



# 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: January 17, 2020

Item #: P20-009 & P20-010

Planner: Tyler Valentine

Phone: 733-0440 ext. 1305

Email: [tvalentine@jacksonwy.gov](mailto:tvalentine@jacksonwy.gov)

**Owner:**

Bluffs Development Group  
PO Box 551  
Jackson, WY 83001

**Applicant:**

Jorgensen Associates – Brendan Shulte  
PO Box 9550  
Jackson, WY 83002

**REQUESTS:**

The applicant is submitting a request for a Development Plan for the property located at 984 Budge Drive legally known as, LOT 1, Crystal Valley Addition.

For questions, please call Tyler Valentine at 733-0440, x1305 or email to the address shown below. Thank you.

**Second Submittal – Please review the sufficient application.**

**Please respond by: February 7, 2020 (Sufficiency)  
February 28, 2020 (with Comments)**

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

# **Development Plan for The Bluffs 984 Budge Drive Lot 1, Crystal Valley Addition**

**Applicant:**

Bluffs Development Group, LLC  
PO Box 551  
Jackson, WY 83001

**Town of Jackson**

**Submittal Date: January 16, 2020**

Updated: February 6, 2020  
Project No. 16092

**Prepared by:**



Jorgensen Associates, Inc.  
Engineers, Land Surveyors, & Planners  
1315 Highway 89 South, Suites 201 & 203 83001  
P.O. Box 9550 - Jackson, WY 83002  
307.733.5150

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## SECTION 1 – PROJECT BACKGROUND AND OVERVIEW

### A. PROJECT BACKGROUND

The Bluffs is a five-lot subdivision application located at 984 Budge Drive owned by Bluffs Development Corp, LLC, who has owned this parcel for two years. This development application outlines the division of Lot 1 of the Crystal Valley Addition (Plat 1051) into five single-family residential lots.

The buildable area of the site was originally home to three mobile homes, one large apartment building moved onsite from a former motel, and one smaller cabin. Two of the mobile homes have already been removed in preparation for construction staging. The remaining structures and all non-conformities will be removed when the Development Plan has been approved and before the Subdivision Plat is recorded.

### B. OWNER & PROJECT TEAM INFORMATION

#### PROPERTY OWNERS & APPLICANTS:

Bluffs Development Group, LLC  
PO Box 551  
Jackson WY 83001  
307-733-2880

#### ENGINEERING & LAND PLANNING

Jorgensen Associates, Inc.  
1315 Highway 89 South, Suites 201 & 203; 83001  
P.O. Box 9550 Jackson, Wyoming 83002  
307-733-5150

#### ARCHITECTURE

Schopfer Associates  
400 Commonwealth Avenue  
Boston MA 02215

### C. DEVELOPMENT PROPOSAL

The applicant proposes that this development plan be approved for the subdivision of the property into five (5) lots with a variable width easement that is 30 feet wide at its center. The five (5) lots are designed to accommodate self-contained and detached structures and are accessible via the easement. 1 single-family residence is currently proposed for each lot.

## FINDINGS FOR APPROVAL

Division 8.3.2.C Development Plan Findings for approval:

**1. *Is consistent with the desired future character for the site in the Jackson/Teton County Comprehensive Plan.* Complies.**

The Bluffs project is within the Comprehensive Plan District 4 – Midtown, Subarea 4.2 – Northern Hillside. “*Low density single-family housing may continue to be appropriate at the edges of this area, particularly when adjacent to existing undisturbed hillsides. Future development should address wildlife permeability and assist in guiding wildlife movement to future roadway crossings.*”

This development meets the standards of the Neighborhood Low Density-5 (NL-5) Zone and proposes five single-family lots that improve upon the current non-conforming structures that are visually unappealing, outdated, sub-standard and, given their configuration, present a considerable barrier to wildlife permeability. The Bluffs project meets the intent of the NL-5 Zone and will further reduce the existing unit density from 15 to five; thereby reducing the overall density, intensity and use of the property while enhancing the character and cohesiveness of the hillside residential neighborhood.

**2. *Achieves the standards and objectives of the Natural Resource Overlay (NRO) and Scenic Resources Overlay (SRO), if applicable.* Not Applicable.**

Lot 1 of the Crystal Valley Addition, Plat 1051 is not located within either the NRO or the SRO and therefore is not applicable.

**3. *Does not have significant impact on public facilities and services, including transportation, potable water and wastewater facilities, parks, schools, police fire, and EMS facilities.* Complies.**

The Bluffs project will provide the required school and park exactions for the new residential units being developed. The existing development is already connected to public utilities for water and sewer, and the Bluffs project will continue to utilize these public utilities. New infrastructure will be installed and connections will be reduced from 10 to five, thus reducing the capacity required for this parcel from the Town Water and Sewer services. The project is within town limits and is currently served by police, fire and EMT services; the development will not result in increased impacts on availability of these services.

Multiple transportation options already exist in proximity to the property: these include pedestrian and bicycle connections to the Teton County Pathway System and Town START Shuttle stops. The Town START Shuttle stops are within 1,000 feet

located westbound on Broadway/South Highway 89 by Sidewinders Tavern, and both east and westbound located on Scott Lane by the Lodge at Jackson Hole.

**4. *Complies with all relevant standards of these LDRs and other Town Ordinances.***

Complies.

The purpose of a development plan is to review a physical development or development option that is large and complex enough to benefit from a public review at a sufficient level of detail to determine compliance with these LDRs prior to preparation of final construction or plat documents.

The 1.47-acre site provides space to meet the FAR requirement within the buildable area of the five lots. While there are some interior areas within the development that meet the minimum setback limitations, the vast majority of the perimeter of the project is set back well beyond requirements and all individual buildings within the development are setback from one another and from the side street within the requirements of the LDRs.

The site plan was adjusted and revised based on provided comments during the Pre-Application process to address snow storage needs and fire sprinklers for each unit.

**5. *Is in substantial conformance with all standards or conditions of any prior or applicable permits or approvals.*** Complies.

There are no previous permits or approvals applicable to this property. The proposed development complies with all conditions of Plat 1051.

**D. CONDITIONAL USE PERMIT**

This project requires a Conditional Use Permit (CUP) based upon the Town of Jackson LDRs Article 5.4.1 *Natural Hazard Protection Standards - Steep Slopes*. Lots with average cross slopes in excess of 10% are subject to a Hillside CUP.

**FINDINGS FOR APPROVAL**

LDR Section 8.4.2 Conditional Use Permit, C. Findings of Approval indicates that a CUP shall be approved based upon:

**1. *Is compatible with the desired future character of the area;*** Complies.

The intent of the NL-5 Zone is to “enhance the character and cohesiveness of residential neighborhoods while allowing for a flexible range of residential types...intended to create opportunities for workforce housing.” This development meets the standards of the NL-5 Zone and proposes five single-family lots that will replace the current non-conforming structures that are visually unappealing and a

considerable barrier to wildlife permeability. The Bluffs project meets the intent of the NL-5 Zone and will further reduce the unit density from 15 to five; thereby reducing the overall intensity and use of the property while enhancing the character and cohesiveness of the hillside residential neighborhood.

2. ***Complies with the use specific standards of Div. 6.1: Allowed Uses; Complies.***

This development is composed of detached Single-Family Units in the NL-5 Zone; an allowed use according to Section 6.1.2.D of the LDRs.

3. ***Minimizes adverse visual impacts; Complies.***

Currently, 984 Budge Drive contains non-conformities with a one-story apartment building, a cabin and trailer, all built over 30 years ago and before current building code. The new project will remove the non-conformities and replace them with residential units built of new construction in compliance with the LDRs and the 2018 IRC. This development will break up the visual impact of the current long building into five separate lots, and will look aesthetically pleasing from the roads below. It will improve on the existing visual impacts. See Visual Analysis attached in **Section 3**.

4. ***Minimizes adverse environmental impacts; Complies.***

The proposed development will not increase environmental impacts on site, and will improve wildlife permeability as the new buildings will be detached to allow for wildlife accessing the undisturbed hillside of Saddle Butte. See Wildlife Review attached in **Section 3**. During construction stormwater will be detained using best management practices to protect the hillside from any erosion.

5. ***Minimizes adverse impacts from nuisances; Complies.***

There are no anticipated nuisances with this development that would have adverse impacts to the surrounding properties. Operational Standards are addressed in **Section M** of this Development Plan Narrative.

6. ***Minimizes adverse impacts on public facilities; Complies.***

There are no anticipated adverse impacts on public facilities from this development. The project will be connected to town water and sewer, with system upgrades installed to the current utilities. The reduced density will both lessen the impacts on public facilities and reduce the trip counts to the property. Budge Drive is not a busy street and vehicles from this development are not anticipated to increase traffic on Highway 89. Structures will be sprinkled for fire suppression and otherwise meet the current building codes. There are no additional adverse impacts anticipated on fire, police, or EMT services that already serve the property located within the limits of the Town of Jackson. Additionally, the owner worked with the Town of Jackson to allow a

temporary road through the southern end of the property during the reconstruction of Budge Drive and the essential water line.

7. ***Complies with all other relevant standards of these LDRs and all other Town Ordinances; Complies.***

This development complies with all other applicable standards for use, layout, structure and site development characteristics in the LDRs for the NL-5 Zone.

Division 5.4 Natural Hazards in Hillside Areas – 5.4.1.C.5 Steep Slopes: Standards in Hillside Areas: “*5. The mitigation measures identified will be effective in mitigating any adverse impacts identified, and associated with the proposed physical development, uses, development option, or subdivision.*”

The Bluffs project will not impact any of the steep slopes that exist on the property. Construction will take place in previously disturbed and developed areas that are less than 5% grade. The project does not require structural retaining walls or any other mitigation structures to contain steep slopes.

8. ***Is in substantial conformance with all standards or conditions of any prior applicable permits or approvals. Complies.***

There are no previous permits or approvals applicable to this property. The proposed development complies with all conditions of Plat 1051.

**E. ADDITIONAL ZONE-SPECIFIC STANDARDS, SECTION 2.2.6.E.**

The following standards apply in addition to all other standards applicable in the NL-1 zone:

**Maximum Allowed Density**

Up to three units are allowed the proposed on individual lots equal to or greater than 7,500 sf. Current plans are for one unit per lot on lots 1 - 4 and possibly two units on Lot 5. Therefore, The Bluffs project will be in conformance with the standards of this section.

**Configuration Options, Section 2.2.6.F.**

Configuration options in the NL-1 zone allow for the detached single-family units being proposed with this development plan.

## F. PROPOSED DEVELOPMENT PROGRAM

The proposed size of each lot's building envelopes and Maximum Floor Area (for one unit per lot) is depicted within Civil plans in **Section 4**. Potential Floor Area for each lot is depicted in the table below.

Lot	Gross Site Area (sf)	FAR 1 unit	FAR 2 units	FAR 3 units
		0.3	0.35	0.4
1	15,220	4,566	2,435	6,088
2	11,930	3,579	1,909	4,772
3	12,650	3,795	2,024	5,060
4	12,340	3,702	1,974	4,936
5	11,800	3,540	1,888	4,720

## G. ENVIRONMENTAL STANDARDS

- Natural Resource Buffers (Wetlands and Water bodies)** there are no wetlands or water bodies on the property
- Wildlife Friendly Fencing** – no fencing is proposed.
- Water Quality** - See subsequent Engineer's report in **Section 2** of this application for discussion on this item.
- Natural Resources Overlay (NRO)** The property is not located within the NRO.
- Bear Conflict Area** – The property is not mapped as a bear conflict area.

## H. SCENIC STANDARDS

- Exterior Lighting** - Exterior lighting will be addressed during the Building Permit and will follow requirements in LDRs.
- Scenic Resource Overlay (SRO) Standards** - The property is not located within SRO.

**I. NATURAL HAZARDS TO AVOID - Steep Slopes – See Section D. CONDITIONAL USE PERMIT and Geotechnical Report included with this application.**

**J. SIGNS - No signage is proposed at this time.**

## **K. GRADING, EROSION CONTROL, DRAINAGE, & STORMWATER**

See subsequent Engineer's report in **Section 2** of this application for discussion on these items.

## **L. ALLOWED USES & USE REQUIREMENTS**

- 1. Allowed Uses** - The proposed uses within the Bluffs development include Detached Single-Family Units.
- 2. Parking** - See subsequent Engineer's report in **Section 2** of this application for discussion on these items.

### **3. Operational Standards**

- a. **Outside Storage** - The proposed uses within the Bluffs development will not include the storage of boats, snowmobiles, trailers, RVs, or similar vehicles and equipment on any yard. No structures will be stored within the lots and no vehicles will be kept within vacant lots. The five planned lots will be for residential use, and thus, will not be using outdoor displays.
- b. **Refuse and Recycling** - The development will include an area for consolidating trash and recycling within access and utility easement near the front of the property on Lot 1.
- c. **Noise** - Noise levels will be kept within the permitted 55 DBA, consistent with LDR restrictions for Zone NL-5.
- d. **Vibration** - The development does not include uses in which any regular activity shall cause or create displacements for given frequencies as prescribed by LDR restrictions.
- e. **Electrical Disturbance** - The planned residential use does not include any activities which could cause electromagnetic radiation and disturbed operation of equipment such as radios and TVs.
- f. **Fire and Explosive Hazards** - No manufacturing, possession, storage, transportation or use of hazardous materials are part of the planned development.

## **M. ALLOWED SUBDIVISION AND DEVELOPMENT OPTIONS**

- 1. Standards Applicable to all Subdivisions** - The project will adhere to all standards provided in Section 7.2.2 of the LDRs which include developer responsibilities, permits required, installation, working with a professional engineer, over sizing and off-site improvements, and acceptance by Town.
- 2. Land Division Standards** - The development will comply with Section 7.2.4 of the LDRs.

## **N. RESIDENTIAL SUBDIVISION REQUIREMENTS**

- 1. Affordable Housing** - The project will generate a small affordable housing requirement that will be addressed at the first building permit submitted for the site.
- 2. School and Parks Exactions** - Total school and park exactions fee-in lieu is \$28,900. Calculations are provided in **Section 3**.

## **O. INFRASTRUCTURE**

- 1. Transportation Facilities** - See plan sheets provided in **Section 4**.
- 2. Required Utilities** - See plan sheets provided in **Section 4**.

## SECTION 2 – ENGINEER’S REPORT

### A. INTRODUCTION

The following Engineer’s Report is intended to provide the engineering basis for design and to discuss engineering related items for The Bluffs Development Plan. Supporting infrastructure will include driveway access improvements and utility connections to the Town of Jackson water and sewer mains as well as connections to cable utility mains that serve this portion of the Town of Jackson. The basic layout and design elements are shown on the plan set attached in **Section 4**.

### B. BACKGROUND

The Bluffs is a subdivision development project located off Budge Drive in the Town of Jackson near the intersection of Highway 89 and 22. The project plans to subdivide the existing property into 5 single-family residential lots. Historically the site was a motel building that was converted to an apartment structure. In addition, the site also housed a cabin and 3 mobile home units, 2 of which have since been removed. The proposed project will remove all existing structures on the property. The existing utilities on site will be reconfigured or abandoned for the new development. From an infrastructure perspective, the new development does not appreciably alter the current load and configuration from the existing arrangement.

### C. SOILS AND SITE CONDITIONS

The proposed project site is located on the lower southwestern flank of East Gros Ventre Butte. Jorgensen Geotechnical prepared a Slope Stability Analysis Report for the project site in July 2017. In summary, five boreholes were drilled to depths ranging from 31.5 to 121.5 feet below the existing ground surface in order to conduct the stability analysis. With applied surcharge loads at the location of the proposed buildings, the stability analysis shows the site is stable. Factors of safety for this site exceed those generally accepted by engineering practice as indicating stable conditions. A single vibrating wire piezometer was installed to monitor groundwater levels following the investigation. In general, the site stratigraphy is made up wind-blown loess, coarse and fine-grained alluvium and colluvium deposits, as well as lacustrine deposits. The report describes the geologic site conditions and includes a site location and geologic map, geologic cross sections, stability analysis results, borehole logs, and laboratory tests results. A copy of the Slope Stability Analysis Report by Jorgensen Geotechnical is included in **Section 5** of this report.

In general, construction of homes on this site will utilize helical piers, grade beams, and structural slabs to reduce the risk of structural distress posed by the observed soil

conditions. A Geotechnical Engineering Report was issued by Jorgensen Geotechnical on April 23, 2019, which references the subsurface exploration performed in 2017 and documented in the Slope Stability Analysis Report. This scope of work included installation of several helical pier test probes and a verification load test of a helical pier. The report provides engineering analysis and recommendations necessary for the design and construction of proposed structures at 984 Budge Drive. A copy of the Geotechnical Engineering Report by Jorgensen Geotechnical is included in **Section 5** of this report.

#### **D. GRADING, EROSION CONTROL, DRAINAGE, & STORMWATER**

Development on the site will accommodate stormwater by routing drainage through the available green spaces on site. These areas are sufficient to accommodate stormwater runoff. The parcel is relatively flat and underlain by semi-permeable surface soils and very permeable subsoils. The lots are spaced to provide landscape areas around the future buildings that will help infiltrate stormwater and spring snow melt water. The expected runoff from the buildings will likely be channeled through roof drains and a piping network and directed to stormwater detention areas onsite away from buildings as much as practicable. Details of the specific stormwater management will be addressed in the building permit applications of the individual residence.

A Town of Jackson Grading and Erosion Control Permit will be required prior to construction of site infrastructure. The GEC permit application drawings will incorporate any revisions made during the Development Plan process and as a result of incorporating final design elements and coordination with the Town and other utility companies.

#### **E. ROADS, ACCESS, AND PARKING**

The site is presently served by access directly off of Budge Drive. The proposed project plans to utilize the existing access with improvements limited to formalizing the access and parking arrangement to fit the new development. The proposed development and use of this road by residents of the Bluffs has been reviewed with the Town of Jackson Planning Department through the Sketch Plan process. The existing access road is approximately 20' in width and in order to limit disturbance at the intersection, will be formalized and essentially remain unchanged for the new development.

The required number of parking spaces for the five lots of the Bluffs is 10 spaces as per the base NL-5 Zoning in the LDRs which requires 2 spaces per lot. The expected parking layout for the Bluffs for this DEV application suggests that Lots 1-3 will accommodate 2 spaces per lot within the individual lot boundary, while parking spaces for Lots 4-5 will be accommodated within the access and utility easement. Additional auxiliary parking area within the easement is available.

#### **F. TRAFFIC**

Multi-modal transportation options are available in the vicinity of The Bluffs. They include pedestrian and bicycle connections to local town services. The Town Shuttle operated by START flows in both east and west bound directions nearby to the site on Scott Lane south of West Broadway. The Town Shuttle has stops along Scott Lane with 30-minute intervals within walking distance from to the Budge Drive and West Broadway intersection.

Proximity to multi-modal options will be an incentive for residents to choose alternative modes of transportation for short and medium distance trips.

#### **G. WATER SUPPLY AND DISTRIBUTION SYSTEM**

The proposed water distribution system for the development consists of an extension from the existing Town of Jackson water main in Budge Drive with individual service connections to the proposed lots. The maximum domestic water demand for the development is estimated based on the current configuration to be approximately 9,600 gallons per day. This value is based upon Wyoming DEQ standards by occupancy and includes irrigation. Using a typical peak factor of 4, the peak hour flow is expected to be approximately 26 gallons per minute. The expected demand for irrigation is estimated separately to be approximately 5,000 gallons per day based on an average 0.25" square foot per day of landscape area. The required site fire flow is 1000 gpm for 1 hour based upon Table B105.1(1) from Section B105 of the 2018 International Fire Code for residential Group R-3 and R-4 buildings (0 - 3,600 square feet). A 50% reduction is allowed for buildings of this type equipped with an automatic sprinkler system. The expected water demand for fire suppression is estimated for one building to be 30 gpm based on an automatic fire sprinkler system with 2 sprinkler heads active with an operating pressure of at least 55-60 psi. Water demand values are included in **Section 5** of this report.

The Town of Jackson water system currently extends along Budge Drive adjacent to the proposed development and includes a fire hydrant at the intersection of the access drive. Further, the lot owner granted an easement to the Town of Jackson for a water line on the southern portion of the property increasing circulation flow and providing redundancy. It is expected that the existing hydrant is capable of providing the site fire flow requirements. The proposed access drive is approximately 390' in length and the site layout will not accommodate an adequate fire truck turn-around. Therefore, all future residential occupancies of this subdivision will be required to be protected by an approved automatic residential fire sprinkler system meeting the standards of NFPA 13-D. Discussions with the Jackson Hole Fire EMS Fire Marshal have confirmed this is acceptable.

The connection to the TOJ water system will require an encroachment permit and coordination with the TOJ Public Works Department to identify the appropriate arrangement. A permit to construct will be required through the Wyoming DEQ. The new

waterlines within the property will be owned and operated by the development and all maintenance will be the responsibility of the development.

#### **H. WASTEWATER COLLECTION AND TREATMENT**

The proposed wastewater collection system for the development consists of sewer manholes and service lines from each lot with a connection to the existing private sewer main and ultimately connected to the Town of Jackson sanitary sewer system. The maximum sanitary sewer demand is estimated based on the current arrangement to be approximately 3,300 gallons per day with a peak hour flow of approximately 9 gallons per minute (Peak Factor 4). These values are based upon Wyoming DEQ standards of 150 gallons per bedroom and 22 total bedrooms within the project at buildout. The construction plans for the project will be required to follow the Town of Jackson Standards for construction. Wastewater demand calculations are included in **Section 5** of this report.

The connection to the TOJ sewer system will require coordination with the TOJ Public Works Department to identify the appropriate arrangement. A permit to construct will be required through the Wyoming DEQ. The new sewer lines within the property will be owned and operated by the development and all maintenance will be the responsibility of the development.

#### **I. CABLE UTILITIES AND GAS**

Power and Communications lines will be accessible to all units on the project. Lower Valley Energy Electrical Power and Natural Gas, Silverstar Fiber-Optic Communications, Charter Cable Television and Communication, and Century Link communications services are all available to this location. Opportunities to connect to all of these service providers will be afforded all lots pending negotiations. Spare conduits may be provided should other utilities not currently available be anticipated.

#### **J. SNOW STORAGE**

The shared access road and parking of the Bluffs Development creates approximately 9,000 square feet of impervious surfaces requiring approximately 225 square feet of snow storage. The current layout anticipates adequate space exists within the access and utility easement for proper snow storage. Additionally, open space in the southeast portion of the access and utility easement will provide additional snow storage in large snowfall years. Snow storage within the lots will be the responsibility of the individual lot owner and will be coordinated with the landscaping to limit damage that can occur during snow clearing.

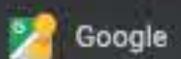
## **SECTION 3 – PHYSICAL DEVELOPMENT REQUIREMENTS**

- **3.1 Visual Analysis**
- **3.2 Wildlife Review**
- **3.3 Park Exaction Calculations**
- **3.4 School Exaction Calculations**



1000 US-89

Jackson, Wyoming



Street View



Google



1024 US-89

Jackson, Wyoming



Street View



Google

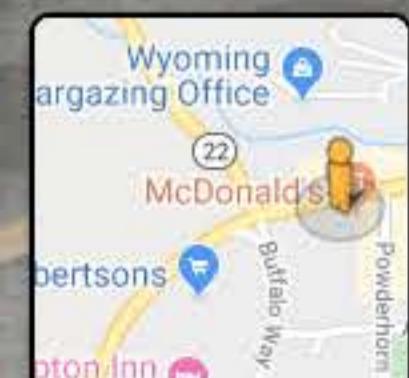


1024 US-89

Jackson, Wyoming



Street View



Google

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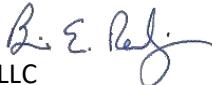


**To:** Town of Jackson Planning & Building Department

**Cc:** Jorgenson Associates, Brendan Schulte

**From:** Brian Remlinger, Principal, Alder Environmental, LLC

Julie Polasik, Wildlife Ecologist, Alder Environmental, LLC



**Date:** February 4, 2020

**Re:** **Proposed Subdivision for the Bluffs Development - 984 Budge Drive, Wildlife Use / Habitat Review**

**PIDN: 22-41-16-32-1-07-001**

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The Bluffs Development Group, LLC is proposing a development plan that includes a subdivision with five lots (Jorgenson Associates Exhibit 1/31/20) on the property located at 984 Budge Drive within the Town of Jackson limits. Jorgenson Associates requested the services of Alder Environmental, LLC to assist with submittal requirements related to the standards in the Town of Jackson Land Development Regulations (LDRs) Section 5.4.1. Steep Slopes. The submittal requirement for the proposed development includes a:

*Report summarizing wildlife use of the subject property and any potential impacts from the proposed development. (LDR 5.4.1.C.6.a)*

For the purposes of this review, *wildlife* shall be defined as those species and associated habitat protected in the in the current LDRs (Div. 5.2) and those species identified in the Teton County Focal Species Habitat Mapping Project (Alder 2017). *Impacts* shall be defined as development and/or uses that will detrimentally affect the food supply and/or cover provided by the habitat or detrimentally affect the potential for survival of the protected and focal wildlife species.

## SITE INVENTORY & DATA REVIEW

A site visit was conducted on February 4, 2020 to evaluate existing wildlife habitat conditions and use. The enclosed photos document the site conditions. The central portion of the Property contains a driveway, apartment building and a trailer (Figure 1). The hillside to the north of the driveway is comprised of mesic shrub (sparse sagebrush) and mesic grassland habitat. The hillside to the south and west of the structures on the Property is comprised of mesic shrub (sparse sagebrush) and mesic grassland habitat with some landscaping. Mule deer tracks and scat were observed on the north and west portions of the Property during the site visit. Mule deer were also present just north of the Property during the site visit.

Three sources of wildlife habitat data were reviewed: 1) Wyoming Game and Fish Department (WGFD) designated ungulate crucial winter ranges and migration routes and Bald Eagle nests, 2) the 2013 WYDOT / Teton Science Schools mule deer movement and habitat use study (Riginos et. al, 2013) and 3) the Teton County Focal Species Habitat Mapping Project (Alder 2017). The only protected or focal wildlife species potentially using the project site or impacted by the proposed development is mule deer.

The entire project site is mapped within WGFD designated mule deer crucial winter range (WGFD 2012, Figure 2). The Property consists of disturbed, mesic grassland, and mesic shrub habitats. The mesic shrub-grassland habitats on south facing slopes provide crucial winter range for mule deer (LDR Section 5.2.1.B.3.d). Wyoming Game and Fish designated mule deer crucial winter yearlong range is also mapped 0.1 miles west and south of the project site across Highway 22, and an elk migration corridor is mapped 0.6 miles southwest of the Property.

The 2013 WYDOT/TSS Mule Deer Study designates the project site as a *low use movement area* for mule deer and *moderate probability of winter use* due to the project site's location on the East Gros Ventre Butte (Figure 3). Signs of mule deer winter use and movement on the Property were also observed during the February 4,

2020 site visit. Additional *high probability of winter use* areas are located north of the Property at higher elevations on East Gros Ventre Butte.

The Teton County Focal Species Habitat Mapping layer for mule deer indicates that mule deer winter range is located on the southern and western portions of the Property (Alder 2017). This coincides with the location of south facing mesic shrub-grassland slopes.

The nearest Bald Eagle nest to the Property is located 0.67 miles southwest of the site (WGFD 2019), and the Property does not contain suitable habitat for nesting or wintering Bald Eagles. The Property also does not contain any crucial winter or nesting habitat for Trumpeter Swans, spawning habitat for Snake River cutthroat trout, or crucial elk or moose winter habitat.

The Teton County Focal Species Habitat Map quantified the relative habitat values for the Property as ranging from 10 to 19 (low to moderate value) out of a possible 42 (highest value) (Alder 2017). This indicates that the Property is of low to moderate quality for wildlife habitat. The relative values habitat map was created by combining 20 weighted focal species habitat maps that are based on well documented species habitat data, expert knowledge and peer reviews, and environmental variables, providing a thorough assessment of relative wildlife habitat values in Teton County.

## **FINDINGS & OPINION**

Wildlife use of the subject Property is considered moderate based on the site inventory and data reviews. Mule deer use the Property extensively during the winter months as crucial winter range and as a movement corridor on the East Gros Ventre Butte. The proposed subdivision of the Property into five lots and associated development would result in the removal of the existing structures that span the Property and construction of potentially five new structures evenly distributed on the Property.

To help minimize impacts to wildlife the new structures and driveways are proposed to be located within existing disturbed areas. Existing mesic shrub (sparse sagebrush) will mostly remain undisturbed. Retaining walls which can serve as barriers to mule deer would not be necessary if the proposed development is located entirely within previously disturbed areas. The new structures should also be spaced a minimum of 15-20 feet apart to allow mule deer to use the areas between them as movement corridors. It is also suggested that any fencing that would impede the movements of mule deer should not be used on the proposed lots and other barriers to mule deer movement should not be placed between the new structures.

The proposed subdivision of the Property would have impacts to mule deer that use the area as crucial winter range and as a movement corridor. However, those impacts can be minimized by limiting development to already disturbed areas, maintaining movement corridors between structures, and avoiding the use of fencing and other barriers such as retaining walls (>42" tall) to mule deer movement. There are no additional wildlife species protected by the Town of Jackson LDRs or identified in the Teton County Focal Species Habitat Mapping Project that are expected to be impacted by the proposed development.

## **REFERENCES**

Alder 2017. Final Report: Focal Species Habitat Mapping for Teton County, WY. Alder Environmental LLC. Jackson, WY. April 2017.

Riginos, C., Krasnow, K.D., Hall, E., Graham, M., Sundaresan, S., Brimeyer, D., Fralick, G., & Wachob, D. 2013. Mule Deer (*Odocoileus hemionus*) Movement and Habitat Use Patterns in Relation to Roadways in Northwest Wyoming. FHWA-WY-13/08F.

WGFD. 2012. Big Game Ranges Geographic Information Systems Layers. Cheyenne, WY.

WGFD. 2019. Bald Eagle Nest Flight Survey Data. Wyoming Game and Fish Department. Jackson, WY.

**Encl:** Photos, Figures 1-3



**Photo 1.** Looking west at the Property from the eastern boundary.



**Photo 2.** Looking east from the end of the driveway.



**Photo 3.** Looking southwest at western edge of Property.



**Photo 4.** Looking west at southern hillside of Property.



**Photo 5.** Mule deer tracks in the northwest portion of the Property.



**Photo 6.** Mule deer located just north of Property in mesic shrub.

**FIGURE 1**

Proposed  
Subdivision

Bluffs Development  
Group, LLC  
**WILDLIFE REVIEW**  
984 Budge Drive  
Jackson, WY 83001

**Legend**

- Subject Property
- Proposed Lot Boundaries
- Lots & Parcels
- Roads

**Sources**

Teton County  
- Aerial Imagery, June 2019  
- Ownership Boundaries  
- Roads  
Jorgenson Associates  
- Proposed Lot Boundaries

1 in = 40 feet

0 10 20 40 Feet

February 04, 2020

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**FIGURE 2**

Protected Wildlife Resources

Bluffs Development Group, LLC

**WILDLIFE REVIEW**

984 Budge Drive

Jackson, WY 83001

**Legend**

- Subject Property
- 1/2 Mile Property Buffer
- Roads
- Bald Eagle Nest Buffer
- Mule Deer Crucial Winter Range
- Mule Deer Crucial Winter/Yearlong Range
- Elk Migration Route 1/2 Mile Buffer

**Sources**

- Teton County
  - Aerial Imagery, June 2019
  - Ownership Boundaries
  - Roads
  - WGFD
  - Big Game Crucial Ranges and Migration Routes
  - Bald Eagle Nest Buffer

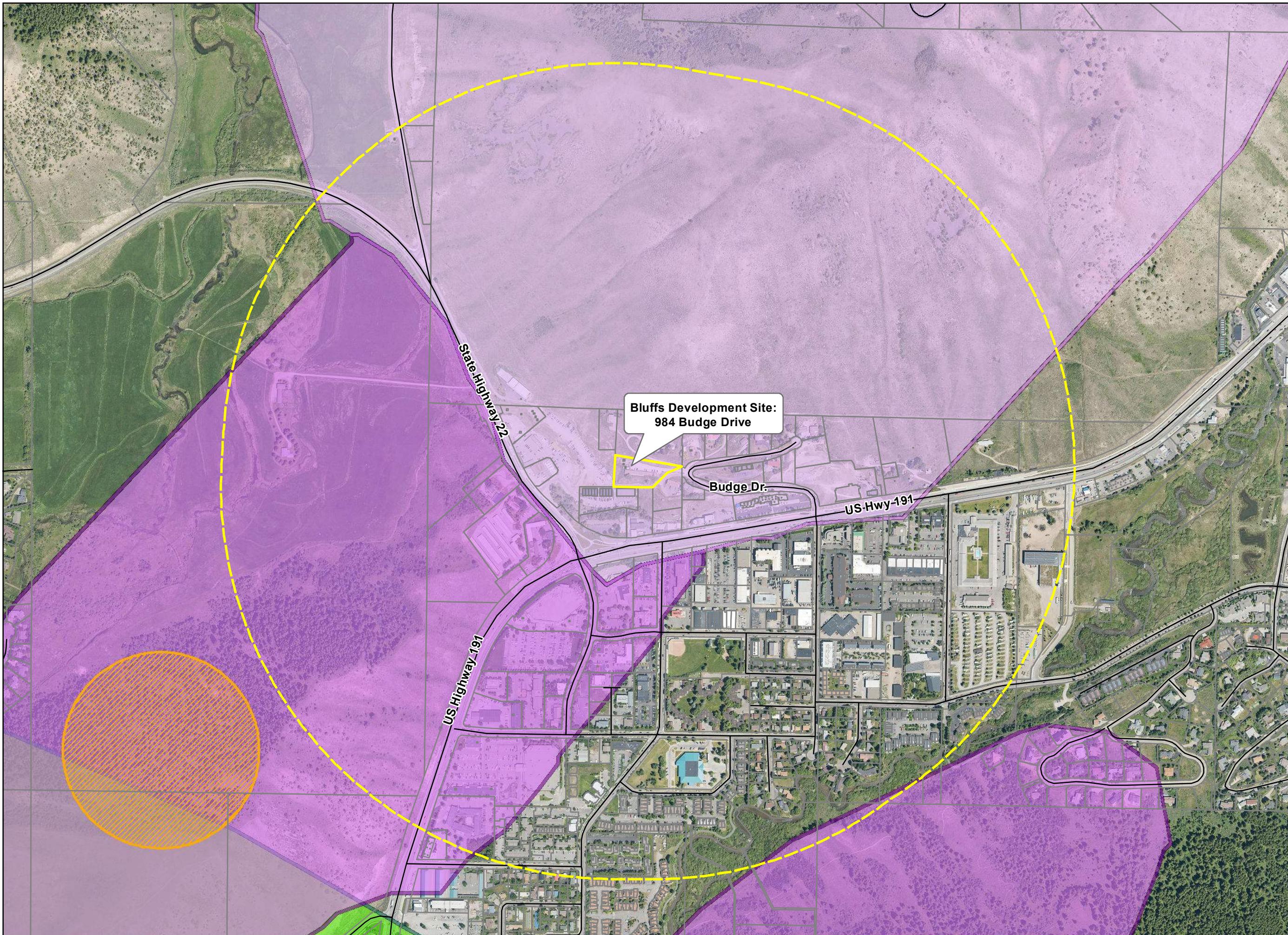
1 in = 600 feet

0 150 300 600 Feet

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**FIGURE 3**

Focal Species Habitat  
& TSS/WYDOT  
Mule Deer Ranges  
Bluffs Development  
Group, LLC  
**WILDLIFE REVIEW**  
984 Budge Drive  
Jackson, WY 83001

**Legend**

- Subject Property
- 1/2 Mile Property Buffer
- Lots & Parcels
- Roads
- Mule Deer Winter Habitat (Alder 2017)

**Mule Deer Use (TSS/WYDOT 2013)**

- High Probability
- Moderate Probability

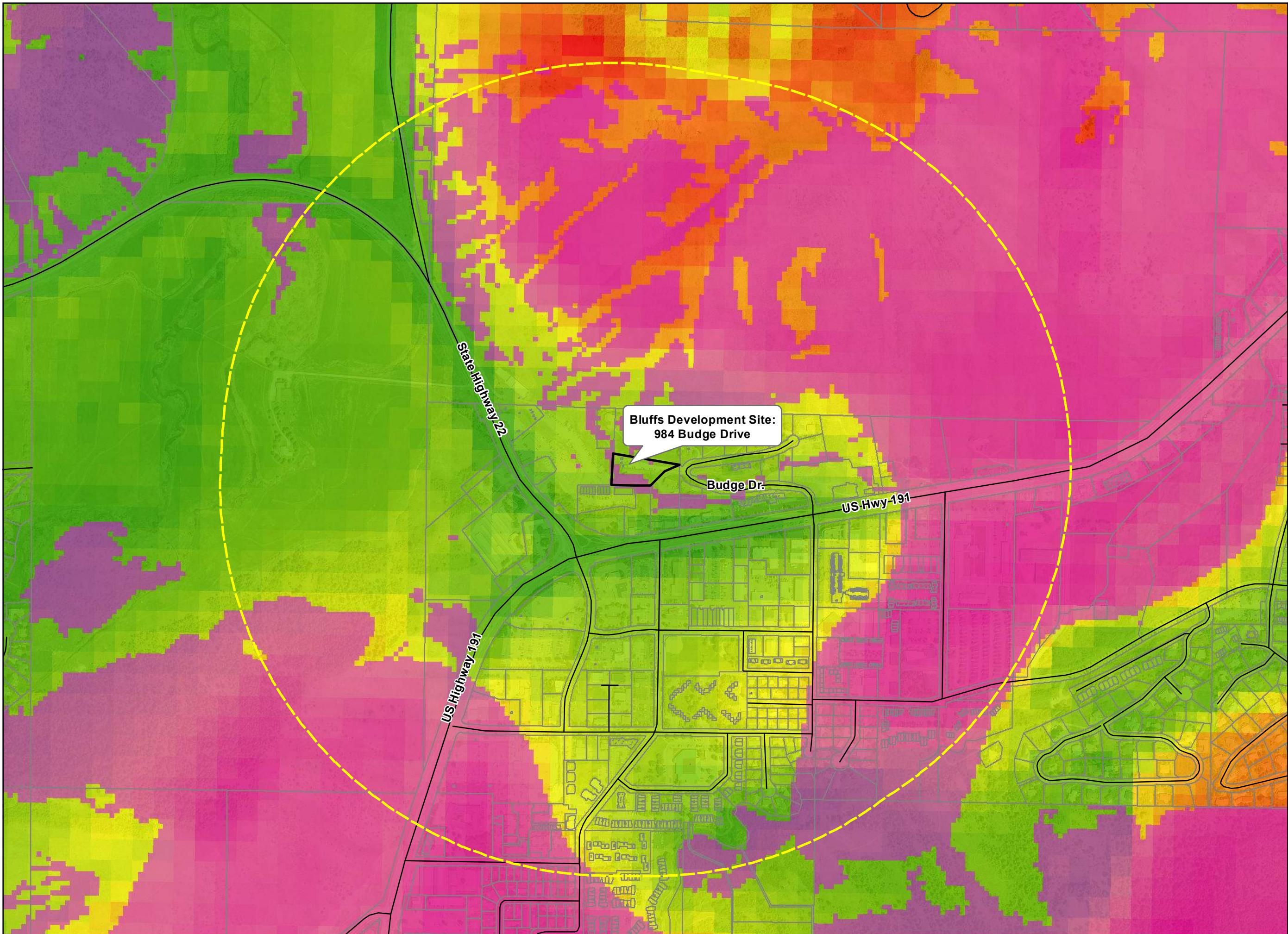
**Sources**

- Teton County
  - Aerial Imagery, June 2019
  - Ownership Boundaries
  - Roads
- Alder Environmental (2017)
  - Focal Species Habitat Map - Mule Deer
- Teton Science School/WY Dept. of Transportation (2013)
  - Mule Deer Kernel Density and Utilization Distribution

1 in = 600 feet  
0 150 300 600  
Feet

February 04, 2020

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**TOWN OF JACKSON**  
**LAND DEVELOPMENT REGULATIONS**  
**DIVISION 7.5.2 - PARK EXACCTIONS**  
**DATE:** \_\_\_\_\_

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

1. PROJECT NAME: \_\_\_\_\_
2. LOCATION: \_\_\_\_\_
3. PROJECT NUMBER: \_\_\_\_\_
4. CALCULATE PROPOSED PROJECT POPULATION:

<u>UNIT TYPE</u>	<u># OF UNITS</u>	X	<u>PERSONS HOUSED PER UNIT</u>	<u>PROJECTED POPULATION</u>
STUDIO	_____		1.25	_____
1 BEDROOM	_____		1.75	_____
2 BEDROOM	_____		2.25	_____
3 BEDROOM	_____		3.00	_____
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:

$$\frac{\text{TOTAL PROJECTED POPULATION}}{1000 \text{ RESIDENTS}} \times \frac{9 \text{ ACRES}}{1 \text{ per 150 sf of net habitable area}} = \frac{\text{REQUIRED ACRES}}{1}$$

6. CALCULATE CASH-IN-LIEU:

$$\frac{\text{REQUIRED ACRES}}{1} \times \frac{\$100,000}{(\text{VALUE OF LAND})} = \frac{\$ \text{ CASH-IN-LIEU}}{1}$$

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 EXACCTIONS**  
**DATE: \_\_\_\_\_**

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

1. PROJECT NAME: \_\_\_\_\_
2. LOCATION: \_\_\_\_\_
3. PROJECT NUMBER: \_\_\_\_\_
4. CALCULATE REQUIRED DEDICATION OF LAND:

LAND DEDICATION REQUIREMENT	X	<u># OF UNITS</u>	=	LAND DEDICATION
.020 ACRES PER UNIT SINGLE & TWO-FAMILY	_____	_____	_____	_____
.015 ACRES PER UNIT MULTI-FAMILY	_____	_____	_____	_____

5. CALCULATE CASH IN-LIEU:

_____	LAND DEDICATION STANDARD	X	\$100,000 (VALUE OF LAND)	=	\$ _____	CASH- IN-LIEU
-------	-----------------------------	---	------------------------------	---	----------	------------------

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

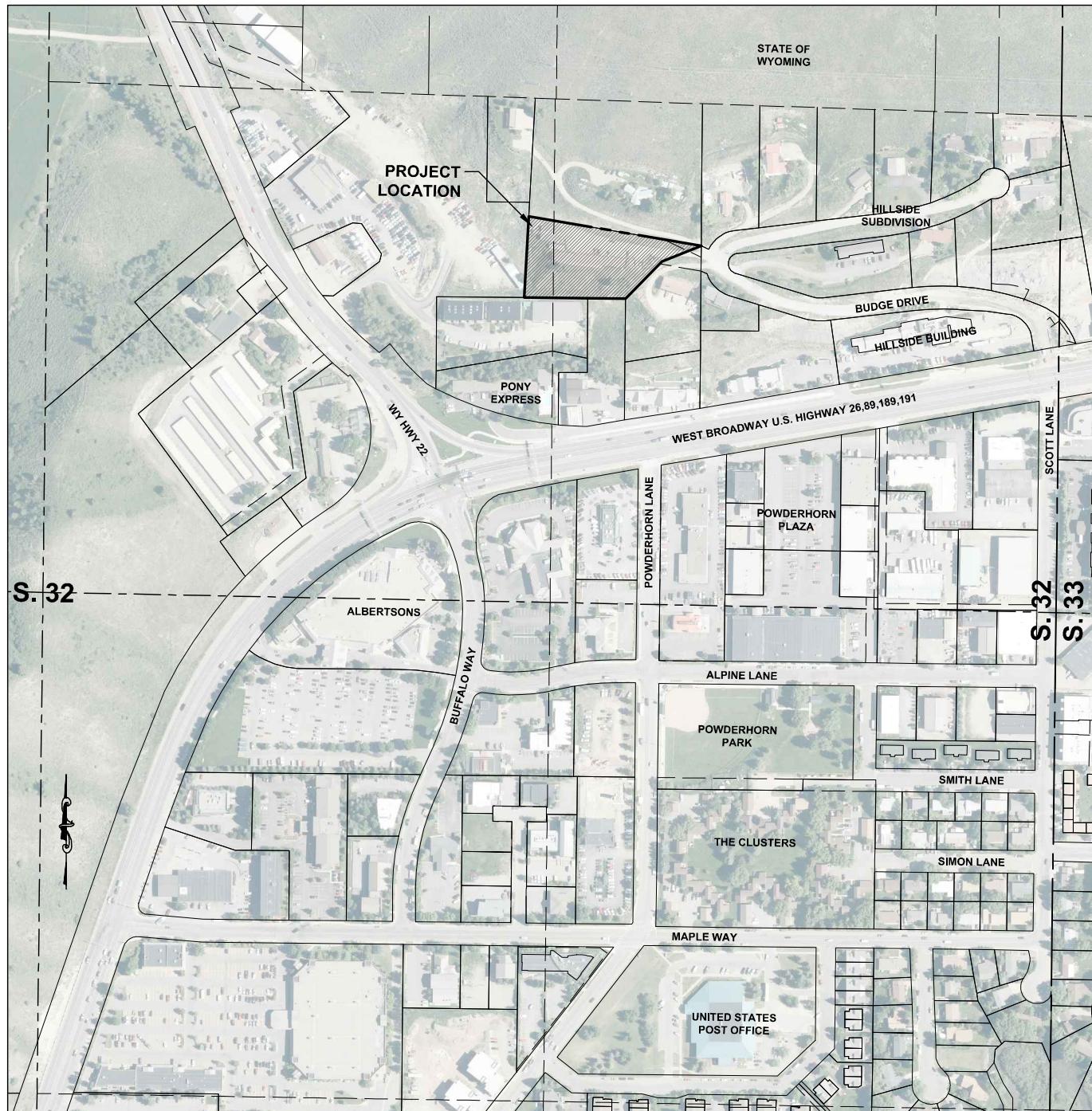
## **SECTION 4 – CIVIL DRAWINGS**

- DRAWINGS 11" X 17' FORMAT

# DEVELOPMENT PLAN

**BLUFFS DEVELOPMENT GROUP, LLC  
LOT 1, CRYSTAL VALLEY ADDITION  
984 BUDGE DRIVE**

**LOCATED WITHIN  
S 1/2 NE 1/4, SECTION 32, T41N, R116W,  
TOWN OF JACKSON, WYOMING**



VICINITY MAP

**OWNER:**

Bluffs Development Group, LLC  
P.O. Box 551 / 984 Budge Drive  
Jackson, Wyoming 83001

## CIVIL ENGINEER:

**Jorgensen Associates, Inc.**  
P.O. Box 9550 / 1315 S. HWY 89, Suite 203  
Jackson, Wyoming 83002  
307.733.5150

## ARCHITECT:

**Schopfer Associates, LLC**  
**400 Commonwealth Ave**  
**Boston, MA 02215**  
**617.262.1410**

## **SHEET INDEX**

**C0.1 COVER, VICINITY MAP, SHEET INDEX  
C0.2 EXISTING CONDITIONS  
C1.1 SITE PLAN**

SHEET TITLE:  
COVER,

DRAFTED BY:	JK
-------------	----

REVIEWED BY: AJ

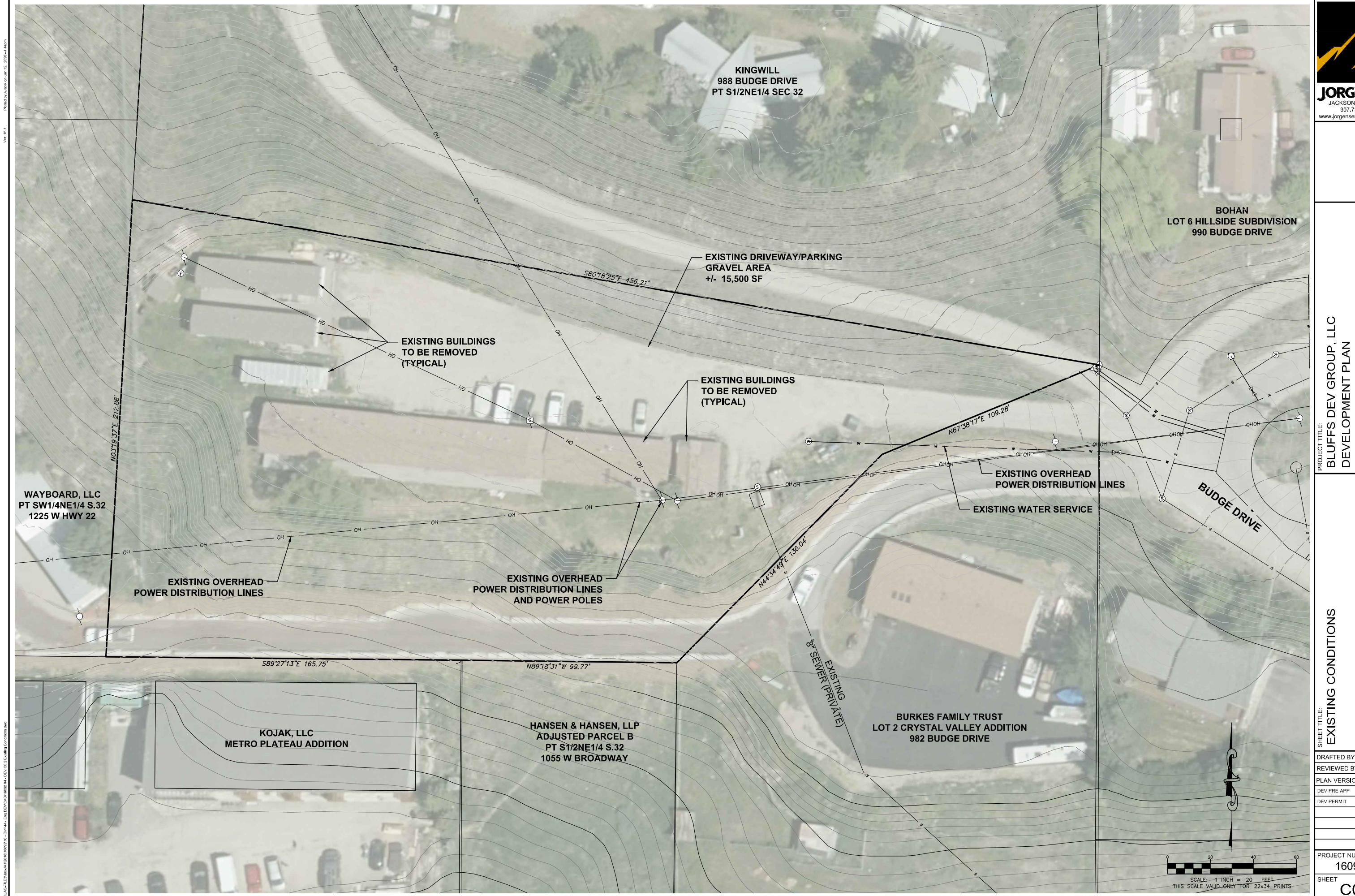
DEV PREF-APP

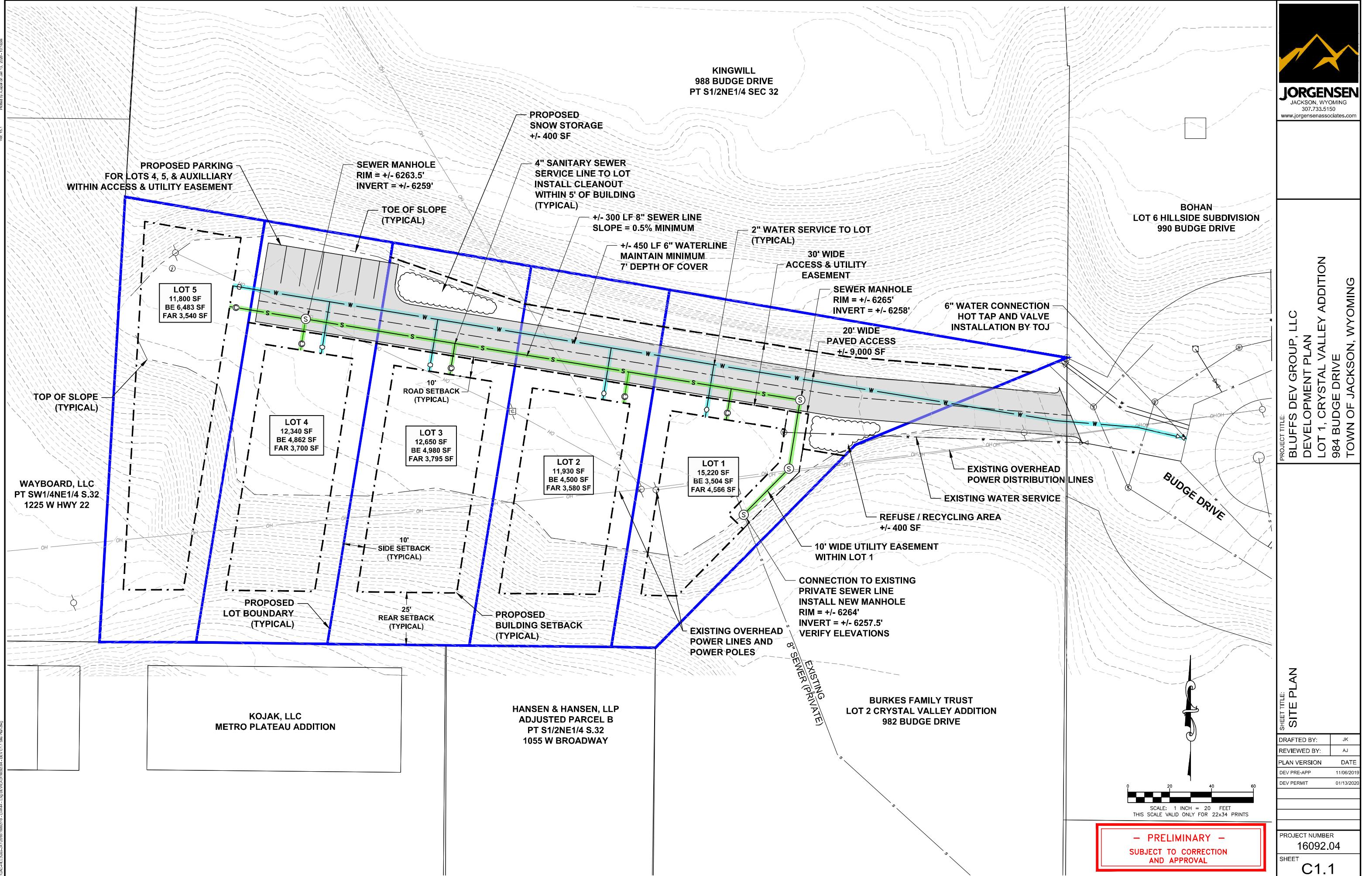
DEV PERMIT 01/13/2024

**PROJECT NUMBER**

16092.04

SHEET 1





## **SECTION 5 – SUPPORTING INFORMATION**

- 5.1 Slope Stability Analysis Report
- 5.2 Geotechnical Engineering Report
  - 5.3 Water/Sewer Demands
- 5.4 Comprehensive Plan: District 4.2 Northern Hillside



March 10, 2017

Mr. Dennis Callaghan  
45 River Avenue  
Monmouth Beach, NJ 07750

## **RE: PRELIMINARY SLOPE STABILITY ANALYSIS, 984 BUDGE DRIVE, JACKSON, WYOMING**

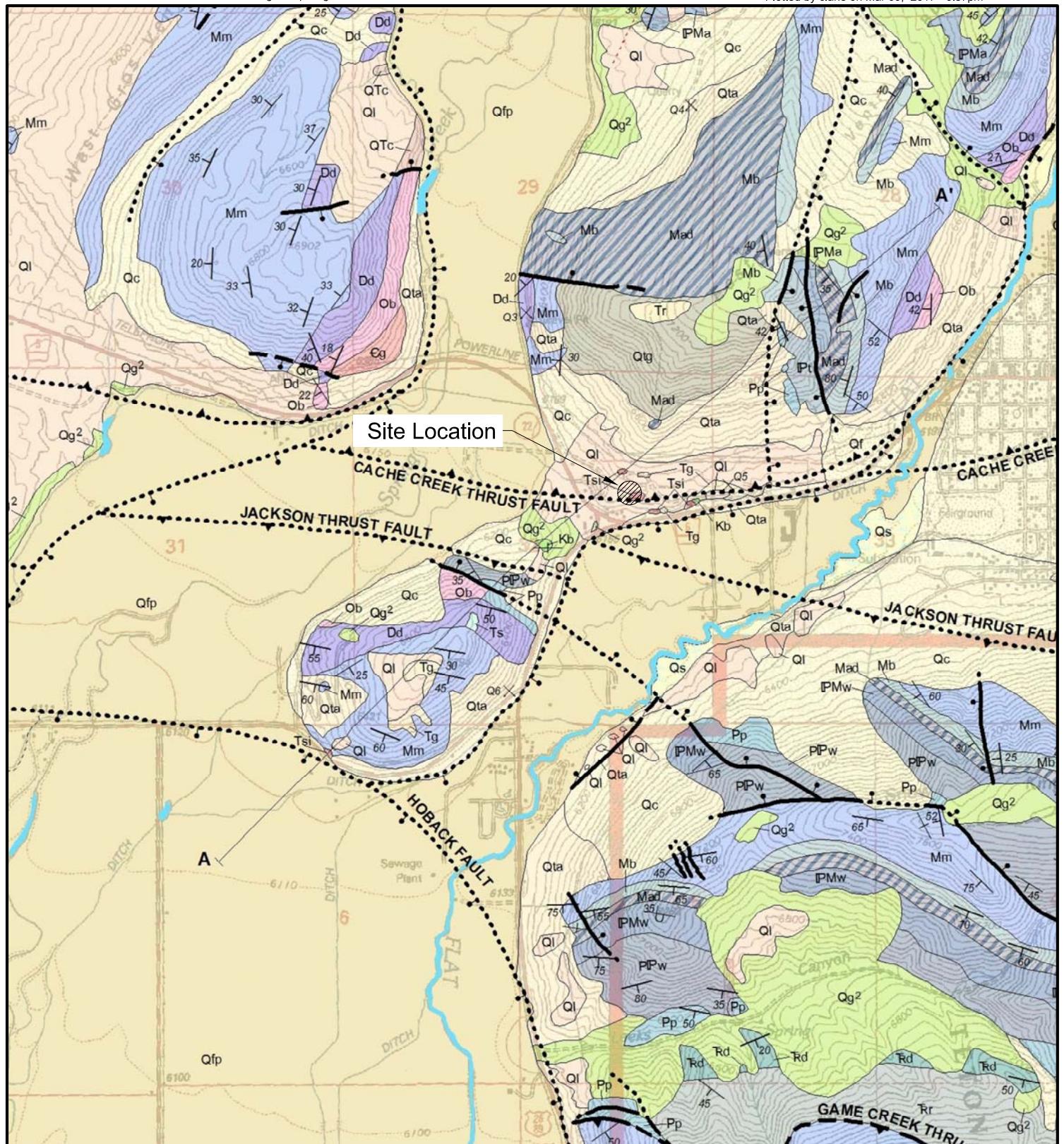
Dear Mr. Callaghan:

At your request, we have performed a preliminary slope stability analysis for the proposed residential development located at 984 Budge Drive in Jackson, Wyoming. This letter briefly summarizes our procedure and presents our recommendations for the project. In summary, the preliminary modeling indicates the slope is likely to be stable and there is relatively low risk of destabilizing the slope with the proposed development. Please note, however, **this analysis does not constitute an appropriate level of effort to support final development design; additional investigation and analysis is necessary.**

This preliminary modeling effort relies on our experience and knowledge of nearby sites. However, the toe of East Gros Ventre Butte is a very complex geologic area (Figure 1), with subsurface conditions varying dramatically over short distances. **A site specific geotechnical investigation is required to better characterize the underlying subsurface conditions.** The purpose of additional investigation is to reduce uncertainty related to depth and lateral extent of weak soil layers (i.e., anticipated failure planes), soil parameters of underlying soils (i.e., shear strength and unit weight), and seasonal high groundwater levels. We are happy to provide a scope of work for such an investigation and analysis at your request.

### **Site Description**

The project site is located in Jackson, Wyoming, near the intersection of West Broadway Avenue and Budge drive at the southwestern toe of East Gros Ventre Butte. The property covers 1.47 acres and is composed of a relatively flat, man-made platform at an approximate elevation of 6,265-feet and slopes greater than 30% which descend to the south to an approximate elevation of 6,220 feet at the property's southern boundary. Currently several trailers occupy the property. The trailers will be removed prior to the proposed development, which preliminary plans indicate will comprise several modular structures placed on a typical foundation system. The remaining area of the graded platform is an aggregate-surfaced parking area.



A horizontal scale with numerical markers at 0, 2000, and 4000. A thick black horizontal bar is drawn from the 0 mark to the 2000 mark.

SCALE: 1 INCH = 2000 FEET  
THIS SCALE VALID ONLY FOR 8.5x11 PRINTS

## Map symbols:

## QI - Loess

## Qta - Talus

## Tsi - Shooting Iron Formation

Tg - Gray Basalt

From Love, J.D., 2003, Geologic Map of the Jackson Quad, Teton County, Wyoming Map LMS-9

DRAFTED BY:	MW	SHEET TITLE:	PROJECT TITLE:	
REVIEWED BY:	CL	Figure 1	Preliminary Stability Analysis	
PROJECT NUMBER	16092	Site Location and Geologic Map	984 Budge Drive Teton County, Wyoming	 <b>JORGENSEN</b> Geotechnical, LLC 307-733-5150 www.jorgeng.com

### Geologic Conditions

The property is found on the Geologic Map of the Jackson Quadrangle (Love and Albee, 1972; Love, 2003), shown on Figure 1. The map shows the location of surface deposits, bedrock units, and geologic structures (i.e., faults and folds). The project site is shown on the map in an area mapped as Quaternary-age windblown deposits called loess (QI). Loess was deposited following the retreat of glacial ice, usually “blanketing” the ancient ground surface and obscuring the underlying topography. Underlying units include glacial outwash terraces (Qtg), talus (Qta), or Tertiary-age clay and silt lake beds described in geologic maps as the Shooting Iron Formation (Tsi). Please be aware the West Broadway Landslide east of the site has demonstrated that actual geology is more complex than indicated by Love’s map.

Drilling on this and nearby properties observed stiff clay lakebeds immediately underlying fill placed during property improvements. Stony colluvium, with limestone and basalt clasts, underlies these stiff clays. Deep-seated, fine-grained lake bed deposits observed during site investigations on nearby properties, including the West Broadway Landslide (Landslide Technology, 2014), could present a risk of slope instability. Two distinct bands of lakebeds have been incorporated into the preliminary model at elevations between 3,180-ft and 3,190-ft (referred to as “Silty Lakebeds”) and 3,150-ft and 3,160-ft (referred to as “Clayey Lakebeds”). These lake beds may not extend under the slope as far as the model indicates. However, we have chosen to model subsurface conditions in this manner as it presents a conservative assessment of existing slope stability.

### Stability Analysis Methodology

The following methodology was performed in order to develop each modeled cross-section:

- Analyses:** Slope stability analyses were performed using the SLOPE/W stability module of GeoStudio 2012 version 8.15.1.11236, produced by GEO-SLOPE International, Ltd. The Morgenstern-Price limit equilibrium method, which takes into consideration moment and force equilibrium, was used to analyze slope stability.
- Geometry:** Locations of the modeled cross-sections, chosen to be representative of the site’s slope geometry, are shown on Figure 2. Figures 3, 4, and 5 (attached to this letter) show the modeled external and internal geometry.

External geometry (i.e., ground surface) of the cross-section was developed using Teton County LiDAR topographic data produced in 2015 and historic aerial photography from the Teton County GIS website. Historic aerial photography indicates the flat area where the trailers are located was constructed in the 1960s. The flat area appears to have been constructed using cut and fill techniques, meaning the fill would be recycled native soil (i.e., loess or colluvium).

Internal geometry (i.e., subsurface conditions) is limited by our understanding of the subsurface conditions at the site. For this preliminary analysis, we projected conditions



DRAFTED BY:	HC
REVIEWED BY:	CHL
PROJECT NUMBER	

SHEET TITLE:  
**Figure 2**  
Cross Section Location Map

PROJECT TITLE:  
**Preliminary Slope Stability Analysis**  
984 Budge Drive  
Jackson, Wyoming



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Geotechnical, LLC  
307-733-5150 [www.jorgeng.com](http://www.jorgeng.com)

from geotechnical investigations of adjacent properties. Modeled lakebeds are assumed to be horizontal and little geological movement is believed to have occurred since Tertiary time. However, borings placed on this and neighboring properties to the northwest did not reach far enough into the fill or native material to determine the nature of deep geological contacts. As mentioned above, lake beds are not anticipated to extend as far into the slope (i.e., north or northeast) as has been modeled, but this allows for a conservative analysis appropriate for preliminary modeling.

Slip surfaces were developed using a “Block Specified” approach. In this model, the left and right “blocks” were constrained to the modeled clay and silt lakebeds to examine translational failure along the lakebed deposits, assumed to be the critical mechanism of global stability. The program creates hundreds of slip surfaces by connecting points of the blocks and selects a Critical Slip Surface, or the one with the lowest Factor of Safety (FS). FS is the ratio of forces/moment resisting slope failure divided by forces/moment tending to cause failure. A FS of 1.0 indicates imminent slope failure, while  $FS < 1.0$  implies failure and  $FS > 1.0$  implies stability.

3. **Materials:** Effective stress shear strength parameters pertaining to a Mohr-Coulomb strength model were estimated for the site soils. Table 1 shows soil parameters used in the stability analysis. Soil shear strength consists of two parameters: cohesion ( $c'$ ), which expresses the shear strength at zero overburden pressure, and friction angle ( $\varphi'$ ), which expresses the relationship between overburden pressure and shear strength. For this model, we have assumed each material is cohesionless. In mathematical terms, the shear strength ( $\tau'$ ) increases at a slope of  $\tan(\varphi')$  with overburden stress ( $\sigma'$ ) beginning at the origin.

Lakebeds along the base of East Gros Ventre Butte are likely composed of layers of silt and clay. Failure, should it occur, is assumed to follow the lakebeds. Strength of the lakebeds was estimated using correlations between the soil's plasticity index (PI) and peak (Ladd et al, 1977) or residual (Voight, 1973) strength. Where possible, these correlations were compared to results of shear strength testing performed on samples collected on nearby sites. Based on index testing of nearby soil samples, PI values of lakebed deposits are in the range of 25 to 30.

Residual strength results from strain-softening behavior; i.e., soils become weaker with shearing (as in the case of slope movement) decreasing from peak strength to residual strength. Reduced shear strength usually occurs only in soils that have been previously sheared while undisturbed soils typically exist at peak strength. Unless the slope is known to have previously moved, it is appropriate to use the peak strength. We have chosen to bracket the slope stability by determining FS with peak strength (upper bound) and residual strength (lower bound) of the lakebeds to account for the possibility of strain-softening by ancient slope movement.

**Table 1: Soil Parameters Used in Stability Analyses**

Layer Name	Unit Weight (pcf)	Cohesion (c', psf)	Friction Angle* (φ', degrees)
LOESS	110	0	31
STIFF CLAY LAKEBEDS	120	0	30.9
STONY COLLUVIUM	130	0	30
SILT LAKEBEDS – PEAK STRENGTH	120	0	36
SILT LAKEBEDS – RESIDUAL STRENGTH	120	0	30.4
CLAY LAKEBEDS – PEAK STRENGTH	124	0	30
CLAY LAKEBEDS – RESIDUAL STRENGTH	124	0	18

\* Friction angles were reduced by 20% in seismic analyses to account for increased pore water pressures during dynamic, earthquake-induced ground shaking (Hynes-Griffin and Franklin, 1984).

4. **Phreatic Surface:** Measurements at the nearby West Broadway Landslide indicate groundwater surface elevations of approximately 3,161-ft beneath the main slide block during June 2014. Back analysis of the landslide based on rates of movement in April 2014 estimated groundwater elevations to be 25-30 feet higher during spring runoff conditions (Landslide Technology, 2014a).

A phreatic surface has been applied to the models in order to account for static pore water pressures. In static analyses, a higher phreatic surface representing seasonal high levels was used. In seismic analyses, the models use a lower phreatic surface considered to represent conditions during most of the year. It is statistically unlikely that high groundwater will occur at the same time as a design earthquake event, and normal practice does not impose two sets of extreme conditions (i.e., peak water pressure plus a design earthquake) on a single model.

A future site investigation will install vibrating wire piezometers to measure seasonal groundwater fluctuations at the site, which will be used to update the stability models.

5. **Seismicity:** The site (Latitude: N 43.475°, Longitude: W 110.787°) is in an area of moderate seismic activity. Online tools exist to select a site specific PGA for the CSES facilities (USGS, 2014). These are based on USGS seismic hazard maps published in 2008, which form the basis of seismic loads for the ASCE 7-10 Minimum Design Loads for Buildings and Other Structures. The site specific PGA with 10% probability of exceedance in 50-years of 0.19g, where “g” is the acceleration due to gravity.

Seismicity has been incorporated into the model using a pseudo-static approach where inertial forces from seismic accelerations are applied statically to the model. Seismic loads have been applied to the critical slip surface determined by static analysis for each cross-section as is it assumed to be the most stressed region within the slope (Abramson et al., 2002). The forces from earthquake-induced ground shaking are assumed to be proportional to the weight of the sliding mass times a horizontal seismic coefficient  $k_h$ . A

seismic coefficient of  $k_h = 0.1g$ , or  $\frac{1}{2}\text{PGA}$ , has been used in this assessment with a 20% reduction in the shear strength of soil materials (Hynes-Griffin and Franklin, 1984).

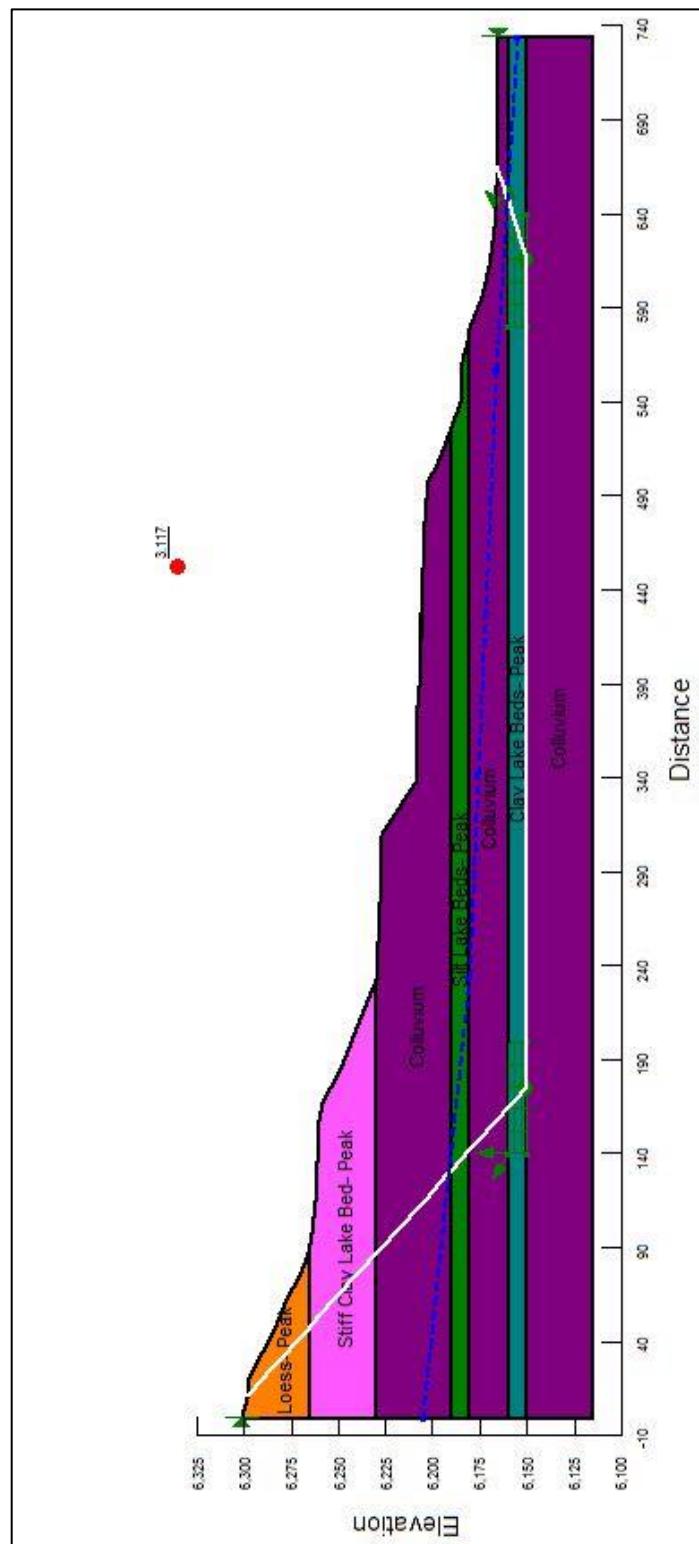
6. **Building Loads:** Due to the number of construction variables at this point in design and uncertainties involved in the preliminary model, we decided not to include building loads, which are typically small compared to soil pressures. Loads from site grading are estimated to be minimal. Foundations constructed on the upper bench may actually result in a net reduction of driving force, increasing the FS with respect to slope stability.

### Stability Analysis Results

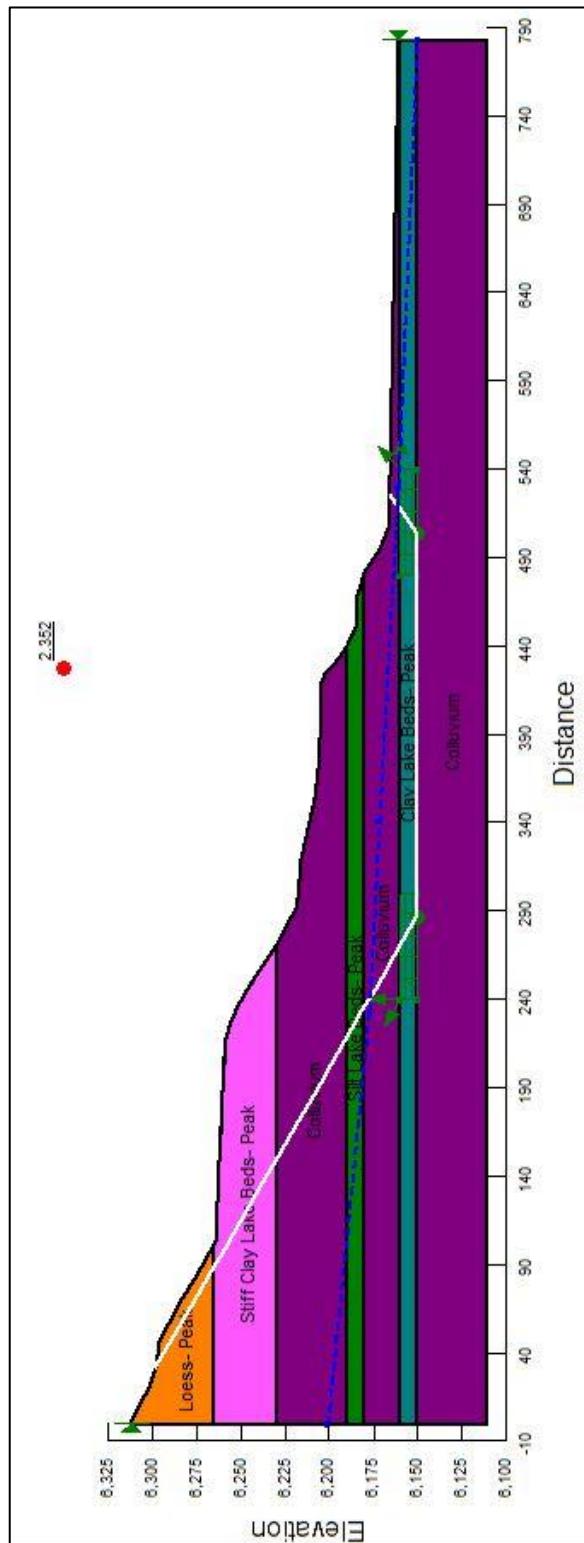
Results of the preliminary stability analyses are shown in Table 2. FS values are above those generally accepted by engineering practice for slope stability (FS  $\geq 1.5$  for static and FS  $\geq 1.1$  for seismic). Please note these are values based on soil shear strength data estimated by extrapolating soil data from nearby sites. Laboratory testing of site soils sampled in a geotechnical site investigation will reduce uncertainty related to soil parameters.

**Table 2: Summary of Stability Analyses Results**

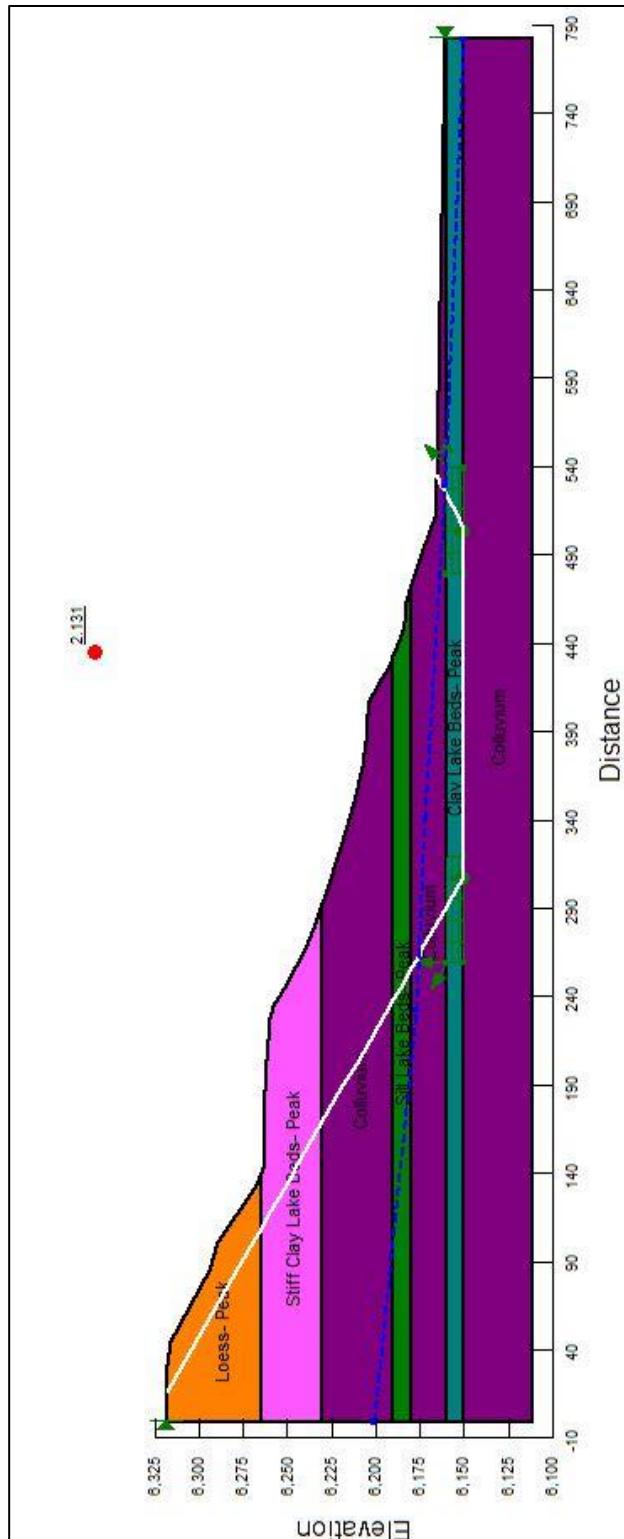
Cross-Section	Analysis Condition	Soil Strength Condition	Modeled Factor of Safety
A-A'	Static	Peak	3.12
		Residual	1.99
	Seismic	Peak	2.66
		Residual	1.72
B-B'	Static	Peak	2.35
		Residual	1.57
	Seismic	Peak	1.93
		Residual	1.32
C-C'	Static	Peak	2.13
		Residual	1.50
	Seismic	Peak	1.74
		Residual	1.24



**Figure 3: Cross-Section A-A'**



**Figure 4: Cross-Section B-B'**



**Figure 5: Cross-Section C-C'**

### Limitations

This report has been prepared based on a very limited amount of data. At this point, geotechnical uncertainties exist and actual site conditions may vary considerably from the assumptions made in these analyses. Nearby slope instability warrants approaching construction on this site with great care.

Site specific investigation, laboratory testing, and modeling shall be performed before final development and design. Stability analyses are dependent upon a number of conditions including, but not limited to: slope geometry, construction methods, building loads, runoff and other water features, etc. Changes in design and construction of the proposed development could dramatically change the inputs to the model. As such, recommendations in this letter and future stability analysis are contingent upon our involvement for the duration of the project.

These services have been performed in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in this area under similar conditions. No other warranty is made or implied.

If you have any questions about this report, or if we may provide other services to you, please contact us. As the project progresses, we will be available to answer questions.

Respectfully submitted,

JORGENSEN GEOTECHNICAL, LLC

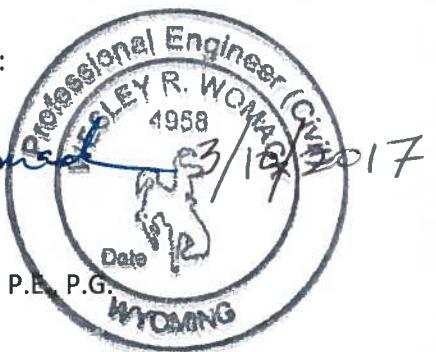
*Colter H. Lane*

Colter H. Lane, P.E., M.S.

Reviewed by:

*Ray Womack*

Ray Womack, P.E., P.G.



**References:**

Abramson, L.W., Lee, T.S., Sharma, S., and Boyce, G.M., 2002, Slope Stability and Stabilization Methods, 2nd ed., John Wiley & Sons, Inc.

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U.S. Geological Survey Seismic Design Maps Application, 2014,  
<http://earthquake.usgs.gov/designmaps/us/application.php>.



**JORGENSEN**  
GEOTECHNICAL, LLC

PO Box 9550 · 1315 HWY 89 S., Suite 201  
Jackson, WY 83002  
PH: 307.733.5150  
| [www.jorgeng.com](http://www.jorgeng.com)

April 23, 2018

Mr. Dennis Callaghan  
Callaghan Partners  
45 River Avenue  
Monmouth Beach, NJ 07750

**RE: GEOTECHNICAL ENGINEERING REPORT, 984 BUDGE DRIVE, JACKSON, WYOMING  
PROJECT NO: 16092**

Dear Dennis,

We are pleased to present this Geotechnical Engineering Report for 984 Budge Drive located in Jackson, Wyoming. The report describes site conditions and presents conclusions and recommendations to support the design and construction of foundation and drainage elements typically associated with residential construction.

In summary, there are two primary geotechnical hazards at the site. First, the southern portion of the site is covered by a combination of loose fill, and a loess and colluvium mixture, both of which are susceptible to settlement or collapse when inundated with water under load. Secondly, the northern portion of the site is underlain by potentially expansive lean clay lake beds. In order to reduce the potential for both settlement and swell, we recommend utilizing deep foundation elements such as helical piers. A structural floor slab is also recommended to further reduce the risk of distress due to differential settlement and/or swell. Moisture-sensitive soils require foundation drainage and careful management of surface water (i.e., adequate grading).

If you have any questions about this report, or if we may provide other services to you, please contact us. As the project progresses, we will be available to answer questions.

Respectfully submitted,

**JORGENSEN GEOTECHNICAL, LLC**

Harrison W. Carter, E.I.

Colter H. Lane, P.E.

**GEOTECHNICAL ENGINEERING REPORT  
984 BUDGE DRIVE  
JACKSON, WYOMING**



**Prepared for:**

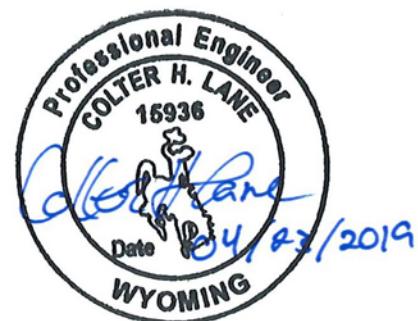
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**April 23, 2019**



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## 1.0 INTRODUCTION

The project site is situated on a 1.47 acre parcel located at 984 Budge in Jackson, Wyoming, on the lower southwestern flank of East Gros Ventre Butte, approximately 500 feet north of West Broadway Avenue/Highway 89 and approximately 1,200 feet west of the West Broadway Landslide (WBL), as shown in Figure 1. Due to the project's close proximity and concerns of similar geology as the WBL, a slope stability analysis commissioned by Mr. Dennis Callaghan was conducted by Jorgensen Geotechnical during Summer 2017. The analyses indicated the site was stable under static and seismic conditions. The results of the slope stability analysis are summarized in Section 3.1.

A brief review of historic mapping and aerial imagery indicated the “benched” topography of the project site is not a result of natural soil and rock deposition, but a result of the development of the building pad using a cut and fill method. The cut and fill method appears to have created the slopes above and below the building site that are steeper than the original ground surface. The aerial imagery shows excavation of the building pad began sometime between 1955 and 1967 and was expanded to its current state by 1977. Specific construction means and methods used to construct the building pad are unknown.

Figure 1 is a generalized geologic map showing the approximate location of the project site adapted from the Geologic Map of the Grand Teton Nation Park (Love, et al. 1992), which shows the location and type of surface deposits, bedrock units, and geologic structures (i.e., faults and rock orientations). The map shows the project site is partially covered by Quaternary loess deposits (Ql) and lacustrine deposits of the Shooting Iron formation (Tsi) outcropping in the immediate vicinity. The map also shows the site is surrounded by gravity deposits, colluvium (Qc) and talus (Qt).

No free water was observed during the 2017 field work in any of the five boreholes. One vibrating wire piezometer was installed in the bottom of boring JG-3 at a depth of 120-ft-4-inches below the existing ground surface, corresponding to an approximate elevation of 6,143-ft above mean sea level (AMSL). Measurements of the piezometer during the spring runoff season indicated dry conditions. A perched groundwater table was discovered in boring JG-1 at an approximate elevation of 6,183-ft AMSL. The water was observed within a fine-grained lacustrine deposit, while the sand and gravel alluvial deposits below were observed to become drier with depth, further indicating the water was confined to the fine-grained lacustrine deposit and did not represent the groundwater table associated with the valley floor.

Additional detailed descriptions of site conditions including history, geology, soil conditions, and groundwater are included in the 2017 Subsurface Exploration and Slope Stability Analysis Report. Generalized geologic cross-sections and borehole logs are also presented in the 2017 Report. We recommend these reports be stored and transmitted together in future project documents.

## 2.0 PROPOSED CONSTRUCTION

At the time of this report, preliminary site plans for the project were not available, though it is assumed future plans include subdividing the property into five separate lots, as shown in Figure 2. Details regarding the type and size of the structures to be built on the lots are unknown at this time, though it is assumed they will be single family residential structures. Helical pier test probe locations were concentrated to the eastern portion of the lot to accommodate a former construction schedule (further discussed in Section 6.4.1). Although the recommendations presented in the Report apply to the entire building pad, it is highly recommended test probes be installed prior to the design and construction of structures west of the test piers installed in April 2019.

## 3.0 REPORT METHODOLOGY

### 3.1 Summary of Previous Subsurface Exploration

The subsurface data collected during the 2017 investigation were used in conjunction with the helical pier test probe (test pier) results to draw conclusions and present recommendations for foundation and drainage elements presented in this Report. During the 2017 field work, a total of five boreholes ranging from 31 to 121-feet in depth were drilled and sampled. Borehole locations are shown in Figure 2. Standard penetration tests (SPT) were recorded and samples were obtained from all borings at 5-foot intervals. Relatively undisturbed samples of fine-grained soils were obtained using thin-walled Shelby tubes. An extensive laboratory testing program was conducted on select samples. Laboratory tests included natural moisture contents, percent fines (i.e., soils passing the #200 sieve), mechanical hydrometer to determine percent silt and percent clay, undisturbed unit weights, direct shear tests, as well as consolidation and swell tests. The results of the slope stability analysis, with applied surcharge loads at the southern edge of the building pad to represent potential structures, indicated the site is stable with factors of safety exceeding those generally accepted in engineering practice.

Soils observed during the slope stability analysis field work consisted mainly of lacustrine deposits (i.e., lake beds), loess, colluvium, stony alluvial deposits at depth, and a loess/colluvium mixture. Surface soils along the southern edge of the building pad encountered in borehole JG-4 are assumed to be loose fill derived from the steep cut slope to the north and consist mainly of loess. Soils underlying the loess fill are a colluvium and loess mixture as well as alluvial fan soils at depth. Lake beds were discovered at the surface in boreholes JG-3 and JG-5 and extended to at least 121-feet below the surface of the existing driveway and parking lot along the northern portion of the project site.

Loess is known to be highly susceptible to hydro-consolidation (sudden collapse upon wetting) when saturated under loads commonly associated with typical residential construction. Laboratory tests conducted on samples collected during summer 2017 show the lake bed deposits have the potential to swell when saturated. The primary geotechnical concerns are the collapse potential of the loess and the swell/heave potential of the lacustrine deposits. We

recommend utilizing a structural slab and grade beam foundation walls supported by deep foundation elements to reduce the risk of differential settlement. A recommended foundation system is discussed further in Section 7.1.

### **3.2 Helical Pier Test Probe Methodology**

The purposes of helical pier test probes are to determine an anticipated design capacity, as well as the helix configuration and the depth necessary to achieve it most economically. Helical pier test probes consist of a single eight-inch, or an eight-inch and ten-inch helix combination attached to a lead section. During the installation of the test probes, the applied torque is displayed on a digital gauge and documented by the engineer on site. The theoretical torque of different helix configurations (i.e., 10-inch, an 8 and 10-inch, and 8, 10, and 12-inch, etc.) can be calculated using the measured torques using a proportional surface area formula, as suggested by Pack (2009).

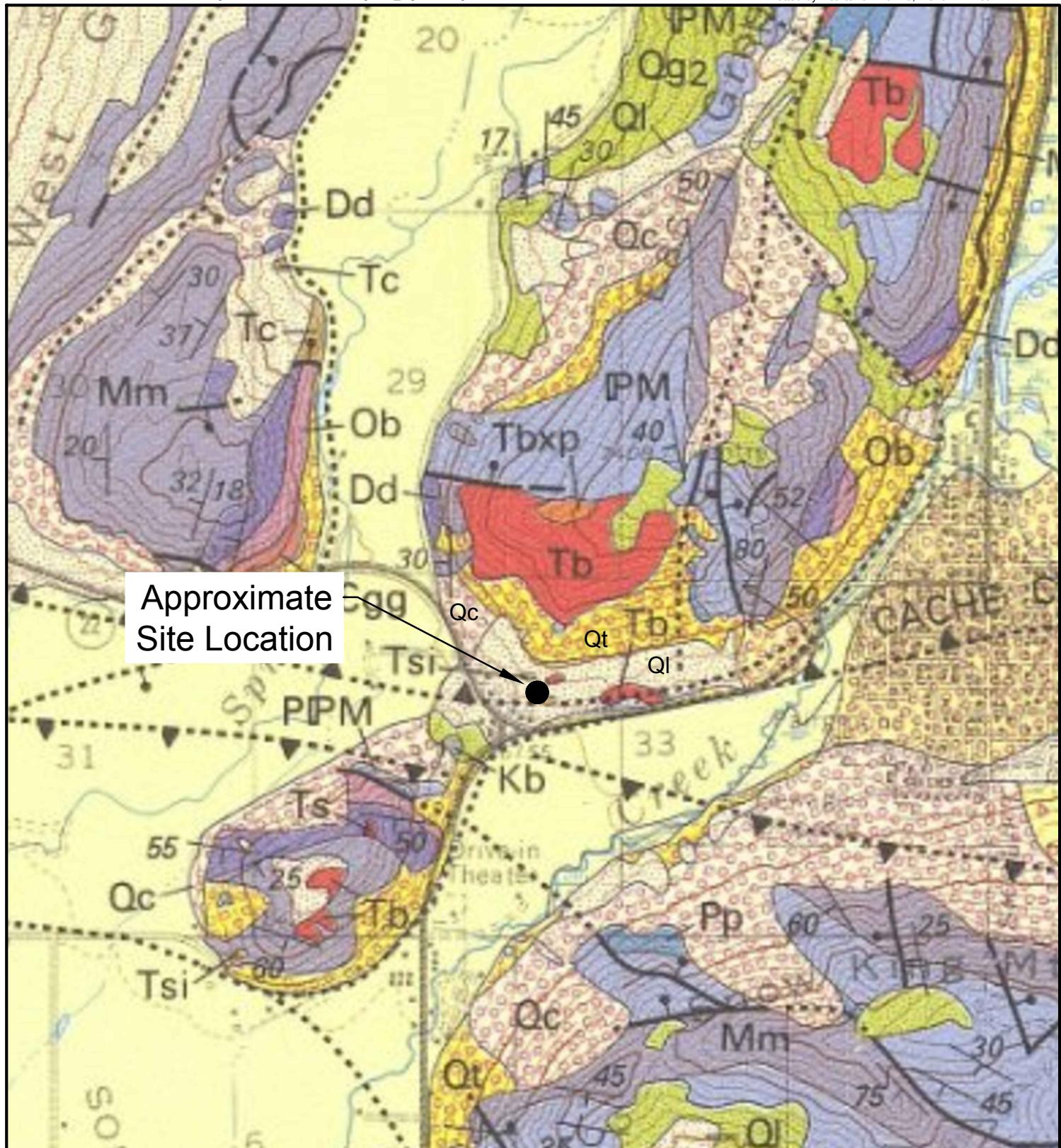
Ultimate capacity of the piers is related to the torque by an “empirical installation torque coefficient”, or  $k_t$ . The measured torque is multiplied by  $k_t$  in order to determine the *ultimate* capacity of the pier. A factor of safety (FS) is then applied to the ultimate capacity of the pier to determine the *design* capacity. If a site specific  $k_t$  value is not determined, the product manufacturer should be consulted when choosing a specific installation torque coefficient as torque coefficients range from 7 to 18 ft<sup>-1</sup>, depending on shape and size (Pack, 2009). In the case of a 1-3/4" solid square shaft, available literature suggests using a  $k_t$  value of 10. Equations showing the relationship between torque, ultimate capacity, and allowable load are shown below:

$$Q_u = Q_{\text{Design}}(\text{FS}) \quad Q_u = k_t(T)$$

Our experience with helical piers installed in similar soils in the Jackson Hole area indicate the theoretical  $k_t$  value of 10 suggested in the available literature may be slightly overestimated. Ultimate capacities have been determined by JG using the Davisson Method in the past by conducting verification tests in both compression and tension. The ultimate capacities ascertained from the field tests were then compared to the recorded installation torques of the piers in order to back-calculate a  $k_t$  value. The average  $k_t$  value for both compression and tension was calculated to be approximately 7.5. Experience has shown the  $k_t$  values can vary from site to site, as well as within a particular site depending on the variability of soil conditions. Due to the variability between the theoretical and the calculated  $k_t$  values, two tensile verification tests were conducted during the helical pier test probe installation at the project site.

### **3.3 Report Preparation**

This report includes the geological site conditions, a site location and geologic map (Figure 1), helical pier test probe results, and the verification test results. This report provides engineering analyses and recommendations for the design and construction of foundation and drainage elements for the entire building pad that occupies 984 Budge Drive (Parcel Identification Number 22-41-16-32-1-07-001) as of April, 2019.



0 2000 4000

SCALE: 1 INCH = 2000 FEET

THIS SCALE VALID ONLY FOR 8.5x11 PRINTS

From Love et al, 1992, Geologic Map of the Grand Teton National Park, Teton County, Wyoming Map I-2031

Map symbols: Qc - Colluvium QI - Loess Qt - Talus

Tsi - Shooting Iron Tb - Basalt

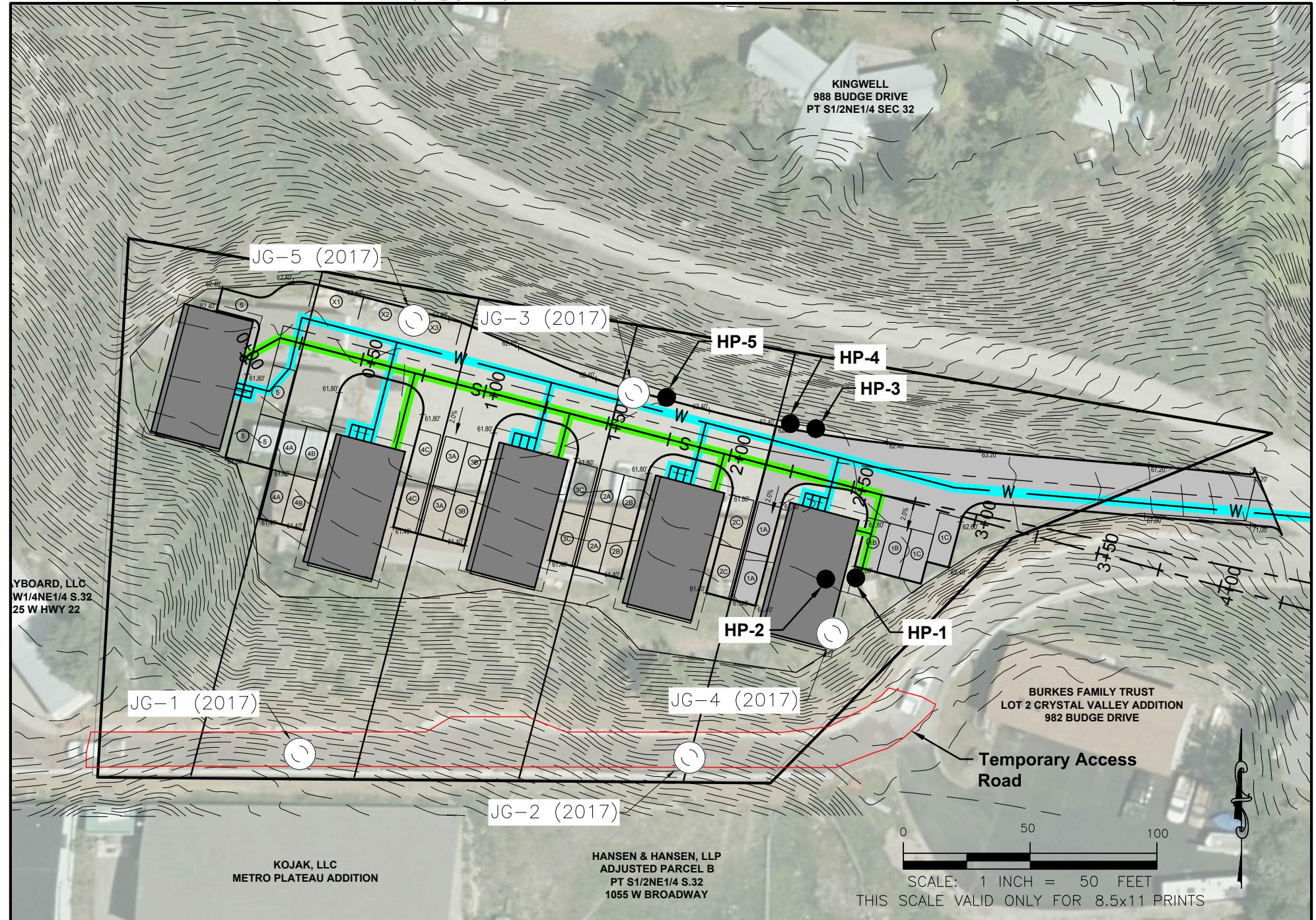
DRAFTED BY:	HC
REVIEWED BY:	CHL
PROJECT NUMBER	16092

SHEET TITLE:  
Figure 1  
Site Location and  
Geologic Map

PROJECT TITLE:  
Geotechnical Site Investigation  
984 Budge Drive  
Jackson, Wyoming



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DRAFTED BY:	HC
REVIEWED BY:	CHL
PROJECT NUMBER	

**Figure 2**  
Helical Pier Test Probe and  
Borehole Location Map

**PROJECT TITLE:**  
Geotechnical Site Investigation  
984 Budge Drive  
Jackson, Wyoming



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#### **4.0 EARTHQUAKES AND SEISMICITY**

Jackson Hole is located within the Intermountain Seismic Belt, a zone of seismicity that extends from southern Utah through eastern Idaho, western Montana, and western Wyoming (Smith and Arabasz, 1991). The Teton Fault, located along the eastern margin of the Teton Range about 10 miles northwest of the project site, is considered an important structural element of the Intermountain Seismic Belt. Predicted recurrence intervals for maximum credible earthquakes have passed for most of the fault systems capable of generating magnitude 7.5 events in western Wyoming (Case, 1997), implying the risk of major earthquakes is relatively high.

Ground motion accelerations should be derived for the project site in accordance with the general procedure defined in the International Building Code (IBC). The IBC references ASCE 7-10 to determine the ground motion accelerations. The site class is determined by the soil characteristics in the top 100 feet of the soil profile. Based on subsurface exploration, geologic mapping, and our experience in the area, the site may be classified as Site Class D (Stiff Soils). For your convenience, a Seismic Design Map Summary Report was produced assuming a risk category of II and is attached in Appendix A. This report presents design ground motion for structural design. Results of the ASCE 7-10 design values indicate the site is classified as Seismic Design Category D.

The site is in an area of moderate seismic activity. The current horizontal peak ground acceleration (PGA) with 10% probability of exceedance in 50-years is approximately 0.23g, according to the USGS Unified Hazard Tool (USGS, 2014). This has been applied in this report for analysis of seismic lateral loading on retaining walls, see Section 6.3.

The provisions of the IBC are intended to provide uniform levels of performance for structures, depending on their occupancy and use and the risk inherent to their failure. The approach adopted in the IBC is intended to provide a uniform margin of safety against collapse at the design ground motion. The design earthquake ground motion is selected at a ground shaking level that is 2/3 of the maximum considered earthquake (MCE) ground motion, which has a likelihood of exceedance of 2 percent in 50 years (a return period of about 2,500 years). The owner should be aware that the IBC is not intended to prevent damage or loss of function during a major earthquake; it is intended to reduce the risk of loss of life. Structural design should follow the level of risk tolerable to the owner.

## **5.0 GEOLOGICAL AND GEOTECHNICAL HAZARDS**

In our opinion, the greatest geo-hazard at this site is the possibility of differential settlement. Differential settlement at the project site is likely to occur without the proper foundation system and subgrade preparation due to the presence of both potentially collapsible *and* expansive soils. Deep foundation elements are recommended as the preferred foundation system (Section 7.1). Due to the seismic activity in the Jackson Hole area, though small, several risks associated with seismic activity are present and are further discussed below.

### **5.1 Collapsible Soils**

Loess deposits, which, as summarized in Section 3.0, are potentially subject to collapse when inundated with water. Collapse settlement tends to occur locally, as a result of unusual moisture events, such as broken sprinkler lines, broken water service lines, or concentration of surface water adjacent to foundations due to poor surface runoff control. Development and maintenance of this property requires careful construction and management of water. Loose, loess-derived fill along the southern portion of the project site has collapse potential, as well.

### **5.2 Expansive Soils**

A consolidation test conducted on a sample from JG-3, indicated the lacustrine deposits encountered on the northern portion of the building pad have expansion potential when saturated. The lacustrine clays exhibited a volumetric expansion potential of 1.6% under a confining pressure of 500 psf and a swell pressure of approximately 2,400 psf. The risk of soil swelling can be mitigated using careful surface runoff control and drainage. As with the collapsible soils, development and maintenance of this property will require careful construction and management of water.

### **5.3 Seismic Hazards**

Due to the location and geologic setting of the proposed project site, several hazards associated with seismic activity exist, though, in our opinion, represent a slim margin of occurrence. Although the project site is located on a steep slope located approximately 1,200 feet from an existing landslide, our extensive subsurface investigation and subsequent analyses in 2017 indicates the site is stable under design seismic conditions. The risk of liquefaction is low due to the observed density (i.e., high SPT blow counts) of subsurface soils, gravel content, and lack of an observed water table within the sand layers. The distance from any Quaternary faults indicates surface rupture at the project site is unlikely to occur. The owner should be aware that in the event of a large magnitude earthquake, strong ground shaking and ground cracking could potentially cause damage to structures (Smith et al., 1993). The owners may wish to consider the option of carrying earthquake insurance in addition to homeowner's insurance.

## 6.0 ENGINEERING ANALYSIS

### 6.1 Settlement

Test results conducted on loess samples collected from the Jackson Hole area show a possible volumetric collapse of up to 20%, though the average collapse potential is understood to be around 6-8%. If a 5-ft layer of loess were to become saturated, settlement on the order of 3-5 inches might be expected, which is likely to damage any structures bearing on the loess. In our opinion, it should be assumed all loess encountered at the site is collapsible and should be dealt with accordingly. Foundation system recommendations to reduce the risk of damage due to soil collapse are presented in Section 7.1. Subgrade preparation under interior and exterior slabs to improve slab performance is described in Sections 7.5 and 7.6, respectively.

Based on our experience with similar deposits in the Jackson Hole area, the stony alluvial fan deposits underlying the loess encountered by two of the helical pier test probes will serve as an adequate bearing layer for deep foundation elements and is not expected to experience significant settlement (i.e., greater than 1-inch total settlement or 0.5-inches of differential settlement). Stiff lakebed clays are also predicted to support deep foundation elements without significant settlement, provided the deep foundation system is installed to sufficient depth below the soil's active zone.

### 6.2 Swell

As mentioned in Section 5.2, one consolidation test conducted on an undisturbed sample of lacustrine soils collected from borehole JG-3 in May 2017 indicated the soils may swell when saturated. The consolidation test indicated the soils have a volumetric expansion potential of 1.6% exhibiting a maximum swell pressure of 2,436 pounds per square feet (psf). If a 5-ft layer of the lacustrine were to become saturated, expansion of approximately 1-inch could be expected, which is likely to damage any structures bearing on the lacustrine clay. This is of particular concern where only portions of the structures may be underlain by swelling soils as the heave would be entirely differential across the structure.

### 6.3 Lateral Pressures

Lateral pressures were calculated using methods suggested by Bowles (1996). Lateral pressures were calculated for at-rest, active, and passive conditions and presented in Table 6-1. Values in the table assume a level ground surface adjacent to basement walls and retaining structures. We have assumed a mixture of native loess and colluvium will be used as exterior backfill, which has an estimated internal friction angle of 30° and a unit weight of 130 pounds per cubic foot (pcf).

**Table 6-1: Lateral Pressure Parameters for Loess and Colluvium Mixture**

Condition	Coefficient of Earth Pressures	$\gamma K$ (equivalent fluid pressure)
<b>Static Conditions</b>		
Level Backfill	$K_o = 0.50$ $K_a = 0.33$ $K_p = 3.00$	65 pcf 43 pcf 390 pcf
<b>Earthquake Conditions</b>		
Level Backfill	$K_{ae} = 0.41$ $K_{pe} = 2.79$	53 pcf 363 pcf

### 6.3.1 Active Pressures

For lateral pressure design of retaining walls, which are allowed to deflect and develop an active soil wedge, the calculated equivalent fluid pressure ( $\gamma K_a$ ) is 43 pcf. This pressure distribution would be equivalent to a force of approximately  $21.5H^2$  pounds per horizontal foot of wall acting at one-third the wall height (H) above the base.

Lateral pressures on retaining walls from earthquakes were estimated using the Mononobe-Okabe equations (Bowles, 1996; Duncan et al, 1990). Because the maximum acceleration occurs only briefly during an earthquake, it is common practice when designing dams and other earth structures to reduce the design acceleration to  $\frac{1}{2}$  of the maximum design acceleration (Hynes and Franklin, 1984). We have calculated equivalent fluid pressures using a horizontal acceleration  $k_h$  of 0.115g (1/2 of  $k_h$  max) per the USGS (2014).

Research has indicated that lateral pressures due to earthquakes are non-hydrostatic in distribution, and the resultant acts above the lower third-point of the wall (Bakeer, et al, 1990). Accordingly, active soil pressures have been divided into two components that act at different wall heights. The static force acts at the lower third-point, as discussed above. The Mononobe-Okabe equations were used to estimate dynamic forces against retaining walls. The resultant force from seismic lateral pressures is applied at 60% of the wall height above the base with a magnitude equal to the difference between seismic and static active pressures; i.e.,  $\frac{1}{2} (\gamma K_{ae} - \gamma K_a)H^2$  or  $5.0H^2$  pounds per horizontal foot of wall applied.

### 6.3.2 At-Rest Pressures

For lateral pressure design of basement walls, which are restrained and not allowed to deflect, the calculated at-rest equivalent fluid pressure ( $\gamma K_o$ ) is about 65 pcf. Design control of such walls should utilize whichever generates the higher resultant force: at-rest pressures ( $\gamma K_o$ ) or active seismic pressures ( $\gamma K_{ae}$ ).

### 6.3.3 Passive Pressures

For passive pressure design, the calculated equivalent fluid pressure ( $\gamma K_p$ ) is 390 pcf reduced to 363 pcf for seismic conditions. Passive pressure design should neglect loose fill and soil located within the frost zone.

## 6.4 Helical Pier Evaluation

### 6.4.1 Test Probe Piers Results

A total of five helical pier test probes (test piers) were installed in March 2019. Approximate test pier locations are shown in Figure 2 denoted by HP-1, HP-2, HP-3, HP-4, and HP-5. Test probe locations are concentrated on the east portion of the site because the planned build-out of the lot at the time of the investigation was to be staggered, with construction of the eastern most unit beginning first. Underground utilities serving the existing residences also limited test probe locations. The test piers were installed to depths ranging from 7.0 to 38.0 feet below the existing ground surface, final depths of each test pier can be found in the Helical Pier Test Probe Observation Sheet attached in Appendix B. Test piers HP-1, HP-2, HP-3, and HP-4 all encountered a refusal condition, while HP-5 was terminated prior to reaching a refusal condition. Test piers HP-3 and HP-4 reached the refusal condition at shallow final depths of 7.0 and 8.0 feet below the ground surface, respectively. Due to the shallow installation depths of HP-3 and HP-4, elevation vs. recorded torque plots were not produced, though elevation vs. torque plots for HP-1, HP-2, and HP-5 can be found in Appendix B. The three plots show the recorded torque depicted as the gray line and calculated torques for different helix configurations (using surface area proportional calculations as discussed in Section 3.2) shown in either orange or blue.

In general, HP-1 and HP-2 were observed to encounter similar drilling conditions with intermittent sections of smooth drilling and heavy grinding and slow drilling. HP-1 and HP-2 experienced relatively consistent torque increases with depth to a maximum achieved at an elevation of 6,236-ft (approximately 25 to 26 feet below the existing ground surface). Below 6,236-ft the torque values decreased until HP-1 and HP-2 reached a refusal condition at approximately 6,228.5-ft and 6,225-ft, respectively. Both HP-1 and HP-2 were terminated in a layer of stony colluvium identified during the 2017 drilling effort. Stony colluvium or the mixture of dense loess and colluvium are assumed to serve as suitable load bearing soils for deep foundation elements.

Test pier HP-5 was installed in a layer of lacustrine lakebeds identified during the 2017 drilling effort. The lakebeds were classified as lean clay through an extensive laboratory testing regime. Young lakebeds were identified to approximately 28 feet below the existing ground surface, with stiffer, older lakebeds identified between 28 and 121.5 feet bgs. The elevation vs. torque plots for HP-5 show a generally steady torque increase with depth to a maximum achieved at an elevation of 6,225-ft where the torque begins to decrease. Test Pier HP-5 installation was stopped at an approximate elevation of 6,224-ft.

#### 6.4.2 Verification Tests Results

Two tensile verification tests were conducted during the helical pier test probe installation. One tensile verification test was conducted on HP-1 within the layer of stony colluvium, with the second tensile verification test completed on HP-5 within the older lacustrine lakebed deposits. The verification tests were conducted in order to determine a site specific  $K_t$  value, which relates the measured torque to the geotechnical capacity of the pier, as described previously in Section 3.2.

Data from the tests were analyzed as recommended by the ICC-ES Acceptance Criteria AC358 for Helical Systems and Devices Section 4.4.1.2 where the ultimate geotechnical capacity of the pier is taken as the test load causing a net displacement (i.e., elastic compression/tension subtracted from total measured displacement) of 0.10 times the average diameter of the helices or, in this case, 0.8-inches. The Davisson Method (Davisson, 1973) is commonly used to determine failure criteria of piers based on the theoretical elastic elongation of the pier.

Based on this method the measured ultimate tensile capacity for HP-1, which reached a refusal condition within a stony layer of colluvium, is zero (0) kips; i.e., when an uplift load was applied to the pier, it moved more than the allowable 0.8 inches before any uplift resistance was measured. The measured ultimate capacity for HP-2 which was terminated at a torque of 3,900 ft-lbs was calculated to be 14.8 kips. Test results are summarized in Table 6-2 below and verification test plots can be found in Appendix C.

**Table 6-2: Helical Pier Verification Test Results Summary**

Helical Pier	Helical Pier Test Date	Test Type	Installation Torque (ft-lbs)	Installation Depth (ft)	Soil Type	Measured Ultimate Tensile Capacity (kips)
HP-1	March 11, 2019	Tension	Refusal	33.5	Stony Colluvium	0.0
HP-5	March 12, 2019	Tension	3,900	38.0	Lacustrine Lean Clay	14.8

In summary, any helical pier that reaches a refusal condition within the layer of stony colluvium is assumed to have no tensile capacity, unless additional testing indicates otherwise. We predict when a pier reaches a refusal condition the pier continues to spin and disturbs the soil in contact with the helices, reducing the in-situ strength the soil had prior to disturbance. The measured tensile capacity and torque for HP-5 indicates a site specific  $K_t$  value of 3.8, which is lower than anticipated. One explanation for the low value is although the helical pier was installed to a recorded torque of 3,900 ft-lb, the installation began to slow and the soil was likely disturbed prior to the verification test. Additional verification testing of helical piers during construction is strongly recommended, especially to establish a  $K_t$  value for compression (see Section 7.1.3).

## 7.0 RECOMMENDATIONS

### 7.1 General Foundation Recommendations

All footings and grade beams should be placed below the frost line, including exterior footings for awnings and porches. The building code for Teton County requires that footings be placed at a minimum depth of 34 inches from finished grade, with a minimum foundation exposure of 6 inches above finished grade. Minor cracks in the foundation walls, floor slabs, and sheetrock are normal and should not be a cause for concern.

Due to the depth of the loose fill and collapsible soils along the southern edge of the building pad and expansive soils on the northern half of the building pad, final building locations may be such that they span both the potentially collapsible *and* expansive soils. Deep foundation elements such as helical piers are recommended to reduce the risk of both settlement and swell. The foundation system should consist of grade beams spanning the piers. A structural slab supported by piers is also recommended to reduce the risk of damage to the floor slab due to differential settlement. In the event any portion of the building footprint is underlain by expansive soils, grade beams and structural slabs should be isolated from the soil subgrade using 4 to 6-inch void forms. Recommendations for helical piers are provided below.

#### 7.1.1 Helical Pier Design Recommendations

We make the following design recommendations for helical piers:

- We recommend designing helical piers assuming an ultimate compressive capacity of 30 kips per pier. Assuming a  $K_t$  value of 7.5 as discussed in Section 3.2, the required installation torque will be approximately 4,000 ft-lb. Helical pier test probes show this is achievable using a double helix configuration of 8-inch and 10-inch helices on a solid 1-3/4-inch square shaft. Production helical piers are estimated to achieve the target torque at elevations between 6,235 and 6,240-ft.
- Based on the HP-1 and HP-5 verification test results, piers reaching refusal in the stony soils may not be assumed to have tension capacity unless test results during construction determine otherwise. Using a site-specific  $K_t$  value for tension of approximately 3.5 for piers installed in the lake beds, as determined by the HP-5 verification test, an ultimate per pier tension capacity of 14 kips may be achieved with an installation torque of 4,000 ft-lb. We recommend relying as little on tension capacity of the helical piers as possible during design.
- Should several closely-spaced piers be required, such as for a heavily loaded interior column, the piers shall be battered such that the helices at the end of the pier are spaced greater than three diameters of the largest helix.

### **7.1.2 Helical Pier Construction Recommendations**

We make the following construction recommendations for helical piers:

- Using a lead section with larger helices (i.e., two 10-inch, or 10 and 12-inch helices) is anticipated to achieve the desired torque at shallower depths than the double helix, resulting in a lower cost per pier. However, the lead sections with larger or more helices will cost more and may increase the chance of reaching refusal in the underlying gravelly soil.
- We recommend specifying an angled leading helix edge for either configuration, preferably manufactured rather than shop-cut, in order to promote adequate penetration and to reduce the likelihood for piers reaching a refusal condition.
- Helical piers should be installed a minimum of five diameters of the largest helix below the ground surface (i.e., the surface of the prepared foundation subgrade) for the torque vs capacity relationship to be valid. Compression capacity may remain valid at depths less than five helix diameters from the ground surface, but tension may not (Pack, 2009). This should not pose an issue with construction due to the thickness of the loess.
- Any helical pier that is installed in the potentially expansive lacustrine lakebeds along the north portion of the property shall have a minimum installation depth of 12-feet below the bottom of footing in order to go below the depth of wetting, as suggested by Perko (2009).

### **7.1.3 Helical Pier Construction Testing**

We recommend performing a minimum of two (2) compression verification tests prior to the start of production piers to verify the torque to capacity relationship for vertical compression loads. Load should be applied in equal increments up to pier failure or to the structural capacity of the pier, which comes first. A minimum of 5% of the production piers should be proof tested in compression to verify pier installation is consistent with the design assumptions. Testing shall be performed in accordance with ASTM D 1143 and D 3689.

## **7.2 Foundation Drains**

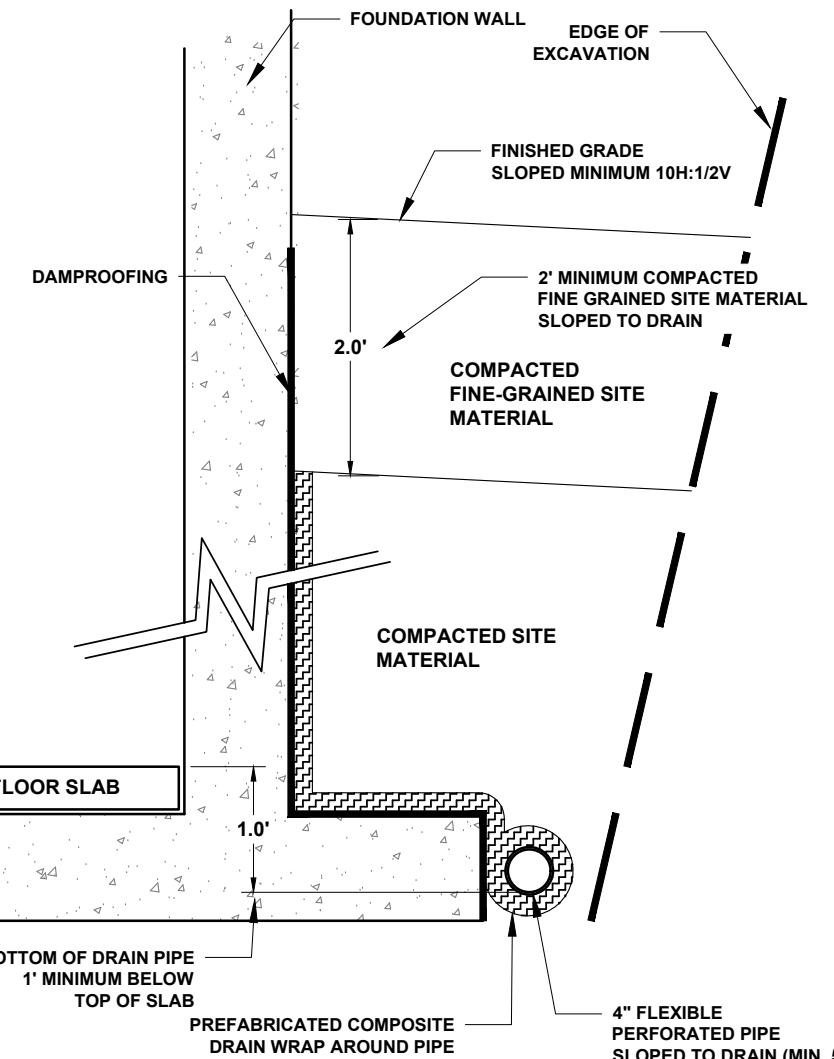
Due to the moisture sensitivity and poor drainage properties of site soils, proper drainage is important throughout the entirety of the project site. We recommend constructing foundation drains at the base of foundation elements. Damp proofing, rather than water proofing, will be adequate for foundation walls at this site.

Two drainage alternatives are illustrated in Figure 3 and are described as follows:

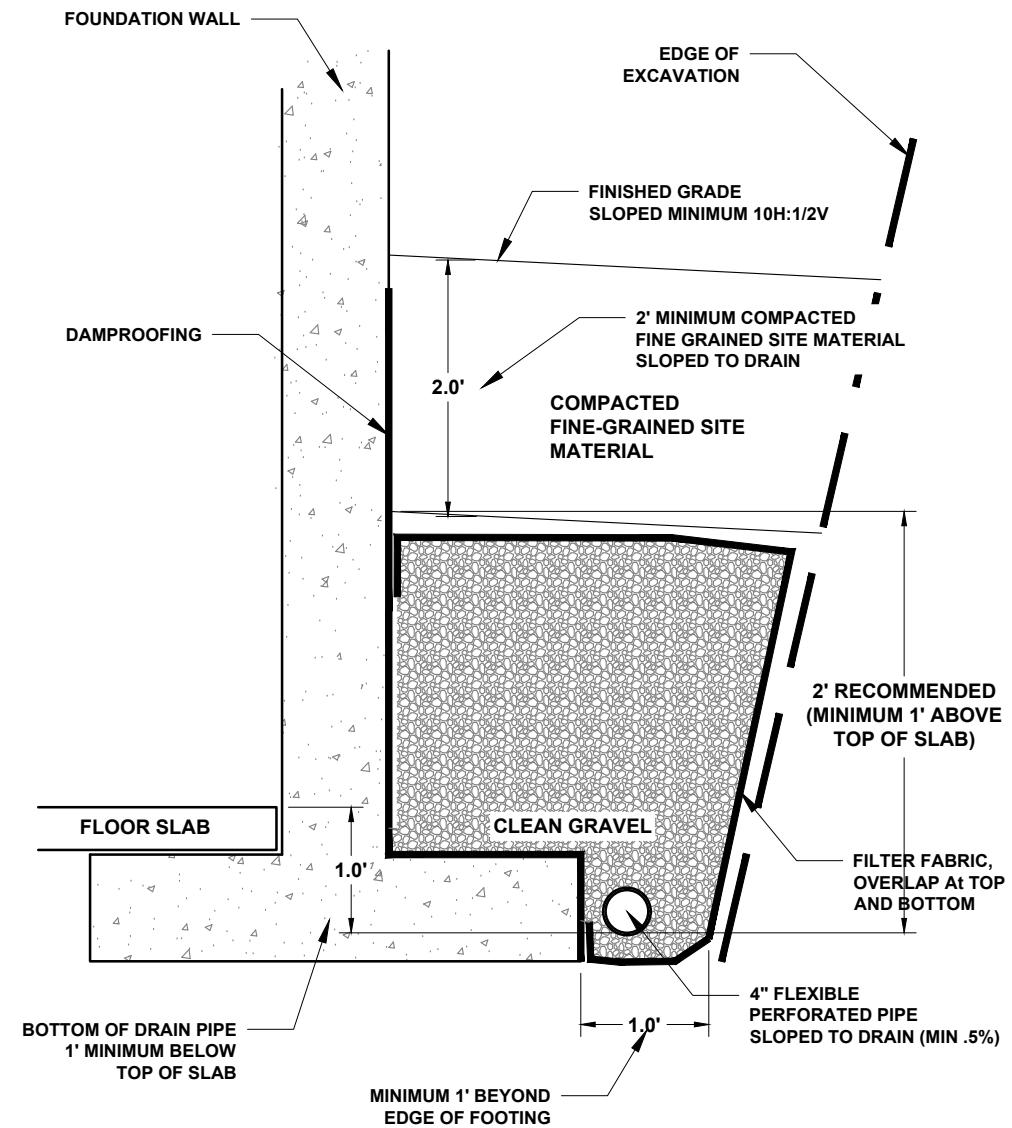
1. One alternative is a prefabricated composite drain, which consists of an open wick layer laminated to filter fabric to reduce infiltration of soil. The exterior of the wall is damp-proofed and the drain is laid against the damp-proofing layer. The excavation is backfilled

### ALTERNATIVE #1: USING PREFABRICATED COMPOSITE DRAIN

(REQUIRED FOR FOUNDATIONS PLACED  
GREATER THAN 6-FT BELOW FINAL GRADE)



### ALTERNATIVE #2: USING DRAIN GRAVEL AND FILTER FABRIC



DRAFTED BY:	HC
REVIEWED BY:	CHI
PROJECT NUMBER	

SHEET TITLE:  
Figure 3  
Foundation Drain Alternatives

PROJECT TITLE:  
Geotechnical Site Investigation  
984 Budge Drive  
Jackson, Wyoming



**JORGENSEN**  
Geotechnical, LLC  
307-733-5150 www.jorgeng.com

with compacted site material and the drain is covered by at least 2 feet of compacted site soil that is sloped to drain (minimum 5% for 10 feet). The composite drain is wrapped around a perforated drain pipe located a minimum of 1 foot below the top of the slab. The drain pipe may slope at a minimum of 0.5% and drain to daylight on the slope. This drain alternative (prefabricated composite drain) is required for foundations placed greater than 6-ft below final grade.

2. A second alternative involves placement of clean angular drain gravel or crushed stone between the foundation wall and the edge of the excavation. Drainage tiles, perforated pipe, or other approved systems should be installed at or below the area to be protected and should discharge by gravity or mechanical means into an approved drainage system. The drain pipe may slope at a minimum of 0.5% and drain to daylight or a sump. Gravel drains should extend at least 1 foot beyond the outside edge of the footing and 6 inches above the top of the footing. The gravel backfill is wrapped in an approved filter fabric. At least 2 feet of compacted fine-grained backfill (sloped to drain) is placed above the gravel envelope. The advantage of this technique is that the gravel backfill can usually be placed without compaction, reducing backfill cost and difficulty.

It is important to place the foundation drains low enough to adequately collect and discharge any water that may accumulate in utility trenches below the footings or in the gravel capillary break beneath concrete floor slabs. Drains that are placed too shallow or with insufficient gradient may fail to perform. Jorgensen is available to review the foundation drain design to ensure consistency with our recommendations.

### **7.3 Excavation and Cut Slope Stability**

OSHA regulations (29CFR1926) appear to classify the loess site soils as Type A. For planning and design purposes, simple cut slopes should be no steeper than 0.75H:1V. If the loess is observed during construction to be fissured, which is often the case, cut slopes shall be no steeper than 1H:1V. According to OSHA, any cut slope greater than 20 feet in height requires additional analysis. These are recommendations based on observations made at the time of the investigation. The contractor shall be responsible for adherence to OSHA and other safety regulations by observing soil conditions at the time of construction.

### **7.4 Final Backfilling and Grading**

Properly compacted backfill and site drainage are extremely important. Final grading should provide positive drainage of at least 0.5 foot in the first 10 feet away from the structure. Adequate gutters are strongly recommended. Roof runoff should be discharged at least 3 feet away from the building or exterior slabs. Swales or other moisture collection points should be avoided if possible within 20 feet of the footings. Drainage swales should slope a minimum of 2%. There should be no irrigation within 5 feet of foundation walls. Irrigation pipes should be pressure-tested when installed and checked annually for leaks.

Exterior backfill around buildings should consist of moisture-conditioned site materials placed in lifts and compacted to a standard of at least 92% of the maximum dry density as determined

by Standard Proctor testing (ASTM D698). Soil should be moisture conditioned to between -2% and +2% of the optimum moisture content. Fine-grained soils are most efficiently compacted using a sheepfoot or padfoot roller. Exterior fills should be placed as early as possible to reduce moisture infiltration along foundation walls. However, do not over-compact exterior backfills against “green” foundation walls. Utility trenches should also be backfilled in lifts and compacted with the same care as exterior backfills, lest the fill settles causing damage to overlying landscaping, hardscapes, etc.

### **7.5 Interior Slabs-on-Grade**

Interior slabs should be at least 4 inches thick, and any slabs bearing vehicles should be at least 6 inches thick, or as approved by a Structural Engineer. Minor floor cracking of slab-on-grade construction is difficult, if not impossible, to prevent. Such cracking is normal and should be expected to occur with time. Buildings are almost never free of cracks, and cracking is caused by many factors other than soil movement, such as concrete shrinkage or curling, or daily and seasonal variability in temperature and humidity.

To reduce the risk of damage from differential settlement, interior slabs should be designed with adequate reinforcement and span between deep foundation elements. As stated in Section 7.1, if any portion of the structure is overlying the potentially expansive soils, the slab should be isolated from the subgrade soil using a 4 to 6-inch void form.

An impermeable layer (usually plastic) is suggested beneath interior slabs, underlain by 4 inches of clean drain gravel that will act as a capillary break to reduce dampness. Two options are available to reduce the tendency for the concrete to crack or curl as it dries:

1. A blotter layer may be placed under the slab. In the past, loose sand has been used for this purpose, but is no longer recommended. A cover of 4 inches of trimmable, compactible, granular material may be placed over the impermeable layer to receive the concrete slab. This material usually consists of “crusher run material”, which varies in size from about 1.5-inch down to rock dust. Alternatively, 3 inches of compacted, fine-graded material such as crusher fines or manufactured sand may be used.
2. The blotter layer may be eliminated if the concrete is reinforced properly. The attached article entitled “Controlling Curling and Cracking in Floors to Receive Coverings” (Appendix D) provides a discussion of proper floor slab reinforcement. If the contractor needs additional guidance on reinforcement, a Structural Engineer should provide it.

References for three articles from the American Concrete Institute (ACI) that discuss these options can be found in the Reference section at the end of this report. We are able to offer additional guidance if requested.

## **7.6     Exterior Slabs-on-Grade**

Exterior slabs (e.g., sidewalks, patios, driveways, etc.) typically sustain the greatest damage. Cracking is almost impossible to avoid, and freeze-thaw adds to the difficulty caused by soil movement. The silty loess soils may cause particularly severe frost damage.

Exterior slabs should be at least 4 inches thick, 6 inches if supporting vehicles, or as directed by the Structural Engineer. Exterior slabs should not be tied to foundation walls. Any movement of exterior slabs may be transmitted to the foundation walls, resulting in damage. Posts for patios or other exterior columns should not bear on exterior slabs. If the slabs settle or rise, the movement can be transmitted to the post, resulting in damage to the structure.

Fine-grained material should be removed below exterior slabs to a depth of 2 feet and replaced with native soil compacted to a dry density of 92% ASTM D698 and at least 6 inches of road mix gravel (e.g., WYDOT Grading H). The gravel and the compacted subgrade should be separated by a lightweight, non-woven geotextile (e.g., Mirafi 140N). Expansion joints are recommended in all concrete flatwork.

## **7.7     Ventilation and Radon**

Evaluation of radon was beyond the scope of work; local codes should be followed and specialty contractors employed, if necessary. The building contractor is ultimately responsible for following local building codes. Ventilation to reduce moisture and potential accumulation of radon gas is required by code for habited and inhabited spaces below grade. A capillary break layer (Section 7.5) may be necessary to accommodate a radon vent pipe under interior slabs.

## **7.8     Reinforcing, Utilities, Testing, and Concrete Considerations**

Footings, slabs, and foundation walls should be reinforced to resist differential movement. Consultation with a Structural Engineer to specify adequate reinforcement is suggested. Water and sewer lines should be pressure tested before backfilling. Exterior concrete should contain 5% to 7% entrained air.

## **7.9     Observations during Construction**

A representative of this office should observe construction of any foundation or drainage elements recommended in this report. Site grading, soil compaction, and foundation installation should be observed by a representative of Jorgensen. Recommendations in this report are contingent upon our involvement. If any unexpected soils or conditions are revealed during construction, this office should be notified immediately to survey the conditions and make necessary modifications.

We are able to provide the most value observing site conditions at the following times:

1. Upon completion of site preparation to verify all organics and unsuitable material have been removed, as well as identify the presence or absence of the potentially expansive soils.
2. During placement and compaction of all fills.
3. During all helical pier testing and installation (continuous observation required by Teton County code).

Notice shall be provided at a minimum of 24 hours before the requested observation.

## **8.0 LIMITATIONS**

This report has been prepared based on a limited amount of data. Actual site conditions may vary. The report is for single use and under no circumstances are the figures and text to be used separately. These services have been performed in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranty is made or implied.

## **9.0 REFERENCES**

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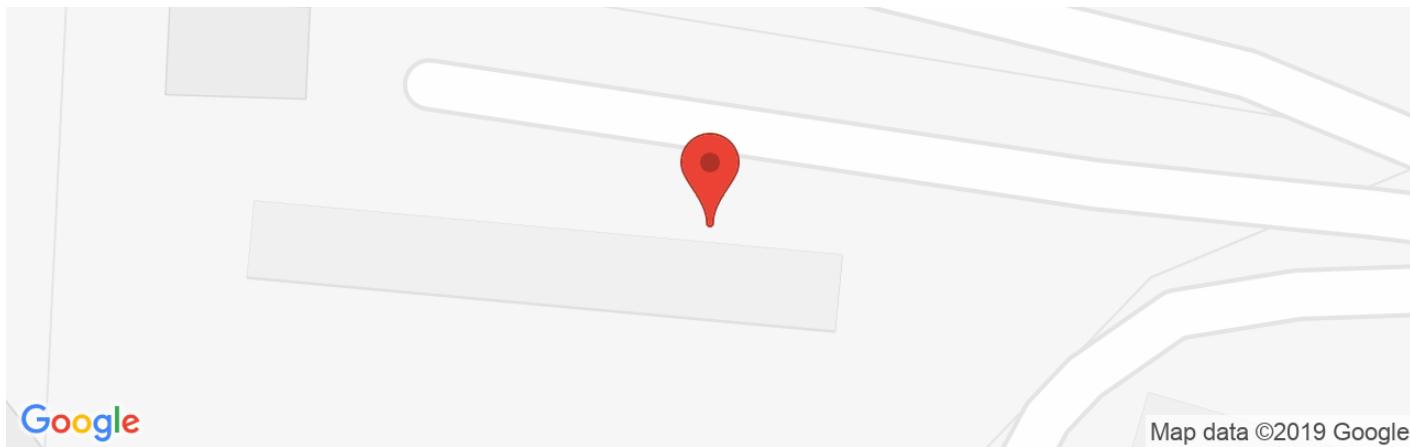
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**APPENDIX A:**  
**U.S. Seismic Design Maps and Summary Reports**


**OSHPD**

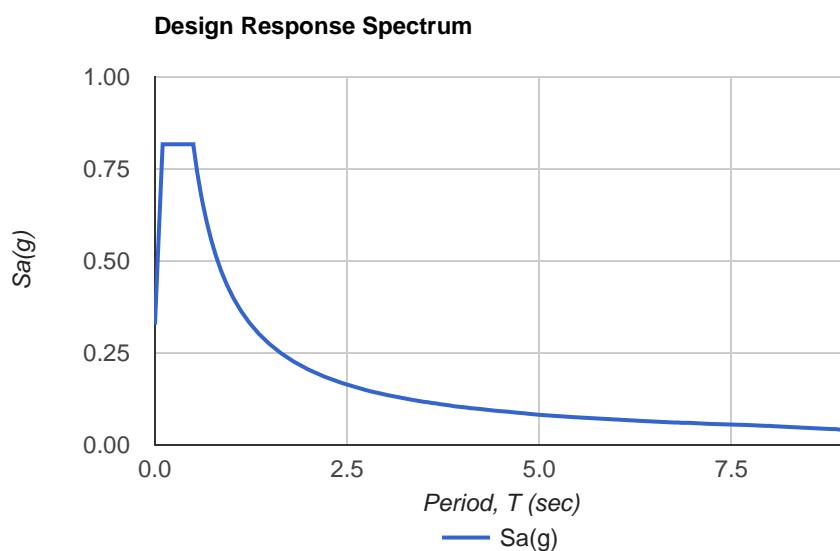
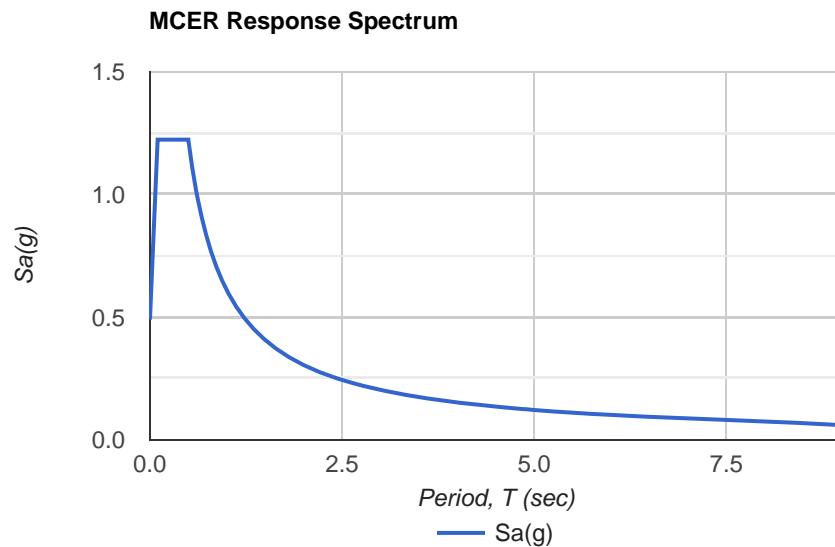
# 984 Budge Drive

**Latitude, Longitude: 43.47517634, -110.78684913**

**Google**

Map data ©2019 Google

<b>Date</b>	3/21/2019, 2:16:13 PM																																																	
<b>Design Code Reference Document</b>	ASCE7-10																																																	
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<table border="1"> <thead> <tr> <th>Type</th><th>Value</th><th>Description</th></tr> </thead> <tbody> <tr> <td><math>S_S</math></td><td>1.2</td><td>MCE<sub>R</sub> ground motion. (for 0.2 second period)</td></tr> <tr> <td><math>S_1</math></td><td>0.366</td><td>MCE<sub>R</sub> ground motion. (for 1.0s period)</td></tr> <tr> <td><math>S_{MS}</math></td><td>1.224</td><td>Site-modified spectral acceleration value</td></tr> <tr> <td><math>S_{M1}</math></td><td>0.611</td><td>Site-modified spectral acceleration value</td></tr> <tr> <td><math>S_{DS}</math></td><td>0.816</td><td>Numeric seismic design value at 0.2 second SA</td></tr> <tr> <td><math>S_{D1}</math></td><td>0.407</td><td>Numeric seismic design value at 1.0 second SA</td></tr> </tbody> </table>			Type	Value	Description	$S_S$	1.2	MCE <sub>R</sub> ground motion. (for 0.2 second period)	$S_1$	0.366	MCE <sub>R</sub> ground motion. (for 1.0s period)	$S_{MS}$	1.224	Site-modified spectral acceleration value	$S_{M1}$	0.611	Site-modified spectral acceleration value	$S_{DS}$	0.816	Numeric seismic design value at 0.2 second SA	$S_{D1}$	0.407	Numeric seismic design value at 1.0 second SA																											
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Type	Value	Description
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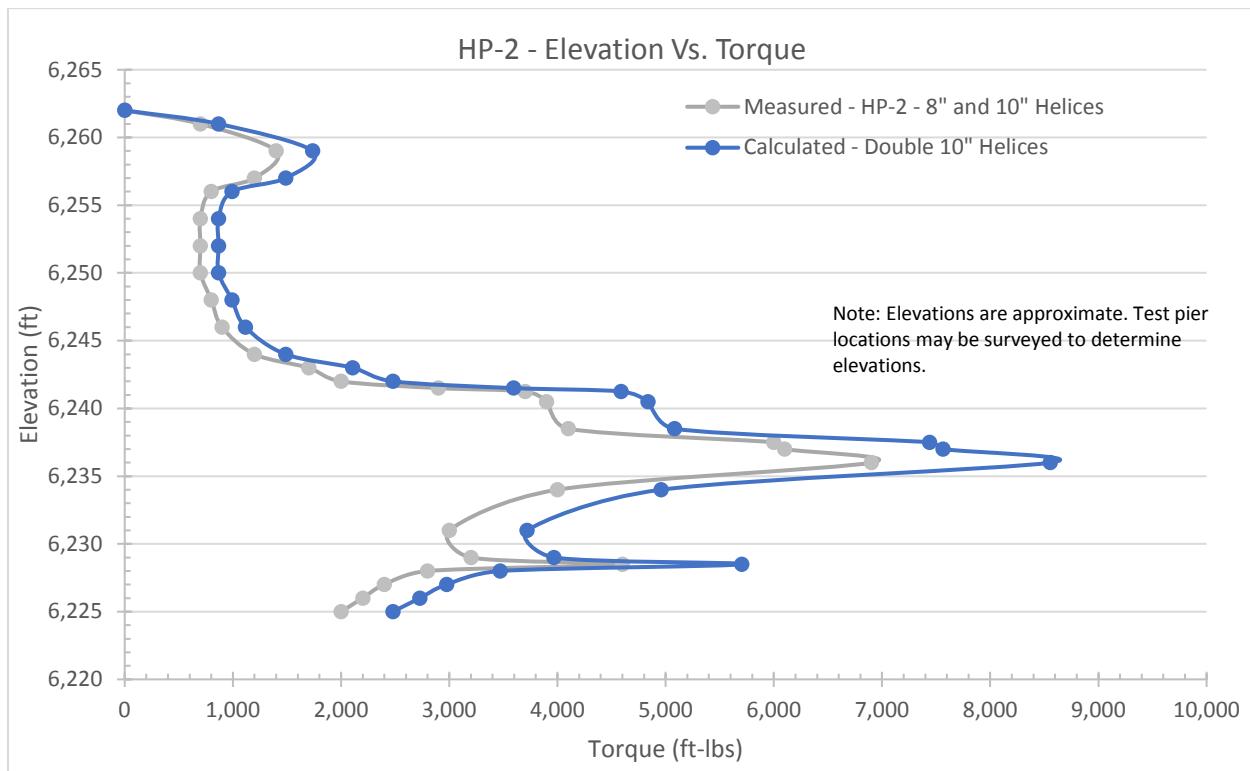
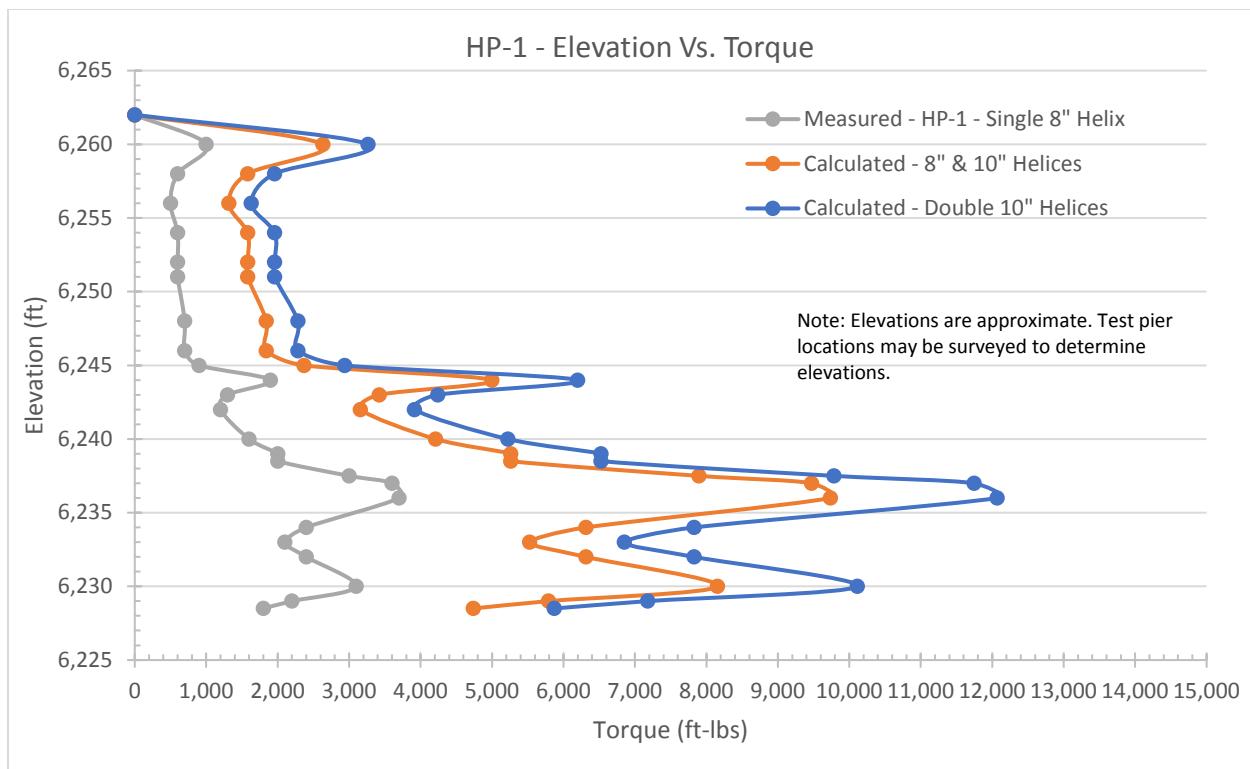
#### DISCLAIMER

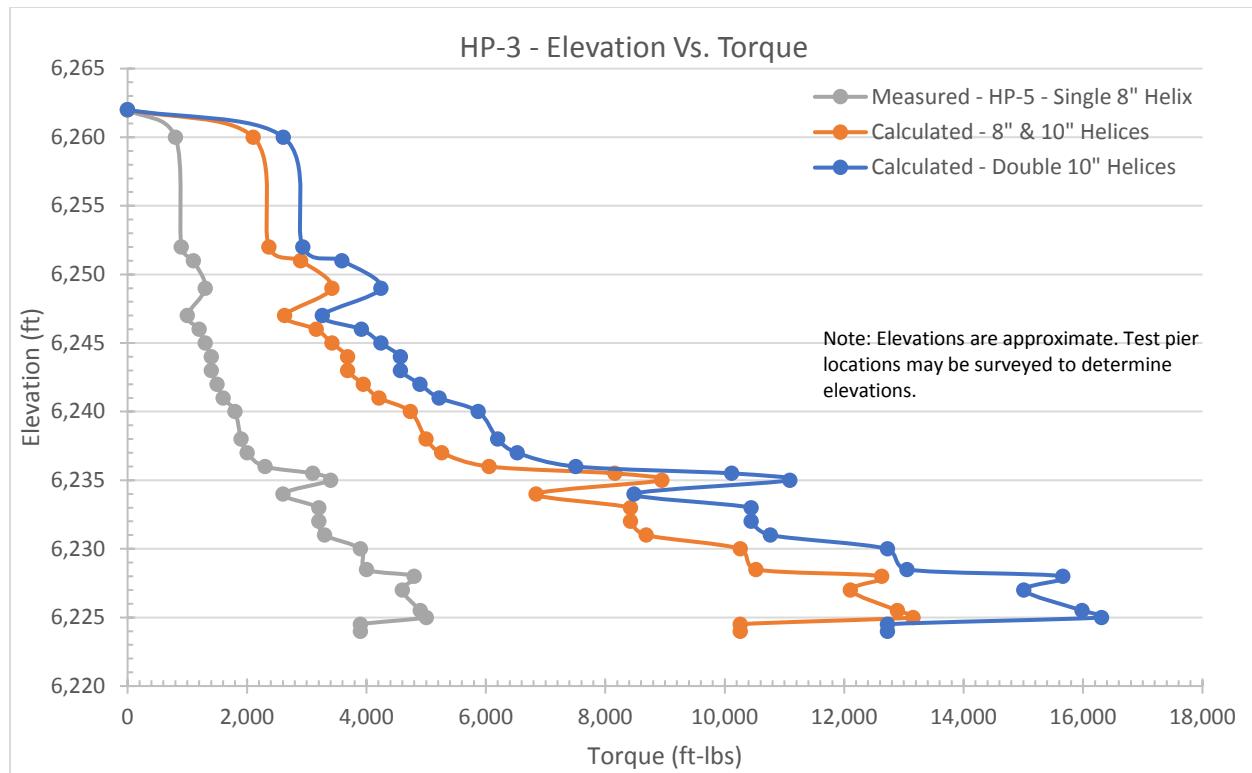
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**APPENDIX B:**  
**Helical Pier Test Probe Observation Forms and Plots**



## Test Helical Pier Observation Form

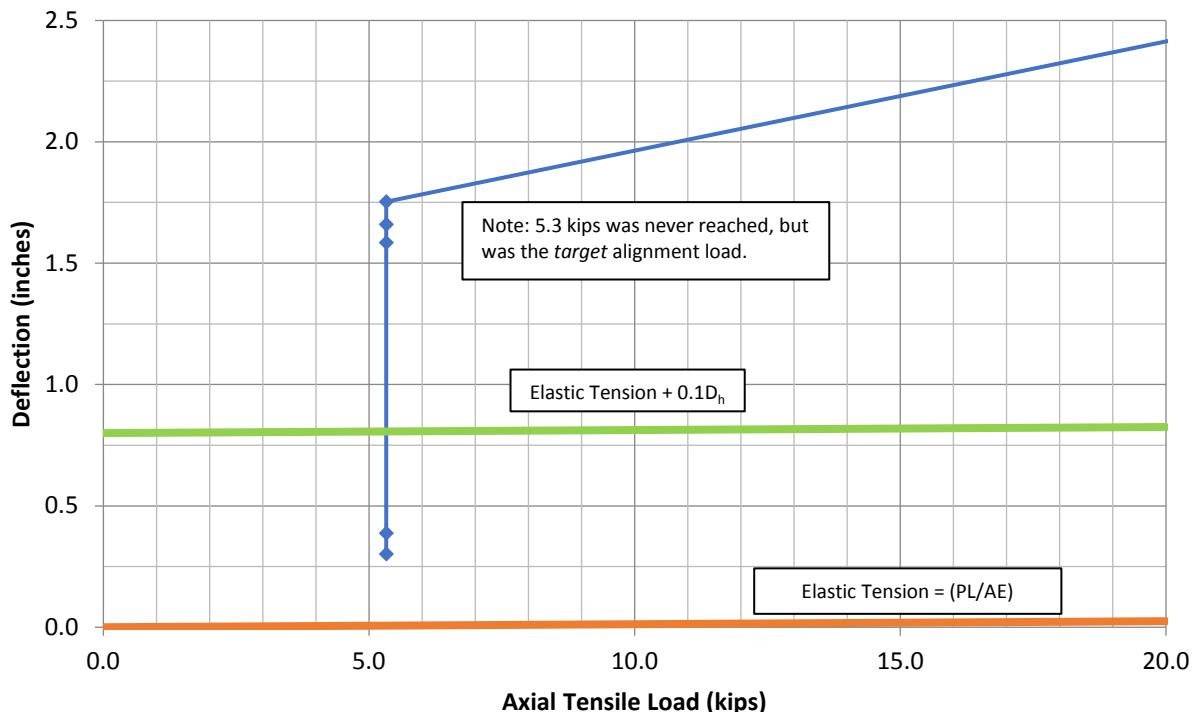




**APPENDIX C:**  
**Helical Pier Verification Test Results**

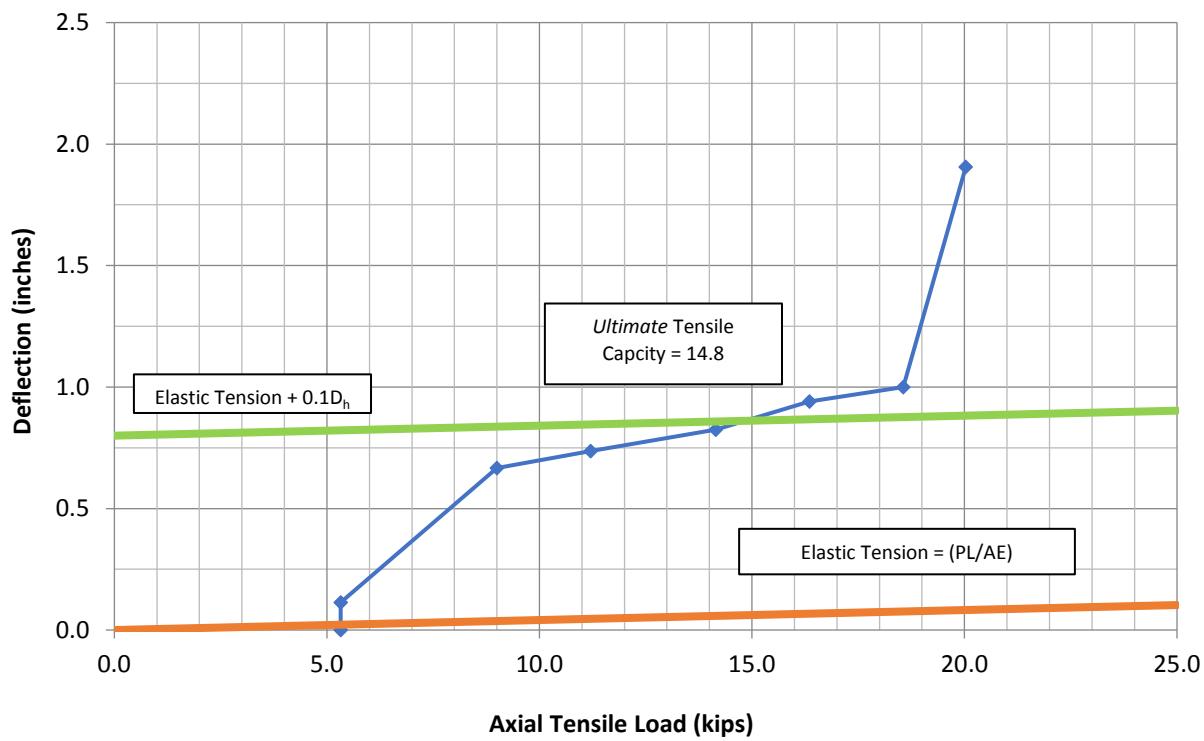
# Tension Load Test: HP-1 - 984 Budge Drive

Date: 3/11/2019



# Tension Load Test: HP-5 - 984 Budge Drive

Date: 3/12/2019



Bluffs Development Group, LLC  
984 Budge Drive  
JA Project No. 16092

Utility Study  
WATER / SEWER DEMANDS

JORGENSEN ASSOCIATES, INC  
PO Box 9550  
Jackson, WY 83002  
307.733.5150

BY: AJ/JK  
Date: 01/16/2020

Average Day Demand <sup>1</sup>	125	gpd
Maximum Day Demand <sup>1</sup>	340	gpd
Peak Hour Factor <sup>3</sup>	4	PHF

WATER DEMAND						
	Occupancy Per Lot <sup>4</sup>	Number of Lots <sup>4</sup>	Total Occupancy <sup>5</sup>	Average TOTAL, gpd	Maximum TOTAL, gpd	PEAK HOUR, gpm
Single Family Lot	5	5	28	3,500	9,520	26.4
Subtotal Housing				3,500	9,520	26.4
	Quantity	Unit	Average inch/day	Average TOTAL, gpd	Maximum TOTAL, gpd	PEAK HOUR, gpm
Irrigation System	16,000	SF	0.25	2,493	4,987	13.9
Subtotal Irrigation				2,493	4,987	13.9
	Building Size, SF	Building Type, IBC	Number of Sprinklers	Flow Per Sprinkler, gpm	Required Pressure, psi	Fire Sprinkler Flow <sup>5</sup>
Fire Suppression	3,500	R3/4	2	15	60	30.0
Subtotal Fire Suppression						30.0
TOTAL WATER DEMAND				5,993	14,507	70

Maximum Day Demand <sup>2</sup>	150	gpd
Average Daily Demand <sup>2</sup>	60%	gpd
Peak Hour Factor <sup>3</sup>	4	PHF

SANITARY SEWER DEMAND						
	Bedrooms Per Lot	Number of Lots <sup>4</sup>	Total Bedrooms <sup>5</sup>	Average TOTAL, gpd	Maximum TOTAL, gpd	PEAK HOUR, gpm
Single Family Lot	4	5	22	1980	3300	9.2
TOTAL SANITARY SEWER DEMAND				1,980	3,300	9

Note:

<sup>1</sup> Water Demand based on daily rates from the WYDEQ CH 12, Section 8

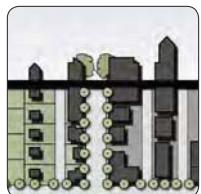
<sup>2</sup> Sewer Demand based on daily flow rates from the WYDEQ CH 25, Section 3, Table 1

<sup>3</sup> Peak Hour Factor based on busiest hour occurring during the busiest quarter of the day

<sup>4</sup> Occupancy/Bedroom count based on current development program

<sup>5</sup> An ARU with 2 bedrooms was added for Lot 5

## 4.2: Northern Hillside



Village Form

This TRANSITIONAL Subarea must strike a delicate balance between allowing some mixed use and residential development while maintaining wildlife permeability and the natural form of the undeveloped hillsides. A key to successful future development will be to sensitively place development in harmony with the existing terrain in order to minimize land disturbance. Development intensity in this subarea should be less than that found within the adjacent Midtown Highway Corridor (Subarea 4.1). Structures will be allowed up to two stories and may be configured in a variety of layouts with attached and detached units blending into the natural surroundings. Smaller building footprints will be encouraged in order to provide adequate open and/or landscaped areas. A variety of residential types, including live/work, multifamily, and duplexes, may be appropriate in this area depending on the specific characteristics of a site and its existing topography. Low density single family housing may continue to be appropriate at the edges of this area, particularly when adjacent to existing undisturbed hillsides. Future development should address wildlife permeability and assist in guiding wildlife movement to future roadway crossings.



## **SECTION 6 – APPLICATION MATERIALS**

- **6.1 Applications**
- **6.2 Quitclaim Deed**
- **6.3 Letter of Authorization**
  - **6.4 Title Report**
  - **6.5 Plat 1051**
- **6.6 Pre-application Conference Checklist**



**PLANNING PERMIT APPLICATION**  
**Planning & Building Department**

150 E Pearl Ave. | ph: (307) 733-0440  
P.O. Box 1687 | [www.townofjackson.com](http://www.townofjackson.com)  
Jackson, WY 83001

*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: 984 Budge Subdivision

Physical Address: 984 Budge Drive, Jackson, WY 83001

Lot, Subdivision: Lot 1, Crystal Valley Addition

PIDN: 22-41-16-32-1-07-001

**PROPERTY OWNER.**

Name: Bluffs Development Group, LLC

Phone: \_\_\_\_\_

Mailing Address: PO Box 551, Jackson, WY

ZIP: 83001

E-mail: \_\_\_\_\_

**APPLICANT/AGENT.**

Name: Jorgensen Associates, Inc.

Phone: 307-733-5150

Mailing Address: PO Box 9550

ZIP: 83002

E-mail: bschulte@jorgeng.com

**DESIGNATED PRIMARY CONTACT.**

Property Owner  Applicant/Agent

**TYPE OF APPLICATION.** Please check all that apply; review the type of application at [www.townofjackson.com/200/Planning](http://www.townofjackson.com/200/Planning)

**Use Permit**

Basic Use

**Physical Development**

Sketch Plan

**Interpretations**

Formal Interpretation

Conditional Use

Development Plan

Zoning Compliance Verification

Special Use

Design Review

**Amendments to the LDRs**

**Relief from the LDRs**

**Subdivision/Development Option**

LDR Text Amendment

Administrative Adjustment

Subdivision Plat

Map Amendment

Variance

Boundary Adjustment (replat)

**Miscellaneous**

Beneficial Use Determination

Boundary Adjustment (no plat)

Other:

Appeal of an Admin. Decision

Development Option Plan

Environmental Analysis

**PRE-SUBMITTAL STEPS.** To see if pre-submittal steps apply to you, go to [www.townofjackson.com/200/Planning](http://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 #: P19-251

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](http://www.townofjackson.com/200/Planning) and select the relevant application type for submittal requirements.

Have you attached the following?

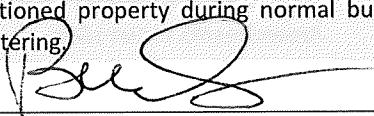
**Application Fee.** Fees are cumulative. Go to [www.townofjackson.com/200/Planning](http://www.townofjackson.com/200/Planning) and select the relevant application type for the fees.

**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](http://www.townofjackson.com/DocumentCenter/View/102/Town-Fee-Schedule-PDF).

**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](http://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

Brendan Schulte

Name Printed

11/16/2020

Date

Senior Project Manager

Title



*First American Title  
Insurance Company*

**WARRANTY DEED**

Jody R. Burkes and Linda S. Burkes, duly acting as Trustees of the Amended and Restated Burkes Family Trust created u/t/a dated January 1, 2014, of Teton County, Wyoming, GRANTORS, for and in consideration of Ten Dollars (\$10.00) and other good and valuable consideration in hand paid, receipt of which is hereby acknowledged, CONVEY AND WARRANT unto **Bluffs Development Group, LLC**, a Wyoming limited liability company, P.O. Box 551, Jackson, Wyoming 83001, GRANTEE, the following-described property situated in the County of Teton, State of Wyoming, to-wit:

**Lot 1 of Crystal Valley Addition to the Town of Jackson, Teton County, Wyoming, according to Plat No. 1051 recorded June 24, 2002 with the Clerk of Teton County, Wyoming,**

*Parcel Identification No. 22-41-16-32-1-07-001*

including and together with all and singular the tenements, hereditaments, appurtenances and improvements or thereunto belonging and any rights of grantor to minerals thereunder, but subject to taxes, assessments, covenants, restrictions, reservations, easements and rights-of-way of sight and/or record,

hereby releasing and waiving all rights under and by virtue of the homestead exemption laws of the State of Wyoming, for purposes of this conveyance.

WITNESS the due execution and delivery of this instrument effective as of the 16th day of June, 2017.

Released	
Indexed	✓
Abstracted	
Scanned	

*Jody R. Burkes*  
Jody R. Burkes, Trustee of the Amended  
and Restated Burkes Family Trust u/t/a  
dated 1/1/2014

*Valerie L. Adams As Attorney-in-Fact  
For Linda S. Burkes*  
Valerie L. Adams, as Attorney-in-Fact for Linda S. Burkes, Trustee of the Amended  
and Restated Burkes Family Trust u/t/a  
dated 1/1/2014

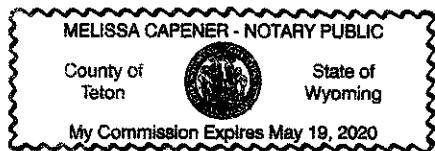
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GRANTOR: BURKES, JODY R ET AL TRUSTEE  
GRANTEE: BLUFFS DEVELOPMENT GROUP LLC  
Doc 0929996 bk 947 pg 488-489 Filed At 14:58 ON 06/19/17  
Sherry L. Daigle Teton County Clerk fees: 15.00  
By Mary Smith Deputy

STATE OF WYOMING )  
 ) ss.  
COUNTY OF TETON )

The foregoing instrument was acknowledged before me by **Jody R. Burkes, duly acting as Trustee of the Amended and Restated Burkes Family Trust u/t/a dated January 1, 2014, this 14 day of June, 2017.**

WITNESS my hand and official seal.



(Seal)

STATE OF WYOMING )  
 )  
COUNTY OF TETON )  
 )  
 ) SS.

The foregoing instrument was acknowledged before me by Valerie L. Adams, duly acting as Attorney-in-Fact for Linda S. Burkes, Trustee of the Amended and Restated Burkes Family Trust u/t/a dated January 1, 2014, this 19<sup>th</sup> day of June, 2017.

WITNESS my hand and official seal.



(See)

Notary Public  
My Commission Expires: 5/19/20

## LETTER OF AUTHORIZATION

Bluffs Development Group, LLC, "Owner" whose address is: \_\_\_\_\_  
PO Box 551, Jackson WY 83001

(NAME OF ALL INDIVIDUALS OR ENTITY OWNING THE PROPERTY)

Bluffs Development Group, LLC

Bulls Development Group, LLC, as the owner of property  
more specifically legally described as: LOT 1, Crystal Valley Addition

**(If too lengthy, attach description)**

HEREBY AUTHORIZES Jorgensen Associates, P.C. 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:**

(SIGNATURE) (SIGNATURE OF CO-OWNER)

Title: MANAGER

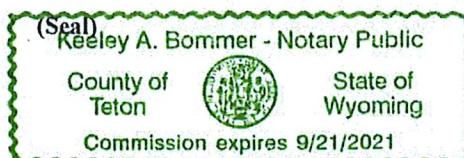
\_\_\_\_\_  
(if signed by officer, partner or member of corporation, LLC (secretary or corporate owner) partnership or  
other non-individual Owner)

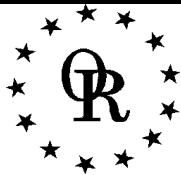
The foregoing instrument was acknowledged before me by STEFAN TODOR this 7<sup>th</sup> day of MARCH, 2001.

WITNESS my hand and official seal.

WITNESS my hand and official seal.

(Notary Public)





Guarantee

SG 08011717

SUBJECT TO THE EXCLUSIONS FROM COVERAGE, THE LIMITS OF LIABILITY AND OTHER PROVISIONS OF THE CONDITIONS AND STIPULATIONS HERETO ANNEXED AND MADE A PART OF THIS GUARANTEE, AND SUBJECT TO THE FURTHER EXCLUSION AND LIMITATION THAT NO GUARANTEE IS GIVEN NOR LIABILITY ASSUMED WITH RESPECT TO THE IDENTITY OF ANY PARTY NAMED OR REFERRED TO IN SCHEDULE A OR WITH RESPECT TO THE VALIDITY, LEGAL EFFECT OR PRIORITY OF ANY MATTER SHOWN THEREIN.

Old Republic National Title Insurance Company, a Florida corporation, herein called the Company  
GUARANTEES

the Assured named in Schedule A, against actual monetary loss or damage not exceeding the liability amount stated in Schedule A which the Assured shall sustain by reason of any incorrectness in the assurances set forth in Schedule A.

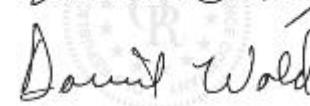
IN WITNESS WHEREOF, OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY has caused its corporate name and seal to be hereunto affixed by its duly authorized officers, the Guarantee to become valid when countersigned on Schedule A by an authorized officer or agent of the Company.

Issued through the Office of:

Jackson Hole Title & Escrow

Authorized Signature

OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY  
A Stock Company  
400 Second Avenue South, Minneapolis, Minnesota 55401  
(612) 371-1111

By  President  
Attest  Secretary

---

## GUARANTEE CONDITIONS AND STIPULATIONS

### 1. Definition of Terms.

The following terms when used in the Guarantee mean:

- (a) the "Assured": the party or parties named as the Assured in this Guarantee, or on a supplemental writing executed by the Company.
- (b) "land": the land described or referred to in Schedule (A)(C) or in Part 2, and improvements affixed thereto which by law constitute real property. The term "land" does not include any property beyond the lines of the area described or referred to in Schedule (A)(C) or in Part 2, nor any right, title, interest, estate or easement in abutting streets, roads, avenues, alleys, lanes, ways or waterways.
- (c) "mortgage": mortgage, deed of trust, trust deed, or other security instrument.
- (d) "public records": records established under state statutes at Date of Guarantee for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without knowledge.
- (e) "date": the effective date.

### 2. Exclusions from Coverage of this Guarantee.

The Company assumes no liability for loss or damage by reason of the following:

- (a) Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
- (b) (1) Unpatented mining claims; (2) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (3) water rights, claims or title to water: whether or not the matters excluded by (1), (2) or (3) are shown by the public records.
- (c) Assurances to title to any property beyond the lines of the land expressly described in the description set forth in Schedule (A)(C) or in Part 2 of this Guarantee, or title to streets, roads, avenues, alleys, lanes, ways or waterways in which such land abuts, or the right to maintain therein vaults, tunnels, ramps or any other structure or improvement; or any rights or easements therein unless such property, rights or easements are expressly and specifically set forth in said description.
- (d) (1) Defects, liens, encumbrances, or adverse claims against the title, if assurances are provided as to such title, and as limited by such assurances.

(2) Defects, liens, encumbrances, adverse claims or other matters (a) whether or not shown by the public records, and which are created, suffered, assumed or agreed to by one or more of the Assureds; (b) which result in no loss to the Assured; or (c) which do not result in the invalidity or potential invalidity of any judicial or non-judicial proceeding which is within the scope and purpose of assurances provided.

### 3. Notice of Claim to be Given by Assured Claimant.

An Assured shall notify the Company promptly in writing in case any knowledge shall come to an Assured hereunder of any claim of title or interest which is adverse to the title to the estate or interest, as stated herein, and which might cause loss or damage for which the Company may be liable by virtue of this Guarantee. If prompt notice shall not be given to the Company, then all liability of the Company shall terminate with regard to the matter or matters for which such prompt notice is required; provided, however, that failure to notify the Company shall in no case prejudice the rights of any Assured under this Guarantee unless the Company shall be prejudiced by such failure and then only to the extent of the prejudice.

### 4. No Duty to Defend or Prosecute.

The Company shall have no duty to defend or prosecute any action or proceeding to which the Assured is a party, notwithstanding the nature of any allegation in such action or proceeding.

### 5. Company's Option to Defend or Prosecute Actions; Duty of Assured Claimant to Cooperate.

Even though the Company has no duty to defend or prosecute as set forth in Paragraph 4 above:

- (a) The Company shall have the right, at its sole option and cost, to institute and prosecute any action or proceeding, interpose a defense, as limited in (b), or to do any other act which in its opinion may be necessary or desirable to establish the title

to the estate or interest as stated herein, or to establish the lien rights of the Assured, or to prevent or reduce loss or damage to the Assured. The Company may take any appropriate action under the terms of this Guarantee, whether or not it shall be liable hereunder, and shall not thereby concede liability or waive any provision of this Guarantee. If the Company shall exercise its rights under this paragraph, it shall do so diligently.

- (b) If the Company elects to exercise its options as stated in Paragraph 5(a) the Company shall have the rights to select counsel of its choice (subject to the right of such Assured to object for reasonable cause) to represent the Assured and shall not be liable for and will not pay the fees of any other counsel, nor will the Company pay any fees, costs or expenses incurred by an Assured in the defense of those causes of action which allege matters not covered by this Guarantee.
- (c) Whenever the Company shall have brought an action or interposed a defense as permitted by the provisions of this Guarantee, the Company may pursue any litigation to final determination by a court of competent jurisdiction and expressly reserves the right, in its sole discretion, to appeal from an adverse judgment or order.
- (d) In all cases where this Guarantee permits the Company to prosecute or provide for the defense of any action or proceeding, the Assured hereunder shall secure to the Company the right to prosecute or provide defense of any action or proceeding, and all appeals therein, and permit the Company to use, at its option, the name of such Assured for this purpose. Whenever requested by the Company, an Assured, at the Company's expense, shall give the Company all reasonable aid in any action or proceeding, securing evidence, obtaining witnesses, prosecuting or defending the action or lawful act which in the opinion of the Company may be necessary or desirable to establish the title to the estate or interest as stated herein, or to establish the lien rights of the Assured. If the Company is prejudiced by the failure of the Assured to furnish the required cooperation, the Company's obligations to the Assured under the Guarantee shall terminate.

## **6. Proof of Loss or Damage.**

In addition to and after the notices required under Section 3 of these Conditions and Stipulations have been provided to the Company, a proof of loss or damage signed and sworn to by the Assured shall be furnished to the Company within 90 days after the Assured shall ascertain the facts giving rise to the loss or damage. The proof of loss or damage shall describe the matters covered by this Guarantee which constitute the basis of loss or damage and shall state, to the extent possible, the basis of calculating the amount of the loss or damage. If the Company is prejudiced by the failure of the Assured to provide the required proof of loss or damage, the Company's obligation to such assured under the Guarantee shall terminate. In addition, the Assured may reasonably be required to submit to examination under oath by any authorized representative of the Company and shall produce for examination, inspection and copying, at such reasonable times and places as may be designated by any authorized representative of the company, all records, books, ledgers, checks, correspondence and memoranda, whether bearing a date before or after Date of Guarantee, which reasonably pertain to the loss or damage. Further, if requested by any authorized representative of the Company, the Assured shall grant its permission, in writing, for any authorized representative of the Company to examine, inspect and copy all records, books, ledgers, checks, correspondence and memoranda in the custody or control of a third party, which reasonably pertain to the loss or damage. All information designated as confidential by the Assured provided to the Company pursuant to this Section shall not be disclosed to others unless, in the reasonable judgment of the Company, it is necessary in the administration of the claim. Failure of the Assured to submit for examination under oath, produce other reasonably requested information or grant permission to secure reasonably necessary information from third parties as required in the above paragraph, unless prohibited by law or governmental regulation, shall terminate any liability of the Company under this Guarantee to the Assured for that claim.

## **7. Options to Pay or Otherwise Settle Claims: Termination of Liability.**

In case of a claim under this Guarantee, the Company shall have the following additional options:

- (a) To Pay or Tender Payment of the Amount of Liability or to Purchase the Indebtedness.  
The Company shall have the option to pay or settle or compromise for or in the name of the Assured any claim which could result in loss to the Assured within the coverage of this Guarantee, or to pay the full amount of this Guarantee or, if this Guarantee is issued for the benefit of a holder of a mortgage or a lienholder, the Company shall have the option to purchase the indebtedness secured by said mortgage or said lien for the amount owing thereon, together with any costs, reasonable attorneys' fees and expenses incurred by the Assured claimant which were authorized by the Company up to the time of purchase.

Such purchase, payment or tender of payment of the full amount of the Guarantee shall terminate all liability of the Company hereunder. In the event after notice of claim has been given to the Company by the Assured the Company offers to purchase the indebtedness, the owner of such indebtedness shall transfer and assign said indebtedness, together with any collateral security, to the Company upon payment of the purchase price.

Upon the exercise by the Company of the option provided for in Paragraph (a) the Company's obligation to the Assured under this Guarantee for the claimed loss or damage, other than to make the payment required in that paragraph, shall terminate, including any obligation to continue the defense or prosecution of any litigation for which the Company has exercised its options under Paragraph 5, and the Guarantee shall be surrendered to the Company for cancellation.

(b) **To Pay or Otherwise Settle With Parties Other Than the Assured or With the Assured Claimant.**

To pay or otherwise settle with other parties for or in the name of an Assured claimant any claim assured against under this Guarantee, together with any costs, attorneys' fees and expenses incurred by the Assured claimant which were authorized by the Company up to the time of payment and which the Company is obligated to pay.

Upon the exercise by the Company of the option provided for in Paragraph (b) the Company's obligations to the Assured under this Guarantee for the claimed loss or damage, other than to make the payment required in that paragraph, shall terminate, including any obligation to continue the defense or prosecution of any litigation for which the Company has exercised its options under Paragraph 5.

**8. Determination and Extent of Liability.**

This Guarantee is a contract of indemnity against actual monetary loss or damage sustained or incurred by the Assured claimant who has suffered loss or damage by reason of reliance upon the assurances set forth in this Guarantee and only to the extent herein described, and subject to the exclusions stated in Paragraph 2.

The liability of the Company under this Guarantee to the Assured shall not exceed the least of:

- (a) the amount of liability stated in Schedule A;
- (b) the amount of the unpaid principal indebtedness secured by the mortgage of an Assured mortgagee, as limited or provided under Section 7 of these Conditions and Stipulations or as reduced under Section 10 of these Conditions and Stipulations, at the time the loss or damage assured against by this Guarantee occurs, together with interest thereon; or
- (c) the difference between the value of the estate or interest covered hereby as stated herein and the value of the estate or interest subject to the defect, lien or encumbrance assured against by this Guarantee.

**9. Limitation of Liability.**

- (a) If the Company establishes the title, or removes the alleged defect, lien or encumbrance, or cures the any other matter assured against by this Guarantee in a reasonably diligent manner by any method, including litigation and the completion of any appeals therefrom, it shall have fully performed its obligations with respect to that matter and shall not be liable for any loss or damage caused thereby.
- (b) In the event of any litigation by the Company or with the Company's consent, the Company shall have no liability for loss or damage until there has been a final determination by a court of competent jurisdiction, and disposition of all appeals therefrom, adverse to the title, as stated herein.
- (c) The Company shall not be liable for loss or damage to any Assured for liability voluntarily assumed by the Assured in settling any claim or suit without the prior written consent of the Company.

**10. Reduction of Liability or Termination of Liability.**

All payments under this Guarantee, except payments made for costs, attorneys' fees and expenses pursuant to Paragraph 5 shall reduce the amount of liability pro tanto.

**11. Payment of Loss.**

- (a) No payment shall be made without producing this Guarantee for endorsement of the payment unless the Guarantee has been lost or destroyed, in which case proof of loss or destruction shall be furnished to the satisfaction of the Company.
- (b) When liability and the extent of loss or damage has been definitely fixed in accordance with these Conditions and Stipulations, the loss or damage shall be payable within 30 days thereafter.

**12. Subrogation Upon Payment or Settlement.**

Whenever the Company shall have settled and paid a claim under this Guarantee, all right of subrogation shall vest in the Company unaffected by any act of the Assured claimant.

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The Company shall be subrogated to and be entitled to all rights and remedies which the Assured would have had against any person or property in respect to the claim had this Guarantee not been issued. If requested by the Company, the insured claimant shall transfer to the Company all rights and remedies against any person or property necessary in order to perfect this right of subrogation. The Assured shall permit the Company to sue, compromise or settle in the name of the Assured and to use the name of the Assured in any transaction or litigation involving these rights or remedies.

If a payment on account of a claim does not fully cover the loss of the Assured the Company shall be subrogated to all rights and remedies of the Assured after the Assured shall have recovered its principal, interest, and costs of collection.

### **13. Arbitration.**

Unless prohibited by applicable law, either the Company or the Assured may demand arbitration pursuant to the Title Insurance Arbitration Rules of the American Arbitration Association. Arbitrable matters may include, but are not limited to, any controversy or claim between the Company and the Assured arising out of or relating to this Guarantee, any service of the Company in connection with its issuance or the breach of a Guarantee provision or other obligation. All arbitrable matters when the Amount of Liability is \$1,000,000 or less shall be arbitrated at the option of either the Company or the Assured. All arbitrable matters when the Amount of Liability is in excess of \$1,000,000 shall be arbitrated only when agreed to by both the Company and the Assured. The Rules in effect at Date of Guarantee shall be binding upon the parties. The award may include attorneys' fees only if the laws of the state in which the land is located permits a court to award attorneys' fees to a prevailing party. Judgment upon the award rendered by the Arbitrator(s) may be entered in any court having jurisdiction thereof.

The law of the situs of the land shall apply to an arbitration under the Title Insurance Arbitration Rules.

A copy of the Rules may be obtained from the Company upon request.

### **14. Liability Limited to this Guarantee; Guarantee Entire Contract.**

- (a) This Guarantee together with all endorsements, if any, attached hereto by the Company is the entire Guarantee and contract between the Assured and the Company. In interpreting any provision of this Guarantee, this Guarantee shall be construed as a whole.
- (b) Any claim of loss or damage, whether or not based on negligence, or any action asserting such claim, shall be restricted to this Guarantee.
- (c) No amendment of or endorsement to this Guarantee can be made except by a writing endorsed hereon or attached hereto signed by either the President, a Vice President, the Secretary, an Assistant Secretary, or validating officer or authorized signatory of the Company.

### **15. Notices, Where Sent.**

All notices required to be given the Company and any statement in writing required to be furnished the Company shall include the number of this Guarantee and shall be addressed to: Old Republic National Title Insurance Company, 400 Second Avenue South, Minneapolis, Minnesota 55401, (612) 371-1111.



OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

## Full Recorded Owner Guarantee - Wyoming

### Schedule A

File No.	Liability	Fee	Reference	Guarantee No.
713873JAC	\$1,000.00	\$250.00	Bluff's Development Group, LLC FROG	<b>SG 08011717</b>

1. Name of Assured: Jorgensen Associations, PC
2. Date of Guarantee: 02/04/2019 at 8:00 A.M.
3. The estate or interest in the land hereinafter described is: Fee Simple.
4. Title to said or estate or interest at the Date hereof is vested in:

Bluffs Development Group, LLC, a Wyoming limited liability company

5. The land referred to in this Guarantee is situated in the County of Teton, State of Wyoming and is described as follows:

**Lot 1 of Crystal Valley Addition to the Town of Jackson, Teton County, Wyoming,  
according to that plat recorded in the Office of the Teton County Clerk on June 24, 2002  
as Plat Number 1051.**



OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

## Full Recorded Owner Guarantee - Wyoming

### Schedule B-I Exceptions/Recorded Documents

File No.	Liability	Fee	Reference	Guarantee No.
713873JAC	\$1,000.00	\$250	Bluff's Development Group, LLC FROG 984 Budge Drive	SG 08011717

As of the Date of this Guarantee, the following exceptions reference all recorded documents which may affect title to the herein described land:

1. Covenants, conditions, restrictions, reservations, easements, encroachments, ditches, roadways, rights-of-way, common areas and building set back requirements as delineated on the recorded Plat Number(s) 1051, records of Teton County, Wyoming.
2. Easement, including terms and conditions contained therein:  
Granted By: Allen and Kayleen Gibson  
Granted To: Lower Valley Power and Light, Inc.  
For: Construction, operation and maintenance of electric lines and other incidental purposes  
Recording Information: Book 11 of Mixed Records, Page 624
3. Terms and conditions of Grant of Easement from Jody R. Burkes and Linda Burkes to Elizabeth L. Kingwill appearing of record in Book 436 of Photo, Pages 579-582, records of Teton County, Wyoming.
4. Permanent Utility Easement:  
Between: Bluffs Development Group, LLC, a Wyoming limited liability company  
And: Town of Jackson  
Recording Information: Doc 0956941
5. **Mortgage** dated January 9, 2019, to secure an original indebtedness of \$550,000.00, and any other amounts and/or obligations secured thereby.  
Recorded: 01/10/19, as Doc 0963075  
Mortgagor: Bluffs Development Group, LLC, a Wyoming limited liability company  
Mortgagee: Wells Fargo Bank, National Association



OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

## Full Recorded Owner Guarantee - Wyoming

### Schedule B-II Informational Notes

File No.	Liability	Fee	Reference	Guarantee No.
713873JAC	\$1,000.00	\$250.00	Bluff's Development Group, LLC FROG	<b>SG</b> 08011717

The following is provided for informational purposes and is not part of the Assurances given under this Guarantee:

The Status of real property taxes is as follows:

Tax ID#	2018 Tax Status
OJ-005676	1st Half in the Amount of \$3,733.28 is PAID
	2nd Half in the Amount of \$3,733.28 is PAID

We recommend that the person responsible for closing this verify this tax information prior to closing.

\*Real Estate Taxes are payable as follows

\*If making one payment: Due on or before December 31.

\*If making two payments: First half payable September 1 and delinquent November 10; second half due March 1 and delinquent May 10.

The PIDN for this property appears to be: 22-41-16-32-1-07-001



FACTS		WHAT DOES OLD REPUBLIC TITLE DO WITH YOUR PERSONAL INFORMATION?
Why?	Financial companies choose how they share your personal information. Federal law gives consumers the right to limit some but not all sharing. Federal law also requires us to tell you how we collect, share, and protect your personal information. Please read this notice carefully to understand what we do.	
What?	<p>The types of personal information we collect and share depend on the product or service you have with us. This information can include:</p> <ul style="list-style-type: none"> <li>• Social Security number and employment information</li> <li>• Mortgage rates and payments and account balances</li> <li>• Checking account information and wire transfer instructions</li> </ul> <p>When you are <b>no longer</b> our customer, we continue to share your information as described in this notice.</p>	
How?	All financial companies need to share customers' personal information to run their everyday business. In the section below, we list the reasons financial companies can share their customers' personal information; the reasons Old Republic Title chooses to share; and whether you can limit this sharing.	

Reasons we can share your personal information	Does Old Republic Title Share?	Can you limit this sharing?
<b>For our everyday business purposes</b> – such as to process your transactions, maintain your accounts(s), or respond to court orders and legal investigations, or report to credit bureaus	Yes	No
<b>For our marketing purposes</b> – to offer our products and services to you	No	We don't share
<b>For joint marketing with other financial companies</b>	No	We don't share
<b>For our affiliates' everyday business purposes</b> – information about your transactions and experiences	Yes	No
<b>For our affiliates' everyday business purposes</b> – information about your creditworthiness	No	We don't share
<b>For our affiliates to market to you</b>	No	We don't share
<b>For non-affiliates to market to you</b>	No	We don't share

Questions	Go to <a href="http://www.oldrepublictitle.com">www.oldrepublictitle.com</a> (Contact Us)
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<b>Who we are</b>	
Who is providing this notice?	Companies with an Old Republic Title names and other affiliates. Please see below for a list of affiliates.
<b>What we do</b>	
<b>How does Old Republic Title protect my personal information?</b>	To protect your personal information from unauthorized access and use, we use security measures that comply with federal law. These measures include computer safeguards and secured files and buildings. For more information, visit <a href="http://www.OldRepublicTitle.com/newnational/Contact/privacy">http://www.OldRepublicTitle.com/newnational/Contact/privacy</a> .
<b>How does Old Republic Title collect my personal information?</b>	<p>We collect your personal information, for example, when you:</p> <ul style="list-style-type: none"> <li>• Give us your contact information or show your driver's license</li> <li>• Show your government-issued ID or provide your mortgage information</li> <li>• Make a wire transfer</li> </ul> <p>We also collect your personal information from others, such as credit bureaus, affiliates, or other companies.</p>
<b>Why can't I limit all sharing?</b>	<p>Federal law gives you the right to limit only:</p> <ul style="list-style-type: none"> <li>• Sharing for affiliates' everyday business purposes - information about your creditworthiness</li> <li>• Affiliates from using your information to market to you</li> <li>• Sharing for non-affiliates to market to you</li> </ul> <p>State laws and individual companies may give you additional rights to limit sharing. See the</p>

	"Other important information" section below for your rights under state law.
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## Definitions

<b>Affiliates</b>	Companies related by common ownership or control. They can be financial and nonfinancial companies. • Our affiliates include companies with an <i>Old Republic Title</i> name, and financial companies such as <i>Attorneys' Title Fund Services, LLC</i> , <i>Lex Terrae National Title Services, Inc.</i> , <i>Mississippi Valley Title Services Company</i> , and <i>The Title Company of North Carolina</i> .
<b>Non-affiliates</b>	Companies not related by common ownership or control. They can be financial and non-financial companies. • <i>Old Republic Title</i> does not share with non-affiliates so they can market to you
<b>Joint marketing</b>	A formal agreement between non-affiliated financial companies that together market financial products or services to you. • <i>Old Republic Title</i> doesn't jointly market.

## Affiliates Who May Be Delivering This Notice

American First Abstract, LLC	American First Title & Trust Company	American Guaranty Title Insurance Company	Attorneys' Title Fund Services, LLC	Compass Abstract, Inc.
eRecording Partners Network, LLC	Genesis Abstract, LLC	Kansas City Management Group, LLC	L.T. Service Corp.	Lenders Inspection Company
Lex Terrae National Title Services, Inc.	Lex Terrae, Ltd.	Mara Escrow Company	Mississippi Valley Title Services Company	National Title Agent's Services Company
Old Republic Branch Information Services, Inc.	Old Republic Diversified Services, Inc.	Old Republic Exchange Company	Old Republic National Title Insurance Company	Old Republic Title and Escrow of Hawaii, Ltd.
Old Republic Title Co.	Old Republic Title Company of Conroe	Old Republic Title Company of Indiana	Old Republic Title Company of Nevada	Old Republic Title Company of Oklahoma
Old Republic Title Company of Oregon	Old Republic Title Company of St. Louis	Old Republic Title Company of Tennessee	Old Republic Title Information Concepts	Old Republic Title Insurance Agency, Inc.
Old Republic Title, Ltd.	Republic Abstract & Settlement , LLC	Sentry Abstract Company	The Title Company of North Carolina	Title Services, LLC
Trident Land Transfer Company, LLC				



## PRE-APPLICATION CONFERENCE SUMMARY

### Planning & Development Department Planning Division

150 E Pearl Ave. | ph: (307) 733-0440  
P.O. Box 687 | fax: (307) 734-3563  
Jackson, WY 83001 | [www.townofjackson.com](http://www.townofjackson.com)

*This Summary will be prepared by Planning Staff. The applicant, or the applicant's agent, shall receive a copy of this summary for their reference in submitting a sufficient application.*

**Staff may request additional materials during review as needed to determine compliance with the LDRs.**

#### PRE-APPLICATION MEETING BASICS.

PAP#: P19-251  
Date of Conference: 12/06/2019  
Planning Staff: Tyler Valentine

#### PROJECT.

Name/Description: 984 Budge Subdivision  
Physical Address: 984 Budge Drive  
Lot, Subdivision: LOT 1, CRYSTAL VALLEY ADDITION PIDN: 22-41-16-32-1-07-001  
Zoning District(s): Neighborhood Low Density-5 (NL-5)  
Overlay(s): N/A

#### STAKEHOLDERS.

Applicant: Jorgensen Associates – Brendan Schulte  
Owner: Bluffs Development Group, LLC  
Agent:

**REQUIRED APPLICATIONS.** (See B.12, C.1, D.4 of applicable zone in Article 2, 3 or 4) *This project will require the following applications:*

Application	Reason	Fee
<b>Step #1:</b> Development Plan	Required prior to all Subdivision Plats (Section 8.3.2)	\$2,500
<b>Step #1:</b> Hillside Conditional Use Permit (CUP)	Required for subdivision and development on lots with average cross slopes of 10% or greater (Section 5.4.1)	\$500
<b>Step #2:</b> Subdivision Plat	Required for lot split (Section 8.5.3)	\$1,000 plus review fees
<b>Step #3:</b> Design Review Committee (DRC)	Required for residential development of 3 units or greater per lot in NL-5 zone. May not apply to this project.	\$200
<b>Step #4:</b> Grading Pre-Application	Required prior to Building Permit for site disturbance greater than 3,000 sf or required at Town Engineer discretion.	\$150
<b>Step #5:</b> Building Permit	Required for all physical development.	TBD

#### MEETING ATTENDEES:

Name	Company	Phone/Email
Stefan Fodor	Fodor Law	307-733-2880
Brendan Schulte	Jorgensen Associates	307-733-5150
Tyler Valentine	Town of Jackson, Planning	307-733-0440 x1305
Aaron Japel	Jorgensen Associates	307-733-5150
Brian Lenz	Town of Jackson, Engineering	307-733-3079 x1410

**TIMELINES.** This table is intended to provide general information regarding the review process and timing of decisions. See Article 8 for a complete explanation of the review process.

For administrative decisions made by the Planning Director, the following timelines are generally applicable:

Application Types:	Sufficiency	Planning Director
n/a	n/a	n/a

For decisions requiring a public hearing process, the following timelines are generally applicable:

Application Types:	Sufficiency	Planning Commission (PC)/ Board of Adjustment (BOA)	Town Council
<b>STEP #1</b> Development Plan Hillside CUP	Within 14 days of Submittal	Hearing within 90 days of Sufficiency	Hearing within 60 days of PC Recommendation
<b>STEP #2</b> Subdivision Plat	Within 14 days of Submittal		Hearing within 90 days of Sufficiency
<b>STEP #3</b> DRC	None		
<b>STEP #4</b> Grading Pre-application	None		
<b>STEP #5</b> Building Permit	TBD		

#### GENERAL INFORMATION.

Required, If Checked.

If not checked, review requirement with a Staff member to determine if necessary for your application.

-Requirement

Notes

✓	<b>Planning Permit Application.</b> The application should list all pertinent permits (use, physical development, interpretation, relief from the LDRs, Development Option/Subdivisions, Amendments to the LDRs) for which you are applying.	Required to be filled out and signed.
✓	<b>Notarized Letter of Authorization.</b> See <b>Section 8.2.4.A</b> for requirements. A template is established in the Administrative Manual.	Required if the applicant/representative is not the owner of the property.
✓	<b>Application Fees.</b> Fees are cumulative. Applications for multiple types of permits, or for multiple permits of the same type, require multiple fees. See the currently adopted Fee Schedule in the Administrative Manual for more information.	Please see above.
✓	<b>Review fees.</b> The applicant is responsible for paying any review fees and expenses from consulting services necessitated by the review of the application by the Town Surveyor, Town Engineer, Town Associate Engineer, Title Company and any other required consultant. Such fees shall be paid prior to approval of the permit.	Review fees required with Subdivision Plat for surveyor and title review.
✓	<b>Mailed Notice fee.</b> See <b>Section 8.2.14.C.2</b> for notice requirements. If mailed notices are required, the applicant is responsible for paying for any mailing in excess of 25 notices.	Done by the Town Staff.
✓	<b>Other information needed.</b> All applications submitted to the Town of Jackson Planning Department must be submitted in digital format once the application is determined to be sufficient.	Please visit <a href="http://TownofJackson.com">TownofJackson.com</a> for Development Plan & CUP submittal requirements.
✓	<b>Response to Submittal Checklist.</b> All applications require response to applicable review standards. For applications where a pre-application conference is required, applicable standards are identified below. If a pre-application conference is optional, see the submittal checklist for the relevant application type, established in the Administrative Manual.	
✓	<b>Title Report.</b> A title report, title certificate or record document guarantee prepared within the last six months that includes evidence of ownership and all encumbrances on the subject property. Copies of the documents referenced in the report should not be submitted unless requested by the planner during review.	Required with Subdivision Plat only.
✓	<b>Narrative description of the proposed development.</b> Briefly describe the existing condition of the property and the proposed use, physical development, subdivision or development option for which you are seeking approval.	Please visit <a href="http://TownofJackson.com">TownofJackson.com</a> for Development Plan & CUP submittal requirements.
<b>N/A</b>	<b>Proposed Development Program.</b> Please use the attached template established in the Administrative Manual.	
✓	<b>Site Plan.</b> Please see the attached list of minimum standards for a site plan, established in the Administrative Manual.	Please show location of 30 foot private roadway easement with 20 foot paved road. This is crucial to determining structure setbacks. Gravel or dirt are not permitted materials for the road.
✓	<b>Floor Plans.</b> Include floor plans for any existing buildings that will be occupied by a proposed use. If changes to existing buildings are proposed, indicate those on the floor plans.	
✓	<b>Neighborhood Meeting Summary.</b> See <b>Section 8.2.3</b> for Neighborhood Meeting requirements.	Optional for a Development Plan/CUP

- ✓ **Posted Notice.** See **Section 8.2.14.C.4** for Posted Notice requirements for all public hearings.
- ✓ **Digital Format.** All application submitted to the Town Planning Department must be submitted in digital format.

**Requirements listed under each Article will be checked if required for the application.**

- ✓ *Required, If Checked.*
- If not checked, this requirement is not applicable to your application.*

**ARTICLE 2, COMPLETE NEIGHBORHOODS, ARTICLE 3, RURAL AREA ZONES, and ARTICLE 4, SPECIAL PURPOSE ZONES – (Public/Semi-Public & Park and Open Space zones only).**

Applicable Zone: NL-5

Applicable LDR Section: 2.2.6

**PHYSICAL DEVELOPMENT.** Please see Subsection B in applicable Zone District for specific standards.

**Requirement**

**Notes**

<ul style="list-style-type: none"> <li>✓ <b>Structure Location and Mass</b> (setbacks, height, FAR, etc.)</li> <li>  <b>Maximum Scale of Development</b> (individual building size)</li> <li>✓ <b>Design Review</b> (Design Guidelines and Design Review Committee)</li> <li>✓ <b>Site Development</b> (Driveway and Access limits)</li> <li>✓ <b>Landscaping</b> (see Div. 5.5 for more information)</li> <li>✓ <b>Fencing</b> (see Sec. 5.1.2 for more information)</li> </ul>	<p>With Development Plan show size of each building envelop and allowed FAR per lot.</p> <p>DRC is required for development of 3 units or more per lot.</p> <p>30 foot private roadway easement required.</p> <p>Required with Building Permit</p> <p>Required with Building Permit</p>
<p><b>N/A</b></p> <p><b>Environmental Standards (see Div. 5.1 and 5.2 for more information)</b></p> <ul style="list-style-type: none"> <li>• Natural Resource Buffers</li> <li>• Irrigation Ditch Setback</li> <li>• Natural Resource Overlay Standards</li> </ul> <p><b>Scenic Standards (see Div. 5.3 for more information)</b></p> <ul style="list-style-type: none"> <li>• Exterior Lighting</li> <li>• Scenic Resource Overlay (SRO) Standards</li> </ul> <p><b>Natural Hazards to Avoid (see Div. 5.4 for more information)</b></p> <ul style="list-style-type: none"> <li>• Steep Slopes</li> <li>• Areas of Unstable Soils</li> <li>• Fault Areas</li> <li>• Floodplains</li> <li>• Wildland Urban Interface</li> </ul> <p><b>N/A</b> <b>Signs (see Div. 5.6 for more information)</b></p>	<p>Lighting plan required with Building Permit</p> <p>Hillside CUP required for average cross slopes 10% and greater.</p>

<input checked="" type="checkbox"/>	<b>Grading, Erosion Control, Stormwater (see Div. 5.7 for more information)</b>	R
<b>USE STANDARDS. Please see Subsection C in applicable Zone District for specific standards.</b>		
<b>Requirement</b>	<b>Notes</b>	

<input checked="" type="checkbox"/>	<b>Allowed Uses</b> (see Div. 6.1 for more information)	
<input checked="" type="checkbox"/>	<b>Parking</b> (see Div. 6.2 for more information)	
<input checked="" type="checkbox"/>	<b>Employee Housing</b> (see Div. 6.3 for more information)	Applicant shall provide a housing mitigation plan at the time of building permit submittal.
<b>Maximum Scale of Use</b>		
<input checked="" type="checkbox"/>	<b>Operational Standards</b> (see Div. 6.4 for more information)	
	<ul style="list-style-type: none"> <li>• Outside Storage</li> <li>• Refuse and Recycling</li> <li>• Noise</li> <li>• Vibration</li> <li>• Electrical Disturbances</li> <li>• Fire and Explosive Hazards</li> <li>• Heat and Humidity</li> <li>• Radioactivity</li> </ul>	

<b>SUBSECTION D, DEVELOPMENT OPTIONS.</b> Please provide the following information for the applicable zone.	
<b>Requirement</b>	<b>Notes:</b>
<input checked="" type="checkbox"/>	Allowed Subdivision and Development Options
<input checked="" type="checkbox"/>	Subdivision and Development Option Permits

**Additional Comments:**

<b>ARTICLE 7, DEVELOPMENT OPTION AND SUBDIVISION STANDARDS APPLICABLE IN ALL ZONES.</b>	
<b>Requirement</b>	<b>Notes</b>
<input checked="" type="checkbox"/>	<b>Division 7.1, Development Option Standards</b>
	<ul style="list-style-type: none"> <li><b>7.1.3 Urban Cluster Development</b></li> <li><b>7.1.4 Mobile Home Park</b></li> </ul>
<input checked="" type="checkbox"/>	<b>Division 7.2, Subdivision Standards</b>
	<ul style="list-style-type: none"> <li><b>7.2.2 Standards Applicable to all Subdivision</b></li> <li><b>7.2.3 Land Division Standards</b></li> <li><b>7.2.4 Condominium and Townhouse Subdivisions</b></li> </ul>

<input checked="" type="checkbox"/>	<b>Division 7.5, Development Exaction Standards</b>	Required to be paid at time of recording of plat.
	<b>7.5.2. Park Exactions</b>	
	<b>7.5.3. School Exactions</b>	
<input checked="" type="checkbox"/>	<b>Division 7.6, Transportation Facility Standards</b>	As stated above, a 30 foot private roadway easement is required with a 20 foot wide paved road. Gravel or dirt are <u>not</u> permitted materials.
	<b>7.6.2 Access to Roads, Streets and Highways</b>	
	<b>7.6.3 Streets, Alleys, and Easements</b>	
<input type="checkbox"/>	<b>Division 7.7, Required Utilities</b>	
	<b>7.7.2 Potable Water Supply</b>	
	<b>7.7.3 Sanitary Sewer Systems</b>	
	<b>7.7.4 Irrigation Ditch Systems and Design</b>	
	<b>7.7.5 Other Utilities</b>	
	<b>7.7.6 Fuel Storage Tank</b>	

#### **Division 7.8, Workforce Housing Incentive Program**

**PLAN REVIEW COMMITTEE.** *The Plan Review Committee consists of the following listed agencies. Planning Staff will transmit pertinent portions of the application to each agency. Other agencies and individuals not checked off on this list may be added to the PRC if necessary.*

<input checked="" type="checkbox"/>	Public Works/Town Engineer	<input checked="" type="checkbox"/>	Police Department
<input checked="" type="checkbox"/>	Building Official	<input checked="" type="checkbox"/>	START Bus
<input checked="" type="checkbox"/>	Town Attorney	<input checked="" type="checkbox"/>	Jackson Hole Fire EMS
<input type="checkbox"/>	Town Clerk	<input checked="" type="checkbox"/>	Parks and Recreation Department
<input checked="" type="checkbox"/>	Pathways Coordinator	<input type="checkbox"/>	Teton County School District #1
<input type="checkbox"/>	Surveyor – for subdivision plat	<input type="checkbox"/>	Teton County Sheriff
<input type="checkbox"/>	Title Company – for subdivision plat	<input type="checkbox"/>	Teton Conservation District
<input checked="" type="checkbox"/>	Teton County Housing Authority	<input type="checkbox"/>	Wyoming Department of Game & Fish
<input type="checkbox"/>	Teton County Weed & Pest	<input type="checkbox"/>	Wyoming Department of Transportation
<input type="checkbox"/>	Teton County Planning	<input type="checkbox"/>	Wyoming Department of Environmental Quality
<input type="checkbox"/>	Teton County Engineer	<input type="checkbox"/>	Army Corp of Engineers
<input type="checkbox"/>	Teton County Assessor	<input type="checkbox"/>	Lower Valley Energy
<input type="checkbox"/>	Integrated Solid Waste and Recycling	<input type="checkbox"/>	U.S. National Park Service
<input type="checkbox"/>	Teton County Clerk	<input type="checkbox"/>	U.S. Forest Service
<input type="checkbox"/>	Teton County Public Health	<input type="checkbox"/>	U.S. Fish and Wildlife
<input type="checkbox"/>	Teton County Scenic Preserve Trust	<input type="checkbox"/>	Other (Teton County Historic Preservation Board)

#### **Additional Comments:**

- The Town has adopted private roadway standards that require a 30 foot wide roadway easement with a 20 foot wide paved road. Gravel, dirt or other similar materials are not permitted. Please provide a plan with the location of the 30 foot easement so that Planning can accurately define street setbacks for each lot.
- This request is for land division and it is unknown as to how much parking will be required for each lot. Please provide site plans that show a building envelop only.

- Please include slopes on at least one of the site plans.
- Fire has denied this initial site plan because there is no adequate turn-around. If these units are to be fire sprinklered, please make that known in the Development Plan. Language requiring fire sprinklering will be added to the recorded plat at time of subdivision.
- Units 2, 3, and 4 have parking located within the 5 foot side yard setback. Parking can be as close as 1' from a side property line if there are at least 3 units on that lot. Staff cannot approve this parking plan as presented.
- Please show compliance with minimum lot size. Also please show building envelop size and potential FAR for each lot.
- How will snow storage be addressed at the dead end? Town staff will not allow snow to be pushed downhill of the parking spaces. How will parking be plowed?
- The parking for Unit 6 does not seem practical. Let's discuss these. Problematic in winter. Will likely encourage guests to park behind them resulting in a line of cars in the road.
- Apartment Occupancy. Occupancy of an apartment shall be restricted to persons employed within Teton County, in accordance with the Jackson/Teton County Housing Rules and Regulations or the occupants shall be members of the same family occupying the principal dwelling unit, such as parents or adult children, or intermittent, nonpaying guests

## PLANNING

<b>Project Number</b>	P19-251	<b>Applied</b>	11/6/2019	STOL
<b>Project Name</b>	Pre-App - 984 Budge Drive	<b>Approved</b>		
<b>Type</b>	PREAPPLICATION	<b>Closed</b>		
<b>Subtype</b>	DEVELOPMENT OPTION PLAN	<b>Expired</b>		
<b>Status</b>	STAFF REVIEW	<b>Status</b>		

**Applicant** Jorgensen Associates, P.C.      **Owner** BLUFFS DEVELOPMENT GROUP, LLC

<b>Site Address</b>	984 BUDGE DRIVE	<b>City</b>	JACKSON	<b>State</b>	<b>Zip</b>
				WY	83001

<b>Subdivision</b>	CRYSTAL VALLEY ADDITION	<b>Parcel No</b>	<b>General Plan</b>
		22411632107001	

<b>Type of Review</b>	<b>Status</b>	<b>Dates</b>				<b>Remarks</b>
		<b>Sent</b>	<b>Due</b>	<b>Received</b>		
Contact						
Notes						
Building	APPROVED W/CONDITI	11/6/2019	11/27/2019	11/7/2019		
Kelly Sluder (11/7/2019 11:50 AM KS)						
New homes will require to meet the building code at time of permitting.						
Fire	DENIED	11/6/2019	11/27/2019	11/18/2019		See notes
Kathy Clay (11/18/2019 2:50 PM CLAY)						
This will become a subdivision. Provide fire department access notes and water supply notes for subdivision.						
Joint Housing Dept	APPROVED W/CONDITI	11/6/2019	12/2/2019	12/2/2019		See notes
Stacy Stoker (12/2/2019 10:04 AM SAS)						
A complete Housing Mitigation Plan is required to be submitted with any development plan. Required units shall meet the Livability Standards in the Jackson/Teton County Housing Department Rules and Regulations and must receive approval from the Housing Department. The Housing Department will work with the applicant to ensure required units meet the Livability Standards and to record restrictions on required units.						
Legal	NO COMMENT	11/6/2019	11/27/2019	11/14/2019		No comment at this time.
Lea Colasunno						

Parks and Rec      NO COMMENT      11/6/2019      11/27/2019      11/14/2019

Steve Ashworth

(11/14/2019 9:18 AM STOL)

No comments from Parks & Rec regarding P19-251, 984 Budge Dr.

Andy Erskine, CPSI

Pathways      NO COMMENT      11/6/2019      11/27/2019      11/26/2019

Brian Schilling

(11/26/2019 12:47 PM STOL)

No comments from Pathways

Planning      APPROVED W/CONDITI      11/6/2019      11/27/2019      12/9/2019

Tyler Valentine

Type of Review	Status	Dates			Remarks
		Sent	Due	Received	
Contact					
Notes (12/9/2019 8:56 AM TV)					
<ul style="list-style-type: none"> <li>The Town has adopted private roadway standards that require a 30 foot wide roadway easement with a 20 foot wide paved road. Gravel, dirt or other similar materials are not permitted. Please provide a plan with the location of the 30 foot easement so that Planning can accurately define street setbacks for each lot.</li> <li>This request is for land division and it is unknown as to how much parking will be required for each lot. Please provide site plans that show a building envelop only.</li> <li>Please include slopes on at least one of the site plans.</li> <li>Fire has denied this initial site plan because there is no adequate turn-around. If these units are to be fire sprinklered, please make that known in the Development Plan. Language requiring fire sprinklering will be added to the recorded plat at time of subdivision.</li> <li>Units 2, 3, and 4 have parking located within the 5 foot side yard setback. Parking can be as close as 1' from a side property line if there are at least 3 units on that lot. Staff cannot approve this parking plan a presented.</li> <li>Please show compliance with minimum lot size. Also please show building envelop size and potential FAR for each lot.</li> <li>How will snow storage be addressed at the dead end? Town staff will not allow snow to be pushed downhill of the parking spaces. How will parking be plowed?</li> <li>The parking for Unit 6 does not seem practical. Let's discuss these. Problematic in winter. Will likely encourage guests to park behind them resulting in a line of cars in the road.</li> <li>Apartment Occupancy. Occupancy of an apartment shall be restricted to persons employed within Teton County, in accordance with the Jackson/Teton County Housing Rules and Regulations or the occupants shall be members of the same family occupying the principal dwelling unit, such as parents or adult children, or intermittent, nonpaying guests</li> </ul>					
Police	NO COMMENT	11/6/2019	11/27/2019	11/15/2019	
Todd Smith					
Public Works	APPROVED W/CONDITI	11/6/2019	12/2/2019	12/13/2019	
Brian Lenz					

Type of Review	Status	Dates			Remarks
		Sent	Due	Received	
Contact					
Notes (12/13/2019 1:32 PM BTL)					
Pre-Ap Comments					

P19-251

ADDRESS: 984 Budge Drive

OWNER: Bluffs Development Group, LLC

APPLICANT: Jorgensen Associates, Uriel

12/13/2019

Brian Lenz, 733-3079

DATE OF SUBMITTAL: 11/6/2019

DATE OF MATERIALS: Civil Plan 11/4/2019

REVISION NO.: 00

The engineering division has reviewed your application for a DEVELOPMENT PERMIT submitted on and with application materials as dated above.

\*The following comments are being provided for use in preparation of future applications and are required for sufficiency.

In addition to the required Town of Jackson submittal requirements, The Engineering Division requires applicants to submit plans, documents, etc in electronic PDF format in addition to the standard paper submittal(s). Please submit these materials through Tiffany Stolte of the Planning Department (tstolte@jacksonwy.gov).

#### TOJ CODE

A construction-staging narrative shall be submitted for review and approval with the Development Plan application.

Plans provided shall show all work to be completed within the Town's right-of-way.

Show all encroachments into the Town's right-of-way or easements. Encroachment agreements are required for encroachments of buildings, retaining walls, foundations, canopies, balconies, roofs, shoring, etc.

A demolition permit is required for each existing structure to be removed from the site. Water and sewer services to be abandoned for the project shall be abandoned at the main during the demolition phase of the project.

#### LAND DEVELOPMENT REGULATIONS

Development shall comply with the physical development standards for its zoning.

5.1.2 Wildlife Friendly Fencing: Show location and height of fencing. No fencing is allowed within the right-of-way. Protect sight triangles at intersections.

5.1.1 Natural Resource Setback: Provide a plan that

#### 5.4 NATURAL HAZARDS PROTECTION STANDARDS

5.4.1 Steep Slopes: For development in Hillside Areas, identify any unstable soils and show compliance with this section. At a minimum, provide a slope analysis, reconnaissance level soil and subsurface investigation. Provide a complete grading and drainage plan that meet the criteria of 5.4.1.C.6.d.

5.4.2 Unstable Soils: Identify any unstable soils and show compliance with this section.

5.4.3 Faults: Identify any unstable soils and show compliance with this section.

5.4.4 Floodplains: Identify and floodplains or floodways and show compliance with the municipal code and / or the LDRs.

#### 5.5 LANDSCAPING STANDARDS

Provide a plan that complies with the LDRs and addresses erosion control and slope stability for Hillside Area developments.

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

5.7.1 Grading Permit Required: Provide information on how the application will comply with this section, including the Geotechnical Report.

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5.7.2 Grading Standards:	Provide a grading plan that shows compliance with this section. Plan shall include existing and proposed site contours with elevation labels, spot elevations, high and low points, grade breaks. Provide easements for grading proposed on adjacent properties.				
5.7.3 Erosion Control Standards:	Provide an erosion control plan that shows compliance with this section.				
5.7.4 Stormwater Management Standards:	Provide an erosion control plan that shows compliance with this section.				

## 6.2 PARKING AND LOADING STANDARDS

6.2.2 Required Parking and Loading: Provide a plan that shows the proposed parking in compliance with this section. Include location and dimension of parking spaces, accessible spaces, including van accessible spaces, and bicycle parking. For uses that require deliveries, show the proposed loading facilities.

6.2.5 Off-Street Parking and Loading Design Standards: Provide a parking plan in compliance with this section. Include surface materials and drainage plans, access and circulation, and snow storage.

## 6.4 OPERATIONAL STANDARDS

6.4.1 Outside Storage: Provide a Construction Management Plan / Narrative, for any offsite storage address compliance with this section.

6.4.3 Noise: Provide a Construction Management Plan / Narrative, for any offsite storage address compliance with this section.

6.4.4 Vibration: Provide a Construction Management Plan / Narrative, for any offsite storage address compliance with this section.

## 7.2 SUBDIVISION STANDARDS

### 7.2.2 Standards Applicable to all Subdivisions

#### 7.2.2.A Subdivision Improvements:

- Provide plans and specifications for roads, streets, alleys, sidewalks, and pathways including street light, signage, and markings.
- Provide a sanitary sewer wastewater plan.
- Provide a water supply plan.
- Provide a storm drainage plan, basins, calculations, treatment method. Stormwater discharged to a public storm sewer or right of way requires treatment. Wyoming DEQ 5D2 permits are required for subsurface discharges.
- Provide an irrigation plan or statement.
- Provide a plan for all other utilities, such as telephone, cable TV, electric, fiber, gas.
- Provide a plan for permanent reference monuments, property corners, etc.
- Permits are required prior to construction of development improvements.
- All improvement shall be designed by a professional engineer licensed to do such work in the State of Wyoming.
- The Town Council may require installation and construction of utilities, pavement and other land improvements in excess of subdivision design needs, to assure adequate service to future development areas.

## 7.6 TRANSPORTATION FACILITY STANDARDS

7.6.2 Access to Roads, Streets and Highways: Provide a plan showing the point of access. Show compliance with the standards for access and justification for access to collector and arterial roads.

7.6.3 Streets Alleys and Easements: Provide a plan showing all proposed streets, alleys, and easements. Show compliance with the general standards, extension, engineering access, right-of-way, pavement widths, urban and rural classification, alignment, profile, grades, and intersections.

#### 7.6.4 Street and Road Standards (section not used, for reference):

- Provide a plan that generally complies with the Community Streets plan and Bicycle improvements plan. Include property lines, dimensions, radii, elevations, slopes, grade changes, etc.
- For all pedestrian areas provide a plan that includes: dimensions, radii, elevations, slopes (running and cross slopes, not oblique slopes), ramp slopes, grade breaks, stair dimensions, handrails, guards, etc. showing compliance with ADA, IBC, and Town standards.

## 7.7 – REQUIRED UTILITIES

### 7.7.2 Potable Water Supply:

- Provide a water supply plan and estimated average day, maximum day, and maximum hour, required fire flows, and per capita maximum daily demands. Demands shall be determined by one of the following: Wyoming DEQ Chapter 12 Section 8 (equivalent per capita water use shall be at least 125 gpd and 340 gpd for average and maximum day respectively); Wyoming DEQ Chapter 25 Tables 1 and 2 with consumption and irrigation factored in, metered water supply data from another development where similar water demands have been demonstrated, or other Town Engineer approved source.
- Provide right-of-way or easements as required, 30 feet minimum width with 10 feet minimum to either side.
- Provide a water system analysis indicating the required domestic and fire flow demands. Identify impacts to or upgrade requirements for the existing distribution, supply, or treatment system.

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4. Show compliance with state regulations, construction standards, connections for lots of record, provisions for system expansion, and fire protection. Provide information on planned metering and backflow prevention locations.

5. State whether the water system will be privately or publicly owned. Water services over 2-inch in diameter require engineering design. Water mains larger than 8-inch and or longer than 250 feet require a Wyoming DEQ permit.

#### 7.7.3 Sanitary Sewer System:

1. Provide a sanitary sewer wastewater plan and estimated average day, maximum day, and peak hour for the design of the project, per capita design flows, extraneous flows, and industrial and/or commercial waste volumes. Volumes shall be determined by one of the following: Wyoming DEQ Chapter 25 Tables 1 and 2; metered water supply data from another development where similar water demands have been demonstrated; or other Town Engineer approved source.
2. Provide right-of-way or easements as required, 30 feet minimum width with 10 feet minimum to either side.
3. Provide a sanitary sewer analysis. Identify downstream impacts on existing sewers, lift stations, and treatment facilities.
4. Show compliance with state regulations, construction standards, maximum allowable infiltration, connections for lots of record, provisions for system expansion.
5. State whether the sewer system will be privately or publicly owned.

#### 7.7.4 Irrigation System:

1. Provide an irrigation plan when the system is for the entire development or the system will be owned by the Town. For all systems provide the irrigation water demand, type of backflow preventer, location, and whether irrigation will be metered separately from domestic.
2. Show compliance with surface water rights (if applicable), irrigation surface water runoff, setbacks to ditches, and access to ditches.
3. Show compliance to standards for any alteration of an irrigation ditch.
4. A Wyoming Department of Transportation license is required for irrigation systems and landscaping located within the WYDOT right-of-way.

#### 7.7.5 Other Utilities:

Provide a plan for all other utilities, such as telephone, cable TV, electric, fiber, gas. All utilities shall be installed underground. Provide right-of-way or easements as required. Show that private utilities can be located on private properties, e.g. transformers.

#### 7.7.6 Fuel Storage Tanks:

Provide a plan showing any buried fuel storage tanks. All fuel storage tanks for private residential use, except for LP (liquid petroleum) gas and kerosene, shall be underground. All fuel tanks shall meet setbacks for accessory structures in the applicable zone, and no fuel may be buried within 50 feet from any stream, excluding irrigation ditches.

### PROJECT SPECIFIC COMMENTS

This response is provided based on the application materials and materials shown at the Pre-Application meeting held 12/6/2019.

1. Provide a fire hydrant or other device suitable to provide scour velocities while flushing. Address runoff and erosion in the flushing area.
2. Based on the information provided no Subdivision Agreement is Required at this time.
3. If the private sewer line to the south across private properties is utilized for the development, provide the legal instruments that allow its use, any conditions of use, etc. Provide information on size, material, slopes, structures, cleanouts, solids retention, etc. to show compliance with current regulations and standards. If the sewer is not used provide information on any abandonment.
4. A zoning compliance verification is required to determine if the steep slopes are manmade. Provide historical photos, maps, surveys, etc. to support your request.
5. Show the new water main between budge drive and highway 22 with associated easements on the plans.
6. If just one lot is developed under the existing regulations for the lot provide all utility and grading information with the building permit.
7. A grading permit is required for the installation of the common utilities and services to the proposed lots.
8. A grading pre-application meeting is required for the installation of the utilities, and as required by the LDRs for the single family home developments.
9. A gravity sewer connecting in Budge Drive would require more detailed review. Consideration for the road being paved within the last five years may require pavement reclamation larger than a typical trench reclamation.
10. Verify with building official for helical piers and geotechnical report being sufficient to meet the requirements of IRC 403.1.7.4.
11. A geotechnical report is required for sites with existing slopes greater than 25% or per Town Engineer Commensurate with the degree of hazard and including a Stability Evaluation or Analysis for Pre and Post Development conditions considering internal, local, and global stability to the degree that the project influences the area. The report must address the stability of each lot as proposed for

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	development minimizing or eliminating the need for detailed investigation, review, and analysis with each individual building permit application. Currently, the Hillside areas and steep slope standards are under review for updating. Standards in place at the time of application for permit will be applicable.					
12.	Utility easements for private water and sewer mains must be a minimum of 20 feet with at least 10 feet on either side of the utility. Utilities shall be installed to meet standard separation distances.					
13.	Show plans for relocation of existing overhead power and communication utilities. Depending on pay structure, scope, and timing this may trigger a subdivision improvement agreement.					
START		11/6/2019		11/27/2019		
Darren Brugmann						