

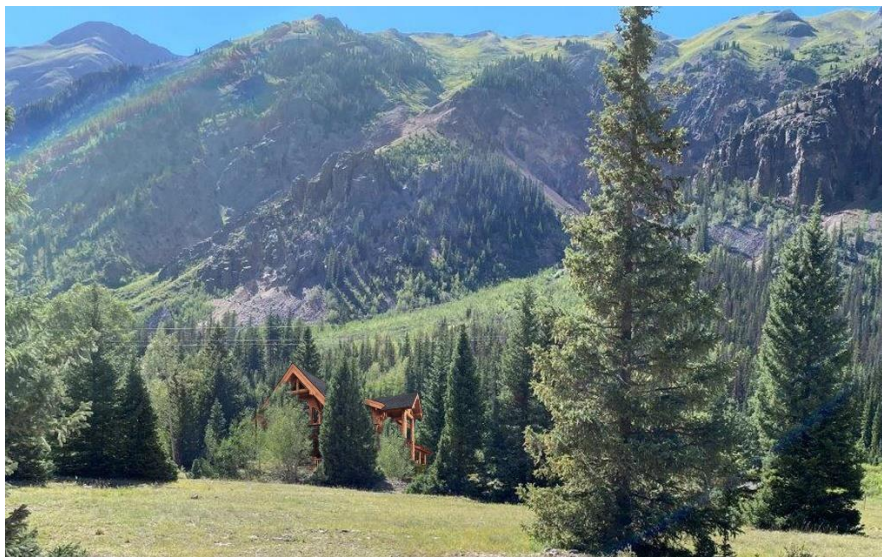
# Application for Improvement Permit

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## Sketch Plan Submittal

### **Proposed Sams Residence**

4760 County Road 2  
Silverton, Colorado 81433  
Cole Ranch Subdivision – Lot 1  
Part of the John H French Placer  
Recorded Reception #149440



Applicant:  
Todd and Julie Sams  
P.O. Box 215  
Oologah, OK 74053  
(918) 606-0558

Prepared By:  
Chris Clemmons  
Mountain Grain, LLC  
Architecture Studio  
1389 CR 240  
Durango, Colorado 81301  
(970) 515-7882

September 2, 2020

San Juan County  
Attn: Lisa Adair, Planning Director  
1360 Greene St  
Silverton, Colorado 81433

**Subject: Application for Improvement Permit – Sketch Plan Review**

Proposed Sams Residence, located at 4760 County Rd 2, Lot 1 of the Cole Ranch Subdivision, located in part of the John H French Placer, near Middleton, San Juan County, Colorado.

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Dear Lisa Adair and Commissioners,

This submittal has been prepared to describe the proposed amended plat and improvements on Lot 4 of the Cole Ranch Subdivision, owned by Todd and Julie Sams. Cole Ranch is an approved Subdivision which was established for residential use in 2001.

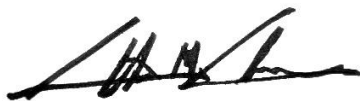
The attached documents have been prepared for a San Juan County Application for Improvement Permit as a "Sketch Plan Review". The Applicant requests review of this project by the County Commissioners at their meeting on September 23, 2020, and to consider approval contingent upon receiving supporting documentation of deferred items listed in the Table of Contents.

The proposed amended plat consists of a relocated building envelope and redistributed open space, which is now larger than the approved plat's open space. The improvements include a single-family residence along with associated road access and utility connections. The new building envelope on the west side of County Road 2 will adhere to all San Juan County setback requirements and will be further setback and more appropriately screened from the road. The property is located within San Juan County's Future Land Use Plan "Economic Corridor", which is designated to be suitable for residential development because of its moderately sloping terrain and year-round access.

The applicant has provided a letter, which follows, to describe in detail the hardships associated with locating the home in the previously approved building envelope on the east site of County Road 2 and the benefits of approving the homesite location proposed in this application.

Please contact Mountain Grain, LLC if you have any questions.

Sincerely,



Christopher M. Clemmons  
Mountain Grain, LLC  
Architecture Studio

To whom it may concern:

We are Todd and Julie Sams as well as our daughter Shiloh Sams. We have been blessed for 25+ years of vacationing in and around Silverton. Over the years we have frequented Fetch's Store, been on the tour with Ernie at the Old 100, visited the wonderful museum and of course rode the train numerous times. On one of our many trips around the Alpine Loop we noticed "Cole Ranch" properties and the old worn out "For Sale" sign on the ground. We inquired about the property and thanks to Steve at Silverton Realty, we were the new owners of Lot 1. Now it's finally time to make our dreams come true and make Silverton our permanent home.

Over the past 7 years we have slowly been doing a little clean up to the property getting it ready for our home. Then the mess of last year happened and it unfortunately gave us a few new concerns. With the avalanches, flooding of County Road 2, and the heavy detoured traffic on County Road 2D (which we personally moved a few years ago) it was eye opening. We even cut our vacation short due to the increased amount of traffic and the dust. In fact, we couldn't even walk the dogs without fear of being hit by a jeep or 4-wheeler driving way too fast. Louie from the county maintenance dept. put up additional speed signs trying to slow traffic down but we still called the sheriff's department multiple times to stop the insane behavior. So now we have spent the past winter months reconsidering if we truly want to build in the assigned building envelope and subject ourselves to the possibility of more unnecessary chaos.

In 2017, while on vacation on our property, we were visited by several individuals doing research on the adjacent land. Those individuals included Lisa Richardson from Bureau of Land Management, County Commissioner Scott Fetchenhier, members of the EPA and a few others. We were informed they were taking soil samples and doing other research regarding the Forest Queen mine. We were told we would be kept in the loop about the findings, but we never heard anything else. This June when we arrived at our property we were surprised to discover work had been started on the Forest Queen mine site and the adjacent property was now being used as a staging area for all of the other projects being done in that area. I met with Lisa Richardson who educated me on what was currently happening with the project and what could take place in the future when work resumed in September. Lisa did tell me that Bureau of Land Management could tidy up the area if we wanted them to but that area would continue to be the staging area. I also was informed that the EPA has listed this area as a Super Fund Site Study. I reached out to the EPA's Kathrine Jenkins by email on June 22 and spoke to her by telephone on June 26, but have not heard back from her again to find out what is actually taking place with that property. We are very concerned at all of the unknowns and what the future brings regarding this area.

While we were in town this past June I not only spoke with Lisa Richardson, but also William Tookey, Lisa Adair and Scott Fetchenhier. To my dismay, not one single person could give an answer as to what is going to take place with the area that I am supposed to build my house on. There are too many variables with this situation, including multiple agencies with multiple ideas, but no one with definite plans to give me an idea of how to proceed. We are very concerned of what could come from living near a Super Fund Site and what this means to our health. What will we be breathing from the pile of old mining debris that has been piled right next to my property? Not to mention how close we are to what is now labeled as "Hot" water, which could possibly have an effect my well water, what could we be drinking? For my family this property isn't going to be an occasional vacation spot, this is going to be our home.

One we plan to enjoy for generations to come. So all these concerns are not only for the immediate future, but for the long term effects to our family.

With the property sectioned off like it is, we do have other options for the location of our home. Although our largest concern is the above topic but other reasons would be:

- 1) If we build our home on the East side which is the approved building site, we will have 1 tree that will be in front of the house, otherwise there is NO screening of the house, this will make our home totally visible from the County Road 2 & 2D. On the West side we have a cluster of trees and the railroad berm that will help with the obviousness of a house in the area. This will help to protect the untouched natural vibe of the area and not obscure the views.
- 2) There is the issue of the size of the house comparably with the size of the existing building envelope. The building envelope leaves little to no room for a yard or any possibilities of further growth of vegetation in the area. The building envelope also leaves no room for all the septic system components (which Willie Tookey was aware of per our conversation). This means the septic lines will have to be routed underneath County Road 2 to the other side of our property, which would cause us to lose some of the trees that run parallel with County Road 2 on both sides of the road. I would assume this would mean some road closures for a period of time, as well as possible disruption and maintenance issues years down the road?
- 3) Due to the size of the property on the East side the house would be extremely close to the tree line (which is becoming more beetle kill than live trees). This is an extreme fire hazard. On the other hand, the trees on the West side have not been affected by the beetles at this point and we have more room to distance the house from these trees and certainly the rest of the forest.
- 4) If the house is on the East side, the dust is a larger factor than on the West side. Visibility issues are always a concern during the peak dry season. This was a large factor last summer when the out-of-control drivers were throwing so much dust they had virtually no visibility of the road. The drivers could not see well enough and were driving off the road and onto our property, nearly causing our daughter and dogs to be hit on an afternoon walk.
- 5) One of our biggest assets to the property, aside from the incredible views, is the historical value of the area. This includes the railroad bed that runs through our property. Our plan is to do minimal damage if any, to the rail bed, as only to provide a driveway crossing it. We wish to preserve as much of the surrounding area as we can.
- 6) In the past couple of years, the moose have become prominent in the area across from the existing building envelope. By moving across the road, we will be less intrusive in their habitat and give more of a quiet area to graze. Bears have also been seen more on the East side of the property, so we would be less disturbing to their habitat by not building there. According to Lisa Richardson she would like to eventually see a wildlife sanctuary become of the BLM area. She also stated at this point a few different animals have been dissected to see if any damage has been done to them by the so called "Hot" water and vegetation they are consuming in this area.



They also believe the animals are not solely living in or eating/drinking from that area, so the findings are not completely accurate at this time.

- 7) The smell of the Forrest Queen as we all know has at times given off a Hydrogen Sulfide smell. There is a possibility with the work being done this might not happen anymore, but we do not know that for sure.
- 8) Overall, in conversation with Lisa Richardson, we have discussed the fact that there are no immediate or future concerns from the BLM for the west side of the property.

We are really looking forward to starting the building process soon but need clarification on the building envelope in order to get on contractors' schedules for next year. We are trying to use as many local contractors as possible to help with the local economy as well as using their expertise in building in the area.

Thanks for considering our move to the West side of County Road 2.

Todd & Julie Sams

## Table of Contents

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1. San Juan County Application for Improvement Permit
2. Warranty Deed
3. Current Plat Information
  - A. Amended Lot 1 Plat
  - B. Original Subdivision Plat
  - C. Subdivision Deed Restrictions
  - D. Permission to Build Outside Original Building Envelope (Ippolite Letter)
4. List of Adjacent Landowners
5. Map of Adjacent Landowners
6. Project Narrative
7. Project Plans
  - A. Vicinity Map
  - B. Proposed Plat Amendment
  - C. Sketch Plan & County Avalanche Map
  - D. Sketch Plan & County Geohazard Map
  - E. Sketch Plan with Flood Hazard Map
  - F. Sketch Plan with Mine Hazards
  - G. Sketch Plan with Topography
  - H. Sketch Plan with Aerial Image
  - I. Draft Floor Plans
8. Septic Design Recommendation Letter and Associated Plan
9. Flood Plain Evaluation Letter and Associated Plan
10. Historic Railroad Impact Review
11. Geotech Report by Trautner Geotech
12. San Juan County Relationship to County Road and State Highway Systems Forms
13. San Juan County Driveway and Road Access Permit Forms
14. Scenic Quality Report

NOTE:

The following materials will be completed and submitted to the County pending approval of the adjusted home location, as these items are dependent upon the final home siting.

- I. Well Permit Application
- II. Full Septic Design and Permitting
- III. Complete Wetlands Investigation (Prelim. analysis suggests no wetlands present)

## Application for Improvement Permit

Applicant		APPROVAL CHECKLIST		Initial	Date
Applicant	Name	Todd A. Sams			
	Address	PO Box 215			
		Oologah Ok 74053 9186405447 Phone			
Owner	Name	Todd & Julie Sams			
	Address	PO Box 215			
		Oologah Ok 74053 9186060558 Phone			
Contractor	Name	N/A			
	Address				
	Phone				
Legal Description of Property:		Road System Relationship			
Lot 1 Cole Ranch Subdivision Amended Plat #1, located in Part of the John H French Placer Recorded Reception # 149440 March 14, 2014. Tax Parcel # 47730300051000 Township 42 N, Range 6 W, Section 30		Zoning Compatibility			
		State Mining Permit			
		Owner Notification			
		Avalanche Hazard			
		Geologic Hazard			
		Floodplain Hazard			
		Wildfire Hazard			
		Mineral Resource Impact			
		Wildlife Impact			
		Historic Site Impact			
Nature of Improvement Planned:		Watershed Gearance			
Land Use Zone: Mountain Zone		County Building Inspector			
		Building Permit			
		State Electrical Inspector			
		Electrical Permit			
Applicant Signature Todd A. Sams		San Juan Basin Health Unit			
		Sewage Disposal: Test			
		Design			
Date Application Requested		Central Sewage Collection			
Date Submitted for Permit		State Division of Water Resources			
Date Permit Issued		Adequate Water Source			
Date Permit Denied		Well Permit			
Reason for Denial		Central Water Distribution			
		U.S. Forest Service/BLM			

149165

Page 1 of 1

SAN JUAN COUNTY, COLORADO

LADONNA L. JARAMILLO, RECORDER

08-23-2013 02:32 PM Recording Fee \$11.00



### Special Warranty Deed

(Pursuant to 38-30-115 C.R.S.)

State Documentary Fee

Date: August 22, 2013

\$ 3.80

THIS DEED, made on August 22, 2013 by BANK OF THE WEST Grantor(s), of the County of \_\_\_\_\_ and State of CALIFORNIA for the consideration of (\$38,000.00) \*\*\* Thirty Eight Thousand and 00/100 \*\*\* dollars in hand paid, hereby sells and conveys to TODD ALAN SAMS AND JULIE ANN SAMS Grantee(s), as Joint Tenants whose street address is P.O. BOX 215 OOLOGAH, OK 74053, County of \_\_\_\_\_, and State of OKLAHOMA, the following real property in the County of San Juan, and State of Colorado, to wit:

LOT 1, COLE RANCH SUBDIVISION, COUNTY OF SAN JUAN, STATE OF COLORADO.

also known by street and number as: 4768 COUNTY ROAD 2 SILVERTON CO 81433

with all its appurtenances and warrants the title against all persons claiming under the Grantor(s)

BANK OF THE WEST

BY: John A. McFarland Vice President

State of

Nebraska

County of

Douglas

)  
) ss.  
)

The foregoing instrument was acknowledged before me on this day of August 20, 2013 by John A. McFarland Vice President OF BANK OF THE WEST

Witness my hand and official seal.

My commission expires

5-5-14

Notary Public

WALTER R. HESS  
General Notary  
State of Nebraska  
My Commission Expires May 5, 2014

When Recorded Return to: TODD ALAN SAMS AND JULIE ANN SAMS  
P.O. BOX 215 OOLOGAH, OK 74053



**FOREIGN INVESTMENT IN REAL PROPERTY TAX ACT OF 1980**  
**(26 U.S.C. 1445) ("FIRPTA")**

**CERTIFICATION BY TRANSFEROR (ENTITY)**  
(Pursuant to Regulation C.F.R. 1.1445-2(b)(2)(i))

To: **TODD ALAN SAMS AND JULIE ANN SAMS**, (hereinafter referred to as the "Transferee";)

Section 1445 of the Internal Revenue Code provides that a transferee of a U. S. real property interest must withhold tax if the transferor is a foreign person. For U.S. tax purposes (including section 1445), the owner of a disregarded entity (which has legal title to a U.S. real property interest under local law) will be the transferor of the property and not the disregarded entity.

To inform the transferee that withholding of tax is not required upon the disposition of a U. S. real property interest by **BANK OF THE WEST**, hereinafter referred to as the transferor, the undersigned hereby certifies the following on behalf of the transferor:

1. The transferor is not a foreign corporation, foreign partnership, foreign trust, or foreign estate (as those terms are defined in the Internal Revenue Code and Income Tax Regulations);
2. The transferor is not a disregarded entity as defined in section 1.1445-2(b)(2)(iii);
3. The transferor's U.S. employer identification number is [REDACTED] and [REDACTED];
4. The transferor's office address is: [REDACTED]  
[REDACTED]
5. The transferor understands that this certification will be disclosed to the Internal Revenue Service by the transferee and that any false statement contained therein could be punished by fine, imprisonment, or both.
6. Under penalties of perjury I declare that I have examined this certification and to the best of my knowledge and belief it is true, correct and complete, and I further declare that I have authority to sign this document on behalf of the transferor (i.e. a responsible officer if a corporation, by a general partner if a partnership, and by a trustee or equivalent fiduciary of the case of a trust or estate)

**BANK OF THE WEST**

Date: August 22, 2013

BY: John A. Matoszek AS Vice President

All information required to be obtained in connection with document has been obtained from information supplied by the transferor to Land Title Guarantee Company. For privacy and security reasons, Land Title will retain this information. In the event you are contacted by the Internal Revenue Service concerning FIRPTA, please contact the Company immediately for a copy of this Affidavit which discloses the transferor's Tax Identification Number.

State of Nebraska )  
 ) ss.  
County of Douglas )

Sworn to before me on this day of August 22, 2013 by John A. Matoszek AS Vice President OF BANK OF THE WEST

My Commission expires: 5-5-14  
Witness my hand and official seal

Notary Public

WALTER R. HESS  
General Notary  
State of Nebraska  
My Commission Expires May 5, 2014

**Note:**

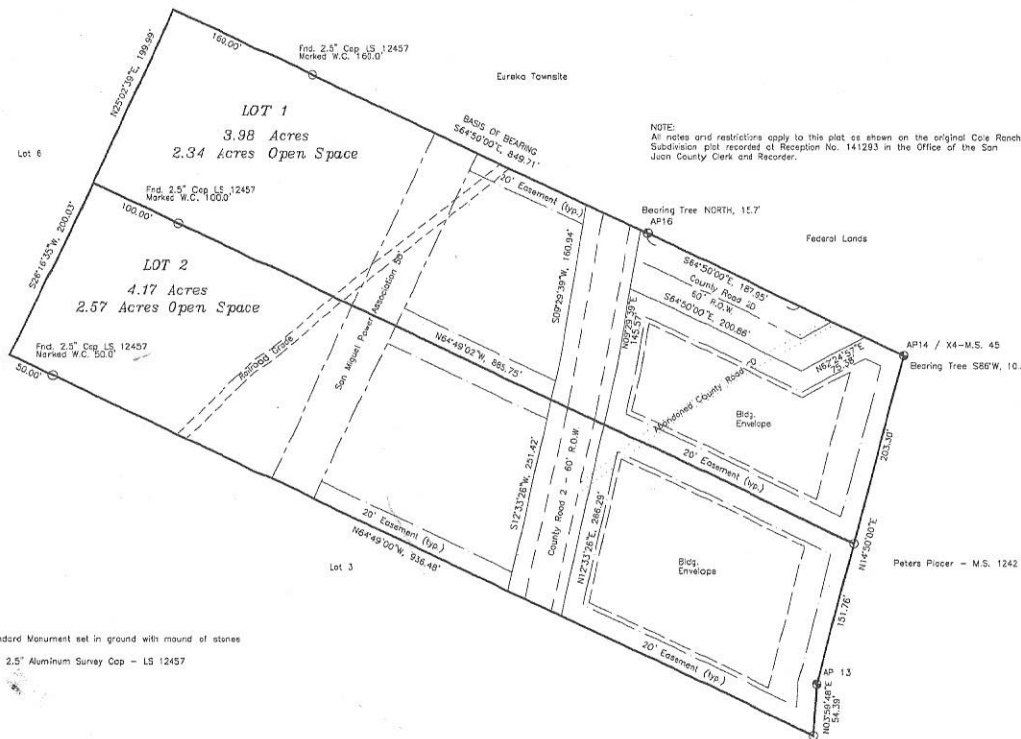
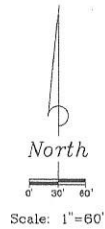
1. If you have any questions or concerns arising from your obligation as transferor in regard to this tax, it is suggested that you immediately contact your local Internal Revenue Service office, attorney or accountant if you do not fully understand these regulations. More information, including the regulations promulgated under FIRPTA, is available at the website for the Internal Revenue Service, [www.irs.gov/businesses/small/international](http://www.irs.gov/businesses/small/international)
2. The transferee is required to retain this certification until the end of the fifth taxable year following the taxable year in which the transfer takes place. The transferee must make this certification available to the Internal Revenue Service when requested in accordance with the requirements of 26 U.S.C 6001 and regulations thereunder.

# Amended Plat No. 1 - Lots 1 & 2

## Cole Ranch Subdivision

Located in Part of the John H. French Placer  
Mineral Survey No. 45, Mining District No. 7  
Suspended Sec. 30, T42N, R6W, N.M.P.M.

Eureka Mining District  
San Juan County, Colorado



### LEGEND

- 3-1/4" BLM Standard Monument set in ground with mound of stones
- Fnd. #5 Rebar & 2.5" Aluminum Survey Cap - LS 12457

NOTE: Legal description from the Cole Ranch Subdivision Plat recorded at Reception No. 141293 in the records of the San Juan County Clerk & Recorder's Office.

NOTICE: According to Colorado Law you must commence any legal action upon any defect in this survey within three years after you first discovered such defect. In no event, may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.

### BASE OF BEARING:

The bearing between a 3-1/4" Standard Monument, marked AP16, and a Witness Corner for the northeast corner of Lot 1, Cole Ranch Subdivision, a 2-1/2" Aluminum Survey Cap, LS 12457, is assumed to be N64°50'00"W as shown on the Cole Ranch Subdivision Plat at Reception No. 141293 in the Office of the San Juan County Clerk and Recorder's Office.

CERTIFICATE OF OWNERSHIP AND DEDICATION:  
KNOW ALL MEN BY THESE PRESENTS, that the undersigned owners of Lots 1 and 2, Cole Ranch Subdivision, San Juan County, State of Colorado, and the County of San Juan, Colorado,  
HAVE BY THESE PRESENTS, caused to be laid out, plotted, Amended Plat No. 1 of said Lots 1 and 2, as shown on this plat, specifically the realignment of County Road 20 as shown hereon.

Owners of Lot 1, Cole Ranch Subdivision:

By: \_\_\_\_\_

By: \_\_\_\_\_

Owners of Lot 2, Cole Ranch Subdivision:

By: \_\_\_\_\_

By: \_\_\_\_\_

San Juan County Board of County Commissioners:

By: \_\_\_\_\_

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

The foregoing signatures were acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_ A.D., 20\_\_\_\_ by \_\_\_\_\_

My commission expires \_\_\_\_\_  
Witness my hand and seal \_\_\_\_\_  
Notary Public

APPROVAL OF BOARD OF COUNTY COMMISSIONERS  
Approved by the San Juan County Board of County Commissioners this \_\_\_\_\_ day of \_\_\_\_\_ A.D., 20\_\_\_\_.

APPROVAL OF COUNTY ATTORNEY:  
Approved for recording this \_\_\_\_\_ day of \_\_\_\_\_ A.D., 20\_\_\_\_ by \_\_\_\_\_ County Attorney.  
Attorney at Law Registration No. \_\_\_\_\_ Date \_\_\_\_\_

SURVEYOR'S CERTIFICATE:  
I, Robert A. Larson, a Registered Land Surveyor in the State of Colorado, do hereby certify that this plat accurately represents to the best of my knowledge and information, a survey made by me or under my direct supervision, and that said survey conforms to all State laws and standards for property boundaries.

FOR COUNTY REVIEW  
Robert A. Larson LS 31180 Date \_\_\_\_\_ SEAL

RECORDER'S CERTIFICATE:  
This plat was filed for record in the office of the Clerk and Recorder of San Juan County at \_\_\_\_\_ M., on the \_\_\_\_\_ day of \_\_\_\_\_ A.D., 20\_\_\_\_, in Book \_\_\_\_\_ Page \_\_\_\_\_ Reception No. \_\_\_\_\_  
Clark & Recorder

Amended Plat			
Surveyed For: Julie Sams			
SURVEYED BY	DATE	SCALE	MONADNOCK MINERAL SERVICES 245 7TH AVE., SUITE 200, COLO SPRING, CO 80904 760-338-0000
R.A.L.	8/1/13	1"=60'	J13031
DRAWN BY	T.A.P.	1"=60'	SHEET 1 of 1

# COLE RANCH SUBDIVISION

## 6 LOTS

LOCATED IN PART OF THE JOHN H. FRENCH PLACER  
MINERAL SURVEY No. 45, MINING DISTRICT No. 7  
SEC 30, T 42 N, R 6 W,  
EUREKA MINING DISTRICT  
SAN JUAN COUNTY, COLORADO

### OWNERS:

SANDRA IPPOLITE.  
PO BOX 3164  
PLACIDA, FLORIDA 33946

MERLIN SCHAEFER  
144 WEST 11 AVE.  
DENVER, COLORADO 80204

North

0' 100' 200'

Basis of Bearings: The line between Cors. No. 14 and 15 of the JOHN H. FRENCH PLACER, monumented as shown hereon, is assumed to bear N.64°49'00"W., as described in Mineral Survey No. 45, all other bearings are relative thereto.

### LEGEND:

- A 3 1/2" aluminum cap set by BLM Cadastral surveys.
- A 2" aluminum cap on a no. 6 rebar by LS 12930.
- MKD, stump as called for in the Mineral Survey notes.
- A 2 1/2" aluminum cap on a no. 6 rebar by LS 12457
- (R)-bearing and distances from mineral survey notes.
- easements.
- Building envelopes
- Trees
- ⊙ Dry fire hydrant

### VICINITY MAP



TOTAL ACRES 37.06  
AREA IN COUNTY ROAD 2 1.71 ACRES  
AREA IN MINNIE GULCH ROAD CR 24 0.50 ACRES

PERCENT OF AREA IN LOTS 65%  
PERCENT OF AREA IN OPEN SPACE 29%  
PERCENT OF AREA IN ROADS 6%

Title commitment is through ATTORNEYS' TITLE GUARANTY FUND, INC.  
REC 10-99.059 dated 10-26-99.

Zoning: Subdivision is located in the MOUNTAIN ZONE.

#### NOTE:

There will be no sale of a portion of any Lot, or further subdivision of any Lot. There will be no structures other than small storage sheds on that portion of Lots 1, 2, 3 and 4 lying west of County Road 2, without the express permission of the Board of County Commissioners.

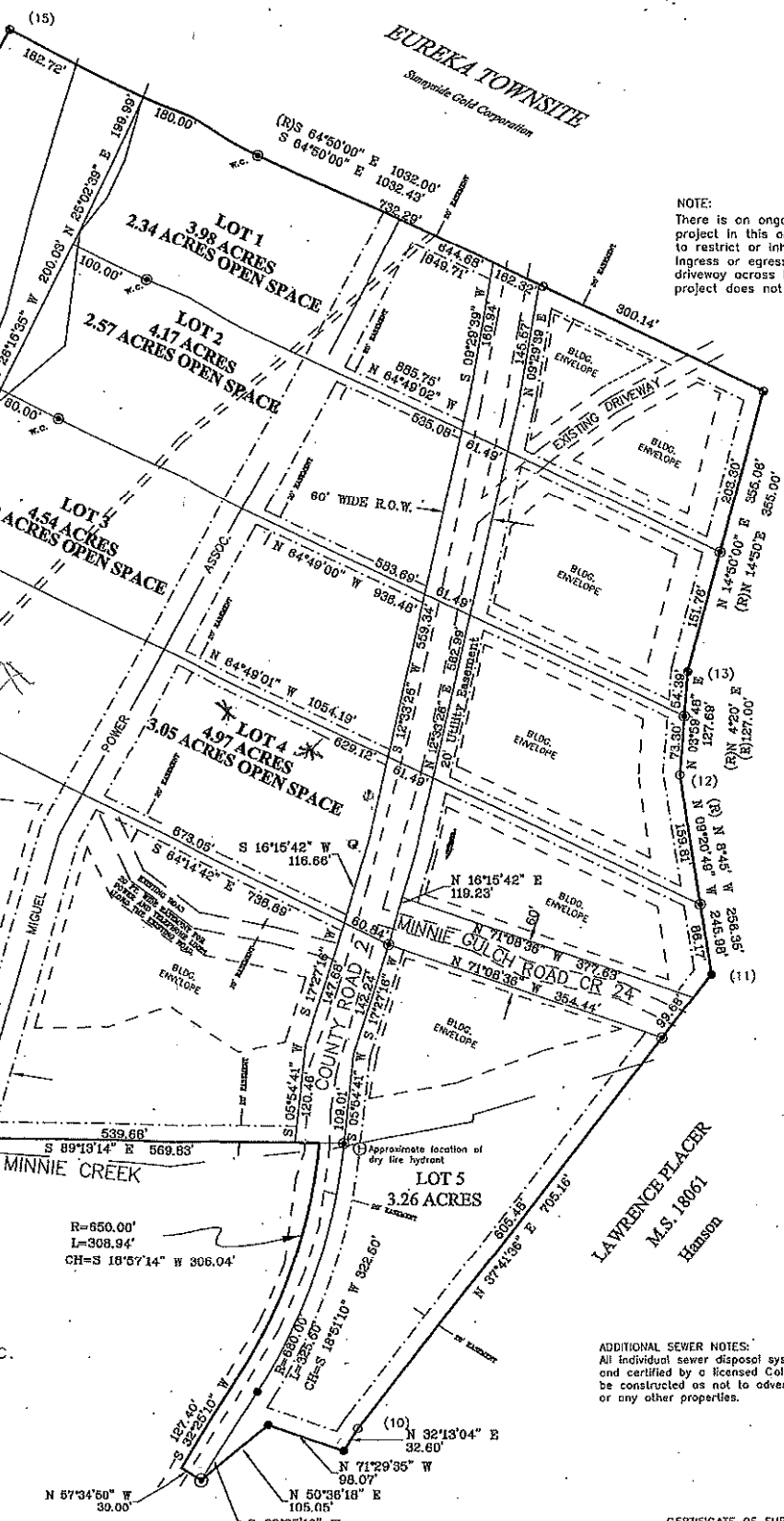
To protect the historical value of the (abandoned) SILVERTON NORTHERN RR GRADE as shown hereon, there will be no excavation or alteration of said grade and no structures will be built within 25 ft. of the centerline of said grade.

A wetlands investigation shall be conducted on each of Lots 1, 2, 3, 4, 5 and 6 under U.S. Army Corp. of Engineers (USACE) rules, prior to applying for an improvement or Use Permit from San Juan County. A report of this investigation shall be included in submittals required for obtaining such permit.

Flood proofing, in the form of berms, shall be required on each of Lots 5 and 6 upgradient of any structures. Construction of berms or othering of the banks of Minnie Creek shall be in compliance with U.S. Army Corp. of Engineers (USACE) rules and in compliance with the Clean Water Act (CWA).

A geo-technical report, along with a grading and drainage plan, will be required prior to applying for an Improvement or Use Permit from San Juan County.

The setback of 50 feet from the base of the slope near the East boundary of Lots 1-5 is a minimum setback. Property owners are encouraged to utilize building locations further from the base of the slope.



NOTE:  
There is an ongoing Mined Land Reclamation project in this area. There will be no attempt to restrict or inhibit additional reclamation. Ingress or egress to area is by the existing driveway across Lots 1 and 2. This reclamation project does not encroach into the subdivision boundary.

### Dedication

I, Merlin Schaefer and Sandra Ippolite, being the owner(s) of the land located in part of the JOHN H. FRENCH PLACER, Mineral Survey No. 45, Mining District 7, Eureka Mining District, San Juan County, Colorado, described as follows:  
Beginning at corner no. 15 said JOHN H. FRENCH PLACER, thence S.29°31'25"W., 1633.16 ft. to a point on line 15-16 said JOHN H. FRENCH PLACER; thence N.33°48'54"E., 632.82 ft.; thence S.89°13'14"E., 569.83 ft.; thence S.308.94 ft. along the arc of a curve to the right, having a radius of 850.00 ft. and a long chord of which bears S.18°57'14"W., 308.04 ft.; thence S.32°25'10"W., 127.40 ft.; thence S.57°34'50"E., 30.00 ft.; thence N.50°36'18"E., 105.05 ft.; thence S.71°29'35"E., 98.07 ft. to a point on line 9-10 said JOHN H. FRENCH PLACER; thence N.32°13'04"E., 32.60 ft. to corner no. 10 said JOHN H. FRENCH PLACER; thence N.37°41'36"E., 705.16 ft. to corner no. 11 said JOHN H. FRENCH PLACER; thence N.9°20'49"W., 245.98 ft. to corner no. 12 said JOHN H. FRENCH PLACER; thence N.14°50'00"E., 355.06 ft. to corner no. 14 said JOHN H. FRENCH PLACER; thence N.64°49'00"W., 1032.43 ft., more or less, to the point of beginning. Said parcel contains 37.06 acres, more or less, in San Juan County, Colorado, under the name of COLE RANCH SUBDIVISION, having laid out, platted and/or subdivided the same as shown on this plot and do hereby dedicate and convey to the public at large, the common right to use the COUNTY ROAD 2 and MINNIE GULCH ROAD CR 24 as shown hereon and other areas as shown hereon and hereby dedicate those portions of land labeled as easements for the installation and maintenance of public utilities as shown hereon.

In witness whereof Merlin Schaefer has subscribed his name  
this 8 day of August, A.D. 2001.

By: Merlin Schaefer  
OWNER

In witness whereof Sandra Ippolite has subscribed her name  
this 8 day of August, A.D. 2001.

By: Sandra Ippolite  
OWNER

NOTARIAL:  
State of Colorado } ss.  
County of San Juan }

The foregoing instrument was acknowledged before me this 8 day of August, 2001, by Sandra Ippolite

My Commission Expires: 5/17/04



In witness whereof \_\_\_\_\_ has subscribed his name this  
day of \_\_\_\_\_, A.D. 2001.

By: \_\_\_\_\_  
Mortgagee

NOTARIAL:  
State of Colorado } ss.  
County of San Juan }

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, A.D. 2001, by Mortgagee.

My Commission Expires: \_\_\_\_\_

My Address is \_\_\_\_\_

Witness My Hand and Official Seal

(SEAL)

Notary Public

BOARD OF COUNTY COMMISSIONERS  
OF SAN JUAN COUNTY, COLORADO

By: Christine K. Davis Attest: Dorothy A. Zaman  
Chairman County Clerk

This plot was approved by the San Juan Regional Planning Commission on this 8 day of August, 2001.

By: Carol K. Davis Attest: William T. Taylor  
Chairman

### COUNTY SURVEYOR'S CERTIFICATE

Approved for content and form only and not as to the accuracy of survey, computations or drafting, pursuant to CRS 38-51-106.

County Surveyor or Deputy 1/24/01 Date

SAN JUAN COUNTY CLERK AND RECORDER'S ACCEPTANCE

### COUNTY CLERK

This plot was accepted for filing in the office of the Clerk and Recorder of San Juan County, Colorado, on this 8 day of August, A.D. 2001; Reception Number 141243 Time 3:24 PM, Page \_\_\_\_\_

Date 8/2/01 Dorothy A. Zaman, Recorder

### CERTIFICATE OF SURVEY

I, Ernest E. Schaefer, a Registered Land Surveyor in the State of Colorado, do hereby certify that this plot accurately represents a survey made by me or under my direct supervision and I further certify that the monuments shown hereon actually exist, and their positions are as shown.

Signature Ernest E. Schaefer Date 8/2/01  
Survey No. 12457

NOTICE  
ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY ACTION FOR RECOVERY OF ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVERED SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF CERTIFICATION SHOWN HEREON.

MERLIN SCHAEFER

COLE RANCH SUBDIVISION

SAN JUAN COUNTY, COLORADO

E. SCHAEFER & ASSOCIATES

MIN. PLAT. DEPT. COLO. BUREAU OF LANDS, 1897-1900 MIN. SURVEYS

ACCT. NO. J2045 SHEET 1 of 1

SURVEYED BY E.E.S. DATE 8-2-2001  
DRAWN BY E.E.S. SCALE 1"=100'



**COLE RANCH SUBDIVISION  
DEED RESTRICTIONS**

1. Structural foundations shall be designed by a professional structural and/or geotechnical engineers to determine the amount and variability of the load bearing capacity and expansive nature of the debris fan deposits.
2. The portions of lots 1-5 lying west of County Road 2 are limited to outbuildings with an aggregate of 1500 square feet per lot.
3. An erosion control plan shall be required as a condition of any improvements or use permit issued by San Juan County.
4. Structures shall be constructed within the building envelopes. Only one residential unit can be constructed per lot.
5. Site grading and drainage shall be designed to move water away from structures and should be performed in a manner that does not substantially change existing natural drainage patterns.
6. No buildings shall be constructed within 50 feet of the centerline of Minnie Gulch Creek.
7. A satellite phone, or operable cellular phone must be available at each home site until a landline is available.
8. Trees shall not be removed within 25 feet of the base of the slope.
9. All driveways shall require access permits to be issued by San Juan County.

\_\_\_\_\_  
Merlin Schaefer

\_\_\_\_\_  
Sandra Ippolite

STATE OF COLORADO    )  
                                      )  
COUNTY OF \_\_\_\_\_)

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 2001 by Merlin Schaefer and by Sandra Ippolite.

Witness my hand and official seal.

\_\_\_\_\_  
Notary Public

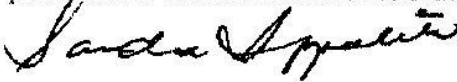
My Commission Expires: \_\_\_\_\_

*Respected youth*

Nov. 25, 2005

To whom it may concern,

As 50% owner of Cole Ranch Subdivision, by this letter I am hereby giving my permission to allow homesites to be built by the river on Lots 1 and 3.

A handwritten signature in black ink, appearing to read "Sandra Ippolite". The signature is fluid and cursive, with the first name "Sandra" being more prominent than the last name "Ippolite".

Sandra Ippolite  
1687 Floyd St.  
Sarasota, FL 34239  
941-362-3924



## List of Adjacent Landowners

---

### Sams Residence, Cole Ranch Subdivision

#### **Adjacent Landowners:**

School of the Ozarks  
PO Box 17  
Point Lookout, MO 65726

Elaine Hintz  
4015 W 93 Terrace Apt 110  
Prairie Village, KS 66207

Houghton Unlimited LLC  
4936 S Fillmore Ct  
Englewood, CO 80113

Keefe Family Revocable Trust  
6219 Saddletree Ln  
Yorba Linda, CA 92886

Jay & Janet Scherer  
230 River Front Rd  
Durango, CO 81303

Dr Builders LLC  
721 Pike Dr  
Pagosa Springs, CO 81147

Joseph Jepson  
PO Box 729  
Silverton, CO 81433

Jack & Barbara Clark  
PO Box 767  
Silverton, CO 81433

Derek & Megan Wendt  
PO Box 504  
Cheyenne Wells, CO 80810

## **List of Adjacent Landowners (cont.)**

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### **Sams Residence, Cole Ranch Subdivision**

#### **Adjacent Landowners:**

George & Anna Riley  
5 Road 5221  
Bloomfield, NM 87413

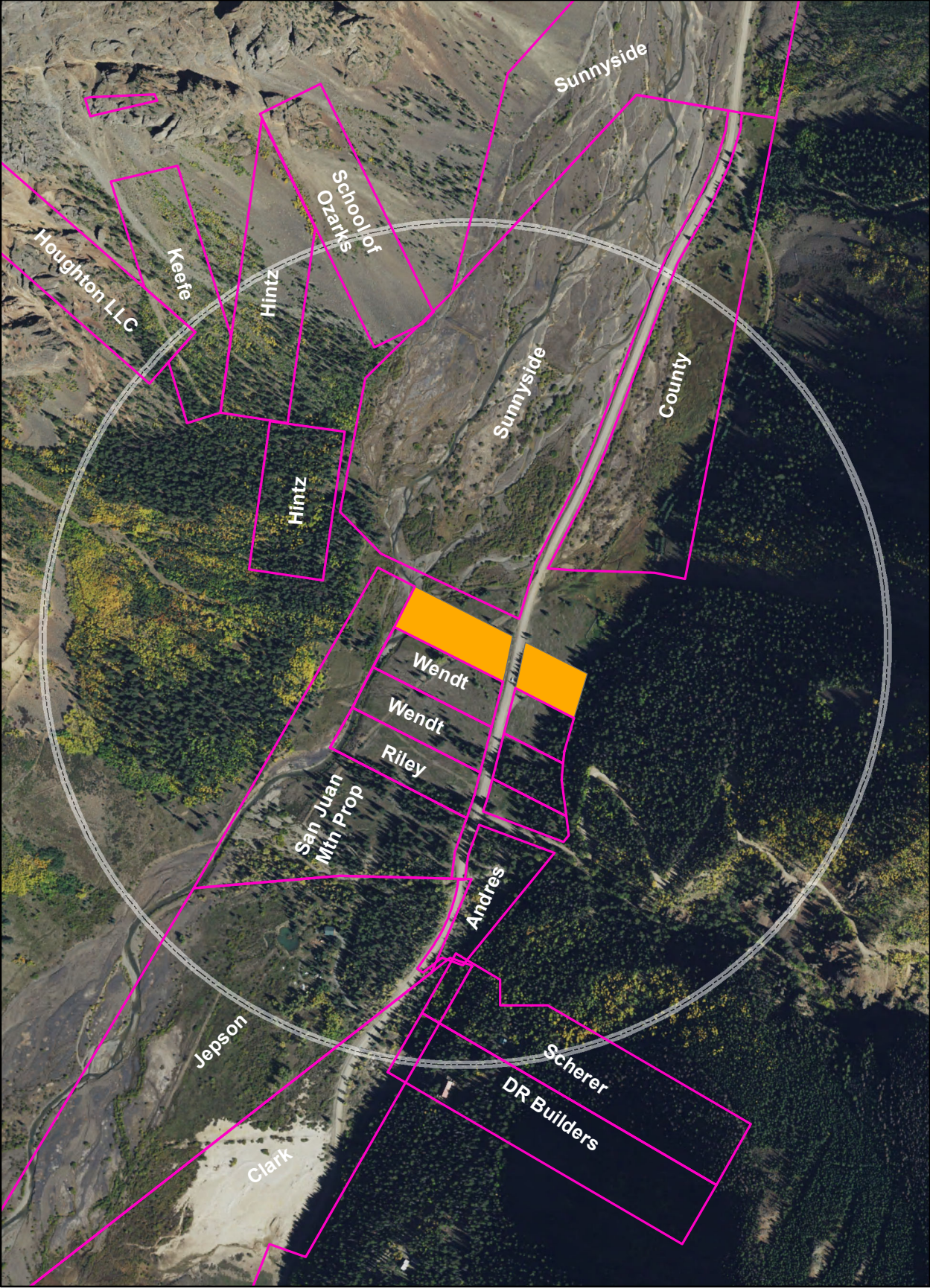
San Juan Mountain Properties LLC  
7592 Aguila Dr  
Sarasota, FL 34240

John & Annette Andres  
7996 Peter Hoover Rd  
New Albany, OH 43054

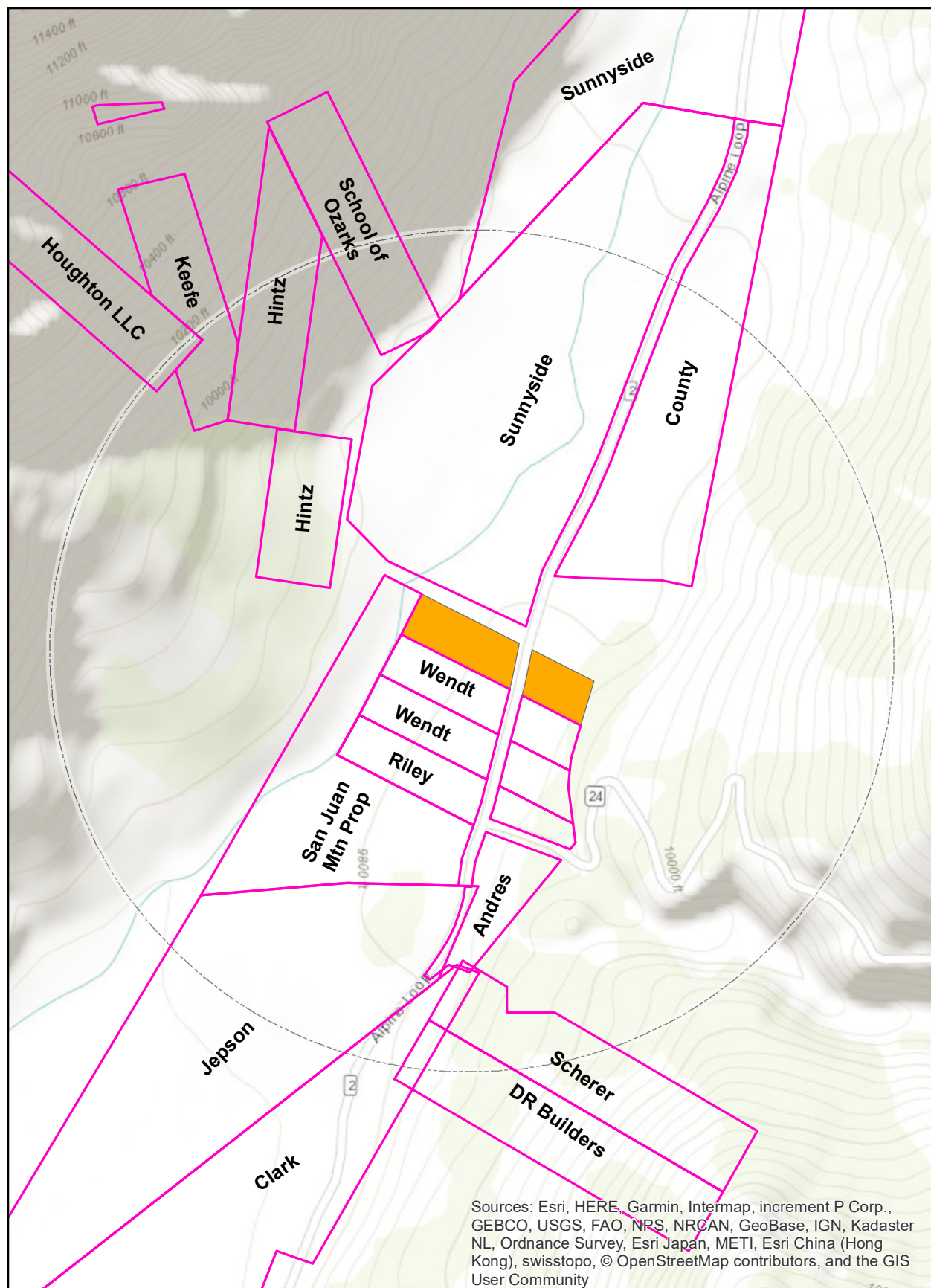
Sunnyside Gold Corp  
PO Box 177  
Silverton, CO 81433

San Juan County  
PO Box 466  
Silverton, CO 81433









## **Project Narrative**

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### **Sams Residence, Cole Ranch Subdivision**

#### **Applicant Name and Address:**

Todd and Julie Sams  
P.O. Box 215  
Oologah, OK 74053  
(918) 606-0558

#### **Project Location:**

Cole Ranch Subdivision – Lot 1  
4760 County Road 2  
Silverton, Colorado 81433

#### **Legal Description**

Located in part of the John H. French Placer Mineral Survey No. 45, Mining District No. 7, Sec. 30, T 42 N, R 6 W, N.M.P.M., Eureka Mining District, San Juan County, Colorado

#### **Proposed Development:**

One single-family residence of approximately 2,600 sf. The Applicant is requesting approval of a new building envelope and general home location within this envelope on the west side of County Road 2, which will adhere to all San Juan County setback requirements and hazard restrictions. Although this location is outside the original approved building envelope, there are many reasons for this proposal, which the Applicant has described in the Cover Letter. A proposed plat amendment has been included with the sketch plans.

#### **Zoning:**

Mountain Zoning District

#### **Acreage:**

3.98 acres

#### **Water Service:**

The Applicant plans to construct a new well near the west corner of the proposed residence. The proposed well will be an ordinary household use inside one single-family dwelling. The well will be constructed by a Colorado licensed well driller in



accordance with the Colorado Division of Water Resources regulations. The well permit will be processed once the home location has been approved.

**Sewer Service:**

An onsite septic system is proposed for the residence and will be located approximately where shown on the site plan. Septic test pits have been dug and analyzed on-site, and a septic designer has created recommendations for septic system siting, which is included in this application in letter form. The system will be engineered by a Colorado Licensed Professional Engineer in accordance with the San Juan Basin Health Department regulations. The septic permit will be processed once approval is granted for the proposed home location.

**Power:**

The Applicant plans to tie into the existing overhead electric line that runs across the western section of the property. The proposed line will be an underground service line.

**Phone:**

The nearby existing phone line located on the east side of County Road 2 will be used for phone service.

**Access:**

The site is accessed via County Road 2, which bisects the property. One driveway is being proposed to access the home on the west side of CR 2. The driveway will include a culvert, as well as any additional requirements of the County Road and Bridge Department Supervisor. A driveway permit form has been submitted to the Road and Bridge Supervisor.

**Heating:**

A forced air system will be used as the primary source of heat for the residence and a pellet/wood stove will be used as supplemental heat when necessary.

**Exterior Lighting:**

Minimal exterior lighting will be incorporated for safety and screened lighting under the deck. Exterior lighting will be in conformance with San Juan County requirements.

**Solid Waste Management:**

The Applicant will be responsible for bi-weekly trash disposal provided by Bruin Waste Management. On-site trash will be contained within the provided dumpster at all times until removal to the transfer station.

**Landscaping:**

Landscaping is to consist of raking and removal of combustible ground cover near the residence as recommended by the Colorado State Forest Service Firewise Practices, to develop adequate defensible space. Revegetation and screening will be provided by the Applicant in accordance with the requirements of San Juan County.

**Surveying:**

An amended survey plat for this lot was prepared by Robert A. Larson of Monadnock Mineral Services. A copy of this survey plat is included with this application submittal for your review. A revised plat will be recorded upon approval of this application.

**Subsurface Conditions:**

Subsurface conditions have been tested and recorded by Trautner Geotech LLC. A copy of the report is included with this application.

**Building Envelope and Siting:**

The lot is divided by County Road 2. The portion of the project site west of CR 2 contains a moderately sloped grassy meadow sloping gradually toward the Animas River with pine and aspens dispersed about the site and clustered adjacent the abandoned railroad bed. The proposed location for the home was chosen for several reasons, which are addressed in the Applicant's cover letter. These include geologic hazards, health concerns, septic fit/design, and proper screening from CR 2, among other justifications.

**County Avalanche Map:**

The Sketch Plan for this project has been overlaid onto the County Avalanche Map, which is included with this application submittal for your review. According to the County Avalanche Map, the site does not appear to be within a potential avalanche area.

**County Geohazards Map:**

The Sketch Plan for this project has been overlaid onto the County Geohazards Map, which is included with this application submittal for your review. According to the County Geohazards Map, the proposed building location appears to be in an area of physiographic floodplain (pf). However, per visual inspection and FEMA panel review, it has been determined that the proposed building envelope is not in a floodplain, and there is no actual floodplain hazard. A letter recording this determination has been included with this application.

**Foundation:**

The foundation of the residence will include concrete stem walls and spread footings that will extend below frost depth and 12" minimum below native grade if backfill is used at any locations. The garage will be slab-on-grade with frost-protected spread footings. The deck will include wood posts with concrete spot footings that will extend below frost depth.

**Elevation at Structure:**

The floor elevation of the proposed residence is approximately 9,787 ft, which is below 11,000 feet elevation, where the County has limits on cabin square footage.

**Residence Size and Height:**

The residence will be two stories and will be approximately 40'x44' with a 7' deep wraparound covered porch and additional 30'x30' attached garage. The plan utilizes a smaller second story footprint, which results in a lower, more integrated roof design. The conditioned home area will be approximately 2,600 sf and the garage will be 900 sf.

The maximum height of the residence, which is measured from the lowest adjacent native grade up to the ridge of the 8:12 primary gable roof, is approximately 32'-0", which is below the County height limit of 35 feet. This height is approximate as the plans are schematic and will be confirmed during the building permit process.

**Building Plans:**

Preliminary building plans for the proposed residence are included in the following section of this package.

**Residence Style:**

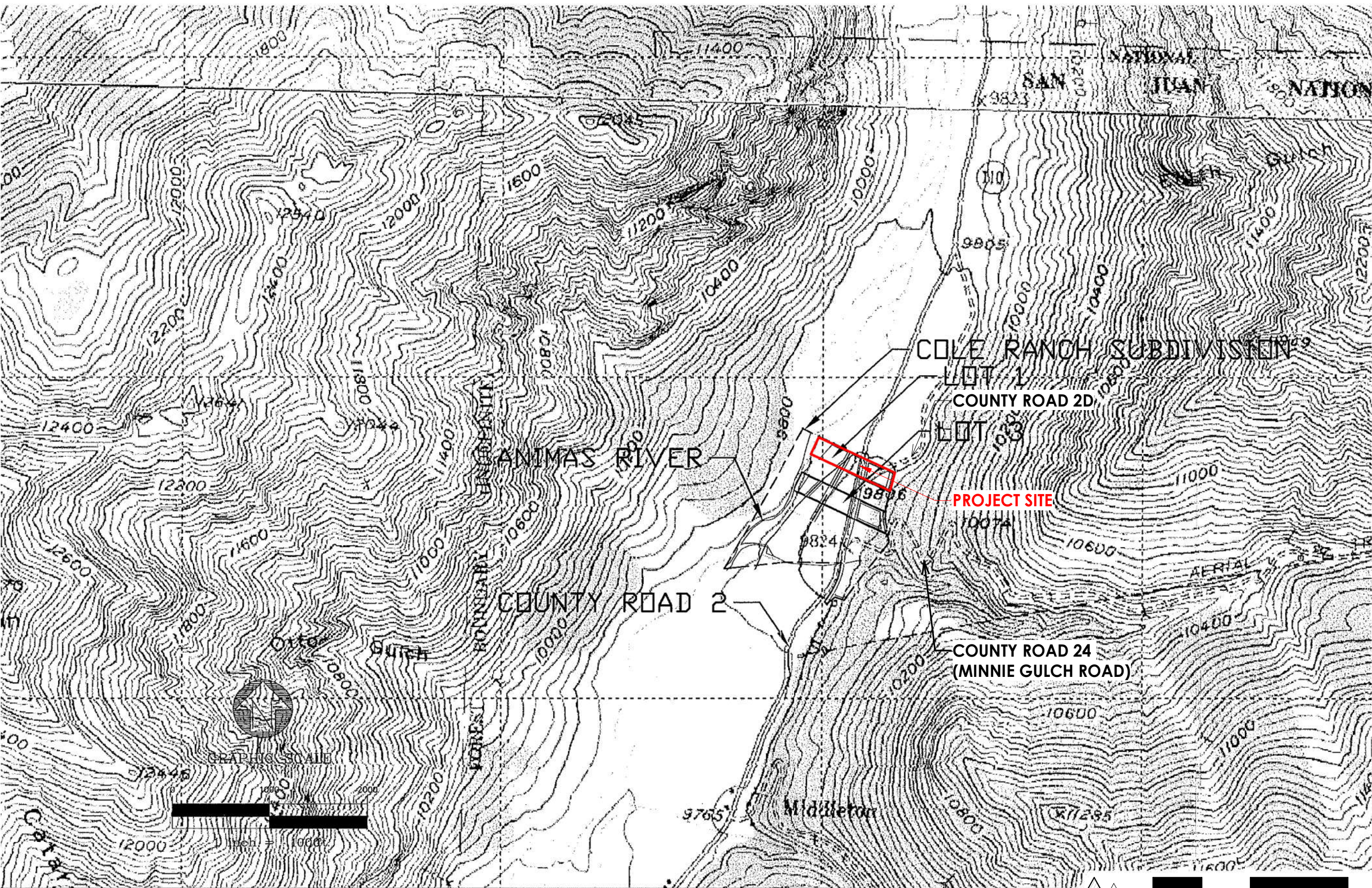
The design of the home will reflect the log cabin style seen throughout the San Juan Mountains.

**Building Materials:**

An image of the proposed building materials and design vernacular is included in the Scenic Quality Report for your review. The proposed materials consist of the following:

- Log siding with a medium, natural stain.
- Rough sawn wood accents with a medium, natural stain.
- Slate color standing seam metal roof with matching trim.
- Stacked river stone used at the column bases.







**MOUNTAIN**  
**grain**  
ARCHITECTURE

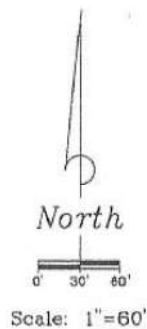
DURANGO, CO 81301  
970 | 515 | 7882  
info@mtngrain.com  
mtngrain.com

PROJECT #:	20-02
ASSESSOR'S PARCEL #:	47730300051000

NEW CONSTRUCTION OF:	<b>THE SAMS RESIDENCE</b>
	LOT 1 COLE RANCH SUBDIVISION SILVERTON, CO 81433

SHEET TITLE:	VICINITY MAP
SHEET #:	A
SCALE:	1" = 1000'





Amended Plat No. 1 – Lots 1 & 2  
Cole Ranch Subdivision  
Located in Part of the John H. French Placer  
Mineral Survey No. 45, Mining District No. 7  
Suspended Sec. 30, T42N, R6W, N.M.P.M.  
Eureka Mining District  
San Juan County, Colorado

**NOTE: ITEMS DRAWN IN RED REPRESENT A PROPOSED AMENDMENT TO THE PREVIOUSLY APPROVED PLAT FOR LOT 1, DATED AUGUST 1, 2013. THESE MODIFICATIONS INCLUDE A MOVED BUILDING ENVELOPE AND ADJUSTED OPEN SPACE. THE RESULTANT OPEN SPACE IS 2.92 ACRES, WHICH IS 0.58 ACRE LARGER THEN THE ORIGINAL OPEN SPACE AREA. IF APPROVED, A FINALIZED PLAT WILL BE SUBMITTED BY THE SURVEYOR.**

CERTIFICATE OF OWNERSHIP AND DEDICATION:  
KNOW ALL MEN BY THESE PRESENTS, that the undersigned owners of Lots 1 and 2, Cole Ranch Subdivision, San Juan County, State of Colorado, and the County of San Juan, Colorado,  
HAVE BY THESE PRESENTS, caused to be laid out, plotted, Amended Plat No.1 of said Lots 1 and 2, as shown on this plat, specifically the realignment of County Road 20 as shown hereon.

Owners of Lot 1, Cole Ranch Subdivision:

By: \_\_\_\_\_

By: \_\_\_\_\_

Owners of Lot 2, Cole Ranch Subdivision:

By: \_\_\_\_\_

By: \_\_\_\_\_

San Juan County Board of County Commissioners:

By: \_\_\_\_\_

STATE OF \_\_\_\_\_ ) ss

COUNTY OF \_\_\_\_\_ )

The foregoing signatures were acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_ A.D., 20\_\_\_\_ by \_\_\_\_\_

My commission expires \_\_\_\_\_  
Witness my hand and seal \_\_\_\_\_  
Notary Public

APPROVAL OF BOARD OF COUNTY COMMISSIONERS

Approved by the San Juan County Board of County Commissioners this \_\_\_\_\_ day of \_\_\_\_\_ A.D., 20\_\_\_\_

Mayor

APPROVAL OF COUNTY ATTORNEY:

Approved for recording this \_\_\_\_\_ day of \_\_\_\_\_ A.D., 20\_\_\_\_ by \_\_\_\_\_, County Attorney.

Attorney at Law Registration No. \_\_\_\_\_ Date \_\_\_\_\_

**SURVEYOR'S CERTIFICATE:**

I, Robert A. Larson, a Registered Land Surveyor in the State of Colorado, do hereby certify that this plat accurately represents to the best of my knowledge and information, a survey made by me or under my direct supervision, and that said survey conforms to all State laws and standards for property boundaries.

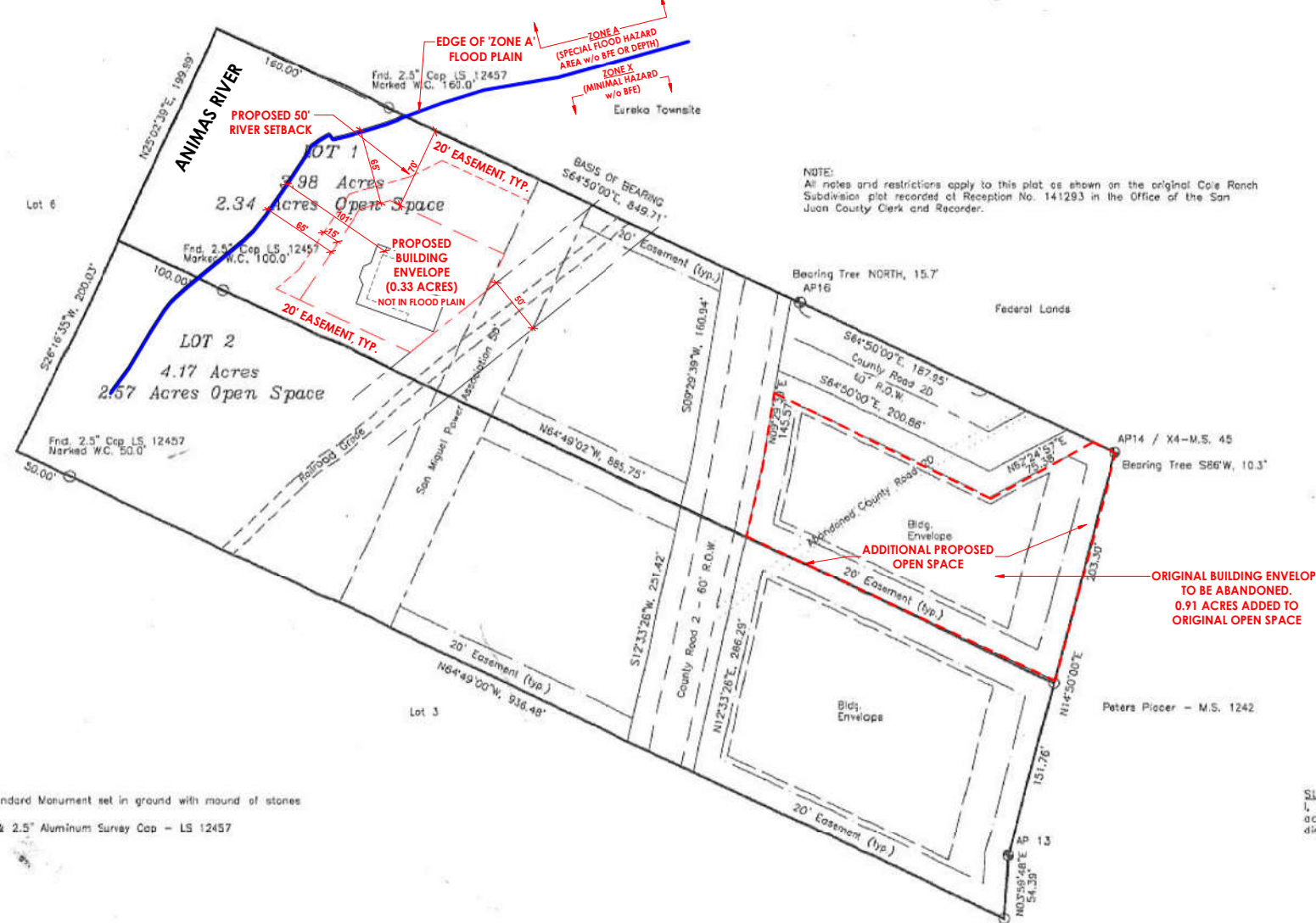
**FOR COUNTY REVIEW**

Robert A. Larson LS 31160 Date \_\_\_\_\_ SEAL

**RECORDER'S CERTIFICATE:**

This plat was filed for record in the office of the Clerk and Recorder of San Juan County at \_\_\_\_\_ M., on the \_\_\_\_\_ day of \_\_\_\_\_ A.D., 20\_\_\_\_, in Book \_\_\_\_\_ Page \_\_\_\_\_, Reception No. \_\_\_\_\_

Clerk & Recorder



**LEGEND**

- 3-1/4" BLM Standard Monument set in ground with mound of stones
- Fnd. #5 Rebar & 2.5" Aluminum Survey Cap - LS 12457

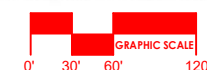
NOTE: Legal description from the Cole Ranch Subdivision Plat recorded at Reception No. 141293 in the records of the San Juan County Clerk & Recorder's Office.

NOTICE: According to Colorado Law you must commence any legal action upon any defect in this survey within three years after you first discovered such defect. In no event, may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.

**BASIS OF BEARING:**

The bearing between a 3-1/4" Standard Monument, marked AP16, and a Witness Corner for the northeast corner of Lot 1, Cole Ranch Subdivision, a 2-1/2" Aluminum Survey Cap, LS 12457, is assumed to be N64°50'00"W as shown on the Cole Ranch Subdivision Plat at Reception No. 141293 in the Office of the San Juan County Clerk and Recorder's Office.

**PROPOSED PLAT AMENDMENT**  
1" = 60'-0" WHEN PRINTED FULL SCALE ON 24x36



NEW CONSTRUCTION OF:  
**THE SAMS RESIDENCE**

**APPLICATION FOR IMPROVEMENT PERMIT**

**PRELIMINARY NOT FOR CONSTRUCTION**

SHEET TITLE: PROPOSED PLAT AMENDMENT  
SHEET #: B  
SCALE: 1" = 60'-0"  
\*\*WHEN PRINTED FULL SCALE ON 24x36



LOT 1  
COLE RANCH  
SUBDIVISION  
SILVERTON, CO 81433  
PROJECT #: 2002

09.02.2020

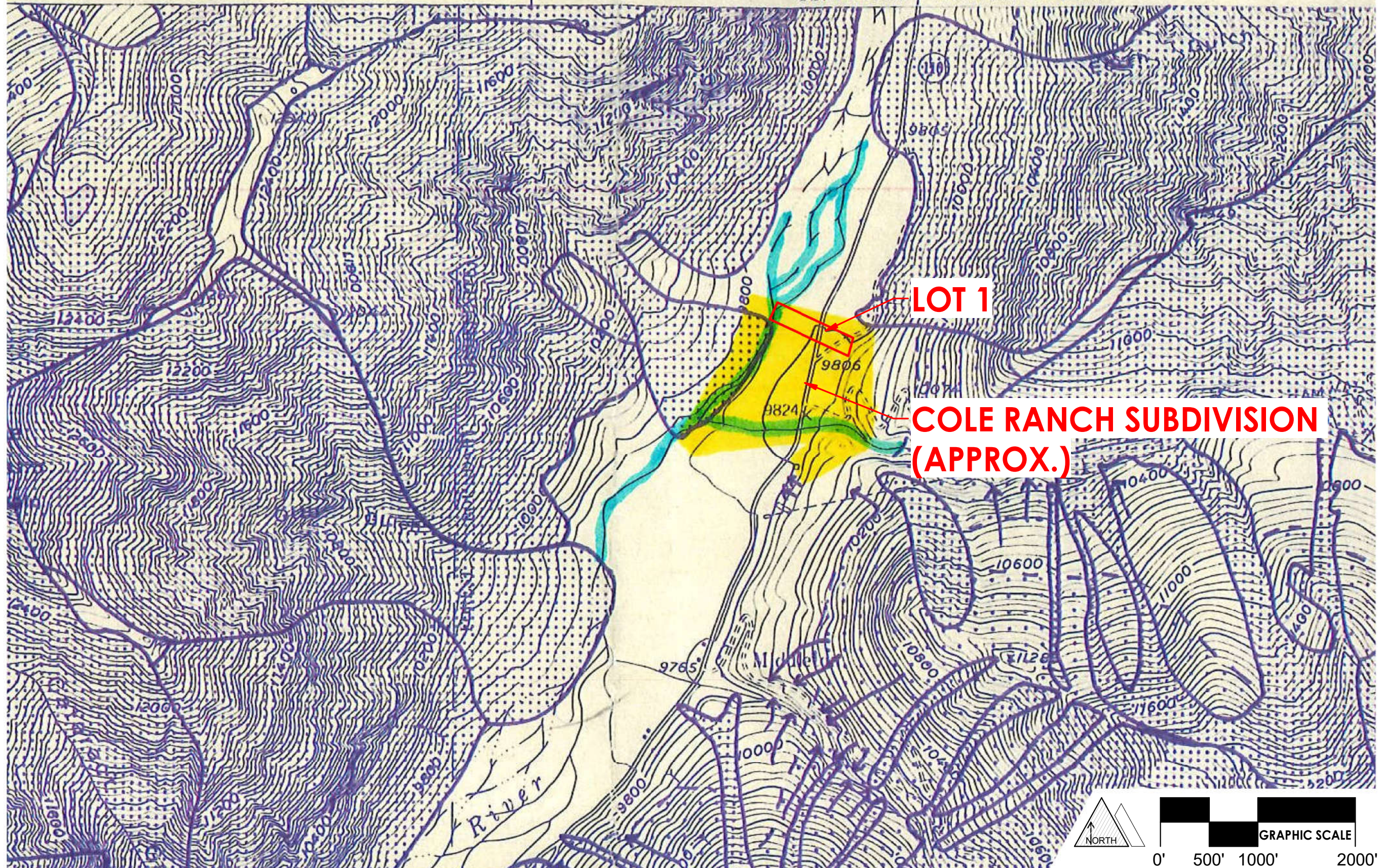
ASSESSORS  
PARCEL #: 47730300051000



# COUNTY AVALANCHE HAZARD MAP

COLE RANCH  
2/25/20 *ama*

DURAY 19 MI HANDED PLAKI



DURANGO, CO 81301  
970.515.7882  
info@mtngrain.com  
mtngrain.com

PROJECT #:  
20-02  
ASSESSOR'S  
PARCEL #:  
47730300051000

NEW CONSTRUCTION OF:  
**THE SAMS RESIDENCE**  
LOT 1  
COLE RANCH SUBDIVISION  
SILVERTON, CO 81433

SHEET TITLE:  
SKETCH PLAN  
& COUNTY  
AVALANCHE  
MAP

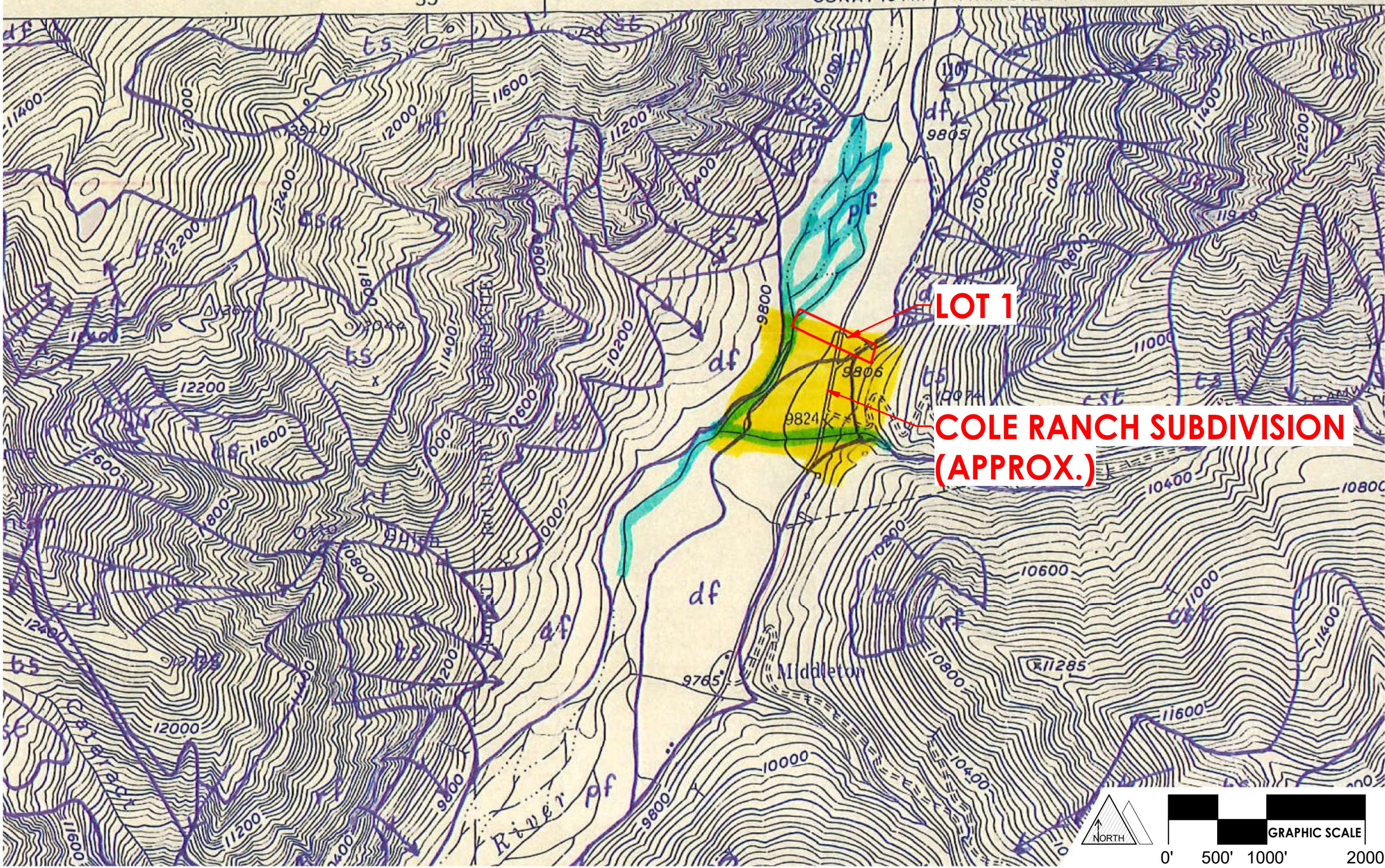
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C

SCALE: 1" = 1000'



COUNTY GEOHAZARD  
MAP

COLE RANCH  
2/25/20  
Sma





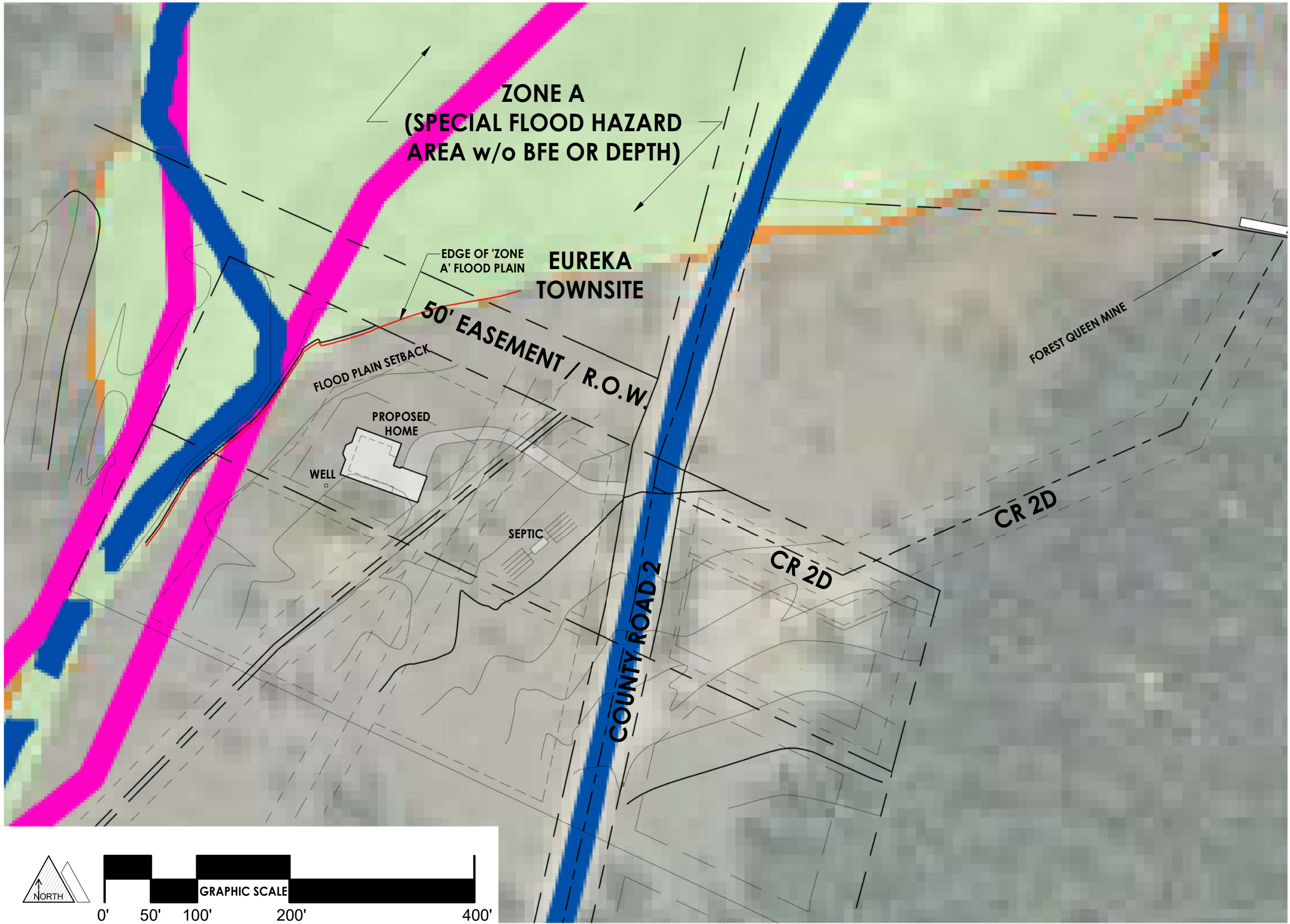
**MOUNTAIN  
grain**  
ARCHITECTURE

DURANGO, CO 81301  
970.515.7882  
info@mtngrain.com  
mtngrain.com

PROJECT #:	20-02	ASSESSOR'S PARCEL #:	47730300051000
NEW CONSTRUCTION OF: <b>THE SAMS RESIDENCE</b>			
LOT 1 COLE RANCH SUBDIVISION SILVERTON, CO 81433			

SHEET TITLE:	SKETCH PLAN & COUNTY GEOHAZARD MAP
SHEET #:	D
SCALE:	1" = 1000'







**MOUNTAIN  
grain**  
ARCHITECTURE

DURANGO, CO 81301  
970 | 515 | 7882  
info@mtngrain.com  
mtngrain.com

PROJECT #:	20-02	ASSESSOR'S PARCEL #:	47730300051000
NEW CONSTRUCTION OF: <b>THE SAMS RESIDENCE</b>			
LOT 1 COLE RANCH SUBDIVISION SILVERTON, CO 81433			

SHEET TITLE:

SKETCH PLAN  
WITH FLOOD  
HAZARD MAP

SHEET #:

E

SCALE: 1" = 100'-0"





IMAGES OF FOREST QUEEN MINE STAGING AREA

EUREKA TOWNSITE

EUREKA TOWNSITE

FOREST QUEEN MINE

BLM

LOT 1 (WEST)

PROPOSED HOME

COUNTY ROAD 2

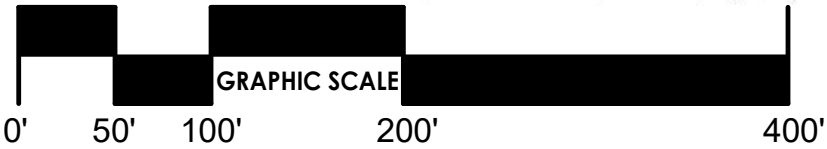
LOT 1 (EAST)

CR 2D

CR 2D

APPROXIMATE LOCATION OF FOREST QUEEN STAGING AREA AND DEBRIS/EQUIPMENT STORAGE

BLM



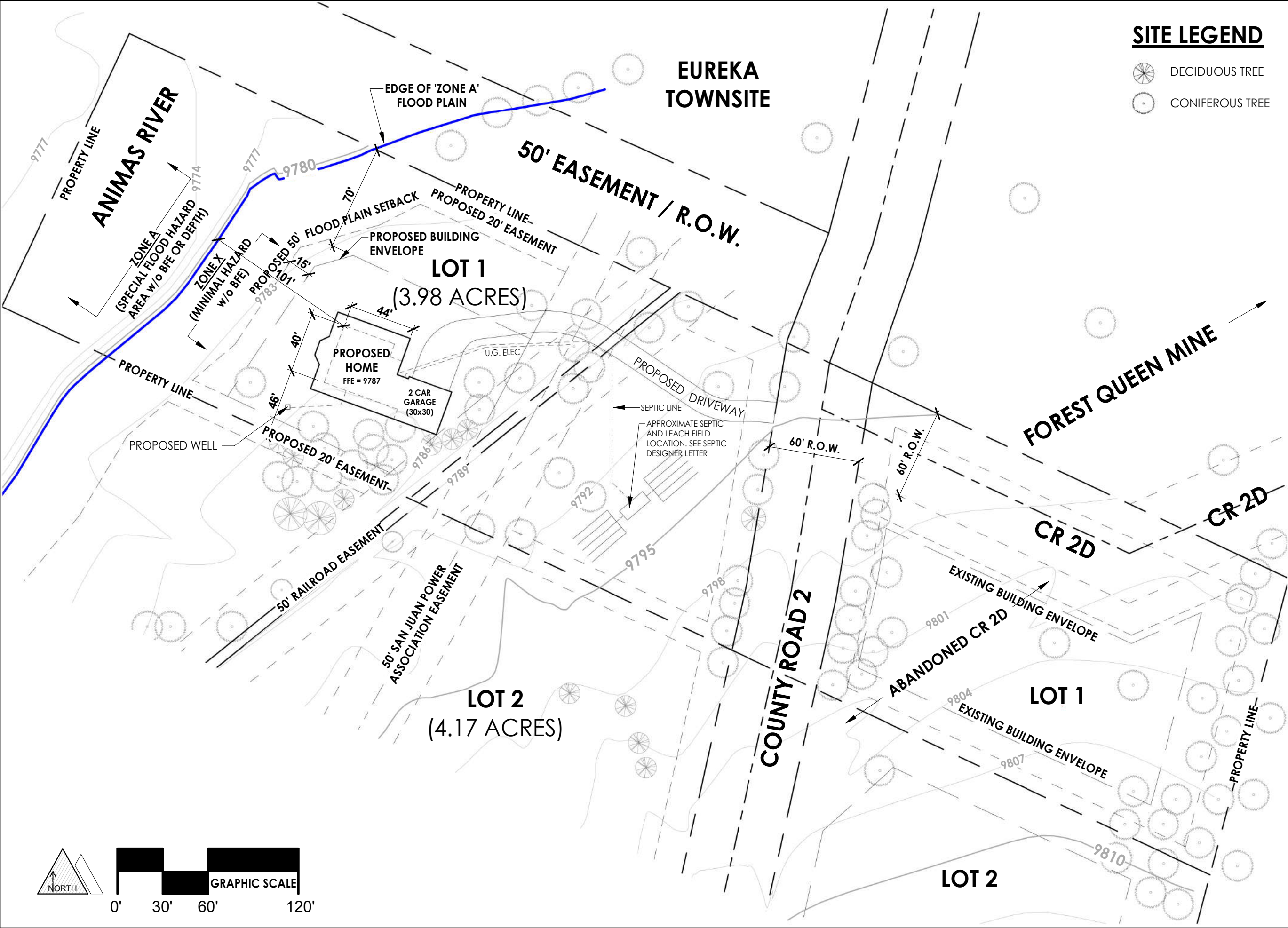
**MOUNTAIN grain**  
ARCHITECTURE

DURANGO, CO 81301  
970 | 515 | 7882  
info@mtngrain.com  
mtngrain.com

PROJECT #:	20-02
ASSESSOR'S PARCEL #:	47730300051000
NEW CONSTRUCTION OF:	<p><b>THE SAMS RESIDENCE</b></p> <p>LOT 1</p> <p>COLE RANCH SUBDIVISION</p> <p>SILVERTON, CO 81433</p>

SHEET TITLE:	SKETCH PLAN WITH MINE HAZARDS
SHEET #:	F
SCALE:	1" = 100'-0"





**SITE LEGEND**

- DECIDUOUS TREE
- CONIFEROUS TREE



**MOUNTAIN grain**  
ARCHITECTURE  
DURANGO, CO 81301  
970 | 515 | 7882  
info@mtngrain.com  
mtngrain.com

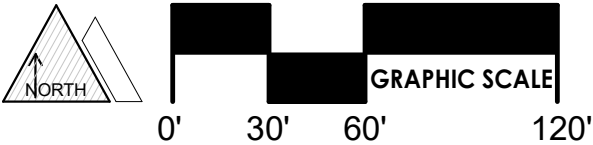
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ASSESSOR'S PARCEL #:	47730300051000

NEW CONSTRUCTION OF:	<b>THE SAMS RESIDENCE</b>
LOT 1	
COLE RANCH SUBDIVISION	
SILVERTON, CO 81433	

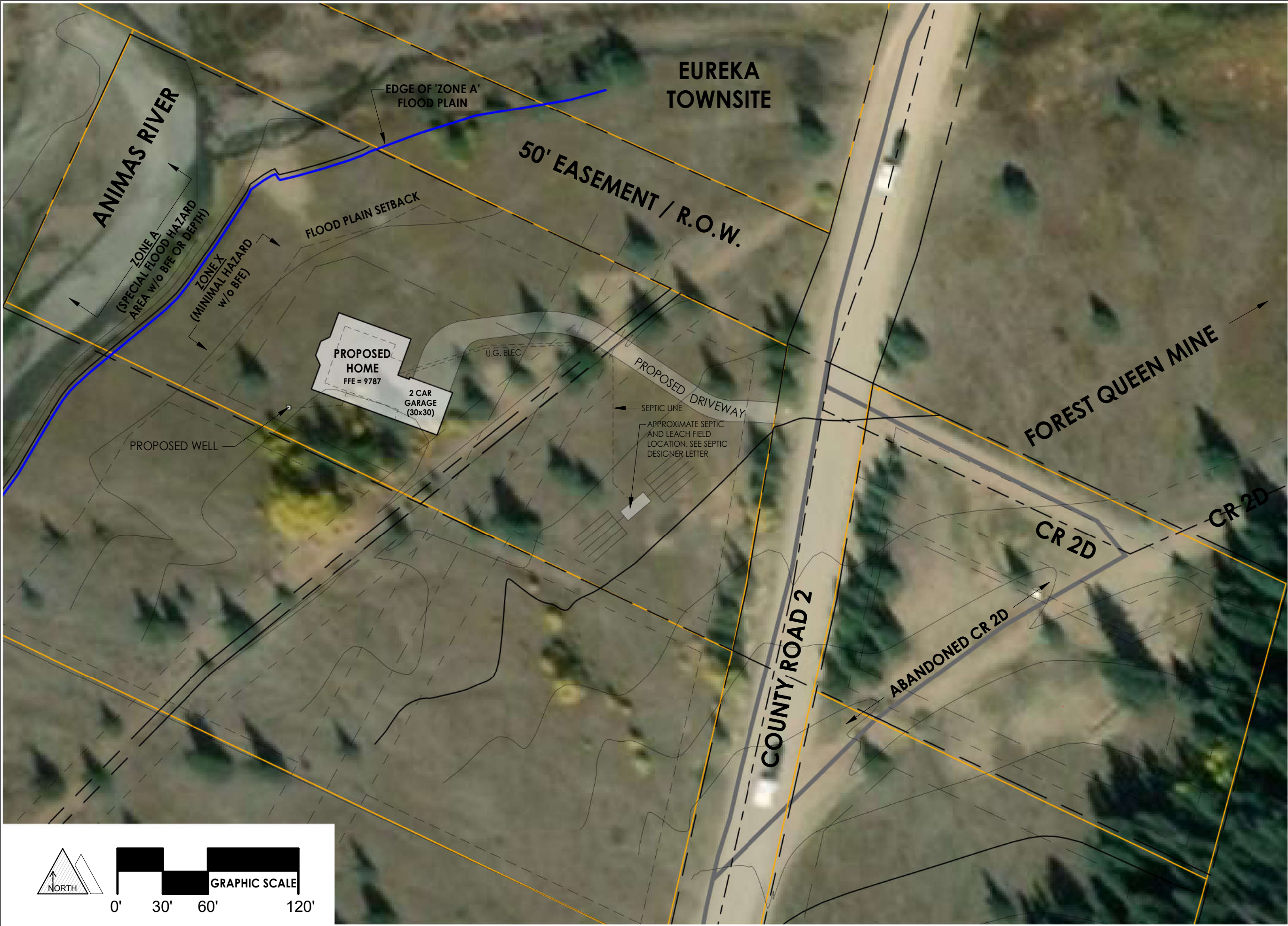
SHEET TITLE:	SKETCH PLAN WITH TOPOGRAPHY
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SHEET #:	G
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SCALE:	1" = 60'-0"
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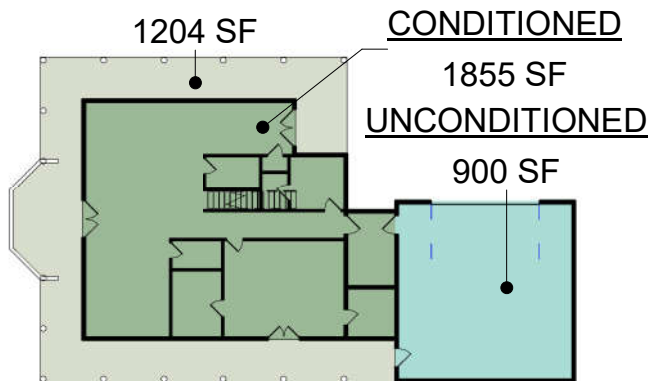




 <b>MOUNTAIN grain</b> ARCHITECTURE DURANGO, CO 81301 970   515   7882 info@mtngrain.com mtngrain.com	
PROJECT #:	20-02
ASSESSOR'S PARCEL #:	47730300051000
NEW CONSTRUCTION OF: <b>THE SAMS RESIDENCE</b>	
LOT 1 COLE RANCH SUBDIVISION SILVERTON, CO 81433	
SHEET TITLE:	SKETCH PLAN WITH AERIAL IMAGE
SHEET #:	H
SCALE:	1" = 60'-0"



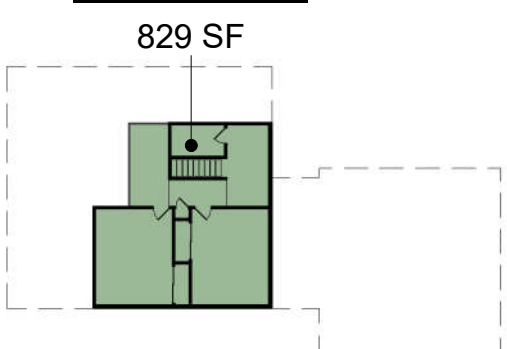
COVERED EXTERIOR



1ST FLR AREA

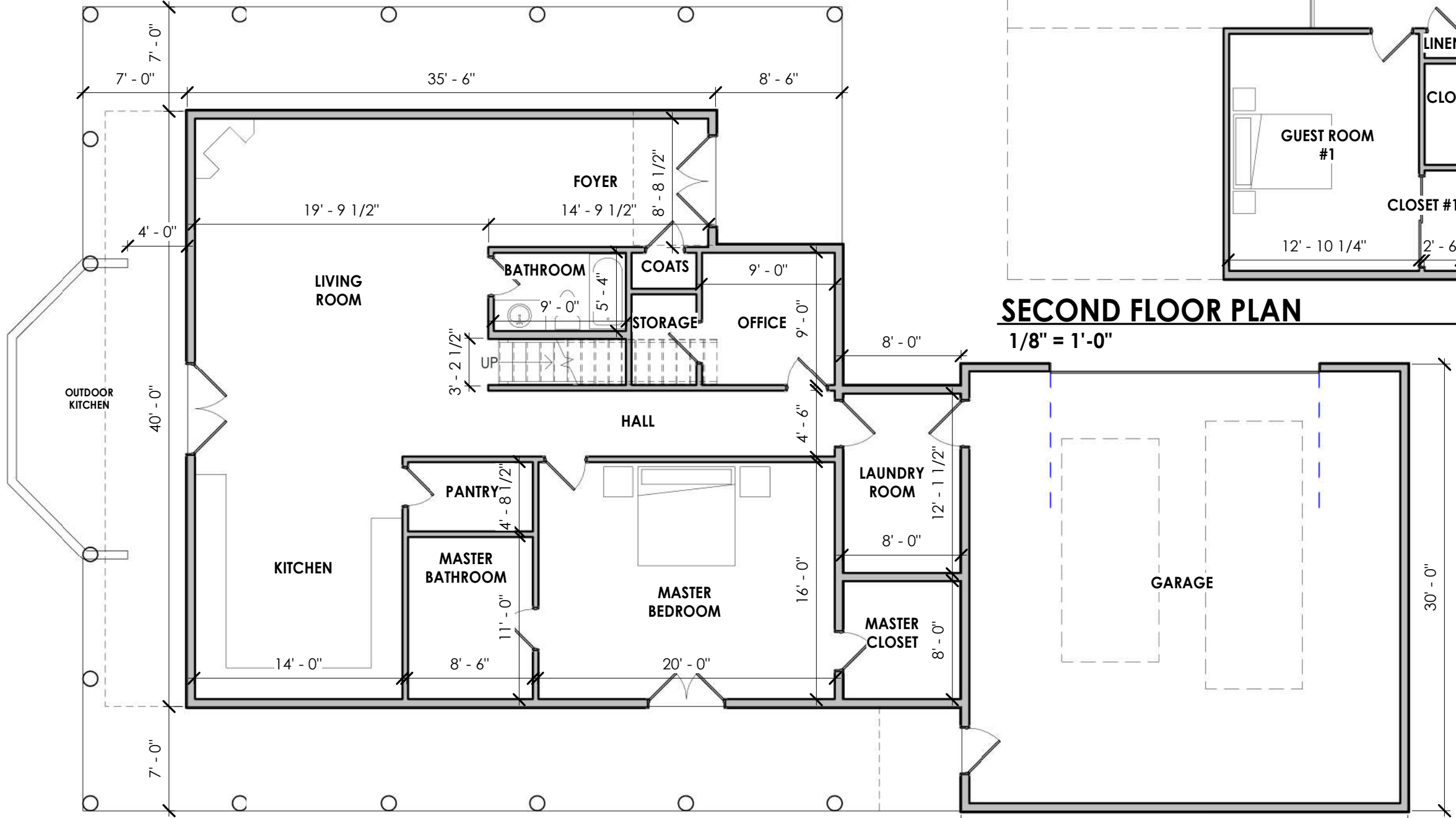
1/32" = 1'-0"

CONDITIONED



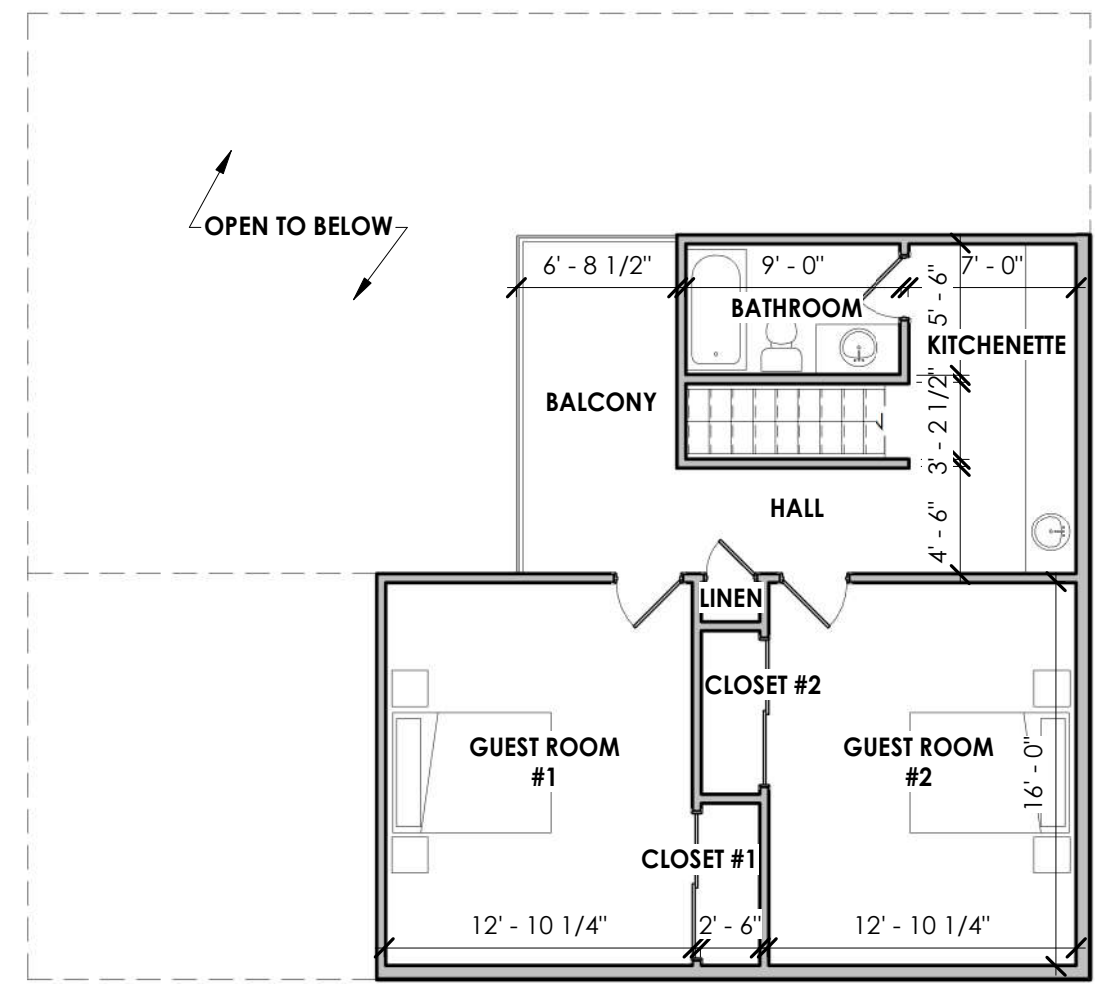
2ND FLR AREA

1/32" = 1'-0"



FIRST FLOOR PLAN

1/8" = 1'-0"



SECOND FLOOR PLAN

1/8" = 1'-0"

**MOUNTAIN**  
**grain**  
ARCHITECTURE  
DURANGO, CO 81301  
970 | 515 | 7882  
info@mtngrain.com  
mtngrain.com

PROJECT #:	20-02
ASSESSOR'S PARCEL #:	47730300051000
NEW CONSTRUCTION OF::	<b>THE SAMS RESIDENCE</b>
	LOT 1 COLE RANCH SUBDIVISION SILVERTON, CO 81433

SHEET TITLE:	DRAFT FLOOR PLANS
SHEET #:	1
SCALE:	As indicated

## Christopher Clemmons

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**From:** Chad Engelhardt <engelhardtenvironmental@gmail.com>  
**Sent:** Friday, July 31, 2020 2:22 PM  
**To:** Christopher Clemmons  
**Cc:** animaspines@gmail.com; sds@durango.net  
**Subject:** RE: Cole Ranch Lot 1  
**Attachments:** OWTS Site Plan.pdf

Chris,

With regard to the possible OWTS (on-site wastewater treatment system) options for the Sams' property at Lot 1 of the Cole Ranch Subdivision in Silverton, CO, I submit the following:

On June 4, 2020, I conducted a site and soil evaluation to determine the most suitable OWTS location respective to the proposed building envelope, among other limiting factors; please refer to the attached OWTS site plan. At the proposed OWTS location, I believe that conditions are the most conducive for OWTS construction. In this scenario, grade is such that a pressurized OWTS would be required and I would recommend placing the force main in alignment with the proposed driveway, where there is already a cut in the old railroad bed. The desired building envelope overlaps the alternate OWTS location, and it is for this reason, deemed "alternate". However, at the alternate OWTS location, I would characterize the soils as more suitable for effluent treatment than that of the proposed OWTS location.


On July 17, 2020, I returned to the property to evaluate the viability of placing the OWTS and all other improvements on the east side of County Road 2. Given the available area, among other limiting factors, it is my opinion that placing all of the proposed improvements may not be possible. If placing the building envelope on the east side of County Road 2 is subsequently desired, it may be possible to trench the sewer line to the west, beneath County Road 2, and construct the OWTS at the aforementioned proposed or alternate locations.

Please let me know if you have any questions or need anything further from me at this time.

Thank you.

Chad Engelhardt  
Engelhardt Environmental, LLC.  
[engelhardt.environmental@gmail.com](mailto:engelhardt.environmental@gmail.com)  
970.946.8657

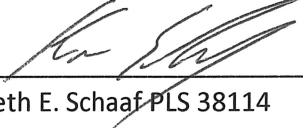


 MOUNTAIN grain ARCHITECTURE <small>DURANGO, CO 81301 970.512.7862 info@mtgrain.com mtgrain.com</small>	
PROJECT #:	20-02
ASSESSOR'S PARCEL #:	4773000061000
NEW CONSTRUCTION OF: <b>THE SAMS RESIDENCE</b>	
LOT 1 COLE RANCH SUBDIVISION SILVERTON, CO 81433	
SHEET:	SKETCH PLAN WITH AERIAL IMAGE
SHEET #:	E
SCALE:	1" = 60'-0"



To whom it may concern:

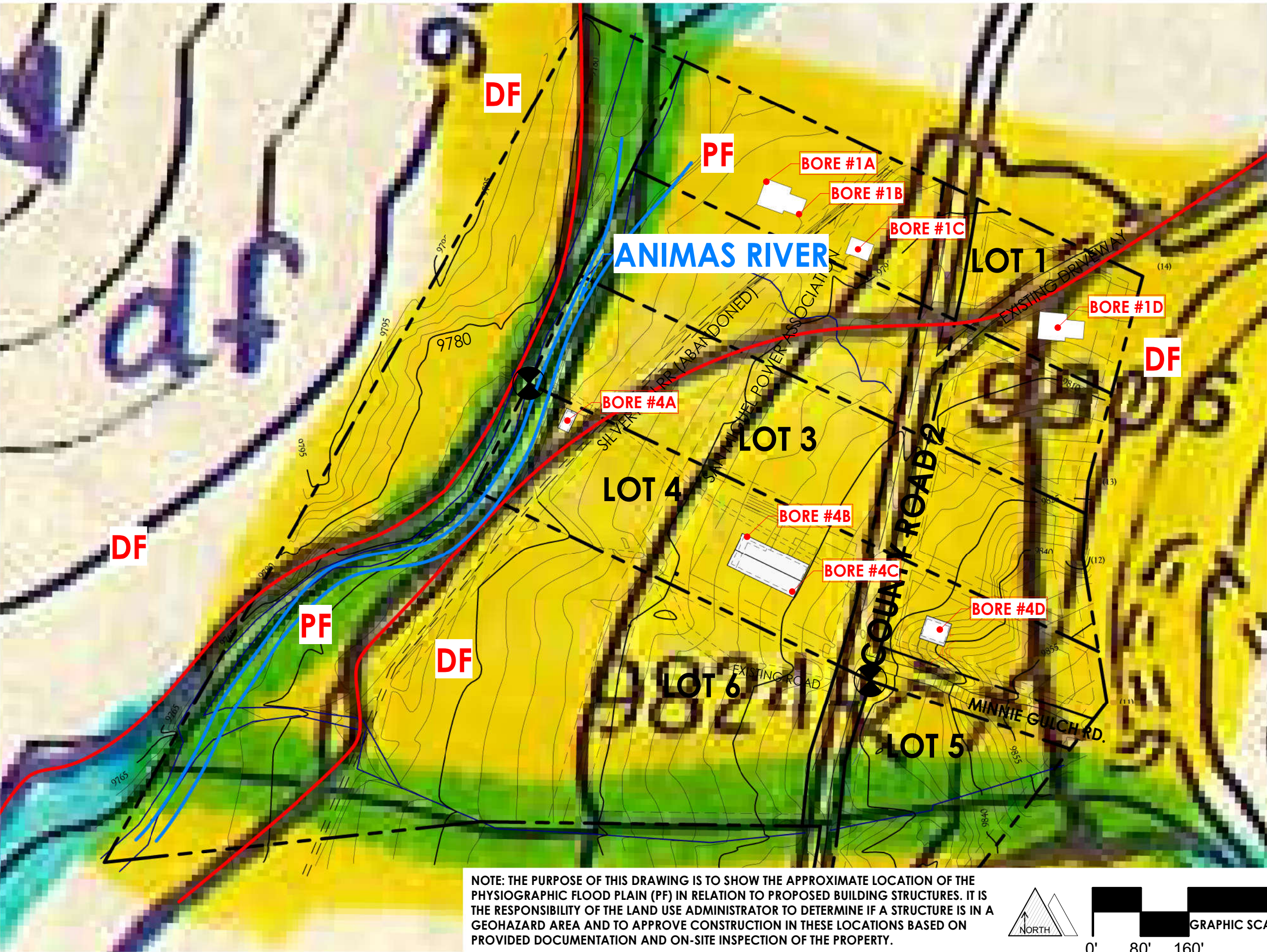
The bore holes on Lots 1 and 4 of the Cole ranch Subdivision, located in San Juan County, Colorado, as shown on the enlarged Geohazard Map sheet G as provided by Mountain Grain Architecture, does not fall in the Flood Plain.



---

Kenneth E. Schaaf PLS 38114







**MOUNTAIN**  
grain  
ARCHITECTURE

DURANGO, CO 81301  
970 | 515 | 7882  
info@mtngrain.com  
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SOILS COORDINATION | 05/27/2020


SHEET TITLE:

ENLARGED  
GEOHAZARD  
MAP


SHEET #:

G

SCALE: 1" = 160'-0"



NORTH



0' 80' 160' 320'

GRAPHIC SCALE



**San Juan County Historic Impact Review Committee  
Silverton, CO 81433**

**Re: Lots 1 & 2 Cole Ranch Subdivision – Merlin Schaefer, Applicant**

**Date: January 24, 2006**

The Historic Impact Review Committee reviewed the above project at the request of the county planner. Present were Bill Jones, Steve Fearn, and Scott Fetchenheir. David Singer met earlier with Bill Jones to give his input.

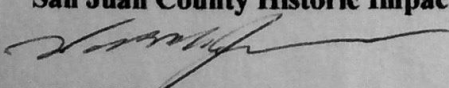
No site visit was performed due to winter snow conditions. The site maps prepared by Engineer Mountain were reviewed, and specific details of the site and project were obtained from Lisa Adair and Beverly Kaiser by telephone. The principal historic site under review is the Silverton Northern Railroad grade crossing the site. This right of way has previously been determined by San Juan County to be an historic site.

The principal impact to site is potential crossing by driveways to access proposed building envelopes. The grade is in a cut where it enters the northerly sideline of lot 1 and this cut diminishes to the south. No ties are said to remain on the grade, which is otherwise very intact and shows good historic integrity. A 20 foot setback on each side of the grade center line has already been established by plat survey. The Impact Committee deems the grade a significant historic site and should be preserved intact. The committee has the following recommendations:

1. Any road crossing shall be made at the grade of the existing roadbed, to preserve the existing railroad grade elevation. If crossed where the railroad grade lies in a cut the cut's sides should be excavated and re-graded to bring the new road down to the railroad grade elevation. The historic grade and cut shall not be filled. If crossed where the historic grade is elevated from the adjacent topography, the new road should be filled to the top of the existing railroad grade elevation, not cut through.
2. Spoil from cut and fill operations should not be placed within the 40 foot railroad right of way.
3. The new road(s) should be limited to a roadway width of 10 to 12 feet to prevent excessive cut and fill work and subsequent excessive impact to the railroad grade.
4. The driveway for lots 1 and 3 should be located along the south side boundary line to minimize cuts needed to reach grade as the topography in this area is less. In addition locating the driveways here would permit them to be used in future to access lots 2 and 4. The committee recommends keeping crossings of the historic railroad grade to a minimum. Two crossings could potentially access four lots.
5. The 20 foot set back from the railroad grade center line should be maintained as a minimum for all construction on the site.
6. If site conditions in the spring show different conditions than assumed above, a site visit should be requested for further review. If conditions are essentially as described above, no additional site visit is necessary.

Sincerely,

**San Juan County Historic Impact Review Committee**



By: William R Jones

Copy: Engineer Mountain

GEOTECHNICAL ENGINEERING STUDY

SAMS RESIDENCE

LOT 1 COLE RANCH

SILVERTON, COLORADO

JULY 9, 2020

PREPARED FOR:  
Todd and Julie Sams  
c/o Christopher Clemmons, RA, NCARB  
Mountain Grain Architecture  
PROJECT NO. 56082GE



## Table of Contents

<b>1.0 REPORT INTRODUCTION.....</b>	<b>1</b>
1.1 Proposed Construction .....	2
<b>2.0 FIELD STUDY.....</b>	<b>2</b>
2.1 Site Description and Geomorphology.....	2
2.2 Subsurface Soil and Water Conditions .....	2
<b>3.0 LABORATORY STUDY .....</b>	<b>3</b>
<b>4.0 FOUNDATION RECOMMENDATIONS.....</b>	<b>4</b>
4.1 Shallow Foundation System Concepts.....	4
4.1.1 Spread Footings.....	5
4.1.2 General Shallow Foundation Considerations.....	8
<b>5.0 RETAINING STRUCTURES.....</b>	<b>9</b>
<b>6.0 SUBSURFACE DRAIN SYSTEM .....</b>	<b>10</b>
<b>7.0 CONCRETE FLATWORK .....</b>	<b>12</b>
7.1 Interior Concrete Slab-on-Grade Floors.....	12
7.1.1 Capillary and Vapor Moisture Rise.....	14
7.1.2 Slab Reinforcement Considerations.....	14
7.2 Exterior Concrete Flatwork Considerations.....	14
7.3 General Concrete Flatwork Comments.....	15
<b>8.0 CONSTRUCTION CONSIDERATIONS.....</b>	<b>16</b>
8.1 Fill Placement Recommendations.....	16
8.1.1 Natural Soil Fill.....	17
8.1.2 Granular Compacted Structural Fill .....	17
8.1.3 Deep Fill Considerations.....	18
8.2 Excavation Considerations.....	19
8.2.1 Excavation Cut Slopes .....	19
8.3 Utility Considerations .....	19
8.4 Exterior Grading and Drainage Comments.....	20
8.5 Landscaping Considerations .....	20
8.6 Soil Sulfate and Corrosion Issues .....	22
8.7 Radon Issues .....	22
8.8 Mold and Other Biological Contaminants .....	22
<b>9.0 CONSTRUCTION MONITORING AND TESTING .....</b>	<b>22</b>
<b>10.0 CONCLUSIONS .....</b>	<b>23</b>
<b>11.0 LIMITATIONS.....</b>	<b>23</b>
<b>FIELD STUDY RESULTS.....</b>	<b>Appendix A</b>
Log of Test Borings	
<b>LABORATORY TEST RESULTS .....</b>	<b>Appendix B</b>
Sieve and Atterberg Limit Test Results	
Swell-Consolidation Test Results	

## 1.0 REPORT INTRODUCTION

This report presents our geotechnical engineering recommendations for the proposed Sams residence and shop structure located on Lot 1 Cole Ranch, Silverton, San Juan County, Colorado. This report was requested by Christopher Clemmons, RA, NCARB, Mountain Grain Architecture, on behalf of Todd and Julie Sams, and was prepared in accordance with our proposal dated May 22, 2020, Proposal No. 20128P.

As outlined within our proposal for services for this project the client is responsible for appropriate distribution of this report to other design professionals and/or governmental agencies unless specific arrangements have been made with us for distribution.

Geotechnical engineering is a discipline which provides insight into natural conditions and site characteristics such as; subsurface soil and water conditions, soil strength, swell (expansion) potential, consolidation (settlement) potential, and often slope stability considerations. The information provided by the geotechnical engineer is utilized by many people including the project owner, architect or designer, structural engineer, civil engineer, the project builder and others. The information is used to help develop a design and subsequently implement construction strategies that are appropriate for the subsurface soil and water conditions, and slope stability considerations. We are available to discuss any aspect of this report with those who are unfamiliar with the recommendations, concepts, and techniques provided below.

This geotechnical engineering report is the beginning of a process involving the geotechnical engineering consultant on any project. It is imperative that the geotechnical engineer be consulted throughout the design and construction process to verify the implementation of the geotechnical engineering recommendations provided in this report. Often the design has not been started or has only been initiated at the time of the preparation of the geotechnical engineering study. Changes in the proposed design must be communicated to the geotechnical engineer so that we have the opportunity to tailor our recommendations as needed based on the proposed site development and structure design.

The following outline provides a synopsis of the various portions of this report;

- ❖ Sections 1.0 provides an introduction and an establishment of our scope of service.
- ❖ Sections 2.0 and 3.0 of this report present our geotechnical engineering field and laboratory studies
- ❖ Sections 4.0 through 7.0 presents our geotechnical engineering design parameters and recommendations which are based on our engineering analysis of the data obtained.
- ❖ Section 8.0 provides a brief discussion of construction sequencing and strategies which may influence the geotechnical engineering characteristics of the site. Ancillary information such as some background information regarding soil corrosion and radon considerations is also presented as general reference.
- ❖ Section 9.0 provides our general construction monitoring and testing recommendations.
- ❖ Section 10.0 provides our conclusions and limitations.

The data used to generate our recommendations are presented throughout this report and in the attached figures.

July 9, 2020

All recommendations provided throughout within this report must be followed in order to achieve the intended performance of the foundation system and other components that are supported by the site soil.

## 1.1 Proposed Construction

We understand the proposed construction will consist of a new single-family residential structure and shop structure. We assume the proposed structures will likely be a wood framed structure supported by a steel reinforced concrete foundation system. Grading for the structure is assumed to be relatively minor with cuts of approximately 3 to 8 feet below the adjacent ground surface. We assume relatively light foundation loadings, typical of the proposed type of construction.

When final building location, grading and loading information have been developed, we should be notified to re-evaluate the recommendations presented in this report.

## 2.0 FIELD STUDY

### 2.1 Site Description and Geomorphology

The approximate 3.98 acre property is currently vacant. The ground surface is relatively flat within the proposed building locations. The Animas River borders the lot to the west and an old railroad easement and CR 2 and 2D transects and borders the property. Vegetation consists primarily of coniferous and deciduous trees and grasses.

### 2.2 Subsurface Soil and Water Conditions

We advanced a total of four test borings in the vicinity of the proposed structures. A schematic showing the approximate boring locations is provided below as Figure 1. The logs of the soils encountered in our test borings are presented in Appendix A.



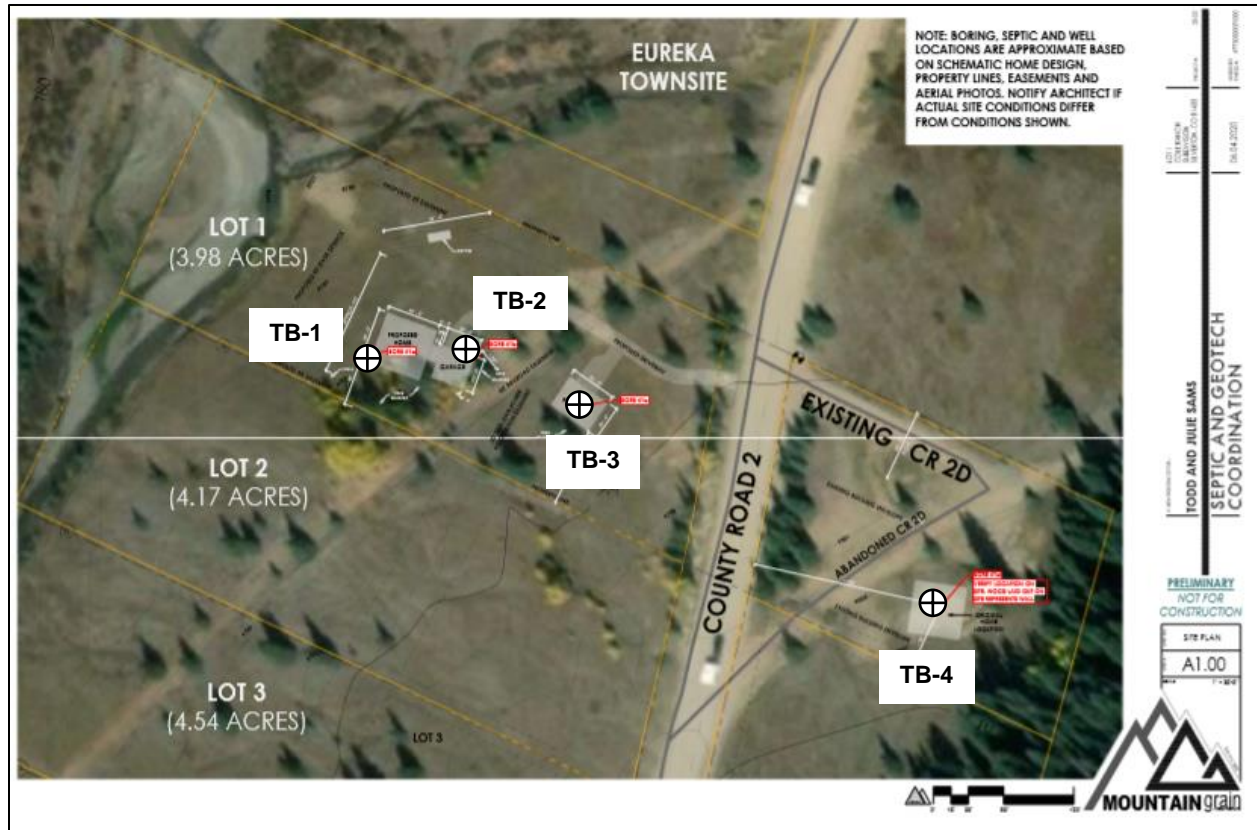


Figure 1: Locations of Exploratory Borings. Adapted from a Mountain Grain site plan dated June 4, 2020.

The schematic presented above was prepared using notes and field measurements obtained during our field exploration and is intended to show the approximate test boring locations for reference purposes only.

The subsurface conditions encountered in our test borings consisted of poorly graded gravel and cobbles with silt and sand and few boulders (GP-GM). Practical auger drilling refusal was encountered on cobble/small boulder size material at depths ranging from 3.5 to 5 feet.

We did not encounter free subsurface water in our test borings at the time of the advancement of our test borings at the project site. We suspect that the subsurface water elevation and soil moisture conditions will be influenced by snow melt and/or precipitation and local irrigation.

The logs of the subsurface soil conditions encountered in our test borings are presented in Appendix A. The logs present our interpretation of the subsurface conditions encountered exposed in the test borings at the time of our field work. Subsurface soil and water conditions are often variable across relatively short distances. It is likely that variable subsurface soil and water conditions will be encountered during construction. Laboratory soil classifications of samples obtained may differ from field classifications.

### 3.0 LABORATORY STUDY

The laboratory study included tests to estimate the strength, swell and consolidation potential of the soils tested. We performed the following tests on select samples obtained from the test

July 9, 2020

borings.

- Moisture Content and Dry Density
- Sieve Analysis (Gradation)
- Atterberg Limits, Liquid Limit, Plastic Limit and Plasticity Index
- Swell Consolidation Tests

A synopsis of some of our laboratory data for some of the samples tested is tabulated below.

Sample Designation	Percent Passing #200 Sieve	Atterberg Limits LL/PI	Moisture Content (percent)	Dry Density (PCF)	Measured Swell Pressure (PSF)	Swell or Consolidation Potential
TB-1 @ 0-4'	-	-	10.3	104.2	1,680*	0.8 (% under 500 psf load)
TB-2 @ 0-3 ½'	5	34/8	4.1	-	-	-
TB-3 @ 2'	-	-	6.9	106.3	0*	-0.2% (% under 500 psf load)

**\*NOTES:**

1. We determine the swell pressure as measured in our laboratory using the constant volume method. The graphically estimated load-back swell pressure may be different from that measured in the laboratory.
2. \* = Swell-Consolidation test performed on remolded sample due to rock content. Test results should be considered an estimate only of the swell or consolidation potential at the density and moisture content indicated.

## 4.0 FOUNDATION RECOMMENDATIONS

There are two general types of foundation system concepts, “deep” and “shallow”, with the designation being based on the depth of support of the system. We have provided a discussion viable foundation system concepts for this project below. The choice of the appropriate foundation system for the project is best made by the project structural engineer or project architect. We should be contacted once the design choice has been made to provide consultation regarding implementation of our design parameters.

Deep foundations will provide for the least likelihood of post-construction movement of the structure. Deep foundation system design concepts may be viable for this project; however, we anticipate that only a shallow foundation system design is being considered at this time. We are available to develop deep foundation design parameters if desired.

### 4.1 Shallow Foundation System Concepts

Subsurface data indicate that GP-GM soils will likely be encountered beneath shallow foundations. Based on the laboratory analysis, the soils encountered in our borings were found to have a low swell potential of 1,680 pounds per square foot (psf) and a magnitude of 0.8 percent under a 500 psf surcharge load and a low consolidation potential. The anticipated soils at the foundation level are considered good for shallow foundation support.

There are numerous types of shallow foundation systems and variants of each type. Shallow foundation system concepts discussed below include:

- Spread Footings (continuous and isolated) and stem walls
- Mat or Raft Foundations

The integrity and long-term performance of each type of system is influenced by the quality of workmanship which is implemented during construction. It is imperative that all excavation and fill placement operations be conducted by qualified personnel using appropriate equipment and techniques to provide suitable support conditions for the foundation system.

#### 4.1.1 Spread Footings

A spread footing foundation system consists of a footing which dissipates, or spreads, the loads imposed from the stem wall (or beam) from the structure above. We recommend that the footings be supported by a layer of moisture conditioned and compacted natural soil which is overlain by a layer of compacted structural fill material. This concept is outlined below:

- The foundation excavation should be excavated to at least six (6) inches below the proposed footing support elevation.
- The natural soils exposed in the bottom of the excavation should be scarified to a depth of about 6 to 8 inches
- The scarified soil should be thoroughly moisture conditioned to about 2 percent above the laboratory determined optimum moisture content and then compacted.
- After completion of the compaction of the moisture conditioned natural soil a six (6) inch thick layer of granular aggregate base course structural fill material should be placed, moisture conditioned and compacted.
- The moisture conditioned natural soil material and the granular soils should be compacted as discussed under the Compaction Recommendations portion of this report below.

Scattered boulders were encountered in our test borings and large boulders are known to be present throughout the vicinity. Due to the size of the boulders encountered in the vicinity, if encountered, they may be difficult to remove using conventional excavation techniques and equipment. Removal of large boulders can also create a void of loose soil beneath structural components, which may require additional removal of loose soil and replacement with structural fill. In some instances, it may be preferable to leave boulders in place. Reduction in the thickness of the recommended structural fill beneath footings and slabs may also be prudent to limit disturbance to the bearing soils. If large boulders are encountered in the building footprint, a representative of the geotechnical engineer can provide field observations and provide additional recommendations for subgrade preparation.

We recommend that particular attention and detail be given to the following aspects of the project construction for this lot;

- A subsurface drain system should be installed adjacent to the residential structure foundation system. Recommendations for a subsurface drain system concepts are presented in Section 5.0 of this report.
- The exterior foundation backfill must be well compacted and moisture conditioned to above optimum moisture content. Recommendations for exterior foundation backfill are provided later in this report.

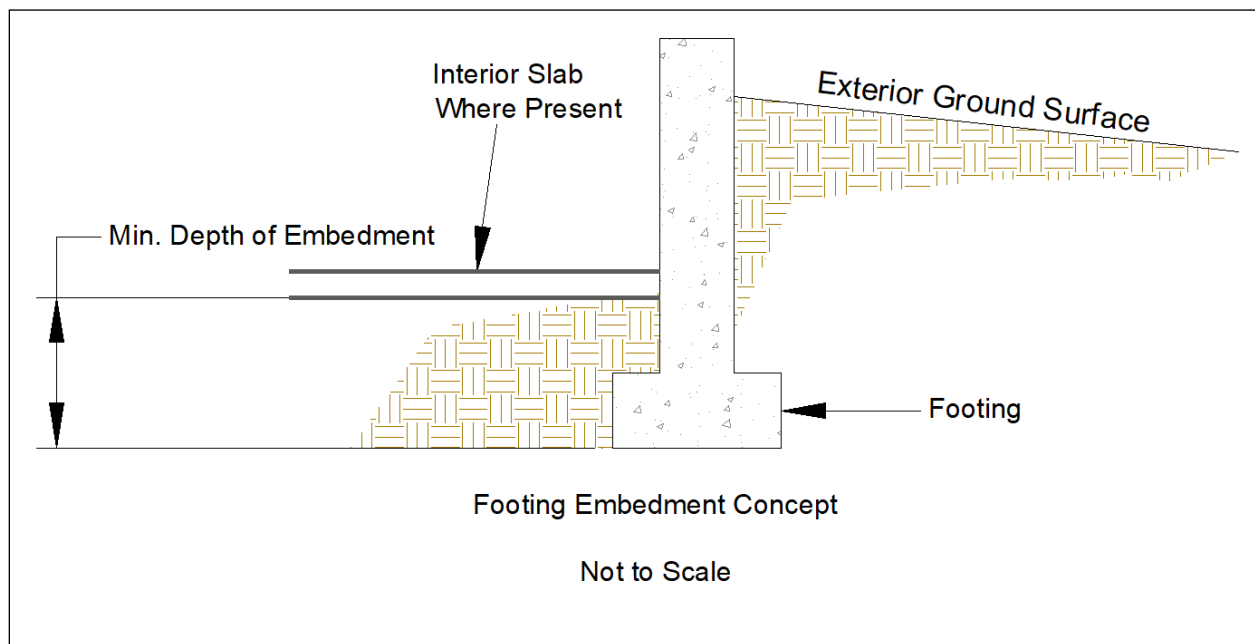


July 9, 2020

We recommend below-grade construction, such as retaining walls, crawlspace and basement areas, be protected from wetting and hydrostatic pressure buildup by an underdrain and wall drain system. Topographic conditions on the site may influence the ability to install a subsurface drain system which promotes water flow away from the foundation system. The subsurface drain system concept is discussed under the Subsurface Drain System section of this report below.

The footing embedment is a relatively critical, yet often overlooked, aspect of foundation construction. The embedment helps develop the soil bearing capacity, increases resistance of the footing to lateral movement and decreases the potential for rapid moisture changes in the footing support soils, particularly in crawl space areas. Interior footing embedment reduces the exposure of the crawl space support soils to dry crawl space air. Reduction in drying of the support soil helps reduce downward movement of interior footings due to soil shrinkage.

All footings should have a minimum depth of embedment of at least one 1 foot. The embedment concept is shown below.



Spread footings located away from sloped areas may be designed using the bearing capacity information tabulated below.

Minimum Depth of Embedment (Feet)	Continuous Footing Design Capacity (psf)	Isolated Footing Design Capacity (psf)
1	2,000	2,500
2	2,500	3,000
3	3,000	3,500

The bearing capacity values tabulated above may be increased by 20 percent for transient conditions associated with wind and seismic loads. Snow loads are not transient loads.

July 9, 2020

The bearing capacity values above were based on footing placed directly on the natural soils and on a continuous spread footing width of 1 ½ feet and an isolated footing width of 3 ½ feet. Larger footings and/or footings placed on a blanket of compacted structural fill will have a higher design soil bearing capacity. Development of the final footing design width is usually an iterative process based on evaluation of design pressures, footing widths and the thickness of compacted structural fill beneath the footings. We should be contacted as the design process continues to re-evaluate the design capacities above based on the actual proposed footing geometry.

The settlement of the spread footing foundation system will be influenced by the footing size and the imposed loads. We estimated the total post construction settlement of the footings based on our laboratory consolidation data, the type and size of the footing. Our analysis below assumed that the highest bearing capacity value tabulated above was used in the design of the footings. The amount of post construction settlement may be reduced by placing the footings on a blanket of compacted structural fill material.

The estimated settlement for continuous footing with a nominal width of about 1½ to 2½ feet are tabulated below

Thickness of Compacted Structural Fill (feet)	Estimated Settlement (inches)
0	½ - ¾
B/2	¼ - ½
B	About ¼

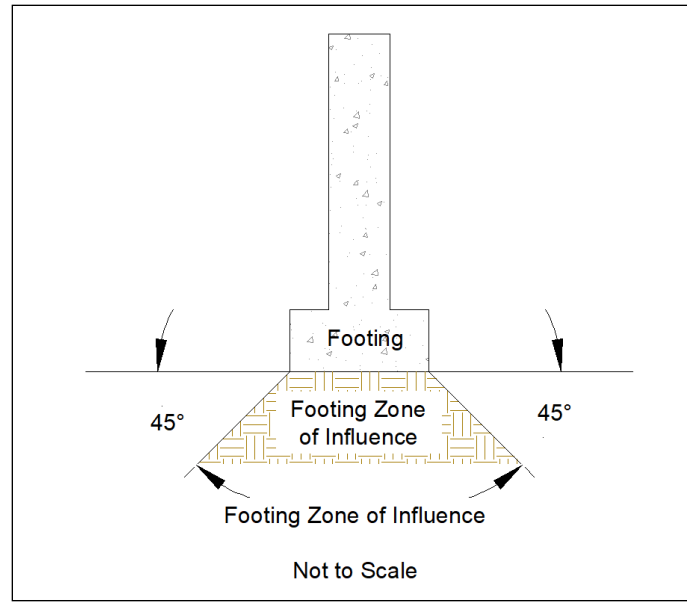
B is the footing width

The estimated settlement for isolated pad footings with a nominal square dimension of about 2 to 3 feet are tabulated below.

Thickness of Compacted Structural Fill (feet)	Estimated Settlement (inches)
0	¾ - 1
B/4	½ - ¾
B/2	¼ - ½
3B/4	About ¼

B is the footing width

The compacted structural fill should be placed and compacted as discussed in the Construction Considerations, "Fill Placement Recommendations" section of this report, below. The zone of influence of the footing (at elevations close to the bottom of the footing) is often approximated as being between two lines subtended at 45 degree angles from each bottom corner of the footing. The compacted structural fill should extend beyond the zone of influence of the footing as shown in the sketch below.



A general and simple rule to apply to the geometry of the compacted structural fill blanket is that it should extend beyond each edge of the footing a distance which is equal to the fill thickness.

We estimate that the differential settlement may be about ½ inch. We estimate that the footings designed and constructed above will have a total post construction settlement of less than 1 inch.

All footings should be support at an elevation deeper than the maximum depth of frost penetration for the area. This recommendation includes exterior isolated footings and column supports. Please contact the local building department for specific frost depth requirements.

The post construction differential settlement may be reduced by designing footings that will apply relatively uniform loads on the support soils. Concentrated loads should be supported by footings that have been designed to impose similar loads as those imposed by adjacent footings.

Under no circumstances should any footing be supported by more than 3 feet of compacted structural fill material unless we are contacted to review the specific conditions supporting these footing locations.

The design concepts and parameters presented above are based on the soil conditions encountered in our test borings. We should be contacted during the initial phases of the foundation excavation at the site to assess the soil support conditions and to verify our recommendations.

#### 4.1.2 General Shallow Foundation Considerations

Some movement and settlement of any shallow foundation system will occur after construction. Movement associated with swelling soils also occurs occasionally. Utility line connections through and foundation or structural component should be appropriately sleeved to reduce the potential for damage to the utility line. Flexible utility line connections will further reduce the potential for damage associated with movement of the structure.



## 5.0 RETAINING STRUCTURES

We anticipate that laterally loaded walls may be needed for project design. Lateral loads will be imposed on the retaining structures by the adjacent soils and, in some cases, surcharge loads on the retained soils. The loads imposed by the soil are commonly referred to as lateral earth pressures. The magnitude of the lateral earth pressure forces is partially dependent on the soil strength characteristics, the geometry of the ground surface adjacent to the retaining structure, the subsurface water conditions and on surcharge loads.

The retaining structures may be designed using the values tabulated below.

Lateral Earth Pressure Values		
Type of Lateral Earth Pressure	Level Native Soil Backfill (pounds per cubic foot/foot)*	Level Granular Soil Backfill (pounds per cubic foot/foot)
Active	45	35
At-rest	65	55
Passive	340	460
Allowable Coefficient of Friction	0.33	0.45

The site soils have a measured swell pressure of 1,680 pounds per square foot which may be exerted on the retaining wall should the backfill soils become moistened. If the site clay soils are used as backfill they must be moisture conditioned to above optimum moisture content during the backfill placement. The retaining wall should be designed to resist forces associated with swelling of the soils used as backfill adjacent to the retaining walls.

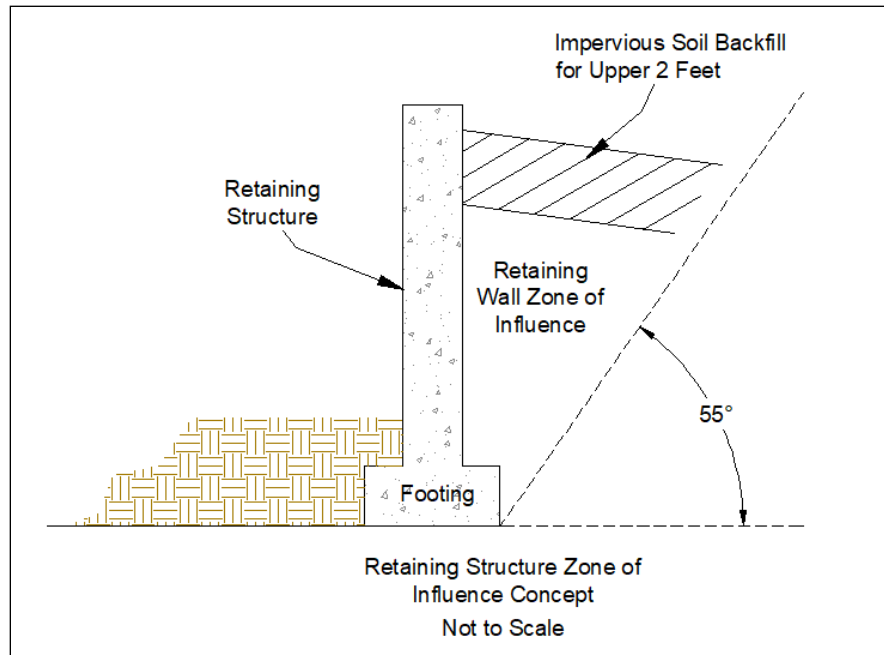
The site soils have a measured swell pressure of 1,680 pounds per square foot. A 1,680 pound per square foot swell pressure may exert approximately 13,440 pounds of force per lineal foot for a wall that retains eight (8) feet of soil. The forces from the swelling soil may be treated as a uniformly distributed load for structural design purposes.

The granular soil that is used for the retaining wall backfill may be permeable and may allow water migration to the foundation support soils. There are several options available to help reduce water migration to the foundation soils, two of which are discussed here. An impervious geotextile layer and shallow drain system may be incorporated into the backfill, as discussed in Section 9.5, Landscaping Considerations, below. A second option is to place a geotextile filter material on top of the granular soils and above that place about 1½ to 2 feet of moisture conditioned and compacted site clay soils. It should be noted that if the site clay soils are used volume changes may occur which will influence the performance of overlying concrete flatwork or structural components.

The values tabulated above are for well drained backfill soils. The values provided above do not include any forces due to adjacent surcharge loads or sloped soils. If the backfill soils become saturated the imposed lateral earth pressures will be significantly higher than those tabulated above.

July 9, 2020

The granular imported soil backfill values tabulated above are appropriate for material with an angle of internal friction of 35 degrees, or greater. The granular backfill must be placed within the retaining structure zone of influence as shown below in order for the lateral earth pressure values tabulated above for the granular material to be appropriate.



If an open graded, permeable, granular backfill is chosen it should not extend to the ground surface. Some granular soils allow ready water migration which may result in increased water access to the foundation soils. The upper few feet of the backfill should be constructed using an impervious soil such as silty-clay and clay soils from the project site, if these soils are available. The 55 degree angle shown in the figure above is approximately correct for most clay soils. The angle is defined by  $45 + (\phi/2)$  where “ $\phi$ ” is the angle of internal friction of the soil.

Backfill should not be placed and compacted behind the retaining structure unless approved by the project structural engineer. Backfill placed prior to construction of all appropriate structural members such as floors, or prior to appropriate curing of the retaining wall concrete, may result in severe damage and/or failure of the retaining structure.

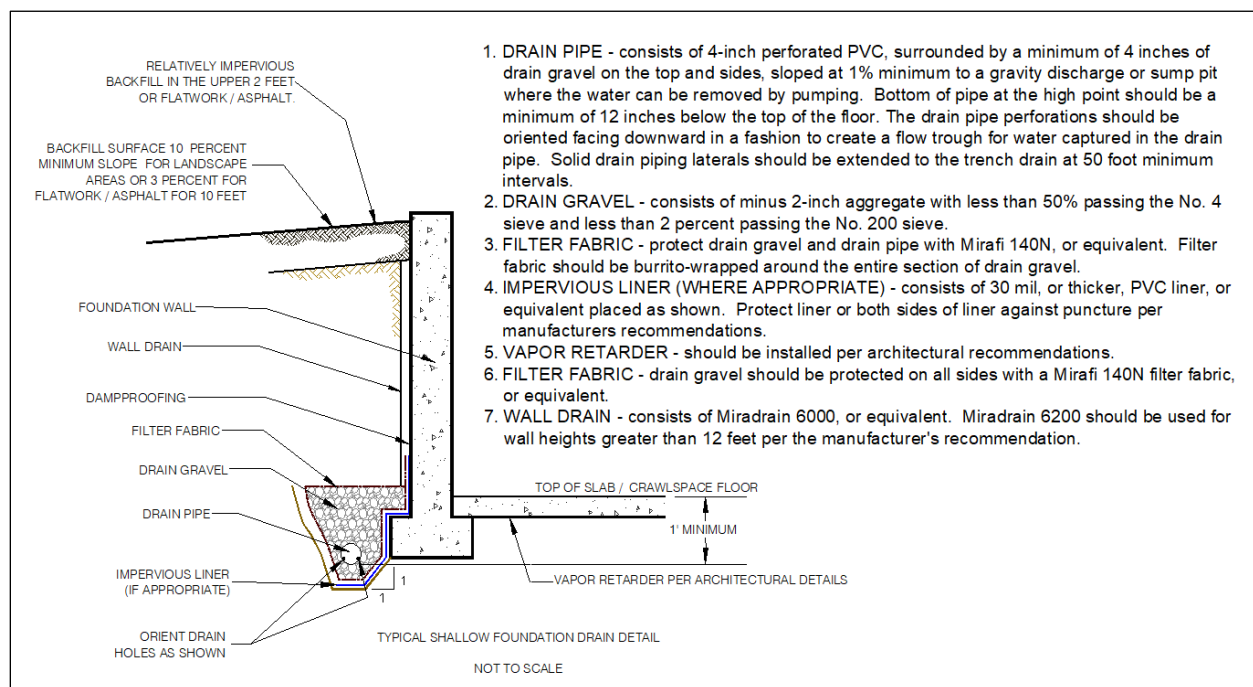
## 6.0 SUBSURFACE DRAIN SYSTEM

We recommend below-grade construction, such as retaining walls, crawlspace and basement areas, be protected from wetting and hydrostatic pressure buildup by an underdrain and wall drain system. Exterior retaining structures may be constructed with weep holes to allow subsurface water migration through the retaining structures. Topographic conditions on the site may influence the ability to install a subsurface drain system which promotes water flow away from the foundation system. The subsurface drain system concept is discussed under the Subsurface Drain System section of this report below.

July 9, 2020

A drain system constructed with a free draining aggregate material and a 4 inch minimum diameter perforated drain pipe should be constructed adjacent to retaining structures and/or adjacent to foundation walls. The drain pipe perforations should be oriented facing downward. The system should be protected from fine soil migration by a fabric-wrapped aggregate which surrounds a rigid perforated pipe. We do not recommend use of flexible corrugated perforated pipe since it is not possible to establish a uniform gradient of the flexible pipe throughout the drain system alignment. Corrugated drain tile is perforated throughout the entire circumference of the pipe and therefore water can escape from the perforations at undesirable locations after being collected. The nature of the perforations of the corrugated material further decreases its effectiveness as a subsurface drain conduit.

The drain should be placed at each level of excavation and at least 12 inches below lowest adjacent finish floor or crawlspace grade. The drain system pipe should be graded to surface outlets or a sump vault. The drain system should be sloped at a minimum gradient of about 2 percent, but site geometry and topography may influence the actual installed pipe gradient. Water must not be allowed to pool along any portion of the subsurface drain system. An improperly constructed subsurface drain system may promote water infiltration to undesirable locations. The drain system pipe should be surrounded by about 2 to 4 cubic feet per lineal foot of free draining aggregate. If a sump vault and pump are incorporated into the subsurface drain system, care should be taken so that the water pumped from the vault does not recirculate through pervious soils and obtain access to the basement or crawl space areas. An impervious membrane should be included in the drain construction for grade beam and pier systems or other foundation systems such as interrupted footings where a free pathway for water beneath the structure exists. A generalized subsurface drain system concept is shown below.





There are often aspects of each site and structure which require some tailoring of the subsurface drain system to meet the needs of individual projects. Drain systems that are placed adjacent to void forms must include provisions to protect and support the impervious liner adjacent to the void form. We are available to provide consultation for the subsurface drain system for this project, if desired.

Water often will migrate along utility trench excavations. If the utility trench extends from areas above the site, this trench may be a source for subsurface water within a crawl space or basement. We suggest that the utility trench backfill be thoroughly compacted to help reduce the amount of water migration. The subsurface drain system should be designed to collect subsurface water from the utility trench and fractures within the formational material and direct it to surface discharge points.

## **7.0 CONCRETE FLATWORK**

We anticipate that both interior and exterior concrete flatwork will be considered in the project design. Concrete flatwork is typically lightly loaded and has a limited capability to resist shear forces associated with uplift from swelling soils and/or frost heave. It is prudent for the design and construction of concrete flatwork on this project to be able to accommodate some movement associated with swelling soil conditions, if possible.

The soil samples tested have a measured swell pressure of about 1,680 pounds per square foot and a magnitude swell potential of about 0.8 percent under a 500 pound per square foot surcharge load. Due to the measured swell potential and swell pressure, interior floors supported over a crawl space are less likely to experience movement than are concrete slabs support on grade. The following recommendations are appropriate for garage floor slabs and for interior floor slabs if the owner is willing to accept the risk of potential movement beyond normal tolerances.

### **7.1 Interior Concrete Slab-on-Grade Floors**

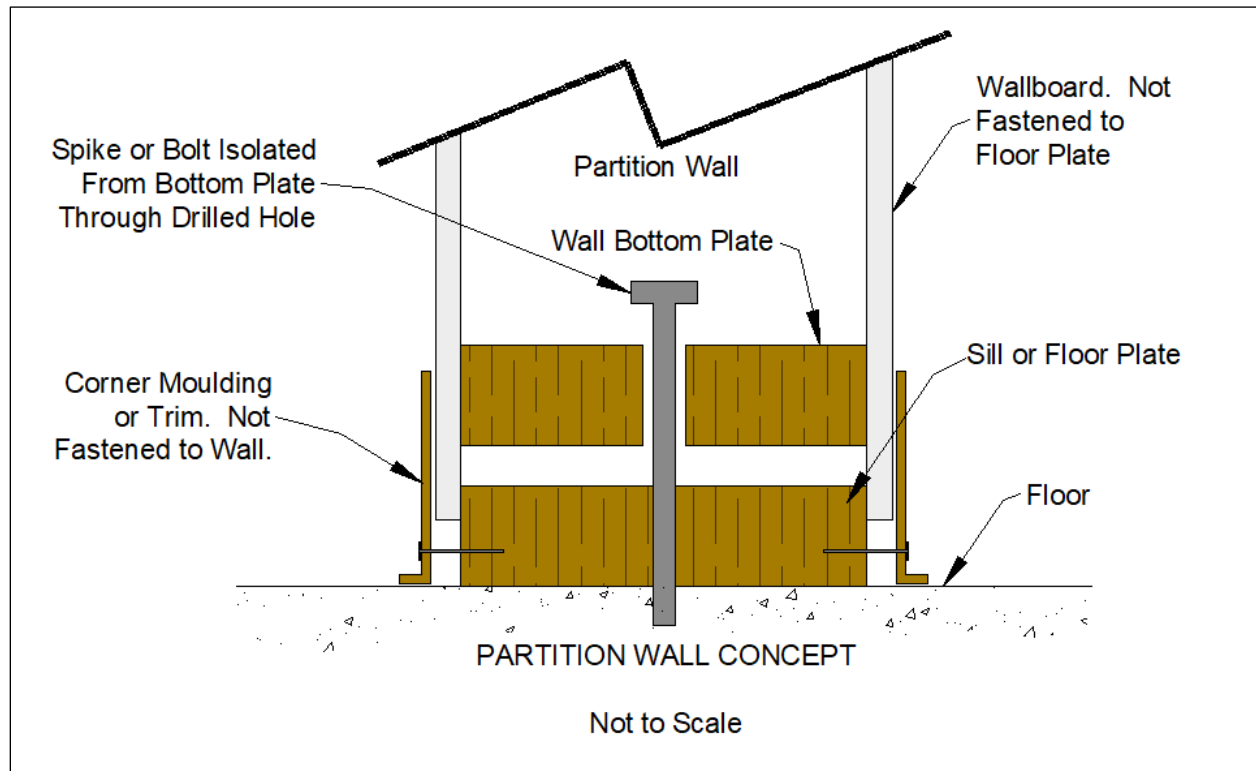
A primary goal in the design and construction of concrete slab-on-grade floors is to reduce the amount of post construction uplift associated with swelling soils, or downward movement due to consolidation of soft soils. A parallel goal is to reduce the potential for damage to the structure associated with any movement of the slab-on-grade which may occur. There are limited options available to help mitigate the influence of volume changes in the support soil for concrete slab-on-grade floors, these include:

- Preconstruction scarification, moisture conditioning and re-compaction of the natural soils in areas proposed for support of concrete flatwork, and/or,
- Placement and compaction of granular compacted structural fill material

Damage associated with movement of interior concrete slab-on-grade floor can be reduced by designing the floors as “floating” slabs. The concrete slabs should not be structurally tied to the foundations or the overlying structure. Interior walls or columns should not be supported on the interior floor slabs. Movement of interior walls or columns due to uplift of the floor slab can cause severe damage throughout the structure. Interior walls may be structurally supported from

July 9, 2020

framing above the floor, or interior walls and support columns may be supported on interior portions of the foundation system. Partition walls should be designed and constructed with voids above, and/or below, to allow independent movement of the floor slab. This concept is shown below.



The sketch above provides a concept. If the plans include isolation of the partition walls from the floor slab, the project architect or structural engineer should be contacted to provide specific details and design of the desired system.

If the owner chooses to construct the residence with concrete slab-on-grade floors, the floors should be supported by a layer of granular structural fill overlying the processed, moisture conditioned and compacted natural soils. Interior concrete flatwork, or concrete slab-on-grade floors, should be underlain by 6 inch minimum layer of compacted structural fill that is placed and compacted as discussed in the Construction Considerations, “Fill Placement Recommendations” section of this report, below.

The above recommendations will not prevent slab heave if the expansive soils underlying slabs-on-grade become wet. However, the recommendations will reduce the effects if slab heave occurs. All plumbing lines should be pressure tested before backfilling to help reduce the potential for wetting. The only means to completely mitigate the influence of volume changes on the performance of interior floors is to structurally support the floors over a void space. Floors that are suspended by the foundation system will not be influenced by volume changes in the site soils. The suggestions and recommendations presented below are intended to help reduce the influence of swelling soils on the performance of the concrete slab-on-grade floors.

### 7.1.1 Capillary and Vapor Moisture Rise

Capillary and vapor moisture rise through the slab support soil may provide a source for moisture in the concrete slab-on-grade floor. This moisture may promote development of mold or mildew in poorly ventilated areas and may influence the performance of floor coverings and mastic placed directly on the floor slabs. The type of floor covering, adhesives used, and other considerations that are not related to the geotechnical engineering practice will influence the design. The architect, builder and particularly the floor covering/adhesive manufacturer should be contacted regarding the appropriate level of protection required for their products.

#### Comments for Reduction of Capillary Rise

One option to reduce the potential for capillary rise through the floor slab is to place a layer of clean aggregate material, such as washed concrete aggregate for the upper 4 to 6 inches of fill material supporting the concrete slabs.

#### Comments for Reduction of Vapor Rise

To reduce vapor rise through the floor slab, a moisture barrier such as a 6 mil (or thicker) plastic, or similar impervious geotextile material is often placed below the floor slab. The material used should be protected from punctures that will occur during the construction process.

There are proprietary barriers that are puncture resistant that may not need the underlying layer of protective material. Some of these barriers are robust material that may be placed below the compacted structural fill layer. We do not recommend placement of the concrete directly on a moisture barrier unless the concrete contractor has had previous experience with curing of concrete placed in this manner. As mentioned above, the architect, builder and particularly the floor covering/adhesive manufacturer should be contacted regarding the appropriate level of moisture and vapor protection required for their products.

### 7.1.2 Slab Reinforcement Considerations

The project structural engineer should be contacted to provide steel reinforcement design considerations for the proposed floor slabs. Any steel reinforcement placed in the slab should be placed at the appropriate elevations to allow for proper interaction of the reinforcement with tensile stresses in the slab. Reinforcement steel that is allowed to cure at the bottom of the slab will not provide adequate reinforcement.

## 7.2 Exterior Concrete Flatwork Considerations

Exterior concrete flatwork includes concrete driveway slabs, aprons, patios, and walkways. The desired performance of exterior flatwork typically varies depending on the proposed use of the site and each owner's individual expectations. As with interior flatwork, exterior flatwork is particularly prone to movement and potential damage due to movement of the support soils. This movement and associated damage may be reduced by following the recommendations discussed under interior flatwork, above. Unlike interior flatwork, exterior flatwork may be exposed to frost heave, particularly on sites where the bearing soils have a high silt content. It



July 9, 2020

may be prudent to remove silt soils from exterior flatwork support areas where movement of exterior flatwork will adversely affect the project, such as near the interface between the driveway and the interior garage floor slab. If silt soils are encountered, they should be removed to the maximum depth of frost penetration for the area where movement of exterior flatwork is undesirable.

If some movement of exterior flatwork is acceptable, we suggest that the support areas be prepared by scarification, moisture conditioning and re-compaction of about 6 inches of the natural soils followed by placement of at least 6 inches of compacted granular fill material. The scarified material and granular fill materials should be placed as discussed under the Construction Considerations, "Fill Placement Recommendations" section of this report, below.

It is important that exterior flatwork be separated from exterior column supports, masonry veneer, finishes and siding. No support columns, for the structure or exterior decks, should be placed on exterior concrete unless movement of the columns will not adversely affect the supported structural components. Movement of exterior flatwork may cause damage if it is in contact with portions of the structure exterior.

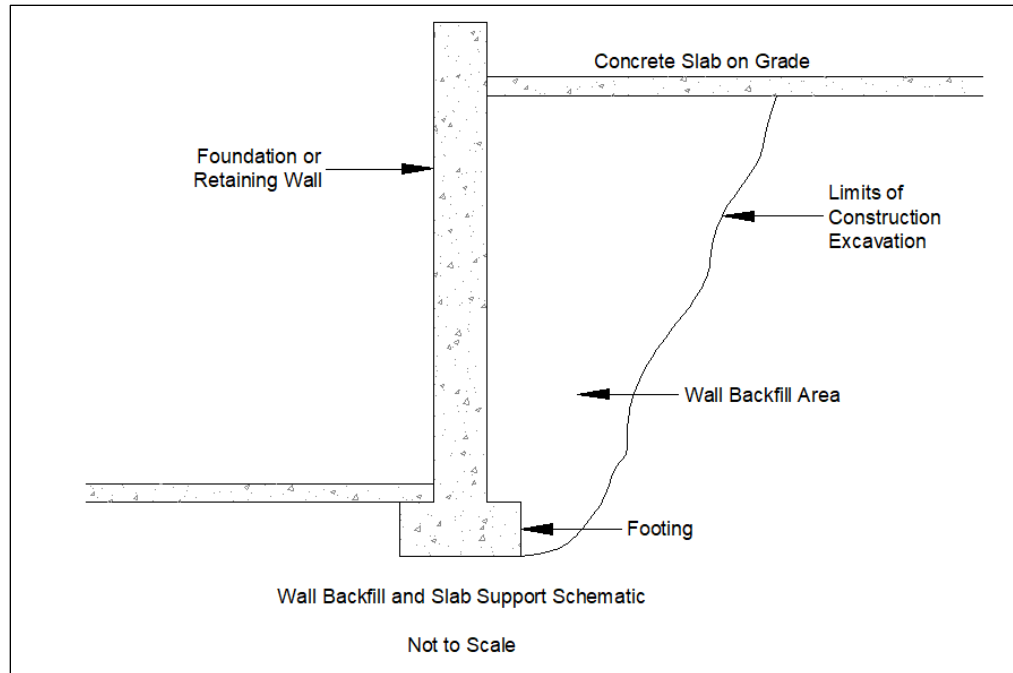
It should be noted that silt and silty sand soils located near the ground surface are particularly prone to frost heave. Soils with high silt content have the ability to retain significant moisture. The ability for the soils to accumulate moisture combined with a relatively shallow source of subsurface water and the fact that the winter temperatures in the area often very cold all contribute to a high potential for frost heave of exterior structural components. We recommend that silty soils be removed from the support areas of exterior components that are sensitive to movement associated with frost heave. These soils should be replaced with a material that is not susceptible to frost heave. Aggregate road base and similar materials retain less water than fine-grained soils and are therefore less prone to frost heave. We are available to discuss this concept with you as the plans progress.

Exterior flatwork should not be placed on soils prepared for support of landscaping vegetation. Cultivated soils will not provide suitable support for concrete flatwork.

### 7.3 General Concrete Flatwork Comments

It is relatively common that both interior and exterior concrete flatwork is supported by areas of fill adjacent to either shallow foundation walls or basement retaining walls. A typical sketch of this condition is shown below.

July 9, 2020



Settlement of the backfill shown above will create a void and lack of soil support for the portions of the slab over the backfill. Settlement of the fill supporting the concrete flatwork is likely to cause damage to the slab-on-grade. Settlement and associated damage to the concrete flatwork may occur when the backfill is relatively deep, even if the backfill is compacted.

If this condition is likely to exist on this site it may be prudent to design the slab to be structurally supported on the retaining or foundation wall and designed to span to areas away from the backfill area as designed by the project structural engineer. We are available to discuss this with you upon request.

## 8.0 CONSTRUCTION CONSIDERATIONS

This section of the report provides comments, considerations and recommendations for aspects of the site construction which may influence, or be influenced by the geotechnical engineering considerations discussed above. The information presented below is not intended to discuss all aspects of the site construction conditions and considerations that may be encountered as the project progresses. If any questions arise as a result of our recommendations presented above, or if unexpected subsurface conditions are encountered during construction we should be contacted immediately.

### 8.1 Fill Placement Recommendations

There are several references throughout this report regarding both natural soil and compacted structural fill recommendations. The recommendations presented below are appropriate for the fill placement considerations discussed throughout the report above.

All areas to receive fill, structural components, or other site improvements should be properly prepared and grubbed at the initiation of the project construction. The grubbing operations should include scarification and removal of organic material and soil. No fill material or concrete should be placed in areas where existing vegetation or fill material exist.

#### 8.1.1 Natural Soil Fill

Any natural soil used for any fill purpose should be free of all deleterious material, such as organic material and construction debris. Natural soil fill includes excavated and replaced material or in-place scarified material. Due to the expansive characteristics of the natural soil we do not recommend that it be used as fill material for direct support of structural components. The natural soils may be used to establish general site elevation. Our recommendations for placement of natural soil fill are provided below.

- The natural soils should be moisture conditioned, either by addition of water to dry soils, or by processing to allow drying of wet soils. The proposed fill materials should be moisture conditioned to between about optimum and about 2 percent above optimum soil moisture content. This moisture content can be estimated in the field by squeezing a sample of the soil in the palm of the hand. If the material easily makes a cast of soil which remains in-tact, and a minor amount of surface moisture develops on the cast, the material is close to the desired moisture content. Material testing during construction is the best means to assess the soil moisture content.
- Moisture conditioning of clay or silt soils may require many hours of processing. If possible, water should be added and thoroughly mixed into fine grained soil such as clay or silt the day prior to use of the material. This technique will allow for development of a more uniform moisture content and will allow for better compaction of the moisture conditioned materials.
- The moisture conditioned soil should be placed in lifts that do not exceed the capabilities of the compaction equipment used and compacted to at least 90 percent of maximum dry density as defined by ASTM D1557, modified Proctor test.
- We typically recommend a maximum fill lift thickness of 6 inches for hand operated equipment and 8 to 10 inches for larger equipment.
- Care should be exercised in placement of utility trench backfill so that the compaction operations do not damage underlying utilities.
- The maximum recommended lift thickness is about 6 to 8 inches; therefore, the maximum allowable rock size for natural soil fill is about 4 inches. If smaller compaction equipment is being used, such as walk behind compactors in trenches, the maximum rock size should be less than 3 inches. This may require on-site screening or crushing if larger rocks are present.

#### 8.1.2 Granular Compacted Structural Fill

Granular compacted structural fill is referenced in numerous locations throughout the text of this report. Granular compacted structural fill should be constructed using an imported commercially produced rock product such as aggregate road base. Many products other than road base, such as clean aggregate or select crusher fines may be suitable, depending on the intended use. If a specification is needed by the design professional for development of project



July 9, 2020

specifications, a material conforming to the Colorado Department of Transportation (CDOT) “Class 6” aggregate road base material can be specified. This specification can include an option for testing and approval in the event the contractor’s desired material does not conform to the Class 6 aggregate specifications. We have provided the CDOT Specifications for Class 6 material below

Grading of CDOT Class 6 Aggregate Base-Course Material	
Sieve Size	Percent Passing Each Sieve
¾ inch	100
#4	30 – 65
#8	25 – 55
#200	3 – 12

Liquid Limit less than 30

All compacted structural fill should be moisture conditioned and compacted to at least 90 percent of maximum dry density as defined by ASTM D1557, modified Proctor test. Areas where the structural fill will support traffic loads under concrete slabs or asphalt concrete should be compacted to at least 95 percent of maximum dry density as defined by ASTM D1557, modified Proctor test.

Although clean-screened or washed aggregate may be suitable for use as structural fill on sites with sand or non-expansive silt soils, or on sites where shallow subsurface water is present, clean aggregate materials must not be used on any site where expansive soils exist due to the potential for water to accumulate in the voids of the clean aggregate materials.

Clean aggregate fill, if appropriate for the site soil conditions, must not be placed in lifts exceeding 8 inches and each lift should be thoroughly vibrated, preferably with a plate-type vibratory compactor prior to placing overlying lifts of material or structural components. We should be contacted prior to the use of clean aggregate fill materials to evaluate their suitability for use on this project.

### 8.1.3 Deep Fill Considerations

Deep fills, in excess of approximately 3 feet, should be avoided where possible. Fill soils will settle over time, even when placed properly per the recommendations contained in this report. Natural soil fill or engineered structural fills placed to our minimum recommended requirements will tend to settle an estimated 1 to 3 percent; therefore, a 3 foot thick fill may settle up to approximately 1 inch over time. A 10 foot thick fill may settle up to approximately 3½ inches even when properly placed. Fill settlement will result in distress and damage to the structures they are intended to support. There are methods to reduce the effects of deep fill settlement such as surcharge loading and surveyed monitoring programs; however, there is a significant time period of monitoring required for this to be successful. A more reliable method is to support structural components with deep foundation systems bearing below the fill envelope. We can provide additional guidance regarding deep fills up on request.

## 8.2 Excavation Considerations

Unless a specific classification is performed, the site soils should be considered as an Occupational Safety and Health Administration (OSHA) Type C soil and should be sloped and/or benched according to the current OSHA regulations. Excavations should be sloped and benched to prevent wall collapse. Any soil can release suddenly and cave unexpectedly from excavation walls, particularly if the soils is very moist, or if fractures within the soil are present. Daily observations of the excavations should be conducted by OSHA competent site personnel to assess safety considerations.

Scattered boulders were encountered in our test borings and large boulders are known to be present throughout the vicinity. Due to the size of the boulders encountered in the vicinity, if encountered, they may be difficult to remove using conventional excavation techniques and equipment. Removal of large boulders can also create a void of loose soil beneath structural components, which may require additional removal of loose soil and replacement with structural fill. In some instances, it may be preferable to leave boulders in place. Reduction in the thickness of the recommended structural fill beneath footings and slabs may also be prudent to limit disturbance to the bearing soils. If large boulders are encountered in the building footprint, a representative of the geotechnical engineer can provide field observations and provide additional recommendations for subgrade preparation.

If possible, excavations should be constructed to allow for water flow from the excavation the event of precipitation during construction. If this is not possible it may be necessary to remove water from snowmelt or precipitation from the foundation excavations to help reduce the influence of this water on the soil support conditions and the site construction characteristics.

### 8.2.1 Excavation Cut Slopes

We anticipate that some permanent excavation cut slopes may be included in the site development. Temporary cut slopes should not exceed 5 feet in height and should not be steeper than about 1:1 (horizontal to vertical) for most soils. Permanent cut slopes greater than 5 feet or steeper than 2½:1 must be analyzed on a site specific basis.

We did not observe evidence of existing unstable slope areas influencing the site, but due to the steepness and extent of the slopes in the area we suggest that the magnitude of the proposed excavation slopes be minimized and/or supported by retaining structures.

## 8.3 Utility Considerations

Subsurface utility trenches will be constructed as part of the site development. Utility line backfill often becomes a conduit for post construction water migration. If utility line trenches approach the proposed project site from above, water migrating along the utility line and/or backfill may have direct access to the portions of the proposed structure where the utility line penetrations are made through the foundation system. The foundation soils in the vicinity of the utility line penetration may be influenced by the additional subsurface water. There are a few options to help mitigate water migration along utility line backfill. Backfill bulkheads constructed with high clay content soils and/or placement of subsurface drains to promote utility

line water discharge away from the foundation support soil.

Some movement of all structural components is normal and expected. The amount of movement may be greater on sites with problematic soil conditions. Utility line penetrations through any walls or floor slabs should be sleeved so that movement of the walls or slabs does not induce movement or stress in the utility line. Utility connections should be flexible to allow for some movement of the floor slab.

If utility line trenches are excavated using blasting techniques it is relatively common for surface and subsurface water to migrate along the fractures in the rock that may be created by blasting. If this water gains access to a utility line trench that has a gradient down toward the structure the water may gain access to the foundation support materials and/or subsurface portions of the proposed structure. Provisions should be made in the project construction plans to create an impervious barrier to prevent water from migrating into undesirable locations.

#### 8.4 Exterior Grading and Drainage Comments

The following recommendations should be following during construction and maintained for the life of the structure with regards to exterior grading and surface drainage.

- The ground surface adjacent to the structure should be sloped to promote water flow away from the foundation system and flatwork.
- Snow storage areas should not be located in areas which will allow for snowmelt water access to support soils for the foundation system or flatwork.
- The project civil engineer, architect or builder should develop a drainage scheme for the site. We typically recommend the ground surface surrounding the exterior of the building be sloped to drain away from the foundation in all directions. We recommend a minimum slope of 12 inches in the first 10 feet in unpaved areas and a minimum slope of 3 inches in the first 10 feet in paved areas.
- Water flow from the roof of the structure should be captured and directed away from the structure. If the roof water is collected in an eave gutter system, or similar, the discharge points of the system must be located away from areas where the water will have access to the foundation backfill or any structure support soils. If downspouts are used, provisions should be made to either collect or direct the water away from the structure.
- Care should be taken to not direct water onto adjacent property or to areas that would negatively influence existing structures or improvements.

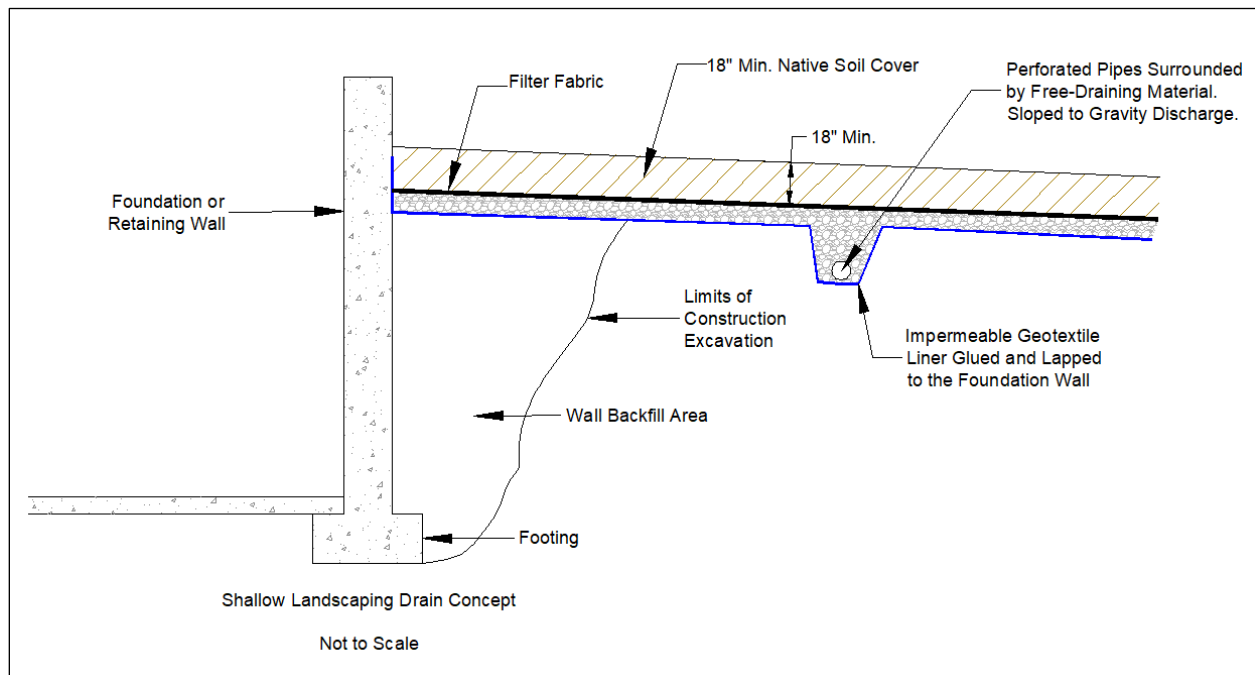
#### 8.5 Landscaping Considerations

We recommend against construction of landscaping which requires excessive irrigation. Generally landscaping which uses abundant water requires that the landscaping contractor install topsoil which will retain moisture. The topsoil is often placed in flattened areas near the structure to further trap water and reduce water migration from away from the landscaped areas. Unfortunately, almost all aspects of landscape construction and development of lush vegetation are contrary to the establishment of a relatively dry area adjacent to the foundation walls. Excess water from landscaped areas near the structure can migrate to the foundation system or flatwork support soils, which can result in volume changes in these soils.



July 9, 2020

A relatively common concept used to collect and subsequently reduce the amount of excess irrigation water is to glue or attach an impermeable geotextile fabric or heavy mill plastic to the foundation wall and extend it below the topsoil which is used to establish the landscape vegetation. A thin layer of sand can be placed on top of the geotextile material to both protect the geotextile from punctures and to serve as a medium to promote water migration to the collection trench and perforated pipe. The landscape architect or contractor should be contacted for additional information regarding specific construction considerations for this concept which is shown in the sketch below.



A free draining aggregate or sand may be placed in the collection trench around the perforated pipe. The perforated pipe should be graded to allow for positive flow of excess irrigation water away from the structure or other area where additional subsurface water is undesired. Preferably the geotextile material should extend at least 10 or more feet from the foundation system.

Care should be taken to not place exterior flatwork such as sidewalks or driveways on soils that have been tilled and prepared for landscaping. Tilled soils will settle which can cause damage to the overlying flatwork. Tilled soils placed on sloped areas often “creep” down-slope. Any structure or structural component placed on this material will move down-slope with the tilled soil and may become damaged.

The landscape drain system concept provided above is optional for this site and provided only if there is a desire to reduce the potential for subsurface water migration to below grade finished areas or crawl space areas. Often this concept is implemented only on the northern sides of structures and/or where snow may accumulate and melt water may migrate toward subsurface areas under the structure.

## 8.6 Soil Sulfate and Corrosion Issues

The requested scope of our services did not include assessment of the chemical constituents of corrosion potential of the site soils. Most soils in southwest Colorado are not typically corrosive to concrete. There has not been a history of damage to concrete due to sulfate corrosion in the area.

We are available to perform soluble sulfate content tests to assess the corrosion potential of the soils on concrete if desired.

## 8.7 Radon Issues

The requested scope of service of this report did not include assessment of the site soils for radon production. Many soils and formational materials in western Colorado produce Radon gas. The structure should be appropriately ventilated to reduce the accumulation of Radon gas in the structure. Several Federal Government agencies including the Environmental Protection Agency (EPA) have information and guidelines available for Radon considerations and home construction. If a radon survey of the site soils is desired, please contact us.

## 8.8 Mold and Other Biological Contaminants

Our services do not include determining the presence, prevention or possibility of mold or other biological contaminants developing in the future. If the client is concerned about mold or other biological contaminants, a professional in this special field of practice should be consulted.

## 9.0 CONSTRUCTION MONITORING AND TESTING

Engineering observation of subgrade bearing conditions, compaction testing of fill material and testing of foundation concrete are equally important tasks that should be performed by the geotechnical engineering consultant during construction. We should be contacted during the construction phase of the project and/or if any questions or comments arise as a result of the information presented below. It is common for unforeseen, or otherwise variable subsurface soil and water conditions to be encountered during construction. As discussed in our proposal for our services, it is imperative that we be contacted during the foundation excavation stage of the project to verify that the conditions encountered in our field exploration were representative of those encountered during construction. Our general recommendations for construction monitoring and testing are provided below.

- Consultation with design professionals during the design phases: This is important to ensure that the intentions of our recommendations are properly incorporated in the design, and that any changes in the design concept properly consider geotechnical aspects.
- Grading Plan Review: A grading plan was not available for our review at the time of this report. A grading plan with finished floor elevations for the proposed construction should be prepared by a civil engineer licensed in the State of Colorado. Trautner Geotech should be provided with grading plans once they are complete to determine if

our recommendations based on the assumed bearing elevations are appropriate.

- Observation and monitoring during construction: A representative of the Geotechnical engineer from our firm should observe the foundation excavation, earthwork, and foundation phases of the work to determine that subsurface conditions are compatible with those used in the analysis and design and our recommendations have been properly implemented. Placement of backfill should be observed and tested to judge whether the proper placement conditions have been achieved. Compaction tests should be performed on each lift of material placed in areas proposed for support of structural components.
- We recommend a representative of the geotechnical engineer observe the drain and dampproofing phases of the work to judge whether our recommendations have been properly implemented.
- If asphaltic concrete is placed for driveways or aprons near the structure, we are available to provide testing of these materials during placement.

## 10.0 CONCLUSIONS

While we feel that it is feasible to develop this site as planned using relatively conventional techniques to the area, we feel that it is prudent for us to be part of the continuing design of this project to review and provide consultation in regard to the proposed development scheme as the project progresses to aid in the proper interpretation and implementation of the recommendations presented in this report. This consultation should be incorporated in the project development prior to construction at the site.

We recommend that we be contacted during the design and construction phase of this project to aid in the implementation of our recommendations. Please contact us immediately if you have any questions, or if any of the information presented above is not appropriate for the proposed site construction.

## 11.0 LIMITATIONS

This study has been conducted based on the geotechnical engineering standards of care in this area at the time this report was prepared. We make no warranty as to the recommendations contained in this report, either expressed or implied. The information presented in this report is based on our understanding of the proposed construction that was provided to us and on the data obtained from our field and laboratory studies. Our recommendations are based on limited field and laboratory sampling and testing. Unexpected subsurface conditions encountered during construction may alter our recommendations. We should be contacted during construction to observe the exposed subsurface soil conditions to provide comments and verification of our recommendations.

The recommendations presented above are intended to be used only for this project site and the proposed construction which was provided to us. The recommendations presented above are not suitable for adjacent project sites, or for proposed construction that is different than that outlined for this study.



Project No. 56082GE  
July 9, 2020

This report provides geotechnical engineering design parameters, but does not provide foundation design or design of structure components. The project architect, designer or structural engineer must be contacted to provide a design based on the information presented in this report.

This report does not provide an environmental assessment nor does it provide environmental recommendations such as those relating to Radon or mold considerations. If recommendation relative to these or other environmental topics are needed and environmental specialist should be contacted.

The findings of this report are valid as of the present date. However, changes in the conditions of the property can occur with the passage of time. The changes may be due to natural processes or to the works of man, on the project site or adjacent properties. In addition, changes in applicable or appropriate standards can occur, whether they result from legislation or the broadening of knowledge. Therefore, the recommendations presented in this report should not be relied upon after a period of two years from the issue date without our review.

We are available to review and tailor our recommendations as the project progresses and additional information which may influence our recommendations becomes available.

Please contact us if you have any questions, or if we may be of additional service.

Respectfully,  
TRAUTNER GEOTECH



Tom R. Harrison, P.E.  
Geotechnical Engineer

# **APPENDIX A**

## **Field Study Results**



Field Engineer : T. Harrison  
Hole Diameter : 4" Solid  
Drilling Method : Continuous Flight Auger  
Sampling Method : Mod. California Sampler  
Date Drilled : 06/08/2020  
Total Depth (approx.) : 4.5 feet  
Location : See Figure in Report

## LOG OF BORING TB-1

Lot 1 Cole Ranch Silverton, Colorado  
Todd and Julie Sams  
Mountain Grain Architecture  
c/o Christopher Clemmons, RA, NCARB

Project Number: 56082 GE

Depth in feet	Sample Type	Water Level	USCS	GRAPHIC	Samples	Blow Count	Water Level	REMARKS
	<div>Mod. California Sampler</div> <div>Standard Split Spoon</div> <div>Bag Sample</div>	<div>Water Level During Drilling</div> <div>Water Level After Drilling</div>						
	DESCRIPTION							
0	SILTY GRAVEL WITH SAND, organics, medium dense to dense, moist, brown		GM					Observed organics in top 6 inches.
1								
2	POORLY GRADED GRAVEL WITH SAND, dense to very dense, slightly moist, brown		GP			5/6		
3						12/6		
4						22/6		
Auger refusal on cobble at 4.5 feet								
5								

Field Engineer : T. Harrison  
Hole Diameter : 4" Solid  
Drilling Method : Continuous Flight Auger  
Sampling Method : Mod. California Sampler  
Date Drilled : 06/08/2020  
Total Depth (approx.) : 3.5 feet  
Location : See Figure in Report

## LOG OF BORING TB-2

Lot 1 Cole Ranch Silverton, Colorado  
Todd and Julie Sams  
Mountain Grain Architecture  
c/o Christopher Clemmons, RA, NCARB

Project Number: 56082 GE

Depth in feet	Sample Type	Water Level	USCS	GRAPHIC	Samples	Blow Count	Water Level	REMARKS
	<div> <div></div> Mod. California Sampler  <div></div> Standard Split Spoon  <div></div> Bag Sample </div>	<div> <div>▼</div> Water Level During Drilling  <div>▽</div> Water Level After Drilling </div>						
DESCRIPTION								
0	POORLY GRADED GRAVEL WITH SILT AND SAND, dense to very dense, moist, brown							Organics observed in top 6".
1								
2				GP-GM				
3								
4	Auger refusal on cobble at 3.5 feet							



Field Engineer : T. Harrison  
Hole Diameter : 4" Solid  
Drilling Method : Continuous Flight Auger  
Sampling Method : Mod. California Sampler  
Date Drilled : 06/08/2020  
Total Depth (approx.) : 4.5 feet  
Location : See Figure in Report

## LOG OF BORING TB-3

Lot 1 Cole Ranch Silverton, Colorado  
Todd and Julie Sams  
Mountain Grain Architecture  
c/o Christopher Clemmons, RA, NCARB



Project Number: 56082 GE

Depth in feet	Sample Type	Water Level	USCS	GRAPHIC	Samples	Blow Count	Water Level	REMARKS
	<div> <div>Mod. California Sampler</div> <div>Standard Split Spoon</div> <div>Bag Sample</div> </div>	<div> <div>Water Level During Drilling</div> <div>Water Level After Drilling</div> </div>						
DESCRIPTION								
0	POORLY GRADED GRAVEL WITH SILT AND SAND, medium dense to very dense, moist, brown							
1								Observed organics in top 6 inches.
2			GP-GM			8/6		
3						16/6		
4						10/4		Standard drive bounced on cobble.
5	Auger refusal on cobble at 4.5 feet							

Field Engineer : T. Harrison  
Hole Diameter : 4" Solid  
Drilling Method : Continuous Flight Auger  
Sampling Method : Mod. California Sampler  
Date Drilled : 06/08/2020  
Total Depth (approx.) : 5 feet  
Location : See Figure in Report

## LOG OF BORING TB-4

Lot 1 Cole Ranch Silverton, Colorado  
Todd and Julie Sams  
Mountain Grain Architecture  
c/o Christopher Clemmons, RA, NCARB  
Project Number: 56082 GE

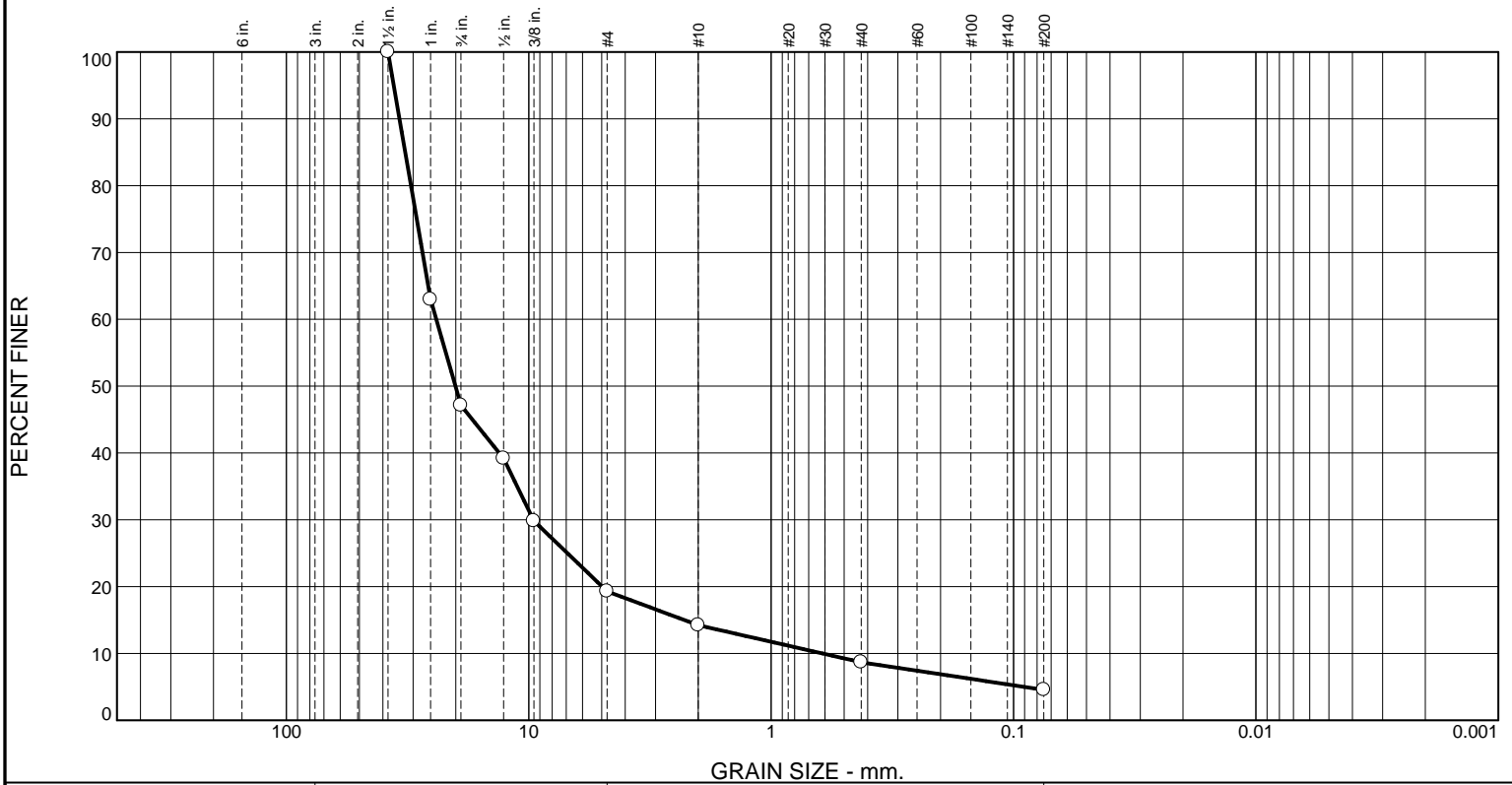
Depth in feet	Sample Type	Water Level	USCS	GRAPHIC	Samples	Blow Count	Water Level	REMARKS
	<div>Mod. California Sampler</div> <div>Standard Split Spoon</div> <div>Bag Sample</div>	<div>Water Level During Drilling</div> <div>Water Level After Drilling</div>						
0	POORLY GRADED GRAVEL WITH SILT AND SAND, medium dense to very dense, moist, brown			GP-GM				Observed organics in top 6 inches.
1								
2								
3								
4								
5	Auger refusal on cobble at 5 feet							

# **APPENDIX B**

## Laboratory Test Results



# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	53	28	5	5	4	5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1-1/2"	100		
1"	63		
3/4"	47		
1/2"	39		
3/8"	30		
#4	19		
#10	14		
#40	9		
#200	5		

\* (no specification provided)

Material Description		
GP-GM-Poorly Graded Gravel with Silt and Sand		
PL= 26	Atterberg Limits LL= 34	PI= 8
D <sub>90</sub> = 34.1494	Coefficients D <sub>85</sub> = 32.3305	D <sub>60</sub> = 24.0693
D <sub>50</sub> = 20.0694	D <sub>30</sub> = 9.5732	D <sub>15</sub> = 2.2799
D <sub>10</sub> = 0.6137	C <sub>u</sub> = 39.22	C <sub>c</sub> = 6.20
USCS= GP-GM	Classification AASHTO=	A-2-4(0)
Remarks		

Location: Test Boring 2  
Sample Number: 12405-B

Depth: 0'-3 1/2'

Date: 6-8-20

**TRAUTNER GEOTECH LLC**

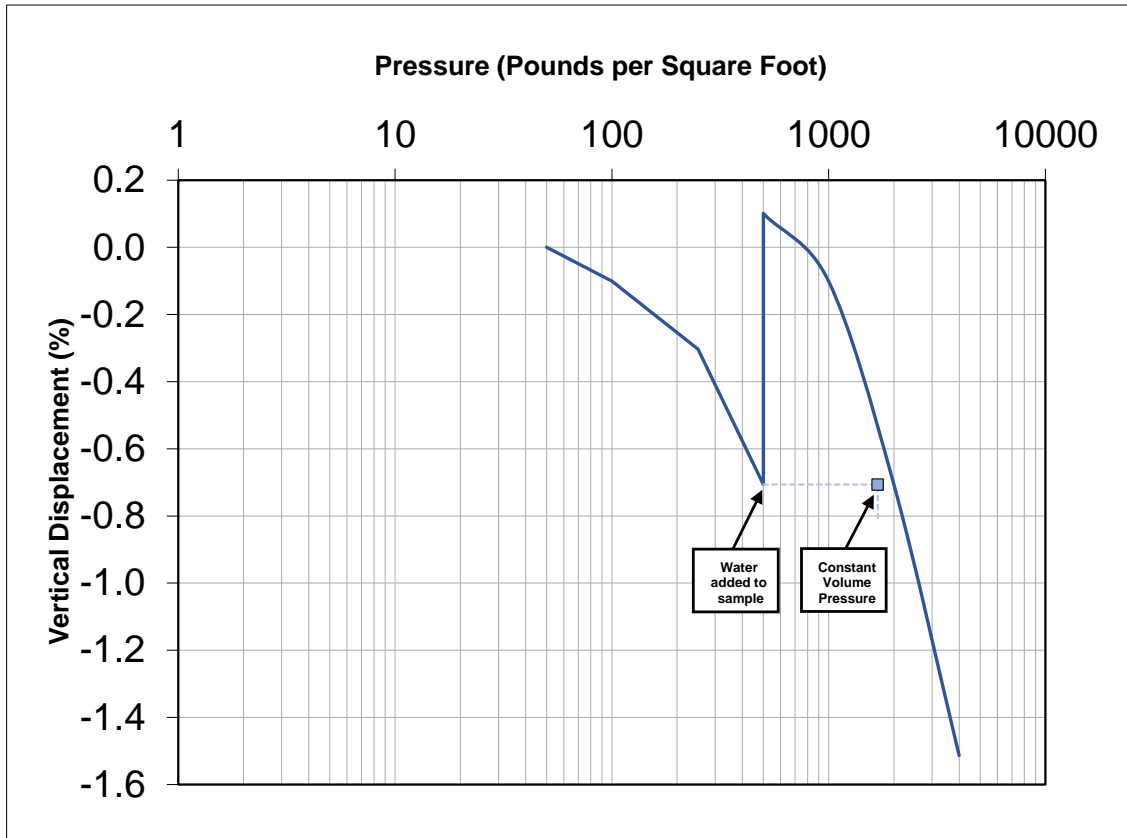
Client: Mr. Christopher Clemmons RA  
Project: Lot 1 Cole Ranch, Silverton CO

Project No: 56082GE

Figure 4.1

Tested By: B. Kunz & G. Jadrych Checked By: C. DeLeon

## SWELL - CONSOLIDATION TEST

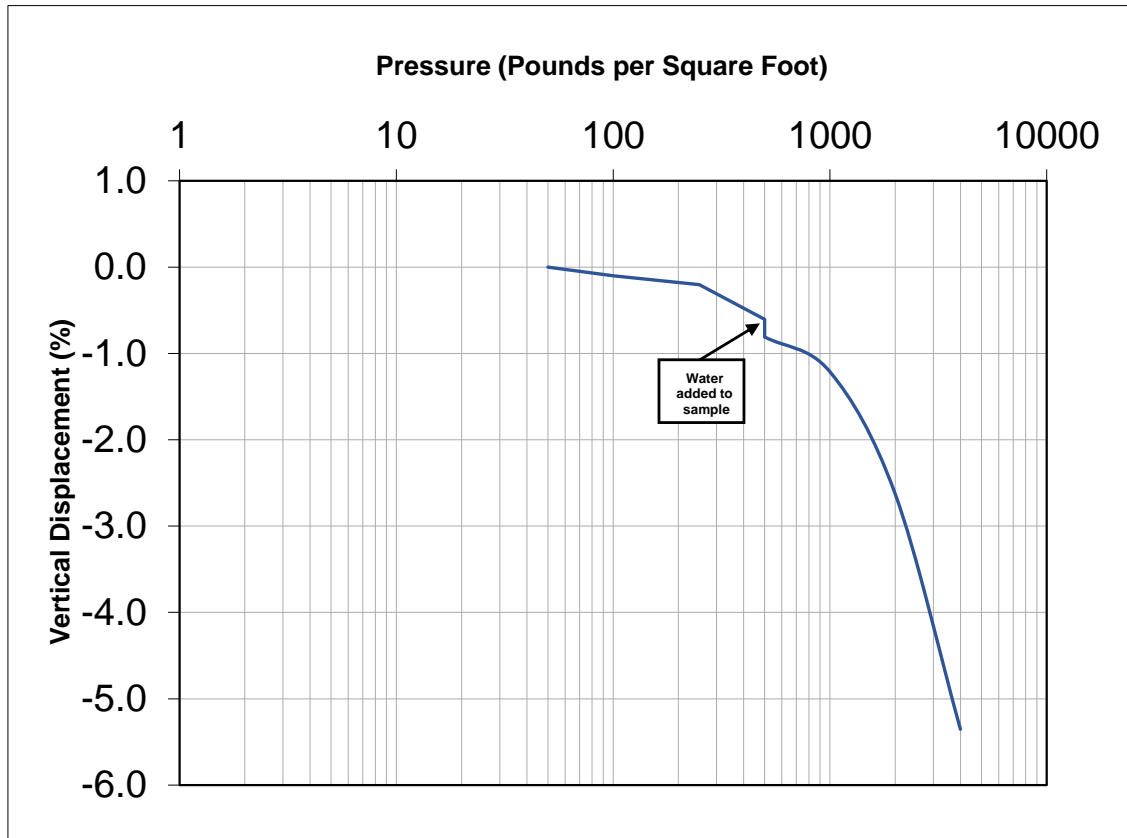


SUMMARY OF TEST RESULTS		
Sample Source:	TB-1 0'-4'	
Visual Soil Description:	GC	
Swell Potential (%)	0.8%	
Constant Volume Swell Pressure (lb/ft <sup>2</sup> ):	1,680	
	Initial	Final
Moisture Content (%):	10.3	21.0
Dry Density (lb/ft <sup>3</sup> ):	104.2	106.2
Height (in.):	0.991	0.976
Diameter (in.):	1.94	1.94

**Note:** Remolded Sample; Molded from the portion of sample passing a #10 sieve. Consolidated under 500 PSF prior to initiating load sequence and wetting. Initial values represent the conditions under 50 PSF following the pre-consolidation under 500 PSF.

Project Number:	56082 GE
Sample ID:	12405-A
Figure:	4.2

## SWELL - CONSOLIDATION TEST



SUMMARY OF TEST RESULTS		
Sample Source:	TB-3 @ 2'	
Visual Soil Description:	GC	
Swell Potential (%)	-0.2%	
Constant Volume Swell Pressure (lb/ft <sup>2</sup> ):	0	
	Initial	Final
Moisture Content (%):	6.9	20.6
Dry Density (lb/ft <sup>3</sup> ):	106.3	109.9
Height (in.):	0.990	0.937
Diameter (in.):	1.94	1.94

**Note:** Remolded Sample: Molded from the portion of sample passing a #10 sieve. Consolidated under 500 PSF prior to initiating load sequence and wetting. Initial values represent the conditions under 50 PSF following the pre-consolidation under 500 PSF.

Project Number:	56082GE
Sample ID:	12405-C
Figure:	4.3



# BOARD OF COUNTY COMMISSIONERS

## San Juan County

P.O. Box 466

Silverton, Colorado 81433

970-387-5671

### RELATIONSHIP OF PROPERTY TO COUNTY ROAD AND STATE HIGHWAY SYSTEMS

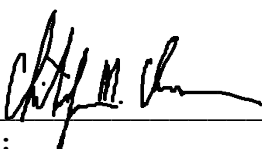
I, the undersigned, applicant engaged in the processing of Application for Improvement Permit No. \_\_\_\_\_, San Juan County, Colorado, do hereby acknowledge the following facts:

1. The real property' which is the subject of said application is on this date located approximately **ZERO FEET** from County Road No. **2**, the nearest designated and publicly maintained county road.
2. Said County Road No. **2** is on this date maintained on an **YEAR-ROUND** basis by San Juan County.
3. The real property which is the subject of said application is on this date located approximately **7 1/2 MILES** from Colorado State Highway No. **550**, the nearest designated state or federal highway.
4. Said Colorado State Highway No. **550** is on this date maintained on a year-round basis by either San Juan County or the Colorado Division of Highways.
5. A Driveway Permit will be necessary for any private access or egress relating to said real property which intersects any designated Colorado State Highway or Federal Highway.

Signed and dated this **31** day of **JULY**, **2020**.  
day month year

ATTEST:

\_\_\_\_\_  
Applicant

  
\_\_\_\_\_  
Position:

# BOARD OF COUNTY COMMISSIONERS

## San Juan County

P.O. Box 466

Silverton, Colorado 81433

970-387-5671

### RELATIONSHIP OF PROPERTY TO COUNTY ROAD AND STATE HIGHWAY SYSTEMS

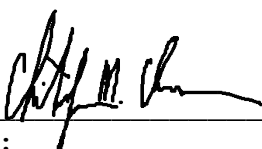
I, the undersigned, applicant engaged in the processing of Application for Improvement Permit No. \_\_\_\_\_, San Juan County, Colorado, do hereby acknowledge the following facts:

1. The real property' which is the subject of said application is on this date located approximately **ZERO FEET** from County Road No. **2D**, the nearest designated and publicly maintained county road.
2. Said County Road No. **2D** is on this date maintained on an **SEASONAL** basis by San Juan County.
3. The real property which is the subject of said application is on this date located approximately **7 1/2 MILES** from Colorado State Highway No. **550**, the nearest designated state or federal highway.
4. Said Colorado State Highway No. **550** is on this date maintained on a year-round basis by either San Juan County or the Colorado Division of Highways.
5. A Driveway Permit will be necessary for any private access or egress relating to said real property which intersects any designated Colorado State Highway or Federal Highway.

Signed and dated this **31** day of **JULY**, **2020**.  
day month year

ATTEST:

\_\_\_\_\_  
Applicant

  
\_\_\_\_\_  
Position:

SAN JUAN COUNTY, COLORADO  
DRIVEWAY AND ROAD ACCESS PERMIT

Improvement  
Permit No. \_\_\_\_\_

Applicant: TODD AND JULIE SAMS  
P.O. BOX 215  
OOLOGAH, OK 74053  
(918) 606-0558

Location of Proposed Driveway or Access on County Road No. 2 :

ON THE WEST SIDE OF COUNTY ROAD 2, APPROXIMATELY 40'  
FROM THE NORTHERN EDGE OF THE PROPERTY.

Description of Proposed Driveway or Access, including materials to be used:

THE DRIVEWAY WILL SLIGHTLY MEANDER FROM CR 2 TO THE PROPOSED RESIDENCE  
LOCATION, IN ORDER TO HINDER DIRECT LINE-OF-SIGHT FROM THE ROAD. THE  
DRIVEWAY WILL CROSS THE ABANDONED RAILROAD BED AT THE LOCATION WITH  
THE LEAST AMOUNT OF GRADE CHANGE BETWEEN THE BED AND THE ADJACENT  
LAND ON EITHER SIDE. THE GRAVEL DRIVEWAY WILL MEET ALL COUNTY STANDARDS,  
INCLUDING WIDTH, SLOPE, CROSS SLOPE, CLEARANCE AND MATERIALS. A CULVERT  
WILL BE INSTALLED WHERE THE DRIVEWAY MEETS CR 2.

Comment and Recommendations of County Road Supervisor:

Terms and Conditions of Issuance of Permit (or reason for denial):

Permit Approved \_\_\_\_\_ or Denied \_\_\_\_\_. Date: \_\_\_\_\_

Land Use Administrator: \_\_\_\_\_



# Scenic Quality Report

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## 1. INTRODUCTION AND SITE LOCATION

San Juan County regulations state the following:

*All residential development shall be required to submit a Scenic Quality Report at the time of sketch plan submittal.*

The following is a Scenic Quality Report for the proposed Sams Residence, located on Lot 1 of the Cole Ranch Subdivision. This subdivision is located between Middleton and Eureka.

The project site is located within San Juan County's Future Land Use Plan "Economic Corridor". These economic corridors are suitable for residential development because of their moderately sloping terrain and year-round access.

A Vicinity Map showing the general project location is included in this submittal for reference.

## 2. PROJECT SITE AND PROPOSED RESIDENCE LOCATION

County regulations require that this Scenic Quality Report adhere to the following:

*The designated view sheds shall include natural and historic features as seen from and toward the site. Provide written descriptions of these view sheds and how they will be preserved. Existing site photos and graphic depictions of the proposed development shall be submitted so that staff, the Planning Commission and the Board of County Commissioners can assess the visual impacts of the project on the view shed and the effectiveness of proposed mitigation measures.*

The project site, Lot 1 of Cole Ranch Subdivision, consists of 3.98 acres. The lot is divided by County Road 2. Most of the lot is situated on the west side of County Road 2, which consists of a gently sloping grassy meadow with pine and aspen trees dispersed about the site and clustered adjacent the abandoned railroad bed. The smaller portion of the lot, which is on the east side of County Road 2 consists of less natural screening as well as the abandoned and current CR 2D with 60' R.O.W. The Animas River runs on the westernmost edge of the site.

The proposed location for the residence is on the west side of County Road 2 across the historic railroad bed. The proposed driveway crosses the bed at the area of least grade change to minimize impact on the bed, which will be preserved and/or restored to conditions approvable by the Historic Preservation Society. It is estimated that no visible cut or fill will result from the driveway and utilities crossing the railroad bed. The proposed siting best utilizes the natural topography and the most densely vegetated area to screen the structure, while having little to no impact on scenic views.

### **3. VISIBILITY OF THE RESIDENCE FROM COUNTY ROAD 2**

The proposed residence will be almost entirely screened by natural vegetation when looking west from County Road 2.

The image below shows the proposed residence superimposed onto the site to show approximate scale and visibility from County Road 2.





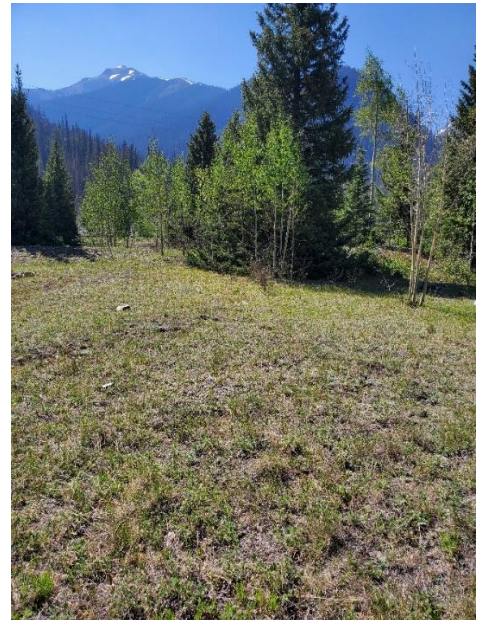
#### **4. VIEWS FROM THE PROPOSED RESIDENCE**

In the County Scenic Quality Report regulations, it is requested that information about the view from the building envelope is provided.

Photos are included below that show views from the proposed residence looking approximately towards the north, south, east, and northwest.



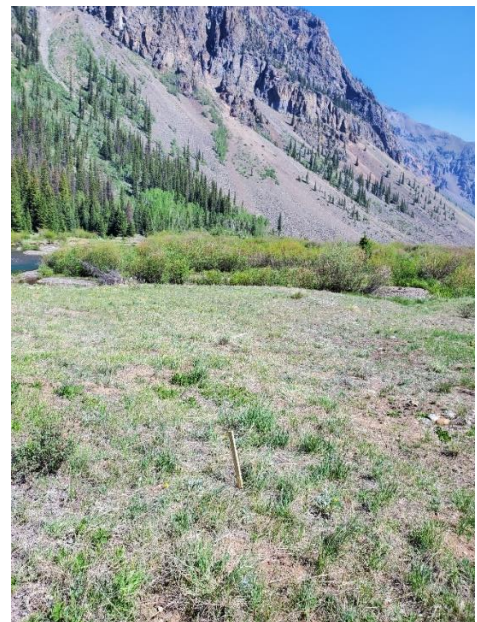
VIEW NORTH



VIEW EAST



VIEW SOUTH



VIEW NORTHWEST



## **5. LOCATION OF STRUCTURE MINIMIZES VISIBILITY FROM PUBLIC LANDS AND EXISTING TRAILS**

The County Scenic Quality regulations require the following information:

*Evidence shall be provided to show that the location of the structure is designed to minimize the visual impacts and that it does not detract from the scenic quality of adjacent public lands, existing trails or historic resources.*

The location of the residence has been selected to minimize visibility and increase privacy, while also striving to meet the objectives of the subdivision as well as the county. Given the proposed residence is at a lower grade and is screened by natural vegetation, this location should have the least impact on scenic quality and views from public lands, trails, or historic resources.

## **6. BUILDING DESIGN AND THE NATURAL TOPOGRAPHY AND VEGETATION**

County regulations require that the Scenic Quality Report includes information regarding the following:

*Evidence to demonstrate that the site improvements are designed and/or oriented in ways that allow them to blend in with and utilize the natural topography and vegetation. The report shall include, but not be limited to, site photos, perspective sketches, photo-simulations and/or three-dimensional models at an appropriate scale.*

The proposed residence is sited directly on the backside of a grouping of large evergreens and young aspens and the main floor elevation is approx. 11 feet below CR 2. The proposed design is shown on the Applicant's draft floor plans included in this application.

## **7. TOPSOIL, UTILITIES, LIGHTING AND DRIVEWAYS**

This section describes design features associated with topsoil, location of utilities, exterior lighting, and any proposed driveways.

### **a) Topsoil**

County regulations require that the project should include the following:

*Plans to remove and save topsoil, prior to any grading or excavation, and how it will be replaced and reused for re-grading and re-vegetation purposes.*

Most of the topsoil removed at the residence area during construction will likely be used as backfill on the west side of the building's foundation to create increased frost protection. Any additional removed topsoil will be used to revitalize the eastern portion of the lot where CR 2 once traversed.

b) Utilities

County regulations require that the project should include the following:

*Location and installation of utilities in ways that will minimize impacts to the view shed and natural environment.*

The project includes the following proposed utilities: a proposed underground septic system and leach field, a proposed underground water well and associated piping. The Applicant plans to tie into the existing overhead electric line and construct an underground electric service to the home. The septic system location was selected based on existing soils, site conditions and dimensional constraints. The Applicant plans to tie into the existing phone line located on the east side of CR 2. The primary heat source is proposed to be forced air with a supplemental pellet/wood stove. All the utilities will be installed with the least amount of disturbance possible to the natural environment, including vegetation preservation and using existing utilities where possible.

c) Exterior Lighting

County regulations require that the project should include the following:

*Exterior lighting shall preserve the Dark Sky environment and view of the stars. Provisions requiring shielding of exterior lighting to prevent direct visibility of light bulbs from off-site, directing of all exterior lighting toward either the ground or the surface of a building and prohibiting high intensity sodium vapor or similar lighting.*

The proposed exterior lighting for the project will be the minimum necessary to safely access the residence, as well as additional screened down-lighting at the covered wrap-around deck. All exterior lighting will be fully shielded, will utilize LED bulbs, will be compatible with the rural mountain

character of the area, and will be in conformance with the requirements of San Juan County regulations.

d) Driveways

County regulations require that the project should include the following:

*Design and construction plans for roads and associated structures that bear a logical relationship to existing topography to minimize the need for cuts and fills.*

One driveway is proposed for this project, which stems off the west side of County Road 2. The driveway location was carefully chosen to minimize disturbance to the abandoned railroad bed and to balance the onsite cut and fill.

## **8. BUILDING MATERIALS**

County regulations require that the Scenic Quality Report includes information regarding the following:

*Provide written descriptions and photos of the proposed building materials, colors and textures. Utilizing and integrating elements, colors and textures found naturally in the landscape and prohibition of reflective materials, such as highly reflective glass or metals.*

The proposed residence will include the following materials:

- Log siding with a medium, natural stain.
- Rough sawn wood accents with a medium, natural stain.
- Slate color standing seam metal roof with matching trim.
- Stacked river stone used at the column bases.

The image below represents the combination of these materials.





## **9. CONCLUSION**

This project aims to conform to the County Scenic Quality Regulations as shown in this report and is believed to do so as summarized below:

- The Applicant has created a new, more suitable building envelope, which abides by the setback requirements of the county, uses the densest natural vegetation for screening, reduces exposure and proximity to CR 2 and avoids natural and unnatural hazards related to BLM and EPA operations on adjacent lands.
- The residence is a compact two-story home and is downhill from CR 2, which helps to minimize the overall and perceived height.
- The material palette chosen for the residence is in keeping with the mountain log cabin vernacular that is found throughout the region.

Thank you for your review and consideration of the proposed Sams Residence at Cole Ranch. If you have any questions or need additional information please contact Chris Clemmons of Mountain Grain, LLC at 970.515.7882 or Julie Sams at 918.606.0558.