



Governing Body Review Submittal
for the

Blue Creek Subdivision

A 9-Lot County Major Subdivision

On Property Legally Described as: The Southwest One-Quarter of the Northwest One-Quarter (SW1/4NW1/4) of Section 20 Lying North of Montana Highway 200, Township 27 North, Range 34 West, Principal Meridian Montana, Sanders County, Montana.
Containing a total of 25.94 Acres, more or less.

Date	Subdivision Requirements
08/05/2022	Pre-Application Meeting
01/29/2024	1 st Element Submittal (Expired Pre-Application)
02/27/2024	1 st Element Submittal
03/15/2024	2 nd Element Submittal
03/18/2024	1 st Sufficiency Review
04/26/2024	2 nd Sufficiency Review
05/09/2024	Governing Body Review

Owner:

Tungsten Holdings, Inc.
809 Mineral Ave.
Libby, MT 59923

Provided By:

IMEG Corp.
1817 South Ave West Suite A
Missoula, MT 59801

Project No. 22003448.00

BLUE CREEK SUBDIVISION

GOVERNING BODY - TABLE OF CONTENTS

Reviews

Sanders County Planning Reviews

Section

Title

A.	PROJECT INFORMATION <ul style="list-style-type: none">• Cover Sheet• Preapplication Meeting Checklist• SandersCo Subdivision Application• Review Fees• Preliminary Plat• Supplemental Data Sheets
B.	MAPS AND EXHIBITS <ul style="list-style-type: none">• Aerial Map• Vicinity Sketch• USGS Topographic Map• Floodplain Map• National Wetlands Inventory Map• Wildlife Exhibit
C.	COVENANTS AND PROPERTY HISTORY <ul style="list-style-type: none">• Preliminary Title Report and Ownership Deeds• Draft Covenants, Conditions, and Restrictions• Road Maintenance Agreement• Noxious Weed and Revegetation Plan
D.	ENGINEERING AND ENVIRONMENTAL INFORMATION <ul style="list-style-type: none">• Water and Sanitation Report• DNRC Predetermination Application• NRCS Soils Report• Private Subdivision Road Register• Private Road Construction Application• MDOT Approach Application• Grading, Drainage, and Road Construction Plans• Grading and Drainage Engineering Design Report
E.	MISCELLANEOUS INFORMATION <ul style="list-style-type: none">• Environmental Assessment• Summary of Probable Impacts• Community Impact Report• Fire Risk Rating Form• Adjoining Property Owners Listing and Labels• State Historic Preservation Office (SHPO) Report• Montana Natural Heritage Program (MTNHP)• Agency Notice Letter and Comments



Sanders County Land Service Department Subdivision Administration

4 March 2024

Tamara Ross
IMEG Corp
1817 South Ave West Suite A
Missoula, MT 59801

RE: ELEMENT REVIEW OF "Blue Creek Subdivision" LOCATED IN the NW1/4 of S20, T27N, R34W

The element review has been completed and it has been determined that the preliminary application for Blue Creek subdivision is missing material identified and requested in the pre-application meeting. The application is being returned to correct the deficiencies. Below are the deficiencies:

- Existing mineral rights has not been provided in the application as required in the pre-application meeting.
- Proposed disposition of mineral rights has not been submitted or discussed in the application as required in the pre-application meeting.
- Missing documented contact of the following agencies. These agencies may not respond but documentation of contact is required. A copy of certified mail or email is sufficient documentation with a reasonable timeline (15 working days) for a response:
 - US Dept. Fish & Wildlife Service Ecological Services
 - Montana Fish, Wildlife & Parks
 - Cabinet Ranger District: District Ranger
 - Sanders County Sheriff's Office
 - Heron Rural Fire District – provide the fire risk rating worksheet when contacting.
 - Noxon School District

Please resubmit including all requested material. If you have questions, please email or call me.

Sincerely,

Chris M. McComas

Chris M. McComas
County Planner



Sanders County Land Service Department Subdivision Administration

May 7, 2024

Tamara Ross (email to Tamara.R.Ross@imegcorp.com ; Daniel.D.Fultz@imegcorp.com ; Sara.M.Hawkins@imegcorp.com)

IMEG Corp
1817 South Ave West Suite A
Missoula, MT 59801

RE: Second Sufficiency Review of “Blue Creek Subdivision”; Notice of Sufficient Application

Ms. Ross:

The subdivision application and the supplemental material for the proposed subdivision to create a nine-lot, single-family residential major subdivision on a ± 25 -acre tract of land that may be legally described as the Southwest One-Quarter of the Northwest One-Quarter (SW1/4NW1/4) of Section 20 Lying North of Montana Highway 200, Township 27 North, Range 34 West, PMM, Sanders County, Montana.

The purpose of this letter is to notify you that the preliminary plat application has been found to be sufficient for the review. Please submit four (4) complete hard copies of the application package and one (1) electronic PDF for posting on the county website.

The Board of Sanders County Commissioners must make a decision on this application within 60 working days of the date of this letter, giving a review deadline of August 1, 2024. The County Commissioners will be scheduled to review the preliminary plat application prior to the deadline. We will provide you with notices of the time and date of the public hearing and a staff report with recommendations to the County Commissioners.

This determination of sufficiency does not ensure the proposed subdivision will be approved or conditionally approved by the governing body and does not limit the ability of the subdivision administrator or the governing body to request additional information during the review process.

Please do not hesitate to contact me with any questions or concerns regarding this letter or the subdivision review process.

Sincerely,

Chris M. McComas
County Planner



Sanders County Land Service Department Subdivision Administration

18 March 2024

Tamara Ross (email to Tamara.R.Ross@imegcorp.com ; Daniel.D.Fultz@imegcorp.com ; Sara.M.Hawkins@imegcorp.com)

IMEG Corp

1817 South Ave West Suite A

Missoula, MT 59801

RE: Second Element Review of "Blue Creek Subdivision; Notice of all elements received to begin Sufficiency Review

Ms. Ross:

The subdivision application and the supplemental material for the proposed subdivision to create a nine-lot, single family residential major subdivision on a ± 25 -acre tract of land that may be legally described as the Southwest One-Quarter of the Northwest One-Quarter (SW1/4NW1/4) of Section 20 Lying North of Montana Highway 200, Township 27 North, Range 34 West, PMM, Sanders County, Montana.

The purpose of this letter is to notify you that the element review has been completed and it has been determined that the preliminary application has all the elements requested in the pre-application meeting.

This begins the 15 working day review for sufficiency of the application in accordance with MCA 76-3-604 and the Sanders County Subdivision Regulations II-A-6.

This determination of sufficiency does not ensure the proposed subdivision will be approved or conditionally approved by the governing body and does not limit the ability of the subdivision administrator or the governing body to request additional information during the review process.

Please do not hesitate to contact me with any questions or concerns regarding this letter or the subdivision review process.

Sincerely,

Chris M. McComas

Chris M. McComas

County Planner



Sanders County Land Service Department Subdivision Administration

28 March 2024

Tamara Ross (email to Tamara.R.Ross@imegcorp.com ; Daniel.D.Fultz@imegcorp.com ; Sara.M.Hawkins@imegcorp.com)

IMEG Corp

1817 South Ave West Suite A

Missoula, MT 59801

RE: First Sufficiency Review of "Blue Creek Subdivision"

Ms. Ross:

The subdivision application and the supplemental material for the proposed subdivision to create a nine-lot, single family residential major subdivision on a ± 25 -acre tract of land that may be legally described as the Southwest One-Quarter of the Northwest One-Quarter (SW1/4NW1/4) of Section 20 Lying North of Montana Highway 200, Township 27 North, Range 34 West, PMM, Sanders County, Montana.

The purpose of this letter is to notify you that the complete preliminary plat application and required elements do not contain detailed, supporting information sufficient to allow for the review of the proposed subdivision, and the application is therefore insufficient. The following is the information that needs to be addressed in order to allow for the review of the proposed subdivision:

1. Water and Sanitation Report contains information that is not related to Sanders County. Specifically, paragraph I.2 under Stormwater heading discusses storm drainage will be mitigated per "Lincoln County" subdivision regulations. Furthermore, the Solid Waste disposal will not be provided by "Evergreen Disposal". Please provide information that is related to Sanders County.
2. Preliminary Plat Map has inconsistent information regarding the road names. Applications for "Blue Sky Court" and "Blue Sky Drive" have been submitted. "Blue Sky Road" is shown on all maps within Section A of the application while maps in Section D Road Construction Plans show "Blue Sky Drive". Identify which road names are proposed and make it consistent in the application materials.
3. Summary of Probable Impacts 6 (b) Please provide information related to the proposed subdivision's proximity to Highway 200. Is visibly a factor at the proposed access? Is speed in this area a factor? Does lot layout provide a safety factor?
4. Community Impact Report. 4(a)(i) Fire Protection. Fire protection procedures have not been discussed. Will a water source be provided for fire protection within the subdivision in accordance with SCSR VII-P(c). If so, address the maintenance provisions of the installed water source. If no water source is provided, cash in lieu at \$500 per lot must be proposed to the county commissioners after approval by the Heron Rural Fire Department (SCSR VII-Q(h)(ii)(b)(4).

Please address the items discussed above. Within 15 working days of your submittal of additional information, Land Services will again perform a sufficiency review to determine whether the application contains detailed, supporting information sufficient to allow for the review of the proposed subdivision.

Please do not hesitate to contact me with any questions or concerns regarding this letter or the subdivision review process.

Sincerely,

A handwritten signature in blue ink, appearing to read "Chris M. McComas", with a stylized flourish at the end.

Chris M. McComas
County Planner

SECTION A

- Cover Sheet
- Preapplication Meeting Checklist
- SandersCo Subdivision Application
 - Review Fees
 - Preliminary Plat
- Supplemental Data Sheets

COVER SHEET

Owner and Developer: Tungsten Holdings, Inc.

Representative: IMEG CORP

Subdivision Name: Blue Creek Subdivision

Number of Lots Proposed: 9 Residential Lots

Number of Acres: 25.94 Acres

Legal Description: The Southwest One-Quarter of the Northwest One-Quarter (SW1/4 NW1/4) of Section 20 Lying North of Montana Highway 200, Township 27 North, Range 34 West, Principal Meridian Montana, Sanders County, Montana. Containing a total of 25.94 Acres, more or less.

Project Summary:

The Blue Creek Subdivision is in Sanders County and proposes 9-lots for residential development. It is generally located adjacent to the east of Blue Creek Road and north of HWY 200 comprising of 25.94 Acres. The property can currently be described as vacant rural land that has been historically timber and can be easily located east of addressed location 17 Blue Creek Road, Heron, MT 59844. The preliminary location of each proposed single-family dwelling, internal roadway, individual well and drainfield locations are shown on the Preliminary Plat included in Section A of this submittal.

Summary of Roads:

The proposed approach onto HWY 200 will be used for two newly proposed roadways, completely internal to the subdivision, providing access to the 9 proposed lots. A 1' No-Access Strip is located along the entire southern property boundary along the HWY 200; excluding the proposed approach. The approach application is under review by MDOT. The approach will be constructed with a 24-foot asphalt travel surface and 2-foot gravel shoulders. It should be noted that a site visit was conducted with IMEG staff, Katherine Maudrone, and the District 3 Road Foreman in September of 2022 which concluded that an approach off of Blue Creek Road would not be supported due to heavy truck traffic and slopes along the existing roadway. Further, the Preliminary Plat Application Requirements checklist received by IMEG Staff on August 16th, 2023, does not require a legal or physical access off of the local roadway, Blue Creek Road, or a variance request for proposing access unto a higher road classification. Therefore, this development has proceeded with an approach permit onto HWY 200 as provided in MDOT Approach Application (section D) avoiding cuts and fills on steep slopes for access.

All lots will be accessed by the newly proposed Blue Sky Drive or Blue Sky Court both proposed to be constructed of a 24-foot-wide gravel road surface with 2-foot shoulders contained within the 60-foot Private Access and Utility Easement (P.A.U.E.). In addition, two hammerhead turnarounds are proposed to be included within this development and will comply with emergency service access requirements. The P.A.U.E. will be unobstructed for maintenance of any future utilities; therefore, it will be subject to a proposed Road Maintenance Agreement. Please see the Preliminary Plat and Supplemental Data Sheets for information regarding the proposed internal roadway and No-Access Strip in Section A of this submittal.

Summary of Non-Motorized Facilities:

The applicant is not aware of existing non-motorized infrastructure in the vicinity of the proposed development. Given the development is rural in nature and outside of city limits the roadway

infrastructure will not include sidewalks or boulevards. Therefore, no existing non-motorized transportation facilities serve this property.

Environment and Parkland:

The property could generally be described as vacant land that has been previously timbered. There are no known natural drainages, ponds, marshes, or wetlands located on the subject property or directly adjacent to the development. The property lies within an area that contains slopes of at least 25% and timbered. The proposed lot layout avoids these potentially hazardous areas, and the face of the plat proposes areas of 25% or greater to be designated as "No-Build Zones". Further, stormwater infrastructure and associated easements have been designed to provide suitable drainage and stormwater management for surface water runoff that may be generated and detained on the subject property. There are no existing agricultural water user facilities in the surrounding area. Parkland is not proposed, therefore, the developer intends to provide payment in lieu of parkland. The developer does not anticipate a park dedication will be required for proposed Lots 1-3 as they are to be larger than 5 acres. As a result, the developer anticipates 0.45 acres (0.14 ac + 0.31 ac = 0.45 ac) will be required for a cash-in-lieu of parkland dedication. A tax assessment or appraisal report for calculating cash-in-lieu of parkland dedication along with a receipt from the County Treasures Office will be provided by the applicant prior to final plat approval.

PRELIMINARY PLAT APPLICATION REQUIREMENTS

Subdivision Name: Blue Creek (9 lots)

Date: 8-15-2022

Developer: Tungsten Holdings

Surveyor: IMEG Corp./Dan Fultz

This Pre-Application determination is **valid for six months** from the date of the pre-application meeting. Please submit one complete application with all supporting documents and preliminary review fees.

- ☒ A completed and signed Subdivision Application Form with original signature;
- ☒ The required review fee; _____
- ☒ A preliminary plat; 18" by 24" or 24" by 36" and if a major subdivision 1-11" by 17"
- ☒ A Vicinity Sketch;
- ☒ A topographic map;
- ☐ A grading and drainage plan;
- ☐ Engineering plans for all Public and Private Improvements;
- ☐ Overall development plan, if development is in phases;
- ☒ Subdivision Guarantee;
- ☐ Documentation of legal and physical access;
- ☒ Documentation of existing easements, including those for Agricultural Water User Facilities;
- ☒ Existing covenants and deed restrictions
- ☒ Existing water rights;
- ☒ Existing mineral rights;
- ☒ Proposed road plans and profiles;
- ☒ Proposed easements;
- ☐ Proposed disposition of water rights;
- ☐ Proposed disposition of mineral rights;
- ☒ Parkland dedication calculations;
- ☒ Environmental Assessment; (major and subsequent minor subdivisions)
- ☐ Summary of Probable Impacts; (minor subdivisions)
- ☐ Transportation impact analysis or transportation plan;
- ☒ Fire risk rating analysis and fire prevention plan;
- ☒ Property owners' association documents, including draft articles of incorporation, declaration and bylaws;
- ☐ FIRM or FEMA panel map and letter identifying floodplain status;
- ☒ Required water and sanitation info. /DNRC Water Right Inquiry 655 Timberwolf Pky. Ste 4 Kalispell, MT 59901
- ☐ A form of Subdivision Improvements Agreement, if proposed;
- ☐ Flood hazard evaluation;
- ☒ Letter to agencies indicated on the back of this sheet. Provide proof of receipt.
- ☐ 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;
- ☐ Such additional relevant and reasonable information as identified by the Subdivision Administrator during the pre-application meeting that is pertinent to the required elements of this section;
- ☒ Subdivision Noxious Weed Management Application;
- ☒ Private Road Construction Application;
- ☒ Private Road Name Application

The following materials will need to be submitted with the final plat:

- ☐ Lien holders' acknowledgement of subdivision, if applicable;
- ☐ Encroachment permits from Montana Department of Transportation or the local jurisdiction;
- ☒ Weed treatment inspection or a Subdivision Improvement Agreement if proposed;
- ☒ Road inspection

Sanders County may require additional information once the review process has begun.

Agency Contact List/Received Receipt Letter or Email

Agencies

- ☒ US Dept. Fish & Wildlife Service Ecological Services, 100 N Park St. Suite 320, Helena, MT 59626
- ☒ Montana Fish, Wildlife & Parks, Stevie.Burton@mt.gov Attn: Stevie Burton, 490 N Meridian Rd., Kalispell, MT 59901
- ☐ Montana Fish, Wildlife & Parks, Jason.Blakney@mt.gov Attn: Jason Blakney/Fisheries Biologist, 5427 MT Hwy 200, Thompson Falls, MT 59873
- ☐ Department of Natural Resources, PO Box 219, Plains, MT 59859
- ☐ Natural Resource & Conservation 7487 MT Hwy 200, Plains, MT 59859
- ☐ Eastern Conservation District, 7487 MT Hwy 200, Plains, MT 59859
- ☒ Green Mountain Conservation District, PO Box 1329, Trout Creek, MT 59874
- ☐ Cabinet Ranger District Attn: District Ranger, 2693 MT Hwy 200, Trout Creek, MT 59874
- ☐ Plains Ranger District Attn: District Ranger, PO Box 429, Plains, MT 59859
- ☐ Dept. of the Army/Omaha District Helena Regulatory Office, 10 West 15th St. Suite 2200, Helena, MT 59626
- ☐ Water Master-Camas Division of Flathead Irrigation District, 25 Andrews Rd, Hot Springs, MT 59845

Utilities

- ☐ Avista Corporation, PO Box 1469, Noxon, MT 59853
- ☐ Avista Corporation, PO Box 3727, Spokane, WA 99220
- ☐ BPA-Dustin Smith Realty Specialist Supervisor TERR/Kalispell, dtsmith@bpa.gov (2520 US Hwy 2 East, Kalispell, MT 59901)
- ☐ NW Energy, Michael Cassidy Michael.Cassidy@northwestern.com (PO Box 4467, Missoula, MT 59806)
- ☒ Northern Lights, Sam Ross, Engineering sam.ross@nli.coop (PO Box 269, Sagle, ID 83860)
- ☐ Mission Valley Power, 65 Pablo Rd. W Pablo, MT 59855
- ☐ Blackfoot Telecommunications, 1221 Russell St, Missoula, MT 59808
- ☐ Hot Springs Telephone, PO Box 627, Hot Springs, MT 59845

Transportation

- ☐ Montana Dept. of Transportation, PO Box 201001, Helena, MT 59620
- ☐ Burlington Northern, PO Box 961089, Fort Worth, TX 76161
- ☐ Montana Rail Link, PO Box 16390, Missoula, MT 59808
- ☐ Sanders County Airport, PO Box 519, Thompson Falls, MT 59873

Government Offices

- ☒ Sanders County Sheriff's Office, PO Box 910, Thompson Falls, MT 59873
- ☐ The Confederated Salish & Kootenai Tribes, PO Box 278, Pablo, MT 59855
- ☐ MT Dept. of Revenue, PO Box 267, Thompson Falls, MT 59873

Fire Districts

- ☒ Heron Rural Fire District, PO Box 86, Heron, MT 59844
- ☐ Noxon Rural Fire District, PO Box 3, Noxon, MT 59853
- ☐ Trout Creek Rural Fire District, PO Box 1408 Trout Creek, MT 59874
- ☐ Thompson Falls Rural Fire District, PO Box 698, Thompson Falls, MT 59873
- ☐ Plains/Paradise Rural Fire District, PO Box 1115, Plains, MT 59859
- ☐ Hot Springs Rural Fire District, PO Box 144, Hot Springs, MT 59845
- ☐ Lonepine Volunteer Fire Dept., 59 Bras Rd, Lonepine, MT 59848
- ☐ Dixon Rural Fire District, PO Box 102, Dixon, MT 59831

Ambulance Services

- ☒ Community Ambulance of Western, Sanders County PO Box 170, Noxon, MT 59853
- ☐ Thompson Falls Ambulance, PO Box 1055, Thompson Falls, MT 59873
- ☐ Plains Ambulance, PO Box 268, Plains, MT 59859
- ☐ Hot Springs Ambulance, PO Box 830, Hot Springs, MT 59845

School Districts

- ☒ Noxon School District, Attn: Superintendents Office 300 Noxon Ave., Noxon, MT 59853
- ☐ Trout Creek School District 4 School Ln., Trout Creek, MT 56874
- ☐ Thompson Falls School District, Attn: Superintendents Office 206 Haley Ave., Thompson Falls, MT 59873
- ☐ Plains School District, Attn: Superintendents Office PO Box 549, Plains, MT 59859
- ☐ Hot Springs School District, Attn: Superintendents Office PO Box 1005, Hot Springs, MT 59845
- ☐ Dixon School District, PO Box 10, Dixon, MT 59831

US Postal Service

- ☐ Town PO Box 9999, Town, MT Zip Code

Other Entities

- ☐ Yellowstone Pipeline, 3180 MT Hwy 12E, Helena, MT 59601
- ☐ Phillips 66, 3009 Main Street East, Thompson Falls, MT 59873



Sanders County Preliminary Plat Application Requirements

Subdivision Name: Blue Creek (9 lots)

Date: Feb 15, 2024

Developer: Tungsten Holdings, Inc

Surveyor: IMEG Corp.

This Pre-Application determination is **valid for six months** from the date of the pre-application meeting. Please submit one complete application with all supporting documents and preliminary review fees.

- ☒ A completed and signed Subdivision Application Form with original signature;
- ☒ The required review fee; \$ 740
- ☒ A preliminary plat; 18" by 24" or 24" by 36" and if a major subdivision 1-11" by 17"
- ☒ A Vicinity Sketch;
- ☒ A topographic map;
- ☐ Grading and drainage plan;
- ☐ Engineering plans for all Public and Private Improvements;
- ☐ Overall development plan, if development is in phases;
- ☒ Subdivision Guarantee;
- ☐ Documentation of legal and physical access;
- ☒ Documentation of existing easements, including those for Agricultural Water User Facilities;
- ☒ Existing covenants and deed restrictions
- ☒ Existing water rights;
- ☒ Existing mineral rights;
- ☒ Proposed road plans and profiles;
- ☒ Proposed easements;
- ☒ Proposed disposition of water rights;
- ☒ Proposed disposition of mineral rights;
- ☒ Parkland dedication calculations; caghi-in-lue
- ☒ Environmental Assessment Summary of Probable Impact/Community Impact Report; (major and subsequent minor subdivisions)
- ☐ Summary of Probable Impacts; (minor subdivisions)
- ☐ Transportation impact analysis or transportation plan;
- ☒ Fire risk rating analysis and fire prevention plan;
- ☒ Property owners' association documents, including draft articles of incorporation, declaration and bylaws;
- ☐ FIRM or FEMA panel map and letter identifying floodplain status;
- ☒ Required water and sanitation info. /DNRC Water Right Inquiry 655 Timberwolf Pky. Ste 4 Kalispell, MT 59901
- ☐ A form of Subdivision Improvements Agreement, if proposed;
- ☐ Flood hazard evaluation;
- ☒ Letter to agencies indicated on the back of this sheet. Provide proof of receipt.
- ☐ 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;
- ☐ Such additional relevant and reasonable information as identified by the Subdivision Administrator during the pre-application meeting that is pertinent to the required elements of this section;
- ☒ Subdivision Noxious Weed Management Application;
- ☒ Private Road Construction Application;
- ☒ Private Road Name Application

The following materials will need to be submitted with the final plat:

- ☒ Lien holders' acknowledgement of subdivision, if applicable;
- ☒ Encroachment permits from Montana Department of Transportation or the local jurisdiction;
- ☒ Weed treatment inspection or a Subdivision Improvement Agreement if proposed;
- ☒ Road inspection

Sanders County may require additional information once the review process has begun.

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- ✓ US Dept. Fish & Wildlife Service Ecological Services, 100 N Park St. Suite 320, Helena, MT 59601
- ✓ Montana Fish, Wildlife & Parks, Zachary.Farley@mt.gov Attn: Zach Farley/Wildlife Biologist, 5427 MT Hwy 200, Thompson Falls, MT 59873
- Montana Fish, Wildlife & Parks, Jason.Blakney@mt.gov Attn: Jason Blakney/Fisheries Biologist, 5427 MT Hwy 200, Thompson Falls, MT 59873
- Montana Fish, Wildlife & Parks Region 1, LMaykuth@mt.gov Attn: Lynsay Maykuth, Administrative Assistant
- Department of Natural Resources, PO Box 219, Plains, MT 59859
- Natural Resource & Conservation 7487 MT Hwy 200, Plains, MT 59859
- Eastern Conservation District, 7487 MT Hwy 200, Plains, MT 59859
- Green Mountain Conservation District, PO Box 1329, Trout Creek, MT 59874
- ✓ Cabinet Ranger District Attn: District Ranger, 2693 MT Hwy 200, Trout Creek, MT 59874
- Plains Ranger District Attn: District Ranger, PO Box 429, Plains, MT 59859
- Dept. of the Army/Omaha District Helena Regulatory Office, 10 West 15th St. Suite 2200, Helena, MT 59626
- Water Master-Camas Division of Flathead Irrigation District, 25 Andrews Rd, Hot Springs, MT 59845
- Montana Historical Society Preservation Office PO Box 201202 Helena, MT 59620-1202 dmurdo@mt.gov

Utilities

- Avista Corporation, PO Box 1469, Noxon, MT 59853
- Avista Corporation, PO Box 3727, Spokane, WA 99220
- BPA-Dustin Smith Realty Specialist Supervisor TERR/Kalispell, dtsmith@bpa.gov (2520 US Hwy 2 East, Kalispell, MT 59901)
- NW Energy, Michael Cassidy Michael.Cassidy@northwestern.com (PO Box 4467, Missoula, MT 59806)
- ✓ Northern Lights, Sam Ross, Engineering sam.ross@nli.coop (PO Box 269, Sagle, ID 83860)
- Mission Valley Power, PO Box 97 Pablo, MT 59855
- Blackfoot Telecommunications, 1221 Russell St, Missoula, MT 59808
- Hot Springs Telephone, PO Box 627, Hot Springs, MT 59845

Transportation

- ✓ Montana Dept. of Transportation, PO Box 201001, Helena, MT 59620
- Burlington Northern, PO Box 961089, Fort Worth, TX 76161
- Montana Rail Link, PO Box 16390, Missoula, MT 59808
- Sanders County Airport, PO Box 519, Thompson Falls, MT 59873

Government Offices

- ✓ Sanders County Sheriff's Office, PO Box 910, Thompson Falls, MT 59873 sfielders@co.sanders.mt.us
- The Confederated Salish & Kootenai Tribes, PO Box 278, Pablo, MT 59855
- MT Dept. of Revenue, PO Box 267, Thompson Falls, MT 59873

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- ✓ Heron Rural Fire District, PO Box 86, Heron, MT 59844
- Noxon Rural Fire District, PO Box 3, Noxon, MT 59853
- Trout Creek Rural Fire District, PO Box 1408 Trout Creek, MT 59874 troutcreekfire@blackfoot.net
- Thompson Falls Rural Fire District, PO Box 698, Thompson Falls, MT 59873
- Plains/Paradise Rural Fire District, PO Box 1115, Plains, MT 59859
- Hot Springs Rural Fire District, PO Box 144, Hot Springs, MT 59845
- Lonepine Volunteer Fire Dept., 59 Bras Rd, Lonepine, MT 59848
- Dixon Rural Fire District, PO Box 102, Dixon, MT 59831

Ambulance Services

- ✓ Community Ambulance of Western, Sanders County PO Box 170, Noxon, MT 59853
- Thompson Falls Ambulance, PO Box 1055, Thompson Falls, MT 59873
- Plains Ambulance, PO Box 268, Plains, MT 59859
- Hot Springs Ambulance, PO Box 830, Hot Springs, MT 59845

School Districts

- ✓ Noxon School District, Attn: Superintendents Office 300 Noxon Ave., Noxon, MT 59853
- Trout Creek School District 4 School Ln., Trout Creek, MT 59874 pwenz@troutcreekeagles.org
- Thompson Falls School District, Attn: Superintendents Office 206 Haley Ave., Thompson Falls, MT 59873
- Plains School District, Attn: Superintendents Office PO Box 549, Plains, MT 59859
- Hot Springs School District, Attn: Superintendents Office PO Box 1005, Hot Springs, MT 59845
- Dixon School District, PO Box 10, Dixon, MT 59831

US Postal Service

- Town PO Box 9999, Town, MT Zip Code

Other Entities

- Yellowstone Pipeline, 3180 MT Hwy 12E, Helena, MT 59601
- Phillips 66, 3009 Main Street East, Thompson Falls, MT 59873

Preliminary Plat Application

PART I GENERAL DESCRIPTION AND INFORMATION

1. Name of the proposed subdivision: **Blue Creek Subdivision**

2. Location (City and/or County): **Sanders County**

Legal Access: **Blue Creek Road**

Legal description: **SW**1/4 **NW**1/4 of Section **20** Township **27 N** Range **34 W**

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. Descriptive Data:

- a. Number of lots or rental spaces: **9 Lots**
- b. Total acreage in lots being reviewed: **25.94 Acres**
- c. Total acreage in streets or roads: **1.76 Acres**
- d. Total acreage in parks, open space, and/or common facilities: **N/A**

e. Total gross acreage of subdivision: **25.94 Acres**

f. Minimum size of lots or spaces: **0.90 Acre Lot**

g. Maximum size of lots or spaces: **6.48 Acre Lot**

6. 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)

7. Provide the following information regarding the development:

a. Current land use: **Vacant Land - Rural/Dense Timber.**

b. 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. **N/A.**

c. Drafts of any covenants and restrictions to be included in deeds or contracts for sale.
A Preliminary Title Report and draft CCR's have been included within the Subdivision Application packet.
Drafts of homeowners' association bylaws and articles of incorporation, if applicable. (Submitting a draft copy of 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.)

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

IMEG Corp. C/O Tamara Ross

Name

406-272-0253

Phone

Tamara.R.Ross@imegcorp.com

Email

1817 South Ave West Suite A, Missoula, MT 59801

Mailing Address

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

Tim Rooney
Tungsten Holdings, Inc. C/O Crawford Dinning
Name

Tungsten Holdings Tim Rooney
Signature of owner

809 Mineral Ave, Libby, MT 59923

Mailing Address

406-293-0553
#406-291-5577 projects@tungstenholdings.com
Date Phone Email

Name, address, and telephone number of subdivider if different than owner(s).

Name Signature of subdivider

Mailing Address

Date Phone Email

OFFICE USE ONLY

DATE RECEIVE _____ ELEMENT REVIEW COMPLETE _____ SUFFICIENCY REVIEW COMPLETE _____

DECISION DUE _____

AMOUNT DUE _____ AMOUNT RECEIVED _____

TUNGSTEN HOLDINGS, INC
P.O. BOX 1213
LIBBY, MT 59923
406-293-3714

GLACIER BANK
LIBBY, MT 59923
93-7082/2929

38342

12/26/2023

PAY TO THE ORDER OF Sanders County

\$ **1,060.00

One Thousand Sixty and 00/100*****

DOLLARS

Sanders County

MEMO

Weed management application


AUTHORIZED SIGNATURE

Photo Safe Deposit®

Details on Back.

TUNGSTEN HOLDINGS, INC
P.O. BOX 1213
LIBBY, MT 59923
406-293-3714

GLACIER BANK
LIBBY, MT 59923
93-7082/2929

38343

12/26/2023

PAY TO THE ORDER OF Sanders County

\$ **740.00

Seven Hundred Forty and 00/100*****

DOLLARS

Sanders County

MEMO

Subdivision application review fee


AUTHORIZED SIGNATURE

Photo Safe Deposit®

Details on Back.

TUNGSTEN HOLDINGS, INC
P.O. BOX 1213
LIBBY, MT 59923
406-293-3714

GLACIER BANK
LIBBY, MT 59923
93-7082/2929

38344

12/26/2023

PAY TO THE ORDER OF Sanders County

\$ **250.00

Two Hundred Fifty and 00/100*****

DOLLARS

Sanders County

MEMO

Private road construction app fee

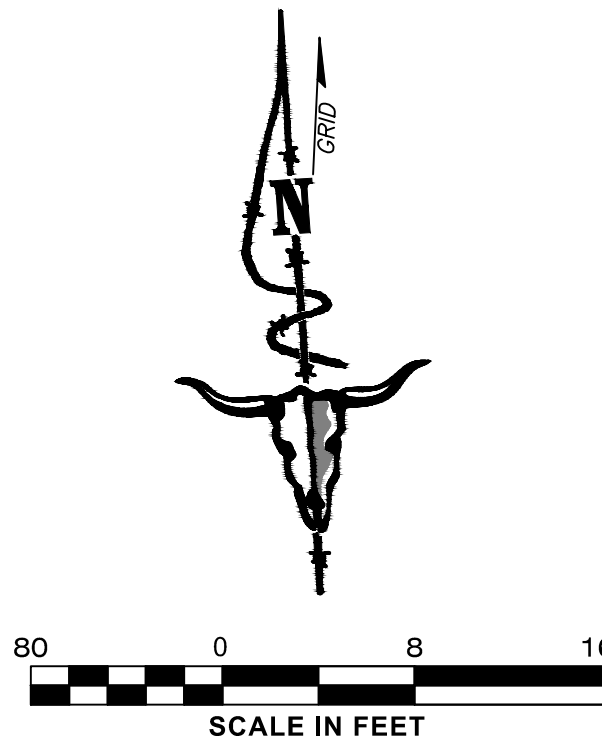

AUTHORIZED SIGNATURE

Photo Safe Deposit®

Details on Back.

PRELIMINARY PLAT OF
BLUE CREEK SUBDIVISION

LOCATED IN THE NW1/4 OF SECTION 20, T.27N., R.34W., P.M.M., SANDERS COUNTY, MONTANA



BASIS OF BEARING:
STATE PLANE MONTANA - ZONE 2500
GROUND (TRUE) DISTANCES
GRID NORTH

VERTICAL DATUM:
NAVD88

DATE:
AUGUST 2023 - NOVEMBER 2023

RECORD OWNERS:
TUNGSTEN HOLDINGS INC

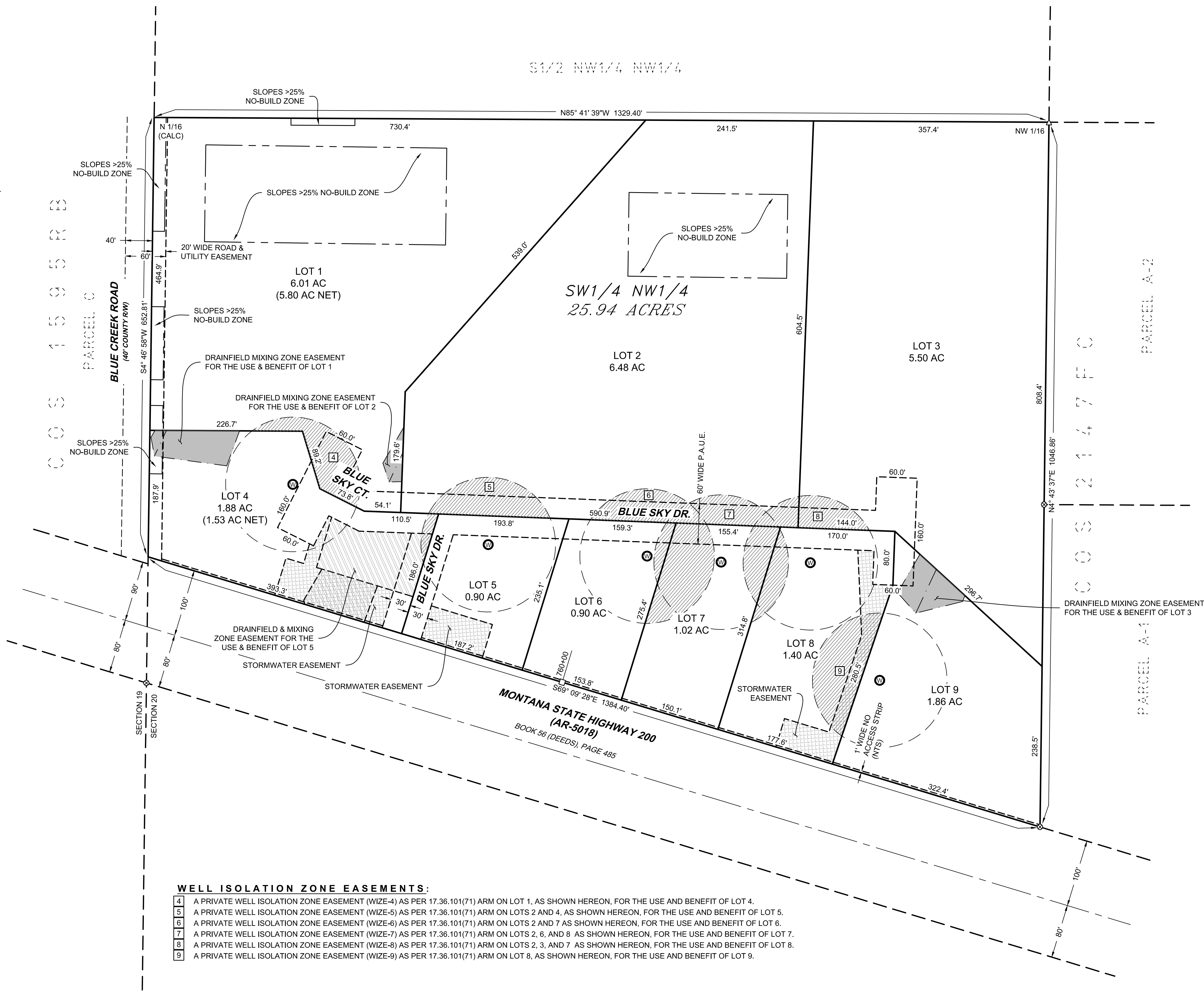
SURVEY COMMISSIONED BY:
TUNGSTEN HOLDINGS INC

TOTAL SUBDIVISION AREA:
25.94 ACRES (GROSS)
0.30 ACRES (PUBLIC ROAD)
25.64 ACRES (NET)

PLAT NOTES:
1) LOTS 1 THROUGH 9 ARE INTENDED FOR SINGLE FAMILY RESIDENTIAL USE.
2) THE NO-BUILD ZONE PROHIBITS ALL BUILDINGS AND STRUCTURES.
3) THIS ZONE SHALL NOT PRECLUDE INSTALLATION OR MAINTENANCE OF UTILITIES AND ASSOCIATED FACILITIES WITHIN DESIGNATED EASEMENT AREAS.

USDA SOILS:
781D - FARMLAND OF LOCAL IMPORTANCE
88C - FARMLAND OF STATEWIDE IMPORTANCE

- LEGEND**
- ⊗ = FOUND REBAR WITH 1" YPC (WARREN, 2734S)
 - △ = FOUND 3-1/4" ALUM. CAP (USFS, 46595LS)
 - = FOUND R/W CONCRETE MONUMENT POLE
 - YPC = YELLOW PLASTIC CAP
 - COS = CERTIFICATE OF SURVEY
 - AC = ACRES
 - P.A.U.E. = PRIVATE ACCESS & UTILITY EASEMENT
 - NTS = NOT TO SCALE
 - WIZE = WELL ISOLATION ZONE EASEMENT
 - ⊙ = PROPOSED WELL

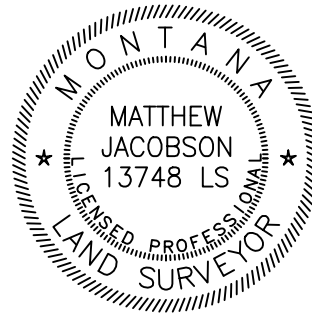


WELL ISOLATION ZONE EASEMENTS:

- 4 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-4) AS PER 17.36.101(71) ARM ON LOT 1, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 4.
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- 9 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-9) AS PER 17.36.101(71) ARM ON LOT 8, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 9.

LEGAL DESCRIPTION

THE SOUTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (SW1/4/NW1/4) OF SECTION 20 LYING NORTH OF MONTANA HIGHWAY 200, TOWNSHIP 27 NORTH, RANGE 34 WEST, PRINCIPAL MERIDIAN MONTANA, SANDERS COUNTY, MONTANA. CONTAINING A TOTAL OF 25.94 ACRES, MORE OR LESS.



SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THE ATTACHED PRELIMINARY PLAT REPRESENTS A SURVEY MADE UNDER MY SUPERVISION AND PREPARED IN CONFORMANCE WITH THE APPLICABLE SECTIONS OF THE MONTANA SUBDIVISION AND PLATTING ACT AND THE REGULATIONS ADOPTED THEREUNDER.

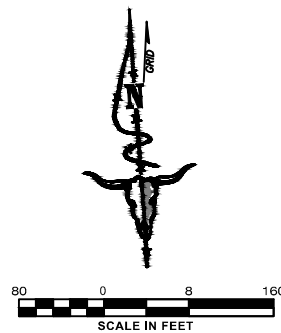
SS
MATTHEW JACOBSON, PROFESSIONAL LAND SURVEYOR
MONTANA LICENSE NO. 13748LS
DATE

1/4	SEC.	T.	R.
<input checked="" type="checkbox"/>	20	27N.	34W.

PREPARED BY:
IMEG
1817 SOUTH AVE. W. STE. A PH: 406.721.0142
MISSOULA, MT FAX: 406.721.5224
59801 www.imegcorp.com
IMEG PROJECT NO. 22003448

PRELIMINARY PLAT OF
BLUE CREEK SUBDIVISION

LOCATED IN THE NW1/4 OF SECTION 20, T.27N., R.34W., P.M.M., SANDERS COUNTY, MONTANA



LEGEND

- = FOUND REBAR WITH 1" YPC (WARREN, 2734S)
- ▲ = FOUND 3-1/4" ALUM. CAP (USFS, 46595LS)
- = FOUND R/W CONCRETE MONUMENT POLE
- = YELLOW PLASTIC CAP
- = CERTIFICATE OF SURVEY
- AC = ACRES
- P.A.U.E. = PRIVATE ACCESS & UTILITY EASEMENT
- NTS = NOT TO SCALE
- WIZE = WELL ISOLATION ZONE EASEMENT
- ⊙ = PROPOSED WELL

BASIS OF BEARING:
STATE PLANE MONTANA - ZONE 2500
GROUND (TRUE) DISTANCES
GRID NORTH

VERTICAL DATUM:
NAVD83

DATE:
AUGUST 2023 - NOVEMBER 2023

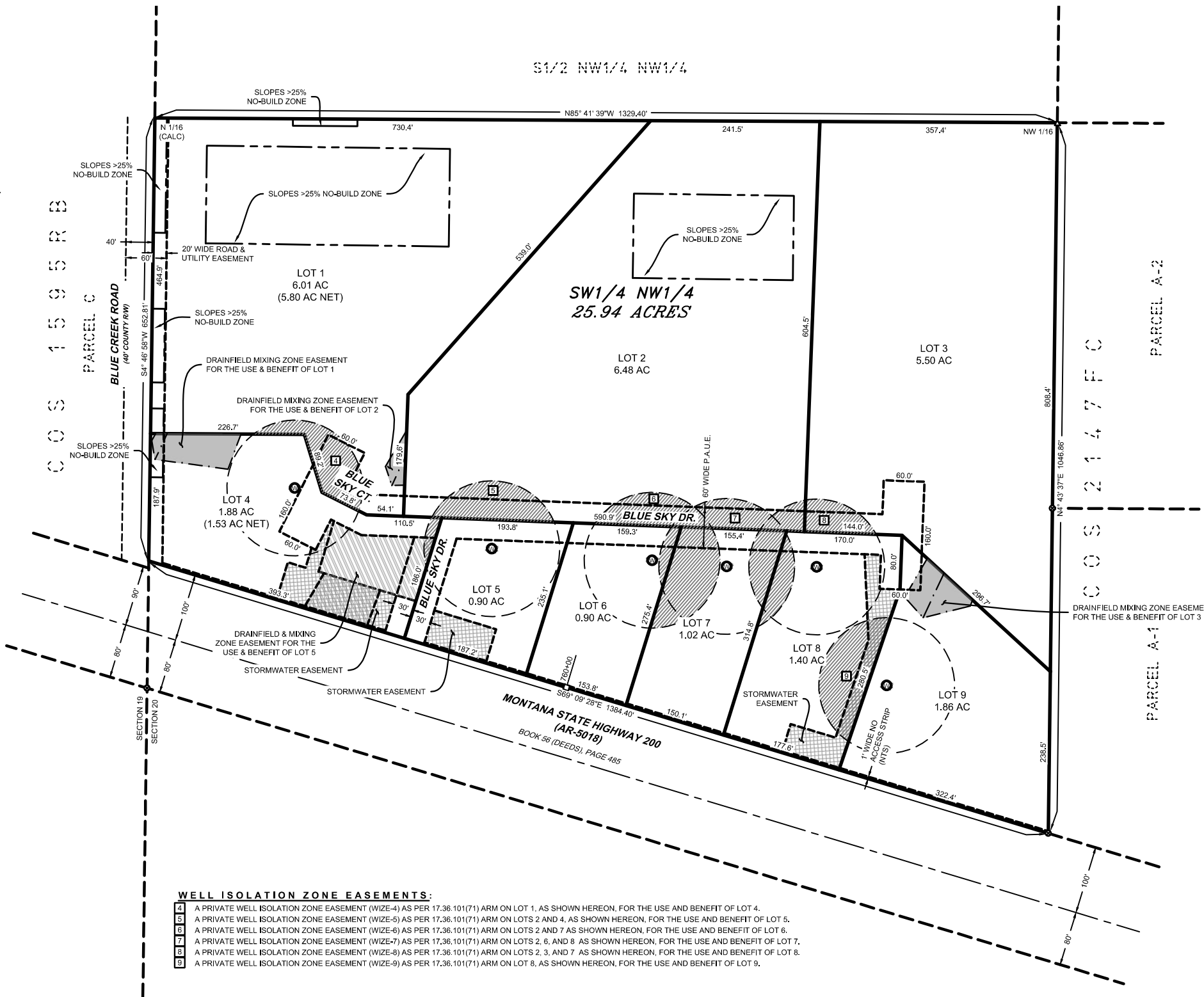
RECORD OWNERS:
TUNGSTEN HOLDINGS INC

SURVEY COMMISSIONED BY:
TUNGSTEN HOLDINGS INC

TOTAL SUBDIVISION AREA:
25.94 ACRES (GROSS)
0.30 ACRES (PUBLIC ROAD)
25.64 ACRES (NET)

PLAT NOTES:
1) LOTS 1 THROUGH 9 ARE INTENDED FOR SINGLE FAMILY RESIDENTIAL USE.
2) THE NO-BUILD ZONE PROHIBITS ALL BUILDINGS AND STRUCTURES.
3) THIS ZONE SHALL NOT PRECLUDE INSTALLATION OR MAINTENANCE OF UTILITIES AND ASSOCIATED FACILITIES WITHIN DESIGNATED EASEMENT AREAS.

USDA SOILS:
781D - FARMLAND OF LOCAL IMPORTANCE
88C - FARMLAND OF STATEWIDE IMPORTANCE



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SS
MATTHEW JACOBSON, PROFESSIONAL LAND SURVEYOR
MONTANA LICENSE NO. 13748LS

DATE

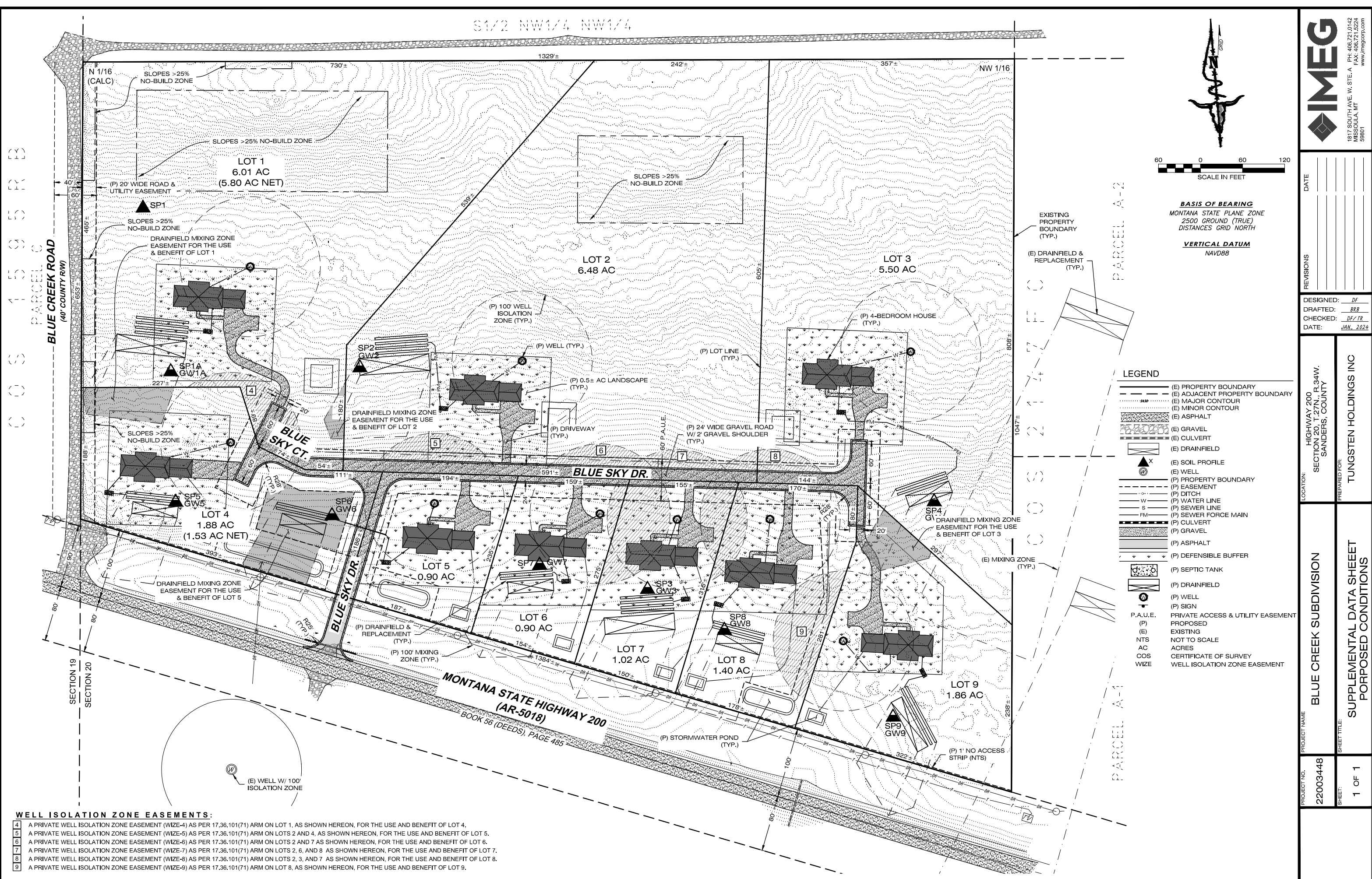
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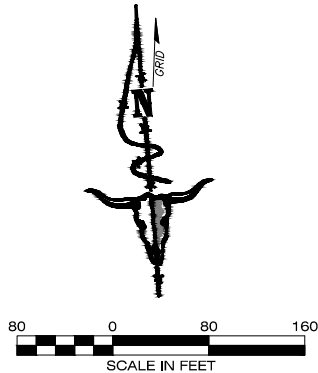
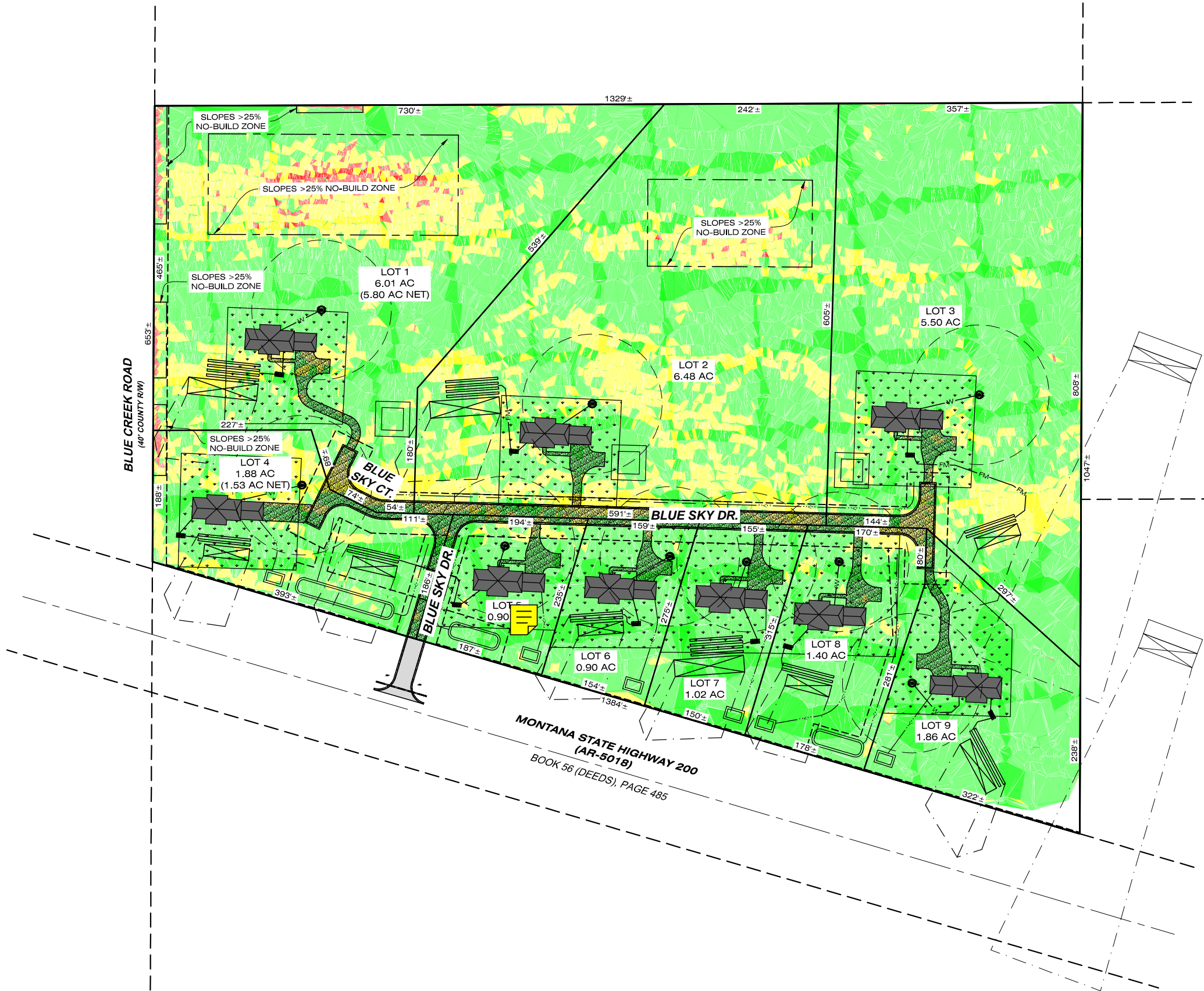
PREPARED BY:



1817 SOUTH AVE. W. STE. A PH: 406.721.0142
MISSOULA, MT FAX: 406.721.5224
59801 www.imegcorp.com

IMEG PROJECT NO. 22003448





Slopes Table			
Minimum Slope	Maximum Slope	Area	Color
0.00%	14.99%	20.3 AC	
15.00%	24.99%	5.1 AC	
25.00%	>30.00%	0.4 AC	

REVISIONS	DATE

DESIGNED: DF/TR
DRAFTED: BRB
CHECKED: DF/TR
DATE: JAN., 2024

LOCATION:	HIGHWAY 200 SECTION 20, T.27N., R.34W. SANDERS, COUNTY
PREPARED FOR:	TUNGSTEN HOLDINGS INC

PROJECT NO.	22003448	PROJECT NAME	BLUE CREEK SUBDIVISION
SHEET:	1 OF 1	SHEET TITLE:	SLOPE ANALYSIS

FOR MDEQ USE

RECEIVED STAMP:

APPROVAL STAMP

EQ #:

PURPOSE OF LOT LAYOUT:

Subdivision Approval.

MDEQ LOT LAYOUT NOTES:

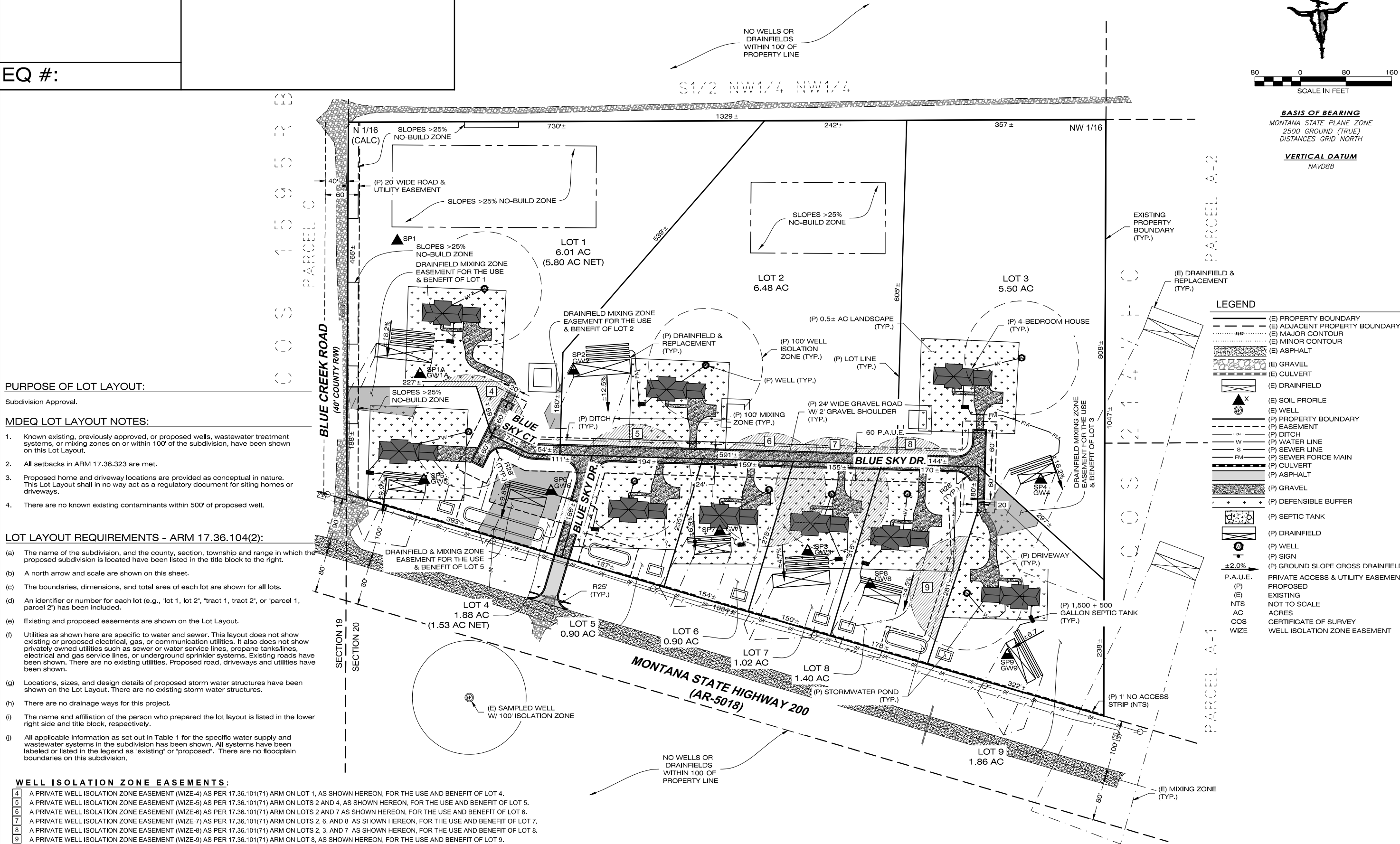
- Known existing, previously approved, or proposed wells, wastewater treatment systems, or mixing zones on or within 100' of the subdivision, have been shown on this Lot Layout.
- All setbacks in ARM 17.36.323 are met.
- Proposed home and driveway locations are provided as conceptual in nature. This Lot Layout shall in no way act as a regulatory document for siting homes or driveways.
- There are no known existing contaminants within 500' of proposed well.

LOT LAYOUT REQUIREMENTS - ARM 17.36.104(2):

- The name of the subdivision, and the county, section, township and range in which the proposed subdivision is located have been listed in the title block to the right.
- A north arrow and scale are shown on this sheet.
- The boundaries, dimensions, and total area of each lot are shown for all lots.
- An identifier or number for each lot (e.g., "lot 1, lot 2", "tract 1, tract 2", or "parcel 1, parcel 2") has been included.
- Existing and proposed easements are shown on the Lot Layout.
- Utilities as shown here are specific to water and sewer. This layout does not show existing or proposed electrical, gas, or communication utilities. It also does not show privately owned utilities such as sewer or water service lines, propane tanks/lines, electrical and gas service lines, or underground sprinkler systems. Existing roads have been shown. There are no existing utilities. Proposed road, driveways and utilities have been shown.
- Locations, sizes, and design details of proposed storm water structures have been shown on the Lot Layout. There are no existing storm water structures.
- There are no drainage ways for this project.
- The name and affiliation of the person who prepared the lot layout is listed in the lower right side and title block, respectively.
- All applicable information as set out in Table 1 for the specific water supply and wastewater systems in the subdivision has been shown. All systems have been labeled or listed in the legend as "existing" or "proposed". There are no floodplain boundaries on this subdivision.

WELL ISOLATION ZONE EASEMENTS:

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- A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-9) AS PER 17.36.101(71) ARM ON LOT 8, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 9.



BASIS OF BEARING
MONTANA STATE PLANE ZONE
2500 GROUND (TRUE)
DISTANCES GRID NORTH

VERTICAL DATUM
NAVD88

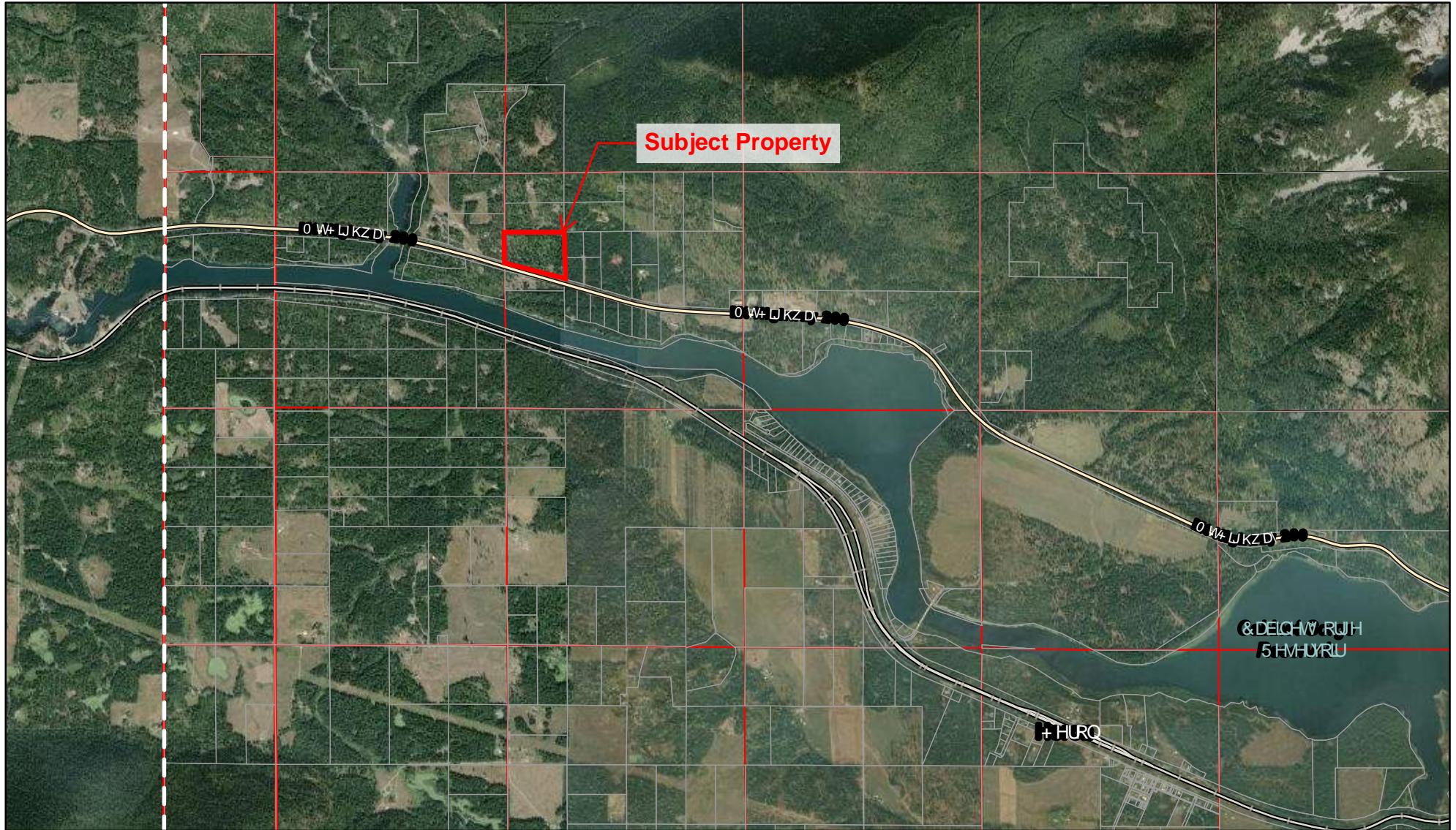
- LEGEND**
- (E) PROPERTY BOUNDARY
 - (E) ADJACENT PROPERTY BOUNDARY
 - (E) MAJOR CONTOUR
 - (E) MINOR CONTOUR
 - (E) ASPHALT
 - (E) GRAVEL
 - (E) CULVERT
 - (E) DRAINFIELD
 - (E) SOIL PROFILE
 - (E) WELL
 - (P) PROPERTY BOUNDARY
 - (P) EASEMENT
 - (P) DITCH
 - (P) WATER LINE
 - (P) SEWER LINE
 - (P) SEWER FORCE MAIN
 - (P) CULVERT
 - (P) ASPHALT
 - (P) GRAVEL
 - (P) DEFENSIBLE BUFFER
 - (P) SEPTIC TANK
 - (P) DRAINFIELD
 - (P) WELL
 - (P) SIGN
 - (P) GROUND SLOPE CROSS DRAINFIELD
 - PRIVATE ACCESS & UTILITY EASEMENT
 - PROPOSED
 - EXISTING
 - NOT TO SCALE
 - ACRES
 - CERTIFICATE OF SURVEY
 - WELL ISOLATION ZONE EASEMENT

PREPARED BY: BRAD BELLAIRE



SECTION B

- Aerial Map
- Vicinity Sketch
- USGS Topographic Map
- Floodplain Map
- National Wetlands Inventory Map
- Wildlife Exhibit



Subject Property

0 W4 LKZD

0 W4 LKZD

0 W4 LKZD

&DECHW RUH
5 HMURU

+ HURQ

30

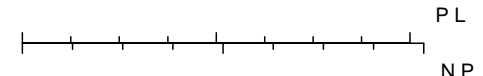
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&DGDVWUDO:HE0HUF 3/66 LUVW LYLVLRQ

3URWUDFWHG %ORFN &DGDVWUDO:HE0HUF

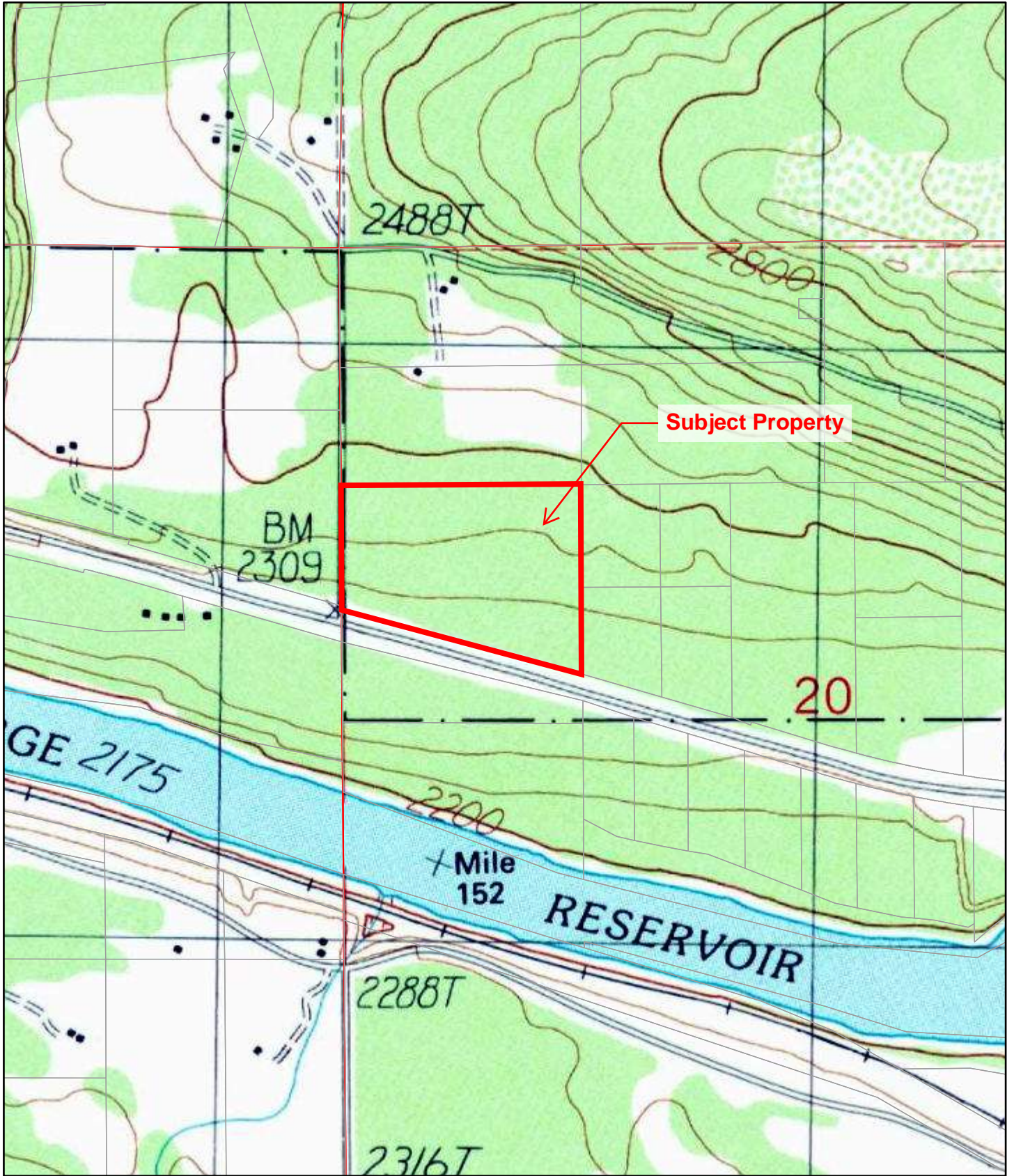
3/66 7RZQVK

&RXQWLHV



0RQWDQD 6WDWH /LEUDU\ (VUL +(5(*DUPLQ 6DIH*
0017...\$6\$ 86*6 %XUHDX RI /DQG 0DQDJHPHQW (3\$ 1

0RQWDQD &DGDV
XUFH (VUL 0DIDU (DUWKVWDU *HRJUDSKLFV



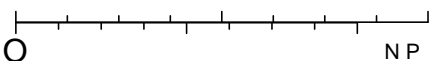
30

&DGDVWUDO:HE0HUF 2ZQHU3D 10
&DGDVWUDO:HE0HUF 3/66)LUVW 'I VLRQ

6HFWLRQ

&DGDVWUDO:HE0HUF 3/66 7RZQ VLRQ

&DGDVWUDO:HE0HUF &RXQWLHV



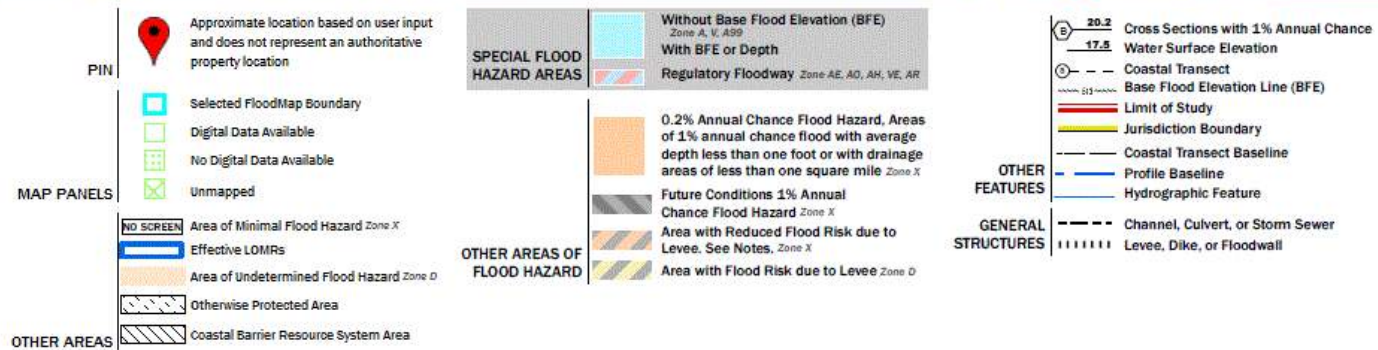
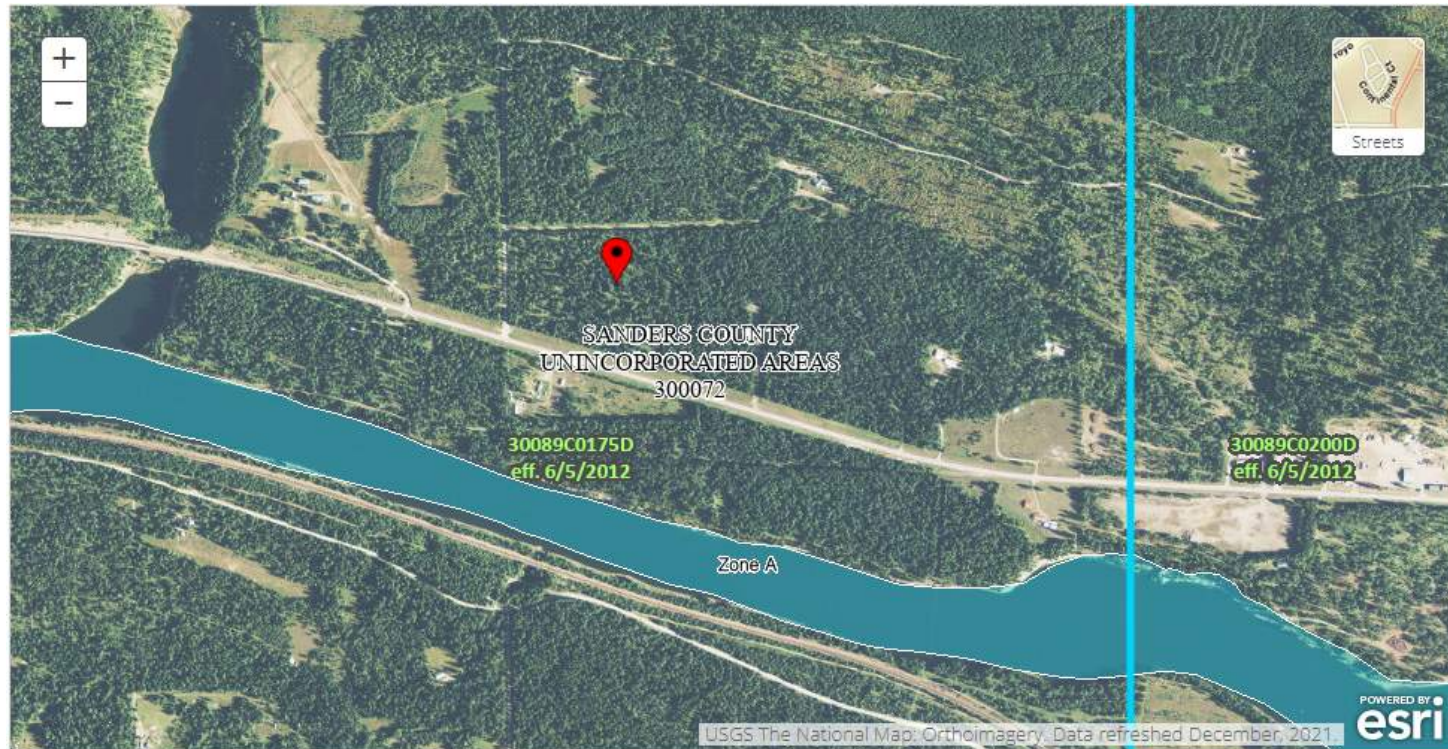
PL

NP

NDQD 6WDWH /LEUDU\

0RQWDQD &DGDVW
8 6 *HRORJLFDO 6XUYH\ 0RQWDQD

FEMA Floodplain Map



NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **Flowways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only to landward of 10' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **Flowways** were computed at cross sections and interpolated between cross sections. The flowways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Flowway widths and other pertinent flowway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 12N. The horizontal datum was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NINGS12
National Geodetic Survey
SSM-C3 #0202
1315 East West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was derived from NAIP Orthophotography produced with a one meter ground resolution from photography dated 2005.

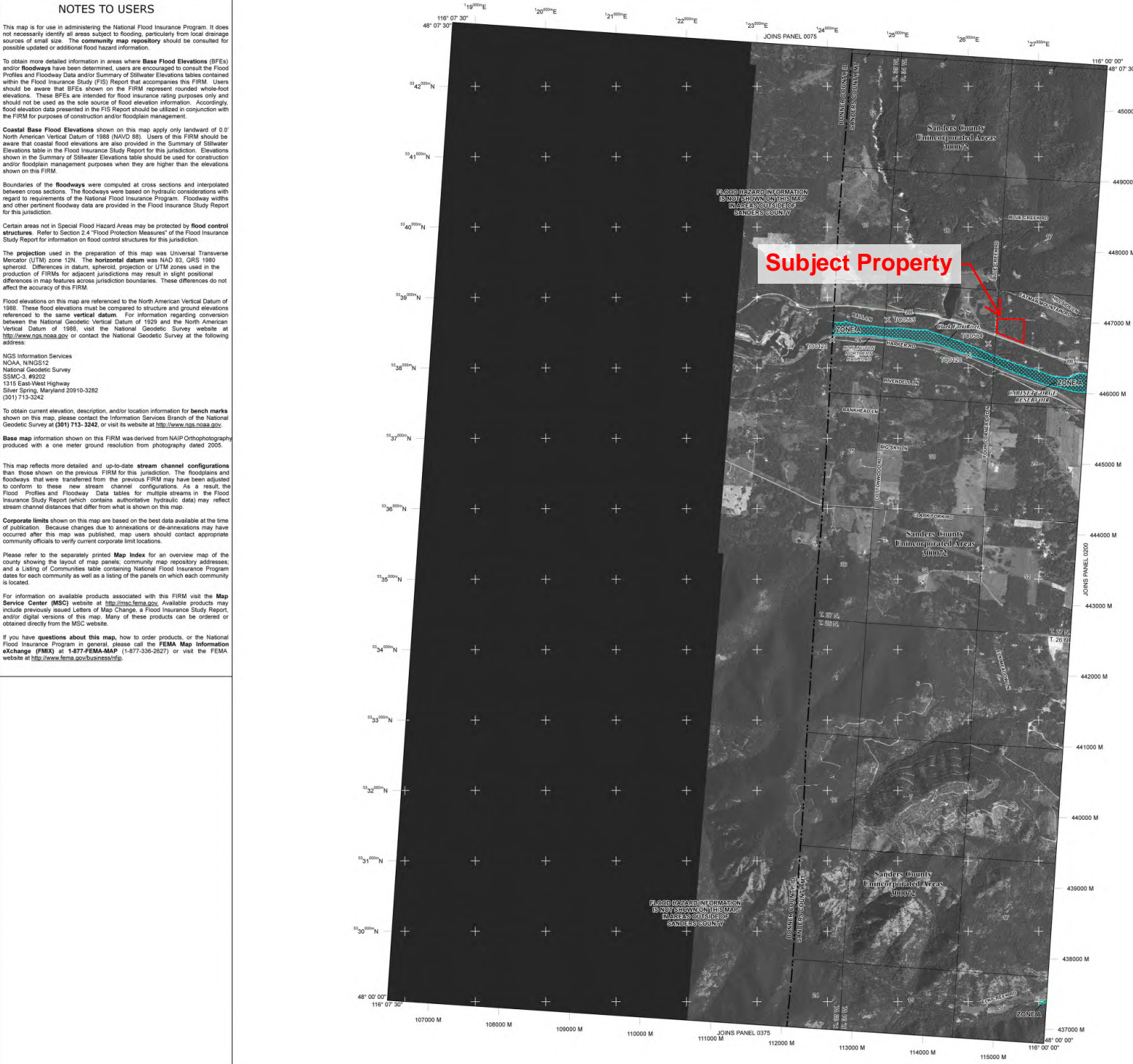
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and flowways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

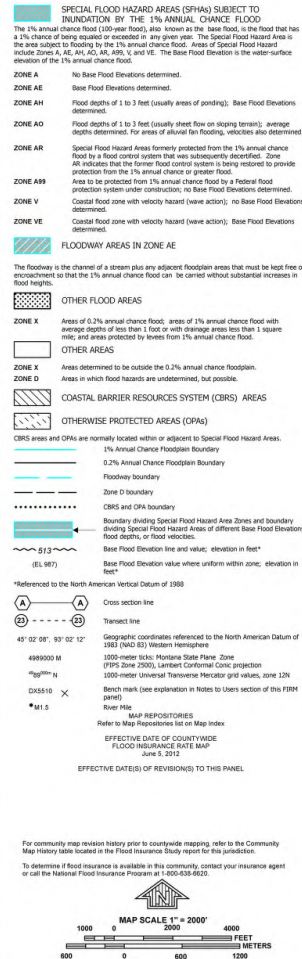
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at <http://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information Exchange (FMIX)** at 1-877-FEMA-MAP (1-877-339-2627) or visit the FEMA website at <http://www.fema.gov/business/fip>.



LEGEND



NFIP

PANEL 0175D

FIRM

FLOOD INSURANCE RATE MAP

SANDERS COUNTY, MONTANA (AND INCORPORATED AREAS)

PANEL 175 OF 2200

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	SUMBER	PANEL	SUFFIX
SANDERS COUNTY, Incorporated Areas	30072	0175	D

Notice to User: The Map Number shown below should be used when placing map orders, the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
30069C0175D

EFFECTIVE DATE
JUNE 5, 2012

Federal Emergency Management Agency



U.S. Fish and Wildlife Service

National Wetlands Inventory

National Wetlands Inventory



November 15, 2023

Wetlands

	Estuarine and Marine Deepwater		Freshwater Emergent Wetland		Lake
	Estuarine and Marine Wetland		Freshwater Forested/Shrub Wetland		Other
			Freshwater Pond		Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Wildlife Exhibit

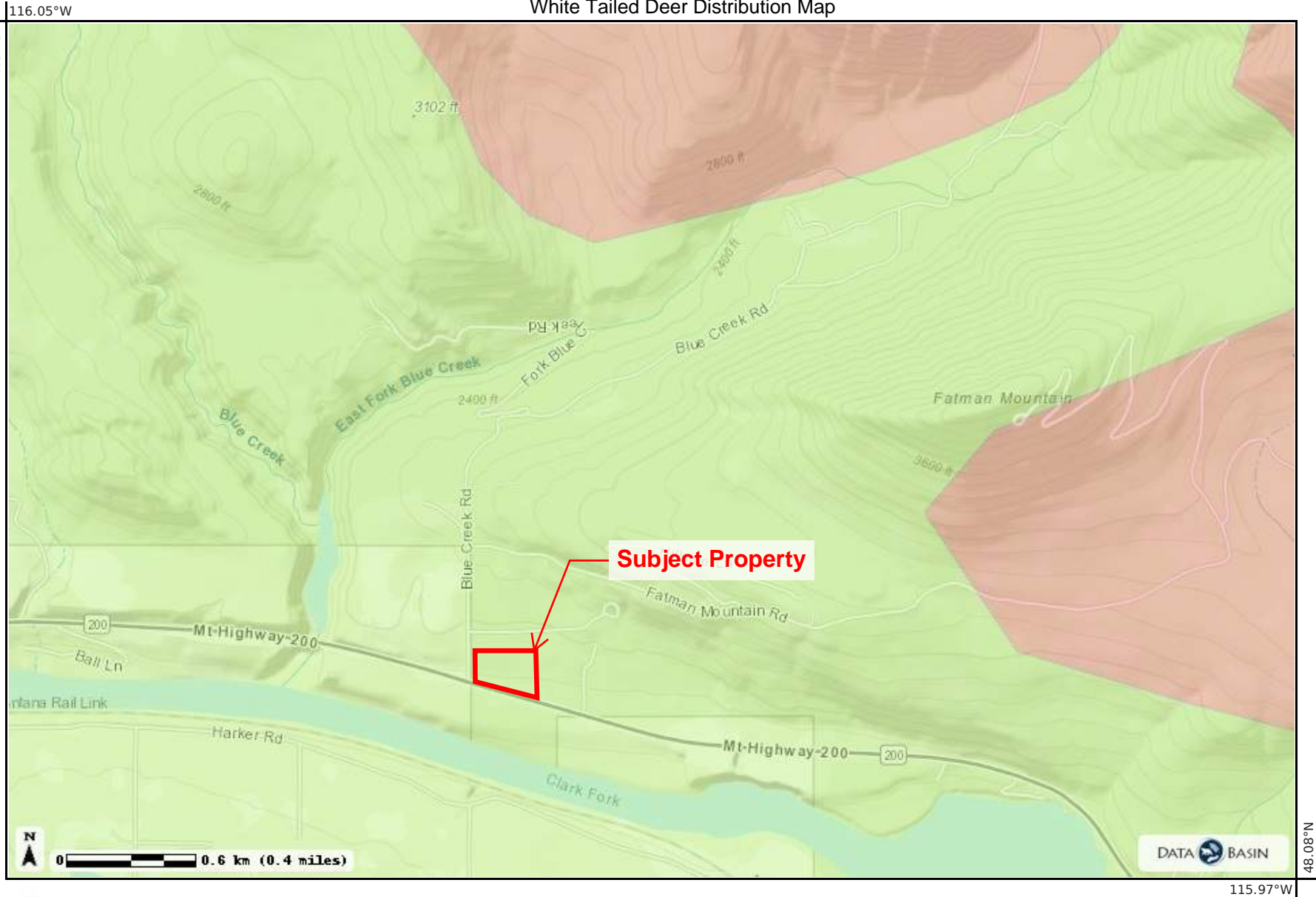
White Tailed Deer Distribution Map

Legend

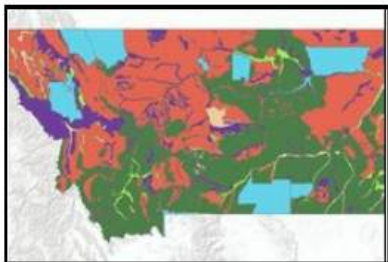
Montana (USA) White-tailed Deer Densities and Overall Distribution

Displaying: **CLASS_1**

- 15 - 30 white-tailed deer per square mile
- 5 - 15 white-tailed deer per square mile
- Not administered by MFWP
- greater than 30 white-tailed deer per square mile
- less than 5 white-tailed deer per square mile
- unoccupied or rare



Datasets



Montana (USA) White-tailed Deer Densities and Overall Distribution

<https://databasin.org/datasets/a35f60cd576e4ee38cc7b36f08b70ffa/>

Credits: Montana Fish, Wildlife and Parks

Layers: • wtdden

This coverage represents density per square mile. It does not include densities or overall distribution within Tribal lands/Indian Reservations. Overall distribution polygons represent general or year round habitat. Not all polygons represent overall distribution. Due to the broad scaled nature, the data in this coverage are intended to be used for general planning purposes and initial resource review.



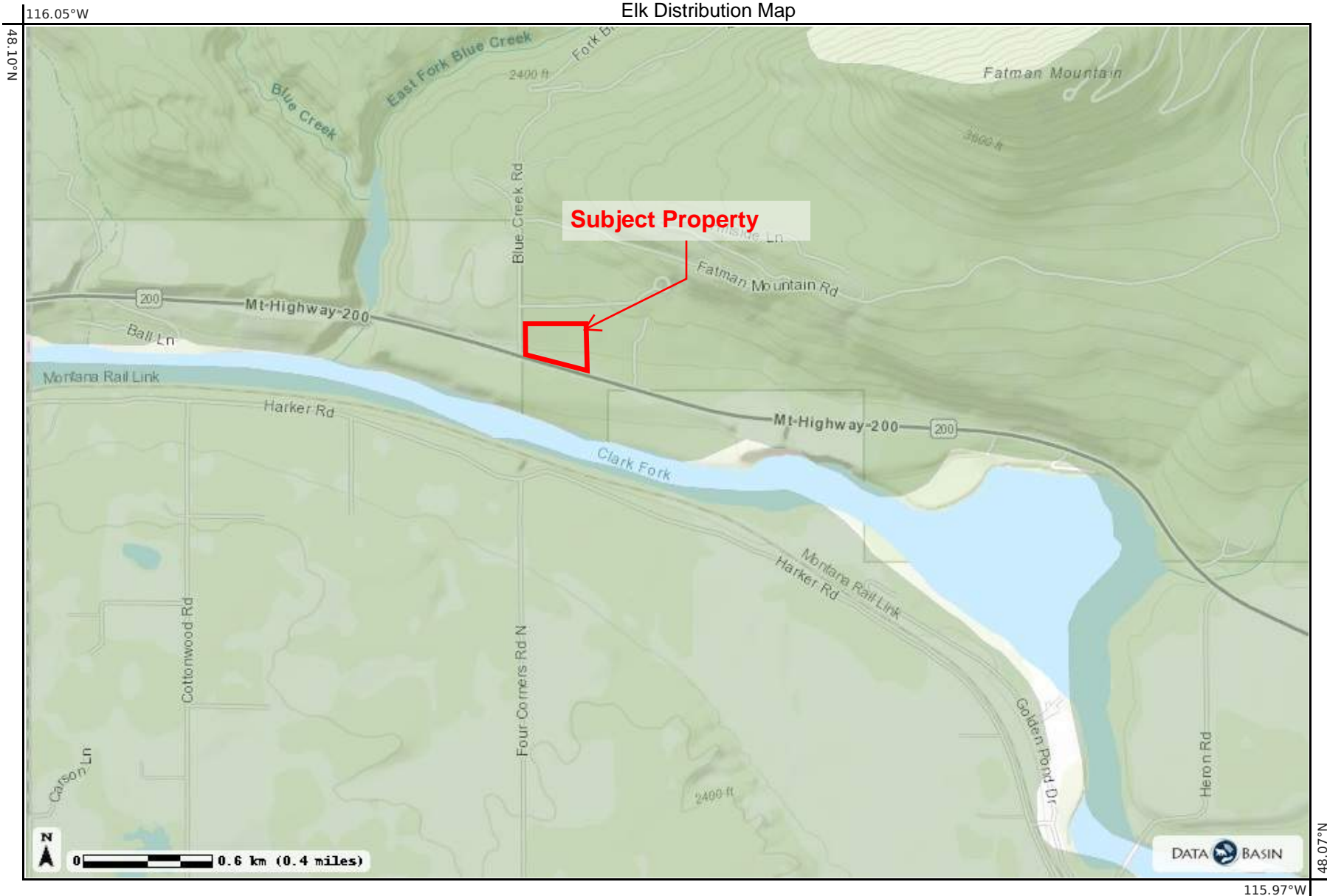
Wildlife Exhibit

Elk Distribution Map

Legend

Montana Elk Winter Ranges,
Summer Ranges, Calving Areas,
and Migration Areas
Displaying: WINHAB

Y



Datasets



Montana Elk Winter Ranges, Summer Ranges, Calving Areas, and Migration Areas

<https://databasin.org/datasets/0eca4ea8f9b34555870599b815946d6e/>

Credits: Montana Fish, Wildlife & Parks

Layers: elk99

This coverage represents density per square mile. It does not include densities or overall distribution within Tribal lands/Indian Reservations. Overall distribution polygons represent general or year round habitat. Not all polygons represent overall distribution. Due to the broad scaled nature, the data in this coverage are intended to be used for general planning purposes and initial resource review.



Wildlife Exhibit

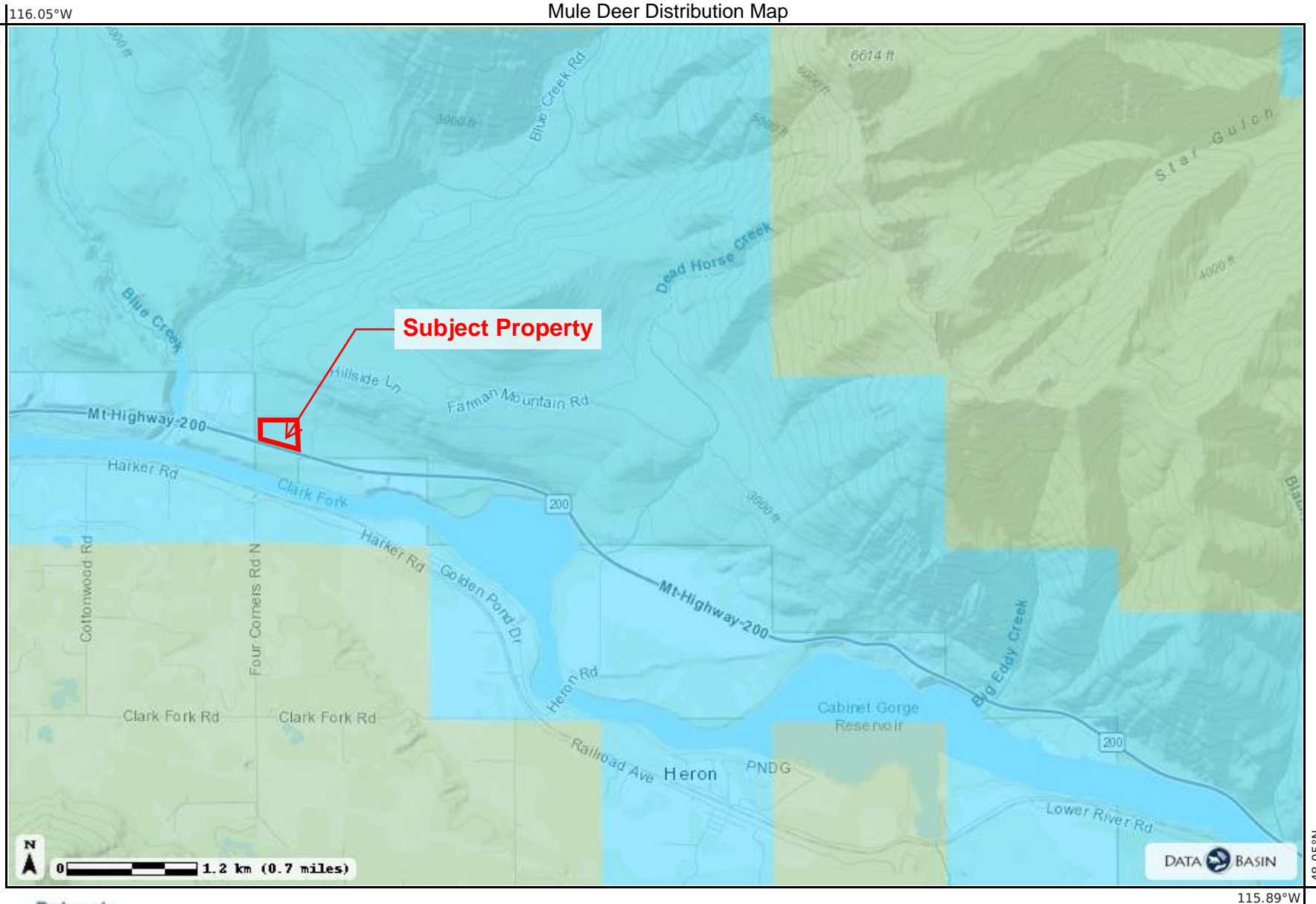
Mule Deer Distribution Map

Legend

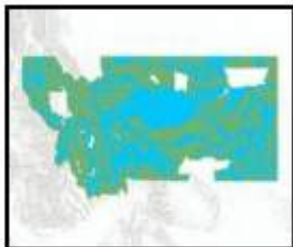
Mule Deer Distribution in Montana (USA)

Displaying: Use Type

- General Distribution
- Winter Distribution



Datasets



Mule Deer Distribution in Montana (USA)

<https://databasin.org/datasets/d89ca283da8c474383d78d9ad79c92c3/>

Credits: Montana Fish, Wildlife & Parks

Layers: • distributionMuleDeer

This coverage represents density per square mile. It does not include densities or overall distribution within Tribal lands/Indian Reservations. Overall distribution polygons represent general or year round habitat. Not all polygons represent overall distribution. Due to the broad scaled nature, the data in this coverage are intended to be used for general planning purposes and initial resource review.





SECTION C

- Preliminary Title Report and Ownership Deeds
- Draft Covenants, Conditions, and Restrictions
 - Road Maintenance Agreement
- Noxious Weed and Revegetation Plan

GUARANTEE

Issued by

First American Title Company

1211 Main Street, P O Box 850, Thompson Falls, MT 59873

Title Officer: Roberta Kinser

Phone: (406)827-3591

FAX: (406)827-3848



*First American Title*TM

Form 5010500 (7-1-14)

Guarantee Number: 501055-

Guarantee Face Page

Issued By

FIRST AMERICAN TITLE INSURANCE COMPANY



First American Title Insurance Company

Dennis J. Gilmore, President

Greg L. Smith, Secretary

This jacket was created electronically and constitutes an original document

File No. 1051775THF	Page 2 of 7	Guarantee Face Page - Exclusions, Conditions and Stipulations Form 5010500 (7-1-14)
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SCHEDULE OF EXCLUSIONS FROM COVERAGE OF THIS GUARANTEE

1. Except to the extent that specific assurances are provided in Schedule A of this Guarantee, the Company assumes no liability for loss or damage by reason of the following:
 - (a) Defects, liens, encumbrances, adverse claims or other matters against the title, whether or not shown by the public records.
 - (b) (1) Taxes or assessments of any taxing authority that levies taxes or assessments on real property; or, (2) Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not the matters excluded under (1) or (2) are shown by the records of the taxing authority or by the public records.
 - (c) (1) Unpatented mining claims; (2) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (3) water rights, claims or title to water, whether or not the matters excluded under (1), (2) or (3) are shown by the public records.
2. Notwithstanding any specific assurances which are provided in Schedule A of this Guarantee, the Company assumes no liability for loss or damage by reason of the following:
 - (a) Defects, liens, encumbrances, adverse claims or other matters affecting the title to any property beyond the lines of the land expressly described in the description set forth in Schedule (A), (C) or in Part 2 of this Guarantee, or title to streets, roads, avenues, lanes, ways or waterways to which such land abuts, or the right to maintain therein vaults, tunnels, ramps or any structure or improvements; or any rights or easements therein, unless such property, rights or easements are expressly and specifically set forth in said description.
 - (b) Defects, liens, encumbrances, adverse claims or other matters, whether or not shown by the public records; (1) which are created, suffered, assumed or agreed to by one or more of the Assureds; (2) which result in no loss to the Assured; or (3) which do not result in the invalidity or potential invalidity of any judicial or non-judicial proceeding which is within the scope and purpose of the assurances provided.
 - (c) The identity of any party shown or referred to in Schedule A.
 - (d) The validity, legal effect or priority of any matter shown or referred to in this Guarantee

GUARANTEE CONDITIONS AND STIPULATIONS

1. DEFINITION OF TERMS.

The following terms when used in the Guarantee mean:

- (a) the "Assured": the party or parties named as the Assured in this Guarantee, or on a supplemental writing executed by the Company.
- (b) "land": the land described or referred to in Schedule (A)(C) or in Part 2, and improvements affixed thereto which by law constitute real property. The term "land" does not include any property beyond the lines of the area described or referred to in Schedule (A)(C) or in Part 2, nor any right, title, interest, estate or easement in abutting streets, roads, avenues, alleys, lanes, ways or waterways.
- (c) "mortgage": mortgage, deed of trust, trust deed, or other security instrument.
- (d) "public records": records established under state statutes at Date of Guarantee for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without knowledge.
- (e) "date": the effective date.

2. NOTICE OF CLAIM TO BE GIVEN BY ASSURED CLAIMANT.

An Assured shall notify the Company promptly in writing in case knowledge shall come to an Assured hereunder of any claim of title or interest which is adverse to the title to the estate or interest, as stated herein, and which might cause loss or damage for which the Company may be liable by virtue of this Guarantee. If prompt notice shall not be given to the Company, then all liability of the Company shall terminate with regard to the matter or matters for which prompt notice is required; provided, however, that failure to notify the Company shall in no case prejudice the rights of any Assured unless the Company shall be prejudiced by the failure and then only to the extent of the prejudice

3. NO DUTY TO DEFEND OR PROSECUTE.

The Company shall have no duty to defend or prosecute any action or proceeding to which the Assured is a party, notwithstanding the nature of any allegation in such action or proceeding.

4. COMPANY'S OPTION TO DEFEND OR PROSECUTE ACTIONS; DUTY OF ASSURED CLAIMANT TO COOPERATE.

Even though the Company has no duty to defend or prosecute as set forth in Paragraph 3 above:

- (a) The Company shall have the right, at its sole option and cost, to institute and prosecute any action or proceeding, interpose a defense, as limited in (b), or to do any other act which in its opinion may be necessary or desirable to establish the title to the estate or interest as stated herein, or to establish the lien rights of the Assured, or to prevent or reduce loss or damage to the Assured. The Company may take any appropriate action under the terms of this Guarantee, whether or not it shall be liable hereunder, and shall not thereby concede liability or waive any provision of this Guarantee. If the Company shall exercise its rights under this paragraph, it shall do so diligently.
- (b) If the Company elects to exercise its options as stated in Paragraph 4(a) the Company shall have the right to select counsel of its choice (subject to the right of such Assured to object for reasonable cause) to represent the Assured and shall not be liable for and will not pay the fees of any other counsel, nor will the Company pay any fees, costs or expenses incurred by an Assured in the defense of those causes of action which allege matters not covered by this Guarantee.
- (c) Whenever the Company shall have brought an action or interposed a defense as permitted by the provisions of

GUARANTEE CONDITIONS AND STIPULATIONS (Continued)

this Guarantee, the Company may pursue any litigation to final determination by a court of competent jurisdiction and expressly reserves the right, in its sole discretion, to appeal from an adverse judgment or order.

- (d) In all cases where this Guarantee permits the Company to prosecute or provide for the defense of any action or proceeding, an Assured shall secure to the Company the right to so prosecute or provide for the defense of any action or proceeding, and all appeals therein, and permit the Company to use, at its option, the name of such Assured for this purpose. Whenever requested by the Company, an Assured, at the Company's expense, shall give the Company all reasonable aid in any action or proceeding, securing evidence, obtaining witnesses, prosecuting or defending the action or lawful act which in the opinion of the Company may be necessary or desirable to establish the title to the estate or interest as stated herein, or to establish the lien rights of the Assured. If the Company is prejudiced by the failure of the Assured to furnish the required cooperation, the Company's obligations to the Assured under the Guarantee shall terminate.

5. PROOF OF LOSS OR DAMAGE.

In addition to and after the notices required under Section 2 of these Conditions and Stipulations have been provided to the Company, a proof of loss or damage signed and sworn to by the Assured shall be furnished to the Company within ninety (90) days after the Assured shall ascertain the facts giving rise to the loss or damage. The proof of loss or damage shall describe the matters covered by this Guarantee which constitute the basis of loss or damage and shall state, to the extent possible, the basis of calculating the amount of the loss or damage. If the Company is prejudiced by the failure of the Assured to provide the required proof of loss or damage, the Company's obligation to such Assured under the Guarantee shall terminate. In addition, the Assured may reasonably be required to submit to examination under oath by any authorized representative of the Company and shall produce for examination, inspection and copying, at such reasonable times and places as may be designated by any authorized representative of the Company, all records, books, ledgers, checks, correspondence and memoranda, whether bearing a date before or after Date of Guarantee, which reasonably pertain to the loss or damage. Further, if requested by any authorized representative of the Company, the Assured shall grant its permission, in writing, for any authorized representative of the Company to examine, inspect and copy all records, books, ledgers, checks, correspondence and memoranda in the custody or control of a third party, which reasonably pertain to the loss or damage. All information designated as confidential by the Assured provided to the Company pursuant to this Section shall not be disclosed to others unless, in the reasonable judgment of the Company, it is necessary in the administration of the claim. Failure of the Assured to submit for examination under oath, produce other reasonably requested information or grant permission to secure reasonably necessary information from third parties as required in the above paragraph, unless prohibited by law or governmental regulation, shall terminate

any liability of the Company under this Guarantee to the Assured for that claim.

6. OPTIONS TO PAY OR OTHERWISE SETTLE CLAIMS: TERMINATION OF LIABILITY.

In case of a claim under this Guarantee, the Company shall have the following additional options:

- (a) To Pay or Tender Payment of the Amount of Liability or to Purchase the Indebtedness.

The Company shall have the option to pay or settle or compromise for or in the name of the Assured any claim which could result in loss to the Assured within the coverage of this Guarantee, or to pay the full amount of this Guarantee or, if this Guarantee is issued for the benefit of a holder of a mortgage or a lienholder, the Company shall have the option to purchase the indebtedness secured by said mortgage or said lien for the amount owing thereon, together with any costs, reasonable attorneys' fees and expenses incurred by the Assured claimant which were authorized by the Company up to the time of purchase.

Such purchase, payment or tender of payment of the full amount of the Guarantee shall terminate all liability of the Company hereunder. In the event after notice of claim has been given to the Company by the Assured the Company offers to purchase said indebtedness, the owner of such indebtedness shall transfer and assign said indebtedness, together with any collateral security, to the Company upon payment of the purchase price.

Upon the exercise by the Company of the option provided for in Paragraph (a) the Company's obligation to the Assured under this Guarantee for the claimed loss or damage, other than to make the payment required in that paragraph, shall terminate, including any obligation to continue the defense or prosecution of any litigation for which the Company has exercised its options under Paragraph 4, and the Guarantee shall be surrendered to the Company for cancellation.

- (b) To Pay or Otherwise Settle With Parties Other Than the Assured or With the Assured Claimant.

To pay or otherwise settle with other parties for or in the name of an Assured claimant any claim assured against under this Guarantee, together with any costs, attorneys' fees and expenses incurred by the Assured claimant which were authorized by the Company up to the time of payment and which the Company is obligated to pay. Upon the exercise by the Company of the option provided for in Paragraph (b) the Company's obligation to the Assured under this Guarantee for the claimed loss or damage, other than to make the payment required in that paragraph, shall terminate, including any obligation to continue the defense or prosecution of any litigation for which the Company has exercised its options under Paragraph 4.

7. DETERMINATION AND EXTENT OF LIABILITY.

This Guarantee is a contract of Indemnity against actual monetary loss or damage sustained or incurred by the Assured claimant who has suffered loss or damage by reason of reliance upon the assurances set forth in this Guarantee and only to the extent herein described, and subject to the

GUARANTEE CONDITIONS AND STIPULATIONS (Continued)

Exclusions From Coverage of This Guarantee.

The liability of the Company under this Guarantee to the Assured shall not exceed the least of:

- (a) the amount of liability stated in Schedule A or in Part 2;
- (b) the amount of the unpaid principal indebtedness secured by the mortgage of an Assured mortgagee, as limited or provided under Section 6 of these Conditions and Stipulations or as reduced under Section 9 of these Conditions and Stipulations, at the time the loss or damage assured against by this Guarantee occurs, together with interest thereon; or
- (c) the difference between the value of the estate or interest covered hereby as stated herein and the value of the estate or interest subject to any defect, lien or encumbrance assured against by this Guarantee.

8. LIMITATION OF LIABILITY.

- (a) If the Company establishes the title, or removes the alleged defect, lien or encumbrance, or cures any other matter assured against by this Guarantee in a reasonably diligent manner by any method, including litigation and the completion of any appeals therefrom, it shall have fully performed its obligations with respect to that matter and shall not be liable for any loss or damage caused thereby.
- (b) In the event of any litigation by the Company or with the Company's consent, the Company shall have no liability for loss or damage until there has been a final determination by a court of competent jurisdiction, and disposition of all appeals therefrom, adverse to the title, as stated herein.
- (c) The Company shall not be liable for loss or damage to any Assured for liability voluntarily assumed by the Assured in settling any claim or suit without the prior written consent of the Company.

9. REDUCTION OF LIABILITY OR TERMINATION OF LIABILITY.

All payments under this Guarantee, except payments made for costs, attorneys' fees and expenses pursuant to Paragraph 4 shall reduce the amount of liability pro tanto.

10. PAYMENT OF LOSS.

- (a) No payment shall be made without producing this Guarantee for endorsement of the payment unless the Guarantee has been lost or destroyed, in which case proof of loss or destruction shall be furnished to the satisfaction of the Company.
- (b) When liability and the extent of loss or damage has been definitely fixed in accordance with these Conditions and Stipulations, the loss or damage shall be payable within thirty (30) days thereafter.

11. SUBROGATION UPON PAYMENT OR SETTLEMENT.

Whenever the Company shall have settled and paid a claim under this Guarantee, all right of subrogation shall vest in the Company unaffected by any act of the Assured claimant. The Company shall be subrogated to and be entitled to all rights and remedies which the Assured would have had against any person or property in respect to the claim had this Guarantee not been issued. If requested by the Company,

the Assured shall transfer to the Company all rights and remedies against any person or property necessary in order to perfect this right of subrogation. The Assured shall permit the Company to sue, compromise or settle in the name of the Assured and to use the name of the Assured in any transaction or litigation involving these rights or remedies. If a payment on account of a claim does not fully cover the loss of the Assured the Company shall be subrogated to all rights and remedies of the Assured after the Assured shall have recovered its principal, interest, and costs of collection.

12. ARBITRATION.

Unless prohibited by applicable law, either the Company or the Assured may demand arbitration pursuant to the Title Insurance Arbitration Rules of the American Arbitration Association. Arbitrable matters may include, but are not limited to, any controversy or claim between the Company and the Assured arising out of or relating to this Guarantee, any service of the Company in connection with its issuance or the breach of a Guarantee provision or other obligation. All arbitrable matters when the Amount of Liability is \$1,000,000 or less shall be arbitrated at the option of either the Company or the Assured. All arbitrable matters when the amount of liability is in excess of \$1,000,000 shall be arbitrated only when agreed to by both the Company and the Assured. The Rules in effect at Date of Guarantee shall be binding upon the parties. The award may include attorneys' fees only if the laws of the state in which the land is located permits a court to award attorneys' fees to a prevailing party. Judgment upon the award rendered by the Arbitrator(s) may be entered in any court having jurisdiction thereof.

The law of the situs of the land shall apply to an arbitration under the Title Insurance Arbitration Rules.

A copy of the Rules may be obtained from the Company upon request.

13. LIABILITY LIMITED TO THIS GUARANTEE; GUARANTEE ENTIRE CONTRACT.

- (a) This Guarantee together with all endorsements, if any, attached hereto by the Company is the entire Guarantee and contract between the Assured and the Company. In interpreting any provision of this Guarantee, this Guarantee shall be construed as a whole.
- (b) Any claim of loss or damage, whether or not based on negligence, or any action asserting such claim, shall be restricted to this Guarantee.
- (c) No amendment of or endorsement to this Guarantee can be made except by a writing endorsed hereon or attached hereto signed by either the President, a Vice President, the Secretary, an Assistant Secretary, or validating officer or authorized signatory of the Company.

14. NOTICES, WHERE SENT.

All notices required to be given the Company and any statement in writing required to be furnished the Company shall include the number of this Guarantee and shall be addressed to the Company at **First American Title Insurance Company, Attn: Claims National Intake Center, 1 First American Way, Santa Ana, California 92707. Phone: 888-632-1642.**



First American Title

Guarantee

Subdivision Guarantee

ISSUED BY

First American Title Insurance Company

GUARANTEE NUMBER

5010500-1051775THF

Subdivision or Proposed Subdivision:

Order No.: 1051775THF

Reference No.:

Fee: \$

SUBJECT TO THE EXCLUSIONS FROM COVERAGE, THE LIMITS OF LIABILITY, AND OTHER PROVISIONS OF THE CONDITIONS AND STIPULATIONS HERETO ANNEXED AND MADE A PART OF THIS GUARANTEE, FIRST AMERICAN TITLE INSURANCE COMPANY, A CORPORATION HEREIN CALLED THE COMPANY GUARANTEES:

FOR THE PURPOSES OF AIDING ITS COMPLIANCE WITH SANDERS COUNTY SUBDIVISION REGULATIONS,

in a sum not exceeding \$5,000.00.

THAT according to those public records which, under the recording laws of the State of Montana, impart constructive notice of matters affecting the title to the lands described on the attached legal description:

The Southwest Quarter of the Northwest Quarter (SW1/4NW1/4) of Section 20, Township 27 North, Range 34 West, PMM, Sanders County records, EXCEPTING THEREFROM the tract of land conveyed to the State of Montana by the Bargain and Sale Deed recorded January 14, 1952 in Book 56 of Deeds, Page 485, Sanders County records, ALSO EXCEPTING THEREFROM that portion of the SW1/4NW1/4 of Section 20, Township 27 North, Range 34 West, PMM, lying South of Montana Highway 200, Sanders County, Montana.

(A) Parties having record title interest in said lands whose signatures are necessary under the requirements of Sanders County Subdivision Regulations on the certificates consenting to the recordation of Plats and offering for dedication any streets, roads, avenues, and other easements offered for dedication by said Plat are:

Tungsten Holdings, Inc.

(B) Parties holding liens or encumbrances on the title to said lands are:

(C) Easements, claims of easements and restriction agreements of record are:

1. County road rights-of-way not recorded and indexed as a conveyance of record in the office of the Clerk and Recorder pursuant to Title 70, Chapter 21, M.C.A., including, but not limited to any right of the Public and the County of Sanders to use and occupy those certain roads and trails as depicted on County Surveyor's maps on file in the office of the County Surveyor of Sanders County.

2. 2022 taxes and special assessments are an accruing lien, amounts not yet determined or payable.

The first one-half becomes delinquent after November 30th of the current year, the second one-half becomes delinquent after May 31st of the following year.

General taxes as set forth below. Any amounts not paid when due will accrue penalties and interest in addition to the amount stated herein:

Year	First Half / Status	Second Half / Status	Parcel Number	Covers
2021	\$29.97 Paid	\$29.96 Paid	8269	Subject Land

3. Easement(s) disclosed on the Sanders County Plats, Sanders County records.
4. Mortgage, to secure an original indebtedness of \$1,053,664.25, dated May 11, 2018 and any other amounts and/or obligations secured thereby.
Recorded: May 14, 2018, Instrument No. 309627
Mortgagor: Tungsten Holdings, Inc.
Mortgagee: Richard F. Schrade and Karla M. Schrade, and First State Bank of Shelby, MT, as Custodian for the Richard F. Schrade Self-Directed Traditional IRA and First State Bank of Shelby, MT, as Custodian for the Karla M. Schrade Self-Directed Traditional IRA, their heirs and assigns

Date of Guarantee: June 09, 2022 at 7:30 A.M.

First American Title Company

By: 
Authorized Countersignature

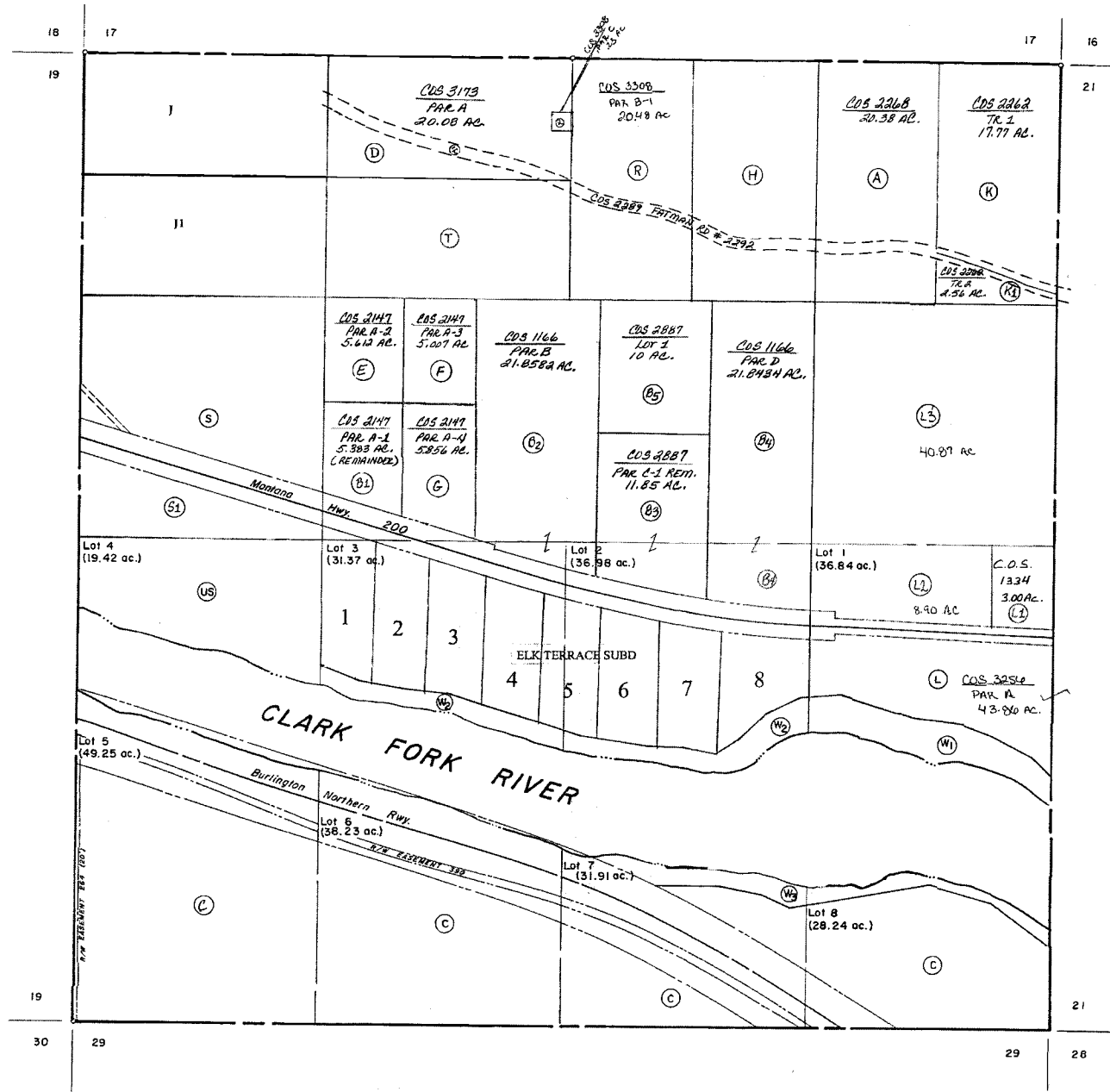
SANDERS COUNTY

SECTION 20 TOWNSHIP 27 N., RANGE 34 W., P. M. M.

PLAT/ LOT	ACRES	NAME OF OWNER	DOCUMENT	COS	PLAT/ LOT	ACRES	NAME OF OWNER	DOCUMENT	COS
(A)	20.38	EIG HORN MANAGEMENT CF INT L.L.C.	112:501,502 WD-52708, 53756	2268	(L1)	3	IDA, INC.	WD-9766 DEQ-MISC 6221	1334
(B1)	5.383	ROYANCE REVOCABLE TRUST	LUP-5083, 7455 QD-32934 QC-319039 WD-319556	1166 2147	(R)	20.18	Charles Haglen	NPI-5449 QD-27758, 43280, 75024 WD-43279, 43257, 40-basis	3173 3302
(B2)	21.852	ANDREW & KALEA BURGESS	WD-7700, QC-78624, WD-79033	1166	(R1)	.23	CHARLES HAYDON		3308
(B3)	11.85	CHRISTOPHER J & ALICIA WELCHER	LUP-7455, 12212 QC-15844 WD-77977	1166 2887	(S)	27.3	VERA STAKER ADAMSON	12:390 26:139 103:857 104:666 200-23353 QD-52074	
(B4)	21.8191	PETER & CAROL A LOPUSHOK	LUP-7455, 12286, QC-78508	1166					
(B5)	10	CHRISTOPHER J & ALICIA WELCHER	WD-77977	2887	(S1)	7	ALICIA L. + CHRISTOPHER J. WELCHER, TRUSTEES	WD-52695 QD-57764	
(C)	76.36 Total	CEDAR FARM	94:947 96:400 WD-12253		(S2)		SANDERS COUNTY (FATHAN RD #3292)	MISC-5118 E2INT-38184	2289
(D)	20.08	FRED LEON BAYLES + JOAN F. DAVIS	NPI-1165 NPI-5421 WD-26036, 28763 QD-3440, 37587	3242 3173	(T)	20	GREGORY ERIC & MELISSA DEE ROBERTS	13:388 11:573 104:666 105:310 311 107:964 108:882 111:142, 114:404, 105, 106 NPI-7746 WD-31831 QD-16650, 38676, 40964, 42432 WD-85242 WD 32259	
(E)	5.612	ROSS W ROYLANCE	QD-32831, 32935 QC-319039	2147	(US)	19.42	UNITED STATES OF AMERICA		640 2289
(F)	5.001	JACOB I GUILL	QD-32836 WD-48501, WD-83204	2147	(W1)	4.25	AVISTA CORPORATION	57:420 MICRO-29422	
(G)	5.856	ROSS W ROYLANCE	QD-32835, 32936 QC-319039	2147	(W2)	15.5	AVISTA CORPORATION	57:376 MICRO-29422	
(H)	20	JANET GIESE	NPI-3587 WD-10487, 10689, 10648 742 DEEP-16564 QD-54667 WD-77174, QC-84928		(W3)	15	AVISTA CORPORATION	56:393 MICRO-29422	
(J)	20	KALVIN DOUGLASS & SHELBY MARIE RATZLAFF	89:845 100:106, 714 WD-2442 WD-85120, Turner Decl-85518 WD-31589		(L1)	8.90	NMC-1 LLC		
(K)	17.77	DENNIS HADERLIE	111:889, 890 114:573, WD-82501	2262	(L2)	40.87	NMC-1 LLC		
(K1)	2.56	MICHAEL BARKLEY	QD-74572, QC-17511, QC 81392	2262	(H)	20	KALVIN DOUGLAS RATZLAFF	QC-317050	
(L)	4.38 201 01	NMC-1 LLC	93:818 QD-69339	3215 3256					

SANDERS COUNTY TRACT BOOK

SECTION 20 TOWNSHIP 27 N., RANGE 34 W., P.M.M.



WHEN RECORDED RETURN TO:
Tungsten Holdings, Inc.
P.O. Box 1213
Libby, MT 59923

309627 MORTGAGE

STATE OF MONTANA SANDERS COUNTY

RECORDED: 5/14/2018 12:11 PM

Pages: 1

Nichol Scribner Clerk and Recorder

FEE: \$7.00 BY: [Signature]
Return To: TUNGSTEN HOLDINGS, INC.***

MORTGAGE

THIS MORTGAGE made and entered into this 23rd day of March, 2018, between Tungsten Holdings, Inc., a Montana corporation, (hereinafter referred to as Tungsten), Post Office Box 1213, Libby, MT 59923-1213, Mortgagor, and Richard F. Schrade and Karla M. Schrade, and First State Bank of Shelby, MT, as Custodian for the Richard F. Schrade Self-Directed Traditional IRA and First State Bank of Shelby, MT, as Custodian for the Karla M. Schrade Self-Directed Traditional IRA, their heirs and assigns, (hereinafter referred to as Schrade), Mortgagees.

WITNESSETH:

That Tungsten mortgages to Schrade, their successors and assigns forever, the hereinafter described real estate, situate, lying and being in the County of Sanders, State of Montana:

The Southwest Quarter of the Northwest Quarter (SW1/4NW1/4) of Section 20, Township 27 North, Range 34 West, PMM, Sanders County records.

EXCEPTING THEREFROM the tract of land conveyed to the State of Montana by the Bargain and Sale Deed recorded January 14, 1952 in Book 56 of Deeds, Page 485, Sanders County records.

ALSO EXCEPTING THEREFROM that portion of the SW1/4NW1/4 of Section 20, Township 27 North, Range 34 West, PMM, lying South of Montana Highway 200, Sanders County, Montana.

TOGETHER WITH an easement for the purpose of ingress, egress, and utilities over and across existing and future access roads and reserving unto Tungsten the same rights along with the right to construct new roads.

as security for the payment to Schrade of the sum of ONE MILLION FIFTY-THREE THOUSAND SIX HUNDRED SIXTY-FOUR AND 25/100 DOLLARS (\$1,053,664.25), according to the tenor and effect of that certain promissory note or obligation secured hereby, (and any extensions, renewals, future advances, and/or modifications thereof).

It is agreed that if Tungsten shall fail to pay the principal or any interest as the same becomes due; or any taxes or assessments or insurance on the mortgaged property when due, or otherwise fail to comply with any one or all of the conditions of this mortgage, then all of said debt secured hereby shall become due and collectible and all rents and profits of said property shall then immediately accrue to the benefit of Schrade; and this mortgage may be foreclosed for the full amount, together with costs, taxes, insurance, cost of abstract of title, attorney's fees, and any and all other sums advanced or expenses accrued on account of Tungsten, for whatsoever purposes, and any and all advances shall draw interest at the rate of ten percent (10%) per annum, and be liens under this indenture.

IN WITNESS WHEREOF, the said Mortgagor, Tungsten Holdings, Inc., has hereunto set its hand and seal the day and year first above written.

[Signature]
Tungsten Holdings, Inc.
By: Jay Dinning, Treasurer

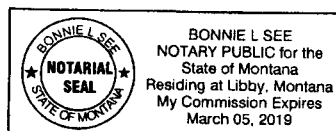
STATE OF MONTANA)

) ss

County of Lincoln)

On this 14th day of MAY, 2018, before me a Notary Public for the State of Montana, personally appeared Jay Dinning, known to me to be the person whose name is subscribed to the within instrument, that he is Treasurer of Tungsten Holdings, Inc., and acknowledged to me that he executed the same for said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year first above written.



Bonnie L. See
Notary Public for the State of Montana

Sanders County | Detail

Date: 06/13/22
Time: 02:36:34 pm

Sanders County Treasurer
Nichol Scribner
Po Box 519

Tax ID: 8269
Type: Real

Name and Address
TUNGSTON HOLDINGS INC.
809 MINERAL AVE
LIBBY MT 59923

Property Tax Query TW Range SC Description
27N/34W /20 Geo 3819-20-2-01-20-0000 SWNW PLAT S LYING N OF MT
HWY 200 27.3 ACRES APPROX

	YR	Int. Date	Tax Date	Tax Amt	Penalty	Interest	Total Amt
Paid	21	11/29/21	11/30/21	29.97	0.00	0.00	59.93
Paid	21	05/18/22	05/31/22	29.96	0.00	0.00	
Paid	20	11/30/20	11/30/20	28.17	0.00	0.00	56.32
Paid	20	05/18/21	05/31/21	28.15	0.00	0.00	
Paid	19	11/29/19	11/30/19	28.07	0.00	0.00	56.69
Paid	19	06/02/20	05/31/20	28.05	0.56	0.01	
Paid	18	11/19/18	11/30/18	28.07	0.00	0.00	56.13
Paid	18	05/30/19	05/31/19	28.06	0.00	0.00	
Paid	17	12/04/17	11/30/17	46.74	0.00	0.00	93.45
Paid	17	12/04/17	05/31/18	46.71	0.00	0.00	
Paid	16	12/19/16	12/28/16	44.08	0.00	0.00	88.13
Paid	16	03/20/17	05/31/17	44.05	0.00	0.00	
Paid	15	11/04/15	11/30/15	45.04	0.00	0.00	90.07
Paid	15	11/04/15	05/31/16	45.03	0.00	0.00	
Paid	14	11/24/14	11/30/14	45.84	0.00	0.00	91.68
Paid	14	11/24/14	05/31/15	45.84	0.00	0.00	
Paid	13	11/04/13	11/30/13	42.64	0.00	0.00	85.26
Paid	13	11/04/13	05/31/14	42.62	0.00	0.00	
Paid	12	10/29/12	11/30/12	38.97	0.00	0.00	77.94
Paid	12	10/29/12	05/31/13	38.97	0.00	0.00	
Paid	11	10/31/11	11/30/11	36.53	0.00	0.00	73.04
Paid	11	10/31/11	05/31/12	36.51	0.00	0.00	

Sanders County | Detail

Date: 06/13/22
Time: 02:36:54 pm

Sanders County Treasurer
Nichol Scribner
Po Box 519

Tax ID: 8269
Type: Real

Name and Address
TUNGSTON HOLDINGS INC.
809 MINERAL AVE
LIBBY MT 59923

Property Print TW Range SC Description
27N 34W 20 SWNW PLAT S LYING N OF MT Geocode: 3819-20-2-01-20-
0000 HWY 200 27.3 ACRES APPROX

Class Taxable/\$	Dist	Quantity	Market
101901 Forestland 106.00	3	27.30	31,163.00
990908 STATE FIRE PROTECTION 0.00	FIRE	0	0.00
990919 GREEN MOUNTAIN SOIL 106.00	GMSL	0	0.00

Sanders County | Detail

Date: 06/13/22
Time: 02:37:04 pm

Sanders County Treasurer
Nichol Scribner
Po Box 519

Tax ID: 8269
Type: Real

Name and Address
TUNGSTON HOLDINGS INC.
809 MINERAL AVE
LIBBY MT 59923

Taxes Due Query TW Range SC Description
27N/34W /20 SWNW PLAT S LYING N OF MT HWY 200 27.3 ACRES
APPROX Geo: 3819-20-2-01-20-0000

District	Tax Date	Int Date	PD?	Tax Amt	Penalty	Interest
3 HERON	11/30/21	06/13/22	Y	25.55	0.00	0.00
FIRE STATE FIRE PROTECTION	11/30/21	06/13/22	Y	4.34	0.00	0.00
GMSL GREEN MOUNTAIN SOIL	11/30/21	06/13/22	Y	0.08	0.00	0.00
3 HERON	05/31/22	06/13/22	Y	25.55	0.00	0.00
FIRE STATE FIRE PROTECTION	05/31/22	06/13/22	Y	4.34	0.00	0.00
GMSL GREEN MOUNTAIN SOIL	05/31/22	06/13/22	Y	0.07	0.00	0.00
Totals for 21				59.93	0.00	0.00
Total Tax, Penalty and Interest				59.93		

Property Record Card

Summary

Primary Information

Property Category: RP **Subcategory:** Agricultural and Timber Properties
Geocode: 35-3819-20-2-01-20-0000 **Assessment Code:** 0000008269
Primary Owner: **PropertyAddress:** MT HIGHWAY 200
TUNGSTEN HOLDINGS INC HERON, MT 59844
809 MINERAL AVE **COS Parcel:**
LIBBY, MT 59923-1922

NOTE: See the Owner tab for all owner information

Certificate of Survey:

Subdivision:

Legal Description:

S20, T27 N, R34 W, SWNW PLAT S LYING N OF MT HWY 200 27.3 ACRES APPROX

Last Modified: 6/4/2022 9:15:05 AM

General Property Information

Neighborhood: 235.030.8 **Property Type:** VAC_R - Vacant Land - Rural
Living Units: 0 **Levy District:** 35-1811-3
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	0.000	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
Total Ag Land	0.000	00.00
Total Forest Land	27.300	39,049.00
Total Market Land	0.000	00.00

Deed Information:

Deed Date	Book	Page	Recorded Date	Document Number	Document Type
2/1/2018			2/1/2018	308220	Warranty Deed

Owners

Party #1

Default Information: TUNGSTEN HOLDINGS INC
809 MINERAL AVE
Ownership %: 100
Primary Owner: "Yes"
Interest Type: Fee Simple
Last Modified: 3/29/2018 11:41:30 AM

Other Names

Other Addresses

Name

Type

Appraisals

Appraisal History

Tax Year	Land Value	Building Value	Total Value	Method
2022	39049	0	39049	COST
2021	39049	0	39049	COST
2020	29586	0	29586	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: Forest

Class Code: 1901

Productivity

Quantity: 441.73

Units: Board Feet/Acre

Valuation

Acres: 27.3

Value: 39049

Irrigation Type:

Timber Zone: 1

Commodity: Timber

Per Acre Value: 1430.38

After recording return to:

Tungsten Holdings, Inc.
809 Mineral Ave
Libby, MT 59923

664479 THF

WARRANTY DEED

THIS INDENTURE Is made the 23rd day of January 2018, by and between **EARL F. ECKLUND, JR. and DENISE J. ECKLUND, Co-Personal Representatives of the ESTATE OF VERA ADAMSON, same person as VERA STRIKER and VERA ADAMSON (STRIKER), deceased, Sanders County District Court, Case No. DP-17-46, 8321 32nd Ave NW, Seattle, WA 98117, Grantor, and the TUNGSTEN HOLDINGS, INC., A MONTANA CORPORATION, 809 Mineral Ave, Libby, MT 59923, Grantee.**

WITNESSETH:

That the said Grantor, for and in consideration of the sum of **TEN DOLLARS AND OTHER GOOD AND VALUABLE CONSIDERATION**, lawful money of the United States of America to Grantor in hand paid by the said Grantee, the receipt whereof is hereby acknowledged, does by these presents grant, bargain, sell, convey and confirm unto the said Grantee, and to Grantee's successors and assigns forever, all that certain lot, piece or parcel of land, situate, lying and being in the County of Sanders, State of Montana, and particularly described as follows:

21 The Southwest Quarter of the Northwest Quarter (SW $\frac{1}{4}$ NW $\frac{1}{4}$) of Section 20, Township 27 North, Range 34 West, PMM, Sanders County records.

EXCEPTING THEREFROM the tract of land conveyed to the State of Montana by the Bargain and Sale Deed recorded January 14, 1952 in Book 56 of Deeds, Page 485, Sanders County records.

ALSO EXCEPTING THEREFROM that portion of the SW $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 20, Township 27 North, Range 34 West, PMM, lying South of Montana Highway 200, Sanders County, Montana.

SUBJECT TO AND TOGETHER WITH Covenants, Conditions, Restrictions, Provisions, Easements, Reservations, Encumbrances and Matters apparent or of record.

TOGETHER WITH all and singular the tenements, hereditaments and appurtenances thereunto belonging or in anywise appertaining and the reversion and reversions, remainder or remainders, rents, issues and profits thereof, and also all the right, title, interest and right of homestead property, possession, claim and demand whatsoever, as well in law as in equity of the said Grantor of, in or to the said premises, and every part and parcel thereof, with the appurtenances.

TO HAVE AND TO HOLD, all and singular, the above mentioned and described premises, together with the appurtenances unto the said Grantee, and to Grantee's successors and assigns.

And the said Grantor and Grantor's heirs, successors and assigns, hereby covenants that Grantor will forever **WARRANT AND DEFEND** all right, title and interest in and to the said premises, and the quiet and peaceable possession thereof unto the said Grantee, and to Grantee's successors and assigns against the acts and deeds of the said Grantor and all and every person and persons whomsoever, lawfully claiming or to claim the same.

IN WITNESS WHEREOF, the said Grantor has hereunto set its hand and seal the day and year first above written.

ESTATE OF VERA ADAMSON
Sanders County District Court, Case No. DP-17-46

Earl F. Ecklund Jr.
Co-Personal Representative
EARL F. ECKLUND, JR.,
Co-Personal Representative

Denise J. Ecklund
Co-Personal Representative
DENISE J. ECKLUND,
Co-Personal Representative

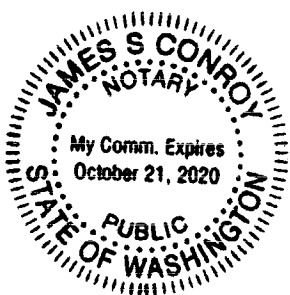
STATE OF WASHINGTON)

: SS.

County of King)

On this 23rd day of January 2018, before me, the undersigned, a Notary Public for the State aforesaid, personally appeared **EARL F. ECKLUND, JR.** and **DENISE J. ECKLUND**, known to me to be the **Co-Personal Representatives of the ESTATE OF VERA ADAMSON, Sanders County District Court, Case No. DP-17-46**, the estate described in and whose name is subscribed to the within instrument and acknowledged to me that they executed the same in their capacity as Co-Personal Representatives.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and date in this certificate first above written.



James S. Conroy
 Notary Public for the State of Washington
James S Conroy
 Printed Name of Notary
 Residing at: 2237 NW 57th St Seattle WA 98107
 My commission expires: October 21, 2020

308820 BOOK: 1 RECORDINGS PAGE: 89826 Pages: 3
 STATE OF MONTANA SANDERS COUNTY
 RECORDED: 02/01/2018 2:55 KOI: WAR DEED
 NICHOL SCRIBNER CLERK AND RECORDER
 FEE: \$21.00 BY: *B. Scrubner*
 TO: TUNGSTEN HOLDINGS, INC. 809 MINERAL AVE, LIBBY, MT 59923

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Return after recording to:

DECLARATION OF CONDITIONS, COVENANTS AND RESTRICTIONS

BLUE CREEK SUBDIVISION

This Declaration is made this ____ day of _____, 202____, by Tungsten Holdings, Inc., of 809 Mineral Ave, Libby, MT 59923, hereinafter referred to as “Declarant,” who is the owner of certain real property referred to as the “Real Property”. The undersigned Declarant holds legal title to the following described real property located in Sanders County, Montana:

The Southwest One-Quarter of the Northwest One-Quarter (SW1/4NW1/4) of Section 20 Lying North of Montana Highway 200, Township 27 North, Range 34 West, Principal Meridian Montana, Sanders County, Montana. Containing a total of 25.94 Acres, more or less.

DECLARATION

Now, therefore, the Declarants do hereby declare that the property above described shall be sold and conveyed subject to the following easements, restrictions, covenants, and conditions, all of which are for the purpose of enhancing and protecting the value, desirability and attractiveness- of the-real property. These easements, covenants, restrictions and conditions shall run with the real property, and shall be binding on all parties having or acquiring any right, title or interest in the described properties or any part thereof and shall inure to the benefit of each owner thereof. The word "lot" as used herein shall refer to each numbered lot of Blue Creek Subdivision.

1. Driveways within this subdivision must be maintained to at least a 16 feet driving surface and a 13.5 feet vertical clearance to allow for emergency services.
2. Lot owners should maintain 10 feet of separation between residential structures and property lines.
3. No portion of a tree or any other vegetation should extend to within 10 feet of the outlet of a stovepipe or chimney.
4. No junk vehicles will be allowed to remain on any lot for more than 30 days. Each lot shall be limited to no more than 4 permanent vehicles visible on any lot. Vehicles more than 4 may be stored in an enclosed garage or shop building.
5. To reduce potential conflicts with wildlife household garbage, pet food, and other solid waste products must be contained or covered to reduce the potential for the enticement or destruction of wildlife. Contact the local office of Montana Fish Wildlife and Parks for particular tips.

6. Utilities, Sanitation, & Water. The electrical power, telephone, water, and septic system shall be the individual parcel owner's expense. Any new electrical power and telephone lines shall be underground.
7. Each Lot Owner shall be responsible for filing a "Notice of Completion of Ground Water Development" form with the State prior to the completion or placement of improvements on their Lot.
8. If a Lot Owner constructs an improvement which impedes an easement (utility, road, drainage, etc.) the Lot Owner shall be liable for any/all damages therein.
9. No fences may be constructed in designated right-of-way or easements.
10. All lot owners must comply with the laws and regulations of the State of Montana and Sanders County as to fire protection, building construction, sanitation and public health and safety.
11. No noxious or offensive activity shall be carried on or permitted upon any lot, nor shall anything be done which may be or may become an annoyance or nuisance to the neighborhood; nor shall the premises be used in any way for any purpose which shall endanger the health, safety or welfare or unreasonably disturb the residents of any lot. No materials or mechanical equipment shall be used in a manner detrimental to the residential use of the surrounding tracts because of vibration, noise, dust, smoke or odor.
12. The discharging of firearms or hunting on any lot is strictly forbidden.
13. No commercial or industrial logging or construction equipment (including but not limited to crawlers, tractors, front-end loaders, skidders and farm tractors), nor any truck of greater than one-ton capacity may be stored or kept on any lot except during the period that such equipment is actively used in the improvement of the lot.
14. All Lots are subject to the approved Weed Plan attached and made a part herein. Noxious Weeds and seeds are a public nuisance under Montana law and it is unlawful to permit their propagation within the subdivision. For additional information contact the Sanders County Weed District at 36 Old Airport Road, Plains, MT 59859, (406) 826-3487.
15. All structure's that will generate wastewater flows must receive approval from the County Health Department for location in conformance with the subdivision's DEQ approval and for final sizing before construction commences.
16. Areas with slopes greater than 25% are designated as No-Build Zone. Limitation of development to low impact use defined as "the prohibition buildings or structures that may be constructed or otherwise placed."
17. No Access Strip. Residential driveways must not have direct access to primary highways unless approved and permitted by the Montana Department of Transportation.
18. The internal road system is not maintained by Sanders County, the State of Montana, or any other governmental entity. Neither the County, nor the State, assumes any liability for lacking or improper maintenance. The Road Maintenance Agreement was filed with this

subdivision and outlines which parties are responsible for maintenance, and under what conditions.

TERM OF DECLARATION

The provisions of this Declaration shall run with the land and be binding for a term of twenty (20) years from the date of this Declaration after which time the Declaration shall be automatically extended for successive periods of ten (10) years each unless there shall be recorded an instrument signed by the owners of 75% of the lots who agree to terminate these covenants.

Enforcement of the DECLARATION OF CONDITIONS, COVENANTS AND RESTRICTIONS of the BLUE CREEK SUBDIVISION shall be by proceedings at law or in equity against any person or persons violating or attempting to violate any of the restrictions, either to restrain violation or to recover damages.

Invalidation of any one of these conditions, covenants, or restrictions, by judgment, or by court order, shall in no way affect any of the other provisions hereof which shall remain in full force and effect.

(Declarant)

(Date)

STATE OF MONTANA)
) ss.
County of)

On this _____ day of _____, 20____, before me, a notary public in and for said State, 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.

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

(SEAL)

Notary Public for State of Montana
Residing at _____, Montana
My commission expires _____

Return after recording to:

BLUE CREEK SUBDIVISION ROAD MAINTENANCE AGREEMENT

Declaration Creating Road User's Agreement for the Roadway(s) Within the Blue Creek Subdivision. This declaration is made by Tungsten Holdings, Inc., of 809 Mineral Ave, Libby, MT 59923, hereinafter referred to as "Declarant".

WHEREAS, Declarant is the present owner of the real property described below and wishes to impose requirements for the future maintenance of internal subdivision roadway(s);

WHEREAS, the real property which is subject to provisions of this Declaration is more particularly described as follows: BLUE CREEK SUBDIVISION, located in the Southwest One-Quarter of the Northwest One-Quarter (SW1/4 NW1/4) of Section 20 Lying North of Montana Highway 200, Township 27 North, Range 34 West, Principal Meridian Montana, Sanders County, Montana. Containing a total of 25.94 Acres, more or less.

NOW, THEREFORE, Declarant declares the following requirements to assure maintenance of the roadway or roadways within the above-described subdivision. These requirements shall run with the land and shall be binding upon and enforceable by the owner (or owners) of each lot located within the above- described subdivision, their heirs, successors, and assigns.

1. The roadway or roadways within the above-described subdivision shall be maintained in good and passable condition under all traffic and weather conditions.
2. The storm drainage facilities associated with the road, including but not limited to roadside ditches, swales, and retention ponds shall be maintained in good condition and cleaned of debris in accordance with the Montana Department of Environmental Quality approved storm drainage plan.
3. The costs for maintenance and repair of the roadway or roadways, including dust abatement, grading and signage, shall be divided equally between each lot. Each lot owner (or owners) shall pay its equal share, including but not limited to:
 - a. Maintenance and repair of the roadway(s), including snow removal, grading, dust control and other surface maintenance.
 - b. Maintenance and repair of storm drainage facilities including roadside ditches, swales and retention ponds.
 - c. Major improvements, including new pavement, re-striping, new sidewalks, and new curbs.

Dated this ____ day of _____, 20 ____.

By:

Declarant

Date

STATE OF MONTANA)

) ss.

County of _____)

On this day of _____, 20_____, before me, the undersigned, a Notary Public for the State of Montana, personally appeared _____, known to me to be the persons whose name is subscribed to the within instrument and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand this _____ day of _____, 20_____.

(Seal)

Notary Public for State of Montana
Residing at _____, Montana
My commission expires _____



TRANSMITTAL LETTER

TO: Sanders County - Clerk & Records Office
Attn. Land Services
PO Box 519
Thompson Falls, MT 59873
Delivery Method: First Class Mail / Email

DATE: January 8, 2024
FROM: Tamara Ross
JOB NAME: Blue Creek Subdivision
LOCATION: Sanders County
IMEG #: 22003448.00

WE ARE TRANSMITTING THE FOLLOWING TO YOU:

- 1 – Compiled Noxious Weed Management Application
- 1 – Check #38342 made out for \$1,600.00

-
- | | | |
|--|---|--|
| <input type="checkbox"/> For Your Information | <input type="checkbox"/> As Requested | <input type="checkbox"/> Shop Drawings |
| <input checked="" type="checkbox"/> For Review/Comment | <input type="checkbox"/> For Distribution | <input type="checkbox"/> For Your Use |
| <input type="checkbox"/> For Signature | | |
-

REMARKS:

Please find all required materials for the formal Noxious Weed Management Application enclosed.

IMEG Corp. staff is representing the landowner, Tungsten Holdings, Inc. through the subdivision process and we are both aware Katherine Maudrone has left her position with Land Services. We understand this position is in the process of being filled or a new staff member may have already been onboarded into the position. We look forward to working with the new staff member and understand intake timelines may differ, please don't hesitate to reach out if anything else is needed at 406-272-0253 or via email tamara.r.ross@imegcorp.com.

TRR/sh

\\files\Active\Projects\2022\22003448.00\Design\Civil\CC07 PLANNING\Working Docs\Section C\20240108 Trn WeedPlan App.docx



Sanders County Subdivision Noxious Weed Management

Application and Plan

1. The purpose of these regulations is to 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 within a subdivision (MCA 7-22-2101 through 7-22-2153).
2. A Sanders County Subdivision Noxious Weed Management Plan can be developed by either the landowner/developer or by the Sanders County Subdivision Weed Management Office but must be approved by the Sanders County Commissioners. This plan is effective for three (3) years from final plat recordation date and will transfer with ownership to buyers, heirs, and assigns.
3. The Sanders County Subdivision Noxious Weed Management Plan will require initial treatment of weeds to be completed during the first suitable growing season with follow-up treatment performed during each succeeding season for the duration of this agreement. **Subdivisions will not receive final approval until the initial treatment of weeds, completion of roads, and ground disturbance restoration has occurred or a Subdivision Improvement Agreement (SIA) has been received.** Landowner/developer must notify the Land Services Office when projects are completed to facilitate follow-up inspections.
4. A Subdivision Weed Management Application must be submitted within thirty (30) days of preliminary plat approval. Inspection will occur within fourteen (14) days of application submittal unless weather prevents inspection. Inspection prior to final plat submittal must be requested no fewer than fourteen (14) days before final plat is submitted to the Sanders County Land Services Department.
5. Off-season final plat recordings must be submitted with a SIA requiring a monetary guarantee in the amount of 125% of the determined cost of the initial treatment of the noxious weeds present on property. The monetary guarantee will be forfeited after one (1) growing season (season begins April 1 and ends September 30) if landowner is found in non-compliance. Noxious weeds will then be treated by Sanders County Weed District, or its agent, the following growing season with landowner/developer responsible for follow-up treatments for the remainder of this agreement. The monetary guarantee value will be determined by the Sanders County Weed District and approved by the Sanders County Commissioners.
6. The Sanders County Commissioners will approve or reject the plan after:
 - a. An initial review of the Sanders County Subdivision Noxious Weed Management Plan,
 - b. The Sanders County Land Services Office, or its representative, has made an on-site inspection of the subdivision site to verify landowner/developer plan or to devise a county plan.

If the Plan is approved, an approval letter and copy of the Sanders County Subdivision Noxious Weed Management Plan will be sent to:

- a. The property owner(s) or applicant,
- b. The Sanders County Land Services Office and
- c. Filed with the final plat.

If the landowner/developer plan is rejected, the applicant has the following options:

- a. The Plan may be revised by the applicant and resubmitted to the Sanders County Commission for review, or
- b. The applicant may request assistance from the Sanders County Land Services Office, or its representative, in revising their plan. **Additional fees may apply.**

Inspections will be done only during the noxious weed active growing season, so please plan accordingly.

7. The Sanders County Land Services Office, or its representative, will inspect the proposed subdivision periodically during the three (3) year period, with consideration given to the filed Plan as reference for control and treatment of noxious weed infestations on the subdivision acreage.
8. The Sanders County Commissioners and the Sanders County Weed Board consider the Sanders County Subdivision Noxious Weed Management Plan process a positive means of continuing awareness and education for landowners to be knowledgeable of, and responsible for, their noxious weed problems. It is the Sanders County Weed Board's desire to persist with effective management of the State and county declared noxious weeds, as stated in the Montana County Noxious Weed Control Act. Noxious weeds will continue to be a problem and will require continued vigilance, even beyond the scope of this agreement.
9. Enforcement of this Sanders County Subdivision Noxious Weed Management Plan as per Sanders County Subdivision Regulations IV-R Noxious Weeds; IV-A-6 (b)(iii)(E) Governing Body Decision and Documentation - Impact on Natural Environment and Title 7, Chapter 22 of the Montana Code Annotated.

Sanders County Subdivision Noxious Weed Management Application

(Please fill out completely)

Date 1/08/2023

Subdivision Name Blue Creek Subdivision

Landowner(s) Name(s) Tungsten Holdings, Inc. C/O Crawford Dinning

Mailing address 809 Mineral Ave City/State/Zip Code Libby, MT 59923

Phone #406-291-5577 Fax NA Email projects@tungstenholdings.com

Physical Location of Property (Please provide any details useful for identification.)

Adjacent to the east of Blue Creek Road and north of HWY 200 comprising of 25.94 Acres.
Vacant rural land with timber east of addressed location 17 Blue Creek Road, Heron, MT 59844.

Legal Description SW 1/4, Sec 20, T 27 N, R 34 W (Please provide documentation)
NW 1/4

Number of lots proposed _____ Number of acres in development _____

Proposed use of lots (Indicate all that apply)

Residential X, Industrial _____, Crop _____, Grazing _____, Rangeland _____, Other _____

Please list type of crop(s) as well as what livestock may be used for grazing: N/A

Landowner duties and Responsibilities

The Landowner agrees:

1. That the Sanders County Land Services Office has the right to review, inspect and audit all Applicator's documents and records regarding the performance of work done under this agreement.
2. That the Sanders County Land Services Office shall be allowed to access property without prior landowner notification for the purposes of surveying to assess noxious weed issues.
3. That Landowner will notify Sanders County Subdivision Weed Management Office immediately upon treatment of weeds for scheduling an inspection.
4. That the landowner/developer shall, during the duration of this agreement, notify the Sanders County Land Services Office in writing when any lot ownership is transferred, as well as contact information for the new landowners.
5. That this Sanders County Subdivision Noxious Weed Management Form and Agreement will transfer with ownership to all buyers, heirs, and assignees, and that the landowner shall provide a copy of this Plan to all new landowners.
6. That emphasis is to be on PREVENTION, as it is the most direct, efficient, and cost-effective method of weed management. The landowner agrees:

- a. That new construction will necessitate special attention to the prevention of weed establishment and spread.
- b. To prioritize efforts toward exposed, disturbed and otherwise vulnerable soil, which will be reseeded and fertilized, if necessary, at the first suitable season. All seed used for this purpose is to be certified **noxious weed seed free**. An ongoing maintenance program will be required to insure the establishment and continuance of competitive vegetation.
- c. That organic materials used for surface mulch, erosion control, water and situation barriers, or frost and weather protection of green concrete shall be obtained from **noxious weed seed free sources**.
- d. Equipment and trucks will be cleaned of **contaminated soil** or **noxious weed seeds** before movement from noxious weed infested areas to areas free of noxious weeds.
- e. All portions of a project's disturbed roadside slopes will be seeded to establish suitable competitive vegetation at the first suitable season. All rights-of-ways will be seeded to edge of road. All seed used for this purpose is to be **certified noxious weed seed free**.
- f. That the storage of clean topsoil shall be protected in specifically prepared areas free of weeds and weed seeds. Topsoil already contaminated shall be stored separately, and if stored more than one growing season, must be tilled regularly or covered with plastic to prevent the establishment of germinating weed seed.

7. The landowner agrees to the application of selective herbicides to reduce and/or remove existing noxious weed populations.
8. The landowner agrees that where mowing is done, careful site-specific consideration shall be given to timing so that in any given area, weeds will be mowed when they are most vulnerable and immature enough to preclude production of viable seed. This will reduce the hardness of the plants, inhibit re-growth, and thereby reduce weed production. Hand pulling of selected weeds on selected sites will be considered to control small infestations in sensitive areas. The use of canopy or shrub cover will be considered, where feasible, along with any other appropriate cultural methods. Follow-up strategies are essential to success using this method.

The Montana County Noxious Weed Control Act, MCA 7-22-2116, states, "It is unlawful for any person to permit any noxious weed to propagate or go to seed on his land..." All noxious weeds are required by state and county law to be controlled by the Landowner at the Landowner's expense. This Sanders County Subdivision Noxious Weed Management Plan must be signed by landowner/developer and Sanders County Commission Chairman or acting Chairman in his or her absence. This plan is effective for three (3) years from final plat recordation date and will transfer with ownership to buyers, heirs and assigns.

FEE SCHEDULE (NON-REFUNDABLE)

(Please indicate all boxes that apply)

☐ Landowner Plan Fee (\$100.00)

☒ County Plan Fee (\$160.00)

Follow-up Fees: ☐ 1 to 5 Lots (\$250.00) ☒ 6 or more Lots (\$100.00 per Lot)



01/08/2023

Signature of Landowner

Date

\$1,060.00

38342

Amount Submitted

Check #

Signature of Landowner

Date

Sanders County Subdivision Noxious Weed Management Plan

Subdivision Name: Blue Creek Subdivision Landowner/Developer IMEG Corp. C/O Tamara Ross

Please check those noxious weeds that are known to exist on the property. Please indicate all that are present along with light, medium, or heavy infestation amount. Please specify major weed infestations on map of property.

PRIORITY 3-Regulated Plants

(NOT MONTANA LISTED NOXIOUS WEEDS)

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.

☐ Cheat Grass

☐ Russian Olive

☐ Hydrilla

☐ Mullen

PRIORITY 2B

These weeds are abundant in Montana and widespread in many counties. Management criteria will require eradication or containment where less abundant.

☐ Canada Thistle

☐ Leafy Spurge

☐ Diffuse Knapweed

☐ Yellow/Common Toadflax

☐ Houndstongue

☐ Saltcedar

☐ Field Bindweed

☐ Russian Knapweed

☐ Dalmation Toadflax

☐ St. Johnswort

☐ Common Tansy

☐ Hoary Alyssum

☐ White Top

☐ Spotted Knapweed

☐ Sulfur Cinquefoil

☐ Oxeye Daisy

PRIORITY 2A

These weeds are common in isolated areas of Montana. Management criteria will require eradication.

☐ *Flowering Rush

☐ Meadow Hawkweed (Yellow)

☐ Common Buckthorn

☐ Tall Buttercup

☐ Yellowflag Iris

☐ Ventenata

☐ Tansy Ragwort

☐ Orange Hawkweed

☐ **Eurasian Watermilfoil

☐ Perennial Pepperweed

☐ Blueweed

*Weeds marked with an asterisk are found only in isolated areas of Sanders County. If found, please contact local Weed District.

**Weeds marked with two (2) asterisks are found in Noxon Reservoir. If found in other bodies of water, contact Weed District or Avista.

PRIORITY 1B

These weeds have a limited presence in Montana. Management criteria will require eradication or containment and education.

☐ Knotweed Complex

☐ *Purple Loosestrife

☐ Blueweed

☐ *Scotch Broom

☐ *Rush Skeletonweed

PRIORITY 1A

These weeds are not present or have a very limited presence in Montana. Management criteria will require eradication if detected, education, and prevention.

☐ Yellow Starthistle

☐ *Dyers Woad

☐ Common Reed

☐ *Medusahead

Early detection is easier and cheaper for you.

Note: This Plan will require treatment of noxious weeds prior to final plat approval.

Knowing your property's terrain, water table, and soil type will aid in your evaluation of the best method to use for weed control. Having a map or drawing of where the weeds are located can prove helpful when weeds are young and actively growing (perfect time for herbicide), but difficult to see.

Attach an appropriate map of your property. Your plan will not be approved without it.

Please include the following features on your map:

1. Weed infestation-Be specific with defining areas where you wish to control weeds.
2. Topographic features-Such as streams, lakes, hills and vegetation (wetlands, wildlife habitat, etc).
3. Buildings, roads, fences, power lines, railroads, and other rights-of-ways.
4. Irrigation canals and ditch systems.
5. Property boundaries.

Maps can be obtained from the County Assessor, Clerk and Recorder, Bureau of Land Management, Forest Service, and Soil Conservation Services. There may be a cost for purchase.

1. Are there any water sources nearby? (Lake, pond, creek, canal, well, etc) The Clark Fork River and an existing well are approximately 1,000-feet south of the proposed development.
2. Is your water table shallow or deep? _____
3. Is there any sensitive vegetation nearby? (Garden, alfalfa, potatoes or orchard) No.
4. What type of soil is present? (Sandy, rocky, clay, etc.) Ashy Silt Loams with slopes up to 15%.
5. Will you be grazing any livestock? No.
6. Number of acres in development? 27.3 Acres Number of lots? 9 Lots
7. What method of weed control/management will be incorporated?

<input type="checkbox"/> Landscaping	<input type="checkbox"/> SeedMix/Timing HandPulling	<input type="checkbox"/> Biocontrol (Species)
<input checked="" type="checkbox"/> Revegetation/Reseeding	<input type="checkbox"/> Grazing (Sheep/Goats)	<input type="checkbox"/> Herbicides
<input checked="" type="checkbox"/> Mowing	<input type="checkbox"/> Cultivation	(List brand/rate/timing)

By signing, if found in non-compliance, the Landowner is authorizing Sanders County to implement this Sanders County Subdivision Noxious Weed Management Plan either through the Weed Control Department or a commercial applicator with the landowner being responsible for all costs.

The Landowner/Developer will follow the Sanders County Subdivision Noxious Weed Management Plan as agreed to in the preceding document.

	Tamara Ross	01/08/2023
Landowner Signature	Printed Name	Date

Landowner Signature	Printed Name	Date
---------------------	--------------	------

Sanders County Commission Presiding Officer Signature	Date
	Revised 03/05/2021

TUNGSTEN HOLDINGS, INC

P.O. BOX 1213
LIBBY, MT 59923
406-293-3714

GLACIER BANK
LIBBY, MT 59923
93-7082/2929

38342

12/26/2023

PAY TO THE ORDER OF Sanders County

\$ **1,060.00

One Thousand Sixty and 00/100*****

DOLLARS

Sanders County

MEMO

Weed management application


AUTHORIZED SIGNATURE

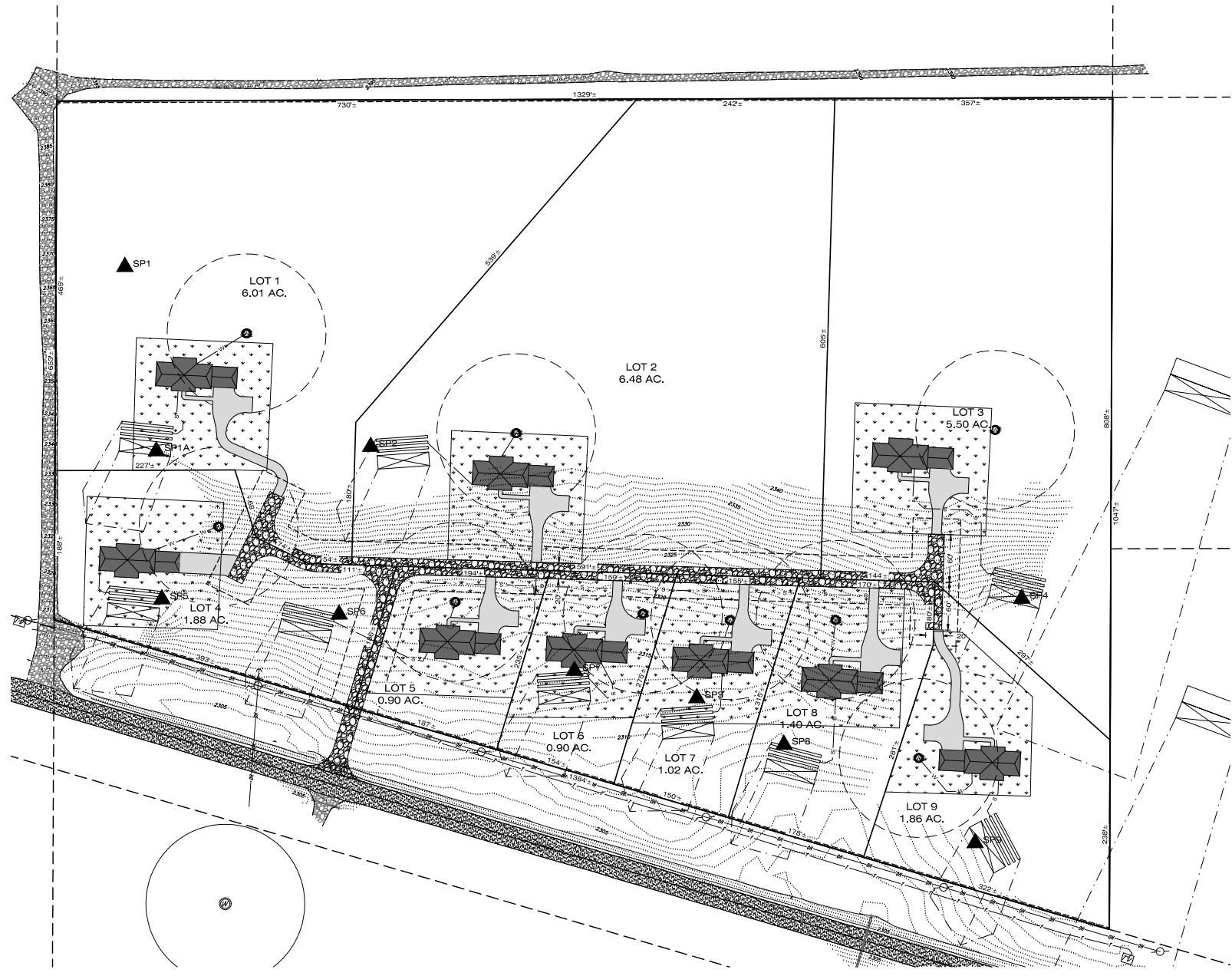
Photo Safe Deposit®

Details on Back.

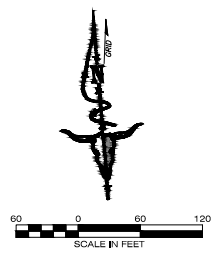


APPENDIX A

1. Preliminary Plat



- LEGEND**
- (B) PROPERTY BOUNDARY
 - (AB) ADJACENT PROPERTY BOUNDARY
 - (C) MAJOR CONTOUR
 - (D) MINOR CONTOUR
 - (E) ASPHALT
 - (F) GRAVEL
 - (G) DRAINFIELD
 - (H) PROPERTY BOUNDARY
 - (I) EASEMENT
 - (J) DITCH
 - (K) ASPHALT
 - (L) GRAVEL
 - (M) DEFENSIBLE BUFFER
 - (N) DRAINFIELD
 - (O) WELL
 - (P) PUBLIC ACCESS AND UTILITY EASEMENT
 - (Q) PROPOSED
 - (R) NOT TO SCALE
- P.A.U.E.
NTS



BASIS OF BEARING
MONTANA STATE PLANE ZONE
2500 GROUND (TRUE)
DISTANCES GRID NORTH
VERTICAL DATUM
NAVD88

112 SOUTH AVE. W. STE. A
MISSOULA, MT 59801
PH: 406.721.9142
WWW.IMEG.COM

DESIGNED: <i>DF</i>	DATE: _____
DRAFTED: <i>DF</i>	REVISIONS: _____
CHECKED: <i>DF</i>	DATE: <i>06.12.22</i>

LOCATION: HIGHWAY 200 SECTION 20, T.2N., R.34W., SANDERS COUNTY	PREPARED FOR: TUNGSTEN HOLDINGS INC
PROJECT NAME: BLUE CREEK SUBDIVISION FEASIBILITY	SHEET TITLE: PRELIMINARY SITE PLAN
PROJECT NO: 22003448	SHEET: 1 OF 1

PRELIMINARY

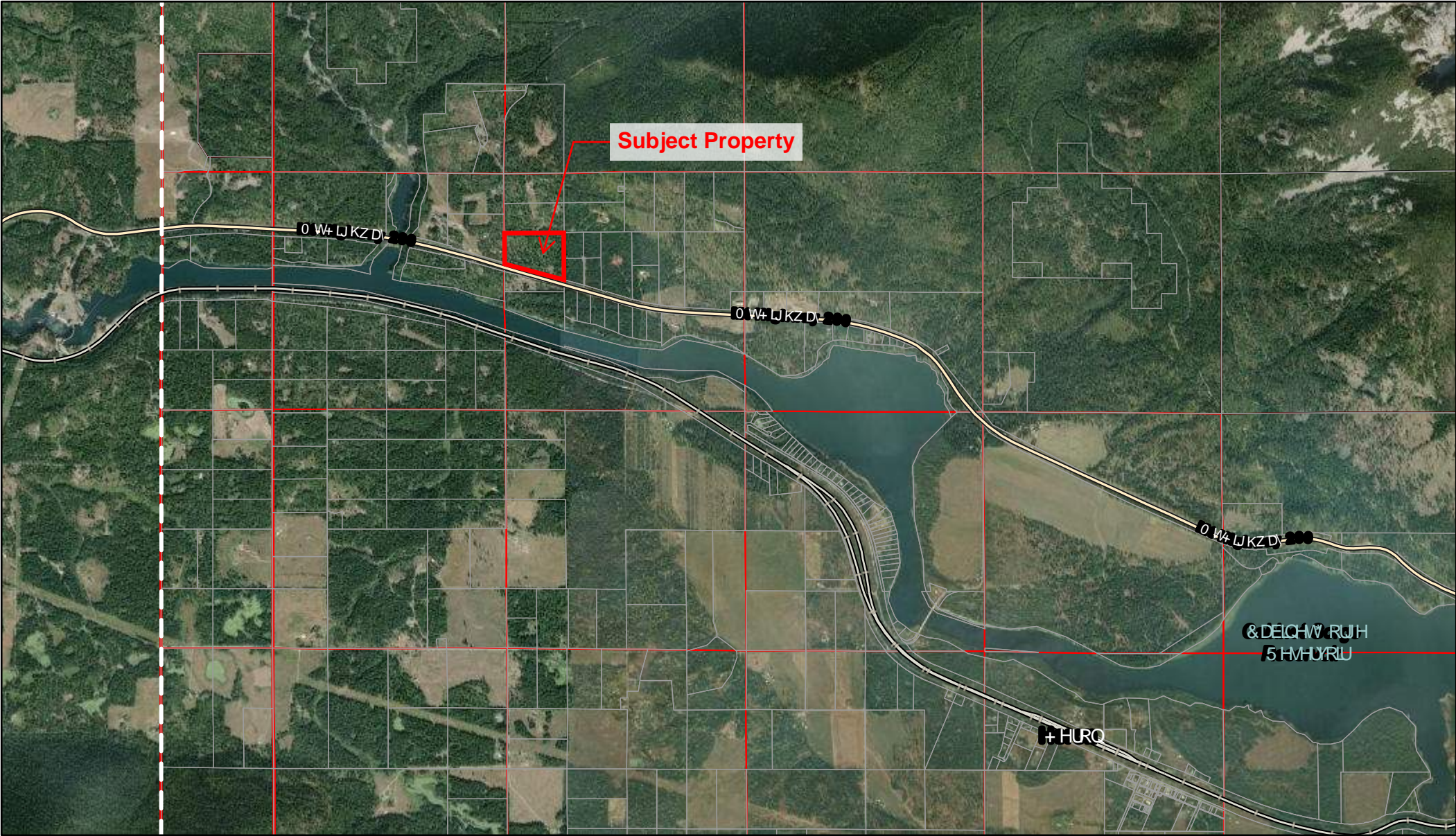


APPENDIX B

1. Vicinity Map

2. National Wetlands Inventory

3. FEMA Floodplain Map



30

&DGDVWUDO:HE0HUF 2ZCHFWBDRCH
&DGDVWUDO:HE0HUF 3/66 LUVW LYLVRO
3URWUDFWHG %ORFN &DGDVWUDO:HE0HUF



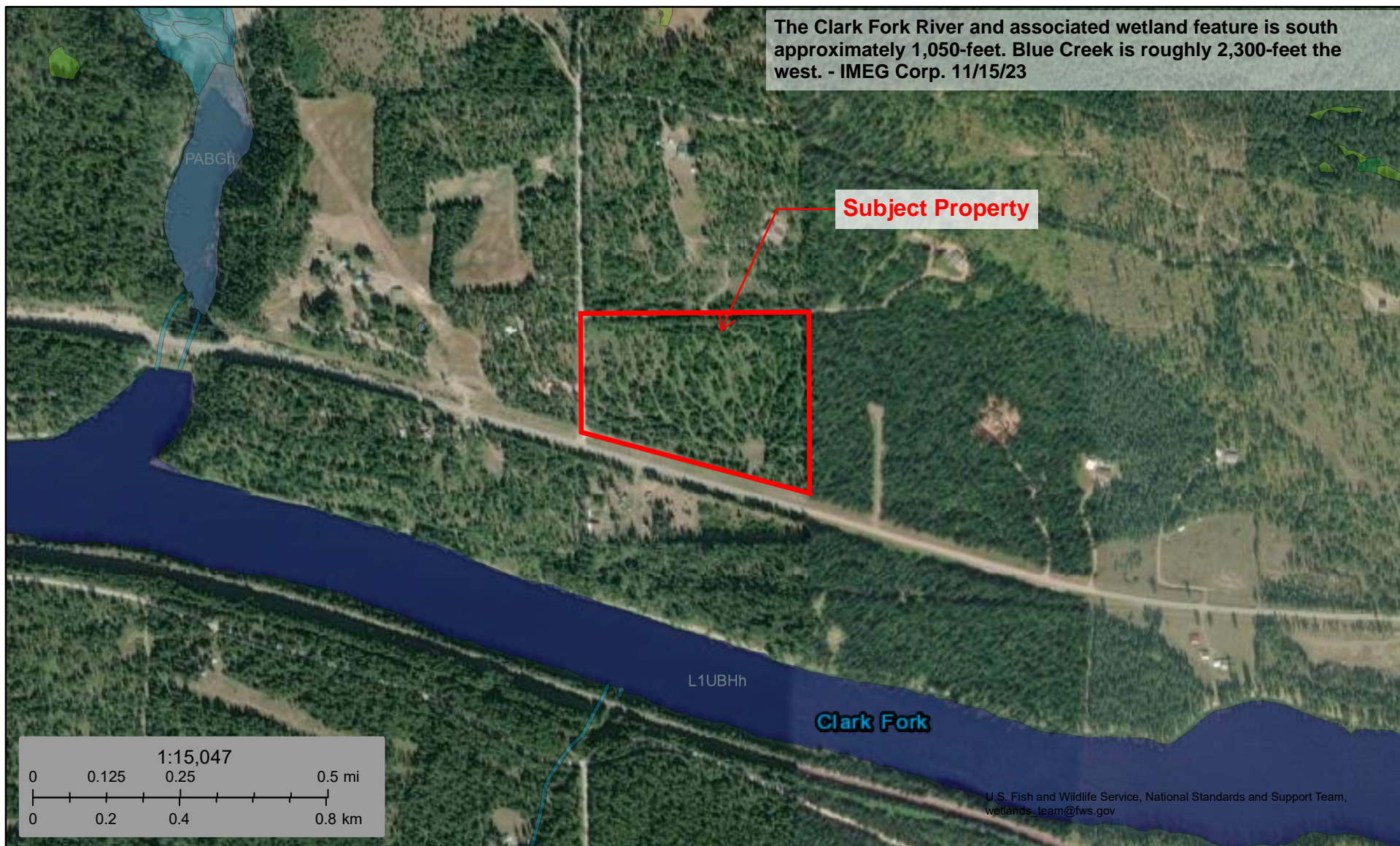
PL
NP
0RQWDQD 6WDWH /LEUDU\ (VUL +(5(*DUPLQ 6DIH*
01Z \$6\$ 86*6 %XUHD RI /DQG 0DQDJHPHQW (3\$ 1
0RQWDQD &DGDV
6RXUFH (VUL 0D[DU (DUWKVWDU *HRJUDSKLFV



U.S. Fish and Wildlife Service

National Wetlands Inventory

National Wetlands Inventory



November 15, 2023

Wetlands

	Estuarine and Marine Deepwater		Freshwater Emergent Wetland		Lake
	Estuarine and Marine Wetland		Freshwater Forested/Shrub Wetland		Other
			Freshwater Pond		Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or Floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only to landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 12N. The horizontal datum was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NUNOS12
National Geodetic Survey
SMMC-3, #0202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(201) 713-3242

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (201) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was derived from NAIP Orthophotography produced with a one meter ground resolution from photography dated 2005.

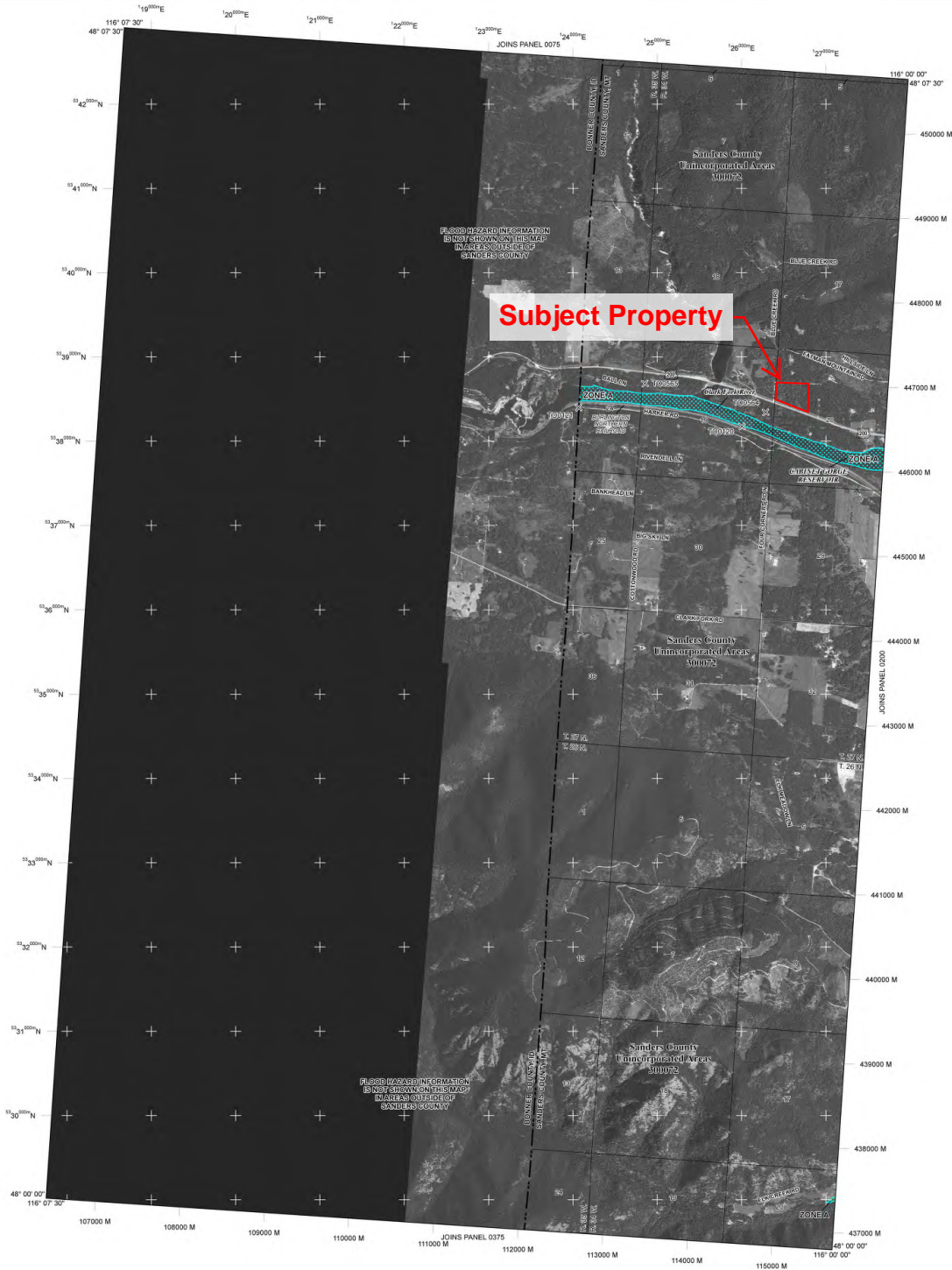
This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program data for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the Map Service Center (MSC) website at <http://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have questions about this map, how to order products, or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange (FMIX) at 1-877-FEMA-MAP (1-877-356-2627) or visit the FEMA website at <http://www.fema.gov/business/fip>.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHA) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood) is the base flood and has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of actual fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently abandoned. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Areas to be protected from 1% annual chance flood by a Federal flood protection system under construction, or Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER PROTECTED SYSTEM (CBPS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBPS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary

0.2% Annual Chance Floodplain Boundary

Floodway Boundary

Zone D boundary

CBPS and OPA boundary

Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.

Base Flood Elevation line and value; elevation in feet*

Base Flood Elevation value where uniform within zone; elevation in feet*

***Referenced to the North American Vertical Datum of 1988**

(A) --- (A) Cross section line

(A) - - - - (A) Transect line

45° 02' 00", 92° 02' 00" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere

499000 M 1000-meter ticks: Montana State Plane Zone (FIPS Zone 5000), Lambert Conformal Conic projection

1000-meter Universal Transverse Mercator grid values, zone 12N

D43510 X Bench mark (see explanation in Notes to Users section of this FIRM panel)

MAP REPOSITORIES River Mile

MAP REPOSITORIES Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP June 5, 2012

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6030.

MAP SCALE 1" = 2000'

0 1000 2000 4000 FEET

0 600 1200 METERS

NFIP

PANEL 0175D

FIRM

FLOOD INSURANCE RATE MAP

SANDERS COUNTY, MONTANA (AND INCORPORATED AREAS)

PANEL 175 OF 2200 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

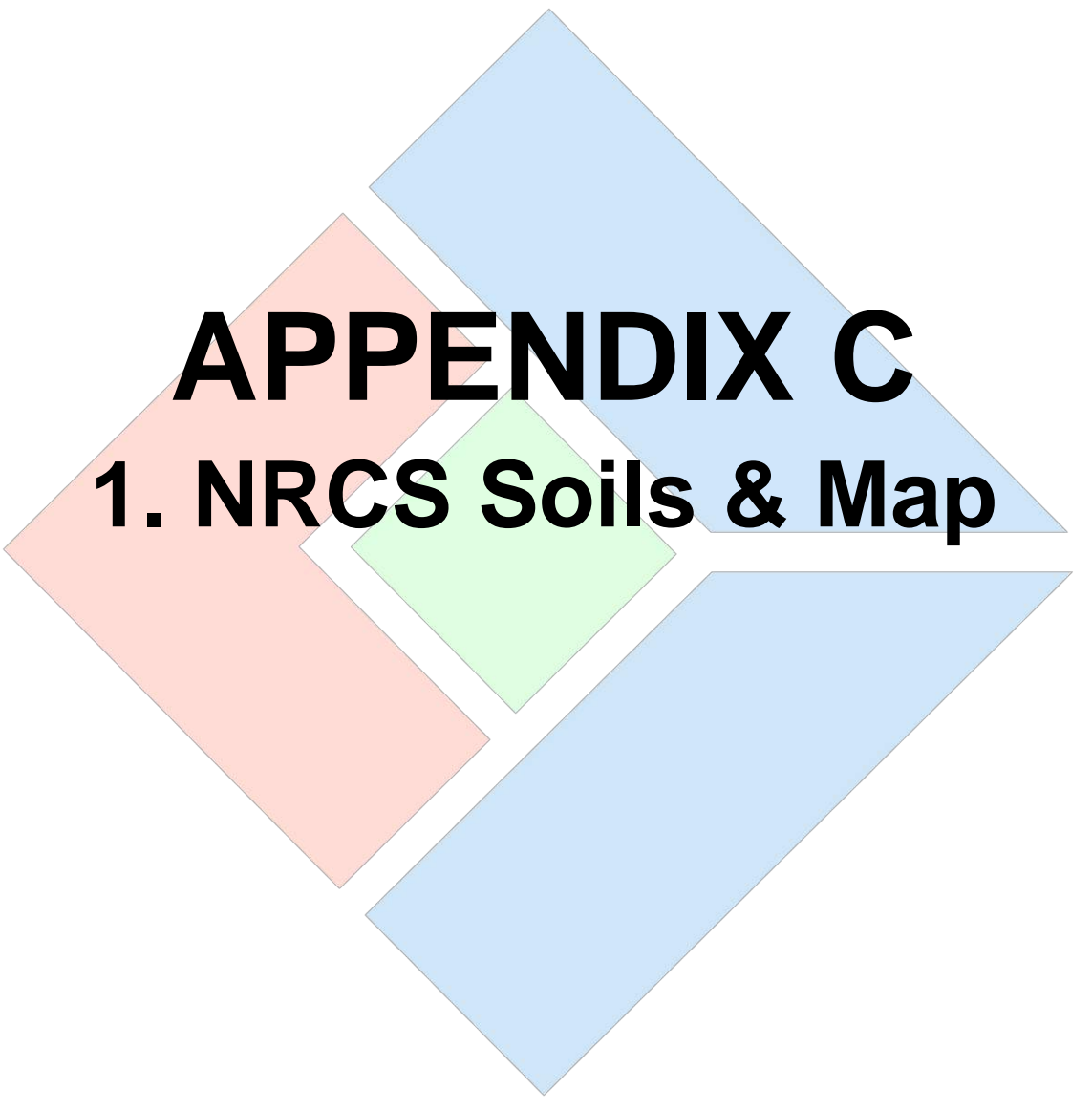
COMMUNITY	NUMBER	PANEL	SUFFIX
SANDERS COUNTY, Incorporated Areas	300072	0175	D

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 30089C0175D

EFFECTIVE DATE JUNE 5, 2012

Federal Emergency Management Agency



APPENDIX C

1. NRCS Soils & Map

Sanders and Parts of Lincoln and Flathead Counties, Montana

88C—Dewberry ashy silt loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 57qk

Elevation: 2,200 to 3,800 feet

Mean annual precipitation: 22 to 34 inches

Mean annual air temperature: 43 to 45 degrees F

Frost-free period: 60 to 105 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Dewberry and similar soils: 90 percent

Minor components: 10 percent

*Estimates are based on observations, descriptions, and transects of
the mapunit.*

Description of Dewberry

Setting

Landform: Stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Volcanic ash over alluvium or outwash

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material

Bw1 - 1 to 10 inches: ashy silt loam

Bw2 - 10 to 24 inches: gravelly ashy silt loam

2C1 - 24 to 39 inches: extremely cobbly coarse sandy loam

2C2 - 39 to 60 inches: extremely gravelly sandy loam

Properties and qualities

Slope: 2 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

Ecological site: F043AP902MT - ASHY COOL-MOIST
WOODLAND ESG 43A LRU P

Other vegetative classification: western hemlock/queencup beadlily
(CN570)

Hydric soil rating: Unranked

Minor Components

Glaciercreek

Percent of map unit: 5 percent

Landform: Stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: western hemlock/queencup beadlily
(CN570)

Hydric soil rating: No

Tamarack

Percent of map unit: 3 percent

Landform: Stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: western hemlock/queencup beadlily
(CN570)

Hydric soil rating: No

Dewberry, greater slope

Percent of map unit: 2 percent

Landform: Stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: western hemlock/queencup beadlily
(CN570)

Hydric soil rating: No

Data Source Information

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties,
Montana

Survey Area Data: Version 22, Sep 2, 2021

Sanders and Parts of Lincoln and Flathead Counties, Montana

781D—Fernline-Cabinet ashy silt loams, 4 to 15 percent slopes

Map Unit Setting

National map unit symbol: 57n6

Elevation: 2,100 to 2,800 feet

Mean annual precipitation: 28 to 38 inches

Mean annual air temperature: 43 to 45 degrees F

Frost-free period: 90 to 120 days

Farmland classification: Farmland of local importance

Map Unit Composition

Fernline and similar soils: 50 percent

Cabinet and similar soils: 40 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fernline

Setting

Landform: Lake plains, lake terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Volcanic ash over glaciolacustrine deposits

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material

Bw - 2 to 11 inches: ashy silt loam

2E - 11 to 16 inches: silty clay loam

2Bt - 16 to 60 inches: silty clay

Properties and qualities

Slope: 4 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low
to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: D

Ecological site: F043AP910MT - UPLAND COOL-MOIST
WOODLAND ESG 43A LRU P

Other vegetative classification: western hemlock/queencup beadlily
(CN570)

Hydric soil rating: No

Description of Cabinet

Setting

Landform: Lake plains, lake terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Volcanic ash over glaciolacustrine deposits

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material

Bw - 1 to 12 inches: ashy silt loam

2E/Bt - 12 to 20 inches: silty clay loam

2Bt1 - 20 to 36 inches: clay

3Bt2 - 36 to 60 inches: stratified very fine sandy loam to clay

Properties and qualities

Slope: 4 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low
to moderately low (0.00 to 0.06 in/hr)

Depth to water table: About 6 to 24 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: D

Ecological site: F043AP910MT - UPLAND COOL-MOIST
WOODLAND ESG 43A LRU P

Other vegetative classification: western hemlock/queencup beadlily
(CN570)

Hydric soil rating: No

Minor Components

Fernline, greater slope

Percent of map unit: 5 percent

Landform: Lake plains, lake terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: western hemlock/queencup beadlily
(CN570)

Hydric soil rating: No

Iffgulch

Percent of map unit: 5 percent

Landform: Swales

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: spruce/common horsetail (PK410)

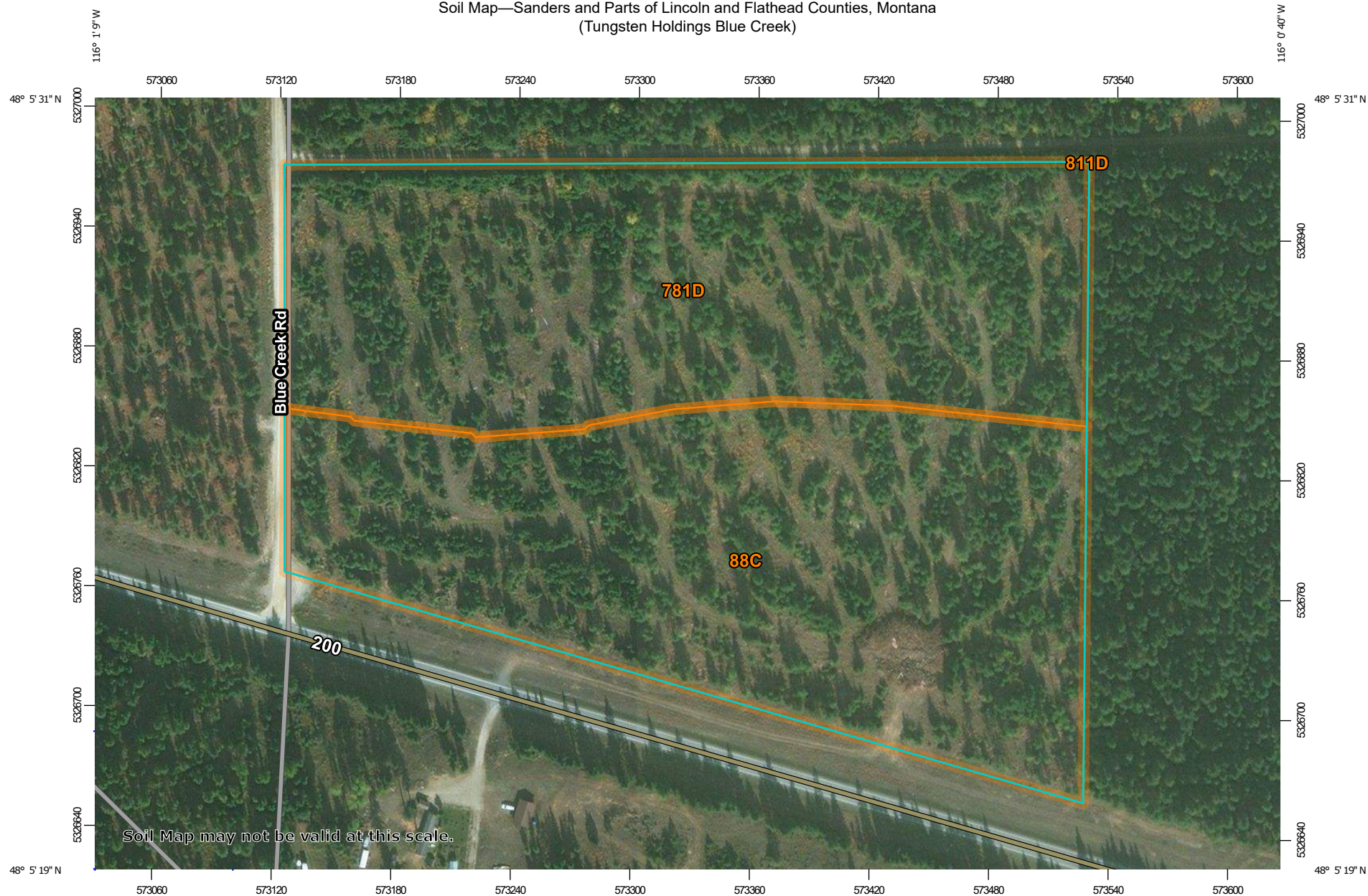
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties,
Montana

Survey Area Data: Version 22, Sep 2, 2021

Soil Map—Sanders and Parts of Lincoln and Flathead Counties, Montana
(Tungsten Holdings Blue Creek)



Soil Map may not be valid at this scale.

Map Scale: 1:2,720 if printed on A landscape (11" x 8.5") sheet.

0 40 80 160 240 Meters

0 100 200 400 600 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

7/12/2022
Page 1 of 3

Soil Map—Sanders and Parts of Lincoln and Flathead Counties, Montana
(Tungsten Holdings Blue Creek)

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



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 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: Sanders and Parts of Lincoln and Flathead Counties, Montana

Survey Area Data: Version 22, 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: Aug 15, 2010—Sep 14, 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
88C	Dewberry ashy silt loam, 2 to 8 percent slopes	13.5	51.6%
781D	Fernline-Cabinet ashy silt loams, 4 to 15 percent slopes	12.7	48.4%
811D	Noxlin-Fernline ashy silt loams, 4 to 15 percent slopes, stony	0.0	0.0%
Totals for Area of Interest		26.2	100.0%

SECTION D

- Water and Sanitation Report
- DNRC Predetermination Application
 - NRCS Soils Report
- Private Subdivision Road Register
- Private Road Construction Application
 - MDOT Approach Application
- Grading, Drainage, and Road Construction Plans
- Grading and Drainage Engineering Design Report



WATER & SANITATION REPORT for

BLUE CREEK SUBDIVISION

On Property Legally Described as: The Southwest One-Quarter of the Northwest One-Quarter (SW1/4NW1/4) of Section 20 Lying North of Montana Highway 200, Township 27 North, Range 34 West, Principal Meridian Montana, Sanders County, Montana. Containing a total of 25.94 Acres, more or less.

Published: August 16, 2023

Revised: April 25, 2024

Prepared For:

Tungsten Holdings
PO Box 1213,
Libby, Montana 59923

Prepared By:

IMEG Corp.
1817 South Avenue West, Suite A
Missoula, MT 59801

I.1. Map. A vicinity map or plan that shows:

- a. The location, within 100 feet outside of the exterior property line of the subdivision and on the proposed Lots, of flood plains; surface water features; springs; irrigation ditches;
A vicinity map is included showing the location of the property in relation to the surrounding area. A more detailed and extensive MDEQ Lot Layout Exhibit is attached (Attachment I.3) showing all the required information outlined in section I.1 of the subdivision application and section I.3 of the subdivision application. There are no known springs or irrigation ditches within 100 feet of the property.
- b. Existing, previously approved, and, for parcels fewer than 20 acres, proposed water wells and wastewater treatment systems; for parcels less than 20 acres, mixing zones;
Proposed individual wells for the proposed subdivision, proposed individual drainfields as well as their mixing zones for the proposed subdivision are all shown on the MDEQ Lot Layout.
- c. The representative drainfield site used for the soil profile description; and
The representative drainfield site used for the soil profile descriptions are shown on the MDEQ Lot Layout. A total of ten (10) soil profiles have been conducted on the site in 2022 by IMEG.
- d. The location, within 500 feet outside of the exterior property line of the subdivision, of public water and sewer facilities.
There are no public water or sewer facilities within 500' of the property lines of the subdivision.

I.2. Description. A description of the proposed subdivision's water supply systems, storm water systems, solid waste disposal systems, and wastewater treatment systems, including whether the water supply and wastewater treatment systems are individual, shared, multiple user, or public as those systems are defined in rules published by the Montana Department of Environmental Quality (DEQ).

Water Supply

Lots 1 through 9 of the proposed subdivision will all have proposed individual wells. All proposed wells will supply both domestic and lawn and garden irrigation. There are no existing wells in the proposed subdivision.

Wastewater Treatment System

Proposed individual wastewater systems are proposed to serve all nine (9) lots in this proposed subdivision. All proposed systems have been designed using 4 bedrooms and a design flow of 350 GPD each and will consist of a 1500-gallon septic tank.

For Lot 1 and 2, based on soil profiles excavated near the area of the proposed drainfield and 100% replacement area are Clay Loam and Gravelly Clay Loam, respectively. The system will consist of a minimum of 300 lineal feet of pressurized drainfield for the primary locations and a minimum of 195 lineal feet for the replacement areas.

For Lots 3-8, based on soil profiles excavated near the area of the proposed drainfield and 100% replacement area are Gravelly Sandy Loam and Very Gravelly Sandy Loam. The system will consist of a minimum of 150 lineal feet of pressurized drainfield for the primary locations and a minimum of 195 lineal feet for the replacement areas.

For Lot 9, based on soil profiles excavated near the area of the proposed drainfield and 100% replacement area are Very Gravelly Fine Sandy Loam. The system will consist of a minimum of 180 lineal feet of pressurized drainfield for the primary locations and a minimum of 240 lineal feet for the replacement areas.

Stormwater

Increase in storm drainage runoff will be mitigated per Sanders County Subdivision Regulations and DEQ Circular 8. Proposed swales and retention ponds are proposed to capture the increase in storm drainage runoff.

Heron has a refuse site to control storage, collection, and the disposal of solid waste from this proposed development. Further, if a lot owner wishes to be served by a private contractor for Solid Waste Disposal it is up to each lot owner to arrange collection.

I.3. Lot Layout. A drawing of the conceptual Lot layout at a scale no smaller than 1 inch equal to 200 feet that shows all information required for a Lot layout document in rules adopted by the Montana Department of Environmental Quality pursuant to 76-4-104, MCA.

A drawing of the MDEQ Lot layout at an acceptable scale of no smaller than 1 inch equal to 200 feet that shows all the information required pursuant to 76-4-104, MCA is included.

I.4. Suitability. Evidence of suitability for new on-site wastewater treatment systems that, at a minimum, include:

- a. A soil profile description from a representative drain-field site identified on the vicinity map that complies with standards published by the Montana Department of Environmental Quality;
A total of ten (10) soil profiles have been conducted across the property and primarily demonstrated textures of Clay Loam and Sandy Loam across the site. These soil profile locations are marked on the attached MDEQ Lot Layout Exhibit (Attachment I.3). The soil profile results are attached as Appendix A of this report and demonstrate the site's soil



characteristics in further detail. This type of soil has been found to be suitable for new on-site wastewater treatment systems and provide treatment for wastewater effluent.

- b. Demonstration that the soil profile contains a minimum of 4 feet of vertical separation distance between the bottom of the permeable surface of the proposed wastewater treatment system and a limiting layer; and
Soil profiles for all but one location show that there is no limiting layer on-site. Soil profiles were dug down to a depth of 120" with no indication showing a potential limiting layer within 4 feet of the proposed drainfield trenches.
- c. In cases in which the soil profile or other information indicates that ground water is within 7 feet of the natural ground surface, evidence that the ground water will not exceed the minimum vertical separation distance of 4 feet.
Groundwater monitoring was completed in 2022. The approved groundwater monitoring results are enclosed in Appendix A.

I.5. Water Quantity. For new water supply systems, unless cisterns are proposed, evidence of adequate water availability:

- a. obtained from well logs or testing of onsite or nearby wells;
 According to ARM 17.36.332, in order to show sufficient quantity, individual wells must provide a sustained yield of at least ten gallons per minute over a one-hour period and six gallons per minute over a two-hour period.
There are no onsite wells. Across Highway 200, is an existing well (GWIC Id: 125985) which is where the sample was taken. The well log from this well showed an 80-gpm yield over a 2-hour period suggesting a more than adequate water supply is available for individual wells to be drilled onsite. A copy of this well log is attached in Appendix B of this report. The existing well does provide sufficient water quantity as described in DEQ20.
- b. obtained from information contained in published hydro-geological reports; or
Section is not applicable as Section (a) above sufficiently provides evidence of an ample quantity of water.
- c. as otherwise specified by rules adopted by the Montana Department of Environmental Quality pursuant to 76-4-104, MCA.
Section is not applicable as Section (a) above sufficiently provides evidence of an ample quantity of water.

I.6. Water Quality. Evidence of sufficient water quality in accordance with rules adopted by the Montana Department of Environmental Quality pursuant to 76-4-104, MCA.
Water Quality results have been included in Appendix B of this report. This information includes Water sample results and existing well logs.

I.7. Impacts to groundwater quality. Preliminary analysis of potential impacts to ground water quality from new wastewater treatment systems, using as guidance rules adopted by the board of



environmental review pursuant to 75-5-301, MCA and 75-5-303, MCA related to standard mixing zones for ground water, source specific mixing zones, and non-significant changes in water quality. The preliminary analysis may be based on currently available information and must consider the effects of overlapping mixing zones from proposed and existing wastewater treatment systems within and directly adjacent to the subdivision. Instead of performing the preliminary analysis, the sub-divider may perform a complete non-degradation analysis in the same manner as is required for an application that is reviewed under Title 76, Chapter 4.

Non-degradation analysis of impacts to groundwater quality from the proposed wastewater treatment systems show there will be no significant changes to water quality. The supporting information is included in Appendix B of this report.

Sincerely,
IMEG. Corp

Prepared by:



Adam Krick,
IMEG - Civil Designer / Sanitarian in Training

Reviewed By:



Dan Fultz, R.S.
Senior Civil Designer

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APPENDIX A

- 1. Soil Profile Logs**
- 2. Groundwater
Monitoring Results**

Project Name Blue Creek Subdivision Feasibility Project No. 22003448.00
 Client Name Tungsten Holdings Inc Lot No. N/A
 Site Evaluator Dan Fultz County Sanders Date 10/4/2022

Soil Profile - SP No: SP- 1A

Depth (in)	Thick (in)	Structure	Stoniness	Texture	Color	Moisture	Length of Ribbon	Other Comments*
0 - 2	2	Forest Duff	N/A	N/A	N/A	N/A	N/A	
2 - 81	79	Subangular Blocky	10% Gravel	Clay Loam	Tan	Dry	1-2"	
81 - 98	17	Structureless	30% Gravel	Gravelly Loam	Dark Brown	Moist	<1"	
								No Limiting Layer Observed

* Include information such as roots present, apparent high ground water level, actual water level, bedrock, layer consistency, color variations, or any other information as appropriate.

Site Factors and Setback Distances

Vegetation Forested Slope _____ Flooding Risk _____
 Notes Partly Cobbly SP Application Rate _____ gpd/ft2

	Water Supply Wells		Sealed(1)/Other(2) Components		Drainfields Sand Mounds		Notes
Public or Multi-use Wells	-	NA	100	X	100	X	
Other Wells	-	NA	50	X	100	X	
Suction Lines	-	NA	50	X	100	X	
Cisterns	-	NA	25	X	50	X	
Roadcuts/Escarpments	-	NA	10 (3)	X	25	X	
Slopes > 25% (4)	-	NA	10 (3)	X	25	X	
Property Boundaries	10	10	10	X	10	X	
Subsurface Drains	-	NA	10	X	10	X	
Water Lines	-	NA	10	X	10	X	
Drainfields / Sand Mounds	100	100	10	X	-	NA	
Foundation Walls	-	NA	10	X	10	X	
Surface Water, Springs	100	100	50	X	100	X	
Floodplains	10	10	0(1)/100(2)	X	100	X	

(1) Sealed Components include sewer lines, sewer mains, septic tanks, grease traps, dosing tanks, and pumping chambers.

(2) Other components include intermittent and recirculating sand filters, package plants and evapotranspiration systems

(3) Sewer lines and mains may be located in roadways and on steep slopes if they are safeguarded against damage.

(4) Down-gradient of the sealed component, other component, or drainfield/sand mound.

Project Name Blue Creek Subdivision Feasibility Project No. 22003448.00
 Client Name Tungsten Holdings Inc Lot No. N/A
 Site Evaluator Dan Fultz County Sanders Date 10/4/2022

Soil Profile - SP No: SP- 2

Depth (in)	Thick (in)	Structure	Stoniness	Texture	Color	Moisture	Length of Ribbon	Other Comments*
0 - 1	1	Forest Duff	N/A	N/A	N/A	N/A	N/A	
1 - 22	21	Granular	5% Rock	Loam	Light Brown	Dry	<1"	
22 - 89	67	Subangular Blocky	15-20% Gravel/Cobbles	Gravelly Clay Loam	Tan	Dry	1-2"	
89 - 110	21	Structureless	30% Gravel	Gravelly Loam	Dark Brown	Moist	<1"	
								No Limiting Layer Observed

* Include information such as roots present, apparent high ground water level, actual water level, bedrock, layer consistency, color variations, or any other information as appropriate.

Site Factors and Setback Distances

Vegetation Forested Slope _____ Flooding Risk _____

Notes Partly Cobbly SP Application Rate _____ gpd/ft2

	Water Supply Wells		Sealed(1)/Other(2) Components		Drainfields Sand Mounds		Notes
Public or Multi-use Wells	-	NA	100	X	100	X	
Other Wells	-	NA	50	X	100	X	
Suction Lines	-	NA	50	X	100	X	
Cisterns	-	NA	25	X	50	X	
Roadcuts/Escarpments	-	NA	10 (3)	X	25	X	
Slopes > 25% (4)	-	NA	10 (3)	X	25	X	
Property Boundaries	10	10	10	X	10	X	
Subsurface Drains	-	NA	10	X	10	X	
Water Lines	-	NA	10	X	10	X	
Drainfields / Sand Mounds	100	100	10	X	-	NA	
Foundation Walls	-	NA	10	X	10	X	
Surface Water, Springs	100	100	50	X	100	X	
Floodplains	10	10	0(1)/100(2)	X	100	X	

(1) Sealed Components include sewer lines, sewer mains, septic tanks, grease traps, dosing tanks, and pumping chambers.

(2) Other components include intermittent and recirculating sand filters, package plants and evapotranspiration systems

(3) Sewer lines and mains may be located in roadways and on steep slopes if they are safeguarded against damage.

(4) Down-gradient of the sealed component, other component, or drainfield/sand mound.

Project Name Blue Creek Subdivision Feasibility Project No. 22003448.00
 Client Name Tungsten Holdings Inc Lot No. N/A
 Site Evaluator Dan Fultz County Sanders Date 10/4/2022

Soil Profile - SP No: SP- 3

Depth (in)	Thick (in)	Structure	Stoniness	Texture	Color	Moisture	Length of Ribbon	Other Comments*
0 - 4	4	Forest Duff	N/A	N/A	N/A	N/A	N/A	
4 - 28	24	Granular	5% Gravel	Loam	Light Brown	Dry	<1"	
28 - 75	47	Structureless	25-30% Gravel/Cobbles	Gravelly Sandy Loam	Tan	Dry	<1"	
75 - 106	31	Structureless	30% Gravel	Gravelly Loam	Dark Brown	Moist	<1"	
								No Limiting Layer Observed

* Include information such as roots present, apparent high ground water level, actual water level, bedrock, layer consistency, color variations, or any other information as appropriate.

Site Factors and Setback Distances

Vegetation Forested Slope _____ Flooding Risk _____
 Notes Partly Cobbly SP Application Rate _____ gpd/ft2

	Water Supply Wells		Sealed(1)/Other(2) Components		Drainfields Sand Mounds		Notes
Public or Multi-use Wells	-	NA	100	X	100	X	
Other Wells	-	NA	50	X	100	X	
Suction Lines	-	NA	50	X	100	X	
Cisterns	-	NA	25	X	50	X	
Roadcuts/Escarpments	-	NA	10 (3)	X	25	X	
Slopes > 25% (4)	-	NA	10 (3)	X	25	X	
Property Boundaries	10	10	10	X	10	X	
Subsurface Drains	-	NA	10	X	10	X	
Water Lines	-	NA	10	X	10	X	
Drainfields / Sand Mounds	100	100	10	X	-	NA	
Foundation Walls	-	NA	10	X	10	X	
Surface Water, Springs	100	100	50	X	100	X	
Floodplains	10	10	0(1)/100(2)	X	100	X	

(1) Sealed Components include sewer lines, sewer mains, septic tanks, grease traps, dosing tanks, and pumping chambers.

(2) Other components include intermittent and recirculating sand filters, package plants and evapotranspiration systems

(3) Sewer lines and mains may be located in roadways and on steep slopes if they are safeguarded against damage.

(4) Down-gradient of the sealed component, other component, or drainfield/sand mound.

Project Name Blue Creek Subdivision Feasibility Project No. 22003448.00
 Client Name Tungsten Holdings Inc Lot No. N/A
 Site Evaluator Dan Fultz County Sanders Date 10/4/2022

Soil Profile - SP No: SP- 4

Depth (in)	Thick (in)	Structure	Stoniness	Texture	Color	Moisture	Length of Ribbon	Other Comments*
0 - 2	2	Forest Duff	N/A	N/A	N/A	N/A	N/A	
2 - 37	35	Granular	5% Cobbles	Fine Sandy Loam	Light Brown	Dry	<1"	
37 - 82	45	Structureless	20-25% Gravel	Gravelly Sandy Loam	Tan	Dry	<1"	
82 - 100	18	Structureless	30% Gravel	Gravelly Loam	Dark Brown	Moist	<1"	
								No Limiting Layer Observed

* Include information such as roots present, apparent high ground water level, actual water level, bedrock, layer consistency, color variations, or any other information as appropriate.

Site Factors and Setback Distances

Vegetation Forested Slope _____ Flooding Risk _____

Notes Partly Cobbly SP Application Rate _____ gpd/ft2

	Water Supply Wells		Sealed(1)/Other(2) Components		Drainfields Sand Mounds		Notes
Public or Multi-use Wells	-	NA	100	X	100	X	
Other Wells	-	NA	50	X	100	X	
Suction Lines	-	NA	50	X	100	X	
Cisterns	-	NA	25	X	50	X	
Roadcuts/Escarpments	-	NA	10 (3)	X	25	X	
Slopes > 25% (4)	-	NA	10 (3)	X	25	X	
Property Boundaries	10	10	10	X	10	X	
Subsurface Drains	-	NA	10	X	10	X	
Water Lines	-	NA	10	X	10	X	
Drainfields / Sand Mounds	100	100	10	X	-	NA	
Foundation Walls	-	NA	10	X	10	X	
Surface Water, Springs	100	100	50	X	100	X	
Floodplains	10	10	0(1)/100(2)	X	100	X	

(1) Sealed Components include sewer lines, sewer mains, septic tanks, grease traps, dosing tanks, and pumping chambers.

(2) Other components include intermittent and recirculating sand filters, package plants and evapotranspiration systems

(3) Sewer lines and mains may be located in roadways and on steep slopes if they are safeguarded against damage.

(4) Down-gradient of the sealed component, other component, or drainfield/sand mound.

Project Name Blue Creek Subdivision Feasibility Project No. 22003448.00
 Client Name Tungsten Holdings Inc Lot No. N/A
 Site Evaluator Dan Fultz County Sanders Date 10/4/2022

Soil Profile - SP No: SP- 5

Depth (in)	Thick (in)	Structure	Stoniness	Texture	Color	Moisture	Length of Ribbon	Other Comments*
0 - 6	6	Forest Duff	N/A	N/A	N/A	N/A	N/A	
6 - 22	16	Granular	5% Gravel	Fine Sandy Loam	Light Brown	Dry	<1"	
22 - 92	70	Structureless	25-30% Gravel	Gravelly Sandy Loam	Tan	Dry	<1"	Roots extend to 92"
92 - 109	17	Structureless	30% Gravel	Gravelly Loam	Dark Brown	Moist	<1"	
								No Limiting Layer Observed

* Include information such as roots present, apparent high ground water level, actual water level, bedrock, layer consistency, color variations, or any other information as appropriate.

Site Factors and Setback Distances

Vegetation Forested Slope _____ Flooding Risk _____

Notes Partly Cobbly SP Application Rate _____ gpd/ft2

	Water Supply Wells		Sealed(1)/Other(2) Components		Drainfields Sand Mounds		Notes
Public or Multi-use Wells	-	NA	100	X	100	X	
Other Wells	-	NA	50	X	100	X	
Suction Lines	-	NA	50	X	100	X	
Cisterns	-	NA	25	X	50	X	
Roadcuts/Escarpments	-	NA	10 (3)	X	25	X	
Slopes > 25% (4)	-	NA	10 (3)	X	25	X	
Property Boundaries	10	10	10	X	10	X	
Subsurface Drains	-	NA	10	X	10	X	
Water Lines	-	NA	10	X	10	X	
Drainfields / Sand Mounds	100	100	10	X	-	NA	
Foundation Walls	-	NA	10	X	10	X	
Surface Water, Springs	100	100	50	X	100	X	
Floodplains	10	10	0(1)/100(2)	X	100	X	

(1) Sealed Components include sewer lines, sewer mains, septic tanks, grease traps, dosing tanks, and pumping chambers.

(2) Other components include intermittent and recirculating sand filters, package plants and evapotranspiration systems

(3) Sewer lines and mains may be located in roadways and on steep slopes if they are safeguarded against damage.

(4) Down-gradient of the sealed component, other component, or drainfield/sand mound.

Project Name Blue Creek Subdivision Feasibility Project No. 22003448.00
 Client Name Tungsten Holdings Inc Lot No. N/A
 Site Evaluator Dan Fultz County Sanders Date 10/4/2022

Soil Profile - SP No: SP- 6

Depth (in)	Thick (in)	Structure	Stoniness	Texture	Color	Moisture	Length of Ribbon	Other Comments*
0 - 5	5	Forest Duff & Log Litter	N/A	N/A	N/A	N/A	N/A	
5 - 26	21	Granular	5% Rock	Fine Sandy Loam	Light Brown	Dry	<1"	
26 - 81	55	Structureless	25-30% Gravel	Gravelly Sandy Loam	Tan	Dry	<1"	Roots extend to 81"
81 - 110	29	Granular	30% Gravel	Gravelly Loam	Dark Brown	Moist	<1"	
								No Limiting Layer Observed

* Include information such as roots present, apparent high ground water level, actual water level, bedrock, layer consistency, color variations, or any other information as appropriate.

Site Factors and Setback Distances

Vegetation Forested Slope _____ Flooding Risk _____
 Notes Partly Cobbly SP Application Rate _____ gpd/ft2

	Water Supply Wells		Sealed(1)/Other(2) Components		Drainfields Sand Mounds		Notes
Public or Multi-use Wells	-	NA	100	X	100	X	
Other Wells	-	NA	50	X	100	X	
Suction Lines	-	NA	50	X	100	X	
Cisterns	-	NA	25	X	50	X	
Roadcuts/Escarpments	-	NA	10 (3)	X	25	X	
Slopes > 25% (4)	-	NA	10 (3)	X	25	X	
Property Boundaries	10	10	10	X	10	X	
Subsurface Drains	-	NA	10	X	10	X	
Water Lines	-	NA	10	X	10	X	
Drainfields / Sand Mounds	100	100	10	X	-	NA	
Foundation Walls	-	NA	10	X	10	X	
Surface Water, Springs	100	100	50	X	100	X	
Floodplains	10	10	0(1)/100(2)	X	100	X	

(1) Sealed Components include sewer lines, sewer mains, septic tanks, grease traps, dosing tanks, and pumping chambers.

(2) Other components include intermittent and recirculating sand filters, package plants and evapotranspiration systems

(3) Sewer lines and mains may be located in roadways and on steep slopes if they are safeguarded against damage.

(4) Down-gradient of the sealed component, other component, or drainfield/sand mound.

Project Name Blue Creek Subdivision Feasibility Project No. 22003448.00
 Client Name Tungsten Holdings Inc Lot No. N/A
 Site Evaluator Dan Fultz County Sanders Date 10/4/2022

Soil Profile - SP No: SP- 7

Depth (in)	Thick (in)	Structure	Stoniness	Texture	Color	Moisture	Length of Ribbon	Other Comments*
0 - 5	5	Forest Duff & Log Litter	N/A	N/A	N/A	N/A	N/A	
5 - 18	13	Granular	5% Gravel	Loam	Light Brown	Dry	<1"	
18 - 75	57	Structureless	55-60% Gravel	Very Gravelly Sandy Loam	Tan	Dry	<1"	Some Boulders
75 - 110	35	Structureless	30% Gravel	Gravelly Loam	Dark Brown	Moist	<1"	
								No Limiting Layer Observed

* Include information such as roots present, apparent high ground water level, actual water level, bedrock, layer consistency, color variations, or any other information as appropriate.

Site Factors and Setback Distances

Vegetation Forested Slope _____ Flooding Risk _____
 Notes Partly Cobbly SP Application Rate _____ gpd/ft2

	Water Supply Wells		Sealed(1)/Other(2) Components		Drainfields Sand Mounds		Notes
Public or Multi-use Wells	-	NA	100	X	100	X	
Other Wells	-	NA	50	X	100	X	
Suction Lines	-	NA	50	X	100	X	
Cisterns	-	NA	25	X	50	X	
Roadcuts/Escarpments	-	NA	10 (3)	X	25	X	
Slopes > 25% (4)	-	NA	10 (3)	X	25	X	
Property Boundaries	10	10	10	X	10	X	
Subsurface Drains	-	NA	10	X	10	X	
Water Lines	-	NA	10	X	10	X	
Drainfields / Sand Mounds	100	100	10	X	-	NA	
Foundation Walls	-	NA	10	X	10	X	
Surface Water, Springs	100	100	50	X	100	X	
Floodplains	10	10	0(1)/100(2)	X	100	X	

(1) Sealed Components include sewer lines, sewer mains, septic tanks, grease traps, dosing tanks, and pumping chambers.

(2) Other components include intermittent and recirculating sand filters, package plants and evapotranspiration systems

(3) Sewer lines and mains may be located in roadways and on steep slopes if they are safeguarded against damage.

(4) Down-gradient of the sealed component, other component, or drainfield/sand mound.

Project Name Blue Creek Subdivision Feasibility Project No. 22003448.00
 Client Name Tungsten Holdings Inc Lot No. N/A
 Site Evaluator Dan Fultz County Sanders Date 10/4/2022

Soil Profile - SP No: SP- 8

Depth (in)	Thick (in)	Structure	Stoniness	Texture	Color	Moisture	Length of Ribbon	Other Comments*
0 - 8	8	Forest Duff & Log Litter	N/A	N/A	N/A	N/A	N/A	
8 - 22	14	Granular	5% Gravel	Loam	Light Brown	Dry	<1"	
22 - 75	53	Structureless	55-60% Gravel	Very Gravelly Sandy Loam	Tan	Dry	<1"	
75 - 116	41	Massive	N/A	Silt Loam	Dark Brown	Somewhat Moist	2"	Extent of Roots; Potential Limiting Layer

* Include information such as roots present, apparent high ground water level, actual water level, bedrock, layer consistency, color variations, or any other information as appropriate.

Site Factors and Setback Distances

Vegetation Forested Slope Flooding Risk
 Notes Partly Cobbly SP Application Rate gpd/ft2

	Water Supply Wells		Sealed(1)/Other(2) Components		Drainfields Sand Mounds		Notes
Public or Multi-use Wells	-	NA	100	X	100	X	
Other Wells	-	NA	50	X	100	X	
Suction Lines	-	NA	50	X	100	X	
Cisterns	-	NA	25	X	50	X	
Roadcuts/Escarpments	-	NA	10 (3)	X	25	X	
Slopes > 25% (4)	-	NA	10 (3)	X	25	X	
Property Boundaries	10	10	10	X	10	X	
Subsurface Drains	-	NA	10	X	10	X	
Water Lines	-	NA	10	X	10	X	
Drainfields / Sand Mounds	100	100	10	X	-	NA	
Foundation Walls	-	NA	10	X	10	X	
Surface Water, Springs	100	100	50	X	100	X	
Floodplains	10	10	0(1)/100(2)	X	100	X	

(1) Sealed Components include sewer lines, sewer mains, septic tanks, grease traps, dosing tanks, and pumping chambers.

(2) Other components include intermittent and recirculating sand filters, package plants and evapotranspiration systems

(3) Sewer lines and mains may be located in roadways and on steep slopes if they are safeguarded against damage.

(4) Down-gradient of the sealed component, other component, or drainfield/sand mound.

Project Name Blue Creek Subdivision Feasibility Project No. 22003448.00
 Client Name Tungsten Holdings Inc Lot No. N/A
 Site Evaluator Dan Fultz County Sanders Date 10/4/2022

Soil Profile - SP No: SP- 9

Depth (in)	Thick (in)	Structure	Stoniness	Texture	Color	Moisture	Length of Ribbon	Other Comments*
0 - 5	5	Forest Duff	N/A	N/A	N/A	N/A	N/A	
5 - 14	9	Granular	5% Gravel	Loam	Light Brown	Dry	<1"	
14 - 67	53	Structureless	55-60% Gravel	Very Gravelly Fine Sandy Loam	Tan	Dry	<1"	
67 - 102	35	Structureless	Some Boulders/ Clay clumps	Loamy Sand	Dark Brown	Somewhat Moist	<1"	Moist from GW monitor
								No Limiting Layer Observed

* Include information such as roots present, apparent high ground water level, actual water level, bedrock, layer consistency, color variations, or any other information as appropriate.

Site Factors and Setback Distances

Vegetation Forested Slope _____ Flooding Risk _____

Notes Partly Cobbly SP Application Rate _____ gpd/ft2

	Water Supply Wells		Sealed(1)/Other(2) Components		Drainfields Sand Mounds		Notes
Public or Multi-use Wells	-	NA	100	X	100	X	
Other Wells	-	NA	50	X	100	X	
Suction Lines	-	NA	50	X	100	X	
Cisterns	-	NA	25	X	50	X	
Roadcuts/Escarpments	-	NA	10 (3)	X	25	X	
Slopes > 25% (4)	-	NA	10 (3)	X	25	X	
Property Boundaries	10	10	10	X	10	X	
Subsurface Drains	-	NA	10	X	10	X	
Water Lines	-	NA	10	X	10	X	
Drainfields / Sand Mounds	100	100	10	X	-	NA	
Foundation Walls	-	NA	10	X	10	X	
Surface Water, Springs	100	100	50	X	100	X	
Floodplains	10	10	0(1)/100(2)	X	100	X	

(1) Sealed Components include sewer lines, sewer mains, septic tanks, grease traps, dosing tanks, and pumping chambers.

(2) Other components include intermittent and recirculating sand filters, package plants and evapotranspiration systems

(3) Sewer lines and mains may be located in roadways and on steep slopes if they are safeguarded against damage.

(4) Down-gradient of the sealed component, other component, or drainfield/sand mound.

Daniel D. Fultz

From: Shawn Sorenson <ssorenson@co.sanders.mt.us>
Sent: Monday, July 31, 2023 8:29 AM
To: Daniel D. Fultz
Subject: RE: Blue Creek Subdivision - Groundwater Monitoring Results

External Email: Treat links and attachments with caution.

I agree with your conclusion. This happens frequently in areas with high precip and the pipe sits over-winter.

From: Daniel D. Fultz <Daniel.D.Fultz@imegcorp.com>
Sent: Monday, July 31, 2023 8:13 AM
To: Shawn Sorenson <ssorenson@co.sanders.mt.us>; projects@tungstenholdings.com
Cc: Bradley Fitchett <Brad.Fitchett@elkcreekcontracting.com>
Subject: RE: Blue Creek Subdivision - Groundwater Monitoring Results

Shawn,

I think from Brad and Crawfords' first hand accounts, that the settling around the pipe combined with the snow melt and rain runoff going into this depression, were a contributing factor of seeing water in the hole. With all other holes being dry it seems like this may not be groundwater. Either way, the hole had passing results for a shallow capped system. I think that is how we will proceed unless you feel strongly about this.

Dan Fultz, Registered Sanitarian
IMEG | Civil Designer

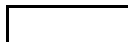


1817 South Ave West | Suite A | Missoula, MT 59801

(406) 721-0142 | phone
(406) 532-0246 | single reach
(814) 720-9312 | mobile
(406) 721-5224 | fax

Daniel.D.Fultz@imegcorp.com

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This email may contain confidential and/or private information. If you received this email in error please delete and notify sender.

From: Shawn Sorenson <ssorenson@co.sanders.mt.us>
Sent: Friday, July 28, 2023 7:13 AM
To: Daniel D. Fultz <Daniel.D.Fultz@imegcorp.com>; projects@tungstenholdings.com
Cc: Bradley Fitchett <Brad.Fitchett@elkcreekcontracting.com>
Subject: RE: Blue Creek Subdivision - Groundwater Monitoring Results

External Email: Treat links and attachments with caution.

Hello Dan,
Thank you for the data. The results look acceptable.

Regarding your last sentence, are you saying the rain and snow melt was the cause of settling and the possible groundwater reading, as opposed to actual groundwater?

Thanks,

Shawn

Shawn Sorenson
Sanders County Environmental Health
PO Box 519
Thompson Falls, MT 59873
(406) 827-6909 (w)
(907) 738-4268 (c)

From: Daniel D. Fultz <Daniel.D.Fultz@imegcorp.com>
Sent: Thursday, July 27, 2023 7:28 PM
To: Shawn Sorenson <ssorenson@co.sanders.mt.us>; projects@tungstenholdings.com
Cc: Bradley Fitchett <Brad.Fitchett@elkcreekcontracting.com>
Subject: RE: Blue Creek Subdivision - Groundwater Monitoring Results

Shawn,

Attached are the groundwater monitoring results recorded by Brad Fitchett for the Blue Creek Subdivision site. Also attached is a photo of SP8. This is the only hole that showed any type of water and this photo was taken on the first day of readings. As you can see this hole settled quite a bit with snow melt going directly into the hole. We believe this was the direct result of the groundwater found in this hole.

Please confirm these are acceptable results.

Dan Fultz, Registered Sanitarian
IMEG | Civil Designer



1817 South Ave West | Suite A | Missoula, MT 59801

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Daniel.D.Fultz@imegcorp.com

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This email may contain confidential and/or private information. If you received this email in error please delete and notify sender.

From: Shawn Sorenson <ssorenson@co.sanders.mt.us>

Sent: Tuesday, March 7, 2023 7:12 AM

To: projects@tungstenholdings.com

Cc: Daniel D. Fultz <Daniel.D.Fultz@imegcorp.com>

Subject: RE: Blue Creek Subdivision - Groundwater Monitoring

External Email: Treat links and attachments with caution.

Hello Crawford,

May – June is typical, but varies by location. Our groundwater potential definitely varies by site, and whether potential for ground water is influenced by the Clark Fork River, more local sources, or a combination. We normally try to get monitoring tubes in the ground by April and determine testing frequency by what we are seeing (hopefully not seeing) in the pipe.

For example, we saw an April 16th peek in groundwater in three test holes on Wendell and Lisa Beachy's property up Whitepine Creek last year. Not related to the creek or the river.

Thanks,

Shawn

Shawn Sorenson
Sanders County Environmental Health
PO Box 519
Thompson Falls, MT 59873
(406) 827-6909 (w)
(907) 738-4268 (c)

From: projects@tungstenholdings.com <projects@tungstenholdings.com>

Sent: Friday, March 3, 2023 4:46 PM

To: Shawn Sorenson <ssorenson@co.sanders.mt.us>

Cc: Daniel.D.Fultz@imegcorp.com

Subject: Blue Creek Subdivision - Groundwater Monitoring

Hello Shawn,

I'm following up on our Blue Creek Subdivision project. Last fall when soil profiles were done, it was determined that groundwater monitoring is needed for the property. We want to be sure to record 2 weeks before and after ground water peak, and would like to get those visits on our schedule. To be certain that we are following all procedures completely, could you clarify when ground water peak is?

Thanks!

Crawford Dinning
Tungsten Holdings
406-293-3714

22003448.00 Tungsten Holdings Blue Creek
Groundwater Monitoring - IMEG 2023

PASSING
Passing with 4' = 48"

		Mon. Well #1a			Mon. Well #2		
Height from EG to Top of Pipe (ft)		20" from Exposed Grad to top of pipe			0" from EG to top of pipe "Flush"		
Total Pipe (ft)		10.00			10.00		
Initials	Date	GW to top of pipe (ft)	GW to EG (ft)	Soil Condition	GW to top of pipe (ft)	GW to EG (ft)	Soil Condition
BF	4/3/23	No Water	0.00	Snow on Sur.	No Water	0.00	Snow on Sur.
BF	4/12/23	No Water	0.00	Slightly Damp	No Water	0.00	Slightly Damp
BF	4/18/23	No Water	0.00	Rain/Saturated	"	0.00	Rain/Saturated
BF	4/26/23	No Water	0.00	Dry	"	0.00	Dry
BF	5/1/23	No Water	0.00	Dry	"	0.00	Dry
BF	5/7/23	"	0.00	Rain/Saturated	"	0.00	Rain/Saturated
BF	5/15/23	"	0.00	Dry	"	0.00	Dry
BF	5/23/23	"	0.00	Dry	"	0.00	Dry
BF	5/29/23	"	0.00	Dry	"	0.00	Dry
BF	6/19/23	No Water	0.00	Dry	No Water	0.00	Dry
			0.00			0.00	

22003448.00 Tungsten Holdings Blue Creek
Groundwater Monitoring - IMEG 2023

PASSING
Passing with 4' = 48"

		Mon. Well #3			Mon. Well #4		
Height from EG to Top of Pipe (ft)		11" from EG to top of pipe			11" from EG to top of pipe		
Total Pipe (ft)		10.00			10.00		
Initials	Date	GW to top of pipe (ft)	GW to EG (ft)	Soil Condition	GW to top of pipe (ft)	GW to EG (ft)	Soil Condition
BF	4/3/23	No Water	0.00	Snow on Sur.	No Water	0.00	Snow on Sur.
BF	4/12/23	No Water	0.00	Slightly Damp	No Water	0.00	Slightly Damp
BF	4/16/23	No Water	0.00	Rain/Saturated	No Water	0.00	Rain/Saturated
BF	4/26/23	No Water	0.00	Dry	No Water	0.00	Dry
BF	5/1/23	No Water	0.00	Dry	No Water	0.00	Dry
BF	5/7/23	"	0.00	Rain/Saturated	"	0.00	Rain/Saturated
BF	5/15/23	"	0.00	Dry	"	0.00	Dry
BF	5/23/23	"	0.00	Dry	"	0.00	Dry
BF	5/29/23	"	0.00	Dry	"	0.00	Dry
BF	6/19/23	No Water	0.00	Dry	No Water	0.00	Dry
			0.00			0.00	

22003448.00 Tungsten Holdings Blue Creek
Groundwater Monitoring - IMEG 2023

PASSING
Passing with 4' = 48"

		Mon. Well #5			Mon. Well #6		
Height from EG to Top of Pipe (ft)		13" from Exisg Ground to top of pipe.			17" from Exisg Ground to top of pipe		
Total Pipe (ft)		10.00			10.00		
Initials	Date	GW to top of pipe (ft)	GW to EG (ft)	Soil Condition	GW to top of pipe (ft)	GW to EG (ft)	Soil Condition
BF	4/3/23	No Water	0.00	Snow on Sur.	No Water	0.00	Snow on Sur.
BK	4/12/23	No Water	0.00	Slightly Damp	No Water	0.00	Slightly Damp
BF	4/18/23	"	0.00	Rain/Saturated	"	0.00	Rain/Saturated
BF	4/26/23	"	0.00	Dry	"	0.00	Dry
BF	5/1/23	"	0.00	Dry	"	0.00	Dry
BF	5/7/23	"	0.00	Rain/Saturated	"	0.00	Rain/Saturated
BF	5/15/23	"	0.00	Dry	"	0.00	Dry
BF	5/23/23	"	0.00	Dry	"	0.00	Dry
BF	5/29/23	"	0.00	Dry	"	0.00	Dry
BF	6/19/23	No Water	0.00	Dry	No Water	0.00	Dry
			0.00			0.00	

22003448.00 Tungsten Holdings Blue Creek
Groundwater Monitoring - IMEG 2023

PASSING

Passing with 4' = 48"

		Mon. Well #7			Mon. Well #8		
Height from EG to Top of Pipe (ft)		6" From Existing Ground to top of Pipe			0" flush		
Total Pipe (ft)		10.00			10.00		
Initials	Date	GW to top of pipe (ft)	GW to EG (ft)	Soil Condition	GW to top of pipe (ft)	GW to EG (ft)	Soil Condition
BF	4/3/23	No Water	0.00	Snow on Sur	65" GW to top	0.00	Snow on Sur.
BF	4/12/23	No Water	0.00	Slightly Damp	74" GW to top	0.00	Slightly Damp
BF	4/18/23	"	0.00	Rain/Saturated	81" GW to top	0.00	Rain/Saturated
BF	4/24/23	"	0.00	Dry	96" GW to top	0.00	Dry
BF	5/1/23	"	0.00	Dry	109" GW to top	0.00	Dry
BF	5/7/23	"	0.00	Rain/Saturated	No Water	0.00	Rain/Saturated
BF	5/15/23	"	0.00	Dry	No Water	0.00	Dry
BF	5/23/23	"	0.00	Dry	No Water	0.00	Dry
BF	5/29/23	"	0.00	Dry	"	0.00	Dry
BF	6/19/23	No Water	0.00	Dry	No Water	0.00	Dry
			0.00			0.00	

22003448.00 Tungsten Holdings Blue Creek
Groundwater Monitoring - IMEG 2023

PASSING
Passing with 4' = 48"

		Mon. Well #9					
Height from EG to Top of Pipe (ft)		12" EG to Top of Pipe					
Total Pipe (ft)		10.00			10.00		
Initials	Date	GW to top of pipe (ft)	GW to EG (ft)	Soil Condition	GW to top of pipe (ft)	GW to EG (ft)	Soil Condition
BF	4/3/23	No Water	0.00	Snow on Sur	No Water	0.00	Saturated
BF	4/12/23	No Water	0.00	Slightly Damp		0.00	
BF	4/19/23	"	0.00	Rain/Saturated		0.00	
BF	4/26/23	"	0.00	Dry		0.00	
BF	5/1/23	"	0.00	Dry		0.00	
BF	5/7/23	"	0.00	Rain/Saturated		0.00	
BF	5/15/23	"	0.00	Dry		0.00	
BF	5/23/23	"	0.00	Dry		0.00	
BF	5/29/23	"	0.00	Dry		0.00	
BF	6/19/23	No Water	0.00	Dry		0.00	
			0.00			0.00	





APPENDIX B

- 1. Sampled Well Log**
- 2. Water Sample Results**
- 3. Well Location Exhibit**
- 4. Non-Degradation Analysis**

Other Options

[Go to GWIC website](#)
[Plot this site in State Library Digital Atlas](#)
[Plot this site in Google Maps](#)

Section 7: Well Test Data

Total Depth: 160
Static Water Level: 130
Water Temperature:

Air Test *

20 gpm with drill stem set at 155 feet for 1 hours.
Time of recovery 0.08 hours.
Recovery water level 130 feet.
Pumping water level feet.

Township	Range	Section	Quarter	Sections
27N	34W	20		
County			Geocode	
SANDERS				
Latitude	Longitude	Geomethod	Datum	
48.088162	-116.007028	TRS-SEC	NAD83	
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.*

Lot

DOMESTIC (1)

Drilling Method: ROTARY
Status: NEW WELL

Date well completed: Tuesday, August 31, 2010

Borehole dimensions

From	To	Diameter
0	25	10
25	160	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
2	160	6	0.25		WELDED	STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
160	160	6			OPEN BOTTOM

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	25	BENTONITE	

Section 8: Remarks

Geologic Source

Unassigned

[illegible]

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: EDWARD A. MINDEN

Company:

License No: WWC-561

Date Completed: 8/31/2010



ANALYTICAL REPORT

Montana Environmental Laboratory LLC

1170 N. Meridian Rd., P.O. Box 8900, Kalispell, MT 59904-1900

Phone: 406-755-2131 Fax: 406-257-5359 www.melab.us

IMEG - Missoula
IMEG - Missoula
1817 South Ave West, Ste A
Missoula, MT 59801

PWS ID:

Project: E of Blue Cr Rd & S of MT 200

Client Sample ID: Yard Hydrant

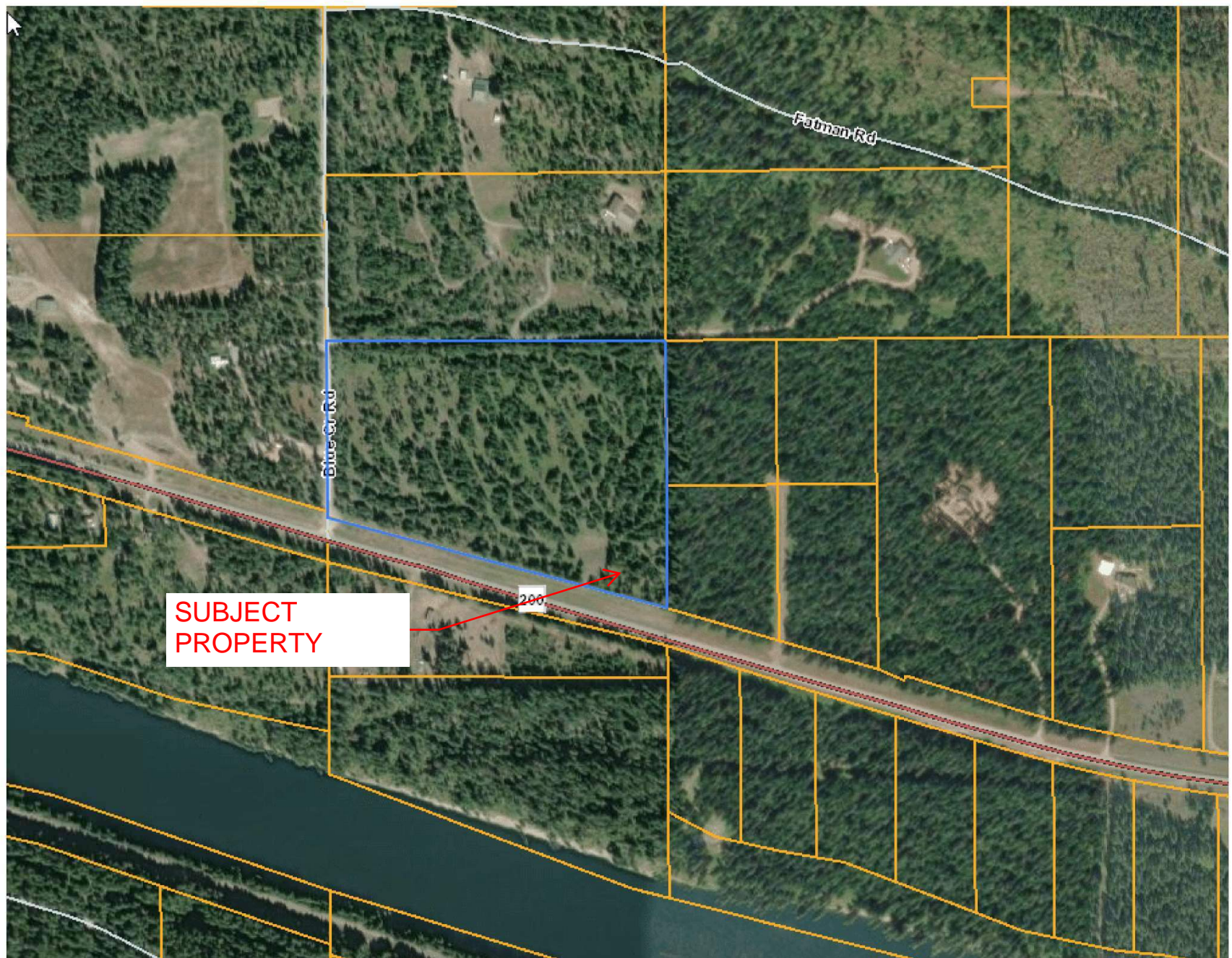
Matrix: DRINKING WATER

Collected: 07/28/2023 7:30

Lab ID: 2307806-01

Received: 08/04/2023 9:00

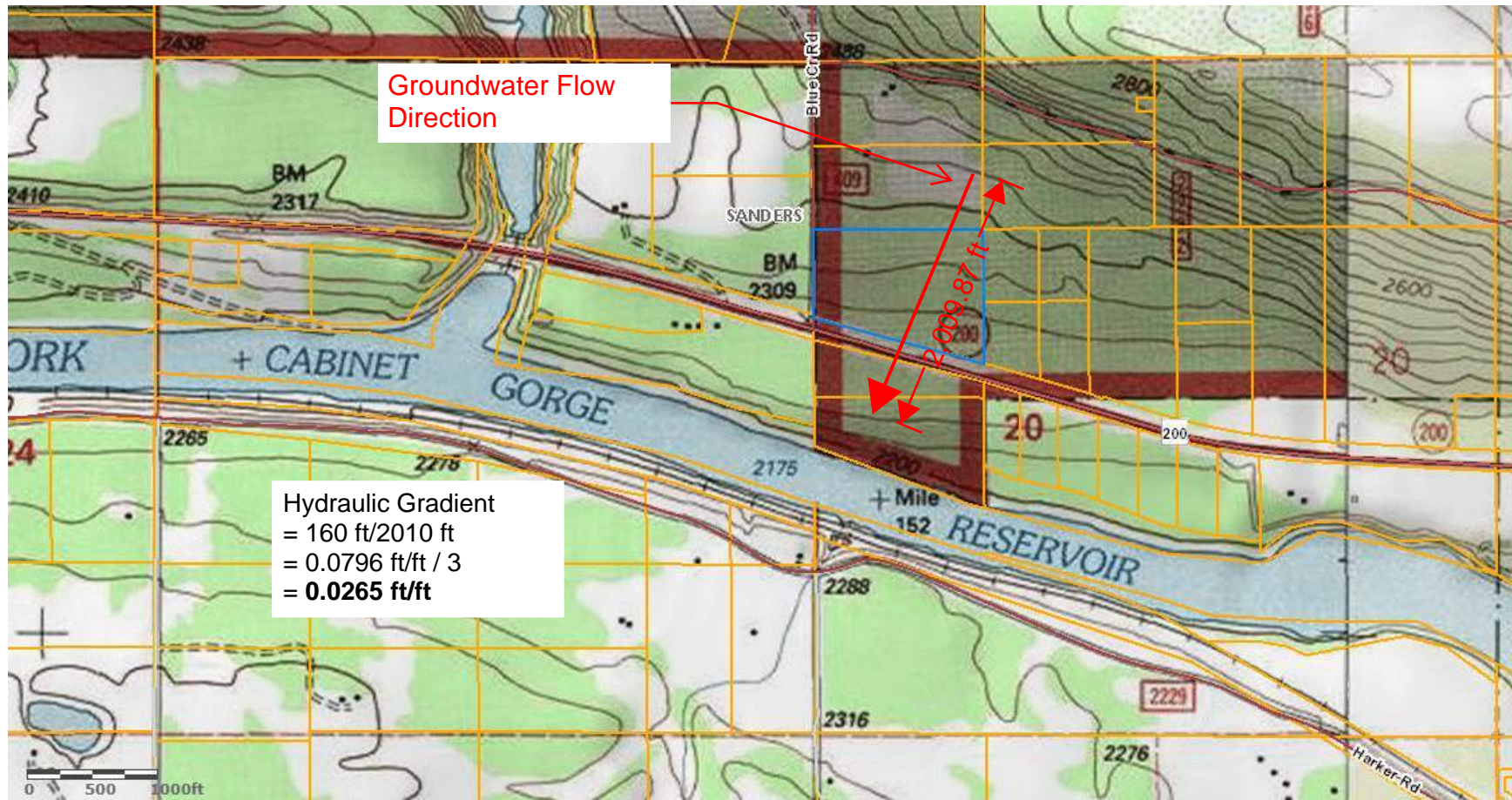
<u>Analyses</u>	<u>Result</u>	<u>Units</u>	<u>RL</u>	<u>MCL</u>	<u>Method</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Analyst</u>
Conductivity	223	umho/cm	0.1		SM2510B		08/04/2023 14:24	BLW
Nitrate + Nitrite, Total	ND	mg/L	0.01	10	E353.2		08/08/2023 10:20	BLW



SUBJECT
PROPERTY

200

Hydraulic Gradient Map



Items in yellow are calculated for you

Using Modified Cooper-Jacob equation (Unconfined)

Well #	GWIC ID	Pump Rate gpm	Pump Level	Static Level	Length of perfs-enter 10 for open hole	Specific Capacity	Transmissivity	Hyd Conductivity (K)
1						#DIV/0!	#DIV/0!	#DIV/0!
2						#DIV/0!	#DIV/0!	#DIV/0!
3						#DIV/0!	#DIV/0!	#DIV/0!
4						#DIV/0!	#DIV/0!	#DIV/0!
5						#DIV/0!	#DIV/0!	#DIV/0!
Average K								#DIV/0!

Using Modified Cooper-Jacob equation (Confined)

Well #	GWIC ID	Pump Rate gpm	Pump Level	Static Level	Length of perfs-enter 10 for open hole	Specific Capacity	Transmissivity	Hyd Conductivity (K)
1						#DIV/0!	#DIV/0!	#DIV/0!
2						#DIV/0!	#DIV/0!	#DIV/0!
3						#DIV/0!	#DIV/0!	#DIV/0!
4						#DIV/0!	#DIV/0!	#DIV/0!
5						#DIV/0!	#DIV/0!	#DIV/0!
Average K								#DIV/0!

Using Razack and Huntley equation (Fetter 1994)

Well #	GWIC ID	Pump Rate gpm	Pump Level	Static Level	Length of perfs-enter 10 for open hole	Specific Capacity	Transmissivity	Hyd Conductivity (K)
1	257971	20	155	130	10	0.80	981.70	98.17
2	168748	7	155	78	10	0.09	228.65	22.87
3	286136	18	195	158	10	0.49	703.47	70.35
4						#DIV/0!	#DIV/0!	#DIV/0!
5						#DIV/0!	#DIV/0!	#DIV/0!
Average K								63.79

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

NITRATE SENSITIVITY ANALYSIS

SITE NAME: Tungsten Blue Creek Subdivision
COUNTY: Sanders County
LOT #:
NOTES: Drainfields are sized for a 4-bedroom home
Conductivity and Gradient derived from regional topographic slope.

<u>VARIABLES</u>	<u>DESCRIPTION</u>	<u>VALUE</u>	<u>UNITS</u>
K	Hydraulic Conductivity	63.79	ft/day
I	Hydraulic Gradient	0.0265	ft/ft
D	Mixing Zone Thickness (usually constant)	15.0	ft
L	Mixing Zone Length (see ARM 17.30.517(1)(d)(viii))	100	ft
Y	Width of Drainfield Perpendicular to Ground Water Flow	60	ft
Ng	Background Nitrate (as Nitrogen) Concentration	0.01	mg/L
Nr	Nitrate (as Nitrogen) Concentration in Precipitation (usually constant)	1.0	mg/L
Ne	Nitrate (as Nitrogen) Concentration in Effluent	50.00	mg/L
#I	Number of Single Family Homes on the Drainfield	1.0	
QI	Quantity of Effluent per Single Family Home	26.70	ft ³ /day
P	Precipitation	34.2	in/year
V	Percent of Precipitation Recharging Ground Water (usually constant)	0.20	

EQUATIONS

W	Width of Mixing Zone Perpendicular to Ground Water Flow = (0.175)(L)+(Y)	77.50	ft
Am	Cross Sectional Area of Aquifer Mixing Zone = (D)(W)	1162.50	ft ²
As	Surface Area of Mixing Zone = (L)(W)	7750.00	ft ²
Qg	Ground Water Flow Rate = (K)(I)(Am)	1965.13	ft ³ /day
Qr	Recharge Flow Rate = (As)(P/12/365)(V)	12.11	ft ³ /day
Qe	Effluent Flow Rate = (#I)(QI)	26.70	ft ³ /day

SOLUTION

Nt	Nitrate (as Nitrogen) Concentration at End of Mixing Zone =((Ng)(Qg)+(Nr)(Qr)+(Ne)(Qe)) / ((Qg)+(Qr)+(Qe))	0.68	mg/L
-----------	---	-------------	-------------

BY: Adam Krick
DATE: November 21, 2023

REV. 03/2005

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

NITRATE SENSITIVITY ANALYSIS

SITE NAME: Tungsten Blue Creek Subdivision

COUNTY: Sanders County

NOTES: Drainfields are sized for a 3-bedroom home

BY: _____

DATE: 11/21/23

Nitrate at end of mixing zone(s) with no cumulative effects

[illegible]

Nitrate at end of mixing zones with cumulative effects

[illegible]

NOTES:

= fill in values in these cells

= these cells are calculated for you

Hydr. cond. =	<i>K</i>	Hydraulic Conductivity
Hydr. grad. =	<i>I</i>	Hydraulic Gradient
Mix zone thick =	<i>D</i>	Thickness of Mixing Zone up to a Maximum of 15 feet (usually constant at 15 feet)
Down grad. distance =	<i>L</i>	Mixing Zone Length (see ARM 17.30.517(1)(d)(viii), or this may also be the distance to end of last mixing zone when calculating cumulative effects.
Drainfield width =	<i>Y</i>	Width of Drainfield Perpendicular to Ground Water Flow
Background nitrate =	<i>Ng</i>	Background Nitrate (as Nitrogen) Concentration
Nitrate in precip. =	<i>Nr</i>	Nitrate (as Nitrogen) Concentration in Precipitation (usually constant at 1.0 mg/L)
Effluent Nitrate conc. =	<i>Ne</i>	Nitrate (as Nitrogen) Concentration in Effluent (50 for conventional; 24 for level II; 30 for level 1a; 40 for level 1b)
# single family homes =	<i>#</i>	Number of Single Family Homes on the Drainfield (leave as 1 if effluent volume in next column is adjusted to equal total effluent from drainfield)
Effluent per drain. =	<i>Ql</i>	Quantity of Effluent from drainfield (average rate varies depending on number of bedrooms)
Annual precip. =	<i>P</i>	Annual local Precipitation
Percent precip recharge =	<i>V</i>	Percent of Precipitation Recharging Ground Water (usually constant at 0.2)
Down grad. width =	<i>W</i>	Width of Mixing Zone Perpendicular to Ground Water Flow = $(0.175)(L) + (Y)$
Mix zone area =	<i>Am</i>	Cross Sectional Area of Aquifer Mixing Zone = $(D)(W)$
Mix zone surface area =	<i>As</i>	Surface Area of Mixing Zone = $(L)(W)$
Ground water flow =	<i>Qg</i>	Ground Water Flow Rate = $(K)(I)(Am)$
Recharge flow =	<i>Qr</i>	Recharge Flow Rate = $(As)(P/12/365)(V)$
Effluent flow =	<i>Qe</i>	Effluent Flow Rate = $(\#)(Ql)$
Resulting nitrate (N) =	<i>Nt</i>	Nitrate (as Nitrogen) Concentration at End of Mixing Zone = $((Ng)(Qg) + (Nr)(Qr) + (Ne)(Qe)) / ((Qg) + (Qr) + (Qe))$ (or nitrate concentration to use as background nitrate for next downgradient drainfield when determining cumulative effects)

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

PHOSPHOROUS BREAKTHROUGH ANALYSIS

SITE NAME: Tungsten Blue Creek Subdivision
COUNTY: Sanders County
LOT #: 0
NOTES: Drainfields are sized for a 3-bedroom home
No surface water is located within 500' so 500' is used.

<u>VARIABLES</u>	<u>DESCRIPTION</u>	<u>VALUE</u>	<u>UNITS</u>
Lg	Length of Primary Drainfield as Measured Perpendicular to Ground Water Flow	100.0	ft
L	Length of Primary Drainfield's Long Axis	100.0	ft
W	Width of Primary Drainfield's Short Axis	52.0	ft
B	Depth to Limiting Layer from Bottom of Drainfield Laterals*	4.0	ft
D	Distance from Drainfield to Surface Water	500.0	ft
T	Phosphorous Mixing Depth in Ground Water (0.5 ft for coarse soils, 1.0 ft for fine soils)**	1.0	ft
Ne			
Sw	Soil Weight (usually constant)	100.0	lb/ft3
Pa	Phosphorous Adsorption Capacity of Soil (usually constant)	200.0	ppm
#I	Number of Single Family Homes on the Drainfield	1.0	

CONSTANTS

PI	Phosphorous Load per Single Family Home (constant)	6.44	lbs/yr
X	Conversion Factor for ppm to percentage (constant)	1.0E+06	

EQUATIONS

Pt	Total Phosphorous Load = (PI)(#I)	6.44	lbs/yr
W1	Soil Weight under Drainfield = (L)(W)(B)(Sw)	2080000.0	lbs
W2	Soil Weight from Drainfield to Surface Water = [(Lg)(D) + (0.0875)(D)(D)] (T)(Sw)	7187500.0	lbs
P	Total Phosphorous Adsorption by Soils = (W1 + W2)[(Pa)/(X)]	1853.5	lbs

SOLUTION

BT	Breakthrough Time to Surface Water = P / Pt	287.8	years
----	---	-------	-------

BY: Adam Krick

DATE: November 21, 2023

*****Must be shallow capped system so 4' to GW used to be conservative*****

NOTES: * Depth to limiting layer is typically based on depth to water in a test pit or bottom of a dry test pit minus two feet to account for burial depth of standard drainfield laterals.
** Material type is usually based on test pit. A soil that can be described as loam (e.g. gravelly loam, sandy loam, etc.) or finer according to the USDA soil texture classification system is considered a "fine" soil.

REV. 12/2004

Appendix Q

TRIGGER VALUE CALCULATION FOR ADJACENT TO SURFACE WATER DILUTION ANALYSIS

"An analysis of the effect of the proposed drainfield system on the quality of any adjacent surface water is required by ARM 17.36.312 and 17.30.715(1c). The increase in the nutrient concentration in the surface water cannot exceed the trigger value (T.V. of 0.01 mg/L nitrate and 0.001 mg/L phosphorous as set forth in Circular DEQ 7."

$$\text{DILUTION EQUATION: } \frac{(QD)(CD) + (QL)(CL)}{QD + QL} < \text{T.V.} = \text{non-significant}$$

Note: Effluent flow rate (QD) must be multiplied by the number of drainfields in the subdivision.

NITRATE CALCULATION:

	9.00		Number of drainfields in subdivision
QD =	26.70	ft ³ /d	Effluent flow rate from drainfield in cubic feet per day (commonly 200 gpd or 26.7 ft ³ /d for a 2 - 5 bedroom home)
CD =	50.00	mg/L	Nitrate concentration in mg/L (50 mg/L nitrate-N for standard drainfield, 24 mg/L for Level 2 wastewater treatment system)
QL =	3260.00	ft ³ /s	Flow rate in ft ³ /s into (or out of) surface water determined by stream gauge (usually the 14-day, 5-year low flow or 14Q5)
CL =	0.00	mg/L	Nitrate concentration (in mg/L) in surface water; can typically assume zero since increase, not total, is important

0.0000427 mg/L = final result, must be < 0.01 mg/L to be considered nonsignificant nitrate increase

PHOSPHOROUS CALCULATION:

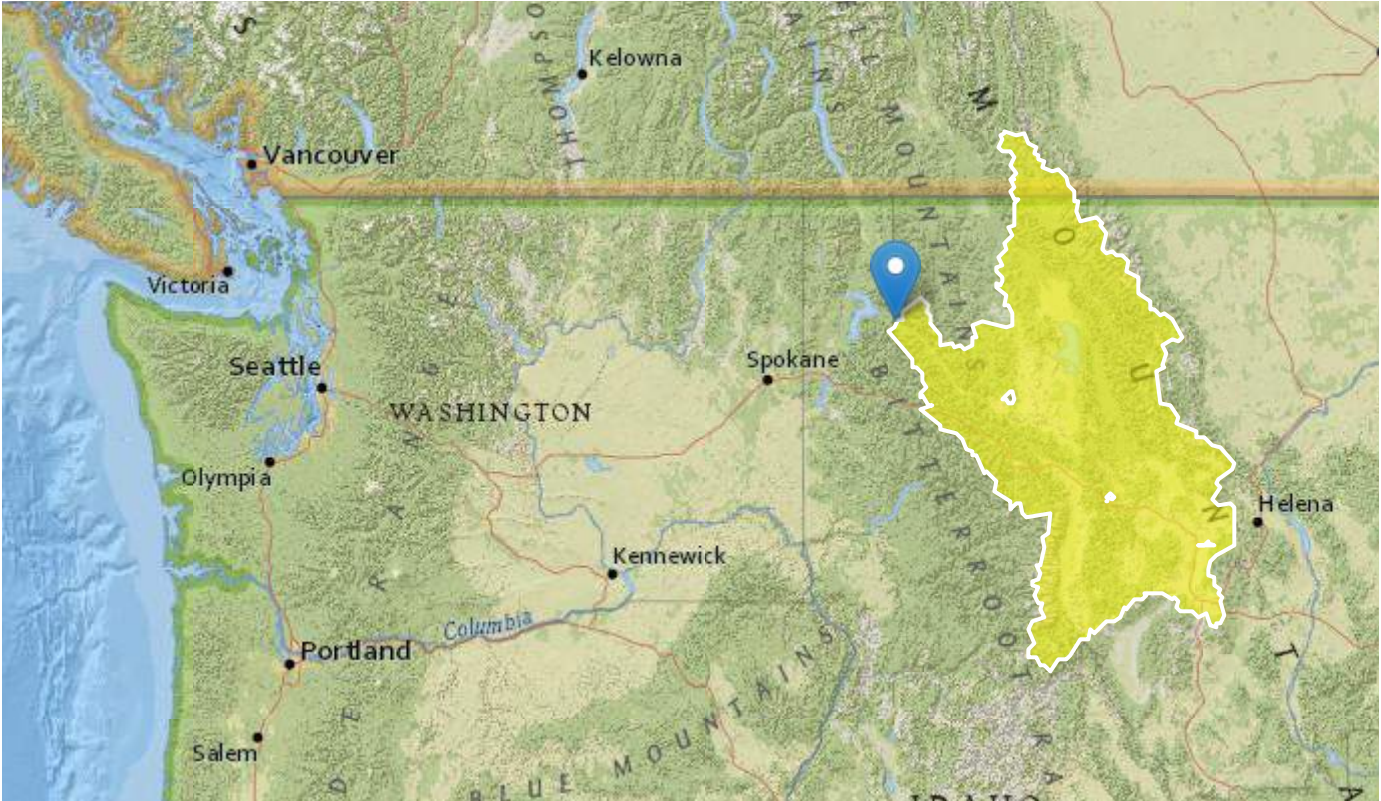
	9		Number of drainfields in subdivision
QD =	26.7	ft ³ /d	Effluent flow rate from drainfield in cubic feet per day, (commonly 200 gpd or 26.7 ft ³ /d for a 2 - 5 bedroom home)
CD =	10.6	mg/L	Phosphorous concentration in mg/L (commonly 10.6 mg/L) in effluent
QL =	3260.00	ft ³ /s	Flow rate in ft ³ /s into (or out of) surface water determined by stream gauge (usually the 14-day, 5-year low flow or 14Q5)
CL =	0	mg/L	Phosphorous concentration (in mg/L) in surface water; can typically assume zero since increase, not total, is important

0.0000090 mg/L = final result, must be < 0.001 mg/L to be considered nonsignificant for phosphorous increase

****Flow Rate based on StreamStats 14Q5, see attached**

StreamStats Report

Region ID: MT
Workspace ID: MT20220714201625121000
Clicked Point (Latitude, Longitude): 48.08803, -116.02678
Time: 2022-07-14 14:16:53 -0600



+ Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CONTDA	Area that contributes flow to a point on a stream	21991.8	square miles
PRECIP	Mean Annual Precipitation	32.34	inches
SLOP50_30M	Percent area with slopes greater than 50 percent from 30-meter DEM.	20.7	percent

➤ Low-Flow Statistics

Low-Flow Statistics Parameters [81.7 Percent (18000 square miles) W Region
LowFlow GLS 2015 5019G]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CONTDA	Contributing Drainage Area	21991.8	square miles	6.4	2520
SLOP50_30M	Slopes_gt_50pct_from_30m_DEM	20.7	percent	1.87	67.5

Low-Flow Statistics Parameters [18.3 Percent (4030 square miles) NW Region
LowFlow GLS 2015 5019G]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CONTDA	Contributing Drainage Area	21991.8	square miles	7.74	1560
SLOP50_30M	Slopes_gt_50pct_from_30m_DEM	20.7	percent	0.06	66

Low-Flow Statistics Disclaimers [81.7 Percent (18000 square miles) W Region
LowFlow GLS 2015 5019G]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [81.7 Percent (18000 square miles) W Region
LowFlow GLS 2015 5019G]

Statistic	Value	Unit
7 Day 10 Year Low Flow	2580	ft ³ /s

Low-Flow Statistics Disclaimers [18.3 Percent (4030 square miles) NW Region
LowFlow GLS 2015 5019G]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [18.3 Percent (4030 square miles) NW Region
LowFlow GLS 2015 5019G]

Statistic	Value	Unit
7 Day 10 Year Low Flow	2420	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 10 Year Low Flow	2550	ft^3/s

Low-Flow Statistics Citations

McCarthy, P.M., Sando, Roy, Sando, S.K., and Dutton, D.M.,2016, Methods for estimating streamflow characteristics at ungaged sites in western Montana based on data through water year 2009: U.S. Geological Survey Scientific Investigations Report 2015–5019–G, 19 p. (<https://doi.org/10.3133/sir20155019>)

➤ Seasonal Flow Statistics

Seasonal Flow Statistics Parameters [81.7 Percent (18000 square miles) W
Region LowFlow GLS 2015 5019G]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CONTDA	Contributing Drainage Area	21991.8	square miles	6.4	2520
SLOP50_30M	Slopes_gt_50pct_from_30m_DEM	20.7	percent	1.87	67.5

Seasonal Flow Statistics Parameters [18.3 Percent (4030 square miles) NW
Region LowFlow GLS 2015 5019G]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CONTDA	Contributing Drainage Area	21991.8	square miles	7.74	1560
PRECIP	Mean Annual Precipitation	32.34	inches	20.7	83.2

Seasonal Flow Statistics Disclaimers [81.7 Percent (18000 square miles) W
Region LowFlow GLS 2015 5019G]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Seasonal Flow Statistics Flow Report [81.7 Percent (18000 square miles) W
Region LowFlow GLS 2015 5019G]

Statistic	Value	Unit
Jul_to_Oct_14_Day_5_Yr_Low_Flow	3260	ft^3/s

Seasonal Flow Statistics Disclaimers [18.3 Percent (4030 square miles) NW
Region LowFlow GLS 2015 5019G]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Seasonal Flow Statistics Flow Report [18.3 Percent (4030 square miles) NW
Region LowFlow GLS 2015 5019G]

Statistic	Value	Unit
Jul_to_Oct_14_Day_5_Yr_Low_Flow	4890	ft^3/s

Seasonal Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
Jul_to_Oct_14_Day_5_Yr_Low_Flow	3560	ft^3/s

Seasonal Flow Statistics Citations

McCarthy, P.M., Sando, Roy, Sando, S.K., and Dutton, D.M.,2016, Methods for estimating streamflow characteristics at ungaged sites in western Montana based on data through water year 2009: U.S. Geological Survey Scientific Investigations Report 2015-5019-G, 19 p. (<https://doi.org/10.3133/sir20155019>)

➤ Channel-width Methods Weighting

No method weighting results returned.

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.10.0

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION



WATER RESOURCES DIVISION – KALISPELL REGIONAL OFFICE
655 TIMBERWOLF PKWY, SUITE 4, KALISPELL, MONTANA 59901 PHONE: (406) 752-2288 FAX: (406) 752-2873

GREG GIANFORTE, GOVERNOR

STATE OF MONTANA

DIRECTOR'S OFFICE: (406) 444-2074
FAX: (406) 444-2684
<http://dnrc.mt.gov>

PO BOX 201601
HELENA, MONTANA 59620-1601

28 December 2023

Adam Krick
IMEG Corp.
1817 South Ave West, Ste A
Missoula, MT 59801

Re: KRO 23-271 DNRC Water Right Review of the Tungsten Holdings Inc Subdivision of 27.3 acre Plat S into nine lots to be known as the Blue Creek Subdivision. Project Location: SW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 20, Township 27N, Range 34W, Sanders County.

Determination: Based on the information provided in your 15 December 2023 DNRC water right review request, the referenced parcel and well locations do fit the current statutes and rules pertaining to filing a water right using a DNRC Notice of Completion of Groundwater Development (Form 602). See full details below.

Dear Mr. Krick,

This letter is in response to your request for DNRC review of water right permit exceptions under Montana Code Annotated (MCA) § 85-2-306(3)(a)(iii) for the referenced project in accordance with Administrative Rules of Montana (ARM) 17.36.103(1)(s).

Proposed Project

The applicants propose to create Lot 1 (6.01 acres), Lot 2 (6.48 acres), Lot 3 (5.50 acres), Lot 4 (1.88 acres), Lot 5 (0.90 acres), Lot 6 0.90 acres), Lot 7 (1.02 acres), Lot 8 (1.40 acres, and Lot 9 (1.86 acres) from the Plat S in the SW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 20, Township 27N, Range 34W, Sanders County, via subdivision. Each new lot will utilize and individual well to serve domestic and lawn & garden uses.

Existing Water Use

There are no existing Groundwater Certificate water uses on Plat S. This leaves 10.00 AF available to appropriate under the water right permit exceptions of MCA § 85-2-306(3)(a)(iii).

Proposed Water Use

The applicants propose to supply water for a domestic use and associated lawn & garden irrigation out of an individual well for each proposed Lot 1-9.

The applicant estimates the proposed uses will require 5.49 AF/year at a pumping rate not to exceed 35.0 gallons per minute (GPM). Any unallocated volume available for additional future appropriations under the water right permit exceptions of MCA § 85-2-306(3)(a)(iii) is shown in the table below.

Reviewed Uses	Property Description (Parcel/Lot/Tract)	Filed Existing Groundwater Certificate	Maximum Volume Allocated (10.0 AF/year)	Volume Allocation by Use (AF/year)			Remaining Volume Available for this Development	Total Project Volume under MCA § 85-2-306(3)(a)(iii)
				Domestic	Lawn and Garden	Total		
Proposed Use	Proposed Lot 1	N/A	1.11	0.28*	0.33	0.61	0.50	
Proposed Use	Proposed Lot 2	N/A	1.11	0.28*	0.33	0.61	0.50	
Proposed Use	Proposed Lot 3	N/A	1.11	0.28*	0.33	0.61	0.50	
Proposed Use	Proposed Lot 4	N/A	1.11	0.28*	0.33	0.61	0.50	
Proposed Use	Proposed Lot 5	N/A	1.11	0.28*	0.33	0.61	0.50	
Proposed Use	Proposed Lot 6	N/A	1.11	0.28*	0.33	0.61	0.50	
Proposed Use	Proposed Lot 7	N/A	1.11	0.28*	0.33	0.61	0.50	
Proposed Use	Proposed Lot 8	N/A	1.11	0.28*	0.33	0.61	0.50	
Proposed Use	Proposed Lot 9	N/A	1.11	0.28*	0.33	0.61	0.50	
---				Development Totals		5.49	4.51	10.00

* Applicant must state their intention to use the 0.28 AF/year/household domestic use volume on their Form 602 instead of the DNRC standard of 1.0 AF/year.

DNRC Conclusion

Based on the information provided in your 15 December 2023 DNRC water right review request, the referenced parcel and well location does fit the current statutes and rules pertaining to filing a water right using a DNRC Notice of Completion of Groundwater Development (Form 602). The proposed appropriations are considered a combined appropriation because proposed Lots 1-9 were not approved with Sanders County prior to October 17, 2014. As noted on Form 602, the diverted flow rate and volume may not exceed 35.0 GPM/well and 10.0 AF/year per development, respectively. Form 602 must be filed within 60 days after first putting water to beneficial use. If a well's flow rate exceeds 35.0 GPM or a development's volume exceeds 10.0 AF/year, then a beneficial water use permit (DNRC Form 600-GW) must be obtained prior to putting water to beneficial use.

In Clark Fork Coalition, et. al. v. DNRC, et. al., 2016 MT 229, 384 Mont. 503, 380 P.3d 771, the Montana Supreme Court concluded that the definition of “combined appropriation” in Admin. R. Mont. 36.12.101(13) was invalid. The Court reinstated the Department’s 1987 Rule defining “combined appropriation” as:

An appropriation of water from the same source aquifer by means of two or more groundwater developments, the purpose of which, in the department’s judgment, could have been accomplished by a single appropriation. Groundwater developments need not be physically connected nor have a common distribution system to be considered a “combined appropriation.”

They can be separate developed springs or wells to separate parts of a project or development. Such wells and springs need not be developed simultaneously. They can be developed gradually or in increments. The amount of water appropriated from the entire project or development from these groundwater developments in the same source aquifer is the “combined appropriation.”

Under this Rule, the Department interprets subdivisions that are either pending before the Department of Environmental Quality for approval on October 17, 2014, or filed after that date, to be a single project that can be accomplished by a single appropriation. Consequently, all wells in such a subdivision will be considered a “combined appropriation” for the purposes of Mont. Code Ann. § 85-2-306. The only exception to this interpretation is that a subdivision which has received preliminary plat approval prior to October 17, 2014, which will not be considered a project under the “combined appropriation” 1987 Rule; individual lots will still be evaluated under the 1987 Rule at the time of an application to the Department. 2015 Mont. Laws § 1, Ch. 221.

This letter does not serve as a pre-approval for a water right. The determination above is based upon the information provided in your request. Prior to issuance of any water right, the owner must make an application or notice to the DNRC for a water right. Applications are processed on a first-come, first-served basis. To ensure timely processing of your water right, please contact DNRC at your earliest convenience to discuss filing requirements.

A copy of this letter and your DNRC review request has been provided to the Department of Environmental Quality (DEQ) and Sanders County. If you have any questions, please contact me at (406) 752-2735 or Kristal.Kiel@mt.gov.

Sincerely,



Kristal Kiel
Water Resource Specialist
Kalispell Regional Water Resource Office
655 Timberwolf Parkway, Suite 4
Kalispell, MT 59901

cc: DEQ, Leata English– via email only
Sanders County, Sean Sorenson – via email only

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December 15, 2023

Via email to DNRCKalispellWater@mt.gov

DNRC

Attn: DNRC Reviewer

655 Timberwolf Parkway, Ste 4

Kalispell, MT 59901-1215

RE: DNRC Water Right Predetermination in accordance with ARM 17.36.103(s)
For Tungsten Holdings, Inc at Blue Creek Subdivision – located at MT Highway
200 Heron, MT 59844

Legally Described as: "S20, T27 N, R34 W, SWNW PLAT S LYING N OF MT HWY 200 27.3
ACRES APPROX"

Geocode: 35-3819-20-2-01-20-0000

Dear Reviewer:

Included with this letter is the water right predetermination request application for a proposed nine (9) lot subdivision on the property legally described above. A copy of the MDEQ Lot Layout showing the proposed subdivision have been provided. There is one tract of record that makes up the +/- 27.3 acre area. Each proposed lot is to include one proposed living unit, one proposed septic, and one proposed well.

There are no existing structures, septic systems, or wells serving the property. The location of the proposed wells is shown on the site plan layout included herein. There are no existing ground water certificates or approved water rights for this property. The property has not been surveyed previously and is over 20 acres in size.

The proposed domestic water use for the nine (9) proposed wells will be 2.52 AF/year, with each well designated 0.28 AF/year. The remaining 7.48 AF/year of use will be designated for lawn and garden irrigation. Converting 7.48 AF/year to acres results in a total of 2.99 acres of allowed water usage and will be allocated evenly between the nine (9) lots at 0.33 acres of irrigable lawn and garden each. As a result, this will remain under the 10 AF/year threshold.

The water use table shown below considers nine (9) proposed wells to serve the nine (9) individual living units which fall under the 10 AF/year allowable annual usage.

Reviewed Uses	Property Description (Parcel/Lot/Tract)	Filed Existing Groundwater Certificate or Water Right	Maximum Volume Allocated to Parcel (10.0 AF/year Limit)	Volume Allocation by Use (AF/year)				Remaining Volume Available	Total Project Volume under MCA 85-2- 306(3)(a)(iii)
				Domestic	Lawn & Garden	Other	Total		
Domestic and Lawn & Garden	Blue Creek Subdivision	N/A	10	2.52	7.48	N/A	10	0	
				Development Totals			10	0	10





Please contact me at Adam.J.Krick@imegcorp.com or Daniel.D.Fultz@imegcorp.com if you have any questions or if you need any additional information or clarification.

Sincerely,
IMEG Corp.

Prepared By:

A handwritten signature in black ink, reading "Adam Krick", positioned above a horizontal line.

Adam Krick
Civil Designer / Civil Designer 1

A handwritten signature in black ink, reading "Daniel D. Fultz", positioned above a horizontal line.

Daniel Fultz
Civil Designer / Registered Sanitarian

Enclosures:
DNRC Predetermination Application
MDEQ Lot Layout
Aerial Site Locator (Vicinity Map)

cc:
File and Scan (w/ enclosures)

\\files\Active\Projects\2022\22003448.00\Design\Civil\CC07 PLANNING\Working Docs\Section D\DNRC\ltr DNRC Predetermination Cover Letter.docx



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 Tungsten Holdings, Inc
 Mailing Address/City/St/Zip MT Highway 200, Heron, MT 59844
 Preferred Phone 406-291-5577 E-Mail projects@tungstenholdings.com

- 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 project proposes a nine (9) lot subdivision of the property. Each proposed lot created will be served by one proposed dwelling unit, one proposed individual septic system, and one proposed individual drinking well.

Geocode of Existing Property: 35-3819-20-2-01-20-0000

Legal Land Description of Project Area:

1/4 1/4 Section 20 TWP 27 N RGE 34 W County Sanders
1/4 1/4 Section TWP RGE County

- Subdivision Plat Information**

Subdivision/Plat Name: Blue Creek Subdivision

Total number of proposed lots: 9 Lot sizes: From approx 0.91 to 6.49

Current landowner: Tungsten Holdings, Inc

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.

There is no existing water use on this property.

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. There is no existing water use on this property.

Explain how the existing water uses will operate with the proposed project and new uses of water.

See cover letter attached with the application for a detailed description.

- **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: 9	$0.28 \times 9 = 2.52$ AF/year
Lawn & Garden	<u>0.33</u> Acres/Lot x <u>9</u> Lots = <u>2.97</u> Total Acres	$0.33 \times 9 = 2.97$ AF/year
Commercial or Industrial	Type:	
Stock	Type and number of animal units proposed:	
Other	Describe:	

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:

See cover letter attached with the application for a detailed description

Diversion Means

☒ New Well ☐ Existing Well: GWIC ID _____ Water Right Number _____

☐ Developed Spring ☐ Pit

Flow rate: _____ GPM

Total number of wells: ⁹ _____

If multiple wells are being proposed, explain the use for each well. _____

The proposed individual wells will serve one single-family residence each, for the purposes of a drinking water supply.

- **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.

Parcel

Owner Signature

Myrden Holdings Tim Rooy

FOR MDEQ USE

RECEIVED STAMP:

APPROVAL STAMP

EQ #:

PURPOSE OF LOT LAYOUT:

Subdivision Approval.

MDEQ LOT LAYOUT NOTES:

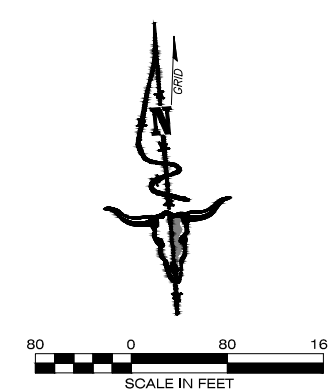
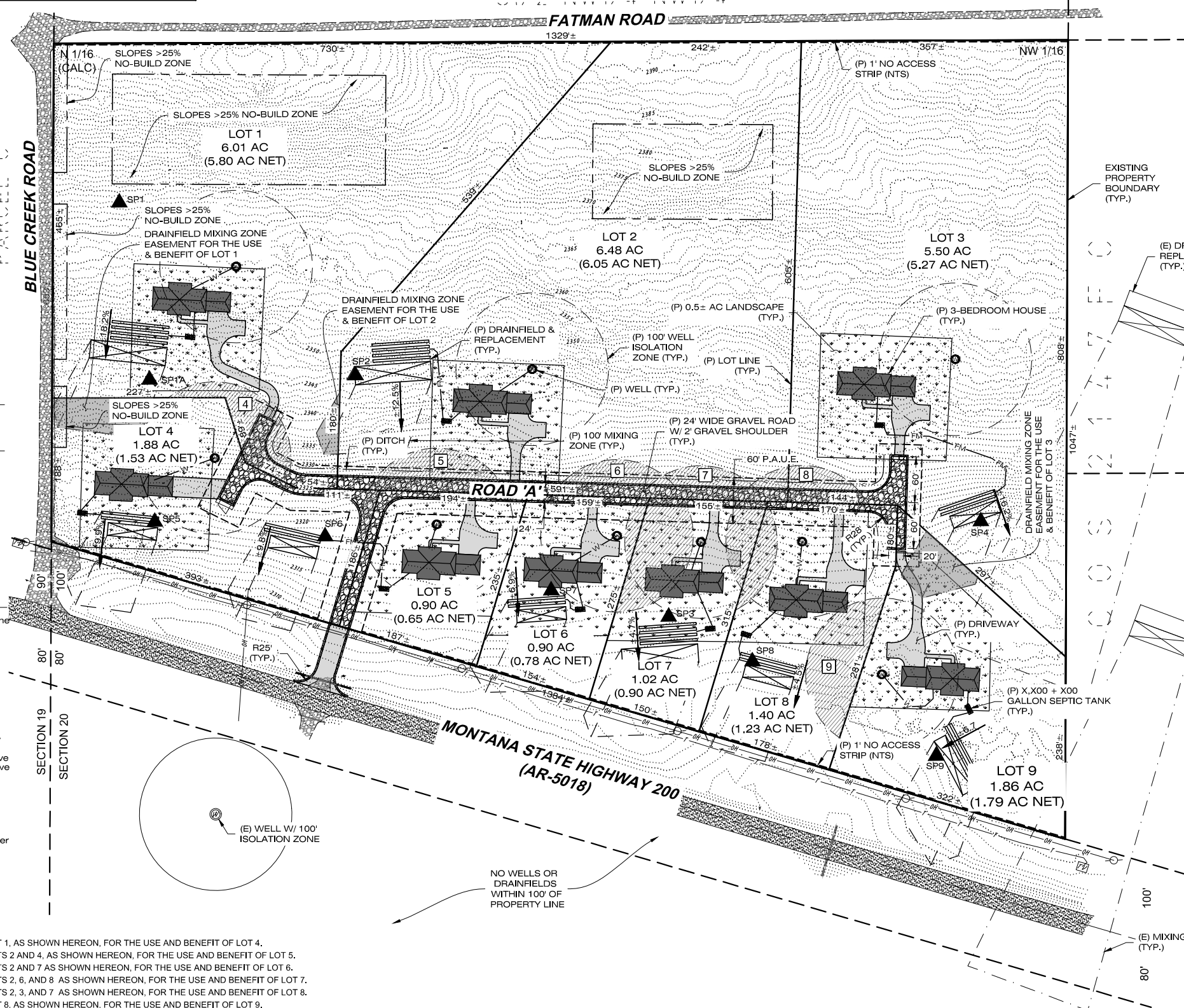
- Known existing, previously approved, or proposed wells, wastewater treatment systems, or mixing zones on or within 100' of the subdivision, have been shown on this Lot Layout.
- All setbacks in ARM 17.36.323 are met.
- Proposed home and driveway locations are provided as conceptual in nature. This Lot Layout shall in no way act as a regulatory document for siting homes or driveways.
- There are no known existing contaminants within 500' of proposed well.

LOT LAYOUT REQUIREMENTS - ARM 17.36.104(2):

- The name of the subdivision, and the county, section, township and range in which the proposed subdivision is located have been listed in the title block to the right.
- A north arrow and scale are shown on this sheet.
- The boundaries, dimensions, and total area of each lot are shown for all lots.
- An identifier or number for each lot (e.g., 'lot 1, lot 2', 'tract 1, tract 2', or 'parcel 1, parcel 2') has been included.
- Existing and proposed easements are shown on the Lot Layout.
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- Locations, sizes, and design details of proposed storm water structures have been shown on the Lot Layout. There are no existing storm water structures.
- There are no drainage ways for this project.
- The name and affiliation of the person who prepared the lot layout is listed in the lower right side and title block, respectively.
- All applicable information as set out in Table 1 for the specific water supply and wastewater systems in the subdivision has been shown. All systems have been labeled or listed in the legend as "existing" or "proposed". There are no floodplain boundaries on this subdivision.

WELL ISOLATION ZONE EASEMENTS:

- A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-4) AS PER 17.36.101(71) ARM ON LOT 1, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 4.
- A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-5) AS PER 17.36.101(71) ARM ON LOTS 2 AND 4, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 5.
- A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-6) AS PER 17.36.101(71) ARM ON LOTS 2 AND 7 AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 6.
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- A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-9) AS PER 17.36.101(71) ARM ON LOT 8, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 9.



BASIS OF BEARING
MONTANA STATE PLANE ZONE
2500 GROUND (TRUE)
DISTANCES GRID NORTH

VERTICAL DATUM
NAVD88

- LEGEND**
- (E) PROPERTY BOUNDARY
 - (E) ADJACENT PROPERTY BOUNDARY
 - (E) MAJOR CONTOUR
 - (E) MINOR CONTOUR
 - (E) ASPHALT
 - (E) GRAVEL
 - (E) CULVERT
 - (E) DRAINFIELD
 - (E) SOIL PROFILE
 - (E) WELL
 - (P) PROPERTY BOUNDARY
 - (P) EASEMENT
 - (P) DITCH
 - (W) (P) WATER LINE
 - (S) (P) SEWER LINE
 - (FM) (P) SEWER FORCE MAIN
 - (P) CULVERT
 - (P) ASPHALT
 - (P) GRAVEL
 - (P) DEFENSIBLE BUFFER
 - (P) SEPTIC TANK
 - (P) DRAINFIELD
 - (P) WELL
 - (P) SIGN
 - (P) GROUND SLOPE CROSS DRAINFIELD
 - ±2.0% P.A.U.E. PRIVATE ACCESS & UTILITY EASEMENT
 - (P) PROPOSED
 - (E) EXISTING
 - NTS NOT TO SCALE
 - AC ACRES
 - COS CERTIFICATE OF SURVEY
 - WISE WELL ISOLATION ZONE EASEMENT

IMEG
1817 SOUTH AVE. W. STE. A
MISSOULA, MT 59801
PH: 406.721.0142
FAX: 406.721.5224
www.imegcorp.com

PLAT DATE: 11/22/2023 10:24 AM

DATE	
DESIGNED:	DF
DRAFTED:	BRB
CHECKED:	DF/TR
DATE:	NOV., 2023

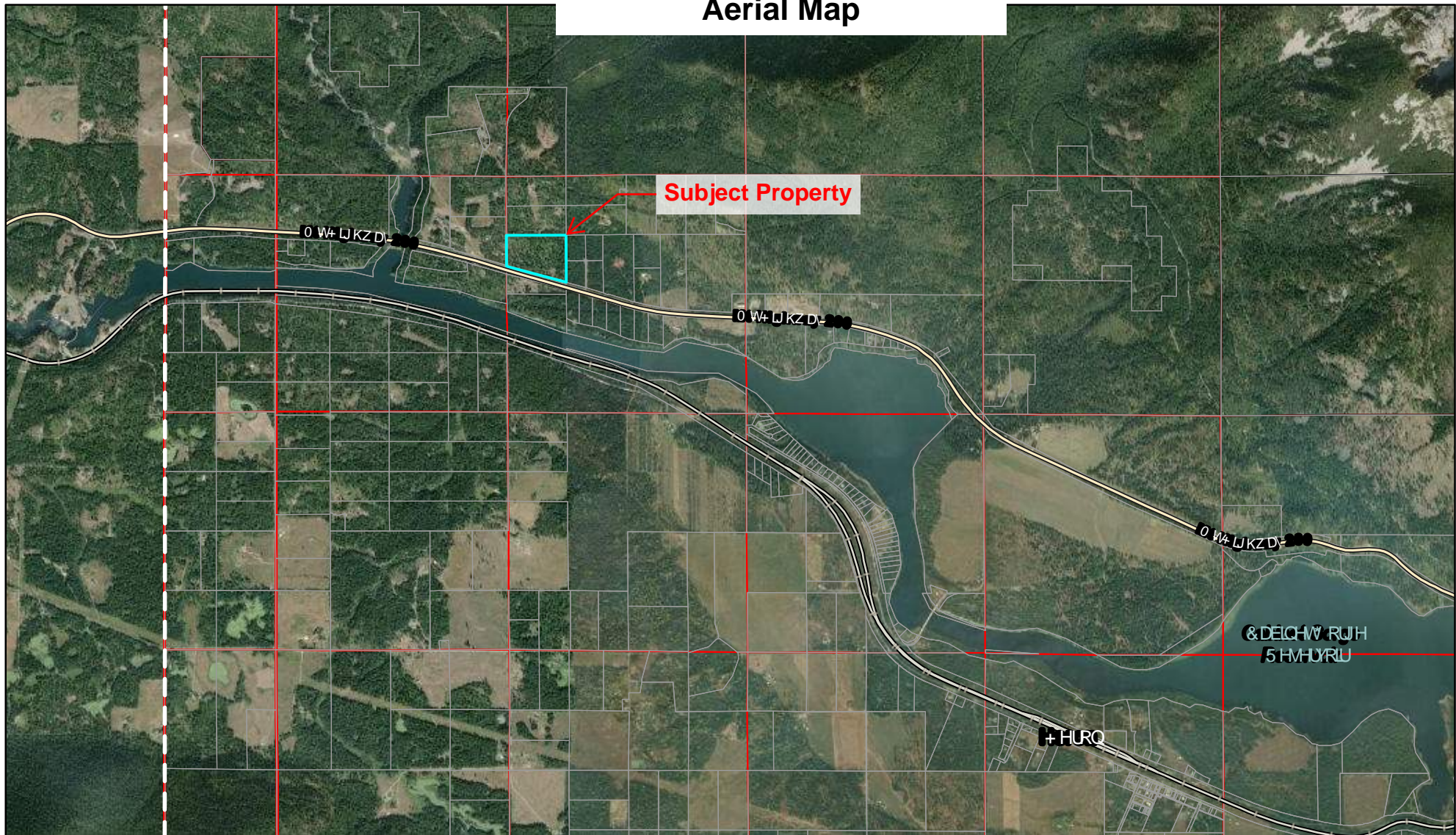
REVISIONS	

LOCATION:	HIGHWAY 200 SECTION 20, T.27N., R.34W. SANDERS, COUNTY
PREPARED FOR:	TUNGSTEN HOLDINGS INC

PROJECT NAME	BLUE CREEK SUBDIVISION
PROJECT NO.	22003448
SHEET:	1 OF 1
SHEET TITLE:	MDEQ LOT LAYOUT (PER ARM 17.36.104(2))

PREPARED BY: BRAD BELLAIRE

Aerial Map



30

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Please contact me at Adam.J.Krick@imegcorp.com or Daniel.D.Fultz@imegcorp.com if you have any questions or if you need any additional information or clarification.

Sincerely,
IMEG Corp.

Prepared By:

A handwritten signature in black ink, reading "Adam Krick", written over a horizontal line.

Adam Krick
Civil Designer / Civil Designer 1

A handwritten signature in black ink, reading "Daniel D. Fultz", written over a horizontal line.

Daniel Fultz
Civil Designer / Registered Sanitarian

Enclosures:
DNRC Predetermination Application
MDEQ Lot Layout
Aerial Site Locator (Vicinity Map)

cc:
File and Scan (w/ enclosures)

\\files\Active\Projects\2022\22003448.00\Design\Civil\CC07 PLANNING\Working Docs\Section D\DNRC\ltr DNRC Predetermination Cover Letter.docx



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 Tungsten Holdings, Inc
 Mailing Address/City/St/Zip MT Highway 200, Heron, MT 59844
 Preferred Phone 406-291-5577 E-Mail projects@tungstenholdings.com

- 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 project proposes a nine (9) lot subdivision of the property. Each proposed lot created will be served by one proposed dwelling unit, one proposed individual septic system, and one proposed individual drinking well.

Geocode of Existing Property: 35-3819-20-2-01-20-0000

Legal Land Description of Project Area:

1/4 1/4 Section 20 TWP 27 N RGE 34 W County Sanders
1/4 1/4 Section TWP RGE County

- Subdivision Plat Information**

Subdivision/Plat Name: Blue Creek Subdivision

Total number of proposed lots: 9 Lot sizes: From approx 0.91 to 6.49

Current landowner: Tungsten Holdings, Inc

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.

There is no existing water use on this property.

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. There is no existing water use on this property.

Explain how the existing water uses will operate with the proposed project and new uses of water.

See cover letter attached with the application for a detailed description.

- **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: 9	$0.28 \times 9 = 2.52$ AF/year
Lawn & Garden	<u>0.33</u> Acres/Lot x <u>9</u> Lots = <u>2.97</u> Total Acres	$0.33 \times 9 = 2.97$ AF/year
Commercial or Industrial	Type:	
Stock	Type and number of animal units proposed:	
Other	Describe:	

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:

See cover letter attached with the application for a detailed description

Diversion Means

☒ New Well ☐ Existing Well: GWIC ID _____ Water Right Number _____

☐ Developed Spring ☐ Pit

Flow rate: _____ GPM

Total number of wells: ⁹ _____

If multiple wells are being proposed, explain the use for each well. _____

The proposed individual wells will serve one single-family residence each, for the purposes of a drinking water supply.

- **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.

Parcel

Owner Signature

Myrden Holdings Tim Rooy

FOR MDEQ USE

RECEIVED STAMP:

APPROVAL STAMP

EQ #:

PURPOSE OF LOT LAYOUT:

Subdivision Approval.

MDEQ LOT LAYOUT NOTES:

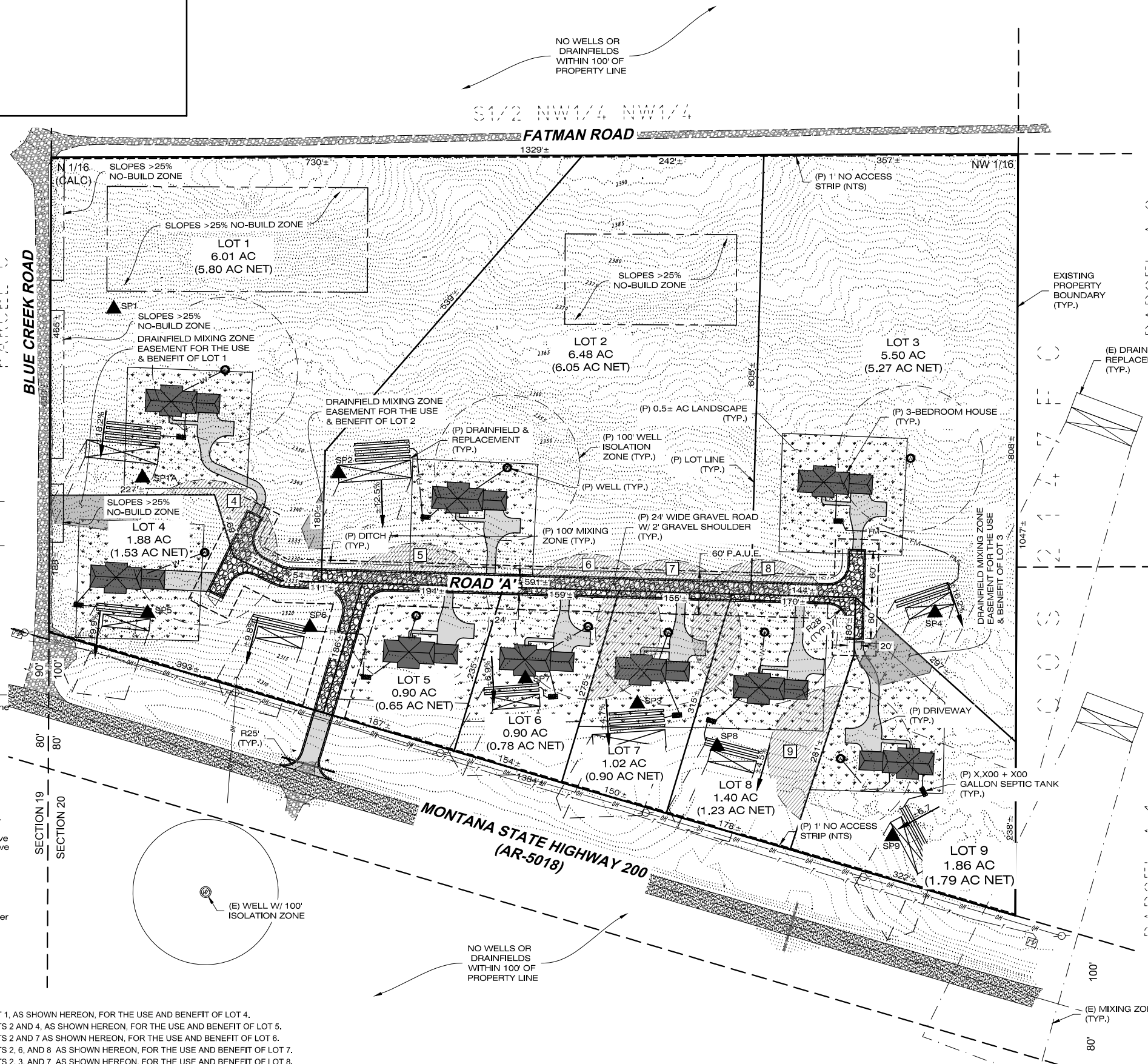
- Known existing, previously approved, or proposed wells, wastewater treatment systems, or mixing zones on or within 100' of the subdivision, have been shown on this Lot Layout.
- All setbacks in ARM 17.36.323 are met.
- Proposed home and driveway locations are provided as conceptual in nature. This Lot Layout shall in no way act as a regulatory document for siting homes or driveways.
- There are no known existing contaminants within 500' of proposed well.

LOT LAYOUT REQUIREMENTS - ARM 17.36.104(2):

- The name of the subdivision, and the county, section, township and range in which the proposed subdivision is located have been listed in the title block to the right.
- A north arrow and scale are shown on this sheet.
- The boundaries, dimensions, and total area of each lot are shown for all lots.
- An identifier or number for each lot (e.g., 'lot 1, lot 2', 'tract 1, tract 2', or 'parcel 1, parcel 2') has been included.
- Existing and proposed easements are shown on the Lot Layout.
- Utilities as shown here are specific to water and sewer. This layout does not show existing or proposed electrical, gas, or communication utilities. It also does not show privately owned utilities such as sewer or water service lines, propane tanks/lines, electrical and gas service lines, or underground sprinkler systems. Existing roads have been shown. There are no existing utilities. Proposed road, driveways and utilities have been shown.
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- | | |
|---|---|
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LEGEND	
	(E) PROPERTY BOUNDARY
	(E) ADJACENT PROPERTY BOUNDARY
	(E) MAJOR CONTOUR
	(E) MINOR CONTOUR
	(E) ASPHALT
	(E) GRAVEL
	(E) CULVERT
	(E) DRAINFIELD
	(E) SOIL PROFILE
	(E) WELL
	(P) PROPERTY BOUNDARY
	(P) EASEMENT
	(P) DITCH
	(P) WATER LINE
	(P) SEWER LINE
	(P) SEWER FORCE MAIN
	(P) CULVERT
	(P) ASPHALT
	(P) GRAVEL
	(P) DEFENSIBLE BUFFER
	(P) SEPTIC TANK
	(P) DRAINFIELD
	(P) WELL
	(P) SIGN
	(P) GROUND SLOPE CROSS DRAINFIELD
	PRIVATE ACCESS & UTILITY EASEMENT
	PROPOSED
	EXISTING
	NOT TO SCALE
	ACRES
	CERTIFICATE OF SURVEY
	WELL ISOLATION ZONE EASEMENT

PREPARED BY: BRAD BELLAIRE

IMEG

1817 SOUTH AVE. W. STE. A
MISSOULA, MT 59801
PH: 406.721.0142
FAX: 406.721.5224
www.imegcorp.com

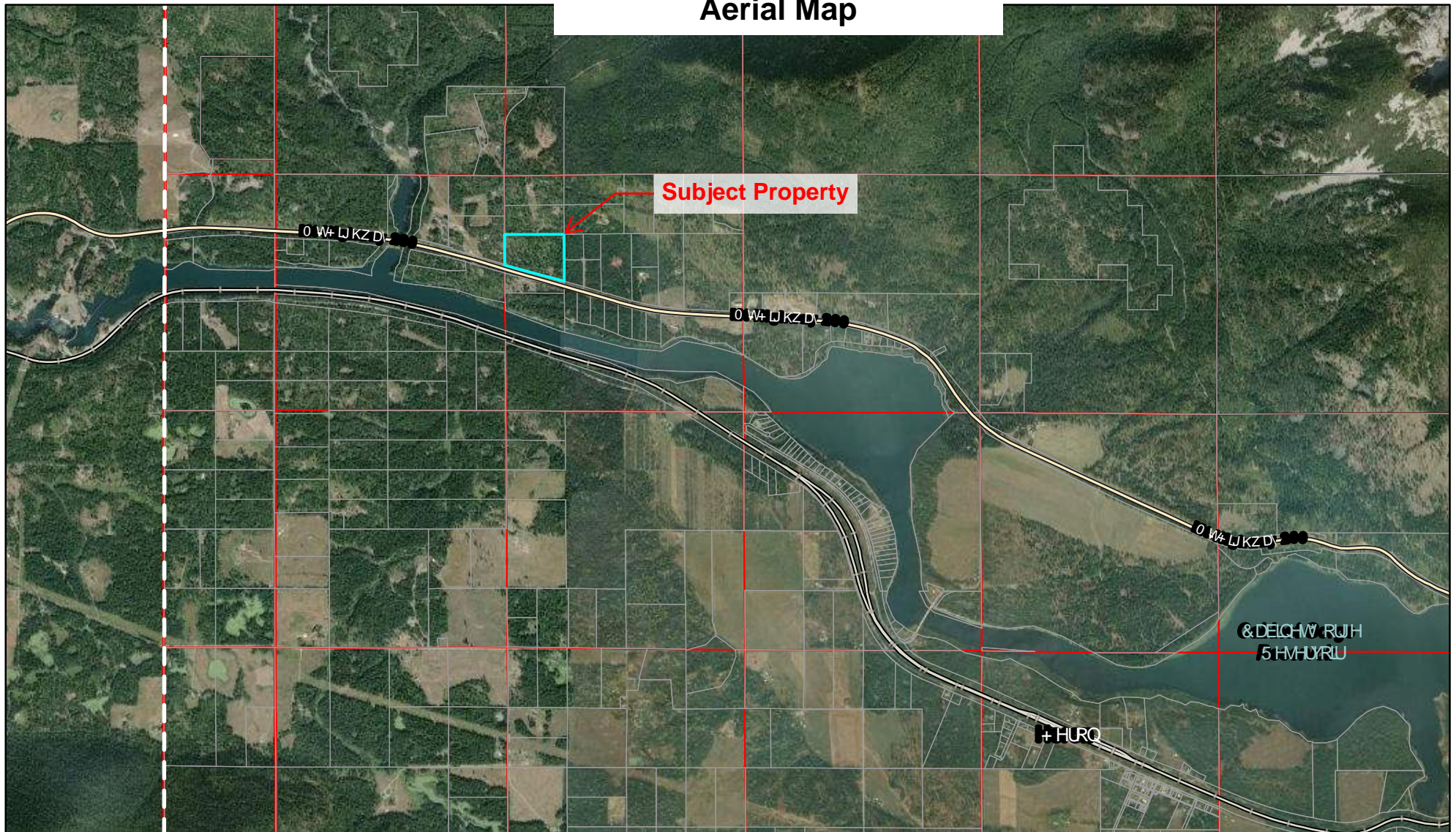
DATE	
DESIGNED	DF
DRAFTED	BRB
CHECKED	DF/TR
DATE	NOV. 2023

DESIGNED	DF
DRAFTED	BRB
CHECKED	DF/TR
DATE	NOV. 2023

LOCATION:	HIGHWAY 200 SECTION 20, T.27N., R.34W. SANDERS, COUNTY
PREPARED FOR:	TUNGSTEN HOLDINGS INC

PROJECT NAME	BLUE CREEK SUBDIVISION
PROJECT NO.	22003448
SHEET	1 OF 1
SHEET TITLE	MDEQ LOT LAYOUT (PER ARM 17.36.104(2))

Aerial Map



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Sanders and Parts of Lincoln and Flathead Counties, Montana

88C—Dewberry ashy silt loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 57qk

Elevation: 2,200 to 3,800 feet

Mean annual precipitation: 22 to 34 inches

Mean annual air temperature: 43 to 45 degrees F

Frost-free period: 60 to 105 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Dewberry and similar soils: 90 percent

Minor components: 10 percent

*Estimates are based on observations, descriptions, and transects of
the mapunit.*

Description of Dewberry

Setting

Landform: Stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Volcanic ash over alluvium or outwash

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material

Bw1 - 1 to 10 inches: ashy silt loam

Bw2 - 10 to 24 inches: gravelly ashy silt loam

2C1 - 24 to 39 inches: extremely cobbly coarse sandy loam

2C2 - 39 to 60 inches: extremely gravelly sandy loam

Properties and qualities

Slope: 2 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

Ecological site: F043AP902MT - ASHY COOL-MOIST
WOODLAND ESG 43A LRU P

Other vegetative classification: western hemlock/queencup beadlily
(CN570)

Hydric soil rating: Unranked

Minor Components

Glaciercreek

Percent of map unit: 5 percent

Landform: Stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: western hemlock/queencup beadlily
(CN570)

Hydric soil rating: No

Tamarack

Percent of map unit: 3 percent

Landform: Stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: western hemlock/queencup beadlily
(CN570)

Hydric soil rating: No

Dewberry, greater slope

Percent of map unit: 2 percent

Landform: Stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: western hemlock/queencup beadlily
(CN570)

Hydric soil rating: No

Data Source Information

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties,
Montana

Survey Area Data: Version 22, Sep 2, 2021

Sanders and Parts of Lincoln and Flathead Counties, Montana

781D—Fernline-Cabinet ashy silt loams, 4 to 15 percent slopes

Map Unit Setting

National map unit symbol: 57n6

Elevation: 2,100 to 2,800 feet

Mean annual precipitation: 28 to 38 inches

Mean annual air temperature: 43 to 45 degrees F

Frost-free period: 90 to 120 days

Farmland classification: Farmland of local importance

Map Unit Composition

Fernline and similar soils: 50 percent

Cabinet and similar soils: 40 percent

Minor components: 10 percent

*Estimates are based on observations, descriptions, and transects of
the mapunit.*

Description of Fernline

Setting

Landform: Lake plains, lake terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Volcanic ash over glaciolacustrine deposits

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material

Bw - 2 to 11 inches: ashy silt loam

2E - 11 to 16 inches: silty clay loam

2Bt - 16 to 60 inches: silty clay

Properties and qualities

Slope: 4 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low
to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: D

Ecological site: F043AP910MT - UPLAND COOL-MOIST
WOODLAND ESG 43A LRU P

Other vegetative classification: western hemlock/queencup beadlily
(CN570)

Hydric soil rating: No

Description of Cabinet

Setting

Landform: Lake plains, lake terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Volcanic ash over glaciolacustrine deposits

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material

Bw - 1 to 12 inches: ashy silt loam

2E/Bt - 12 to 20 inches: silty clay loam

2Bt1 - 20 to 36 inches: clay

3Bt2 - 36 to 60 inches: stratified very fine sandy loam to clay

Properties and qualities

Slope: 4 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low
to moderately low (0.00 to 0.06 in/hr)

Depth to water table: About 6 to 24 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: D

Ecological site: F043AP910MT - UPLAND COOL-MOIST
WOODLAND ESG 43A LRU P

Other vegetative classification: western hemlock/queencup beadlily
(CN570)

Hydric soil rating: No

Minor Components

Fernline, greater slope

Percent of map unit: 5 percent

Landform: Lake plains, lake terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: western hemlock/queencup beadlily
(CN570)

Hydric soil rating: No

Iffgulch

Percent of map unit: 5 percent

Landform: Swales

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: spruce/common horsetail (PK410)

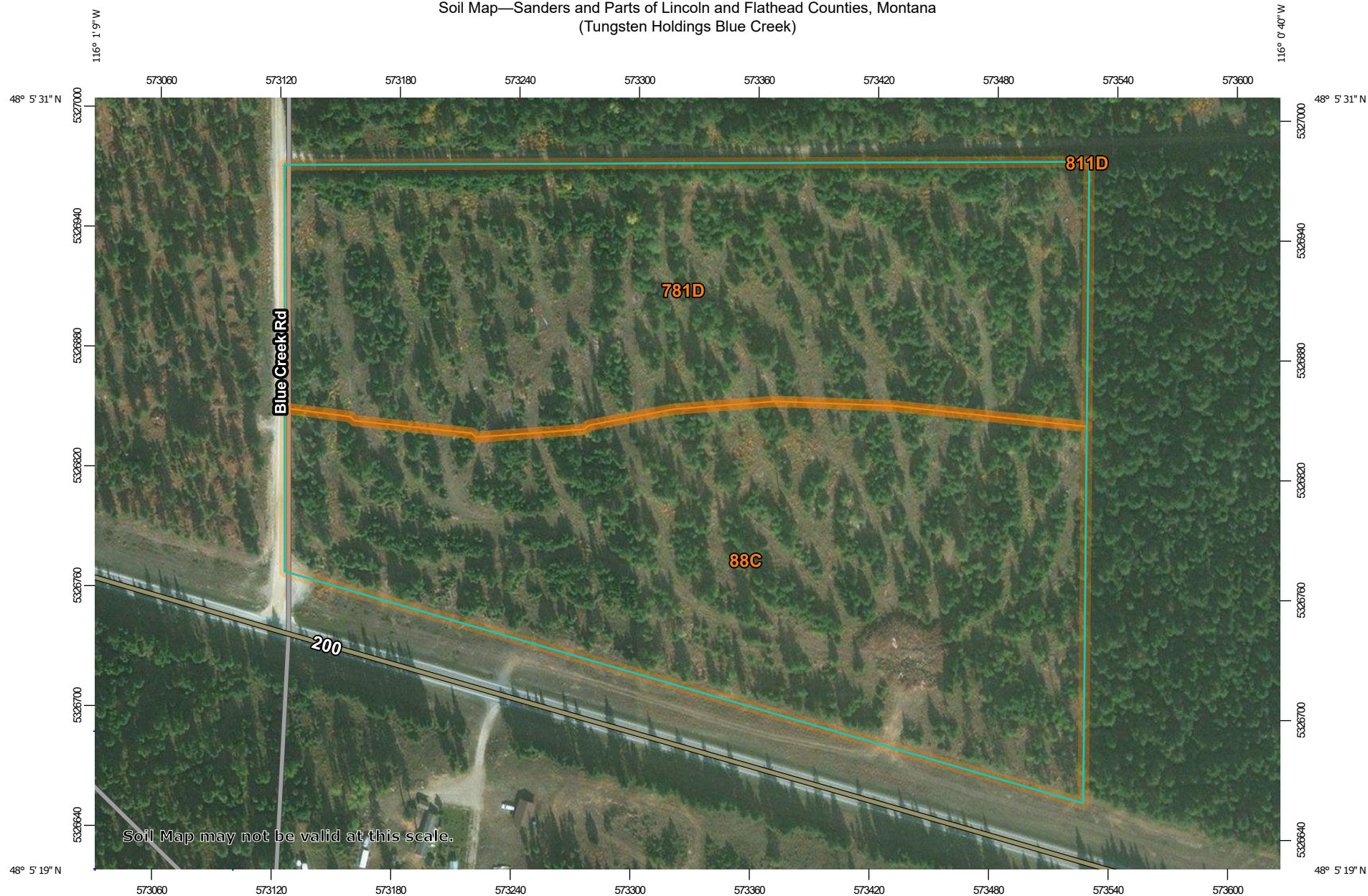
Hydric soil rating: Yes

Data Source Information

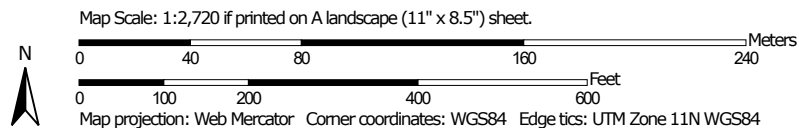
Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties, Montana

Survey Area Data: Version 22, Sep 2, 2021

Soil Map—Sanders and Parts of Lincoln and Flathead Counties, Montana
(Tungsten Holdings Blue Creek)



Soil Map may not be valid at this scale.



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

7/12/2022
Page 1 of 3

Soil Map—Sanders and Parts of Lincoln and Flathead Counties, Montana
(Tungsten Holdings Blue Creek)

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



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 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: Sanders and Parts of Lincoln and Flathead Counties, Montana

Survey Area Data: Version 22, 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: Aug 15, 2010—Sep 14, 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
88C	Dewberry ashy silt loam, 2 to 8 percent slopes	13.5	51.6%
781D	Fernline-Cabinet ashy silt loams, 4 to 15 percent slopes	12.7	48.4%
811D	Noxlin-Fernline ashy silt loams, 4 to 15 percent slopes, stony	0.0	0.0%
Totals for Area of Interest		26.2	100.0%



PRIVATE SUBDIVISION ROAD REGISTER

ROAD NAME: (Limited to 12 characters including spaces. Not including the abbreviation, Rd, Ln, Dr, etc.)

1st Choice Blue Sky Drive

2nd Choice _____

3rd Choice _____

4th Choice _____

Road Location: Township 27 N Range 34 W Section(s) 20

Subdivision Name: Blue Creek Subdivision COS # _____

Legal Description: S20, T27 N, R34 W, SWNW PLAT S LYING N OF MT HWY 200 27.3 ACRES APPROX

Submitted by: IMEG Corp./Tamara Ross
(name)
1817 South Ave W Missoula, MT 59801
(address)
(406) 272-0253 / Tamara.R.Ross@imegcorp.com
(phone number/Email)

Signatures of property owners:

Tungsten Holdings Inc. Ross

Date: 12-7-23

For official use only

Name accepted: BLUE SKY DRIVE

Road number: _____

Location check: Township 27 N Range 34 W Section(s) 20

Subdivision Name: _____ COS # _____

Description: HERON

Computer entry: Ashley Bache



PRIVATE SUBDIVISION ROAD REGISTER

ROAD NAME: (Limited to 12 characters including spaces. Not including the abbreviation, Rd, Ln, Dr, etc.)

1st Choice Blue Sky Court

2nd Choice _____

3rd Choice _____

4th Choice _____

Road Location: Township 27 N Range 34 W Section(s) 20

Subdivision Name: Blue Creek Subdivision COS # _____

Legal Description: S20, T27 N, R34 W, SWNW PLAT S LYING N OF MT HWY 200 27.3 ACRES APPROX

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Signatures of property owners:

Tungsten Holdings Inc. Ross

Date: 12-7-23

For official use only

Name accepted: BIG SKY COURT

Road number: _____

Location check: Township 27 N Range 34 W Section(s) 20

Subdivision Name: _____ COS # _____

Description: HERON

Computer entry: Ashley Bache

S1/2 NW1/4 NW1/4



60 0 60 120
SCALE IN FEET

BASIS OF BEARING
MONTANA STATE PLANE ZONE
2500' GROUND (TRUE)
DISTANCES GRID NORTH

VERTICAL DATUM
NAVD88



112 SOUTH AVE. W. STE. A PM 400.771.0542
MINNEAPOLIS, MINN. 55414
90801
www.imegcorp.com

DATE	
REVISIONS	
DESIGNED: <i>DF</i>	
DRAFTED: <i>RE</i>	
CHECKED: <i>DF/RE</i>	
DATE: <i>NOV. 2024</i>	

LOCATION	HIGHWAY 200 SECTION 20, T.12N., R.34W., SANDERS, COUNTY
PREPARED FOR	TUNGSTEN HOLDINGS INC

PROJECT NAME	BLUE CREEK SUBDIVISION
SHEET TITLE	SUPPLEMENTAL DATA SHEET

PROJECT NO.	22003448
SHEET	1 OF 1

BLUE CREEK ROAD

PARCEL A-2

PARCEL A-1

LEGEND

- (E) PROPERTY BOUNDARY
- (E) ADJACENT PROPERTY BOUNDARY
- (E) MAJOR CONTOUR
- (E) MINOR CONTOUR
- (E) ASPHALT
- (E) GRAVEL
- (E) CULVERT
- (E) DRAINFIELD
- (E) SOIL PROFILE
- (E) WELL
- (P) PROPERTY BOUNDARY
- (E) EASEMENT
- (P) DITCH
- (P) WATER LINE
- (P) SEWER LINE
- (P) SEWER FORCE MAIN
- (P) CULVERT
- (P) ASPHALT
- (P) GRAVEL
- (P) DEFENSIBLE BUFFER
- (P) SEPTIC TANK
- (P) DRAINFIELD
- (P) WELL
- (P) SIGN
- (P) PRIVATE ACCESS & UTILITY EASEMENT
- (P) PROPOSED
- (E) EXISTING
- NOT TO SCALE
- AC
- COS
- WISE
- CERTIFICATE OF SURVEY
- WELL ISOLATION ZONE EASEMENT

WELL ISOLATION ZONE EASEMENTS:

- A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-4) AS PER 17.36.101(71) ARM ON LOT 1, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 4.
- A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-5) AS PER 17.36.101(71) ARM ON LOTS 2 AND 4, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 5.
- A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-6) AS PER 17.36.101(71) ARM ON LOTS 3 AND 7 AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 6.
- A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-7) AS PER 17.36.101(71) ARM ON LOTS 2, 6, AND 8 AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 7.
- A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-8) AS PER 17.36.101(71) ARM ON LOTS 2, 3, AND 7 AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 8.
- A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-9) AS PER 17.36.101(71) ARM ON LOT 8, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 9.



SANDERS COUNTY
SUBDIVISION ROAD CONSTRUCTION
APPLICATION/PERMIT / INSPECTION

\$250.00 for first private road
\$100.00 for each additional private road.

TOTAL DUE _____

CONTRACTOR: _____ EMAIL: _____ PHONE: _____

NAME OF SUBDIVISION: _____ LOCATION: _____

OF ROAD(S): _____ ACCESSING OFF: _____ ROAD DISTRICT: _____

- DISTRICT 1 & 2 ROAD FOREMAN BEN BACHE 1-406-531-1711

- ☒ DISTRICT 3 ROAD FOREMAN LEE SMITH 1-406-827-3691

REQUIRED SPECIFICATIONS ATTACHED.

**CONTACT THE ROAD FOREMAN FOR ALL INSPECTIONS LISTED BELOW AND FOR
APPROVAL OF MATERIALS TO BE USED.
PLEASE PROVIDE 24 HOURS NOTICE FOR INSPECTION.**

CONTRACTOR SIGNATURE

DATE

PERMIT ISSUED _____ BY _____

ROAD FOREMAN INSPECTIONS:

____ PRE-CONSTRUCTION DATE: _____

____ GRUB AND CLEAR TO MINERAL SOIL DATE: _____

____ BASE MATERIAL AND COMPACTION DATE: _____

____ FINAL ACCEPTANCE/SIGN INSTALLED/MAIL BOXES DATE: _____

ROAD FORMAN SIGNATURE

AMOUNT RECEIVED: _____ BY: _____ DATE: _____

TUNGSTEN HOLDINGS, INC
P.O. BOX 1213
LIBBY, MT 59923
406-293-3714

GLACIER BANK
LIBBY, MT 59923
93-11627225

38344

12/26/2023

PAY TO THE ORDER OF Sanders County

\$ **250.00

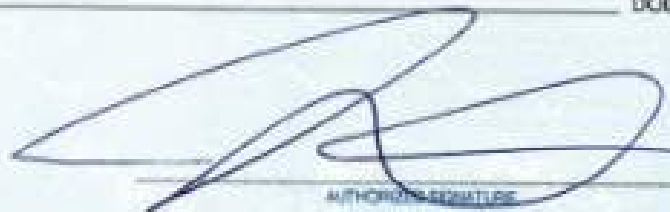
Two Hundred Fifty and 00/100*****

DOLLARS

Sanders County

MEMO

Private road construction app fee

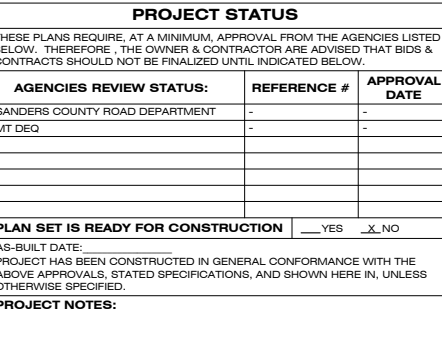

AUTHORIZED SIGNATURE

⑆038344⑆ ⑆292970825⑆ 029921345⑆

Photo Safe Deposit®

Details on Back

LOCATED AT THE INTERSECTION OF HIGHWAY 200 & BLUE CREEK ROAD
LOCATED IN SECTION 20, T.27N., R.34W., P.M.M., SANDERS COUNTY, MONTANA.



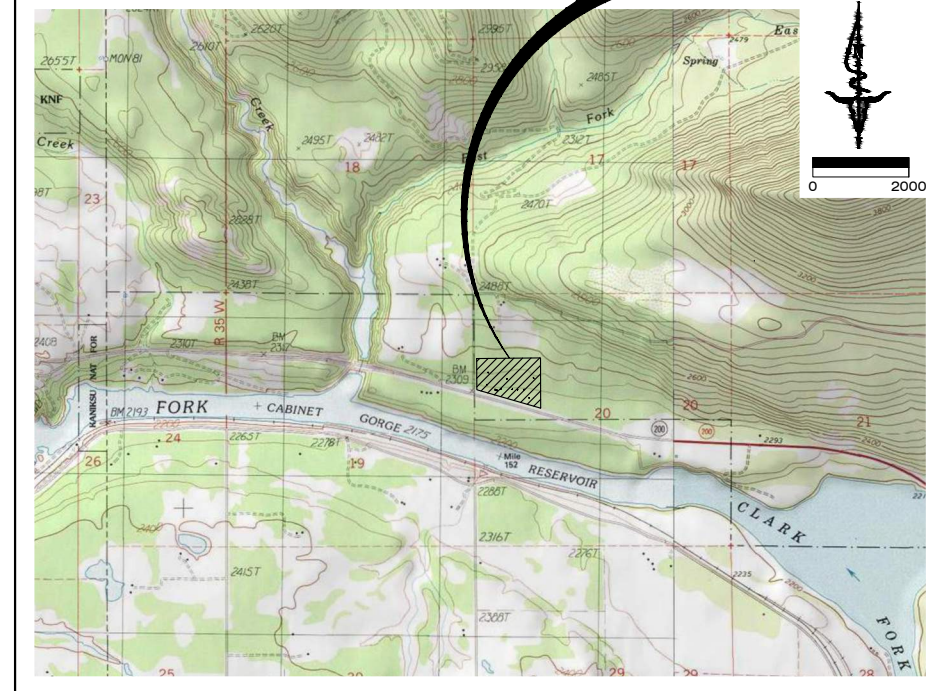
CALL UTILITY NOTIFICATION
CENTER OF MONTANA
1-800-424-5555
CALL FOR THE MARKING OF
UNDERGROUND UTILITIES
2 BUSINESS DAYS BEFORE
YOU DIG, GRADE, OR EXCAVATE



SHEET INDEX

DESCRIPTION	SHEET NO.
LEGEND AND NOTES	SHEET 2 OF 12
SWPPP PLAN	SHEET 3 OF 12
PLAN & PROFILE - BLUE SKY DRIVE (STA: 0+00 - 2+76.52)	SHEET 4 OF 12
PLAN & PROFILE - BLUE SKY COURT (STA: 5+00 - 6+83.35) / BLUE SKY DRIVE (STA: 6+83.35 - 10+00)	SHEET 5 OF 12
PLAN & PROFILE - BLUE SKY DRIVE (STA: 10+00 - 13+60.78)	SHEET 6 OF 12
STORM PLAN	SHEET 7 OF 12
CROSS SECTIONS - BLUE SKY DRIVE (STA: 0+00 - 2+76.52)	SHEET 8 OF 12
CROSS SECTIONS - BLUE SKY COURT (STA: 5+00 - 6+00)	SHEET 9 OF 12
CROSS SECTIONS - BLUE SKY COURT (STA: 6+50 - 6+83.35) / BLUE SKY DRIVE (STA: 6+83.35 - 8+50)	SHEET 10 OF 12
CROSS SECTIONS - BLUE SKY DRIVE (STA: 9+00 - 11+50)	SHEET 11 OF 12
CROSS SECTIONS - BLUE SKY DRIVE (STA: 12+00 - 13+22.78)	SHEET 12 OF 12
DETAIL SHEET	SHEET D1 OF D2
DETAIL SHEET	SHEET D2 OF D2

VICINITY MAP



HERON, SANDERS COUNTY

[illegible]

DESIGNED: DF
 DRAFTED: AE
 CHECKED: CD
 DATE: JAN. 202

SECTION 20, T.27N., R.34W., P.M.M.
SANDERS COUNTY, MONTANA

TUNGSTEN HOLDINGS, INC.

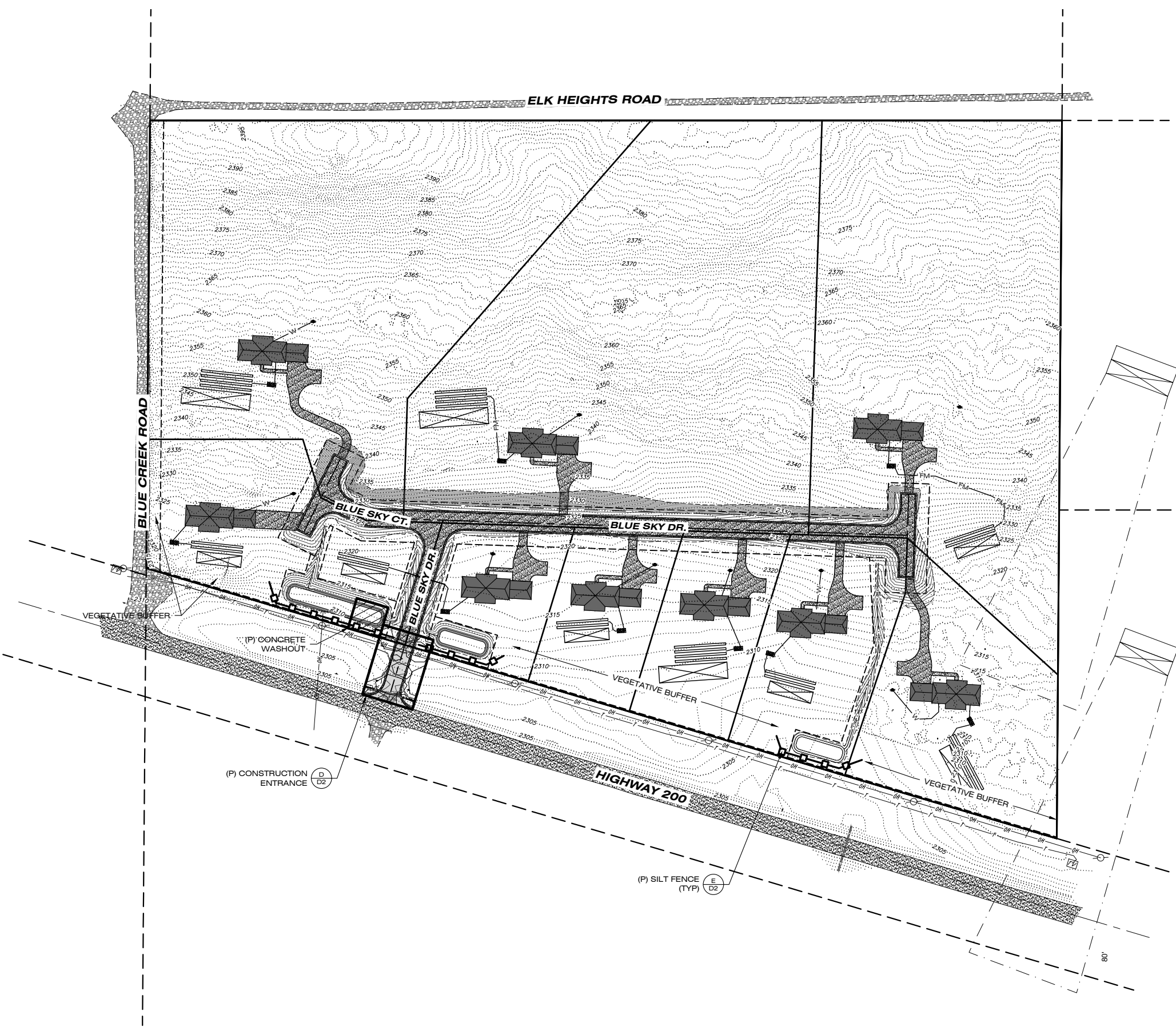
BLUE CREEK SUBDIVISION

22003448

ROAD CONSTRUCTION PLANS COVER SHEET

22003448
SHEET:
1 OF 11

WG LOCATION: G:\2022\22003448.00\DESIGN\CIVIL\C3D\PLOT\CIVIL-22003448.DWG



LEGEND

- SILT FENCE
- EXISTING ASPHALT
- PROPOSED ASPHALT
- PROPOSED CONCRETE



STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NOTES

- CONTRACTOR IS TO BE FAMILIAR WITH THE REQUIREMENTS OF SECTION 402(P) OF THE FEDERAL CLEAN WATER ACT AND REGULATIONS ADOPTED BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA). (AMENDMENTS TO TITLE 40 OF THE CODE OF FEDERAL REGULATIONS, PART 122, PUBLISHED IN THE FEDERAL REGISTER ON NOVEMBER 16, 1990 AND ON APRIL 2, 1992.) ALSO, DEQ 1200-C PERMIT FOR THE CONTROL OF STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
- CONTRACTOR IS TO BE FAMILIAR WITH ALL REQUIREMENTS OF THE SWPPP.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH LOCAL JURISDICTION AND MONTANA DEQ FOR EROSION AND SEDIMENT CONTROL.
- THE TEMPORARY POLLUTION CONTROL SYSTEM SHALL BE INSTALLED PRIOR TO ALL OTHER CONSTRUCTION.
- ALL EQUIPMENT MAINTENANCE AND RE-FUELING SHALL BE CONDUCTED IN A SAFE MANNER AND SPILL KITS SHALL BE MAINTAINED ON-SITE TO CLEAN ANY SPILLS THAT MAY OCCUR.
- ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY SUITABLE APPLICATION OF BEST MANAGEMENT PRACTICES (BMP'S), SUCH AS VEGETATIVE COVER, MULCHING, PLASTIC COVERING OR APPLICATION OF GRAVEL SURFACES IN AREAS TO BE GRAVELED. NO EXPOSED AND UNWORKED SOILS SHALL REMAIN UNSTABILIZED. ONCE CONSTRUCTION ACTIVITY IS COMPLETED IN AN AREA BETWEEN THE MONTHS OF OCTOBER 1 AND APRIL 30, PERMANENT SEEDING SHALL BE INSTALLED.
- THE CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL AT ALL TIMES DURING CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING PROPER TRASH RECEPTACLES AND PORTABLE TOILETS ON-SITE AS WELL AS THE REGULAR MAINTENANCE OF THESE FACILITIES.
- ALL CLEARING LIMITS AND/OR EASEMENT SETBACKS, SENSITIVE CRITICAL AREAS AND THEIR BUFFERS, SIGNIFICANT TREES AND DRAINAGE COURSES SHALL BE CLEARLY STAKED AND MARKED AS SHOWN ON PLANS.
- PROPERTIES ADJACENT TO THE PROJECT SITE THAT ARE SUBJECT TO POTENTIAL EROSION CAUSED BY CONSTRUCTION ACTIVITIES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION THROUGH THE USE OF SILT FENCE, HAY BALES OR OTHER BMP SELECTED BY THE CONTRACTOR.
- ALL FACILITIES INTENDED TO TRAP SEDIMENT ON-SITE SHALL BE CONSTRUCTED AS A FIRST STEP IN GRADING. THESE FACILITIES SHALL BE FUNCTIONAL BEFORE ANY LAND DISTURBING ACTIVITIES TAKE PLACE. EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS SHALL BE SEEDED AND MULCHED ACCORDING TO THE TIME PERIOD STATED IN #6 ABOVE.
- ALL CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. ALL SLOPES SHALL BE STABILIZED WITHIN THE TIME PERIOD STATED IN #6 ABOVE.
- ALL STORM DRAINAGE INLETS MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED WITH A GRAVEL INTAKE FILTER TO PREVENT SEDIMENT FROM ENTERING THE SYSTEM. THE FILTER MUST BE INSPECTED REGULARLY AND CLEANED WHEN NECESSARY.
- THE FOLLOWING SHALL APPLY TO CONSTRUCTION OF UTILITY LINES:
 - WHERE FEASIBLE, NO MORE THAN 500' OF TRENCH SHALL BE OPEN AT ONE TIME.
 - WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
 - TRENCH DEWATERING DEVICES SHALL DISCHARGE AND SHALL REMAIN ON-SITE AND IN NO WAY ENTER PUBLIC PROPERTY OR WATERWAY.
- WHEREVER CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED ROADS, A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE CONSTRUCTED (SEE DETAIL SHEET) TO MINIMIZE THE TRANSPORT OF SEDIMENT (MUD) ONTO THE PAVED ROAD. IF SEDIMENT IS TRANSPORTED ONTO A ROAD SURFACE, THE ROADS SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. STREET WASHING SHALL ONLY BE ALLOWED AFTER SEDIMENT IS REMOVED IN THIS MANNER. A MINIMUM OF ONE (1) ON-SITE STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED.
- CONCRETE TRUCKS SHALL NOT BE ALLOWED TO WASH OUT ON-SITE UNLESS A PROPERLY CONSTRUCTED CONCRETE TRUCK WASHOUT AREA IS CONSTRUCTED AND MAINTAINED.
- ALL TRUCKS USED TO HAUL EXCAVATED SOILS FROM THE SITE SHALL BE INSPECTED AND SWEEPED CLEAN OF LOOSE SOIL PRIOR TO LEAVING THE SITE.
- FUEL, LUBRICANTS AND OTHER FLUIDS REQUIRED FOR THE MAINTENANCE OF THE EQUIPMENT SHALL NOT BE STORED ON-SITE.
- ALL TEMPORARY SEDIMENT AND EROSION CONTROL SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON-SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.
- ALL POLLUTANTS OTHER THAN SEDIMENT THAT OCCUR ON-SITE DURING CONSTRUCTION SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORM WATER OR THE SITE.
- ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL FACILITIES SHALL BE INSPECTED, MAINTAINED AND REPAIRED BY THE CONTRACTOR AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED USE. ALL ON-SITE EROSION AND CONTROL MEASURES SHALL BE INSPECTED BY THE CONTRACTOR AT LEAST ONCE EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS OF ANY STORM EVENT EQUAL TO OR GREATER THAN 0.25" OF RAIN PER 24 HOUR PERIOD. AN INSPECTION REPORT FILE SHALL BE MAINTAINED BY THE CONTRACTOR AND KEPT ON-SITE.
- THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ADDITIONAL TEMPORARY SEDIMENT PONDS/TRAPS AS SITE CONDITIONS REQUIRE. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ADDITIONAL EROSION CONTROL MEASURES, INCLUDING BUT NOT LIMITED TO SILT FENCING, SEDIMENT PONDS/TRAPS, DIVERSION SWALES, CHECK DAMS, SEDIMENT BARRIERS, FILTER FABRIC MULCH AND SEEDING, AS CONDITIONS REQUIRE. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER.

1817 SOUTH AVE. W. STE. A
MISSOULA, MT 59801
PH: 406.721.0142
FAX: 406.721.5224
www.imegcorp.com

DATE: _____

DESIGNED: DF

DRAFTED: AE

CHECKED: CD

DATE: JAN. 2024

REVISIONS

LOCATION: SWNW PLAT S LYING N. OF HIGHWAY 200
SECTION 20, T.27N., R.34W., P.M.M.
SANDERS COUNTY, MONTANA

PREPARED FOR: TUNGSTEN HOLDINGS, INC.

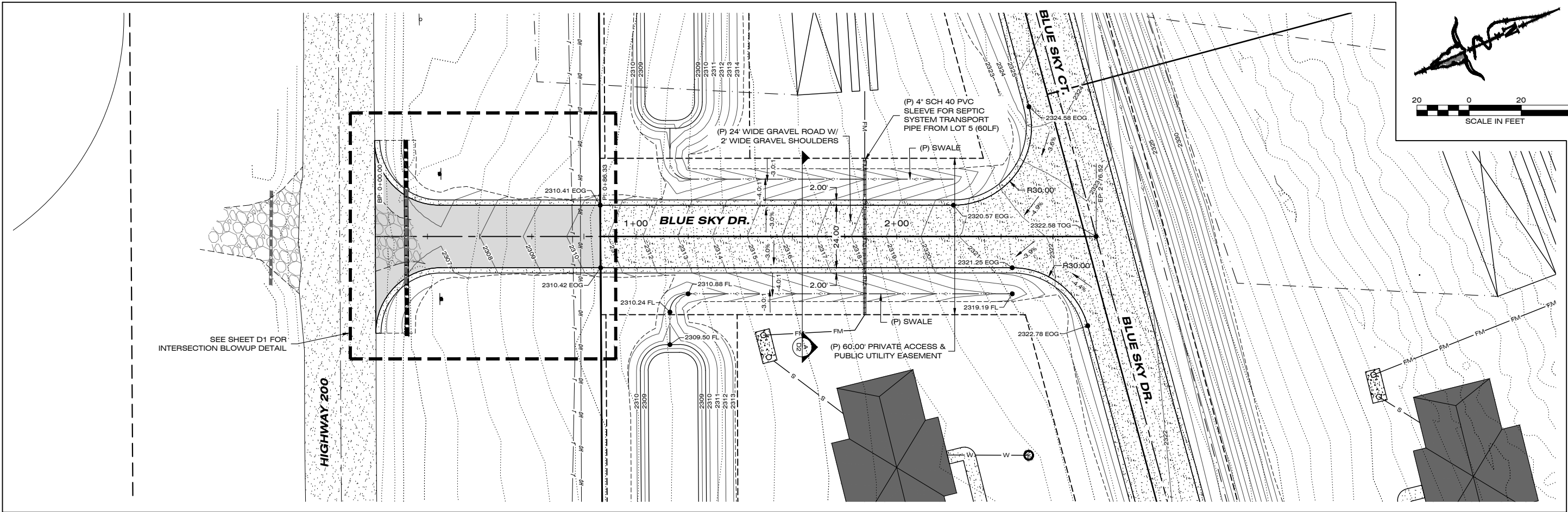
PROJECT NAME: BLUE CREEK SUBDIVISION

PROJECT NO.: 22003448

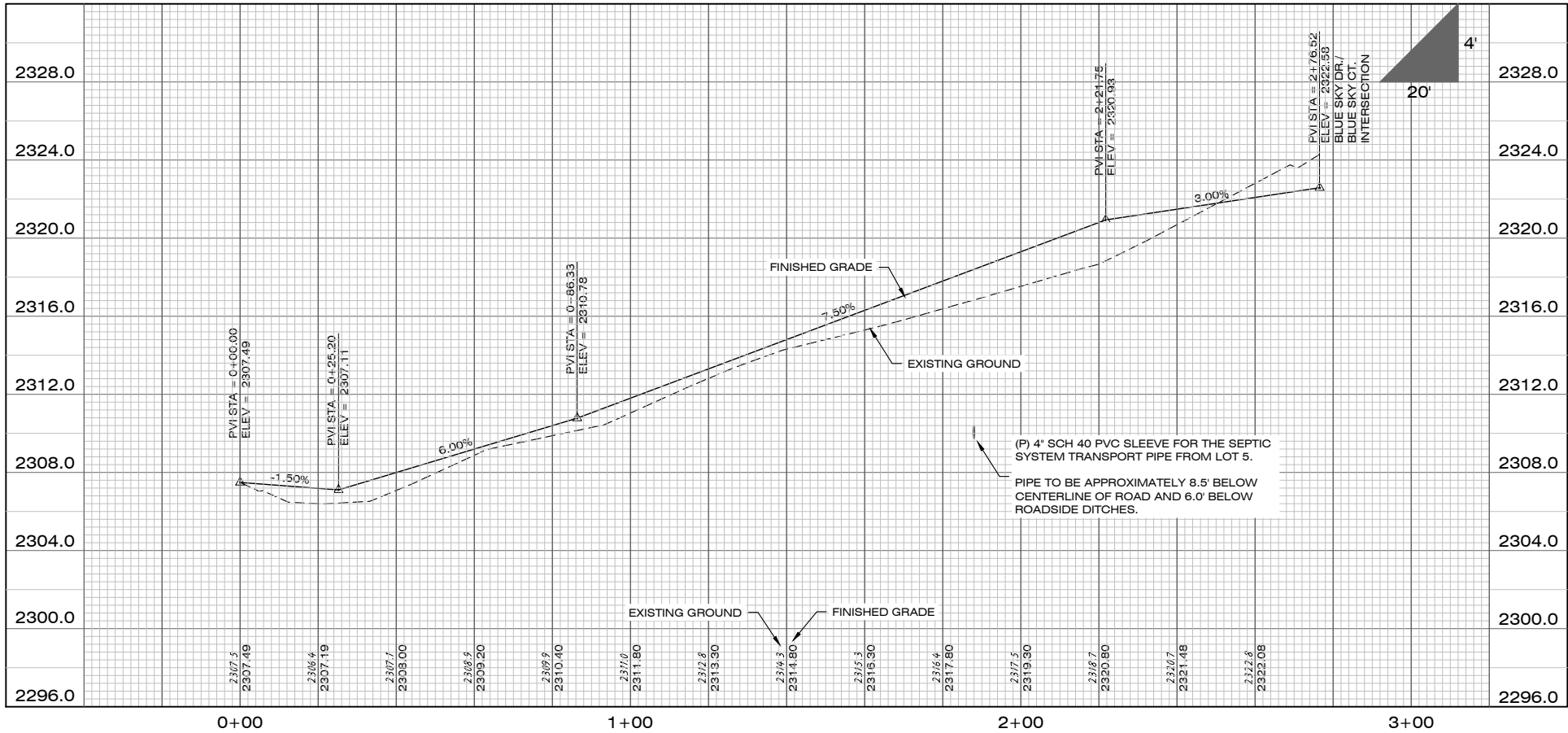
SHEET: 3 OF 11

SHEET TITLE: ROAD CONSTRUCTION PLANS
SWPPP PLAN


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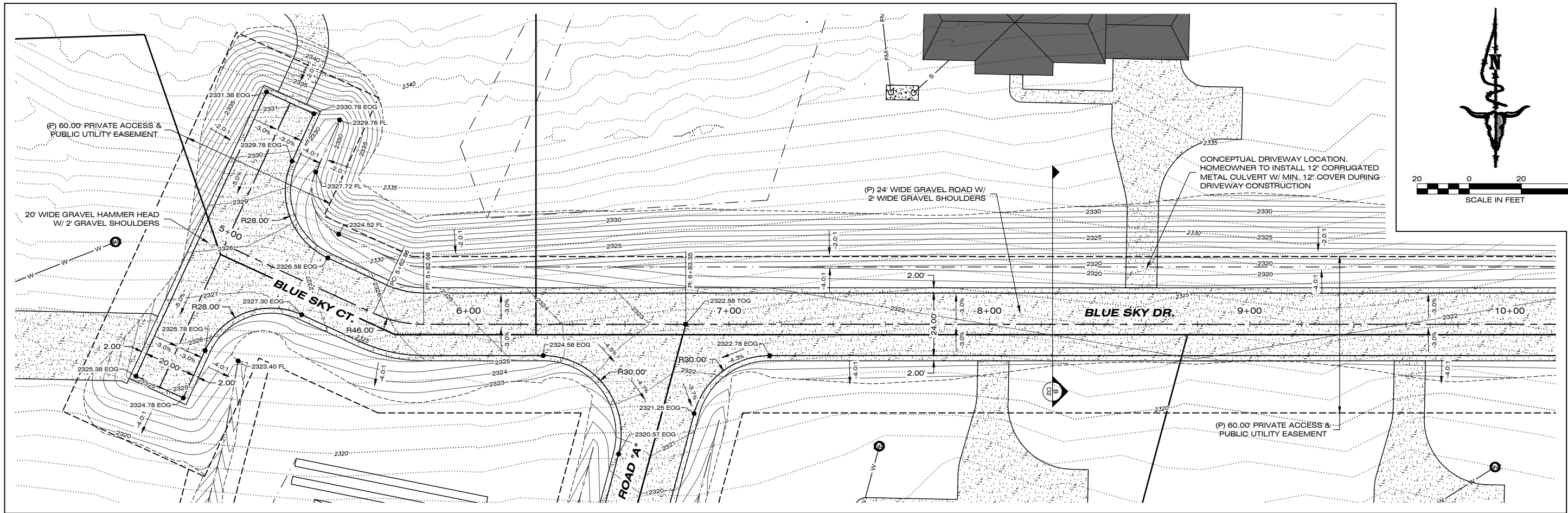
PLAN VIEW



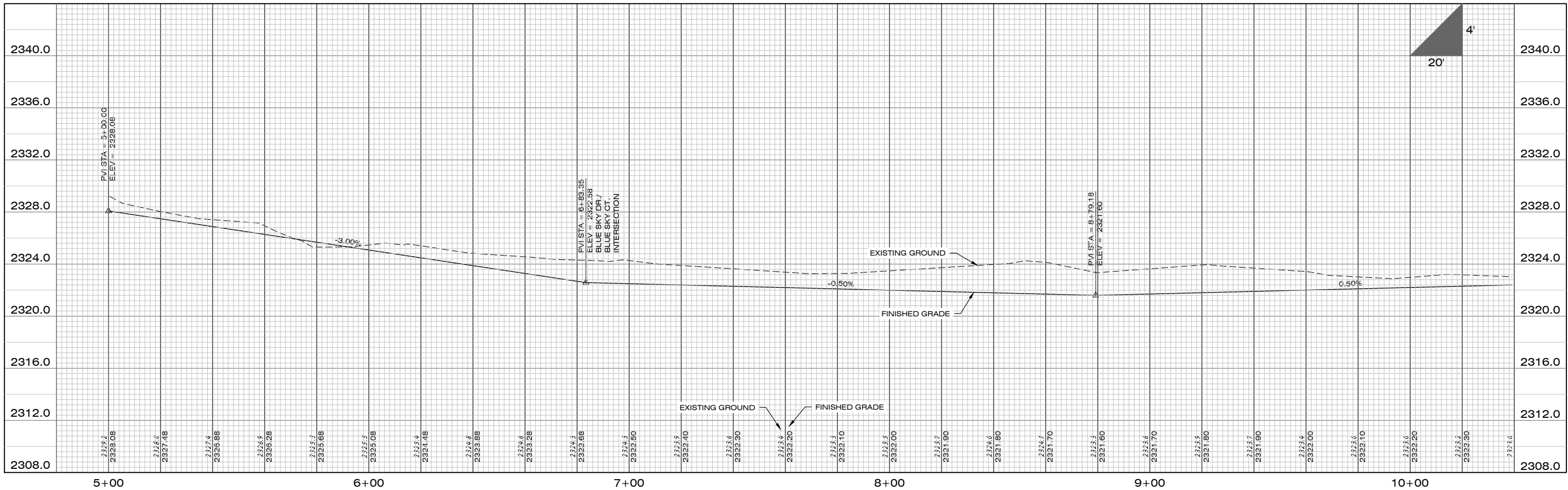
PROFILE VIEW

 1817 SOUTH AVE. W. STE. A MISSOULA, MT 59801 PH: 406.721.0142 FAX: 406.721.5221 www.imegcorp.com		DATE: _____	
DESIGNED: <i>DF</i>		REVISIONS: _____	
DRAFTED: <i>AE</i>		_____	
CHECKED: <i>CD</i>		_____	
DATE: <i>JAN 2024</i>		_____	
LOCATION: SWNW PLAT S LYING N. OF HIGHWAY 200 SECTION 20, T.27N., R.34W., P.M.M. SANDERS COUNTY, MONTANA		PREPARED FOR: TUNGSTEN HOLDINGS, INC.	
PROJECT NAME: BLUE CREEK SUBDIVISION		SHEET TITLE: ROAD CONSTRUCTION PLANS PLAN & PROFILE SHEET	
PROJECT NO. 22003448	SHEET: 4 OF 11		

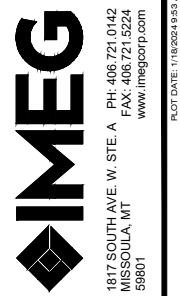
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PLAN VIEW



PROFILE VIEW

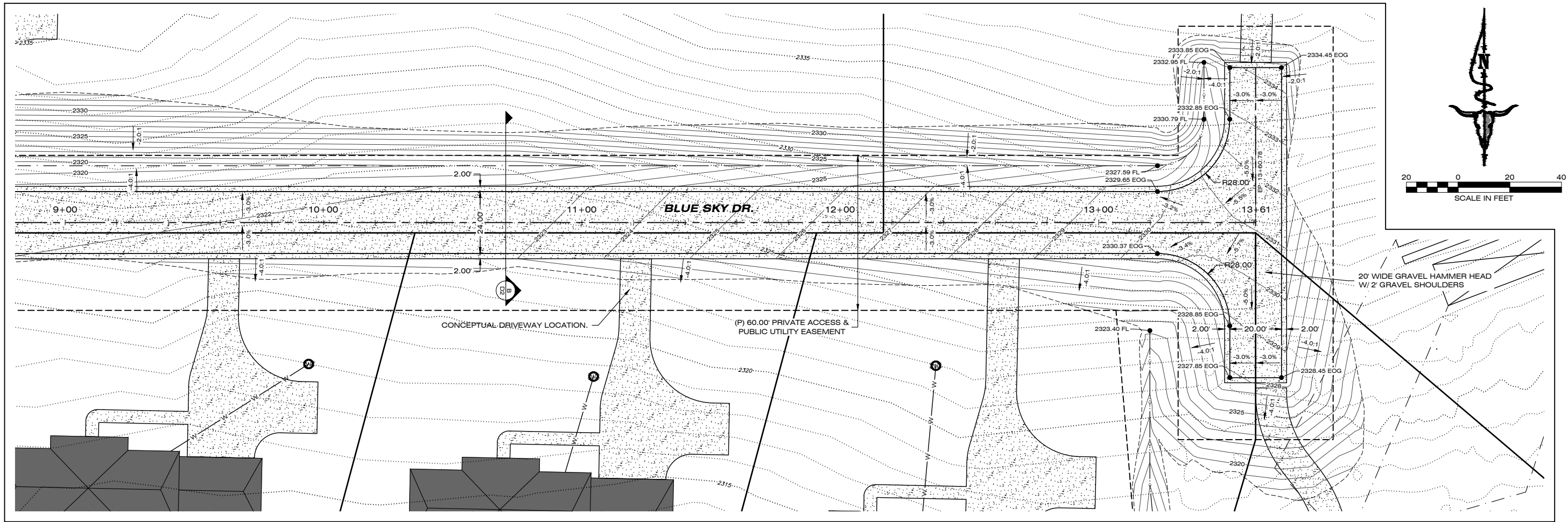


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REVISIONS	
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DATE: <i>JAN 2024</i>	

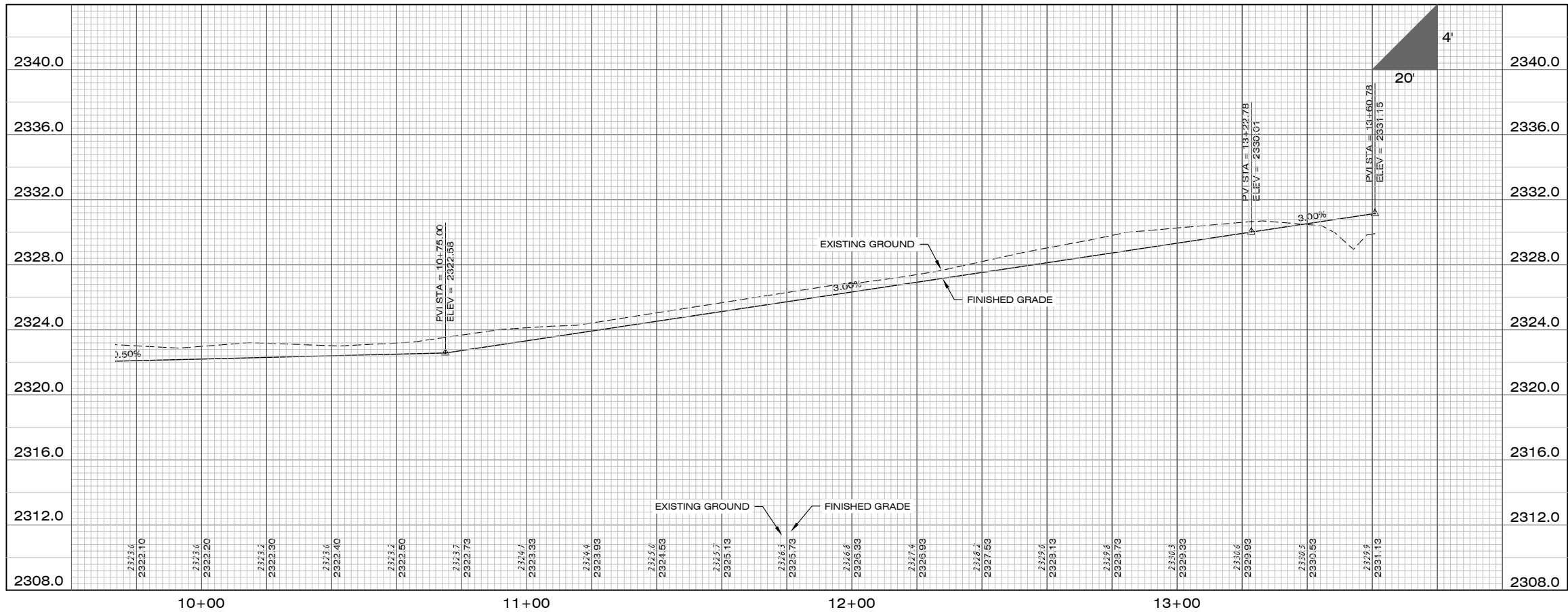
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PREPARED FOR: TUNGSTEN HOLDINGS, INC.

PROJECT NO.	22003448
PROJECT NAME	BLUE CREEK SUBDIVISION
SHEET	5 OF 11
SHEET TITLE	ROAD CONSTRUCTION PLANS PLAN & PROFILE SHEET

DWG LOCATION: G:\020\22003448\02003448.DWG
DWG DESCRIPTION: ROAD CONSTRUCTION PLANS & PROFILE SHEET
DWG DATE: 1/18/2024 9:53 AM



PLAN VIEW



PROFILE VIEW

1817 SOUTH AVE. W. STE. A
MISSOULA, MT 59801
PH: 406.721.0142
FAX: 406.721.5221
www.imegcorp.com

DATE: _____

DESIGNED: *DF*

DRAFTED: *AE*

CHECKED: *CD*

DATE: *JAN 2024*

REVISIONS

LOCATION: SW/4 PLAT S LYING N. OF HIGHWAY 200
SECTION 20, T.27N., R.34W., P.M.M.
SANDERS COUNTY, MONTANA

PREPARED FOR: TUNGSTEN HOLDINGS, INC.

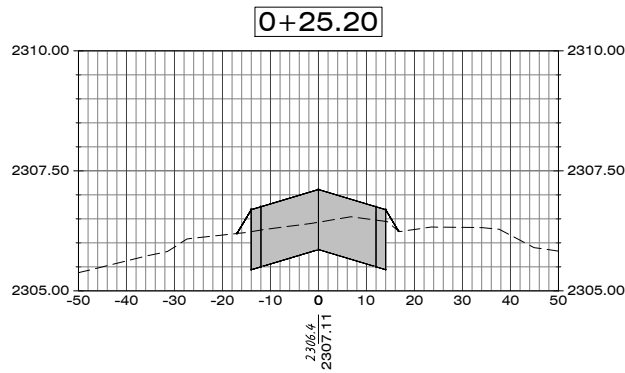
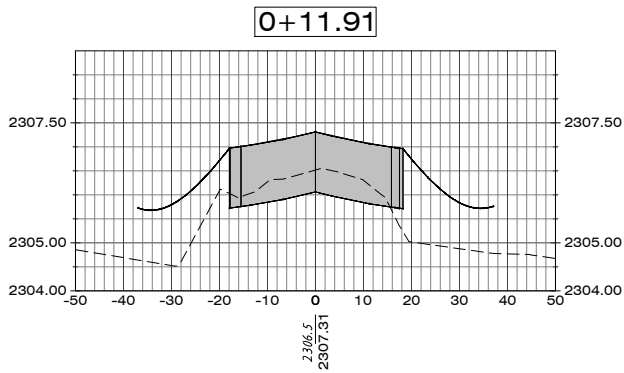
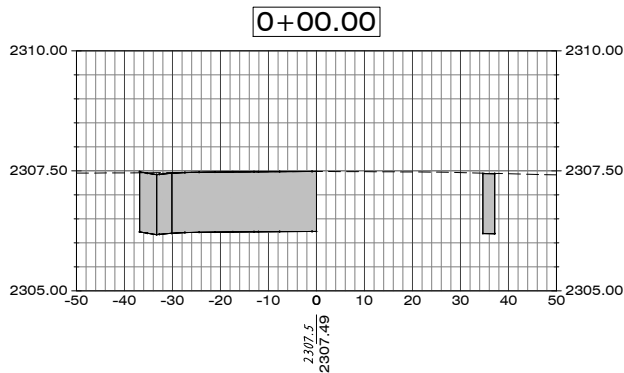
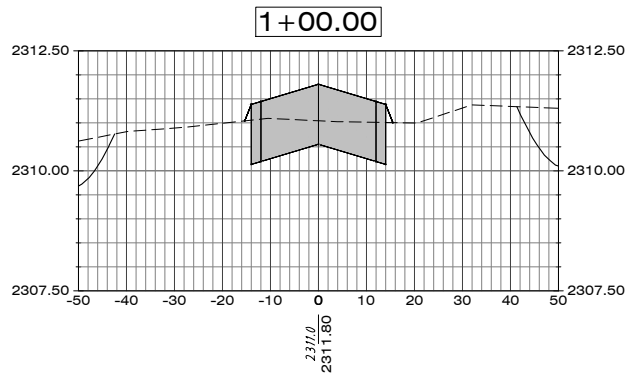
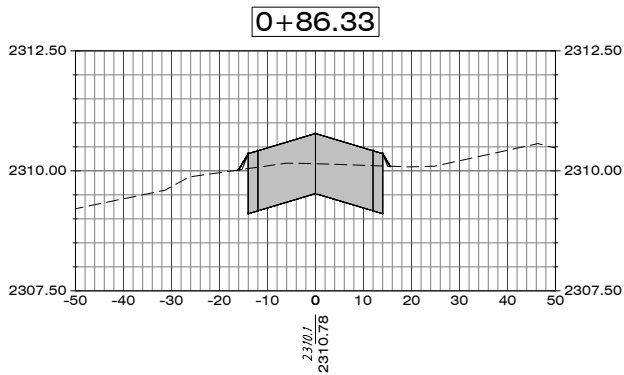
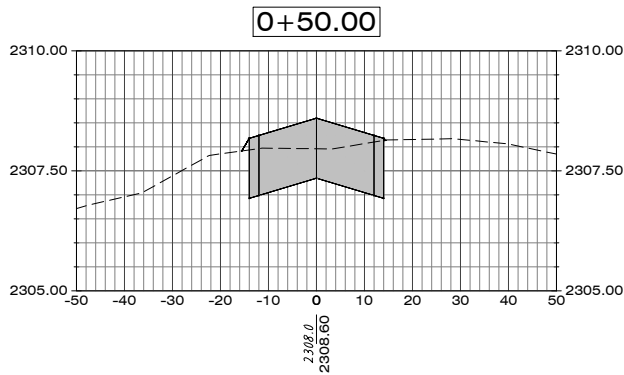
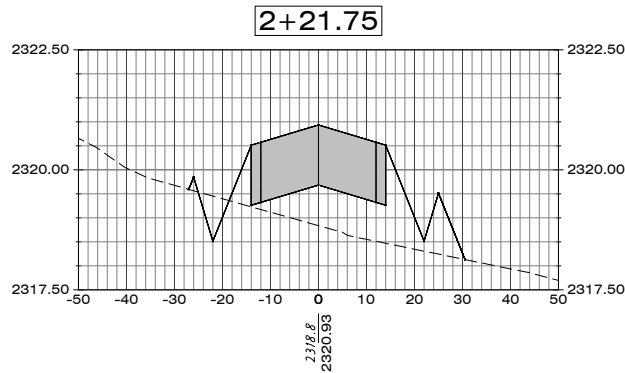
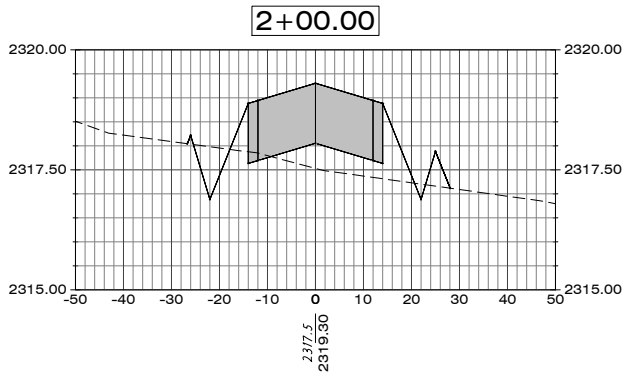
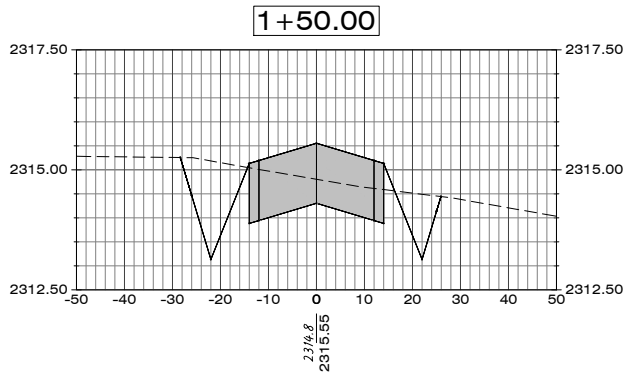
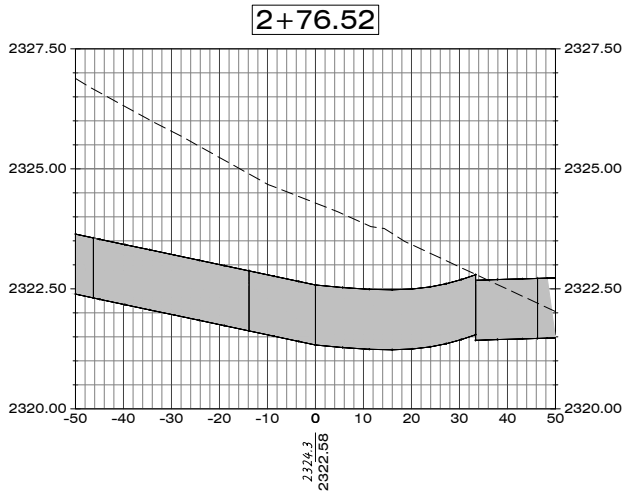
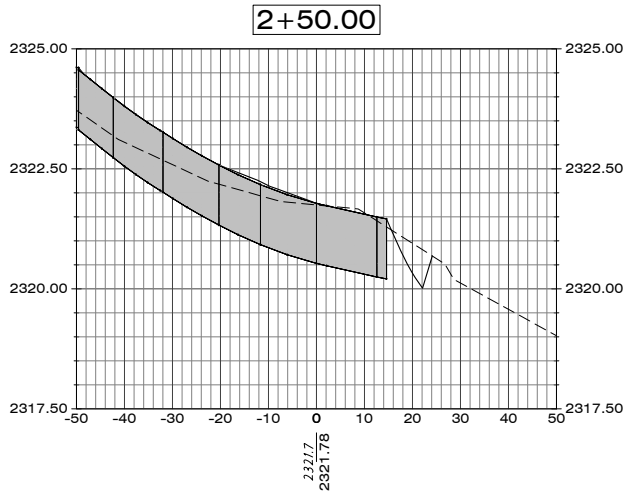
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22003448

PROJECT NAME
BLUE CREEK SUBDIVISION

SHEET:
6 OF 11

SHEET TITLE:
ROAD CONSTRUCTION PLANS
PLAN & PROFILE SHEET

DWG LOCATION: G:\2025\22003448\000\BIB\BIB\DWG\CONSTR\PLAN\22003448.DWG



REVISIONS	DATE

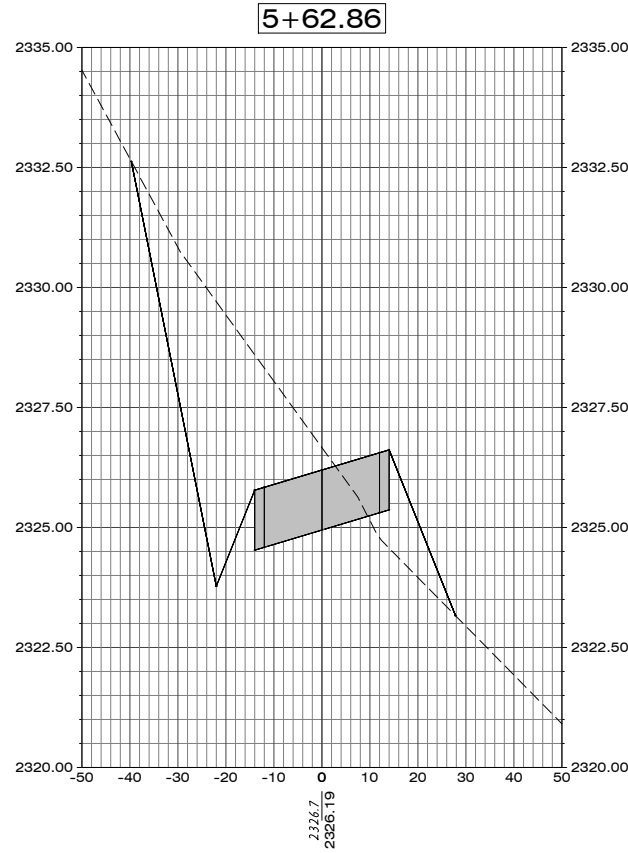
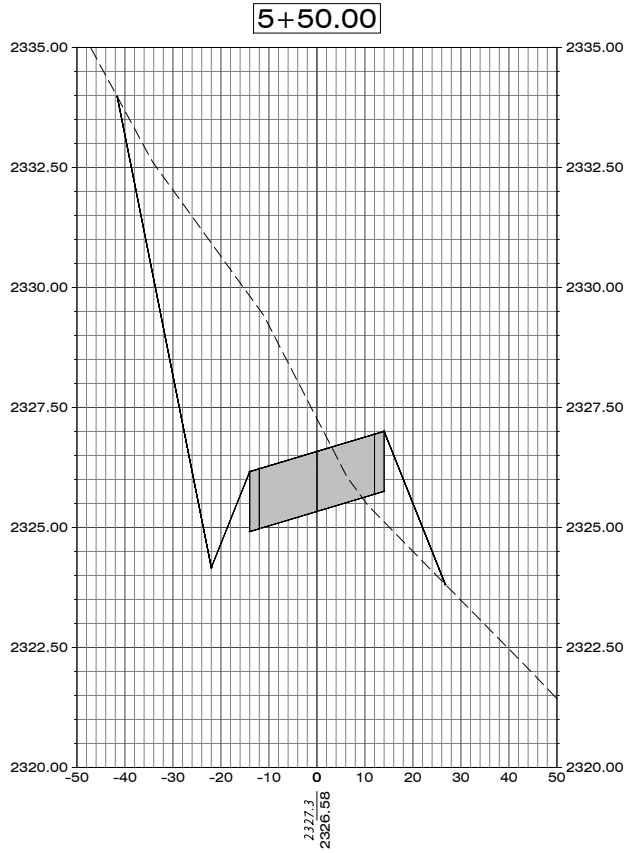
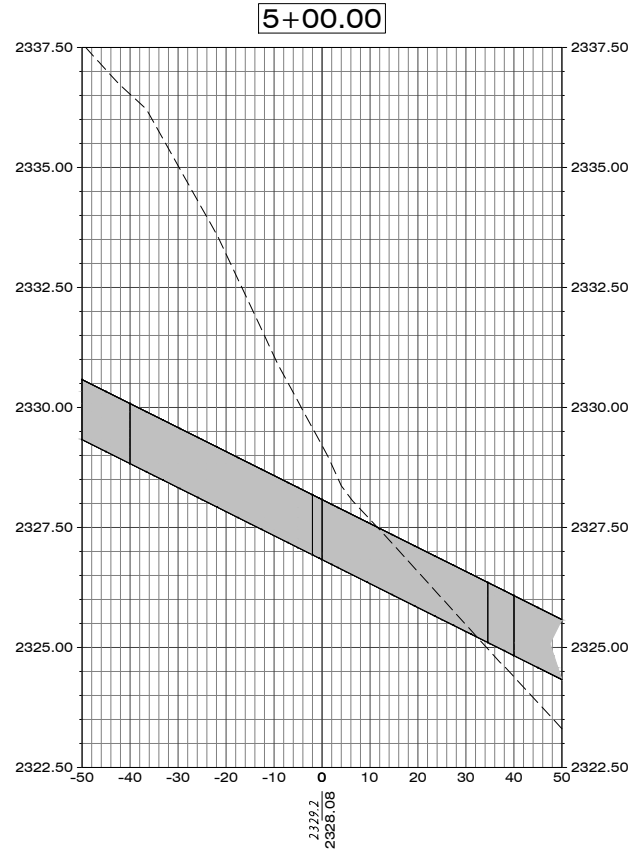
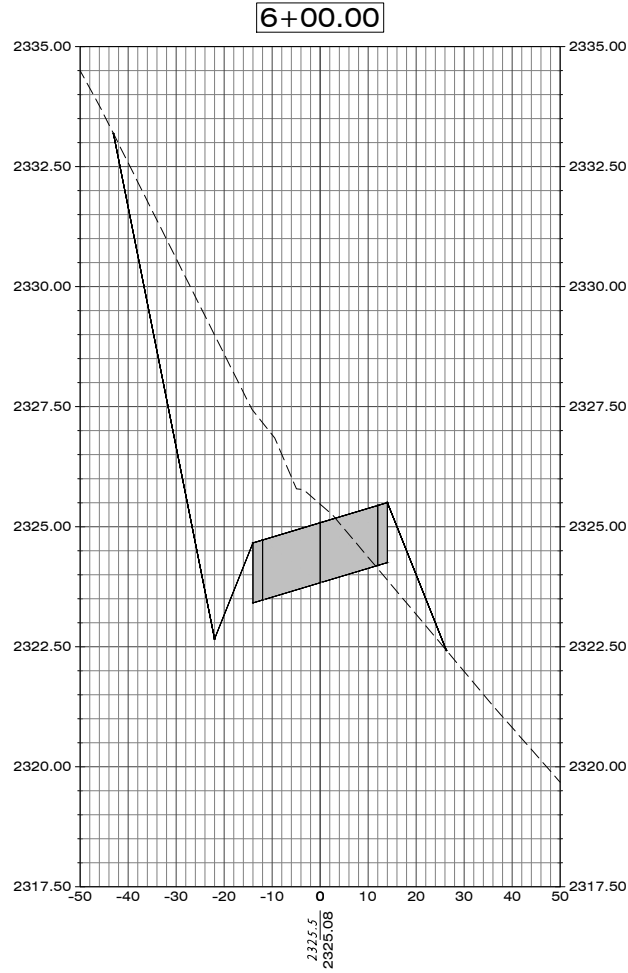
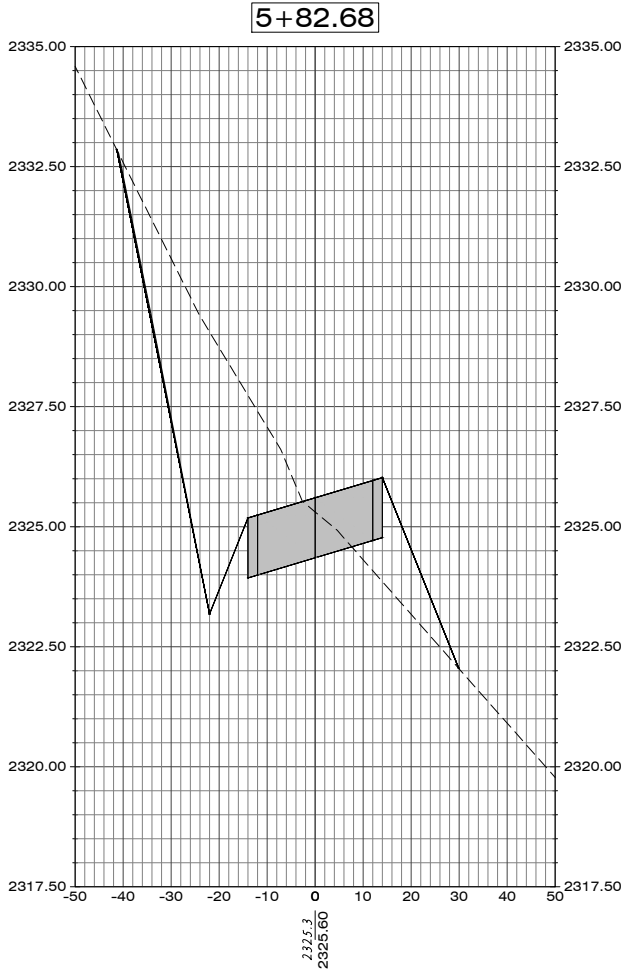
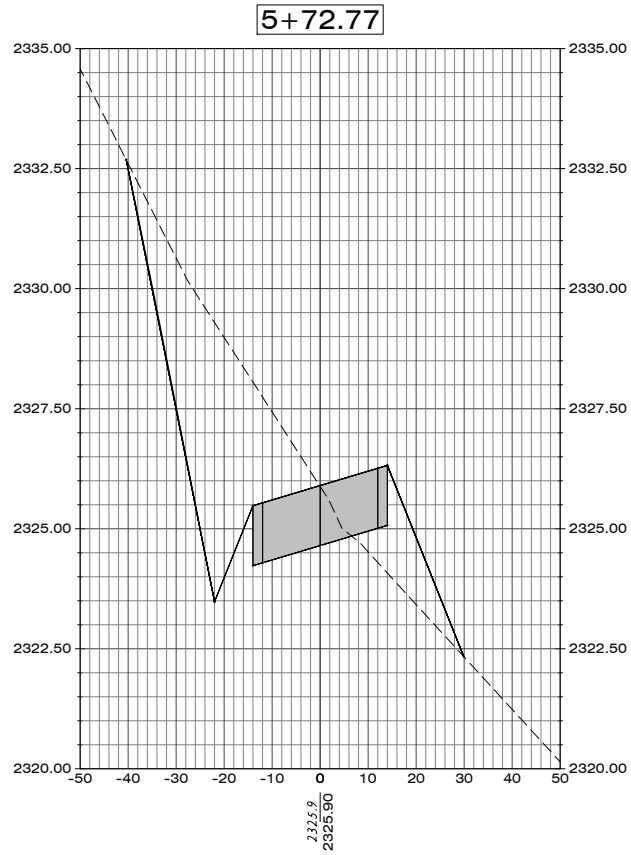
DESIGNED: DF
DRAFTED: AE
CHECKED: CD
DATE: JAN 2024

LOCATION: SWNW PLAT S LYING N. OF HIGHWAY 200
SECTION 20, T.27N., R.34W., P.M.M.
SANDERS COUNTY, MONTANA
PREPARED FOR: TUNGSTEN HOLDINGS, INC.

PROJECT NAME: BLUE CREEK SUBDIVISION
PROJECT NO.: 22003448
SHEET: 8 OF 11
SHEET TITLE: ROAD CONSTRUCTION PLANS
CROSS SECTIONS

DWG LOCATION: G:\2025\22003448\DWG\BDR\CON\ALCS\PROJECT\AL-22003448.DWG

PLOT DATE: 1/18/2024 9:53 AM



PROJECT NO.
22003448

PROJECT NAME
BLUE CREEK SUBDIVISION

SHEET
9 OF 11

SHEET TITLE
ROAD CONSTRUCTION PLANS
CROSS SECTIONS

LOCATION:
SW/4 PLAT S LYING N. OF HIGHWAY 200
SECTION 20, T.27N., R.34W., P.M.M.
SANDERS COUNTY, MONTANA

PREPARED FOR:
TUNGSTEN HOLDINGS, INC.

DESIGNED: DF

DRAFTED: AE

CHECKED: CD

DATE: JAN 2024

REVISIONS

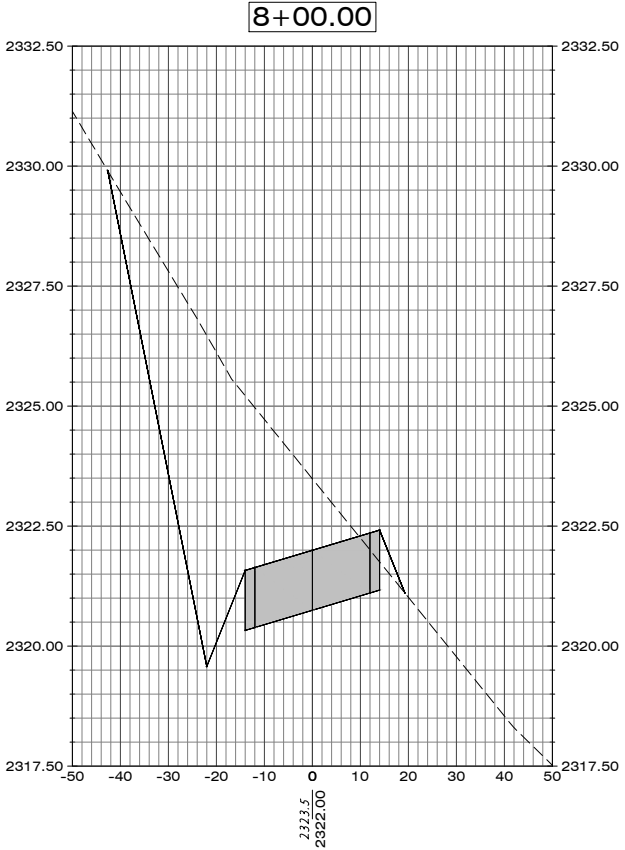
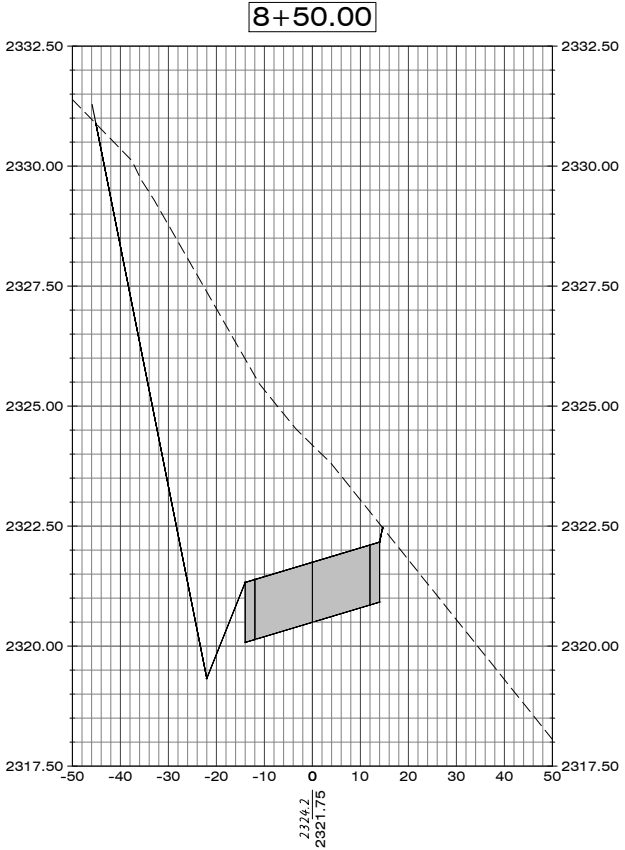
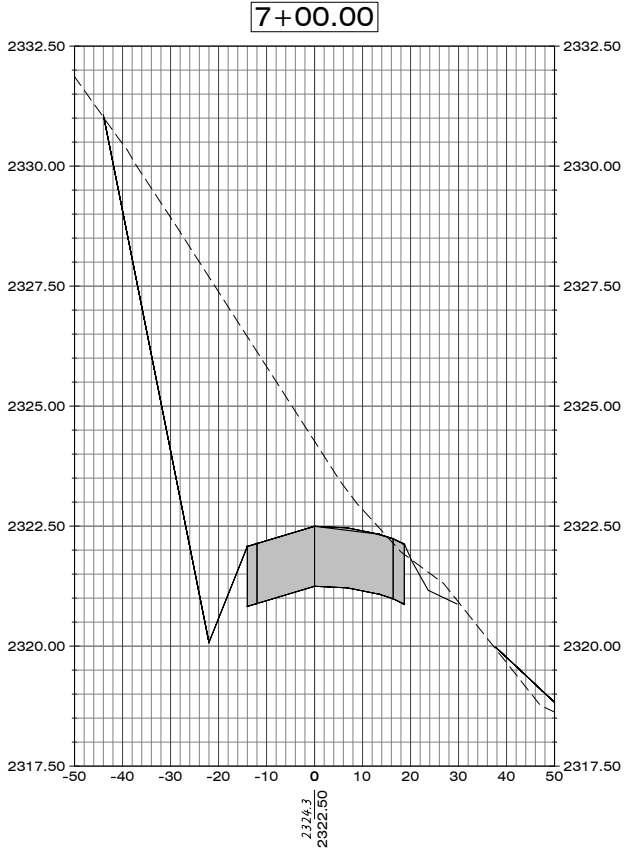
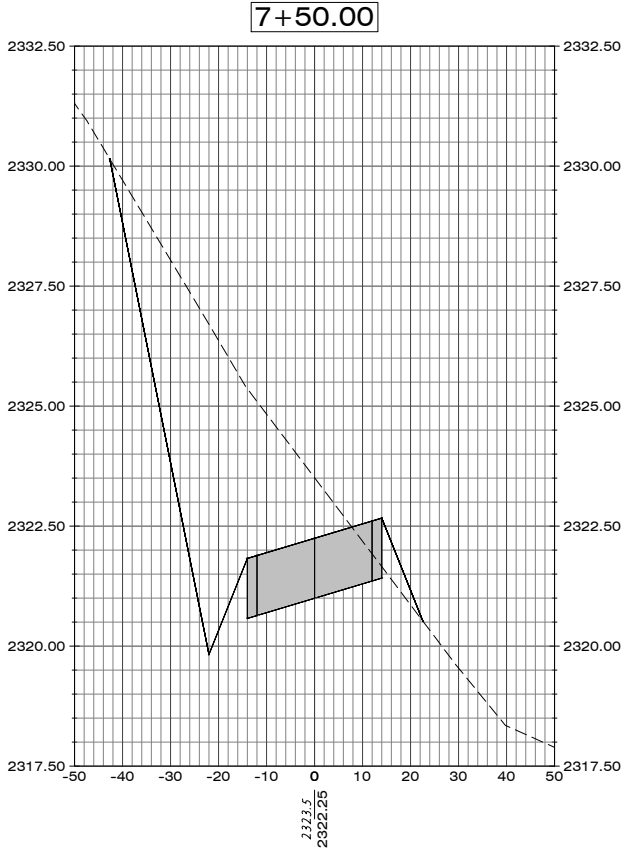
DATE


IMEG

1817 SOUTH AVE. W. STE. A
MISSOULA, MT 59801

PH: 406.721.0142
FAX: 406.721.5221
www.imegcorp.com

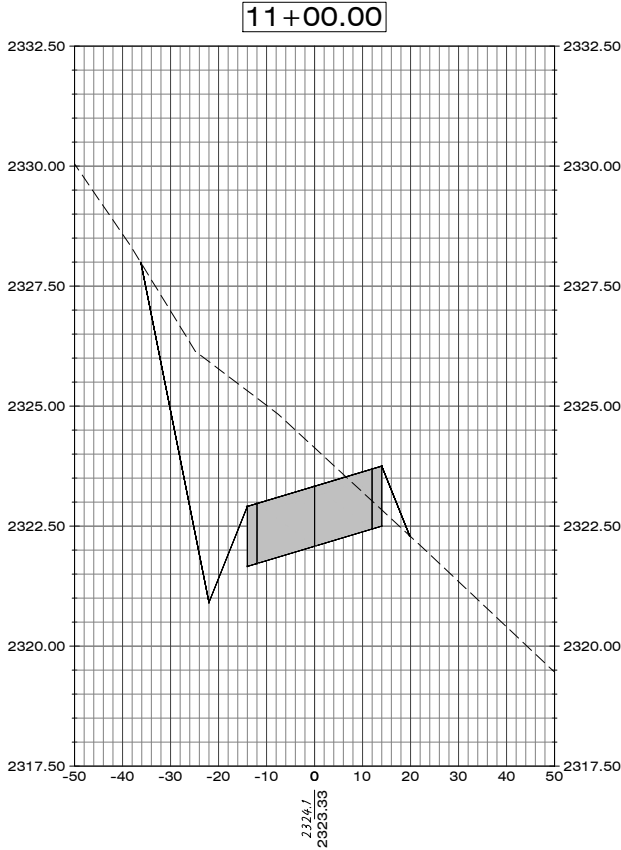
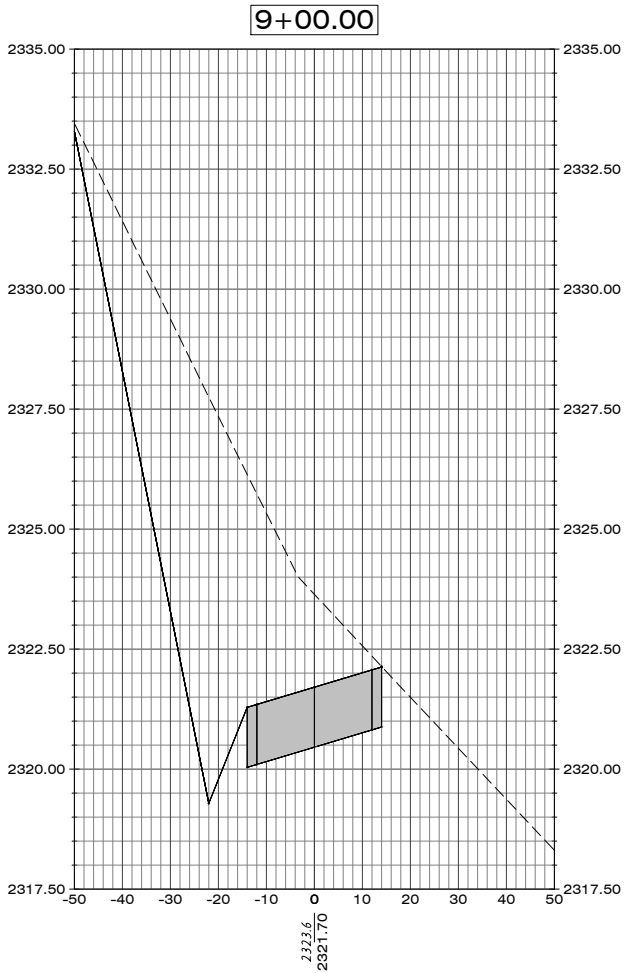
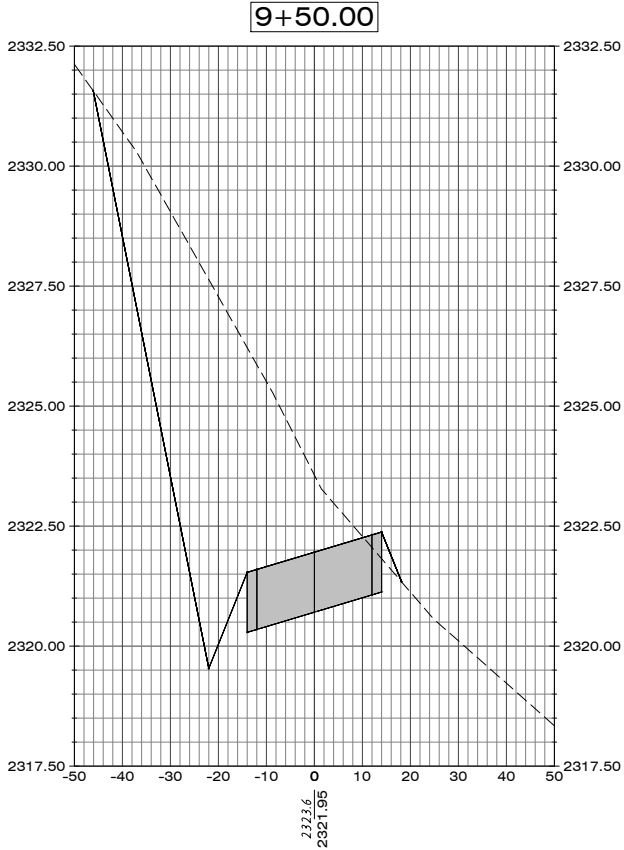
PLLOT DATE: 1/18/2024 9:53 AM



 <div>1817 SOUTH AVE. W. STE. A MISSOULA, MT 59801 PH: 406.721.0142 FAX: 406.721.5221 www.imegcorp.com</div>		DATE: _____	
DESIGNED: <u>DF</u>		REVISIONS: _____	
DRAFTED: <u>AE</u>		DATE: <u>JAN 2024</u>	
CHECKED: <u>CD</u>		LOCATION: SWNW PLAT S LYING N. OF HIGHWAY 200 SECTION 20, T.27N., R.34W., P.M.M. SANDERS COUNTY, MONTANA	
DATE: <u>JAN 2024</u>		PREPARED FOR: TUNGSTEN HOLDINGS, INC.	
PROJECT NO. 22003448		PROJECT NAME: BLUE CREEK SUBDIVISION	
SHEET: 10 OF 11		SHEET TITLE: ROAD CONSTRUCTION PLANS CROSS SECTIONS	

DWG LOCATION: G:\2022\22003448\00\DESIGN\CONSTRUCTION\PLANS\22003448.DWG

PLOT DATE: 1/18/2024 8:54 AM





1817 SOUTH AVE. W. STE. A
MISSOULA, MT 59801
PH: 406.721.0142
FAX: 406.721.5224
www.imegcorp.com

DATE

REVISIONS

DESIGNED: *DF*

DRAFTED: *AE*

CHECKED: *CD*

DATE: *JAN 2024*

LOCATION:
SW/4 PLAT S LYING N. OF HIGHWAY 200
SECTION 20, T.27N., R.34W., P.M.M.
SANDERS COUNTY, MONTANA

PREPARED FOR:
TUNGSTEN HOLDINGS, INC.

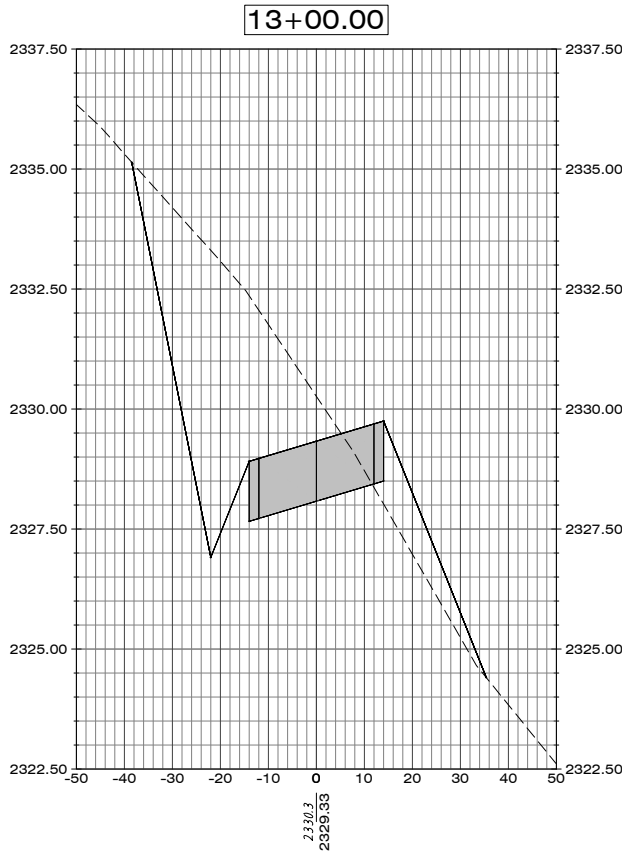
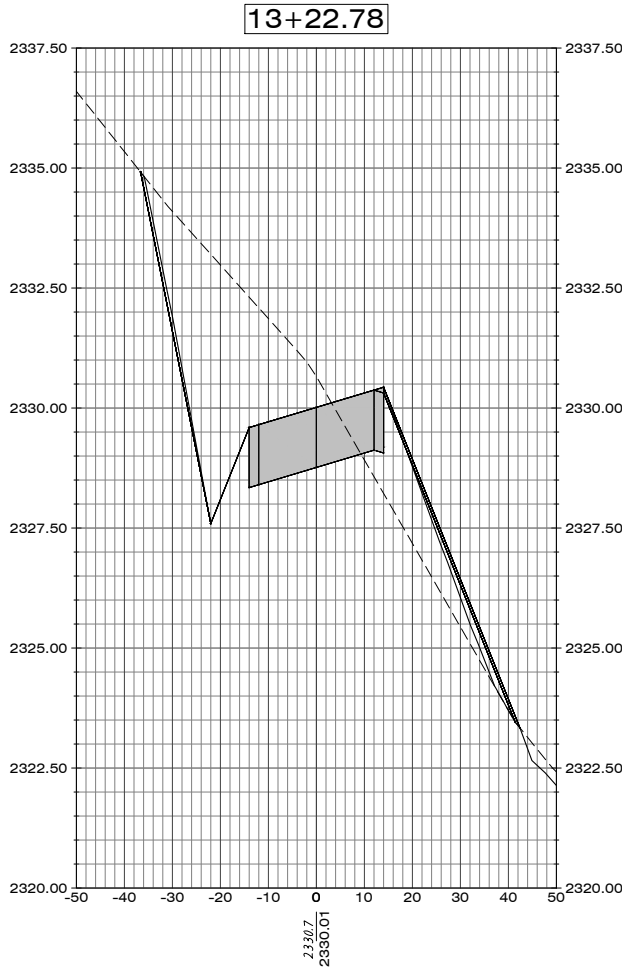
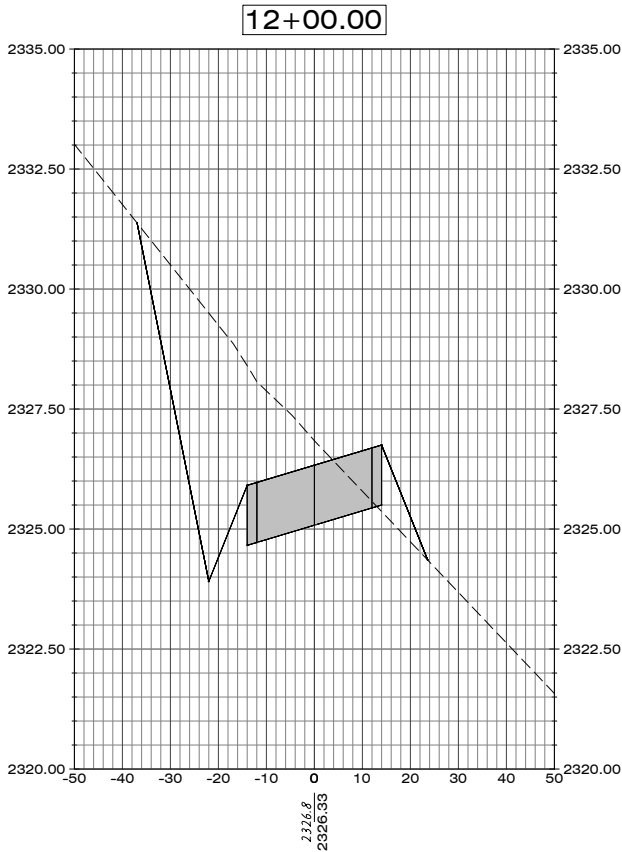
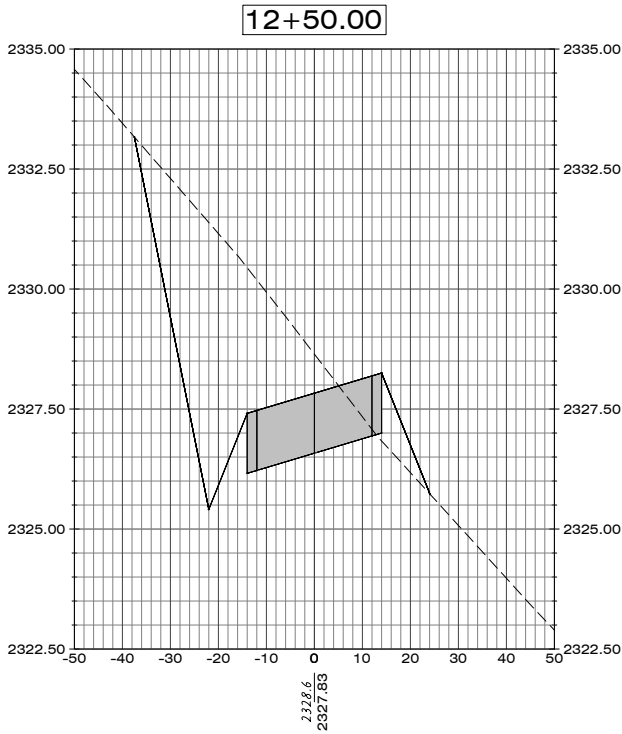
PROJECT NO.
22003448

PROJECT NAME
BLUE CREEK SUBDIVISION

SHEET:
10 OF 11

SHEET TITLE:
ROAD CONSTRUCTION PLANS
CROSS SECTIONS

DWG LOCATION: G:\2022\22003448.DWG



PROJECT NO.
22003448

PROJECT NAME
BLUE CREEK SUBDIVISION

DATE
JAN 2024

DESIGNED BY
DF

DRAFTED BY
AE

CHECKED BY
CD

LOCATION:
SWNW PLAT S LYING N. OF HIGHWAY 200
SECTION 20, T.27N., R.34W., P.M.M.
SANDERS COUNTY, MONTANA

PREPARED FOR:
TUNGSTEN HOLDINGS, INC.

11 OF 11

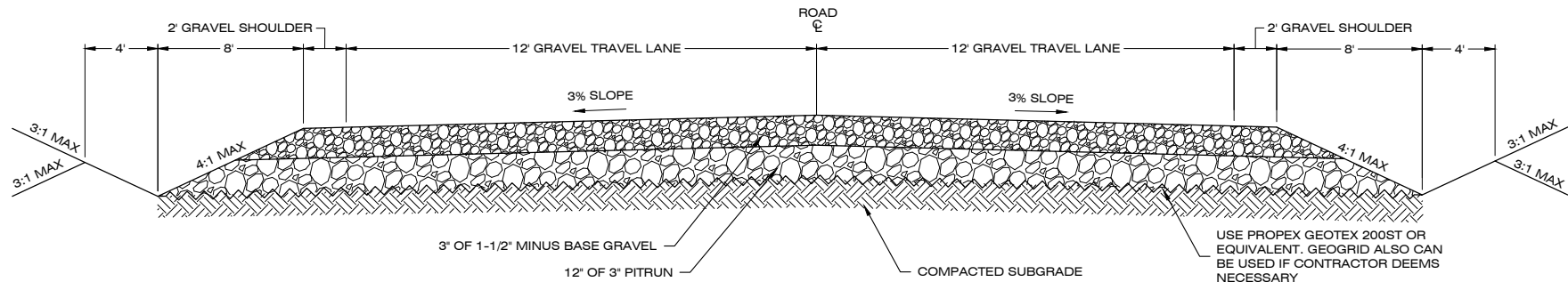
ROAD CONSTRUCTION PLANS
CROSS SECTIONS

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MISSOULA, MT 59801
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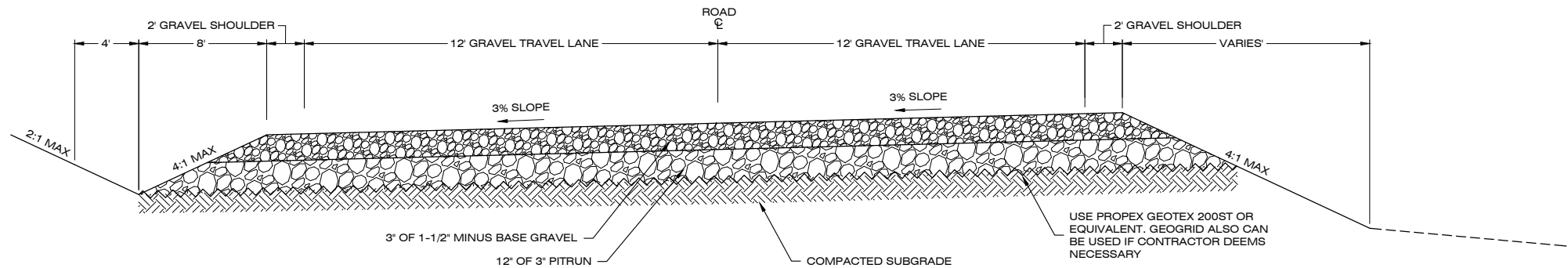
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PLOT DATE: 1/18/2024 9:54 AM



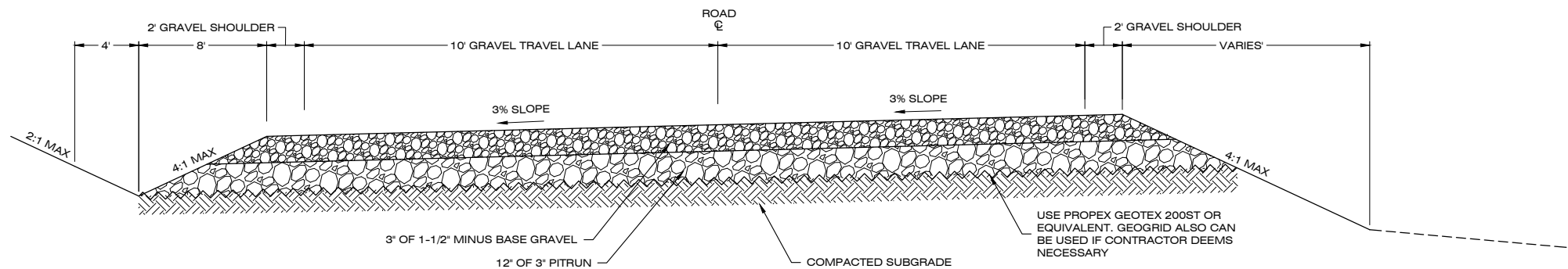
A GRAVEL ROAD CROSS SECTION - BLUE SKY DR. (NON-MDT)

NOT TO SCALE



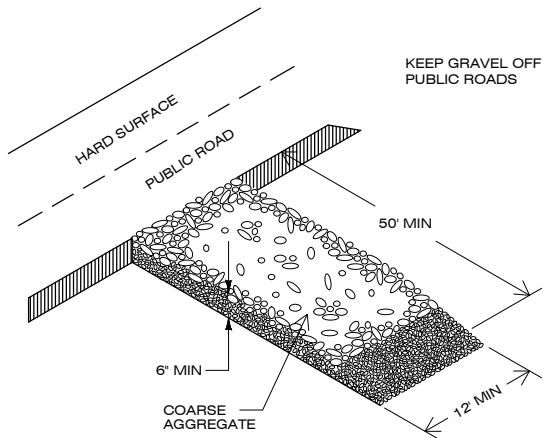
B GRAVEL ROAD CROSS SECTION - BLUE SKY COURT (5+38 - 6+28) / BLUE SKY DRIVE (7+16 - 13+23)

NOT TO SCALE



C GRAVEL ROAD CROSS SECTION - HAMMERHEAD

NOT TO SCALE



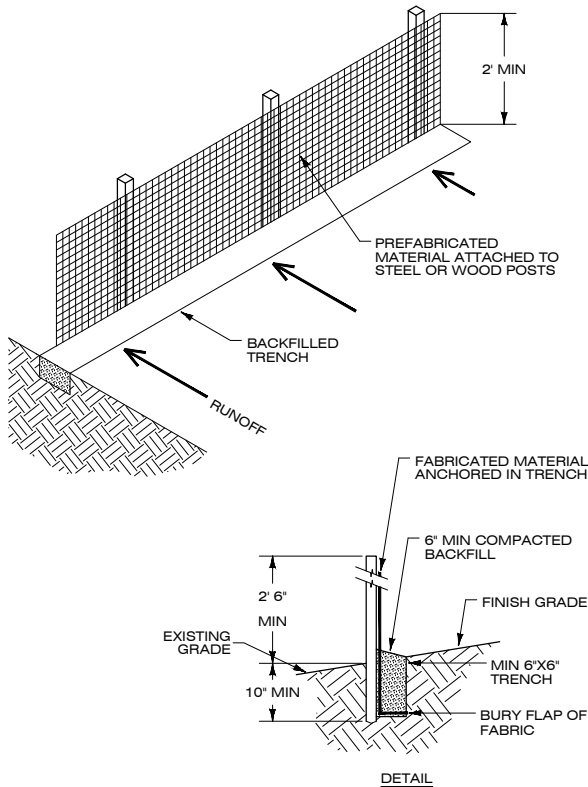
DEFINITION
A STONE STABILIZED PAD LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE

PURPOSE
TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF

NOTE:
CONTRACTOR MAY SUBSTITUTE TRACK PAD FOR CATTLE GUARD(S) OR OTHER METHOD TO CONTROL TRACKING.

D TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

NOT TO SCALE



- NOTES:**
1. SILT FENCE SHALL BE INSTALLED BEFORE ANY EARTH REMOVAL OR EXCAVATION TAKES PLACE.
 2. SET POSTS MAXIMUM 8 FEET ON CENTER AND EXCAVATE 6"X6" TRENCH UP-SLOPE ALONG THE LINE OF POSTS.
 3. ATTACH FILTER FABRIC TO POSTS AND EXTEND IT INTO TRENCH.
 4. BACKFILL AND COMPACT EXCAVATED SOIL.

E SILT FENCE INSTALLATION

NOT TO SCALE



1817 SOUTH AVE. W. STE. A
MISSOULA, MT 59801
PH: 406.721.0142
FAX: 406.721.5224
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DATE	
REVISIONS	

DESIGNED: DF
DRAFTED: AE
CHECKED: CD
DATE: JAN 2024

LOCATION: SWNW PLAT S LYING N. OF HIGHWAY 200
SECTION 20, T.27N., R.34W., P.M.M.
SANDERS COUNTY, MONTANA
PREPARED FOR: TUNGSTEN HOLDINGS, INC.

PROJECT NAME: BLUE CREEK SUBDIVISION
PROJECT NO.: 22003448
SHEET TITLE: ROAD CONSTRUCTION PLANS
DETAIL SHEET

SHEET: D2 OF D2

Tamara R. Ross

From: Daniel D. Fultz
Sent: Wednesday, January 17, 2024 4:12 PM
To: Tamara R. Ross
Subject: FW: Pre-application follow-up - Tungsten Blue Creek Sub Follow Up
Attachments: SKMBT_C224e22081607510.pdf; SUB ROAD CONST PERMIT-FILLABLE.pdf; PRIVATE ROAD REGISTER_SUB1.docx; Homeowners Code of Responsibility.docx; Road-Section.pdf; Road-Construction-General-Specifications-and-Inspection-Requirements.pdf

From: Katherine Maudrone <kmaudrone@co.sanders.mt.us>
Sent: Tuesday, August 16, 2022 8:32 AM
To: Daniel D. Fultz <Daniel.D.Fultz@imegcorp.com>; Crawford Dinning <tungsten@montanasky.net>
Cc: Shawn Sorenson <:ssorenson@co.sanders.mt.us>
Subject: Pre-application follow-up

External Email: Treat links and attachments with caution.

Good Morning Dan and Crawford,

It was great to meet with you yesterday. Attached is my check sheet of required elements for the preliminary application and agencies to be noticed for comment. Typically we require one submittal to work through the element and sufficiency review, and once deemed complete, the submittal of 5 paper and 1 electronic preliminary application. I have started working with some firms out of county with an electronic submittal for the element and sufficiency review. Let me know if this is preferred.

I have attached the Private Road Construction Permit, Specs and Cross-section, Road Name Approval, and the Homeowners Code that included the Protection Zone Guidelines for mitigation of vegetation.

I am waiting to hear from Lee and Bill about availability for a site visit the week of September 19th and will get back with you once I do.

Best Regards,

Katherine F. Maudrone
Katherine Maudrone CFM
Sanders County
Director of Land Service
PO Box 519
Thompson Falls, MT 59873-0519
406-827-6965

**MONTANA DEPARTMENT OF TRANSPORTATION
ENCROACHMENT & DRIVEWAY APPROACH PERMIT APPLICATION
SUPPLEMENTAL INFORMATION**

For the

PROPOSED APPROACH Tungsten Blue Creek Subdivision

Located at 222-146 MT Hwy 200
Heron, MT 59844

Legally Described as: SWNW Plat S lying N of MT Hwy 200, 27.3 Acres
Section 20, T27N, R34W
Sanders County, Montana

Prepared For:
Tungsten Holding
809 Mineral Ave
Libby, MT 59923

Prepared By:
IMEG
1817 South Ave. W. Suite A
Missoula, MT 59801

General/Background

IMEG is representing Tungsten Holdings in this submittal for a Driveway Approach Permit for a shared residential access driveway. Our client is proposing to develop the property with nine single-family homes.

We are submitting a driveway approach permit to complete work within the MDT right-of-way.

Scope of Work

The proposed approach will serve residential development on nine tracts. The lots range in size between one and seven acres. All nine proposed lots will use this approach access.

The proposed approach will be 24' in width with a 25' radius flare. The proposed approach will be paved inside of the right-of-way and will access MT Hwy 200. Outside of the right-of-way the surface of the driveway will be gravel.

Construction of the approach is anticipated to occur over the next two years. It currently is in the subdivision review process.

The approach will follow standard specifications per MDT including an 18" culvert and 6:1 grading inside of the right-of-way.

I have enclosed an exhibit that shows the proposed location. The proposed approach is located between Hwy 200 mile markers 1 and 2. Below are also representative pictures of the proposed approach area.

Prepared by:
IMEG Corp.,



Ryley Spearing, Civil Design Engineer

Review by:
IMEG Corp.,



Dan Fultz, R.S.

Representative Photos

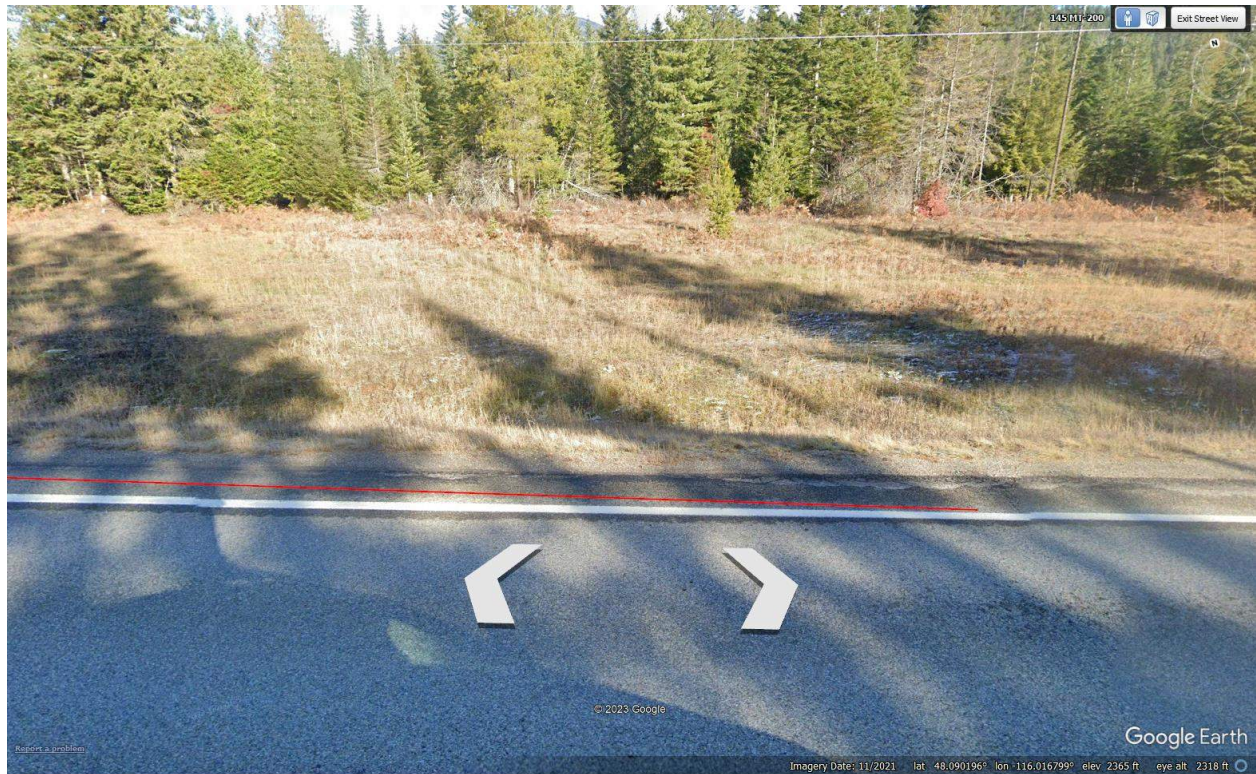
Figure 1 Looking at Hwy 200 in the E direction.

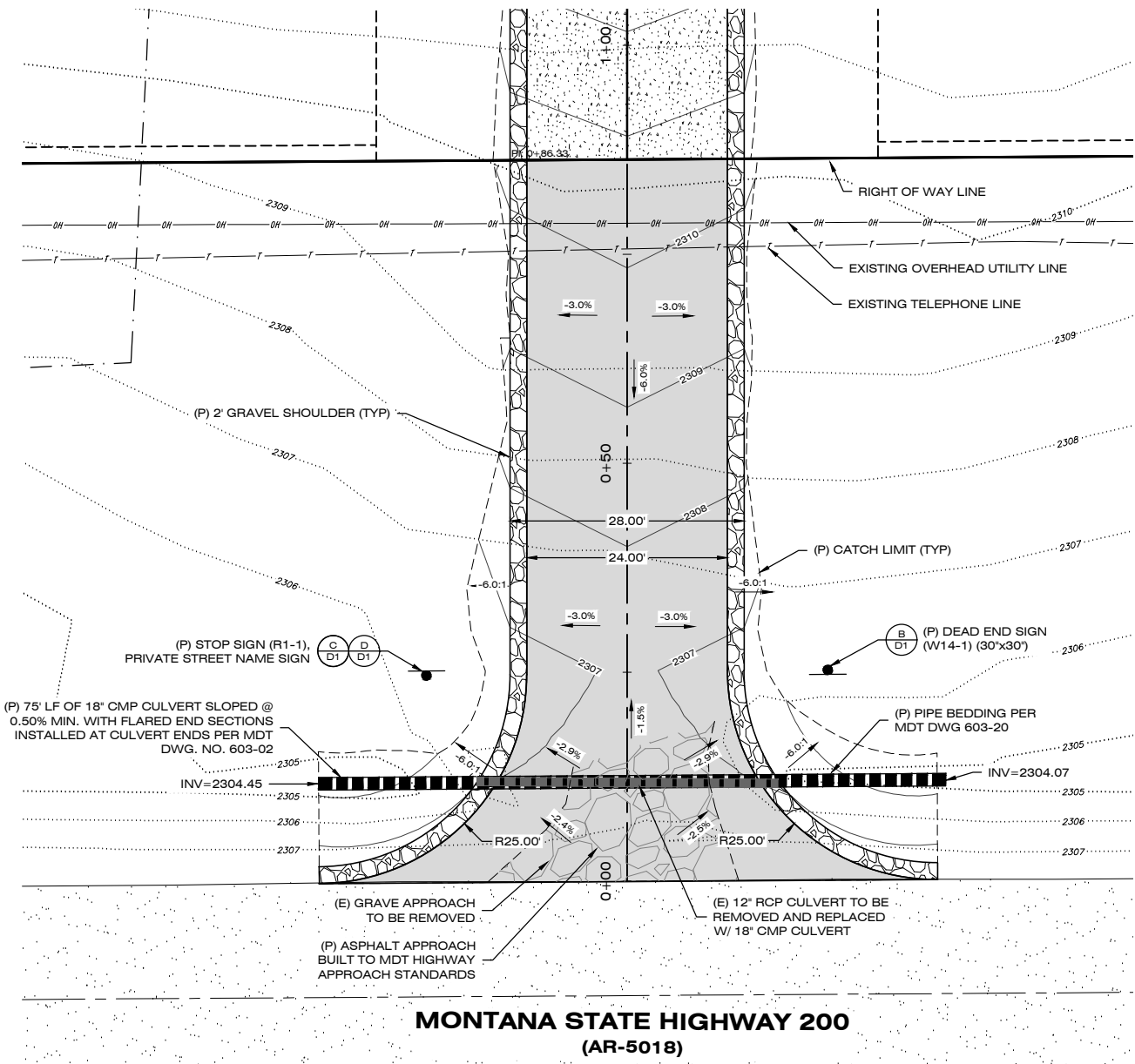


Figure 2 Looking at Hwy 200 in the W direction.



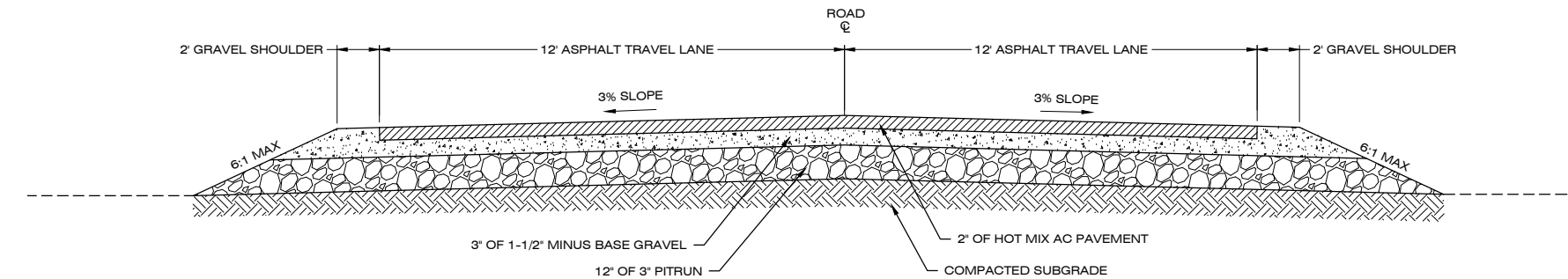
Figure 3 Looking (N) directly at the proposed approach.





A MDT APPROACH DETAIL

NOT TO SCALE



E MDT APPROACH

NOT TO SCALE



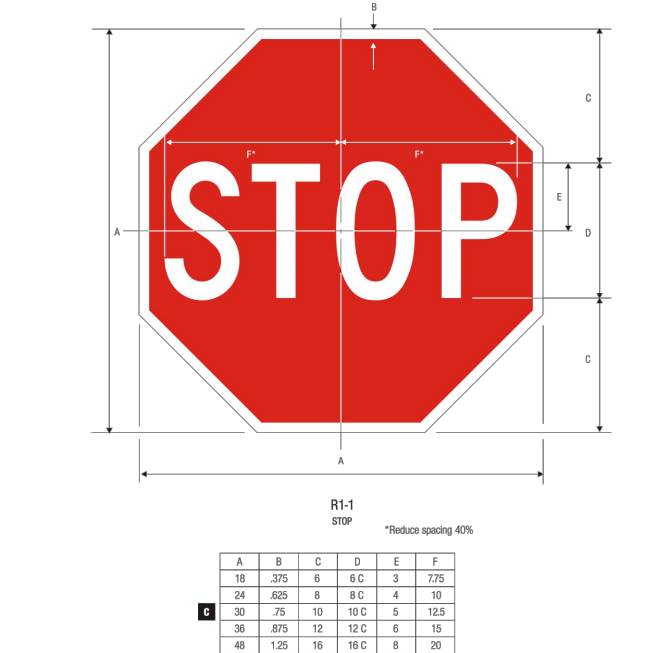
B DEAD END SIGN

NOT TO SCALE



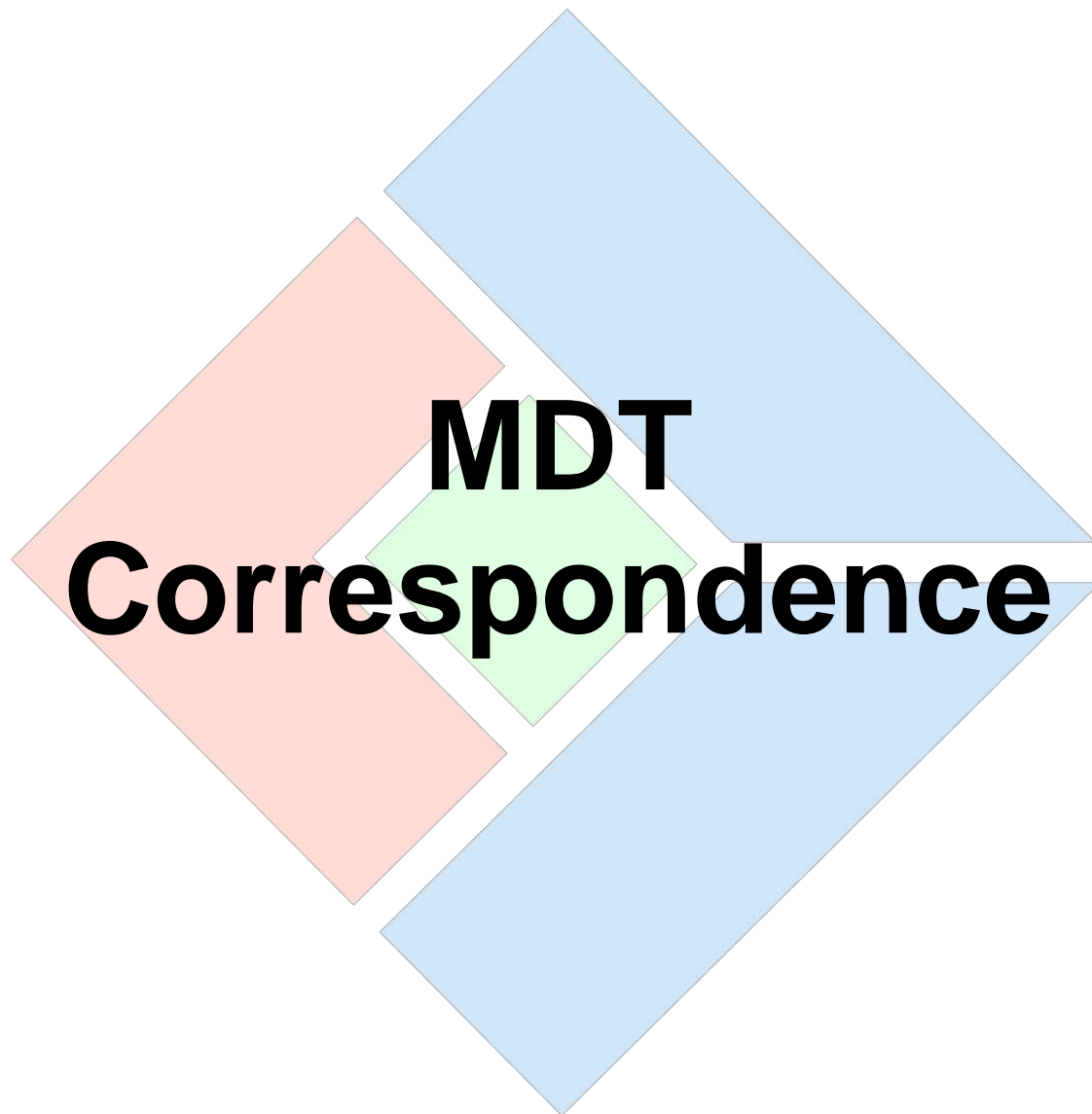
C PRIVATE STREET SIGN

NOT TO SCALE



D STOP SIGN

NOT TO SCALE



Tamara R. Ross

From: Daniel D. Fultz
Sent: Tuesday, January 16, 2024 2:06 PM
To: Tamara R. Ross; Ryley K. Spearing
Subject: FW: APPROACH Application has been returned [mnt_appuser-mdtprd]

-----Original Message-----

From: mdt-maint-permit-sys-noreply@mt.gov <mdt-maint-permit-sys-noreply@mt.gov>
Sent: Tuesday, January 16, 2024 2:03 PM
To: Ryley K. Spearing <Ryley.K.Spearing@Imegcorp.com>; Daniel D. Fultz <Daniel.D.Fultz@Imegcorp.com>
Subject: APPROACH Application has been returned [mnt_appuser-mdtprd]

External Email: Treat links and attachments with caution.

Application # 9336

Permit type: APPROACH

The APPROACH Application has been returned to you for the following reasons:
Please provide preliminary plat- required for consideration of approach permit approval

For prompt consideration, please address the above by 02/09/2024

For reference, your application can be found at
<https://app.mdt.mt.gov/mntencr/permit/edit/9336>

Thank you,

Jesse Gascon
jgascon@mt.gov

Tamara R. Ross

From: Ryley K. Spearing
Sent: Wednesday, January 17, 2024 3:09 PM
To: jgascon@mt.gov
Cc: Daniel D. Fultz; Tamara R. Ross
Subject: Approach Permit Application #9336
Attachments: 22003448-PLAT.pdf

Hi Jesse,

Our approach permit was returned because we did not provide a preliminary plat. I attempted to edit the permit online. However, it did not allow me too.
Attached this the preliminary plat needed for the permit.

Application #9336

Please call me at 701-871-0624 if you have any questions.

Thank you and have a nice day,

Ryley Spearing
IMEG | Civil Design Engineer



1817 South Ave West | Suite A | Missoula, MT 59801

(406) 721-0142 | phone
(701) 871-0624 | mobile
ryley.k.spearing@imegcorp.com

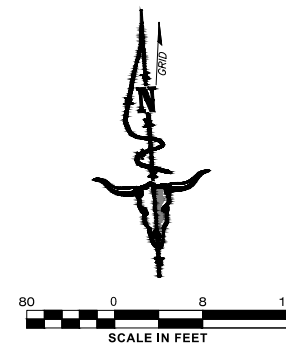
[website](#) | [vCard](#) | [map](#) | [regional news](#)   

[Learn more](#) about us and the IMEG story!

This email may contain confidential and/or private information. If you received this email in error please delete and notify sender.

PRELIMINARY PLAT OF
BLUE CREEK SUBDIVISION

LOCATED IN THE SE1/4 AND SW1/4 OF SECTION 20, T.27N., R.34W., P.M.M., SANDERS COUNTY, MONTANA



BASIS OF BEARING:
STATE PLANE MONTANA - ZONE 2500
GROUND (TRUE) DISTANCES
GRID NORTH

VERTICAL DATUM:
NAVD88

DATE:
AUGUST 2023 - NOVEMBER 2023

RECORD OWNERS:
TUNGSTEN HOLDINGS INC

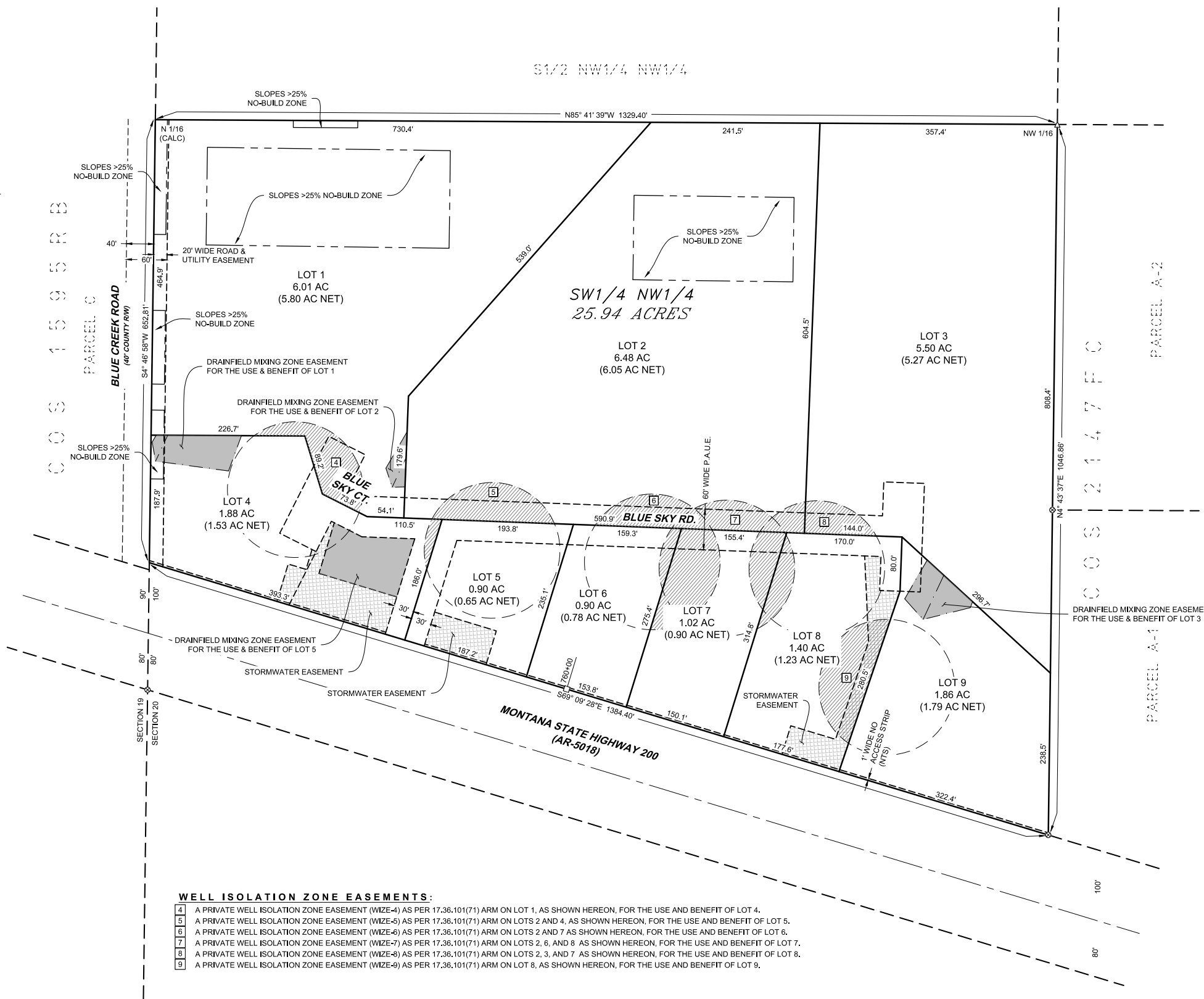
SURVEY COMMISSIONED BY:
TUNGSTEN HOLDINGS INC

TOTAL SUBDIVISION AREA:
25.94 ACRES (GROSS)
1.76 ACRES (ROADS)
0.9 ACRES (NO ACCESS)
25.08 ACRES (NET)

PLAT NOTES:
1) LOTS 1 THROUGH 9 ARE INTENDED FOR SINGLE FAMILY RESIDENTIAL USE.
2) THE NO-BUILD ZONE PROHIBITS ALL BUILDINGS AND STRUCTURES.
3) THIS ZONE SHALL NOT PRECLUDE INSTALLATION OR MAINTENANCE OF UTILITIES AND ASSOCIATED FACILITIES WITHIN DESIGNATED EASEMENT AREAS.

USDA SOILS:
781D - FARMLAND OF LOCAL IMPORTANCE
88C - FARMLAND OF STATEWIDE IMPORTANCE

- LEGEND**
- ⊗ = FOUND REBAR WITH 1" YPC (WARREN, 2734S)
 - △ = FOUND 3-1/4" ALUM. CAP (USFS, 46595LS)
 - = FOUND R/W CONCRETE MONUMENT POLE
 - YPC = YELLOW PLASTIC CAP
 - COS = CERTIFICATE OF SURVEY
 - AC = ACRES
 - P.A.U.E. = PRIVATE ACCESS & UTILITY EASEMENT
 - NTS = NOT TO SCALE
 - WISE = WELL ISOLATION ZONE EASEMENT



WELL ISOLATION ZONE EASEMENTS:

- 4 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-4) AS PER 17.36.101(71) ARM ON LOT 1, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 4.
- 5 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-5) AS PER 17.36.101(71) ARM ON LOTS 2 AND 4, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 5.
- 6 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-6) AS PER 17.36.101(71) ARM ON LOTS 2 AND 7 AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 6.
- 7 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-7) AS PER 17.36.101(71) ARM ON LOTS 2, 6, AND 8 AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 7.
- 8 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-8) AS PER 17.36.101(71) ARM ON LOTS 2, 3, AND 7 AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 8.
- 9 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-9) AS PER 17.36.101(71) ARM ON LOT 8, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 9.

LEGAL DESCRIPTION

SOUTHWEST/NORTHWEST OF PLAT S, LYING NORTH OF MONTANA HIGHWAY 200, RECORDS OF SANDERS COUNTY, AND BEING LOCATED IN THE SECTION 20, TOWNSHIP 27 NORTH, RANGE 34 WEST, PRINCIPAL MERIDIAN MONTANA, SANDERS COUNTY, MONTANA.



SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THE ATTACHED PRELIMINARY PLAT REPRESENTS A SURVEY MADE UNDER MY SUPERVISION AND PREPARED IN CONFORMANCE WITH THE APPLICABLE SECTIONS OF THE MONTANA SUBDIVISION AND PLATTING ACT AND THE REGULATIONS ADOPTED THEREUNDER.

SS
MATTHEW JACOBSON, PROFESSIONAL LAND SURVEYOR
MONTANA LICENSE NO. 13748LS

DATE

1/4	SEC.	T.	R.
<input checked="" type="checkbox"/>	20	27N.	34W.

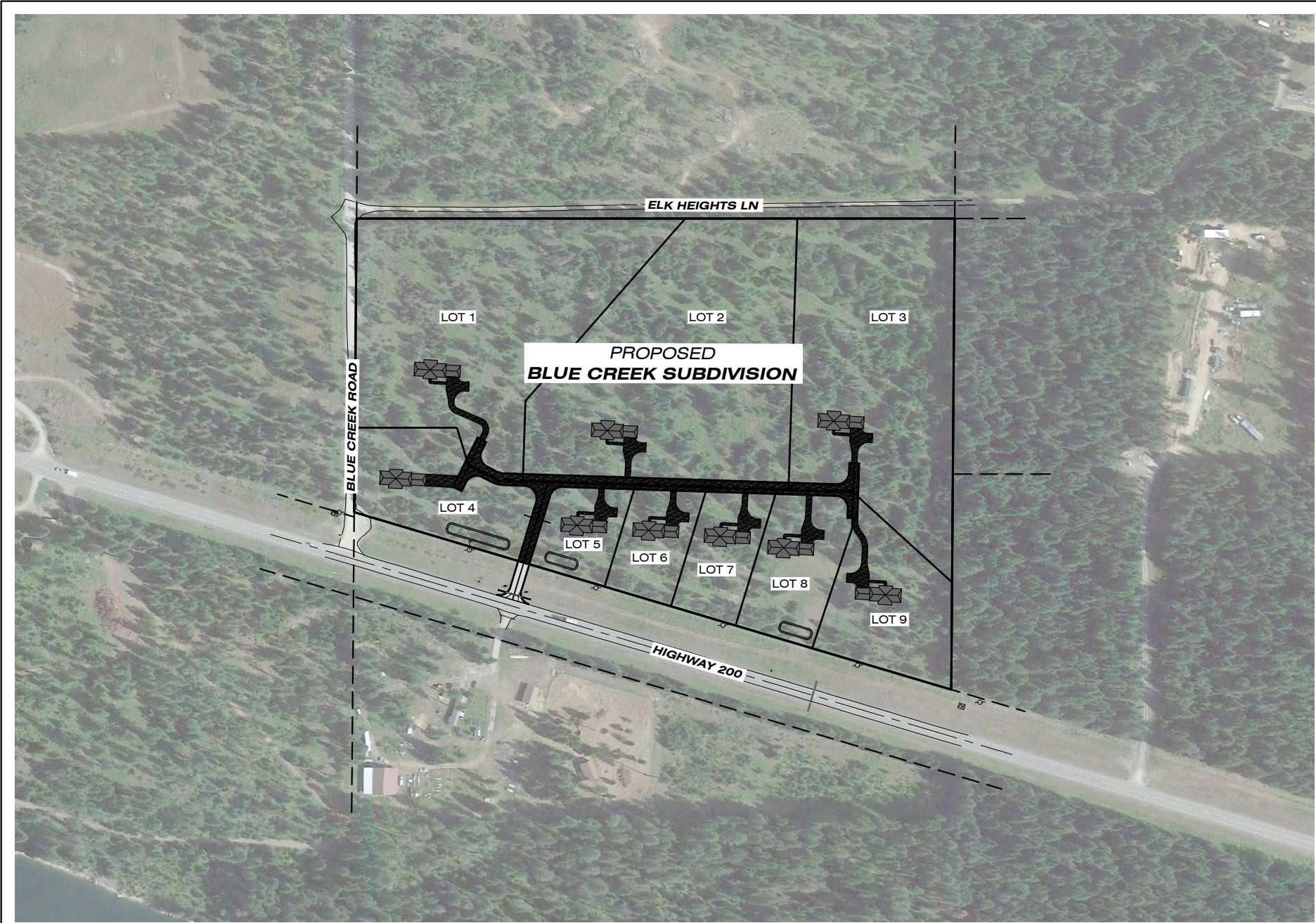
PREPARED BY:



1817 SOUTH AVE. W, STE. A PH: 406.721.0142
MISSOULA, MT FAX: 406.721.5224
59801 www.imegcorp.com
IMEG PROJECT NO. 22003448

ROAD CONSTRUCTION PLANS

LOCATED AT THE INTERSECTION OF HIGHWAY 200 & BLUE CREEK ROAD
LOCATED IN SECTION 20, T.27N., R.34W., P.M.M., SANDERS COUNTY, MONTANA.



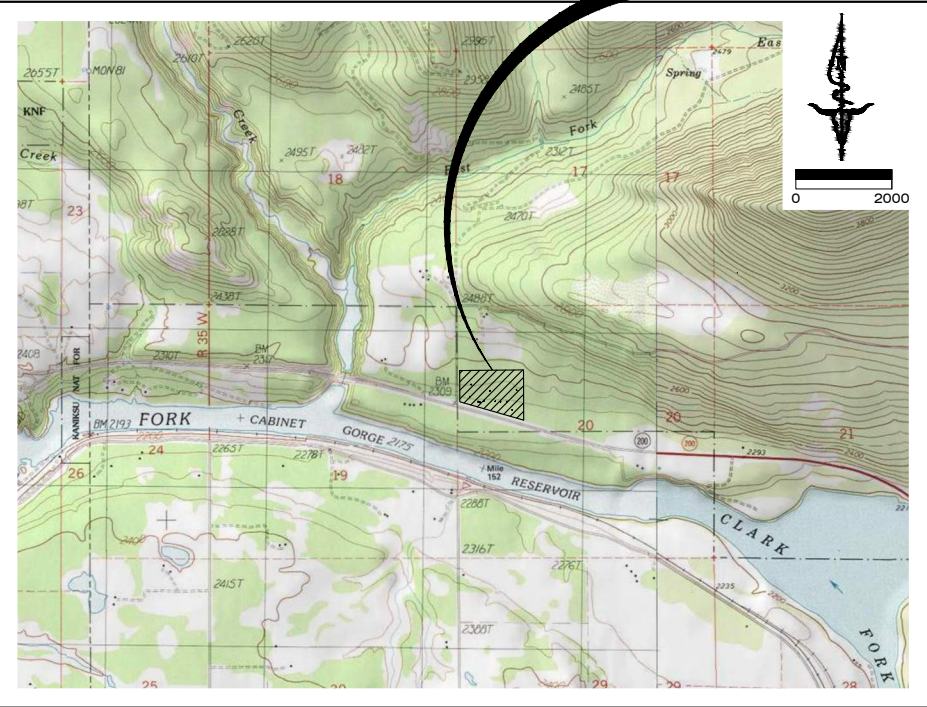
CALL UTILITY NOTIFICATION
CENTER OF MONTANA
1-800-424-5555
CALL FOR THE MARKING OF
UNDERGROUND UTILITIES
2 BUSINESS DAYS BEFORE
YOU DIG, GRADE, OR EXCAVATE



SHEET INDEX

DESCRIPTION	SHEET NO.
LEGEND AND NOTES	SHEET 2 OF 12
SWPPP PLAN	SHEET 3 OF 12
PLAN & PROFILE - BLUE SKY DRIVE (STA: 0+00 - 2+76.52)	SHEET 4 OF 12
PLAN & PROFILE - BLUE SKY COURT (STA: 5+00 - 6+83.35) / BLUE SKY DRIVE (STA: 6+83.35 - 10+00)	SHEET 5 OF 12
PLAN & PROFILE - BLUE SKY DRIVE (STA: 10+00 - 13+60.78)	SHEET 6 OF 12
STORM PLAN	SHEET 7 OF 12
CROSS SECTIONS - BLUE SKY DRIVE (STA: 0+00 - 2+76.52)	SHEET 8 OF 12
CROSS SECTIONS - BLUE SKY COURT (STA: 5+00 - 6+00)	SHEET 9 OF 12
CROSS SECTIONS - BLUE SKY COURT (STA: 6+50 - 6+83.35) / BLUE SKY DRIVE (STA: 6+83.35 - 8+50)	SHEET 10 OF 12
CROSS SECTIONS - BLUE SKY DRIVE (STA: 9+00 - 11+50)	SHEET 11 OF 12
CROSS SECTIONS - BLUE SKY DRIVE (STA: 12+00 - 13+22.78)	SHEET 12 OF 12
DETAIL SHEET	SHEET D1 OF D2
DETAIL SHEET	SHEET D2 OF D2

VICINITY MAP



HERON, SANDERS COUNTY

PROJECT STATUS		
THESE PLANS REQUIRE, AT A MINIMUM, APPROVAL FROM THE AGENCIES LISTED BELOW. THEREFORE, THE OWNER & CONTRACTOR ARE ADVISED THAT BIDS & CONTRACTS SHOULD NOT BE FINALIZED UNTIL INDICATED BELOW.		
AGENCIES REVIEW STATUS:	REFERENCE #	APPROVAL DATE
SANDERS COUNTY ROAD DEPARTMENT	-	-
MT DEQ	-	-
PLAN SET IS READY FOR CONSTRUCTION <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
AS-BUILT DATE: PROJECT HAS BEEN CONSTRUCTED IN GENERAL CONFORMANCE WITH THE ABOVE APPROVALS, STATED SPECIFICATIONS, AND SHOWN HERE IN, UNLESS OTHERWISE SPECIFIED.		
PROJECT NOTES:		



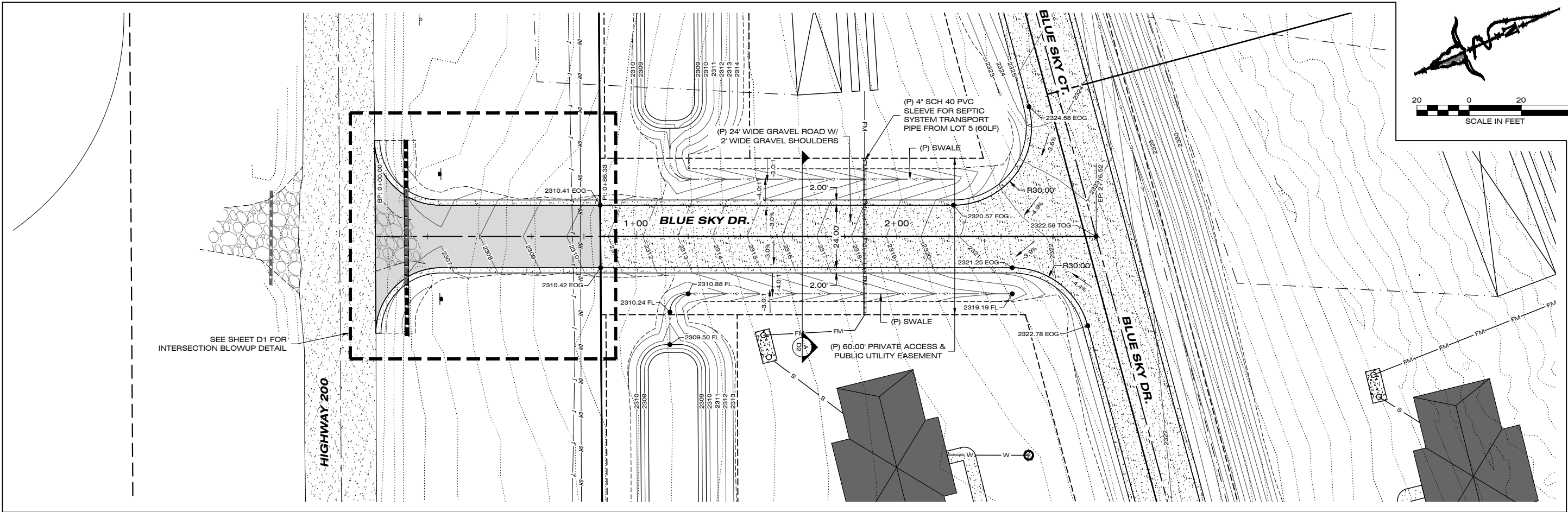
DATE	
REVISIONS	

DESIGNED:	DF
DRAFTED:	AE
CHECKED:	CD
DATE:	JAN 2024

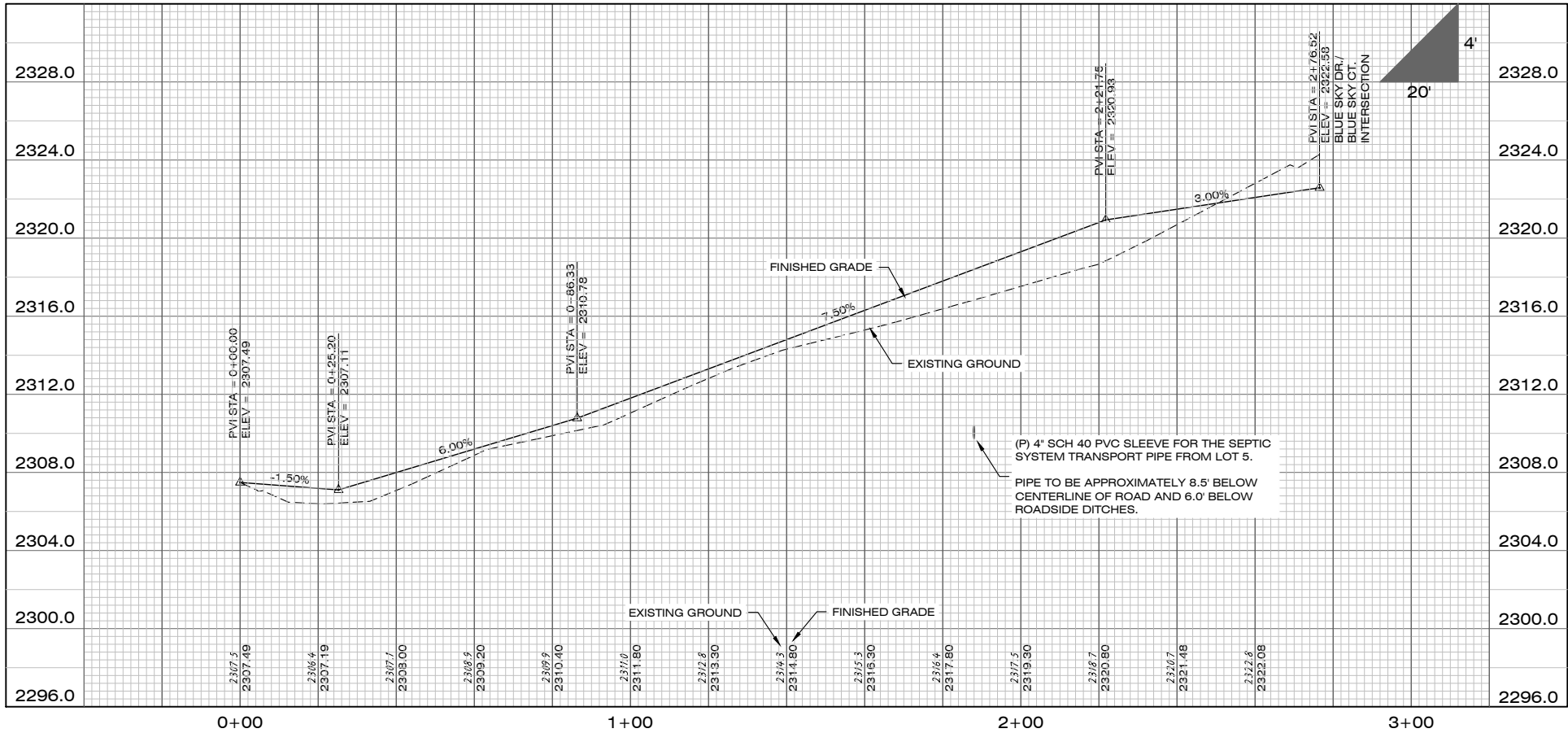
LOCATION: SWNW PLAT S LYING N. OF HIGHWAY 200 SECTION 20, T.27N., R.34W., P.M.M. SANDERS COUNTY, MONTANA	PREPARED FOR: TUNGSTEN HOLDINGS, INC.
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PROJECT NAME BLUE CREEK SUBDIVISION	PROJECT NO. 22003448
SHEET TITLE: ROAD CONSTRUCTION PLANS COVER SHEET	SHEET: 1 OF 11


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	52
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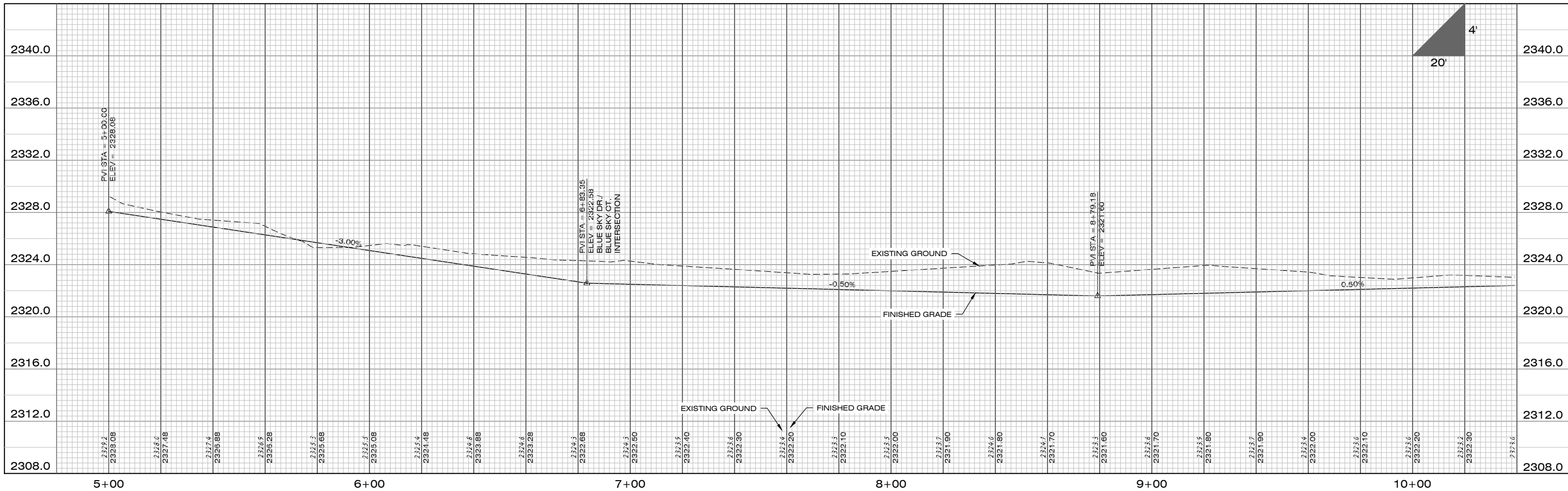
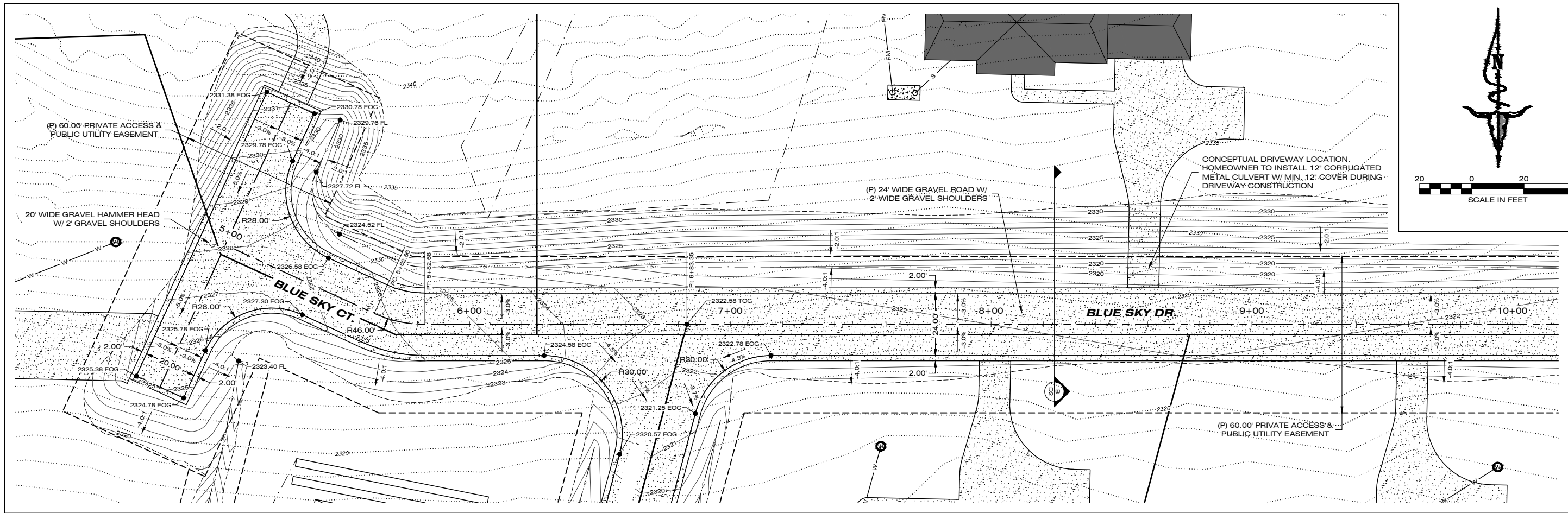
PLAN VIEW



PROFILE VIEW

 1817 SOUTH AVE. W. STE. A MISSOULA, MT 59801 PH: 406.721.0142 FAX: 406.721.5221 www.imegcorp.com		DATE: _____	
DESIGNED: <i>DF</i>		REVISIONS: _____	
DRAFTED: <i>AE</i>		_____	
CHECKED: <i>CD</i>		_____	
DATE: <i>JAN 2024</i>		_____	
LOCATION: SW/4 PLAT S LYING N. OF HIGHWAY 200 SECTION 20, T.27N., R.34W., P.M.M. SANDERS COUNTY, MONTANA		PREPARED FOR: TUNGSTEN HOLDINGS, INC.	
PROJECT NO. 22003448		PROJECT NAME BLUE CREEK SUBDIVISION	
SHEET: 4 OF 11		SHEET TITLE: ROAD CONSTRUCTION PLANS PLAN & PROFILE SHEET	

DWG LOCATION: G:\2025\22003448.DWG DESIGNER: JAVIER ESPINOZA\22003448.DWG



1817 SOUTH AVE. W. STE. A
MISSOULA, MT 59801
PH: 406.721.0142
FAX: 406.721.5222
www.imegcorp.com

DATE: _____

DESIGNED: *DF*

DRAFTED: *AE*

CHECKED: *CD*

DATE: *JAN 2024*

LOCATION: SW/4 PLAT S LYING N. OF HIGHWAY 200
SECTION 20, T.27N., R.34W., P.M.M.
SANDERS COUNTY, MONTANA

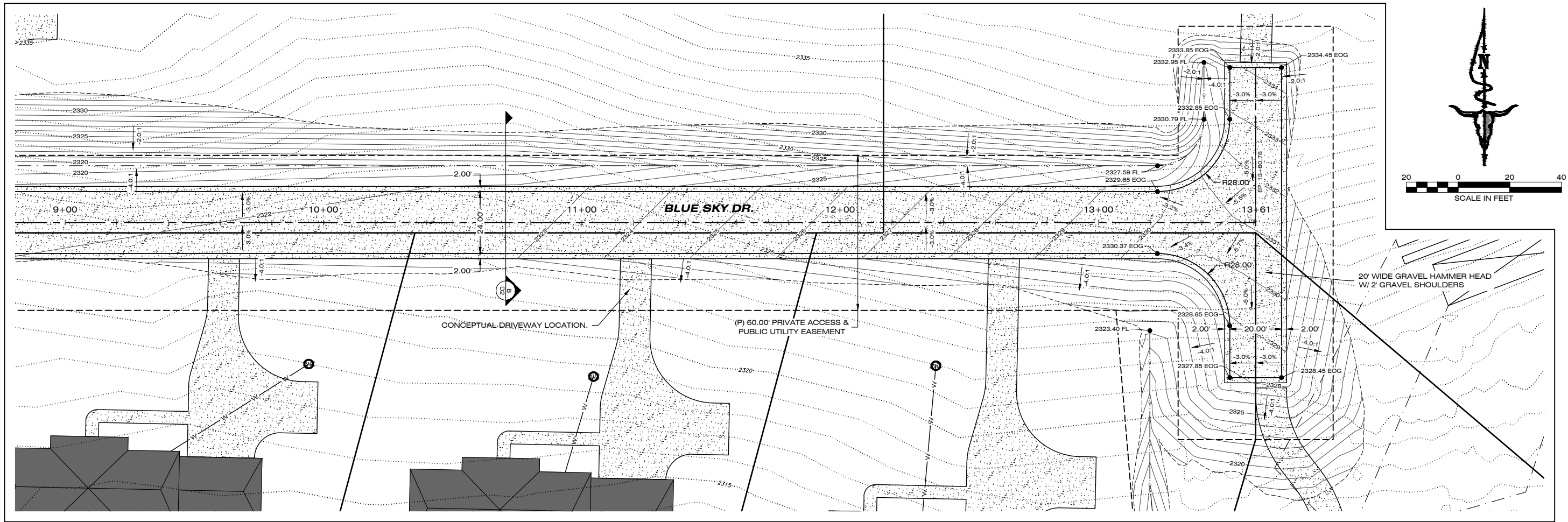
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PROJECT NO: 22003448

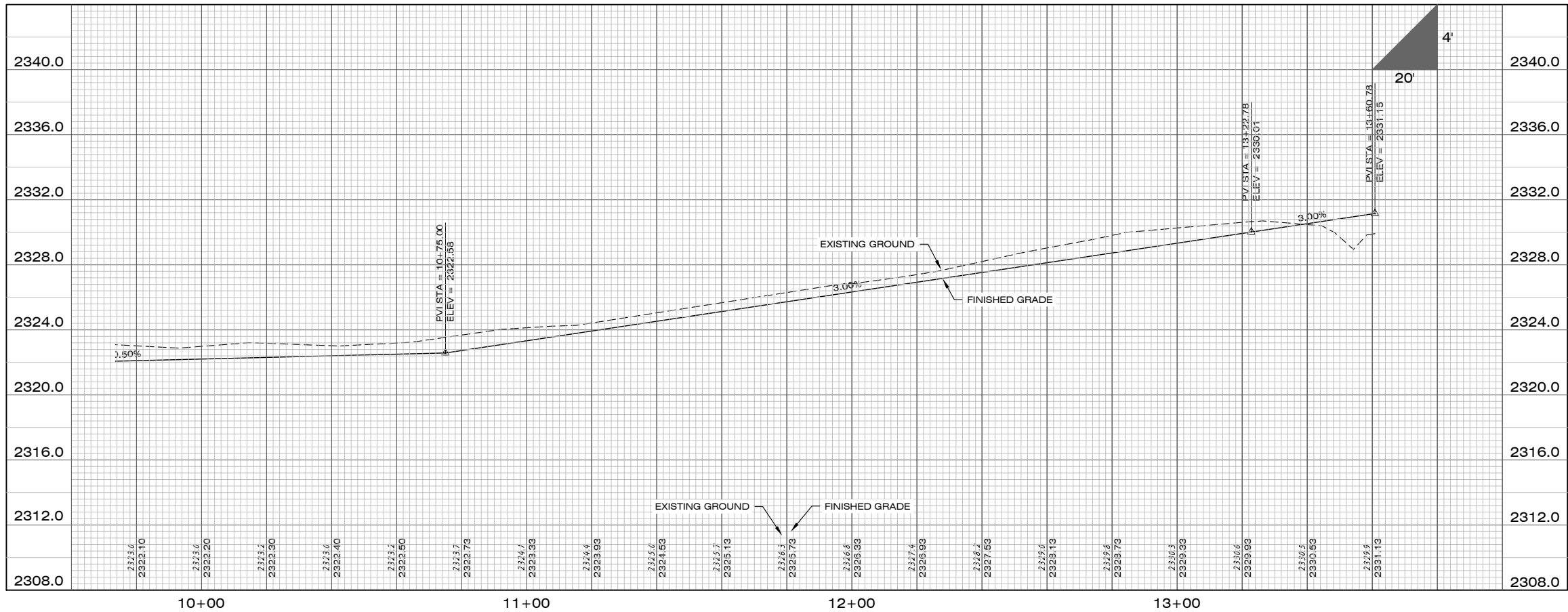
PROJECT NAME: BLUE CREEK SUBDIVISION

SHEET: 5 OF 11

SHEET TITLE: ROAD CONSTRUCTION PLANS
PLAN & PROFILE SHEET



PLAN VIEW



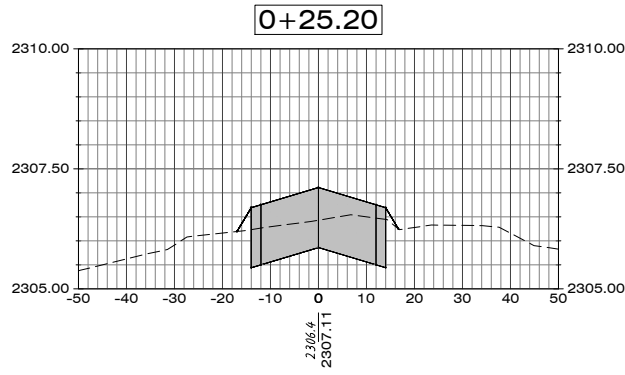
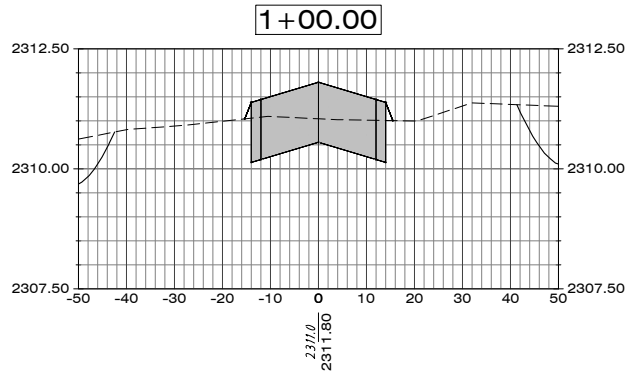
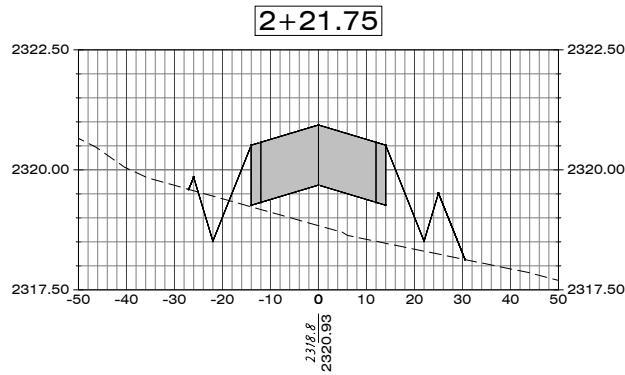
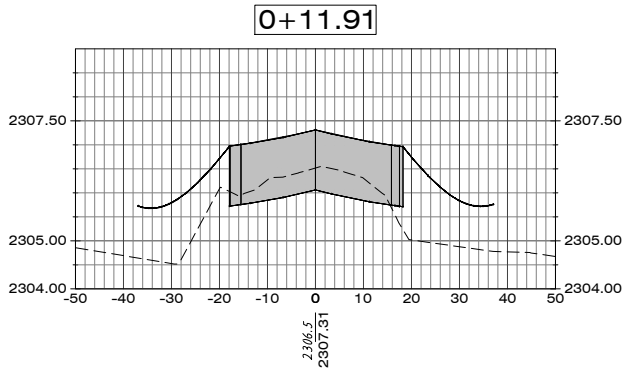
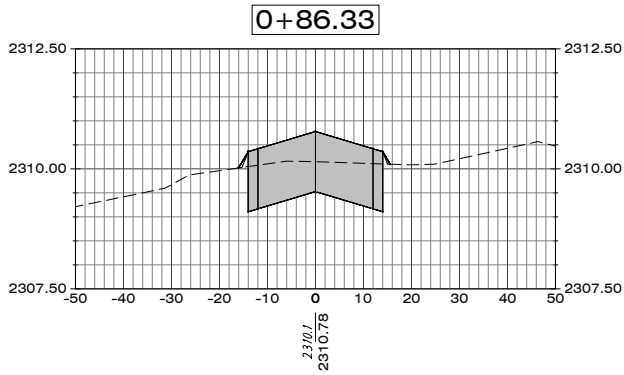
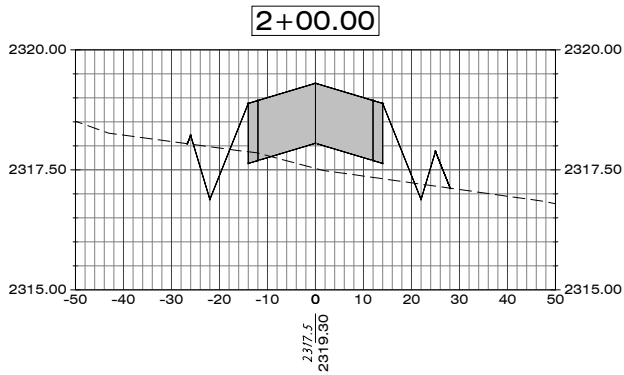
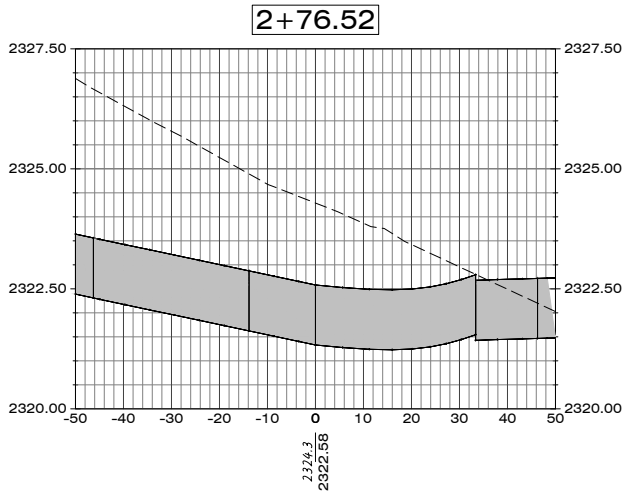
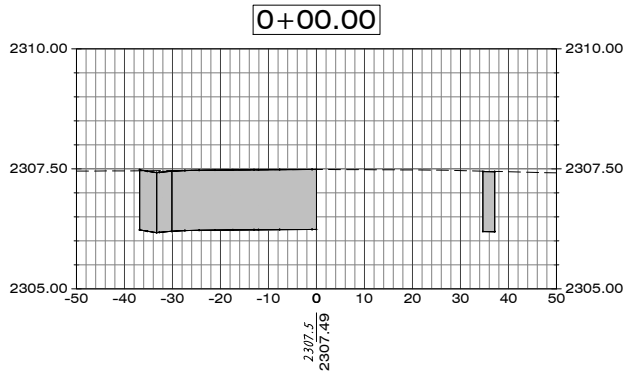
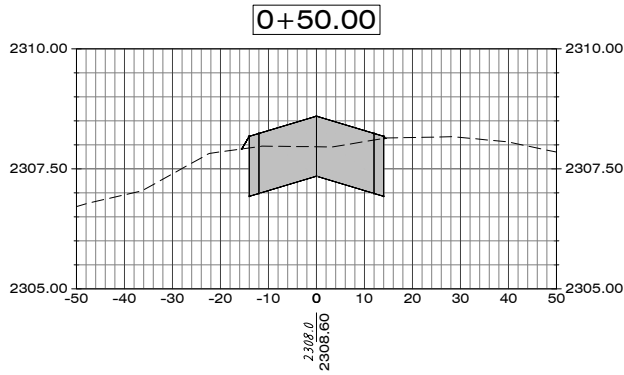
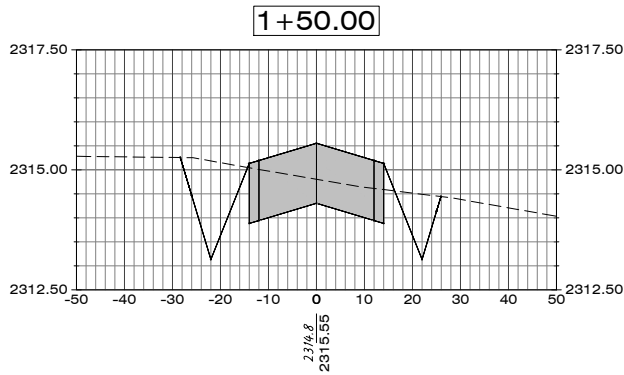
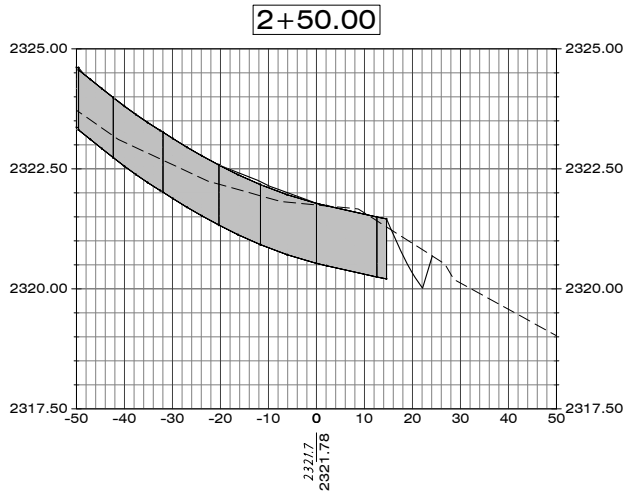
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DESIGNED: <i>DF</i>	
DRAFTED: <i>AE</i>	
CHECKED: <i>CD</i>	
DATE: <i>JAN 2024</i>	

LOCATION: SWNW PLAT S LYING N. OF HIGHWAY 200 SECTION 20, T.27N., R.34W., P.M.M. SANDERS COUNTY, MONTANA
PREPARED FOR: TUNGSTEN HOLDINGS, INC.

PROJECT NO. 22003448	PROJECT NAME BLUE CREEK SUBDIVISION
SHEET: 6 OF 11	SHEET TITLE: ROAD CONSTRUCTION PLANS PLAN & PROFILE SHEET



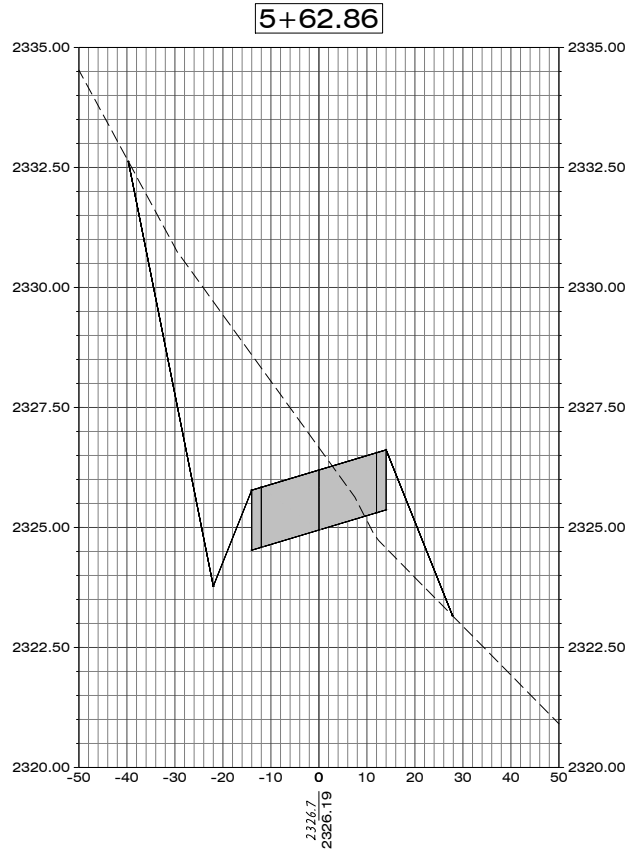
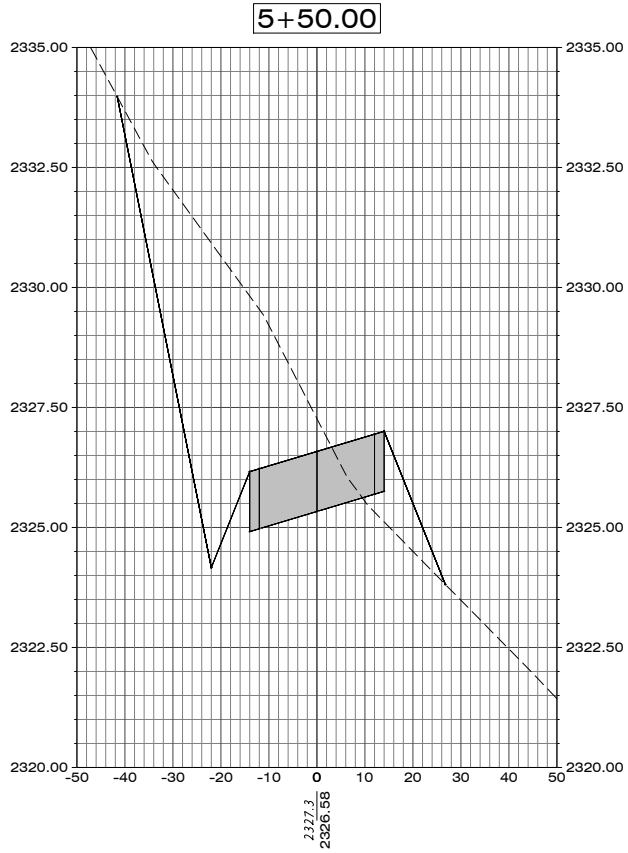
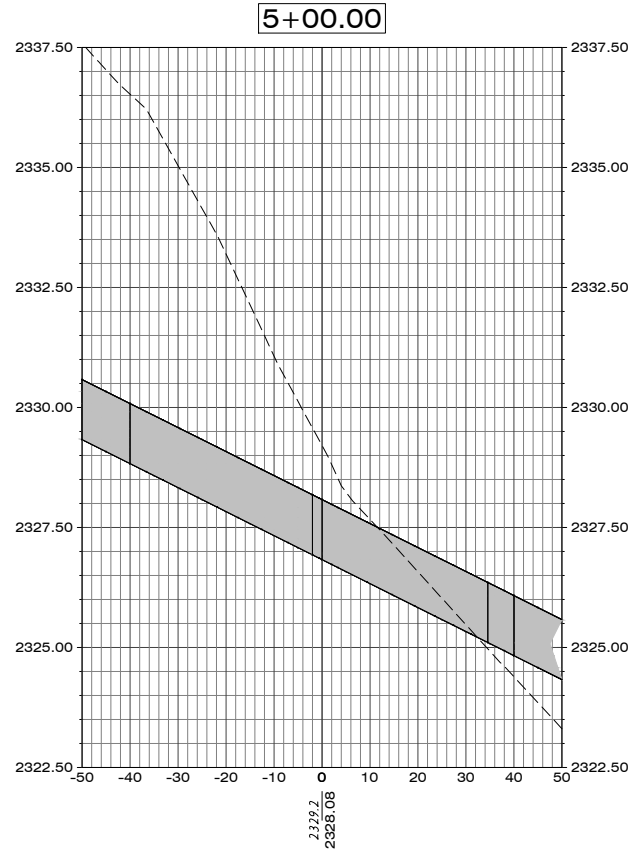
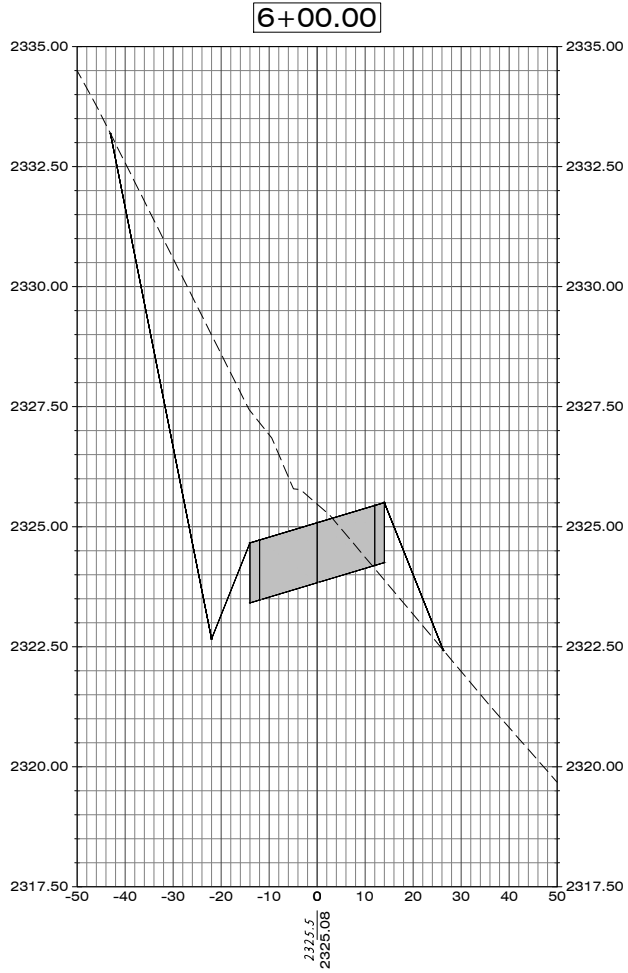
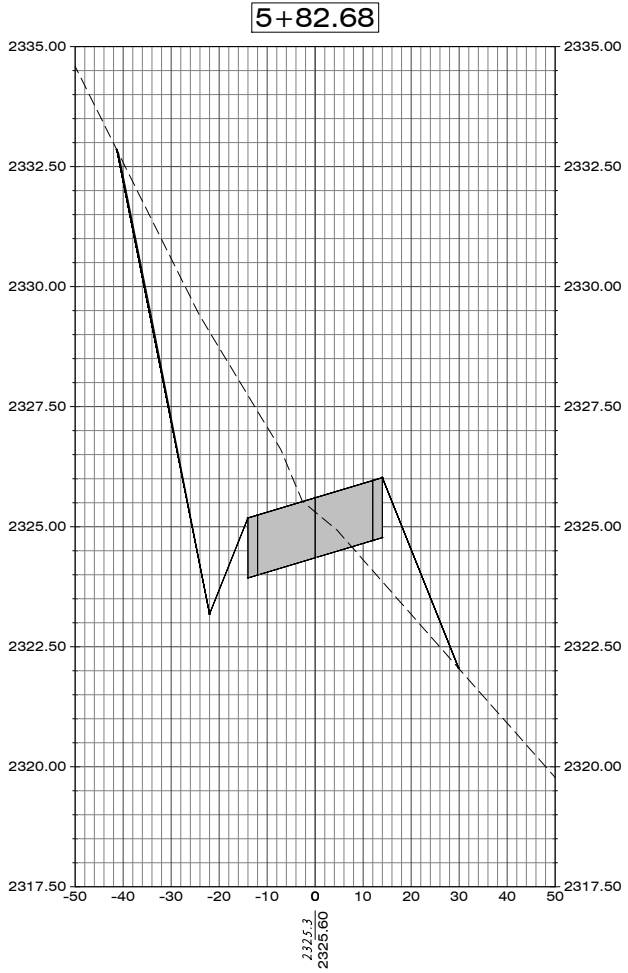
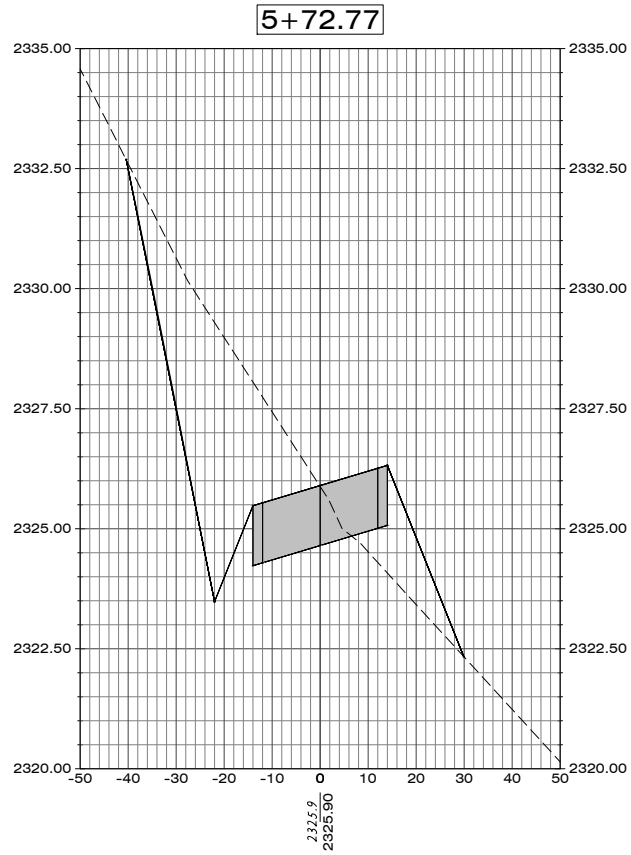
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DRAFTED: AE
CHECKED: CD
DATE: JAN 2024

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SECTION 20, T.27N., R.34W., P.M.M.
SANDERS COUNTY, MONTANA
PREPARED FOR: TUNGSTEN HOLDINGS, INC.

PROJECT NAME: BLUE CREEK SUBDIVISION
PROJECT NO.: 22003448
SHEET: 8 OF 11
SHEET TITLE: ROAD CONSTRUCTION PLANS
CROSS SECTIONS

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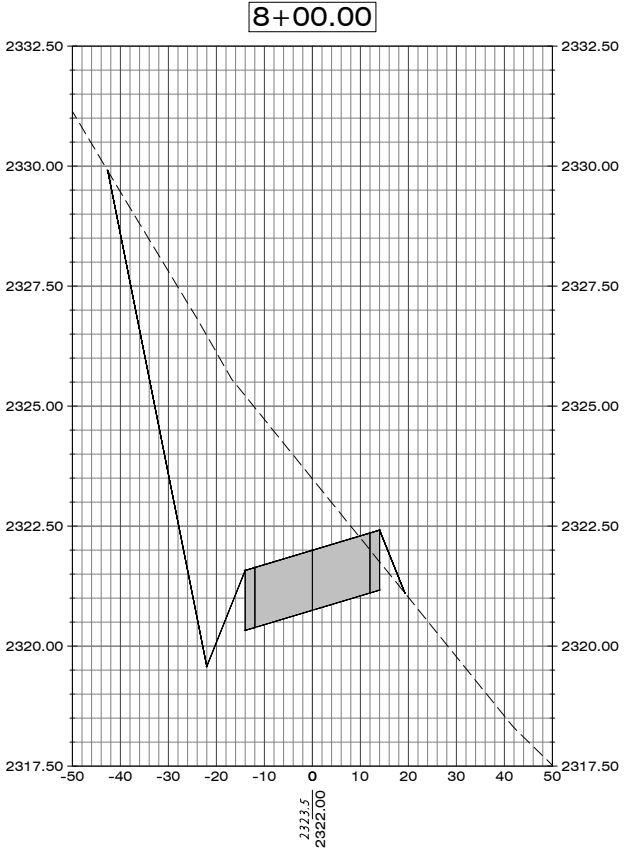
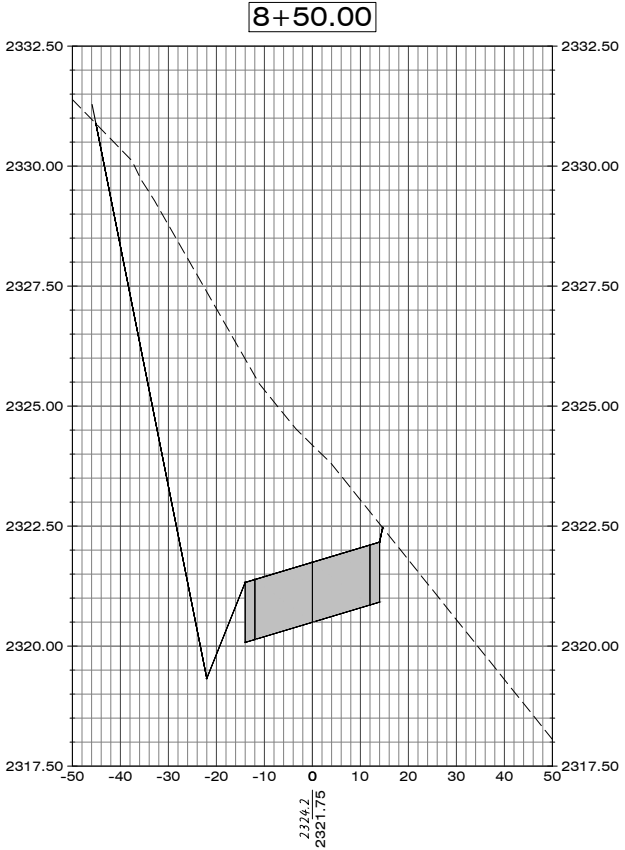
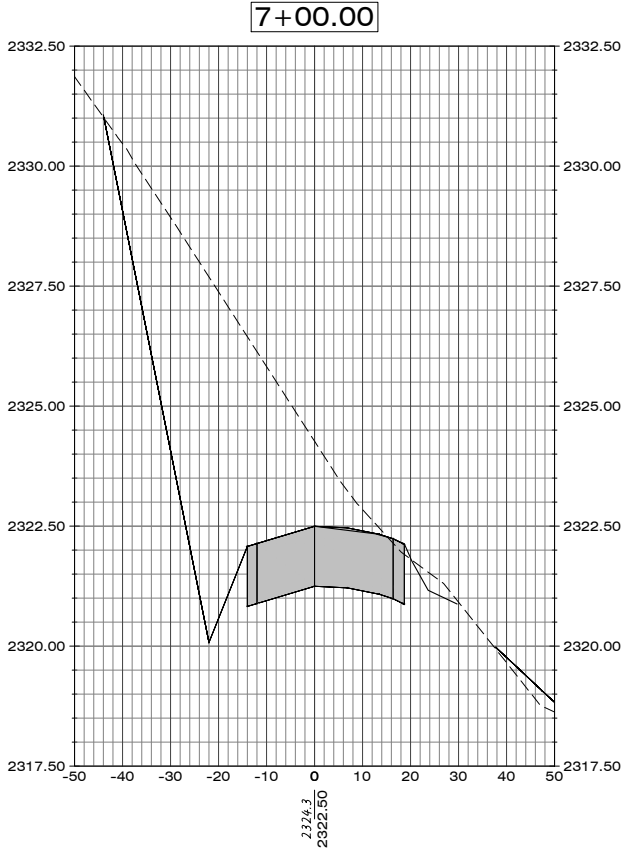
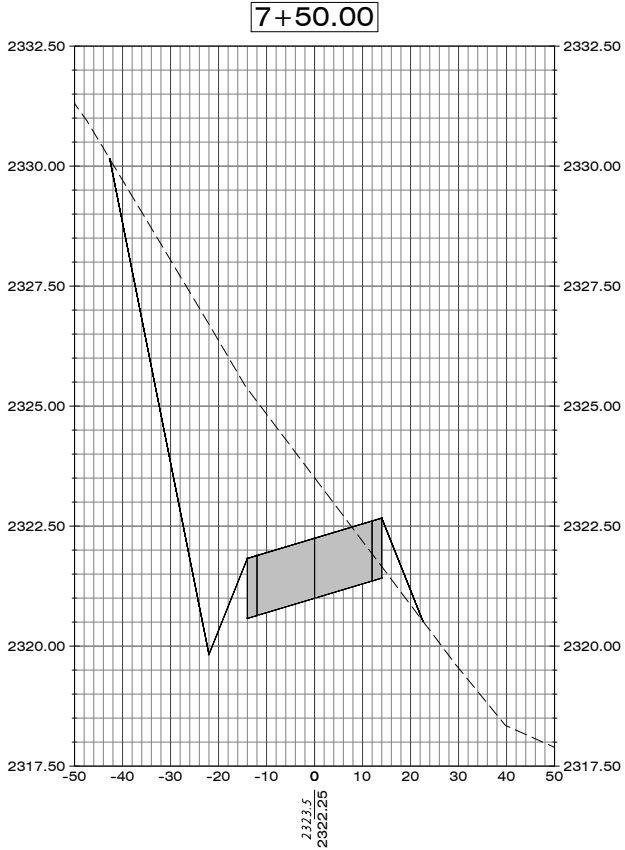


REVISIONS	DATE

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DRAFTED: AE
CHECKED: CD
DATE: JAN 2024

LOCATION: SWNW PLAT S LYING N. OF HIGHWAY 200
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SANDERS COUNTY, MONTANA
PREPARED FOR: TUNGSTEN HOLDINGS, INC.

PROJECT NAME: BLUE CREEK SUBDIVISION
PROJECT NO.: 22003448
SHEET: 9 OF 11
SHEET TITLE: ROAD CONSTRUCTION PLANS
CROSS SECTIONS



PROJECT NO.
22003448

PROJECT NAME
BLUE CREEK SUBDIVISION

SHEET:
10 OF 11

SHEET TITLE:
ROAD CONSTRUCTION PLANS
CROSS SECTIONS

LOCATION:
SW/4 PLAT S LYING N. OF HIGHWAY 200
SECTION 20, T.27N., R.34W., P.M.M.
SANDERS COUNTY, MONTANA

PREPARED FOR:
TUNGSTEN HOLDINGS, INC.

DESIGNED: DF

DRAFTED: AE

CHECKED: CD

DATE: JAN 2024

REVISIONS

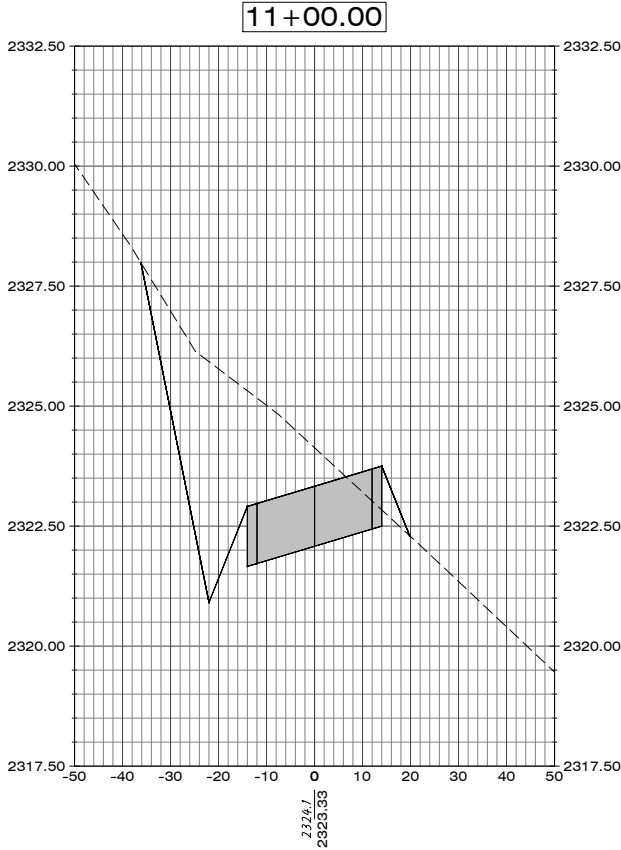
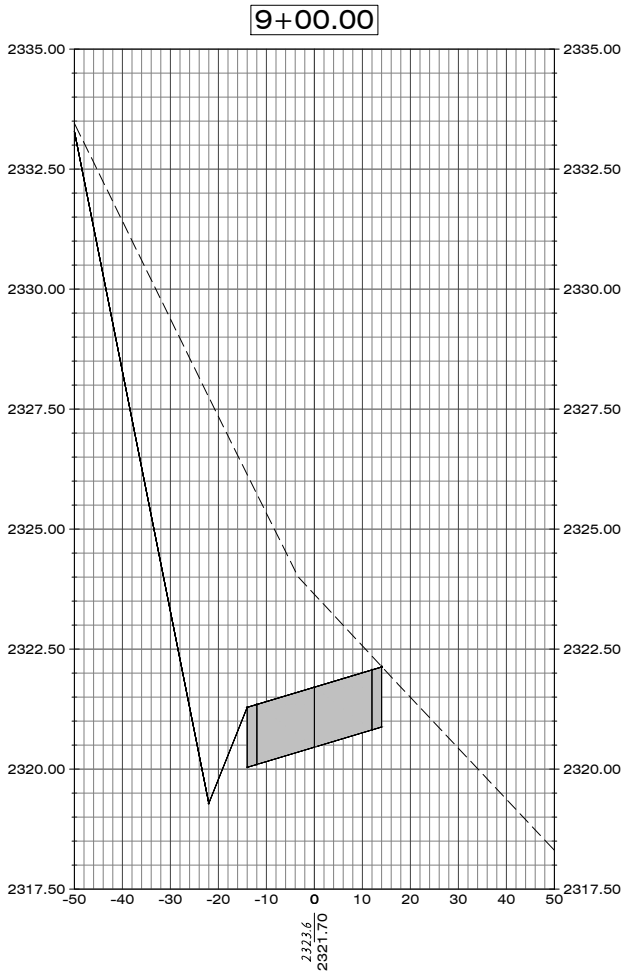
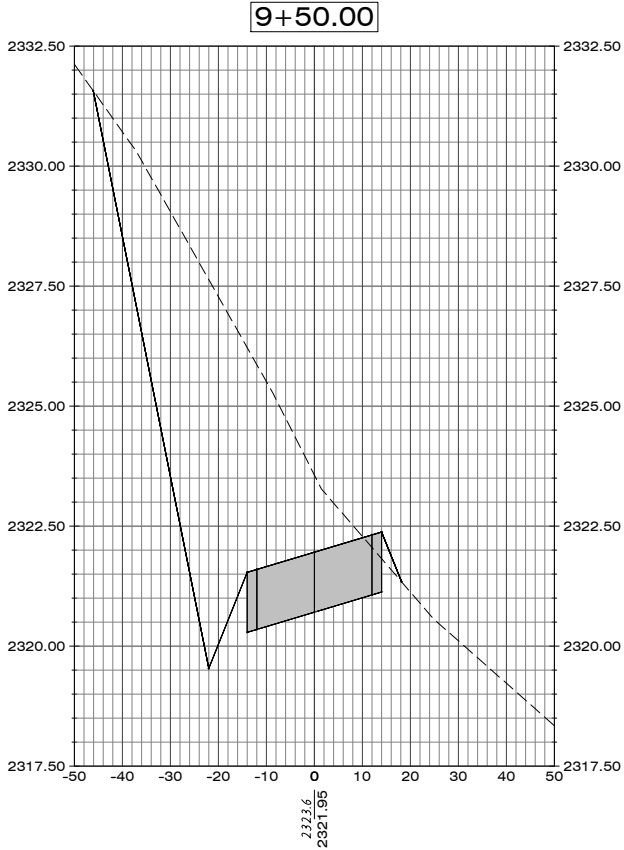
DATE

IMEG

1817 SOUTH AVE. W. STE. A
MISSOULA, MT 59801

PH: 406.721.0142
FAX: 406.721.5221
www.imegcorp.com

PLLOT DATE: 1/18/2024 8:54 AM

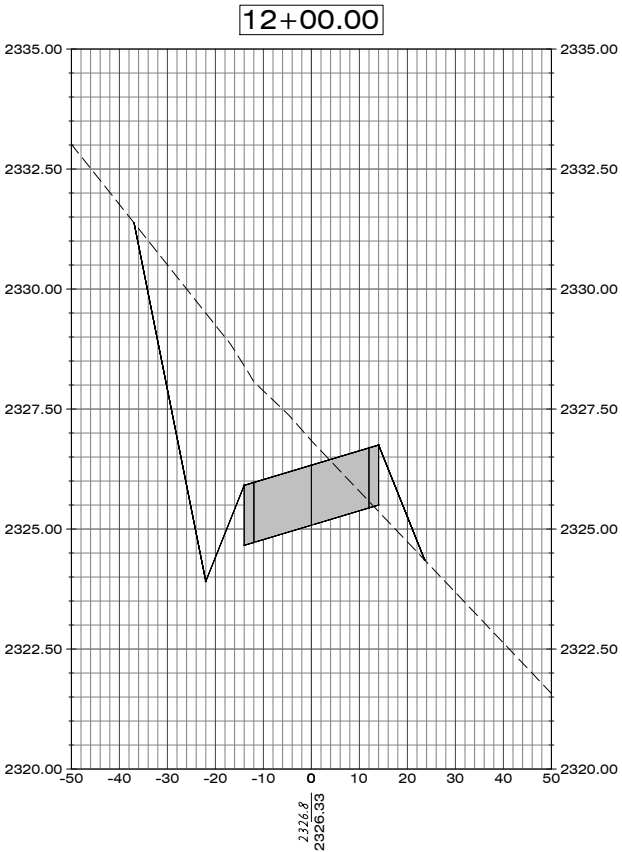


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CHECKED: CD
DATE: JAN 2024

LOCATION: SWNW PLAT S LYING N. OF HIGHWAY 200
SECTION 20, T.27N., R.34W., P.M.M.
SANDERS COUNTY, MONTANA
PREPARED FOR: TUNGSTEN HOLDINGS, INC.

PROJECT NO. 22003448
PROJECT NAME BLUE CREEK SUBDIVISION
SHEET 10 OF 11
SHEET TITLE ROAD CONSTRUCTION PLANS
CROSS SECTIONS

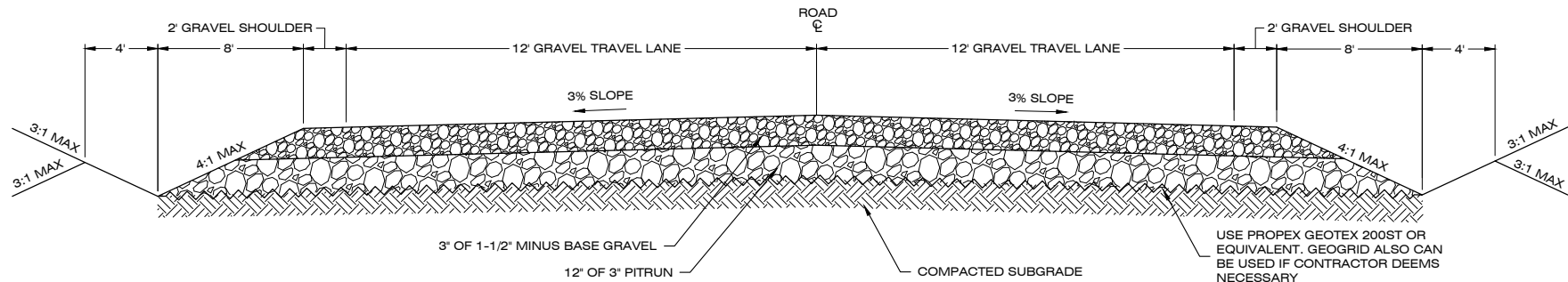


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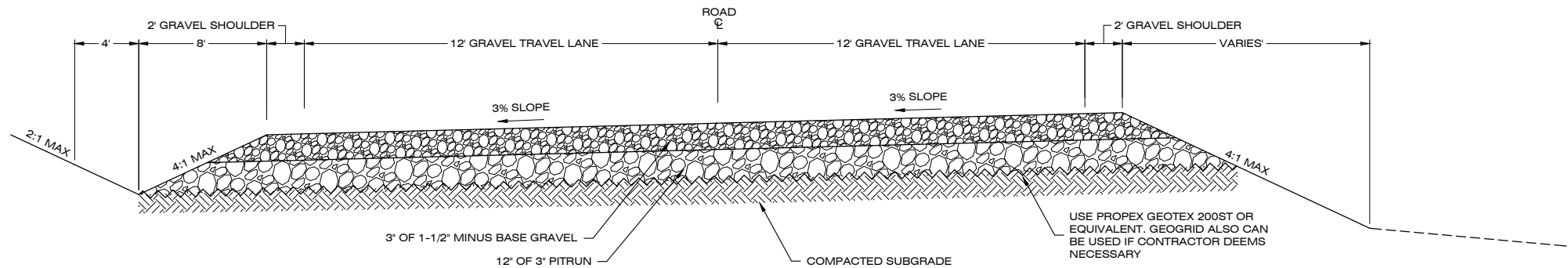
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PROJECT NAME BLUE CREEK SUBDIVISION
SHEET 11 OF 11
SHEET TITLE ROAD CONSTRUCTION PLANS
CROSS SECTIONS



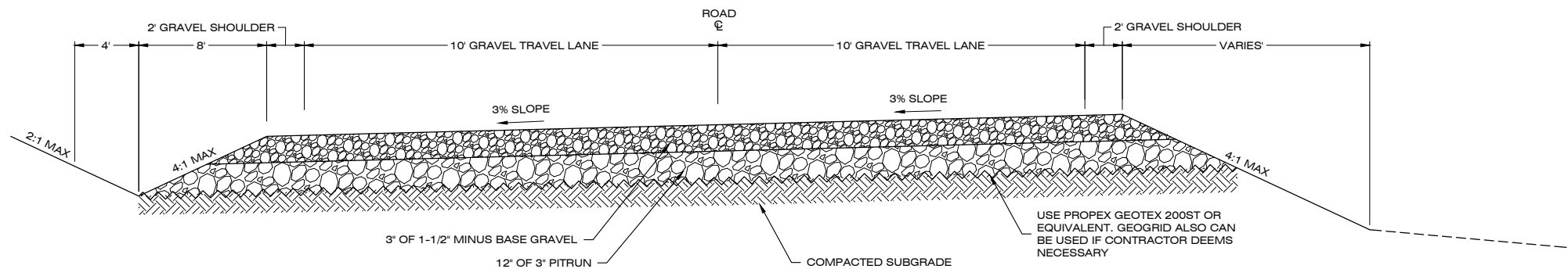
A GRAVEL ROAD CROSS SECTION - BLUE SKY DR. (NON-MDT)

NOT TO SCALE



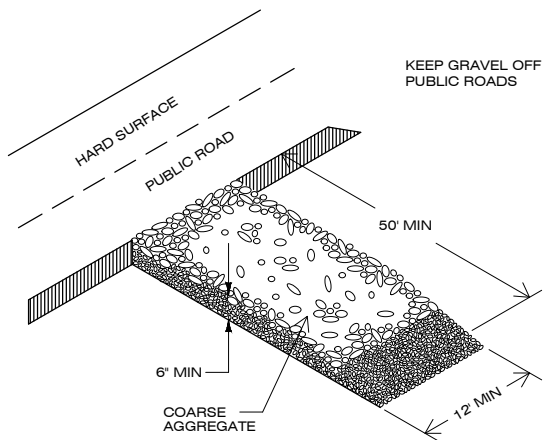
B GRAVEL ROAD CROSS SECTION - BLUE SKY COURT (5+38 - 6+28) / BLUE SKY DRIVE (7+16 - 13+23)

NOT TO SCALE



C GRAVEL ROAD CROSS SECTION - HAMMERHEAD

NOT TO SCALE



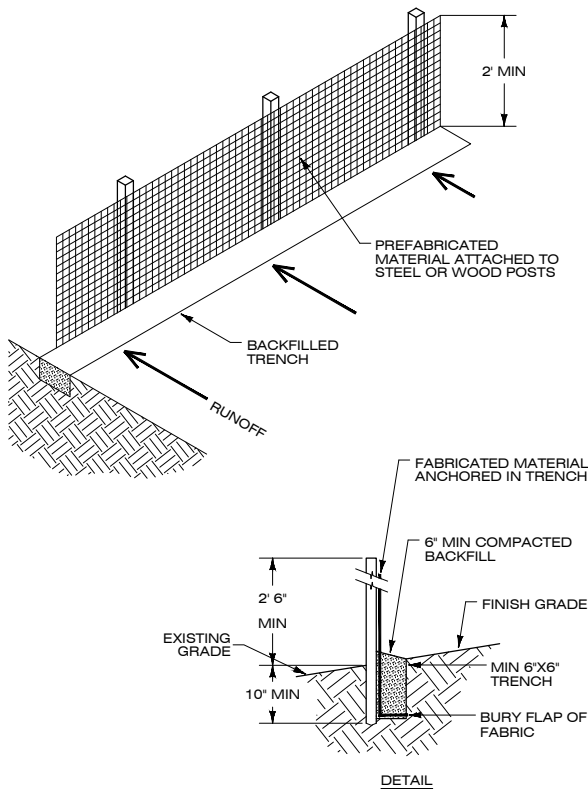
DEFINITION
A STONE STABILIZED PAD LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE

PURPOSE
TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF

NOTE:
CONTRACTOR MAY SUBSTITUTE TRACK PAD FOR CATTLE GUARD(S) OR OTHER METHOD TO CONTROL TRACKING.

D TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

NOT TO SCALE



- NOTES:
1. SILT FENCE SHALL BE INSTALLED BEFORE ANY EARTH REMOVAL OR EXCAVATION TAKES PLACE.
 2. SET POSTS MAXIMUM 8 FEET ON CENTER AND EXCAVATE 6'X6" TRENCH UP-SLOPE ALONG THE LINE OF POSTS.
 3. ATTACH FILTER FABRIC TO POSTS AND EXTEND IT INTO TRENCH.
 4. BACKFILL AND COMPACT EXCAVATED SOIL.

E SILT FENCE INSTALLATION

NOT TO SCALE

DATE	
REVISIONS	

DESIGNED: DF
DRAFTED: AE
CHECKED: CD
DATE: JAN 2024

LOCATION: SW/4 PLAT S LYING N. OF HIGHWAY 200
SECTION 20, T.27N., R.34W., P.M.M.
SANDERS COUNTY, MONTANA
PREPARED FOR: TUNGSTEN HOLDINGS, INC.

PROJECT NAME: BLUE CREEK SUBDIVISION
PROJECT NO.: 22003448
SHEET TITLE: ROAD CONSTRUCTION PLANS
DETAIL SHEET

SHEET: D2 OF D2

GRADING AND DRAINAGE ENGINEERING DESIGN REPORT

PREPARED IN ACCORDANCE WITH MDEQ'S CIRCULAR DEQ-8

for

Blue Creek Subdivision
Located at Mile Post 1 MT Hwy 200
Heron, MT 59844
Legally Described as: SWNW Plat S lying N of MT Hwy 200, 27.3 Acres
Section 20, T27N, R34W
Sanders County, Montana

Prepared For:
Tungsten Holdings Inc.
809 Mineral Ave
Libby, Montana 59923

Prepared By:
IMEG Corp.
1817 South Avenue West, Suite A
Missoula, MT 59801

2.0 SUBMISSION OF PLANS

2.1 GENERAL

The Blue Creek Subdivision is in Sanders County and proposes nine (9) lots for residential development located on the above-described property. The purpose of this report is to address the grading and drainage created by the infrastructure proposed as part of the development of the nine (9) residential lots in this major subdivision. There will be a 24' wide proposed gravel access road with 2' shoulders referred to as Blue Sky Drive. The proposed road will also feature two (2) hammerhead turnarounds for access to Lots 1, 4, 3, and 9. Each lot will have a single-family home and a gravel driveway with a proposed individual well and drainfield.

This report has been prepared in accordance with the Montana Department of Environmental Quality (MDEQ) Circular DEQ-8 for storm runoff.

2.2 REPORT

This report has been prepared to address section 2.2 of Circular DEQ-8. In addition, a Grading and Drainage Exhibit has been included as Appendix B of this report. These plans depict the design of the proposed facilities to mitigate storm water for each of the lots and the proposed access road. The name of the subdivision, narrative of slope, vegetation, hydrologic patterns, land use, and initial storm water facilities are included in this report.

2.3 DRAWINGS

Please see the Grading and Drainage Exhibit in Appendix B of this application to address Section 2.3 of Circular DEQ-8.

2.4 CONSTRUCTION DOCUMENTS

Please see the Grading and Drainage Exhibit in Appendix B of this report to address Section 2.4 of Circular DEQ-8.

2.5 OPERATION AND MAINTENANCE PLANS

- A. The responsible entity (Property Owner & Homeowners Association) should walk the site to look for any signs of storm drainage malfunctioning once a month. Signs of storm drainage malfunctioning include ponding stormwater; signs of ponding water such as vegetative differences due to saturation; overflow dripping along building gutters. Any signs of potential storm drainage failure should be investigated and fixed.
- B. Building gutters shall be free of debris allowing building roof runoff to flow into downspouts. Gutters shall be checked for potential blockage in the spring and the fall (twice a year) or more frequently if deemed necessary by the homeowner.
- C. The responsible entity for all common facilities inside of the Private Access and Public Utility Easement and Storm Drainage Easements, as shown on the Plat and DEQ Lot Layout, is the Homeowners Association.
 - a. The road retention ponds and swales shall be inspected by the Homeowners Association for debris or blockage as well as blockage of the conveyance surrounding the facility once a month.
- D. The responsible entity for all stormwater facilities on individual lots and individual culverts in the Private Access and Public Utility Easement, as shown on the Plat and DEQ Lot Layout, is the Property Owner of the respective Lot.
 - a. The retention ponds on individual lots (stormwater ponds) shall be inspected by the homeowner for debris or blockage as well as blockage of the conveyance surrounding the facility once a month.
 - b. Driveway crossing culverts shall be inspected by the homeowner for debris and blockage once a month. Culvert inlets and outlets shall be kept clear of overgrown vegetation by the homeowner.
 - c. Landscaping shall be maintained by the Property Owner to ensure that vegetation is kept in good condition. Inspections shall be conducted bi-weekly in the summer to ensure that lawns are irrigated properly.

~~2.6 DEVIATIONS~~

~~2.7 ILLUSTRATIONS, SPREADSHEETS AND EXAMPLES~~

3.0 DESIGN CRITERIA

3.1 GENERAL

A standard plan has been prepared with this report to address the pre-development and post-development site conditions.

~~3.2 SIMPLIFIED PLAN~~

3.3 STANDARD PLAN

With this report and the attached plans and calculations we have addressed the storm water drainage peak flow and volume in accordance with Appendix B of the DEQ-8 Circular. The majority of the property flows North to South with the runoff being collected and retained by the proposed lot ponds and road basin ponds. The Development will not be exceeding the pre-development runoff to an adjoining property during a 2-year 24-hour storm event, overtop roadways or driveways during a 10-year 24-hour event, or inundate any building or drainfield during a 100-year 24-hour post development storm event.

3.4 INITIAL STORM WATER FACILITY

The storm drainage design for the property includes Initial Storm Water Facilities sized to infiltrate, evapotranspire, and/or capture for reuse the post-development runoff generated from the first 0.5 inches of rainfall on impervious areas. The equation to calculate the minimum facility size for the 0.5-inch storm event is:

$$V = (0.5 * A_{imp}) / \frac{12 \text{ inches}}{\text{ft}}$$

V = minimum volume (ft³)

A_{imp} = total impervious area (ft²)

Supporting documentation and information used for the calculation are included in Appendix A

3.5 PRE- AND POST-DEVELOPMENT CONDITIONS

The pre-development runoff for this property has been calculated based on undeveloped conditions. The existing tract is comprised of a total of approximately 27 acres which consists of scattered grass and trees draining North to South. Drainage patterns will not change throughout the development of the subdivision. Each lot will consist of its own Post Development Basin Table 1 and the development's internal roads will be broken out into four (4) Road Basins Table 2. The intent of this report is to provide calculations showing that the plans can provide appropriate mitigation efforts in accordance with DEQ-8 regulations. The sizes of the basin are shown below in the table.

Table 1 - Lot Basin Breakdown

Lot	Basin	Acres	Square Feet
1	1	1.85	80968
2	2	1.84	80240
3	3	1.82	79149
4	4	1.88	81892
5	5	0.90	39204
6	6	0.90	39204
7	7	1.02	44431
8	8	1.40	52272
9	9	1.86	81021

Table 2 - Road Basin Breakdown

Lot	Basin	Acres	Square Feet
N/A	A	0.202	8810
N/A	B	0.977	42572
N/A	C	0.079	3466
N/A	D	0.136	5932

For the post-developed condition, each lot will be proposed to have a residential home and a gravel driveway and irrigated lawn area spanning 0.48 acres.

For residential lots 4-9, our storm drainage calculations to determine required storage volumes are based on Lot 9, the most conservative of them all. For residential Lots 1-3, the storm drainage calculations to determine required storage volumes are based on Lot 1, the most conservative of the three. Lots 1-3 are much larger and they see more unconcentrated sheet flow that will flow following historic patterns allowing the design to only consider the area surrounding the houses and driveways. Lots are deemed the most conservative lot based on the amount infrastructure on the lot post-development.

Based on the parameters outlined in the Montana Department of Environmental Quality (MDEQ) Circular DEQ-8, a runoff coefficient of 0.10 is used for improved lawns and landscaped area, 0.9 is used for the impervious area, 0.8 for semi-impervious areas, and 0.2 for the unimproved areas.

3.6 RAINFALL INTENSITY

The 2-year, 24-hour rainfall depth of 1.93 inches was automatically generated by the DEQ IDF Spreadsheet when given the project's latitude and longitude, the 10- and 100-year, 24-hour rainfall depths, 2.8 and 3.84 inches, respectively, were taken from NOAA Atlas II.

3.7 ACCEPTABLE METHODS

In accordance with Appendix B of Circular DEQ-8, the Rational Method was used to estimate the storm runoff rate for each basin. The flows from the 2-year, 10-year, and 100-year, 24-hour storms were analyzed for both the historical and post-construction basins. The equation for the Rational method is as follows:

$$Q = C * i * A$$

Where: Q = flow (ft³ /sec or, in-ac/hour)
C = runoff coefficient (unitless)
i = intensity (in/hour)
A = Area (acres)

Supporting documentation and information used for the Rational Method are included Appendix A.

3.7.1 HYDROLOGIC SOIL GROUP

3.7.2 CURVE NUMBERS & LAND USE DATA

3.7.3 TIME OF CONCENTRATION

~~3.7.4~~

3.8 STORM WATER VOLUME

~~3.8.1 SIMPLIFIED PLAN~~

~~3.8.2~~

3.8.3 STANDARD PLAN

For simplicity, the lot basins were calculated by the most conservative lot with the largest impervious area. For Lots/Basins 1 – 9, Lot 9 was used for all stormwater designs. Due to Lots 1-3 being vastly larger, Lots 1-3 were only calculated and designed for the area surrounding the house and driveway because the rest of the lot can be seen as unconcentrated sheet flow that will continue to flow in historic fashion. Lots 4-9 are designed and calculated for the entire lot. For Lots 1-3, DEQ-8 standards were followed with the entire 10-year 24-hour storm volume as to not threaten to overtop roads or driveways. For Lots 4-9, DEQ-8 standards were followed to retain the 2-year 24-hour pre- to post-development volume difference.

For each of the four (4) road Basins A-D, DEQ-8 standards were followed. As such the post-development 100-year, 24-hour storm volume was retained so to not threaten downstream houses and drainfields on the property.

3.9 PEAK FLOW

The following information pertains to off-site flows that may affect the proposed development as well as any mitigation for storm water flow rates that will be increased due to the development. All conveyance structures have been designed and sized in accordance with DEQ-8.

~~3.9.1 SIMPLIFIED PLAN~~

3.9.2 STANDARD PLAN

3.9.2.1 ONSITE DRAINAGE BASINS

A. Pre-development peak flow for the 2-, 10-, and 100-year, 24-hour storms was calculated using the Rational method as outlined previously in this report.

B. The post-development peak flow for the 2-year 24-hour event, 10-year 24-hour event, and 100-year 24-hour event has been calculated using the same methodology as the pre-development flows.

Pre- and post-development peak flow rates for each of the site's drainage basins can be seen in Table 3 below.

Table 3 - Basin Peak Flow Breakdown

Basin	100-Year 24 Hour Pre-Development Peak Flow (cfs)	100-Year 24 Hour Post-Development Peak Flow (cfs)
Road Basin A	0.100	0.232
Road Basin B	0.646	1.651
Road Basin C	0.247	0.419
Road Basin D	0.281	0.773
Lot 1 – 9 Basin	2.957	3.128

All concentrated flow and any flow generated by proposed impervious surfaces will be intercepted by the proposed retention facilities.

3.9.2.2 OFFSITE DRAINAGE BASINS

There is no need to provide additional provisions to pass offsite storm water flows as the existing runoff rates will not be altered from pre- to post-conditions. Any stormwater coming from the slopes to the north is unconcentrated and should continue any historical drainage patterns unaltered.

4.0 CONVEYANCE STRUCTURES

4.1 GENERAL

DEQ-8 requires that conveyance structures must be designed to convey post-development peak flow without overtopping roadways or driveways during a 10-year 24-hour storm event and without inundating any buildings or drainfields during a 100-year 24-hour post-development storm event. Due to an increase in storm water runoff, we have taken provisions to mitigate on-site storm water flows.

The roadside swales which convey water to the proposed retention ponds in each of the four (4) road basins have enough capacity to convey the 100-year 24-hour post-development peak flows described in section 3.9.2.1. Thus, the roadside swales are sized sufficiently to not overtop the road or threaten downgradient homes and drainfields during the 10-year 24-hour or 100-year 24-hour event. See the channel report calculation for the highest peak flow across the site attached with this report in Appendix A.

Residential Lots 4-9 have swales conveying the volume of the 100-year 24-hour storm event to ensure homes and drainfields are not threatened during this event.

The drainfields are designed along existing contours and storm water will drain across naturally. Assurance that the home and drainfield will be protected from the 100-year 24-hour post development storm event can be achieved by proper site grading during construction. The home, septic tank, and drainfield will be constructed to direct runoff away from the improvements.

~~4.2 OPEN CHANNELS~~

~~4.3 STORM SEWERS~~

~~4.4 CULVERTS~~

5.0 RETENTION AND DETENTION FACILITIES

5.1 GENERAL

The storm drainage design for the property includes retention facilities for each basin sized to infiltrate, evapotranspire, and/or capture the run calculated runoff. The retention ponds proposed on Lots 4-9 were designed to retain the 2-year 24-hour pre- to post-development volume difference to ensure that runoff to adjoining properties will be limited to the pre-development rate during that event. While the retention ponds proposed in each road basin were designed to retain the runoff generated from the

100-year 24-hour post-development storm event and the initial stormwater facility so as not threaten houses and drainfields during that event.

5.2 RETENTION FACILITY DESIGN

The calculations for the size of these facilities are included in Appendix A, and the retention facilities for each basin are shown on the Grading and Drainage Plan in Appendix B. Unlike Road Basins A, C, & D, which have distinct retention ponds, Road Basin B's retention facility is a widening of the basin's roadside swale.

For residential Lots 1-3 (Basins 1-3), we have sized the retention pond to capture and retain the entire 10-year 24-hour storm event, as these ponds are located above the proposed roadway. Basins 1 - 3 will have identical retention pond designs.

For residential Lots 4-9 (Basins 4-9), each lot will also have identical retention pond designs based on calculations from Lot 9. Lot Basins 4-9 are designed to retain the difference in the 2-year 24-hour post-development storm event. Based on the location of Lots 4-9 being below the road and houses it is acceptable to only satisfy the difference in volume of the 2-year 24-hour storm event with any overflow draining off site to the roadside ditch along Hwy 200 at a pre-development rate. Basins 4-9 will have a swale conveying the runoff to an appropriately designed retention pond. Table 4 summarizing the storm volumes and pond sizing of each basin can be found below. Further calculations for pond sizing can be found in Appendix A of this report.

Table 4 - Pound Volume Breakdown

Basin	Post-Development 100-year Storm Volume (ft ³)	Initial Storm Water Facility (ft ³)	Pond Volume Provided (ft ³)	Pond Dimensions	Post- Development 10-year 24 Hour Storm Volume (ft ³)	Difference Between Pre-Development and Post- Development 2-year 24 Hour Storm Volume (ft ³)
A	1197	160	1523	75' X 25' X 1'	N/A	N/A
B	6956	918	7533	391' X 12' X 1'	N/A	N/A
C	1175	104	1523	75' X 25' X 1'	N/A	N/A
D	2380	276	3063	145' X 25' X 1'	N/A	N/A
Lots 1-3	N/A	272	4362	49' X 50' X 3'	4284	N/A
Lots 4-9	N/A	272	363	18' X 27' X 1'	N/A	347

*All lot retention ponds and those of Road Basins A, C, & D, have a 3:1 side slope.

*Road Basin B's roadside retention swale has a 4:1 and 2:1 side slope on the south and north sides respectively.

These Retention facilities have been designed to infiltrate, evapotranspire, and/or capture for reuse storm water and to hold runoff no more than 72 hours.

~~5.3 DETENTION FACILITIES~~

~~6.0 INFILTRATION FACILITIES~~

~~6.1 GENERAL~~

~~6.2 DESIGNS~~

~~7.0 PRE TREATMENT FACILITIES~~

~~7.1 GENERAL~~

~~7.2 DESIGNS~~

CONCLUSION

This drainage report has been prepared in accordance with circular DEQ-8 for this project. Adverse effects from storm water are not expected since any increased runoff volume will be mitigated with the proposed retention facilities.

Prepared by:

IMEG Corp.,



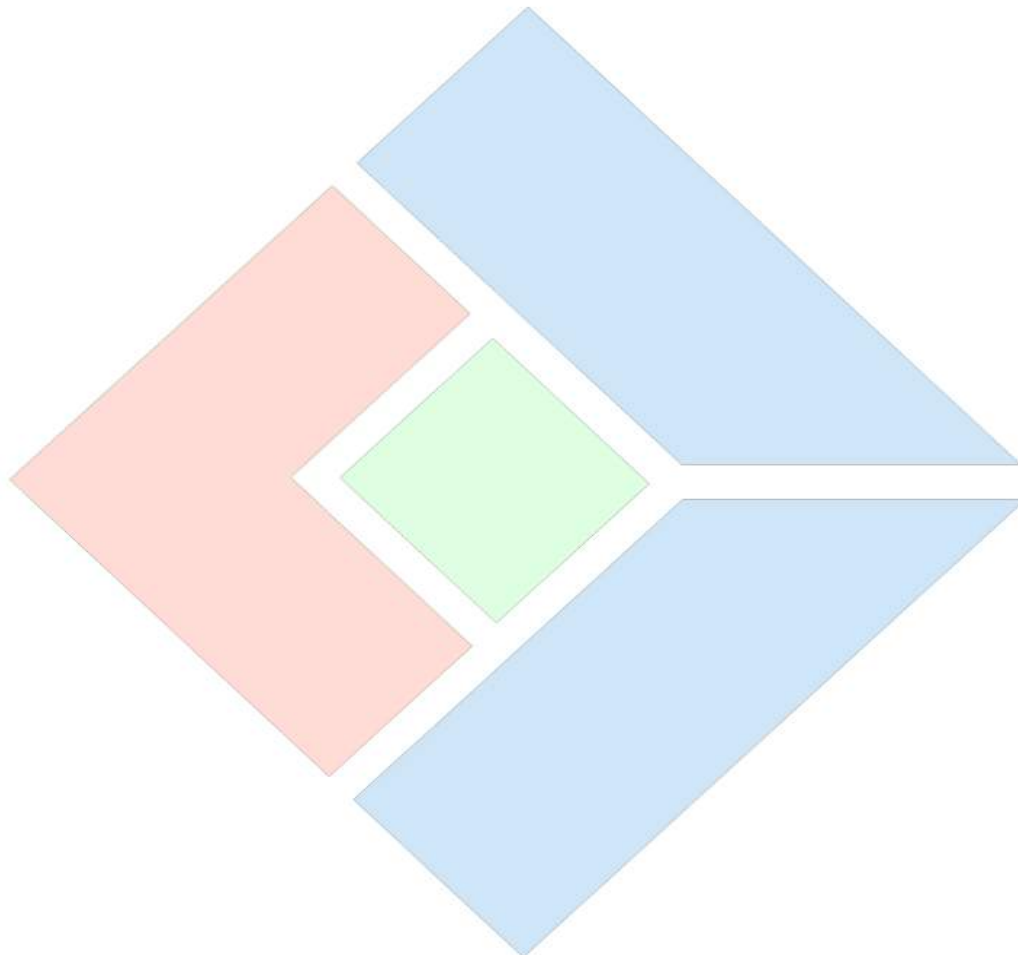
Ryley Spearing, Civil Design Engineer

Reviewed by:

IMEG Corp.,


Cory Davis, P.E.

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APPENDIX A: DESIGN CALCULATIONS

PRE- AND POST-DEVELOPMENT DRAINAGE CALCULATIONS

IDF Curve – Time of Concentration Spreadsheets

Appendix G: Standard Storm Drainage Plan – DEQ Spreadsheets

Hydraflow Express Swale Calculations

Rainfall Intensity for DEQ 8

Road Basin A

1. Location Data:

Latitude:	48.090373
Longitude:	-116.015268
Distance to closest station (km)	1.55
Closest meteorological station	HERON 2 NW
2-hour, 24-hour precipitation (in)	1.93

2. Pre-development Hydraulic Path:

Flow Type	Surface Description	Flow Length (ft)	Land Slope (ft/ft)	Culvert Diameter (in)	Depth of Flow in Channel (in) or Culvert (in)	Channel - Top Width (ft.)	Channel - Bottom Width (ft.)	Cross Sectional Flow Area (ft^2)	Wetted Perimeter (ft)	n	Average Velocity (ft/s)	Tt (hr)	Tt (min)
Sheet	Short Grass Prairie	300	0.125							0.15	n/a	0.24	14.59
Shallow	Short-grass pasture	74	0.125		1	6				0.073	2.37	0.01	0.52

Appendix F: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprd1044171.pdf

3. Post-development Hydraulic Path:

Flow Type	Surface Description	Flow Length (ft)	Land Slope (ft/ft)	Culvert Diameter (in)	Depth of Flow in Channel (in) or Culvert (in)	Channel - Top Width (ft.)	Channel - Bottom Width (ft.)	Cross Sectional Flow Area (ft^2)	Wetted Perimeter (ft)	n	Average Velocity (ft/s)	Tt (hr)	Tt (min)
Sheet	Cement Rubble Surface	119	0.08							0.024	n/a	0.03	1.92
Channel_Triangular	Vegetation	254	0.05		1	6		0.25	12.00	0.085	0.30	0.24	14.27

Appendix F: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprd1044171.pdf

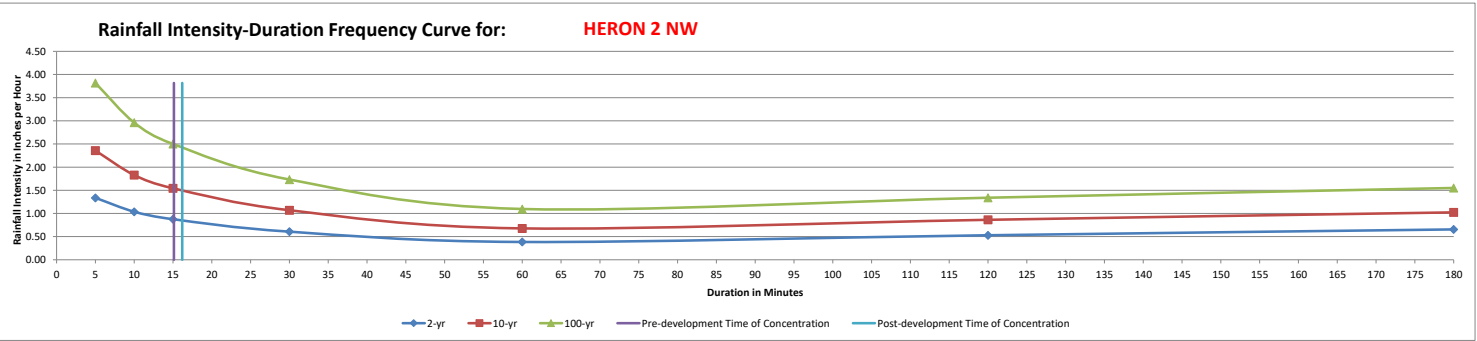
4. Time of Concentration and Rainfall Intensity (24-hour storm event):

Pre-development Path

Total Time of Concentration (min)	15.11
Rainfall Intensity (in/hr), 2 Year	0.89
Rainfall Intensity (in/hr), 10 Year	1.57
Rainfall Intensity (in/hr), 100 Year	2.54

Post-development Path

Total Time of Concentration (min)	16.19
Rainfall Intensity (in/hr), 2 Year	0.86
Rainfall Intensity (in/hr), 10 Year	1.52
Rainfall Intensity (in/hr), 100 Year	2.46



[Return to Summary](#)

Rainfall Intensity for DEQ 8

Road Basin B

1. Location Data:

Latitude:	48.090373
Longitude:	-116.015268
Distance to closest station (km)	1.55
Closest meteorological station	HERON 2 NW
2-hour, 24-hour precipitation (in)	1.93

2. Pre-development Hydraulic Path:

Flow Type	Surface Description	Flow Length (ft)	Land Slope (ft/ft)	Culvert Diameter (in)	Depth of Flow in Channel (in) or Culvert (in)	Channel - Top Width (ft.)	Channel - Bottom Width (ft.)	Cross Sectional Flow Area (ft^2)	Wetted Perimeter (ft)	n	Average Velocity (ft/s)	Tt (hr)	Tt (min)
Sheet	Short Grass Prairie	62	0.1							0.15	n/a	0.08	4.52

Appendix F: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprd1044171.pdf

3. Post-development Hydraulic Path:

Flow Type	Surface Description	Flow Length (ft)	Land Slope (ft/ft)	Culvert Diameter (in)	Depth of Flow in Channel (in) or Culvert (in)	Channel - Top Width (ft.)	Channel - Bottom Width (ft.)	Cross Sectional Flow Area (ft^2)	Wetted Perimeter (ft)	n	Average Velocity (ft/s)	Tt (hr)	Tt (min)
Sheet	Cement Rubble Surface	28	0.1							0.024	n/a	0.01	0.55
Sheet	Short Grass Prairie	8	0.29							0.15	n/a	0.01	0.57
Channel_Triangular	Vegetation	386	0.02		12	6		3.00	12.17	0.085	0.97	0.11	6.60

Appendix F: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprd1044171.pdf

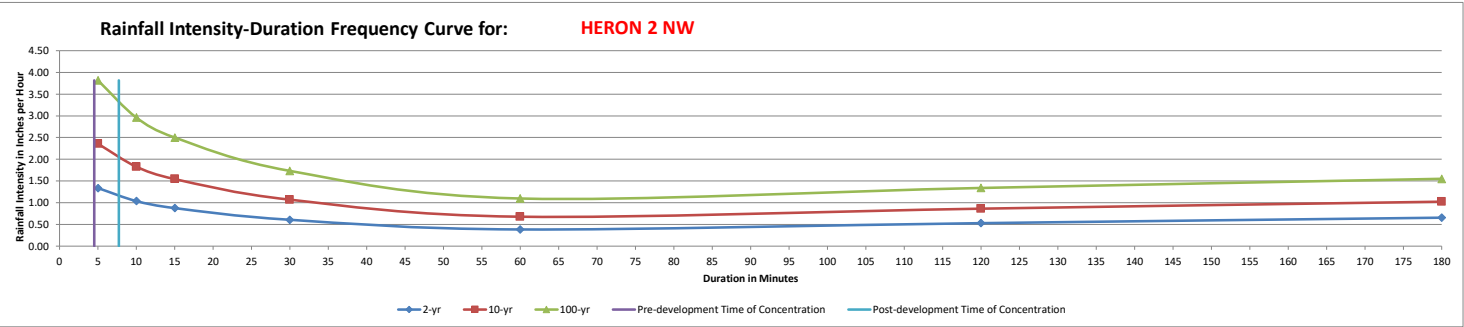
4. Time of Concentration and Rainfall Intensity (24-hour storm event):

Pre-development Path

Total Time of Concentration (min)	4.52
Rainfall Intensity (in/hr), 2 Year	1.35
Rainfall Intensity (in/hr), 10 Year	2.39
Rainfall Intensity (in/hr), 100 Year	3.86

Post-development Path

Total Time of Concentration (min)	7.73
Rainfall Intensity (in/hr), 2 Year	1.15
Rainfall Intensity (in/hr), 10 Year	2.02
Rainfall Intensity (in/hr), 100 Year	3.28



[Return to Summary](#)

Rainfall Intensity for DEQ 8

Road Basin C

1. Location Data:

Latitude:	48.090373
Longitude:	-116.015268
Distance to closest station (km)	1.55
Closest meteorological station	HERON 2 NW
2-hour, 24-hour precipitation (in)	1.93

2. Pre-development Hydraulic Path:

Flow Type	Surface Description	Flow Length (ft)	Land Slope (ft/ft)	Culvert Diameter (in)	Depth of Flow in Channel (in) or Culvert (in)	Channel - Top Width (ft.)	Channel - Bottom Width (ft.)	Cross Sectional Flow Area (ft^2)	Wetted Perimeter (ft)	n	Average Velocity (ft/s)	Tt (hr)	Tt (min)
Sheet	Short Grass Prairie	169	0.073							0.15	n/a	0.19	11.44

Appendix F: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprd1044171.pdf

3. Post-development Hydraulic Path:

Flow Type	Surface Description	Flow Length (ft)	Land Slope (ft/ft)	Culvert Diameter (in)	Depth of Flow in Channel (in) or Culvert (in)	Channel - Top Width (ft.)	Channel - Bottom Width (ft.)	Cross Sectional Flow Area (ft^2)	Wetted Perimeter (ft)	n	Average Velocity (ft/s)	Tt (hr)	Tt (min)
Sheet	Cement Rubble Surface	18	0.04							0.024	n/a	0.01	0.56
Channel_Triangular	Vegetation	123	0.066		12	6		3.00	12.17	0.085	1.77	0.02	1.16

Appendix F: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprd1044171.pdf

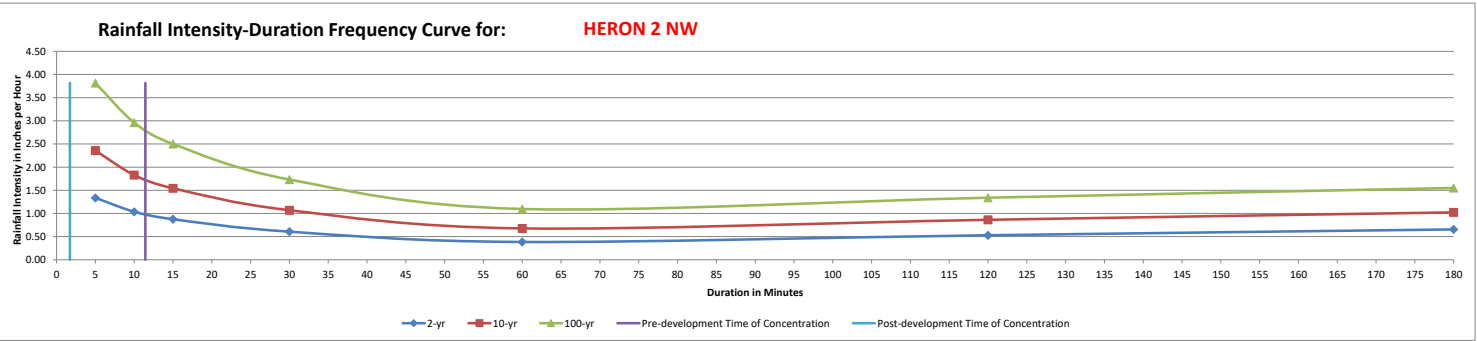
4. Time of Concentration and Rainfall Intensity (24-hour storm event):

Pre-development Path

Total Time of Concentration (min)	11.44
Rainfall Intensity (in/hr), 2 Year	1.00
Rainfall Intensity (in/hr), 10 Year	1.76
Rainfall Intensity (in/hr), 100 Year	2.85

Post-development Path

Total Time of Concentration (min)	1.72
Rainfall Intensity (in/hr), 2 Year	1.73
Rainfall Intensity (in/hr), 10 Year	3.04
Rainfall Intensity (in/hr), 100 Year	4.92



Rainfall Intensity for DEQ 8

Road Basin D

1. Location Data:

Latitude:	48.0903737
Longitude:	-116.015268
Distance to closest station (km)	1.55
Closest meteorological station	HERON 2 NW
2-hour, 24-hour precipitation (in)	1.93

2. Pre-development Hydraulic Path:

Flow Type	Surface Description	Flow Length (ft)	Land Slope (ft/ft)	Culvert Diameter (in)	Depth of Flow in Channel (in) or Culvert (in)	Channel - Top Width (ft.)	Channel - Bottom Width (ft.)	Cross Sectional Flow Area (ft^2)	Wetted Perimeter (ft)	n	Average Velocity (ft/s)	Tt (hr)	Tt (min)
Sheet	Short Grass Prairie	206	0.127							0.15	n/a	0.18	10.74

Appendix F: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprd1044171.pdf

3. Post-development Hydraulic Path:

Flow Type	Surface Description	Flow Length (ft)	Land Slope (ft/ft)	Culvert Diameter (in)	Depth of Flow in Channel (in) or Culvert (in)	Channel - Top Width (ft.)	Channel - Bottom Width (ft.)	Cross Sectional Flow Area (ft^2)	Wetted Perimeter (ft)	n	Average Velocity (ft/s)	Tt (hr)	Tt (min)
Sheet	Cement Rubble Surface	120	0.082							0.024	n/a	0.03	1.92
Channel_Triangular	Vegetation	83	0.1		12	6		3.00	12.17	0.085	2.18	0.01	0.63

Appendix F: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprd1044171.pdf

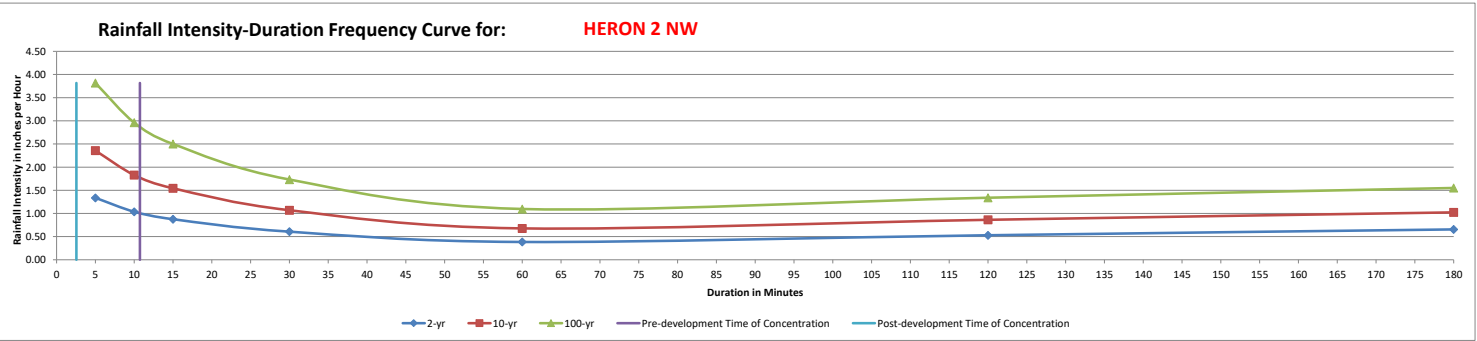
4. Time of Concentration and Rainfall Intensity (24-hour storm event):

Pre-development Path

Total Time of Concentration (min)	10.74
Rainfall Intensity (in/hr), 2 Year	1.02
Rainfall Intensity (in/hr), 10 Year	1.80
Rainfall Intensity (in/hr), 100 Year	2.91

Post-development Path

Total Time of Concentration (min)	2.55
Rainfall Intensity (in/hr), 2 Year	1.57
Rainfall Intensity (in/hr), 10 Year	2.77
Rainfall Intensity (in/hr), 100 Year	4.49



[Return to Summary](#)

Rainfall Intensity for DEQ 8

LOT 1 (Worst Case Senario Lots 1-3)

1. Location Data:

Latitude:	48.090373
Longitude:	-116.015268
Distance to closest station (km)	1.55
Closest meteorological station	HERON 2 NW
2-hour, 24-hour precipitation (in)	1.93

2. Pre-development Hydraulic Path:

Flow Type	Surface Description	Flow Length (ft)	Land Slope (ft/ft)	Culvert Diameter (in)	Depth of Flow in Channel (in) or Culvert (in)	Channel - Top Width (ft.)	Channel - Bottom Width (ft.)	Cross Sectional Flow Area (ft^2)	Wetted Perimeter (ft)	n	Average Velocity (ft/s)	Tt (hr)	Tt (min)
Sheet	Short Grass Prairie	300	0.06							0.15	n/a	0.33	19.57
Shallow	Short-grass pasture	23	0.06							0.073	1.64	0.00	0.23

Appendix F: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprd1044171.pdf

3. Post-development Hydraulic Path:

Flow Type	Surface Description	Flow Length (ft)	Land Slope (ft/ft)	Culvert Diameter (in)	Depth of Flow in Channel (in) or Culvert (in)	Channel - Top Width (ft.)	Channel - Bottom Width (ft.)	Cross Sectional Flow Area (ft^2)	Wetted Perimeter (ft)	n	Average Velocity (ft/s)	Tt (hr)	Tt (min)
Sheet	Smooth Asphalt	15	0.05							0.011	n/a	0.00	0.24
Sheet	Short Grass Prairie	68	0.05							0.15	n/a	0.11	6.42

Appendix F: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprd1044171.pdf

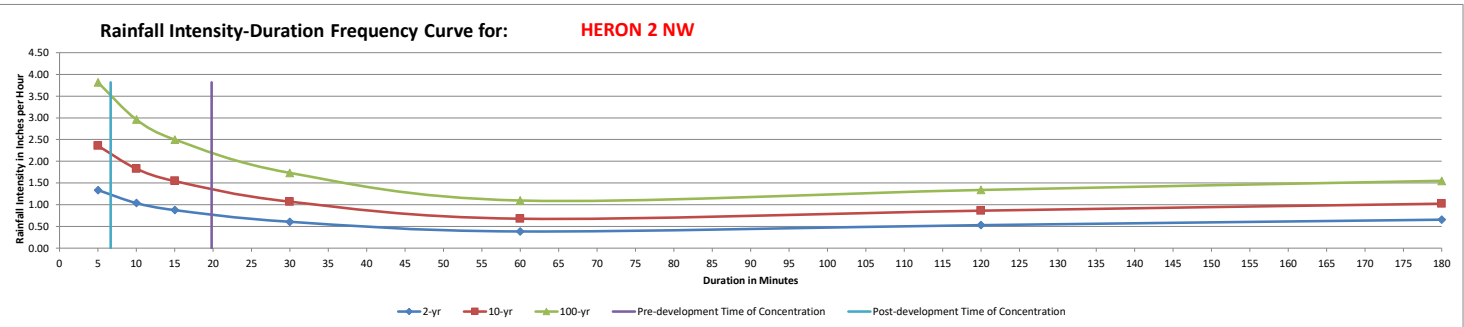
4. Time of Concentration and Rainfall Intensity (24-hour storm event):

Pre-development Path

Total Time of Concentration (min)	19.81
Rainfall Intensity (in/hr), 2 Year	0.79
Rainfall Intensity (in/hr), 10 Year	1.39
Rainfall Intensity (in/hr), 100 Year	2.24

Post-development Path

Total Time of Concentration (min)	6.66
Rainfall Intensity (in/hr), 2 Year	1.20
Rainfall Intensity (in/hr), 10 Year	2.12
Rainfall Intensity (in/hr), 100 Year	3.44



[Return to Summary](#)

Rainfall Intensity for DEQ 8

LOT 9 (Worst Case Senario Lots 4-9)

1. Location Data:

Latitude:	48.090373
Longitude:	-116.015268
Distance to closest station (km)	1.55
Closest meteorological station	HERON 2 NW
2-hour, 24-hour precipitation (in)	1.93

2. Pre-development Hydraulic Path:

Flow Type	Surface Description	Flow Length (ft)	Land Slope (ft/ft)	Culvert Diameter (in)	Depth of Flow in Channel (in) or Culvert (in)	Channel - Top Width (ft.)	Channel - Bottom Width (ft.)	Cross Sectional Flow Area (ft^2)	Wetted Perimeter (ft)	n	Average Velocity (ft/s)	Tt (hr)	Tt (min)
Sheet	Short Grass Prairie	300	0.06							0.15	n/a	0.33	19.57
Shallow	Short-grass pasture	23	0.06							0.073	1.64	0.00	0.23

Appendix F: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprd1044171.pdf

3. Post-development Hydraulic Path:

Flow Type	Surface Description	Flow Length (ft)	Land Slope (ft/ft)	Culvert Diameter (in)	Depth of Flow in Channel (in) or Culvert (in)	Channel - Top Width (ft.)	Channel - Bottom Width (ft.)	Cross Sectional Flow Area (ft^2)	Wetted Perimeter (ft)	n	Average Velocity (ft/s)	Tt (hr)	Tt (min)
Sheet	Smooth Asphalt	15	0.05							0.011	n/a	0.00	0.24
Sheet	Short Grass Prairie	15	0.05							0.15	n/a	0.03	1.92
Channel Triangular	Vegetation	133	0.09		1	6		0.25	12.00	0.085	0.40	0.09	5.57

Appendix F: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprd1044171.pdf

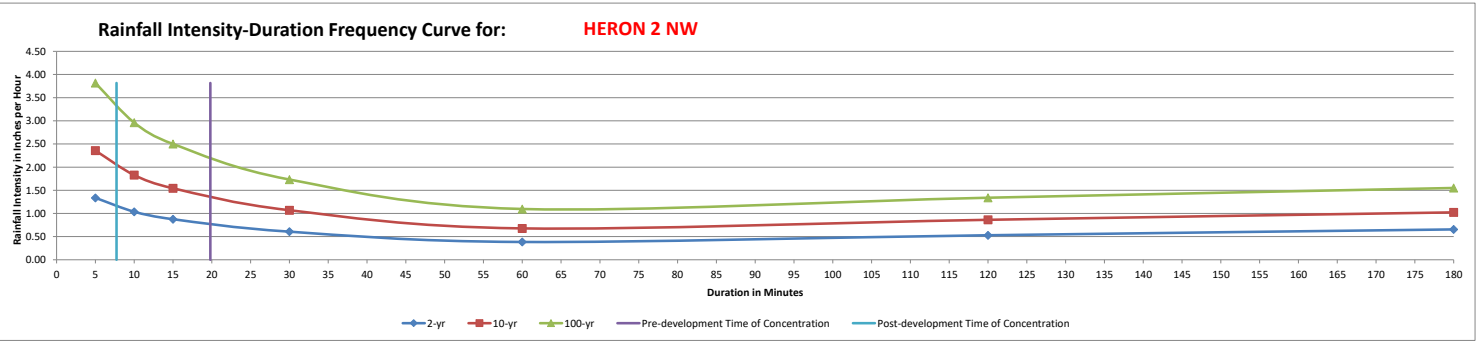
4. Time of Concentration and Rainfall Intensity (24-hour storm event):

Pre-development Path

Total Time of Concentration (min)	19.81
Rainfall Intensity (in/hr), 2 Year	0.79
Rainfall Intensity (in/hr), 10 Year	1.39
Rainfall Intensity (in/hr), 100 Year	2.24

Post-development Path

Total Time of Concentration (min)	7.72
Rainfall Intensity (in/hr), 2 Year	1.15
Rainfall Intensity (in/hr), 10 Year	2.02
Rainfall Intensity (in/hr), 100 Year	3.28



Appendix G: Standard Storm Drainage Plan

Sudivision Name	Blue Creek Subdivision
EQ#	
County	Sanders County
Location	
Lot/Area No.	Road Basin A

Rational Method Co-	
0.9	Paved/hard surfaces
0.8	Gravel surfaces
0.1	Lawn/landscaping
0.2	Unimproved areas

Q=C*i*A

Intensity Values	
2-year, T _c	0.86 inches/hour
2-year, 24-hour	1.93 inches
10-year, T _c	1.52 inches/hour
10-year, 24-hour	2.8 inches
100-year, T _c	2.46 inches/hour
100-year, 24-hour	3.84 inches

Total Area/Lot Size 0.202 acres = 8810 ft²

Initial Stormwater Facility Volume (0.5" x Impervious Area) = 160.16667 ft³

Pre-Development Characteristics			2-year, T _c (flow rate)	2-year, 24-hour (volume)	10-year, T _c (flow rate)	10-year, 24-hour (volume)	100-year, T _c (flow rate)	100-year, 24-hour (volume)
Paved/House Area	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Gravel Area	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Lawn/Landscaping	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Unimproved Area	0.202 acres	8810 ft ²	Q= 0.035 ft ³ /sec	V= 283.388 ft ³	Q= 0.062 ft ³ /sec	V= 411.1333333 ft ³	Q= 0.100 ft ³ /sec	V= 563.840 ft ³
Total	0.202 acres	8810 ft ²	Q _{Total} = 0.04 ft ³ /sec	V _{Total} = 283.388 ft ³	Q _{Total} = 0.062 ft ³ /sec	V _{Total} = 411.13 ft ³	Q _{Total} = 0.100 ft ³ /sec	V _{Total} = 563.840 ft ³

Post-Development Characteristics			2-year, T _c (flow rate)	2-year, 24-hour (volume)	10-year, T _c (flow rate)	10-year, 24-hour (volume)	100-year, T _c (flow rate)	100-year, 24-hour (volume)
Paved/House Area	0 acres	ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Gravel Area	0.088 acres	3844 ft ²	Q= 0.061 ft ³ /sec	V= 494.595 ft ³	Q= 0.108 ft ³ /sec	V= 717.547 ft ³	Q= 0.175 ft ³ /sec	V= 984.064 ft ³
Lawn/Landscaping	0 acres	ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Unimproved Area	0 acres	4966 ft ²	Q= 0.020 ft ³ /sec	V= 159.740 ft ³	Q= 0.035 ft ³ /sec	V= 231.747 ft ³	Q= 0.057 ft ³ /sec	V= 317.824 ft ³
Total	0.20224977 acres	8810 ft ²	Q _{Total} = 0.081 ft ³ /sec	V _{Total} = 654.334 ft ³	Q _{Total} = 0.143 ft ³ /sec	V _{Total} = 949.293 ft ³	Q _{Total} = 0.232 ft ³ /sec	V _{Total} = 1301.888 ft ³

Runoff Flow/Volume Change			ΔQ= 0.046 ft ³ /sec	ΔV= 370.946 ft ³	ΔQ= 0.081 ft ³ /sec	ΔV= 538.160 ft ³	ΔQ= 0.131 ft ³ /sec	ΔV= 738.048 ft ³
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Required Minimum Facility Volume:		371 ft ³
DESIGN TO RETAIN ENTIRETY OF 100YR STORM:		1302 ft ³

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Appendix G: Standard Storm Drainage Plan

Sudivision Name	Blue Creek Subdivision
EQ#	
County	Sanders County
Location	
Lot/Area No.	Road Basin B

Rational Method Co-	
0.9	Paved/hard surfaces
0.8	Gravel surfaces
0.1	Lawn/landscaping
0.2	Unimproved areas

Q=C*i*A

Intensity Values

2-year, T _c	1.15	inches/hour
2-year, 24-hour	1.93	inches
10-year, T _c	2.02	inches/hour
10-year, 24-hour	2.8	inches
100-year, T _c	3.28	inches/hour
100-year, 24-hour	3.84	inches

Total Area/Lot Size 0.977 acres = 42573 ft²

Initial Stormwater Facility Volume (0.5" x Impervious Area) = 918.41667 ft³

Pre-Development Characteristics			2-year, T _c (flow rate)	2-year, 24-hour (volume)	10-year, T _c (flow rate)	10-year, 24-hour (volume)	100-year, T _c (flow rate)	100-year, 24-hour (volume)
Paved/House Area	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Gravel Area	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Lawn/Landscaping	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Unimproved Area	0.977 acres	42573 ft ²	Q= 0.227 ft ³ /sec	V= 1369.432 ft ³	Q= 0.398 ft ³ /sec	V= 1986.74 ft ³	Q= 0.646 ft ³ /sec	V= 2724.672 ft ³
Total	0.977 acres	42573 ft ²	Q _{Total} = 0.23 ft ³ /sec	V _{Total} = 1369.432 ft ³	Q _{Total} = 0.398 ft ³ /sec	V _{Total} = 1986.74 ft ³	Q _{Total} = 0.646 ft ³ /sec	V _{Total} = 2724.672 ft ³

Post-Development Characteristics			2-year, T _c (flow rate)	2-year, 24-hour (volume)	10-year, T _c (flow rate)	10-year, 24-hour (volume)	100-year, T _c (flow rate)	100-year, 24-hour (volume)
Paved/House Area	0 acres	ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Gravel Area	0.506 acres	22042 ft ²	Q= 0.469 ft ³ /sec	V= 2836.071 ft ³	Q= 0.825 ft ³ /sec	V= 4114.507 ft ³	Q= 1.339 ft ³ /sec	V= 5642.752 ft ³
Lawn/Landscaping	0 acres	ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Unimproved Area	0 acres	20531 ft ²	Q= 0.109 ft ³ /sec	V= 660.414 ft ³	Q= 0.192 ft ³ /sec	V= 958.113 ft ³	Q= 0.312 ft ³ /sec	V= 1313.984 ft ³
Total	0.977341598 acres	42573 ft ²	Q _{Total} = 0.579 ft ³ /sec	V _{Total} = 3496.485 ft ³	Q _{Total} = 1.017 ft ³ /sec	V _{Total} = 5072.620 ft ³	Q _{Total} = 1.651 ft ³ /sec	V _{Total} = 6956.736 ft ³

Runoff Flow/Volume Change			ΔQ= 0.352 ft ³ /sec	ΔV= 2127.053 ft ³	ΔQ= 0.618 ft ³ /sec	ΔV= 3085.880 ft ³	ΔQ= 1.004 ft ³ /sec	ΔV= 4232.064 ft ³
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Required Minimum Facility Volume:		2127 ft ³
DESIGN TO RETAIN ENTIRETY OF 100YR STORM:		6957 ft ³

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Appendix G: Standard Storm Drainage Plan

Sudivision Name **Blue Creek Subdivision**
EQ#
County **Sanders County**
Location
Lot/Area No. **Road Basin C**

Rational Method Co-	
0.9	Paved/hard surfaces
0.8	Gravel surfaces
0.1	Lawn/landscaping
0.2	Unimproved areas

$Q=C*i*A$

Intensity Values

2-year, T_c	1.73	inches/hour
2-year, 24-hour	1.93	inches
10-year, T_c	3.04	inches/hour
10-year, 24-hour	2.8	inches
100-year, T_c	4.92	inches/hour
100-year, 24-hour	3.84	inches

Total Area/Lot Size **0.249** acres = **10832** ft²

Initial Stormwater Facility Volume (0.5" x Impervious Area) = **104.75** ft³

Pre-Development Characteristics			2-year, T_c (flow rate)	2-year, 24-hour (volume)	10-year, T_c (flow rate)	10-year, 24-hour (volume)	100-year, T_c (flow rate)	100-year, 24-hour (volume)
Paved/House Area	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Gravel Area	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Lawn/Landscaping	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Unimproved Area	0.249 acres	10832 ft ²	Q= 0.087 ft ³ /sec	V= 348.429 ft ³	Q= 0.152 ft ³ /sec	V= 505.4933333 ft ³	Q= 0.247 ft ³ /sec	V= 693.248 ft ³
Total	0.249 acres	10832 ft ²	Q_{Total}= 0.09 ft ³ /sec	V_{Total}= 348.429 ft ³	Q_{Total}= 0.152 ft ³ /sec	V_{Total}= 505.49 ft ³	Q_{Total}= 0.247 ft ³ /sec	V_{Total}= 693.248 ft ³

Post-Development Characteristics			2-year, T_c (flow rate)	2-year, 24-hour (volume)	10-year, T_c (flow rate)	10-year, 24-hour (volume)	100-year, T_c (flow rate)	100-year, 24-hour (volume)
Paved/House Area	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Gravel Area	0.058 acres	2514 ft ²	Q= 0.081 ft ³ /sec	V= 323.468 ft ³	Q= 0.142 ft ³ /sec	V= 469.280 ft ³	Q= 0.229 ft ³ /sec	V= 643.584 ft ³
Lawn/Landscaping	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Unimproved Area	0 acres	8318 ft ²	Q= 0.067 ft ³ /sec	V= 267.562 ft ³	Q= 0.117 ft ³ /sec	V= 388.173 ft ³	Q= 0.189 ft ³ /sec	V= 532.352 ft ³
Total	0.248668503 acres	10832 ft ²	Q_{Total}= 0.147 ft ³ /sec	V_{Total}= 591.030 ft ³	Q_{Total}= 0.259 ft ³ /sec	V_{Total}= 857.453 ft ³	Q_{Total}= 0.419 ft ³ /sec	V_{Total}= 1175.936 ft ³

Runoff Flow/Volume Change		ΔQ = 0.060 ft ³ /sec	ΔV = 242.601 ft ³	ΔQ = 0.106 ft ³ /sec	ΔV = 351.960 ft ³	ΔQ = 0.172 ft ³ /sec	ΔV = 482.688 ft ³
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Required Minimum Facility Volume:		243 ft ³
= input field	DESIGN TO RETAIN ENTIRETY OF 100YR STORM:	1176 ft ³

Appendix G: Standard Storm Drainage Plan

Sudivision Name Blue Creek Subdivison
EQ#
County Sanders County
Location
Lot/Area No. Road Basin D

Rational Method Co-	
0.9	Paved/hard surfaces
0.8	Gravel surfaces
0.1	Lawn/landscaping
0.2	Unimproved areas

$Q=C*i*A$

Intensity Values

2-year, T_c	1.57	inches/hour
2-year, 24-hour	1.93	inches
10-year, T_c	2.77	inches/hour
10-year, 24-hour	2.8	inches
100-year, T_c	4.49	inches/hour
100-year, 24-hour	3.84	inches

Total Area/Lot Size 0.396 acres = 17259 ft²

Initial Stormwater Facility Volume (0.5" x Impervious Area) = 276.875 ft³

Pre-Development Characteristics			2-year, T_c (flow rate)	2-year, 24-hour (volume)	10-year, T_c (flow rate)	10-year, 24-hour (volume)	100-year, T_c (flow rate)	100-year, 24-hour (volume)
Paved/House Area	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Gravel Area	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Lawn/Landscaping	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Unimproved Area	0.310 acres	13515 ft ²	Q= 0.098 ft ³ /sec	V= 434.733 ft ³	Q= 0.173 ft ³ /sec	V= 630.7 ft ³	Q= 0.281 ft ³ /sec	V= 864.960 ft ³
Total	0.310 acres	13515 ft²	Q_{Total}= 0.10 ft³/sec	V_{Total}= 434.733 ft³	Q_{Total}= 0.173 ft³/sec	V_{Total}= 630.70 ft³	Q_{Total}= 0.281 ft³/sec	V_{Total}= 864.960 ft³

Post-Development Characteristics			2-year, T_c (flow rate)	2-year, 24-hour (volume)	10-year, T_c (flow rate)	10-year, 24-hour (volume)	100-year, T_c (flow rate)	100-year, 24-hour (volume)
Paved/House Area	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Gravel Area	0.153 acres	6645 ft ²	Q= 0.193 ft ³ /sec	V= 854.990 ft ³	Q= 0.341 ft ³ /sec	V= 1240.400 ft ³	Q= 0.553 ft ³ /sec	V= 1701.120 ft ³
Lawn/Landscaping	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Unimproved Area	0 acres	10614 ft ²	Q= 0.077 ft ³ /sec	V= 341.417 ft ³	Q= 0.136 ft ³ /sec	V= 495.320 ft ³	Q= 0.221 ft ³ /sec	V= 679.296 ft ³
Total	0.396212121 acres	17259 ft²	Q_{Total}= 0.270 ft³/sec	V_{Total}= 1196.407 ft³	Q_{Total}= 0.477 ft³/sec	V_{Total}= 1735.720 ft³	Q_{Total}= 0.773 ft³/sec	V_{Total}= 2380.416 ft³

Runoff Flow/Volume Change			ΔQ = 0.172 ft ³ /sec	ΔV = 761.675 ft ³	ΔQ = 0.304 ft ³ /sec	ΔV = 1105.020 ft ³	ΔQ = 0.492 ft ³ /sec	ΔV = 1515.456 ft ³
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Required Minimum Facility Volume:		762 ft ³
= input field	DESIGN TO RETAIN ENTIRETY OF 100YR STORM:	2380 ft ³

Appendix G: Standard Storm Drainage Plan

Sudivision Name Blue Creek Subdivision
EQ#
County Sanders County
Location
Lot/Area No. Lot 1 (Worst Case Scenario for Lots 1-3)

Rational Method Co-Efficients	
0.9	Paved/hard surfaces
0.8	Gravel surfaces
0.1	Lawn/landscaping
0.2	Unimproved areas

$Q=C*i*A$

Intensity Values
2-year, T_c 1.15 inches/hour
2-year, 24-hour 1.93 inches
10-year, T_c 2.02 inches/hour
10-year, 24-hour 2.8 inches
100-year, T_c 3.28 inches/hour
100-year, 24-hour 3.84 inches

Total Area/Lot Size 1.860 acres = 81021 ft²

Initial Stormwater Facility Volume (0.5" x Impervious Area) = 272.54167 ft³

Pre-Development Characteristics			2-year, T_c (flow rate)	2-year, 24-hour (volume)	10-year, T_c (flow rate)	10-year, 24-hour (volume)	100-year, T_c (flow rate)	100-year, 24-hour (volume)
Paved/House Area	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Gravel Area	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Lawn/Landscaping	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Unimproved Area	1.860 acres	81021 ft ²	Q= 0.431 ft ³ /sec	V= 2606.176 ft ³	Q= 0.758 ft ³ /sec	V= 3780.98 ft ³	Q= 1.230 ft ³ /sec	V= 5185.344 ft ³
Total	1.860 acres	81021 ft ²	Q _{Total} = 0.43 ft ³ /sec	V _{Total} = 2606.176 ft ³	Q _{Total} = 0.758 ft ³ /sec	V _{Total} = 3780.98 ft ³	Q _{Total} = 1.230 ft ³ /sec	V _{Total} = 5185.344 ft ³

Post-Development Characteristics			2-year, T_c (flow rate)	2-year, 24-hour (volume)	10-year, T_c (flow rate)	10-year, 24-hour (volume)	100-year, T_c (flow rate)	100-year, 24-hour (volume)
Paved/House Area	0.075757576 acres	3300 ft ²	Q= 0.079 ft ³ /sec	V= 477.675 ft ³	Q= 0.139 ft ³ /sec	V= 693.000 ft ³	Q= 0.226 ft ³ /sec	V= 950.400 ft ³
Gravel Area	0.074 acres	3241 ft ²	Q= 0.069 ft ³ /sec	V= 417.009 ft ³	Q= 0.121 ft ³ /sec	V= 604.987 ft ³	Q= 0.197 ft ³ /sec	V= 829.696 ft ³
Lawn/Landscaping	0.480899908 acres	20948 ft ²	Q= 0.056 ft ³ /sec	V= 336.914 ft ³	Q= 0.098 ft ³ /sec	V= 488.787 ft ³	Q= 0.159 ft ³ /sec	V= 670.336 ft ³
Unimproved Area	1.229 acres	53532 ft ²	Q= 0.285 ft ³ /sec	V= 1721.946 ft ³	Q= 0.501 ft ³ /sec	V= 2498.160 ft ³	Q= 0.813 ft ³ /sec	V= 3426.048 ft ³
Total	1.859986226 acres	81021 ft ²	Q _{Total} = 0.489 ft ³ /sec	V _{Total} = 2953.543 ft ³	Q _{Total} = 0.859 ft ³ /sec	V _{Total} = 4284.933 ft ³	Q _{Total} = 1.394 ft ³ /sec	V _{Total} = 5876.480 ft ³

Runoff Flow/Volume Change		ΔQ = 0.057 ft ³ /sec	ΔV = 347.368 ft ³	ΔQ = 0.101 ft ³ /sec	ΔV = 503.953 ft ³	ΔQ = 0.164 ft ³ /sec	ΔV = 691.136 ft ³
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Required Minimum Facility Volume:		347 ft ³
DESIGN TO RETAIN ENTIRETY OF 10YR STORM:		4285 ft ³

Appendix G: Standard Storm Drainage Plan

Sudivision Name Blue Creek Subdivision
EQ#
County Sanders County
Location
Lot/Area No. Lot 9 (Worst Case Scenario for Lots 4-9)

Rational Method Co-Efficients	
0.9	Paved/hard surfaces
0.8	Gravel surfaces
0.1	Lawn/landscaping
0.2	Unimproved areas

Q=C*i*A

Intensity Values	
2-year, T _c	1.15 inches/hour
2-year, 24-hour	1.93 inches
10-year, T _c	2.02 inches/hour
10-year, 24-hour	2.8 inches
100-year, T _c	3.28 inches/hour
100-year, 24-hour	3.84 inches

Total Area/Lot Size 1.860 acres = 81021 ft²

Initial Stormwater Facility Volume (0.5" x Impervious Area) = 272.54167 ft³

Pre-Development Characteristics			2-year, T _c (flow rate)	2-year, 24-hour (volume)	10-year, T _c (flow rate)	10-year, 24-hour (volume)	100-year, T _c (flow rate)	100-year, 24-hour (volume)
Paved/House Area	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Gravel Area	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Lawn/Landscaping	0 acres	0 ft ²	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³	Q= 0.000 ft ³ /sec	V= 0.000 ft ³
Unimproved Area	1.860 acres	81021 ft ²	Q= 0.431 ft ³ /sec	V= 2606.176 ft ³	Q= 0.758 ft ³ /sec	V= 3780.98 ft ³	Q= 1.230 ft ³ /sec	V= 5185.344 ft ³
Total	1.860 acres	81021 ft ²	Q _{Total} = 0.43 ft ³ /sec	V _{Total} = 2606.176 ft ³	Q _{Total} = 0.758 ft ³ /sec	V _{Total} = 3780.98 ft ³	Q _{Total} = 1.230 ft ³ /sec	V _{Total} = 5185.344 ft ³

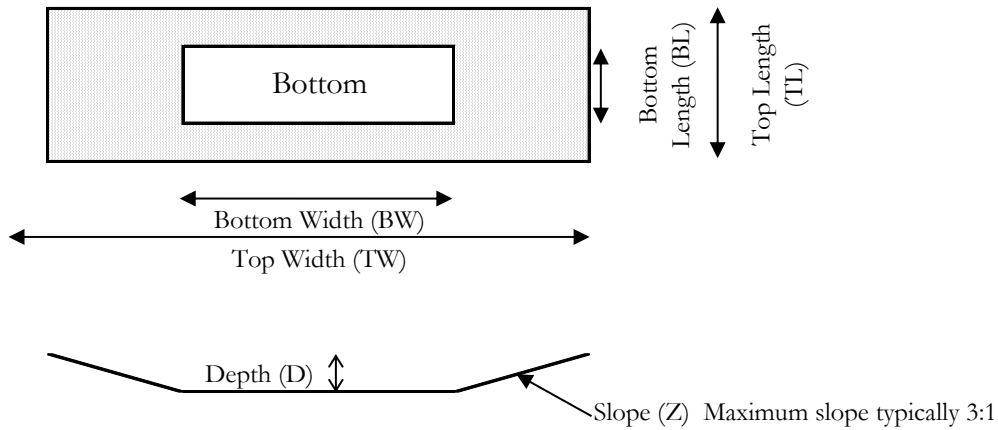
Post-Development Characteristics			2-year, T _c (flow rate)	2-year, 24-hour (volume)	10-year, T _c (flow rate)	10-year, 24-hour (volume)	100-year, T _c (flow rate)	100-year, 24-hour (volume)
Paved/House Area	0.075757576 acres	3300 ft ²	Q= 0.079 ft ³ /sec	V= 477.675 ft ³	Q= 0.139 ft ³ /sec	V= 693.000 ft ³	Q= 0.226 ft ³ /sec	V= 950.400 ft ³
Gravel Area	0.074 acres	3241 ft ²	Q= 0.069 ft ³ /sec	V= 417.009 ft ³	Q= 0.121 ft ³ /sec	V= 604.987 ft ³	Q= 0.197 ft ³ /sec	V= 829.696 ft ³
Lawn/Landscaping	0.480899908 acres	20948 ft ²	Q= 0.056 ft ³ /sec	V= 336.914 ft ³	Q= 0.098 ft ³ /sec	V= 488.787 ft ³	Q= 0.159 ft ³ /sec	V= 670.336 ft ³
Unimproved Area	1.229 acres	53532 ft ²	Q= 0.285 ft ³ /sec	V= 1721.946 ft ³	Q= 0.501 ft ³ /sec	V= 2498.160 ft ³	Q= 0.813 ft ³ /sec	V= 3426.048 ft ³
Total	1.859986226 acres	81021 ft ²	Q _{Total} = 0.489 ft ³ /sec	V _{Total} = 2953.543 ft ³	Q _{Total} = 0.859 ft ³ /sec	V _{Total} = 4284.933 ft ³	Q _{Total} = 1.394 ft ³ /sec	V _{Total} = 5876.480 ft ³

Runoff Flow/Volume Change			ΔQ= 0.057 ft ³ /sec	ΔV= 347.368 ft ³	ΔQ= 0.101 ft ³ /sec	ΔV= 503.953 ft ³	ΔQ= 0.164 ft ³ /sec	ΔV= 691.136 ft ³
Required Minimum Facility Volume:			347 ft ³					
DESIGN TO RETAIN DIFFERENCE OF 2YR STORM:			347 ft ³					

= input field

Volume Calculation Area Lots 1-3

For a Square or Rectangular Flat Bottom and Top pit



VOLUME CALCULATION FORMULA

$$V = \frac{4 \times Z^2 \times D^3}{3} + [Z \times BL \times D^2] + [Z \times BW \times D^2] + [BW \times BL \times D]$$

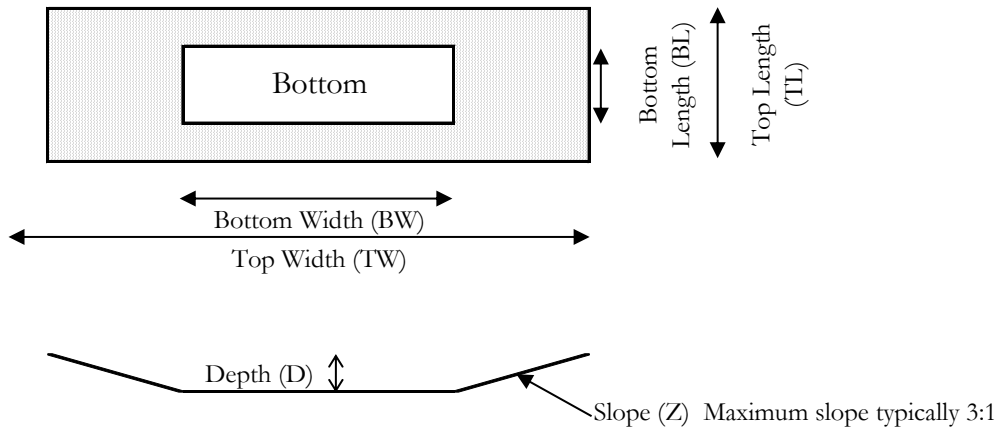
	1	2	3	4	5	6	7	8
Dimension Option	BW	BL	D	Z	TW	TL	Volume (ft ³)	Volume (gallons)
Area 1	25	26	3	4	49	50	4,362	32,628

Columns 1 through 4 are Variables

Columns 5 through 8 are Formulas DO NOT CHANGE

Volume Provided =	4,362 ft ³
Total Volume Required =	4,285 ft ³

Volume Calculation Area Lots 4-9 **For a Square or Rectangular Flat Bottom and Top pit**



VOLUME CALCULATION FORMULA

$$V = \frac{4 \times Z^2 \times D^3}{3} + [Z \times BL \times D^2] + [Z \times BW \times D^2] + [BW \times BL \times D]$$

	1	2	3	4	5	6	7	8
Dimension Option	BW	BL	D	Z	TW	TL	Volume (ft3)	Volume (gallons)
Area 1	12	21	1	3	18	27	363	2,715

Columns 1 through 4 are Variables

Columns 5 through 8 are Formulas DO NOT CHANGE

Volume Provided =	363 ft ³
Total Volume Required =	347 ft ³

Channel Report

Basin A Swale Report

Triangular

Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 1.00

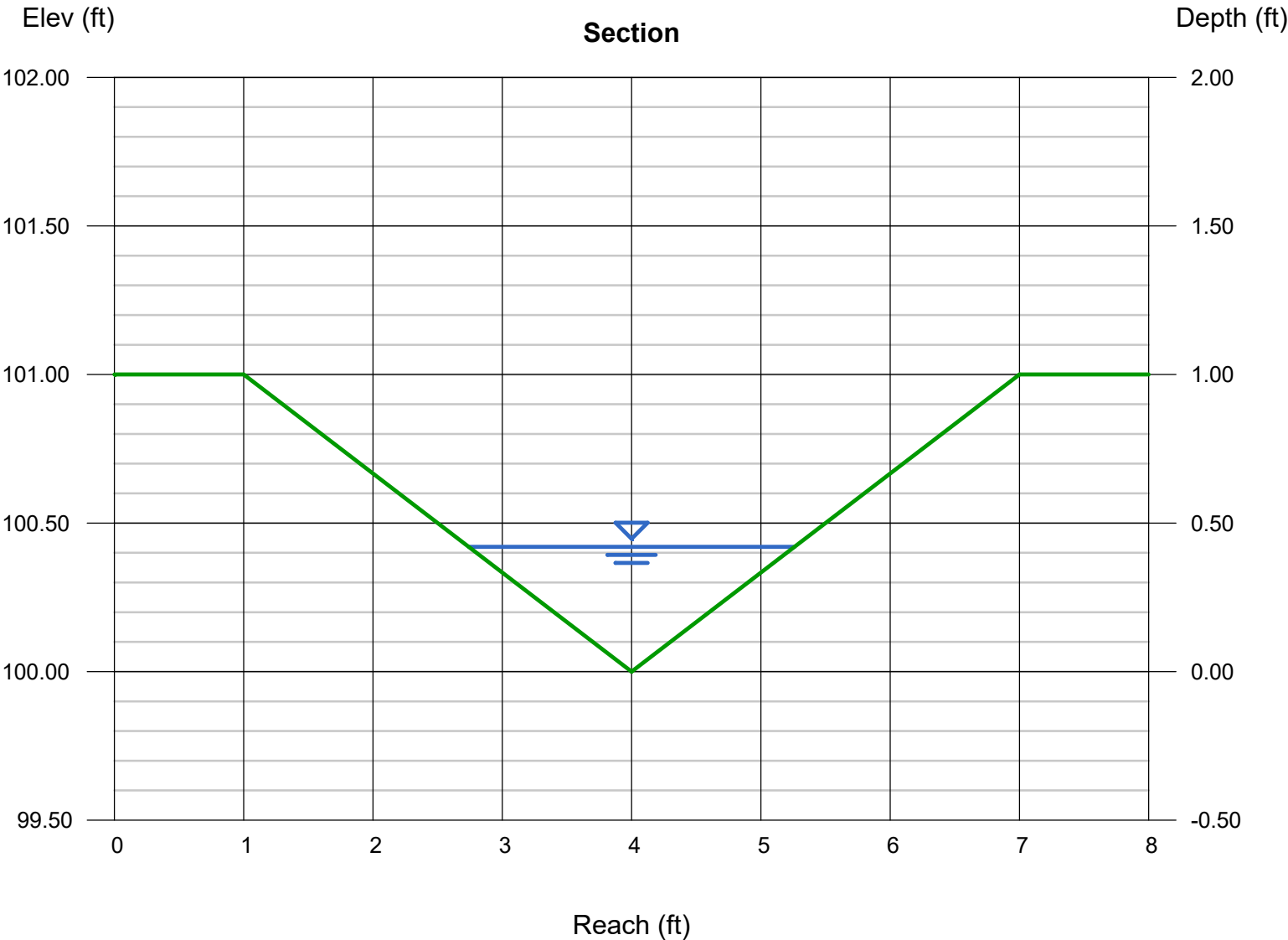
Invert Elev (ft) = 100.00
Slope (%) = 3.00
N-Value = 0.200

Calculations

Compute by: Known Q
Known Q (cfs) = 0.23

Highlighted

Depth (ft) = 0.42
Q (cfs) = 0.232
Area (sqft) = 0.53
Velocity (ft/s) = 0.44
Wetted Perim (ft) = 2.66
Crit Depth, Yc (ft) = 0.21
Top Width (ft) = 2.52
EGL (ft) = 0.42



Channel Report

Basin B Swale Report

Triangular

Side Slopes (z:1) = 4.00, 4.00
Total Depth (ft) = 1.00

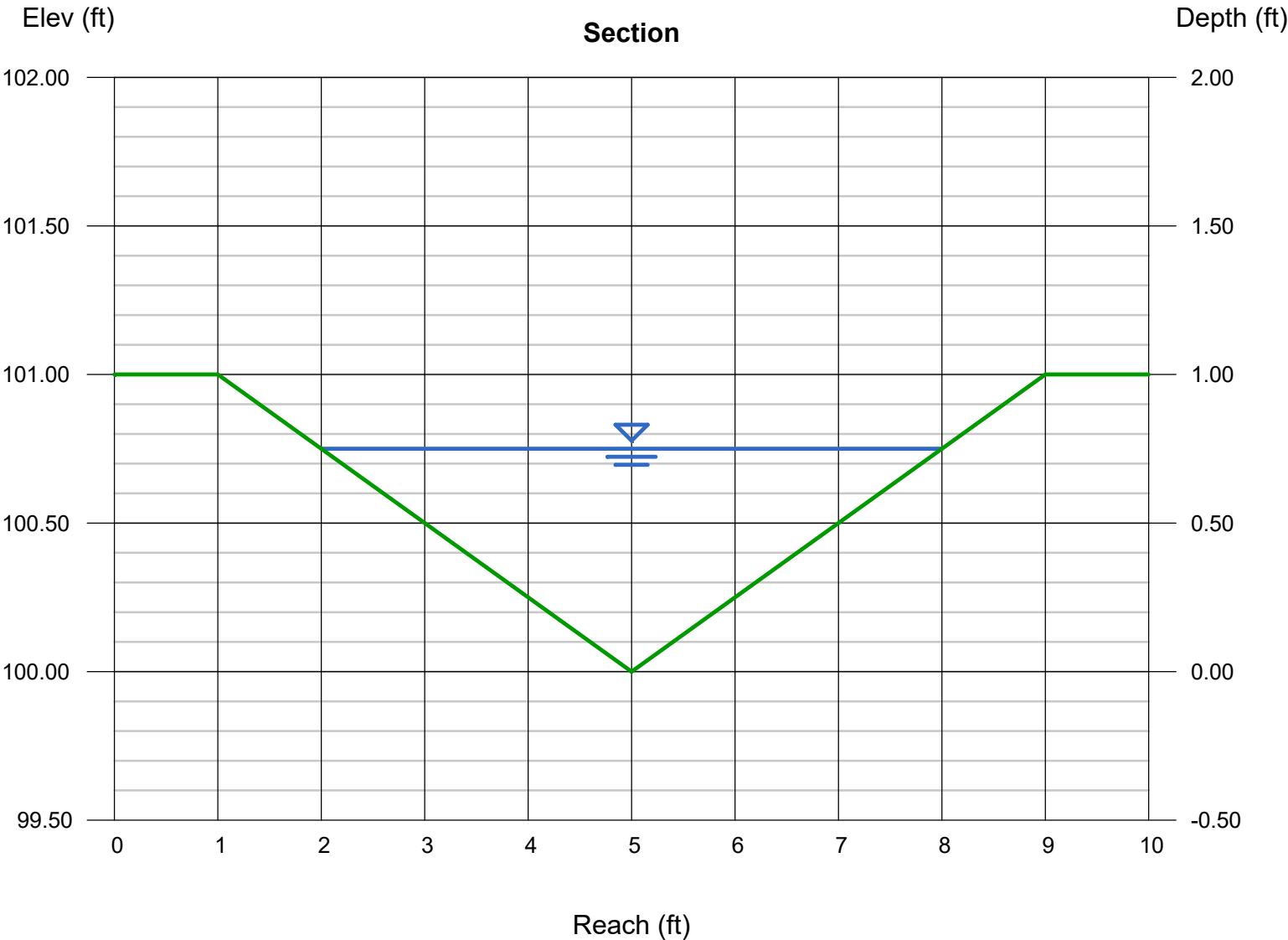
Invert Elev (ft) = 100.00
Slope (%) = 4.00
N-Value = 0.200

Calculations

Compute by: Known Q
Known Q (cfs) = 1.65

Highlighted

Depth (ft) = 0.75
Q (cfs) = 1.650
Area (sqft) = 2.25
Velocity (ft/s) = 0.73
Wetted Perim (ft) = 6.18
Crit Depth, Yc (ft) = 0.41
Top Width (ft) = 6.00
EGL (ft) = 0.76



Channel Report

Basin C Swale Report

Triangular

Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 1.00

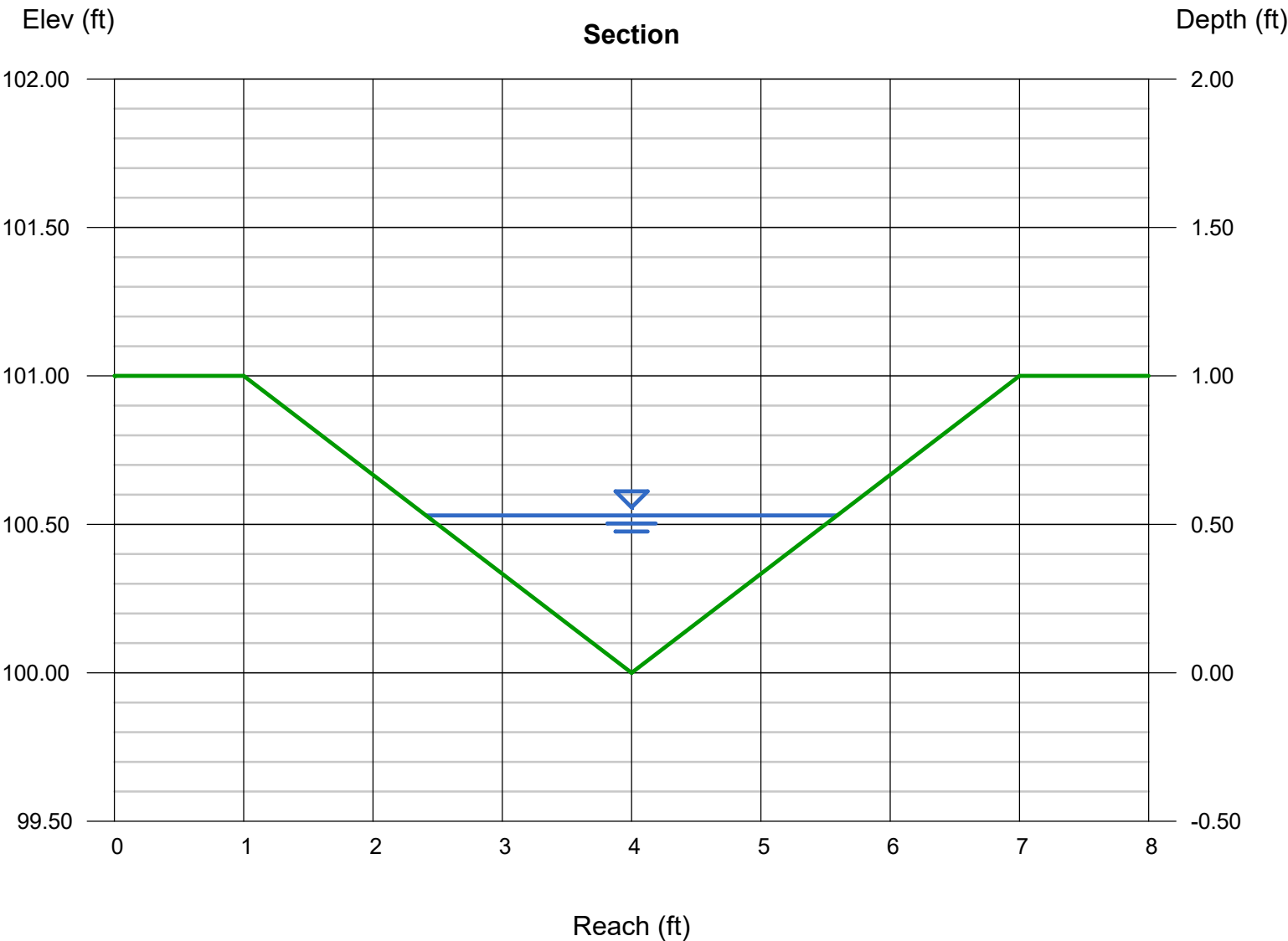
Invert Elev (ft) = 100.00
Slope (%) = 3.00
N-Value = 0.200

Calculations

Compute by: Known Q
Known Q (cfs) = 0.42

Highlighted

Depth (ft) = 0.53
Q (cfs) = 0.420
Area (sqft) = 0.84
Velocity (ft/s) = 0.50
Wetted Perim (ft) = 3.35
Crit Depth, Yc (ft) = 0.27
Top Width (ft) = 3.18
EGL (ft) = 0.53



Channel Report

Basin D Swale Report

Triangular

Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 1.00

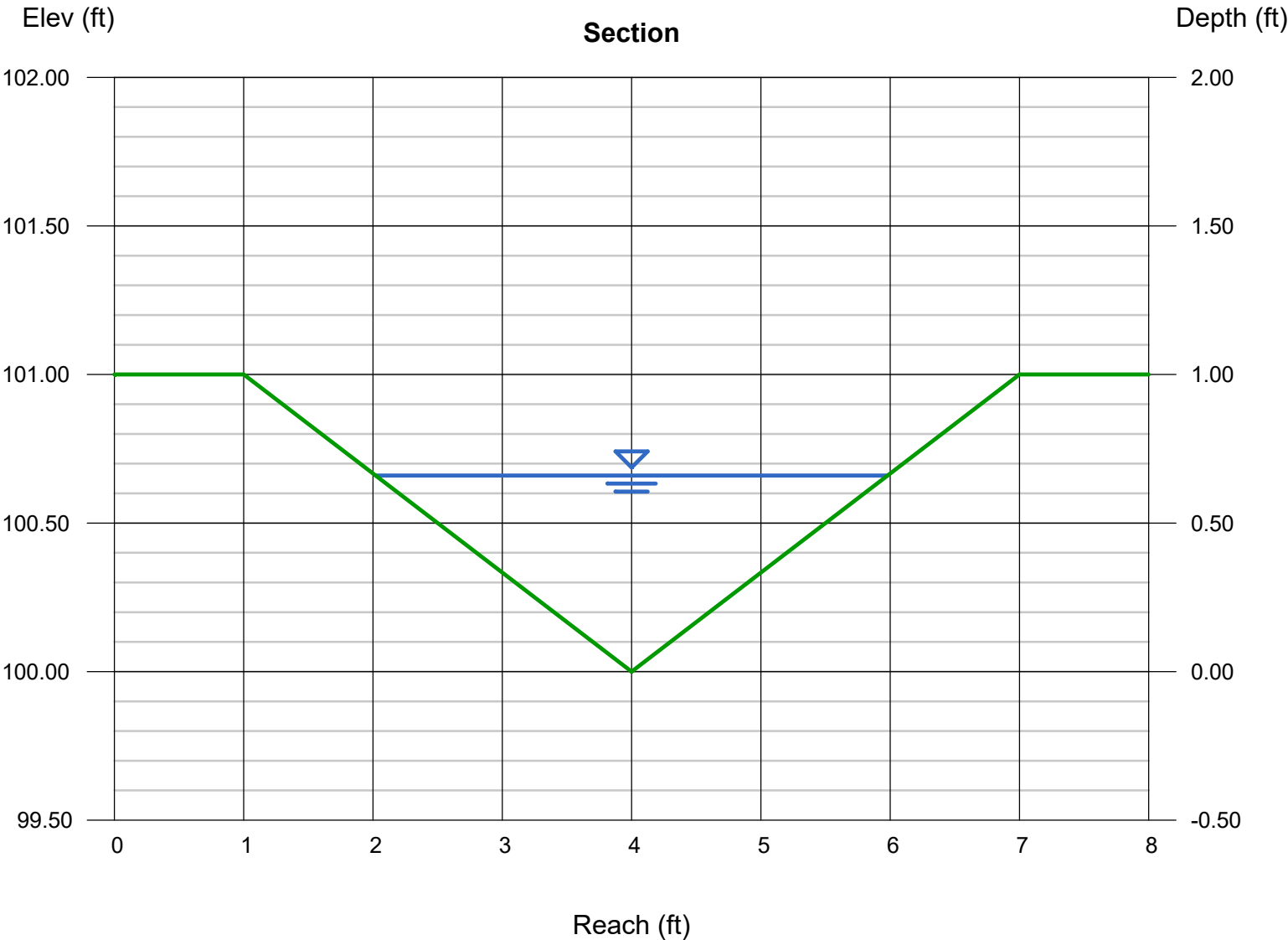
Invert Elev (ft) = 100.00
Slope (%) = 3.00
N-Value = 0.200

Calculations

Compute by: Known Q
Known Q (cfs) = 0.77

Highlighted

Depth (ft) = 0.66
Q (cfs) = 0.770
Area (sqft) = 1.31
Velocity (ft/s) = 0.59
Wetted Perim (ft) = 4.17
Crit Depth, Yc (ft) = 0.34
Top Width (ft) = 3.96
EGL (ft) = 0.67



Channel Report

Lots 4-9 Swale Report

Triangular

Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 1.00

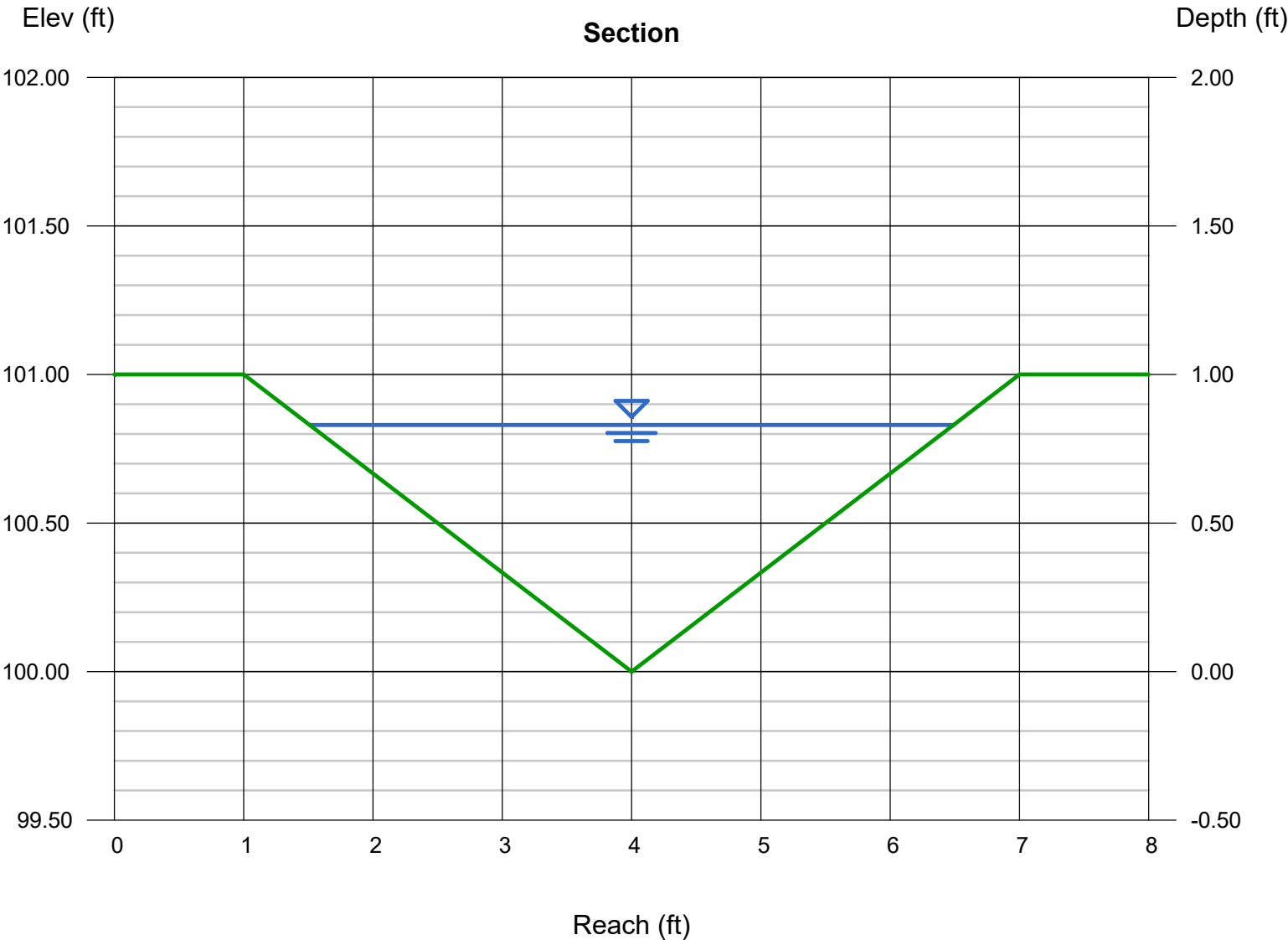
Invert Elev (ft) = 100.00
Slope (%) = 3.00
N-Value = 0.200

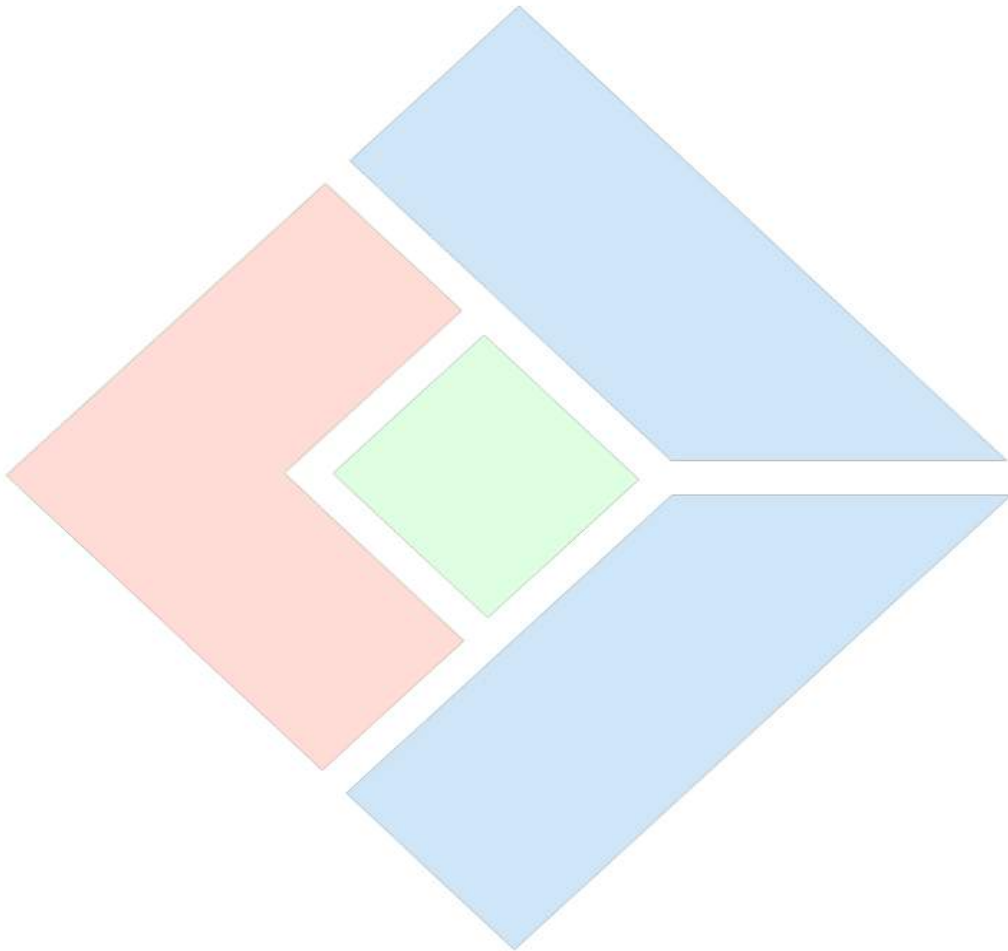
Calculations

Compute by: Known Q
Known Q (cfs) = 1.39

Highlighted

Depth (ft) = 0.83
Q (cfs) = 1.390
Area (sqft) = 2.07
Velocity (ft/s) = 0.67
Wetted Perim (ft) = 5.25
Crit Depth, Yc (ft) = 0.43
Top Width (ft) = 4.98
EGL (ft) = 0.84





Appendix B: Plans and Exhibits

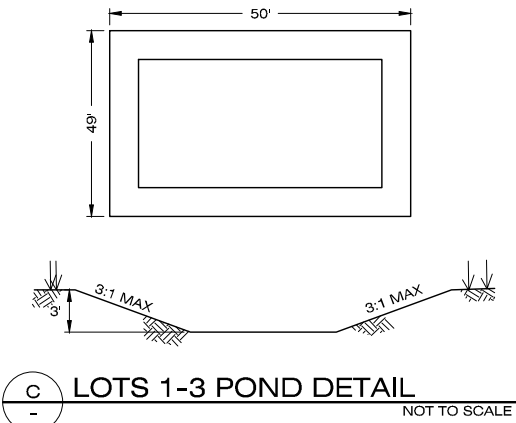
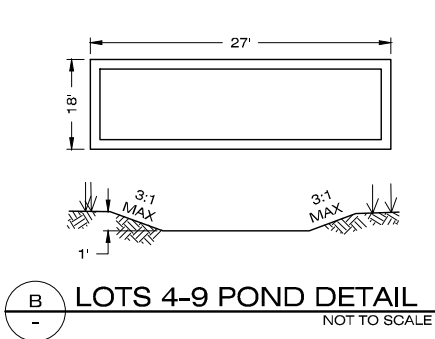
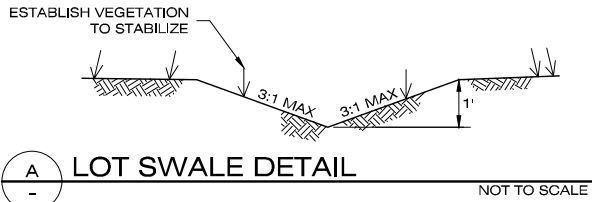
Grading and Drainage Plan
Grading, Drainage, and Road Construction Plans
Including Drainage Basin Exhibit

FOR MDEQ USE

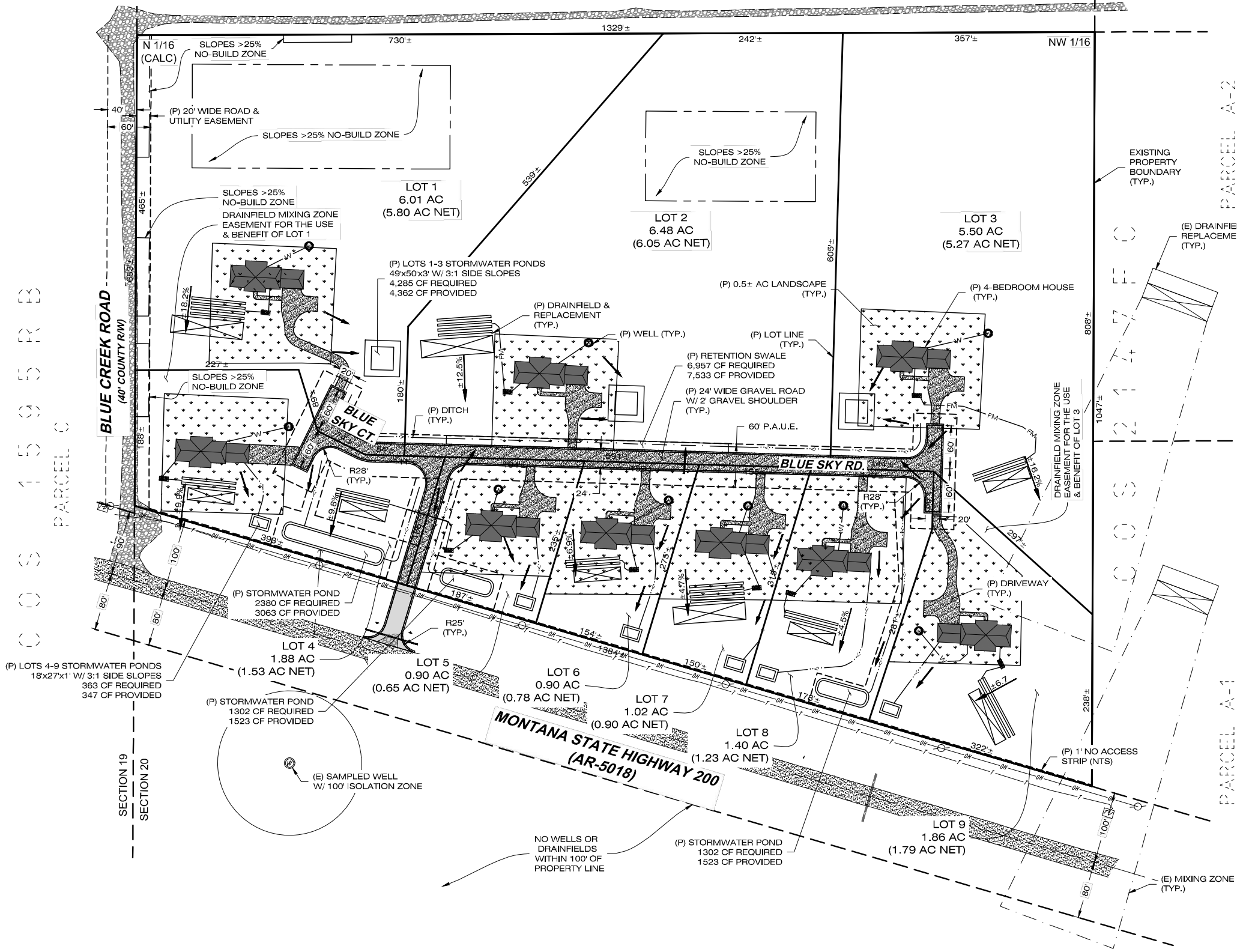
RECEIVED STAMP:

APPROVAL STAMP

EQ #:



S1/2 NW1/4, NW1/4



LEGEND

(E) PROPERTY BOUNDARY	(P) SEPTIC TANK
(E) ADJACENT PROPERTY BOUNDARY	(P) DRAINFIELD
(E) MAJOR CONTOUR	(P) WELL
(E) MINOR CONTOUR	(P) SIGN
(E) ASPHALT	(P) GROUND SLOPE CROSS DRAINFIELD
(E) GRAVEL	±2.0% P.A.U.E.
(E) CULVERT	PRIVATE ACCESS & UTILITY EASEMENT
(E) DRAINFIELD	PROPOSED
(E) WELL	(P)
(P) PROPERTY BOUNDARY	NTS
(P) EASEMENT	AC
(P) DITCH	COS
(P) WATER LINE	
(P) SEWER LINE	
(P) SEWER FORCE MAIN	
(P) CULVERT	
(P) ASPHALT	
(P) GRAVEL	
(P) DEFENSIBLE BUFFER	

2.1 OPERATION AND MAINTENANCE PLANS

- A. THE RESPONSIBLE ENTITY (PROPERTY OWNER & HOMEOWNERS ASSOCIATION) SHOULD WALK THE SITE TO LOOK FOR ANY SIGNS OF STORM DRAINAGE MALFUNCTIONING ONCE A MONTH. SIGNS OF STORM DRAINAGE MALFUNCTIONING INCLUDE PONDING STORMWATER; SIGNS OF PONDING WATER SUCH AS VEGETATIVE DIFFERENCES DUE TO SATURATION; OVERFLOW DRIPPING ALONG BUILDING GUTTERS. ANY SIGNS OF POTENTIAL STORM DRAINAGE FAILURE SHOULD BE INVESTIGATED AND FIXED.
- B. BUILDING GUTTERS SHALL BE FREE OF DEBRIS ALLOWING BUILDING ROOF RUNOFF TO FLOW INTO DOWNSPOUTS. GUTTERS SHALL BE CHECKED FOR POTENTIAL BLOCKAGE IN THE SPRING AND THE FALL (TWICE A YEAR) OR MORE FREQUENTLY IF DEEMED NECESSARY BY THE HOMEOWNER.
- C. THE RESPONSIBLE ENTITY FOR ALL COMMON FACILITIES INSIDE OF THE PRIVATE ACCESS AND PUBLIC UTILITY EASEMENT AND STORM DRAINAGE EASEMENTS, AS SHOWN ON THE PLAT AND DEQ LOT LAYOUT, IS THE HOMEOWNERS ASSOCIATION.
- a. THE ROAD RETENTION PONDS AND SWALES SHALL BE INSPECTED BY THE HOMEOWNERS ASSOCIATION FOR DEBRIS OR BLOCKAGE AS WELL AS BLOCKAGE OF THE CONVEYANCE SURROUNDING THE FACILITY ONCE A MONTH.
- D. THE RESPONSIBLE ENTITY FOR ALL STORMWATER FACILITIES ON INDIVIDUAL LOTS AND INDIVIDUAL CULVERTS IN THE PRIVATE ACCESS AND PUBLIC UTILITY EASEMENT, AS SHOWN ON THE PLAT AND DEQ LOT LAYOUT, IS THE PROPERTY OWNER OF THE RESPECTIVE LOT.
- a. THE RETENTION PONDS ON INDIVIDUAL LOTS (STORMWATER PONDS) SHALL BE INSPECTED BY THE HOMEOWNER FOR DEBRIS OR BLOCKAGE AS WELL AS BLOCKAGE OF THE CONVEYANCE SURROUNDING THE FACILITY ONCE A MONTH.
- b. DRIVEWAY CROSSING CULVERTS SHALL BE INSPECTED BY THE HOMEOWNER FOR DEBRIS AND BLOCKAGE ONCE A MONTH. CULVERT INLETS AND OUTLETS SHALL BE KEPT CLEAR OF OVERGROWN VEGETATION BY THE HOMEOWNER.
- c. LANDSCAPING SHALL BE MAINTAINED BY THE PROPERTY OWNER TO ENSURE THAT VEGETATION IS KEPT IN GOOD CONDITION. INSPECTIONS SHALL BE CONDUCTED BI-WEEKLY IN THE SUMMER TO ENSURE THAT LAWNS ARE IRRIGATED PROPERLY.

PREPARED BY: ANTHONY EVANS



DATE	
DESIGNED	DF
DRAFTED	RRB
CHECKED	DF/TR
DATE	JAN, 2024

DESIGNED: DF
DRAFTED: RRB
CHECKED: DF/TR
DATE: JAN, 2024

LOCATION: HIGHWAY 200
SECTION 20, T.27N., R.34W.
SANDERS, COUNTY
PREPARED FOR: TUNGSTEN HOLDINGS INC

PROJECT NAME: BLUE CREEK SUBDIVISION
SHEET TITLE: GRADING & DRAINAGE PLAN

PROJECT NO: 22003448
SHEET: 1 OF 1

SECTION E

- Environmental Assessment
- Summary of Probable Impacts
- Community Impact Report
- Fire Risk Rating Form
- Adjoining Property Owners Listing and Labels
- State Historic Preservation Office (SHPO) Report
- Montana Natural Heritage Program (MTNHP)
- Agency Notice Letter and Comments



ENVIRONMENTAL SUMMARY

PREPARED IN ACCORDANCE WITH SANDERS COUNTY SUBDIVISION REGULATIONS

for

BLUE CREEK SUBDIVISION

On Property Legally Described as: The Southwest One-Quarter of the Northwest One-Quarter (SW1/4NW1/4) of Section 20 Lying North of Montana Highway 200, Township 27 North, Range 34 West, Principal Meridian Montana, Sanders County, Montana. Containing a total of 25.94 Acres, more or less.

Dated: January 15th, 2023

Prepared For:

Tungsten Holdings, Inc.
809 Mineral Ave.
Libby, MT 59923

Prepared By:

IMEG Corp
1817 South Ave West, Suite A
Missoula, MT 59801

ENVIRONMENTAL ASSESSMENT

Information specified in this Part must be provided in addition to that required in parts I and II of this application form, unless the proposed subdivision qualifies for an exemption under Section IV-A-1.b of the subdivision regulations. Describe the following environmental features, provide responses to each of the following questions and provide reference materials as required.

1. Surface Water

Locate on a plat overlay or sketch map:

- a. Any natural water systems such as streams, rivers, intermittent streams, lakes or marshes (also indicate the names and sizes of each).
- b. Any artificial water systems such as canals, ditches, aqueducts, reservoirs, and irrigation systems (also indicate the names, sizes and present uses of each).
- c. Time when water is present (seasonally or all year).
- d. Any areas subject to flood hazard, or in delineated 100-year floodplain.
- e. Describe any existing or proposed streambank alteration from any proposed construction or modification of lake beds or stream channels. Provide information on location, extent, type and purpose of alteration, and permits applied for.

A National Wetlands Inventory Map and FEMA Floodplain Map are provided in Section B of this application packet. These maps support that there are no streams, rivers, creeks, streams, lakes, ponds, marshes, natural drainages, artificial water systems or wetlands located on the subject property or directly adjacent to the development. Therefore, the Preliminary Plat, surveyed by a PLS licensed in the state of Montana does not show the requirements as provided above.



2. Groundwater

Using available data, provide the following information:

- a. The minimum depth to water table and identify dates when depths were determined. What is the location and depth of all aquifers which may be affected by the proposed subdivision?

Describe the location of known aquifer recharge areas which may be affected.

A neighboring well report to the east provides a total depth of 100 ft with a minimum depth to static water level as 52 ft. determined on 07/10/2014 (GWR 76N 30070117 G). Across Highway 200, is an existing well (GWIC Id: 125985) which is where the sample was taken. The well log from this well showed an 80-gpm yield over a 2-hour period suggesting a more than adequate water supply is available for individual wells to be drilled onsite. Please reference the Water and Sanitation Report (Section I.5. Water Quantity) providing further information on depths to the water table.

- b. Describe any steps necessary to avoid depletion or degradation of groundwater recharge areas.

All on-site treatment will be designed in accordance with the State of Montana's non-degradation requirements. A non-degradation analysis of impacts to groundwater quality from the proposed wastewater treatment systems show there will be no significant changes to water quality. Please reference the Water and Sanitation Report (Section I.2. Description) providing further information pertaining to the steps necessary to avoid depletion or degradation of groundwater recharge areas.

3. Topography, Geology and Soils

- a. Provide a map of the topography of the area to be subdivided, and an evaluation of suitability for the proposed land uses. On the map identify any areas with highly erodible soils or slopes in excess of 15% grade. Identify the lots or areas affected. Address conditions such as:

- i Shallow bedrock
- ii Unstable slopes
- iii Unstable or expansive soils
- iv Excessive slope

A USGS Topographic Map is provided of the site and adjacent areas. Please see the Slope Analysis, within the Supplemental Data Sheets (Section A), which provides an evaluation of slope categories found on the site. Lots in excess of 15% grade have been shown. Areas containing slopes 25% or greater have been designated as "No Build-Zone" on the face of the Preliminary Plat.

- b. Locate on an overlay or sketch map:

- i Any known hazards affecting the development which could result in property damage or personal injury due to:
 - A. Falls, slides or slumps -- soil, rock, mud, snow.
 - B. Rock outcroppings
 - C. Seismic activity.
 - D. High water table



The extent of the property lies within an area that is largely made up of less than 15% slopes and timbered. Please see both the Aerial Map and USGS Topographic Map in Section B supporting this topography. Portions within proposed Lots 1 and 2 and along Blue Creek Road will be designated as “No Build-Zone” due to slopes of 25% or greater as provided on the Preliminary Plat. This is intended to mitigate potentially adverse impacts to future development to avoid unstable or expansive slopes and soils. The applicant does not foresee any geological issues arising from the development of these lots. There are no other known geologic hazards such as slumping, land slide, seismic activity, shallow bedrock etc. on or directly adjacent to the proposed development.

c. Describe measures proposed to prevent or reduce these dangers.

The subject property contains steep slopes along areas of Blue Creek Road and proposed Lots 1 and 2 while the remainder of the subject property consists of slopes that are less than 15%. These areas can be reviewed within the Slope Analysis, within the Supplemental Data Sheets, provided in Section A of this submittal packet. The property has been historically timbered where 25% or greater slopes exist on the site and are proposed to be a “No Build-Zone”. This is intended to mitigate potentially adverse impacts to future development to avoid unstable or expansive slopes and soils. Further, stormwater infrastructure and associated easements have been designed to provide suitable drainage and stormwater management for surface water or runoff that may be generated and detained on the subject property.

Development of future home sites is anticipated to occur towards the newly proposed roadway due to the construction of driveways and future utility connections. All other areas, not identified with an “No Build-Zone” are not intended to restrict development. The subdivision design and development conforms to the general landforms and topography to minimize alteration to the natural landscape.

d. Describe the location and amount of any cut or fill more than three feet in depth. Indicate these cuts or fills on a plat overlay or sketch map. Where cuts or fills are necessary, describe plans to prevent erosion and to promote vegetation such as replacement of topsoil and grading. The graded areas of the road surface will not result in slopes steeper than 3:1 (horizontal to vertical). The provided cross sections propose a 4:1 side slope off the roadway into the stormwater catch basins. A large portion of the grade changes occur along the southern property line of proposed Lot 2 at approximately 2,321' elevation but does not result in more than 4-feet of cut and fill. This is supported within the Grading, Drainage, and Road Construction Plans (Section D). Silt fences will be installed before excavation takes place and filter fabric will be used to avoid ponding or trenching. Grading and Drainage Engineering Design Report (Section D) offers design aspects and calculations of stormwater facilities to mitigate storm water for each of the lots and proposed access roads. The stormwater retention facilities will be in accordance with MDEQ requirements mitigating pre- and post-development 100-year storm and any potential erosion due to grading during and after construction.

This project is required to establish a Noxious Weed Management Application and Plan, which has been prepared in accordance with the Sanders County Subdivision Regulations and Montana County Noxious Weed Control Act. The plan details the current conditions of the site,



the weed management goals for the subdivision, and it specifies specific weed management techniques (control actions) that will be followed to ensure noxious weeds are actively managed on the property indefinitely. A copy of the Noxious Weed Management Application and Plan has can be reviewed in Section C.

4. Vegetation

a. On a plat overlay or sketch map:

- (i) Indicate the distribution of the major vegetation types, such as marsh, grassland, shrub, coniferous forest, deciduous forest, mixed forest.

The provided Montana Natural Heritage Program (MTNHP) summarizes vegetation types that may be located on the project site. Specifically, please see the map on page 6 of Environmental Summary Report in Section E which supports the property is largely coniferous forest based on IMEG site visit and photos. This is further supported by the Environmental Summary Report on page 17 that provides the subject property would classify largely as Rocky Mountain Mesic Montane Mixed Conifer Forest. There are no other major vegetation types as listed in this criterion.

- (ii) Identify the location of critical plant communities such as:

- A. Stream bank or shoreline vegetation
- B. Vegetation on steep, unstable slopes
- C. Vegetation on soils highly susceptible to wind or water erosion
- D. Type and extent of noxious weeds

An Environmental Summary Report has been provided by Montana Natural Heritage Program (MTNHP) and can be reviewed in Section D of this submittal. No critical plant communities have been identified on the property based upon the data provided.

The established Noxious Weed Management Application and Plan (Section C) provides details of type and extent of noxious weeds that may exist on the site.

b. Describe measures to:

- (i) Preserve trees and other natural vegetation (e.g. locating roads and lot boundaries, planning construction to avoid damaging tree cover).

Although portions of this site will be thinned or cleared for infrastructure (roadways, utilities, drainfields, home sites etc.,) it is anticipated each proposed lot will not be cleared or logged completely. The larger rural tracts as proposed will further support the perseverance of trees and natural vegetation where infrastructure is not proposed. The applicant is not aware of any unstable slopes, soils highly susceptible to wind or water erosion. There are no stream banks or shoreline vegetation on the project site.

- (ii) Protect critical plant communities (e.g. keeping structural development away from these areas), setting areas aside for open space.

No critical plant communities have been identified on the property.

- (iii) Prevent and control grass, brush or forest fires (e.g. green strips, water supply, access.)

The proposed development is located in the WUI, therefore, this application packet includes a Fire Risk Rating Form evaluating the risk of wildfire hazards. This will be reviewed by the subdivision administrator and local fire protection district for adequate fire protection measures. The applicant intends to implement maintenance provisions for any infrastructure such as water supplies, subdivision road signs and roadways. The Fire Risk Rating Form is provided in Section E of the submittal packet.

(iv) Control and prevent growth of noxious weeds

The plant communities can be reviewed within the Noxious Weed Management Application and Plan has can be reviewed in Section C.

5. Wildlife

a. Identify species of fish and wildlife use the area affected by the proposed subdivision.

An Environmental Summary Report has been provided by Montana Natural Heritage Program (MTNHP) and can be reviewed in Section D of this submittal. Each of the species known to occur on this property have been outlined in the Environmental Summary Report (pages 3 and 6-7). This exhibit identifies the wildlife that Montana FWP's database lists as being "known to utilize all or a portion of" the section, township, and range that this project is located within. The wildlife includes Bald Eagle, Fisher, Wolverine, and a variety of plant species anticipated to be in the area. The report highlights the presence of Bald Eagles. The Wildlife Exhibit located in Section B provides the possibility of White-Tail Deer, Mule Deer, and Elk to using this site.

The proposed project mitigates impacts on wildlife and wildlife habitat which is inhabited by birds, small and large mammals within this mixed rural residential and timbered area through proposing larger tracts of land that will preserve habitat for those species that may visit or pass through the site.

b. On a copy of the preliminary plat or overlay, identify known critical wildlife areas, such as big game winter range, calving areas and migration routes; riparian habitat and waterfowl nesting areas; habitat for rare or endangered species and wetlands.

Please reference the Environmental Summary Report (Section E) which supports the subject site is not known to have critical wildlife areas as provided above. The ranges for Elk, Mule Deer and White-Tailed Deer Distribution Maps can be reviewed within the Wildlife Exhibit in Section B. These maps show the area intersects Winter/General range types for Elk, Mule Deer, and White-tailed Deer. These species occur in the area and show suitable habitats within the distribution maps, however, not all areas will always have animals or sign of animals every year. Not all populations concentrate on specific ranges during the winter season. In areas where no winter distribution is delineated animals depend upon and occur across their General Distribution area during the winter season. The specific areas occupied may expand or contract through time as seasons, population levels and habitat conditions change. There are no other known wildlife migration corridors, waterfowl nesting areas, or wetlands located on the subject property.

c. Describe proposed measures to protect or enhance wildlife habitat or to minimize degradation (e.g. keeping buildings and roads back from shorelines; setting aside wetlands as undeveloped open space).

The proposed project mitigates impacts on wildlife and wildlife habitat which is inhabited by birds, small and large mammals within this mixed rural residential and timbered area as much of the existing vegetation will remain. This development considers the surrounding character of neighboring properties which are generally rural residential developments mixed with larger tracts of vacant land. It should be noted that the intent of the subdivider is to propose cash-in-lieu instead of proposing open space or a parkland dedication. This option will support other desirable locations throughout the county to be improved and provide easier connectivity and public access than the subject parcel.

Sincerely,
IMEG, Corp.

Prepared by:

A handwritten signature in black ink that reads "Tamara Ross".

IMEG | Civil Designer / Planning Technician

"\\files\Active\Projects\2022\22003448.00\Design\Civil\CC07 PLANNING"



SUMMARY OF PROBABLE IMPACTS

PREPARED IN ACCORDANCE WITH SANDERS COUNTY SUBDIVISION REGULATIONS
for

BLUE CREEK SUBDIVISION

On Property Legally Described as: The Southwest One-Quarter of the Northwest One-Quarter (SW1/4 NW1/4) of Section 20 Lying North of Montana Highway 200, Township 27 North, Range 34 West, Principal Meridian Montana, Sanders County, Montana. Containing a total of 25.94 Acres, more or less.

Dated: January 15th, 2024

Revised: March 5th, 2024

Revised: April 25th, 2024

Prepared For:

Tungsten Holdings, Inc.
809 Mineral Ave.
Libby, MT 59923

Prepared By:

IMEG Corp
1817 South Ave West, Suite A
Missoula, MT 59801

SUMMARY OF PROBABLE IMPACTS

Summarize the effects of the proposed subdivision on each topic below. Provide responses to the following questions and provide reference materials as required:

1. Effects on Agriculture

a. Is the proposed subdivision or associated improvements located on or near prime farmland or farmland of statewide importance as defined by the Natural Resource Conservation Service? If so, identify each area on a copy of the preliminary plat.

The NRCS Soils & Farmland Classification Exhibit shows two separate classifications within the proposed subdivision: "Dewberry ashy silt loam, 2 to 8 percent slopes" and "Fernline-Cabinet ashy silt loams, 4 to 15 percent". The USDA soil map indicates the property as a mix of "Farmland of Statewide Importance" and "Farmland of Local Importance" soils. The Preliminary Plat contains the required information showing both "Prime Farmland if Irrigated" and "Farmland of Local Importance" which can be reviewed within Section A. Further, a NRCS Soils & Farmland Classification Exhibit is in Section D.

b. Describe whether the subdivision would remove from production any agricultural or timber land.

The subdivision does propose to remove some timber land from the subject property for residential homesites and associated infrastructure. The property was not historically used for commercial timber processing or agricultural production, therefore, the applicant does not foresee potentially significant adverse impacts resulting from the subdivision.

c. Describe possible conflicts with nearby agricultural operations (e.g., residential development creating problems for moving livestock, operating farm machinery, maintaining water supplies,



controlling weeds or applying pesticides; agricultural operations suffering from vandalism, uncontrolled pets or damaged fences).

The applicant is not aware of adjacent agricultural production or operations. Further, there are no facilities or irrigated lands adjacent to or on site. However, the applicant may be required to adopt protective covenants pertaining to Living Adjacent to Agricultural Operations providing mitigation and guidance to future homeowners on how to reduce impacts to agricultural operations by confining pets and avoiding trespass.

d. Describe possible nuisance problems which may arise from locating a subdivision near agricultural or timber lands.

Due to the similar uses in the vicinity of this proposal, similar lot sizes and individual infrastructure (well and septic) on each site the subdivision will not remove any agriculture land or timber land used for commercial production. Larger tracts of land to the north may be used for timber lands and commercial thinning but are not adjacent to the subject property and impacts are not foreseen to these lands.

e. Describe effects the subdivision would have on the value of nearby agricultural lands.

The primary use for adjacent properties is residential, large tracts of open space, and public infrastructure (roadways). The proposal continues to support residential uses similar to those found within the vicinity, therefore, no adverse impacts are anticipated as a result of this proposed development.

2. Effects on Agricultural Water User Facilities

a. Describe conflicts the subdivision would create with agricultural water user facilities (e.g., residential development creating problems for operating and maintaining irrigation systems) and whether agricultural water user facilities would be more subject to vandalism or damage because of the subdivision.

There are no known agricultural water user facilities on or adjacent to the subject property. As a result, no mitigation is proposed to offset the project impacts to agricultural water users because no potentially adverse impacts to agriculture water users have been identified.

b. Describe possible nuisance problems which the subdivision would generate with regard to agricultural water user facilities (e.g., safety hazards to residents or water problems from irrigation ditches, headgates, siphons, sprinkler systems, or other agricultural water user facilities).

There are no known agricultural water user facilities on or adjacent to the subject property. As a result, no mitigation is proposed to offset the project impacts to agricultural water users because no potentially adverse impacts to agriculture water users have been identified.

3. Effects on Local Services

a. Indicate the proposed use and number of lots or spaces in each:

- 9 Residential, multiple family
- Types of multiple family structures and number of each (e.g., duplex, 4-plex)
- Planned unit development (No. of units)
- Condominium (No. of units)
- Mobile Home Park



_____ Recreational Vehicle Park
_____ Commercial or Industrial
_____ Other (Please describe _____)

This subdivision proposes nine (9) residential single-family lots.

b. Describe the additional or expanded public services and facilities that would be demanded of local government or special districts to serve the subdivision.

- i. Describe additional costs which would result for services such as roads, bridges, law enforcement, parks and recreation, fire protection, water, sewer and solid waste systems, schools or busing, (including additional personnel, construction, and maintenance costs).

Emergency services are available from the Sanders County Sheriff's Office. Fire Protection will be provided for the subdivision by the Heron Rural Fire District. Hospital and ambulance services will be provided by Community Ambulance of Western. The development is within the Noxon School District. The general increase in the tax base is expected to offset any impacts that are made to existing services as listed that would serve the proposed subdivision. Garbage pick-up is not anticipated for this development. Therefore, solid waste will need to be taken to one of the Sanders County Refuse Districts and each future lot owner would be responsible for disposal costs.

Parkland is not proposed; therefore, the applicant proposes to provide payment in lieu of parkland. This option will support other desirable locations throughout the county to be improved and provide easier connectivity and public access than the subject property. Impacts to parks and recreation will be mitigated through providing cash-in-lieu.

An agency contact letter has been sent to each agency to provide comments on the subdivision proposal which will be considered during the subdivision administrators review. In summary, the landowner intends to provide evidence that a contribution has been made to Heron Rural Fire District as requested by the district for cash in lieu of a water supply for fire suppression. As it pertains to the comment received by Community Ambulance Services of Western Sanders County, Inc. the subdivision will abide by the Sanders County Subdivision Regulations and design standards which will satisfy the concerns as provided in their comment which is the responsibility of the developer.

Please refer to for review of comments received by both the Heron Rural Fire District and the Community Ambulance of Western Sanders County, Inc. as provided in Agency Notice Letter and Comments exhibit (Section D). We have not received comments from the Sanders County Sheriff's Office or the Noxon School District.

- ii. Who would bear these costs (e.g. all taxpayers within the jurisdiction, people within special taxing districts, or users of a service)?

The newly proposed approach and internal roadways will be constructed prior to final plat approval and costs will be a burden of the developer. This infrastructure



will support year-round access. The internal roadway is intended to be constructed to the Sanders County Road Design Standards and support access to each lot for busing, emergency services or fire protection needs for future lot owners. This submittal packet has included a proposed Road Maintenance Agreement, provided in Section C, ensuring costs for maintenance and repair of the roadway is the responsibility of each lot owner.

The developer does not anticipate a park dedication will be required for proposed Lots 1-3 as they are proposed to be larger than 5 acres. As a result, the developer anticipates 0.45 acres (0.14 ac + 0.31 ac = 0.45 ac) will be required for a cash-in-lieu of parkland dedication. A tax assessment or appraisal report dated no less than 6 months from the date of submittal for calculating cash-in-lieu of parkland dedication along with a receipt from the County Treasures Office will be provided by the applicant prior to final plat approval.

Each lot will be responsible for the permitting and construction of each well, septic and drainfield. The general increase in the tax base is expected to offset any impacts that are made to existing facilities that serve the proposed subdivision.

- iii. Can the service providers meet the additional costs given legal or other constraints (e.g. statutory ceilings on mill levies or bonded indebtedness)?

Yes, the service providers can meet the additional cost at this time. Agency contact letters have been sent to each agency to provide comments on the subdivision proposal which will be considered during the subdivision administrators' review. On January 11th, 2024, Northern Lights, Inc. provided a new underground line would likely be located within the new internal road network and each residential lot would establish a transformer. Please see the Agency Notice Letter and Comments packet in Section E of the submittal packet

- iv. Describe off-site costs or costs to other jurisdictions may be incurred (e.g. development of water sources or construction of a sewage treatment plant; costs borne by a nearby municipality).

Public wastewater treatment facilities and public water supply is not within the vicinity or available to this development. The MDEQ Lot Layout planning submittal, within Section A, provides details for the proposed approximate locations of wells. Further, this layout provides locations anticipated size of subsurface wastewater treatment systems and replacement areas. Each individual future lot owner will be responsible for the construction and permitting of septic, drainfields, and well locations as provided. Please reference the Water and Sanitation Report (Section D) providing further information on how each lot will be provided well and septic infrastructure to serve each lot.

- c. Describe how the subdivision allows existing services, through expanded use, to operate more efficiently, or makes the installation or improvement of services feasible (e.g. allow installation of a central water system or upgrading a country road).



The newly proposed Blue Sky Drive and Blue Sky Court will both be unobstructed for maintenance of any future utilities; therefore, these roadways will be subject to a proposed Road Maintenance Agreement. These planned private improvements will aid in mitigating impacts anticipated from the proposed subdivision. The general increase in the tax base is expected to offset any impacts that are made to existing facilities that serve the proposed subdivision.

d. What are the present tax revenues received from the unsubdivided land?

- i. By the County \$ 60.00
- ii. By the municipality if applicable N/A
- iii. By the school(s) \$ 26.00

4. Effects on the Historic or Natural Environment

a. Describe and locate on a plat overlay or sketch map known or possible historic, paleontological, archaeological or cultural sites, structures, or objects which may be affected by the proposed subdivision.

There are no known historical, paleontological, archeological, or cultural sites were located within a half-mile of the proposed subdivision, therefore, a site map has not been provided.

According to the Sanders County Subdivision Regulations the "Natural Environment" is defined as, "physical conditions which exist within a given area, including land, air, water, mineral, flora, fauna, noise, and objects of historic or aesthetic significance." The subsections provided below address effects on the natural environment. It should be noted, any existing mineral rights are planned to remain and are not planned to be used in connection with this subdivision. The title report and current ownership deeds do not specify the severance of mineral rights. Further, proposed development and associated construction activities are not anticipated to interfere (explore for, drill for or extract mineral) with existing mineral rights that pertain to the property.

b. How would the subdivision affect surface and groundwater, soils, slopes, vegetation, historical or archaeological features within the subdivision or on adjacent land? Describe plans to protect these sites.

- i. Would any stream banks or lake shorelines be altered, streams rechanneled, or any surface water contaminated from sewage treatment systems, run-off carrying sedimentation, or concentration of pesticides or fertilizers?

The groundwater flow direction is provided as an exhibit within the Water and Sanitation Report in Section D. Given the rural residential nature of this development, well logs, soil profiles and other supporting information provided within this report the Cabinet Gorge Reservoir to the south is not anticipated to be contaminated from sewage treatment systems, run-off carrying sedimentation, or concentration of pesticides or fertilizers as a result of this division.

- ii. Would groundwater supply likely be contaminated or depleted as a result of the subdivision? **The standards of MDEQ pertaining to water supply quality, quantity and**



construction criteria are intended to be met. This includes 100' well isolation zones and review of subsurface treatment systems and replacement areas by MDEQ to avoid the contamination or depletion of groundwater supply. Please reference the provided Water and Sanitation Report and exhibits completed by a registered sanitarian. The report and supporting materials are subject to review of local and state law that supports this criterion will be satisfied prior to final plat approval.

- iii. Would construction of roads or building sites require cuts and fills on steep slopes or cause erosion on unstable, erodible soils? Would soils be contaminated by sewage treatment systems?

The newly approach and internal roadways will not result in graded areas that would result in slopes steeper than 3:1 (horizontal to vertical). The provided cross sections propose a 4:1 side slope off the roadway into the stormwater catch basins. A large portion of the grade changes occur along the southern property line of proposed Lot 2 at approximately 2321 elevation but does not result in more than 4-feet of cut and fill. The applicant does not foresee the grading of this roadway and associated stormwater infrastructure would cause erosion on unstable or erodible soils nor would it result in contamination by sewage treatment systems. Please see the Grading, Drainage, and Road Construction Plans for profiles of road segments in Section D.

It should be noted that a site visit was conducted with IMEG staff, Katherine Maudrone, and the District 3 Road Foreman in September of 2022 which concluded that an approach off of Blue Creek Road would not be supported due to heavy truck traffic and slopes along the existing roadway. Further, the Preliminary Plat Application Requirements checklist received by IMEG Staff on August 16th does not require a legal or physical access off of the local roadway, Blue Creek Road, or a variance request for proposing access unto a higher road classification. A second formal site visit has occurred on April 16, 2024, with MDT, Sanders County, the current property titleholder, and an IMEG representative to discuss possible hazardous conditions due to the proposed approach unto the adjacent HWY and why Blue Creek Road would not provide adequate access to the division. Therefore, this development has proceeded with an approach permit unto HWY 200 as provided in MDOT Approach Application (section D) avoiding cuts and fills on steep slopes for access. Sanders County will provide a formal letter providing support of the proposed access unto HWY 200 subject to review and approval by MDT.

The standards of MDEQ pertaining to water supply quality, quantity and construction criteria are intended to be met. This includes 100' well isolation zones and review of subsurface treatment systems and replacement areas by MDEQ to avoid the contamination or depletion of groundwater supply. Soils are not anticipated to be contaminated by sewage treatment systems, please refer to the previous response within this section of the application for further clarification.



- iv. Describe the impacts that removal of vegetation would have on soil erosion, bank, or shoreline instability.

Please see the Grading, Drainage, and Road Construction Plans in Section D. This project is required to establish a Noxious Weed Management Application and Plan, which has been prepared in accordance with the Sanders County Subdivision Regulations and Montana County Noxious Weed Control Act. The plan details the current conditions of the site, the weed management goals for the subdivision, and it specifies specific weed management techniques (control actions) that will be followed to ensure noxious weeds are actively managed on the property indefinitely. A copy of the Noxious Weed Management Application and Plan can be reviewed in Section C.

Further, where soils are 25% or greater a no-build zone has been established to further minimize impacts or possibility of soil erosion for the subject development. Please refer to the Preliminary Plat, provided in Section A, to review these areas.

- v. Would the value of significant historical, visual, or open space features be reduced or eliminated?

A Montana State Historic Preservation Office (SHPO) Report has been generated to include within Section 20, Township 27 North, and Range 34 West which did not include historic structures or objects within a half-mile of the proposed subdivision. Typically, a file search is completed by the SHPO for the proposed project area and a summary of historical structures, features, and sites are provided. Based on the results of this report a total of three historical objects or sites exist within the same township, section, and range but none are on or adjacent to the proposed development. Therefore, approval of this subdivision will not destroy, adversely affect, or damage significant historical features. Please see the SHPO Report and Letter included in Section E.

The adjacent lands are timbered; therefore, it is not anticipated open spaces or visual features would be eliminated. It should be noted that the intent of the subdivider is to propose cash-in-lieu instead of proposing open space or a parkland dedication. This option will support other desirable locations throughout the county to be improved and provide easier connectivity and public access than the subject parcel.

- vi. Describe possible natural hazards the subdivision be could subject to (e.g., natural hazards such as flooding, rock, snow or landslides, high winds, severe wildfires, or difficulties such as shallow bedrock, high water table, unstable or expansive soils, or excessive slopes).

The subject property contains steep slopes in the northern portion of the site and along areas of Blue Creek Road while the remainder of the subject property consists of soils less than 15% slopes. The steep sloped areas restrict development and structures and will likely remain timbered. Please refer to the Preliminary Plat, provided in Section A, to review these areas. All other areas, not identified with an "No-Build Zone" are not intended to restrict development.



The proposed development is located in the Wildland Urban Interface (WUI); therefore, this application packet includes a fire assessment of the risk of wildfire hazards.

Therefore, mitigation strategies to reduce the negative impacts of wildfire on the community are considered. A Fire Risk Rating Form and Fire Prevention and Control Plan has been provided in Section E considers road grade, emergency access routes, road surface conditions, vehicle clearance, etc. outlining the possible natural hazard and possible mitigation to reduce wildfire hazard in the new subdivision.

- c. How would the subdivision affect visual features within the subdivision or on adjacent land? Describe efforts to visually blend the proposed development with the existing environment (e.g. use of appropriate building materials, colors, road design, underground utilities, and revegetation of earthworks).

The primary use for adjacent properties is residential, large tracts of open space, and public infrastructure (roadways). The proposal continues to support residential uses similar to those found within the vicinity. As mentioned previously, a Noxious Weed Management Application and Plan can be reviewed in Section C. This plan will be used to reduce the impact of noxious weeds on the disturbed sites, mitigating negative visual impacts during and after the construction of the roadway and installation of utilities.

5. Effects on Wildlife and Wildlife Habitat

- a. Describe what impacts the subdivision or associated improvements would have on wildlife areas such as big game wintering range, migration routes, nesting areas, wetlands, or important habitat for rare or endangered species.

Ranges for Elk, Mule Deer and White-Tailed Deer Distribution Maps can be reviewed within the Wildlife Exhibit in Section B. These species occur in the area and show suitable habitats within the distribution maps, however, not all areas will always have animals or sign of animals every year. The proposed project mitigates impacts on wildlife and wildlife habitat which is inhabited by birds, small and large mammals within this mixed rural residential and timbered area through proposing larger tracts of land that will preserve habitat for those species that may visit or pass through the site.

A National Wetlands Inventory Map is provided in Section B of this application packet. The map supports there are no wetlands on or adjacent to the site, therefore, no adverse impacts will occur as a result of this subdivision. The provided Environmental Summary Report provides the site is not known to have nesting areas or important habitat for rare or endangered species. Therefore, no adverse impacts will occur to nesting areas or endangered species as a result of this subdivision. The Environmental Summary Report has been provided by Montana Natural Heritage Program (MTNHP) and can be reviewed in Section D of this submittal.

- b. Describe the effect that pets or human activity would have on wildlife.

In summary, access to rural residential lots with nearby recreational amenities continues to be sought after and is considered through the design elements of this site. Further, residents must accept responsibility for maintaining their property in a manner which minimizes conflicts and does not restrict free transit of wildlife across the land.



An agency contact letter has been sent to the Montana Fish, Wildlife & Parks Department for an opportunity to provide comments on the subdivision proposal which will be considered during the subdivision administrators review. No agency comment has been received at this time.

6. Effects on the Public Health and Safety

a. Describe any health or safety hazards on or near the subdivision, such as: natural hazards, lack of water, drainage problems, heavy traffic, dilapidated structures, high pressure gas lines, high voltage power lines, or irrigation ditches. These conditions proposed or existing should be accurately described with their origin and location identified on a copy of the preliminary plat.

There are no known health or safety hazards on or near the subdivision related to: natural hazards, lack of water, drainage problems, dilapidated structures, high voltage power lines, irrigation canals, airports, floodplains, railroads, high fire hazard areas, or adjacent industrial or mining uses.

Further, agency contact letters have been sent for an opportunity to provide comments on the subdivision proposal which will be considered during the subdivision administrators review. Please see Section E of the submittal packet to review comments received that do not provide additional health or safety hazards on or near the subdivision to address at this time.

b. Describe how the subdivision would be subject to hazardous conditions due to high voltage lines, airports, highways, railroads, dilapidated structures, high pressure gas lines, irrigation ditches, and adjacent industrial or mining uses.

A second formal site visit has occurred on April 16, 2024, with MDT, Sanders County, the current property titleholder, and an IMEG representative to discuss possible hazardous conditions due to the proposed approach unto the adjacent HWY and why Blue Creek Road would not provide adequate access to the division.

Blue Creek Road contains steep slopes with a gradient of 25% or greater and topography that does not provide safe access unto HWY 200. About 950' from the Blue Creek Road and HWY 200 intersection a flat bench exists reducing travel lane visibility from this point the entire slope length is downhill until vehicles reach the intersection. This flat bench and slope length is especially a concern during winter months given the travel distance for vehicles to come to a full stop at the intersection of the two roadways. Environmental conditions on Blue Creek Road, such as weather (e.g., snow, heavy rainfall), water, and the possibility of flash floods (e.g., storm runoff) all reduce the ability for vehicles to come to a full stop and additional traffic from this division would deteriorate the underlying material at a much faster rate given the rural nature of the area. Further, the likely priority of the public roadway to be maintained compared to those closer to civic services or within closure proximity to town limits should be considered.

Therefore, this development has proceeded with an approach permit unto HWY 200 as provided in MDOT Approach Application (section D) avoiding cuts and fills on steep slopes for access. This approach has been designed in conjunction to an internal road network which avoids the steep grades, therefore, providing a gradual access unto HWY 200. All residential homesites including individual well and septic locations are pushed towards this internal road network given the steep slopes along the northern portion of this property which have been dedicated as "No Build





Zones". Please see the Preliminary Plat (Section A) for a reference of subdivision design and layout. Sanders County will provide a formal letter providing support of the proposed access unto HWY 200 subject to review and approval by MDT.

The remaining hazards listed are not applicable, please see the previous response within this section.

c. Describe land uses adjacent to the subdivision and how the subdivision will affect the adjacent land uses. Identify existing uses such as feed lots, processing plants, airports or industrial firms which could be subject to lawsuits or complaints from residents of the subdivision.

The proposed development is not adjacent to feed lots, processing plants, airports, or industrial firms, therefore, no lawsuits or complaints are anticipated. The primary use for adjacent properties is residential, large tracts of open space, and public infrastructure (roadways). The proposal continues to support residential uses similar to those found within the vicinity.

d. Describe public health or safety hazards, such as dangerous traffic, fire conditions, or contamination of water supplies which would be created by the subdivision.

Please refer to Section 6(a) Effects on the Public Health and Safety as it pertains to the discussion around proposed access into the subdivision. The proposed approach unto HWY 200 is subject to review by MDT to reduce public safety hazards for the proposed development. The proposed approach is made up of two 12' travel lanes, 2' gravel shoulders, will include signage and aligns with the approach adjacent to the south providing safe access into the development.

Further, the general increase in the tax base is expected to offset any impacts that are made to existing facilities that serve the proposed subdivision. There are no known health or safety hazards on or near the subdivision and complaints from residents of the subdivision due to adjacent land uses are not anticipated. Further, the existing emergency services personnel, vehicles, and facilities described throughout this application packet are anticipated to meet the likely needs of the proposed subdivision.

Sincerely,
IMEG, Corp.

Prepared by:

A handwritten signature in black ink that reads "Tamara Ross".

IMEG | Civil Designer / Planning Technician

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COMMUNITY IMPACT REPORT

PREPARED IN ACCORDANCE WITH SANDERS COUNTY SUBDIVISION REGULATIONS
for

BLUE CREEK SUBDIVISION

On Property Legally Described as: The Southwest One-Quarter of the Northwest One-Quarter (SW1/4NW1/4) of Section 20 Lying North of Montana Highway 200, Township 27 North, Range 34 West, Principal Meridian Montana, Sanders County, Montana. Containing a total of 25.94 Acres, more or less.

Dated: January 15th, 2024

Revised: March 5th, 2024

Revised: April 25th, 2024

Prepared For:

Tungsten Holdings, Inc.
809 Mineral Ave.
Libby, MT 59923

Prepared By:

IMEG Corp
1817 South Ave West, Suite A
Missoula, MT 59801

COMMUNITY IMPACT REPORT

Provide a community impact report containing a statement of estimated number of people coming into the area as a result of the subdivision, anticipated needs of the proposed subdivision for public facilities and services, the increased capital and operating cost to each affected unit of local government. Provide responses to each of the following questions and provide reference materials as required.

1. Education and Busing

a. Describe the available educational facilities which would serve this subdivision.

This proposed subdivision is located within the Noxon School District.

b. Estimate the number of school children that will be added by the proposed subdivision.

Provide a statement from the administrator of the affected school system indicating whether the increased enrollment can be accommodated by the present personnel and facilities and by the existing school bus system. If not, estimate the increased expenditures that would be necessary to do so.

According to census information gathered and analyzed by Statista between 1960 and 2020 the average number of children under 18 in families with children in the United States grows at a maximum of .5 children per year (assuming a household has two parents). As the exact number of families with children cannot be determined at this time it is anticipated that the proposed development will align with the average trend and families that move to the proposed subdivision would contribute a maximum of .5 annual growth to children under the age of 18 in this area (www.statista.com)

Based on this information, assuming 9 future single-family homes would adhere to the estimated average, the proposed development could add 5 school aged children at full build



out. A letter was sent to the Noxon School District for comment, but no response was received at this time. The additional cost coming from the increase in students would be covered by the increase in taxes.

2. Roads and Maintenance

- a. Estimate how much daily traffic the subdivision, when fully occupied will generate on existing streets and arterials.

The conservative number used to estimate vehicle trips per day for the proposed use of Single-Family Detached Housing is 10 trips per day for each lot proposed. As a result, the subdivision may generate an average of 90 vehicle trips per day at full build out. This has been found through using the current edition Trip Generation published by the Institute of Transportation Engineers. This publication includes rates and equations for use in estimating traffic generation by land use of the type proposed for the subdivision which is Single Family Detached Housing.

- b. Describe the capability of existing and proposed roads to safely accommodate this increased traffic.

The proposed approach onto HWY 200 will be used for a newly proposed roadway, internal to the subdivision, providing access to the 9 proposed lots. Impacts to HWY 200 are not anticipated as the highway is sufficiently sized to handle the traffic from the proposed lots. Further, due to the expected increase of 90 vehicle trips per day proposed does not require a traffic impact study unless otherwise requested from the county.

A proposed 1' No-Access Strip is located along the entire southern property boundary along the HWY 200; excluding the proposed approach. The proposed approach unto HWY 200 is under review by MDOT. Please reference the MDOT Approach Application and correspondence in Section D further supporting the proposed approach and roadway to safely accommodate increased traffic onto HWY 200.

All lots will be accessed by the newly proposed Blue Sky Drive or Blue Sky Court to be constructed of a 24-foot-wide gravel road surface with 2-foot shoulders contained within the 60-foot Private Access and Utility Easement (P.A.U.E.). In addition, two hammerhead turnarounds are proposed to be included within this development and will comply with emergency service access requirements. The easement will be unobstructed for maintenance of any future utilities; therefore, each roadway will be subject to a proposed Road Maintenance Agreement, provided in Section C. These planned private improvements will aid in mitigating impacts anticipated from the proposed subdivision. These proposed improvements can be observed in the Grading, Drainage, and Road Construction Plans and approval of the Private Subdivision Road Register in Section D of this submittal.

Blue Creek Road and HWY 200 are not expected to have a heavy increase in traffic as ingress and egress to the subdivision is not proposed to either of these roadways.



It should be noted that a site visit was conducted with IMEG staff, Katherine Maudrone, and the District 3 Road Foreman in September of 2022 which concluded that an approach off of Blue Creek Road would not be supported due to heavy truck traffic and slopes along the existing roadway. Further, the Preliminary Plat Application Requirements checklist received by IMEG Staff on August 16th does not require a legal or physical access off of the local roadway, Blue Creek Road, or a variance request for proposing access unto a higher road classification. A second formal site visit has occurred on April 16, 2024, with MDT, Sanders County, the current property titleholder, and an IMEG representative to discuss possible hazardous conditions due to the proposed approach unto the adjacent HWY and why Blue Creek Road would not provide adequate access to the division. Therefore, this development has proceeded with an approach permit unto HWY 200 as provided in MDOT Approach Application (section D) avoiding cuts and fills on steep slopes for access. Sanders County will provide a formal letter providing support of the proposed access unto HWY 200 subject to review and approval by MDT.

c. Describe increased maintenance problems and increased cost due to this increase in volume. **The increase in tax revenue from the subdivision will be able to cover the increase in road maintenance to roadways in the vicinity. An increase of maintenance costs to HWY 200 are not anticipated as the highway is sufficiently sized to handle the traffic from the proposed lots.**

d. Describe proposed new public or private access roads including:

i. Measures for disposing of storm run-off from streets and roads.

Stormwater retention facilities in accordance with MDEQ requirements are provided within this planning submittal to further mitigate potential erosion due to grading during and after construction. Silt fences will be installed prior to excavation taking place and filter fabrics will be used to avoid ponding or trenching during construction. The Grading and Drainage Engineering Design Report (Section D) offers design aspects and calculations of stormwater facilities to mitigate storm water for each of the lots and proposed access roads. The Drainage Basin Exhibit included within the report illustrates each lot will consist of its own Post Development Basin and the development's internal roads will be broken out into four (4) Road Basins. The stormwater retention facilities will be in accordance with MDEQ requirements mitigating pre- and post-development 2-year storm and any potential erosion due to grading during and after construction. Please see the Grading, Drainage, and Road Construction Plans and associated report in Section D.

ii. Type of road surface and provisions to be made for dust.

The proposed subdivision intends to access directly from HWY 200 and each individual lot owner will use the newly constructed roadway subject to a roadway maintenance agreement. The Road Maintenance Agreement will address dust control which will be included in the Proposed Covenants, Conditions, and Restrictions prior to final plat approval. Please reference Section C for these documents.



iii. Facilities for streams or drainage crossing (e.g. culverts, bridges).

The applicant is not aware of streams or drainage crossings that would be impacted by this project. Onsite

iv. Seeding of disturbed areas.

The proposed subdivision will be required to submit and follow a Sanders County Subdivision Noxious Weed Management Form and Agreement. During construction, noxious weeds will be controlled by adherence to the Noxious Weed Management Plan as required by the county. After construction of infrastructure, noxious weed growth will be controlled via requirements, covenants and oversight by the lot owners as indicated in the Noxious Weed Management Form and Agreement which is subject to future lot owners.

e. Describe the closing or modification of any existing roads.

The applicant does not anticipate the closing or modification of existing roads as a result of this division.

f. Explain why road access was not provided within the subdivision, if access to any individual lot is directly from arterial streets or roads.

All lots will be accessed by the newly proposed Blue Sky Drive or Blue Sky Court both proposed to be constructed of a 24-foot-wide gravel road surface with 2-foot shoulders contained within the 60-foot Private Access and Utility Easement (P.A.U.E.). Each lot will construct its own driveway unto these newly constructed roadways.

g. Is year-round access by conventional automobile over legal rights-of-way available to the subdivision and to all lots and common facilities within the subdivision? Identify the owners of any private property over which access to the subdivision will be provided.

Year-round access to all lots within the subdivision will be provided.

h. Estimate the cost and completion date of the system, and indicate who will pay the cost of installation, maintenance and snow removal.

Estimated time for completion of this roadway is 2025. The cost of installation, maintenance and snow removal is at the expense of the developer until each lot is sold. Once a lot is sold the individual landowner will be subject to a Road Maintenance Agreement which will be included in the Proposed Covenants, Conditions, and Restrictions prior to final plat approval.

3. Water, Sewage, and Solid Waste Facilities

a. Briefly describe the water supply and sewage treatment systems to be used in serving the proposed subdivision (e.g. methods, capacities, locations).

This subdivision proposes individual septic systems for the method of sewage disposal for each of the 9 residential lots. The location of allowable build zones for proposed systems and drainfields are shown on the MDEQ Lot Layout planning submittal. Please refer to the Water & Sanitation Report in Section D for further descriptions of these individual systems and the



MDEQ Lot Layout planning submittal in Section A for the proposed locations. This layout is subject to changes as it continues through the MDEQ review process.

b. Provide information on estimated cost of the system, who will bear the costs, and how the system will be financed.

Septic systems will be constructed at the time of building and the cost of such systems will be at the expense of the individual lot owner. The wells would also be at the expense of the individual lot owners. Solid waste is also at the expense of each individual lot owner.

c. Where hook-up to an existing system is proposed, describe estimated impacts on the existing system, and show evidence that permission has been granted to hook up to the existing system.

Public wastewater treatment facilities are not within the vicinity or available to this development. Therefore, this criterion is not applicable.

d. All water supply and sewage treatment plans and specifications will be reviewed and approved by the Department of Environmental Quality (DEQ) and should be submitted using the appropriate DEQ application form.

The proposed development will adhere to the rules published by the Montana Department of Environmental Quality (DEQ). The MDEQ Lot Layout planning submittal, within Section A, provides details for the proposed approximate locations and size of subsurface treatment systems and replacement areas. This lot layout includes the approximate location, size and depth of proposed wells and the 100' isolation zones. The standards of MDEQ pertaining to water supply quality, quantity and construction criteria are intended to be met. See Section D which includes well logs, the Water and Sanitation Report, and exhibits to support this criterion will be satisfied.

e. Describe the proposed method of collecting and disposing of solid waste from the development.

Garbage pick-up is not anticipated for this development. Therefore, solid waste will need to be taken to one of the Sanders County Refuse Districts by each individual lot owner.

f. If use of an existing collection system or disposal facility is proposed indicate the name and location of the facility.

The applicant believes the Heron disposal facility is the closest garbage collection system to the development. The address is 249 Mt. Hwy 200, Heron, MT 59844. The site is approximately 2-miles from the project site.

4. Fire and Police Protection

a. Describe the fire and police protection services available to the residents of the proposed subdivision including number of personnel and number of vehicles or type of facilities for:

i Fire protection -- is the proposed subdivision in an existing fire district? If not, will one be formed or extended? Describe what fire protection procedures are planned?

Yes, the proposed subdivision is located within the Heron Rural Fire District.

An agency contact letter has been sent to each agency to provide comments on the subdivision proposal which will be considered during the subdivision administrators



review. In summary, the landowner intends to provide evidence that a contribution has been made to Heron Rural Fire District as requested by the district for cash in lieu of a water supply for fire suppression. Please refer to the Agency Notice Letter and Comments (Section D) to review all agency comments received by the applicant.

ii Law --Enforcement protection – Which of --is the proposed subdivision within the jurisdiction of a County Sheriff or municipal police department.

The site would be under the protection of the Sanders County Sheriff's Office. A contact letter was sent out for input to the respective agency but no comment has been received at this time.

b. Can the fire and police protection service needs of the proposed subdivision be met by present personnel and facilities? If not, describe the additional expenses that would be necessary to make these services adequate, and who would pay the costs?

An agency contact letter has been sent to each agency to provide comments on the subdivision proposal which will be considered during the subdivision administrators review. Comments from the local Sheriff's Office have not been provided, therefore, there is no indication that existing facilities and personnel would be negatively affected as a result of this division. The Herson Rural Fire District has requested cash in lieu of a water supply for fire suppression and reviewed and approved the Fire Risk Rating Form provided in Section E. Please review all agency as provided in Agency Notice Letter and Comments exhibit (Section D).

There are no potentially significant adverse impacts identified based on the criteria outlined within this section of the application.

5. Payment for extension of Capital Facilities

Indicate how the subdivider will pay for the cost of extending capital facilities resulting from expected impacts directly attributable to the subdivision.

N/A.

Sincerely,
IMEG, Corp.

Prepared by:

A handwritten signature in blue ink that reads "Tamara Ross".

IMEG | Civil Designer / Planning Technician

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Sanders County Fire Risk Rating Form

This form may be used to rate the risks from wildfire hazards in new subdivisions and other developments. Conditions anticipated after development of roads, water supplies, etc., should be the focus.

Name of Subdivision: Blue Creek Subdivision

Landowner or Subdivider: Tungsten Holdings, Inc.

Legal Description: SW1/4 NW1/4 of S20, T27N, R34W less B56 Deeds, P485, less SW1/4NW1/4 of S20 T27N, R34W south of Hwy 200

Location: East of Blue Creek Rd North of Hwy 200

General Description of Subdivision: The 27.3 acres is proposed to be developed into 9 single family residential lots. The property is vacant rural land, contains timber and gentle slopes not exceeding 15%. The proposed development is adjacent to the north of HWY 200 and abuts Blue Creek Road. Building sites will be cleared prior to the development of homes.

Date of Assessment: _____

Name, Qualifications, and Contact Information of Preparer: IMEG Corp.

1817 South Ave. W Ste A Missoula, MT 59801; 406-721-0142

Verified by local Fire District, DNRC, USFS, or other qualified person: _____

MEG, ASST. CHIEF, HRFD

Signature

3/25/24

Date

Instructions: Circle the score beside the appropriate descriptions in each subsection, add points, and enter on page 6. Preparers have discretion to assign appropriate scores based on conditions and their judgment.

Section	Attributes	Points	
1	Vehicular and Emergency Service Provider Access (20%)		
	Ingress/Egress		
	A	Two or more full-time primary access roads	0
		One full-time primary access road with functional secondary or emergency access road	2
		One full-time primary access road	4
	B	Width of Primary Access Road (driving surface)	
		24 feet or more	0
		20 to 24 feet	1
		20 feet	2
		16 to 20 feet	3
		Less than 16 feet	4
	C	Width of Secondary Access Road (the road most likely to be used for escape if primary access is blocked or closed)	
		24 feet or more	0
		20 to 24 feet	1
		20 feet	2
		12 to 20 feet	3
		None or less than 12 feet	4
	D	Maximum Road Grade of Primary Access Route	
		5%	0
		8%	1
		10%	2
		12%	3
		>12%	4
	E	Maximum Road Grade of Secondary or Emergency Access Route	
5%		0	
10%		1	
12%		2	

		>12% or none	3
	F	Primary Access Terminus	
		Primary road connects with another road (i.e., no turnaround necessary)	0
		Fully compliant cul-de-sac or other turnaround	1
		Substandard turnaround but largest fire department apparatus is capable of turnaround under normal summer conditions	2
		No turnaround or turnaround in which largest fire department apparatus is incapable of turnaround under normal summer conditions	3
	G	Length of Primary Dead End Road as Only Full-Time Primary Access (measured from edge of intersecting public road that provides two exit routes, along centerline to road terminus or end of turnaround)	
		600 feet or less, or if primary road does not dead end	0
		600 feet to 1,000 feet	1
		>1,000 feet	3
	H	Road surface conditions (on worst road if more than one)	
		Hard-surfaced (paved), excellent conditions throughout	0
		Hard-surfaced (paved or chip seal), with partial gravel, potholes, or deteriorating conditions that may minimally slow but not hinder emergency service access; or gravel, excellent condition	1
		Gravel, with areas of washboard, potholes, or other deterioration conditions that may slow but not hinder emergency service access	2
		Deteriorating or similar conditions that may slow or otherwise measurably hinder emergency service access	3
	I	Vertical Clearance	
		No obstructions to a height of 13.5 feet or more	0
		Minimal, temporary overhead obstructions under 13.5 feet in height, such as occasional tree branches that emergency vehicles can easily manage	1
		Overhead vegetation less than 13.5 feet in height that may significantly slow or obstruct emergency vehicles	2
		Permanent obstructions less than 13.5 feet in height	3
	J	Driveways (driveways that exceed 600 feet in length shall be factored as roads above and given a non-compliant rating)	

		Driveway lengths do not exceed 600 feet as measured along the centerline from the primary access road to the end of where a fire department water tender will typically park to conduct structural fire suppression	0	
		Driveway extends to within 150 feet of all points of occupied buildings	0	
		Driveway width exceeds 12 feet	0	
		Driveways include a turnaround in which largest fire department apparatus is capable of turnaround under normal, summer conditions	0	
		For each aspect a driveway does not comply with the above, assign one point	1 or 2 or 3 or 4	
		Driveway includes 13.5 feet of vertical clearance of all obstructions	0	
		Driveway does not include 13.5 feet of vertical clearance of all obstructions	2	
K	Street Signs and Posted Address Numbers			
		Fully present and compliant with rural addressing requirements	0	
		Not fully present or compliant	3	
Section 1 Subtotal Score (add Sec. 1. A-K above) =			16	
2	Vegetation (30%) (see IWUIC definitions below)			
	A	On-site fuel loads based on mapping and site assessment		
			Light	5
			Medium	10
			Heavy	20
	B	Predominant fuel types within ½ mile of project site based on mapping and site assessment		
			Light	5
			Medium	10
			Heavy	20
	C	Defensible spaces or fuels reduction at building sites at final plat		
		Not necessary	0	
		No defined building sites or no way to ensure it is carried out	10	
		Needed but will not be carried out	20	
Section 2 Subtotal Score (add Sec. 2. A-C above) =			40	
3	Topography (20%)			
	A	Surrounding topography 150 feet to ½ mile from building sites		
			Characterized by typical slopes of 8% or less	1
	Characterized by typical slopes of >8% and <25%	5		

3 (cont.)		Characterized by typical slopes of >25% and <35%	10
		Characterized by typical slopes of 35% and greater	15
	B	Topography within 150 feet surrounding building sites	
		Characterized by typical slopes of 8% or less	1
		Characterized by typical slopes of >8% and <25%	5
		Characterized by typical slopes of >25% and <35%	10
		Characterized by typical slopes of 35% and greater	15
		Presence of fire chimneys or other hazardous features that may impact the subdivision within ½ mile from buildings and building sites	
	C	No fire chimneys or hazardous features	0
		Fire chimneys or hazardous features exist but are not a common characteristic	3
		Fire chimneys or hazardous features are a common characteristic	5
	D	Predominant aspect	
		North or east	0
West or south		3 or 5	
Section 3 Subtotal Score (add Sec. 3. A-D above) =			20
4	Water Sources for Fire Protection (15%)		
	A	Hydrants/draft sites (choose best water source available)	
		500-GPM hydrant within 500 feet of each building	0
		500-GPM hydrant within 1,000 feet of each building	3
		500-GPM hydrant farther than 1,000 feet from each building, but within 5 minutes, round trip	5
		10,000+ gallon draft site within 1,000 feet of each building	12
		10,000+ gallon draft site farther than 1,000 feet of each building, but within 5 minutes round trip	15
		Water source providing 10,000+ gallons; 5 - 10 minutes round trip including fill time	20
		Water source providing <10,000 gallons; more than 10 minutes round trip including fill time	25
	B	Internal sprinkler systems	
		Internal sprinkler systems in all regularly occupied buildings	0
No internal sprinkler systems in all regularly occupied buildings		5	
Section 4 Subtotal Score (add Sec. 4. A-B above) =			30
	Miscellaneous Fire Dangers (15%)		
	A	Electrical/power lines	
		All underground	0

5		Some underground, some above	(3)
		All above ground	5
	B	Propane and other gas tanks	
		None	0
		All underground	1
		Above ground or allowed above ground	(3)
5 (cont.)	C	Other Risks: Add one point for each if the risk is present or likely to be present on site or present within surrounding ½ mile; add two points for each with multiple occurrences	
		Campsite, picnic area, or home with fire pit	0 or (1) or 2
		Commercial activity	(0) or 1 or 2
		Debris burning	0 or 1 or (2)
		Domestic wood heat	0 or 1 or (2)
		Agricultural operation	(0) or 1 or 2
		Lumber mill, mines, other industrial activity	(0) or 1 or 2
		Overhead high-voltage powerlines	0 or (1) or 2
		Active railroad	(0) or 1 or 2
		Major highway or off-road vehicle trail/road	0 or 1 or (2)
		Historic wildfires over last 10 years	0 or 1 or (2)
		Others: describe each	(0) or 1 or 2
		Section 5 Subtotal Score (add Sec. 5. A-C above) =	
TOTAL SCORES FROM SECTION 1-5			
Total Score from Section 1 (Access):			16
Total Score from Section 2 (Vegetation)			40
Total Score from Section 3 (Topography)			20
Total Score from Section 4 (Water Sources)			30
Total Score from Section 5 (Misc. Risks)			16
TOTAL PROJECT SCORE:			122
RISK RATING (see range below):			Moderate Risk
Risk Rating Range: <div style="display: flex; justify-content: space-between;"> < 99 = Low Risk 100-130 = Moderate Risk > 131 = High Risk </div>			

REFERENCES AND MODEL CODES:

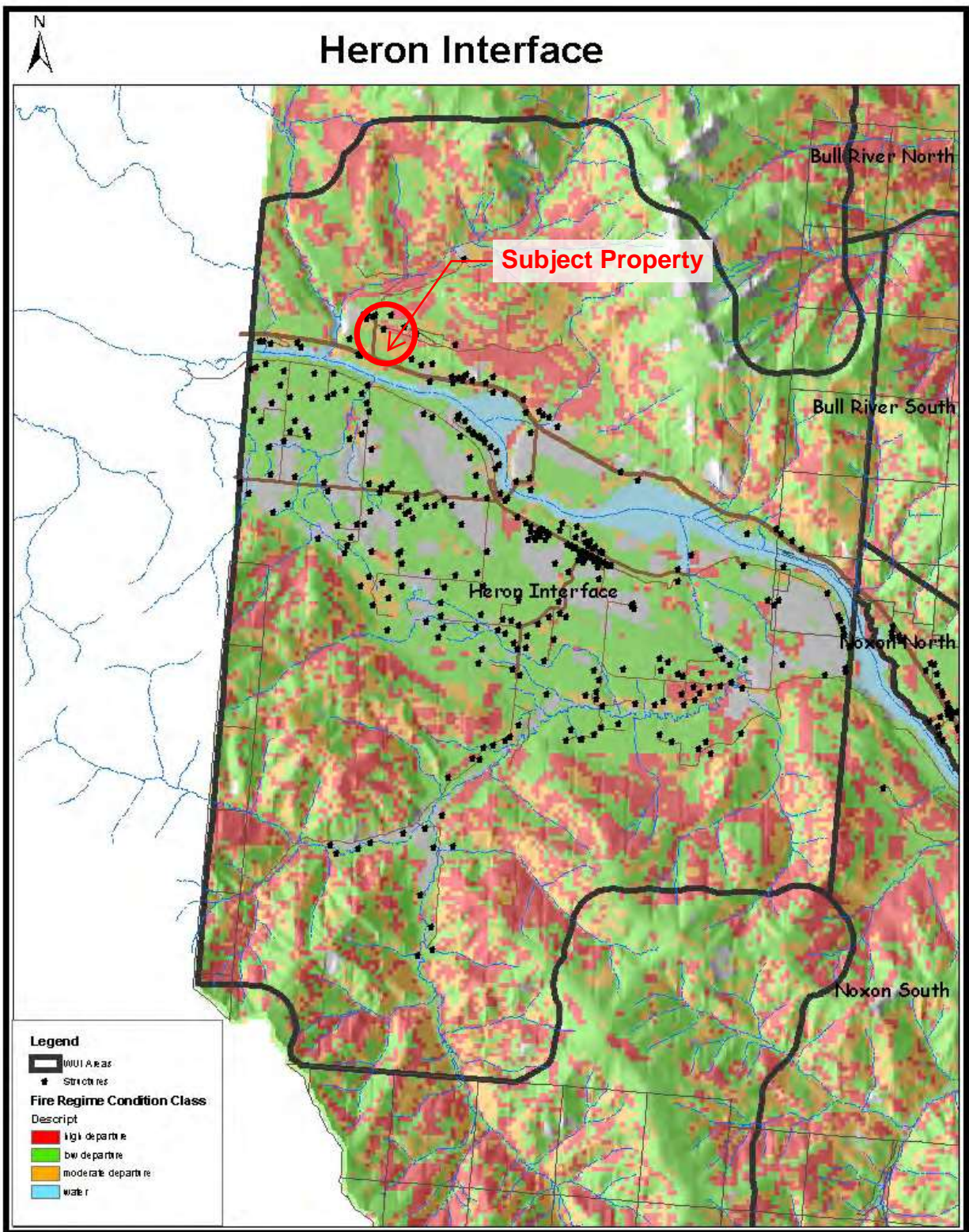
The Fire Risk form was developed from several model codes and existing literature. The purpose of this form is to provide a template and guidance for Sanders County regarding best practices and opportunities to mitigate wildfire risk to homes and property. Risk variables should be reviewed by the county, fire personnel, and emergency management officer to identify and prioritize risks most applicable to Sanders County.

References and Resources

- [Department of State Lands Fire Risk Rating for Existing and Planned Wildland Residential Interface Developments in Montana. 1993.](#)
- [National Fire Protection Association Wildfire Hazard Severity Form Checklist NFPA 299 / 1144. 2018.](#)
- [International Wildland Urban Interface Code Appendix C. 2012.](#)
- [U.S. Fire Administration. Wildland Urban Interface Toolkit: Codes and Standards. 2019.](#)
- [National Volunteer Fire Council. Wildland Fire Assessment Program. 2019.](#)
- [Fire Adapted Communities Learning Network. FAC Self-Assessment Tool. 2019.](#)

Fuel Type Definitions – see [Appendix D, 2012 International Wildland Urban Interface Code](#)

- *Light fuel:* Vegetation consisting of herbaceous plants and round wood less than ¼ inch in diameter. See Fuel Models A, C, E, L, N, P, R, and S.
- *Medium fuel:* Vegetation consisting of round wood ¼ to 3 inches in diameter. See Fuel Models B, D, F, H, O, Q, and T.
- *Heavy fuel:* Vegetation consisting of round wood 3 to 8 inches in diameter. See Fuel Models G, I, J, K and U.



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Tamara R. Ross

From: Chris McComas <cmccomas@co.sanders.mt.us>
Sent: Thursday, April 4, 2024 4:12 PM
To: Tamara R. Ross
Subject: FW: Heron Fire Department Subdivision Review
Attachments: Blue Creek Fire Risk Rating Form.pdf

External Email: Treat links and attachments with caution.

Tamara,

I received this from Brad with Heron Rural Fire. Have you received a comment with approval for \$500 per lot cash in lieu of a water supply for fire suppression?

Chris McComas

Director of Land Services

Sanders County

PO Box 519

Thompson Falls, MT 59873-0519

406-827-6965(Office)

406-449-6573(Cell)

<https://co.sanders.mt.us/206/Land-Services>



From: Brad Gilbert <bradegilbert3115@gmail.com>
Sent: Thursday, April 4, 2024 3:48 PM
To: Chris McComas <cmccomas@co.sanders.mt.us>
Subject: Re: Heron Fire Department Subdivision Review

Chris,

Is this the document in question? I could have forgotten to attach it. I've only seen the documentation for the Blue Creek Subdivision. If there is another one, let me know and I'll get it turned around quickly. I've only been the Assistant Chief for a year so I'm still getting caught up on all of the things that were supposed to be getting done. Don't hesitate to reach out if there is something you're missing from us.

Brad

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DATE: 3/25/2024

MOUNTAIN PLANS, LLC
PO BOX 324
THOMPSON FALLS, MT 59873-0324
kmaudrone@mtnplains.com

FIRE AGENCY: Heron Rural Fire District

SUBDIVISION: Blue Creek Subdivision

The following are our recommendations for the above proposed subdivision:

- ☒ Road to standards with adequate turn around.
- ☒ Nonflammable road name signs installed by developer.
- ☒ Address numbers to be placed in visible location.
- ☐ Approved 5000-gallon water cistern to be installed by developer with maintenance agreement. For 6 or more lots a minimum of 1000-gallon per lot/not to exceed 30,000
- ☐ Approved dry hydrant installed by developer with maintenance agreement.
- ☐ Stream or pond access for drafting developed and maintained.
- ☒ \$500/new lot created per Sanders County Policy/Subdivision Regulations
- ☐ Provide the subdivision plat map once approved.
- ☐ Other _____

In areas of high wildfire risk:

- ☐ No new dead-end roads.
- ☒ Fire Prevention and Control Plan/Fuels Treatment Plan

Sincerely,

Brad E Gilbert

Authorized Signer/Fire Chief/President of the Board of Trustees



Assistant Chief, HRFD

PLEASE CHECK WHAT YOU ARE ABLE TO AND WILLING TO DO OF THE FOLLOWING LIST:

- ☒ RETURN INFORMATION SHEET ABOUT YOUR AGENCY AND RESOURCES
- ☐ REQUEST FOR COMMENT FORM (EXAMPLE INCLUDED)
- ☒ COMPLETE OR VERIFY AND SIGN OFF ON FIRE RISK RATING FORM

NAME OF AGENCY: Heron Rural Fire District

CONTACT PERSON: Brad Gilbert

PHYSICAL LOCATION: 140 Railroad Ave. Heron, MT 59844

PLEASE INDICATE WHICH IS THE PREFERRED FORM OF CONTACTING YOU.

- ☐ EMAIL: _____
- ☒ MAILING ADDRESS: 140 Railroad Ave. Heron, MT 59844

RESOURCES:

NUMBER AND TYPE OF RESPONSE VEHICLES:

1- Type 2 Pumper, 2-type 5 brush trucks, 1- ARFF, 2- 1500 gallon tenders

NUMBER AND TITLE OF PAID STAFF:

0

NUMBER OF VOLUNTEERS: 15

ANY ADDITIONAL INFORMATION YOU WOULD LIKE TO PROVIDE:

We would be happy to VERIFY and sign off on Fire Risk Rating Form

- ☒ THIS AGENCY IS WILLING TO SIGN OFF ON FIRE RISK RATING FORMS

Brad E Gilbert, Assistant Chief, HREFD
SIGNATURE OF AUTHORIZED PERSONNEL



Adjoining Landowners Map



11/21/2023, 9:39:16 AM

 CadastralWebMerc - OwnerParcel  CadastralWebMerc - PLSS Township



1:6,620
0 0.04 0.07 0.15 mi
0 0.05 0.1 0.2 km

Adjoining Landowner Map provides the owner of record of a parcel of land that is immediately contiguous at any point with the subject property.

Number Corresponding with Map	Geocode	Property Owner	Property Address				Mail Address (If Different)				
1	35-3819-20-2-01-25-0000	RATZLAFF KALVIN DOUGLAS & SHELBY MARIE	16 BLUE CREEK RD	HERON	MT	59844	-	-	-	-	-
2	35-3819-20-2-01-60-0000	ROBERTS GREGORY ERIC & MELISSA DEE	18 BLUE CREEK RD	HERON	MT	59844	-	-	-	-	-
3	35-3819-20-2-01-07-0000	ROYLANCE REVOCABLE TRUST	-	-	-	-	ROYLANCE REVOCABLE TRUST	51 ELK HILLS RD	SHERIDAN	MT	59749
4	35-3819-20-2-01-10-0000	ROYLANCE REVOCABLE TRUST	-	-	-	-	ROYLANCE REVOCABLE TRUST	51 ELK HILLS RD	SHERIDAN	MT	59749
5	35-3819-20-4-01-01-0000	ADAMS DANIEL L & LORY A	212 MT HIGHWAY 200	HERON	MT	59844	ADAMS DANIEL L & LORY A	604 NEWCOMER ST	RICHLAND	WA	99354
6	35-3819-20-2-02-01-0000	WELCHER ALICIA L & CHRISTOPHER J TRUSTEE	150 MT HIGHWAY 200	HERON	MT	59844	WELCHER ALICIA L & CHRISTOPHER J TRUSTEE	15920 VON SOSTEN RD	TRACY	CA	95304
7	35-3819-19-1-02-01-0000	COMPTON SUSAN E	126 MT HIGHWAY 200	HERON	MT	59844	-	-	-	-	-
8	35-3819-19-1-01-01-0000	COMPTON DOUGLAS C	17 BLUE CREEK RD	HERON	MT	59844	-	-	-	-	-
Subject Property	35-3819-20-2-01-20-0000	TUNGSTEN HOLDINGS, INC.	-	-	-	-	TUNGSTEN HOLDINGS, INC.	809 MINERAL AVE	LIBBY	MT	59923

RATZLAFF KALVIN DOUGLAS & SHELBY
MARIE
16 BLUE CREEK RD
HERONMT59844

ROBERTS GREGORY ERIC & MELISSA DEE
18 BLUE CREEK RD
HERONMT59844

ADAMS DANIEL L & LORY A
212 MT HIGHWAY 200
HERONMT59844

WELCHER ALICIA L & CHRISTOPHER J
TRUSTEE
150 MT HIGHWAY 200
HERONMT59844

COMPTON SUSAN E
126 MT HIGHWAY 200
HERONMT59844

COMPTON DOUGLAS C
17 BLUE CREEK RD
HERONMT59844

RATZLAFF KALVIN DOUGLAS & SHELBY
MARIE
16 BLUE CREEK RD
HERONMT59844

ROBERTS GREGORY ERIC & MELISSA DEE
18 BLUE CREEK RD
HERONMT59844

ADAMS DANIEL L & LORY A
212 MT HIGHWAY 200
HERONMT59844

WELCHER ALICIA L & CHRISTOPHER J
TRUSTEE
150 MT HIGHWAY 200
HERONMT59844

COMPTON SUSAN E
126 MT HIGHWAY 200
HERONMT59844

COMPTON DOUGLAS C
17 BLUE CREEK RD
HERONMT59844

Tamara R. Ross

From: Murdo, Damon <dmurdo@mt.gov>
Sent: Tuesday, November 21, 2023 2:51 PM
To: Tamara R. Ross
Subject: RE: Blue Creek Subdivision - SHPO Request
Attachments: Reports.pdf; Sites.pdf; 2023112106.pdf

External Email: Treat links and attachments with caution.

November 21, 2023

Tamara Ross
IMEG Corp.
1817 South Ave W
Missoula MT 59801



RE: BLUE CREEK SUBDIVISION, SANDERS COUNTY. SHPO Project #:2023112106

Dear Tamara:

I have conducted a file search for the above-cited project located in Section 20, T27N R34W. According to our records there have been a few previously recorded sites within the designated search locales. None of these sites are within the proposed project area. 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.

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

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. 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



STATE HISTORIC PRESERVATION OFFICE Montana Cultural Resource Database

CRABS Township, Range, Section Results

Report Date: 11/21/2023

Township: 27 N Range: 34 W Section: 20

BAKER JOSEPH A.

12/2/1985 TOOMEY NO. 3 LAND EXCHANGE

CRABS Document Number: LN 1 4794 Agency Document Number: 85-KO-7-3

Township: 27 N Range: 34 W Section: 20

CULTURAL RESOURCE MANAGEMENT GROUP ANONYMOUS

1/1/1998 UTEMCCI<KOOTENAI> PEOPLES OF THE LOWER CLARK FORK: A CULTURAL ASSESSMENT PREPARED FOR WASHINGTON WATER POWER IN THE CONTEXT OF THE FEDERAL ENERGY REGULATORY COMMISSION RELICENSING OF THE NOXON RAPIDS (FERC LIC. 2075) AND CABINET GORGE DAMS (FERC LIC. 2058)

CRABS Document Number: SA 6 20982 Agency Document Number:

Township: 27 N Range: 34 W Section: 20

JOURNEY ALFRED E.

10/13/1976 ARCHAEOLOGICAL RECONNAISSANCE OF NAPOLEON PLANNING UNIT AND PILGRIM PLANNING UNIT, KOOTENAI NATIONAL FOREST

CRABS Document Number: LN 1 22159 Agency Document Number:

Township: 27 N Range: 34 W Section: 20

JOURNEY ALFRED E.

10/13/1976 ARCHAEOLOGICAL RECONNAISSANCE OF NAPOLEON PLANNING UNIT AND PILGRIM PLANNING UNIT, KOOTENAI NATIONAL FOREST

CRABS Document Number: LN 1 22159 Agency Document Number:

Township: 27 N Range: 34 W Section: 20

RYAN TIM

11/1/2002 CULTURAL RESOURCES INVENTORY AND EVALUATION OF MONITORING REPORT AT CABINET GORGE AND NOXON RESERVOIRS IN SANDERS COUNTY MONTANA

CRABS Document Number: SA 6 25285 Agency Document Number:



STATE HISTORIC PRESERVATION OFFICE Cultural Resource Information Systems

CRIS Township, Range, Section Report

Report Date:11/21/2023

Site #	Twp	Rng	Sec	Qs	Site Type 1	Site Type 2	Time Period	Owner	NR Status
24SA0199	27N	34W	20	comb	Historic Railroad		1880-1889	Other	Eligible
24SA0415	27N	34W	20	SE	Precontact Rock Cairn(s)		No Indication of Time	Private	Undetermined*
24SA0442	27N	34W	20	SE	Historic Outbuildings	Historic Irrigation System	Historic Period	Private	Undetermined*



PO Box 201800 • 1201 11th Avenue • Helena, MT 59620-1800 • fax 406.444.0266 • tel 406.444.5363 • <https://mtnhp.org>

November 22, 2023

Tamara Ross
IMEG Corp.
1817 South Ave West
Missoula, MT 59801

Dear Tamara Ross,

Thank you for your request for Natural Heritage information for Blue Creek Subdivision - SandersCo, in Section 20, Township 27 North, Range 34 West, Sanders County, Montana. Included with this letter is an Environmental Summary report PDF and a companion Excel workbook summarizing information managed in the Montana Natural Heritage Program's (MTNHP) databases for: (1) species occurrences; (2) other observed species without Species Occurrences; (3) other species potentially present based on their range, presence of associated habitats, or predictive distribution model output if available; (4) structured surveys (organized efforts following a protocol capable of detecting one or more species); (5) land cover mapped as ecological systems; (6) wetland and riparian mapping; (7) land management categories; and (8) biological reports associated with plant and animal observations. The PDF report contains introductory materials and limitations associated with the use of each of these data types, a list of additional information resources, data use terms and conditions, and suggested contacts. The Excel workbook contains worksheets for each data type that can be easily sorted to summarize particular information needs. In addition to these materials, we have included a compilation of one page snapshots containing general description, habitat, spatial and temporal distribution, and conservation status information for each species listed in the species occurrence, other observed species, and other potential species sections of the Environmental Summary report. These three field guide compilations are excerpted from the full accounts found on the Montana Field Guide <https://fieldguide.mt.gov> for general reference use and, if desired, as appendices to environmental review documents.

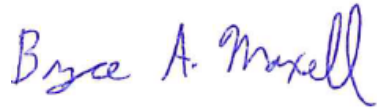
Please keep in mind the following when using and interpreting the enclosed information:

- (1) This information is intended for distribution or use only within your department, agency, or business. Please see the Data Use Terms and Conditions in the Environmental Summary report PDF for additional guidelines.

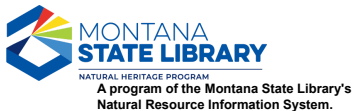
- (2) Our minimum search area for standard information requests consists of the requested area buffered by an additional mile in order to capture records that may be immediately adjacent to the requested area. Please let us know if a buffer greater than 1 mile would be of use to your efforts.
- (3) Additional information on animal, plant, and lichen species and ecological systems in Montana is available on the Montana Field Guide at <https://fieldguide.mt.gov/>
- (4) In addition to the information you receive from us, we encourage you to contact state, federal, and tribal resource management agencies in the area where your project is located (see Environmental Summary report PDF).

I hope the enclosed information is helpful to you. Please feel free to contact me at the phone or email address below if you have any questions, require additional information, or have suggestions for how we could improve our information resources.

Sincerely,



Bryce A. Maxell
Montana Natural Heritage Program
(406) 444-3989
bmaxell@mt.gov



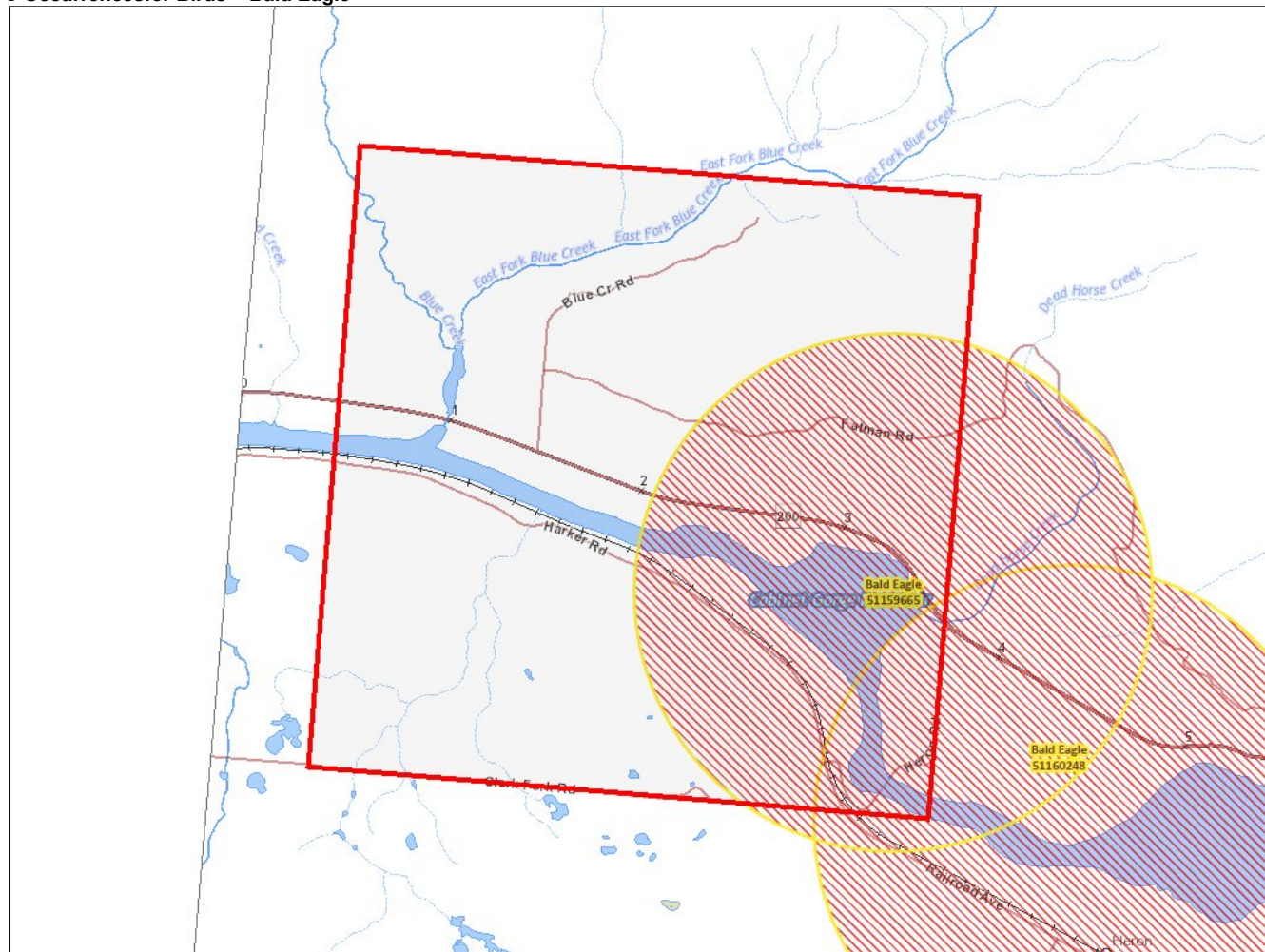
Latitude	Longitude
48.04562	-115.90401
48.13075	-116.10948



Montana SOC Occurrences Report

SOC Occurrences for Birds = Bald Eagle

Report generated 11/22/2023 8:48:52 AM



☐ **Birds - Bald Eagle** (*Haliaeetus leucocephalus*)

SO Count: 2

Obs Count: 16

Earliest Obs: 1993

Recent Obs: 2011

Special Status Species

Native Species

Global Rank: G5

State Rank: S4

Agency Status

USFWS: BGEP; MBTA

USFS: Sensitive - Known in

Forests (LOLO)

BLM: SENSITIVE

FWP SWAP:

Delineation Criteria

Confirmed nesting area buffered by a minimum distance of 2,000 meters in order to be conservative about encompassing the breeding territory and area commonly used for renesting. Only nesting observations with a locational uncertainty of 1,000 meters or less will be used to delineate a nesting area.

Last Updated

Sep 05, 2023

SO ID: 51159665	Acres: 3,105	Obs Count: 3	Earliest Obs: 2009	Recent Obs: 2011
SO ID: 51160248	Acres: 3,095	Obs Count: 13	Earliest Obs: 1993	Recent Obs: 2009

Citation for this report:

Montana SOC Occurrences Report

SOC Occurrences for Birds = Bald Eagle

Within Lat/Long: (48.04562,-115.90401) to (48.13075,-116.10948)

Natural Heritage Map Viewer. Montana Natural Heritage Program.

Retrieved on November 22, 2023, from <https://mtnhp.org/MapView/SOReport.aspx>



MONTANA STATE LIBRARY

NATURAL HERITAGE PROGRAM

mtnhp.org

1201 11th Ave • P.O. Box 201800 • Helena, MT 59620-1800 • fax 406-444-0266 • phone 406-444-3989

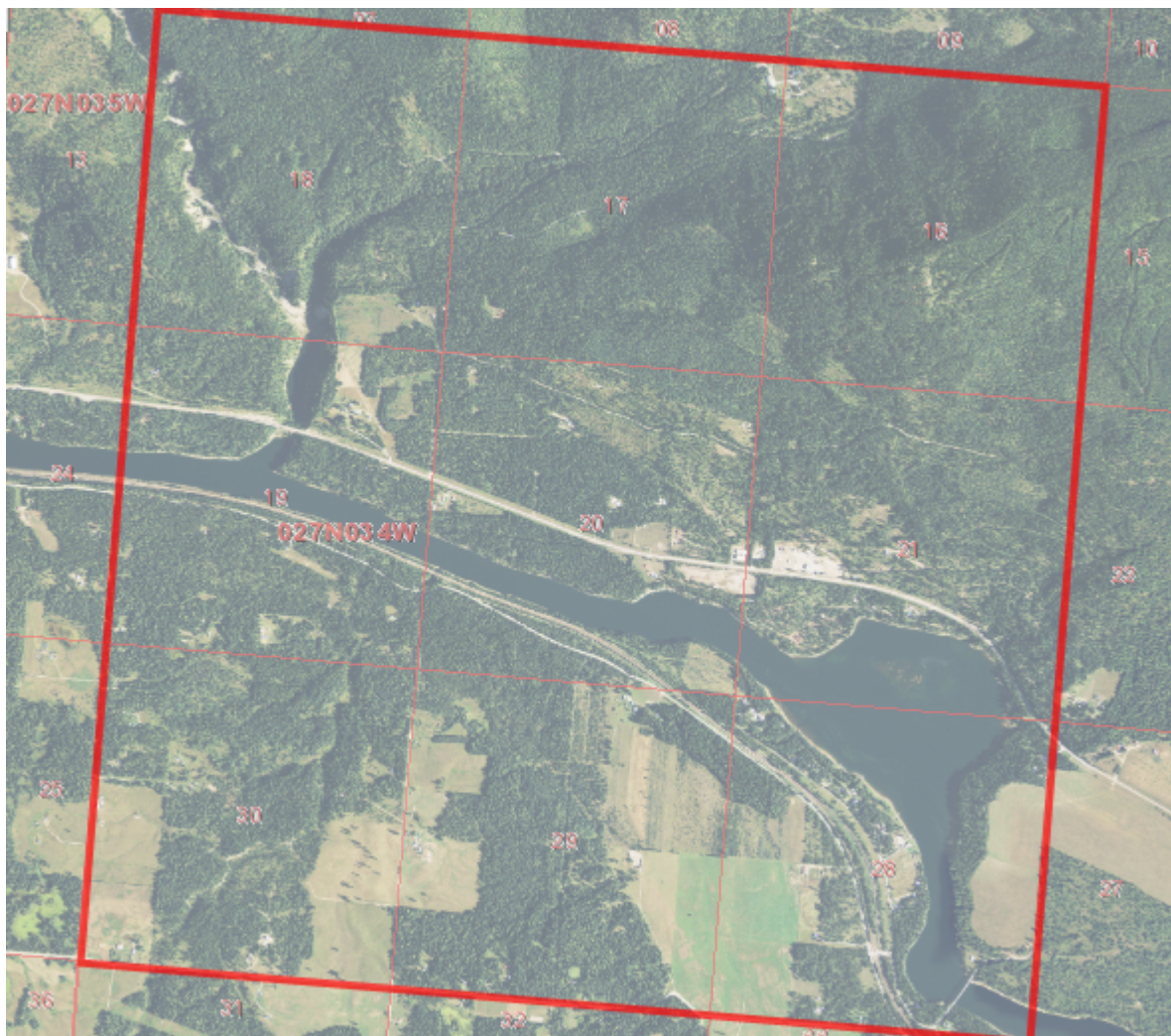


Latitude	Longitude
48.06296	-115.97510
48.11350	-116.03854

Summarized by:

027N034W020

(Buffered PLSS Section)



Suggested Citation

Montana Natural Heritage Program. Environmental Summary Report.

for Latitude 48.06296 to 48.11350 and Longitude -115.97510 to -116.03854. Retrieved on 11/22/2023.

The Montana Natural Heritage Program is part of the Montana State Library's Natural Resource Information System. Since 1985, it has served as a neutral and non-regulatory provider of easily accessible information on Montana's species and biological communities to inform all stakeholders in environmental review, permitting, and planning processes. The program is part of the NatureServe network that is composed of over 60 member programs across North America that work to provide current and comprehensive distribution and status information on species and biological communities.



Environmental Summary

Table of Contents

- [Species Report](#)
- [Structured Surveys](#)
- [Land Cover](#)
- [Wetland and Riparian](#)
- [Land Management](#)
- [Biological Reports](#)
- [Invasive and Pest Species](#)
- [Introduction to Montana Natural Heritage Program](#)
- [Data Use Terms and Conditions](#)
- [Suggested Contacts for Natural Resource Agencies](#)
- [Introduction to Native Species](#)
- [Introduction to Land Cover](#)
- [Introduction to Wetland and Riparian](#)
- [Introduction to Land Management](#)
- [Introduction to Invasive and Pest Species](#)
- [Additional Information Resources](#)

Introduction to Environmental Summary Report

Environmental Summary Reports from the Montana Natural Heritage Program (MTNHP) provide information on species and biological communities to inform all stakeholders in environmental review, permitting, and planning processes. For information on environmental permits in Montana, please see permitting overviews by the [Montana Department of Environmental Quality](#), the [Montana Department of Natural Resources and Conservation](#), the [Index of Environmental Permits for Montana](#) and our [Suggested Contacts for Natural Resource Management Agencies](#). The report for your area of interest consists of introductory and related materials in this PDF and an Excel workbook with worksheets summarizing information managed in the MTNHP databases for: (1) species occurrences; (2) other observed species without species occurrences; (3) other species potentially present based on their range, presence of associated habitats, or predictive distribution model output if available; (4) structured surveys that follow a protocol capable of detecting one or more species; (5) land cover mapped as ecological systems; (6) wetland and riparian mapping; (7) land management categories; and (8) biological reports associated with plant and animal observations. If your area of interest corresponds to a statewide polygon layer (e.g., watersheds, counties, or public land survey sections) information summaries in your report will exactly match those boundaries. However, if your report is for a custom area, users should be aware that summaries do not correspond to the exact boundaries of the polygon they have specified, but instead are a summary across a layer of hexagons intersected by the polygon they specified as shown on the report cover. Summarizing by these hexagons which are one square mile in area and approximately one kilometer in length on each side allows for consistent and rapid delivery of summaries based on a uniform grid that has been used for planning efforts across North America.

In presenting this information, MTNHP is working towards assisting the user with rapidly assessing the known or potential species and biological communities, land management categories, and biological reports associated with the report area. Users are reminded that this information is likely incomplete and may be inaccurate as surveys to document species are lacking in many areas of the state, species' range polygons often include regions of unsuitable habitat, methods of predicting the presence of species or communities are constantly improving, and information is constantly being added and updated in our databases. **Field verification by professional biologists of the absence or presence of species and biological communities in a report area will always be an important obligation of users of our data. Users are encouraged to only use this environmental summary report as a starting point for more in depth analyses and are encouraged to contact state, federal, and tribal resource management agencies for additional data or management guidelines relevant to your efforts. Please see the Appendix for introductory materials to each section of the report, additional information resources, and a list of relevant agency contacts.**

Legend			
Model Icons	Habitat Icons	Range Icons	Num Obs
Suitable (native range)	Common	Native / Year-round	Count of obs with 'good precision' (<=1000m)
Optimal Suitability	Occasional	Summer	+ indicates additional 'poor precision' obs (1001m-10,000m)
Moderate Suitability		Winter	
Low Suitability		Migratory	
Suitable (introduced range)		Non-native	
		Historical	



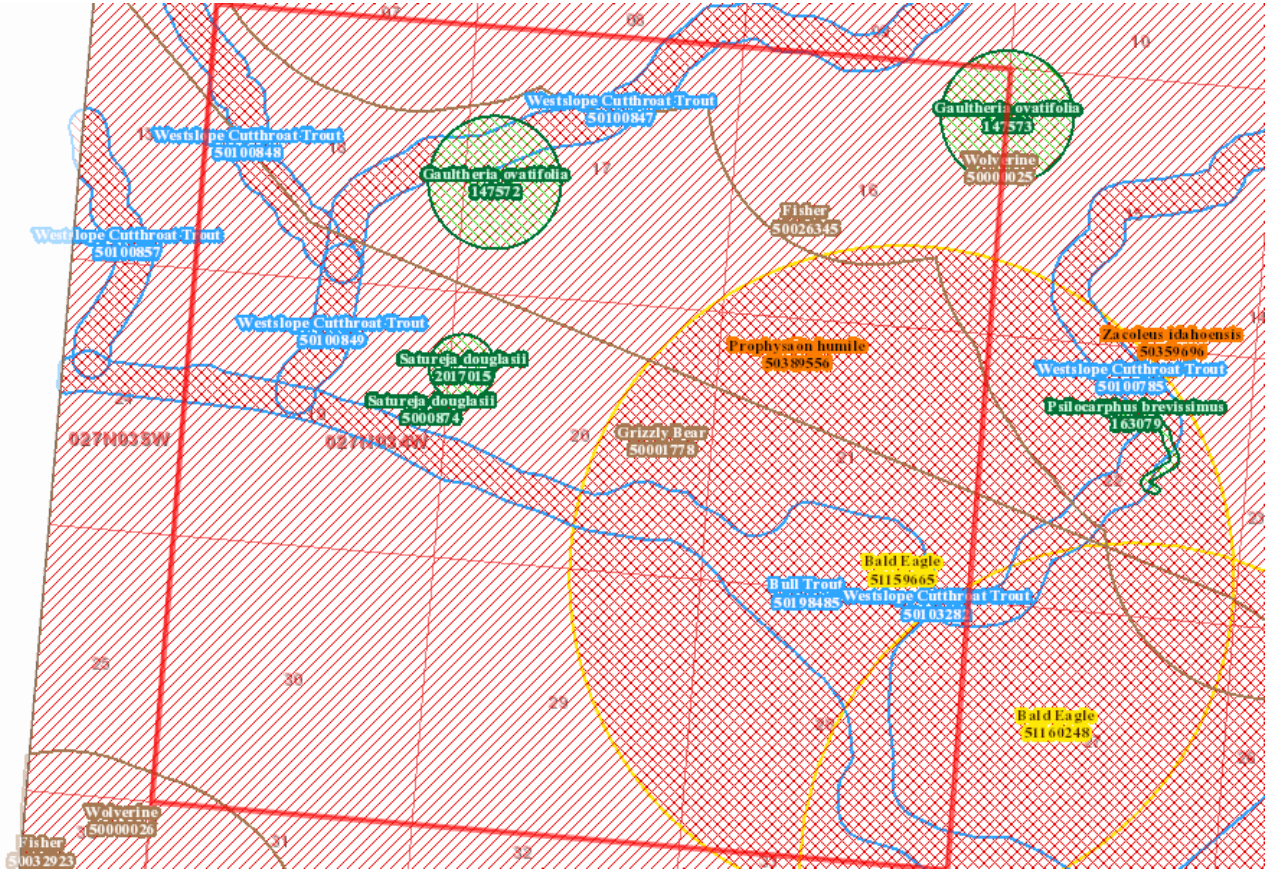
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48.11350 -116.03854

Native Species

Summarized by: **027N034W020 (Buffered PLSS Section)**

Filtered by:

Native Species reports are filtered for Species with MT Status = Species of Concern, Special Status, Important Animal Habitat, Potential SOC








Species Occurrences

	USFWS Sec7	# SO	# Obs	Predicted Model	Range
F - Westslope Cutthroat Trout (<i>Oncorhynchus clarkii lewisi</i>) SOC					
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: G5T4 State: S2 USFS: Sensitive - Known in Forests (BD, BRT, KOOT, LOLO) Species of Conservation Concern in Forests (CG, HLC) BLM: SENSITIVE FWP SWAP: SGCN2 Delineation Criteria Stream reaches and standing water bodies where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters, standing water bodies greater than 1 acre are buffered 50 meters, and standing water bodies less than 1 acre are buffered 30 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Jul 25, 2022) Predicted Models: 84% Suitable (native range) (deductive)					
F - Bull Trout (<i>Salvelinus confluentus</i>) SOC					
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2 USFWS: LT; CH BLM: THREATENED FWP SWAP: SGCN2 Delineation Criteria Stream reaches and standing water bodies where the species is believed to be present based on the professional judgement of a fisheries biologist, potentially supported by habitat assessment, direct capture, or confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters, standing water bodies greater than 1 acre are buffered 50 meters, and standing water bodies less than 1 acre are buffered 30 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards. (Last Updated: Jul 18, 2022) Predicted Models: 52% Suitable (native range) (deductive)					
V - Gaultheria ovatifolia (<i>Slender Wintergreen</i>) PSOC					
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S3S4 Predicted Models: 38% Optimal (inductive), 62% Moderate (inductive)					

<div><div></div><div>V - Satureja douglasii (Yerba Buena) SOC</div></div>	2	3	<div><div></div><div></div><div></div></div>	<div><div></div><div>Y</div></div>
<div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div><div>Species of Concern - Native Species</div><div>Global: G5 State: S3 Plant Threat Score: No Known Threats</div></div><div><div>Delineation Criteria</div><div>Individual occurrences are generally based upon a discretely mapped area provided by an observer and are not separated by any pre-defined distance. Individual clusters of plants mapped at fine spatial scales (separated by less than approximately 25-50 meters) may be grouped together into one occurrence if they are not separated by distinct areas of habitat or terrain features. Point observations are buffered to encompass any locational uncertainty associated with the observation. (Last Updated: Jan 29, 2021)</div></div><div><div>Predicted Models:</div><div><div><div></div>32% Optimal (inductive),</div><div><div></div>34% Moderate (inductive),</div><div><div></div>5% Low (inductive)</div></div></div></div>				
<div><div></div><div>B - Bald Eagle (Haliaeetus leucocephalus) SSS</div></div>	2	13	<div><div></div><div></div><div></div></div>	<div><div></div><div>Y</div></div>
<div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div><div>Special Status Species - Native Species</div><div>Global: G5 State: S4 USFWS: BGEPA; MBTA USFS: Sensitive - Known in Forests (LOLO) BLM: SENSITIVE PIF: 2</div></div><div><div>Delineation Criteria</div><div>Confirmed nesting area buffered by a minimum distance of 2,000 meters in order to be conservative about encompassing the breeding territory and area commonly used for renesting. Only nesting observations with a locational uncertainty of 1,000 meters or less will be used to delineate a nesting area. (Last Updated: Sep 05, 2023)</div></div><div><div>Predicted Models:</div><div><div><div></div>1% Optimal (inductive),</div><div><div></div>50% Moderate (inductive),</div><div><div></div>26% Low (inductive)</div></div></div></div>				
<div><div></div><div>M - Fisher (Pekania pennanti) SOC</div></div>	1	3	<div><div></div><div></div><div></div></div>	<div><div></div><div>Y</div></div>
<div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div><div>Species of Concern - Native Species</div><div>Global: G5 State: S3 USFS: Sensitive - Known in Forests (LOLO) BLM: SENSITIVE FWP SWAP: SGCN3</div></div><div><div>Delineation Criteria</div><div>Confirmed area of occupancy based on the documented presence of adults or juveniles within tracking regions containing core habitat for the species. Outer boundaries of tracking regions are defined by areas of forest cover on individual mountain ranges or clusters of adjacent mountain ranges with continuous forest cover. (Last Updated: Dec 21, 2022)</div></div><div><div>Predicted Models:</div><div><div><div></div>100% Moderate (inductive)</div></div></div></div>				
<div><div></div><div>M - Grizzly Bear (Ursus arctos) SOC</div></div>	7	1	<div><div></div><div></div><div></div></div>	<div><div></div><div>Y</div></div>
<div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div><div>Species of Concern - Native Species</div><div>Global: G4 State: S2S3 USFWS: LT BLM: THREATENED FWP SWAP: SGCN2-3</div></div><div><div>Delineation Criteria</div><div>Species Occurrence polygons represent areas delineated by the U.S. Fish and Wildlife Service (USFWS) that encompass both home ranges and potential transitory movements based on verified sightings. Within these areas, the USFWS wants project proponents to consider whether the species “may be present” when evaluating the potential impacts of a project and to work with the USFWS to develop and implement best management practices to minimize or eliminate project effects on the species. (Last Updated: Jul 06, 2023)</div></div><div><div>Predicted Models:</div><div><div><div></div>100% Moderate (inductive)</div></div></div></div>				
<div><div></div><div>M - Wolverine (Gulo gulo) SOC</div></div>	7	2	<div><div></div><div></div><div></div></div>	<div><div></div><div>Y</div></div>
<div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div><div>Species of Concern - Native Species</div><div>Global: G4 State: S3 USFS: Sensitive - Known in Forests (LOLO) BLM: SENSITIVE FWP SWAP: SGCN3</div></div><div><div>Delineation Criteria</div><div>Confirmed area of occupancy supported by recent (post-1980), nearby (within 10 kilometers) observations of adults or juveniles. Tracking regions were defined by areas of primary habitat and adjacent female dispersal habitat as modeled by Inman et al. (2013). These regions were buffered by 1 kilometer in order to link smaller areas and account for potential inaccuracies in independent variables used in the model. (Last Updated: Jul 06, 2023)</div></div><div><div>Predicted Models:</div><div><div><div></div>59% Moderate (inductive),</div><div><div></div>41% Low (inductive)</div></div></div></div>				
<div><div></div><div>I - Prophyaon humile (Smoky Taildropper) SOC</div></div>	1	1	<div><div></div><div></div><div></div></div>	<div><div></div><div>Not Assessed</div><div>Y</div></div>
<div><div><div>View in Field Guide</div><div>View Range Maps</div></div><div><div>Species of Concern - Native Species</div><div>Global: G3 State: S2S3</div></div><div><div>Delineation Criteria</div><div>Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 100 meters in order to encompass the home range of the individual as well as adjacent habitat likely to support other individuals and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Oct 11, 2017)</div></div></div>				
<div><div></div><div>I - Zacoletus idahoensis (Sheathed Slug) SOC</div></div>	1	1	<div><div></div><div></div><div></div></div>	<div><div></div><div>Not Assessed</div><div>Y</div></div>
<div><div><div>View in Field Guide</div><div>View Range Maps</div></div><div><div>Species of Concern - Native Species</div><div>Global: G3G4 State: S2S3</div></div><div><div>Delineation Criteria</div><div>Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 100 meters in order to encompass the home range of the individual as well as adjacent habitat likely to support other individuals and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Aug 07, 2017)</div></div></div>				

Legend





Model Icons

-  Suitable (native range)
-  Optimal Suitability
-  Moderate Suitability
-  Low Suitability
-  Suitable (introduced range)

Habitat Icons

-  Common
-  Occasional

Range Icons

-  Native / Year-round
-  Summer
-  Winter
-  Migratory
-  Non-native
-  Historical

Num Obs
Count of obs with
'good precision'
(≤1000m)
+ indicates
additional 'poor
precision' obs
(1001m-
10,000m)



Latitude 48.06296
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
















Native Species

Summarized by: **027N034W020** (*Buffered PLSS Section*)

Filtered by:

Native Species reports are filtered for Species with MT Status = Species of Concern, Special Status, Important Animal Habitat, Potential SOC

Other Observed Species

	USFWS Sec7	# Obs	Predicted Model	Range
V - Heteranthera dubia (<i>Water Star-grass</i>) SOC		1		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S1S2 USFS: Sensitive - Known in Forests (KOOT) Plant Threat Score: Unknown Predicted Models:  8% Optimal (inductive),  33% Moderate (inductive),  21% Low (inductive)				
B - Pileated Woodpecker (<i>Dryocopus pileatus</i>) SOC		1		
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 PIF: 2 Predicted Models:  100% Moderate (inductive)				
B - Hooded Merganser (<i>Lophodytes cucullatus</i>) PSOC		1		  
View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S4 USFWS: MBTA FWP SWAP: SGIN PIF: 2 Predicted Models:  8% Moderate (inductive),  48% Low (inductive)				
B - Great Blue Heron (<i>Ardea herodias</i>) SOC		1		  
View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFWS: MBTA FWP SWAP: SGCN3 Predicted Models:  45% Low (inductive)				

Legend

Model Icons

- Suitable (native range)
- Optimal Suitability
- Moderate Suitability
- Low Suitability
- Suitable (introduced range)

Habitat Icons

- Common
- Occasional

Range Icons

- Native / Year-round
- Summer
- Winter
- Migratory
- Non-native
- Historical

Num Obs
Count of obs with
'good precision'
(≤1000m)
+ indicates
additional 'poor
precision' obs
(1001m-
10,000m)



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Native Species

Summarized by: **027N034W020** (*Buffered PLSS Section*)

Filtered by:

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Other Potential Species

	USFWS Sec7	Predicted Model	Range
F - Burbot (<i>Lota lota</i>) PSOC View in Field Guide View Predicted Models View Range Maps Potential Species of Concern - Native Species Global: G5 State: S4 Predicted Models: 52% Suitable (native range) (deductive)			
V - Psilocarphus brevissimus (<i>Dwarf woolly-heads</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S2S3 Plant Threat Score: No Known Threats Predicted Models: 100% Optimal (inductive), 0% Moderate (inductive)			
V - Juncus covillei (<i>Coville's Rush</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2S3 Plant Threat Score: No Known Threats Predicted Models: 48% Optimal (inductive), 52% Moderate (inductive), 0% Low (inductive)			
V - Isoetes echinospora (<i>Spiny-spore Quillwort</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 Plant Threat Score: No Known Threats CCVI: Less Vulnerable Predicted Models: 29% Optimal (inductive), 52% Moderate (inductive), 19% Low (inductive)			
M - Townsend's Big-eared Bat (<i>Corynorhinus townsendii</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3 USFS: Sensitive - Known in Forests (LOLO) BLM: SENSITIVE FWP SWAP: SGCN3 Predicted Models: 26% Optimal (inductive), 74% Moderate (inductive), 0% Low (inductive)			
V - Botrychium lanceolatum (<i>Lanceleaf Moonwort</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFS: Sensitive - Known in Forests (BRT, KOOT) CCVI: Less Vulnerable Predicted Models: 23% Optimal (inductive), 61% Moderate (inductive), 16% Low (inductive)			
V - Mimulus floribundus (<i>Floriferous Monkeyflower</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: SH Plant Threat Score: No Known Threats CCVI: Highly Vulnerable Predicted Models: 22% Optimal (inductive), 78% Moderate (inductive)			
V - Botrychium hesperium (<i>Western Moonwort</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S3 CCVI: Less Vulnerable Predicted Models: 21% Optimal (inductive), 36% Moderate (inductive), 43% Low (inductive)			
V - Heterocodon rariflorum (<i>Western Pearl-flower</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2 USFS: Sensitive - Known in Forests (BRT, KOOT, LOLO) Plant Threat Score: Medium - Low CCVI: Moderately Vulnerable Predicted Models: 15% Optimal (inductive), 85% Moderate (inductive)			
A - Western Toad (<i>Anaxyrus boreas</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G4 State: S2 USFS: Sensitive - Known in Forests (BD, BRT, KOOT, LOLO) BLM: SENSITIVE FWP SWAP: SGCN2 Predicted Models: 15% Optimal (inductive), 65% Moderate (inductive), 19% Low (inductive)			
V - Utricularia intermedia (<i>Flatleaf Bladderwort</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S2 USFS: Sensitive - Known in Forests (KOOT) Plant Threat Score: No Known Threats Predicted Models: 13% Optimal (inductive), 87% Moderate (inductive), 0% Low (inductive)			
V - Clarkia rhomboidea (<i>Diamond Clarkia</i>) SOC View in Field Guide View Predicted Models View Range Maps Species of Concern - Native Species Global: G5 State: S3 USFS: Sensitive - Known in Forests (LOLO) Plant Threat Score: Low CCVI: Less Vulnerable Predicted Models: 11% Optimal (inductive), 32% Moderate (inductive), 25% Low (inductive)			

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<div><div></div><div></div></div> <div>V - Botrychium pinnatum (Northern Moonwort) SOC</div>	<div><div></div><div></div><div></div></div> <div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div>Species of Concern - Native Species<div>Global: G5State: S3USFS: Sensitive - Known in Forests (BD)CCVI: Less Vulnerable</div></div><div>Predicted Models: <div>M</div> 4% Moderate (inductive), <div>L</div> 19% Low (inductive)</div></div>
<div><div></div><div></div></div> <div>V - Lycopodium inundatum (Northern Bog Clubmoss) SOC</div>	<div><div></div><div></div><div></div></div> <div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div>USFS: Sensitive - Suspected in Forests (KOOT)<div>Species of Concern - Native Species<div>Global: G5State: S2USFS: Species of Conservation Concern in Forests (FLAT)Plant Threat Score: UnknownCCVI: Highly Vulnerable</div></div></div><div>Predicted Models: <div>M</div> 2% Moderate (inductive), <div>L</div> 98% Low (inductive)</div></div>
<div><div></div><div></div></div> <div>M - Hoary Bat (Lasiurus cinereus) SOC</div>	<div><div></div><div></div><div></div></div> <div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div>Species of Concern - Native Species<div>Global: G3G4State: S3BBLM: SENSITIVEFWP SWAP: SGCN3</div></div><div>Predicted Models: <div>M</div> 2% Moderate (inductive), <div>L</div> 79% Low (inductive)</div></div>
<div><div></div><div></div></div> <div>B - American Bittern (Botaurus lentiginosus) SOC</div>	<div><div></div><div></div><div></div></div> <div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div>Species of Concern - Native Species<div>Global: G5State: S3BUSFWS: MBTALBLM: SENSITIVEFWP SWAP: SGCN3PIF: 3</div></div><div>Predicted Models: <div>M</div> 2% Moderate (inductive), <div>L</div> 55% Low (inductive)</div></div>
<div><div></div><div></div></div> <div>V - Carex crawei (Crawe's Sedge) SOC</div>	<div><div></div><div></div><div></div></div> <div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div>Species of Concern - Native Species<div>Global: G5State: S2S3Plant Threat Score: Low</div></div><div>Predicted Models: <div>M</div> 2% Moderate (inductive), <div>L</div> 38% Low (inductive)</div></div>
<div><div></div><div></div></div> <div>V - Ophioglossum pusillum (Adder's Tongue) SOC</div>	<div><div></div><div></div><div></div></div> <div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div>Species of Concern - Native Species<div>Global: G5State: S3CCVI: Moderately Vulnerable</div></div><div>Predicted Models: <div>M</div> 2% Moderate (inductive), <div>L</div> 19% Low (inductive)</div></div>
<div><div></div><div></div></div> <div>V - Potamogeton obtusifolius (Blunt-leaved Pondweed) SOC</div>	<div><div></div><div></div><div></div></div> <div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div>USFS: Sensitive - Suspected in Forests (LOLO)<div>Species of Concern - Native Species<div>Global: G5State: S3USFS: Species of Conservation Concern in Forests (HLC)Plant Threat Score: Low</div></div></div><div>Predicted Models: <div>M</div> 1% Moderate (inductive), <div>L</div> 68% Low (inductive)</div></div>
<div><div></div><div></div></div> <div>M - North American Porcupine (Erethizon dorsatum) PSOC</div>	<div><div></div><div></div><div></div></div> <div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div>Potential Species of Concern - Native Species<div>Global: G5State: S3S4FWP SWAP: SGIN</div></div><div>Predicted Models: <div>L</div> 100% Low (inductive)</div></div>
<div><div></div><div></div></div> <div>B - Boreal Owl (Aegolius funereus) PSOC</div>	<div><div></div><div></div><div></div></div> <div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div>Potential Species of Concern - Native Species<div>Global: G5State: S3S4USFWS: MBTALFWP SWAP: SGINPIF: 3</div></div><div>Predicted Models: <div>L</div> 100% Low (inductive)</div></div>
<div><div></div><div></div></div> <div>V - Geocaulon lividum (Northern Toadflax) PSOC</div>	<div><div></div><div></div><div></div></div> <div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div>Potential Species of Concern - Native Species<div>Global: G5State: S3S4</div></div><div>Predicted Models: <div>L</div> 100% Low (inductive)</div></div>
<div><div></div><div></div></div> <div>V - Epipactis gigantea (Giant Helleborine) SOC</div>	<div><div></div><div></div><div></div></div> <div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div>USFS: Sensitive - Known in Forests (BD, BRT, KOOT, LOLO)<div>Species of Concern - Native Species<div>Global: G4State: S2S3USFS: Species of Conservation Concern in Forests (FLAT, HLC)CCVI: Moderately Vulnerable</div></div></div><div>Predicted Models: <div>L</div> 95% Low (inductive)</div></div>
<div><div></div><div></div></div> <div>V - Cypripedium parviflorum (Small Yellow Lady's-slipper) PSOC</div>	<div><div></div><div></div><div></div></div> <div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div>USFS: Sensitive - Known in Forests (LOLO)<div>Potential Species of Concern - Native Species<div>Global: G5State: S3S4USFS: Species of Conservation Concern in Forests (CG, HLC)</div></div></div><div>Predicted Models: <div>L</div> 93% Low (inductive)</div></div>
<div><div></div><div></div></div> <div>V - Cypripedium fasciculatum (Clustered Lady's-slipper) SOC</div>	<div><div></div><div></div><div></div></div> <div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div>USFS: Sensitive - Known in Forests (KOOT, LOLO)<div>Species of Concern - Native Species<div>Global: G4State: S3USFS: Species of Conservation Concern in Forests (FLAT)CCVI: Moderately Vulnerable</div></div></div><div>Predicted Models: <div>L</div> 63% Low (inductive)</div></div>
<div><div></div><div></div></div> <div>B - Great Gray Owl (Strix nebulosa) SOC</div>	<div><div></div><div></div><div></div></div> <div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div>Species of Concern - Native Species<div>Global: G5State: S3USFWS: MBTALBLM: SENSITIVEFWP SWAP: SGCN3, SGINPIF: 3</div></div><div>Predicted Models: <div>L</div> 56% Low (inductive)</div></div>
<div><div></div><div></div></div> <div>B - Lewis's Woodpecker (Melanerpes lewis) SOC</div>	<div><div></div><div></div><div></div></div> <div><div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div><div>Species of Concern - Native Species<div>Global: G4State: S2BUSFWS: MBTA; BCC10; BCC17USFS: Species of Conservation Concern in Forests (HLC)BLM: SENSITIVEFWP SWAP: SGCN2PIF: 2</div></div><div>Predicted Models: <div>L</div> 56% Low (inductive)</div></div>

[View in Field Guide](#) [View Predicted Models](#) [View Range Maps](#)
Species of Concern - Native Species Global: **G5** State: **S3** USFS: **Sensitive - Known in Forests (LOLO)** Plant Threat Score: **Medium - Low**
 CCVI: **Moderately Vulnerable**
Predicted Models:  23% Low (inductive)

Structured Surveys

Summarized by: **027N034W020** (*Buffered PLSS Section*)

The Montana Natural Heritage Program (MTNHP) records information on the locations where more than 80 different types of well-defined repeatable survey protocols capable of detecting an animal species or suite of animal species have been conducted by state, federal, tribal, university, or private consulting biologists. Examples of structured survey protocols tracked by MTNHP include: visual encounter and dip net surveys for pond breeding amphibians, point counts for birds, call playback surveys for selected bird species, visual surveys of migrating raptors, kick net stream reach surveys for macroinvertebrates, visual encounter cover object surveys for terrestrial mollusks, bat acoustic or mist net surveys, pitfall and/or snap trap surveys for small terrestrial mammals, track or camera trap surveys for large mammals, and trap surveys for turtles. Whenever possible, photographs of survey locations are stored in MTNHP databases.

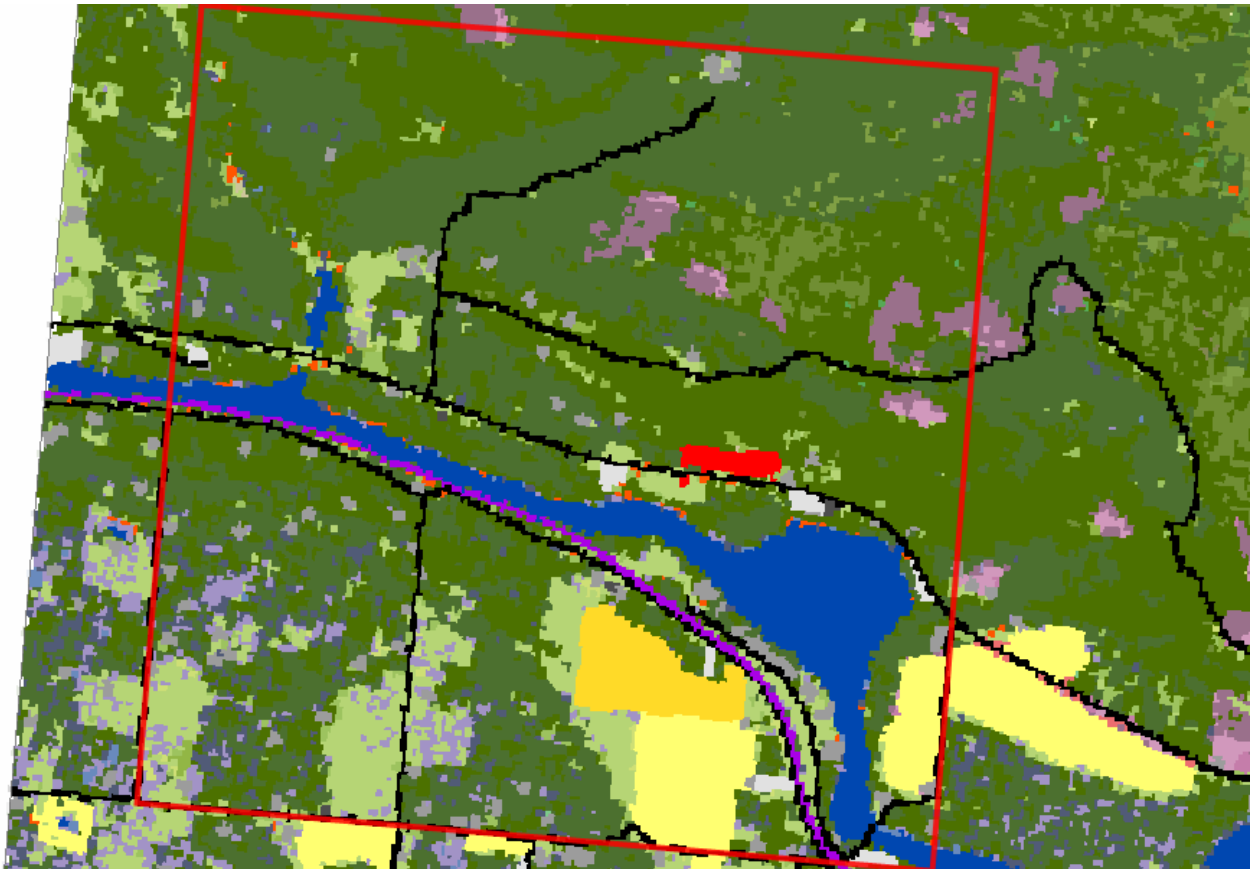
MTNHP does not typically manage information on structured surveys for plants; surveys for invasive species may be a future exception.

Within the report area you have requested, structured surveys are summarized by the number of each type of structured survey protocol that has been conducted, the number of species detections/observations resulting from these surveys, and the most recent year a survey has been conducted.

A-Coeur d'Alene Salamander (<i>Coeur d'Alene Salamander Surveys</i>)	Survey Count: 3	Obs Count:	Recent Survey: 2006
B-Bald Eagle Nest (<i>Bald Eagle Nest Survey</i>)	Survey Count: 3	Obs Count: 3	Recent Survey: 2011
B-Harlequin Duck Stream (<i>Harlequin Duck Stream Survey</i>)	Survey Count: 3	Obs Count:	Recent Survey: 1989
E-Eurasian Water-milfoil Rake (<i>Rake tows/pulls for Eurasian Water-milfoil</i>)	Survey Count: 172	Obs Count: 209	Recent Survey: 2023
E-Invasive Mussel Plankton Tow (<i>Plankton tows for veligers of Invasive Mussels</i>)	Survey Count: 17	Obs Count:	Recent Survey: 2022
E-Kicknet (<i>Kicknet Collection Survey for Invasive Mussels and Snails</i>)	Survey Count: 5	Obs Count: 1	Recent Survey: 2023
E-Noxious Weed, Road-based (<i>Noxious Weed Road-based Visual Surveys</i>)	Survey Count: 4	Obs Count: 18	Recent Survey: 2003
E-Visual Aquatic Invasives (<i>Visual Encounter Surveys for Aquatic Invasives on Shorelines or Underwater</i>)	Survey Count: 5	Obs Count: 4	Recent Survey: 2021
F-Fish Electrofishing (<i>Fish Electrofishing Surveys</i>)	Survey Count: 14	Obs Count: 16	Recent Survey: 2017
F-Fish Other Survey (<i>Fish Other Survey (FWP Survey Type)</i>)	Survey Count: 2	Obs Count: 2	Recent Survey: 1956
I-Terrestrial Invert Pitfall (<i>Invertebrate Pitfall Trap Survey</i>)	Survey Count: 1	Obs Count: 4	Recent Survey: 2011
M-Camera Trap (Montane) (<i>Carnivore Camera Trap (Montane)</i>)	Survey Count: 1	Obs Count: 2	Recent Survey: 2012
M-Hair Snag (<i>Mammal Hair Snagging</i>)	Survey Count: 2	Obs Count: 3	Recent Survey: 2012
P-Algal scraping (<i>Algal Scraping</i>)	Survey Count: 1	Obs Count: 1	Recent Survey: 2014
P-PIBO Cross Section (<i>PIBO Riparian Vegetation Cross Section</i>)	Survey Count: 3	Obs Count: 9	Recent Survey: 2016
P-USFS ECODATA Plot (<i>USFS ECODATA Ecological Inventory Survey Plot</i>)	Survey Count: 14	Obs Count: 244	Recent Survey: 1995

Land Cover

Summarized by: **027N034W020** (Buffered PLSS Section)



35% (2,016
Acres)

Forest and Woodland Systems

Conifer-dominated forest and woodland (mesic-wet)

Rocky Mountain Mesic Montane Mixed Conifer Forest

These forests are generally dominated by western hemlock (*Tsuga heterophylla*), western red cedar (*Thuja plicata*), and grand fir (*Abies grandis*). They are found in areas influenced by incursions of mild, wet, Pacific maritime air masses west of the Continental Divide in Montana. Occurrences are found on all slopes and aspects but grow best on sites with high soil moisture, such as toeslopes and bottomlands. At the periphery of its distribution, this system is confined to moist canyons and cooler, moister aspects. Generally, these are moist, non-flooded or upland forest sites that are not saturated yearlong. In northwestern Montana, western hemlock and western red cedar forests occur on bottomland and northerly exposures between 609-1,585 meters (2,000-5,200 feet) on sites with an average annual precipitation of 635 millimeters (25 inches). These forests are common in extreme northwestern Montana, and extend eastward to the Continental Divide in the Lake McDonald drainage of Glacier National Park. Isolated stands of western hemlock occur in the Swan Valley, but are found most commonly in the Libby and Thompson Falls vicinities, west to the Idaho border. Western red cedar occurs extensively in the Mission Mountain ranges south to Missoula, and on lower flanks of the Swan Range north of Lion Creek. It is confined to the riparian zone of major streams on the east face of the Bitterroot Mountain Range. Grand fir, being less moisture dependent, occurs in more southerly and easterly sites than western red cedar and western hemlock. This system is similar to Rocky Mountain Dry-Mesic Mixed Montane Conifer Forest, which can be described as a seral phase of this system on appropriate sites west of the Continental Divide.



29% (1,684
Acres)

Forest and Woodland Systems

Conifer-dominated forest and woodland (xeric-mesic)

Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest

This ecological system, composed of highly variable montane conifer forests, is found throughout Montana. It is associated with a submesic climate regime with annual precipitation ranging from 250 to 1,000 millimeters (10-39 inches), with most precipitation occurring during winter, and April through June. Winter snowpacks typically melt off in early spring at lower elevations. Elevations range from valley bottoms to 1,676 meters (5,500 feet) in northwestern Montana and up to 2,286 meters (7,500 feet) on warm aspects in southern Montana. In northwestern and west-central Montana, this ecosystem forms a forest belt on warm, dry to slightly moist sites. It generally occurs on gravelly soils with good aeration and drainage and a neutral to slightly acidic pH. In the western part of the state, it is seen mostly on well drained mountain slopes and valleys from lower treeline to up to 1,676 meters (5,500 feet). Immediately east of the Continental Divide, in north-central Montana, it occurs at montane elevations. Douglas-fir (*Pseudotsuga menziesii*) is the dominant conifer both as a seral and climax species. West of the Continental Divide, occurrences can be dominated by any combination of Douglas-fir and long-lived, seral western larch (*Larix occidentalis*), grand fir (*Abies grandis*), ponderosa pine (*Pinus ponderosa*) and lodgepole pine (*Pinus contorta*). Aspen (*Populus tremuloides*) and western white pine (*Pinus monticola*) have a minor status, with western white pine only in extreme western Montana. East of the Continental Divide, larch is absent and lodgepole pine is the co-dominant. Engelmann spruce (*Picea engelmannii*), white spruce, (*Picea glauca*) or their hybrid, become increasingly common towards the eastern edge of the Douglas-fir forest belt.



Wetland and Riparian Systems

Open Water

Open Water

7% (383 Acres)

All areas of open water, generally with less than 25% cover of vegetation or soil



Grassland Systems

Montane Grassland

Rocky Mountain Lower Montane, Foothill, and Valley Grassland

6% (364 Acres)

This grassland system of the northern Rocky Mountains is found at lower montane to foothill elevations in mountains and valleys throughout Montana. These grasslands are floristically similar to Big Sagebrush Steppe but are defined by shorter summers, colder winters, and young soils derived from recent glacial and alluvial material. They are found at elevations from 548 - 1,650 meters (1,800-5,413 feet). In the lower montane zone, they range from small meadows to large open parks surrounded by conifers; below the lower treeline, they occur as extensive foothill and valley grasslands. Soils are relatively deep, fine-textured, often with coarse fragments, and non-saline. Microphytic crust may be present in high-quality occurrences. This system is typified by cool-season perennial bunch grasses and forbs (>25%) cover, with a sparse shrub cover (<10%). Rough fescue (*Festuca campestris*) is dominant in the northwestern portion of the state and Idaho fescue (*Festuca idahoensis*) is dominant or co-dominant throughout the range of the system. Bluebunch wheatgrass (*Pseudoroegneria spicata*) occurs as a co-dominant throughout the range as well, especially on xeric sites. Western wheatgrass (*Pascopyrum smithii*) is consistently present, often with appreciable coverage (>10%) in lower elevation occurrences in western Montana and virtually always present, with relatively high coverages (>25%), on the edge of the Northwestern Great Plains region. Species diversity ranges from a high of more than 50 per 400 square meter plot on mesic sites to 15 (or fewer) on xeric and disturbed sites. Most occurrences have at least 25 vascular species present. Farmland conversion, noxious species invasion, fire suppression, heavy grazing and oil and gas development are major threats to this system.



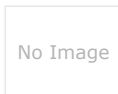
Human Land Use

Agriculture

Pasture/Hay

3% (180 Acres)

These agriculture lands typically have perennial herbaceous cover (e.g. regularly-shaped plantings) used for livestock grazing or the production of hay. There are obvious signs of management such as irrigation and haying that distinguish it from natural grasslands. Identified CRP lands are included in this land cover type.



No Image

Human Land Use

Developed

Other Roads

3% (171 Acres)

County, city and or rural roads generally open to motor vehicles.



Human Land Use

Developed

Low Intensity Residential

2% (125 Acres)

Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20-50% of total cover. These areas most commonly include single-family housing units in rural and suburban areas. Paved roadways may be classified into this category.



Wetland and Riparian Systems

Wet meadow

Alpine-Montane Wet Meadow

2% (114 Acres)

These moderate-to-high-elevation systems are found throughout the Rocky Mountains, dominated by herbaceous species found on wetter sites with very low-velocity surface and subsurface flows. Occurrences range in elevation from montane to alpine at 1,000 to 3,353 meters (3,280-11,000 feet). This system typically occurs in cold, moist basins, seeps and alluvial terraces of headwater streams or as a narrow strip adjacent to alpine lakes (Hansen et al., 1996). Wet meadows are typically found on flat areas or gentle slopes, but may also occur on sub-irrigated sites with slopes up to 10 percent. In alpine regions, sites are typically small depressions located below late-melting snow patches or on snowbeds. The growing season may only last for one to two months. Soils of this system may be mineral or organic. In either case, soils show typical hydric soil characteristics, including high organic content and/or low chroma and redoximorphic features. This system often occurs as a mosaic of several plant associations, often dominated by graminoids such as tufted hairgrass (*Deschampsia caespitosa*), and a diversity of montane or alpine sedges such as small-head sedge (*Carex illota*), small-winged sedge (*Carex microptera*), black alpine sedge (*Carex nigricans*), Holm's Rocky Mountain sedge (*Carex scopulorum*) shortstalk sedge (*Carex podocarpa*) and Payson's sedge (*Carex paysonis*). Drummond's rush (*Juncus drummondii*), Merten's rush (*Juncus mertensianus*), and high elevation bluegrasses (*Poa arctica* and *Poa alpina*) are often present. Forbs such as arrow-leaf groundsel (*Senecio triangularis*), slender-sepal marsh marigold (*Caltha leptosepala*), and spreading globeflower (*Trollius laxus*) often form high cover in higher elevation meadows. Wet meadows are associated with snowmelt and are usually not subjected to high disturbance events such as flooding.



Human Land Use

Agriculture

Cultivated Crops

2% (106 Acres)

These areas used for the production of crops, such as corn, soybeans, small grains, sunflowers, vegetables, and cotton, typically on an annual cycle. Agricultural plant cover is variable depending on season and type of farming. Other areas include more stable land cover of orchards and vineyards.






















2% (105 Acres)

Wetland and Riparian Systems Floodplain and Riparian

Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland

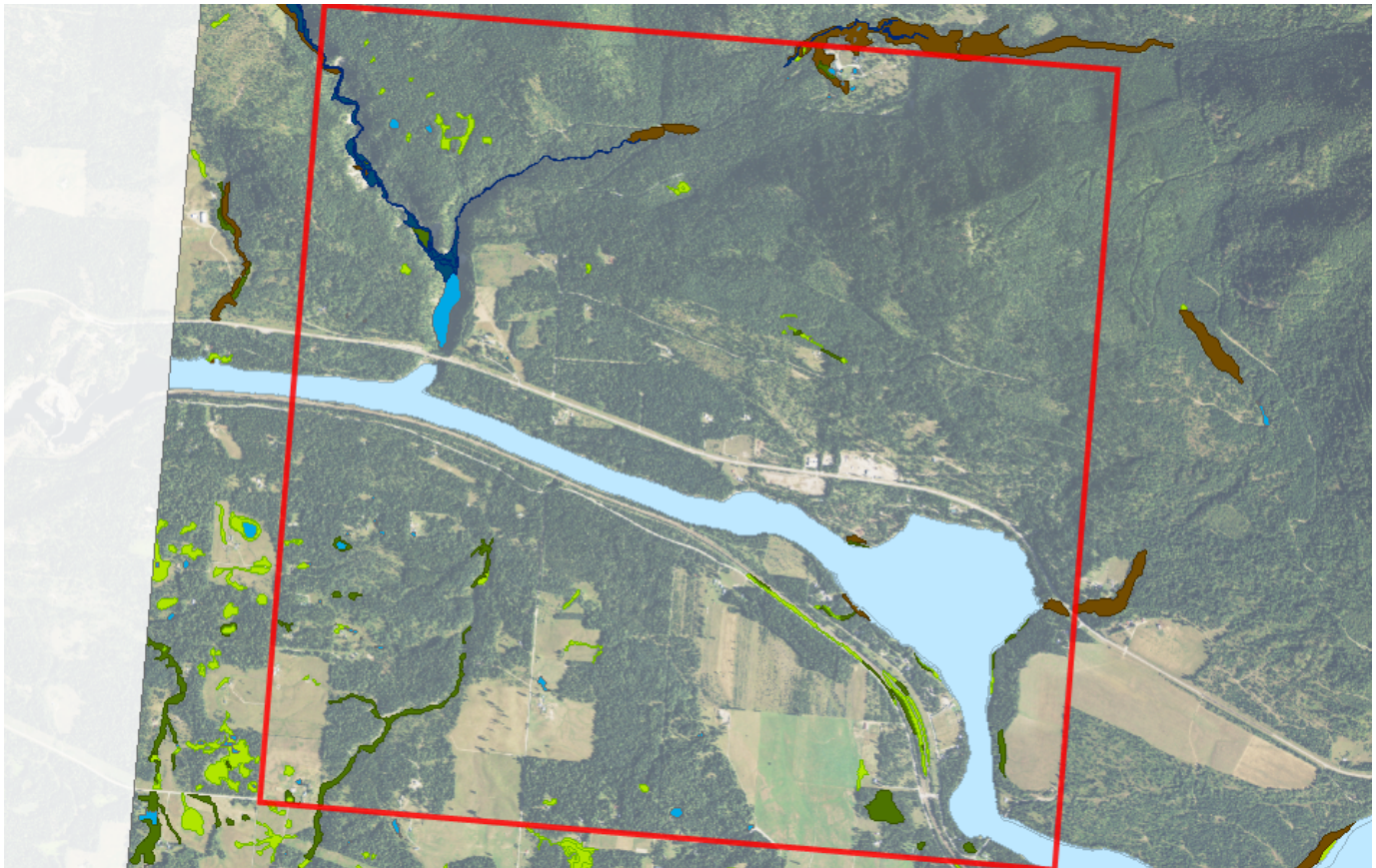
This ecological system is found throughout the Rocky Mountain and Colorado Plateau regions. In Montana, sites occur at elevations of 609-1,219 meters (2,000-4,000 feet) west of the Continental Divide. East of the Continental Divide, this system ranges up to 1,676 meters (5,500 feet). It generally comprises a mosaic of multiple communities that are tree-dominated with a diverse shrub component. It is dependent on a natural hydrologic regime with annual to episodic flooding, so it is usually found within the flood zone of rivers, on islands, sand or cobble bars, and along streambanks. It can form large, wide occurrences on mid-channel islands in larger rivers, or narrow bands on small, rocky canyon tributaries and well-drained benches. It is also typically found in backwater channels and other perennially wet but less scoured sites, such as floodplains, swales and irrigation ditches. In some locations, occurrences extend into moderately high intermountain basins where the adjacent vegetation is sage steppe. Black cottonwood (*Populus balsamifera* ssp. *trichocarpa*) is the key indicator species. Other dominant trees may include boxelder maple (*Acer negundo*), narrowleaf cottonwood (*Populus angustifolia*), eastern cottonwood (*Populus deltoides*), Douglas-fir (*Pseudotsuga menziesii*), peachleaf willow (*Salix amygdaloides*), or Rocky Mountain juniper (*Juniperus scopulorum*). Dominant shrubs include Rocky Mountain maple (*Acer glabrum*), thinleaf alder (*Alnus incana*), river birch (*Betula occidentalis*), redbarked dogwood (*Cornus sericea*), hawthorne (*Crataegus* species), chokecherry (*Prunus virginiana*), skunkbush sumac (*Rhus trilobata*), willows (*Salix* species), rose (*Rosa* species), silver buffaloberry (*Shepherdia argentea*), or snowberry (*Symphoricarpos* species).

Additional Limited Land Cover

- 1% (83 Acres)  [Harvested forest-tree regeneration](#)
- 1% (77 Acres)  [Rocky Mountain Ponderosa Pine Woodland and Savanna](#)
- 1% (66 Acres)  [Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland](#)
- 1% (47 Acres)  [Major Roads](#)
- 1% (46 Acres)  [Railroad](#)
- 1% (29 Acres)  [Developed, Open Space](#)
- <1% (26 Acres)  [Rocky Mountain Montane-Foothill Deciduous Shrubland](#)
- <1% (22 Acres)  [Commercial / Industrial](#)
- <1% (17 Acres)  [Insect-Killed Forest](#)
- <1% (15 Acres)  [Rocky Mountain Subalpine-Montane Mesic Meadow](#)
- <1% (15 Acres)  [Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland](#)
- <1% (14 Acres)  [Harvested forest-grass regeneration](#)
- <1% (8 Acres)  [Emergent Marsh](#)
- <1% (4 Acres)  [High Intensity Residential](#)
- <1% (2 Acres)  [Aspen and Mixed Conifer Forest](#)
- <1% (1 Acres)  [Rocky Mountain Cliff, Canyon and Massive Bedrock](#)
- <1% (1 Acres)  [Aspen Forest and Woodland](#)
- <1% (1 Acres)  [Harvested forest-shrub regeneration](#)
- <1% (0 Acres)  [Rocky Mountain Subalpine-Montane Fen](#)

Wetland and Riparian

Summarized by: **027N034W020 (Buffered PLSS Section)**



Wetland and Riparian Mapping

P - Palustrine

AB - Aquatic Bed

F - Semipermanently Flooded	6 Acres
(no modifier)	4 Acres PABF
h - Diked/Impounded	1 Acres PABFh
x - Excavated	1 Acres PABFx

G - Intermittently Exposed	9 Acres
h - Diked/Impounded	9 Acres PABGh

P - Palustrine, AB - Aquatic Bed

Wetlands with vegetation growing on or below the water surface for most of the growing season.

US - Unconsolidated Shore

A - Temporarily Flooded	<1 Acres
(no modifier)	<1 Acres PUSA

P - Palustrine, US - Unconsolidated Shore

Wetlands with less than 75% areal cover of stones, boulders, or bedrock. AND with less than 30% vegetative cover AND the wetland is irregularly exposed due to seasonal or irregular flooding and subsequent drying.

EM - Emergent

A - Temporarily Flooded	21 Acres
(no modifier)	20 Acres PEMA
h - Diked/Impounded	1 Acres PEMAh
C - Seasonally Flooded	3 Acres
(no modifier)	3 Acres PEMC
h - Diked/Impounded	<1 Acres PEMCh
F - Semipermanently Flooded	1 Acres
(no modifier)	1 Acres PEMF

P - Palustrine, EM - Emergent

Wetlands with erect, rooted herbaceous vegetation present during most of the growing season.

SS - Scrub-Shrub

A - Temporarily Flooded	19 Acres
(no modifier)	18 Acres PSSA
h - Diked/Impounded	1 Acres PSSAh
C - Seasonally Flooded	1 Acres
(no modifier)	1 Acres PSSC

P - Palustrine, SS - Scrub-Shrub

Wetlands dominated by woody vegetation less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.

FO - Forested

P - Palustrine, FO - Forested

Wetlands dominated by woody vegetation greater than 6

A - Temporarily Flooded	15 Acres
(no modifier)	15 Acres PFOA


meters (20 feet) tall.


L - Lacustrine (Lakes)

1 - Limnetic

 UB - Unconsolidated Bottom			L - Lacustrine (Lakes), 1 - Limnetic, UB - Unconsolidated Bottom <i>Deep waterbodies with mud or silt covering at least 25% of the bottom.</i>
H - Permanently Flooded	395 Acres		
h - Diked/Impounded	395 Acres L1UBHh		


2 - Littoral


 AB - Aquatic Bed			L - Lacustrine (Lakes), 2 - Littoral, AB - Aquatic Bed <i>Shorelines with vegetation growing on or below the water surface for most of the growing season.</i>
G - Intermittently Exposed	3 Acres		
h - Diked/Impounded	3 Acres L2ABGh		

 US - Unconsolidated Shore			L - Lacustrine (Lakes), 2 - Littoral, US - Unconsolidated Shore <i>Shorelines where there is less than 75% areal cover of stones, boulders, or bedrock, and less than 30% vegetation cover. The area is also irregularly exposed due to seasonal or irregular flooding and subsequent drying.</i>
A - Temporarily Flooded	2 Acres		
h - Diked/Impounded	2 Acres L2USAh		
C - Seasonally Flooded	3 Acres		
(no modifier)	<1 Acres L2USC		
h - Diked/Impounded	3 Acres L2USCh		

R - Riverine (Rivers)

3 - Upper Perennial

 UB - Unconsolidated Bottom			R - Riverine (Rivers), 3 - Upper Perennial, UB - Unconsolidated Bottom <i>Stream channels where the substrate is at least 25% mud, silt or other fine particles.</i>
F - Semipermanently Flooded	<1 Acres		
(no modifier)	<1 Acres R3UBF		
G - Intermittently Exposed	7 Acres		
(no modifier)	7 Acres R3UBG		

 US - Unconsolidated Shore			R - Riverine (Rivers), 3 - Upper Perennial, US - Unconsolidated Shore <i>Shorelines with less than 75% areal cover of stones, boulders, or bedrock and less than 30% vegetation cover. The area is also irregularly exposed due to seasonal or irregular flooding and subsequent drying.</i>
A - Temporarily Flooded	8 Acres		
(no modifier)	8 Acres R3USA		
C - Seasonally Flooded	4 Acres		
(no modifier)	4 Acres R3USC		

Rp - Riparian

1 - Lotic

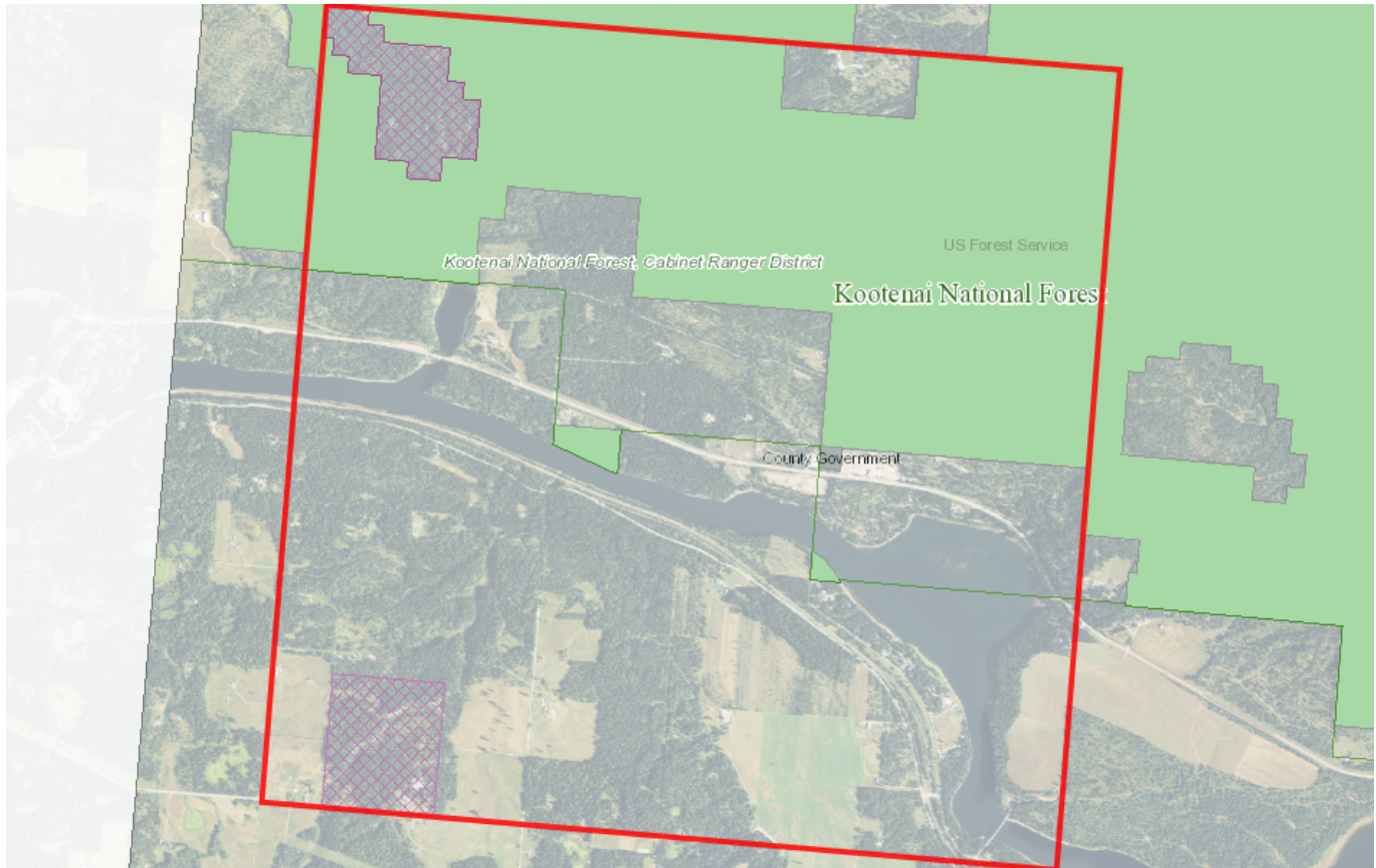
 FO - Forested (no modifier)	16 Acres Rp1FO	Rp - Riparian, 1 - Lotic, FO - Forested <i>This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.</i>
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2 - Lentic

 FO - Forested (no modifier)	2 Acres Rp2FO	Rp - Riparian, 2 - Lentic, FO - Forested <i>This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.</i>
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Land Management

Summarized by: **027N034W020 (Buffered PLSS Section)**



Land Management Summary



	Ownership	Tribal	Easements	Other Boundaries (possible overlap)
Public Lands	1,915 Acres (33%)			
Federal	1,911 Acres (33%)			
US Forest Service	1,911 Acres (33%)			
USFS Owned	1,911 Acres (33%)			
USFS Ranger Districts				2,877 Acres
Kootenai National Forest, Cabinet Ranger District				2,877 Acres
USFS National Forest Boundaries				2,877 Acres
Kootenai National Forest				2,877 Acres
Local	4 Acres (<1%)			
Local Government	4 Acres (<1%)			
Local Government Owned	4 Acres (<1%)			
Conservation Easements			257 Acres (4%)	
Private			257 Acres (4%)	
Montana Land Reliance			257 Acres (4%)	
Private Lands or Unknown Ownership	3,549 Acres (62%)			

Biological Reports

Summarized by: **027N034W020** (*Buffered PLSS Section*)






Within the report area you have requested, citations for all reports and publications associated with plant or animal observations in Montana Natural Heritage Program (MTNHP) databases are listed and, where possible, links to the documents are included.

The MTNHP plans to include reports associated with terrestrial and aquatic communities in the future as allowed for by staff resources. If you know of reports or publications associated with species or biological communities within the report area that are not shown in this report, please let us know: mtnhp@mt.gov

-  Fairman, L.M., C. Jones, and D.L. Genter. 1989. **Results of the 1989 survey for Harlequin Ducks (*Histrionicus histrionicus*) on the Kootenai National Forest, Montana and Flathead National Forest, Montana**. Mont. Nat. Heritage Prog., Helena. 20 p.
- Hanson, Erik. 2016. **Noxon and Cabinet Gorge Reservoirs Littoral Survey 2016**. Report to Sanders County Aquatic Invasive Plants TaskForce. 13pp.
- Miller, V.E. 1988. **Harlequin ducks (*Histrionicus histrionicus*) 1988 results of field survey in west-central Montana**. Prepared for Professor James Lowe, Forestry 220. 18 pp.
- Miller, V.E. 1989. Field Survey Report, Harlequin Duck (*Histrionicus histrionicus*): Lower Clark Fork Drainage, West Central Montana. Unpublished, 47 pp.
- Northrop, Devine & Tarbell, Inc. 1994. **Cabinet Gorge and Noxon Rapids hydroelectric developments: 1993 wildlife study**. Unpublished report to the Washington Water Power Company, Spokane. Vancouver, Washington and Portland, Maine. 144 pp. plus appendices.
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Legend

Model Icons

-  Suitable (native range)
-  Optimal Suitability
-  Moderate Suitability
-  Low Suitability
-  Suitable (introduced range)

Habitat Icons

-  Common
-  Occasional

Range Icons

-  Non-native

Num Obs
Count of obs with
'good precision'
(≤1000m)
+ indicates
additional 'poor
precision' obs
(1001m-
10,000m)


















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


Invasive and Pest Species

Summarized by: **027N034W020** (*Buffered PLSS Section*)







Aquatic Invasive Species

# Obs	Predicted Model	Range
V - Iris pseudacorus (<i>Yellowflag Iris</i>) N2A/AIS		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species Global: GNR State: SNA Predicted Models:  45% Optimal (inductive),  11% Moderate (inductive),  43% Low (inductive)		
A - American Bullfrog (<i>Lithobates catesbeianus</i>) AIS		
View in Field Guide View Predicted Models View Range Maps Aquatic Invasive Species - Non-native Species Global: G5 State: SNA Predicted Models:  8% Optimal (inductive),  48% Moderate (inductive),  44% Low (inductive)		
V - Myriophyllum spicatum (<i>Eurasian Water-milfoil</i>) N2A/AIS		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species Global: GNR State: SNA Predicted Models:  8% Optimal (inductive),  33% Moderate (inductive),  4% Low (inductive)		
V - Butomus umbellatus (<i>Flowering-rush</i>) N2A/AIS		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species Global: G5 State: SNA Predicted Models:  8% Optimal (inductive),  22% Moderate (inductive),  22% Low (inductive)		
V - Potamogeton crispus (<i>Curly-leaf Pondweed</i>) N2B/AIS		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 2B - Aquatic Invasive Species - Non-native Species Global: G5 State: SNA Predicted Models:  30% Moderate (inductive),  46% Low (inductive)		
V - Nymphaea odorata (<i>American Water-lily</i>) AIS		
View in Field Guide View Predicted Models View Range Maps Aquatic Invasive Species - Non-native Species Global: G5 State: SNA Predicted Models:  77% Suitable (introduced range) (deductive)		
I - Faxonius virilis (<i>Virile Crayfish</i>) AIS		
View in Field Guide View Range Maps Aquatic Invasive Species - Native/Non-native Species - (depends on location or taxa) Global: G5 State: S5		

Noxious Weeds: Priority 1A

V - Centaurea solstitialis (<i>Yellow Starthistle</i>) N1A		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1A - Non-native Species Global: GNR State: SNA Predicted Models:  67% Moderate (inductive),  24% Low (inductive)		
V - Taeniatherum caput-medusae (<i>Medusahead</i>) N1A		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1A - Non-native Species Global: G4G5 State: SNA Predicted Models:  77% Low (inductive)		
V - Isatis tinctoria (<i>Dyer's Woad</i>) N1A		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1A - Non-native Species Global: GNR State: SNA Predicted Models:  35% Low (inductive)		

Noxious Weeds: Priority 1B

V - Chondrilla juncea (<i>Rush Skeletonweed</i>) N1B		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1B - Non-native Species Global: GNR State: SNA Predicted Models:  100% Optimal (inductive)		
V - Cytisus scoparius (<i>Scotch Broom</i>) N1B		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1B - Non-native Species Global: GNR State: SNA Predicted Models:  92% Optimal (inductive),  8% Moderate (inductive)		
V - Echium vulgare (<i>Blueweed</i>) N1B		
View in Field Guide View Predicted Models View Range Maps Noxious Weed: Priority 1B - Non-native Species Global: GNR State: SNA Predicted Models:  56% Optimal (inductive),  11% Moderate (inductive),  33% Low (inductive)		

<div><div></div><div>V - Polygonum x bohemicum</div><div>(Bohemian Knotweed)</div></div>	N1B	<div><div><div></div><div></div><div></div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 1B - Non-native Species</div> <div>Global: GNA State: SNA</div> <div>Predicted Models: <div></div> 17% Optimal (inductive), <div></div> 24% Moderate (inductive), <div></div> 21% Low (inductive)</div>			
<div><div></div><div>V - Polygonum cuspidatum</div><div>(Japanese Knotweed)</div></div>	N1B	<div><div><div></div><div></div><div></div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 1B - Non-native Species</div> <div>Global: GNRTNR State: SNA</div> <div>Predicted Models: <div></div> 99% Moderate (inductive), <div></div> 1% Low (inductive)</div>			
Noxious Weeds: Priority 2A			
<div><div></div><div>V - Hieracium aurantiacum</div><div>(Orange Hawkweed)</div></div>	N2A	<div><div><div></div><div></div><div></div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2A - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div></div> 92% Optimal (inductive), <div></div> 8% Moderate (inductive)</div>			
<div><div></div><div>V - Hieracium caespitosum</div><div>(Meadow Hawkweed)</div></div>	N2A	<div><div><div></div><div></div><div></div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2A - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div></div> 92% Optimal (inductive), <div></div> 8% Moderate (inductive)</div>			
<div><div></div><div>V - Hieracium praealtum</div><div>(Kingdevil Hawkweed)</div></div>	N2A	<div><div><div></div><div></div><div></div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2A - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div></div> 81% Optimal (inductive), <div></div> 19% Moderate (inductive)</div>			
<div><div></div><div>V - Ventenata dubia</div><div>(Ventenata)</div></div>	N2A	<div><div><div></div><div></div><div></div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2A - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div></div> 67% Optimal (inductive), <div></div> 32% Moderate (inductive), <div></div> 1% Low (inductive)</div>			
<div><div></div><div>V - Iris pseudacorus</div><div>(Yellowflag Iris)</div></div>	N2A/AIS	<div><div><div></div><div></div><div></div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div></div> 45% Optimal (inductive), <div></div> 11% Moderate (inductive), <div></div> 43% Low (inductive)</div>			
<div><div></div><div>V - Myriophyllum spicatum</div><div>(Eurasian Water-milfoil)</div></div>	N2A/AIS	<div><div><div></div><div></div><div></div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div></div> 8% Optimal (inductive), <div></div> 33% Moderate (inductive), <div></div> 4% Low (inductive)</div>			
<div><div></div><div>V - Butomus umbellatus</div><div>(Flowering-rush)</div></div>	N2A/AIS	<div><div><div></div><div></div><div></div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species</div> <div>Global: G5 State: SNA</div> <div>Predicted Models: <div></div> 8% Optimal (inductive), <div></div> 22% Moderate (inductive), <div></div> 22% Low (inductive)</div>			
<div><div></div><div>V - Rhamnus cathartica</div><div>(Common Buckthorn)</div></div>	N2A	<div><div><div></div><div></div><div></div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2A - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div></div> 77% Moderate (inductive), <div></div> 14% Low (inductive)</div>			
<div><div></div><div>V - Ranunculus acris</div><div>(Tall Buttercup)</div></div>	N2A	<div><div><div></div><div></div><div></div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2A - Non-native Species</div> <div>Global: G5 State: SNA</div> <div>Predicted Models: <div></div> 56% Moderate (inductive), <div></div> 44% Low (inductive)</div>			
<div><div></div><div>V - Senecio jacobaea</div><div>(Tansy Ragwort)</div></div>	N2A	<div><div><div></div><div></div><div></div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2A - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div></div> 32% Moderate (inductive), <div></div> 68% Low (inductive)</div>			
Noxious Weeds: Priority 2B			
<div><div></div><div>V - Hypericum perforatum</div><div>(Common St. John's-wort)</div></div>	N2B	<div><div><div></div><div></div><div></div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2B - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div></div> 100% Optimal (inductive), <div></div> 0% Moderate (inductive)</div>			
<div><div></div><div>V - Leucanthemum vulgare</div><div>(Oxeye Daisy)</div></div>	N2B	<div><div><div></div><div></div><div></div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2B - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div></div> 81% Optimal (inductive), <div></div> 19% Moderate (inductive)</div>			
<div><div></div><div>V - Tanacetum vulgare</div><div>(Common Tansy)</div></div>	N2B	<div><div><div></div><div></div><div></div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2B - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div></div> 56% Optimal (inductive), <div></div> 44% Moderate (inductive)</div>			
<div><div></div><div>V - Potentilla recta</div><div>(Sulphur Cinquefoil)</div></div>	N2B	<div><div><div></div><div></div><div></div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2B - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div></div> 34% Optimal (inductive), <div></div> 58% Moderate (inductive), <div></div> 8% Low (inductive)</div>			

<div><div></div><div>V - Centaurea stoebe</div><div>(Spotted Knapweed)</div></div>	N2B	15	<div><div></div><div></div><div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2B - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div>M</div> 100% Moderate (inductive), <div>L</div> 0% Low (inductive)</div>				
<div><div></div><div>V - Linaria dalmatica</div><div>(Dalmatian Toadflax)</div></div>	N2B	4	<div><div></div><div></div><div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2B - Non-native Species</div> <div>Global: G5 State: SNA</div> <div>Predicted Models: <div>M</div> 67% Moderate (inductive), <div>L</div> 31% Low (inductive)</div>				
<div><div></div><div>V - Potamogeton crispus</div><div>(Curly-leaf Pondweed)</div></div>	N2B/AIS	5	<div><div></div><div></div><div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2B - Aquatic Invasive Species - Non-native Species</div> <div>Global: G5 State: SNA</div> <div>Predicted Models: <div>M</div> 30% Moderate (inductive), <div>L</div> 46% Low (inductive)</div>				
<div><div></div><div>V - Cirsium arvense</div><div>(Canada Thistle)</div></div>	N2B	1	<div><div></div><div></div><div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2B - Non-native Species</div> <div>Global: G5 State: SNA</div> <div>Predicted Models: <div>M</div> 12% Moderate (inductive), <div>L</div> 88% Low (inductive)</div>				
<div><div></div><div>V - Cynoglossum officinale</div><div>(Common Hound's-tongue)</div></div>	N2B		<div><div></div><div></div><div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2B - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div>M</div> 11% Moderate (inductive), <div>L</div> 61% Low (inductive)</div>				
<div><div></div><div>V - Linaria vulgaris</div><div>(Yellow Toadflax)</div></div>	N2B		<div><div></div><div></div><div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2B - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div>M</div> 9% Moderate (inductive), <div>L</div> 68% Low (inductive)</div>				
<div><div></div><div>V - Euphorbia virgata</div><div>(Leafy Spurge)</div></div>	N2B		<div><div></div><div></div><div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2B - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div>L</div> 67% Low (inductive)</div>				
<div><div></div><div>V - Acroptilon repens</div><div>(Russian Knapweed)</div></div>	N2B		<div><div></div><div></div><div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2B - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div>L</div> 45% Low (inductive)</div>				
<div><div></div><div>V - Convolvulus arvensis</div><div>(Field Bindweed)</div></div>	N2B		<div><div></div><div></div><div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2B - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div>L</div> 43% Low (inductive)</div>				
<div><div></div><div>V - Tamarix ramosissima</div><div>(Salt Cedar)</div></div>	N2B		<div><div></div><div></div><div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2B - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div>L</div> 30% Low (inductive)</div>				
<div><div></div><div>V - Lepidium draba</div><div>(Whitetop)</div></div>	N2B		<div><div></div><div></div><div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Noxious Weed: Priority 2B - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div>L</div> 28% Low (inductive)</div>				
Regulated Weeds: Priority 3				
<div><div></div><div>V - Bromus tectorum</div><div>(Cheatgrass)</div></div>	R3		<div><div></div><div></div><div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Regulated Weed: Priority 3 - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div>M</div> 81% Moderate (inductive), <div>L</div> 19% Low (inductive)</div>				
Biocontrol Species				
<div><div></div><div>I - Mecinus janthinus</div><div>(Yellow Toadflax Stem-boring Weevil)</div></div>	BIOCNTL		<div><div></div><div></div><div></div></div>	<div>N</div>
<div><div>View in Field Guide</div><div>View Predicted Models</div><div>View Range Maps</div></div> <div>Biocontrol Species - Non-native Species</div> <div>Global: GNR State: SNA</div> <div>Predicted Models: <div>M</div> 67% Moderate (inductive), <div>L</div> 32% Low (inductive)</div>				

Introduction to Montana Natural Heritage Program



PO Box 201800 • 1201 11th Avenue • Helena, MT 59620-1800 • fax 406.444.0266 • phone 406.444.3989 • mtnhp.org

INTRODUCTION

The Montana Natural Heritage Program (MTNHP) is Montana's source for reliable and objective information on Montana's native species and habitats, emphasizing those of conservation concern. MTNHP was created by the Montana legislature in 1983 as part of the Natural Resource Information System (NRIS) at the Montana State Library (MSL). MTNHP is "a program of information acquisition, storage, and retrieval for data relating to the flora, fauna, and biological community types of Montana" (MCA 90-15-102). MTNHP's activities are guided by statute as well as through ongoing interaction with, and feedback from, principal data source agencies such as Montana Fish, Wildlife, and Parks, the Montana Department of Environmental Quality, the Montana Department of Natural Resources and Conservation, the Montana University System, the US Forest Service, and the US Bureau of Land Management. Since the first staff was hired in 1985, the Program has logged a long record of success, and developed into a highly respected, service-oriented program. MTNHP is widely recognized as one of the most advanced and effective of over 60 natural heritage programs that are distributed across North America.

VISION

Our vision is that public agencies, the private sector, the education sector, and the general public will trust and rely upon MTNHP as the source for information and expertise on Montana's species and habitats, especially those of conservation concern. We strive to provide easy access to our information to allow users to save time and money, speed environmental reviews, and make informed decisions.

CORE VALUES

- We endeavor to be a single statewide source of accurate and up-to-date information on Montana's plants, animals, and aquatic and terrestrial biological communities.
- We actively listen to our data users and work responsively to meet their information and training needs.
- We strive to provide neutral, trusted, timely, and equitable service to all of our information users.
- We make every effort to be transparent to our data users in setting work priorities and providing data products.

CONFIDENTIALITY

All information requests made to the Montana Natural Heritage Program are considered library records and are protected from disclosure by the Montana Library Records Confidentiality Act (MCA 22-1-11).

INFORMATION MANAGED

Information managed at the Montana Natural Heritage Program is botanical, zoological, and ecological information that describes the distribution (e.g., observations, structured surveys, range polygons, predicted habitat suitability models), conservation status (e.g., global and state conservation status ranks, including threats), and other supporting information (e.g., accounts and references) on the biology and ecology of species and biological communities.

Data Use Terms and Conditions


- Montana Natural Heritage Program (MTNHP) products and services are based on biological data and the objective interpretation of those data by professional scientists. MTNHP does not advocate any particular philosophy of natural resource protection, management, development, or public policy.
- MTNHP has no natural resource management or regulatory authority. Products, statements, and services from MTNHP are intended to inform parties as to the state of scientific knowledge about certain natural resources, and to further develop that knowledge. The information is not intended as natural resource management guidelines or prescriptions or a determination of environmental impacts. MTNHP recommends consultation with appropriate state, federal, and tribal resource management agencies and authorities in the area where your project is located.
- Information on the status and spatial distribution of biological resources produced by MTNHP are intended to inform parties of the state-wide status, known occurrence, or the likelihood of the presence of those resources. **These products are not intended to substitute for field-collected data, nor are they intended to be the sole basis for natural resource management decisions.**
- MTNHP does not portray its data as exhaustive or comprehensive inventories of rare species or biological communities. **Field verification of the absence or presence of sensitive species and biological communities will always be an important obligation of users of our data.**
- MTNHP responds equally to all requests for products and services, regardless of the purpose or identity of the requester.
- Because MTNHP constantly updates and revises its databases with new data and information, products will become outdated over time. Interested parties are encouraged to obtain the most current information possible from MTNHP, rather than using older products. We add, review, update, and delete records on a daily basis. Consequently, we strongly advise that you update your MTNHP data sets at a minimum of every four months for most applications of our information.
- MTNHP data require a certain degree of biological expertise for proper analysis, interpretation, and application. Our staff is available to advise you on questions regarding the interpretation or appropriate use of the data that we provide. See [Contact Information for MTNHP Staff](#)
- The information provided to you by MTNHP may include sensitive data that if publicly released might jeopardize the welfare of threatened, endangered, or sensitive species or biological communities. This information is intended for distribution or use only within your department, agency, or business. Subcontractors may have access to the data during the course of any given project, but should not be given a copy for their use on subsequent, unrelated work.
- MTNHP data are made freely available. Duplication of hard-copy or digital MTNHP products with the intent to sell is prohibited without written consent by MTNHP. Should you be asked by individuals outside your organization for the type of data that we provide, please refer them to MTNHP.
- MTNHP and appropriate staff members should be appropriately acknowledged as an information source in any third-party product involving MTNHP data, reports, papers, publications, or in maps that incorporate MTNHP graphic elements.
- Sources of our data include museum specimens, published and unpublished scientific literature, field surveys by state and federal agencies and private contractors, and reports from knowledgeable individuals. MTNHP actively solicits and encourages additions, corrections and updates, new observations or collections, and comments on any of the data we provide.
- MTNHP staff and contractors do not enter or cross privately-owned lands without express permission from the landowner. However, the program cannot guarantee that information provided to us by others was obtained under adherence to this policy.

Suggested Contacts for Natural Resource Management Agencies

As required by Montana statute (MCA 90-15), the Montana Natural Heritage Program works with state, federal, tribal, nongovernmental organizations, and private partners to ensure that the latest animal and plant distribution and status information is incorporated into our databases so that it can be used to inform a variety of permitting and planning processes and management decisions. We encourage you to contact state, federal, and tribal resource management agencies in the area where your project is located and review the permitting overviews by the [Montana Department of Environmental Quality](#), the [Montana Department of Natural Resources and Conservation](#) and the [Index of Environmental Permits for Montana](#) for guidelines relevant to your efforts. In particular, we encourage you to contact the Montana Department of Fish, Wildlife, and Parks for the latest data and management information regarding hunted and high-profile management species and to use the U.S. Fish and Wildlife Service's [Information Planning and Consultation \(IPAC\) website regarding](#) U.S. Endangered Species Act listed Threatened, Endangered, or Candidate species.

For your convenience, we have compiled a list of relevant agency contacts and links below:

Montana Fish, Wildlife, and Parks

Fish Species	Zachary Shattuck zshattuck@mt.gov (406) 444-1231 or Eric Roberts eroberts@mt.gov (406) 444-5334
American Bison Black-footed Ferret Black-tailed Prairie Dog Bald Eagle Golden Eagle Common Loon Least Tern Piping Plover Whooping Crane	Kristian Smucker KSmucker@mt.gov (406) 444-5209
Grizzly Bear Greater Sage Grouse Trumpeter Swan Big Game Upland Game Birds Furbearers	Brian Wakeling brian.wakeling@mt.gov (406) 444-3940
Managed Terrestrial Game Data	Cara Whalen– MFWP Data Analyst cara.whalen@mt.gov (406) 444-3759
Fisheries Data and Nongame Animal Data	Ryan Alger – MFWP Data Analyst ryan.alger@mt.gov (406) 444-5365
Wildlife and Fisheries Scientific Collector's Permits	https://fwp.mt.gov/buyandapply/commercialwildlifeandscientificpermits/scientific Kristina Smucker for Wildlife ksmucker@mt.gov (406) 444-5209 Dave Schmetterling for Fisheries dschmetterling@mt.gov (406) 542-5514
Fish and Wildlife Recommendations for Subdivision Development	Charlie Sperry csperry@mt.gov (406) 444-3888 See https://fwp.mt.gov/conservation/living-with-wildlife/subdivision-recommendations
Regional Contacts 	<div> <div>Region 1</div> <div>(Kalispell)</div> <div>(406) 752-5501</div> <div>fwprg12@mt.gov</div> </div> <div> <div>Region 2</div> <div>(Missoula)</div> <div>(406) 542-5500</div> <div>fwprg22@mt.gov</div> </div> <div> <div>Region 3</div> <div>(Bozeman)</div> <div>(406) 577-7900</div> <div>fwprg3@mt.gov</div> </div> <div> <div>Region 4</div> <div>(Great Falls)</div> <div>(406) 454-5840</div> <div>fwprg42@mt.gov</div> </div> <div> <div>Region 5</div> <div>(Billings)</div> <div>(406) 247-2940</div> <div>fwprg52@mt.gov</div> </div> <div> <div>Region 6</div> <div>(Glasgow)</div> <div>(406) 228-3700</div> <div>fwprg62@mt.gov</div> </div> <div> <div>Region 7</div> <div>(Miles City)</div> <div>(406) 234-0900</div> <div>fwprg72@mt.gov</div> </div>

Montana Department of Agriculture

General Contact Information: <https://agr.mt.gov/About/Office-Locations/Office-Locations-and-Field-Offices>

Noxious Weeds: <https://agr.mt.gov/Noxious-Weeds>

Montana Department of Environmental Quality

Permitting and Operator Assistance for all Environmental Permits: <https://deq.mt.gov/Permitting>

Montana Department of Natural Resources and Conservation

Overview of, and contacts for, licenses and permits for state lands, water, and forested lands:

<https://dnrc.mt.gov/Permits-Services>

Stream Permitting (310 permits) and an overview of various water and stream related permits (e.g., Stream Protection Act 124, Federal Clean Water Act 404, Federal Rivers and Harbors Act Section 10, Short-term Water Quality Standard for Turbidity 318 Authorization, etc.).

<https://dnrc.mt.gov/Licenses-and-Permits/Stream-Permitting>

Wildfire Resources: <https://dnrc.mt.gov/Forestry/Wildfire>

Bureau of Land Management

Montana Field Office Contacts:	Billings	(406) 896-5013
	Butte	(406) 533-7600
	Dillon	(406) 683-8000
	Glasgow	(406) 228-3750
	Havre	(406) 262-2820
	Lewistown	(406) 538-1900
	Malta	(406) 654-5100
	Miles City	(406) 233-2800
	Missoula	(406) 329-3914

United States Army Corps of Engineers

Montana Regulatory Office for federal permits related to construction in water and wetlands

<https://www.nwo.usace.army.mil/Missions/Regulatory-Program/Montana/> (406) 441-1375

United States Environmental Protection Agency

Environmental information, notices, permitting, and contacts <https://www.epa.gov/mt>

Gateway to state resource locators <https://www.envcap.org/srl/index.php>

United States Fish and Wildlife Service

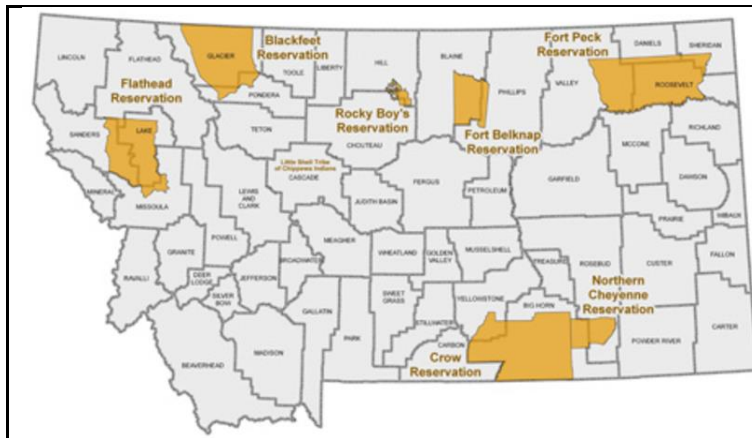
Information Planning and Conservation (IPAC) website: <https://ipac.ecosphere.fws.gov>

Montana Ecological Services Field Office: <https://www.fws.gov/office/montana-ecological-services> (406) 449-5225

United States Forest Service

Regional Office – Missoula, Montana Contacts			
Wildlife Program Leader	Tammy Fletcher	tammy.fletcher2@usda.gov	(406) 329-3086
Wildlife Ecologist	Cara Staab	cara.staab@usda.gov	(406) 329-3677
Aquatic Ecologist	Justin Jimenez	justin.jimenez@usda.gov	(435) 370-6830
TES Program	Lydia Allen	lydia.allen@usda.gov	(406) 329-3558
Interagency Grizzly Bear Coordinator	Scott Jackson	scott.jackson@usda.gov	(406) 329-3664
Regional Botanist	Amanda Hendrix	amanda.hendrix@usda.gov	(651) 447-3016
Regional Vegetation Ecologist	Mary Manning	marry.manning@usda.gov	(406) 329-3304
Invasive Species Program Manager	Michelle Cox	michelle.cox2@usda.gov	(406) 329-3669

Tribal Nations



[Assiniboine & Gros Ventre Tribes – Fort Belknap Reservation](#)

[Assiniboine & Sioux Tribes – Fort Peck Reservation](#)

[Blackfeet Tribe - Blackfeet Reservation](#)

[Chippewa Creek Tribe - Rocky Boy's Reservation](#)

[Crow Tribe – Crow Reservation](#)

[Little Shell Chippewa Tribe](#)

[Northern Cheyenne Tribe – Northern Cheyenne Reservation](#)

[Salish & Kootenai Tribes - Flathead Reservation](#)

Natural Heritage Programs and Conservation Data Centers in Surrounding States and Provinces

[Alberta Conservation Information Management System](#)

[British Columbia Conservation Data Centre](#)

[Idaho Natural Heritage Program](#)

[North Dakota Natural Heritage Program](#)

[Saskatchewan Conservation Data Centre](#)

[South Dakota Natural Heritage Program](#)

[Wyoming Natural Diversity Database](#)

Invasive Species Management Contacts and Information

Aquatic Invasive Species

[Montana Fish, Wildlife, and Parks Aquatic Invasive Species staff](#)

[Montana Department of Natural Resources and Conservation's Aquatic Invasive Species Grant Program](#)

[Montana Invasive Species Council \(MISC\)](#)

[Upper Columbia Conservation Commission \(UC3\)](#)

Noxious Weeds

[Montana Weed Control Association Contacts Webpage](#)

[Montana Biological Weed Control Coordination Project](#)

[Montana Department of Agriculture - Noxious Weeds](#)

[Montana Weed Control Association](#)

[Montana Fish, Wildlife, and Parks - Noxious Weeds](#)

[Montana State University Integrated Pest Management Extension](#)

[Integrated Noxious Weed Management after Wildfires](#)

[Fire Management and Invasive Plants](#)

Introduction to Native Species

Within the report area you have requested, separate summaries are provided for: (1) Species Occurrences (SO) for plant and animal Species of Concern, Special Status Species (SSS), Important Animal Habitat (IAH) and some Potential Plant Species of Concern; (2) other observed non Species of Concern or Species of Concern without suitable documentation to create Species Occurrence polygons; and (3) other non-documented species that are potentially present based on their range, predicted suitable habitat model output, or presence of associated habitats. Each of these summaries provides the following information when present for a species: (1) the number of [Species Occurrences](#) and associated delineation criteria for construction of these polygons that have long been used for considerations of documented Species of Concern in environmental reviews; (2) the number of observations of each species; (3) the geographic range polygons for each species that the report area overlaps; (4) predicted relative habitat suitability classes that are present if a predicted suitable habitat model has been created; (5) the percent of the report area that is mapped as commonly associated or occasionally associated habitat as listed for each species in the [Montana Field Guide](#); and (6) a variety of conservation status ranks and links to species accounts in the [Montana Field Guide](#). Details on each of these information categories are included under relevant section headers below or are defined on our [Species Status Codes](#) page. In presenting this information, the Montana Natural Heritage Program (MTNHP) is working towards assisting the user with rapidly determining what species have been documented and what species are potentially present in the report area. We remind users that this information is likely incomplete as surveys to document native and introduced species are lacking in many areas of the state, information on introduced species has only been tracked relatively recently, the MTNHP's staff and resources are restricted by budgets, and information is constantly being added and updated in our databases. **Thus, field verification by professional biologists of the absence or presence of species and biological communities will always be an important obligation of users of our data.**

If you are aware of observation datasets that the MTNHP is missing, please report them to the Program Botanist apipp@mt.gov or Senior Zoologist dbachen@mt.gov. If you have animal or plant observations that you would like to contribute, you can also submit them via Excel spreadsheets, geodatabases, iNaturalist, or a Survey123 form. Various methods of data submission are reviewed in this playlist of videos: <https://www.youtube.com/playlist?list=PLRaydtZpHu2qOHPoSPq9cnM9uXGmEXACx>

Observations

The MTNHP manages information on several million animal and plant observations that have been reported by professional biologists and private citizens from across Montana. The majority of these observations are submitted in digital format from standardized databases associated with research or monitoring efforts and spreadsheets of incidental observations submitted by professional biologists and amateur naturalists. At a minimum, accepted observation records must contain a credible species identification (i.e. appropriate geographic range, date, and habitat and, if species are difficult to identify, a photograph and/or notes on key identifying features), a date or date range, observer name, locational information (ideally with latitude and longitude in decimal degrees), notes on numbers observed, and species behavior or habitat use (e.g., is the observation likely associated with reproduction). Bird records are also required to have information associated with date-appropriate breeding or overwintering status of the species observed. MTNHP reviews observation records to ensure that they are mapped correctly, occur within date ranges when the species is known to be present or detectable, occur within the known seasonal geographic range of the species, and occur in appropriate habitats. MTNHP also assigns each record a locational uncertainty value in meters to indicate the spatial precision associated with the record's mapped coordinates. Only records with locational uncertainty values of 10,000 meters or less are included in environmental summary reports and number summaries are only provided for records with locational uncertainty values of 1,000 meters or less.

Species Occurrences

The MTNHP evaluates plant and animal observation records for species of higher conservation concern to determine whether they are worthy of inclusion in the [Species Occurrence](#) (SO) layer for use in environmental reviews; observations not worthy of inclusion in this layer include long distance dispersal events, migrants observed away from key migratory stopover habitats, and winter observations. An SO is a polygon depicting what is known about a species occupancy from direct observation with a defined level of locational uncertainty and any inference that can be made about adjacent habitat use from the latest peer-reviewed science. If an observation can be associated with a map feature that can be tracked (e.g., a wetland boundary for a wetland associated plant) then this polygon feature is used to represent the SO. Areas that can be inferred as probable occupied habitat based on direct observation of a species location and what is known about the foraging area or home range size of the species may be incorporated into the SO. Species Occurrences generally belong to one of the following categories:

Plant Species Occurrences

A documented location of a specimen collection or observed plant population. In some instances, adjacent, spatially separated clusters are considered subpopulations and are grouped as one occurrence (e.g., the subpopulations occur in ecologically similar habitats, and their spatial proximity likely allows them to interbreed). Tabular information for multiple observations at the same SO location is generally linked to a single polygon. Plant SO's are only created for Species of Concern and Potential Species of Concern.

Animal Species Occurrences

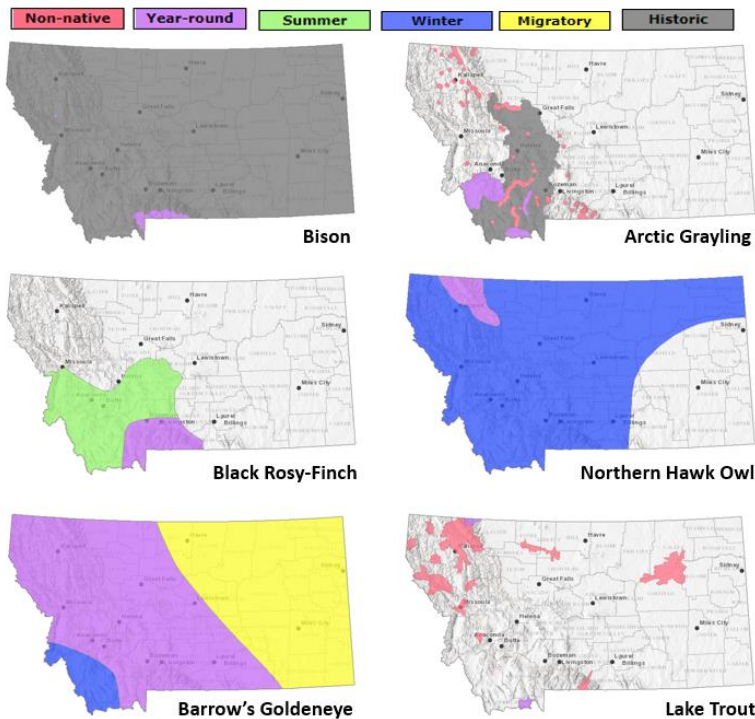
The location of a verified observation or specimen record typically known or assumed to represent a breeding population or a portion of a breeding population. Animal SO's are generally: (1) buffers of terrestrial point observations based on documented species' home range sizes; (2) buffers of stream segments to encompass occupied streams and immediate adjacent riparian habitats; (3) polygonal features encompassing known or likely breeding populations (e.g., a wetland for some amphibians or a forested portion of a mountain range for some wide-ranging carnivores); or (4) combinations of the above. Tabular information for multiple observations at the same SO location is generally linked to a single polygon. Species Occurrence polygons may encompass some unsuitable habitat in some instances in order to avoid heavy data processing associated with clipping out habitats that are readily assessed as unsuitable by the data user (e.g., a point buffer of a terrestrial species may overlap into a portion of a lake that is obviously inappropriate habitat for the species). Animal SO's are only created for Species of Concern and Special Status Species (e.g., Bald Eagle).

Other Occurrence Polygons

These include significant biological features not included in the above categories, such as Important Animal Habitats like bird rookeries and bat roosts, and peatlands or other wetland and riparian communities that support diverse plant and animal communities.

Geographic Range Polygons

Geographic range polygons are still under development for most plant and invertebrate species. Native year-round, summer, winter, migratory and historic geographic range polygons as well as polygons for introduced



populations have been defined for most vertebrate animal species for which there are enough observations, surveys, and knowledge of appropriate seasonal habitat use to define them (see examples to left). These native or introduced range polygons bound the extent of known or likely occupied habitats for non-migratory and relative sedentary species and the regular extent of known or likely occupied habitats for migratory and long-distance dispersing species; polygons may include unsuitable intervening habitats. For most species, a single polygon can represent the year-round or seasonal range, but breeding ranges of some colonial nesting water birds and some introduced species are represented more patchily when supported by data. Some ranges are mapped more broadly than actual distributions in order to be visible on statewide maps (e.g., fish).

Predicted Suitable Habitat Models

Predicted habitat suitability models have been created for plant and animal Species of Concern and are undergoing development for non-Species of Concern. For species for which models have been completed, the environmental summary report includes simple rule-based associations with streams for aquatic species and seasonal habitats for game species as well as mathematically complex Maximum Entropy models (Phillips et al. 2006, *Ecological Modeling* 190:231-259) constructed from a variety of statewide biotic and abiotic layers and presence only data for individual species for most terrestrial species. For the Maximum Entropy models, we reclassified 90 x 90-meter continuous model output into suitability classes (unsuitable, low, moderate, and optimal) then aggregated that into the one square mile hexagons used in the environmental summary report; this is the finest spatial scale we suggest using this information in management decisions and survey planning. Full model write ups for individual species that discuss model goals, inputs, outputs, and evaluation in much greater detail are posted on the MTNHP's [Predicted Suitable Habitat Models](#) webpage. Evaluations of predictive accuracy and specific limitations are included with the metadata for models of individual species.

Model outputs should not be used in place of on-the-ground surveys for species. Instead model outputs should be used in conjunction with habitat evaluations to determine the need for on-the-ground surveys for species. We suggest that the percentage of predicted optimal and moderate suitable habitat within the report area be used in conjunction with geographic range polygons and the percentage of commonly associated habitats to generate lists of potential species that may occupy broader landscapes for the purposes of landscape-level planning.

Associated Habitats

Within the boundary of the intersected hexagons, we provide the approximate percentage of commonly or occasionally associated habitat for vertebrate animal species that regularly breed, overwinter, or migrate through the state; a detailed list of commonly and occasionally associated habitats is provided in individual species accounts in the [Montana Field Guide](#). We assigned common or occasional use of each of the ecological

systems mapped in Montana by: (1) using personal knowledge and reviewing literature that summarizes the breeding, overwintering, or migratory habitat requirements of each species; (2) evaluating structural characteristics and distribution of each ecological system relative to the species' range and habitat requirements; (3) examining the observation records for each species in the state-wide point observation database associated with each ecological system; and (4) calculating the percentage of observations associated with each ecological system relative to the percent of Montana covered by each ecological system to get a measure of numbers of observations versus availability of habitat. Species that breed in Montana were only evaluated for breeding habitat use, species that only overwinter in Montana were only evaluated for overwintering habitat use, and species that only migrate through Montana were only evaluated for migratory habitat use. In general, species were listed as associated with an ecological system if structural characteristics of used habitat documented in the literature were present in the ecological system or large numbers of point observations were associated with the ecological system. However, species were not listed as associated with an ecological system if there was no support in the literature for use of structural characteristics in an ecological system, even if point observations were associated with that system. Common versus occasional association with an ecological system was assigned based on the degree to which the structural characteristics of an ecological system matched the preferred structural habitat characteristics for each species as represented in the scientific literature. The percentage of observations associated with each ecological system relative to the percent of Montana covered by each ecological system was also used to guide assignment of common versus occasional association.

We suggest that the percentage of commonly associated habitat within the report area be used in conjunction with geographic range polygons and the percentage of predicted optimal and moderate suitable habitat from predictive models to generate lists of potential species that may occupy broader landscapes for the purposes of landscape-level planning. Users of this information should be aware that land cover mapping accuracy is particularly problematic when the systems occur as small patches or where the land cover types have been altered over the past decade. Thus, particular caution should be used when using the associations in assessments of smaller areas (e.g., evaluations of public land survey sections).

Introduction to Land Cover

Land Use/Land Cover is one of 15 [Montana Spatial Data Infrastructure](#) framework layers considered vital for making statewide maps of Montana and understanding its geography. The layer records all Montana natural vegetation, land cover and land use, classified from satellite and aerial imagery, mapped at a scale of 1:100,000, and interpreted with supporting ground-level data. The baseline map is adapted from the Northwest ReGAP (NWGAP) project land cover classification, which used 30m resolution multi-spectral Landsat imagery acquired between 1999 and 2001. Vegetation classes were drawn from the Ecological System Classification developed by NatureServe (Comer et al. 2003). The land cover classes were developed by Anderson et al. (1976). The NWGAP effort encompasses 12 map zones. Montana overlaps seven of these zones. The two NWGAP teams responsible for the initial land cover mapping effort in Montana were Sanborn and NWGAP at the University of Idaho. Both Sanborn and NWGAP employed a similar modeling approach in which Classification and Regression Tree (CART) models were applied to Landsat ETM+ scenes. The Spatial Analysis Lab within the Montana Natural Heritage Program was responsible for developing a seamless Montana land cover map with a consistent statewide legend from these two separate products. Additionally, the Montana land cover layer incorporates several other land cover and land use products (e.g., MSDI Structures and Transportation themes and the Montana Department of Revenue Final Land Unit classification) and reclassifications based on plot-level data and the latest NAIP imagery to improve accuracy and enhance the usability of the theme. Updates are done as partner support and funding allow, or when other MSDI datasets can be incorporated. Recent updates include fire perimeters and agricultural land use (annually), energy developments such as wind, oil and gas installations (2014), roads, structures and other impervious surfaces (various years): and local updates/improvements to specific ecological systems (e.g., central Montana grassland and sagebrush ecosystems). Current and previous versions of the Land Use/Land Cover layer with full metadata are available for download from the Montana State Library's [GIS Data List](#). More information on the land cover layer is available at: https://msl.mt.gov/geoinfo/msdi/land_use_land_cover/

Within the report area you have requested, land cover is summarized by acres of Level 1, Level 2, and Level 3 Ecological Systems.

Literature Cited

- Anderson, J.R. E.E. Hardy, J.T. Roach, and R.E. Witmer. 1976. A land use and land cover classification system for use with remote sensor data. U.S. Geological Survey Professional Paper 964.
- Comer, P., D. Faber-Langendoen, R. Evans, S. Gawler, C. Josse, G. Kittel, S. Menard, M. Pyne, M. Reid, K. Schulz, K. Snow, and J. Teague. 2003. Ecological systems of the United States: A working classification of U.S. terrestrial systems. NatureServe, Arlington, VA.

Introduction to Wetland and Riparian

Within the report area you have requested, wetland and riparian mapping is summarized by acres of each classification present. Summaries are only provided for modern MTNHP wetland and riparian mapping and not for outdated (NWI Legacy) or incomplete (NWI Scalable) mapping efforts; [described here](#). MTNHP has made all three of these datasets and associated metadata available for separate download on the Montana [Wetland and Riparian Framework](#) web page.

Wetland and Riparian mapping is one of 15 [Montana Spatial Data Infrastructure](#) framework layers considered vital for making statewide maps of Montana and understanding its geography. The wetland and riparian framework layer consists of spatial data representing the extent, type, and approximate location of wetlands, riparian areas, and deep water habitats in Montana.

Wetland and riparian mapping is completed through photointerpretation of 1-m resolution color infrared aerial imagery acquired from 2005 or later. A coding convention using letters and numbers is assigned to each mapped wetland. These letters and numbers describe the broad landscape context of the wetland, its vegetation type, its water regime, and the kind of alterations that may have occurred. Ancillary data layers such as topographic maps, digital elevation models, soils data, and other aerial imagery sources are also used to improve mapping accuracy. Wetland mapping follows the federal Wetland Mapping Standard and classifies wetlands according to the Cowardin classification system of the National Wetlands Inventory (NWI) (Cowardin et al. 1979, FGDC Wetlands Subcommittee 2013). Federal, State, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands differently than the NWI. Similar coding, based on U.S. Fish and Wildlife Service conventions, is applied to riparian areas (U.S. Fish and Wildlife Service 2009). These are mapped areas where vegetation composition and growth is influenced by nearby water bodies, but where soils, plant communities, and hydrology do not display true wetland characteristics. **These data are intended for use at a scale of 1:12,000 or smaller. Mapped wetland and riparian areas do not represent precise boundaries and digital wetland data cannot substitute for an on-site determination of jurisdictional wetlands.**

See detailed overviews, with examples, of both wetland and riparian classification systems and associated codes as a [storymap](#) and companion [guide](#)

Literature Cited

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79/31. Washington, D.C. 103pp.
- Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, D.C.
- U.S. Fish and Wildlife Services. 2009. A system for mapping riparian areas in the western United States. Division of Habitat and Resource Conservation, Branch of Resource and Mapping Support, Arlington, Virginia.

Introduction to Land Management

Within the report area you have requested, land management information is summarized by acres of federal, state, and local government lands, tribal reservation boundaries, private conservation lands, and federal, state, local, and private conservation easements. Acreage for “Owned”, “Tribal”, or “Easement” categories represents non-overlapping areas that may be totaled. However, “Other Boundaries” represents managed areas such as National Forest boundaries containing private inholdings and other mixed ownership which may cause boundaries to overlap (e.g. a wilderness area within a forest). Therefore, acreages may not total in a straight-forward manner.

Because information on land stewardship is critical to effective land management, the Montana Natural Heritage Program (MTNHP) began compiling ownership and management data in 1997. The goal of the Montana Land Management Database is to manage a single, statewide digital data set that incorporates information from both public and private entities. The database assembles information on public lands, private conservation lands, and conservation easements held by state and federal agencies and land trusts and is updated on a regular basis. Since 2011, the Information Management group in the Montana State Library’s Digital Library Division has led the Montana Land Management Database in partnership with the MTNHP.

Public and private conservation land polygons are attributed with the name of the entity that owns it. The data are derived from the statewide [Montana Cadastral Parcel layer](#). Conservation easement data shows land parcels on which a public agency or qualified land trust has placed a conservation easement in cooperation with the landowner. The dataset contains no information about ownership or status of the mineral estate. For questions about the dataset or to report errors, please contact the Montana Natural Heritage Program at (406) 444-5363 or mtnhp@mt.gov. You can download various components of the Land Management Database and view associated metadata at the Montana State Library’s [GIS Data List](#) at the following links:

[Public Lands](#)

[Conservation Easements](#)

[Private Conservation Lands](#)

[Managed Areas](#)

Map features in the Montana Land Management Database or summaries provided in this report are not intended as a legal depiction of public or private surface land ownership boundaries and should not be used in place of a survey conducted by a licensed land surveyor. Similarly, map features do not imply public access to any lands. The Montana Natural Heritage Program makes no representations or warranties whatsoever with respect to the accuracy or completeness of this data and assumes no responsibility for the suitability of the data for a particular purpose. The Montana Natural Heritage Program will not be liable for any damages incurred as a result of errors displayed here. Consumers of this information should review or consult the primary data and information sources to ascertain the viability of the information for their purposes.

Introduction to Invasive and Pest Species

Within the report area you have requested, separate summaries are provided for: Aquatic Invasive Species, Noxious Weeds, Agricultural Pests, Forest Pests, and Biocontrol species that have been documented or potentially occur there based on the predicted suitability of habitat. Definitions for each of these invasive and pest species categories can be found on our [Species Status Codes](#) page.

Each of these summaries provides the following information when present for a species: (1) the number of observations of each species; (2) the geographic range polygons for each species, if developed, that the report area overlaps; (3) predicted relative habitat suitability classes that are present if a predicted suitable habitat model has been created; (4) the percent of the report area that is mapped as commonly associated or occasionally associated habitat as listed for each species in the [Montana Field Guide](#); and (5) links to species accounts in the [Montana Field Guide](#). Details on each of these information categories are included under relevant section headers under the Introduction to Native Species above or are defined on our [Species Status Codes](#) page. In presenting this information, the Montana Natural Heritage Program (MTNHP) is working towards assisting the user with rapidly determining what invasive and pest species have been documented and what species are potentially present in the report area. We remind users that this information is likely incomplete as surveys to document introduced species are lacking in many areas of the state, information on introduced species has only been tracked relatively recently, the MTNHP's staff and resources are limited, and information is constantly being added and updated in our databases. **Thus, field verification by professional biologists of the absence or presence of species will always be an important obligation of users of our data.**

If you are aware of observation or survey datasets for invasive or pest species that the MTNHP is missing, please report them to the Program Coordinator bmaxell@mt.gov Program Botanist apipp@mt.gov or Senior Zoologist dbachen@mt.gov If you have animal or plant observations that you would like to contribute, you can also submit them via Excel spreadsheets, geodatabases, iNaturalist, or a Survey123 form. Various methods of data submission are reviewed in this playlist of videos:

<https://www.youtube.com/playlist?list=PLRaydtZpHu2qOHPoSPq9cnM9uXGmEXACx>

Additional Information Resources

[MTNHP Staff Contact Information](#)

[Montana Field Guide](#)

[MTNHP Species of Concern Report - Animals and Plants](#)

[MTNHP Species Status Codes - Explanation](#)

[MTNHP Predicted Suitable Habitat Models](#) (for select Animals and Plants)

[MTNHP Request Information page](#)

[Montana Cadastral](#)

[Montana Code Annotated](#)

[Montana Fisheries Information System](#)

[Montana Fish, Wildlife, and Parks Subdivision Recommendations](#)

[Montana GIS Data Layers](#)

[Montana GIS Data Bundler](#)

[Montana Greater Sage-Grouse Project Submittal Site](#)

[Montana Ground Water Information Center](#)

[Montana Index of Environmental Permits, 21st Edition \(2018\)](#)

[Montana Environmental Policy Act \(MEPA\)](#)

[Montana Environmental Policy Act Analysis Resource List](#)

[Laws, Treaties, Regulations, and Agreements on Animals and Plants](#)

[Montana Spatial Data Infrastructure Layers](#)

[Montana State Historic Preservation Office Review and Compliance](#)

[Montana Stream Permitting: a guide for conservation district supervisors and others](#)

[Montana Water Information System](#)

[Montana Web Map Services](#)

[National Environmental Policy Act](#)

[Penalties for Misuse of Fish and Wildlife Location Data](#) (MCA 87-6-222)

[U.S. Fish and Wildlife Service Information for Planning and Consultation](#) (Section 7 Consultation)

[Web Soil Survey Tool](#)



1st Agency Notice Letter and Comments

1st Agency Notice Sent January 11, 2024
- Physical Mailers Uncertified and emailed



January 11, 2024

RE: Blue Creek Subdivision - Agency Notice

Dear Agent:

The Sanders County Land Division Office has identified you as being an agency that may have important comments to make about the proposed County Major Subdivision, Blue Creek Subdivision. This proposed 9-lot major subdivision is generally located adjacent to the east of Blue Creek Road and north of HWY 200 comprising of 25.94 Acres. The property can currently be described as vacant rural land that has been historically timber and can be easily located east of addressed location 17 Blue Creek Road, Heron, MT 59844. The preliminary location of each proposed single-family dwelling, internal roadway, individual well and drainfield locations are shown on the Preliminary Plat included herein. Please review the enclosed Project Summary and Preliminary Plat to provide comment or questions.

The purpose of this agency review is twofold:

- 1) For agencies to determine if the subdivision submittal packet has enough information or is sufficient for review.
- 2) For agencies to provide comments regarding the proposal on anything that should be addressed before the project is submitted for governing body review. Thus, it is important that you send us your comments or let us know if you have no comments.

Your comments are important to us, and we look forward to your responses. Please reply and send any comments directly to Tamara.R.Ross@imegcorp.com, by end of the day, January 22, 2024, and copy the Land Services, landservices@co.sanders.mt.us. You may also mail your comments to IMEG Corp. at 1817 South Ave West, Suite A, Missoula, MT 59801 and the Sanders County Land Services at P.O. Box 519, Thompson Falls, MT 59873. These comments will be reviewed by both the land services administrator and provided to the Sanders County Commissioners for further comment and consideration.

If there is anything we can do to facilitate your review, please reach out to us. Thank you in advance for your comments.

Sincerely,
IMEG Corp.

Prepared By:

A handwritten signature in black ink that reads "Tamara Ross". The signature is written in a cursive, flowing style.

Tamara R. Ross
Civil Designer / Planning Technician
P: (406) 272-0253
Tamara.R.Ross@imegcorp.com

Enclosed: One copy of the Project Summary and Preliminary Plat

Tamara R. Ross

From: Tamara R. Ross
Sent: Thursday, January 11, 2024 10:10 AM
To: sam.ross@nli.coop; Stevie.Burton@mt.gov; noxonsupt@noxonschools.com; noxonoffice@noxonschools.com; jjohnson@co.sanders.mt.us; tmlner@co.sanders.mt.us
Cc: landservices@co.sanders.mt.us; Daniel D. Fultz
Subject: Blue Creek Subdivision - Agency Notice
Attachments: Project Summary.pdf; Supplemental Data Sheet.pdf

Dear Agent,

The Sanders County Land Division Office has identified you as being an agency that may have important comments to make about the proposed County Major Subdivision, Blue Creek Subdivision. This proposed 9-lot major subdivision is generally located adjacent to the east of Blue Creek Road and north of HWY 200 comprising of 25.94 Acres. The property can currently be described as vacant rural land that has been historically timber and can be easily located east of addressed location 17 Blue Creek Road, Heron, MT 59844. The preliminary location of each proposed single-family dwelling, internal roadway, individual well and drainfield locations are shown on the Supplemental Data Sheet included herein. Please review the enclosed Project Summary and Supplemental Data Sheet to provide comment or questions.

The purpose of this agency review is twofold:

- 1) For agencies to determine if the subdivision submittal packet has enough information or is sufficient for review.
- 2) For agencies to provide comments regarding the proposal on anything that should be addressed before the project is submitted for governing body review. Thus, it is important that you send us your comments or let us know if you have no comments.

Your comments are important to us, and we look forward to your responses. Please reply and send any comments directly to Tamara.R.Ross@imegcorp.com, by end of the day, January 22, 2024, and copy the Land Services, landservices@co.sanders.mt.us. You may also mail your comments to IMEG Corp. at 1817 South Ave West, Suite A, Missoula, MT 59801 and the Sanders County Land Services at P.O. Box 519, Thompson Falls, MT 59873. These comments will be reviewed by both the land services administrator and provided to the Sanders County Commissioners for further comment and consideration.

If there is anything we can do to facilitate your review, please reach out to us. Each agency identified during the Pre-Application Meeting will receive a physical copy of this notice.

Thank you in advance for your comments.

Tamara Ross

IMEG | Civil Designer / Planning Technician



1817 South Ave West | Suite A | Missoula, MT 59801

(406) 272-0253

Tamara.R.Ross@imegcorp.com

[website](#) | [vCard](#) | [map](#) | [regional news](#)   

[Learn more](#) about us and the IMEG story!

This email may contain confidential and/or private information. If you received this email in error please delete and notify sender.

PROJECT SUMMARY

Owner and Developer:	Tungsten Holdings, Inc.
Representative:	IMEG CORP
Subdivision Name:	Blue Creek Subdivision
Number of Lots Proposed:	9 Residential Lots
Number of Acres:	25.94 Acres
Legal Description:	Southwest/Northwest of Plat S, Lying North of Montana Highway 200, Records of Sanders County, And Being Located in The Section 20, Township 27 North, Range 34 West, Principal Meridian Montana, Sanders County, Montana.

Project Summary:

The Blue Creek Subdivision is in Sanders County and proposes 9-lots for residential development. It is generally located adjacent to the east of Blue Creek Road and north of HWY 200 comprising of 25.94 Acres. The property can currently be described as vacant rural land that has been historically timber and can be easily located east of addressed location 17 Blue Creek Road, Heron, MT 59844. The preliminary location of each proposed single-family dwelling, internal roadway, individual well and drainfield locations are shown on the Preliminary Plat included in Section A of this submittal.

Summary of Roads:

The proposed approach onto HWY 200 will be used for a newly proposed roadway, internal to the subdivision, providing access to the 9 proposed lots. A proposed 1' No-Access Strip is located along the entire southern property boundary along the HWY 200; excluding the proposed approach. The proposed Driveway Approach Permit is under review by MDOT under the requirements of a shared residential access driveway and is intended to be constructed with a 24-foot asphalt travel surface and 2-foot gravel shoulders.

All lots will be accessed by the newly proposed "Road A" proposed to be constructed of a 24-foot-wide gravel road surface with 2-foot shoulders contained within the 60-foot Public Access and Utility Easement (P.A.U.E.). In addition, two hammerhead turnarounds are proposed to be included within this development and will comply with emergency service access requirements. The easement will be unobstructed for maintenance of any future utilities; therefore, it will be subject to a proposed Road Maintenance Agreement. Please see the Preliminary Plat and Supplemental Data Sheets for information regarding the proposed internal roadway and No-Access Strip in Section A of this submittal.

Summary of Non-Motorized Facilities:

The applicant is not aware of existing non-motorize infrastructure in the facility of the proposed development. Therefore, no existing non-motorized transportation facilities serve this property.

Environment and Parkland:

The property could generally be described as vacant land that has been previously timbered. There are natural drainages, ponds, marshes, or wetlands located on the subject property or directly adjacent to the development. The property lies within an area that contains slopes of at least 25% and is timbered. There are no existing agricultural water user facilities in the surrounding area. Parkland is not proposed, therefore, the applicant proposes to provide payment in lieu of parkland. The landowner intends to meet the requirement for cash-in-lieu in the amount of 2.5% of 25.94 acres.

7.5% will be used for proposed Lots 5 and 6 being larger than one-half acre but not larger than one acre. Collectively Lots 5 and 6 result in a total of 1.8 acres. Therefore, $1.8 \text{ acres} \times 0.075 = 0.135 \text{ acres}$ total at 7.5% parkland dedication.

5% will be used for proposed Lots 4, and 7-9 being larger than one acre and not larger than three acres. Collectively, these lots result in a total of 6.16 acres. Therefore, $6.16 \text{ acres} \times 0.05 = 0.308 \text{ acres}$ total at 5% parkland dedication.

The developer does not anticipate a park dedication will be required for proposed Lots 1-3 as they are proposed to be larger than 5 acres. As a result, the developer anticipates 0.45 acres ($0.14 \text{ ac} + 0.31 \text{ ac} = 0.45 \text{ ac}$) will be required for a cash-in-lieu of parkland dedication. A tax assessment or appraisal report dated no less than 6 months from the date of submittal for calculating cash-in-lieu of parkland dedication along with a receipt from the County Treasures Office will be provided by the applicant prior to final plat approval.



DESIGNED:	DATE
DRAFTED:	
CHECKED:	
DATE:	

SECTION 20, T.27N., R.34W.,
SANDERS, COUNTY

BLUE CREEK SUBDIVISION

PROJECT NO.	22003448	SHEET	1 OF 1
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Agency Contact List/Received Receipt Letter or Email

Agencies

- ☒ US Dept. Fish & Wildlife Service Ecological Services, 100 N Park St. Suite 320, Helena, MT 59626
- ☒ Montana Fish, Wildlife & Parks, Stevie.Burton@mt.gov Attn: Stevie Burton, 490 N Meridian Rd., Kalispell, MT 59901
- ☐ Montana Fish, Wildlife & Parks, Jason.Blakney@mt.gov Attn: Jason Blakney/Fisheries Biologist, 5427 MT Hwy 200, Thompson Falls, MT 59873
- ☐ Department of Natural Resources, PO Box 219, Plains, MT 59859
- ☐ Natural Resource & Conservation 7487 MT Hwy 200, Plains, MT 59859
- ☐ Eastern Conservation District, 7487 MT Hwy 200, Plains, MT 59859
- ☐ Green Mountain Conservation District, PO Box 1329, Trout Creek, MT 59874
- ☒ Cabinet Ranger District Attn: District Ranger, 2693 MT Hwy 200, Trout Creek, MT 59874
- ☐ Plains Ranger District Attn: District Ranger, PO Box 429, Plains, MT 59859
- ☐ Dept. of the Army/Omaha District Helena Regulatory Office, 10 West 15th St. Suite 2200, Helena, MT 59626
- ☐ Water Master-Camas Division of Flathead Irrigation District, 25 Andrews Rd, Hot Springs, MT 59845

Utilities

- ☐ Avista Corporation, PO Box 1469, Noxon, MT 59853
- ☐ Avista Corporation, PO Box 3727, Spokane, WA 99220
- ☐ BPA-Dustin Smith Realty Specialist Supervisor TERR/Kalispell, dtsmith@bpa.gov (2520 US Hwy 2 East, Kalispell, MT 59901)
- ☐ NW Energy, Michael Cassidy Michael.Cassidy@northwestern.com (PO Box 4467, Missoula, MT 59806)
- ☒ Northern Lights, Sam Ross, Engineering sam.ross@nli.coop (PO Box 269, Sagle, ID 83860)
- ☐ Mission Valley Power, 65 Pablo Rd. W Pablo, MT 59855
- ☐ Blackfoot Telecommunications, 1221 Russell St, Missoula, MT 59808
- ☐ Hot Springs Telephone, PO Box 627, Hot Springs, MT 59845

Transportation

- ☐ Montana Dept. of Transportation, PO Box 201001, Helena, MT 59620
- ☐ Burlington Northern, PO Box 961089, Fort Worth, TX 76161
- ☐ Montana Rail Link, PO Box 16390, Missoula, MT 59808
- ☐ Sanders County Airport, PO Box 519, Thompson Falls, MT 59873

Government Offices

- ☒ Sanders County Sheriff's Office, PO Box 910, Thompson Falls, MT 59873
- ☐ The Confederated Salish & Kootenai Tribes, PO Box 278, Pablo, MT 59855
- ☐ MT Dept. of Revenue, PO Box 267, Thompson Falls, MT 59873

Fire Districts

- ☒ Heron Rural Fire District, PO Box 86, Heron, MT 59844
- ☐ Noxon Rural Fire District, PO Box 3, Noxon, MT 59853
- ☐ Trout Creek Rural Fire District, PO Box 1408 Trout Creek, MT 59874
- ☐ Thompson Falls Rural Fire District, PO Box 698, Thompson Falls, MT 59873
- ☐ Plains/Paradise Rural Fire District, PO Box 1115, Plains, MT 59859
- ☐ Hot Springs Rural Fire District, PO Box 144, Hot Springs, MT 59845
- ☐ Lonepine Volunteer Fire Dept., 59 Bras Rd, Lonepine, MT 59848
- ☐ Dixon Rural Fire District, PO Box 102, Dixon, MT 59831

Ambulance Services

- ☒ Community Ambulance of Western, Sanders County PO Box 170, Noxon, MT 59853
- ☐ Thompson Falls Ambulance, PO Box 1055, Thompson Falls, MT 59873
- ☐ Plains Ambulance, PO Box 268, Plains, MT 59859
- ☐ Hot Springs Ambulance, PO Box 830, Hot Springs, MT 59845

School Districts

- ☒ Noxon School District, Attn: Superintendents Office 300 Noxon Ave., Noxon, MT 59853
- ☐ Trout Creek School District 4 School Ln., Trout Creek, MT 56874
- ☐ Thompson Falls School District, Attn: Superintendents Office 206 Haley Ave., Thompson Falls, MT 59873
- ☐ Plains School District, Attn: Superintendents Office PO Box 549, Plains, MT 59859
- ☐ Hot Springs School District, Attn: Superintendents Office PO Box 1005, Hot Springs, MT 59845
- ☐ Dixon School District, PO Box 10, Dixon, MT 59831

US Postal Service

- ☐ Town PO Box 9999, Town, MT Zip Code

Other Entities

- ☐ Yellowstone Pipeline, 3180 MT Hwy 12E, Helena, MT 59601
- ☐ Phillips 66, 3009 Main Street East, Thompson Falls, MT 59873

Tamara R. Ross

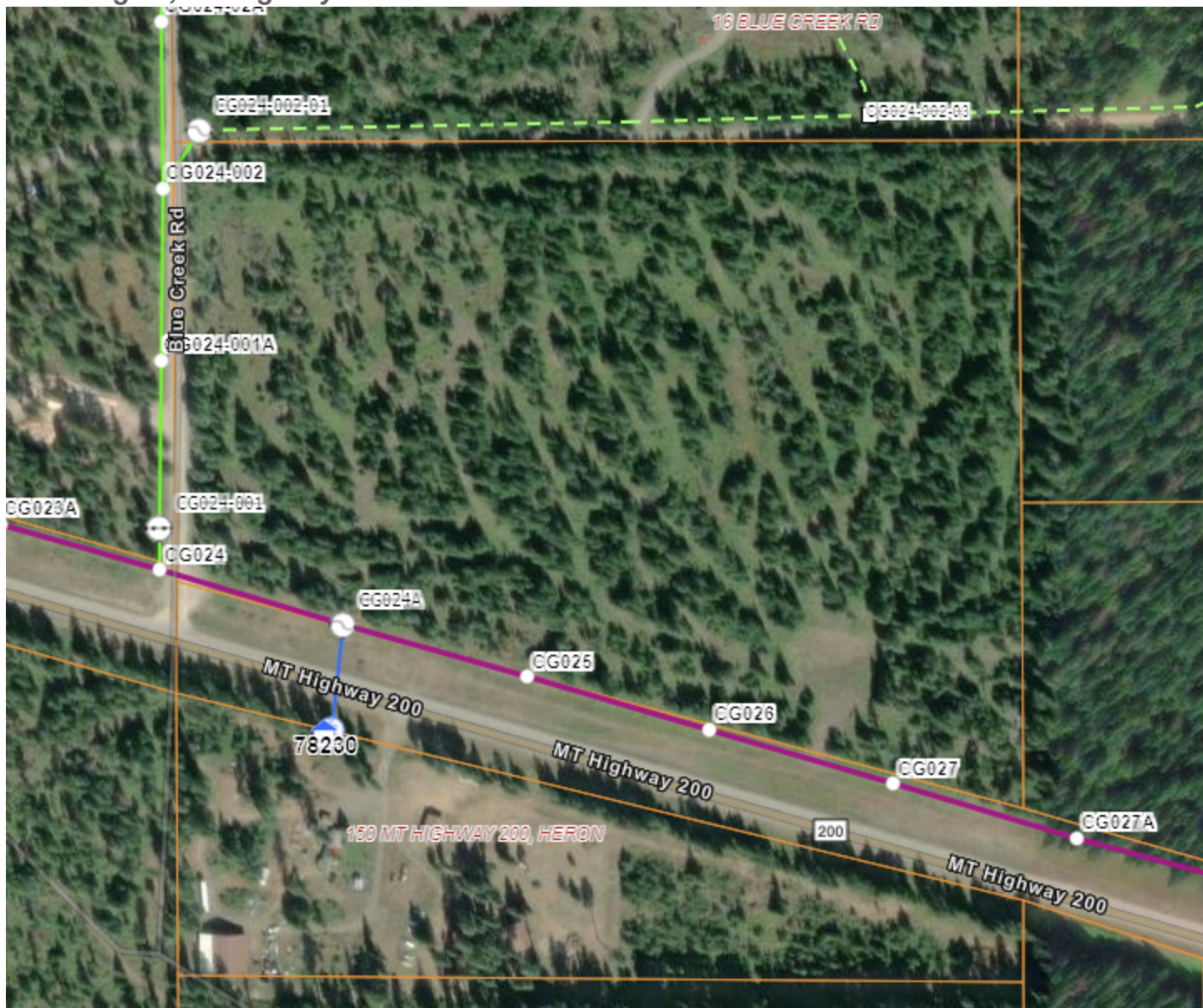
From: Sam Ross <sam.ross@nli.coop>
Sent: Thursday, January 11, 2024 1:59 PM
To: Tamara R. Ross
Cc: landservices@co.sanders.mt.us; Dan Scholz
Subject: RE: Blue Creek Subdivision - Agency Notice
Attachments: Supplemental Data Sheet.pdf; Project Summary.pdf

External Email: Treat links and attachments with caution.

Hi Tamara,

Thanks for allowing us the opportunity to review and submit comments.

NLI has several powerlines in the project vicinity. Specifically, we have a three-phase overhead line running along Highway 200 and a single-phase overhead line paralleling the west side of Blue Creek Road. Both lines are sufficient to provide electric services to the proposed subdivision. Based on the layout, NLI would most likely work with the developer to bring a new single-phase line in underground along the proposed Road 'A' as show on the preliminary plat.



The new underground line would likely be located in the Road 'A' access and utility easement where we will establish transformer to feed residential services to each lot.

[Here is the link to NLI's developer's application](#) whereby the developer can start the process of extending power to the lots in the proposed subdivision.

Thanks again for the opportunity to review—sincerely,

Samuel Ross

Engineering Assistant I

[Northern Lights, INC.](#)

Email: Sam.ross@nli.coop

Office: 208.255.7183

Cell: 208.946.7787

Tamara R. Ross

From: Buckner, Shauna L - Heron, MT <Shauna.L.Buckner@usps.gov>
Sent: Friday, February 2, 2024 12:55 PM
To: Tamara R. Ross
Subject: 18 Blue Creek Rd Heron, MT 59844

External Email: Treat links and attachments with caution.

To Whom It May Concern,

I spoke with Tamara Ross concerning mail delivery at the proposed subdivision listed at 18 Blue Creek Road Heron, MT 59844. It is our recommendation that individual mailboxes are placed instead of a CBU unit.

If you have any questions, please feel free to call me.

Shauna Buckner
Postmaster
Heron, MT 59844
406-847-5505



2nd Agency Notice Letter and Comments

2nd Agency Notice Sent March 5, 2024

- Physical Mailers Certified
- Fire Department Fire Risk Rating Form included.



March 5, 2024

RE: Blue Creek Subdivision - Agency Notice

Dear Agent:

The Sanders County Land Division Office has identified you as being an agency that may have important comments to make about the proposed County Major Subdivision, Blue Creek Subdivision. This proposed 9-lot major subdivision is generally located adjacent to the east of Blue Creek Road and north of HWY 200 comprising of 25.94 Acres. The property can currently be described as vacant rural land that has been historically timber and can be easily located east of addressed location 17 Blue Creek Road, Heron, MT 59844. The preliminary location of each proposed single-family dwelling, internal roadway, individual well and drainfield locations are shown on the Preliminary Plat included herein. Please review the enclosed Project Summary and Preliminary Plat to provide comment or questions.

The purpose of this agency review is twofold:

- 1) For agencies to determine if the subdivision submittal packet has enough information or is sufficient for review.
- 2) For agencies to provide comments regarding the proposal on anything that should be addressed before the project is submitted for governing body review. Thus, it is important that you send us your comments or let us know if you have no comments.

Your comments are important to us, and we look forward to your responses. Please reply and send any comments directly to Tamara.R.Ross@imegcorp.com, by end of the day, March 14th, 2024, and copy the Land Services, landservices@co.sanders.mt.us. You may also mail your comments to IMEG Corp. at 1817 South Ave West, Suite A, Missoula, MT 59801 and the Sanders County Land Services at P.O. Box 519, Thompson Falls, MT 59873. These comments will be reviewed by both the land services administrator and provided to the Sanders County Commissioners for further comment and consideration.

If there is anything we can do to facilitate your review, please reach out to us. Thank you in advance for your comments.

Sincerely,
IMEG Corp.

Prepared By:

A handwritten signature in black ink that reads "Tamara Ross".

Tamara R. Ross
Civil Designer / Planning Technician
P: (406) 272-0253
Tamara.R.Ross@imegcorp.com

Enclosed: One copy of the Project Summary and Preliminary Plat

COVER SHEET

Owner and Developer: Tungsten Holdings, Inc.

Representative: IMEG CORP

Subdivision Name: Blue Creek Subdivision

Number of Lots Proposed: 9 Residential Lots

Number of Acres: 25.94 Acres

Legal Description: The Southwest One-Quarter of the Northwest One-Quarter (SW1/4 NW1/4) of Section 20 Lying North of Montana Highway 200, Township 27 North, Range 34 West, Principal Meridian Montana, Sanders County, Montana. Containing a total of 25.94 Acres, more or less.

Project Summary:

The Blue Creek Subdivision is in Sanders County and proposes 9-lots for residential development. It is generally located adjacent to the east of Blue Creek Road and north of HWY 200 comprising of 25.94 Acres. The property can currently be described as vacant rural land that has been historically timber and can be easily located east of addressed location 17 Blue Creek Road, Heron, MT 59844. The preliminary location of each proposed single-family dwelling, internal roadway, individual well and drainfield locations are shown on the Preliminary Plat included in Section A of this submittal.

Summary of Roads:

The proposed approach onto HWY 200 will be used for two newly proposed roadways, completely internal to the subdivision, providing access to the 9 proposed lots. A 1' No-Access Strip is located along the entire southern property boundary along the HWY 200; excluding the proposed approach. The approach application is under review by MDOT. The approach will be constructed with a 24-foot asphalt travel surface and 2-foot gravel shoulders. It should be noted that a site visit was conducted with IMEG staff, Katherine Maudrone, and the District 3 Road Foreman in September of 2022 which concluded that an approach off of Blue Creek Road would not be supported due to heavy truck traffic and slopes along the existing roadway. Further, the Preliminary Plat Application Requirements checklist received by IMEG Staff on August 16th, 2023, does not require a legal or physical access off of the local roadway, Blue Creek Road, or a variance request for proposing access unto a higher road classification. Therefore, this development has proceeded with an approach permit onto HWY 200 as provided in MDOT Approach Application (section D) avoiding cuts and fills on steep slopes for access.

All lots will be accessed by the newly proposed Blue Sky Drive or Blue Sky Court both proposed to be constructed of a 24-foot-wide gravel road surface with 2-foot shoulders contained within the 60-foot Private Access and Utility Easement (P.A.U.E.). In addition, two hammerhead turnarounds are proposed to be included within this development and will comply with emergency service access requirements. The P.A.U.E. will be unobstructed for maintenance of any future utilities; therefore, it will be subject to a proposed Road Maintenance Agreement. Please see the Preliminary Plat and Supplemental Data Sheets for information regarding the proposed internal roadway and No-Access Strip in Section A of this submittal.

Summary of Non-Motorized Facilities:

The applicant is not aware of existing non-motorized infrastructure in the vicinity of the proposed development. Given the development is rural in nature and outside of city limits the roadway

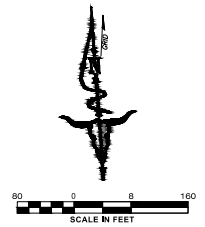
infrastructure will not include sidewalks or boulevards. Therefore, no existing non-motorized transportation facilities serve this property.

Environment and Parkland:

The property could generally be described as vacant land that has been previously timbered. There are no known natural drainages, ponds, marshes, or wetlands located on the subject property or directly adjacent to the development. The property lies within an area that contains slopes of at least 25% and timbered. The proposed lot layout avoids these potentially hazardous areas, and the face of the plat proposes areas of 25% or greater to be designated as "No-Build Zones". Further, stormwater infrastructure and associated easements have been designed to provide suitable drainage and stormwater management for surface water runoff that may be generated and detained on the subject property. There are no existing agricultural water user facilities in the surrounding area. Parkland is not proposed; therefore, the developer intends to provide payment in lieu of parkland. The developer does not anticipate a park dedication will be required for proposed Lots 1-3 as they are to be larger than 5 acres. As a result, the developer anticipates 0.45 acres (0.14 ac + 0.31 ac = 0.45 ac) will be required for a cash-in-lieu of parkland dedication. A tax assessment or appraisal report for calculating cash-in-lieu of parkland dedication along with a receipt from the County Treasures Office will be provided by the applicant prior to final plat approval.

PRELIMINARY PLAT OF
BLUE CREEK SUBDIVISION

LOCATED IN THE NW1/4 OF SECTION 20, T.27N., R.34W., P.M.M., SANDERS COUNTY, MONTANA



BASIS OF BEARING:
STATE PLANE COORDINATE ZONE 4900
GROUND (TRUE) DISTANCES
GRID NORTH

VERTICAL DATUM:
NAD83

DATE:
AUGUST 2023 - NOVEMBER 2023

RECORD OWNERS:
TUNSTEN HOLDINGS INC.

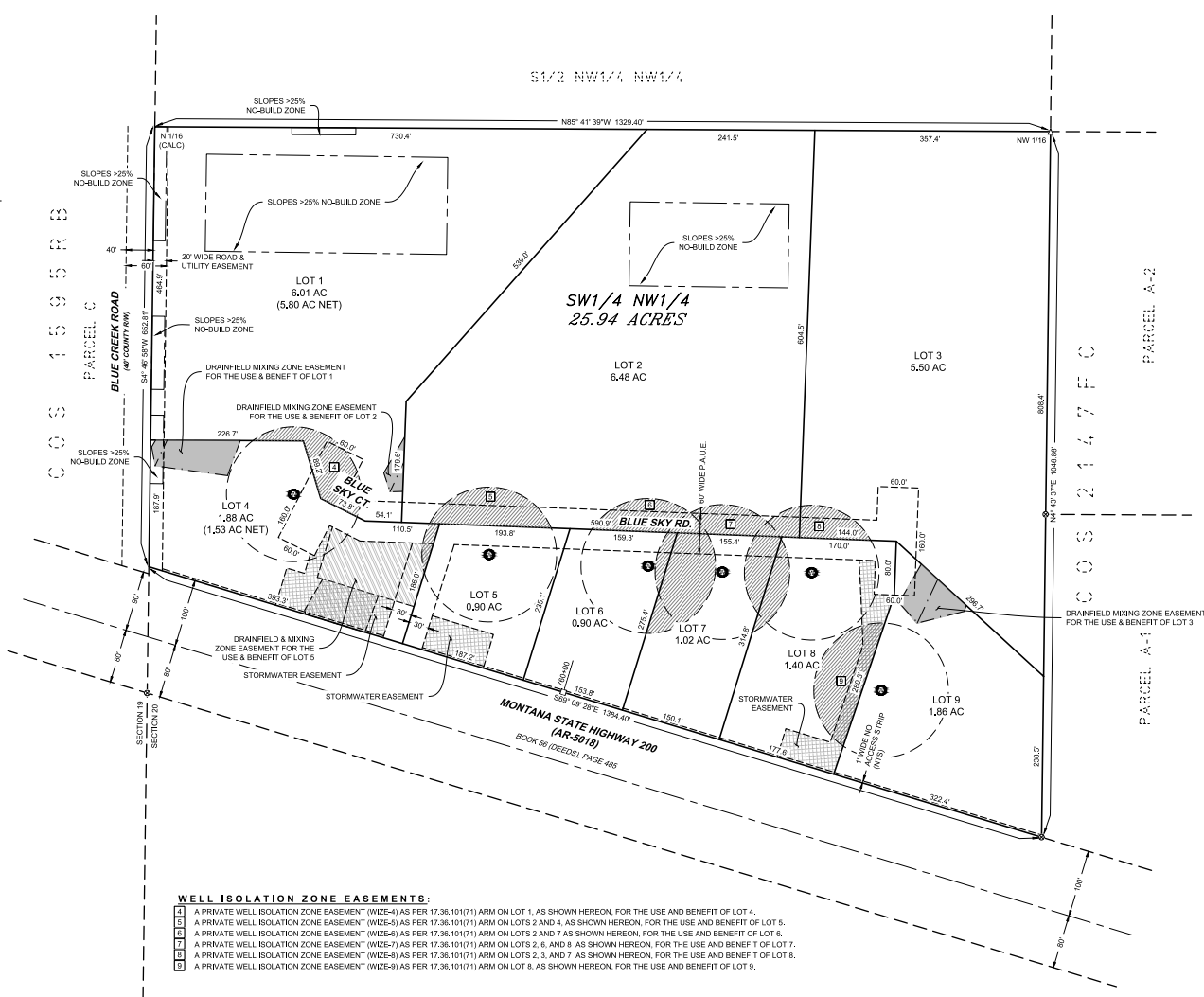
SURVEY COMMISSIONED BY:
TUNSTEN HOLDINGS INC.

TOTAL SUBDIVISION AREA:
(25.94 ACRES NET)
(25.94 ACRES NET)

PLAT NOTES:
1) LOTS 1 THROUGH 9 ARE INTENDED FOR SINGLE FAMILY RESIDENTIAL USE.
2) THE NO-BUILD ZONE PROHIBITS ALL BUILDINGS AND STRUCTURES.
3) THIS ZONE SHALL NOT PRECLUDE INSTALLATION OR MAINTENANCE OF UTILITIES AND ASSOCIATED FACILITIES WITHIN DESIGNATED EASEMENT AREAS.

USDA SOILS:
7E10 - FARMLAND OF LOCAL IMPORTANCE
8E - FARMLAND OF STATEWIDE IMPORTANCE

- LEGEND**
- = FOUND REBAR WITH 1" YPC (WARREN, 2734S)
 - △ = FOUND 3-1/4" ALUM. CAP (USFS, 4659LS)
 - = FOUND RWY CONCRETE MONUMENT POLE
 - = YELLOW PLASTIC CAP
 - = CERTIFICATE OF SURVEY
 - AC = ACRES
 - P.A.U.E. = PRIVATE ACCESS & UTILITY EASEMENT
 - NTS = NOT TO SCALE
 - WIZE = WELL ISOLATION ZONE EASEMENT
 - = PROPOSED WELL



- WELL ISOLATION ZONE EASEMENTS:**
- 1 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-6) AS PER 17.36.101(7) ARM ON LOT 1, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 4.
 - 2 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-5) AS PER 17.36.101(7) ARM ON LOTS 2 AND 4, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 5.
 - 3 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-6) AS PER 17.36.101(7) ARM ON LOTS 2 AND 7 AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 6.
 - 4 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-7) AS PER 17.36.101(7) ARM ON LOTS 2, 6, AND 8 AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 7.
 - 5 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-8) AS PER 17.36.101(7) ARM ON LOTS 2, 3, AND 7 AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 8.
 - 6 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-9) AS PER 17.36.101(7) ARM ON LOT 8, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 9.

LEGAL DESCRIPTION

THE SOUTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (SW1/4NW1/4) OF SECTION 20 LYING NORTH OF MONTANA HIGHWAY 200, TOWNSHIP 27 NORTH, RANGE 34 WEST, PRINCIPAL MERIDIAN MONTANA, SANDERS COUNTY, MONTANA, CONTAINING A TOTAL OF 25.94 ACRES, MORE OR LESS.



SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THE ATTACHED PRELIMINARY PLAT REPRESENTS A SURVEY MADE UNDER MY SUPERVISION AND PREPARED IN CONFORMANCE WITH THE APPLICABLE SECTIONS OF THE MONTANA SUBDIVISION AND PLATTING ACT AND THE REGULATIONS ADOPTED THEREUNDER.

BY: MATTHEW JACOBSON, PROFESSIONAL LAND SURVEYOR DATE: _____
MONTANA LICENSE NO. 13748LS

1/4	SEC.	T.	R.
<input checked="" type="checkbox"/>	20	27N.	34W.

PREPARED BY:
IMEG
1817 SOUTH AVE. W. STE. A PH: 406.721.0142
MISSOULA, MT. FAX: 406.721.5224
59801 www.imegcorp.com
IMEG PROJECT NO. 22080448

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March 5, 2024

RE: Blue Creek Subdivision - Agency Notice

Dear Agent:

The Sanders County Land Division Office has identified you as being an agency that may have important comments to make about the proposed County Major Subdivision, Blue Creek Subdivision. This proposed 9-lot major subdivision is generally located adjacent to the east of Blue Creek Road and north of HWY 200 comprising of 25.94 Acres. The property can currently be described as vacant rural land that has been historically timber and can be easily located east of addressed location 17 Blue Creek Road, Heron, MT 59844. The preliminary location of each proposed single-family dwelling, internal roadway, individual well and drainfield locations are shown on the Preliminary Plat included herein. Please review the enclosed Project Summary and Preliminary Plat to provide comment or questions.

The purpose of this agency review is twofold:

- 1) For agencies to determine if the subdivision submittal packet has enough information or is sufficient for review.
- 2) For agencies to provide comments regarding the proposal on anything that should be addressed before the project is submitted for governing body review. Thus, it is important that you send us your comments or let us know if you have no comments.

Your comments are important to us, and we look forward to your responses. Please reply and send any comments directly to Tamara.R.Ross@imegcorp.com, by end of the day, March 14th, 2024, and copy the Land Services, landservices@co.sanders.mt.us. You may also mail your comments to IMEG Corp. at 1817 South Ave West, Suite A, Missoula, MT 59801 and the Sanders County Land Services at P.O. Box 519, Thompson Falls, MT 59873. These comments will be reviewed by both the land services administrator and provided to the Sanders County Commissioners for further comment and consideration.

If there is anything we can do to facilitate your review, please reach out to us. Thank you in advance for your comments.

Sincerely,
IMEG Corp.

Prepared By:

A handwritten signature in black ink that reads "Tamara Ross". The signature is written in a cursive, flowing style.

Tamara R. Ross
Civil Designer / Planning Technician
P: (406) 272-0253
Tamara.R.Ross@imegcorp.com

Enclosed: One copy of the Project Summary and Preliminary Plat

COVER SHEET

Owner and Developer: Tungsten Holdings, Inc.

Representative: IMEG CORP

Subdivision Name: Blue Creek Subdivision

Number of Lots Proposed: 9 Residential Lots

Number of Acres: 25.94 Acres

Legal Description: The Southwest One-Quarter of the Northwest One-Quarter (SW1/4 NW1/4) of Section 20 Lying North of Montana Highway 200, Township 27 North, Range 34 West, Principal Meridian Montana, Sanders County, Montana. Containing a total of 25.94 Acres, more or less.

Project Summary:

The Blue Creek Subdivision is in Sanders County and proposes 9-lots for residential development. It is generally located adjacent to the east of Blue Creek Road and north of HWY 200 comprising of 25.94 Acres. The property can currently be described as vacant rural land that has been historically timber and can be easily located east of addressed location 17 Blue Creek Road, Heron, MT 59844. The preliminary location of each proposed single-family dwelling, internal roadway, individual well and drainfield locations are shown on the Preliminary Plat included in Section A of this submittal.

Summary of Roads:

The proposed approach onto HWY 200 will be used for two newly proposed roadways, completely internal to the subdivision, providing access to the 9 proposed lots. A 1' No-Access Strip is located along the entire southern property boundary along the HWY 200; excluding the proposed approach. The approach application is under review by MDOT. The approach will be constructed with a 24-foot asphalt travel surface and 2-foot gravel shoulders. It should be noted that a site visit was conducted with IMEG staff, Katherine Maudrone, and the District 3 Road Foreman in September of 2022 which concluded that an approach off of Blue Creek Road would not be supported due to heavy truck traffic and slopes along the existing roadway. Further, the Preliminary Plat Application Requirements checklist received by IMEG Staff on August 16th, 2023, does not require a legal or physical access off of the local roadway, Blue Creek Road, or a variance request for proposing access unto a higher road classification. Therefore, this development has proceeded with an approach permit onto HWY 200 as provided in MDOT Approach Application (section D) avoiding cuts and fills on steep slopes for access.

All lots will be accessed by the newly proposed Blue Sky Drive or Blue Sky Court both proposed to be constructed of a 24-foot-wide gravel road surface with 2-foot shoulders contained within the 60-foot Private Access and Utility Easement (P.A.U.E.). In addition, two hammerhead turnarounds are proposed to be included within this development and will comply with emergency service access requirements. The P.A.U.E. will be unobstructed for maintenance of any future utilities; therefore, it will be subject to a proposed Road Maintenance Agreement. Please see the Preliminary Plat and Supplemental Data Sheets for information regarding the proposed internal roadway and No-Access Strip in Section A of this submittal.

Summary of Non-Motorized Facilities:

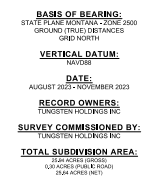
The applicant is not aware of existing non-motorized infrastructure in the vicinity of the proposed development. Given the development is rural in nature and outside of city limits the roadway

infrastructure will not include sidewalks or boulevards. Therefore, no existing non-motorized transportation facilities serve this property.

Environment and Parkland:

The property could generally be described as vacant land that has been previously timbered. There are no known natural drainages, ponds, marshes, or wetlands located on the subject property or directly adjacent to the development. The property lies within an area that contains slopes of at least 25% and timbered. The proposed lot layout avoids these potentially hazardous areas, and the face of the plat proposes areas of 25% or greater to be designated as "No-Build Zones". Further, stormwater infrastructure and associated easements have been designed to provide suitable drainage and stormwater management for surface water runoff that may be generated and detained on the subject property. There are no existing agricultural water user facilities in the surrounding area. Parkland is not proposed; therefore, the developer intends to provide payment in lieu of parkland. The developer does not anticipate a park dedication will be required for proposed Lots 1-3 as they are to be larger than 5 acres. As a result, the developer anticipates 0.45 acres (0.14 ac + 0.31 ac = 0.45 ac) will be required for a cash-in-lieu of parkland dedication. A tax assessment or appraisal report for calculating cash-in-lieu of parkland dedication along with a receipt from the County Treasures Office will be provided by the applicant prior to final plat approval.

LOCATED IN THE NW1/4 OF SECTION 20, T.27N., R.34W., P.M.M., SANDERS COUNTY, MONTANA



PLAT NOTES:

1) LOTS 1 THROUGH 9 ARE INTENDED FOR SINGLE FAMILY RESIDENTIAL USE.

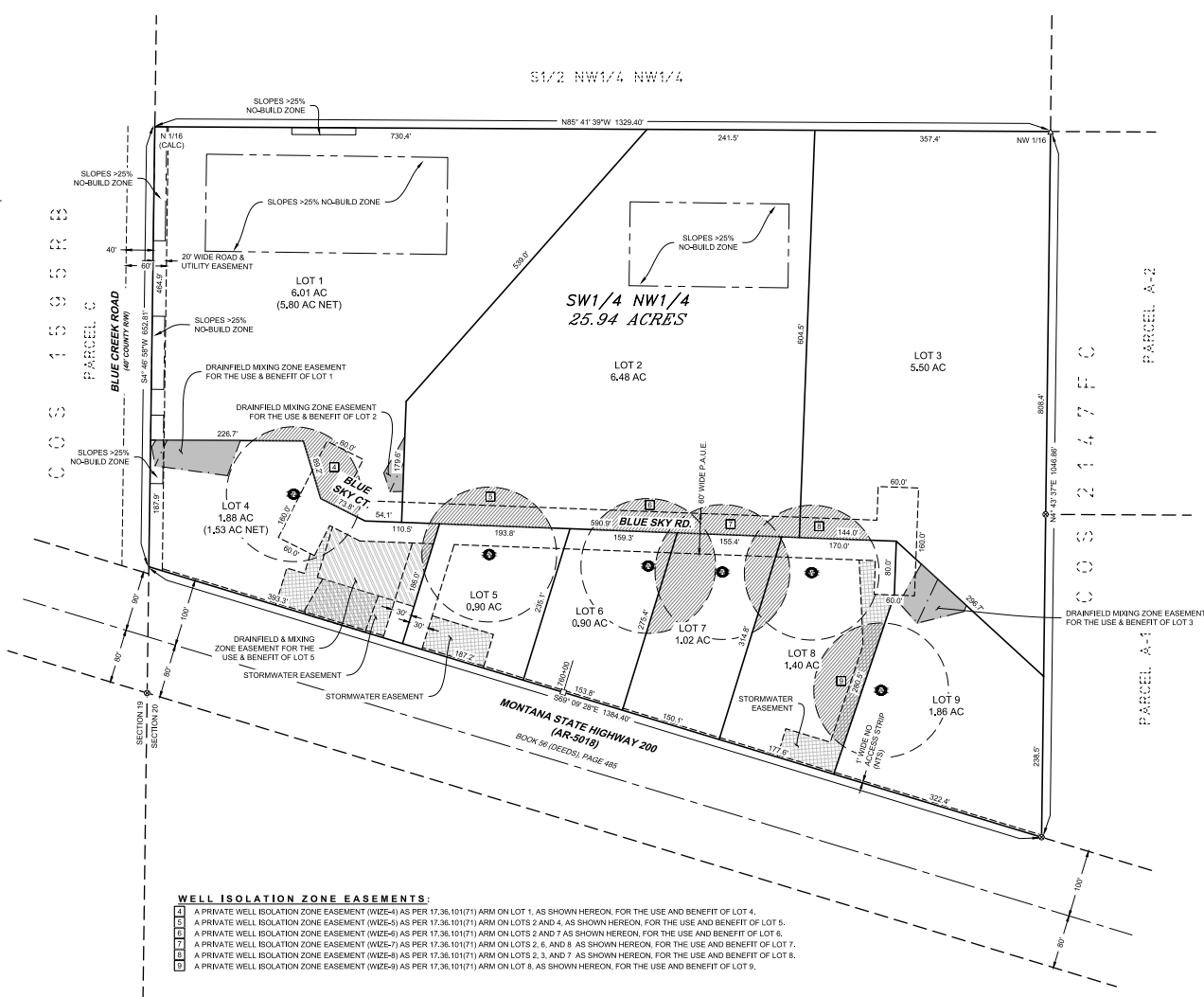
2) THE NO-BUILD ZONE PROHIBITS ALL BUILDINGS AND STRUCTURES.

3) THIS ZONE SHALL NOT PRECLUDE INSTALLATION OR MAINTENANCE OF UTILITIES AND ASSOCIATED FACILITIES WITHIN DESIGNATED EASEMENT AREAS.

USDA SOILS:

781D - FARMLAND OF LOCAL IMPORTANCE
B1C - FARMLAND OF STATEWIDE IMPORTANCE

- ### LEGEND
- | | |
|----------|---|
| ⊗ | = FOUND REBAR WITH 1" YPC (WARREN, 2734S) |
| ⊙ | = FOUND 3-1/4" ALUM. CAP (USFS, 46595LS) |
| □ | = FOUND R/W CONCRETE MONUMENT POLE |
| YPC | = YELLOW PLASTIC CAP |
| COS | = CERTIFICATE OF SURVEY |
| AC | = ACRES |
| P.A.U.E. | = PRIVATE ACCESS & UTILITY EASEMENT |
| NTS | = NOT TO SCALE |
| WZE | = WELL ISOLATION ZONE EASEMENT |
| ⊗ | = PROPOSED WELL |



WELL ISOLATION ZONE EASEMENTS:

1 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-4) AS PER 17.36.101(17)1 ARM ON LOT 1, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 4.

2 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-5) AS PER 17.36.101(17)1 ARM ON LOTS 2 AND 4, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 5.

3 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-6) AS PER 17.36.101(17)1 ARM ON LOTS 2 AND 4, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 7.

4 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-7) AS PER 17.36.101(17)1 ARM ON LOTS 4 AND 8, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 6.

5 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-8) AS PER 17.36.101(17)1 ARM ON LOTS 2, 3 AND 7 AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 8.

6 A PRIVATE WELL ISOLATION ZONE EASEMENT (WIZE-9) AS PER 17.36.101(17)1 ARM ON LOTS 4, AS SHOWN HEREON, FOR THE USE AND BENEFIT OF LOT 6.

LEGAL DESCRIPTION

THE SOUTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (SW1/4NW1/4) OF SECTION 20 LYING NORTH OF MONTANA HIGHWAY 200, TOWNSHIP 27 NORTH, RANGE 34 WEST, PRINCIPAL MERIDIAN MONTANA, SANDERS COUNTY, MONTANA, CONTAINING A TOTAL OF 25.94 ACRES, MORE OR LESS.

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THE ATTACHED PRELIMINARY PLAT REPRESENTS A SURVEY MADE UNDER MY SUPERVISION AND PREPARED IN CONFORMANCE WITH THE APPLICABLE SECTIONS OF THE MONTANA SUBDIVISION AND PLATTING ACT AND THE REGULATIONS ADOPTED THEREUNDER.

88 _____
MATTHEW JACOBSON, PROFESSIONAL LAND SURVEYOR
MONTANA LICENSE NO. 13748LS _____ DATE _____

1/4	SEC.	T.	R.
	20	27N.	34W.

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Name and Address of Sender

Check type of mail or service

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| <input type="checkbox"/> Adult Signature Restricted Delivery | <input type="checkbox"/> Registered Mail |
| <input type="checkbox"/> Certified Mail | <input type="checkbox"/> Return Receipt for Merchandise |
| <input type="checkbox"/> Certified Mail Restricted Delivery | <input type="checkbox"/> Signature Confirmation |
| <input type="checkbox"/> Collect on Delivery (COD) | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Insured Mail | |
| <input type="checkbox"/> Priority Mail | |

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USPS Tracking/Article Number	US Dept. Fish & Wildlife Ecological Services	Postage	(Extra Service) Fee	Handling Charge	Actual Value if Registered	Insured Value	Due Sender if COD	ASR Fee	ASR Fee	ASR Fee	ASR Fee	ASR Fee	ASR Fee	ASR Fee	ASR Fee	ASR Fee	ASR Fee	ASR Fee
1.	100 N Park Street. Suite 320 Helena, MT 59626	.66																
2.	Montana Fish, Wildlife & Parks 490 N Meridian Rd. Kalispell, MT 59901	"																
3.	Cabinet Ranger District Attn: District Ranger 2693 MT HWY 200	"																
4.	Trout Creek, MT 59874 Northern Lights Attn: Engineering, Sam Ross	"																
5.	PO BOX 269 Sagle, ID 83860	"																
6.	Sanders County Sheriff's Office PO Box 910	"																
7.	Thompson Falls, MT 59873 Heron Rural Fire District Attn: Fire Chief	"																
8.	PO Box 86 Heron, MT 59844	.96																
Total Number of Pieces Listed by Sender	Total Number of Pieces Received at Post Office	Postmaster, Per (Name of receiving employee)																
9	NINE	[Signature]																



Firm Mailing Book For Accountable Mail

Name and Address of Sender		<div>Check type of mail or service</div> <div><div><input type="checkbox"/> Adult Signature Required</div><div><input type="checkbox"/> Adult Signature Restricted Delivery</div><div><input type="checkbox"/> Certified Mail</div><div><input type="checkbox"/> Certified Mail Restricted Delivery</div><div><input type="checkbox"/> Collect on Delivery (COD)</div><div><input type="checkbox"/> Insured Mail</div><div><input type="checkbox"/> Priority Mail</div></div> <div><div><input type="checkbox"/> Priority Mail Express</div><div><input type="checkbox"/> Registered Mail</div><div><input type="checkbox"/> Return Receipt for Merchandise</div><div><input type="checkbox"/> Signature Confirmation</div><div><input type="checkbox"/> Signature Confirmation Restricted Delivery</div></div>	
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Agency Comments

- During Sufficiency

Community Ambulance Service of Western Sanders County, Inc.

P.O. Box 170 Noxon, MT 59853

Tamara R. Ross

1817 South Ave. West Suite A

Missoula, Montana 559801

RE: Blue Creek Subdivision

Dear Ms. Ross,

We have received a copy of the proposed land division plan. The Community Ambulance Service of Western Sanders County, Inc. has reviewed the data with the following comments:

- The need for adequate ingress/egress to each dwelling.
- Utility shutoffs (electric and propane) to be located near the entrance of each driveway.
- Year round access to each dwelling.
- The ingress/egress roads to each dwelling are at least a 12 foot wide road that is maintained year round. It is very important during the winter months to keep the road plowed and sanded.

Sincerely,



Jennifer Swant

Secretary CASWSC

Cc: Sanders County Land Services

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Sanders County Fire Risk Rating Form

This form may be used to rate the risks from wildfire hazards in new subdivisions and other developments. Conditions anticipated after development of roads, water supplies, etc., should be the focus.

Name of Subdivision: Blue Creek Subdivision

Landowner or Subdivider: Tungsten Holdings, Inc.

Legal Description: SW1/4 NW1/4 of S20, T27N, R34W less B56 Deeds, P485, less SW1/4NW1/4 of S20 T27N, R34W south of Hwy 200

Location: East of Blue Creek Rd North of Hwy 200

General Description of Subdivision: The 27.3 acres is proposed to be developed into 9 single family residential lots. The property is vacant rural land, contains timber and gentle slopes not exceeding 15%. The proposed development is adjacent to the north of HWY 200 and abuts Blue Creek Road. Building sites will be cleared prior to the development of homes.

Date of Assessment: _____

Name, Qualifications, and Contact Information of Preparer: IMEG Corp.

1817 South Ave. W Ste A Missoula, MT 59801; 406-721-0142

Verified by local Fire District, DNRC, USFS, or other qualified person: _____

MEAD, ASST. CHIEF, HRFD

Signature

3/25/24

Date

Tamara R. Ross

From: Chris McComas <cmccomas@co.sanders.mt.us>
Sent: Thursday, April 4, 2024 4:12 PM
To: Tamara R. Ross
Subject: FW: Heron Fire Department Subdivision Review
Attachments: Blue Creek Fire Risk Rating Form.pdf

External Email: Treat links and attachments with caution.

Tamara,

I received this from Brad with Heron Rural Fire. Have you received a comment with approval for \$500 per lot cash in lieu of a water supply for fire suppression?

Chris McComas

Director of Land Services

Sanders County

PO Box 519

Thompson Falls, MT 59873-0519

406-827-6965(Office)

406-449-6573(Cell)

<https://co.sanders.mt.us/206/Land-Services>



From: Brad Gilbert <bradegilbert3115@gmail.com>
Sent: Thursday, April 4, 2024 3:48 PM
To: Chris McComas <cmccomas@co.sanders.mt.us>
Subject: Re: Heron Fire Department Subdivision Review

Chris,

Is this the document in question? I could have forgotten to attach it. I've only seen the documentation for the Blue Creek Subdivision. If there is another one, let me know and I'll get it turned around quickly. I've only been the Assistant Chief for a year so I'm still getting caught up on all of the things that were supposed to be getting done. Don't hesitate to reach out if there is something you're missing from us.

Brad

DATE: 3/25/2024

MOUNTAIN PLANS, LLC
PO BOX 324
THOMPSON FALLS, MT 59873-0324
kmaudrone@mtnplains.com

FIRE AGENCY: Heron Rural Fire District

SUBDIVISION: Blue Creek Subdivision

The following are our recommendations for the above proposed subdivision:

- ☒ Road to standards with adequate turn around.
- ☒ Nonflammable road name signs installed by developer.
- ☒ Address numbers to be placed in visible location.
- ☐ Approved 5000-gallon water cistern to be installed by developer with maintenance agreement. For 6 or more lots a minimum of 1000-gallon per lot/not to exceed 30,000
- ☐ Approved dry hydrant installed by developer with maintenance agreement.
- ☐ Stream or pond access for drafting developed and maintained.
- ☒ \$500/new lot created per Sanders County Policy/Subdivision Regulations
- ☐ Provide the subdivision plat map once approved.
- ☐ Other _____

In areas of high wildfire risk:

- ☐ No new dead-end roads.
- ☒ Fire Prevention and Control Plan/Fuels Treatment Plan

Sincerely,

Brad E Gilbert

Authorized Signer/Fire Chief/President of the Board of Trustees



Assistant Chief, HRFD

PLEASE CHECK WHAT YOU ARE ABLE TO AND WILLING TO DO OF THE FOLLOWING LIST:

- ☒ RETURN INFORMATION SHEET ABOUT YOUR AGENCY AND RESOURCES
- ☐ REQUEST FOR COMMENT FORM (EXAMPLE INCLUDED)
- ☒ COMPLETE OR VERIFY AND SIGN OFF ON FIRE RISK RATING FORM

NAME OF AGENCY: Heron Rural Fire District

CONTACT PERSON: Brad Gilbert

PHYSICAL LOCATION: 140 Railroad Ave. Heron, MT 59844

PLEASE INDICATE WHICH IS THE PREFERRED FORM OF CONTACTING YOU.

- ☐ EMAIL: _____
- ☒ MAILING ADDRESS: 140 Railroad Ave. Heron, MT 59844

RESOURCES:

NUMBER AND TYPE OF RESPONSE VEHICLES:

1- Type 2 Pumper, 2-type 5 brush trucks, 1- ARFF, 2- 1500 gallon tenders

NUMBER AND TITLE OF PAID STAFF:

0

NUMBER OF VOLUNTEERS: 15

ANY ADDITIONAL INFORMATION YOU WOULD LIKE TO PROVIDE:

We would be happy to VERIFY and sign off on Fire Risk Rating Form

- ☒ THIS AGENCY IS WILLING TO SIGN OFF ON FIRE RISK RATING FORMS

Brad E Gilbert, Assistant Chief, HREFD
SIGNATURE OF AUTHORIZED PERSONNEL



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MEETING SUMMARY

IMEG # 22003448.00

MEETING DATE: 04/16/2024

LOCATION: Blue Creek Road – Project Site

PRESENT:

MDT

Gascon, Jesse (District Engineer)

jgascon@mt.gov

Unknown Gentleman (District Road Forman MDT)

Sanders County

Chris McComas (Planning Director)

cmccomas@co.sanders.mt.us

Dist. 3 Road Shop (Lee)

sandersroad3@co.sanders.mt.us

Landowner

Crawford

projects@tungstenholdings.com

IMEG Corp.

Tamara R. Ross (Planning Technician)

Tamara.R.Ross@imegcorp.com

ITEMS DISCUSSED:

The notes below are summarized of a discussion that has taken place as it pertains to the MDT Approach for Blue Creek Subdivision discussed on site with all parties listed above on 04/16/2024.

Jesse: discussion on distance of the existing approach to Blue Creek Road. IMEG approx. 393' center of Blue Creek Road and edge of proposed road location. Crawford discussion approach adjacent to the south and alignment with Jesse. This approach is existing with a culvert. Jesse, it does not mean it is necessarily permitted or allowed to remain.

Jesse & Road Foreman: discuss steepness of Blue Creek Road. IMEG confirms slopes in areas of this roadway are 25% or greater if a roadway were to be proposed to county standards this would be difficult to meet. Road Foreman states the roadway is 20% or greater and explains difficulties in maintain and winter weather dangerous conditions. Large vehicle hauls and timber sales increase these dangers up at the time where visibility is limited, close to the existing mailbox for the neighbor.

Jesse: are the mixing zones allowed within MDT right of way? How much is allowed?

Chris: should be 50-feet but not confirmed at the time of site visit. We swung back to this and IMEG states these preliminary plans have been designed and reviewed by our staff registered sanitarian, they are not planned to change and would meet the requirements of MDEQ.

Jesse: is looking for a report/letter to support why Sanders County is in favor of an approach unto HWY 200 and not Blue Creek Road. Please include at least; traffic/trip counts on Blue Creek Road, existing grades and difficulties

with access, road foreman support/opinion on the situation, maintenance talking points and perspective, any other problematic concerns the county may have all in one letter with a formal letterhead from the county.

- The traffic counts do not have to be done by a traffic engineer, just count the residential homes that would use this roadway and use 10 trips per day for a residential dwelling. Look at Fatman Road. Forest Service may have data to pull from.
- Discuss why the shared driveway to the north can be used. What's the history there and how was this lot created?
- One letterhead and again does not have to be stamped plans or report.

Chris & IMEG: any special signage needed if the approach is supported off of HWY 200.

Jesse: None, same signage as usual.

Chris & IMEG: Confirm the specific language within the Sanders County Subdivision Regulations and MDT requirements for paved approaches (20-foot proposed off HWY 200). The internal road network will be gravel so this may not be required in the first place off of an HWY but just a county-maintained road (previously proposed). MDT would not require a 20-foot paved approach.

Jesse & Crawford Permitting timelines, what does the end goal here for construction look like. In theory, let's say there is support for this approach around August, how long does it take to get to construction. Crawford and others explain MDEQ timelines and complications. Jesse explains the approach permit is good for six months and can be extended for an additional six if needed. Crawford and Chris agree that the approach would be a condition of approval for the Final Plat Application packet. Parties would work together to prioritize this construction, so permit does not expire as MDEQ is pending review.

Chris and IMEG review what is pending and required of both parties prior to resubmittal with MDT and 2nd Element. Conversation dissipates and meeting ends. Jesse adds no further comment.

Chris & Crawford walk the site with IMEG present. Further discussion of water and approaches on Blue Creek Road with previous discussions with Lee (Sanders County Road Foreman) and previous Sanders County Planning Director.

Prepared by:
Tamara Ross

cc: All Present

