



PLANNING COMMISSION MEETING STAFF REPORT

DATE OF MEETING: April 19, 2017

NAME OF PROJECT: Ashton Robertson Enterprises LLC

NAME OF APPLICANT: Berg Engineering

AGENDA ITEM: Final Approval

LOCATION OF ITEM: 250 East and 200 South

ZONING DESIGNATION: R-1-9

ITEM: 10

Jim Ashton, agent for Ashton Robertson Enterprises, is requesting Final approval for the Alder Meadows Subdivision. The proposal is a large-scale subdivision that is 5.16 acres in size and will contain 11 lots that could contain single-family dwellings or duplex dwellings. The property is located at 250 East 200 South and is in the R-1-9 zone.

BACKGROUND:

This request is for final approval of a large-scale subdivision on 5.16 acres and will contain 11 lots. The 11 lots proposed in the subdivision will obtain frontage along new roads built within the subdivision. The property is in the R-1-9 zones which allows single-family dwellings and duplex dwellings (duplex lots require more frontage, acreage, and water than single-family lots). All 11 lots will comply with the requirement for duplex lots and the developer does plan to build duplexes on each lot. Because the property is less than six acres there is not an open space requirement. The parcel is located close to Main Street where many services are located. It is also close to the Midway Elementary School and an LDS chapel. The property has historically been used for agricultural.

A portion of the property was recently zoned R-1-9 where it had previously been zoned R-1-11. As part of that approval, the developer is required to build some offsite improvements. These include a sidewalk along 200 South that will extend from the proposed subdivision to Midway Elementary. Also, a sidewalk is required along the 100 South, on both sides of the road, from the proposed subdivision to 200 East.

The General plan describes the R-1-9 zone as the following:

The R-1-9 zone (9,000 sf lot) provides a residential environment within the City which is characterized by smaller lots and somewhat denser residential environment than is characteristic of the R-1-11 Zone. Nevertheless, this zone is characterized by spacious yards and other residential amenities adequate to maintain desirable residential conditions. The principal uses permitted in this zone shall be one and two family dwellings and certain other public facilities needed to promote and maintain stable residential neighborhoods. This zone should be planned with an emphasis on walkability.

This proposal was noticed for two weeks in the Wasatch Wave, it was posted in three locations in Midway, and it was noticed on the State's webpage and the City's webpage.

LAND USE SUMMARY:

- 5.16-acre parcel
- R-1-9 zoning
- Proposal contains 11 lots
- Access from 100 South and 200 South
- The lots will connect to the Midway Sanitation District sewer, Midway City's culinary water line, and Midway Irrigation Company's secondary water line

ANALYSIS:

Access – Access will be from 100 South and from 200 South. A stub road from the proposed subdivision will extend to the property on the east that will allow 100 South to continue to the east in the future.

Water Connection – The lots will connect to water lines that will be built by the developer and connect to the City's water lines along 200 East and 200 South.

Sewer Connection – The lot will connect to Midway Sanitations District’s sewer lines located in the area.

Secondary Water Connection – The lots will connect to Midway Irrigation Company’s secondary which is already servicing the property. Laterals will be created for all 11 lots. Secondary water meters are required for each lateral.

WATER BOARD RECOMMENDATION:

This item was reviewed by the Water Board on February 6th. The board recommended that 23.1 acre feet of water are tendered to the City before the plat is recorded. This calculation is based on duplexes being constructed on each lot. Duplexes contain two dwelling units and therefore each lot requires 2.1 acre feet (1.3 for one residence and the irrigated area and 0.8 for the second residence.)

VISUAL AND ARCHITECTURAL COMMITTEE RECOMMENDATION:

This item was reviewed by the VAC on March 13th. The VAC recommended approval of the landscaping and elevations of the dwellings with some minor revisions that will take place during the building permit process.

POSSIBLE FINDINGS:

- The proposal does meet the intent of the General Plan for the R-1-9 zoning district
- The proposal does comply with the land use requirements of the R-1-9 zoning district
- The sidewalks crossing the property and connecting to neighboring roads and existing sidewalks will benefit the community by allowing safe pedestrian access.

ALTERNATIVE ACTIONS:

1. Recommendation of Approval (conditional). This action can be taken if the Planning Commission feels that conditions placed on the approval can resolve any outstanding issues.
 - a. Accept staff report
 - b. List accepted findings
 - c. Place condition(s)

2. Continuance. This action can be taken if the Planning Commission feels that there are unresolved issues.
Accept staff report
 - a. List accepted findings
 - b. Reasons for continuance
 - i. Unresolved issues that must be addressed
 - c. Date when the item will be heard again

3. Recommendation of Denial. This action can be taken if the Planning Commission feels that the request does not meet the intent of the ordinance.
 - a. Accept staff report
 - b. List accepted findings
 - c. Reasons for denial



E 100 S

S 200 E

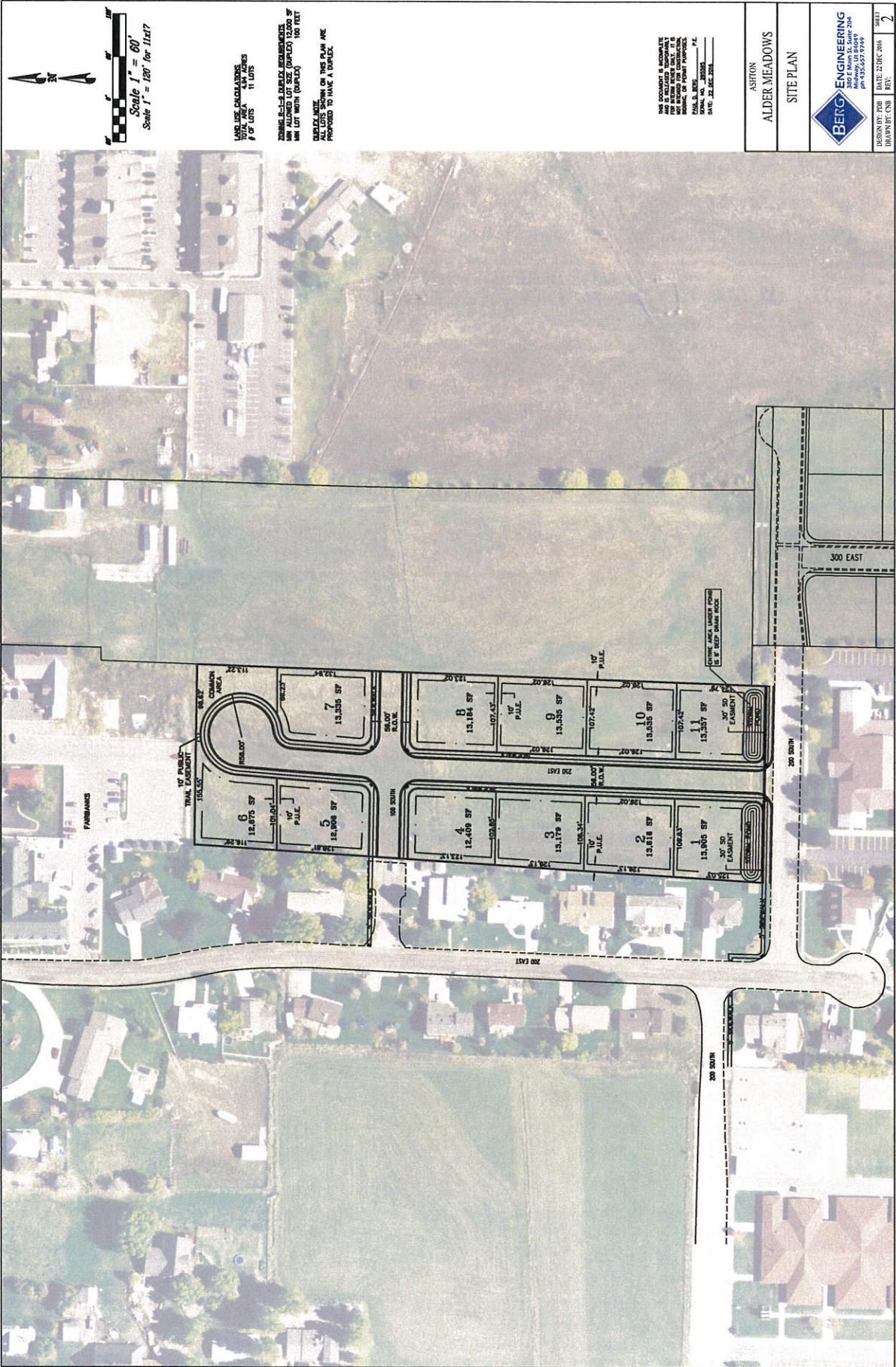
E 200 S

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Imagery Date: 7/8/2016 40°30'35.70" N 111°28'01.12" W elev 5561

1993



Scale 1" = 60'
Scale 1" = 120' for 11x17

10' PUBLIC TRAIL EXHIBITMENT
CENTRAL AREA UNDER FORM 12' x 8' DEEP DRAIN HOOD

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THE PROPERTY OF BERG
ENGINEERING, INC. AND
SHALL BE KEPT IN CONFIDENCE.
DATE: 22 DEC 2016

ASHTON
ALDER MEADOWS
SITE PLAN

BERG ENGINEERING
280 E. MAIN ST. SUITE 204
PH 435.527.9349

DESIGN BY: FOB | DATE: 22 DEC 2016 | REV: 2

DRAWN BY: CDB



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1.0 EXECUTIVE SUMMARY

This entire report presents the results of Earthtec Engineering's completed geotechnical study for the Alder Meadows in Midway, Utah. This executive summary provides a general synopsis of our recommendations and findings. Details of our findings, conclusions, and recommendations are provided within the body of this report.

- The subject property is approximately 4.94 acres and is proposed to be developed the construction of 11 two-story duplexes. The proposed structures will consist of conventionally framed two-story buildings with crawl spaces. We anticipate foundation loads for the proposed structures will not exceed 8,000 pounds per linear foot for bearing wall, 50,000 pounds for column loads, and 150 pounds per square foot for floor slabs. (see Section 3)
- Our field exploration included the excavation of six (6) test pits to depths of 3½ to 10 feet below the existing ground surface. Groundwater was not encountered within the excavations at the depths explored. (see Section 5)
- The native clayey sand soils have a negligible potential for collapse (settlement) and a slight potential for compressibility under increased moisture contents and anticipated load conditions. (see Section 6)
- The subsurface soils encountered generally consisted of topsoil overlying medium dense to dense sand and loose to very dense calcareous Tufa or potrock. All topsoil should be removed beneath the entire building footprints, exterior flatwork, and pavements prior to construction. (see Section 7)
- Conventional strip and spread footings may be used to support the structure, with foundations placed entirely on firm, undisturbed, competent Tufa or entirely on a minimum 18 inches of properly placed, compacted, and tested structural fill extending to undisturbed competent Tufa. (see Section 10)
- Minimum roadway section consists of 3 inches of asphalt and 6 inches of road-base. Areas that are soft or deflect under construction traffic should be removed and replaced with granular material or structural fill. (see Section 13)

Based on the results of our field exploration, laboratory testing, and engineering analyses, it is our opinion that the subject site may be suitable for the proposed development, provided the recommendations presented in this report are followed and implemented during design and construction.

Failure to consult with Earthtec Engineering (Earthtec) regarding any changes made during design and/or construction of the project from those discussed herein relieves Earthtec from any liability arising from changed conditions at the site. We also strongly recommend that Earthtec observes the building excavations to verify the adequacy of our recommendations presented herein, and that Earthtec performs materials testing and special inspections for this project to



provide continuity during construction.

2.0 INTRODUCTION

The project is located at approximately 100 South 250 East in Midway, Utah. The general location of the site is shown on Figure No. 1, *Vicinity Map* and Figure No. 2, *Aerial Photograph Showing Location of Test Pits and Percolation Test*, at the end of this report. The purposes of this study are to:

- Evaluate the subsurface soil conditions at the site,
- Assess the engineering characteristics of the subsurface soils, and
- Provide geotechnical recommendations for general site grading and the design and construction of foundations, concrete floor slabs, miscellaneous concrete flatwork, and asphalt paved residential streets.

The scope of work completed for this study included field reconnaissance, subsurface exploration, field and laboratory soil testing, geotechnical engineering analysis, and the preparation of this report.

3.0 PROPOSED CONSTRUCTION

We understand that the proposed project, as described to us by Mr. Jim Ashton with Ashton-Robertson Enterprises, consists of developing the approximately 4.94-acre existing parcel with the construction of 11 duplexes. The proposed structures will consist of conventionally framed two-story buildings with crawl spaces. We have based our recommendations in this report on the assumption that or anticipated foundation loads for the proposed structures will not exceed 8,000 pounds per linear foot for bearing wall, 50,000 pounds for column loads, and 150 pounds per square foot for floor slabs. If structural loads will be greater Earthtec should be notified so that we may review our recommendations and make modifications, if necessary.

In addition to the construction described above, we anticipate that

- Utilities will be installed to service the proposed buildings,
- Exterior concrete flatwork will be placed in the form of curb, gutter, and sidewalks, and
- Asphalt paved residential streets will be constructed.

4.0 GENERAL SITE DESCRIPTION

4.1 Site Description

At the time of our subsurface exploration the site was an undeveloped lot covered in snow.



There is a depression at Test Pit 4 (TP-4) where the Tufa was weathered, decomposing and had collapsed in on itself. Ground penetrating radar (GPR) may be required to determine if there are any additional voids around TP-4. The ground surface appears to be relatively flat, we anticipate less than 3 feet of cut and fill may be required for site grading. The lot was bounded on the north and west by residential lots, on the east by a vacant field, and on the south by 200 South Street.

4.2 Geologic Setting

The subject property is located in the Middle Rocky Mountains Physiographic region of Utah, in norther portions of the Heber Valley. The surficial geology of much of the eastern margin of the valley has been mapped by Bryant, 2003¹. The surficial geology at the location of the subject site and adjacent properties is mapped as "Calcareous Tufa" (Map Unit Qtu), dated to be Holocene.

5.0 SUBSURFACE EXPLORATION

5.1 Soil Exploration

Under the direction of a qualified member of our geotechnical staff, subsurface explorations were conducted at the site on March 3, 2017 by the excavation of six (6) test pits to depths of 3½ to 10 feet below the existing ground surface using a track-mounted mini excavator. The approximate locations of the test pits are shown on Figure No. 2, *Aerial Photograph Showing Location of Test Pits and Percolation Test*. Graphical representations and detailed descriptions of the soils encountered are shown on Figure Nos. 3 through 8, *Test Pit Log* at the end of this report. The stratification lines shown on the logs represent the approximate boundary between soil units; the actual transition may be gradual. Due to potential natural variations inherent in soil deposits, care should be taken in interpolating between and extrapolating beyond exploration points. A key to the symbols and terms on the logs is presented on Figure No. 9, *Legend*. Disturbed bag samples and relatively undisturbed block samples were collected at various depths in each test pit.

The soil samples collected were classified by visual examination in the field following the guidelines of the Unified Soil Classification System (USCS). The samples were transported to our Lindon, Utah laboratory where they will be retained for 30 days following the date of this report and then discarded, unless a written request for additional holding time is received prior to the 30-day limit.

5.2 Percolation Testing

A percolation test was conducted in Test Pit 5 (TP-5). The test was performed at the specified

¹ Bryant, Bruce, 2003, Geologic Map of the Salt Lake City 30' x 60' Quadrangle, North-Central Utah, and Uinta County, Wyoming; Utah Geological Survey, Map 190DM, Scale 1: 100,000.



depth by digging a small hole with a shovel, filling the hole with water, and measuring the water loss with time. The test was performed several times and the final measured rate is shown in the table below.

Table 1: Percolation Test Results

Test Pit No.	Depth (ft.)	Percolation Rate (min/in)	Soil Type
TP-5	2½	1.17	SM

6.0 LABORATORY TESTING

Representative soil samples collected during our field exploration were tested in the laboratory to assess pertinent engineering properties and to aid in refining field classifications, if needed. Tests performed included natural moisture content, dry density tests, liquid and plastic limits determinations, mechanical (partial) gradation analyses, one-dimensional consolidation tests, a water-soluble sulfate test, a pH test, and a resistivity test. The table below summarizes the laboratory test results, which are also included on the attached *Test Pit Logs* at the respective sample depths, and on Figure No. 10, *Consolidation-Swell Test*.

Table 2: Laboratory Test Results

Test Pit No.	Depth (ft.)	Natural Moisture (%)	Natural Dry Density (pcf)	Atterberg Limits		Grain Size Distribution (%)			Soil Type
				Liquid Limit	Plasticity Index	Gravel (+ #4)	Sand	Silt/Clay (- #200)	
TP-1	3	19	---	20	NP*	27	49	24	SM
TP-2	3½	22	---	---	---	29	49	22	SC-SM
TP-3	2	23	96	33	12	6	61	33	SC
TP-5	6	15	---	---	---	21	62	17	SM
TP-6	8	32	---	32	13	7	40	53	CL

NP* = Non-Plastic

As part of the consolidation test procedure, water was added to a sample to assess moisture sensitivity when the sample was loaded to an equivalent pressure of approximately 1,000 psf. The native clayey sand soils have a negligible potential for collapse (settlement) and a slight potential for compressibility under increased moisture contents and anticipated load conditions.

Laboratory resistivity, pH, and water soluble sulfate tests were performed on a representative sample obtained during our field exploration. The resistivity value measured was 4,180 ohm-cm and pH value measured was 7.60. This result indicates an average life greater than 60 years for 0.05-inch thick galvanized steel sheet exposed to on-site soils. Water soluble sulfate testing indicated a value of less than 6.40 parts per million. Based on this result, the risk of sulfate attack to concrete appears to be "negligible" according to American Concrete Institute standards. Therefore, we recommend that any type of Portland cement may be used for concrete in contact with on-site soils. The results can be found in Appendix A.



7.0 SUBSURFACE CONDITIONS

7.1 Soil Types

On the surface of the site, we encountered topsoil which is estimated to extend up to 3 feet in depth at the test pit locations. Below the topsoil we encountered layers of sand, clay, and Tufa extending to depths of 3½ to 10 feet below the existing ground surface. Graphical representations and detailed descriptions of the soils encountered are shown on Figure Nos. 3 through 8, Test Pit Log at the end of this report. Based on our experience and observations during field exploration, the clay soils visually were medium stiff in consistency, the sand soils visually had a relative density of medium dense to dense and the Tufa had a relative density varying from loose to very dense.

7.2 Groundwater Conditions

Groundwater was not encountered within the excavations at the depths explored. Note that groundwater levels will fluctuate in response to the season, precipitation, snow melt, irrigation, and other on and off-site influences. Quantifying these fluctuations would require long term monitoring, which is beyond the scope of this study. The contractor should be prepared to dewater excavations as needed.

8.0 SITE GRADING

8.1 General Site Grading

All surface vegetation and unsuitable soils (such as topsoil, organic soils, undocumented fill, soft, loose, or disturbed native soils, and any other inapt materials) should be removed from below foundations, floor slabs, exterior concrete flatwork, and pavement areas. We encountered topsoil on the surface of the site. The topsoil (including soil with roots larger than about ¼ inch in diameter) should be completely removed, even if found to extend deeper, along with any other unsuitable soils that may be encountered. Over-excavations below footings and slabs also may be needed, as discussed in Section 10.0.

Fill placed over large areas, even if only a few feet in depth, can cause consolidation in the underlying native soils resulting in settlement of the fill. Because the site is relatively flat, we anticipate that less than 3 feet of grading fill will be placed. If more than 3 feet of grading fill will be placed above the existing surface (to raise site grades), Earthtec should be notified so that we may provide additional recommendations, if required. Such recommendations will likely include placing the fill several weeks (or possibly more) prior to construction to allow settlement to occur.

