City of Ketchum
Planning & Building

STAFF REPORT
KETCHUM PLANNING AND ZONING COMMISSION
REGULAR MEETING OF JULY 11, 2023

PROJECT:	Miller Residence
FILE NUMBER:	P22-046 and P22-046A
APPLICATION TYPE:	Mountain Overlay Design Review and Conditional Use Permit
REPRESENTATIVE:	Aaron Bunse – Studio DVLP, LLC (architect)
PROPERTY OWNER:	Paramount Property Development LLC
REQUEST:	Mountain Overlay Design Review application for the development of a new 3,745 square foot single-family residence. A Conditional Use Permit application is also requested for the avalanche retaining wall located at the rear of the proposed residence.
LOCATION:	219 Hillside Drive (Lot 9, Block 5, Warm Springs Valley Subdivision)
ZONING:	Limited Residential (LR) & Mountain Overlay (MO)
REVIEWER:	Paige Nied – Associate Planner
NOTICE:	A public hearing notice for the project was mailed to all owners of property within 300 feet of the project site and all political subdivisions on May 24, 2023. The public hearing notice was published in the Idaho Mountain Express on May 24, 2023. A notice was posted on the project site and the city's website on June 6, 2023. Story poles were documented on the project site as of June 6, 2023. The project was heard at the June 13, 2023, meeting of the Planning & Zoning Commission and continued to a regular meeting on July 11, 2023.

I. EXECUTIVE SUMMARY:

The Planning and Zoning Commission reviewed the proposed development during their June 13, 2023, meeting (See Attachment I for the staff report). At the meeting, concerns were raised by the public regarding the project's site-specific avalanche report and the deflection that would occur to adjacent properties from the avalanche flow. Further concerns were raised about the proposed can exterior lighting fixtures.

Upon review of the application materials, staff and applicant presentation, and public comment, the Commission requested the following information from the applicant:

- Additional information on the avalanche retaining wall pertaining to roof pitches and avalanche flow deflection.

The applicant has provided additional documentation and a revised development proposal (Attachment B) to address comments provided by the Commission. The following documents and development changes include:

- A clarification letter to accompany the site-specific avalanche report from Alpine Enterprises Inc.
- Revised grading plan for the site.
- Revised architectural drawing which indicates a higher exposed avalanche wall height.
- The removal of the exterior lighting fixtures on the third-story patio (indicated as Type L3 on the original plan set).

Staff was supportive of the initial application and believes the applicant has adequately addressed the Commission's concerns and requests for clarifications. The Snow Hazard Avalanche Evaluation clarifications letter, dated June 23, 2023, produced by Alpine Enterprises Inc. provides a detailed analysis of the methods used and findings in the site-specific avalanche report for the project. Further, it presents three different avalanche scenarios which all indicate that the proposed development does not increase the danger to adjacent properties, compared to the existing danger if the development were not constructed.

II. BACKGROUND:

The Planning and Building Department received the Mountain Overlay Design Review and Conditional Use Permit applications for the project on July 7, 2022. Following the receipt of the applications, staff routed the application materials to all city departments for review. The applications were reviewed concurrently, and the applications were deemed complete on May 19, 2023, after three rounds of review.

III. CONFORMANCE WITH ZONING AND DESIGN REVIEW STANDARDS:

Prior to granting Design Review approval, the Commission must determine that the application meets two criteria: (1) the project doesn't jeopardize the health, safety, or welfare of the public, and (2) the project conforms to all Design Review standards and zoning regulations (KMC §17.96.050.A).

Criteria #1: Health, Safety, and Welfare of the Public

The 2014 Comprehensive Plan contains the community's vision for Ketchum and sets goals and policies to guide future development. The vision is shaped by 10 core values identified by Ketchum residents as important to consider for all future land uses decisions. The community's core values include protecting the community character of Ketchum and preserving its environmental quality and scenic beauty. Ketchum's undeveloped hillsides are visual assets that define the character of our community. Protecting and preserving Ketchum's natural resources is critical to maintaining our economy, quality of life, and community identity. Staff reviewed the goals and policies of the comprehensive plan related to hillside development as well as the future land use map against the proposed project. With the new documentation provided for the project's applications, staff's analysis of the criteria has not changed. During the June 13th meeting, the Commission did not raise concerns regarding the project's conformance with the Comprehensive plan.

Criteria #2: Applicable Standards and Criteria

Conformance with Design Review Improvements and Standards

The initial exterior lighting plan included can lighting fixtures on the third-story patio. These fixtures were reviewed by staff and were in compliance with Dark Sky requirements. However, during the June 13th meeting, a public comment was made from a neighboring property owner stating that despite the patio's dark sky compliance, the lighting would still be downward casting and visible due to the property's elevation above surrounding structures. The revised exterior lighting plan removed the can lighting fixtures (indicated as Type L3 on the original lighting plans) from the third-story patio. The applicant wishes to explore other exterior lighting fixture options for the patio that will have less of a visual impact on neighboring properties from the structure's higher elevation. To ensure adequate lighting is proposed, staff recommend condition of approval #5 which requires the applicant to submit a lighting plan for the third story patio and a narrative explaining how the proposed lighting fixtures achieve minimal visual impact on adjacent lower elevation properties. Final review and approval of exterior lighting will take place prior to issuance of a building permit. The project remains in conformance with all other Design Review improvements and standards requirements.

Conformance with Mountain Overlay Standards

The proposed changes do not impact the project's conformance with the Mountain Overlay Design Review standards for the project. The project remains in conformance with all Mountain Overlay development standards.

Conformance with Zoning Regulations

The proposed changes do not impact the project's conformance with the zoning regulations, including dimensional standards, for the project. The project remains in conformance with all zoning requirements.

IV. CONFORMANCE WITH CONDITIONAL USE PERMIT STANDARDS

Following the June 13th Planning and Zoning meeting, the Commission requested that the applicant provide additional information on the avalanche retaining wall pertaining to roof pitches and avalanche flow deflection. The applicant provided a Snow Avalanche Hazard Evaluation clarification letter from Alpine Enterprises Inc., dated June 23, 2023, which provides a detailed analysis of the methods used and findings of their site-specific avalanche study for the proposed development. Below is an overview of the letter's highlights:

- All adjacent properties are subject to avalanche danger independent of the proposed development. The downslope properties of the proposed development 213 and 215 Hillside Drive were not constructed with avalanche protection devices. The adjacent property to the east, 223 Hillside Drive, was constructed with an avalanche retaining wall and Alpine Enterprises Inc. consulted on the avalanche protection of this structure.
- The properties located directly downslope of the proposed development were required to be included in the avalanche study. This is because any property not directly in the modeled avalanche path is still assumed to be located within the high avalanche hazard areas depicted in the 1977 Wilson and 1978 Mears avalanche studies, unless superseded by a site-specific evaluation.
- The evaluation standard relied on for the project's avalanche study is determining whether the proposed development increases avalanche danger to adjacent properties compared to the existing danger if the development were not constructed.

- Alpine Enterprises Inc. utilizes a 300-year design event (0.33% annual chance) in an attempt to account for the inherent variabilities associated with avalanches, snowfall, and snowpacks. Many other fields rely on the 100-year design event, but they've found that the more conservative 300-year event better represents the potential avalanche hazards in the region because it assumes greater avalanche release volumes, release depths, and flow heights than would be used in a 100-year design event.
- The study utilizes three different avalanche scenarios modeled to the same 300-year avalanche design event with the same release volume and the same friction and turbulence parameters. All the scenarios depict the anticipated pre- and post-development maximum avalanche flow velocities for the 300-year design event, and in each situation the model demonstrates that the proposed development does not increase avalanche hazards to adjacent properties.
- The ski jump concerns raised at the June 13th meeting are not valid because it would require a significantly larger avalanche path with higher flow velocities, but in the location of the proposed development the existing site conditions and the structural design will limit the hazards associated with airborne runout debris exclusively to the subject property.
- The avalanche event included in the study contains only one of multiple avalanche paths in the area and the likelihood of the model avalanche releasing at a 300-year magnitude solely in the path evaluated would be rare. In this type of situation, the adjacent avalanche paths would have a high probability of sliding simultaneously.
- Since the June 13th Planning and Zoning meeting, the civil and architectural plans have been revised to indicate the uphill grade north of the proposed foundation has been lowered in order to expose more of the vertical foundation wall to increase avalanche safety to surrounding properties.

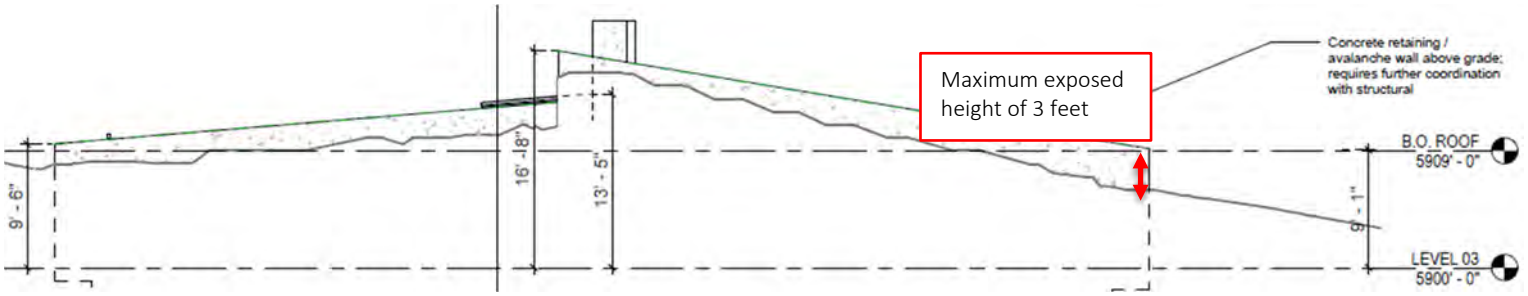
As shown circled in red in the revised civil plans below (Figure 1), the uphill grade north of the foundation has been lowered in order to expose more of the vertical foundation wall. This was done to increase avalanche safety to the proposed structure and surrounding properties by having a higher exposed wall to mitigate avalanche forces. However, as explained by Alpine Enterprises Inc. during the June 13th meeting, in winter seasons when avalanches occur much of this wall will be covered by snow on the ground. The entirety of the retaining wall (which is built vertically into the hillside), roof design, and regrading uphill above the wall are cohesive elements to the design which will protect the structure and adjacent structures from avalanche forces.

Figure 1: Revised Grading for the Avalanche Retaining Wall

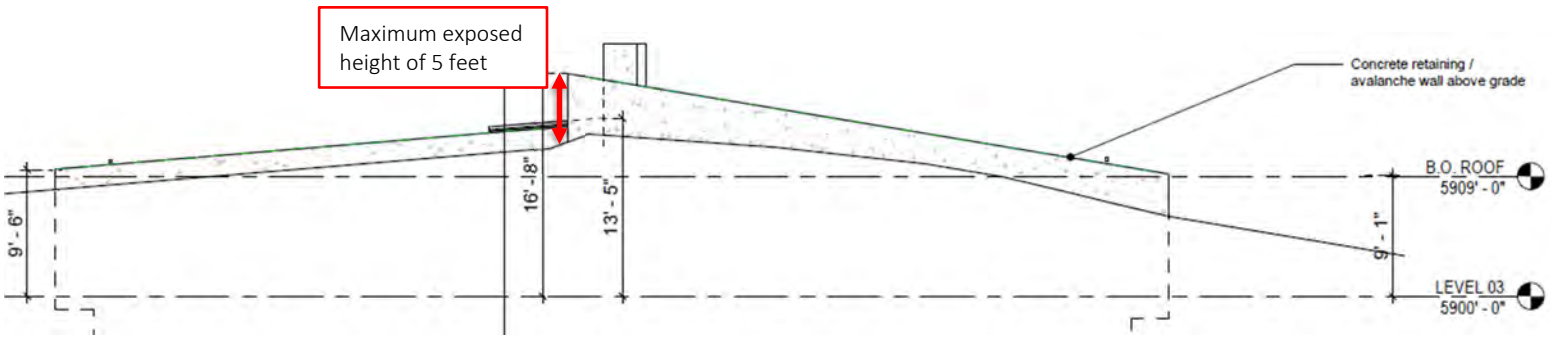
The revised architectural plans, as shown on the north elevation in Attachment B, reflect the wall's exposed height as a result of the change in grading. Please see Figure 2 below for a comparison of the architectural plan's previous and revised illustration of the avalanche retaining wall's exposed height from the north elevation. Previously, the wall had a maximum exposed height of 3 feet above grade (indicated below in red) and the revised plans indicate that the wall's maximum exposed height is 5 feet above grade (indicated below in red).

Figure 2: North Elevation Avalanche Retaining Wall Comparison

Previous North Elevation



Revised North Elevation



On July 5th, 2023, the Planning and Building Department received a new public comment letter for the project which expressed concerns regarding increased avalanche risks to adjacent properties and questioned the validity 300-year avalanche design event methodology used by Alpine Enterprises Inc. in their site-specific avalanche study for the project. The letter states that planning and zoning departments across the west have abandoned 300-year planning models due to the increased frequency of extreme weather events from climate change and referenced various articles to this effect. To get a better understanding of this information, staff conducted independent research of the referenced articles including web searches and outreach to the referenced news outlets but were unsuccessful in locating the specific articles. Based on the titles and year of reference articles, staff believe these to be references of floodplain modeling, not necessarily all types of modeling efforts conducted by cities for risk management. Floodplain and avalanche event modeling differ significantly and use different calculations for determining probabilities and corresponding outcomes. Therefore, staff believe the model approach to be sufficient for our evaluation purposes.

The public comment letter also included a letter from David Hamre of David Hamre and Associates, LLC, an avalanche professional based out of Anchorage, Alaska. To gain a better understanding of Mr. Hamre's comments, staff contacted him with follow-up questions. Mr. Hamre confirmed he is an avalanche professional, however, not a certified engineer. He also confirmed that his review of the information was cursory and that he did not review the supplemental letter provided by Alpine Enterprises Inc. prior to issuing his comment letter.

Upon review of the Snow Avalanche Hazard Evaluation clarification letter, research, and interviews, staff believes that the concerns raised by the Commission and public have been addressed. Alpine Enterprises Inc. has produced the majority of site-specific avalanche studies for hillside properties in Ketchum and the organization has a wealth of local knowledge and expertise. Therefore, staff continues its recommendation of approval for the 219 Hillside Drive applications.

STAFF RECOMMENDATION

Staff recommends **approval** of the Design Review application (File No. P22-046) subject to the following conditions:

1. This Design Review approval is based on the project plans presented at the July 11, 2023, Planning and Zoning Commission meeting. The project plans for all on-site improvements submitted for the building permit must conform to the approved design review plans unless otherwise approved in writing by the Planning and Zoning Commission or Administrator. Any building or site discrepancies which do not conform to the approved plans will be subject to review by the Commission and/or removal.
2. The applicant shall submit final civil drawings prepared by an engineer registered in the State of Idaho which include specifications for right-of-way, circulation design, utilities, and drainage improvements for review and approval by the City Engineer, Streets, and Utilities departments prior to issuance of a building permit for the project.
3. The term of Design Review approval shall be twelve (12) months from the date that the Findings of Fact, Conclusions of Law, and Decision are adopted by the Commission or upon appeal, the date the approval is granted by the Council subject to changes in zoning regulations.
4. In addition to the requirements set forth in this Design Review approval, this project shall comply with all applicable local, state, and federal laws.

5. Prior to issuance of a building permit, the applicant shall submit a lighting plan for the third-story patio and a narrative explaining how the proposed lighting fixtures achieve minimal visual impact on adjacent lower elevation properties.

Staff recommends **approval** of the Conditional Use Permit application (File No. P22-046A) subject to the following conditions:

1. This conditional use permit approval is based on the project plans presented at the July 11, 2023, Planning and Zoning Commission meeting. Building Permit Plans must conform to the approved plans unless otherwise approved in writing by the Commission or the Planning and Zoning Administrator. Any building or site discrepancies which do not conform to the approved plans will be subject to removal.
2. This Conditional Use Permit is not transferable from one parcel of land to another.
3. The conditional use permit is subject to all conditions of approval associated with Design Review approval P22-046.
4. The term of this Conditional Use Permit shall be that of Design Review approval P22-046. In the event the Design Review approval expires, this Conditional Use Permit approval shall also expire and become null and void.

V. RECOMMENDED MOTIONS

Design Review:
"I move to approve the 219 Hillside Drive Mountain Overlay Design Review application, as conditioned, and direct staff to return with the findings of fact."

Conditional Use Permit:
"I move to approve the 219 Hillside Drive Conditional Use Permit application, as conditioned, and direct staff to return with the findings of fact."

ATTACHMENTS:

A. Mountain Overlay Design Review - Application and Supplemental Documents
B. Mountain Overlay Design Review Plan Set
C. Conditional Use Permit – Application Materials and Supplemental Documents
D. Conditional Use Permit Plan Set
E. Design Review Standards Analysis
F. Mountain Overlay Design Review Standards Analysis
G. Zoning and Dimensional Standards Analysis
H. Conditional Use Permit Standards Analysis
I. Staff Report – June 13, 2023 Planning and Zoning Meeting
J. New Public Comment
K. Public Comment From June 13, 2023 Planning and Zoning Meeting

City of Ketchum

Attachment A:

Mountain Overlay Design Review – Application Materials and Supplemental Documents

City of Ketchum
Planning & Building

OFFICIAL USE ONLY
File Number:
Date Received:
By:
Fee Paid:
Approved Date:
Denied Date:
By:

Mountain Overlay Design Review Application

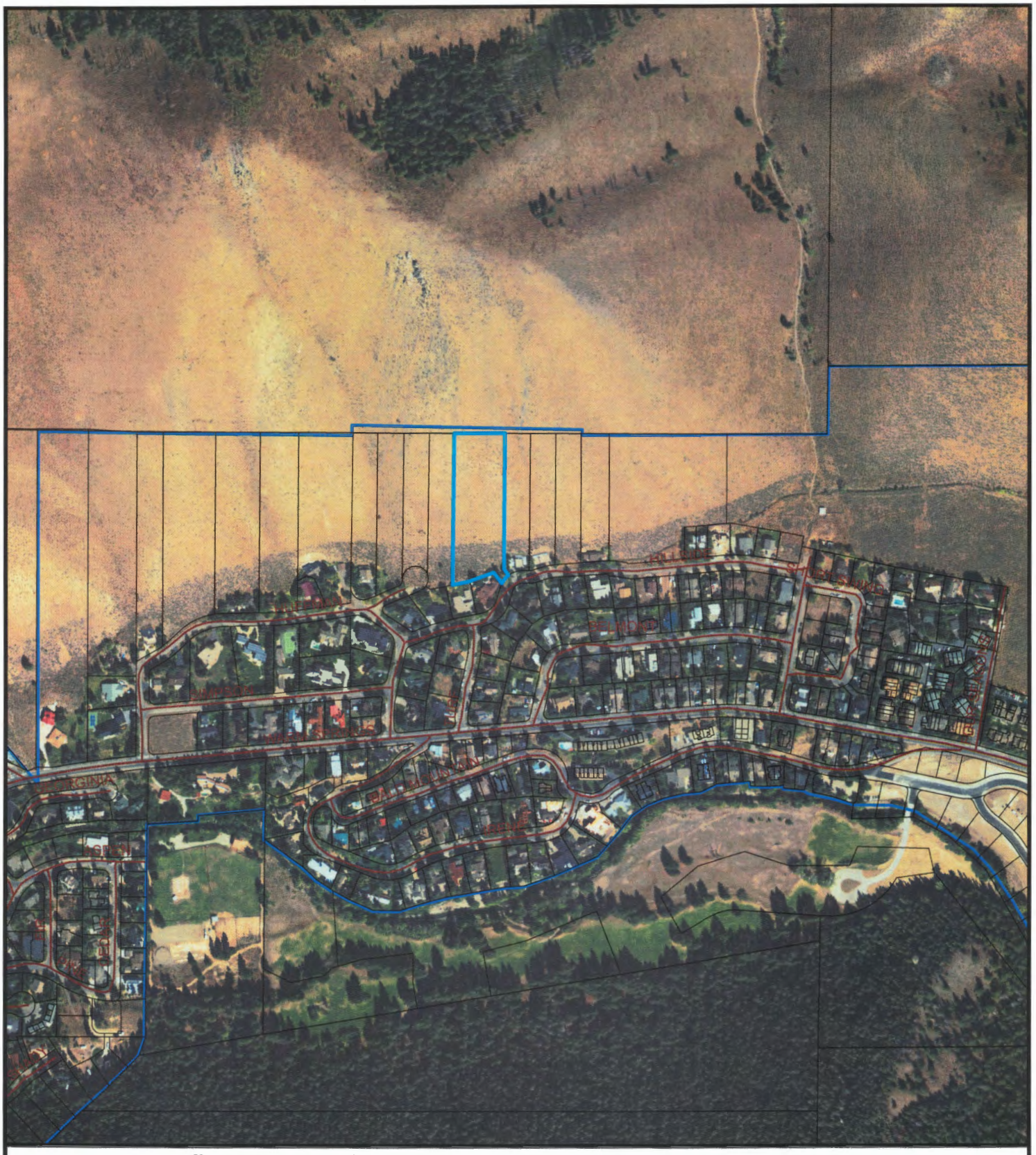
OWNER INFORMATION			
Project Name: Miller Residence, 219 Hillside Dr.			
Owner Name: Paramount Property Development LLC.			
Mailing Address: 2359 Pole Line Rd. E., Twin Falls, ID, 83301			
Phone: (314) 452-4993			
Email: kmiller187@yahoo.com			
PROJECT INFORMATION			
Architect/Representative: Studio DVLP - Aaron Bunse			
Phone: (314) 265-8799			
Mailing Address: 1905 Marconi Ave., St. Louis, MO 63110			
Email: aaron@studiodvlp.com			
Engineer of Record: Alex Nelson, PE - Alpine Enterprises Inc.			
Engineer Email: alexnelson@alpineenterprisesinc.com			
Legal Land Description: Warm Springs Valley Subdivision, Block 5, Lot 9			
Project Address: 219 Hillside Drive			
Lot Area: 111,849 Sq. Ft. - 2.57 Ac.			
Zoning District: Limited Residential District (LR)			
Anticipated Use: Single-Family Residential			
Number of Residential Units: 1			
TYPE OF CONSTRUCTION			
☑ New	☐ Remodel	☐ Addition	☐ Other, please explain:

TOTAL FLOOR AREA			
Proposed		Existing	
Basement: N/A			
1st Floor: 997 Sq. Ft.			
2nd Floor: 1,796 Sq. Ft.			
3rd Floor: 2,099 Sq. Ft.			
Decks: 000 Sq. Ft.			
Mezzanine: N/A			
Total: 4,892 Sq. Ft.			
Building Coverage: 3,745 Sq. Ft. 3.4 %		Curb Cut: NA SF % See ROW Application	
PROPOSED SETBACKS			
Front: 15.00'	Side: 18.33'	Side: 18.33'	Rear: 20.00'
ADDITIONAL INFORMATION			
Building Height: 40'-0"		Parking Spaces Provided: 2 Car Garage = 2 On-Site	
Will Fill or Excavation Be Required? (Yes) No			
If Yes, Amount in Cubic Yards Fill: 60 CY Excavation: 1300 CY			
Will Existing Trees or Vegetation Be Removed? (Yes) No			

Applicant agrees in the event of a dispute concerning the interpretation or enforcement of the Mountain Overlay Design Review Application, in which the City of Ketchum is the prevailing party, to pay reasonable attorney fees, including attorney fees on appeal, and expenses of the City of Ketchum. I, the undersigned, certify that all information submitted with and upon this application form is true and accurate to the best of my knowledge and belief.

Representative's Signature — Bruce Smith, PLS 7048, Alpine Enterprises Inc. — Date: 01MAY23

Once your application has been received, we will review it and contact you with next steps. No further action is required at this time.



N
W E
S

0 100200 400
Feet
1 inch = 500 feet

A Vicinity Map Showing
Lot 9, Block 5, Warm Springs Valley Sub.
219 Hillside Dr.
City of Ketchum
Blaine County, Idaho

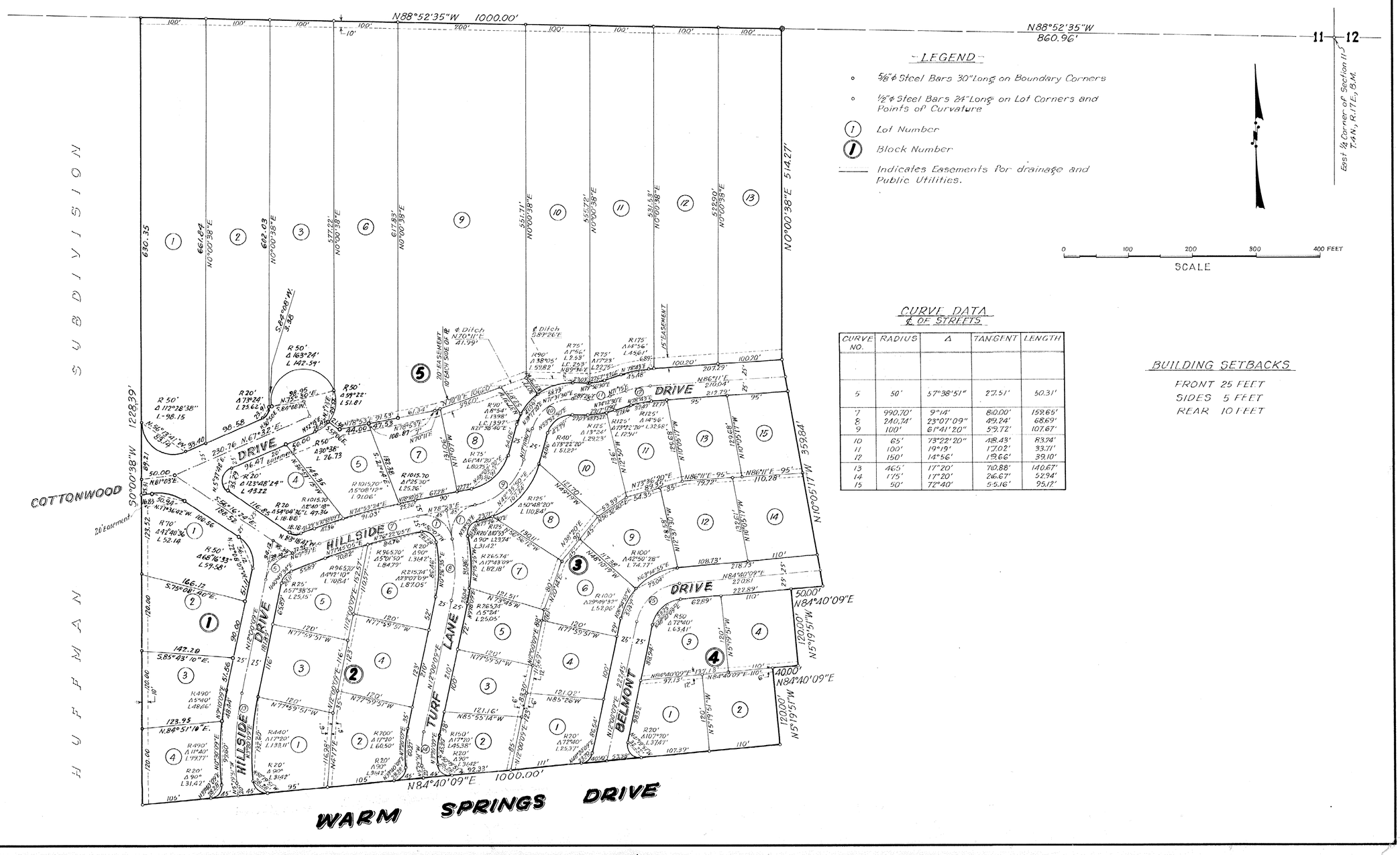
ALPINE ENTERPRISES INC.
PO Box 2037
660 Bell Drive, Unit1
Ketchum, Idaho
208-727-1988

May 2022

WARM SPRINGS VALLEY SUBDIVISION

PART OF THE SE¼ OF SECTION 11, T.4N., R.17E., B.M., BLAINE COUNTY, IDAHO.

HOFFMANN-FISKE & MILAR — CONSULTING ENGINEERS



LEGEND

- ○ 5/8"ϕ Steel Bars 30" Long on Boundary Corners
- ○ ½"ϕ Steel Bars 24" Long on Lot Corners and Points of Curvature
- (1) Lot Number
- (1) Block Number
- ——— Indicates Easements for drainage and Public Utilities.

CURVE DATA & OF STREETS

CURVE NO.	RADIUS	Δ	TANGENT	LENGTH
5	50'	57°38'51"	27.51'	50.31'
7	990.70'	9°11'	810.00'	159.65'
8	240.74'	23°07'09"	491.24'	68.69'
9	100'	61°41'20"	5'9.72'	107.67'
10	65'	73°22'20"	48.43'	83.24'
11	100'	19°19'	17.02'	33.71'
12	150'	14°56'	19.66'	39.10'
13	465'	17°20'	710.88'	140.67'
14	175'	17°20'	246.67'	52.94'
15	50'	72°40'	5:5.16'	95.12'

BUILDING SETBACKS

FRONT 25 FEET
SIDES 5 FEET
REAR 10 FEET

Mountain Overlay Design Narrative

219 Hillside Drive,
Ketchum, ID 83340
11/15/2022
Rev. 04/27/2023 (revisions in red, bold italics)

17.104.070 - Mountain Overlay design review.

Design review applications shall be made and processed according to the regulations contained in chapter 17.96 of this title and as follows:

A. *Criteria and standards.* The following list of criteria and those contained in chapter 17.96 of this title must be considered and addressed by each applicant seeking design review approval. The Commission will use this list of design review criteria along with that contained in chapter 17.96 of this title as a basis to determine whether a project is to be approved, approved with conditions or denied:

1. There shall be no building on ridges or knolls which would have a material visual impact on a significant skyline visible from a public vantage point entering the City or within the City. "Material", as the term is used herein, shall be construed in light of the magnitude of the negative impact on the objectives of this section;

The project is not on a ridge or knoll and will not have a visual impact on the skyline.

2. Building, excavating, filling and vegetation disturbance on hillsides which would have a material visual impact visible from a public vantage point entering the City or within the City shall be minimized. "Material", as the term is used herein, shall be construed in light of the magnitude of the negative impact on the objectives of this section;

This project will not have a visual impact visible from a public vantage point entering the City.

3. Driveway standards as well as other applicable standards contained in title 12, chapter 12.04 of this Code shall be met;

Driveway standards will be met.

04/27/2023 – Driveway standards are met with revisions, see revised drawings.

4. All development shall have access for fire and other emergency vehicles to within 150 feet of the furthest exterior wall of any building;

Building has access.

04/27/2023 – Development has access as required.

5. Significant rock outcroppings shall not be disturbed;

Project will not disturb significant outcroppings.

6. International Building Code (IBC) and International Fire Code (IFC) and Ketchum Fire Department requirements shall be met;

Project will meet IBC and IFC requirements.

04/27/2023 – Project will comply with requirements.

7. Public water and sewer service shall comply with the requirements of the City;

Project will meet public water and sewer services.

8. Drainage shall be controlled and maintained to not adversely affect other properties;

Drainage will be controlled appropriately.

9. Cuts and fills allowed for roadways shall be minimized; lengths of driveways allowed shall be minimized; all cuts and fills shall be concealed with landscaping, revegetation and/or natural stone materials. Revegetation on hillsides with a clear zone of 30 feet around all structures is recommended. Said clear zone shall include low combustible irrigated vegetation with appropriate species, on file with the Ketchum Planning Department. Revegetation outside of this clear zone should be harmonious with the surrounding hillsides;

Cuts and fills and driveway lengths will be minimized. Project team will work with City of Ketchum for an appropriate landscaping plan that is in line with standards for fire prevention.

10. Are there other sites on the parcel more suitable for the proposed development in order to carry out the purposes of this section;

Private residence is located in most suitable spot on the parcel.

11. Access traversing 25 percent or greater slopes does not have significant impact on drainage, snow and earthslide potential and erosion as it relates to the subject property and to adjacent properties;

Project will limit impact on adjacent properties.

12. Utilities shall be underground;

Utilities will be underground.

13. Limits of disturbance shall be established on the plans and protected by fencing on the site for the duration of construction;

Fencing will be used during construction.

14. Excavations, fills and vegetation disturbance on hillsides not associated with the building construction shall be minimized; and

Site disturbance will be minimized.

15. Preservation of significant landmarks shall be encouraged and protected, where applicable. A significant landmark is one which gives historical and/or cultural importance to the neighborhood and/or community.

No significant landmark is on this site.

16. Encroachments of below grade structures into required setbacks are subject to subsection 17.128.020.K of this title and shall not conflict with any applicable easements, existing underground structures, sensitive ecological areas, soil stability, drainage, other sections of this Code or other regulating codes such as adopted International Code Council Codes, or other site features concerning health, safety, and welfare.

Project will comply.

B. *Application information.* Information to be submitted with the application shall include, but not be limited to, topography of sufficient detail to represent slope of land, significant rock outcrops, cuts and fills required and similar features; elevations of proposed building pads and public streets providing access, private access drives; preliminary utility extension plans, drainage plans and driveway plans; and description of proposed drilling or blasting, if any. On site information may be required prior to any on site visit to the subject property by the Commission. Such information may include stakes marking boundaries of buildings, centerlines of access drives or other elements of the proposal, and/or poles illustrating proposed heights of structures, and also may include recent photographs evidencing impact(s) of the proposed development from various vantage points.

C. *On site review.* On site review by the members of the Commission is required prior to taking action on said design review application. Extreme weather conditions or inordinate depth of snow may cause the Commission to delay said on site review not more than 180 days.

NO. 40785 THE UNITED STATES TO AUGUST T. FARNLUND.

PATENT.

Hailey 010576. THE UNITED STATES OF AMERICA,

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING?

WHEREAS, a Certificate of the Register of the Land Office at Hailey, Idaho, has been deposited in the General Land Office, whereby it appears that, pursuant to the Act of Congress of May 20, 1862, "To Secure Homesteads to Actual Settlers on the Public Domain," and the acts supplemental thereto, the claim of August T.Franlund has been established and consummated, in conformity of law, for the H.E.Survey No. 292, embracing a protion of Township four north of Range seventeen east of the Boise Meridian, Idaho, more particularly bounded and described as follows: Beginning at corner No. 1 from which the southwest corner of Section twelve, said Township and Range, bears south twelve minutes west five and ninety-five-hundredths chains distant; thence north twelve minutes east fourteen and five- hundredths chains to corner No. 2; thence west forty chains to corner No3; thence south twelve minutes west twenty chains to corner No.4; thence west sixteen and seventy nine- hundredths chains to corner No. 5; thence south forty four degrees west two and sixty one-hundredths chains to corner No. 6; thence north forty six degrees west one and ninety four-hundredths chains to corner No.7; thence south twelve minutes west twenty and thirty two-hundredths chains to corner. no.8; thence north forty four degrees fifty two minutes east twenty eight chains to corner No. 9; thence north eighty degrees nine minutes east forty one and seven hundredths chains to corner No. 1, the place of beginning; containing ninety one and thirty three hundredths acres, according to the Official Plat of the Survey of the said Land, returned to the General Land Office by the Surveyor General:

NOW KNOW YE, That there is, therefore, granted by the United States unto the said claimant the tract of Land above described; TO HAVE AND TO HOLD the said tract of Land, with the appurtenances thereof, unto the said claimant and to the heirs and assigns of the said claimant forever; subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights, as may be recognized and acknowledged by the local customs, laws and decisions of courts; and there is reserved from the lands hereby granted, a right of way thereon for ditches or canals constructed by the authority of the United States.

IN TESTIMONY WHEREOF, I, Woodrow Wilson President of the United States of America, have caused these letters to be made Patent, and the Seal of the General Land Office to be hereunto affixed.

GIVEN Under my hand, at the City of Washington, the twenty first day of August in the year of our Lord one thousand nine hundred and eighteen and of the Independence of the United States the one hundred and forty third.

By the President: Woodrow Wilson

By M.P.LeRoy, Secretary.

(SEAL) L.Q.C.Lamar

RECORDED: Patent Number 645191 Recorder of the General Land Office.

Recorded at the Request of A.T.Farnlund at 3:10 o'clock P.M. September 21, 1918.

7

Geo.A.McLeod

County Recorder.

CERTIFICATE OF OWNERS

KNOW ALL MEN BY THESE PRESENTS: That we the undersigned are the owners of the property hereinafter described: A part of the SE¼ of Section 11, T.4N., R.17E., B.M., Blaine County, Idaho; more particularly described as follows; Commencing at the ¼ Corner common to Sections 11 & 12, T.4N., R.17E., B.M., thence N88°52'35"W 860.96 feet to the Real Point of Beginning:—

thence N88°52'35"W 1000.00 feet to an iron pin;
thence S0°00'38"W 1228.39 feet to an iron pin;
thence N84°40'09"E 1000.00 feet to an iron pin;
thence N 5°19'51"W 120.00 feet to an iron pin;
thence N84°40'09"E 40.00 feet to an iron pin;
thence N 5°19'51"W 120.00 feet to an iron pin;
thence N84°40'09"E 50.00 feet to an iron pin;
thence N10°05'17"W 359.84 feet to an iron pin;
thence N0°00'38"E 514.27 feet to the Real Point of Beginning; that it is the intention of the undersigned to and they do hereby include said land in this plat; that the undersigned does by these presents dedicate to the public for public use forever all streets as shown on this plat. The easements shown on said plat are not dedicated to the public, but the right to use said easements is hereby perpetually reserved for public utilities and for such other uses as designated hereon, and no structures other than for such utility purposes are to be erected within the lines of said easements.

WARM SPRINGS VALLEY INC.

Herbert S. Edwards
PRESIDENT

A.R. Sweetland
SECRETARY

ACKNOWLEDGMENT

STATE OF IDAHO
COUNTY OF BLAINE } ss

On this 7 day of Sept, 1963, before me, the undersigned, a Notary Public in and for said State, personally appeared Herbert S. Edwards & A.R. Sweetland, known to me to be the President of the Company that executed the foregoing dedication and acknowledged to me that such Corporation executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

My Commission expires 3-31-67

R.V. McCoy
Notary Public, State of Idaho

VILLAGE ACCEPTANCE

By resolution duly adopted, the foregoing plat was duly accepted and approved by the Village Board of the Village of Ketchem, Idaho, this _____ day of _____, 1963.

_____
Chairman of the Board.

#199580
11/18/1963

CERTIFICATE OF ENGINEER

This is to certify that I, Jean Milar, a Registered Professional Engineer, made the survey of the land as described in the Certificate of Owners and designated herein as "Warm Springs Valley Subdivision," and that this plat is a true and correct representation of said survey as made and staked by me on said land.

Jean Milar

REGISTERED PROFESSIONAL ENGINEER 784 Sept 63 STATE OF IDAHO JEAN MILAR

ACKNOWLEDGMENT

STATE OF IDAHO
COUNTY OF TWIN FALLS } ss

On this 2nd day of September, 1963, before me, the undersigned, a Notary Public in and for said State, personally appeared Jean Milar, known to me to be the person whose name is subscribed to the foregoing certificate, and acknowledged to me that did execute the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year in this certificate first above written.

My Commission expires 1966

Donna Killinger
Notary Public, State of Idaho.

DONNA KILLINGER NOTARY PUBLIC STATE OF IDAHO

COUNTY COMMISSIONER'S ACCEPTANCE

The foregoing plat was duly accepted and approved by the Board of Commissioners of the County of Blaine, Idaho; on the 18th day of November, 1963.

Ray Sweat
Chairman

COUNTY SURVEYOR'S CERTIFICATE

This is to certify that the undersigned has checked the foregoing plat and computations for making the same and has determined that they comply with the laws of the State of Idaho relating thereto.

Dated this ___ day of _____, 1963.

_____
County Surveyor.

no: 119580

COUNTY RECORDER'S CERTIFICATE

This is to certify that the foregoing plat was filed for record in the office of Recorder of Blaine County, Idaho, this 18 day of November, 1963, at 4:41 P.M., at the request of R.V. McCoy, and duly recorded in Plat Book No. 1, at Page 20.

Hazel Barker
Deputy

George L. McCoy
Ex-Officio Recorder.

Mountain Overlay Design Narrative

219 Hillside Drive,
Ketchum, ID 83340
11/15/2022
Rev. 04/27/2023 (revisions in red, bold italics)

17.104.070 - Mountain Overlay design review.

Design review applications shall be made and processed according to the regulations contained in chapter 17.96 of this title and as follows:

A. *Criteria and standards.* The following list of criteria and those contained in chapter 17.96 of this title must be considered and addressed by each applicant seeking design review approval. The Commission will use this list of design review criteria along with that contained in chapter 17.96 of this title as a basis to determine whether a project is to be approved, approved with conditions or denied:

1. There shall be no building on ridges or knolls which would have a material visual impact on a significant skyline visible from a public vantage point entering the City or within the City. "Material", as the term is used herein, shall be construed in light of the magnitude of the negative impact on the objectives of this section;

The project is not on a ridge or knoll and will not have a visual impact on the skyline.

2. Building, excavating, filling and vegetation disturbance on hillsides which would have a material visual impact visible from a public vantage point entering the City or within the City shall be minimized. "Material", as the term is used herein, shall be construed in light of the magnitude of the negative impact on the objectives of this section;

This project will not have a visual impact visible from a public vantage point entering the City.

3. Driveway standards as well as other applicable standards contained in title 12, chapter 12.04 of this Code shall be met;

Driveway standards will be met.

04/27/2023 – Driveway standards are met with revisions, see revised drawings.

4. All development shall have access for fire and other emergency vehicles to within 150 feet of the furthest exterior wall of any building;

Building has access.

04/27/2023 – Development has access as required.

5. Significant rock outcroppings shall not be disturbed;

Project will not disturb significant outcroppings.

6. International Building Code (IBC) and International Fire Code (IFC) and Ketchum Fire Department requirements shall be met;

Project will meet IBC and IFC requirements.

04/27/2023 – Project will comply with requirements.

7. Public water and sewer service shall comply with the requirements of the City;

Project will meet public water and sewer services.

8. Drainage shall be controlled and maintained to not adversely affect other properties;

Drainage will be controlled appropriately.

9. Cuts and fills allowed for roadways shall be minimized; lengths of driveways allowed shall be minimized; all cuts and fills shall be concealed with landscaping, revegetation and/or natural stone materials. Revegetation on hillsides with a clear zone of 30 feet around all structures is recommended. Said clear zone shall include low combustible irrigated vegetation with appropriate species, on file with the Ketchum Planning Department. Revegetation outside of this clear zone should be harmonious with the surrounding hillsides;

Cuts and fills and driveway lengths will be minimized. Project team will work with City of Ketchum for an appropriate landscaping plan that is in line with standards for fire prevention.

10. Are there other sites on the parcel more suitable for the proposed development in order to carry out the purposes of this section;

Private residence is located in most suitable spot on the parcel.

11. Access traversing 25 percent or greater slopes does not have significant impact on drainage, snow and earthslide potential and erosion as it relates to the subject property and to adjacent properties;

Project will limit impact on adjacent properties.

12. Utilities shall be underground;

Utilities will be underground.

13. Limits of disturbance shall be established on the plans and protected by fencing on the site for the duration of construction;

Fencing will be used during construction.

14. Excavations, fills and vegetation disturbance on hillsides not associated with the building construction shall be minimized; and

Site disturbance will be minimized.

15. Preservation of significant landmarks shall be encouraged and protected, where applicable. A significant landmark is one which gives historical and/or cultural importance to the neighborhood and/or community.

No significant landmark is on this site.

16. Encroachments of below grade structures into required setbacks are subject to subsection 17.128.020.K of this title and shall not conflict with any applicable easements, existing underground structures, sensitive ecological areas, soil stability, drainage, other sections of this Code or other regulating codes such as adopted International Code Council Codes, or other site features concerning health, safety, and welfare.

Project will comply.

B. *Application information.* Information to be submitted with the application shall include, but not be limited to, topography of sufficient detail to represent slope of land, significant rock outcrops, cuts and fills required and similar features; elevations of proposed building pads and public streets providing access, private access drives; preliminary utility extension plans, drainage plans and driveway plans; and description of proposed drilling or blasting, if any. On site information may be required prior to any on site visit to the subject property by the Commission. Such information may include stakes marking boundaries of buildings, centerlines of access drives or other elements of the proposal, and/or poles illustrating proposed heights of structures, and also may include recent photographs evidencing impact(s) of the proposed development from various vantage points.

C. *On site review.* On site review by the members of the Commission is required prior to taking action on said design review application. Extreme weather conditions or inordinate depth of snow may cause the Commission to delay said on site review not more than 180 days.

15091

WARRANTY DEED

For Value Received

ANDREAS SCHERNTHANNER and ALICE E. SCHERNTHANNER, Husband and Wife

Hereinafter called the grantor, hereby grants, bargains, sells and conveys unto

WALKER B. MONROE and LINDA STUART as tenants in common

whose address is:

309 Santa Monica Blvd., #410; Santa Monica, California 90401

Hereinafter called the grantee, the following described premises, in Blaine County, Idaho, to-wit:

Lots 1 and 9, Block 5, WARM SPRINGS VALLEY SUBDIVISION, Blaine County, Idaho, according to the official plat thereof recorded in Book 1 of Plats, page 20, records of Blaine County, Idaho.

EXCEPTING AND RESERVING to the Grantors and their successors and assigns forever, all water rights on, or over said land and any ditch rights associated with or appurtenant to said land or any parcel thereof.

SUBJECT TO: Covenants, conditions, restrictions, reservations, and easements of record in the office of the County Recorder, Blaine County, Idaho.

TO HAVE AND TO HOLD the said premises, with their appurtenances unto the said Grantee and to the Grantee's heirs and assigns forever. And the said Grantor does hereby covenant to and with the said Grantee, that the Grantor is the owner in fee simple of said premises; that they are free from all incumbrances except as described above and that Grantor will warrant and defend the same from all lawful claims whatsoever.

Dated: June 20, 1988

Andreas Schernthanner — ANDREAS SCHERNTHANNER

Alice E. Schernthanner — ALICE E. SCHERNTHANNER

STATE OF IDAHO, COUNTY OF BLAINE

On this 20th day of June, 1988, before me, a notary public in and for said State, personally appeared

Andreas Schernthanner and Alice E. Schernthanner, husband and wife,

known to me to be the persons whose names are subscribed to the within instrument, and acknowledged to me that they executed the same.

Notary Public

Residing at Hailey, Idaho

Comm. Expires 10/9/93

STATE OF IDAHO, COUNTY OF Blaine

I hereby certify that this instrument was filed for record at the request of [illegible] Co. Ltd.

at 53 minutes past 4 o'clock P m., this 21 day of June, 19 88, in my office, and duly recorded in Book of Deeds at page

Mary Green

Ex-Officio Recorder

By D Hurst Deputy.

Fees $ 3.00

Mail to:

295876

Instrument # 640872
HAILEY, BLAINE, IDAHO
01-09-2017 2:04:33 PM No. of Pages: 10
Recorded for: FIRST AMERICAN TITLE - KETCHUM
JOLYNN DRAGE Fee: $37.00
Ex-Officio Recorder Deputy: JB
Electronically Recorded by Simplifile

#615807

After Recording Return to:
Northwest FCS – Country Home Department
Attn: **Tiffany Carlquist**
2001 S Flint Rd
PO Box 2515
Spokane, WA 99220-2515

Primary Customer Name/Note No.
Vita, Greg/NW1611011287-6231839

DEED OF TRUST

On **01/05/2017**, **Greg R Vita and Diana H Vita**, husband and wife, hereinafter called Grantors, whose address is

36918 Palo Colorado Rd
Carmel, CA 93923

grant, convey, warrant, transfer and assign to Brad L. Williams, Attorney at Law, hereinafter called Trustee, whose address is 12410 E. Mirabeau Parkway, Suite 100, Spokane Valley, WA 99216, in trust with power of sale for the benefit of Northwest Farm Credit Services, FLCA, a corporation organized under the Farm Credit Act of 1971, as amended, hereinafter called Beneficiary, whose address is 2001 South Flint Road, P.O. Box 2515, Spokane, Washington 99220-2515, property in **Blaine** County(ies), State of **ID**, more particularly described as and made a part hereof (the "Land"),

LOT 9 IN BLOCK 5 OF WARM SPRINGS VALLEY SUBDIVISION, ACCORDING TO THE OFFICIAL PLAT THEREOF, RECORDED AS INSTRUMENT NO. 119580, RECORDS OF BLAINE COUNTY, IDAHO.

Abbreviated Legal Description:
Tax Parcel Number(s): **RPK05800050090**

and including all buildings, structures, wells and other improvements now or hereafter located on the Land, including, but not limited to the fixtures (as described below), and all other equipment, machinery, appliances, goods and other articles attached to such buildings and other improvements; all fixtures (including without limitation, goods that are or become so related to the Land that an interest in them arises under the real estate law) and any additions or replacements now or hereafter located on, attached to, installed in or used in connection with the Land; all personal property, appliances, equipment and goods now or hereafter owned or possessed by Grantors located upon, in, or about or used in connection with the Land or improvements; all rights, rights-of-way, easements, licenses, profits, claims, demands, privileges, grazing privileges, leases, rents, issues, tenements, hereditaments, and appurtenances now owned or hereafter acquired by Grantors and used in connection with the Land and the improvements or as a means of access to either or both, (including without limitation all rights over the property of third persons which are related thereto, private roads, water rights and entitlements, other rights to water and other rights to receive water or water rights of every kind or nature whatsoever and howsoever evidenced, ditches and

conduits and rights of way therefor, all plumbing, lighting, heating, cooling, ventilating, elevating and irrigating apparatus, now or hereafter belonging to or used in connection therewith), all of which is hereinafter called the "Property."

The following described Note(s), Membership Agreements, loan agreement, security documents and any other documents or instruments signed in connection with the note(s) and security documents and any amendments thereto are collectively called the "Loan Documents." "Advances" shall include any amounts provided under the terms of the Loan Documents and any amounts expended by Beneficiary to protect the Property or enforce its rights under the Loan Documents. This conveyance is intended to secure performance of the covenants and agreements contained herein, and in any Loan Documents, except those Loan Documents that expressly state they are not secured by the Property described herein, and payment of the indebtedness under the terms of the Note(s) made to the order of Beneficiary, with interest and charges as provided therein and in the Loan Documents, and any extensions, modifications or renewals thereof:

DATE OF NOTE	PRINCIPAL AMOUNT	FINAL INSTALLMENT DATE
01/05/2017	$162,400.00	02/01/2027

In addition, this Deed of Trust is intended to secure future loans and advances made by Beneficiary, no matter how evidenced. The continuing validity and priority of this Deed of Trust for future loans and advances shall not be impaired by the fact that at certain times no outstanding indebtedness to Beneficiary nor commitment from Beneficiary to make future loans exist.

The terms of the Note(s) and Loan Documents, described above, provide that the interest rate, payment terms or amounts due may be indexed, adjusted, renewed or renegotiated.

The Property does not exceed 40 acres in area.

Grantors and each of them REPRESENT, WARRANT, COVENANT and AGREE:

1. That they have title to the Property free from encumbrances, except as otherwise previously disclosed, they have good right and lawful authority to convey and encumber the same; they will warrant and defend the same forever against the lawful claims and demands of all persons whomsoever; and they agree this covenant shall not be extinguished by foreclosure or other transfers. Grantors authorize Beneficiary to file a financing statement and any continuations thereof, describing any personal property or fixtures described herein, without further signature by Grantor.

2. That this Deed of Trust also constitutes a Security Agreement granting Beneficiary a security interest in any and all personal property described above.

3. To keep all buildings and other improvements, now or hereafter existing, in good repair; not to remove or demolish or permit the removal or demolition of any building or other improvement; to restore promptly in a good and workmanlike manner, any building or improvement, which may be damaged or destroyed; tomaintain and cultivate the Property in a good and husbandlike manner; not to change or permit change in the use of the Property; and not to do anything which would reduce the value of the Property; and Beneficiary shall have the right to enter upon the Property to make full inspection of the Property.

4. To maintain casualty insurance, naming Beneficiary as loss payee, on all buildings and improvements, against loss or damage by fire or other risks; to maintain liability insurance; to obtain flood insurance at any time it is determined that any building or improvement is located, in whole or in part, within a special flood hazard area; to

pay all premiums and charges on all such insurance when due; and to provide Beneficiary satisfactory evidence of such insurance upon request. All such insurance shall be in such form(s), with such company(ies) and in such amount(s) as shall be satisfactory to Beneficiary.

5. To pay all debts and money, secured hereby, when due; to pay, when due, all taxes, assessments, rents and other charges upon the Property and to suffer no other encumbrance, charge or lien on the Property, which would be superior to this Deed of Trust, except as stated above.

6. To specifically assign and deliver to Beneficiary all rents, royalties, damages and payments of every kind, including without limitation insurance reimbursements and condemnation awards, at any time accruing, for any transfer, loss or seizure of the Property, any portion thereof or any rights therein; Beneficiary may, at its option, apply such amounts in any proportion to any of the indebtedness hereby secured; and application or release of such amounts shall not cure or waive any default or notice of default or invalidate any act done pursuant to such notice.

7. To comply with all laws, ordinances, regulations, covenants, conditions and restrictions affecting the Property and its use, including without limitation all environmental laws; not to use or permit the use of the Property for any unlawful or objectionable purpose or for any purpose that poses an unreasonable risk of harm, or that impairs or may impair the value of the Property, or any part thereof; not to apply residue from waste water treatment facilities to the Property without prior written notice to Beneficiary; to remedy any environmental contamination or violation of environmental laws that may occur or be discovered in the future; to allow Beneficiary access to the Property to inspect its condition and to test and monitor for compliance with applicable laws (any inspections or tests made by Beneficiary shall be for Beneficiary's purposes only and shall not be construed to create any responsibility or liability on the part of Beneficiary to Grantors or to any other person); to forward copies of any notices received from any environmental agencies to Beneficiary; to provide Beneficiary copies of any independent test or inspection reports on the environmental status of the Property; and to indemnify and hold Beneficiary, its directors, employees, agents and its successors and assigns, harmless from and against any environmental claims of any kind, and all costs and expenses incurred in connection therewith, including, without limitation, attorney's fees.

8. That neither Grantors nor, to the best of Grantors' knowledge, any prior owner has created or permitted conditions on the Property, which may give rise to environmental liability; no enforcement actions are pending or threatened; no underground tanks are located on the Property except as already disclosed; any such underground tanks currently or previously located on the Property do not now and never have leaked and no contaminated soil is located on the Property; and Grantor's representations, warranties, covenants and indemnities herein and in the Loan Documents shall survive satisfaction of the Note(s) and Loan Documents, foreclosure of this Deed of Trust, acceptance of a deed in lieu of foreclosure or any transfer or abandonment of the Property.

9. To perform all terms and conditions of each water or other contract, described above, if any, and to promptly pay all sums due or to become due under each contract so that no delinquency or default will occur under such contract(s); not to apply or enter into any federal, state or local program which limits or restricts the use of the Property, in any way without prior written consent of Beneficiary; to perform all acts necessary to perfect and maintain any water permit, certificate, license or other water interest, however designated, described in or used in conjunction with the real property described above; any assignment of any such interest during the term of this Deed of Trust, naming Beneficiary as an assignee shall be for security purposes and shall not alter Grantors' obligations hereunder; and any failure of Grantors to perform any such obligation shall constitute an event of default.

10. That the term "Grazing Rights," as hereinafter used refers to that portion of the Property, if any, consisting of grazing leases, permits, licenses, privileges, and preferences, or any of them, which have or will be assigned, conveyed or waived to Trustee or Beneficiary, together with any additions, renewals, replacements or substitutions thereof; if any portion of the Grazing Rights is a leasehold interest in state lands, such leasehold shall be considered to be real property; such leasehold and all other real property portions of the Property constitute a single operating unit; and in the event of foreclosure, Beneficiary shall have the right to have such leasehold and the other real property sold as a unit and not in parcels; any statements and representations in any applications for Grazing Rights are true and correct; Grantors have received no notice that the Grazing Rights have or are to be terminated, cancelled or modified; and any termination or cancellation of any of the Grazing Rights shall constitute an event of default under this Deed of Trust.

11. To execute any instrument deemed necessary by the Beneficiary to assign, convey or waive such Grazing Rights to the Trustee; to pay all fees and charges, and to perform all acts and things necessary to preserve and keep in good standing the Grazing Rights; to take no action which would adversely affect the Grazing Rights; to procure renewals of the Grazing Rights upon or prior to their expiration date; to operate the lands covered by the Grazing Rights in conjunction with the other real estate portion of the Property and not to convey or attempt to convey either separately; to forward to Beneficiary copies of any notices received by Grantors regarding the Grazing Rights; and in the event of foreclosure of this Deed of Trust, to waive all claims for preference in the Grazing Rights upon demand from the purchaser of the Property at Trustee's or foreclosure sale, or from any successor to such purchaser.

12. That if the Property is within an irrigation block and/or subject to water service contract(s) governed by the provisions of "Federal reclamation law," and the regulations issued thereunder, Grantors shall comply with the terms and provisions of said laws, regulations and contracts; Grantors, and each of them, for themselves, their heirs, successors and assigns, hereby appoint Beneficiary their attorney-in-fact to select and designate the portion of the property to be subject to a recordable contract, in the event Grantors become subject to the excess land limitation; if Grantors fail to comply with the terms of said law, regulations or contracts, or if the delivery of water for the irrigation of the Property is discontinued in whole or in part, Grantors shall be in default; in the event the Bureau of Reclamation determines that continued drainage maintenance on the Property is no longer feasible, and Grantors purchase other lands offered as a preference purchase right (as an adjustment for wetlands), Grantors shall execute a supplemental deed of trust on such lands in favor of the Beneficiary; and failure to execute such deed of trust on demand, shall constitute an event of default.

13. That in the event of default in any of the covenants or agreements herein, or in any of the Loan Documents, Beneficiary may, at its option, perform the same, in whole or in part; any advances, attorney fees or costs, paid or incurred by Beneficiary to protect or enforce its rights under the Loan Documents, in bankruptcy, appellate proceedings or otherwise, shall be payable on demand and shall become a part of the obligation secured by this Deed of Trust.

14. That the indebtedness and obligations secured by this Deed of Trust are personal to the Grantors and are not assignable by Grantors; Beneficiary relied upon the credit of Grantors, the interest of Grantors in the Property and the financial market conditions then existing when making this loan; if Grantors sell, transfer or convey or contract to sell, transfer or convey the Property, or any portion thereof, or if the ownership of any corporation or partnership, owning all or any portion of the Property shall be changed either by voluntary or involuntary sale or transfer or by operation of law, without prior written consent of Beneficiary, or if Grantors default in the payment of the indebtedness, or with respect to any warranty, covenant or agreement in the Loan Documents or if a receiver or trustee for any part of the Property is appointed, or if any proceedings under the bankruptcy or insolvency laws is commenced by or against Grantors, or if Grantors become insolvent, or if any action is commenced to foreclose or enforce a lien on any portion of the Property, then, Grantors shall be in default hereunder.

15. That time is of the essence and in the event of default, at Beneficiary's option, the entire indebtedness secured hereby shall forthwith become due and payable and bear interest at the rate set forth in the Loan Documents for delinquent payments; Beneficiary shall have the right to foreclose the lien of this Deed of Trust or to direct Trustee, in writing, to foreclose this Deed of Trust by notice and sale, to have a receiver appointed in any court proceeding, to collect any rents, issues and profits from the Property and to deliver them to Beneficiary to be applied as provided above and to exercise any rights and remedies available under the Uniform Commercial Code for the state in which the property is located; and reasonable notice if required by such Code shall be five (5) days.

16. That Beneficiary may from time to time, in writing and without further notice or consent, release any person from liability for payment of any of the indebtedness or extend the time or otherwise alter the termsof payment of any of the indebtedness; and Trustee may, with written consent of Beneficiary, at any time and from time to time, and without affecting the liability of any person:
    a. Join in any subordination or other agreement affecting this Deed of Trust or lien or charge thereof.
    b. Reconvey, without warranty, any or all of the Property.

17. That after all sums secured hereby have been paid, upon receipt of the Deed of Trust and note and payment of its fees, Trustee shall reconvey without warranty the Property, as provided by law. The grantee in such reconveyance may be described as "the person or persons legally entitled thereto."

18. That, in the event of foreclosure of this Deed of Trust by notice and sale, the power of sale shall be exercisedby the Trustee according to and under the authority of the law pertaining to deeds of trust then in effect in the state in which the Property is situated; Trustee shall deliver to purchaser its deed, without warranty, containing recitals demonstrating compliance with the requirements of such law.

19. To surrender possession of such premises within the time period provided by law; in the event Beneficiary is purchaser of the Property and possession is not delivered, as provided by law, to pay Beneficiary the costs and the expenses, including reasonable attorney fees, incurred in any suit or action by Beneficiary to obtain possession of the premises.

20. That Trustee accepts this trust when this deed, duly executed an acknowledged is recorded as provided by law; any Trustee lawfully appointed by Beneficiary as a substitute or successor Trustee shall succeed to all the powers and duties of the Trustee named herein; Trustee is not obligated to notify any party hereto of the pending sale under any other deed of trust or any action or proceeding in which Grantors, Trustee, or Beneficiary shall be a party unless such action or proceeding is brought by Trustee.

21. That as used herein, the term "Deed of Trust" shall be synonymous with the terms "trust indenture" and "trust deed"; the term "Grantors" shall be synonymous with the term "Trustors" as used in any of the laws of the state in which the Property is situated; the term "Beneficiary" shall mean the holder and owner of any Note secured hereby, or if any Note(s) has been pledged, the pledgee thereof.

22. That the failure of Beneficiary to exercise any right or option provided herein, at any time shall not preclude Beneficiary from exercising any of such rights at any other time; the covenants and agreements contained herein shall be binding on and inure to the benefit of the parties and their respective heirs, successors and assigns; all rights conferred on Beneficiary or on Trustee are cumulative and additional to any rights conferred by law; and if any provision is found to be invalid or unenforceable, such invalidity or unenforceability shall not affect any other provision hereof and the Deed of Trust shall be construed as though such provision had been omitted.

23. That Grantors and each of them join in this instrument for the purpose of subjecting each of their right, title and interest, if any, in the Property, whether of record or otherwise and including any right to possession, to the lien of this Deed of Trust. All Exhibits hereto, if applicable, are incorporated herein and made a part of this Deed of Trust. This Deed of Trust may be executed in any number of counterparts, each of which, when executed, shall be deemed to be an original, and all of which together shall be deemed to be one and the same instrument.

24. At origination or at any time during the term of the loan, Borrower (as defined in the Loan Documents) or any other vested party (collectively "Escrow Obligor") shall pay to Beneficiary on the day installment payments are due under the Note(s), until the Note(s) is paid in full, a sum (the "Funds") to provide for payment of amounts due for: (a) taxes and assessments and other items which can attain priority over this Deed of Trust as a lien or encumbrance on the Property; (b) leasehold payments or ground rents on the Property, if any; and (c) premiums for any and all insurance required by Beneficiary under this Deed of Trust. These items are called "Escrow Items". At origination or at any time during the term of the loan, Beneficiary may require that community association dues, fees, and assessments, if any, be escrowed by Escrow Obligor, and such dues, fees and assessments shall be an Escrow Item. Escrow Obligor shall promptly furnish to Beneficiary all notices of amounts to be paid under this section. Escrow Obligor shall pay Beneficiary the Funds for Escrow Items unless Beneficiary waives Escrow Obligor's obligation to pay the Funds for any or all Escrow Items. Beneficiary may waive Escrow Obligor's obligation to pay to Beneficiary Funds for any or all Escrow Items at any time. Any such waiver may only be in writing. In the event of such waiver, Escrow Obligor shall pay directly, when and where payable, the amounts due for any Escrow Items for which payment of Funds has been waived by Beneficiary and, if Beneficiary requires, shall furnish to Beneficiary receipts evidencing such payment within such time period as Beneficiary may require. Escrow Obligor's obligation to make such payments and to provide receipts shall for all purposes be deemed to be a covenant and agreement contained in this Deed of Trust. If Escrow Obligor is obligated to pay Escrow Items directly, pursuant to a waiver, and Escrow Obligor fails to pay the amount due for an Escrow Item, Beneficiary may exercise its rights under the Covenants section and pay such amount and Borrower shall then be obligated under this Deed of Trust to repay to Beneficiary any such amount. Beneficiary may revoke the waiver as to any or all Escrow Items at any time by a notice given in accordance with this Deed of Trust and, upon such revocation, Escrow Obligor shall pay to Beneficiary all Funds, and in such amounts, that are then required under this section.

    Beneficiary may, at any time, collect and hold Funds in an amount (a) sufficient to permit Beneficiary to apply the Funds at the time specified under Real Estate Settlement Procedures Act ("RESPA"), and (b) not to exceed the maximum amount a lender can require under RESPA. Beneficiary shall estimate the amount of Funds due on the basis of current data and reasonable estimates of expenditures of future Escrow Items or otherwise in accordance with applicable law.

    Funds shall be held in a special account set up by Beneficiary. The Funds in the special account are not insured by any federal financial regulator or agency. Funds are protected only by the financial condition of Beneficiary. Interest will accrue on the special account balance at such rates as are required by applicable state or federal law. Beneficiary shall apply the Funds to pay the Escrow Items no later than the time specified under RESPA. Beneficiary shall not charge Escrow Obligor for holding and applying the Funds, annually analyzing the escrow account, or verifying the Escrow Items, unless Beneficiary pays Escrow Obligor interest on the Funds and applicable law permits Beneficiary to make such a charge. Unless an agreement is made in writing or applicable law requires interest to be paid on the Funds, Beneficiary shall not be required to pay Escrow Obligor any interest or earnings on the Funds. Escrow Obligor and Beneficiary can agree in writing, however, that interest shall be paid on the Funds. Beneficiary shall give to Escrow Obligor, without charge, an annual accounting of the Funds as required by RESPA.

    If there is a surplus of Funds held in escrow, as defined under RESPA, Beneficiary shall account to Escrow Obligor for the excess funds in accordance with RESPA. If there is a shortage of Funds held in escrow, as

defined under RESPA, Beneficiary shall notify Escrow Obligor as required by RESPA, and Escrow Obligor shall pay to Beneficiary the amount necessary to make up the shortage in accordance with RESPA, but in no more than 12 monthly payments. If there is a deficiency of Funds held in escrow, as defined under RESPA, Beneficiary shall notify Escrow Obligor as required by RESPA, and Escrow Obligor shall pay to Beneficiary the amount necessary to make up the deficiency in accordance with RESPA, but in no more than 12 monthly payments.

Upon payment in full of all sums secured by this Deed of Trust, Beneficiary shall promptly refund to Escrow Obligor any Funds held by Beneficiary.

25. Trustee shall reconvey the Property, without warrant, to the person or persons legally entitled to it upon (a) written request of Beneficiary stating that all indebtedness has been paid and fully performed, which shall be in substantially the form of Exhibit A attached hereto and incorporated herein, (b) surrender by Beneficiary of this Deed of Trust, and (c) payment by Grantor of Trustee's fees and the costs and expenses of executing and recording any requested reconveyance. The grantee in any such reconveyance may be described as "the person or persons legally entitled thereto."

ORAL AGREEMENTS OR ORAL COMMITMENTS TO LOAN MONEY, EXTEND CREDIT, OR TO FORBEAR FROM ENFORCING REPAYMENT OF A DEBT ARE NOT ENFORCEABLE UNDER WASHINGTON LAW.

Greg R Vita

Diana H Vita

STATE OF CALIFORNIA)
)ss.
County of MONTEREY)

On this 5 day of JANUARY, 2017, before me personally appeared **Greg R Vita**, to me known to be the person(s) described in and who executed the within instrument, and acknowledged that he/she executed the same as his/her free act and deed.

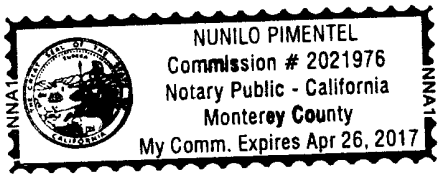
NUNILO PIMENTEL
Commission # 2021976
Notary Public - California
Monterey County
My Comm. Expires Apr 26, 2017

Printed name NUNILO PIMENTEL
Notary Public for the State of CALIFORNIA
Residing at MONTEREY
My commission expires APRIL 26, 2017

STATE OF CALIFORNIA)
)ss.
County of MONTEREY)

On this 5 day of JANUARY, 2017, before me personally appeared **Diana H Vita**, to me known to be the person(s) described in and who executed the within instrument, and acknowledged that he/she executed the same as his/her free act and deed.

Printed name NUNILO PIMENTEL
Notary Public for the State of CALIFORNIA
Residing at MONTEREY
My commission expires APRIL 26, 2017



Loan Origination Company's Name	**Northwest Farm Credit Services, FLCA**
Loan Origination Company NMLS	**543727**
Loan Originator's Name	**Rena Berrett**
Loan Originator NMLS	**1276844**

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT **CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of MONTEREY)

On JANUARY 5, 2017 before me, NUNILO PIMENTEL, NOTARY PUBLIC,
Date *Here Insert Name and Title of the Officer*

personally appeared GREG R VITA AND DIANA H VITA
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

NUNILO PIMENTEL
Commission # 2021976
Notary Public - California
Monterey County
My Comm. Expires Apr 26, 2017

Signature _____
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: _____ Document Date: _____
Number of Pages: _____ Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____	Signer's Name: _____
☐ Corporate Officer — Title(s): _____	☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General	☐ Partner — ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator	☐ Trustee ☐ Guardian or Conservator
☐ Other: _____	☐ Other: _____
Signer Is Representing: _____	Signer Is Representing: _____

Exhibit A

EXAMPLE
REQUEST FOR FULL RECONVEYANCE

THE PROMISSORY NOTE OR NOTES, AND ANY EVIDENCES
OF FURTHER AND/OR ADDITIONAL ADVANCES
MUST BE PRESENTED WITH THIS REQUEST

TO THE TRUSTEE: [Insert Name]

The undersigned hereby certifies that it is the legal owner and holder of the Note[s] and all other indebtedness secured by the Deed of Trust dated [date] between [Grantor name], Grantor, [Trustee name], Trustee, and [Beneficiary Name], Beneficiary, recorded [date], as Instrument No. [instrument no.], to secure an indebtedness in the amount of $[amount], records of [County], [State]. Said indebtedness has been fully paid and satisfied, and you are hereby requested and directed to cancel said Note[s] above-mentioned and all other evidences of indebtedness secured by said Deed of Trust, and to reconvey without warranty all the estate now held by you thereunder.

Dated: [insert date]

[BENEFICIARY NAME]

[BENEFICIARY SIGNATURE BLOCK]

[ACKNOWLEDGEMENT]

Sun Valley Title
A TitleOne Company

Sun Valley Title
Authorized Agent for:
Title Resources Guaranty Company

File Number: 21402336

Contact Information

We would like to thank you for your business and we appreciate the opportunity to serve you. The title commitment has been sent to the parties listed below.

If you have any closing questions, please contact your Escrow team:

Alison Warner
ali@sunvalleytitle.com
(208)726-9341

Beth Landes
beth.landes@sunvalleytitle.com

TitleOne Corporation dba Sun Valley Title State License: 712444

If you have any title questions, please contact your Title Officer:

Nick Busdon
nbusdon@sunvalleytitle.com
(208)726-9341

Sun Valley Title Address:
271 1st Avenue North, PO Box 2365
Ketchum, ID 83340

Agents / Brokers and Transaction Coordinators

Sallie Castle
Sun Valley Real Estate LLC
sallie@salliecastle.com
(208) 720-3956

Brenda Blackwell
info@sunvalleyrealestate.com
(208)726-6000

Pamela Colesworthy
Berkshire Hathaway HomeServices
Sun Valley Properties
pam@pamcolesworthy.com
(208)720-4520

John Sofro
johnalanpartners@gmail.com
(208)720-5776

Jordan Sofro
contracts@bhhssunvalley.com
(208) 720-4510

COMMITMENT FOR TITLE INSURANCE
Issued by
TITLE RESOURCES GUARANTY COMPANY

Title Resources Guaranty Company, a Texas corporation ("Company"), for a valuable consideration, commits to issue its policy or policies of title insurance, as identified in Schedule A, in favor of the Proposed Insured named in Schedule A, as owner or mortgagee of the estate or interest in the land described or referred to in Schedule A, upon payment of the premiums and charges and compliance with the Requirements; all subject to the provisions of Schedules A and B and to the Conditions of this Commitment.

This Commitment shall be effective only when the identity of the Proposed Insured and the amount of the policy or policies committed for have been inserted in Schedule A by the Company.

All liability and obligation under this Commitment shall cease and terminate 180 days after the Effective Date or when the policy or policies committed for shall issue, whichever first occurs, provided that the failure to issue the policy or policies is not the fault of the Company.

The Company will provide a sample of the policy form upon request.

This Commitment shall not be valid or binding until countersigned by a validating officer or authorized signatory.

IN WITNESS WHEREOF, Title Resources Guaranty Company has caused its corporate name and seal to be affixed by its duly authorized officers on the date shown in Schedule A.

Title Resources Guaranty Company

By:
President/CEO

Secretary

An authorized signature

CONDITIONS

1. The term mortgage, when used herein, shall include deed of trust, trust deed, or other security instrument.

2. If the proposed Insured has or acquired actual knowledge of any defect, lien, encumbrance, adverse claim or other matter affecting the estate or interest or mortgage thereon covered by this Commitment other than those shown in Schedule B hereof, and shall fail to disclose such knowledge to the Company in writing, the Company shall be relieved from liability for any loss or damage resulting from any act of reliance hereon to the extent the Company is prejudiced by failure to so disclose such knowledge. If the proposed Insured shall disclose such knowledge to the Company, or if the Company otherwise acquires actual knowledge of any such defect, lien, encumbrance, adverse claim or other matter, the Company at its option may amend Schedule B of this Commitment accordingly, but such amendment shall not relieve the Company from liability previously incurred pursuant to paragraph 3 of these Conditions.

3. Liability of the Company under this Commitment shall be only to the named proposed Insured and such parties included under the definition of Insured in the form of policy or policies committed for and only for actual loss incurred in reliance hereon in undertaking in good faith (a) to comply with the requirements hereof, or (b) to eliminate exceptions shown in Schedule B, or (c) to acquire or create the estate or interest or mortgage thereon covered by this Commitment. In no event shall such liability exceed the amount stated in Schedule A for the policy or policies committed for and such liability is subject to the insuring provisions and Conditions and the Exclusions from Coverage of the form of policy or policies committed for in favor of the proposed Insured which are hereby incorporated by reference and are made a part of this Commitment except as expressly modified herein.

4. This Commitment is a contract to issue one or more title insurance policies and is not an abstract of title or a report of the condition of title. Any action or actions or rights of action that the proposed Insured may have or may bring against the Company arising out of the status of the title to the estate or interest or the status of the mortgage thereon covered by this Commitment must be based on and are subject to the provisions of this Commitment.

5. The policy to be issued contains an arbitration clause. All arbitrable matters when the Amount of Insurance is $2,000,000 or less shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. You may review a copy of the arbitration rules at <http://www.alta.org/>.

Sun Valley Title
A TitleOne Company

271 1st Avenue North, PO Box 2365
Ketchum, ID 83340
Ph. (208)726-9341
Fx. (866) 407-1180
www.sunvalleytitle.com

Privacy Policy Notice

Rev. 10-23-2017

FACTS	WHAT DOES SUN VALLEY TITLE DO WITH YOUR PERSONAL INFORMATION?
Why?	Financial companies choose how they share your personal information. Federal law gives consumers the right to limit some but not all sharing. Federal law also requires us to tell you how we collect, share, and protect your personal information. Please read this notice carefully to understand what we do.
What?	The types of personal information we collect and share depend on the product or service you have with us. This information can include: • Social Security number and account balances • Payment history and credit card or other debt • Checking account information and wire transfer instructions When you are *no longer* our customer, we continue to share your information as described in this notice.
How?	All financial companies need to share customers' personal information to run their everyday business. In the section below, we list the reasons financial companies can share their customers' personal information; the reasons Sun Valley Title chooses to share; and whether you can limit this sharing.

Reasons we can share your personal information	**Does Sun Valley Titleshare?**	**Can you limit this sharing?**
For our everyday business purposes – such as to process your transactions, maintain your account(s), respond to court orders and legal investigations, or report to credit bureaus	Yes	No
For our marketing purposes- to offer our products and services to you	No	We don't share
For joint marketing with other financial companies	No	We don't share
For our affiliates' everyday business purposes- information about your transactions and experiences	Yes	No
For our affiliates' everyday business purposes- information about your creditworthiness	No	We don't share
For our affiliates to market to you	No	We don't share
For nonaffiliates to market to you	No	We don't share

Questions?	Go to http://www.sunvalleytitle.com/Legal/Privacy

Who we are	
Who is providing this notice?	Sun Valley Title
What we do	
How does Sun Valley Title protect my personal information?	To protect your personal information from unauthorized access and use, we use security measures that comply with federal law. These measures include computer safeguards and secured files and buildings.
How does Sun Valley Title collect my personal information?	We collect your personal information, for example, when you • Apply for insurance or pay insurance premiums • Provide your mortgage information or show your driver's license • Give us your contact information We also collect your personal information from others, such as credit bureaus, affiliates, or other companies.
Why can't I limit all sharing?	Federal law gives you the right to limit only • Sharing for affiliates' everyday business purposes – information about your creditworthiness • Affiliates from using your information to market to you • Sharing for nonaffiliates to market to you State laws and individual companies may give you additional rights to limit sharing.
Definitions	
Affiliates	Companies related by common ownership or control. They can be financial and nonfinancial companies. • *Our affiliates include companies that are owned in whole or in part by Realogy Holdings Corp., such as Better Homes and Gardens® Real Estate, CENTURY 21®, Coldwell Banker®, Coldwell Banker Commercial®, The Corcoran Group®, ERA®, Sotheby's International Realty®, ZipRealty®, NRT LLC, Cartus and Title Resource Group.*
Nonaffiliates	Companies not related by common ownership or control. They can be financial and nonfinancial companies. • *Sun Valley Title does not share with nonaffiliates so they can market to you.*
Joint Marketing	A formal agreement between nonaffiliated financial companies that together market financial products or service to you. • *Sun Valley Title does not share with nonaffiliated financial companies for joint marketing purposes.*
Other Important Information	
For European Union Customers	Please see our Privacy Policy located at http://www.sunvalleytitle.com/Legal/Privacy

For our California Customers	Please see our notice about the California Consumer Protection Act located at http://www.sunvalleytitle.com/Legal/Privacy

TITLE RESOURCES®

FACTS	WHAT DOES TITLE RESOURCES GUARANTY COMPANY DO WITH YOUR PERSONAL INFORMATION?
Why?	Financial companies choose how they share your personal information. Federal law gives consumers the right to limit some but not all sharing. Federal law also requires us to tell you how we collect, share, and protect your personal information. Please read this notice carefully to understand what we do.
What?	The types of personal information we collect and share depend on the product or service you have with us. This information can include: • Social Security number and account balances • Payment history and credit card or other debt • Checking account information and wire transfer instructions When you are *no longer* our customer, we continue to share your information as described in this notice.
How?	All financial companies need to share customers' personal information to run their everyday business. In the section below, we list the reasons financial companies can share their customers' personal information; the reasons TITLE RESOURCES GUARANTY COMPANY chooses to share; and whether you can limit this sharing.

Reasons we can share your personal information	Does TITLE RESOURCES GUARANTY COMPANY share?	Can you limit this sharing?
For our everyday business purposes – such as to process your transactions, maintain your account(s), respond to court orders and legal investigations, or report to credit bureaus	Yes	No
For our marketing purposes- to offer our products and services to you	No	We don't share
For joint marketing with other financial companies	No	We don't share
For our affiliates' everyday business purposes- information about your transactions and experiences	Yes	No
For our affiliates' everyday business purposes- information about your creditworthiness	No	We don't share
For our affiliates to market to you	No	We don't share
For nonaffiliates to market to you	No	We don't share

Questions?	Go to https://www.trgc.com/privacypolicy

Who we are	
Who is providing this notice?	TITLE RESOURCES GUARANTY COMPANY
What we do	
How does TITLE RESOURCES GUARANTY COMPANY protect my personal information?	To protect your personal information from unauthorized access and use, we use security measures that comply with federal law. These measures include computer safeguards and secured files and buildings.
How does TITLE RESOURCES GUARANTY COMPANY collect my personal information?	We collect your personal information, for example, when you • Apply for insurance or pay insurance premiums • Provide your mortgage information or show your driver's license • Give us your contact information We also collect your personal information from others, such as credit bureaus, affiliates, or other companies.
Why can't I limit all sharing?	Federal law gives you the right to limit only • Sharing for affiliates' everyday business purposes –information about your creditworthiness • Affiliates from using your information to market to you • Sharing for nonaffiliates to market to you State laws and individual companies may give you additional rights to limit sharing.
Definitions	
Affiliates	Companies related by common ownership or control. They can be financial and nonfinancial companies. • *Our affiliates include companies that are owned in whole or in part by Realogy Holdings Corp., such as Better Homes and Gardens® Real Estate, CENTURY 21®, Coldwell Banker®, Coldwell Banker Commercial®, The Corcoran Group®, ERA®, Sotheby's International Realty®, ZipRealty®, NRT LLC, Cartus and Title Resource Group.*
Nonaffiliates	Companies not related by common ownership or control. They can be financial and nonfinancial companies. • ***TITLE RESOURCES GUARANTY COMPANY*** *does not share with nonaffiliates so they can market to you.*
Joint Marketing	A formal agreement between nonaffiliated financial companies that together market financial products or service to you. • ***TITLE RESOURCES GUARANTY COMPANY*** *does not share with nonaffiliated financial companies for joint marketing purposes.*
Other Important Information	
For European Union Customers	Please see our Privacy Policy located at https://www.trgc.com/privacypolicy
For our California Customers	Please see our notice about the California Consumer Protection Act located at https://www.trgc.com/privacypolicy

File Number: 21402336

COMMITMENT FOR TITLE INSURANCE
Issued by
TITLE RESOURCES GUARANTY COMPANY

Issuing Office: TitleOne Corporation dba Sun Valley Title
ALTA® Universal ID: 1065022
Commitment Number: 21402336

SCHEDULE A

1. Commitment Date: February 12, 2021 at 07:30 AM

2. Policy or Policies to be issued:

X	ALTA Owners Policy (6/17/06) Proposed Insured: Kyle Miller	*Standard Coverage*	Policy Amount: Premium:	$325,000.00 $1,388.00

3. The estate or interest in the land described or referred to in this Commitment is:
   Fee Simple

4. Title to the estate or interest in the Land is at the Commitment Date vested in:
   Greg R. Vita and Diana H. Vita, husband and wife

5. The Land described as follows:
   See Attached Schedule C

Title Resources Guaranty Company
TitleOne Corporation dba Sun Valley Title

By:

Nick Busdon, Authorized Signatory

Title Resources Guaranty Company
By:
President/CEO
Secretary

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Title Resources Guaranty Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I—Requirements; and Schedule B, Part II—Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

SCHEDULE B, PART I
Requirements

All of the following Requirements must be met:

1. The Proposed Insured must notify the Company in writing of the name of any party not referred to in this Commitment who will obtain an interest in the Land or who will make a loan on the Land. The Company may then make additional Requirements or Exceptions.

2. Pay the agreed amount for the estate or interest to be insured.

3. Pay the premiums, fees, and charges for the Policy to the Company.

4. Documents satisfactory to the Company that convey the Title or create the Mortgage to be insured, or both, must be properly authorized, executed, delivered, and recorded in the Public Records.

5. NOTE: According to the available records, the purported address of said land is:

219 Hillside Dr, Ketchum, ID 83340

6. Necessary conveyance to the proposed insured.

7. Note: In the event this transaction fails to close, or this commitment is cancelled, a cancellation fee will be charged to comply with the State of Idaho Department of Insurance regulations.

8. The Company will require delivery of and approval by the Company of an Indemnity and Affidavit as to Debts, Liens and Possession, prior to the issuance of the policy.

SCHEDULE B, PART II
Exceptions

THIS COMMITMENT DOES NOT REPUBLISH ANY COVENANT, CONDITION, RESTRICTION, OR LIMITATION CONTAINED IN ANY DOCUMENT REFERRED TO IN THIS COMMITMENT TO THE EXTENT THAT THE SPECIFIC COVENANT, CONDITION, RESTRICTION, OR LIMITATION VIOLATES STATE OR FEDERAL LAW BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, GENDER IDENTITY, HANDICAP, FAMILIAL STATUS, OR NATIONAL ORIGIN.

The Policy will not insure against loss or damage resulting from the terms and provisions of any lease or easement identified in Schedule A, and will include the following Exceptions unless cleared to the satisfaction of the Company. If the Company's requirements are satisfied, Exceptions 1 through 7 will be removed on Enhanced/Extended coverage policies.

1. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I—Requirements are met.

2. Rights or claims of parties in possession not shown by the public records.

3. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land, and that is not shown by the Public Records.

4. Easements, or claims of easements, not shown by the public records.

5. Any lien, or right to a lien, for services, labor, or materials heretofore or hereafter furnished, imposed by law and not shown by the public records.

6. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims to title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

7. Taxes or special assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notices to such proceedings whether or not shown by the records of such agency, or by the public records.

8. Taxes, including any assessments collected therewith, for the year 2020 for which the first installment is delinquent, and the second installment is due and payable on or before June 21, 2021.
Parcel Number: RPK05800050090
Original Amount: $1,285.88 plus penalty and interest.
Without homeowner's exemption

9. Taxes, including any assessments collected therewith, for the year 2021 which are a lien not yet due and payable.

10. Water and sewer charges, if any, for the City of Ketchum.

11. Easements, reservations, restrictions, and dedications as shown on the official plat of Warm Springs Valley Subdivision.

12. Reservations and exceptions in a United States Patent, and in the act authorizing the issuance thereof, recorded September 21, 1918 as Instrument No. 40785.

13. Right of way for ditches, tunnels, telephone, and distribution lines constructed by authority of the United States, as granted to the United States under the provisions of Section 58-604 Idaho Code.

14. Affidavit as to Identification of Plats and Description of Real Property within the Avalanche Zone.
Recorded: October 10, 1979
Instrument No.: 197578

15. Reservations and/or exceptions as contained in a Warranty Deed, executed by Andreas Schernthanner and Alice E. Schernthanner, husband and wife.
Recorded: June 21, 1988
Instrument No.: 295876
Purpose: Excepting and reserving all water rights and any ditch rights associated with land

16. A Deed of Trust to secure an indebtedness in the amount shown below and any other obligations secured thereby:
Amount: $162,400.00
Trustor/Grantor: Greg R. Vita and Diana H. Vita, husband and wife
Trustee: Brad L. Williams
Beneficiary: Northwest Credit Farm Services FLCA
Dated: January 5, 2017
Recorded: January 9, 2017
Instrument No.: 640872

(End of Exceptions)

SCHEDULE C

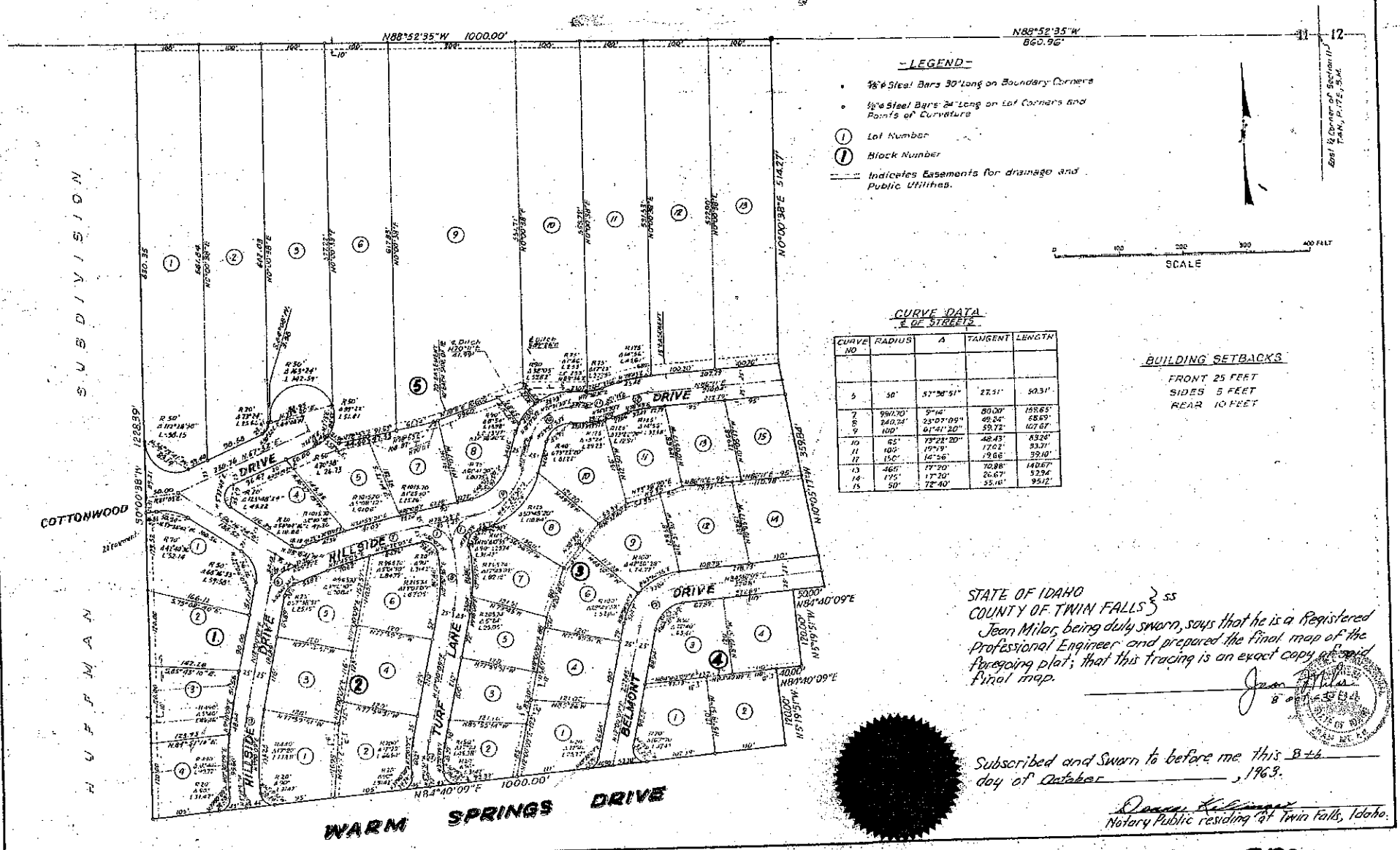
Legal Description:

Lot 9, Block 5 of WARM SPRINGS VALLEY SUBDIVISION, BLAINE COUNTY, IDAHO, according to the official plat thereof, recorded as Instrument No. 119580, records of Blaine County, Idaho.

WARM SPRINGS VALLEY SUBDIVISION

PART OF THE SE¼ OF SECTION 11, T.4N., R.17E., B.M., BLAINE COUNTY, IDAHO.

HOFFMANN-FISKE & MILAR — CONSULTING ENGINEERS



-LEGEND-

- ● ⅝"ø Steel Bars 30" Long on Boundary Corners
- ● ½"ø Steel Bars 24" Long on Lot Corners and Points of Curvature
- (1) Lot Number
- (1) Block Number
- ==== Indicates Easements for drainage and Public Utilities.

CURVE DATA
& OF STREETS

CURVE NO	RADIUS	Δ	TANGENT	LENGTH
5	50'	57°38'51"	27.51'	50.31'
7	994.70'	9°14'	80.00'	159.65'
8	240.24'	23°07'09"	49.24'	88.69'
9	100'	61°41'20"	59.72'	107.67'
10	65'	79°28'20"	48.43'	83.26'
11	100'	19°19'	17.02'	33.71'
12	150'	14°56'	19.66'	39.10'
13	466'	17°20'	70.88'	140.67'
14	175'	17°20'	26.67'	52.96'
15	50'	72°40'	35.16'	95.12'

BUILDING SETBACKS

FRONT 25 FEET
SIDES 5 FEET
REAR 10 FEET

STATE OF IDAHO }
COUNTY OF TWIN FALLS } ss

Jean Milar, being duly sworn, says that he is a Registered Professional Engineer and prepared the final map of the foregoing plat; that this tracing is an exact copy of said final map.

Jean Milar

Subscribed and Sworn to before me this 8th day of October, 1963.

Notary Public residing at Twin Falls, Idaho.

110580
11/18/63

Parcel Number

RPK05800050090

Property Year 2021

Property Address
219 HILLSIDE DR
KETCHUM ID 83340

Legal Description
WARM SPRINGS VALLEY SUB
LOT 9 BLK 5
115,668 SF

Tax Code Area 003-002

Parcel Status Active
Property Type Real Property
Sub Type

Owner/Contact Name	Type	Relationship	Owner%	HOE
VITA GREG R	OWNER	COM PROP1	50.00%	
VITA DIANA H	OWNER	COM PROP1	50.00%	

Mailing Address
36918 PALO COLORADO RD
CARMEL CA 93923-8125

Land Group
WARM SPRINGS VALLEY SUB

Township	Range	Section
4N	17E	11

Location Code ERES
Parcel Type
Zoning

Associated Parcels
None

Building Permits
None

Reappraisal Year 2018
Inspection Date 10/18/2017
Appraiser Initials TLR

Parcel Exemption: None

CB: No **NC:** No

Tax Certification

District	Roll Type	Units	Amount

Instrument	Eff Date	Action	Source	Target	Comments
640871	01/09/2017	Ownership	2017		
569642	07/27/2009	Ownership	2009		
569640	07/27/2009	Ownership	2009		

CHARACTERISTIC			ROLLS			ACRES	VALUATION SUMMARY			URBAN RENEWAL	
SCC	Type	Suffix Description	Assessed	Occupancy	Status	Quantity	Assessed Value	Exemption Amount	Net Taxable Value	Net Taxable Base	Net Taxable Incr
20	LAND		PRIMARY	NO	O	2.701	$ 220,000	$ --	$ 220,000	--	--
				TOTALS:		**2.701**	**$ 220,000**	**--**	**$ 220,000**	**--**	**--**

ROLL STATUS : O Open, Subject to Change

BLAINE COUNTY TREASURER
JOHN DAVID DAVIDSON
219 1ST AVE SOUTH SUITE 102
HAILEY ID 83333
TELEPHONE: (208) 788-5530

TAX MASTER INQUIRY

PARCEL NUMBER
RPK05800050090

TAX CODE AREA
003-002

LEGAL DESCRIPTION
WARM SPRINGS VALLEY SUB
LOT 9 BLK 5
115,668 SF

PRIMARY PROPERTY ADDRESS
219 HILLSIDE DR
KETCHUM ID 83340

VITA GREG R
VITA DIANA H
36918 PALO COLORADO RD
CARMEL CA 93923-8125

BALANCE DUE	INTEREST DATE
$ 1,307.36	02/09/2021
TOTAL	BALANCE AS OF 02/09/2021 2:53 pm

Tax Year **Assessment Roll** — **Bill Number:** 335606

2020 PRIMARY

	FIRST HALF	SECOND HALF	FULL YEAR
TAX / CERTIFICATION			
Charges	$ 642.94	$ 642.94	$ 1,285.88
Adjustments	$ 0	$ 0	$ 0
Payments	$ 0	$ 0	$ 0
LATE CHARGE			
Charges/Adjustments	$ 12.86	$ 0	$ 12.86
Payments	$ 0	$ 0	$ 0
FEES			
Charges/Adjustments	$ 0	$ 0	$ 0
Payments	$ 0	$ 0	$ 0
INTEREST			
Charges/Adjustments	$ 8.62	$ 0	$ 8.62
Payments	$ 0	$ 0	$ 0
AMOUNT DUE	**$ 664.42**	**$ 642.94**	**$ 1,307.36**

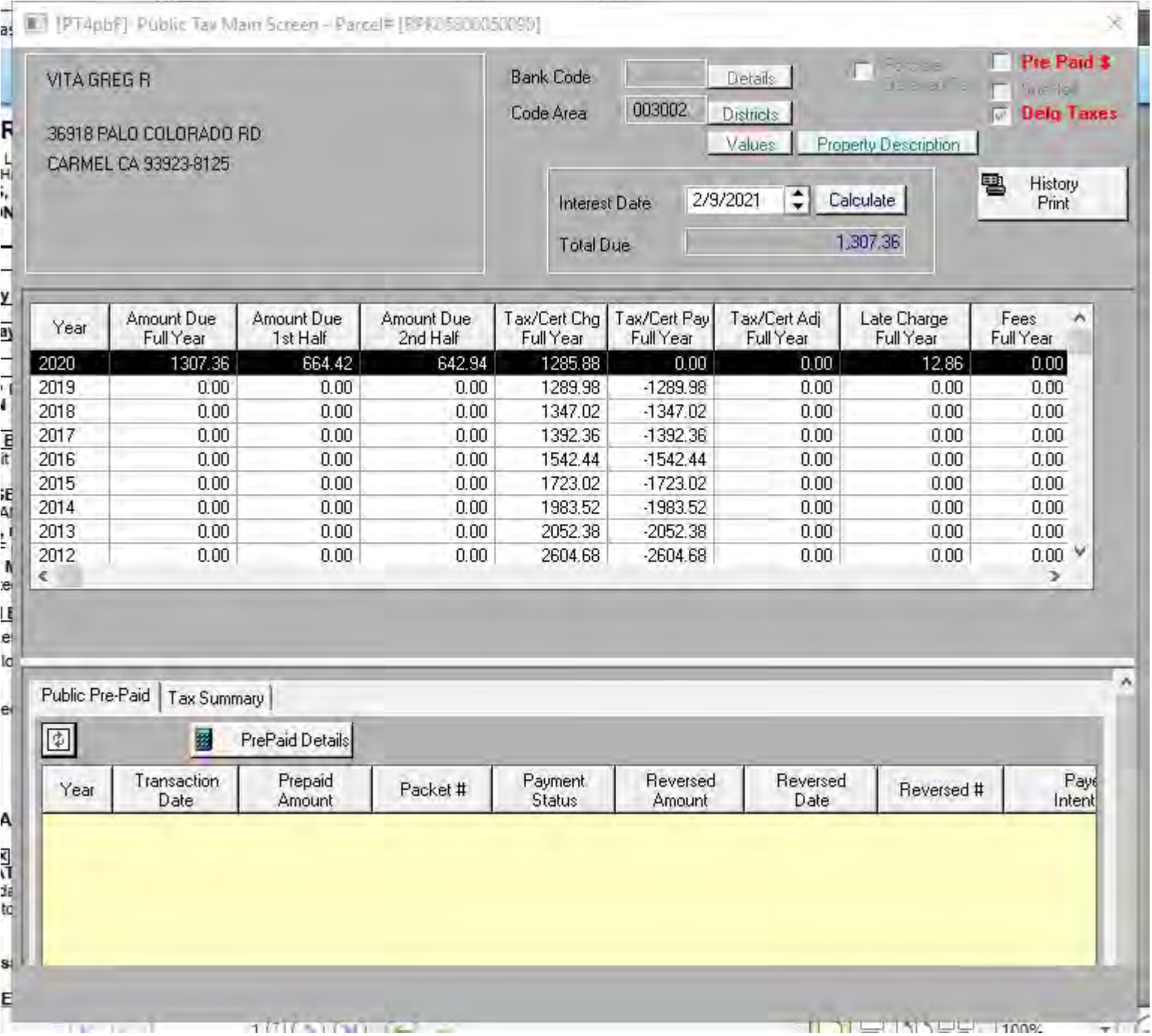
The amount due shown here is as of 2:53 pm on February 9, 2021, with interest calculated to February 9, 2021, and is subject to additional charges, fees and/or interest. Contact Treasurer's Office for updated amount due before sending payment.

VALUATION

TAXABLE VALUE: **$ 220,000**

CHARGES

Tax Code Area: 003-002 **Levy:** 0.005844856
Tax Charge: $ 1,285.88
Certifications: $ 0
TOTAL CHARGES: **$ 1,285.88**


[PT4pbF] Public Tax Main Screen - Parcel# [R#[redacted]]
VITA GREG R
36918 PALO COLORADO RD
CARMEL CA 93923-8125
Bank Code
Details
Code Area
003002
Districts
Values
Property Description
Pre Paid $
Delq Taxes
Interest Date
2/9/2021
Calculate
Total Due
1,307.36
History Print
Year | Amount Due Full Year | Amount Due 1st Half | Amount Due 2nd Half | Tax/Cert Chg Full Year | Tax/Cert Pay Full Year | Tax/Cert Adj Full Year | Late Charge Full Year | Fees Full Year
2020 | 1307.36 | 664.42 | 642.94 | 1285.88 | 0.00 | 0.00 | 12.86 | 0.00
2019 | 0.00 | 0.00 | 0.00 | 1289.98 | -1289.98 | 0.00 | 0.00 | 0.00
2018 | 0.00 | 0.00 | 0.00 | 1347.02 | -1347.02 | 0.00 | 0.00 | 0.00
2017 | 0.00 | 0.00 | 0.00 | 1392.36 | -1392.36 | 0.00 | 0.00 | 0.00
2016 | 0.00 | 0.00 | 0.00 | 1542.44 | -1542.44 | 0.00 | 0.00 | 0.00
2015 | 0.00 | 0.00 | 0.00 | 1723.02 | -1723.02 | 0.00 | 0.00 | 0.00
2014 | 0.00 | 0.00 | 0.00 | 1983.52 | -1983.52 | 0.00 | 0.00 | 0.00
2013 | 0.00 | 0.00 | 0.00 | 2052.38 | -2052.38 | 0.00 | 0.00 | 0.00
2012 | 0.00 | 0.00 | 0.00 | 2604.68 | -2604.68 | 0.00 | 0.00 | 0.00
Public Pre-Paid
Tax Summary
PrePaid Details
Year | Transaction Date | Prepaid Amount | Packet # | Payment Status | Reversed Amount | Reversed Date | Reversed # | Paye Intent

City of Ketchum

Attachment B:

Mountain Overlay Design Review – Plan Set

LEGEND

- Subject Boundary
- Adjoiners Boundary
- CL = Centerline Road
- EOA = Edge of Asphalt
- EOP = Edge of Paver Driveway
- Drainage & Utility Easement per Plat
- BE = Building Setback (See Note 5)
- MOD = Mountain Overlay District (City of Ketchum)
- 25% = 25% Slope Line (Alpine 2022)
- 5' Major Contour Line (Alpine 2022)
- 1' Minor Contour Line (Alpine 2022)
- FNC = Wooden Fence
- DL = Dripline/Edge of Vegetation
- TRL = Walking Trail
- Approximate Existing Structure
- RTW = Retaining Wall
- OHP = Overhead Power
- WTR = Water Main
- WS = Water Service
- SWR = Sewer Main
- SS = Sewer Service
- PH = Underground Phone
- Red Avalanche Hazard Zone (Alpine 2022)
- Blue Avalanche Hazard Zone (Alpine 2022)
- CNTRL = Survey Control
- FND 1/2" = Fond 1/2" Rebar
- FND BC = Found Brass Cap
- PP = Power Pole
- GUY = Power Pole Guy Wire
- SMH = Sewer Manhole
- PHBOX = Phone Box
- Bench
- STP = Proposed Soil Test Pit
- WLW = Willow Bush
- CT = Conifer Tree
- DT = Deciduous Tree
- NC = No Cap
- DIST = Disturbed
- GS = Ground Shot/Spot Elevation
- TOE = Toe of Slope
- SLAB = Concrete Slab Elevation
- ( ) = Record Bearing & Distance Instrument Number 119580

NOTES

1) Basis of Bearings is Idaho State Plane Coordinate System, NAD83, Central Zone, at Grid in US Survey Feet. Vertical Datum is NAVD1988.

2) Boundary Information is from the Plats of Warm Springs Valley Subdivision, Instrument Number 119580; Warm Springs Valley Subdivision, Block 5, Lots 5A & 7A, Instrument Number 559480; Records of Blaine County, Idaho.

3) Refer to the Plat Notes, Conditions, Covenants, & Restrictions on the Original Plat.

4) Utility Locations shown are based on visual surface evidence. Utility locations should be verified by Digline before any excavation.

5) Current Zoning appears to be Limited Residential District, (LR). Please refer to City of Ketchum Zoning Ordinances for more information about this Zone. Front and Rear Building Setbacks are are as shown, Side Setbacks are the greater of 1' for every 2' in building height or 10', the minimum setback is shown.

6) Lot 9 appears to be partially in the City of Ketchum Mountain Overlay District.

7) Lot 9 appears to be zoned Blaine County Elk Winter Range.

8) Lot 9 appears to be in the Ketchum Avalanche Overlay District.

9) Not all trees and vegetation are shown. some locations are approximate.

10) Avalanche Zoning is from a 2022 RAMMS & AVAL-1D Study conducted by Alpine Enterprises Inc. This study is site specific; it should not be applied to adjacent lands.

LOT 9
BLOCK 5
±111,849 Sq. Ft.
±2.57 Ac.

LOT 10
BLOCK 5

LOT 6
BLOCK 5

LOT 5
BLOCK 5

LOT 7
BLOCK 5

LOT 8
BLOCK 5

LOT 10
BLOCK 3

HILLSIDE DR
(50' R.O.W.)

GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.

A SITE SURVEY SHOWING
LOT 9, BLK 5, WARM SPRINGS VALLEY SUBDIVISION
WITHIN S11, T.4N., R.17E., B.M., CITY OF KETCHUM, BLAINE COUNTY, IDAHO
PREPARED FOR PARAMOUNT PROPERTY DEVELOPMENT LLC

Alpine Enterprises Inc.
Surveying, Mapping, Civil Engineering,
and Natural Hazards Consulting
660 Bell Dr., Unit 1
P.O. Box 2037, Ketchum, ID 83340 USA
(208) 727-1988 fax (208) 727-1987
email: bsmith@alpineenterprisesinc.com

PROFESSIONAL LAND SURVEYOR
LICENSED
Bruce Smith
7048
29NOV22
STATE OF IDAHO
BRUCE SMITH

NO	DATE	BY
REVISIONS		

PROJECT PATH AND PRINT DATE U:\Land Projects\725_HURD.dwg\725M_CS_WSVALLEY_BLK5_LT9_SITE2022.dwg 11/29/22 11:52:29 AM MST

SHEET 1 OF 1

LEGEND

- Subject Boundary
- Adjoiners Boundary
- Centerline of Existing Road
- Existing Edge of Asphalt Roadway
- Existing Edge of Paver Driveway
- Drainage & Utility Easement per Plat
- Building Setback (See Note 5)
- Mountain Overlay District (City of Ketchum)
- 25% Slope Line (Alpine 2022)
- Existing 5' Major Contour Line (Alpine 2022)
- Existing 1' Minor Contour Line (Alpine 2022)
- Proposed 5' Major Contour
- Proposed 1' Minor Contour
- Proposed Drainage Flowline
- Proposed Limits of Disturbance
- Existing Wooden Fence
- Existing Wooden Fence (To Be Removed)
- Existing Dripline/Edge of Vegetation (To Be Removed)
- Approximate Existing Structure
- Existing Retaining Wall
- Existing Overhead Power
- Proposed Underground Power
- Existing Water Main
- Existing Water Service
- Proposed 1" Water Service (C2.0, Detail 4)
- Existing Sewer Main
- Existing Sewer Service
- Proposed 4" Sanitary Sewer Service (C2.0, Detail 4)
- Existing Underground Phone
- Red Avalanche Hazard Zone (Alpine 2022)
- Blue Avalanche Hazard Zone (Alpine 2022)
- Found 1/2" Rebar
- Existing Power Pole
- Existing Power Pole Guy Wire
- Existing Sewer Manhole
- Proposed Sewer Cleanout
- Proposed Water Meter (C2.0, Detail 1)
- Existing Phone Box
- Proposed Power Meter
- Proposed Gas Meter
- 1.0% Existing Road Grade
- Existing Willow Bush (To Be Removed)
- Existing Conifer Tree (To Be Removed)
- Existing Deciduous Tree (To Be Removed)
- Proposed Structure
- Proposed Paver Driveway (C3.0, Detail 9)
- Proposed Asphalt Patch & Saw-Cut Line (C3.0, Detail 7)
- Proposed Stone Entry
- Proposed Boulders (C3.0, Detail 10)
- Proposed Gravel (C3.0, Detail 6)
- Proposed Snow Storage
- Proposed Landscape Drywell (C3.0, Detail 8)
- Proposed Heated Landscape Catch Basin Connected To Building Drainage
- Proposed 6" Driveway Trench Drain

SLAB	Garage Slab Elevation
FFE	Finish Floor Elevation
RIM	Drywell/Catch Basin Rim Elevation
TR	Top of Retainage Elevation
BR	Bottom of Retainage Elevation

NOTES

1) Basis of Bearings is Idaho State Plane Coordinate System, NAD83, Central Zone, at Grid in US Survey Feet. Vertical Datum is NAVD1988.
2) Boundary Information is from the Plats of Warm Springs Valley Subdivision, Instrument Number 119580; Warm Springs Valley Subdivision, Block 5, Lots 5A & 7A, Instrument Number 559480; Records of Blaine County, Idaho.
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LOT 9
BLOCK 5
±111,849 Sq. Ft.
±2.57 Ac.

LOT 10
BLOCK 5

LOT 8
BLOCK 5

LOT 7
BLOCK 5

LOT 10
BLOCK 3

UPPER FFE = 5900.00'

NOTE: INSTALL LANDSCAPE BOULDER RETAINING WALL. MAX HEIGHT=3'

NOTE: INSTALL 4" SEWER SERVICE. CUT & PATCH ASPHALT DRIVEWAY

NOTE: INSTALL 1" WATER SERVICE

NOTE: EXISTING ROAD IS NOT CENTERED WITHIN R.O.W.

HILLSIDE DR (50' R.O.W.)

HILLSIDE DR (50' R.O.W.)

SNOW STORAGE 220 SQ. FT.

SNOW STORAGE 70 SQ. FT.

GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.

NORTH

A SITE GRADING, R.O.W. ENCROACHMENT, & UTILITY PLAN SHOWING
LOT 9, BLK 5, WARM SPRINGS VALLEY SUBDIVISION
WITHIN S11, T.4N., R.17E., B.M., CITY OF KETCHUM, BLAINE COUNTY, IDAHO
PREPARED FOR PARAMOUNT PROPERTY DEVELOPMENT LLC

Alpine Enterprises Inc.
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660 Bell Dr., Unit 1
P.O. Box 2037, Ketchum, ID 83340 USA
(208) 727-1988 fax (208) 727-1987
email: bamith@alpineenterprisesinc.com

PROFESSIONAL ENGINEER — ALEX NELSON — STATE OF IDAHO — 19275 — 20JUN23

NO	DATE	BY
1	02DEC22	AHN
2	30JAN23	AHN
3	28APR23	AHN
4	20JUN23	AHN

REVISIONS
PRELIMINARY ONLY: NOT FOR CONSTRUCTION
DESIGN REVIEW SUBMITTAL
REVISED
REVISED - CUF/FILL CALCULATIONS ADDED
REVISED
REVISED

PROJECT PATH AND PRINT DATE: U:\Land Projects\725_HURD\dwg\725M_CS_WSVALLEY_BLK5_LT9_CIVILROW2022_REVISED_31MAR23.dwg 06/20/23 12:47:13 PM MST

C1.0

GENERAL CONSTRUCTION NOTES

1) Utility Locations shown are based on Digline locates and visual surface evidence. They are approximate. Contractor shall be responsible for locating existing utilities prior to commencing and during construction.

2) See the Building Plan from Studio DVLP and the Landscape Plan from N.S. Consulting for the remainder of the design.

3) Contractor shall assure positive drainage away from the building and driveway.

4) Contractor shall be responsible for dust control during construction of all items hereon. Dust control shall be continuous during construction, 24 hours per day 7 days per week. The contractor shall follow the requirements of the Storm Water Pollution Prevention Program at all times until permanent erosion control is established.

5) The Trench Drain shall be a 6" wide HDPE channel with a 0.75 built in channel slope (Zurn Flo-Thru Model Z886 or equivalent). Grate shall be ductile iron with a slotted pattern. All components shall be rated for H-20 loading.

6) All construction shall be in accordance with the most current edition of the Idaho Standards for Public Works Construction, ISPWC, and the City of Ketchum, Idaho, Codes and Standards. The contractor shall be responsible for obtaining and keeping a copy of the ISPWC and the City of Ketchum Codes and Standards on site during construction.

7) Per Idaho Code, 55-1613, the contractor shall retain and protect all monuments, accessories to corners, benchmarks, and points set in control surveys. All monuments, accessories to corners, benchmarks, and points set in control surveys that are lost or disturbed by construction shall be reestablished and re-monumented, at the expense of the agency or person causing their loss or disturbance under the direction of a professional land surveyor.

8) The contractor shall clean up the site after construction so that it is in a condition equal to or better than that which existed prior to construction.

9) The contractor shall be required to obtain all the necessary permits prior to construction and shall check with the City of Ketchum for permits the owner may have already obtained.

10) Potable/non-potable crossings shall comply with ISPWC Standard Drawing SD-407 and IDAPA section 58.01.08.542.07.

11) Sewer service lines shall be placed at a slope of 2%, with markers per ISPWC. Cleanouts are required at changes in alignment, grade, and minimum 150' length.

12) All pipe shall be bedded with (ISPWC) Type I bedding material.

13) Trenches shall be backfilled and compacted to a minimum of 95% of maximum density as determined by AASHTO T-99.

14) The contractor shall pressure test all sewer service connections in accordance with Idaho Standards for Public Works Construction, ISPWC.

15) All clearing and grubbing shall conform to ISPWC Section 201 and City of Ketchum standards of excavation and backfill.

16) All excavation and embankment shall conform to ISPWC Section 202 and City of Ketchum standards for excavation and backfill. Excavated subgrade shall be compacted and all unsuitable Sections removed and replaced with structural fill as determined by the engineer per ISPWC Section 204. Minimum compaction of placed material shall be 95% of maximum laboratory density as determined by AASHTO T-99 or IDT T-91.

17) All 2" minus aggregate shall be placed in conformance with ISPWC Section 802. It shall be compacted per ISPWC Section 202 and the City of Ketchum standards. 2" minus crushed aggregate material shall conform to ISPWC Section 802 Type II and to the City of Ketchum specifications. Minimum compaction of placed material shall be 95% of maximum laboratory density as determined by AASHTO T-99 or IDT T-91.

18) All 3/4" minus aggregate shall be placed in conformance with ISPWC Section 802. It shall be compacted per ISPWC Section 202 and the City of Ketchum standards. 3/4" minus crushed aggregate for leveling course shall conform to ISPWC Table 802 Type I and to the City of Ketchum specifications. Minimum compaction of placed material shall be 95% of maximum laboratory density as determined by AASHTO T-99 or IDT T-91.

19) All asphaltic concrete pavement work shall conform to ISPWC Section(s) 805, 810, and 811 for Class II pavement and to the City of Ketchum standards. Asphalt aggregate shall be 1/2" nominal size conforming to Table 803b in ISPWC Section 803. Asphalt binder shall be pg 58-28 conforming to Table A-1 in ISPWC Section 805.

20) All concrete work shall conform to ISPWC Sections 701 and 703. All concrete shall be 3,000 psi minimum. 28 day, as defined in ISPWC Section 703, Table 1.C.

21) All edges of existing asphalt paving shall be saw cut a minimum of 24" to provide a clean pavement edge for matching. No wheel cutting shall be allowed. Pavement shall be cut prior to paving to prevent damage to the cut edge.

22) Snow Storage based on 30% of the Improved Parking and Pedestrian Circulation Areas.
Driveway = *1,475 Sq. Ft.
Front Walk = *350 Sq. Ft.
Total = 1,825 Sq. Ft.
30% of Total = 547.5 Sq. Ft.
Area Designated = 455 Sq. Ft. + 120 Sq. Ft. = 575 Sq. Ft. of Snow Storage

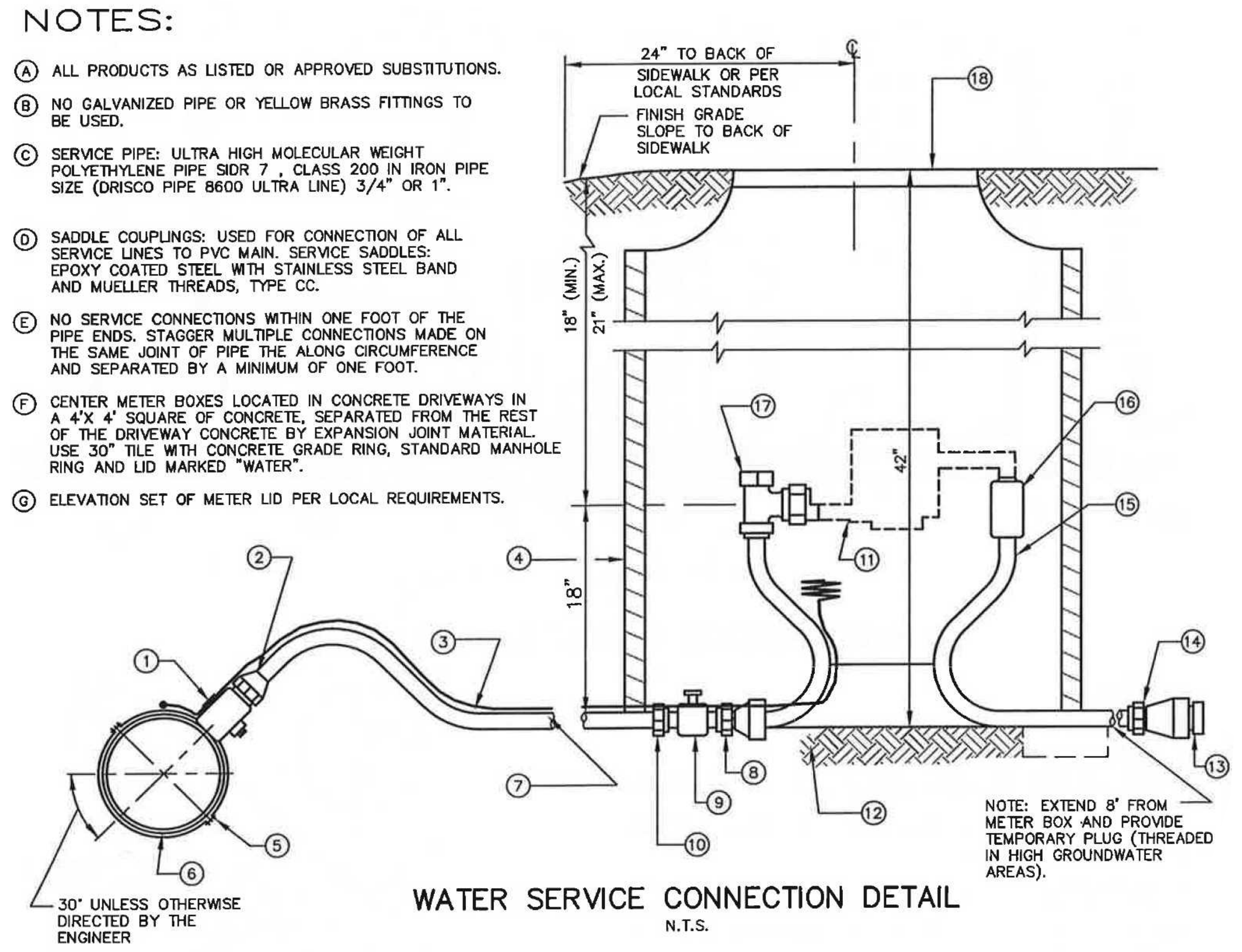
23) The contractor shall be responsible for providing traffic control per the current edition of the US Department of Transportation Manual of Uniform Traffic Control Devices (MUTCD).

24) Alpine Enterprises Inc. is not responsible for any deviation from these plans, unless such changes have been authorized in writing.

25) All right-of-way improvements per sheet C1.0 must be completed prior to issuance of a temporary or final Certificate of Occupancy unless otherwise agreed upon in writing by the City.

NOTES:

(A) ALL PRODUCTS AS LISTED OR APPROVED SUBSTITUTIONS.
(B) NO GALVANIZED PIPE OR YELLOW BRASS FITTINGS TO BE USED.
(C) SERVICE PIPE: ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE PIPE SIDR 7 , CLASS 200 IN IRON PIPE SIZE (DRISCO PIPE 8600 ULTRA LINE) 3/4" OR 1".
(D) SADDLE COUPLINGS: USED FOR CONNECTION OF ALL SERVICE LINES TO PVC MAIN. SERVICE SADDLES: EPOXY COATED STEEL WITH STAINLESS STEEL BAND AND MUELLER THREADS, TYPE CC.
(E) NO SERVICE CONNECTIONS WITHIN ONE FOOT OF THE PIPE ENDS. STAGGER MULTIPLE CONNECTIONS MADE ON THE SAME JOINT OF PIPE THE ALONG CIRCUMFERENCE AND SEPARATED BY A MINIMUM OF ONE FOOT.
(F) CENTER METER BOXES LOCATED IN CONCRETE DRIVEWAYS IN A 4'X 4' SQUARE OF CONCRETE, SEPARATED FROM THE REST OF THE DRIVEWAY CONCRETE BY EXPANSION JOINT MATERIAL. USE 30" TILE WITH CONCRETE GRADE RING, STANDARD MANHOLE RING AND LID MARKED "WATER".
(G) ELEVATION SET OF METER LID PER LOCAL REQUIREMENTS.

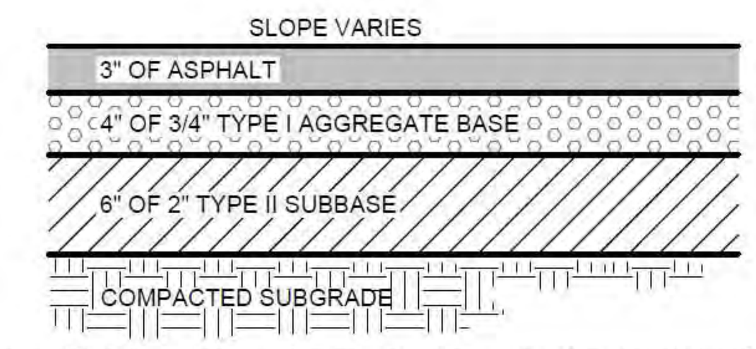


WATER SERVICE CONNECTION DETAIL
N.T.S.

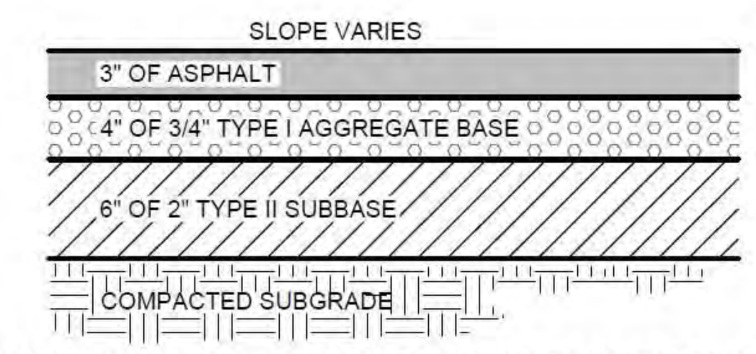
LEGEND

(1) FORD FB-1101 OR MUELLER BALL CORPORATION STOP 3/4" OR 1".
(2) MUELLER H-15072.
(3) NO. 12 COPPER FINDER WIRE. SEE SD-514 FOR SPLICING.
(4) 20" DIA. X 42" DEEP METER BOX (NOTCH FOR SERVICE LINES).
(5) STAINLESS STEEL SADDLE.
(6) WATER MAIN.
(7) 3/4" OR 1" SERVICE LINE (TYP.) NO SPLICING IS ALLOWED.
(8) MALE SWIVEL END.
(9) FULL OPENING 3/4" OR 1" MUELLER 300 BALL OR FORD B-11333 BALL VALVE.
(10) CURB STOP ADAPTER (FORD C-86 OR MUELLER H-15426 "GRIP JOINT").
(11) FUTURE METER INSTALLED BY WATER PURVEYOR.
(12) FIRM UNDISTURBED EARTH. (SET TILE ON 2"X 22" DIAMETER PRECAST CONCRETE BLOCK IF OVER EXCAVATION OCCURS).
(13) PROVIDE TEMPORARY PLUG (THREADED IN HIGH WATER AREAS).
(14) DOUBLE PURPOSE COUPLING.
(15) FORD VHH-92-18" YOKE WITH MALE CONNECTION AND EXTENDED END OR APPROVED EQUAL.
(16) FORD CARTRIDGE DUAL CHECK VALVE (VERTICAL).
(17) FORD BALL VALVE 18" (92,93,94 SERIES OR MUELLER B24101-142) 3/4"-1" COPPERSETTER WITH PADLOCK WINGS AND EXTENDED END ON EACH.
(18) FORD TYPE X SINGLE LID COVERS NO. X43, 13 1/2" OPENING-1 1/32" PENTAGONAL NUT.

(1) WATER SERVICE CONNECTION (3/4" - 1")
ISPWC - SD-401
NOT TO SCALE



TYPICAL STREET ASPHALT SECTION

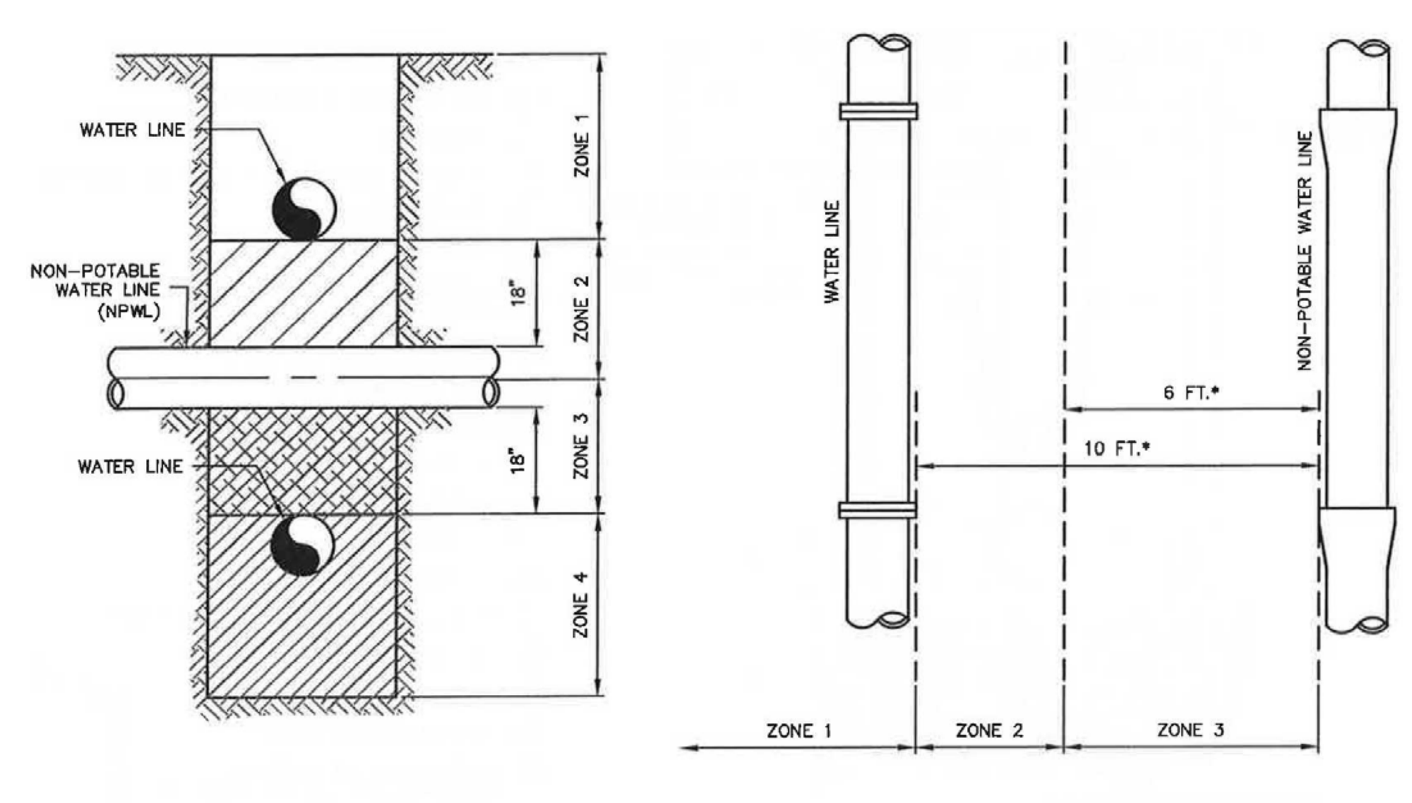


TYPICAL ALLEY ASPHALT SECTION

NOTES:

1. SUBBASE CAN BE 2" TYPE II OR ¾" TYPE I CRUSHED AGGREGATE BASE COURSE.
2. MATERIALS SHALL CONFORM WITH CURRENT ISPWC STANDARDS, DIVISION 800 AGGREGATES AND ASPHALT.
3. PAVEMENT SECTION MAY BE MODIFIED IF A PROJECT SPECIFIC GEOTECHNICAL REPORT, STAMPED BY A LICENSED ENGINEER, IS PROVIDED.

(2) TYPICAL ROAD SECTIONS
CITY OF KETCHUM - SD-3
NOT TO SCALE



* DISTANCES ARE HORIZONTAL.

VERTICAL SEPARATION REQUIREMENTS

ZONE 1: A) WATER AND NPWL MUST BE SEPARATED BY AT LEAST 18" AND B) ONE FULL, UNCUT LENGTH OF BOTH PWL AND NPWL PIPE MUST BE CENTERED ON THE CROSSING SO THAT THE JOINTS ARE AS FAR AS POSSIBLE FROM THE CROSSING.

ZONE 2: A) ONE FULL, UNCUT LENGTH OF BOTH PWL AND NPWL PIPE MUST BE CENTERED ON THE CROSSING SO THAT THE JOINTS ARE AS FAR AS POSSIBLE FROM THE CROSSING.
AND EITHER B) NPWL MUST BE CONSTRUCTED TO WATER MAIN STANDARDS AND PRESSURE TESTED FOR WATER TIGHTNESS FOR A HORIZONTAL DISTANCE OF 10 FEET ON BOTH SIDES OF CROSSING.
OR C) EITHER THE NPWL OR WATER LINE OR BOTH MUST BE ENCASED WITH A SLEEVEING MATERIAL ACCEPTABLE TO DEQ FOR A HORIZONTAL DISTANCE OF 10 FEET ON BOTH SIDES OF THE CROSSING.

ZONE 3: SAME REQUIREMENTS AS ZONE 2 EXCEPT THE NPWL MUST ALSO BE SUPPORTED ABOVE THE CROSSING TO PREVENT SETTLING.

ZONE 4: SAME REQUIREMENTS AS ZONE 1 EXCEPT THE NPWL MUST ALSO BE SUPPORTED ABOVE THE CROSSING TO PREVENT SETTLING.

HORIZONTAL SEPARATION REQUIREMENTS

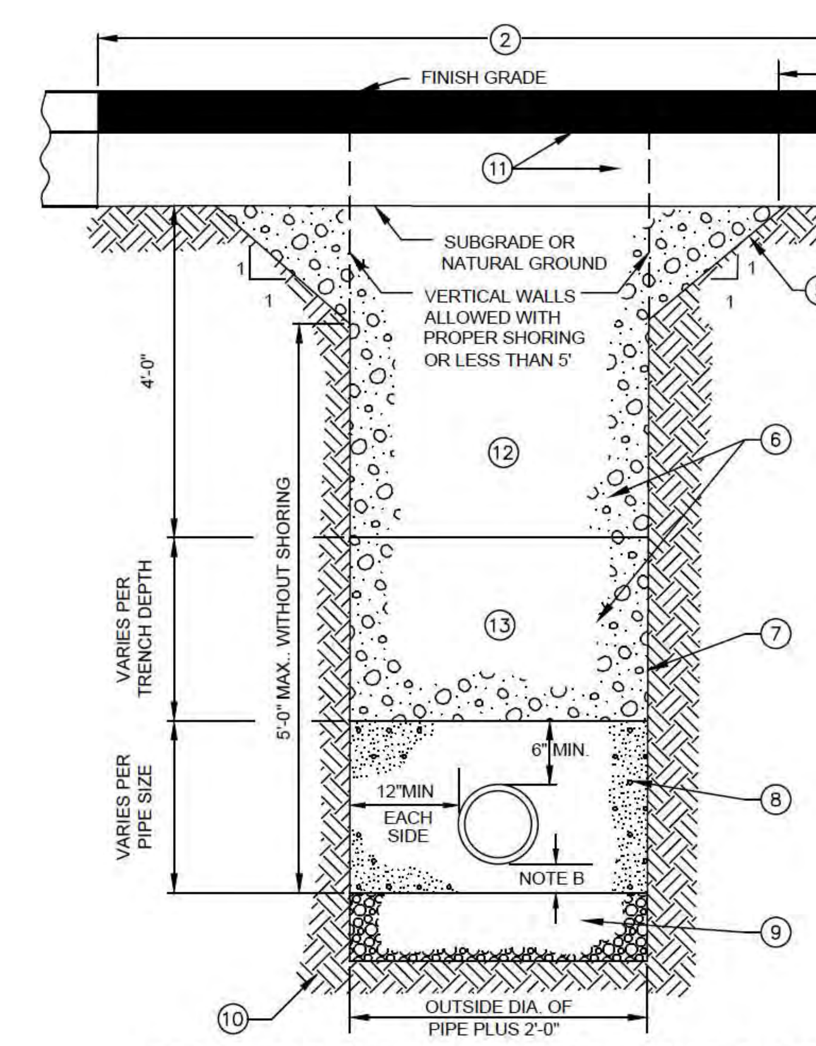
ZONE 1: A) NO SPECIAL REQUIREMENTS.

ZONE 2: A) NO SPECIAL REQUIREMENTS FOR POTABLE OR NON-POTABLE SERVICES.
B) WATER AND NPWL SEPARATED BY AT LEAST 6 FEET AT OUTSIDE WALLS.
AND C) WATER AT LEAST 18 INCHES HIGHER IN ELEVATION THAN THE NPWL.
AND EITHER D) NPWL CONSTRUCTED TO WATER MAIN STANDARDS AND PRESSURE TESTED FOR WATER TIGHTNESS.
OR E) SITE SPECIFIC REQUIREMENTS APPROVED BY DEQ.

ZONE 3: NOT ALLOWED WITHOUT DEQ WAIVER.

NOTE: SANITARY SEWER FORCE MAINS MUST HAVE MIN. 10' HORIZONTAL SEPARATION AND 18" VERTICAL SEPARATION. ZONE 2 AND ZONE 3 PLACEMENTS ARE NOT ALLOWED WITHOUT A WAIVER GRANTED BY DEQ.

(3) POTABLE AND NON-POTABLE WATER LINE (NPWL) SEPERATION
ISPWC - SD-407
NOT TO SCALE



LEGEND

(1) 2' REQUIRED BOTH SIDES, SAWCUT REQUIRED.
(2) SURFACE REPAIR WIDTH, 4' MINIMUM. SEE NOTE 5.
(3) EXISTING SURFACE.
(4) EXISTING BASE.
(5) TRENCH BACK SLOPE PER O.S.H.A. OR SUITABLE SHORING.
(6) TRENCH BACKFILL PER SECTION-306, OR SEE "KETCHUM PUBLIC CONSTRUCTION SLURRY REQUIREMENT" BELOW IF LOCATED WITHIN PUBLIC RIGHT-OF-WAY.
(7) VERTICAL TRENCH WALLS SHORING PER O.S.H.A..
(8) PIPE BEDDING PER SECTION-305 (SEE SD-302).
(9) FOUNDATION STABILIZATION MAY VARY PER SOIL TYPE AND STABILITY (PER SECTION-304).
(10) UNDISTURBED SOIL (TYP).
(11) REPAIRED SURFACE, SEE DETAIL 5, SEE "KETCHUM PUBLIC CONSTRUCTION SLURRY REQUIREMENT" BELOW IF LOCATED WITHIN PUBLIC RIGHT-OF-WAY.
(12) UPPER COMPACTION ZONE; SEE "KETCHUM PUBLIC CONSTRUCTION SLURRY REQUIREMENT" BELOW IF LOCATED WITHIN PUBLIC RIGHT-OF-WAY.
(13) LOWER COMPACTION ZONE

KETCHUM PUBLIC CONSTRUCTION SLURRY REQUIREMENT

IN AREAS WHERE IT IS NECESSARY TO CUT THE ASPHALT PAVEMENT AND DIG A TRENCH FOR BURIAL OF CONDUIT CABLE OR OTHER CITY UTILITY, THE TRENCH SHALL BE BACKFILLED WITH A LEAN CONCRETE MIX TO THE BOTTOM OF FINISH SURFACE MATERIAL WITH THE FOLLOWING PROPORTIONS OF MATERIALS:

COARSE AGGREGATE (⅜" MINUS)	: 2,600 LBS
SAND	: 800 LBS
PORTLAND CEMENT	: 94 LBS
WATER	: 11 GAL (MAX.)

WATER CONTENT IS MAXIMUM AND MAY BE REDUCED DOWNWARD. CARE SHALL BE TAKEN TO ASSURE THAT EXCESS WATER IS NOT PRESENT IN THE MIXING DRUM PRIOR TO CHARGING THE MIXER WITH MATERIALS. THOROUGH MIXING WILL BE REQUIRED PRIOR TO DISCHARGE.

NO COMPACTION, VIBRATION, OR FINISHING IS REQUIRED. THE LEAN CONCRETE MIX SHALL BE STRUCK OFF AT OR BELOW THE ELEVATION OF THE PLANTMIX SURFACING WITH A SQUARE-NOSE SHOVEL OR SIMILAR HAND TOOL. THE BACKFILL MIX SHALL BE ALLOWED TO SET FOR A MINIMUM OF 2 HOURS BEFORE THE PERMANENT PLANTMIX SURFACING IS PLACED TO COMPLETE THE TRENCH REPAIR. TEMPORARY PLACEMENT OF ASPHALT COLD MIX SURFACING MAY BE NECESSARY TO ACCOMMODATE TRAFFIC WITHIN THE FIRST 2 HOURS OF BACKFILL PLACEMENT PRIOR TO COMPLETING THE PERMANENT REPAIR.

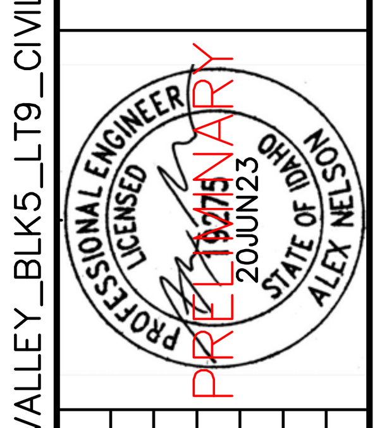
NOTES:

1. TRENCH EXCAVATION PER SECTION-301.
2. PIPE BEDDING PER SECTION-305.
3. BACKFILL AND COMPACTION PER SECTION-306.
4. SURFACE REPAIR AND BASE PER DETAIL 3.
5. ASPHALT PAVEMENT FOR SURFACE REPAIR SHALL BE IN ACCORDANCE WITH PLANS AND ISPWC SECTIONS 805, 810, AND 811 FOR CLASS II PAVEMENT. ASPHALT AGGREGATE SHALL BE ½" (13MM) NOMINAL SIZE CONFORMING TO TABLE 803B IN ISPWC SECTION 803. ASPHALT BINDER SHALL BE PG 58-28 CONFORMING TO TABLE A-1 IN ISPWC SECTION 805.
6. IF TRENCH IMPACTS CROWN OF ROADWAY, CROWN MUST BE MAINTAINED AND POSITIVE DRAINAGE PROVIDED.

(4) TYPICAL TRENCH
CITY OF KETCHUM - SD-12
NOT TO SCALE

A SITE GRADING, R.O.W. ENCROACHMENT, & UTILITY PLAN SHOWING
LOT 9, BLK 5, WARM SPRINGS VALLEY SUBDIVISION
WITHIN S11, T.4N., R.17E., B.M., CITY OF KETCHUM, BLAINE COUNTY, IDAHO
PREPARED FOR PARAMOUNT PROPERTY DEVELOPMENT LLC

Alpine Enterprises Inc.
Surveying, Mapping, Civil Engineering, and Natural Hazards Consulting
P.O. Box 2037, 660 Bell Dr., Unit ..., Ketchum, ID 83340 USA
(208) 727-1988 727-1987 fax
email: bsmith@alpineenterprisesinc.com



REVISIONS	NO	DATE	BY
PRELIMINARY ONLY: NOT FOR CONSTRUCTION			
DESIGN REVIEW SUBMITTAL	1	02DEC22	AHN
REVISED	2	30JAN23	AHN
REVISED - CUT/FILL CALCULATIONS ADDED	3	28APR23	AHN
REVISED	4	20JUN23	AHN
REVISED			

PROJECT PATH AND PRINT DATE U:\Land Projects\725_HURD\dwg\725M_CS_WSVALLEY_BLK5_LT9_CIVILROW2022_REVISED_31MAR23.dwg 06/20/23 12:47:13 PM MST

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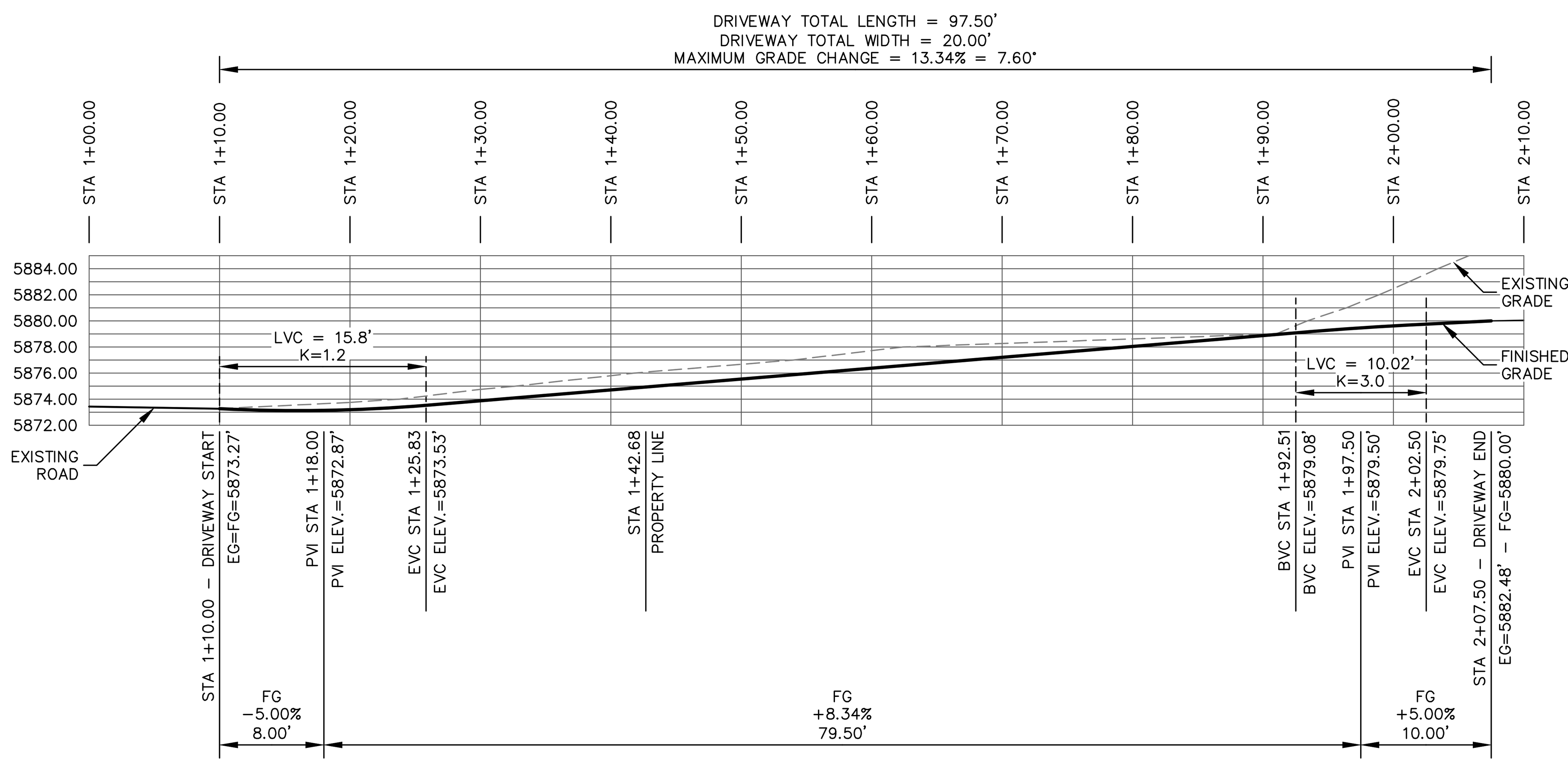
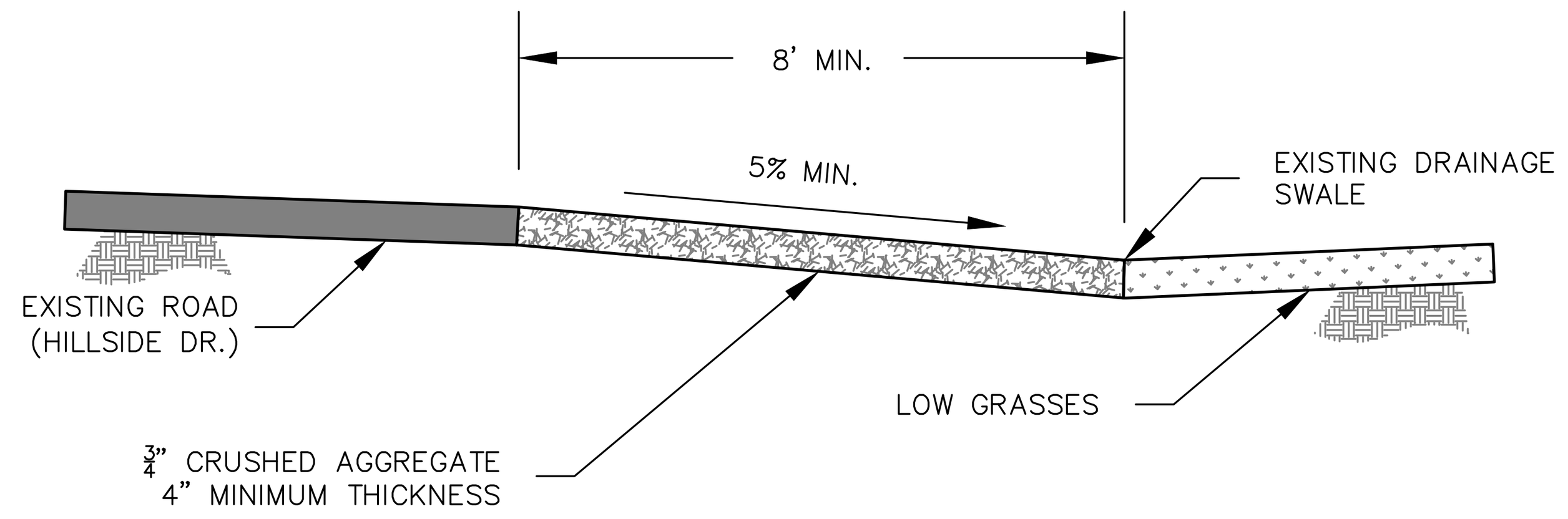


5 **DRIVEWAY PROFILE VIEW**
VERT: 1"=10'
HORIZ: 1"=10'



6 **CROSS-SECTION: ROADSIDE SWALE**
R.O.W. HILLSIDE DRIVE
NOT TO SCALE

NOTES

A) Material shall be pervious/permeable to allow drainage.

B) Surface must allow for vehicle parking and be consistent along the entire property frontage.

C) Material within the first eight (8) feet from edge of asphalt (Street) shall be distinct from driveway and rest of property in order to visually appear available for parking.

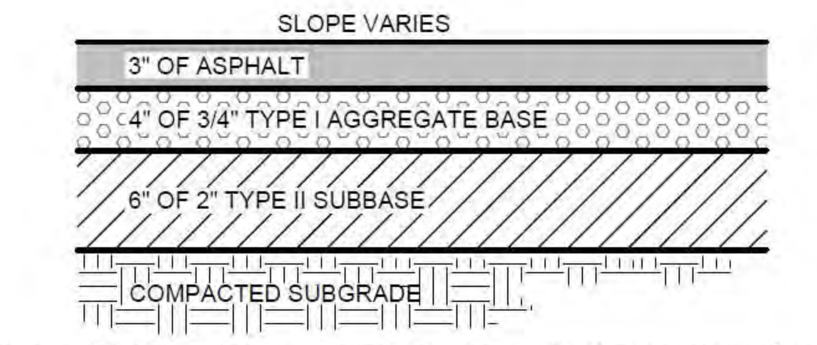
D) Grading and drainage improvements as required by City Engineer – Minimum 5% slope.

E) No obstructions, such as boulders or berms.

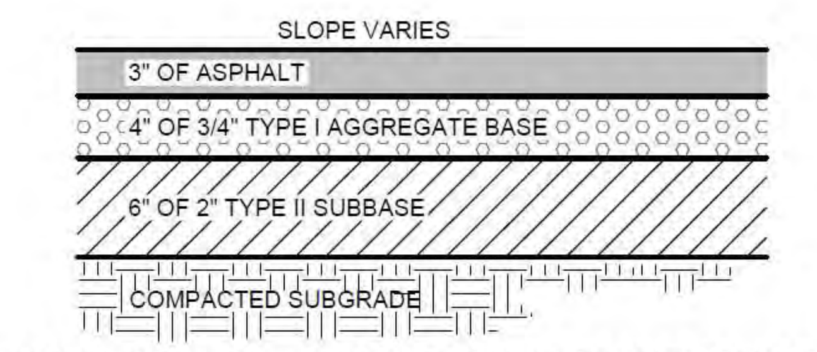
F) No buried irrigation systems within the first eight (8) feet the edge of asphalt (Street). Surface irrigation lines are permitted beyond the first eight (8) feet, however pop-up heads are not permitted anywhere in the ROW.

G) No live plant material within the first eight (8) feet from edge of asphalt (Street). Low ground cover plant material, such as turf grass, is permitted beyond the first eight (8) feet. Drought-tolerant species are preferred.

H) No snow-melt systems to be located within the Public R.O.W.



TYPICAL STREET ASPHALT SECTION

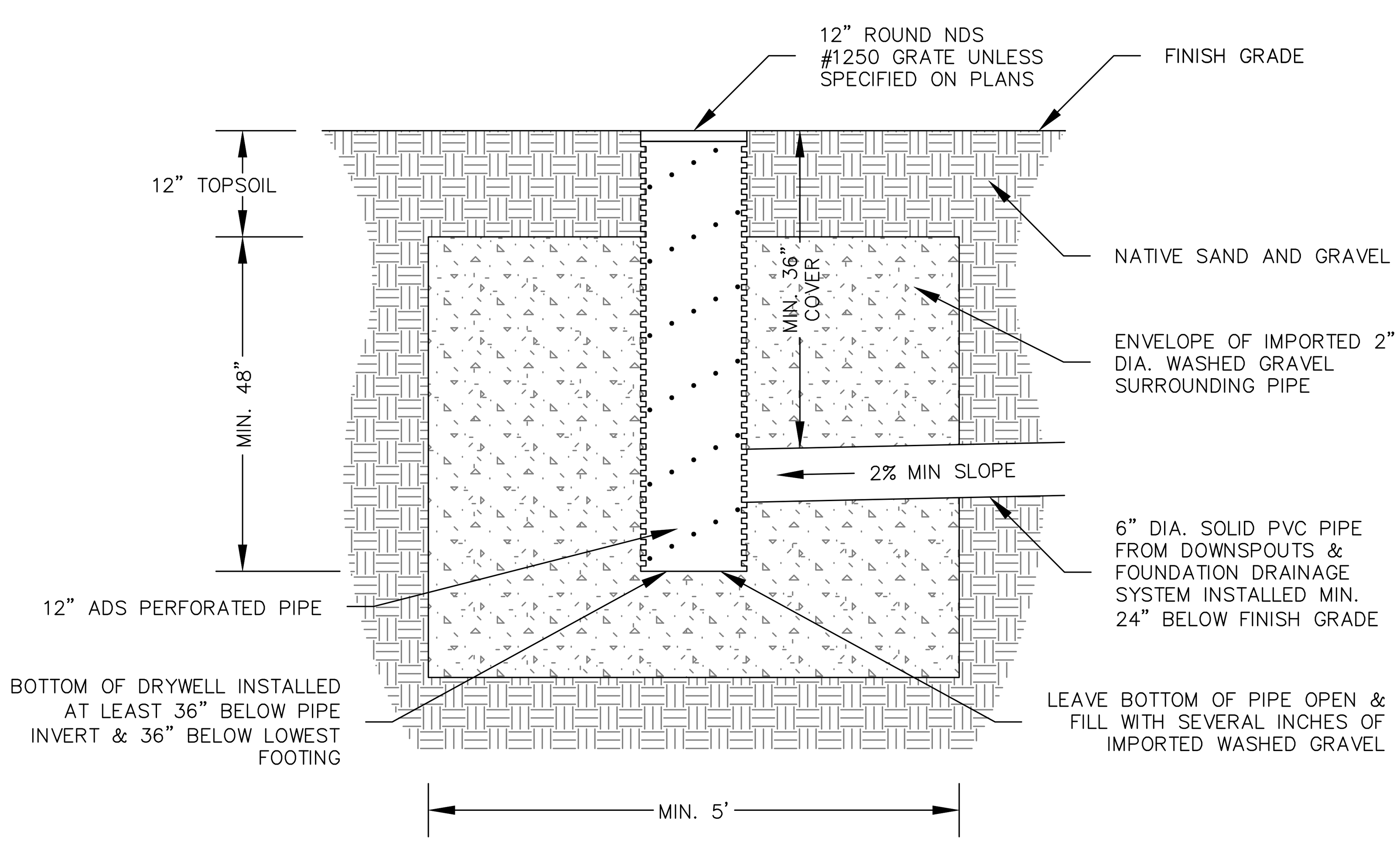


TYPICAL ALLEY ASPHALT SECTION

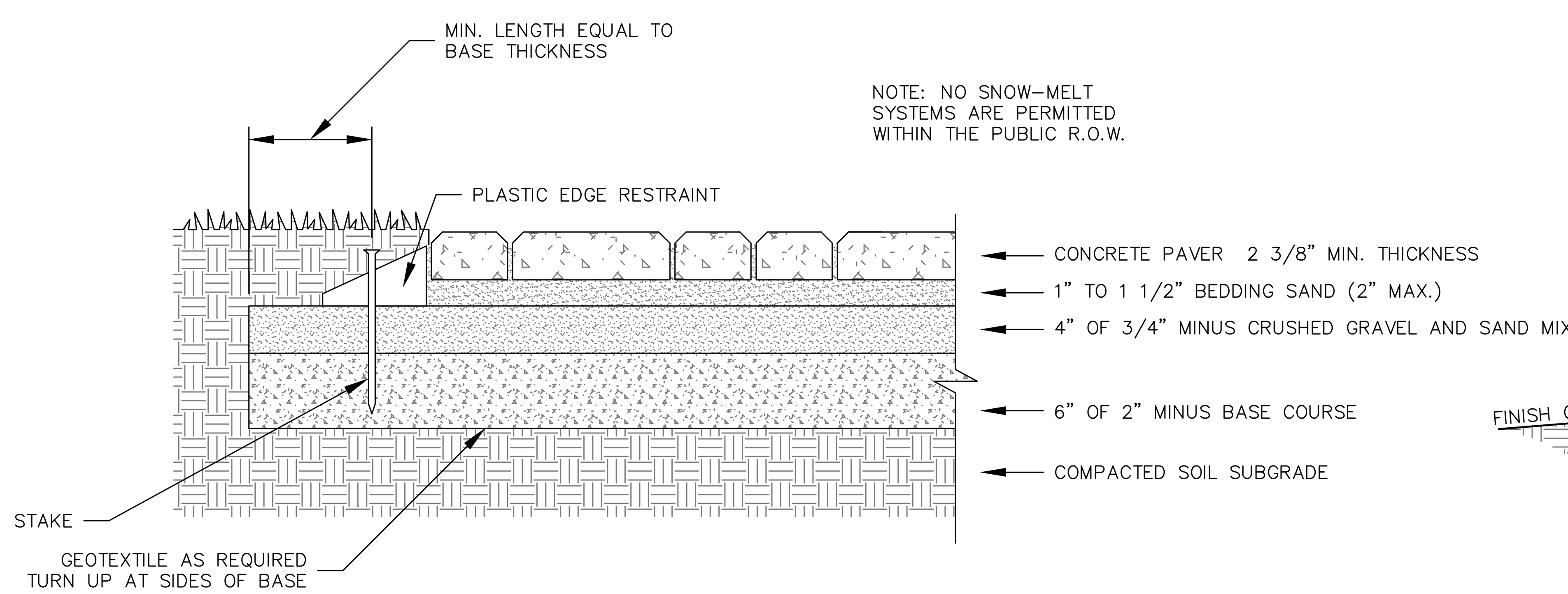
NOTES:

1. SUBBASE CAN BE 2" TYPE II OR ¾" TYPE I CRUSHED AGGREGATE BASE COURSE.
2. MATERIALS SHALL CONFORM WITH CURRENT ISPWC STANDARDS, DIVISION 800 AGGREGATES AND ASPHALT.
3. PAVEMENT SECTION MAY BE MODIFIED IF A PROJECT SPECIFIC GEOTECHNICAL REPORT, STAMPED BY A LICENSED ENGINEER, IS PROVIDED.

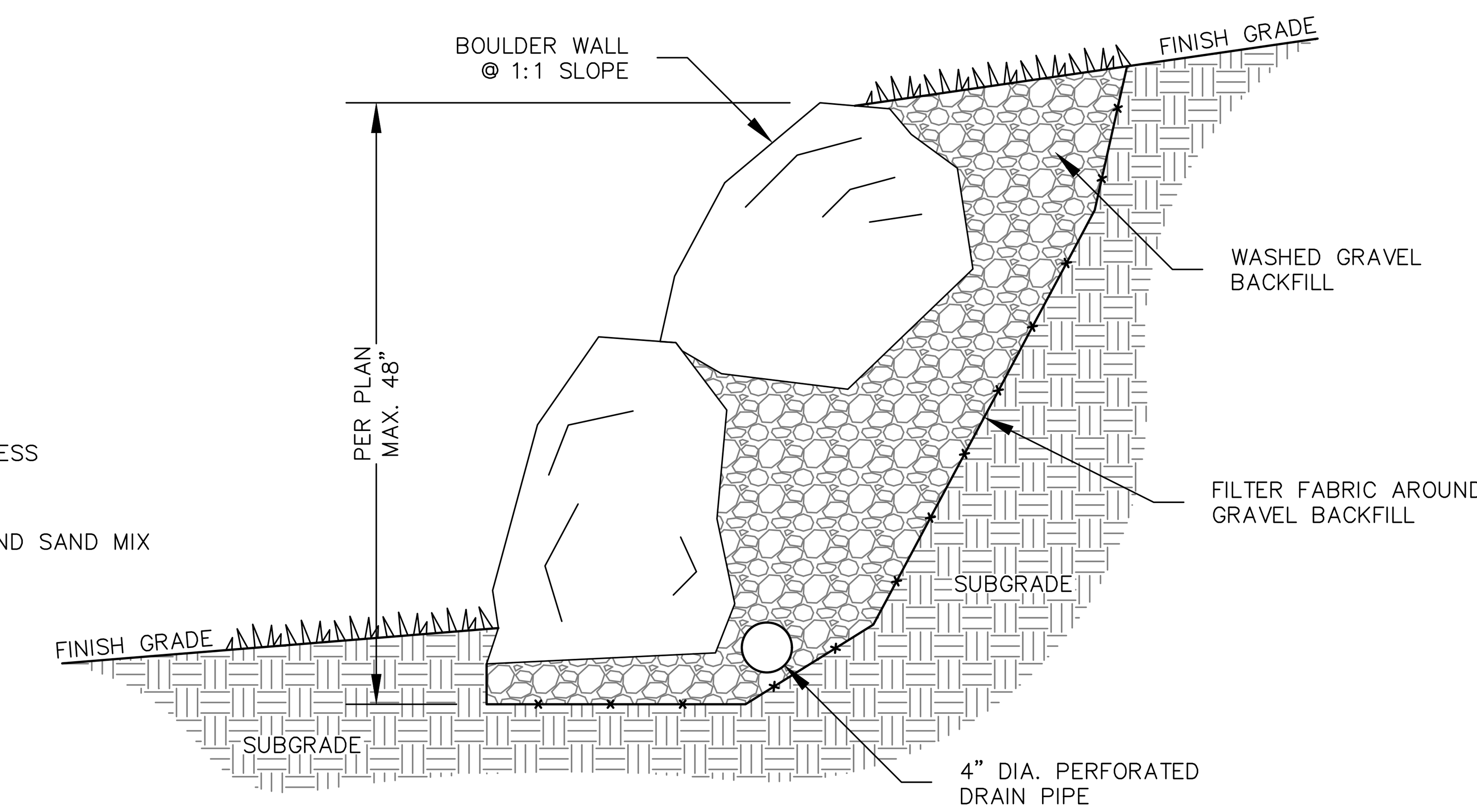
7 **TYPICAL ROAD SECTIONS**
CITY OF KETCHUM – SD-3
NOT TO SCALE



8 **LANDSCAPE DRYWELL DETAIL**
NOT TO SCALE



9 **PAVER DRIVEWAY DETAIL**
NOT TO SCALE



10 **BOULDER WALL**
NOT TO SCALE

A SITE GRADING, R.O.W. ENCROACHMENT, & UTILITY PLAN SHOWING
LOT 9, BLK 5, WARM SPRINGS VALLEY SUBDIVISION
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email: bsmith@alpineenterprisesinc.com

PROFESSIONAL ENGINEER LICENSED 17275 20JUN23 STATE OF IDAHO ALEX NELSON
PRELIMINARY

NO	DATE	BY	REVISIONS
			PRELIMINARY ONLY: NOT FOR CONSTRUCTION
1	02DEC22	AHN	DESIGN REVIEW SUBMITTAL
2	30JAN23	AHN	REVISED
3	28APR23	AHN	REVISED – CUT/FILL CALCULATIONS ADDED
4	20JUN23	AHN	REVISED
			REVISED

PROJECT PATH AND PRINT DATE U:\Land Projects\725_HURD\dwg\725M_CS_WSVALLEY_BLK5_LT9_CIVILROW2022_REVISED_31MAR23.dwg 06/20/23 12:47:13 PM MST

C3.0

LEGEND

- Subject Boundary
- Adjoiners Boundary
- Centerline of Existing Road
- Existing Edge of Asphalt Roadway
- Existing Edge of Paver Driveway
- Drainage & Utility Easement per Plat
- Building Setback (See Note 5)
- Mountain Overlay District (City of Ketchum)
- 25% Slope Line (Alpine 2022)
- Existing 5' Major Contour Line (Alpine 2022)
- Existing 1' Minor Contour Line (Alpine 2022)
- Proposed 5' Major Contour
- Proposed 1' Minor Contour
- Proposed Drainage Flowline
- Proposed Limits of Disturbance
- Existing Wooden Fence
- Existing Wooden Fence (To Be Removed)
- Existing Dripline/Edge of Vegetation (To Be Removed)
- Approximate Existing Structure
- Existing Retaining Wall
- Existing Overhead Power
- Proposed Underground Power
- Existing Water Main
- Existing Water Service
- Proposed 1" Water Service (C2.0, Detail 4)
- Existing Sewer Main
- Existing Sewer Service
- Proposed 4" Sanitary Sewer Service (C2.0, Detail 4)
- Existing Underground Phone
- Red Avalanche Hazard Zone (Alpine 2022)
- Blue Avalanche Hazard Zone (Alpine 2022)
- Found 1/2" Rebar
- Existing Power Pole
- Existing Power Pole Guy Wire
- Existing Sewer Manhole
- Proposed Sewer Cleanout
- Proposed Water Meter (C2.0, Detail 1)
- Existing Phone Box
- Proposed Power Meter
- Proposed Gas Meter
- 1.0% Existing Road Grade
- Existing Willow Bush (To Be Removed)
- Existing Conifer Tree (To Be Removed)
- Existing Deciduous Tree (To Be Removed)
- Proposed Structure
- Proposed Paver Driveway (C3.0, Detail 9)
- Proposed Asphalt Patch & Saw-Cut Line (C3.0, Detail 7)
- Proposed Stone Entry
- Proposed Boulders (C3.0, Detail 10)
- Proposed Gravel (C3.0, Detail 6)
- Proposed Snow Storage
- Proposed Landscape Drywell (C3.0, Detail 8)
- Proposed Heated Landscape Catch Basin Connected To Building Drainage
- Proposed 6" Driveway Trench Drain

SLAB	Garage Slab Elevation
FFE	Finish Floor Elevation
RIM	Drywell/Catch Basin Rim Elevation
TR	Top of Retainage Elevation
BR	Bottom of Retainage Elevation

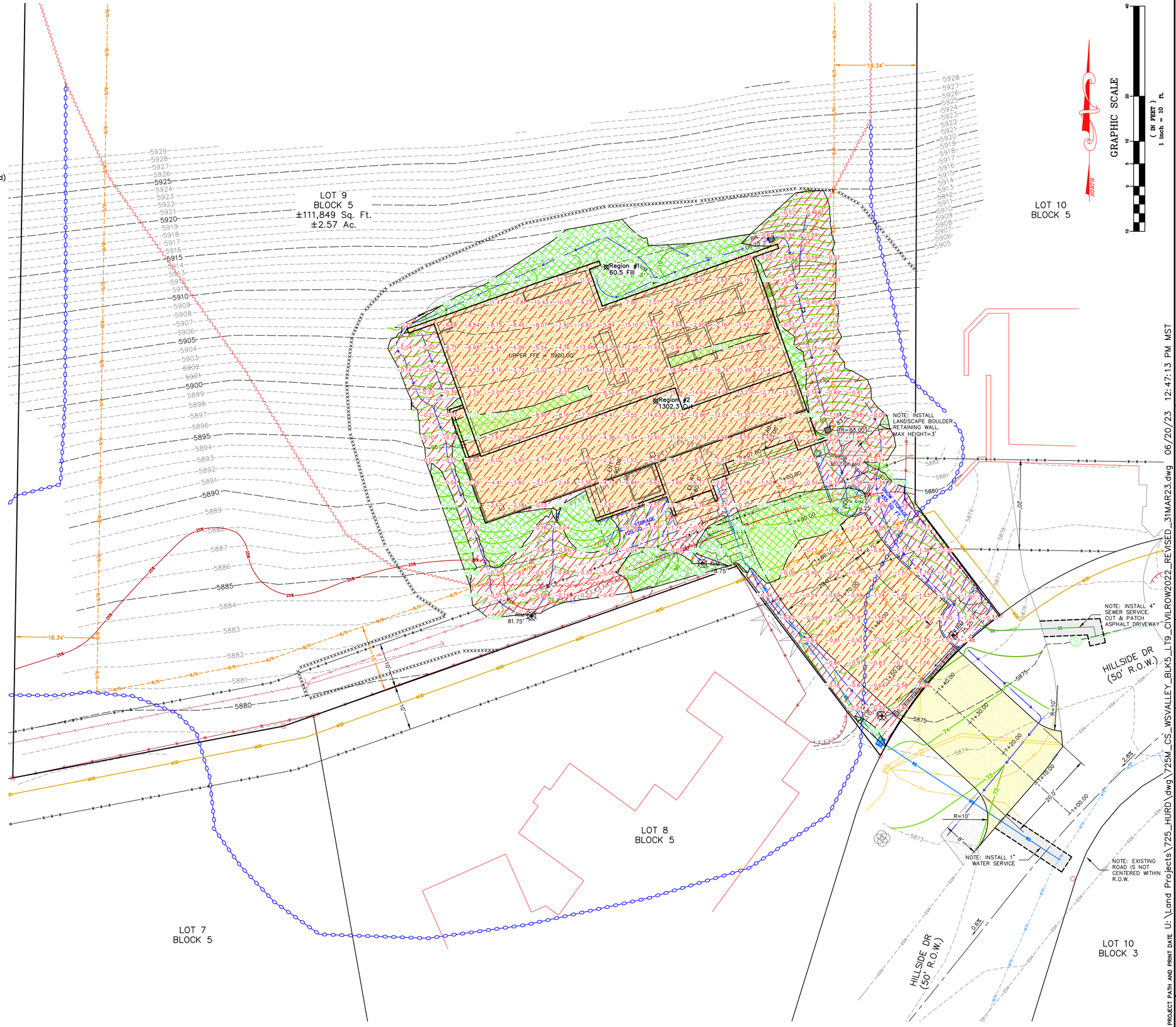
NOTES

1) Basis of Bearings is Idaho State Plane Coordinate System, NAD83, Central Zone, at Grid in US Survey Feet. Vertical Datum is NAVD1988.
2) Boundary Information is from the Plats of Warm Springs Valley Subdivision, Instrument Number 119580; Warm Springs Valley Subdivision, Block 5, Lots 5A & 7A, Instrument Number 559480; Records of Blaine County, Idaho.
3) Refer to the Plat Notes, Conditions, Covenants, & Restrictions on the Original Plat.
4) Utility Locations shown are based on visual surface evidence. Utility locations should be verified by Digline before any excavation.
5) Current Zoning appears to be Limited Residential District, (LR). Please refer to City of Ketchum Zoning Ordinances for more information about this Zone. Front and Rear Building Setbacks are are as shown, Side Setbacks are the greater of 1' for every 2' in building height or 10'.
6) Lot 9 appears to be partially in the City of Ketchum Mountain Overlay District.
7) Lot 9 appears to be zoned Blaine County Elk Winter Range.
8) Lot 9 appears to be in the Ketchum Avalanche Overlay District.
9) Not all trees and vegetation are shown. some locations are approximate.
10) Avalanche Zoning is from a 2022 RAMMS & AVAL-1D Study conducted by Alpine Enterprises Inc. This study is site specific; it should not be applied to adjacent lands.

CUT/FILL VOLUMES

- Proposed Cut (Total = 1302.3 Cubic Yards)
- Proposed Fill (Total = 60.1 Cubic Yards)
- -7.29 Proposed Vertical Cut Elevation Difference
- +1.52 Proposed Vertical Fill Elevation Difference

NOTE: Shrink/Swell Factor = 1.2



A SITE GRADING, R.O.W. ENCROACHMENT, & UTILITY PLAN SHOWING
LOT 9, BLK 5, WARM SPRINGS VALLEY SUBDIVISION
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PROFESSIONAL ENGINEER — 20JUN23 — STATE OF IDAHO — ALEX NELSON

NO	DATE	BY
PRELIMINARY ONLY: NOT FOR CONSTRUCTION		
DESIGN REVIEW SUBMITTAL		
REVISED	1 02DEC22	AHN
REVISED - CUF/FILL CALCULATIONS ADDED	2 30JAN23	AHN
REVISED	3 28APR23	AHN
REVISED	4 20JUN23	AHN

PROJECT PATH AND PRINT DATE: U:\Land Projects\725_HURD\dwg\725M_CS_WSVALLEY_BLK5_LT9_CIVILROW2022_REVISED_31MAR23.dwg 06/20/23 12:47:13 PM MST

C4.0

Site location:
219 Hillside Drive
Ketchum, ID 83340

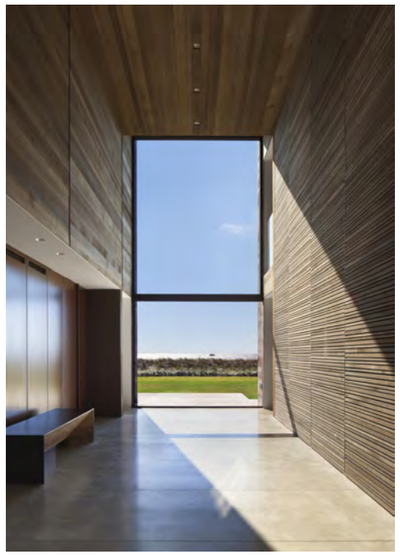
Location in avalanche zone

Aerial view of Ketchum
NTS

Enlarged aerial view at 219 Hillside Drive relative to existing residential homes (1"=100'-0"):
Proposed single-family residential footprint in white; dashed lines represent property boundary

AERIAL SITE IMAGE
219 HILLSIDE DRIVE
04/27/2023

EXTERIOR INSPIRATION
219 HILLSIDE DRIVE
04/27/2023



INTERIOR INSPIRATION

219 HILLSIDE DRIVE

04/27/2023

corten steel

black framed windows + doors

painted black steel

native landscaping

board formed concrete

wood cladding

EXTERIOR MATERIAL PALETTE

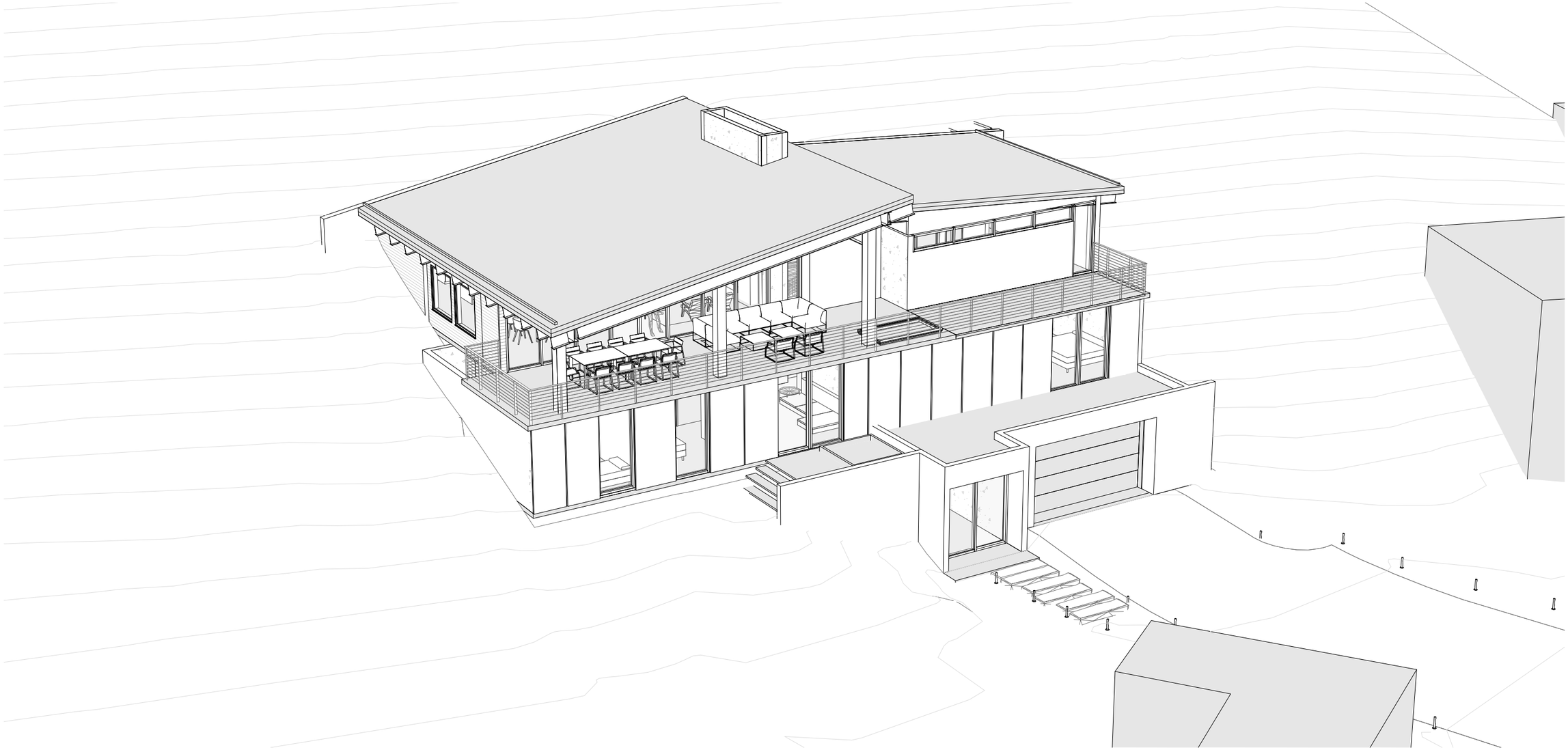
219 HILLSIDE DRIVE

04/27/2023

SCHEMATIC RENDERING - FROM STREET

219 HILLSIDE DRIVE

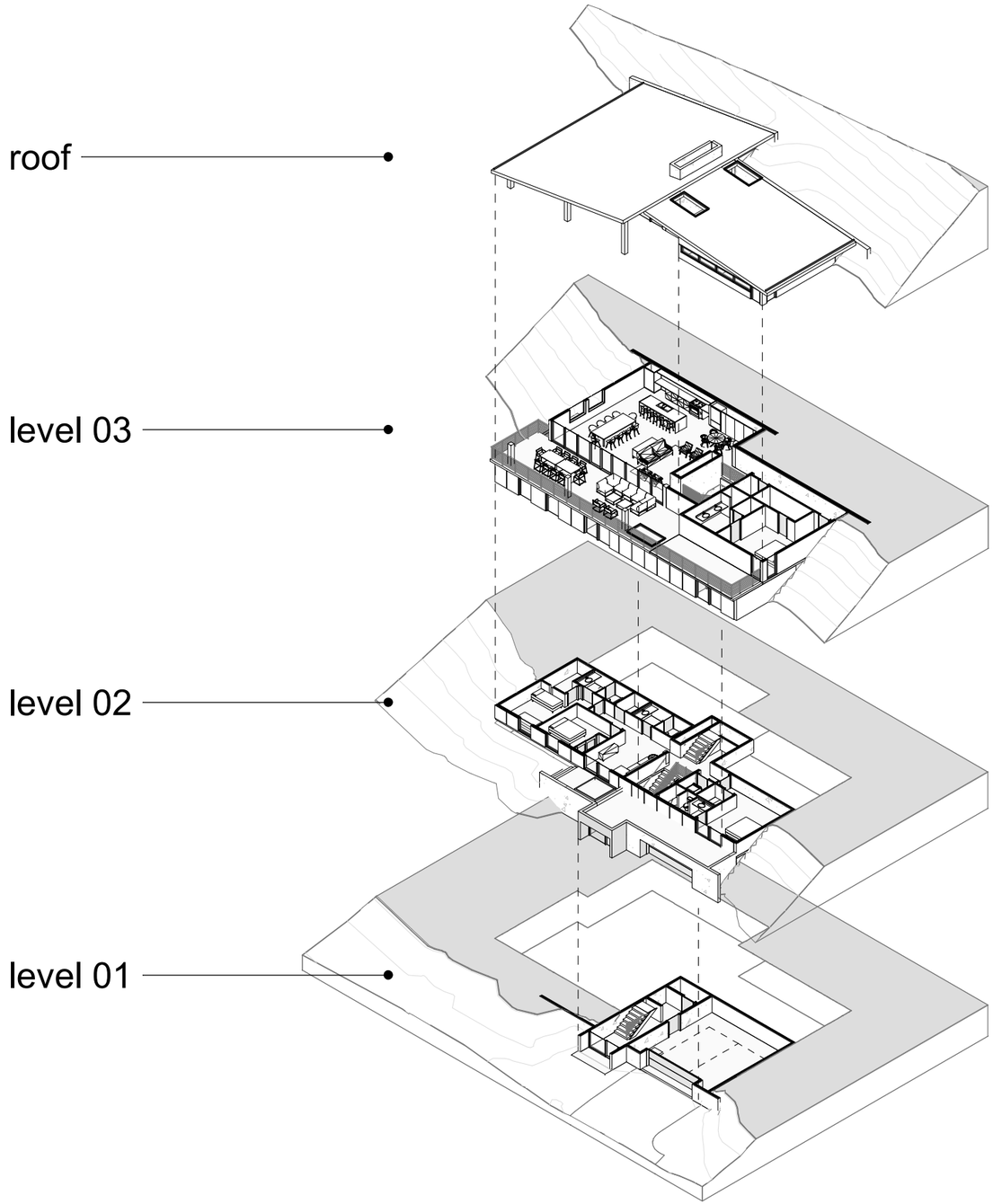
04/27/2023



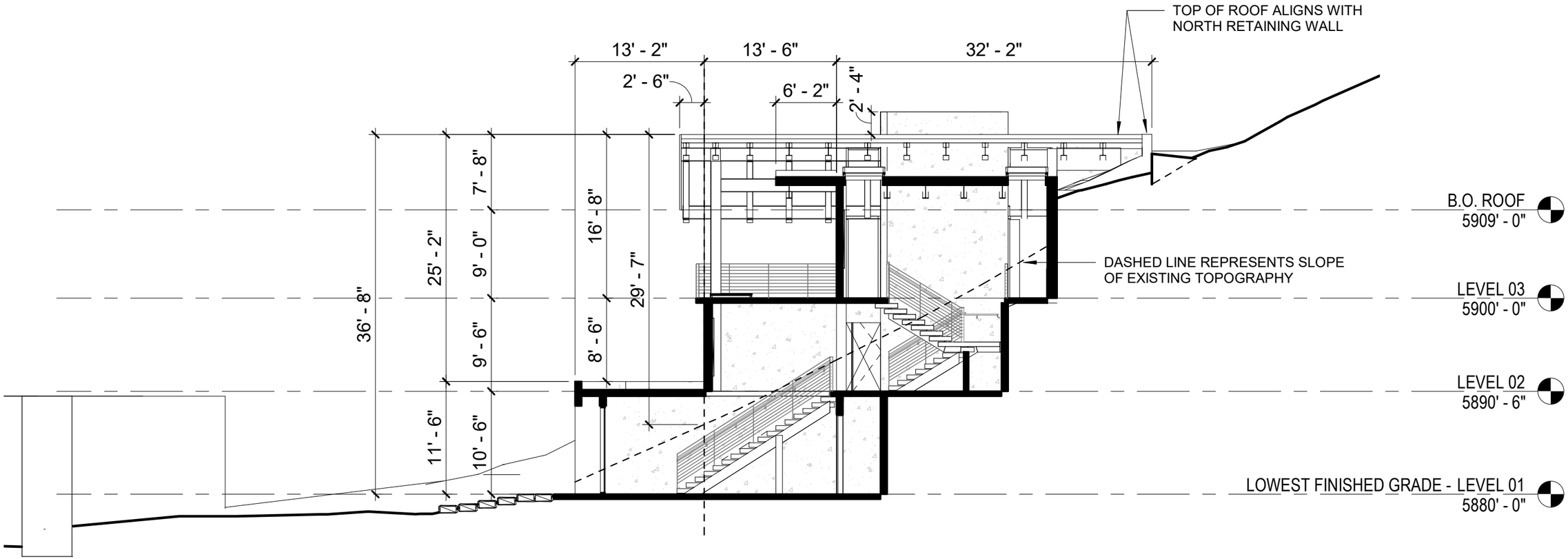
BIRD'S EYE PERSPECTIVE

219 HILLSIDE DRIVE

04/27/2023



EXPLODED AXONS
219 HILLSIDE DRIVE
04/27/2023

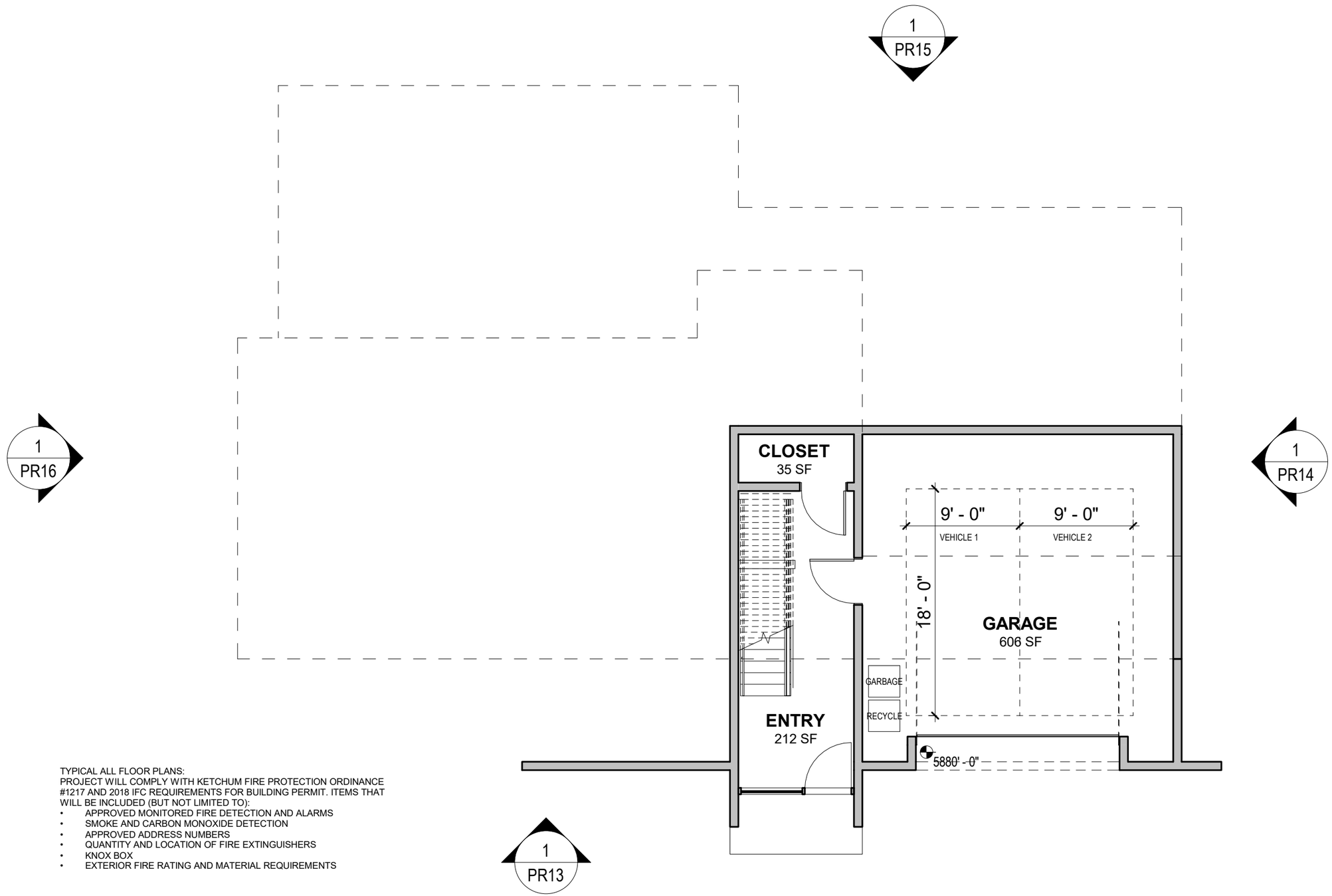


SECTION

219 HILLSIDE DRIVE

04/27/2023 Scale: 3/32" = 1'-0"

0 1 5 10 20



TYPICAL ALL FLOOR PLANS:
PROJECT WILL COMPLY WITH KETCHUM FIRE PROTECTION ORDINANCE #1217 AND 2018 IFC REQUIREMENTS FOR BUILDING PERMIT. ITEMS THAT WILL BE INCLUDED (BUT NOT LIMITED TO):

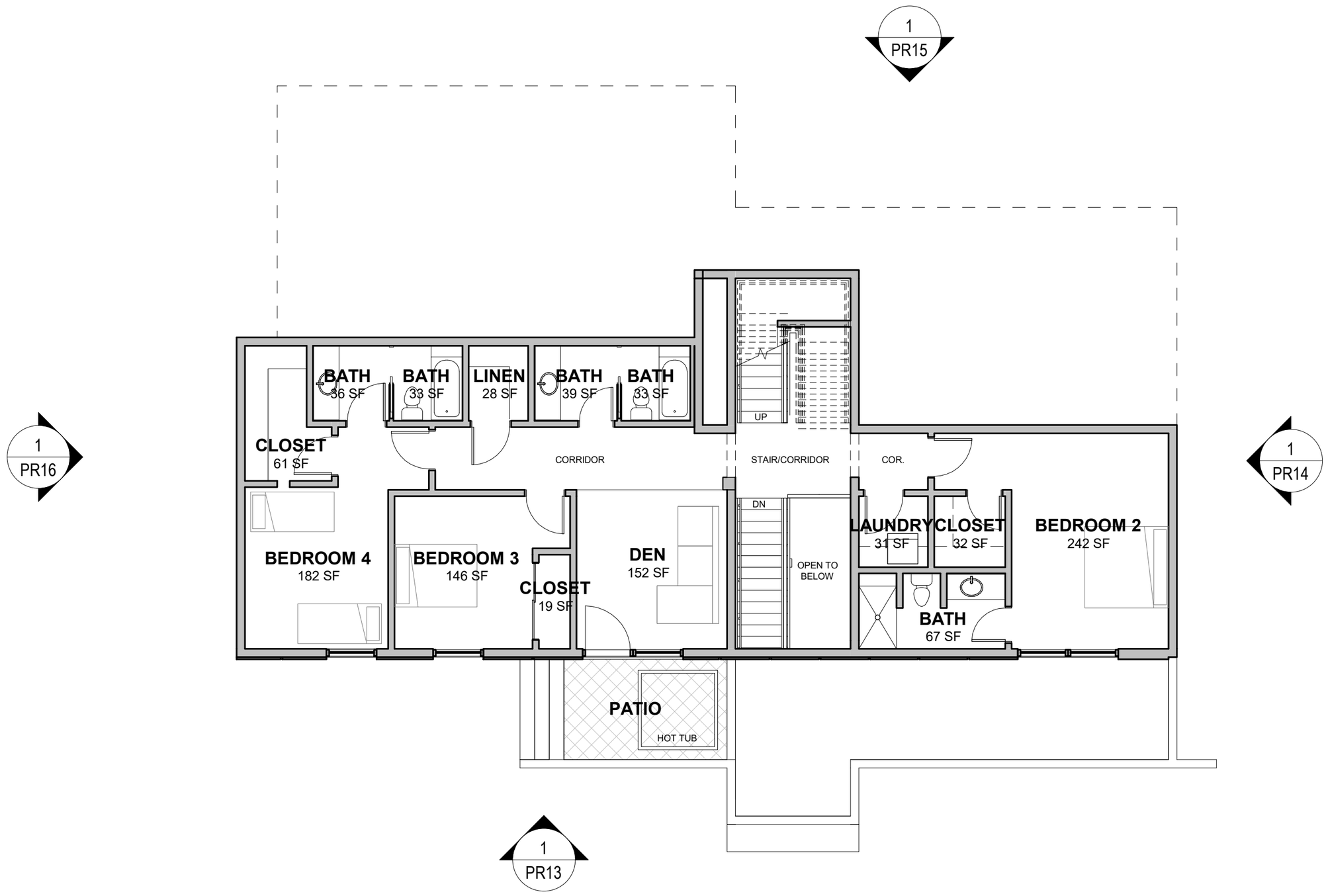
- APPROVED MONITORED FIRE DETECTION AND ALARMS
- SMOKE AND CARBON MONOXIDE DETECTION
- APPROVED ADDRESS NUMBERS
- QUANTITY AND LOCATION OF FIRE EXTINGUISHERS
- KNOX BOX
- EXTERIOR FIRE RATING AND MATERIAL REQUIREMENTS

FLOOR PLAN - LEVEL 1

219 HILLSIDE DRIVE

04/27/2023 Scale: 1/8" = 1'-0"

0 1 5 10 20

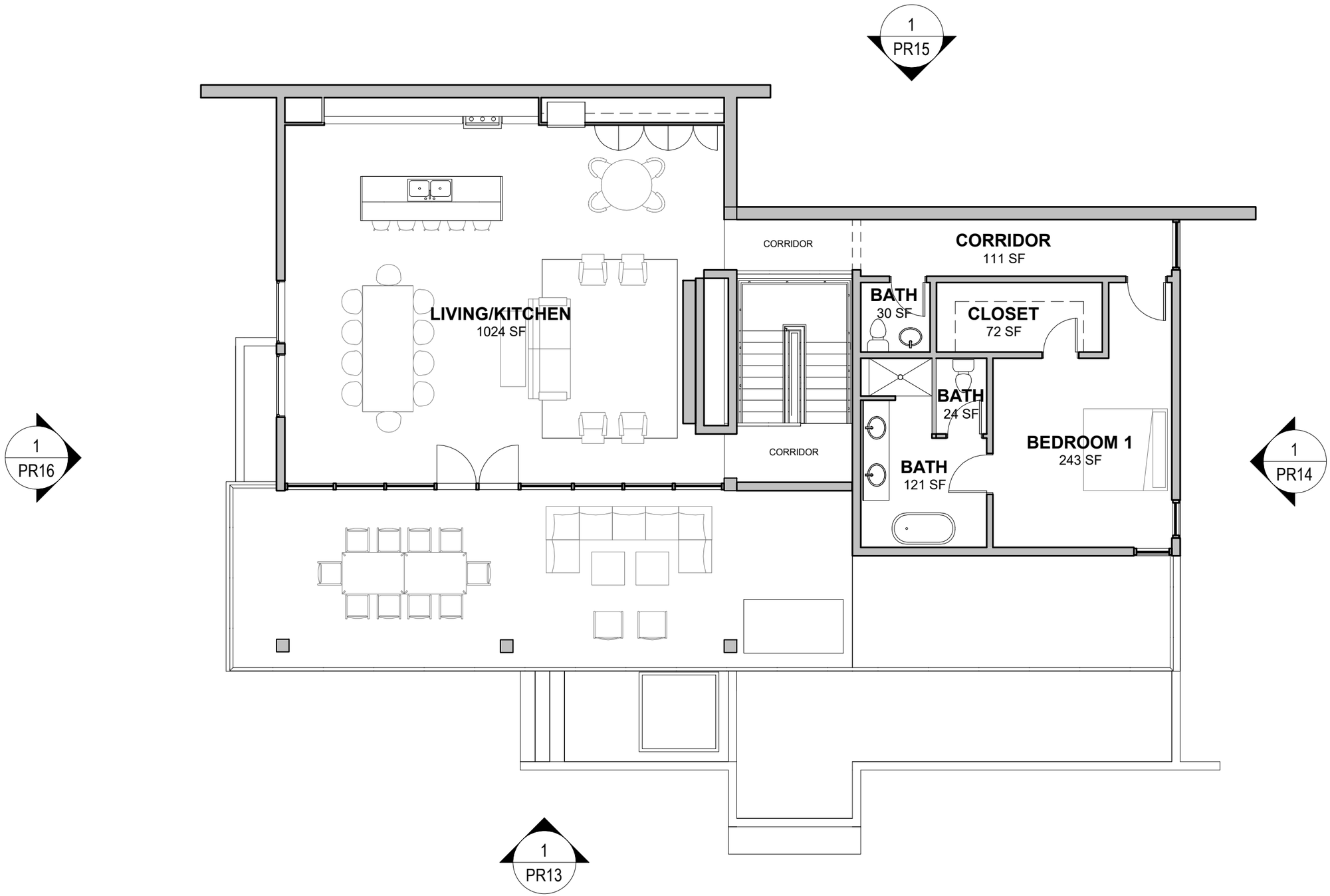


FLOOR PLAN - LEVEL 2

219 HILLSIDE DRIVE

04/27/2023 Scale: 1/8" = 1'-0"

0 1 5 10 20

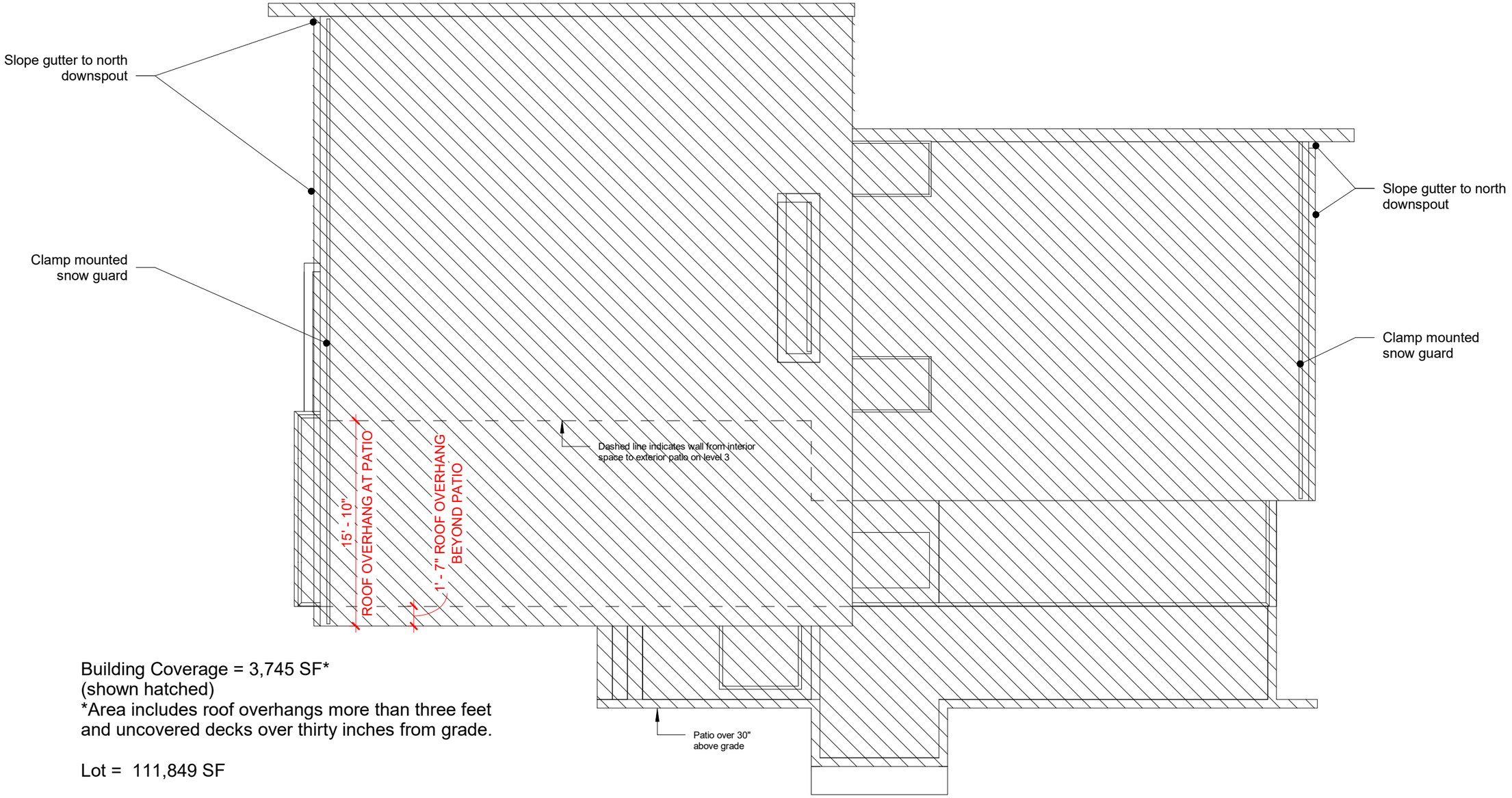


FLOOR PLAN - LEVEL 3

219 HILLSIDE DRIVE

04/27/2023 Scale: 1/8" = 1'-0"

0 1 5 10 20



Building Coverage = 3,745 SF*
(shown hatched)
*Area includes roof overhangs more than three feet and uncovered decks over thirty inches from grade.

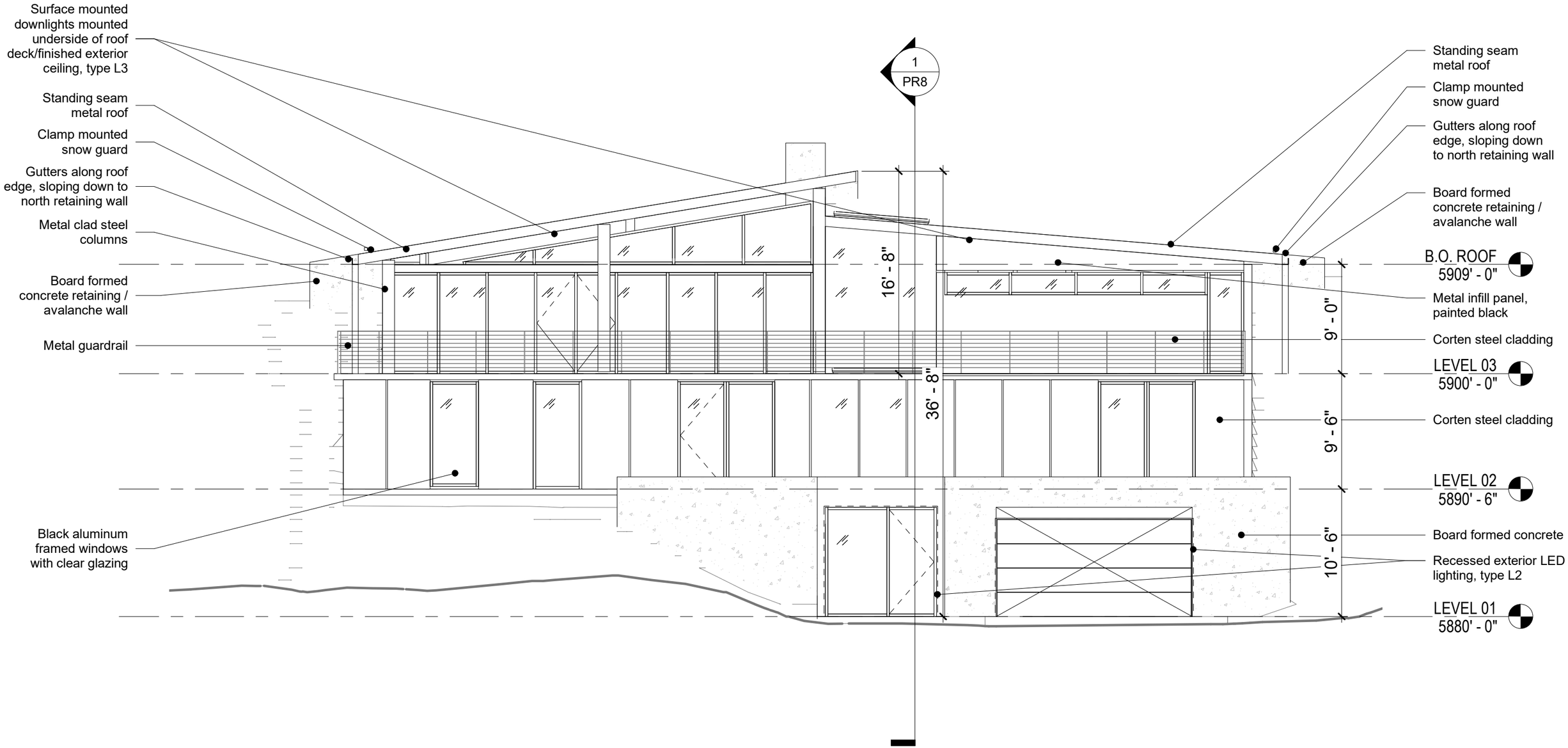
Lot = 111,849 SF

3.4% coverage

ROOF PLAN
219 HILLSIDE DRIVE

04/27/2023 Scale: 1/8" = 1'-0"

0 1 5 10 20

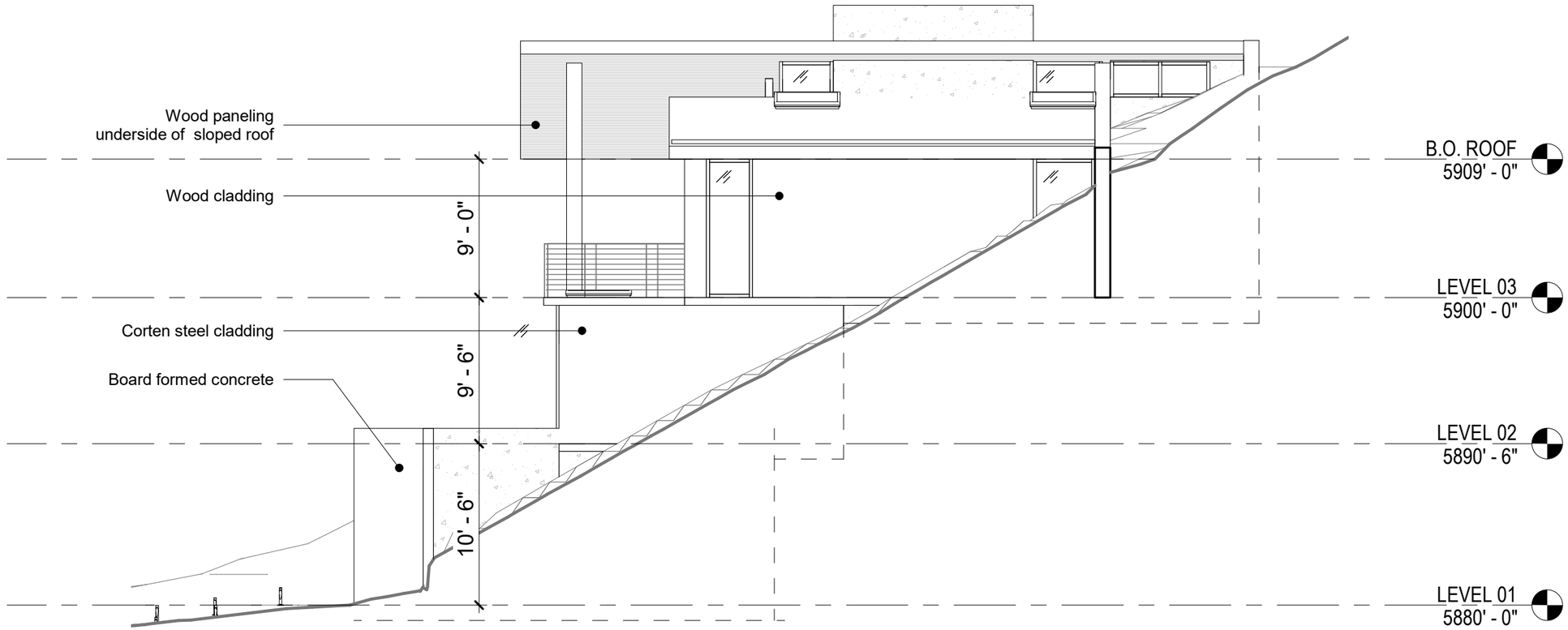


ELEVATION SOUTH

219 HILLSIDE DRIVE

04/27/2023 Scale: 1/8" = 1'-0"

0 1 5 10 20

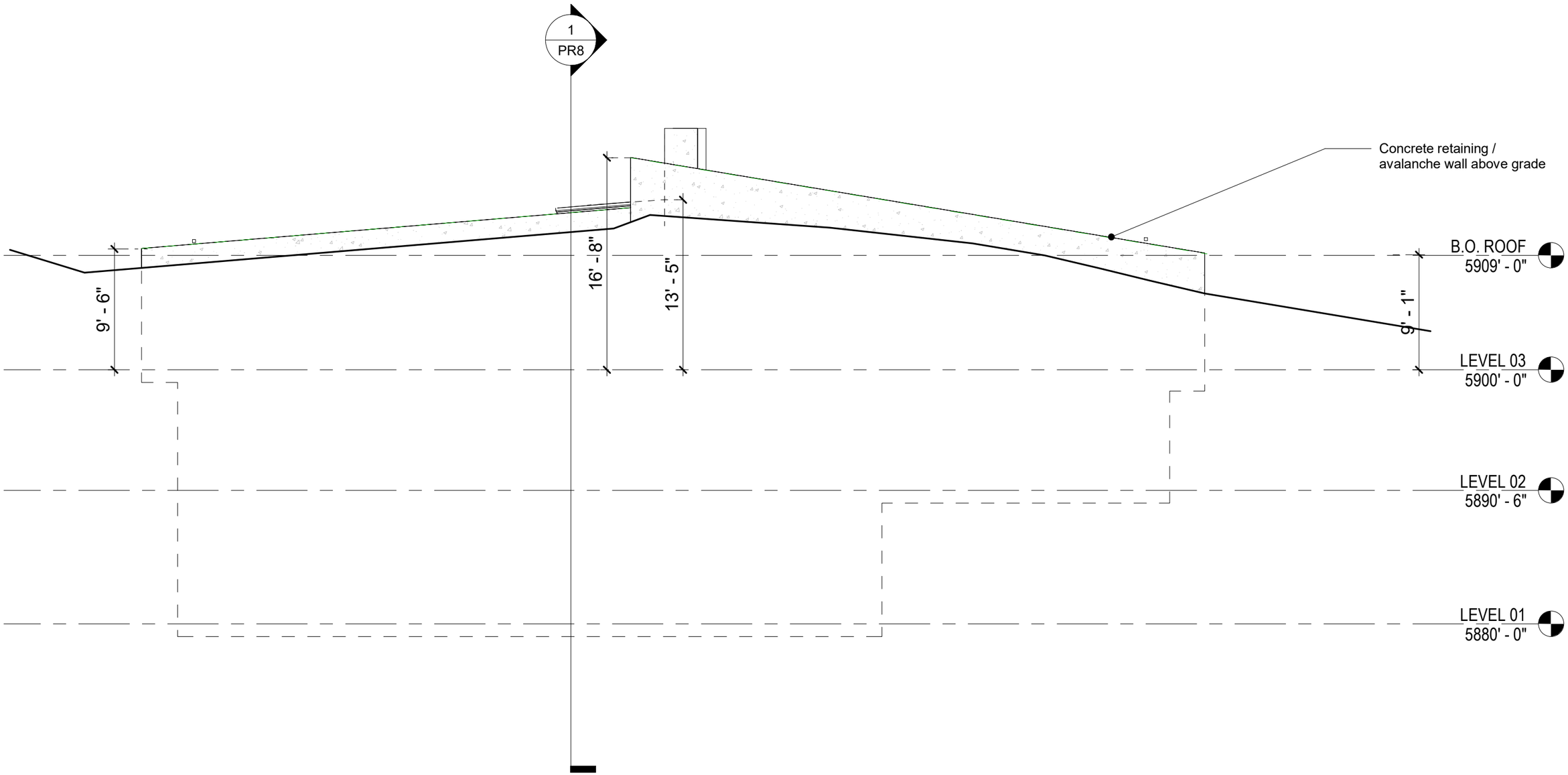


ELEVATION EAST

219 HILLSIDE DRIVE

04/27/2023 Scale: 1/8" = 1'-0"

0 10 20 40

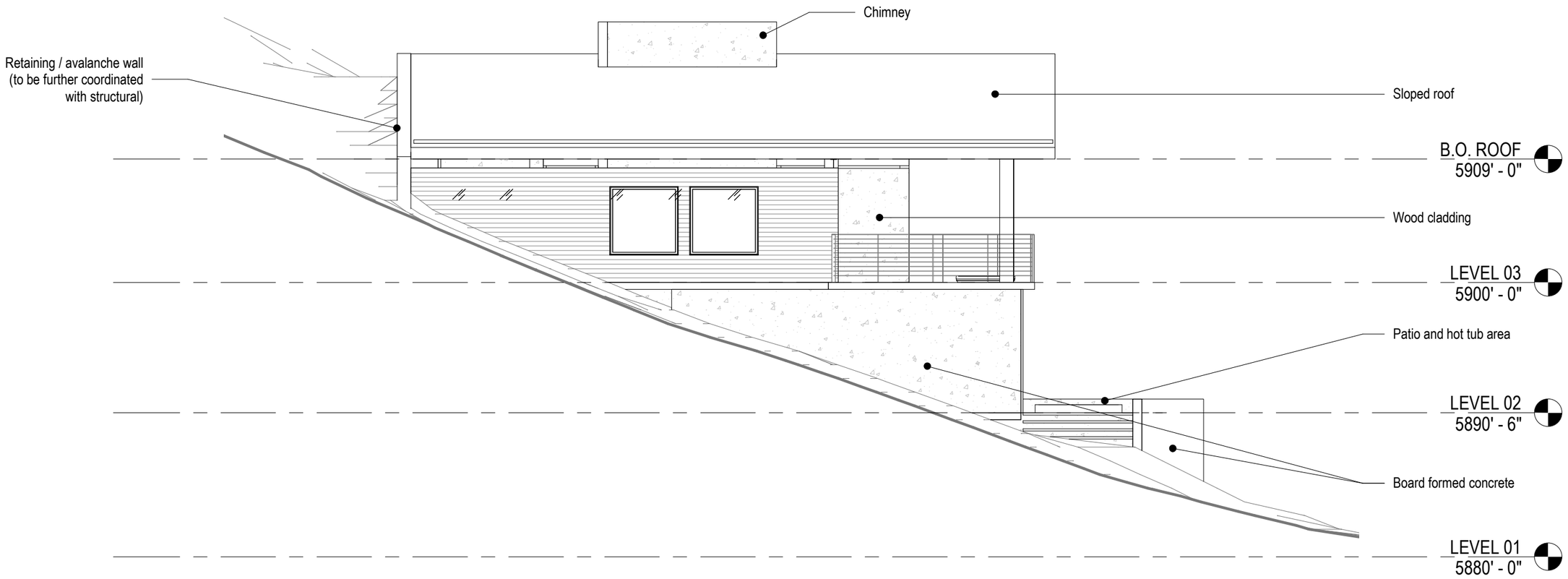


ELEVATION NORTH

219 HILLSIDE DRIVE

07/03/2023 Scale: 1/8" = 1'-0"

0 10 20 40



ELEVATION WEST

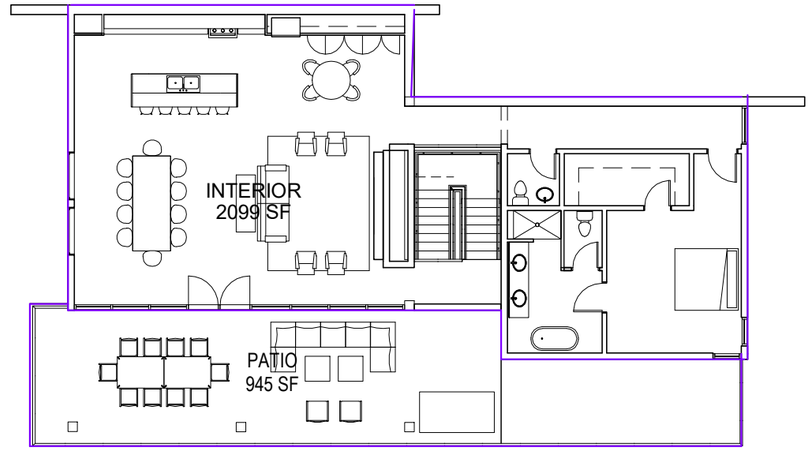
219 HILLSIDE DRIVE

04/27/2023 Scale: 1/8" = 1'-0"

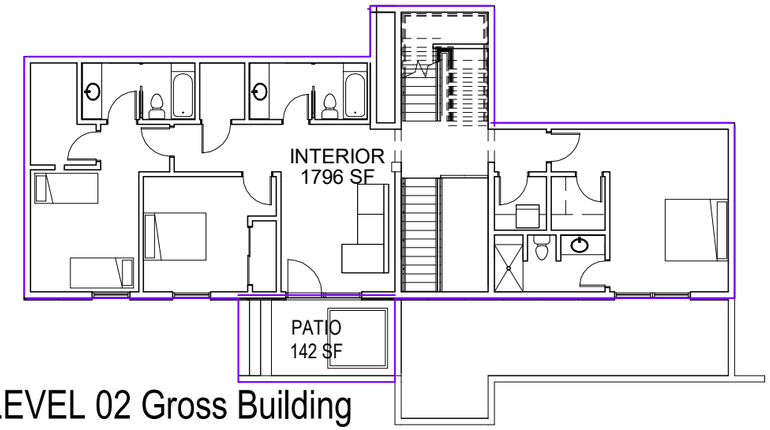
0 10 20 40

Room Schedule -Usable SF	
Name	Area
LEVEL 01	
CLOSET	35 SF
ENTRY	212 SF
GARAGE	606 SF
LEVEL 01: 3	853 SF
LEVEL 02	
BATH	39 SF
BATH	33 SF
BATH	67 SF
BATH	36 SF
BATH	33 SF
BEDROOM 2	242 SF
BEDROOM 3	146 SF
BEDROOM 4	182 SF
CLOSET	61 SF
CLOSET	19 SF
CLOSET	32 SF
COR.	25 SF
CORRIDOR	115 SF
DEN	152 SF
LAUNDRY	31 SF
LINEN	28 SF
STAIR/CORRIDOR	155 SF
LEVEL 02: 17	1398 SF

Room Schedule -Usable SF	
Name	Area
LEVEL 03	
BATH	30 SF
BATH	121 SF
BATH	24 SF
BEDROOM 1	243 SF
CLOSET	72 SF
CORRIDOR	47 SF
CORRIDOR	46 SF
CORRIDOR	111 SF
LIVING/KITCHEN	1024 SF
LEVEL 03: 9	1719 SF
Grand total: 29	3970 SF



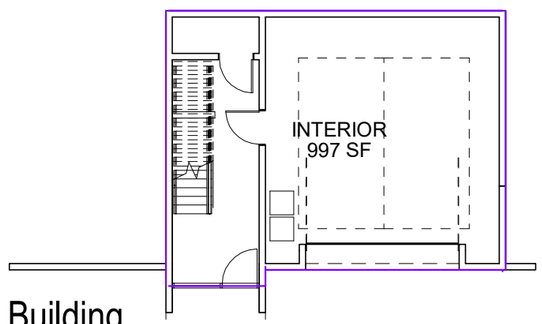
LEVEL 03 Gross Building



LEVEL 02 Gross Building

Area Schedule - Gross...	
Level	Area
LEVEL 01	997 SF
LEVEL 02	1796 SF
LEVEL 03	2099 SF
	4892 SF

Bold purple lines indicate area boundary.



LEVEL 01 Gross Building

AREA BREAKDOWN
219 HILLSIDE DRIVE
04/27/2023

PLANT LEGEND

symbol	quan	description	planted size
	9	**Evergreen Trees** Douglas Fir - *Pseudotsuga menziesii var. glauca* Bristlecone Pine - *Pinus aristata*	10'
	6	**Aspen Groupings** Quaking Aspen - *Populus tremuloides*	2" & 3" Cal.
	3	**Small Accent Tree** Russian Hawthorn - *Crataegus ambigua*	2" Cal.
	46	**Shrubs** Snowmound Spirea - *Spiraea x nipponica 'Snowmound'* Common Snowberry - *Symphoricarpos albus* American Cranberrybush - *Viburnum trilobum*	5 Gal.
	50	**Ornamental Grasses & Perennials** Reed Grass, Switch Grass, Blue Oat Grass	1 Gal.
	3,300 sq ft	**Low Maintenance Grasses** Fescue Blend	Hydroseed

*Proposed plants to be drought tolerant

LEGEND

- **Property Line** (Per Survey)
- **Existing Contour** (Per Survey)
- **Proposed 1' Contour** (See Civil Plan For Grading)
- **Proposed Boulders**
- **Gravel**
- **Heated Paver Driveway**
- **Stone Entry**
- **Existing Evergreen Tree** (To Remain)
- **Existing Trees** (To Be Removed)

LANDSCAPE NOTES

1. **All disturbed areas shall be revegetated and irrigated with an automatic underground irrigation system.**
2. **Planting beds shall have 3" cover of decorative rock.**

IRRIGATION NOTES

1. **Irrigation system shall be an automatically controlled underground system with low water use heads, a smart controller, and rain/freeze sensor for a water wise system.**
2. **Rotors to be used in grass & lawn areas and drip irrigation shall be installed adjacent to buildings in planting beds and around tree plantings in natural areas.**
3. **Irrigation systems shall not be placed against pavement, or placed such that they spray water onto the pavement.**
4. **No irrigation heads to be installed in Right of Way.**

N W E S

0' 5' 10' 20' 30'

Scale: 1" = 10' - 0"
On 24 x 36 (Arch D) Sheet Size
Contour Interval = 1' Contours

NS CONSULTING
landscape architecture & drone mapping
380 E Highway 26
Shoshone, ID 83352
P: 208.320.2911
E: nathanwschutte@gmail.com
NATHAN W. SCHUTTE LICENSED LANDSCAPE ARCHITECT STATE OF IDAHO LA - 16798

PROJECT
219 HILLSIDE DRIVE
Ketchum, Idaho

DOCUMENT DATE
May 24, 2022

DRAWN BY
Nathan Schutte

REVISION

No.	Date	Remark
	04/27/23	Revision

SUBMITTAL SET

LANDSCAPE PLAN

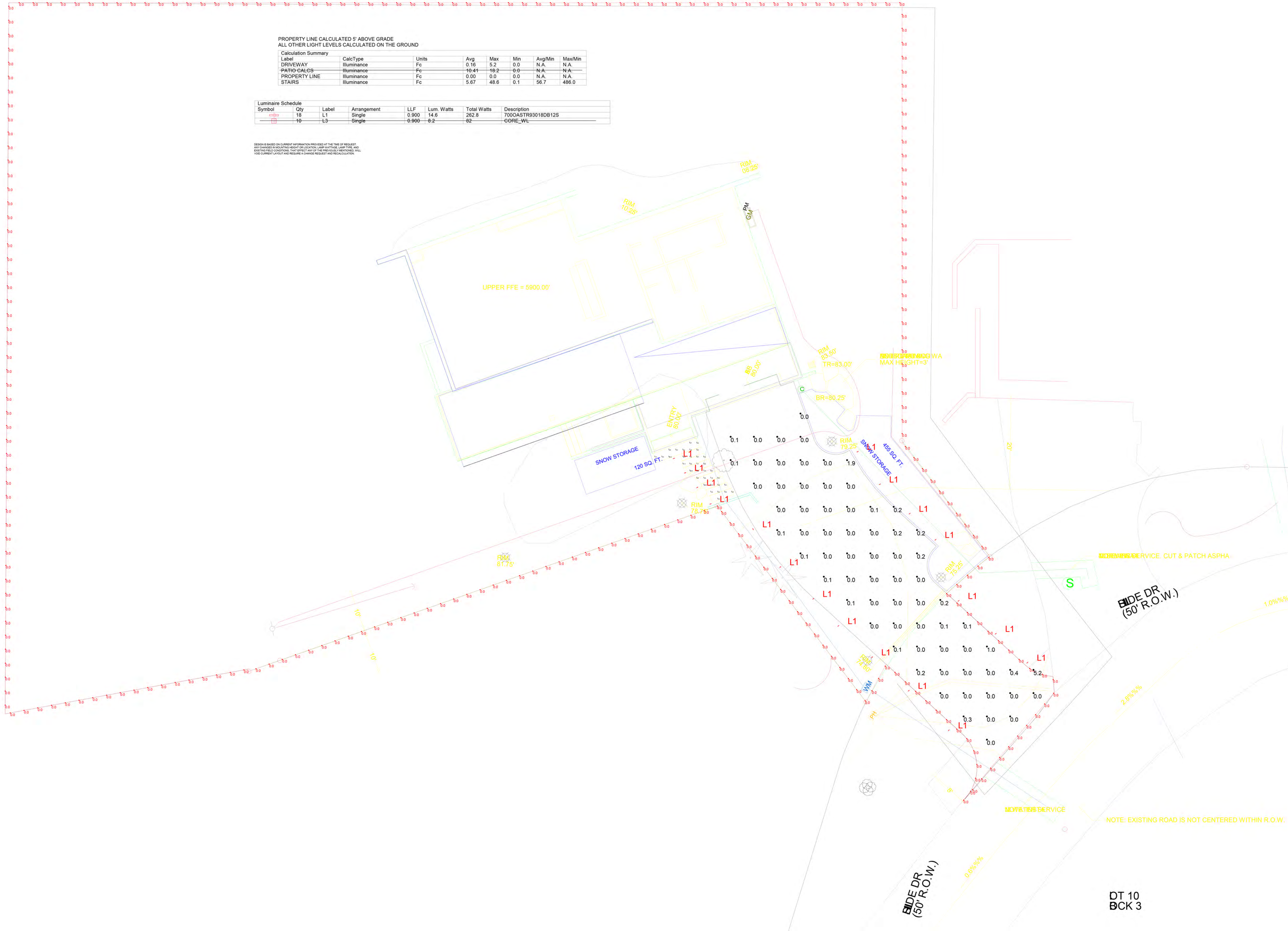
L2

PROPERTY LINE CALCULATED 5' ABOVE GRADE
ALL OTHER LIGHT LEVELS CALCULATED ON THE GROUND

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
DRIVEWAY	Illuminance	Fc	0.16	5.2	0.0	N.A.	N.A.
~~PATIO CALCS~~	~~Illuminance~~	~~Fc~~	~~10.41~~	~~18.2~~	~~0.0~~	~~N.A.~~	~~N.A.~~
PROPERTY LINE	Illuminance	Fc	0.00	0.0	0.0	N.A.	N.A.
STAIRS	Illuminance	Fc	5.67	48.6	0.1	56.7	486.0

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	LLF	Lum. Watts	Total Watts	Description
	18	L1	Single	0.900	14.6	262.8	700OASTR93018DB12S
~~—~~	~~10~~	~~L3~~	~~Single~~	~~0.900~~	~~0.2~~	~~62~~	~~CORE_WL~~

DESIGN IS BASED ON CURRENT INFORMATION PROVIDED AT THE TIME OF REQUEST. ANY CHANGES IN MOUNTING HEIGHT OR LOCATION, LAMP WATTAGE, LAMP TYPE, AND EXISTING FIELD CONDITIONS, THAT EFFECT ANY OF THE PREVIOUSLY MENTIONED, WILL VOID CURRENT LAYOUT AND REQUIRE A CHANGE REQUEST AND RECALCULATION.



STRUT PATHWAY

TECH LIGHTING

The Strut LED path exemplifies the epitome of a modern, minimalist aesthetic. The clean lines and modern design can effortlessly disappear into the setting or be positioned to make a bold statement. Also available as a matching 42" bollard. Ideal for outdoor path and campus illumination.

Outstanding protection against the elements:

- Powder coat finishes
- Stainless Steel mounting hardware
- Impact-resistant, UV stabilized frosted acrylic lensing

Bolt or Stake mounting options

SPECIFICATIONS

DELIVERED LUMENS	693.1
WATTS	15
VOLTAGE	12V (Transformer sold separately)
DIMMING	MLV
LIGHT DISTRIBUTION	Symmetric
MOUNTING OPTIONS	Bolt or Stake
CCT	2700K, 3000K
CRI	90
COLOR BINNING	3 Step
BUG RATING	B0-U1-G0
DARK SKY	Compliant
WET LISTED	IP65
GENERAL LISTING	ETL
CALIFORNIA TITLE 24	Can be used to comply with CEC 2019 Title 24 Part 6 for outdoor use. Registration with CEC Appliance Database not required.
START TEMP	-30°C
FIELD SERVICEABLE LED	Yes
CONSTRUCTION	Aluminum
HARDWARE	Stainless Steel
FINISH	Powder Coat
LED LIFETIME	L70; >60,000 Hours
WARRANTY*	5 Years
WEIGHT	4 lbs.

* Visit techlighting.com for specific warranty limitations and details.

STRUT PATH
shown in bronze

STRUT PATH
shown in charcoal

STRUT PATH
shown in black

12V AC TRANSFORMERS*

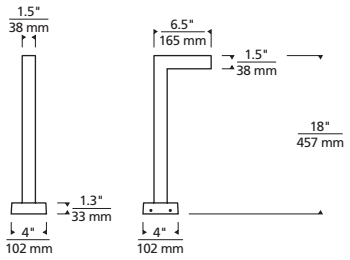
(OUTDOOR RATED, ORDERED SEPARATELY)

ITEM	DESCRIPTION	HOUSING	DIMMING
700OT150T	MAGNETIC, 150W, 120V	STAINLESS STEEL	MAGNETIC
700OT300T	MAGNETIC, 300W, 120V	STAINLESS STEEL	MAGNETIC

ORDERING INFORMATION

PRODUCT	CRI/CCT	LENGTH	LENS	FINISH	VOLTAGE	DISTRIBUTION	OPTIONS
700OASTR	**927** 90 CRI, 2700K **930** 90 CRI, 3000K	**18** 18"	**D** DIFFUSE	**Z** BRONZE **H** CHARCOAL **B** BLACK	**12** 12V*	**S** SYMMETRIC	CONCRETE MOUNT **ST** STAKE MOUNTING KIT

*12V TRANSFORMER ORDERED SEPARATELY.



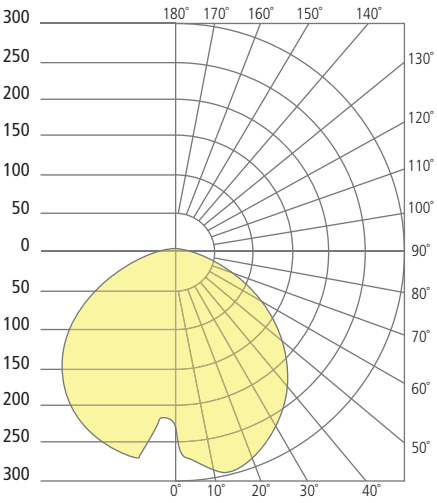
Strut Path

PHOTOMETRICS*

*For latest photometrics, please visit www.techlighting.com/OUTDOOR

STRUT PATH

Total Lumen Output:	693.1
Total Power:	14.6
Luminaire Efficacy:	47
Color Temp:	3000K
CRI:	80+
BUG Rating:	B0-U1-G0



PROJECT INFO

FIXTURE TYPE & QUANTITY

JOB NAME & INFO

NOTES

TECH LIGHTING

VISUAL COMFORT & CO.

7400 Linder Avenue, Skokie, Illinois 60077

T 847.410.4400

City of Ketchum

Attachment C:

Conditional Use Permit – Application Materials and Supplemental Documents

City of Ketchum
Planning & Building

OFFICIAL USE ONLY
File Number:
Date Received:
By:
Fee Paid:
Approved Date:
Denied Date:
By:

Conditional Use Permit Application

Submit completed application and payment to the Planning and Building Department, PO Box 2315, Ketchum, ID 83340 or hand deliver to Ketchum City Hall, 191 5th St. West, Ketchum. If you have questions, please contact the Planning and Building Department at (208) 726-7801. To view the Development Standards, visit the City website at: www.ketchumidaho.org and click on Municipal Code.

OWNER INFORMATION	
Project Name: Miller Residence, 219 Hillside Dr.	
Name of Owner of Record: Paramount Property Development, LLC.	
Physical Address: 219 Hillside Drive	
Property Legal Description: Warm Springs Valley Subdivision, Block 5, Lot 9	
Property Zoning District: Limited Residential District (LR)	
Contact Phone: (208) 727-1988	Contact Email: bsmith@alpineenterprisesinc.com
PROJECT INFORMATION	
Description of Proposed Conditional Use:	To allow for a new avalanche resistant single-family residential structure within the Avalanche Overlay District.
Description of Proposed and Existing Exterior Lighting:	See Architectural Plans. No exterior lighting is associated with the avalanche mitigation structure.
ADDITIONAL COMMENTS	
See the attached Narrative & Engineering Statements.	
ACCOMPANYING SUPPORTING INFORMATION REQUIRED	
• Existing Site Plan • Proposed Site Plan • Landscape Plan • Grading and Drainage Plan • Exterior Lighting Plan and Specifications • Other plans and studies related to the social, economic, fiscal, environmental, traffic, and other effects of the proposed conditional use, as required by the Administrator	

Applicant agrees to observe all City ordinances, laws and conditions imposed. Applicant agrees to defend, hold harmless and indemnify the City of Ketchum, city officials, agents and employees from and for any and all losses, claims, actions, judgments for damages, or injury to persons or property, and losses and expenses caused or incurred by Applicant, its servants, agents, employees, guests and business invitees and not caused by or arising out of the tortuous conduct of city or its officials, agents or employees. Applicant certifies that s/he has read and examined this application and that all information contained herein is true and correct.

Bruce S. 28APR23

Representative's Signature Bruce Smith, PLS 7048 Alpine Enterprises Inc. Date

*Once your application has been received, we will review it and contact you with next steps. No further action is required at this time.

ALPINE ENTERPRISES INC.

Surveying, Mapping, Civil Engineering, GPS, GIS and Natural Hazards Consulting

Alex Nelson, PE
Alpine Enterprises Inc.
P.O. Box 2037
Ketchum, ID 83340
(208) 727-1988
alexnelson@alpineenterprisesinc.com

April 19th, 2023

City of Ketchum
Planning & Building Department

RE: Miller Residence, 219 Hillside Drive – Conditional Use Permit Application
Warm Springs Valley Subdivision, Block 5, Lot 9
Ketchum, ID 83340

Please find the attached Conditional Use Permit Application and plans for the proposed Single-Family Residence development located at 219 Hillside Drive in Ketchum, Idaho.

The owners wish to develop the existing Lot located at Warm Springs Valley Subdivision, Block 5, Lot 9 into a new Single-Family Residence. The Subject Property is located within the City of Ketchum's Avalanche Zoning District. As a result, any new development within this Zone must be designed to withstand the potential avalanche forces, to not deflect avalanche runout towards the property of others, and to not increase the danger to persons or property.

We have worked with the Owners, the Designers at Studio DVLP, LLC., and the Structural Engineer, Matthew Boulant PE, with EMH Engineers, Inc. to make this an avalanche aware design from its inception. Numerous meetings with the Owners, Studio DVLP, and EMH Engineers have resulted in what we believe to be the best location and orientation for the proposed residence. The goal was to keep the proposed structure and the surrounding property as safe as possible while still maintaining the Owners vision for their property. Important aspects of the design that were implemented were to be deflection neutral and to not increase danger to neighboring persons or property. The design also adds a significant element of safety to the existing down path residences which were developed without avalanche protection. The proposed structure was oriented perpendicular to the avalanche flow direction in order to minimize avalanche runout deflection towards the property of others. Any snow momentarily deflected by the protection wall/structure will be immediately entrained by the rest of the slide as it passes by ensuring there will not be increased risks to neighboring properties. The structure was also located immediately adjacent to the minimum front yard setback in an attempt to reduce the potential avalanche forces associated with Red Hazard Zones. It should be remembered that persons and property inside an avalanche resistant structure will be safe from avalanche danger, but persons or property on the outside of a proposed structure could be at risk.

According to the architectural plans by Studio DVLP, the height of the proposed avalanche protection wall/foundation would range between 2' and 5' above finish grade along the Northern side of the structure.

Conditional Use Permit Criteria:

A. *The characteristics of the conditional use will not be unreasonably incompatible with the types of uses permitted in the applicable zoning district.*
   - Much of the surrounding neighborhood and adjacent properties have been developed with similar avalanche protection structures. The neighboring properties that do not have similar avalanche mitigation structures were developed before it was a requirement.

B. *The conditional use will not materially endanger the health, safety, and welfare of the community.*
   - The proposed structure will not endanger the health, safety, and welfare of the community as far as any development within a Red-Avalanche Hazard zone can be considered, but as long as the City allows development in the High Hazard Zones, we do feel that the owner has a vested right to responsibly develop this property. The neighboring properties which were developed before avalanche protection was required have created the need for stricter codes and enforcement. The immediate downslope property does not have avalanche protection and also has glass windows and doors facing directly into the avalanche path. The proposed development would act as a mitigation structure for this

property and would decrease the risks to the adjacent properties.

C. The conditional use is such that pedestrian and vehicular traffic associated with the use will not be hazardous or conflict with existing and anticipated traffic in the neighborhood.

- The proposed development is within a platted subdivision that was recorded in 1963. The subject property was identified as being within an Avalanche Zone by the City of Ketchum in 1979. The vehicular and pedestrian traffic associated with this property would be consistent with every other lot and development within the subdivision.

D. The conditional use will be supported by adequate public facilities or services and will not adversely affect public services to the surrounding area, or conditions can be established to mitigate adverse impacts.

- The proposed development is within a platted subdivision that was recorded in 1963 and all adjoining properties are serviced by City water and sewer.

E. The conditional use is not in conflict with the policies of the comprehensive plan or the basic purposes of this chapter.

- The proposed development does not conflict with the policies of the City's Comprehensive Plan or the basic purpose of the Conditional Use requirements.

Should you need further information, please do not hesitate to contact me.

Sincerely,
Alex Nelson, P.E.

EHM Engineers, Inc.
BUILDING THE FUTURE ON A FOUNDATION OF EXCELLENCE

Date: May 18, 2023

To: Kyle Miller

From: Matthew Boulant, P.E.
EHM Engineers, Inc

Re: 458-21_219 Hillside Drive

To Whom it May Concern:

The structural design of the new residence at 219 Hillside Drive, Ketchum, ID 83340 has been designed to resist the impact loading of an avalanche as prescribed by a report developed Alpine Enterprises Inc. At no point has the design by EHM Engineers, Inc been specifically intended to deflect snow or alter the snow's flow direction to other locations of the property or adjacent properties.

The orientation of the structure is positioned perpendicular to the avalanche flow. This creates a directly opposing barrier to stop the flow's momentum and not redirect the flow. The low slope of the roof may redirect small amounts of snow as it continues over the structure. However, due to the force and momentum of the avalanche flow, any redirected snow will be entrained by the rest of the slide.

Avalanche events are unpredictable, and the addition of any new obstacle may cause change to an avalanche's impact on neighboring buildings. However, the structural design has not been designed to intentionally impact these changes.

Please contact me with any questions.

Respectfully,
EHM Engineers

Matthew Boulant, P.E.

621 North College Rd., Suite 100 • Twin Falls, Idaho 83301 • [208] 734-4888 • Fax [208] 734-6049
3501 W. Elder St., Suite 100 • Boise, Idaho 83705 • [208] 386-9170 • Fax [208] 386-9076

JAMES W. PHILLIPS
Donart & Phillips
Attorneys at Law
201 Giacobbi Annex
P.O. Box 730
Ketchum, Idaho 83340
Telephone: (208) 726-4472

No. 197578

STATE OF IDAHO)
) ss.
County of Blaine)

AFFIDAVIT AS TO IDENTIFICATION OF PLATS AND DESCRIPTIONS OF REAL PROPERTY

GERALD N. SEIFFERT, being first duly sworn on oath, deposes and says as follows:

1. That he is the duly elected Mayor of the City of Ketchum, Blaine County, Idaho;

2. That he is authorized pursuant to section 16.5(d) of Ordinance 302 amending Ordinance 208 of said City and Idaho Code section 5-816 to prepare and file this affidavit with regard to identification of certain plats and parcels of real property within said City as being within the AVALANCHE ZONE designated by said ordinance for the purposes of providing RECORD NOTICE of said fact;

3. That the plats and parcels of real property set forth in the attachments to this affidavit are incorporated by reference as if fully set forth herein. Said plats and parcels of real property are located with an AVALANCHE ZONE.

4. That all real property within said AVALANCHE ZONE are subject to the provisions of Ketchum Ordinance 302 which includes that each owner of real property within said AVALANCHE ZONE who rents or leases any structure therein, in whole or in part, shall provide written notice that said real property is located within said AVALANCHE ZONE to any and all tenants, lessees, rentors or subtenants prior to any occupancy of said property.

Dated this 8 day of October, 1979.

Gerald N. Seiffert
Mayor of the City of Ketchum,
Blaine County, Idaho

Subscribed and sworn to before me this 8 day of October, 1979.

Jane Jacobus
Notary Public
Residing at: Ketchum, Idaho

JANE JACOBUS
NOTARY
PUBLIC
STATE OF IDAHO

EXHIBIT A

A. PLATTED PROPERTY LOCATED, IN WHOLE OR IN PART, WITHIN AVALANCHE ZONE

Warm Springs Valley Subdivision:
Block 1, Lots 1, 2, 3
Block 2, Lots 3, 4, 5, 6
Block 3, Lots 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
Block 5, Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13

Huffman Subdivision:
Block 1, Lots 1, 2, 3, 4, 5, 6, 7, 8
Block 2, Lots 1, 2, 3, 4, 5, 6, 7, 8

Warm Springs Village Subdivision, Third Addition:
Block 1, Lots 1, 2, 3, 4, 5, 6, 7, 8, 20, 21, 22, 23
Block 2, Lots 1, 2, 3, 4, 7, 8, 9
Block 3, Lots 1, 2, 3

Warm Springs Village Subdivision, Second Addition:
Block 1, Lots 1, 2, 3
Block 2, Lots 13, 14, 15, 16, 39
Block 3, Lots 4, 5, 6, *, 8, 9, 11, 12

Replat of Lot 10, Warm Springs Village Subdivision, Second Addition:
Lots 10-A, 10-B

Warm Springs Village:
Block 1, Lots 1, 2, 3, 4
Block 2, Lots 1, 2
Block 4, Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Block 5, Lots 1, 2

Warm Springs Village Subdivision, Fourth Addition:
Block 1, Lots 1, 2, 3, 4, 5, 6, 7, 8, 9
Block 2, Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Block 3, Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26

*Lots 7A and 7B of the Replat of Lot 7, Block 3, Warm Springs Village Subdivision, Second Addition

Lots 14, 15, 25, 26, 27, 28, 29, Block 1
Lots 34, 33, Block 2
Warm Springs Subdivision No. 5

B. PARCELS OF REAL PROPERTY, IN WHOLE OR IN PART, LOCATED WITHIN THE AVALANCHE ZONE described as set forth in the following Blaine County Assessor List of Tax Lot Numbers:

TAX LOT NUMBER

1252

2459

2487

2651

TAX LOT NUMBER	TAX LOT NUMBER
2750	3760
3223	3970
3225	3972
3371	3973
3372	3973A
3373	4453
3419	4454
3468	4537
3470	4538
3598	4542
3647	4545
3648	4750
3734	5648
3735	3377

C. PARCELS OF REAL PROPERTY, IN WHOLE OR IN PART, WITHIN THE AVALANCHE ZONE, as follows:

PARCEL 1: A portion of T4N R17E Sec. 11 and 12 except for Warm Springs Subdivision #3 and Warm Springs Subdivision #4 as described in Blaine County Tax Assessor Tax Lot #5132

PARCEL 2: A portion of SW¼ SE¼ of Section 13- 4N-17 zoned Agricultural-Forest District pursuant to Ketchum Ordinance 208, and described in Blaine County Tax Assessor Tax Lot #3384

PARCEL 3: A portion of a parcel of land within Lot 4, Sec. 18, T4N, R18E B.M., City of Ketchum, Blaine County, Idaho, and more particularly described by metes and bounds as follows:

Commencing at the ¼ Cor. of said Sec. 18; thence S 89° 57'W, 330.31 feet; thence S16° 29'W, 252.44 feet to the true point of beginning. Thence S16° 29'W, 84.15 feet; thence S89° 57'W, 170.00 feet; Thence N16° 29'E. 84.15 feet; thence N 89° 57'E, 170.00 feet to the true point of beginning, and said parcel containing 0.33 acres more or less.

Also a parcel of land within Lot 4, Sec. 18, T4N, R18E, B.M., City of Ketchum, Blaine County, Idaho, and more particularly described by metes and bounds as follows:

Commencing at the ¼ Cor. of said Sec. 18; thence S 0° 28'E, 272.65 feet to the true point of

beginning. Thence S 0° 28' E, 118.17 feet; thence N89° 39'W, 262.65 feet; thence N 16° 29'E, 123.00 feet; thence S89° 39'E, 226.78 feet to the true point of beginning, and said parcel containing 0.66 acres more or less.

PARCEL 4: A portion of Lot 4, Sec. 13, T. 4N, R. 17 E.B.M. formerly described as T.L. 3205, except T.L. 3345, 3346. Contains 18.21 acres more or less Cancels T.L. 3205.

City of Ketchum

Attachment D:

Conditional Use Permit – Plan Set

ALPINE ENTERPRISES INC.

Surveying, Mapping, Civil Engineering, GPS, GIS, and Natural Hazards Consulting

DATE: June 23, 2023

TO: City of Ketchum Planning & Zoning Commission
City of Ketchum Planning & Building Department

Re: Snow Avalanche Hazard Evaluation
Warm Springs Valley Subdivision, Block 5, Lot 9
219 Hillside Drive

Dear P&Z Commission and City,

At the request of the City and the Landowner of 219 Hillside Drive we performed a Site-Specific Snow Avalanche Hazard Evaluation for the subject property. On Tuesday, June 13th, 2023, Alpine Enterprises Inc. presented the Site-Specific Snow Avalanche Hazard Evaluation before the City of Ketchum Planning and Zoning Commission. During the meeting numerous public comments and concerns were raised regarding the Avalanche Study. In the following memo we will further explain the findings and methods used. This memo should be viewed along with the full Site-Specific Snow Avalanche Hazard Evaluation that was submitted with the Design Review Application.

All of the Avalanche Studies performed by Alpine Enterprises Inc. use a 300-year design event, 0.33% annual chance. This is done in an attempt to account for the inherent variabilities associated with avalanches, snowfall, and snowpacks. Many other fields rely on the 100-year design event, but we have found that the more conservative 300-year event better represents the potential avalanche hazards in the region. In the past 5 years we have experienced numerous extreme and record-breaking snowfall events that suggests climate change is creating more sporadic and severe weather events.

Several design parameters are adjusted to differentiate between the 300-year and 100-year design events. The 300-year design event assumes a constant snow density of 300 kg/m^3, whereas the 100-year event assumes a constant snow density of 150 kg/m^3. The 300-year design event also assumes greater avalanche release volumes, release depths, and flow heights than would be used in a 100-year design event. We also make other assumptions when evaluating the 300-year design event which account for potential changes in the existing site conditions. We assume that the neighboring properties and forested areas will not provide any protection from an avalanche event. This approach has proven to be realistic as many homes have been torn down and large areas of forest have been lost to fires.

The subject property is located at Block 5, Lot 9, Warm Springs Valley Subdivision. This Lot was platted 50 years ago in 1963. While this Lot would not be permitted under the current Ketchum Municipal Code Subdivision Ordinances, Idaho is a pro-property rights state, and Landowners have a vested right to develop their property in a manner similar to what the adjoining properties have been permitted to do. The City of Ketchum Avalanche Zone District Code of Ordinances has undergone numerous changes since it was first adopted on April 19th, 1974. A requirement that has been consistent throughout this period is that an applicant shall submit a written acknowledgement or provide personal testimony of knowledge that a proposed development or improvement is located within the Avalanche Zone District prior to the issuance of a building permit in said zone. Further, each and every real estate agent, salesperson, or broker of every property for sale, rent, or lease within the Avalanche Zone District have been required to disclose that a property is within the district via written statement upon first inquiry since 1974.

Prior to KMC Ordinance No. 1135, July 6th, 2015, Landowners were permitted to build single-family residences within the Avalanche Zone District without structural engineering designed to withstand potential avalanche impact pressures. Currently, all new development within the Avalanche Zone District is required to be designed and certified by a Structural

Engineer that the development will be able to withstand potential avalanche forces, the exception being remodels under 1,200 gross square feet for existing non-engineered single-family homes. The subject property, 219 Hillside Drive, is surrounded by single-family residences that have and have not been designed to resist potential avalanche forces. The two properties downslope of the proposed development, 213 and 215 Hillside Drive, were not constructed with such engineering, whereas the adjacent property to the east, 223 Hillside Drive, was constructed with large concrete avalanche protection walls incorporated into the foundation. Alpine Enterprises Inc. was consulted on the avalanche protection of this structure.

The subject property and the adjoining properties north of Hillside Drive have all been identified in both the 1977 and 1978 Avalanche Studies, conducted by Norman A. Wilson and Arthur I. Mears respectively, as being located within high, red-zone, avalanche hazard areas. These zoning areas can be seen on sheet 27 of the Site-Specific Snow Avalanche Hazard Evaluation of 219 Hillside Drive conducted by Alpine Enterprises Inc. The Mears avalanche hazard zones have also been included in Figure 9 of this memo. The Snow Avalanche Hazard Evaluation for 219 Hillside Drive is site-specific to the proposed building area and is not indicative of and does not comprise the total risk present to the immediately adjacent properties. When performing a site-specific avalanche hazard evaluation, we attempt to not evaluate adjacent properties to avoid the possibility of potentially imposing zoning restrictions upon Landowners that have not requested such a study. However, in this particular instance, the properties located directly downslope of the proposed development were required to be included in the avalanche study. Any property that is not directly in the modeled avalanche path is still assumed to be located within the high avalanche hazard areas depicted in the 1977 and 1978 Avalanche Studies, conducted by Norman A. Wilson and Arthur I. Mears respectively, unless superseded by a site-specific evaluation. Site-specific avalanche hazard evaluations are able to refine the existing studies that were conducted before most of the development occurred in the area with the use of Avalanche Dynamics Modeling Software and LiDAR topographic mapping that were not available until recently.

The primary concern raised at the June 13th, 2023 Planning and Zoning Commission meeting was in regard to avalanche deflection and an increased risk to surrounding properties. Ketchum Municipal Code 17.92.010.D.2 states that:

"Avalanche protective, deflective and preventative structures, devices or earthwork which threaten to deflect avalanches toward property of others or otherwise threaten to increase the danger to persons or property are prohibited. The construction of such structures, devices or earthwork shall be permitted only as a conditional use. Prior to granting of a conditional use permit, the applicant shall submit to the City plans signed by an engineer licensed in the state, certifying that the proposed construction will withstand the avalanche forces set forth in the avalanche studies on file with the City and that the proposed construction will not deflect avalanches toward the property of others. Other information and engineering studies may be requested in consideration of an application for a conditional use permit. As a further condition of any conditional use permit, appropriate landscaping may be required where such structures, devices or earthwork alter the natural slope or beauty of the land. This shall not apply to reforestation. Alteration or removal of any existing natural barriers is prohibited."

All avalanches will deflect off of any man-made or natural object in its path, but when designed correctly, a structure can minimize such deflection, contain avalanche runout to the confines of the subject property, and not increase dangers to persons or property. The proposed development for 219 Hillside Drive presents difficulties when evaluating this criteria, as all the adjacent properties are currently subject to avalanche danger independent of the proposed development. A proposed development cannot be considered to deflect towards another property that was already directly in the avalanche path, and the proposed development cannot be required to be direct protection for a property that does not currently have engineered protection measures. In this situation the evaluation standard we have to rely on is does the proposed development increase the danger to the adjacent properties compared to the existing danger if the development were not constructed.

In order to assess if the proposed development meets City design criteria, we evaluated three different avalanche situations for the area that would be directly impacted by the development. All three scenarios modeled the same 300-year avalanche design event with the same release volume and the same friction and turbulence parameters. The first situation is included in the Site-Specific Snow Avalanche Hazard Evaluation of 219 Hillside Drive conducted by Alpine Enterprises Inc. This situation follows the 300-year design event model and omits all existing structures in the area. This method is used to establish avalanche zoning areas and potential avalanche impact pressures. This method is indicative of the worst-case scenario and is used to develop design parameters.

The second method, Situation 2 in the included figures, evaluated the subject property with the adjacent structures to the south and east included in the terrain model. The existing structure located at 213 Hillside Drive was not included as this Lot is subject to a separate avalanche path than the one that affects the proposed development. The third method, Situation 3 in the included figures, evaluated the subject property with the proposed structure and the adjacent structures to the south and east included in the terrain model. The results of these studies should not be used for any future building designs and are only included to demonstrate that the proposed development does not increase dangers to adjacent properties.

Figures 1 and 2 depict the anticipated pre and post development maximum avalanche flow depths for the 300-year design event. The results show that some avalanche runout will be diverted around the proposed structure, but the majority of runout directly in the structures path will be captured behind and on top of the residence. The avalanche runout distance remains mostly unchanged adjacent to the structure, and the area directly down slope shows a significant decrease in in avalanche debris accumulation. Both scenarios show that adjacent properties will be affected by the design avalanche event, but there will not be an increase in avalanche hazard at these locations.

Figures 3 and 4 depict the anticipated pre and post development maximum avalanche flow velocities for the 300-year design event. The results show that there is a considerable decrease in avalanche flow velocity caused by impact with and friction across the roof of the proposed structure. The energy dissipated through the initial impact with the rear retaining wall and roof friction causes an estimated 50% to 60% reduction in avalanche velocities at the southern/downhill roof edge than would be experienced if the proposed structure was not present. The proposed structure does have the potential to project runout debris into the air and act as a “ski jump”, but in this situation the debris will not land on the roofs of neighboring properties and will land within the boundary of the subject property. The anticipated flow velocities off of the roof at this location range between 3 m/s and 6 m/s (6.7 mph and 13.4 mph). The “ski jump” concerns presented at the June 13th, 2023 Planning and Zoning Commission meeting would be valid for a significantly larger avalanche path with higher flow velocities, but in the location of the proposed development the existing site conditions and the structural design will limit the hazards associated with airborne runout debris exclusively to the subject property.

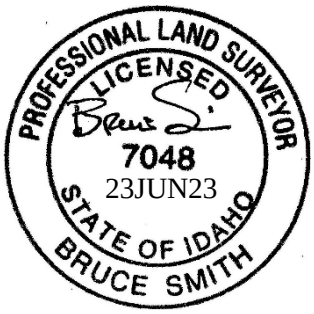
Figures 5 and 6 depict the anticipated pre and post development maximum avalanche flow pressures for the 300-year design event. Figures 7 and 8 depict the same anticipated pre and post development maximum avalanche flow pressures, but with the upper display limit set to 30 kpa to differentiate between red and blue avalanche hazard areas. The results show that there would be a clear reduction in anticipated avalanche impact pressures to the residence located downslope of the proposed development at 215 Hillside Drive. It is of our professional opinion that the proposed development would increase the avalanche safety for this property, particularly because this structure was built prior to the requirement that single-family residences be designed to withstand avalanche forces.

The design team and applicant of the proposed development located at 219 Hillside Drive are simpathetic to the public comments and concerns accociated with the proposal and have evaluated the concerns presented. Since the June 13th, 2023 Planning and Zoning Commission meeting design considerations have been assessed and implemented. In order to increase avalanche safety to the surrounding properties, the uphill grade north of the proposed foundation has been lowered in order to expose more of the vertical foundation wall. Other design considerations have been implemented, but only those associated with avalanche mitigation have been included in this memo.

In conclusion, the subject property, located at 219 Hillside Drive, and the surrounding properties north of Hillside Drive are all located in high avalanche danger areas. Any person building or dwelling in the Avalanche Zone District is required by Ketchum Municipal Code to acknowledge the potential hazards to life, health, and property for residents, guests, and visitors. The avalanche event included in this study consists of only a small portion of the total hazard in the area. The likelihood of the design avalanche releasing at a 300-year magnitude solely in the path evaluated would be exceedingly rare. In this type of situation, the adjacent avalanche paths would have a high probability of sliding simultaneously. Extreme avalanche hazards already exist in this area, and it is not exclusive to the to the subject property. Development within high avalanche hazard areas is prohibited in virtually every other municipality that possesses a fundamental understanding of avalanche dangers. The City of Ketchum has worked to increase avalanche awareness and promote responsible development, but past recklessness has set a dangerous standard. Living and developing in avalanche paths is an inherited and assumed risk that should not be taken lightly.

Alpine Enterprises Inc. operates under Idaho State surveying and engineering codes, standards, and ethics. Our primary obligation is to protect the health, safety, and welfare of the public. We welcome anyone with questions or concerns regarding the avalanche study and safety of the proposed development to contact us.

Respectfully submitted,



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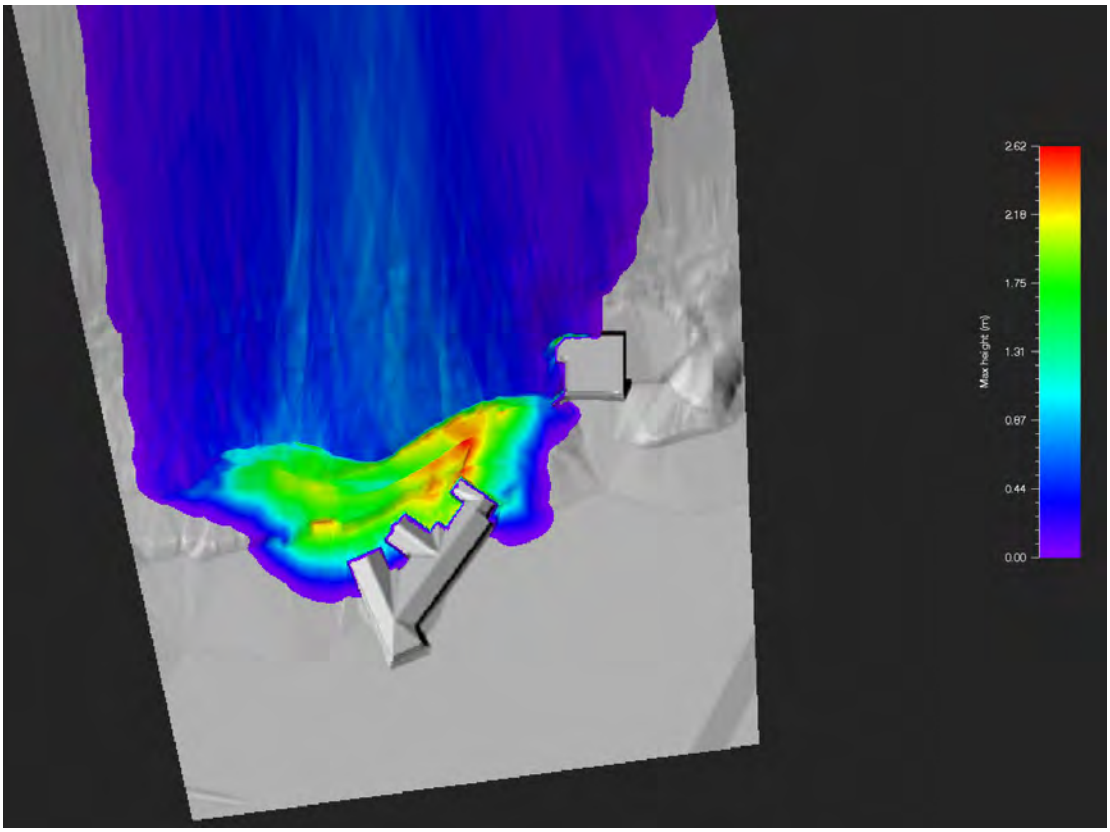


Figure 1 – Path_R5_S300 – Maximum Flow Height, Situation 2

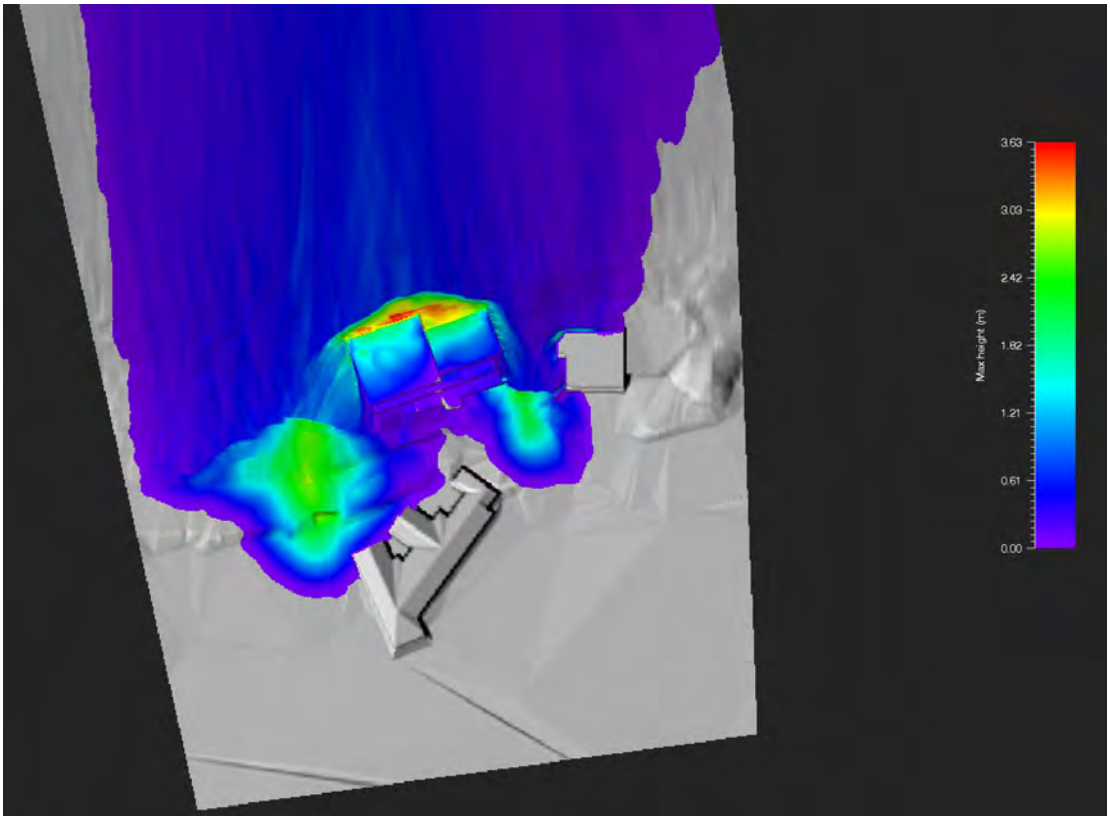


Figure 2 – Path_R5_S300 – Maximum Flow Height, Situation 3

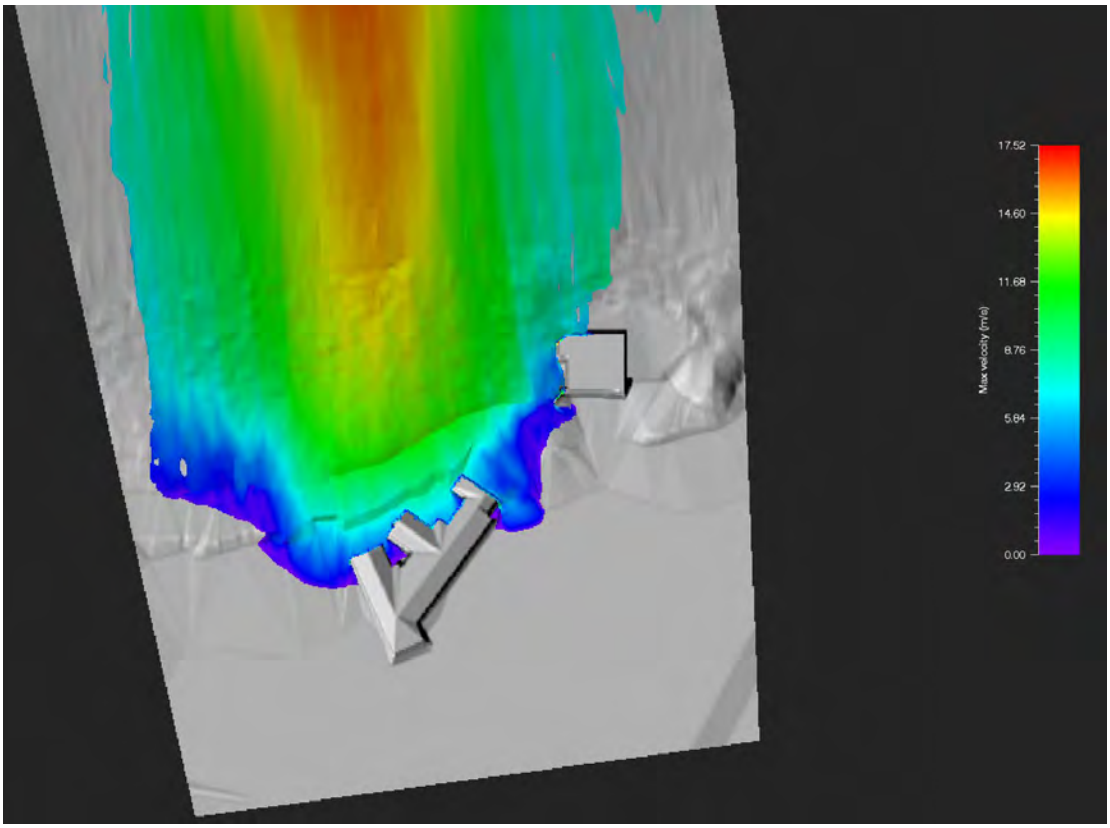


Figure 3 – Path_R5_S300 – Maximum Velocity, Situation 2

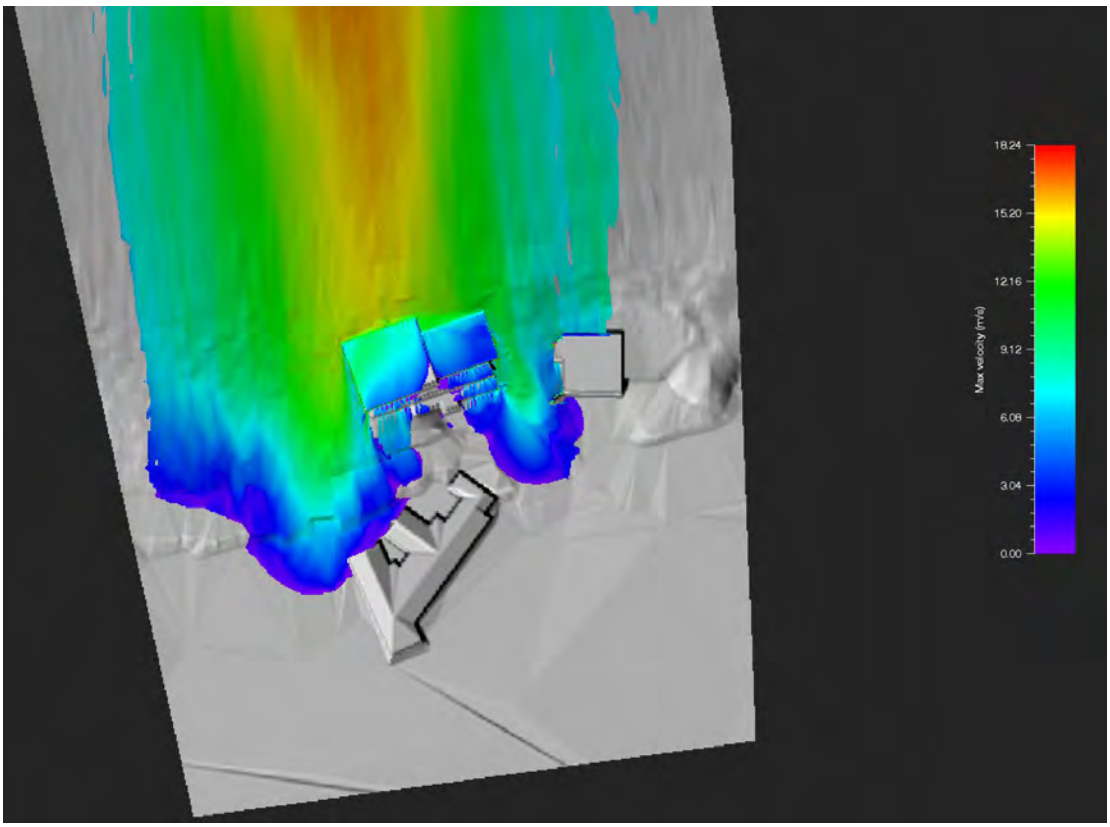


Figure 4 – Path_R5_S300 – Maximum Velocity, Situation 3

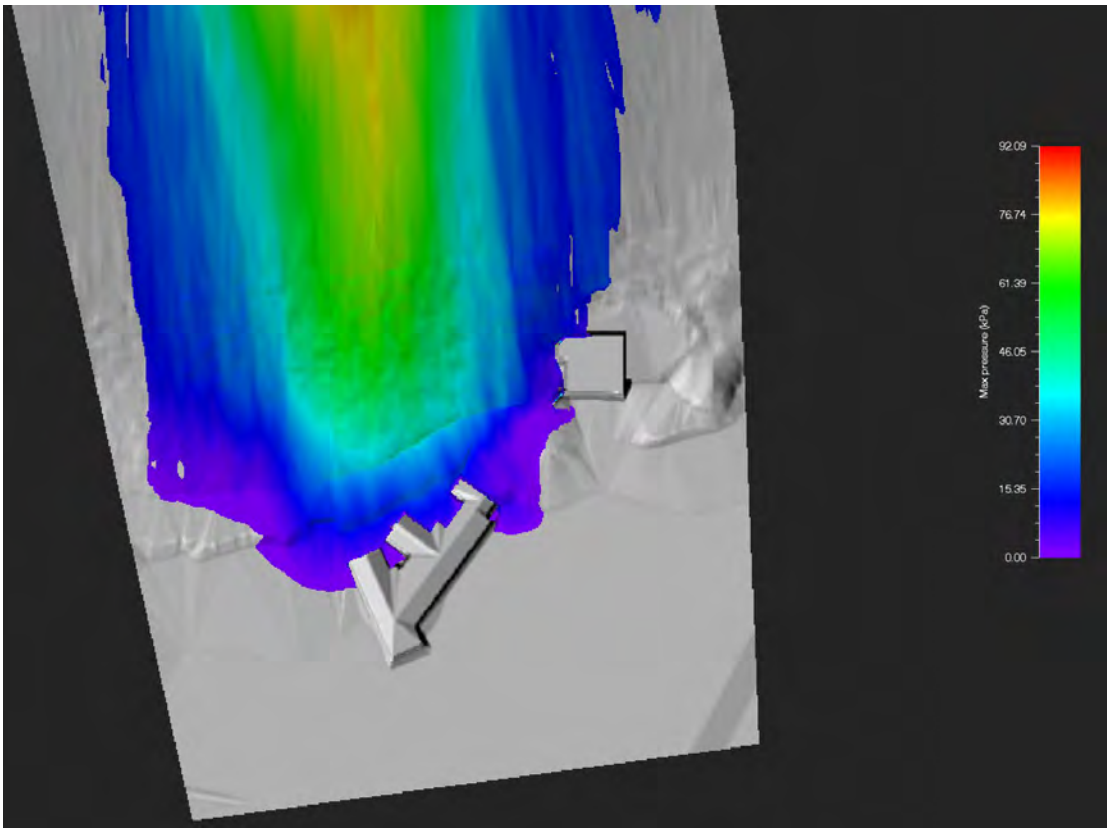


Figure 5 – Path_R5_S300 – Maximum Pressure, Situation 2

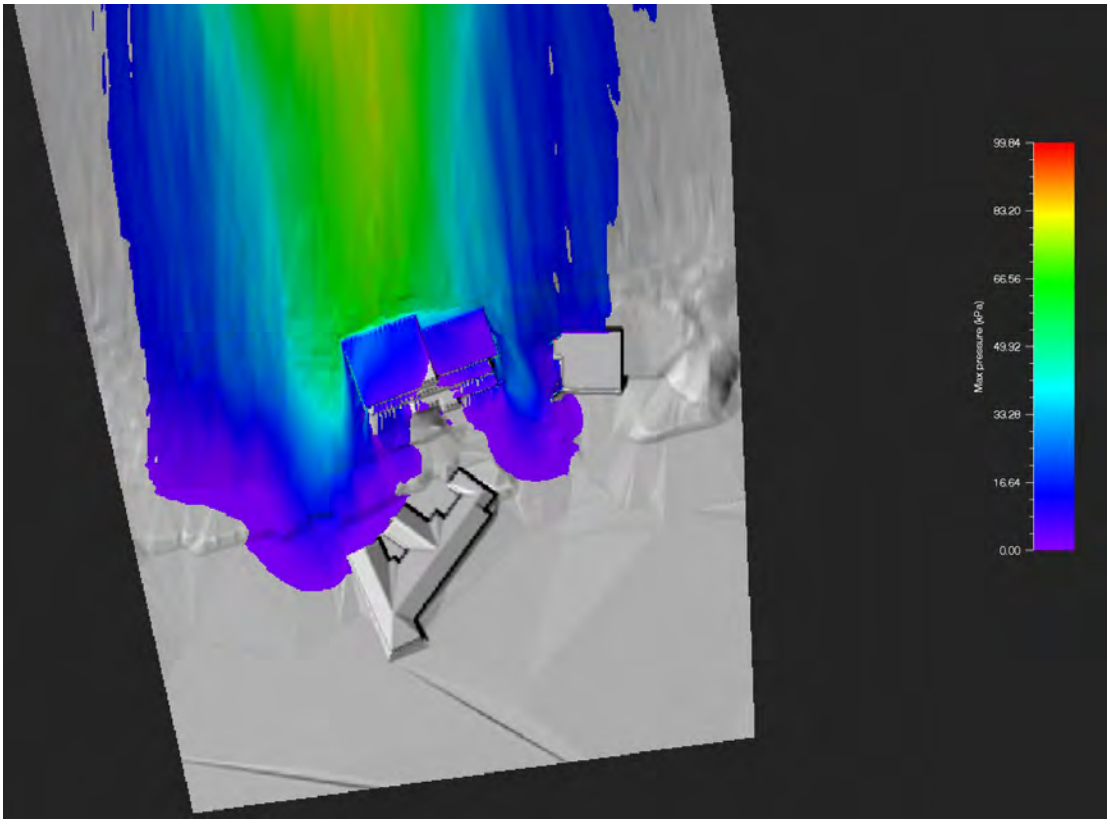


Figure 6 – Path_R5_S300 – Maximum Pressure, Situation 3

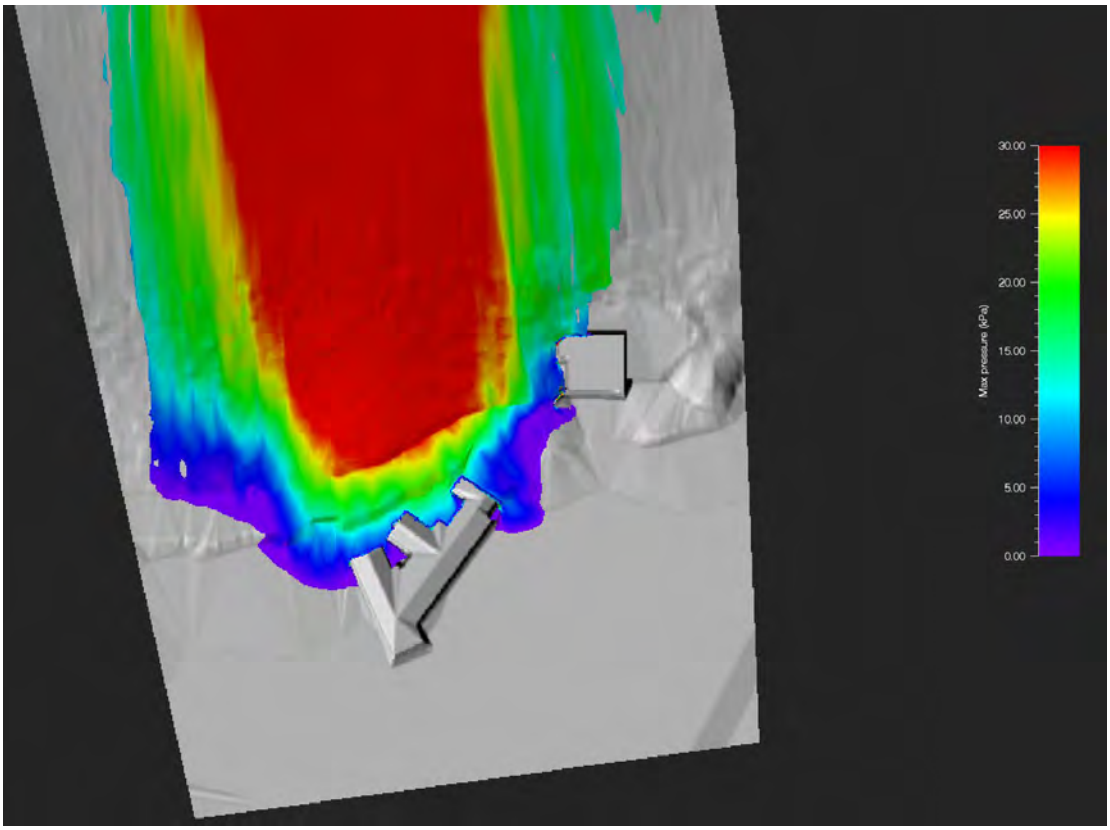


Figure 7 – Path_R5_S300 – Maximum Pressure, Red-Zone, Max. Pressure Set To 30 kpa, Situation 2

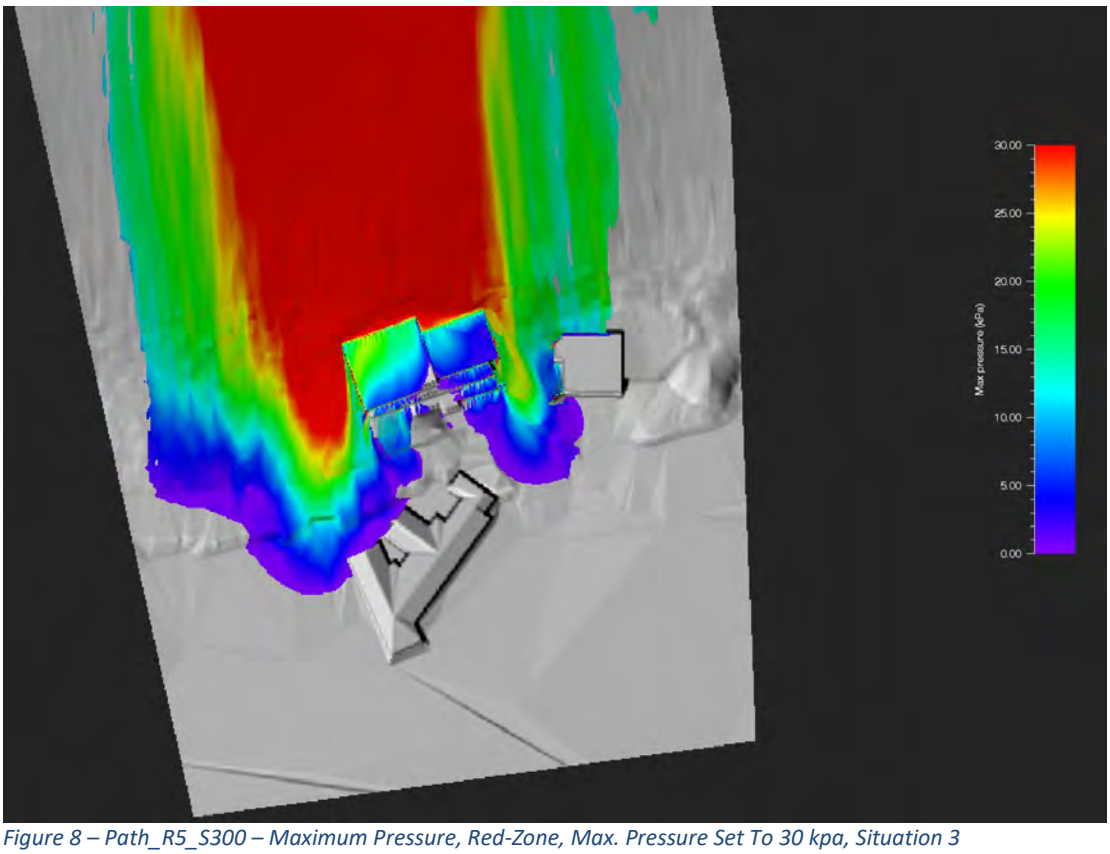


Figure 8 – Path_R5_S300 – Maximum Pressure, Red-Zone, Max. Pressure Set To 30 kpa, Situation 3

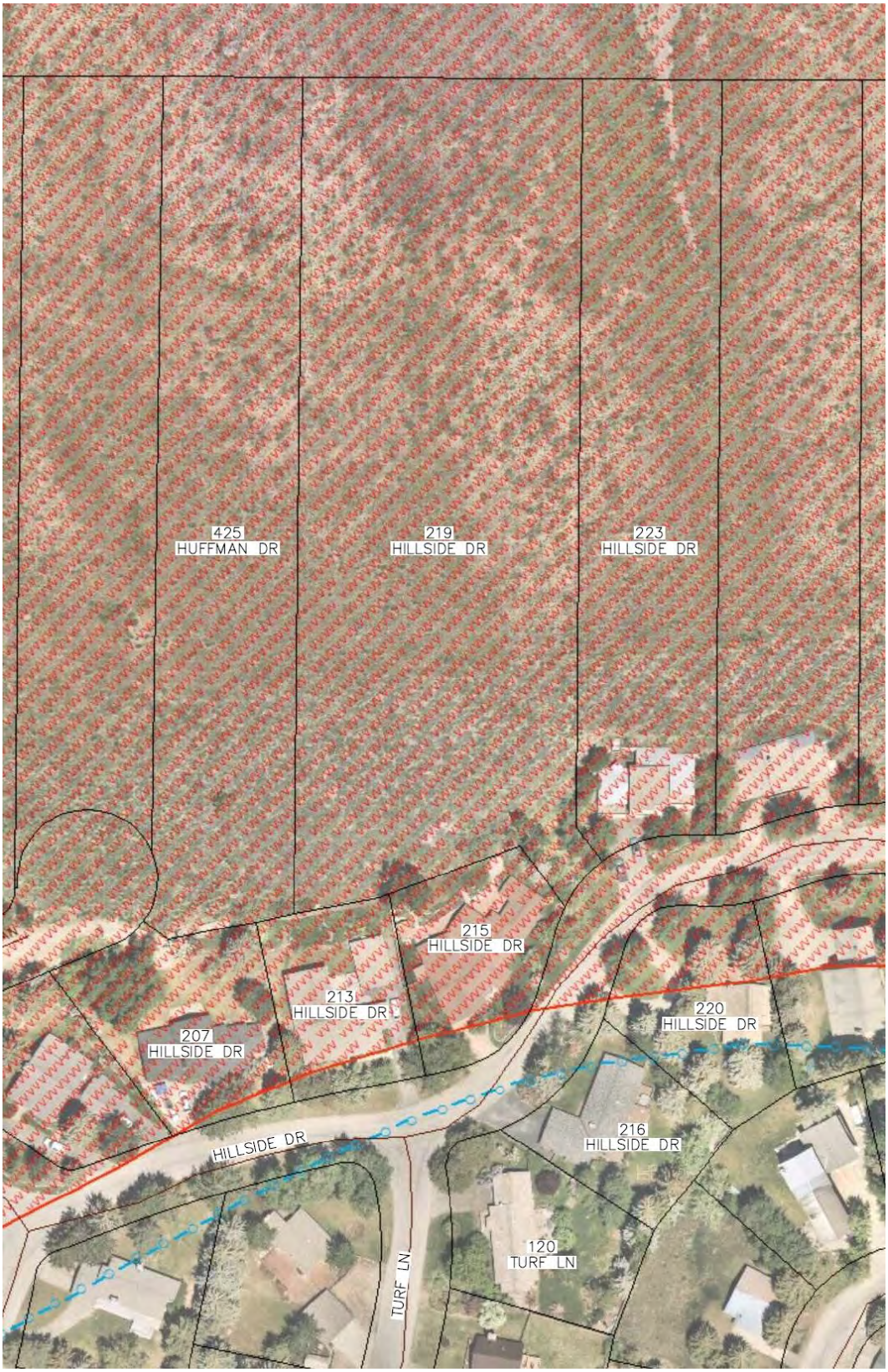


Figure 9 – Vicinity Map Showing the Mears 1978 Red & Blue Avalanche Hazard Areas

SNOW AVALANCHE HAZARD EVALUATION
LOT 9, BLOCK 5, WARM SPRINGS VALLEY SUBDIVSION, 219 HILLSIDE DR.
LOCATED WITHIN SECTION 11, T. 4 N., R.17 E., B.M.,
CITY OF KETCHUM, BLAINE COUNTY, IDAHO

Prepared for
Paramount Property Development, LLC.

Bruce Smith, PLS 7048
Alex Nelson, PE 19275
Alpine Enterprises Inc.
P.O. Box 2037
Ketchum, Idaho 83340

This report will attempt to delineate the potential avalanche danger at the study site by correlating key data, both quantitatively and intuitively, to show runout distances and destructive power within the limits of the avalanche hazard forecasting art. The avalanche hazard areas in this study are considered by Alpine Enterprises, Inc., the City of Ketchum, the owners and their planners to be reasonable for regulatory purposes. However, neither Alpine Enterprises, Inc., the City of Ketchum, nor the owners or their planners represents, warrants or implies that areas outside of the designated avalanche zones are safe and free from avalanches or avalanche danger. The effects of natural and artificial hazards other than snow are not discussed in this report.

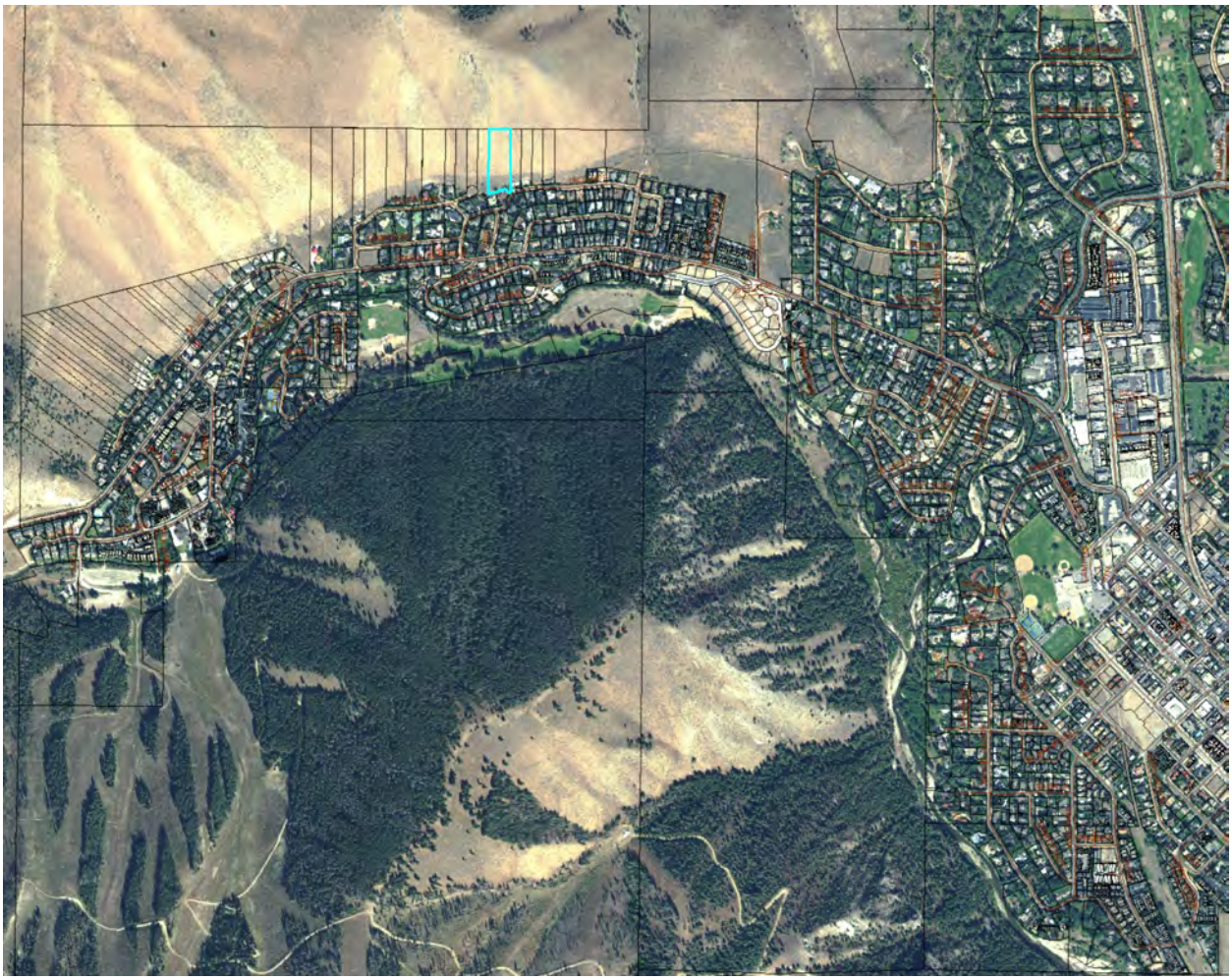


Figure 1 - Vicinity Map (Image Not to Scale)

The purpose of this study is to discuss the potential Snow Avalanche Hazard for a proposed new residence on Lot 9, Block 5, Warm Springs Valley Subdivision located at 219 Hillside Drive, City of Ketchum, Idaho. This discussion applies only to this Lot and should not be used for other areas. The subject property is located within a portion of Section 11, Township 4 North, Range 17 East, Boise Meridian, Blaine County, Idaho. The geographic position is roughly 43° 41'33.7" North Latitude, and 114°23'27.2" West Longitude. Elevations range from approximately 5880 feet on the valley floor, to about 6600 feet on top of a ridge that may affect the general area. Downtown Ketchum, Idaho, lies approximately 1.5 miles Southeasterly of the study site. Topographic maps used in the calculations come from a Site Plan produced by Alpine Enterprises Inc. using site specific data, Blaine County GIS LiDAR and Parcel Data.

Field inspections and avalanche observations of the general area have taken place from circa 1980 through 2023, and field inspections of the site took place in May of 2022.

AVALANCHE CHARACTERISTICS

The following discussion is to help the reader better understand conditions that may lead to an avalanche event. The difference between grade in percent and inclination in degrees should be noted. Percent grade is calculated by the vertical rise divided by the horizontal distance. Inclination in degrees is calculated by taking the arctangent of the grade in percent. A four to one slope = 25% = 14°. Avalanches are generally divided into three areas: a starting zone, a track, and a runout zone. In general, an open slope with an inclination over 27° that receives large amounts of snow can be considered a potential starting zone. Once the snow is set in motion, a slope angle of 17° is all that is required to keep the snow moving through the track, although 22° to 35° is a more typical track angle. The runout zone is where the slide starts losing momentum and the debris finally comes to rest. Runouts may begin when the slope angle flattens to 10° and some will continue across flats and even uphill.

Avalanches may be put into two general types: loose snow, and slabs. These two may be further subdivided into wet and dry. Loose snow slides occur when individual snow grains, due to a lack of cohesiveness, reach their angle of repose and slide down the hill in a generally harmless repositioning, known as a sluff. Wet snow sluffs, although slow moving, may present a hazard due to the sheer mass involved. This type of slide usually occurs in the springtime when factors such as high temperatures, warm winds, rain, and solar radiation create a melt-water saturated snowpack which slides on the ground. Slushflows have been documented on slopes as shallow as 3°, but these are rare occurrences and can generally be disregarded for land planning purposes. On slopes steeper than 50°, loose snow sluffs occur almost continually during storms, thus preventing accumulations that could become hazardous.

Slab avalanches occur involving entire layers in the snowpack and have the potential to become extremely dangerous. The most common type of slab avalanche occurs when large amounts of wind deposited snow accumulate on a slope into a cohesive slab, sitting on top of a weaker layer. With an appropriate trigger, this slab layer will fracture into blocks of snow and begin moving rapidly down the hill, picking up momentum and entraining more snow as it propagates. The slide moves on a bed surface, which may be a deeper layer of snow or the ground. Structural instability in the snowpack occurs due to many factors, some of which are: heavy amounts of snowfall, extreme air temperature changes, a temperature gradient through the layers that forms weak crystals, rainfall, or an ice crust layer.

AVALANCHE ZONING

The City of Ketchum uses roughly the same zoning plan that was developed in Switzerland over 60 years ago. The main difference in the two systems is the "return period" factor. Avalanches have been documented for centuries in Europe, while Blaine County still lacks actual records of occurrences. The best available evidence is talking to long time area residents, old newspaper articles, and terrain analysis with personal observations and records.

This report will use the three color (or three zone) system. The three zones are defined as follows:

RED (High Hazard) Zone. This area includes terrain where avalanches are expected to have (a) an impact pressure of 30 kPa (600 Lb/Ft^2) or greater with a return period up to 300 years, and/or (b) a return period of 30 years or less regardless of impact pressure. Buildings, roads, and winter parking are generally not allowed in the Red Zone (except in the Cities of Ketchum and Sun Valley).

BLUE (Low Hazard) Zone. This area is the transition zone between high hazard and no hazard zones. Avalanches are expected with impact pressures of less than 30 kPa (600 Lb/Ft^2) and return periods between 30 and 300 years.

WHITE (No Hazard) Zone. This area includes terrain with very infrequent small slides and the potential for less than 3 kPa (60 Lb/Ft^2) from the air blast of a Very Large Avalanche.

The avalanche path modeled in this study that could affect the site and the proposed structure lies within the Red and Blue Hazard Zones and it's size classification is between Medium and Large.

Please refer to Ketchum Municipal Code, Chapter 17.92 Avalanche Zone District for further Conditions and Restrictions, as it is subject to change.

It is generally regarded that it is not economically feasible to build wood frame structures capable of withstanding pressures greater than 10 kPa (200 Lb/Ft^2), so reinforced concrete structures may be the most logical direct protection alternative. In some cases, avalanche mitigation structures such as catching dams or deflecting berms may be more suitable. Any structure that encourages gatherings of people such as schools, churches, and hotels, should not be allowed.

HISTORY

The Sun Valley and Blaine County areas have seen man's activities since the late 1800's, but a detailed history of avalanche activity has not been kept. Personal observations, videos, photos, old newspaper articles and interviews with long time area residents recall that avalanches have occurred regularly in the Warm Springs area. In my brief 40 years living in Ketchum, I have observed numerous avalanches in this area, but none, so far, at the subject property.

A former Blaine County Planning and Zoning Administrator recalled stories of a storm in the early 1930's when "it snowed 2 feet, and then rained hard on the new snow, and nearly everything slid." A similar report from the early 1900's reports the same conditions.

The circa 1978 Avalanche Maps by Norman A. Wilson and Arthur I. Mears that were used as the basis for Ketchum’s Avalanche Overlay both show the subject property to be in a Red Zone. These maps were produced before most of the development occurred in the area and were before Avalanche Dynamics Software and LiDAR mapping were available.

Figure 2 - This photo shows a January 2008 event on Sage Road and is similar to what could be expected at the site.

Figure 3 - This photo shows a January 2008 event on Sage Road and is similar to what could be expected at the site.

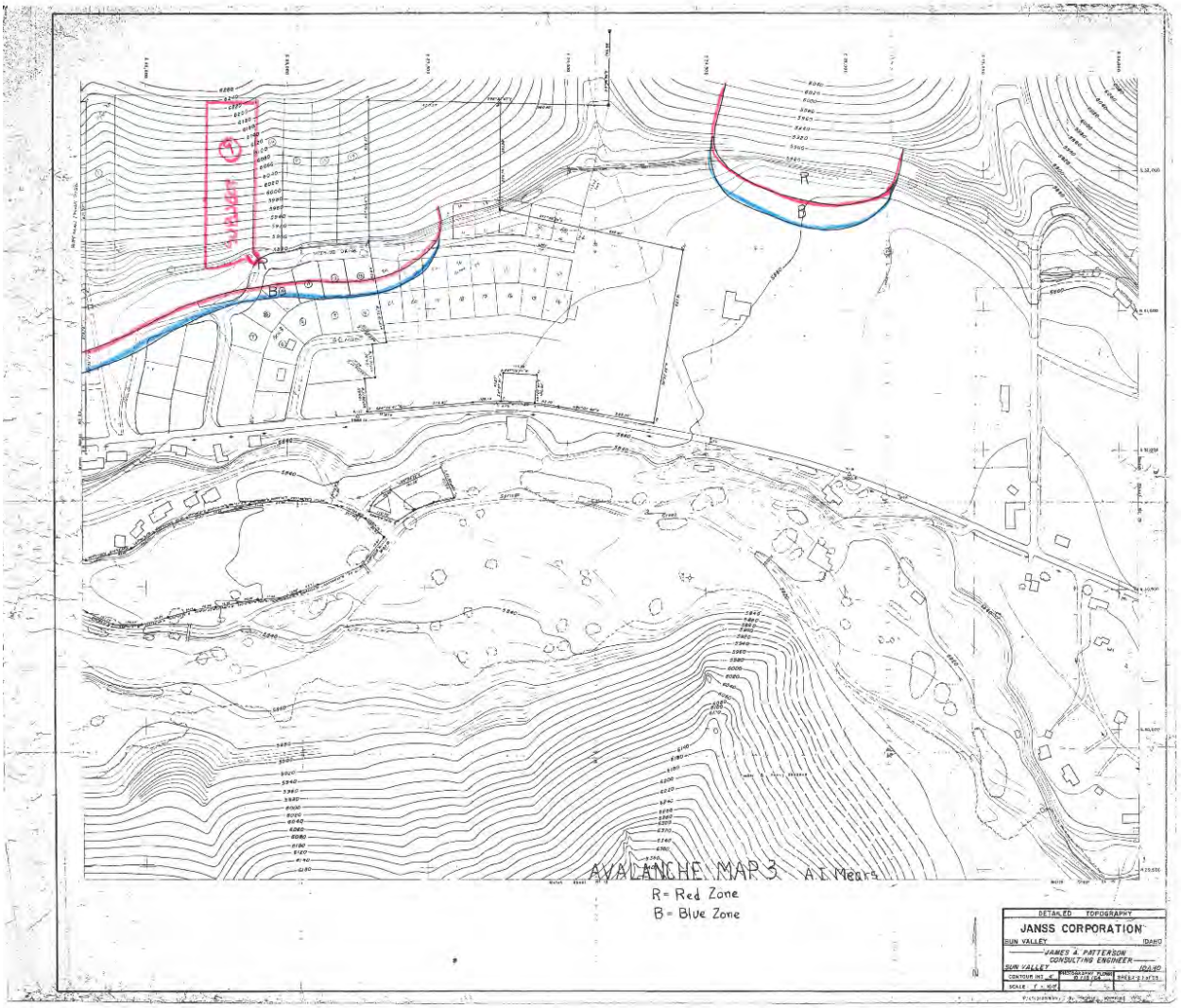


Figure 4 - Mears Avalanche Map 3 – Circa 1978

SITE ANALYSIS

The best method for determining avalanche runout distance (which is of primary importance to man and his activities) is a long (300 year) history of past events at the site. If this is not available, the next step is to look for damage to trees and other vegetation along the track and runout zone. This particular site does not lend itself to dendrochronology, as there are only grasses and sage.

The next step is terrain analysis and applying statistical methods developed by mapping hundreds of avalanches around the world and comparing these figures to a local data set to

determine runout distance. These results are compared with accepted avalanche dynamics modeling software, RAMMS: AVALANCHE (RApid Mass Movement Simulation), developed by the Swiss Federal Institute for Snow and Avalanche Research to calculate approximate flow depths, velocities, pressures, and potential impact forces that may be expected. Both the Statistical and Dynamic Models are used in this report with the RAMMS model taking precedence as it shows velocities, pressures, and flow depths along the path and the lateral extents.

Blaine County is typically under the influence of Intermountain climatic factors, which usually result in a comparatively shallow snowpack, and cold temperatures; perfect conditions for creating the usual and expected temperature gradient layers (T.G., Kinetic, Facets or "sugar snow") resulting in a weak snowpack structure. This fact, coupled with occasional large Pacific storm events, and the necessary terrain characteristics, result in the occasional avalanches that are observed.

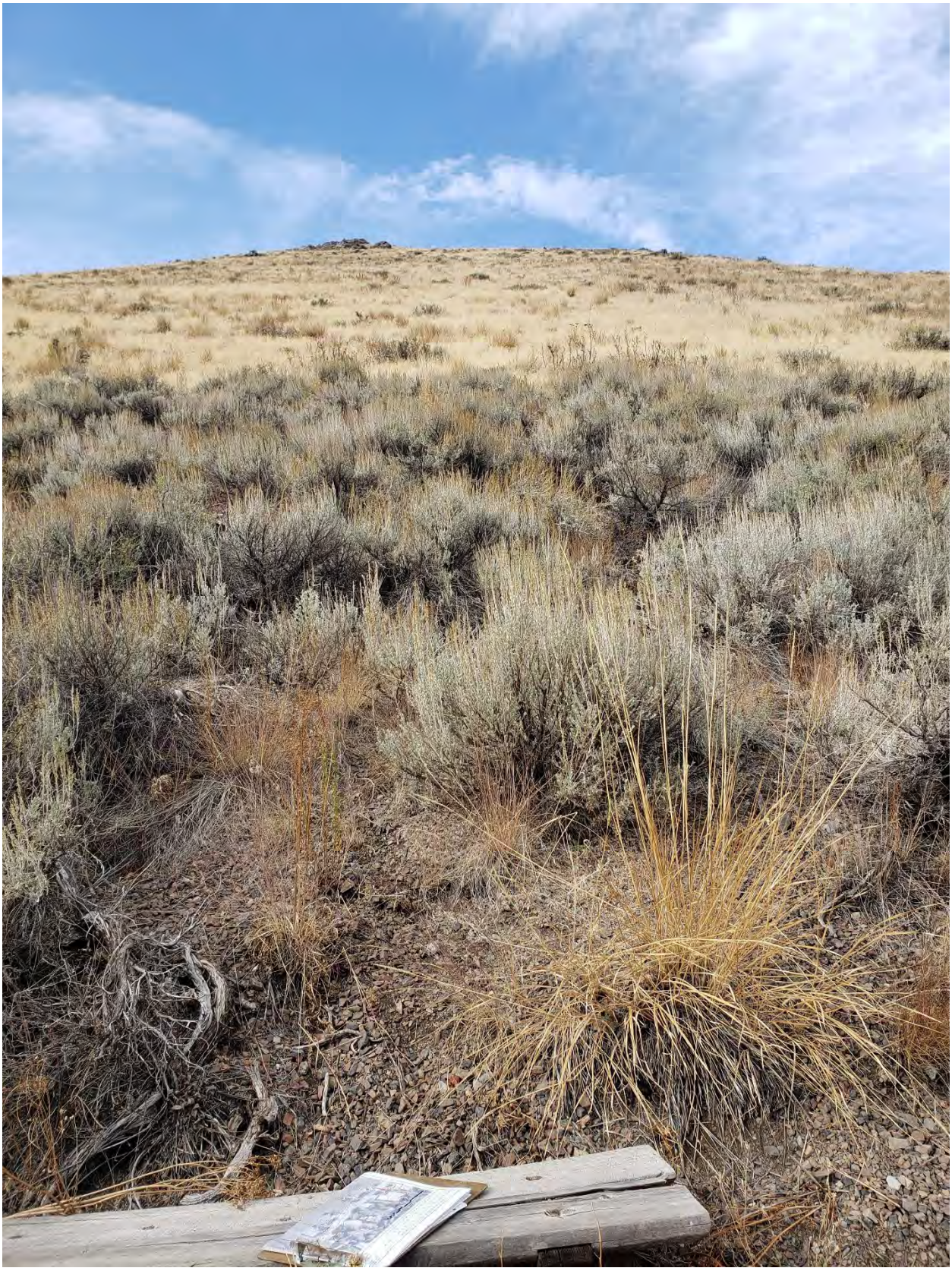


Figure 5 - Looking Uphill from Proposed Building Site.

The slope above the site is a broad unconfined face lying at a typical slope angle of around 33 degrees. The slope does not lend itself to deep snow loading as typical on the Westerly side of many of the channelized paths in the Warm Springs area.

LAND PLANNING RECOMMENDATIONS

Please refer to the attached 1" = 50', 1" = 10', and Avalanche Forces "Snow Avalanche Hazard Study Showing Lot 9, Block 5 Warm Springs Valley Subdivision" maps by Alpine Enterprises Inc. for the following discussion.

The Red Zone shown will affect most of the proposed structure, while a portion of the proposed structure and driveway lie in the Blue Zone that stops before it reaches Hillside Drive.

We have worked with the Owners, the Designers at Studio DVLP, LLC., and the Structural Engineer, Matthew Boulant PE, with EMH Engineers, Inc. to make this an avalanche aware design from its inception. Numerous meetings with the Owners, Studio DVLP, and EMH Engineers have resulted in what we believe to be the best location and orientation for the proposed residence. The goal was to keep the proposed structure and the surrounding property as safe as possible while still maintaining the Owners vision for their property. An important aspect of the design was to be deflection neutral. The design also adds a significant element of safety to the existing down path residences which were developed without avalanche protection. The proposed structure was oriented perpendicular to the avalanche flow direction in order to minimize avalanche runout deflection towards the property of others. Any snow momentarily deflected by the protection wall/structure will be immediately entrained by the rest of the slide as it passes by ensuring there will not be increased risks to neighboring properties. The structure was also located immediately adjacent to the minimum front yard setback in an attempt to reduce

the potential avalanche forces associated with Red Hazard Zones. It should be remembered that persons and property inside an avalanche resistant structure will be safe from avalanche danger, but persons or property on the outside of a proposed structure could be at risk.

According to the architectural plans by Studio DVLP, the height of the proposed avalanche protection wall/foundation would range between 2’ and 5’ above finish grade along the Northern side of the structure.

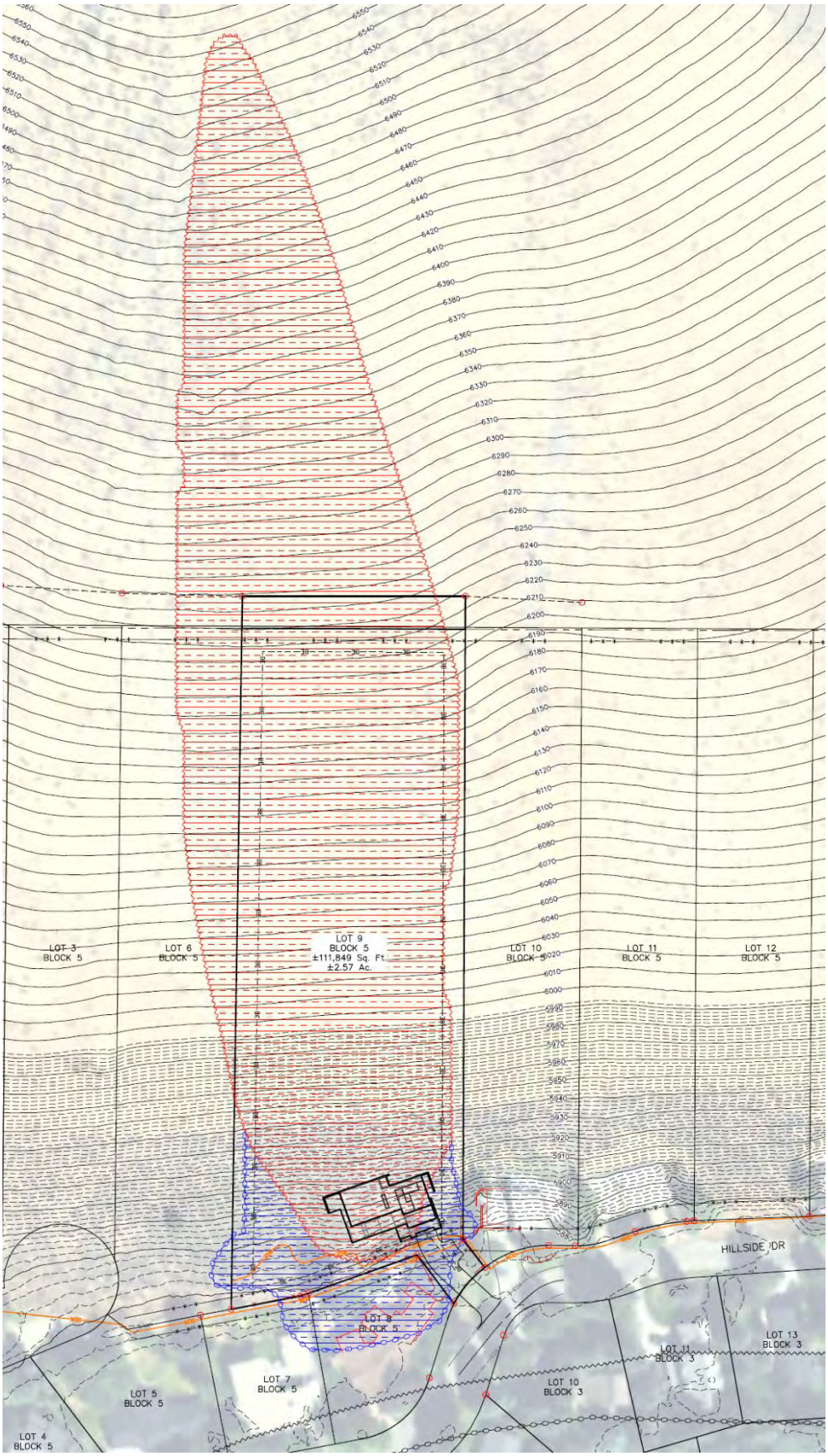


Figure 6 – A 2023 Avalanche Hazard Zoning Map showing the subject property, 129 Hillside Dr.

This report should be considered site specific in that avalanche forces and return periods at this site should not be applied to other sites.

The Sawtooth Avalanche Center maintains a daily avalanche hazard forecast during winter months on the internet at SawtoothAvalanche.com that should be referred to frequently, and official warnings should be heeded during periods of high hazard. A daily subscription via email is also available.

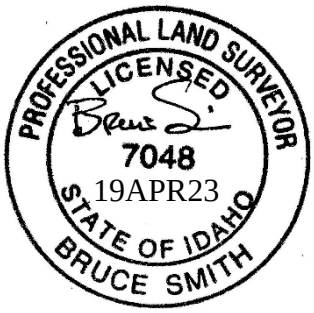
As Pete Schaerer suggests in The Handbook of Snow, "the technical work required to identify dangerous zones can be carried out with reasonable accuracy using the procedures outlined above. Determination of acceptable risk and the enforcement of building restriction are political and legal matters."

In conclusion, it is recommended that structures in this area be carefully positioned, oriented, and designed; and that the residents of this area possess at least a basic knowledge of conditions that may lead to an avalanche event, and use this knowledge to protect themselves, family, visitors, structures, the public, and property. As long as the City allows development in the High Hazard Zones, we do feel that the owners have a vested right to responsibly develop this property. Dwelling in this area may be considered an acceptable risk for those who are aware of the hazard, have a basic understanding of conditions that could result in an avalanche event, and are willing to accept the occasional risk. The Developer, Owner, and the City should be aware of, and willing to accept, all possible legal, moral, financial, political, ethical, and safety consequences that may result from structures being located within High Avalanche Hazard Zones.

Respectfully submitted,

Bruce Smith, PLS 7048, Idaho

Alex Nelson, PE 19275, Idaho



Alpine Enterprises, Inc.

Ketchum, Idaho

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NGI CALCULATIONS

Client/Site	WarmSpringsValleySub_Blk5Lt9		
Date	6/20/2022		
		Horizontal Distance (X) (ft)	**Elevation (Y) (ft)**
Input Parameters (yellow):			
Avalanche Path Profile			
Top of starting zone (X_1, Y_1)		**0**	6565
10° point (X_β, Y_β)		1080	5875
θ, slope angle (°) top 100 m (vert.)			31.60
Calculated Parameters (green and red):			
β, ave. slope < to 10° point			32.574
H, vert. distance (0,0 to end parabola (ft)			210.312

X_r (ft)	dX (ft)	dX + 1SD (ft)	
1,216	136	208	**Equation 2**
1,237	157	236	**Equation 3**
1,358	278	370	**Equation 3B**
1,147	67	189	**Equation 5**
1,377	297	385	**Equation 7**
Mean	**187**	**278**	**All Equations**
Mean	**194**	**288**	**All Equations except Eq. 3**

Figure 7 - NGI Calculation Sheet

RAMMS ::AVALANCHE DATA

Avalanche simulations were run for five different circumstances. Path R5_T300 represents the 300-Year Event that is considered to be an accurate representation of the potential design event. Existing vegetation and structures were ignored due to uncertainties in future site conditions.

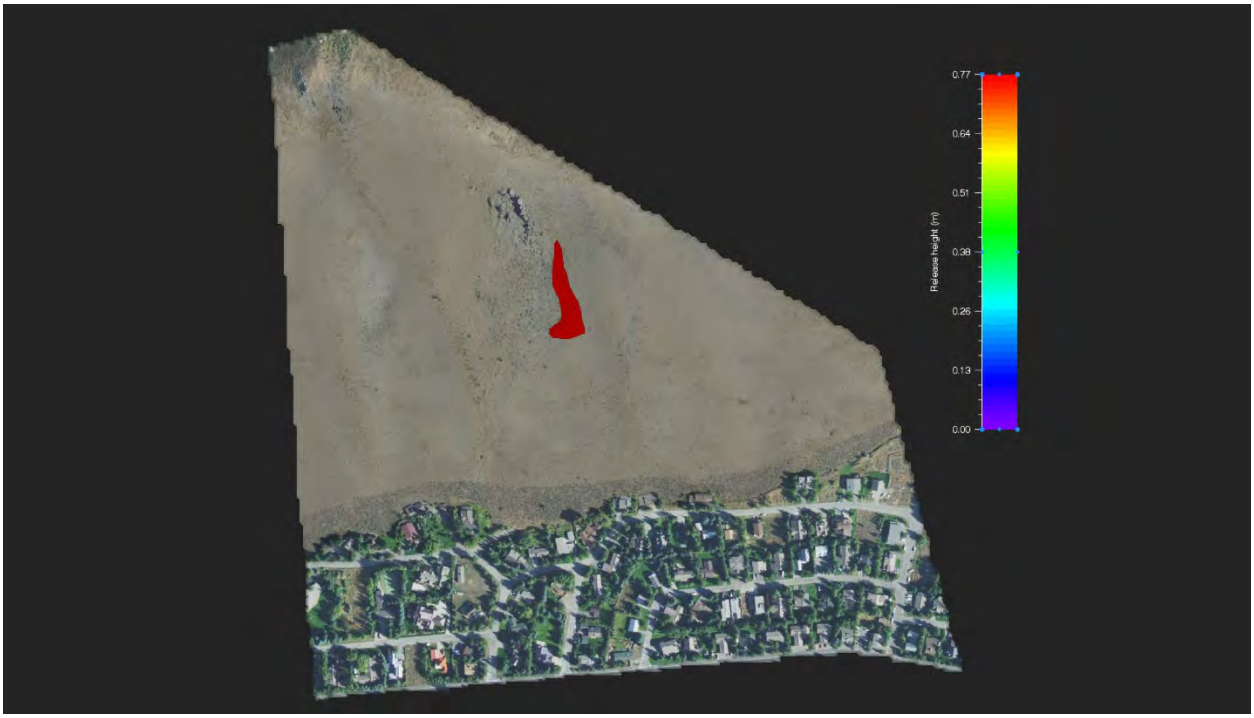


Figure 8 - Release Area, R5, 2D

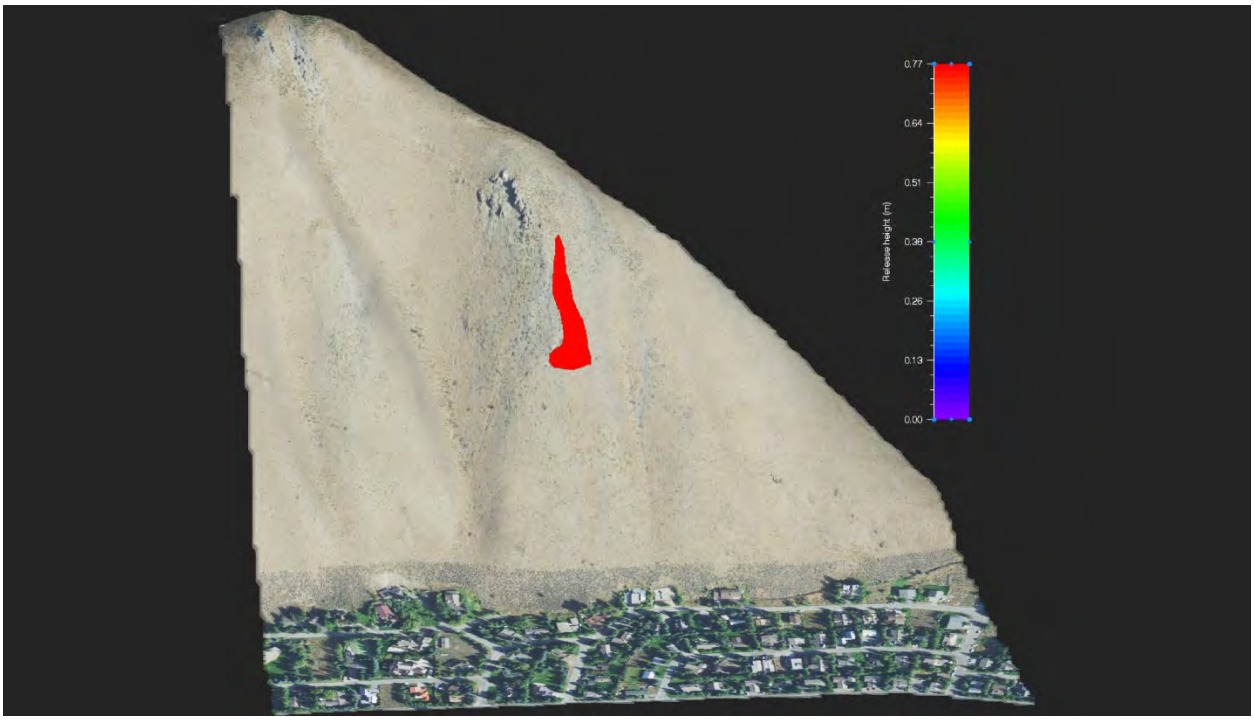


Figure 9 - Release Area, R5, 3D

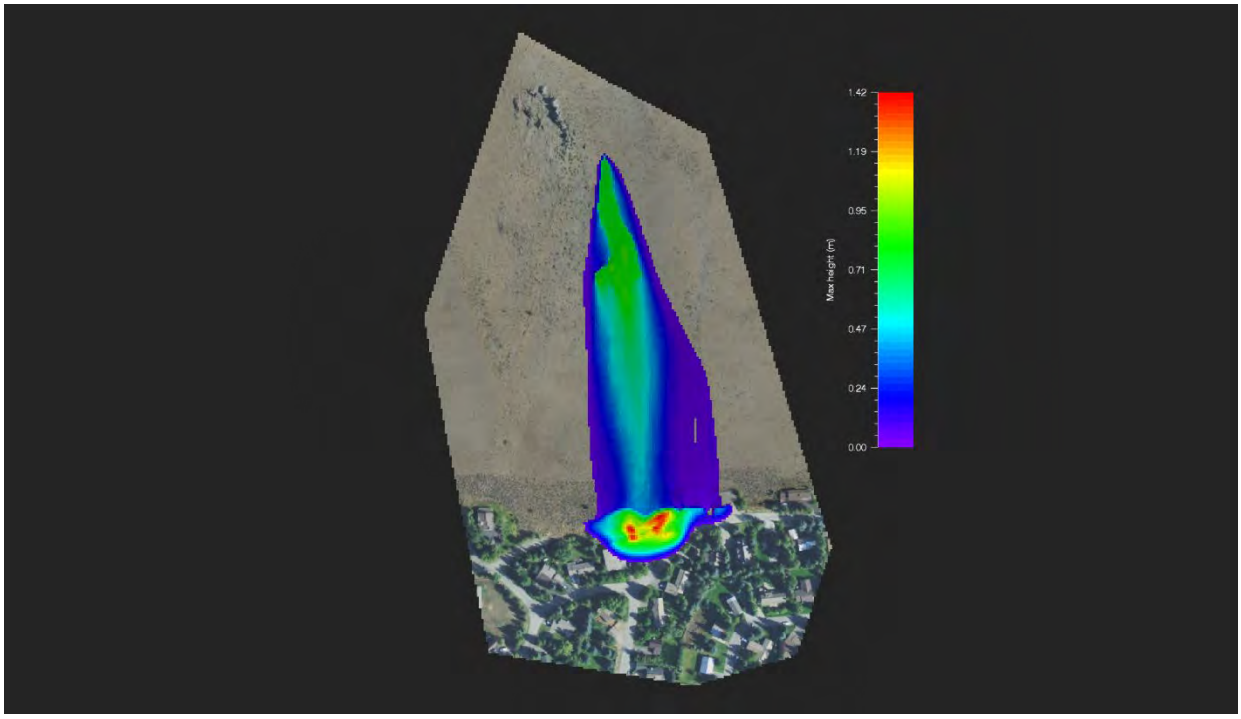


Figure 10 - Path_R5_S300 - Maximum Flow Height, 2D

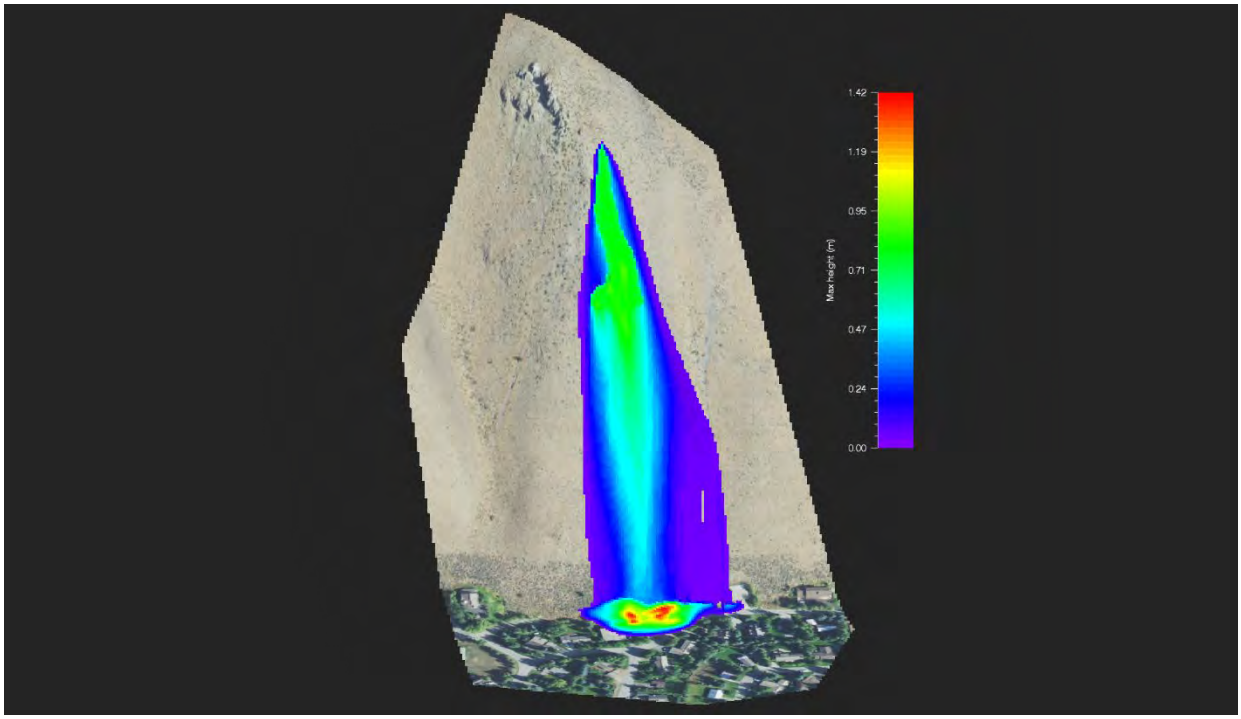


Figure 11 - Path_R5_S300 - Maximum Flow Height, 3D

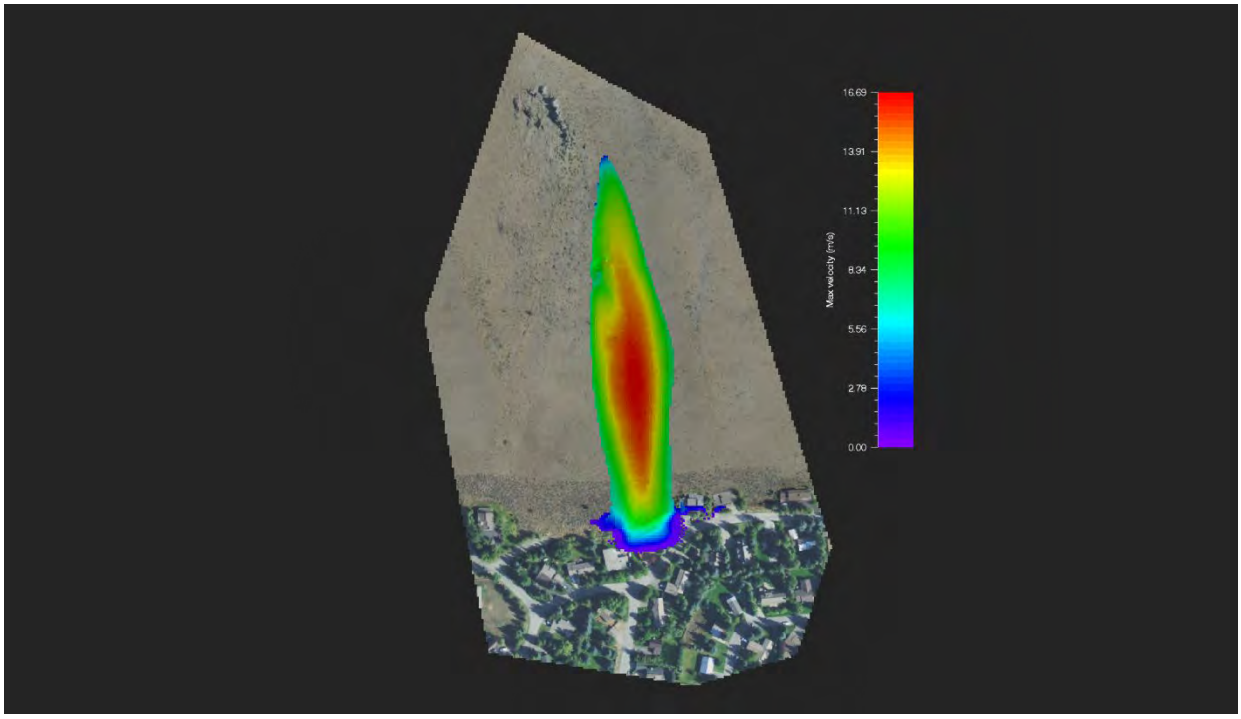


Figure 12 - Path_R5_S300 - Maximum Velocity, 2D

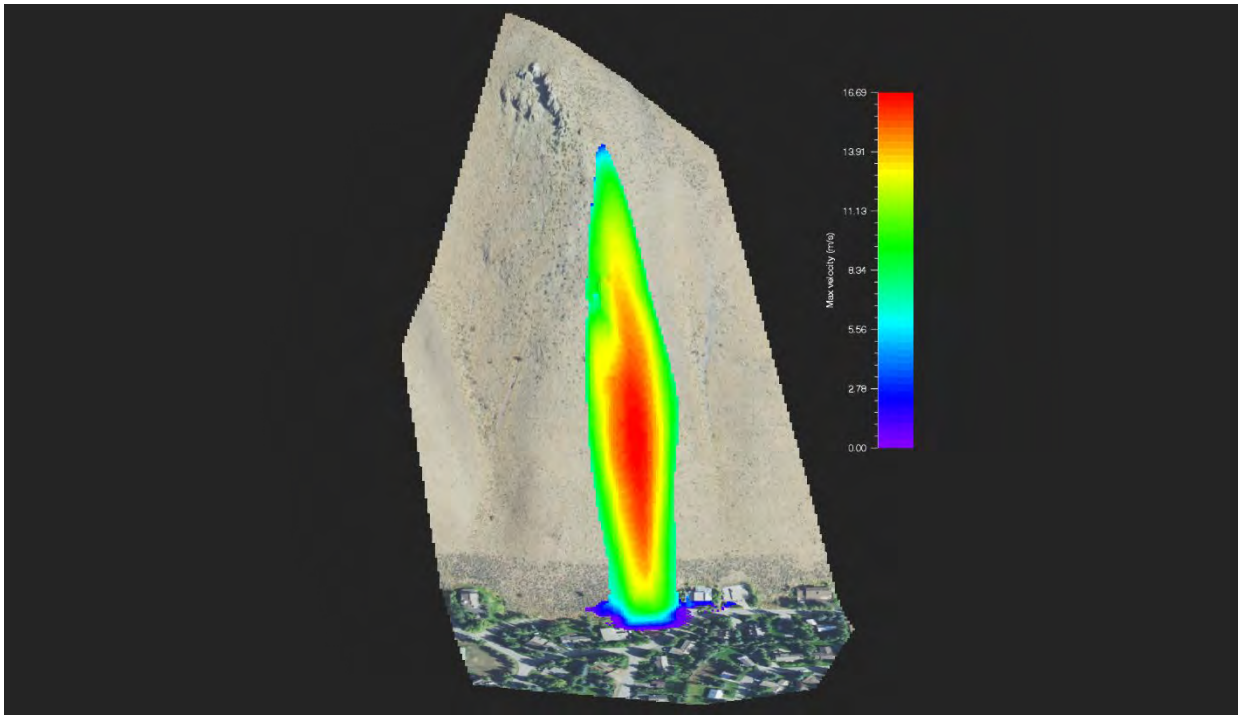


Figure 13 - Path_R5_S300 - Maximum Velocity, 3D

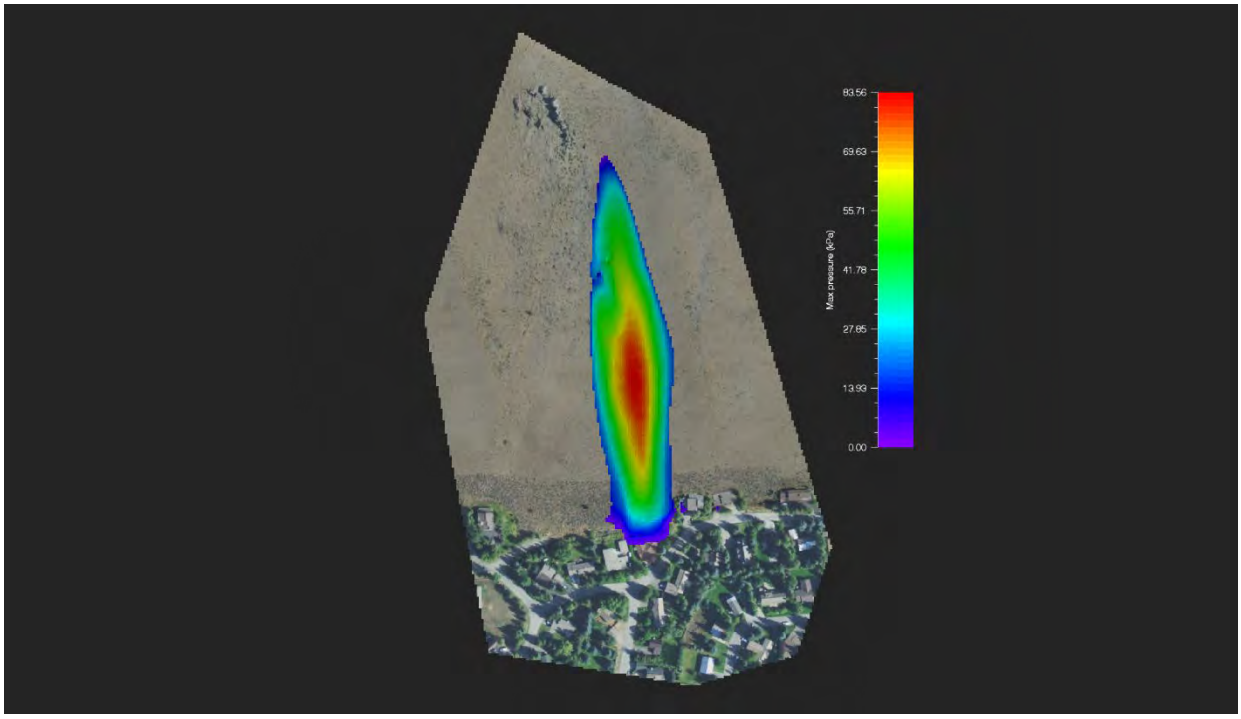


Figure 14 - Path_R5_S300 - Maximum Pressure, 2D

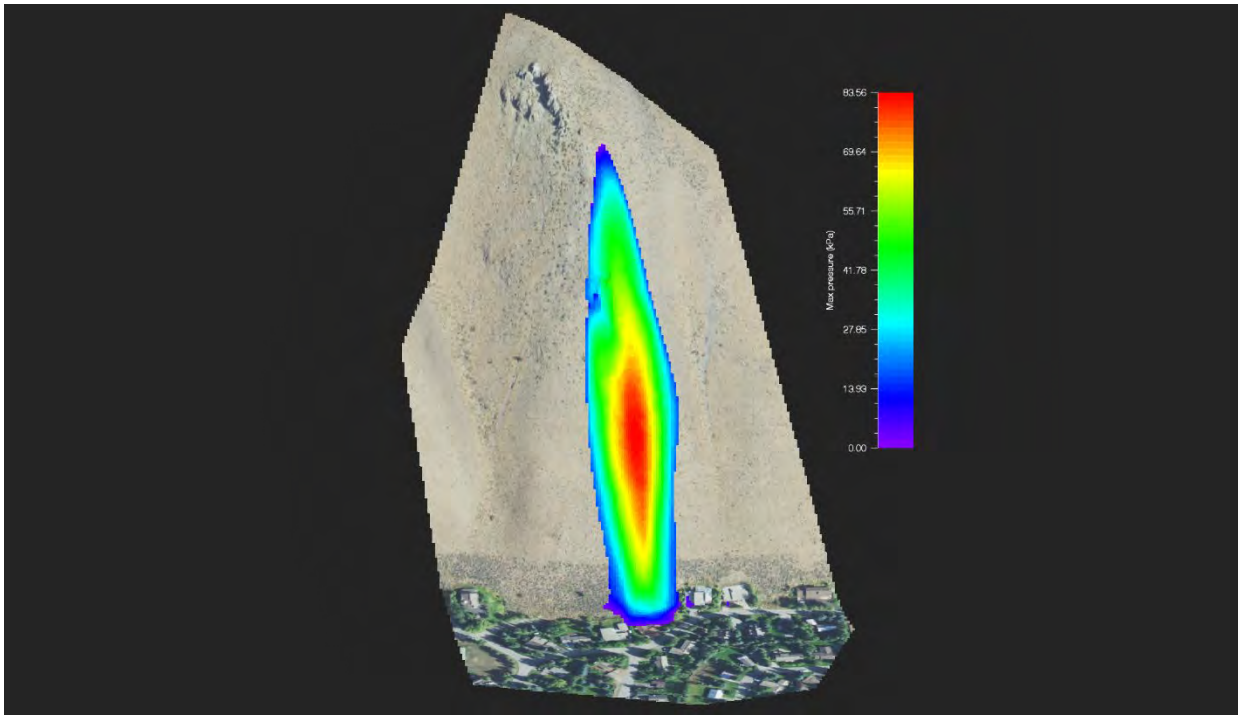


Figure 15 - Path_R5_S300 - Maximum Pressure, 3D

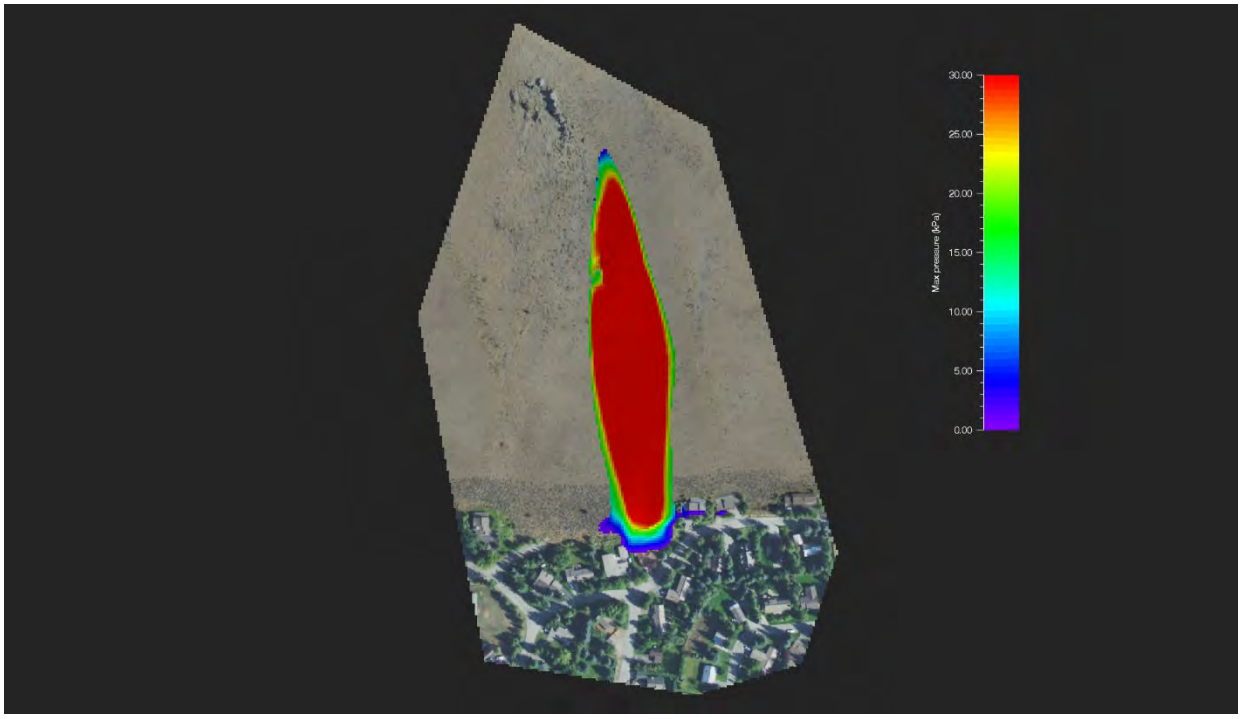


Figure 16 - Path_R5_S300 - Maximum Pressure – Red Zone, 2D

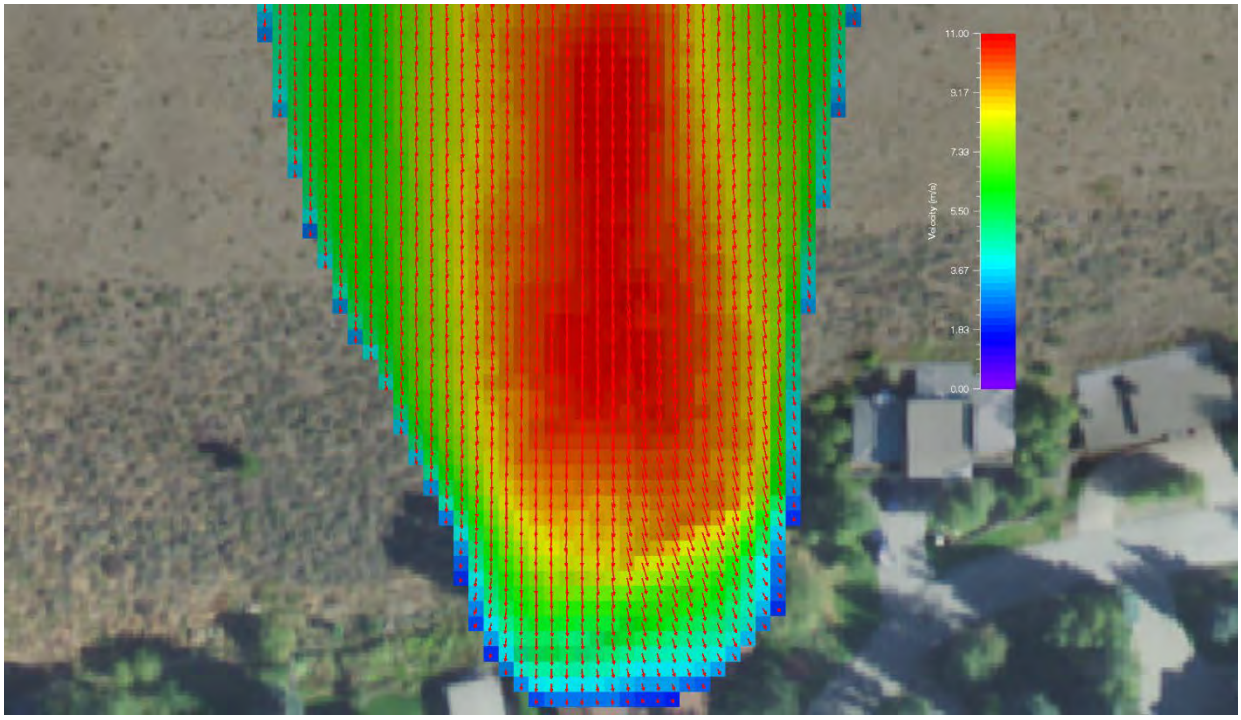


Figure 17 - Path_R5_S300 – Velocity Vectors – Time Step 22 Sec.

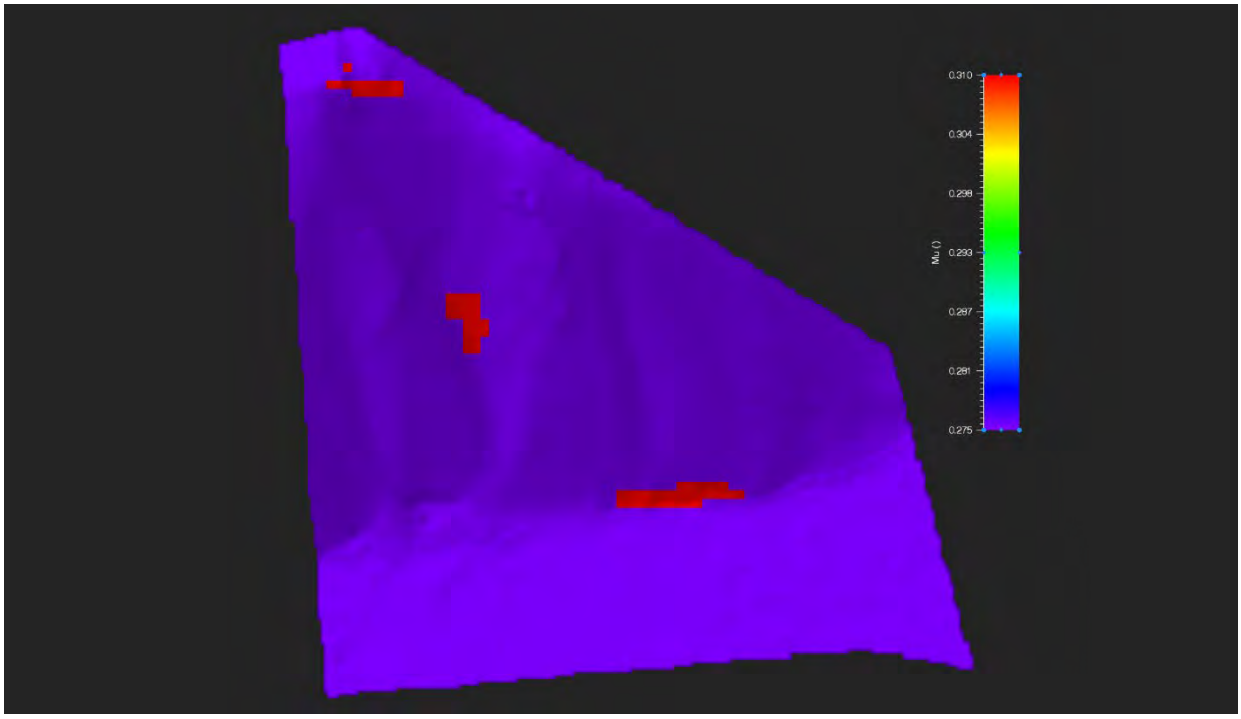


Figure 18 - Path_R5_S300 – Mu - Friction

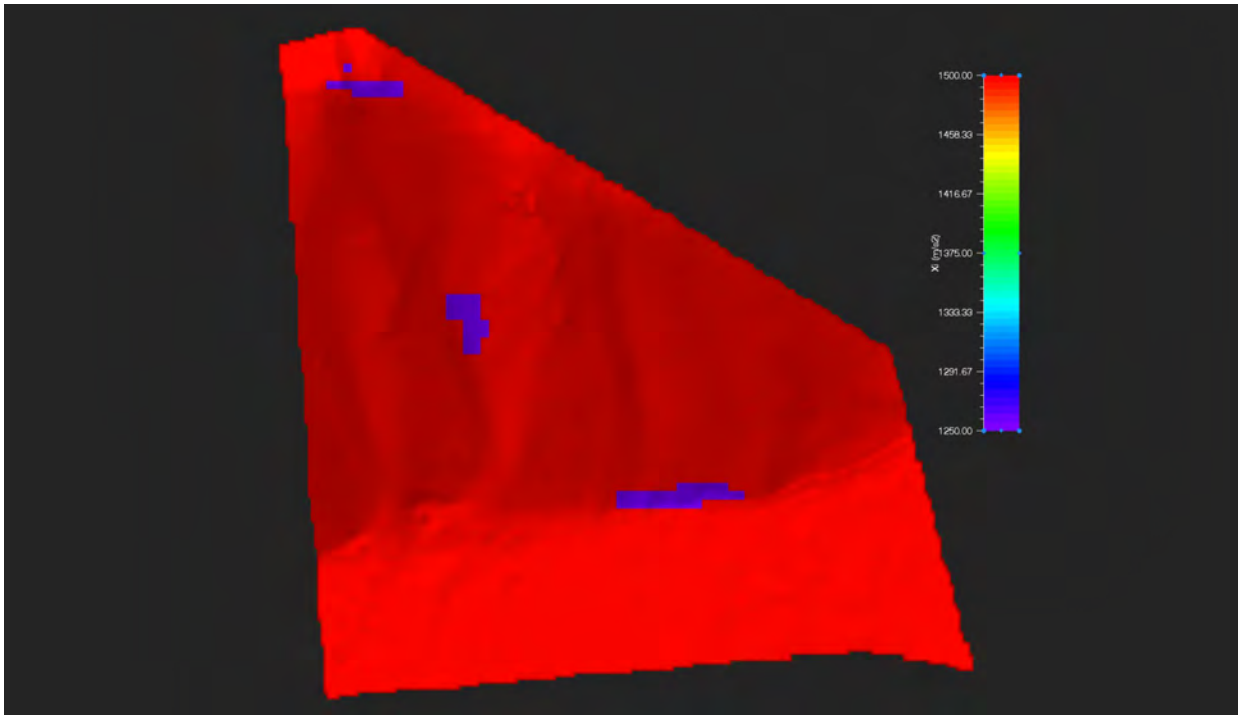


Figure 19 - Path_R5_S300 – XI – Turbulence

PATH : R5-S300 LOG FILE

****
RAMMS::AVALANCHE RAMMS OUTPUT LOGFILE

Output filename: U:\LandProjects2004\725_HURD\RAMMS_2022\725M_WSV_BLK5_LT9_2M\R5_T300.out.gz

Simulation stopped due to LOW FLUX!

Simulation stopped after 85.2500s
Calculation time (min.): 1.13

Simulation resolution (m): 2.00

SIMULATION RESULTS

Number of cells: 35824
Number of nodes: 36293

Calculated Release Volume (m3): 2107.66

Overall MAX velocity (m/s): 16.6895
Overall MAX flowheight (m): 1.42390
Overall MAX pressure (kPa): 83.5622

****
RAMMS::AVALANCHE 1.7.20 INPUT LOGFILE

Date: Fri Apr 22 12:08:13 2022
Input filename: U:\LandProjects2004\725_HURD\RAMMS_2022\725M_WSV_BLK5_LT9_2M\R5_T300.av2

Project: 725M_WSV_BLK5_LT9_2M
Details:
725M Warm Springs Valley Subdivision, Block 5, Lot 9
Avalanche Study 2022
2 Meter Grid
Kyle Miller

DEM / REGION INFORMATION:
DEM file:
U:\LandProjects2004\725_HURD\RAMMS_2022\725M_WSV_BLK5_LT9_2M\725M_WSV_BLK5_LT9_2M.xyz
DEM resolution (m): 2.00
(imported from: U:\LandProjects2004\725_HURD\RAMMS_2022\725M_WSV_BLK5_LT9_GRID_2M_ASCII.asc)

Nr of nodes: 172550
Nr of cells: 171720

Project region extent:
E - W: 468930.95 / 468082.94
S - N: 224891.81 / 225701.82

CALCULATION DOMAIN:
U:\LandProjects2004\725_HURD\RAMMS_2022\725M_WSV_BLK5_LT9_2M\D2.dom

GENERAL SIMULATION PARAMETERS:
Simulation time (s): 300.000

Dump interval (s): 0.25
Stopping criteria (momentum threshold) (%): 5
Constant density (kg/m3): 300

NUMERICS:
Numerical scheme: SecondOrder
H Cutoff (m): 0.000001
Curvature effects are ON!

RELEASE:
Depth: 0.77 m Vol: 2103.9 m3 Delay: 0.00 s Name: R5.shp
Estimated release volume: 2103.92 m3

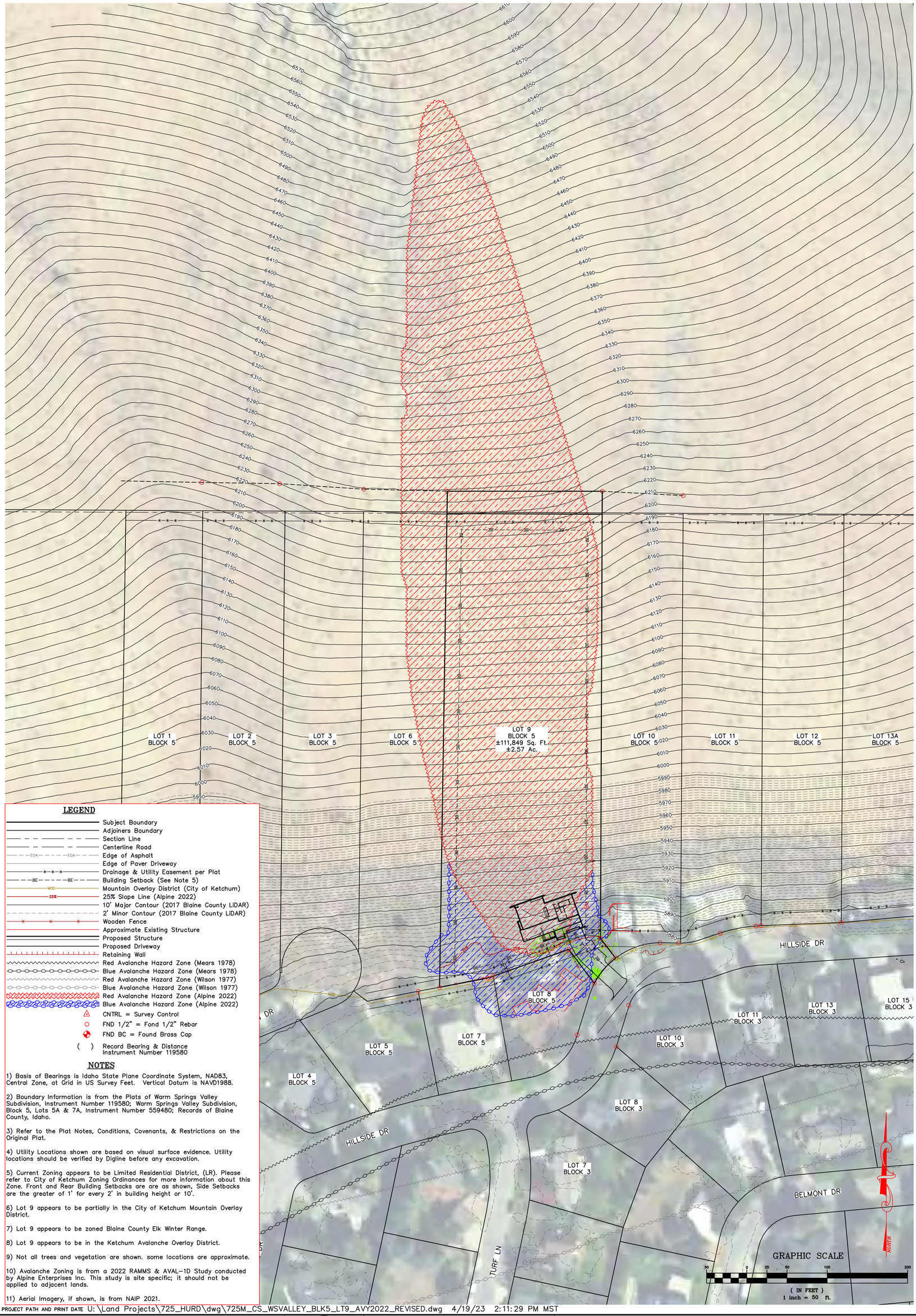
FRICTION MUXI:
Altitude_limit_1: 1500 m a.s.l
Altitude_limit_2: 1000 m a.s.l
Format of following parameters: [< 1000] - [1000 - 1500] - [> 1500]

Open slope parameters:
Mu: 0.300 - 0.290 - 0.275
Xi: 1250 - 1400 - 1500
Channelled parameters:
Mu: 0.340 - 0.330 - 0.310
Xi: 1050 - 1180 - 1250
Gully parameters:
Mu: 0.440 - 0.430 - 0.420
Xi: 900 - 1000 - 1050
Flat parameters:
Mu: 0.280 - 0.270 - 0.260
Xi: 1500 - 1600 - 1750
Forest parameters:
Mu (delta): 0.020 - 0.020 - 0.020
Xi: 400 - 400 - 400

RETURN PERIOD (y): 300
VOLUME category: Tiny

COHESION:
No COHESION specified.

MAP / ORTHOPHOTO INFO:
Map file: U:\LandProjects2004\725_HURD\RAMMS_2022\Orthophoto\NAIP_2013_FULL.tif
OrthoPhoto file: U:\LandProjects2004\725_HURD\RAMMS_2022\Orthophoto\NAIP_2013_FULL.tif



LEGEND

- Subject Boundary
- Adjoiners Boundary
- Section Line
- Centerline Road
- Edge of Asphalt
- Edge of Paver Driveway
- Drainage & Utility Easement per Plat
- Building Setback (See Note 5)
- Mountain Overlay District (City of Ketchum)
- 25% Slope Line (Alpine 2022)
- 10' Major Contour (2017 Blaine County LiDAR)
- 2' Minor Contour (2017 Blaine County LiDAR)
- Wooden Fence
- Approximate Existing Structure
- Proposed Structure
- Proposed Driveway
- Retaining Wall
- Red Avalanche Hazard Zone (Mears 1978)
- Blue Avalanche Hazard Zone (Mears 1978)
- Red Avalanche Hazard Zone (Wilson 1977)
- Blue Avalanche Hazard Zone (Wilson 1977)
- Red Avalanche Hazard Zone (Alpine 2022)
- Blue Avalanche Hazard Zone (Alpine 2022)
- CNTRL = Survey Control
- FND 1/2" = Fond 1/2" Rebar
- FND BC = Found Brass Cap
- ( ) Record Bearing & Distance Instrument Number 119580

NOTES

1) Basis of Bearings is Idaho State Plane Coordinate System, NAD83, Central Zone, at Grid in US Survey Feet. Vertical Datum is NAVD1988.

2) Boundary Information is from the Plats of Warm Springs Valley Subdivision, Instrument Number 119580; Warm Springs Valley Subdivision, Block 5, Lots 5A & 7A, Instrument Number 559480; Records of Blaine County, Idaho.

3) Refer to the Plat Notes, Conditions, Covenants, & Restrictions on the Original Plat.

4) Utility Locations shown are based on visual surface evidence. Utility locations should be verified by Digline before any excavation.

5) Current Zoning appears to be Limited Residential District, (LR). Please refer to City of Ketchum Zoning Ordinances for more information about this Zone. Front and Rear Building Setbacks are are as shown, Side Setbacks are the greater of 1' for every 2' in building height or 10'.

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8) Lot 9 appears to be in the Ketchum Avalanche Overlay District.

9) Not all trees and vegetation are shown. some locations are approximate.

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11) Aerial Imagery, if shown, is from NAIP 2021.

PROJECT PATH AND PRINT DATE U:\Land Projects\725_HURD\dwg\725M_CS_WSVALLEY_BLK5_LT9_AVY2022_REVISED.dwg 4/19/23 2:11:29 PM MST

REVISIONS	NO	DATE	BY
PRELIMINARY ONLY: NOT FOR CONSTRUCTION			
DESIGN REVIEW SUBMITTAL			
REVISED	1	29NOV22	AHN
REVISED	2	19APR23	AHN
SHEET 1 OF 3			

LICENSED PROFESSIONAL LAND SURVEYOR — BRUCE SMITH — STATE OF IDAHO — 7048 — 19APR23

PRELIMINARY

Alpine Enterprises Inc.
Surveying, Mapping, Civil Engineering, and Natural Hazards Consulting
660 Bell Dr., Unit 1
P.O. Box 2037, Ketchum, ID 83340 USA
(208) 727-1988 727-1987 fax
email: bsmith@alpineenterprisesinc.com

A SNOW AVALANCHE HAZARD STUDY SHOWING
LOT 9, BLK 5, WARM SPRINGS VALLEY SUBDIVISION
WITHIN S11, T.4N., R.17E., B.M., CITY OF KETCHUM, BLAINE COUNTY, IDAHO
PREPARED FOR PARAMOUNT PROPERTY DEVELOPMENT LLC

LEGEND

- Subject Boundary
- Adjoiners Boundary
- Centerline Road
- Edge of Asphalt
- Edge of Paver Driveway
- Drainage & Utility Easement per Plat
- Building Setback (See Note 5)
- Mountain Overlay District (City of Ketchum)
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- Bench
- Willow Bush
- Conifer Tree
- Deciduous Tree
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Max pressure (kPa): 50.00, 41.67, 33.33, 25.00, 16.67, 8.33, 0.00

LOT 9
BLOCK 5
±111,849 Sq. Ft.
±2.57 Ac.

LOT 10
BLOCK 5

LOT 6
BLOCK 5

LOT 8
BLOCK 5

LOT 7
BLOCK 5

LOT 5
BLOCK 5

LOT 10
BLOCK 3

HILLSIDE DR
(50' R.O.W.)

(N 00°00'38" E)
S 00°53'58" W
589.08'
(617.83')

(N 00°00'38" E)
N 00°13'12" E
527.24'
(551.71')

18.34'

(N 70°11'00" E)
N 70°38'54" E
7.08'
(7.00')

(N 70°11'00" E)
N 70°32'41" E
99.57'
(99.60')

(N 70°11'00" E)
N 70°32'41" E
42.01'
(41.99')

(N 37°31'00" W)
S 37°10'39" E
92.80'
(92.87')

(N 37°31'00" W)
N 37°10'39" W
31.20'
(30.72')

L=41.34' R=90.00'
CHB=N 40°23'59" E CH=40.98'
(L=41.46' R=90.00')
(CHB=N 39°17'20" E CH=41.09')

[N 78°54'27" E]
(N 78°53'00" E)
N 79°10'42" E
61.11'
(61.34')

GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.
NORTH

A SNOW AVALANCHE HAZARD STUDY SHOWING
LOT 9, BLK 5, WARM SPRINGS VALLEY SUBDIVISION
WITHIN S11, T.4N., R.17E., B.M., CITY OF KETCHUM, BLAINE COUNTY, IDAHO
PREPARED FOR PARAMOUNT PROPERTY DEVELOPMENT LLC

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and Natural Hazards Consulting
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PROFESSIONAL LAND SURVEYOR
BRUCE SMITH
STATE OF IDAHO
LS 7048
9APR23

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REVISIONS		
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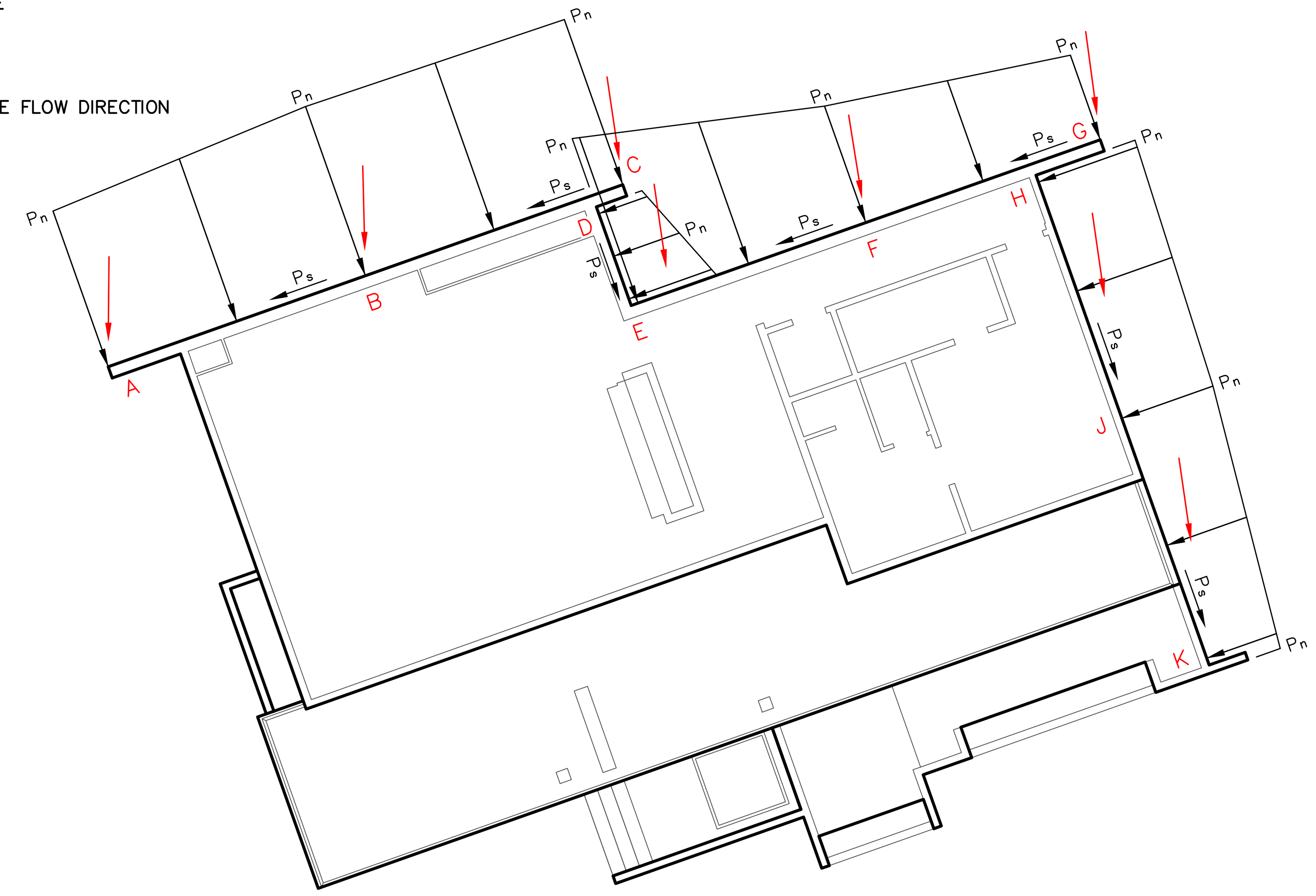
REVISED		
SHEET 2 OF 3		

PROJECT PATH AND PRINT DATE: U:\Land Projects\725_HURD\dwg\725M_CS_WSVALLEY_BLK5_LT9_AVY2022_REVISED.dwg 4/19/23 2:11:29 PM MST

AVALANCHE FORCES

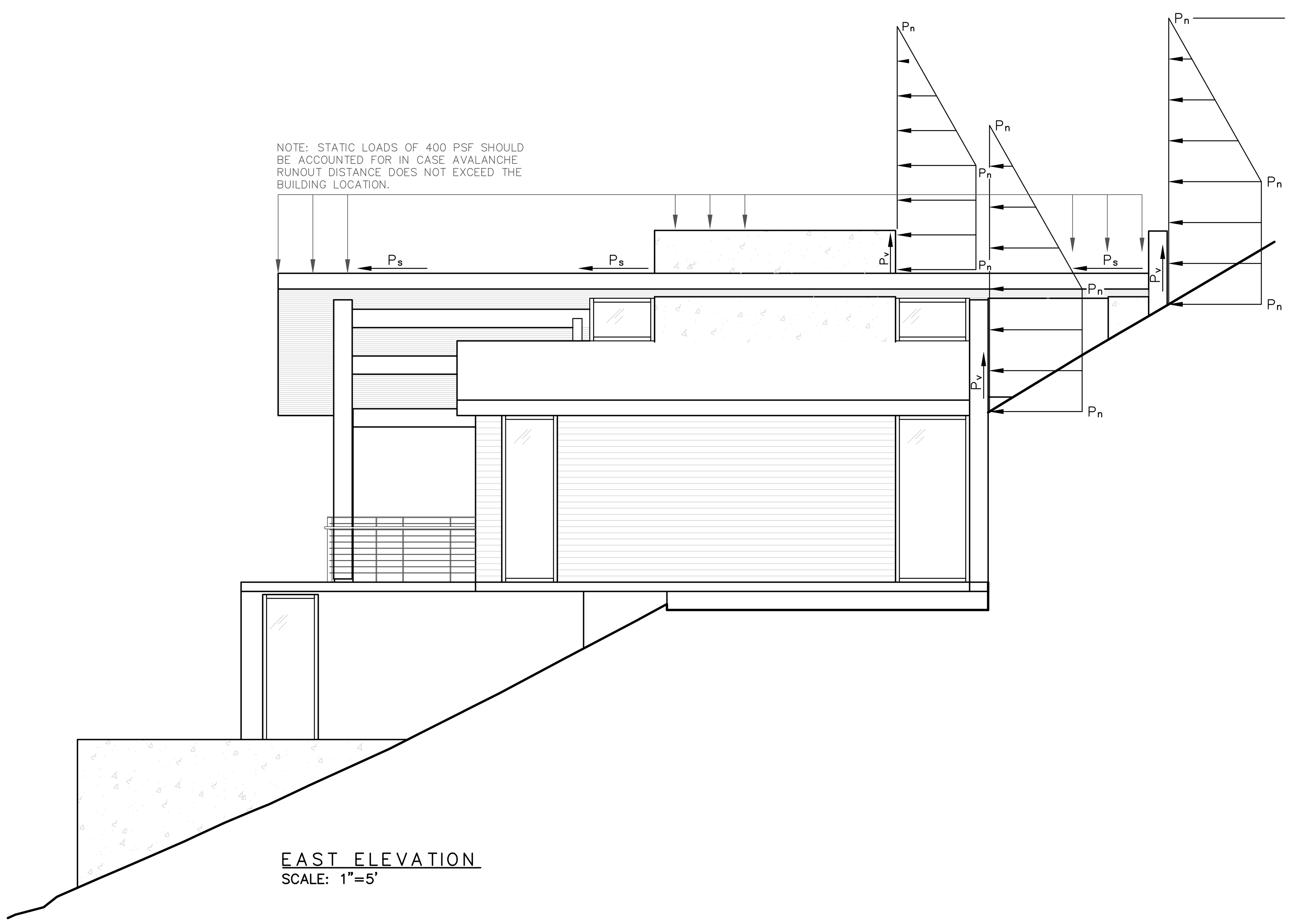
P_n = NORMAL FORCE
P_s = SHEAR FORCE
P_v = UPLIFT FORCE
$P_n = \frac{1}{2} P_s = \frac{1}{2} P_v$

AVALANCHE FLOW DIRECTION



PLAN VIEW
SCALE: 1"=10'

NOTE: STATIC LOADS OF 400 PSF SHOULD BE ACCOUNTED FOR IN CASE AVALANCHE RUNOUT DISTANCE DOES NOT EXCEED THE BUILDING LOCATION.



EAST ELEVATION
SCALE: 1"=5'

METRIC

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
Point	Point Name	Velocity (V) (m/s)	Deflection Angle (θ) (°)	Depth Previous Snow and Avalanche Deposits (H_s) (m)	Design Avalanche Flow Depth (H_a) (m)	Design Avalanche Climbing Height on Deflecting Surface (H_v) (m)	Full Impact Height (m)	Total Climbing Height (H) (m) = $H_s + H_a + H_v$	Pressure (P_n) (kPa)	Normal Pressure (P_n) (kPa)	Shear Forces (Ps) (kPa) = (0.5)*(P_n)	Uplift Forces (Pv) (kPa) = (0.5)*(P_n)	Notes
A	NORTH WALL	12.4	70.00	1.00	0.55	6.98	1.55	8.53	46.5	41.06	20.53	20.53	Forces increase linearly along North Wall from A to B.
B	NORTH WALL	12.8	72.00	1.00	0.55	7.57	1.55	9.12	49.3	44.55	22.27	22.27	Forces increase linearly along North Wall from A to B.
C	NORTH WALL	12.4	79.00	1.00	0.55	7.53	1.55	9.08	46.0	44.33	22.16	22.16	Forces decrease linearly along East Wall from B to C.
D	EAST WALL	12.4	30.00	1.00	0.55	1.95	1.55	3.50	46.0	11.50	5.75	5.75	Forces increase linearly along East Wall from D to E.
E	EAST WALL	12.1	45.00	1.00	0.74	3.74	1.74	5.48	44.0	22.00	11.00	11.00	Flow is confined.
E	NORTH WALL	12.1	90.00	1.00	0.74	7.48	1.74	9.22	44.0	44.00	22.00	22.00	Flow is confined.
F	NORTH WALL	10.3	80.00	1.00	0.53	5.23	1.53	6.76	31.8	30.79	15.40	15.40	Forces decrease linearly along North Wall from E to F.
G	NORTH WALL	8.8	78.00	1.00	0.47	3.78	1.47	5.25	23.3	22.24	11.12	11.12	Forces decrease linearly along North Wall from F to G.
H	EAST WALL	8.8	30.00	1.00	0.45	0.99	1.45	2.44	23.3	5.81	2.91	2.91	Forces decrease linearly along East Wall from H to J.
J	EAST WALL	8.4	30.00	1.00	0.50	0.89	1.50	2.39	21.0	5.25	2.63	2.63	Forces decrease linearly along East Wall from J to K.
K	EAST WALL	7.7	30.00	1.00	0.70	0.76	1.70	2.46	18.0	4.50	2.25	2.25	Forces decrease linearly along East Wall from J to K.

Note: Structures should be designed to withstand full Normal Pressures (kPa) (Column (k)) at Full Impact Height (m) (Column (h)) and decrease linearly to 0 kPa at Total Climbing Height (m) (Column (i)). Flow Density (ρ) = 300kg/m3 (Assumed for safety)
Full Impact Height was assumed at 1.0m. Proposed building location is in Flow Channel and above Deposition Zone. Actual Full Impact Height will vary with avalanche size and runout distance.

IMPERIAL

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
Point	Point Name	Velocity (V) (mph)	Deflection Angle (θ) (°)	Depth Previous Snow and Avalanche Deposits (H_s) (ft)	Design Avalanche Flow Depth (H_a) (ft)	Design Avalanche Climbing Height on Deflecting Surface (H_v) (ft)	Full Impact Height (ft)	Total Climbing Height (H) (ft) = $H_s + H_a + H_v$	Pressure (P_n) (psf)	Normal Pressure (P_n) (psf)	Shear Forces (Ps) (psf) = (0.5)*(P_n)	Uplift Forces (Pv) (psf) = (0.5)*(P_n)	Notes
A	NORTH WALL	27.8	70.00	3.28	1.80	22.9	5.1	28.0	971.2	857.6	428.8	428.8	Forces increase linearly along North Wall from A to B.
B	NORTH WALL	28.7	72.00	3.28	1.80	24.8	5.1	29.9	1028.6	930.4	465.2	465.2	Forces increase linearly along North Wall from A to B.
C	NORTH WALL	27.7	79.00	3.28	1.80	24.7	5.1	29.8	960.7	925.8	462.9	462.9	Forces decrease linearly along East Wall from B to C.
D	EAST WALL	27.7	30.00	3.28	1.80	6.4	5.1	11.5	960.7	240.2	120.1	120.1	Forces increase linearly along East Wall from D to E.
E	EAST WALL	27.1	45.00	3.28	2.43	12.3	5.7	18.0	919.0	459.5	229.7	229.7	Flow is confined.
E	NORTH WALL	27.1	90.00	3.28	2.43	24.5	5.7	30.2	919.0	919.0	459.5	459.5	Flow is confined.
F	NORTH WALL	23.0	80.00	3.28	1.74	17.2	5.0	22.2	663.1	643.1	321.6	321.6	Forces decrease linearly along North Wall from E to F.
G	NORTH WALL	19.7	78.00	3.28	1.54	12.4	4.8	17.2	485.6	464.6	232.3	232.3	Forces decrease linearly along North Wall from F to G.
H	EAST WALL	19.7	30.00	3.28	1.48	3.2	4.8	8.0	485.6	121.4	60.7	60.7	Forces decrease linearly along East Wall from H to J.
J	EAST WALL	18.7	30.00	3.28	1.64	2.9	4.9	7.8	438.6	109.6	54.8	54.8	Forces decrease linearly along East Wall from J to K.
K	EAST WALL	17.3	30.00	3.28	2.30	2.5	5.6	8.1	375.9	94.0	47.0	47.0	Forces decrease linearly along East Wall from J to K.

Note: Structures should be designed to withstand full Normal Pressures (psf) (Column (k)) at Full Impact Height (ft) (Column (h)) and decrease linearly to 0 psf at Total Climbing Height (ft) (Column (i)). Flow Density (ρ) = 300kg/m3 (Assumed for safety
Full Impact Height was assumed at 3.3ft. Proposed building location is in Flow Channel and above Deposition Zone. Actual Full Impact Height will vary with avalanche size and runout distance.

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PROJECT PATH AND PRINT DATE U:\Land Projects\725_HURD\dwg\725M_CS_WSVALLEY_BLK5_LT9_AVY2022_REVISED.dwg 4/19/23 2:11:29 PM MST

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PROFESSIONAL ENGINEER LICENSED 19275 19APR23 STATE OF IDAHO ALEX NELSON
PRELIMINARY

REVISIONS	NO	DATE	BY
PRELIMINARY ONLY: NOT FOR CONSTRUCTION			
DESIGN REVIEW SUBMITTAL			
REVISED	1	29NOV22	AHN
REVISED	2	19APR23	AHN
SHEET 3 OF 3			

LEGEND

- Subject Boundary
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- 1' Minor Contour Line (Alpine 2022)
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- DL = Dripline/Edge of Vegetation
- TRL = Walking Trail
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- RTW = Retaining Wall
- OHP = Overhead Power
- WTR = Water Main
- WS = Water Service
- SWR = Sewer Main
- SS = Sewer Service
- PH = Underground Phone
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- Blue Avalanche Hazard Zone (Alpine 2022)
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- PP = Power Pole
- GUY = Power Pole Guy Wire
- SMH = Sewer Manhole
- PHBOX = Phone Box
- Bench
- STP = Proposed Soil Test Pit
- WLW = Willow Bush
- CT = Conifer Tree
- DT = Deciduous Tree
- NC = No Cap
- DIST = Disturbed
- GS = Ground Shot/Spot Elevation
- TOE = Toe of Slope
- SLAB = Concrete Slab Elevation
- ( ) = Record Bearing & Distance Instrument Number 119580

NOTES

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LOT 9
BLOCK 5
±111,849 Sq. Ft.
±2.57 Ac.

LOT 10
BLOCK 5

LOT 6
BLOCK 5

LOT 5
BLOCK 5

LOT 7
BLOCK 5

LOT 8
BLOCK 5

LOT 10
BLOCK 3

HILLSIDE DR
(50' R.O.W.)

GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.

A SITE SURVEY SHOWING
LOT 9, BLK 5, WARM SPRINGS VALLEY SUBDIVISION
WITHIN S11, T.4N., R.17E., B.M., CITY OF KETCHUM, BLAINE COUNTY, IDAHO
PREPARED FOR PARAMOUNT PROPERTY DEVELOPMENT LLC

Alpine Enterprises Inc.
Surveying, Mapping, Civil Engineering,
and Natural Hazards Consulting
660 Bell Dr., Unit 1
P.O. Box 2037, Ketchum, ID 83340 USA
(208) 727-1988 fax (208) 727-1987
email: bsmith@alpineenterprisesinc.com

PROFESSIONAL LAND SURVEYOR
LICENSED
Bruce Smith
7048
29NOV22
STATE OF IDAHO
BRUCE SMITH

NO	DATE	BY
REVISIONS		

PROJECT PATH AND PRINT DATE U:\Land Projects\725_HURD.dwg\725M_CS_WSVALLEY_BLK5_LT9_SITE2022.dwg 11/29/22 11:52:29 AM MST

SHEET 1 OF 1

LEGEND

- Subject Boundary
- Adjoiners Boundary
- CL = Centerline Road
- EOA = Edge of Asphalt
- EOP = Edge of Paver Driveway
- Drainage & Utility Easement per Plat
- BE = Building Setback (See Note 5)
- MOD = Mountain Overlay District (City of Ketchum)
- 25% = 25% Slope Line (Alpine 2022)
- 5' Major Contour Line (Alpine 2022)
- 1' Minor Contour Line (Alpine 2022)
- FNC = Wooden Fence
- DL = Dripline/Edge of Vegetation
- TRL = Walking Trail
- Approximate Existing Structure
- RTW = Retaining Wall
- OHP = Overhead Power
- WTR = Water Main
- WS = Water Service
- SWR = Sewer Main
- SS = Sewer Service
- PH = Underground Phone
- Red Avalanche Hazard Zone (Alpine 2022)
- Blue Avalanche Hazard Zone (Alpine 2022)
- Proposed Sturcture
- Proposed Driveway
- CNTRL = Survey Control
- FND 1/2" = Fond 1/2" Rebar
- FND BC = Found Brass Cap
- PP = Power Pole
- GUY = Power Pole Guy Wire
- SMH = Sewer Manhole
- PHBOX = Phone Box
- Bench
- WLW = Willow Bush
- CT = Conifer Tree
- DT = Deciduous Tree
- NC = No Cap
- DIST = Disturbed
- GS = Ground Shot/Spot Elevation
- TOE = Toe of Slope
- SLAB = Concrete Slab Elevation
- ( ) = Record Bearing & Distance Instrument Number 119580

NOTES

1) Basis of Bearings is Idaho State Plane Coordinate System, NAD83, Central Zone, at Grid in US Survey Feet. Vertical Datum is NAVD1988.

2) Boundary Information is from the Plats of Warm Springs Valley Subdivision, Instrument Number 119580; Warm Springs Valley Subdivision, Block 5, Lots 5A & 7A, Instrument Number 559480; Records of Blaine County, Idaho.

3) Refer to the Plat Notes, Conditions, Covenants, & Restrictions on the Original Plat.

4) Utility Locations shown are based on visual surface evidence. Utility locations should be verified by Digline before any excavation.

5) Current Zoning appears to be Limited Residential District, (LR). Please refer to City of Ketchum Zoning Ordinances for more information about this Zone. Front and Rear Building Setbacks are are as shown, Side Setbacks are the greater of 1' for every 2' in building height or 10', the minimum setback is shown.

6) Lot 9 appears to be partially in the City of Ketchum Mountain Overlay District.

7) Lot 9 appears to be zoned Blaine County Elk Winter Range.

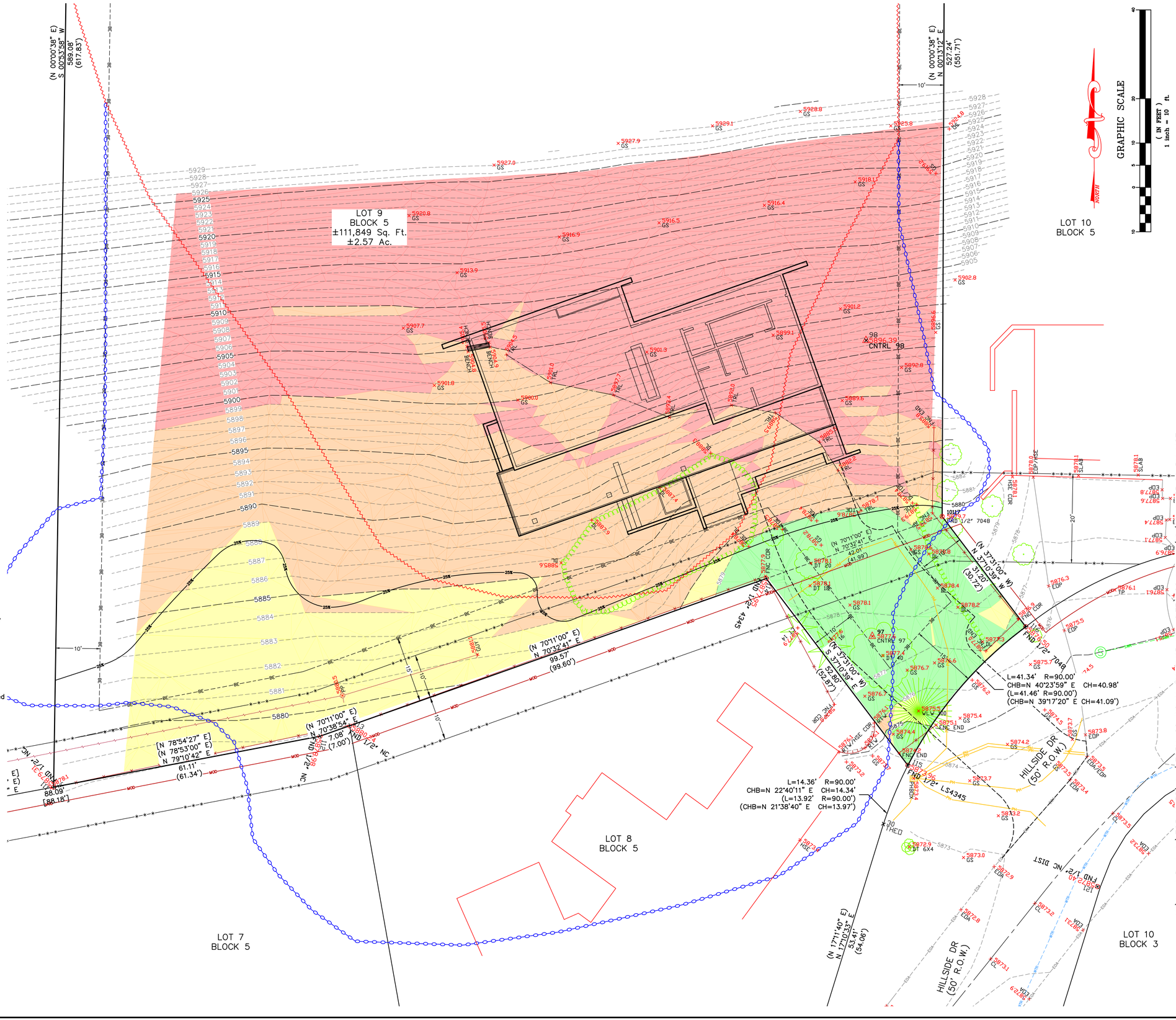
8) Lot 9 appears to be in the Ketchum Avalanche Overlay District.

9) Not all trees and vegetation are shown. some locations are approximate.

10) Avalanche Zoning is from a 2022 RAMMS & AVAL-1D Study conducted by Alpine Enterprises Inc. This study is site specific; it should not be applied to adjacent lands.

SLOPE RANGES

- Slopes Less Than 15%
- Slopes 15% to 25%
- Slopes 25% to 45%
- Slopes Greater Than 45%



A SLOPE RANGE MAP SHOWING
LOT 9, BLK 5, WARM SPRINGS VALLEY SUBDIVISION
WITHIN S11, T.4N., R.17E., B.M., CITY OF KETCHUM, BLAINE COUNTY, IDAHO
PREPARED FOR PARAMOUNT PROPERTY DEVELOPMENT LLC

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PROFESSIONAL LAND SURVEYOR
LICENSED
Bruce Smith
10748
19APR23
STATE OF IDAHO
BRUCE SMITH

NO	DATE	BY
REVISIONS		

PROJECT PATH AND PRINT DATE U:\Land Projects\725_HURD.dwg\725M_CS_WSVALLEY_BLK5_LT9_SITE2022.dwg 4/19/22 4:55:29 PM MST

SHEET 1 OF 1

November 11, 2022

Kyle Miller,
RE: 219 Hillside Drive in Ketchum, Idaho – Job #: 458-21

Dear Kyle,

EHM Engineers, Inc. was contracted to structurally evaluate and design the proposed new residence at the above-mentioned address for avalanche forces in addition to typical code required gravity and lateral forces. This narrative is to explain the basis of design moving forward to withstand the avalanche forces as developed by Alpine Enterprises, Inc.

The avalanche study produced lateral static snow forces on the retaining wall above finished grade of up to 1,000 psf and a shear force on the roof surface of approximately 200 psf; the latter being the more significant contributor to the overall lateral forces. With these large forces, a typical retaining wall construction would be unable to meet the overturning or sliding requirements.

It is proposed to use helical piers cast into the top of the retaining walls as near to the roof diaphragm as possible to directly resist avalanche forces. These helical piers will need to be designed for approximately 52 kip (service level loading) of tension and be spaced 4'-0" on center along the entire retaining wall. Please see attached calculations for additional clarity. The forces on the retaining wall will be directly resisted by the helical piers and the forces on the roof will be dragged back to the helical piers using closely spaced rebar.

The avalanche study also produced gravity static snow forces on the roof of 400 psf. These forces will be resisted by the concrete over metal deck roof diaphragm, steel beams, and concrete columns extending down to bearing footings. Please see attached calculations for additional clarity.

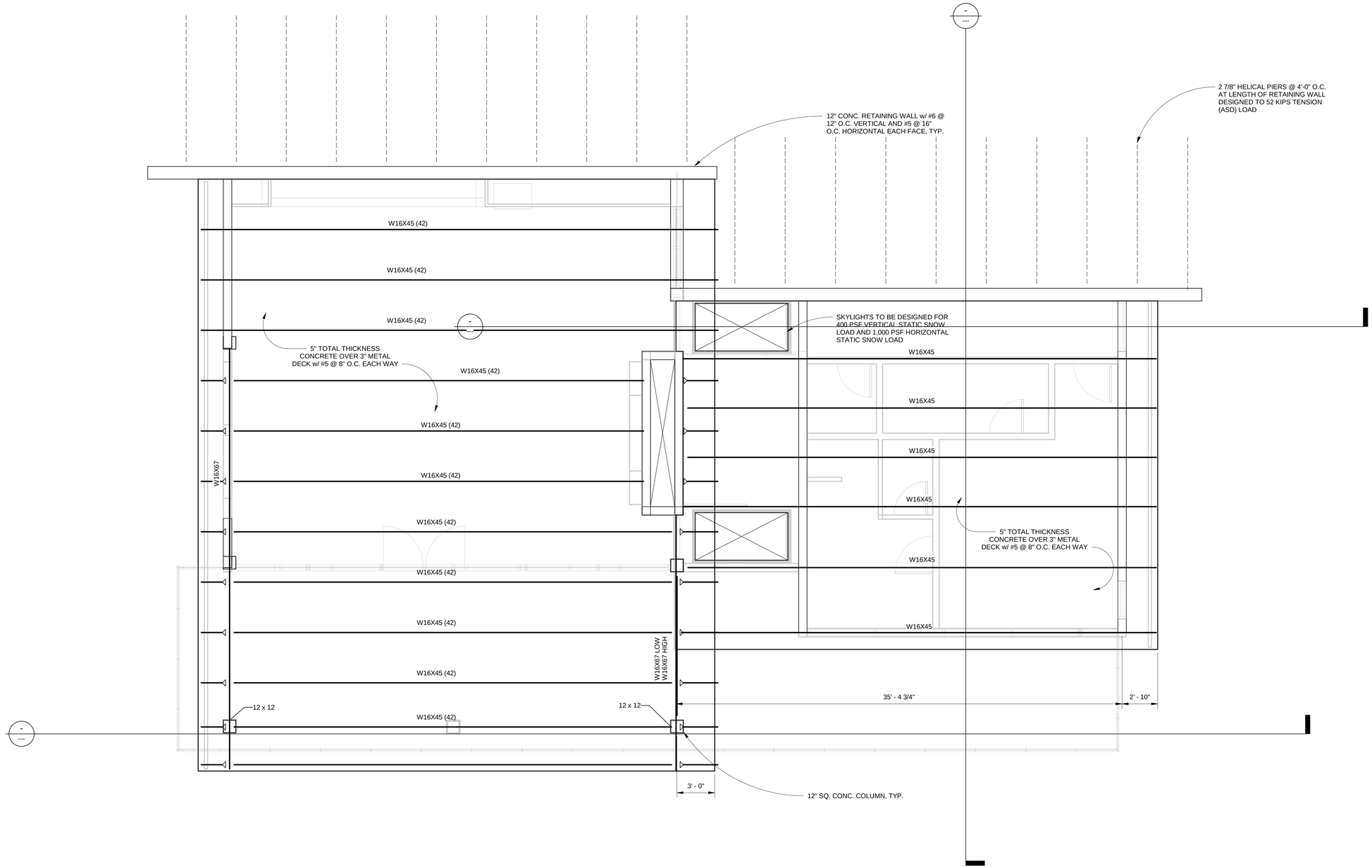
The design attached is a partial design to show how the proposed residence is to withstand avalanche forces only. No other life safety, structural analysis, foundation analysis, or connection evaluations were performed other than what is described above.

If you need any additional information, please do not hesitate to call, or email me.

Warm regards,

Matthew Boulant, PE
Project Engineer

Attachments:
1. Calculations: Pages 1 – 32
2. Schematic Design Sheets: Pages S231 and S301



ROOF FRAOMING PLAN

SCALE: 1/4" = 1'-0"

NORTH

PLAN NOTES

1. SEE GENERAL STRUCTURAL NOTES ON SHEET S###.
2. VERIFY EXACT WIDTH AND LOCATION OF WALL OPENINGS WITH ARCHITECTURAL DRAWINGS AND ARCHITECT. VERIFY ALL DIMENSIONS SHOWN WITH ARCHITECTURAL DRAWINGS.
3. FOR CLARITY, ALL FLOOR OPENINGS MAY NOT BE SHOWN ON FRAMING PLAN. FOR EXACT SIZE, NUMBER , AND LOCATIONS OF OPENINGS SEE ARCHITECTURAL.
4. CONNECT NON-BEARING WALLS TO ROOF FRAMING WITH DEFLECTION TOLERANT CONNECTIONS. REFERENCE DETAILS # AND #/S###.
5. STRAP CALL-OUTS ARE BY "SIMPSON STRONG TIE CO. INC."
6. REFERENCE DETAIL #/S#### FOR BEAM BEARINGS.
7. ROOF DESIGNED TO WITHSTAND VERTICAL STATIC AVALANCHE LOAD OF 400 PSF.

EHM Engineers, Inc.
BUILDING THE FUTURE ON A FOUNDATION OF EXCELLENCE
Engineers / Surveyors / Planners
621 North College Road, Suite 100 Twin Falls, Idaho 83301
p (208)-734-4888 fax (208)-734-6049 web: ehminc.com

PROJECT NAME

213 HILLSIDE DRIVE

213 HILLSIDE DRIVE
KETCHUM, ID 83340

Revision Schedule

SEAL

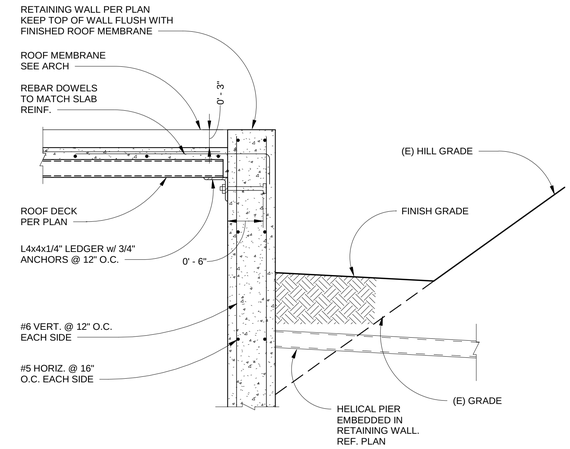
PROJECT NO.	458-21
DATE	04/26/2023
DESIGNED	M. Boulant
DRAWN	
CHECKED	-

SHEET TITLE

ROOF FRAMING

SHEET NO.

S231



RETAINTING WALL AT ROOF LEVEL

SCALE: 1" = 1'-0"

1
S301

EHM Engineers, Inc.
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p (208)-734-4888 fax (208)-734-6049 web: ehminc.com

PROJECT NAME

213 HILLSIDE DRIVE

213 HILLSIDE DRIVE
KETCHUM, ID 83340

Revision Schedule

SEAL

PROJECT NO.	458-21
DATE	04/26/2023
DESIGNED	M. Boulant
DRAWN	
CHECKED	-

SHEET TITLE

STRUCTURAL FOUNDATION DETAILS

SHEET NO.

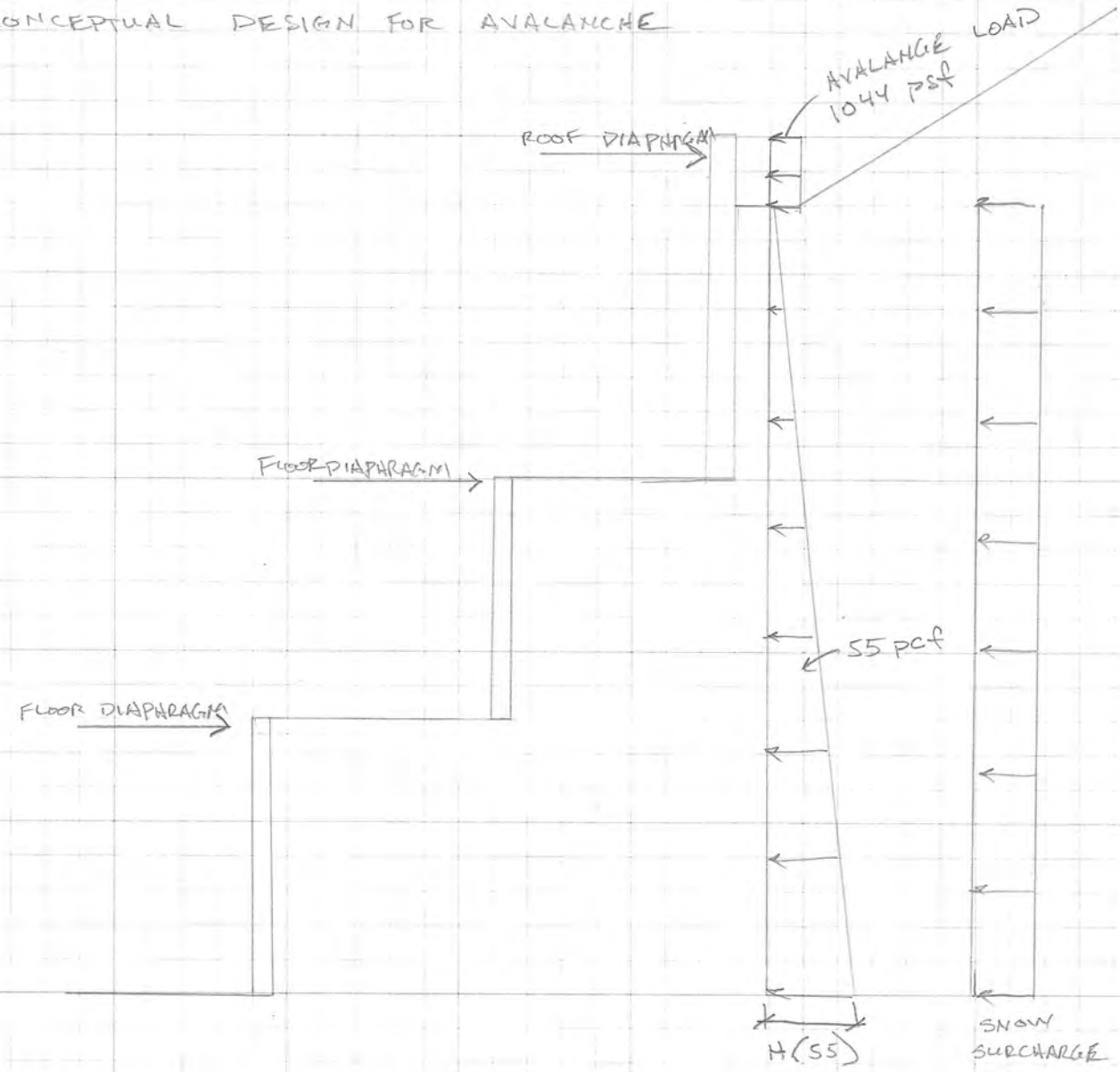
S301

EHM Engineers, Inc.
BUILDING THE FUTURE ON A FOUNDATION OF EXCELLENCE
621 North College Road, Suite 100 Twin Falls, Idaho 83301 208/734-4888 FAX 208/734-6049

JOB NAME KYLE MILLER RESIDENCE JOB NO.

BY M. BOULANT DATE SHEET 1 OF

CONCEPTUAL DESIGN FOR AVALANCHE



- SIMPLY TIED RETAINING WALLS CARRY LOAD TO DIAPHRAGMS WHICH TAKE LOAD TO SIDE WALLS WHICH ACT AS SHEAR WALLS

AVALANCHE LOAD TAKEN FROM REPORT BY ALPINE ENTERPRISES INC. DATED 5/19/22

EHM Engineers, Inc.
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621 North College Road, Suite 100 Twin Falls, Idaho 83301 208/734-4888 FAX 208/734-6049

JOB NAME KYLE MILLER RESIDENCE JOB NO.

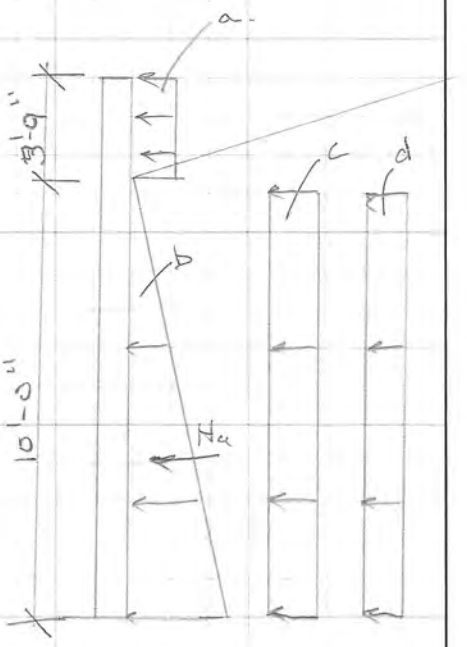
BY M. BOULANT DATE SHEET 2 OF

FIND DEMAND ON UPPER WALL

a) AVALANCH LOAD = 1044 plf

b) SOIL AT REST PRESSURE = 55 pcf

$H_a = (\frac{1}{2})(55)(10)^2 = 2.75^K$



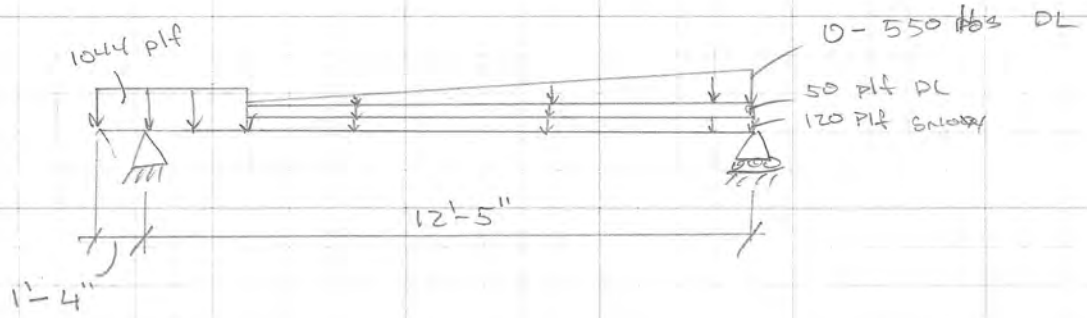
c) SNOW SURCHARGE

0.3 (400) = 120 plf

d) SLOPED SOIL SURCHARGE

(10)(6)(55)(1/2) = 1650

(3/10)(1650) = 50 plf



FROM TEDDS ANALYSIS:

$M_{EARTH} = 6.33^{K-ft}$

$M_{SNOW} = 3.29^{K-ft}$

LOAD COMBO: 1.6H + 0.5S

$1.6(6.33) + (0.5)(3.29) = 11.77^{K-ft}$

∴ USE 12" CONC. WALL

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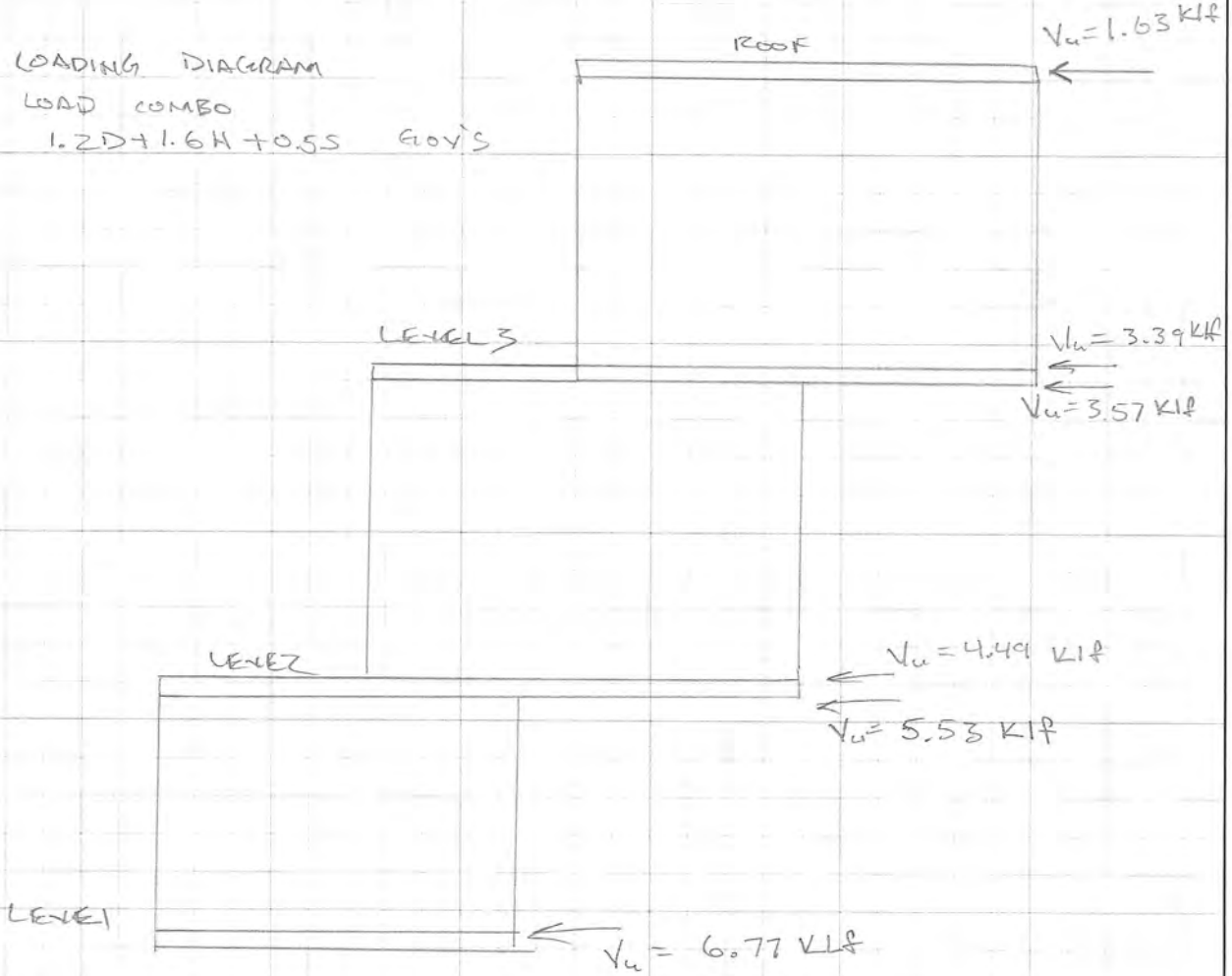
JOB NAME KYLE MILLER JOB NO.

BY M. BOULANT DATE SHEET 3 OF

SINCE THE LOADS ARE RESOLVED INTO THE DIAPHRAGM AT EACH LEVEL AND THE WALLS GENERALLY FOLLOWING THE SLOPE OF CED GRADE, IT CAN BE ASSUMED EACH LOWER WALL MAY BE SIMPLY TIED W/ A SIMPLE TRIANGULAR LOADING BASED ON RELATIVE DEPTH W/ 50 PSF SOIL SURCHARGE FROM SLOPE.

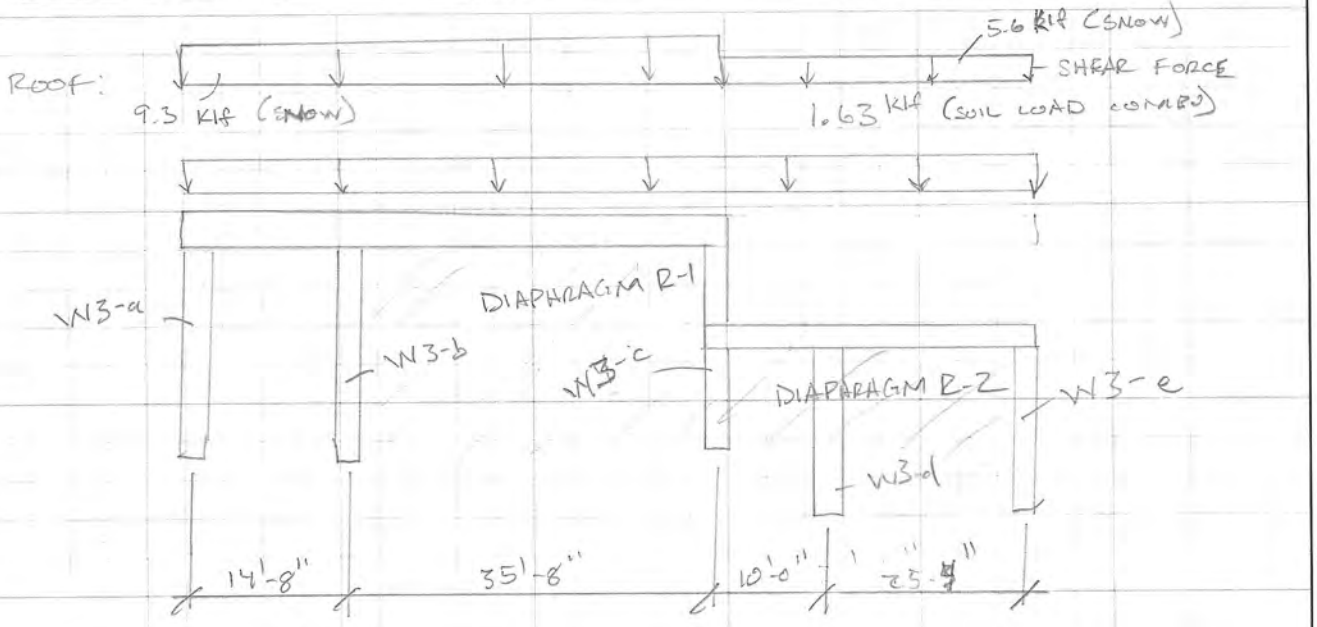
∴ SEE EXCEL SHEETS FOR CALCS

LOADING DIAGRAM
LOAD COMBO
1.2D+1.6H+0.5S EQV'S



JOB NAME KYLE MILLER JOB NO.

BY M. BOULANT DATE SHEET 4 OF



REACTIONS: (LRFD)
FROM TEDDS:

(SOIL COMBO)

$W3_a = 5.38^K$

$W3_b = 108.2^K$

$W3_c = 92.4^K$

$W3_d = 35.9^K$

$W3_e = 28.2^K$

SNOW ONLY

$W3_a = 31.9^K$

$W3_b = 643.34^K$

$W3_c = 548.5^K$

$W3_d = 178.0^K$

$W3_e = 152.0^K$

∴ ASSUME THESE LOADS WILL BE HANDLED BY TENSION TIES DIRECTLY BACK INTO HILL SIDE

EHM Engineers, Inc.
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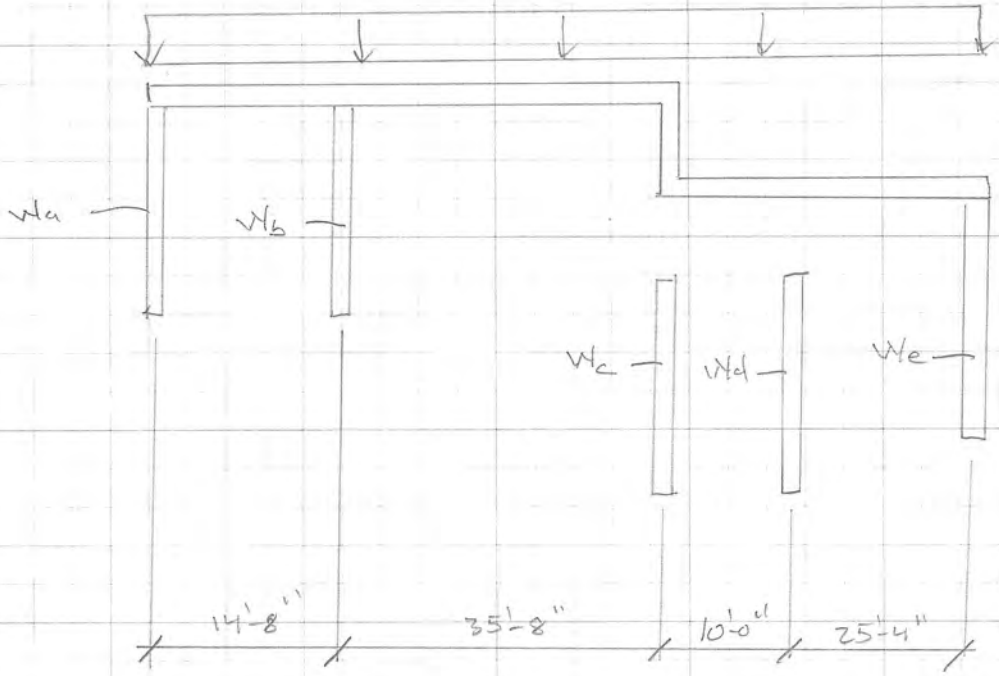
JOB NAME KYLE MILLER RESIDENCE JOB NO.

BY M. BOULANT DATE SHEET 5 OF

LEVEL 2/3 FLOOR

10.02 K/f 2ND
6.96 K/f 3RD



3rd LEVEL

W 2-a = 8.5^k
W 2-b = 218.2^k
W 2-c = 188.9^k
W 2-d = 101.4^k
W 2-e = 72.3^k

2ND LEVEL

W 1-a = 12.3^k
W 1-b = 314.1^k
W 1-c = 272.0^k
W 1-d = 146.0^k
W 1-e = 104.0^k

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JOB NAME KYLE MILLER RESIDENCE JOB NO.

BY M. BOULANT DATE SHEET OF

ROOF FRAMING: ROOF DECK

MAX LOAD:

SNOW = 400 PSF
SUPER DEAD: 8 PSF

ASSUME 4'-0" O.C. SPACING FOR BEAMS
- CHECK BEARING OF 5" COMPOSITE DECK

SLAB DL = 46.0 PSF

LC: DL + SL (ASD)

= 400 + 8 + 46 = 454 PSF

$V_a = (4)(454) = 1816$ plf

∴ PER VERCODECK CATALOG FOR DLW3 5" DECK, 18 GA w/ 4" MIN BEARING IS REQUIRED

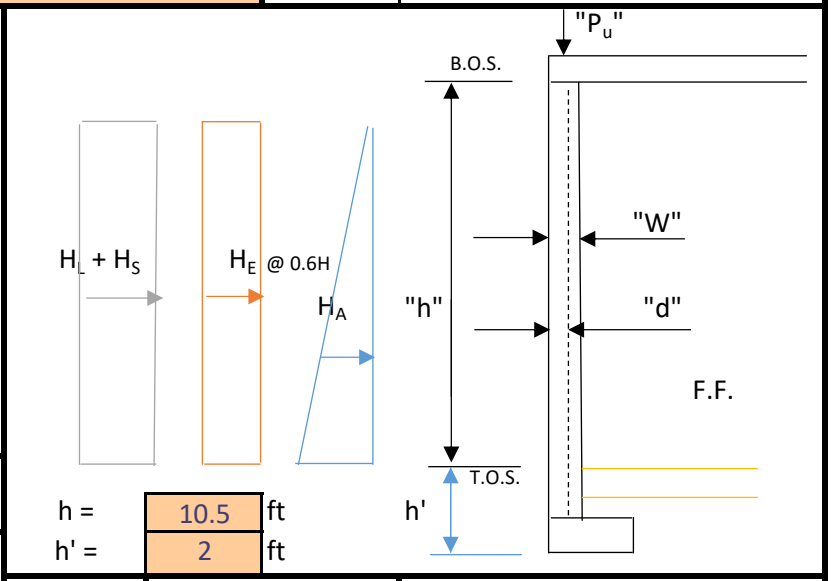
ROOF FRAMING:

- SEE TEDDS COMPOSITE BEAM CALC.

Simple Span Tied Retaining Wall w/ Axial Load V1.4			Job name:	Kyle Miller (first floor)
Wall Structural Use:	Basement Wall		Job #:	458-21

P_u =	1.0	klf
Retain. Height = H =	16.5	ft
d = W - Db/2 - 1.5 =	10.13	in
Bar Clear or Center	1.50	in
W =	12	in
Lat. Earth =	55	pcf
Surcharge * .3 = P_s =	80	psf
Seis. = 7(H+h') = HE =	129.50	psf
Ground Snow Load =	0	psf
D_b = Reinf. size =	#6	Vert.
S = Reinf. spacing =	12	in

Use #5 bars at 16'' o.c. each face or #4 bars at 12'' o.c. each face horizontal



h =	10.5	ft
h' =	2	ft

f_y =	60.0	ksi
f'_c =	4.0	ksi
ϕ_M =	0.9	
ϕ_P =	0.65	
A_s =	0.44	in^2/ft
A_g = 12 * W =	144.0	in^2/ft
a = $A_s*f_y/.85*f'c*b$ =	0.65	in
M_{max} =	212.48	k-in

Surcharge	Misc Induced (ω_L)		Seismic at Service Level?	
100	50	psf	Yes	(yes/no)

Min. steel Check		
As > 0.0025(.5Ag)		
0.18	in^2/ft	
< OK >		

Use 7. 0.9D + 1.4E + 1.6H =

HA = Alt. Calc. =	10.40	kips
HL = 0		kips
HE = 1.4*PE*h =	1.90	kips
HS = 0 =		kips

FIND ϕM_n & ϕP_n:

$M_n = A_s*f_y*(d-a/2)$ =	259.77	k-in	ϕM_n =	233.80	k-in
$\phi P_n = 0.55\phi*f'c*A_g[1-(k*l_c/32h)^2]$ =	205.7	klf	ACI 318-11 Eq 14-1		

FIND M_c:

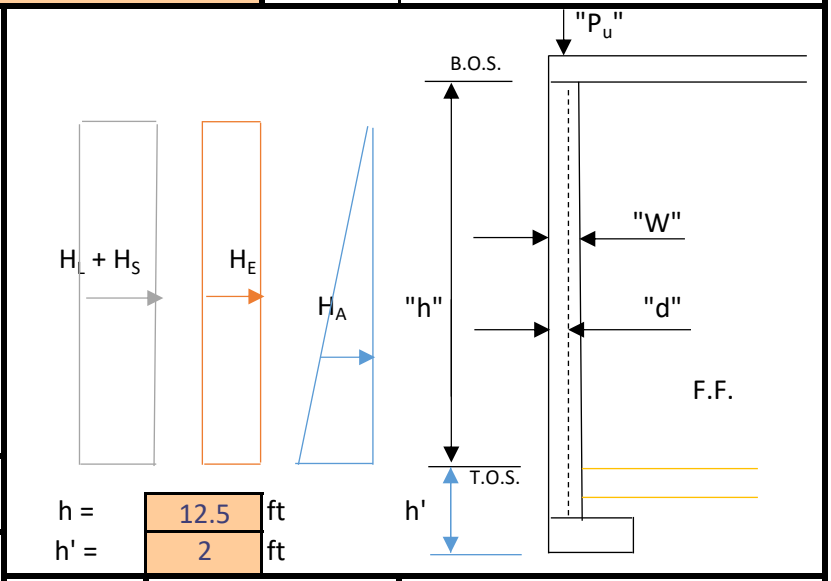
$M_c = \delta M_{max}$	214.76	k-in	ACI 318-11 Eq 10-11
$\delta = C_m/1 - (P_u / 0.75P_c)$ =	1.01		ACI 318-11 Eq 10-12
C_m =	1		ACI 318-11 Section 10.10.6.4
$P_c = \pi^2 EI / (kl_u)^2$ =	125.22	klf	ACI 318-11 Eq 10-13
k =	1		
$EI = (0.2E_cI_g + E_sI_{se}) / (1 + \beta_{dns})$ =	201422	$k\text{-}in^2$	ACI 318-11 Eq 10-14
$E_c = 57{,}000\ f'c^{0.5}$ =	3605	ksi	ACI 318-11 Section 8.5.1
β_{dns} =	0.6		ACI 318-11 Sec R10.10.6.2
E_s =	29000	ksi	
$I_{se} = I_s + A_s[d-(W/2)]^2$ =	7.53	in^4	
$I_s = \pi r^4/4$ =	0.02	in^4	
$I_g = 12 * W^2 / 12$ =	144	in^4	
$M_c / \phi M_n$ =	91.86%		
$P_u / \phi P_n$ =	0.49%		

Code Checks:		
$c = a/\beta_1$ =	0.764	in
ε_t = .003*(w-c)/c =	0.044	> .005
GOOD		

Simple Span Tied Retaining Wall w/ Axial Load V1.4			Job name:	Kyle Miller (third floor)
Wall Structural Use:	Basement Wall		Job #:	458-21

P_u =	1.0	klf
Retain. Height = H =	10	ft
d = W - Db/2 - 1.5 =	10.13	in
Bar Clear or Center	1.50	in
W =	12	in
Lat. Earth =	55	pcf
Surcharge * .3 = P_s =	80	psf
Seis. = 2(H+h') = HE =	24.00	psf
Ground Snow Load =	400	psf
D_b = Reinf. size =	#6	Vert.
S = Reinf. spacing =	12	in

Use #5 bars at 16'' o.c. each face or #4 bars at 12'' o.c. each face horizontal



h =	12.5	ft
h' =	2	ft

f_y =	60.0	ksi
f'_c =	4.0	ksi
ϕ_M =	0.9	
ϕ_P =	0.65	
A_s =	0.44	in^2/ft
A_g = 12 * W =	144.0	in^2/ft
a = A_s*f_y/.85*f'c*b =	0.65	in
M_{max} =	123.21	k-in

Surcharge	Misc Induced (ω_L)		Seismic at Service Level?	
100	50	psf	Yes	(yes/no)

Min. steel Check		
As > 0.0025(.5Ag)		
0.18	in^2/ft	
< OK >		

Use 2. 1.2D + 1.6(L+H) + 0.5(Lr or S or R) =		
HA = 1.6*(PL*h2)/2 =	4.40	kips
HL = 1.6*Ps*h =	1.28	kips
HE = 0 =	0.00	kips
HS = 0.5*Psnow*h =	0.60	kips

FIND ϕM_n & ϕP_n:

$M_n = A_s*f_y*(d-a/2)$ =	259.77	k-in	ϕM_n =	233.80	k-in
$\phi P_n = 0.55\phi*f'c*A_g[1-(k*l_c/32h)^2]$ =	205.7	klf	ACI 318-11 Eq 14-1		

FIND M_c:

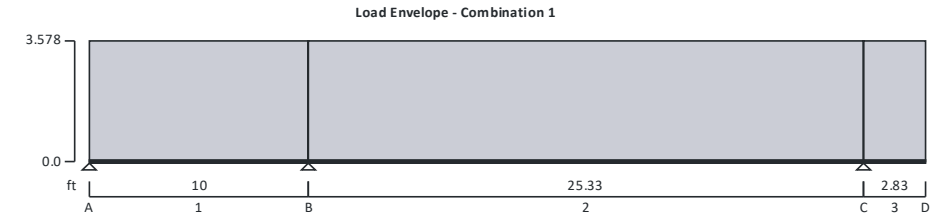
$M_c = \delta M_{max}$	125.09	k-in	ACI 318-11 Eq 10-11
$\delta = C_m/1 - (P_u / 0.75P_c)$ =	1.02		ACI 318-11 Eq 10-12
C_m =	1		ACI 318-11 Section 10.10.6.4
$P_c = \pi^2 EI / (kl_u)^2$ =	88.35	klf	ACI 318-11 Eq 10-13
k =	1		
$EI = (0.2E_cI_g + E_sI_{se}) / (1 + \beta_{dns})$ =	201422	$k\text{-}in^2$	ACI 318-11 Eq 10-14
$E_c = 57{,}000\ f'c^{0.5}$ =	3605	ksi	ACI 318-11 Section 8.5.1
β_{dns} =	0.6		ACI 318-11 Sec R10.10.6.2
E_s =	29000	ksi	
$I_{se} = I_s + A_s[d-(W/2)]^2$ =	7.53	in^4	
$I_s = \pi r^4/4$ =	0.02	in^4	
$I_g = 12 * W^2 / 12$ =	144	in^4	
$M_c / \phi M_n$ =	53.51%		
$P_u / \phi P_n$ =	0.49%		

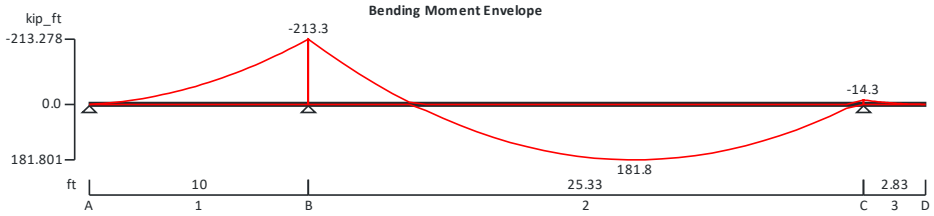
Code Checks:		
$c = a/\beta_1$ =	0.764	in
ε_t = .003*(w-c)/c =	0.044	> .005
GOOD		

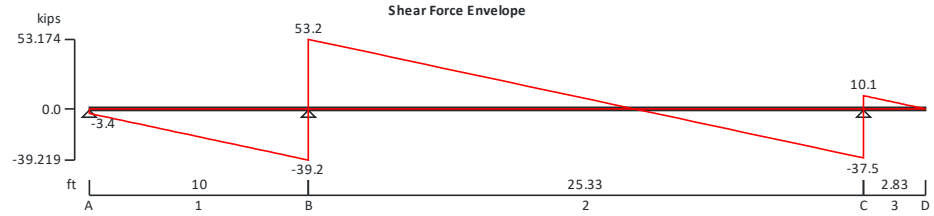
STEEL BEAM ANALYSIS & DESIGN (AISC360-10)

In accordance with AISC360-10 using the LRFD method

Tedds calculation version 3.0.15







Support conditions

Support A	Vertically restrained
	Rotationally free
Support B	Vertically restrained
	Rotationally free
Support C	Vertically restrained
	Rotationally free
Support D	Vertically free
	Rotationally free

Applied loading

Beam loads	Dead self weight of beam × 1
Span 1 loads	Trib - Dead UDL 0.27 kips/ft from 0.00 in to 120.00 in
	Trib - Snow UDL 2 kips/ft from 0.00 in to 120.00 in
Span 2 loads	Trib - Dead UDL 0.27 kips/ft from 0.00 in to 303.96 in
	Trib - Snow UDL 2 kips/ft from 0.00 in to 303.96 in

Span 3 loads	Trib - Dead UDL 0.27 kips/ft from 0.00 in to 33.96 in Trib - Snow UDL 2 kips/ft from 0.00 in to 33.96 in	

Load combinations

Load combination 1	Support A	Dead × 1.20
		Live × 1.60
		Roof live × 1.60
		Snow × 1.60
		Dead × 1.20
		Live × 1.60
		Roof live × 1.60
		Snow × 1.60
	Support B	Dead × 1.20
		Live × 1.60
		Roof live × 1.60
		Snow × 1.60
		Dead × 1.20
		Live × 1.60
		Roof live × 1.60
		Snow × 1.60
	Support C	Dead × 1.20
		Live × 1.60
		Roof live × 1.60
		Snow × 1.60
		Dead × 1.20
		Live × 1.60
		Roof live × 1.60
		Snow × 1.60
	Support D	Dead × 1.20
		Live × 1.60
		Roof live × 1.60
		Snow × 1.60

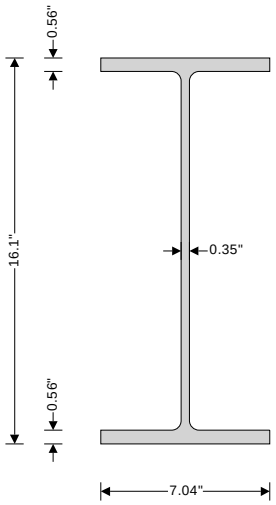
Analysis results

Maximum moment	M_{max} = **181.8** kips_ft	M_{min} = **-213.3** kips_ft
Maximum moment span 1	M_{s1_max} = **0** kips_ft	M_{s1_min} = **-213.3** kips_ft
Maximum moment span 2	M_{s2_max} = **181.8** kips_ft	M_{s2_min} = **-213.3** kips_ft
Maximum moment span 3	M_{s3_max} = **0** kips_ft	M_{s3_min} = **-14.3** kips_ft
Maximum shear	V_{max} = **53.2** kips	V_{min} = **-39.2** kips
Maximum shear span 1	V_{s1_max} = **-3.4** kips	V_{s1_min} = **-39.2** kips
Maximum shear span 2	V_{s2_max} = **53.2** kips	V_{s2_min} = **-37.5** kips
Maximum shear span 3	V_{s3_max} = **10.1** kips	V_{s3_min} = **0** kips
Deflection	δ_{max} = **0.7** in	δ_{min} = **0.3** in
Deflection span 1	δ_{s1_max} = **0** in	δ_{s1_min} = **0.1** in

Deflection span 2	δ_{s2_max} = **0.7** in	δ_{s2_min} = **0** in
Deflection span 3	δ_{s3_max} = **0** in	δ_{s3_min} = **0.3** in
Maximum reaction at support A	R_{A_max} = **-3.4** kips	R_{A_min} = **-3.4** kips
Unfactored dead load reaction at support A	R_{A_Dead} = **-0.3** kips	
Unfactored snow load reaction at support A	R_{A_Snow} = **-1.9** kips	
Maximum reaction at support B	R_{B_max} = **92.4** kips	R_{B_min} = **92.4** kips
Unfactored dead load reaction at support B	R_{B_Dead} = **8.1** kips	
Unfactored snow load reaction at support B	R_{B_Snow} = **51.6** kips	
Maximum reaction at support C	R_{C_max} = **47.6** kips	R_{C_min} = **47.6** kips
Unfactored dead load reaction at support C	R_{C_Dead} = **4.2** kips	
Unfactored snow load reaction at support C	R_{C_Snow} = **26.6** kips	
Maximum reaction at support D	R_{D_max} = **0** kips	R_{D_min} = **0** kips

Section details

Section type	**W 16x45 (AISC 15th Edn (v15.0))**
ASTM steel designation	**A992**
Steel yield stress	F_y = **50** ksi
Steel tensile stress	F_u = **65** ksi
Modulus of elasticity	E = **29000** ksi



Resistance factors

Resistance factor for tensile yielding	ϕ_{ty} = **0.90**
Resistance factor for tensile rupture	ϕ_{tr} = **0.75**
Resistance factor for compression	ϕ_c = **0.90**
Resistance factor for flexure	ϕ_b = **0.90**

Lateral bracing

Span 1 has continuous lateral bracing
Span 2 has continuous lateral bracing
Span 3 has continuous lateral bracing
Cantilever tip is unbraced
Cantilever support is continuous with lateral and torsional restraint

Classification of sections for local buckling - Section B4.1

Classification of flanges in flexure - Table B4.1b (case 10)

Width to thickness ratio	$b_f / (2 \times t_f)$ = **6.23**	
Limiting ratio for compact section	$\lambda_{pff} = 0.38 \times \sqrt{[E / F_y]}$ = **9.15**	
Limiting ratio for non-compact section	$\lambda_{rff} = 1.0 \times \sqrt{[E / F_y]}$ = **24.08**	Compact

Classification of web in flexure - Table B4.1b (case 15)

Width to thickness ratio	$(d - 2 \times k) / t_w$ = **41.06**	
Limiting ratio for compact section	$\lambda_{pwf} = 3.76 \times \sqrt{[E / F_y]}$ = **90.55**	
Limiting ratio for non-compact section	$\lambda_{rwf} = 5.70 \times \sqrt{[E / F_y]}$ = **137.27**	Compact

Section is compact in flexure

Design of members for shear - Chapter G

Required shear strength	$V_r = \max(\text{abs}(V_{max}), \text{abs}(V_{min}))$ = **53.174** kips
Web area	$A_w = d \times t_w$ = **5.554** in^2
Web plate buckling coefficient	k_v = **5**
Web shear coefficient - eq G2-3	C_v = **1**
Nominal shear strength – eq G2-1	$V_n = 0.6 \times F_y \times A_w \times C_v$ = **166.635** kips
Resistance factor for shear	ϕ_v = **1.00**
Design shear strength	$V_c = \phi_v \times V_n$ = **166.635** kips

PASS - Design shear strength exceeds required shear strength

Design of members for flexure in the major axis at span 1 - Chapter F

Required flexural strength	$M_r = \max(\text{abs}(M_{s1\_max}), \text{abs}(M_{s1\_min}))$ = **213.278** kips_ft

Yielding - Section F2.1

Nominal flexural strength for yielding - eq F2-1	$M_{nyld} = M_p = F_y \times Z_x$ = **342.917** kips_ft
Nominal flexural strength	$M_n = M_{nyld}$ = **342.917** kips_ft
Design flexural strength	$M_c = \phi_b \times M_n$ = **308.625** kips_ft

PASS - Design flexural strength exceeds required flexural strength

Design of members for vertical deflection

Consider deflection due to dead, live, roof live and snow loads

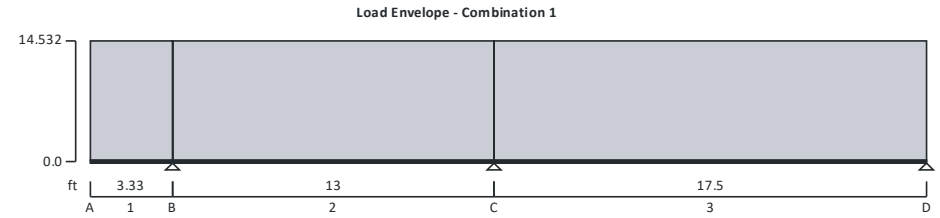
Limiting deflection	$\delta_{lim} = L_{s2} / 360$ = **0.844** in
Maximum deflection span 2	$\delta = \max(\text{abs}(\delta_{max}), \text{abs}(\delta_{min}))$ = **0.67** in

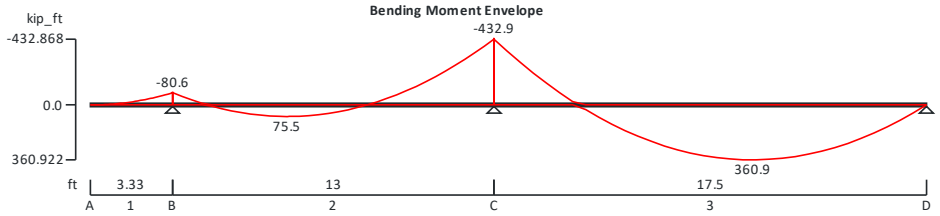
PASS - Maximum deflection does not exceed deflection limit

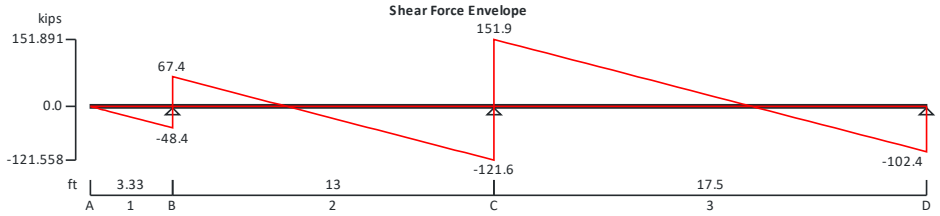
STEEL BEAM ANALYSIS & DESIGN (AISC360-10)

In accordance with AISC360-10 using the LRFD method

Tedds calculation version 3.0.15







Support conditions

Support A	Vertically free
	Rotationally free
Support B	Vertically restrained
	Rotationally free
Support C	Vertically restrained
	Rotationally free
Support D	Vertically restrained
	Rotationally free

Applied loading

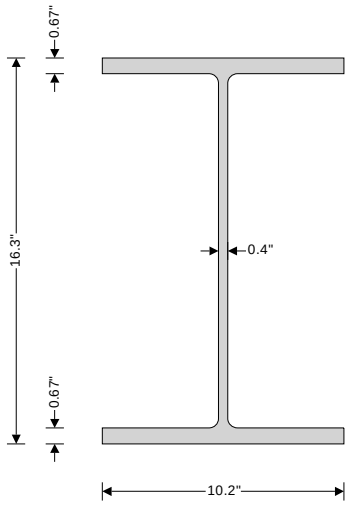
Beam loads	Dead self weight of beam × 1
Span 1 loads	Avalanche Load - Snow UDL 8.2 kips/ft from 0.00 in to 39.96 in
	Roof Dead - Dead UDL 1.11 kips/ft from 0.00 in to 39.96 in
Span 2 loads	Avalanche Load - Snow UDL 8.2 kips/ft from 0.00 in to 156.00 in
	Roof Dead - Dead UDL 1.11 kips/ft from 0.00 in to 156.00 in

Span 3 loads	Avalanche Load - Snow UDL 8.2 kips/ft from 0.00 in to 210.00 in	
	Roof Dead - Dead UDL 1.11 kips/ft from 0.00 in to 210.00 in	
Load combinations		
Load combination 1	Support A	Dead × 1.20
		Live × 1.60
		Roof live × 1.60
		Snow × 1.60
		Dead × 1.20
		Live × 1.60
		Roof live × 1.60
		Snow × 1.60
	Support B	Dead × 1.20
		Live × 1.60
		Roof live × 1.60
		Snow × 1.60
		Dead × 1.20
		Live × 1.60
		Roof live × 1.60
		Snow × 1.60
	Support C	Dead × 1.20
		Live × 1.60
		Roof live × 1.60
		Snow × 1.60
		Dead × 1.20
		Live × 1.60
		Roof live × 1.60
		Snow × 1.60
	Support D	Dead × 1.20
		Live × 1.60
		Roof live × 1.60
		Snow × 1.60
Analysis results		
Maximum moment	M_{max} = **360.9** kips_ft	M_{min} = **-432.9** kips_ft
Maximum moment span 1	M_{s1_max} = **0** kips_ft	M_{s1_min} = **-80.6** kips_ft
Maximum moment span 2	M_{s2_max} = **75.5** kips_ft	M_{s2_min} = **-432.9** kips_ft
Maximum moment span 3	M_{s3_max} = **360.9** kips_ft	M_{s3_min} = **-432.9** kips_ft
Maximum shear	V_{max} = **151.9** kips	V_{min} = **-121.6** kips
Maximum shear span 1	V_{s1_max} = **0** kips	V_{s1_min} = **-48.4** kips
Maximum shear span 2	V_{s2_max} = **67.4** kips	V_{s2_min} = **-121.6** kips
Maximum shear span 3	V_{s3_max} = **151.9** kips	V_{s3_min} = **-102.4** kips
Deflection	δ_{max} = **0.4** in	δ_{min} = **0** in
Deflection span 1	δ_{s1_max} = **0** in	δ_{s1_min} = **0** in

Deflection span 2	δ_{s2_max} = **0** in	δ_{s2_min} = **0** in
Deflection span 3	δ_{s3_max} = **0.4** in	δ_{s3_min} = **0** in
Maximum reaction at support A	R_{A_max} = **0** kips	R_{A_min} = **0** kips
Maximum reaction at support B	R_{B_max} = **115.8** kips	R_{B_min} = **115.8** kips
Unfactored dead load reaction at support B	R_{B_Dead} = **9.4** kips	
Unfactored snow load reaction at support B	R_{B_Snow} = **65.3** kips	
Maximum reaction at support C	R_{C_max} = **273.4** kips	R_{C_min} = **273.4** kips
Unfactored dead load reaction at support C	R_{C_Dead} = **22.1** kips	
Unfactored snow load reaction at support C	R_{C_Snow} = **154.3** kips	
Maximum reaction at support D	R_{D_max} = **102.4** kips	R_{D_min} = **102.4** kips
Unfactored dead load reaction at support D	R_{D_Dead} = **8.3** kips	
Unfactored snow load reaction at support D	R_{D_Snow} = **57.8** kips	

Section details

Section type	**W 16x67 (AISC 15th Edn (v15.0))**
ASTM steel designation	**A992**
Steel yield stress	F_y = **50** ksi
Steel tensile stress	F_u = **65** ksi
Modulus of elasticity	E = **29000** ksi



Resistance factors

Resistance factor for tensile yielding	ϕ_{ty} = **0.90**
Resistance factor for tensile rupture	ϕ_{tr} = **0.75**
Resistance factor for compression	ϕ_c = **0.90**
Resistance factor for flexure	ϕ_b = **0.90**

Lateral bracing

Span 1 has continuous lateral bracing
Span 2 has continuous lateral bracing
Span 3 has continuous lateral bracing
Cantilever tip is unbraced
Cantilever support is continuous with lateral and torsional restraint

Classification of sections for local buckling - Section B4.1

Classification of flanges in flexure - Table B4.1b (case 10)

Width to thickness ratio	$b_f / (2 \times t_f)$ = **7.67**	
Limiting ratio for compact section	$\lambda_{pff} = 0.38 \times \sqrt{[E / F_y]}$ = **9.15**	
Limiting ratio for non-compact section	$\lambda_{rff} = 1.0 \times \sqrt{[E / F_y]}$ = **24.08**	Compact

Classification of web in flexure - Table B4.1b (case 15)

Width to thickness ratio	$(d - 2 \times k) / t_w$ = **35.85**	
Limiting ratio for compact section	$\lambda_{pwf} = 3.76 \times \sqrt{[E / F_y]}$ = **90.55**	
Limiting ratio for non-compact section	$\lambda_{rwf} = 5.70 \times \sqrt{[E / F_y]}$ = **137.27**	Compact

Section is compact in flexure

Design of members for shear - Chapter G

Required shear strength	$V_r = \max(\text{abs}(V_{max}), \text{abs}(V_{min}))$ = **151.891** kips
Web area	$A_w = d \times t_w$ = **6.439** in^2
Web plate buckling coefficient	k_v = **5**
Web shear coefficient - eq G2-3	C_v = **1**
Nominal shear strength – eq G2-1	$V_n = 0.6 \times F_y \times A_w \times C_v$ = **193.155** kips
Resistance factor for shear	ϕ_v = **1.00**
Design shear strength	$V_c = \phi_v \times V_n$ = **193.155** kips

PASS - Design shear strength exceeds required shear strength

Design of members for flexure in the major axis at span 2 - Chapter F

Required flexural strength	$M_r = \max(\text{abs}(M_{s2\_max}), \text{abs}(M_{s2\_min}))$ = **432.868** kips_ft

Yielding - Section F2.1

Nominal flexural strength for yielding - eq F2-1	$M_{nyld} = M_p = F_y \times Z_x$ = **541.667** kips_ft
Nominal flexural strength	$M_n = M_{nyld}$ = **541.667** kips_ft
Design flexural strength	$M_c = \phi_b \times M_n$ = **487.500** kips_ft

PASS - Design flexural strength exceeds required flexural strength

Design of members for vertical deflection

Consider deflection due to dead, live, roof live and snow loads

Limiting deflection	$\delta_{lim} = L_{s3} / 360$ = **0.583** in
Maximum deflection span 3	$\delta = \max(\text{abs}(\delta_{max}), \text{abs}(\delta_{min}))$ = **0.387** in

PASS - Maximum deflection does not exceed deflection limit

STEEL COMPOSITE BEAM DESIGN (AISC 360)

In accordance with AISC 360-16 using the load and resistance factor design method

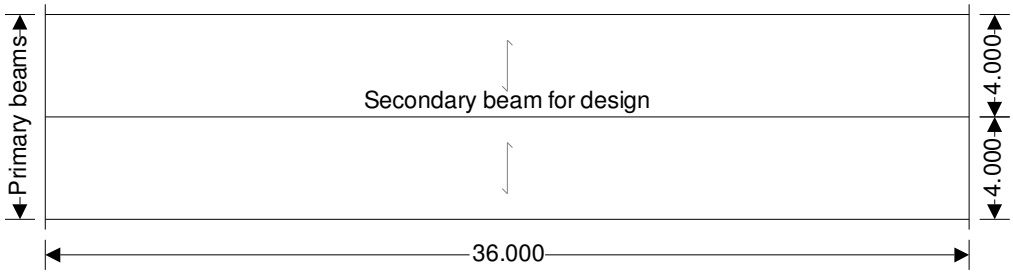
Tedds calculation version 1.0.16

Design summary

Overall design status: Pass

Overall design utilisation: 0.955

Description	Unit	Provided	Required	Utilization	Result
Moment, constr	(kip_ft)	308.62	75.7	0.245	PASS
Shear, constr	(kips)	166.64	8.41	0.050	PASS
Moment, comp	(kip_ft)	493.31	470.89	0.955	PASS
Shear, comp	(kips)	166.64	52.32	0.314	PASS
Deflection, constr	(in)	3.1	0.81	0.260	PASS
Deflection, comp	(in)	3.1	2.83	0.912	PASS



Basic dimensions

Beam span: L = **36.000** ft

Beam spacing on one side: b_1 = **4.000** ft

Beam spacing on other side: b_2 = **4.000** ft

Deck orientation: **Deck ribs perpendicular to beam**

Profiles are assumed to meet all dimensional criteria in AISC 360-16

Overall depth of slab: t = **5.000** in

Height of ribs: h_r = **3.000** in

Centers of ribs: rib_{ccs} = **12.000** in

Average width of rib: w_r = **7.500** in

Material properties

Concrete

Specified compressive strength of concrete: f'_c = **4.00** ksi

Wet density of concrete: w_{cw} = **150** lb/ft^3

Dry density of concrete: w_{cd} = **130** lb/ft^3

Modulus of elasticity of concrete: $E_c = w_{cd}^{1.5} \times \sqrt{(f'_c \times 1\ ksi)} / (1\ lb/ft^3)^{1.5}$ = **2964** ksi

Steel

Specified minimum yield stress of steel: F_y = **50** ksi

Modulus of elasticity of steel: E_S = **29000** ksi

Loading – secondary beam

Weight of slab construction stage: $w_{slab\_constr} = [t - h_r \times (1 - w_r / rib_{ccs})] \times w_{cw}$ = **48.437** psf

Weight of slab composite stage	$w_{slab\_comp} = [t - h_r \times (1 - w_r / rib_{ccs})] \times w_{cd}$ = **41.979** psf
Weight of steel deck	w_{deck} = **3.000** psf
Additional dead load	w_{d_add} = **8.000** psf
Weight of steel beam	w_{beam_s} = **45.000** lb/ft
Weight of construction live load	w_{constr} = **20.000** psf
Superimposed dead load	w_{serv} = **8.000** psf
Weight of wall parallel to span	w_{w_par} = **0.000** lb/ft
Weight of wall perpendicular to span	w_{w_perp} = **0.000** lb/ft assumed to be at mid-span.
Floor live load	w_{imp} = **400.000** psf
Lightweight partition load	w_{part} = **0.000** psf
Total construction stage dead load	$w_{constr\_D} = [(w_{slab\_constr}+w_{deck}+w_{d\_add})\times((b_1+b_2)/2)] + w_{beam\_s}$ = **282.750** lb/ft
Total construction stage live load	$w_{constr\_L} = w_{constr} \times (b_1 + b_2) / 2$ = **80.000** lb/ft
Total composite stage dead load(excluding walls)	$w_{comp\_D} = [(w_{slab\_comp}+w_{deck}+w_{d\_add}+w_{serv})\times(b_1+b_2)/2]+w_{beam\_s}$ = **288.917** lb/ft
Total composite stage live load	$w_{comp\_L} = (w_{imp} + w_{part}) \times (b_1 + b_2)/2$ = **1600.000** lb/ft

Design forces – secondary beam

Max ultimate moment at construction stage	$M_{constr\_u} = (1.2 \times w_{constr\_D} + 1.6 \times w_{constr\_L}) \times L^2/ 8$ = **75.703** kips_ft
Max ultimate shear at construction stage	$V_{constr\_u} = (1.2 \times w_{constr\_D} + 1.6 \times w_{constr\_L}) \times L / 2$ = **8.411** kips

Maximum ultimate moment at composite stage

$M_{comp\_u} = (1.2 \times w_{comp\_D} + 1.6 \times w_{comp\_L}) \times L^2/ 8 + 1.2 \times w_{w\_par} \times L^2/8 + 1.2 \times w_{w\_perp} \times (b_1 + b_2)/2 \times L/4$= **470.885** kips_ft

Maximum ultimate shear at composite stage

$V_{comp\_u} = (1.2 \times w_{comp\_D} + 1.6 \times w_{comp\_L}) \times L / 2 + 1.2 \times w_{w\_par} \times L / 2 + 1.2 \times w_{w\_perp} \times (b_1 + b_2)/2 \times 1/2$= **52.321** kips

Point of max. B.M. from nearest support	L_{BM_near} = L/2 =**18.00** ft

Steel section check

Trial steel section	**W16X45**
Plastic modulus of steel section	Z_x = **82.30** in^3
Elastic modulus of steel section	S_x = **72.70** in^3
Width to thickness ratio	$\lambda_f = b_f / (2 \times t_f)$ = **6.230**
Limiting width to thickness ratio (compact)	$\lambda_{pf} = 0.38 \times \sqrt{(E_S / F_y)}$ = **9.152**
Limiting width to thickness ratio (noncompact)	$\lambda_{rf} = \sqrt{(E_S / F_y)}$ = **24.083**

Flange is compact

Depth to thickness ratio (h/t_w)	λ_w = **41.100**
Limiting depth to thickness ratio (compact)	λ_{pw}= $3.76 \times \sqrt{(E_S / F_y)}$ = **90.553**
Limiting depth to thickness ratio (noncompact)	λ_{rw}= $5.70 \times \sqrt{(E_S / F_y)}$ = **137.274**

Web is compact

Strength check at construction stage for flexure

Check for flexure

Plastic moment for steel section	$M_p = F_y \times Z_x$ = **342.917** kip_ft
Resistance factor for flexure	ϕ_b = **0.90**
Design flexural strength of steel section alone	$M_{constr\_n} = \phi_b \times M_p$ = **308.625** kip_ft
Required flexural strength	M_{constr_u} = **75.703** kip_ft

PASS - Beam bending at construction stage loading

Strength check at construction stage for shear

Web area	$A_w = d \times t_w$ = **5.554** in^2

Web plate buckling coefficient	k_v = **5.34**
Depth to thickness ratio (h/t_w)	λ_w = **41.100**
Web shear coefficient	C_{v1} = **1.00**
Resistant factor for shear	ϕ_v = **1.0**
Design shear strength	$V_{constr\_n} = \phi_v \times (0.6 \times F_y \times A_w \times C_{v1})$ = **166.635** kips
Required shear strength	V_{constr_u} = **8.411** kips

PASS - Beam shear at construction stage loading

Design of steel anchors

Note - for non-uniform stud layouts a higher concentration of studs should be located towards the ends of the beam

Effective slab width of composite section	$b = \min(L/8, b_1/2) + \min(L/8, b_2/2)$ = **48.000** in
Effective area of concrete flange	$A_c = b \times (t - h_r)$ = **96.00** in^2
Diameter of stud anchor	dia = **0.750** in
Length of stud anchor after weld	H_s = **4.50** in
Specified tensile strength of stud anchor	F_u = **65** ksi
Cross section area of one stud anchor	$A_{sa} = \pi \times dia^2 / 4$ = **0.442** in^2
Maximum diameter permitted	$dia_{max} = 2.5 \times t_f$ = **1.412** in

PASS - Diameter of stud anchor provided is OK

Point of max. B.M. from nearest support	L_{BM_near} = **18.00** ft
No. of ribs from points of zero to max moment	$rib_{numbers} = int(L_{BM\_near} / rib_{ccs} - 1)$ = **17**
No. of ribs with 1 stud per rib	N_{r1} = **12**
No. of ribs with 2 studs per rib	N_{r2} = **5**
No. of ribs with 3 studs per rib	N_{r3} = **0**
Total number of studs	$N_{prov} = N_{r1} + 2 \times N_{r2} + 3 \times N_{r3}$ = **22**
Group effect factor for 1 stud per rib	R_{g1} = **1.00**
Group effect factor for 2 studs per rib	R_{g2} = **0.85**
Group effect factor for 3 studs per rib	R_{g3} = **0.70**
Value of $e_{mid\text{-}ht}$ is less than 2 in (51 mm)	
Position effect factor for deck perpendicular	R_p = **0.60**
Nom. strength of one stud with 1 stud per rib	$Q_{n1} = \min(0.5 \times A_{sa} \times \sqrt{(f'_c \times E_c)}, R_{g1} \times R_p \times A_{sa} \times F_u)$ = **17.230** kips
Nom. strength of one stud with 2 studs per rib	$Q_{n2} = \min(0.5 \times A_{sa} \times \sqrt{(f'_c \times E_c)}, R_{g2} \times R_p \times A_{sa} \times F_u)$ = **14.645** kips
Nom. strength of one stud with 3 studs per rib	$Q_{n3} = \min(0.5 \times A_{sa} \times \sqrt{(f'_c \times E_c)}, R_{g3} \times R_p \times A_{sa} \times F_u)$ = **12.061** kips
Total strength of provided steel anchors	$S_{sc} = N_{r1} \times Q_{n1} + 2 \times N_{r2} \times Q_{n2} + 3 \times N_{r3} \times Q_{n3}$ = **353.21** kips
Resistance of concrete flange	$C_{cf} = 0.85 \times f'_c \times A_c$ = **326.400** kips
Resistance of steel beam	$T_{sb} = A \times F_y$ = **665.000** kips
Beam/slab interface shear force	$C = \min(C_{cf}, T_{sb})$ = **326.400** kips

Strength of studs is greater than maximum interface shear force therefore full composite action takes place

Strength check for flexure with full composite action

Resistance of concrete flange	$C_{cf} = 0.85 \times f'_c \times A_c$ = **326.400** kips
Resistance of steel beam	$T_{sb} = A \times F_y$ = **665.000** kips

PNA is in the I Section

Actual net tensile force	$V_h = C$ = **326.400** kips

Assuming plastic neutral axis at the bottom of the steel beam flange.

Resultant compressive force at flange bottom	$P_{yf} = b_f \times t_f \times F_y$ = **198.880** kips
Net force at steel and concrete interface	$C_{net} = T_{sb} - 2 \times P_{yf}$ = **267.240** kips

PNA is in the flange of I Section

Depth of compression from top of the flange	$t' = (A \times F_y - V_h) / (2 \times b_f \times F_y) =$ **0.481** in
Tension	
Bottom flange component	$F_{bf} = F_y \times b_f \times t_f =$ **198.880** kips
Moment capacity of bottom flange	$M_{bf} = F_{bf} \times (d - (t_f/2) - t') =$ **254.177** kip_ft
Web component	$F_{web} = F_y \times (A - (2 \times b_f \times t_f)) =$ **267.240** kips
Moment capacity of web	$M_{web} = F_{web} \times (((d - 2 \times t_f)/2) + t_f - t') =$ **168.562** kip_ft
Top flange component	$F_{tf\_t} = F_y \times b_f \times (t_f - t') =$ **29.580** kips
Moment capacity of top flange	$M_{tf\_t} = F_{tf\_t} \times (t_f - t')/2 =$ **0.104** kip_ft
Compression	
Top flange component	$F_{tf\_c} = F_y \times b_f \times t' =$ **169.300** kips
Moment capacity of top flange	$M_{tf\_c} = F_{tf\_c} \times t'/2 =$ **3.393** kip_ft
Concrete flange component	$F_{cf} = 0.85 \times f'_c \times A_c =$ **326.400** kips
Moment capacity of concrete flange	$M_{cf} = F_{cf} \times (t - ((t - h_r)/2) + t') =$ **121.882** kip_ft
Design flexural strength of beam	$M_{comp\_n} = \phi_b \times (M_{bf} + M_{web} + M_{tf\_t} + M_{tf\_c} + M_{cf}) =$ **493.307** kip_ft
Required flexural strength	$M_{comp\_u} =$ **470.885** kip_ft

PASS - Beam bending at full composite stage

Check for shear	
Design shear strength	$V_{comp\_n} = V_{constr\_n} =$ **166.635** kips
Required shear strength	$V_{comp\_u} =$ **52.321** kips

PASS - Beam shear at composite stage loading

Check for deflection (Commentary section I3.1)

Calculation of immediate construction stage deflection

Deflection due to dead load	$\Delta_{short\_D} = 5 \times w_{constr\_D} \times L^4 / (384 \times E_S \times I_x) =$ **0.6288** in
Amount of beam camber	$\Delta_{camber} =$ **0.000** in

PASS - The camber is less than the construction stage dead load deflection

Deflection due to construction live load	$\Delta_2 = 5 \times w_{constr\_L} \times L^4 / (384 \times E_S \times I_x) =$ **0.1779** in
Net total construction stage deflection	$\Delta_{short} = \Delta_{short\_D} + \Delta_2 - \Delta_{camber} =$ **0.807** in
For short term loading:-	
Short term modular ratio	$n_s = E_S / E_c =$ **9.8**
Depth of neutral axis from top of concrete	

$y_s = [b \times (t - h_r)/n_s \times (t - h_r)/2 + A \times (t + d/2)] / [b \times (t - h_r)/n_s + A]$

$y_s =$ **7.934** in

Moment of inertia of fully composite section

$I_s = I_x + A \times (d/2 + t - y_s)^2 + b \times (t - h_r)^3/(12 \times n_s) + b \times (t - h_r)/n_s \times (y_s - (t - h_r)/2)^2$

$I_s =$ **1409** in^4

Effective moment of inertia of section	$I_{s\_eff} = 0.75 \times I_s =$ **1056.9** in^4
Proportion of live load which is short term	$r_{L\_s} =$ **67** %
Deflection due to short term live load	$\Delta_{L\_s} = 5 \times r_{L\_s} \times w_{comp\_L} \times L^4 / (384 \times E_S \times I_{s\_eff}) =$ **1.3218** in
For long term loading:-	
Long term concrete modulus as % of short term	$r_{E\_l} =$ **50** %
Long term modular ratio	$n_l = E_S / (E_c \times r_{E\_l}) =$ **19.6**
Depth of neutral axis from top of concrete	

$y_l = [b\times(t-h_r)/n_l\times(t-h_r)/2 + A\times(t+d/2)] / [b\times(t-h_r)/n_l+A]$

y_l = **9.803** in

Moment of inertia of fully composite section

$I_l = I_x + A\times(d/2+t-y_l)^2 + b\times(t - h_r)^3/(12\times n_l) + b\times(t - h_r)/n_l \times (y_l - (t-h_r)/2)^2$

I_l = **1108** in^4

Effective moment of inertia of section $I_{l\_eff} = 0.75 \times I_l =$ **831.1** in^4

Proportion of live load which is long term $r_{L\_l} = 1 - r_{L\_s}$ = **33** %

Deflection due to long term live load $\Delta_{L\_l} = 5 \times r_{L\_l} \times w_{comp\_L} \times L^4 / (384 \times E_S \times I_{l\_eff})$ = **0.8279** in

Dead load due to parallel wall & superimp. dead $w_{D\_part} = w_{w\_par} + (w_{serv}\times(b_1+ b_2) / 2)$ = **32.0000** lb/ft

Long term deflection due to superimposed dead load (after concrete has cured):-

Wall parallel to span and superimposed dead $\Delta_4 = 5 \times (w_{D\_part}) \times L^4 / (384 \times E_S \times I_{l\_eff})$ = **0.0502** in

Wall perpendicular to span $\Delta_5 = (w_{w\_perp} \times(b_1+ b_2) / 2) \times L^3 / (48 \times E_S \times I_{l\_eff})$ = **0.0000** in

Combined deflections

Net total construction stage deflection $\Delta_{short} = \Delta_{short\_D} + \Delta_2 - \Delta_{camber}$ = **0.807** in

Net total long term deflection $\Delta_{long} = \Delta_{short\_D} + \Delta_{L\_s} + \Delta_{L\_l} + \Delta_4 + \Delta_5 - \Delta_{camber}$ = **2.829** in

Combined short and long term live load deflectn $\Delta_{live} = \Delta_{L\_s} + \Delta_{L\_l}$ = **2.150** in

Net long term dead and super imposed dead defln $\Delta_{dead} = \Delta_{short\_D} + \Delta_4 + \Delta_5 - \Delta_{camber}$ = **0.679** in

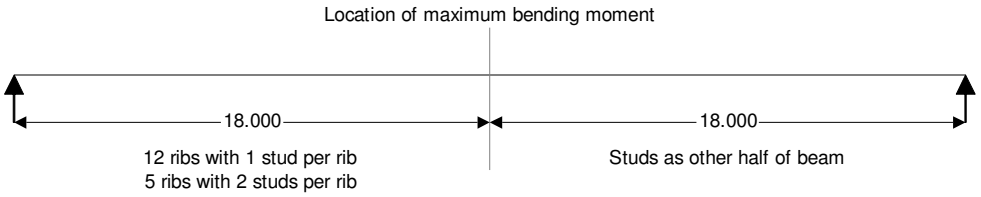
Post composite deflection $\Delta_{comp} = \Delta_{L\_s} + \Delta_{L\_l} + \Delta_4 + \Delta_5$ = **2.200** in

Allowable max deflection Δ_{Allow} = **3.100** in

PASS - Deflection less than allowable

Arrangement of steel anchor

Note - for non-uniform stud layouts a higher concentration of studs should be located towards the ends of the beam



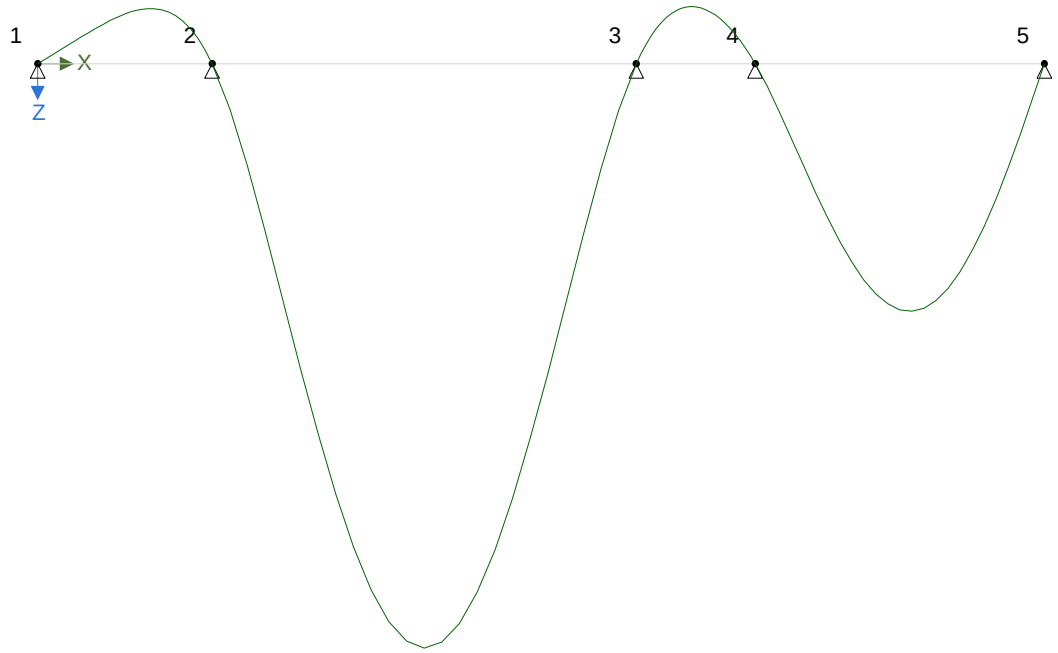
ANALYSIS

Tedds calculation version 1.0.37

Results

Total deflection

Dead - Total deflection



Node deflections

Load case: Dead

Node	Deflection		Rotation	Co-ordinate system
	X (in)	Z (in)	(°)	
1	0	0	-3.48066	
2	0	0	12.30884	
3	0	0	-12.88783	
4	0	0	9.92823	
5	0	0	-16.99409	

Total base reactions

Load case/combination	Force	
	FX (kips)	FZ (kips)
Dead	0	589.303

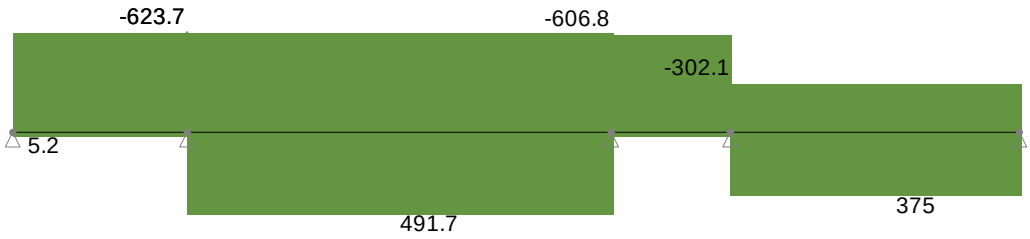
Element end forces

Load case: Dead

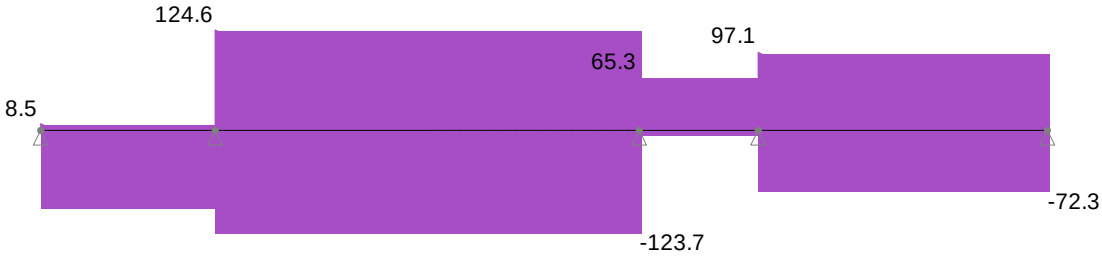
Element	Length (ft)	Nodes Start/End	Axial force (kips)	Shear force (kips)	Moment (kip_ft)
1	14.67	1	0	-8.538	0
		2	0	-93.565	-623.676
2	35.67	2	0	-124.606	623.676
		3	0	-123.658	-606.771
3	10	3	0	-65.265	606.771
		4	0	-4.335	-302.12
4	24.33	4	0	-97.086	302.12
		5	0	-72.251	0

Forces

All load cases - Moment envelope (kip_ft)



All load cases - Shear envelope (kips)



Element results

Envelope - All load cases

Element	Position (ft)	Shear force (kips)		Moment (kip_ft)	
1	0	8.538		0	
	1.23	0		5.237 (max)	
	14.67	-93.565 (max abs)		-623.676 (min)	
2	0	124.606 (max abs)		-623.676 (min)	
	17.9	0		491.736 (max)	
	35.67	-123.658		-606.771	
3	0	65.265 (max abs)		-606.771 (min)	

Element	Position (ft)	Shear force (kips)		Moment (kip_ft)	
	9.38	0		-300.77 (max)	
	10	-4.335		-302.12	
4	0	97.086 (max abs)		-302.12 (min)	
	13.95	0		375.013 (max)	
	24.33	-72.251		0	

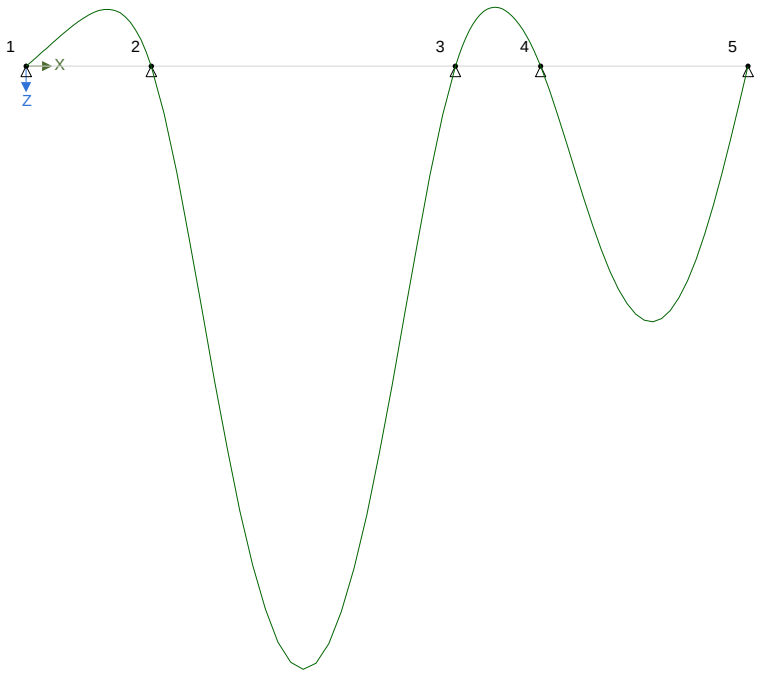
ANALYSIS

Tedds calculation version 1.0.37

Results

Total deflection

Dead - Total deflection



Node deflections

Load case: Dead

Node	Deflection		Rotation	Co-ordinate system
	X (in)	Z (in)	(°)	
1	0	0	-5.01096	
2	0	0	17.72048	
3	0	0	-18.55403	
4	0	0	14.29323	
5	0	0	-24.46564	

Total base reactions

Load case/combination	Force	
	FX (kips)	FZ (kips)
Dead	0	848.393

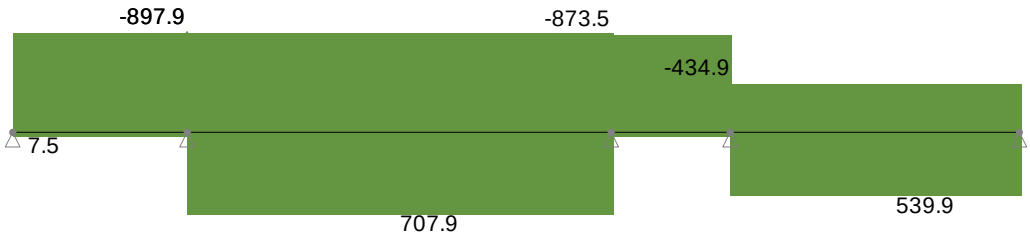
Element end forces

Load case: Dead

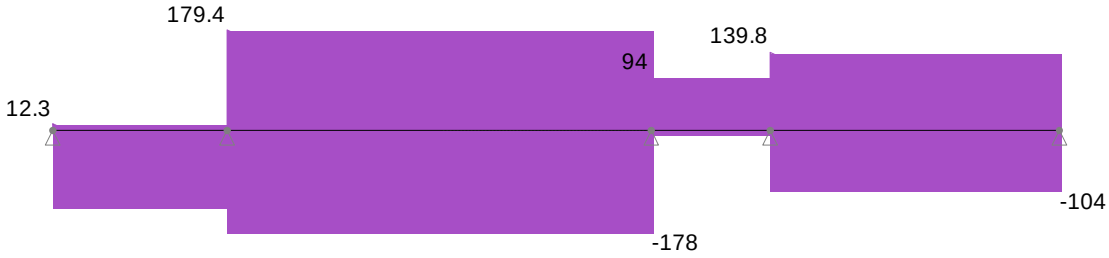
Element	Length (ft)	Nodes Start/End	Axial force (kips)	Shear force (kips)	Moment (kip_ft)
1	14.67	1	0	-12.292	0
		2	0	-134.702	-897.879
2	35.67	2	0	-179.389	897.879
		3	0	-178.024	-873.541
3	10	3	0	-93.959	873.541
		4	0	-6.241	-434.948
4	24.33	4	0	-139.77	434.948
		5	0	-104.016	0

Forces

All load cases - Moment envelope (kip_ft)



All load cases - Shear envelope (kips)



Element results

Envelope - All load cases

Element	Position (ft)	Shear force (kips)		Moment (kip_ft)	
1	0	12.292		0	
	1.23	0		7.539 (max)	
	14.67	-134.702 (max abs)		-897.879 (min)	
2	0	179.389 (max abs)		-897.879 (min)	
	17.9	0		707.931 (max)	
	35.67	-178.024		-873.541	
3	0	93.959 (max abs)		-873.541 (min)	

Element	Position (ft)	Shear force (kips)		Moment (kip_ft)	
	9.38	0		-433.004 (max)	
	10	-6.241		-434.948	
4	0	139.77 (max abs)		-434.948 (min)	
	13.95	0		539.89 (max)	
	24.33	-104.016		0	

ANALYSIS

Tedds calculation version 1.0.37

Results

Total deflection

Dead - Total deflection

Node deflections

Load case: Dead

Node	Deflection		Rotation	Co-ordinate system
	X (in)	Z (in)	(°)	
1	0	0	0.00014	
2	0	0	0.00261	
3	0	0	-0.00265	
4	0	0	0.00103	
5	0	0	-0.00239	

Total base reactions

Load case/combination	Force	
	FX (kips)	FZ (kips)
Dead	0	270.076

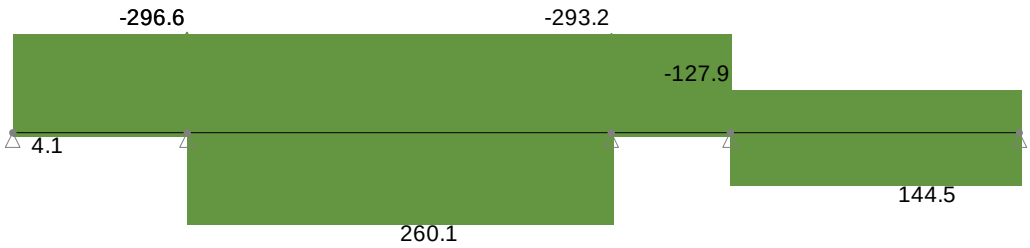
Element end forces

Load case: Dead

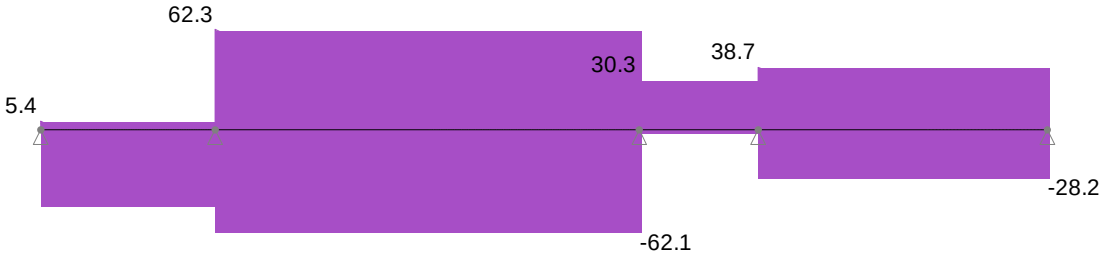
Element	Length (ft)	Nodes Start/End	Axial force (kips)	Shear force (kips)	Moment (kip_ft)
1	14.67	1	0	-5.381	0
		2	0	-45.818	-296.604
2	35.67	2	0	-62.339	296.604
		3	0	-62.142	-293.223
3	10	3	0	-30.279	293.223
		4	0	2.779	-127.932
4	24.33	4	0	-38.712	127.932
		5	0	-28.184	0

Forces

All load cases - Moment envelope (kip_ft)



All load cases - Shear envelope (kips)



Element results

Envelope - All load cases

Element	Position (ft)	Shear force (kips)		Moment (kip_ft)	
1	0	5.381		0	
	1.54	0		4.148 (max)	
	14.67	-45.818 (max abs)		-296.604 (min)	
2	0	62.339 (max abs)		-296.604 (min)	
	17.86	0		260.15 (max)	
	35.67	-62.142		-293.223	
3	0	30.279 (max abs)		-293.223 (min)	
	10	2.779		-127.932 (max)	
4	0	38.712 (max abs)		-127.932 (min)	
	14.08	0		144.543 (max)	
	24.33	-28.184		0	

ANALYSIS

Tedds calculation version 1.0.37

Results

Total deflection

Dead - Total deflection

Live - Total deflection

Node deflections

Load case: Dead

Node	Deflection		Rotation	Co-ordinate system
	X (in)	Z (in)	(°)	
1	0	0	0	
2	0	0	0	
3	0	0	0	
4	0	0	0	
5	0	0	0	

Load case: Live

Node	Deflection		Rotation	Co-ordinate system
	X (in)	Z (in)	(°)	
1	0	0	0.00052	
2	0	0	0.00971	
3	0	0	-0.00992	
4	0	0	0.00348	
5	0	0	-0.00807	

Total base reactions

Load case/combination	Force	
	FX (kips)	FZ (kips)
Dead	0	0
Live	0	971.056

Element end forces

Load case: Dead

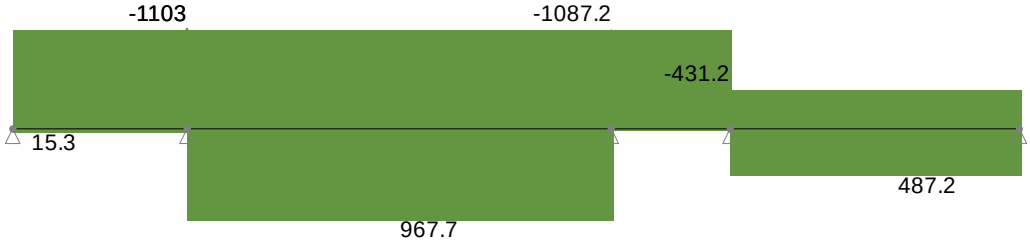
Element	Length (ft)	Nodes Start/End	Axial force (kips)	Shear force (kips)	Moment (kip_ft)
1	14.67	1	0	0	0
		2	0	0	0
2	35.67	2	0	0	0
		3	0	0	0
3	10	3	0	0	0
		4	0	0	0
4	24.33	4	0	0	0
		5	0	0	0

Load case: Live

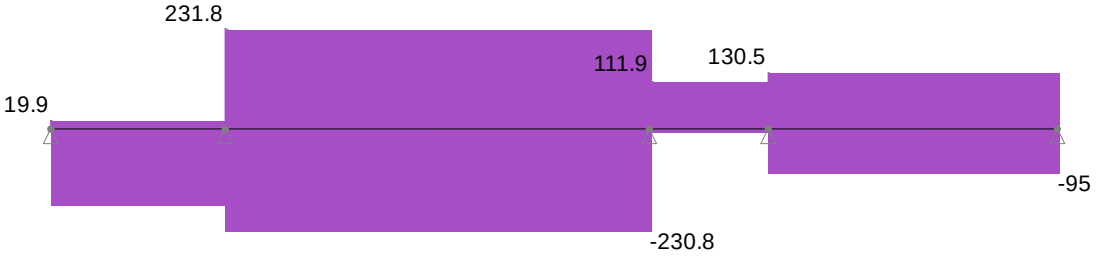
Element	Length (ft)	Nodes Start/End	Axial force (kips)	Shear force (kips)	Moment (kip_ft)
1	14.67	1	0	-19.945	0
		2	0	-170.324	-1103.03
2	35.67	2	0	-231.764	1103.03
		3	0	-230.839	-1087.198
3	10	3	0	-111.945	1087.198
		4	0	19.245	-431.247
4	24.33	4	0	-130.494	431.247
		5	0	-94.989	0

Forces

All load cases - Moment envelope (kip_ft)



All load cases - Shear envelope (kips)



Element results

Envelope - All load cases

Element	Position (ft)	Shear force (kips)		Moment (kip_ft)	
1	0	19.945	0	0	
	1.54	0		15.336 (max)	0
	14.67	0	-170.324 (max abs)	0	-1103.03 (min)
2	0	231.764 (max abs)	0	0	-1103.03 (min)
	17.87	0		967.689 (max)	0
	35.67	0	-230.839	0	-1087.198
3	0	111.945 (max abs)	0	0	-1087.198 (min)
4	0	130.494 (max abs)	0	0	-431.247 (min)
	14.08	0		487.243 (max)	0
	24.33	0	-94.989	0	

City of Ketchum

Attachment E:

Design Review Standards Analysis

City of Ketchum
Planning & Building

219 Hillside Drive
DESIGN REVIEW STANDARDS ANALYSIS

17.96.060.A.1 - Streets	Conformance
The applicant shall be responsible for all costs associated with providing a connection from an existing City street to their development.	YES
Finding: The project proposes to construct a new paver driveway that accesses the property from Hillside Drive. All project costs associated with the development, including the City street connection, are the responsibility of the applicant.	

17.96.060.A.2 - Streets	Conformance
All street designs shall be approved by the City Engineer.	YES
Finding: The City Engineer has reviewed the proposed driveway design and finds it to be sufficient for the project. All street designs shall be reviewed and approved by the City Engineer and Streets Department prior to issuance of a Building Permit for the project.	

17.96.060.B.1 - Sidewalks	Conformance
All projects under subsection 17.96.010.A of this chapter that qualify as a "substantial improvement" shall install sidewalks as required by the Public Works Department.	N/A
Finding: N/A. Ketchum Municipal Code 17.124.140 outlines the zone districts where sidewalks are required when substantial improvements are made, which include the Community Core, all tourist zone districts, and all light industrial districts. The subject property is located within the LR Zone, and sidewalks are not required to be installed for the project. This standard is not applicable.	

17.96.060.B.2 - Sidewalks	Conformance
Sidewalk width shall conform to the City's right-of-way standards, however the City Engineer may reduce or increase the sidewalk width and design standard requirements at their discretion.	N/A
Finding: N/A. The subject property is located within the LR Zone, and sidewalks are not required to be installed for this project.	

17.96.060.B.3 - Sidewalks	Conformance
Sidewalks may be waived if one of the following criteria is met: *a) The project comprises an addition of less than 250 square feet of conditioned space.* b) *The City Engineer finds that sidewalks are not necessary because of existing geographic limitations, pedestrian traffic on the street does*	N/A

not warrant a sidewalk, or if a sidewalk would not be beneficial to the general welfare and safety of the public.	
Finding: N/A. The subject property is located within the LR Zone, and sidewalks are not required to be installed for this project.	

17.96.060.B.4 - Sidewalks	Conformance
The length of sidewalk improvements constructed shall be equal to the length of the subject property line(s) adjacent to any public street or private street.	N/A
Finding: N/A. The subject property is located within the LR Zone, and sidewalks are not required to be installed for this project.	

17.96.060.B.5 – Sidewalks	Conformance
New sidewalks shall be planned to provide pedestrian connections to any existing or future sidewalks adjacent to the site. In addition, sidewalks shall be constructed to provide safe pedestrian access to and around a building.	N/A
Finding: N/A. Ketchum Municipal Code 17.124.140 outlines the zone districts where sidewalks are required when substantial improvements are made, which include the CC, all tourist zone districts, and all light industrial districts. The subject property is located in the LR Zone, and sidewalks are not required to be installed for this project.	

17.96.060.B.6 - Sidewalks	Conformance
The City may approve and accept voluntary cash contributions in lieu of the above described improvements, which contributions must be segregated by the City and not used for any purpose other than the provision of these improvements. The contribution amount shall be 110 percent of the estimated costs of concrete sidewalk and drainage improvements provided by a qualified contractor, plus associated engineering costs, as approved by the City Engineer. Any approved in lieu contribution shall be paid before the City issues a certificate of occupancy.	N/A
Finding: N/A. The subject property is located within the LR Zone, and sidewalks are not required to be installed for this project.	

17.96.060.C.1 - Drainage	Conformance
All stormwater shall be retained on site.	YES
Finding: Pursuant to KMC §17.96.060.C.1, all storm water drainage shall be retained on site. Drainage improvements are specified on Sheet C1.0 of the project plans. The drainage improvements include the installation of a trench drain bordering the length of the driveway. A combination of drywells and catch basins will be installed to collect stormwater from the rest of the property. The City Engineer has reviewed the proposed drainage plan and believes	

the trench drain and drywell improvements are sufficient to maintain all storm water drainage on-site. All drainage plans and specifications shall be reviewed and approved by the City Engineer and Streets Department prior to issuance of a Building Permit for the project.

17.96.060.C.2 - Drainage	Conformance
Drainage improvements constructed shall be equal to the length of the subject property lines adjacent to any public street or private street.	YES
Finding: Drainage improvements are specified on Sheet C1.0 of the project plans. The drainage improvements include the installation of a trench drain bordering the length of the driveway. A combination of drywells and catch basins will be installed to collect stormwater from the rest of the property. The City Engineer has reviewed the proposed drainage plan and believes the trench drain and drywell improvements are sufficient to maintain all storm water drainage on-site. All drainage plans and specifications shall be reviewed and approved by the City Engineer and Streets Department prior to issuance of a Building Permit for the project.	

17.96.060.C.3 - Drainage	Conformance
The City Engineer may require additional drainage improvements as necessary, depending on the unique characteristics of a site.	YES
Finding: The City Engineer has reviewed the proposed drainage plan and believes the trench drain and drywell/catch basin improvements are sufficient to maintain all storm water drainage on-site. The City Engineer may require additional drainage improvements if necessary. If approved, the applicant shall submit final civil drawings for all drainage improvements with the building permit application to be verified, reviewed, and approved by the City Engineer and Streets Department.	

17.96.060.C.4 - Drainage	Conformance
Drainage facilities shall be constructed per City standards.	YES
Finding: The drainage improvements include the installation of a trench drain bordering the width of the driveway along Hillside Drive. A combination of drywells and catch basins will be installed to collect stormwater from the rest of the property. The City Engineer has reviewed the proposed drainage plan and believes the proposed trench drain and drywell improvements meet city standards. All drainage plans and specifications shall be reviewed and approved by the City Engineer and Streets Department prior to issuance of a Building Permit for the project.	

17.96.060.D.1 - Utilities	Conformance
All utilities necessary for the development shall be improved and installed at the sole expense of the applicant.	YES
Finding: All project costs associated with the development, including the installation of utilities, are the responsibility of the applicant. The applicant has not made requests for funding to the City for utility improvements. No funds have been provided by the City for the project.	

17.96.060.D.2 - Utilities	Conformance
Utilities shall be located underground and utility, power, and communication lines within the development site shall be concealed from public view.	YES
Finding: As shown on Sheet C1.0 of the project plans, the applicant has proposed connecting to the municipal water and sewer systems from existing lines on Hillside Drive. Requirements and specification for the water and sewer connections will be verified, reviewed, and approved by the Utilities Department prior to issuance of a Building Permit for the project.	

17.96.060.D.3 - Utilities	Conformance
When extension of utilities is necessary all developers will be required to pay for and install two-inch SDR11 fiber optical conduit. The placement and construction of the fiber optical conduit shall be done in accordance with City of Ketchum standards and at the discretion of the City Engineer.	N/A
Finding: N/A. Extension of utilities is not necessary to service the proposed development.	

17.96.060.E.1 – Compatibility of Design	Conformance
The project's materials, colors and signing shall be complementary with the townscape, surrounding neighborhoods and adjoining structures.	YES
Finding: Pursuant to Ketchum Municipal Code §17.96.060.E1, "The project's materials, colors and signing shall be complementary with the townscape, surrounding neighborhoods and adjoining structures." Hillside Drive features residences built at varying timeframes resulting in a diverse range of materials and architectural styles. This has resulted in mountain modern architectural styles (flat roofs, high percentage of glazing, and cold materials such as concrete and metal) mixed with older traditional styles (pitched roofs and warm materials such as wood and stone). The adjacent structure to the lookers right is three stories in height and features a Santa Fe architectural style which has flat roofs with stucco and block forms. The structure to the lookers left is one story in height with pitched roofs and stucco and stone siding. The architectural style of the proposed residence is modern in nature; however, it is complementary of the newer and older residences of the neighborhood as it utilizes wood and steel cladding, board formed concrete, large windows, and shed roofs sloped away from each other which presents as a pitched roof.	

17.96.060.E.2 – Compatibility of Design	Conformance
Preservation of significant landmarks shall be encouraged and protected, where applicable. A significant landmark is one which gives historical and/or cultural importance to the neighborhood and/or community.	N/A
Finding: N/A. The subject property does not contain any significant landmarks.	

17.96.060.E.3 – Compatibility of Design	Conformance
Additions to existing buildings, built prior to 1940, shall be complementary in design and use similar material and finishes of the building being added to.	N/A
Finding: N/A. The subject property is vacant, therefore no additions to existing buildings will take place.	

17.96.060.F.1 – Architectural	Conformance
Building(s) shall provide unobstructed pedestrian access to the nearest sidewalk and the entryway shall be clearly defined.	N/A
Finding: N/A. Ketchum Municipal Code 17.124.140 outlines the zone districts where sidewalks are required when substantial improvements are made, which include the Community Core, all tourist zone districts, and all light industrial districts. The subject property is located within the LR Zone, and sidewalks are not required to be installed for the project. This standard is not applicable.	

17.96.060.F.2 – Architectural	Conformance
The building character shall be clearly defined by use of architectural features.	YES
Finding: As stated previously, the proposed development utilizes a mountain modern, yet traditional design which utilizes clean lines, large windows, pitched roof, and a mix of warm and cold materials.	

17.96.060.F.3 – Architectural	Conformance
There shall be continuity of materials, colors and signing within the project.	YES
Finding: The project utilizes wood and corten steel cladding, board formed concrete, and black trimmed windows.	

17.96.060.F.4 – Architectural	Conformance
Accessory structures, fences, walls and landscape features within the project shall match or complement the principal building.	YES
Finding: No accessory structures or fences are proposed. The project proposes landscaping improvements that restore disturbed hillside areas. These landscaping improvements complement and soften the visual appearance of the single-family residence. The front, side,	

and rear yard setback areas will be restored and revegetated with native grasses. Shrubs are proposed along the sides of the residence, which will screen utilities and the avalanche retaining wall. New Evergreen, Aspen, and Russian Hawthorn trees will be installed to providing screening for the residence from adjacent properties.

17.96.060.F.5 – Architectural	Conformance
Building walls shall provide undulation/relief, thus reducing the appearance of bulk and flatness.	YES
Finding: The proposed residence is three stories in height and each floor of the structure is stepped back into the hillside, providing undulation and relief to reduce the appearance of bulk and flatness.	

17.96.060.F.6 – Architectural	Conformance
Building(s) shall orient toward their primary street frontage.	YES
Finding: The residence is proposed to be oriented towards the primary street frontage along Hillside Drive.	

17.96.060.F.7 – Architectural	Conformance
Garbage storage areas and satellite receivers shall be screened from public view and located off alleys.	YES
Finding: No satellite receivers are proposed for the project. As shown on the sheet entitled "Floor Plan – Level 1" of the architectural plans in Attachment B, the garage contains storage space to accommodate garbage bins. The garbage storage area will be contained within the enclosed garage and fully screened from public view.	

17.96.060.F.8 – Architectural	Conformance
Building design shall include weather protection which prevents water to drip or snow to slide on areas where pedestrians gather and circulate or onto adjacent properties.	YES
Finding: The roof plan indicates that metal gutters will be installed and sloped to downspouts, as shown in the architectural plans in Attachment B. The roof plan also includes clamp mounted snow guards on the east and west side of the roof to prevent snow from sliding on pedestrian areas.	

17.96.060.G.1 – Circulation Design	Conformance
Pedestrian, equestrian and bicycle access shall be located to connect with existing and anticipated easements and pathways.	N/A
Finding: N/A. This project is located within the Hillside Drive area, an existing low-density residential neighborhood. The site is not contiguous to existing pedestrian, equestrian, or bicycle easements or pathways.	

17.96.060.G.2 – Circulation Design	Conformance
Awnings extending over public sidewalks shall extend five feet or more across the public sidewalk but shall not extend within two feet of parking or travel lanes within the right-of-way.	N/A
Finding: N/A. Ketchum Municipal Code 17.124.140 outlines the zone districts where sidewalks are required when substantial improvements are made, which include the CC, all tourist zone districts, and all light industrial districts. The subject property is located in the LR Zone, and sidewalks are not required to be installed for this project.	

17.96.060.G.3 – Circulation Design	Conformance
Traffic shall flow safely within the project and onto adjacent streets. Traffic includes vehicle, bicycle, pedestrian and equestrian use. Consideration shall be given to adequate sight distances and proper signage.	YES
Finding: The proposal is a residential development along a low traffic area on Hillside Drive. The City Engineer has reviewed the proposed driveway and finds its circulation design to meet city standards. Final circulation design shall be reviewed and approved by the City Engineer and Streets Department prior to issuance of a Building Permit for the project.	

17.96.060.G.4 – Circulation Design	Conformance
Curb cuts and driveway entrances shall be no closer than 20 feet to the nearest intersection of two or more streets, as measured along the property line adjacent to the right-of-way. Due to site conditions or current/projected traffic levels or speed, the City Engineer may increase the minimum distance requirements.	YES
Finding: The proposed driveway is located further than 20 feet away from the nearest intersection of Hillside Drive and Turf Drive.	

17.96.060.G.5 – Circulation Design	Conformance
Unobstructed access shall be provided for emergency vehicles, snowplows, garbage trucks and similar service vehicles to all necessary locations within the proposed project.	YES
Finding: Access for emergency vehicles, snowplows and garbage trucks is provided along Hillside Drive.	

17.96.060.H.1 – Snow Storage	Conformance
Snow storage areas shall not be less than 30 percent of the improved parking and pedestrian circulation areas.	YES
Finding: Sheets C1.0 & C2.0 show the proposed snow storage areas to include 575 square feet, greater than the required 30% (1,825 * .30 = 547 square feet).	

17.96.060.H.2 – Snow Storage	Conformance
Snow storage areas shall be provided on site.	YES
Finding: Sheet C1.0 shows the snow storage areas to be provided are on-site.	

17.96.060.H.3 – Snow Storage	Conformance
A designated snow storage area shall not have any dimension less than five feet and shall be a minimum of 25 square feet.	YES
Finding: Sheet C1.0 shows that no snow storage area has dimensions less than five feet.	

17.96.060.H.4 – Snow Storage	Conformance
In lieu of providing snow storage areas, snowmelt and hauling of snow may be allowed.	N/A
Finding: N/A. The applicant is not proposing a snowmelt system.	

17.96.060.I.1 – Landscaping	Conformance
Landscaping is required for all projects.	YES
Finding: Landscaping has been provided for the project as indicated on Sheet L2 of the project plans.	

17.96.060.I.2 – Landscaping	Conformance
Landscape materials and vegetation types specified shall be readily adaptable to a site's microclimate, soil conditions, orientation and aspect, and shall serve to enhance and complement the neighborhood and townscape.	YES
Finding: The front, side, and rear yard setback areas will be restored and revegetated with native grasses. Shrubs are proposed along the sides of the residence, which will screen utilities and the avalanche retaining wall. New Evergreen, Aspen, and Russian Hawthorn trees will be installed to provide screening for the residence from adjacent properties. Boulders and ornamental grasses and perennials are also proposed in front of the structure.	

17.96.060.I.3 – Landscaping	Conformance
All trees, shrubs, grasses and perennials shall be drought tolerant. Native species are recommended but not required.	YES
Finding: The landscape plan proposes drought-tolerant and native species, including evergreens and aspens, native shrubs, and drought tolerant grasses.	

17.96.060.I.4 – Landscaping	Conformance
Landscaping shall provide a substantial buffer between land uses, including, but not limited to, structures, streets and parking lots. The development of landscaped public courtyards, including trees and shrubs where appropriate, shall be encouraged.	YES
Finding: The proposal intends to provide landscaping on the front and side yards allowing for privacy between adjacent properties.	

17.96.060.J.1 – Public Amenities	Conformance
Where sidewalks are required, pedestrian amenities shall be installed. Amenities may include, but are not limited to, benches and other seating, kiosks, bus shelters, trash receptacles, restrooms, fountains, art, etc. All public amenities shall receive approval from the Public Works Department prior to design review approval from the Commission.	N/A
Finding: N/A. The subject property is located within the LR Zone, and sidewalks are not required to be installed for this project.	

17.96.060.K.1 – Underground Encroachments	Conformance
Encroachments of below grade structures into required setbacks are subject to subsection 17.128.020.K of this title and shall not conflict with any applicable easements, existing underground structures, sensitive ecological areas, soil stability, drainage, other sections of this Code or other regulating codes such as adopted International Code Council Codes, or other site features concerning health, safety, and welfare.	N/A
Finding: N/A. No encroachments of below grade structures are proposed.	

17.96.060.K.2 – Underground Encroachments	Conformance
No below grade structure shall be permitted to encroach into the riparian setback.	N/A
Finding: N/A. No encroachments of below grade structures are proposed, and the structure is not located within the riparian setback.	

City of Ketchum

Attachment F:

Mountain Overlay Design Review Standards Analysis

City of Ketchum
Planning & Building

219 Hillside Drive
MOUNTAIN OVERLAY DESIGN REVIEW STANDARDS ANALYSIS

Mountain Overlay Design Review Standards (KMC §17.104.070.A)				
Compliant			Standards and Findings	
Yes	No	N/A	Ketchum Municipal Code	City Standards and Findings
☒	☐	☐	17.104.070.A.1	There is no building on ridges or knolls which would have a material visual impact on a significant skyline visible from a public vantage point entering the City or within the City. Material, as the term is used herein, shall be construed in light of the magnitude of the negative impact on the objectives of this Ordinance.
			Findings	The project is not sited on a ridge or knoll that would have a material visual impact on a significant skyline visible from a public vantage point entering or within the city. The proposed residence is sited at the lower elevation of the parcel preserving the natural topography of the hillside above.
☒	☐	☐	17.104.070.A.2	Building, excavating, filling and vegetation disturbance on hillsides which would have a material visual impact visible from a public vantage point entering the City or within the City is minimized. Material, as the term is used herein, shall be construed in light of the magnitude of the negative impact on the objectives of this Ordinance.
			Findings	As the proposal occurs at the lower elevation of the subject property, all building, excavating, filling and vegetation disturbance will not occur at a point on the hillside which has a material visual impact visible from a public vantage point.
☒	☐	☐	17.104.070.A.3	Driveway standards as well as other applicable standards contained in Street Standards Chapter 12.04 are met.
			Findings	The proposed driveway improvements have been reviewed by the City Engineer, Streets Department, and Fire Department. The driveway improvements comply with all applicable standards for private driveway specified in Ketchum Municipal Code §12.03.030.L. If approved, the applicant shall submit final civil drawings prepared by an engineer registered in the State of Idaho that provide specifications for the proposed driveway and right-of-way improvements for final review and approval by the City Engineer and Streets Department prior to issuance of a building permit for the project.
☒	☐	☐	17.104.070.A.4	All development shall have access for fire and other emergency vehicles to within one hundred fifty feet (150') of the furthest exterior wall of any building.
			Findings	Sufficient access is provided for fire and other emergency vehicles to reach within 150 feet of the furthest exterior wall of the building. The

				Fire Department has reviewed the project plans and has found that all access requirements for emergency vehicles have been met. Emergency vehicle access shall be reviewed and approved by the Fire Department prior to issuance of a building permit.
☒	☐	☐	17.104.070.A.5	Significant rock outcroppings are not disturbed.
			Findings	There are no significant rock outcroppings within the property boundary of the subject property
☒	☐	☐	17.104.070.A.6	International Building Code (IBC) and International Fire Code (IFC) and Ketchum Fire Department requirements shall be met.
			Findings	The project must comply with the 2018 International Residential Code, the 2018 International Fire Code, all local amendments specified in Title 15 of Ketchum Municipal Code, and Ketchum Fire Department requirements. All building code, fire code, and Fire Department requirements will be verified for compliance by the Building and Fire departments prior to building permit issuance.
☒	☐	☐	17.104.070.A.7	Public water and sewer service comply with the requirements of the City.
			Findings	As shown on C1.0 of the project plans, the applicant is proposing to connect to the municipal water and sewer systems from existing lines within Hillside Drive. Requirements and specification for the water and sewer connections will be verified, reviewed, and approved by the Utilities Departments prior to issuance of a Building Permit for the project.
☒	☐	☐	17.104.070.A.8	Drainage is controlled and maintained to not adversely affect other properties.
			Findings	Pursuant to KMC §17.96.060.C.1, all storm water drainage shall be retained on site. Drainage improvements are specified on Sheet C1.0 of the project plans in Attachment B. The drainage improvements include the installation of a trench drain bordering the length of the driveway. A combination of drywells and catch basins will be installed to collect stormwater from the rest of the property. The City Engineer has reviewed the proposed drainage plan and believes the trench drain and drywell improvements are sufficient to maintain all storm water drainage on-site. All drainage plans and specifications shall be reviewed and approved by the City Engineer and Streets Department prior to issuance of a Building Permit for the project.
☒	☐	☐	17.104.070.A.9	Cuts and fills allowed for roadways shall be minimized; lengths of driveways allowed shall be minimized; all cuts and fills shall be concealed with landscaping, revegetation and/or natural stone materials. Revegetation on hillsides with a clear zone of thirty feet (30') around all structures is recommended. Said clear zone shall include low

				combustible irrigated vegetation with appropriate species, on file with the Ketchum planning department. Revegetation outside of this clear zone should be harmonious with the surrounding hillsides.
			Findings	The proposed residence is sited at the minimum front yard setback; however, the driveway to the residence is lengthy due to the shape of the lot which has a narrow entryway. The proposed driveway on Hillside Drive is 20 feet in width. The landscape plan proposes a variety of drought tolerant trees, shrubs, and grasses that will conceal any cuts and fills the project has. The Fire Department has reviewed the project plans and recommended a 26-foot aerial fire apparatus access road for the project, which is proposed in the project plans. Fire Protection Ordinance No. 1217 (KMC §15.08.080) requires that: (1) tree crowns extending within 10 feet of any structure shall be pruned to maintain a minimum horizontal clearance of 10 feet, (2) tree crowns within 30 feet of any structure shall be pruned to remove limbs less than 6 feet above the ground surface adjacent to trees, and (3) non-fire resistive vegetation or growth shall be kept clear of buildings and structures in order to provide a clear area for fire suppression operations. The project complies with the fire protection and defensible space standards specified in KMC §15.08.080. The Fire Department is not requiring a driveway snowmelt system for the project.
☒	☐	☐	17.104.070.A.10	There are not other sites on the parcel more suitable for the proposed development in order to carry out the purposes of this Ordinance.
			Findings	The proposed residence is situated at the lot's lower elevation with the minimum required front yard setback of 15 feet, thus is sited at the most suitable location on the parcel.
☒	☐	☐	17.104.070.A.11	Access traversing 25% or greater slopes does not have significant impact on drainage, snow and earth slide potential and erosion as it relates to the subject property and to adjacent properties.
			Findings	A portion of the driveway access traverses in 25% or greater slopes. The City Engineer reviewed the proposed driveway access and determined that the proposal does not have significant impact on drainage, snow and earth slide potential and erosion on the subject property and adjacent properties. The final access plan shall be reviewed and approved by the City Engineer and Streets Department prior to issuance of a Building Permit for the project.
☒	☐	☐	17.104.070.A.12	Utilities shall be underground.
			Findings	The utility improvements are indicated on Sheet C1.0 of the project plans. The project will utilize sewer, gas, and electrical service from Hillside Drive. The Utilities Department reviewed the project plans and the service connections for compliance with city requirements. Pursuant

				to condition of approval #2, the applicant shall submit final civil drawings prepared by an engineer registered in the State of Idaho that provide specifications for the proposed utility improvements for final review and approval by the Utilities Department prior to issuance of a building permit for the project.
☒	☐	☐	17.104.070.A.13	Limits of disturbance shall be established on the plans and protected by fencing on the site for the duration of construction.
			Findings	Sheet C1.0 shows the proposed limits of disturbance on the subject property for the proposed residence. A construction management plan that addresses all construction activity standards specified in Ketchum Municipal Code §15.06.030 will be required to be submitted with the building permit application. City Departments will conduct a comprehensive review of the proposed construction management plan during plan review for the building permit.
☒	☐	☐	17.104.070.A.14	Excavations, fills and vegetation disturbance on hillsides not associated with the building construction shall be minimized.
			Findings	The project minimizes building, excavating, filling, and vegetation disturbance by siting the proposed residence at the minimum required front yard setback. The lot is currently vacant, so there is no previously disturbed area on site. The proposed cut and fill quantities are specified on Sheet C4.0. The total volume of the proposed cut is 1302.3 cubic yards. The proposed fill comes out to 60.1 cubic yards. The proposed residence is sited at the lower elevation of the parcel, which preserves the natural topography of the hillside above. Additionally, the project proposes to further preserve the hillside by restoring and revegetating existing disturbed areas within the front and side yard setback areas.
☐	☐	☒	17.104.070.A.15	Preservation of significant landmarks shall be encouraged and protected, where applicable. A significant landmark is one which gives historical and/or cultural importance to the neighborhood and/or community.
			Findings	No significant landmarks have been identified on-site.
☐	☐	☒	17.104.070.A.16	Encroachments of below grade structures into required setbacks are subject to subsection 17.128.020.K of this title and shall not conflict with any applicable easements, existing underground structures, sensitive ecological areas, soil stability, drainage, other sections of this Code or other regulating codes such as adopted International Code Council Codes, or other site features concerning health, safety, and welfare.
			Findings	This standard is not applicable as the project does not propose below-grade structures that encroach into required setbacks.

City of Ketchum

Attachment G:

Zoning and Dimensional Standards Analysis

City of Ketchum
Planning & Building

219 Hillside Drive
COMPLIANCE WITH ZONING REGULATIONS

Compliance with Zoning and Dimensional Standards				
Compliant			Standards and Findings	
Yes	No	N/A	Ketchum Municipal Code	City Standards and Findings
☒	☐	☐	17.12.030	Minimum Lot Area
			Finding	**Required:** 9,000 square feet **Existing:** 111,849 square feet (2.57 acres)
☒	☐	☐	17.12.030	Building Coverage
			Finding	**Permitted:** 35% **Proposed:** 3.4% (3,745 square feet / 111,849 square feet lot area)
☒	☐	☐	17.12.030	Minimum Building Setbacks
			Finding	**Minimum Required Setbacks:** Front: 15' Side: > of 1' for every 2' in building height, or 10' (18' required) Rear: 20' **Proposed:** Front (Hillside Drive/south): 15' Side (east): 18.34' Side (west): 99.1' Rear (north): 477'
☒	☐	☐	17.12.030	Building Height
			Finding	**Maximum Permitted:** 35' (properties which step up or down hillsides may extend 5 feet above the maximum height permitted in the zoning district) **Proposed:** 36' – 8"
☒	☐	☐	17.125.030.H	Curb Cut
			Finding	**Permitted:** A total of 35% of the linear footage of any street frontage can be devoted to access off street parking. **Proposed:** 10% (20-foot-wide driveway/209.08 feet of property frontage along Hillside Drive). The curb cut calculation included both of the front lot lines of the property.
☒	☐	☐	17.125.020.A.2 & 17.125.050	Parking Spaces
			Finding	Off-street parking standards of this chapter apply to any new development and to any new established uses. **Required:**

				Residential (one family dwelling), in all applicable zoning districts require two parking spaces. Proposed: The project proposes two parking spaces within the enclosed garage.

City of Ketchum

Attachment H:

Conditional Use Permit Standards Analysis

City of Ketchum
Planning & Building

219 Hillside Drive

CONDITIONAL USE PERMIT CRITERIA

Conditional Use Requirements				
EVALUATION STANDARDS: 17.116.030 and § 67-6512 of Idaho Code A conditional use permit shall be granted by the commission only if the applicant demonstrates the following:				
Compliance and Analysis				
Yes	**No**	**N/A**	**City Code**	**City Standards and *Staff Comments***
☒	☐	☐	**17.116.030(A)**	**The characteristics of the conditional use will not be unreasonably incompatible with the types of uses permitted in the applicable zoning district.**
			Staff Comments	The project is proposing a conditional use avalanche retaining wall to the rear of the residence. The function of the conditional use avalanche wall is to protect the proposed structure, adjacent structures, and to prevent snow from sliding onto the Hillside Drive right-of-way. Staff finds the proposed conditional use avalanche protective structure for the project to be compatible with the zoning district, as other conditional use avalanche protective structures have been permitted on Hillside Drive and in the surrounding neighborhood.
☒	☐	☐	**17.116.030(B)**	**The conditional use will not materially endanger the health, safety and welfare of the community.**
			Staff Comments	As previously mentioned, the function of the conditional use avalanche wall is to protect the proposed structure, adjacent structures, and to prevent snow from sliding onto the Hillside Drive right-of-way. The applicant submitted a site-specific avalanche study and avalanche wall plans designed by a structural engineer to withstand the anticipated forces. The wall is located perpendicular to the projected avalanche flow to not deflect avalanches onto adjacent properties or damage/endanger persons or property in the vicinity of the project. Since the June 13th Planning & Zoning meeting, the applicant submitted revised civil plans which indicate the uphill grade north of the foundation has been lowered in order to expose more of the vertical foundation wall. The applicant also submitted a new north elevation architectural sheet to reflect the new exposed wall height. Previously, the maximum exposed height of the wall was three feet, and the revised plans indicate the maximum exposed height of the wall is five feet. This was done in an effort to increase avalanche

				safety to the proposed structure and surrounding properties by having a higher wall exposed to mitigate avalanche forces. However, as explained by Alpine Enterprises Inc. during the June 13th meeting, during this time of year much of the wall will be covered by snow on the ground. The entirety of the retaining wall (which is built vertically into the hillside), roof design, and regrading uphill above the wall are cohesive elements to the design which will protect the structure and adjacent structures from avalanche forces. In addition to the revised civil and architectural drawings, the applicant submitted a Snow Avalanche Hazard Evaluation clarification letter, dated June 3, 2023, produced by Alpine Enterprises Inc. which provides a detailed analysis of the methods used and findings in the site-specific avalanche report for the project. It presents three different avalanche scenarios which all indicate that the proposed development does not increase the danger to adjacent properties, compared to the existing danger if the development were not constructed.
☒	☐	☐	**17.116.030(C)**	**The conditional use is such that pedestrian and vehicular traffic associated with the use will not be hazardous or conflict with existing and anticipated traffic in the neighborhood.**
			Staff Comments	The proposed development is platted within the Warm Springs Valley Subdivision that was recorded in 1963. The subject property was identified as being within an Avalanche Zone by the City of Ketchum in 1979. The proposed conditional use avalanche protective wall will not be hazardous or conflict with existing and anticipated traffic in the neighborhood. A function of the avalanche protective wall is to act as a mitigation structure and prevent snow from sliding onto the Hillside Drive right-of-way.
☒	☐	☐	**17.116.030(D)**	**The conditional use will be supported by adequate public facilities or services and will not adversely affect public services to the surrounding area or conditions can be established to mitigate adverse impacts.**
			Staff Comments	As mentioned above, all departments have reviewed the proposed conditional use including streets, fire, water, wastewater, planning and engineering. The conditional use permit is for the structure's avalanche protective wall. Avalanche protective walls do not require public facilities or services.
☒	☐	☐	**17.116.030(E)**	**The conditional use is not in conflict with the policies of the Comprehensive Plan or the basic purposes of this section.**

			Staff Comments	The community's core values in the City of Ketchum's 2014 Comprehensive Plan include protecting the community character of Ketchum and preserving its environmental quality and scenic beauty. Ketchum's undeveloped hillsides are visual assets that define the character of our community. Protecting and preserving Ketchum's natural resources is critical to maintaining our economy, quality of life, and community identity. Staff believes that the goals and policies of the comprehensive plan related to hillside development are met with the proposed project as the single-family residence is within the list of primary uses anticipated in the future land use category and due to the location of the structure sited at the minimum front yard setback to cause minimal impact on the visual character of the hillside.

City of Ketchum

Attachment I:

June 13th, 2023, P&Z Staff Report

City of Ketchum
Planning & Building

STAFF REPORT
KETCHUM PLANNING AND ZONING COMMISSION
REGULAR MEETING OF JUNE 13, 2023

PROJECT:	Miller Residence
FILE NUMBER:	P22-046 and P22-046A
APPLICATION TYPE:	Mountain Overlay Design Review and Conditional Use Permit
REPRESENTATIVE:	Aaron Bunse – Studio DVLP, LLC (architect)
PROPERTY OWNER:	Paramount Property Development LLC
REQUEST:	Mountain Overlay Design Review application for the development of a new 3,745 square foot single-family residence. A Conditional Use Permit application is also requested for the avalanche retaining wall located at the rear of the proposed residence.
LOCATION:	219 Hillside Drive (Lot 9, Block 5, Warm Springs Valley Subdivision)
ZONING:	Limited Residential (LR) & Mountain Overlay (MO)
REVIEWER:	Paige Nied – Associate Planner
NOTICE:	A public hearing notice for the project was mailed to all owners of property within 300 feet of the project site and all political subdivisions on May 24, 2023. The public hearing notice was published in the Idaho Mountain Express on May 24, 2023. A notice was posted on the project site and the city's website on June 6, 2023. Story poles were documented on the project site as of June 6, 2023.

I. EXECUTIVE SUMMARY:

The applicant is proposing a new 3,745 square foot three-story single-family residence (the "project"), located at 219 Hillside Drive (the "subject property"). The project contains four bedrooms and an attached two car garage. The subject property is zoned Limited Residential (LR) in the Mountain Overlay District (MOD), and the lot is currently vacant. A rendering of the proposed residence can be seen in Figure 1 below.

Figure 1: Rendering of Proposed Project

Pursuant to Ketchum Municipal Code (KMC) §17.104.050.A, design review is required for the "construction or placement of new buildings or structures, including additions to any such structures or buildings existing at the effective date hereof, upon real property within the Mountain Overlay Zoning District." The project is subject to all Mountain Overlay design review criteria and standards specified in KMC §17.104.070 as well as all applicable design review standards specified in KMC §17.96.060.

Pursuant to KMC §17.92.010.D.2, the construction of avalanche protective, deflective and preventative structures "shall be permitted only as a conditional use." The proposed avalanche protective wall spanning the rear of the residence is subject to all applicable conditional use permit criteria specified in KMC §17.116.030.

Staff believes the project conforms to the zoning and dimensional standard requirements and the design review and Mountain Overlay design review criteria. Staff also finds the project to be in conformance with the conditional use permit criteria. Therefore, staff recommends approval of the Mountain Overlay design review and conditional use permit applications.

II. BACKGROUND:

The Planning and Building Department received the Mountain Overlay Design Review and Conditional Use Permit applications for the project on July 7, 2022. Following the receipt of the applications, staff routed the application materials to all city departments for review. The applications were reviewed concurrently, and the applications were deemed complete on May 19, 2023, after three rounds of review.

III. CONFORMANCE WITH ZONING AND DESIGN REVIEW STANDARDS:

Prior to granting Design Review approval, the Commission must determine that the application meets two criteria: (1) the project doesn't jeopardize the health, safety, or welfare of the public, and (2) the project conforms to all Design Review standards and zoning regulations (KMC §17.96.050.A).

Criteria #1: Health, Safety, and Welfare of the Public

The 2014 Comprehensive Plan contains the community's vision for Ketchum and sets goals and policies to guide future development. The vision is shaped by 10 core values identified by Ketchum residents as important to consider for all future land uses decisions. The community's core values include protecting the community character of Ketchum and preserving its environmental quality and scenic beauty. Ketchum's undeveloped hillsides are visual assets that define the character of our community. Protecting and preserving Ketchum's natural resources is critical to maintaining our economy, quality of life, and community identity. The comprehensive plan states:

> *Community Character: You know when you have entered Ketchum; this is a place centered on the "town" and identifiable from the "country" by distinct edges. Residents and visitors desire this clear division that has been lost in so many American cities through strip commercial development and sprawling residential subdivisions. Protecting and enhancing the visual character of our community gateways, the undeveloped hillsides, and night skies is a priority* (page 9).
>
> *Environmental Quality and Scenic Beauty: Ketchum's citizens place great value on the exceptional natural setting and resources of the Wood River Valley. The community is surrounded by rugged alpine peaks, forested and sage-covered open spaces, pristine wildlife habitat, and beautiful rivers and riparian areas. Key open spaces create visual buffers between the built and natural environment. Unobstructed views exist in every direction in large part due to Ketchum's wide streets and lack of hillside development. These environmental features and resources sustain our economy and are why many people choose to live in Ketchum. We will be excellent stewards of these resources in order to preserve them for the future* (page 10).

The comprehensive plan sets policies to guide land-use decisions and identifies the following objectives regarding hillside development:

- Policy OS-3.2: Establish and maintain open space buffers in important scenic areas to maintain the community's separate identity from surrounding communities and to protect views and open space.
- Goal CD-2: Protect and enhance views of the surrounding mountains and natural features.
- Policy CD-2.2: Continue to protect hillsides within the City and the Area of City Impact from further development. Enforce and encourage strengthening of the Mountain Overlay standards of the City and County, by using a variety of techniques; such as clustering at lower elevations, creating conservation easements, or purchasing private property on hillsides.
- Policy CD-2.4: Protect and incorporate natural features into newly developing areas. Conserve the natural patterns of streams, ridgelines, topography, riparian areas, and wildlife habitat areas.

The MOD ensures the preservation of Ketchum's surrounding hillsides and ridgelines and minimizes impacts on natural topography, geology, soils, drainage, wildlife, and native vegetation. The Mountain Overlay Design Review standards reduce visual impact by directing building sites away from higher elevations and keeping hillsides open and unobstructed. Additionally, MOD standards protect public health, safety, and welfare by ensuring the adequate provision of emergency services, fire protection, and utilities.

The comprehensive plan's future land use map identifies two different future land use designations for the property, the lower and upper portions of the property. The map designates the future land use for the downhill portion of the subject property as low-density residential. Desired primary uses within this future land use category include single-family and duplex residences as well as accessory units. The proposed single-family residence falls within the primary uses of the low-density residential land use category. Open space is identified as an appropriate secondary use that complements the low-density residential units. The uphill portion of the subject property is designated as open space, parks & recreation which does not encourage any development in that area of the property.

As previously mentioned, Policy CD-2.2 of the plan indicates that new development should be clustered at lower elevations to protect hillsides within the City. The proposed residence is sited at the lowest elevation within the low-density designation portion of the parcel and has the minimum required front yard setback. Despite this, the project will sit higher on the hillside than the adjacent properties due to the lot's configuration. To ease the proposed residence's visual impact, the landscape plan for the project flows harmoniously with the surrounding properties so the extent of the dividing line between development and the hillside doesn't appear to be significantly altered.

Staff believes that the goals and policies of the comprehensive plan related to hillside development are met with the proposed project as the single-family residence is within the list of primary uses anticipated in the future land use category and due to the location of the structure and the visual character of the hillside is not impacted.

Criteria #2: Applicable Standards and Criteria

Conformance with Design Review Improvements and Standards

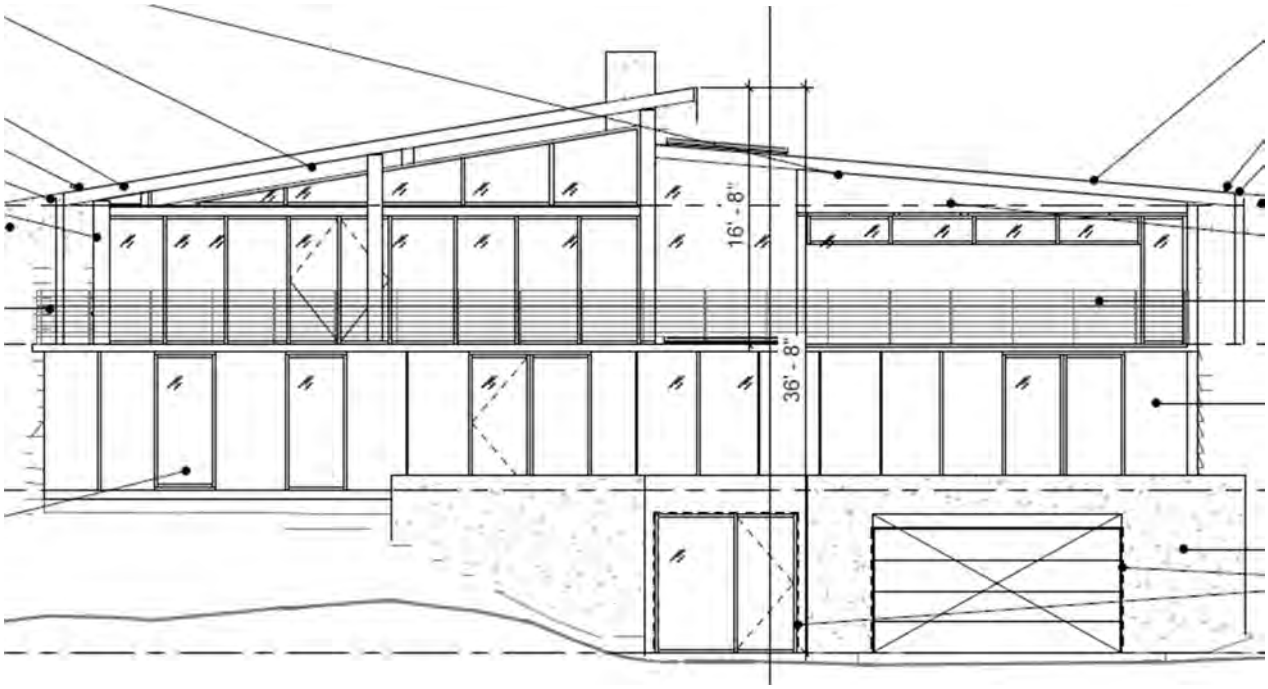
As the project is located in the MOD, the project is subject to both Mountain Overlay criteria outlined in 17.104.070 as well as Design Review criteria outlined in 17.96.060. During department review, city staff reviewed the project for conformance with all design review standards and required improvements specified in KMC §17.96.060. Additionally, staff reviewed the project for conformance with all city code requirements for right-of-way improvements, utilities, and drainage. Staff believes the project meets the design review standards. Please see Attachment E for staff's comprehensive design review standards analysis. Below is an overview of some of the more noteworthy design review criteria for the proposed project.

Compatibility of Design (KMC 17.96.060.E) and Architectural (KMC 17.96.060.F)

Pursuant to KMC §17.96.060.E.1, "The project's materials, colors and signing shall be complementary with the townscape, surrounding neighborhoods and adjoining structures." Hillside Drive features residences built at varying timeframes resulting in a diverse range of materials and architectural styles. This has resulted in mountain modern architectural styles (flat roofs, high percentage of glazing, and cold materials such as concrete and metal) mixed with older traditional styles (pitched roofs and warm materials such as wood and stone). The adjacent structure to the lookers right is three stories in height

and features a Santa Fe architectural style which has flat roofs with stucco and block forms. The structure to the lookers left is one story in height with pitched roofs and stucco and stone siding. The architectural style of the proposed residence is modern in nature; however, it is complementary of the newer and older residences of the neighborhood as it utilizes wood and steel siding, board formed concrete, large windows, and shed roofs sloped away from each other which presents as a pitched roof. Please see Figure 2 below for details on the proposed roof for the structure. Additionally, pursuant to KMC §17.96.060.F.2 & 5, "The building character shall be clearly defined by the use of architectural features" and "Buildings walls shall provide undulation/relief, thus reducing the appearance of bulk and flatness." The proposed residence is three stories in height and each floor of the structure is stepped back into the hillside, providing undulation and relief to reduce the appearance of bulk and flatness.

Figure 2: Project's Roof



Circulation Design (KMC 17.96.060.G)

Pursuant to KMC §17.96.060.G.5, "Unobstructed access shall be provided for emergency vehicles." The original plan set for the project included an 18-foot-wide driveway with a snowmelt system for the entirety of the driveway, including the portion within the public right-of-way. The Fire Department requires a 26-foot-wide aerial apparatus access road, or an approved automatic fire sprinkler system installed throughout the structure. The applicant revised the plans to include a 26-foot-wide driveway to meet the Fire Code aerial apparatus access road requirements. On April 3, 2023, the City Council determined that residential snowmelt systems within the public right-of-way hinder the City's ability to reach its sustainability goals and asserted that they will no longer approve of these encroachments, unless required by the Fire or Streets Department for nonconforming driveways. The Fire Department reviewed the revised plan set and determined that a snowmelt system is not required for the driveway of this project, as the fire apparatus access requirements have been met. The revised plan set removed the snowmelt system out of the Hillside Drive right-of-way.

Conformance with Mountain Overlay Standards

Staff believes the Mountain Overlay Design Review criteria outlined in KMC §17.104.060 has been met. Please see Attachment F for staff's comprehensive Mountain Overlay Design Review standards analysis. Below is an overview of some of the more noteworthy criteria for the project.

The following Mountain Overlay Design Review Criteria are all related to conformance with fire code and driveway access requirements for emergency vehicles:

3. Driveway standards as well as other applicable standards contained in title 12, chapter 12.04 of this Code shall be met;
4. All development shall have access for fire and other emergency vehicles to within 150 feet of the furthest exterior wall of any building;
6. International Building Code (IBC) and International Fire Code (IFC) and Ketchum Fire Department requirements shall be met;

As mentioned above under Circulation Design, the Fire Department has reviewed the project for compliance and found that the project meets all fire code requirements. Final review for fire code compliance will take place at time of building permit.

Mountain Overlay Design Review criteria #10 states, "Are there other sites on the parcel more suitable for the proposed development in order to carry out the purposes of this section." Purposes of the MOD include directing buildings away from higher elevations and minimizing the visual impact of building sites and access drives that are significantly higher than the vast majority of building sites in Ketchum. Due to the lot's configuration, the proposed residence will sit higher on the hillside than the adjacent properties. However, the proposed development meets criteria #10 because the residence is sited at the lower elevation of the lot and has the minimum required front yard setback of 15 feet. The proposed landscaping for the project will further help to ease the visual impact of the structure and the access drive from Hillside Drive with the addition of new trees and shrubs.

Lastly, as previously mentioned, Criteria #10 relates to the strategic, suitable siting of proposed developments on hillside lots to meet the purposes of the MOD section. Criteria #14 reads, "Excavations, fills and vegetation disturbance on hillsides not associated with the building construction shall be minimized". The original plan set submitted for the project included a hot tub on the west side of the residence, which extended the avalanche protective wall beyond the building's construction and thus further disturbing the hillside. Staff had concerns regarding the hot tub due to the increased disturbance of the hillside as a hot tub is not associated with the building's construction and its location in the avalanche path. Staff believed there to be more suitable locations for the hot tub on the site. Therefore, recommended the hot tub be relocated to a more suitable down slope location to minimize excavation into the hillside and for the safety of the property owners. The applicant revised the plan set to locate the hot tub on the second story deck and reduce the western extension of the avalanche retaining wall to be closer to the structure. The hot tub is now located in a more suitable location as it is more snug to the proposed building construction which minimizes the limits of disturbance to the hillside.

Conformance with Zoning Regulations

During city department review, planning staff reviewed the project for conformance with all applicable zoning code requirements including permitted uses, dimensional limitations, parking, development standards, and dark skies. Staff believes the project complies with all zoning code regulations and

dimensional standards required in the LR Zone. Comprehensive analysis of the project's conformance with zoning code requirements and dimensional standards is provided in Attachment G. Below is a detailed overview of the project's front setback, which is unique because the lot has two front lot lines.

Setbacks

The KMC defines minimum setbacks for the front, side, and rear lot lines for each project. The KMC defines the "lot line, front" as "The property line dividing a lot from a street. On a corner lot, only one street line shall be considered as a front line, and the shorter street frontage shall be considered the front line, unless otherwise determined by the administrator based on the orientation and layout of the lot and surrounding neighborhood." There are two front lot lines for the subject property. The lot is situated behind two existing single-family homes and is uniquely shaped with a narrow entrance between the two lots to access the subject property. The proposed residence is setback 15 feet from the longer of the two front lot lines, which is setback at the lowest possible elevation. Please see Figure 3 below which outlines the two front lot lines and front yard setback in red.

Figure 3: Project's Front Lot Lines and Front Setback

IV. CONFORMANCE WITH CONDITIONAL USE PERMIT STANDARDS

The Hillside Drive neighborhood is within the blue and red avalanche zones. New buildings within the Avalanche Zone District must meet the standards and comply with certain restrictions specified in KMC §17.92.010. New construction in the Avalanche Zone must be certified by an engineer licensed in the State of Idaho certifying that the proposed construction, as designed, will withstand the avalanche

forces specific to the development site (KMC §17.92.010.D.3). Avalanche structures or earthwork that threaten to deflect avalanches toward the property of others or otherwise threaten to increase the danger to persons or property are prohibited (KMC §17.92.010.D.2). Avalanche attenuation and protective structures require the review and approval of a Conditional Use Permit. Staff believes the project complies with the Conditional Use Permit criteria outlined in KMC §17.116.030. Please see Attachment H for staff's comprehensive Conditional Use Permit standards analysis. Below is an overview of some of the more noteworthy criteria for the project.

Criteria A of the Conditional Use Permit standards requires that the characteristics of the conditional use are compatible with the types of uses permitted in the applicable zoning district. The project is proposing a conditional use avalanche retaining wall to the rear of the residence. The function of the conditional use avalanche wall is to protect the proposed structure, adjacent structures, and to prevent snow from sliding onto the Hillside Drive right-of-way. Staff finds the proposed conditional use avalanche protective structure for the project to be compatible with the zoning district, as other conditional use avalanche protective structures have been permitted on Hillside Drive and in the surrounding neighborhood.

Criteria B of the Conditional Use Permit standards stipulates that the conditional use will not materially endanger the health, safety and welfare of the community. As previously mentioned, the function of the conditional use avalanche wall is to protect the proposed structure, adjacent structures, and to prevent snow from sliding onto the Hillside Drive right-of-way. The applicant submitted a site-specific avalanche study and avalanche wall plans designed by a structural engineer to withstand the anticipated forces. The wall is located perpendicular to the projected avalanche flow to not deflect avalanches onto adjacent properties or damage/endanger persons or property in the vicinity of the project. Upon review of the submitted material, staff believes the proposed avalanche wall meets Conditional Use Permit criteria B.

STAFF RECOMMENDATION

Staff recommends **approval** of the Design Review application (File No. P22-046) subject to the following conditions:

1. This Design Review approval is based on the project plans presented at the June 13, 2023, Planning and Zoning Commission meeting. The project plans for all on-site improvements submitted for the building permit must conform to the approved design review plans unless otherwise approved in writing by the Planning and Zoning Commission or Administrator. Any building or site discrepancies which do not conform to the approved plans will be subject to review by the Commission and/or removal.
2. The applicant shall submit final civil drawings prepared by an engineer registered in the State of Idaho which include specifications for right-of-way, circulation design, utilities, and drainage improvements for review and approval by the City Engineer, Streets, and Utilities departments prior to issuance of a building permit for the project.
3. The term of Design Review approval shall be twelve (12) months from the date that the Findings of Fact, Conclusions of Law, and Decision are adopted by the Commission or upon appeal, the date the approval is granted by the Council subject to changes in zoning regulations.
4. In addition to the requirements set forth in this Design Review approval, this project shall comply with all applicable local, state, and federal laws.

Staff recommends **approval** of the Conditional Use Permit application (File No. P22-046A) subject to the following conditions:

1. This conditional use permit approval is based on the project plans presented at the June 13, 2023, Planning and Zoning Commission meeting. Building Permit Plans must conform to the approved plans unless otherwise approved in writing by the Commission or the Planning and Zoning Administrator. Any building or site discrepancies which do not conform to the approved plans will be subject to removal.
2. This Conditional Use Permit is not transferable from one parcel of land to another.
3. The conditional use permit is subject to all conditions of approval associated with Design Review approval P22-046.
4. The term of this Conditional Use Permit shall be that of Design Review approval P22-046. In the event the Design Review approval expires, this Conditional Use Permit approval shall also expire and become null and void.

V. RECOMMENDED MOTIONS

Design Review:
"I move to approve the 219 Hillside Drive Mountain Overlay Design Review application, as conditioned, and direct staff to return with the findings of fact."

Conditional Use Permit:
"I move to approve the 219 Hillside Drive Conditional Use Permit application, as conditioned, and direct staff to return with the findings of fact."

ATTACHMENTS:

A. Mountain Overlay Design Review - Application Materials and Supplemental Documents
B. Mountain Overlay Design Review Plan Set
C. Conditional Use Permit – Application Materials and Supplemental Documents
D. Conditional Use Permit Plan Set
E. Design Review Standards Analysis
F. Mountain Overlay Design Review Standards Analysis
G. Zoning and Dimensional Standards Analysis
H. Conditional Use Permit Criteria Analysis
I. Public Comment

City of Ketchum

Attachment J:

New Public Comment

July 3, 2023

To:
Public comment @Ketchum Planning and Zoning Department
CC:
Mayor Neil Bradshaw

From:
Mark and Ellie Gilbreath
223 Hillside Dr

We are writing to formally register our serious concerns about the proposed residential development 219 Hillside Dr in the red avalanche zone in Warm Springs.

Summary assertions:

- **The development site at 219 Hillside is unsafe for residential development as proposed.**
- **The proposed project will in fact increase the risk of property loss and personal injury for neighboring properties.**
- **The snow avalanche hazard analysis for the proposed project falls short of current norms and fails to consider the true risk to both the subject development and the existing adjacent homes.**
- **In approving the project, the City of Ketchum will be assuming significant legal liability.**

Background:

We attended the Planning and Zoning meeting on June 13th during which P&Z staff summarized the findings and their recommendation for approval of the project and during which testimony was heard from the developer, Kyle Miller as well as representatives associated with the development project including Bruce Smith and Alex Nelson of Alpine Enterprises Inc (AEI)

During the meeting, public comments were provided by multiple members of the neighborhood, including every existing homeowner who is either directly adjacent or downslope from the proposed project, all expressing concern about the potential health and safety risks posed to adjacent existing residents.

Given the unresolved health and life safety risks of this project, we reached out to multiple acknowledged avalanche experts in North America, including David Hamre (Avalanche Safety Associates) and Alan Jones (Dynamic Avalanche Consulting Ltd). Both expressed concerns.

Associates) and Alan Jones (Dynamic Avalanche Consulting Ltd). Both expressed concerns. After reviewing the 219 Hillside development proposal and viewing the recording of the June 13 P&Z meeting, David Hamre, operating in an unpaid, pro bono capacity provided the attached letter (attachment A) expressing his multiple concerns about the proposed project and asked that it be shared with the P&Z and the community at large.

Supporting evidence to summary assertions:

Assertion: The development site at 219 Hillside is unsuitable for residential development as proposed.

This lot is highly unique and controversial. It is the only instance in Ketchum or Blaine County of a "flag lot" in a red avalanche zone with an existing downslope home.

In its revised letter to the Ketchum P&Z dated June 23, AEI acknowledges the hazards of building in high avalanche areas and the unsuitability of the proposed site.

> ***"Development within high avalanche hazard areas is prohibited in virtually every other municipality that possesses a fundamental understanding of avalanche dangers …past recklessness has set a dangerous standard"*** *- AEI*

> ***"this Lot would not be permitted under the current Ketchum Municipal Code Subdivision Ordinances"*** *- AEI*

Moreover, while permissible in Ketchum with strict design requirements, and demonstrated safety precautions including no snow diversion, development in any red avalanche zone is expressly prohibited in surrounding areas of Blaine County and in most other mountain communities.

Ketchum municipal code is very clear with regards to the parameters for any new development project in an avalanche zone.

> ***Avalanche protective, deflective and preventative structures, devices or earthwork <u>which threaten to deflect avalanches toward property of others</u> or <u>otherwise threaten to increase the danger to persons or property, are prohibited</u>.*** **- Ketchum Municipal Code 17.92.010.D.2**

AEI's own testimony states that the proposed project will in fact increase the risk of property loss and personal injury for neighboring properties.

> **"The 'ski jump' concerns presented at the June 13th, 2023 Planning and Zoning Commission meeting would be valid for a significantly larger avalanche path with higher flow velocities…".** - AEI letter June 23
>
> ***"The proposed structure does have the potential to project runout debris into the air and act as a 'ski jump'... in this situation the debris… will land within the boundary of the subject property[1]."*** - AEI letter June 23
>
> 1. (eg the downslope, directly adjacent home and property of Kevin Moss)

The use of 300 yr models in snow avalanche hazard analysis for the proposed project falls short of current norms and fails to consider the true risk to both the subject development and the existing adjacent homes.

Multiple recent scientific studies document evidence that snowfall and avalanche activity have increased in North American mountain areas in recent decades.

> "Avalanche Hazards and Climate Change in the Canadian Rockies" by Whiteman, et al. (2013). This study found that avalanche activity in the Canadian Rockies has increased in recent decades, and that this trend is likely to continue due to climate change.
>
> - "Snowfall and Avalanche Activity in the Cascade Mountains of the United States" by Mote, et al. (2014). This study found that snowfall and avalanche activity in the Cascade Mountains of the United States have increased in recent decades, and that this trend is likely to continue due to climate change.
> - "Avalanche Hazards and Climate Change in the Sierra Nevada of California" by Saari, et al. (2015). This study found that avalanche activity in the Sierra Nevada of California has increased in recent decades, and that this trend is likely to continue due to climate change.
>
> These studies all found that snowfall and avalanche activity in North American mountain areas has increased in recent decades. This is due to changing weather patterns, causing temperatures to rise and snowpack to become more

variable. As a result, avalanches are becoming more frequent and more severe, and they are posing a greater risk to communities in the mountains.

References:

- Whiteman, G., Stewart, J. M., & Brown, J. (2013). Avalanche hazards and climate change in the Canadian Rockies. Natural Hazards, 67(3), 1513-1534.
- Mote, P. W., Hamlet, A. F., & Hamlet, N. (2014). Snowfall and avalanche activity in the Cascade Mountains of the United States. Journal of Climate, 27(1), 245-263.
- Saari, G. W., Mote, P. W., & Hamlet, N. (2015). Avalanche hazards and climate change in the Sierra Nevada of California. Journal of Geophysical Research: Atmospheres, 120(12), 5628-5644.

Planning and zoning departments across the Rocky Mountain West have abandoned 300 year planning models due to the increasing frequency of extreme weather events due to climate change.

- "Park City Abandons 300-Year Floodplain Model" (The Salt Lake Tribune, 2019). This article discusses how Park City's planning and zoning department has abandoned the use of a 300-year floodplain model in favor of a more dynamic model that takes into account the increasing frequency and severity of floods.
- "Vail Resorts to Abandon 300-Year Planning Model" (Vail Daily, 2019). This article discusses how Vail Resorts has announced that it will no longer use a 300-year planning model in its development decisions.
- "Aspen Abandons 300-Year Planning Model" (The Aspen Times, 2019). This article discusses how Aspen's planning and zoning department has abandoned the use of a 300-year planning model in favor of a more dynamic model that takes into account the increasing frequency and severity of extreme weather events.
- "Jackson Hole Abandons 300-Year Planning Model" (Jackson Hole News & Guide, 2019). This article discusses how Jackson Hole's planning and zoning department has abandoned the use of a 300-year planning model in favor of a more dynamic model that takes into account the increasing frequency and severity of extreme weather events.

The avalanche risk analysis conducted by AEI for the 219 Hillside project and presented for approval by Ketchum P&Z staff was modeled using a now outdated 300 year model.

> ***"All of the Avalanche Studies performed by Alpine Enterprises Inc. use a 300-year design event"*** - AEI letter June 23

The avalanche risk analysis conducted by AEI used only a wet snow avalanche event assumption.

Dry snow avalanches are known to move at dramatically higher speeds with much higher impact forces. David Hamre and the Sawtooth Avalanche Center agree that a dry snow avalanche assumption with greater snow depth and design loads should have been modeled.

> **"We talked with Scott Savage, the Director of the Sawtooth Avalanche Center, who states that the design load is more likely in the 1.5 to 2 meters range for fracture depth and would likely be dry snow. "** - David Hamre & Associates, Avalanche Safety

In approving the project, the City of Ketchum will be assuming significant legal liability.

> Multiple residents in harm's way have expressed their concern about the proposed project. The avalanche hazard assessment was insufficient. Consulted avalanche experts believe the project should be reevaluated.
>
> **"The statement by Alex Larson that he is 100% certain that an avalanche would not overtop this building and end up in the street or adjacent properties is a challenging assertion. Long-time avalanche practitioners in the field tend to stay away from these kinds of absolutes because they have seen flow behaviors that have exceeded their expectations."** - David Hamre & Associates, Avalanche Safety

Thank you for your consideration on this urgent matter.

Sincerely
Mark and Ellie Gilbreath

Attachment A

letter from David Hamre Associates

David Hamre and Associates, LLC
Anchorage, AK

Subject: 219 Hillside Drive, Sun Valley, ID

June 23, 2023

To Whom It May Concern,

A resident [redacted] David Hamre and Associates to review the public information packet provided on the above property. We also spot-checked the transcript of the public hearing for this property. This letter is [redacted]n partially in support of that request, and the request is generated by the unusual nature of approving a residential structure in an avalanche Red Zone. We also use it to illustrate the challenges of deriving a suitable approach in the face of conflicting information.

This is a fairly cursory level review of information, so our conclusions could be modified with additional relevant information. We believe the avalanche analysis on this property warrants further review. As evidence of this, we would like to present the following potential issues:

1. We can't be sure of the model used to derive the impact values. Using at least two different models is advised in case the chosen input values are incorrect.
2. We talked with Scott Savage, the Director of the Sawtooth Avalanche Center, who states that the design load is more likely in the 1.5 to 2 meters range for fracture depth and would likely be dry snow. There may be solid reasons why the lower fracture sizes were chosen, but this is not apparent.
3. Since dry snow travels much faster than wet snow, it typically creates larger impact pressures. It also doesn't slow down and get pushed around by terrain or structural features as readily. It stands to reason that if the building roof acts more like a snowshed and the retaining wall is short, it would be easily overtopped in a dry snow avalanche, with snow launching off the downhill end of the roof and into the street and downhill

buildings. However, the relatively small vertical drop may not support these kinds of velocities. An argument was made that this may not be any worse than the current situation, but in the event of a large avalanche, the presence of a building uphill is very likely to create controversy and could result in legal action.

4. The engineering design appears to assume that the rear wall is high enough to resist the design avalanche impact forces with the dead load and shear force considered in the roof design. While we do not know that this is true, the reality is that the flow height of a design magnitude avalanche is likely much higher than the retaining wall. For that reason, the roof will deflect a significant portion of the impact loads, approximately 30 degrees or more. This can be easily seen in the West Elevation of the document on packet page 73. This may not be included in the engineering calculations.

5. As stated by the engineer, the lateral deflection of avalanche debris from the shallow angle change of the two roofs separated by a ridge would likely be small, but it could be a cumulative load. These forces can be calculated by an avalanche engineer who is specialized in performing these calculations.

6. The statement by Alex Larson that he is 100% certain that an avalanche would not overtop this building and end up in the street or adjacent properties is a challenging assertion. Long-time avalanche practitioners in the field tend to stay away from these kinds of absolutes because they have seen flow behaviors that have exceeded their expectations. If this design was going to positively stop the flow, then that might change the zoning map and move the adjacent properties out of the Blue Zone. In our opinion, a proponent that is going to propose an action that affects avalanche flows in a Red Zone should be tasked with the concept of showing how their action might change the boundaries of the avalanche zoning.

7. The very clear line in the Red Zone/Blue Zone interface is the point that typically sees large avalanches once every 30 years with impact pressures higher than 600 PSF. The loads are higher as you move uphill. These forces are difficult but not impossible to calculate, and the work involved is specialized. It typically takes years of experience and training to understand the dynamics of large avalanches. Very few people in North America can reasonably do these calculations. There is a recent trend to rely on a Swiss computer model for the engineering output of avalanche forces. As with all models, if you feed the model bad data, that's what you will get back out of it.

8. This specific property highlights the urgency behind Ketchum and surrounding areas to address a range of avalanche issues again, including zoning. The work of Art Mears from the 1980s has been shown by time to be relatively accurate. An example of the robust nature of Mears' work is provided in the following photo from Conundrum Creek, Colorado, and is self-explanatory.

We have pointed out some issues that we believe were not adequately addressed, but it's also possible that we are incorrect in our cursory review. While the people involved may change, the mountains won't. Once a house is built in a Red Zone, it becomes a perpetual concern. That is why most jurisdictions don't allow construction in a Red Zone. The impacts are much greater than just that house or the immediate neighborhood, particularly in a bad avalanche year where many large avalanches might occur in a short period. The issues involved include but are broader than the potential impacts on a neighborhood and tend to include road safety and involvement of EMS services. Therefore, we hope that this simple property review can serve as a catalyst for the community to take a more proactive approach to residential avalanche safety.

Sincerely,

David Hamre
Avalanche Consultant
David Hamre and Associates, LLC
907-223-9590

City of Ketchum

Attachment K:

Public Comment From June 13th, 2023, P&Z Meeting

219 Hillside Drive Miller Residence/ Lot 9 Block 5 Warm Springs Valley Subdivision. Submission for the 6-13-23 P&Z Meeting

Avalanche Hazard

"The goal was to keep the proposed structure and the surrounding property as safe as possible while still maintaining the Owners vision for their property. Important aspects of the design that were implemented were to be deflection neutral and to not increase danger to neighboring persons or property. The design also adds a significant element of safety to the existing down path residences which were developed without avalanche protection. The proposed structure was oriented perpendicular to the avalanche flow direction in order to minimize avalanche runout deflection towards the property of others. Any snow momentarily deflected by the protection wall/structure will be immediately entrained by the rest of the slide as it passes by ensuring there will not be increased risks to neighboring properties."

I previously submitted excerpts from the avalanche study authored by Art Mears in 1978, which is referenced in Ketchum Municipal Code, detailing the increased avalanche hazard that may result from lofting snow when an avalanche overtops a resistive structure. The proposed house would be a perfect ski jump to produce exactly this effect, but we are being told that an avalanche will magically be stopped when it encounters the proposed structure, which will add a significant element of safety to the existing down path residences. I don't buy that.

Not only does the design not add a significant element of safety to the existing down path residences, it increases the hazard by creating a ramp 37' high above grade on the south end, and perhaps another 10' higher relative to the property immediately below, which will loft any avalanche into the air, which is known to increase the destructive effects of an avalanche.

It should be noted that along Sage Road farther west, there are places where the topography and the length of the potential slide path is quite similar to this Lot 9, and the structures built on the south side of Sage Road were required to have avalanche walls or berms, with reinforced roofs, but with respect to this project we are being told that an avalanche will not negatively affect the down path structures, let alone reach Hillside Drive. I disagree.

Due to the short time period available to review the application, which was apparently available online only last Thursday, of which I was made aware on Saturday, it is only fair to continue this hearing to allow sufficient time, for those of us who so wish, to reach and engage our own avalanche experts to review this application.

Regarding access off Hillside Drive.

From page 12: "The KMC defines the "lot line, front" as "The property line dividing a lot from a street." And "There are two front lot lines for the subject property."

This latter statement is incorrect because by definition there is only one front lot line. The long east-west lot line directly above the house at 215 Hillside, lot 8, does not divide lot 9 from a street, it divides lot 9 from lot 8 below. The only lot line that meets the definition of a front lot line is the one immediately adjacent to Hillside Drive, measuring 41.09 feet in length.

17.125.030 H
Street frontage. A maximum of 35 percent of the linear footage of any street frontage may be devoted to access off street parking. Corner lots that front two or more streets may select either or both streets as access but shall still not devote more than 35 percent of the total linear footage of street frontage to access off street parking.

Therefore, the maximum allowable driveway width is 35% of 41.09', which is 14.38'.

From page 10 Circulation Design:

"The Fire Department requires a 26-foot-wide aerial apparatus access road, or an approved automatic fire sprinkler system installed throughout the structure. The applicant revised the plans to include a 26-foot-wide driveway to meet the Fire Code aerial apparatus access road requirements."

26' exceeds the allowable driveway width of 14.38', so the fire department requirement cannot be met.

Pages 77-87 Lighting Plan. The plan on page 76 shows ten fixtures designated as L-3 mounted on the underside of the roof overhang over the outdoor terrace. Page 79 shows the pendant fixture designated as L-3 on the plan. The Dark Sky Ordinance requires that the light source on exterior fixtures be fully shielded, but regardless of the manufacturer's statement as to dark sky compliance, when mounted on the underside of the roof at a considerable height above the adjacent property below, it is doubtful that the light source will be fully shielded. Please address this possibility if approving this project.

Pages 114-137 Engineering designated for 213 Hillside Drive. This project is located at 219 Hillside Drive, thus this engineering is valid. While this is an easy mistake to make, and easy to correct, these are legal documents that must be correct before any approval can occur.

Concerns about possible additional improvements in the future.
Page 9, second paragraph:
"Open space is identified as an appropriate secondary use that complements the low-density residential units. The uphill portion of the subject property is designated as open space, parks & recreation which does not encourage any development in that area of the property."

Page 152 17.104.070.A.14
Excavations, fills and vegetation disturbance on hillsides not associated with the building construction shall be minimized.

Under the provisions of the Mountain Overly Zone, I would ask that any approval of this project permanently prohibit any further disturbance to the native vegetation, or improvements outside the designated undisturbed area on the plan (page 53), both to the west of the house as well to the portion of the lot uphill from the house. No shed, no garden, no greenhouse, no swimming pool, no pickle ball court, nothing. If approved and built as proposed, enough damage will have already been done to the hillside by this project, so designate the entire remainder of the lot as
open space in perpetuity.

William Glenn
207 Hillside Drive
213 Hillside Drive

From:	Participate
To:	Heather Nicolai
Subject:	FW: Miller Residence Overlay Review 6/13
Date:	Monday, June 12, 2023 10:40:13 AM
Attachments:	Screenshot 2023-06-12 at 8.26.46 AM.png Screenshot 2023-06-12 at 8.26.24 AM.png

Public comment.

LISA ENOURATO | CITY OF KETCHUM

Public Affairs & Administrative Services Manager

P.O. Box 2315 | 191 Fifth St. W. | Ketchum, ID 83340

o: 208.726.7803 | f: 208.726.7812

lenourato@ketchumidaho.org | www.ketchumidaho.org

From: andy luhn <andyluhn@gmail.com>
Sent: Monday, June 12, 2023 10:37 AM
To: Participate <participate@ketchumidaho.org>; Matt Luhn <deepestpow@gmail.com>
Subject: Miller Residence Overlay Review 6/13

Hi City P&Z,

These are comments/questions we have for tomorrow's meeting on the Miller Residence/Mountian Overlay Review.

My name is Andy Luhn. I own 216 Hillside Drive with my brother Matt Luhn.

Our property line is +/- **90ft** away from From Millers:

Front door from our house to front door of Millers is +/- **230ft** away:

I have read 172 pages of the Agenda packet. None of the engineering & survey reports, nor the avalanche research specifically addresses or includes the impact this project will have on our property and our adjoining neighbors. Our properties aren't included in any maps or sketches as well. Again, we are 90ft away.

While we are not adjoining to Miller, we are impacted in all ways with anything that does or doesn't happen with 219/Miller's hillside.

Regarding avalanche risk 213 (Glenn) and 215 (Moss) are sadly natural barricades that would help block debris. Putting a house just above them is like putting in a Nordic Jump that would potentially launch debris over 213/215 and put the landing zone right in the middle of of our living room.

In a letter (page 99) EHM Engineers states their structural design and debris flow predictions are based on a report by Alpine Enterprises.

Alpine is the land surveyor. Are they certified by the state of Idaho or the City of Ketchum to provide valid data, calculations, recommendations and data for structural engineers and architects to use in their designs?

Are there any reports or studies that include our property but were omitted from the packet? If so could you point me to them.

Thanks for your consideration and I would appreciate if you could potentially address any of the above at the meeting.

Thanks,

Andy Luhn
216 Hillside Drive

From:	Bill Glenn
To:	Participate
Subject:	219 Hillside Drive Miller Residence/Lot 9 Block 5 Warm Springs Valley Subdivision
Date:	Tuesday, June 6, 2023 4:08:55 PM

Warm Springs Valley Subdivision was platted in 1963 with little regard to topography and little in the way covenants of any consequence. However, by the mid-1970's, the community became concerned with the avalanche hazard to the properties located on and below the south-facing slopes in Warm Springs. A little later on, the community resolved to restrict building on hillsides in excess of a 25% slope, due to both aesthetic considerations and avalanche risk. These community concerns were codified with the enactment of the Avalanche Ordinance and the Mountain Overlay Ordinance.

The avalanche ordinance states, "It is recommended that said studies be examined prior to purchase, development, construction or use of land located within the Avalanche Zone."

Both these studies, the first by Norm Wilson in 1977, and the second by Art Mears in 1978, compare favorably with one another, and each outlines the avalanche risk, from a high-risk red zone, to a moderate-risk blue zone, and a low-risk yellow zone. The subject property is entirely within the high-risk red zone, and except for a small portion, is entirely at a slope of greater than 25%.

Art Mears, the author of the 1978 study, is considered to be the preeminent avalanche expert in the United States. He has a B.S in Civil Engineering and an M.S. in Geology from the University of Colorado. Mr. Mears has been an avalanche consultant on over 1000 projects in 9 states and 8 countries. He has published over 35 technical and research papers and works with international colleagues from Canada, Switzerland, Norway, and Austria.

With respect to engineered structures designed to deflect or stop moving avalanches, Mr. Mears explains in his avalanche study that in order for this to be an effective defense, it is imperative that advance planning consider the best location for the deflected snow and development take place well outside of these areas. This requirement may present serious problems when land has already been subdivided into lots and sold. Furthermore, the location, length, orientation, height, and the strength of these structures must be carefully designed by taking into consideration the topography, the avalanche velocity, and the avalanche dynamic pressures. Haphazard placement and sizing of these structures may even increase the hazard to adjacent buildings by causing avalanches to be deflected into the air after structures have been overtopped by fast-moving snow.

The long avalanche-protective wall along the north side of the proposed residence is likely to do just what is described above in the event of an avalanche. When overtopped, it will loft the snow into the air, with the area of deposition being the two houses immediately below the proposed residence, both of which were built in the 1960's and neither of which was designed to resist an avalanche. Subjecting the occupants of the two adjacent properties to such a hazard simply cannot be allowed

to happen.

All along Sage Road, Huffman Drive, and Hillside Drive, the existing houses on the north side of the street front on their respective streets. Should an avalanche overtop one of these houses and loft the snow into the air, there is a thirty-foot setback to the street out front, a fifty-foot wide street, and then additional setbacks across the street. Further, many of the houses on the south side of the street are newer and have avalanche protective berms and concrete construction. While there is no guarantee that this separation would be adequate in the event of an avalanche overtopping one of the houses on the north side of the street, having no separation from the two existing houses immediately below this proposed development is a recipe for disaster. A situation such as this does not seem to exist anywhere else in Ketchum and cannot be allowed to exist here.

There are numerous issues with respect to the Mountain Overlay Zone, but since this development, as proposed, should not move forward based solely on the increased avalanche hazard to the houses below, comments with respect to the Mountain Overlay are, for the time being, reserved.

William Glenn
207 Hillside Drive & 213 Hillside Drive

P.S. When this statement was written, details about this proposed residence were not available at the URL noted on the Notice of Public Hearing.

From: Kevin Moss
To: Participate
Subject: FW: Ketchum public hearing for 219 Hillside
Date: Tuesday, June 6, 2023 4:53:45 PM

To the City of Ketchum Planning and Zoning Commission,

As a resident of 215 Hillside Drive, I have some very strong concerns of Avalanche diversions and changes directly above our Residence. The lot at 219 Hillside is directly vertical from our lot, therefore, our Avalanche concerns should be warranted by the slope of the lot above us. Enclosed are photos of the topographic map for neighbor Bill Glenn. This map is of the adjacent lot bordering west of 219 Hillside. The south west corner of 219 represents ~5865' elevation and the top northwest corner of the 219 lot is ~6215' elevation over the horizontal distance of 616.27' for the western border. This slope percentage is beyond the 25% slope parameter of building.

(6215' – 5865')/616.27' **= 56.8% Slope**

This slope does exceed most safe building criteria and enters into a dangerous and extreme slope percentage!

Please, feel free to climb up this lot to verify my concerns for our safety.

Respectfully,
Kevin D Moss
215 Hillside

From: Kevin Moss <kevin@mossgreenhouses.com>
Sent: Tuesday, June 6, 2023 4:03 PM
To: Kevin Moss <kevin@mossgreenhouses.com>
Subject: Ketchum public hearing for 219 Hillside

N 88°03'47" W 105.42'
N 88°52'35" W 100.00'
S 00°30'01" E 603.66'
N 00°04'43" E 575.50'
S 00°10'20" E 616.27'
LOT 2
Lot 3
Lot 6
LOT 9
CD N 75°30'00" E
T 328.40'
R 50.05'
L 142.09'
LC 98.95'
OPE LINE
Calc'd Cor
CD S 07°12'59" W
T 28.11'
R 52.33'
L 51.58'
LC 49.52'
CD N 51°25'25" E
T 13.62'
R 46.28'
L 26.49'
LC 26.13'
S 86°40'03" E
3.51'
N 74°45'25" E
7.00'
Power Pole
N 78°07'06" E
60.95'
Willow
S 78°07'06" W
44.00'
N 78°07'06" E
47.67'
21.33'
S 53°26'11" E
Power Pole & Box
Milazzo Cap
ONWOOD DRIVE
Gravel
49.80'
N 67°18'19" E
Tele Pedestal
Birch
Crab Apple
Aspens
Fnd PK Top of Fence
N 37°37'46" W 145.70'
EL 5861.06'
EL 5861'
Lot 5
Exist House
Exist House
LOT 4
Driveway
Fnd Al. cap witness corner 4' to corner
Irrigation box
S 74°33'13" W
89.74'
S 21°30'02" E 132.82'
EL 5861.05'
Exist Garage
EL 5860.84'
Lot 7
S 11°38'29" E 131.11'
Ash
EL 5860.55'
S 78°13'07" W
67.44'
EL 5860.04'
Sewer MH
EOA
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DRIVE
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LEG

Notes:
1. Bearings and distan
in the field based on
Warm Springs Valley

2. This map is not
locations are based
a full and detailed

3. The basis of ele
located on the no
The ASSUMED ELE

TOPOGRAPHIC MAP
FOR
WILLIAM GLENN
Located in a Portion of
the SE1/4 of Section 11, T.4.N., R.17E., B.M.
Blaine County, Idaho

EQUINOX INC.

Land Surveyors and Mapping Specialists

Ketchum ***(208) 726-8200*** ***Idaho***

SCALE	DATE	DWG. NO.	SHT.	OF
1"=40'	1998	BGLENN	1	1

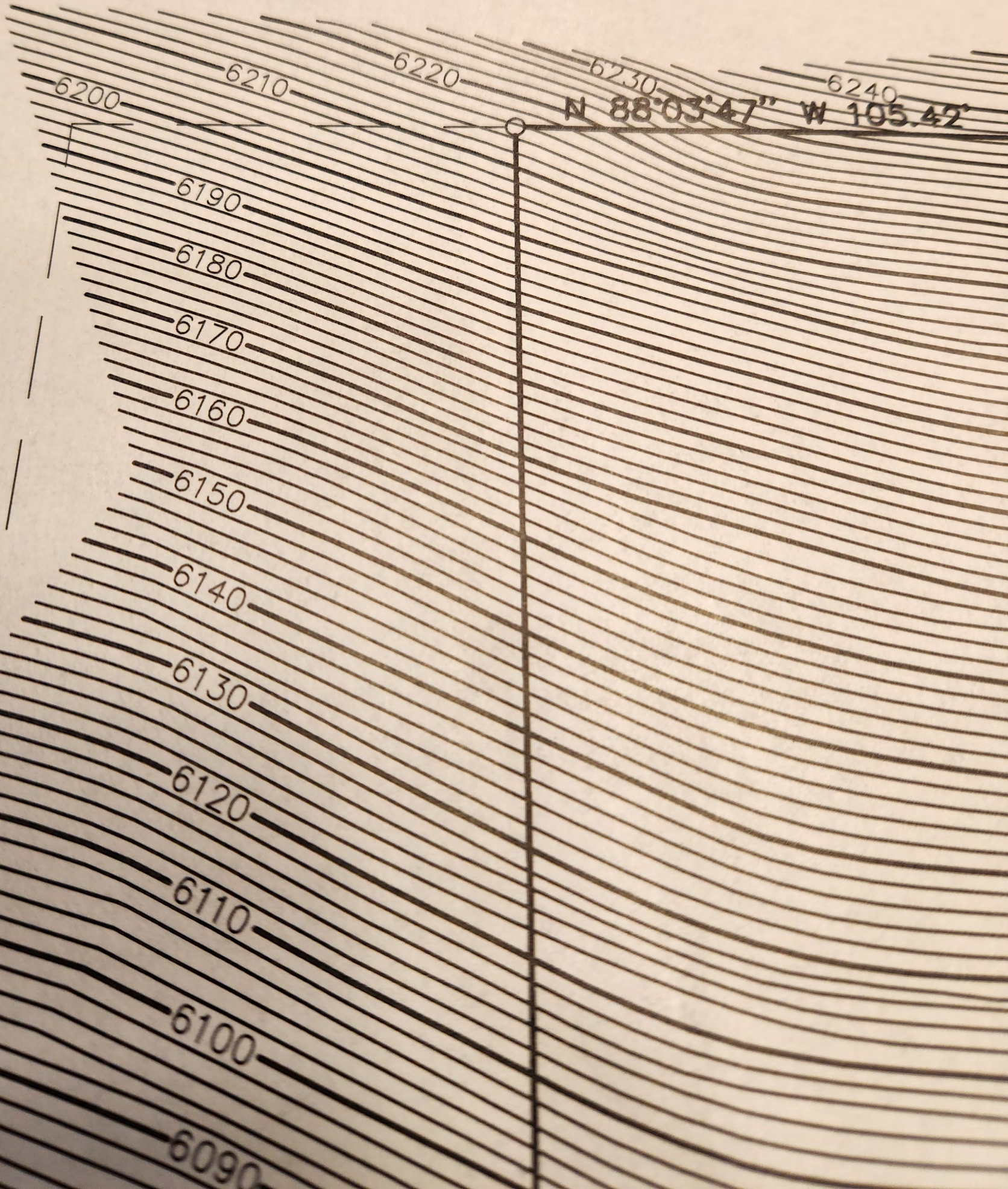
Notes:

1. Bearings and distances shown are measurements in the field based on found monumentation. Refer Warm Springs Valley Subdivision for record data.

2. This map is not intended to be a record of su locations are based on found monuments and do a full and detailed record of survey.

3. The basis of elevations is the aluminum cap s located on the northerly boundary of Lot 5. he ASSUMED ELEVATION IS 5865.66 feet.

S 00°00'20" E 616.27'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3.51'
DRIVE
Power
Pole & Bo

From: Kevin Moss
To: Participate
Subject: FW: Slope view above 215 Hillside
Date: Tuesday, June 6, 2023 5:02:55 PM

Dear Ketchum City P & Z Commission,

Attached are view of the Avalanche landing zone for 219 Hillside. This is the only place that I am aware of that a building directly below the new
Construction will divert directly on top of our building and Family!

Please, reconsider building and creating such a risky environment for the neighbors.

Thank you for your consideration,
Kevin D Moss

From: Kevin Moss <kevin@mossgreenhouses.com>
Sent: Tuesday, June 6, 2023 4:56 PM
To: Kevin Moss <kevin@mossgreenhouses.com>
Subject: Slope view above 215 Hillside