# TOWN OF JACKSON
# PLANNING & BUILDING DEPARTMENT

## TRANSMITTAL MEMO

**Town of Jackson**
- ☒ Public Works/Engineering
- ☒ Building
- ☐ Title Company
- ☒ Town Attorney
- ☒ Police

**Joint Town/County**
- ☒ Parks and Recreation
- ☒ Pathways
- ☒ Housing Department

**Teton County**
- ☐ Planning Division
- ☐ Engineer
- ☐ Surveyor- *Nelson*
- ☐ Assessor
- ☐ Clerk and Recorder
- ☐ Road and Levee

**State of Wyoming**
- ☐ Teton Conservation
- ☐ WYDOT
- ☐ TC School District #1
- ☐ Game and Fish
- ☐ DEQ

**Federal Agencies**
- ☐ Army Corp of Engineers

**Utility Providers**
- ☐ Qwest
- ☐ Lower Valley Energy
- ☐ Bresnan Communications

**Special Districts**
- ☒ START
- ☒ Jackson Hole Fire/EMS
- ☐ Irrigation Company

Date: March 10, 2020

Item #: P20-035 & 036

Planner: Brendan Conboy

Phone: 733-0440 ext. 1302

Fax: 734-3563

Email: bconboy@jacksonwy.gov

**Owner:**
Thompson Family Trust
PO Box 615
Jackson, WY 83001

**Applicant:**
Y2 Consultants – Mark Fellermann
PO Box 2870
Jackson, WY 83001

**REQUESTS:**

The applicant is submitting a request for a Development Plan and Hillside CUP for the property located at 808 Upper Redmond Road, legally known as, PT. N1/2 SE1/4, SEC. 34, TWP. 41, RNG. 116 TRACT C-1, PT. TRACT C-2.

For questions, please call Brendan Conboy at 307-733-0440, x1302 or email to the address shown to the left. Thank you.

**Please respond by:** **March 24, 2020 (Sufficiency)**
**March 31, 2020 (with Comments)**

**RESPONSE:** For Departments not using Trak-it, please send responses via email to:
tstolte@jacksonwy.gov

# PLANNING PERMIT APPLICATION
## Planning & Building Department

150 E Pearl Ave.
P.O. Box 1687
Jackson, WY 83001

ph: (307) 733-0440
www.townofjackson.com

***For Office Use Only***

Fees Paid_____ Date & Time Received _____

Application #s _____ _____ _____

***Please note:** Applications received after 3 PM will be processed the next business day.*

**PROJECT.**

Name/Description: Thompson 2-Lot Subdivision

Physical Address: 808 Upper Redmond Road

Lot, Subdivision: PT. N1/2 SE1/4, SEC. 34, TWP. 41, RNG. 116 TRACT C-1, PT. TRACT C-2 PIDN: 22-41-16-34-4-00-006

**PROPERTY OWNER.**

Name: Thompson Family Trust Phone: 690-5160

Mailing Address: PO Box 615, Jackson, WY ZIP: 83001

E-mail: george@thompsonpalmer.com

**APPLICANT/AGENT.**

Name: Y2 Consultants - Mark Fellermann Phone: 733-2999

Mailing Address: PO Box 2870, Jackson, WY ZIP: 83001

E-mail: mark@y2consultants.com

**DESIGNATED PRIMARY CONTACT.**

_____Property Owner __X__Applicant/Agent

**TYPE OF APPLICATION.** *Please check all that apply; review the type of application at www.townofjackson/200/Planning*

**Use Permit**

_____Basic Use

__X__Conditional Use -Hillside

_____Special Use

**Relief from the LDRs**

_____Administrative Adjustment

_____Variance

_____Beneficial Use Determination

_____Appeal of an Admin. Decision

**Physical Development**

_____Sketch Plan

__X__Development Plan

_____Design Review

**Subdivision/Development Option**

_____Subdivision Plat

_____Boundary Adjustment (replat)

_____Boundary Adjustment (no plat)

_____Development Option Plan

**Interpretations**

_____Formal Interpretation

_____Zoning Compliance Verification

**Amendments to the LDRs**

_____LDR Text Amendment

_____Map Amendment

**Miscellaneous**

_____**Other:**_____

_____Environmental Analysis

**PRE-SUBMITTAL STEPS.** *To see if pre-submittal steps apply to you, go to www.townofjackson.com/200/Planning and select the relevant application type for requirements. Please submit all required pre-submittal steps with application.*

Pre-application Conference #: P19-192 Environmental Analysis #: _____

Original Permit #: _____ Date of Neighborhood Meeting: _____

**SUBMITTAL REQUIREMENTS.** *Please ensure all submittal requirements are included. The Planning Department will not hold or process incomplete applications. Partial or incomplete applications will be returned to the applicant. Go to www.townofjackson.com/200/Planning and select the relevant application type for submittal requirements.*

*Have you attached the following?*

X **Application Fee.** Fees are cumulative. Go to www.townofjackson.com/200/Planning and select the relevant application type for the fees.

X **Notarized Letter of Authorization.** A notarized letter of consent from the landowner is required if the applicant is not the owner, or if an agent is applying on behalf of the landowner. Please see the Letter of Authorization template at www.townofjackson.com/DocumentCenter/View/102/Town-Fee-Schedule-PDF.

X **Response to Submittal Requirements**. The submittal requirements can be found on the TOJ website for the specific application. If a pre-application conference is required, the submittal requirements will be provided to applicant at the conference. The submittal requirements are at www.townofjackson.com/200/Planning under the relevant application type.

***Note: Information provided by the applicant or other review agencies during the planning process may identify other requirements that were not evident at the time of application submittal or a Pre-Application Conference, if held. Staff may request additional materials during review as needed to determine compliance with the LDRs.***

Under penalty of perjury, I hereby certify that I have read this application and associated checklists and state that, to the best of my knowledge, all information submitted in this request is true and correct. I agree to comply with all county and state laws relating to the subject matter of this application, and hereby authorize representatives of Teton County to enter upon the above-mentioned property during normal business hours, after making a reasonable effort to contact the owner/applicant prior to entering.

Signature of Property Owner or Authorized Applicant/Agent — Date: 2/26/2020

Mark Fellermann — Name Printed

Survey Department Manager — Title

# LETTER OF AUTHORIZATION

Thompson Family Trust ,"Owner" whose address is: PO Box 615 Jackson, WY 83001

(NAME OF ALL INDIVIDUALS OR ENTITY OWNING THE PROPERTY)

, as the owner of property more specifically legally described as: PT N 1/2 SE 1/4 Sec. 34 TWP. 41, RNG 116 TRACT C-1, PT. TRACT C-2

(If too lengthy, attach description)

**HEREBY AUTHORIZES** Y2 CONSULTANTS, LLC **as agent to represent and act for Owner in making application for and receiving and accepting on Owners behalf, any permits or other action by the Town of Jackson, or the Town of Jackson Planning, Building, Engineering and/or Environmental Health Departments relating to the modification, development, planning or replatting, improvement, use or occupancy of land in the Town of Jackson. Owner agrees that Owner is or shall be deemed conclusively to be fully aware of and to have authorized and/or made any and all representations or promises contained in said application or any Owner information in support thereof, and shall be deemed to be aware of and to have authorized any subsequent revisions, corrections or modifications to such materials. Owner acknowledges and agrees that Owner shall be bound and shall abide by the written terms or conditions of issuance of any such named representative, whether actually delivered to Owner or not. Owner agrees that no modification, development, platting or replatting, improvement, occupancy or use of any structure or land involved in the application shall take place until approved by the appropriate official of the Town of Jackson, in accordance with applicable codes and regulations. Owner agrees to pay any fines and be liable for any other penalties arising out of the failure to comply with the terms of any permit or arising out of any violation of the applicable laws, codes or regulations applicable to the action sought to be permitted by the application authorized herein.**

**Under penalty of perjury, the undersigned swears that the foregoing is true and, if signing on behalf of a corporation, partnership, limited liability company or other entity, the undersigned swears that this authorization is given with the appropriate approval of such entity, if required.**

**OWNER:**

George L Thompson

**(SIGNATURE) (SIGNATURE OF CO-OWNER)**

***Title:*** Trustee

**(if signed by officer, partner or member of corporation, LLC (secretary or corporate owner) partnership or other non-individual Owner)**

**STATE OF** Wyoming )
)**SS.**
**COUNTY OF** Teton )

The foregoing instrument was acknowledged before me by George Thompson this 7 day of August, 2019.

**WITNESS my hand and official seal.**

**(Seal)**

**(Notary Public)**

**My commission expires:**

MARK FELLERMANN - NOTARY PUBLIC
COUNTY OF TETON STATE OF WYOMING
MY COMMISSION EXPIRES JULY 26, 2022

Y2 CONSULTANTS

y2consultants.com
307 733 2999

ENGINEERING, SURVEYING & PLANNING
LANDSCAPE ARCHITECTURE, GIS
NATURAL RESOURCE SERVICES

# THOMPSON SUBDIVISION 1ST FILING

## DEVELOPMENT PLAN AND HILLSIDE CONDITIONAL USE PERMIT
## LOTS 1 & 2

**Prepared by:**
Y2 Consultants, LLC
ATTN: Melissa Ruth
P.O. Box 2870
Jackson, WY 83001

**Prepared for:**
Thompson Family Trust
P.O. Box 615
Jackson, WY 83001

February 26, 2020

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# Contents

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# INTRODUCTION

Thompson Family Trust currently owns a parcel located at 808 Upper Redmond Road within the Town of Jackson. The subject parcel is a 2.04-acre parcel zoned Neighborhood Low-1 (NL-1). Access to the existing lot is via a 40' access easement from Upper Redmond Road.

Two (2) lots are proposed with this subdivision, both 1.02 acres in size and in harmony with the existing neighborhood character (See Appendix A for proposed lot lines). The minimum lot size in this zone is one acre for single-family lots.

# PHYSICAL DEVELOPMENT

The table below summarizes the existing and proposed physical development conditions.

| | LDR Requirement/ Allowance | Existing | Proposed Lot 1 | Proposed Lot 2 |
|---|---|---|---|---|
| Lot Size | 1 acre | 2.04 ac (88862.4 sf) | 1.03 ac (44,978.9 sf) | 1.01 ac (43,883.5 sf) |
| Floor Area Ratio (FAR) | 0.4 | 5,734 sf | 4,134 sf | 1,600 sf |
| Minimum Landscape Surface Ratio (LSR) | 0.6 (60%) | > 60% | > 60% | > 60% |
| Building Height Maximum | 30' | < 30' | < 30' | < 30' |
| Primary Street Setback | 25' | > 25' | > 25' | N/A |
| Side Interior Setback | 15' | > 15' | > 15' | N/A |
| Rear Setback | 15' | > 15' | > 15' | N/A |
| Parking | 2/DU | 2 | 2 | N/A |

## STRUCTURE LOCATION AND MASS

There are two structures currently on the lot: a 4,134-sf two-story ranch home and a 1,600-sf shed, comprising approximately 5,734 sf according to County Assessors Records.

The NL-1 zone allows for a maximum floor area ratio (FAR) of 0.4. This subdivision would locate the existing ranch home on Proposed Lot 1 and the 1,600-sf shed on Proposed Lot 2. Each lot will be just over one acre in size.

## MAXIMUM SCALE OF DEVELOPMENT

There are two structures currently on the lot: a 4,134-sf two-story ranch home and a 1,600-sf shed that are conforming to all setbacks. The shed is proposed to be removed upon approval of this subdivision.

The NL-1 zone limits individual building size to 10,000 sf. Both existing structures are less than 10,000 sf and no additional physical development is proposed with this application.

## SITE DEVELOPMENT

No additional site development is proposed with this application. A 30' driveway easement is proposed to provide access to Lot 2 across Lot 1. The current owner is not planning to develop Lot 2 at this time, with the exception of removing the existing shed. The existing site development on Lot 1 complies with the NL-1 zone specific standards.

# LANDSCAPING- DIVISION 5.5

The minimum landscape surface ratio in the NL-1 zone is 0.60. A minimum of one plant unit is required per residential lot. No physical development is proposed with this subdivision, and both lots currently comply with all landscaping and landscape surface ration requirements. Final landscaping plans will be included in future building permit submittals.

# FENCING- SECTION 5.1.2

There are no existing fences on the property and this Development Plan and Conditional Use Permit application do not anticipate fencing.

# ENVIRONMENTAL STANDARDS- DIVISION 5.1 & 5.2

## NATURAL RESOURCE BUFFERS

There are no natural resources on the property which require buffers from development. A Wildlife Report is provided as part of this Conditional Use Permit/Development Plan application as Appendix G.

## IRRIGATION DITCH SETBACKS

There are no irrigation ditches on this property.

## WILD ANIMAL FEEDING

Wild animal feeding is prohibited, and none is proposed.

## NATURAL RESOURCE OVERLAY STANDARDS

The property is not within the Natural Resource Overlay.

## BEAR CONFLICT AREA STANDARDS

This property is not within either bear conflict priority Area 1 or 2.

# SCENIC STANDARDS- DIVISION 5.3

## EXTERIOR LIGHTING

Exterior lighting will be addressed upon submittal of a building permit for Lot 2. All future development will comply with Town of Jackson exterior lighting standards.

## SCENIC RESOURCE OVERLAY STANDARDS

This property is not within the Scenic Resource Overlay.

# NATURAL HAZARDS TO AVOID- DIVISION 5.4

A Geotechnical Analysis was performed as required for the Hillside Conditional Use Permit. This report analyzed steep slopes, areas of unstable soils, and fault areas and is included as Appendix F of this application.

## STEEP SLOPES

The site has an average cross slope in excess of 10%. As such, a geotechnical slope stability report is attached as Appendix F of this application. The geotechnical report concluded that some steep slopes are man-made. The steep

slopes in the western and northern portion of the lot are man-made as a result of historical road, driveway, and home-site construction. The steep slopes along the eastern property boundary and a portion of the southern property boundary were determined to be naturally occurring.

### AREAS OF UNSTABLE SOILS

As stated in the Geotechnical Report, the topsoil and loam are not suitable to provide support for foundations and should be removed prior to construction. Upon removal of the topsoil and loam, the westerly portion of the lot is suitable for construction with shallow footings. The rest of the lot would require pile footings for stability. The report recommends that proposed structures be constructed in the western and northern portions of the lot to avoid unstable soils.

### FAULT AREAS

The Jackson thrust fault is located approximately 1000 feet South of the property and the Cache Creek thrust fault is located approximately 2000 feet North of the subject property. All future building will comply with seismic design criteria in affect at the time of submission of a building permit.

### FLOODPLAINS

There are no floodplains associated with this subdivision.

### WILDLAND URBAN INTERFACE

The property is located within the Wildland Urban Interface. As such, future construction will include fire sprinklers, and a firetruck turnaround if the driveway is in excess of 150 feet, and trees within 10 feet of any proposed structure will be removed to comply with the Wildland Urban Interface Ignition Resistant construction standards and the Town Of Jackson ordinances.

## GRADING, EROSION CONTROL, AND STORMWATER- DIVISION 5.7

Required grading and erosion control measures have not been determined at this time because the owner is not proposing any physical development. Future building design will comply with the regulations in effect at the time of submission of a grading pre-application request.

Stormwater is anticipated to drain from the southwestern most edge of Lot 2 to the northeastern edge and into the existing drainage ditch along the eastern property boundary. Conceptual stormwater retention and movement is depicted in Appendix E. Final stormwater run-off calculations and design will be included in future building permit submittals.

# USE STANDARDS

## ALLOWED USES- DIVISION 6.1

Detached single-family residential use is an allowed use in the NL-1 with no use permit required.

## PARKING- DIVISION 6.2

Two (2) parking spaces are required for future residential development on Lot 2. Parking spaces for Lot 2 residential development will be provided onsite off street. No physical development is proposed with this subdivision. Future

proposed development on both lots will comply with the parking requirements in place at the time of building permit submission.

## AFFORDABLE WORKFORCE HOUSING - DIVISION 6.3

This Division does not apply to an application for a single-family subdivision. This Division will be applied to each lot in the subdivision at the time a building permit is submitted. Affordable housing fees will be paid upon submission of a building permit for Lot 2. Lot 1 is an existing single-family home and has paid all affordable workforce housing fees.

## MAXIMUM SCALE OF USE

No physical development is proposed with this application. All future development will comply with the maximum scale of use requirements at the time of building permit submission.

## OPERATIONAL STANDARDS - DIVISION 6.4

No outside storage, noise vibration, electrical disturbances, or fire and explosive hazards are proposed or anticipated with this residential subdivision. All trailers and vehicles, as well as the existing shed will be removed from Lot 2 with the approval of this subdivision. Refuse and Recycling enclosures are not proposed for this two-lot subdivision.

# DEVELOPMENT OPTIONS

## ALLOWED SUBDIVISION AND DEVELOPMENT OPTIONS

### DIVISION 7.1 DEVELOPMENT OPTION STANDARDS

This application is for a two-lot subdivision within the Town of Jackson. The two proposed lots meet the 43,560-sf minimum lot size of the NL-1 zone.

### DIVISION 7.2 SUBDIVISION STANDARDS

#### *7.2.2 STANDARDS APPLICABLE TO ALL SUBDIVISIONS*

A Subdivision Improvements Agreement (SIA) addressing access, signs/lights, water treatment, water supply, fire control measures, storm drainage, utilities, parking, and landscaping will accompany the Subdivision Plat application.

#### *7.2.3 LAND DIVISION STANDARDS*

This development plan is for a 2-lot residential subdivision and meets all standards of this Section. The minimum lot size in this zone is one acre. Each of the lots is approximately 1.02 acres, above the minimum lot size in the NL-1 zone.

#### *7.2.4 CONDOMINIUM AND TOWNHOUSE SUBDIVISIONS*

This development plan is not for a townhouse or condominium subdivision.

## RESIDENTIAL SUBDIVISION REQUIREMEMNTS

### DIVISION 7.5 DEVELOPMENT EXACTION STANDARDS

#### *7.5.2 PARK EXACTIONS*

The park exaction fee in lieu calculation is attached as Appendix B.

#### *7.5.3 SCHOOL EXACTIONS*

The school exaction fee in lieu calculation is attached as Appendix C.

## INFRASTRUCTURE- DIVISON 7.6 & 7.7

### DIVISION 7.6 TRANSPORTATION FACILITY STANDARDS

#### *7.6.2 ACCESS TO ROADS, STREETS, AND HIGHWAYS*

Lot 1 (the northern lot) will be accessed via Upper Redmond Road, where the primary access is currently located. Lot 2 (the southern lot) will also be accessed via Upper Redmond Road via an easement across Lot 1.

#### *7.6.3 STREETS, ALLEYS, AND EASEMENTS*

This subdivision does not affect any alleys.

### DIVISION 7.7 REQUIRED UTILITIES

All required utilities for Lot 2 are existing along the eastern property boundary. There are no irrigation systems or fuel storage tanks proposed with this application. An exhibit depicting proposed utility connections is attached as Appendix E.

# DEVELOPMENT PLAN FINDINGS

## IS CONSISTENT WITH THE DESIRED FUTURE CHARACTER DESCRIBED FOR THE SITE IN THE JACKSON/TETON COUNTY COMPREHENSIVE PLAN

**Complies.** The Teton County GIS locates the property within Comprehensive Plan Subarea 6.2- Upper Cache. This Subarea is classified as "stable" and defined primarily by medium- to low-density single-family homes with a predominance of landscape over the built environment.

The proposed 2 lots will maintain existing wildlife permeability between the National Forest, Karns Meadow, and East Gros Ventre Butte. This low-density development will encourage wildlife to move through the residential area and into the adjacent public lands in a similar fashion as neighboring existing development. The development setbacks in this zone, combined with the density of this proposal, allow movement corridors for wildlife and encourage movement through the residential neighborhood.

No physical development is proposed with this application. However, upon building applications, the applicant shall meet the goals and objectives outlined in the Comprehensive Plan and Town LDRs.

## ACHIEVES THE STANDARDS AND OBJECTIVE OF THE NATURAL RESOURCE OVERLAY (NRO) AND SCENIC RESOURCES OVERLAY (SRO)

**Not applicable.** A Visual Resource Analysis is attached as Appendix D. The proposed subdivision only affects PIDN: 22-41-16-34-4-00-006 which is not within the NRO or SRO

## DOES NOT HAVE A SIGNIFICANT IMPACT ON PUBLIC FACILITIES AND SERVICES, INCLUDING TRANSPORTATION, POTABLE WATER AND WASTEWATER FACILITIES, PARKS, SCHOOLS, POLICE, FIRE AND EMS FACILITIES

**Complies**. The development will be subject to mitigation of park and school impacts through payment of exactions at the ratio required in the LDRs for residential development at the time of Subdivision Plat recordation. Exaction fee calculations for park and school impacts are attached as Appendix B and Appendix C. Refer to Appendix E for locations of utility connections.

## COMPLIES WITH THE TOWN OF JACKSON DESIGN GUIDELINES, IF APPLICABLE

**Not Applicable**. The proposed subdivision does not include physical development and, therefore, does not apply to TOJ Design Guidelines. TOJ Design Guidelines do not apply to residential development less than three attached units.

## COMPLIES WITH ALL RELEVANT STANDARDS OF THESE LDRS AND OTHER TOWN ORDINANCES

**Complies.** The proposed subdivision complies with relevant standards, outlined in the NL-1 zone. The proposed subdivision lot sizes are in conformance with the NL-1 zone standards. Please see Appendix A, Proposed Lot Lines, for subdivision lot sizes and configuration.

## IS IN SUBSTANTIAL CONFORMANCE WITH ALL STANDARDS OR CONDITIONS OF ANY PRIOR APPLICABLE PERMITS OR APPROVALS

**Complies.** The applicant is unaware of any prior permits or approvals that conflict with this project.

# HILLSIDE CONDITIONAL USE PERMIT FINDINGS

## MITIGATION MEASURES IDENTIFIED WILL BE EFFECTIVE IN MITIGATING ANY ADVERSE IMPACTS IDENTIFIED, AND ASSOCIATED WITH THE PROPOSED PHYSICAL DEVELOPMENT, USE, DEVELOPMENT OPTION, OR SUBDIVISION

Complies. A Geotechnical Analysis was completed for this subdivision and the final report is attached as Appendix F. The Geotechnical Report does not identify any adverse impacts resulting from this development that need to be identified.

## IS COMPATIBLE WITH THE DESIRED FUTURE CHARACTER OF THE AREA

**Complies.** The Teton County GIS locates the property within Comprehensive Plan Subarea 6.2- Upper Cache. This Subarea is classified as "stable" and defined primarily by medium- to low-density single-family homes with a predominance of landscape over the built environment. This 2-lot subdivision is consistent with surrounding neighborhood development and meets the future desired character of Subarea 6.2.

This proposed subdivision meets the minimum lot size requirement of the zone and will maintain existing wildlife permeability between the National Forest, Karns Meadow, and East Gros Ventre Butte. This low-density development will encourage wildlife to move through the residential area and into the adjacent public lands in a similar fashion as neighboring existing development. The development setbacks in this zone, combined with the density of this proposal, allow movement corridors for wildlife and encourage movement through the residential neighborhood.

No physical development is proposed with this application. However, upon building applications, the applicant shall meet the goals and objectives outlined in the Comprehensive Plan and Town LDRs.

## COMPLIES WITH THE USE SPECIFIC STANDARDS OF DIV. 6.1

**Complies**. No physical development is proposed with this application. However, is anticipated that the proposed Lot 2 will be sold and developed as a Detached single-family home, which is an allowed use within the NL-1 zone. Development on newly subdivided lots with cross slopes greater than or equal to 10% is allowed with a Conditional Use Permit.

## MINIMIZES ADVERSE VISUAL IMPACTS

**Complies.** A Visual Resource Analysis was performed for this subdivision and is attached as Appendix D. This Visual Resource Analysis shows that the design, development, and operation of the proposed Conditional Use minimizes any visual impact of the proposed use on neighboring lots. All future development on proposed Lot 2 will meet the TOJ LDR landscaping and screening requirements for residential use at the time of building permit application.

## MINIMIZES ADVERSE ENVIRONMENTAL IMPACTS

Complies. A Wildlife Use and Habitat Review Report is attached as Appendix G. The report states that no adverse environmental impacts will result with the development and operation of the proposed Conditional Use.

## MINIMIZES ADVERSE IMPACTS FROM NUISANCES

**Complies.** The applicant is unaware of any adverse impacts from nuisances pertaining to this development and conditional use permit.

## MINIMIZES ADVERSE IMPACTS ON PUBLIC FACILITIES

**Complies**. The development will be subject to mitigation of park and school impacts through payment of exactions at the ratio required in the LDRs for residential development at the time of Subdivision Plat recordation. Exaction fee calculations for park and school impacts are attached as Appendix B and Appendix C. Refer to Appendix E for locations of utility connections.

## COMPLIES WITH ALL OTHER RELEVANT STANDARDS OF THESE LDRS AND ALL OTHER TOWN ORDINANCES

**Complies.** The proposed subdivision complies with relevant standards, outlined in the NL-1 zone. The proposed subdivision lot sizes are in conformance with the NL-1 zone standards. Please see Appendix A, Proposed Lot Lines, for subdivision lot sizes and configuration.

## IS IN SUBSTANTIAL CONFORMANCE WITH ALL STANDARDS OR CONDITIONS OF ANY PRIOR APPLICABLE PERMITS OR APPROVALS

**Complies.** The applicant is unaware of any prior permits or approvals that conflict with this project.

# APPENDIX A: PROPOSED LOT LINES (P.1)

# APPENDIX B: PARK EXACTIONS CALCULATIONS

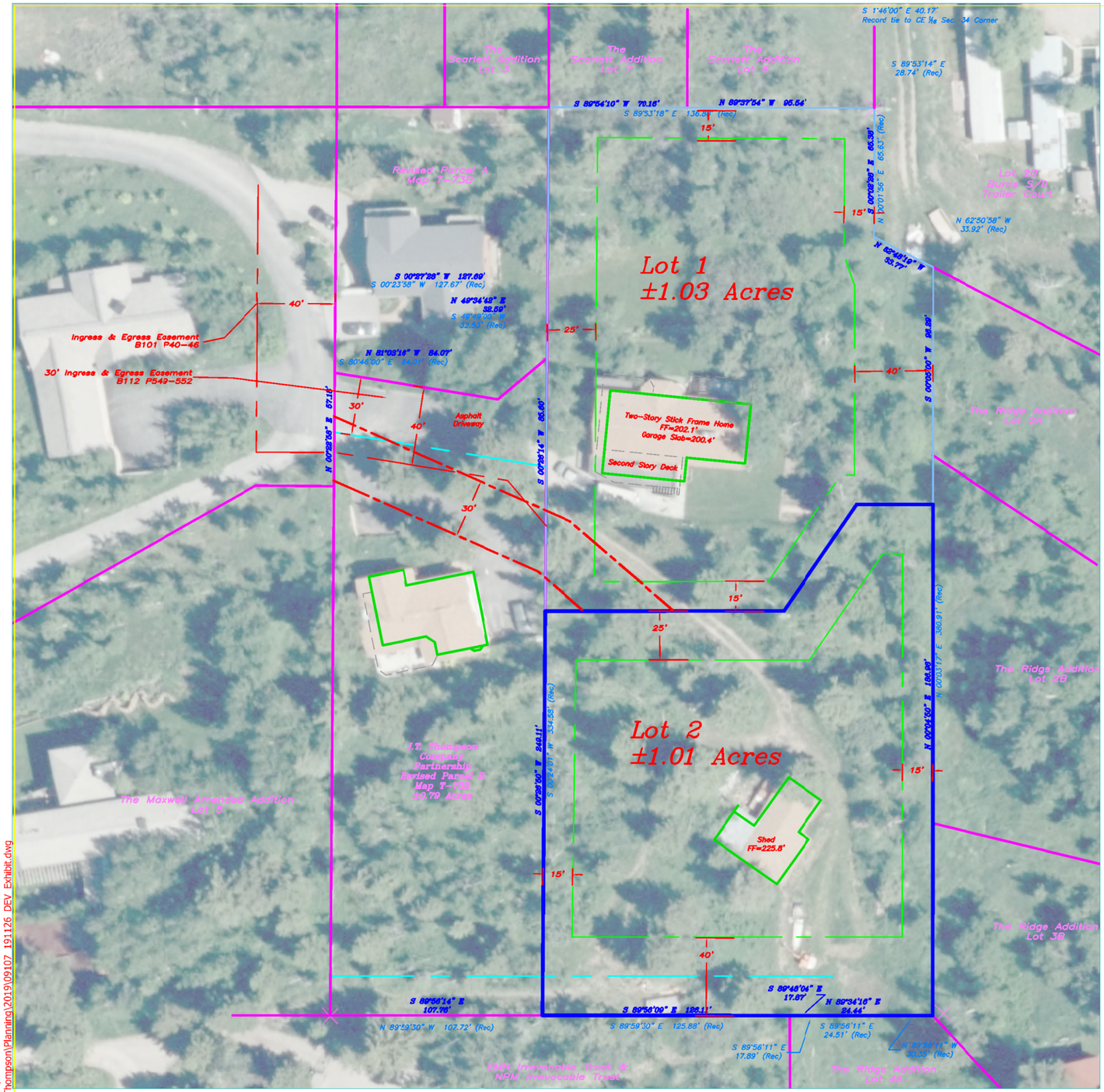
# APPENDIX C: SCHOOL EXACTIONS CALCULATIONS

# APPENDIX D: VISUAL RESOURCE ANALYSIS

# APPENDIX E: UTILITY CONNECTIONS AND CONCEPTUAL STORMWATER MANAGEMENT AND ACCESS (C1.1)

# APPENDIX F: GEOTECHNICAL REPORT – ADDENDUMS 1 & 2

# APPENDIX G: WILDLIFE REPORT




## Subdivision Access Concept

# LEGEND

(E) - EXISTING (P) - PROPCSED

| | |
|---|---|
| PROPERTY BOUNDARY | |
| | PROPERTY BOUNDARY |
| ADJ PROPERTY BOUNDARY | ADJ PROPERTY BOUNDARY |
| ACCESS EASEMENT | ACCESS EASEMENT |
| BUILDING ENVELOPE | |


Y2 consultants.com
307 733 2999


| | |
|---|---|
| DRAWN BY: | MKR |
| REVIEWED BY: | MWF |

808 Upper Redmond Road Subdivision

George Thompson

808 Upper Redmond Road

Jackson, WY 83002

JOB NO: 09107

SET TITLE:

Development Plan Application

PLOT DATE: 12.04.2019

| TITLE | DATE |
|---|---|
| Client Review | 12/04/19 |
| Revision | 2/26/2020 |

Proposed Boundaries

SHEET:

P.1


LAST SAVED: 2/26/2020 4:18 PM BY: MARKF PLOT BY: MARK FELLERMANN
F:\2009\09107 Thompson\Planning\2019\09107 191126_DEV Exhibit.dwg

**TOWN OF JACKSON**
**LAND DEVELOPMENT REGULATIONS**
**DIVISION 7.5.2 - PARK EXACTIONS**
**DATE:** 12/16/2019

**CASH-IN-LIEU OF LAND DEDICATION: SECTION 49660**

1. PROJECT NAME: Thompson HIllside CUP/DEV

2. LOCATION: 808 Upper Redmond Road

3. PROJECT NUMBER: P19-192

4. CALCULATE PROPOSED PROJECT POPULATION:

| UNIT TYPE | # OF UNITS | X | PERSONS HOUSED PER UNIT | PROJECTED POPULATION |
|---|---|---|---|---|
| STUDIO | | | 1.25 | |
| 1 BEDROOM | | | 1.75 | |
| 2 BEDROOM | | | 2.25 | |
| 3 BEDROOM | 2 | | 3.00 | 6 |
| 4 BEDROOM | | | 3.75 | |
| 5 BEDROOM | | | 4.50 | |
| EACH ADDITIONAL BEDROOM | | | 0.50 | |
| DORMITORY | | | 1 per 150 sf of net habitable area | |
| TOTAL | | | | |

5. CALCULATE REQUIRED PARK ACREAGE:

6 TOTAL PROJECTED POPULATION X 9 ACRES / 1000 RESIDENTS = 0.054 REQUIRED ACRES

6. CALCULATE CASH-IN-LIEU:

0.054 REQUIRED ACRES X $100,000 (VALUE OF LAND) = $ 5,400 CASH-IN-LIEU

7. FOR INFORMATION ON PROVIDING AN INDEPENDENT CALCULATION, SEE LDR SECTION 7.5.2 OPTION FOR INDEPENDENT CALCULATION OF DEDICATION STANDARDS

**TOWN OF JACKSON**
**LAND DEVELOPMENT REGULATIONS**
**DIVISION 7.5.3 - SCHOOL EXACTIONS**
**DATE:** 12/16/2019

**CASH-IN-LIEU OF LAND DEDICATION: SECTION 49770**

1. PROJECT NAME: Thompson Hillside CUP/DEV

2. LOCATION: 808 Upper Redmond

3. PROJECT NUMBER: P19-192

4. CALCULATE REQUIRED DEDICATION OF LAND:

| LAND DEDICATION REQUIREMENT | X | # OF UNITS | = | LAND DEDICATION |
|---|---|---|---|---|
| .O2O ACRES PER UNIT SINGLE & TWO-FAMILY | | 808 Upper Redmond Road | | 0.040 AC |
| .015 ACRES PER UNIT MULTI-FAMILY | | | | |

5. CALCULATE CASH IN-LIEU:

0.040 LAND DEDICATION STANDARD X $100,000 (VALUE OF LAND) = $ 5,400 CASH-IN-LIEU

6. FOR INFORMATION ON PROVIDING AN INDEPENDENT CALCULATION, SEE LDR SECTION 7.5.3 OPTION FOR INDEPENDENT CALCULATION OF DEDICATION STANDARDS

# Thompson Family Trust – 808 Upper Redmond Road

## Visual Resource Analysis

define design deliver
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NATURAL RESOURCE SERVICES
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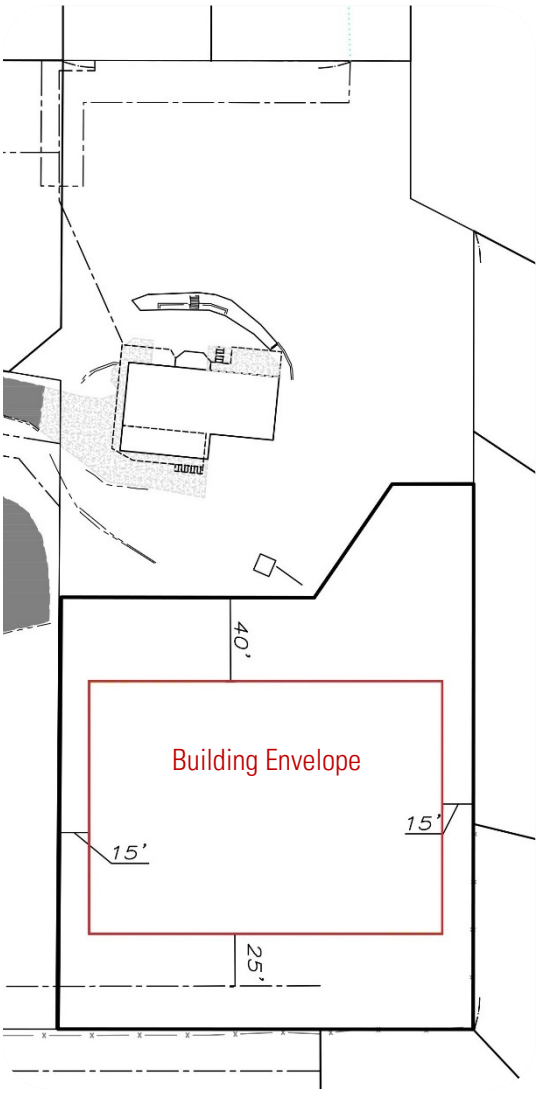
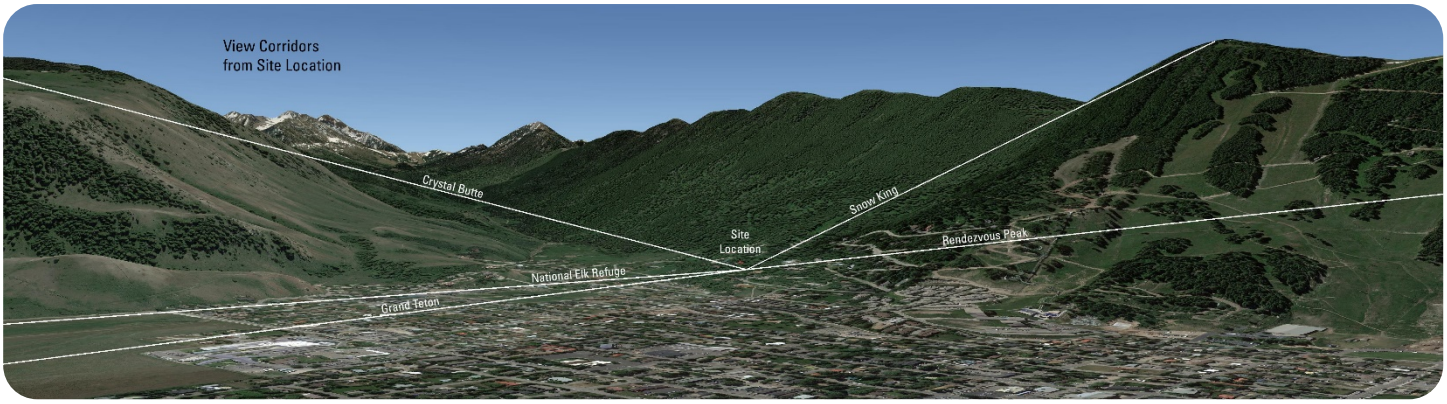
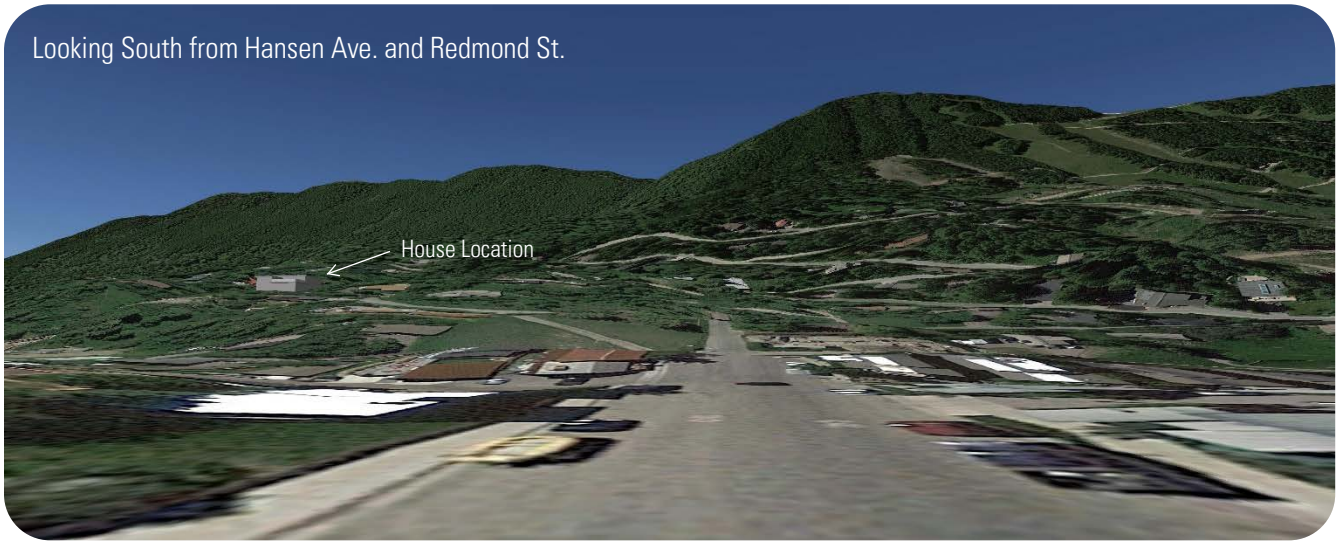


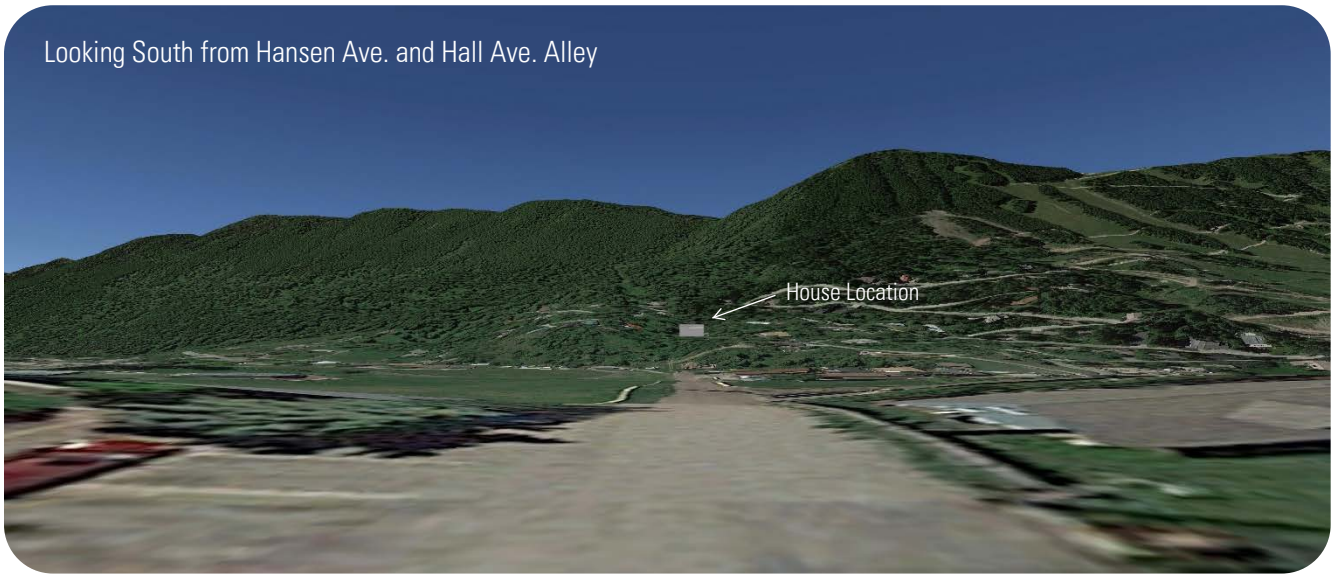


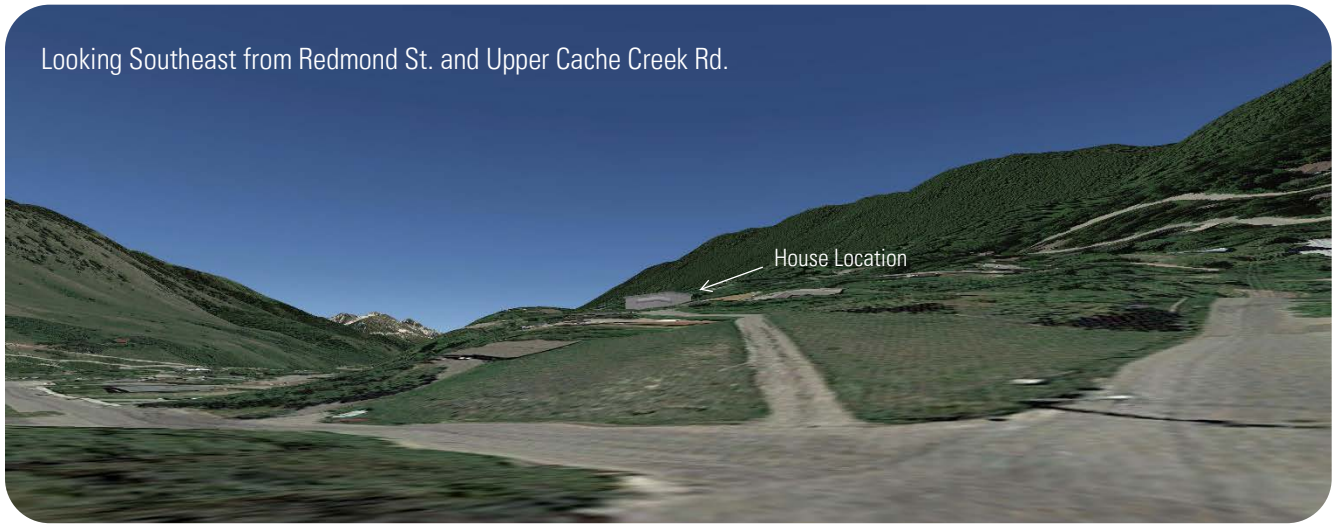
Looking South from Hansen Ave. and Redmond St.

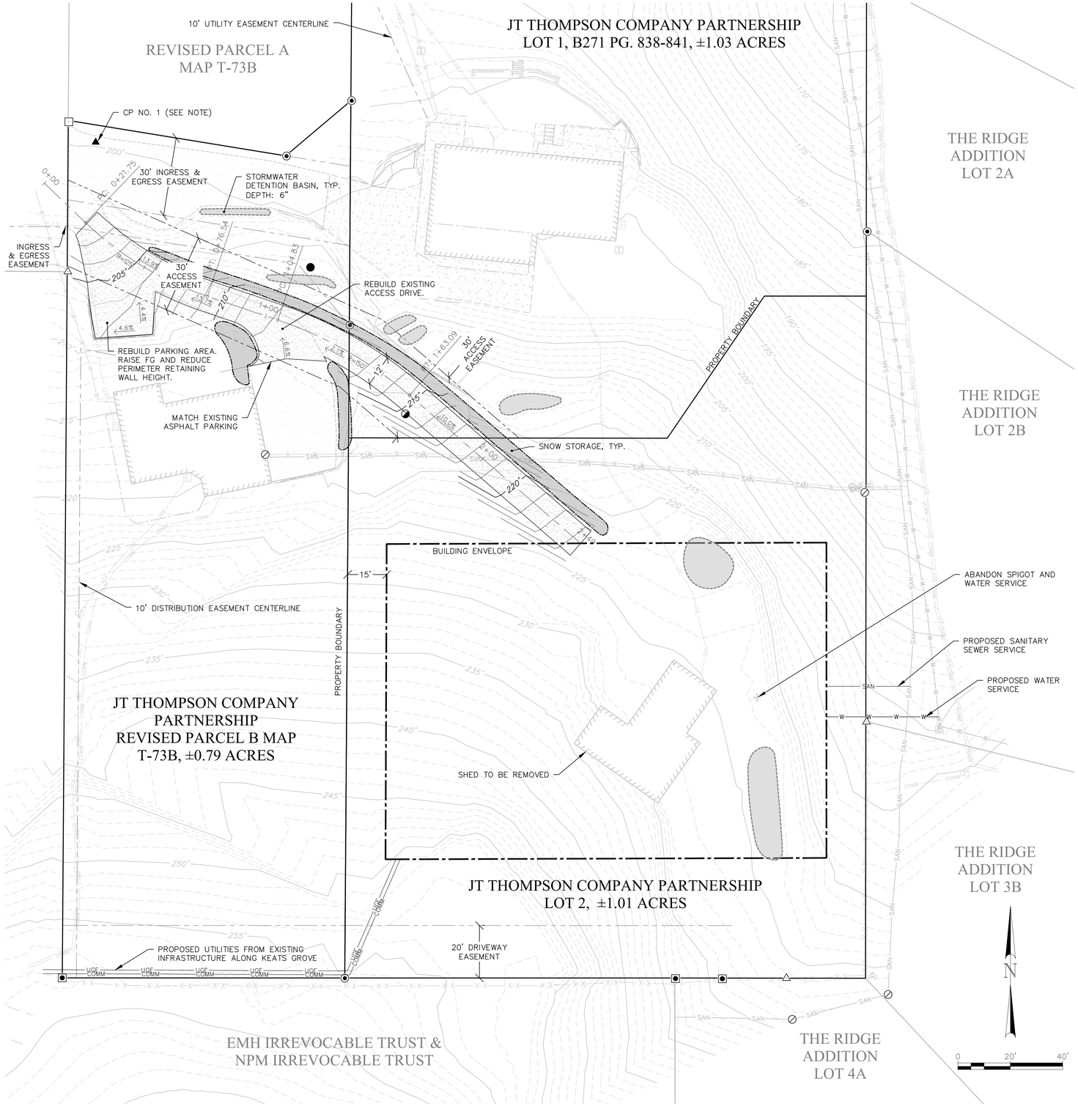



Looking South from Hansen Ave. and Hall Ave. Alley




Looking Southeast from Redmond St. and Upper Cache Creek Rd.






GENERAL NOTES:

- EXISTING TOPOGRAPHY CONSISTS OF DATA COLLECTED DURING GROUND SURVEY SUPPLEMENTED WITH TETON COUNTY LIDAR DATA BEYOND THE LIMITS OF THE SURVEY SOUTH AND WEST OF THE PROPERTY BOUNDARIES.
- GRADING, UTILITY DESIGN, AND STORMWATER MANAGEMENT SHOWN HEREON ILLUSTRATES FEASIBILITY AND CONSTRUCTIBILITY. FINAL DESIGN AND UTILITY LOCATIONS WILL BE DETERMINED AT GRADING AND EROSION CONTROL PERMIT SUBMITTAL.
- MULTIPLE UTILITIES MAY SHARE TRENCHES WHERE APPLICABLE.
- SYMBOLS IN GRAY ON THE SITE PLAN INDICATE THAT THE FEATURE IS EXISTING.

SURVEY NOTES:

BUILDING FOOTPRINTS AS SHOWN HEREON REPRESENT FIELD MEASUREMENTS MAPPED AS PART OF THIS SURVEY AND ARE NOT INTENDED TO REPRESENT ARCHITECTURAL DIMENSIONS. ROOF EAVES WERE NOT MAPPED AS PART OF THIS SURVEY.

UNDERGROUND UTILITIES SHOWN HEREON WERE MAPPED FROM MARKINGS PROVIDED BY MAGIC VALLEY PRIVATE UTILITY LOCATE COMPANY ON APRIL 25, 2016.

NO WETLAND MAPPING WAS DONE UNDER THIS SURVEY.

BASE ELEVATION = 200.0' AT CP NO. 1 AS SHOWN HEREON. (LOCAL DATUM)

TOPOGRAPHIC FEATURES REPRESENTED ON THIS MAP SHOW CONDITIONS DETERMINED BY A FIELD SURVEY MADE FROM APRIL 27 TO MAY 3, 2016 AND ON AUGUST 5, 2016 AND MAY NOT REFLECT CHANGES MADE SUBSEQUENT TO THOSE DATES.

BASIS OF BEARING IS N00°24'00"E ALONG THE WEST LINE OF REVISED PARCEL B.

CURRENT ZONING = NL–1 (SUBURBAN – TOWN OF JACKSON)
DEVELOPMENT SETBACKS ARE ESTABLISHED BY THE TOWN OF JACKSON LAND DEVELOPMENT REGULATIONS, EFFECTIVE APRIL 1, 2016, REFER TO COUNTY DOCUMENT
STREET: 25'
SIDE: 15'
REAR: 40'

## LEGEND

(E) - EXISTING (P) - PROPOSED

- (E) STRUCTURE
- PROPERTY BOUNDARY
- BUILDING ENVELOPE
- (E) EASEMENT
- (P) EASEMENT
- (E) MAJOR CONTOUR
- (E) MINOR CONTOUR
- (P) MAJOR CONTOUR
- (P) MINOR CONTOUR
- (E) EDGE OF ASPHALT
- (P) EDGE OF ASPHALT
- (E) EDGE OF CONCRETE
- (E) EDGE OF GRAVEL
- (P) EDGE OF GRAVEL
- (E) FENCE
- (E) WATER MAIN
- (E) WATER SERVICE
- (P) WATER SERVICE
- (E) SEWER MAIN
- (E) SEWER SERVICE
- (P) SEWER SERVICE
- (E) COMMUNICATIONS LINE
- (P) COMMUNICATIONS LINE
- (E) UNDERGROUND ELECTRIC
- (P) UNDERGROUND ELECTRIC
- (P) SNOW STORAGE
- (P) STORMWATER BASIN

- INDICATES A BRASS CAP INSCRIBED "RLS 578" FOUND THIS SURVEY
- INDICATES A BRASS CAP INSCRIBED "RLS 164" FOUND THIS SURVEY
- INDICATES A ⅝" DIA. REBAR WITH PLASTIC CAP INSCRIBED "PLS 3831" FOUND THIS SURVEY
- INDICATES A ⅝" DIA. REBAR WITH ALUMINUM CAP INSCRIBED "PE & LS 578" FOUND THIS SURVEY
- INDICATES A ⅝" DIA. REBAR WITH ALUMINUM CAP INSCRIBED "PLS 6447" FOUND THIS SURVEY
- INDICATES A ⅝" DIA. REBAR WITH NO CAP FOUND THIS SURVEY
- INDICATES A STEEL T–STAKE WITH CHROME CAP INSCRIBED "RLS 3889" FOUND THIS SURVEY
- INDICATES A STEEL T–STAKE WITH CHROME CAP INSCRIBED "PE & LS 2612" FOUND THIS SURVEY
- INDICATES A STEEL DISTURBED T–STAKE WITH NO CAP FOUND THIS SURVEY
- INDICATES A STEEL SPIKE SET THIS SURVEY FOR ORIENTATION AND MAPPING PURPOSES.
- SEWER CLEANOUT
- TELEPHONE PEDESTAL
- ELECTRIC PEDESTAL
- ELECTRIC METER
- SEWER MANHOLE
- WATER MANHOLE
- WATER VALVE
- DRAIN PIPE
- POWER POLE
- GUY WIRE
- SATELLITE DISH
- SPIGOT
- GAS VALVE
- YARD LIGHT
- ELECTRIC SWITCH ON WOOD POST
- IRRIGATION CONTROL VALVE

| DRAWING SET TITLE | DATE |
|---|---|
| DEV & CUP | 11/12/2019 |
| DEV & CUP | 02/17/2020 |
| DEV & CUP | 02/26/2020 |

DRAWN BY: VAR
CHECKED BY: VAR
JOB #: 09107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NATURAL RESOURCE SERVICES
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Professional Engineer (Civil)
BEIED ZIA A. TASROBI
8902
WYOMING
02/26/2020

THOMPSON CONDITIONAL USE PERMIT
THOMPSON FAMILY TRUST
808 UPPER REDMOND ROAD
JACKSON, WY 83001

DEV & CUP EXHIBIT

C1.1


LAST SAVED: 2/26/2020 9:37 AM BY: JACOBG PLOT BY: VINCE ROUX
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NATURAL RESOURCE SERVICES

# GEOTECHNICAL REPORT

## 808 UPPER REDMOND ROAD
## TOWN OF JACKSON, WYOMING

Prepared by:
Y2 Consultants, LLC
Zia Yasrobi, PE


Prepared for:
George Thompson
P.O. Box 615
Jackson, WY 83001

Addendum 1

Revised January 19, 2020

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# CONTENTS

# Tables



# Appendix

# INTRODUCTION

## SITE DESCRIPTION

The subject property is located at 808 Upper Redmond Road, Town of Jackson, Wyoming Appendix Figure 1. The northern half of the lot is developed with a single family residence. The southern half of the lot houses a shed. The ground slopes down to the northeast. This geotechnical investigation focuses on the southern half of the lot.

## PROPOSED DEVELOPMENT

The subject site is comprised of a shed and a parking area at the southern portion of the site, and two access points – one from the north, and one from the southwest. The proposed development includes demolition of the existing shed and the potential for construction new residential building(s). The proposed access would be from the southwest. Appendix Figure 2 illustrates the proposed building envelope for the subdivided lot.

## SCOPE OF SERVICES

Y2 Consultants LLC (Y2) performed a geotechnical investigation at the subject site to provide geotechnical engineering recommendations for a single-family home and access driveway. The results of this geotechnical investigation are included in this report along with recommendations for foundation, slab-on-grade, excavation and access road construction. As the site is located on a slope of notable grade, slope stability analysis was performed to determine long-term stability of the slope and evaluate the feasibility of the proposed development.

Scope of services for this work included a review of published geology, seismic and soils information for the project site, advancing and logging four exploratory test pits to classify soils and determine the presence/absence of groundwater, and performing geotechnical analyses to provide recommendations for proposed development on the subject property.

# SITE INVESTIGATION

## FIELD VISIT

On October 1, 2019, Y2 conducted a subsurface investigation at the site which included excavation of four (4) test pits to depths varying from 7 to 13 ft below grade. Test pits were located within the general proximity of the proposed development at different locations on the slope to identify slope stratigraphy. The locations of the test pits are shown in Appendix Figure 5.

The test pits were excavated by a subcontractor retained by Y2. A Professional Geotechnical Engineer from Y2 supervised work completed by field crew who classified, logged and sampled soils in the field. Soil classifications, moisture conditions, and presence of organics or other notable features were recorded in the field logs. Samples were taken from the test pits for further geotechnical laboratory testing at Y2. The results from the geotechnical lab testing are enclosed in the Appendix.

## OBSERVED SOILS

All test pits encountered a thin surficial layer of topsoil at the ground surface underlain by a layer of loam extending to depths of about 3 to 3.5 ft below grade in test pits 1 and 2, and to the full depth of test pits at 13 and 4 ft below grade in test pits 3 and 4, respectively. The loam in test pits 1 and 2 was underlain by a layer of dense to very dense gravel and boulders, extending to the full depth at 7 to 8 ft below grade.

Test pit 4 was located at the bottom of a slope at the southern portion of the site. The slope wall near test pit 4 was cut to identify the soil condition of the slope. Based on field observations the subject slope is comprised of native dense to very dense gravel and boulder.

Additional geotechnical laboratory testing (sieve analysis) was conducted on select samples collected from the gravel and boulder layer. The test pit logs, and laboratory test results are included in the Appendix.

## GROUNDWATER

At the time of investigation groundwater was not observed in the test pits. It should be noted that groundwater may fluctuate seasonally due to precipitation and surface runoff. However, due to the absence of ground water in the test pits and the sloping topography of the site, ground water is not expected to cause any complications during construction.

## GEOLOGY

The geology of the subject property is found on the Geologic map of the Cache Creek Quadrangle, Teton County, Wyoming. An adapted version of this map is included in Appendix Figure 3. According to the map, the majority of the property consists of Landslide debris. Quaternary Alluvium is mapped in the northern part of the property.

Surface geology regimes that are present in the project area are shown in Appendix Figure 3. These regimes are defined as follows. Each of these descriptions (Italicized) is taken from Geologic map of the Cache Creek Quadrangle (USGS)

Qa –Alluvium (Quaternary) – Valley and stream deposits of gravel with lesser amounts of sand, silt, and clay.

Qls – Landslide debris– Chaotically mixed boulders and finer rock debris emplaced by mass movement

## SEISMICITY AND GEOLOGIC HAZARDS

Teton County is located within the Intermountain Seismic Belt (ISB), a zone of seismicity extending south to Arizona and north into Montana. Jackson thrust fault is located approximately 1000 feet South of the property Appendix Figure 3. The Cache Creek thrust fault is located approximately 2000 feet North of the subject property.

According to the Wyoming Multi-Hazard Mitigation Plan, the Teton Fault and other Quaternary faults in northwestern Wyoming are considered capable of generating magnitude 7.0 to 7.5 earthquakes (Wyoming Office of Homeland Security 2016-2021). Strong ground motion at the project site can be expected if a sizeable earthquake occurs along the Teton Fault or other regional faults. Seismic design criteria, provided by the USGS, are shown in Appendix Figure 4.

Loose saturated sands and silts may liquify when exposed to seismic shaking. Evaluation of the potential for liquefaction during a large magnitude earthquake is beyond the scope of the investigation for this site.

# GEOTECHNICAL RECOMMENDATIONS

## FOUNDATION

The topsoil material and loam are not suitable to provide support for the proposed foundations. The topsoil, vegetation and loam should be removed from the construction area. The unsuitable materials in the building foundation area should be excavated to the underlying layer of dense to very dense gravel and boulders prior to placement of foundations.

Based on information obtained from the test pit investigation, the southeast portion of the site, near Test Pits 3 and 4, has a deep layer of loam which is not suitable as foundation subgrade material. Therefore, it is recommended that proposed structures be constructed in the westerly or northerly portion of the subdivided lot.

The foundations should be at least two feet above seasonally high groundwater with footings below the frost depth of 36-inches. Seasonal high depth-to-groundwater should be determined prior to construction. Although, per the findings of this investigation, groundwater is not expected to impact construction at this site.

Based on the results of the test pits excavation, the underlying dense to very dense layer of gravel and boulders is competent to support conventional spread footings for the proposed development.

The proposed house can be designed with conventional shallow spread footings supported on the underlying dense to very dense gravel and boulder layer with a bearing pressure of 5,000 pounds per square foot (psf). The recommended soil bearing pressure assumes a minimum footing depth of 36 inches and a maximum total settlement of 0.5 inches for individual footing and 0.3 inches for differential settlement between the footings.

The above analysis assumes a maximum width of 4 feet for continuous footings and a maximum dimension of 12 feet for isolated footings. Construction of large footing sizes can lead to increased settlement as the bearing pressure bulb can extend deeper into the soil profile resulting in larger settlement than specified.

Any excessively loose material or soft spots encountered in the footing subgrade will require sub-excavation to the level of underlying competent soil and backfilling with structural fill placed in layers with a maximum thickness of 8 inches, compacted to 98% of maximum density per ASTM D698 (Standard Proctor). The compaction and testing should be carried out under the supervision of Y2.

Structural fill should meet the gradation specifications defined in Table 1. Structural fill material should be clean sand and gravel free of topsoil, organic debris such as roots or brush, with all material greater than 6-inches removed.

Table 1. Structural Fill Specifications

| Sieve | % Passing |
|---|---|
| 6-inch greater | Removed |
| 5-inch | 90 to 100 |
| 3/4-inch | 60 |
| No. 200 | 0 to 5 |

Bearing capacity values and settlement shall be checked for each combination of load to determine whether settlement or bearing capacity will control the response of the footing. Foundation elements supporting large concentrated loads should be analyzed on an individual basis to determine settlement and bearing characteristics

The gravel and boulder layer contains large size particles that should not bear directly against the footings and foundation walls. Oversize material, such as large cobble greater than 6 inches in diameter, should not be used as backfill against footings or foundation walls.

A waterproofing barrier should be installed on the exterior surface of the foundation wall, between the foundation wall and back fill. The waterproof barrier should extend from below the footing to above the finished grade. The waterproof barrier should be a sheet membrane waterproof barrier. Prior to installing the waterproof barrier any holes, spalling, or recesses in the concrete wall resulting from removal of the forms should be sealed. Foundation drains comprised of at minimum, 4-inch diameter corrugated pipes to be installed around the perimeter of the foundation.

## SLAB-ON-GRADE CONSTRUCTION

For slab-on-grade construction the unsuitable material including the topsoil and silty clay loam should be removed to the level of underlying gravel and boulders deposit. A Professional Geologist and/or Structural Engineer from Y2 should observe the site conditions after the unsuitable material is excavated and before the imported fill is placed and compacted to ensure that site conditions have not changed and to verify bearing soils. Thickened edge slab should be at least two feet above seasonal high groundwater and native soils compacted to 95% of maximum density per ASTM D698 (Standard Proctor). A moisture barrier should be installed above the compacted native material finished by placing 6 to 8 inches of angular fill material, such as ¾ inch minus crush base (Table 2). Rebar or wire mesh may be installed and will be designed by a structural engineer during the structural design phase of the project.

Table 2. Slab-on-Grade Construction

| Material | Thickness (in inches) |
|---|---|
| Concrete Thickened Edge Slab | 4 |
| Angular Course - ¾ inch Minus Crush Base Material | 6 to 8 |
| Polypropylene Moisture Barrier | One Layer 10 ml (TenCate or Geotex equivalent) |
| Compacted Structural Fill | To meet finished grade |

## ACCESS DRIVEWAY

Remove organics, topsoil, and upper soil layers to a depth sufficient for the proposed road section. A Professional Geotechnical Engineer from Y2 should observe the site conditions after the unsuitable material is excavated and before the imported fill is placed and compacted to ensure that site conditions have not changed and to verify bearing soils. Compact native material and place Geotextile fabric. Place and compact angular material in lifts no greater than 8 inches in thickness. Finally place road surfacing material. See Table 3 for specific drive section recommendations.

Table 3. Driveway Specifications

| Access Driveway Components | Thickness |
|---|---|
| Asphalt Surface (optional) | 3" |
| ¾ inch Minus Crush Base Material | 6" |
| Structural Fill, 2 inch minus crush | 18" minimum |
| Compacted Native Soil | 8" |
| Geotextile | Mirafi RS580i |

## LATERAL EARTH PRESSURE

Structural fill or native gravel may be used as back fill material for foundation walls. Large cobbles and large angular boulders, greater than 6 inches in diameter, should not be used as backfill against footings and foundations walls.

Lateral earth pressure parameters were calculated using Rankine and Jaky's theory with the assumption that the foundations are above groundwater elevation. Results are depicted in Table 4., assuming a horizontal backfill:

Table 4. Lateral Earth Pressures

| Backfill Material | Unit Weight (pcf) | Earth Pressure Coefficients | | |
|---|---|---|---|---|
| | | $K_o$ | $K_a$ | $K_p$ |
| Structural Fill | 130 | 0.50 | 0.33 | 3.00 |
| Native Gravel | 140 | 0.44 | 0.28 | 3.54 |

## EXCAVATION AND SHORING

Excavations for retaining walls and foundations shall conform to applicable OSHA and State of Wyoming safety standards. Excavations shall be laid back to safe slopes or properly shored. Excavations and shoring operations shall be conducted in accordance with the most recent versions of the OSHA Construction Standards for Excavations, Part 1926, Subpart P and Wyoming Public Works Standard Specifications. If site conditions observed during the excavation stage of construction are different than those detailed in this report, the structural design may need to be adjusted. A Professional Geotechnical Engineer from Y2 should observe the site conditions after the unsuitable material is excavated and before the imported fill is placed and compacted to ensure that site conditions have not changed and to verify bearing soils. More information on applicable shoring can be found in the OSHA Excavations: Hazard Recognition in Trenching and Shoring Technical Manual Section VL Chapter 2. https://www.osha.gov/dts/osta/otm/otm_v/otm_v_2.html.

## COMPACTION

The imported pit-run material should be placed and compacted with an adequately sized vibratory compactor suitable to the size of the excavation. Pit-run should be placed in lifts of 8-inch thickness or less, brought to optimal moisture content and compacted to a density of 95% in accordance with standard ASTM D698. Laboratory testing such as Atterberg Limits and standard Proctor should be completed on proposed fill material prior to use as fill. Y2 recommends the pit-run fill be tested for moisture content compaction during placement using field methods for determining the density such as the Nuclear Gauge Method. Subgrade conditions and compaction should be observed by Y2.

## NATURAL AND MAN-MADE SLOPES

Based on visual observations in the field, soil samples, and a review of historical imagery, Y2 assessed the presence of man-made steep slopes. During the site-visit additional test-pits, 4 and 5, were added from the trench behind the existing building. The natural slope consists of top soil, followed by loam, and finally bearing soil, in this case dense gravel. Test Pit 3 indicated that from top to bottom there is no gravel layer but rather silty-clay was observed indicating that this area was filled with the excavated material from the upper slope.

Some slopes at the subject site are considered natural. These are primarily along the east property boundary, and a portion of the center of the south property boundary. Elsewhere the slopes have been disturbed either from excavation of material or deposits of excavated material. These soil transpositions were related to historical road, driveway, and home-site constructions. The locations are shown on Appendix Figure 8.

## SLOPE STABILITY

One slope cross section (Section A) was derived from topographic information for slope stability analysis. The cross-section location was selected based on slope height and inclination to represent critical slope conditions within the study area and to obtain sufficient coverage of the subject slope. The location of the slope cross section is presented in Appendix Figure 8.

A detailed engineering analysis of slope stability was carried out for Section A using the computer software Slope/w, using several standard methods of limit equilibrium analysis. These methods of analysis allow for the calculation of Factors of Safety for hypothetical or assumed failure surfaces throughout the slope.

For a specific failure surface, the Factor of Safety is defined as the ratio of the available soil strength resisting movement, divided by the gravitational forces tending to cause the movement. The Factor of Safety of 1.0 represents a "limiting equilibrium" condition where the slope is at a point of pending failure as the soil resistance is equal to forces tending to cause movement. It is common to require a Factor of Safety greater than 1.0 to ensure stability of the slope. The typical Factor of Safety used for engineering design of slopes for stability, ranges from about 1.3 to 1.5 for developments situated close to the slope. The most common design guidelines are based on a 1.5 minimum Factor of Safety against potential slope slides.

The analysis was carried out by preparing a model of the slope geometry and subsurface conditions while analyzing numerous failure surfaces through the slope in search of the minimum or critical Factor of Safety for specific slope conditions. The pertinent data obtained from topographic survey, and test pit information were used as input data for the slope stability analysis. Many calculations were carried out to examine the Factor of Safety for varying depths of potential failure surfaces.

Based on the field investigation results, the following average soil properties were utilized for the soil strata in the slope stability analysis:

Table 5: Soil properties used in slope stability analysis.

| Stratum | Unit Weight (pcf) | Cohesion (psf) | Angle of Internal Friction (degree) |
|---|---|---|---|
| Loam | 120 | 208 | 30 |
| Gravel | 127 | 0 | 36 |

The above soil strength parameters are based on effective stress analysis for long-term slope stability. It should be noted that these soil parameters are relatively conservative. This is based on the results of the sieve analysis results, site observations, and engineering judgement.

As previously noted, all test pits remained dry upon completion of drilling. No groundwater was encountered during the field investigation.

The results of the slope stability analysis are presented in the Appendix and summarized as follows:

Table 6: Results of slope stability analysis.

| Section | Average Existing Slope Inclination | Factor of Safety |
|---|---|---|
| A | 5.0 H : 1 V± | 1.85 |

The minimum computed factor of safety for the overall stability of the analyzed section is higher than the minimum 1.5 required factor of safety. Therefore, the existing slope profile is considered stable in the long-term and we anticipate that the proposed development can be carried out safely with regards to the slope stability. Slope stability will have to be reassessed once the design for a proposed development is available.

As previously mentioned in the geology section of this report and from observations in the GIS maps. This property consists of landside debris. From the aerial photos comparing the site in 1945 to the present it can be concluded that there have been no considerable changes in the topography confirming that there are no active landslides in this area during recent years. This does not preclude the possibility of a landslide at this site.

Based on current and past conditions, along with the calculated factor of safety and other information provided in this report, this site is deemed suitable to develop.

# OTHER CONSIDERATIONS

- Topsoil should be stripped and stockpiled for future use.
- Final grade, slopes, and landscaping should be sloped away from foundation areas. Site drainage recommendations should be provided by a Civil Engineer. Trees should be kept away from foundation and other structural elements.
- Y2 should be retained to provide comment on final plans and specifications to ensure the geotechnical recommendations in this report are sufficient.
- Foundation recommendations were made assuming the removal of unsuitable material followed by replacement with structural fill material.
- Moisture and water in crawl spaces is likely. The installation of a moisture barrier, ventilation, and water flow-through should be included in the crawl space design.
- The Scope of Services was for geotechnical information and analysis only and does not address any environmental or biological conditions on the subject property.

# CONCLUSIONS

The minimum computed factor of safety for overall stability of the analyzed section at this site is higher than the minimum 1.5 required factor of safety. There have not been any active landslides in this area during recent years. Based on field observations, the subject slope is comprised of native dense to very dense gravel and boulder. From a

geotechnical perspective, it is the opinion of Y2 that the westerly portion of the site to the line defined by Test Pit 1-4 is suitable for the proposed development using shallow footings. Everything to the East of the line defined by Test Pit 1-4 will require the use of pile footings. This site is suitable for construction provided the recommendations contained in this report are followed.

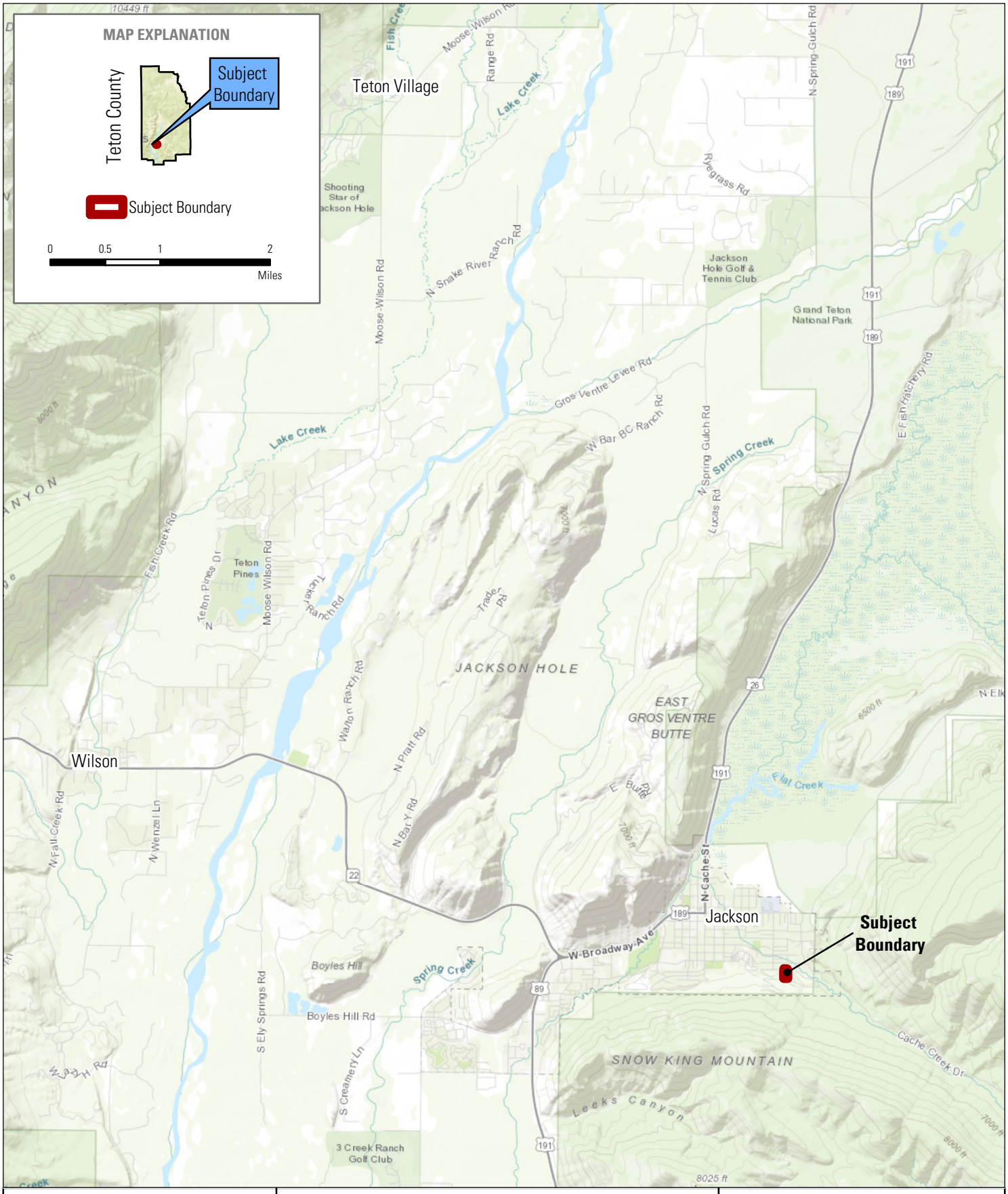
# LIMITATIONS

The geotechnical recommendations in this report are based on limited subsurface investigation and review of published literature. Subsurface conditions vary, and the possibility exists that unfavorable conditions are present on the property not identified during this limited investigation. Findings in this report are limited to data collected onsite and do not account for fill zones and variability in soils throughout the property. Recommendations in this report are based on general engineering properties of soils and conditions observed onsite. Y2 Consultants, LLC should be retained to observe actual subsurface conditions during excavation activities to provide additional recommendations as needed.

The information and recommendations contained in this report are specific to the defined subject property. This report is for the sole use of the Thompson Family Trust (the "Client"), LLC and Y2 Consultants, LLC; no other use is authorized without written permission from Y2 Consultants, LLC.

# APPENDIX

# FIGURES

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# Vicinity Map

Geotechnical Investigation Report
808 Upper Redmond Road
Sec.34, T41N, R116W
Town of Jackson, Wyoming

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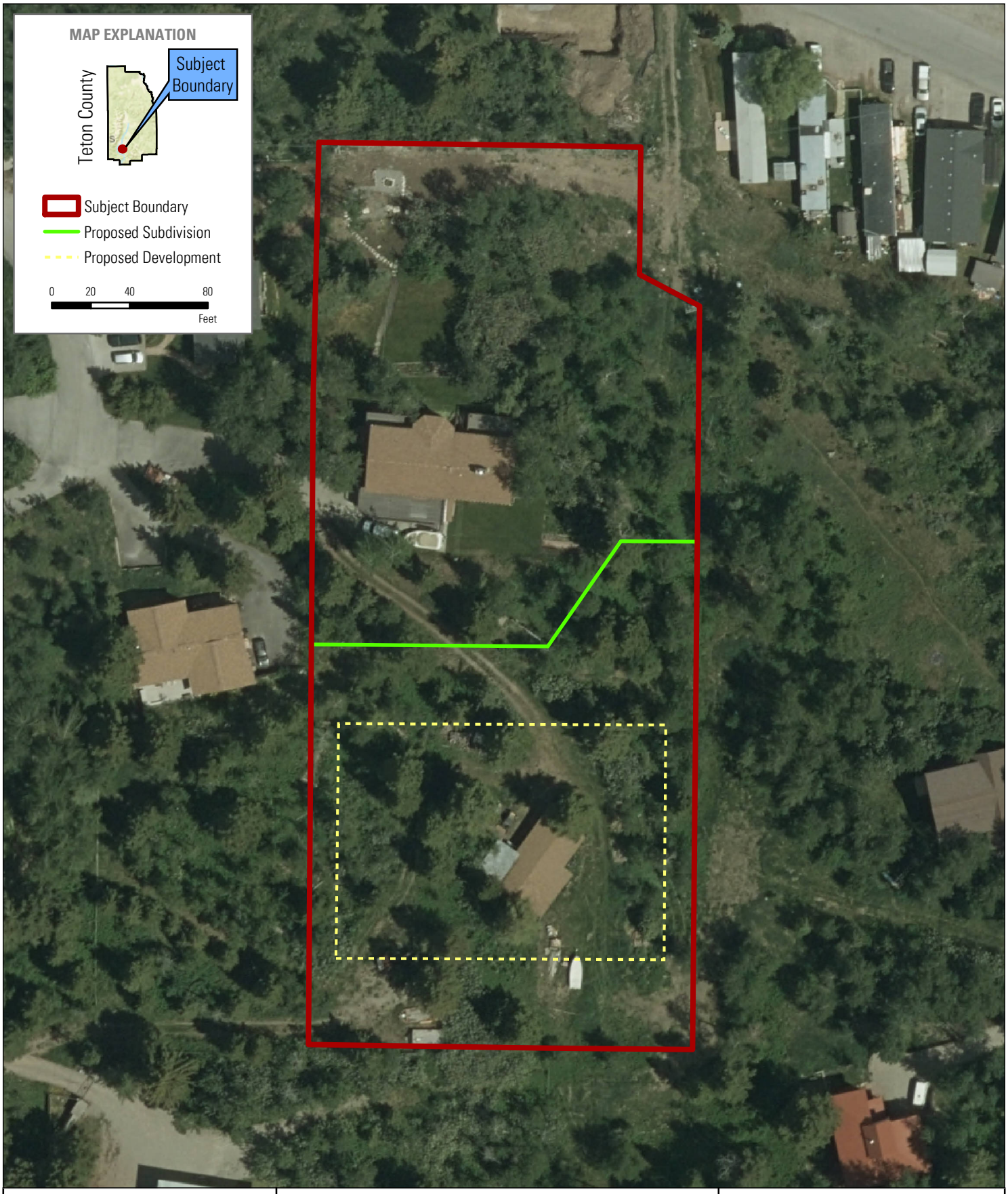
F:\2009\09107 Thompson\GIS\09107_VicinityMap.mxd

FIGURE 1

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**Proposed Development**

Geotechnical Investigation Report
808 Upper Redmond Road
Sec. 34, T41N, R116W
Town of Jackson, Wyoming

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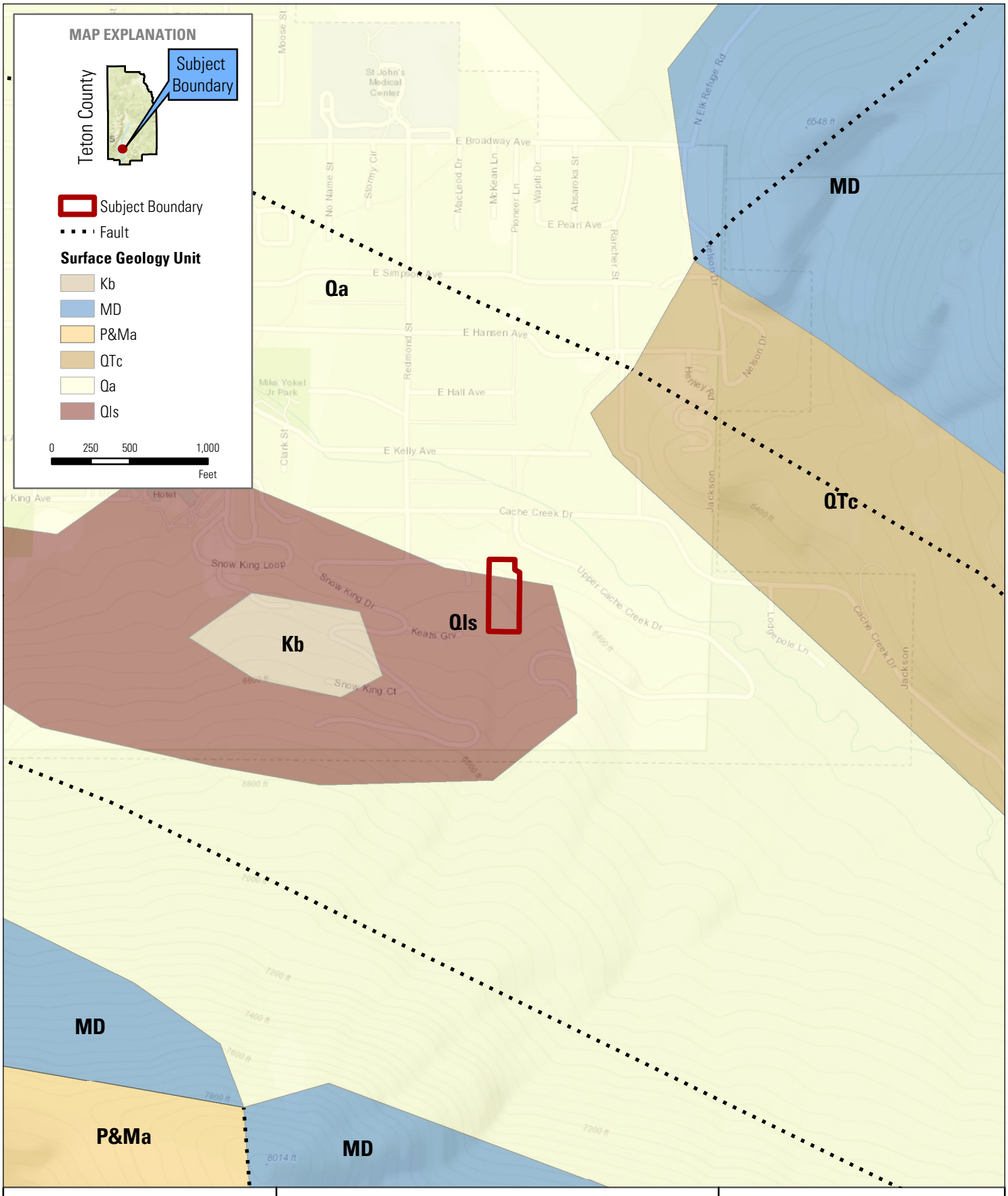
FIGURE 2

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# Geologic Map

Geotechnical Investigation Report
808 Upper Redmond Road
Sec. 34, T41N, R116W
Town of Jackson, Wyoming

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307.733.2999

FIGURE 3

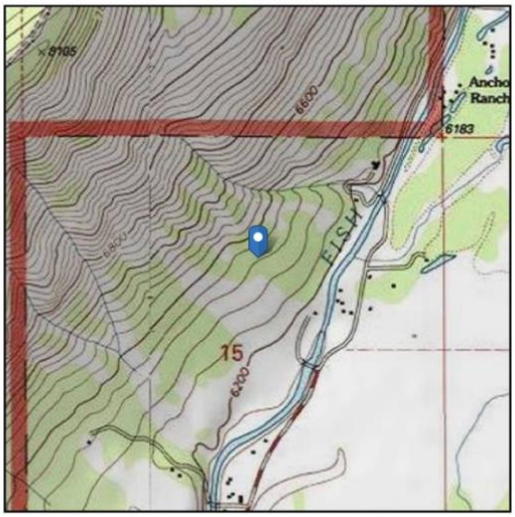
F:\2009\09107 Thompson\GIS\09107_GeologicMap.mxd

# ASCE 7 Hazards Report

**Address:**
No Address at This Location

**Standard:** ASCE/SEI 7-16
**Risk Category:** II
**Soil Class:** D - Default (see Section 11.4.3)

**Elevation:** 6322.27 ft (NAVD 88)
**Latitude:** 43.519109
**Longitude:** -110.870619





## Seismic

**Site Soil Class:** D - Default (see Section 11.4.3)
**Results:**

| | | | |
|---|---|---|---|
| $S_S$ : | 1.041 | $S_{D1}$ : | N/A |
| $S_1$ : | 0.351 | $T_L$ : | 8 |
| $F_a$ : | 1.2 | PGA : | 0.462 |
| $F_v$ : | N/A | $PGA_M$ : | 0.555 |
| $S_{MS}$ : | 1.249 | $F_{PGA}$ : | 1.2 |
| $S_{M1}$ : | N/A | $I_e$ : | 1 |
| $S_{DS}$ : | 0.833 | $C_v$ : | 1.308 |

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

**Data Accessed:** Thu Oct 10 2019
**Date Source:** USGS Seismic Design Maps

Data Source:
https://asce7hazardtool.online/

**Seismic Criteria**
Geotechnical Investigation Report
2491 N Fish Creek Road
Sec. 15, T41N, R116W
Teton County, Wyoming

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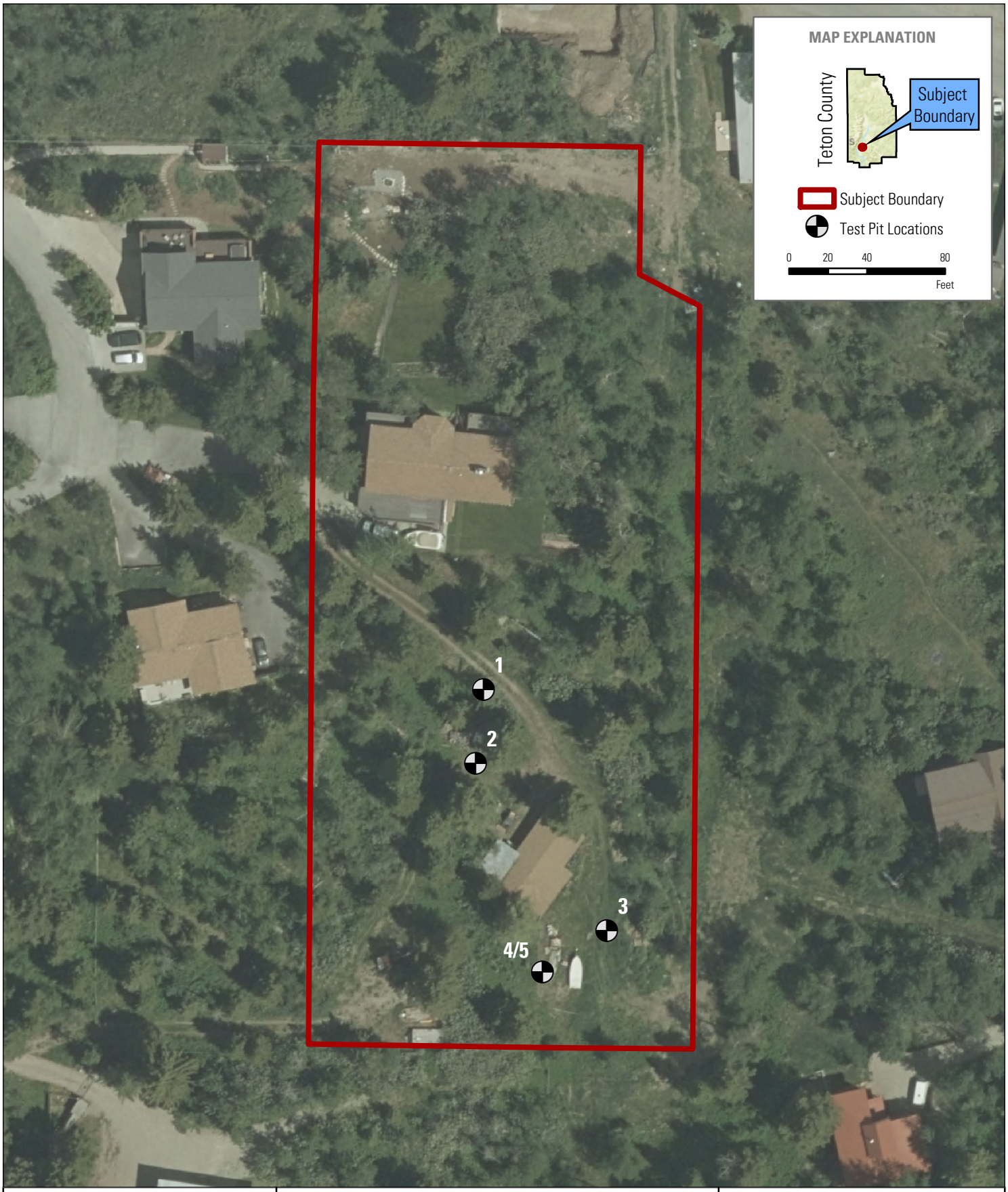
F:\2019\19063_Henderson\GIS\ESRI\19063_SeismicCriteriaMap.mxd

Figure 4




N

1:800

# Test Pit Location Map

Geotechnical Investigation Report
808 Upper Redmond Road
Sec. 34, T41N, R116W
Town of Jackson, Wyoming

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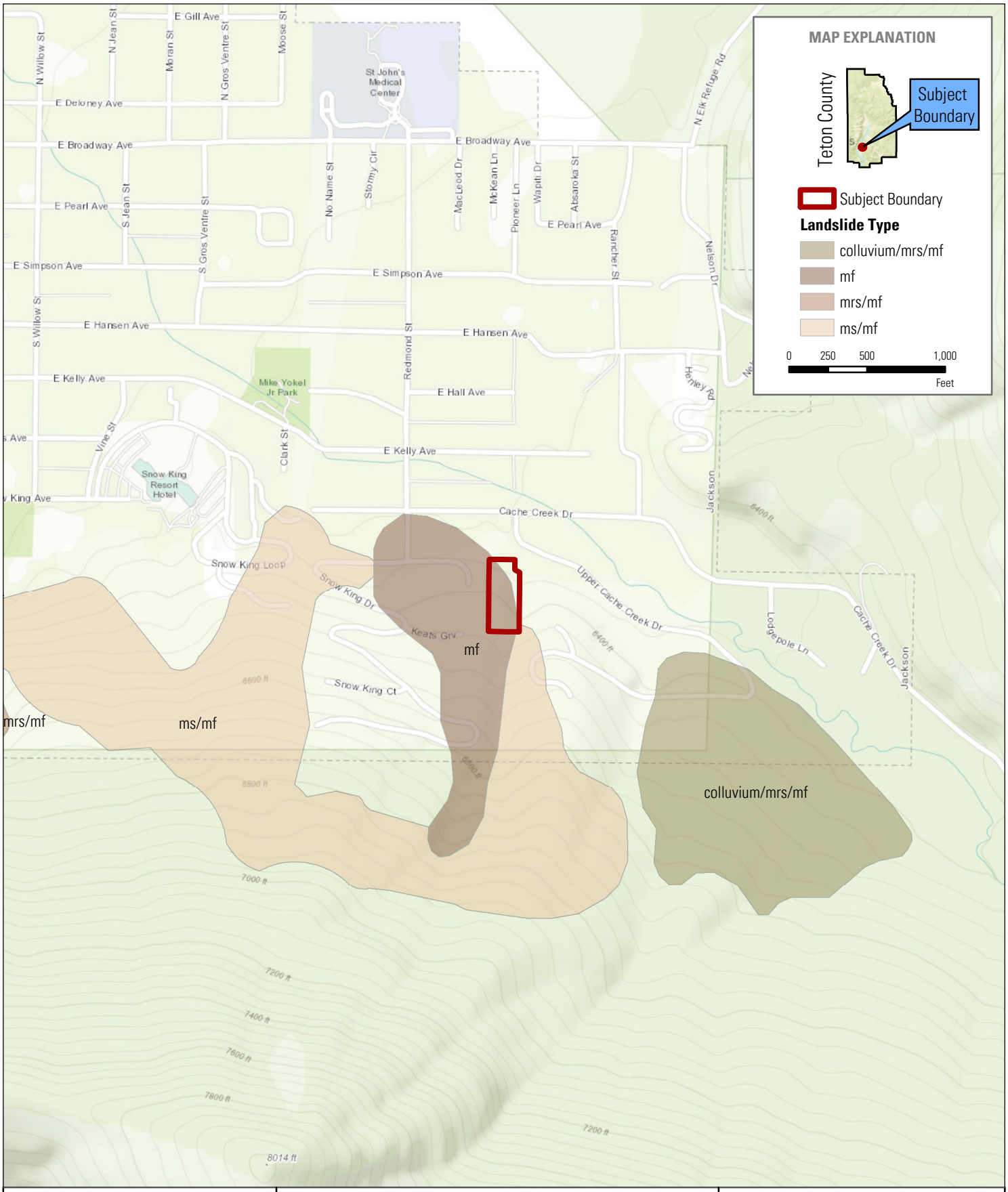
F:\2009\09107 Thompson\GIS\09107_TestPitMap.mxd




N

1:10,000

# Landslide Map

Geotechnical Investigation Report
808 Upper Redmond Road
Sec. 34, T41N, R116W
Town of Jackson, Wyoming

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F:\2009\09107 Thompson\GIS\09107_LandslideMap.mxd

FIGURE 6

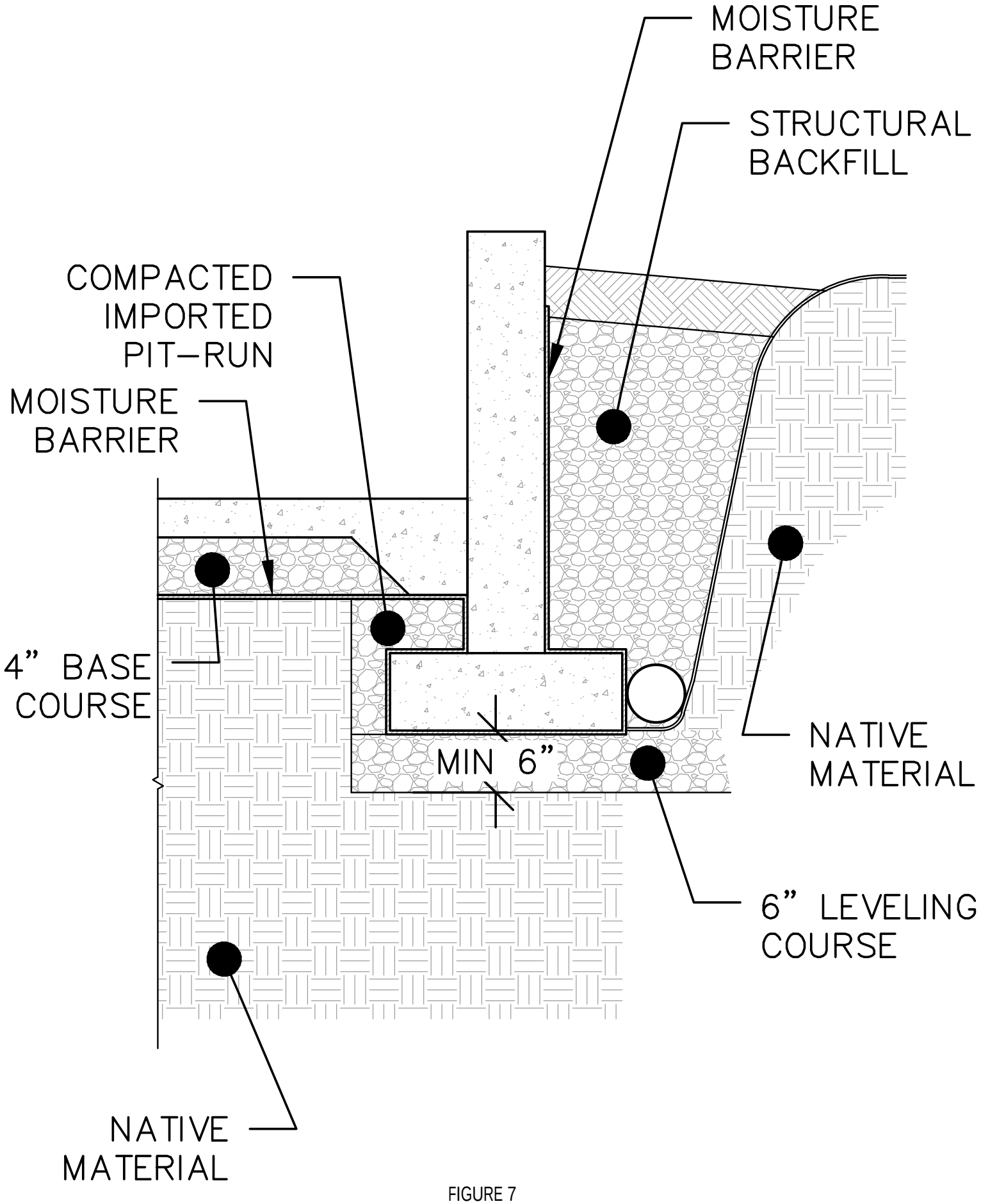
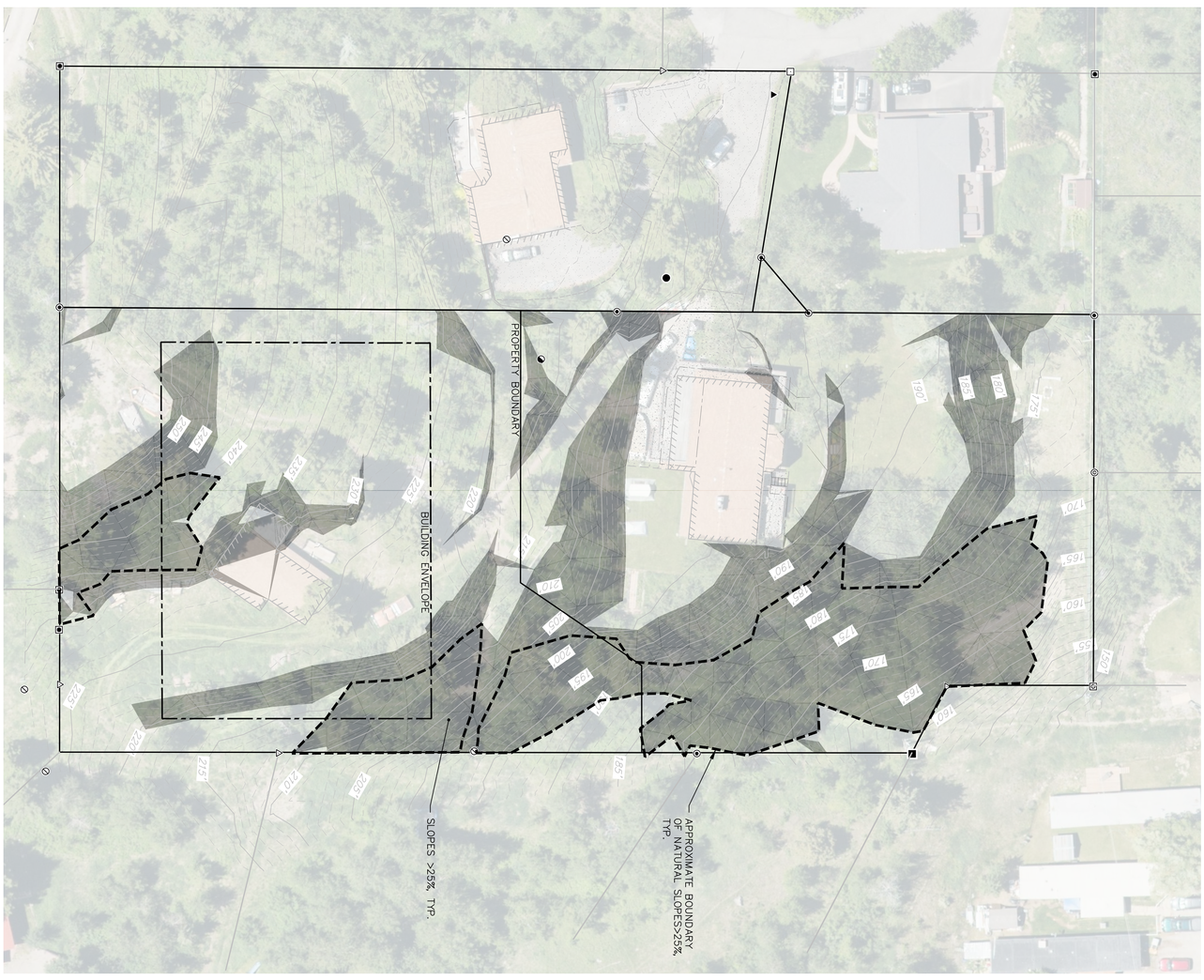

MOISTURE
BARRIER
STRUCTURAL
BACKFILL
COMPACTED
IMPORTED
PIT–RUN
MOISTURE
BARRIER
4" BASE
COURSE
MIN 6"
NATIVE
MATERIAL
6" LEVELING
COURSE
NATIVE
MATERIAL

FIGURE 7

LAST SAVED: 11/13/2019 4:04 PM BY: VINCER PLOT BY: VINCE ROUX
F:\2009\09107 Thompson\Civil\ACAD 2019\09107_DESIGN-EXH.dwg




NOTES:
EXISTING TOPOGRAPHY CONSISTS OF DATA COLLECTED DURING GROUND SURVEY.

0 30' 60'

N

FIG. 8

SLOPES EXHIBIT

# THOMPSON CONDITIONAL USE PERMIT

## THOMPSON FAMILY TRUST

808 UPPER REDMOND ROAD

JACKSON, WY 83001

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307 733 2999
ENGINEERING, SURVEYING & PLANNING
LANDSCAPE ARCHITECTURE, GIS
NATURAL RESOURCE SERVICES

| DATE | DRAWING SET TITLE |
|---|---|
| 11/12/2019 | DEV & CUP |

DRAWN BY: JG
CHECKED BY: VR JOB #: 09107

# TEST PIT LOGS

# Y2 CONSULTANTS

| | | | |
|---|---|---|---|
| Project: **George Thompson** | Project Number: **09107** | Client: **George Thompson** | Boring No. **1** |
| Address, City, State | **808 Upper Redmond Road Jackson, WY 83001** | | |
| Logged By: **AK** | Date — Started: 10/1/2019 | | |
| | Completed: 10/1/2019 | | |
| | Backfilled: 10/1/2019 | | |
| | Groundwater Depth: **N/A** | Elevation: **6445'** | Total Depth: **7'** |

| Depth (feet) | Sample Type | | Lithology | Dry Density (pcf) | Moisture Content (%) |
|---|---|---|---|---|---|
| | ☒ | TP-1 | 0'-1' MOIST, DK BROWN, PEAT TOPSOIL, ORGANIC | | |
| | | | 1'-3.5' LOAM, BROWN, NO ROOTS, SOFT, NEARLY DRY | | |
| 5 | | | 3.5'-6' GRAVEL, COBBLES, MAX 1.5' BOULDERS, DRY, HARD, BROWN/GRAY | | |
| | | | 6'-7' CRUSHED STONES, SEMI-ANGULAR, POORLY GRADED | | |
| | | | B.O.P. = 7' | | |
| 10 | | | | | |

**Soil Group Name:** modifier, color, moisture, density/consistency, grain size, other descriptors

**Rock Description:** modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

- Standard Penetration Slit Spoon Sampler (SPT)
- California Sampler
- Shelby Tube
- CPP Sampler
- ☒ Bulk/ Bag Sample
- ▼ Stabllized Ground water
- ▽ Groundwater At time of Drilling

# Y2 CONSULTANTS

| | | | |
|---|---|---|---|
| Project: **George Thompson** | Project Number: **09107** | Client: **George Thompson** | Boring No. **2** |
| Address, City, State | **808 Upper Redmond Road Jackson, WY 83001** | | |
| Logged By: **AK** | Date — Started: 10/1/2019 | | |
| | Completed: 10/1/2019 | | |
| | Backfilled: 10/1/2019 | | |
| | Groundwater Depth: **N/A** | Elevation: **6445'** | Total Depth: **8'** |

| Depth (feet) | Sample Type | Sample Number | Lithology | Dry Density (pcf) | Moisture Content (%) |
|---|---|---|---|---|---|
| | | | 0'-1' MOIST, DK BROWN, PEAT TOPSOIL, ORGANIC | | |
| | | | 1'-3' LOAM, BROWN, NO ROOTS, SOFT, NEARLY DRY | | |
| | ☒ | TP-2-1 | 3'-5' COBBLES, LOA, DRY, BROWN/GRAY, PINHOLE VOIDS | | |
| 5 | ☒ | TP-2-2 | 5'-8' 8" MAX GRAVEL, DRY, VERY DENSE, 10-15% SILT, BROWN/GRAY, SEMI-ANGULAR | | |
| | | | B.O.P. = 8' | | |
| 10 | | | | | |

**Soil Group Name:** modifier, color, moisture, density/consistency, grain size, other descriptors

**Rock Description:** modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

◪ Standard Penetration Slit Spoon Sampler (SPT)

☒ California Sampler

▥ Shelby Tube

▤ CPP Sampler

☒ Bulk/ Bag Sample

▼ Stabllized Ground water

▽ Groundwater At time of Drilling

# Y2 CONSULTANTS

| | | | |
|---|---|---|---|
| Project: **George Thompson** | Project Number: **09107** | Client: **George Thompson** | Boring No. **3** |
| Address, City, State | **808 Upper Redmond Road Jackson, WY 83001** | | |
| Logged By: **AK** | Date Started: 10/1/2019 | | |
| | Completed: 10/1/2019 | | |
| | Backfilled: 10/1/2019 | | |
| | Groundwater Depth: **N/A** | Elevation: **6440'** | Total Depth: **13'** |

| Depth (feet) | Sample Type | Sample Number | Lithology | Dry Density (pcf) | Moisture Content (%) |
|---|---|---|---|---|---|
| | ☒ | TP-3-1 | 0'-1' MOIST, DK BROWN, PEAT TOPSOIL, ORGANIC<br>1'-2' GRAY LOAM | | |
| 5 | | | 2'-8' SILTY LOAM, PIECES OF WOOD, ROOTS, DK BROWN, WET, SMALL PINHOLE VOIDS | | |
| | ☒ | TP-3-2 | | | |
| 10 | | | 8'-13' SOFT GRAY, PINHOLE VOIDS, LOAM, MAN-MADE, UNCONSILIDATED DEPOSIT, CALCIUM CARBONATE, ONE 1' DIA. ROCK FOUND AT 10' | | |
| | | | B.O.P. = 13' | | |

**Soil Group Name:** modifier, color, moisture, density/consistency, grain size, other descriptors

**Rock Description:** modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

- Standard Penetration Slit Spoon Sampler (SPT)
- California Sampler
- Shelby Tube
- CPP Sampler
- ☒ Bulk/ Bag Sample
- Stabllized Ground water
- Groundwater At time of Drilling

# Y2 CONSULTANTS

| | | | |
|---|---|---|---|
| Project: **George Thompson** | Project Number: **09107** | Client: **George Thompson** | Boring No. **4** |
| Address, City, State | **808 Upper Redmond Road Jackson, WY 83001** | | |
| Logged By: **AK** | Date Started: 10/1/2019 | | |
| | Completed: 10/1/2019 | | |
| | Backfilled: 10/1/2019 | | |
| | Groundwater Depth: **N/A** | Elevation: **6450'** | Total Depth: **4'** |

| Depth (feet) | Sample Type | Sample Number | | | Lithology | Dry Density (pcf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | | | | | **Soil Group Name:** modifier, color, moisture, density/consistency, grain size, other descriptors<br>**Rock Description:** modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions. | | |
| | | | | | 0'-1' MOIST, DK BROWN, PEAT TOPSOIL, ORGANIC | | |
| | | | | | 1'-4' SOFT GRAY, PINHOLE VOIDS, LOAM, MAN-MADE, UNCONSILIDATED DEPOSIT, CALCIUM CARBONATE | | |
| | | | | | B.O.P. = 4' | | |
| 5 | | | | | | | |
| 10 | | | | | | | |

Standard Penetration Slit Spoon Sampler (SPT)

California Sampler

Shelby Tube

CPP Sampler

Bulk/ Bag Sample

Stabllized Ground water

Groundwater At time of Drilling

# Y2 CONSULTANTS

| | | | | | |
|---|---|---|---|---|---|
| Project: **George Thompson** | Project Number: **09107** | | Client: **George Thompson** | Cut # **1** | |
| Address, City, State | **808 Upper Redmond Road Jackson, WY 83001** | | | | |
| Logged By: **AK** | Date | Started: 10/1/2019 | | | |
| | | Completed: 10/1/2019 | | | |
| | | Backfilled: 10/1/2019 | | | |
| | Groundwater Depth: **N/A** | | Elevation: **6450'** | | |

| Depth (feet) | Sample Type | Sample Number | | | Lithology<br>**Soil Group Name:** modifier, color, moisture, density/consistency, grain size, other descriptors<br>**Rock Description:** modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions. | Dry Density (pcf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | | | | | 2' CUT ON NATURAL SIDE WALL, GRAY LOAM | | |
| 5 | | | | | | | |
| 10 | | | | | | | |

Standard Penetration Slit Spoon Sampler (SPT)

California Sampler

Shelby Tube

CPP Sampler

Bulk/ Bag Sample

Stabllized Ground water

Groundwater At time of Drilling

# GEOTECHNICAL LABORATORY TEST RESULTS

# Moisture Content Summary

Standard: ASTM D6913

| Project Number: | 09107 |
|---|---|

Y2 CONSULTANTS

Sample ID: 09107-1-1 Depth: 1' Date: 10/7/2019

| | | |
|---|---|---|
| Mass of Container (g) | 174.3 | Moisture Content |
| Mass of Container + Wet Soil (g) | 280.3 | 8% |
| Mass of Container + Dry Soil (g) | 272.5 | |

Tested: DW/SH
Checked: VR

Sample ID: 09107-3-1 Depth: 1' Date: 10/7/2019

| | | |
|---|---|---|
| Mass of Container (g) | 175.0 | Moisture Content |
| Mass of Container + Wet Soil (g) | 266.4 | 20% |
| Mass of Container + Dry Soil (g) | 251.0 | |

Tested: DW/SH
Checked: VR

Sample ID: 09107-3-2 Depth: 8' Date: 10/7/2019

| | | |
|---|---|---|
| Mass of Container (g) | 175.1 | Moisture Content |
| Mass of Container + Wet Soil (g) | 258.4 | 31% |
| Mass of Container + Dry Soil (g) | 238.9 | |

Tested: DW/SH
Checked: VR

Sample ID: 09107-2-1 Depth: 3' Date: 10/7/2019

| | | |
|---|---|---|
| Mass of Container (g) | 175.3 | Moisture Content |
| Mass of Container + Wet Soil (g) | 267.4 | 7% |
| Mass of Container + Dry Soil (g) | 261.5 | |

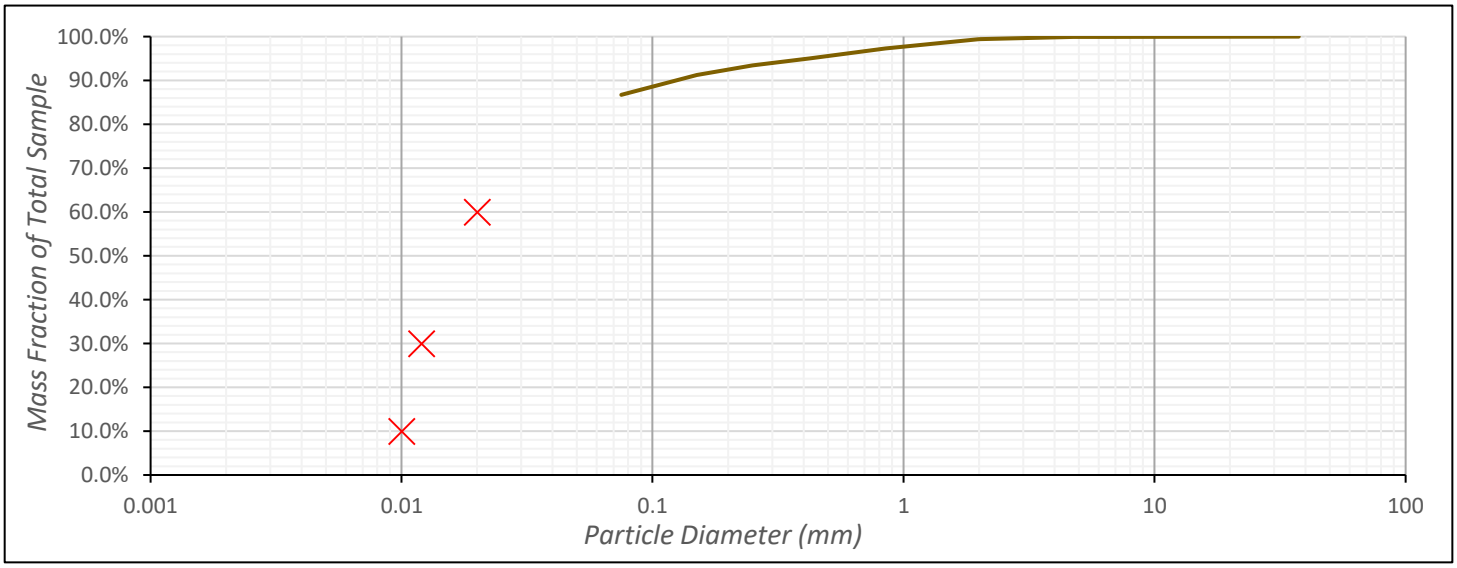
Tested: DW
Checked: VR

# Soil Analyses

## (Sieve, Atterberg, Hydrometer & Moisture)

| | | | | | | |
|---|---|---|---|---|---|---|
| **Project Number:** | 09107 | | | | | |
| **Sample Depth:** | 3' | | **Sample No:** | 09107-2-1 | | |
| **Sample Date:** | 10/1/2019 | | **Tested By:** | AK/DW/SH | **Checked By:** | AK |

| Sieve Number | Diameter (mm) | Mass of Empty Sieve (g) | Mass of Sieve + Soil Retained (g) | Soil Retained (g) | Soil Retained (%) | Soil Passing (%) |
|---|---|---|---|---|---|---|
| 1 1/2" | 37.5 | 0.0 | 0.0 | 0.0 | 0.0% | 100.0% |
| 1/4" | 6.35 | 789.4 | 789.8 | 0.4 | 0.1% | 99.9% |
| #4 | 4.75 | 509.8 | 509.8 | 0.0 | 0.0% | 99.9% |
| #10 | 2 | 478.3 | 480.6 | 2.3 | 0.5% | 99.4% |
| #20 | 0.85 | 635.3 | 645.4 | 10.1 | 2.1% | 97.3% |
| #40 | 0.425 | 362.2 | 373.0 | 10.8 | 2.3% | 95.0% |
| #60 | 0.25 | 554.1 | 561.9 | 7.8 | 1.6% | 93.4% |
| #100 | 0.15 | 522.0 | 532.3 | 10.3 | 2.2% | 91.2% |
| #200 | 0.075 | 320.5 | 342.0 | 21.5 | 4.5% | 86.7% |
| Pan | 0 | 372.7 | 377.8 | 5.1 | 1.1% | 85.7% |
| | | | Washed Material | 408.1 | 85.7% | |
| | | | Sum of Total Sample | 476.4 | 100.0% | |




| | | | | | |
|---|---|---|---|---|---|
| **Gravel Content** | 0.1% | **$D_{10}$ (mm) =** | 0.010 | **Cu =** | 2.00 |
| **Sand Content** | 13.2% | **$D_{30}$ (mm) =** | 0.012 | **Cc =** | 0.72 |
| **Fines Content** | 86.7% | **$D_{60}$ (mm) =** | 0.020 | | |
| **Sample Classification** | Silt | | | **Plastic Limit** | 0.0% |
| **Classification Abbreviation** | ML | | | **Liquid Limit** | 0.0% |
| **Fine Classification** | ML | | | **Plasticity Index** | 0.0% |

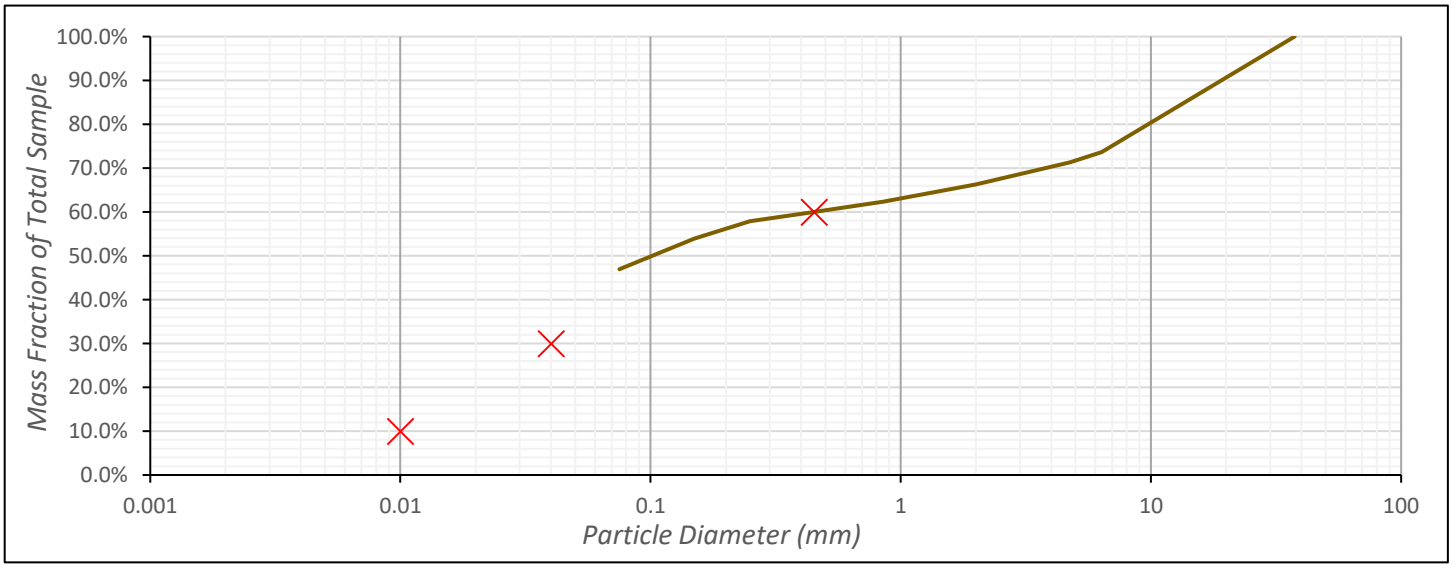
| **Moisture Content** | | |
|---|---|---|
| **Mass of Container (g)** | 175.3 | **Moisture Content** |
| **Mass of Container + Wet Soil (g)** | 267.4 | 7% |
| **Mass of Container + Dry Soil (g)** | 261.5 | |

# Soil Analyses

## (Sieve, Atterberg, Hydrometer & Moisture)

| | | | | | | |
|---|---|---|---|---|---|---|
| **Project Number:** | 09107 | | | | | |
| **Sample Depth:** | 5' | | **Sample No:** | 09107-2-2 | | |
| **Sample Date:** | 10/1/2019 | | **Tested By:** | AK/DW/SH | **Checked By:** | AK |

| Sieve Number | Diameter (mm) | Mass of Empty Sieve (g) | Mass of Sieve + Soil Retained (g) | Soil Retained (g) | Soil Retained (%) | Soil Passing (%) |
|---|---|---|---|---|---|---|
| 1 1/2" | 37.5 | 0.0 | 0.0 | 0.0 | 0.0% | 100.0% |
| 1/4" | 6.35 | 789.4 | 1089.8 | 300.4 | 26.4% | 73.6% |
| #4 | 4.75 | 509.8 | 535.9 | 26.1 | 2.3% | 71.3% |
| #10 | 2 | 478.3 | 535.5 | 57.2 | 5.0% | 66.3% |
| #20 | 0.85 | 635.3 | 680.4 | 45.1 | 4.0% | 62.3% |
| #40 | 0.425 | 362.2 | 391.0 | 28.8 | 2.5% | 59.8% |
| #60 | 0.25 | 554.1 | 576.4 | 22.3 | 2.0% | 57.8% |
| #100 | 0.15 | 522.0 | 566.4 | 44.4 | 3.9% | 53.9% |
| #200 | 0.075 | 320.5 | 399.7 | 79.2 | 7.0% | 47.0% |
| Pan | 0 | 372.7 | 388.1 | 15.4 | 1.4% | 45.6% |
| | | | Washed Material | 519.5 | 45.6% | |
| | | | Sum of Total Sample | 1138.4 | 100.0% | |




| | | | | | |
|---|---|---|---|---|---|
| **Gravel Content** | 28.7% | **$D_{10}$ (mm) =** | 0.01 | **Cu =** | 45.00 |
| **Sand Content** | 24.3% | **$D_{30}$ (mm) =** | 0.04 | **Cc =** | 0.36 |
| **Fines Content** | 47.0% | **$D_{60}$ (mm) =** | 0.45 | | |
| **Sample Classification** | Silty Gravel with Sand | | | **Plastic Limit** | 0.0% |
| **Classification Abbreviation** | GM | | | **Liquid Limit** | 0.0% |
| **Fine Classification** | ML | | | **Plasticity Index** | 0.0% |

| **Moisture Content** | | |
|---|---|---|
| **Mass of Container (g)** | NA | **Moisture Content** |
| **Mass of Container + Wet Soil (g)** | NA | NA |
| **Mass of Container + Dry Soil (g)** | NA | |

# TEST PIT PHOTOS

TP 1

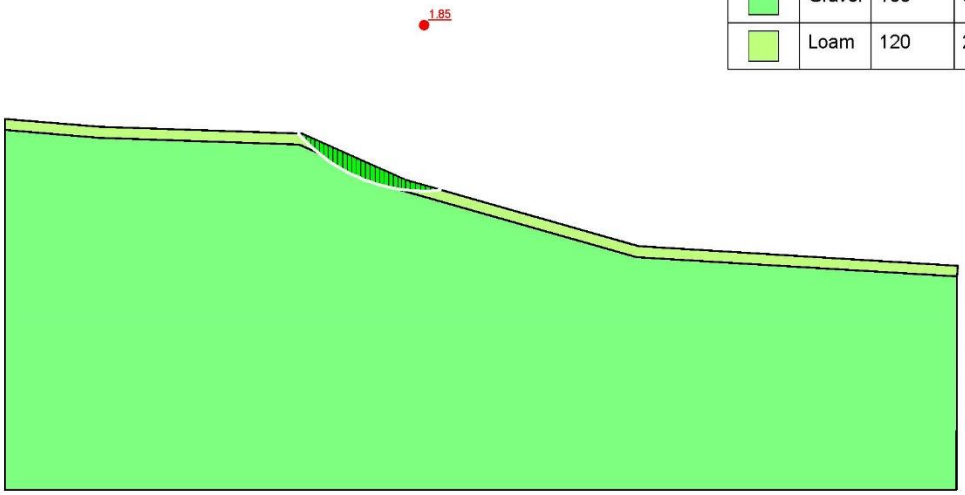
TP 2

TP 3

TP 4

# SLOPE STABILITY ANALYSIS RESULTS

| Color | Name | Unit Weight (pcf) | Cohesion' (psf) | Phi' (°) |
|---|---|---|---|---|
| | Gravel | 138 | 0 | 36 |
| | Loam | 120 | 208 | 30 |



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LANDSCAPE ARCHITECTURE, GIS
NATURAL RESOURCE SERVICES

February 26, 2020

**Geotechnical Report**
**Addendum 2 – revised driveway slope stability analysis**
**808 Upper Redmond Road, Jackson, WY**

This letter serves as Addendum 2 to the original Geotechnical Report by Y2 Consultants for 808 Upper Redmond Road dated November 14th, 2019.

The design and location of the proposed access road was revised after completion of the 11/14/19 report. Revision 1 is dated 1/28/2020, and revision 2 is dated 2/26/2020. Revision 1 includes small retaining walls less than 4 feet in height. Revision 2 does not include any retaining walls. Slope stability analyses were carried out on revision 1 to verify the stability of the slopes in the proposed condition. The subsurface information and soil strength parameters for slope stability analyses were discussed in the original report.

Two new slope cross sections (Sections B and C; see Sheet C1.2, enclosed) were developed for the slope stability analysis using the finished grade topography. The results of the slope stability analysis are enclosed, and a summary is provided in the following table:

| Section | Average Existing Slope Inclination | Factor of Safety |
|---|---|---|
| B | 5.5 H : 1 V± | 2.69 |
| C | 5.2 H : 1 V± | 2.52 |

The minimum computed factor of safety for the overall stability of the analyzed sections are higher than the minimum 1.5 required factor of safety. Therefore, the slope profiles are considered stable in the long-term and the proposed development can be carried out safely with regards to the slope stability.

The revision 2 driveway was reviewed in the context of the original Geotech report and subsequent slope stability analyses (original, and for revision 1 presented herein), and its effect on slope stability is considered to be lesser than for either of the first 2 iterations (original and revision 1). Additional slope stability analyses were not conducted, but the slope profiles of revision 2 are considered stable in the long-term and the proposed development can be carried out safely with regards to the slope stability.

Professional Engineer (Civil) SEIED ZIA A. YASROBI 8902 Date 02/26/2020 WYOMING

Zia Yasrobi, PE

*Encl:* *Sheet C1.2 Slope Stability Sections*
*Slope stability analysis results*


GENERAL NOTES:

- EXISTING TOPOGRAPHY CONSISTS OF DATA COLLECTED DURING GROUND SURVEY SUPPLEMENTED WITH TETON COUNTY LIDAR DATA BEYOND THE LIMITS OF THE SURVEY SOUTH AND WEST OF THE PROPERTY BOUNDARIES.
- GRADING, UTILITY DESIGN, AND STORMWATER MANAGEMENT SHOWN HEREON ILLUSTRATES FEASIBILITY AND CONSTRUCTIBILITY. FINAL DESIGN AND UTILITY LOCATIONS WILL BE DETERMINED AT GRADING AND EROSION CONTROL PERMIT SUBMITTAL.
- MULTIPLE UTILITIES MAY SHARE TRENCHES WHERE APPLICABLE.
- SYMBOLS IN GRAY ON THE SITE PLAN INDICATE THAT THE SYMBOL IS EXISTING.

SURVEY NOTES:

BUILDING FOOTPRINTS AS SHOWN HEREON REPRESENT FIELD MEASUREMENTS MAPPED AS PART OF THIS SURVEY AND ARE NOT INTENDED TO REPRESENT ARCHITECTURAL DIMENSIONS. ROOF EAVES WERE NOT MAPPED AS PART OF THIS SURVEY.

UNDERGROUND UTILITIES SHOWN HEREON WERE MAPPED FROM MARKINGS PROVIDED BY MAGIC VALLEY PRIVATE UTILITY LOCATE COMPANY ON APRIL 25, 2016.

NO WETLAND MAPPING WAS DONE UNDER THIS SURVEY.

BASE ELEVATION = 200.0' AT CP NO. 1 AS SHOWN HEREON. (LOCAL DATUM)

TOPOGRAPHIC FEATURES REPRESENTED ON THIS MAP SHOW CONDITIONS DETERMINED BY A FIELD SURVEY MADE FROM APRIL 27 TO MAY 3, 2016 AND ON AUGUST 5, 2016 AND MAY NOT REFLECT CHANGES MADE SUBSEQUENT TO THAT DATE.

BASIS OF BEARING IS N00°24'00"E ALONG THE WEST LINE OF REVISED PARCEL B.

CURRENT ZONING = NL-1 (SUBURBAN - TOWN OF JACKSON)
DEVELOPMENT SETBACKS ARE ESTABLISHED BY THE TOWN OF JACKSON LAND DEVELOPMENT REGULATIONS, EFFECTIVE APRIL 1, 2016, REFER TO COUNTY DOCUMENT
STREET: 25'
SIDE: 15'
REAR: 40'

## LEGEND

(E) - EXISTING (P) - PROPOSED

- (E) STRUCTURE
- PROPERTY BOUNDARY
- BUILDING ENVELOPE
- (E) EASEMENT
- (P) EASEMENT
- (E) MAJOR CONTOUR
- (E) MINOR CONTOUR
- (P) MAJOR CONTOUR
- (P) MINOR CONTOUR
- (E) EDGE OF ASPHALT
- (P) EDGE OF ASPHALT
- (E) EDGE OF CONCRETE
- (E) EDGE OF GRAVEL
- (P) EDGE OF GRAVEL
- (E) FENCE
- (E) WATER MAIN
- (E) WATER SERVICE
- (P) WATER SERVICE
- (E) SEWER MAIN
- (E) SEWER SERVICE
- (P) SEWER SERVICE
- (E) COMMUNICATIONS LINE
- (P) COMMUNICATIONS LINE
- (E) UNDERGROUND ELECTRIC
- (P) UNDERGROUND ELECTRIC
- (P) SNOW STORAGE
- (P) STORMWATER BASIN

- INDICATES A BRASS CAP INSCRIBED "RLS 578" FOUND THIS SURVEY
- INDICATES A BRASS CAP INSCRIBED "RLS 164" FOUND THIS SURVEY
- INDICATES A 5/8" DIA. REBAR WITH PLASTIC CAP INSCRIBED "PLS 3831" FOUND THIS SURVEY
- INDICATES A 5/8" DIA. REBAR WITH ALUMINUM CAP INSCRIBED "PE & LS 578" FOUND THIS SURVEY
- INDICATES A 5/8" DIA. REBAR WITH ALUMINUM CAP INSCRIBED "PLS 6447" FOUND THIS SURVEY
- INDICATES A 5/8" DIA. REBAR WITH NO CAP FOUND THIS SURVEY
- INDICATES A STEEL T-STAKE WITH CHROME CAP INSCRIBED "RLS 3889" FOUND THIS SURVEY
- INDICATES A STEEL T-STAKE WITH CHROME CAP INSCRIBED "PE & LS 2612" FOUND THIS SURVEY
- INDICATES A STEEL DISTURBED T-STAKE WITH NO CAP FOUND THIS SURVEY
- INDICATES A STEEL SPIKE SET THIS SURVEY FOR ORIENTATION AND MAPPING PURPOSES.
- SEWER CLEANOUT
- TELEPHONE PEDESTAL
- ELECTRIC PEDESTAL
- ELECTRIC METER
- SEWER MANHOLE
- WATER MANHOLE
- WATER VALVE
- DRAIN PIPE
- POWER POLE
- GUY WIRE
- SATELLITE DISH
- SPIGOT
- GAS VALVE
- YARD LIGHT
- ELECTRIC SWITCH ON WOOD POST
- IRRIGATION CONTROL VALVE

| DRAWING SET TITLE | DATE |
|---|---|
| DEV & CUP | 11/12/2019 |
| DEV & CUP | 1/28/2020 |

DRAWN BY: AK
CHECKED BY: VR
JOB #: 09107


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ENGINEERING, SURVEYING & PLANNING
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NATURAL RESOURCE SERVICES
Y2consultants.com
307 733 2999


THOMPSON CONDITIONAL USE PERMIT

THOMPSON FAMILY TRUST
808 UPPER REDMOND ROAD
JACKSON, WY 83001

SLOPE STABILITY SECTIONS

C1.2


LAST SAVED: 1/30/2020 11:39 AM BY: VINCER PLOT BY: VINCE ROUX
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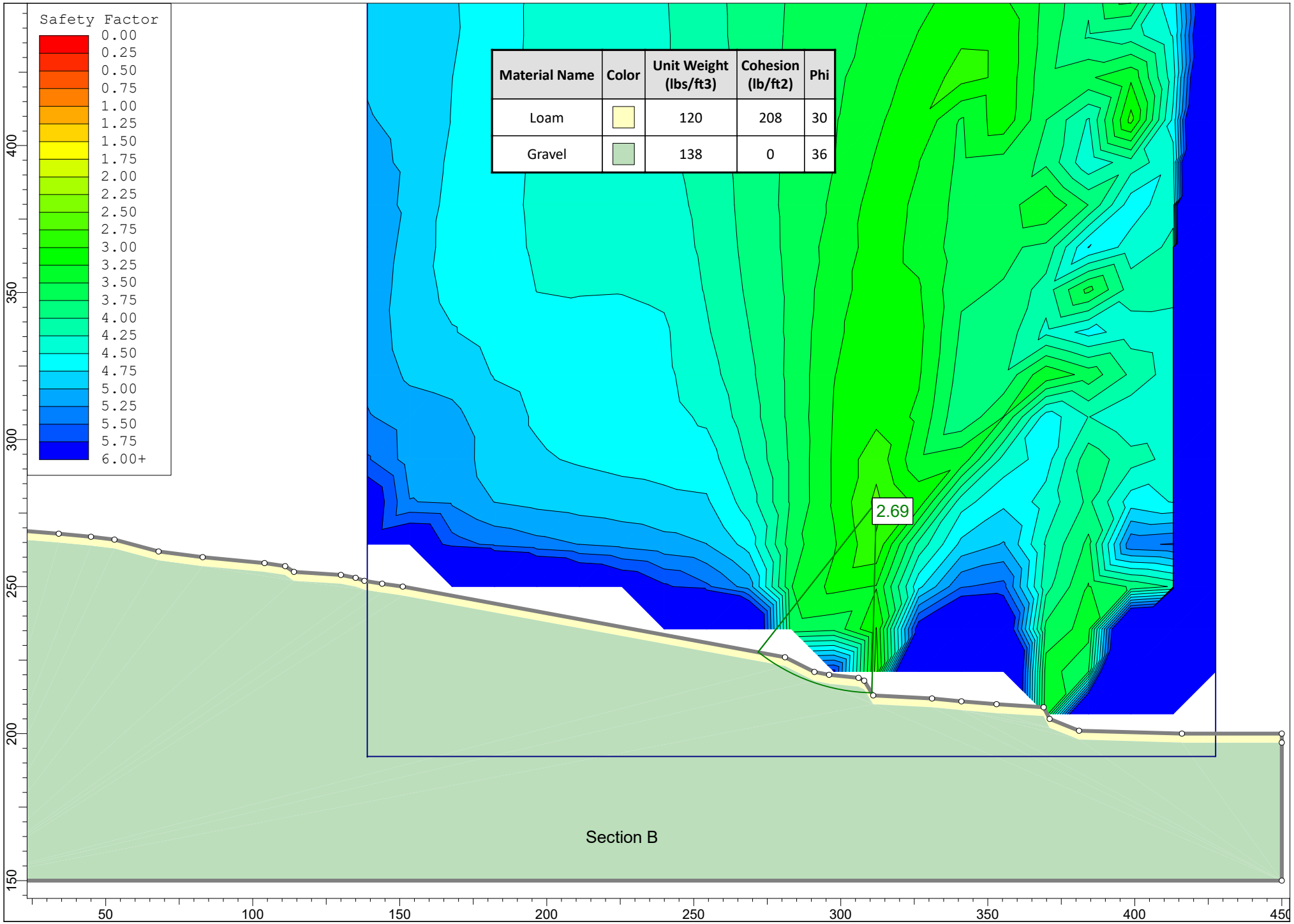
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5.75
6.00+
Material Name | Color | Unit Weight (lbs/ft3) | Cohesion (lb/ft2) | Phi
Loam | 120 | 208 | 30
Gravel | 138 | 0 | 36
2.69
Section B
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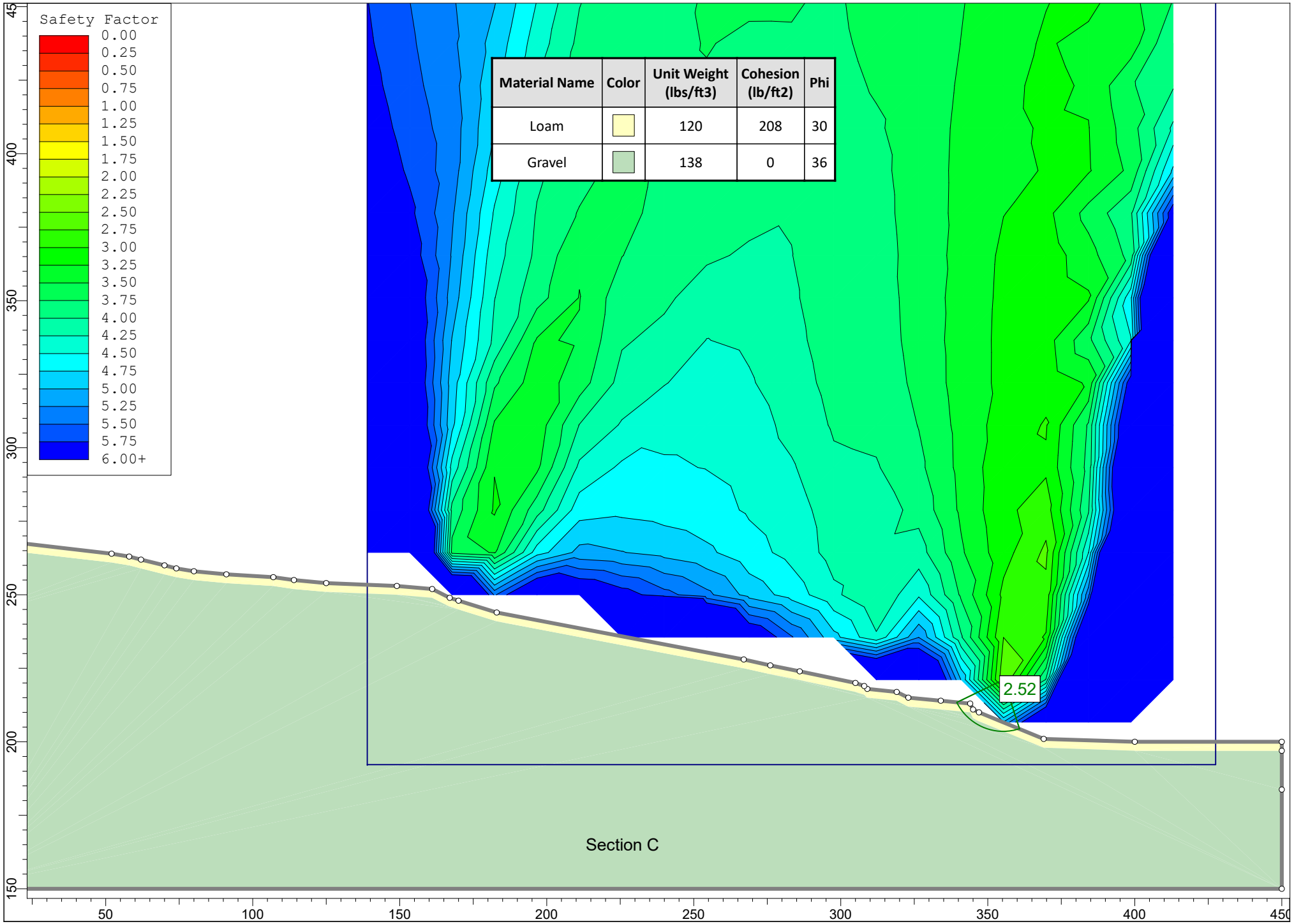
200
250
300
350
400
50
100
150
200
250
300
350
400
450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0.00
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3.00
3.25
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4.00
4.25
4.50
4.75
5.00
5.25
5.50
5.75
6.00+
Material Name | Color | Unit Weight (lbs/ft3) | Cohesion (lb/ft2) | Phi
Loam | 120 | 208 | 30
Gravel | 138 | 0 | 36
2.52
Section C
150
200
250
300
350
400
450
50
100
150
200
250
300
350
400
450

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ENGINEERING, SURVEYING & PLANNING
LANDSCAPE ARCHITECTURE, GIS
NATURAL RESOURCE SERVICES

November 8, 2019

Town of Jackson
Planning Department
150 E Pearl Avenue
Jackson, WY 83001

**RE: Wildlife report, 808 Upper Redmond Drive**

To Whom it May Concern

A site visit was completed on the parcel located at 808 Upper Redmond Road to determine what, if any, wildlife habitat value is provided by the parcel. The 2.04 parcel (PIDN 22-41-16-34-4-00-006) is located in east Jackson between Cache Creek Drive and Upper Cache Creek Drive, east of Snow King Drive.

A review of historical aerial imagery shows the parcel was historically covered with a relatively dense aspen stand with few conifers (Figure 1). The parcel was developed into a single-family residence with an associated unit between 1978 and 1983; recent aerial imagery shows the invasion of conifers into the aspen stand. This is a common occurrence when wildfire is removed from aspen systems (Figure 2).

Today, the property is surrounded by developed parcels. Dense development is located northeast of the parcel in the Budge Mobile Home Park. Single family residences are the primary development in the area.

Teton County remotely sensed vegetation cover types and mapped vegetation within the Town of Jackson. The subject parcel is mapped as Mixed Evergreen-Aspen forest. The site visit confirmed the vegetation was consistent with that cover type.

Several vehicle trails extend through the property (Figure2), potentially created from tree clearing efforts. Little dead or downed wood was observed during the site visit. The trails appear to be used regularly.

Habitat for large ungulates (mule deer, elk and moose) is limited on this parcel. With limited understory and little regeneration in the remnant aspen clone, there is little forage value. Deer and elk will browse conifers, but there are higher-value habitats without the human disturbance nearby which are likely preferred by ungulates. Domestic pets (cats and dogs) also negatively impact the potential habitat value of the site for wildlife.

The parcel may provide some roosting and nesting habitat for hummingbirds, flycatchers and woodpeckers. Historic and current human impacts, including the removal of all dead and downed wood, decrease the habitat value of this site.

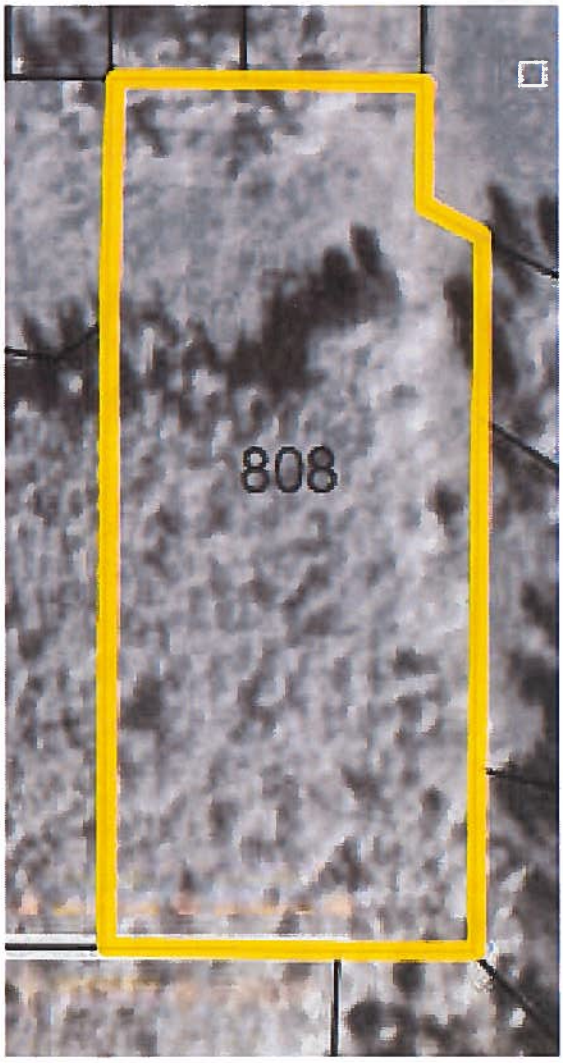


Figure 1. 1955 aerial imagery.


Figure 2, 2019 aerial imagery.

Please let me know if I can provide any additional information.

Sincerely,

Brenda Younkin, MS, CBMC
Owner
Brenda@y2consultants.com