete and allowing the concrete to flow out over the base layer.

Asphalt Concrete

Asphalt Concrete Pavement Design

Paved areas subject to truck traffic shall consist of 4 inches of asphalt concrete underlain by 6 inches of Type 2, Class B aggregate base (*SSPWC*, 2016). Paved areas restricted to automobile parking can consist



of 3 inches of asphalt concrete underlain by 6 inches of aggregate base. All aggregate base beneath asphalt pavements shall be densified to at least 95 percent relative compaction.

Pavement Maintenance

Asphalt concrete pavements have been designed for a standard 20-year life expectancy as detailed above. Due to the local climate and available construction aggregates, a 20-year performance life requires diligent maintenance. Between 15 and 20 years after initial construction (average 17 years), major rehabilitation (structural overlay or reconstruction) is often necessary if maintenance has been lax. To achieve maximum performance life, maintenance must include regular crack sealing, seal coats, and patching as needed. Crack filling is commonly necessary within 5 years of construction and every year, or at least every other year, thereafter. Seal coats, typically with a Type II slurry seal, are generally needed every 3 to 6 years depending on surface wear. Failure to provide thorough maintenance will significantly reduce pavement design life and performance.

Corrosion Potential

Metal Pipe Design Parameters

Laboratory testing was performed to evaluate the corrosion potential of the soils with respect to metal pipe in contact with the ground. The results of the laboratory testing indicate that the site foundation soils are not corrosive (American Water Works Association, 1999). As a result, metal pipe in contact with the ground will not require corrosion protection.

Portland Cement Concrete Mix Design Parameters

Soluble sulfate content has been determined for representative samples of the site foundation soils. The sulfate was extracted from the soil at a 10:1 water to soil ratio in order to assure that all soluble sodium sulfate was dissolved. The results are reported in milligrams of sulfate per kilogram of soil and can be directly converted to percent by dividing by 10,000. The percent sulfate in the soil is used to determine the sulfate exposure Class (S) from the information presented in Table 6 (Sulfate Exposure Class).



TABLE 6 - SULFATE EXPOSURE CLASS*

S Sulfate			Water-Soluble Sulfate (SO₄) in Soil, Percent by Weight
	Not Applicable	S0	SO ₄ < 0.10
Moderate	S1	0.10 ≤ SO ₄ < 0.20	
Severe	S2	0.20 ≤ SO ₄ ≤ 2.00	
Very Severe	S3	SO ₄ > 2.00	

*From Table 4.2.1 Exposure Categories and Classes. ACI 318, *Buildings Code and Comments*.

The results of the testing (Appendix A) indicate that concrete in contact with the site foundation soils should be designed for Class S0 Sulfate exposure. Therefore, Type II cement can be used for all concrete work.

DRAFT



Anticipated Construction Problems

Depending on the season of construction, soft, wet surface soils may make it difficult for construction equipment to travel and operate. Some difficulty will be encountered in trenching due to the presence of small to large boulders in areas of granular (outwash) soil.

DRAFT



Quality Control

All plans and specifications should be reviewed for conformance with this geotechnical report and approved by the engineer prior to submitting them to the building department for review.

The recommendations presented in this report are based on the assumption that sufficient field testing and construction review will be provided during all phases of construction. We should review the final plans and specifications to check for conformance with the intent of our recommendations. Prior to construction, a pre-job conference should be scheduled to include, but not be limited to, the owner, architect, civil engineer, general contractor, earthwork and materials subcontractors, building official, and engineer. The conference will allow parties to review the project plans, specifications, and recommendations presented in this report and discuss applicable material quality and mix design requirements. All quality control reports should be submitted to and reviewed by the engineer.

During construction, we should have the opportunity to provide sufficient on-site observation of preparation and grading, over-excavation, fill placement, foundation installation, and paving. These observations would allow us to verify that the geotechnical conditions are as anticipated and that the contractor's work is in conformance with the approved plans and specifications.



Standard Limitations Clause

This report has been prepared in accordance with generally accepted geotechnical practices. The analyses and recommendations submitted are based on field exploration performed at the locations shown on Plate 1. This report does not reflect soils variations that may become evident during the construction period, at which time re-evaluation of the recommendations may be necessary. We recommend our firm be retained to perform construction observation in all phases of the project related to geotechnical factors to ensure compliance with our recommendations.

Water level readings were made on the date shown on Plate 2. Fluctuations in the water table may occur due to rainfall, temperature, or seasonal runoff. Construction planning should be based on assumptions of possible variations in the water table.

It is anticipated that the site will be graded cut to fill. As such, minor deviations from the recommendations and assessments presented in this report are anticipated. Fills are to be generated on site using cut-to-fill methods and will not be purchased from a commercial borrow source. Therefore, the potential exists for soils within the building pads to fall outside the material limits recommended in this report. Unless these deviations can be proven to be fundamental to any observed distress or performance issue, such deviations should not be considered a failure to adhere to the recommendations presented in this report or a design flaw but should be considered an acceptable variation in mass grading when on-site materials are used as the fill source. Acceptable performance of such materials is formulated around the provisions and requirements of the *IBC*, as applicable.

This report has been produced to provide information allowing the architect or engineer to design the project. The owner is responsible for distributing this report to all designers and contractors whose work is affected by geotechnical aspects. In the event there are changes in the design, location, or ownership of the project from the time this report is issued, recommendations should be reviewed and possibly modified by the engineer. If the engineer is not granted the opportunity to make this recommended review, he or she can assume no responsibility for misinterpretation or misapplication of his or her recommendations or their validity in the event changes have been made in the original design concept without his or her prior review. The engineer makes no other warranties, either express or implied, as to the professional advice provided under the terms of this agreement and included in this report.

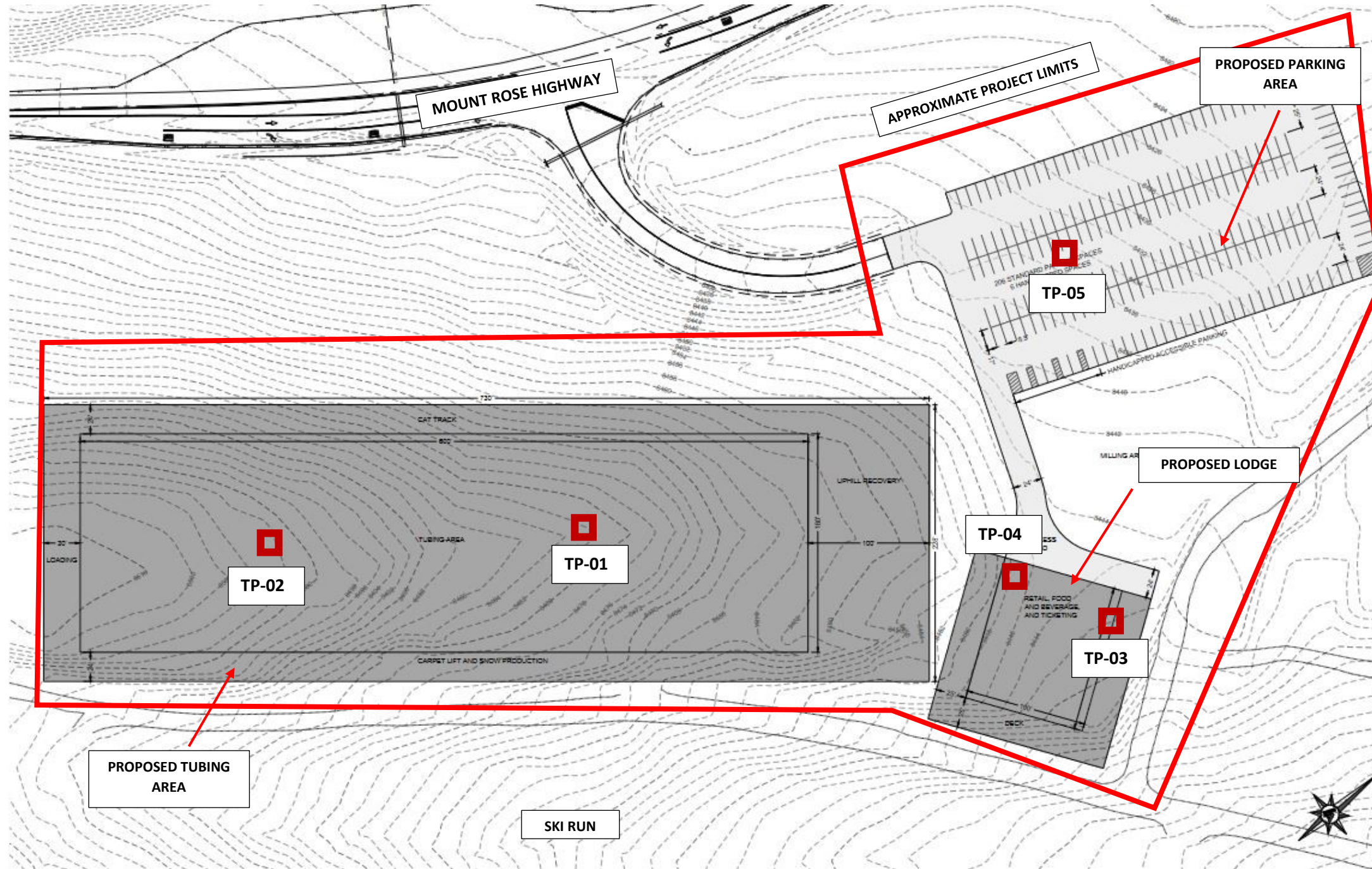


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PLATES



NORTH

 Overall Scale: 1" = ~ 205'

LEGEND

TP-01 APPROXIMATE TEST PIT LOCATION

Base map provided by LUMOS AND ASSOCIATES.

VICINITY MAP



NOT TO SCALE



MT. ROSE SKI TAHOE
PLOT PLAN
 MT. ROSE TUBING PARK
 WASHOE COUNTY, NEVADA

Black Eagle Consulting, Inc.
 Project No. 0094-15-1

TEST PIT LOG

TEST PIT NO.: TP-01

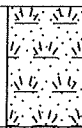
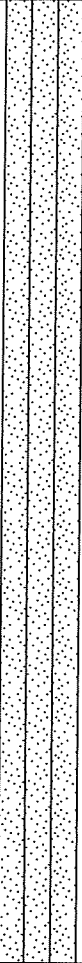
DATE: 7/19/23

EXCAVATOR TYPE: CAT 308E

DEPTH TO GROUND WATER (ft): NE

LOGGED BY: CRW

GROUND ELEVATION (ft): 8,484

SAMPLE NO.	SAMPLE TYPE	PENETROMETER (tsf)	MOISTURE (%)	PLASTICITY INDEX	DEPTH (ft)	USCS SYMBOL	LITHOLOGY	DESCRIPTION
						SM		Topsoil Dark brown, slightly moist, loose to medium dense organics present with an estimated 30% non-plastic fines, 50% fine to coarse sand and 20% gravel.
					5	SM		Silty Sand Light brown to brown, moist, medium dense with an estimated 30% non-plastic fines, 50% fine to coarse sand and 20% gravel. Cobbles and boulders up to 24 inches in diameter make up about 15% of the total soil matrix (TSM). Increasing cobbles and boulder content.
								Bottom of excavation at 9 feet below existing grade.

TEST_PIT_0094151.GPJ_BLACKEAGLE_GDT_8/7/23



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Mt. Rose Ski Tahoe
Mt. Rose Tubing Park
Washoe County, Nevada

PROJECT NO.: 0094-15-1
PLATE: 2
SHEET 1 OF 1

TEST PIT LOG

TEST PIT NO.: TP-02

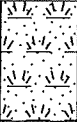

DATE: 7/19/23

EXCAVATOR TYPE: CAT 308E

DEPTH TO GROUND WATER (ft): NE

LOGGED BY: CRW

GROUND ELEVATION (ft): 8,502

SAMPLE NO.	SAMPLE TYPE	PENETROMETER (tsf)	MOISTURE (%)	PLASTICITY INDEX	DEPTH (ft)	USCS SYMBOL	LITHOLOGY	DESCRIPTION
						SM		Topsoil Dark brown, slightly moist, loose to medium dense organics present with an estimated 30% non-plastic fines, 50% fine to coarse sand and 20% gravel.
A	GRAB				5	SM		Silty Sand Light brown to brown, moist, medium dense with an estimated 25% non-plastic fines, 55% fine to coarse sand and 20% gravel. Cobbles and boulders up to 18 inches in diameter make up about 15% of the TSM.
								Bottom of excavation at 8 feet below existing grade.

TEST_PIT_0094151.GPJ BLACKEAGLE.GDT 8/7/23



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Mt. Rose Ski Tahoe
 Mt. Rose Tubing Park
 Washoe County, Nevada

PROJECT NO.:
0094-15-1

PLATE:
2

SHEET 1 OF 1

TEST PIT LOG

TEST PIT NO.: TP-03


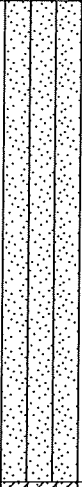

DATE: 7/19/23

EXCAVATOR TYPE: CAT 308E

DEPTH TO GROUND WATER (ft): 6

LOGGED BY: CRW

GROUND ELEVATION (ft): 8,438

SAMPLE NO.	SAMPLE TYPE	PENETROMETER (tsf)	MOISTURE (%)	PLASTICITY INDEX	DEPTH (ft)	USCS SYMBOL	LITHOLOGY	DESCRIPTION
						SM		Topsoil Dark brown, slightly moist, loose to medium dense organics present with an estimated 30% non-plastic fines, 50% fine to coarse sand and 20% gravel.
						SM		Silty Sand Reddish-brown, moist, medium dense with an estimated 25% non-plastic fines, 55% fine to coarse sand and 20% gravel. Cobbles and boulders up to 24 inches in diameter make up about 15% of the total soil matrix (TSM).
					5			
	A	GRAB			▼	SC		Clayey Sand with Gravel Grey-brown, moist to saturated, loose to medium dense, with an estimated 30% low plasticity fines, 50% fine to coarse sand and 20% angular gravel. Granitic source material.
								Free groundwater seepage observed at 6 feet.
								Bottom of excavation at 8 feet below existing grade.

TEST_PIT_0094151.GPJ BLACKEAGLE.GDT 8/7/23



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Mt. Rose Ski Tahoe
 Mt. Rose Tubing Park
 Washoe County, Nevada

PROJECT NO.: 0094-15-1
PLATE: 2
SHEET 1 OF 1

TEST PIT LOG

TEST PIT NO.: TP-04
 EXCAVATOR TYPE: CAT 308E
 LOGGED BY: CRW

DATE: 7/19/23
 DEPTH TO GROUND WATER (ft): 5
 GROUND ELEVATION (ft): 8,446

SAMPLE NO.	SAMPLE TYPE	PENETROMETER (tsf)	MOISTURE (%)	PLASTICITY INDEX	DEPTH (ft)	USCS SYMBOL	LITHOLOGY	DESCRIPTION
						SM		Topsoil Dark brown, slightly moist, loose to medium dense organics present with an estimated 30% non-plastic fines, 50% fine to coarse sand and 20% gravel.
A	GRAB				5	SC		Clayey Sand with Gravel Grey to reddish-brown, moist to saturated, loose to medium dense, with an estimated 30% low plasticity fines, 50% fine to coarse sand and 20% angular gravel. Granitic source material. Subangular cobbles and boulders up to 30 inches in diameter make up about 15% of the TSM.
								Free groundwater seepage observed at 5 feet.
								Bottom of excavation at 7 feet below existing grade.

TEST_PIT_0094151.GPJ BLACKEAGLE.GDT 8/7/23



Black Eagle Consulting, Inc.
 1345 Capital Blvd., Suite A
 Reno, Nevada 89502-7140
 Telephone: (775) 359-6600

Mt. Rose Ski Tahoe
 Mt. Rose Tubing Park
 Washoe County, Nevada

PROJECT NO.: 0094-15-1
PLATE: 2
SHEET 1 OF 1

TEST PIT LOG

TEST PIT NO.: TP-05

DATE: 7/19/23

EXCAVATOR TYPE: CAT 308E

DEPTH TO GROUND WATER (ft): 4

LOGGED BY: CRW

GROUND ELEVATION (ft): 8,434

SAMPLE NO.	SAMPLE TYPE	PENETROMETER (tsf)	MOISTURE (%)	PLASTICITY INDEX	DEPTH (ft)	USCS SYMBOL	LITHOLOGY	DESCRIPTION
A	GRAB					SM		Topsoil Dark brown, slightly moist, loose to medium dense organics present with an estimated 30% non-plastic fines, 50% fine to coarse sand and 20% gravel.
					▼	SM		Silty Sand Reddish-brown, moist, medium dense with an estimated 25% non-plastic fines, 55% fine to coarse sand and 20% gravel. Cobbles and boulders up to 30 inches in diameter make up about 15% of the TSM. Free groundwater seepage observed at 4 feet.
					5	SC		Clayey Sand with Gravel Grey-brown, moist to saturated, loose to medium dense, with an estimated 30% low plasticity fines, 50% fine to coarse sand and 20% angular gravel. Granitic source material. Cobbles and boulders up to 30 inches in diameter make up about 15% of the TSM.
								Bottom of excavation at 7 feet below existing grade.

TEST_PIT_0094151.GPJ BLACKEAGLE.GDT 8/7/23



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Mt. Rose Ski Tahoe
Mt. Rose Tubing Park
Washoe County, Nevada

PROJECT NO.:
0094-15-1

PLATE:
2

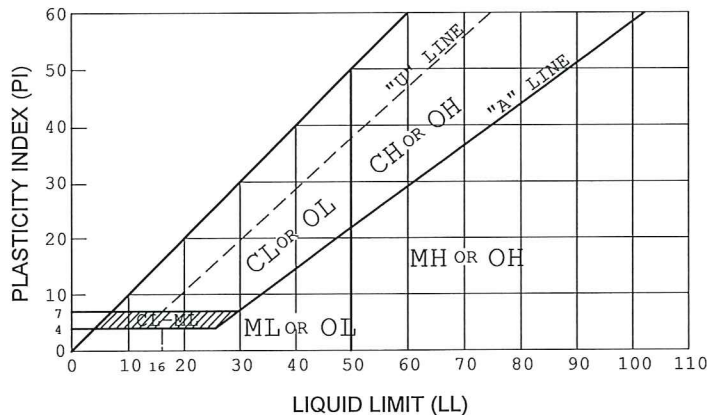
SHEET 1 OF 1

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS	TYPICAL	
			GRAPH	LETTER	
			DESCRIPTIONS		
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
		SILTS AND CLAYS		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
		SILTS AND CLAYS		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
HIGHLY ORGANIC SOILS			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
HIGHLY ORGANIC SOILS			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS	
HIGHLY ORGANIC SOILS			CH	INORGANIC CLAYS OF HIGH PLASTICITY	
HIGHLY ORGANIC SOILS			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
FILL MATERIAL			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	
FILL MATERIAL			--	FILL MATERIAL, NON-NATIVE	

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS.

PLASTICITY CHART



FOR CLASSIFICATION OF FINE-GRAINED SOILS AND FINE-GRAINED FRACTION OF COARSE-GRAINED SOILS

EXPLORATION SAMPLE TERMINOLOGY

Sample Type	Sample Symbol	Sample Code
Auger Cuttings		Auger
Bulk (Grab) Sample		Grab
Modified California Sampler		MC
Shelby Tube		SH or ST
Standard Penetration Test		SPT
Split Spoon		SS
No Sample		

GRAIN SIZE TERMINOLOGY

Component of Sample	Size Range
Boulders	Over 12 in. (300mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75mm)
Sand	# 4 to #200 sieve (4.75mm to 0.074mm)
Silt or Clay	Passing #200 sieve (0.074mm)

RELATIVE DENSITY OF GRANULAR SOILS

N - Blows/ft	Relative Density
0 - 4	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
greater than 50	Very Dense

CONSISTENCY OF COHESIVE SOILS

Unconfined Compressive Strength, psf	N - Blows/ft	Consistency
less than 500	0 - 1	Very Soft
500 - 1,000	2 - 4	Soft
1,000 - 2,000	5 - 8	Firm
2,000 - 4,000	9 - 15	Stiff
4,000 - 8,000	16 - 30	Very Stiff
8,000 - 16,000	31 - 60	Hard
greater than 16,000	greater than 60	Very Hard

USCS CHART - 1826041.GPJ US LAB.GDT 7/24/2019

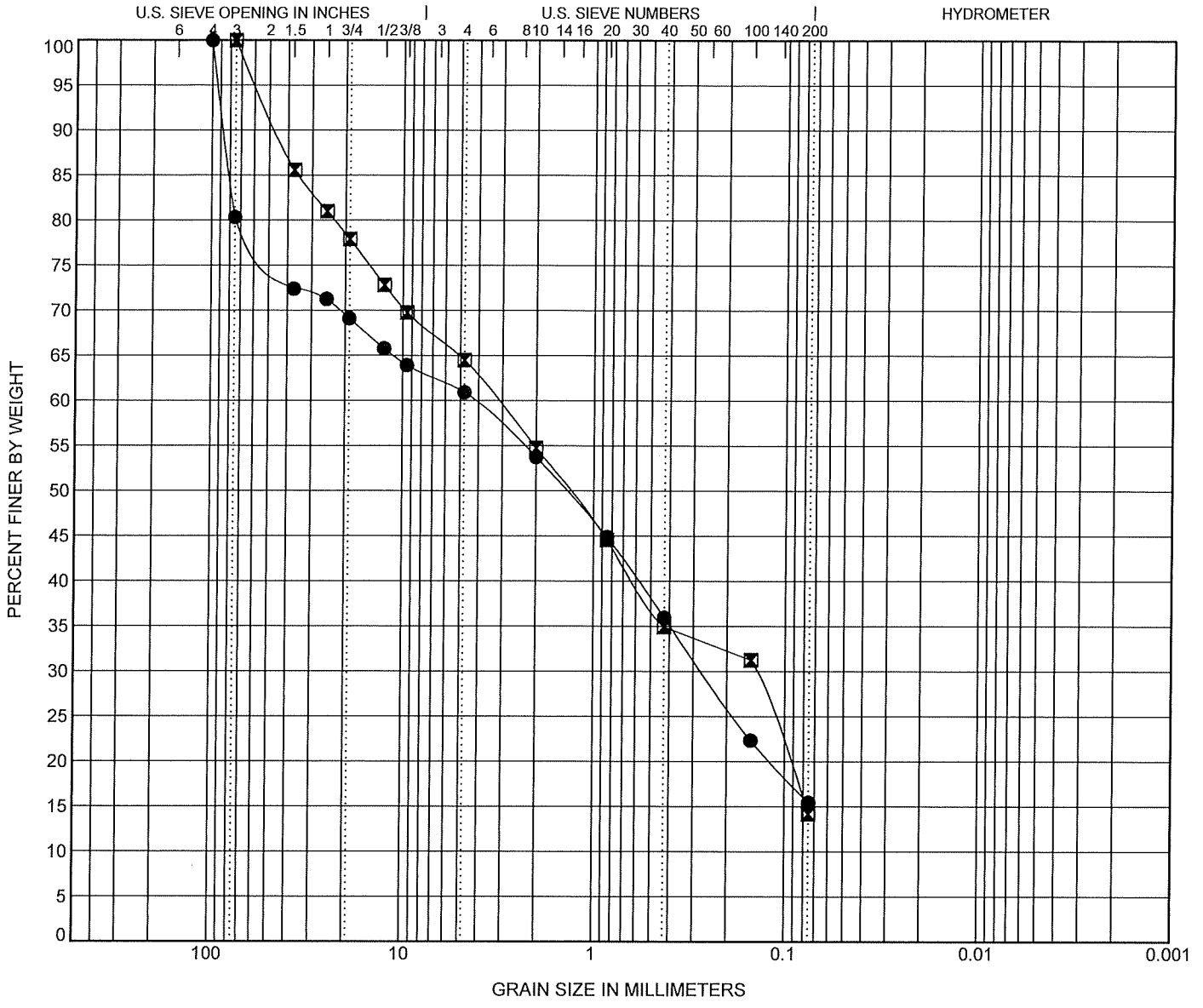


Black Eagle Consulting, Inc.
1345 Capital Blvd., Suite A
Reno, Nevada 89502-7140
Telephone: (775) 359-6600
Fax: (775) 359-7766

USCS Soil Classification Chart

Project: Mt. Rose Tubing Park
Location: Washoe County, Nevada
Project Number: 0094-15-1

Plate:



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
● TP-02	5.0	SILTY SAND with GRAVEL(SM)	NP	NP	NP		
■ TP-04	4.0	SILTY SAND with GRAVEL(SM)	NP	NP	NP		

BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● TP-02	5.0	100	4.248	0.269		19.4	45.5	15.5	
■ TP-04	4.0	75	3.186	0.142		35.5	50.3	14.2	

GRAIN SIZE DISTRIBUTION

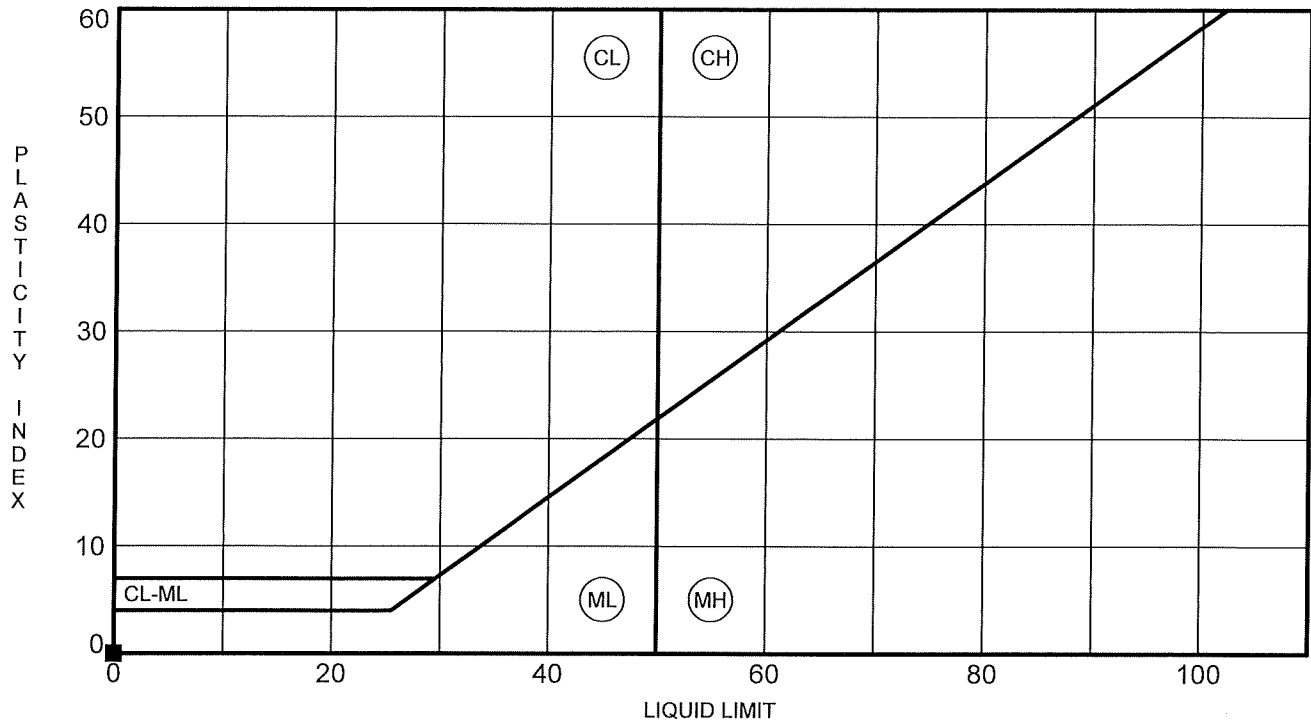
Black Eagle Consulting, Inc.
 1345 Capital Blvd., Suite A
 Reno, Nevada 89502-7140
 Telephone: (775) 359-6600

Project: Mt. Rose Tubing Park
 Location: Washoe County, Nevada
 Project Number: 0094-15-1

PLATE: 4a

GRAIN SIZE 0094151.GPJ GINT STD US.LAB.GDT 8/7/23





BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
● TP-02	5.0	NP	NP	NP	15	SILTY SAND with GRAVEL(SM)
☒ TP-04	4.0	NP	NP	NP	14	SILTY SAND with GRAVEL(SM)

ATTERBERG LIMITS 0094151.GPJ GINT STD US LAB.GDT 8/7/23



Black Eagle Consulting, Inc.
 1345 Capital Blvd., Suite A
 Reno, Nevada 89502-7140
 Telephone: (775) 359-6600

ATTERBERG LIMITS RESULTS

Project: Mt. Rose Tubing Park
 Location: Washoe County, Nevada
 Project Number: 0094-15-1
 PLATE: 4b

SUMMARY OF LABORATORY RESULTS

Black Eagle Consulting

CLIENT Mt. Rose Ski Tahoe PROJECT NAME Mt. Rose Tubing Park

PROJECT NUMBER 0094-15-1 PROJECT LOCATION Washoe County, Nevada

Borehole	Depth	Liquid Limit	Plastic Limit	Plasticity Index	Maximum Size (mm)	%<#200 Sieve	Classification	Water Content (%)	Dry Density (pcf)	Saturation (%)	Void Ratio
TP-02	5.0	NP	NP	NP	100	15	SM	15.5			
TP-04	4.0	NP	NP	NP	75	14	SM	27.4			

APPENDIX A

CHEMICAL TEST RESULTS



SGS Silver State Analytical Laboratories
1135 Financial Blvd
Reno, NV 89502
(775) 857-2400
www.ssalabs.com

August 01, 2023
Workorder **23071048**

Jonathan Payne
BLACK EAGLE CONSULTING, INC
1345 Capital Blvd
Suite A
Reno, NV 89502-7140

Project: 0094 - 15 - 1 / TP - 02_ A _ 5'

Dear Jonathan Payne:

It is the policy of SGS Silver State Analytical Laboratory - Reno to strictly adhere to a comprehensive Quality Assurance Plan that ensures the data presented in this report are both accurate and precise. SGS Silver State Analytical Laboratory - Reno maintains accreditation in the State of Nevada (NV-00015) and the State of California (ELAP 2990).

The data presented in this report was obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged in the Analytical Report with an appropriate explanation in the Definitions & Qualifiers.

23071048: Sample has been Sub Contracted.

Sincerely,

A handwritten signature in black ink that reads 'Carly Wood'.

Carly Wood
Laboratory Director
1135 Financial Blvd
Reno, NV 89502



SGS Silver State Analytical Laboratories
 1135 Financial Blvd
 Reno, NV 89502
 (775) 857-2400
 www.ssalabs.com

Analytical Report

Workorder#: 23071048
 Date Reported: 8/1/2023

Client: BLACK EAGLE CONSULTING, INC
Project Name: 0094 - 15 - 1 / TP - 02_ A _ 5'
PO #:

Sampled By: Remington

Laboratory Accreditation Number: NV930/CA3029

Laboratory ID	Client Sample ID	Date/Time Sampled	Date Received
23071048-01	TP - 02, A, 5'	07/19/2023 9:30	7/21/2023

Parameter	Method	Result	Units	PQL	Analyst	Date/Time Analyzed	Data Flag
Oxidation-Reduction Potential	SM 2580 B	424	mV	1	LJ	07/26/2023 14:43	
pH	SM 4500H	7.77	pH Units	0	VO	07/26/2023 15:03	H
Resistivity	NDOT T235 B	76500	Ohms-cm	0	LJ	07/26/2023 14:43	
Sulfate	EPA 9056A	3.44	mg/Kg	2	JG	07/26/2023 19:12	L
Sulfide	SM 4500S2 F	1.60	mg/Kg	1	LJ	07/26/2023 14:44	



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Quality Control Report

WO#: 23071048
 8/1/2023

Analysis: Sulfide - Soils
Method: SM 4500S2 F

Batch ID: R81058

Method Blank

RunID: 81058 SeqNo 2121074 Units: mg/Kg
 Analysis Date: 7/26/2023 2:44:00 PM Analyst: LJ

Analyte	Result	Rep Limit	Rep Qual
Sulfide	ND	1.00	

Analysis: Anions in Soils (Cl, F, NO2, NO3, S)
Method: EPA 9056A

Batch ID: R81092

Duplicate

RunID: 81092 SeqNo 2121598 Units: mg/Kg
 Analysis Date: 7/26/2023 5:27:00 PM Analyst: JG

Analyte	Result	Rep Limit	Rep Qual	RPD	Sample Value
Sulfate	208	0.200		0.0021876	207.5843

Method Blank

RunID: 81092 SeqNo 2121577 Units: mg/Kg
 Analysis Date: 7/26/2023 10:50:00 AM Analyst: JG

Analyte	Result	Rep Limit	Rep Qual
Sulfate	ND	0.200	

Laboratory Control Sample (LCS)

RunID: 81092 SeqNo 2121578 Units: mg/Kg
 Analysis Date: 7/26/2023 11:11:00 AM Analyst: JG

Analyte	LCS Spike Added	LCS Result	LCS % Recovery	LCSD Spike Added	LCSD Result	LCSD % Recovery	RPD	RPD Limit	Low Limit	High Limit	Qual
Sulfate	5.000	5.32	106								

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 23071124-02B

RunID: 81092 SeqNo 2121596 Units: mg/Kg
 Analysis Date: 7/26/2023 4:45:00 PM Analyst: JG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit	Qual
Sulfate	207.6	10.00	215	71.3	10.00	213	54.0	0.809	20	90	110	S

Original



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Quality Control Report

WO#: 23071048
8/1/2023

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 23071124-02B

RunID: 81092 SeqNo 2121597 Units: mg/Kg

Analysis Date: 7/26/2023 5:06:00 PM Analyst: JG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit	Qual
Sulfate	207.6	10.00	213	54.0								

23074048

Page 5 of 6

Report Results To:

Report Attention: Jonathan Payne Project Number: **0094-15-1**

Company: Black Eagle Consulting, Inc.

Mailing Address: 1345 Capital Blvd., Suite A

City, State, Zip: Reno, NV 89502

Phone: 775-359-6600 Email / Fax: jpayne@blackagleconsulting.com

Send Invoice To:

Invoice Attention: Jonathan Payne PG# Quote #

Company: Black Eagle Consulting, Inc.

Mailing Address: 1345 Capital Blvd., Suite A

City, State, Zip: Reno, NV 89502

Phone: 775-359-6600 Email / Fax: accounting@blackagleconsulting.com

Sampled by: *R. W. ...* Signature: *C. Perry*

I attest to the validity and authenticity of the sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time is considered fraud and may be grounds for legal action.

Standard: Standard TA (7-10 business days. Note that some tests vary.) Other Pertinent Information / Special Instructions

Rush Same Day: 3 Day: Other (specify):

1 Day: 4 Day: Rush results will be issued after 4:00 p.m.

2 Day: 5 Day:

NOTE: A Rush Surcharge is applied for rush samples

ANALYSES REQUESTED

Date Sampled	Time Sampled	Sample Identification	SSAL - SEM Lab No.	Comp. Grab	Matrix	Preservative**	Number / Type of Containers ***										
7/19	9:30	TP-02, A, S'		SS	Gr	Le	1	✓	✓	✓	✓	✓					

Field Measurements

On-Site pH: Chlorine: Temperature: Other:

Metals*

COMMENTS:

Relinquished By: *[Signature]* Signature Print Name: *Ronington Walker*

Received By: *[Signature]* Signature Print Name: *Jordan ...*

Relinquished By: Signature Print Name:

Received By: Signature Print Name:

Relinquished By: Signature Print Name:

Received By: Signature Print Name:

Relinquished By: Signature Print Name:

Received By: Signature Print Name:

Relinquished By: Signature Print Name:

Received By: Signature Print Name:

Relinquished By: Signature Print Name:

Received By: Signature Print Name:

Company: *Black Eagle SSSD*

Date: *7/21/23* Time: *12:47*

Date: *7/21/23* Time: *1247*

Authorization is required to process samples. This obligates your organization for service fees. SSAL Standard T & C's or other written agreement applies. If collections or legal services are required to recover said fees, your organization will be responsible for all fees and costs in addition to service fees.

Samples are discarded 30 days after results are reported unless other arrangements are made and storage fees may apply. The analytical results associated with this COC apply only to these samples as they are received by the laboratory. The liability of the laboratory is limited to the amount paid for the report.

Matrix* DW-Drinking Water, WW-Waste Water, GW-Ground Water, SW-Surface Water, SS-Soil, S-Solid, OT-Other

Preservative** 1=H₂SO₄, 2=HNO₃, 3=HCl, 4=NaOH, 5=Na₂S₂O₃, 6=None, 7=Other

Container*** P-Plastic, G-Glass, V-Voa Vial, OT-Other



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Reno, NV 89502
(775) 857-2400
www.ssalabs.com

Definitions & Qualifiers

WO#: 23071048

Date: 8/1/2023

Definitions:

LCS: Laboratory Control Sample; prepared by adding a known mass of target analytes to a specified amount of de-ionized water and prepared with the batch of samples, used to calculate Accuracy (%REC).

LCSD: LCS Duplicate; used to calculate both Accuracy (%REC) and Precision (%RPD)

MBLK: Method Blank; a sample of similar matrix that is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedure, and in which no target analytes or interferences are present at concentrations that impact the analytical results for sample analyses.

MS: Matrix Spike; prepared by adding a known mass of target analytes to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available, used to calculate Accuracy (%REC)

MSD: Matrix Spike Duplicate; used to calculate both Accuracy (%REC) and Precision (%RPD)

RPD: Relative Percent Difference; comparison between sample and duplicate and/or MS and MSD.

PQL: Practical Quantitation Limit; the limit to which data is quantitated for reporting.

MDL: Method Detection Limit; the limit to which the instrument can reliably detect.

MCL: Maximum Contaminant Level; value set according to EPA guidelines.

Qualifiers:

* - Analyte exceeds Safe Drinking Water Act MCL, does not meet drinking water standards.

C - Analyte value below Safe Drinking Water Act MCL, does not meet drinking water standards.

B - Analyte found above the PQL in associated method blank.

G - Calibration blank analyte detected above PQL.

H - Sample analyzed beyond holding time for this parameter.

J - Estimated Value; Analyte found between MDL and PQL limits.

L - Sample concentration is at least 5 times greater than spike contribution. Spike recovery criteria do not apply.

R - RPD between sample and duplicate sample outside the RPD acceptance limits.

S - Batch MS and/or MSD were outside acceptance limits, batch LCS was acceptable.

W - Sample temperature when received was out of limit as specified by method.

Z - Batch LCS and/or LCSD were outside acceptance limits.

TAB E



THE STATE OF NEVADA
PERMIT TO APPROPRIATE WATER

Name of applicant: MT ROSE DEVELOPMENT COMPANY
Source: UNDERGROUND
Basin: PLEASANT VALLEY
Manner of Use: RECREATIONAL
Period of Use: OCTOBER 1ST TO MAY 1ST
Priority Date: 10/22/2010

APPROVAL OF STATE ENGINEER

This is to certify that I have examined the foregoing application, and do hereby grant the same, subject to the following limitations and conditions:

This permit is issued subject to existing rights. It is understood that the amount of water herein granted is only a temporary allowance and that the final water right obtained under this permit will be dependent upon the amount of water actually placed to beneficial use. It is also understood that this right must allow for a reasonable lowering of the static water level. This well shall be equipped with a two (2) inch opening for measuring depth to water. If the well is flowing, a valve must be installed and maintained to prevent waste. A totalizing meter must be installed and maintained in the discharge pipeline near the point of diversion and accurate measurements must be kept of water placed to beneficial use. The totalizing meter must be installed before any use of water begins, or before the Proof of Completion of Work is filed. This source is located within an area designated by the State Engineer, pursuant to NRS 534.030. The State retains the right to regulate the use of the water herein granted at any and all times.

A separate totalizing meter must be installed and the amount of water pumped from this source for quasi-municipal and snowmaking purposes shall be reported separately. The Permittee shall keep monthly records of the amount of water pumped from this well for both uses and the consumptive use portions must be calculated. These records must be submitted to the State Engineer on an annual basis within 30 days after the end of each calendar year. Under no circumstances shall the maximum net consumptive use duty of 131.669 acre-feet annually be exceeded.

This permit does not extend the permittee the right of ingress and egress on public, private or corporate lands.

The well must be sealed with cement grout, concrete grout or neat cement from ground level to 100 feet.

The totally combined duty of water that may be withdrawn from the well under Permit 67914, Certificate 17118; Permit 67915, Certificate 17119; Permit 67916, Certificate 17120; Permit 67917, Certificate 17121; Permit 67918, Certificate 17122; Permits 79024 and 80237 shall not exceed 386.669 acre-feet annually and the net consumptive use duty of water under these permits shall not exceed 131.669 acre-feet annually.

The issuance of this permit does not waive the requirements that the permit holder obtain other permits from State, Federal and local agencies.

(Continued on Page 2)

The place of use of this permit is limited to that area lying totally within the Pleasant Valley Hydrographic Basin (6-088).

The point of diversion and place of use are as described on the submitted application to support this permit.

The amount of water to be appropriated shall be limited to the amount which can be applied to beneficial use, **and not to exceed 0.60 cubic feet per second for non-consumptive purposes (snowmaking).**

Work must be prosecuted with reasonable diligence and proof of completion of work shall be filed on or before:

March 26, 2012

Water must be placed to beneficial use and proof of the application of water to beneficial use shall be filed on or before:

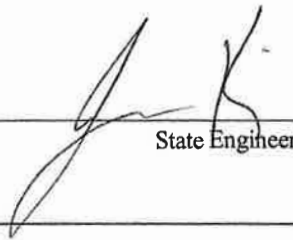
March 26, 2016

Map in support of proof of beneficial use shall be filed on or before:

N/A

IN TESTIMONY WHEREOF, I, JASON KING, P.E.,

State Engineer of Nevada, have hereunto set my hand and the seal of my office, this 8th day of June, A.D. 2011

 P.E.

State Engineer

Completion of work filed _____

Proof of beneficial use filed _____

Cultural map filed _____

Certificate No. _____ Issued _____

General Information

Application: 67914 Status: CERTIFICATE Certificate: 17118 [Start new search](#)

General

Owner(s):	MT. ROSE DEVELOPMENT COMPANY	Basin:	PLEASANT VALLEY - 088
Sub Basin:		Basin Status:	DESIGNATED
Region:	TRUCKEE RIVER BASIN	County:	WASHOE
Water Resource Specialist:	ALAN MULLER		

Previous Applications (Base Rights)

Change of App No.	POD	POU	MOU
		Y	

Source:	UNDERGROUND	Source Description:	
Project Name:		Decree Name:	
Use:	QUASI-MUNICIPAL		
Period Start:	0101	Period End:	1231

Point of Diversion Information:

Qtr-Qtr:	Qtr:	Section:	Township:	Range:
SW	SW	19	17N	19E

Duty Balance:	51.669 AFA	Div Balance:	0.0438	Well Log Nos.: 17118
Acre-Foot Storage:	0	Well Logs:		
Remarks:				

General Information

Application: 67915 Status: CERTIFICATE Certificate: 17119 [Start new search](#)

General

Owner(s):	MT. ROSE DEVELOPMENT COMPANY	Basin:	PLEASANT VALLEY - 088
Sub Basin:		Basin Status:	DESIGNATED
Region:	TRUCKEE RIVER BASIN	County:	WASHOE
Water Resource Specialist:	ALICE M...		

Previous Applications (Base Rights)

Change of App No.	POD	POU	MOU
		Y	

Source:	UNDERGROUND	Source Description:	
Project Name:		Decree Name:	
Use:	QUASI-MUNICIPAL		
Period Start:	0101	Period End:	1231

Point of Diversion Information:

Qtr-Qtr:	Qtr:	Section:	Township:	Range:
SW	SW	19	17N	19E

Duty Balance:	4.99 AFA	Div Balance:	0.01	Well Log Nos.:	
Acre-Feet Storage:	0	Well Logs:			
Remarks:					

General Information

Application: 67917 Status: CERTIFICATE Certificate: 17121 [Start new search](#)

General

Owner(s):	MT, ROSE DEVELOPMENT COMPANY	Basin:	PLEASANT VALLEY - 088
Sub Basin:		Basin Status:	DESIGNATED
Region:	TRUCKEE RIVER BASIN	County:	WASHOE
Water Resource Specialist:	M. J. ...		

Previous Applications (Base Rights)

Change of App No.	POD	POU	MOU
		Y	

Source:	UNDERGROUND	Source Description:	
Project Name:		Decree Name:	
Use:	QUASI-MUNICIPAL	Period End:	1231
Period Start:	0101		

Point of Diversion Information:

Qtr-Qtr:	Qtr:	Section:	Township:	Range:
SW	SW	19	17N	19E
Duty Balance:	31.669 AFA	Div Balance:	0.0438	Well Log Nos.: []
Acre-Feet Storage:	0	Well Logs:		
Remarks:				

General Information

Application: 67918 Status: CERTIFICATE Certificate: 17122 [Start new search](#)

General

Owner(s):	MT. ROSE DEVELOPMENT COMPANY	Basin:	PLEASANT VALLEY - 088
Sub Basin:		Basin Status:	DESIGNATED
Region:	TRUCKEE RIVER BASIN	County:	WASHOE
Water Resource Specialist:	M. B. M.		

Previous Applications (Base Rights)

Change of App No.	POD	POU	MOU
		Y	

Source:	UNDERGROUND	Source Description:	
Project Name:		Decree Name:	
Use:	QUASI-MUNICIPAL		
Period Start:	0101	Period End:	1231

Point of Diversion Information:

Qtr-Qtr:	Qtr:	Section:	Township:	Range:
SW	SW	19	17N	19E
Duty Balance:	31.669 AFA	Div Balance:	0.0438	
Acre-Feet Storage:	0	Well Logs:	Well Log Nos.: / /	
Remarks:				

General Information

Application: 79024 Status: CERTIFICATE Certificate: 19859 [Start new search](#)

General

Owner(s):	MT. ROSE DEVELOPMENT COMPANY	Basin:	PLEASANT VALLEY - 088
Sub Basin:		Basin Status:	DESIGNATED
Region:	TRUCKEE RIVER BASIN	County:	WASHOE
Water Resource Specialist:	MELISSA MCGEE		

Previous Applications (Base Rights)

Change of App No.	POD	POU	MOU
1	Y	Y	Y

Source:	UNDERGROUND	Source Description:	
Project Name:		Decree Name:	
Use:	QUASI-MUNICIPAL		
Period Start:	0101	Period End:	1231

Point of Diversion Information:

Qtr-Qtr:	Qtr:	Section:	Township:	Range:
SW	SW	19	17N	19E
Duty Balance:	31.669 AFA	Div Balance:	0.0438	Well Log Nos.: []
Acre-Foot Storage:	0	Well Logs:		
Remarks:				

Point of diversion

General Information

Application: **68664** | Status: **CERTIFICATE** | Certificate: **18254** : [Start new search](#)

General

Owner(s):	MT. ROSE DEVELOPMENT COMPANY	Basin:	WASHOE VALLEY - 089
Sub Basin:		Basin Status:	DESIGNATED
Region:	TRUCKEE RIVER BASIN	County:	WASHOE

Previous Applications (Base Rights)

Change of App No.	POD	POU	MOU
25682		Y	

Source:	SPRING	Source Description:	UNNAMED SPRING #2	<i>Zephyr Springs Slide Mt.</i>
Project Name:		Decree Name:		
Use:	COMMERCIAL	Period End:	1231	
Period Start:	0101			

Point of Diversion Information:

Qtr-Qtr:	Qtr:	Section:	Township:	Range:
NW	NE	29	17N	19E

Duty Balance:	21.34 AFA	Div Balance:	0.03	
Acre-Feet Storage:	0	Well Logs:		Well Log Nos.:
Remarks:				

General Information

Application: [25724](#) | Status: CERTIFICATE | Certificate: [9629](#) | [Start new search](#)

General

Owner(s):	MT. ROSE DEVELOPMENT COMPANY	Basin:	WASHOE VALLEY - 089
Sub Basin:		Basin Status:	DESIGNATED
Region:	TRUCKEE RIVER BASIN	County:	WASHOE

Previous Applications (Base Rights)

No previous applications found

Source:	SPRING	Source Description:	UNNAMED SPRING NO. 1
Project Name:		Decree Name:	
Use:	COMMERCIAL		
Period Start:	0101	Period End:	1231

Brewer's Slide Mt.

Point of Diversion Information:

Qtr-Qtr:	Qtr:	Section:	Township:	Range:
SE	NW	29	17N	19E

Duty Balance:	36.182331 AFA	Div Balance:	0.05
Acre-Feet Storage:	0	Well Logs:	Well Log Nos.:
Remarks:			

General Information

Application: **19098** | Status: CERTIFICATE | Certificate: **6630** | [Start new search](#)

General

Owner(s):	MT ROSE DEVELOPMENT CO.	Basin:	PLEASANT VALLEY - 088
Sub Basin:		Basin Status:	DESIGNATED
Region:	TRUCKEE RIVER BASIN	County:	WASHOE

Previous Applications (Base Rights)

No previous applications found

Source:	UNDERGROUND	Source Description:	<i>Kit Carson</i>
Project Name:		Decree Name:	<i>Rose Side</i>
Use:	QUASI-MUNICIPAL	Period End:	1231
Period Start:	0101		

Point of Diversion Information:

Qtr-Qtr:	Qtr:	Section:	Township:	Range:
NW	SE	19	17N	19E

Duty Balance:	4.818173 AFA	Div Balance:	0.2	
Acre-Foot Storage:	0	Well Logs:		Well Log Nos.:
Remarks:				

Project Name: Mt.Rose-Ski Tahoe Tubing Hill

Neighborhood Meeting

SUMMARY

Meeting Location: Winters Creek Lodge, 21333 Mt. Rose Highway. Reno, NV 89511

Meeting Date: 6:00 p.m., Monday, July 24, 2023

Virtual Meeting Option Provided: YES NO

Hosted By (Name): Dave Snelgrove, AICP **(Company):** CFA, Inc

Contact (Email): dsnelgrove@cfareno.com **(Phone):** (775) 856-7073

Public Concerns:

- 1. Question on number of lanes - showed example of narrower lane equipment to explain.
- 2. Traffic - explained that turn lanes already exist and limitation on number of tubers will keep traffic levels down.
- 3.
- 4.
- 5.

Changes Made to Proposal (if applicable):

- 1. No changes necessary out of comments.
- 2.
- 3.
- 4.
- 5.

Any Additional Comments:

Comment cards were provided to attendees but none were returned



Board of Adjustment Action Order

Special Use Permit Case No. SB11-015

Decision: Approval with Conditions
Decision Date: February 2, 2012
Applicant: Mount Rose Ski Tahoe
Assigned Planner: Trevor Lloyd - Senior Planner
Washoe County Department of Community Development
Phone: 775.328.3620
E-Mail: tlloyd@washoecounty.us

Project Description: To allow the phased improvements to the Mt. Rose Ski Tahoe ski resort. The proposed improvements include the removal of two existing ski lifts (Ponderosa and Galena) and the replacement with a new single ski lift, the extension of an existing ski lift (Lakeview lift), expansion of the mountain terrain to include new ski trails and a new surface lift, the expansion of the existing Rose lodge by approximately $\pm 30,000$ square feet, the relocation of a $\pm 5,000$ square foot maintenance building, the construction of two snowmaking ponds, the construction of a relocated access road off of Mt. Rose Hwy., the construction of a new $\pm 3,000$ square foot on mountain restaurant, the construction of a $\pm 15,000$ seasonal locker building and the construction of a new terrain park ski lift on the slide side of the resort. The proposed improvements are projected to be phased over a 15 year timeframe.

Notice is hereby given that the Washoe County Board of Adjustment granted approval with conditions of the above referenced case number based on the findings in accordance with Washoe County Development Code Article 810. If no appeals have been filed within 10 days after the date of decision, the approval by the Washoe County Board of Adjustment is final. If filed, an appeal stays any further action on the permit until final resolution of the appeal. If the end of the appeal period falls on a non-business day, the appeal period shall be extended to include the next business day. An appeal shall be filed in accordance with the provisions found in Article 810 of the Washoe County Development Code.

This Action Order of approval is granted subject to the attached conditions and Washoe County development standards. Please contact the planner assigned to your project at the above-referenced phone number within 7 days of receipt of this Order to review the steps necessary to satisfy the Conditions of Approval. A business license, certificate of occupancy or final approval shall not be issued until all of the Conditions of Approval (attached) are satisfied. Additionally, compliance shall be required with all federal, state and local statutes, ordinances and regulations applicable to the approved project.

This Action Order does not authorize grading or building without issuance of the necessary permits from the Washoe County Building and Safety Department.

To: Mount Rose Ski Tahoe
Subject: Special Use Permit Case No SB11-015
Date: February 3, 2012
Page: 2

Washoe County
Community Development


Bill Whitney
Secretary to the Board of Adjustment

BW/TL/ds (SB11-015 Mount Rose Ski Tahoe Action Order)

Attachments:

- Conditions of Approval

xc: Representatives: Lisa Foster, lfnevada@sbcglobal.net

Action Order xc: Greg Salter, Esq., District Attorney's Office; Carol Buonanoma, Assessor's Office (CAAS); Theresa Wilkins, Assessor's Office; Don Jeppson, AIA, Department of Building & Safety; Jim Shaffer, Environmental Health Services, District Health Department; Alan Reich, P.E., Department of Water Resources; Kimble Corbridge/Leo Vesely, P.E., Public Works Department, Engineering Division; Kurt Latipow, Washoe County Fire Services Coordinator; Mark Regan, Sierra Fire Protection District; West Washoe Valley Citizen Advisory Board, Chair, Galena Steamboat Citizen Advisory Board

The project approved under Special Use Permit Case No: SB11-015 shall be carried out in accordance with the Conditions of Approval granted by the Board of Adjustment on February 2, 2012. Conditions of Approval are requirements placed on a permit or development by each reviewing agency. These Conditions of Approval may require submittal of documents, applications, fees, inspections, amendments to plans, and more. These conditions do not relieve the applicant of the obligation to obtain any other approvals and licenses from relevant authorities required under any other act.

Unless otherwise specified, all conditions related to the approval of this Special Use Permit shall be met or financial assurance must be provided to satisfy the conditions of approval prior to issuance of a grading or building permit. The agency responsible for determining compliance with a specific condition shall determine whether the condition must be fully completed or whether the applicant shall be offered the option of providing financial assurance. All agreements, easements, or other documentation required by these conditions shall have a copy filed with the County Engineer and the Department of Community Development.

Compliance with the conditions of approval related to this Special Use Permit is the responsibility of the applicant, his/her successor in interest, and all owners, assignees, and occupants of the property and their successors in interest. Failure to comply with any of the conditions imposed in the approval of the Special Use Permit may result in the initiation of revocation procedures.

Washoe County reserves the right to review and revise the conditions of approval related to this Special Use Permit should it be determined that a subsequent license or permit issued by Washoe County violates the intent of this approval.

For the purpose of conditions imposed by Washoe County, "may" is permissive and "shall" or "must" is mandatory.

Conditions of Approval are usually complied with at different stages of the proposed project. Those stages are typically:

- Prior to permit issuance (i.e., grading permits, building permits, etc.).
- Prior to obtaining a final inspection and/or a certificate of occupancy.
- Prior to the issuance of a business license or other permits/licenses.
- Some "Conditions of Approval" are referred to as "Operational Conditions". These conditions must be continually complied with for the life of the project or business.

The Washoe County Commission oversees many of the reviewing agencies/departments with the exception of the following agencies.

- **The DISTRICT BOARD OF HEALTH, through the Washoe County Health District, has jurisdiction over all public health matters in the Health District.**

Any conditions set by the District Health Department must be appealed to the District Board of Health.

- The RENO-TAHOE AIRPORT AUTHORITY is directed and governed by its own Board. Therefore, any conditions set by the Reno-Tahoe Airport Authority must be appealed to their Board of Trustees.
- The REGIONAL TRANSPORTATION COMMISSION (RTC) is directed and governed by its own board. Therefore, any conditions set by the Regional Transportation Commission must be appealed to that Board.

FOLLOWING ARE CONDITIONS OF APPROVAL REQUIRED BY THE REVIEWING AGENCIES. EACH CONDITION MUST BE MET TO THE SATISFACTION OF THE ISSUING AGENCY.

Washoe County Community Development

1. The following conditions are requirements of the Department of Community Development, which shall be responsible for determining compliance with these conditions.

Contact Name – Trevor Lloyd, 775.328.3620

- a. The applicant shall demonstrate substantial conformance to the plans approved as part of this special use permit. The Department of Community Development shall determine compliance with this condition.
- b. The applicant shall submit building plans and complete construction of all phases of this project within 15 years from the approval date by Washoe County. In order to demonstrate progress, the applicant shall complete at least one improvement within each five year increment.
- c. The applicant shall attach a copy of the action order approving this project to all administrative permit applications (including building permits) applied for as part of this special use permit.
- d. A note shall be placed on all construction drawings and grading plans stating:

NOTE

Should any prehistoric or historic remains/artifacts be discovered during site development, work shall temporarily be halted at the specific site and the State Historic Preservation Office of the Department of Museums, Library and Arts shall be notified to record and photograph the site. The period of temporary delay shall be limited to a maximum of two (2) working days from the date of notification.

- e. Prior to any ground disturbing activity, the applicant shall submit a landscaping/architectural design plan to the Department of Community Development for review and approval by the Design Review Committee. Said

plan shall address, but not be limited to: type and color of building materials, general architectural design, and signage and exterior lighting if applicable.

- f. The following **Operational Conditions** shall be required for the life of the project/business:
1. This special use permit shall remain in effect until or unless it is revoked or is inactive for one year.
 2. Failure to comply with the conditions of approval shall render this approval null and void. Compliance with this condition shall be determined by the Department of Community Development.
 3. The applicant and any successors shall direct any potential purchaser/operator of the site and/or the special use permit to meet with the Department of Community Development to review conditions of approval prior to the final sale of the site and/or the special use permit. Any subsequent purchaser/operator of the site and/or the special use permit shall notify the Department of Community Development of the name, address, telephone number, and contact person of the new purchaser/operator within 30 days of the final sale.
 4. This special use permit shall remain in effect as long as the business is in operation and maintains a valid business license.
- g. The applicant shall provide signage/markers and rope or fencing around each of the snowmaking ponds at all times to provide warnings and keep people away from the ponds.

Washoe County Department of Public Works

2. The following conditions are requirements of the Engineering Division, which shall be responsible for determining compliance with these conditions.

Contact Name – Leo Vesely, 775.328.8032

- a. A complete set of construction improvement drawings, including an on-site grading plan, shall be submitted to the County Engineer for approval when applying for a building/grading permit. Grading shall comply with best management practices (BMP's) and shall include detailed plans for grading, site drainage, erosion control (including BMP locations and installation details), pollution control, slope stabilization, and mosquito abatement. Placement or disposal of any excavated materials shall be indicated on the grading plan. Silts shall be controlled on-site and not allowed onto adjacent properties.
- b. For construction areas larger than 1 acre, the owner/developer shall obtain from the Nevada Division of Environmental Protection a Stormwater Discharge Permit for construction and submit a copy to the Engineering Division prior to issuance of a grading permit.
- c. For construction areas larger than 1 acre, the owner/developer shall complete and submit the Construction Permit Submittal Checklist, the Performance Standards Compliance Checklist and pay the Construction Stormwater

- Inspection Fee prior to obtaining a grading permit. The County Engineer shall determine compliance with this condition.
- d. All disturbed areas left undeveloped for more than 30 days shall be treated with a dust palliative. Disturbed areas left undeveloped for more than 45 days shall be revegetated. Methods and seed mix must be approved by the County Engineer with technical assistance from the Washoe-Storey Conservation District. The applicant shall submit a revegetation plan to the Washoe-Storey Conservation District for review.
 - e. A grading bond of \$1,500/acre of disturbed area shall be provided to the Engineering Division prior to any grading.
 - f. Cross-sections indicating cuts and fills shall be submitted when applying for a grading permit. Estimated total volumes shall be indicated.
 - g. The developer shall provide documentation of access to the site to the satisfaction of the County Engineer.
 - h. Approved Encroachment Permits shall be obtained from the Nevada Department of Transportation (NDOT), for use of State right-of-way and a copy of said permit sent to the Engineering Division. The County Surveyor shall determine compliance with this condition.
 - i. A detailed hydrology/hydraulic report prepared by a registered engineer shall be submitted to the Engineering Division for review and approval. The report shall include the locations, points of entry and discharge, flow rates and flood limits of all 5- and 100-year storm flows impacting both the site and offsite areas and the methods for handling those flows. The report shall include all storm drain pipe and ditch sizing calculations and a discussion of and mitigation measures for any impacts on existing offsite drainage facilities and properties.
 - j. Any increase in storm water runoff resulting from the site grading and based upon the 5 and 100-year storms shall be detained and/or mitigated on site to the satisfaction of the County Engineer.
 - k. The developer shall provide pretreatment for petrochemicals and silt for all storm drainage from the site to the satisfaction of the County Engineer.
 - l. The maximum permissible flow velocity (that which does not cause scour) shall be determined for all proposed channels and open ditches. The determination shall be based on a geotechnical analysis of the channel sli, proposed channel lining and channel cross section, and it shall be in accordance with acceptable engineering publications/calculations. Appropriate linings shall be provided for all proposed channels and open ditches such that the 100-year flows do not exceed the maximum permissible flow velocity. The County Engineer shall be responsible for determining compliance with this condition.
 - m. A note shall be placed on the improvement plans stating that at no time shall natural drainage be impeded.

- n. Any easement documents recorded for the project shall include an exhibit map that shows the location and limits of the easement in relationship to the project. The County Engineer shall determine compliance with this condition.
- o. Any existing easements or utilities that conflict with the project shall be relocated, quitclaimed, and/or abandoned, as appropriate. The County Engineer shall determine compliance with this condition.
- p. All slopes steeper than 3:1 shall be mechanically stabilized to control erosion. As an alternative to riprap, an engineered solution (geofabric, etc.) may be acceptable. The County Engineer shall determine compliance with this condition.

Washoe County Department of Water Resources (DWR)

3. The following conditions are requirements of the Department of Water Resources, which shall be responsible for determining compliance with these conditions.

Contact Name – Alan Reich, 775.954.4600

- a. The applicant shall dedicate necessary water rights for the requested uses prior to issuance of building permit(s). The dedication of water rights shall be in accordance with Article 422 and the Forest Area Plan. Water rights must be in good standing with the State of Nevada Division of Water Resources and the point of diversion, place and manner of use must be acceptable to the DWR. The subject water rights will then be made available to the Applicant via a water sale agreement, which will then lease the water rights back to the Applicant for 99 years, at no cost to the Applicant.
- b. The applicant shall pay all applicable fees resulting from Special Assessment District 29 (SAD29).
- c. Improvement plans shall be reviewed and approved by DWR prior to the release of building permits. They shall be in compliance with Washoe County Design Standards or design standards acceptable to Washoe County, NAC445A, and be designed by a Professional Engineer licensed to practice in the State of Nevada.
- d. Inspection of all sanitary sewer improvements shall be accomplished by DWR staff or the Engineer of Record.
- e. All fees shall be paid in accordance with Washoe County Ordinance prior to the release of building permits.
- f. All applicable sanitary sewer connection fees shall be paid prior to release of any building permits.
- g. A master sanitary sewer report for the entire proposed project shall be prepared and submitted by the applicant's engineer at the time of the initial submittal for the first phase which addresses:
 - i. the estimated sewage flows generated by the project(s),
 - ii. projected sewage flows from potential or existing development within tributary areas,

- iii. the impact on capacity of existing infrastructure,
 - iv. slope of pipe, invert elevation and rim elevation for all manholes,
 - v. and proposed collection line sizes, on-site and off-site alignment, and half-full velocities.
- h. No building permits shall be released until an application for service is received and a sewer lateral permit is issued.
 - i. No permanent structures (including rockery or retaining walls, building's, etc.) shall be allowed within or upon any County maintained utility easement.
 - j. A 20-foot minimum sanitary sewer and access easement shall be granted to Washoe County over any public sanitary sewer facilities not located in a dedicated right of way.
 - k. A 12-foot wide all weather sanitary sewer access road shall be constructed to facilitate access to public sanitary sewer manholes not within a paved street.

Washoe County District Health Department

- 4. The following conditions are requirements of the District Health Department, which shall be responsible for determining compliance with these conditions. The District Board of Health has jurisdiction over all public health matters in the Health District. Any conditions set by the District Health Department must be appealed to the District Board of Health.

Contact Name – Bryan Tyre, 775.328.2434

- a. Construction plans and equipment specifications for any foodhandling facilities, detailing food storage and preparation areas, shall be submitted to the health District for review and approval prior to the issuance of a building permit. Foodhandling facilities shall comply with requirements stipulated in the Washoe County District Board of Health Regulations Governing Food Establishments and with requirements of the appropriate disposal service.
- b. Garbage facilities, dumpsters, and compactors shall have raised washdown pads which drain into a sanitary sewer. Refer to Sections 100.025 and 100.040 of the Washoe County District Board of Health Regulations Governing Food Establishments.
- c. All land disturbing activities during construction phases, such as, but not limited to, grading, excavation, cut and fill, etc., must be done with effective dust control measures consistent with Washoe County District Board of Health Regulations Governing Air Quality Management, Section 040.030. Disturbances greater than 1 acre in size must obtain an approved dust control plan prior to beginning work.

Washoe County District Health Department – Vector Borne Diseases

- 5. The following conditions are requirements of the District Health Department, which shall be responsible for determining compliance with these conditions. The District Board of Health has jurisdiction over all public health matters in the Health District. Any

conditions set by the District Health Department must be appealed to the District Board of Health.

Contact Name – Jim Shaffer, 775.328.2434

- a. The proposed snow making ponds will require the standard detail of placing 6-8 inch rock on the side slopes of the ponds perimeter.
- b. Prior to approval of any grading permit and or building permit the above detail designs is required on the civil plans.

Sierra Fire Protection District

6. The following conditions are requirements of the Sierra Fire Protection District, which shall be responsible for determining compliance with these conditions.

Contact Name – Mark Regan, 775.849.1108

- a. Have a Wildfire Hazard Mitigation Plan in place before construction begins.
- b. Meet fire flow requirements for the Rose Base Lodge expansion. 3,750gpm duration of 4 hours. New water tanks will meet NFPA 22 and new fire service mains will meet NFPA 24.
- c. Provide remote FDC to the Rose Base Lodge and mountain restaurant.
- d. Update the fire hydrants to a Storz steamer port in place of a 4.33 x 5" port.
- e. New buildings to be built to meet the 2006IFC and Washoe County Chapter 60. Fire sprinklers are required in Rose Base Lodge, mountain restaurant, seasonal locker room and the new maintenance building.
- f. Need to provide approved transportation up to the mountain restaurant. The fire equipment can't access the restaurant.
- g. Provide a supply of firefighting equipment on site of the mountain restaurant

*** End of Conditions ***



WASHOE COUNTY
COMMUNITY SERVICES DEPARTMENT
 Planning and Building

1001 EAST 9TH STREET
 RENO, NEVADA 89512-2845
 PHONE (775) 328-6100
 FAX (775) 328.6133

Board of Adjustment Action Order
Special Use Permit Case Number WSUP19-0020

Decision: Approval with Conditions
 Decision Date: December 5, 2019
 Mailing/Filing Date: December 10, 2019
 Applicant: Mr. Rose Development Company
 Assigned Planner: Chris Bronczyk, Planner
 Washoe County Community Services Department
 Planning and Building Division
 Phone: 775.328.3612
 E-Mail: cbronczyk@washoecounty.us

Special Use Permit Case Number WSUP19-0020 (Mt. Rose Expansion) - For possible action, hearing, and discussion of a special use permit for improvements to Mt. Rose Ski Tahoe ski resort. In order to accommodate specific improvements within the resort area the applicant is requesting to vary several grading standards. Project elements include replacing and expanding a maintenance building; building a first aid and ski patrol station; expanding the existing Winters Creek Lodge; and repurposing several existing buildings. The proposal includes the excavation of ±9,900 cubic yards of earthen material, and disturbance of a ±3-acre area. The total amount of cut, fill and disturbed area includes impacts associated with the construction of a 5 million gallon snowmaking water tank, which is being considered under a separate special use permit application, WSUP19-0021. The subject site is located on privately-owned lands and lands owned by the United States Forest Service (USFS). The USFS has recently completed a final environmental impact statement (EIS) for the proposed expansion.

- Applicant: Mt. Rose Development Company
- Property Owners: Mt. Rose Development Company and US Forest Service
- Location: Main access to the site is ±11.4 miles from the intersection of Mt. Rose Hwy and Thomas Creek Rd.
- APNs and Parcel Sizes: 048-112-12: ±340.9 acres; 048-112-13: ±41.4 acres; 048-112-14: ±15.9 acres; 048-112-15: ±67.68 acres; 048-050-11: ±945.3 acres; 048-111-11: ±68.3 acres; 048-120-22: 2551.6 acres
- Master Plan: Rural (R); Open Space (OS); Commercial (C)
- Regulatory Zone: Parks and Recreation (PR); Open Space (OS); Tourist Commercial (TC)
- Area Plan: Forest
- Citizen Advisory Board: South Truckee Meadows/Washoe Valley
- Development Code: Authorized in Article 810, Special Use Permits and Article 438, Grading Standards
- Commission District: 2 – Commissioner Lucey



To: Mt. Rose Development Company
Subject: Special Use Permit Case WSUP19-0020
(Mt. Rose Expansion)
Date: December 10, 2019
Page: 2

Notice is hereby given that the Washoe County Board of Adjustment granted approval with conditions for the above referenced case number based on the findings in accordance with Washoe County Development Code Article 810, Special Use Permit. If no appeals have been filed within 10 calendar days from the Mailing/Filing Date shown on this Action Order, the approval by the Washoe County Board of Adjustment is final. If filed, an appeal stays any further action on the decision until final resolution of the appeal. An appeal shall be filed in accordance with the provisions found in Article 912 of the Washoe County Development Code.

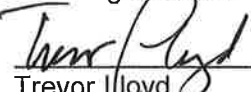
The action was based on the following findings in accordance with Washoe County Code Section 110.810.30:

1. Consistency. That the proposed use is consistent with the action programs, policies, standards and maps of the Master Plan and the Forest Area Plan;
2. Improvements. That adequate utilities, roadway improvements, sanitation, water supply, drainage, and other necessary facilities have been provided, the proposed improvements are properly related to existing and proposed roadways, and an adequate public facilities determination has been made in accordance with Division Seven;
3. Site Suitability. That the site is physically suitable for a destination resort use type, and for the intensity of such a development;
4. Issuance Not Detrimental. That issuance of the permit will not be significantly detrimental to the public health, safety or welfare; injurious to the property or improvements of adjacent properties; or detrimental to the character of the surrounding area;
5. Effect on a Military Installation. Issuance of the permit will not have a detrimental effect on the location, purpose or mission of the military installation.

This Action Order is issued subject to the attached conditions and Washoe County development standards. Please contact the planner assigned to your project at the above-referenced phone number within 7 days of receipt of this Order to review the steps necessary to satisfy the Conditions of Approval. Any business license, certificate of occupancy, or final approval shall not be issued until all of the Conditions of Approval are satisfied. Additionally, compliance shall be required with all federal, state, and local statutes, ordinances, and regulations applicable to the approved project.

This Action Order does not authorize grading or building without issuance of the necessary permits from the Washoe County Planning and Building Division.

Washoe County Community Services Department
Planning and Building Division



Trevor Lloyd
Secretary to the Board of Adjustment

TL/CB/df

Attachments: Conditions of Approval

To: Mt. Rose Development Company
Subject: Special Use Permit Case WSUP19-0020
(Mt. Rose Expansion)
Date: December 10, 2019
Page: 3

Applicant: Mt. Rose Development Company
22222 Mt. Rose Highway
Reno, NV 89511

Representatives: CFA, Inc
1150 Corporate Boulevard
Reno, NV 89502

Action Order xc: Mike Large, District Attorney's Office; Keirsten Beck, Assessor's Office;
Rigo Lopez, Assessor's Office; Tim Simpson, Utilities; Leo Vesely,
Engineering and Capital Projects; Charles Moore, Truckee Meadows Fire
Protection District; Nevada Division of Environmental Protection, 901
South Stewart Street, Suite. 4001, Carson City, NV 89701-5249;
Regional Transportation Commission; Truckee Meadows Regional
Planning Agency; STM/WV Citizen Advisory Board



Conditions of Approval

Special Use Permit Case Number WSUP19-0020

The project approved under Special Use Permit Case Number WSUP19-0020 shall be carried out in accordance with the conditions of approval granted by the Board of Adjustment on December 5, 2019. Conditions of approval are requirements placed on a permit or development by each reviewing agency. These conditions of approval may require submittal of documents, applications, fees, inspections, amendments to plans, and more. These conditions do not relieve the applicant of the obligation to obtain any other approvals and licenses from relevant authorities required under any other act.

Unless otherwise specified, all conditions related to the approval of this Special Use Permit shall be met or financial assurance must be provided to satisfy the conditions of approval prior to issuance of a grading or building permit. The agency responsible for determining compliance with a specific condition shall determine whether the condition must be fully completed or whether the applicant shall be offered the option of providing financial assurance. All agreements, easements, or other documentation required by these conditions shall have a copy filed with the County Engineer and the Planning and Building Division.

Compliance with the conditions of approval related to this special use permit is the responsibility of the applicant, his/her successor in interest, and all owners, assignees, and occupants of the property and their successors in interest. Failure to comply with any of the conditions imposed in the approval of the special use permit may result in the institution of revocation procedures.

Washoe County reserves the right to review and revise the conditions of approval related to this Special Use Permit should it be determined that a subsequent license or permit issued by Washoe County violates the intent of this approval.

For the purpose of conditions imposed by Washoe County, "may" is permissive and "shall" or "must" is mandatory.

Conditions of approval are usually complied with at different stages of the proposed project. Those stages are typically:

- Prior to permit issuance (i.e., grading permits, building permits, etc.).
- Prior to obtaining a final inspection and/or a certificate of occupancy.
- Prior to the issuance of a business license or other permits/licenses.
- Some "conditions of approval" are referred to as "operational conditions." These conditions must be continually complied with for the life of the project or business.

FOLLOWING ARE CONDITIONS OF APPROVAL REQUIRED BY THE REVIEWING AGENCIES. EACH CONDITION MUST BE MET TO THE SATISFACTION OF THE ISSUING AGENCY.

Washoe County Planning and Building Division

1. The following conditions are requirements of Planning and Building, which shall be responsible for determining compliance with these conditions.

Contact Name – Chris Bronczyk, 775.328.3612, cbronczyk@washoecounty.us

- a. The applicant shall attach a copy of the action order approving this project to all administrative permit applications (including building permits) applied for as part of this special use permit.
- b. The applicant shall demonstrate substantial conformance to the plans approved as part of this special use permit. The Planning and Building Division shall determine compliance with this condition.
- c. The applicant shall submit complete construction plans and building permits shall be issued within ten (10) years from the date of approval by Washoe County. The applicant shall complete construction within the time specified by the building permits. Compliance with this condition shall be determined by the Planning and Building Division.
- d. A note shall be placed on all construction drawings and grading plans stating:

NOTE

Should any cairn or grave of a Native American be discovered during site development, work shall temporarily be halted at the specific site and the Sheriff's Office as well as the State Historic Preservation Office of the Department of Conservation and Natural Resources shall be immediately notified per NRS 383.170.

- e. Prior to the issuance of building or grading permits, the applicant shall submit a noxious weed management plan, developed through consultation with the Washoe County District Health Department, the University of Nevada Cooperative Extension, the Washoe-Storey Conservation District, and/or the US Forest Service. The plan will be implemented on a voluntary compliance basis.
- f. All proposed lighting must adhere to Article 414, *Noise and Lighting Standards* requirements.
- g. All undeveloped disturbed areas shall be revegetated utilizing a native, dryland seed mix as reviewed and approved by the Forest Service. Revegetation shall occur as soon as practicable after construction.
- h. A revegetation plan shall be prepared to address soils and plants to restore project-related ground disturbance. The revegetation plan will be developed in coordination with the Forest Service and will include, at a minimum, appropriate revegetation options, seed mixes and goals for establishing success of revegetation for desirable species, as consistent with management requirement BO 1 in the FEIS.
- i. Prior to the issuance of building or grading permits, the applicant shall submit the geotechnical investigations related to the proposed maintenance building, and Winters Creek Lodge expansion. Final plans must incorporate all recommendations identified in the investigation.
- j. A restoration plan must be submitted to Washoe County Planning for areas that have been graded.
- k. The applicant shall secure any required air quality permits prior to construction.
- l. A revegetation plan must be submitted to Washoe County Planning, the revegetation plan will address soils, and plants to restore project-related ground disturbance.
- m. The following **Operational Conditions** shall be required for the life of the project.
 - i. Failure to comply with the conditions of approval shall render this approval null and void. Compliance with this condition shall be determined by Planning and Building.

- ii. This special use permit shall remain in effect until or unless it is revoked or is inactive for one year.

Washoe County Engineering and Capital Projects

2. The following conditions are requirements of the Engineering Division, which shall be responsible for determining compliance with these conditions.

Contact Name – Leo Vesely, P.E., 775.328.2041, Lvesely@washoecounty.us

- a. A complete set of construction improvement drawings, including an on-site grading plan, shall be submitted when applying for a building/grading permit. Grading shall comply with best management practices (BMP's) and shall include detailed plans for grading, site drainage, erosion control (including BMP locations and installation details), slope stabilization, and mosquito abatement. Placement or removal of any excavated materials shall be indicated on the grading plan. Silts shall be controlled on-site and not allowed onto adjacent property.
- b. All existing and proposed easements shall be shown on the site and/or grading plan.
- c. The applicant shall obtain from the Nevada Division of Environmental Protection a Stormwater Discharge Permit and submit a copy to the Engineering Division prior to issuance of a grading or building permit.
- d. The applicant shall complete and submit the Construction Permit Submittal Checklist and pay the Construction Stormwater Inspection Fee prior to obtaining a grading permit.
- e. A grading bond of \$2,000/acre of disturbed area shall be provided to the Engineering Division prior to any grading revegetation bond shall be provided to the Engineering Division prior to approval of the grading or building permit.
- f. Cut slopes, fill slopes, and berms shall be setback from parcel lines and access easements in accordance with Washoe County Code Article 438, unless otherwise specified/modified by the Washoe County Planning Division.
- g. All slopes steeper than 3:1 shall be mechanically stabilized to control erosion. As an alternative to riprap, an engineered solution (geo-fabric, etc.) may be acceptable.
- h. All disturbed areas left undeveloped for more than 30 days shall be treated with a dust palliative. Disturbed areas left undeveloped for more than 45 days shall be revegetated or mechanically stabilized. Methods and seed mix must be designed by a licensed landscape architect and approved by the County Engineer.

DRAINAGE (COUNTY CODE 110.416, 110.420, and 110.421)

- i. A detailed hydrology/hydraulic report prepared by a licensed engineer shall be submitted to the Engineering Division for review and approval prior to the approval of a grading or building permit. The report shall include the locations, points of entry and discharge, flow rates and flood limits of all 5- and 100-year storm flows impacting both the site and offsite areas and the methods for handling those flows. The report shall include all storm drain pipe and ditch sizing and rip-rap sizing calculations and a discussion of and mitigation measures for any impacts on existing offsite drainage facilities and properties.
- j. Standard reinforced concrete headwalls or other approved alternatives shall be placed on the inlet and outlet of all drainage structures and rip rap shall be used to prevent erosion at the inlets and outlets of all pipe culverts.
- k. The applicant shall provide pretreatment for petrochemicals and silt for all storm drainage from the site.

- I. The maximum permissible flow velocity (that which does not cause scour) shall be determined for all proposed channels and open ditches. The determination shall be based on a geotechnical analysis of the channel soil, proposed channel lining and channel cross section, and it shall be in accordance with acceptable engineering publications/calculations. Appropriate linings shall be provided for all proposed channels and open ditches such that the 100-year flows do not exceed the maximum permissible flow velocity.

TRAFFIC AND ROADWAY (COUNTY CODE 110.436)

Contact Name: Mitch Fink, (775) 328-2050, mfink@washoecounty.us

- m. Verify that any proposed signage meets AASHTO's sight triangle requirements for potential driver's view obstructions at the driveway intersection(s) with Mt. Rose Highway.

*** End of Conditions ***



WASHOE COUNTY
COMMUNITY SERVICES DEPARTMENT
 Planning and Building

1001 EAST 9TH STREET
 RENO, NEVADA 89512-2845
 PHONE (775) 328-6100
 FAX (775) 328.6133

Board of Adjustment Action Order

Special Use Permit Case Number WSUP19-0021

Decision: Approval with Conditions
 Decision Date: December 5, 2019
 Mailing/Filing Date: December 10, 2019
 Applicant: Mt. Rose Development Company
 Assigned Planner: Sophia Kirschenman, Planner
 Washoe County Community Services Department
 Planning and Building Division
 Phone: 775.328.3623
 E-Mail: skirschenman@washoecounty.us

Special Use Permit Case Number WSUP19-0021 (Mt. Rose Water Tank) - For possible action, hearing, and discussion to modify grading and setback standards, vary grading and landscaping standards, and approve major grading to facilitate the construction of a 5-million-gallon water tank for snowmaking purposes at the Mt. Rose Ski Resort. The proposal includes the excavation of ±5,720 cubic yards of earthen material and the disturbance of ±0.9 acres. The subject site is located on privately-owned land and lands owned by the United States Forest Service.

- Applicant: Mt. Rose Development Company
- Property Owners: Mt. Rose Development Company and US Forest Service
- Location: Main access to the site is ±11.4 miles from the intersection of Mt. Rose Hwy and Thomas Creek Rd.
- APNs and Parcel Sizes: 048-112-12: ±340.9 acres; 048-120-22: ±2551.6 acres
- Master Plan: Rural (R); Open Space (OS)
- Regulatory Zone: Parks and Recreation (PR); Open Space (OS)
- Area Plan: Forest
- Citizen Advisory Board: South Truckee Meadows/Washoe Valley
- Development Code: Authorized in Article 810, Special Use Permits and Article 438, Grading Standards
- Commission District: 2 – Commissioner Lucey

Notice is hereby given that the Washoe County Board of Adjustment granted approval with conditions for the above referenced case number based on the findings in accordance with Washoe County Development Code Article 810, Special Use Permit. If no appeals have been filed within 10 calendar days from the Mailing/Filing Date shown on this Action Order, the approval by the Washoe County Board of Adjustment is final. If filed, an appeal stays any further action on the decision until final resolution of the appeal. An appeal shall be filed in accordance with the provisions found in Article 912 of the Washoe County Development Code.

The action was based on the following findings in accordance with Washoe County Code Section 110.810.30:



INTEGRITY



EFFECTIVE COMMUNICATION



QUALITY PUBLIC SERVICE

To: Mt. Rose Development Company
Subject: Special Use Permit Case WSUP19-0021
(Mt. Rose Water Tank)
Date: December 10, 2019
Page: 2

1. Consistency. That the proposed use is consistent with the action programs, policies, standards and maps of the Master Plan and the Forest Area Plan;
2. Improvements. That adequate utilities, roadway improvements, sanitation, water supply, drainage, and other necessary facilities have been provided, the proposed improvements are properly related to existing and proposed roadways, and an adequate public facilities determination has been made in accordance with Division Seven;
3. Site Suitability. That the site is physically suitable for a 5-million-gallon water tank, and for the intensity of such a development;
4. Issuance Not Detrimental. That issuance of the permit will not be significantly detrimental to the public health, safety or welfare; injurious to the property or improvements of adjacent properties; or detrimental to the character of the surrounding area;
5. Effect on a Military Installation. Issuance of the permit will not have a detrimental effect on the location, purpose or mission of the military installation.

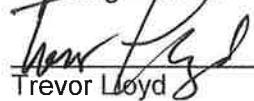
Required Findings for special use permits within the Forest planning area:

- F.2.13 The approval of all special use permits and administrative permits must include a finding that the community character as described in the Character Statement can be adequately conserved through mitigation of any identified potential negative impacts.
- F.12.3 The granting of special use permits in the Forest planning area must be accompanied by a finding that no significant degradation of air quality will occur as a result of the permit. As necessary, conditions may be placed on special use permits to ensure no significant degradation of air quality will occur. The Department of Community Development (now the Community Services Department) will seek the advice and input of the Air Quality Division of the Department of Health in the implementation of this policy.

This Action Order is issued subject to the attached conditions and Washoe County development standards. Please contact the planner assigned to your project at the above-referenced phone number within 7 days of receipt of this Order to review the steps necessary to satisfy the Conditions of Approval. Any business license, certificate of occupancy, or final approval shall not be issued until all of the Conditions of Approval are satisfied. Additionally, compliance shall be required with all federal, state, and local statutes, ordinances, and regulations applicable to the approved project.

This Action Order does not authorize grading or building without issuance of the necessary permits from the Washoe County Planning and Building Division.

Washoe County Community Services Department
Planning and Building Division



Trevor Loyd
Secretary to the Board of Adjustment

TL/SK/df

To: Mt. Rose Development Company
Subject: Special Use Permit Case WSUP19-0021
(Mt. Rose Water Tank)
Date: December 10, 2019
Page: 3

Attachments: Conditions of Approval

Owner/Applicant: Mt. Rose Development Company
22222 Mt. Rose Highway
Reno, NV 89511

Owner: US Forest Service
Attn: William Dunkelberker and Marnie Bonesteel
1200 Franklin Way
Sparks, NV 89431

Consultants CFA, Inc.
Attn: R. David Snelgrove
1150 Corporate Blvd.
Reno, NV 89502

AND

Lumos & Associates
Attn: Ed Thomas
9222 Prototype Drive
Reno, NV 89521

Action Order xc: Mike Large, District Attorney's Office; Tim Simpson, Utilities; Leo Vesely, Engineering and Capital Projects; Charles Moore, Truckee Meadows Fire Protection District; Nevada Division of Environmental Protection, 901 South Stewart Street, Suite. 4001, Carson City, NV 89701-5249; Regional Transportation Commission, Truckee Meadows Regional Planning Agency, Patricia Phillips, South Truckee Meadows/Washoe Valley Citizen Advisory Board



Conditions of Approval

Special Use Permit Case Number WSUP19-0021

The project approved under Special Use Permit Case Number WSUP19-0021 shall be carried out in accordance with the conditions of approval granted by the Board of Adjustment on December 5, 2019. Conditions of approval are requirements placed on a permit or development by each reviewing agency. These conditions of approval may require submittal of documents, applications, fees, inspections, amendments to plans, and more. These conditions do not relieve the applicant of the obligation to obtain any other approvals and licenses from relevant authorities required under any other act.

Unless otherwise specified, all conditions related to the approval of this special use permit shall be met or financial assurance must be provided to satisfy the conditions of approval prior to issuance of a grading or building permit. The agency responsible for determining compliance with a specific condition shall determine whether the condition must be fully completed or whether the applicant shall be offered the option of providing financial assurance. All agreements, easements, or other documentation required by these conditions shall have a copy filed with the County Engineer and the Planning and Building Division.

Compliance with the conditions of approval related to this special use permit is the responsibility of the applicant, his/her successor in interest, and all owners, assignees, and occupants of the property and their successors in interest. Failure to comply with any of the conditions imposed in the approval of the special use permit may result in the institution of revocation procedures.

Washoe County reserves the right to review and revise the conditions of approval related to this special use permit should it be determined that a subsequent license or permit issued by Washoe County violates the intent of this approval.

For the purpose of conditions imposed by Washoe County, "may" is permissive and "shall" or "must" is mandatory.

Conditions of approval are usually complied with at different stages of the proposed project. Those stages are typically:

- Prior to permit issuance (i.e., grading permits, building permits, etc.).
- Prior to obtaining a final inspection and/or a certificate of occupancy.
- Prior to the issuance of a business license or other permits/licenses.
- Some "conditions of approval" are referred to as "operational conditions." These conditions must be continually complied with for the life of the project or business.

FOLLOWING ARE CONDITIONS OF APPROVAL REQUIRED BY THE REVIEWING AGENCIES. EACH CONDITION MUST BE MET TO THE SATISFACTION OF THE ISSUING AGENCY.

Washoe County Planning and Building Division

1. The following conditions are requirements of Planning and Building, which shall be responsible for determining compliance with these conditions.

Contact: Sophia Kirschenman, 775.328.3623, Skirschenman@washoecounty.us

- a. The applicant shall attach a copy of the action order approving this project to all administrative permit applications (including building permits) applied for as part of this special use permit.
- b. The applicant shall demonstrate substantial conformance to the plans approved as part of this special use permit. The Planning and Building Division shall determine compliance with this condition.
- c. The applicant shall submit complete construction plans and building permits shall be issued within eight years from the date of approval by Washoe County. The applicant shall complete construction within the time specified by the building permits. Compliance with this condition shall be determined by the Planning and Building Division.
- d. Prior to the issuance of building or grading permits, the applicant shall submit a noxious weed management plan, developed through consultation with the Washoe County District Health Department, the University of Nevada Cooperative Extension, the Washoe-Storey Conservation District, and/or the US Forest Service. The plan will be implemented on a voluntary compliance basis.
- e. The final environmental impact statement (FEIS) for the Mt. Rose Ski Tahoe Atoma Area Expansion and the final record of decision (ROD) for the water tank include a number of management requirements to mitigate identified environmental impacts. The applicant shall comply with all finalized management requirements related to construction of the water tank, including, but not limited to: compliance with National Historic Preservation Act Section 106 obligations; completion of a fire precaution plan; utilization of a muted color that blends with the forest environment on the water tank; and compliance with revegetation requirements.
- f. All undeveloped disturbed areas shall be revegetated utilizing a native, dryland seed mix as reviewed and approved by the Forest Service. Revegetation shall occur as soon as practicable after construction.
- g. A revegetation plan shall be prepared to address soils and plants to restore project-related ground disturbance. The revegetation plan shall be developed in coordination with the Forest Service and will include, at a minimum, appropriate revegetation options, seed mixes and goals for establishing success of revegetation for desirable species, as consistent with management requirement BO 1 in the FEIS and final ROD.
- h. Prior to issuance of building or grading permits, a full geotechnical investigation must be prepared for the water tank site and final plans must incorporate all recommendations identified in the investigation.
- i. Permits allowing for use of the earthen materials excavated at the water tank elsewhere on the subject site will be required, as necessary, per WCC Article 438, *Grading Standards*.
- j. The applicant shall secure any required air quality permits prior to construction.
- k. A note shall be placed on all construction drawings and grading plans stating:

NOTE

Should any cairn or grave of a Native American be discovered during site development, work shall temporarily be halted at the specific site and the Sheriff's Office as well as the State Historic Preservation Office of the Department of Conservation and Natural Resources shall be immediately notified per NRS 383.170.

- i. The following **Operational Conditions** shall be required for the life of the development:
 - i. Failure to comply with the conditions of approval shall render this approval null and void. Compliance with this condition shall be determined by Planning and Building.

Washoe County Engineering and Capital Projects

2. The following conditions are requirements of the Engineering Division, which shall be responsible for determining compliance with these conditions.

Contact: Leo Vesely, P.E., 775.328.2041, Lvesely@washoecounty.us

- a. A complete set of construction improvement drawings, including an on-site grading plan, shall be submitted when applying for a building/grading permit. Grading shall comply with best management practices (BMPs) and shall include detailed plans for grading, site drainage, erosion control (including BMP locations and installation details), slope stabilization, and mosquito abatement. Placement or removal of any excavated materials shall be indicated on the grading plan. Silts shall be controlled on-site and not allowed onto adjacent property.
- b. The applicant shall provide permanent easements or right-of-entry documentation for construction and maintenance of facilities that fall on the U.S. Forest Service owned parcel. A copy of the document(s) shall be submitted to the Engineering Division prior to issuance of a building permit.
- c. All existing and proposed easements shall be shown on the site and/or grading plan.
- d. Appropriate drainage facilities for tank overflow and drainage shall be extended to a natural or improved drainage system.
- e. The applicant shall obtain from the Nevada Division of Environmental Protection a Stormwater Discharge Permit and submit a copy to the Engineering Division prior to issuance of a grading or building permit.
- f. The applicant shall complete and submit the Construction Permit Submittal Checklist and pay the Construction Stormwater Inspection Fee prior to obtaining a grading permit.
- g. A grading bond of \$2,000/acre of disturbed area shall be provided to the Engineering Division prior to approval of the grading or building permit.
- h. Cut slopes, fill slopes, and berms shall be setback from parcel lines and access easements in accordance with Washoe County Code Article 438, unless otherwise specified/modified by the Washoe County Planning Division.
- i. All slopes steeper than 3:1 shall be mechanically stabilized to control erosion. As an alternative to riprap, an engineered solution (geo-fabric, etc.) may be acceptable.
- j. All disturbed areas left undeveloped for more than 30 days shall be treated with a dust palliative. Disturbed areas left undeveloped for more than 45 days shall be revegetated or mechanically stabilized. Methods and seed mix must be designed by a licensed landscape architect and approved by the County Engineer.
- k. A detailed hydrology/hydraulic report prepared by a licensed engineer shall be submitted to the Engineering Division for review and approval prior to the approval of a grading or building permit. The report shall include the locations, points of entry and discharge, flow rates and flood limits of all 5- and 100-year storm flows impacting both the site and offsite areas and the methods for handling those flows. The report shall include all storm

drain pipe and ditch sizing and rip-rap sizing calculations and a discussion of and mitigation measures for any impacts on existing offsite drainage facilities and properties.

- I. The maximum permissible flow velocity (that which does not cause scour) shall be determined for all proposed channels and open ditches. The determination shall be based on a geotechnical analysis of the channel soil, proposed channel lining and channel cross section, and it shall be in accordance with acceptable engineering publications/calculations. Appropriate linings shall be provided for all proposed channels and open ditches such that the 100-year flows do not exceed the maximum permissible flow velocity.

Washoe-Storey Conservation District

3. The following conditions are requirements of the Washoe-Storey Conservation District, which shall be responsible for determining compliance with these conditions.

Contact: Jim Shaffer, shafferjam51@gmail.com

- a. A revegetation monitoring plan shall be in place for at least three years to ensure that revegetation success criteria (as determined by the U.S. Forest Service) are met. Photos shall be sent to the Washoe County Planning Division and to the Washoe-Storey Conservation District one year and three years after hydroseeding applications to demonstrate compliance with revegetation goals.

Truckee Meadows Fire Protection District

4. The following conditions are requirements of the Truckee Meadows Fire Protection District (TMFPD), which shall be responsible for determining compliance with these conditions.

Contact: Don Coon, 775.326.6077, dcoon@tmfpd.us

- a. Fire protection of the new structures shall be as required by the current adopted International Fire Code, (IFC) 2012 and International Wildland Urban Interface Code (IWUIC) 2012 Ed., with amendments and the requirements of the NFPA standard(s).
- b. A draft fire hydrant and fire apparatus access road shall be provided to within 150 ft. of the proposed water tank or the existing water tank. The road shall have adequate turnaround at the tank and shall be a minimum of 26 ft. wide at the hydrant location, pursuant to IFC Chapter 5 and IFC Appendices B, C, and D.

*** End of Conditions ***