ALPINE CITY PLANNING COMMISSION MEETING

NOTICE is hereby given that the **PLANNING COMMISSION** of Alpine City, UT will hold a **Regular Meeting at Alpine City Hall,** 20 North Main, Alpine, Utah on **Tuesday, June 19, 2018 at 7:00 pm** as follows:

I. GENERAL BUSINESS

A. Welcome and Roll Call: David Fotheringham
B. Prayer/Opening Comments: John Gubler
C. Pledge of Allegiance: By Invitation

II. PUBLIC COMMENT

Any person wishing to comment on any item not on the agenda may address the Planning Commission at this point by stepping to the microphone and giving his or her name and address for the record.

III. ACTION ITEMS

A. Public Hearing – Parking Proposal – Smooth Canyon Park and Lambert Park
Planning Commission will hold a public hearing and make a recommendation to the City Council.

B. Retaining Wall Exception – Michael Pratt
Petitioner is seeking recommendation for an exception to the retaining wall ordinance.

C. Development Code Review – Section 3.32 Retaining Walls
Planning Commission will discuss changes to the ordinance that would make administration easier.

D. Major Subdivision Preliminary Review – The Ridge at Alpine – Paul Kroff
Developer is seeking approval of preliminary plans.

IV. COMMUNICATIONS

V. APPROVAL OF PLANNING COMMISSION MINUTES: May 15, 2018
June 5, 2018

ADJOURN

Chairman David Fotheringham
June 19, 2018

THE PUBLIC IS INVITED TO ATTEND ALL PLANNING COMMISSION MEETINGS. If you need a special accommodation to participate in the meeting, please call the City Recorder's Office at 801-756-6347 ext. 5.

CERTIFICATION OF POSTING. The undersigned duly appointed recorder does hereby certify that the above agenda notice was posted at Alpine City Hall, 20 North Main, Alpine, UT. It was also sent by e-mail to The Daily Herald located in Provo, UT a local newspaper circulated in Alpine, UT. This agenda is also available on the City's web site at www.alpinecity.org and on the Utah Public Meeting Notices website at www.utah.gov/pmn/index.html.

ALPINE PLANNING COMMISSION AGENDA

SUBJECT: **Public Hearing – Parking Proposal – Smooth Canyon Park and Lambert Park**

FOR CONSIDERATION ON: **19 June 2018**

PETITIONER: **Staff**

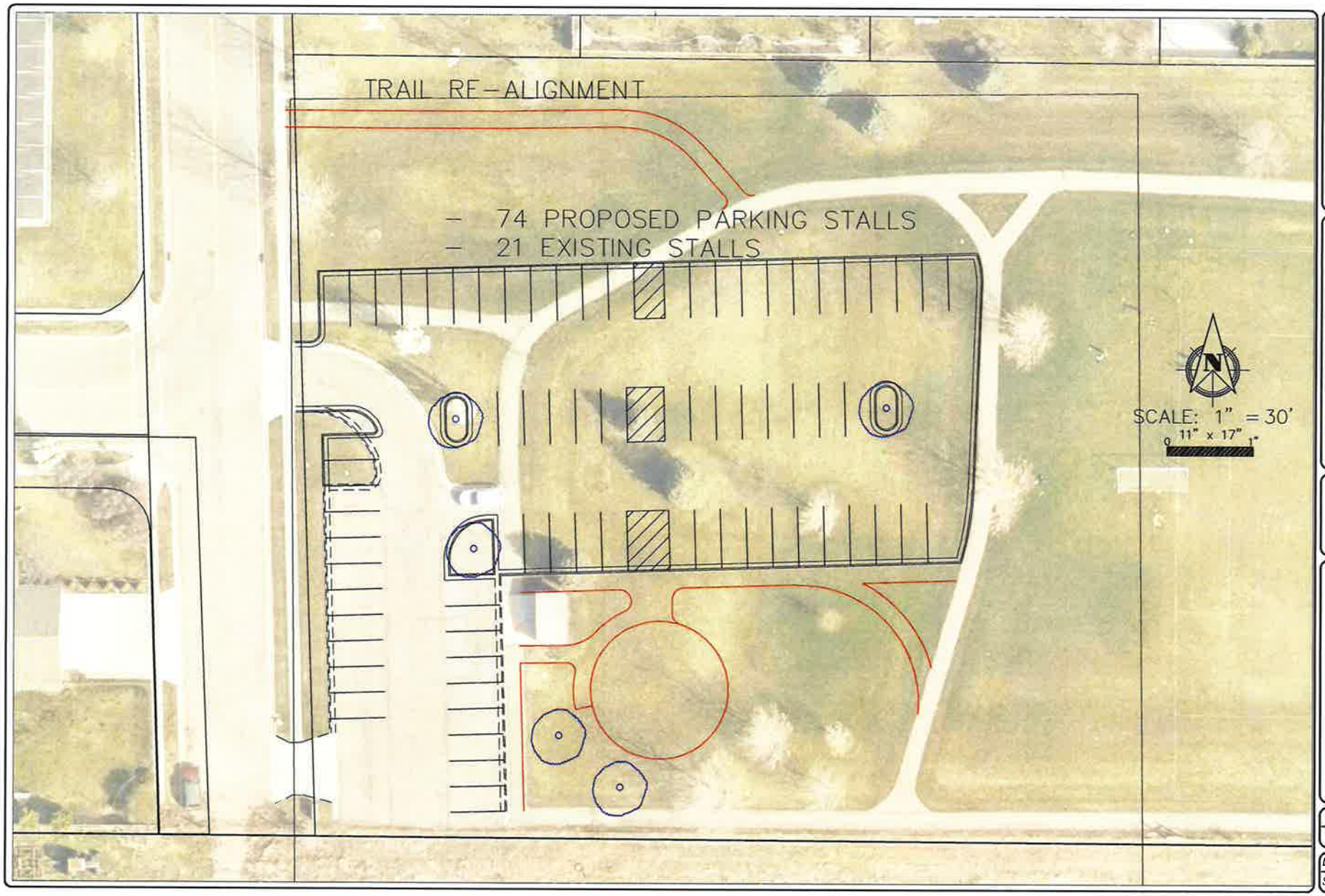
ACTION REQUESTED BY PETITIONER: **Planning Commission to hold public hearing and make recommendation to City Council.**

BACKGROUND INFORMATION:

Staff have recommended parking improvements to Smooth Canyon Park and Lambert Park. City Council has requested that a public hearing be held and that the Planning Commission make a recommendation based on the feedback.

STAFF RECOMMENDATION:

Recommend approval of the proposed parking improvement plans.



REMARKS

1. Revised (7-7-16) Profile Labels for SDMH A2 & SDMH B4

SMOOTH CANYON PARKING
May, 2018
Parking & Playground CONCEPT

7-18

Engineering File Number: –

Drawing: –

Sheet: 1 of 1

REMARKS

1. Revised (1-7-19) Profile Labels for SDMH-03 & SDMH-04

LAMBERT SOUTH PARKING
May, 2018
CONCEPT DESIGN

Engineering File Number: –

Drawing: –

Sheet: 1 of 1

ALPINE PLANNING COMMISSION AGENDA

SUBJECT: **Retaining Wall Exception**

FOR CONSIDERATION ON: **19 June 2018**

PETITIONER: **Michael Pratt**

ACTION REQUESTED BY PETITIONER: **Approve exception for retaining wall.**

BACKGROUND INFORMATION:

The petitioner, Michael Pratt, has submitted a request for an exception to the retaining wall height ordinance (9 feet maximum) for the property located at 663 West Ranch Circle. Plans for the proposed retaining wall show a height of 12 feet.

STAFF RECOMMENDATION:

Recommend approval of the concrete retaining wall.

Memo

To: Alpine City Planning Commission
From: Jed Muhlestein, P.E.
City Engineer
Date: June 6, 2018
Subject: Retaining Wall Exception Request – Pratt Residence
663 West Ranch Circle

Alpine City has received a request for an exception to the maximum height of a single retaining wall, which is nine (9) feet. The building permit is for a concrete retaining wall which shows a height of twelve (12) feet. The following are two excerpts from Article 3.32 of the development code:

> ***3.32.2 EXCEPTIONS FROM ARTICLE 3.32.*** *The City Council may grant an exception from these standards. Prior to the City Council considering the exception, the City Engineer shall submit a written recommendation to the Planning Commission. The recommended exception shall be based on generally accepted engineering practices. The Planning Commission shall review the recommendation and advise the City Council as to whether or not the exception should or should not be granted.*
>
> ***3.32.3 PURPOSE AND INTENT.***
> ***5.*** *Height, Separation and Plantings.*
> 1. *For the purposes of this subsection, the height of a retaining wall is measured as exposed height (H) of wall of an individual tier.*
> 2. *A single retaining wall shall not exceed nine feet in height if exposed or can be seen from the nearest public right-of-way to which it is exposed.*

Engineering has reviewed the permit, visited the site, and recommends approval of the concrete retaining wall based on two items. First, calculations have been submitted for a concrete retaining wall design which show it can be safely constructed to that height. These calculations will be independently reviewed prior to issuing a building permit. Second, the wall will not be seen from the nearest public right of way. Even in the current un-landscaped situation, the wall would be hidden from public view. See attached pictures.

Attached:
- Building Permit site plan
- Views from Ranch Circle (nearest public right of way)
- Article 3.32 – Retaining Walls

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20 North Main • Alpine, Utah 84004
Phone/Fax: (801) 763-9862
E-mail: jed@alpinecity.org

RECEIVED MAY 0 9 2018 18-079A

Reinforced Concrete Retaining Wall

Pratt Residence

Alpine, Utah
2018-05-03

Prepared For:

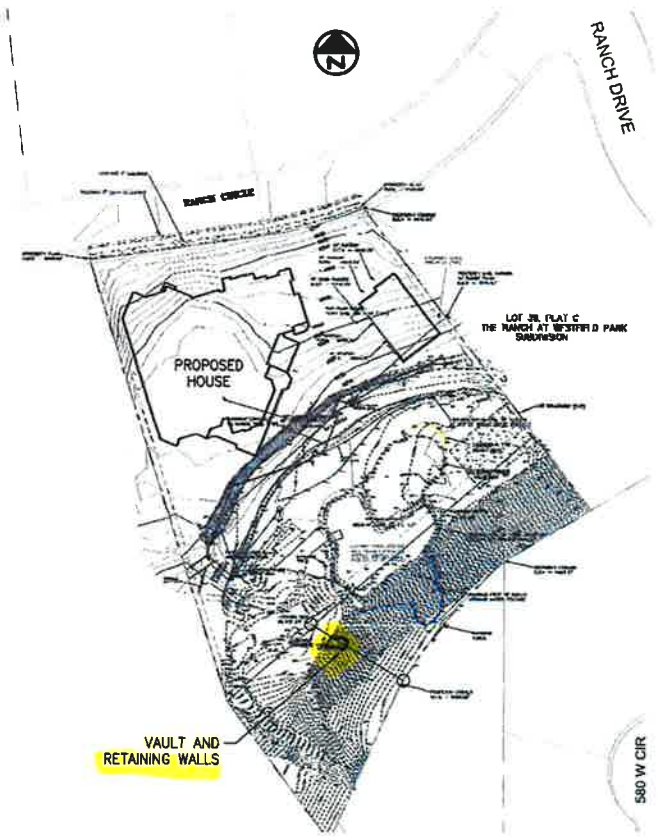
Sunline Landscaping
Contact: Curtis Atkinson
801-201-1141

REGISTERED PROFESSIONAL ENGINEER
#7589454-2202
JAMES DEREK LLOYD
5-8-18
STATE OF UTAH

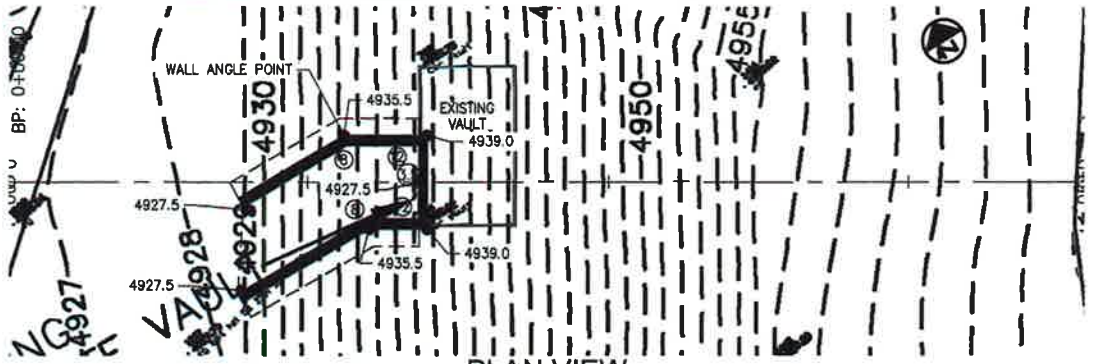
Prepared By:

WILDING
ENGINEERING

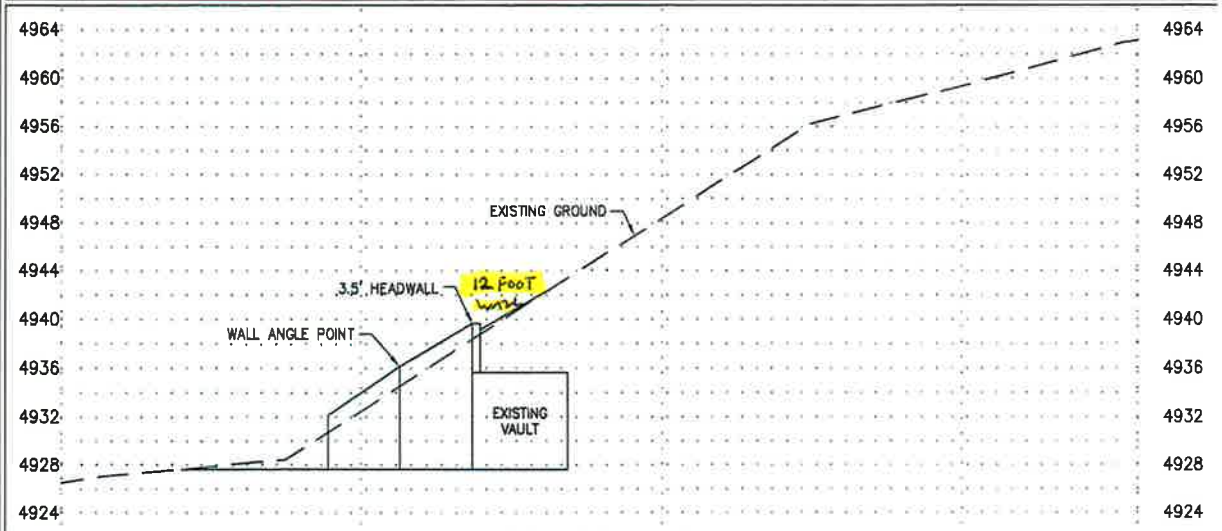
Wilding Engineering, Inc.
14721 South Heritage Crest Way
Bluffdale, UT 84065
Contact: Derek Lloyd
801-553-8112



OVERALL SITE
1"=100'



PLAN VIEW
1"=10'



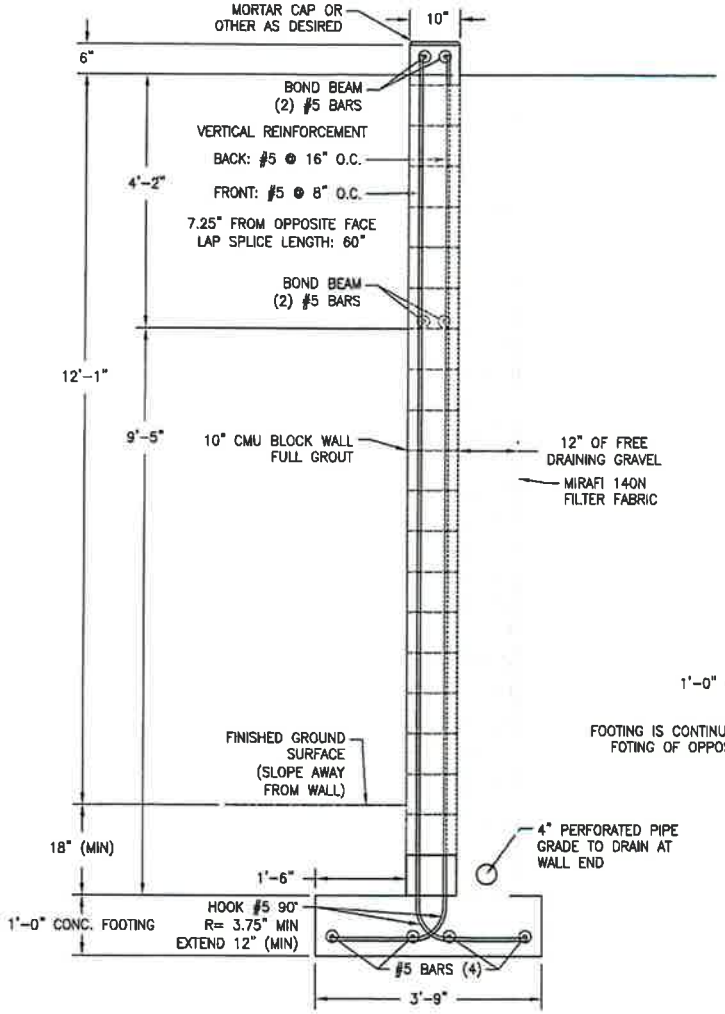
SECTION VIEW
1"=10' (H, V)

REGISTERED PROFESSIONAL ENGINEER
#7589454-2202
JAMES DEREK LLOYD
5-8-18
STATE OF UTAH

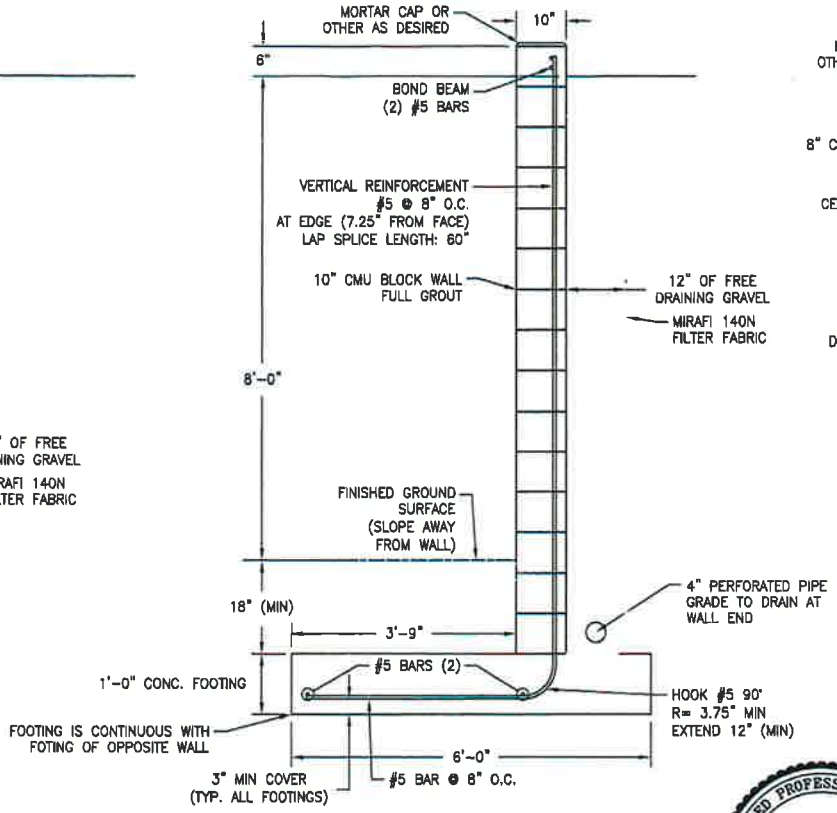
WILDING ENGINEERING, INC
14721 SOUTH HERITAGE CREST WAY
BLUFFDALE, UTAH 84065
(801)553-8112

NO.	REVISION	DATE

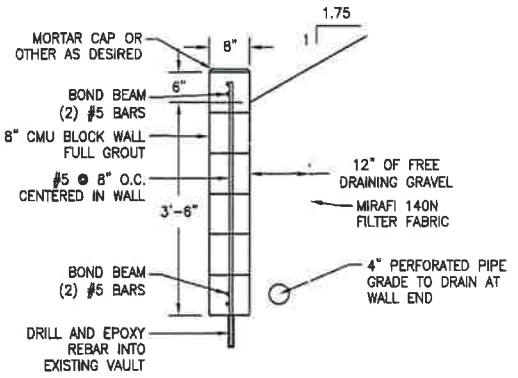
DRAWING TITLE: RETAINING WALLS	PROJECT NAME: PRATT RESIDENCE	DATE: 05/04/2018
		SCALE: AS SHOWN
LOCATION: 663 W RANCH CIR	DRAWN: JDL / CHECKED: MEC	SHEET: D-1
ALPINE, UTAH	FILE NAME: G:\DATA\18096\DWG\18096 BASE.DWG	



12' WALL
SCALE 1/2" = 1'



8' WALL
SCALE 1/2" = 1'



EXISTING VAULT

4' HEADWALL
SCALE 1/2" = 1'

REGISTERED PROFESSIONAL ENGINEER
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5-8-18
STATE OF UTAH

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14721 SOUTH HERITAGE CREST WAY
BLUFFDALE, UTAH 84065
(801)553-6112

NO.	REVISION	DATE

DRAWING TITLE	RETAINING WALLS
PROJECT NAME	PRATT RESIDENCE
DATE	05/04/2018
SCALE	1/2" = 1'
LOCATION	663 W RANCH CIR
	ALPINE, UTAH
DRAWN	JDL
CHECKED	MEC
FILE NAME:	G:\DATA\18096\DWG\18096 BASE.DWG
SHEET	D-2

RETAINING WALL NOTES:

1. REINFORCEMENT: ASTM A 615, GRADE 60, DEFORMED STEEL ROD. PLACE STEEL PER CRSI MANUAL OF STANDARD PRACTICE.
2. CONCRETE: USE CLASS 3,000 PORTLAND CEMENT CONCRETE.
3. CHAMFER ALL EXPOSED CONCRETE EDGES.
4. PROVIDE 30" MINIMUM COVER FROM FINISHED GROUND TO BOTTOM OF FOOTING. STEP FOOTING AS NECESSARY TO MAINTAIN MINIMUM COVER.
5. MINIMUM CONCRETE COVER OVER REINFORCEMENT:
   - 5.1. PROVIDE 3" MIN CONCRETE COVER TO REINFORCEMENT IN CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.
   - 5.2. PROVIDE 2" MIN CONCRETE COVER TO #6 AND LARGER REINFORCEMENT IN CONCRETE EXPOSED TO EARTH OR WEATHER.
   - 5.3. PROVIDE 1.5" MIN CONCRETE COVER TO #5 AND SMALLER REINFORCEMENT IN CONCRETE EXPOSED TO EARTH OR WEATHER.
6. REINFORCEMENT SHALL BE CONTINUOUS THROUGH ANY CHANGES IN ALIGNMENT.
7. CONCRETE MASONRY UNIT (CMU) BLOCK: MEDIUM WEIGHT SOLID GROUTED
8. CMU MORTAR: TYPE M OR TYPE S MORTAR.
9. CMU GROUT: 2000 PSI (COMPRESSIVE STRENGTH AT 28 DAYS.)
10. REINFORCEMENT IN BLOCK TO BE PLACED AT EDGE WITH 2 MIN CLEARANCE TO EARTH AND 1/4" CLEARANCE BETWEEN REBAR AND MASONRY IF USING FINE GROUT OR 1/2" USING COARSE GROUT.
11. NATIVE MATERIAL UNDER FOOTING TO BE DISTURBED MINIMALLY DURING EXCAVATION. SEE SOILS REPORT FOR FILL PLACEMENT AND COMPACTION FOR FOOTINGS BEARING ON FILL MATERIAL.
12. NATIVE MATERIAL TO BE EXCAVATED WITH BENCHES CONSTRUCTED INTO THE SLOPE PRIOR TO PLACEMENT OF FILL.
13. A SHEET DRAIN MAY BE SUBSTITUTED FOR THE WRAPPED GRAVEL DRAIN LOCATED BEHIND THE RETAINING WALL. USE AMERICAN WICK DRAIN SHEET DRAIN AND STRIP DRAIN INSTALLED TO DRAIN TO WEEP HOLES PER MANUFACTURERS DIRECTIONS. OTHER PRODUCTS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
14. INSPECTION SCHEDULE: RETAINING WALLS SHALL BE INSPECTED BY THE ENGINEER OF RECORD AFTER EACH OF THE FOLLOWING STAGES OF CONSTRUCTION ARE COMPLETE:
   - 14.1. SUB-GRADE PREPARATION
   - 14.2. FORMWORK AND REINFORCEMENT PLACEMENT (PRIOR TO CONCRETE POUR.)
   - 14.3. BLOCK AND REINFORCEMENT PLACEMENT (PRIOR TO GROUTING.)
   - 14.4. DRAINAGE SYSTEM PLACEMENT (PRIOR TO BACKFILL.)
   - 14.5. COMPLETION OF WORK.

SITE ADDRESS: 663 W RANCH CIR, ALPINE, UT
Ss: 1.254g
PGA: 0.54g
Kh= 0.27g
BACK FILL SOIL: NATIVE SITE SOILS
127 PCF, EQUIVALENT FLUID PRESSURE (ACTIVE)= 35', F= 0.4
NATIVE SOILS: CLAYEY SAND (SC)
BEARING: 2500 PSF STATIC, 3333 PSF SEISMIC
NO SURCHARGE, NO BACK SLOPE EXCEPT ON HEADWALL

REGISTERED PROFESSIONAL ENGINEER
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5-8-18
STATE OF UTAH

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14721 SOUTH HERITAGE CREST WAY
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NO.	REVISION	DATE

DRAWING TITLE: RETAINING WALLS	PROJECT NAME: PRATT RESIDENCE		DATE: 05/04/2018
			SCALE: NA
LOCATION: 663 W RANCH CIR	DRAWN: JDL	CHECKED: MEC	SHEET: D-3
ALPINE, UTAH	FILE NAME: G:\DATA\18098\DWG\18098 BASE.DWG		

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ARTICLE 3.32 RETAINING WALLS (Ord. No. 2015-07, 06/09/15)

3.32.1 APPLICABILITY. This section applies to all retaining walls as defined in Article 3.1.11.45

3.32.2 EXCEPTIONS FROM ARTICLE 3.32. The City Council may grant an exception from these standards. Prior to the City Council considering the exception, the City Engineer shall submit a written recommendation to the Planning Commission. The recommended exception shall be based on generally accepted engineering practices. The Planning Commission shall review the recommendation and advise the City Council as to whether or not the exception should or should not be granted.

3.32.3 PURPOSE AND INTENT. The purpose of this ordinance and the intent of the City Council in its adoption is to promote the health and safety and general welfare of the present and future inhabitants of Alpine City. The ordinance will accomplish this purpose by:

1. Building Permit Required. Except as otherwise provided in Subsection (2), all retaining walls require a building permit prior to construction or alteration. Permit applications shall be processed and issued in accordance with building permit procedures and applicable provisions of this section. Building permit review fees will be assessed and collected at the time the permit is issued.

2. Building Permit Exemptions. The following do not require a building permit:

    1. Retaining walls less than four feet in exposed height with less than 10H:1V (Horizontal: Vertical) front and back slopes within ten feet of the wall;

    2. Non-tiered retaining walls less than four feet in exposed height with back slopes flatter than or equal to 2H:1V and having front slopes no steeper than or equal to 4H:1V;

    3. Double tiered retaining walls less than three feet in exposed height per wall and which have front slopes and back slopes of each wall no steeper than or
    equal to 10H:1V within ten feet of the walls, 1.5 foot spacing between front face of the upper wall and back edge of the lower wall;

    4. Retaining walls less than 50 square feet in size, less than 4 feet tall.

3. Geologic Hazards. If construction of any retaining wall, which requires a building permit, occurs within sensitive land areas as outlined by Article 3.12, then all analyses required for the design of retaining walls or rock protected slopes shall follow the Sensitive Lands Ordinance, specifically in regards to limits of disturbance and the required geologic hazard and engineering geology reports (3.12.6.4)

4. Engineer Design Required. All retaining walls required to obtain a building permit shall be designed by an engineer licensed by the State of Utah.

5. Height, Separation and Plantings.

    1. For the purposes of this subsection, the height of a retaining wall is measured as exposed height (H) of wall of an individual tier.

    2. A single retaining wall shall not exceed nine feet in height if exposed or can

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be seen from the nearest public right-of-way to which it is exposed.

3. Terracing of retaining walls is permitted where justified by topographic conditions, but the combined height of all walls shall not exceed a height of 18 feet if exposed or can be seen from the nearest public right-of-way or adjacent properties. Walls with a separation of at least 2H (H of largest of 2 walls) from face of wall to face of wall shall be considered as separate walls for analysis purposes and applicability to this ordinance. If walls are within 2H (H of largest of 2 walls), then the combined height of the terrace shall be used for limitation of height.

4. In a terrace of retaining walls, a minimum horizontal separation of H/2 (H of largest of 2 walls) is required as measured from back of lower wall to face of higher wall. If the walls are not viewable from the nearest public right-of-way or adjacent properties, then there is no limitation of height.

5. The view of the nearest public right-of-way or adjacent property shall be verified by the City Official during the review process and prior to permit for construction.

6. For terraces walls viewable from the nearest public right-of-way, the horizontal separation between walls shall be planted with a minimum of five shrubs for every 20 linear feet of planting area. The size of the shrubs shall be less than one-half the width of the terrace. Shrubs shall be watered by drip irrigation to minimize erosion by property owner, not by Alpine City.

6. Submittals. The following documents and calculations prepared by a licensed engineer of the State of Utah shall be submitted with each retaining wall building permit application:

    1. profile drawings if the retaining wall is longer than 50 lineal feet, with the base elevation, exposed base elevation and top of wall labeled at the ends of the wall and every 50 linear feet or change in grade;

    2. cross-sectional drawings including surface grades and structures located in front and behind the retaining wall a distance equivalent to three times the height of the retaining wall, and if the retaining wall is supporting a slope, then the cross section shall include the entire slope plus surface grades and structures within a horizontal distance equivalent to one times the height of slope;

    3. a site plan showing the location of the retaining walls with the base elevation, exposed base elevation and top of wall labeled at the ends of wall and every 50 lineal feet or change in grade;

4. a copy of the geotechnical report used by the design engineer. The geotechnical report shall include requirement of Item 5 below otherwise additional laboratory testing is required in Item 5;

5. material strength parameters used in the design of the retaining wall, substantiated with laboratory testing of the materials as follows:

    a. for soils, this may include, but is not limited to, unit weights, direct shear tests, triaxial shear tests and unconfined compression tests;

    b. if laboratory testing was conducted from off-site but similar soils within a 2000 foot radius of the proposed wall location, the results of the testing with similar soil classification testing needs to be submitted;

    c. minimum laboratory submittal requirements are the unit weight of retained soils, gradation for cohesionless soils, Atterberg limits for cohesive soils, and shear test data;

    d. soil classification testing shall be submitted for all direct shear or triaxial shear tests;

    e. if a Proctor is completed, classification testing shall be submitted with the Proctor result; and,

    f. laboratory testing should be completed in accordance with applicable American Society for Testing and Materials (ASTM) standards;

    g. for segmented block walls, the manufacturer's test data for the wall facing, soil reinforcement, and connection parameters shall be submitted in an appendix.

6. the design engineer shall indicate the design standard used and supply a printout of the input and output of the files in an appendix with factors of safety within the design standard used as follows:

    a. design calculations ensuring stability against overturning, base sliding, excessive foundation settlement, bearing capacity, internal shear and global stability;

    b. calculations shall include analysis under static and seismic loads, which shall be based on the PGA as determined from probabilistic analysis for the maximum credible earthquake (MCE), with spectral acceleration factored for site conditions in accordance with the current IBC;

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c. Mechanically Stabilized Earth (MSE) walls shall be designed in general accordance with current FHWA or AASHTO standards for design of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes or the current National Concrete Masonry Association (NCMA) Design Manual for Segmental Retaining Walls;

d. rock walls shall be designed in general accordance with 2006 FHWA-CFL/TD-06-006 "Rockery Design and Construction Guidelines," or current FHWA standard of care and;

e. concrete cantilever walls shall be designed in general accordance with specifications provided in current American Concrete Institute or American Society of Civil Engineers standards and specifications.

7. a global stability analysis with minimum factors of safety of at least 1.50 under static conditions and at least 1.10 under seismic loading conditions as follows:

   a. factors of safety results shall be presented to the nearest hundredth;

   b. seismic loads shall be based on the PGA as determined from probabilistic analysis for the maximum credible earthquake (MCE), with spectral acceleration factored for site conditions in accordance with the current IBC;

   c. the cross-sectional view of each analysis shall be included, and the printout of the input and output files placed in an appendix; and,

   d. the global stability analysis may be omitted for concrete cantilever retaining walls that extend to frost depth, that are less than nine feet in exposed height, absent of supporting structures within 30 feet of the top of the wall, and which have less than 10H:1V front and back slopes within 30 feet of the retaining structure.

8. a drainage design, including a free draining gravel layer wrapped in filter fabric located behind the retaining wall with drain pipe day-lighting to a proper outlet or weep holes placed through the base of the wall, however:

   a. a synthetic drainage composite may be used behind MSE walls if a materials specific shear testing is completed to determined friction properties between the backfill and synthetic drainage composite;

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b. a synthetic drainage composite is not allowed behind rock walls;

c. a synthetic drainage composite may be used behind the stem of the concrete cantilever walls;

d. if the engineering can substantiate proper filtering between the retained soils and the drain rock, then the filter fabric may be omitted, and;

e. if the retaining wall is designed to withstand hydrostatic pressures or the retained soils or backfill is free-draining as substantiated through appropriate testing, then drainage material may be omitted from the design.

9. the design engineer's acknowledgement that the site is suitable for the retaining wall;

10. an inspection frequency schedule.

7. Preconstruction Meeting. At least 48 hours prior to the construction of any approved retaining wall, a preconstruction meeting shall be held as directed by the Building Official. The meeting shall include the Building Official, the design engineer, the contractor and the project or property owner. The preconstruction meeting can be waived at the discretion of the Building Official.

8. Inspections and Final Report. The design engineer shall make all inspections needed during construction. A final report from the engineer shall state that the retaining wall was built according to the submitted design. The report shall include detail of the inspections of the wall in accordance with the inspection frequency schedule. All pertinent compaction testing shall also be included with the final report.

9. Maintenance. All retaining walls shall be maintained in a structurally safe and sound condition and in good repair.

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ALPINE PLANNING COMMISSION AGENDA

SUBJECT: **Development Code Review – Section 3.32 Retaining Walls**

FOR CONSIDERATION ON: **19 June 2018**

PETITIONER: **Staff**

ACTION REQUESTED BY PETITIONER: **Discuss proposed changes to the retaining wall ordinance.**

BACKGROUND INFORMATION:

Staff have reviewed the retaining wall ordinance and made recommendations to change the ordinance so that more closely reflects the original intent of the ordinance.

STAFF RECOMMENDATION:

Review and discuss proposed changes to Article 3.32 of the Development Code.

ARTICLE 3.32 RETAINING WALLS (Ord. No. 2015-07, 06/09/15)

3.32.1 APPLICABILITY. This section applies to all retaining walls as defined in Article 3.1.11.45

3.32.2 EXCEPTIONS FROM ARTICLE 3.32. The City Council may grant an exception from these standards. Prior to the City Council considering the exception, the City Engineer shall submit a written recommendation to the Planning Commission. The recommended exception shall be based on generally accepted engineering practices. The Planning Commission shall review the recommendation and advise the City Council as to whether or not the exception should or should not be granted.

3.32.3 PURPOSE AND INTENT. The purpose of this ordinance and the intent of the City Council in its adoption is to promote the health and safety and general welfare of the present and future inhabitants of Alpine City. The ordinance will accomplish this purpose by:

1. Building Permit Required. Except as otherwise provided in Subsection (2), all retaining walls require a building permit prior to construction or alteration. Permit applications shall be processed and issued in accordance with building permit procedures and applicable provisions of this section. Building permit review fees will be assessed and collected at the time the permit is issued.

2. Building Permit Exemptions. The following do not require a building permit:

    1. Retaining walls less than four feet in exposed height with less than 10H:1V (Horizontal: Vertical) front and back slopes within ten feet of the wall;

    2. Non-tiered retaining walls less than four feet in exposed height with back slopes flatter than or equal to 2H:1V and having front slopes no steeper than or equal to 4H:1V;

    3. Double tiered retaining walls less than ~~three~~ four feet in exposed height per wall and which have front slopes and back slopes of each wall no steeper than or equal to 10H:1V within ten feet of the walls, ~~1.5~~2 foot spacing between front face of the upper wall and back edge of the lower wall;

    4. Retaining walls less than 50 square feet in size, less than 4 feet tall.

3. Geologic Hazards. If construction of any retaining wall, which requires a building permit, occurs within sensitive land areas as outlined by Article 3.12, then all analyses required for the design of retaining walls or rock protected slopes shall follow the Sensitive Lands Ordinance, specifically in regards to limits of disturbance and the required geologic hazard and engineering geology reports (3.12.6.4)

4. Engineer Design Required. All retaining walls required to obtain a building permit shall be designed by an engineer licensed by the State of Utah.

5. Height, Separation and Plantings.

    1. For the purposes of this subsection, the height of a retaining wall is measured as exposed height (H) of wall of an individual tier.
    2. A single retaining wall shall not exceed nine feet in exposed height if ~~exposed or~~it can be seen from the nearest public right-of-way or neighboring ~~to~~properties to which it is exposed.
    3. Terracing of retaining walls is permitted where justified by topographic conditions, but the combined height of all walls shall not exceed a height of 18 feet if exposed or can be seen from the nearest public right-of-way or adjacent

properties. Walls with a separation of at least 2H (H of largest of 2 walls) from face of wall to face of wall shall be considered as separate walls for analysis purposes and applicability to this ordinance. If walls are within 2H (H of largest of 2 walls), then the combined height of the terrace shall be used for limitation of height.

4. In a terrace of retaining walls, a minimum horizontal separation of H/2 (H of largest of 2 walls) is required as measured from back of lower wall to face of higher wall. If the walls are not viewable from the nearest public right-of-way or adjacent properties, then there is no limitation of height.

5. The view of the nearest public right-of-way or adjacent property shall be verified by the City Official during the review process and prior to permit for construction.

6. For terraces walls viewable from the nearest public right-of-way, the horizontal separation between walls shall be planted with a minimum of five shrubs for every 20 linear feet of planting area. The size of the shrubs shall be less than one-half the width of the terrace. Shrubs shall be watered by drip irrigation to minimize erosion by property owner, not by Alpine City.

6. Submittals. The following documents and calculations prepared by a licensed engineer of the State of Utah shall be submitted with each retaining wall building permit application:

    1. profile drawings if the retaining wall is longer than 50 lineal feet, with the base elevation, exposed base elevation and top of wall labeled at the ends of the wall and every 50 linear feet or change in grade;

    2. cross-sectional drawings including surface grades and structures located in front and behind the retaining wall a distance equivalent to three times the height of the retaining wall, and if the retaining wall is supporting a slope, then the cross section shall include the entire slope plus surface grades and structures within a horizontal distance equivalent to one times the height of slope;

    3. a site plan showing the location of the retaining walls with the base elevation, exposed base elevation and top of wall labeled at the ends of wall and every 50 lineal feet or change in grade;

    4. a copy of the geotechnical report used by the design engineer. The geotechnical report shall include requirement of Item 5 below otherwise additional laboratory testing is required in Item 5;

    5. material strength parameters used in the design of the retaining wall, substantiated with laboratory testing of the materials as follows:

        a. for soils, this may include, but is not limited to, unit weights, direct shear tests, triaxial shear tests and unconfined compression tests;

        b. if laboratory testing was conducted from off-site but similar soils within a 2000 foot radius of the proposed wall location, the results of the testing with similar soil classification testing needs to be submitted;

c. minimum laboratory submittal requirements are the unit weight of retained soils, gradation for cohesionless soils, Atterberg limits for cohesive soils, and shear test data;

d. soil classification testing shall be submitted for all direct shear or triaxial shear tests;

e. if a Proctor is completed, classification testing shall be submitted with the Proctor result; and,

f. laboratory testing should be completed in accordance with applicable American Society for Testing and Materials (ASTM) standards;

g. for segmented block walls, the manufacturer's test data for the wall facing, soil reinforcement, and connection parameters shall be submitted in an appendix.

6. the design engineer shall indicate the design standard used and supply a printout of the input and output of the files in an appendix with factors of safety within the design standard used as follows:

   a. design calculations ensuring stability against overturning, base sliding, excessive foundation settlement, bearing capacity, internal shear and global stability;

   b. calculations shall include analysis under static and seismic loads, which shall be based on the PGA as determined from probabilistic analysis for the maximum credible earthquake (MCE), with spectral acceleration factored for site conditions in accordance with the current IBC;

   c. Mechanically Stabilized Earth (MSE) walls shall be designed in general accordance with current FHWA or AASHTO standards for design of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes or the current National Concrete Masonry Association (NCMA) Design Manual for Segmental Retaining Walls;

   d. rock walls shall be designed in general accordance with 2006 FHWA-CFL/TD-06-006 "Rockery Design and Construction Guidelines," or current FHWA standard of care and;

   e. concrete cantilever walls shall be designed in general accordance with specifications provided in current American Concrete Institute or American Society of Civil Engineers standards and specifications.

7. a global stability analysis with minimum factors of safety of at least 1.50 under static conditions and at least 1.10 under seismic loading conditions as follows:

   a. factors of safety results shall be presented to the nearest hundredth;

   b. seismic loads shall be based on the PGA as determined from probabilistic analysis for the maximum credible earthquake (MCE), with spectral acceleration factored for site conditions in accordance with the current IBC;

   c. the cross-sectional view of each analysis shall be included, and the printout of the input and output files placed in an appendix; and,

d. the global stability analysis may be omitted for concrete cantilever retaining walls that extend to frost depth, that are less than nine feet in exposed height, absent of supporting structures within 30 feet of the top of the wall, and which have less than 10H:1V front and back slopes within 30 feet of the retaining structure.

8. a drainage design, including a free draining gravel layer wrapped in filter fabric located behind the retaining wall with drain pipe day-lighting to a proper outlet or weep holes placed through the base of the wall, however:

    a. a synthetic drainage composite may be used behind MSE walls if a materials specific shear testing is completed to determined friction properties between the backfill and synthetic drainage composite;

    b. a synthetic drainage composite is not allowed behind rock walls;

    c. a synthetic drainage composite may be used behind the stem of the concrete cantilever walls;

    d. if the engineering can substantiate proper filtering between the retained soils and the drain rock, then the filter fabric may be omitted, and;

    e. if the retaining wall is designed to withstand hydrostatic pressures or the retained soils or backfill is free-draining as substantiated through appropriate testing, then drainage material may be omitted from the design.

9. the design engineer's acknowledgement that the site is suitable for the retaining wall;

10. an inspection frequency schedule.

7. Preconstruction Meeting. At least 48 hours prior to the construction of any approved retaining wall, a preconstruction meeting shall be held as directed by the Building Official. The meeting shall include the Building Official, the design engineer, the contractor and the project or property owner. The preconstruction meeting can be waived at the discretion of the Building Official.

8. Inspections and Final Report. The design engineer shall make all inspections needed during construction. A final report from the engineer shall state that the retaining wall was built according to the submitted design. The report shall include detail of the inspections of the wall in accordance with the inspection frequency schedule. All pertinent compaction testing shall also be included with the final report.

9. Maintenance. All retaining walls shall be maintained in a structurally safe and sound condition and in good repair.

ALPINE PLANNING COMMISSION AGENDA

SUBJECT: **Major Subdivision Revised Concept and Preliminary Plan Review – The Ridge at Alpine PRD**

FOR CONSIDERATION ON: **19 June 2018**

PETITIONER: **Paul Kroff**

ACTION REQUESTED BY PETITIONER: **Approve revised concept and preliminary plans.**

BACKGROUND INFORMATION:

The subdivision includes a total of 72 lots ranging in size from 0.46 acres to 3.08 acres on a site that is approximately 189.5 acres. It is proposed to include approximately 127.3 acres of private open space. Approximately 68.6 acres of that open space is already recorded as a conservation easement. It is also proposed to include approximately 2 acres of public open space that will be used as a soccer park. The site is located in the CR-40,000 zone.

STAFF RECOMMENDATION:

Review Revised Concept and Preliminary Plans for The Ridge at Alpine PRD Subdivision.

Date: June 15, 2018

By: Austin Roy AR
City Planner

Subject: Planning and Zoning Review
The Ridge at Alpine PRD Preliminary Plan
Approximately 1100 North Grove Drive – 72 lots on 189.5 acres

Background

The proposed Alpine Ridge Planned Residential Development (PRD) consists of two parts; recently annexed property (Oberre Annexation) and property that was already located within Alpine City. This distinction needs to be made due to a development agreement between the City and the developer which will affect the lots that were part of the Oberre Annexation. Lots that were already located within Alpine City limits were accepted to be developed as a PRD by the City Council on September 13, 2016 provided that the open space was designated as a soccer field with the gradation and preparation of the park to be the responsibility of the developer in the first phase, and apply the wording of the Development Agreement for the Oberee annexation relating to lot size to this property.

The subdivision includes a total of 72 lots ranging in size from 0.46 acres to 3.08 acres on a site that is approximately 189.5 acres. It is proposed to include approximately 127.3 acres of private open space. Approximately 68.6 acres of that open space is already recorded as a conservation easement. It is also proposed to include 2 acres of public open space that will be used as a soccer park. The site is located in the CR-40,000 zone.

PART 1 – OBERRE ANNEXATION (60 LOTS)

Development Agreement

178.9 acres of the property was annexed into Alpine City and a development agreement (attached) was executed between the City and the Developer. The details of the agreement are unique to this development and may not be consistent with typical subdivision requirements.

Lot Area and Width Requirements

The Development Agreement (DA) limits the number of lots to be developed on the property. The Developer shall use the base density for the CR-40,000 zone with no bonus density awarded for any public or private open space. In addition, the existing conservation easement on the property will not be included in calculating the base density for the development (DA 3.2). The total number of lots allowed within the annexed area is 60 lots. The developer shows no more than 60 of the 72 lots within the annexed area. This is consistent with the terms of the agreement.

The DA also limits the size of the lots. No more than 20% of the lots to be developed shall be less than 30,000 square feet in area, with no lot being smaller than 20,000 square feet in area (DA 3.3). No lot is shown to be less than 20,000 square feet and 6 lots or 8% of the annexed area are less than 30,000 square feet. The size of the proposed lots is consistent with the terms of the development agreement.

Each lot shall abut upon and have direct access to an adjacent public street. The width of each lot shall be not less than 90 feet (as measured along a straight line connecting each side lot line at a point 30 feet back from the front lot line). The length of the front lot line abutting the City street shall be no less than 60 feet (Section 3.9.7.6). Each proposed lot appears to meet the requirements.

PART 2 – OTHER PROPERTY NOT OBERRE ANNEXATION (12 LOTS)

Planned Residential Development (PRD) Determination

The 10.6-acre area of the development that is not a part of the development agreement is proposed to be developed as a PRD. The Planning Commission made a recommendation to the City Council and the PRD proposal was accepted by the City Council on September 13, 2016 provided that open space be designated as a soccer field with the gradation and preparation of the park to be the responsibility of the developer in the first phase, and apply the wording of the Oberre Annexation Development Agreement relating to lot size to this property.

It is proposed that **2 acres be used as a public soccer park**. The proposed field is designed for youth groups ages 9 and under (U9), which is smaller an adult field. Open space has been proposed as an incentive for receiving approval for being developed as a PRD and having smaller lots in this area of the development.

Lot Area and Width Requirements

Since the City Council has required that the DA language apply to the area outside of the Oberre Annexation if it is developed as a PRD, the development as a whole will need to have no more than 20% of the lots less than 30,000 square feet and no lot less than 20,000 square feet. The plan shows 7 more lots outside of the Oberee Annexation that are less than 30,000 square feet making a total of 13 lots for the entire development. That is 18% of the development which is consistent with the language of the DA.

The width of each lot shall be not less than 90 feet (as measured along a straight line connecting each side lot line at a point 30 feet back from the front lot line). The length of the front lot line abutting the City street shall be no less than 60 feet (Section 3.9.7.6). Each proposed lot appears to meet the width requirements.

PART 3 – GENERAL REMARKS (ENTIRE SUBDIVISION)

Revised Concept

The concept plan for The Ridge at Alpine has been revised since it was approved with conditions by the Planning Commission on December 6, 2016. The revised concept plan requires Planning Commission approval. Changes to the concept plan include:

1) Lot 72 private lane has been altered.
2) Savannah Circle layout and design changed.
3) Catherine Way connection to Grove Drive changed.
4) Change to lot lines and lot size for lots 52 and 53 (old 54).
5) Lots 46 and 48 (old 60 and 69) divided to create lot 47.
6) Alignment of easterly hiking/mountain bike trail has been altered.
7) Layout of Zachary Way has been slightly altered.
8) Trailhead parking has been added to the bottom of lot 72.
9) Parking and restroom have been added to the proposed soccer park.

Public Trails

The proposed subdivision will include public trails. The **plans currently show two trails**: one located on the western property boundary, and the other located east of the ridge line in the conservation easement. The alignment of the first trail (westerly trail) has not been altered since the approved concept. The alignment of the second changed slightly from the original approved concept, most notably the southern end of the trail.

> *3.17.9.1*
> *When a proposed development includes a trail, trailhead or any segment of a trail as shown on the Trail Master Plan...the building or subdivision plans and plats shall incorporate such trails or trailhead, and they shall be built by the developer.*

The trail committee has recommended alternate alignments for the trails proposed by the developer. As of the time of writing this letter the developer is working with the trail committee to find an agreed upon trail alignment that will be updated prior to final plat submission. See attachments.

Road Locations

The Planning Commission had a concern with the location of the roads on the original concept plan, specifically the proximity of an exit to the Russon property. This road has not changed since.

Parking

At concept, it was discussed that the developer needed to add parking for both the proposed

trailhead and soccer field. The revised concept now shows 13 off-street parking stalls for the trailhead (located at the base of lot 72 in Savannah Circle) and 25 off-street parking stalls for the soccer field. The developer has proposed that the trailhead off-street parking be done in gravel, and the soccer field parking be paved asphalt. The preliminary plans show no light in the parking lot for the soccer field; a light is required per ordinance.

The US Soccer Foundation recommends a minimum of 45 parking per field (see attachment from the official Soccer Field Handbook). As for trailhead parking, the Trail Committee is advising at least 15 off-street parking stalls be added based on anticipated use of the proposed trailhead.

Preliminary plans do not show any screening for the trailhead or soccer field parking lots. The sides and rear of any parking lot that adjoins a resident shall be required to be screened by solid privacy fence or masonry wall.

Staff recommends that off-street parking be sufficient to meet the anticipated use of the soccer field and trailhead, that lighting be added to the soccer field parking, and that screening be added between the parking lots and adjoining residential properties.

Name of Subdivision

At concept there were concerns about the name of the subdivision (Alpine Ridge), but the name has since changed (The Ridge at Alpine) and this is no longer a concern.

Lot 72

There are several concerns with "lot 72" of the proposed plan, including preservation of open space, and development clusters. Engineering and Fire concerns are addressed in separate letters.

Section 3.9.1.D of the PRD ordinance states that the proposed project must demonstrate that it will "preserve open space to meet the recreational, scenic, and public service needs." In addition, the dwelling cluster requirements (section 3.9.6.1) states that "**All lots shall be located within a designated development cluster**. Each cluster shall contain no less than three (3) separate lots." And "Where a project contains land located within and outside the Sensitive Land Overlay Zone, development clusters will **be located outside the Sensitive Land Overlay Zone, to the maximum extent possible.**" The consensus staff interpretation of the ordinance is that "lot 72" would not be consistent with the scenic intent and dwelling cluster requirements of a Planned Residential Development. Due to the above concerns it is recommended that "lot 72" be eliminated or modified to meet the PRD ordinance.

RECOMMENDATION

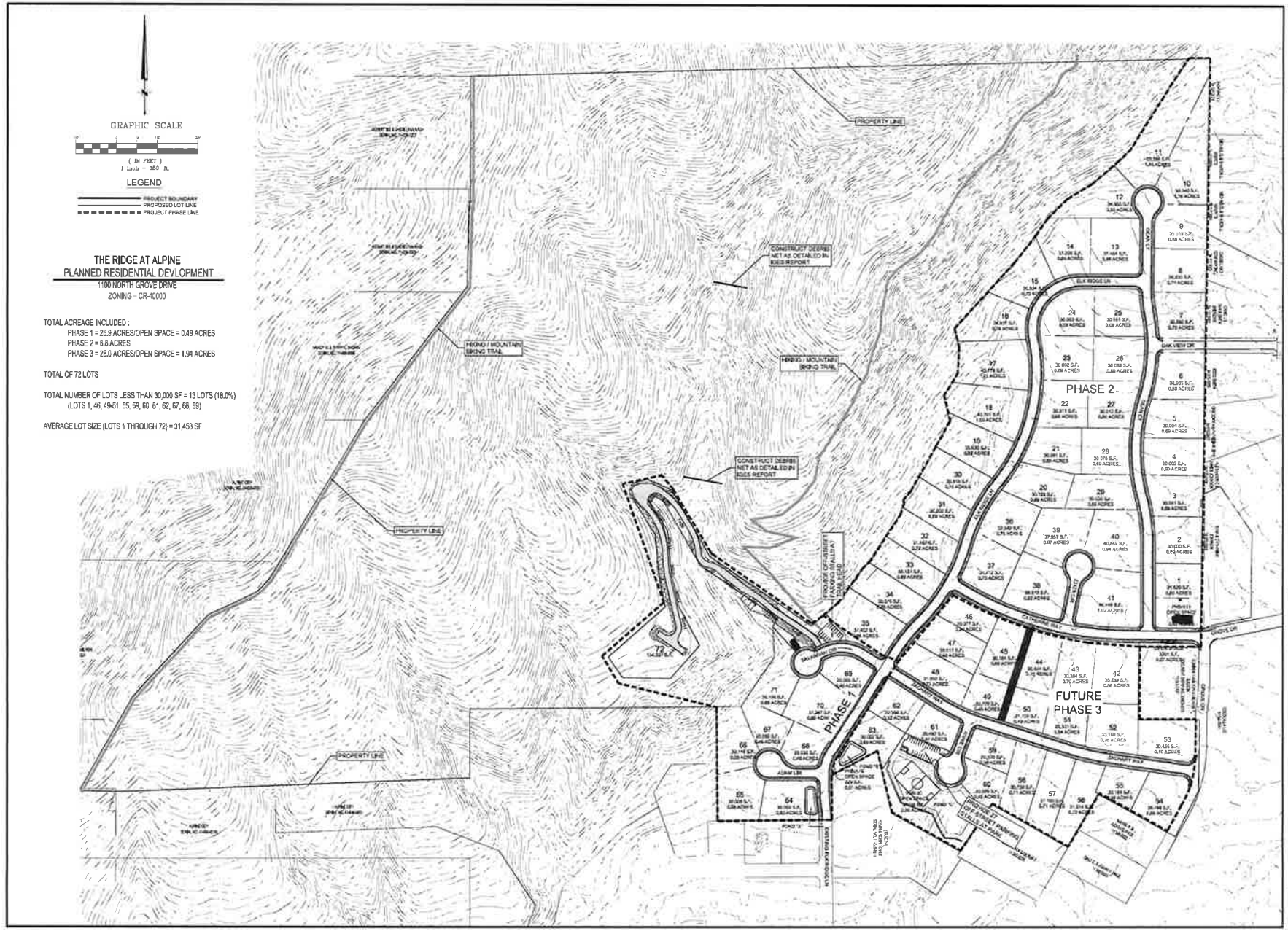
The Planning and Zoning Department recommends that the proposed subdivision concept plan be approved with the following conditions:

- The Developer eliminate or modify "Lot 72" to meet the scenic intent and dwelling cluster requirements of a PRD.
- Developer provide required lighting for soccer field parking.

- Developer provide required screening (solid privacy fence or masonry wall) between the
- The Developer address and resolve parking concerns for the trailhead and soccer field.
- The Developer implement the proposed trail alignment as recommended by the Trail Committee.

Attachments:

- Approved Concept – The Ridge at Alpine (Old)
- Revised Concept – The Ridge at Alpine (Proposed)
- Development Agreement
- Trail Master Plan
- USSF Soccer Field Handbook – Parking
- Trail Committee Alignment exhibits



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CONCEPTUAL PLAN
THE RIDGE AT ALPINE
PLANNED RESIDENTIAL DEVELOPMENT
PREPARED FOR: PAUL KROFF

SHEET
C3.1

Date: June 14, 2018

By: Jed Muhlestein, P.E.
City Engineer

Subject: The Ridge at Alpine – ENGINEER'S PRELIMINARY REVIEW
72 Lots on 189.5 Acres, CR 40,000 Zone

This is the engineering review for The Ridge at Alpine preliminary subdivision plans. A separate Planning Review will also be completed. The proposed development consists of 72 lots on 189.5 acres. The development is located in the CR 40,000 zone, west of the Cove subdivision and north east of Heritage Hills Plat A. A map was prepared showing the preliminary plan overlaid on existing city infrastructure, it is attached for reference.

Street System

Alpine Cove Road Connection

At concept it was mentioned that a connection to Alpine Cove Drive would be made. The plans show this connection but with no curb and gutter, which match the current conditions in the Cove. The City does not have a typical cross section without curb and gutter but in this situation, Staff would be in favor of an exception. Due to the "built-out" nature of the Cove, where landscaping exists and encroaches in the right of way throughout the development, Staff does not think upgrading the roads to the City standard with curb, gutter, sidewalk, and park strips will be feasible in the foreseeable future. Because of this, **Staff would recommend an exception to the City's road standards on Oak Drive as proposed.** The developer would be responsible for construction of Oak Drive on their property, the City would be responsible for the offsite costs to make the connection.

Design Standards

The street system appears to be in compliance with the street master plan, which does not show collector or arterial roads on/through the property. The typical residential street, having 30 feet of pavement and a 54-foot right of way, is shown throughout the development.

The cul-de-sacs appear to be dimensioned per code and overall road design appears to meet ordinance. The standard road cross section is shown everywhere besides the Oak Drive stub road as mentioned earlier.

Frontage improvements along Grove Drive are discussed in the development agreement (attached). The road design includes the design and improvement of the intersection by the

Russon's residence. Grove Drive improvements are discussed in section 5.4 of the development agreement. The intersection of Catherine Way and Grove is intended to be a 3-way stop. The plans show curb, gutter, and sidewalk and have been redlined to show street striping and signage to reflect a 3-way stop.

Utilities

Sewer System

The upper portion of the property can gravity flow to an 8-inch sewer main located in Grove Drive. Parts of the south westerly side of the development can gravity flow to an existing 8-inch main in Elk Ridge Drive. The lower middle section of the development (lots 49-51, 56-61, soccer bathroom) is shown to use a low pressurized sewer system. The sewage for these lots will be required to be pumped to the nearest gravity sewer main, which is located in Zachary Way. The sewer master plan showed these lots being served via a gravity sewer main that ran southward, offsite through private property, and connected back to Elk Ridge Lane. Negotiations with the private property owner for a sewer alignment failed and the City Council voted for the use of a pumped system for these lots. New laterals are shown for each lot. There are existing buildings that have sewer systems which must be removed or capped in place. This would be a condition of final approval for the appropriate phase of the development.

Pressurized Irrigation System

Horrocks Engineers has modeled the site and recommends a 12-inch irrigation main to be installed from Grove Drive to the intersection of Elk Ridge and East View Lane. This is a master planned improvement and is larger than needed for the subdivision but benefits the city as a whole. The minimum required mainline size in residential roads is a 6-inch line. The city would be responsible for and use impact fees to pay the cost of upsizing this mainline to 12-inch. The 12-inch line would need extended to East View Lane as shown on the plans. The remainder of the subdivision would use 6-inch lines for main roads including the northern most cul-de-sac and 4-inch lines for the minor cul-de-sacs. Connection to the lines in Grove Drive and Elk Ridge is shown on the plans.

Source of water is an ongoing problem in the high zone, where the development is proposed. The development agreement discusses the responsibility of the developer to install a variable speed pump at the Fort Creek booster station which could be dedicated to pumping water to this zone from the low zone. It was mentioned at Concept that the design of this system improvement should be submitted with the Preliminary Application and the pumps should be installed along with the first phase of development. Since Concept there have been projects discussed that may or may not affect the need for these pumps; namely a new well in the high zone and pressurized irrigation meters for the entire city. **Prior to Final Approval, the Developer needs to work with Staff regarding the specifics of what would be required for this development agreement item. The City Council would need to approve the result of those discussions.**

New 1-inch laterals are shown to be installed for each new lot except Lot 72. The building pad for Lot 72 sits above the maximum elevation to which the system can serve and

would therefore be watered with culinary water only.

There are two existing pressurized irrigation laterals that currently serve the property. Neither would be useful for the proposed design and are therefore required to be cut and capped at the main as shown on the plans.

Culinary Water System

The subdivision is very close to the 5,350-foot elevation, which is the highest elevation the existing water system can serve and still provide the minimum 40 psi required by ordinance. The culinary water master plan calls for a new 10-inch main to be installed from the Grove tank to the 90-degree bend in Grove Drive that would provide minimum fire flows to the area. The development agreement specifies it is the responsibility of the developer to bring offsite utilities to the development (section 4.2.1). Discussions have indicated that the size of homes desired in the upper portion of the development may require a larger line to meet the fire protection demands. The developer has elected to install a 16-inch line instead of the 10-inch, which increases fire flows to 2,750 gpm. With 2,750 gpm available fire flow, the maximum sized home to be built without the need for fire sprinklers or alternate construction materials would be 11,300 square feet based on the International Fire Code.

The fire flow for this development was dependent upon the completion of the water system improvements in Three Falls and Fort Canyon Road. These improvements are complete and in operation.

1-inch laterals with ¾-inch meters are required, and shown, for each new lot.

The Fire Chief has reviewed and approved all but the access to Lot 72 on the plans (discussed below).

Storm Water Drainage System

The storm water system design and drainage report has been submitted, reviewed, and approved with some redline comments. It is attached. There are four main topics to cover concerning storm water.

1. School House Springs Drainage and Existing Irrigation Ditches.

   The school house springs drainage enters Alpine City on the top west side of Alpine Cove. From there it travels southward until it enters the Zolman property. Section 4.7.19 of the development code requires existing ditches to be piped. A 30-inch pipe is proposed to capture this drainage and route it through the property.

   The Northfield Ditch also runs through the property. This ditch has been abandoned and therefore will not be required to be piped through the property. **The Developer will be required to weld a metal plate at the upstream head gates to ensure water will not enter the abandoned ditch.**

2. Onsite Drainage.

   Onsite drainage consists of a piped system to capture and route water to three different detention basins. Each basin is designed for the 100-yr storm event which releases water to the existing drainages in the area. On Catherine Way there is a low point in the road which would cause flooding problems for events greater than a 10-

year storm. Because of this a drainage swale is proposed between lots 44, 45 and 49, 50. The swale would adequately route larger storm event flows to the pond south of Annie Circle without causing a flooding risk for the nearby homes. This swale should remain open, no fences allowed. Notes to be placed on Final Plat.

3. Hillside/Offsite Drainage.

   The geotechnical report highlighted the issue of debris flows that would enter the development from the west side in the event of post fire flows or heavy rainfall events. The Developer contracted with IGES to design debris flow nets to capture these flows and mitigate the potential problem. The nets are designed to capture the debris, water would be allowed to pass through the nets and continue down the drainage. The water that passes the nets would follow Savannah Cir, Elk Ridge Lane, Zachary Way, and Annie Circle to make its was to the detention pond. Calculations have been done to show that the homes along this route would not be flooded in the event of a post fire situation if they were required to build at least 1.75 feet above the curb. A note will be placed on the final plat for the appropriate phases and checked prior to Final Approval for this requirement. The Drainage Reports and IGES design for debris flow nets are attached.

4. Low Impact Development.

   March 1, 2016, the State of Utah implemented into the General MS4 Permit (Small Municipal Separate Storm Sewer Systems) the requirement of all developments to evaluate Low Impact Development (aka - LID) for their site. LID is a measure of handling storm water and improving water quality. LID emphasizes conservation and the use of on-site natural features to protect water quality. There are many ways to meet the LID requirement. LID can be met by the use of drainage swales, rainwater harvesting, curb cuts to direct water to smaller local basins, and so on. The developer shows in the storm water calculations that LID will be implemented at the building permit level with each new lot retaining the 90th percentile storm, which equates to about a 2-year, 1-hr rainfall event for Alpine City. This is something Alpine is doing for all new homes within the city as required by the State. This is not done just as a measure of protecting water quality, but also protecting against runoff from one property to another.

Geotechnical / Hazard Reports

Geotechnical Report

The proposed development falls within the Geologic Hazards Overlay Zone as well as the Urban/Wildland Interface. As with any development, the developer would be required to obtain and submit a Geologic Hazards Report for the property. The developer has had such a report prepared and it is included herewith. Several reports have been done on the property. Of particular note is an area of mass grading and fill of an existing ravine that ran through the property. The City has no records of compaction or what type of material was used to fill the ravine. The report did pay specific attention to this area and has provided recommendations for

building there. The report also mentioned the need to look further into Geologic Hazards such as debris flow and rock fall (see next paragraph). The report should be made available to all future home buyers.

Hazard Report

The Developer contracted with IGES to provide further information regarding certain hazards. The report covers rock fall and debris flow in more depth. It was determined that there is a low to moderate rock fall hazard for most the lots along the westerly side of the development. The lots in the north westerly corner were considered to have a moderate rockfall hazard and IGES recommended more studies be done in the area prior to development to determine if larger setbacks or other mitigation efforts would be required. **Staff would recommend that report be a condition of final approval for the appropriate phase of development.** The report recommended disclosure to future buyers of lots along the westerly side of the potential rock-fall hazard. A note should be placed on the plat for any phase of development that contains these lots. This will be checked at final approval.

The report also looked further into debris flow from Big Hollow canyon. This canyon exits near lot 72 and onto Savannah Circle. The worst-case scenario would be a post-fire situation. IGES provided a design for debris flow nets that would capture the potential debris from such an event but would allow the water to pass through. This design is similar in nature to what the city built in Box Elder where water is allowed to pass but the debris is captured. The location of two debris flow nets are shown in the report.

Lot 72

Lot 72 (previously Lot 69) has been discussed at the concept level. A design has been provided which meets fire flow and pressure standards per to Horrocks' review. Pressurized irrigation will not be served on this lot due to its elevation. The driveway design follows an existing dirt road with retaining walls that were recently constructed without a building permit. The walls currently would not meet city ordinance and would need to be rebuilt per city ordinances. Pictures attached. The design does not currently meet fire access requirements. **The Developer needs to work with the Fire Department for access design approval.** From an engineering standpoint the lot is buildable assuming retaining walls can be built to city code. **If the lot is approved, Engineering recommends retaining wall compliance be part of the approval.** A separate review from the Planner will discuss other ordinances that apply to the lot.

Existing buildings

The property has several existing buildings onsite. Prior to the recordation of any phase of development that contains existing buildings, the existing building(s) must be removed, existing services either re-used or cut and capped, or a bond provided to the city to ensure those things will happen prior to a building permit being issued on the affected lot(s). These would all be conditions of Final Approval.

Conservation Easement

It should be noted that a conservation easement exists on a large portion of the north westerly area of the property. The language for the easement expressly prohibits any kind of building or development. Trails are allowed and discussed in the Planner's Review Letter. The recorded conservation easement is attached.

ENGINEERING RECOMENDATION

Engineering recommends that Preliminary Approval of the proposed development be approved with the following conditions:

- **An exception be granted for a non-standard road cross section along Oak Drive. The cross section would include 30 feet of pavement with 3-foot shoulders on each side;**
- **The Developer address redline comments on the plans and drainage report;**
- **The Developer work with Staff regarding the variable speed pumps required in the Annexation and Development Agreement, then report to the City Council prior to submitting for Final Approval;**
- **The Developer weld metal plates at the upstream head gates of North Field Ditch;**
- **The Planning Commission approve/disapprove Lot 72**
  If Lot 72 is approved as proposed:
  - **The Developer obtain approval from the Fire Department regarding Lot 72 access;**
  - **The Developer submit a retaining wall design that meets city ordinance for Lot 72.**

Attachments

- **Preliminary Map Overlay**
- **Annexation Development Agreement**
- **Horrocks Engineer's Review Letter**
- **Fire Chief Letters**
- **Preliminary Plans**
- **Drainage Report**
- **Geotechnical Studies**
- **IGES Debris Flow Net Design**
- **Conservation Easement**
- **Lot 72 Existing Retaining Walls**

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REED M. THOMPSON, FIRE CHIEF

MEMORANDUM

DATE: 1 June 2018

TO: Jed Muhlestein, City Engineer, Alpine City
CC: Austin Roy, City Planner, Alpine City

FROM: Reed M. Thompson, Fire Chief

SUBJECT: THE RIDGE AT ALPINE SUBDIVISION—LOT 72 ACCESS ROAD

In review of the proposed site development construction drawings, labeled "The Ridge at Alpine Subdivision Planned Residential Development", specifically [(Plan and Profile 17, 18, 19), (Lot 72 Access Overview C7.20) attached].

Please note the access road due to the length (greater than 750') and slope (in excess of 10%) requires special approval. Special access road approval will be granted if the following conditions are met:

- Access road is comprised of an all-weather access material and maintained 24/7/365
- Supports minimum traffic weights of 75,000 pounds
- Turnaround at end of road measures a minimum of 96' in diameter
- A fire hydrant with adequate fire flows located within 150' of the structure(s)
- Any other requirement as outlined in the 2015 International Fire Code
- Bump outs to 26' for 100' sections for distances greater than 500'
    - Bump outs require a grade change in slope to lesser than 10%

Based on the drawings submitted, the slope still exceeds 10% for distances greater than 500'. While it addresses the bump outs required, the slope has not been addressed, and therefore is not approved.