



Staff Report for Administrative Subdivision Approval

Weber County Planning Division

Synopsis

Application Information

Application Request:	Consideration and action on an administrative application for final approval of Babilis Subdivision, consisting of one lot with a request to defer curb, gutter and sidewalk.
Type of Decision:	Administrative
Agenda Date:	Wednesday, August 30, 2017
Applicant:	Nicholas Babilis, owner
File Number:	LVB 070317

Property Information

Approximate Address:	6207 Melanie Lane, Uintah, UT
Project Area:	1.21 acres
Zoning:	Residential Estates (RE-20) Zone
Existing Land Use:	Residential
Proposed Land Use:	Residential
Parcel ID:	07-099-0011
Township, Range, Section:	T5N, R1W, Section 24

Adjacent Land Use

North:	Residential	South:	Residential
East:	Residential	West:	Residential

Staff Information

Report Presenter:	Felix Lleverino flleverino@co.weber.ut.us 801-399-8767
Report Reviewer:	RK

Applicable Ordinances

- Title 101 (General Provisions) Section 7 (Definitions)
- Title 104 (Zones) Chapter 3 (RE- 20 Zone)
- Title 106 (Subdivisions)
- Title 108 Chapter 18 (Drinking Water Source Protection)
- Title 108 (Standards) Chapter 22 (Natural Hazard Areas)

Background and Summary

The applicant has submitted a proposal for a one lot subdivision. The proposed subdivision is located in the unincorporated areas of Uintah Highlands that is zoned RE-20. The parcel was previously owned by Uintah Highlands Improvement District where a water tank was located. The water tank has since been demolished and the land acquired by the applicant to be used as a residential lot. There is a 35 foot access easement on the north of the lot that will remain undeveloped due to the steep grade. The owner has secured rights to utilize access across Lot 36 of Eastwood Subdivision No. 10 in the form of an Easement Agreement shown in Exhibit C. In 2008 the Board of Adjustment approved a variance to allow for access other than across own front lot line. The file for this approval can be found in the Planning Office under file number BOA 09-2008.

Based on the Weber County geologic map, this parcel is located within a Natural Hazards Study Area. In order to determine the type and severity of hazards that may exist, the applicant has contracted with Charles Payton who is a licensed geologist, and who has prepared a report that is included as Exhibit E.

This parcel is also located within a Drinking Water Source Protection Zone 4. The Uniform Land Use Code of Weber County, Utah (LUC) §108-18-5 and §108-18-6 states the allowed and prohibited uses. The proposed residential uses are in accordance with Drinking Water Source Protection requirements.

The proposed subdivision and lot configuration is in conformance with the applicable zone and subdivision requirements as required in the LUC.

Analysis

The following section is a brief synopsis of the review criteria and conformance with the LUC:

General Plan: The Babilis Subdivision is in harmony with the Western Weber General Plan by conforming to all zoning standards of the RE-20 Zone.

Zoning: The property is located in the RE-20 Zone. The purpose of this zone is stated in the LUC §104-3-1 as follows:

“The major purpose of the RE-15 and RE-20 Zones is to provide and protect residential development at a low density in a semi-agricultural or rural environment. It is also to provide for certain rural amenities on larger minimum lots, in conjunction with the primary residential nature of the zone.”

As part of the subdivision process, the proposal has been reviewed against the current subdivision ordinance in LUC Title 106, and the applicable standards in the RE-20 Zone (LUC Title 104 Chapter 3) to ensure that the regulations and standards have been adhered to. The LUC §101-1-7 defines a “small subdivision” as “A subdivision consisting of five (5) or fewer lots and for which no streets will be created or realigned.” This subdivision consists of one lot and no new streets are being created or realigned. Based on these provisions, this subdivision qualifies for administrative approval as a small subdivision. The proposed subdivisions, with the recommended conditions listed in this staff report, are in conformance with county code. The following is a brief synopsis of the review criteria and conformance with the LUC.

Lot Area, Frontage Width and Yard Regulations: Lot 1 will contain 1.214 acres with the width of 341.22 ft. The site development standards for the RE-20 Zone are 20,000 sq. ft. and the minimum lot width is 100 feet; therefore, the proposed lot meets the lot area and width of the RE-20 Zone. The yard regulations for a single family dwelling in the RE-20 zone are as follows:

- Front: 30
- Sides: 10 feet with a total of two side yards less than 24 feet.
- Rear: 30 feet

Natural Hazards Area: This lot is located within a FEMA Flood Zone X, and is in the area determined to be outside of the 500-year flood area.

The proposed subdivision is located within a Natural Hazards Area and a geologic study has been submitted for review to determine if hazards exist on the site, the severity of the hazards, and to identify the need for further recommendations. In this instance, landslide, debris flow, alluvial fan, flooding hazards, stream flooding, and rock fall hazards have a risk level of low. An observation trench was dug through the middle of lot 1 of Babilis Subdivision. This observation trench was labeled as Trench 1 (see the last page of Exhibit E). It is noted that a geologic hazard assessment was made in October 2016 of the building lot located at 6116 South 2900 East, which is approximately 300 feet to the west of the proposed Babilis Subdivision where a single trench was excavated and where three faults were located. Fault 3 (F-3) is considered an active antithetic fault (see the last page of the Geologic report). The geologic report prepared by Charles C. Payton does include a recommendation that a geologic review be made at the time of excavation for a future single family dwelling to ensure that geologic features are not detrimental to the home construction. The geologic report did not include a slope analysis nor have the existing contours of the site been provided. In order to determine if a slope analysis will be required prior to construction of a single family home, the existing contours must be provided to ensure the existing slopes do not exceed 25%. If such conditions do exist, Lot 1 will need to be identified with an “R” and a Hillside Review will be required prior to submitting an application for the construction of a single family dwelling on the lot. A condition of approval has been added to staff’s recommendations to ensure that the contours on the proposed lot are provided for evaluation and that the average slope on the site does not exceed 25%. If the contours do identify the average slope of 25% or more, an “R” will be added to the lot number on the final Mylar and the required verbiage as outlined in LUC §106-1-8(c)(4) must be noted on the final Mylar to provide adequate notice to future homeowners.

A note must be added to the final Mylar stating that a geologic report performed by Charles Payton identified as Job No. 02-17 dated June 20, 2017 is on record with the Weber County Planning Department for review and upon recording the final subdivision Mylar a separate “Natural Hazards Disclosure” document will be required to be recorded to provide adequate notice of the geotechnical and geological recommendations to future property owners. A condition of approval has been added to staff’s recommendations to ensure that a note is on the final Mylar to provide adequate notification for future property owners.

Culinary Water and Sanitary Water: A “Will Serve” letter from Uintah Highlands Improvement District has been submitted stating that culinary water and wastewater services are available for Lot 1 (see Exhibit E).

Additional design standards and requirements: This proposal lies within a Drinking Water Source Protection Zone 4. Due to the potential for ground water contamination the LUC lists specific restrictions for this zone. The proposed residential uses do not violate the Drinking Water Source Protection Regulations. There may be additional site preparation in conjunction with an approved building permit. The proposed subdivision does not require the realignment of or the creation of a new street system. With the exception of the recommended conditions identified in this staff report additional standards and requirements are unnecessary at this time.

Review Agencies: Weber County Fire District has required that a fire hydrant be installed within 400 feet from the farthest most portion of the building. Fire flow for this subdivision shall be 1000 GPM. Further, the developer shall place a temporary address marker at the building site during construction. The Weber County Engineering Division and Weber County Surveying Division have reviewed the proposed subdivision and currently have outstanding issues that the applicant will need to address prior to this application being approved. All agencies must have the project approved prior to the applicant providing the County with the final approved Mylar for signatures and recording.

Tax Clearance: The 2016 property taxes have been paid in full. The 2017 property taxes will be due in full on November 1, 2017.

Public Notice: Noticing requirements, according to LUC 106-1-6(c), have been met by mailing notices out to all property owners of record within 500 feet of the subject property.

Staff Recommendations

Staff recommends final plat approval of Babilis Subdivision, consisting of one lot. This recommendation for approval is subject to all applicable review agency requirements and is based on the following conditions:

1. A note indicating that a geologic report has been conducted and is available in the Weber County Planning Office must be added to the final Mylar prior to recording.
2. The contours of the proposed lot must be provided for staff evaluation. If applicable an "R" will be added to the lot number on the final Mylar and the required verbiage as outlined in LUC §106-1-8(c)(4) must be noted on the final Mylar to provide adequate notice to future homeowners.
3. Improvements will need to be installed or escrowed for prior to final approval. If improvements are installed a 10% contingency fund will need to be created.
4. A Deferral Agreement for asphalt, curb, gutter, and sidewalk along Melanie Lane shall be entered into by the applicant and recorded with the final Mylar.

This recommendation is based on the following findings:

1. The proposed subdivision conforms to the Western Weber General Plan.
2. The proposed subdivision complies with the applicable County codes.

Administrative Approval

Administrative final approval of Babilis Subdivision is hereby granted based upon its compliance with the Weber County Land Use Code. This approval is subject to the requirements of applicable review agencies and the conditions of approval listed in this staff report.

Date of Administrative Approval: _____

Rick Grover
Weber County Planning Director

Exhibits

- A. Babilis Subdivision
- B. Current Recorders Plat
- C. Easement Agreement
- D. Uintah Highlands Improvement District Will Serve Letter
- E. Geologic Report

Area Map



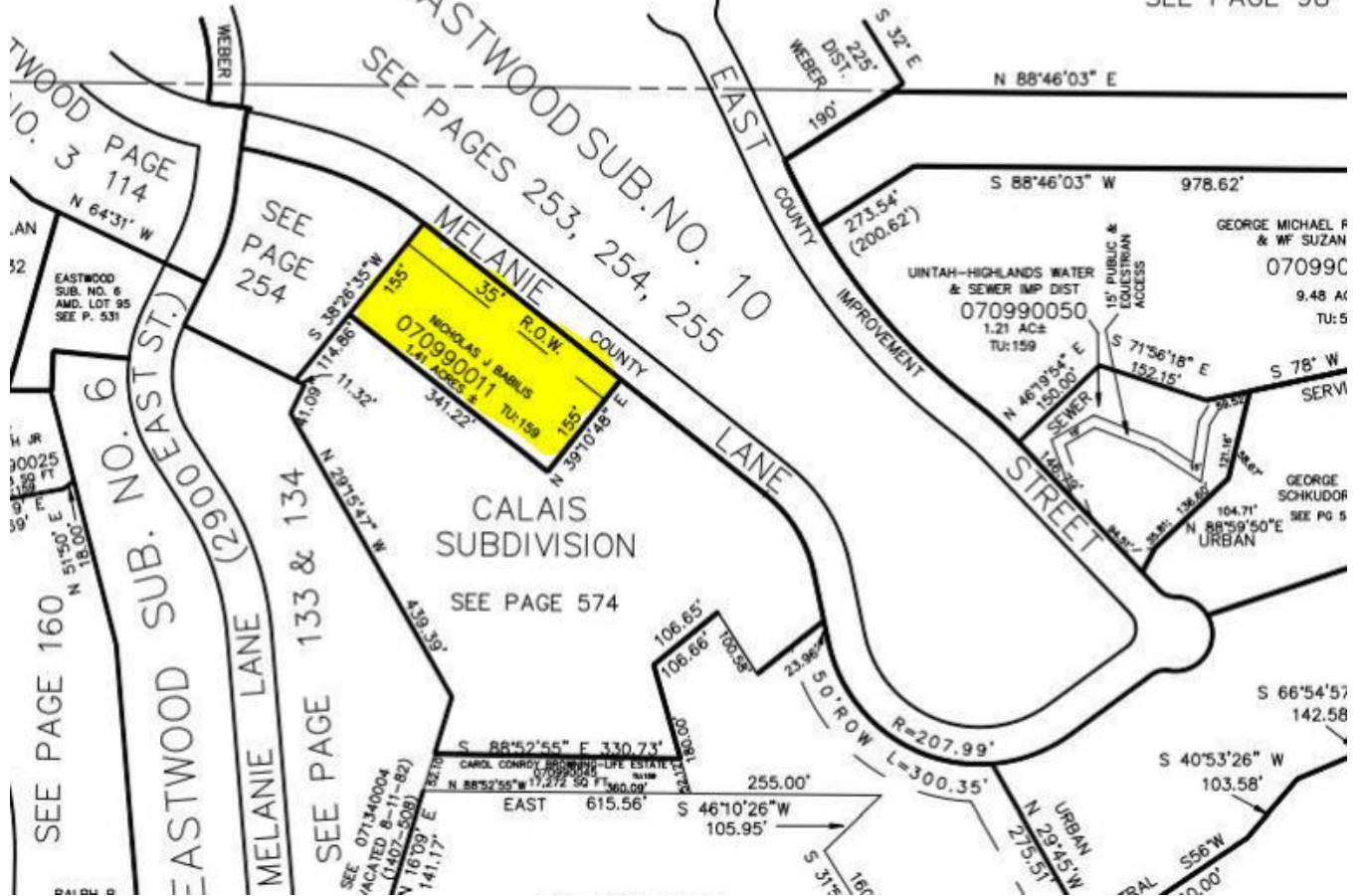
S.W. 1/4

SECTION 24 T.5N., R.1W., S.L.B. & M.

UINTAH DISTRICT
SCALE 1" = 200'

9

SEE PAGE 98





W2366599

9-23

E# 2366599 PG 1 OF 4
ERNEST D ROWLEY, WEBER COUNTY RECORDER
24-SEP-08 1045 AM FEE \$1.00 DEP LF
REC FOR: PROPERTY MANAGEMENT

WHEN RECORDED RETURN TO:
Uintah Highlands Improvement District
Board of Trustees
2401 East 6175 South
Ogden, UT 84403-0945

C2008-190

EASEMENT AGREEMENT

This Easement Agreement ("Agreement") is entered into this ____ day of September, 2008, by and between Weber County a body corporate, politic, and political subdivision of the State of Utah (hereinafter "County"), and Uintah Highlands Improvement District, (hereinafter "Grantee"). Grantee and County shall hereinafter sometimes be collectively referred to as the "Parties."

RECITALS

WHEREAS, County is the owner of that certain real property ("County Property") located in, Weber County, State of Utah; and

WHEREAS, Grantee is the owner of certain property adjacent to the County Property (the "Grantee Property"); and

WHEREAS, in order to develop the Grantee Property in accordance with its desires it is necessary to procure an easement over and across the County Property; and,

WHEREAS, the Parties now desire to enter into this Agreement to provide Grantee with an easement across the County Property;

NOW THEREFORE, for the amount of Ten Dollars (\$10.00) and other good and valuable consideration as specified herein, it is hereby agreed as follows:

**SECTION ONE
EASEMENT GRANT**

County does hereby grant, transfer and convey to Grantee, a perpetual non-exclusive easement ("Easement") across County Property for the consideration as set forth above. The legal description of the easement granted to the Grantee is set forth in Exhibit "A" attached hereto and incorporated herein by this reference.

**SECTION TWO
OBSTRUCTIONS**

County hereby agrees not to obstruct or interfere with the use of the easement for lawful purposes.

**SECTION THREE
BINDING EFFECT**

This Agreement shall be binding upon the Parties hereto, and their successors and assigns. The covenants, rights, benefits and burdens created by this Easement shall run with the land.

**SECTION FOUR
MISCELLANEOUS**

- 4.01 Amendments. This agreement may be amended in whole or in part at any time by the parties by a written amendment approved and signed by all parties in the manner provided by law.
- 4.02 Authorization. The individuals signing this agreement on behalf of the parties confirm that they are the duly authorized representatives of the parties and are lawfully enabled to sign this agreement on behalf of the parties.
- 4.03 Governing Law. This agreement shall be governed by and construed in accordance with the applicable laws of the United States and the State of Utah.

IN WITNESS WHEREOF the undersigned have caused this Agreement to be executed the day and year first written above.

BOARD OF COUNTY COMMISSIONERS
OF WEBER COUNTY

By Jan M. Zogmaister
Jan M. Zogmaister, Chair

Commissioner Bischoff voted _____
Commissioner Dearden voted _____
Commissioner Zogmaister voted _____

ATTEST:

Alan D. McEwan
Alan D. McEwan, CPA
Weber County Clerk/Auditor

GRANTEE
By [Signature]
Its Chairman

STATE OF UTAH)
 :ss.
COUNTY OF WEBER)

On the 17th day of September, 2008, personally appeared before me John P. Reeve who did say that he/she is the Chairman that the within and foregoing instrument was signed in behalf of said corporation, and John P. Reeve duly acknowledged to me that said corporation executed the same.

Linda A. Trotta
Notary Public





EXHIBIT "A"

A PART OF LOT 36, EASTWOOD SUBDIVISION NO. 10 IN THE W1/2 OF SECTION 24, T 5 N, R 1 W, SLB & M. BEGINNING THE NW CORNER OF GRANTOR'S PROPERTY THENCE S08°01'18"W ALONG THE WESTERLY LINE OF GRANTOR'S PROPERTY 40.00 FEET; THENCE ALONG A NON-TANGENT CURVE TURNING TO THE RIGHT WITH AN ARC LENGTH OF 242.70', A RADIUS OF 275.95', WHOSE CHORD BEARS S57°04'33"E, 234.95' TO THE EASTERLY LINE OF GRANTOR'S PROPERTY THENCE ALONG GRANTOR'S EASTERLY LINE N39°15'51"E, 85.00 FEET TO THE NE CORNER OF GRANTOR'S PROPERTY, THENCE NORTHWESTERLY ALONG THE SOUTHERLY LINE OF MELANIE LANE TO THE POINT OF BEGINNING.

07-254-0010 ✓

Uintah Highlands Improvement District

2401 East 6175 South
Ogden, UT 84403-5344
Phone: 801-476-0945
Fax: 801-476-2012
uhid1@qwestoffice.net

November 15, 2016

Subdivision Planner
Weber County Planning and Engineering
2380 Washington Blvd.
Ogden, Utah 84401

Re: Availability of services for Water and Sanitary Sewer within Uintah Highlands Improvement District for the: Proposed Building Lot - Parcel 07-099-0011

Officials of the Uintah Highlands Improvement District, have been contacted about the proposed building lot for the property owned by Nicholas Babilis parcel 07-099-0011, which is located within the boundaries of the District. Based upon the information from the phone conversation with Mr. Babilis and under existing conditions, the District hereby states that municipal water and sanitary sewer collection services would be available for the proposed building lot. The Developer would be responsible to make the connection to the existing services of the District, at the expense of the developer. The lines may be considered private from the connection at the main, which would then be the sole responsibility of the owner. Detailed plans must be submitted and approved and all fees must be paid before a commitment to serve is granted and before construction begins.

This commitment is made expressly subject to the condition that the Developer of the building lot shall be required to comply with all applicable development procedures of the District, including, without limitation, the Developer shall agree to construct all water and sewer system improvements in strict conformance with and subject to the Uintah Highlands Improvement District current 'Public Works Standards', and to abide by all applicable rules and regulations of the District, as the same currently exist, or as they may be amended from time-to-time.

Dated this 15th day of November, 2016.

UINTAH HIGHLANDS IMPROVEMENT DISTRICT

By: 

Blaine Brough, District Manager

SURFACE GEOLOGIC HAZARD STUDY

PROPOSED PAS DE CALAIS SUBDIVISION

S.W. ¼ OF SECTION 24, T. 5 N., R. 1 W.

WEBER COUNTY, UTAH

PREPARED FOR:

MATT RASMUSSEN AND JEAN ROBERT BABILIS
2975 MELANIE LANE
OGDEN, UTAH 84403

PROJECT NO. 02-17

JUNE 20, 2017

June 20, 2017
Job No. 02-17

Page 1

Matt Rasmussen and Jean Robert Babilis
Property Owners
2975 Melanie Lane
Ogden, Utah 84403

Gentlemen:

Re: Report
Surface Fault Rupture Hazard Study
Pas De Calais Subdivision
Between Melanie Lane and 2900 East
Ogden, Utah

1. INTRODUCTION

1.1 GENERAL

Presented in this report are the results of a surface fault rupture hazard study which includes other potential geologic hazards as well. The site is located within the location of what was once known as the Bybee Pond. The general location of the site with respect to major topographic features and general conditions, as of 1998, is shown on Figure 1, Vicinity Map. A more detailed layout of the site showing overall property boundaries and locations of the exploration trenches excavated in conjunction with this study are presented on Figure 3, Site Plan, including property boundaries and trench locations.

1.2 OBJECTIVES AND SCOPE

The objectives and scope of this study were planned during telephone discussions between Mr. Matt Rasmussen and C. Charles Payton of Payton Geological Services, LLC.

The objectives of this study were to:

1. Determine if faults that represent a potential surface fault rupture hazard exist within the proposed subdivision.
2. If such faults are encountered, determine the extent of faulting and deformation.
3. Determine setbacks from any active fault for planned structures.

In accomplishing these objectives the scope included the following:

1. An initial review of geologic maps and a report prepared by GeoStrata of adjoining property.
2. A field program consisting of general reconnaissance and the logging of 3 exploratory trenches.
3. Preparation of this summary report.

2. SITE DESCRIPTION

This report presents the results of a surface geologic hazard study for the development of a subdivision within the area that was at one time the area of Bybee Pond. The subdivision is called the Pas De Calais Subdivision which consists of three lots with a total area of approximately 4 acres. The property is between Melanie Lane and 2900 East and about 6100 South in Ogden, Utah. The approximate elevation of the site is 5,060 feet above sea level.

Most of the subdivision is covered with grass and weeds. On the eastern side of the subdivision near the toe of the slope extending up to Melanie Lane are groups of scrub oak. A tributary of Spring Creek runs down the slope about 20 feet southeast of the subdivision. No surface water is present within the area of Bybee Pond.

This study was conducted to primarily determine if any active faults were present within the subdivision. The evaluation of the site for potential active faulting was performed by a review of geological literature and also of the 0.5 meter LiDAR elevation data provided in the GeoStrata report.

Bybee Pond was present within the site area from approximately 1913 until in the 1980's. Since 1956 the pond was operated by the Mountain Streams Irrigation Company. The dikes forming the pond area were constructed using horses and scrappers and lots of hand shovels. The soil used in the embankments was that present on the ground surface at that time. Water was diverted from Spring Creek along a stone lined ditch. The pond has always leaked and the water depth ranged from a few feet in the north end to up to 15 feet in the southern end. The pond was decommissioned in the 1980's.

This study was conducted primarily to identify active faults which may be present within the proposed subdivision. A review of geologic maps indicates that the Wasatch fault is present crossing the eastern portion of the proposed subdivision. Three exploratory trenches were excavated to identify the potential of active faults within the area and to determine soil conditions at depth. Logs of the trenches were prepared.

3. GEOLOGIC AND SEISMOTECTONIC SETTING

The subdivision site is located within the southeastern portion of Ogden, Utah at an approximated elevation of 5,060 feet above mean sea level and along the foothills of the Wasatch Range and just north of Weber Canyon (Figure 1). The site is also on the eastern margin of the Great Salt Lake Basin which represents a deep, sediment filled structural basin of Cenozoic age between the Wasatch Range on the east and the Lakeside Mountains to the west (Hintze, 1980). The Wasatch range is the eastern side of the Basin and Range Province which extends westward to the Sierra Mountains in California.

The surface soils are primarily sediments which were deposited by Lake Bonneville within the last 30,000 years (Yonkee and Lowe, 2004). The lacustrine sediments near the mountain front consist of mostly sand and rounded gravels and cobbles. Surface soils mapped by Yonkee and Lowe (2004) within the subdivision area are either colluvium (Qc) or lacustrine sand and gravel deposited during the transgressing of Lake Bonneville (Qlg4). A more complete description of these deposits is given on Figure 2a.

The site is located on a near horizontal bench on the foothills of the Wasatch Range and just north of Weber Canyon in the southeastern portion of Ogden, Utah. The Weber segment of the Wasatch Fault Zone is mapped trending northwest through the subdivision (Figure 2). The Wasatch Fault is considered to be made up of several segments, each segment acting relatively independently (Machette and Others, 1987). The Weber segment is one of the longest and most active segments within the Wasatch fault zone. The segment extends from north of Ogden to the north end of Salt Lake City, Utah. Nelson and others (2006) report four surface rupturing seismic events since the middle Holocene (about 5000 years ago) with the most recent event being about 500 years ago with a surface rupture of 1.6 feet. The Weber Segment of the Wasatch Fault may be capable of producing earthquakes with a magnitude as large as 7.5 (Ms). Vertical displacements of 3 to 15 feet have been considered possible during a major earthquake on the Weber segment of the Wasatch Fault (Hecker, 1993).

Consensus by the Utah Quaternary Fault Working Group is that the recurrence interval for large earthquakes within the Weber segment of the Wasatch Fault is approximately 1,400 years for the past four surface fault rupture events (Lund, 2005).

4. FIELD INVESTIGATION

At the time of the field investigation, there were no permanent structures or pavement on the property. There is a short dirt road extending southeast from the intersection of Melanie Lane and 2900 East. On June 5, 2017 three exploratory trenches were completed. The trenches had been excavated using a tracked backhoe. A total of 586 feet of trench excavation was completed with depths of the trenches ranging from 6 to 12 feet. No groundwater was encountered in any of the trenches. In Trench 3 (T-3) surface water from the diversion of Spring Creek did enter the trench for a short period of time. On June 7, 2017 logging of the trenches began. A level line and stationing were established on the southeastern wall of each trench. The approximate location of each trench is shown on the current study site plan which is shown on Figure 3. The approximate locations shown are based on distance and direction from the property boundaries surveyed by Landmark Surveying Inc.

The soils expected to be encountered in the trenches generally consist of colluvium overlying Lake Bonneville deposits of silt, sand and gravel with some cobbles and boulders. The geologic units exposed in the trenches were logged to determine if there was evidence of active faults extending through the three trenches excavated within the Bybee Pond area. Based upon the geologic map shown on Figure 2 the active Wasatch Fault extends through the eastern portion of the planned subdivision.

4.1 Trench 1 (T-1)

Trench 1 was excavated across the northern third of Lot 3 as shown on Figure 3. Debris flow and lacustrine deposits are exposed in the trench and are partly covered by some disturbed surface soil most likely disturbed during the construction of Bybee Pond. The soil units that are debris flow deposits are designated SU-1 and SU-2. They consist of light brown to light silver gray, fine sand, silt and rounded very hard gravel and cobbles. The soils are massive, dense, and dry. The gravel and cobbles make up between 10 % and 20% of the deposit. The remainder is fine sand with some silt, which is friable and non-plastic. SU-3 and SU-4 soil units are lacustrine sand and silt, which is interpreted as transgressive

Lake Bonneville sediments deposited in relatively shallow water on beaches. These sediments occasionally show slight layering as alternating sand and poorly sorted sand and clay deposits. The bedding ranges from near horizontal to a very shallow dip to the east. Soil Unit 3 has abundant roots which decrease westward to about Station 1+20.

In the disturbed soil area at Station 0+94 at a depth of approximately 2 feet is a white golf ball. The log of this trench is shown on three figures (Figures 4, 4a, and 4b) due to the length of the trench.

4.2 Trench 2 (T-2)

Trench 2 was excavated about 7 feet southeast of a property corner at the north side of Lot 2 as shown on Figure 3. The log of this trench is shown on Figure 5. Four soil units were identified in this trench which are interpreted to be transgressive Lake Bonneville sediments. The lacustrine soil units range from light orange brown fine sand which is massive to a dark gray moist massive sand and silt with some rounded hard gravel which is locally bedded in the eastern portion of the trench. These two soil units overlay SU-3, which is light yellowish orange, dense clay, fine sand and some small rounded gravel. This unit is massive and at Station 0+54 there is a near vertical filled fracture extending through SU-3 as exposed in the trench wall. The fracture is filled with dark gray clay, and fine sand and does not extend to the overlying SU-2 soil unit. At Station 1+24 there is a contact with another lacustrine soil unit which is designated SU-4. This unit is composed of light gray to orange brown thin beds of clay, fine sand and silt which are dense and are 1 inch to 2 inches thick. They have an apparent dip of 5 degrees to 25 degrees to the northeast. At Station 1+41 is a fracture which also shows that there may have been some movement along the fracture surface. The fracture has a north-south strike and a dip of 70 to 75 degrees to the east. At the base of SU-4 is a contact with a medium gray to silver gray loose sand and fine rounded gravel. This sand and gravel is loose, dry and has no to very few fines associated with it. This soil unit is designated SU-5. Along the fracture surface the contact between SU-4 and SU-5 has an apparent offset of approximately 6 inches. This suggests that there has been a small movement in the past along this fracture. Also the dip of the beds within SU-4 suggest that this soil unit has moved in the past as a large block during an earthquake. Lacustrine beds are usually nearly flat or have a gently dip to the west when they are deposited during the transgression of Lake Bonneville.

4.3 Trench 3A (T-2A)

Some difficulty with the excavator resulted in the excavation of a short trench northeast of T-2. This short trench has been designated Trench 2A (T-2A). The southeast wall of the trench was logged as has been done in all the trenches within this proposed subdivision. Two soil units were logged both of them being debris flows. SU-1 is a light brown massive mixture of sand and gravel with some very hard rounded cobbles. It is dry and excavates easily. SU-2 appears to be younger and to be deposited on top and to the west of SU-1. SU-2 is also a debris flow which is dark gray, massive and a mixture of fine sand, gravel and cobbles. It is generally dry but becomes slightly damp at depth. The gravel is all rounded and very hard. No top soil was present at the top of the trench. No groundwater was encountered during the excavation of this trench. The log of this trench is shown on Figure 6.

4.4 Trench 3 (T-3)

Trench 3 was excavated near the southeast corner of Lot 2 as shown on Figure 3. Trench 3 was approximately 100 feet long and the east end of it was in a debris flow soil unit SU-1 on the log which is shown on Figure 7. The debris flow was dark brown to nearly black and a mixture of silt, fine sand, gravel and cobbles. The gravel and cobbles were very hard and round. The soil unit was massive and dry. Above the debris flow deposit was a lacustrine deposit of brown fine sand and silt which was massive and damp to moist. The fine sand was friable and non-plastic. No groundwater was encountered however, surface water from the diversion of Spring Creek was seeping into the trench at about Station 0+42. This flow of water was accumulated in the bottom of the trench at about Station 0+65. After two days this seepage water stopped flowing and logging of the trench was possible. No evidence of faulting as identified in this area.

The exploratory trenches were backfilled using a large tracked backhoe with the excavated material being used as backfill and compacted with the backhoe bucket.

Groundwater was not encountered in the exploration trenches to the depth excavated.

5. CONCLUSIONS AND RECOMMENDATIONS

Based on field observations, a review of available geologic literature and the subsurface conditions encountered in the exploratory trenches, there is little evidence of active faulting in the area of this subsurface investigation. However, a geologic hazard assessment was made in October 2016 of the building lot located at 6116 South 2900 East which is just west of this proposed subdivision. The location of this lot is shown on Figure 3. The geologic hazard study for this lot was accomplished by GeoStrata. A single trench was excavated on the lot and three faults were encountered. Two faults, F2 and F3, dip eastward and fault F1 dips westward. GeoStrata concluded that Fault 1 and Fault 2 are inactive minor faults or minor lateral spread related offsets. Fault 3 is considered an active antithetic fault within the Weber Segment of the Wasatch Fault Zone.

The large fracture or fault observed in Trench 2 with a possible maximum displacement of 6 inches is concluded to be an inactive minor fault or a minor lateral spread feature which resulted in the tilting of the thin clay beds to the east during a large soil block movement related to a pre-Holocene earthquake more than 10,000 years ago.

Active surface traces of the main Wasatch fault could not be seen during this geologic hazard study. The Yonkee & Lowe geologic map of the Ogden Quadrangle does show the Wasatch fault passing through Bybee Pond. It is concluded, based upon the current study, that the Wasatch fault is east of the site.

Other geologic hazards considered during this study included landslide, slope stability, alluvial fan flooding / debris flow, stream flooding, and rock fall. The landslide hazard within the subject site is considered low. Slope stability was not assessed as part of this geological hazard assessment. Alluvial

fan flooding or a debris flood consisting of organic material and rock debris transported by fast-moving flood water would be possible along the diversion channel of Spring Creek which had been used to divert water into Bybee Pond. Debris flow or alluvial fan flooding hazards are considered to be low. Stream flooding from the Spring Creek channel is also considered to be low. While there are rock source areas up the mountain slopes east of the site there is no evidence of rock falls on the site. Therefore, rock fall hazards are considered to be low.

6. LIMITATIONS

The analysis and report findings are based on published geologic maps and report, a reconnaissance of the site, and the excavations at the approximate locations shown on Figure 3. The conclusions are based on currently accepted geologic interpretation of this information. Geologic logs of the exploratory excavations presented in this report depict geologic conditions only along the specific corridors and to the depth excavated. They do not necessarily reflect geologic conditions at other locations or at greater depth. It is recommended that because during construction that geologic conditions may change at depth that a geologic review be made of the excavation to be certain that geologic features are not detrimental to home construction. No attempt has been made to predict earthquake ground motions or determine potential magnitude for earthquakes associated with faults in the project area.

I appreciate the opportunity to be of service on this project. Should you have any questions regarding the report or wish to discuss additional services, please do not hesitate to contact me at your convenience at (801) 631-1613.

Respectfully submitted,

C. Charles

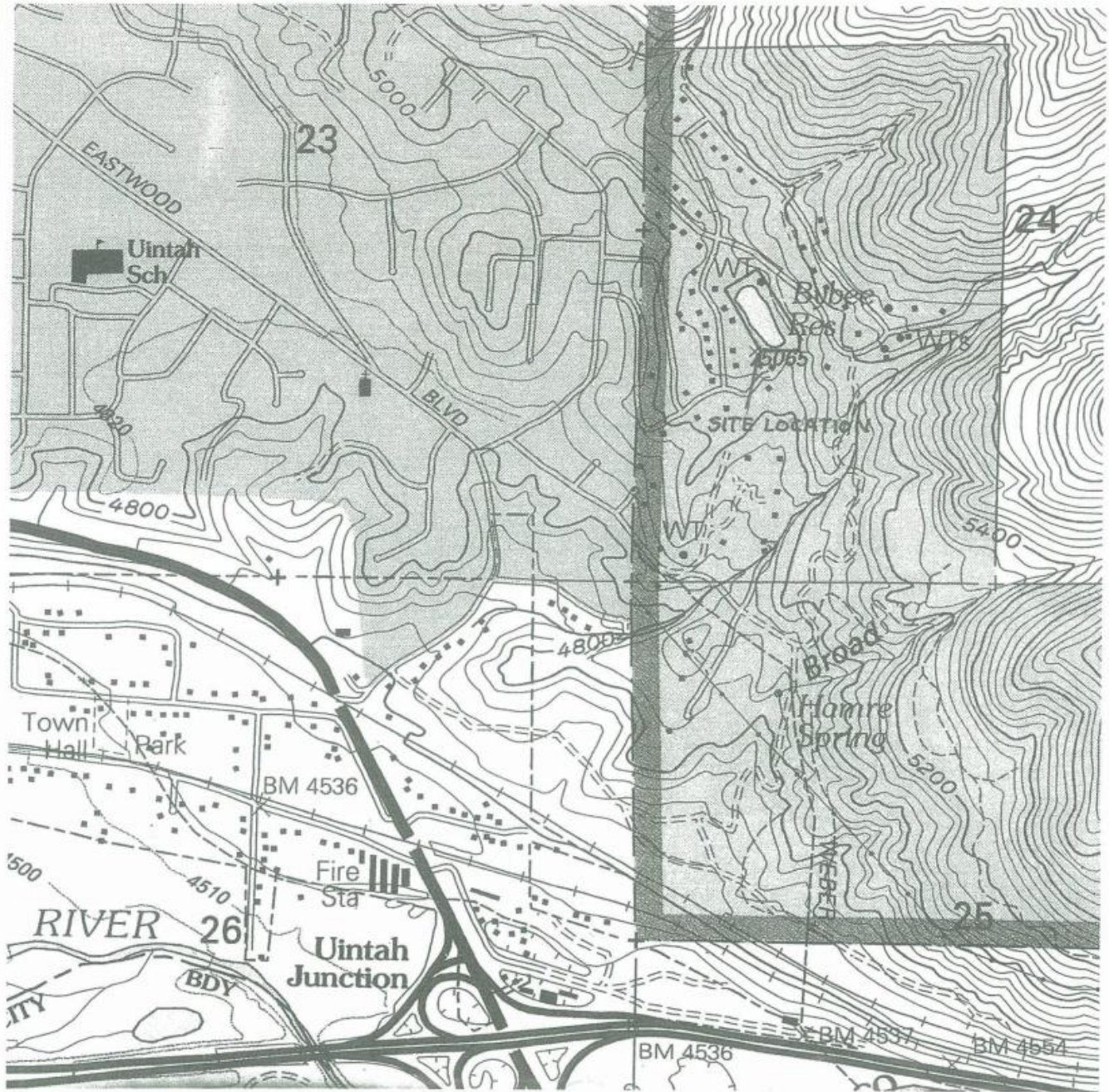
C. Charles Payton, P.G., C.E.G.
Professional Engineering Geologist
1474 North 1930 West
Provo, Utah 84604
c2payton.egs@gmail.com



Enclosures:	Figure 1,	Project Site
	Figure 2,	Geologic Map of Subdivision Area
	Figure 2a,	Description of Map Units in Area of Site
	Figure 3,	Property Boundaries and Trench Locations
	Figure 4,	Log of Trench 1
	Figure 4a,	Log of Trench 1
	Figure 4b,	Log of Trench 1
	Figure 5	Log of Trench 2
	Figure 6	Log of Trench 2
	Figure 7	Log of Trench 3

REFERENCES CITED

- Hecker, S., 1993; Quaternary Tectonics of Utah with Emphasis on Earthquake-Hazard Characterization, Utah Geological Survey, Bulletin 127.
- Hintze, L.F. , 1980; Geologic Map of Utah: Utah Geological and Mineral Survey Map-A-1, scale 1:500,000.
- Lund, W.R., 2005; Consensus preferred recurrence-interval and vertical slip-rate estimates: review of Utah paleoseismic-trenching data by the Utah Quaternary Fault Parameters Working Group: Utah Geological Survey Bulletin 134.
- Macheette, M.N. and Personius, S.F. and Nelson, A.R., 1987; Quaternary geology along the Wasatch Fault zone; segmentation, recent investigations and preliminary conclusions; U.S. Geological Survey open file report 87-585 p. B-1 – B 124.
- Nelson, A.R, Lowe, M., Personius, S., Bradley, L, Forman, S.L., Izlask, R., and Garr, J., 2006; Holocene earthquake history of the northern Weber segment of the Wasatch fault zone, Utah, Paleoseismology of Utah, Volume 13: Utah Geological Survey Miscellaneous Publication 05-8, 39p.
- Yonkee, A., Lowe, M., 2004; Geologic Map of the Ogden 7.5' Quadrangle, Weber and Davis Counties, Utah: Utah Geological Survey Map 200.



Modified from USGS
 Ogden Quadrangle 1998
 contour Interval 40 feet

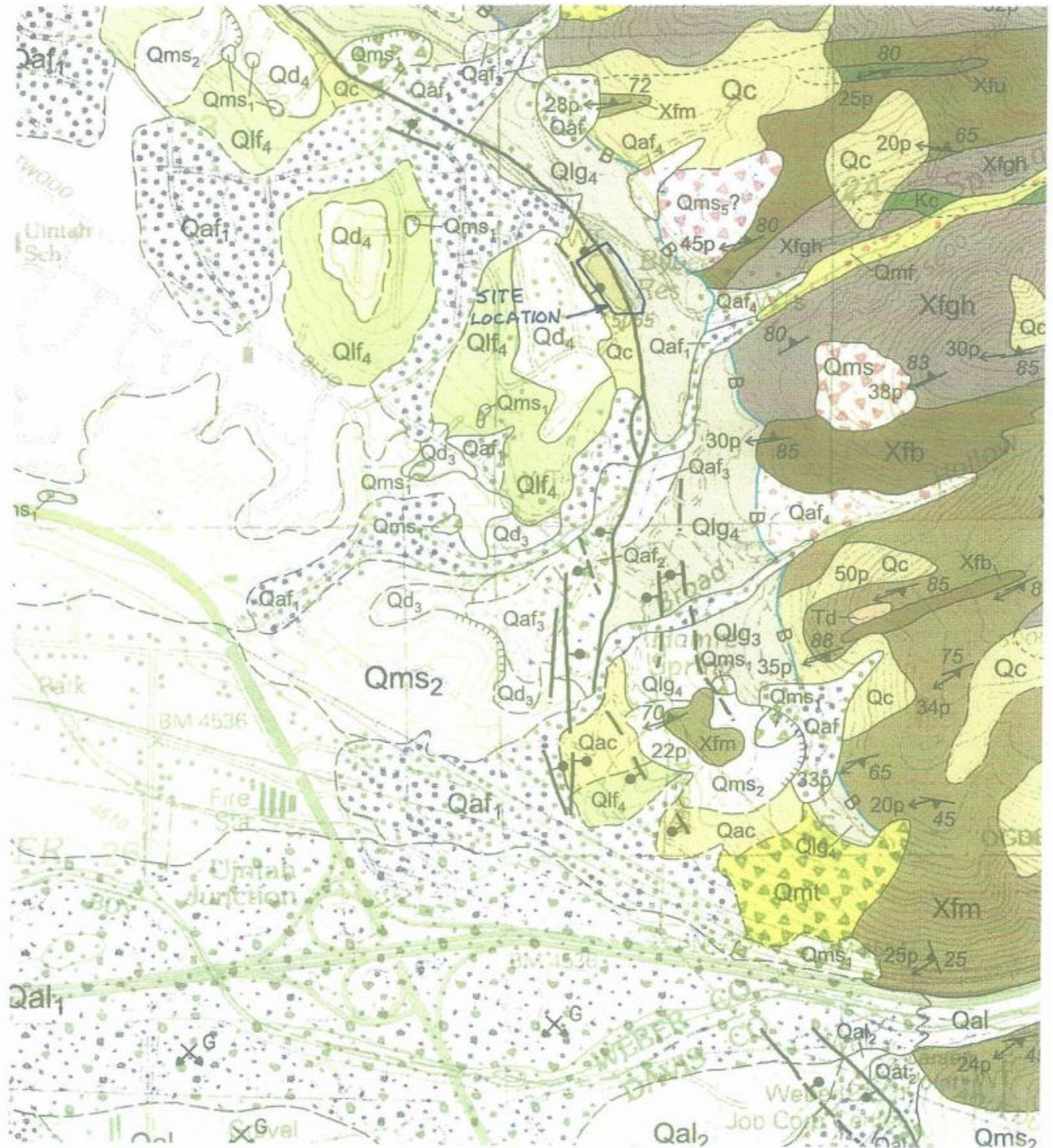


Scale 1" = 1000'



PROPOSED PAS DE CALAIS SUBDIVISION
 SW 1/4 OF SECTION 24, T.5N. R.1W.
 WEBER COUNTY, UTAH

PROJECT SITE
 FIGURE 1



Modified from Yankee & Lowe (2004)

GEOLOGIC MAP OF SUBDIVISION AREA

FIGURE 2

DESCRIPTION OF MAP UNITS IN AREA OF SITE

Qc Colluvium- Weakly to non-layered, variably sorted, matrix- to clast-supported, pebble to boulder gravel and diamicton of local origin; contains angular to subangular clasts in variable amounts of clay, silt, and sand matrix; deposits formed mostly by creep and slope wash, also includes small landslides, talus, debris cones, minor alluvium, and small bedrock exposures; found mostly along vegetated slopes in the Wasatch Range, and locally covering scarps along the Wasatch fault zone; thickness probably less than 50 feet in most areas.

Qlg4 Lacustrine gravel-bearing deposits, Bonneville transgressive – Clast-supported, moderately to well-sorted, pebble to cobble gravel, with some silt to sand in interfluvial areas and away from mountain front; gravels contain rounded to subrounded clasts, and some subangular clasts derived from reworking of mass-wasting and alluvial-fan deposits; deposited in higher energy environments along shorelines and small fan deltas as Lake Bonneville was transgressing; grades westward away from shorelines into fine-grained lacustrine deposits (Qlf4); total thickness locally as much as 200 feet

MAP SYMBOLS



Normal Fault – Dashed where location approximate; dotted where concealed; solid bar and ball on downthrown side.



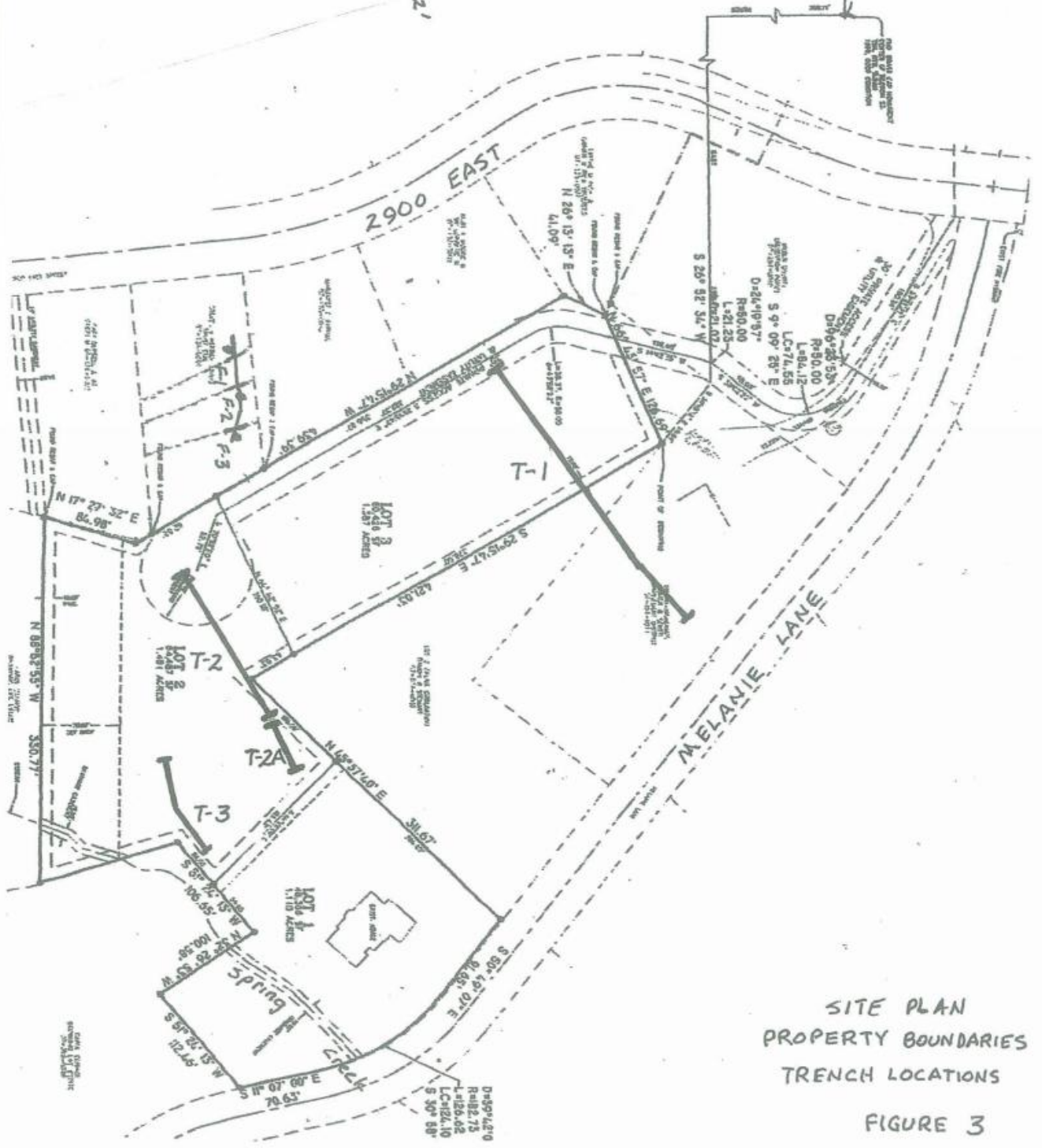
Bonneville shoreline of Lake Bonneville

FIGURE 2a

SCALE 1"=112'



NO ADJUSTMENT TO BE MADE TO THE DISTANCE BETWEEN THE POINTS OF BEGINNING AND THE POINTS OF ENDING FOR CURVE CORRECTION



SITE PLAN
PROPERTY BOUNDARIES
TRENCH LOCATIONS

FIGURE 3