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 meetings at the referenced site on **Wednesday, April 26, 2023,** commencing on-site at approximately 8:30 a.m.

The estimated site times are in bold. The agenda for the meeting is as follows:

1. Consider a request for a hillside development permit to allow development on a portion of a single lot of an existing subdivision that is currently restricted due to potential rockfall hazard. This would affect only Lot 3 of the Banded Hills Subdivision. The property is currently zoned R-1-10 (Single Family Residential minimum 10,000 sq ft lot size). The site is located at 2991 E Banded Hills Dr. The applicant is Split Rock/Jeff Ward. Case No. 2023-HS-005. **Meeting time is approx. 8:30 am**

2. Consider approval of the meeting minutes from the February 8 and the February 22, 2023, meetings.

Mike Hadley, GISP
Senior Planner
Development Services

Reasonable Accommodation: 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.

Meeting Location

Item #1 – 2991 E Banded Hills Dr

St.George
Community Development

ITEM 1

Hillside Permit

HILLSIDE REVIEW BOARD AGENDA REPORT: **04/26/2023**

HILLSIDE DEVELOPMENT PERMIT
Banded Hills Lot 3
Case No. 2021-HS-005

Request: This is a request for a Hillside Development Permit to allow development on a portion of a single lot of an existing subdivision that is currently restricted due to potential rockfall hazard. This would affect only Lot 3 of Banded Hills subdivision.

Hillside History: In 2018, a hillside permit was granted to allow an eleven-lot subdivision to be created (Banded Hills). The following year, another hillside permit was granted to add a 12th lot to the subdivision. Part of the approval of the hillside permit was that, due to the potential for rock fall from adjacent hillside, no building would be permitted adjacent to Banded Hills Drive on lots 1-7 and a portion of lot 8.

Exhibits Provided:

1) Exhibit A – AGEC Letter Dated October 13, 2022.
"Exhibit A" – This is a letter provided by the applicant from Applied Geotechnical Engineering Consultants, Inc. (AGEC) recommending a reduction in setback.

2) Exhibit B – Rock Fall Study dated February 05, 2018
"Exhibit B" – This report outlined the possible geologic hazards in the area and how that may affect the subject property.

3) Exhibit C – AGEC Report dated February 23, 2018
"Exhibit C" is the study produced by AGEC on February 13, 2018.

4) Exhibit D – Staff Report dated April 18, 2018
"Exhibit D" is the staff report for the original request for hillside development permit. This was included for historical context only.

5) Exhibit E – Recorded Banded Hills Subdivision Plat
"Exhibit E" is the official plat that was recorded at the Washington County Recorders office on October 29, 2019.

Proposal: The applicant's desire is to be able to build a home on lot three that encroaches into the current area that is labeled as non-buildable.. If the request for a hillside development permit is granted, the applicant will need to submit an amended plat to adjust the boundary of the no build area.

Owner: Aaron &Heather O Brien

Applicant: Split Rock Custom Homes

APN: SG-BAN-3

Location: 2991 E Banded Hills Drive

Acreage: 41,241 sq ft (0.94 acres)

Zoning: R-1-10 (single-family residential, 10,000 sq ft minimum lot size)

Adjacent zones: The property is surrounded by R-1-10 zoning with the exception of the property to the north-west which is zoned OS (open space).

Powers & Duties: Section 10-13A-8(B) of the city code states:

***Powers and Duties**: The Hillside Review Board shall have the following responsibilities:*

1. Review proposed development within the hillside development overlay zone or in a high category rockfall area and make a recommendation to the planning commission to adopt, modify, or reject a proposal.

2. Provide advice and support as needed to the city staff, planning commission and city council in connection with reviewing requests for zone changes or other development applications within the hillside development overlay zone or in a high category rockfall area.

Permit required: Section 10-13A-7 states:

For developments on a development parcel of more than one (1) acre containing slopes greater than twenty percent (20%) or in a rockfall hazard area, certification by a Utah registered engineer that the development has been completed in compliance with the approved HDOZ permit, including satisfaction of any conditions contained in the permit, is required. The improvements required by the HDOZ permit are essential for the life, health and safety of the future users and occupants of the property. All essential improvements shall be completed prior to approval of permanent electric power service. Failure to complete all essential improvements shall result in the suspension of the building permit. The financial assurance shall not be released until such certification has been received by the city engineer or designee of satisfaction of all conditions contained in the permit.

PC Motion Options: The Planning Commission can recommend several different options to the City Council:

1. Denial
2. Approval as presented
3. Approval with specific conditions and comments added as required.

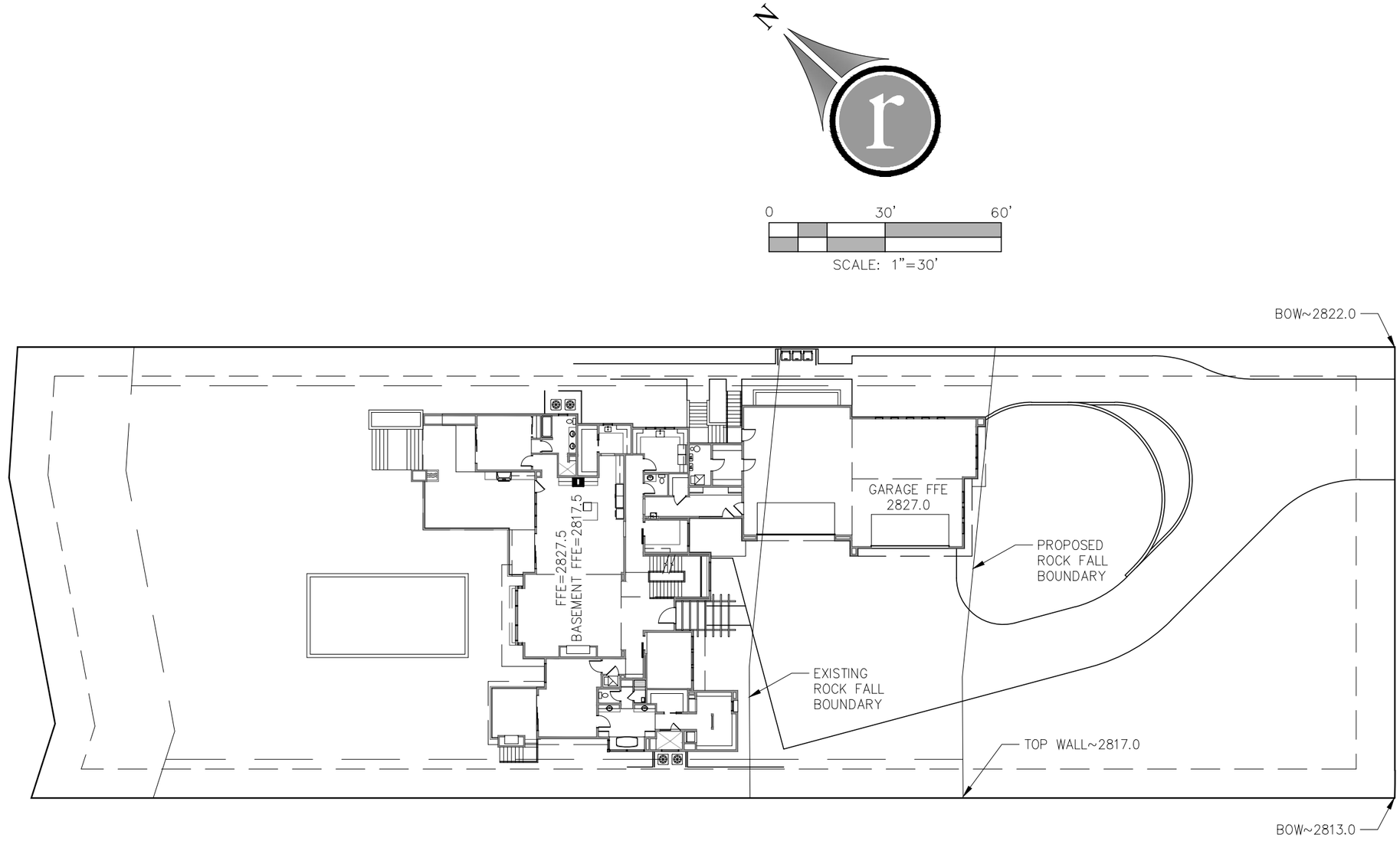
Example Motion: I move we forward a positive/negative recommendation to the City Council for the revision of the hillside permit for Banded Hills Lot 3 as recommended by the Hillside Review Board with the finding that the applicant has mitigated the rock fall hazard.

Vicinity Map

General Plan – MDR

Zoning - R-1-10


R-1-10
Airport Ridge 7-24-2005
E BANDED HILLS DR
R-1-10
E BANDED HILLS DR



DATE: 03/31/2023
JOB NO.: 10588-21
DESIGNED BY: JLW
CHECKED BY: JSS
DWG: LOT3

REVISIONS
DATE

ROSENBERG ASSOCIATES
CIVIL ENGINEERS • LAND SURVEYORS
352 East Riverside Drive, Suite A-2
St. George, Utah 84790
Ph (435) 673-8586 Fx (435) 673-8397
www.racivil.com

ROCK FALL LINE EXHIBIT
FOR
BANDED HILLS LOT 3
MR & MRS. O'BRIEN
ST. GEORGE, UTAH

SHEET
1
1 OF 1 SHEETS

Exhibit A

Exhibit B

Exhibit C

Exhibit D

Exhibit E

AGEC
Applied GeoTech

October 13, 2022

Split Rock Construction, LLC
1449 North 1400 West #15
St. George, Utah 84770

Attention: Brett Boyce
EMAIL: brett@splitrockinc.com

Subject: Rockfall Hazard Consultation
O'Brien Residence
Banded Hills, Lot 3
St. George, Utah
Project No. 2221659

Gentlemen:

Applied Geotechnical Engineering Consultants, Inc. (AGEC) was requested to conduct additional evaluation on the rockfall hazard setback criteria recommended for Lot 3 of the Banded Hills subdivision for use on Lot 3. We previously submitted a geologic hazard study which included setback recommendations from the rockfall hazard in a letter dated February 21, 2019 under Project No. 2172453.

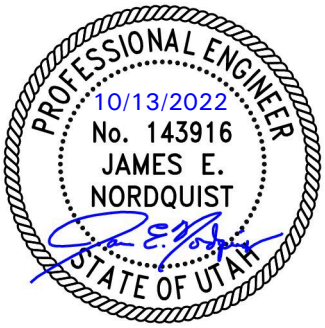
AGEC was provided a site plan prepared by Creative Designs dated September 26, 2022. We understand that the area where improvements will start will be graded to be 5 feet above the road elevation. Based on our understanding, the street elevation in front of Lot 103 will be near elevation 2,799.

Based on the proposed rise in grade and specific detailed analysis of the rockfall hazard area contributing onto Lot 3, the rockfall hazard setback (included in the February 21, 2019 letter) can be moved 55 feet towards the front of the lot

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

Sincerely,

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.



James E. Nordquist, P.E., D G.E.

JEN/rs

AGEC
Applied GeoTech

February 5, 2018

Development Solutions
120 East St. George Blvd. #300
St George, Utah 84770

Attention: Steve Kamlowsky

Subject: Geologic-hazard Study
Banded Hills Subdivision
Banded Hills Drive
St George, Utah
Project No. 2172453

Gentlemen:

Applied Geotechnical Engineering Consultants, Inc. (AGEC) was requested to perform a geologic-hazards study for the proposed Banded Hills Subdivision located below the airport bluff, northwest of Banded Hills Drive in St. George, Utah (see Figure 1).

PROPOSED CONSTRUCTION

We understand the area is planned for single-family residences. The approximate area planned for development is shown on Figure 1.

GEOLOGY

The geology for the area was mapped by Hayden and Willis (2011) to consist of the upper unit of the Triassic-age Moenkopi Formation. This unit consists of interbedded siltstone and sandstone. The Triassic-age Shnabkaib Member of the Moenkopi underlies this unit and consists predominantly of siltstone. The Shinarump Conglomerate Member of the Chinle Formation overlies the Moenkopi Formation and makes up the rock near the top of the bluff southeast of the site, the source of the rockfall for the southeast portion of the property. The bedrock exposed on the property is that of the Moenkopi Formation. The bedrock in the area dips down toward the southeast at approximately 17 degrees.

GEOLOGIC-HAZARD EVALUATION

Low-sun-angle aerial photographs from 1960 and aerial photographs from 1938 were reviewed along with site reconnaissance to determine what potential geologic hazards may affect the proposed development. Rockfall and faulting are the two geologic hazards that

may affect development in the area. Fault hazard does not extend into the property or proposed building areas. Liquefaction, landslide and debris flow are not considered potential hazards at this site.

A. Fault Hazard

Fault hazard was evaluated based on review of aerial photographs and geologic maps for the area and site reconnaissance.

Hayden and Willis (2011) map a fault southwest of the site. This fault is considered potentially an active fault by Lund and others (2008). The approximately location of the fault based on aerial photograph and geologic literature review and site reconnaissance is presented on Figure 2.

Bedding of the Moenkopi Formation is visible at the ground surface for the east/west length of the property and is unfaulted on the property. Thus with the lack of faulted bedrock below the site, surface fault rupture is not considered a hazard for the proposed buildings.

B. Rockfall Hazard

A site visit was made on January 16, 2018. Source boulders for rockfall hazard originate from the Shinarump Conglomerate Member of the Chinle Formation, which forms cliffs at the top of the hill southeast of the property. Reconnaissance of the rockfall source area finds that there are numerous rock outcrops that could potentially dislodge from the cliffs above the site. These blocks of bedrock are similar to or larger in size to the boulders along the slopes and base of the hill. It appears that the boulders originating from the cliffs typically break into smaller particles as they roll down the slope. Based on observation of the area, a boulder size of 6 feet was assumed for the rockfall analysis.

Rockfall modeling using the Colorado Rockfall Simulation Program was performed for the slope based on the topography provided. Results of the modeling indicate that a 12-foot high berm could be constructed along the southeast side of the proposed building lots near Banded Hills Drive to mitigate the rockfall hazard.

The rockfall-protection berm, assumed to be constructed along the southeast side of proposed building lots needing rockfall protection, should have a height of at least 12 feet, a top width of at least 4 feet and an upslope face of ½ horizontal to 1 vertical or steeper. It is important to have a steep upslope face for the berm so rocks are not directed over the berm. The berm can be reinforced using geogrid to maintain a steep upslope face. In some areas, bedrock may be intact enough to provide at least part of the berm. The reinforcement spacing and slope construction will depend on the type of fill

used and reinforcement selected. Design of the reinforced berm could be provided upon request.

C. Other Geologic Hazards

Liquefaction and associated lateral spread are not considered hazards at the site because bedrock underlies the site. Bedrock is not considered susceptible to liquefaction.

Review of the aerial photographs and geology show no evidence of landslides on or near the site. Landslide is not considered a hazard at the site. Slope stability of cut and fill slopes would be addressed in the geotechnical report for the project.

Debris flow is not considered a hazard at the site due to the lack of a source for debris flow. A drainage with a drainage area of about 25 acres or more is needed to develop debris flows (VanDine, 1984). There are no such drainages up gradient of the site.

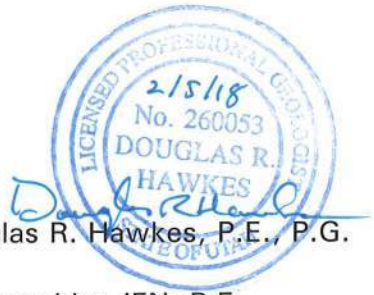
LIMITATIONS

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, topographic information provided and use of the Colorado Rockfall Simulation Program. If conditions are significantly different from those described in this letter, we should be notified to reevaluate the recommendations given.

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.

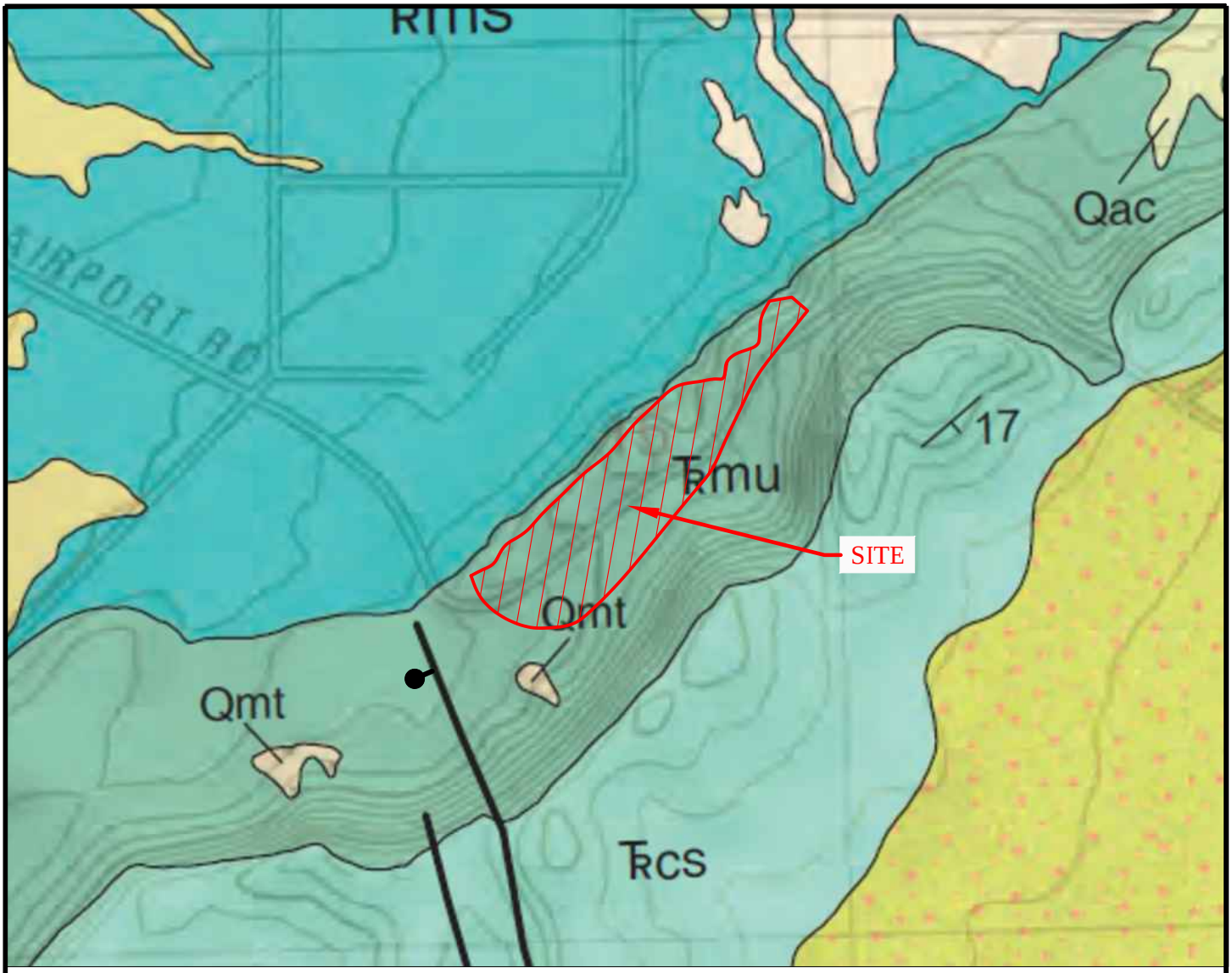
Enclosure

Reference:

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

Lund, W.R., Knudsen, T.R., Vice, G.S. and Shaw, L.M., 2008; Geologic hazards and adverse construction conditions, St. George-Hurricane Metropolitan Area, Washington County, Utah, Utah Geological Survey Special Study 127.

VanDine, D.F., 1984; Debris flow and debris torrents in the Southern Canadian Cordillera, 8th Canadian Geotechnical Colloquium, at the 37th Canadian Geotechnical Conference, Toronto.



From Hayden and Willis (2011)

EXPLANATION OF SYMBOLS AND GEOLOGIC UNITS IN AREA OF PROPOSED DEVELOPMENT

Qmt	-	Quartenary talus deposits - sand, gravel, cobbles and boulders.
Trcs	-	Triassic Shinarump Conglomerate Member of the Chinle Formation - sandstone and conglomerate.
Trmu	-	Triassic upper red member of the Moenkopi Formation - interbedded sandstone and siltstone.
Trms	-	Triassic Shnabkaib Member of the Moenkopi Formation - siltstone.

Contact between geologic units.

Normal fault, bar and ball on down thrown side.

17 Strike and dip of bedding.

N

0 600 1200 feet

Approximate Scale

PROPOSED BANDED HILLS SUBDIVISION
BANDED HILLS DRIVE
ST. GEORGE, UTAH

2172453	AGEC	Geologic Map	Figure 1

LEGEND:

Rockfall Hazard Area

Normal fault, bar and ball on down dropped side.

N

0 200 400 feet

Approximate Scale

PROPOSED BANDED HILLS SUBDIVISION
BANDED HILLS DRIVE
ST. GEORGE, UTAH

2172453	AGEC	Geologic - Rockfall Hazard Areas	Figure 2

Exhibit C

AGEC

Applied GeoTech

GEOTECHNICAL INVESTIGATION

BANDED HILLS SUBDIVISION

ST. GEORGE, UTAH

PREPARED FOR:

DEVELOPMENT SOLUTIONS
120 E ST. GEORGE BOULEVARD #300
ST. GEORGE, UTAH 84770

ATTENTION: STEVE KAMLOWSKY, P.E.

PROJECT NO. 2172452

FEBRUARY 23, 2018

1420 South 270 East • St. George, Utah 84790 • (435) 673-6850 • FAX (435) 673-1044

TABLE OF CONTENTS

SUMMARY

1. The subsurface profile observed within the test pits excavated generally consists of near surface silty sand to sandy silt overlying interbedded sandstone, shale and siltstone bedrock to the maximum depth investigated, approximately 4 feet. Practical excavator refusal was encountered on bedrock in each of the test pits at depths ranging from 1 to 4 feet below the existing grade. Stockpiles of fill were also observed on the south and west sides of the site.

2. Groundwater was not encountered in test pits to the maximum depth investigated, approximately 4 feet below the existing grade. Fluctuations of groundwater levels may occur over time. An evaluation of such fluctuations over time is beyond the scope of this report.

3. The site is suitable for the proposed construction provided recommendations within this report are followed.

4. Laboratory testing and observations indicate the near surface soils exist in a loose condition. The underlying bedrock is relatively low to non plastic, moderately hard and suitable to support the proposed residences.

5. The proposed residences may be supported on conventional spread and spot footings bearing on directly on the underlying bedrock or on properly compacted structural fill underlain by a properly prepared subgrade. Specifically, the subgrade should be prepared during site grading by removing the full depth of unsuitable, loose soils (½ to 2 feet thick) as recommended in the Subgrade Preparation section of this report. The on-site natural soils, stockpiled fill and processed bedrock are suitable for use as structural fill provided they are properly moisture conditioned and compacted.

6. If basements are constructed, a subdrain system should be placed around the perimeters of the basements due to the possible infiltration of surface water which could result after development. If the groundwater becomes present, the drain would be in-place to remove groundwater.

7. The on-site soil and properly bedrock, free of organics, debris and material greater than 6 inches in size, are suitable for use as site grading fill, structural fill, wall backfill and utility trench backfill. The bedrock should be processed such that the maximum particle size is 6 inches and at least 40 percent of the material passes the No. 4 sieve.

8. This report does not address swimming pool support. Support of proposed pools should addressed with a lot specific subsurface investigation and report to provide pool support recommendations.

9. Detailed recommendations for subgrade preparation, materials, foundations, and drainage are included in the report.

10. The information provided in this summary should not be used independent of that provided within the body of this report.

SCOPE

This report presents the results of a geotechnical investigation for the proposed Banded Hills Subdivision to be located in St. George, Utah, as shown in Figure 1. This report presents the subsurface conditions encountered, laboratory test results, and recommendations for the project. This report was prepared in general accordance with the Proposal for Professional Geotechnical Services dated December 27, 2017 under Project No. 2172452.

Field exploration was conducted to obtain information on the subsurface conditions and to obtain samples for laboratory testing. Information obtained from the field and laboratory was used to define conditions at the site and to develop recommendations for the proposed development.

This report has been prepared to summarize the data obtained during the study and to present our conclusions and recommendations based on the proposed construction and the subsurface conditions encountered. Design parameters and a discussion of geotechnical engineering considerations related to construction are included in the report.

SITE CONDITIONS

The subject site consists of an approximately 4 acres of undeveloped hillside property located on the south side of Little Valley in St. George, Utah as shown on Figure 2. The site consists of an elevated plateau which overlooks Little Valley to the north. The north portion of the site is relatively undisturbed and covered with sparse desert brush. The southern and west portion of the site, which is adjacent to the old Airport Road (Banded Hills Drive), has been partially graded and disturbed. This area of the site contains minimal vegetation, fill piles, boulder piles and occasional large, naturally deposited boulders.

The site is bounded on the south and west by Banded Hills Drive on the east by undeveloped hillside and on the north of undeveloped property and Maple Estates, further to the north.

FIELD STUDY

On January 24, 2018, an engineer from AGEC visited the site and observed the excavation of 13 test pits at the approximate locations shown on Figure 2. The test pits were excavated using a mini rubber tracked excavator. The subsurface soil profile was logged and soil and bedrock samples were obtained at this time for laboratory testing.

SUBSURFACE CONDITIONS

The subsurface profile observed within the test pits excavated generally consists of near surface silty sand to sandy silt overlying interbedded sandstone, shale and siltstone bedrock to the maximum depth investigated, approximately 4 feet. Practical excavator refusal was encountered on bedrock in each of the test pits at depths ranging from 1 to 4 feet below the existing grade. Stockpiles of fill were also observed on the south and west sides of the site. Detailed descriptions of the soil and bedrock types encountered follow.

File Piles - Fill piles were observed on the south side of the site. Observations indicate the fill consists of a mixture of excavated bedrock and silty to clayey sand. Cobbles and boulders were also observed in the fill and in other piles. Based upon laboratory testing, the samples of the fill classify as silty sand with gravel to sandy silt.

Laboratory tests conducted on samples of the fill indicate an in-place moisture content of 7 percent, gravel contents (percent retained on the No. 4 sieve) ranging from 2 to 25 percent and fines contents (percent passing the No. 200 Sieve) ranging from 43 to 59 percent. Atterberg limits tests indicate the samples are non plastic.

One-dimensional consolidation tests were conducted on remolded samples of the fill and indicate the material is not expansive when wetted.

Two moisture-density relationship tests (Modified Proctor) completed on samples of the fill indicate maximum dry densities ranging from 131.0 to 136.0 pounds per cubic foot (pcf) with and optimum moisture contents ranging from 6.0 to 7.5 percent.

Silty Sand to Sandy Silt - The silty sand to sandy silt is loose, dry to slightly moist and reddish brown in color.

Laboratory tests conducted on a sample of the sandy silt indicate a gravel content of 3 percent and a fines content of 54 percent. An Atterberg limits test indicates the sample is non-plastic.

A moisture-density relationship test (Modified Proctor) completed on a sample of the sandy silt indicates a maximum dry density of 129.0 pcf with and optimum moisture content of 9.0 percent.

Bedrock - The bedrock consists of interbedded sandstone, siltstone and shale bedrock. It is moderately hard, dry, and red-brown in color.

Laboratory tests conducted on samples of the bedrock indicate fines contents ranging from 81 to 91 percent. Atterberg limits tests indicate Liquid Limits ranging from 28 to 34 percent and plasticity indexes ranging from non-plastic to 16 percent.

The Logs, Legend and Notes of Test Pits are shown on Figure 3. Results of the laboratory tests are also shown on Figure 3 and are summarized in the Summary of Laboratory Test Results, Table 1. The consolidation test results are shown graphically on Figure 4. The Gradation and Moisture-Density Relationships are shown on Figures 5 - 7.

SUBSURFACE WATER

Groundwater was not encountered in test pits to the maximum depth investigated, approximately 4 feet below the existing grade. Fluctuations of groundwater levels may occur over time. An evaluation of such fluctuations over time is beyond the scope of this report.

PROPOSED CONSTRUCTION

We understand that the site will be developed for construction of a residential subdivision containing 20 lots. We understand that wood framed residences will be constructed and 3 residences will include walkout basements. The residences will be supported on conventional spread footings. We estimate wall loads up to 4 kips per lineal foot and columns loads up to 75 kips.

Review of the proposed grading plan indicates the site will be graded by terracing the lots down from the east to the west using on site soils. The grading plan indicates cuts up to approximately 10 feet and fill depths up to 15 feet. The development will also include asphalt roadways, utilities and site improvements.

If the proposed construction, or building loads are significantly different from those listed, we should be notified so that we can reevaluate our recommendations.

RECOMMENDATIONS

Based on our experience in the area, the subsurface conditions encountered, laboratory test results, and the proposed construction, the following recommendations are given:

A. Site Grading

Based on the subsurface conditions and engineering analysis, the following site grading recommendations are provided:

1. Subgrade Preparation

Prior to placing fill or concrete beneath building areas, pavement/flatwork or improvements, the site should be grubbed to remove the existing vegetation and soil containing significant roots and organics. The thickness may vary across the site, but we anticipate this will generally require the removal of approximately 1 to 2 inches of soil across the site. The existing fill piles should also be removed, but may be replaced in properly moisture conditioned and compacted lifts after removal of debris and oversized particles.

The grubbed soil may be stockpiled for use in landscaped areas. If this soil is placed in landscaped areas, then CMU fence footings or other structures/improvements, which may be supported in these areas (above the grubbed soil), should be overexcavated to allow for the placement of properly compacted structural fill which extends to the appropriate depth as stated below.

Observations of the subsurface soil and bedrock during our investigation indicate the upper approximately ½ to 2 feet (varies across the site) of the near surface soil is loose and dry This soil is unsuitable in its existing condition.

Prior to placing site grading fill, base course or concrete, the full depth of the previously described unsuitable soils should be removed from beneath the proposed building pad and roadways.

The limits of the overexcavation should extend at least 5 feet beyond the perimeter of the proposed construction. The lateral extent of the overexcavation should be determined by survey and is the responsibility of the owner/contractor.

Subsequent to overexcavation and prior to placing fill, the exposed subgrade should be scarified to a depth of 8 inches, moisture conditioned and compacted. If the exposed subgrade consists of bedrock, scarification and compaction will not be necessary and the exposed subgrade may be wetted and proof rolled. The removed material may then be replaced in properly moisture conditioned and compacted lifts.

2. Excavation

We anticipate that excavation of the overburden soils and soft bedrock at the site can be accomplished with typical excavation equipment. Portions of deeper, more competent bedrock may require the use of heavy duty excavation equipment to excavate below the weathered zone.

3. Grading Slopes and Trenches

Permanent cut slopes excavated into the overburden soils and highly weathered bedrock should be cut no steeper than 2:1 (horizontal to vertical). Permanent cut slopes into the underlying firm to hard bedrock should be cut no steeper than ½:1 (Horizontal:vertical).

Unretained fill slopes constructed with properly compacted on-site soil and processed bedrock should be graded no steeper than 2½:1 (horizontal to vertical). Slopes should include benches in accordance with the 2015 IBC. The cut and fill slopes will be highly susceptible to erosion, particularly resulting from run off from the adjacent slopes. Water should be directed around slopes using drainage swales to reduce potential erosion. A lot specific drainage study should be conducted by the civil engineer to control localized runoff.

To reduce erosion, the fill slopes may be flattened to 3:1 (horizontal to vertical) or they may be retained. Fill slopes may also be protected from erosion with an appropriate geotextile or riprap underlain with filter fabric. More detailed recommendations for riprap erosion control can be provided if requested.

Fill slopes should be graded by overbuilding and then cut back to the desired grade to provide a compacted slope face. Fill placed on existing slopes steeper than 3:1 (horizontal to vertical) should be placed using a benching procedure to "key" the fill into the existing slope. Benches should be of sufficient width to allow adequate area for the compaction equipment.

Utility trenches excavated in the on-site soils and soft, highly weathered bedrock should be excavated in accordance with OSHA requirements using a OSHA Soil Class C (1½:1 Horizontal:Vertical) soils and Soil Class A (¾:1) for trenches excavated into the firm bedrock. Steeper trenches may require the use of shoring or a trench box to provide as safe work environment. Safe trench excavation is the responsibility of the contractor.

4. Materials

Import materials should be non-expansive, non-gypsiferous, granular soil. Listed below are the materials recommended for imported fill.

Area	Fill Type	Recommendations
Foundations/slabs	Site grading/ structural fill	**-200** <35%, **LL** <30% Maximum size: 4 inches Solubility < 1%
Underslab (upper 4 inches)	Base course	**-200** <12% Maximum size: 1 inch Solubility < 1%

-200 = Percent Passing the No. 200 Sieve
LL = Liquid Limit

The on-site silty sand to sandy silt, fill and properly processed bedrock, free of organics, debris and material greater than 6 inches in size, are suitable for use as site grading fill, structural fill, wall backfill and utility trench backfill. The bedrock should be processed such that the maximum particle size is 6 inches and at least 40 percent of the material passes the No. 4 sieve.

5. Compaction

Compaction of materials placed at the site should equal or exceed the following minimum densities when compared to the maximum dry density as determined by ASTM D-1557:

Area	Percent Compaction
Subgrade	90
Footings/building pad	95
Site grading	95
Utility trenches	95
Wall backfill	95

To facilitate the compaction process, the fill should be moisture conditioned to within 2 percentage points of the optimum moisture content as determined by ASTM D-1557 prior to placement. Fill should be placed in loose lift thicknesses which do not exceed the capacity of the equipment being utilized. Generally, 6 to 8-inch loose lifts are adequate. Lift thicknesses should be reduced to 4-inches for hand compaction equipment.

6. Surface Drainage

Positive site drainage should be maintained during the course of construction. After construction has been completed, positive drainage of the surface water away from the buildings in each direction must be maintained. To reduce infiltration adjacent to foundations we recommend the following:

a. A minimum slope of 6 inches in the first 10 feet from the perimeters of the structures should be provided.

b. Roof gutter systems should be installed around the perimeters of the structures. Roof downspouts should discharge away from the buildings so as to prevent ponding adjacent to foundations. We recommend piping roof drains to the curb and gutter downslope from the structures.

c. Placement of 3 to 4 foot wide concrete aprons around the perimeters of the structures.

d. Landscaping requiring water should not be placed adjacent to or within 5 feet of foundations.

e. We also recommend that desert landscaping, which requires no water, be used adjacent to concrete walls and masonry walls or other cement containing elements which will be backfilled to reduce salt migration of soluble salts and the subsequent salt weathering on cement containing elements. Further, the below grade portions of walls/fences which are backfilled with soil should be protected with an impermeable membrane and a subsurface drain. A gravel covered, perforated PVC pipe should also be placed at the base of the wall to carry water to a discharge point. This is intended to reduce the potential for salt weathering on concrete/masonry.

7. Subsurface Drainage

We recommend placement of a perimeter subdrain around the basement walls due to possible presence of future groundwater which may become perched on the underlying bedrock resulting from development. The drain should consist of a 4 inch perforated PVC pipe placed around the perimeter of the of the basement footings. It should be placed such that the bottom of the pipe is at least 12 inches below the finished floor elevation and should slope at a 2% minimum grade to drain by gravity or to a sump. A sump pump should be placed, if necessary, to remove water which may become present in the future. The perforated pipe should be backfilled with 1 inch minus crushed gravel to an elevation at least 1 foot above the highest anticipated groundwater level. Prior to backfilling the basement walls with properly compacted fill, Mirafi 140N filter fabric should be placed over the gravel to prevent sand from migrating into the gravel.

B. Foundations

This report does not address swimming pools. Support of proposed pools should addressed with a lot specific subsurface investigation and report to provide pool support recommendations. Recommendations for design of conventional spread and spot footing are provided below.

1. Bearing Material

The proposed residences may be supported on conventional spread and spot footings bearing on directly on the underlying bedrock or on properly compacted structural fill underlain by a properly prepared subgrade. Specifically, the subgrade should be prepared during site grading by removing the full depth of unsuitable, loose soils (½ to 2 feet) as recommended in the Subgrade Preparation section of this report. Basement footings may be supported on a minimum of 1 foot of properly compacted structural fill or directly on bedrock.

2. Bearing Pressure

Footings bearing on properly compacted structural fill may be designed for a net allowable bearing pressure of 2,500 psf. The net allowable bearing pressure may be increased to 3,500 psf for footings which will be supported directly on bedrock.

3. Footing Width and Embedment

Footings should have a minimum width of 18 inches and should be embedded at least 12 inches below the lowest adjacent grade.

4. Temporary Loading Conditions

The allowable bearing pressures may be increased by one-half for temporary loading conditions such as wind or seismic loads.

5. Settlement

We estimate that settlement will be approximately 1 inch for footings designed as indicated above due to the load of the structure. Differential settlement is estimated to be approximately ½ inch.

6. Foundation Base

The base of excavations should be cleared of loose or deleterious material prior to placement of fill or concrete.

7. Foundation Setback

Foundations supporting the residences should be set back from the crest of the top ridge at least 30 feet.

C. **Concrete Slab-on-Grade**

1. Slab Support

Concrete slabs may be supported on a zone of properly prepared (overexcavated) and compacted fill as stated in the Subgrade Preparation section of this report with a minimum thickness of at least 12 inches.

2. Underslab Base Course

A 4-inch layer of properly compacted base course should be placed below slabs to provide a firm and consistent subgrade and promote even curing of the concrete.

3. Vapor Barrier

A vapor barrier should be placed below slabs in areas which will receive sensitive floor coverings or coverings which are impermeable. Vapor barriers also provide protection from salt and sulfate attack.

D. **Lateral Earth Pressures**

1. Lateral Resistance for Footings

Lateral resistance for spread footings is controlled by sliding resistance developed between the footing and the subgrade soil. An ultimate friction value of 0.45 may be used in design for ultimate lateral resistance of footings bearing on properly compacted on-site soils.

2. Retaining Structures

The following equivalent fluid weights are given for design of subgrade walls and retaining structures. The active condition is where the wall moves away from the soil. The passive condition is where the wall moves into the soil and the at-rest condition is where the wall does not move. We recommend the basement walls be designed in an at-rest condition.

The values listed below assume a horizontal surface adjacent the top and bottom of the wall.

Description	Active	At-Rest	Passive
Imported or on site granular backfill (sand or gravel)	35 pcf	55 pcf	325 pcf
Imported or on site granular backfill - Earth pressure coefficient	0.28	0.44	-

The above values account for the lateral earth pressures due to the soil and level backfill conditions and do not account for hydrostatic pressures or surcharge loads.

Lateral loading should be increased to account for surcharge loading using the appropriate earth pressure coefficient and a rectangular distribution if structures are placed above the wall and are within a horizontal distance equal to the height of the wall. If the ground surface slopes up away from the wall, the equivalent fluid weights should also be increased.

Care should be taken to prevent percolation of surface water into the backfill material adjacent to the retaining walls. The risk of hydrostatic build up can be reduced by placing a subdrain behind the walls consisting of free-draining gravel wrapped in a filter fabric.

3. Seismic Conditions

Under seismic conditions, the equivalent fluid weight should be modified as follows according to the Mononobe-Okabe method assuming a level backfill condition:

Lateral Earth Pressure Condition	Seismic Modification (2% PE in 50 yrs)
Active	20 pcf increase
At-rest	0 pcf increase
Passive	41 pcf decrease

The seismic increases and decrease assume a peak ground acceleration (PGA) of 0.23g and a 1 second period ground acceleration (S_1) of 0.17g using the Mononobe-Okabe pressure distribution. The resultant of the seismic increase should be placed up from the base of the wall a distance equal to ⅓ the height of the wall.

4. Safety Factors

The values recommended assume mobilization of the soil to achieve the assumed soil strength. Conventional safety factors used for structural analysis for such items as overturning and sliding resistance should be used in design.

E. **Seismicity, Liquefaction and Faulting**

1. Seismic design parameters are provided below:

Description	Seismic Parameter
	2,500 yr event (≈2% PE in 50 yrs)
2015 IBC	C
Site Latitude	37.0435°
Site Longitude	-113.5223°
PGA - Site Class B	0.23g
S_s (0.2 second period) - Site Class B	0.56g
S_1 (1 second period) - Site Class B	0.17g
F_{pga} - Site Class Factor	1.17
F_a - Site Class Factor	1.18
F_v - Site Class Factor	1.63

2. Liquefaction

Based on subsurface conditions encountered in the test pits, the subsurface soils observed are non-liquefiable to the depths investigated during a seismic event.

3. Faulting

Based on a review of available geologic literature, there are no mapped faults extending near or through the site.

F. Soil Corrosion

Laboratory test results completed on samples collected at the site indicate water soluble sulfates concentrations ranging from 5,700 to 5,940 parts per million (ppm). Therefore, we recommend concrete elements that will be exposed to the on-site soils be designed in accordance with provisions provided in the American Concrete Institute Manual of Concrete Practice (ACI) 318-II. Table 4.2.1 and 4.2.1 of ACI 318-11 should be referenced for design of concrete elements utilizing a Sulfate Exposure Class of S2, and a sulfate exposure severity of "severe".

Consideration should also be given to cathodic protection of buried metal pipes. We recommend utilizing PVC pipes where local building codes allow.

G. Pavement

1. Subgrade Support

We anticipate that the subgrade materials beneath the pavement areas will consist of properly compacted silty sand to sandy silt. Prior to placement of road base, the subgrade should be prepared as recommended in the subgrade preparation section of this report. A California Bearing Ratio (CBR) of 7 percent was assumed for a properly compacted sandy silt subgrade for purposes of design.

2. Pavement Thickness

Based on the assumed traffic loadings and St. George City traffic indexes, a 20-year design life, and AASHTO design methods, the following pavement sections are recommended.

Roadway	Asphalt (in.)	Base Course (in.)
45 foot right-of-way	2½	6
Banded Hills Drive	3	6

3. Pavement Materials

The pavement materials should meet City of St. George specifications for gradation and quality. The pavement thicknesses indicated above assume that the base course is a high quality material with a CBR of at least 50 percent and the asphaltic concrete has a minimum Marshall stability of 1,800 pounds. Other materials may be considered for use in the pavement section. The use of other materials may result in other pavement material thicknesses.

4. Drainage

The collection and diversion of drainage away from the pavement surface is extremely important to the satisfactory performance of the pavement section. Proper drainage should be provided.

H. Construction Testing and Observations

We recommend the following testing and observations be done as a minimum as required by the City of St. George.

1. Observe grubbing and verify removal of soil containing roots and organics.

2. Verify that recommended overexcavation depths are achieved in the building pads and beneath roadways. The lateral extent of the building pad should be located by survey (not included in AGEC's Scope of Services) and includes an area which extends at least 5 feet beyond the buildable area as per city set-back requirements.

3. Verify that recommended structural fill depths are provided below foundations and slabs.

4. Conduct compaction testing on fill placed below foundations and in building pads. We recommend testing each foot of fill placed.

5. Conduct construction materials testing on city improvements at a frequency which meets or exceeds St. George City requirements.

I. **Geotechnical Recommendation Review**

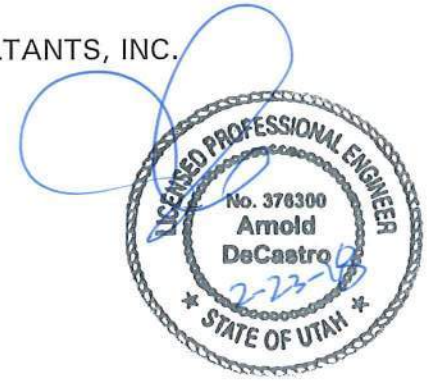
The client should familiarize themselves with the information contained in this report. If specific questions arise or if the client does not fully understand the conclusions/recommendations provided, AGEC should be contacted to provide clarification.

LIMITATIONS

This report 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 report are based on the information obtained from the test pits excavated, the referenced report, the data obtained from laboratory testing, and our experience in the area. Variations in the subsurface conditions may not become evident until excavation is conducted. If the subsurface conditions or groundwater level are found to be significantly different from those 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.

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.



Arnold DeCastro, P.E.

Reviewed by JRH, P.E.

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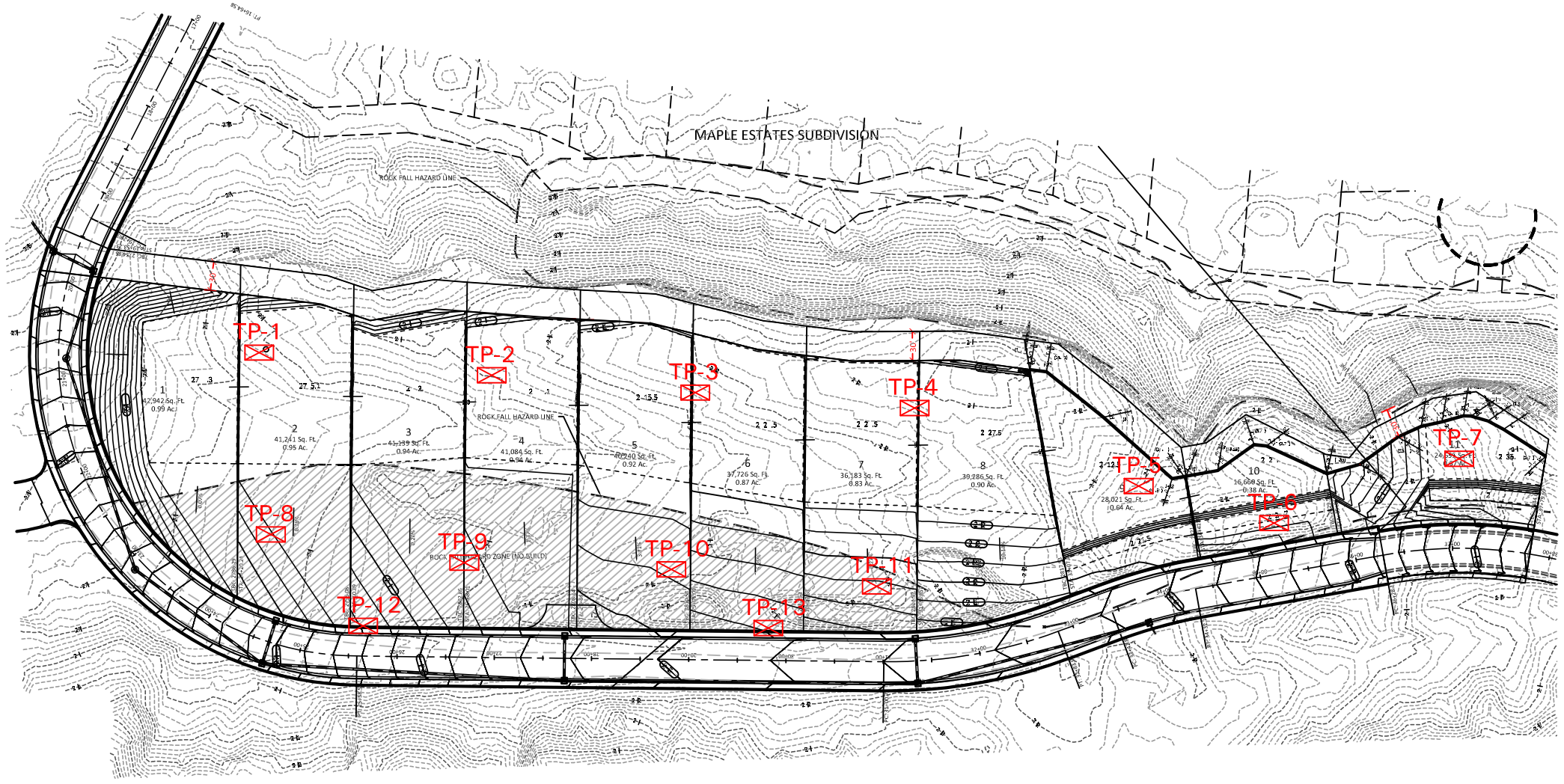
N

Not to Scale

BANDED HILLS SUBDIVISION
ST. GEORGE, UTAH

2172452	AGEC	Vicinity Map	Figure 1

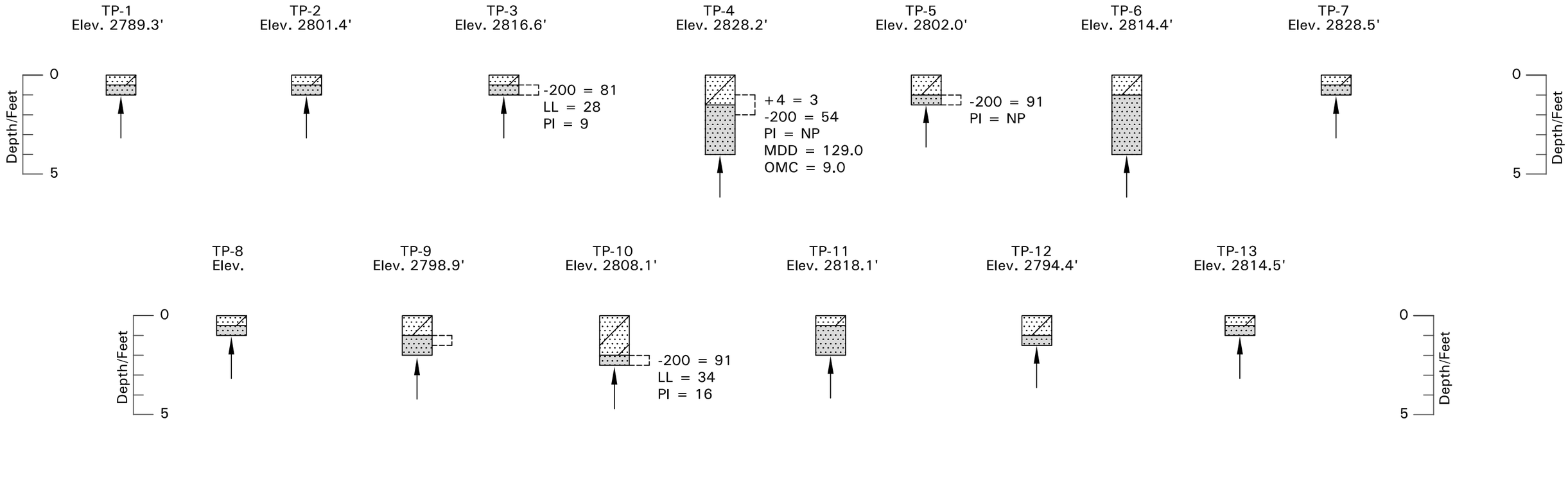
BANDED HILLS SUBDIVISION
ST. GEORGE, UTAH



Approximate test pit location

0 150 300 feet
Approximate Scale

2172452	AGEC	Site Plan	Figure 2



LEGEND:

Silty Sand (SM); loose, dry to slightly moist, and reddish brown in color.

Bedrock; interbedded sandstone, siltstone and shale bedrock, moderately hard, dry, and red/brown in color.

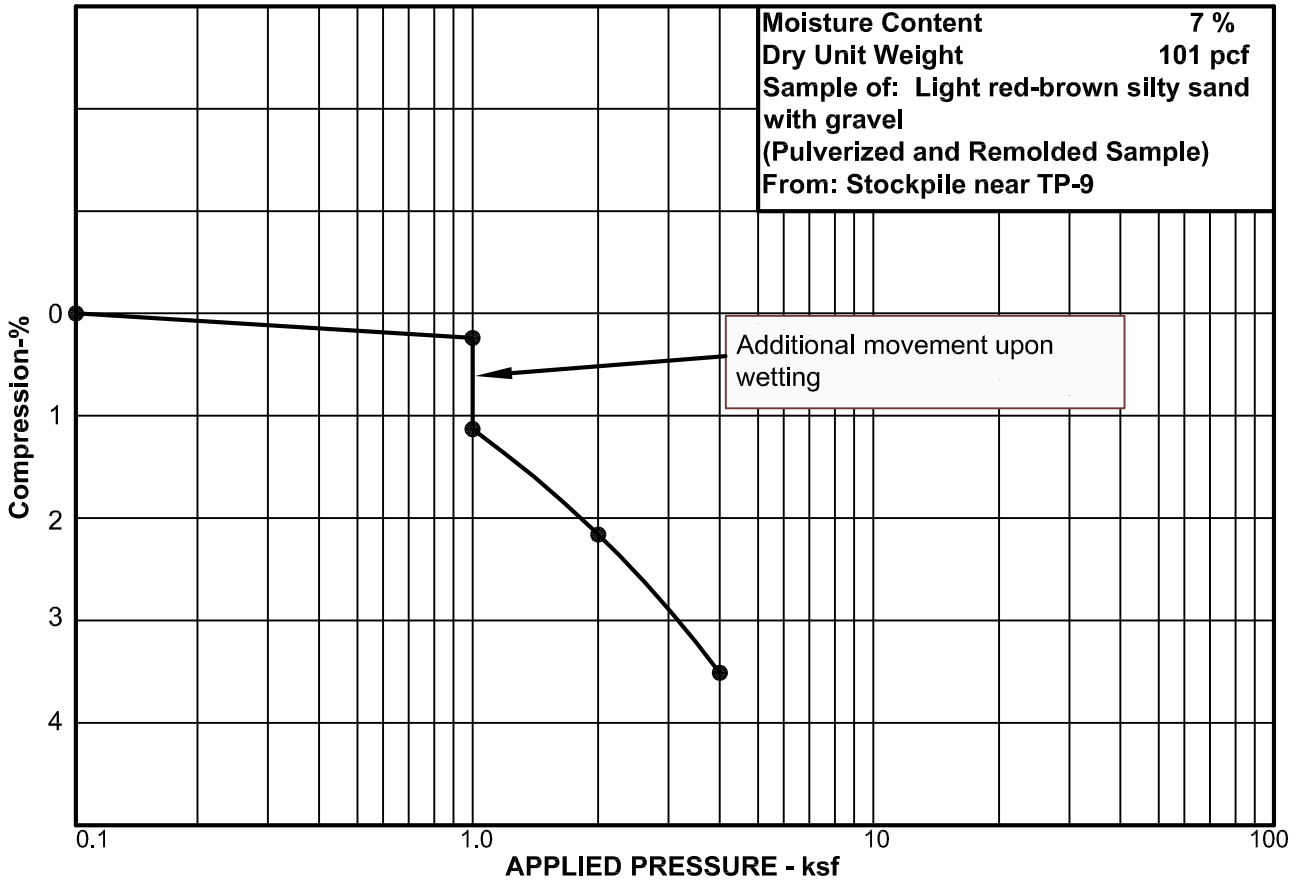
Indicates disturbed sample taken.

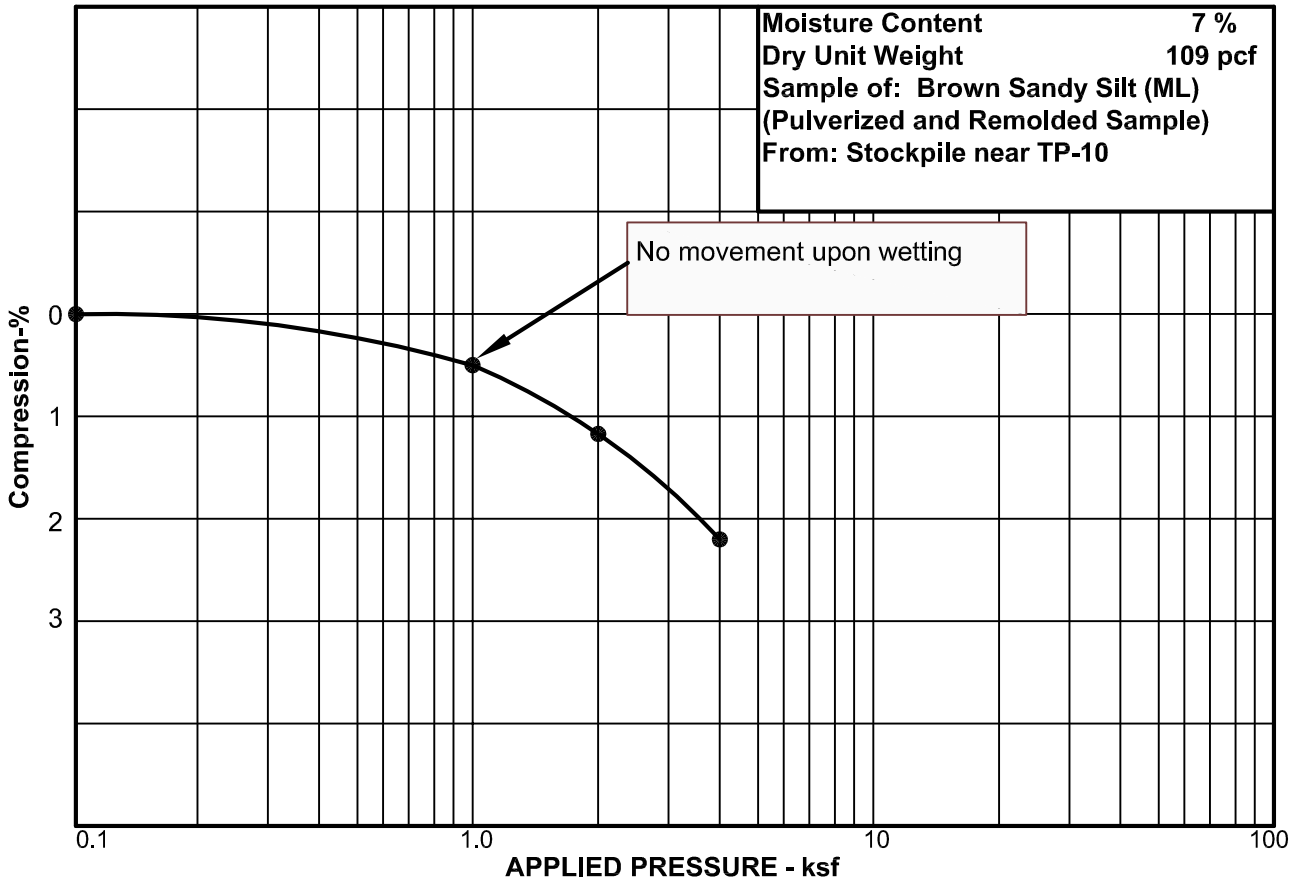
Indicates practical backhoe refusal on sandstone bedrock.

NOTES:

1. The test pits were excavated on January 24, 2018 with a mini excavator.
2. The locations of the test pits were measured by pacing from features shown on the site plan, Figure 2.
3. The elevations of the test pits were estimated using a hand level and are based on the benchmark shown on Figure 2.
4. The test pit locations and elevations should be considered accurate only to the degree implied by the method used.
5. The lines between the materials shown on the test pit logs represent the approximate boundaries between material types and the transitions may be gradual.
6. Free water was not encountered in the test pits at the time of excavation.
7. +4 = percent retained on the No. 4 sieve;
   -200 = percent passing No. 200 sieve;
   LL = liquid limit (%);
   PI = plasticity index (%);
   NP = non plastic;
   MDD = maximum dry density (pcf);
   OMC = optimum moisture content (%).

Applied Geotechnical Engineering Consultants, Inc.

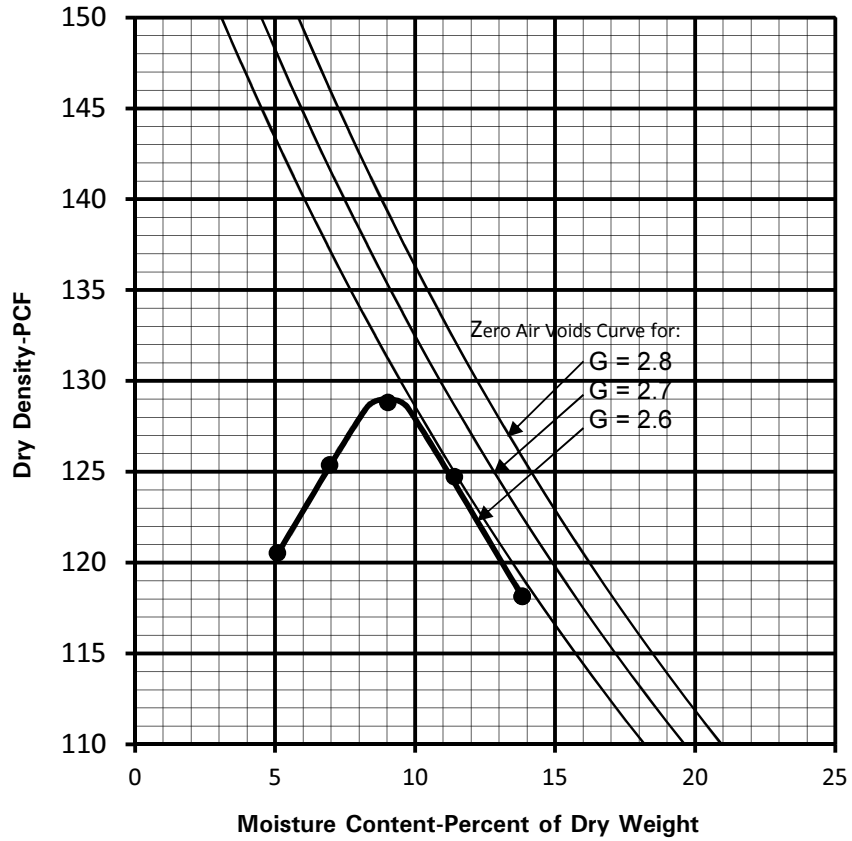




Project No. 2172452 **CONSOLIDATION TEST RESULTS** **Figure 4**

AGEC
Applied GeoTech

Project: Banded Hills



Sample Date:	1/24/18
Sample No.	180126D
Maximum Dry Density:	129.0
Optimum Moisture:	9.0

Atterberg Limits

Liquid Limit:	
Plasticity Index:	Non-Plastic

Gradation

Gravel:	3%
Sand:	43%
Silt & Clay:	54%

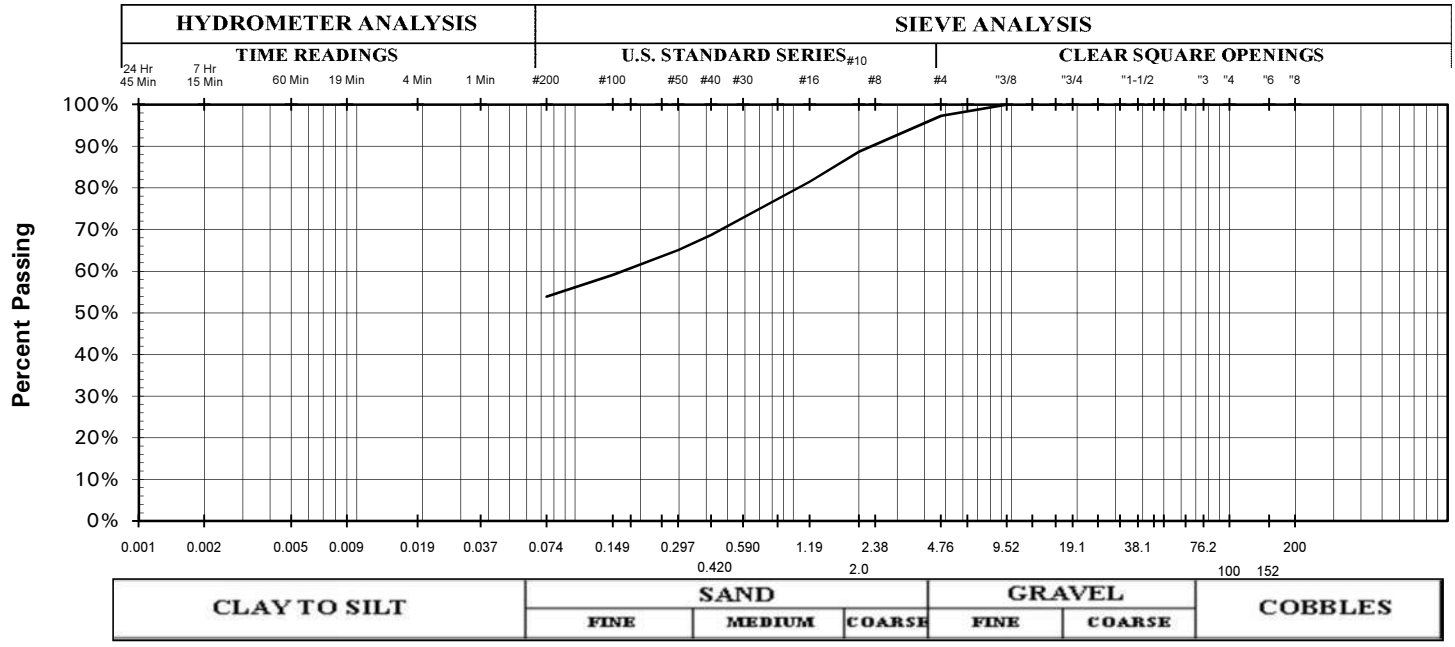
Moisture - Density Relationship Test Procedure: AASHTO T-180 B

Reviewed By: TT

USCS Classification: sandy silt (ML)

AASHTO Classification: A-4

Sample Location: TP-4 @ 1-2'



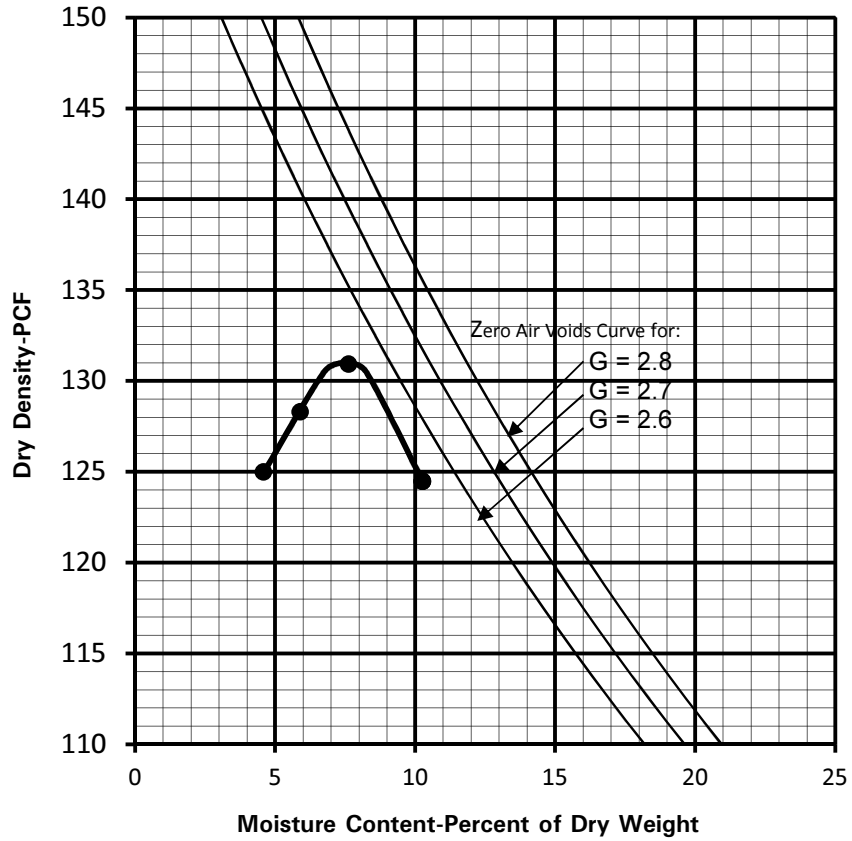
GRADATION AND MOISTURE-DENSITY RELATIONSHIP RESULTS

Project No.: 2172452

Figure: 5

AGEC
Applied GeoTech

Project: Banded Hills



Sample Date:	2/5/18
Sample No.	180206B
Maximum Dry Density:	131.0
Optimum Moisture:	7.5

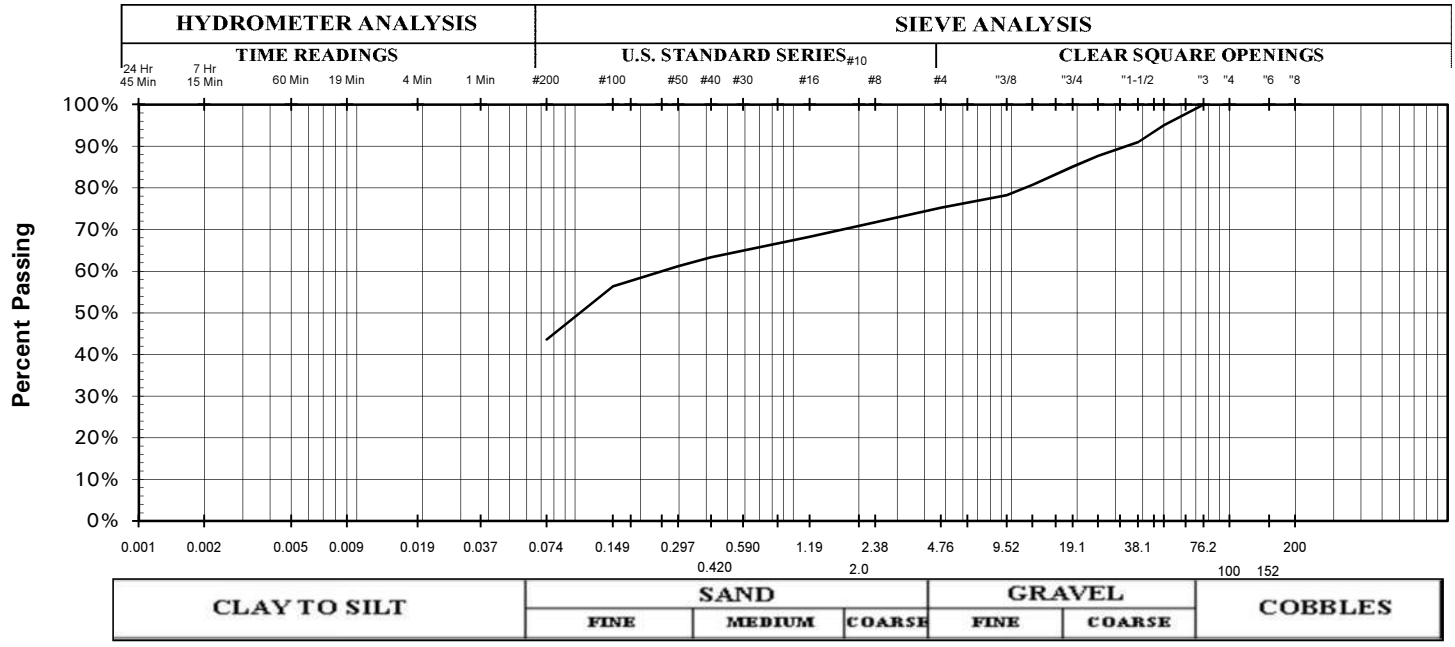
Atterberg Limits

Liquid Limit:	
Plasticity Index:	Non-Plastic

Gradation

Gravel:	25%
Sand:	32%
Silt & Clay:	43%

Moisture - Density Relationship Test Procedure: AASHTO T-180 B Reviewed By: TT
USCS Classification: Light red-brown, Silty Sand with Gravel (SM) Rock Corrected
AASHTO Classification: A-4
Sample Location: Onsite Stockpile Near TP-9

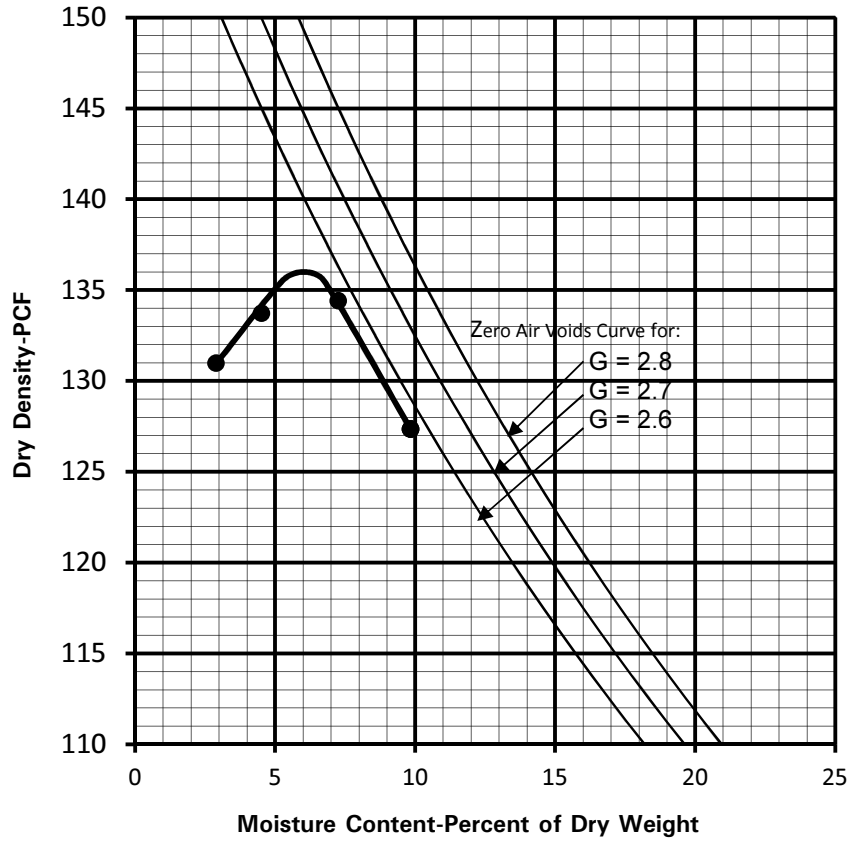


GRADATION AND MOISTURE-DENSITY RELATIONSHIP RESULTS

Project No.: 2172452 Figure: 6

AGEC
Applied GeoTech

Project: Banded Hills



Sample Date:	2/5/18
Sample No.	180206A
Maximum Dry Density:	136.0
Optimum Moisture:	6.0

Atterberg Limits

Liquid Limit:	
Plasticity Index:	Non-Plastic

Gradation

Gravel:	2%
Sand:	39%
Silt & Clay:	59%

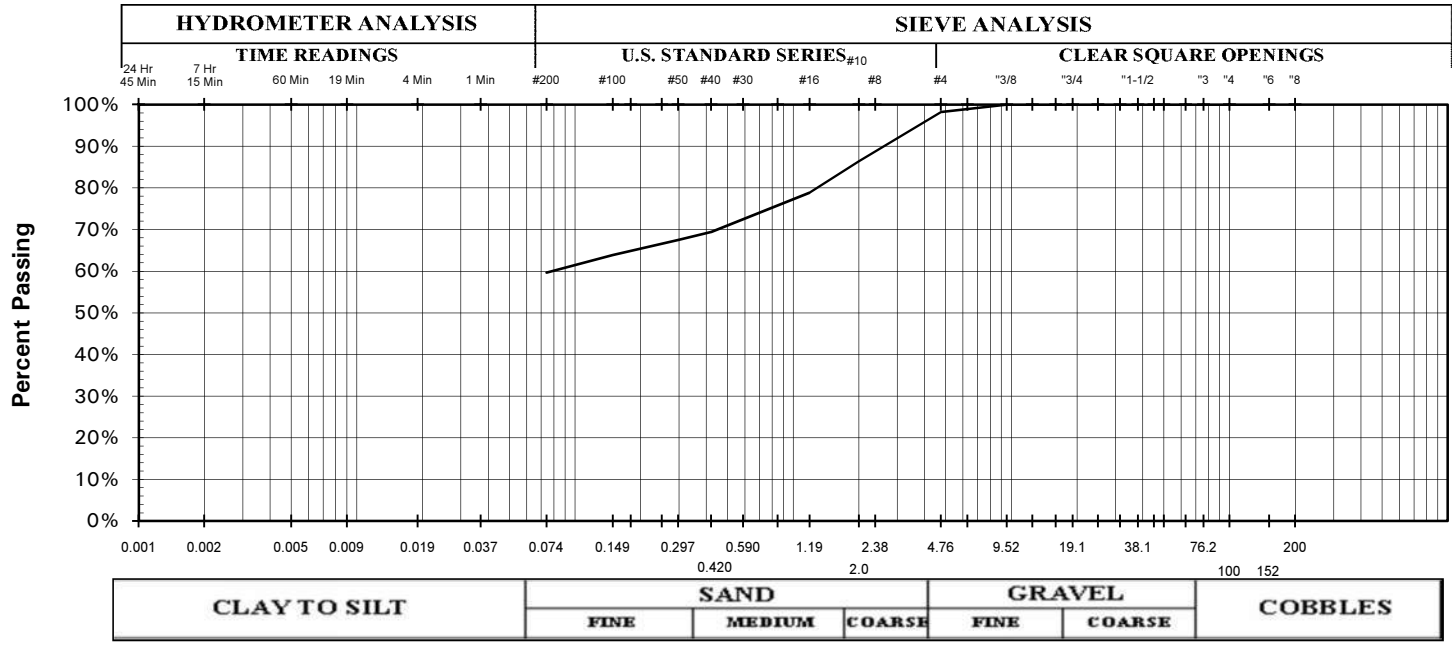
Moisture - Density Relationship Test Procedure: AASHTO T-180 B

Reviewed By: TT

USCS Classification: Brown, Sandy Silt (ML)

AASHTO Classification: A-4

Sample Location: Onsite Stockpile near TP-10



GRADATION AND MOISTURE-DENSITY RELATIONSHIP RESULTS

Project No.: 2172452

Figure: 7

Applied Geotechnical Engineering Consultants, Inc.

Table 1 - Summary of Laboratory Test Results

Banded Hills Subdivision

Project No. 2172452

Sample Location				Gradation			Atterberg Limits		Moisture-Density Relationship			
Test Pit No.	Depth (ft)	Natural Moisture Content (%)	Natural Dry Density (pcf)	Gravel (%)	Sand (%)	Silt/Clay (%)	Liquid Limit (%)	Plastic Index (%)	Maximum Dry Density (pcf)	Optimum Moisture Content (%)	Water Soluble Sulfates (ppm)	Soil Type
TP-3	½					81	28	9				Shale Bedrock
TP-4	1-2			3	43	54		NP	129.0	9.0		Sandy Silt (ML)
TP-5	1					91		NP				Siltstone Bedrock
TP-10	2					91	34	16				Shale Bedrock
Stockpile near TP-9		7		25	32	43		NP	131.0	7.5	5,700	Fill - Silty Sand with Gravel (SM)
Stockpile near TP-10		7		2	39	59		NP	136.0	6.0	5,940	Fill - Sandy Silt (ML)

Exhibit D

ITEM 1

HILLSIDE REVIEW BOARD AGENDA REPORT: **04/18/2018**

HILLSIDE DEVELOPMENT PERMIT
Banded Hills
Case No. 2018-HS-002

Request: A request for a Hillside Development Permit to allow development of a proposed single family residential development on "Banded Hills Drive."

Project: The purpose of this project is to develop eleven (11) residential lots in compliance with the hillside ordinance.

Owner: Quality Development

Representative: Steve Kamlowski

Engineer: Development Solutions Group

APN: SG-5-3-15-121-STL (SG-5-3-15-311)

Location: Located at approximately 2915 E Banded Hills Drive (*generally located between Copper Cliff Drive and Banded Hills Drive*)

Acreage: Site area = 9.12 acres
Disturbed area = 7.93 acres

Zone: R-1-10 (Single Family Residential 10,000 sq. ft. minimum lot size)

Adjacent zones: North = OS & R-1-10
South = ASBP (Airport)
East = OS
West = R-1-10

Powers & Duties: Section 10-13A-12.B.1 of the "Hillside Review Board Powers and Duties" states that the hillside board can make recommendations for approval, conditional approval, and denial to the Planning Commission (PC) and City Council (CC).

Permit required: Section 10-13A-6:A requires that all major development (i.e, cut greater than 4', etc.) on slopes above 20% requires a 'hillside development permit' granted by the City Council upon recommendation from the Hillside Review Board and the Planning Commission.

Geotech: A Geological Hazard Assessment and Preliminary Geotechnical Report was prepared by AGEC (*Applied Geotechnical Engineering Consultants, Inc.*) on February 23, 2018 (*Project No. 2172452*). The report includes a summary of conditions and recommended investigations and mitigations to occur with development.

Rockfall: AGEC prepared a rockfall report with recommendations for mitigations; its included in the "Geologic-Hazard Study" report dated February 13, 2018.

Drainage: A "Drainage Study" dated March 26, 2018, was prepared by Development Solutions Group, Inc. The report is an analysis of on-site and off-site hydrology under current conditions and with proposed development of the site. The report addresses proposed mitigations for handling drainage.

Applicable Ordinance(s):
(Selected portions)

10-13A-1: Purpose
The city finds that the health, safety and the general public welfare of the residents of the city will be promoted by establishing standards for the development and excavation of hillside and slope areas located in the city so as to minimize soil and slope instability and erosion, to minimize the adverse effects of grading, cut and fill operations, to preserve the character of the city's hillsides, and to otherwise supplement and amplify the city subdivision and zoning ordinances. The provisions herein are designated to accomplish the following:

A. Prohibit development of uses which would likely result in a hazardous situation due to slope instability, rock falls or excessive soil erosion.

B. Provide for safe vehicular circulation and access.

C. Encourage the location, design and development of building sites in a manner that will minimize the scarring and erosion effects of cutting, filling and grading of hillsides.

D. Encourage preservation of open space by encouraging clusters or other design techniques to preserve the natural terrain.

E. Where hillside excavation does occur, require that buildings be located in the cut area to minimize the visual effects of scarring. (1998 Document § 10A-1)

Section 10-13A-4: Density and Disturbance Standards

A. Schedule: In furtherance of the purposes set forth above, density and site disturbance within the hillside development overlay zone shall comply with the following schedule. Any portion of a development parcel having a slope greater than forty percent (40%) shall not be included in the calculation of the area of such parcel for the purposes of determining conformity with the density requirements below:

Percent Natural Slope	Dwelling Units (DU) / Acre
0-19	See underlying zone
20-29	2 DU/acre, provided the units are clustered on 30 percent (30%) or less of the land area within this slope category. 70 percent of this slope category shall remain undisturbed. The 70 percent area is based upon the overall area/development rather than per lot. Also see subsections A1, A2, and A3 of this section.
30-39	1 DU/10 acres, provided no more than 5 percent (5%) of the site is disturbed, and 95 percent of the site remains undisturbed. If the cumulative area is at least 1 acre but less than 10 acres, the cumulative area shall be allowed 1 DU.
40	Development is not permitted (0%), **except** as provided for in subsection A4 of this section.

A.4. The city council, after considering the recommendation from the hillside review board, and from the planning commission may approve the removal of small hills which contain slopes forty percent (40%) or greater subject to determining the application conforms to all of the following requirements:

a. The hill is not contiguous to nor part of a major hillside formation, and
b. The removal of such landform will not create a negative aesthetic impact in the opinion of the city council, and
c. The land area is zoned for residential, commercial, or industrial development. (Ord. 2013-01-001, 1-3-2013)

Section 10-13A-5: Slope and Slope Areas Determined

B. Procedure: The location of the natural twenty percent (20%), thirty percent (30%) and forty percent (40%) slopes for the purposes of this article shall be determined using the following procedure: (Ord. 2005-07-007, 7-21-2005)

3. Determination of Slope Areas for Density Calculations: Using the contour maps, slopes shall be calculated in intervals no greater than forty feet (40') along profile lines. Points identified as slopes of twenty percent (20%), thirty percent (30%), and forty percent (40%) 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 dwelling unit density. Small washes or rock outcrops which have slopes

> distinctly different from surrounding property and not part of the contiguous topography may be excluded from slope determination if, in the opinion of the hillside review board, the exclusion of such small areas from slope determination will not be contrary to the overall purpose of this article. For the purpose of determining developable areas and allowable densities, previously disturbed hillside areas shall be considered on a pre-disturbance natural slope basis, where feasible, as proposed by the applicant's engineer and approved by the hillside review board. Where a property owner restores a previously disturbed area to a natural or near natural condition, the area may be included within a required no disturbance area. (Ord. 2005-07-007, 7-21-2005)

Comments: If the HSRB recommends approval of a hillside permit, then the permit request advances forward to the Planning Commission (PC) for review and recommendation and then on to the City Council (CC) for approval or denial.

If approved, staff would work with the applicant for submittal of a SPR (Site Plan Review) application with the required accompanying civil engineering plan set (*for plan review*).

1. Hillside Permit - A hillside permit is required per ordinance and the HSRB will make recommendations to the PC & CC.

2. Zoning – For this project, no zone change is proposed because the project would fit into the existing R-1-10 zone.

3. Development – It's proposed to develop eleven (11) single family residences. A thirty (30) foot setback line from an established ridge line will be required as presented. Retaining walls will be incorporated. No disturb (*no build*) areas will be established on lots 1 thru 8 as presented. The 'Minor Hills' may be removed as presented (*minor hills and/or cuts left over from the Banded Hills Road construction*).

4. Drainage – Drainage shall comply with the 'Drainage Study' dated March 26, 2018 by Development Solutions Group.

5. Geotechnical Investigation – All earthworks shall comply with the recommendations and mitigations presented in AGEC Geotech Report for project #2172452 dated February 23, 2018.

6. Rockfall – Rockfall hazards shall be mitigated in compliance with the recommendations found in the AGEC "Geologic-Hazard Study" report dated February 13, 2018.

HSRB Motion: The following are examples of possible motions;

1. Denial - This application is recommended for denial because _____.

2. Table – This application is recommended to be tabled to allow the applicant an opportunity to provide the following information _____.

3. Approval - A motion to recommend approval to remove insignificant slope areas to allow development of a proposed single family residential development off of Banded Hills Drive. The recommended areas to be removed are depicted on Sheet SAM-1 titled "Slope Analysis Map" (*dated 3/26/2018*). This removal is justified with the **findings** that the areas within the identified "limits of disturbance" per Section 10-13A-4.A.4.a) are not contiguous nor part of a major hillside formation, b) the removal of such areas will not create a negative aesthetic impact in the opinion of the City Council, and c) the land area is zoned for residential development. The applicant shall work with staff during the construction plan review process to address any rockfall hazards, geotech hazartds, and drainage and sediment issues, and will follow the recommendations of the drainage report, geotechnical report, and rockfall report.

Street Photos – Banded Hills

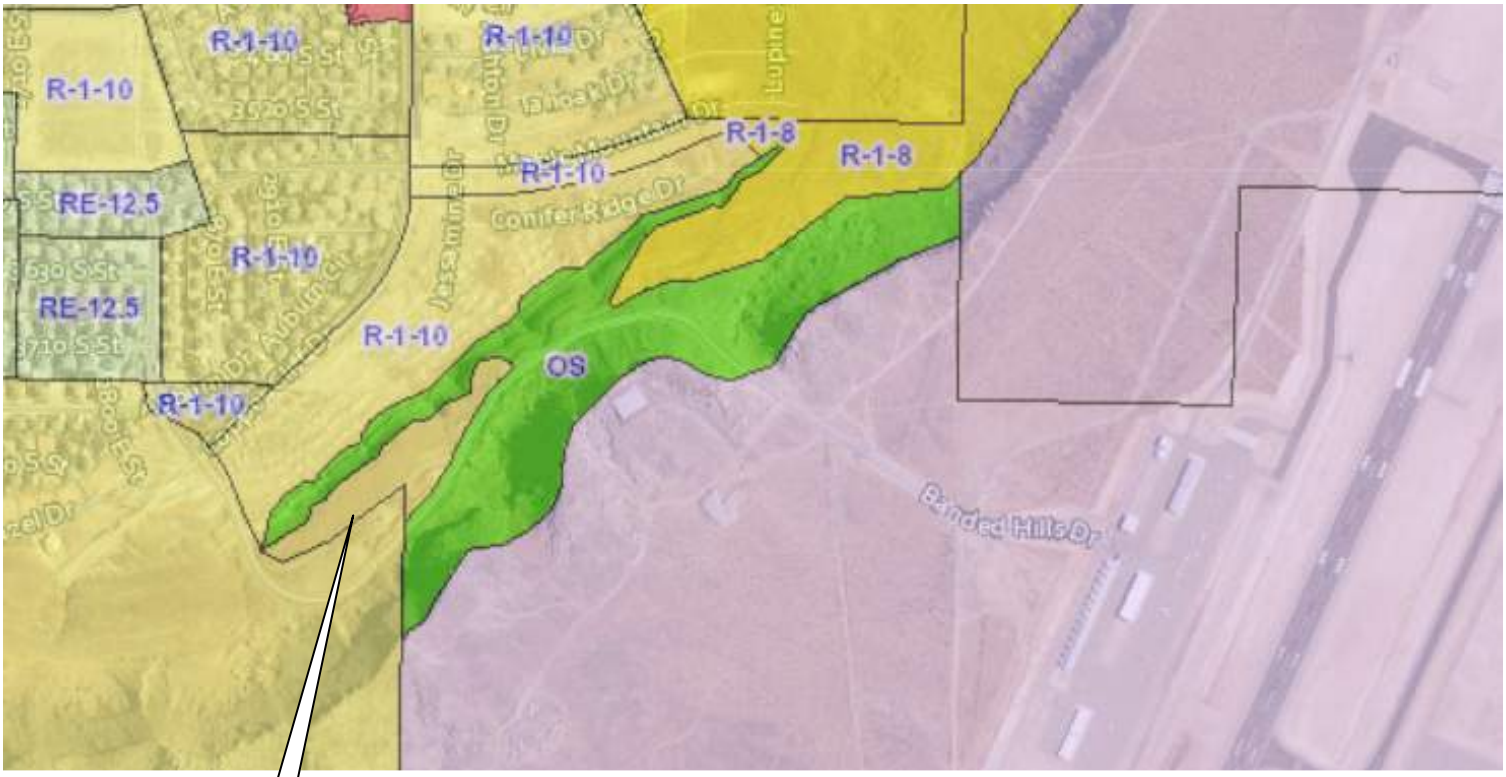

Airport Rd


Airport Rd


Airport Rd

Vicinity - Aerial Map

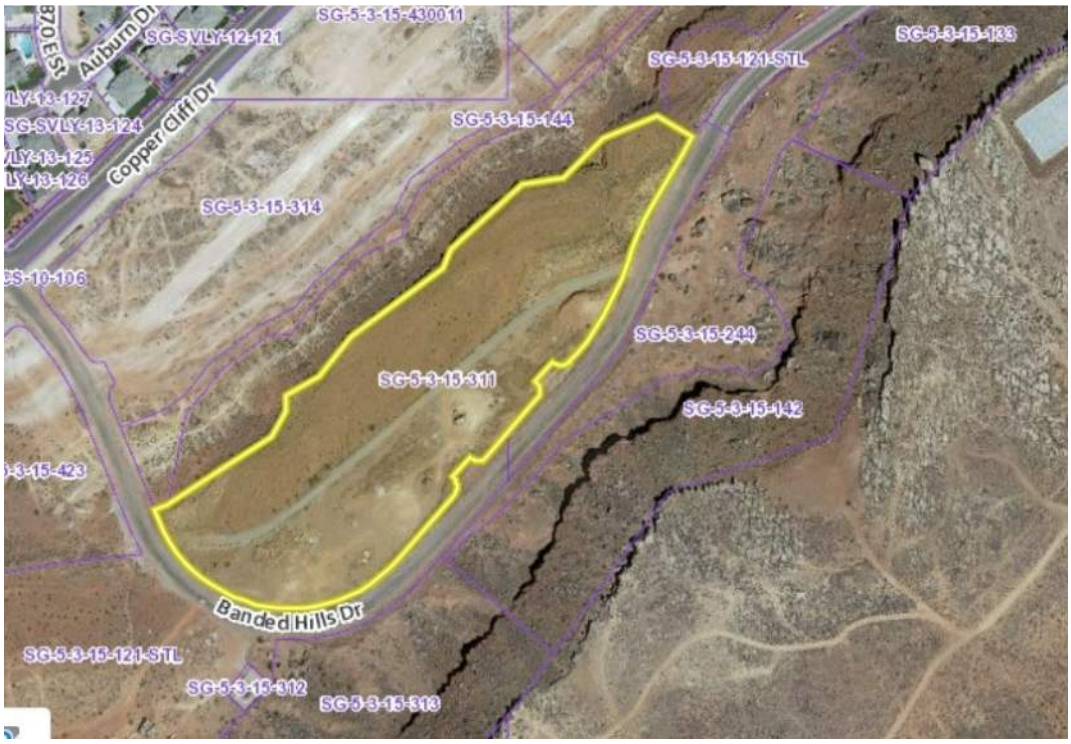
Zoning Map


R-1-10
R-1-10
R-1-10
R-1-10
R-1-8
R-1-8
RE-12.5
R-1-10
RE-12.5
R-1-10
OS
R-1-10
Banded Hills Dr
Site

Property

City GIS

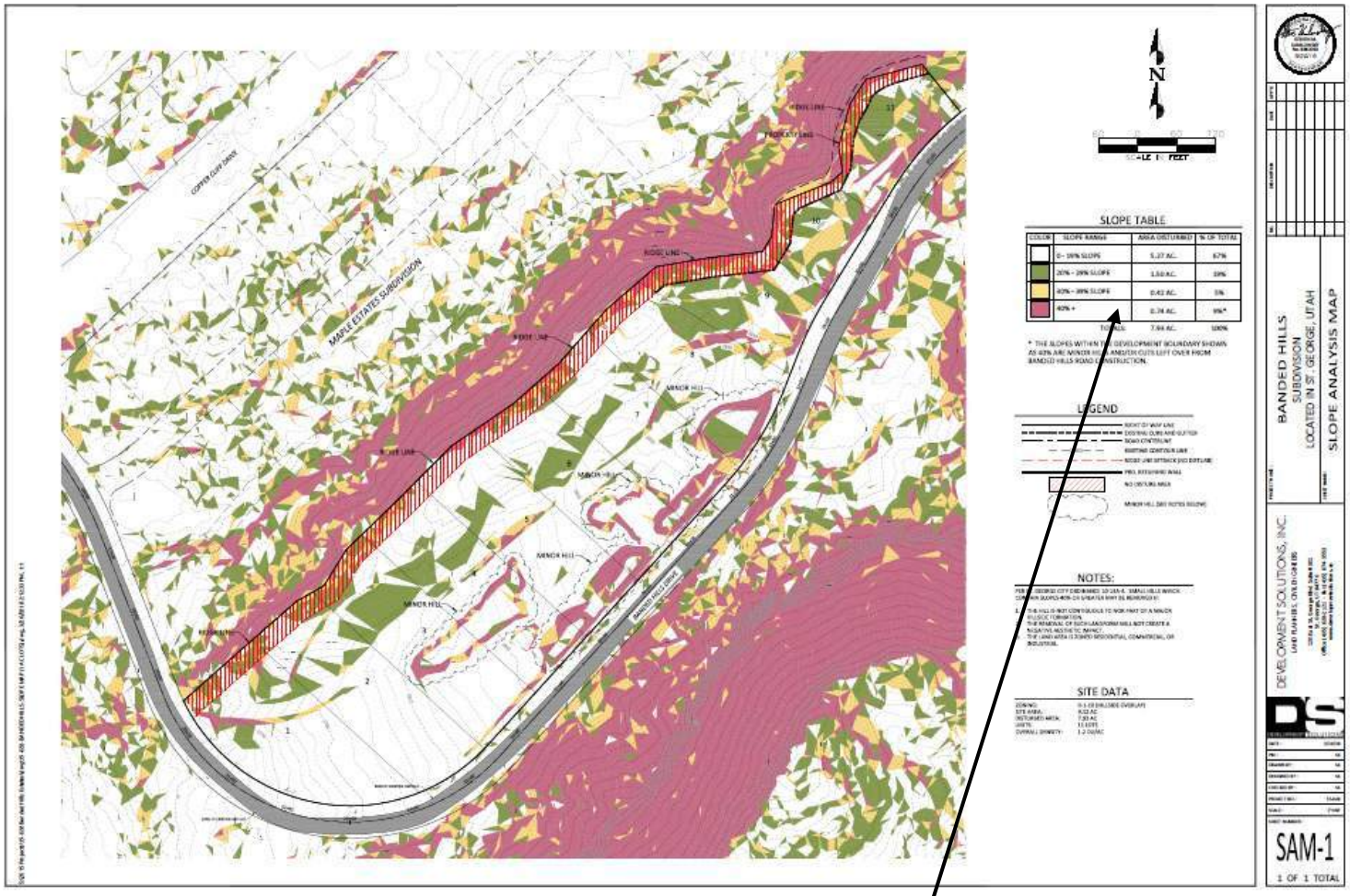
Washington County



Slope Map – Full Sheet

(Colored Contour Map)

(Full size plan is in the HSRB packet)



SLOPE TABLE

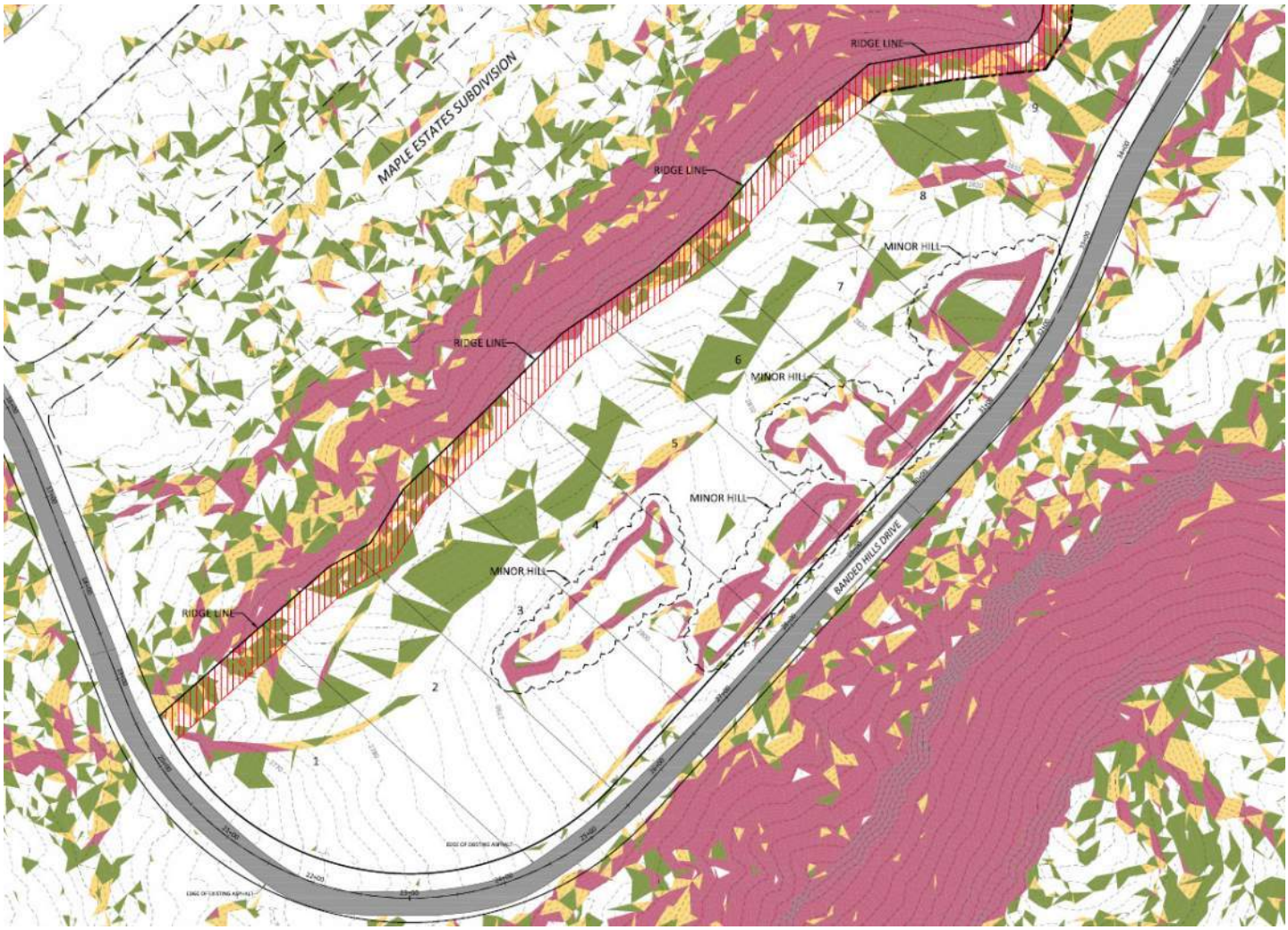
COLOR	SLOPE RANGE	AREA DISTURBED	% OF TOTAL
	0 - 19% SLOPE	5.27 AC.	67%
	20% - 29% SLOPE	1.50 AC.	19%
	30% - 39% SLOPE	0.42 AC.	5%
	40% +	0.74 AC.	9%*
	TOTALS:	7.93 AC.	100%

* THE SLOPES WITHIN THE DEVELOPMENT BOUNDARY SHOWN AS 40% ARE MINOR HILLS AND/OR CUTS LEFT OVER FROM BANDED HILLS ROAD CONSTRUCTION.

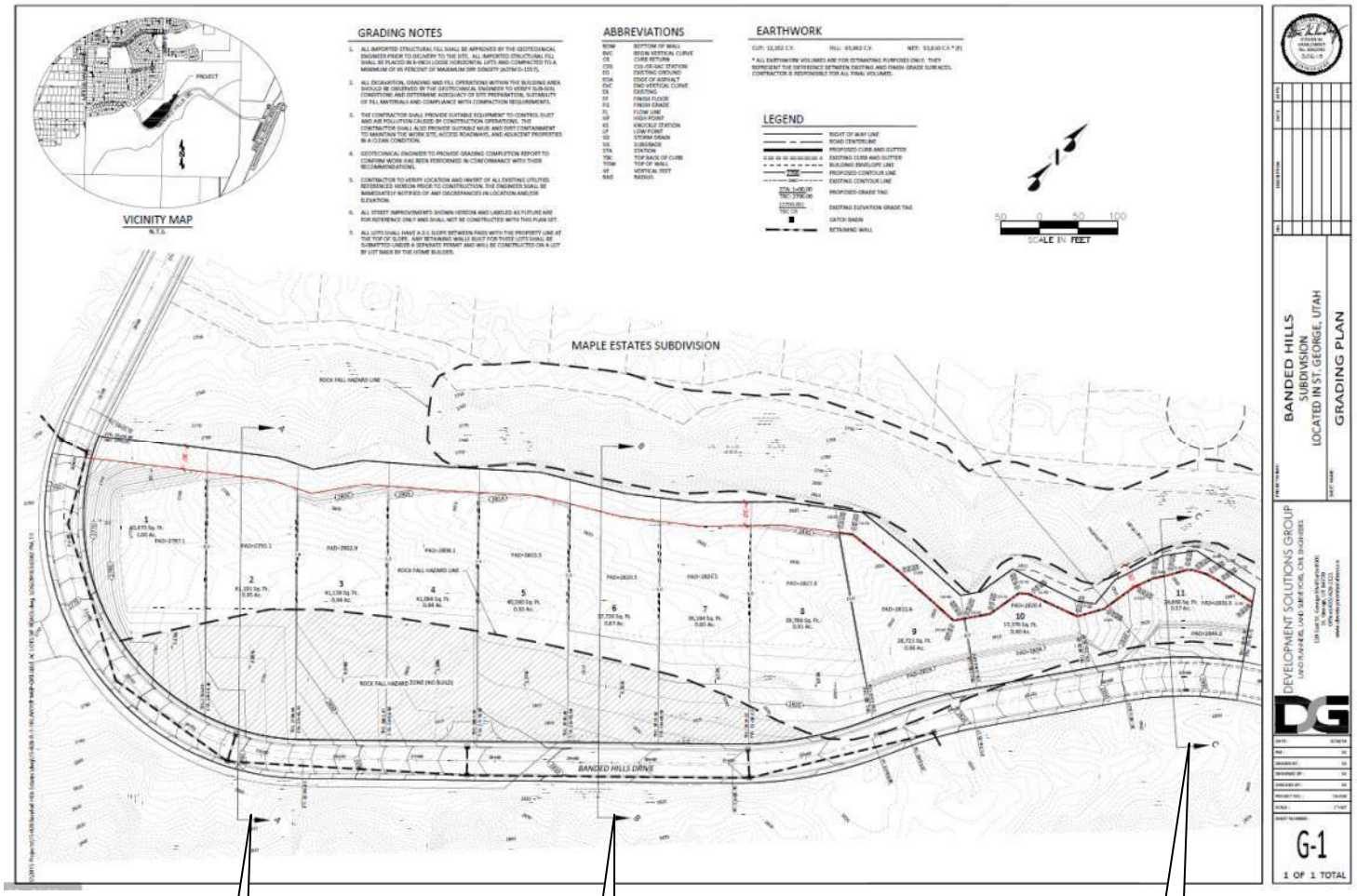
Slope Map – Detail

(Colored Contour Map)

(Full size plan is in the HSRB packet)



Grading Plan

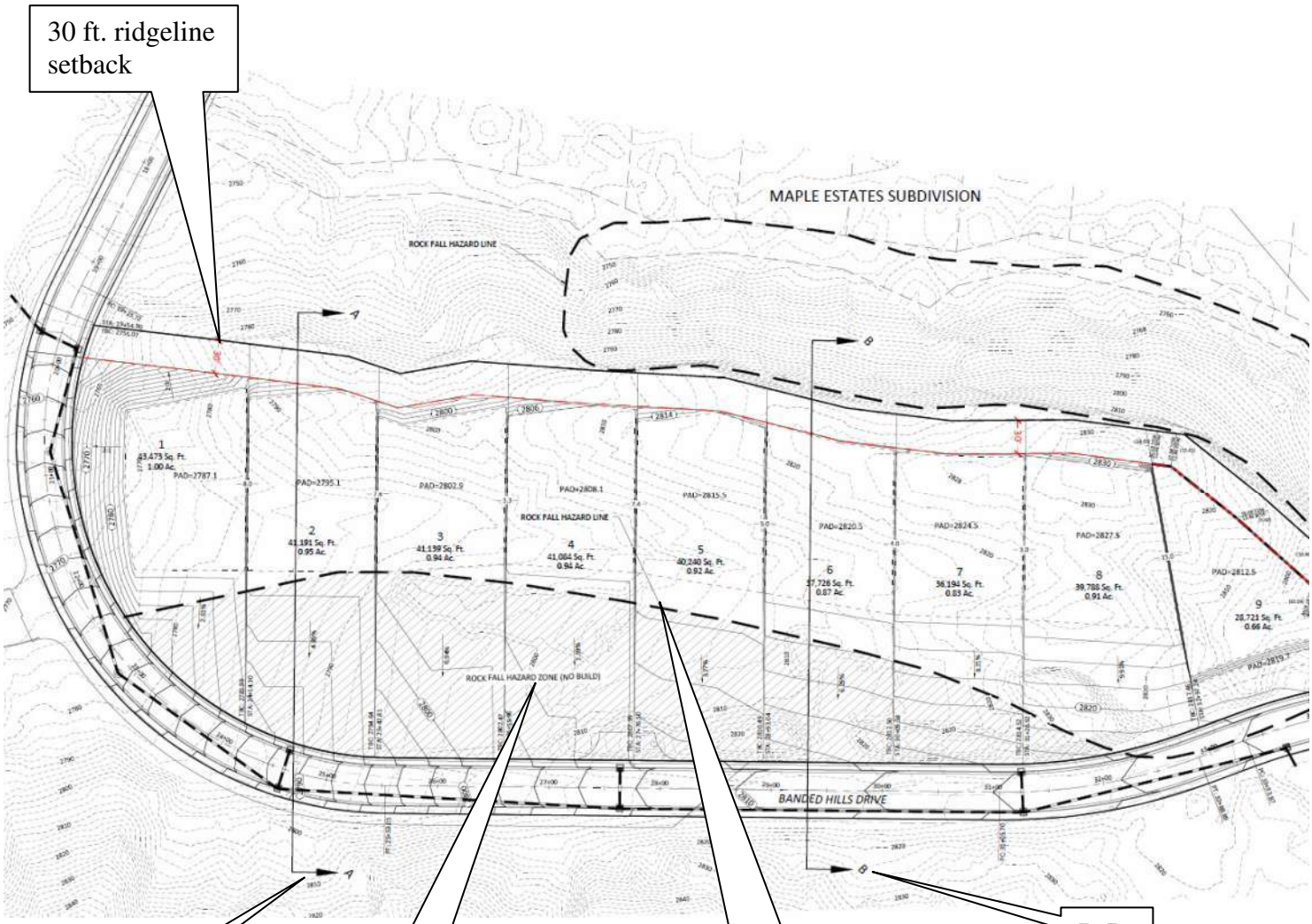


A-A

B-B

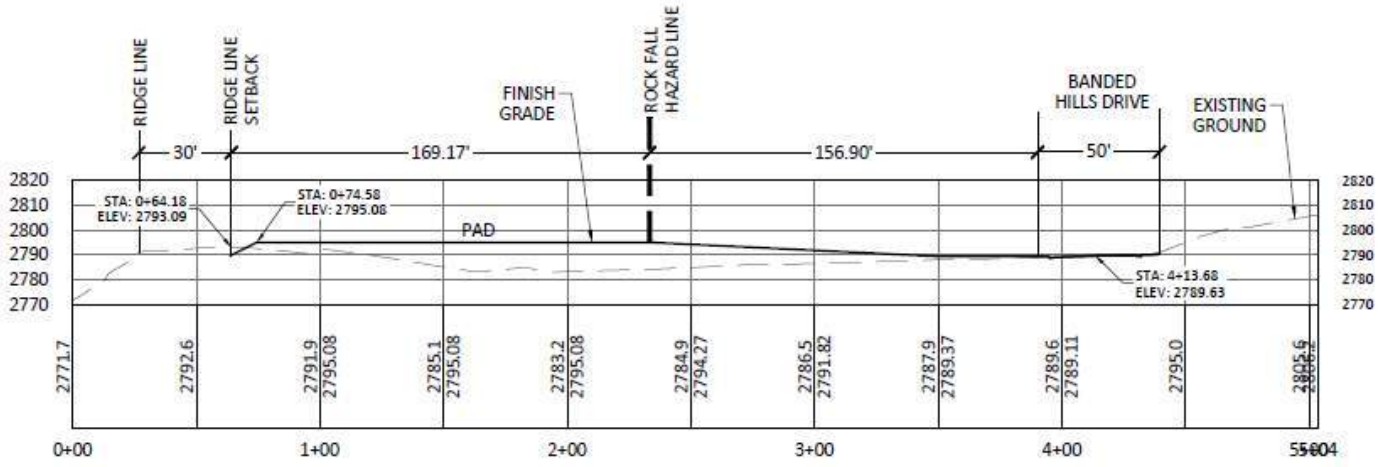
C-C

Detail – Grading Plan



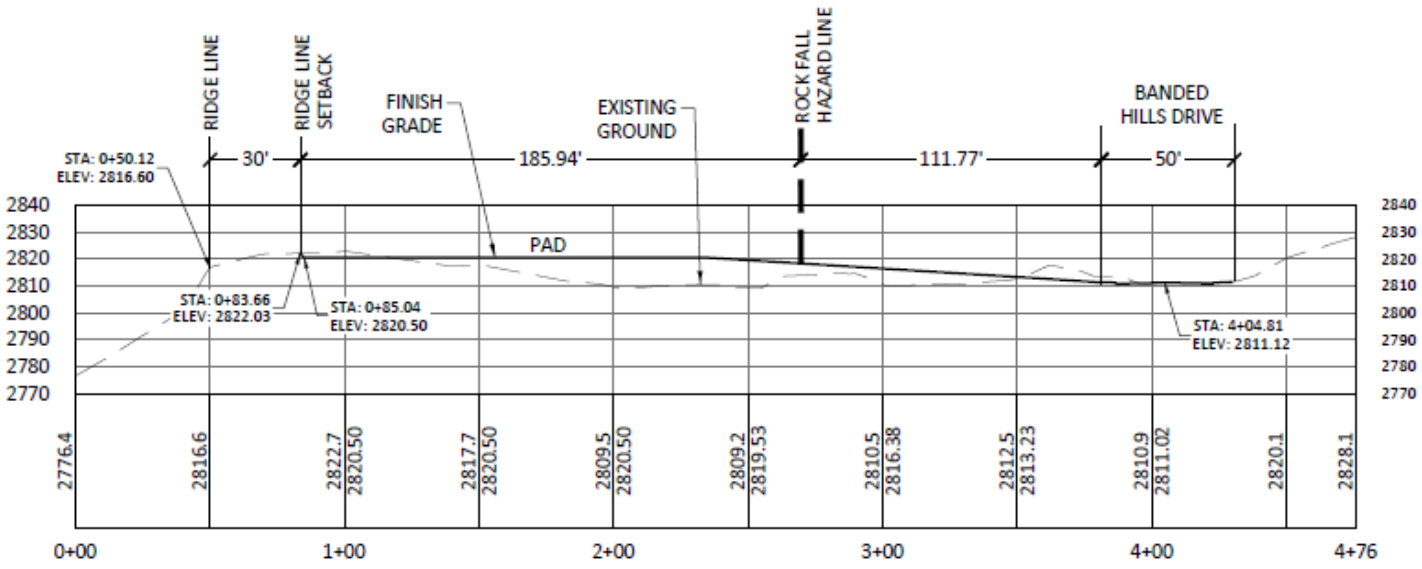
Cross Sections

A-A



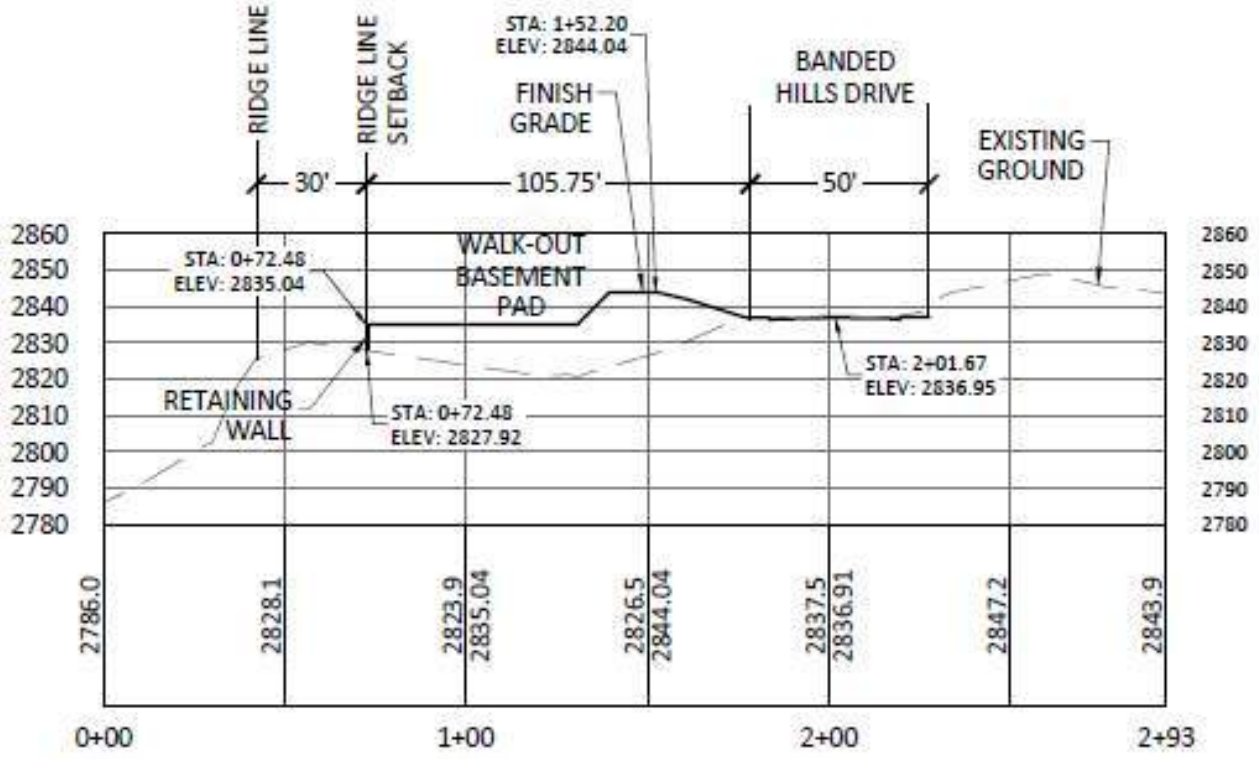
SECTION A
H: 1"=50'
V: 1"=50'

B-B



SECTION B
H: 1"=50'
V: 1"=50'

C-C



SECTION C
H: 1"=50'
V: 1"=50'

Drainage Report

(Only the cover is shown; the full report is 26 pages and is in the HSRB packet and in the project case file)

BANDED HILLS SUBDIVISION

Drainage Study

St. George, Utah

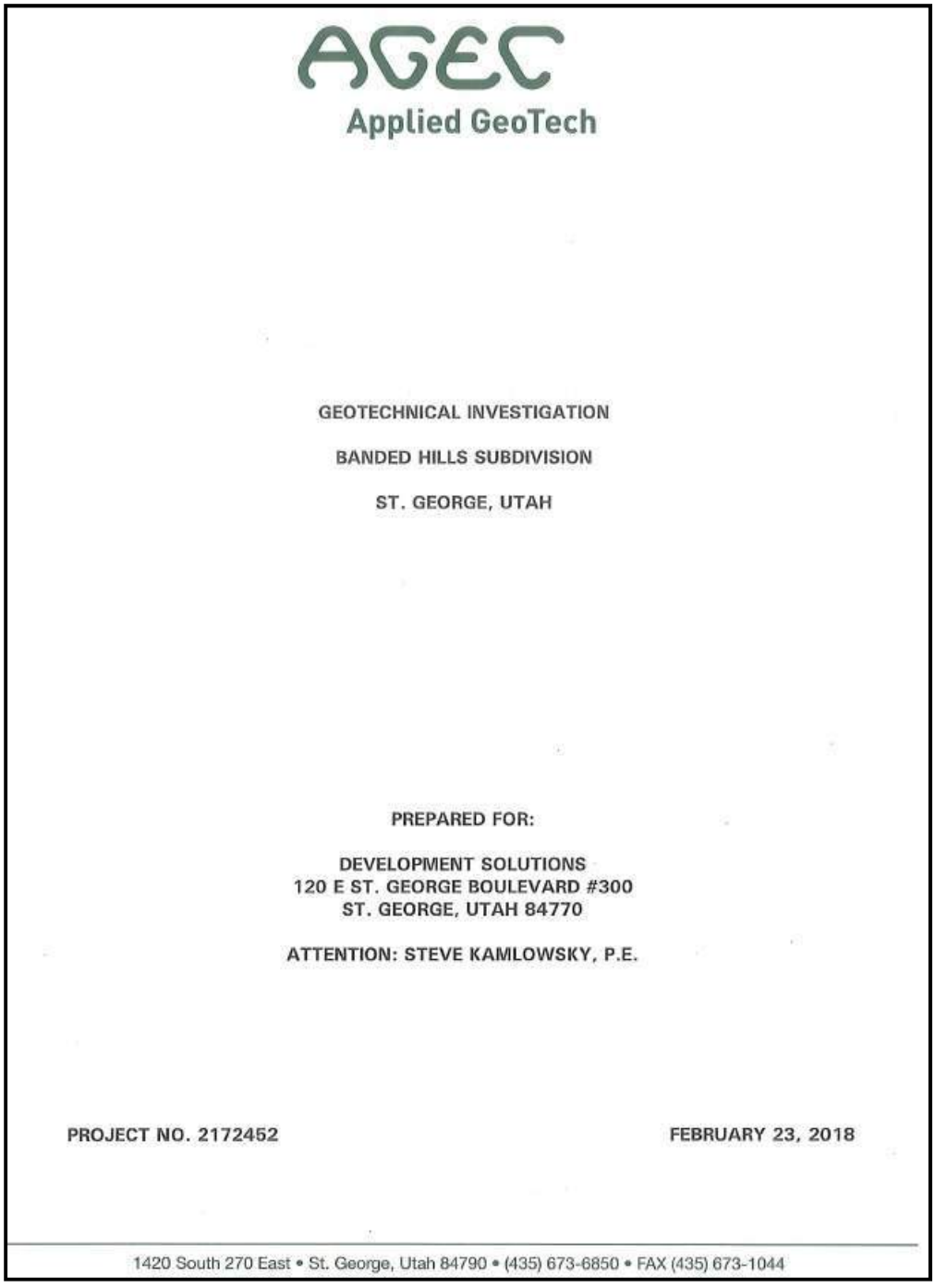
Prepared By:

Development Solutions Group, Inc.
120 East St. George Boulevard
St. George, Utah 84770
(435) 628-2121

March 26, 2018

Geotechnical Report

(Cover only is shown; the full report is 30 pages long and is in the HSRB packet and in the project case file)



AGEC
Applied GeoTech

GEOTECHNICAL INVESTIGATION

BANDED HILLS SUBDIVISION

ST. GEORGE, UTAH

PREPARED FOR:

DEVELOPMENT SOLUTIONS
120 E ST. GEORGE BOULEVARD #300
ST. GEORGE, UTAH 84770

ATTENTION: STEVE KAMLOWSKY, P.E.

PROJECT NO. 2172452

FEBRUARY 23, 2018

1420 South 270 East • St. George, Utah 84790 • (435) 673-6850 • FAX (435) 673-1044

Hazard – Rock Fall Report

(Only the cover is shown; the full report is 6 pages and is in the HSRB packet and in the project case file)

AGEC
Applied GeoTech

February 5, 2018

Development Solutions
120 East St. George Blvd. #300
St George, Utah 84770

Attention: Steve Kamlowsky

Subject: Geologic-hazard Study
Banded Hills Subdivision
Banded Hills Drive
St George, Utah
Project No. 2172453

Gentlemen:

Applied Geotechnical Engineering Consultants, Inc. (AGEC) was requested to perform a geologic-hazards study for the proposed Banded Hills Subdivision located below the airport bluff, northwest of Banded Hills Drive in St. George, Utah (see Figure 1).

PROPOSED CONSTRUCTION

We understand the area is planned for single-family residences. The approximate area planned for development is shown on Figure 1.

GEOLOGY

The geology for the area was mapped by Hayden and Willis (2011) to consist of the upper unit of the Triassic-age Moenkopi Formation. This unit consists of interbedded siltstone and sandstone. The Triassic-age Shnabkaib Member of the Moenkopi underlies this unit and consists predominantly of siltstone. The Shinarump Conglomerate Member of the Chinle Formation overlies the Moenkopi Formation and makes up the rock near the top of the bluff southeast of the site, the source of the rockfall for the southeast portion of the property. The bedrock exposed on the property is that of the Moenkopi Formation. The bedrock in the area dips down toward the southeast at approximately 17 degrees.

GEOLOGIC-HAZARD EVALUATION

Low-sun-angle aerial photographs from 1960 and aerial photographs from 1938 were reviewed along with site reconnaissance to determine what potential geologic hazards may affect the proposed development. Rockfall and faulting are the two geologic hazards that

600 West Sandy Parkway • Sandy, Utah 84070 • (801) 566-6399 • FAX (801) 566-6493

Application

Banded Hills Subdivision

CITY OF ST GEORGE
3/27/2018 11:00 AM
PLANNING FEES
200.00
1 CHECK(S)
APPLIED: 200.00-
CHANGE: 0.00

HILLSIDE REVIEW
APPLICATION

FILE #: 2018-HS-002 FILING DATE: _____ RECEIVED BY: _____
FEE: $200 FEES PAID: _____ PSR Date: _____

APPLICANT INFORMATION

LEGAL OWNER(S) OF SUBJECT PROPERTY: Quality Development

MAILING ADDRESS: 1472 E. 3950 S. St. George, UT 84790

PHONE: 634-0111 CELL: _____ FAX: _____

APPLICANT: Development Solutions Group
(If different than owner)

MAILING ADDRESS: 120 E. St. George Blvd., St. George, UT 84770

PHONE: 628-2121 CELL: _____ FAX: _____

CONTACT PERSON/REPRESENTATIVE: Steve Kamlowsky
(If different than owner)

MAILING ADDRESS: _____

PHONE: _____ CELL: _____ FAX: _____

PROPERTY INFORMATION

STREET ADDRESS OF PROPERTY: 2915 E. Banded Hills Drive

ASSESSOR'S PARCEL NUMBER(S): SG-5-3-15-311

ZONING: R-1-10 GENERAL PLAN: LDR

LEGAL DESCRIPTION: (Attach separate sheet if necessary) See Attached
Lot / Plat

EXISTING USE: None
Use of property and/or Buildings

PROPOSED USE: Single Family Residential
Use of property and/or Buildings

SUBMITTAL "CHECK LIST"

Note: The applicant is responsible for familiarizing themselves with Title 10, Chapter 13-A "Hillside Development Overlay Zone" of the St. George City Code Zoning Regulations from which this check list was condensed.

Density and Disturbance Standards
Any area greater than 40% will not be reviewed for development.
No portion of the parcel having a slope greater than 40% shall be included in the calculations for conformity with the density requirements shown below.

Complete the following checklist:

Submitted

Yes	No	N/A		
✓			1-19%:	See the underlying zone.
✓			20-29%:	2 d.u. per acre, provided clustering is done on 30% or less of the land in this category. 70% remained undisturbed.
✓			30-39%:	1 d.u. per 10 acres, provided no more than 5% of the site is disturbed. 95% is to remain undisturbed.
✓			40% +:	Development is not permitted.
✓				Contour intervals, maps and calculations prepared by a professional civil engineer.
✓				Engineer's certification and signature on reports and plans.

Slope Determination
The location of the natural 20%, 30%, or 40% is determined by a professional licensed engineer or surveyor who is to prepare contour maps, conduct a field survey, and calculate the slope area.

✓			Slope Analysis Map
✓			Contours at intervals no greater than five (5) feet.
✓			Scale to be drawn at one-inch equals one hundred (1"= 100') feet scale maximum.

Lot Size

✓			Lot size determined

Site Plan

✓			A grading plan showing existing and proposed contours extending at least 100 feet beyond property has been submitted.
✓			All excavations and fills conform to Appendix "K" of the Utah Uniform Building Standards Act rules and the current adopted edition of the International Building Code.
✓			The height of cut(s) does not exceed 10'. (Combined height of cuts and fills does not exceed 20')

✓	—	—	Detailed plans of all surface and subsurface drainage systems are shown.
✓	—	—	Location of existing and proposed streets, buildings, structures, and easements have been shown.
✓	—	—	Detailed site plans and elevation drawings showing the location of all structures and mitigation of cuts or fills.
✓	—	—	Cross sections provided

Earth Moving Plan (Shall be prepared by a licensed Civil Engineer and shall include but not be limited to the following items)

✓	—	—	Topography. 2' for tableland. 5' for steep slopes.
✓	—	—	Terrain details
✓	—	—	Proposed earth-moving details
✓	—	—	Description of the method used to dispose of earth, etc.
✓	—	—	A time table for each step of the project has been submitted. This shall include the starting and completion dates.

Drainage

✓	—	—	A drainage control plan (study) has been prepared by a licensed Civil Engineer.

Geology & Soils Report (Study)
(Shall be prepared by a licensed professional engineer trained in geo-technical engineering) (A geology & soils report/study shall include but not be limited to the following items)

✓	—	—	Slope stability analysis.
✓	—	—	Foundation investigation.
—	—	✓	Location and yield of springs.
✓	—	—	Structural features.
✓	—	—	Existence of surface hazards.
✓	—	—	Conclusions and recommendations regarding effect of geological conditions.

Landscape & Vegetation Plan (Shall be prepared by a qualified professional prior to Final Plat and approved) (A landscape and vegetation plan shall include but not be limited to the following items)

—	—	✓	Replant disturbed areas.
—	—	✓	Types of retention to be used
—	—	✓	Sprinkler plans and projected water usage.

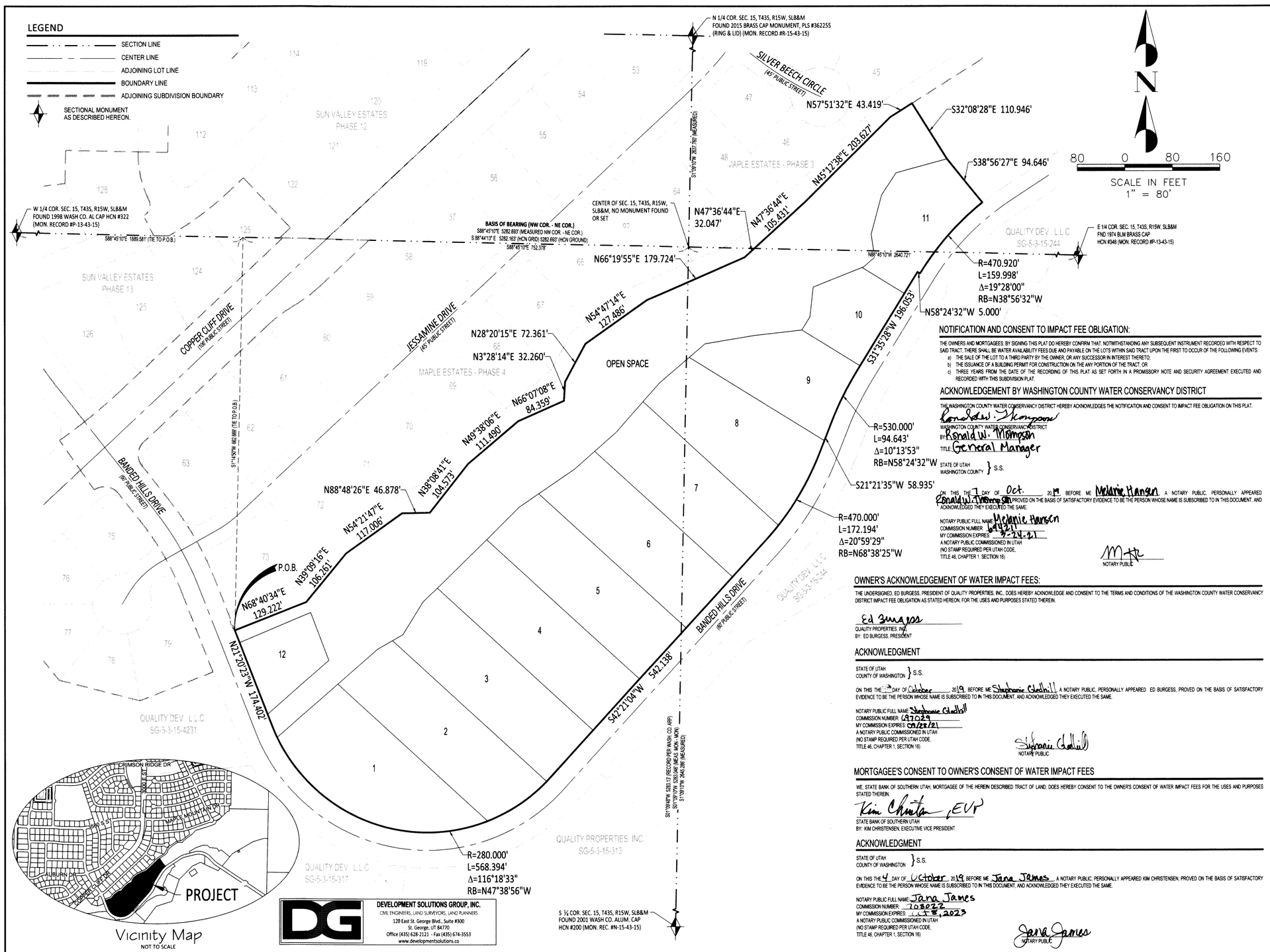
Street Design

✓	—	—	Street design conforms to City standards.

Submitted by

Steve Kamlowsky — Steve Kamlowsky — 3/26/18
(Print Name) (Signature) (Date)

Exhibit E



Vicinity Map
NOT TO SCALE

DEVELOPMENT SOLUTIONS GROUP, INC.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS
120 East St. George Blvd., Suite #300
St. George, UT 84770
Office (435) 628-2121 - Fax (435) 674-3553
www.developmentsolutions.co

SURVEYOR'S CERTIFICATE:

I, D. BRADFORD PETERSEN, DO HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR, AND THAT I HOLD CERTIFICATE NO. 362255, IN ACCORDANCE WITH TITLE 58, CHAPTER 22, OF THE PROFESSIONAL ENGINEERS AND LAND SURVEYORS LICENSING ACT OF THE STATE OF UTAH. I FURTHER CERTIFY THAT BY AUTHORITY OF THE OWNERS, I HAVE MADE A SURVEY OF THE TRACT OF LAND SHOWN ON THIS PLAT AND DESCRIBED BELOW, HAVE VERIFIED ALL MEASUREMENTS, HAVE PLACED MONUMENTS AS SHOWN IN ACCORDANCE WITH SECTION 17-23-17 AND HAVE SUBDIVIDED SAID TRACT OF LAND INTO LOTS, PUBLIC STREETS, OPEN SPACE AND MUNICIPAL UTILITY EASEMENTS HEREAFTER KNOWN AS:

BANDED HILLS SUBDIVISION

I FURTHER CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, THE LOTS SHOWN ON THIS PLAT MEET THE CURRENT ZONING ORDINANCE.

DATE: SEPTEMBER 30, 2019

D. BRADFORD PETERSEN No. 362255 STATE OF UTAH

LEGAL DESCRIPTION:

BEGINNING AT THE SOUTHWESTERLY BOUNDARY CORNER OF MAPLE ESTATES - PHASE 4 SUBDIVISION, AS RECORDED AND ON FILE WITH THE WASHINGTON COUNTY RECORDER'S OFFICE, SAID POINT BEING SOUTH 88°45'10" EAST ALONG THE SECTION LINE A DISTANCE OF 1889.581 FEET AND SOUTH 1°14'50" WEST 662.669 FEET FROM THE WEST QUARTER CORNER OF SECTION 15, TOWNSHIP 43 SOUTH, RANGE 15 WEST, SALT LAKE BASE & MERIDIAN, (BASIS OF BEARING BEING SOUTH 88°45'10" EAST BETWEEN THE WEST QUARTER CORNER AND THE EAST QUARTER CORNER OF SAID SECTION 15); AND RUNNING THENCE ALONG THE SOUTHERLY BOUNDARY OF SAID SUBDIVISION AND THE SOUTHERLY BOUNDARY OF MAPLE ESTATES - PHASE 3 SUBDIVISION AS RECORDED AND ON FILE WITH THE WASHINGTON COUNTY RECORDER'S OFFICE THE FOLLOWING (15) FIFTEEN COURSES: (1) NORTH 68°40'34" EAST 129.222 FEET; (2) NORTH 39°09'16" EAST 106.261 FEET; (3) NORTH 54°21'47" EAST 117.006 FEET; (4) NORTH 88°48'26" EAST 46.878 FEET; (5) NORTH 38°08'41" EAST 104.573 FEET; (6) NORTH 49°38'06" EAST 111.490 FEET; (7) NORTH 66°07'08" EAST 84.359 FEET; (8) NORTH 03°28'14" EAST 32.260 FEET; (9) NORTH 28°20'15" EAST 72.361 FEET; (10) NORTH 54°47'14" EAST 127.486 FEET; (11) NORTH 66°19'55" EAST 179.724 FEET; (12) NORTH 47°36'44" EAST 32.047 FEET; (13) NORTH 47°36'44" EAST 105.431 FEET; (14) NORTH 45°12'38" EAST 203.627 FEET; AND (15) NORTH 57°51'32" EAST 43.419 FEET; THENCE SOUTH 32°08'28" EAST 110.946 FEET; THENCE SOUTH 38°56'27" EAST 94.646 FEET TO A POINT ON THE ARC OF A NON-TANGENT CURVE, (RADIUS POINT BEARS SOUTH 38°56'27" EAST), SAID POINT BEING ON THE NORTHERLY RIGHT-OF-WAY LINE OF THE BANDED HILLS DRIVE ROADWAY DEDICATION RECORDED AS DOCUMENT NO. 20100003974, WITH THE WASHINGTON COUNTY RECORDER'S OFFICE THENCE ALONG SAID ROADWAY DEDICATION AND THE ARC OF A 470.920 FOOT RADIUS CURVE TO THE LEFT, THROUGH A CENTRAL ANGLE OF 19°28'00", A DISTANCE OF 159.998 FEET TO A POINT ON THE NORTHERLY RIGHT-OF-WAY LINE OF THE BANDED HILLS DRIVE ROADWAY DEDICATION RECORDED AS DOCUMENT NO. 20090021919 WITH THE WASHINGTON COUNTY RECORDER'S OFFICE; THENCE ALONG SAID ROADWAY DEDICATION THE FOLLOWING (8) EIGHT COURSES: (1) NORTH 58°24'32" WEST 5.000 FEET; (2) SOUTH 31°35'28" WEST 196.053 FEET TO A POINT OF CURVATURE; (3) RUNNING SOUTHWESTERLY ALONG THE ARC OF A 530.000 FOOT RADIUS CURVE TO THE LEFT, THROUGH A CENTRAL ANGLE OF 10°13'53", A DISTANCE OF 94.643 FEET; (4) SOUTH 21°21'35" WEST 58.935 FEET TO A POINT OF CURVATURE; (5) RUNNING SOUTHWESTERLY ALONG THE ARC OF A 470.000 FOOT RADIUS CURVE TO THE RIGHT, THROUGH A CENTRAL ANGLE OF 20°59'29", A DISTANCE OF 172.194 FEET; (6) SOUTH 42°21'04" WEST 542.138 FEET TO A POINT OF CURVATURE; (7) RUNNING WESTERLY ALONG THE ARC OF A 280.000 FOOT RADIUS CURVE TO THE RIGHT, THROUGH A CENTRAL ANGLE OF 116°18'33", A DISTANCE OF 568.394 FEET; AND (8) NORTH 21°20'23" WEST 174.402 FEET TO THE POINT OF BEGINNING.

CONTAINS 577,042 SQ. FT. (13.247 ACRES)

OWNER'S DEDICATION

KNOW ALL MEN BY THESE PRESENTS THAT THE UNDERSIGNED OWNER(S) OF ALL THE ABOVE DESCRIBED TRACT OF LAND HAVING CAUSED THE SAME TO BE SUBDIVIDED INTO LOTS, PUBLIC STREETS, OPEN SPACE AND MUNICIPAL UTILITY EASEMENTS, HEREAFTER KNOWN AS:

BANDED HILLS SUBDIVISION

FOR GOOD AND VALUABLE CONSIDERATION RECEIVED, THE UNDERSIGNED OWNERS DO HEREBY DEDICATE AND CONVEY TO THE CITY OF ST. GEORGE FOR PERPETUAL USE OF THE PUBLIC, ALL PARCELS OF LAND SHOWN ON THIS PLAT AS PUBLIC STREETS, OPEN SPACE AND MUNICIPAL UTILITY EASEMENTS. ALL LOTS, PUBLIC STREETS, OPEN SPACE AND MUNICIPAL UTILITY EASEMENTS, ARE AS NOTED OR SHOWN. THE OWNERS DO HEREBY WARRANT TO THE CITY OF ST. GEORGE, IT'S SUCCESSORS AND ASSIGNS, TITLE TO ALL PROPERTY DEDICATED AND CONVEYED TO PUBLIC USE HEREIN AGAINST THE CLAIMS OF ALL PERSONS. THE LOTS SHOWN ON THIS PLAT ARE SUBJECT TO THE DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS OF THE BANDED HILLS SUBDIVISION RECORDED ON THE 29 DAY OF October 20 19 AS DOC. NO. 20190044964 IN THE OFFICE OF THE WASHINGTON COUNTY RECORDER. SAID DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS IS HEREBY INCORPORATED AND MADE A PART OF THIS PLAT.

IN WITNESS WHEREOF I HAVE HEREUNTO SET MY HAND THIS 4th DAY OF OCTOBER 20 19

Ed Burgess
QUALITY PROPERTIES, INC.
BY: ED BURGESS, PRESIDENT

NOTIFICATION AND CONSENT TO IMPACT FEE OBLIGATION:

THE OWNERS AND MORTGAGEES, BY SIGNING THIS PLAT DO HEREBY CONFIRM THAT, NOTWITHSTANDING ANY SUBSEQUENT INSTRUMENT RECORDED WITH RESPECT TO SAID TRACT, THERE SHALL BE WATER AVAILABILITY FEES DUE AND PAYABLE ON THE LOTS WITHIN SAID TRACT UPON THE FIRST TO OCCUR OF THE FOLLOWING EVENTS:

a) THE SALE OF THE LOT TO A THIRD PARTY BY THE OWNER, OR ANY SUCCESSOR IN INTEREST THERETO;
b) THE ISSUANCE OF A BUILDING PERMIT FOR CONSTRUCTION ON THE ANY PORTION OF THE TRACT; OR
c) THREE YEARS FROM THE DATE OF THE RECORDING OF THIS PLAT AS SET FORTH IN A PROMISSORY NOTE AND SECURITY AGREEMENT EXECUTED AND RECORDED WITH THIS SUBDIVISION PLAT.

ACKNOWLEDGEMENT BY WASHINGTON COUNTY WATER CONSERVANCY DISTRICT

THE WASHINGTON COUNTY WATER CONSERVANCY DISTRICT HEREBY ACKNOWLEDGES THE NOTIFICATION AND CONSENT TO IMPACT FEE OBLIGATION ON THIS PLAT.

Ronald W. Thompson
WASHINGTON COUNTY WATER CONSERVANCY DISTRICT
BY: Ronald W. Thompson
TITLE: General Manager

STATE OF UTAH
WASHINGTON COUNTY } S.S.

ON THIS THE 7 DAY OF Oct. 20 19 BEFORE ME Melanie Hansen A NOTARY PUBLIC, PERSONALLY APPEARED Ronald W. Thompson PROVED ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO IN THIS DOCUMENT, AND ACKNOWLEDGED THEY EXECUTED THE SAME.

NOTARY PUBLIC FULL NAME: Melanie Hansen
COMMISSION NUMBER: 694921
MY COMMISSION EXPIRES: 3-24-21
A NOTARY PUBLIC COMMISSIONED IN UTAH
(NO STAMP REQUIRED PER UTAH CODE, TITLE 46, CHAPTER 1, SECTION 16)

NOTARY PUBLIC

OWNER'S ACKNOWLEDGEMENT OF WATER IMPACT FEES:

THE UNDERSIGNED, ED BURGESS, PRESIDENT OF QUALITY PROPERTIES, INC., DOES HEREBY ACKNOWLEDGE AND CONSENT TO THE TERMS AND CONDITIONS OF THE WASHINGTON COUNTY WATER CONSERVANCY DISTRICT IMPACT FEE OBLIGATION AS STATED HEREON, FOR THE USES AND PURPOSES STATED THEREIN.

Ed Burgess
QUALITY PROPERTIES, INC.
BY: ED BURGESS, PRESIDENT

ACKNOWLEDGMENT

STATE OF UTAH
COUNTY OF WASHINGTON } S.S.

ON THIS THE 1st DAY OF October 20 19 BEFORE ME Stephanie Gladwill A NOTARY PUBLIC, PERSONALLY APPEARED ED BURGESS, PROVED ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO IN THIS DOCUMENT, AND ACKNOWLEDGED THEY EXECUTED THE SAME.

NOTARY PUBLIC FULL NAME: Stephanie Gladwill
COMMISSION NUMBER: 697029
MY COMMISSION EXPIRES: 09/28/21
A NOTARY PUBLIC COMMISSIONED IN UTAH
(NO STAMP REQUIRED PER UTAH CODE, TITLE 46, CHAPTER 1, SECTION 16)

NOTARY PUBLIC

MORTGAGEE'S CONSENT TO OWNER'S CONSENT OF WATER IMPACT FEES

WE, STATE BANK OF SOUTHERN UTAH, MORTGAGEE OF THE HEREIN DESCRIBED TRACT OF LAND, DOES HEREBY CONSENT TO THE OWNER'S CONSENT OF WATER IMPACT FEES FOR THE USES AND PURPOSES STATED THEREIN.

Kim Christen, EVP
STATE BANK OF SOUTHERN UTAH
BY: KIM CHRISTENSEN, EXECUTIVE VICE PRESIDENT

ACKNOWLEDGMENT

STATE OF UTAH
COUNTY OF WASHINGTON } S.S.

ON THIS THE 4 DAY OF October 20 19 BEFORE ME Jana James A NOTARY PUBLIC, PERSONALLY APPEARED KIM CHRISTENSEN, PROVED ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO IN THIS DOCUMENT, AND ACKNOWLEDGED THEY EXECUTED THE SAME.

NOTARY PUBLIC FULL NAME: Jana James
COMMISSION NUMBER: 708022
MY COMMISSION EXPIRES: Oct. 5, 2023
A NOTARY PUBLIC COMMISSIONED IN UTAH
(NO STAMP REQUIRED PER UTAH CODE, TITLE 46, CHAPTER 1, SECTION 16)

NOTARY PUBLIC

MORTGAGEE'S CONSENT TO RECORD

WE, STATE BANK OF SOUTHERN UTAH, MORTGAGEE OF THE HEREIN DESCRIBED TRACT OF LAND, DO HEREBY GIVE OUR CONSENT OF SAID TRACT OF LAND TO BE USED FOR THE USES AND PURPOSES DESCRIBED ON THIS PLAT, RECORDING OF ANNEXATION INTO COVENANTS, CONDITIONS AND RESTRICTIONS, AND JOINS IN ALL DEDICATIONS AND CONVEYANCES.

Kim Christen, EVP
STATE BANK OF SOUTHERN UTAH
BY: KIM CHRISTENSEN, EXECUTIVE VICE PRESIDENT

ACKNOWLEDGMENT

STATE OF UTAH
COUNTY OF WASHINGTON } S.S.

ON THIS THE 4 DAY OF October 20 19 BEFORE ME Jana James A NOTARY PUBLIC, PERSONALLY APPEARED KIM CHRISTENSEN, PROVED ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO IN THIS DOCUMENT, AND ACKNOWLEDGED THEY EXECUTED THE SAME.

NOTARY PUBLIC FULL NAME: Jana James
COMMISSION NUMBER: 708022
MY COMMISSION EXPIRES: Oct. 5, 2023
A NOTARY PUBLIC COMMISSIONED IN UTAH
(NO STAMP REQUIRED PER UTAH CODE, TITLE 46, CHAPTER 1, SECTION 16)

NOTARY PUBLIC

Subdivision Final Plat for

BANDED HILLS SUBDIVISION

Located in Section 15, Township 43 South, Range 15 West, SLB&M

SHEET 1 OF 2

APPROVAL OF THE COMMUNITY DEVELOPMENT DIRECTOR

I, COMMUNITY DEVELOPMENT DIRECTOR FOR THE CITY OF ST. GEORGE, HAVE THIS THE 15 DAY OF OCT A.D. 2019, REVIEWED THE ABOVE SUBDIVISION FINAL PLAT AND RECOMMENDED THE SAME FOR ACCEPTANCE BY THE CITY OF ST. GEORGE, UT.

COMMUNITY DEVELOPMENT DIRECTOR
CITY OF ST. GEORGE

ENGINEER'S APPROVAL

THE HEREON SUBDIVISION FINAL PLAT HAS BEEN REVIEWED AND IS APPROVED IN ACCORDANCE WITH THE INFORMATION ON FILE IN THIS OFFICE THIS 28TH DAY OF OCTOBER, A.D. 20 19

ENGINEER
CITY OF ST. GEORGE

APPROVAL AS TO FORM

APPROVED AS TO FORM, THIS THE 13TH DAY OF Oct, A.D. 20 19

CITY ATTORNEY
CITY OF ST. GEORGE

APPROVAL OF THE PLANNING COMMISSION

ON THIS THE 8 DAY OF OCTOBER A.D. 20 19 THE PLANNING COMMISSION OF THE CITY OF ST. GEORGE, HAVING REVIEWED THE ABOVE SUBDIVISION FINAL PLAT AND HAVING FOUND THAT IT COMPLIES WITH THE REQUIREMENTS OF THE CITY'S PLANNING ORDINANCES, AND BY AUTHORITY OF SAID COMMISSION HEREBY APPROVE SAID SUBDIVISION FOR ACCEPTANCE BY THE CITY OF ST. GEORGE, UT.

CHAIRMAN PLANNING COMMISSION
CITY OF ST. GEORGE

APPROVAL AND ACCEPTANCE BY THE CITY OF ST. GEORGE, UTAH

WE, THE MAYOR AND CITY COUNCIL OF THE CITY OF ST. GEORGE, UT, HAVE REVIEWED THE ABOVE SUBDIVISION FINAL PLAT AND BY AUTHORIZATION OF SAID CITY COUNCIL, RECORD IN THE MINUTES OF IT'S MEETING OF THE 17 DAY OF OCTOBER A.D. 20 19 HEREBY ACCEPT SAID FINAL PLAT WITH ALL COMMITMENTS AND OBLIGATIONS PERTAINING THERETO.

ATTEST: CITY RECORDER
CITY OF ST. GEORGE

CITY OF ST. GEORGE UTAH

MAYOR
CITY OF ST. GEORGE

TREASURER APPROVAL

I, WASHINGTON COUNTY TREASURER, CERTIFY ON THIS 29 DAY OF October A.D. 2019 THAT ALL TAXES, SPECIAL ASSESSMENTS, AND FEES DUE AND OWING ON THIS SUBDIVISION HAVE BEEN PAID IN FULL.

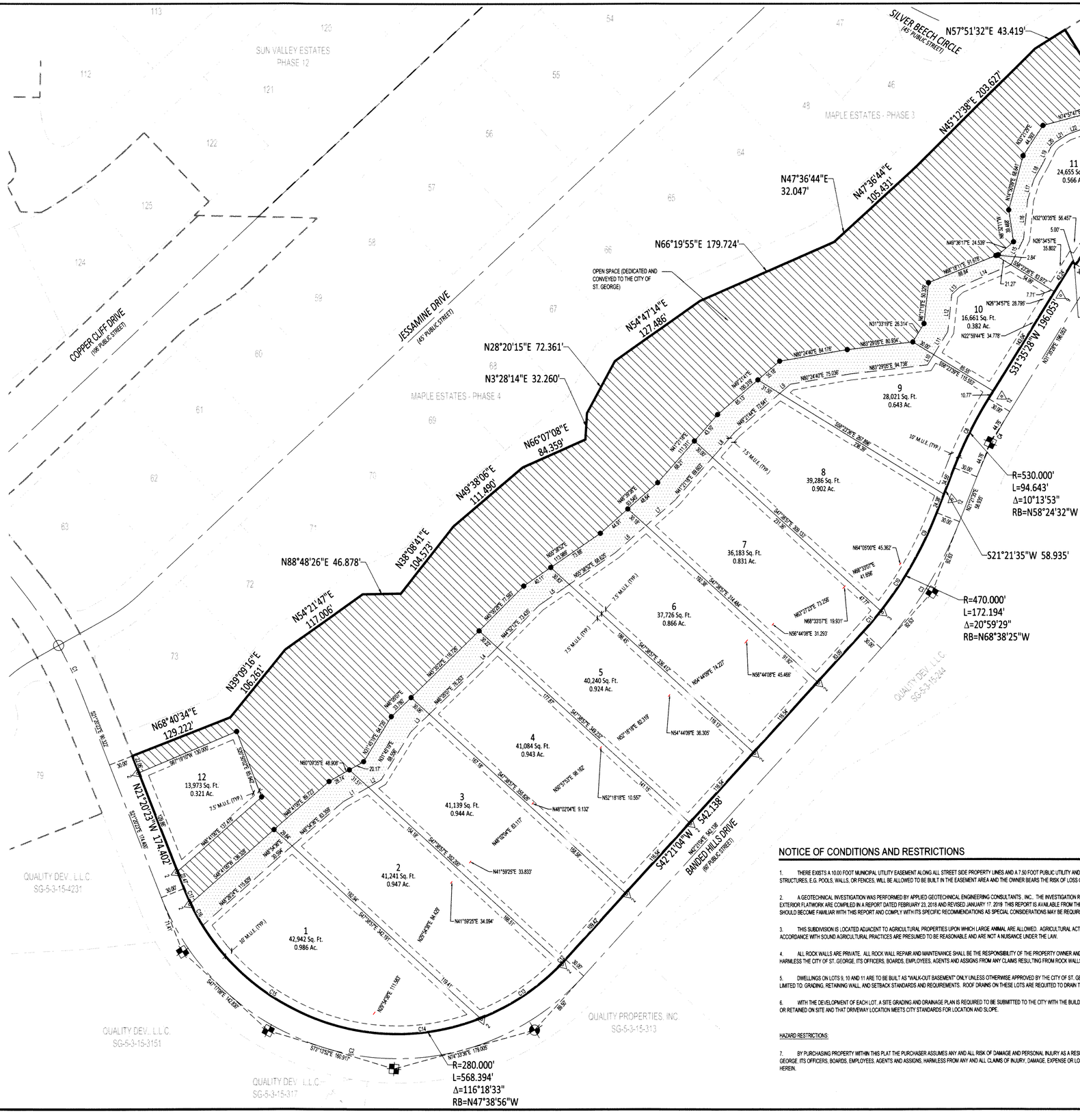
WASHINGTON COUNTY TREASURER

STATE OF UTAH COUNTY OF WASHINGTON

RECORDED NUMBER

DOC # 20190044863
Map (Conveying Property) Page 1 of 3
Russell Shirts Washington County Recorder
10/29/2019 02:42:48 PM Fee $ 124.00
By SOUTHERN UTAH TITLE CO

WASHINGTON COUNTY RECORDER



LEGEND

- SECTION LINE
- MUNICIPAL UTILITY EASEMENT (M.U.E.)
- CENTER LINE
- ADJOINING LOT LINE
- BOUNDARY LINE
- ADJOINING SUBDIVISION BOUNDARY
- CLASS II (REBAR & ALUM. CAP) MONUMENT SET
- CLASS I (ST. GEORGE CITY BRASS CAP, IN RING & LID) MONUMENT SET
- EXISTING CLASS I (RING & LID) MONUMENT FOUND
- DSG REBAR AND CAP LS NO. 382255 SET AT ALL REAR PROPERTY CORNERS
- CONCRETE ANCHOR SET IN SIDEWALK. EXTENSION DISTANCE ALONG THE PROPERTY LINE FROM THE THE FRONT PROPERTY CORNER IN FEET IS INDICATED BY ADJACENT NUMBER
- OPEN SPACE (DEDICATED AND CONVEYED TO THE CITY OF ST. GEORGE WITH THIS PLAT)
- NO BUILD ROCK FALL HAZARD AREA. NO HABITABLE STRUCTURES ALLOWED
- NO BUILD / NO DISTURB AREA, TO REMAIN NATURAL. NO STRUCTURES, BUILDINGS, LANDSCAPE, FENCES, WALLS, POOLS, ETC.

CURVE TABLE					
CURVE	RADIUS	LENGTH	DELTA	CH. BRG.	CH. DIST.
C1	500.000'	68.830'	7°53'14"	N25°17'00"W	68.775'
C2	310.000'	629.293'	116°18'33"	S79°29'39"E	526.674'
C3	500.000'	183.185'	20°59'29"	N31°51'20"E	182.162'
C4	500.000'	89.286'	10°13'53"	S26°28'32"W	89.167'
C5	445.920'	194.383'	24°58'34"	S44°04'45"W	192.848'
C6	470.920'	45.272'	5°30'29"	S53°48'48"W	45.254'
C7	470.920'	159.998'	19°28'00"	S41°19'28"W	159.229'
C8	530.000'	94.643'	10°13'53"	S26°28'32"W	94.517'
C9	470.000'	58.117'	7°05'05"	N24°54'08"E	58.080'
C10	470.000'	80.602'	9°49'33"	N33°21'27"E	80.504'
C11	470.000'	33.474'	4°04'51"	N40°18'39"E	33.467'
C12	280.000'	7.117'	1°27'23"	N43°04'46"E	7.117'
C13	280.000'	120.959'	24°45'06"	N56°11'00"E	120.021'
C14	280.000'	146.470'	29°58'19"	N83°32'42"E	144.806'
C15	280.000'	243.195'	49°45'52"	S56°35'13"E	235.623'
C16	280.000'	30.806'	6°18'13"	S28°33'10"E	30.790'
C17	280.000'	19.847'	4°03'41"	S23°22'13"E	19.843'

LINE TABLE		
LINE	BEARING	LENGTH
L1	N60°09'35"E	35.424'
L2	N60°09'35"E	18.122'
L3	N46°05'07"E	31.967'
L4	N44°52'12"E	40.488'
L5	N55°38'52"E	44.366'
L6	N48°39'38"E	47.228'
L7	N48°39'38"E	47.234'
L8	N41°21'18"E	41.524'
L9	N49°21'44"E	17.247'
L10	N31°33'19"E	14.583'
L11	N31°33'19"E	33.065'
L12	N6°17'18"E	45.815'
L13	N47°21'43"E	12.945'
L14	N66°21'12"E	68.281'
L15	N26°05'11"E	35.249'
L16	N5°55'02"E	47.979'
L17	N17°21'36"E	26.500'
L18	N29°24'14"E	21.943'
L19	N25°58'29"E	22.872'
L20	N43°11'21"E	7.787'
L21	N57°59'03"E	18.123'
L22	N69°46'54"E	18.295'
L23	N74°20'39"E	51.523'

60 0 60 120
SCALE IN FEET
1" = 60'

NOTICE OF CONDITIONS AND RESTRICTIONS

1. THERE EXISTS A 10.00 FOOT MUNICIPAL UTILITY EASEMENT ALONG ALL STREET SIDE PROPERTY LINES AND A 7.50 FOOT PUBLIC UTILITY AND DRAINAGE EASEMENT ALONG ALL SIDE AND BACK LOT LINES UNLESS OTHERWISE NOTED. NO BUILDINGS OR STRUCTURES, E.G. POOLS, WALLS, OR FENCES, WILL BE ALLOWED TO BE BUILT IN THE EASEMENT AREA AND THE OWNER BEARS THE RISK OF LOSS OR DAMAGE TO THOSE IMPROVEMENTS RESULTING FOR THE EXERCISE OF THE EASEMENT RIGHTS.

2. A GEOTECHNICAL INVESTIGATION WAS PERFORMED BY APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS , INC.. THE INVESTIGATION RESULTS AND SPECIFIC RECOMMENDATIONS FOR THE CONSTRUCTION OF FOUNDATIONS, FLOOR SLABS, SOILS AND EXTERIOR FLATWORK ARE COMPILED IN A REPORT DATED FEBRUARY 23, 2018 AND REVISED JANUARY 17, 2019. THIS REPORT IS AVAILABLE FROM THE DEVELOPER AND A COPY IS ON FILE WITH THE CITY OF ST. GEORGE. OWNERS, BUILDERS, AND CONTRACTORS SHOULD BECOME FAMILIAR WITH THIS REPORT AND COMPLY WITH ITS SPECIFIC RECOMMENDATIONS AS SPECIAL CONSIDERATIONS MAY BE REQUIRED FOR STRUCTURES AND LANDSCAPING.

3. THIS SUBDIVISION IS LOCATED ADJACENT TO AGRICULTURAL PROPERTIES UPON WHICH LARGE ANIMAL ARE ALLOWED. AGRICULTURAL ACTIVITIES CONDUCTED IN THE NORMAL AND ORDINARY COURSE OF AGRICULTURAL OPERATIONS OR CONDUCTED IN ACCORDANCE WITH SOUND AGRICULTURAL PRACTICES ARE PRESUMED TO BE REASONABLE AND ARE NOT A NUISANCE UNDER THE LAW.

4. ALL ROCK WALLS ARE PRIVATE. ALL ROCK WALL REPAIR AND MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER AND SUBSEQUENT PURCHASERS. SAID OWNER AND SUBSEQUENT PURCHASERS SHALL INDEMNIFY AND HOLD HARMLESS THE CITY OF ST. GEORGE, ITS OFFICERS, BOARDS, EMPLOYEES, AGENTS AND ASSIGNS FROM ANY CLAIMS RESULTING FROM ROCK WALLS LOCATED WITHIN THIS SUBDIVISION.

5. DWELLINGS ON LOTS 9, 10 AND 11 ARE TO BE BUILT AS "WALK-OUT BASEMENT" ONLY UNLESS OTHERWISE APPROVED BY THE CITY OF ST. GEORGE, BASED ON A SITE GRADING PLAN THAT MEETS ALL APPLICABLE CITY STANDARDS, INCLUDING BUT NOT LIMITED TO: GRADING, RETAINING WALL, AND SETBACK STANDARDS AND REQUIREMENTS. ROOF DRAINS ON THESE LOTS ARE REQUITED TO DRAIN TO THE FRONT OF EACH LOT.

6. WITH THE DEVELOPMENT OF EACH LOT, A SITE GRADING AND DRAINAGE PLAN IS REQUIRED TO BE SUBMITTED TO THE CITY WITH THE BUILDING PERMIT APPLICATION THAT ADDRESSES HOW DRAINAGE WILL BE CONVEYED TO THE PUBLIC RIGHT-OF-WAY OR RETAINED ON SITE AND THAT DRIVEWAY LOCATION MEETS CITY STANDARDS FOR LOCATION AND SLOPE.

HAZARD RESTRICTIONS:

7. BY PURCHASING PROPERTY WITHIN THIS PLAT THE PURCHASER ASSUMES ANY AND ALL RISK OF DAMAGE AND PERSONAL INJURY AS A RESULT OF ITS PROXIMITY TO A HILLSIDE AND/OR ROCK FALL AND DOES INDEMNIFY AND HOLD THE CITY OF ST. GEORGE, ITS OFFICERS, BOARDS, EMPLOYEES, AGENTS AND ASSIGNS, HARMLESS FROM ANY AND ALL CLAIMS OF INJURY, DAMAGE, EXPENSE OR LOSS OF WHATEVER NATURE WHICH MAY ARISE AS A DIRECT OR INDIRECT RESULT OF HAZARDS REFERRED TO HEREIN.

Subdivision Final Plat for

BANDED HILLS SUBDIVISION

Located in Section 15, Township 43 South, Range 15 West, SLB&M

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 meetings at the referenced site on **Wednesday, February 8, 2023,** commencing on-site at approximately 9:00 a.m.

PRESENT:
James Sullivan
Dave Black
Jeff Mathis
Russ Owens

EXCUSED:
James Dotson

CITY STAFF:
Assistant Public Works Director, Wes Jenkins
Planner III, Carol Davidson
Planner III, Michael Hadley
Development Office Supervisor, Brenda Hatch

The agenda for the meeting is as follows:

1. Consider a request for a hillside development permit for a residential retaining wall. The applicant is requesting that the Hillside Review Board consider the structural stability and mitigate the appearance and location of this retaining wall. The property is currently zoned R-1-8 (Single Family Residential, minimum lot size 8,000sf). The site is located at 150 N. Donlee Drive. The applicant is Ryan and Martina Davis. Case No. 2022-HS-018.

   Dave Black – I feel that they've addressed all their comments and concerns. They have looked at it with some different parameters which are probably more realistic and it appears it meets the requirements of what we've asked them to do.

   Wes Jenkins – The three things were, there was no ridgeline there and so they are basically doing what Ridge wants to do, even though they couldn't do that here because they didn't own the property to the north, so you will need to make that recommendation. Then the color that they were going to stain it.

   Ryan Davis – And one of the items was the drainage, just making sure it has proper drainage itself.

   Jeff Mathis – One thing, it seems to me that there should be some discussion on this idea of creating new ridgelines in our community. I think it is something we as a committee need to think about. Especially when they are 1000 ft long. This is a small example, but

the other project we are looking at is going to be a very large example. I understand property rights and that they should be able to do what they want with their own property.

Dave Black – I think it's worth a discussion.

Jeff Mathis – I don't know if that is a separate meeting, a separate agenda item on a short agenda like this so we sit down and talk about it sometime, because I've got my thoughts on it. When you create a large new ridgeline, you are definitely changing the nature of the hillside.

Discussion continued regarding discussing creating a ridgeline.

Wes Jenkins – Carol and I talked to the City Attorney about this, and she recommend a notice of non-compliance be recorded against this property because no building permit was issued. Carol and I kind of word smithed this a little bit, we want some direction in the wording of the notification that should be given to a future buyer.

James Sullivan – The only thing I would add to that, because it does say no tests were performed during construction, it doesn't imply that further testing has been done. There are reports compiled that can be referred to.

Russ Owens – I like the wording, I feel very uncomfortable in approving it, but if were just saying this happened and this happened.

Jeff Mathis – Are you still planning a pool in that area?

Ryan Davis – Yes.

Jeff Mathis – But that is all addressed?

James Sullivan – Yes and there was quite a bit in the actual study that came back with recommendations for the pool. We might want to say that if a pool goes in they follow the recommendations in the report.

Ryan Davis – And that is the plan, it will have it's own separate foundation and footings and everything so that it's not putting additional stress on the wall. It's actually lighter than the dirt.

Carol Davidson – Let me just add that number 2 the height of the wall, we would include with the non-compliant letter about the height being non-compliant as well.

MOTION: Russ Owens made a motion to acknowledge that at 150 N Don Lee Drive that the owners created a ridgeline by placing a retaining wall between the two existing ridgelines, we acknowledge that the retaining wall is approximately 10 ft. which exceeds the allowed by 2 ft. However, there was an attempt to bury the wall by 2 ft and we recommended as a board not to do that because of future disturbance on the outside of the wall a notice of non-compliance letter should be recorded against the property so that any future owners will know that the wall was erected without obtaining a hillside or building permit, no testing was done during construction of the wall. However, a

geotechnical evaluation has been completed which shows that the wall could be safe if properly constructed. The retaining wall needs to be colored to blend in with the surrounding geology and with that we recommend approval of the hillside permit.
SECOND: Dave Black
AYES (4)
James Sullivan
Dave Black
Jeff Mathis
Russ Owens
NAYS (0)
Motion carries

James Sullivan moved to adjourn.

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 meetings at the referenced site on **Wednesday, February 22, 2023,** commencing on-site at approximately 9:00 a.m.

PRESENT:
James Sullivan
Dave Black
Jeff Mathis
James Dotson

EXCUSED:
Russ Owens

CITY STAFF:
Assistant Public Works Director, Wes Jenkins
Planner III, Carol Davidson
Planner III, Michael Hadley
Development Office Supervisor, Brenda Hatch

The agenda for the meeting is as follows:

1. Consider a request for a hillside development permit for the extension of Flowers Way. The property is currently zoned ASBP (Airport Supporting Business Park) & Open Space. The site is located at the end of the existing Flowers Way. The applicant is Desert Canyons LLC/Curt Gordon. Case No. 2023-HS-004.

   Ken Miller – You can't see where the hillside is from here. Flowers Way is being extended from here all the way over to section 1. You can't see it from here. The hillside portion that I submitted on is down that way, we are just kind of coming around the toe.

   Jeff Mathis – It looks like you have kind of a little cut slope right at the toe for a minute but it's pretty non-contiguous. It wasn't really steep.

   Ken Miller – Everything is pretty much less than 20%. There is a little bit of cut here, this is the rockfall hazard boundary that AGEC determined here.

   Jeff Mathis – So really we are just talking about the road, not about the lots or anything?

   Ken Miller – Yes.

   Dave Black – I don't have any concerns. They have submitted all the documents. They have addressed the potential geologic hazards. The cut slopes that they have are relatively

minimal, 12 ft or less it looks like. It does go through some isolated steep areas that are non-contiguous.

MOTION: Dave Black made a motion to recommend approval of this roadway extension project.
SECOND: Jeff Mathis I will second the motion and just clarify that we stated the steep slopes are non-contiguous.
AYES (4)
James Sullivan
Dave Black
Jeff Mathis
James Dotson
NAYS (0)
Motion carries

2. Consider approval of the meeting minutes from the January 24 and the January 25, 2023, meetings.

MOTION: Jeff Mathis made a motion to approve the minutes from the last two meetings.
SECOND: Dave Black
AYES (4)
James Sullivan
Dave Black
Jeff Mathis
James Dotson
NAYS (0)
Motion carries

Jeff Mathis motioned to adjourn.