NOTICE OF MEETING HILLSIDE REVIEW BOARD CITY OF ST. GEORGE WASHINGTON COUNTY, UTAH

Public Notice

Notice is hereby given that the Hillside Review Board of the City of St. George, Washington County, Utah, will hold a meeting at the reference site on **Wednesday**, **October 22**, **2025**, commencing on site #1 at 8:30 a.m.

The agenda for the meeting is as follows:

Call to Order
Call for disclosure of conflicts of interest

- Banded Ridge Hillside Revision This is a request for a Hillside Development permit to request modification to the approved location of the rock fall hazard line approved with the original Hillside permit.
 Meeting time is approximately 8:30 am at approximately 2900 E Cliff Shadow Dr.
- 2. <u>Tech Ridge Zip Line & Chair Lift</u>—This is a request for a Hillside Development Permit to allow disturbance of areas in the 20-30%, 30-40% and 40% and above slope areas and review possible construction in a possible landslide area.

Meeting time is approximately 9:15 am at approximately 500 S Tech Ridge Parkway

- 3. <u>Trails East Site visit</u> for potential future development. There is no official application at this time. Meeting time is approximately 10:00 am at approximately 3700 N Hwy 18
- 4. Minutes

Consider a request to approve the meeting minutes from the June 25, 2025, meeting.

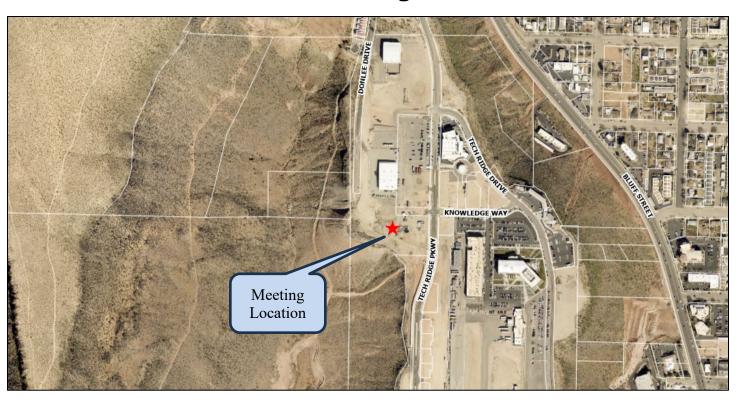
Angie Jessop – Development Services

<u>REASONABLE ACCOMMODATION:</u> The City of St. George will make efforts to provide reasonable accommodations to disabled members of the public in accessing City programs. Please contact the City Human Resources Office at (435) 627-4674 at least 24 hours in advance if you have special needs.

Item # 1 Meeting Location



Item #2 Meeting Location



Item #3 Meeting Location

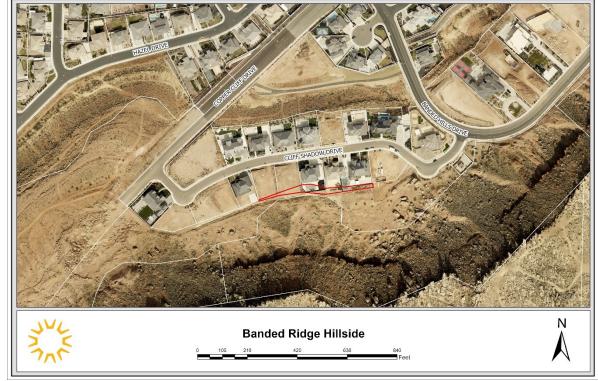




Hillside Permit

HILLSIDE REVIEW BOARD AGENDA REPORT: 10/22/2025

Banded Ridge Hillside Revision Hillside Development Permit (Case No. 2025-HS-009)			
Request:	The applicant is requesting modifications to the approved location of the rock fall hazard line approved with the original Hillside permit.		
Applicant:	RS Custom Homes		
Representative:	Ryan Shaw		
Location:	The open space south of the existing Banded Ridge Subdivision		
General Plan:	OS (Open Space)		
Existing Zoning:	OS (Open Space)		
Surrounding Zoning:	North	R-1-10 (Single Family Residential, 10,000 ft² lots)	
	South	OS (Open Space)	
	East	R-1-10 (Single Family Residential, 10,000 ft² lots)	
	West	R-1-10 (Single Family Residential, 10,000 ft² lots)	
Land Area:	Approximately 10,177 ft² (0.23 acres) – area that is affected by request		



BACKGROUND

In 2018, a hillside permit and preliminary plat were approved on the property that later resulted in the Banded Ridge plat. The plat was later recorded in August of 2021. The Hillside permit delineated the location of the edge of the rockfall runoff, the furthest point believed that rock or rock debris would travel in the event of a rock fall. The line drawn in that report was then drawn as the southern boundary of the Banded Ridge subdivision as was recorded and stands today. The property south of that southern boundary was dedicated to St. George City as open space.

The owner of one of the adjacent lots has asked AGEC to review the rock fall report and to analyze the accuracy of the rock fall runoff line. AGEC produced a new report which pushes that line to the south away from lots 16-20. The task for the Hillside Review Board is to make a recommendation to the Planning Commission and City Council to accept or deny the revised rockfall report.

APPLICABLE ORDINANCE(S) (Selected portions)

10-13B-2: Development in Geologic Hazard Areas

- A. Geologic Hazard Areas (UGS 1-4: subsections A1 through A4 of this section): For any development in the city with a geologic hazard listed below, applicant shall submit a report prepared by a qualified, licensed geologist specializing in engineering geology, or a licensed civil engineer, trained and experienced in the practice of geotechnical engineering. Development in the geologic hazard overlay for high category rockfall areas shall be reviewed by the hillside review board.
 - 1. Surface fault rupture and earthquake: well-defined Holocene, and well-defined fault areas, red and purple lines/categories (extending five hundred feet (500') on the downthrown side and two hundred fifty feet (250') on the upthrown side of each red/purple fault line).
 - 2. Liquefaction: Very High category.
 - 3. Landslide: Very High category.
 - 4. Rockfall: High category.
- B. General Requirements for Development in a Geologic Hazard Area:
 - 1. Submit a site-specific report prepared by a qualified, licensed geologist specializing in engineering geology, or a licensed civil engineer, trained and experienced in the practice of geotechnical engineering with the following minimum requirements:
 - a. Identify all geologic hazard areas (UGS 1-4: subsections A1 through A4 of this section);
 - b. Identify any other geologic hazards, not listed above (UGS 1-4: subsections A1 through A4 of this section), which present an unacceptable risk to development;
 - c. Demonstrate which areas of the development are suitable for the proposed use;
 - d. Recommend specific measures necessary to make the land suitable for the proposed use:
 - e. Recommend the optimal placement of all structures, roadways, utilities, trails and infrastructure in relation to the geologic hazard area;

- f. Slope stability analysis: conclusions and recommendations concerning the effects of material removal, introduction of water, both on and off site, including, where applicable, on mesa tops, seismic activity, and erosion on slope stability;
- g. Foundation investigation: conclusions and recommendations concerning the effects of soil conditions on foundation and structural stability, including bearing capacity, sheer strength, and shrink/swell potential of soils;
- h. Spring location: the location and yield of springs and seeps which shall be shown on the site plan;
 - i. Structural features: structural features including any geological limitations;
- j. Surface hazards: existence of surface hazards including potential for rockfalls and toppling failures to cliffs, slopes and overhangs above the subject property; and
- k. Effect of geologic conditions: conclusions and recommendations regarding the effect of geologic conditions on the proposed development, together with recommendations identifying the means proposed to minimize any hazard to life or property, or adverse impact on the natural environment.
- 2. The city shall review the applicant's report. If the applicant's report is deemed adequate by the city engineer or designee, development may proceed if the report recommendations are followed. If the report is deemed incomplete or inadequate by the city engineer or designee, the development application shall be denied. If denied, the applicant may request an independent review, and the city engineer or designee may order a review by independent, qualified professionals. The professionals selected by the city shall review and prepare written findings and comments on the applicant's report. The cost of the independent, qualified professionals shall be paid to the city by applicant. Applicant may develop if the independent review and written findings and comments are implemented, in addition to any nonconflicting recommendations in the initial report of applicant. The city engineer or designee is the land use authority for the decision. The reports shall be specifically identified on the plat and available to all owners and interested parties.
- 3. All development shall be outside the geologic hazard areas in subsections A1 through A4 of this section, unless:
- a. The city has accepted applicant's report, prepared by a qualified, licensed geologist specializing in engineering geology or a licensed professional engineer trained and practicing in the field of geotechnical engineering, and it recommends development, and shows hazards can be adequately mitigated for the proposed land use;
- b. If the city has not accepted applicant's report, the applicant also adopts and implements the independent review and writing findings and comments, in addition to any nonconflicting recommendations in applicant's report;
- c. All report recommendations, and HDOZ permit conditions (when required), are adopted by the city and are conditions of development.
- 4. Hold the city harmless from all claims resulting from any damage related to development within a geologic hazard area by executing a "geologic hazard disclaimer of liability and agreement" and by placing a "notice of hazard" on the final plat.
- 5. The applicant may appeal a decision in accordance with chapter 3 of this title.

- C. *Compliance*: No structure or land shall be constructed, located, extended, converted or altered without full compliance with the terms of this chapter and other applicable regulations.
- D. Abrogation and Greater Restrictions: This chapter is not intended to repeal, abrogate or impair any existing easement, covenant or deed restriction; however, where this chapter and another ordinance, easement, covenant or deed restriction conflict or overlap, the more stringent restriction shall prevail.
- E. *Interpretation:* In the interpretation and application of this chapter, all provisions are minimum requirements in addition to applicable provisions of this title.

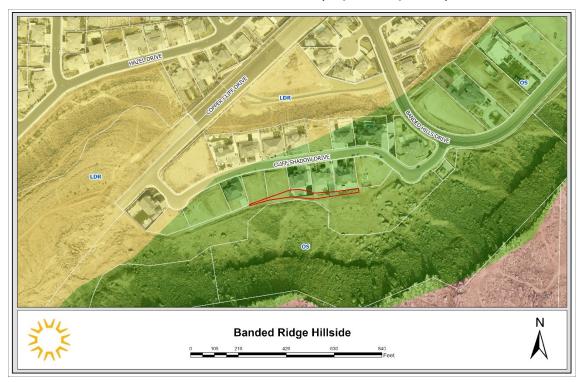
EXHIBITS PROVIDED

- Exhibit A Rockfall Study
 Exhibit A in the packet is a revised study conducted by AGEC, dated August 11, 2025, for the Banded Ridge Subdivision.
- 2. Exhibit B Revised Plat
 Exhibit B is a revised plat showing the areas requested to be taken out of the rock fall area.

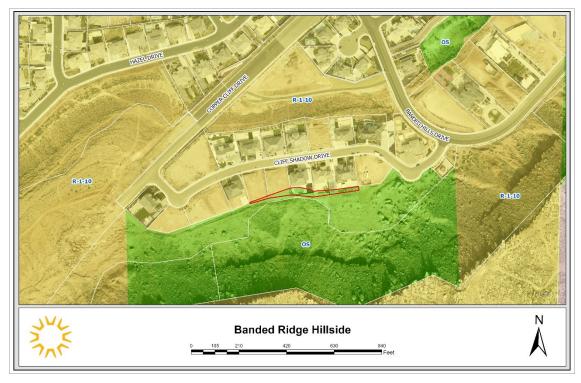
RECOMMENDATION

Section 10-13A-8(B)(1) of the "Hillside Review Board Powers and Duties" states that the Hillside Board can make recommendations to "adopt, modify or reject a proposal" to the Planning Commission (PC).

General Plan – OS (Open Space)



Zoning – OS (Open Space)



HS 2025-HS-009 Banded Ridge Hillside Revision Page 6

EXHIBIT A

Rockfall Study



August 11, 2025

RS Custom Homes 3490 Rim Runner Drive St. George, Utah 84790

Attention: Ryan Shaw

EMAIL: rscustomhome@gmail.com

Subject: Banded Ridge Rockfall Evaluation

Lots 16 through 18

Banded Ridge Subdivision

St. George, Utah Project No. 2250528

Mr. Shaw:

Applied Geotechnical Engineering Consultants, Inc. (AGEC) was requested to update our rockfall hazard analysis incorporating the grading that was accomplished between the building lots and the source of rockfall.

We previously conducted a geologic hazard study for Banded Ridge Subdivision and reported our findings in a letter dated April 30, 2018 under Project No. 2180168.

A rockfall setback line was included in the above-referenced letter. This setback line is also included on a grading plan for the Banded Ridge Subdivision prepared by Development Solutions Group Drawing G-1 dated May 11, 2018 under Project No. 15-028.

Subsequent to construction of many of the homes, a drainage channel was constructed south of the developed properties. This modification has been documented on a Banded Ridge Channel Topo map prepared by Bush and Gudgell Inc. dated August 5, 2025 under Project No. 251162.

SECTION ANALYSIS

The rockfall hazard analysis was conducted using the original topography including the drainage channel configuration. Based on the findings of our analysis, the rockfall setback can be modified to coincide with the north top edge of the channel for Lots 16, 17 and 18.

LIMITATIONS

This letter has been prepared in accordance with generally accepted soil and foundation engineering practices in the area for the use of the client for design purposes. The conclusions and recommendations included within the letter are based on the topographic information developed by others. If the conditions are significantly different from what is described above, we should be notified to reevaluate our recommendations.

If you have any questions or if we can be of further service, please call.

Sincerely,

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.

No. 143916

JAMES E.

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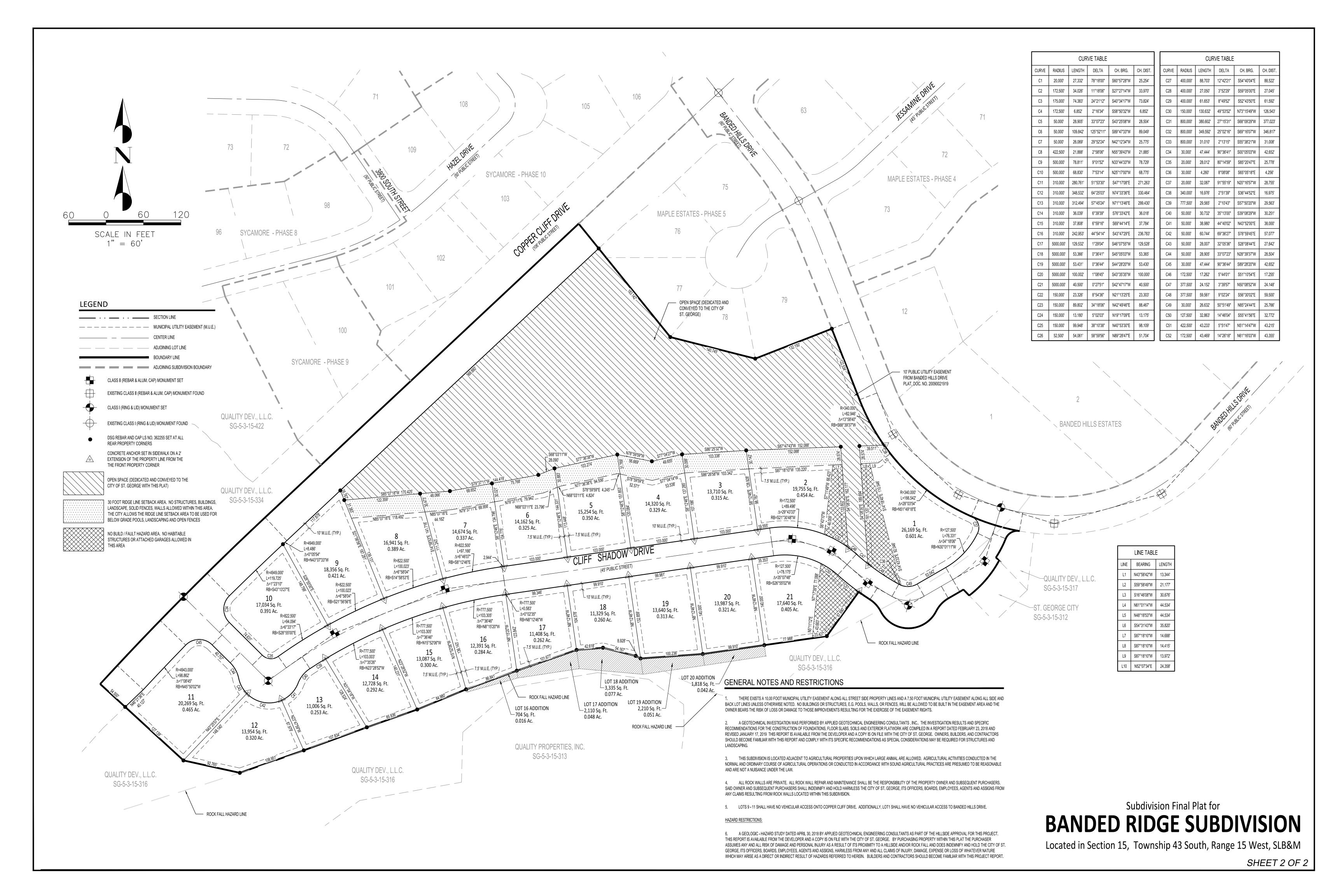
James E. Nordquist, P.E., D.GE

JEN/rs

HS 2025-HS-009 Banded Ridge Hillside Revision Page 7

EXHIBIT B

Revised Plat





HILLSIDE REVIEW BOARD AGENDA REPORT: 10/22/2025

Tech Ridge Zip Line & Chair Lift Hillside Development Permit (Case No. 2025-HS-008)			
Request:	A Hillside Development Permit to allow disturbance of areas in the 20-30%, 30-40% and 40% and above slope areas and review possible construction in a possible landslide area.		
Applicant:	Alliance Consulting		
Representative:	Michael Bradshaw		
Location:	West of Tech Ridge Pkwy and South of the end of Donlee Drive		
General Plan:	COM (Commercial), OS (Open Space)		
Existing Zoning:	PD-MU (Planned Development Mixed-Use), OS (Open Space), R-1-10 (Single Family Residential 10,000 sq. ft. lot minimum)		
Surrounding Zoning:	The property being an odd shape, is generally surrounded by R-1-10 (Single Family Residential 10,000 sq. ft. lot minimum), PD-MU (Planned Development Mixed-Use), OS (Open Space) and PD-R (Planned Development Residential)		
Land Area:	Approximately 6 acres		



2025-HS-008 Tech Ridge Zip Line & Chair Lift Page 2

BACKGROUND

The Tech Ridge Development is governed by a unique Zone Plan adopted in 2021, which includes five distinct districts. This project is partially located within District 1 and proposes the installation of a Chairlift and Zipline as amenities for the Stadium Plaza. The remainder of the project is in the valley below the Tech Ridge Development as well as on the neighboring Black Ridge mesa.

The proposal includes three chairlift stations, allowing riders to load and unload at each location. Approximately 19 poles, ranging from 20 to 30 feet in height, will be required to support the system. The first station will be situated at the Stadium Plaza in the Tech Ridge Development. The second station is located at the bottom of the valley providing access to the adventure park. The third and final, is on the upper Black Ridge mesa where the zip line will be located, riders can either zip line back to the other side or if preferred, ride the chairlift back to the other side.

Pole locations will be field verified by an engineer to ensure placement on slopes of less than 30%. Construction will not involve large machinery; instead, each pole will be individually assessed to determine the most appropriate construction method. Additional details and representative photos are provided in the narrative (Exhibit A).

This site is in the hillside overlay as well as the landslide and rockfall hazard areas.

The Hillside Review Board must weigh in and make a recommendation to Planning Commission and City Council on all applications in hillside overlay areas.

APPLICABLE ORDINANCE(S) (Selected portions)

10-13A-1: Density and Disturbance Standards

- A. The hillside development overlay zone (HDOZ) limits development densities and provides specific development incentives to transfer underlying zone densities from hillsides (sending areas) to less steep slopes or more safe development areas (receiving areas), within a development.
- B. For those portions of a proposed development with natural slopes twenty percent (20%) or less, development density follows the density and development standards in the underlying zone.
- C. For those portions of a proposed development with natural slopes from twenty-one percent (21%) to thirty percent (30%), development activity shall not disturb more than thirty percent (30%) of the parcel within this slope category.
- D. For those portions of a proposed development with natural slopes from thirty-one percent (31%) to forty percent (40%), development activity shall not disturb more than five percent (5%) of the area within this slope category.
- E. A proposed development may not disturb slopes in excess of forty percent (40%).

10-13A-2: Slope and Slope Areas Determined

- A. Slope shall be determined for each significant portion of development parcel.
- B. *Procedure:* The applicant shall map the location of the natural slope by using the following procedure:
 - 1. Preparation of Contour Maps: The applicant shall submit an accurate, current contour map, prepared and certified by a licensed professional engineer or surveyor, which shows all land contours at intervals no greater than five feet (5'), drawn at a one inch equals one hundred feet (1" = 100') scale maximum.
 - 2. *Verification through Field Surveys:* The city engineer, or designee may require the applicant to submit a field survey to verify the accuracy of the contour map.
- C. Determination of Slope Areas: Using the contour map, <u>natural</u> slopes shall be calculated using points identified as natural slopes of twenty percent (20%), thirty percent (30%), and forty percent (40%), and shall be located on the contour map and connected by a continuous line. That area bounded by said lines and intersecting property lines shall be used for determining project density. <u>Small washes or outcrops</u>, which have slopes distinctly different from <u>surrounding property</u>, and are not part of the contiguous topography, may be excluded from the slope determination.

10-13B-2: Development in Geologic Hazard Areas

- A. Geologic Hazard Areas (UGS 1-4: subsections A1 through A4 of this section): For any development in the city with a geologic hazard listed below, applicant shall submit a report prepared by a qualified, licensed geologist specializing in engineering geology, or a licensed civil engineer, trained and experienced in the practice of geotechnical engineering. Development in the geologic hazard overlay for high category rockfall areas shall be reviewed by the hillside review board.
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- f. Slope stability analysis: conclusions and recommendations concerning the effects of material removal, introduction of water, both on and off site, including, where applicable, on mesa tops, seismic activity, and erosion on slope stability;
- g. Foundation investigation: conclusions and recommendations concerning the effects of soil conditions on foundation and structural stability, including bearing capacity, sheer strength, and shrink/swell potential of soils;
- h. Spring location: the location and yield of springs and seeps which shall be shown on the site plan;
 - i. Structural features: structural features including any geological limitations;
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- 5. The applicant may appeal a decision in accordance with chapter 3 of this title.
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- E. *Interpretation:* In the interpretation and application of this chapter, all provisions are minimum requirements in addition to applicable provisions of this title.

EXHIBITS PROVIDED

- 1. Exhibit A Narrative
 The narrative includes the construction methods supplement.
- 2. Exhibit B Conceptual Site Plan/Slope Analysis/Chairlift Plan and Profile
 This shows the placement of the chairlift stations and the approximate locations of the support poles.
- 3. Exhibit C Slope Analysis
 Exhibit C shows the slopes on the site.
- 4. Exhibit D AGEC Evaluations and Studies

"Exhibit D" includes the following:

- a) Zipline and Chair Lift Feasibility Evaluation conducted in 2020
- b) Rockfall-hazard Study conducted in 2019
- c) Landslide-hazard Study conducted in 2019
- 5. Exhibit E Tech Ridge Stadium Concept Design
 This is the concept design for the Tech Ridge Stadium.

RECOMMENDATION

Section 10-13A-8(B)(1) of the "Hillside Review Board Powers and Duties" states that the Hillside Board can make recommendations to "adopt, modify or reject a proposal" to the Planning Commission (PC).

2025-HS-008 Tech Ridge Zip Line & Chair Lift Page 6

EXHIBIT A Narrative



April 9, 2020

Tech Ridge Development

RE: Zip Line & Chair Lift Hillside Narrative (Construction Methods Supplement)

The Hillside permit request is to construct a zip line & chair lift amenity from the proposed Stadium Plaza at the west end of Knowledge Way to the upper Black Ridge mesa. This amenity will provide riders the availability to the area's highest vantage point to participate in a 360-degree view of the surrounding vista. Riders can then take the chair lift back down to the Stadium Plaza while thrill seekers will have the opportunity to sail down the 2,650-foot-long zip line flying about 250-feet above the valley below. An additional key feature of the Stadium Plaza is the observation pier which will allow spectators a bird's eye view of the Adventure Park and zip line riders by means of a cantilevered platform that extends 40+ feet beyond the rim edge.

There are three proposed chair lift platforms which will allow riders to load and unload at each location: the first is at the Stadium Plaza; the second is in the bottom of the valley servicing the proposed Adventure Park; and the third is on the upper Black Ridge mesa. The chair lift requires approximately 19 poles that are between 20 and 30 feet tall. Several are to be installed on the hillside and will be field located on the flattest shelfs available to accommodate the required pole spacing. The poles that are to be built on the hillside will be constructed without heavy equipment to limit the area of disturbance. The construction process will be to dig the foundation holes with manual labor and construct the vertical pole structures via helicopter. The poles, chairs and cables will be fabricated or painted to blend in with the hillside to minimize visual impact.

The 4-cable zip line will transport riders from the upper Black Ridge mesa down to the Stadium Plaza, approximately 320-feet below. There will be a launch platform on the upper Black Ridge mesa and a landing platform at the Stadium Plaza.

All facilities on the upper Black Ridge mesa will be constructed with the lowest impact possible. Since there is no vehicular access available to the site, the bulk materials will be delivered via helicopter or packed in. Minimal restroom facilities are proposed at this location to be available for the employees and emergency situations. Since no utility services are available to the upper Black Ridge mesa, all water and waste will have to be managed via the chair lift.

A key element of the Stadium Plaza is the observation pier. This will be an iconic architectural feature that will be composed of a 130-foot tall "tail fin" vertical structure with a tapering 40-foot wide 175-foot long observation pier. The pier will cantilever over the rim edge about 45-feet with the "tail fin" structure as the counter-weight. This structure will require several support columns within the 50-foot rim edge boundary.

A development agreement and zoning package is being developed that will create overlay areas to accommodate the necessary rim edge encroachments for the launch and landing platforms and the observation pier.

This supplement to the zip line & chair lift hillside application that was hear at the March 18th meeting is to discuss the means and methods of pole construction and the mitigation of the facilities on the upper Black Ridge mesa.

A Feasibility Evaluation for the Zip Line and Chair Lift has been done by AGEC dated April 9, 2020. It states that "the proposed Zip Line and Chair Lift is a feasible project," and that "the subsurface conditions for foundation support would need to be evaluated at each pole location."

Pole Construction and Mitigation:

Each pole will be evaluated on an individual basis for specific construction methods. In reasonably accessible areas the foundations and construction will be done by conventional means with tracked excavator and trucks. We anticipate that for poles located in more difficult terrain areas and on the highly sensitive slope areas the construction will be done to minimize impact to the natural slope, rock outcroppings, and native vegetation. Where possible a "spider" excavator (see photo #1) will be used with the spoils carefully removed from the site. Disturbed areas will be shaped to fit the natural slope and revegetated with native plants. Disturbed rocks will be reset with the "black" facing out or a rock stain applied to minimize the color difference. We anticipate some poles to will be inaccessible to motorized equipment. These poles will be excavated using had tools and manual labor. In most cases heavy equipment will not have adequate access to the pole locations. These heavy haul loads will be accomplished with helicopter (see photo #'s 2-5).

Poles and other appurtenances will be painted non gloss black to mitigate the visual impact.

Upper Mesa Facilities Construction and Mitigation:

Construction of the chair lift and zipline facilities on the upper mesa will be by small equipment, hand tools, and manual labors. The small equipment and material will be delivered via helicopter or by manual means. The structures will be constructed to minimize the visual impact to the surrounding areas by angular components and dark color schemes to mimic the thick basalt layer of the mesa. This is will have the aesthetic effect of continuing the basalt horizon and minimizing the visual impact of the structures from the valley view points. (see photo #'s 6-9)

Please call (435) 673-8060 or e-mail mwb@allianceconsulting.us with additional comments or concerns. Thank you,

Mike Bradshaw, P.L.S.

Picture #1 – Spider Excavator





Picture #2 –Foundation Construction

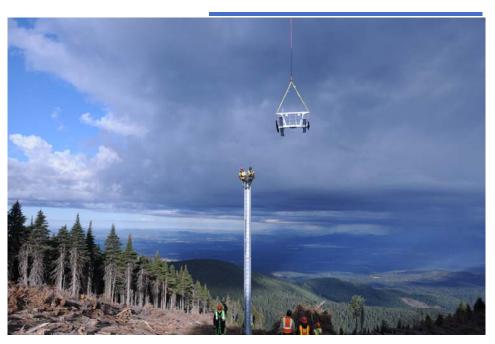
Picture #3 – Foundation Construction





Picture #4 –Pole Construction

Picture #5 –Pole Construction





Picture #6 – Upper Mesa Platform from Black Ridge Cove

Picture #7 – Upper Mesa Platform from Mid Tech Ridge



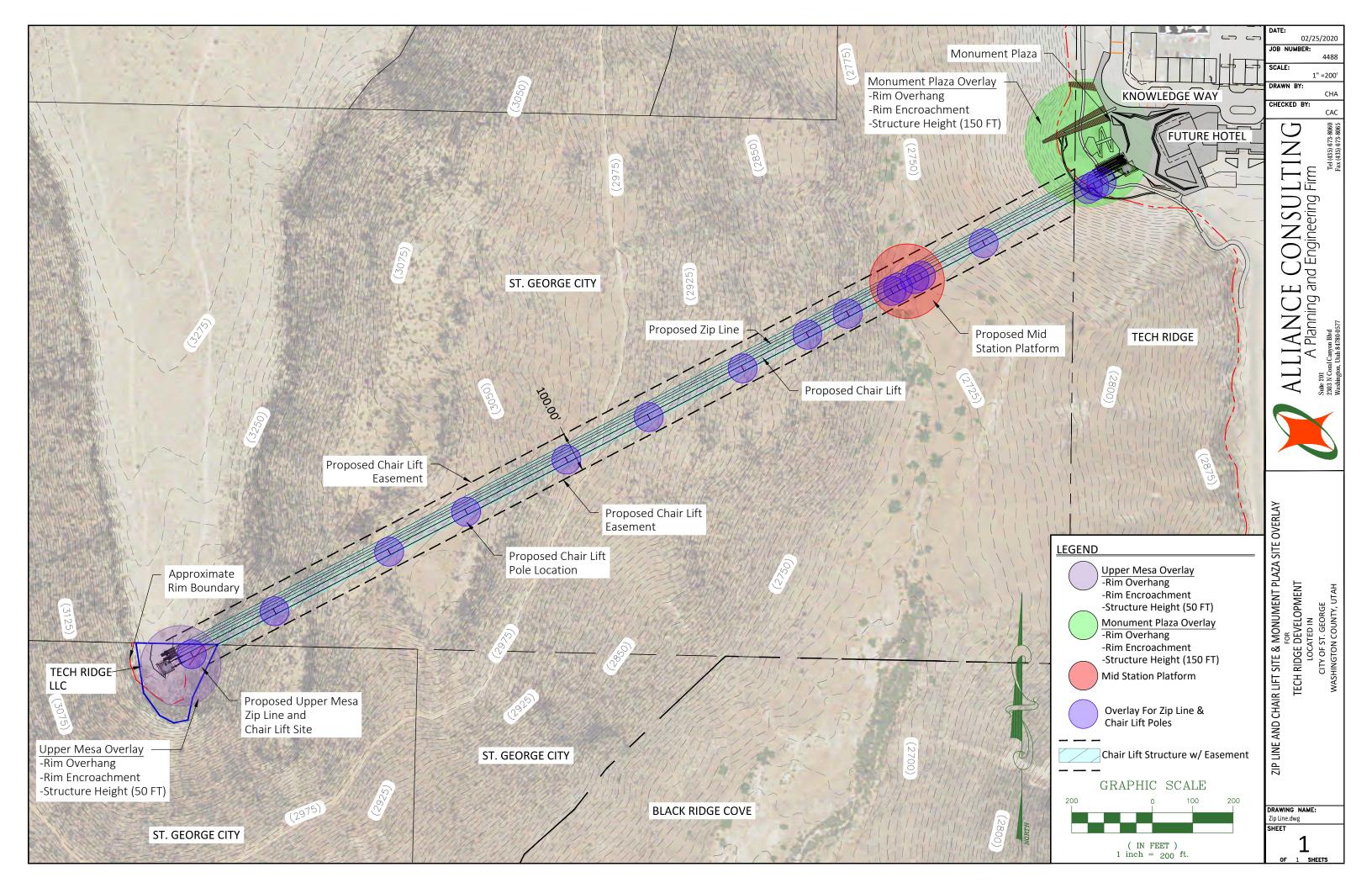
Picture #8 – Upper Mesa Platform

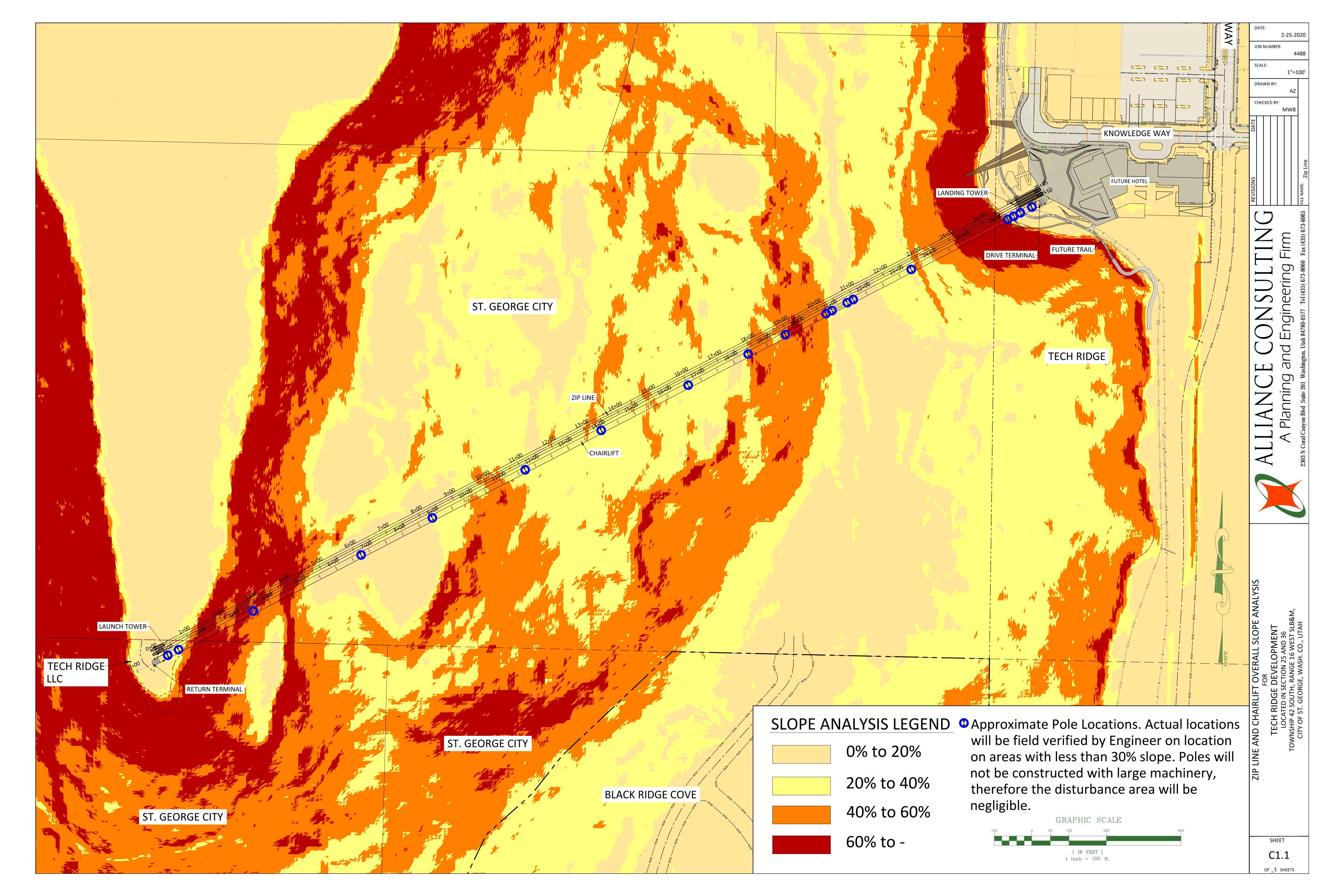


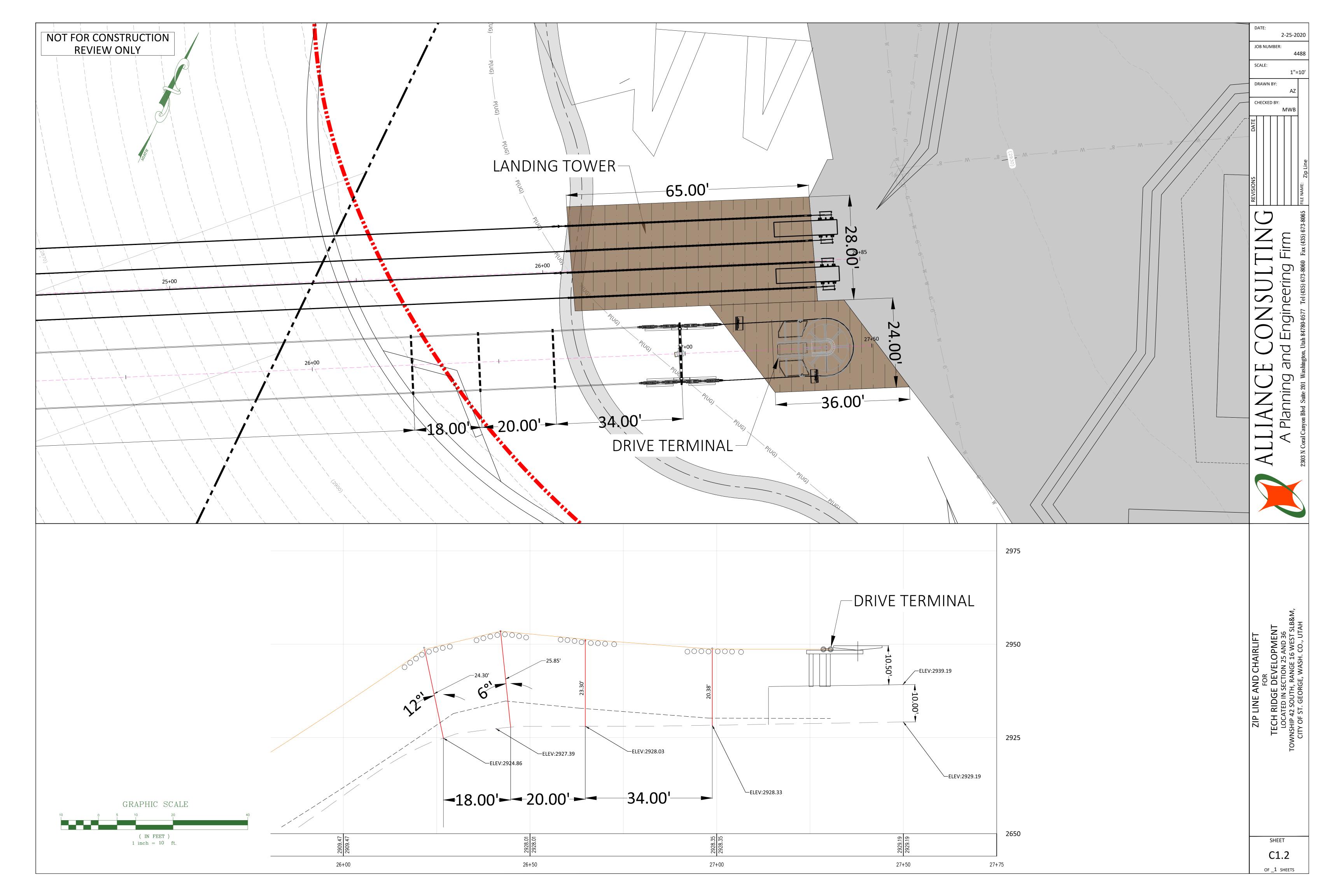
 ${\it Picture~\#9-Upper~Mesa~Plat form~view~from~Stadium~Plaza}$

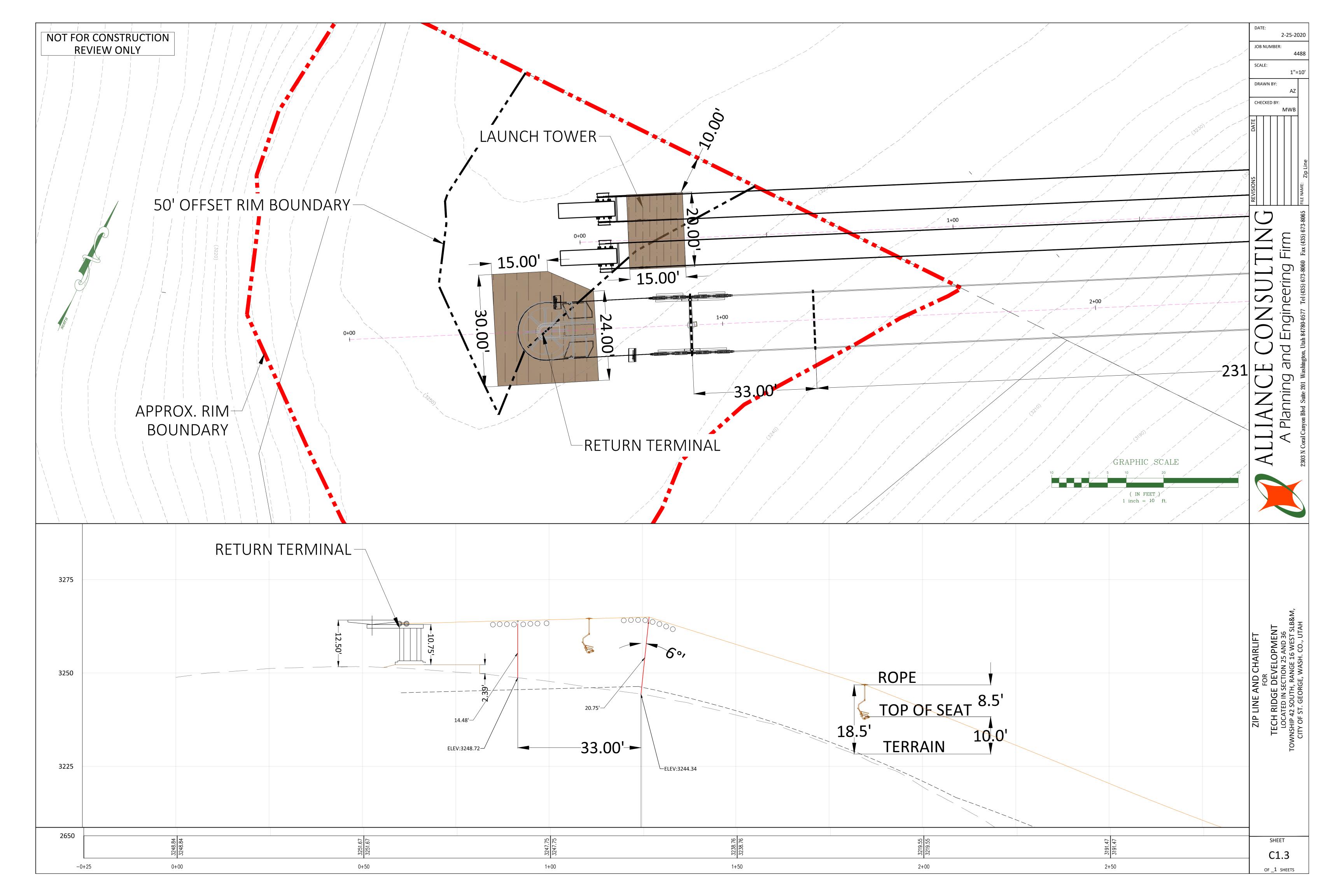


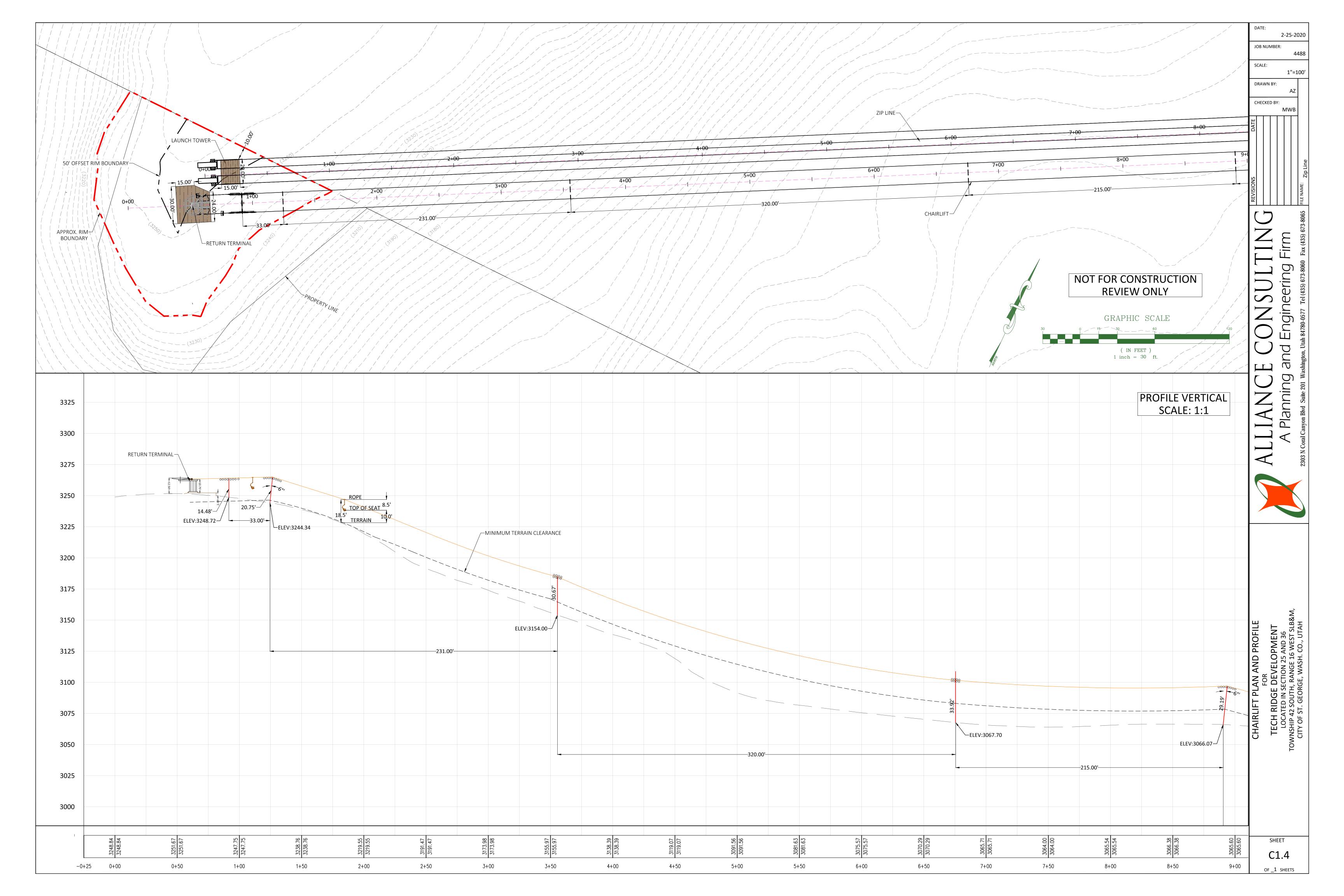
EXHIBIT B Conceptual Site Plan/Slope Analysis/Chairlift Plan and Profile

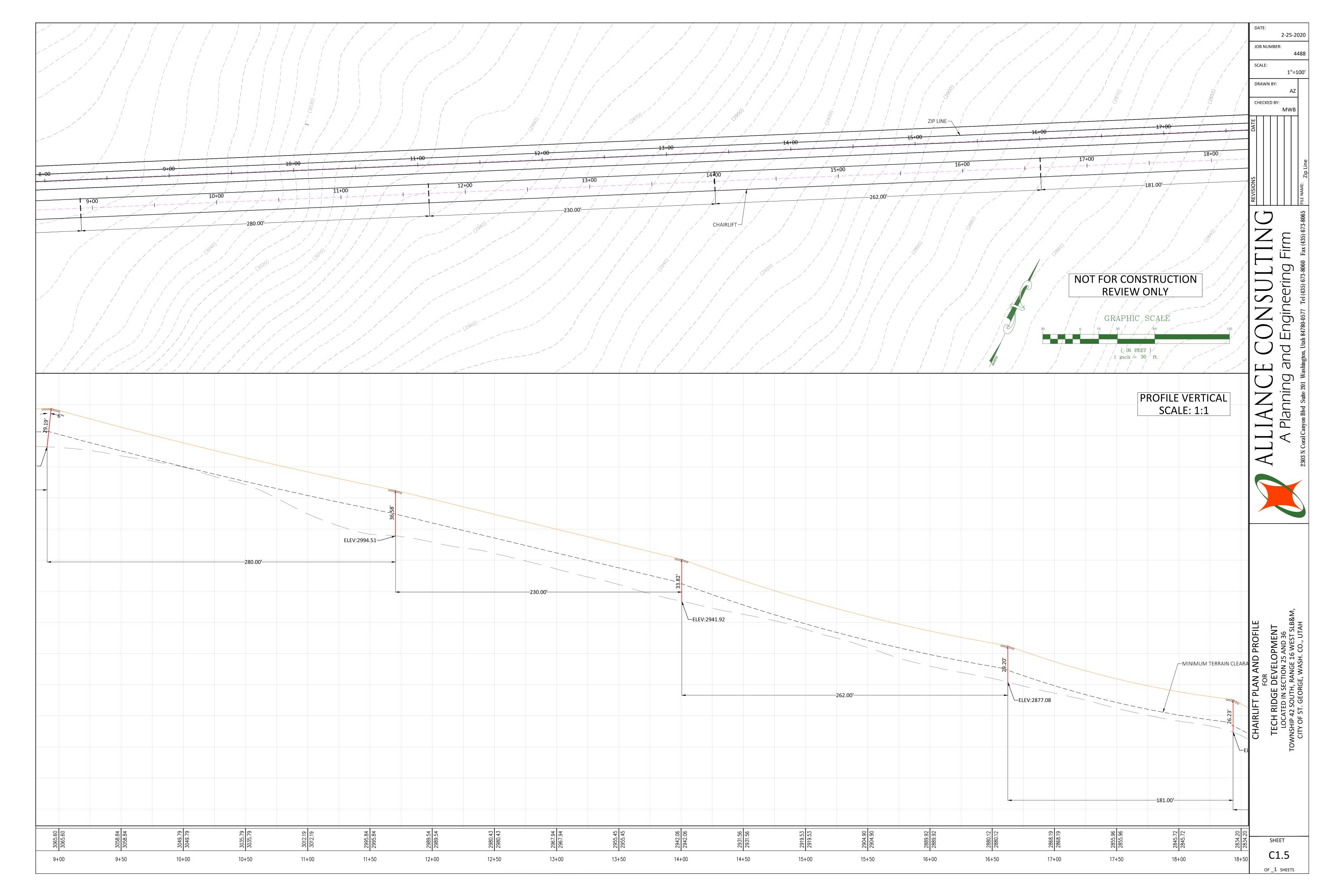


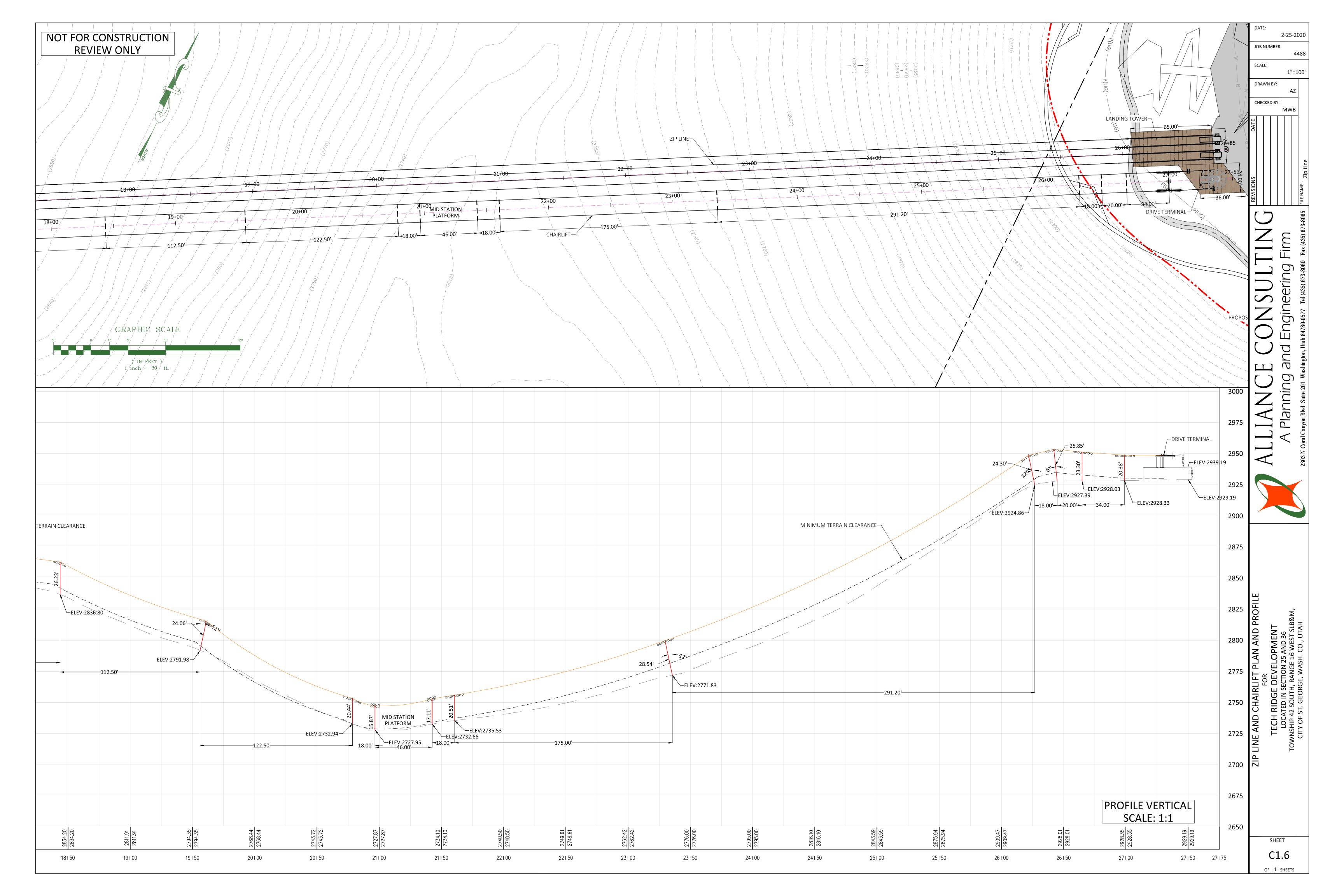


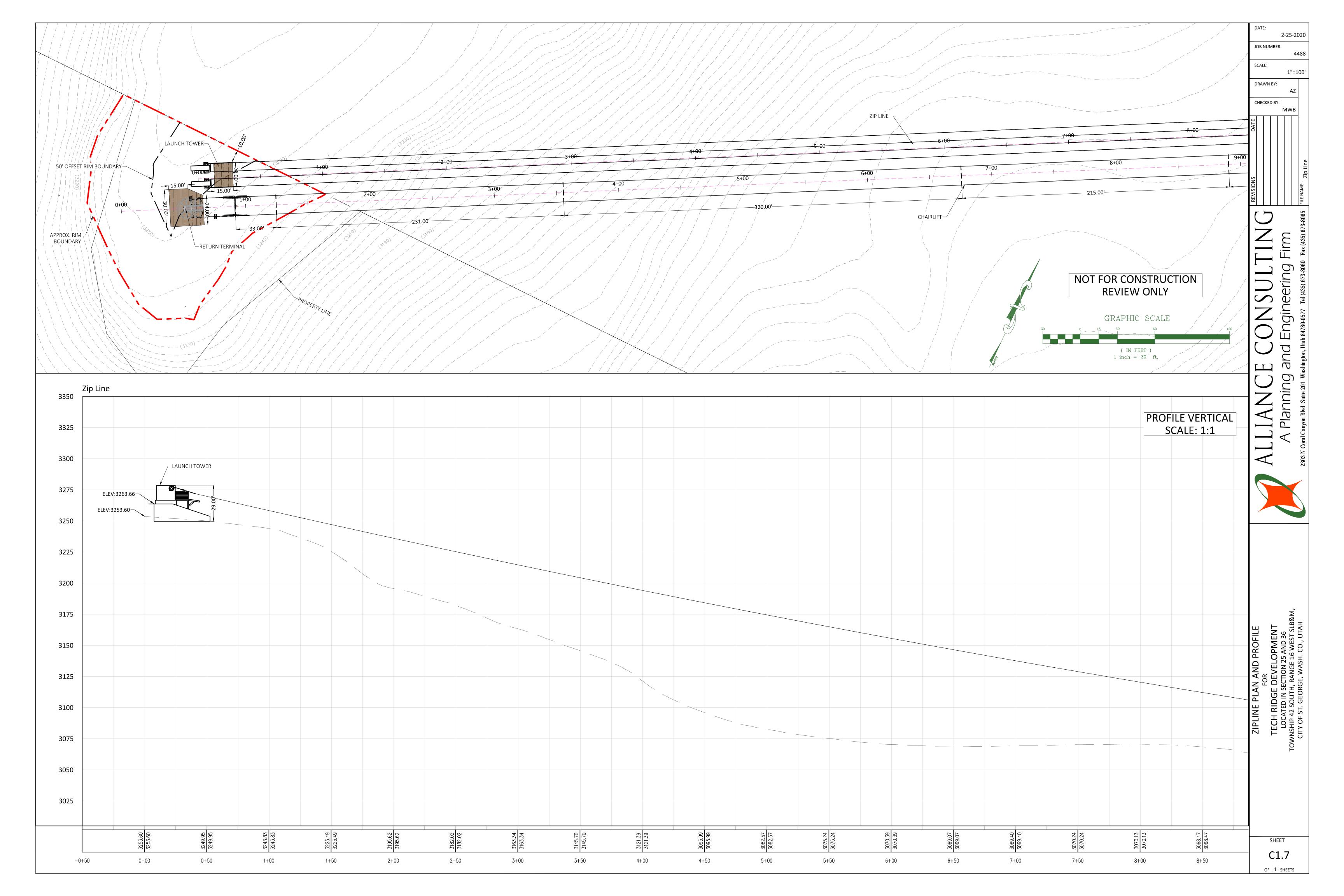


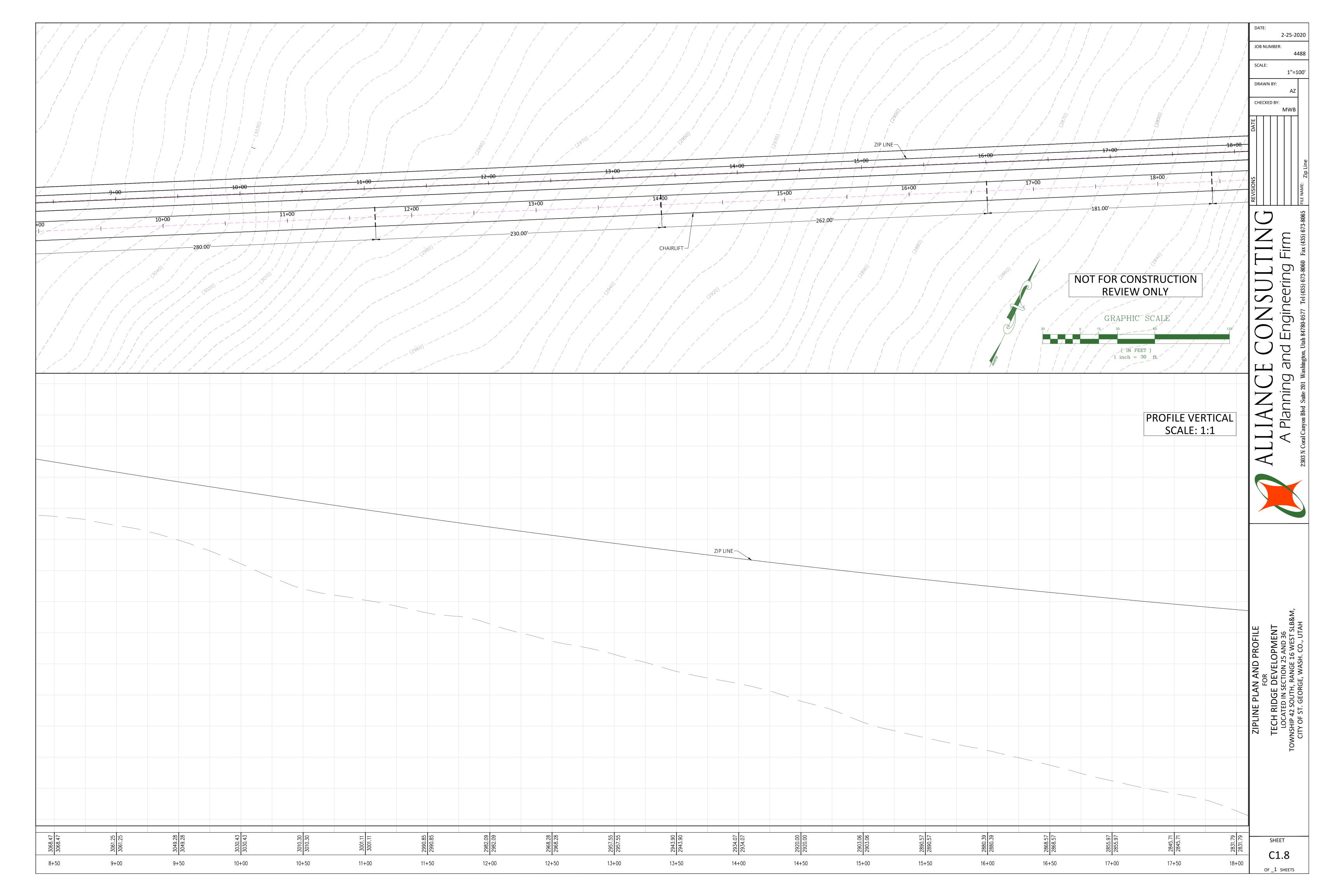


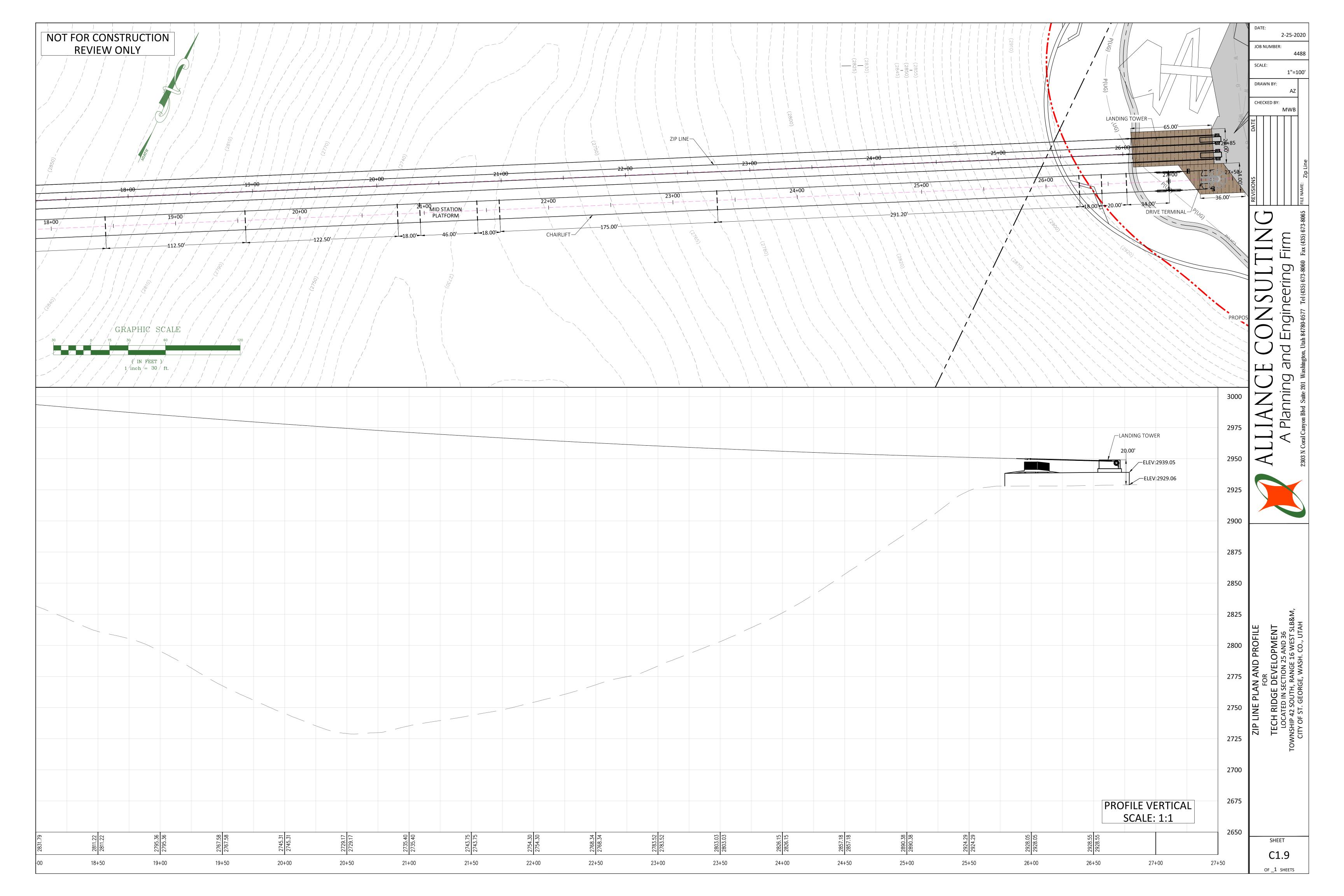






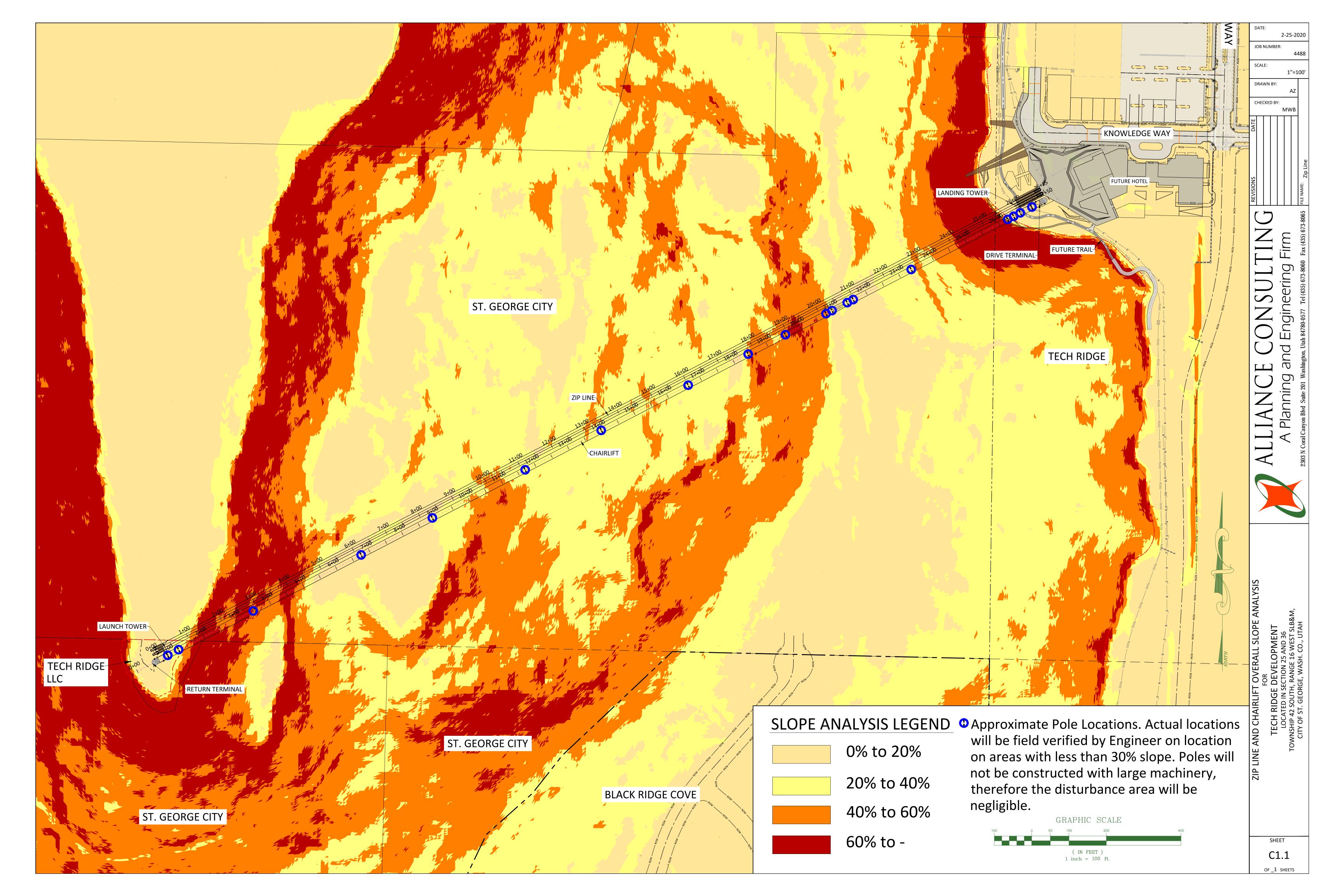






2025-HS-008 Tech Ridge Zip Line & Chair Lift Page 8

EXHIBIT C Slope Analysis



2025-HS-008 Tech Ridge Zip Line & Chair Lift Page 9

EXHIBIT D AGEC Evaluations and Studies



April 9, 2020

Tech Ridge, LLC 475 South Donlee Drive St. George, Utah 84770

Attention: Isaac Barlow

Subject: Zip Line and Chair Lift Feasibility Evaluation

Tech Ridge Development

St. George, Utah

AGEC Project No. 2200622

Applied Geotechnical Engineering Consultants, Inc. (AGEC) was requested to provide consultation to the feasibility of the proposed Zip Line and Chair Lift for the Tech Ridge Development. AGEC has been provided a Site overlay plan along with the proposed profile and easement of the project.

AGEC has previously provided geotechnical engineering and testing for the Blackridge Cove and Cloud Drive projects that are associated with this project.

- Blackridge Cove (Temple Trail Sub), Landslide Hazard Study, by AGEC, dated May 3, 2019, Project No. 2182077. (attached)
- 2. Blackridge Cove (Temple Trail Sub), Rockfall Hazard Study, by AGEC, dated May 2, 2019. Project No. 2182068 (attached)
- 3. Blackridge Cove (Temple Trial Sub), Geotechnical Study, by AGEC, dated September 21, 2018, Project No. 2180672 Addendum dated December 23, 2019.
- 4. Cloud Drive (Tech Ridge South Access Road), Geotechnical Investigation, dated October 19, 2018, Project No. 2180295, Clarification of Grading Recommendations, dated December 17, 2008.

Items No. 1 and 2 include a geologic hazard evaluation specific to the Landslides and Rockfall were conducted for the west side slope within the alignment of the proposed Zip Line and Chair Lift. These two reports were referenced as a part of the feasibility evaluation.

Based on a review of the plans provided, the studies noted above, the following items are noted:

- The alignment extends from a Terminal down the east ridge (previous airport area) to a Mid Station Platform at the bottom, then up the west slope to the top of the west ridge above the Temple Trail to the other Terminal. There are approximately 18 poles that will support the cables for the chair lift and zip line structures. (See Photo No. 2 attached).
- The east side Drive Terminal and Landing Tower is located on an area that appears to be a previously placed fill slope (see attached photo No. 1).
- A portion of the west ridge alignment between the Temple Trail and mid station platform extends through a mapped area of a landslide.

Zip Line and Chair Lift Feasibility Evaluation Tech Ridge Development April 9, 2010

- AGEC has reviewed the geologic conditions for the proposal alignment and our previous study for the mapped landslide and concluded that there is no evidence of areas mapped as landslide deposits are actually landslide deposits.
- There is a rock fall hazard that would extend along the west ridge slope.

Based on these items noted during our evaluation and previous evaluation, it is our opinion that the proposed Zip Line and Chair Lift is a feasible project. The items that would need to be evaluated as a part of the design.

- The subsurface conditions for foundation support would need to be evaluated at each pole location. The areas of difficult access along the west ridge may need to be estimated and verified during construction. We anticipate relatively shallow bedrock on the west side slope.
- The potential for rock fall may be mitigated placing exiting rocks as a barrier between the pole and the rock fall runout path. During the design stage, details for this protection can be provided.

Please call if further consultation is needed.

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.

G. Wayne Rogers, P.E. Attached photos and Reports

P:\2020 PROJECT FILES\2200600\2200622 - G-GT TECH RIDGE ZIP LINE & CHAIR LIFT\LETTER.DOCX





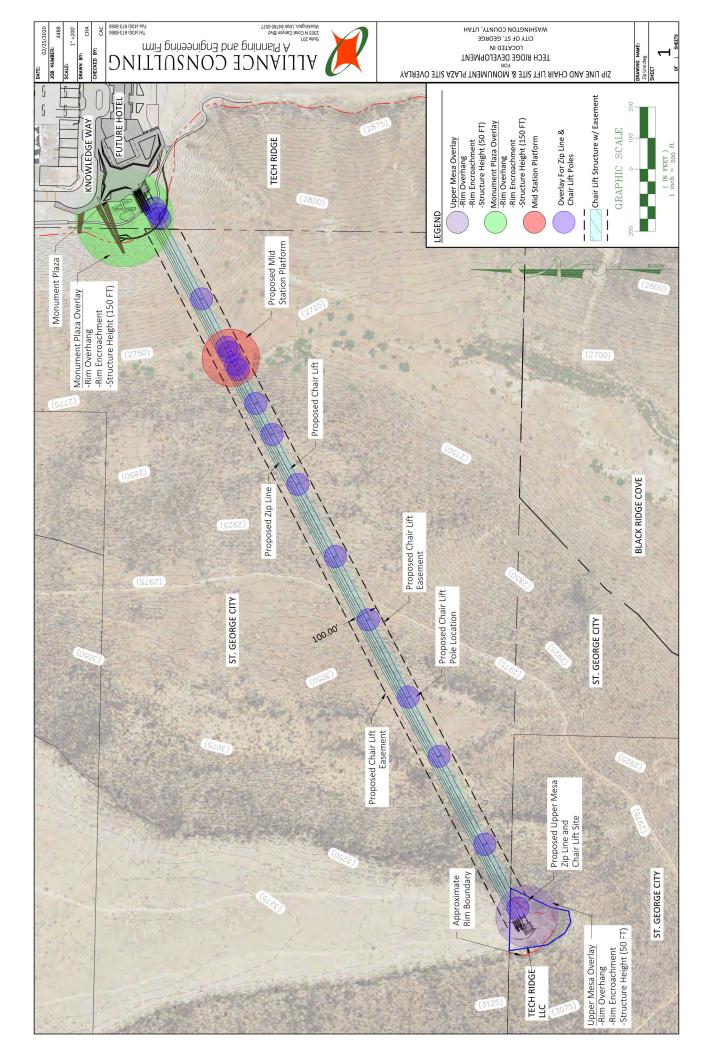


Photo No. 1, view of west ridge/slope from top of east slope – Upper Orange Arrow is Upper Mesa Landing, Blue arrows are approximate location of poles, black line is approximate location of Temple Trail and Black Arrow is Mid Station Platform.



Photo No. 2 - View of Transfer Platform location (red arrow), note fill slope below.







May 2, 2019

Tech Ridge, LLC. 475 South Donlee Drive St George, Utah 84770

Attention: Isaac Barlow

Subject: Rockfall-hazard Study

Temple Trail Subdivision 950 West Indian Hills Drive

St George, Utah Project No. 2182068

Gentlemen:

Applied Geotechnical Engineering Consultants, Inc. (AGEC) was requested to perform a rockfall-hazard study for the proposed Temple Trail subdivision located north of Indian Hills Drive at approximately 950 West in St George, Utah.

PROPOSED CONSTRUCTION

We understand the area is planned for residential development. The approximate area planned for development is shown on Figures 1 and 2.

GEOLOGY

The geology for the area as mapped by Hayden and Willis (2011) is presented on Figure 1. The site is located in a drainage. The soil in the drainage is mapped as a mixture of alluvial and colluvial deposits with older terrace-gravel deposits associated with the Santa Clara River along the south end of the property. Talus deposits are mapped for the steep slopes above the drainage. Hayden and Willis (2011) map landslide deposits for portions of the steep slopes above the drainage. However, review of aerial photographs, lidar data and site reconnaissance finds no evidence that the areas mapped as landslide on the property are landslide deposits. They are colluvial deposits. There are landslide deposits to the north and southeast of the site.

The soil is underlain by Triassic to Jurassic bedrock consisting from top to bottom of the Springdale Sandstone Member of the Kayenta Formation, Whitmore Point and Dinosaur Canyon Members of the Moenave Formation, and the Petrified Forest Member of the Chinle Formation. All but the Petrified Forest Member of the Chinle Formation consist predominantly

Tech Ridge, LLC. May 2, 2019 Page 2

of sandstone and siltstone. The Petrified Forest Member of the Chinle Formation consists of interlayered mudstone, claystone and siltstone. The bedrock dips down toward the north at approximately 5 degrees.

Basalt caps the plateaus to the northwest and east of the proposed subdivision. The basalt to the northwest is mapped as the lower Pleistocene Twin Peaks lava flow and the basalt to the east is the lower Pleistocene Cedar Bench lava flow, the younger of the two flows, at approximately 2 and 1 millions years old. Boulders weathering from the basalts are the source of potential rockfalls in the area.

ROCKFALL-HAZARD EVALUATION

Low-sun-angle aerial photographs from 1981 and aerial photographs from 2000 were reviewed along with site reconnaissance on April 18, 2019 to determine what potential rockfall hazard may affect the proposed development.

Source boulders for rockfall hazard originate from the basalt outcrops to the northwest and east of the site. The rockfall appears to be relatively infrequent.

The approximate limit of the rockfall runout is presented on Figure 2. We expect that most rocks will stop well before this rockfall-limit line and it is possible that in rare cases, a rock could roll beyond this line. The farther houses are kept below this line, the lower the risk that houses could be aversely affected by rockfall. Regrading the site can modify the rockfall hazard. Thus, grading plans should be reviewed by AGEC if modified from those shown on Figure 2.

LIMITATIONS

This letter has been prepared in accordance with generally accepted geologic engineering practices in the area for the use of the client. The conclusions and recommendations included in the letter are based on conditions observed during our field study and the topographic information provided. If conditions are significantly different from those described in this letter, we should be notified to reevaluate the recommendations given. There may be rockfall hazard beyond the rockfall zone shown on Figure 2 and this hazard should be disclosed to potential home buyers.

If you have questions or if we can be of further service, please call.

Tech Ridge, LLC. May 2, 2019 Page 3

Sincerely,

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.

Douglas R. Hawkes, P.E., P.G.

Reviewed by JEN, P.E.

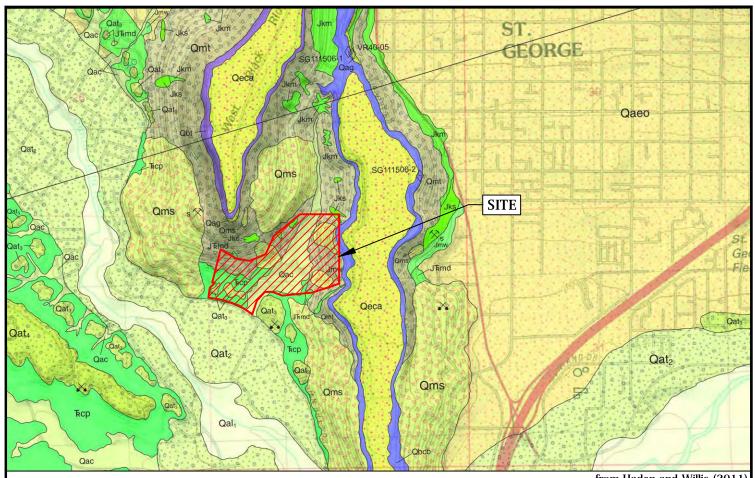
Enclosures

References:

Hayden, J.M. and Willis, G.C., 2011; Geologic map of the St George 7.5' quadrangle, Washington County, Utah, Utah Geological Survey Map 251DM.

Utah Geological Survey, 1981; Low-sun-angle aerial photographs AM 4-1 and 2, dated October 23, 1981.

Utah Geological Survey, 2000; Aerial photographs 3-11-7 and 8, dated July 20, 2000.



from Haden and Willis (2011)

4000 feet

EXPLANATION OF SYMBOLS AND GEOLOGIC UNITS IN AREA OF PROPOSED DEVELOPMENT

Qac Mixture of alluvial and colluvial deposits (Holocene to Pleistocene).

Talus (Holocene to Pleistocene). Qmt

Landslide deposits (Holocene to Pleistocene). Qms

Terrace-gravel deposits (Pleistocene). Qat₃

Cedar Bench lava flow (Pleistocene). Qbcb -

Qbt Twin Peaks lava flow (Pleistocene).

Springdale Sandsone member of the Kayenta Formation (Jurassic). Jks

Whitmore Point member of the Moenave Formation (Jurassic). Jmw -

JTkmd -Dinosaur Canyon Member of the Moenave Formation (Jurassic to Triassic).

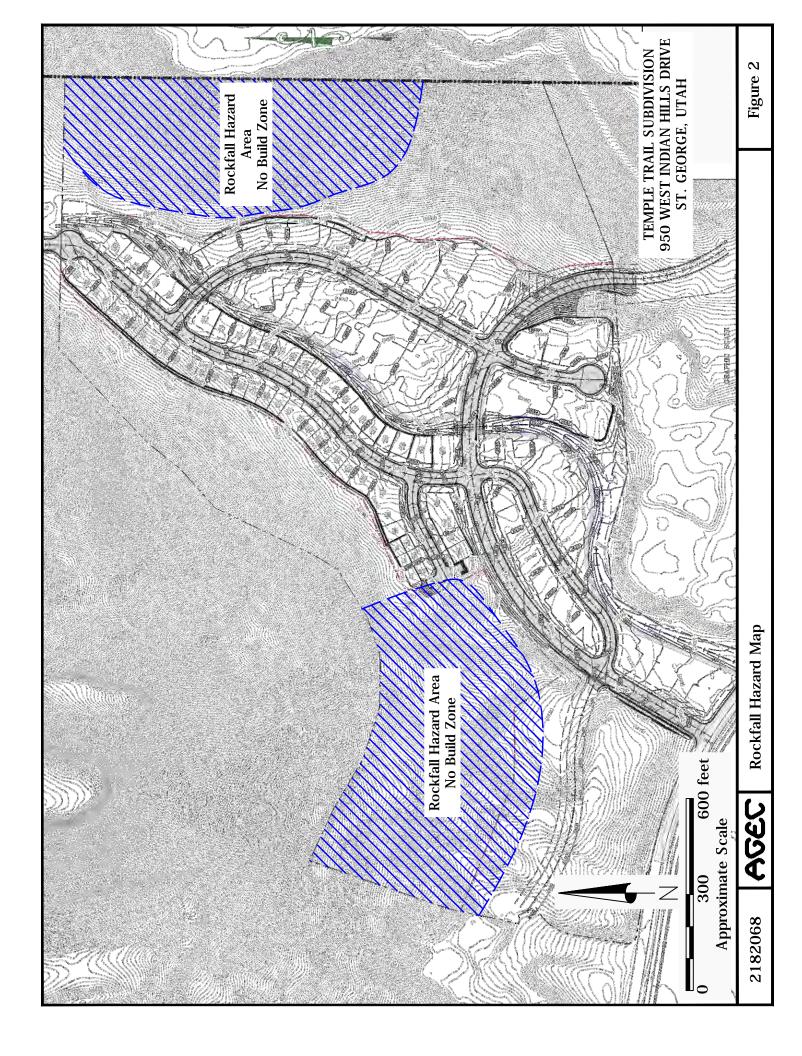
Ткер Petrified Forest Member of the Chinle Formation (Triassic).

Geologic contact between units.

TEMPLE TRAIL SUBDIVISION 950 WEST INDIAN HILLS DRIVE ST. GEORGE, UTAH

2000 Approximate Scale

AGEC 2182068 Geologic Map Figure 1





May 3, 2019

Tech Ridge, LLC. 475 South Donlee Drive St George, Utah 84770

Attention: Isaac Barlow

Subject: Landslide-hazard Study

Temple Trail Subdivision 950 West Indian Hills Drive

St George, Utah Project No. 2182077

Gentlemen:

Applied Geotechnical Engineering Consultants, Inc. (AGEC) was requested to perform a landslide-hazard study for the proposed Temple Trail subdivision located north of Indian Hills Drive at approximately 950 West in St George, Utah.

PROPOSED CONSTRUCTION

We understand the area is planned for residential development. The approximate area planned for development is shown on Figure 1.

GEOLOGY

The geology for the area as mapped by Hayden and Willis (2011) is presented on Figure 1. The site is located in a drainage. The soil in the drainage is mapped as a mixture of alluvial and colluvial deposits with older terrace-gravel deposits associated with the Santa Clara River along the south end of the property. Talus deposits are mapped for the steep slopes above the drainage.

The soil is underlain by Triassic to Jurassic bedrock consisting from top to bottom of the Springdale Sandstone Member of the Kayenta Formation, Whitmore Point and Dinosaur Canyon Members of the Moenave Formation, and the Petrified Forest Member of the Chinle Formation. All but the Petrified Forest Member of the Chinle Formation consist predominantly of sandstone and siltstone. The Petrified Forest Member of the Chinle Formation consists of interlayered mudstone, claystone and siltstone. The bedrock dips down toward the north at approximately 5 degrees.

Tech Ridge, LLC. May 3, 2019 Page 2

Basalt caps the plateaus to the northwest and east of the proposed subdivision. The basalt to the northwest is mapped as the lower Pleistocene Twin Peaks lava flow and the basalt to the east is the lower Pleistocene Cedar Bench lava flow, the younger of the two flows, at approximately 2 and 1 millions years old.

LANDSLIDE-HAZARD EVALUATION

Low-sun-angle aerial photographs from 1981, aerial photographs from 2000 and lidar data from 2017 were reviewed along with site reconnaissance on April 18, 2019 to determine what potential landslide hazard may affect the proposed development.

Hayden and Willis (2011) map landslide deposits for portions of the steep slopes above the drainage. However, review of aerial photographs, lidar data and site reconnaissance finds no evidence that the areas mapped as landslide on the property are landslide deposits. The underlying bedrock in these areas is predominantly sandstone, which would have much greater strength than what is needed for a stable slope. They are colluvial deposits. There are landslide deposits to the north and southeast of the site. These are underlain by bedrock consisting of mudstone and have geomorphic characteristics consistent with landslide deposits.

Slope stability was performed for the steep slopes along the east and west sides of the property using topographic data provided by Alliance Consulting and the computer program Slide 2018. Bedrock strengths used in evaluating landslides in the area to the southeast were applied to the stability model and found to have suitable safety factors for the area planned for development.

LIMITATIONS

This letter has been prepared in accordance with generally accepted geologic engineering practices in the area for the use of the client. The conclusions and recommendations included in the letter are based on conditions observed during our field study and the topographic information provided. If conditions are significantly different from those described in this letter, we should be notified to reevaluate the recommendations given.

Tech Ridge, LLC. May 3, 2019 Page 3

If you have questions or if we can be of further service, please call.

Sincerely,

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.

Douglas R. Hawkes, P.E., P.G.

Reviewed by JEN, P.E. DRH/rs Enclosure

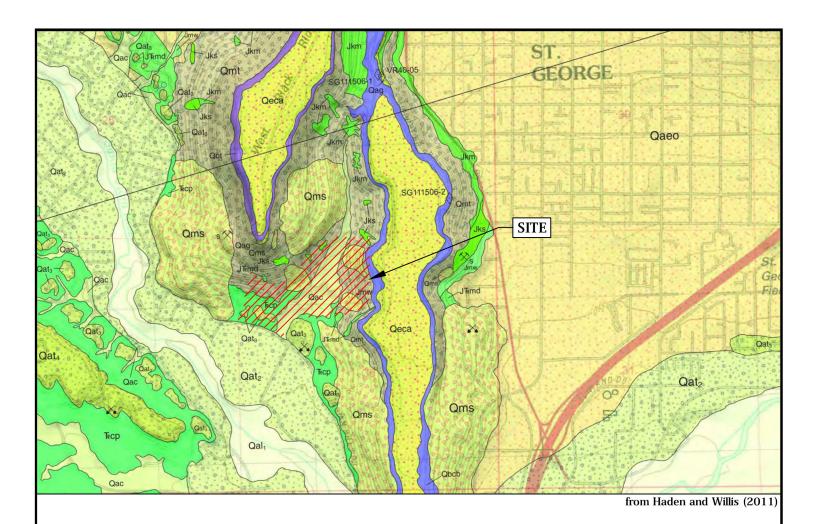
Reference:

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Utah Geological Survey, 2000; Aerial photographs 3-11-7 and 8, dated July 20, 2000.

Utah Geological Survey, 2018; 1-meter bare-earth lidar DEM for Washington County.



EXPLANATION OF SYMBOLS AND GEOLOGIC UNITS IN AREA OF PROPOSED DEVELOPMENT

Qac - Mixture of alluvial and colluvial deposits (Holocene to Pleistocene).

Qmt - Talus (Holocene to Pleistocene).

Qms - Landslide deposits (Holocene to Pleistocene).

Qat₃ - Terrace-gravel deposits (Pleistocene).

Qbcb - Cedar Bench lava flow (Pleistocene).

Qbt - Twin Peaks lava flow (Pleistocene).

Jks - Springdale Sandsone member of the Kayenta Formation (Jurassic).

Jmw - Whitmore Point member of the Moenave Formation (Jurassic).

JTmd - Dinosaur Canyon Member of the Moenave Formation (Jurassic to Triassic).

Tecp - Petrified Forest Member of the Chinle Formation (Triassic).

——— Geologic contact between units.

TEMPLE TRAIL SUBDIVISION 950 WEST INDIAN HILLS DRIVE ST. GEORGE, UTAH

2000

Approximate Scale

4000 feet

2182077 **AGEC**

Geologic Map Figure 1

EXHBIT E Tech Ridge Stadium Concept Design





STADIUM PARK



TECH RIDGE STADIUM - CONCEPT DESIGN

TR - Illustrated Site Plan



TECH RIDGE Main Street Imagery St. George, UT

05.13.2019

Key Planning Features:

- Zero-curb street between bike shop, hotel restaurant, and stadium; serves as extension of plaza
- [2.] Restaurants anchor each corner, activating the street
- [3.] Bike shop holds corner at trail head
- Narrowing street
 accentuates pedestrian
 experience
- Plaza has focus on natural environment and connection to recreation activities while functioning across multiple scales



St. George, Utah

Stadium Park Concept Design

2-10-2020

The monolithic monument structure supports a 175' long viewing platform that places viewers out into Stadium park

A chairlift and zip-line landing platform anchor the corner of the edge of the stadium plaza.

The Rim trail leads users under the platforms and connects the stadium park area between the landings with the trail system.





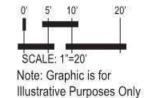
St. George, Utah

Stadium Park Concept Design

2-10-2020

Key Planning Features:

- [1.] Zero-curb street between bike shop, hotel restaurant, and stadium; serves as extension of plaza
- [2] Restaurants anchor each corner, activating the street
- I3.1 Bike shop holds corner at trail head
- [4.] Narrowing street accentuates pedestrian experience
- Plaza has focus on natural environment and connection to recreation activities while functioning across multiple scales





St. George, Utah

Stadium Park Concept Design

2-10-2020

Tech Ridge Main Street (Knowledge Way) is centered on the monument structure for maximum visibility.

The Stadium plaza above provides an open shaded area for large public gatherings and community events.

The "monument" is a 130' tall structural pylon that supports the cable-stayed viewing pier beyond the street edge.





St. George, Utah

Stadium Park Concept Design

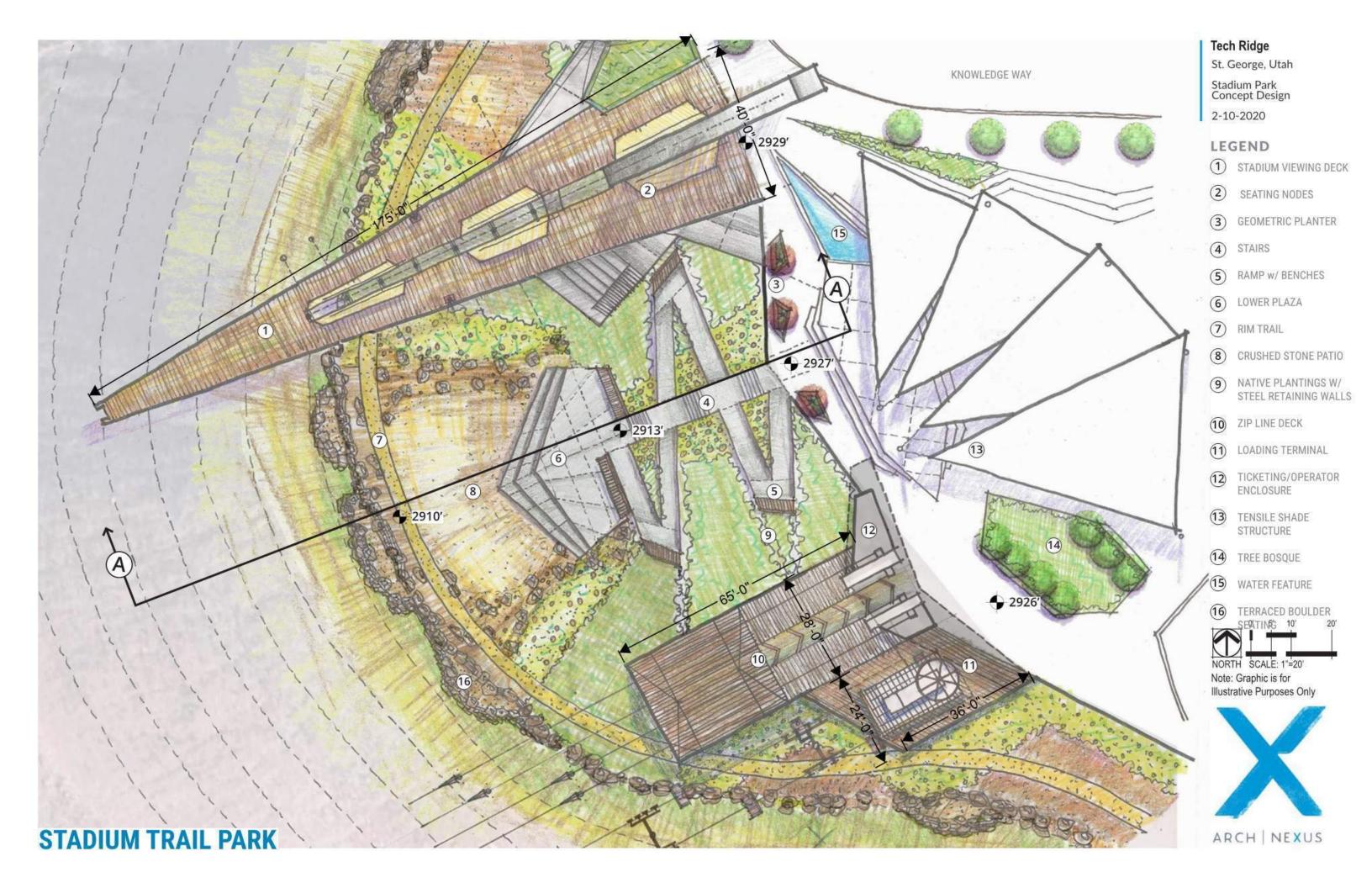
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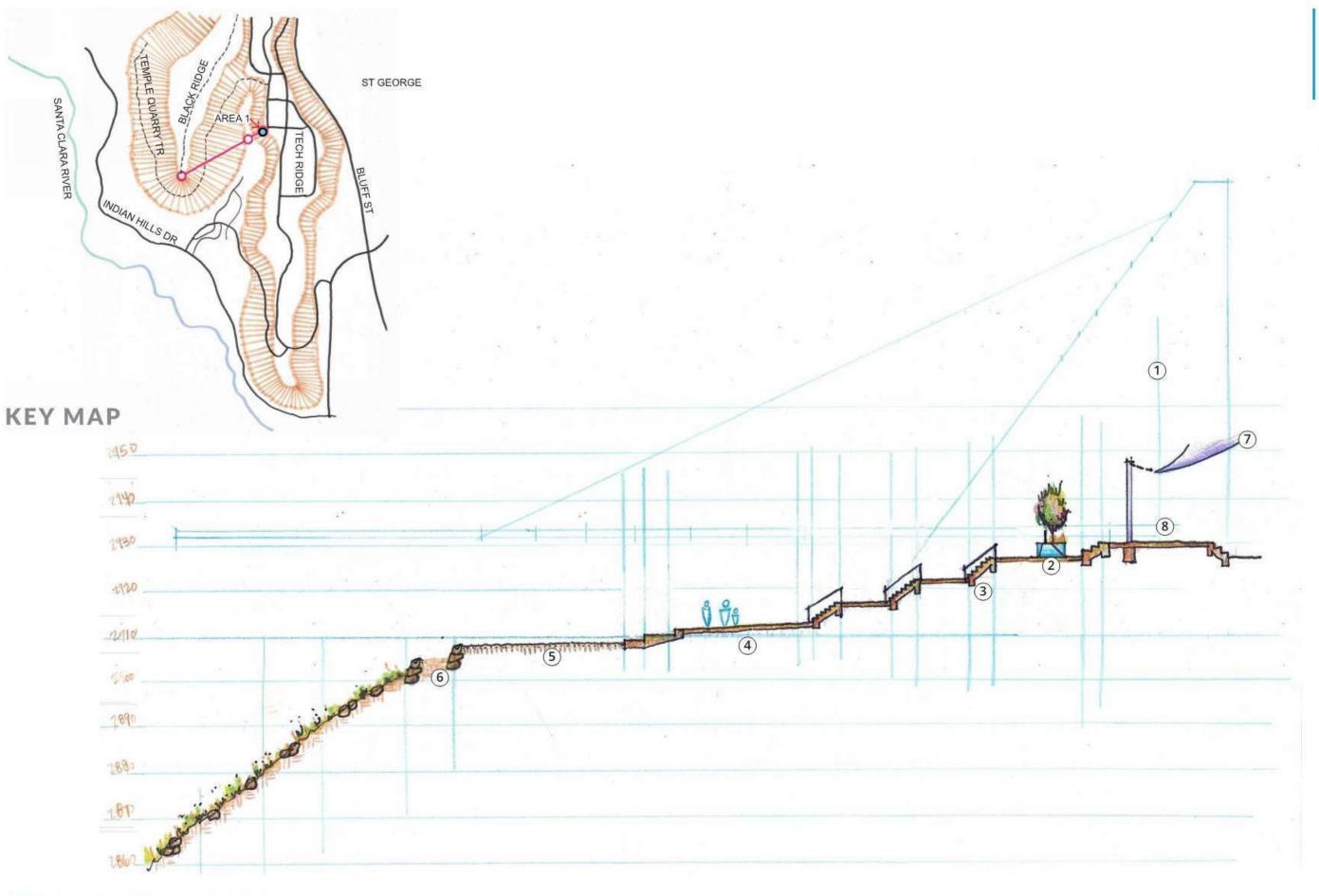
The monument structure supports an unobstructed viewing platform that puts viewers out over the rim of Stadium Park

Located at the west corner of Knowledge Way, the monument structure connects to the sidewalk trail system above.









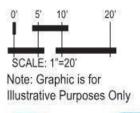
St. George, Utah

Stadium Park Concept Design

2-10-2020

LEGEND

- 1 PIER MONUMENT
- 2 GEOMETRIC PLANTER
- 3 STAIRS
- 4 LOWER PLAZA
- (5) CRUSHED STONE PATIO
- 6 TERRACED BOULDER SEATING
- 7 TENSILE SHADE STRUCTURE
- 8 STADIUM PLAZA STAGE





ARCH | NEXUS



St. George, Utah

Stadium Park Concept Design

2-10-2020

The is a 130' tall structural pylon that supports the cable-stayed viewing pier provides 360 degree unobstructed views all along the pier.

The different levels and viewing edge conditions is meant to provides the public a dynamic experience for the stadium park below.

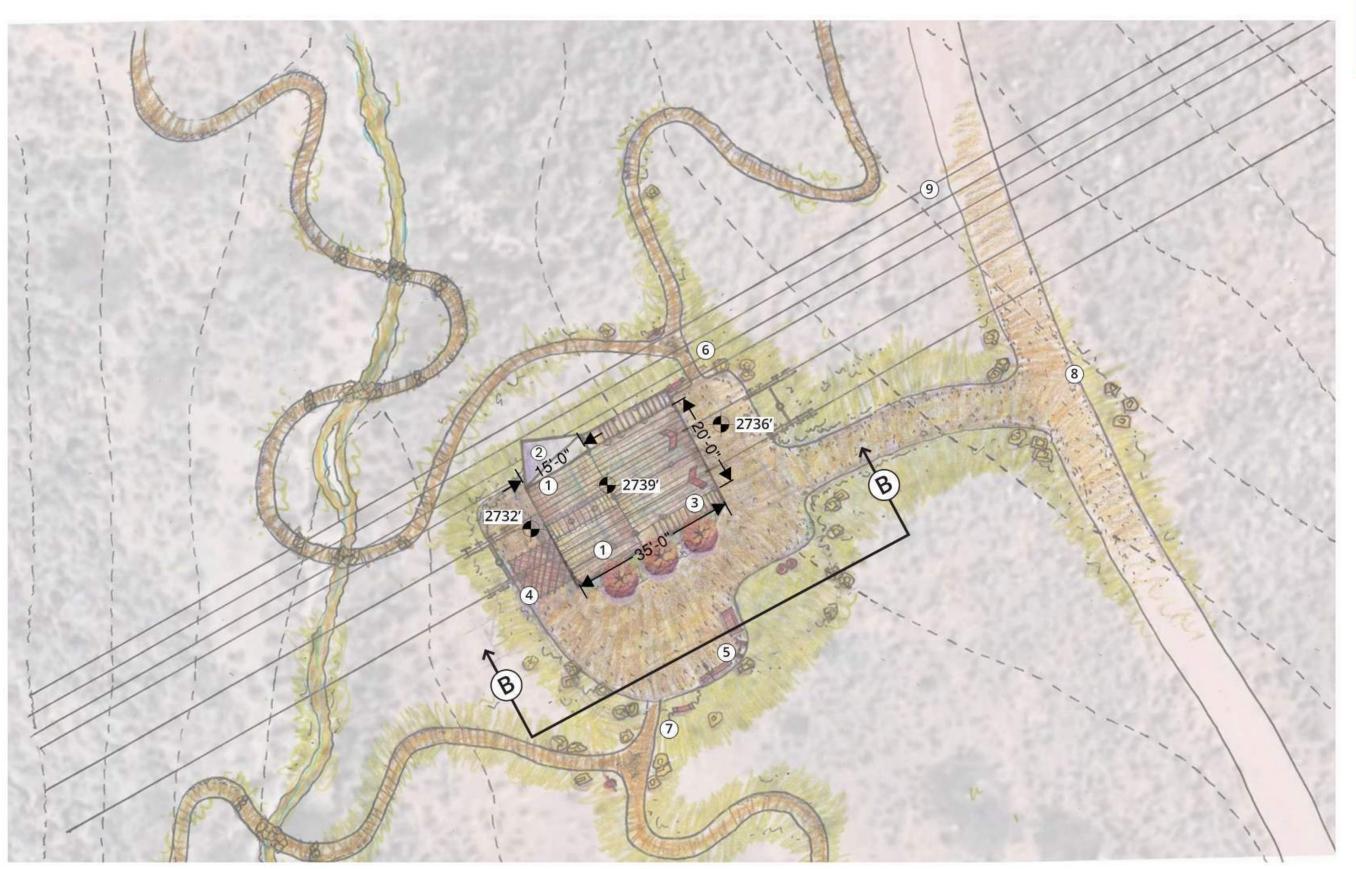
Access to the trail below is provided for pedestrians by a series of stairs and accessible ramping





TECH RIDGE - STADIUM MONUMENT, ZIPLINE & CHAIRLIFT





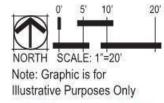
St. George, Utah

Stadium Park Concept Design

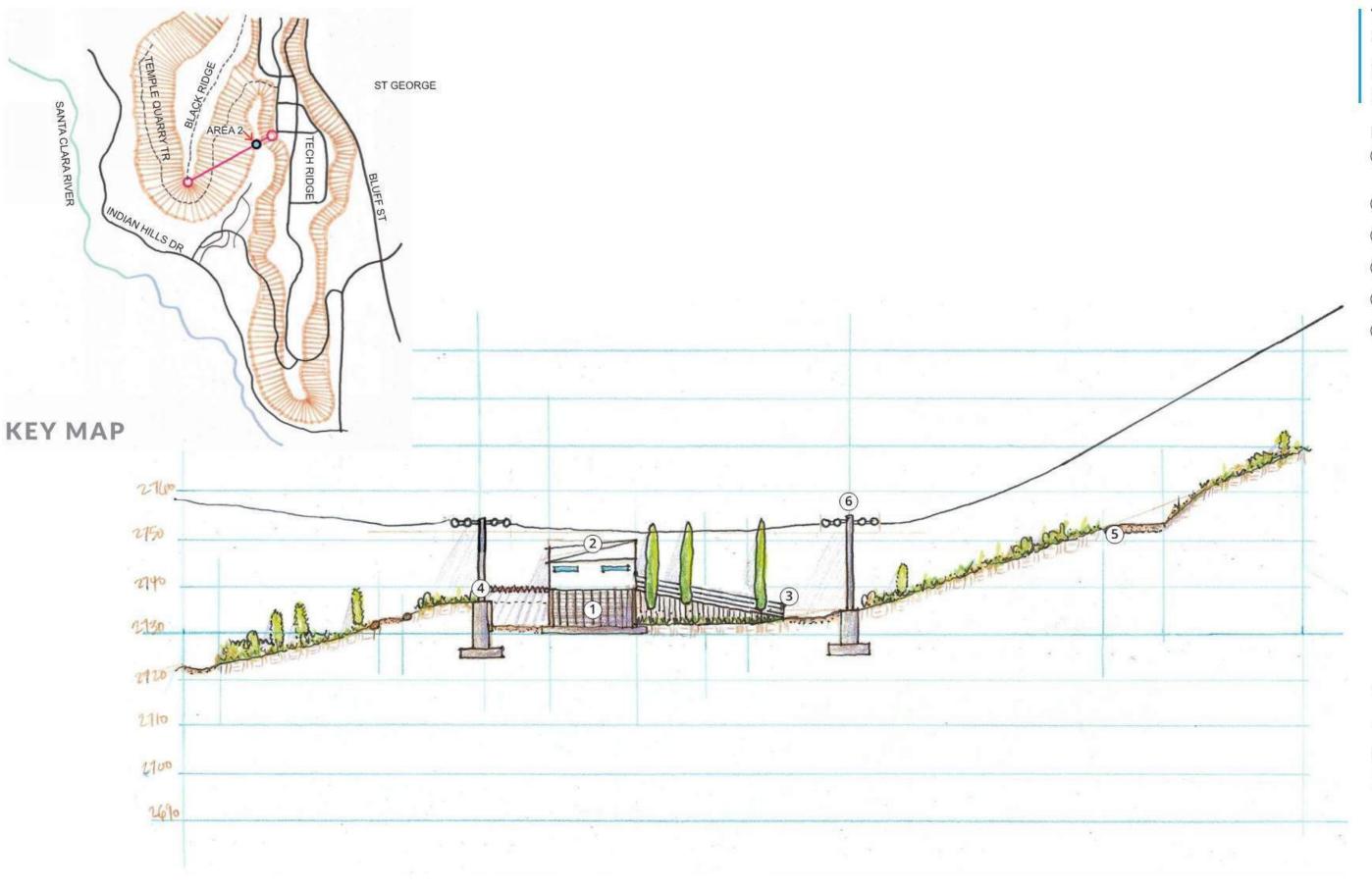
2-10-2020

LEGEND

- 1 MID STATION PLATFORM W/ STORAGE UNDER
- OPERATOR ENCLOSURE
- 3 STAIRS & RAMP
- 4 EMERGENCY NET
- 5 BIKE REPAIR STATION
- 6 TRAIL ACCESS
- 7 TRAIL MAP KIOSK
- 8 ROAD ACCESS
- 9 ZIP LINE







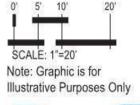
St. George, Utah

Stadium Park Concept Design

2-10-2020

LEGEND

- 1 MID STATION PLATFORM W/ STORAGE UNDER
- 2 OPERATOR ENCLOSURE
- 3 STAIRS & RAMP
- (4) EMERGENCY NET
- 5 ROAD ACCESS
- 6 CHAIR LIFT





St. George, Utah

Stadium Park Concept Design

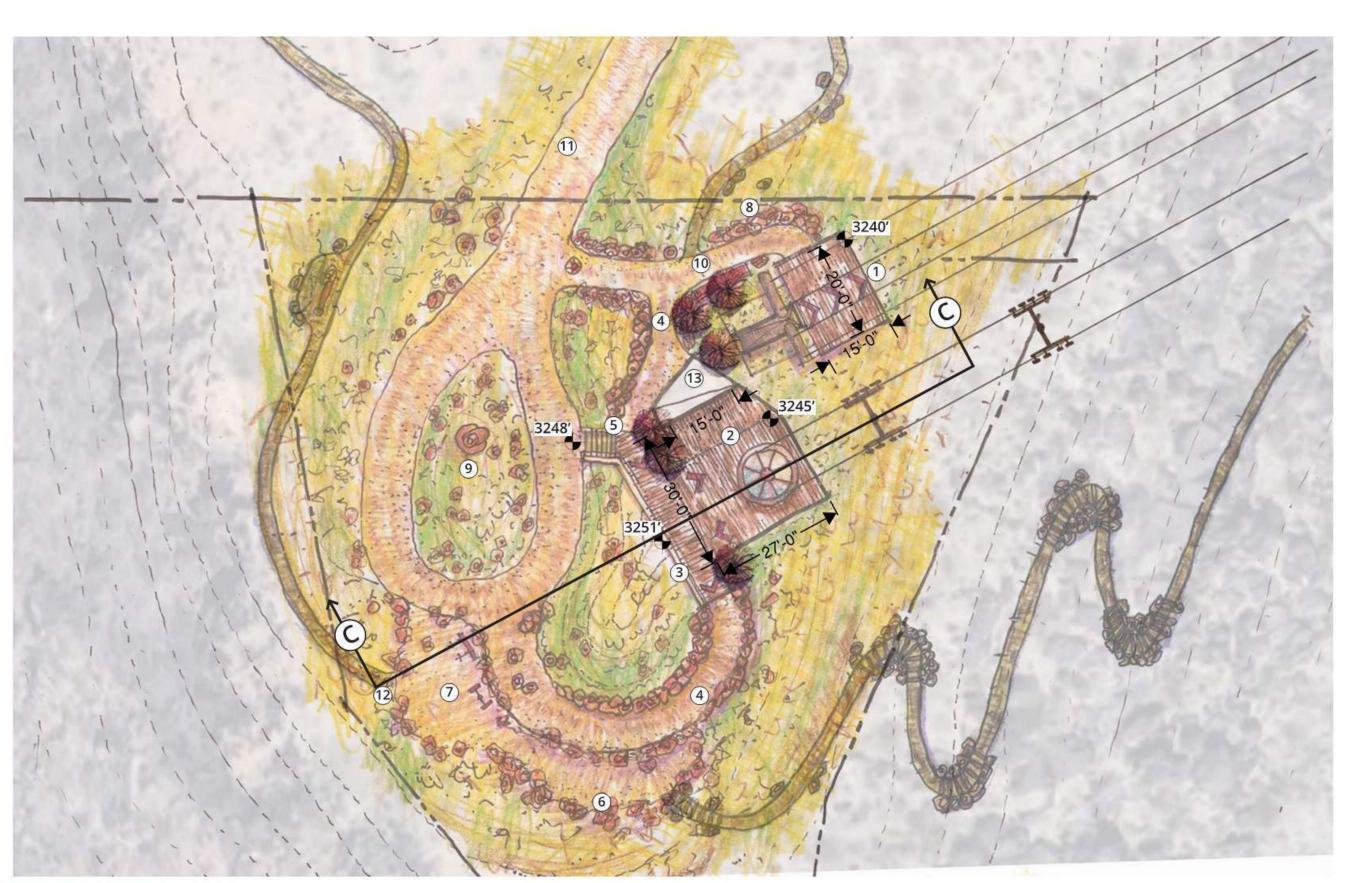
2-10-2020

The lower mid-station platform provides a central location for trails and lower public road access.

All structural elements are designed as stained concrete or painted metal to match the local black rock to reduce visibility from surround areas.







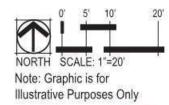
St. George, Utah

Stadium Park Concept Design

2-10-2020

LEGEND

- 1 ZIP LAUNCH PLATFORM
- 2 UNLOADING TERMINAL
- 3 RETAINING WALL/BERM
- 4 RAMP
- 5 STAIRS
- 6 TERRACED BOULDER SEATING
- (7) BIKE REPAIR STATION
- 8 BOULDER RETAINING WALL
- 9 ARTIFACT
- 10 BENCHES
- 11 VEHICULAR ACCESS
- 12 TRAIL ACCESS
- (13) OPERATOR ENCLOSURE







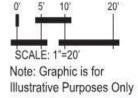
St. George, Utah

Stadium Park Concept Design

2-10-2020

LEGEND

- 1 ZIP LAUNCH PLATFORM
- 2 UNLOADING TERMINAL
- 3 RETAINING WALL/BERM
- 4 TERRACED OBSERVATION DECK
- 5 BIKE REPAIR STATION
- 6 ARTIFACT
- (7) BENCHES
- 8 OPERATOR ENCLOSURE







St. George, Utah

Stadium Park Concept Design

2-10-2020

The upper return terminal is nestled into the hillside to reduce its visibility below.

An aerodynamic form provides a simple shade roof for the lift station.

All structural elements are designed as stained concrete or painted metal to match the surrounding black rock to reduce skyline visibility from below.



1 2	ST. GEORGE HILLSIDE REVIEW BOARD MINUTES June 25, 2025, 8:30 A.M.
3	ON SITE
4 5	PRESENT:
6	Board Member, Jeff Mathis
7	Board Member, Hugo Angeles
8 9	Board Member, Kevin Holyoak
10 11	EXCUSED:
12	Hillside Review Board Chair, James Sullivan
13 14	Board Member, Dave Black
15	
16	STAFF MEMBERS PRESENT:
17	Assistant Public Works Director, Wes Jenkins
18	City Landscape Architect, Mark Goble
19 20	Planner, Brenda Hatch Assistant City Attorney, Kristopher Pearson
21	Development Office Supervisor, Angie Jessop
22	
23	OTHERS IN ATTENDANCE:
24 25	Applicant, Isaac Barlow Applicant, Wayne Rogers
26	Applicant, wayne Rogers
27	Link to Roll Call 00:00:00
28	
29	Link to motion 00:00:58
30 31	MOTION:
32	A motion was made by Board Member Mathis to elect Board Member Hugo
33	Angeles as the alternate Hillside Review Board Vice Chair for today's meeting
34	
35	SECOND:
36 37	The motion was seconded by Board Member Holyoak
38	VOTE:
39	Board Member Mathis called for a vote, as follows:
40	
41	Chair Sullivan – absent
42	Board Member Mathis – aye
43 44	Board Member Angeles –aye Board Member Black – absent
45	Board Member Holyoak – aye
46	bourd member horyout aye
47	The vote was unanimous and the motion carried
48	
49	
50	Link to Call to Order by Board Vice Chair Angeles: 00:01:07

51 **BLACK HILL EYEBROW SCAR MITIGATION** 52 This is a request for a Hillside Development permit to mitigate the scar on the Black 53 Hill. The applicant is Alliance Consulting, and the representative is Mike Bradshaw. 54 Case No. 2025-HS-007 (Staff, Brenda Hatch) 55 56 Agenda Packet [Page 3] 57 Link to presentation by Applicant Isaac Barlow 00:01:40 58 59 Link to discussion between Hillside Committee Members, Mr. Barlow, and Mr. Rogers 60 00:02:28 61 62 Link to motion: 00:09:40 63 64 **MOTION:** 65 A motion was made by Board Member Mathis to recommend approval for the 66 Black Hill Eyebrow Scar Mitigation with the recommendation that they consider 67 doing some natural seeding of the downhill slope or wherever they feel it may 68 stick, to try to bring back natural vegetation. 69 70 SECOND: 71 The motion was seconded by Board Member Holyoak. 72 73 VOTE: 74 Board Vice Chair Angeles called for a vote, as follows: 75 76 Chair Sullivan - absent 77 Board Member Mathis – ave 78 Board Member Angeles -aye 79 Board Member Black – absent 80 Board Member Holyoak - aye 81 82 The vote was unanimous and the motion carried 83 84 85 **APPROVAL OF MINUTES:** 86 87 Consider a request to approve the minutes from the May 28, 2025 meeting 88 89 Agenda Packet [Page 23] 90 91 Link to motion: 00:10:43 92 93 **MOTION:** 94 A motion was made by Board Member Holyoak to approve the minutes. 95 96 SECOND: 97 The motion was seconded by Board Member Mathis 98 99 VOTE: 100 Board Vice Chair Angeles called for a vote, as follows: 101 102 Chair Sullivan - absent

103 104	Board Member Mathis – aye Board Member Angeles –aye
105	Board Member Black – absent
106	Board Member Holyoak – aye
107	
108	The vote was unanimous and the motion carried
109	
110	MOTION TO ADJOURN:
111	
112	Link to motion to adjourn 00:11:08
113	
114	MOTION:
115	A motion was made by Board Member Mathis to adjourn.
116	
117	
118	
119	/s/
120	
121	Angie Jessop, Development Office Supervisor June 25, 2025
122	