

# Preliminary Plat Application

For

## Six Ranges Ranch Subdivision

GOV. LOTS 1,2,3  
Sec. 13 T03N, R01E  
Broadwater County

*Prepared by*



714 Stoneridge Drive, Suite 3  
Bozeman, Montana 59718  
(406) 586-5599

April 2023

# APPENDIX D. SUBDIVISION APPLICATION FORM

---

## COVER SHEET

Name of Proposed Subdivision: Six Ranges Ranch Major Subdivision

Date of Pre-Application Meeting: \_\_\_\_\_

### Contents of Subdivision Application Package

- X \_\_\_\_\_ Preliminary Plat
- X \_\_\_\_\_ Subdivision Application Form
- X \_\_\_\_\_ Environmental Assessment (majors and subsequent minors only)
- X \_\_\_\_\_ Preliminary Plat Checklist
- X \_\_\_\_\_ Subdivision Review Fee
- NA \_\_\_\_\_ Any request for variance

# PRELIMINARY SUBDIVISION SUBMITTAL CHECKLIST

Name of Proposed Subdivision: Six Ranges Ranch Subdivision

Location/Legal Description: E2NW4; NE4SW4 GOV. LOTS 1,2,3, S31, T03 N, R01 E, ACRES 234

Date of Completion by Subdivider: \_\_\_\_\_

Date of Element Review by Planner: \_\_\_\_\_

Items and Information, Filled Out by:	Subdivider		Planning included —	Dept. Not Complete
	Included	Not Applicable		
Alpine Surveying and Engineering				
1. Completed and signed Subdivision Application Form (Appendix D)	See Appendix 1			
2. Subdivision Review Fee.	See Appendix 2			
3. Preliminary plat prepared by a professional land surveyor in accordance with Montana Code Annotated and the Administrative Rules of Montana. At least two full-size (18"x 24" or 24"x 36") must be provided. Plat must include: <ul style="list-style-type: none"> <li>a. The proposed subdivision or development name (the title must contain the words "plat" and/or "Subdivision").</li> <li>b. The legal description, including Section, Township and Range.</li> <li>c. A north arrow.</li> <li>d. The scale used on the plat.</li> <li>e. The certification of a professional land surveyor.</li> <li>f. The date the preliminary plat is completed. If the plat is modified, each version must be identified by date or version number.</li> <li>g. Lots and blocks identified by number or letter.</li> <li>h. All existing and proposed streets, roads, highways, avenues, alleys, and/or easements within or adjacent to the subject property.</li> <li>i. Existing and proposed street names.</li> <li>j. The approximate location of all section corners or legal subdivision corners of sections pertinent to the subdivision boundary.</li> <li>k. Approximate area, location, boundaries, and dimensions of all parks, common grounds, and other grounds dedicated for public use.</li> <li>l. The proposed use of each tract if other than single-family residential.</li> <li>m. Locations of all existing buildings, structures, and other improvements.</li> <li>n. Existing infrastructure and utilities including: the approximate locations, size and depth of existing and proposed sanitary and storm sewers; the</li> </ul>	See Appendix 3 Subdivision Plat			

4. A copy of the most current certificate of survey or subdivision plat pertaining to the subject parcel to be subdivided;	See Appendix 4			
5. A map showing the location of the nearest utilities.	See Appendix 5			
6. A topographic map.	See Appendix 6			
7. A stormwater drainage plan;	See Appendix 7			
8. Overall development plan if development is in phases.	See Appendix 8	NA		
9. Title Report dated no more than 6 months prior to the date of preliminary plat submittal.	See Appendix 9			
10. Lienholders' acknowledgement of the subdivision, if applicable.	See Appendix 10			
11. Documentation of legal and physical access.	See Appendix 11			
12. Documentation of existing easements, including those for agricultural water user facilities and historical water conveyance facilities.	See Appendix 12 (no water conveyance)			
13. Existing covenants and deed restrictions(proposed).	See Appendix 13			
14. Existing water rights.	See Appendix 14 No water rights on the property			
15. Existing mineral rights.	See Appendix 15 No mineral rights on the property			
16. Names and addresses of all adjoining property owners.	See Appendix 16			
17. Proposed road plans and profiles, include the - - - location and dimensions of the roads and if proposed - alleys, sidewalks and / or paths;	See Appendix 17			
18. Approach/access/encroachment permits submitted to the Montana Department of Transportation or the local jurisdiction;	See Appendix 18			
19. Road maintenance agreement;	See Appendix 19 (Also see proposed covenants)			
20. Proposed easements, including the location of nearest - utilities;	See Appendix 20			
21. Proposed disposition of water rights;	See Appendix 21 no water rights are associated with this property			
22. Proposed disposition of mineral rights;	See Appendix 22 no mineral rights are associated with this property			

23. Parkland dedication calculations, location of and description of proposed parkland, or proposal for cash-in-lieu;		NA No Parkland is required		
24. Environmental assessment and/or summary of probable impacts;	See Appendix 24 for Summary of Probable Impacts and Environmental impacts			
25. Transportation Impact Analysis or Transportation Plan, (if applicable);	NA			
26. Noxious Weed Management Compliance Plan;	See Appendix 26			
27. Existing and proposed property owners' association documents, including draft articles of incorporation, declaration and bylaws;	See Appendix 27			
28. FIRM or FEMA panel map and letter identifying floodplain status;	See Appendix 28			
29. Required water and sanitation information;	See Appendix 29			
30. Letter requesting a revocation of agricultural covenants;	See Appendix 30	NA		
31. Letter indicating locations of cultural or historic resources;	See Appendix 31			
32. Variance request;	See Appendix 32	NA		
33. Re-zoning (or Conditional Use Permit) application or approval;	See Appendix 33	NA		
34. An engineering study that identifies the Base Flood Elevation (BFE) (if identified during the preapplication meeting);	See Appendix 34	NA		
35. Letter identifying and proposing mitigation for potential hazards or other adverse impacts as identified in the pre-application meeting and not covered by any of the above required materials;	See Appendix 35 as well as Impacts Reports			
36. Such additional relevant and reasonable information as identified by the subdivision administrator that is pertinent to the required elements of this section; and	See Appendix 36 for comment response letters, fire plan and sage Grouse			
37. If proposing a first minor subdivision, or a subsequent minor subdivision, a copy of each instrument of transfer for the parcel or tract pertaining to the subject parcel filed or recorded since July 1, 1973. The instruments of transfer include but not limited to deed(s), certificate of survey(s) or subdivision plat(s).		NA Major subdivision		

Subdivider Explanatory Comments: \_\_\_\_\_

\_\_\_\_\_

Planner Explanatory Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



*SIX RANGES RANCH MAJOR SUBDIVISION*  
*Application*

**Table of Contents**

**TABLE OF APPENDICES**

APPENDIX 1	SIGNED SUBDIVISION APPLICATION FORM
APPENDIX 2	REQUIRED REVIEW FEE
APPENDIX 3	PRELIMINARY PLAT
APPENDIX 4	A COPY OF THE MOST CURRENT CERTIFICATE OF SURVEY
APPENDIX 5	MAP SHOWING THE LOCATION OF THE NEAREST UTILITIES
APPENDIX 6	TOPOGRAPHIC MAP
APPENDIX 7	STORMWATER DRAINAGE PLAN
APPENDIX 8	PLANNED PHASES
APPENDIX 9	TITLE REPORT
APPENDIX 10	LIENHOLDER'S ACKNOWLEDGEMENT
APPENDIX 11	DOCUMENTATION OF LEGAL AND PHYSICAL ACCESS
APPENDIX 12	DOCUMENTATION OF EXISTING EASEMENTS
APPENDIX 13	EXISTING COVENANTS AND DEED RESTRICTIONS (PROPOSED)
APPENDIX 14	EXISTING WATER RIGHTS
APPENDIX 15	EXISTING MINERAL RIGHTS
APPENDIX 16	ADJOINING PROPERTY OWNERS
APPENDIX 17	PROPOSED ROAD PLANS AND PROFILES
APPENDIX 18	APPROACH/ACCESS/ENCROACHMENT PERMITS



APPENDIX 19	ROAD MAINTENANCE AGREEMENT
APPENDIX 20	PROPOSED EASEMENTS
APPENDIX 21	PROPOSED DISPOSITION OF WATER RIGHTS
APPENDIX 22	PROPOSED DISPOSITION OF MINERAL RIGHTS
APPENDIX 23	PARKLAND DEDICATION CALCULATIONS
APPENDIX 24	SUMMARY OF PROBABLE/COMMUNITY AND ENVIRONMENTAL IMPACTS
APPENDIX 25	TRANSPORTATION IMPACT ANALYSIS
APPENDIX 26	NOXIOUS WEED MANAGEMENT COMPLIANCE PLAN
APPENDIX 27	EXISTING AND PROPOSED PROPERTY OWNERS' ASSOCIATION DOCUMENTS
APPENDIX 28	FIRM OR FEMA PANEL MAP
APPENDIX 29	WATER AND SANITATION INFORMATION
APPENDIX 30	A REVOCATION OF AGRICULTURAL COVENANTS
APPENDIX 31	CULTURAL OR HISTORIC RESOURCES
APPENDIX 32	VARIANCE REQUEST
APPENDIX 33	RE-ZONING
APPENDIX 34	ENGINEERING STUDY THAT IDENTIFIES THE BASE FLOOD ELEVATION (BFE)
APPENDIX 35	IDENTIFYING AND PROPOSING MITIGATION FOR POTENTIAL HAZARDS
APPENDIX 36	RELEVANT AND REASONABLE INFORMATION
APPENDIX 37	COPY OF EACH INSTRUMENT OF TRANSFER FOR THE PARCEL
APPENDIX 38	COMMENT AND RESPONSE LETTERS
APPENDIX 39	FIRE PROTECTION



# SUBDIVISION APPLICATION

## PART 1. GENERAL DESCRIPTION AND INFORMATION

1. Name of the proposed subdivision **Six Ranges Ranch** \_\_\_\_\_

2. Location (City and/or County): **Broadwater County** \_\_\_\_\_  
Legal description: \_\_\_\_\_ NE 1/4 \_\_ SE1/4 of Section: 31 Township: 3N Range: 1E \_

3. Type of water supply system:
- a. Individual surface water supply from spring \_\_\_\_\_
  - b. Multiple-family water supply system (3-14 connections and fewer than 25 people) \_\_\_\_\_
  - c. Service connection to multiple-family system \_\_\_\_\_
  - d. Service connection to public system \_\_\_\_\_
  - e. Extension of public main \_\_\_\_\_
  - f. New public system \_\_\_\_\_
  - g. Individual well:  \_\_\_\_\_

4. Type of wastewater treatment system:
- a. Individual or shared on-site septic system:  \_\_\_\_\_
  - b. Multiple-family on-site system (3-14 connections and fewer than 25 people) \_\_\_\_\_
  - c. Service connection to multiple-family system \_\_\_\_\_
  - d. Service connection to public system \_\_\_\_\_
  - e. Extension of public main \_\_\_\_\_
  - f. New public system \_\_\_\_\_

5. Name of solid waste garbage disposal site and hauler: Logan \_\_\_\_\_

Is information included which substantiates that there will be no degradation of state waters or that degradation will be non-significant? Yes, however each lot is greater than 20-acres, thus MDEQ review is not required.

8. Descriptive Data:
- a. Number of lots or rental spaces: **11-Lots** \_\_\_\_\_
  - b. Total acreage in lots being reviewed **227.14-acres** \_\_\_\_\_
  - c. Total acreage in streets or roads **6.86-acres** \_\_\_\_\_
  - d. Total acreage in parks, open space, and/or common facilities: **0-acres** \_\_\_\_\_
  - e. TOTAL gross acreage of subdivision **234-acres** \_\_\_\_\_
  - f. Minimum size of lots or spaces: **20.004 acres** \_\_\_\_\_
  - g. Maximum size of lots or spaces: **31.749 acres** \_\_\_\_\_

9. Indicate the proposed use(s) and number of lots or spaces in each:
- Residential, single family
  - Residential, multiple family
  - Types of multiple family structures and numbers of each (e.g. duplex)
  - Planned Unit Development (Number of units \_\_\_\_\_)
  - Condominium (Number of units \_\_\_\_\_)
  - Mobile Home Subdivision (Number of spaces \_\_\_\_\_)
  - Recreational Vehicle Subdivision (Number of spaces \_\_\_\_\_)
  - Commercial or Industrial
  - Other (please describe) \_\_\_\_\_

10. Provide the following information regarding the development:

- a. Current land use: Vacant
- b. Existing zoning or other regulations; None
- c. Depth to ground water at the time of year when water table is nearest to the natural ground surface within the drainfield area: Greater than 8 feet
- . Depth to bedrock or other impervious material in the drainfield area ; Greater than 8 feet
- a. If a tract of land is to be subdivided in phases, an overall development plan indicating the intent for the development of the remainder of the tract.: NA
- b. Drafts of any covenants and restrictions to be included in deeds or contracts for sale. Drafts of homeowners' association bylaws and articles of incorporation, if applicable. (Submitting a draft copy of a homeowners' association bylaws and articles of incorporation is adequate for DEQ to initiate and complete its review of sanitary facilities, but a copy of the fully executed documents must be submitted before DEQ can issue final approval.)
- c. Indicate whether the mineral rights have been severed from the property:  
Yes \_\_\_\_\_ No X
- d. Indicate whether water rights have been severed from the property:  
Yes \_\_\_\_\_ No X

11. Is the applicant claiming an exemption of the subdivision regulations from the requirement to prepare an environmental assessment?

Yes \_\_\_\_\_ No X

Name, address, and telephone number of designated representative, if any (e.g., engineer, surveyor).

Name: Alpine Surveying and Engineering Phone 406-586-9955


714 Stoneridge Drive, Suite 3, Bozeman, MT. 59718

Address (Street or P.O. Box, City, State, Zip Code)

Name, address, and telephone number of owner(s).

VALLEY VIEW ACRES LLC

Name

  
Signature of owner

180 W KAGY BLVD STE D238, BOZEMAN, MT 59715-

Address (Street or P.O. Box, City, State, Zip Code)

Date: \_\_\_\_\_

Phone: 360-921-7956



Resolution 2022- 24

**A Resolution Establishing Broadwater County Subdivision Fees**

**WHEREAS**, Section 76-3-602, MCA, authorizes the governing body to establish reasonable fees to be paid by the subdivider to defray the expense of reviewing subdivision applications; and

**WHEREAS**, the Broadwater County Commission has adopted Subdivision Regulations as part of its Subdivision policy that requires the review of subdivisions within its jurisdiction; and

**WHEREAS**, Broadwater County desires to adjust its schedule of fees reflecting the current costs associated with staff time and administration of the Subdivision Regulations.

**NOW, THEREFORE BE IT RESOLVED** that the Broadwater Board of County Commissioner shall adopt the Broadwater County Subdivision Review Fees Schedule.

**BROADWATER COUNTY SUBDIVISION REVIEW FEES**

Pre-Application Meeting Fees: .....	\$150.00
Variance Request: .....	\$250.00
Preliminary Plat Application Review Fee:	
Major (more than 5 lots) .....	\$2,500.00
Minor (2 to 5 lots) .....	\$1,500.00
Plus additional fee per lot/unit. ....	\$100.00
One Lot Minor. ....	\$850.00
Phasing Plan Review Fee:	
Initial. ....	\$200.00
Per phase. ....	\$500.00
Amendment review. ....	\$550.00

**194106 Fee: \$ 0.00**

BROADWATER COUNTY Filed 7/6/2022 at 11:21 AM  
Angie Paulsen, Clk & Rcdt *Angie Paulsen*

Environmental Health Review Fee. .... \$100.00  
 (Per each lot over 20 acres)

Amended to Conditions of Preliminary Plat. .... \$550.00

PUD (Planned Unit Development) \*in addition to preliminary plat application review fees

Development review. .... \$1,000.00

Adjustments. .... \$550.00

Fire District inspection fee (Major only) ..... \$100.00

Plus additional fee per lot/unit. .... \$5.00

Road Department inspection fee\*\*\* (Major only). .... \$100.00

Plus additional fee per lot/unit. .... \$5.00

\*\*\*plus actual contract engineering consultant expenses for detailed review if necessary

Final plat review fee:

Major (more than 5 lots). .... \$1,000.00

Minor (2 to 5 lots). .... \$500.00

Plus additional fee per lot/unit. .... \$50.00

One Lot Minor. .... \$150.00

Examining Land Surveyor Review Fee..... \$150.00 +\$25.00/lot

Dated this 6<sup>th</sup> day of July 2022.

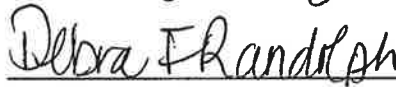
Broadwater County Commissioners



Darrel Folkvord



Michael Delger



Debi Randolph

ATTEST:



Angie Paulsen, Clerk & Recorder



**BROADWATER COUNTY SUBDIVISION REVIEW FEES**

**Preliminary Plat Application Review Fees:**

Major (more than 5 lots) .....	\$2,000.00
Minor (2 to 5 lots) .....	\$1,500.00
Plus additional fee per lot/unit. ....	\$ 100.00
One Lot Minor. ....	\$ 850.00
 Environmental Health review fee. ....	 \$ 100.00
(Per each lot over 20 acres)	
 Weed inspection fee. ....	 \$ 100.00
Plus additional fee per lot/unit. ....	\$ 5.00
 Fire District inspection fee (Major only) .....	 \$ 100.00
Plus additional fee per lot/unit. ....	\$ 5.00
 Road Department inspection fee*** (Major only) .....	 \$ 100.00
Plus additional fee per lot/unit. ....	\$ 5.00

\*\*\*plus actual contract engineering consultant expenses for detailed review if necessary

\$3415.00

**Final plat review fee:**

Major (more than 5 lots) .....	\$1,000.00
Minor (2 to 5 lots) .....	\$ 500.00
Plus additional fee per lot/unit. ....	\$ 50.00
One Lot Minor. ....	\$ 150.00

VALLEY VIEW ACRES, LLC  
ERIC GREEN  
280 W KAGY BLVD  
BOZEMAN MT 59715-6056

12/15/2022 Date

Pay to the Order of Broadwater County Planning \$ 2,600.00  
Two thousand six hundred dollars only Dollars

**Opportunity Bank**  
OF MONTANA

For \_\_\_\_\_ MP

⑆ 29 20 70806 ⑆ 180 1 2486 2 1 ⑆ 200 1

Harland Clarke

BLUE SHEFFIELD™

VALLEY VIEW ACRES, LLC  
ERIC GREEN  
280 W KAGY BLVD  
BOZEMAN MT 59715-6056

12/15/2022 Date

Pay to the Order of Broadwater County Environmental Dept \$ 1,100.00  
One thousand one hundred dollars only Dollars

**Opportunity Bank**  
OF MONTANA

For \_\_\_\_\_ MP

⑆ 29 20 70806 ⑆ 180 1 2486 2 1 ⑆ 200 2

Harland Clarke

BLUE SHEFFIELD™

VALLEY VIEW ACRES, LLC  
ERIC GREEN  
280 W KAGY BLVD  
BOZEMAN MT 59715-6056

12/15/2022 Date

Pay to the Order of Broadwater County Wood District \$ 155.00  
One hundred fifty-five dollars only Dollars

**Opportunity Bank**  
OF MONTANA

For \_\_\_\_\_ MP

⑆ 29 20 70806 ⑆ 180 1 2486 2 1 ⑆ 200 3

Harland Clarke

BLUE SHEFFIELD™

VALLEY VIEW ACRES, LLC  
ERIC GREEN  
280 W KAGY BLVD  
BOZEMAN MT 59715-6056

12/15/2022 Date

Pay to the Order of One Hundred Fifty-five Dollars only \$ 155.00  
One Hundred Fifty-five Dollars only Dollars

**Opportunity Bank**  
OF MONTANA

For Fire District MP

⑆ 29 20 70806 ⑆ 180 1 2486 2 1 ⑆ 200 4

VALLEY VIEW ACRES, LLC  
ERIC GREEN  
280 W KAGY BLVD  
BOZEMAN MT 59715-6056

Pay to the Order of

Broadwater County Board District \$ 155.00  
One Hundred Fifty-five Dollars only Dollars

12/15/2022 Date

Dollars

Security Features Details on Back

2005

93-7080/292

Opportunity Bank  
OF MONTANA

For \_\_\_\_\_

MP

*[Handwritten signature]*



**PRELIMINARY PLAT**  
**SIX RANGES RANCH SUBDIVISION**  
 SUBDIVISION PLAT NO. \_\_\_\_\_

A SUBDIVISION OF GOVERNMENT LOTS 1, 2 & 3, THE EAST ONE-HALF OF THE NORTHWEST ONE-QUARTER AND THE NORTHEAST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 31 TOWNSHIP 3 NORTH, RANGE 1 EAST, P.M.M., BROADWATER COUNTY, MONTANA

THIS SURVEY WAS PERFORMED FOR THE OWNERS OF RECORD: VALLEY VIEW ACRES LLC

THE PURPOSE OF THIS SURVEY IS TO CREATE AN 11 LOT SUBDIVISION.

**PERIMETER LEGAL DESCRIPTION**

A Tract of land being Government Lots 1, 2, & 3, the east one-half of the northwest one-quarter and the northeast one-quarter of the southwest one-quarter of Section 31, Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana, more particularly described as follows:

Beginning at the corner common to Section 30 and Section 31, Township 3 North, Range 1 East, P.M.M. and Section 25 and Section 36, Township 3 North, Range 1 West, P.M.M., a 3/4" aluminum cap "1453LS";  
 thence N 89°53'26" E a distance of 1271.45' to an orange plastic cap "15279LS";  
 thence N 89°53'26" E a distance of 1349.73' to a 3/4" BLM brass cap;  
 thence S 00°27'53" W a distance of 534.14' to a 1/2" rebar;  
 thence S 00°28'07" W a distance of 550.18' to a 1/2" aluminum cap "5430LS";  
 thence S 00°27'23" W a distance of 605.86' to a 1/2" aluminum cap "5430LS";  
 thence S 00°26'56" W a distance of 658.36' to a 1/2" aluminum cap "5430LS";  
 thence S 00°26'47" W a distance of 453.66' to a 1/2" aluminum cap "5430LS";  
 thence S 00°27'41" W a distance of 279.84' to a 1/2" aluminum cap "5430LS";  
 thence S 00°28'27" W a distance of 175.42' to a 1/2" aluminum cap "5430LS";  
 thence S 00°28'54" W a distance of 819.85' to a 1/2" aluminum cap "5430LS";  
 thence S 00°25'22" W a distance of 111.91' to an orange plastic cap "15279LS";  
 thence N 89°59'31" W a distance of 2609.52' to an orange plastic cap "15279LS";  
 thence N 00°17'07" E a distance of 3983.79' to the Point of Beginning;  
 containing, 239.328 acres more or less.

Subject to all easements of record or apparent from a visual inspection of the property.

**CERTIFICATE OF DEDICATION**

The above-described tract of land is to be known and designated as the Six Ranges Ranch Subdivision, Broadwater County, Montana; and the lands included in all streets, avenues, alleys, and parks or public lands shown on said plat are hereby granted and donated to Broadwater County for the public use and enjoyment. Unless specifically listed herein, the lands included in all streets, avenues, alleys and parks or public lands dedicated to the public are accepted for public use, but the County accepts no responsibility for maintaining the same. The owner agrees that the County has no obligation to maintain the lands included in all streets, avenues, alleys and parks or public lands hereby dedicated to public use.

**CERTIFICATE OF WAIVER**

I, \_\_\_\_\_ of Valley View Acres LLC, the undersigned owner of the Subdivision, do hereby waive the right to protest the creation of Rural Improvement Districts. In so doing, we do not waive any right to comment on, protest, and/or appeal any assessment formula which may be proposed, if we believe it to be inequitable. This waiver shall be binding upon the heirs, assigns, and purchasers on all lots within this subdivision.

**CERTIFICATE OF EXEMPTION**

I, \_\_\_\_\_ of Valley View Acres LLC, the undersigned owner of the Subdivision furthermore certify that Tracts 1 - 11 of this survey are larger than 20 acres and that this division is not a subdivision and is exempt from Montana Department of Environmental Quality review pursuant to MCA 76-4-103 which states:

A subdivision consists of only those parcels of less than 20 acres that have been created by a division of land, and the plat must show all of the parcels, whether contiguous or not. The rental or lease of one or more parts of a single building, structure, or other improvement, whether existing or proposed, is not a subdivision, as that term is defined in this part, and is not subject to the requirements of this part.

Dated this \_\_\_\_\_ day of \_\_\_\_\_

Valley View Acres, LLC

By: \_\_\_\_\_ it's

State of \_\_\_\_\_

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_ before me, Notary Public in and for said state, personally appeared \_\_\_\_\_ known to me to be the \_\_\_\_\_ of Valley View Acres, LLC and acknowledged to me that she/he executed the same.

Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Notary Public for the State of \_\_\_\_\_

Residing at \_\_\_\_\_

My commission expires \_\_\_\_\_

**CERTIFICATE OF CLERK AND RECORDER**

I, \_\_\_\_\_ Clerk and Recorder of Broadwater County, Montana, hereby certify that the foregoing instrument was filed in my office at \_\_\_\_\_ o'clock \_\_\_\_\_ M. this \_\_\_\_\_ day of \_\_\_\_\_ A.D., and recorded in Book \_\_\_\_\_ of Plats on Page \_\_\_\_\_ records of the Clerk and Recorder, Broadwater County, Montana.

Document Number \_\_\_\_\_

Clerk and Recorder of Broadwater County \_\_\_\_\_

**CERTIFICATE OF COUNTY COMMISSIONERS**

The County Commission of Broadwater County, Montana, does hereby certify that the accompanying plat has been duly reviewed, and has been found to conform to the requirements of the Montana Subdivision and Platting Act, §76-3-101 et. seq. MCA and the Broadwater County Subdivision Regulations, approve it, and hereby accept the dedication to public use.

Dated this \_\_\_\_\_ day of \_\_\_\_\_

Commissioner \_\_\_\_\_ County Attorney \_\_\_\_\_

Commissioner \_\_\_\_\_ Clerk and Recorder \_\_\_\_\_

Commissioner \_\_\_\_\_

**CERTIFICATE OF COUNTY TREASURER**

I, \_\_\_\_\_ Treasurer of Broadwater County, Montana do hereby certify that the accompanying Subdivision Plat has been duly examined and that all real property taxes and special assessments assessed and levied on the land to be surveyed have been paid through \_\_\_\_\_ (J240168)

Dated this \_\_\_\_\_ day of \_\_\_\_\_

Treasurer of Broadwater County \_\_\_\_\_

**CERTIFICATE OF SURVEYOR**

I, Norbert Hackl the undersigned Professional Land Surveyor, do hereby certify that between June 9, 2022 and \_\_\_\_\_ the accompanying Subdivision Plat was surveyed by me, or under my supervision, and the same was platted as shown on the accompanying plat and as described, in accordance with the Montana Subdivision and Platting Act, §76-3-101 through §76-3-625 M.C.A., and the Broadwater County Subdivision Regulations.

Dated this \_\_\_\_\_ day of \_\_\_\_\_

Norbert Hackl, PLS  
 Montana Registration No. 14,535 L.S.

**CERTIFICATE OF EXAMINATION**

Reviewed for errors and omissions this \_\_\_\_\_ day of \_\_\_\_\_ pursuant to Section 76-3-611(2)(a), MCA.

Montana Registration No. \_\_\_\_\_

**RIGHT-TO-FARM RESOLUTION**

This subdivision is subject to the "Right-to-Farm Resolution" as adopted by Broadwater County.

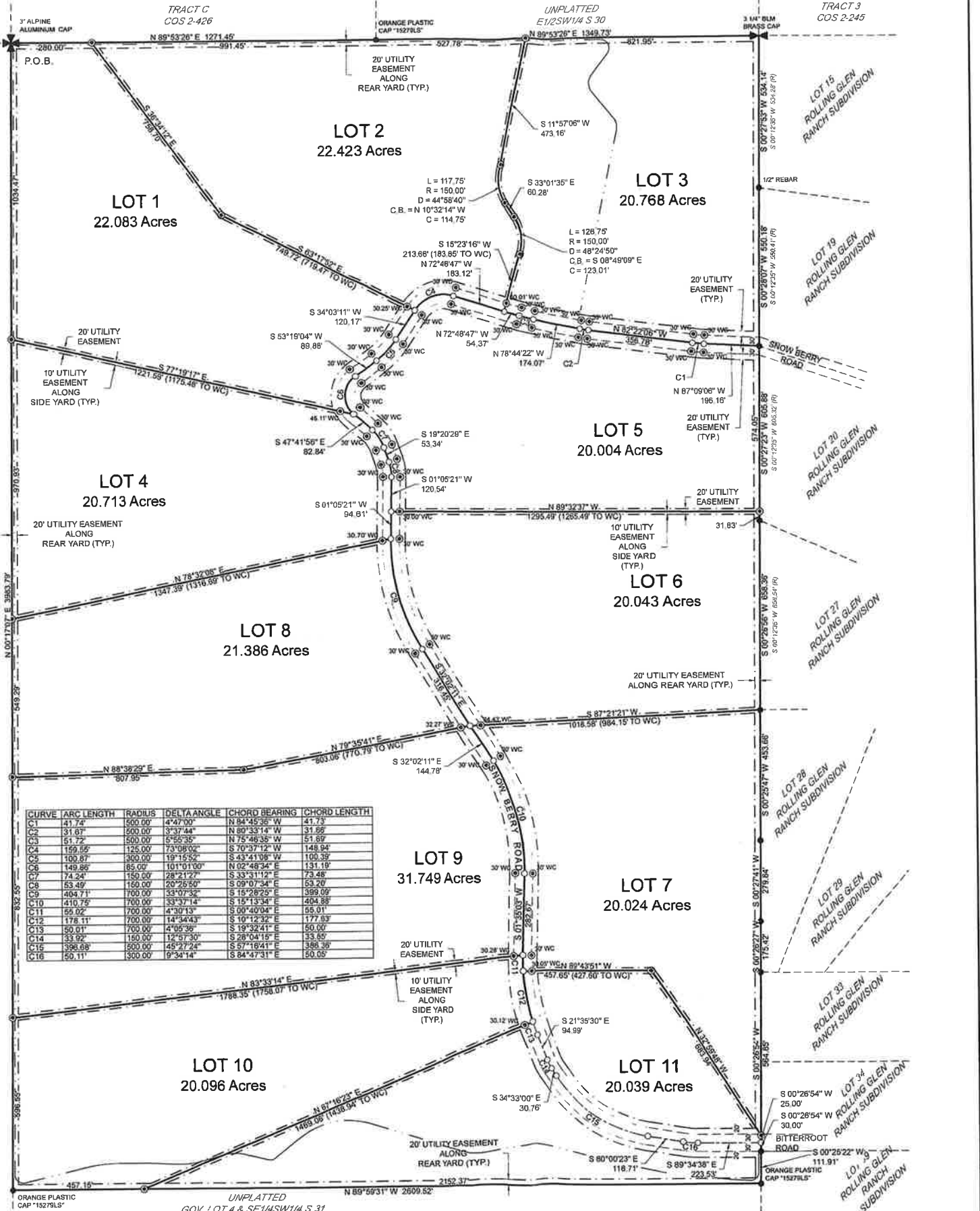
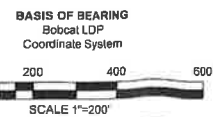
**WEED CONTROL CERTIFICATION**

The Conditions and Restrictions as required by Broadwater County will apply to this subdivision.

**LEGEND**

- FOUND 1/2" ALUMINUM CAP "5430LS" OR AS NOTED
- CALCULATED POINT NOTHING FOUND OR SET
- ⊙ SET 5/8"x24" REBAR W/ 2" ALUMINUM CAP
- PROPERTY BOUNDARY
- ADJOINING LOT BOUNDARY
- 80' ROAD RIGHT-OF-WAY
- 20' PUBLIC UTILITY EASEMENT
- RIGHT-OF-WAY CENTER LINE
- 15' RECREATIONAL TRAIL EASEMENT CENTER LINE

P.O.B. POINT OF BEGINNING  
 S 00°12'30" W 605.32' (R) RECORD BOOK 1, PAGE 965



X	1/4	Sec	T	R	X	1/4	Sec	T	R
☒	31	3	N	1	☒	31	3	N	1
☒					☒				
☒					☒				

**ALPINE SURVEYING & ENGINEERING**  
 714 Stoneridge Dr.  
 Suite 3  
 Bozeman, MT 59718  
 585.5599 Office  
 www.alpinesurveying.net

PROJECT SURVEYOR: NH	SHEET
DRAWN BY: NH	1 OF 1
REVIEWED BY: MB	CREAGAN BROADWATER
DATE: 11/28/22	PROJECT NO. 540-02



**Return To:**  
**Security Title Company**  
**P.O. Box 6550**  
**Bozeman, MT 59771-6550**

**Accommodation Recording Only**  
**STC# ESC 22039 pd**

**195079 Fee: \$ 32.00 Bk 247 Pg 138**  
BROADWATER COUNTY Recorded 11/15/2022 at 04:33 PM  
Angie Paulsen, Clerk and Recorder By mh Deputy  
Return to: Security Title Company  
600 S 19th Ave, Bozeman, Montana 59718-4028

WARRANTY DEED

FOR VALUE RECEIVED, JEFFREY N. COTTERELL, GREGORY E. ANDERSON and DEBORAH M. VELLI, the Grantors, do hereby grant, bargain, sell, convey and confirm unto VALLEY VIEW ACRES LLC of 280 West Kagy Boulevard, Suite D238, Bozeman, Montana 59715, the Grantee and Grantee's assigns, the following described premises in Broadwater County, Montana, to-wit:

Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana

Section 31: Lots 1, 2, 3, E $\frac{1}{2}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$

**SUBJECT TO:** all reservations and restrictions in prior conveyances or in patents from the United States or the State of Montana; existing easements, encroachments and rights of way of record and those which would be disclosed by an examination of the property; mineral, oil and gas reservations, conveyances and leases of record; all real property taxes and assessments for the current year and subsequent years; and all building and use restrictions, covenants, agreements, requirements, notices, waivers, and conditions of record.

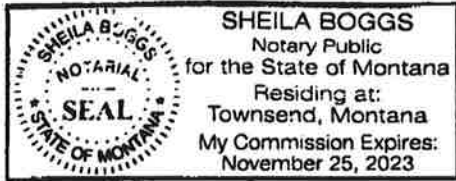
**TO HAVE AND TO HOLD** the said premises, with their tenements, hereditaments, and appurtenances unto the said Grantee and Grantee's assigns forever. And the said Grantors do hereby covenant to and with the said Grantee that they are the owners in fee simple of said premises; that Grantee shall enjoy the same without any lawful disturbance; that the same is free from all encumbrances except those limitations set forth above; that the Grantors and all persons acquiring any interest in the same through or from Grantors will, on demand, execute and deliver to the Grantee any further assurance of the same that may be reasonably required; and that the Grantors will warrant to the Grantee all the said property against every person lawfully claiming the same.

DATED this 6th day of July, 2022.

  
\_\_\_\_\_  
Jeffrey N. Cotterell

STATE OF MONTANA )  
County of Broadwater ) : ss.

On this 16 day of July, 2022, before me a Notary Public in and for said state personally appeared JEFFREY N. COTTERELL, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same.



Sheila Boggs  
Printed Name: Sheila Boggs  
Notary Public for the State of Montana  
Residing at Townsend, Montana  
My commission expires: 11-25-2023

SIGNATURE PAGE for that Warranty Deed from:

JEFFREY N. COTTERELL, GREGORY E. ANDERSON and DEBORAH M. VELLI, the Grantors, to:

VALLEY VIEW ACRES LLC, the Grantee, for the following described premises in Broadwater County, Montana, to-wit:

Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana

Section 31: Lots 1, 2, 3, E $\frac{1}{2}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$


DATED this 8<sup>th</sup> day of July, 2022.

  
\_\_\_\_\_  
Gregory E. Anderson

STATE OF COLORADO )  
County of Boulder : ss.

On this 8 day of July, 2022, before me a Notary Public in and for said state personally appeared GREGORY E. ANDERSON, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same.

JASON BUSHMAN  
NOTARY PUBLIC  
STATE OF COLORADO  
NOTARY ID 20064025004  
My Commission Expires December 10, 2023

  
\_\_\_\_\_  
Printed Name: Jason Bushman  
Notary Public for the State of Colorado  
Residing at Louisville, Colorado  
My commission expires: 12/10/2023



SIGNATURE PAGE for that Warranty Deed from:

JEFFREY N. COTTERELL, GREGORY E. ANDERSON and DEBORAH M. VELLI, the Grantors, to:

VALLEY VIEW ACRES LLC, the Grantee, for the following described premises in Broadwater County, Montana, to-wit:

Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana

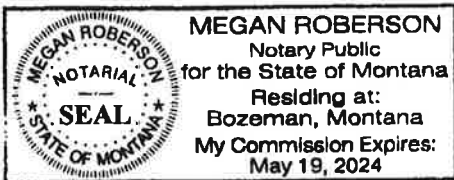
Section 31: Lots 1, 2, 3, E½NW¼, NE¼SW¼

DATED this 7<sup>th</sup> day of July, 2022.

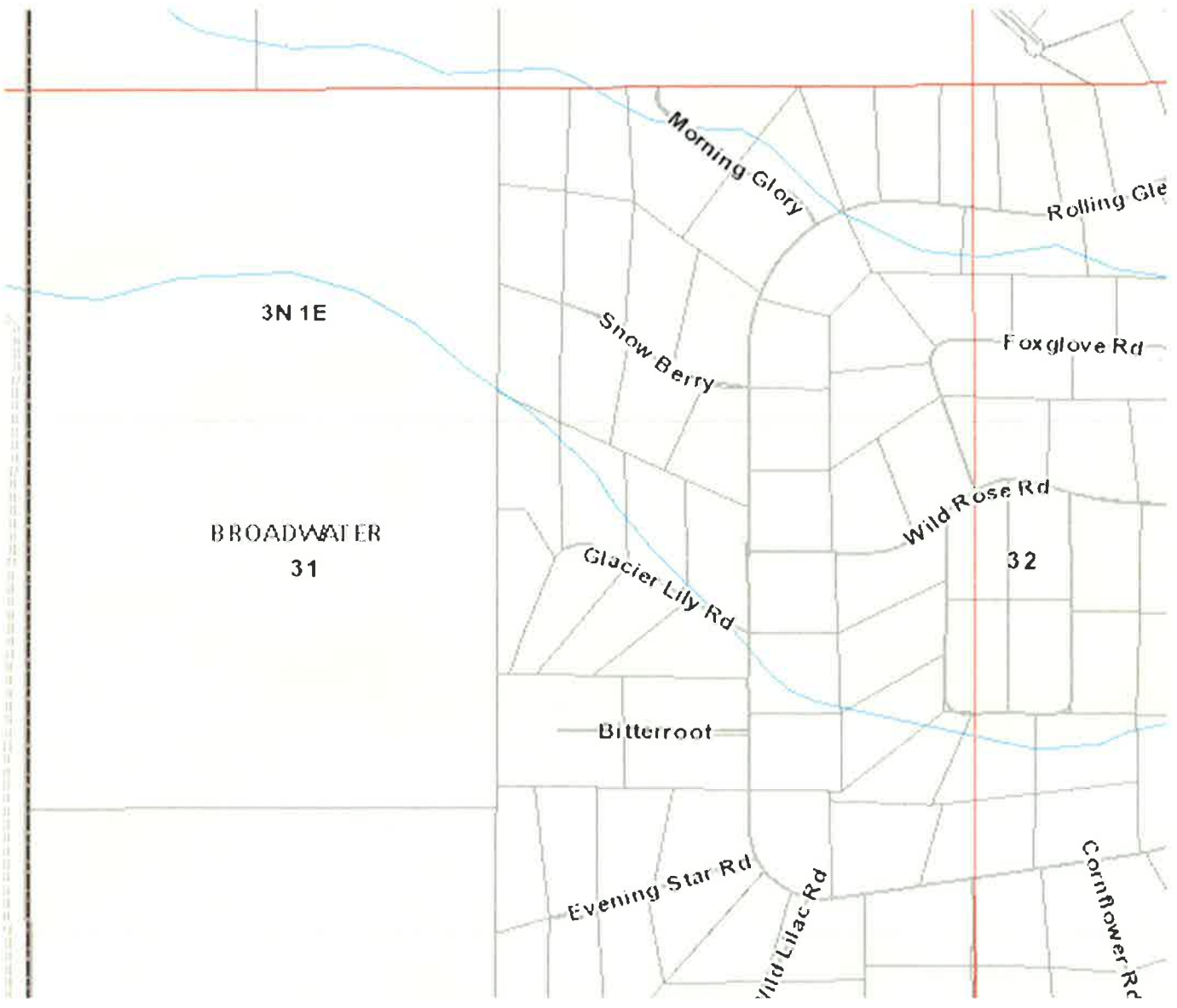
Deborah M. Velli  
Deborah M. Velli

STATE OF MONTANA )  
County of Gallatin ) : ss.

On this 7 day of July, 2022, before me a Notary Public in and for said state personally appeared DEBORAH M. VELLI, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that she executed the same.



M Roberson  
Printed Name: M Roberson  
Notary Public for the State of Montana  
Residing at Bozeman Montana  
My commission expires: MAY 19, 2024



# Property Record Card

## Summary

### Primary Information

**Property Category:** RP **Subcategory:** Agricultural and Timber Properties  
**Geocode:** 43-1206-31-2-01-01-0000 **Assessment Code:** 000J240168  
**Primary Owner:** **PropertyAddress:**

VALLEY VIEW ACRES LLC **COS Parcel:**  
 280 W KAGY BLVD STE D238  
 BOZEMAN, MT 59715-6056

*NOTE: See the Owner tab for all owner information*

### Certificate of Survey:

### Subdivision:

### Legal Description:

S31, T03 N, R01 E, ACRES 234, LOTS 1,2,3; E2NW4; NE4SW4

**Last Modified:** 3/11/2023 10:35:23 AM

### General Property Information

**Neighborhood:** 243.001.S **Property Type:** VAC\_R - Vacant Land - Rural  
**Living Units:** 0 **Levy District:** 43-2360-J24  
**Zoning:** **Ownership %:** 100

### Linked Property:

No linked properties exist for this property

### Exemptions:

No exemptions exist for this property

### Condo Ownership:

**General:** 0 **Limited:** 0

### Property Factors

**Topography:** **Fronting:**  
**Utilities:** **Parking Type:**  
**Access:** **Parking Quantity:**  
**Location:** **Parking Proximity:**

### Land Summary

<u>Land Type</u>	<u>Acres</u>	<u>Value</u>
Grazing	234.000	00.00
Fallow	0.000	00.00
Irrigated	0.000	00.00

**Continuous Crop**

Wild Hay 0.000  
 Farmsite 0.000  
 ROW 0.000  
 NonQual Land 0.000  
 Total Ag Land 234.000  
 Total Forest Land 0.000  
 Total Market Land 0.000

**Deed Information:**

Deed Date	Book	Page	Recorded Date	Document Number	Document Type
7/11/2022	243	218	7/11/2022	194154	Contract for Deed
7/11/2022	247	138	11/15/2022	195079	Warranty Deed
7/7/2021	227	54	7/9/2021	190145	Quit Claim Deed
6/23/2014	157	448	7/7/2013	171465	Quit Claim Deed
3/24/2014	155	795	4/2/2014	170964	Sheriff's Certificate of Redemption/Sheriff's Deed
4/24/2013	149	632	4/25/2013	169180	Sheriff's Certificate of Redemption/Sheriff's Deed
5/12/2012	143	728	7/10/2012	167497	
1/29/2008	111	330	1/29/2008		
4/27/2006	93	503			
4/3/2006	92	782			
10/24/2003	72	665			
10/12/1994	30	999			

**Owners**

Party #1

**Default Information:** VALLEY VIEW ACRES LLC  
 280 W KAGY BLVD STE D238

**Ownership %:** 100

**Primary Owner:** "Yes"

**Interest Type:** Fee Simple

**Last Modified:** 11/16/2022 12:46:35 PM

Other Names

Other Addresses

**Type**

**Name**

**Appraisals**

**Appraisal History**

Tax Year	Land Value	Building Value	Total Value	Method
2022	10391	0	10391	COST
2021	10391	0	10391	COST
2020	9670	0	9670	COST

**Market Land**

**Market Land Info**

No market land info exists for this parcel

**Dwellings**

**Existing Dwellings**

No dwellings exist for this parcel

**Other Buildings/Improvements**

**Outbuilding/Yard Improvements**

No other buildings or yard improvements exist for this parcel

**Commercial**

**Existing Commercial Buildings**

No commercial buildings exist for this parcel

**Ag/Forest Land**

**Ag/Forest Land Item #1**

**Acre Type:** G - Grazing

**Class Code:** 1601

Productivity

**Quantity:** 0.097

**Units:** AUM/Acre

Valuation

**Acres:** 4.187

**Value:** 0

**Ag/Forest Land Item #2**

**Acre Type:** G - Grazing

**Class Code:** 1601

**Irrigation Type:**

**Timber Zone:**

**Commodity:** Grazing Fee

**Per Acre Value:** 0

**Irrigation Type:**

**Timber Zone:**

Productivity

**Quantity:** 0.099  
**Units:** AUM/Acre

Valuation

**Acres:** 20.368  
**Value:** 0

Ag/Forest Land Item #3

**Acre Type:** G - Grazing  
**Class Code:** 1601

Productivity

**Quantity:** 0.125  
**Units:** AUM/Acre

Valuation

**Acres:** 4.432  
**Value:** 0

Ag/Forest Land Item #4

**Acre Type:** G - Grazing  
**Class Code:** 1601

Productivity

**Quantity:** 0.133  
**Units:** AUM/Acre

Valuation

**Acres:** 15.17  
**Value:** 0

Ag/Forest Land Item #5

**Acre Type:** G - Grazing  
**Class Code:** 1601

Productivity

**Quantity:** 0.138  
**Units:** AUM/Acre

Valuation

**Acres:** 10.643  
**Value:** 0

Ag/Forest Land Item #6

**Acre Type:** G - Grazing

**Commodity:** Grazing Fee

**Per Acre Value:** 0

**Irrigation Type:**  
**Timber Zone:**

**Commodity:** Grazing Fee

**Per Acre Value:** 0

**Irrigation Type:**  
**Timber Zone:**

**Commodity:** Grazing Fee

**Per Acre Value:** 0

**Irrigation Type:**  
**Timber Zone:**

**Commodity:** Grazing Fee

**Per Acre Value:** 0

**Irrigation Type:**

**Class Code:** 001

Productivity

**Quantity:** 0.141

**Units:** AUM/Acre

Valuation

**Acres:** 2.785

**Value:** 0

Ag/Forest Land Item #7

**Acre Type:** G - Grazing

**Class Code:** 1601

Productivity

**Quantity:** 0.181

**Units:** AUM/Acre

Valuation

**Acres:** 125.582

**Value:** 0

Ag/Forest Land Item #8

**Acre Type:** G - Grazing

**Class Code:** 1601

Productivity

**Quantity:** 0.191

**Units:** AUM/Acre

Valuation

**Acres:** 46.427

**Value:** 0

Ag/Forest Land Item #9

**Acre Type:** G - Grazing

**Class Code:** 1601

Productivity

**Quantity:** 0.222

**Units:** AUM/Acre

Valuation

**Acres:** 4.406

**Value:** 0

**Timber Zone:**

**Commodity:** Grazing Fee

**Per Acre Value:** 0

**Irrigation Type:**

**Timber Zone:**

**Commodity:** Grazing Fee

**Per Acre Value:** 0

**Irrigation Type:**

**Timber Zone:**

**Commodity:** Grazing Fee

**Per Acre Value:** 0

**Irrigation Type:**

**Timber Zone:**

**Commodity:** Grazing Fee

**Per Acre Value:** 0

Plat of the: *Rolling Glen Ranch Subdivision*  
Being the E 1/2 of Section 31 and the W 1/2 of Section 32, Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana.

For: *Steven and Susan Cavanaugh*

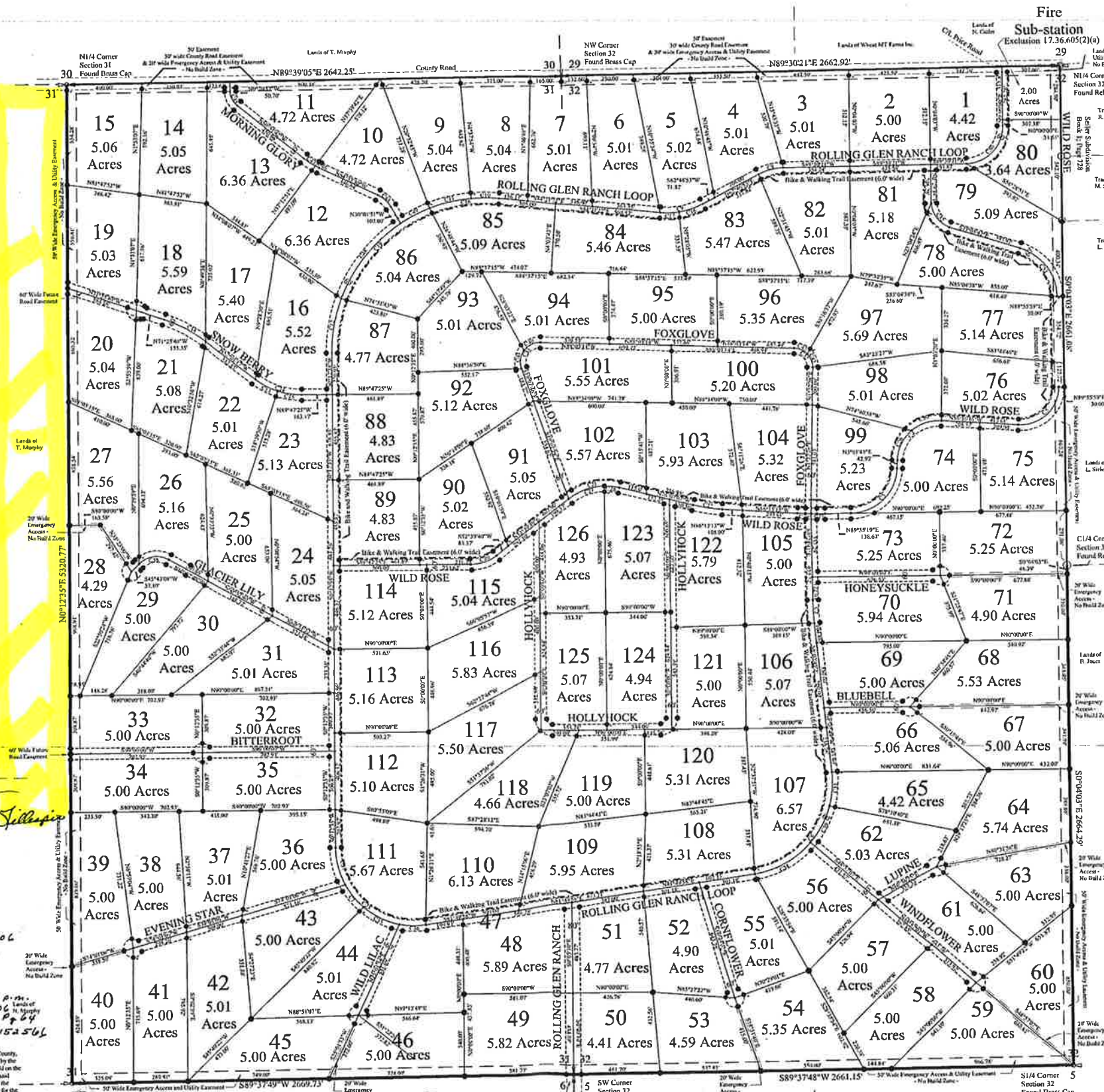
Curve Data table with columns: CURVE, BEARING, HORIZ DIST, RADIUS, ARC, DELTA, TANGENT. Lists data for curves C1 through C52.

PHASE 1: Includes Rolling Glen Ranch Loop, Rolling Glen Ranch, Foxglove, Wild Rose, and all lots being accessed from these roads.  
PHASE 2: Includes all remaining roads (cul-de-sac roads) and retaining lots being accessed by these remaining roads.  
All roadways are a minimum 60.0 feet wide Access & Utility Easement.  
All Natural Drainages are subject to a 60.0 feet wide Drainage Easement. No structure may be erected or utilized within 30 feet of either side of all natural drainages within this subdivision.

APPROVAL PHASE 1: Certificate of Final Plat Approval: The County Commission of Broadwater County, Montana, does hereby certify that we have examined the attached subdivision plat and find it conforms to the Subdivision and Platting Act and therefore is approved.  
APPROVAL PHASE 2: Certificate of Final Plat Approval: The County Commission of Broadwater County, Montana, does hereby certify that we have examined the attached subdivision plat and find it conforms to the Subdivision and Platting Act and therefore is approved.

Certificate of Treasurer: I hereby certify that the accompanying plat has been duly examined and that all real property taxes and special assessments assessed and levied on the land to be subdivided have been paid in full.  
Certificate of Clerk and Recorder: I, Recorder of Broadwater County, Montana, do hereby certify that the foregoing instrument was filed in my office at 1:50 PM on the 20th day of October, A.D. 2004, and recorded in Book 113/106 of Plats on Page 965. Records of the Clerk and Recorder, Broadwater County, Montana.

In witness whereof, I have hereunto affixed the seal of Broadwater County, Montana, this 19th day of October, 2004.  
Notary Public for the State of Montana  
My commission expires June 3, 2007



Rolling Glen Ranch Subdivision:  
Being the E 1/2 of Section 31 and the W 1/2 of Section 32, all being in Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana; and being more particularly described as follows: Commence at a found Brass Cap being the Northwest corner of said Section 32, thence along the north boundary of said Section 32 N89°30'21"E for 2662.92 feet to a found rebar being the North 1/4 corner of said Section; thence along the north-south mid-section line S0°40'3"E for 2661.08 feet to a found rebar being the Center 1/4 corner of said section; thence S0°40'3"E for 2664.29 feet to a found Brass Cap being the South 1/4 corner of said section; thence along the south boundary of said section S89°37'48"W for 2661.15 feet to a found rebar being the Southwest corner of said Section 32; thence along the south boundary of said Section 31 S89°37'49"W for 2669.73 feet to a found Brass Cap being the South 1/4 corner of said Section 31; thence along the north-south mid-section line N0°12'35"E for 5320.77 feet to a found Brass Cap being the North 1/4 corner of said Section 31; thence along the north boundary of said section N89°39'05"E for 2642.25 feet to the point of beginning containing 649.64 acres more or less and being served by and subject to right-of-ways and easements as shown, existing, or of record.

Certificate of Dedication:  
I, (We), the undersigned property owner(s), do hereby certify that I, (We), have caused to be surveyed, subdivided, and platted into lots, parcels, blocks, roads, and alleys, and other divisions and dedications, as shown by this plat hereunto included, the following described Tract of land, to wit:  
ROLLING GLEN RANCH SUBDIVISION:  
Utility Easement Declaration:  
The undersigned hereby grants unto each and every person, firm, or corporation, whether public or private, providing or offering to provide telephone, telegraph, electric power, gas, cable television, water or sewer service to the public, the right to the joint use of an easement for the construction, maintenance, repair and removal of their lines and other facilities, in, over, under and across each area designated on this plat as "Utility Easement" to have and to hold forever.

Certificate of Waiver:  
We, the undersigned owners of the Subdivision, do hereby waive the right to protest the creation of Rural Improvement Districts. In so doing, we do not waive any right to comment on, protest, and/or appeal any assessment formula which may be proposed, if we believe it to be inequitable. This waiver shall be binding upon the heirs, assigns, and purchasers on all lots within this subdivision.

The above described tract of land is to be known and designated as the ROLLING GLEN RANCH SUBDIVISION of Broadwater County, Montana, and the lands included in all roads, avenues, alleys, and parks or public squares shown on said plat are hereby granted and donated to the use of the public forever. The roadways dedicated to the public are accepted for public use, but the County accepts no responsibility for maintaining the same. The owner(s) agree(s) that the County has no obligation to maintain the roads hereby dedicated to public use.

Fire Sub-station Tract:  
Exclusion 17.36.605(2)(a)  
I hereby certify, the Fire Sub-station Tract is not subject to review according to Montana Department of Environmental Quality Regulation; Chapter 6 (2)(a) which states; Parcels are exempt from review: "Where sanitation facilities will not be used, on which no structure requiring water or sewage disposal will be erected. Any change in land use subjects the division to the provisions of Title 76, Chapter 4, Part 1, MCA, and this chapter."  
Therefore, this tract of land is not subject to sanitation review.

WEED CONTROL CERTIFICATION:  
The Conditions and Restrictions as required by Broadwater County will apply to this subdivision.

COVENANTS: This subdivision is subject to Restrictive Covenants. See Covenants Filed in Book 79, Page 455.

See: HOMEOWNERS ASSOCIATION:  
Homeowners Association Article of Organization and By-Laws must be filed if applicable.

RIGHT-TO-FARM RESOLUTION:  
This subdivision is subject to the "Right-to-Farm Resolution" as adopted by Broadwater County.  
Dated this 19th day of October, A.D., 2004  
Landowners: *Steven & Susan Cavanaugh*

Notary:  
On this 19th day of October, 2004, before me a Notary Public for the State of Montana, personally appeared *Steven Cavanaugh* known to me to be the persons whose names are subscribed to the within instrument, and acknowledged to me that they executed the same.  
Notary Public for the State of Montana  
My commission expires June 3, 2007

Certificate of Surveyor:  
I hereby certify the attached plat is a true representation of a survey performed under my supervision and completed on May 24, 2004 and described the same as shown on the accompanying plat in accordance with the provisions of the Montana Subdivision and Platting Act.  
Dated this 18th day of October, 2004  
Surveyor: *Donald M. Schaubert*  
Donald M. Schaubert L.S.  
P.O. Box 177  
Townsend, MT 59644



Professional seals and stamps for the Notary Public and Surveyor, including the Montana State seal and a surveyor's seal for Donald M. Schaubert L.S.



**PRELIMINARY PLAT**  
**SIX RANGES RANCH SUBDIVISION**  
 SUBDIVISION PLAT NO. \_\_\_\_\_

A SUBDIVISION OF GOVERNMENT LOTS 1, 2 & 3, THE EAST ONE-HALF OF THE NORTHWEST ONE-QUARTER AND THE NORTHEAST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 31 TOWNSHIP 3 NORTH, RANGE 1 EAST, P.M.M., BROADWATER COUNTY, MONTANA

THIS SURVEY WAS PERFORMED FOR THE OWNERS OF RECORD: VALLEY VIEW ACRES LLC

THE PURPOSE OF THIS SURVEY IS TO CREATE AN 11 LOT SUBDIVISION.

**PERIMETER LEGAL DESCRIPTION**

A Tract of land being Government Lots 1, 2, & 3, the east one-half of the northwest one-quarter and the northeast one-quarter of the southwest one-quarter of Section 31, Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana, more particularly described as follows:

Beginning at the corner common to Section 30 and Section 31, Township 3 North, Range 1 East, P.M.M. and Section 25 and Section 36, Township 3 North, Range 1 West, P.M.M., a 3" aluminum cap "14535LS";  
 thence N 89°53'26" E a distance of 1271.45' to an orange plastic cap "15279LS";  
 thence N 89°53'26" E a distance of 1349.73' to a 3" BLM brass cap;  
 thence S 00°27'53" W a distance of 534.14' to a 1/2" rebar;  
 thence S 00°28'07" W a distance of 550.18' to a 1/2" aluminum cap "5430LS";  
 thence S 00°27'23" W a distance of 805.88' to a 1/2" aluminum cap "5430LS";  
 thence S 00°26'56" W a distance of 658.36' to a 1/2" aluminum cap "5430LS";  
 thence S 00°25'47" W a distance of 453.68' to a 1/2" aluminum cap "5430LS";  
 thence S 00°27'41" W a distance of 279.84' to a 1/2" aluminum cap "5430LS";  
 thence S 00°26'27" W a distance of 175.42' to a 1/2" aluminum cap "5430LS";  
 thence S 00°26'54" W a distance of 619.85' to a 1/2" aluminum cap "5430LS";  
 thence S 00°25'22" W a distance of 111.91' to an orange plastic cap "15279LS";  
 thence N 89°59'31" W a distance of 2609.62' to an orange plastic cap "15279LS";  
 thence N 00°17'07" E a distance of 3983.79' to the Point of Beginning; containing, 239.326 acres more or less.

Subject to all easements of record or apparent from a visual inspection of the property.

**CERTIFICATE OF DEDICATION**

The above-described tract of land is to be known and designated as the Six Ranges Ranch Subdivision, Broadwater County, Montana, and the lands included in all streets, avenues, alleys, and parks or public lands shown on said plat are hereby granted and donated to Broadwater County for the public use and enjoyment. Unless specifically listed herein, the lands included in all streets, avenues, alleys and parks or public lands dedicated to the public are accepted for public use, but the County accepts no responsibility for maintaining the same. The owner agrees that the County has no obligation to maintain the lands included in all streets, avenues, alleys and parks or public lands hereby dedicated to public use.

**CERTIFICATE OF WAIVER**

I, \_\_\_\_\_ of Valley View Acres LLC, the undersigned owner of the Subdivision, do hereby waive the right to protest the creation of Rural Improvement Districts. In so doing, we do not waive any right to comment on, protest, and/or appeal any assessment formula which may be proposed, if we believe it to be inequitable. This waiver shall be binding upon the heirs, assigns, and purchasers on all lots within this subdivision.

**CERTIFICATE OF EXEMPTION**

I, \_\_\_\_\_ of Valley View Acres LLC, the undersigned owner of the Subdivision furthermore certify that Tracts 1 - 11 of this survey are larger than 20 acres and that this division is not a subdivision and is exempt from Montana Department of Environmental Quality review pursuant to MCA 76-4-103 which states:  
 A subdivision consists of only those parcels of less than 20 acres that have been created by a division of land, and the plat must show all of the parcels, whether contiguous or not. The rental or lease of one or more parts of a single building, structure, or other improvement, whether existing or proposed, is not a subdivision, as that term is defined in this part, and is not subject to the requirements of this part.

Dated this \_\_\_\_\_ day of \_\_\_\_\_

Valley View Acres, LLC

By: \_\_\_\_\_ f/s

State of \_\_\_\_\_ s.s.

County of \_\_\_\_\_ s.s.

On this \_\_\_\_\_ day of \_\_\_\_\_ before me, Notary Public in and for said state, personally appeared \_\_\_\_\_ known to me to be the \_\_\_\_\_ of Valley View Acres, LLC and acknowledged to me that she/he executed the same.

Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Notary Public for the State of \_\_\_\_\_

Residing at \_\_\_\_\_

My commission expires \_\_\_\_\_

**CERTIFICATE OF CLERK AND RECORDER**

I, \_\_\_\_\_ Clerk and Recorder of Broadwater County, Montana, hereby certify that the foregoing instrument was filed in my office at \_\_\_\_\_ o'clock \_\_\_\_\_ M. this \_\_\_\_\_ day of \_\_\_\_\_ A.D., and recorded in Book \_\_\_\_\_ of Plats on Page \_\_\_\_\_ records of the Clerk and Recorder, Broadwater County, Montana.

Document Number \_\_\_\_\_

Clerk and Recorder of Broadwater County \_\_\_\_\_

**CERTIFICATE OF COUNTY COMMISSIONERS**

The County Commission of Broadwater County, Montana, does hereby certify that the accompanying plat has been duly reviewed, and has been found to conform to the requirements of the Montana Subdivision and Platting Act, §76-3-101 et. seq. MCA and the Broadwater County Subdivision Regulations, approve it, and hereby accept the dedication to public use.

Dated this \_\_\_\_\_ day of \_\_\_\_\_

Commissioner \_\_\_\_\_ County Attorney \_\_\_\_\_

Commissioner \_\_\_\_\_ Clerk and Recorder \_\_\_\_\_

Commissioner \_\_\_\_\_

**CERTIFICATE OF COUNTY TREASURER**

I, \_\_\_\_\_ Treasurer of Broadwater County, Montana do hereby certify that the accompanying Subdivision Plat has been duly examined and that all real property taxes and special assessments assessed and levied on the land to be surveyed have been paid through \_\_\_\_\_ (J240108)

Dated this \_\_\_\_\_ day of \_\_\_\_\_

Treasurer of Broadwater County \_\_\_\_\_

**CERTIFICATE OF SURVEYOR**

I, Norbert Hackl the undersigned Professional Land Surveyor, do hereby certify that between June 9, 2022 and \_\_\_\_\_ the accompanying Subdivision Plat was surveyed by me, or under my supervision, and the same was platted as shown on the accompanying plat and as described, in accordance with the Montana Subdivision and Platting Act, §76-3-101 through §76-3-625 M.C.A., and the Broadwater County Subdivision Regulations.

Dated this \_\_\_\_\_ day of \_\_\_\_\_

Norbert Hackl, PLS  
 Montana Registration No. 14,535 L.S.

**CERTIFICATE OF EXAMINATION**

Reviewed for errors and omissions this the \_\_\_\_\_ day of \_\_\_\_\_ pursuant to Section 76-3-611(2)(a), MCA.

Montana Registration No. \_\_\_\_\_

**RIGHT-TO-FARM RESOLUTION**

This subdivision is subject to the "Right-to-Farm Resolution" as adopted by Broadwater County.

**WEED CONTROL CERTIFICATION**

The Conditions and Restrictions as required by Broadwater County will apply to this subdivision.

**LEGEND**

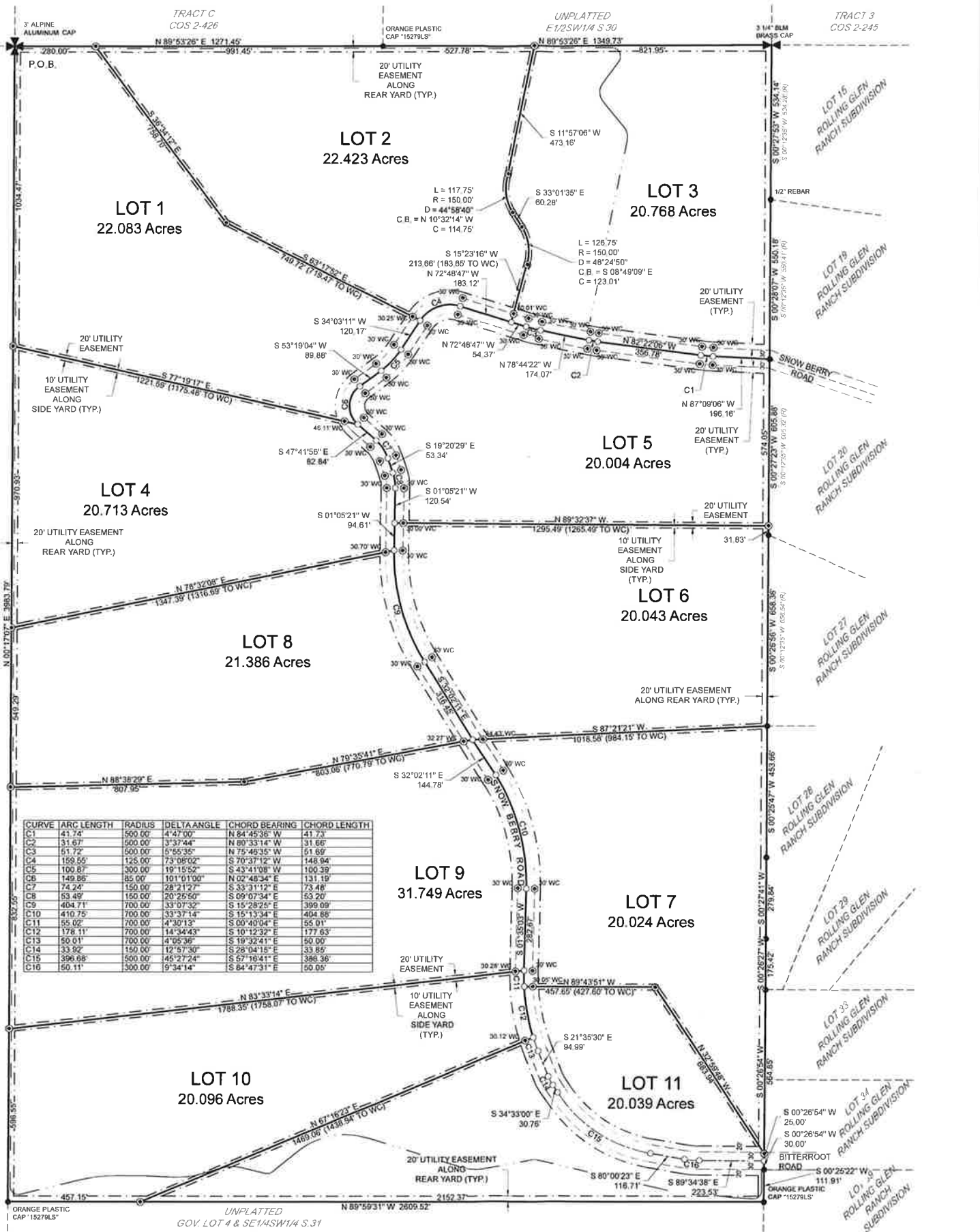
- FOUND 1 1/2" ALUMINUM CAP "5430LS" OR AS NOTED
- CALCULATED POINT NOTHING FOUND OR SET
- ⊙ SET 5/8"x24" REBAR W/ 2" ALUMINUM CAP
- PROPERTY BOUNDARY
- - - ADJOINING LOT BOUNDARY
- 60' ROAD RIGHT-OF-WAY
- 20' PUBLIC UTILITY EASEMENT
- RIGHT-OF-WAY CENTER LINE
- 15' RECREATIONAL TRAIL EASEMENT CENTER LINE

P.O.B., POINT OF BEGINNING

S 00°27'23" W 805.88' (R) RECORD BOOK 1, PAGE 965

**BASIS OF BEARING**  
 Bobcat LDP  
 Coordinate System

0 200 400 600  
 SCALE 1"=200'



X 1/4	Sec.	T.	R.	X 1/4	Sec.	T.	R.
	31	3 N	1 E				

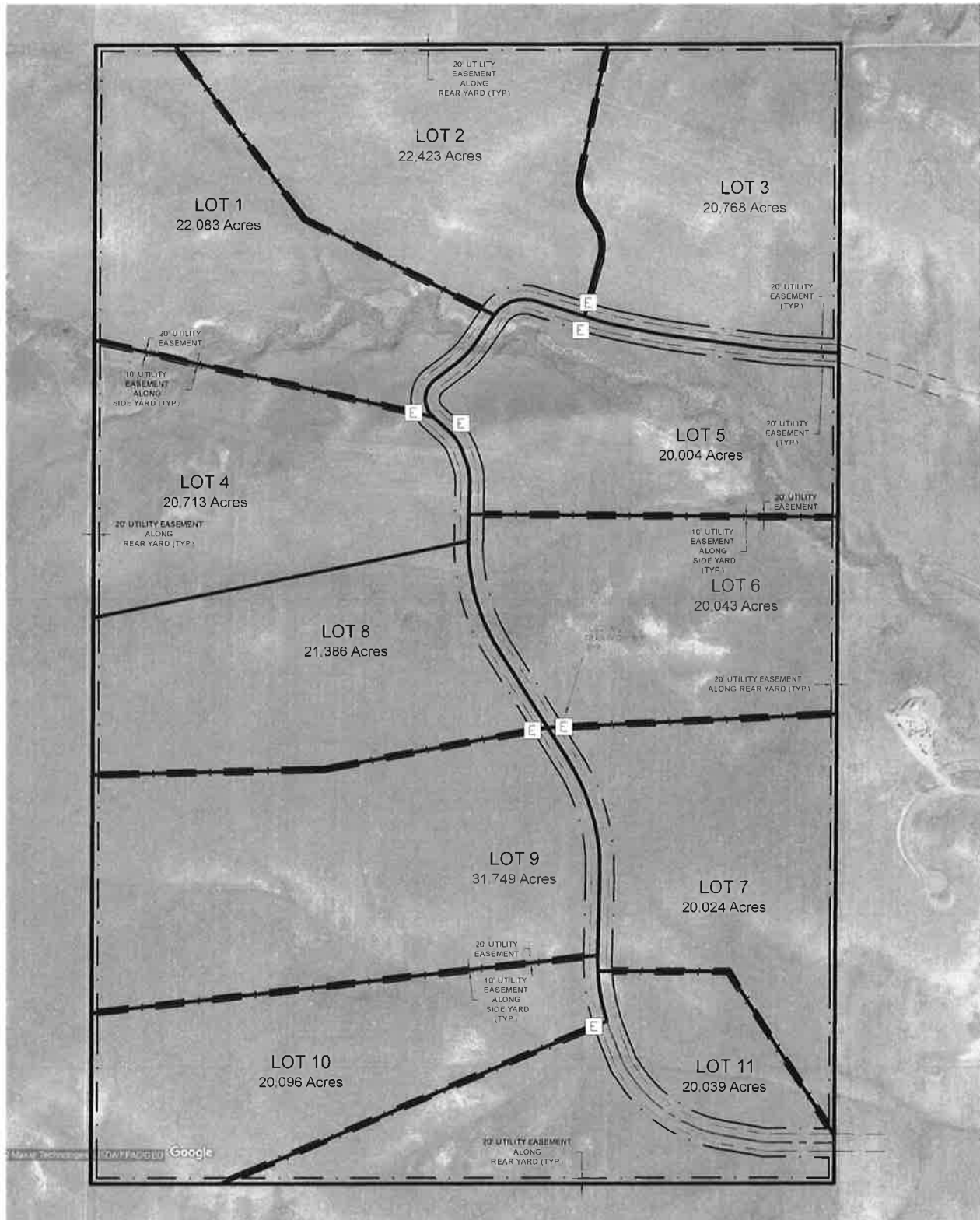
**ALPINE SURVEYING & ENGINEERING**  
 714 Stoneridge Dr.  
 Suite 3  
 Bozeman, MT 59718  
 586.5598 Office  
 www.alpinesurveying.net

PROJECT SURVEYOR: NH	SHEET
DRAWN BY: NH	1 OF 1
REVIEWED BY: MB	CREAGAN BROADWATER
DATE: 11/28/22	PROJECT NO: 540-02



# UTILITY EXHIBIT

A DEPICTION OF UTILITY EASEMENTS AND STAKED/INSTALLED ELECTRIC TRANSFORMERS.



**BASIS OF BEARING**  
BOBCAT LDP  
Coordinate System

DRAWN BY: \_\_\_\_\_ GLL  
DATE: \_\_\_\_\_ 04/14/2023  
PROJECT NO. \_\_\_\_\_ 540-02  
FILE NAME: \_\_\_\_\_ UTIL EXHIB



714 Stoneridge Dr.  
Suite 3  
Bozeman, MT 59718  
586.5599 Office  
[www.alpinesurveying.net](http://www.alpinesurveying.net)



**PRELIMINARY PLAT**  
**SIX RANGES RANCH SUBDIVISION**  
 SUBDIVISION PLAT NO. \_\_\_\_\_

A SUBDIVISION OF GOVERNMENT LOTS 1, 2 & 3, THE EAST ONE-HALF OF THE NORTHWEST ONE-QUARTER AND THE NORTHEAST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 31 TOWNSHIP 3 NORTH, RANGE 1 EAST, P.M.M., BROADWATER COUNTY, MONTANA

THIS SURVEY WAS PERFORMED FOR THE OWNERS OF RECORD: VALLEY VIEW ACRES LLC

THE PURPOSE OF THIS SURVEY IS TO CREATE AN 11 LOT SUBDIVISION.

**PERIMETER LEGAL DESCRIPTION**

A Tract of land being Government Lots 1, 2, & 3, the east one-half of the northwest one-quarter and the northeast one-quarter of the southwest one-quarter of Section 31, Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana, more particularly described as follows:

Beginning at the corner common to Section 30 and Section 31, Township 3 North, Range 1 East, P.M.M. and Section 25 and Section 35, Township 3 North, Range 1 West, P.M.M., a 3" aluminum cap "14636LS";  
 thence N 89°53'26" E a distance of 1271.45' to an orange plastic cap "15276LS";  
 thence N 89°53'26" E a distance of 1349.73' to a 3" BLM brass cap;  
 thence S 00°27'53" W a distance of 534.14' to a 1/2" rebar;  
 thence S 00°28'07" W a distance of 950.18' to a 1/2" aluminum cap "5430LS";  
 thence S 00°27'23" W a distance of 805.89' to a 1/2" aluminum cap "5430LS";  
 thence S 00°26'56" W a distance of 659.35' to a 1/2" aluminum cap "5430LS";  
 thence S 00°25'47" W a distance of 453.86' to a 1/2" aluminum cap "5430LS";  
 thence S 00°27'41" W a distance of 279.84' to a 1/2" aluminum cap "5430LS";  
 thence S 00°28'27" W a distance of 175.42' to a 1/2" aluminum cap "5430LS";  
 thence S 00°26'54" W a distance of 819.85' to a 1/2" aluminum cap "5430LS";  
 thence S 00°25'22" W a distance of 111.91' to an orange plastic cap "15276LS";  
 thence N 89°59'31" W a distance of 2609.52' to an orange plastic cap "15276LS";  
 thence N 00°17'07" E a distance of 3983.79' to the Point of Beginning, containing, 239.328 acres more or less.

Subject to all easements of record or apparent from a visual inspection of the property.

**CERTIFICATE OF DEDICATION**

The above-described tract of land is to be known and designated as the Six Ranges Ranch Subdivision, Broadwater County, Montana; and the lands included in all streets, avenues, alleys, and parks or public lands shown on said plat are hereby granted and donated to Broadwater County for the public use and enjoyment. Unless specifically listed herein, the lands included in all streets, avenues, alleys and parks or public lands dedicated to the public are accepted for public use, but the County accepts no responsibility for maintaining the same. The owner agrees that the County has no obligation to maintain the lands included in all streets, avenues, alleys and parks or public lands hereby dedicated to public use.

**CERTIFICATE OF WAIVER**

I, \_\_\_\_\_ of Valley View Acres LLC, the undersigned owner of the Subdivision, do hereby waive the right to protest the creation of Rural Improvement Districts. In so doing, we do not waive any right to comment on, protest, and/or appeal any assessment formula which may be proposed, if we believe it to be inequitable. This waiver shall be binding upon the heirs, assigns, and purchasers on all lots within this subdivision.

**CERTIFICATE OF EXEMPTION**

I, \_\_\_\_\_ of Valley View Acres LLC, the undersigned owner of the Subdivision furthermore certify that Tracts 1 - 11 of this survey are larger than 20 acres and that this division is not a subdivision and is exempt from Montana Department of Environmental Quality review pursuant to MCA 76-4-103 which states:

A subdivision consists of only those parcels of less than 20 acres that have been created by a division of land, and the plat must show all of the parcels, whether contiguous or not. The rental or lease of one or more parts of a single building, structure, or other improvement, whether existing or proposed, is not a subdivision, as that term is defined in this part, and is not subject to the requirements of this part.

Dated this \_\_\_\_\_ day of \_\_\_\_\_

Valley View Acres, LLC

By: \_\_\_\_\_ it's

State of \_\_\_\_\_ s.s.

County of \_\_\_\_\_ s.s.

On this \_\_\_\_\_ day of \_\_\_\_\_ before me, Notary Public in and for said state, personally appeared \_\_\_\_\_ known to me to be the \_\_\_\_\_ of Valley View Acres, LLC and acknowledged to me that she/he executed the same.

Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Notary Public for the State of \_\_\_\_\_

Residing at \_\_\_\_\_

My commission expires \_\_\_\_\_

**CERTIFICATE OF CLERK AND RECORDER**

I, \_\_\_\_\_ Clerk and Recorder of Broadwater County, Montana, hereby certify that the foregoing instrument was filed in my office at \_\_\_\_\_ o'clock \_\_\_\_\_ M. this \_\_\_\_\_ day of \_\_\_\_\_ A.D., and recorded in Book \_\_\_\_\_ of Plats on Page \_\_\_\_\_ records of the Clerk and Recorder, Broadwater County, Montana.

Document Number \_\_\_\_\_

Clerk and Recorder of Broadwater County \_\_\_\_\_

**CERTIFICATE OF COUNTY COMMISSIONERS**

The County Commission of Broadwater County, Montana, does hereby certify that the accompanying plat has been duly reviewed, and has been found to conform to the requirements of the Montana Subdivision and Platting Act, 576-3-101 et. seq. MCA and the Broadwater County Subdivision Regulations, approve it, and hereby accept the dedication to public use.

Dated this \_\_\_\_\_ day of \_\_\_\_\_

Commissioner \_\_\_\_\_ County Attorney \_\_\_\_\_

Commissioner \_\_\_\_\_ Clerk and Recorder \_\_\_\_\_

Commissioner \_\_\_\_\_

**CERTIFICATE OF COUNTY TREASURER**

I, \_\_\_\_\_ Treasurer of Broadwater County, Montana do hereby certify that the accompanying Subdivision Plat has been duly examined and that all real property taxes and special assessments assessed and levied on the land to be surveyed have been paid through \_\_\_\_\_ (J240168)

Dated this \_\_\_\_\_ day of \_\_\_\_\_

Treasurer of Broadwater County \_\_\_\_\_

**CERTIFICATE OF SURVEYOR**

I, Norbert Hackl the undersigned Professional Land Surveyor, do hereby certify that between June 9, 2022 and \_\_\_\_\_ the accompanying Subdivision Plat was surveyed by me, or under my supervision, and the same was plotted as shown on the accompanying plat and as described, in accordance with the Montana Subdivision and Platting Act, 576-3-101 through 576-3-625 M.C.A., and the Broadwater County Subdivision Regulations.

Dated this \_\_\_\_\_ day of \_\_\_\_\_

Norbert Hackl, PLS  
 Montana Registration No. 14,635 L.S.

**CERTIFICATE OF EXAMINATION**

Reviewed for errors and omissions this \_\_\_\_\_ day of \_\_\_\_\_ pursuant to Section 76-3-611(2)(a), MCA.

Montana Registration No. \_\_\_\_\_

**RIGHT-TO-FARM RESOLUTION**

This subdivision is subject to the "Right-to-Farm Resolution" as adopted by Broadwater County.

**WEED CONTROL CERTIFICATION**

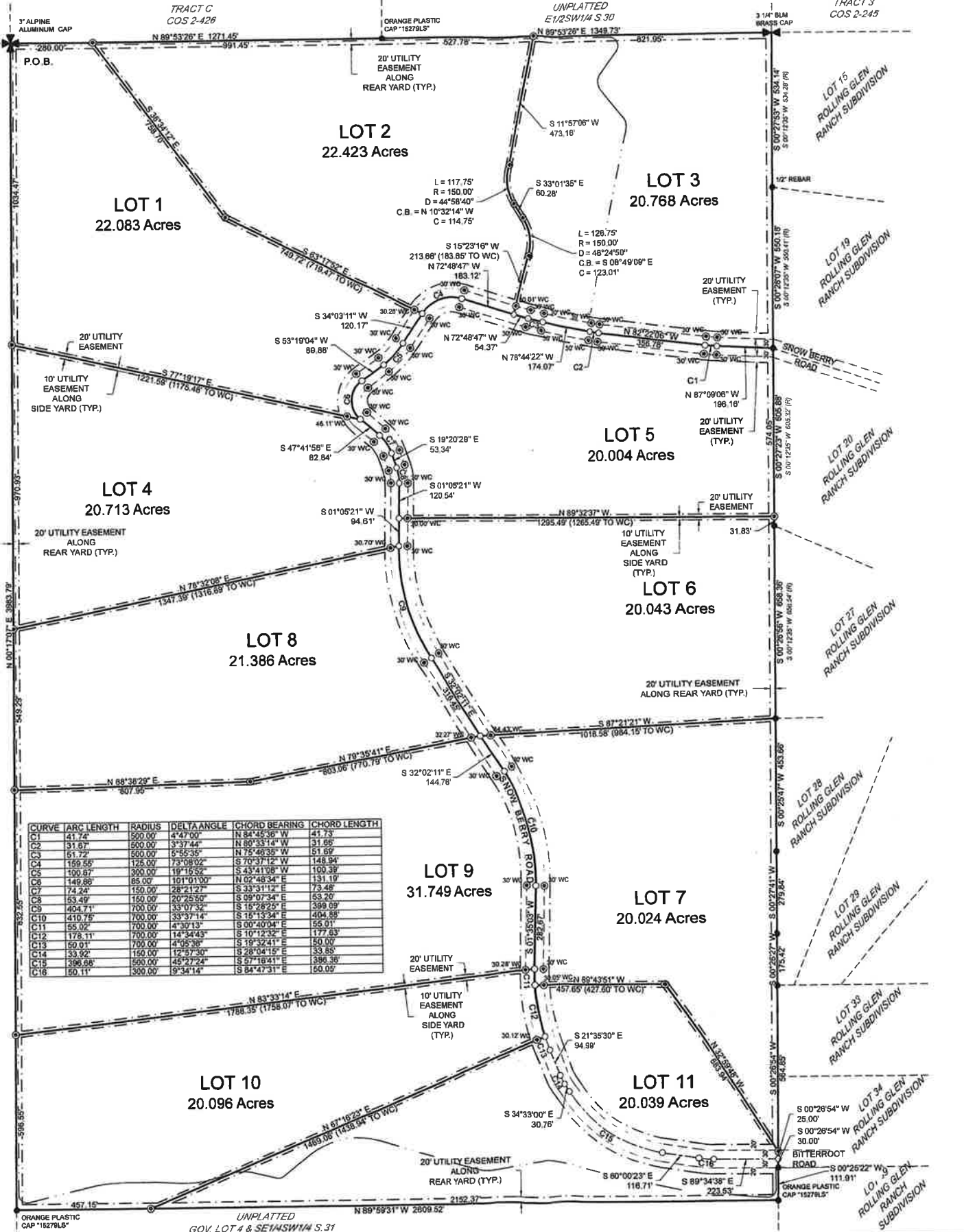
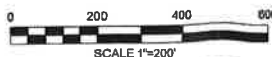
The Conditions and Restrictions as required by Broadwater County will apply to this subdivision.

**LEGEND**

- FOUND 1/2" ALUMINUM CAP "5430LS" OR AS NOTED
- CALCULATED POINT NOTHING FOUND OR SET
- ⊙ SET 5/8"x24" REBAR W/ 2" ALUMINUM CAP
- PROPERTY BOUNDARY
- - - ADJOINING LOT BOUNDARY
- - - 80' ROAD RIGHT-OF-WAY
- - - 20' PUBLIC UTILITY EASEMENT
- - - RIGHT-OF-WAY CENTER LINE
- - - 15' RECREATIONAL TRAIL EASEMENT CENTER LINE

P.O.B. POINT OF BEGINNING  
 S 00°12'35" W 665.52' (R) RECORD BOOK 1, PAGE 995

BASIS OF BEARING  
 Bobcat LDP  
 Coordinate System



CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	41.74	500.00	4°47'00"	N 84°45'35" W	41.73
C2	31.67	600.00	5°37'44"	N 80°35'14" W	31.66
C3	51.72	500.00	5°55'35"	N 75°46'35" W	51.69
C4	159.55	125.00	73°08'02"	S 70°37'12" W	148.94
C5	100.87	300.00	19°15'52"	S 43°41'58" W	100.39
C6	149.86	85.00	101°01'00"	N 02°48'34" E	131.19
C7	74.24	150.00	28°21'27"	S 33°31'12" E	73.48
C8	63.49	150.00	20°25'50"	S 09°07'34" E	63.20
C9	404.71	700.00	33°07'32"	S 16°28'25" E	399.09
C10	410.75	700.00	33°57'14"	S 19°13'54" E	404.58
C11	65.92	700.00	4°32'13"	S 00°40'04" E	65.91
C12	178.11	700.00	14°34'43"	S 10°12'32" E	177.63
C13	60.01	700.00	4°05'36"	S 19°32'41" E	60.00
C14	33.92	150.00	12°57'30"	S 28°04'15" E	33.88
C15	296.68	500.00	45°22'24"	S 57°18'41" E	296.39
C16	50.11	300.00	9°34'14"	S 84°47'31" E	50.05

X 1/4	Sec.	T.	R.	X 1/4	Sec.	T.	R.
<input checked="" type="checkbox"/>	31	3 N	1 E	<input checked="" type="checkbox"/>			
<input type="checkbox"/>				<input type="checkbox"/>			
<input type="checkbox"/>				<input type="checkbox"/>			



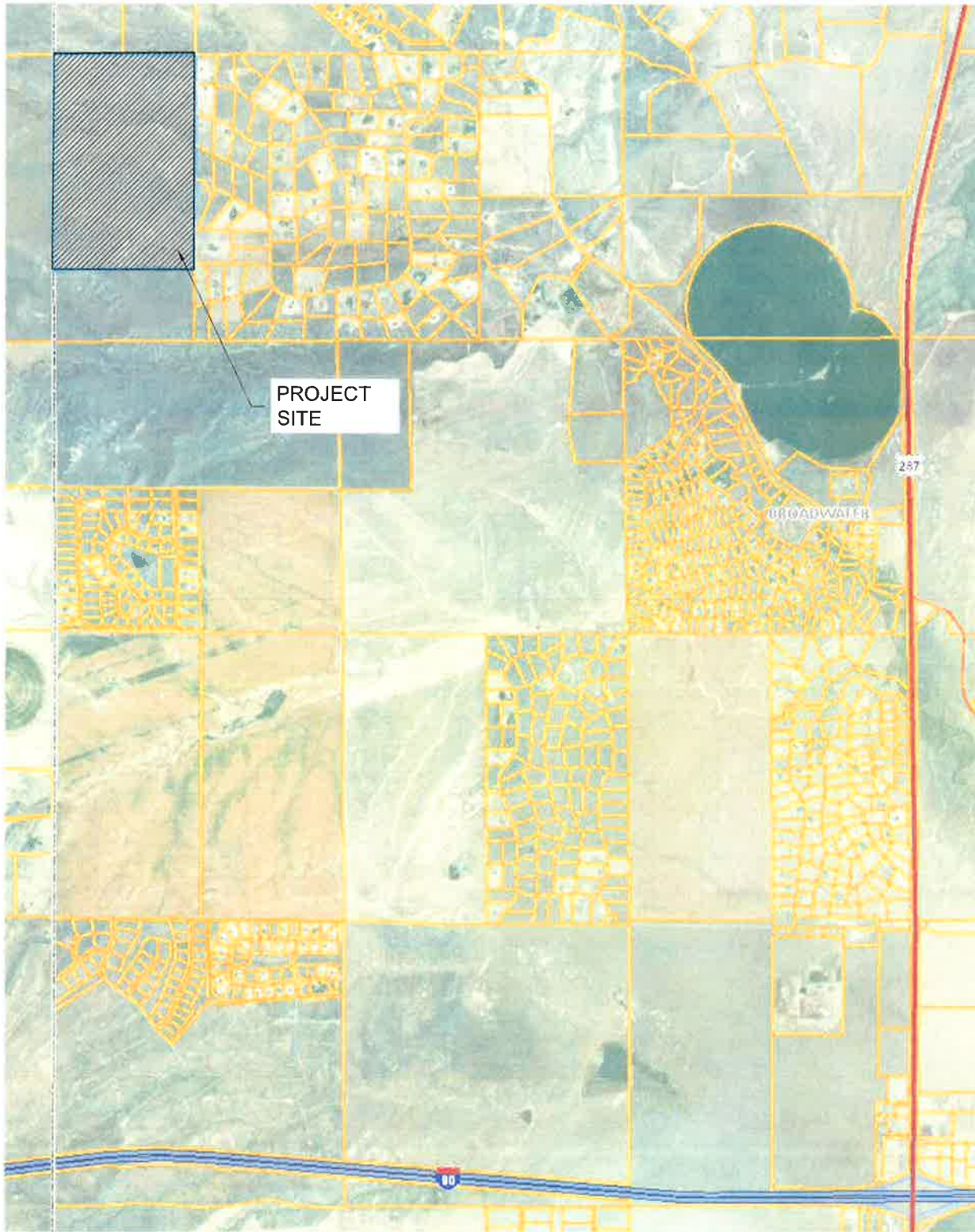
714 Stoneridge Dr.  
 Suite 3  
 Bozeman, MT 59718  
 586-5589 Office  
 www.alpinesurveying.net

PROJECT SURVEYOR: NH	SHEET
DRAWN BY: NH	1 OF 1
REVIEWED BY: MB	CREAGAN BROADWATER
DATE: 11/28/22	PROJECT NO. 540-02



# VICINITY / USGS TOPOGRAPHY MAP

SIX RANGES RANCH SUBDIVISION, SEC. 31, T. 3S, R. 1E, BROADWATER COUNTY, MT



CREAGAN  
SIX RANGES RANCH SUB.  
BROADWATER COUNTY, MT  
VICINITY MAP

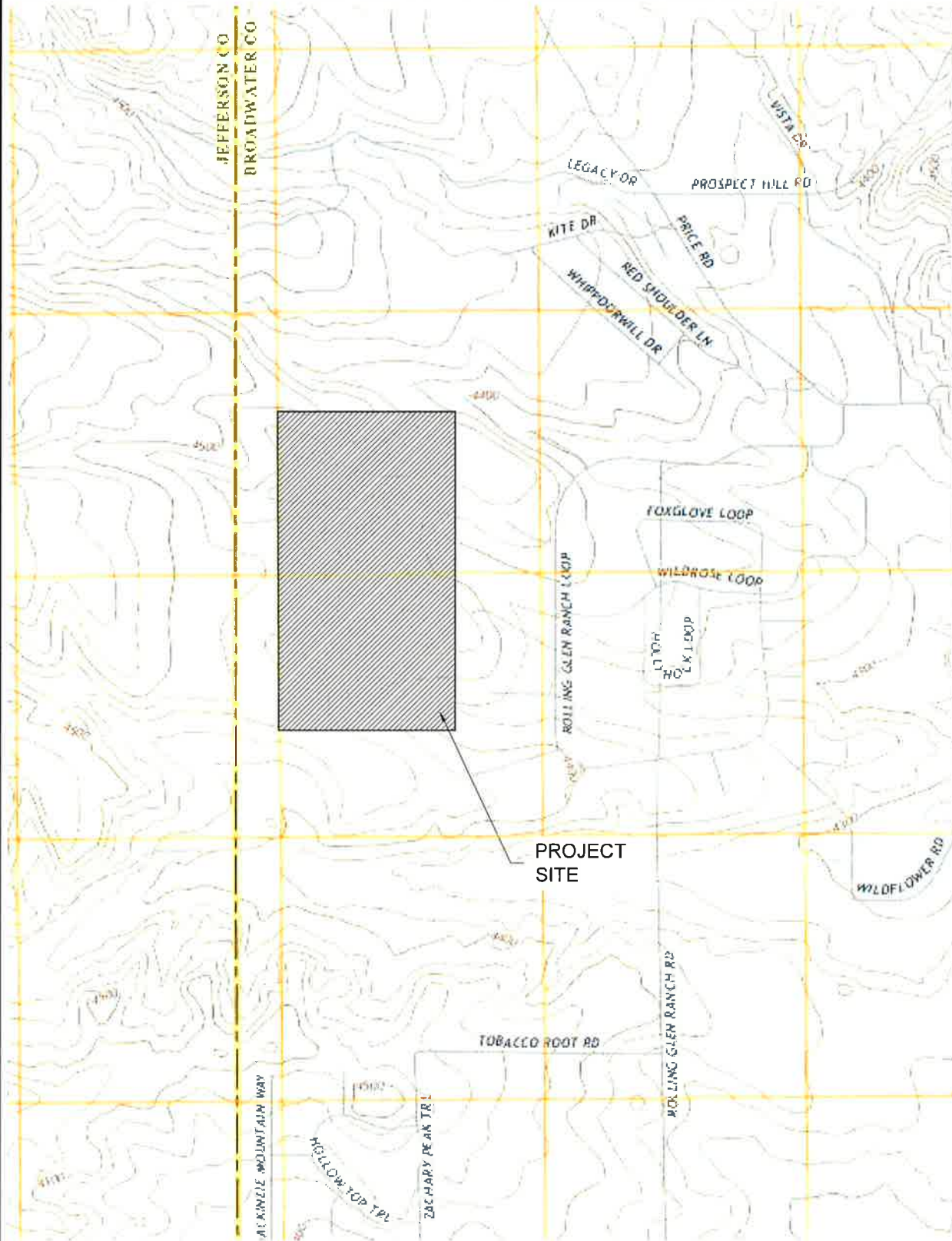
DRAWN BY: EV  
DATE: 1/25/2023  
PROJECT NO. 540-02  
FILE NAME: EXHIBIT A



714 STONERIDGE DR  
SUITE 3  
BOZEMAN, MT 59718  
586.5599 Office  
[www.alpinesurveying.net](http://www.alpinesurveying.net)

# VICINITY / USGS TOPOGRAPHY MAP

SIX RANGES RANCH SUBDIVISION, SEC. 31, T. 3S, R. 1E, BROADWATER COUNTY, MT



CREAGAN  
SIX RANGES RANCH SUB.  
BROADWATER COUNTY, MT  
VICINITY MAP

DRAWN BY: EV  
DATE: 1/25/2023  
PROJECT NO. 540-02  
FILE NAME: EXHIBIT A



714 STONERIDGE DR  
SUITE 3  
BOZEMAN, MT 59718  
586.5599 Office  
www.alpinesurveying.net

**PRELIMINARY PLAT**  
**SIX RANGES RANCH SUBDIVISION**  
 SUBDIVISION PLAT NO. \_\_\_\_\_

A SUBDIVISION OF GOVERNMENT LOTS 1, 2, & 3, THE EAST ONE-HALF OF THE NORTHWEST ONE-QUARTER AND THE NORTHEAST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 31 TOWNSHIP 3 NORTH, RANGE 1 EAST, P.M.M., BROADWATER COUNTY, MONTANA

THIS SURVEY WAS PERFORMED FOR THE OWNERS OF RECORD: VALLEY VIEW ACRES LLC

THE PURPOSE OF THIS SURVEY IS TO CREATE A 11 LOT SUBDIVISION.

**PERIMETER LEGAL DESCRIPTION**

A Tract of land being Government Lots 1, 2, & 3, the east one-half of the northwest one-quarter and the northeast one-quarter of the southwest one-quarter of Section 31, Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana, more particularly described as follows:

Beginning at the corner common to Section 30 and Section 31, Township 3 North, Range 1 East, P.M.M. and Section 25 and Section 36, Township 3 North, Range 1 West, P.M.M., a 3" aluminum cap "14535LS";  
 thence N 89°53'26" E a distance of 1271.45' to an orange plastic cap "15279LS";  
 thence N 89°53'26" E a distance of 1349.73' to a 3" BLM brass cap;  
 thence S 00°27'53" W a distance of 534.14' to a 3" rebar;  
 thence S 00°28'07" W a distance of 550.18' to a 1" aluminum cap "5430LS";  
 thence S 00°27'23" W a distance of 805.68' to a 1" aluminum cap "5430LS";  
 thence S 00°28'56" W a distance of 659.36' to a 1" aluminum cap "5430LS";  
 thence S 00°25'47" W a distance of 453.66' to a 1" aluminum cap "5430LS";  
 thence S 00°27'41" W a distance of 279.84' to a 1" aluminum cap "5430LS";  
 thence S 00°28'27" W a distance of 175.42' to a 1" aluminum cap "5430LS";  
 thence S 00°26'54" W a distance of 619.85' to a 1" aluminum cap "5430LS";  
 thence S 00°25'22" W a distance of 111.91' to an orange plastic cap "15279LS";  
 thence N 89°59'31" W a distance of 2609.62' to an orange plastic cap "15279LS";  
 thence N 00°17'07" E a distance of 3963.79' to the Point of Beginning, containing, 239.328 acres more or less.

Subject to all easements of record or apparent from a visual inspection of the property.

**CERTIFICATE OF DEDICATION**

The above-described tract of land is to be known and designated as the Six Ranges Ranch Subdivision, Broadwater County, Montana; and the lands included in all streets, avenues, alleys, and parks or public lands shown on said plat are hereby granted and donated to Broadwater County for the public use and enjoyment. Unless specifically listed herein, the lands included in all streets, avenues, alleys and parks or public lands dedicated to the public are accepted for public use, but the County accepts no responsibility for maintaining the same. The owner agrees that the County has no obligation to maintain the lands included in all streets, avenues, alleys and parks or public lands hereby dedicated to public use.

**CERTIFICATE OF WAIVER**

I, \_\_\_\_\_ of Valley View Acres LLC, the undersigned owner of the Subdivision, do hereby waive the right to protest the creation of Rural Improvement Districts. In so doing, we do not waive any right to comment on, protest, and/or appeal any assessment formula which may be proposed, if we believe it to be inequitable. This waiver shall be binding upon the heirs, assigns, and purchasers on all lots within this subdivision.

**CERTIFICATE OF EXEMPTION**

I, \_\_\_\_\_ of Valley View Acres LLC, the undersigned owner of the Subdivision furthermore certify that Tracts 1 - 11 of this survey are larger than 20 acres and that this division is not a subdivision and is exempt from Montana Department of Environmental Quality review pursuant to MCA 76-4-103 which states:  
 A subdivision consists of only those parcels of less than 20 acres that have been created by a division of land, and the plat must show all of the parcels, whether contiguous or not. The rental or lease of one or more parts of a single building, structure, or other improvement, whether existing or proposed, is not a subdivision, as that term is defined in this part, and is not subject to the requirements of this part.

Dated this \_\_\_\_\_ day of \_\_\_\_\_,

Valley View Acres, LLC

By: \_\_\_\_\_ it's \_\_\_\_\_

State of \_\_\_\_\_ s.s.

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_ before me, Notary Public in and for said state, personally appeared \_\_\_\_\_ known to me to be the \_\_\_\_\_ of Valley View Acres, LLC and acknowledged to me that she/he executed the same.

Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Notary Public for the State of \_\_\_\_\_ Residing at \_\_\_\_\_ My commission expires \_\_\_\_\_

**CERTIFICATE OF CLERK AND RECORDER**

I, \_\_\_\_\_ Clerk and Recorder of Broadwater County, Montana, hereby certify that the foregoing instrument was filed in my office at \_\_\_\_\_ o'clock \_\_\_\_\_ M. this \_\_\_\_\_ day of \_\_\_\_\_ A.D. \_\_\_\_\_ and recorded in Book \_\_\_\_\_ of Plats on Page \_\_\_\_\_ records of the Clerk and Recorder, Broadwater County, Montana.

Document Number \_\_\_\_\_

Clerk and Recorder of Broadwater County

**CERTIFICATE OF COUNTY COMMISSIONERS**

The County Commission of Broadwater County, Montana, does hereby certify that the accompanying plat has been duly reviewed, and has been found to conform to the requirements of the Montana Subdivision and Platting Act, §76-3-101 et. seq. MCA and the Broadwater County Subdivision Regulations, approve it, and hereby accept the dedication to public use.

Dated this \_\_\_\_\_ day of \_\_\_\_\_,

Commissioner \_\_\_\_\_ County Attorney \_\_\_\_\_

Commissioner \_\_\_\_\_ Clerk and Recorder \_\_\_\_\_

Commissioner \_\_\_\_\_

**CERTIFICATE OF COUNTY TREASURER**

I, \_\_\_\_\_ Treasurer of Broadwater County, Montana do hereby certify that the accompanying Subdivision Plat has been duly examined and that all real property taxes and special assessments assessed and levied on the land to be surveyed have been paid through \_\_\_\_\_ (J240165)

Dated this \_\_\_\_\_ day of \_\_\_\_\_,

Treasurer of Broadwater County

**CERTIFICATE OF SURVEYOR**

I, Norbert Hackl the undersigned Professional Land Surveyor, do hereby certify that between April 3rd, 2019 and \_\_\_\_\_ the accompanying Subdivision Plat was surveyed by me, or under my supervision, and the same was plotted as shown on the accompanying plat and as described, in accordance with the Montana Subdivision and Platting Act, §76-3-101 through §76-3-625 M.C.A., and the Broadwater County Subdivision Regulations.

Dated this \_\_\_\_\_ day of \_\_\_\_\_,

Norbert Hackl, PLS  
 Montana Registration No. 14,535 L.S.

**CERTIFICATE OF EXAMINATION**

Reviewed for errors and omissions this the \_\_\_\_\_ day of \_\_\_\_\_ pursuant to Section 76-3-611(2)(a), MCA.

Montana Registration No. \_\_\_\_\_

**RIGHT-TO-FARM RESOLUTION**

This subdivision is subject to the "Right-to-Farm Resolution" as adopted by Broadwater County.

**WEED CONTROL CERTIFICATION**

The Conditions and Restrictions as required by Broadwater County will apply to this subdivision.

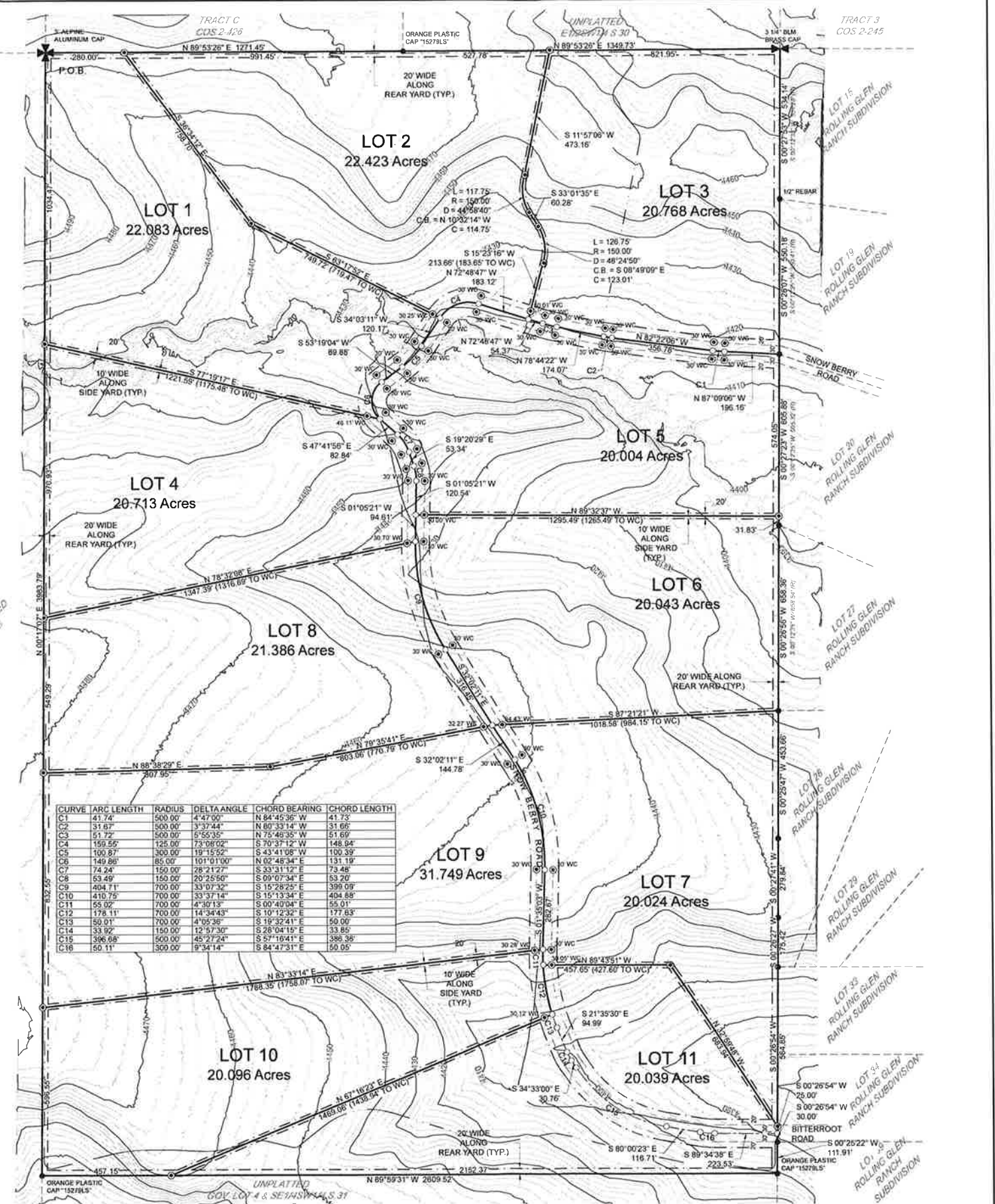
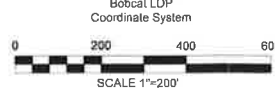
**LEGEND**

- FOUND 1" ALUMINUM CAP "5430LS" OR AS NOTED
- CALCULATED POINT NOTHING FOUND OR SET
- ⊙ SET 5/8"x24" REBAR W/ 2" ALUMINUM CAP
- PROPERTY BOUNDARY
- - - ADJOINING LOT BOUNDARY
- - - 60' ROAD RIGHT-OF-WAY
- - - 20' PUBLIC UTILITY EASEMENT
- - - RIGHT-OF-WAY CENTER LINE
- - - 15' RECREATIONAL TRAIL EASEMENT CENTER LINE

P.O.B. POINT OF BEGINNING

S 00°12'35" W 605.31' (R) RECORD BOOK 1, PAGE 985

**BASIS OF BEARING**  
 Bobcat LDP  
 Coordinate System



CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	41.74	500.00	4°47'00"	N 84°45'36" W	41.73
C2	31.67	500.00	3°37'44"	N 60°33'14" W	31.66
C3	51.72	500.00	5°55'35"	N 75°46'35" W	51.69
C4	159.55	125.00	73°06'02"	S 70°37'12" W	148.94
C5	100.87	300.00	19°15'52"	S 43°41'08" W	100.39
C6	149.89	85.00	101°10'00"	N 05°48'34" E	131.19
C7	74.24	150.00	28°21'27"	S 33°11'22" E	73.48
C8	53.49	150.00	20°25'50"	S 09°07'34" E	53.20
C9	404.71	700.00	33°07'32"	S 15°26'25" E	399.09
C10	410.79	700.00	33°37'14"	S 15°13'34" E	404.89
C11	55.07	700.00	4°30'13"	S 00°40'04" E	55.01
C12	178.11	700.00	14°34'43"	S 10°12'32" E	177.83
C13	50.01	700.00	4°05'36"	S 18°32'41" E	50.00
C14	33.92	150.00	12°57'30"	S 28°04'19" E	33.89
C15	386.68	500.00	45°27'24"	S 27°16'41" E	386.36
C16	50.11	300.00	9°34'14"	S 84°47'31" E	50.05

X 1/4	Sec.	T.	R.	X 1/4	Sec.	T.	R.
31	3	N	1	E			



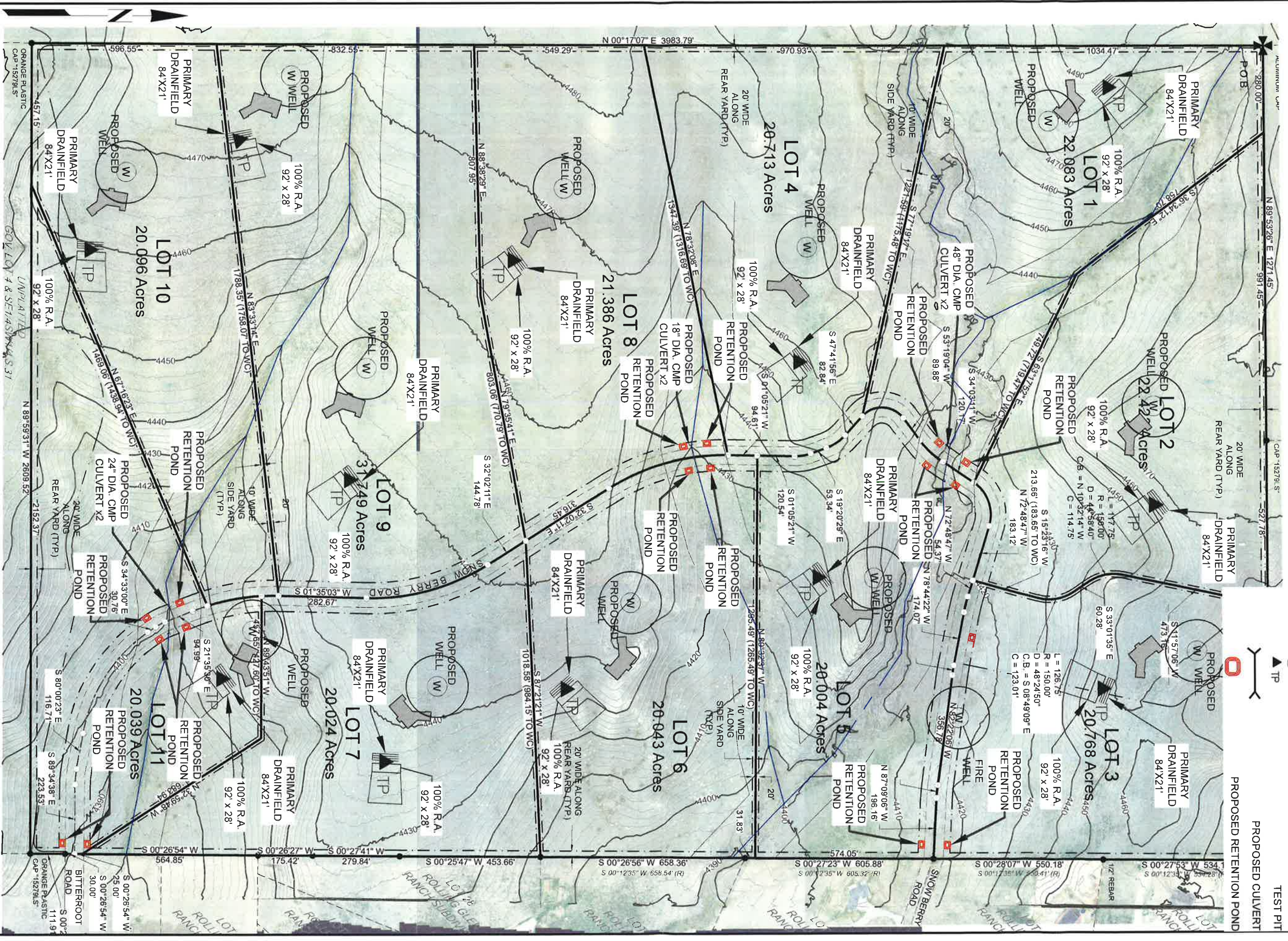
714 Stoneridge Dr.  
 Suite 3  
 Bozeman, MT 59718  
 596.5599 Office  
 www.alpinesurveying.net

PROJECT SURVEYOR NH		SHEET	
DRAWN BY NH		1 OF 1	
REVIEWED BY: MB	CREAGAN BROADWATER		
DATE: 11/28/22	PROJECT NO. 540-02		



# SIX RANGES RANCH SUBDIVISION

A SUBDIVISION OF GOVERNMENT LOTS 1, 2 & 3, THE EAST ONE-HALF OF THE NORTHEAST ONE-QUARTER AND THE NORTHEAST ONE-QUARTER OF THE SOUTHEAST ONE-QUARTER OF SECTION 31, TOWNSHIP 3 NORTH, RANGE 1 EAST, P.M.M., BROADWATER COUNTY, MONTANA



**LEGEND**

- PROPOSED RESIDENCES
- PROPOSED WELL
- PROPOSED CULVERT
- PROPOSED RETENTION POND
- PROPOSED WELL
- PROPOSED TEST PIT

CREAGAN SIX RANGES  
RANCH SUBDIVISION  
BROADWATER COUNTY, MT

DRAWN BY: EV  
DATE: 2/23/2023  
PROJECT NO. 540-02  
FILE NAME: LOT LAYOUT



714 STONERIDGE DR  
Suite 3  
Bozeman, MT 59718  
566.5599 Office  
www.alpinesurveying.net

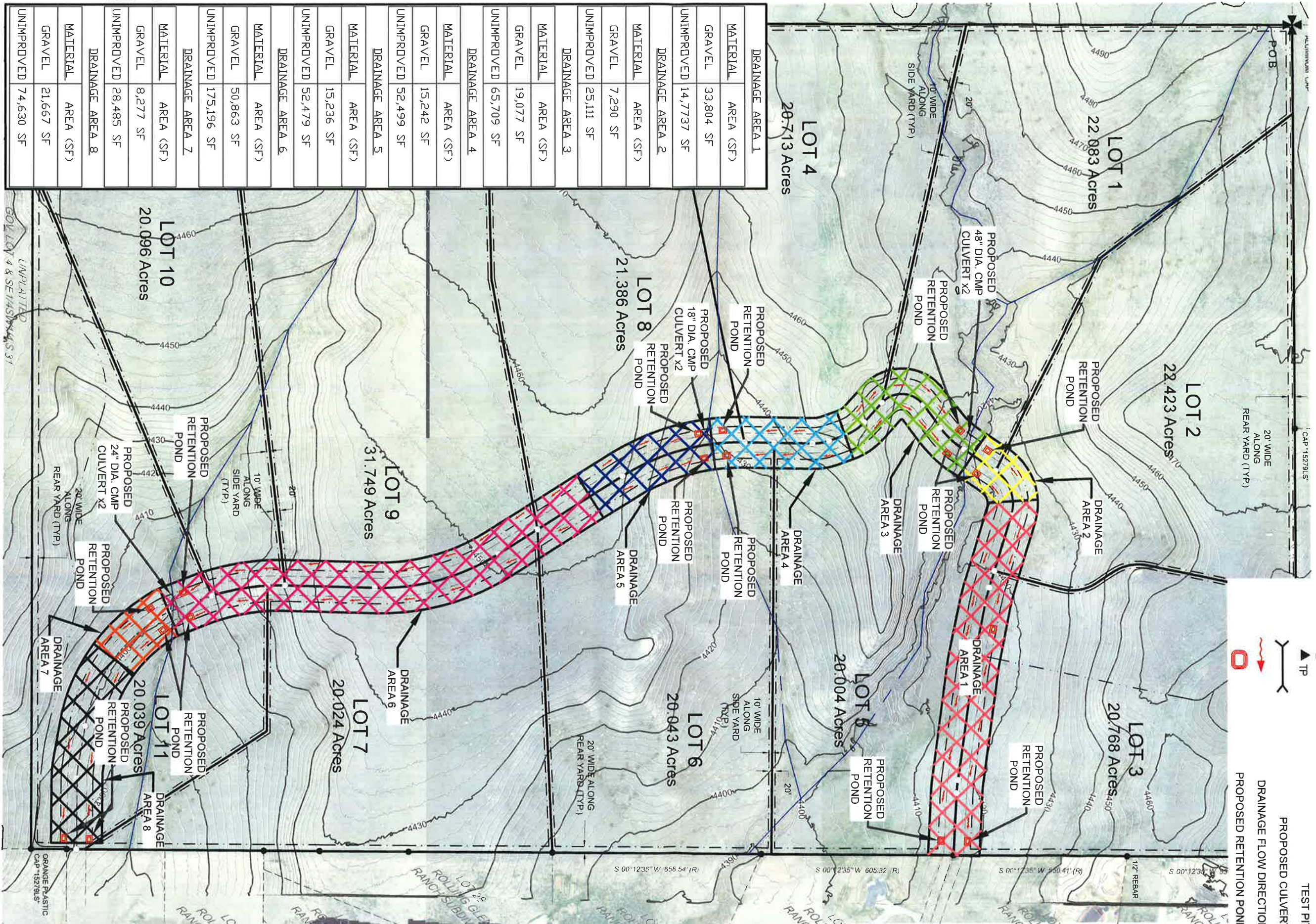


SHEET  
C-1



# SIX RANGES RANCH DRAINAGE PLAN

A SUBDIVISION OF GOVERNMENT LOTS 1, 2 & 3, THE EAST ONE-HALF OF THE NORTHEAST ONE-QUARTER AND THE NORTHEAST ONE-QUARTER OF THE SOUTHEAST ONE-QUARTER OF SECTION 31, TOWNSHIP 3 NORTH, RANGE 1 EAST, P.M.M., BROADWATER COUNTY, MONTANA



DRAINAGE AREA 1	
MATERIAL	AREA (SF)
GRAVEL	33,804 SF
UNIMPROVED	14,7737 SF
DRAINAGE AREA 2	
MATERIAL	AREA (SF)
GRAVEL	7,290 SF
UNIMPROVED	25,111 SF
DRAINAGE AREA 3	
MATERIAL	AREA (SF)
GRAVEL	19,077 SF
UNIMPROVED	65,709 SF
DRAINAGE AREA 4	
MATERIAL	AREA (SF)
GRAVEL	15,242 SF
UNIMPROVED	52,499 SF
DRAINAGE AREA 5	
MATERIAL	AREA (SF)
GRAVEL	15,236 SF
UNIMPROVED	52,479 SF
DRAINAGE AREA 6	
MATERIAL	AREA (SF)
GRAVEL	50,863 SF
UNIMPROVED	175,196 SF
DRAINAGE AREA 7	
MATERIAL	AREA (SF)
GRAVEL	8,277 SF
UNIMPROVED	28,485 SF
DRAINAGE AREA 8	
MATERIAL	AREA (SF)
GRAVEL	21,667 SF
UNIMPROVED	74,630 SF

**LEGEND**

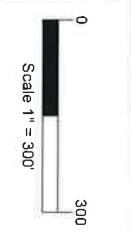
- PROPOSED RESIDENCES
- PRIMARY/REPLACEMENT DE W/ 100' MIXING ZONE
- PROPOSED WELL
- TEST PIT
- PROPOSED CULVERT
- DRAINAGE FLOW DIRECTION
- PROPOSED RETENTION POND

CREAGAN SIX RANGES  
RANCH SUBDIVISION  
BROADWATER COUNTY, MT

DRAWN BY: EV  
DATE: 2/23/2023  
PROJECT NO: 540-02  
FILE NAME: DRAINAGE

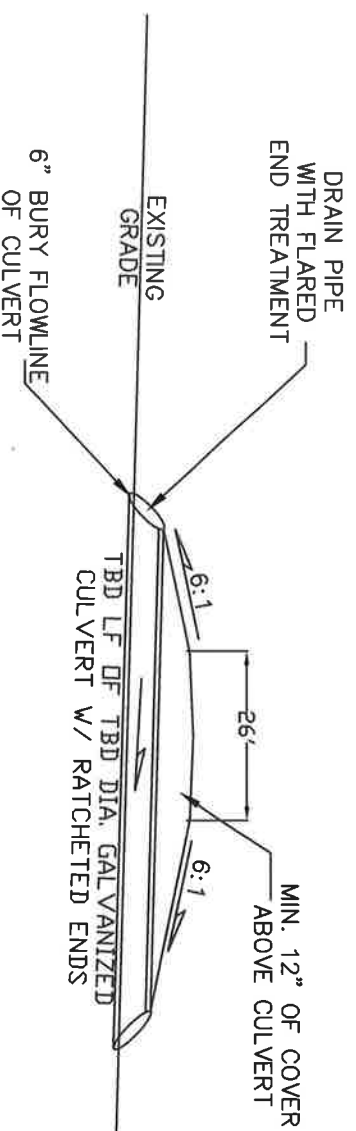
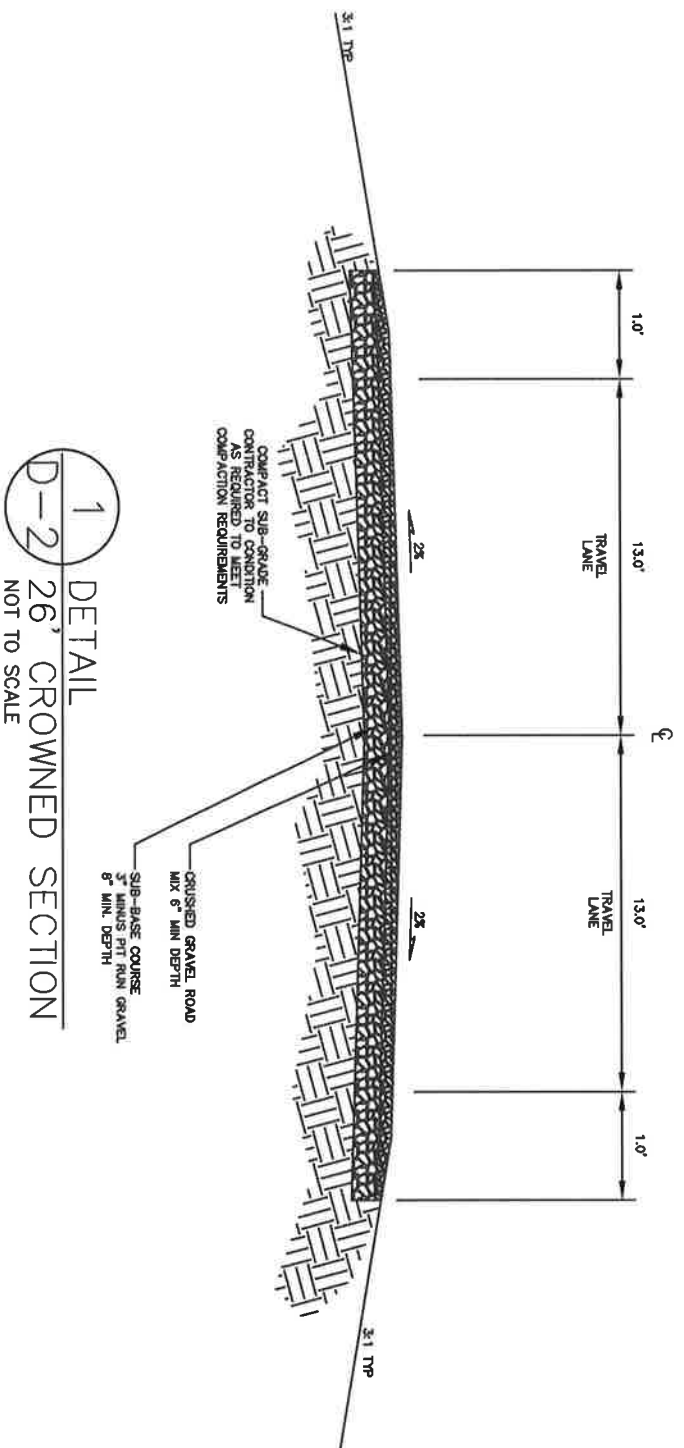


714 STONERIDGE DR  
Suite 3  
Bozeman, MT 59718  
586.5599 Office  
www.alpinesurveying.net



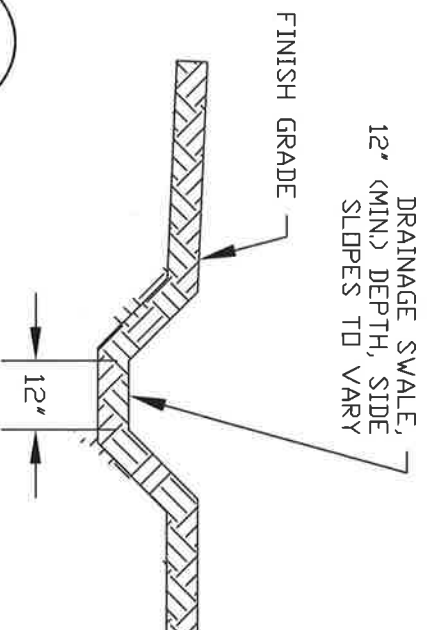
SHEET  
D-1

SIX RANGES RANCH DRAINAGE DETAILS



NOTE:  
IT HAS BEEN DETERMINED THAT THE VOLUME OF THE 10-YEAR 24-HOUR STORM EVENT WILL NOT OVERTOP THE PROPOSED RETENTION POND, OVERTOP THE ROADWAYS/DRIVEWAY, OR INUNDATE ANY BUILDINGS.

SIDE SLOPES TO HAVE 6" OF TOPSOIL AND BE SEEDED WITH NATIVE GRASSES



DRAINAGE SWALE, 12" (MIN.) DEPTH, SIDE SLOPES TO VARY

INSPECTION AND MAINTENANCE PLAN FOR STORMWATER FACILITIES

- THE MAINTENANCE PLAN SHOULD BE COMPLETED BY THE OWNER AFTER THE FINAL SNOW MELT OF EACH YEAR AND PRIOR TO THE RAINY SEASON.
- CHECK RETENTION PONDS FOLLOWING DRY WEATHER. FAILURE FOR WATER TO PERCOLATE MAY INDICATE POSSIBLE CLOGGING.
- SEMI-ANNUAL INSPECTION:
  1. INSPECT FLOW LINE OF THE DRAINAGE SWALE/DRIVEWAY DITCHES OBSTRUCTIONS, VEGETATION, LITTER SEDIMENT ECT.
  2. INSPECT RETENTION POND FOR SEDIMENT BUILD UP, EXCESS ORGANICS DEBRIS AND LITTER.
- STANDARD MAINTENANCE:
  1. REMOVE SEDIMENT AND OIL/GREASE FROM DRIVEWAY DITCHES AND RETENTION PONDS
  2. INSPECT AND REMOVE DEBRIS FROM DRAINAGE SWALES AND RETENTION PONDS
  3. MAINTAIN SWALES AND PONDS BY MOWING AND VEGETATION CONTROL.
  4. LIMIT LONG TERM PONDING TO HELP WITH MOSQUITO ABATEMENT.
- IN MOST CASES, SEDIMENT FROM A RETENTION POND DOES NOT CONTAIN TOXINS AT LEVELS POSING A HAZARDOUS CONCERN. HOWEVER, SEDIMENTS CONTAINING ELEVATED LEVELS OF POLLUTANTS SHOULD BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE REGULATIONS.

CREAGAN SIX RANGES  
RANCH SUBDIVISION  
BROADWATER COUNTY, MT

DRAWN BY: EV  
DATE: 2/23/2023  
PROJECT NO. 540-02  
FILE NAME: DRAINAGE



714 STONERIDGE DR  
Suite 3  
Bozeman, MT 59718  
586.5599 Office  
www.alpinesurveying.net



## Phasing Plan

**Not Applicable:**

**The proposed 11-lot subdivision will be developed in one phase**



**Remit Payment To:**  
Rocky Mountain Title Guaranty, LLC  
400 North Park Avenue  
Helena, MT 59601

**INVOICE**

**Billed To:**  
River Realty  
13515 Cottonwood Canyon Rd.  
Bozeman, MT. 59718

**Invoice No.:**  
**Invoice Date:** April 21, 2022  
**Please Pay Before:**  
**Our File Number:** BX29517  
**Your Reference Number:**

**Property:**  
TBD Price Road  
Three Forks, MT 59752  
Broadwater County

**Brief Legal:** T3N, R1E, Section 31

DESCRIPTION	AMOUNT
Policy premium for Owner's	2,422.00
<b>Invoice Total Amount Due</b>	<b>\$ 2,422.00</b>

**Buyer/Borrower:** Jeffrey Creagan

**Seller:** Jeffrey N. Cotterell, Gregory E. Anderson, and Deborah M. Velli

**cc:** Joseph Velli-River Realty

**cc:** E. Michael Green-eXp Realty, LLC

Please reference our Order Number when remitting payments.

If you have any questions please contact our office.

Thank you for your business.

For further information on rates, policy options, and other matters please visit [www.firstam.com](http://www.firstam.com) or call (406) 449-2244.



 <b>First American Title™</b>	<b>ALTA Commitment for Title Insurance</b>
	ISSUED BY <b>First American Title Insurance Company</b>
<b>Commitment</b>	

**COMMITMENT FOR TITLE INSURANCE**

Issued By

**FIRST AMERICAN TITLE INSURANCE COMPANY**

**NOTICE**

**IMPORTANT—READ CAREFULLY:** THIS COMMITMENT IS AN OFFER TO ISSUE ONE OR MORE TITLE INSURANCE POLICIES. ALL CLAIMS OR REMEDIES SOUGHT AGAINST THE COMPANY INVOLVING THE CONTENT OF THIS COMMITMENT OR THE POLICY MUST BE BASED SOLELY IN CONTRACT.

THIS COMMITMENT IS NOT AN ABSTRACT OF TITLE, REPORT OF THE CONDITION OF TITLE, LEGAL OPINION, OPINION OF TITLE, OR OTHER REPRESENTATION OF THE STATUS OF TITLE. THE PROCEDURES USED BY THE COMPANY TO DETERMINE INSURABILITY OF THE TITLE, INCLUDING ANY SEARCH AND EXAMINATION, ARE PROPRIETARY TO THE COMPANY, WERE PERFORMED SOLELY FOR THE BENEFIT OF THE COMPANY, AND CREATE NO EXTRACONTRACTUAL LIABILITY TO ANY PERSON, INCLUDING A PROPOSED INSURED.

THE COMPANY'S OBLIGATION UNDER THIS COMMITMENT IS TO ISSUE A POLICY TO A PROPOSED INSURED IDENTIFIED IN SCHEDULE A IN ACCORDANCE WITH THE TERMS AND PROVISIONS OF THIS COMMITMENT. THE COMPANY HAS NO LIABILITY OR OBLIGATION INVOLVING THE CONTENT OF THIS COMMITMENT TO ANY OTHER PERSON.

**COMMITMENT TO ISSUE POLICY**

Subject to the Notice; Schedule B, Part I—Requirements; Schedule B, Part II—Exceptions; and the Commitment Conditions, **First American Title Insurance Company**, a Nebraska Corporation (the "Company"), commits to issue the Policy according to the terms and provisions of this Commitment. This Commitment is effective as of the Commitment Date shown in Schedule A for each Policy described in Schedule A, only when the Company has entered in Schedule A both the specified dollar amount as the Proposed Policy Amount and the name of the Proposed Insured.

If all of the Schedule B, Part I—Requirements have not been met within six months after the Commitment Date, this Commitment terminates and the Company's liability and obligation end.

**First American Title Insurance Company**



Dennis J. Gilmore, President



Greg L. Smith, Secretary

If this jacket was created electronically, it constitutes an original document.

*This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by First American Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I—Requirements; Schedule B, Part II—Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.*

Copyright 2006-2016 American Land Title Association. All rights reserved.  
The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited.  
Reprinted under license from the American Land Title Association.



## COMMITMENT CONDITIONS

### 1. DEFINITIONS

- (a) "Knowledge" or "Known": Actual or imputed knowledge, but not constructive notice imparted by the Public Records.
  - (b) "Land": The land described in Schedule A and affixed improvements that by law constitute real property. The term "Land" does not include any property beyond the lines of the area described in Schedule A, nor any right, title, interest, estate, or easement in abutting streets, roads, avenues, alleys, lanes, ways, or waterways, but this does not modify or limit the extent that a right of access to and from the Land is to be insured by the Policy.
  - (c) "Mortgage": A mortgage, deed of trust, or other security instrument, including one evidenced by electronic means authorized by law.
  - (d) "Policy": Each contract of title insurance, in a form adopted by the American Land Title Association, issued or to be issued by the Company pursuant to this Commitment.
  - (e) "Proposed Insured": Each person identified in Schedule A as the Proposed Insured of each Policy to be issued pursuant to this Commitment.
  - (f) "Proposed Policy Amount": Each dollar amount specified in Schedule A as the Proposed Policy Amount of each Policy to be issued pursuant to this Commitment.
  - (g) "Public Records": Records established under state statutes at the Commitment Date for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without Knowledge.
  - (h) "Title": The estate or interest described in Schedule A.
2. If all of the Schedule B, Part I—Requirements have not been met within the time period specified in the Commitment to Issue Policy, this Commitment terminates and the Company's liability and obligation end.
3. The Company's liability and obligation is limited by and this Commitment is not valid without:
- (a) the Notice;
  - (b) the Commitment to Issue Policy;
  - (c) the Commitment Conditions;
  - (d) Schedule A;
  - (e) Schedule B, Part I—Requirements;
  - (f) Schedule B, Part II—Exceptions; and
  - (g) a counter-signature by the Company or its issuing agent that may be in electronic form.

### 4. COMPANY'S RIGHT TO AMEND

The Company may amend this Commitment at any time. If the Company amends this Commitment to add a defect, lien, encumbrance, adverse claim, or other matter recorded in the Public Records prior to the Commitment Date, any liability of the Company is limited by Commitment Condition 5. The Company shall not be liable for any other amendment to this Commitment.

### 5. LIMITATIONS OF LIABILITY

- (a) The Company's liability under Commitment Condition 4 is limited to the Proposed Insured's actual expense incurred in the interval between the Company's delivery to the Proposed Insured of the Commitment and the delivery of the amended Commitment, resulting from the Proposed Insured's good faith reliance to:
  - (i) comply with the Schedule B, Part I—Requirements;
  - (ii) eliminate, with the Company's written consent, any Schedule B, Part II—Exceptions; or
  - (iii) acquire the Title or create the Mortgage covered by this Commitment.
- (b) The Company shall not be liable under Commitment Condition 5(a) if the Proposed Insured requested the amendment or had Knowledge of the matter and did not notify the Company about it in writing.
- (c) The Company will only have liability under Commitment Condition 4 if the Proposed Insured would not have incurred the expense had the Commitment included the added matter when the Commitment was first delivered to the Proposed Insured.
- (d) The Company's liability shall not exceed the lesser of the Proposed Insured's actual expense incurred in good faith and described in Commitment Conditions 5(a)(i) through 5(a)(iii) or the Proposed Policy Amount.
- (e) The Company shall not be liable for the content of the Transaction Identification Data, if any.
- (f) In no event shall the Company be obligated to issue the Policy referred to in this Commitment unless all of the Schedule B, Part I—Requirements have been met to the satisfaction of the Company.
- (g) In any event, the Company's liability is limited by the terms and provisions of the Policy.

### 6. LIABILITY OF THE COMPANY MUST BE BASED ON THIS COMMITMENT

*This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by First American Title Insurance Company. This Commitment is not valid without the Notice: the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I—Requirements; Schedule B, Part II—Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.*

Copyright 2006-2016 American Land Title Association. All rights reserved.  
The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited.  
Reprinted under license from the American Land Title Association.



- (a) Only a Proposed Insured identified in Schedule A, and no other person, may make a claim under this Commitment.
- (b) Any claim must be based in contract and must be restricted solely to the terms and provisions of this Commitment.
- (c) Until the Policy is issued, this Commitment, as last revised, is the exclusive and entire agreement between the parties with respect to the subject matter of this Commitment and supersedes all prior commitment negotiations, representations, and proposals of any kind, whether written or oral, express or implied, relating to the subject matter of this Commitment.
- (d) The deletion or modification of any Schedule B, Part II—Exception does not constitute an agreement or obligation to provide coverage beyond the terms and provisions of this Commitment or the Policy.
- (e) Any amendment or endorsement to this Commitment must be in writing and authenticated by a person authorized by the Company.
- (f) When the Policy is issued, all liability and obligation under this Commitment will end and the Company's only liability will be under the Policy.

**7. IF THIS COMMITMENT HAS BEEN ISSUED BY AN ISSUING AGENT**

The issuing agent is the Company's agent only for the limited purpose of issuing title insurance commitments and policies. The issuing agent is not the Company's agent for the purpose of providing closing or settlement services.

**8. PRO-FORMA POLICY**

The Company may provide, at the request of a Proposed Insured, a pro-forma policy illustrating the coverage that the Company may provide. A pro-forma policy neither reflects the status of Title at the time that the pro-forma policy is delivered to a Proposed Insured, nor is it a commitment to insure.

**9. ARBITRATION**

Arbitration provision intentionally removed.

*This page is only a part of a 2016 ALTA<sup>2</sup> Commitment for Title Insurance issued by First American Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I—Requirements; Schedule B, Part II—Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.*

**Copyright 2006-2016 American Land Title Association. All rights reserved.**

The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited. Reprinted under license from the American Land Title Association.



**COMMITMENT FOR TITLE INSURANCE**

**SCHEDULE A**

Order No: BX29517

1. Effective Date: April 15, 2022 at 08:00 AM

2. Policy or Policies to be issued:

(a)  ALTA Own. Policy (08/01/16)

Amount  
**\$ 925,000.00**

Proposed Insured:

**Jeffrey Creagan**

(b)  ALTA Loan Policy (08/01/16)

Amount

Proposed Insured:

3. The estate or interest in the land described or referred to in this Commitment and covered herein is FEE SIMPLE and is at the effective date hereof vested in:

**Jeffrey N. Cotterell and Gregory E. Anderson and Deborah M. Velli, as tenants in common**

4. The land referred to in this Commitment is situated in the County of BROADWATER, State of Montana, and is described as follows:

**Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana.**

**Section 31: Lots 1, 2, 3, E $\frac{1}{2}$ NE $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$**

**Deed Reference: Book 30 of Micro., page 999**

Countersigned:



Authorized Officer or Agent

Rocky Mountain Title Guaranty, LLC  
400 North Park Avenue  
Helena, MT 59601

VALID ONLY IF SCHEDULE B AND COVER ARE ATTACHED

## SCHEDULE B - SECTION 1 REQUIREMENTS

Order No: BX29517

The following requirements must be met:

1. The Proposed Insured must notify the Company in writing of the name of any party not referred to in this Commitment who will obtain an interest in the Land or who will make a loan on the Land. The Company may then make additional Requirements or Exceptions.
2. Pay the agreed amount for the estate or interest to be insured.
3. Pay the premiums, fees, and charges for the Policy to the Company.
4. Documents satisfactory to the Company that convey Title or create the Mortgage to be insured, or both, must be properly authorized, executed, delivered, and recorded in the Public Records.
5. Release(s) or Reconveyance(s) of item(s) deemed necessary.
6. You must give us the following information:
  1. Any off record leases, surveys, etc.
  2. Statement(s) of identity, all parties.
7. A Seller/Borrower Affidavit is required.

## SCHEDULE B - SECTION 2 EXCEPTIONS

Order No: BX29517

Schedule B of the Policy or Policies to be issued will contain exceptions to the following matters unless the same are disposed of to the satisfaction of the Company:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records.
2. Any facts, rights, interest, or claims which are not shown by the public records but which could be ascertained by an inspection of said Land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the title including discrepancies, conflicts in boundary lines, shortage in area, or any other facts that would be disclosed by an accurate and complete land survey of the Land, and that are not shown in the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, ditch or ditch right, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any liens, or rights to a lien, for services, labor or materials theretofore or hereafter furnished, imposed by law and not shown by the Public Records.
7. Any right, title or interest in any minerals, mineral rights, or related matters, including but not limited to oil, gas, coal, and other hydrocarbons, sand, gravel or other common variety materials, whether or not shown by the Public Records.
8. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B - Section 1, Requirements are met.
9. General County Taxes for the year 2021  
First Half: \$63.32 PAID  
Second Half: \$63.31 PAID  
Total for year: \$126.63  
Geo Code: 43-1206-31-2-01-01-0000  
Taxpayer No.: 000J240168  
Prior Years Delinquent Taxes: NONE  
PLEASE NOTE: DELINQUENT TAX AMOUNTS ABOVE, IF ANY DO NOT INCLUDE PENALTY AND INTEREST.
10. Any Special Improvement District, any Rural Improvement District, special liens and levies of which is not yet due and payable.
11. General County Taxes and assessments for the year 2022 and subsequent years, a lien which is not yet due and payable.
12. No liability is assumed for errors, omissions or changes in assessed evaluations or amount of taxes assessed by any state, county, city or federal taxing or assessing authority.
13. Reservations or exceptions in patents or in Acts authorizing the issuance thereof all claims to water and water rights.

**SCHEDULE B - SECTION 2**  
**EXCEPTIONS**  
(Continued)

Order No: BX29517

14. County road rights-of-way the existence of which is dependent in whole or in part upon writings which have not been recorded and indexed as conveyances in the office fo the Clerk and Recorder pursuant to Title 70, Chapter 21 MCA.
15. Terms and provisions of Declaration of Easement granted by Sidney K. Price unto himself, his heirs, successors and assigns, recorded in Book 30 of Micro, page 983, records of Broadwater County, Montana.
16. Terms and provisions of Reservation of Easement granted by Sidney K. Price unto himself, his heirs, successors and assigns, recorded in Book 30 of Micro, page 986, records of Broadwater County, Montana.
17. Terms and provisions of Grant of Easement granted by Sidney K. Price unto Nolan J. Murphy, Sandra J. Murphy and Terry Murphy, recorded in Book 30 of Micro, page 989, records of Broadwater County, Montana.
18. Terms and provisions of Grant of Easement granted by Sidney K. Price unto Dennis B. Rahn and Irene A. Rahn, recorded in Book 31 of Micro, page 120, records of Broadwater County, Montana.

NOTE: This Order does not include a search for financing statements filed in the office of the Secretary of State and the Clerk and Recorder and no liability is assumed. Please contact this office if a search is requested.

NOTE: As an accommodation and not part of this commitment, no liability is assumed by noting the following conveyances describing all or part of the subject property, which have been recorded within the past 24 months: NONE

NOTE: Other than as shown in Schedule B, we find no Judgment Liens, Federal Tax Liens or Child Support Liens of record which attach to the name(s) or interest of the vested owner and/or proposed insured owner/borrower.

NOTE: Any Deed Restrictions, Covenant, By-Law, Declaration of Condominium and/or any amendments thereto and/or otherwise as shown herein as an exception which may contain a clause indicating a preference, limitation or discrimination based on race, color, religion, sex, handicap, familial status, or national origin to the extent that such reference violates 42 USC 3604 (c), is hereby deleted as to said reference; no other deletion is hereby intended or implied.

END OF SCHEDULE B



## Privacy Notice

**Effective:** November 1, 2019

**Notice Last Updated:** November 1, 2019

This Privacy Notice describes how First American Financial Corporation and its subsidiaries and affiliates (together referred to as "First American," "we," "us," or "our") collect, use, store, and share your information. This Privacy Notice applies to information we receive from you offline only, as well as from third parties. For more information about our privacy practices, please visit <https://www.firstam.com/privacy-policy/index.html>. The practices described in this Privacy Notice are subject to applicable laws in the places in which we operate.

**What Type Of Information Do We Collect About You?** We collect both **personal** and **non-personal information** about and from you. **Personal information** is non-public information that can be used to directly or indirectly identify or contact you. **Non-personal information** is any other type of information.

**How Do We Collect Your Information?** We collect your **personal** and **non-personal information**: (1) directly from you; (2) automatically when you interact with us; and (3) from third parties, including **business parties** and affiliates.

**How Do We Use Your Information?** We may use your personal information in a variety of ways, including but not limited to providing the services you have requested, fulfilling your transactions, comply with relevant laws and our policies, and handling a claim. We may use your **non-personal information** for any purpose.

**How Do We Share Your Personal Information?** We do not sell your **personal information** to nonaffiliated third parties. We will only share your **personal information**, including to subsidiaries, affiliates, and to unaffiliated third parties: (1) with your consent; (2) in a business transfer; (3) to service providers; and (4) for legal process and protection. If you have any questions about how First American shares your **personal information**, you may contact us at [dataprivacy@firstam.com](mailto:dataprivacy@firstam.com) or toll free at 1-866-718-0097.

**How Do We Secure Your Personal Information?** The security of your **personal information** is important to us. That is why we take commercially reasonable steps to make sure your **personal information** is protected. We use our best efforts to maintain commercially reasonable technical, organizational, and physical safeguards, consistent with applicable law, to protect your **personal information**.

**How Long Do We Keep Your Personal Information?** We keep your **personal information** for as long as necessary in accordance with the purpose for which it was collected, our business needs, and our legal and regulatory obligations.

**Your Choices** We provide you the ability to exercise certain controls and choices regarding our collection, use, storage, and sharing of your **personal information**. In accordance with applicable law, your controls and choices. You can learn more about your choices, and exercise these controls and choices, by sending an email to [dataprivacy@firstam.com](mailto:dataprivacy@firstam.com) or toll free at 1-866-718-0097.

**International Jurisdictions:** Our Products are hosted and offered in the United States of America (US), and are subject to US federal, state, and local law. If you are accessing the Products from another country, please be advised that you may be transferring your **personal information** to us in the US, and you consent to that transfer and use of your **personal information** in accordance with this Privacy Notice. You also agree to abide by the applicable laws of applicable US federal, state, and local laws concerning your use of the Products, and your agreements with us.

We may change this Privacy Notice from time to time. Any and all changes to this Privacy Notice will be reflected on this page, and where appropriate provided in person or by another electronic method. **YOUR CONTINUED USE, ACCESS, OR INTERACTION WITH OUR PRODUCTS OR YOUR CONTINUED COMMUNICATIONS WITH US AFTER THIS NOTICE HAS BEEN PROVIDED TO YOU WILL REPRESENT THAT YOU HAVE READ AND UNDERSTOOD THIS PRIVACY NOTICE.**

**Contact Us** [dataprivacy@firstam.com](mailto:dataprivacy@firstam.com) or toll free at 1-866-718-0097.





**For California Residents**

If you are a California resident, you may have certain rights under California law, including but not limited to the California Consumer Privacy Act of 2018 ("CCPA"). All phrases used in this section shall have the same meaning as those phrases are used under California law, including the CCPA.

**Right to Know.** You have a right to request that we disclose the following information to you: (1) the categories of **personal information** we have collected about or from you; (2) the categories of sources from which the **personal information** was collected; (3) the business or commercial purpose for such collection and/or disclosure of your personal information; (4) the categories of third parties with whom we have shared your **personal information**; and (5) the specific pieces of your **personal information** we have collected. To submit a verified request for this information, go to our online privacy policy at [www.firstam.com/privacy-policy](http://www.firstam.com/privacy-policy) to submit your request or call toll-free at 1-866-718-0097. You may also designate an authorized agent to submit a request on your behalf by going to our online privacy policy at [www.firstam.com/privacy-policy](http://www.firstam.com/privacy-policy) to submit your request or by calling toll-free at 1-866-718-0097 and submitting written proof of such authorization to [dataprivacy@firstam.com](mailto:dataprivacy@firstam.com).

**Right of Deletion.** You also have a right to request that we delete the **personal information** we have collected from you. This right is subject to certain exceptions available under the CCPA and other applicable law. To submit a verified request for deletion, go to our online privacy policy at [www.firstam.com/privacy-policy](http://www.firstam.com/privacy-policy) to submit your request or call toll-free at 1-866-718-0097. You may also designate an authorized agent to submit a request on your behalf by going to our online privacy policy at [www.firstam.com/privacy-policy](http://www.firstam.com/privacy-policy) to submit your request or by calling toll-free at 1-866-718-0097 and submitting written proof of such authorization to [dataprivacy@firstam.com](mailto:dataprivacy@firstam.com).

**Verification Process.** For either a request to know or delete, we will verify your identity before responding to your request. To verify your identity, we will generally match the identifying information provided in your request with the information we have on file about you. Depending on the sensitivity of the personal information requested, we may also utilize more stringent verification methods to verify your identity, including but not limited to requesting additional information from you and/or requiring you to sign a declaration under penalty of perjury.

**Right to Opt-Out.** We do not sell your personal information to third parties, and do not plan to do so in the future.

**Right of Non-Discrimination.** You have a right to exercise your rights under California law, including under the CCPA, without suffering discrimination. Accordingly, First American will not discriminate against you in any way if you choose to exercise your rights under the CCPA.

**Collection Notice.** The following is a list of the categories of personal information we may have collected about California residents in the twelve months preceding the date this Privacy Notice was last updated, including the business or commercial purpose for said collection, the categories of sources from which we may have collected the personal information, and the categories of third parties with whom we may have shared the personal information:

<p><b>Categories of Personal Information</b></p>	<p>The categories of personal information we have collected include, but may not be limited to: real name; signature; alias; SSN; physical characteristics or description, including protected characteristics under federal or state law; address; telephone number; passport number; driver's license number; state identification card number; IP address; policy number; file number; employment history; bank account number; credit card number; debit card number; financial account numbers; commercial information; internet or other electronic network activity; geolocation data; audio and visual information; professional or employment information; and inferences drawn from the above categories; to create a profile about a consumer.</p>
<p><b>Categories of Sources</b></p>	<p>Categories of sources from which we've collected <b>personal information</b> include, but may not be limited to: the consumer directly; public records; governmental entities; non-affiliated third parties; social media networks; affiliated third parties</p>
<p><b>Business Purposes</b></p>	<p>The business purposes for which we've collected <b>personal information</b> include, but may not be limited to: completing a transaction for our Products; verifying eligibility for employment; facilitating employment; performing services on behalf of affiliated and non-affiliated third parties; debugging to identify and repair errors that impair existing intended functionality on our Websites, Applications, or Products; protecting against malicious, deceptive, fraudulent, or illegal activity</p>



The categories of third parties with whom we've shared **personal information** include, but may not be limited to: advertising networks; internet service providers; data analytics providers; service providers; government entities; operating systems and platforms; social media networks; non-affiliated third parties; affiliated third parties

*Categories of Personal Information We Have Sold In The Past Year.* We have not sold any personal information of California residents to any third party in the twelve months preceding the date this Privacy Notice was last updated.

*Categories of Personal Information Disclosed For A Business Purpose In The Past Year.* The following is a list of the categories of **personal information** of California residents we may have disclosed for a business purpose in the 12 months preceding the date this Privacy Notice was last updated: The categories of personal information we have collected include, but may not be limited to: real name; signature; alias; SSN; physical characteristics or description, including protected characteristics under federal or state law; address; telephone number; passport number; driver's license number; state identification card number; IP address; policy number; file number; employment history; bank account number; credit card number; debit card number; financial account numbers; commercial information; internet or other electronic network activity; geolocation data; audio and visual information; professional or employment information; and inferences drawn from the above categories to create a profile about a consumer.

# 2018 REAL Property Tax Statement

BROADWATER COUNTY  
515 Broadway Street

Townsend, MT 59644-2397

10/19/18

RETURN SERVICE REQUESTED

Tax Payer	Property Description
COTTERELL JEFFREY N 1170 COBB HILL RD BOZEMAN MT 59718-9075	Twn/Rng/Sect 03N/01E /31 ACRES 234, LOTS 1,2,3; E2NW4; NE4SW4 Acres: 234.00

Tax Payer 000J240168  
School District 24J THREE FORKS  
Taxable Value 195  
Geo Code 1206-31-2-01-01-0000

Tax Description	1st Half	2nd Half	Total Tax	% of Tax	Tax Amount	Mill Levy																																																															
LAND	47.33	47.32	94.65																																																																		
SOIL	0.29	0.28	0.57																																																																		
1st Half Due (11/30/18)	47.62																																																																				
2nd Half Due (05/31/19)		47.60																																																																			
<b>Total Bill</b>			<b>95.22</b>																																																																		
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Receipt Validation for 1st Half:</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td style="padding-left: 20px;">Penalty:</td> <td></td> <td>47.62</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Interest:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Total:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="7" style="border-top: 1px solid black;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Receipt Validation for 2nd Half:</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td style="padding-left: 20px;">Penalty:</td> <td></td> <td>47.60</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Interest:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Total:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> </td> </tr> </table>							Receipt Validation for 1st Half:							Penalty:		47.62					Interest:							Total:							<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Receipt Validation for 2nd Half:</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td style="padding-left: 20px;">Penalty:</td> <td></td> <td>47.60</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Interest:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Total:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>							Receipt Validation for 2nd Half:							Penalty:		47.60					Interest:							Total:						
Receipt Validation for 1st Half:																																																																					
Penalty:		47.62																																																																			
Interest:																																																																					
Total:																																																																					
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Receipt Validation for 2nd Half:</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td style="padding-left: 20px;">Penalty:</td> <td></td> <td>47.60</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Interest:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Total:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>							Receipt Validation for 2nd Half:							Penalty:		47.60					Interest:							Total:																																									
Receipt Validation for 2nd Half:																																																																					
Penalty:		47.60																																																																			
Interest:																																																																					
Total:																																																																					

|  | | | | |                       |                 |                |                |  |  |  | |-----------------------|-----------------|----------------|----------------|--|--|--| | <b>Total School</b>   | <b>62.78 %</b>  | <b>\$59.70</b> | <b>306.640</b> |  |  |  | | County                |                 |                |                |  |  |  | | GENERAL               | 8.02 %          | \$7.64         | 39.170         |  |  |  | | ROAD                  | 4.67 %          | \$4.45         | 22.010         |  |  |  | | WEED                  | 1.35 %          | \$1.29         | 6.600          |  |  |  | | PAIR                  | 0.29 %          | \$0.28         | 1.420          |  |  |  | | AIRPORT               | 0.11 %          | \$0.10         | 0.520          |  |  |  | | DISTRICT COURT        | 0.11 %          | \$0.10         | 0.500          |  |  |  | | LIBRARY               | 0.75 %          | \$0.71         | 3.630          |  |  |  | | PLANNING              | 0.00 %          | \$0.00         |                |  |  |  | | EMERGENCY DISASTER    | 0.00 %          | \$0.00         |                |  |  |  | | SNR CTZ HEALS         | 0.41 %          | \$0.39         | 2.000          |  |  |  | | SNR CTZ TR            | 0.13 %          | \$0.12         | 0.620          |  |  |  | | EXTENSION SERVICE     | 0.79 %          | \$0.75         | 3.050          |  |  |  | | PUBLIC SAFETY         | 7.66 %          | \$7.29         | 37.360         |  |  |  | | DETENTION CENTER      | 0.00 %          | \$0.00         |                |  |  |  | | ECONOMIC DEVELOPMENT  | 0.00 %          | \$0.00         |                |  |  |  | | MUSEUM                | 0.22 %          | \$0.21         | 1.100          |  |  |  | | GROUP HEALTH          | 3.55 %          | \$3.38         | 17.310         |  |  |  | | PERMISSIVE MEDICAL LE | 7.37 %          | \$7.02         | 36.000         |  |  |  | | SEARCH & RECOVERY     | 0.20 %          | \$0.19         | 1.000          |  |  |  | | 3 FORKS FIRE          | 1.00 %          | \$0.95         | 4.860          |  |  |  | | <b>Total County</b>   | <b>36.63 %</b>  | <b>\$34.87</b> | <b>170.750</b> |  |  |  | | Other                 |                 |                |                |  |  |  | | COMMUNITY DEVELOPMENT | 0.00 %          | \$0.00         |                |  |  |  | | SOIL CONSERVATION     | 0.34 %          | \$0.32         | 1.610          |  |  |  | | SOIL CONSERVATION PER | 0.26 %          | \$0.25         | 1.300          |  |  |  | | <b>Total Other</b>    | <b>0.60 %</b>   | <b>\$0.57</b>  | <b>2.910</b>   |  |  |  | | <b>Total Bill</b>     | <b>100.00 %</b> | <b>\$95.22</b> | <b>400.300</b> |  |  |  | | | |

Pd 3354

# Property Record Card

## Summary

### Primary Information

**Property Category:** RP **Subcategory:** Agricultural and Timber Properties  
**Geocode:** 43-1206-31-2-01-01-0000 **Assessment Code:** 000J240168  
**Primary Owner:** **PropertyAddress:**  
 VALLEY VIEW ACRES LLC  
 280 W KAGY BLVD STE D238 **COS Parcel:**  
 BOZEMAN, MT 59715-6056  
*NOTE: See the Owner tab for all owner information*

### Certificate of Survey:

**Subdivision:**  
**Legal Description:**  
 S31, T03 N, R01 E, ACRES 234, LOTS 1,2,3; E2NW4; NE4SW4  
**Last Modified:** 1/28/2023 2:43:58 PM

### General Property Information

**Neighborhood:** 243.001.S **Property Type:** VAC\_R - Vacant Land - Rural  
**Living Units:** 0 **Levy District:** 43-2360-J24  
**Zoning:** **Ownership %:** 100  
**Linked Property:**

No linked properties exist for this property

### Exemptions:

No exemptions exist for this property

### Condo Ownership:

**General:** 0 **Limited:** 0

### Property Factors

**Topography:** **Fronting:**  
**Utilities:** **Parking Type:**  
**Access:** **Parking Quantity:**  
**Location:** **Parking Proximity:**

### Land Summary

<u>Land Type</u>	<u>Acres</u>	<u>Value</u>
Grazing	234.000	00.00
Fallow	0.000	00.00
Irrigated	0.000	00.00
Continuous Crop	0.000	00.00
Wild Hay	0.000	00.00
Farmsite	0.000	00.00
ROW	0.000	00.00
NonQual Land	0.000	00.00
<b>Total Ag Land</b>	<b>234.000</b>	<b>00.00</b>
<b>Total Forest Land</b>	<b>0.000</b>	<b>00.00</b>
<b>Total Market Land</b>	<b>0.000</b>	<b>00.00</b>

### Deed Information:

Deed Date	Book	Page	Recorded Date	Document Number	Document Type
7/11/2022	247	138	11/15/2022	195079	Warranty Deed
7/11/2022	243	218	7/11/2022	194154	Contract for Deed

Ag/Forest Land Item #1

**Acre Type:** G - Grazing  
**Class Code:** 1601

**Irrigation Type:**  
**Timber Zone:**

Productivity

**Quantity:** 0.097  
**Units:** AUM/Acre

**Commodity:** Grazing Fee

Valuation

**Acres:** 4.187  
**Value:** 0

**Per Acre Value:** 0

Ag/Forest Land Item #2

**Acre Type:** G - Grazing  
**Class Code:** 1601

**Irrigation Type:**  
**Timber Zone:**

Productivity

**Quantity:** 0.099  
**Units:** AUM/Acre

**Commodity:** Grazing Fee

Valuation

**Acres:** 20.368  
**Value:** 0

**Per Acre Value:** 0

Ag/Forest Land Item #3

**Acre Type:** G - Grazing  
**Class Code:** 1601

**Irrigation Type:**  
**Timber Zone:**

Productivity

**Quantity:** 0.125  
**Units:** AUM/Acre

**Commodity:** Grazing Fee

Valuation

**Acres:** 4.432  
**Value:** 0

**Per Acre Value:** 0

Ag/Forest Land Item #4

**Acre Type:** G - Grazing  
**Class Code:** 1601

**Irrigation Type:**  
**Timber Zone:**

Productivity

**Quantity:** 0.133  
**Units:** AUM/Acre

**Commodity:** Grazing Fee

Valuation

**Acres:** 15.17  
**Value:** 0

**Per Acre Value:** 0

Ag/Forest Land Item #5

**Acre Type:** G - Grazing  
**Class Code:** 1601

**Irrigation Type:**  
**Timber Zone:**

Productivity

**Quantity:** 0.138  
**Units:** AUM/Acre

**Commodity:** Grazing Fee

Valuation

**Acres:** 10.643  
**Value:** 0

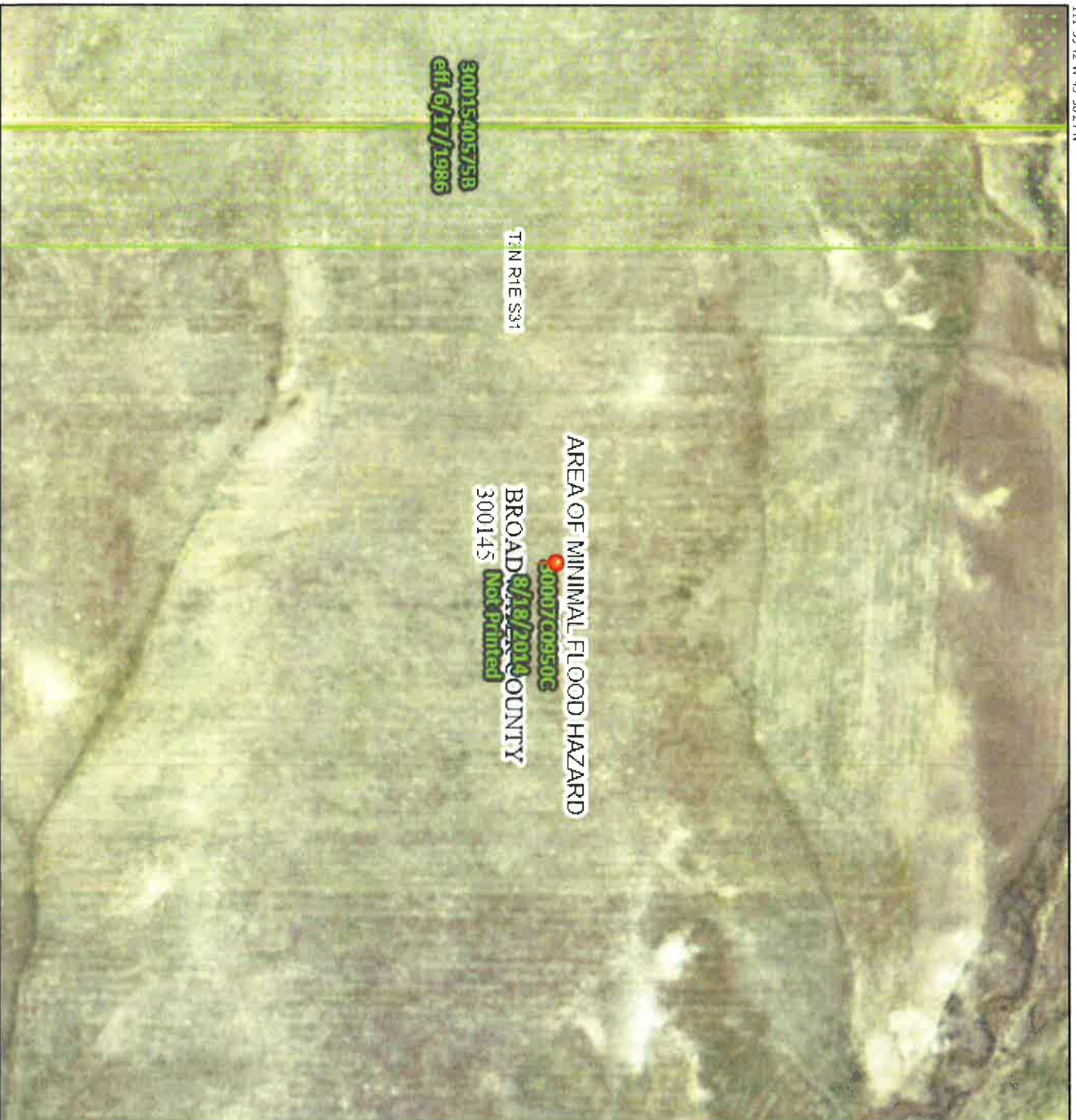
**Per Acre Value:** 0

Ag/Forest Land Item #6

# National Flood Hazard Layer FIRMeTte



111°39'42"W 45°58'24"N



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

### SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE)  
Zone A, V, AE, AH, AR
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile

Future Conditions 1% Annual

Chance Flood Hazard

Area with Reduced Flood Risk due to Levee. See Notes.

### OTHER AREAS OF FLOOD HAZARD

- Area with Flood Risk due to Levee

### OTHER AREAS

- Area of Minimal Flood Hazard
- Area of Undetermined Flood Hazard

### GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

- Cross Sections with 1% Annual Chance
- Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

### OTHER FEATURES

- Digital Data Available
- No Digital Data Available
- Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/11/2022 at 2:21 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRMeTte panel number, and FIRMeTte effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



**Lienholder's Acknowledgement**

**Not Applicable:**

**The property does not have any lienholder.**





## Documentation of Legal and Physical access

### **a. Description/ Average Daily Traffic**

Local county road easements, and encroachment permits will be finalized prior to the final plat. All road access improvements will be approved and constructed to county requirements. All lots will access off interior subdivision roads. Access to the property will utilize public roads/easements from Rolling Glen Ranch (Snow Berry Road and Bitterroot Road). Six Ranges Ranch proposes to pay their proportional share of the road maintenance within the Rolling Glen Ranch, See proposed road maintenance agreement int appendix 19.

The proposed development consists of 11- lots. The proposed lots are anticipated to consist of one (1) single family dwelling per lot. Per engineering trip generation calculations, 11-lots X 9 trips per day (conservative for rural setting) = 99 trips, the anticipated ADT generated by the overall subdivision is anticipated to be a conservative 99 trips per day.

### **b. Modification to Existing Roads:**

Modifications to existing roads and easements will include the construction of access roads through Snow Berry and Bitterroot Roads.

The proposed accesses/roads will be installed and maintained by the property owners.

Existing nearby roadways consist of gravel and limited paved roads. Any road improvements that are under the purview of Broadwater County will adhere to the regulations at the time of design and construction. The proposed access will be designed per County Regulations.



Map of the Rolling Glen Ranch Subdivision  
Being the E 1/2 of Section 31 and the W 1/2 of Section 32, Township 3 North, Range 1 East, P.M., Broadwater County, Montana.

For Steven and Susan Curranough

Curve Data table with columns for Stationing, Curve Length, and other technical details.

PHASE 1 includes Paving (Gravel) Bank Edge, Rolling Glen Ranch Loop, Wild Rose, and all lots being accessed from these roads.

All roadways are a minimum 60-foot wide Access & Utility Easement.

All Natural Drainages are subject to a 60-foot wide Drainage Easement. No structures may be erected or situated within 10 feet of either side of all natural drainages within this subdivision.

APPROVAL PHASE 1: Certificate of Final Plat Approval. APPROVAL PHASE 2: Certificate of Final Plat Approval.

Signatures of County Clerk and Notary Public.

Notary Public for the State of Montana, Steven and Susan Curranough.

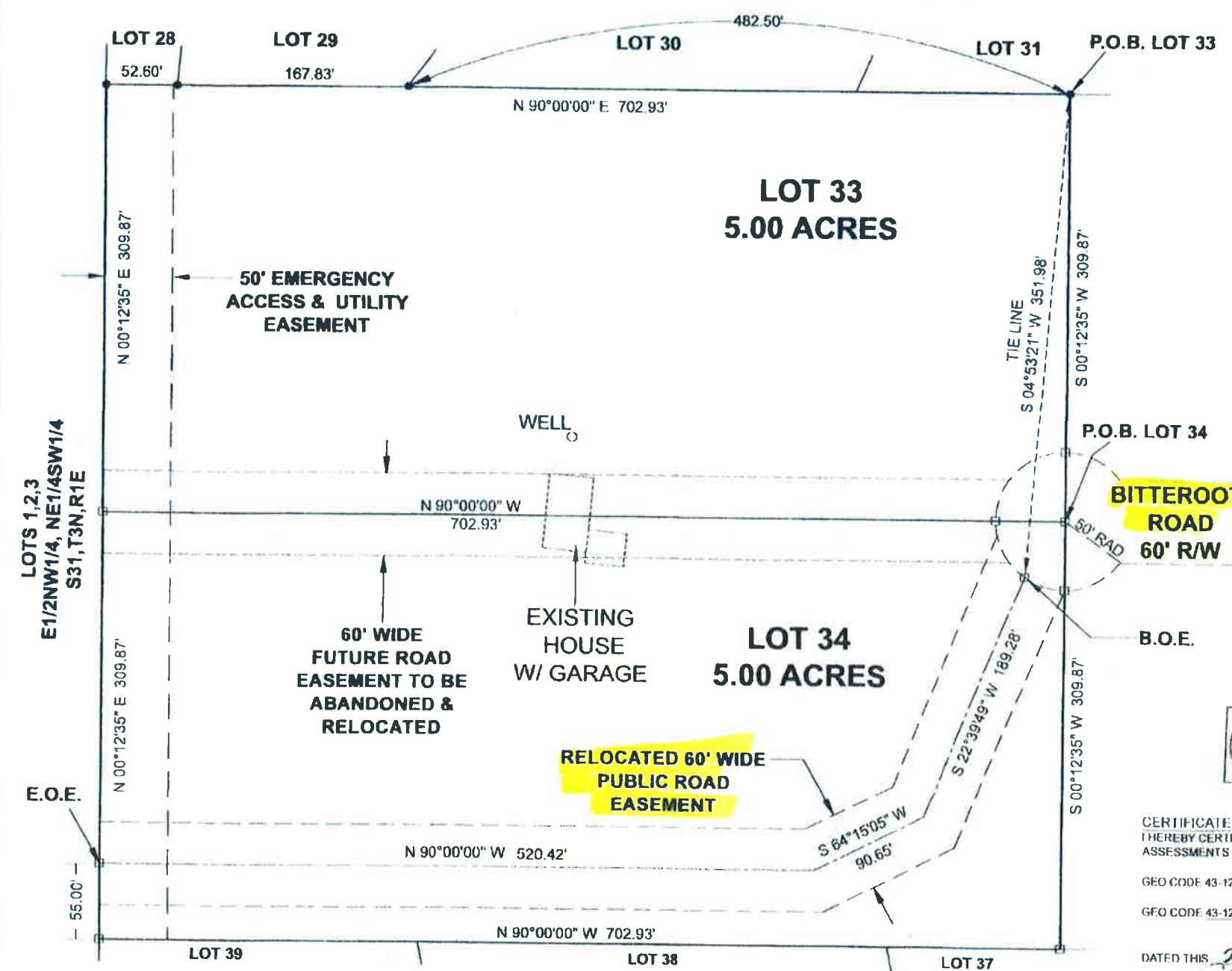


Legal description of the subdivision, including references to Sections 31 and 32, Township 3 North, Range 1 East, P.M., Broadwater County, Montana. Includes a 'Public Road' label and a signature.



# AMENDED PLAT OF ROLLING GLEN RANCH SUBDIVISION LOTS 33 & 34

FOR: CHRISTOPHER AND MELISSA LAGERQUIST  
PURPOSE: TO RELOCATE 60' WIDE FUTURE ROAD EASEMENT  
DATE: 10/29/2018



### LEGAL DESCRIPTIONS

**LOT 33**  
A TRACT OF LAND LOCATED IN THE SE1/4 OF SECTION 31, TOWNSHIP 3 NORTH, RANGE 1 EAST, P.M.M., BROADWATER COUNTY, MONTANA, MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHEAST CORNER OF LOT 33 OF CERTIFICATE OF SURVEY RECORDED IN BOOK 1, PAGE 985; THENCE S 00°12'35" W, 309.87 FEET, THENCE N 90°00'00" W, 702.93 FEET, THENCE N 00°12'35" E, 309.87 FEET ALONG WEST LINE TO THE NORTHWEST PROPERTY CORNER, THENCE N 90°00'00" E, 702.93 FEET ALONG THE NORTH PROPERTY LINE AND TO THE NORTHEAST PROPERTY CORNER OF SAID LOT AND THE POINT OF BEGINNING. THE TRACT OF LAND CONTAINS 5.00 ACRES, MORE OR LESS, AND IS SUBJECT TO ALL EXISTING EASEMENTS, DOCUMENTS OF RECORD AND EASEMENTS AS SHOWN ON THIS SURVEY.

**LOT 34**  
A TRACT OF LAND LOCATED IN THE SE1/4 OF SECTION 31, TOWNSHIP 3 NORTH, RANGE 1 EAST, P.M.M., BROADWATER COUNTY, MONTANA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHEAST CORNER OF LOT 34 OF CERTIFICATE OF SURVEY RECORDED IN BOOK 1, PAGE 985; THENCE S 00°12'35" W, 309.87 FEET, ALONG THE EAST PROPERTY LINE OF SAID TRACT; THENCE N 90°00'00" W, 702.93 FEET ALONG THE SOUTH PROPERTY LINE OF SAID LOT, THENCE N 00°12'35" E, 309.87 FEET TO THE NORTHWEST PROPERTY CORNER OF SAID LOT, THENCE N 90°00'00" E, 702.93 FEET ALONG THE NORTH PROPERTY LINE OF SAID LOT TO THE NORTHEAST CORNER AND THE POINT OF BEGINNING. THE TRACT OF LAND CONTAINS 5.00 ACRES, MORE OR LESS, AND IS SUBJECT TO ALL EXISTING EASEMENTS, DOCUMENTS OF RECORD AND EASEMENTS AS SHOWN ON THIS SURVEY.

**RELOCATED 60' WIDE PUBLIC ROAD EASEMENT**  
A 60' WIDE PUBLIC ROAD EASEMENT LOCATED IN THE SE1/4 OF SECTION 31, TOWNSHIP 3 NORTH, RANGE 1 EAST, BROADWATER COUNTY, MONTANA, WITH THE CENTERLINE OF SAID EASEMENT BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING FROM THE NORTHEAST PROPERTY CORNER OF LOT 33 OF ROLLING GLEN RANCH SUBDIVISION, THREE FORKS, MONTANA, THENCE S 04°53'21" W, 351.98 FEET TO THE BEGINNING OF EASEMENT, THENCE S 22°39'49" W, 189.28 FEET, THENCE S 64°15'05" W, 90.65 FEET, THENCE N 80°00'00" W, 520.42 FEET TO A POINT ON THE WEST PROPERTY LINE OF LOT 34, WHICH BEARS N 00°12'35" E, 55 FEET FROM THE SOUTHWEST CORNER OF SAID LOT AND MARKS THE END OF THE EASEMENT.

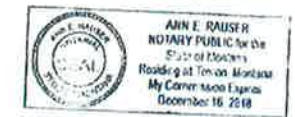
**CERTIFICATE OF EXEMPTIONS**  
I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS SURVEY IS CREATED WITH THE PURPOSE TO CREATE RIGHTS OF WAY OR UTILITY SITES AND A SUBSEQUENT CHANGE IN THE USE OF THE LAND TO A RESIDENTIAL OR COMMERCIAL AREA, IS SUBJECT TO THE REQUIREMENTS OF THIS CHAPTER AND EXEMPT FROM REVIEW UNDER THE MONTANA SUBDIVISION AND PLATTING ACT PURSUANT TO 76-3-201 (b) MCA.

CHRIS LAGERQUIST  
MELISSA LAGERQUIST

ON THIS 29 DAY OF Oct., 2018,

CHRIS AND MELISSA LAGERQUIST PERSONALLY APPEARED BEFORE ME AND HAVING BEEN DULY SWORN DID HEREIN EXECUTE THE ABOVE INSTRUMENT FOR THE PURPOSES STATED.

ANN E. RAUSER  
NOTARY PUBLIC FOR THE STATE OF MONTANA



PRINTED NAME  
RESIDING AT  
MY COMMISSION EXPIRES \_\_\_\_\_ 20\_\_

**CERTIFICATE OF COUNTY TREASURER**  
I HEREBY CERTIFY, PURSUANT TO SECTION 76-3-207 (3) OF MCA, THAT ALL REAL PROPERTY TAXES AND SPECIAL ASSESSMENTS ASSESSED AND LEVIED ON THE LAND DESCRIBED ON THIS CERTIFICATE OF SURVEY ARE PAID IN FULL.

GEO CODE 43-1208-31-4-02-25-0000

GEO CODE 43-1208-31-4-02-30-0000

DATED THIS 29 DAY OF November 2018

TREASURER, BROADWATER COUNTY, MONTANA

**CERTIFICATE OF CLERK AND RECORDER**

I, Douglas D. Ellis, CLERK AND RECORDER OF BROADWATER COUNTY, MONTANA, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT WAS FILED IN MY OFFICE AT 3:03 O'CLOCK (AM OR PM) THE 29th DAY OF November, AD, 2018, AND RECORDED IN BOOK 2 OF PLATS ON PAGE 571 RECORDS OF THE CLERK AND RECORDER, BROADWATER COUNTY, MONTANA.

CLERK AND RECORDER  
DOCUMENT NUMBER: 181594

**BASIS OF BEARING:**  
GEODETIC NORTH BASED ON GPS OBSERVATION  
**C.O.S. USED**  
1-965  
**LEGEND**  
● FND 2" ALUMINUM CAP SCHAUBER 540LS  
□ CALCULATED CORNER  
B.O.E. BEGINNING OF EASEMENT  
E.O.E. END OF EASEMENT  
P.O.B. POINT OF BEGINNING  
--- CENTERLINE OF EASEMENT

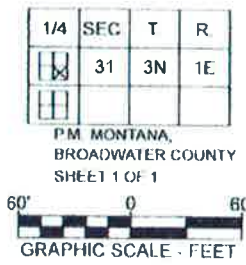
**CERTIFICATE OF EXAMINING LAND SURVEYOR**  
REVIEWED FOR ERRORS AND OMISSIONS IN CALCULATIONS AND DRAFTING THIS 29 DAY OF Oct., 2018 PURSUANT TO SECTION 76-3-811(2)(a), MCA.  
EXAMINING LAND SURVEYOR  
LICENSE No. 5430

**CERTIFICATE OF LAND SURVEYOR**



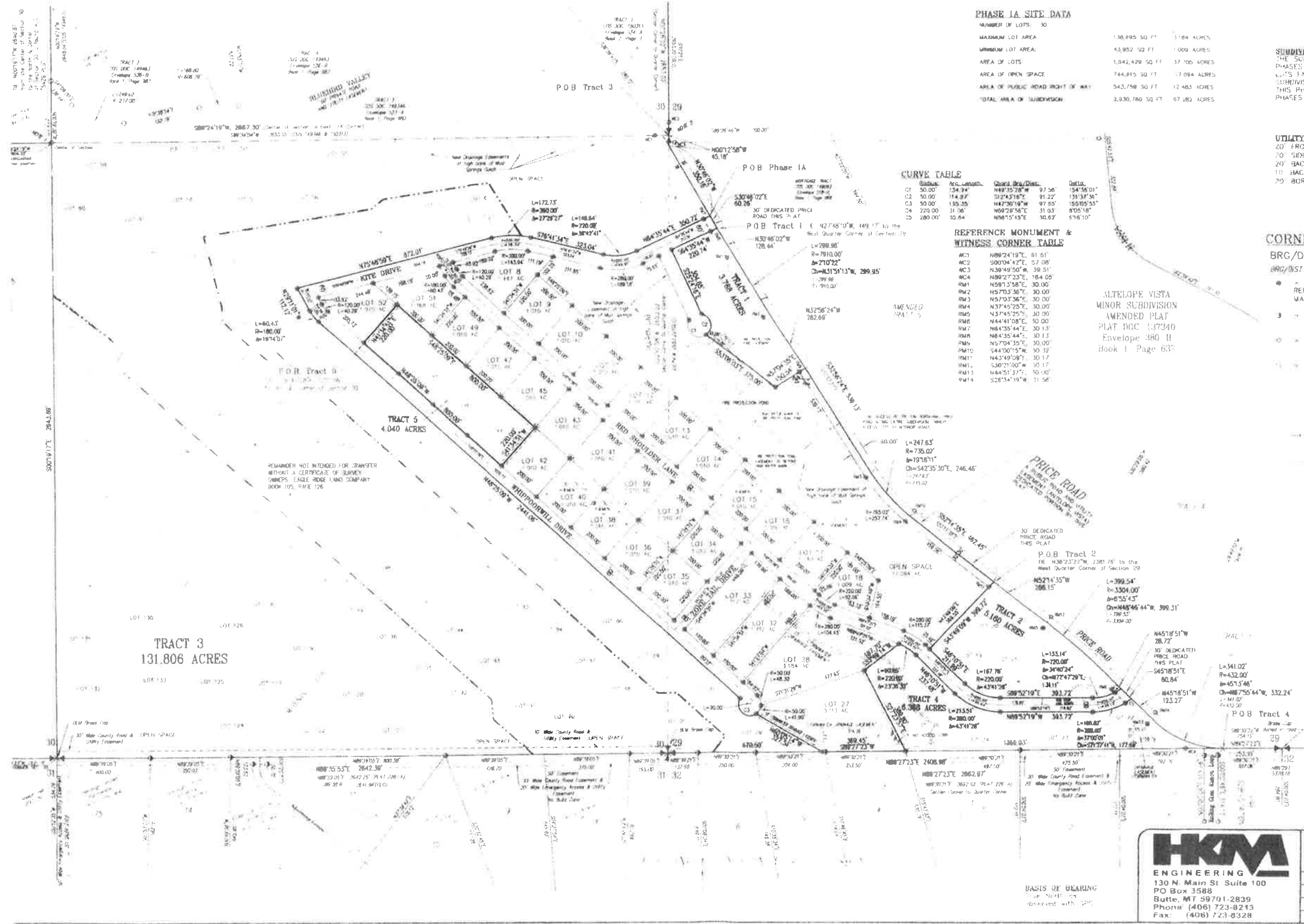
JONATHAN J. RIES P.L.S. (12450LS)  
PROFESSIONAL LAND SURVEYOR  
DATE: 10/29, 2018

**TRIPLE R SURVEYING, INC**  
P. O. BOX 2201 EAST HELENA, MT. 59635



# FINAL PLAT OF EAGLE RIDGE ESTATES, PHASE 1A

SITUATED IN THE SE 1/4 OF SECTION 30 AND IN THE SW 1/4 OF SECTION 29, T3N, R1E, P.M.M.  
BROADWATER COUNTY, MONTANA



**PHASE 1A SITE DATA**

NUMBER OF LOTS	50	136,895 SQ FT	3.184 ACRES
MAXIMUM LOT AREA		43,952 SQ FT	1.000 ACRES
AREA OF LOTS		1,042,420 SQ FT	23.706 ACRES
AREA OF OPEN SPACE		744,815 SQ FT	17.094 ACRES
AREA OF PUBLIC ROAD RIGHT OF WAY		543,750 SQ FT	12.483 ACRES
TOTAL AREA OF SUBDIVISION		2,930,780 SQ FT	67.282 ACRES

**SUBDIVISION LOT NUMBER NOTE:**  
THE SUBMITTA TO MDCG WAS BASED ON ALL PHASES. SOME OF THE SEQUENTIAL NUMBERS LOTS FALL INTO PHASE 2, EAGLE RIDGE ESTATE SUBDIVISION. RESULTING IN SKIPPED LOT NUM. THIS PHASE. THE FUTURE LOT NUMBERS FOR PHASES ARE SHOWN.

**CURVE TABLE**

Station	Chord Length	Chord Brg/Dist.	Delta
C1 50.00	134.84	N49°35'28"W 97.58'	134°38'01"
C2 50.00	114.87	S12°43'14"W 81.27'	131°31'36"
C3 50.00	135.35	N47°30'16"W 97.85'	150°05'55"
C4 220.00	31.98	N60°28'56"E 31.03'	8°05'18"
C5 280.00	50.64	N56°54'45"E 30.82'	5°16'10"

**REFERENCE MONUMENT & WITNESS CORNER TABLE**

Monument	Station	Chord Length	Chord Brg/Dist.	Delta
MC1	N89°24'19"E	81.81'		
MC2	S00°04'42"E	57.08'		
MC3	N38°49'50"W	39.51'		
MC4	N89°27'23"E	184.05'		
MC1	N59°17'58"E	30.00'		
MC2	N57°03'38"E	30.00'		
MC3	N57°03'38"E	30.00'		
MC4	N37°45'25"E	30.00'		
MC5	N37°45'25"E	30.00'		
MC6	N44°41'08"E	50.00'		
MC7	N64°35'44"E	30.13'		
MC8	N64°35'44"E	30.13'		
MC9	N57°04'35"E	30.17'		
MC10	S44°00'15"W	30.12'		
MC11	N43°49'09"E	30.17'		
MC12	S30°21'00"W	30.15'		
MC13	N44°51'37"E	30.00'		
MC14	S28°14'19"W	31.56'		

**UTILITY EASEMENTS**

- 20' FRONT
- 20' SIDES (10' EACH SIDE)
- 20' BACK AS SHOWN
- 15' BACK AS SHOWN
- 20' BORDERING OPEN SPACE

**CORNER MONUMENT LEGE**

- BRG/DIST - FOUND OR SET THIS
- BRG/DIST - PREVIOUS RECORD (from deeds or surr)
- 5/8" REBAR & PLASTIC OR ALUMIN REBAR & PLASTIC CAP. SET THIS SURVE MARKED "HKM ENG. 14531 PL"
  - 5/8" REBAR AND ALUMINUM CAP. FC MARKED "54.305"
  - 5/8" REBAR & PLASTIC CAP. FOUND MARKED "54.305"
  - 5/8" REBAR & ALUMINUM CAP. FOUND MARKED "5429 PL"

**SYMBOL LEGEN**

- FENCE
- UNDERGROUND
- OVERHEAD ELEC
- EXISTING POWER
- EXISTING ELECTF
- EXISTING TEL
- NEW FIRE HYDR
- NEW WELL

**SURVEYOR'S NOTES:**  
1. THIS SURVEY ESTABLISHES THE CORNER OF SECTION 30 AT THE PRO DISTANCE USING THE 1965 BLM REP PLAT BETWEEN THE NE CORNER AND THE CORNER 30.

**OWNERS OF RECORD:**  
EAGLE RIDGE LAND COMPANY  
BK 105, PG 126

**HKM ENGINEERING**  
130 N. Main St Suite 100  
PO Box 3588  
Butte, MT 59701-2839  
Phone (406) 723-8213  
Fax: (406) 723-8328

**FINAL PLAT OF T  
EAGLE RIDGE ESTATES MAJOR  
PHASE 1A**

CLIENT: EAGLE RIDGE LAND COMPANY  
LOCATION: SE 1/4 SECTION 30 & SW 1/4 OF S  
DRAWN BY: KB & BP  
SCALE: 1"=20'

BASIS OF BEARING  
as shown on  
attached with 2005



**Documentation of existing easements, including those for Agricultural Water  
User Facilities**

See attached plat for existing and proposed easements (Appendix 3).

No water conveyance or agricultural water user facilities are associated with this property.



129160

DECLARATION OF EASEMENT

KNOW ALL MEN BY THESE PRESENTS: That SIDNEY K. PRICE, of 161 Price Road, Three Forks, Montana, does hereby declare and reserve unto himself, his heirs, successors and assigns, a non-exclusive perpetual easement for ingress and egress, over, across and upon three tracts of land described as follows:

TRACT I

County of Broadwater, State of Montana  
Township 2 North, Range 1 East  
Section 7: W1/2  
Section 8: SE1/4  
Section 5: All except W1/2NW1/4

Township 3 North, Range 1 East  
Section 31: E1/2  
Section 32: W1/2

Notary Public for the State of Montana  
I hereby certify that the above  
instrument was filed in my office on  
the 18th day of October 1983  
at Three Forks, Montana.  
I am not required to copy this  
instrument if copy is made  
by the County Clerk.  
Clairne Hawley  
Christina  
18.08

TRACT II

County of Broadwater, State of Montana  
Township 3 North, Range 1 East  
Section 29: All that portion of the SW1/4 that lies south and west of the  
County Road.  
Section 30: SE1/4  
Section 31: N1/2SW1/4NW1/4

TRACT III

County of Jefferson, State of Montana  
Township 3 North, Range 1 West  
Section 35: E1/4  
Section 36: All

County of Broadwater, State of Montana  
Township 3 North, Range 1 East  
Section 31: S1/2SW1/4

County of Broadwater, State of Montana  
Township 2 North, Range 1 East  
Section 5: W1/2NW1/4  
Section 6: N1/2

SAID EASEMENT shall extend from the county roads, known as Price Road or Dunbar Road, over and across the above-described tracts. Said easement shall be 24 feet in width and shall generally follow the course and direction as shown on the attached Exhibit A. Said easement shall run with the land and shall be appurtenant thereto and shall be for the construction, maintenance and use of the roadway herein described.

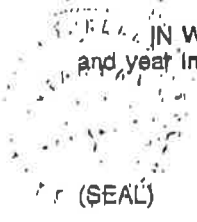
DATED this 11 day of October, 1994.

Sidney K. Price  
SIDNEY K. PRICE

STATE OF MONTANA )  
COUNTY OF REWS + CLARK ) ss.

On this 11 day of OCTOBER, 1994, before me, the undersigned officer, personally appeared SIDNEY K. PRICE, known to me to be the person whose name is subscribed to the within Instrument and acknowledged to me that he executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year in this Instrument first above written.



Alan F. King  
Notary Public for the State of Montana  
Residing at: Helena, MT  
My Commission Expires: Aug 13, 1995



(Proposed Draft)  
DECLARATION OF PROTECTIVE COVENANTS  
AND RESTRICTIONS FOR SIX RANGES RANCH SUBDIVISION

THIS DECLARATION is made this \_\_\_\_\_ day of \_\_\_\_\_, 2022, by Six Ranges Ranch Subdivision, hereinafter referred to as "Declarant";

W I T N E S S E T H:

WHEREAS, Declarant is the owner of the following described property situated in Broadwater County, Montana:

WHEREAS, Declarant intends to develop, sell and convey the above-described real property, hereinafter referred to as "Six Ranges Ranch Subdivision"; and,

WHEREAS, Declarant desires to subject all of said real property, together with the lots contained therein, to the covenants, conditions, restrictions and reservations herein set forth and referred to as "Covenants";

NOW, THEREFORE, Declarant does hereby establish, dedicate, declare, publish and impose upon the property the following Protective and Restrictive Covenants, which shall run with the land, and shall be binding upon and be for the benefit of all persons claiming such property, their grantors, legal representatives, heirs, successors and assigns, and shall be for the purpose of maintaining a uniform and stable value, character, architectural design, use, and development of the property. Such Covenants shall apply to the entire property, and all improvements placed or erected thereon, unless otherwise specifically excepted herein. The Covenants shall inure to and pass with each and every parcel, tract, lot or division.

Said Covenants shall be as follows:

**ARTICLE I**  
**DEFINITIONS**

Section 1. The term "member" shall mean any owner or lot owner. Each member or owner agrees to abide and be bound by these Covenants, the Articles of Incorporation, and the Bylaws and the Resolutions of the Homeowners' Association, if any.

Section 3. The term "owner" or "lot owner" shall mean any person or entity owning a fee simple interest in a lot or a contract purchaser, whether one or more persons or entities, owning or purchasing a lot, but excluding those having a mortgage or an interest merely as security for the performance of an obligation; provided, however, that prior to the first conveyance of a lot for value, the term "owner" shall mean "Declarant" or its successors or assigns. The term "person" hereinafter shall include any person, persons or entities.

Section 4. The term "contract purchaser" shall mean a person buying a lot pursuant to a contract for deed, Montana Trust Indenture or mortgage.

Section 5. The terms "properties" and "lots" shall mean all of the real property herein described and subsequently surveyed and platted into lots as Six Ranges Ranch Subdivision, according to the official plats thereof filed of record in the office of the Clerk and Recorder of Broadwater County, Montana.

Section 7. The term "Declarant" shall mean and refer to Six Ranges Ranch Subdivision, and its successors and assigns.

Section 8. Other definitions may be found throughout these covenants and those definitions are binding upon all owners. Any term not specifically defined shall be deemed to have a common and ordinary meaning.

## ARTICLE II

- A. All lots shall be used for residential and agricultural purposes only.
- B. Lot owners are informed of the potential health risk from radon concentrations and that such risk can be evaluated through soil tests and mitigated through radon abatement techniques incorporated into structures; (*Section 76-3-608(3)(a), MCA*)
- C. All units within the subdivision shall be constructed to specifications which meet or exceed equivalent provisions in the applicable state building code for this seismic zone; (*Zone 3*); (*Section 76-3-608(3)(a), MCA*)
- D. Lot owners are informed of the potential degradation of existing emergency services due to the potential for growth in a rural area.
- E. Any additional, replacement, or relocated utility lines shall be installed underground, in accordance with the County Subdivision Regulations, unless otherwise determined by the utility provided; (*Section 76-3-608(3)(a), MCA; Section VI-M, County Subdivision Regulations*).
- F. Any exterior lighting shall be directed downward to minimize visibility beyond the property lines; (*Section 76-3-608(3)(a), MCA*)
- G. Lot owners and tenants of the subdivision are informed that adjacent uses may be agricultural. Lot owners accept and are aware that standard agricultural and farming practices can result in dust, animal odors, flies, smoke and machinery noise. Standard agricultural practices feature the use of heavy equipment, chemical sprays and the use of machinery early in the morning and sometimes late into the evening. Lot purchasers are hereby notified that Montana law

provides specific protections in regard to liability and nuisance claims for agricultural operations and irrigators.; Those specific protections include but are not limited to (*Section 763-608(3)(a), MCA*).

- H. A waiver of right to protest joining a rural improvement or maintenance district for the purpose of road maintenance, mosquito control, or equitably funding parks and maintenance of parks. (*Section 76-3-102(4), 501, 504(7) and 621 MCA*)
- I. Lot owners are informed that these covenants bind the landowner, any heirs, successors and assigns, and all future owners of property within the subdivision, agreeing therein to hold Broadwater County harmless and indemnify Broadwater County from all claims, demands, obligations, suits, causes of action, damages, and liability, including the County's costs and attorney's fees, arising in any manner whatsoever out of, or relating to, the existence, use, operation, repair, and/or maintenance of the following:
  - i. Earthquake fault zone and any seismic activity;
  - ii. Water availability;
- J. Each lot shall be maintained in a clean, attractive, and weed-free manner; Noxious weeds must be pulled, sprayed or cut prior to seed maturity; (*Sections 76-3-102(5 and 6), 501(1), and 608(3)(a), MCA; Section VI-S, County Subdivision Regulations*)
- K. A prohibition of the storage of foods, garbage, or continuous feeding of domestic pets outdoors or other activities that creates an attractive nuisance for wildlife species (hay or alfalfa storage and feeding are not prohibited where livestock are permitted) (*Section 76-3-608(3) (a), MCA*)
- L. Lots shall only allow for livestock if a small acreage livestock management plan is reviewed and approved by the County Extension Agent and submitted to the county. Each lot owner shall be required to create and adhere to their own livestock management plan.
- M. All cats and dogs must be restrained, penned, or otherwise under the control of their owner at all times (*Section 76-3-608(3) (a), MCA*).
- N. Address numbers shall be clearly marked at the driveway entrance to each lot and be easily identified from the road.
- O. The Association shall be responsible for the maintenance and snow removal of the interior subdivision roads.

### **ARTICLE III**

#### **TERM, ENFORCEMENT, APPLICABILITY AND CHANGE**

Section 1. The term of the provisions of these Covenants shall be binding for the life of the property

Section 2. Enforcement of these Covenants shall be by proceedings either at law or in equity against any person or persons violating, or attempting to violate, any Covenant; and the legal proceedings may either be to restrain violation of these Covenants, to recover damages, or both.

Should any lawsuit or other legal proceeding be instituted by an owner against an owner alleged to have violated one or more of the provisions of these Covenants and should the owner enforcing the provisions of the covenants be wholly or partially successful in such proceedings, the offending owner shall be obligated to pay the costs of such proceeding, including reasonable attorney's fees for all time associated with the action.

Section 3. The failure of Declarant, or an owner, to enforce any Covenant or restriction contained herein shall not be deemed a waiver or in any way prejudice the rights to later enforce that Covenant, or any other Covenant thereafter, or to collect damages for any subsequent breach of Covenants.

Section 4. Invalidation of any one of these Covenants by judgment or by Court order shall in no way affect any of the other Covenants or provisions, all of which shall remain in full force and effect.

Section 5. In any conveyance of the above-described real property or of any lot thereon, it shall be sufficient to insert a provision in any deed or conveyance to the effect that the property is subject to protective or restrictive Covenants without setting forth such restrictions and Covenants verbatim or in substance in said deed nor referring to the recording data. All of the above-described real property and lots shall be subject to the restrictions and Covenants set forth herein, whether or not there is a specific reference to the same in a deed or conveyance.

Section 6. A breach of any of the foregoing restrictions or Covenants shall not defeat or render invalid the lien of any mortgage or deed of trust made in good faith and for value upon any lot or portion of the real property or any improvements thereon. However, the Covenants shall be binding upon and shall inure to the benefit of any subsequent owner whose title thereto was acquired by foreclosure, trustee sale or otherwise.

Any change of these Covenants shall be effective upon the filing and recording of such an instrument in the office of the Broadwater County Clerk and Recorder. Any change in these Covenants shall not affect existing structures and uses of the lots.

IN WITNESS WHEREOF, Declarant has hereunto set its hand as of this \_\_\_\_\_ day of \_\_\_\_\_, 2023.

\_\_\_\_\_ (Managing Member of Six Ranges Ranch Subdivision)

STATE OF \_\_\_\_\_ )

:SS.

County of \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, 2023, before me, the undersigned, a Notary Public of the State of \_\_\_\_\_, personally appeared \_\_\_\_\_ being the managing member of Six Ranges Ranch Subdivision known to me to be the persons that executed the within instrument and acknowledged to me they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal as of the day and year first above written.

\_\_\_\_\_  
\_\_\_\_\_

NOTARY PUBLIC for the State of \_\_\_\_\_  
Residing at \_\_\_\_\_  
My Commission expires \_\_\_\_\_





**Existing water rights**

Not Applicable

No existing water rights are associated with this property.



**Existing mineral rights**

Not Applicable

No existing mineral rights are associated with this property.



**BROADWATER COUNTY**  
**Certification of Property Owners List**

I, William Dreyer, applicant for the attached proposal, hereby certify that: hereby certify that:

- To the best of my knowledge, the attached list shows all property owners and purchasers under contract for property:
  - According to the notice requirements of the Broadwater County Subdivision Regulations.
- The names on the list are from the Broadwater County Clerk and Recorder's most recent records.
- The addresses on the list are from Montana Departments of Revenue's most recent tax records, available on the internet at <http://svc.mt.gov/msl/mtcadastral>.
- I understand that an inaccurate list may delay review of the project.

---

Signature

---

Date

Proposal Creagan Major Sub

**Property Owners**

According to the notice requirements of the Broadwater County Subdivision Regulations.

	<b>Legal Description of Property</b>	<b>Property Owner's Name</b>	<b>Mailing Address of Property Owner from Montana Dept. of Revenue</b>
<b>1</b>	ROLLING GLEN RANCH, S31, T03 N, R01 E, Lot 15, ACRES 5.06, COS 1-965	OSBORNE JUSTIN W & REBEKAH	8 LUPINE RD THREE FORKS, MT 59752-8784
<b>2</b>	ROLLING GLEN RANCH, S31, T03 N, R01 E, Lot 19, ACRES 5.03, COS 1-965	KLUJN ROD C & JULIE A	20 SNOWBERRY THREE FORKS, MT 59752-9225
<b>3</b>	ROLLING GLEN RANCH, S31, T03 N, R01 E, Lot 20, ACRES 5.04, COS 1-965	HILL CHRISTOPHER C & JENNIFER L	21 SNOWBERRY THREE FORKS, MT 59752-9225
<b>4</b>	ROLLING GLEN RANCH, S31, T03 N, R01 E, Lot 27, ACRES 5.56, COS 1-965	O'BRIEN GARY & VIOLET	22 GLACIER LILY RD THREE FORKS, MT 59752
<b>5</b>	ROLLING GLEN RANCH, S31, T03 N, R01 E, Lot 28, ACRES 4.29, COS 1-965	DELRYN LLC	207 FRONT ST SCITUATE, MA 02066-1391
<b>6</b>	ROLLING GLEN RANCH, S31, T03 N, R01 E, Lot 33, ACRES 5, COS 2-571	LAGERQUIST CHRISTOPHER & MELISSA	14 BITTERROOT RD THREE FORKS, MT 59752-9567
<b>7</b>	ROLLING GLEN RANCH, S31, T03 N, R01 E, Lot 34, ACRES 5, COS 2-571	LAGERQUIST CHRISTOPHER & MELISSA	14 BITTERROOT RD THREE FORKS, MT 59752-9567
<b>8</b>	ROLLING GLEN RANCH, S31, T03 N, R01 E, Lot 39, ACRES 5, COS 1-965	FITCH TOMMY E & KATHY M	PO BOX 424 BELGRADE, MT 59714-0424
<b>9</b>	S31, T03 N, R01 E, LOT 4; SE4SW4	MURPHY NOLAN J	165 COTTONWOOD RD CARDWELL, MT 59721-9607
<b>10</b>	S36, T03 N, R01 W, ACRES 640, ALL	MURPHY NOLAN J	165 COTTONWOOD RD CARDWELL, MT 59721-9607

\* If road is a state highway, also include Montana Department of Transportation in property owner list.

(If additional pages of this form are needed, download the file entitled "Property Owners".)

## Property Owners

According to the notice requirements of the Broadwater County Subdivision Regulations.

	Legal Description of Property	Property Owner's Name	Mailing Address of Property Owner from Montana Dept. of Revenue
11	S25, T03 N, R01 W, C.O.S. 251341, F888A, ACRES 407.43, AMENDED TRACT B	PRICE RDALE & RAEALYN	2150 DIANE LN POCATELLO, ID 83201-191
12	S30, T03 N, R01 E, C.O.S. 2-426, ACRES 76.68, TRACT C, W2SW4, LESS 2.17 AC LYING IN JEFFERSON COUNTY	GREENE GARY P & KAREN	35 LEGACY DR THREE FORKS, MT 59752-9535
13	S30, T03 N, R01 E, ACRES 80, E2SW4	GREENE GARY P & KAREN	35 LEGACY DR THREE FORKS, MT 59752-9535
14	S30, T03 N, R01 E, C.O.S. 2-245, ACRES 131.806, TRACT 3, IN SE4	GREENE GARY P & KAREN	35 LEGACY DR THREE FORKS, MT 59752-9535
15			
16			
17			
18			
19			
20			

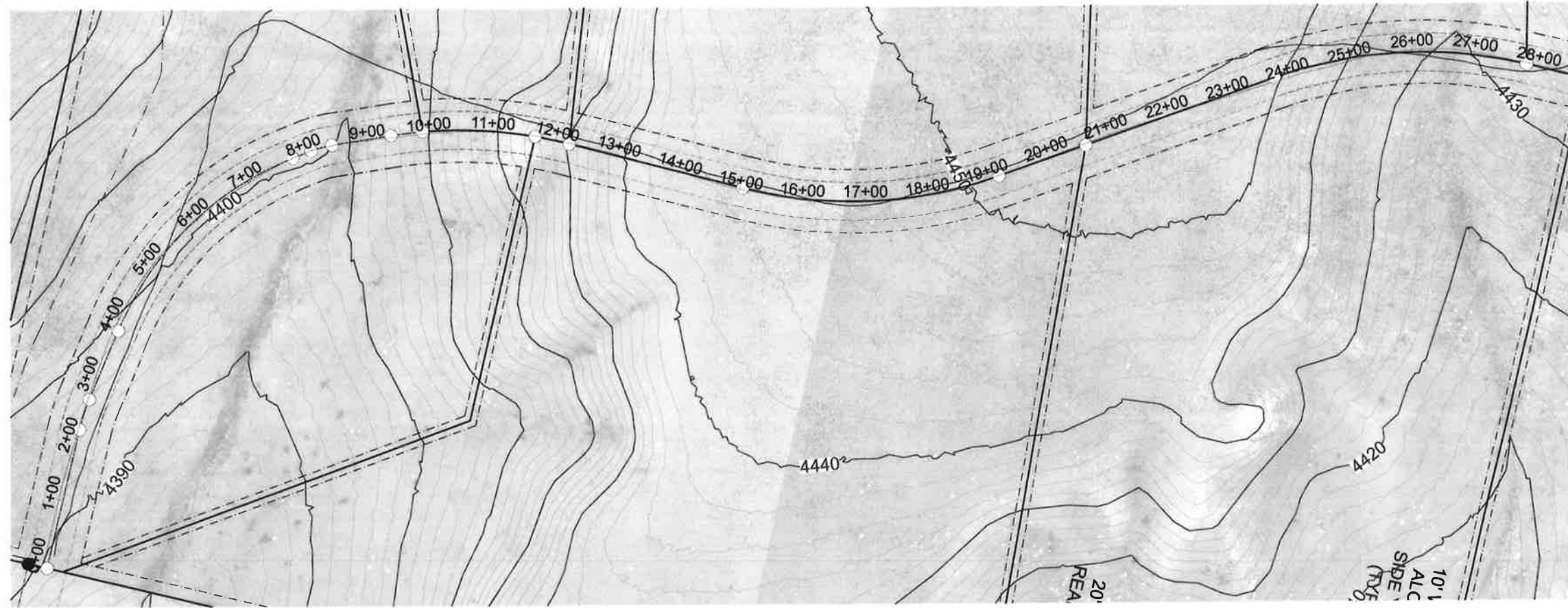
\* If road is a state highway, also include Montana Department of Transportation in property owner list.

(If additional pages of this form are needed, download the file entitled "Property Owners".)

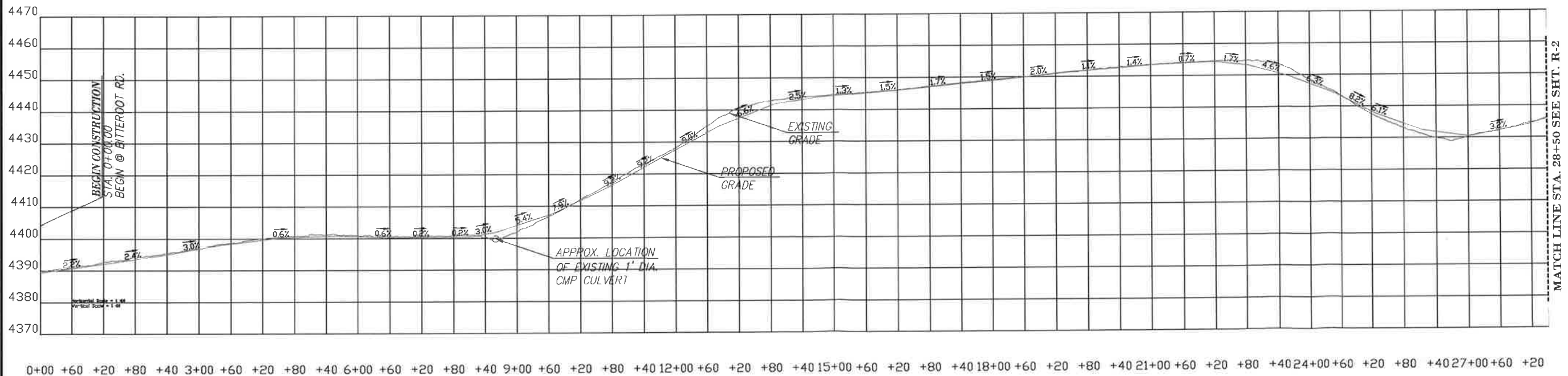




ROAD PLAN



ROAD PROFILE



CS-TB-MD-TBL00K\_22x34\_LAYOUT.dwg

M:\Storage\Conson\Templates\CIVIL\SHEET\_TEMPLATES\TB\_BAISED

REV	DATE	DESCRIPTION	BY

714 Stoneridge Dr.  
Suite 3  
Bozeman, MT 59718  
586.5599 Office  
www.alpinesurveying.net



SIX RANGES RANCH SUBDIVISION  
BROADWATER COUNTY, MT

ROAD PLAN & PROFILE

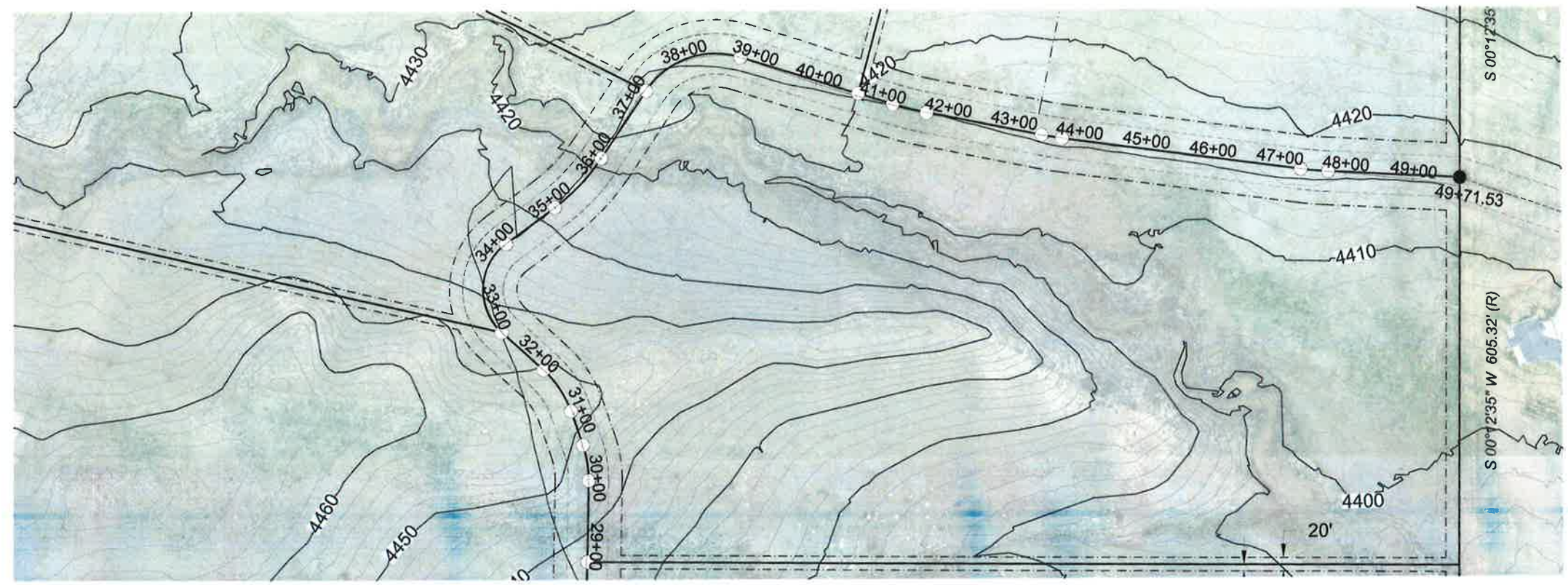
WARNING  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PROJECT	540-02
DATE	FEB 2023
DRAWN BY	EV
REVIEWED BY	WD

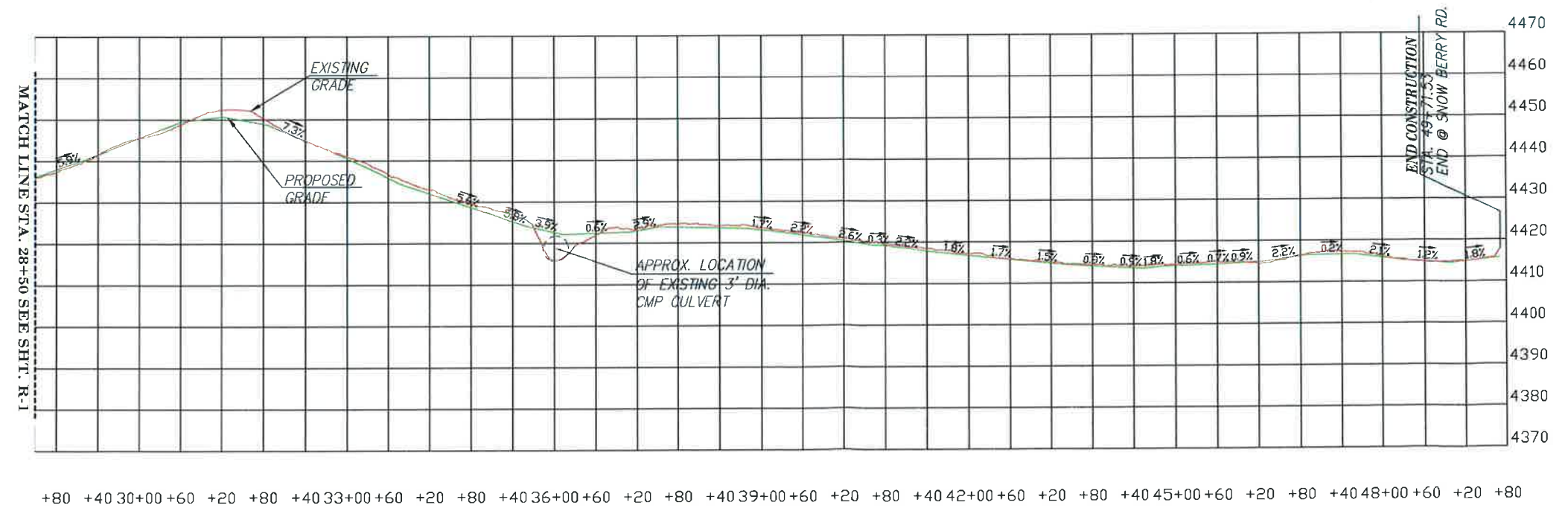
© ALPINE 2021

SHEET  
R-1

ROAD PLAN



ROAD PROFILE



REV	DATE	DESCRIPTION	BY

714 Stoneridge Dr.  
Suite 3  
Bozeman, MT 59718  
586.5599 Office  
www.alpinesurveying.net

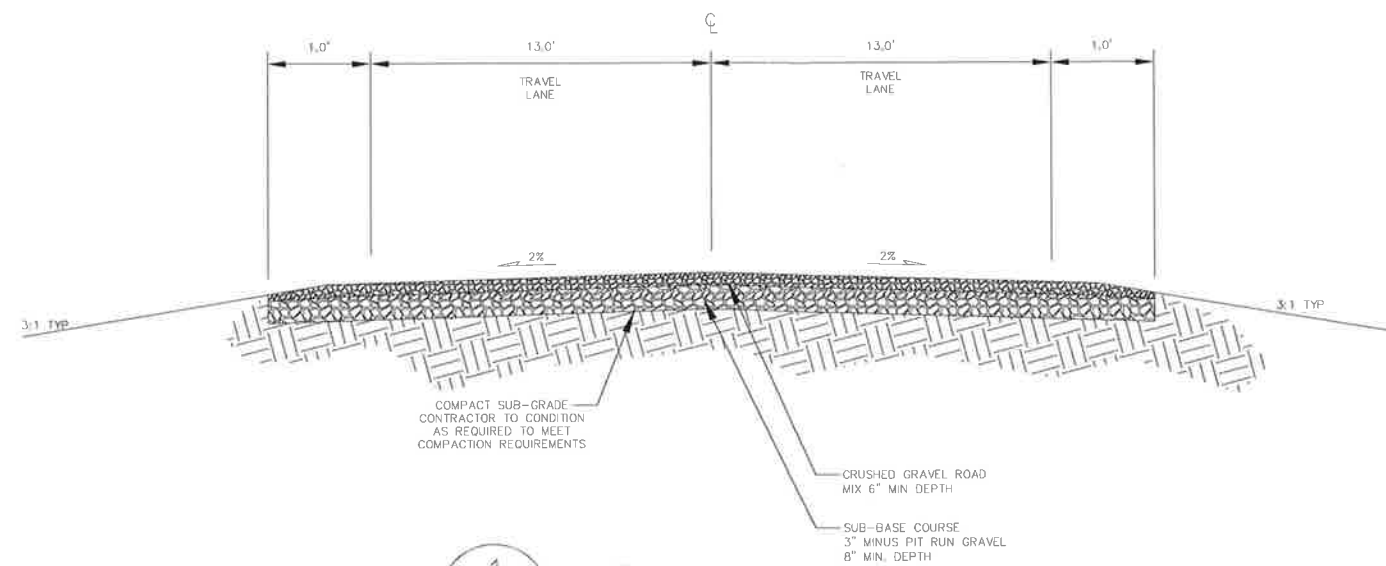
SIX RANGES RANCH SUBDIVISION  
BROADWATER COUNTY, MT  
ROAD PLAN & PROFILE

WARNING  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

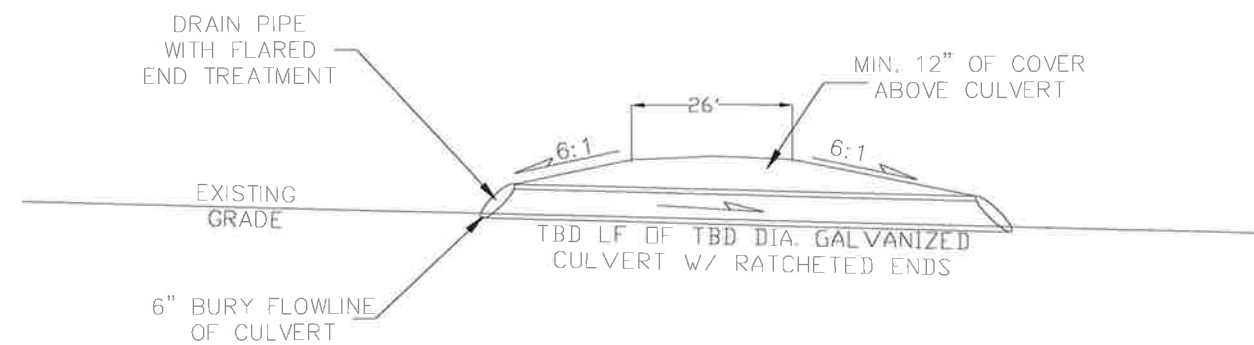
PROJECT	540-02
DATE	FEB 2023
DRAWN BY	EV
REVIEWED BY	WD

CS-1B-MD-1BLOCK\_22x34\_LAYOUT.dwg

M:\Standards\Corison\Templates\CIVIL\SHEET\_TEMPLATES\STB\_BASED



1  
R-3 DETAIL  
26' CROWNED SECTION  
NOT TO SCALE



2  
R-3 SECTION A-A  
APPROACH CULVERT DETAIL  
NOT TO SCALE

714 STONERIDGE DR.  
SUITE 3  
BOZEMAN, MT 59718  
586.5599 Office  
www.alpinesurveying.net



SIX RANGES RANCH SUBDIVISION  
BROADWATER COUNTY, MT

ROAD DETAILS

PROJECT	540-02
DATE	FEB 2023
DRAWN BY	EV
REVIEWED BY	WD

© ALPINE 2021

SHEET

R-3



**Approach/Access/Encroachment permits.**

Not Applicable

No new access permits are required since access will be from interior subdivision public road easements.

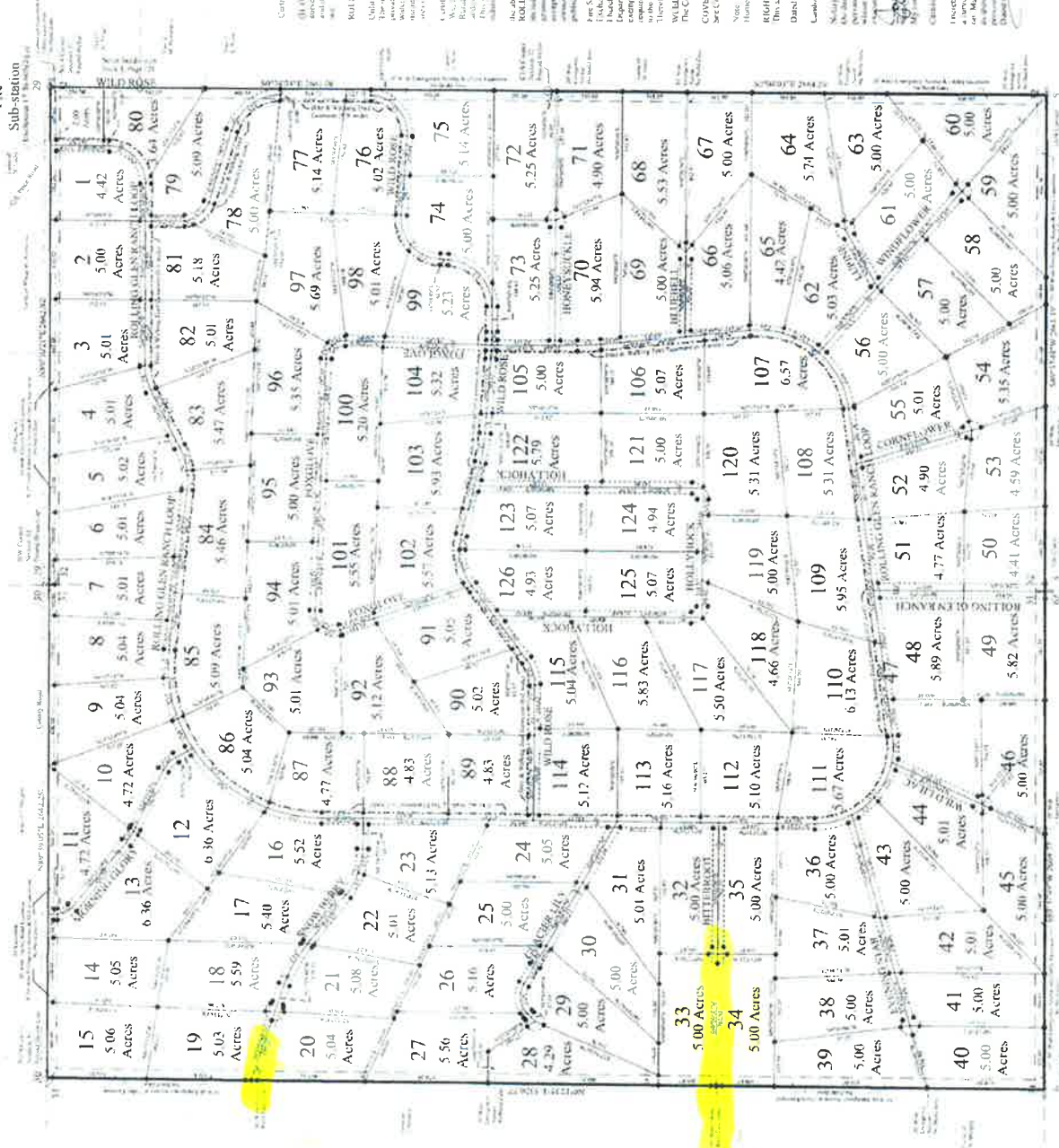
# Rolling Glen Ranch Subdivision

## Being the E 1/2 of Section 31 and the W 1/2 of Section 32, Township 33 North, Range 1 East, P.M.M., Broadwater County, Montana.

### The Shaven and Shaven Townships

Curve Data

Station	PC	PVI	PT	Curve Length	Radius	Chord	Chord Bearing	Area
1	100+00	100+00	100+00	0				
2	100+00	100+00	100+00	0				
3	100+00	100+00	100+00	0				
4	100+00	100+00	100+00	0				
5	100+00	100+00	100+00	0				
6	100+00	100+00	100+00	0				
7	100+00	100+00	100+00	0				
8	100+00	100+00	100+00	0				
9	100+00	100+00	100+00	0				
10	100+00	100+00	100+00	0				
11	100+00	100+00	100+00	0				
12	100+00	100+00	100+00	0				
13	100+00	100+00	100+00	0				
14	100+00	100+00	100+00	0				
15	100+00	100+00	100+00	0				
16	100+00	100+00	100+00	0				
17	100+00	100+00	100+00	0				
18	100+00	100+00	100+00	0				
19	100+00	100+00	100+00	0				
20	100+00	100+00	100+00	0				
21	100+00	100+00	100+00	0				
22	100+00	100+00	100+00	0				
23	100+00	100+00	100+00	0				
24	100+00	100+00	100+00	0				
25	100+00	100+00	100+00	0				
26	100+00	100+00	100+00	0				
27	100+00	100+00	100+00	0				
28	100+00	100+00	100+00	0				
29	100+00	100+00	100+00	0				
30	100+00	100+00	100+00	0				
31	100+00	100+00	100+00	0				
32	100+00	100+00	100+00	0				
33	100+00	100+00	100+00	0				
34	100+00	100+00	100+00	0				
35	100+00	100+00	100+00	0				
36	100+00	100+00	100+00	0				
37	100+00	100+00	100+00	0				
38	100+00	100+00	100+00	0				
39	100+00	100+00	100+00	0				
40	100+00	100+00	100+00	0				
41	100+00	100+00	100+00	0				
42	100+00	100+00	100+00	0				
43	100+00	100+00	100+00	0				
44	100+00	100+00	100+00	0				
45	100+00	100+00	100+00	0				
46	100+00	100+00	100+00	0				
47	100+00	100+00	100+00	0				
48	100+00	100+00	100+00	0				
49	100+00	100+00	100+00	0				
50	100+00	100+00	100+00	0				
51	100+00	100+00	100+00	0				
52	100+00	100+00	100+00	0				
53	100+00	100+00	100+00	0				
54	100+00	100+00	100+00	0				
55	100+00	100+00	100+00	0				
56	100+00	100+00	100+00	0				
57	100+00	100+00	100+00	0				
58	100+00	100+00	100+00	0				
59	100+00	100+00	100+00	0				
60	100+00	100+00	100+00	0				
61	100+00	100+00	100+00	0				
62	100+00	100+00	100+00	0				
63	100+00	100+00	100+00	0				
64	100+00	100+00	100+00	0				
65	100+00	100+00	100+00	0				
66	100+00	100+00	100+00	0				
67	100+00	100+00	100+00	0				
68	100+00	100+00	100+00	0				
69	100+00	100+00	100+00	0				
70	100+00	100+00	100+00	0				
71	100+00	100+00	100+00	0				
72	100+00	100+00	100+00	0				
73	100+00	100+00	100+00	0				
74	100+00	100+00	100+00	0				
75	100+00	100+00	100+00	0				
76	100+00	100+00	100+00	0				
77	100+00	100+00	100+00	0				
78	100+00	100+00	100+00	0				
79	100+00	100+00	100+00	0				
80	100+00	100+00	100+00	0				
81	100+00	100+00	100+00	0				
82	100+00	100+00	100+00	0				
83	100+00	100+00	100+00	0				
84	100+00	100+00	100+00	0				
85	100+00	100+00	100+00	0				
86	100+00	100+00	100+00	0				
87	100+00	100+00	100+00	0				
88	100+00	100+00	100+00	0				
89	100+00	100+00	100+00	0				
90	100+00	100+00	100+00	0				
91	100+00	100+00	100+00	0				
92	100+00	100+00	100+00	0				
93	100+00	100+00	100+00	0				
94	100+00	100+00	100+00	0				
95	100+00	100+00	100+00	0				
96	100+00	100+00	100+00	0				
97	100+00	100+00	100+00	0				
98	100+00	100+00	100+00	0				
99	100+00	100+00	100+00	0				
100	100+00	100+00	100+00	0				



**ROLLING GLEN RANCH SUBDIVISION**

**ROLLING GLEN RANCH SUBDIVISION**, Broadwater County, Montana, and the Law of Montana, is hereby approved by the Board of Supervisors of Broadwater County, Montana, and the Law of Montana, on this 1st day of June, 2007, for the purpose of subdividing the above described land into the lots shown on the attached plat.

The Board of Supervisors of Broadwater County, Montana, on this 1st day of June, 2007, has approved the subdivision of the above described land into the lots shown on the attached plat, and has authorized the Board of Supervisors to execute and file this plat with the County Clerk of Broadwater County, Montana, for recording.

The Board of Supervisors of Broadwater County, Montana, on this 1st day of June, 2007, has approved the subdivision of the above described land into the lots shown on the attached plat, and has authorized the Board of Supervisors to execute and file this plat with the County Clerk of Broadwater County, Montana, for recording.

**APPROVAL PHASE 1:**

**APPROVAL PHASE 2:**

**APPROVAL PHASE 3:**

Being the E 1/2 of Section 31 and the W 1/2 of Section 32, Township 33 North, Range 1 East, P.M.M., Broadwater County, Montana.

Rolling Glen Ranch Subdivision

Scale: 1" = 200'

North Arrow

Rolling Glen Ranch Subdivision

Being the E 1/2 of Section 31 and the W 1/2 of Section 32, Township 33 North, Range 1 East, P.M.M., Broadwater County, Montana.

Rolling Glen Ranch Subdivision

Being the E 1/2 of Section 31 and the W 1/2 of Section 32, Township 33 North, Range 1 East, P.M.M., Broadwater County, Montana.







SHARED ROAD MAINTENANCE AGREEMENT

THIS SHARED ROAD MAINTENANCE AGREEMENT (the "Agreement") is made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ by and between Lots 1-11 of Six Ranges Ranch Major Subdivision.

WITNESSETH:

WHEREAS, Six Range Major Subdivision Homeowner's Association is the entity responsible for governing and supervising the use of all roadways within Six Ranges Ranch Major Subdivision in Broadwater County, Montana. Six Ranges Ranch Major Subdivision Homeowner's Association duties include the maintenance of all the public county roads that pass through Six Ranges Ranch Major Subdivision; and

WHEREAS, the specific public county roads that are located within Six Ranges Ranch Major Subdivision(SRRHOA) which are commonly known as Snow Berry Road(extension of Snowberry Road); and

WHEREAS, SRR HOA is the entity responsible for governing and supervising the use of roadways within that property of Six Ranges Ranch Major Subdivision on behalf of and for the benefit of the Property owner's located within Six Ranges Ranch Major Subdivision; and

WHEREAS, in light of the fact that Broadwater County has no obligation to maintain any portion of the Roads, the parties hereto are desirous of establishing maintenance responsibilities and related pro rata cost sharing obligations related to such Roads.

NOW, THEREFORE, in consideration of the mutual covenants and conditions herein set forth, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Maintenance of Roads. All lots hereby agree to help maintain and repair those portions of the Roads located within Six Ranges Ranch Major Subdivision for the benefit of all tract owners within Six Ranges Ranch Major Subdivision. The scope of such maintenance and repair obligations shall be limited to normal and customary maintenance work such as resurfacing, snowplowing and weed management that may become necessary on a case-by-case basis in order to keep the Roads in a good, safe and serviceable condition. The choice of entity to perform any required maintenance work under this Agreement related to the Roads shall be at the mutually agreed upon.

2. Payment for Maintenance of Roads. In consideration for maintenance of the Roads as set forth herein, all Lots hereby agrees to pay for an equal percentage of the costs related to such maintenance. Any of the Lots that incur maintenance cost to the shared roads shall submit invoices to SRR HOA specifically setting forth its pro rata cost sharing obligation in accordance with the mutual agreement and indicating how such cost was calculated.

3. Damage to Roads by Identifiable Party. The parties hereto agree that in the event that any portion of the Roads located within Six Ranges Ranch Major Subdivision is damaged due solely to the action of an identifiable party or parties, the obligation for the cost related to any necessary repair of such damage shall be that solely of the damaging party or parties and such cost shall not be subject to pro rata sharing as set forth herein.

4. Future Rural Improvements District. To the extent that any of the Roads or any portions thereof located within Six Ranges Ranch Major Subdivision are included within a future rural improvements district or districts formed in accordance with Broadwater County regulations for the purpose of providing maintenance for such Roads or portions thereof (the formation of which shall not be opposed by either party), any such Roads or portions thereof shall thereafter be excluded from and not subject to the terms and provisions of this Agreement. To the extent all portions of the Road that are the subject of this Agreement are ultimately included within one or more rural improvements district, this Agreement shall automatically terminate and be of no further force or effect.

5. Notice. Any and all notices required or permitted to be given by the terms of this Agreement shall be effective: (a) on the date of delivery, if delivered personally; (b) on the next business day after deposit for delivery with an overnight courier service such as Federal Express; or three (3) business days after the day of deposit in the U.S. Mail as certified mail, postage prepaid. Personal delivery shall be deemed to have occurred when any notice is delivered to the offices of the party for whom the delivery is intended or to such address as the parties may from time to time designate in writing with notice as provided herein and may be evidenced by an affidavit of delivery.

6. Accounting. SRR HOA agrees to maintain records of all costs incurred in connection with any maintenance of the Roads that are undertaken. Records shall be available for inspection by any lot owners within Six Ranges Ranch Major Subdivision, upon reasonable notice.

8. Binding Effect. This Agreement and the benefits and burdens thereunto attaching shall be binding upon the parties, their heirs, assigns, ~~personal representatives and successors in interest, and the contract purchasers~~ and owners of record within Six Ranges Ranch Major Subdivision.

9. Assignment. This Agreement may not be assigned by either party without the prior written consent of the other party, which consent shall not be unreasonably withheld.

10. Enforcement; Attorneys' Fees. This Agreement and the terms, conditions, and provisions hereof may be enforced by all parties, their successors and assigns, and any tract owners. In the event legal proceedings are brought against any party for the purpose of enforcement of any term or provision hereof, the substantially prevailing party or parties shall recover from the other party or parties all costs associated therewith, including but not limited to reasonable attorneys' fees.

11. Conflicting Documents. To the extent that the terms and provisions set forth in this Agreement conflict with the terms and provisions of any other document binding upon either party hereto, including but not limited to any declarations or other controlling documents, the terms and provisions of this Agreement shall govern and control.

12. Complete Agreement: Amendment. This Agreement constitutes the entire and complete agreement of the parties in regard to the pro rata cost sharing obligations of Lots 1-11 of Six Ranges Ranch Major Subdivision and those portions of the Roads located within Six Ranges Ranch Major Subdivision. No promise or undertaking has been made by any party, and no understanding exists with respect to the transaction herein contemplated, except as expressly set forth herein. All prior and contemporaneous negotiations and understandings between the parties are embodied and merged into this Agreement. Any modification of or amendment to this Agreement must be in written form and executed in the same manner as this Agreement.

13. Counterparts: Emailed Signatures. This Agreement may be executed in duplicate original counterparts, each of which shall constitute an original but all of which shall constitute one and the same document. An emailed signature shall have the same effect as an original signature.

IN WITNESS WHEREOF, the undersigned have executed this Agreement on the date hereinabove first written.

By: \_\_\_\_\_  
Managing Member of Six Ranges Ranch Major Subdivision

## SHARED ROAD MAINTENANCE AGREEMENT

THIS SHARED ROAD MAINTENANCE AGREEMENT (the "Agreement") is made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ by and between Rolling Glen Ranch's Homeowners Association (RGRHOA) and Six Ranges Ranch's Homeowners Association (SRRHOA).

WITNESSETH:

WHEREAS, RGHOA is the entity responsible for governing and supervising the use of all roadways within Rolling Glens Ranch Subdivision in Broadwater County, Montana. RGHOA duties include the maintenance of all the public county roads that pass through Ranch Major Subdivision; and

WHEREAS, the specific public county roads that are located within RGRHOA which are commonly known as Snow Berry Road, Bitterroot Road and Rolling Glen Ranch Loop ; and

WHEREAS, RGRHOA is the entity responsible for governing and supervising the use of roadways within that property of Rolling Glen Ranch Subdivision on behalf of and for the benefit of the Property owner's located within Rolling Glen Ranch Subdivision and Six Ranges Ranch Subdivision; and

WHEREAS, in light of the fact that Broadwater County has no obligation to maintain any portion of the Roads, the parties hereto are desirous of establishing maintenance responsibilities and related pro rata cost sharing obligations related to such Roads.

NOW, THEREFORE, in consideration of the mutual covenants and conditions herein set forth, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Maintenance of Roads. All lots hereby agree to help maintain and repair those portions of the Roads located within Rolling Glen Ranch Subdivision for the benefit of all tract owners within Six Ranges Ranch Major Subdivision. The scope of such maintenance and repair obligations shall be limited to normal and customary maintenance work such as resurfacing, snowplowing and weed management that may become necessary on a case-by-case basis in order to keep the Roads in a good, safe and serviceable condition. The choice of entity to perform any required maintenance work under this Agreement related to the Roads shall be at the mutually agreed upon.

2. Payment for Maintenance of Roads. In consideration for maintenance of the Roads as set forth herein, all Lots hereby agrees to pay for an equal percentage of the costs related to such maintenance. Any of the Lots that incur maintenance cost to the shared roads shall submit invoices to RGRHOA specifically setting forth its pro rata cost sharing obligation in accordance with the mutual agreement and indicating how such cost was calculated.

3. Damage to Roads by Identifiable Party. The parties hereto agree that in the event that any portion of the Roads located within Rolling Glen Ranch Subdivision is damaged due solely to the action of an identifiable party or parties, the obligation for the cost related to any necessary repair of such damage shall be that solely of the damaging party or parties and such cost shall not be subject to pro rata sharing as set forth herein.

4. Future Rural Improvements District. To the extent that any of the Roads or any portions thereof located within Rolling Glen Ranch Subdivision are included within a future rural improvements district or districts formed in accordance with Broadwater County regulations for the purpose of providing maintenance for such Roads or portions thereof (the formation of which shall not be opposed by either party), any such Roads or portions thereof shall thereafter be excluded from and not subject to the terms and provisions of this Agreement. To the extent all portions of the Road that are the subject of this Agreement are ultimately included within one or more rural improvements district, this Agreement shall automatically terminate and be of no further force or effect.

5. Notice. Any and all notices required or permitted to be given by the terms of this Agreement shall be effective: (a) on the date of delivery, if delivered personally; (b) on the next business day after deposit for delivery with an overnight courier service such as Federal Express; or three (3) business days after the day of deposit in the U.S. Mail as certified mail, postage prepaid. Personal delivery shall be deemed to have occurred when any notice is delivered to the offices of the party for whom the delivery is intended or to such address as the parties may from time to time designate in writing with notice as provided herein and may be evidenced by an affidavit of delivery.

6. Accounting. RGRHOA agrees to maintain records of all costs incurred in connection with any maintenance of the Roads that are undertaken. Records shall be available for inspection by any lot owners within Rolling Glen Ranch Subdivision, upon reasonable notice.

8. Binding Effect. This Agreement and the benefits and burdens thereunto attaching shall be binding upon the parties, their heirs, assigns, personal representatives and successors in interest, and the contract purchasers and owners of record within Six Ranges Ranch Major Subdivision.

9. Assignment. This Agreement may not be assigned by either party without the prior written consent of the other party, which consent shall not be unreasonably withheld.

10. Enforcement; Attorneys' Fees. This Agreement and the terms, conditions, and provisions hereof may be enforced by all parties, their successors and assigns, and any tract owners. In the event legal proceedings are brought against any party for the purpose of enforcement of any term or provision hereof, the substantially prevailing party or parties shall recover from the other party or parties all costs associated therewith, including but not limited to reasonable attorneys' fees.

11. Conflicting Documents. To the extent that the terms and provisions set forth in this Agreement conflict with the terms and provisions of any other document binding upon either party hereto, including but not limited to any declarations or other controlling documents, the terms and provisions of this Agreement shall govern and control.

12. Complete Agreement: Amendment. This Agreement constitutes the entire and complete agreement of the parties in regard to the pro rata cost sharing obligations of Rolling Glen Ranch Subdivision and Six Ranges Ranch Subdivision and those portions of the Roads located within Rolling Glen Ranch Subdivision. No promise or undertaking has been made by any party, and no understanding exists with respect to the transaction herein contemplated, except as expressly set forth herein. All prior and contemporaneous negotiations and understandings between the parties are embodied and merged into this Agreement. Any modification of or amendment to this Agreement must be in written form and executed in the same manner as this Agreement.

13. Counterparts: Emailed Signatures. This Agreement may be executed in duplicate original counterparts, each of which shall constitute an original but all of which shall constitute one and the same document. An emailed signature shall have the same effect as an original signature.

IN WITNESS WHEREOF, the undersigned have executed this Agreement on the date hereinabove first written.

By: \_\_\_\_\_  
Managing Member of Six Ranges Ranch Major Subdivision

By: \_\_\_\_\_  
Managing Member of Rolling Glenn Ranch Subdivision

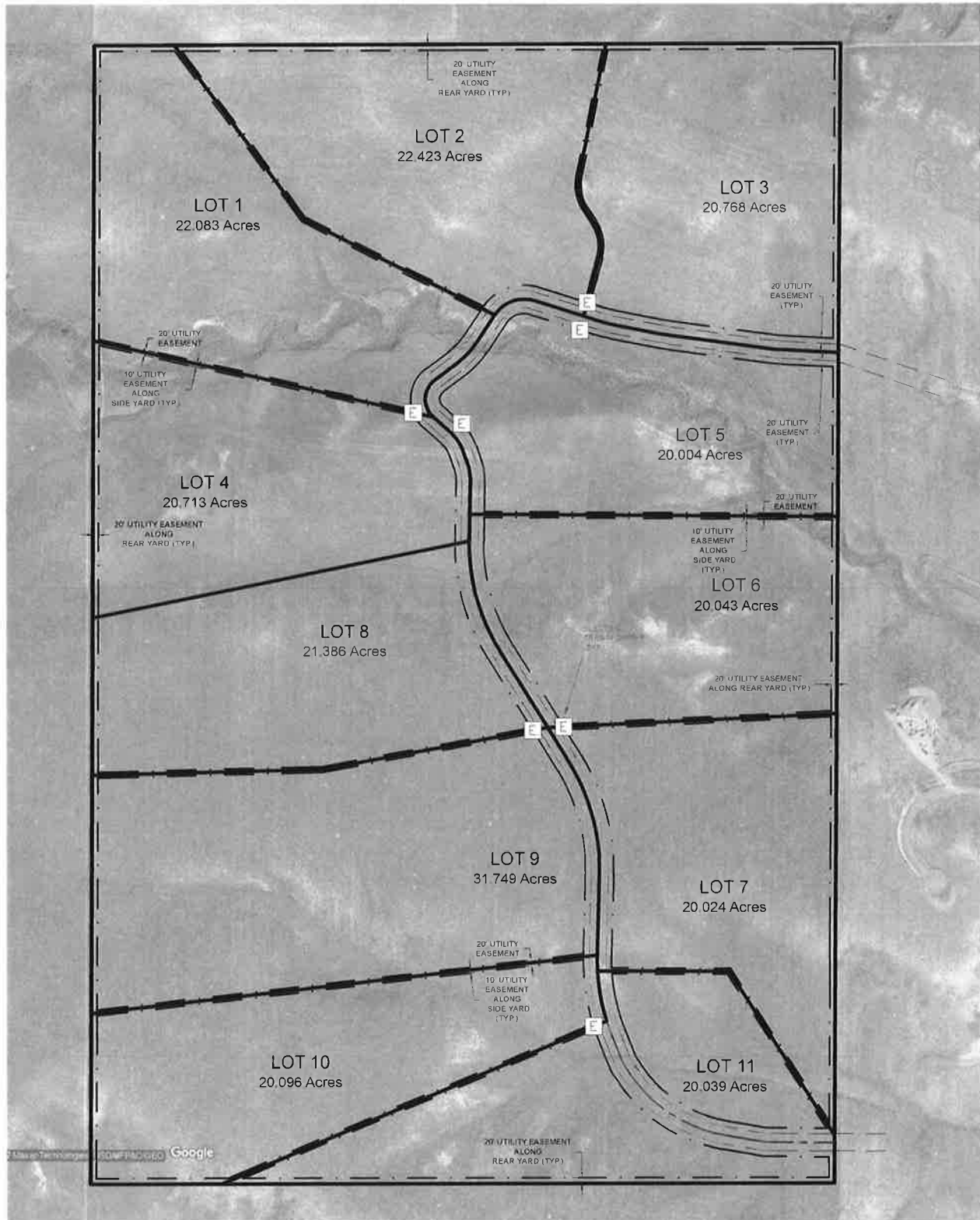
---





# UTILITY EXHIBIT

A DEPICTION OF UTILITY EASEMENTS AND STAKED/INSTALLED ELECTRIC TRANSFORMERS.



**BASIS OF BEARING**  
BOBCAT LDP  
Coordinate System

DRAWN BY: \_\_\_\_\_ GLL  
DATE: \_\_\_\_\_ 04/14/2023  
PROJECT NO. \_\_\_\_\_ 540-02  
FILE NAME: \_\_\_\_\_ UTIL EXHIB



714 Stoneridge Dr.  
Suite 3  
Bozeman, MT 59718  
586.5599 Office  
www.alpinesurveying.net



**PRELIMINARY PLAT**  
**SIX RANGES RANCH SUBDIVISION**  
 SUBDIVISION PLAT NO. \_\_\_\_\_

A SUBDIVISION OF GOVERNMENT LOTS 1, 2 & 3, THE EAST ONE-HALF OF THE NORTHWEST ONE-QUARTER AND THE NORTHEAST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 31 TOWNSHIP 3 NORTH, RANGE 1 EAST, P.M.M., BROADWATER COUNTY, MONTANA

THIS SURVEY WAS PERFORMED FOR THE OWNERS OF RECORD: VALLEY VIEW ACRES LLC

THE PURPOSE OF THIS SURVEY IS TO CREATE AN 11 LOT SUBDIVISION.

**PERIMETER LEGAL DESCRIPTION**

A Tract of land being Government Lots 1, 2, & 3, the east one-half of the northwest one-quarter and the northeast one-quarter of the southwest one-quarter of Section 31, Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana, more particularly described as follows:

Beginning at the corner common to Section 30 and Section 31, Township 3 North, Range 1 East, P.M.M. and Section 25 and Section 36, Township 3 North, Range 1 West, P.M.M., a 3 1/2" aluminum cap "1453LS";  
 thence N 89°53'26" E a distance of 1271.45' to an orange plastic cap "15279LS";  
 thence N 89°53'26" E a distance of 1349.73' to a 3 1/2" BLM brass cap;  
 thence S 00°27'53" W a distance of 534.14' to a 1/2" rebar;  
 thence S 00°28'07" W a distance of 550.18' to a 1 1/2" aluminum cap "5430LS";  
 thence S 00°27'23" W a distance of 805.88' to a 1 1/2" aluminum cap "5430LS";  
 thence S 00°26'56" W a distance of 658.36' to a 1 1/2" aluminum cap "5430LS";  
 thence S 00°25'47" W a distance of 453.86' to a 1 1/2" aluminum cap "5430LS";  
 thence S 00°27'41" W a distance of 279.84' to a 1 1/2" aluminum cap "5430LS";  
 thence S 00°28'27" W a distance of 175.42' to a 1 1/2" aluminum cap "5430LS";  
 thence S 00°26'54" W a distance of 619.85' to a 1 1/2" aluminum cap "5430LS";  
 thence S 00°25'22" W a distance of 111.91' to an orange plastic cap "15279LS";  
 thence N 89°59'31" W a distance of 2809.52' to an orange plastic cap "15279LS";  
 thence N 00°17'07" E a distance of 3963.79' to the Point of Beginning, containing, 229.328 acres more or less.

Subject to all easements of record or apparent from a visual inspection of the property.

**CERTIFICATE OF DEDICATION**

The above-described tract of land is to be known and designated as the Six Ranges Ranch Subdivision, Broadwater County, Montana; and the lands included in all streets, avenues, alleys, and parks or public lands shown on said plat are hereby granted and donated to Broadwater County for the public use and enjoyment. Unless specifically listed herein, the lands included in all streets, avenues, alleys and parks or public lands dedicated to the public are accepted for public use, but the County accepts no responsibility for maintaining the same. The owner agrees that the County has no obligation to maintain the lands included in all streets, avenues, alleys and parks or public lands hereby dedicated to public use.

**CERTIFICATE OF WAIVER**

I, \_\_\_\_\_ of Valley View Acres LLC, the undersigned owner of the Subdivision, do hereby waive the right to protest the creation of Rural Improvement Districts. In so doing, we do not waive any right to comment on, protest, and/or appeal any assessment formula which may be proposed, if we believe it to be inequitable. This waiver shall be binding upon the heirs, assigns, and purchasers on all lots within this subdivision.

**CERTIFICATE OF EXEMPTION**

I, \_\_\_\_\_ of Valley View Acres LLC, the undersigned owner of the Subdivision furthermore certify that Tracts 1 - 11 of this survey are larger than 20 acres and that this division is not a subdivision and is exempt from Montana Department of Environmental Quality review pursuant to MCA 76-4-103 which states:  
 A subdivision consists of only those parcels of less than 20 acres that have been created by a division of land, and the plat must show all of the parcels, whether contiguous or not. The rental or lease of one or more parts of a single building, structure, or other improvement, whether existing or proposed, is not a subdivision, as that term is defined in this part, and is not subject to the requirements of this part.

Dated this \_\_\_\_\_ day of \_\_\_\_\_

Valley View Acres, LLC

By: \_\_\_\_\_ (fe)

State of \_\_\_\_\_ s.s.

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_ before me, Notary Public in and for said state, personally appeared \_\_\_\_\_ known to me to be the \_\_\_\_\_ of Valley View Acres, LLC and acknowledged to me that she/he executed the same.

Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Notary Public for the State of \_\_\_\_\_

Residing at \_\_\_\_\_

My commission expires \_\_\_\_\_

**CERTIFICATE OF CLERK AND RECORDER**

I, \_\_\_\_\_ Clerk and Recorder of Broadwater County, Montana, hereby certify that the foregoing instrument was filed in my office at \_\_\_\_\_ o'clock \_\_\_\_\_ M. this \_\_\_\_\_ day of \_\_\_\_\_ A.D., and recorded in Book \_\_\_\_\_ of Plats on Page \_\_\_\_\_ records of the Clerk and Recorder, Broadwater County, Montana.

Document Number \_\_\_\_\_

Clerk and Recorder of Broadwater County

**CERTIFICATE OF COUNTY COMMISSIONERS**

The County Commission of Broadwater County, Montana, does hereby certify that the accompanying plat has been duly reviewed, and has been found to conform to the requirements of the Montana Subdivision and Platting Act, §76-3-101 et. seq. MCA and the Broadwater County Subdivision Regulations, approve it, and hereby accept the dedication to public use.

Dated this \_\_\_\_\_ day of \_\_\_\_\_

Commissioner \_\_\_\_\_ County Attorney \_\_\_\_\_

Commissioner \_\_\_\_\_ Clerk and Recorder \_\_\_\_\_

Commissioner \_\_\_\_\_

**CERTIFICATE OF COUNTY TREASURER**

I, \_\_\_\_\_ Treasurer of Broadwater County, Montana do hereby certify that the accompanying Subdivision Plat has been duly examined and that all real property taxes and special assessments assessed and levied on the land to be surveyed have been paid through \_\_\_\_\_ (J240168)

Dated this \_\_\_\_\_ day of \_\_\_\_\_

Treasurer of Broadwater County \_\_\_\_\_

**CERTIFICATE OF SURVEYOR**

I, Norbert Hackl the undersigned Professional Land Surveyor, do hereby certify that between June 9, 2022 and \_\_\_\_\_ the accompanying Subdivision Plat was surveyed by me, or under my supervision, and the same was platted as shown on the accompanying plat and as described, in accordance with the Montana Subdivision and Platting Act, §76-3-101 through §76-3-625 M.C.A., and the Broadwater County Subdivision Regulations.

Dated this \_\_\_\_\_ day of \_\_\_\_\_

Norbert Hackl, PLS  
 Montana Registration No. 14,535 L.S.

**CERTIFICATE OF EXAMINATION**

Reviewed for errors and omissions this the \_\_\_\_\_ day of \_\_\_\_\_ pursuant to Section 76-3-011(2)(a), MCA.

Montana Registration No. \_\_\_\_\_

**RIGHT-TO-FARM RESOLUTION**

This subdivision is subject to the "Right-to-Farm Resolution" as adopted by Broadwater County.

**WEED CONTROL CERTIFICATION**

The Conditions and Restrictions as required by Broadwater County will apply to this subdivision.

**LEGEND**

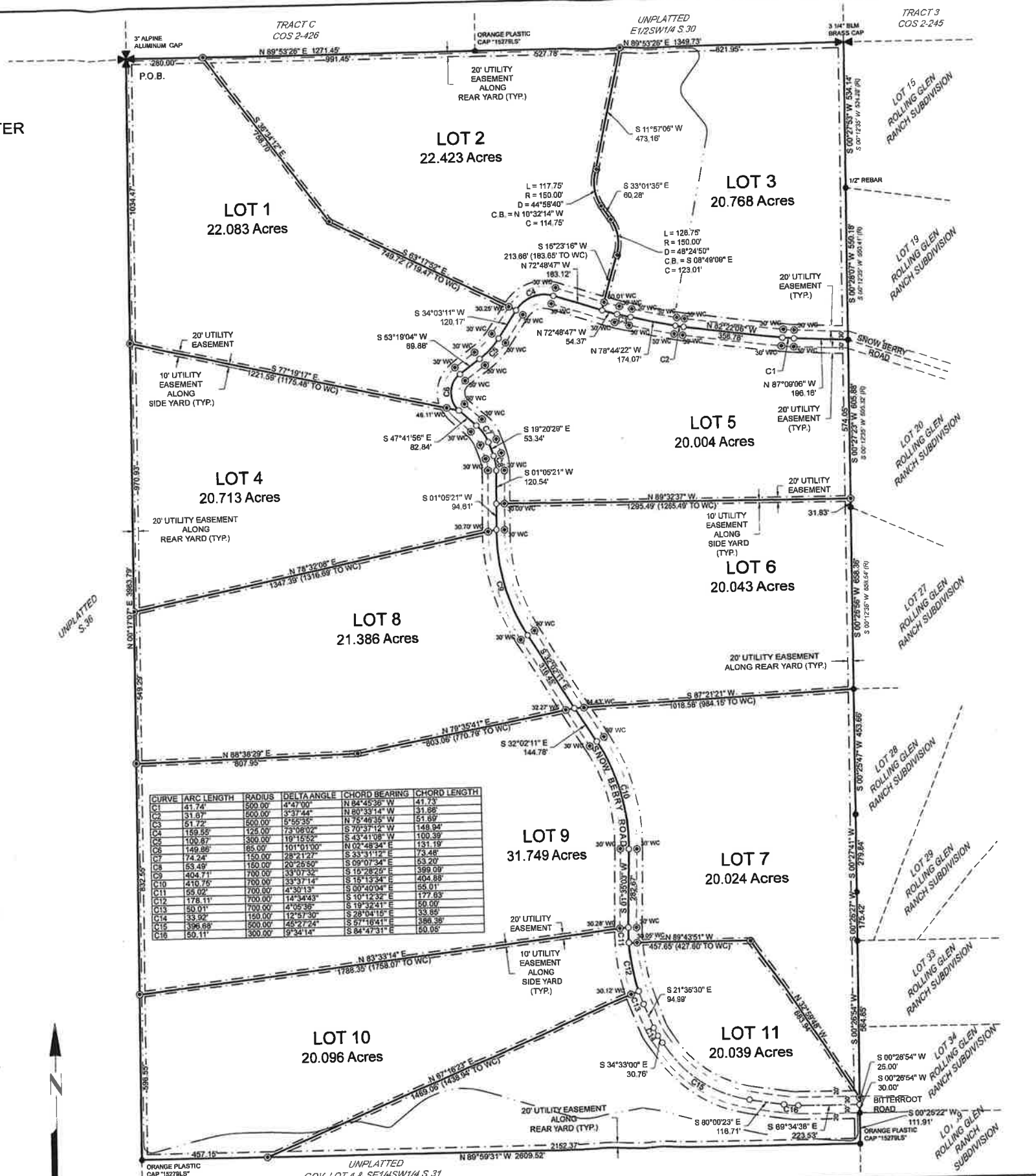
- FOUND 1 1/2" ALUMINUM CAP "5430LS" OR AS NOTED
- CALCULATED POINT NOTHING FOUND OR SET
- ⊙ SET 5/8"x24" REBAR W/ 2" ALUMINUM CAP
- PROPERTY BOUNDARY
- - - ADJOINING LOT BOUNDARY
- - - 60' ROAD RIGHT-OF-WAY
- - - 20' PUBLIC UTILITY EASEMENT
- - - RIGHT-OF-WAY CENTER LINE
- - - 16' RECREATIONAL TRAIL EASEMENT CENTER LINE

P.O.B. POINT OF BEGINNING  
 S 00°12'35" W 695.32' (R) RECORD BOOK 1, PAGE 965

BASIS OF BEARING  
 Bobcat LDP  
 Coordinate System



CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	41.74	500.00	4°47'00"	N 84°45'36" W	41.73
C2	31.67	500.00	3°37'44"	N 80°33'14" W	31.66
C3	51.72	500.00	5°55'35"	N 75°46'35" W	51.69
C4	159.55	125.00	75°08'02"	S 70°37'12" W	148.94
C5	102.87	350.00	19°15'25"	S 43°41'09" W	100.39
C6	149.89	85.00	101°01'00"	N 02°48'34" E	131.19
C7	74.24	150.00	28°21'27"	S 33°31'12" E	73.46
C8	53.49	150.00	20°25'50"	S 09°07'34" E	53.20
C9	404.71	700.00	33°07'35"	S 16°28'20" E	399.09
C10	410.76	700.00	33°37'14"	S 16°13'34" E	404.88
C11	55.02	700.00	4°30'13"	S 00°40'04" E	55.01
C12	178.11	700.00	14°34'43"	S 10°12'32" E	177.63
C13	50.01	700.00	4°05'38"	S 19°32'41" E	50.00
C14	33.32	150.00	12°51'30"	S 28°04'16" E	33.89
C15	396.69	500.00	48°27'24"	S 57°18'41" E	386.36
C16	50.11	500.00	9°34'14"	S 84°47'31" E	50.05



X 1/4	Sec.	T.	R.	X 1/4	Sec.	T.	R.
31	3N	1E					



714 Stoneridge Dr.  
 Suite 3  
 Bozeman, MT 59718  
 585.5599 Office  
 www.alpinesurveying.net

PROJECT SURVEYOR: NH	SHEET
DRAWN BY: NH	1 OF 1
REVIEWED BY: MB	CREAGAN BROADWATER
DATE: 11/28/22	PROJECT NO. 540-02



**Proposed disposition of water rights**

Not Applicable

No existing water rights are associated with this property. No disposition is required.



**Proposed disposition of mineral rights**

Not Applicable

No existing mineral rights are associated with this property. No disposition is required.



**Parkland dedication calculations, location of and description of proposed parkland, or proposal for cash-in-lieu;**

Not Applicable

The proposed subdivision is an 11-lot residential subdivision with lots greater than 20- acres, therefore no park land is required.





**SIX RANGES RANCH SUBDIVISION  
SUMMARY OF PROBABLE IMPACTS & MITIGATION**

Broadwater County Commission review of this proposed subdivision will include findings per the Broadwater County Subdivision Regulations (consistent with the primary review criteria as defined by 76-3-608(3) MCA). This section of the application summarizes potential impacts per those criteria:

1. **Effect on agriculture:**

a. **Number of Acres in Production and Type of Production:**

In previous years, the subject property has been used for limited agricultural uses such as pasture ground.

b. **Productivity of the Land:**

The productivity has been described by the Natural Resources Conservation Service as "Farmland of Statewide Importance" to "Not Prime Farmland". The property's productivity is based on soil quality, growing season, and moisture supply. Water management is the major component in this area, due to lack of surface water/irrigation. Water availability is needed to economically produce sustained high yields of crops.

c. **Whether or not the Property is Part of a Viable Farm Unit:**

Due to the limited water viability in the area, a viable farming operation is not feasible. The property has mainly been used for grazing and grassland.

d. **Agricultural Operations and Other Uses of Land in the General Locality:**

The adjacent land uses consist of agricultural, rural residential and vacant land.

e. **Measures Taken to Control Family Pets:**

The Covenants require responsible management of household pets and restrict activities that might adversely affect nearby agriculture. Interactions between humans and/or domesticated pets, with wildlife/agricultural activities is strictly prohibited in the Covenants.

f. **Fencing of Agricultural Land:**

There are existing fences that border the subject property. The adjacent property to the west is vacant. The property to the east consists of a residential subdivision. The property to the north is rural residential. The property to the south is bordered by vacant property. The proposed development is not anticipated to affect offsite fences. Future fences will be allowed within the subdivision based on the subdivision covenants. There is no foreseeable impact on other agricultural properties, and no

mitigation measures are necessary.

2. **Effect on Agricultural Water User Facilities:**

There are no agricultural water user facilities on the property. No agricultural water be impacted by the proposed subdivision.

a. **Type, Description, Ownership, and Users of Facilities:**

There are no active ditches or conveyance facility for irrigation within the proposed 11-lot subdivision.

b. **Conflicts the Subdivision May Create with Agricultural Water User Facilities & Water Conveyance Facilities:**

The subdivision is not anticipated to create any conflicts with agricultural water user facilities since there are no active water conveyance facilities on the property.

c. **Nuisance Problems which the Subdivision would Generate with Regard to Agricultural Water User Facilities & Water Conveyance Facilities:**

The subdivision is not anticipated to generate any nuisance problems with regard to agricultural water user facilities.

d. **Where water users and/or water conveyance facility's authorized representatives have provided the subdivider with written comments, those comments shall be submitted with the preliminary plat application:**

The subdivision is not anticipated to generate any nuisance problems with regard to agricultural water user facilities.

3. **Effect on Local Services:**

a. **Water Supply and Sewage Disposal:**

The property will be services by onsite wastewater treatment systems. The proposed lots will utilize on-site wells. Each lot is allotted 10 ac-ft of water, see DNRC's letter. The design and operation of this system will meet or exceed Broadwater County and MDEQ requirements.

b. **Law Enforcement and Fire Protection:**

The Broadwater County Sheriff and the Three Forks Rural Fire Chief were sent comment letters as part of the planning phase of this development. At this time, we have not received a response for this specific project. Response letters are included in Appendix 36. Attempts have been made to discuss fire related issues with Three Forks Rural Fire. At this time no response has been received.

c. **Roads:**

All internal subdivision roads will be designed and will be constructed to Broadwater County standards. The eleven proposed lots will share two accesses off of Snowberry and Bitterroot Roads. All proposed public roads within the subdivision will be maintained by the eleven lots.

d. **Schools:**

The proposed 11-lot major subdivision is proposed to be residential subdivision. The School District was contacted in order to request comments regarding the proposed development. At this time, no comments have been received.

**School Children**

Per the U.S. Department of Commerce's Census Bureau's 2010 Demographic Profile for the State of Montana, there were approximately 989,415 persons living in Montana. Of the total population, there were approximately 223,563 persons under the age of 18. From this, it can conservatively be assumed that the percentage of student aged persons is approximately 22.6% of the population. The Census Bureau also gives an estimate of 2.34 persons per household. From this, the proposed lots are projected to generate an estimated **6 students**. The "impact on [the] school district would be minimal.

**Busses**

School age children will utilize the school buses that service Rolling Glen Ranch and surrounding households.

e. **Property Taxes:**

Current Property Taxes and Projected Developed Property Taxes:  
Property taxes will increase with the development of the proposed development relative to the current classification and configuration of the underlying subject properties.

The Montana Department of Revenue estimates the following 2022 general taxable value:

If left in its current configuration: \$10,391.00  
If proposed parcels are platted and left vacant: \*\$1,316 per lot – \$14,476 total.  
If proposed parcels are fully built out: \*\$194,388 per lot- \$ 2,138,268 total.  
*\*Based on surrounding properties*

f. **Utilities and Easements:**

Local private utility companies will provide services to the project. Utilities will be placed underground within the rights-of-way (between the roadway and the right-of-way edge) and will be installed concurrently with construction. All utility easement delineation and construction will be subject to the approval of the appropriate utility providers.

**4. Effect on Natural Environment:**

a. **Road Drainage and Erosion, Terrain and Surface Runoff Effects, Grading and Drainage Plans:**

Stormwater generated by the development will be managed within the property boundaries with the exception of the existing roadside ditches along adjacent

roadways. Road drainage will be collected and conveyed via roadside ditches. Post development stormwater generated by the development will be detained via retention ponds and roadside ditches throughout the development.

b. **Terrain and Surface Runoff Effects:**

The proposed development conforms with the existing topography and does not create steep slopes or concentrated flows of stormwater. Stormwater run-on will be allowed to pass through the development, and post development generated stormwater will be detained within the subdivision boundaries.

c. **Grading and Drainage Plan:**

A grading and drainage plan will be provided for review, which will indicate localized high & low points, street grades, and areas of stormwater swales and ponds. The grading and drainage plan will be integrated into the utility design, and final stormwater management plan.

d. **Effects on Native Vegetation, Soils, Quality or Quantity of Surface or Ground Waters:**

The development is intended to produce little or no impact to native soils, surface water, and/or groundwater. Future water and wastewater facilities for the proposed additional lots will be required to comply with applicable County and State regulations.

e. **Weed Control:**

The measures required by the approved Weed Management Plan will ensure appropriate weed management per County Weed Board requirements.

f. **Light Pollution:**

This project has not proposed any street lighting or other subdivision lighting.

**Compliance with County Plans for Parks, Recreation, Open Space, and Trails**

Per the Broadwater County Subdivision Regulations, the proposed development is not required to dedicate parklands.

**5. Effect on Wildlife and Wildlife Habitat:**

a. **Expected Effects of Pets and Human Activity on Wildlife:**

The roadways and other development on the project site are designed to minimize impact to wildlife habitat. Human activities are anticipated to be similar to the residential neighborhood in the region and are similarly anticipated to have a minimal impact.

b. **Effects on Fisheries:**

No fisheries within the property have been identified for this project. Therefore, no directly adverse impacts are identified.

c. **Proximity to Area of Significant Wildlife Habitat or Critical Wildlife Areas:**

The proximity to wildlife from the proposed subdivision is similar to surrounding properties and is anticipated to similarly have a minimal impact. The lots within subdivision are not proximate to any identified critical

wildlife habitat area.

d. **Effects on Public access to Public Lands, Trails, Hunting, or Fishing Areas:**

The project site does not consist of any public lands, trails, hunting areas, or fishing areas and the proposed development is not anticipated to affect public access to public lands, trails, hunting areas, or fishing areas.

e. **Impacts on Wildlife Areas such as Big Game Wintering Range, Migration Routes, Nesting Areas, Wetlands, or Important Habitat for Rare or Endangered Species:**

The roadways and other development of the project site are designed to minimize impact to wildlife areas.

6. **Effect on Public Health and Safety:**

Fire protection services will be provided by the Three Forks Rural Fire Department. The proposed 11-lot major will utilize emergency water from a new on-site fill site. The fill site will be located north of Snow Berry Road.

Law enforcement will be provided by the Broadwater County Sheriff's Department. Ambulance services can be provided by American Medical Response. Medical services will be provided by the Saint Peters Hospital and Bozeman Deaconess Hospital, located in Townsend and Bozeman, Montana. Solid waste can be disposed of at the county's designated landfill. Sewage is anticipated to be disposed of by onsite wastewater treatment systems (wastewater systems will be designed per County & State regulations). Water is anticipated to be provided by on-site water supply wells.

a. **Potential Natural Hazards:**

Development in rural areas always has the potential for natural hazards to occur. There is no identified hazard due to snow or rockslides, wildfire, or excessive slopes. The seismic risk affecting the subject property is common to the Three Forks Valley and can be mitigated by current building codes. Some risks related to wildfire are associated with this project but can be mitigated with the public water system and fire hydrants. High groundwater areas are not found within the property. Expansive soils have been found in the surrounding area. The soil conditions can be mitigated with proper foundation and geotechnical design.

b. **Potential Man-made Hazards:**

Man-made Hazards consist of surrounding road conditions. The road conditions can be mitigated by shared road users' maintenance agreements.

**SIX RANGES RANCH SUBDIVISION  
SECTION: COMMUNITY IMPACT REPORT**

**1. EDUCATION AND BUSING**

**a. Available Facilities**

The proposed 11-lot major subdivision is proposed to be residential subdivision. The School District was contacted in order to request comments regarding the proposed development. At this time, no comments have been received.

**b. School Children**

Per the U.S. Department of Commerce's Census Bureau's 2010 Demographic Profile for the State of Montana, there were approximately 989,415 persons living in Montana. Of the total population, there were approximately 223,563 persons under the age of 18. From this, it can conservatively be assumed that the percentage of student aged persons is approximately 22.6% of the population. The Census Bureau also gives an estimate of 2.34 persons per household. From this, the proposed lots are projected to generate an estimated **6 students**. The "impact on [the] school district would be minimal.

**c. Busses**

School age children will utilize the school buses that service Rolling Glen Ranch and surrounding households.

**2. ROADS:**

**a. Description/ Average Daily Traffic**

Local county road easements will be finalized prior to final plat. All road access improvements will be approved and constructed to county requirements. All lots will access off interior subdivision roads. The interior subdivision roads will access off Bitterroot and Snow Berry Road.

The proposed 11-lots will continue with open pasture use until lot sale begin.

**b. Modification to Existing Roads:**

Modifications to Snowberry and Bitterroot Roads may be required based on road requirements.

The proposed accesses will be installed by the developer and will be maintained by the lot owners, (see road maintenance plan).

Existing nearby roadways consist of gravel roads. Any road improvements that are under the purview of Broadwater County will adhere to the regulations at the time of design and construction. The proposed access will be designed per County Regulations.

### **3. UTILITIES**

#### **a. Affected Utilities**

The proposed lots will be able to be served by local utility service providers consistent with nearby properties. As part of this subdivision, it is anticipated that utilities will be able to be installed within the road right-of-way and utility easement. Utility companies include Vigilante Electric Cooperative, Inc., and Qwest.

#### **b. Utilities Easements**

All utility easements are shown on the preliminary plat. All utilities are intended to be installed in utility easements (or rights-of-way) indicated on the preliminary plat.

#### **c. Adequate Utility Services**

The owners of the property have been in contact with the local utility suppliers and are confident adequate utilities are available. The proposed 11- lots are located next to an established subdivision.

#### **d. Utilities Review**

The preliminary plat has been submitted to local utilities for their review. Any additional requests will be incorporated as needed.

### **4. WATER SUPPLY**

#### **a. Description of Use:**

Each lot within the proposed subdivision will utilize on-site water and wastewater systems. See site layout for water and wastewater locations.

#### **b. Proposed Connections:**

See enclosed Lot Layout showing the proposed sewer location. As discussed previously, the property will utilize on-site water and sewer systems. No adverse impacts are anticipated.

#### **c. Collection of Solid Waste:**

Each lot will be required to collect and store their own solid waste on site. The lots will then be required to remove the solid waste, at a minimum, once every week. The waste will be taken to a county designated site, where it will be disposed of.

#### **d. Existing Public System:**

No existing public systems are located in the area. The proposed 11-lots will utilize on -site water and sewer systems.



The future water and wastewater systems will be required to undergo review and approval through Broadwater County Health Department.

**5. EMERGENCY SERVICES FIRE AND POLICE PROTECTION**

**a. Services Available**

Local emergency services are provided by Three Forks Fire Department, Broadwater County Sheriff's Department, Billings Clinic Broadwater and Bozeman Deaconess Hospital.

**Estimated Time of Response**

Estimated time of response to the project site are difficult to estimate as there are numerous variables that play a role in response time such as: number of responders available, number of current response calls, weather conditions, etc. A table representing the distance from the project site to the respective emergency response service providers is given below.

**ACCESSIBILITY OF SERVICE SYSTEMS AND FACILITIES**

	Paved	Gravel	Total	Town Location
Fire Protection	~8 mi.	~5 mi.	~13 mi.	Three Forks, MT
Sheriff Protection	~28 mi.	~5 mi.	~33 mi.	Townsend, MT
Hospital Facilities	~28 mi	~5mi.	~33 mi	Townsend and Bozeman, MT

**1. Fire Protection:**

The proposed 11-lot subdivision will be serviced by the Three Forks Fire Department. A letter requesting comments has been sent to the fire department. The proposed 11-lot major will utilize emergency water from a new on-site fill site. The fill site will be located north of Snow Berry Road.

**1. HISTORIC OR NATURAL ENVIRONMENT**

**a. Known Historic, Paleontological, Archaeological or Cultural Sites**

A letter has been sent to Damon Murdo, Cultural Records Manager of the Montana Historical Society. Within his response he stated that, "According to our records there have been no previously recorded sites within the designated search locale. The absence of cultural properties in the area does not mean that they do not exist but rather may reflect the absence of any previous cultural resource inventory in the area, as our records indicated only one. I've attached a list of the report. If you would like any further information regarding the report, you may contact me at the number listed below.

It is SHPO's position that any structure over fifty years of age is considered historic and is potentially eligible for listing in the National Register of Historic Places. If any structures are within the Area of Potential Effect, and are over fifty years old, we would recommend that they be recorded, and a determination of their eligibility be made prior to any disturbance taking place.

As long as there will be no disturbance or alteration to structures over fifty years of age, we feel that there is a low likelihood cultural properties will be impacted. We, therefore, feel that a recommendation for a cultural resource inventory is unwarranted at this time. However, should structures need to be altered or if cultural materials be inadvertently discovered during this project, we would ask that our office be contacted, and the site investigated". If cultural materials are discovered, the developer will complete the study prior to additional soil disturbance.

**b. Effects on Surface, Groundwater, Soils, Slopes, Vegetation, Historical or Archaeological Features.**

**1. Existing public land access is not anticipated to be affected by the development.**

Excluding the nearby public roads, there is no access to public lands.

The proposed 11-lot subdivision conforms with the existing topography and flows of stormwater. Existing grades range between 1% to 25%. Outside stormwater run-on will be allowed to pass through the development, and post development generated stormwater will be detained within the subdivision boundaries.

A grading and drainage plan will be generated. The drainage plans will indicate localized high & low points, road grades, and areas of stormwater swales and ponds. The grading and drainage plan will be integrated into the utility design, SWPPP, and final stormwater management plan.

**2. Riparian Areas**

There are no surface water riparian areas, wetland, or regulated flood prone areas within the site. See enclosed FEMA Flood Map and the NRCS soils report.

**3. Slopes and Natural Topographic Features**

The proposed subdivision is located on slopes of 1 to 25 %. The proposed subdivision conforms with the existing topography and limits concentrated flows of stormwater.

**4. Open Space/Ridge Top/River Corridors/Views**

The proposed subdivision is designated as an 11-lot major residential development with lots over 20-acres, therefore open space is not required.

The proposed development is located next to an established subdivision. There are no ridge tops areas within the property, so ridge top development is not proposed. Due to the topography in the area, view shed issues are minimized.

**5. Natural Hazards**

Development in rural areas always has the potential for natural hazards to occur. There is no identified hazard due to snow or rockslides, wildfire, or excessive slopes. The seismic risk affecting the subject property is common to the Three Forks Valley and can be mitigated by current building codes. Some risks related to wildfire are associated with this project but can be mitigated with the fire fill site water system. High groundwater areas are not found within the property. Expansive soils have been found in the surrounding area. The soil conditions can be mitigated with proper foundation and geotechnical design.

Man-made Hazards consist of surrounding road conditions. The road conditions can be mitigated by shared road users' maintenance agreements.

**Nuisance**

The proposed development is intended to be a continuation of nearby properties, which consist of residential and agricultural lots. The surrounding off-site land uses are not anticipated to create a nuisance uncharacteristic to rural developments. Similarly, the proposed development is not anticipated to create a nuisance uncharacteristic to the nearby properties.

**Adjacent Land Use**

The adjacent land uses consist of agricultural, rural residential, and vacant land in the vicinity of the project site. The proposed residential subdivision is anticipated to blend into the surroundings.

**SIX RANGES RANCH MAJOR SUBDIVISION  
ENVIRONMENTAL ASSESSMENT**

This section of the application presents a summary of environmental factors as abstracted from more detailed information.

1. **Surface Water:** The Six Ranges Ranch Major Subdivision has no surface water associated with it. No active irrigation ditches are located on the property. The proposed subdivision has U.S. Highway 287 on its eastern boundary and Wheatland Road on its northern boundary of the subdivision, as shown on the Vicinity Map.

There are no wetland areas located on the property. No disturbance is proposed within these environmentally sensitive areas.

2. **Groundwater:** Generally, the Six Ranges Ranch Major Subdivision is located in the Jefferson and Madison River valley about 9.5 miles west of Three Forks MT (Figure 1). Tertiary volcanic units dominate the surface geology in the area. Lithologic information from the well log indicates that the water is located in sand lenses at depths of 100 to 140 feet below ground surface based on the on-site test well. The aquifer appears to be semi-confined located below clay layer.

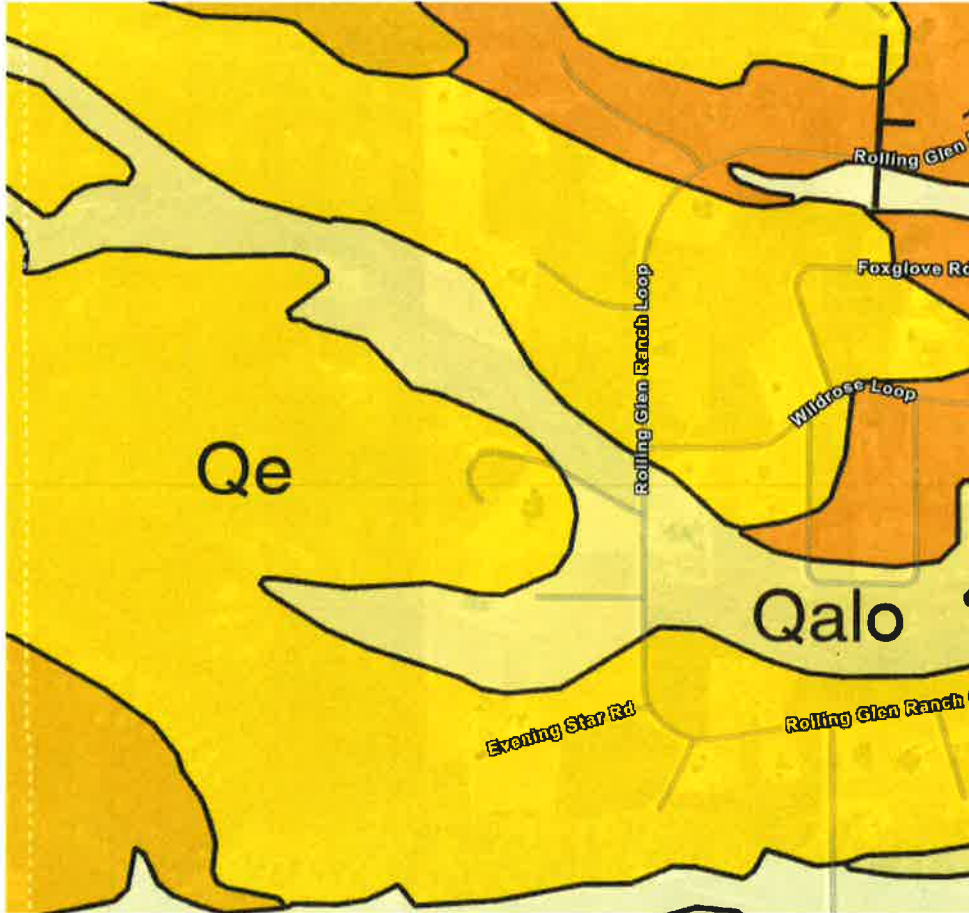
The Western Three Forks Valley is filled with at least 2,500 feet of Tertiary-aged sediments of the Bozeman Group. The primary formation is the Climbing Arrow Formation. The Climbing Arrow Formation is approximately 1,000 feet thick. Based on neighboring test well logs, it is in this formation that the Six Ranges Ranch well are most likely to be completed in. This formation occurs as filling material to a general northwest to southeast trending valley with pre-Tertiary bedrock to the northeast and southwest, and with older Cretaceous Volcanic Rocks in the Elkhorn Mountains to the northwest. Water is present in small, discontinuous sandstone and other coarser grained layers separated by thick sequences of clay-rich shales and bentonites up to one-hundred feet thick or more. Based on the test well logs, the source of drinking water is in a confined to semi confined Tertiary aged valley fill sediments.

Ground water flow direction in the study area is most likely in a southeasterly direction generally following surface topography. The groundwater flow direction is based on the geologic setting of the area and basic hydrologic principles. The primary source of recharge to this aquifer is most likely from infiltration of surface water along the boundaries of the Climbing Arrow Formation with older pre-Tertiary bedrock. The majority of recharge would be from streams draining the Elkhorn Mountains to the northwest, where the stream flow crosses from volcanic rocks onto the Climbing Arrow Formation.

**Geology, Soils and Slopes: Local Stratigraphy**

The sedimentary deposits near the Six Ranges Ranch site are in the Tertiary age formations (Figure 3). Tertiary deposits in this area are more fine-grained and consist of a larger percentage of clay, silt, and sand with varying amounts of gravel, cobbles, and boulders.

**Figure 1**



The following geographic description was obtained from Kendy and Tresch, 1996. The Western Three Forks Valley is an intermontane basin that is bounded by the southern Elkhorn Mountains on the north, the Hossfeldt Hills on the northeast, the Madison Plateau on the east, the Madison Range on the southeast, the Tobacco Root Mountains on the southwest and west, and the London Hills on the northwest. The Western Three Forks Valley covers approximately 380 square miles. Two rivers drain the Western Three Forks Valley. The Jefferson River enters the basin east of the London Hills and flows along the northwestern margin of the basin. The Madison River enters the southeastern part of the basin and flows northward to its confluence with the Jefferson River near Three Forks.

Less than one mile downstream, the Gallatin River joins the Madison and Jefferson Rivers from the east. The confluence of the Three Forks of the Madison, Jefferson, and Gallatin Rivers gave rise to the basin name and also marks the headwaters of the Missouri River. The Six Ranges Ranch is situated on hills to the northwest of the Jefferson River. Surface drainage in the area is to the southeast, towards the Jefferson River. Specific construction techniques may be required due to geology, or soil types.

Qe EOLIAN DEPOSIT (Holocene and Pleistocene)—(Description modified from Robinson, 1963) Yellowish-gray to very pale orange silt and clay-size sediment with scattered grains and streaks of rounded fine-grained sand. Dominantly volcanic glass, quartz, and clay minerals with minor amounts of mica, feldspar, and calcite. Some Quaternary eolian deposits are also included in the Parker Homestead map unit (QTph). Thickness highly variable. Locally as much as 100 ft. thick.

Qalo\* OLDER ALLUVIUM AND FLOOD PLAIN DEPOSIT (Holocene and Late Pleistocene)—Gravel, sand, silt, clay, and organic matter deposited in broad, open older parts stream and river valleys. Late Pleistocene bison and Holocene animal bones have been found in these deposits (Robinson, 1963). Thickness about 450 ft (Robinson, 1963).

Trca Climbing Arrow Member (Eocene)—Pale olive-gray, tuffaceous, montmorillonitic mudstone, immature vitric siltstone (Kuenzi and Fields, 1971), and fine-grained, submature to immature arkosic sandstone or granule conglomerate that superficially resembles a granitic rock, contains both biotite and a light-colored mica (muscovite or phlogopite), and weathers to guss-like, unconsolidated sediment. Thickness at least 175 ft (Kuenzi and Fields, 1971).

3. **Vegetation:** Vegetation on the property consists of remnants of open pastureland. The approved Weed Management and Revegetation Plan for the subject property is included within the preliminary plat application.
4. **Wildlife:** The subject property has been used for open pastureland in the past. Animals listed are either known to occur or are likely occupants; based upon actual sightings or published information about preferred habitat: Long-tailed weasel, meadow vole, striped skunk, white tail deer, red fox, Richardson's ground squirrel, raccoon, and mink.

No animals listed under the "Animal Species of Special Concern", (Montana Natural Heritage Program, Helena) have been observed or are known to occupy the property. Bald eagles, listed by the U.S. Fish and Wildlife Service as threatened, are known to nest within 30 miles of the site.

5. **Historical Features:** A letter has been sent to Damon Murdo, Cultural Records Manager of the Montana Historical Society. Within his response he stated that, "According to our records there have been no previously recorded sites within the designated search locale. The absence of cultural properties in the area does not mean that they do not exist but rather may reflect the absence of any previous cultural resource inventory in the area, as our records indicated only one. I've

attached a list of the report. If you would like any further information regarding the report, you may contact me at the number listed below. It is SHPO's position that any structure over fifty years of age is considered historic and is potentially eligible for listing in the National Register of Historic Places. If any structures are within the Area of Potential Effect, and are over fifty years old, we would recommend that they be recorded, and a determination of their eligibility be made prior to any disturbance taking place.

As long as there will be no disturbance or alteration to structures over fifty years of age, we feel that there is a low likelihood cultural properties will be impacted. We, therefore, feel that a recommendation for a cultural resource inventory is unwarranted at this time. However, should structures need to be altered or if cultural materials be inadvertently discovered during this project, we would ask that our office be contacted, and the site investigated". If cultural materials are discovered, the developer will complete the study prior to additional soil disturbance.

6. **Visual Impact:** The Six Ranges Ranch Subdivision is proposed for a residential subdivision. The building areas within the subdivision twenty acres each, allowing physical and visual space between building sites. All residential construction will be consistent with neighboring developments.





## TRANSPORTATION IMPACT ANALYSIS

**A formal traffic study is not required since the proposed traffic is less than 400 annual average daily traffic (AADT).**

### **Average Daily Traffic**

The proposed development consists of 11 lots. The proposed lots are anticipated to consist of one (1) single family dwelling per lot. Per Broadwater County's trip generation, the anticipated AADT generated by the overall subdivision is anticipated to be 88 trips per day.

P = Projected AADT

P = 11 lots x 8 aadt = 88 trips per day

**TABLE B-2  
SPECIFICATION FOR CHIPS - ASPHALT SEAL COAT MATERIAL  
3/8" Asphalt Seal Coat Aggregate**

<b>TABLE OF GRADATIONS</b>	
Percentage by Weight Passing Square Mesh Sieves(Montana Test Method MT-202)	
<b>Sieve Size</b>	<b>Grade 2</b>
1/2" sieve	100%
3/8" sieve	85-100%
#4 sieve	10-30%
#10 sieve	0-10%
#40 sieve	0-2%

The material from which aggregate is to be produced shall have a wear factor not to exceed 50 percent at 500 revolutions, as determined by MT-209. The abrasion test shall be run using a 5000-gram sample charge material between 3/8 inch and #4 sieves and an abrasive charge of eight balls.

At least 50 percent by weight of the aggregate retained on the #4 sieve shall have at least one mechanically fractured face.

**TABLE B-3  
SPECIFICATION FOR CRUSHED TOP SURFACING**

<b>TABLE OF GRADATIONS</b>	
<b>Sieve Size</b>	<b>Grade 2</b>
1" sieve	
3/4" sieve	100%
1/2" sieve	
No. 4 sieve	40-80%
No. 10 sieve	25-60%
No. 200 sieve	8-20%

Meet the following requirements for crushed top surfacing, including added binder, or blending material:

- Dust Ratio: the portion passing the No. 200 sieve cannot exceed two-thirds of the portion passing the No. 40 sieve.
- The maximum liquid limit and plasticity index for the material passing the No. 40 sieve must not exceed 35, while the plasticity index may vary from 3 to 10.
- A wear factor not exceeding 50% at 500 revolutions.

At least 20 percent by weight of the aggregate retained on the No. 4 sieve must have on fractured face.

**TABLE B-4  
SPECIFICATION FOR CRUSHED BASE COURSE**

<b>TABLE OF GRADATIONS</b>			
Percentages by weight passing square mesh			
Passing	1 1/2" Minus	1" Minus	3/4" Minus
2" sieve	--		
1 1/2" sieve	100		
1" sieve	--	100	
3/4" sieve	--	--	100
1/2" sieve	--	--	--
No. 4 sieve	25-60	40-70	40-70
No. 10 sieve	--	25-55	25-55
No. 200 sieve (not more than)	0-8	2-10	2-10

- A tolerance of 5 percent, by weight, up to the next above-specified gradation (2 1/2" for 2" max.) is allowed. The produced material passing the maximum screen opening and retained on the No. 4 sieve shall be reasonably well graded in its grading between those limits within 5 percent.
- Suitability of the aggregate for its particular use is determined by the final gradation required for grading, as established by the Design Engineer, within the limits allowed in the table for the grading specified.
- That portion of the fine aggregate passing the No. 200 sieve must be less than 60 percent of that portion passing the No. 40 sieve.
- The liquid limit for that portion of the fine aggregate passing a No. 40 sieve cannot exceed 25, nor the plasticity index exceed 6, as determined by AASHTO T89 and T90.

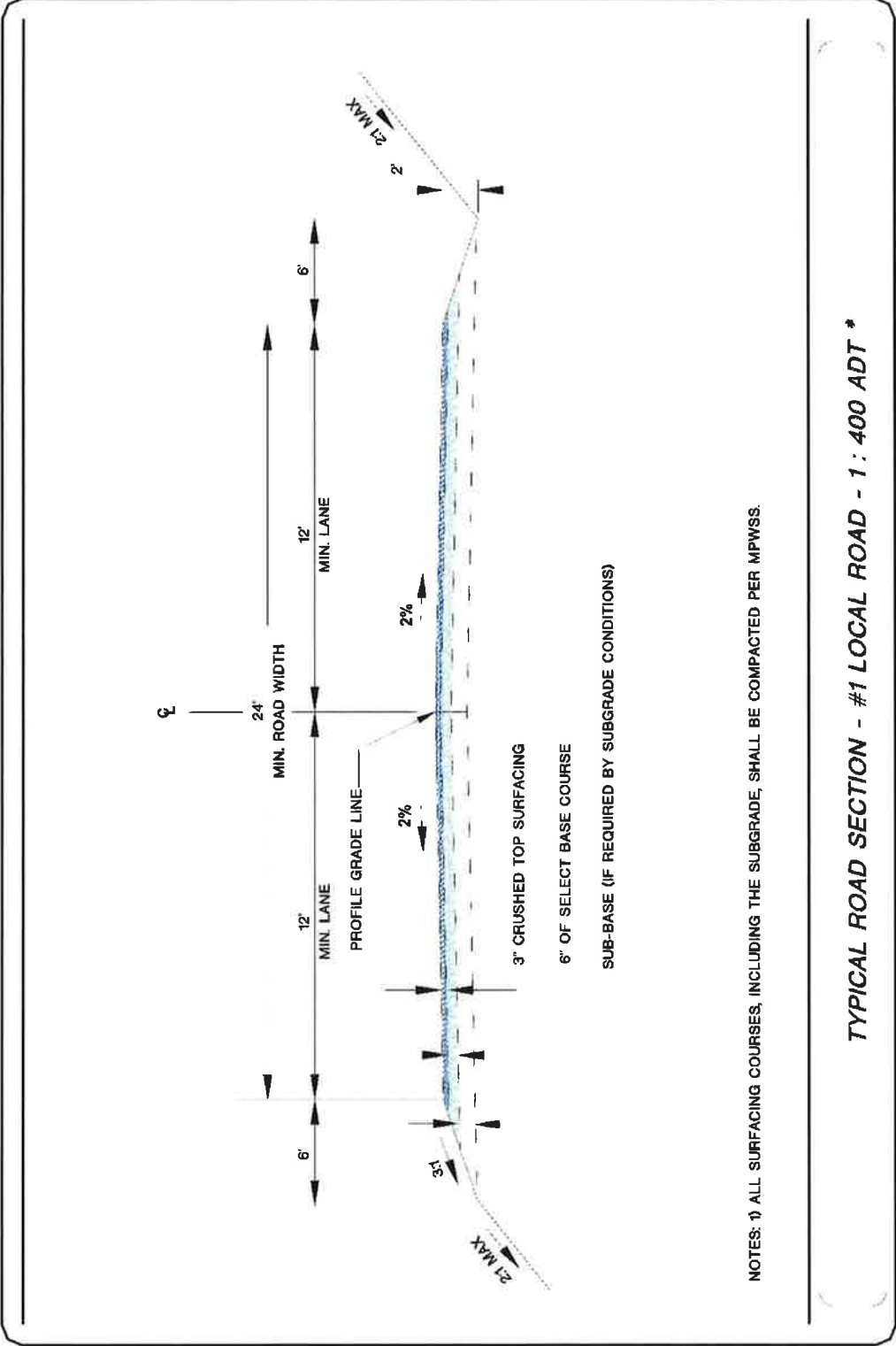
**TABLE B-5  
SPECIFICATION FOR SELECT SUB-BASE COURSE**

<b>TABLE OF GRADATIONS</b>					
Percentages by weight passing square mesh sieve					
<b>Passing</b>	<b>4" Minus</b>	<b>3" Minus</b>	<b>2 ½" Minus</b>	<b>2" Minus</b>	<b>1 ½" Minus</b>
4" sieve	100%				
3" sieve	--	100%			
2½" sieve	--	--	100%		
2" sieve	--	--	--	100%	
1½" sieve	--	--	--	--	100%
No. 4 sieve	25-60%	25-60%	25-60%	25-60%	25-60%
No. 200 sieve (not more than)	2-12%	2-12%	2-12%	2-12%	2-12%

- A tolerance of 5 percent, by weight, up to the next above-specified gradation (2 ½" for 2" max.) is allowed. The produced material passing the maximum screen opening and retained on the No. 4 sieve shall be reasonably well graded in its grading between those limits within 5 percent.
- Suitability of the aggregate for its particular use is determined by the final gradation required for grading, as established by the Engineer, within the limits allowed in the table for the grading specified.
- The liquid limit for that portion of the fine aggregate passing a No. 40 sieve cannot exceed 25, nor the plasticity index exceed 6, as determined by AASHTO T89 and T90.

**Intersections.** Intersections shall be designed to meet the standards provided in Table B-1, Road Design Criteria of these standards. The following additional items shall also be incorporated into design and construction.

- Roads shall be laid out to intersect at an angle as near to a right angle (ninety-degree angle) as practicable within plus or minus 5 degrees.
- Intersections shall have a minimum corner radius of 15 feet along the right-of-way lines of local roads and a minimum corner radius of 25 feet at the right-of-way line at the intersection of collector or arterial roads unless road improvements require a greater radius.
- On collector and arterial roads, the dedication of right-of-way on corners shall include the chord of the radius. The County will accept an easement for this chord instead of dedication of right-of-way.
- Opposing intersection of major collector roads and /or arterial roads shall either be aligned or will be separated by the minimum distance specified in Table B-1.
- No more than two streets may intersect at one point.
- Intersection design shall provide acceptable visibility for traffic safety.



NOTES: 1) ALL SURFACING COURSES, INCLUDING THE SUBGRADE, SHALL BE COMPACTED PER MPWSS.

**TYPICAL ROAD SECTION - #1 LOCAL ROAD - 1 : 400 ADT \***

**FIGURE 1**



BROADWATER COUNTY WEED DISTRICT



515 Broadway, Townsend, MT 59644

Phone: 406-266-9243

Email: [brweed@co.broadwater.mt.us](mailto:brweed@co.broadwater.mt.us)

Subdivision Name: Six Ranges Ranch

**SUBDIVISION NOXIOUS WEED  
MANAGEMENT AND  
REVEGETATION PLAN  
INFORMATION  
AND  
APPLICATION**

Approved and Adopted by:

Date: 12-30-19

John Ferrat, Chair, Weed Board Member

Approved by:

Date: 12-30-19

Mike Delger, Chair, Broadwater County Commissioner

Approved by:

Date: 12-30-19

Laura Obert, Broadwater County Commissioner

Approved by:

Date: 12-30-19

Darrel Folkvord, Broadwater County Commissioner

## SUBMISSION PACKET CHECKLIST

The following items are to be submitted to the Broadwater County Weed District in one complete packet ('Submission Packet'). All items must be accounted for prior to **Approval** or **Approval with Modifications**.

- Signed Letter of Agreement
- Map(s)
- Complete and Signed Noxious Weed Management and Revegetation Plan
- Scheduled Site Visit with the Broadwater County Weed District Representative (*Appendix A*)
- Payment of Site Application and Inspection Fees and Plan Preparation Fees (*if applicable*)

**Please Note:** The Submission Packet will be reviewed and approved, approved with modifications, or rejected by the Broadwater County Weed Board at regularly scheduled monthly meetings. The Submission Packet **must** be submitted to the Broadwater County Weed District Office at least **ten (10) business days** prior to the regularly scheduled board meeting. Broadwater County Weed Board meetings are scheduled on the 2nd Wednesday of each month.

### Requirements for Subdivision and Preliminary Plat Approval

Per the Montana County Weed Control Act, Section 7-22-2152, **PRIOR** to subdivision activity, which includes, but is not limited to, groundbreaking, soil disturbance, and/or construction, a Noxious Weed Management and Revegetation Plan must be completed by the Subdivider/Landowner or Weed Management Professional<sup>1</sup> and submitted to the Broadwater County Weed District Office. The plan template will assist with specific methods to be used for:

- The management of noxious weeds already infesting land(s) within the subdivision or that may arise during development.
- The revegetation of disturbed areas within the subdivision.

This plan is subject to approval by the Weed Board, which may require revisions to bring the plan into compliance with the District's Noxious Weed Management Plan and the Montana County Weed Control Act. The Letter of Agreement and Noxious Weed Management and Revegetation Plan are binding documents and the Subdivider(s)/Landowner(s) must abide by the terms of the Agreements.

If there are any questions, concerns, or need for assistance, please call the Weed District Office at 406-266-9243.

<sup>1</sup> Broadwater County Weed District may be utilized to assist the landowner in the creation of the Noxious Weed Management and Revegetation Plan. A list of other approved Weed Management Professionals can be found in Appendix B of this document.



BROADWATER COUNTY WEED DISTRICT

103 BROADWAY, FORT SHERIDAN, MT 59644  
PHONE: 406-366-9247  
EMAIL: broadwater@broadwater.org

**LETTER OF AGREEMENT**

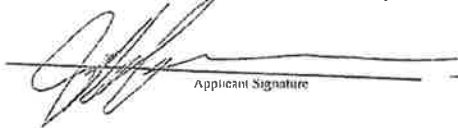
The purpose of the Broadwater County Subdivision Submission Packet is threefold:

1. Promote the prevention of noxious weeds and their seeds as a public nuisance under Montana Law. It is unlawful to permit noxious weeds to propagate (MCA 7-22-2101 through 7-22-2153).
2. Mitigate the potential spread of existing infestations, while monitoring for new invaders.
3. Promote education and awareness for landowners to be knowledgeable of, and responsible for, their noxious weed problems. Noxious weeds will continue to be a problem and will require continued vigilance, even beyond the scope of this agreement.

The following are requirements that apply to all subdivisions in Broadwater County. Please check the boxes for each corresponding line item, sign and date at the bottom, and include with Submission Packet.

- The Noxious Weed Management and Revegetation Plan must be completed by the Subdivider/Landowner or Weed Management Professional and approved by the Broadwater County Weed Board **PRIOR** to any subdivision activity.
- The Subdivider/Landowner/Homeowner Association agrees to abide by the Montana County Weed Control Act, Title 7, Chapter 22, Sections 7-22-2101 through 7-22-2153, as well as to the standards specified in the Noxious Weed Management and Revegetation Plan on all properties, parks, and rights-of way within the subdivision.
- The Subdivider/Landowner shall pass on the obligations of this agreement to the purchaser of a subdivided tract by placing the requirements agreed to in this letter and management plan as a condition of the sale.
- A statement shall be placed on the face of the Final Plat stating: "Weed management will be the responsibility of the individual property owners within the subdivision." (MCA 7-22-201 through 7-22-2153)
- All borrow materials such as gravel, sand, topsoil, rock, road mix, mulch, straw, hay, and grass seed must come from a noxious weed free source. No noxious weed contaminated material may be removed from the site and placed in an area not infested with noxious weeds.
- Inspections done November through April are not conclusive, due to time of year and noxious weed growth stage. Thus, applications will have their initial inspection as soon as conditions allow, and modifications to the Noxious Weed Management and Revegetation Plan will be made at the discretion of the Broadwater County Weed District.
- The agreements set forth in this Letter and Noxious Weed Management and Revegetation Plan are effective upon the date of approval by the Broadwater County Weed Board and is effective for three years (3) from final plat recordation date. A new agreement is required after the effective date has expired.
- Subdivider/Landowner shall submit documentation that the Noxious Weed Management and Revegetation Plan has been implemented no later than **December 20<sup>th</sup>** of each year the agreements are effective. Documentation requirements can be found in Appendix C.
- The Broadwater County Weed District reserves the right of spot-inspection, throughout the longevity of the agreement, for compliance.

By checking the boxes above and signing below, the Subdivider/Landowner is agreeing to the terms outlined in the Letter of Agreement, the Noxious Weed Management and Revegetation Plan, and Montana County Weed Control Act for the longevity of the agreements' effectiveness. Failure to adhere to the terms of the agreements will result in the Non-Compliance (MCA 7-22-2131) process.

<u>Jeff Cragan</u> Printed Name of Applicant	 Applicant Signature	<u>12/13/22</u> Date
<u>Todd Kite</u> Printed Name of Weed Board Chair	<u>Todd Kite</u> Weed Board Chair Signature	<u>12/17/22</u> Date
_____ Printed Name of New Landowner	_____ New Landowner Signature	_____ Date

## BROADWATER COUNTY NOXIOUS WEED POLICY AND INSTRUCTIONS

1. A Broadwater County Weed District Subdivision Submission Packet will be filed with the Weed Board at least **ten (10) business days** prior to the regularly scheduled board meeting. Any subdivision activity and preliminary plat approval may not occur until the Submission Packet has been approved by the Weed Board.
  - a. Upon receipt of the Submission Packet, the Broadwater County Weed Board has ten (10) business days from the regularly scheduled board meeting to approve, or approve with modifications, or deny the Noxious Weed Management and Revegetation Plan.
2. The Noxious Weed Management and Revegetation Plan has been developed to assist Subdividers/Landowners in identifying measures to control noxious weeds within a subdivision. The Plan will include:
  - a. The name and address of the property owner or applicant;
  - b. The legal description and location of the property;
  - c. Map(s):
    - i. Please include a map identifying as many features present on the property as possible. In addition, noxious weed infestations should be indicated, as well as any areas of environmental or special concern (ie. waterways, wells, sensitive plant/animal/fish species, etc.)
      1. Acceptable map formats include:
        - a. Plat maps (preferred), topographic maps, and/or aerial maps;
  - d. Noxious weed data:
    - i. Noxious weed species present. A full state and County list can be found in Appendix D;
    - ii. Approximate number of acres infested with noxious weeds;
    - iii. Anticipated land use and other environmental concerns; and
    - iv. Weed control and prevention activities and measures that will be taken to control for noxious weeds;
  - e. Revegetation data:
    - i. This section of the plan must be filled out only if the soil on the property will be disturbed at any point during the longevity of the agreements' effectiveness. Examples of soil disturbance include, but are not limited to: road construction, grading, backfilling during construction, and/or project development; and
  - f. Signature of Subdivider/Landowner.
3. A Broadwater County Weed District representative will inspect the proposed subdivision. It is the responsibility of the Subdivider/Landowner to work with the representative's schedule and ensure access to the proposed subdivision.
4. A fee will be paid by the Subdivider/Landowner to defray the expenses of Submission Packet review and onsite inspection. All fees will be paid, by cash, check, or credit card (with a 3.33% fee), to the Broadwater County Weed District and are due at initial filing and are non-refundable. Fees are as follows:
  - a. Minor Subdivisions (1-5 lots): \$250.00 plus \$20/lot
  - b. Major Subdivisions (6+ lots): \$400.00 plus \$20/lot
  - c. Mileage: State rate of \$0.58/mile. Fee is applicable only if inspection site is more than twenty (20) miles ROUNDTRIP from 515 Broadway, Townsend, MT 59644.
  - d. Noxious Weed Management and Revegetation Plan Completion Fee
    - i. If the Subdivider/Landowner chooses to have the Broadwater County Weed District complete the Plan, an additional fee will be assessed. The fee is:
      1. \$150.00 for the first two hours.
      2. \$50/hour for any time after the first two hours.
  - e. Submission Packets will not be accepted unless accompanied by applicable fees.
5. After review of the Submission Packet and onsite inspection of the subdivision site, the Broadwater County Weed Board will approve, approve with modifications, or reject the application.
  - a. If the Submission Packet is approved, or approved with modifications, an approval letter will be sent to:
    - i. The Subdivider/Landowner
    - ii. The Broadwater County Planning Board
  - b. If the Submission Packet is rejected, the Subdivider/Landowner has the following options:
    - i. The Noxious Weed Management and Revegetation Plan may be revised by the applicant and resubmitted to the Weed Board for review.
    - ii. The applicant may request assistance from the Weed District in revising the Plan.
    - iii. The applicant may request an administrative hearing pursuant to MCA 7-22-2110.

**BROADWATER COUNTY NOXIOUS WEED MANAGEMENT AND  
REVEGETATION PLAN**

*Before any subdivision activity may occur, please complete and submit a signed copy of the Noxious Weed Management and Revegetation Plan, with the remainder of the Submission Packet, to the Broadwater County Weed District Office for review by the Weed Board. Upon approval, the Weed Board Chair will sign all Submission Packet documents and the agreements will be considered to be effective from that date forward to three (3) years from final plat recordation date. After that term expires a new agreement will be required. These are binding agreements.*

**NAME OF PROJECT/SUBDIVISION:** Six Ranges Ranch (major subdivision)

**NAME OF APPLICANT:** Jeff Creagan and Mike Green/(Alpine Surveying (attn: Bill Dreyer))

**MAILING ADDRESS:** 280 W KAGY BLVD STE D238

**CITY:** Bozeman                      **STATE:** MT.                      **ZIP:** 59715

**PHONE:** 406-586-5599/406-920-0020                      **EMAIL:** move1omontanaw@gmail.com/bdreyer@alpinesurveying.net

**PREFERRED METHOD OF CONTACT:**

Email                       Phone                       Mail

**NAME & BUSINESS OF WEED MANAGEMENT PROFESSIONAL (if applicable):**  
\_\_\_\_\_

**PHONE:** \_\_\_\_\_                      **EMAIL:** \_\_\_\_\_

**LEGAL DESCRIPTION OF PROPERTY:**

\_\_\_\_\_ ¼                      \_\_\_\_\_ ¼                      \_\_\_\_\_ ¼

**Section:** \_\_\_\_\_                      **Township:** \_\_\_\_\_                      **Range:** \_\_\_\_\_

**PLEASE INCLUDE A SITE MAP WITH FEATURES, WEED INFESTATIONS, ETC.**

## **I. PROJECT OVERVIEW**

**Describe what the intentions are for developing this property:**

The property is being divided into 11 lots approximately 20 acres in size. The lots will be used for residential/horse property.

**What are your land management goals for this property?**

Development into large lots with natural landscapes, homes and yards.

## **II. LANDSCAPE DATA** (*Montana Natural Heritage website is very helpful*)

**Describe the present ground cover on the property. What type of soil(s) is present (ie. loam, clay, gravel, sandy, etc.)?**

The land is predominately sagebrush steppe with perennial grasses and sage brush. The soils is silty loam with a moderate high to high ability to transmit water and is well drained.

**List any water sources (streams, ditches, lake, pond, well, spring, drainages/gullies, etc.) that are on the property. Is the water table shallow or deep?**

There are no standing water sources on the property, two intermittent gullies run through the property and the well drain soil means not much puddling occurs. The water table averages 200ft deep and the static water is between 50-95ft.

**List any sensitive plant, wildlife, fisheries, or riparian areas that are/may be found on the property.**

There are no observations of sensitive species on this property. Potential species are the Ferruginous hawk, Greater shorthorned lizard and the loggerhead shrike.

### III. NOXIOUS WEED DATA

What noxious weed species are present on the property (*see Appendix D for State and County list*)?

There are no known species on the property, the plan will be amended to reflect any species found after the site inspection in Spring 2023.

How many total acres is the property? 234

How many acres are infested with noxious weeds? unknown

### IV. NOXIOUS WEED MANAGEMENT

Please describe the methods of weed management that will be utilized on the property. *One method alone will never achieve good weed management. An integrated approach, utilizing several techniques that are compatible with your property goals, is encouraged by the Broadwater County Weed Board.*

**1. Prevention** (*certified seed/hay, clean fill, revegetation of disturbed sites, etc.*)

Machinery will be cleaned if coming in from another county to wash weed seeds from equipment. Road cuts will be reseeded or graveled after completion.

**2. Chemical** (*herbicides*)

The plan will be amended to reflect any noxious weed species found during site survey. It will follow Weed Coordinator's recommendations.

**3. Mechanical** (*hand-pulling, mowing, burning, etc.*)

No mechanical methods will be used at this time.

**4. Biological** (*grazing, biological insectary, etc.*)

No biological methods will be used at this time.

**5. Cultural** (*crop rotation, intensive pasture management, revegetation, etc.*)

Revegetation will be used to cover exposed land.

**Who will conduct the noxious weed control activities (described above) on the property? A list of Commercial Applicators can be found at the Broadwater County Weed District Office.**

Will be determined after site survey 2023.

**If utilizing herbicide, please fill out the table below.**

<i>Noxious Weed Species</i>	<i>Herbicide(s)</i>	<i>Rate of Application</i>

**The timing of herbicide applications will greatly affect the success of a chemical control efforts. When do you intend to apply herbicides?**

Will follow Coordinator's recommendations.

**What additional measures will be taken to ensure safe and efficient herbicide use, lowering the impact on sensitive species, water quality and soil health?**

Will follow Coordinator's recommendations.

**Describe how you will monitor and measure the success of your plan.**

After site survey in Spring 2023

## **V. REVEGETATION PLAN**

**Are any soil disturbances planned over the longevity of the Plan?**

**YES**

**NO**

*If YES, complete the following revegetation section.*

**Describe the type of disturbance and size in acres.**

A road will be constructed to access the lots. The road cuts will be graveled or revegetated to prevent weed establishment.

**Describe the revegetation work to be done.**

**What is the average precipitation per year at the property? Will the area be irrigated?**

13 inches of rain annually.

**What type of seed will be used to reseed? Where will you obtain the seed? How many pounds per acre of seed mix will be used?**

2.0 pls#/ac Pryor slender wheatgrass, 3.0 pls#/ac Critana thickspike wheatgrass, 3.0 pls#/ac Secar bluebunch wheatgrass, 1.5 pls#/ac Lodorm green , 2.0 pls#/ac Rosana western wheatgrass, 0.5 pls#/ac High Plains Sandberg bluegrass. Applied for a total 12 pls#/ac. Seed would be source from Bruce Seed Farm in Townsend, MT

**Will the seeded area be fertilized? What type of fertilizer will be used?**

No fertilizer

**What is your revegetation timeline for the property? Please include details on when revegetation will occur, how often, how will the site be monitored and evaluated, etc.**

Revegetation will occur when completion of project stages occur or every two years. Sites that have been seeded will be inspected when annual inspection occurs.

## **VI. GRAVEL SOURCE**

**Please list the source of gravel/pit run/road mix/topsoil/etc. brought on-site for disturbance mitigation and/or construction. Source must be weed-free.**

*Name of Source(s):* Am Wells

*Location(s):* 105 Sterling Rd, Norris, MT 59745

*Contact Person(s) and Phone Number(s):*

AM Wells-406 685-3372



**VII. SIGNATURE**

The undersigned Subdivider/Landowner agrees to abide by this Broadwater County Subdivision Noxious Weed Management and Revegetation Plan following approval by the Broadwater County Weed Board. By entering this Plan, the Subdivider/Landowner and the Weed Board, or its representatives, shall have the right to revise this Plan as necessary to effectuate the purposes of the property, the Noxious Weed Management and Revegetation Plan, and/or the Montana County Weed Control Act. All changes must be mutually agreed upon by each party and placed in writing. The approval of this plan does not reduce the Subdivider/Landowner's liability for damage caused by compliance with the approved plan. Nor does the Broadwater County Weed District in authorizing this plan in any way acknowledge liability for damage caused by the landowner's implementation of the authorized plan. Plan is effective from date of Approval or Approval with Modifications by the Broadwater County Weed Board through three (3) years post Final Plat approval. After that term has expired a new agreement is required.

*I do hereby certify that all of the information contained in this plan and all supplemental information are true and accurate. I agree to abide by the Broadwater County Noxious Weed Management and Revegetation Plan in accordance with Broadwater County Weed Management Plan and the Montana County Weed Control Act.*

  
\_\_\_\_\_  
Applicant Signature

12-13-22  
Date

**VIII. WEED BOARD REVIEW**

After review of the aforementioned Broadwater County Subdivision Noxious Weed Management Plan, the Broadwater County Weed Board delivers the following decision:

**Approve** Date: \_\_\_\_\_

**Approve with Modifications** Date: 12/14/22

*Modification(s) Required:*

- 1. annual visits to monitor for invasives
- 2. updated plat map with weed certificate

**Reject** Date: \_\_\_\_\_

*Reason(s) for Rejection:*

**Signature:**   
Broadwater County Weed Board Chairperson

**BROADWATER COUNTY WEED DISTRICT INSPECTION REPORT**

**Landowner/Subdivision:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Phone Number:** \_\_\_\_\_

**Email Address:** \_\_\_\_\_

**Date of Inspection:** \_\_\_\_\_

**Noxious Weed Species Present:**

**Additional Recommendations/Modifications:**

**Comments:**

\_\_\_\_\_  
Printed Name of Weed District Representative

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**APPENDIX A: SITE VISIT SCHEDULING FORM**

*Please submit this form with your final Submission Packet. It is the responsibility of the Subdivider/Landowner to work with the Broadwater County Weed District representative's schedule and ensure access to the proposed subdivision. The representative will do their best to schedule around preferred dates and times proposed in form below, however an alternative date may need to be scheduled and adhered to by the Subdivider/Landowner.*

*Proposed dates must fall within the 10-business day approval timeline, upon submission of packet to the Weed District. Inspection times are Monday-Friday between 8am and 5pm. The Broadwater County Weed District representative will contact the Subdivider/Landowner with the final date and time of the inspection.*

**Date of Request:** \_\_\_\_\_

**Requested By:** \_\_\_\_\_

**Company Name:** \_\_\_\_\_

**Phone Number:** \_\_\_\_\_

**Email Address:** \_\_\_\_\_

**Project Address:**  
\_\_\_\_\_  
\_\_\_\_\_

**Preferred Inspection Date:** \_\_\_\_\_

**Alternative Date:** \_\_\_\_\_

**Alternative Date:** \_\_\_\_\_

## **APPENDIX B: APPROVED WEED MANAGEMENT PROFESSIONALS**

Per the Letter of Agreement, the Broadwater County Noxious Weed Management and Revegetation Plan is to be completed by the Subdivider/Landowner or a Weed Management Professional. This is to ensure accuracy and understanding of the Plan and Montana County Weed Control Act.

The staff at the Broadwater County Weed District can complete the Plan for the Subdivider/Landowner, with some required assistance of the Subdivider/Landowner, at the fee scale below:

- \$150.00 for the first two hours of Plan development.
- \$50/hour for any hours after the first two hours of Plan development.

Other local Weed Management Professionals, and their contact information, are listed below. If you have an alternative professional in mind, please contact the Broadwater County Weed District Office directly for approval.

### *Approved Weed Management Professionals*

*Nitro Green*

*Brad Culver 443-5088*

*JHS Inc*

*John Semple 443-7487*

*West River Land Management LLC*

*Nigel Davis 437-1709*

*Ernst Weed Control*

*Jeff Ernst 442-5514*

*Tru Green Chem Lawn*

*Charles Ball 441-2244*

*Helena Weed Control*

*Bob Summers 439-2765*

*Hidden Waterfall Consulting LLC*

*Dave Burch 461-4719*

**APPENDIX C: REQUIRED ANNUAL DOCUMENTATION OF WEED MANGEMENT AND REVEGETATION ACTIVITIES**

Noxious weeds are detrimental to the landscape and require consistent attention by weed managers and landowners every year. The Subdivider/Landowner shall submit documentation that the Noxious Weed Management and Revegetation Plan has been/is being implemented. The following information is to be included in the documentation packet:

- A Narrative (1-2 paragraphs), signed and dated, that includes:
  - What work was accomplished and when?
  - How many acres and/or infestations identified in Plan were treated?
  - How many acres identified in Plan were reseeded?
  - Any new noxious weed species identified?
  - Who completed the work and contact information (if not self)?
  - What successes did you have?
  - What challenges/concerns arose?
- If contracted, please submit a copy of all invoices and application records
- If self-treated, please submit a copy of all receipts for herbicides purchased and application records.

Documentation shall be submitted to the Broadwater County Weed District Office no later than **December 20<sup>th</sup>** of each year the Noxious Weed Management and Revegetation Plan is effective. Documentation may be submitted in-person, mail, or email. Please contact the Weed District Office at 406-266-9243 for any questions, concerns, or assistance with reporting.

## APPENDIX D: STATE AND COUNTY NOXIOUS WEED LIST

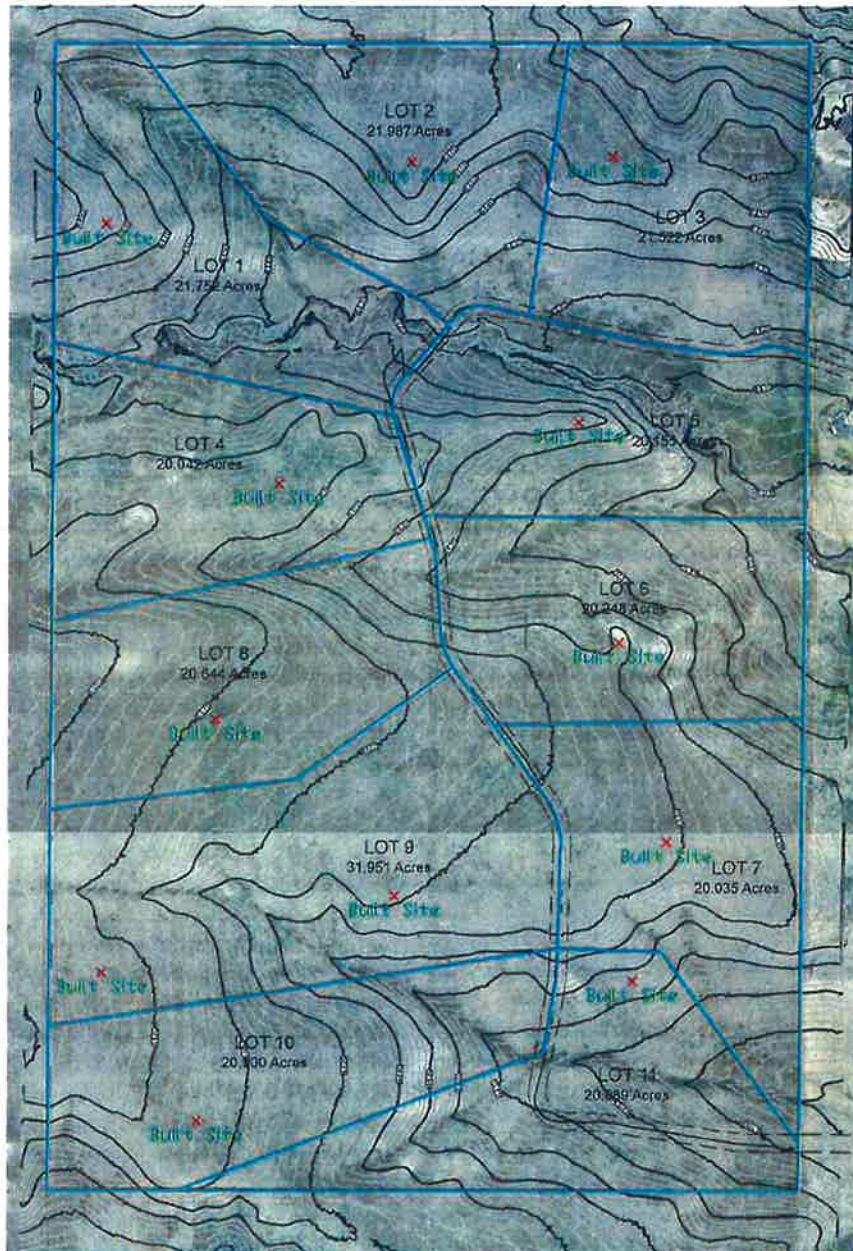
Priority 1A	<p>These weeds are not present or have a very limited presence in Montana. Management criteria will require eradication if detected, education, and prevention:</p> <ul style="list-style-type: none"> <li>- Yellow starthistle (<i>Centaurea solstitialis</i>)</li> <li>- Dyer's woad (<i>Isatis tinctoria</i>)</li> <li>- Common Reed (<i>Phragmites australis</i> ssp. <i>australis</i>)</li> <li>- Medusahead (<i>Taeniatherum caput-medusae</i>)</li> </ul>
Priority 1B	<p>These weeds have limited presence in Montana. Management criteria will require eradication or containment and education:</p> <ul style="list-style-type: none"> <li>- Knotweed complex (<i>Polygonum cuspidatum</i>, <i>P. sachalinense</i>, <i>P. × bohemicum</i>, <i>Fallopia japonica</i>, <i>F. sachalinensis</i>, <i>F. × bohémica</i>, <i>Reynoutria japonica</i>, <i>R. sachalinensis</i>, and <i>R. × bohémica</i>)</li> <li>- Purple loosestrife (<i>Lythrum salicaria</i>)</li> <li>- Rush skeletonweed (<i>Chondrilla juncea</i>)</li> <li>- Scotch broom (<i>Cytisus scoparius</i>)</li> <li>- Blueweed (<i>Echium vulgare</i>)</li> </ul>
Priority 2A	<p>These weeds are common in isolated areas of Montana. Management criteria will require eradication or containment where less abundant. <b>Management shall be prioritized by local weed districts:</b></p> <ul style="list-style-type: none"> <li>- Tansy ragwort (<i>Senecio jacobaea</i>, <i>Jacobaea vulgaris</i>)</li> <li>- Meadow hawkweed complex (<i>Hieracium caespitosum</i>, <i>H. praealtum</i>, <i>H. floridundum</i>, and <i>Pilosella caespitosa</i>)</li> <li>- Orange hawkweed (<i>Hieracium aurantiacum</i>, <i>Pilosella aurantiaca</i>)</li> <li>- Tall buttercup (<i>Ranunculus acris</i>)</li> <li>- Perennial pepperweed (<i>Lepidium latifolium</i>)</li> <li>- Yellowflag iris (<i>Iris pseudacorus</i>)</li> <li>- Common buckthorn (<i>Rhamnus cathartica</i> L.)</li> <li>- Flowering rush (<i>Butomus umbellatus</i>)</li> <li>- Eurasian watermilfoil (<i>Myriophyllum spicatum</i>)</li> <li>- Ventenata (<i>Ventenata dubia</i>)</li> </ul>
Priority 2B	<p>These weeds are abundant in Montana and widespread in many counties. Management criteria will require eradication or containment where less abundant. <b>Management shall be prioritized by local weed districts:</b></p> <ul style="list-style-type: none"> <li>- Leafy spurge (<i>Euphorbia esula</i>)</li> <li>- Saltcedar (<i>Tamarix</i> spp.)</li> <li>- Oxeye daisy (<i>Leucanthemum vulgare</i>)</li> <li>- St. Johnswort (<i>Hypericum perforatum</i>)</li> <li>- Russian knapweed (<i>Acroptilon repens</i>, <i>Rhaponticum repens</i>)</li> <li>- Spotted knapweed (<i>Centaurea stoebe</i>, <i>C. maculosa</i>)</li> <li>- Diffuse knapweed (<i>Centaurea diffusa</i>)</li> <li>- Dalmatian toadflax (<i>Linaria dalmatica</i>)</li> <li>- Houndstongue (<i>Cynoglossum officinale</i>)</li> <li>- Sulfur cinquefoil (<i>Potentilla recta</i>)</li> <li>- Common tansy (<i>Tanacetum vulgare</i>)</li> <li>- Yellow toadflax (<i>Linaria vulgaris</i>)</li> <li>- Whitetop (<i>Cardaria draba</i>, <i>Lepidium draba</i>)</li> <li>- Field bindweed (<i>Convolvulus arvensis</i>)</li> <li>- Canada thistle (<i>Cirsium arvense</i>)</li> <li>- Curlyleaf pondweed (<i>Potamogeton crispus</i>)</li> <li>- Hoary alyssum (<i>Berteroa incana</i>)</li> </ul>
Priority 3	<p><b>Regulated Plants: (NOT MONTANA LISTED NOXIOUS WEEDS)</b>          These regulated plants have the potential to have significant negative impacts. The plant may not be intentionally spread or sold other than as a contaminant in agricultural products. The state recommends research, education and prevention to minimize the spread of the regulated plant.</p> <ul style="list-style-type: none"> <li>- Cheatgrass (<i>Bromus tectorum</i>)</li> <li>- Hydrilla (<i>Hydrilla verticillata</i>)</li> <li>- Russian olive (<i>Elaeagnus angustifolia</i>)</li> <li>- Brazilian waterweed (<i>Egeria densa</i>)</li> <li>- Parrot feather watermilfoil (<i>Myriophyllum aquaticum</i> or <i>M. brasiliense</i>)</li> </ul>
Priority 4	<p><b>COUNTY DESIGNATED NOXIOUS WEEDS</b>          These plants have the potential for serious negative impacts. Management criteria will require eradication or containment. Control of these plant species is required by Broadwater County.</p> <ul style="list-style-type: none"> <li>- Musk Thistle (<i>Carduus nutans</i>)</li> <li>- Bull Thistle (<i>Cirsium vulgare</i>)</li> <li>- Black Henbane (<i>Hyoscyamus niger</i>)</li> <li>- Baby's Breath (<i>Gypsophila paniculata</i>)</li> <li>- Burdock (<i>Arctium minus</i>)</li> <li>- Perennial Sowthistle (<i>Sonchus arvensis</i>)</li> </ul>

PRELIMINARY PLAT

MINOR SUBDIVISION

MINOR SUBDIVISION PLAT NO. \_\_\_\_\_

A SUBDIVISION OF GOVERNMENT LOTS 1, 2 & 3, THE EAST ONE-HALF OF THE NORTHEAST ONE-QUARTER AND THE NORTHEAST ONE-QUARTER OF THE SOUTHEAST ONE-QUARTER OF SECTION 31, TOWNSHIP 3 NORTH, RANGE 1 EAST, P.M.M., BROADWATER COUNTY, MONTANA



ELEVATION DATUM:  
NAVD 88

BASIS OF BEARING  
BOBCAT LDP  
COORDINATE SYSTEM

DRAWN BY: NH  
DATE: 07/28/2022  
PROJECT NO: 540.02  
FILE NAME: PRELIM LAYOUT



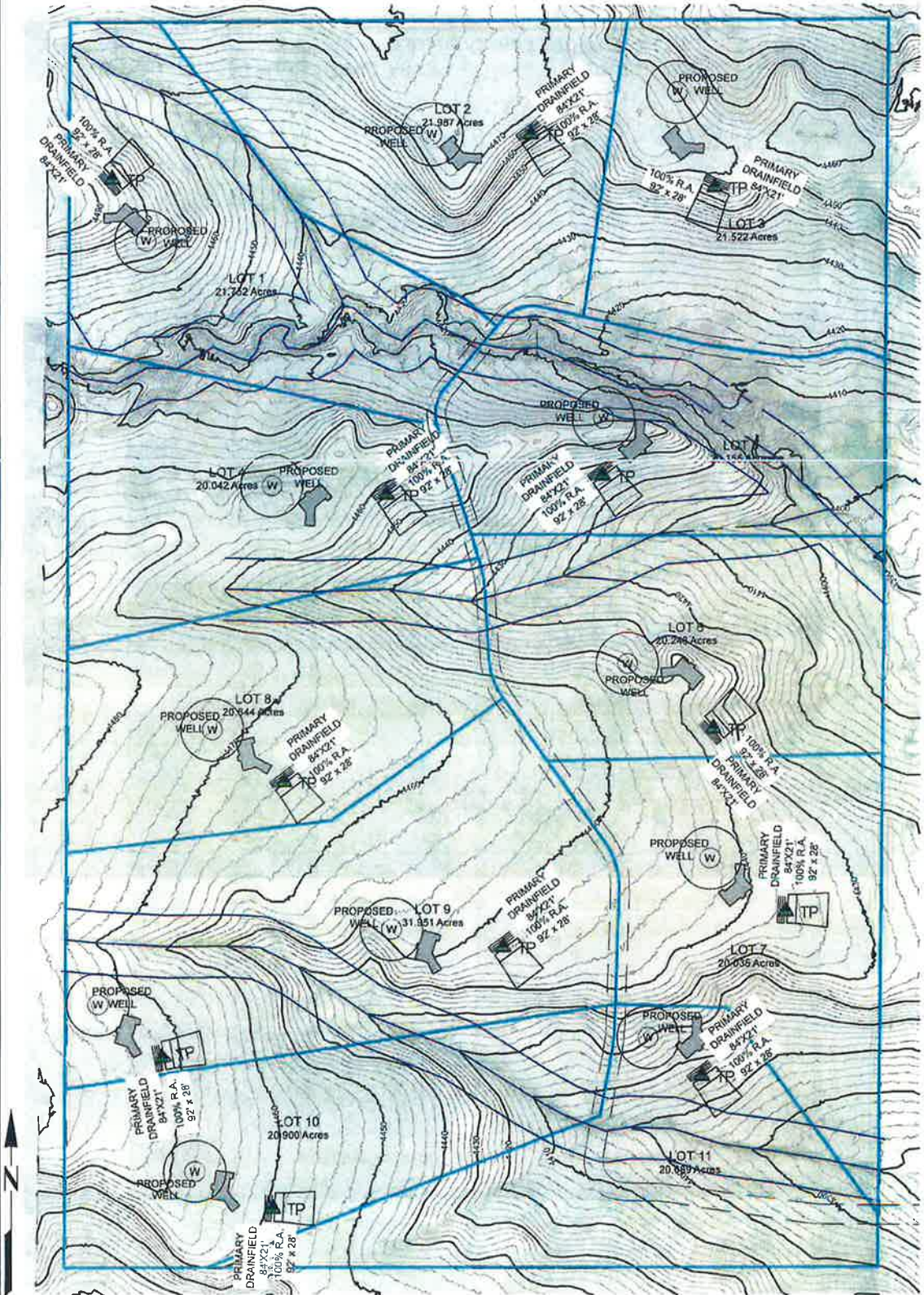
714 Stoneridge Dr.  
Suite 3  
Bozeman, MT 59718  
586.5599 Office  
www.alpinosurveying.net



SHEET  
1 OF 1

# CREAGAN BROADWATER SUBDIVISION

A SUBDIVISION OF GOVERNMENT LOTS 1, 2 & 3, THE EAST ONE-HALF OF THE NORTHEAST ONE-QUARTER AND THE NORTHEAST ONE-QUARTER OF THE SOUTHEAST ONE-QUARTER OF SECTION 31, TOWNSHIP 3 NORTH, RANGE 1 EAST, P.M.M., BROADWATER COUNTY, MONTANA



CREAGAN SUBDIVISION  
SUBDIVISION  
BROADWATER COUNTY,  
MT

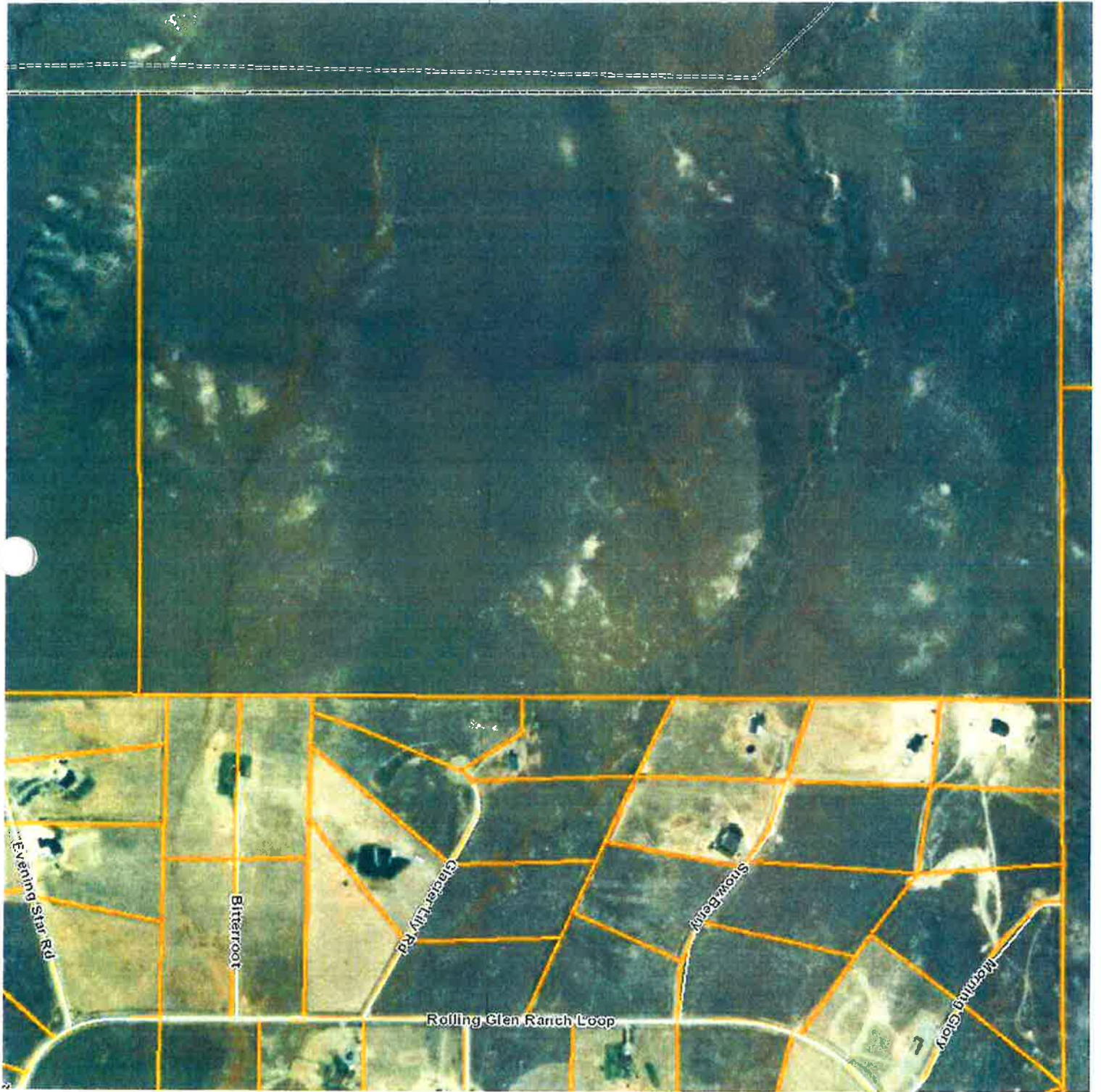
DRAWN BY: EV  
DATE: 8/24/2022  
PROJECT NO. 540-02  
FILE NAME: CS-SI-MD



714 STONERIDGE DR  
Suite 3  
Bozeman, MT 59718  
596.5599 Office  
www.alpinesurveying.net











**ARTICLES OF INCORPORATION**  
**FOR**  
**"SIX RANGES RANCH SUBDIVISION"**

We, the undersigned, being a natural persons over the age of eighteen (18) years, a citizen of the United States and residents of the State of Montana, for the purpose of forming a corporation under the provisions of the Montana Nonprofit Corporation Act, do hereby adopt the following Articles of Incorporation:

**ARTICLE I.**

**Name.** The name of the corporation is VALLEY VIEW ACRES LLC

**ARTICLE II.**

**Period of Duration.** The duration of the corporation is perpetual.

**ARTICLE III.**

**Mutual Benefit Corporation.** The corporation is a mutual benefit corporation.

**ARTICLE IV.**

**Members.** The corporation shall have members.

**ARTICLE V.**

**Distribution of earnings.** No part of the net earnings of the corporation shall insure to the benefit of, or be distributable to its members, directors or officers. No substantial part of the activities of the corporation shall be the carrying on of propaganda, or otherwise attempting to influence legislation, and the corporation shall not participate in, or intervene in (including the publishing or distribution of statements) any political campaign on behalf of or in opposition to any candidate for public office. Not with standing any other provision of these articles, the corporation shall not carry on any other activities not permitted to be carried on (a) by a corporation exempt from federal income tax under section 501(c)(3) of the Internal

Revenue Code, or the corresponding section of any future federal tax code, or (b) of the Internal Revenue Code, or the corresponding section of any future federal tax code.

**ARTICLE VI.**

**Dissolution.** Upon the dissolution of the corporation, assets shall be distributed for one or more exempt purposes within the meaning of section 501(c)(3) of the Internal Revenue Code, the corresponding section of any future federal tax code, or shall be distributed to the federal government, or to a state or local government, for a public purpose. Any such assets not so disposed of shall be disposed by a Court of competent jurisdiction of the county in which the principal office of the corporation is the located, exclusively for such purposes or to such organization or organizations, as such court shall determine, which is organized and operated exclusively for such purposes.

**ARTICLE VII.**

**Principal Office, Registered Office and Registered Agent.** The place in this state where the principal office of the corporation is to be located is at \_\_\_\_\_, Bozeman, MT. 59718. The street address and mailing address of the initial registered office of the corporation is at \_\_\_\_\_, Bozeman, MT. 59718. The registered office may be changed in the manner permitted by law.

**ARTICLE VIII.**

**Incorporator.** The name and address of the incorporators is as follows:

<u>Name</u>	<u>Address</u>
VALLEY VIEW ACRES LLC	280 W KAGY BLVD STE D238, Bozeman MT. 59718

**IN WITNESS WHEREOF**, these Articles of Incorporation have been executed in duplicated this \_\_\_\_ day of \_\_\_\_\_, 2023.

\_\_\_\_\_  
VALLEY VIEW ACRES LLC

STATE OF MONTANA )

:ss.

County of Broadwater )

On this \_\_\_\_ day of \_\_\_\_\_, 2023, before me a Notary Public for the State of Montana, personally appeared \_\_\_\_\_, known to me to be the person whose name is subscribed to

the within instrument and acknowledged to me that he executed the same as incorporator and registered agent.

IN WITNESS WHEREOF, I have hereunto set my hand and seal the day and year in this certificate first written.

\_\_\_\_\_  
Notary Public for the State of Montana

Print Name: \_\_\_\_\_

Residing at: \_\_\_\_\_

My Commission expires: \_\_\_\_\_

(Proposed Draft)  
DECLARATION OF PROTECTIVE COVENANTS  
AND RESTRICTIONS FOR SIX RANGES RANCH SUBDIVISION

THIS DECLARATION is made this \_\_\_\_\_ day of \_\_\_\_\_, 2022, by Six Ranges Ranch Subdivision, hereinafter referred to as "Declarant";

W I T N E S S E T H:

WHEREAS, Declarant is the owner of the following described property situated in Broadwater County, Montana:

WHEREAS, Declarant intends to develop, sell and convey the above-described real property, hereinafter referred to as "Six Ranges Ranch Subdivision"; and,

WHEREAS, Declarant desires to subject all of said real property, together with the lots contained therein, to the covenants, conditions, restrictions and reservations herein set forth and referred to as "Covenants";

NOW, THEREFORE, Declarant does hereby establish, dedicate, declare, publish and impose upon the property the following Protective and Restrictive Covenants, which shall run with the land, and shall be binding upon and be for the benefit of all persons claiming such property, their grantors, legal representatives, heirs, successors and assigns, and shall be for the purpose of maintaining a uniform and stable value, character, architectural design, use, and development of the property. Such Covenants shall apply to the entire property, and all improvements placed or erected thereon, unless otherwise specifically excepted herein. The Covenants shall inure to and pass with each and every parcel, tract, lot or division.

Said Covenants shall be as follows:

**ARTICLE I**  
**DEFINITIONS**

Section 1. The term "member" shall mean any owner or lot owner. Each member or owner agrees to abide and be bound by these Covenants, the Articles of Incorporation, and the Bylaws and the Resolutions of the Homeowners' Association, if any.

Section 3. The term "owner" or "lot owner" shall mean any person or entity owning a fee simple interest in a lot or a contract purchaser, whether one or more persons or entities, owning or purchasing a lot, but excluding those having a mortgage or an interest merely as security for the performance of an obligation; provided, however, that prior to the first conveyance of a lot for value, the term "owner" shall mean "Declarant" or its successors or assigns. The term "person" hereinafter shall include any person, persons or entities.

Section 4. The term "contract purchaser" shall mean a person buying a lot pursuant to a contract for deed, Montana Trust Indenture or mortgage.

Section 5. The terms "properties" and "lots" shall mean all of the real property herein described and subsequently surveyed and platted into lots as Six Ranges Ranch Subdivision, according to the official plats thereof filed of record in the office of the Clerk and Recorder of Broadwater County, Montana.

Section 7. The term "Declarant" shall mean and refer to Six Ranges Ranch Subdivision, and its successors and assigns.

Section 8. Other definitions may be found throughout these covenants and those definitions are binding upon all owners. Any term not specifically defined shall be deemed to have a common and ordinary meaning.

## ARTICLE II

- A. All lots shall be used for residential and agricultural purposes only
- B. Lot owners are informed of the potential health risk from radon concentrations and that such risk can be evaluated through soil tests and mitigated through radon abatement techniques incorporated into structures; (*Section 76-3-608(3)(a), MCA*)
- C. All units within the subdivision shall be constructed to specifications which meet or exceed equivalent provisions in the applicable state building code for this seismic zone; (*Zone 3*); (*Section 76-3-608(3)(a), MCA*)
- D. Lot owners are informed of the potential degradation of existing emergency services due to the potential for growth in a rural area.
- E. Any additional, replacement, or relocated utility lines shall be installed underground, in accordance with the County Subdivision Regulations, unless otherwise determined by the utility provided; (*Section 76-3-608(3)(a), MCA; Section VI-M, County Subdivision Regulations*).
- F. Any exterior lighting shall be directed downward to minimize visibility beyond the property lines; (*Section 76-3-608(3)(a), MCA*)
- G. Lot owners and tenants of the subdivision are informed that adjacent uses may be agricultural. Lot owners accept and are aware that standard agricultural and farming practices can result in dust, animal odors, flies, smoke and machinery noise. Standard agricultural practices feature the use of heavy equipment, chemical sprays and the use of machinery early in the morning and sometimes late into the evening. Lot purchasers are hereby notified that Montana law



provides specific protections in regard to liability and nuisance claims for agricultural operations and irrigators.; Those specific protections include but are not limited to (*Section 763-608(3)(a), MCA*).

- H. A waiver of right to protest joining a rural improvement or maintenance district for the purpose of road maintenance, mosquito control, or equitably funding parks and maintenance of parks. (*Section 76-3-102(4), 501, 504(7) and 621 MCA*)
- I. Lot owners are informed that these covenants bind the landowner, any heirs, successors and assigns, and all future owners of property within the subdivision, agreeing therein to hold Broadwater County harmless and indemnify Broadwater County from all claims, demands, obligations, suits, causes of action, damages, and liability, including the County's costs and attorney's fees, arising in any manner whatsoever out of, or relating to, the existence, use, operation, repair, and/or maintenance of the following:
  - i. Earthquake fault zone and any seismic activity;
  - ii. Water availability;
- J. Each lot shall be maintained in a clean, attractive, and weed-free manner; Noxious weeds must be pulled, sprayed or cut prior to seed maturity; (*Sections 76-3-102(5 and 6), 501(1), and 608(3)(a), MCA; Section VI-S, County Subdivision Regulations*)
- K. A prohibition of the storage of foods, garbage, or continuous feeding of domestic pets outdoors or other activities that creates an attractive nuisance for wildlife species (hay or alfalfa storage and feeding are not prohibited where livestock are permitted) (*Section 76-3-608(3) (a), MCA*)
- L. Lots shall only allow for livestock if a small acreage livestock management plan is reviewed and approved by the County Extension Agent and submitted to the county. Each lot owner shall be required to create and adhere to their own livestock management plan.
- M. All cats and dogs must be restrained, penned, or otherwise under the control of their owner at all times (*Section 76-3-608(3) (a), MCA*).
- N. Address numbers shall be clearly marked at the driveway entrance to each lot and be easily identified from the road.
- O. The Association shall be responsible for the maintenance and snow removal of the interior subdivision roads.

### **ARTICLE III**

#### **TERM, ENFORCEMENT, APPLICABILITY AND CHANGE**

Section 1. The term of the provisions of these Covenants shall be binding for the life of the property

Section 2. Enforcement of these Covenants shall be by proceedings either at law or in equity against any person or persons violating, or attempting to violate, any Covenant; and the legal proceedings may either be to restrain violation of these Covenants, to recover damages, or both.

Should any lawsuit or other legal proceeding be instituted by an owner against an owner alleged to have violated one or more of the provisions of these Covenants and should the owner enforcing the provisions of the covenants be wholly or partially successful in such proceedings, the offending owner shall be obligated to pay the costs of such proceeding, including reasonable attorney's fees for all time associated with the action.

Section 3. The failure of Declarant, or an owner, to enforce any Covenant or restriction contained herein shall not be deemed a waiver or in any way prejudice the rights to later enforce that Covenant, or any other Covenant thereafter, or to collect damages for any subsequent breach of Covenants.

Section 4. Invalidation of any one of these Covenants by judgment or by Court order shall in no way affect any of the other Covenants or provisions, all of which shall remain in full force and effect.

Section 5. In any conveyance of the above-described real property or of any lot thereon, it shall be sufficient to insert a provision in any deed or conveyance to the effect that the property is subject to protective or restrictive Covenants without setting forth such restrictions and Covenants verbatim or in substance in said deed nor referring to the recording data. All of the above-described real property and lots shall be subject to the restrictions and Covenants set forth herein, whether or not there is a specific reference to the same in a deed or conveyance.

Section 6. A breach of any of the foregoing restrictions or Covenants shall not defeat or render invalid the lien of any mortgage or deed of trust made in good faith and for value upon any lot or portion of the real property or any improvements thereon. However, the Covenants shall be binding upon and shall inure to the benefit of any subsequent owner whose title thereto was acquired by foreclosure, trustee sale or otherwise.

Any change of these Covenants shall be effective upon the filing and recording of such an instrument in the office of the Broadwater County Clerk and Recorder. Any change in these Covenants shall not affect existing structures and uses of the lots.

IN WITNESS WHEREOF, Declarant has hereunto set its hand as of this \_\_\_\_\_ day of \_\_\_\_\_, 2023.

\_\_\_\_\_  
(Managing Member of Six Ranges Ranch Subdivision)

STATE OF \_\_\_\_\_ )

:ss.

County of \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, 2023, before me, the undersigned, a Notary Public of the State of \_\_\_\_\_, personally appeared \_\_\_\_\_ being the managing member of Six Ranges Ranch Subdivision known to me to be the persons that executed the within instrument and acknowledged to me they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal as of the day and year first above written.

\_\_\_\_\_  
\_\_\_\_\_

NOTARY PUBLIC for the State of \_\_\_\_\_  
Residing at \_\_\_\_\_  
My Commission expires \_\_\_\_\_



# National Flood Hazard Layer FIRMette



111°39'42" W 45°58'24" N



Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

<p><b>SPECIAL FLOOD HAZARD AREAS</b></p> <ul style="list-style-type: none"> <li> Without Base Flood Elevation (BFE) Zone A, V, A99</li> <li> With BFE or Depth Zone AE, AO, AH, VE, AP</li> <li> Regulatory Floodway</li> </ul> <p><b>OTHER AREAS OF FLOOD HAZARD</b></p> <ul style="list-style-type: none"> <li> 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X</li> <li> Future Conditions 1% Annual Chance Flood Hazard Zone X</li> <li> Area with Reduced Flood Risk due to Levee, See Notes, Zone X</li> <li> Area with Flood Risk due to Levee Zone D</li> </ul> <p><b>OTHER AREAS</b></p> <ul style="list-style-type: none"> <li> NO SCREEN Area of Minimal Flood Hazard Zone X</li> <li> Effective LOMRS</li> <li> Area of Undetermined Flood Hazard Zone D</li> </ul> <p><b>GENERAL STRUCTURES</b></p> <ul style="list-style-type: none"> <li> Channel, Culvert, or Storm Sewer</li> <li> Levee, Dike, or Floodwall</li> </ul> <p><b>OTHER FEATURES</b></p> <ul style="list-style-type: none"> <li> Cross Sections with 1% Annual Chance Water Surface Elevation</li> <li> Coastal Transect</li> <li> Base Flood Elevation Line (BFE)</li> <li> Limit of Study</li> <li> Jurisdiction Boundary</li> <li> Coastal Transect Baseline</li> <li> Profile Baseline</li> <li> Hydrographic Feature</li> </ul> <p><b>MAP PANELS</b></p> <ul style="list-style-type: none"> <li> Digital Data Available</li> <li> No Digital Data Available</li> <li> Unmapped</li> </ul>	<p style="text-align: center;">N</p> <p>The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.</p> <p>This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards</p> <p>The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/11/2022 at 2:21 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.</p> <p>This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.</p>
---	---



DEPARTMENT OF NATURAL RESOURCES  
AND CONSERVATION

Water Resources Division • Helena Regional Office  
1424 9th Ave, Helena, MT 59620-1601 Phone: (406) 444-6999 Fax: (406) 444-9317



GREG GIANFORTE, GOVERNOR

1539 ELEVENTH AVENUE

STATE OF MONTANA

DIRECTOR'S OFFICE: (406) 444-2074  
FAX: (406) 444-2684

PO BOX 201601  
HELENA, MONTANA 59620-1601

January 31, 2023

William Dreyer, PE  
Alpine Surveying and Engineering, Inc.  
714 Stoneridge Dr, STE 3  
Bozeman, MT 59718

Re: HRO 23-4 DNRC Water Right Review of Six Ranges Ranch Major Subdivision. This project is located in Section 31, Township 3N, Range 1E, Broadwater County.

Determination: Based on the information provided in your January 25, 2023 DNRC water right review request, a predetermination is not required for the proposed project.

Mr. Dreyer,

This letter is in response to your request for DNRC review of water rights for the referenced project in accordance with Administrative Rules of Montana (ARM) 17.36.103(1)(s).

A determination as to whether the proposed uses can be filed under the water right permit exceptions of MCA § 85-2-306(3)(a)(iii) is not required for the following selected reason:

All lots involved in the proposed project are remaining over 20 acres.

If you have any questions, please contact me at 406-444-6602 or [rgates@mt.gov](mailto:rgates@mt.gov).

Sincerely,

A handwritten signature in blue ink, appearing to read "Russ Gates".

Russ Gates  
Hydrologist/Water Resource Specialist  
Helena Regional Water Resource Office

CC: Leata English, via email

**From:** Strasheim, Kerri <kstrasheim@mt.gov>  
**Sent:** Thursday, January 26, 2023 5:54 PM  
**To:** bdreyer@alpinesurveying.net  
**Subject:** Lots over 20 acres

Bill –

Per your voicemail question, I am confirming that if the lots are greater than or equal to 20 acres, that they are not considered part of a subdivision single project by MT DNRC.

Definition in the guidance document: "Subdivision" means a division of land or land so divided that creates one or more parcels containing less than 20 acres.

Thank you!  
Kerri

---

Kerri Strasheim  
Regional Manager – Gallatin, Madison, and Park Counties  
MT DNRC Water Resources  
2273 Boot Hill Court, Suite 110  
Bozeman, MT 59715  
Ph: 406-556-4504



## DNRC WATER RIGHT PREDETERMINATION REQUEST ARM 17.36.103(s)

Complete this form if you have a proposed project which will be subject to DEQ or county sanitation or subdivision review. All information described in the instructions below must be submitted. Use of this specific form for submittal of the information to DNRC is required. See page 3 for additional guidance about this process.

Name(s)/Business Name William Drreyer (Alpine Surveying and Engineering)

Mailing Address/City/St/Zip 714 Stoneridge Drive, Suite 3

Preferred Phone 406-539-9954 E-Mail bdreyer@alpinesurveying.net

• **Project and Location Information**

Identify the type of project:

- Release of Sanitary Restrictions/Rewrite                       Family Transfer  
 Boundary Line Adjustment                       Subdivision of Property                       Other

Provide a brief description of the proposed project:

The owners have proposed to subdivide the property into eleven residential lots, ranging from 20 to 31 acres in size. The major subdivision is being proposed on 234 acres in size and is vacant at this time.

Geocode of Existing Property: 43-1206-31-2-01-01-0000

Legal Land Description of Project Area:

NE 1/4 SW 1/4                      Section 31 TWP 3N RGE 1E County Broadwater  
1/4 1/4                      Section     TWP     RGE     County    

• **Subdivision Plat Information**

Subdivision/Plat Name: Six Ranges Ranch Major Subdivision

Total number of proposed lots: 11 Lot sizes: 20-31 acre

Current landowner: VALLEY VIEW ACRES LLC

Is this a rewrite?  Yes     No    If yes, briefly explain the details of the rewrite below.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

• **Existing Water Use**

Describe all existing water uses within the footprint of the project area.

One test well/future fire well is located on the property. No other water uses are know at this time.

Before DNRC can make a predetermination, all existing water uses within the project area must have a water right. **If existing uses do not have a water right, you cannot file this predetermination request at this time.** If you have questions, please contact your local Regional Office for assistance. See Page 4 for contact information.

Identify water right numbers of the existing water uses. None

Explain how the existing water uses will operate with the proposed project and new uses of water.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

• **Project Information**

**Purpose** – Identify all new water uses proposed for the subdivided property. Be sure to adhere to applicable CC&Rs. Refer to DNRC Form 615 for information on general water requirements.

Type of Use	Details of Use	Volume Required (AF)
Domestic	Number of new households proposed: 11	11.0
Lawn & Garden	0.25Acres/Lot x 11 Lots = 2.75 Total Acres	6.875
Commercial or Industrial	Type: NA	
Stock	Type and number of animal units proposed: No more than three horses per lot $3 \times 1.5 \text{ AU} \times 0.17 \times 11 = 0.84$	0.84
Other	Describe: NA	

**If more than one lot is involved in your project and you intend to meet the exception to the permitting process, how will the maximum volume of 10 AF/year allowed under the permit exception be divided between the lots, parcels or tracts being reviewed:**

Since each lot is 20 acres or larger, exempt wells are proposed on each lot.

20ac = 10 ac-ft , 11 lots greater than 20 ac. = 110 ac-ft

Proposed water usage = 18.72 ac-ft

**Diversion Means**

New Well    Existing Well: GWIC ID \_\_\_\_\_ Water Right Number \_\_\_\_\_

Developed Spring    Pit

Flow rate: 35 per well GPM

Total number of wells: 11

If multiple wells are being proposed, explain the use for each well. \_\_\_\_\_

Domestic use with limited horses.

• **Attach the Following Required Documents**

- Proposed Plat Map/Lot Layout Map
- General Location Map
- Copy of recorded documents (COS, Final Plat) that created parcels under 20 acres in this review.
- Well log(s), if well has been drilled

Attach any additional information that may be helpful to DNRC on a separate sheet.

• **Signatures of Property Owners**

This proposal must be reviewed by owners of all parcels involved in the proposed project; signatures from all property owners are required. Use additional sheets if necessary.

<u>Parcel</u>	<u>Owner Signature</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

**From:** bdreyer@alpinesurveying.net  
**Sent:** Wednesday, January 25, 2023 4:18 PM  
**To:** rgates@mt.gov  
**Subject:** Six Ranges Ranch  
**Attachments:** Six Ranges Ranch Sub. Vicinity Maps.pdf; DNRC Predetermination Submittal Form (Fillable).pdf; 540-02 Six Ranges Ranch Preliminary Plat 24X36.pdf

Hi Russ,

Thanks for the phone call. As discussed, there is a total of 11 lots on 234 acres. The smallest lots are just over 20 acres and the largest is 31 acres. I have attached a vicinity map and preliminary plat with the request form. Please let me know if you have any questions.

Thanks, Bill

**William Dreyer, PE**  
**Alpine Surveying & Engineering, Inc.**  
714 Stoneridge Dr., Suite 3  
Bozeman, MT 59718  
[406.586.5599](tel:406.586.5599) | office  
[406.539.9954](tel:406.539.9954) | cell  
[bdreyer@alpinesurveying.net](mailto:bdreyer@alpinesurveying.net)



**MONTANA WELL LOG REPORT**

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report was completed online by the driller. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

**Site Name: VALLEY VIEW ACRES LLC**  
**GWIC Id: 325451**

**Section 1: Well Owner(s)**  
 1) VALLEY VIEW ACRES LLC (MAIL)  
 280 W KAGY BLVD STE D238  
 BOZEMAN MT 59715-6056

**Section 2: Location**

<b>Township</b>	<b>Range</b>	<b>Section</b>	<b>Quarter Sections</b>
03N	01E	31	SW¼ SE¼ NE¼ NW¼
<b>County</b>		<b>Geocode</b>	
BROADWATER		43-1206-31-2-01-01-0000	
<b>Latitude</b>	<b>Longitude</b>	<b>Geomethod</b>	<b>Datum</b>
45.973611	-111.651889 MAP		WGS84
<b>Addition</b>	<b>Block</b>	<b>Lot</b>	
		LOTS 1,2,3	

**Section 3: Proposed Use of Water**  
 FIRE PROTECTION (1)

**Section 4: Type of Work**  
 Drilling Method: DUAL ROTARY

**Section 5: Well Completion Date**  
 Date well completed: Thursday, November 17, 2022

**Section 6: Well Construction Details**  
 Meta Data Fields

- Was borehole completed as a well? YES
- Was well abandoned?

**Borehole dimensions**

From	To	Diameter
0	202	6

**Casing**

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	76	6	0.250		WELDED	A53B STEEL
62	82	4.5	0.250		SPLINE	PVC-SCHED 40
102	182	4.5	0.250		SPLINE	PVC-SCHED 40

**Completion (Perf/Screen)**

From	To	Diameter	# of Openings	Size of Openings	Description
82	102	4.5		020	FACTORY SLOTTED
182	202	4.5		020	FACTORY SLOTTED

**Annular Space (Seal/Grout/Packer)**

From	To	Description	Cont. Fed?
0	25	BENTONITE	Y

**Section 7: Well Test Data**

Total Depth: 202  
 Static Water Level: 49  
 Water Temperature:

**Air Test \***

60 gpm with drill stem set at 197 feet for 1 hours.  
 Time of recovery 1 hours.  
 Recovery water level 49 feet.

\* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

**Section 8: Remarks**

**Section 9: Well Log**

From	To	Description
0	1	TOPSOIL
1	18	SANDY CLAY
18	22	SAND
22	26	CLAY
26	38	SANDY CLAY
38	51	SAND W/ SOME CLAY
51	56	SAND W/ SOME GRAVEL
56	67	TAN SANDY CLAY
67	71	BROWN CANDY CLAY
71	78	GRAY SANDY CLAY
78	127	LIGHT GRAY SANDY CLAY
127	133	COARSE SAND
133	149	SANDY CLAY
149	151	FINE SAND
151	166	CLAY W/ SOME SAND

**Driller Certification**

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

**Name:** COLTON BAERTSCH  
**Company:** EXCEL PUMP & WELL INC  
**Address:** 5 WEST MENDENHALL ST STE 202  
**City:** BOZEMAN MT 59715  
**License No:** WWC-756  
**Date Certified:** 2/24/2023



**Ground Water Information Center | MBMG Data Center**  
**Montana Bureau of Mines and Geology**  
**Montana Technological University**  
 1300 West Park Street - Natural Resources Building Room 329  
 Butte Montana 59701-8997  
 Ph: (406) 496-4336 Fx: (406) 496-4343

You are currently signed in. | 2/17/2023  
[Sign Out](#)

[Home](#) | [Well Data](#) | [Reports](#) | [Data Coop](#) | [DrillerWeb](#) | [DNRC](#) | [Help!](#)

Menus: [Main](#) | [SWL](#) | [GWCP](#) | [Projects](#) | [Coal](#) | [Coal Quality](#) | [Geothermal](#)

**GWIC Data > Well Construction Data > Township: 03N Range: 01E Sec: 31**

The following data were returned from the GWIC databases for the area you requested. For a more detailed description of the data view the [GWIC Metadata report](#). If you notice data entry errors or have questions please let us know by sending us an Email at [GWIC@mtech.edu](mailto:GWIC@mtech.edu). If you wish to view a one page report for a particular site, click the hyperlinked **Gwic Id** for that well. Scroll to the right of your screen to view all the data. All data displayed on the screen may not show up when printed.

Field	Max	Min	Avg
Total Depth (ft)	300.00	102.00	183.42
Static Water Level (ft)	102.00	23.00	58.76
Yield (gpm)	75.00	15.00	38.06

\* These statistics do not take any geographic, topographic, or geologic factors into consideration. Negative swl values are reported for water levels that are above land surface.

Did you know about...

Other GWIC data

**Thanks, Just take me back to the menu.**

Other MBMG data

**MBMG has 386 publications available for BROADWATER county.  
 MBMG has 432 publications available for GALLATIN county.  
 MBMG has 439 publications available for PARK county.  
 MBMG has 3 abandoned mine record(s) for this request area.**

Gwic Id	PDF	DNRC WR	Site Name	Twn	Rng	Sec	Q Sec	Yer?	Type	Td	Swl	Pwl	Rwl	Yield	Test	Date	Use
<a href="#">323093</a>			VOELLER, DENNIS	03N	01E	31		No	WELL	280.00	24.60	24.60	70.00	AIR	8/25/2022	DOMESTIC	
<a href="#">230223</a>			BACHAR WAYNE AND MARILYN	03N	01E	31	AA	No	WELL	180.00	68.00	68.00	75.00	AIR	9/18/2006	DOMESTIC	
<a href="#">308424</a>			KOLODKA HOMES, LLC	03N	01E	31	AA	No	WELL	120.00	70.00	70.00	60.00	AIR	7/13/2020	DOMESTIC	
<a href="#">218077</a>			BROWN, JARED	03N	01E	31	AAB	No	WELL	120.00	50.50	50.50	45.00	AIR	3/14/2005	DOMESTIC	
<a href="#">222392</a>			GREEN, KELVIN	03N	01E	31	AAC	No	WELL	103.00	35.00	35.00	24.00	AIR	8/22/2005	DOMESTIC	
<a href="#">325015</a>			WRENN, WILLIAM & RENE	03N	01E	31	AAD	No	WELL	145.00	64.00	64.00	25.00	AIR	1/25/2023	DOMESTIC	
<a href="#">296844</a>			KLUIN, ROD & JULIE	03N	01E	31	ABB	No	WELL	220.00	94.00	94.00	30.00	AIR	5/7/2018	DOMESTIC	
<a href="#">299366</a>			OSBORNE, JUSTIN	03N	01E	31	ABB	No	WELL	273.00	102.00	102.00	20.00	AIR	10/19/2018	DOMESTIC	
<a href="#">219043</a>			ROLLING GLEN RANCH	03N	01E	31	ABD	No	WELL	262.00	89.50	89.00	42.00	AIR	3/15/2005	DOMESTIC	
<a href="#">280252</a>			OBRIEN, GARY & VIOLET	03N	01E	31	AC	No	WELL	220.00	71.00	71.00	20.00	AIR	9/23/2014	DOMESTIC	
<a href="#">285888</a>			KITSEMBLE, AMY AND VIRGINIA	03N	01E	31	ACBA	No	WELL	245.00	51.00	51.00	15.00	AIR	1/13/2016	DOMESTIC	
<a href="#">292171</a>			HILL, CHRIS	03N	01E	31	ACBB	No	WELL	238.00	54.00	54.00	40.00	AIR	5/6/2017	DOMESTIC	
<a href="#">323579</a>			CRAWFORD, SHAWN & MAYA	03N	01E	31	ACC	No	WELL	300.00	54.00	54.00	75.00	AIR	9/30/2022	DOMESTIC	
<a href="#">220566</a>		30024241	HULTMAN, KEVIN	03N	01E	31	AD	No	WELL	242.00	50.00	50.00	60.00	AIR	5/6/2005	DOMESTIC	
<a href="#">222134</a>			DENA FRISINGER	03N	01E	31	ADB	No	WELL	180.00	53.00	53.00	52.00	AIR	10/11/2005	DOMESTIC	
<a href="#">297760</a>			SHUMWAY, COLIN M & JENNY A	03N	01E	31	ADD	No	WELL	142.00	53.00	53.00	60.00	AIR	7/6/2018	DOMESTIC	
<a href="#">297374</a>			BEGGER, KYLE	03N	01E	31	CC	No	WELL	160.00	78.00	78.00	25.00	AIR	2/19/2018	DOMESTIC	

**Disclaimer:**

The preceding materials represent the contents of the GWIC databases at the Montana Bureau of Mines and Geology at the time and date of the retrieval. The information is considered unpublished and is subject to correction and review on a daily basis. The Bureau warrants the accurate transmission of the data to the original end user at the time and date of the retrieval [2/17/2023 9:21:01 AM]. Retransmission of the data to other users is discouraged and the Bureau claims no responsibility if the material is retransmitted. There may be wells in the request area that are not recorded at the Information Center.

Ground Water Information Center Online © 1998 - 2023

[Staff](#) | [Privacy Statement](#)

**MONTANA WELL LOG REPORT**

**Other Options**

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

[Return to menu](#)  
[Plot this site in State Library Digital Atlas](#)  
[Plot this site in Google Maps](#)

**Site Name: VOELLER, DENNIS**  
**GWIC Id: 323093**

**Section 7: Well Test Data**

Total Depth: 280  
 Static Water Level: 24.6  
 Water Temperature:

**Air Test \***

70 gpm with drill stem set at 280 feet for 1 hours.  
 Time of recovery 2 hours.  
 Recovery water level 24.6 feet.  
 Pumping water level    feet.

*\* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

**Section 1: Well Owner(s)**

- 1) VOELLER, DENNIS (MAIL)  
 163 ROLLING GLEN RANCH LOOP  
 THREE FORKS MT 59752 [08/25/2022]
- 2) VOELLER, DENNIS (WELL)  
 SAME  
 N/A N/A N/A [08/25/2022]

**Section 2: Location**

Township	Range	Section	Quarter Sections
03N	01E	31	
County		Geocode	
BROADWATER			
Latitude	Longitude	Geomethod	Datum
45.9653	-111.64213	NAV-GPS	WGS84
Ground Surface Altitude	Ground Surface Method	Datum	Date

Addition	Block	Lot
ROLLING GLEN RANCH		110

**Section 3: Proposed Use of Water**

DOMESTIC (1)

**Section 4: Type of Work**

Drilling Method: ROTARY  
 Status: NEW WELL

**Section 5: Well Completion Date**

Date well completed: Thursday, August 25, 2022

**Section 6: Well Construction Details**

**Borehole dimensions**

From	To	Diameter
0	20	7.3
20	280	6

**Casing**

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	20	6.8	0.25		WELDED	A53B STEEL
10	240	4		220.0	SPLINE	PVC-SCHED 40

**Completion (Perf/Screen)**

From	To	Diameter	# of Openings	Size of Openings	Description
240	280	4	6048	.020	FACTORY SLOTTED

**Annular Space (Seal/Grout/Packer)**

From	To	Description	Cont. Fed?
0	0	CASING SEAL	Y

**Section 8: Remarks**

THIS WELL LOG DEEPENS GWIC ID: 209884

**Section 9: Well Log**

**Geologic Source**

Unassigned

From	To	Description
100	110	WHITE & PALE GREEN CEMENTED SANDS
110	122	FIRM GRAY MUDSTONE
122	177	BLUE SANDY CLAY
177	179	COURSE SANDS
179	210	GREEN SANDY CLAY W/ GRAY MUDSTONE STREAKS
210	225	BLUE & GRAY SANDSTONE W/ CEMENTED PEA GRAVEL STREAKS
225	242	GRAY CEMENTED COURSE SANDS W/ 12 GPM WATER
242	265	FIRM GREEN MUDSTONE
265	280	COURSE SANDS W/ PEA GRAVELS & 50 GPM WATER @ 265' 70 GPM WATER @ 280'

**Driller Certification**

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

**Name:** TROY HAUSER  
**Company:** RED TIGER DRILLING  
**License No:** WWC-598  
**Date Completed:** 8/25/2022







**MONTANA WELL LOG REPORT**

**Other Options**

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

[Return to menu](#)  
[Plot this site in State Library Digital Atlas](#)  
[Plot this site in Google Maps](#)

**Site Name: STANGHILL, WALTER & GENIE**  
**GWIC Id: 321618**

**Section 7: Well Test Data**

Total Depth: 138  
 Static Water Level: 23  
 Water Temperature:

**Section 1: Well Owner(s)**

- 1) STANGHILL, WALTER & GENIE (MAIL)  
 P.O. BOX 160429  
 BIG SKY MT 59716 [06/03/2022]
- 2) STANGHILL, WALTER & GENIE (WELL)  
 35 HOLLYHOCK LOOP  
 THREE FORKS MT 59752 [06/03/2022]

**Air Test \***

15 gpm with drill stem set at 135 feet for 1 hours.  
 Time of recovery 1 hours.  
 Recovery water level 23 feet.  
 Pumping water level    feet.

**Section 2: Location**

Township	Range	Section	Quarter Sections
03N	01E	31	SE¼ SE¼ NE¼ SE¼
County		Geocode	
BROADWATER		43-1206-31-4-01-15-0000	
Latitude	Longitude	Geomethod	Datum
45.966	-111.64078	NAV-GPS	WGS84
Ground Surface Altitude	Ground Surface Method	Datum	Date

\* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

**Addition**

ROLLING GLEN RANCH

**Block**

**Lot**  
118

**Section 8: Remarks**

**Section 3: Proposed Use of Water**

DOMESTIC (1)

**Section 9: Well Log**

**Geologic Source**

Unassigned

**Section 4: Type of Work**

Drilling Method: ROTARY  
 Status: NEW WELL

From	To	Description
0	23	CLAY, SILTY, LIGHT TAN AND OCCASIONAL ROCK
23	24	CLAY, GRAVEL
24	70	CLAY, HARD, GREY
70	90	CLAY, SANDY, GREY
90	110	SANDSTONE, BLACK, WHITE
110	122	CLAY, GREY/GREEN, THIN BENTONITE LENSES
122	138	CLAY, GREY, SHALE, BLACK

**Section 5: Well Completion Date**

Date well completed: Friday, June 3, 2022

**Driller Certification**

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

**Section 6: Well Construction Details**

**Borehole dimensions**

From	To	Diameter
0	55.3	7.3
55.3	138	6

**Casing**

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	55.3	6	0.25		WELDED	A53B STEEL
38	118	4.5		220.0	SPLINE	PVC-SCHED 40

**Completion (Perf/Screen)**

From	To	Diameter	# of Openings	Size of Openings	Description
118	138	4.5		.020	FACTORY SLOTTED

**Annular Space (Seal/Grout/Packer)**

From	To	Description	Cont. Fed?
0	25	BENTONITE GRANULES	Y

<b>Name:</b> DAVE POTTS
<b>Company:</b> POTTS DRILLING INC
<b>License No:</b> WWC-512
<b>Date Completed:</b> 6/3/2022

## MONTANA WELL LOG REPORT

Other Options

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

[Return to menu](#)  
[Plot this site in State Library Digital Atlas](#)  
[Plot this site in Google Maps](#)

**Site Name: CRAWFORD, SHAWN & MAYA**  
**GWIC Id: 323579**

**Section 7: Well Test Data**

Total Depth: 300  
 Static Water Level: 54  
 Water Temperature:

**Section 1: Well Owner(s)**

1) CRAWFORD, SHAWN & MAYA (MAIL)  
 16 GLACIER LILY ROAD  
 THREE FORKS MT 59752 [09/30/2022]  
 2) CRAWFORD, SHAWN & MAYA (WELL)  
 SAME  
 N/A N/A N/A [09/30/2022]

**Air Test \***

75 gpm with drill stem set at 300 feet for 1 hours.  
 Time of recovery 2 hours.  
 Recovery water level 54 feet.  
 Pumping water level    feet.

**Section 2: Location**

Township	Range	Section	Quarter Sections
03N	01E	31	SW¼ SW¼ NE¼
County		Geocode	
BROADWATER		43-1206-31-1-03-25-0000	
Latitude	Longitude	Geomethod	Datum
45.9698	-111.64855	NAV-GPS	WGS84
Ground Surface Altitude	Ground Surface Method	Datum	Date

\* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

**Addition**

ROLLING GLEN RANCH

**Block****Lot**

26

**Section 3: Proposed Use of Water**

DOMESTIC (1)

**Section 4: Type of Work**

Drilling Method: ROTARY  
 Status: NEW WELL

**Section 5: Well Completion Date**

Date well completed: Friday, September 30, 2022

**Section 6: Well Construction Details****Borehole dimensions**

From	To	Diameter
0	40	7.3
40	300	6

**Casing**

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	40	6.6	0.25		WELDED	A53B STEEL
20	280	4.5		220.0	SPLINE	PVC-SCHED 40

**Completion (Perf/Screen)**

From	To	Diameter	# of Openings	Size of Openings	Description
280	300	4.5	3024	.020	FACTORY SLOTTED

**Annular Space (Seal/Grout/Packer)**

From	To	Description	Cont. Fed?
0	0	CASING SEAL	Y

**Section 8: Remarks****Section 9: Well Log****Geologic Source**

Unassigned

From	To	Description
0	2	TOP SOIL
2	10	TAN SILTSAND
10	30	BROWN CLAY W/ MEDIUM SAND STREAKS
30	91	LIGHT BROWN SOFT SILTSTONE
91	145	BLUE CLAY W/ MUDSTONE STREAKS
145	190	SOFT BLUE MUDSTONE W/ COURSE SAND STREAKS
190	204	CEMENTED MEDIUM SANDS W/ 3 GPM WATER @ 200'
204	225	FIRM GRAY MUDSTONE
225	232	FINE SANDS W/ ADDITIONAL 5 GPM WATER @ 240'
232	270	PALE GREEN SOFT MUDSTONE W/ COURSE SAND STREAKS @ ADDITIONAL 18 GPM WATER @ 260'
270	300	FINE/COURSE SANDS W/ SMALL GRAVELS & 75 TOTAL GPM WATER

**Driller Certification**

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

**Name:** TROY HAUSER  
**Company:** RED TIGER DRILLING  
**License No:** WWC-598  
**Date Completed:** 9/30/2022



## DRAINFIELD AREA CALCULATIONS

For

Creagan's Broadwater Subdivision

S31, T03 N, R01 E, P.M.M.

Broadwater County, MT

**I. Daily Design Flow:**

(Circular DEQ-4)

(Single Family House- 5 bedrooms @ 400 gpd) = 400 gpd

**TOTAL = 400 gallons per day**

**II. Drainfield Requirements:**

Application rate based on test hole information and confirmed with the percolation test (Circular DEQ-4). Use 0.3 gpd/ft<sup>2</sup> for a clay loam. The daily flow is 400 gallons.

Use 400 gpd/0.3 gpd/ft<sup>2</sup> = 1,334 ft<sup>2</sup>

1,334 ft<sup>2</sup> - 25% reduction for gravelless chambers = 1,000 ft<sup>2</sup>

**TOTAL = 1,000 ft<sup>2</sup>**

**III. Lateral Requirements:**

(1,000 ft<sup>2</sup>) / (3 ft trench "infiltrator") = 334 lnft

**TOTAL = 334 lineal feet required**

**IV. Total Drainfield / 100% Replacement Area:**

Use 4, 84 feet, drainfield laterals in three-foot-wide "infiltrator" gravelless chambers in a "standard trench" at seven feet on center (minimum). Thus, the drainfield area required will be 84 feet by 21 feet. See Site Plan Attached.

**TOTAL DRAINFIELD AREA = 84 feet x 21 feet**

**TOTAL REPLACEMENT DRAINFIELD AREA = 92 feet x 28 feet**

**V. Septic Tank Sizing:**

(from Circular DEQ 4,)

The septic tank is sized based on the maximum possible flow, which is 400 gallons per day for both residences. To meet the requirements of a 5-bedroom house a minimum of 1,500-gallons of septic liquid volume capacity is required for both residences, and a minimum of 1,000-gallons of dose liquid volume capacity is required to pressurize the drainfield. Septic tanks must be reinforced concrete with effluent filter.



**Ground Water Information Center | MBMG Data Center**  
**Montana Bureau of Mines and Geology**  
**Montana Technological University**  
 1300 West Park Street - Natural Resources Building Room 329  
 Butte Montana 59701-8997  
 Ph: (406) 496-4336 Fx: (406) 496-4343

You are currently signed in. | 2/17/2023  
[Sign Out](#)

| [Home](#) | [Well Data](#) | [Reports](#) | [Data Coop](#) | [DrillerWeb](#) | [DNRC](#) | [Help!](#) |

Menus: | [Main](#) | [SWL](#) | [GWCP](#) | [Projects](#) | [Coal](#) | [Coal Quality](#) | [Geothermal](#)

**GWIC Data > Well Construction Data > Township: 03N Range: 01E Sec: 31**

The following data were returned from the GWIC databases for the area you requested. For a more detailed description of the data view the [GWIC Metadata report](#). If you notice data entry errors or have questions please let us know by sending us an Email at [GWIC@mtech.edu](mailto:GWIC@mtech.edu). If you wish to view a one page report for a particular site, click the hyperlinked **Gwic Id** for that well. Scroll to the right of your screen to view all the data. All data displayed on the screen may not show up when printed.

Retrieval Statistics*			
Field	Max	Min	Avg
Total Depth (ft)	300.00	102.00	183.42
Static Water Level (ft)	102.00	23.00	58.76
Yield (gpm)	75.00	15.00	38.06

\* These statistics do not take any geographic, topographic, or geologic factors into consideration. Negative swl values are reported for water levels that are above land surface.

Did you know about...

Other GWIC data

**Thanks, Just take me back to the menu.**

Other MBMG data

**MBMG has 386 publications available for BROADWATER county.  
 MBMG has 432 publications available for GALLATIN county.  
 MBMG has 439 publications available for PARK county.  
 MBMG has 3 abandoned mine record(s) for this request area.**

Gwic Id	PDF	DNRC WR	Site Name	Twn	Rng	Sec	Q.Sec	Ver?	Type	Td	Swl	Pwl	Rwl	Yield	Test	Date	Use
<a href="#">323093</a>			VOELLER, DENNIS	03N	01E	31		No	WELL	280.00	24.60	24.60	70.00	AIR	8/25/2022	DOMESTIC	
<a href="#">230223</a>			BACHAR WAYNE AND MARILYN	03N	01E	31	AA	No	WELL	180.00	68.00	68.00	75.00	AIR	9/18/2006	DOMESTIC	
<a href="#">308424</a>			KOLODKA HOMES, LLC	03N	01E	31	AA	No	WELL	120.00	70.00	70.00	60.00	AIR	7/13/2020	DOMESTIC	
<a href="#">218077</a>			BROWN, JARED	03N	01E	31	AAB	No	WELL	120.00	50.50	50.50	45.00	AIR	3/14/2005	DOMESTIC	
<a href="#">222392</a>			GREEN, KELVIN	03N	01E	31	AAC	No	WELL	103.00	35.00	35.00	24.00	AIR	8/22/2005	DOMESTIC	
<a href="#">325015</a>			WRENN, WILLIAM & RENE	03N	01E	31	AAD	No	WELL	145.00	64.00	64.00	25.00	AIR	1/25/2023	DOMESTIC	
<a href="#">296844</a>			KLUIN, ROD & JULIE	03N	01E	31	ABB	No	WELL	220.00	94.00	94.00	30.00	AIR	5/7/2018	DOMESTIC	
<a href="#">299366</a>			OSBORNE, JUSTIN	03N	01E	31	ABB	No	WELL	273.00	102.00	102.00	20.00	AIR	10/19/2018	DOMESTIC	
<a href="#">219043</a>			ROLLING GLEN RANCH	03N	01E	31	ABD	No	WELL	262.00	89.50	89.00	42.00	AIR	3/15/2005	DOMESTIC	
<a href="#">280252</a>			OBRIEN, GARY & VIOLET	03N	01E	31	AC	No	WELL	220.00	71.00	71.00	20.00	AIR	9/23/2014	DOMESTIC	
<a href="#">285888</a>			KITSEMBLE, AMY AND VIRGINIA	03N	01E	31	ACBA	No	WELL	245.00	51.00	51.00	15.00	AIR	1/13/2016	DOMESTIC	
<a href="#">292171</a>			HILL, CHRIS	03N	01E	31	ACBB	No	WELL	238.00	54.00	54.00	40.00	AIR	5/6/2017	DOMESTIC	
<a href="#">323579</a>			CRAWFORD, SHAWN & MAYA	03N	01E	31	ACC	No	WELL	300.00	54.00	54.00	75.00	AIR	9/30/2022	DOMESTIC	
<a href="#">220566</a>		30024241	HULTMAN, KEVIN	03N	01E	31	AD	No	WELL	242.00	50.00	50.00	60.00	AIR	5/6/2005	DOMESTIC	
<a href="#">222134</a>			DENA FRISINGER	03N	01E	31	ADB	No	WELL	180.00	53.00	53.00	52.00	AIR	10/11/2005	DOMESTIC	
<a href="#">297760</a>			SHUMWAY, COLIN M & JENNY A	03N	01E	31	ADD	No	WELL	142.00	53.00	53.00	60.00	AIR	7/6/2018	DOMESTIC	
<a href="#">297374</a>			BEGGER, KYLE	03N	01E	31	CC	No	WELL	160.00	78.00	78.00	25.00	AIR	2/19/2018	DOMESTIC	

<a href="#">319297</a>		RONNING DEVELOPMENT	03N 01E 31 CDD	No	WELL	160.00	54.00	54.00	23.00	AIR	3/21/2022	DOMESTIC
<a href="#">222893</a>		MURPHY, JASON & CYNTHIA	03N 01E 31 DA	No	WELL	102.00	36.00	36.00	35.00	AIR	8/4/2005	DOMESTIC
<a href="#">288285</a>		SCHNELL, DAVID	03N 01E 31 DAB	No	WELL	207.00	69.00	69.00	25.00	AIR	6/10/2016	DOMESTIC
<a href="#">210273</a>		CAVANAUGH, STEVE * WELL #1	03N 01E 31 DAC	No	WELL	122.00	37.00	39.00	40.00	PUMP	2/27/2004	DOMESTIC
<a href="#">210273</a>		CAVANAUGH, STEVE * WELL #1	03N 01E 31 DAC	No	WELL	122.00	37.00	37.00	42.00	AIR	2/27/2004	DOMESTIC
<a href="#">209884</a>		30066490 CAVANAUGH, STEVE * WELL #2	03N 01E 31 DAC	No	WELL	102.00	25.50	25.50	33.00	AIR	3/30/2004	DOMESTIC
<a href="#">321618</a>		STANGHILL, WALTER & GENIE	03N 01E 31 DADD	No	WELL	138.00	23.00	23.00	15.00	AIR	6/3/2022	DOMESTIC
<a href="#">291927</a>		BIRKHOLZ, RICHARD AND DONNA	03N 01E 31 DBA	No	WELL	262.00	58.00	58.00	20.00	AIR	4/11/2017	DOMESTIC
<a href="#">297759</a>		LAGERQUIST, CHRIS	03N 01E 31 DBC	No	WELL	162.00	42.00	42.00	50.00	AIR	7/5/2018	DOMESTIC
<a href="#">284300</a>		MARK, TETREAULT	03N 01E 31 DC	No	WELL	160.00	64.00	64.00	50.00	AIR	9/8/2015	DOMESTIC
<a href="#">288364</a>		MULDER, CURTIS	03N 01E 31 DC	No	WELL	200.00	88.00	88.00	20.00	AIR	4/27/2016	DOMESTIC
<a href="#">303463</a>		30148214 HOLBERG, MICHAEL	03N 01E 31 DCAB	No	WELL	158.00	75.00	75.00	30.00	AIR	6/24/2019	DOMESTIC
<a href="#">314838</a>		K3 CONSTRUCTION	03N 01E 31 DCD	No	WELL	160.00	70.00	70.00	45.00	AIR	6/3/2021	DOMESTIC
<a href="#">324991</a>		MOUNTAIN PEAK HOMES	03N 01E 31 DCD	No	WELL	164.00	79.00	79.00	30.00	AIR	1/23/2023	DOMESTIC
<a href="#">234734</a>		DAUM MICHEAL	03N 01E 31 DDA	No	WELL	200.00	62.00	62.00	30.00	AIR	2/5/2007	DOMESTIC
<a href="#">314834</a>		LEE, CALEB	03N 01E 31 DDD	No	WELL	204.00	58.00	58.00	30.00	AIR	6/3/2021	DOMESTIC

End of Report.  
33 record(s) listed.

**Items of Note:**

<sup>1</sup>This report is restricted to site types of **WELL, BOREHOLE, SPRING, COAL BED METHANE WELL, PETWELL, PIEZOMETER.**

<sup>2</sup>A single well record (a distinct GWIC Id) may be represented by more than one line in this report if more than one performance test was conducted on the well at the time of drilling.

**Explanation of Columns:**

**GWIC Id** = Key field for the GWIC database. Links to one page reports.

**PDF** = Are scanned documents available through the Document Manager?

- = Yes, click on the icon to download the PDF file.
- = No, well was submitted electronically. No paper record exists.
- = No, record does have a known well log but it is not scanned yet.
- = No, record may or may not have a document to scan. Metadata is unclear.
- = No, record was created from a source other than a well log. No paper record exists.

**DNRC WR** = Water right number assigned to this site by Department of Natural Resources and Conservation.

**Site Name** = Current owner name assigned to GWIC record.

**Location** = Location of site in Montana township, range, section, and quarter-section coordinates.

**Ver?** = Has this location been verified by field staff?

**Type** = Type of site assigned to GWIC record.

**Td** = Total depth of well in feet below ground.

**Swl** = Static water level in feet above/below ground - Negative values are reported for water levels that are above land surface.

**Pwl** = Pumping water level in feet below ground.

**Rwl** = Recovery water level in feet below ground.

**Yield** = Yield in gallons per minute.

**Test** = Type of performance test reported.

**Date** = Completion date of well/borehole.

**Use** = Reported use of water.



# SIX RANGES RANCH SUBDIVISION

A SUBDIVISION OF GOVERNMENT LOTS 1, 2 & 3, THE EAST ONE-HALF OF THE NORTHEAST ONE-QUARTER AND THE NORTHEAST ONE-QUARTER OF THE SOUTHEAST ONE-QUARTER OF SECTION 31, TOWNSHIP 3 NORTH, RANGE 1 EAST, P.M.M., BROADWATER COUNTY, MONTANA

**LEGEND**

- PROPOSED RESIDENCES
- PRIMARY/REPLACEMENT OF W/ 100' MIXING ZONE
- PROPOSED WELL (W)
- TEST PIT (TP)
- PROPOSED CULVERT
- PROPOSED RETENTION POND



**CREAGAN SIX RANGES RANCH SUBDIVISION BROADWATER COUNTY, MT**

**ALPINE SURVEYING & ENGINEERING**

714 STONERIDGE DR  
Suite 3  
Bozeman, MT 59718  
586.5599 Office  
www.alpinesurveying.net

**EV**  
DATE: 2/23/2023  
PROJECT NO. 540-02  
FILE NAME: LOT LAYOUT

**SHEET C-1**

Scale 1" = 300'



# TEST HOLE LOG # 1

**PROJECT:** Creagan-Broadwater Sub.

**PROJECT #:**

**540-02**

**HOLE:** TH#1

**STATE:**

**MT**

**LOCATION:** Morning Glory Rd.

**COUNTY:**

**Gallatin**

**LEGAL DESCRIPTION:** See site plan

**DATE:**

**9/15/2022**

**RECORDED BY:** EV

**DRILL METHOD:**

**Track hoe**

**DRILLER:** Vinger Excavation

**TOTAL DEPTH:**

**8 feet**

<b>DEPTH</b>	<b>SOIL DESCRIPTION</b>
0"	0" Fine silty clay loam with common organics and no gravels.
1'	
2'	
3'	
4'	
5'	
6'	
6.2'	74.4" End of organics, fine silty clay loam with no organics and no gravels
7'	
8'	96" End of excavation, No Groundwater encountered. No Limiting Layer

**PROJECT: Creagan-Broadwater Sub.**

**PROJECT #:**

**540-02**

**HOLE: TH#2**

**STATE:**

**MT**

**LOCATION: Morning Glory Rd.**

**COUNTY:**

**Gallatin**

**LEGAL DESCRIPTION: See site plan**

**DATE:**

**9/15/2022**

**RECORDED BY: EV**

**DRILL METHOD:**

**Track hoe**

**DRILLER: Vinger Excavation**

**TOTAL DEPTH:**

**8 feet**

<b>DEPTH</b>	<b>SOIL DESCRIPTION</b>
0"	0" Fine silty clay loam with common organics and no gravels.
1'	
2'	
3'	
3.6'	43.2" Silt loam with common/few organics and no gravels
4	
5'	
6'	
6.7'	80.4" End of organics
7'	
8'	96" End of excavation, No Groundwater encountered. No Limiting Layer

**PROJECT: Creagan-Broadwater Sub.**

**PROJECT #:**

**540-02**

**HOLE: TH#3**

**STATE:**

**MT**

**LOCATION: Morning Glory Rd.**

**COUNTY:**

**Gallatin**

**LEGAL DESCRIPTION: See site plan**

**DATE:**

**9/15/2022**

**RECORDED BY: EV**

**DRILL METHOD:**

**Track hoe**

**DRILLER: Vinger Excavation**

**TOTAL DEPTH:**

**8 feet**

<b>DEPTH</b>	<b>SOIL DESCRIPTION</b>
0"	0" Fine silty clay loam with common organics and no gravels.
1'	
2'	
3'	
4'	
4.8'	57.6" End of organics, fine silty clay loam with no organics and no gravels
5'	
6'	
7'	
8'	96" End of excavation, No Groundwater encountered. No Limiting Layer

**PROJECT: Creagan-Broadwater Sub.**

**PROJECT #:**

**540-02**

**HOLE: TH#4**

**STATE:**

**MT**

**LOCATION: Morning Glory Rd.**

**COUNTY:**

**Gallatin**

**LEGAL DESCRIPTION: See site plan**

**DATE:**

**9/15/2022**

**RECORDED BY: EV**

**DRILL METHOD:**

**Track hoe**

**DRILLER: Vinger Excavation**

**TOTAL DEPTH:**

**8 feet**

<i>DEPTH</i>	<i>SOIL DESCRIPTION</i>
0"	0" Fine silty clay loam with common organics and no gravels.
1'	
2'	
3'	
4'	
5'	
5.7'	68.4" End of organics.
6'	
7'	
8'	96" End of excavation, No Groundwater encountered. No Limiting Layer

**PROJECT: Creagan-Broadwater Sub.**

**PROJECT #:**

**540-02**

**HOLE: TH#5**

**STATE:**

**MT**

**LOCATION: Morning Glory Rd.**

**COUNTY:**

**Gallatin**

**LEGAL DESCRIPTION: See site plan**

**DATE:**

**9/15/2022**

**RECORDED BY: EV**

**DRILL METHOD:**

**Track hoe**

**DRILLER: Vinger Excavation**

**TOTAL DEPTH:**

**8 feet**

<b>DEPTH</b>	<b>SOIL DESCRIPTION</b>
0"	0" Fine silty clay loam with common organics and no gravels.
1'	
2'	
3'	36" End of organics.
4	
4.3'	51.6" Silt loam with no organics and no gravels. Bronze/green coloration and mottling throughout layer.
5'	
6'	
7'	
8'	96" End of excavation, No Groundwater encountered. No Limiting Layer



# TEST HOLE LOG # 6

PROJECT: Creagan-Broadwater Sub.

PROJECT #:

540-02

HOLE: TH#6

STATE:

MT

LOCATION: Morning Glory Rd.

COUNTY:

Gallatin

LEGAL DESCRIPTION: See site plan

DATE:

9/15/2022

RECORDED BY: EV

DRILL METHOD:

Track hoe

DRILLER: Vinger Excavation

TOTAL DEPTH:

8 feet

DEPTH	SOIL DESCRIPTION
0"	0" Fine silty clay loam with common organics and no gravels.
1'	
2'	
3'	
4	
4.5'	54" End of organics.
5'	
6'	
7'	
8'	96" End of excavation, No Groundwater encountered. No Limiting Layer

**PROJECT: Creagan-Broadwater Sub.**

**PROJECT #:**

**540-02**

**HOLE: TH#7**

**STATE:**

**MT**

**LOCATION: Morning Glory Rd.**

**COUNTY:**

**Gallatin**

**LEGAL DESCRIPTION: See site plan**

**DATE:**

**9/15/2022**

**RECORDED BY: EV**

**DRILL METHOD:**

**Track hoe**

**DRILLER: Vinger Excavation**

**TOTAL DEPTH:**

**8 feet**

<b>DEPTH</b>	<b>SOIL DESCRIPTION</b>
0"	0" Fine silty clay loam with common organics and no gravels.
1'	
2'	
3'	
4'	
5'	
6'	
6.2'	74.4" End of organics.
7'	
8'	96" End of excavation, No Groundwater encountered. No Limiting Layer



**PROJECT: Creagan-Broadwater Sub.**

**PROJECT #:**

**540-02**

**HOLE: TH#8**

**STATE:**

**MT**

**LOCATION: Morning Glory Rd.**

**COUNTY:**

**Gallatin**

**LEGAL DESCRIPTION: See site plan**

**DATE:**

**9/15/2022**

**RECORDED BY: EV**

**DRILL METHOD:**

**Track hoe**

**DRILLER: Vinger Excavation**

**TOTAL DEPTH:**

**8 feet**

<b>DEPTH</b>	<b>SOIL DESCRIPTION</b>
0"	0" Fine silty clay loam with common organics and no gravels.
1'	
2'	
3'	
4	
4.8'	57.6" End of organics.
5'	
6'	
7'	
8'	96" End of excavation, No Groundwater encountered. No Limiting Layer

**PROJECT: Creagan-Broadwater Sub.**

**PROJECT #:**

**540-02**

**HOLE: TH#9-2**

**STATE:**

**MT**

**LOCATION: Morning Glory Rd.**

**COUNTY:**

**Gallatin**

**LEGAL DESCRIPTION: See site plan**

**DATE:**

**9/15/2022**

**RECORDED BY: EV**

**DRILL METHOD:**

**Track hoe**

**DRILLER: Vinger Excavation**

**TOTAL DEPTH:**

**8 feet**

<b>DEPTH</b>	<b>SOIL DESCRIPTION</b>
0"	0" Fine silty clay loam with common organics and no gravels.
1'	
2'	
3'	
4	
4.4'	52.8" End of organics.
5'	
6'	
7'	
8'	96" End of excavation, No Groundwater encountered. No Limiting Layer

**PROJECT: Creagan-Broadwater Sub.**

**PROJECT #:**

**540-02**

**HOLE: TH#10**

**STATE:**

**MT**

**LOCATION: Morning Glory Rd.**

**COUNTY:**

**Gallatin**

**LEGAL DESCRIPTION: See site plan**

**DATE:**

**9/15/2022**

**RECORDED BY: EV**

**DRILL METHOD:**

**Track hoe**

**DRILLER: Vinger Excavation**

**TOTAL DEPTH:**

**8 feet**

<b>DEPTH</b>	<b>SOIL DESCRIPTION</b>
0"	0" Fine silty clay loam with common organics and no gravels.
1'	
2'	
3'	
4	
4.7'	56.4" End of organics.
5'	
6'	
7'	
8'	96" End of excavation, No Groundwater encountered. No Limiting Layer

## Six Ranques Ranch.

### Site Evaluation

Photo #1-TP#1



Photo #2-TP#1 Soils Horizons/Root Zone



**Six Rangres Ranch.**

**Site Evaluation**

Photo #1-TP#1 Soil Pile



Photo #2-TP#2



**Six Ranges Ranch.**  
**Site Evaluation**

Photo #2-TP#2 Soils Horizons/Root Zone



Photo #1-TP#2 Soil Pile



**Six Ranges Ranch**  
**Site Evaluation**

Photo #1-TP#3



Photo #2-TP#3 Soils Horizons/Root Zone



# Six Ranges Ranch

## Site Evaluation

Photo #1-TP#3 Soil Pile



Six Ranges Ranch

Photo #2-TP#4





## Six Ranges Ranch

### Site Evaluation

Photo #2-TP#4 Soils Horizons/Root Zone



Photo #1-TP#4 Soil Pile



**Six Ranges Ranch**  
**Site Evaluation**

Photo #1-TP#5



Photo #2-TP#5 Soils Horizons/Root Zone



**Six Ranges Ranch**  
**Site Evaluation**

Photo #1-TP#5 Soil Pile



Photo #2-TP#6



**Six Ranges Ranch Site  
Evaluation**

Photo #2-TP#6 Soils Horizons/Root Zone



Photo #1-TP#6 Soil Pile



**Six Ranges Ranch Site  
Evaluation**

Photo #1-TP#7



Photo #2-TP#7 Soils Horizons/Root Zone



**Six Ranges Ranch Site  
Evaluation**

Photo #1-TP#7 Soil Pile



Photo #2-TP#8



## Six Ranges Ranch Site Evaluation

Photo #2-TP#8 Soils Horizons/Root Zone



Photo #1-TP#8 Soil Pile



**Six Ranges Ranch Site  
Evaluation**

Photo #1-TP#9



Photo #2-TP#9 Soils Horizons/Root Zone





**Six Rangas Ranch**  
**Site Evaluation**

Photo #1-TP#9 Soil Pile



Photo #2-TP#9-2



## Six Ranges Ranch Site Evaluation

Photo #2-TP#9-2 Soils Horizons/Root Zone



Photo #1-TP#9-2 Soil Pile



# Six Ranges Ranch Site Evaluation

Photo #1-TP#10



Photo #2-TP#10 Soils Horizons/Root Zone

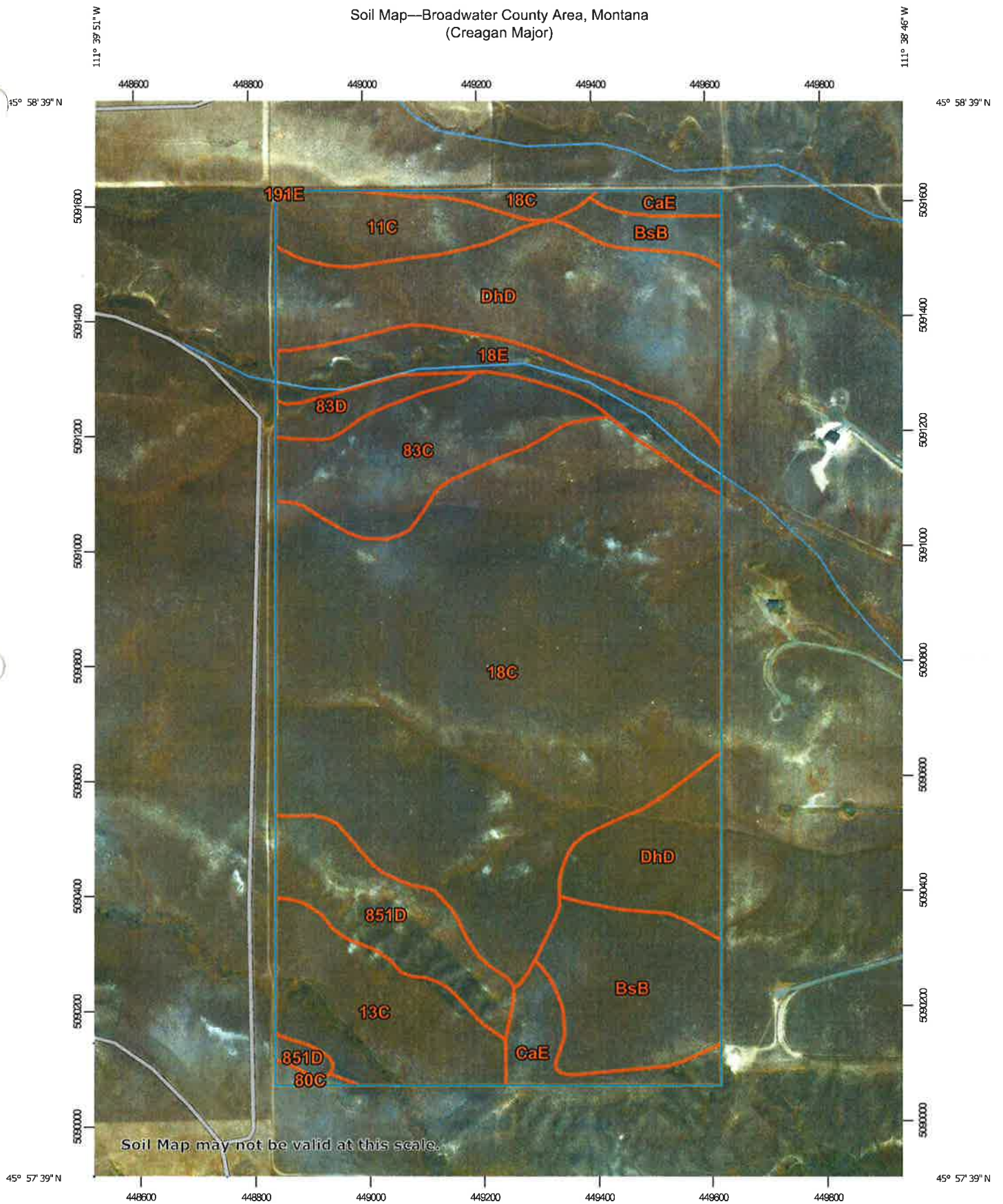


**Six Ranges Ranch Site  
Evaluation**

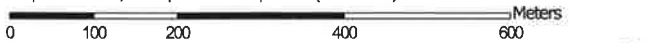
Photo #1-TP#10 Soil Pile



Soil Map—Broadwater County Area, Montana  
(Creagan Major)



Map Scale: 1:9,110 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84



## MAP LEGEND

- Area of Interest (AOI)
- Area of Interest (AOI)
- Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points
- Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Broadwater County Area, Montana  
Survey Area Data: Version 20, Sep 2, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

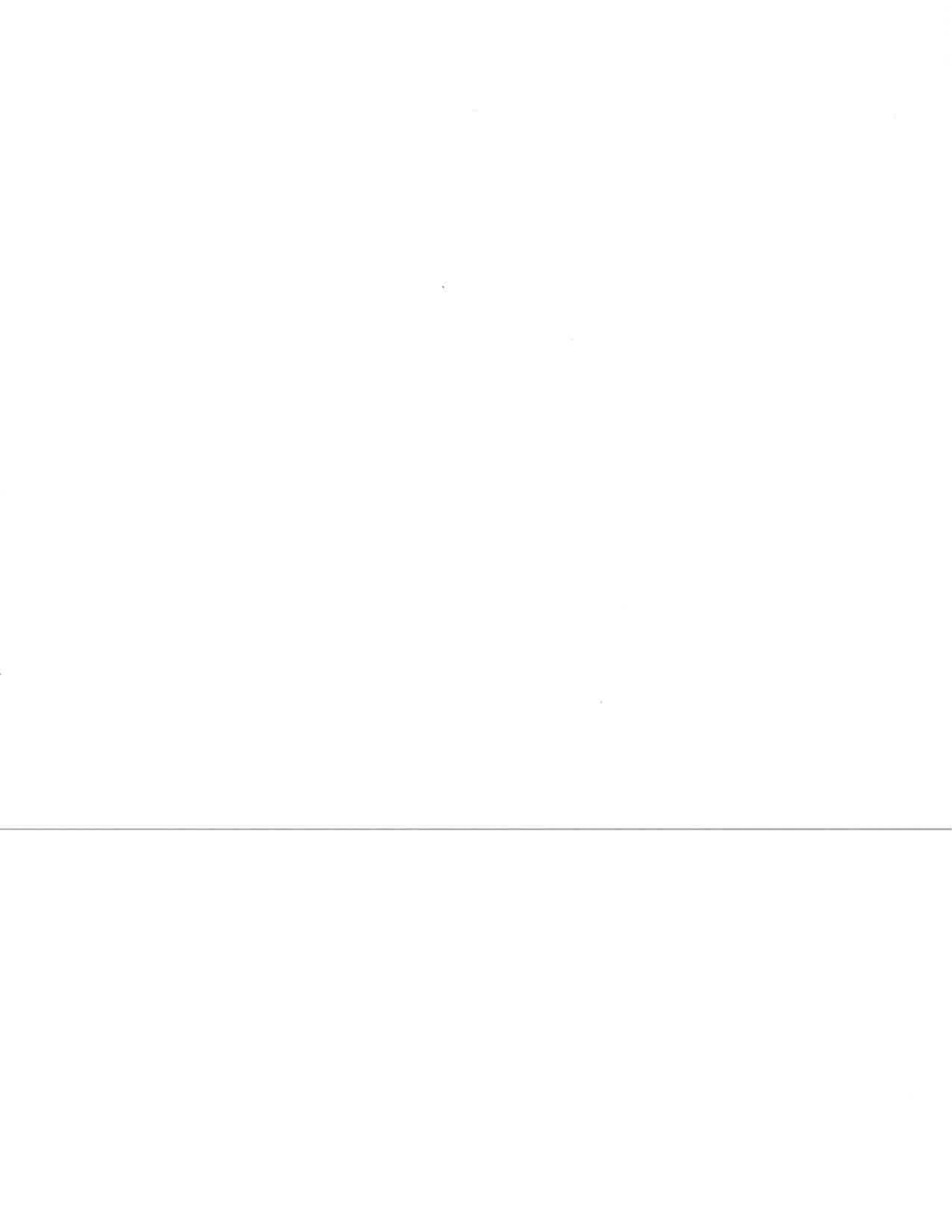
Date(s) aerial images were photographed: Sep 10, 2012—Nov 12, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features
- Water Features**
- Streams and Canals
- Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads
- Background**
- Aerial Photography

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
11C	Amesha silt loam, 4 to 8 percent slopes	10.6	3.5%
13C	Anamac loam, 2 to 8 percent slopes	19.7	6.5%
18C	Brocko silt loam, 2 to 8 percent slopes	131.7	43.7%
18E	Brocko silt loam, 15 to 35 percent slopes	15.1	5.0%
80C	Floweree silt loam, 2 to 8 percent slopes	0.7	0.2%
83C	Shoddy silty clay loam, 2 to 8 percent slopes	20.6	6.8%
83D	Shoddy silty clay loam, 8 to 15 percent slopes	4.1	1.4%
191E	Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes	0.1	0.0%
851D	Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes	16.1	5.3%
BsB	Brocko silt loam, 2 to 5 percent slopes	23.7	7.9%
CaE	Cabbart complex, 9 to 35 percent slopes	8.9	2.9%
DhD	Delphill-Abor complex, 5 to 20 percent slopes	50.0	16.6%
<b>Totals for Area of Interest</b>		<b>301.4</b>	<b>100.0%</b>





## Dwellings and Small Commercial Buildings

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. This table shows the degree and kind of soil limitations that affect dwellings and small commercial buildings.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Dwellings* are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

*Small commercial buildings* are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Information in this table is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this table. Local ordinances and regulations should be considered in planning, in site selection, and in design.

### Report—Dwellings and Small Commercial Buildings

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Dwellings and Small Commercial Buildings—Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
11C—Amesha silt loam, 4 to 8 percent slopes							
Amesha	90	Not limited		Not limited		Somewhat limited	
						Slope	0.52

Dwellings and Small Commercial Buildings—Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
13C—Anamac loam, 2 to 8 percent slopes							
Anamac	90	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.10			Slope	0.14
						Shrink-swell	0.10
18C—Brocko silt loam, 2 to 8 percent slopes							
Brocko	95	Not limited		Not limited		Somewhat limited	
						Slope	0.14
18E—Brocko silt loam, 15 to 35 percent slopes							
Brocko	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
80C—Floweree silt loam, 2 to 8 percent slopes							
Floweree	95	Not limited		Not limited		Somewhat limited	
						Slope	0.14
83C—Shoddy silty clay loam, 2 to 8 percent slopes							
Shoddy	90	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
						Slope	0.14
83D—Shoddy silty clay loam, 8 to 15 percent slopes							
Shoddy	90	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
		Slope	0.63	Depth to soft bedrock	1.00	Shrink-swell	1.00
		Depth to soft bedrock	0.50	Slope	0.63	Depth to soft bedrock	1.00

Dwellings and Small Commercial Buildings--Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
191E--Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes							
Cabbart	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Shoddy	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Amesha	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
851D--Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes							
Walbert	35	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
Shoddy	25	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
Cabbart	20	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
BsB--Brocko silt loam, 2 to 5 percent slopes							
Brocko	85	Not limited		Not limited		Somewhat limited	
						Slope	0.01

Dwellings and Small Commercial Buildings—Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CaE—Cabbart complex, 9 to 35 percent slopes							
Cabbart	26	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Slope	1.00	Depth to soft bedrock	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Cabbart	24	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Slope	1.00	Depth to soft bedrock	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
DhD—Delphill-Abor complex, 5 to 20 percent slopes							
Delphill	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
		Shrink-swell	0.04	Depth to soft bedrock	0.10	Shrink-swell	0.04
				Shrink-swell	0.04		
Abor	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.84	Slope	0.84	Slope	1.00
				Depth to soft bedrock	0.01		

### Data Source Information

Soil Survey Area: Broadwater County Area, Montana

Survey Area Data: Version 20, Sep 2, 2021



## Source of Reclamation Material, Roadfill, and Topsoil

This table gives information about the soils as potential sources of reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

The soils are rated *good*, *fair*, or *poor* as potential sources of reclamation material, roadfill, and topsoil. The features that limit the soils as sources of these materials are specified in the table. Numerical ratings between 0.00 and 0.99 are given after the specified features. These numbers indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

*Reclamation material* is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

*Roadfill* is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments. The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

*Topsoil* is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Information in this table is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this table. Local ordinances and regulations should be considered in planning, in site selection, and in design.

## Report—Source of Reclamation Material, Roadfill, and Topsoil

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation]

Source of Reclamation Material, Roadfill, and Topsoil—Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Potential as a source of reclamation material		Potential as a source of roadfill		Potential as a source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
11C—Amesha silt loam, 4 to 8 percent slopes							
Amesha	90	Fair		Fair		Fair	
		Carbonate content	0.68	Dusty	0.96	Exchange capacity	0.81
		Low content of organic matter	0.88			Carbonate content	0.85
		Water erosion	0.90				
13C—Anamac loam, 2 to 8 percent slopes							
Anamac	90	Fair		Fair		Fair	
		Low content of organic matter	0.13	Dusty	0.94	Rock fragments	0.95
						Exchange capacity	0.96



Source of Reclamation Material, Roadfill, and Topsoil--Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Potential as a source of reclamation material		Potential as a source of roadfill		Potential as a source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
18C---Brocko silt loam, 2 to 8 percent slopes							
Brocko	95	Fair		Fair		Fair	
		Water erosion	0.37	Dusty	0.78	Carbonate content	0.81
		Carbonate content	0.68			Exchange capacity	0.96
		Low content of organic matter	0.88				
18E---Brocko silt loam, 15 to 35 percent slopes							
Brocko	85	Fair		Poor		Poor	
		Water erosion	0.37	Slope	0.00	Slope	0.00
		Carbonate content	0.68	Dusty	0.78	Carbonate content	0.81
		Low content of organic matter	0.88			Exchange capacity	0.96
80C---Floweree silt loam, 2 to 8 percent slopes							
Floweree	95	Fair		Fair		Fair	
		Water erosion	0.68	Dusty	0.77	Exchange capacity	0.96
		Low content of organic matter	0.88				
83C---Shoddy silty clay loam, 2 to 8 percent slopes							
Shoddy	90	Poor		Poor		Not rated	
		Low content of organic matter	0.00	Depth to bedrock	0.00		
		Depth to bedrock	0.00	Low strength	0.00		
		Droughty	0.00	Shrink-swell	0.13		
		Too clayey	0.09	Dusty	0.77		
83D---Shoddy silty clay loam, 8 to 15 percent slopes							
Shoddy	90	Poor		Poor		Not rated	
		Low content of organic matter	0.00	Depth to bedrock	0.00		
		Depth to bedrock	0.00	Low strength	0.00		
		Droughty	0.00	Shrink-swell	0.13		
		Too clayey	0.09	Dusty	0.77		

Source of Reclamation Material, Roadfill, and Topsoil--Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Potential as a source of reclamation material		Potential as a source of roadfill		Potential as a source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
191E—Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes							
Cabbart	35	Poor		Poor		Not rated	
		Low content of organic matter	0.00	Depth to bedrock	0.00		
		Depth to bedrock	0.00	Low strength	0.00		
		Droughty	0.01	Slope	0.00		
				Shrink-swell	0.87		
				Dusty	0.92		
Shoddy	25	Poor		Poor		Not rated	
		Low content of organic matter	0.00	Depth to bedrock	0.00		
		Depth to bedrock	0.00	Low strength	0.00		
		Droughty	0.00	Slope	0.00		
		Too clayey	0.09	Shrink-swell	0.13		
				Dusty	0.77		
Amesha	20	Fair		Poor		Poor	
		Low content of organic matter	0.13	Slope	0.00	Slope	0.00
		Carbonate content	0.68	Dusty	0.99	Rock fragments	0.38
		Water erosion	0.90			Exchange capacity	0.76
						Carbonate content	0.87

Source of Reclamation Material, Roadfill, and Topsoil--Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Potential as a source of reclamation material		Potential as a source of roadfill		Potential as a source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
851D---Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes							
Walbert	35	Poor		Poor		Not rated	
		Droughty	0.00	Depth to bedrock	0.00		
		Low content of organic matter	0.00	Low strength	0.00		
		Depth to bedrock	0.00				
		Too sandy	0.01				
Shoddy	25	Poor		Poor		Not rated	
		Low content of organic matter	0.00	Depth to bedrock	0.00		
		Depth to bedrock	0.00	Low strength	0.00		
		Droughty	0.00	Shrink-swell	0.13		
		Too clayey	0.09	Dusty	0.77		
		Water erosion	0.90				
Cabbart	20	Poor		Poor		Not rated	
		Low content of organic matter	0.00	Depth to bedrock	0.00		
		Depth to bedrock	0.00	Low strength	0.00		
		Droughty	0.02	Dusty	0.84		
		Carbonate content	0.92				
BsB---Brocko silt loam, 2 to 5 percent slopes							
Brocko	85	Fair		Fair		Fair	
		Water erosion	0.37	Dusty	0.78	Carbonate content	0.85
		Carbonate content	0.68			Exchange capacity	0.96
		Low content of organic matter	0.88				

Source of Reclamation Material, Roadfill, and Topsoil--Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Potential as a source of reclamation material		Potential as a source of roadfill		Potential as a source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CaE--Cabbart complex, 9 to 35 percent slopes							
Cabbart	26	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Slope	0.00
		Low content of organic matter	0.88	Slope	0.18	Exchange capacity	0.40
		Carbonate content	0.92	Shrink-swell	0.87	Salinity	0.88
		Water erosion	0.99	Dusty	0.90		
Cabbart	24	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Slope	0.00
		Low content of organic matter	0.88	Slope	0.18	Exchange capacity	0.41
		Carbonate content	0.92	Shrink-swell	0.87	Salinity	0.88
		Water erosion	0.99	Dusty	0.88		
DhD--Delphill-Abor complex, 5 to 20 percent slopes							
Delphill	40	Poor		Poor		Fair	
		Low content of organic matter	0.00	Low strength	0.00	Slope	0.16
		Depth to bedrock	0.90	Depth to bedrock	0.00	Depth to bedrock	0.90
		Droughty	0.99	Dusty	0.90	Exchange capacity	0.98
				Shrink-swell	0.99		
Abor	30	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.88	Depth to bedrock	0.00	Slope	0.16
		Depth to bedrock	0.99	Shrink-swell	0.13	Rock fragments	0.99
		Droughty	0.99	Dusty	0.77	Depth to bedrock	0.99

## Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021

## Sewage Disposal

This table shows the degree and kind of soil limitations that affect septic tank absorption fields and sewage lagoons. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Septic tank absorption fields* are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches or between a depth of 24 inches and a restrictive layer is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

*Sewage lagoons* are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Saturated hydraulic conductivity (Ksat) is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a Ksat rate of more than 14 micrometers per second are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

Information in this table is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this table. Local ordinances and regulations should be considered in planning, in site selection, and in design.

## Report—Sewage Disposal

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Sewage Disposal—Broadwater County Area, Montana					
Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
11C—Amesha silt loam, 4 to 8 percent slopes					
Amesha	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.92
				Seepage	0.50

Sewage Disposal—Broadwater County Area, Montana					
Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
13C—Anamac loam, 2 to 8 percent slopes					
Anamac	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
18C—Brocko silt loam, 2 to 8 percent slopes					
Brocko	95	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
18E—Brocko silt loam, 15 to 35 percent slopes					
Brocko	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
80C—Floweree silt loam, 2 to 8 percent slopes					
Floweree	95	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
83C—Shoddy silty clay loam, 2 to 8 percent slopes					
Shoddy	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Slope	0.68
83D—Shoddy silty clay loam, 8 to 15 percent slopes					
Shoddy	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.63	Slope	1.00

Sewage Disposal--Broadwater County Area, Montana					
Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
191E--Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes					
Cabbart	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
Shoddy	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Amesha	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
851D--Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes					
Walbert	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Seepage	1.00
				Slope	1.00
Shoddy	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	1.00
Cabbart	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	1.00
				Seepage	0.50
BsB--Brocko silt loam, 2 to 5 percent slopes					
Brocko	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
				Slope	0.32



Sewage Disposal--Broadwater County Area, Montana					
Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CaE--Cabbart complex, 9 to 35 percent slopes					
Cabbart	26	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
Cabbart	24	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
DhD--Delphill-Abor complex, 5 to 20 percent slopes					
Delphill	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.84	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Abor	30	Very limited		Very limited	
		Slow water movement	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	0.84		

## Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021



## Chemical Soil Properties

This table shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

*Cation-exchange capacity* is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

*Effective cation-exchange capacity* refers to the sum of extractable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

*Soil reaction* is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

*Calcium carbonate* equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

*Gypsum* is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

*Salinity* is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

*Sodium adsorption ratio (SAR)* is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced saturated hydraulic conductivity and aeration, and a general degradation of soil structure.

## Report—Chemical Soil Properties

Chemical Soil Properties—Broadwater County Area, Montana									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>		
11C—Amesha silt loam, 4 to 8 percent slopes									
Amesha	0-4	10-15	—	7.4-8.4	5-10	0	0	0	
	4-32	5.0-10	—	7.9-8.4	15-35	0	0	0	
	32-60	5.0-10	—	7.9-8.4	10-25	0	0.0-2.0	0	
13C—Anamac loam, 2 to 8 percent slopes									
Anamac	0-4	15-20	—	7.4-8.4	0-5	0	0	0	
	4-12	15-20	—	7.4-8.4	0-10	0	0	0	
	12-31	10-15	—	7.9-9.0	5-15	0	0.0-2.0	0	
	31-60	5.0-10	—	7.9-9.0	3-10	0	0.0-2.0	0	
18C—Brocko silt loam, 2 to 8 percent slopes									
Brocko	0-5	10-15	—	7.4-8.4	5-10	0	0	0	
	5-60	10-15	—	7.9-8.4	15-35	0	0.0-2.0	0	
18E—Brocko silt loam, 15 to 35 percent slopes									
Brocko	0-5	10-15	—	7.4-8.4	5-10	0	0	0	
	5-60	10-15	—	7.9-8.4	15-35	0	0.0-2.0	0	

Chemical Soil Properties--Broadwater County Area, Montana									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
	In	meq/100g	meq/100g	pH	Pct	Pct	mmhos/cm		
80C--Floweree silt loam, 2 to 8 percent slopes									
Floweree	0-7	15-20	—	6.6-7.8	0	0	0	0	
	7-16	10-15	—	6.6-7.8	0-5	0	0	0	
	16-60	10-15	—	7.9-8.4	5-15	0	0	0	
83C--Shoddy silty clay loam, 2 to 8 percent slopes									
Shoddy	0-1	25-30	—	7.4-9.0	0-5	0	0	0	
	1-5	25-30	—	7.4-9.0	0-10	0	0	0	
	5-16	25-30	—	7.4-9.0	5-15	0	0	0	
	16-60	—	—	—	—	—	—	—	
83D--Shoddy silty clay loam, 8 to 15 percent slopes									
Shoddy	0-1	25-30	—	7.4-9.0	0-5	0	0	0	
	1-5	25-30	—	7.4-9.0	0-10	0	0	0	
	5-16	25-30	—	7.4-9.0	5-15	0	0	0	
	16-60	—	—	—	—	—	—	—	

Chemical Soil Properties--Broadwater County Area, Montana									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>		
191E--Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes									
Cabbart	0-5	10-15	—	7.4-9.0	5-10	0	0.0-4.0	0	
	5-18	5.0-10	—	7.4-9.0	5-10	0	2.0-8.0	0	
	18-60	—	—	—	—	—	—	—	
Shoddy	0-1	25-30	—	7.4-9.0	0-5	0	0	0	
	1-5	25-30	—	7.4-9.0	0-10	0	0	0	
	5-16	25-30	—	7.4-9.0	5-15	0	0	0	
	16-60	—	—	—	—	—	—	—	
Amesha	0-4	10-15	—	7.4-8.4	5-10	0	0	0	
	4-29	5.0-10	—	7.9-8.4	15-35	0	0	0	
	29-60	5.0-10	—	7.9-8.4	10-25	0	0	0	

Chemical Soil Properties--Broadwater County Area, Montana									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>		
851D--Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes									
Walbert	0-4	5.0-15	—	6.6-7.8	0-5	0	0	0	
	4-16	0.0-5.0	—	6.6-7.8	0-10	0	0	0	
	16-60	—	—	—	—	—	—	—	
Shoddy	0-1	25-30	—	7.4-9.0	0-5	0	0	0	
	1-5	25-30	—	7.4-9.0	0-10	0	0	0	
	5-16	25-30	—	7.4-9.0	5-15	0	0	0	
	16-60	—	—	—	—	—	—	—	
Cabbart	0-3	10-15	—	7.4-9.0	5-10	0	0.0-4.0	0	
	3-16	5.0-10	—	7.4-9.0	10-15	0	0.0-4.0	1-5	
	16-18	5.0-10	—	7.4-9.0	15-25	1-5	2.0-8.0	1-5	
	18-60	—	—	—	—	—	—	—	
BsB--Brocko silt loam, 2 to 5 percent slopes									
Brocko	0-7	10-15	—	7.4-8.4	5-10	0	0	0	
	7-44	10-15	—	7.9-8.4	15-35	0	0	0	
	44-75	5.0-10	—	7.9-8.4	5-25	0	0.0-2.0	0-5	

Chemical Soil Properties--Broadwater County Area, Montana									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>		
CaE---Cabbart complex, 9 to 35 percent slopes									
Cabbart	0-3	10-15	—	7.4-8.4	5-10	0	0.0-4.0	0	
	3-15	5.0-10	—	7.4-8.4	10-15	0	0.0-4.0	1-5	
	15-60	—	5.0-10	—	15-25	0	2.0-8.0	1-5	
Cabbart	0-3	10-15	—	7.4-8.4	5-10	0	0.0-4.0	0	
	3-15	5.0-10	—	7.4-8.4	10-15	0	0.0-4.0	1-5	
	15-60	—	5.0-10	—	15-25	0	2.0-8.0	1-5	
DhD---Delphill-Abor complex, 5 to 20 percent slopes									
Delphill	0-4	15-20	—	6.6-8.4	0	0	0.0-4.0	0	
	4-19	15-20	—	6.6-8.4	5-10	0	0.0-4.0	0	
	19-35	10-15	—	7.9-8.6	5-15	0	0.0-4.0	0	
	35-60	—	—	—	—	—	—	—	
Abor	0-4	30-40	—	7.4-8.4	1-5	0	0.0-4.0	0	
	4-38	25-40	—	7.4-8.4	5-15	0	0.0-4.0	0-2	
	38-60	—	—	—	—	—	—	—	

## Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021



## Conservation Planning

This report provides those soil attributes for the conservation plan for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. It provides the soil description along with the slope, runoff, T Factor, WEI, WEG, Erosion class, Drainage class, Land Capability Classification, and the engineering Hydrologic Group and the erosion factors Kf, the representative percentage of fragments, sand, silt, and clay in the mineral surface horizon. Missing surface data may indicate the presence of an organic surface layer. Further information on these factors can be found in the National Soil Survey Handbook section 618 found at the url [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2\\_054223#00](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054223#00) .

## Report—Conservation Planning

Soil properties and interpretations for conservation planning. The surface mineral horizon properties are displayed. Organic surface horizons are not displayed.

Conservation Planning—Broadwater County Area, Montana																						
Map symbol and soil name	Pct. of map unit	Slope RV	USLE Slope Length ft.	Runoff	T Factor	WEI	WEG	Erosion	Drainage <sup>a</sup>	NIRR LCC	Hydro logic Group	Surface										
												Depths in.	Kf Factor	Frag-ments RV	Sand RV	Silt RV	Clay RV					
11C—Amesha silt loam, 4 to 8 percent slopes																						
Amesha	90	6.0	150	—	5	86	4L	—	Well drained	4e	B	0 - 3	.32	5	26	53	20					
13C—Anamac loam, 2 to 8 percent slopes																						
Anamac	90	5.0	173	—	5	48	6	—	Well drained	3e	B	0 - 3	.24	9	39	37	22					
18C—Brocko silt loam, 2 to 8 percent slopes																						
Brocko	95	5.0	173	—	5	86	4L	—	Well drained	4e	B	0 - 5	.43	—	14	71	14					
18E—Brocko silt loam, 15 to 35 percent slopes																						
Brocko	85	25.0	49	—	5	86	4L	—	Well drained	6e	B	0 - 5	.43	—	14	71	14					
80C—Floweree silt loam, 2 to 8 percent slopes																						
Floweree	95	5.0	173	—	5	48	6	—	Well drained	3e	B	0 - 7	.37	5	11	68	20					
83C—Shoddy silty clay loam, 2 to 8 percent slopes																						
Shoddy	90	5.0	173	—	2	48	6	—	Well drained	6e	D	0 - 1	.32	12	18	47	33					

Conservation Planning--Broadwater County Area, Montana

Map symbol and soil name	Pct. of map unit	Slope RV	USLE Slope Length ft.	Runoff	T Factor	WEI	WEG	Erosion	Drainage	NIRR LCC	Hydro logic Group	Surface						
												Depths in.	Kf Factor	Frag-ments RV	Sand RV	Silt RV	Clay RV	
83D--Shoddy silty clay loam, 8 to 15 percent slopes																		
Shoddy	90	12.0	75	—	2	48	6	—	Well drained	6e	D	0 - 1	.32	12	18	47	33	
191E--Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes																		
Cabbart	35	30.0	26	—	2	56	5	—	Well drained	7e	D	0 - 5	.32	27	39	37	22	
Shoddy	25	30.0	26	—	2	48	6	—	Well drained	7e	D	0 - 1	.32	12	18	47	33	
Amesha	20	30.0	26	—	5	56	5	—	Well drained	6e	B	0 - 3	.28	24	42	37	20	
851D--Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes																		
Walbert	35	9.0	98	—	2	86	3	—	Somewhat excessively drained	6e	D	0 - 3	.28	5	68	19	12	
Shoddy	25	9.0	98	—	2	48	6	—	Well drained	6e	D	0 - 1	.32	12	18	47	33	
Cabbart	20	9.0	98	—	2	86	4L	—	Well drained	6e	D	0 - 3	.32	8	39	37	22	
BsB--Brocko silt loam, 2 to 5 percent slopes																		
Brocko	85	4.0	200	—	5	86	4L	—	Well drained	4e	B	0 - 7	.43	—	14	71	14	
CaE--Cabbart complex, 9 to 35 percent slopes																		
Cabbart	26	22.0	49	—	2	86	4L	—	Well drained	7e	D	0 - 3	.43	8	39	37	22	
Cabbart	24	22.0	49	—	2	86	4L	—	Well drained	7e	D	0 - 3	.37	8	33	36	29	

Conservation Planning--Broadwater County Area, Montana																		
Map symbol and soil name	Pct. of map unit	Slope RV	USLE Slope Length ft.	Runoff	T Factor	WEI	WEG	Erosion	Drainage	NIRR LCC	Hydro Logic Group	Surface						
												Depths in.	Kf Factor	Frag-ments RV	Sand RV	Silt RV	Clay RV	
DhD--Delphill-Abor complex, 5 to 20 percent slopes																		
Delphill	40	13.0	75	—	3	48	6	—	Well drained	6e	C	0 - 3	.32	5	39	36	24	
Abor	30	13.0	75	—	3	86	4	—	Well drained	6e	D	0 - 3	.20	5	5	47	47	

### Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021

## Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow; help to keep snow on fields; and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

This table shows the height that locally grown trees and shrubs are expected to reach in 20 years on soils in the survey area. The estimates are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or of the Cooperative Extension Service or from a commercial nursery.

### Report—Windbreaks and Environmental Plantings

Windbreaks and Environmental Plantings--Broadwater County Area, Montana					
Map symbol and soil name	Trees having predicted 20-year average height of—				
	8 feet or less	>8 to 15 feet	>15 to 25 feet	>25 to 35 feet	>35 feet
11C—Amesha silt loam, 4 to 8 percent slopes					
Amesha	Skunkbush sumac	Common lilac Silver buffaloberry Common chokecherry Siberian crabapple Tatarian honeysuckle Rocky mountain juniper Siberian peashrub	Siberian elm Ponderosa pine Green ash Russian olive	—	—
13C—Anamac loam, 2 to 8 percent slopes					
Anamac	Western sandcherry Nanking cherry	Siberian peashrub Rocky mountain juniper Tatarian honeysuckle Common chokecherry Common lilac	Green ash Russian olive Ponderosa pine Blue spruce Siberian elm	—	—

Windbreaks and Environmental Plantings--Broadwater County Area, Montana					
Map symbol and soil name	Trees having predicted 20-year average height of--				
	8 feet or less	>8 to 15 feet	>15 to 25 feet	>25 to 35 feet	>35 feet
18C--Brocko silt loam, 2 to 8 percent slopes					
Brocko	Western sandcherry Skunkbush sumac	Siberian crabapple Blue spruce Common chokecherry Common lilac Siberian peashrub Rocky mountain juniper	Ponderosa pine Siberian elm Russian olive Green ash	—	—
18E--Brocko silt loam, 15 to 35 percent slopes					
Brocko	—	—	—	—	—
80C--Floweree silt loam, 2 to 8 percent slopes					
Floweree	Skunkbush sumac	Siberian peashrub Rocky mountain juniper Tatarian honeysuckle Siberian crabapple Common chokecherry Silver buffaloberry Common lilac	Russian olive Green ash Ponderosa pine	—	—
83C--Shoddy silty clay loam, 2 to 8 percent slopes					
Shoddy	Western sandcherry Skunkbush sumac	Siberian peashrub Russian olive Rocky mountain juniper Siberian crabapple Ponderosa pine	Siberian elm	—	—
83D--Shoddy silty clay loam, 8 to 15 percent slopes					
Shoddy	Western sandcherry Skunkbush sumac	Siberian peashrub Russian olive Rocky mountain juniper Siberian crabapple Ponderosa pine	Siberian elm	—	—

Windbreaks and Environmental Plantings--Broadwater County Area, Montana					
Map symbol and soil name	Trees having predicted 20-year average height of--				
	8 feet or less	>8 to 15 feet	>15 to 25 feet	>25 to 35 feet	>35 feet
191E--Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes					
Cabbart	---	---	---	---	---
Shoddy	---	---	---	---	---
Amesha	---	---	---	---	---
851D--Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes					
Walbert	---	---	---	---	---
Shoddy	Skunkbush sumac Western sandcherry	Ponderosa pine Siberian crabapple Rocky mountain juniper Russian olive Siberian peashrub	Siberian elm	---	---
Cabbart	---	---	---	---	---
BsB--Brocko silt loam, 2 to 5 percent slopes					
Brocko	Western sandcherry Skunkbush sumac	Siberian peashrub Rocky mountain juniper Siberian crabapple Blue spruce Common chokecherry Common lilac	Russian olive Green ash Ponderosa pine Siberian elm	---	---
CaE--Cabbart complex, 9 to 35 percent slopes					
Cabbart	---	---	---	---	---
Cabbart	---	---	---	---	---

Windbreaks and Environmental Plantings--Broadwater County Area, Montana					
Map symbol and soil name	Trees having predicted 20-year average height of--				
	8 feet or less	>8 to 15 feet	>15 to 25 feet	>25 to 35 feet	>35 feet
DhD--Delphill-Abor complex, 5 to 20 percent slopes					
Delphill	Western sandcherry Skunkbush sumac	Siberian peashrub Russian olive Rocky mountain juniper Ponderosa pine	Siberian elm	—	—
Abor	Western sandcherry Nanking cherry	Siberian peashrub Rocky mountain juniper Siberian crabapple Blue spruce Common chokecherry Common lilac	Russian olive Green ash Ponderosa pine Siberian elm	—	—

### Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021



## Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

*Hydrologic soil group* is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007 (<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

*Group A.* Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

*Group B.* Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

*Group C.* Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

*Group D.* Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

*Depth* to the upper and lower boundaries of each layer is indicated.

*Texture* is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

*Classification* of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

*Percentage of rock fragments* larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

*Percentage (of soil particles) passing designated sieves* is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

*Liquid limit and plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

## Report—Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk '\*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007 (<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties—Broadwater County Area, Montana														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
11C—Amesha silt loam, 4 to 8 percent slopes			In				L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H		
Amesha	90	B	0-4	Silt loam	CL, CL-ML	A-4, A-6	0-0-0	0-0-0	95-98-100	90-95-100	85-90-95	60-70-80	25-30-35	5-10-15
			4-32	Loam, sandy loam, silt loam	CL-ML, ML	A-4	0-0-0	0-3-5	95-98-100	90-95-100	70-80-90	55-65-75	20-25-30	NP-5-10
			32-60	Loam, fine sandy loam, gravelly sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0-0-0	0-5-10	65-83-100	55-78-100	45-65-85	25-45-65	20-25-30	NP-5-10
13C—Anamac loam, 2 to 8 percent slopes														
Anamac	90	B	0-4	Loam	CL-ML	A-4	0-0-0	0-0-0	90-95-100	80-90-100	70-83-95	50-63-75	25-28-30	5-8-10
			4-12	Loam, clay loam	CL, CL-ML	A-4, A-6	0-0-0	0-0-0	90-95-100	80-90-100	70-85-100	50-65-80	25-30-35	5-10-15
			12-31	Loam, clay loam	CL, CL-ML	A-4, A-6	0-0-0	0-0-0	90-95-100	80-90-100	70-85-100	50-65-80	25-30-35	5-10-15
			31-60	Loam, clay loam, gravelly sandy loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0-0-0	0-0-0	70-85-100	60-75-90	35-60-85	20-45-70	20-25-30	NP-5-10

Engineering Properties--Broadwater County Area, Montana

Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index	
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200			
18C--Brocko silt loam, 2 to 8 percent slopes			<i>In</i>												
Brocko	95 B		0-5	Silt loam	CL-ML, ML	A-4	0-0-0	0-0-0	100-100-100	100-100-100	85-90-95	70-80-90	20-25-30	NP-5-10	L-R-H
18E--Brocko silt loam, 15 to 35 percent slopes			5-60	Silt loam, loam, very fine sandy loam	CL-ML, ML	A-4	0-0-0	0-0-0	100-100-100	100-100-100	95-98-100	70-80-90	20-25-30	NP-5-10	L-R-H
Brocko	85 B		0-5	Silt loam	CL-ML, ML	A-4	0-0-0	0-0-0	100-100-100	100-100-100	85-90-95	70-80-90	20-25-30	NP-5-10	L-R-H
80C--Floweree silt loam, 2 to 8 percent slopes			5-60	Silt loam, loam, very fine sandy loam	CL-ML, ML	A-4	0-0-0	0-0-0	100-100-100	100-100-100	95-98-100	70-80-90	20-25-30	NP-5-10	L-R-H
Floweree	95 B		0-7	Silt loam	CL-ML, ML	A-4	0-0-0	0-0-0	95-98-100	90-95-100	85-93-100	60-75-90	20-25-30	NP-5-10	L-R-H
			7-16	Silt loam, very fine sandy loam	ML	A-4	0-0-0	0-0-0	95-98-100	90-95-100	85-93-100	70-78-85	20-23-25	NP-3-5	L-R-H
			16-60	Stratified very fine sandy loam to silt loam	ML	A-4	0-0-0	0-0-0	100-100-100	100-100-100	100-100-100	70-78-85	20-23-25	NP-3-5	L-R-H

Engineering Properties---Broadwater County Area, Montana														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number---				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
83C---Shoddy silty clay loam, 2 to 8 percent slopes			In											
Shoddy	90 D		0-1	Silty clay loam	CL	A-6	0-0-0	0-0-0	85-93-1 00	75-88-1 00	70-85-1 00	65-80- 95	30-35 -40	10-15-2 0
			1-5	Silty clay loam, silty clay, clay loam	CL	A-6	0-0-0	0-0-0	85-93-1 00	75-88-1 00	70-85-1 00	55-75- 95	30-35 -40	10-15-2 0
			5-16	Silty clay loam, silty clay, clay loam	CL	A-6, A-7	0-0-0	0-0-0	85-93-1 00	75-88-1 00	70-85-1 00	60-78- 95	35-43 -50	15-23-3 0
			16-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
83D---Shoddy silty clay loam, 8 to 15 percent slopes														
Shoddy	90 D		0-1	Silty clay loam	CL	A-6	0-0-0	0-0-0	85-93-1 00	75-88-1 00	70-85-1 00	65-80- 95	30-35 -40	10-15-2 0
			1-5	Silty clay loam, silty clay, clay loam	CL	A-6	0-0-0	0-0-0	85-93-1 00	75-88-1 00	70-85-1 00	55-75- 95	30-35 -40	10-15-2 0
			5-16	Silty clay loam, silty clay, clay loam	CL	A-6, A-7	0-0-0	0-0-0	85-93-1 00	75-88-1 00	70-85-1 00	60-78- 95	35-43 -50	15-23-3 0
			16-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Engineering Properties---Broadwater County Area, Montana														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number---				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
191E---Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes			<i>In</i>					L-R-H	L-R-H	L-R-H	L-R-H	L-R-H		
Cabbart	35 D		0-5	Gravelly loam	CL-ML, GC-GM, SC-SM	A-4	0-0-0	0-5-10	60-70-80	55-65-75	45-58-70	35-48-60	25-28-30	5-8-10
			5-18	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0-0-0	0-5-10	90-95-100	85-93-100	70-83-95	55-70-85	25-30-35	5-10-15
			18-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Shoddy	25 D		0-1	Silty clay loam	CL	A-6	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	65-80-95	30-35-40	10-15-20
			1-5	Silty clay loam, silty clay, clay loam	CL	A-6	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	55-75-95	30-35-40	10-15-20
			5-16	Silty clay loam, silty clay, clay loam	CL	A-6, A-7	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	60-78-95	35-43-50	15-23-30
			16-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Amesha	20 B		0-4	Gravelly loam	CL, CL-ML, GC, GC-GM	A-4, A-6	0-0-0	0-5-10	65-73-80	60-68-75	50-60-70	40-50-60	25-30-35	5-10-15
			4-29	Loam, gravelly loam	CL-ML, SC-SM	A-4	0-0-0	0-3-5	75-88-100	65-80-95	55-70-85	40-55-70	20-25-30	5-8-10
			29-60	Loam, gravelly loam	CL-ML, GC-GM, SC-SM	A-4	0-0-0	0-5-10	70-85-100	60-80-100	50-70-90	35-55-75	20-25-30	5-8-10

Engineering Properties---Broadwater County Area, Montana														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number---				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
851D---Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes			In				L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H		
Walbert	35 D		0-4	Coarse sandy loam	SC-SM	A-2, A-4	0-0-0	0-0-0	95-98-100	90-95-100	40-53-65	20-30-40	25-28-30	5-8-10
			4-16	Coarse sand, loamy coarse sand	SM	A-1, A-2-4	0-0-0	0-0-0	95-98-100	90-95-100	35-48-60	5-18-30	20-23-25	NP-3-5
			16-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Shoddy	25 D		0-1	Silty clay loam	CL	A-6	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	65-80-95	30-35-40	10-15-20
			1-5	Silty clay loam, silty clay, clay loam	CL	A-6	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	55-75-95	30-35-40	10-15-20
			5-16	Silty clay loam, silty clay, clay loam	CL	A-6, A-7	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	60-78-95	35-43-50	15-23-30
			16-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Cabbart	20 D		0-3	Loam	CL-ML	A-4	0-0-0	0-0-0	90-95-100	85-93-100	65-75-85	55-65-75	25-28-30	5-8-10
			3-16	Silt loam, loam	CL-ML	A-4	0-0-0	0-0-0	90-95-100	85-93-100	65-75-85	55-65-75	25-28-30	5-8-10
			16-18	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0-0-0	0-0-0	90-95-100	85-93-100	60-75-90	55-70-85	25-30-35	5-10-15
			18-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	---



Engineering Properties---Broadwater County Area, Montana														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
BsB---Brocko silt loam, 2 to 5 percent slopes			<i>In</i>					L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H
Brocko	85 B		0-7	Silt loam	CL-ML, ML	A-4	0-0-0	0-0-0	100-100-100	100-100-100	85-90-95	70-80-90	20-25-30	NP-5-10
			7-44	Silt loam, loam, very fine sandy loam	CL-ML, ML	A-4	0-0-0	0-0-0	100-100-100	100-100-100	95-98-100	70-80-90	20-25-30	NP-5-10
			44-75	Silt loam, loam, very fine sandy loam	CL-ML, ML	A-4	0-0-0	0-0-0	90-95-100	85-93-100	80-83-85	55-65-75	20-25-30	NP-5-10
CaE---Cabbart complex, 9 to 35 percent slopes														
Cabbart	26 D		0-3	Loam	CL-ML	A-4	0-0-0	0-0-0	90-95-100	85-93-100	65-75-85	55-65-75	25-28-30	5-8-10
			3-15	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0-0-0	0-0-0	90-95-100	85-93-100	60-75-90	55-70-85	25-30-35	5-10-15
			15-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Cabbart	24 D		0-3	Clay loam	CL	A-6	0-0-0	0-0-0	90-95-100	85-93-100	70-80-90	60-70-80	30-33-35	10-13-15
			3-15	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0-0-0	0-0-0	90-95-100	85-93-100	60-75-90	55-70-85	25-30-35	5-10-15
			15-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Engineering Properties—Broadwater County Area, Montana														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
DhD—Delphill-Abor complex, 5 to 20 percent slopes			In				L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H		
Delphill	40 C		0-4	Loam	CL-ML	A-4	0-0-0	C-0-0	95-98-100	90-95-100	75-83-90	55-65-75	20-25-30	5-8-10
			4-19	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0-0-0	C-0-0	95-98-100	90-95-100	85-90-95	65-75-85	20-30-40	5-13-20
			19-35	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0-0-0	C-0-0	95-98-100	90-95-100	85-90-95	65-75-85	20-30-40	5-13-20
			35-60	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—
Abor	30 D		0-4	Silty clay	CH, CL	A-7	0-0-0	C-0-0	95-98-100	90-95-100	80-90-100	75-85-95	40-50-60	20-28-35
			4-38	Silty clay, clay, silty clay loam	CH, CL	A-6, A-7	0-0-0	C-0-0	80-90-100	75-88-100	65-83-100	60-78-95	35-50-65	20-33-45
			38-60	Bedrock	—	—	—	—	—	—	—	—	—	—

### Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021

## Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

*Sand* as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

*Silt* as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

*Clay* as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity ( $K_{sat}$ ), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

*Moist bulk density* is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

*Saturated hydraulic conductivity (K<sub>sat</sub>)* refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (K<sub>sat</sub>) is considered in the design of soil drainage systems and septic tank absorption fields.

*Available water capacity* refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

*Linear extensibility* refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

*Organic matter* is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

*Erosion factors* are shown in the table as the K factor (K<sub>w</sub> and K<sub>f</sub>) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and K<sub>sat</sub>. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

*Erosion factor K<sub>w</sub>* indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

*Erosion factor K<sub>f</sub>* indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

*Erosion factor T* is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

*Wind erodibility groups* are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

*Wind erodibility index* is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (<http://soils.usda.gov>)

## Report—Physical Soil Properties

Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Physical Soil Properties—Broadwater County Area, Montana														
Map symbol and soil name	Depth <i>In</i>	Sand <i>Pct</i>	Silt <i>Pct</i>	Clay <i>Pct</i>	Moist bulk density <i>g/cc</i>	Saturated hydraulic conductivity <i>micro m/sec</i>	Available water capacity <i>In/In</i>	Linear extensibility <i>Pct</i>	Organic matter <i>Pct</i>	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
11C—Amesha silt loam, 4 to 8 percent slopes														
Amesha	0-4	-27-	-54-	15-20- 25	1.10-1.20 -1.30	4.00-9.00-14.00	0.18-0.20-0.22	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.32	.32	5	4L	86
	4-32	-45-	-41-	10-14- 18	1.30-1.43 -1.55	4.00-9.00-14.00	0.14-0.16-0.17	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.43	.43			
	32-60	-67-	-19-	10-14- 18	1.35-1.48 -1.60	4.00-9.00-14.00	0.12-0.14-0.15	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.15	.24			
13C—Anamac loam, 2 to 8 percent slopes														
Anamac	0-4	-40-	-38-	18-23- 27	1.15-1.25 -1.35	4.00-9.00-14.00	0.16-0.17-0.18	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.24	.24	5	6	48
	4-12	-39-	-37-	18-24- 30	1.25-1.35 -1.45	4.00-9.00-14.00	0.16-0.18-0.19	3.0- 4.5- 5.9	1.0- 1.5- 2.0	.32	.32			
	12-31	-39-	-37-	18-24- 30	1.30-1.40 -1.50	4.00-9.00-14.00	0.16-0.17-0.18	3.0- 4.5- 5.9	0.5- 0.8- 1.0	.32	.32			
	31-60	-66-	-15-	10-19- 30	1.30-1.43 -1.55	4.00-9.00-14.00	0.14-0.16-0.18	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.10	.20			

Physical Soil Properties—Broadwater County Area, Montana														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/in	Pct	Pct					
18C—Brocko silt loam, 2 to 8 percent slopes														
Brocko	0-5	-14-	-72-	10-14- 18	1.10-1.20 -1.30	4.00-9.00-14.00	0.18-0.20-0.22	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.43	.43	5	4L	86
	5-60	-14-	-72-	10-14- 18	1.20-1.30 -1.40	4.00-9.00-14.00	0.18-0.20-0.22	0.0- 1.5- 2.9	0.5-0.8- 1.0	.55	.55			
18E—Brocko silt loam, 15 to 35 percent slopes														
Brocko	0-5	-14-	-72-	10-14- 18	1.10-1.20 -1.30	4.00-9.00-14.00	0.18-0.20-0.22	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.43	.43	5	4L	86
	5-60	-14-	-72-	10-14- 18	1.20-1.30 -1.40	4.00-9.00-14.00	0.18-0.20-0.22	0.0- 1.5- 2.9	0.5-0.8- 1.0	.55	.55			
80C—Floweree silt loam, 2 to 8 percent slopes														
Floweree	0-7	-11-	-69-	15-20- 25	1.05-1.13 -1.20	4.00-9.00-14.00	0.16-0.18-0.20	0.0- 1.5- 2.9	2.0- 3.0- 4.0	.37	.37	5	6	48
	7-16	-14-	-69-	12-17- 22	1.15-1.28 -1.40	4.00-9.00-14.00	0.15-0.17-0.19	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.49	.49			
	16-60	-12-	-70-	12-19- 25	1.15-1.28 -1.40	4.00-9.00-14.00	0.15-0.17-0.19	0.0- 1.5- 2.9	0.5-0.8- 1.0	.49	.49			

Physical Soil Properties—Broadwater County Area, Montana														
Map symbol and soil name	Depth <i>In</i>	Sand <i>Pct</i>	Silt <i>Pct</i>	Clay <i>Pct</i>	Moist bulk density <i>g/cc</i>	Saturated hydraulic conductivity <i>micro m/sec</i>	Available water capacity <i>In/In</i>	Linear extensibility <i>Pct</i>	Organic matter <i>Pct</i>	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
83C—Shoddy silty clay loam, 2 to 8 percent slopes														
Shoddy	0-1	-19-	-48-	27-34-40	1.20-1.30 -1.40	0.42-0.91-1.40	0.17-0.19-0.20	3.0-4.5-5.9	1.0-1.5-2.0	.32	.32	2	6	48
	1-5	-8-	-56-	27-36-45	1.25-1.35 -1.45	0.42-0.91-1.40	0.16-0.18-0.19	3.0-4.5-5.9	1.0-1.5-2.0	.43	.43			
	5-16	-18-	-43-	35-39-50	1.30-1.40 -1.50	0.42-0.91-1.40	0.16-0.18-0.19	6.0-7.5-8.9	0.5-0.8-1.0	.37	.37			
	16-60	—	—	—	—	—	—	—	—	—	—	—	—	—
83D—Shoddy silty clay loam, 8 to 15 percent slopes														
Shoddy	0-1	-19-	-48-	27-34-40	1.20-1.30 -1.40	0.42-0.91-1.40	0.17-0.19-0.20	3.0-4.5-5.9	1.0-1.5-2.0	.32	.32	2	6	48
	1-5	-8-	-56-	27-36-45	1.25-1.35 -1.45	0.42-0.91-1.40	0.16-0.18-0.19	3.0-4.5-5.9	1.0-1.5-2.0	.43	.43			
	5-16	-18-	-43-	35-39-50	1.30-1.40 -1.50	0.42-0.91-1.40	0.16-0.18-0.19	6.0-7.5-8.9	0.5-0.8-1.0	.37	.37			
	16-60	—	—	—	—	—	—	—	—	—	—	—	—	—



Physical Soil Properties--Broadwater County Area, Montana														
Map symbol and soil name	Depth In	Sand Pct	Silt Pct	Clay Pct	Moist bulk density g/cc	Saturated hydraulic conductivity micro m/sec	Available water capacity In/In	Linear extensibility Pct	Organic matter Pct	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
191E-- Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes														
Cabbart	0-5	-40-	-38-	18-23- 27	1.20-1.30 -1.40	4.00-9.00-14.00	0.11-0.13-0.14	0.0- 1.5- 2.9	1.0- 1.5- 2.0	.17	.32	2	5	56
	5-18	-38-	-36-	18-27- 35	1.30-1.40 -1.50	4.00-9.00-14.00	0.16-0.18-0.20	3.0- 4.5- 5.9	0.5-0.8- 1.0	.37	.37			
	18-60	—	—	—	—	—	—	—	—	—	—	—	—	—
Shoddy	0-1	-19-	-48-	27-34- 40	1.20-1.30 -1.40	0.42-0.91-1.40	0.17-0.19-0.20	3.0- 4.5- 5.9	1.0- 1.5- 2.0	.32	.32	2	6	48
	1-5	- 8-	-56-	27-36- 45	1.25-1.35 -1.45	0.42-0.91-1.40	0.16-0.18-0.19	3.0- 4.5- 5.9	1.0- 1.5- 2.0	.43	.43			
	5-16	-18-	-43-	35-39- 50	1.30-1.40 -1.50	0.42-0.91-1.40	0.16-0.18-0.19	6.0- 7.5- 8.9	0.5-0.8- 1.0	.37	.37			
	16-60	—	—	—	—	—	—	—	—	—	—	—	—	—
Amesha	0-4	-42-	-38-	15-20- 25	1.15-1.25 -1.35	4.00-9.00-14.00	0.13-0.15-0.16	0.0- 1.5- 2.9	1.0-2.0- 3.0	.15	.28	5	5	56
	4-29	-45-	-41-	10-14- 18	1.25-1.38 -1.50	4.00-9.00-14.00	0.12-0.14-0.16	0.0- 1.5- 2.9	0.5-0.8- 1.0	.43	.43			
	29-60	-45-	-41-	10-14- 18	1.30-1.43 -1.55	4.00-9.00-14.00	0.12-0.14-0.15	0.0- 1.5- 2.9	0.0-0.3- 0.5	.24	.43			

Physical Soil Properties---Broadwater County Area, Montana														
Map symbol and soil name	Depth In	Sand Pct	Silt Pct	Clay Pct	Moist bulk density g/cc	Saturated hydraulic conductivity micro m/sec	Available water capacity In/In	Linear extensibility Pct	Organic matter Pct	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
851D---Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes														
Walbert	0-4	-69-	-19-	4-12- 20	1.35-1.43 -1.50	14.00-28.00-42.00	0.07-0.09-0.10	0.0- 1.5- 2.9	1.0- 1.5- 2.0	.28	.28	2	3	86
	4-16	-89-	- 4-	4- 7- 10	1.50-1.60 -1.70	42.00-92.00-141.00	0.04-0.06-0.07	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.20	.20			
	16-60	—	—	—	—	—	—	—	—					
Shoddy	0-1	-19-	-48-	27-34- 40	1.20-1.30 -1.40	0.42-0.91-1.40	0.17-0.19-0.20	3.0- 4.5- 5.9	1.0- 1.5- 2.0	.32	.32	2	6	48
	1-5	- 8-	-56-	27-36- 45	1.25-1.35 -1.45	0.42-0.91-1.40	0.16-0.18-0.19	3.0- 4.5- 5.9	1.0- 1.5- 2.0	.43	.43			
	5-16	-18-	-43-	35-39- 50	1.30-1.40 -1.50	0.42-0.91-1.40	0.16-0.18-0.19	6.0- 7.5- 8.9	0.5- 0.8- 1.0	.37	.37			
	16-60	—	—	—	—	—	—	—	—					
Cabbart	0-3	-40-	-38-	18-23- 27	1.20-1.30 -1.40	4.00-9.00-14.00	0.17-0.19-0.21	0.0- 1.5- 2.9	1.0- 1.5- 2.0	.32	.32	2	4L	86
	3-16	-25-	-53-	18-23- 27	1.20-1.30 -1.40	4.00-9.00-14.00	0.16-0.18-0.20	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.49	.49			
	16-18	-38-	-36-	18-27- 35	1.30-1.40 -1.50	4.00-9.00-14.00	0.15-0.17-0.19	3.0- 4.5- 5.9	0.5- 0.8- 1.0	.37	.37			
	18-60	—	—	—	—	—	—	—	—					



Physical Soil Properties—Broadwater County Area, Montana														
Map symbol and soil name	Depth <i>In</i>	Sand <i>Pct</i>	Silt <i>Pct</i>	Clay <i>Pct</i>	Moist bulk density <i>g/cc</i>	Saturated hydraulic conductivity <i>micro m/sec</i>	Available water capacity <i>In/In</i>	Linear extensibility <i>Pct</i>	Organic matter <i>Pct</i>	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
BsB—Brocko silt loam, 2 to 5 percent slopes														
Brocko	0-7	-14-	-72-	10-14- 18	1.10-1.20 -1.30	4.00-9.00-14.00	0.18-0.20-0.22	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.43	.43	5	4L	86
	7-44	-14-	-72-	10-14- 18	1.20-1.30 -1.40	4.00-9.00-14.00	0.18-0.20-0.22	0.0- 1.5- 2.9	0.5-0.8- 1.0	.55	.55			
	44-75	-14-	-72-	10-14- 18	1.20-1.35 -1.50	4.00-9.00-14.00	0.16-0.18-0.20	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.55	.55			
CaE—Cabbart complex, 9 to 35 percent slopes														
Cabbart	0-3	-40-	-38-	18-23- 27	1.20-1.30 -1.40	4.00-9.00-14.00	0.17-0.19-0.21	0.0- 1.5- 2.9	1.0- 1.5- 2.0	.43	.43	2	4L	86
	3-15	-34-	-38-	18-28- 35	1.20-1.30 -1.40	4.00-9.00-14.00	0.15-0.17-0.19	3.0- 4.5- 5.9	0.5-0.8- 1.0	.37	.37			
	15-60	—	—	—	1.30-1.40 -1.50	—	—	—	0.5-0.8- 1.0					
Cabbart	0-3	-34-	-37-	27-30- 32	1.25-1.35 -1.45	4.00-9.00-14.00	0.14-0.16-0.18	3.0- 4.5- 5.9	1.0- 1.5- 2.0	.37	.37	2	4L	86
	3-15	-34-	-37-	18-30- 35	1.20-1.30 -1.40	4.00-9.00-14.00	0.15-0.17-0.19	3.0- 4.5- 5.9	0.5-0.8- 1.0	.37	.37			
	15-60	—	—	—	1.30-1.40 -1.50	—	—	—	0.5-0.8- 1.0					

Physical Soil Properties—Broadwater County Area, Montana														
Map symbol and soil name	Depth <i>In</i>	Sand <i>Pct</i>	Silt <i>Pct</i>	Clay <i>Pct</i>	Moist bulk density <i>g/cc</i>	Saturated hydraulic conductivity <i>micro m/sec</i>	Available water capacity <i>In/In</i>	Linear extensibility <i>Pct</i>	Organic matter <i>Pct</i>	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
DhD—Delphill- Abor complex, 5 to 20 percent slopes														
Delphill	0-4	-39-	-37-	20-24-27	1.15-1.25 -1.35	4.00-9.00-14.00	0.16-0.18-0. 20	0.0-1.5-2.9	1.0-2.0- 3.0	.32	.32	3	6	48
	4-19	-34-	-38-	18-28-35	1.30-1.40 -1.50	4.00-9.00-14.00	0.14-0.16-0. 18	0.0-1.5-2.9	0.5-0.8- 1.0	.32	.32			
	19-35	-34-	-38-	18-28-35	1.30-1.43 -1.55	4.00-9.00-14.00	0.14-0.16-0. 18	3.0-4.5-5.9	0.0-0.3- 0.5	.43	.43			
	35-60	—	—	—	—	—	—	—	—	—	—	—	—	—
Abor	0-4	-6-	-47-	40-48-55	1.20-1.30 -1.40	1.40-2.70-4.00	0.14-0.16-0. 18	6.0-7.5-8.9	1.0-1.5- 2.0	.20	.20	3	4	86
	4-38	-23-	-29-	35-48-60	1.30-1.43 -1.55	0.01-0.22-0.42	0.14-0.15-0. 16	6.0-7.5-8.9	0.5-0.8- 1.0	.28	.28			
	38-60	—	—	—	—	—	—	—	—	—	—	—	—	—

### Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021

## Hydrologic Soil Group and Surface Runoff

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

*Hydrologic soil groups* are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

*Surface runoff* refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

### Report—Hydrologic Soil Group and Surface Runoff

Absence of an entry indicates that the data were not estimated. The dash indicates no documented presence.

Hydrologic Soil Group and Surface Runoff--Broadwater County Area, Montana			
Map symbol and soil name	Pct. of map unit	Surface Runoff	Hydrologic Soil Group
11C—Amesha silt loam, 4 to 8 percent slopes			
Amesha	90	—	B

Hydrologic Soil Group and Surface Runoff--Broadwater County Area, Montana			
Map symbol and soil name	Pct. of map unit	Surface Runoff	Hydrologic Soil Group
13C—Anamac loam, 2 to 8 percent slopes			
Anamac	90	— B	
18C—Brocko silt loam, 2 to 8 percent slopes			
Brocko	95	— B	
18E—Brocko silt loam, 15 to 35 percent slopes			
Brocko	85	— B	
80C—Floweree silt loam, 2 to 8 percent slopes			
Floweree	95	— B	
83C—Shoddy silty clay loam, 2 to 8 percent slopes			
Shoddy	90	— D	
83D—Shoddy silty clay loam, 8 to 15 percent slopes			
Shoddy	90	— D	
191E—Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes			
Cabbart	35	— D	
Shoddy	25	— D	
Amesha	20	— B	
851D—Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes			
Walbert	35	— D	
Shoddy	25	— D	
Cabbart	20	— D	
BsB—Brocko silt loam, 2 to 5 percent slopes			
Brocko	85	— B	
CaE—Cabbart complex, 9 to 35 percent slopes			
Cabbart	26	— D	
Cabbart	24	— D	
DhD—Delphill-Abor complex, 5 to 20 percent slopes			
Delphill	40	— C	
Abor	30	— D	

## Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021

## Water Features

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

*Hydrologic soil groups* are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

*Surface runoff* refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

The *months* in the table indicate the portion of the year in which a water table, ponding, and/or flooding is most likely to be a concern.

*Water table* refers to a saturated zone in the soil. The water features table indicates, by month, depth to the top ( *upper limit* ) and base ( *lower limit* ) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table. The kind of water table, apparent or perched, is given if a seasonal high water table exists in the soil. A water table is perched if free water is restricted from moving downward in the soil by a restrictive feature, in most cases a hardpan; there is a dry layer of soil underneath a wet layer. A water table is apparent if free water is present in all horizons from its upper boundary to below 2 meters or to the depth of observation. The water table kind listed is for the first major component in the map unit.

*Ponding* is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as *none*, *rare*, *occasional*, and *frequent*. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

*Flooding* is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

*Duration* and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as *none*, *very rare*, *rare*, *occasional*, *frequent*, and *very frequent*. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.



Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

## Report—Water Features

Map unit symbol and soil name	Hydrologic group	Surface runoff	Most likely months	Water table		Ponding			Flooding				
				Upper limit	Lower limit	Kind	Surface depth	Duration	Frequency	Duration	Frequency		
				Ft	Ft								
11C—Amesha silt loam, 4 to 8 percent slopes													
Amesha	B		Jan-Dec	—	—	—	—	—	—	—	—	—	None
13C—Anamac loam, 2 to 8 percent slopes													
Anamac	B		Jan-Dec	—	—	—	—	—	—	—	—	—	None
18C—Brocko silt loam, 2 to 8 percent slopes													
Brocko	B		Jan-Dec	—	—	—	—	—	—	—	—	—	None
18E—Brocko silt loam, 15 to 35 percent slopes													
Brocko	B		Jan-Dec	—	—	—	—	—	—	—	—	—	None
80C—Floweree silt loam, 2 to 8 percent slopes													
Floweree	B		Jan-Dec	—	—	—	—	—	—	—	—	—	None
83C—Shoddy silty clay loam, 2 to 8 percent slopes													
Shoddy	D		Jan-Dec	—	—	—	—	—	—	—	—	—	None
83D—Shoddy silty clay loam, 8 to 15 percent slopes													
Shoddy	D		Jan-Dec	—	—	—	—	—	—	—	—	—	None
191E—Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes													
Cabbart	D		Jan-Dec	—	—	—	—	—	—	—	—	—	None
Shoddy	D		Jan-Dec	—	—	—	—	—	—	—	—	—	None
Amesha	B		Jan-Dec	—	—	—	—	—	—	—	—	—	None
851D—Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes													
Walbert	D		Jan-Dec	—	—	—	—	—	—	—	—	—	None
Shoddy	D		Jan-Dec	—	—	—	—	—	—	—	—	—	None
Cabbart	D		Jan-Dec	—	—	—	—	—	—	—	—	—	None

Map unit symbol and soil name	Hydrologic group	Surface runoff	Most likely months	Water table			Ponding			Flooding	
				Upper limit	Lower limit	Kind	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	Ft		Ft				
BsB—Brocko silt loam, 2 to 5 percent slopes											
Brocko	B		Jan-Dec	—	—	—	—	—	None	—	None
CaE—Cabbart complex, 9 to 35 percent slopes											
Cabbart	D		Jan-Dec	—	—	—	—	—	None	—	None
Cabbart	D		Jan-Dec	—	—	—	—	—	None	—	None
DhD—Delphill-Abor complex, 5 to 20 percent slopes											
Delphill	C		Jan-Dec	—	—	—	—	—	None	—	None
Abor	D		Jan-Dec	—	—	—	—	—	None	—	None

### Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021



**Letter requesting a revocation of agricultural covenants**

Not Applicable

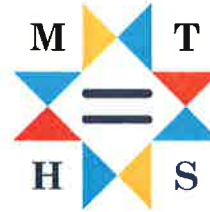
No existing agricultural covenants are associated with this property.



**From:** Murdo, Damon <dmurdo@mt.gov>  
**Sent:** Thursday, February 16, 2023 2:59 PM  
**To:** bdreyer@alpinesurveying.net  
**Subject:** RE: [EXTERNAL] FW: Six Ranges Ranch  
**Attachments:** 2023021605.pdf; Reports.pdf

February 16, 2023

William Dreyer  
Alpine Surveying & Engineering  
714 Stoneridge Dr, Suite 3  
Bozeman MT 59718



**MONTANA**  
HISTORICAL SOCIETY

Historic Preservation Office  
1301 E. Lockey, PO Box 201202  
Helena, MT 59620-1202

RE: SIX RANGES RANCH 11-LOT MAJOR SUBDIVISION, BROADWATER COUNTY. SHPO Project #: 2023021605

Dear Mr. Dreyer:

I have conducted a file search for the above-cited project located in Section 31, T3N R1E. According to our records there have been no previously recorded sites within the designated search locale. The absence of cultural properties in the area does not mean that they do not exist but rather may reflect the absence of any previous cultural resource inventory in the area, as our records indicated only one. I've attached a list of the report. If you would like any further information regarding the report, you may contact me at the number listed below.

It is SHPO's position that any structure over fifty years of age is considered historic and is potentially eligible for listing in the National Register of Historic Places. If any structures are within the Area of Potential Effect, and are over fifty years old, we would recommend that they be recorded, and a determination of their eligibility be made prior to any disturbance taking place.

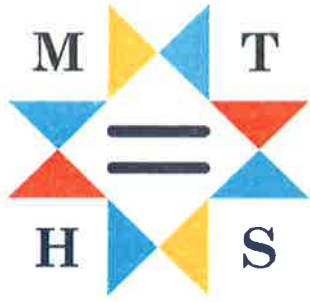
As long as there will be no disturbance or alteration to structures over fifty years of age, we feel that there is a low likelihood cultural properties will be impacted. We, therefore, feel that a recommendation for a cultural resource inventory is unwarranted at this time. However, should structures need to be altered or if cultural materials be inadvertently discovered during this project, we would ask that our office be contacted, and the site investigated.

If you have any further questions or comments, you may contact me at (406) 444-7767 or by e-mail at [dmurdo@mt.gov](mailto:dmurdo@mt.gov). I have attached an invoice for the file search. Thank you for consulting with us.

Sincerely,

Damon Murdo  
Cultural Records Manager  
State Historic Preservation Office

File: LOCAL/SUBDIVISIONS/2023



**MONTANA**  
HISTORICAL SOCIETY

Historic Preservation Office  
1301 E. Lockey, PO Box 201202  
Helena, MT 59620-1202

**FILE SEARCH REQUEST  
INVOICE**

DATE: 16-Feb-23

SHPO Invoice #: **2023021605**

**Bill To:**

**Contact Name:** William Dreyer  
**Organization:** Alpine Surveying & Engineering  
**Address:** 714 Stoneridge Dr, Suite 3  
**City/State/Zip:** Bozeman MT 59718

**File Search Fee Structure**

\$35 / Section Searched

**For questions contact:**

**Damon Murdo**  
dmurdo@mt.gov  
406-444-7767

Project Name:

SIX RANGES RANCH 11-LOT MAJOR  
SUBDIVISION, BROADWATER COUNTY

**Total Cost:**

**\$35.00**

**Total sections searched for SHPO Project #: 2023021605**

**1**

**Please make all checks payable to:**

Montana Historical Society  
PO Box 201201  
Helena, MT 59620

**\*\* PAY ONLINE HERE \*\***

<https://svc.mt.gov/doa/opp/HISSHPO/cart>

**Due upon receipt. Please pay within 30 days.**

MTHS Accounting	604	604.1
Use Only	29.75	5.25





**STATE HISTORIC PRESERVATION OFFICE  
Montana Cultural Resource Database**

CRABS Township, Range, Section Results

Report Date: 2/16/2023

Township: 8 N Range: 1 E Section: 31

**MCCARLEY BILLY J.**

8/13/2021

PHASE I ARCHAEOLOGICAL SURVEY OF THE PROPOSED THREE FORKS ELEMENTARY TELECOMMUNICATIONS FACILITY IN THREE FORKS,

CRABS Document Number: BW 6 41044

Agency Document Number: 51752



**Variance request**

Not Applicable

No Variance request is associated with this subdivision.



**Re-zoning (or Conditional Use Permit) application or approval**

Not Applicable

No rezoning request is associated with this subdivision.



**An engineering study that identifies the Base Flood Elevation (BFE)**

Not Applicable

No engineering study that identifies the Base Flood Elevation (BFE) is required with this subdivision. See attached FIRM map.





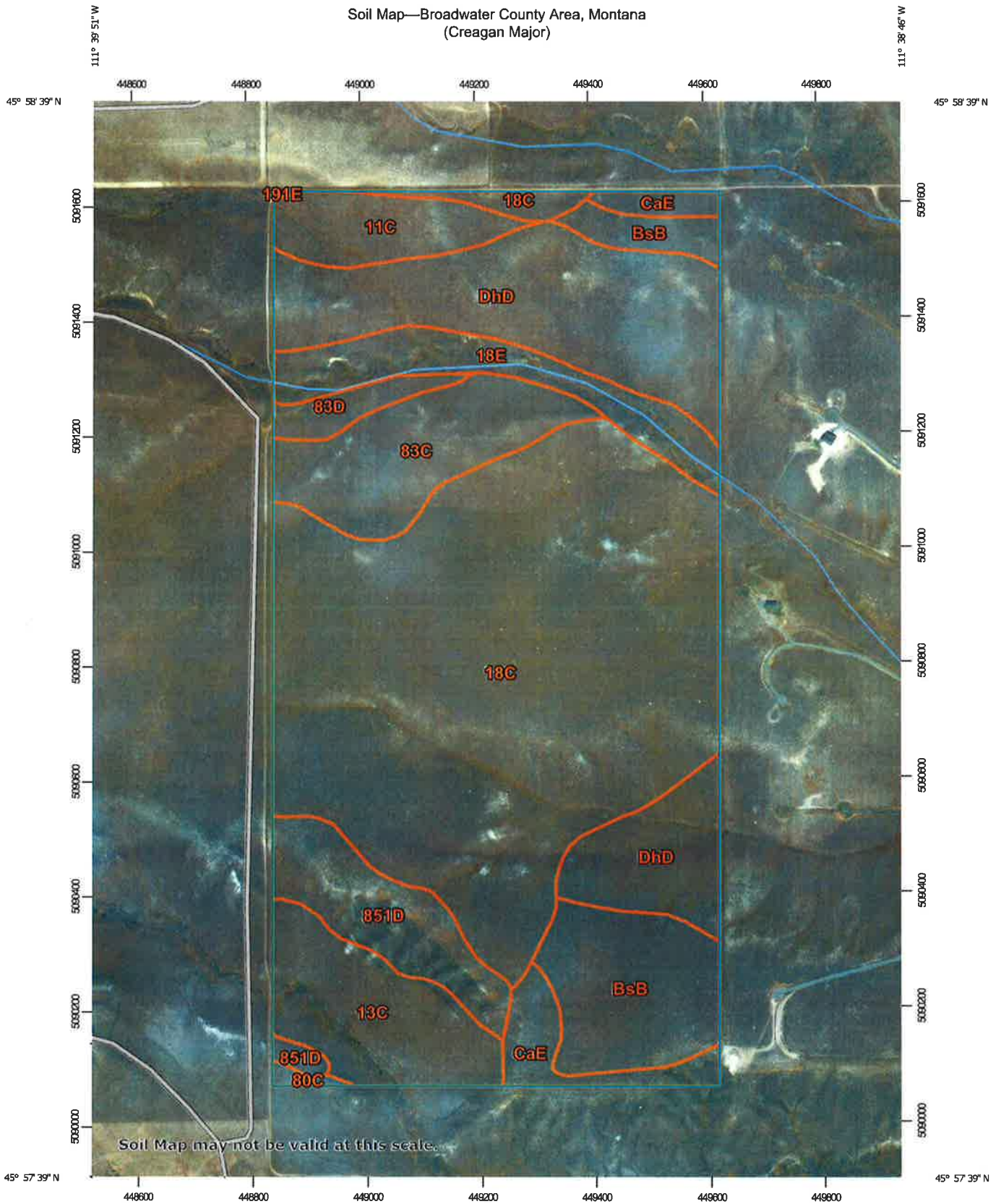
**Letter identifying and proposing mitigation for potential hazards or other adverse impacts as identified in the pre-application meeting and not covered by any of the above required materials**

Development in rural areas always has the potential for natural hazards to occur. There is no identified hazard due to snow or rockslides, wildfire, or excessive slopes. The seismic risk affecting the subject property is common to the Three Forks Valley and can be mitigated by current building codes. Some risks related to wildfire are associated with this project but can be mitigated with the public water system and fire hydrants. High groundwater areas are not found within the property. Expansive soils have been found in the surrounding area. The soil conditions can be mitigated with proper foundation and geotechnical design.

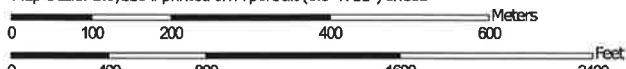
Man-made Hazards consist of surrounding road conditions. The road conditions can be mitigated by shared road users' maintenance agreements. The owners have indicated that they have had discussions with the HOA representative of Rolling Glenn Subdivision in regards to road maintenance of the shared interior public roads.



Soil Map—Broadwater County Area, Montana  
(Creagan Major)









































Map Scale: 1:9,110 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84



## MAP LEGEND

- |  |  |   |
|--|--|---|
|  Area of Interest (AOI) |  Area of Interest (AOI) |  Spoil Area            |
| <b>Soils</b>   |  Soil Map Unit Polygons |  Stony Spot            |
|  |  Soil Map Unit Lines    |  Very Stony Spot       |
|  |  Soil Map Unit Points   |  Wet Spot              |
| <b>Special Point Features</b>  |  Blowout                |  Other                 |
|  |  Borrow Pit              |  Special Line Features |
|  |  Clay Spot                | <b>Water Features</b>   |
|  |  Closed Depression        |  Streams and Canals     |
|  |  Gravel Pit               | <b>Transportation</b>   |
|  |  Gravelly Spot            |  RRR Ralls               |
|  |  Landfill                 |  Interstate Highways     |
|  |  Lava Flow                |  US Routes               |
|  |  Marsh or swamp           |  Major Roads             |
|  |  Mine or Quarry           |  Local Roads             |
|  |  Miscellaneous Water      |  Background              |
|  |  Perennial Water          |  Aerial Photography      |
|  |  Rock Outcrop             |   |
|  |  Saline Spot              |   |
|  |  Sandy Spot               |   |
|  |  Severely Eroded Spot     |   |
|  |  Sinkhole                 |   |
|  |  Slide or Slip            |   |
|  |  Sodic Spot               |   |

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Broadwater County Area, Montana  
Survey Area Data: Version 20, Sep 2, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 10, 2012—Nov 12, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
11C	Amesha silt loam, 4 to 8 percent slopes	10.6	3.5%
13C	Anamac loam, 2 to 8 percent slopes	19.7	6.5%
18C	Brocko silt loam, 2 to 8 percent slopes	131.7	43.7%
18E	Brocko silt loam, 15 to 35 percent slopes	15.1	5.0%
80C	Floweree silt loam, 2 to 8 percent slopes	0.7	0.2%
83C	Shoddy silty clay loam, 2 to 8 percent slopes	20.6	6.8%
83D	Shoddy silty clay loam, 8 to 15 percent slopes	4.1	1.4%
191E	Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes	0.1	0.0%
851D	Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes	16.1	5.3%
BsB	Brocko silt loam, 2 to 5 percent slopes	23.7	7.9%
CaE	Cabbart complex, 9 to 35 percent slopes	8.9	2.9%
DhD	Delphill-Abor complex, 5 to 20 percent slopes	50.0	16.6%
<b>Totals for Area of Interest</b>		<b>301.4</b>	<b>100.0%</b>



## Water Features

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

*Hydrologic soil groups* are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

*Surface runoff* refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

The *months* in the table indicate the portion of the year in which a water table, ponding, and/or flooding is most likely to be a concern.

*Water table* refers to a saturated zone in the soil. The water features table indicates, by month, depth to the top ( *upper limit* ) and base ( *lower limit* ) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table. The kind of water table, apparent or perched, is given if a seasonal high water table exists in the soil. A water table is perched if free water is restricted from moving downward in the soil by a restrictive feature, in most cases a hardpan; there is a dry layer of soil underneath a wet layer. A water table is apparent if free water is present in all horizons from its upper boundary to below 2 meters or to the depth of observation. The water table kind listed is for the first major component in the map unit.

*Ponding* is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

*Flooding* is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

*Duration* and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.



Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

## Report—Water Features

Map unit symbol and soil name	Hydrologic group	Surface runoff	Most likely months	Water table			Ponding			Flooding	
				Upper limit	Lower limit	Kind	Surface depth	Duration	Frequency	Duration	Frequency
11C—Amesha silt loam, 4 to 8 percent slopes											
Amesha	B		Jan-Dec	—	—	—	—	—	None	—	None
13C—Anamac loam, 2 to 8 percent slopes											
Anamac	B		Jan-Dec	—	—	—	—	—	None	—	None
18C—Brocko silt loam, 2 to 8 percent slopes											
Brocko	B		Jan-Dec	—	—	—	—	—	None	—	None
18E—Brocko silt loam, 15 to 35 percent slopes											
Brocko	B		Jan-Dec	—	—	—	—	—	None	—	None
80C—Floweree silt loam, 2 to 8 percent slopes											
Floweree	B		Jan-Dec	—	—	—	—	—	None	—	None
83C—Shoddy silty clay loam, 2 to 8 percent slopes											
Shoddy	D		Jan-Dec	—	—	—	—	—	None	—	None
83D—Shoddy silty clay loam, 8 to 15 percent slopes											
Shoddy	D		Jan-Dec	—	—	—	—	—	None	—	None
191E—Cabhart-Shoddy-Amesha complex, 15 to 45 percent slopes:											
Cabhart	D		Jan-Dec	—	—	—	—	—	None	—	None
Shoddy	D		Jan-Dec	—	—	—	—	—	None	—	None
Amesha	B		Jan-Dec	—	—	—	—	—	None	—	None
851D—Walbert-Shoddy-Cabhart complex, 2 to 15 percent slopes											
Walbert	D		Jan-Dec	—	—	—	—	—	None	—	None
Shoddy	D		Jan-Dec	—	—	—	—	—	None	—	None
Cabhart	D		Jan-Dec	—	—	—	—	—	None	—	None

Map unit symbol and soil name	Hydrologic group	Surface runoff	Most likely months	Water table			Surface depth	Ponding		Flooding	
				Upper limit	Lower limit	Kind		Duration	Frequency	Duration	Frequency
BSB---Brocko silt loam, 2 to 5 percent slopes											
Brocko	B		Jan-Dec	---	---	---	---	---	None	---	None
CaE---Cabbart complex, 9 to 35 percent slopes											
Cabbart	D		Jan-Dec	---	---	---	---	---	None	---	None
Cabbart	D		Jan-Dec	---	---	---	---	---	None	---	None
DhD---Delphill-Abor complex, 5 to 20 percent slopes											
Delphill	C		Jan-Dec	---	---	---	---	---	None	---	None
Abor	D		Jan-Dec	---	---	---	---	---	None	---	None

### Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021



## Dwellings and Small Commercial Buildings

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. This table shows the degree and kind of soil limitations that affect dwellings and small commercial buildings.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Dwellings* are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

*Small commercial buildings* are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Information in this table is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this table. Local ordinances and regulations should be considered in planning, in site selection, and in design.

## Report—Dwellings and Small Commercial Buildings

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Dwellings and Small Commercial Buildings—Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
11C—Amesha silt loam, 4 to 8 percent slopes							
Amesha	90	Not limited		Not limited		Somewhat limited	
						Slope	0.52

Dwellings and Small Commercial Buildings--Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
13C--Anamac loam, 2 to 8 percent slopes							
Anamac	90	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.10			Slope	0.14
						Shrink-swell	0.10
18C--Brocko silt loam, 2 to 8 percent slopes							
Brocko	95	Not limited		Not limited		Somewhat limited	
						Slope	0.14
18E--Brocko silt loam, 15 to 35 percent slopes							
Brocko	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
80C--Floweree silt loam, 2 to 8 percent slopes							
Floweree	95	Not limited		Not limited		Somewhat limited	
						Slope	0.14
83C--Shoddy silty clay loam, 2 to 8 percent slopes							
Shoddy	90	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
						Slope	0.14
83D--Shoddy silty clay loam, 8 to 15 percent slopes							
Shoddy	90	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
		Slope	0.63	Depth to soft bedrock	1.00	Shrink-swell	1.00
		Depth to soft bedrock	0.50	Slope	0.63	Depth to soft bedrock	1.00

Dwellings and Small Commercial Buildings--Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
191E--Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes							
Cabbart	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Shoddy	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Amesha	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
851D--Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes							
Walbert	35	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
Shoddy	25	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
Cabbart	20	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
BsB--Brocko silt loam, 2 to 5 percent slopes							
Brocko	85	Not limited		Not limited		Somewhat limited	
						Slope	0.01



Dwellings and Small Commercial Buildings--Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CaE--Cabbart complex, 9 to 35 percent slopes							
Cabbart	26	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Slope	1.00	Depth to soft bedrock	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Cabbart	24	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Slope	1.00	Depth to soft bedrock	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
DhD--Delphill-Abor complex, 5 to 20 percent slopes							
Delphill	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
		Shrink-swell	0.04	Depth to soft bedrock	0.10	Shrink-swell	0.04
				Shrink-swell	0.04		
Abor	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.84	Slope	0.84	Slope	1.00
				Depth to soft bedrock	0.01		

### Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021



## Source of Reclamation Material, Roadfill, and Topsoil

This table gives information about the soils as potential sources of reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

The soils are rated *good*, *fair*, or *poor* as potential sources of reclamation material, roadfill, and topsoil. The features that limit the soils as sources of these materials are specified in the table. Numerical ratings between 0.00 and 0.99 are given after the specified features. These numbers indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

*Reclamation material* is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

*Roadfill* is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments. The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

*Topsoil* is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Information in this table is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this table. Local ordinances and regulations should be considered in planning, in site selection, and in design.

### Report—Source of Reclamation Material, Roadfill, and Topsoil

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation]

Source of Reclamation Material, Roadfill, and Topsoil—Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Potential as a source of reclamation material		Potential as a source of roadfill		Potential as a source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
11C—Amesha silt loam, 4 to 8 percent slopes							
Amesha	90	Fair		Fair		Fair	
		Carbonate content	0.68	Dusty	0.96	Exchange capacity	0.81
		Low content of organic matter	0.88			Carbonate content	0.85
		Water erosion	0.90				
13C—Anamac loam, 2 to 8 percent slopes							
Anamac	90	Fair		Fair		Fair	
		Low content of organic matter	0.13	Dusty	0.94	Rock fragments	0.95
						Exchange capacity	0.96

Source of Reclamation Material, Roadfill, and Topsoil--Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Potential as a source of reclamation material		Potential as a source of roadfill		Potential as a source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
18C--Brocko silt loam, 2 to 8 percent slopes							
Brocko	95	Fair		Fair		Fair	
		Water erosion	0.37	Dusty	0.78	Carbonate content	0.81
		Carbonate content	0.68			Exchange capacity	0.96
		Low content of organic matter	0.88				
18E--Brocko silt loam, 15 to 35 percent slopes							
Brocko	85	Fair		Poor		Poor	
		Water erosion	0.37	Slope	0.00	Slope	0.00
		Carbonate content	0.68	Dusty	0.78	Carbonate content	0.81
		Low content of organic matter	0.88			Exchange capacity	0.96
80C--Floweree silt loam, 2 to 8 percent slopes							
Floweree	95	Fair		Fair		Fair	
		Water erosion	0.68	Dusty	0.77	Exchange capacity	0.96
		Low content of organic matter	0.88				
83C--Shoddy silty clay loam, 2 to 8 percent slopes							
Shoddy	90	Poor		Poor		Not rated	
		Low content of organic matter	0.00	Depth to bedrock	0.00		
		Depth to bedrock	0.00	Low strength	0.00		
		Droughty	0.00	Shrink-swell	0.13		
		Too clayey	0.09	Dusty	0.77		
83D--Shoddy silty clay loam, 8 to 15 percent slopes							
Shoddy	90	Poor		Poor		Not rated	
		Low content of organic matter	0.00	Depth to bedrock	0.00		
		Depth to bedrock	0.00	Low strength	0.00		
		Droughty	0.00	Shrink-swell	0.13		
		Too clayey	0.09	Dusty	0.77		

Source of Reclamation Material, Roadfill, and Topsoil--Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Potential as a source of reclamation material		Potential as a source of roadfill		Potential as a source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
191E--Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes							
Cabbart	35	Poor		Poor		Not rated	
		Low content of organic matter	0.00	Depth to bedrock	0.00		
		Depth to bedrock	0.00	Low strength	0.00		
		Droughty	0.01	Slope	0.00		
				Shrink-swell	0.87		
				Dusty	0.92		
Shoddy	25	Poor		Poor		Not rated	
		Low content of organic matter	0.00	Depth to bedrock	0.00		
		Depth to bedrock	0.00	Low strength	0.00		
		Droughty	0.00	Slope	0.00		
		Too clayey	0.09	Shrink-swell	0.13		
				Dusty	0.77		
Amesha	20	Fair		Poor		Poor	
		Low content of organic matter	0.13	Slope	0.00	Slope	0.00
		Carbonate content	0.68	Dusty	0.99	Rock fragments	0.38
		Water erosion	0.90			Exchange capacity	0.76
						Carbonate content	0.87

Source of Reclamation Material, Roadfill, and Topsoil--Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Potential as a source of reclamation material		Potential as a source of roadfill		Potential as a source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
851D--Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes							
Walbert	35	Poor		Poor		Not rated	
		Droughty	0.00	Depth to bedrock	0.00		
		Low content of organic matter	0.00	Low strength	0.00		
		Depth to bedrock	0.00				
		Too sandy	0.01				
Shoddy	25	Poor		Poor		Not rated	
		Low content of organic matter	0.00	Depth to bedrock	0.00		
		Depth to bedrock	0.00	Low strength	0.00		
		Droughty	0.00	Shrink-swell	0.13		
		Too clayey	0.09	Dusty	0.77		
		Water erosion	0.90				
Cabbart	20	Poor		Poor		Not rated	
		Low content of organic matter	0.00	Depth to bedrock	0.00		
		Depth to bedrock	0.00	Low strength	0.00		
		Droughty	0.02	Dusty	0.84		
		Carbonate content	0.92				
BsB--Brocko silt loam, 2 to 5 percent slopes							
Brocko	85	Fair		Fair		Fair	
		Water erosion	0.37	Dusty	0.78	Carbonate content	0.85
		Carbonate content	0.68			Exchange capacity	0.96
		Low content of organic matter	0.88				

Source of Reclamation Material, Roadfill, and Topsoil--Broadwater County Area, Montana							
Map symbol and soil name	Pct. of map unit	Potential as a source of reclamation material		Potential as a source of roadfill		Potential as a source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CaE--Cabbart complex, 9 to 35 percent slopes							
Cabbart	26	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Slope	0.00
		Low content of organic matter	0.88	Slope	0.18	Exchange capacity	0.40
		Carbonate content	0.92	Shrink-swell	0.87	Salinity	0.88
		Water erosion	0.99	Dusty	0.90		
Cabbart	24	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Slope	0.00
		Low content of organic matter	0.88	Slope	0.18	Exchange capacity	0.41
		Carbonate content	0.92	Shrink-swell	0.87	Salinity	0.88
		Water erosion	0.99	Dusty	0.88		
DhD--Delphill-Abor complex, 5 to 20 percent slopes							
Delphill	40	Poor		Poor		Fair	
		Low content of organic matter	0.00	Low strength	0.00	Slope	0.16
		Depth to bedrock	0.90	Depth to bedrock	0.00	Depth to bedrock	0.90
		Droughty	0.99	Dusty	0.90	Exchange capacity	0.98
				Shrink-swell	0.99		
Abor	30	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.88	Depth to bedrock	0.00	Slope	0.16
		Depth to bedrock	0.99	Shrink-swell	0.13	Rock fragments	0.99
		Droughty	0.99	Dusty	0.77	Depth to bedrock	0.99

## Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021



## Sewage Disposal

This table shows the degree and kind of soil limitations that affect septic tank absorption fields and sewage lagoons. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Septic tank absorption fields* are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches or between a depth of 24 inches and a restrictive layer is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

*Sewage lagoons* are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Saturated hydraulic conductivity (Ksat) is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a Ksat rate of more than 14 micrometers per second are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

Information in this table is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this table. Local ordinances and regulations should be considered in planning, in site selection, and in design.

## Report—Sewage Disposal

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Sewage Disposal—Broadwater County Area, Montana					
Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
11C—Amesha silt loam, 4 to 8 percent slopes					
Amesha	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.92
				Seepage	0.50

Sewage Disposal--Broadwater County Area, Montana					
Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
13C--Anamac loam, 2 to 8 percent slopes					
Anamac	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
18C--Brocko silt loam, 2 to 8 percent slopes					
Brocko	95	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
18E--Brocko silt loam, 15 to 35 percent slopes					
Brocko	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
80C--Floweree silt loam, 2 to 8 percent slopes					
Floweree	95	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
83C--Shoddy silty clay loam, 2 to 8 percent slopes					
Shoddy	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Slope	0.68
83D--Shoddy silty clay loam, 8 to 15 percent slopes					
Shoddy	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.63	Slope	1.00

Sewage Disposal--Broadwater County Area, Montana					
Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
191E--Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes					
Cabbart	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
Shoddy	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Amesha	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
851D--Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes					
Walbert	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Seepage	1.00
				Slope	1.00
Shoddy	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	1.00
Cabbart	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	1.00
				Seepage	0.50
BsB--Brocko silt loam, 2 to 5 percent slopes					
Brocko	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
				Slope	0.32

Sewage Disposal--Broadwater County Area, Montana					
Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CaE--Cabbart complex, 9 to 35 percent slopes					
Cabbart	26	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
Cabbart					
	24	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
DhD--Delphill-Abor complex, 5 to 20 percent slopes					
Delphill	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.84	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Abor					
	30	Very limited		Very limited	
		Slow water movement	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	0.84		

### Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021



## Chemical Soil Properties

This table shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

*Cation-exchange capacity* is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

*Effective cation-exchange capacity* refers to the sum of extractable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

*Soil reaction* is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

*Calcium carbonate* equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

*Gypsum* is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

*Salinity* is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

*Sodium adsorption ratio (SAR)* is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced saturated hydraulic conductivity and aeration, and a general degradation of soil structure.

## Report—Chemical Soil Properties

Chemical Soil Properties—Broadwater County Area, Montana									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
	In	meq/100g	meq/100g	pH	Pct	Pct	mmhos/cm		
11C—Amesha silt loam, 4 to 8 percent slopes									
Amesha	0-4	10-15	—	7.4-8.4	5-10	0	0	0	
	4-32	5.0-10	—	7.9-8.4	15-35	0	0	0	
	32-60	5.0-10	—	7.9-8.4	10-25	0	0.0-2.0	0	
13C—Anamac loam, 2 to 8 percent slopes									
Anamac	0-4	15-20	—	7.4-8.4	0-5	0	0	0	
	4-12	15-20	—	7.4-8.4	0-10	0	0	0	
	12-31	10-15	—	7.9-9.0	5-15	0	0.0-2.0	0	
	31-60	5.0-10	—	7.9-9.0	3-10	0	0.0-2.0	0	
18C—Brocko silt loam, 2 to 8 percent slopes									
Brocko	0-5	10-15	—	7.4-8.4	5-10	0	0	0	
	5-60	10-15	—	7.9-8.4	15-35	0	0.0-2.0	0	
18E—Brocko silt loam, 15 to 35 percent slopes									
Brocko	0-5	10-15	—	7.4-8.4	5-10	0	0	0	
	5-60	10-15	—	7.9-8.4	15-35	0	0.0-2.0	0	



Chemical Soil Properties--Broadwater County Area, Montana									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>		
80C---Floweree silt loam, 2 to 8 percent slopes									
Floweree	0-7	15-20	—	6.6-7.8	0	0	0	0	
	7-16	10-15	—	6.6-7.8	0-5	0	0	0	
	16-60	10-15	—	7.9-8.4	5-15	0	0	0	
83C---Shoddy silty clay loam, 2 to 8 percent slopes									
Shoddy	0-1	25-30	—	7.4-9.0	0-5	0	0	0	
	1-5	25-30	—	7.4-9.0	0-10	0	0	0	
	5-16	25-30	—	7.4-9.0	5-15	0	0	0	
	16-60	—	—	—	—	—	—	—	
83D---Shoddy silty clay loam, 8 to 15 percent slopes									
Shoddy	0-1	25-30	—	7.4-9.0	0-5	0	0	0	
	1-5	25-30	—	7.4-9.0	0-10	0	0	0	
	5-16	25-30	—	7.4-9.0	5-15	0	0	0	
	16-60	—	—	—	—	—	—	—	

Chemical Soil Properties--Broadwater County Area, Montana									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
	In	meq/100g	meq/100g	pH	Pct	Pct	mmhos/cm		
191E---Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes									
Cabbart	0-5	10-15	—	7.4-9.0	5-10	0	0.0-4.0	0	
	5-18	5.0-10	—	7.4-9.0	5-10	0	2.0-8.0	0	
	18-60	—	—	—	—	—	—	—	
Shoddy	0-1	25-30	—	7.4-9.0	0-5	0	0	0	
	1-5	25-30	—	7.4-9.0	0-10	0	0	0	
	5-16	25-30	—	7.4-9.0	5-15	0	0	0	
	16-60	—	—	—	—	—	—	—	
Amesha	0-4	10-15	—	7.4-8.4	5-10	0	0	0	
	4-29	5.0-10	—	7.9-8.4	15-35	0	0	0	
	29-60	5.0-10	—	7.9-8.4	10-25	0	0	0	

Chemical Soil Properties--Broadwater County Area, Montana									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
	In	meq/100g	meq/100g	pH	Pct	Pct	mmhos/cm		
851D---Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes									
Walbert	0-4	5.0-15	—	6.6-7.8	0-5	0	0	0	
	4-16	0.0-5.0	—	6.6-7.8	0-10	0	0	0	
	16-60	—	—	—	—	—	—	—	
Shoddy	0-1	25-30	—	7.4-9.0	0-5	0	0	0	
	1-5	25-30	—	7.4-9.0	0-10	0	0	0	
	5-16	25-30	—	7.4-9.0	5-15	0	0	0	
	16-60	—	—	—	—	—	—	—	
Cabbart	0-3	10-15	—	7.4-9.0	5-10	0	0.0-4.0	0	
	3-16	5.0-10	—	7.4-9.0	10-15	0	0.0-4.0	1-5	
	16-18	5.0-10	—	7.4-9.0	15-25	1-5	2.0-8.0	1-5	
	18-60	—	—	—	—	—	—	—	
BsB---Brocko silt loam, 2 to 5 percent slopes									
Brocko	0-7	10-15	—	7.4-8.4	5-10	0	0	0	
	7-44	10-15	—	7.9-8.4	15-35	0	0	0	
	44-75	5.0-10	—	7.9-8.4	5-25	0	0.0-2.0	0-5	

Chemical Soil Properties--Broadwater County Area, Montana									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>		
CaE---Cabbart complex, 9 to 35 percent slopes									
Cabbart	0-3	10-15	—	7.4-8.4	5-10	0	0.0-4.0	0	
	3-15	5.0-10	—	7.4-8.4	10-15	0	0.0-4.0	1-5	
	15-60	—	5.0-10	—	15-25	0	2.0-8.0	1-5	
Cabbart	0-3	10-15	—	7.4-8.4	5-10	0	0.0-4.0	0	
	3-15	5.0-10	—	7.4-8.4	10-15	0	0.0-4.0	1-5	
	15-60	—	5.0-10	—	15-25	0	2.0-8.0	1-5	
DhD---Delphill-Abor complex, 5 to 20 percent slopes									
Delphill	0-4	15-20	—	6.6-8.4	0	0	0.0-4.0	0	
	4-19	15-20	—	6.6-8.4	5-10	0	0.0-4.0	0	
	19-35	10-15	—	7.9-8.6	5-15	0	0.0-4.0	0	
	35-60	—	—	—	—	—	—	—	
Abor	0-4	30-40	—	7.4-8.4	1-5	0	0.0-4.0	0	
	4-38	25-40	—	7.4-8.4	5-15	0	0.0-4.0	0-2	
	38-60	—	—	—	—	—	—	—	

### Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021

## Chemical Soil Properties

This table shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

*Cation-exchange capacity* is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

*Effective cation-exchange capacity* refers to the sum of extractable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

*Soil reaction* is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

*Calcium carbonate* equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

*Gypsum* is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

*Salinity* is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

*Sodium adsorption ratio* (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced saturated hydraulic conductivity and aeration, and a general degradation of soil structure.

## Report—Chemical Soil Properties

Chemical Soil Properties—Broadwater County Area, Montana									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>		
11C—Amesha silt loam, 4 to 8 percent slopes									
Amesha	0-4	10-15	—	7.4-8.4	5-10	0	0	0	
	4-32	5.0-10	—	7.9-8.4	15-35	0	0	0	
	32-60	5.0-10	—	7.9-8.4	10-25	0	0.0-2.0	0	
13C—Anamac loam, 2 to 8 percent slopes									
Anamac	0-4	15-20	—	7.4-8.4	0-5	0	0	0	
	4-12	15-20	—	7.4-8.4	0-10	0	0	0	
	12-31	10-15	—	7.9-9.0	5-15	0	0.0-2.0	0	
	31-60	5.0-10	—	7.9-9.0	3-10	0	0.0-2.0	0	
18C—Brocko silt loam, 2 to 8 percent slopes									
Brocko	0-5	10-15	—	7.4-8.4	5-10	0	0	0	
	5-60	10-15	—	7.9-8.4	15-35	0	0.0-2.0	0	
18E—Brocko silt loam, 15 to 35 percent slopes									
Brocko	0-5	10-15	—	7.4-8.4	5-10	0	0	0	
	5-60	10-15	—	7.9-8.4	15-35	0	0.0-2.0	0	

Chemical Soil Properties—Broadwater County Area, Montana									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
	In	meq/100g	meq/100g	pH	Pct	Pct	mmhos/cm		
80C—Floweree silt loam, 2 to 8 percent slopes									
Floweree	0-7	15-20	—	6.6-7.8	0	0	0	0	
	7-16	10-15	—	6.6-7.8	0-5	0	0	0	
	16-60	10-15	—	7.9-8.4	5-15	0	0	0	
83C—Shoddy silty clay loam, 2 to 8 percent slopes									
Shoddy	0-1	25-30	—	7.4-9.0	0-5	0	0	0	
	1-5	25-30	—	7.4-9.0	0-10	0	0	0	
	5-16	25-30	—	7.4-9.0	5-15	0	0	0	
	16-60	—	—	—	—	—	—	—	
83D—Shoddy silty clay loam, 8 to 15 percent slopes									
Shoddy	0-1	25-30	—	7.4-9.0	0-5	0	0	0	
	1-5	25-30	—	7.4-9.0	0-10	0	0	0	
	5-16	25-30	—	7.4-9.0	5-15	0	0	0	
	16-60	—	—	—	—	—	—	—	

Chemical Soil Properties—Broadwater County Area, Montana									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>		
191E—Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes									
Cabbart	0-5	10-15	—	7.4-9.0	5-10	0	0.0-4.0	0	
	5-18	5.0-10	—	7.4-9.0	5-10	0	2.0-8.0	0	
	18-60	—	—	—	—	—	—	—	
Shoddy	0-1	25-30	—	7.4-9.0	0-5	0	0	0	
	1-5	25-30	—	7.4-9.0	0-10	0	0	0	
	5-16	25-30	—	7.4-9.0	5-15	0	0	0	
	16-60	—	—	—	—	—	—	—	
Amesha	0-4	10-15	—	7.4-8.4	5-10	0	0	0	
	4-29	5.0-10	—	7.9-8.4	15-35	0	0	0	
	29-60	5.0-10	—	7.9-8.4	10-25	0	0	0	



Chemical Soil Properties--Broadwater County Area, Montana									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
	In	meq/100g	meq/100g	pH	Pct	Pct	mmhos/cm		
851D---Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes									
Walbert	0-4	5.0-15	—	6.6-7.8	0-5	0	0	0	
	4-16	0.0-5.0	—	6.6-7.8	0-10	0	0	0	
	16-60	—	—	—	—	—	—	—	
Shoddy	0-1	25-30	—	7.4-9.0	0-5	0	0	0	
	1-5	25-30	—	7.4-9.0	0-10	0	0	0	
	5-16	25-30	—	7.4-9.0	5-15	0	0	0	
	16-60	—	—	—	—	—	—	—	
Cabbart	0-3	10-15	—	7.4-9.0	5-10	0	0.0-4.0	0	
	3-16	5.0-10	—	7.4-9.0	10-15	0	0.0-4.0	1-5	
	16-18	5.0-10	—	7.4-9.0	15-25	1-5	2.0-8.0	1-5	
	18-60	—	—	—	—	—	—	—	
BsB---Brocko silt loam, 2 to 5 percent slopes									
Brocko	0-7	10-15	—	7.4-8.4	5-10	0	0	0	
	7-44	10-15	—	7.9-8.4	15-35	0	0	0	
	44-75	5.0-10	—	7.9-8.4	5-25	0	0.0-2.0	0-5	

Chemical Soil Properties—Broadwater County Area, Montana									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>		
CaE—Cabbart complex, 9 to 35 percent slopes									
Cabbart	0-3	10-15	—	7.4-8.4	5-10	0	0.0-4.0	0	
	3-15	5.0-10	—	7.4-8.4	10-15	0	0.0-4.0	1-5	
	15-60	—	5.0-10	—	15-25	0	2.0-8.0	1-5	
Cabbart	0-3	10-15	—	7.4-8.4	5-10	0	0.0-4.0	0	
	3-15	5.0-10	—	7.4-8.4	10-15	0	0.0-4.0	1-5	
	15-60	—	5.0-10	—	15-25	0	2.0-8.0	1-5	
DhD—Delphill-Abor complex, 5 to 20 percent slopes									
Delphill	0-4	15-20	—	6.6-8.4	0	0	0.0-4.0	0	
	4-19	15-20	—	6.6-8.4	5-10	0	0.0-4.0	0	
	19-35	10-15	—	7.9-8.6	5-15	0	0.0-4.0	0	
	35-60	—	—	—	—	—	—	—	
Abor	0-4	30-40	—	7.4-8.4	1-5	0	0.0-4.0	0	
	4-38	25-40	—	7.4-8.4	5-15	0	0.0-4.0	0-2	
	38-60	—	—	—	—	—	—	—	

### Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021

## Conservation Planning

This report provides those soil attributes for the conservation plan for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. It provides the soil description along with the slope, runoff, T Factor, WEI, WEG, Erosion class, Drainage class, Land Capability Classification, and the engineering Hydrologic Group and the erosion factors Kf, the representative percentage of fragments, sand, silt, and clay in the mineral surface horizon. Missing surface data may indicate the presence of an organic surface layer. Further information on these factors can be found in the National Soil Survey Handbook section 618 found at the url [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2\\_054223#00](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054223#00) .

## Report—Conservation Planning

Soil properties and interpretations for conservation planning. The surface mineral horizon properties are displayed. Organic surface horizons are not displayed.

Conservation Planning—Broadwater County Area, Montana																		
Map symbol and soil name	Pct. of map unit	Slope RV	USLE Slope Length ft.	Runoff	T Factor	WEI	WEG	Erosion	Drainage	NIRR LCC	Hydro logic Group	Surface						
												Depths in.	Kf Factor	Frag-ments RV	Sand RV	Silt RV	Clay RV	
11C—Amesha silt loam, 4 to 8 percent slopes																		
Amesha	90	6.0	150	—	5	86	4L	—	Well drained	4e	B	0 - 3	.32	5	26	53	20	
13C—Anamac loam, 2 to 8 percent slopes																		
Anamac	90	5.0	173	—	5	48	6	—	Well drained	3e	B	0 - 3	.24	9	39	37	22	
18C—Brocko silt loam, 2 to 8 percent slopes																		
Brocko	95	5.0	173	—	5	86	4L	—	Well drained	4e	B	0 - 5	.43	—	14	71	14	
18E—Brocko silt loam, 15 to 35 percent slopes																		
Brocko	85	25.0	49	—	5	86	4L	—	Well drained	6e	B	0 - 5	.43	—	14	71	14	
80C—Floweree silt loam, 2 to 8 percent slopes																		
Floweree	95	5.0	173	—	5	48	6	—	Well drained	3e	B	0 - 7	.37	5	11	68	20	
83C—Shoddy silt loam, 2 to 8 percent slopes																		
Shoddy	90	5.0	173	—	2	48	6	—	Well drained	6e	D	0 - 1	.32	12	18	47	33	

Conservation Planning—Broadwater County Area, Montana																			
Map symbol and soil name	Pct. of map unit	Slope RV	USLE Slope Length ft.	Runoff	T Factor	WEI	WEG	Erosion	Drainage	NIRR LCC	Hydro logic Group	Surface							
												Depths in.	Kf Factor	Frag-ments RV	Sand RV	Silt RV	Clay RV		
83D—Shoddy silty clay loam, 8 to 15 percent slopes																			
Shoddy	90	12.0	75	—	2	48	6	—	Well drained	6e	D	0 - 1	.32	12	18	47	33		
191E—Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes																			
Cabbart	35	30.0	26	—	2	56	5	—	Well drained	7e	D	0 - 5	.32	27	39	37	22		
Shoddy	25	30.0	26	—	2	48	6	—	Well drained	7e	D	0 - 1	.32	12	18	47	33		
Amesha	20	30.0	26	—	5	56	5	—	Well drained	6e	B	0 - 3	.28	24	42	37	20		
851D—Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes																			
Walbert	35	9.0	98	—	2	86	3	—	Somewhat excessively drained	6e	D	0 - 3	.28	5	68	19	12		
Shoddy	25	9.0	98	—	2	48	6	—	Well drained	6e	D	0 - 1	.32	12	18	47	33		
Cabbart	20	9.0	98	—	2	86	4L	—	Well drained	6e	D	0 - 3	.32	8	39	37	22		
BsB—Brocko silt loam, 2 to 5 percent slopes																			
Brocko	85	4.0	200	—	5	86	4L	—	Well drained	4e	B	0 - 7	.43	—	14	71	14		
CaE—Cabbart complex, 9 to 35 percent slopes																			
Cabbart	26	22.0	49	—	2	86	4L	—	Well drained	7e	D	0 - 3	.43	8	39	37	22		
Cabbart	24	22.0	49	—	2	86	4L	—	Well drained	7e	D	0 - 3	.37	8	33	36	29		

Conservation Planning--Broadwater County Area, Montana																		
Map symbol and soil name	Pct. of map unit	Slope RV	USLE Slope Length ft.	Runoff	T Factor or	WEI	WEG	Erosion	Drainage	NIRR LCC	Hydro Logic Group	Surface						
												Depths in.	Kf Factor or	Frag-ments RV	Sand RV	Silt RV	Clay RV	
DhD--Delphill-Abor complex, 5 to 20 percent slopes																		
Delphill	40	13.0	75	—	3	48	6	—	Well drained	6e	C	0 - 3	.32	5	39	36	24	
Abor	30	13.0	75	—	3	86	4	—	Well drained	6e	D	0 - 3	.20	5	5	47	47	

### Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021

## Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow; help to keep snow on fields; and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

This table shows the height that locally grown trees and shrubs are expected to reach in 20 years on soils in the survey area. The estimates are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or of the Cooperative Extension Service or from a commercial nursery.

### Report—Windbreaks and Environmental Plantings

Windbreaks and Environmental Plantings—Broadwater County Area, Montana					
Map symbol and soil name	Trees having predicted 20-year average height of—				
	8 feet or less	>8 to 15 feet	>15 to 25 feet	>25 to 35 feet	>35 feet
11C—Amesha silt loam, 4 to 8 percent slopes					
Amesha	Skunkbush sumac	Common lilac Silver buffaloberry Common chokecherry Siberian crabapple Tatarian honeysuckle Rocky mountain juniper Siberian peashrub	Siberian elm Ponderosa pine Green ash Russian olive	—	—
13C—Anamac loam, 2 to 8 percent slopes					
Anamac	Western sandcherry Nanking cherry	Siberian peashrub Rocky mountain juniper Tatarian honeysuckle Common chokecherry Common lilac	Green ash Russian olive Ponderosa pine Blue spruce Siberian elm	—	—

Windbreaks and Environmental Plantings--Broadwater County Area, Montana					
Map symbol and soil name	Trees having predicted 20-year average height of--				
	8 feet or less	>8 to 15 feet	>15 to 25 feet	>25 to 35 feet	>35 feet
18C--Brocko silt loam, 2 to 8 percent slopes					
Brocko	Western sandcherry Skunkbush sumac	Siberian crabapple Blue spruce Common chokecherry Common lilac Siberian peashrub Rocky mountain juniper	Ponderosa pine Siberian elm Russian olive Green ash	---	---
18E--Brocko silt loam, 15 to 35 percent slopes					
Brocko	---	---	---	---	---
80C--Floweree silt loam, 2 to 8 percent slopes					
Floweree	Skunkbush sumac	Siberian peashrub Rocky mountain juniper Tatarian honeysuckle Siberian crabapple Common chokecherry Silver buffaloberry Common lilac	Russian olive Green ash Ponderosa pine	---	---
83C--Shoddy silty clay loam, 2 to 8 percent slopes					
Shoddy	Western sandcherry Skunkbush sumac	Siberian peashrub Russian olive Rocky mountain juniper Siberian crabapple Ponderosa pine	Siberian elm	---	---
83D--Shoddy silty clay loam, 8 to 15 percent slopes					
Shoddy	Western sandcherry Skunkbush sumac	Siberian peashrub Russian olive Rocky mountain juniper Siberian crabapple Ponderosa pine	Siberian elm	---	---



Windbreaks and Environmental Plantings—Broadwater County Area, Montana					
Map symbol and soil name	Trees having predicted 20-year average height of—				
	8 feet or less	>8 to 15 feet	>15 to 25 feet	>25 to 35 feet	>35 feet
191E—Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes					
Cabbart	—	—	—	—	—
Shoddy	—	—	—	—	—
Amesha	—	—	—	—	—
851D—Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes					
Walbert	—	—	—	—	—
Shoddy	Skunkbush sumac Western sandcherry	Ponderosa pine Siberian crabapple Rocky mountain juniper Russian olive Siberian peashrub	Siberian elm	—	—
Cabbart	—	—	—	—	—
BsB—Brocko silt loam, 2 to 5 percent slopes					
Brocko	Western sandcherry Skunkbush sumac	Siberian peashrub Rocky mountain juniper Siberian crabapple Blue spruce Common chokecherry Common lilac	Russian olive Green ash Ponderosa pine Siberian elm	—	—
CaE—Cabbart complex, 9 to 35 percent slopes					
Cabbart	—	—	—	—	—
Cabbart	—	—	—	—	—

Windbreaks and Environmental Plantings—Broadwater County Area, Montana					
Map symbol and soil name	Trees having predicted 20-year average height of—				
	8 feet or less	>8 to 15 feet	>15 to 25 feet	>25 to 35 feet	>35 feet
DhD—Delphill-Abor complex, 5 to 20 percent slopes					
Delphill	Western sandcherry Skunkbush sumac	Siberian peashrub Russian olive Rocky mountain juniper Ponderosa pine	Siberian elm	—	—
Abor	Western sandcherry Nanking cherry	Siberian peashrub Rocky mountain juniper Siberian crabapple Blue spruce Common chokecherry Common lilac	Russian olive Green ash Ponderosa pine Siberian elm	—	—

### Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021

## Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

*Hydrologic soil group* is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007 (<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

*Group A.* Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

*Group B.* Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

*Group C.* Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

*Group D.* Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

*Depth* to the upper and lower boundaries of each layer is indicated.

*Texture* is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

*Classification* of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

*Percentage of rock fragments* larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

*Percentage (of soil particles) passing designated sieves* is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

*Liquid limit* and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

## Report—Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk "\*" denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties—Broadwater County Area, Montana														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
11C—Amesha silt loam, 4 to 8 percent slopes			<i>In</i>											
Amesha	90 B		0-4	Silt loam	CL, CL-ML	A-4, A-6	0-0-0	0-0-0	95-98-100	90-95-100	85-90-95	60-70-80	25-30-35	5-10-15
			4-32	Loam, sandy loam, silt loam	CL-ML, ML	A-4	0-0-0	0-3-5	95-98-100	90-95-100	70-80-90	55-65-75	20-25-30	NP-5-10
			32-60	Loam, fine sandy loam, gravelly sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0-0-0	0-5-10	65-83-100	55-78-100	45-65-85	25-45-65	20-25-30	NP-5-10
13C—Anamac loam, 2 to 8 percent slopes														
Anamac	90 B		0-4	Loam	CL-ML	A-4	0-0-0	0-0-0	90-95-100	80-90-100	70-83-95	50-63-75	25-28-30	5-8-10
			4-12	Loam, clay loam	CL, CL-ML	A-4, A-6	0-0-0	0-0-0	90-95-100	80-90-100	70-85-100	50-65-80	25-30-35	5-10-15
			12-31	Loam, clay loam	CL, CL-ML	A-4, A-6	0-0-0	0-0-0	90-95-100	80-90-100	70-85-100	50-65-80	25-30-35	5-10-15
			31-60	Loam, clay loam, gravelly sandy loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0-0-0	0-0-0	70-85-100	60-75-90	35-60-85	20-45-70	20-25-30	NP-5-10

Engineering Properties---Broadwater County Area, Montana															
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index	
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200			
18C---Brocko silt loam, 2 to 8 percent slopes			<i>In</i>												
Brocko	95 B		0-5	Silt loam	CL-ML, ML	A-4	0-0-0	0-0-0	100-100-100	100-100-100	85-90-95	70-80-90	20-25-30	NP-5-10	L-R-H
18E---Brocko silt loam, 15 to 35 percent slopes			5-60	Silt loam, loam, very fine sandy loam	CL-ML, ML	A-4	0-0-0	0-0-0	100-100-100	100-100-100	95-98-100	70-80-90	20-25-30	NP-5-10	L-R-H
Brocko	85 B		0-5	Silt loam	CL-ML, ML	A-4	0-0-0	0-0-0	100-100-100	100-100-100	85-90-95	70-80-90	20-25-30	NP-5-10	L-R-H
80C---Floweree silt loam, 2 to 8 percent slopes			5-60	Silt loam, loam, very fine sandy loam	CL-ML, ML	A-4	0-0-0	0-0-0	100-100-100	100-100-100	95-98-100	70-80-90	20-25-30	NP-5-10	L-R-H
Floweree	95 B		0-7	Silt loam	CL-ML, ML	A-4	0-0-0	0-0-0	95-98-100	90-95-100	85-93-100	60-75-90	20-25-30	NP-5-10	L-R-H
			7-16	Silt loam, very fine sandy loam	ML	A-4	0-0-0	0-0-0	95-98-100	90-95-100	85-93-100	70-78-85	20-23-25	NP-3-5	L-R-H
			16-60	Stratified very fine sandy loam to silt loam	ML	A-4	0-0-0	0-0-0	100-100-100	100-100-100	100-100-100	70-78-85	20-23-25	NP-3-5	L-R-H

Engineering Properties--Broadwater County Area, Montana															
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index	
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200			
83C---Shoddy silty clay loam, 2 to 8 percent slopes			<i>In</i>												
Shoddy	90	D	0-1	Silty clay loam	CL	A-6	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	65-80-95	30-35-40	10-15-20	
			1-5	Silty clay loam, silty clay, clay loam	CL	A-6	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	55-75-95	30-35-40	10-15-20	
			5-16	Silty clay loam, silty clay, clay loam	CL	A-6, A-7	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	60-78-95	35-43-50	15-23-30	
			16-60	Weathered bedrock	—	—	—	—	—	—	—	—	—	—	
83D---Shoddy silty clay loam, 8 to 15 percent slopes															
Shoddy	90	D	0-1	Silty clay loam	CL	A-6	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	65-80-95	30-35-40	10-15-20	
			1-5	Silty clay loam, silty clay, clay loam	CL	A-6	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	55-75-95	30-35-40	10-15-20	
			5-16	Silty clay loam, silty clay, clay loam	CL	A-6, A-7	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	60-78-95	35-43-50	15-23-30	
			16-60	Weathered bedrock	—	—	—	—	—	—	—	—	—	—	



Engineering Properties---Broadwater County Area, Montana															
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number---					Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200			
191E---Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes			<i>In</i>												
Cabbart	35 D		0-5	Gravelly loam	CL-ML, GC-GM, SC-SM	A-4	0-0-0	0-5-10	60-70-80	55-65-75	45-58-70	35-48-60	25-28-30	5-8-10	L-R-H
			5-18	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0-0-0	0-5-10	90-95-100	85-93-100	70-83-95	55-70-85	25-30-35	5-10-15	L-R-H
			18-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	---	---
Shoddy	25 D		0-1	Silty clay loam	CL	A-6	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	65-80-95	30-35-40	10-15-20	L-R-H
			1-5	Silty clay loam, silty clay, clay loam	CL	A-6	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	55-75-95	30-35-40	10-15-20	L-R-H
			5-16	Silty clay loam, silty clay, clay loam	CL	A-6, A-7	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	60-78-95	35-43-50	15-23-30	L-R-H
			16-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	---	---
Amesha	20 B		0-4	Gravelly loam	CL, CL-ML, GC, GC-GM	A-4, A-6	0-0-0	0-5-10	65-73-80	60-68-75	50-60-70	40-50-60	25-30-35	5-10-15	L-R-H
			4-29	Loam, gravelly loam	CL-ML, SC-SM	A-4	0-0-0	0-3-5	75-88-100	65-80-95	55-70-85	40-55-70	20-25-30	5-8-10	L-R-H
			29-60	Loam, gravelly loam	CL-ML, GC-GM, SC-SM	A-4	0-0-0	0-5-10	70-85-100	60-80-100	50-70-90	35-55-75	20-25-30	5-8-10	L-R-H

Engineering Properties—Broadwater County Area, Montana															
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—					Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200			
851D—Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes			<i>In</i>												
Walbert	35 D		0-4	Coarse sandy loam	SC-SM	A-2, A-4	0-0-0	0-0-0	95-98-100	90-95-100	40-53-65	20-30-40	25-28-30	5-8-10	L-R-H
			4-16	Coarse sand, loamy coarse sand	SM	A-1, A-2-4	0-0-0	0-0-0	95-98-100	90-95-100	35-48-60	5-18-30	20-23-25	NP-3-5	L-R-H
			16-60	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—	—
Shoddy	25 D		0-1	Silty clay loam	CL	A-6	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	65-80-95	30-35-40	10-15-20	L-R-H
			1-5	Silty clay loam, silty clay, clay loam	CL	A-6	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	55-75-95	30-35-40	10-15-20	L-R-H
			5-16	Silty clay loam, silty clay, clay loam	CL	A-6, A-7	0-0-0	0-0-0	85-93-100	75-88-100	70-85-100	60-78-95	35-43-50	15-23-30	L-R-H
			16-60	Weathered bedrock	—	—	—	—	—	—	—	—	—	—	—
Cabbart	20 D		0-3	Loam	CL-ML	A-4	0-0-0	0-0-0	90-95-100	85-93-100	65-75-85	55-65-75	25-28-30	5-8-10	L-R-H
			3-16	Silt loam, loam	CL-ML	A-4	0-0-0	0-0-0	90-95-100	85-93-100	65-75-85	55-65-75	25-28-30	5-8-10	L-R-H
			16-18	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0-0-0	0-0-0	90-95-100	85-93-100	60-75-90	55-70-85	25-30-35	5-10-15	L-R-H
			18-60	Weathered bedrock	—	—	—	—	—	—	—	—	—	—	—

Engineering Properties--Broadwater County Area, Montana															
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index	
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200			
BsB--Brocko silt loam, 2 to 5 percent slopes			<i>In</i>												
Brocko	85 B		0-7	Silt loam	CL-ML, ML	A-4	0-0-0	0-0-0	100-100-100	100-100-100	85-90-95	70-80-90	20-25-30	NP-5-10	L-R-H
			7-44	Silt loam, loam, very fine sandy loam	CL-ML, ML	A-4	0-0-0	0-0-0	100-100-100	100-100-100	95-98-100	70-80-90	20-25-30	NP-5-10	L-R-H
CaE--Cabbart complex, 9 to 35 percent slopes			44-75	Silt loam, loam, very fine sandy loam	CL-ML, ML	A-4	0-0-0	0-0-0	90-95-100	85-93-100	80-83-85	55-65-75	20-25-30	NP-5-10	L-R-H
Cabbart	26 D		0-3	Loam	CL-ML	A-4	0-0-0	0-0-0	90-95-100	85-93-100	65-75-85	55-65-75	25-28-30	5-8-10	
			3-15	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0-0-0	0-0-0	90-95-100	85-93-100	60-75-90	55-70-85	25-30-35	5-10-15	
			15-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---	
Cabbart	24 D		0-3	Clay loam	CL	A-6	0-0-0	0-0-0	90-95-100	85-93-100	70-80-90	60-70-80	30-33-35	10-13-15	
			3-15	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0-0-0	0-0-0	90-95-100	85-93-100	60-75-90	55-70-85	25-30-35	5-10-15	
			15-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---	

Engineering Properties—Broadwater County Area, Montana														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
DhD—Delphill-Abor complex, 5 to 20 percent slopes			<i>In</i>											
Delphill	40	C	0-4	Loam	CL-ML	A-4	0-0-0	0-0-0	95-98-100	90-95-100	75-83-90	55-65-75	20-25-30	5-8-10
			4-19	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0-0-0	0-0-0	95-98-100	90-95-100	85-90-95	65-75-85	20-30-40	5-13-20
			19-35	Loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0-0-0	0-0-0	95-98-100	90-95-100	85-90-95	65-75-85	20-30-40	5-13-20
			35-60	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—
Abor	30	D	0-4	Silty clay	CH, CL	A-7	0-0-0	0-0-0	95-98-100	90-95-100	80-90-100	75-85-95	40-50-60	20-28-35
			4-38	Silty clay, clay, silty clay loam	CH, CL	A-6, A-7	0-0-0	0-0-0	80-90-100	75-88-100	65-83-100	60-78-95	35-50-65	20-33-45
			38-60	Bedrock	—	—	—	—	—	—	—	—	—	—

### Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021

## Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

*Sand* as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

*Silt* as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

*Clay* as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity ( $K_{sat}$ ), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

*Moist bulk density* is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

*Saturated hydraulic conductivity (Ksat)* refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

*Available water capacity* refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

*Linear extensibility* refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

*Organic matter* is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

*Erosion factors* are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

*Erosion factor Kw* indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

*Erosion factor Kf* indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

*Erosion factor T* is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

*Wind erodibility groups* are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

*Wind erodibility index* is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (<http://soils.usda.gov>)

## Report—Physical Soil Properties

Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Physical Soil Properties—Broadwater County Area, Montana														
Map symbol and soil name	Depth <i>In</i>	Sand <i>Pct</i>	Silt <i>Pct</i>	Clay <i>Pct</i>	Moist bulk density <i>g/cc</i>	Saturated hydraulic conductivity <i>micro m/sec</i>	Available water capacity <i>In/In</i>	Linear extensibility <i>Pct</i>	Organic matter <i>Pct</i>	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
11C—Amesha silt loam, 4 to 8 percent slopes														
Amesha	0-4	-27-	-54-	15-20-25	1.10-1.20 -1.30	4.00-9.00-14.00	0.18-0.20-0.22	0.0-1.5-2.9	1.0-2.0-3.0	.32	.32	5	4L	86
	4-32	-45-	-41-	10-14-18	1.30-1.43 -1.55	4.00-9.00-14.00	0.14-0.16-0.17	0.0-1.5-2.9	0.5-0.8-1.0	.43	.43			
	32-60	-67-	-19-	10-14-18	1.35-1.48 -1.60	4.00-9.00-14.00	0.12-0.14-0.15	0.0-1.5-2.9	0.0-0.3-0.5	.15	.24			
13C—Anamac loam, 2 to 8 percent slopes														
Anamac	0-4	-40-	-38-	18-23-27	1.15-1.25 -1.35	4.00-9.00-14.00	0.16-0.17-0.18	0.0-1.5-2.9	1.0-2.0-3.0	.24	.24	5	6	48
	4-12	-39-	-37-	18-24-30	1.25-1.35 -1.45	4.00-9.00-14.00	0.16-0.18-0.19	3.0-4.5-5.9	1.0-1.5-2.0	.32	.32			
	12-31	-39-	-37-	18-24-30	1.30-1.40 -1.50	4.00-9.00-14.00	0.16-0.17-0.18	3.0-4.5-5.9	0.5-0.8-1.0	.32	.32			
	31-60	-66-	-15-	10-19-30	1.30-1.43 -1.55	4.00-9.00-14.00	0.14-0.16-0.18	0.0-1.5-2.9	0.0-0.3-0.5	.10	.20			



Physical Soil Properties--Broadwater County Area, Montana														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
18C--Brocko silt loam, 2 to 8 percent slopes	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
Brocko	0-5	-14-	-72-	10-14-18	1.10-1.20 -1.30	4.00-9.00-14.00	0.18-0.20-0.22	0.0-1.5-2.9	1.0-2.0-3.0	.43	.43	5	4L	86
	5-60	-14-	-72-	10-14-18	1.20-1.30 -1.40	4.00-9.00-14.00	0.18-0.20-0.22	0.0-1.5-2.9	0.5-0.8-1.0	.55	.55			
18E--Brocko silt loam, 15 to 35 percent slopes														
Brocko	0-5	-14-	-72-	10-14-18	1.10-1.20 -1.30	4.00-9.00-14.00	0.18-0.20-0.22	0.0-1.5-2.9	1.0-2.0-3.0	.43	.43	5	4L	86
	5-60	-14-	-72-	10-14-18	1.20-1.30 -1.40	4.00-9.00-14.00	0.18-0.20-0.22	0.0-1.5-2.9	0.5-0.8-1.0	.55	.55			
80C--Floweree silt loam, 2 to 8 percent slopes														
Floweree	0-7	-11-	-69-	15-20-25	1.05-1.13 -1.20	4.00-9.00-14.00	0.16-0.18-0.20	0.0-1.5-2.9	2.0-3.0-4.0	.37	.37	5	6	48
	7-16	-14-	-69-	12-17-22	1.15-1.28 -1.40	4.00-9.00-14.00	0.15-0.17-0.19	0.0-1.5-2.9	1.0-2.0-3.0	.49	.49			
	16-60	-12-	-70-	12-19-25	1.15-1.28 -1.40	4.00-9.00-14.00	0.15-0.17-0.19	0.0-1.5-2.9	0.5-0.8-1.0	.49	.49			

Physical Soil Properties—Broadwater County Area, Montana														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
83C—Shoddy silty clay loam, 2 to 8 percent slopes														
Shoddy	0-1	-19-	-48-	27-34- 40	1.20-1.30 -1.40	0.42-0.91-1.40	0.17-0.19-0.20	3.0- 4.5- 5.9	1.0- 1.5- 2.0	.32	.32	2	6	48
	1-5	- 8-	-56-	27-36- 45	1.25-1.35 -1.45	0.42-0.91-1.40	0.16-0.18-0.19	3.0- 4.5- 5.9	1.0- 1.5- 2.0	.43	.43			
	5-16	-18-	-43-	35-39- 50	1.30-1.40 -1.50	0.42-0.91-1.40	0.16-0.18-0.19	6.0- 7.5- 8.9	0.5- 0.8- 1.0	.37	.37			
	16-60	—	—	—	—	—	—	—	—	—	—	—	—	—
83D—Shoddy silty clay loam, 8 to 15 percent slopes														
Shoddy	0-1	-19-	-48-	27-34- 40	1.20-1.30 -1.40	0.42-0.91-1.40	0.17-0.19-0.20	3.0- 4.5- 5.9	1.0- 1.5- 2.0	.32	.32	2	6	48
	1-5	- 8-	-56-	27-36- 45	1.25-1.35 -1.45	0.42-0.91-1.40	0.16-0.18-0.19	3.0- 4.5- 5.9	1.0- 1.5- 2.0	.43	.43			
	5-16	-18-	-43-	35-39- 50	1.30-1.40 -1.50	0.42-0.91-1.40	0.16-0.18-0.19	6.0- 7.5- 8.9	0.5- 0.8- 1.0	.37	.37			
	16-60	—	—	—	—	—	—	—	—	—	—	—	—	—

Physical Soil Properties—Broadwater County Area, Montana														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
191E--- Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes														
Cabbart	0-5	-40-	-38-	18-23-27	1.20-1.30 -1.40	4.00-9.00-14.00	0.11-0.13-0.14	0.0- 1.5- 2.9	1.0- 1.5- 2.0	.17	.32	2	5	56
	5-18	-38-	-36-	18-27-35	1.30-1.40 -1.50	4.00-9.00-14.00	0.16-0.18-0.20	3.0- 4.5- 5.9	0.5- 0.8- 1.0	.37	.37			
	18-60	—	—	—	—	—	—	—	—	—	—	—	—	—
Shoddy	0-1	-19-	-48-	27-34-40	1.20-1.30 -1.40	0.42-0.91-1.40	0.17-0.19-0.20	3.0- 4.5- 5.9	1.0- 1.5- 2.0	.32	.32	2	6	48
	1-5	- 8-	-56-	27-36-45	1.25-1.35 -1.45	0.42-0.91-1.40	0.16-0.18-0.19	3.0- 4.5- 5.9	1.0- 1.5- 2.0	.43	.43			
	5-16	-18-	-43-	35-39-50	1.30-1.40 -1.50	0.42-0.91-1.40	0.16-0.18-0.19	6.0- 7.5- 8.9	0.5- 0.8- 1.0	.37	.37			
	16-60	—	—	—	—	—	—	—	—	—	—	—	—	—
Amesha	0-4	-42-	-38-	15-20-25	1.15-1.25 -1.35	4.00-9.00-14.00	0.13-0.15-0.16	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.15	.28	5	5	56
	4-29	-45-	-41-	10-14-18	1.25-1.38 -1.50	4.00-9.00-14.00	0.12-0.14-0.16	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.43	.43			
	29-60	-45-	-41-	10-14-18	1.30-1.43 -1.55	4.00-9.00-14.00	0.12-0.14-0.15	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.24	.43			

Physical Soil Properties---Broadwater County Area, Montana														
Map symbol and soil name	Depth In	Sand Pct	Silt Pct	Clay Pct	Moist bulk density g/cc	Saturated hydraulic conductivity micro m/sec	Available water capacity In/In	Linear extensibility Pct	Organic matter Pct	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
851D---Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes														
Walbert	0-4	-69-	-19-	4-12-20	1.35-1.43 -1.50	14.00-28.00-42.00	0.07-0.09-0.10	0.0-1.5-2.9	1.0-1.5-2.0	.28	.28	2	3	86
	4-16	-89-	-4-	4-7-10	1.50-1.60 -1.70	42.00-92.00-141.00	0.04-0.06-0.07	0.0-1.5-2.9	0.5-0.8-1.0	.20	.20			
	16-60	---	---	---	---	---	---	---	---					
Shoddy	0-1	-19-	-48-	27-34-40	1.20-1.30 -1.40	0.42-0.91-1.40	0.17-0.19-0.20	3.0-4.5-5.9	1.0-1.5-2.0	.32	.32	2	6	48
	1-5	-8-	-56-	27-36-45	1.25-1.35 -1.45	0.42-0.91-1.40	0.16-0.18-0.19	3.0-4.5-5.9	1.0-1.5-2.0	.43	.43			
	5-16	-18-	-43-	35-39-50	1.30-1.40 -1.50	0.42-0.91-1.40	0.16-0.18-0.19	6.0-7.5-8.9	0.5-0.8-1.0	.37	.37			
	16-60	---	---	---	---	---	---	---	---					
Cabbart	0-3	-40-	-38-	18-23-27	1.20-1.30 -1.40	4.00-9.00-14.00	0.17-0.19-0.21	0.0-1.5-2.9	1.0-1.5-2.0	.32	.32	2	4L	86
	3-16	-25-	-53-	18-23-27	1.20-1.30 -1.40	4.00-9.00-14.00	0.16-0.18-0.20	0.0-1.5-2.9	0.5-0.8-1.0	.49	.49			
	16-18	-38-	-36-	18-27-35	1.30-1.40 -1.50	4.00-9.00-14.00	0.15-0.17-0.19	3.0-4.5-5.9	0.5-0.8-1.0	.37	.37			
	18-60	---	---	---	---	---	---	---	---					

Physical Soil Properties—Broadwater County Area, Montana														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
BsB—Brooko silt loam, 2 to 5 percent slopes	In	Pct	Pct	Pct	g/cc	micro m/sec	In/in	Pct	Pct					
Brooko	0-7	-14-	-72-	10-14- 18	1.10-1.20 -1.30	4.00-9.00-14.00	0.18-0.20-0.22	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.43	.43	5	4L	86
	7-44	-14-	-72-	10-14- 18	1.20-1.30 -1.40	4.00-9.00-14.00	0.18-0.20-0.22	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.55	.55			
	44-75	-14-	-72-	10-14- 18	1.20-1.35 -1.50	4.00-9.00-14.00	0.16-0.18-0.20	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.55	.55			
CaE—Cabbart complex, 9 to 35 percent slopes														
Cabbart	0-3	-40-	-38-	18-23- 27	1.20-1.30 -1.40	4.00-9.00-14.00	0.17-0.19-0.21	0.0- 1.5- 2.9	1.0- 1.5- 2.0	.43	.43	2	4L	86
	3-15	-34-	-38-	18-28- 35	1.20-1.30 -1.40	4.00-9.00-14.00	0.15-0.17-0.19	3.0- 4.5- 5.9	0.5- 0.8- 1.0	.37	.37			
	15-60	—	—	—	1.30-1.40 -1.50	—	—	—	0.5- 0.8- 1.0					
Cabbart	0-3	-34-	-37-	27-30- 32	1.25-1.35 -1.45	4.00-9.00-14.00	0.14-0.16-0.18	3.0- 4.5- 5.9	1.0- 1.5- 2.0	.37	.37	2	4L	86
	3-15	-34-	-37-	18-30- 35	1.20-1.30 -1.40	4.00-9.00-14.00	0.15-0.17-0.19	3.0- 4.5- 5.9	0.5- 0.8- 1.0	.37	.37			
	15-60	—	—	—	1.30-1.40 -1.50	—	—	—	0.5- 0.8- 1.0					

Physical Soil Properties--Broadwater County Area, Montana														
Map symbol and soil name	Depth In	Sand Pct	Silt Pct	Clay Pct	Moist bulk density g/cc	Saturated hydraulic conductivity micro m/sec	Available water capacity In/In	Linear extensibility Pct	Organic matter Pct	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
DhD---Delphill- Abor complex, 5 to 20 percent slopes														
Delphill	0-4	-39-	-37-	20-24- 27	1.15-1.25 -1.35	4.00-9.00-14.00	0.16-0.18-0. 20	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.32	.32	3	6	48
	4-19	-34-	-38-	18-28- 35	1.30-1.40 -1.50	4.00-9.00-14.00	0.14-0.16-0. 18	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.32	.32			
	19-35	-34-	-38-	18-28- 35	1.30-1.43 -1.55	4.00-9.00-14.00	0.14-0.16-0. 18	3.0- 4.5- 5.9	0.0- 0.3- 0.5	.43	.43			
	35-60	—	—	—	—	—	—	—	—	—	—	—	—	—
Abor	0-4	-6-	-47-	40-48- 55	1.20-1.30 -1.40	1.40-2.70-4.00	0.14-0.16-0. 18	6.0- 7.5- 8.9	1.0- 1.5- 2.0	.20	.20	3	4	86
	4-38	-23-	-29-	35-48- 60	1.30-1.43 -1.55	0.01-0.22-0.42	0.14-0.15-0. 16	6.0- 7.5- 8.9	0.5- 0.8- 1.0	.28	.28			
	38-60	—	—	—	—	—	—	—	—	—	—	—	—	—

### Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021

## Hydrologic Soil Group and Surface Runoff

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

*Hydrologic soil groups* are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

*Surface runoff* refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

### Report—Hydrologic Soil Group and Surface Runoff

Absence of an entry indicates that the data were not estimated. The dash indicates no documented presence.

Hydrologic Soil Group and Surface Runoff—Broadwater County Area, Montana			
Map symbol and soil name	Pct. of map unit	Surface Runoff	Hydrologic Soil Group
11C—Amesha silt loam, 4 to 8 percent slopes			
Amesha	90	—	B

Hydrologic Soil Group and Surface Runoff--Broadwater County Area, Montana			
Map symbol and soil name	Pct. of map unit	Surface Runoff	Hydrologic Soil Group
13C—Anamac loam, 2 to 8 percent slopes			
Anamac	90	— B	
18C—Brocko silt loam, 2 to 8 percent slopes			
Brocko	95	— B	
18E—Brocko silt loam, 15 to 35 percent slopes			
Brocko	85	— B	
80C—Floweree silt loam, 2 to 8 percent slopes			
Floweree	95	— B	
83C—Shoddy silty clay loam, 2 to 8 percent slopes			
Shoddy	90	— D	
83D—Shoddy silty clay loam, 8 to 15 percent slopes			
Shoddy	90	— D	
191E—Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes			
Cabbart	35	— D	
Shoddy	25	— D	
Amesha	20	— B	
851D—Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes			
Walbert	35	— D	
Shoddy	25	— D	
Cabbart	20	— D	
BsB—Brocko silt loam, 2 to 5 percent slopes			
Brocko	85	— B	
CaE—Cabbart complex, 9 to 35 percent slopes			
Cabbart	26	— D	
Cabbart	24	— D	
DhD—Delphill-Abor complex, 5 to 20 percent slopes			
Delphill	40	— C	
Abor	30	— D	

## Data Source Information

Soil Survey Area: Broadwater County Area, Montana

Survey Area Data: Version 20, Sep 2, 2021



## Water Features

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

*Hydrologic soil groups* are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

*Surface runoff* refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

The *months* in the table indicate the portion of the year in which a water table, ponding, and/or flooding is most likely to be a concern.

*Water table* refers to a saturated zone in the soil. The water features table indicates, by month, depth to the top ( *upper limit* ) and base ( *lower limit* ) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table. The kind of water table, apparent or perched, is given if a seasonal high water table exists in the soil. A water table is perched if free water is restricted from moving downward in the soil by a restrictive feature, in most cases a hardpan; there is a dry layer of soil underneath a wet layer. A water table is apparent if free water is present in all horizons from its upper boundary to below 2 meters or to the depth of observation. The water table kind listed is for the first major component in the map unit.

*Ponding* is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

*Flooding* is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

*Duration* and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

## Report—Water Features

Map unit symbol and soil name	Hydrologic group	Surface runoff	Most likely months	Water table			Ponding			Flooding	
				Upper limit	Lower limit	Kind	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	Ft		Ft				
11C—Amesha silt loam, 4 to 8 percent slopes											
Amesha	B		Jan-Dec	—	—	—	—	—	None	—	None
13C—Anamac loam, 2 to 8 percent slopes											
Anamac	B		Jan-Dec	—	—	—	—	—	None	—	None
18C—Brocko silt loam, 2 to 8 percent slopes											
Brocko	B		Jan-Dec	—	—	—	—	—	None	—	None
18E—Brocko silt loam, 15 to 35 percent slopes											
Brocko	B		Jan-Dec	—	—	—	—	—	None	—	None
80C—Floweree silt loam, 2 to 8 percent slopes											
Floweree	B		Jan-Dec	—	—	—	—	—	None	—	None
83C—Shoddy silty clay loam, 2 to 8 percent slopes											
Shoddy	D		Jan-Dec	—	—	—	—	—	None	—	None
83D—Shoddy silty clay loam, 8 to 15 percent slopes											
Shoddy	D		Jan-Dec	—	—	—	—	—	None	—	None
191E—Cabbart-Shoddy-Amesha complex, 15 to 45 percent slopes											
Cabbart	D		Jan-Dec	—	—	—	—	—	None	—	None
Shoddy	D		Jan-Dec	—	—	—	—	—	None	—	None
Amesha	B		Jan-Dec	—	—	—	—	—	None	—	None
851D—Walbert-Shoddy-Cabbart complex, 2 to 15 percent slopes											
Walbert	D		Jan-Dec	—	—	—	—	—	None	—	None
Shoddy	D		Jan-Dec	—	—	—	—	—	None	—	None
Cabbart	D		Jan-Dec	—	—	—	—	—	None	—	None

Map unit symbol and soil name	Hydrologic group	Surface runoff	Most likely months	Water table			Ponding			Flooding	
				Upper limit	Lower limit	Kind	Surface depth	Duration	Frequency	Duration	Frequency
BsB—Brocko silt loam, 2 to 5 percent slopes											
Brocko	B		Jan-Dec	—	—	—	—	—	—	—	None
CaE—Cabbart complex, 9 to 35 percent slopes											
Cabbart	D		Jan-Dec	—	—	—	—	—	—	—	None
Cabbart	D		Jan-Dec	—	—	—	—	—	—	—	None
DhD—Delphill-Abor complex, 5 to 20 percent slopes											
Delphill	C		Jan-Dec	—	—	—	—	—	—	—	None
Abor	D		Jan-Dec	—	—	—	—	—	—	—	None

### Data Source Information

Soil Survey Area: Broadwater County Area, Montana  
 Survey Area Data: Version 20, Sep 2, 2021



Return to  
SecurWest Escrow Services, Inc.  
P.O. Box 6550  
Bozeman, MT 59771-6550

NOTICE OF CONTRACT FOR DEED

NOTICE IS HEREBY GIVEN, that a Contract for Deed was executed this \_\_\_\_ day of July, 2022 wherein JEFFREY N. COTTERELL of 1170 Cobb Hill Road, Bozeman, Montana 59718, GREGORY E. ANDERSON of 8937 Little Raven Trail, Niwot, Colorado 80503-7185 and DEBORAH M. VELLI of 13515 Cottonwood Canyon Road, Bozeman, Montana 59718, as Seller agreed to sell and VALLEY VIEW ACRES LLC of 280 West Kagy Boulevard, Suite D238, Bozeman, Montana 59715, as Buyer agreed to purchase the following described property in the County of Broadwater, State of Montana, to-wit:

Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana

Section 31: Lots 1, 2, 3, E $\frac{1}{2}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$

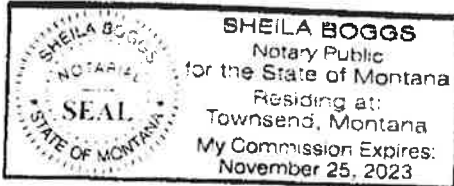
Notice is further given that this instrument is an abstract of said contract, executed copies of which are in the possession of the above designated parties. Copies will be furnished upon request by the Buyer at no cost. The effect of the document abstracted is that the Seller agrees to convey all of the above described property to the Buyer upon full payment and performance of said contract.

DATED this 6th day of July, 2022.

  
\_\_\_\_\_  
Jeffrey N. Cotterell

STATE OF MONTANA )  
                                  ) ss.  
County of Broadwater )

On this 6 day of July, 2022, before me a Notary Public in and for said state personally appeared JEFFREY N. COTTERELL, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same.



Jeffrey N Cotterell Sheila Boggs  
Printed Name: Sheila Boggs  
Notary Public for the State of Montana  
Residing at Townsend, Montana  
My commission expires: 11-25-2022

SIGNATURE PAGE for that Notice of Contract for Deed from:

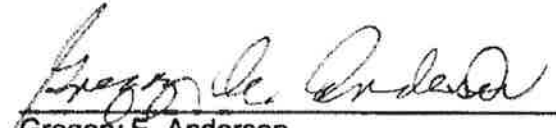
JEFFREY N. COTTERELL, GREGORY E. ANDERSON and DEBORAH M. VELLI, the Sellers, to:

VALLEY VIEW ACRES LLC, the Buyer, for the following described premises in Broadwater County, Montana, to-wit:

Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana

Section 31: Lots 1, 2, 3, E $\frac{1}{2}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$


DATED this 8<sup>th</sup> day of July, 2022.

  
\_\_\_\_\_  
Gregory E. Anderson

STATE OF COLORADO )  
County of Boulder ) : ss.

On this 8 day of July, 2022, before me a Notary Public in and for said state personally appeared GREGORY E. ANDERSON, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same.

**JASON BUSHMAN**  
**NOTARY PUBLIC**  
**STATE OF COLORADO**  
NOTARY ID 20064025004  
My Commission Expires December 10, 2023

  
\_\_\_\_\_  
Printed Name: Jason Bushman  
Notary Public for the State of Colorado  
Residing at Louisville, Colorado  
My commission expires: 12/10/2023



SIGNATURE PAGE for that Notice of Contract for Deed from:

JEFFREY N. COTTERELL, GREGORY E. ANDERSON and DEBORAH M. VELLI, the Sellers, to:

VALLEY VIEW ACRES LLC, the Buyer, for the following described premises in Broadwater County, Montana, to-wit:

Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana

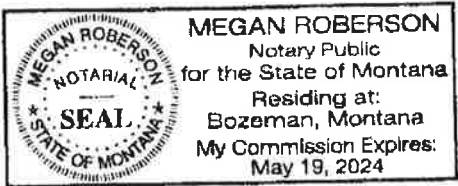
Section 31: Lots 1, 2, 3, E $\frac{1}{2}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$

DATED this 7<sup>th</sup> day of July, 2022.

Deborah M. Velli  
Deborah M. Velli

STATE OF MONTANA )  
County of Gallatin ) ss.

On this 7 day of July, 2022, before me a Notary Public in and for said state personally appeared DEBORAH M. VELLI, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that she executed the same.



M Roberson  
Printed Name: M Roberson  
Notary Public for the State of Montana  
Residing at Bozeman, Montana  
My commission expires: MAY 19, 2024

SIGNATURE PAGE for that Notice of Contract for Deed from:

JEFFREY N. COTTERELL, GREGORY E. ANDERSON and DEBORAH M. VELLI, the Sellers, to:

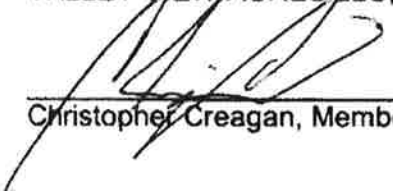
VALLEY VIEW ACRES LLC, the Buyer, for the following described premises in Broadwater County, Montana, to-wit:

Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana

Section 31: Lots 1, 2, 3, E $\frac{1}{2}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$

DATED this 7 day of July, 2022.

VALLEY VIEW ACRES LLC, by

  
\_\_\_\_\_  
Christopher Creagan, Member

  
\_\_\_\_\_  
Jeffrey Creagan, Member

\_\_\_\_\_  
Eric Michael Green, Member



STATE OF Washington )  
  ) : ss.  
County of Clark )

On this 7 day of July, 2022, before me a Notary Public in and for said state personally appeared CHRISTOPHER CREAGAN, JEFFREY CREAGAN, and ~~ERIC MICHAEL GREEN~~, Members of VALLEY VIEW ACRES LLC, known to me to be the persons whose names are subscribed to the foregoing instrument and acknowledged to me that the company executed the same.

Printed Name: Kesa Rooney  
Notary Public for the State of Washington  
Residing at 3540 NE 111 Ave Lacey WA  
My commission expires: 9-16-2025

SIGNATURE PAGE for that Notice of Contract for Deed from:

JEFFREY N. COTTERELL, GREGORY E. ANDERSON and DEBORAH M. VELLI, the Sellers, to:

VALLEY VIEW ACRES LLC, the Buyer, for the following described premises in Broadwater County, Montana, to-wit:

Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana

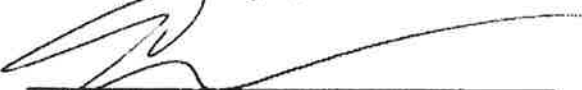
Section 31: Lots 1, 2, 3, E $\frac{1}{2}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$

DATED this \_\_\_\_\_ day of July, 2022.

VALLEY VIEW ACRES LLC, by

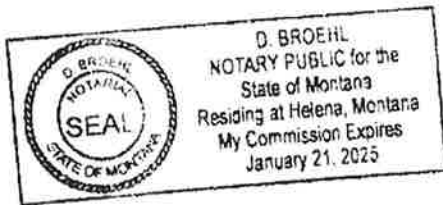
\_\_\_\_\_  
Christopher Creagan, Member

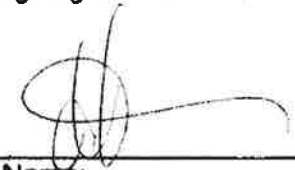
\_\_\_\_\_  
Jeffrey Creagan, Member

  
\_\_\_\_\_  
Eric Michael Green, Member

STATE OF Montana,  
County of Leibis + Clark; ss.

On this 11<sup>th</sup> day of July, 2022, before me a Notary Public in and for said state personally appeared ~~CHRISTOPHER CREAGAN, JEFFREY CREAGAN,~~ and ERIC MICHAEL GREEN, Members of VALLEY VIEW ACRES LLC, known to me to be the persons whose names are subscribed to the foregoing instrument and acknowledged to me that the company executed the same.



  
\_\_\_\_\_  
Printed Name: \_\_\_\_\_  
Notary Public for the State of \_\_\_\_\_  
Residing at \_\_\_\_\_  
My commission expires: \_\_\_\_\_

**Return To:**  
**Security Title Company**  
**P.O. Box 6550**  
**Bozeman, MT 59771-6550**

**195079 Fee: \$ 32.00 Bk 247 Pg 138**  
BROADWATER COUNTY Recorded 11/15/2022 at 04:33 PM  
Angie Paulsen, Clerk and Recorder By mh Deputy  
Return to: Security Title Company  
600 S 19th Ave, Bozeman, Montana 59718-4028

**Accommodation Recording Only**  
**STC# ESC 22039 pd**

WARRANTY DEED

FOR VALUE RECEIVED, JEFFREY N. COTTERELL, GREGORY E. ANDERSON and DEBORAH M. VELLI, the Grantors, do hereby grant, bargain, sell, convey and confirm unto VALLEY VIEW ACRES LLC of 280 West Kagy Boulevard, Suite D238, Bozeman, Montana 59715, the Grantee and Grantee's assigns, the following described premises in Broadwater County, Montana, to-wit:

Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana

Section 31: Lots 1, 2, 3, E $\frac{1}{2}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$

**SUBJECT TO:** all reservations and restrictions in prior conveyances or in patents from the United States or the State of Montana; existing easements, encroachments and rights of way of record and those which would be disclosed by an examination of the property; mineral, oil and gas reservations, conveyances and leases of record; all real property taxes and assessments for the current year and subsequent years; and all building and use restrictions, covenants, agreements, requirements, notices, waivers, and conditions of record.

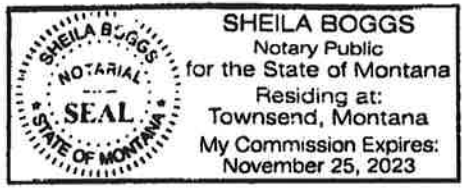
**TO HAVE AND TO HOLD** the said premises, with their tenements, hereditaments, and appurtenances unto the said Grantee and Grantee's assigns forever. And the said Grantors do hereby covenant to and with the said Grantee that they are the owners in fee simple of said premises; that Grantee shall enjoy the same without any lawful disturbance; that the same is free from all encumbrances except those limitations set forth above; that the Grantors and all persons acquiring any interest in the same through or from Grantors will, on demand, execute and deliver to the Grantee any further assurance of the same that may be reasonably required; and that the Grantors will warrant to the Grantee all the said property against every person lawfully claiming the same.

DATED this 6th day of July, 2022.

  
\_\_\_\_\_  
Jeffrey N. Cotterell

STATE OF MONTANA )  
 )  
County of Broadwater ) : ss.

On this 6 day of July, 2022, before me a Notary Public in and for said state personally appeared JEFFREY N. COTTERELL, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same.



Sheila Boggs  
Printed Name: Sheila Boggs  
Notary Public for the State of Montana  
Residing at Townsend, Montana  
My commission expires: 11-25-2023

SIGNATURE PAGE for that Warranty Deed from:

JEFFREY N. COTTERELL, GREGORY E. ANDERSON and DEBORAH M. VELLI, the Grantors, to:

VALLEY VIEW ACRES LLC, the Grantee, for the following described premises in Broadwater County, Montana, to-wit:

Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana

Section 31: Lots 1, 2, 3, E $\frac{1}{2}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$


DATED this 8<sup>th</sup> day of July, 2022.

  
\_\_\_\_\_  
Gregory E. Anderson

STATE OF COLORADO )  
County of Boulder ) ss.

On this 8 day of July, 2022, before me a Notary Public in and for said state personally appeared GREGORY E. ANDERSON, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same.

JASON BUSHMAN  
NOTARY PUBLIC  
STATE OF COLORADO  
NOTARY ID 20064025004  
My Commission Expires December 10, 2023

  
\_\_\_\_\_  
Printed Name: Jason Bushman  
Notary Public for the State of Colorado  
Residing at Louisville, Colorado  
My commission expires: 12/10/2023

SIGNATURE PAGE for that Warranty Deed from:

JEFFREY N. COTTERELL, GREGORY E. ANDERSON and DEBORAH M. VELLI, the Grantors, to:

VALLEY VIEW ACRES LLC, the Grantee, for the following described premises in Broadwater County, Montana, to-wit:

Township 3 North, Range 1 East, P.M.M., Broadwater County, Montana

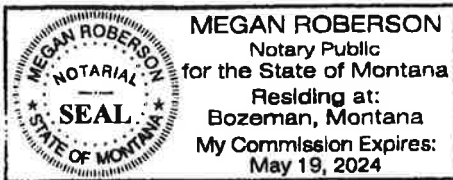
Section 31: Lots 1, 2, 3, E½NW¼, NE¼SW¼

DATED this 7<sup>th</sup> day of July, 2022.

Deborah M. Velli  
Deborah M. Velli

STATE OF MONTANA )  
County of Gallatin ) : ss.

On this 7 day of July, 2022, before me a Notary Public in and for said state personally appeared DEBORAH M. VELLI, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that she executed the same.



M Roberson  
Printed Name: M Roberson  
Notary Public for the State of Montana  
Residing at Bozeman Montana  
My commission expires: May 19, 2024

# Property Record Card

## Summary

### Primary Information

**Property Category:** RP **Subcategory:** Agricultural and Timber Properties  
**Geocode:** 43-1206-31-2-01-01-0000 **Assessment Code:** 000J240168  
**Primary Owner:** **PropertyAddress:**

VALLEY VIEW ACRES LLC **COS Parcel:**  
 280 W KAGY BLVD STE D238  
 BOZEMAN, MT 59715-6056

*NOTE: See the Owner tab for all owner information*

### Certificate of Survey:

### Subdivision:

### Legal Description:

S31, T03 N, R01 E, ACRES 234, LOTS 1,2,3; E2NW4; NE4SW4

**Last Modified:** 3/11/2023 10:35:23 AM

### General Property Information

**Neighborhood:** 243.001.S **Property Type:** VAC\_R - Vacant Land - Rural  
**Living Units:** 0 **Levy District:** 43-2360-J24  
**Zoning:** **Ownership %:** 100

### Linked Property:

No linked properties exist for this property

### Exemptions:

No exemptions exist for this property

### Condo Ownership:

**General:** 0 **Limited:** 0

### Property Factors

**Topography:** **Fronting:**  
**Utilities:** **Parking Type:**  
**Access:** **Parking Quantity:**  
**Location:** **Parking Proximity:**

### Land Summary

<u>Land Type</u>	<u>Acres</u>	<u>Value</u>
Grazing	234.000	00.00
Fallow	0.000	00.00
Irrigated	0.000	00.00



**Continuous Crop**

Wild Hay

Farmsite

ROW

**NonQual Land**

Total Ag Land

Total Forest Land

Total Market Land

0.000  
 0.000  
 0.000  
 0.000  
 0.000  
 0.000  
 234.000  
 0.000  
 0.000

**Deed Information:**

Deed Date	Book	Page	Recorded Date	Document Number	Document Type
7/11/2022	243	218	7/11/2022	194154	Contract for Deed
7/11/2022	247	138	11/15/2022	195079	Warranty Deed
7/7/2021	227	54	7/9/2021	190145	Quit Claim Deed
6/23/2014	157	448	7/7/2013	171465	Quit Claim Deed
3/24/2014	155	795	4/2/2014	170964	SheriffsCertificate/Redemption/Sheriffs Deed
4/24/2013	149	632	4/25/2013	169180	SheriffsCertificate/Redemption/Sheriffs Deed
5/12/2012	143	728	7/10/2012	167497	
1/29/2008	111	330	1/29/2008		
4/27/2006	93	503			
4/3/2006	92	782			
10/24/2003	72	665			
10/12/1994	30	999			

**Owners**

Party #1

**Default Information:**

VALLEY VIEW ACRES LLC  
 280 W KAGY BLVD STE D238

**Ownership %:** 100

**Primary Owner:** "Yes"

**Interest Type:** Fee Simple

**Last Modified:** 11/16/2022 12:46:35 PM

Other Names

Other Addresses

**Name**

**Type**

**Appraisals**

**Appraisal History**

Tax Year	Land Value	Building Value	Total Value	Method
2022	10391	0	10391	COST
2021	10391	0	10391	COST
2020	9670	0	9670	COST

**Market Land**

**Market Land Info**

No market land info exists for this parcel

**Dwellings**

**Existing Dwellings**

No dwellings exist for this parcel

**Other Buildings/Improvements**

**Outbuilding/Yard Improvements**

No other buildings or yard improvements exist for this parcel

**Commercial**

**Existing Commercial Buildings**

No commercial buildings exist for this parcel

**Ag/Forest Land**

**Ag/Forest Land Item #1**

**Acre Type:** G - Grazing

**Class Code:** 1601

Productivity

**Quantity:** 0.097

**Units:** AUM/Acre

Valuation

**Acres:** 4.187

**Value:** 0

**Irrigation Type:**

**Timber Zone:**

**Commodity:** Grazing Fee

**Per Acre Value:** 0

**Ag/Forest Land Item #2**

**Acre Type:** G - Grazing

**Class Code:** 1601

**Irrigation Type:**

**Timber Zone:**

Productivity

**Quantity:** 0.099

**Units:** AUM/Acre

Valuation

**Acres:** 20.368

**Value:** 0

Ag/Forest Land Item #3

**Acre Type:** G - Grazing

**Class Code:** 1601

Productivity

**Quantity:** 0.125

**Units:** AUM/Acre

Valuation

**Acres:** 4.432

**Value:** 0

Ag/Forest Land Item #4

**Acre Type:** G - Grazing

**Class Code:** 1601

Productivity

**Quantity:** 0.133

**Units:** AUM/Acre

Valuation

**Acres:** 15.17

**Value:** 0

Ag/Forest Land Item #5

**Acre Type:** G - Grazing

**Class Code:** 1601

Productivity

**Quantity:** 0.138

**Units:** AUM/Acre

Valuation

**Acres:** 10.643

**Value:** 0

Ag/Forest Land Item #6

**Acre Type:** G - Grazing

**Commodity:** Grazing Fee

**Per Acre Value:** 0

**Irrigation Type:**

**Timber Zone:**

**Commodity:** Grazing Fee

**Per Acre Value:** 0

**Irrigation Type:**

**Timber Zone:**

**Commodity:** Grazing Fee

**Per Acre Value:** 0

**Irrigation Type:**

**Timber Zone:**

**Commodity:** Grazing Fee

**Per Acre Value:** 0

**Irrigation Type:**

**Class Code:** 1601

Productivity

**Quantity:** 0.141

**Units:** AUM/Acre

Valuation

**Acres:** 2.785

**Value:** 0

Ag/Forest Land Item #7

**Acre Type:** G - Grazing

**Class Code:** 1601

Productivity

**Quantity:** 0.181

**Units:** AUM/Acre

Valuation

**Acres:** 125.582

**Value:** 0

Ag/Forest Land Item #8

**Acre Type:** G - Grazing

**Class Code:** 1601

Productivity

**Quantity:** 0.191

**Units:** AUM/Acre

Valuation

**Acres:** 46.427

**Value:** 0

Ag/Forest Land Item #9

**Acre Type:** G - Grazing

**Class Code:** 1601

Productivity

**Quantity:** 0.222

**Units:** AUM/Acre

Valuation

**Acres:** 4.406

**Value:** 0

**Timber Zone:**

**Commodity:** Grazing Fee

**Per Acre Value:** 0

**Irrigation Type:**

**Timber Zone:**

**Commodity:** Grazing Fee

**Per Acre Value:** 0

**Irrigation Type:**

**Timber Zone:**

**Commodity:** Grazing Fee

**Per Acre Value:** 0

**Irrigation Type:**

**Timber Zone:**

**Commodity:** Grazing Fee

**Per Acre Value:** 0



**bdreyer@alpinesurveying.net**

---

**From:** bdreyer@alpinesurveying.net  
**Sent:** Wednesday, January 25, 2023 4:32 PM  
**To:** 'Gates, Russ'  
**Subject:** RE: [EXTERNAL] Six Ranges Ranch

Thanks Russ!

**From:** Gates, Russ <RGates@mt.gov>  
**Sent:** Wednesday, January 25, 2023 4:26 PM  
**To:** bdreyer@alpinesurveying.net  
**Subject:** RE: [EXTERNAL] Six Ranges Ranch

Bill,

I'll get the response to this out in the next couple days. Like I said on the phone, we don't review any lots smaller than 20 acres, so what you have proposed shouldn't be an issue on the water rights side.

Russ

**From:** [bdreyer@alpinesurveying.net](mailto:bdreyer@alpinesurveying.net) <[bdreyer@alpinesurveying.net](mailto:bdreyer@alpinesurveying.net)>  
**Sent:** Wednesday, January 25, 2023 4:18 PM  
**To:** Gates, Russ <[RGates@mt.gov](mailto:RGates@mt.gov)>  
**Subject:** [EXTERNAL] Six Ranges Ranch

Hi Russ,  
Thanks for the phone call. As discussed, there is a total of 11 lots on 234 acres. The smallest lots are just over 20 acres and the largest is 31 acres. I have attached a vicinity map and preliminary plat with the request form. Please let me know if you have any questions.  
Thanks, Bill

**William Dreyer, PE**  
**Alpine Surveying & Engineering, Inc.**  
714 Stoneridge Dr., Suite 3  
Bozeman, MT 59718  
[406.586.5599](tel:406.586.5599) | office  
[406.539.9954](tel:406.539.9954) | cell  
[bdreyer@alpinesurveying.net](mailto:bdreyer@alpinesurveying.net)

**From:** Mick Paffhausen <mick@vec.coop>  
**Sent:** Thursday, January 26, 2023 7:45 AM  
**To:** bdreyer@alpinesurveying.net  
**Subject:** RE: Six Ranges Ranch 11-Lot Major Subdivision

Hi Bill,

It all looks good to us. We have the materials and are on tract to get started on this project this spring as soon as the weather allows. I have not seen a request letter from Broadwater County.

Thanks

Mick Paffhausen  
Staking/Mapping Technician  
(406)925-3899  
[mick@vec.coop](mailto:mick@vec.coop)



**From:** bdreyer@alpinesurveying.net <bdreyer@alpinesurveying.net>  
**Sent:** Wednesday, January 25, 2023 4:41 PM  
**To:** Mick Paffhausen <mick@vec.coop>  
**Subject:** Six Ranges Ranch 11-Lot Major Subdivision

Hey Mick

I understand that you are already working on this project. I am following up on the comment request letter for Broadwater county.

As you are aware the owners have proposed to subdivide the property into eleven residential lots, ranging from 20 to 31 acres in size.

We are presently preparing a Potential Impact Statement for inclusion in the major subdivision submittal.

Currently the property is vacant land. Once subdivided, the property will be approved for eleven residential lots.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Bill

William Dreyer, PE  
**Alpine Surveying & Engineering, Inc.**  
714 Stoneridge Dr., Suite 3  
Bozeman, MT 59718  
[406.586.5599](tel:406.586.5599) | office



January 25, 2023

Mick Paffhausen  
Project Engineer  
Vigilante Electric  
[mick@vec.coop](mailto:mick@vec.coop)  
225 E Bannack St., PO Box 1049,  
Dillon MT 59725

**RE: Proposed Six Ranges Ranch 11-Lot Major Subdivision, Broadwater County, MT**

Dear Conner,

Enclosed please find the Preliminary Plat for Six Ranges Ranch, eleven lot major subdivision. The property is located west of Price Road and adjacent to Rolling Glen Ranch on the west side. The major subdivision is being proposed on 234 acres in size and is vacant at this time.

The owners have proposed to subdivide the property into eleven residential lots, ranging from 20 to 31 acres in size.

We are presently preparing a Potential Impact Statement for inclusion in the major subdivision submittal.

Currently the property is vacant land. Once subdivided, the property will be approved for eleven residential lots.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,  
Alpine Surveying & Engineering

William Dreyer, P.E

714 Stoneridge Drive, Suite 3  
Bozeman MT. 59718  
Office: 406-586-5599  
Cell: 406-539-9954  
[Bdreyer@alpinesurveying.net](mailto:Bdreyer@alpinesurveying.net)



**From:** bdreyer@alpinesurveying.net  
**Sent:** Wednesday, January 25, 2023 4:31 PM  
**To:** dmurdo@mt.gov  
**Subject:** Six Ranges Ranch  
**Attachments:** Six Ranges Ranch Sub. Vicinity Maps.pdf; 540-02 Six Ranges Ranch Preliminary Plat 24X36.pdf

Hey Damon,

Attached, please find the Preliminary Plat for Six Ranges Ranch, eleven lot major subdivision. The property is located west of Price Road and adjacent to Rolling Glen Ranch on the west side. The major subdivision is being proposed on 234 acres in size and is vacant at this time.

The owners have proposed to subdivide the property into eleven residential lots, ranging from 20 to 31 acres in size. We are presently preparing a Potential Impact Statement for inclusion in the major subdivision submittal.

Currently the property is vacant land. Once subdivided, the property will be approved for eleven residential lots.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Thanks, Bill

William Dreyer, PE  
**Alpine Surveying & Engineering, Inc.**  
714 Stoneridge Dr., Suite 3  
Bozeman, MT 59718  
[406.586.5599](tel:406.586.5599) | office  
[406.539.9954](tel:406.539.9954) | cell  
[bdreyer@alpinesurveying.net](mailto:bdreyer@alpinesurveying.net)



Jan 25, 2023

Damon Murdo  
Montana State Historic Preservation Office  
P.O. Box 201201  
225 N. Roberts  
Helena, MT 59620

**RE: Proposed Six Ranges Ranch 11-Lot Major Subdivision, Broadwater County, MT**

Damon,

Enclosed please find the Preliminary Plat for Six Ranges Ranch, eleven lot major subdivision. The property is located west of Price Road and adjacent to Rolling Glen Ranch on the west side. The major subdivision is being proposed on 234 acres in size and is vacant at this time.

The owners have proposed to subdivide the property into eleven residential lots, ranging from 20 to 31 acres in size.

We are presently preparing a Potential Impact Statement for inclusion in the major subdivision submittal.

Currently the property is vacant land. Once subdivided, the property will be approved for eleven residential lots.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,  
Alpine Surveying & Engineering

William Dreyer, P.E

714 Stoneridge Drive, Suite 3  
Bozeman MT. 59718  
Office: 406-586-5599  
Cell: 406-539-9954  
Bdreyer@alpinesurveying.net

## File Search Request Form

**Contact Name:** William Dreyer  
**Organization:** Apline Surveying and Engineering  
**Address:** 714 Stoeridge Drive, Suite 3  
**City/State/Zip:** Bozeman, MT. 59718  
**Telephone:** 406-586-5599  
**Email:** [bdreyer@alpinesurveying.net](mailto:bdreyer@alpinesurveying.net)



**MONTANA**  
HISTORICAL SOCIETY

Historic Preservation Office  
1301 E. Lockey, PO Box 201202  
Helena, MT 59620-1202

**SEND TO: Damon Murdo**  
**dmurdo@mt.gov (406) 444-7767**

**Project Name:**

Six Ranges Ranch

**Land Use:** Proposed 11 lot Subdivision **County:** Broadwater

**Agency Involved:** Broadwater County **Land Ownership:** VALLEY VIEW ACRES LLC  
(Private,FWP,BLM)

### Project Area Location Information

Township(N/S)	Range (E/W)	Section(s)
03 N	01E	31

### File Search Fee Structure

\$35 / section

*Please complete this form and attach a map showing the proposed project location. Feel free to attach additional project information if available.*

*All fields must be completed in order to process your request.*

*All sections must be added up and entered in to the box below before a file search will take place.*

*An invoice will be sent with your file search results.*

Total Sections to be searched:	1
--------------------------------	---

Total amount to be paid to SHPO:	<b>\$35.00</b>
----------------------------------	----------------



February 19, 2023

Global Net  
81-B Gold Miner Ln  
Belgrade, MT 59714

**Reference: Six Ranges Ranch 11-Lot Major Subdivision**

We are soliciting your comments regarding a proposed single-family subdivision west of Price Road and west of Rolling Glen Ranch. The project would create 11 residential lots. These single-family lots would be served by on-site water and sanitary sewer systems.

It is located on Government Lots 1, 2, 3 in Section 31, T. 3N., R. 1E., P.M.M, Broadwater County, Montana. The property is 234 acres in size and is vacant at this time.

As part of the subdivision application process, we are soliciting comments you may have regarding the proposed subdivision. Should you have any comments or questions, we would appreciate a written response to this letter.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,  
Alpine Surveying & Engineering

A handwritten signature in black ink that reads "William Dreyer". The signature is written in a cursive style.

William Dreyer, P.E  
714 Stoneridge Drive Suite 3  
Bozeman MT. 59718  
Office: 406-586-5599  
Cell: 406-539-9954  
[bdreyer@alpinesurveying.net](mailto:bdreyer@alpinesurveying.net)



February 19, 2023

Three Forks Post Office  
Attn: Lenna Wester  
9 E Front St  
Three Forks, MT 59752

**Reference: Six Ranges Ranch 11-Lot Major Subdivision**

We are soliciting your comments regarding a proposed single-family subdivision west of Price Road and west of Rolling Glen Ranch. The project would create 11 residential lots. These single-family lots would be served by on-site water and sanitary sewer systems.

It is located on Government Lots 1, 2, 3 in Section 31, T. 3N., R. 1E., P.M.M, Broadwater County, Montana. The property is 234 acres in size and is vacant at this time.

As part of the subdivision application process, we are soliciting comments you may have regarding the proposed subdivision. Should you have any comments or questions, we would appreciate a written response to this letter.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,  
Alpine Surveying & Engineering

A handwritten signature in black ink, appearing to read "William Dreyer", is written over the typed name.

William Dreyer, P.E  
714 Stoneridge Drive Suite 3  
Bozeman MT. 59718  
Office: 406-586-5599  
Cell: 406-539-9954  
bdreyer@alpinesurveying.net



February 19, 2023

Three Forks School District  
Attn RHONDA UTHLAUT, Superintendent  
212 East Neal  
Three Forks, MT 59752

**Reference: Six Ranges Ranch 11-Lot Major Subdivision**

We are soliciting your comments regarding a proposed single-family subdivision west of Price Road and west of Rolling Glen Ranch. The project would create 11 residential lots. These single-family lots would be served by on-site water and sanitary sewer systems.

It is located on Government Lots 1, 2, 3 in Section 31, T. 3N., R. 1E., P.M.M, Broadwater County, Montana. The property is 234 acres in size and is vacant at this time.

As part of the subdivision application process, we are soliciting comments you may have regarding the proposed subdivision. Should you have any comments or questions, we would appreciate a written response to this letter.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,  
Alpine Surveying & Engineering

William Dreyer, P.E  
714 Stoneridge Drive Suite 3  
Bozeman MT. 59718  
Office: 406-586-5599  
Cell: 406-539-9954  
[bdreyer@alpinesurveying.net](mailto:bdreyer@alpinesurveying.net)



February 19, 2023

Three Forks Rural Fire District  
Attn: Keith Aune  
PO Box 444  
Three Forks, MT 59752

**Reference: Six Ranges Ranch 11-Lot Major Subdivision**

We are soliciting your comments regarding a proposed single-family subdivision west of Price Road and west of Rolling Glen Ranch. The project would create 11 residential lots. These single-family lots would be served by on-site water and sanitary sewer systems.

It is located on Government Lots 1, 2, 3 in Section 31, T. 3N., R. 1E., P.M.M, Broadwater County, Montana. The property is 234 acres in size and is vacant at this time.

As part of the subdivision application process, we are soliciting comments you may have regarding the proposed subdivision. Should you have any comments or questions, we would appreciate a written response to this letter.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,  
Alpine Surveying & Engineering

William Dreyer, P.E  
714 Stoneridge Drive Suite 3  
Bozeman MT. 59718  
Office: 406-586-5599  
Cell: 406-539-9954  
[bdreyer@alpinesurveying.net](mailto:bdreyer@alpinesurveying.net)



February 19, 2023

Mr. Terrance Gots  
Republic Waste Services  
8600 Huffine Lane  
Bozeman, MT 59718

**Reference: Six Ranges Ranch 11-Lot Major Subdivision**

We are soliciting your comments regarding a proposed single-family subdivision west of Price Road and west of Rolling Glen Ranch. The project would create 11 residential lots. These single-family lots would be served by on-site water and sanitary sewer systems.

It is located on Government Lots 1, 2, 3 in Section 31, T. 3N., R. 1E., P.M.M, Broadwater County, Montana. The property is 234 acres in size and is vacant at this time.

As part of the subdivision application process, we are soliciting comments you may have regarding the proposed subdivision. Should you have any comments or questions, we would appreciate a written response to this letter.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,  
Alpine Surveying & Engineering

A handwritten signature in black ink, appearing to read "William Dreyer", is written over the typed name.

William Dreyer, P.E  
714 Stoneridge Drive Suite 3  
Bozeman MT. 59718  
Office: 406-586-5599  
Cell: 406-539-9954  
bdreyer@alpinesurveying.net





February 19, 2023

Superintendent of Schools  
Attn: Melissa Franks  
515 Broadway St.  
Townsend, MT 59644

**Reference Six Ranges Ranch 11-Lot Major Subdivision**

We are soliciting your comments regarding a proposed single-family subdivision west of Price Road and west of Rolling Glen Ranch. The project would create 11 residential lots. These single-family lots would be served by on-site water and sanitary sewer systems.

It is located on Government Lots 1, 2, 3 in Section 31, T. 3N., R. 1E., P.M.M, Broadwater County, Montana. The property is 234 acres in size and is vacant at this time.

As part of the subdivision application process, we are soliciting comments you may have regarding the proposed subdivision. Should you have any comments or questions, we would appreciate a written response to this letter.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,  
Alpine Surveying & Engineering

A handwritten signature in black ink that reads "William Dreyer".

William Dreyer, P.E  
714 Stoneridge Drive Suite 3  
Bozeman MT. 59718  
Office: 406-586-5599  
Cell: 406-539-9954  
[bdreyer@alpinesurveying.net](mailto:bdreyer@alpinesurveying.net)



February 19, 2023

Operations Manager  
American Medical Response  
2101 Industrial Drive  
Bozeman, MT 59715

**Reference: Six Ranges Ranch 11-Lot Major Subdivision**

We are soliciting your comments regarding a proposed single-family subdivision west of Price Road and west of Rolling Glen Ranch. The project would create 11 residential lots. These single-family lots would be served by on-site water and sanitary sewer systems.

It is located on Government Lots 1, 2, 3 in Section 31, T. 3N., R. 1E., P.M.M, Broadwater County, Montana. The property is 234 acres in size and is vacant at this time.

As part of the subdivision application process, we are soliciting comments you may have regarding the proposed subdivision. Should you have any comments or questions, we would appreciate a written response to this letter.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,  
Alpine Surveying & Engineering

A handwritten signature in black ink that reads "William Dreyer". The signature is written in a cursive style.

William Dreyer, P.E  
714 Stoneridge Drive, Suite 3  
Bozeman MT. 59718  
Office: 406-586-5599  
Cell: 406-539-9954  
bdreyer@alpinesurveying.net



February 19, 2023

Ms. Julie Cunningham  
Wildlife Biologist  
Montana Fish, Wildlife, and Parks  
1400 S. 19th Avenue  
Bozeman, MT 59718

**Reference: Six Ranges Ranch 11-Lot Major Subdivision**

We are soliciting your comments regarding a proposed single-family subdivision west of Price Road and west of Rolling Glen Ranch. The project would create 11 residential lots. These single-family lots would be served by on-site water and sanitary sewer systems.

It is located on Government Lots 1, 2, 3 in Section 31, T. 3N., R. 1E., P.M.M, Broadwater County, Montana. The property is 234 acres in size and is vacant at this time.

As part of the subdivision application process, we are soliciting comments you may have regarding the proposed subdivision. Should you have any comments or questions, we would appreciate a written response to this letter.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,  
Alpine Surveying & Engineering

William Dreyer, P.E  
714 Stoneridge Drive, Suite 3  
Bozeman MT. 59718  
Office: 406-586-5599  
Cell: 406-539-9954  
bdreyer@alpinesurveying.net



February 19, 2023

John Elliot  
Montana Department of Revenue  
2273 Boot Hill Court Suite 100,  
Bozeman MT 59715

**Reference: Six Ranges Ranch 11-Lot Major Subdivision**

We are soliciting your comments regarding a proposed single-family subdivision west of Price Road and west of Rolling Glen Ranch. The project would create 11 residential lots. These single-family lots would be served by on-site water and sanitary sewer systems.

It is located on Government Lots 1, 2, 3 in Section 31, T. 3N., R. 1E., P.M.M, Broadwater County, Montana. The property is 234 acres in size and is vacant at this time.

As part of the subdivision application process, we are soliciting comments you may have regarding the proposed subdivision. Should you have any comments or questions, we would appreciate a written response to this letter.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,  
Alpine Surveying & Engineering

William Dreyer, P.E  
714 Stoneridge Drive, Suite 3  
Bozeman MT. 59718  
Office: 406-586-5599  
Cell: 406-539-9954  
[bdreyer@alpinesurveying.net](mailto:bdreyer@alpinesurveying.net)



February 19, 2023

Broadwater County Health Center  
Attn: Sam Allen  
110 North Oak  
Townsend, MT 59644

**Reference: Six Ranges Ranch 11-Lot Major Subdivision**

We are soliciting your comments regarding a proposed single-family subdivision west of Price Road and west of Rolling Glen Ranch. The project would create 11 residential lots. These single-family lots would be served by on-site water and sanitary sewer systems.

It is located on Government Lots 1, 2, 3 in Section 31, T. 3N., R. 1E., P.M.M, Broadwater County, Montana. The property is 234 acres in size and is vacant at this time.

As part of the subdivision application process, we are soliciting comments you may have regarding the proposed subdivision. Should you have any comments or questions, we would appreciate a written response to this letter.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,  
Alpine Surveying & Engineering

A handwritten signature in black ink, appearing to read "William Dreyer", is written over the printed name.

William Dreyer, P.E  
714 Stoneridge Drive, Suite 3  
Bozeman MT. 59718  
Office: 406-586-5599  
Cell: 406-539-9954  
[bdreyer@alpinesurveying.net](mailto:bdreyer@alpinesurveying.net)



February 19, 2023

Eagle Emergency Service  
PO Box 822  
East Helena, MT 59644

**Reference: Six Ranges Ranch 11-Lot Major Subdivision**

We are soliciting your comments regarding a proposed single-family subdivision west of Price Road and west of Rolling Glen Ranch. The project would create 11 residential lots. These single-family lots would be served by on-site water and sanitary sewer systems.

It is located on Government Lots 1, 2, 3 in Section 31, T. 3N., R. 1E., P.M.M, Broadwater County, Montana. The property is 234 acres in size and is vacant at this time.

As part of the subdivision application process, we are soliciting comments you may have regarding the proposed subdivision. Should you have any comments or questions, we would appreciate a written response to this letter.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,  
Alpine Surveying & Engineering

A handwritten signature in black ink that reads "William Dreyer". The signature is written in a cursive style.

William Dreyer, P.E  
714 Stoneridge Drive, Suite 3  
Bozeman MT. 59718  
Office: 406-586-5599  
Cell: 406-539-9954  
[bdreyer@alpinesurveying.net](mailto:bdreyer@alpinesurveying.net)



February 19, 2023

Broadwater County Sheriff department  
Attn: Sheriff Nick Rauser  
519 Broadway Street  
Townsend, MT 59644

**RE: Proposed Six Ranges Ranch 11-Lot Major Subdivision, Broadwater County, MT**

Dear Sheriff Rauser,

Enclosed please find the Preliminary Plat for Six Ranges Ranch 11-lot major subdivision. The property is located west of Price Road and adjacent to Rolling Glen Ranch on the west side. The major subdivision is being proposed on 234 acres in size and is vacant at this time

The owners have proposed to subdivide the property into 11- residential lots, ranging from 20 to 31 acres in size.

We are presently preparing a Potential Impact Statement for inclusion in the major subdivision submittal.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,  
Alpine Surveying & Engineering

A handwritten signature in black ink that reads "William Dreyer". The signature is written in a cursive style with a large, stylized initial "W".

William Dreyer, P.E

714 Stoneridge Drive, Suite 3  
Bozeman MT. 59718  
Office: 406-586-5599  
Cell: 406-539-9954  
bdreyer@alpinesurveying.net



February 19, 2023

Jodie Pengra  
St. Peter's Health  
2475 Broadway  
Helena, MT 59601

**RE: Proposed, Subdivision, Six Ranges Ranch Broadwater County, MT**

We are soliciting your comments regarding a proposed single-family subdivision west of Price Road and west of Rolling Glen Ranch. The project would create 11-residential lots. These single-family lots would be served by on-site water and sanitary sewer systems.

It is located on Government Lots 1, 2, 3 in Section 31, T. 3N., R. 1E., P.M.M, Broadwater County, Montana. The property is 234 acres in size and is vacant at this time.

As part of the subdivision application process, we are soliciting comments you may have regarding the proposed subdivision. Should you have any comments or questions, we would appreciate a written response to this letter.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,  
Alpine Surveying & Engineering

William Dreyer, P.E

714 Stoneridge Drive, Suite 3  
Bozeman MT. 59718  
Office: 406-586-5599  
Cell: 406-539-9954  
Bdreyer@alpinesurveying.net



**From:** TJ Graveley <tgraveley@co.broadwater.mt.us>  
**Sent:** Tuesday, February 21, 2023 10:58 AM  
**To:** bdreyer@alpinesurveying.net  
**Subject:** RE: Six Ranges Ranch 11-lot Major.

Good Morning Bill,

My 1 question that I have is, Have you secured access to the roads within the subdivision (snow berry, and bitterroot)? I have heard that there is new regulations you may need to call Broadwater County Planning.

**From:** bdreyer@alpinesurveying.net <bdreyer@alpinesurveying.net>  
**Sent:** Monday, February 20, 2023 3:31 PM  
**To:** TJ Graveley <tgraveley@co.broadwater.mt.us>  
**Subject:** Six Ranges Ranch 11-lot Major.

February 19, 2023

**TJ Graveley**  
**Broadwater County Public Works Supervisor**  
**515 Broadway**  
**Townsend, MT 59644**

**RE: Six Ranges Ranch 11-Lot Major Subdivision, Broadwater County, MT**

Dear TJ,

We are soliciting your comments regarding a proposed single-family subdivision west of Price Road and west of Rolling Glen Ranch. The project would create 11 residential lots. These single-family lots would be served by on-site water and sanitary sewer systems.

It is located on Government Lots 1, 2, 3 in Section 31, T. 3N., R. 1E., P.M.M, Broadwater County, Montana. The property is 234 acres in size and is vacant at this time.

The anticipated traffic is estimated at 88 trips per day, (11 lots x 8 trips per day).

As part of the subdivision application process, we are soliciting comments you may have regarding the proposed subdivision. Should you have any comments or questions, we would appreciate a written response to this letter.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,



February 19, 2023

**TJ Graveley**  
**Broadwater County Public Works Supervisor**  
**515 Broadway**  
**Townsend, MT 59644**

**RE: Six Ranges Ranch 11-Lot Major Subdivision, Broadwater County, MT**

Dear TJ,

We are soliciting your comments regarding a proposed single-family subdivision west of Price Road and west of Rolling Glen Ranch. The project would create 11 residential lots. These single-family lots would be served by on-site water and sanitary sewer systems.

It is located on Government Lots 1, 2, 3 in Section 31, T. 3N., R. 1E., P.M.M, Broadwater County, Montana. The property is 234 acres in size and is vacant at this time.

The anticipated traffic is estimated at 88 trips per day, (11 lots x 8 trips per day).

As part of the subdivision application process, we are soliciting comments you may have regarding the proposed subdivision. Should you have any comments or questions, we would appreciate a written response to this letter.

If you require additional information, please don't hesitate to call. We appreciate your assistance. Please contact our office if you have any questions. Thank you.

Sincerely,  
Alpine Surveying & Engineering

William Dreyer, P.E

714 Stoneridge Drive, Suite 3  
Bozeman MT. 59718  
Office: 406-586-5599  
Cell: 406-539-9954  
Bdreyer@alpinesurveying.net



# SIX RANGES RANCH SUBDIVISION

## Fire Protection/Fuels Management Plan

---

### **Background:**

Six Ranges Ranch is an 11-lot minor subdivision consisting of approximately 234 acres west of Rolling Glen Ranch and Price Road.

Abutting land use includes rural residential lots to the east, vacant agricultural land to the west and south.

All the lots will be directly accessible from inter subdivision roads that access through Rolling Glen Ranch.

### **Fire Protection:**

Fire protection facilities will include installation of a fire fill site. The site will include 30,000 gallons underground tanks located on lot 3 so that the placement of the tanks will utilize the elevation difference that creates a pressurized fill site.

Prior to final plat confirmation of fire protection service/arrangement will be obtained

### **Fire Protection Requirements for Major Residential Subdivisions:**

Fire Protection A fire plan will be created with the Fire Protection Authority (FPA) with jurisdiction for the area in which the Subdivision is located. The applicant will work with the FPA on that fire protection plan, and the fire plan will take into account that there is a water supply with sufficient volume for effective fire control.

### **A water supply of sufficient volume for effective fire control must be provided as follows:**

The proposed 11- lot major is adjacent to Rolling Glen Ranch. Rolling Glen Ranch has a fire fill site within it, however due to travel distance, Six Range Ranch is proposing a gravity pressurized fill site. Each lot will be able to utilize the fire fill site system for fire prevention purposes. Fire flows out of the hydrant within the subdivision will exceeded 1,000 gallon per minute and meet all flow volumes and durations within the International Fire Code.

### **Fire Protection Requirements for Residential subdivisions:**

1. Water supply shall meet or exceed the minimum required fire flow and flow duration for buildings as described in the current edition of the Fire Code, as adopted by the State of Montana.
2. All residential structures will be required to provide fire detection systems, either by code or as part of the Fire Protection Plan,

3. All structures shall be built meeting or exceeding the requirements of the current editions of the Fire and Building codes, as adopted by the State of Montana.

**Expansion of water supply systems.**

A new fire fill site is proposed for the 11-lot subdivision.

**Back-Up-Power Requirements for Water Distribution Systems Providing Fire Protection Water Supply.**

Since the proposed fire system is proposing to utilize the topographical elevation differences, backup power will not be needed for the fire fill site. The 30,000-gallon tanks will provide over 1, 000 gallons per minute at 25 psi water pressure.

**Locations of Fire Protection Water Supply System.**

The pressurized hydrant is adjacent to the public road on lot-3. This location will have a fire pullout that will be approved by the FPA

**Maintenance of Fire Protection Water Supply.**

The Six Ranges Ranch Home Owners Association will maintain the Fire fill site system. The HOA will have the financial means for proper maintenance.

**Access & Evacuation**

Access for emergency responders and the public's evacuation shall be provided for with the looped road section.

**Roads**

All roads are designed to meet or exceed Broadwater County Road standards, including but not limited to construction, width and grade. The access routes shall be approved by the FPA.

The proposed 11- lot subdivision has two ingress/egress to assure adequate escape routes for firefighting and other emergency response vehicles.

**The Suggested Covenants:**

2. Site plans of all lots must be submitted for review and approval by the Fire District.
3. Driveways to Structures – To allow for emergency vehicle access to structures, the property owner shall provide a driveway meeting the following requirements as approved by the FPA: a minimum unobstructed driving surface of 12 feet for driveways less than 300 feet long and a 16-foot driving surface for any driveway over 300 feet long; a vertical

clearance of 15 feet; and a four-foot zone of reduced vegetation on each side of the driving surface. If a driveway that is less than 16 feet wide is approved by the FPA.

4. All roads shall meet or exceed Broadwater County Road standards, including but not limited to construction, width and grade.
5. All major subdivisions should provide a minimum of two ingress/egress roads, at the recommendation of the FPA that are integral to and have approaches directly connected to the subdivision, to assure adequate escape routes for residents and access for firefighting and other emergency response vehicles.
6. Addressing Posted: Addressing on the buildings shall be contrasting on the building and reflective on the street. Number size shall be four-inch (4") minimum height. Sign numbers and the background shall be made of retroreflective material. Address signs shall meet the requirements of the FPA

**Defensible Space:**

Provisions of this section are intended to modify the fuel load in areas adjacent to structures to create a defensible space.

1. Fuel Load Reduction - The dimensions of the defensible space shall be based upon the requirements established in the Vegetation Management Plan.
2. Ground Fuel - Ground fuel within the defined defensible space, shall be treated (mowed, mulched, converted to compost, etc.) or removed annually or more frequently as directed by the FPA.
3. Thinning and Pruning - Live vegetation within the defensible space shall have all dead material removed and shall be thinned and pruned to reduce fire intensity and rate of spread.
4. Dead Trees - Dead trees within the defensible space of buildings shall be removed.
5. Ladder Fuels - Vegetation under trees, within the defined defensible space, shall be maintained at a height that will preclude its functioning as a "ladder" for fire to travel from ground vegetation into the tree crown.
6. Fire-Resistant Landscaping - Where landscaping is desired, the proposed

vegetation type and/or management practices shall be approved by the FPA and be in compliance with fire resistant landscaping guidelines.

7. Defensible Space Maintenance - The defensible space plan shall include a maintenance element with the responsibility for maintenance defined.

**Vegetation/ Fuels Management Program:**

With the exception of individual structures, landscaping the remaining of the property will be managed as a natural environment to the extent appropriate. Vegetation maintenance will emphasize control of noxious weeds and to prevention of fire fuel buildup.

The Weed Management Plan calls for revegetation of non-agricultural areas with the approved grass seed mix. All new access corridors will be seeded with a turf mixture as required by the approved Noxious Weed Management Plan. During the first and second years of grass establishment, the area seeded to grass will be mowed to prevent weed seed development and dispersal. Mowing will continue in future years as necessary to limit grass growth to a height of 4 to 6 inches. The Fire District may monitor the potential fuel status and may require additional mowing when deemed necessary to avoid a fire hazard.

**Conclusion:**

This combination of managed landscaping and onsite fire protection facilities will provide an effective plan for the protection of lot owners and for the conservation goals of Six Ranges Ranch Subdivision.

**Appendix A-Plat/Site Plan**

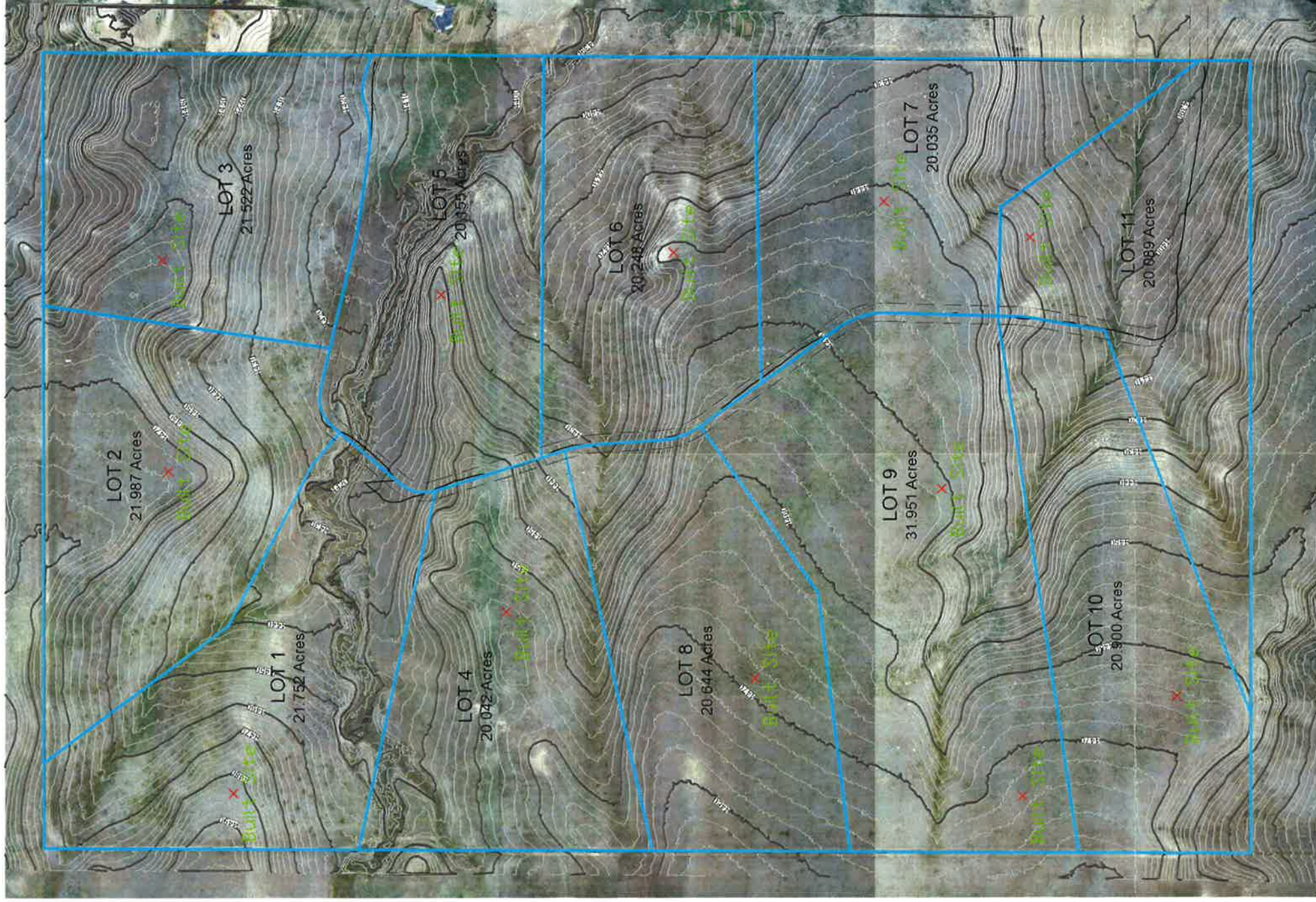


PRELIMINARY PLAT

# MINOR SUBDIVISION

MINOR SUBDIVISION PLAT NO. \_\_\_\_\_

A SUBDIVISION OF GOVERNMENT LOTS 1, 2 & 3, THE EAST ONE-HALF OF THE NORTHEAST ONE-QUARTER AND THE NORTHEAST ONE-QUARTER OF THE SOUTHEAST ONE-QUARTER OF SECTION 31, TOWNSHIP 3 NORTH, RANGE 1 EAST, P.M.M., BROADWATER COUNTY, MONTANA



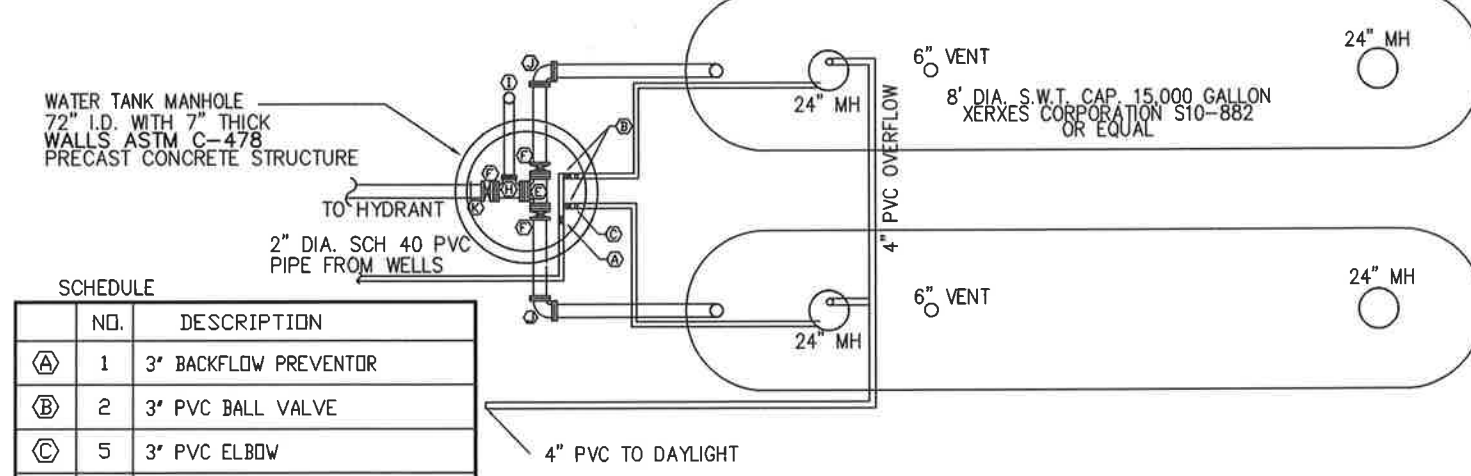
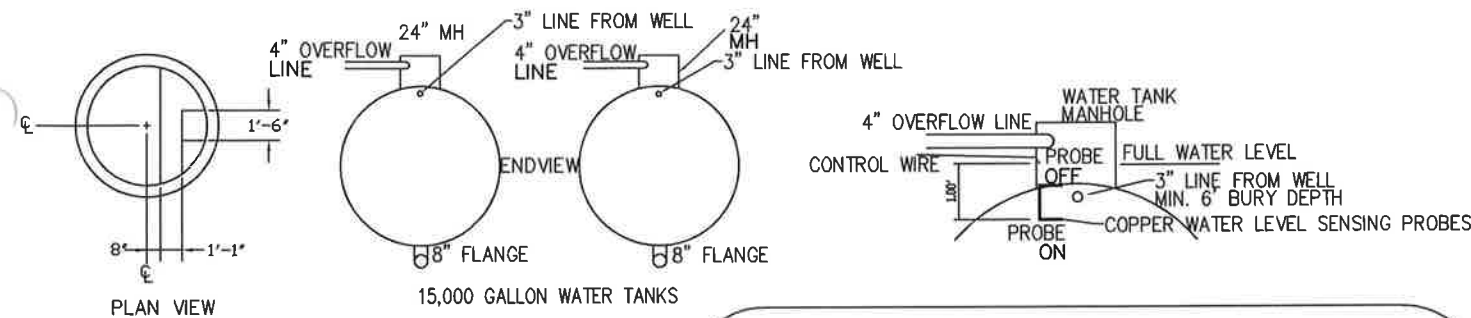
ELEVATION DATUM:  
NAVD 88

**BASIS OF BEARING**  
BOBCAT LDP  
COORDINATE SYSTEM

DRAWN BY: NH  
DATE: 07/28/2022  
PROJECT NO. 540-02  
FILE NAME: PRELIM LAYOUT

714 Stoneridge Dr.  
Suite 3  
Bozeman, MT 59718  
586 5599 Office  
www.alpinesurveying.net

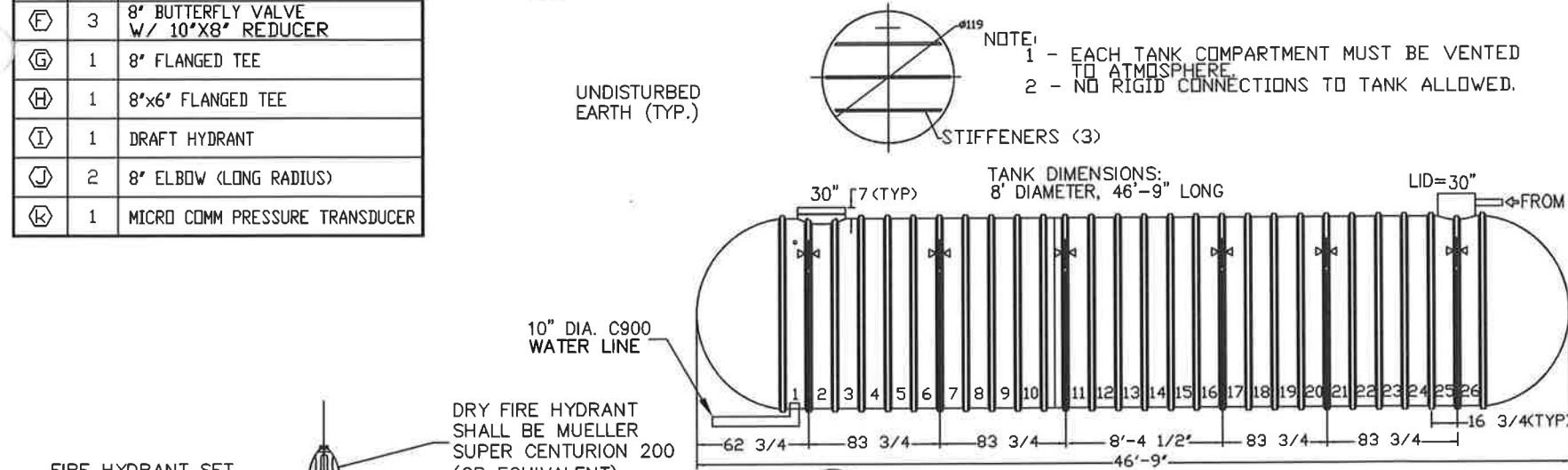




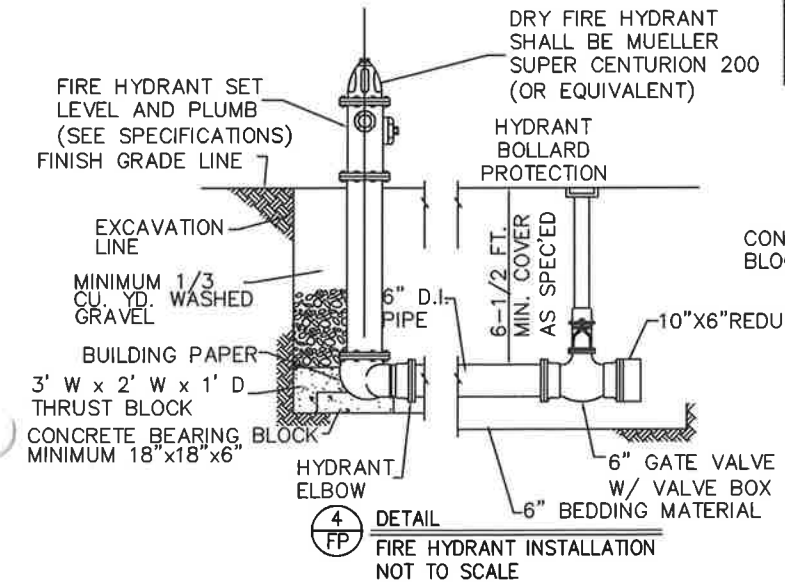
**SCHEDULE**

NO.	DESCRIPTION
A	1 3" BACKFLOW PREVENTOR
B	2 3" PVC BALL VALVE
C	5 3" PVC ELBOW
D	1 3" PVC TEE
E	1 8" TEE
F	3 8" BUTTERFLY VALVE W/ 10"x8" REDUCER
G	1 8" FLANGED TEE
H	1 8"x6" FLANGED TEE
I	1 DRAFT HYDRANT
J	2 8" ELBOW (LONG RADIUS)
K	1 MICRO COMM PRESSURE TRANSDUCER

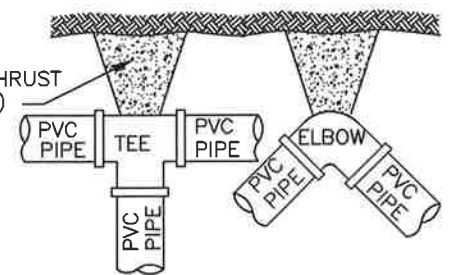
1 WATER SYSTEM DETAIL  
FP SCALE: NTS



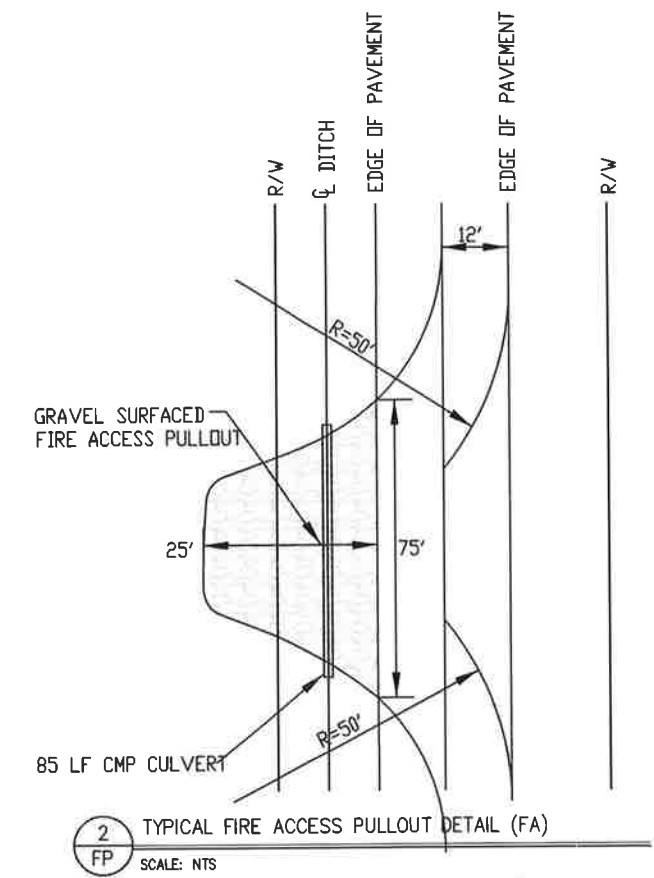
3 15,000 GAL FIBERGLASS TANK DETAIL  
FP SCALE: NTS XERXES CORPORATION S10-882 OR EQUAL



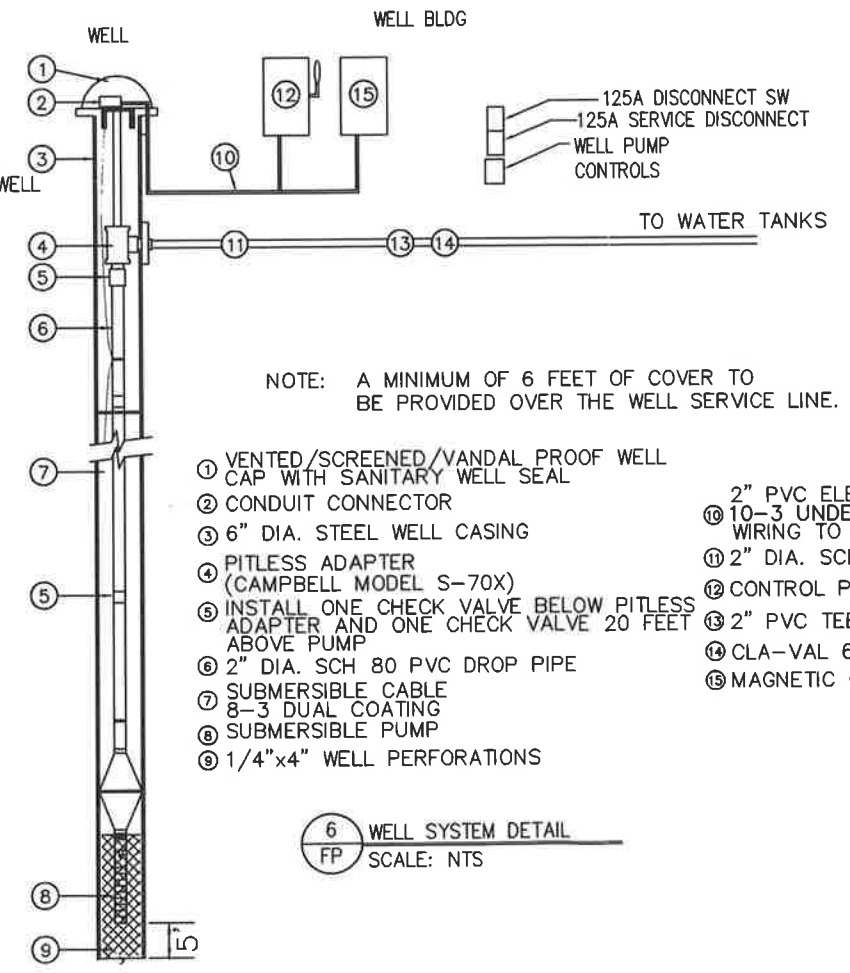
4 DETAIL  
FP FIRE HYDRANT INSTALLATION NOT TO SCALE



5 THRUST BLOCK DETAIL  
FP SCALE: NTS



2 TYPICAL FIRE ACCESS PULLOUT DETAIL (FA)  
FP SCALE: NTS



6 WELL SYSTEM DETAIL  
FP SCALE: NTS

- ① VENTED/SCREENED/VANDAL PROOF WELL CAP WITH SANITARY WELL SEAL
- ② CONDUIT CONNECTOR
- ③ 6" DIA. STEEL WELL CASING
- ④ PITLESS ADAPTER (CAMPBELL MODEL S-70X)
- ⑤ INSTALL ONE CHECK VALVE BELOW PITLESS ADAPTER AND ONE CHECK VALVE 20 FEET ABOVE PUMP
- ⑥ 2" DIA. SCH 80 PVC DROP PIPE
- ⑦ SUBMERSIBLE CABLE 8-3 DUAL COATING
- ⑧ SUBMERSIBLE PUMP
- ⑨ 1/4"x4" WELL PERFORATIONS
- ⑩ 2" PVC ELEC CONDUIT WITH UF WIRING TO PUMP HOUSE
- ⑪ 2" DIA. SCH 40 PVC SERVICE LINE
- ⑫ CONTROL PANEL
- ⑬ 2" PVC TEE WITH 2"x1/2" REDUCER
- ⑭ CLA-VAL 6816-02 CHECK VALVE
- ⑮ MAGNETIC CONTROL SWITCH BOX

REV	DATE	DESCRIPTION

**ALPINE SURVEYING & ENGINEERING**  
714 STONERIDGE DR. STE. 3  
BOZEMAN, MT 59718

CREAGAN-BROADWATER  
BROADWATER COUNTY, MT

FIRE POND DETAILS

PROJECT	540-02
DATE	OCT 2022
DRAWN BY	EV
REVIEWED BY	WD
© ALPINE 2021	
SHEET	
FP	

**Appendix B- VEGETATION MANAGEMENT PLAN**

## VEGETATION MANAGEMENT PLAN

This document is intended to address vegetation management as outlined in the Broadwater County Subdivision Regulations.

Intent: The intent of this vegetation management plan is to:

- Reduce fuel loading and hazard rating and provide continuous maintenance of the fuel load.
- To protect life and property.
- To reduce the potential for a fire on improved property from spreading to wildland fuels and from a fire in wildland fuels from spreading to the structures.
- To provide a safe working area and access for emergency responders.

Components: This Vegetation Management Plan describes all actions to be taken to prevent a fire from being carried toward or away from the development. Included with this vegetation management plan is the following information:

- A copy of the site plan for the development (see Preliminary Plat).
- Methods and timetables for controlling, changing or modifying areas on the property. Elements of the plan shall include removal of slash, snags, vegetation that may grow into overhead electrical lines, other ground fuels, ladder fuels, and dead trees, and the thinning of live trees (see methods and timetables).
- A plan for continuously maintaining the proposed fuel reduction measures (see Covenants).
- Establishment of the requirements for defensible space as appropriate per site conditions and as described in the following section (see text below).

Defensible Space: Provisions of this section are intended to modify the fuel load in areas adjacent to structures to create a defensible space.

- Fuel Load Reduction - The dimensions of the defensible space shall be based upon the requirements established in the "**Ready, Set, Go! Montana Your Personal Wildland Fire Action Guide**".
- Ground Fuel - Ground fuel within the defined defensible space, shall be treated (mowed, mulched, converted to compost, etc.) or removed annually or more frequently as directed by the FPAHJ. All yards will be mowed to a maximum of 4 inches in height. At a minimum, the open spaces will be mowed twice during each growing season (May through October).
- Thinning and Pruning - Live vegetation within the defensible space shall have all dead material removed and shall be thinned and pruned to reduce fire intensity and rate of spread.
- Dead Trees - Dead trees within the defensible space of buildings shall be removed.

Seeding Recommendations: Successful seeding is accomplished by using drills equipped with width depth banks, a seed agitator and packer wheels. Rice hulls cracked corn or cracked small grains can be mixed with the seed in the drill box to reduce bridging and provide a more uniform feeding. If broadcast planting is used equipment must provide the correct seeding rate. Seeding will be made on a firm seedbed that has been roughened for seed soil contact and then harrowed or cultipacked.

When pasture seedings are drilled at 12" row spacing. The recommendation for drilled seeding should be followed as per revegetation plan. When seedings are broadcasted, the seeding rate should be doubled.

Seed must be distributed evenly over the entire acreage.

Seed must be covered with light layer of soil (1/4 to 1/2 inch)

Soil surface must be firm enough after seeding to provide good seed to soil contact for proper germination.

Weeds must be controlled to eliminate competition.

Plant on the contour or across the slope, where possible, to help reduce water erosion.

Sodding and tree planting will be used for the individual lots and open space.

Open space areas will be undisturbed to enhance native plant habitat.

Single-family residences are planned, and all lots will be landscaped with lawns and gardens.

It shall be the responsibility of the Owner/Developer to maintain all lots that are not sold. Lots under construction are considered to be under Owner/Developer management and are to be managed by the owner/developer, until construction is complete.

It shall be the responsibility of the homeowners (2 lots), to maintain shared access areas. All seeding should be evenly distributed over the entire designated area(s). Seeding must be covered with a layer of soil ( $\approx 0.25 - 0.5$  inches in depth).

Thick Spike Wheatgrass                      35%. 6lbs./acres

Blue Bunch Wheatgrass                      30%. 7 lbs./acres

Sheep Fescue                                      35%. 3 lbs/acres

4-3-3 rates for specific grass species: Tall Fescue

1 quart per 5,000 to 8,000 sq. ft.

4-3-3 rates for specific grass species: Kentucky bluegrass

1 quart per 3,000 to 5,000 sq. ft.

**Vegetation Management Plan**

**Methods and Timetables for controlling, changing, or modifying areas.**

**Item**

**Phases 1**

Clearing and Grubbing

Topsoil stripping

Road and utility construction

Revegetation and final grading (private areas)

Structure development

**Approximate Timeline**

April 2023-Septemeber 2023

April 2023-Septemeber 2023

April 2023-Septemeber 2023

June 2023 – September 2024

June 2023 – September 2024

**Appendix C- “Ready, Set, Go!” Action Guide**

# READY, SET, GO!





# READY, SET, GO!

## Montana Wildland Fire Action Guide

Saving Lives and Property  
through Advanced Planning



**F**ire season is now a year-round reality in many areas, requiring firefighters and residents to be on heightened alert for the threat of wildland fire. This plan is designed to help you get ready, get set, and go when a wildland fire approaches. Civilian deaths occur because people wait too long to leave their home.

Each year, wildland fires consume hundreds of homes in the Wildland-Urban Interface (WUI). Studies show that as many as 80 percent of the homes lost to wildland fires could have been saved if their owners had only followed a few simple fire-safe practices.

Montana wildland firefighting agencies and your local fire department take every precaution to help protect you and your property from wildland fire. However, the reality is that in a major wildland fire event, there will simply not be enough fire resources or firefighters to defend every home.

Successfully preparing for a wildland fire enables you to take personal responsibility for protecting yourself, your family and your property. In this Ready, Set, Go! Action Guide, our goal is to provide you with the tips and tools you need to prepare for a wildland fire threat, to have situational awareness when a fire starts, and to leave early when a wildland fire threatens, even if you have not received a warning.

The Ready, Set, Go! Program works in a collaborative fashion to compliment Fire Adapted Communities, FireSafe Montana, Firewise® Communities Program, and other existing wildland fire public education efforts.

Fire is, and always has been, a natural occurrence in Montana. Historically, our forested areas and rangelands burned periodically long before we built homes there. Wildland fires are fueled by a build-up of dry vegetation and driven by seasonal hot, dry winds. They are also extremely dangerous and difficult to control. Many people have built homes in the Wildland-Urban Interface without fully understanding the impact a fire may have on their lives. Few have adequately prepared their families for timely evacuation in the event of a wildland fire.



It is not a question of **if**, but rather **when**, the next major wildland fire will occur. Through advanced planning, understanding and preparation, we can all be partners in the wildland fire solution. The tips on the following pages are designed to create heightened awareness and a safer environment for you, your family and firefighters.

### INSIDE

Living in the Wildland-Urban Interface	3
Give Your Home a Chance	4
Making a Hardened Home	5
Tour a Wildland Fire Ready Home	6-7
Ready - Preparing for the Fire Threat	8
Set - Situational Awareness	9
Go - Leave Early	10
Ranchers and Rural Residents	11-13
My Personal Wildland Fire Action Guide	14
Ready, Set, Go! Checklist	15

"This publication was produced in cooperation with the International Association of Fire Chiefs. The national RSG Program is managed by the International Association of Fire Chiefs, funded by the USDA Forest Service with partner support from the U.S. Dept. of the Interior, the U.S. Fire Administration, Firewise Communities Program and the Insurance Institute for Business and Home Safety. For more information on the RSG Program, please visit [www.wildlandfireRSG.org](http://www.wildlandfireRSG.org)."

## Living in the Wildland-Urban Interface

Ready, Set, Go! begins with a house that can survive on its own.



### Even if you do not live in the WUI, you may live in the Ember Zone.

A home within one mile of a naturally vegetated or WUI area is in the Ember Zone. Wind-driven embers can threaten your home. You and your home must be prepared well before a fire occurs. Fires caused by embers can destroy homes or neighborhoods far from the actual front of the wildland fire.

## Prepare Your Property!

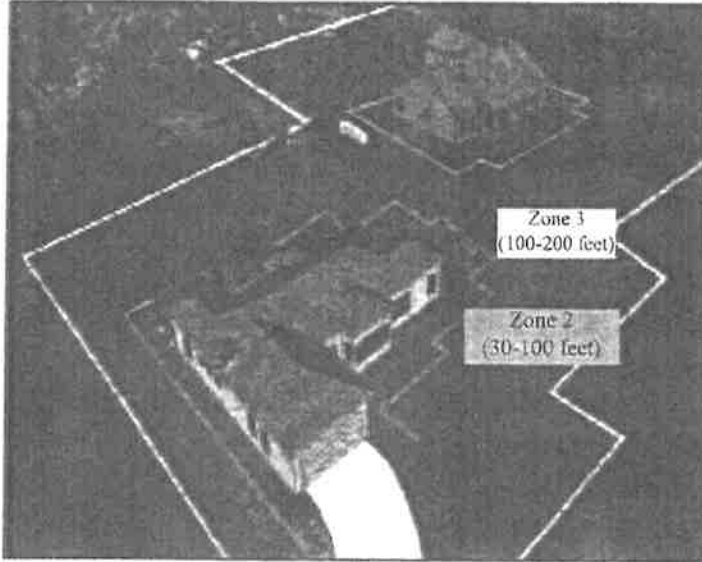
If you live next to a naturally vegetated area, often called the Wildland-Urban Interface, you must prepare your property and modify vegetation around your property. This can be done by altering grasses, shrubs, and trees on your property. Effective preparation reduces the wildland fire threat to your property and is a critical component of a home that can survive without firefighters.



## Living in the Ember Zone

In a wildland fire event, your house may be showered with burning embers. Any flammable materials that could be ignited by the burning embers needs to be eliminated where they come in contact with your house or other buildings. This includes dead pine needles, dry grasses, wood piles, wood chips used for mulching, and even dry coconut husk door mats - anything likely to catch fire and spread to your structure.

# Give Your Home a Chance



The area between your home and an approaching wildland fire where the vegetation has been modified through careful selection, maintenance and some replacement improves the chances of your home surviving with little or no assistance from firefighters.

During a major wildland fire event, firefighting resources will be limited. It is likely there will not be enough to protect every home.

## ZONE ONE

0-30 feet around your home

- Use hard surfaces such as concrete or noncombustible rock mulch 0-5 feet around home.
- Use non-woody, low growing herbaceous vegetation. Succulent plants and ground covers are good choices.
- Store firewood or other combustible materials at least 30 feet away from your home, garage or attached deck.
- Remove branches overhanging or touching the roof to a distance of at least 10 feet.

## ZONE TWO

30-100 feet around your home or to property line

- Thin trees to a minimum of 10 feet between tops of trees or create vegetation groups "islands" to break up continuous fuels.
- Remove ladder fuels, creating a separation between low-level vegetation and tree branches to keep fire from climbing up trees.
- Remove leaf and needle debris from the yard.
- Keep grasses and wildflowers under 8" in height.

## ZONE THREE

100-200 feet around your home or to property line

- Create and maintain a minimum of 10 feet between the tops of trees.
- Remove ladder fuels, creating a separation between low-level vegetation and tree branches to keep fire from climbing up trees.
- Remove dead trees and shrubs.

### Ladder Fuels

*Ladder fuels are those that will allow the fire to climb from the surface fuels into the upper portion of the tree. They can be eliminated by increasing horizontal and vertical separation between vegetation.*



# Making a Hardened Home

Suitable construction materials offer a home the best chance to survive a wildland fire. Embers from a wildland fire can find the weak link in your home's fire protection scheme and gain the upper hand due to a small, overlooked or seemingly inconsequential factors. However, there are measures you can take to safeguard your home from wildland fire. While you may not be able to accomplish all the measures listed below, each will decrease the ignitability of your home and increase its chances of survival during a wildland fire.



This photo shows how gutters filled with debris can be ignited by wind-blown embers that land there. Once ignited, the edge of the roof and fascia are exposed to direct flame contact.



No deck, regardless of the material used to build it, would be safe if this amount of fuel beneath the deck caught fire. Even decks that may have a noncombustible surface, such as concrete, use lumber and timbers for structural support and those materials can catch fire.

## ROOFS

The roof is the most vulnerable part of your home. Because of its large horizontal surface, embers can land and ignite combustible materials and debris such as leaves and needles. Clean roof valleys, open ends of barrel tiles, and rain gutters on a regular basis.

## EAVES

Open eave construction is vulnerable to embers and flames. "Boxed-in" or soffit eaves provide better protection.

## VENTS

Embers can enter the attic and other enclosed spaces through vents. Vents with vertical orientation, such as vents in open eave construction or gable end vents, are more susceptible to embers.

## WALLS

Combustible siding and trim is vulnerable to flames from ignited vegetation or debris at the base of walls. Fire can spread vertically to windows and eaves. An effective noncombustible zone close to your home is particularly important if you have combustible siding.

If you live in a mobile home, install skirting made from a noncombustible material (e.g. metal or fiber-cement) around the perimeter.

## WINDOWS AND DOORS

Embers can enter through open windows and through gaps at the edge of garage doors. Plants or combustible materials stored under windows can ignite by embers, resulting in flames breaking window glass and igniting combustible window frames.

## BALCONIES AND DECKS

Embers can collect under balconies and decks, igniting vegetative debris and other combustible materials, including the deck. The flames can then enter the home through walls or broken glass in the window or sliding glass door. Shade coverings for decks should be made from noncombustible materials. Carpeted decks should be avoided.

# Tour a Wildland Fire Ready Home

**Inside:** Keep working fire extinguishers on hand. Install smoke alarms on each level of your home and near bedrooms. Test them monthly and change the batteries twice a year.

**Deck/Patio Cover:** Use heavy timber or nonflammable construction material for decks. Enclose the underside of balconies and decks with fire-resistant materials to prevent embers from blowing underneath. Keep your deck clear of combustible items, such as baskets, flower arrangements and other material. The decking surface must be ignition resistant materials within 10 feet of the home.

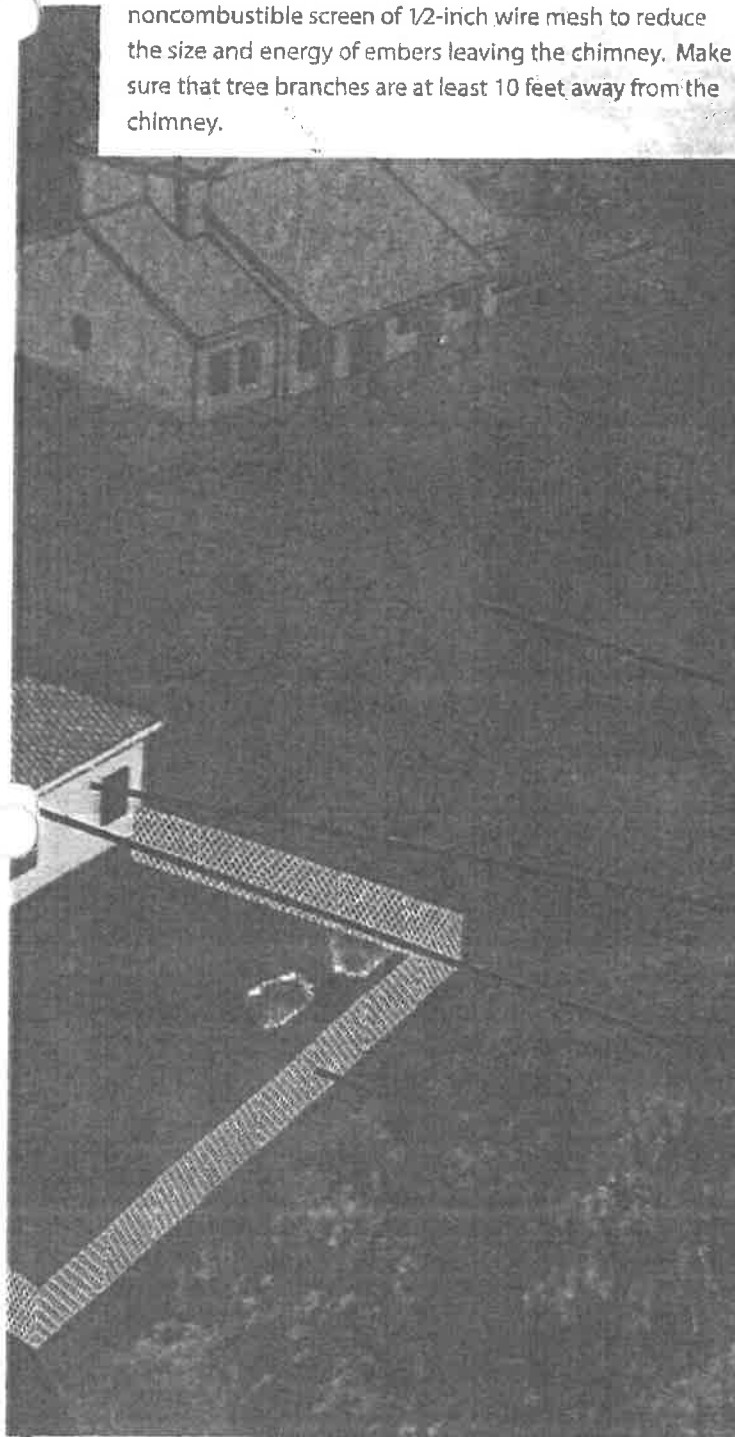
**Address:** Make sure your address is clearly visible from the road. Reflective and noncombustible numbering is recommended.

**Roof:** Use a Class A fire-rated roof covering, such as composition shingles, metal or tile, when roofing or re-roofing. Block any spaces between roof decking and covering to minimize ember intrusion. Clear pine needles, leaves and other debris from your roof and gutters. Prune tree branches within 10 feet of your roof.

**Vents:** At a minimum, all vent openings should be covered with 1/8-inch corrosion resistant metal mesh.

**Windows:** Radiant heat from burning vegetation or a nearby structure can cause the glass in windows to break. This will allow embers to enter and start internal fires. Single-pane and large picture windows are particularly vulnerable to glass breakage. Install dual-paned windows with a minimum of one pane being tempered glass to reduce the chance of breakage during a fire. Limit the size and number of windows in your home that face large areas of vegetation.

**Driveways and Access Roads:** Driveways should be designed to allow emergency vehicles and fire equipment to reach your house. Access roads should have a minimum 10 foot clearance on either side of the traveled section of roadway and should allow for two-way traffic. Ensure that all gate openings are wide enough to accommodate emergency equipment. Trim trees and shrubs overhanging the road back to a minimum of 14 feet to allow emergency vehicles access.



**Chimney:** Cover chimney and stovepipe outlets with a noncombustible screen of 1/2-inch wire mesh to reduce the size and energy of embers leaving the chimney. Make sure that tree branches are at least 10 feet away from the chimney.

**Walls:** Wood, vinyl and other plastic siding and trim products are combustible. Consider building or remodeling with ignition-resistant or noncombustible building materials, such as brick, cement, masonry or stucco.

**Home Site and Yard:** Ensure you have 100 feet of managed vegetation around your home or to your property line. This area may need to be enlarged in severe fire hazard areas. This may mean looking past what you own to determine the impact a common slope or neighbor's yard will have on your property during a wildland fire. Remember the importance of routine maintenance. Keep woodpiles, propane tanks and combustible materials away from your home and other structures such as detached garages, barns and sheds. Ensure trees are far away from power lines.

**Eaves:** Box in eaves with a noncombustible or ignition resistant material.

**Gutters:** Screen or cover rain gutters with a flat, noncombustible metal device. If possible, the device should follow the slope of the roof.

**Fencing:** Use noncombustible fencing within 5 feet of your home.

**Water:** Have multiple garden hoses that are long enough to reach any area of your home and other structures on your property. If you have a pool, pond or irrigation ditch, consider a pump.

**Garage:** Install weather stripping around and under the vehicle access door. This will reduce the intrusion of embers. If the garage is attached to the home, install a solid door with self-closing hinges between living areas and garage. Do not store combustibles and flammable liquids near combustion equipment (e.g. hot water heater).

# READY, SET, GO!

## Create Your Own Wildland Fire Action Plan

Now that you've done everything you can to prepare your home, it's time to prepare your family. Your **Wildland Fire Action Plan** should be prepared with all members of your household well in advance of a fire. Use these checklists to help you prepare and gain situational awareness of the threat of wildland fires.

## GET READY | Preparing for the Fire Threat



- Create a **Wildland Fire Action Plan** that includes meeting locations and communication plans. Rehearse it regularly. Also include the evacuation of pets and large animals such as horses.
- Have fire extinguishers on hand and train your family how to use them.
- Ensure that your family is familiar with the location of your gas, electric and water main shut-off controls and how to use them.
- Plan and know several different evacuation routes. Pre-program your GPS device with multiple escape routes, as visibility may be low.
- Designate an emergency meeting location outside the fire hazard area.
- Assemble an emergency supply kit as recommended by the American Red Cross. Keep an extra kit in your vehicle.
- Appoint an out-of-area friend or relative as a point of contact so you can communicate with family members.
- Maintain a list of emergency contact numbers posted near your phone and in your emergency supply kit.

### Resources

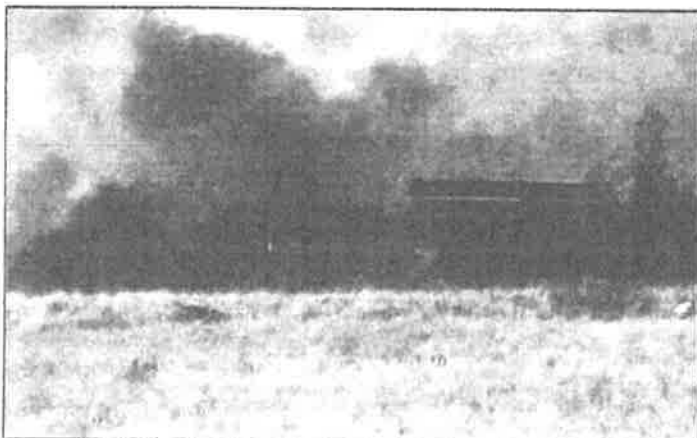
- ▶ [www.firesafemt.org](http://www.firesafemt.org)
- ▶ [www.ready.mt.gov](http://www.ready.mt.gov)
- ▶ [www.readyssetgomontana.org](http://www.readyssetgomontana.org)

# GET SET | Situational Awareness when a Fire Starts

- Monitor fire weather conditions and fire status. Stay tuned to your TV or local radio stations for updates or check the appropriate websites.
- Evacuate as soon as you are aware of a possible threat to your home or evacuation route. Do not wait for emergency notification. Alert family members and neighbors.
- Dress in appropriate clothing (i.e. clothing made from natural fibers such as cotton and work boots). Have goggles, gloves, and a dry bandana or particle mask handy.
- Ensure that you have your emergency supply kit on hand.
- Remain close to your house, drink plenty of water and keep an eye on your family and pets until you are ready to leave.
- If you or your family members require more time to leave, it is best to leave immediately and not wait to be notified.

## INSIDE CHECKLIST, if time allows

- Close all windows and doors, leaving doors unlocked.
- Open window shades and curtains and close metal shutters (if installed).
- Move furniture away from windows and doors.
- Turn off pilot lights for gas appliances. Turn off the air conditioning.
- Leave your lights on so firefighters can see your house and other structures under smoky conditions.



## OUTSIDE CHECKLIST, if time allows

- Bring combustible items, such as patio furniture and cushions inside.
- Turn off propane tanks and other gas at the meter.
- If you are on a municipal water system, don't leave sprinklers on or water running - they can reduce water pressure.
- Leave exterior lights on.
- Back your car into the driveway to facilitate a quick departure when ready to evacuate.
- Have a ladder available.
- Cover attic and crawl space vents with pre-cut plywood or commercial covers.

## IF YOU ARE TRAPPED: SURVIVAL TIPS

- Remain inside your home until fire passes. Shelter away from outside walls.
- Bring garden hoses inside house so embers and flames don't destroy them.
- Patrol inside your home and look in your attic for spot or smoldering fires. If found, extinguish them.
- Wear dry long sleeved shirts and long pants made of natural fibers such as cotton.
- Stay hydrated.
- Ensure you can exit the home if it catches fire (remember if it's hot inside the house, it is four to five times hotter outside).
- Fill sinks and tubs for an emergency water supply.
- Place wet towels under doors to keep smoke and embers out.
- After the fire has passed, check around your house and on your roof. Extinguish any small smoldering or burning fires.
- If there are fires that you cannot extinguish with a small amount of water or in a short period of time, call 9-1-1.



# Go – Leave Early

By leaving early, you give your family the best chance of surviving a wildland fire. You also help firefighters by keeping roads clear of congestion, enabling them to move more freely and do their jobs in a safer environment.

## WHEN TO LEAVE

Do not wait to be advised to leave if there is a possible threat to your home or evacuation route. Leave early enough to avoid being caught in fire, smoke or road congestion. If you are advised to leave, don't hesitate!

## WHERE TO GO

Evacuate to a predetermined location. It should be a low-risk area, such as a well-prepared neighbor or relative's house, a Red Cross shelter or evacuation center, motel, etc.

## HOW TO GET THERE

Have several travel routes in case one route is blocked by the fire or by emergency vehicles and equipment. Choose an escape route away from the fire.

## WHAT TO TAKE

Take your emergency supply kit containing your family's and pet's necessary items.



## EMERGENCY SUPPLIES

The American Red Cross recommends every family have an emergency supply kit assembled. Use the checklist below to help assemble yours. For more information on emergency supplies, visit the American Red Cross at [www.redcross.org](http://www.redcross.org).

- Three-day supply of water (one gallon per person per day).
- Non-perishable food for all family members and pets (three-day supply).
- First aid kit.
- Flashlight, battery-powered radio, and extra batteries.
- An extra set of car keys, credit cards, and cash or traveler's checks.
- Sanitation supplies.
- Extra eyeglasses or contact lenses.
- Important family documents and contact numbers.
- Map marked with evacuation routes.
- Prescriptions or special medications.
- Family photos, valuables and other irreplaceable items that are easy to carry.
- Personal computers, hard drives, disks, and flash-drives.
- Chargers for cell phones, laptops, etc.



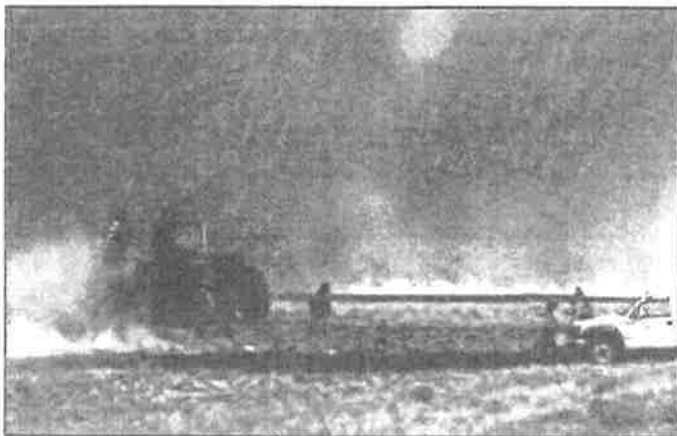
# READY, SET, GO!

## Create Your Own Wildland Fire Action Plan

# Ranchers and Rural Residents

### PREPARE YOUR ANIMALS

- Create a livestock evacuation plan.
- Ensure proper registering and branding of livestock.
- Establish a contingency plan for feeding livestock if grazing land is destroyed by fire.



# GET READY |

### PREPARE YOUR FAMILY

- Create a *Wildland Fire Action Plan* that includes meeting locations and communication plans and rehearse it regularly. Include in your plan the evacuation of large animals such as horses.
- Plan and know your evacuation routes. Have more than one exit from your headquarters and primary residence.
- Pre-program your GPS device with multiple escape routes, as visibility may be low.
- Assemble an emergency supply kit as recommended by the American Red Cross.
- Appoint an out-of-area friend or relative as a point of contact so you can communicate with family.
- Keep an emergency supply kit in all ranch and personal vehicles.

### PREPARE YOUR PROPERTY

- Establish and maintain firebreaks around pastures and structures.
- Reduce vegetation and remove combustible material around all structures.
- Reinforce fences with metal posts, if applicable.
- Create a safe zone clear of all vegetation for equipment.
- Clear vegetation around fuel tanks and other highly combustible equipment.



# GET SET

## *Situational Awareness when a Fire Starts*

### YOUR PROPERTY

- Hook up your stock trailer and load your animals.
- Unlock and open gates so livestock can escape flames and firefighters can gain access.
- Close all barn doors so horses and livestock will not go into a burning building.
- Move equipment into a safe zone that is clear of combustible fuels.
- Close all doors, windows, and turn on exterior/interior lights in barns and other structures.
- Shut off gas supply and propane tanks.



### YOUR FAMILY

- Be ready to go at a moment's notice.
- Alert family and ranch hands.
- Dress in appropriate clothing (i.e. cotton, work boots, goggles, dry bandana, gloves, Nomex).
- Ensure you and your family have separate emergency kits in case you get separated.
- Monitor the radio or Internet for fire updates.
- Stay hydrated.



### COMMUNICATE WITH FIRE PERSONNEL BEFORE FIRE SEASON BEGINS.

- Contact your wildland firefighting agency or local fire department to coordinate firefighting on your property.
- Keep copies of gate keys and a written list of combinations in a known location.
- If you would like to offer your equipment (water tank, tractor) for firefighting, make arrangements and contracts prior to use for proper tracking and reimbursement.

## LEAVE EARLY

---

Evacuate your family, pets, livestock and cherished possessions to a safe area and monitor for fire updates.

If you choose to stay with your property, make sure your family is considered first. Decide who stays and who evacuates (consider children, elderly or ill family members).

Nothing you own is worth your family members' lives.

## IF YOU CHOOSE TO STAY

---

Call your local law enforcement.

Have spare gate keys and combination lists ready for responders.

If you have prior contracts for equipment use, be ready to coordinate with fire operations personnel.



## TIPS FOR MONTANA RANCHERS

---

**O**ffer knowledge of your area to fire crews. Your knowledge of access roads, location of structures, location of water sources, fence lines and geography of the land can prove helpful to fire crews who may not be familiar with the area.

**C**ommunicate with fire operations. Ask questions, offer assistance, give permission. Chances are if a fire is on your ranch, fire crews will need to be in contact with you. Be patient and understand that there are many moving parts to a fire operation. Sometimes decisions require communication between several stakeholders and may take longer than you are accustomed to.

**D**on't panic or jump to conclusions. Firefighters and ranchers in Montana have the same goals when a wildfire occurs - to protect lives, property and livelihoods. Grazing areas and stored hay can be a costly loss for ranchers. By offering your knowledge and communicating with fire operations, fire crews can run an operation effectively and efficiently while protecting what is important to you.



# READY, SET, GO!

## Property Preparedness

- |  | <b>Yes</b>               | <b>No</b>                |
|--|--------------------------|--------------------------|
| 1. Has vegetation been removed and modified in the recommended zones around your home? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Are the rain gutters and roof free of leaves, needles and branches?                 | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Are all vent openings screened with 1/8 inch mesh metal screen?                     | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Does your home have a metal, composition, or tile (or other Class A) roof?          | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Does the house have noncombustible or ignition resistant siding material?           | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Are the eaves "boxed in" using noncombustible materials?                            | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Has the 0-5 foot noncombustible zone been developed and maintained?                 | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Is the underdeck area free of combustible material?                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Is all firewood at least 30 feet from the house?                                    | <input type="checkbox"/> | <input type="checkbox"/> |

## Get Ready

- |   | <b>Yes</b>               | <b>No</b>                |
|---|--------------------------|--------------------------|
| 1. Is your Wildland Fire Action Plan completed?                               | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Do you have fire extinguishers on hand and know how to use them?           | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Do you know where your gas, electric and water main shut-off controls are? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Do you have several different evacuation routes planned?                   | <input type="checkbox"/> | <input type="checkbox"/> |

## Get Set

- |   | <b>Yes</b>               | <b>No</b>                |
|---|--------------------------|--------------------------|
| 1. Are you able to monitor fire weather conditions and fire status?   | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Are you ready to evacuate as soon as you are aware of a possible threat to your home or evacuation route?                          | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Do you have appropriate clothing (i.e. clothing made from natural fibers such as cotton and work boots)?                           | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Is your emergency supply kit on hand?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Are you able to stay close to your house, drink plenty of water and keep an eye on your family and pets until it is time to leave? | <input type="checkbox"/> | <input type="checkbox"/> |

## Go

- |   | <b>Yes</b>               | <b>No</b>                |
|---|--------------------------|--------------------------|
| 1. Are you prepared to leave early enough to avoid being caught in fire, smoke or road congestion?                    | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Do you have your predetermined location set when you evacuate?   | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Do you have several travel routes in case one route is blocked by the fire or by emergency vehicles and equipment? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Do you have your emergency supply kit containing your families and pet's necessary items?                          | <input type="checkbox"/> | <input type="checkbox"/> |



# My Personal Wildland Fire Action Guide

Write up your Wildland Fire Action Guide and post it in a location where every member of your family can see it. Rehearse it with your family. During High Fire Danger days in your area, monitor your local media for information and be ready to implement your plan. Hot, dry and windy conditions create the perfect environment for a wildland fire.

## Important Phone Numbers:

Fire Department: \_\_\_\_\_ Phone: \_\_\_\_\_

Law Enforcement: \_\_\_\_\_ Phone: \_\_\_\_\_

Out-of-Area Contact: \_\_\_\_\_ Phone: \_\_\_\_\_

Work: \_\_\_\_\_

School: \_\_\_\_\_

Other: \_\_\_\_\_

Evacuation Routes: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Meeting Location: \_\_\_\_\_

\_\_\_\_\_

Location of Emergency Supply Kit: \_\_\_\_\_

\_\_\_\_\_

Notes: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Incident Information: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

For wildland fire information: [www.inciweb.org](http://www.inciweb.org)