FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION

All sections must be addressed, or the application will be considered invalid

I. APPLICANT INFORMATION

A. Applicant Name: Tess Scanlon

Mailing Address: 312 N. Higgins St. 200

City: Missoula State: MT Zip: 59802

Telephone: 406-552-2168 E-mail: TScanlon@tu.org

B. Contact Person (if different than applicant): _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____ E-mail: _____

C. Landowner and/or Lessee Name (if different than applicant): Lolo National Forest

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____ E-mail: _____

II. PROJECT INFORMATION

A. Project Name: Gratton Ditch Ranch Creek Fish Passage Improvement

River, stream, or lake: Ranch Creek

Location: Township: 10N Range: 16W Section: 31

Latitude: 46.575711° Longitude: -113.663847° *Within project (decimal degrees)*

County: Granite County

B. Purpose of Project: *(high level, focus on why the project is important)*

The purpose of the proposed Gratton Diversion Ranch Creek Fish Passage Improvement project is twofold:

1) To improve fish populations in Rock Creek, a native fish stronghold and designated “Core Habitat Area” for ESA-threatened bull trout according to the USFWS, and
2) To improve fish recruitment to an impaired reach of the Clark Fork River.

The project proposes to improve fishing and fish populations in Rock Creek watershed located 20 miles east of Missoula, MT by removing an irrigation diversion fish passage barrier on the Lolo National Forest and reconnecting 1.5-miles of designated critical bull trout spawning habitat in Ranch Creek. Project activities include upgrading the existing irrigation diversion structure and installing a fish screen on the associated irrigation ditch. The project will eliminate the entrainment of fish into the irrigation ditch and provide safe passage for all age class fish past the diversion site.

The project is part of a joint effort by Montana Fish, Wildlife, and Parks (MFWP) Montana Natural Resource Damage Program (NRDP), the US Forest Service, US Fish and Wildlife Service (USFWS), and Trout Unlimited (TU) to reconnect key migration corridors and reduce entrainment of fish in irrigation ditches in Rock Creek by screening priority irrigation diversions. The coordinated effort, initiated in 2017, was informed by an inventory of irrigation diversion fish passage barriers in the Rock Creek watershed completed by TU staff. The removal of priority irrigation diversion fish passage barriers reconnects migratory corridors and spawning grounds and reduces fish mortality in irrigation ditches.

C. Brief Project Description (attach additional information to end of application). Please include the anticipated construction schedule:

The proposed Gratton Diversion Ranch Creek Fish Passage Improvement project will replace the existing irrigation diversion infrastructure and install a fish screen in the irrigation ditch. In coordination with the Lolo National Forest and the private water users, TU has identified the following goals for this project:

1) Eliminate fish entrainment and provide safe fish passage for all age class fish into the Gratton Irrigation ditch on Ranch Creek.
2) Provide improved means of water management and delivery and reduce maintenance of the irrigation diversion for water users.
3) Reconnect 1.5-miles of spawning habitat in Ranch Creek.
4) Improve fish populations and fish recruitment to Rock Creek and the Clark Fork River.

The existing diversion structure is located immediately downstream of documented bull trout redds from redd counts by Montana FWP. It is also documented by MFWP, the USFS, and the water users to entrain several fish species, including migratory ESA-threatened bull trout, native westslope cutthroat trout, rainbow trout, brown trout, and brook trout. In addition, maintenance of the outdated diversion structure has resulted in streambank erosion, increased sedimentation, and an over-widened channel at the diversion site. The upgraded diversion structure will consist of two rock weir structures constructed to mimic natural channel step-pool features.

A Farmers Conservation Alliance Screen (“Farmers Screen”) and fish return pipe will be installed in the irrigation ditch below the headgate to eliminate fish entrainment into the ditch. The Farmers Screen is NMFS (National Marine Fisheries Service) certified to provide safe fish passage for all out-migrating and downstream-moving fish. The design is also intended to reduce maintenance of the diversion site which will benefit the water users and reduce impacts of bank erosion and sedimentation associated with the current management.

Pre-project planning efforts include three years of irrigation ditch flow monitoring to better understand water use needs, an assessment of water right allocations, and an assessment of project alternatives, including an alternative to decommission the existing diversion and provide water use through groundwater wells. The selected alternative was preferred by the water users and USFS.

Final design plans will be completed by Great West Engineering in February 2024. TU is coordinating all permits with the Lolo National Forest for environmental compliance and permits will be in hand by June 2025. Construction is scheduled to take place in July or August 2025 during the bull trout window when Ranch Creek streamflows are low. Construction is expected to take place during a 5-day construction period. TU will be responsible for all project development and implementation activities, including procurement and contracting for the purchase of the screen and construction contractor as well as coordination with project partners, including the private water users and USFS.

D. What was the cause of habitat degradation and how will the project correct the cause?

The Gratton diversion on Ranch Creek has adversely affected habitat in three significant ways:

1) Habitat fragmentation – the diversion blocks downstream fish passage and causes fish entrainment and mortality in the irrigation ditch. This impacts the life cycle of migratory fish species and can lead to population decline.

2) Bank erosion and increased sedimentation – the existing diversion negatively impacts aquatic habitat. Maintenance of the diversion structures has reduced streambank stability and led to bank erosion and channel widening at the diversion site as well as increased sedimentation which negatively impacts downstream water quality.

3) Reduced riparian vegetation – current management of the diversion structure has reduced riparian vegetation at the diversion site and led to nonnative weeds and exposed streambanks at risk of further erosion.

E. Length of stream or size of lake that will be treated (project extent): n/a

Length/size of impact, if larger than project extent (e.g., stream miles opened): 1.5 miles reconnected

F. Project Budget Summary:

Grant Request (Dollars):	**$**	**$67,500**
Matching Dollars:	**$**	**10,000**
Matching In-Kind Services:*	**$**	

**salaries of government employees are not considered matching contributions*

Other Contributions (not used as match)	**$**	**75,806**
Total Project Cost:	**$**	**$158,806**

G. Attach itemized (line item) budget – *see budget template*

H. Attach project location map(s) that include:

- [ ] Extent of the project, including context (relation to major landmark or town)
- [ ] Indication of public and private property
- [ ] Riparian buffer locations and widths (if applicable) and grazing locations

I. Attach project plans:

- [X] Detailed sketches or plan views with the location and proposed restoration
- [X] Pre-project photographs (GPS location strongly recommended)
- [ ] If water leasing or water salvage is involved, attach a supplemental questionnaire (*https://myfwp.mt.gov/getRepositoryFile?objectID=36110*)

J. Attach support letters or statements of (e.g., landowner consent, community or public support). For FWP statement, attach provided template. List any other project partners:

Lolo National Forest, USFS, Trout Unlimited, WestSlope Chapter TU, and the private water users

III. MAINTENANCE AND MONITORING (attach additional information to end of application):

A. A 20-year maintenance commitment is required*. Please confirm that you will ensure this protection and describe your approach. Attach any relevant maintenance plans. Yes [X] No [ ]

**If it is a water leasing project, describe the length of the agreement.*

TU will work with the Lolo National Forest and water users on a 20-year maintenance commitment that will provide for maintenance of the fish screen and diversion site.

B. Will grazing be part of or adjacent to the project? If so, describe or attach land management plans, including short term and long-term grazing regimes. If the landowner is not the applicant, please describe their involvement in the project. *If you want assistance with grazing plan development, note your need.*

There is no grazing at the diversion site. The landowner is the Lolo National Forest. Lolo National Forest is an active partner in the project, supporting project planning and implementation.

C. Will the project be monitored to determine if goals were met? If so, what are the short-term and long-term plans to assess benefits and lessons learned? Were pre-project data collected? Will monitoring information be shared with FWP?

The project will be monitored by TU and project partners, including MFWP. Short-term monitoring by TU staff will ensure implementation of the project is completed according to design plans. Long-term fisheries monitoring by FWP will continue. Fish population estimates and bull trout redd count data will be used to assess project benefits on fish populations.

IV. PROJECT BENEFITS (attach additional information to end of application):

A. What species of fish will benefit from this project?

Primary fish species that will benefit from this project are the following migratory trout species. Native and wild salmonid species present in Ranch Creek:

- ESA-threatened bull trout
- Westslope cutthroat trout
- Mountain Whitefish
- brown trout
- brook trout
- rainbow trout

Ranch Creek also supports several species of native dace and sculpin that will benefit from the project.

B. How will the project protect or enhance wild fish habitat?

The project will reconnect fragmented habitat and reduce fish mortality caused by the current diversion by replacing existing diversion infrastructure and installing a Farmers Screen in the irrigation ditch. The diversion currently blocks downstream fish migration and causes fish entrainment and subsequent mortality in the irrigation ditch. Upgraded infrastructure will ensure safe fish passage for all age classes and eliminate entrainment of fish at the diversion site, improving fish populations in Ranch Creek and Rock Creek.

C. What is the expected improvement to fish populations, both short term and long term? How might the project translate to angler success?

Expected project benefits are both short and long term. Short term benefits include reconnection of 1.5 miles of spawning and rearing habitat and the elimination of entrainment and mortality of fish in the associated irrigation ditch. Keeping fish out of the ditch and reconnecting downstream migration pathways are expected to boost fish populations in the long term, benefiting Ranch Creek fish populations and promoting fish recruitment to downstream waterbodies of Rock Creek and the Clark Fork River. Improved fish populations are also expected to provide improved angling opportunities in the future.

D. Will the project increase public fishing opportunity for wild fish and, if so, how? Is public fishing allowed onsite? Is it allowed by permission? If not, describe how the public would benefit.

The Rock Creek watershed offers ample public access for fishing, with over 80% of the watershed in public USFS land ownership. Fishing opportunities are expected to increase as a result of the project which is aimed at improving fish populations in Rock Creek and Ranch Creek.

E. Aside from angling, what local or large-scale public benefits will be realized from this project?

Local benefits include improved water management for the water users on Gratton ditch. Other local benefits include: improved angling opportunities and improved water quality downstream by reducing sedimentation caused by current management of the existing irrigation diversion structure.

F. Will the project interfere with water or property rights of adjacent landowners? (explain):

The project will not interfere with property or water rights for adjacent landowners. The project does not change water use, but it should improve the water users ability to manage the diversion and delivery of Ranch Creek water.

G. Will the project result in the development of commercial recreational use on the site (including paid access)? Explain:

No.

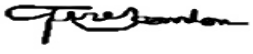
H. Is this project associated with the reclamation of past mining activity?

No.

Each approved project applicant must enter into a written agreement with Montana Fish, Wildlife & Parks specifying terms and duration of the project. The applicant must obtain all applicable permits prior to project construction. A competitive bid process must be followed when using State funds.

V. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature:  Date: 10/28/2024

Submittal: **Applications must be signed and received on or before November 15 and May 15 to be considered for the subsequent funding period**. Late or incomplete applications will be rejected.

Mail to:	FWP Future Fisheries Fish Habitat Bureau PO Box 200701 Helena, MT 59620-0701	Email:	Future Fisheries Coordinator (electronic submissions must be signed) For files over 10MB, use https://transfer.mt.gov and send to mmcgree@mt.gov

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

Both tables MUST be completed appropriately or the application will be invalid. Please see the example budget sheet for clarification.

PROJECT COSTS					GRANT REQUEST AND FUNDING			
Work Items (Itemize by Category)	**Number of Units**	**Unit Description***	**Cost/Unit**	**Total Cost**	**FUTURE FISHERIES REQUEST**	**Matching Contributions (Cash or In-Kind)*** **	**Other Contributions (Funds not used as match)**	**Total Funding**
**Units = feet, hours, cubic yards, etc. Do not use lump sum unless necessary.*								
Personnel								
Survey	1	LS	$6,400.00	$ 6,400.00			6,400.00	$ 6,400.00
Engineering & Design	1	LS	$14,600.00	$ 14,600.00			14,600.00	$ 14,600.00
Permitting	1	LS	$3,000.00	$ 3,000.00			3,000.00	$ 3,000.00
Oversight	1	LS	$10,000.00	$ 10,000.00			10,000.00	$ 10,000.00
Maintenance**			$0.00	$ -				$ -
			Sub-Total	$ 34,000.00	$ -	$ -	$ 34,000.00	$ 34,000.00
Travel								
Mileage	1800	mile	$0.67	$ 1,206.00			1,206.00	$ 1,206.00
Per diem	0		$0.00	$ -				$ -
			Sub-Total	$ 1,206.00		$ -	$ 1,206.00	$ 1,206.00
Construction Materials								
				$ -				$ -
			Sub-Total	$ -	$ -	$ -	$ -	$ -
Equipment, Labor, and Mobilization								
Mobilization and Demobilization	1	LS	$11,000.00	$ 11,000.00		10,000.00	1,000.00	$ 11,000.00
Construction Staking	1	LS	$4,000.00	$ 4,000.00			4,000.00	$ 4,000.00
Structure Excavation	1	LS	$4,000.00	$ 4,000.00			4,000.00	$ 4,000.00
Ditch Excavation	1	LS	$1,000.00	$ 1,000.00			1,000.00	$ 1,000.00
Furnish & Install Backfill	1	LS	$3,000.00	$ 3,000.00			3,000.00	$ 3,000.00
Furnish & Install Bedding Material	1	LS	$500.00	$ 500.00			500.00	$ 500.00
Furnish and Install Geotextile	1	LS	$1,000.00	$ 1,000.00			1,000.00	$ 1,000.00

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

Furnish and Install Riprap	1	LS	$1,000.00	$ 1,000.00			1,000.00	$ 1,000.00
Furnish and Install Farmers Screen and Appurtenances	1	LS	$37,500.00	$ 37,500.00	37,500.00			$ 37,500.00
Furnish and install 12" Fish Return Pipe	1	LS	$3,500.00	$ 3,500.00			3,500.00	$ 3,500.00
Seed and Mulch Disturbed areas	1	LS	$500.00	$ 1,000.00	-		1,000.00	$ 1,000.00
Furnish and Install 36" Diameter Rock	2	LS	$15,000.00	$ 30,000.00	30,000.00			$ 30,000.00
Furnish and Instsall EZ Ramp Flume	1	LS	$5,500.00	$ 5,500.00			5,500.00	$ 5,500.00
			Construction Sub-Total	$ 103,000.00	$ 67,500.00	$ 10,000.00	$ 20,000.00	$ 103,000.00
			Construction Contingency (20%)	*$ 20,600.00*			*$ 20,600.00*	*$ 20,600.00*
			OVERALL TOTALS	**$ 158,806.00**	$ 67,500.00	$ 10,000.00	$ 75,806.00	$ 158,806.00

OTHER REQUIREMENTS:

**For projects that include a maintenance request, it cannot exceed 10% of the total project cost.

***Match can include in-kind materials or labor. Justification for in-kind labor (e.g. hourly rates used) can be noted below. Do not use government salaries as match.

Additional budget detail: construction cost estimates are based on the cost estimates for design and construction from Great West Engineering. For this reason, lump sum costs are provided. Note: The difference between the GWE Budget for Construction and the above Construction Budget is the increased cost for an additional Rock-Step Structure that will be included in the final design plans.The preliminary design exhibit and cost estimate includes only 1 rock step structure. Since February when the preliminary design was completed, FWP fisheries biologist input on the design was to include a secondary rock-step structure at the diversion site to reduce the jump height for fish past the diversion structure. As such, the cost of the 2nd rock-step ithat will be incldued in the final design plans is reflected in the line item number 32, "furnish and install 36" dimater rock. This line item cost is double the original estimate for one rock-step from $15,000 to $30,000.

APPLICATION MATCHING CONTRIBUTIONS

Total should equal match listed above; do not include requested funds

CONTRIBUTOR	IN-KIND	CASH	TOTAL	Secured? (Y/N)
USFS	$ -	$ 10,000.00	$ 10,000.00	Y
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
TOTALS	$ -	$ 10,000.00	$ 10,000.00	

OTHER CONTRIBUTIONS

Total should equal other contributions listed above; these are funds not specically matched to the Future Fisheries application

CONTRIBUTOR	IN-KIND	CASH	TOTAL	Secured? (Y/N)
USFS	$ -	$ 63,806.00	$ 63,806.00	Y
WestSlope Chapter	$ -	$ 5,000.00	$ 5,000.00	Y
TU	$ -	$ 4,000.00	$ 4,000.00	Y
Private Donations	$ -	$ 3,000.00	$ 3,000.00	N
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
TOTALS	$ -	$ 75,806.00	$ 75,806.00	

MONTANA FISH, WILDLIFE & PARKS

Future Fisheries Improvement Program

Appendix: FWP Statement

Project Title: Gratton Diversion Ranch Creek Fish Passage Improvement Project

Please describe the potential impact of the project, including the priorities of the Fisheries Division and the importance to Montana's anglers.

To the FWP Future Fisheries Review Committee:

On behalf of Montana Fish Wildlife and Parks, please consider this statement as written confirmation of our full support of the proposed Ranch Creek Gratton Ditch Fish Passage Project, as well the Grant Application to the Montana Fish Wildlife and Parks Future Fisheries Improvement Program. Ranch Creek provides considerable ecological value. It offers essential spawning habitat for native westslope cutthroat trout and bull trout, and wild brown trout and rainbow trout. Evidence from recent Montana FWP studies shows that Ranch Creek is a source of juvenile westslope cutthroat trout recruitment to Rock Creek as well for fish from the Clark Fork River. Ranch Creek is also a valued recreational fishery offering publicly accessible angling opportunities.

The Gratton Ditch irrigation diversion infrastructure in lower Ranch Creek adversely affects fish passage and natural stream processes. The current diversion structure blocks migratory fish passage by entraining fish in the irrigation canal. A reduction in riparian vegetation and sedimentation at the diversion site affects water quality and aquatic and riparian habitat.

The proposed Gratton Ditch fish passage project on the Lolo National Forest will improve passage to ten miles of Ranch Creek and address disturbances to the natural stream channel. The proposed project to install a fish screen and build a rock diversion that mimics a natural channel step pool feature will improve fish passage and stabilize the channel morphology. The upgraded infrastructure will promote bank vegetation and reduce sediment loads that negatively impact fisheries and water quality.

This project will improve habitat conditions and connectivity between Rock Creek and spawning habitat in Ranch Creek for the benefit of native and wild fish populations in Ranch Creek and Rock Creek. The project will also provide improved recreational opportunities for anglers.

We encourage you to reach out to Brad Liermann, Rock Creek/Flint Creek Fisheries Biologist, Bradley.Liermann@mt.gov, 406-825-5525, as the primary contact person with any questions or concerns about this project.

Thank you very much for your consideration of this funding application for this important project and we look forward to its swift completion.

Name of FWP Biologist Brad Liermann Date: 10/28/24

Please attach to the FFIP application and materials and submit according to listed deadlines.

Trout Unlimited's FFIP Fall Cycle 2024 Proposal:

Gratton Diversion Ranch Creek Fish Passage Improvement Project

Project Map

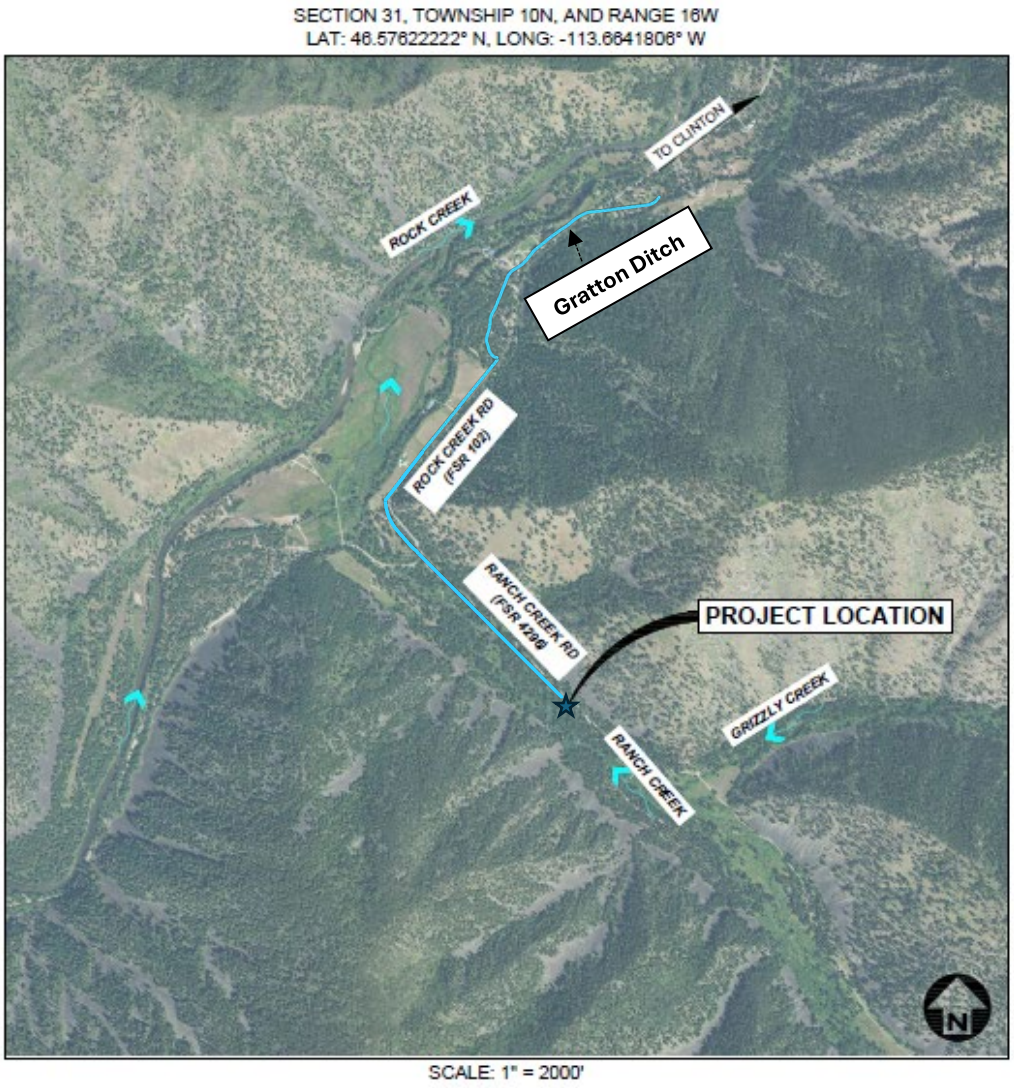


Figure 1. Project Map- Project is located on USFS Property.

Pre-Project Existing Conditions – Photos

Figure 2. Looking downstream at the Gratton Diversion and headgate on the right side of the channel. Photo taken June 2022. GPS Coordinates: 46.5759, -113.6639

Figure 3. Looking upstream at Ranch Creek during low flow conditions. Photo taken from the headgate at the Gratton Diversion in July 2022.

Figure 4. Headgate for the Gratton Irrigation Diversion ditch. Photo taken September 2022.

Pre-Project Existing Conditions – Photos Cont.

Figure 5. Gratton Ditch looking upstream at the headgate and Ranch Creek. Photo taken June 2022.

Figure 6. FWP Electrofishing the Gratton Ditch with TU staff in 2022.

Figure 6. Temporary ditch flow measurement flume installed in Gratton Ditch in 2022, flow measured at 1.5CFS

Additional Project Info – Screen Detail and Ranch Creek Hydrology

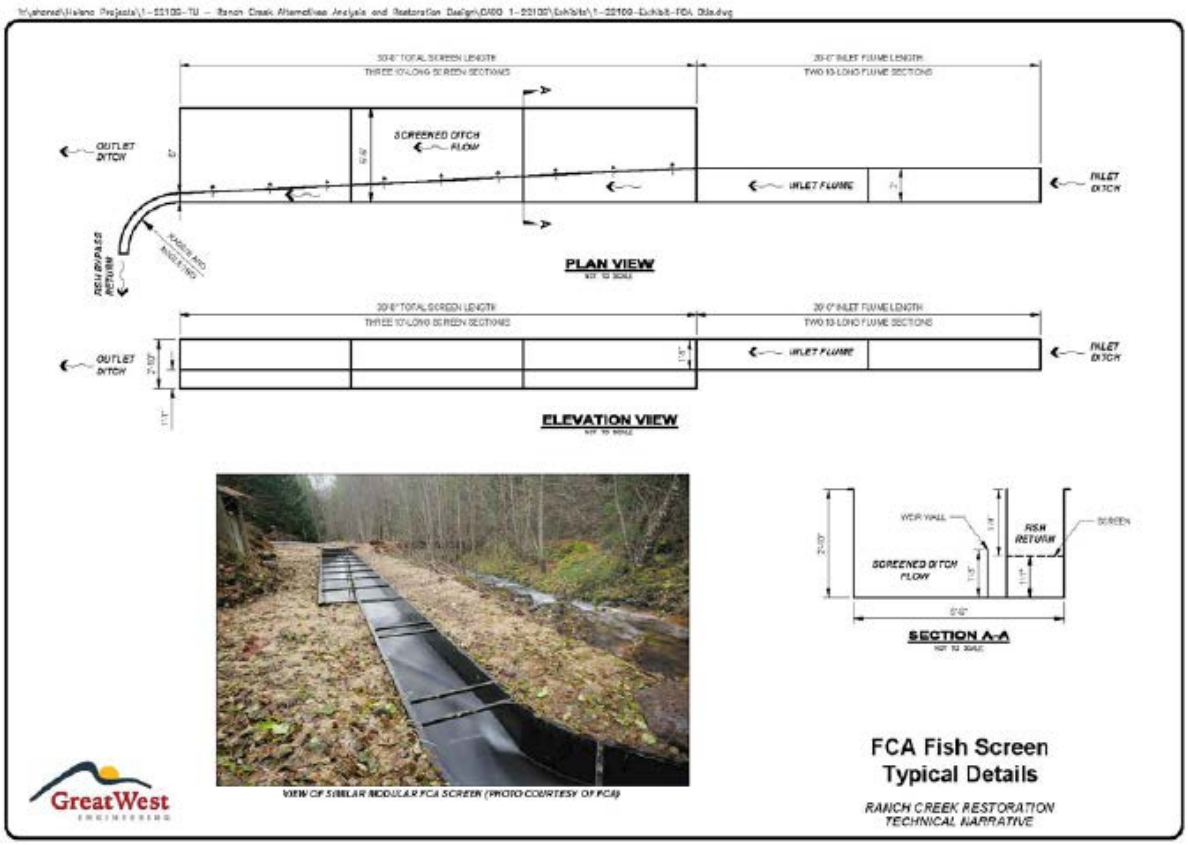


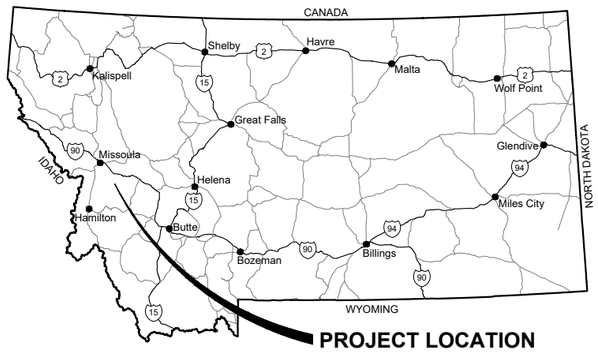
Figure 5. Farmers Conservation Alliance (FCA) Screen Details

Return Interval	Discharge (CFS)
2-Year	206
10-Year	419
25-Year	524
50-Year	613
100-Year	705
500-Year	912

Table 1. – Ranch Creek Hydrology

Preliminary Design* and Alternatives

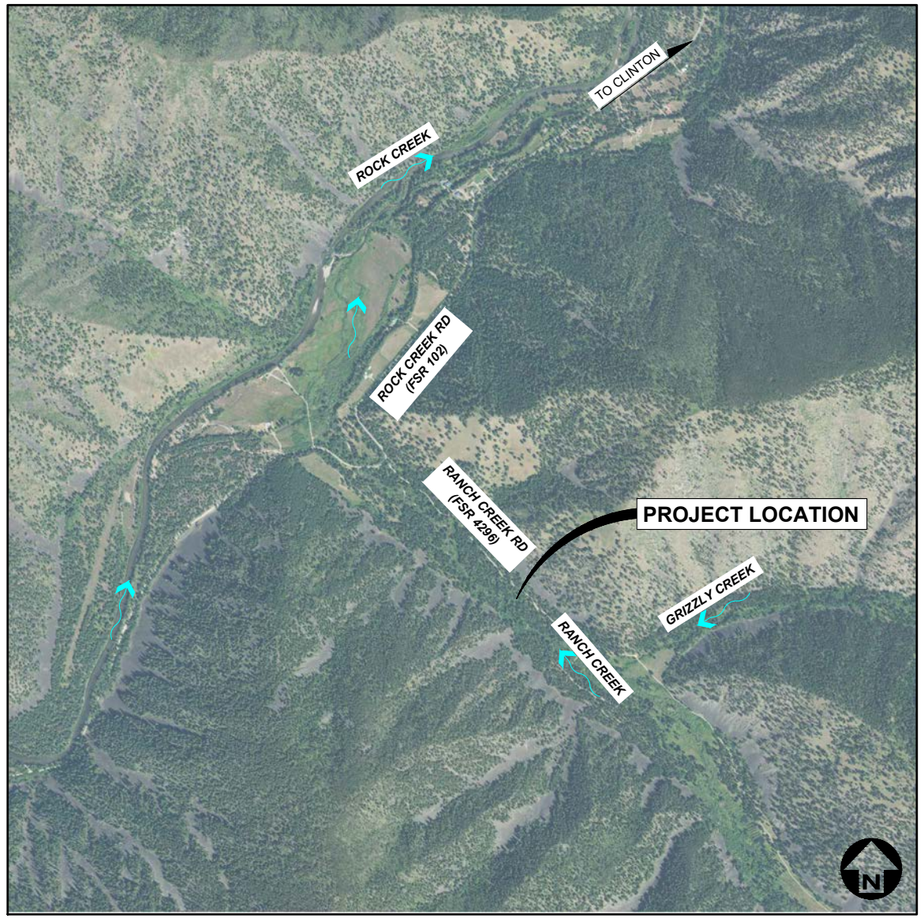
*FCA screen is the preferred alternative



TROUT UNLIMITED
RANCH CREEK FISH SCREEN

PRELIMINARY PLANS -
NOT FOR CONSTRUCTION

SECTION 31, TOWNSHIP 10N, AND RANGE 16W
LAT: 46.57622222° N, LONG: -113.6641806° W



SCALE: 1" = 2000'

SHEET INDEX

PROJECT: 1-22109

DATE: FEBRUARY 7, 2024

PLANS PREPARED FOR:

TROUT UNLIMITED

QA/QC BY:

RYAN ELLIOTT, P.E.
GREAT WEST ENGINEERING

DRAFT

PLANS PREPARED BY:

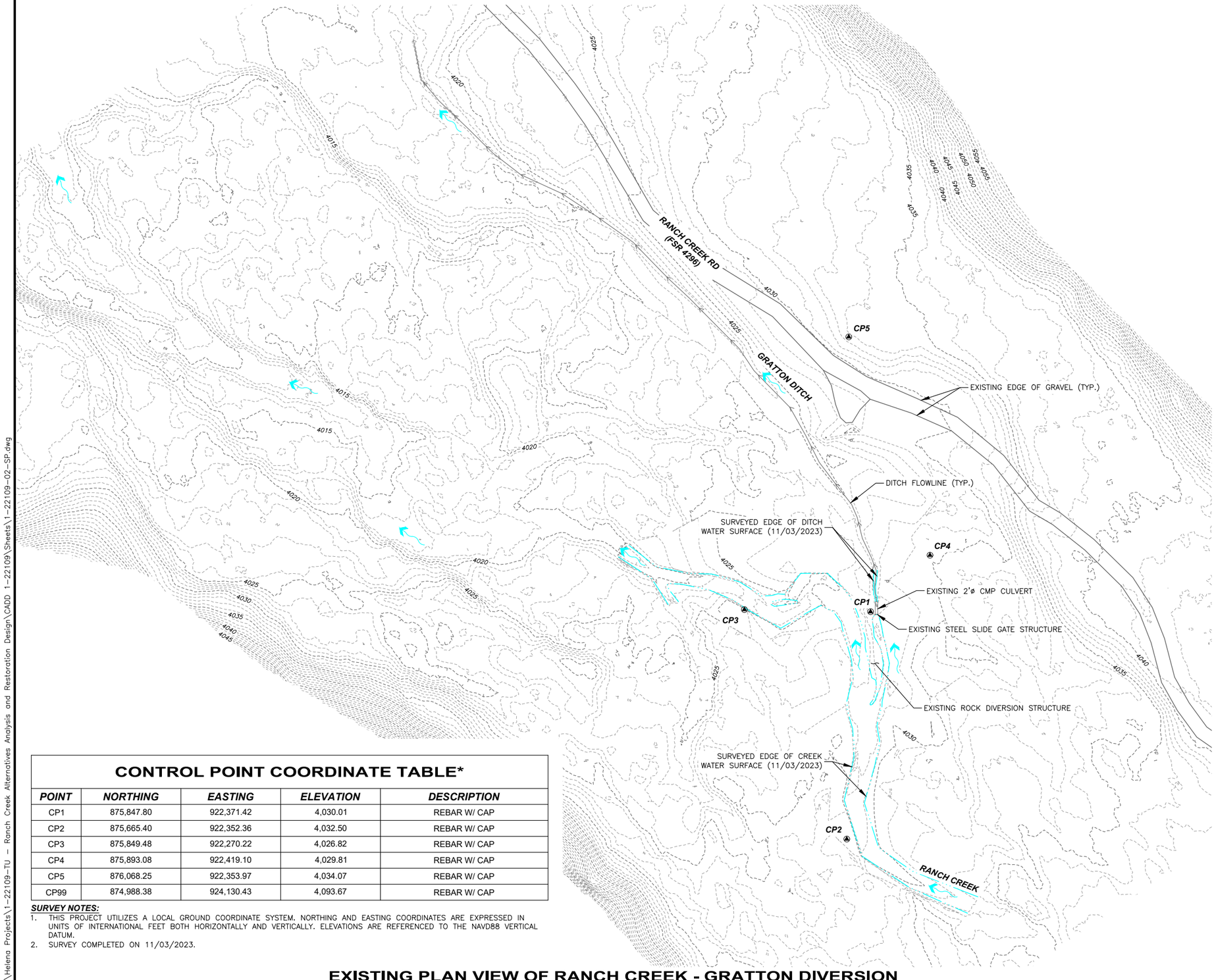
EVAN CARROLL, P.E.

GreatWest ENGINEERING
2501 BELT VIEW DRIVE
HELENA, MT 59601
(406)449-8627

NO.	REVISION DESCRIPTION	BY	DATE

SET NO.

SHEET NO.
1



CONTROL POINT COORDINATE TABLE*

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	875,847.80	922,371.42	4,030.01	REBAR W/ CAP
CP2	875,665.40	922,352.36	4,032.50	REBAR W/ CAP
CP3	875,849.48	922,270.22	4,026.82	REBAR W/ CAP
CP4	875,893.08	922,419.10	4,029.81	REBAR W/ CAP
CP5	876,068.25	922,353.97	4,034.07	REBAR W/ CAP
CP99	874,988.38	924,130.43	4,093.67	REBAR W/ CAP

SURVEY NOTES:

1. THIS PROJECT UTILIZES A LOCAL GROUND COORDINATE SYSTEM. NORTHING AND EASTING COORDINATES ARE EXPRESSED IN UNITS OF INTERNATIONAL FEET BOTH HORIZONTALLY AND VERTICALLY. ELEVATIONS ARE REFERENCED TO THE NAVD88 VERTICAL DATUM.
2. SURVEY COMPLETED ON 11/03/2023.

EXISTING PLAN VIEW OF RANCH CREEK - GRATTON DIVERSION

0 40 80
SCALE IN FEET

NORTH

PRELIMINARY DESIGN

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT: 1-22109
DESIGNED: EAC
DRAWN: EAC
CHECKED: ----
APPROVED: ----
DATE: FEBRUARY 7, 2024

RYAN ELLIS SLOPE
LICENSED PROFESSIONAL ENGINEER
MONTANA
DRAFT

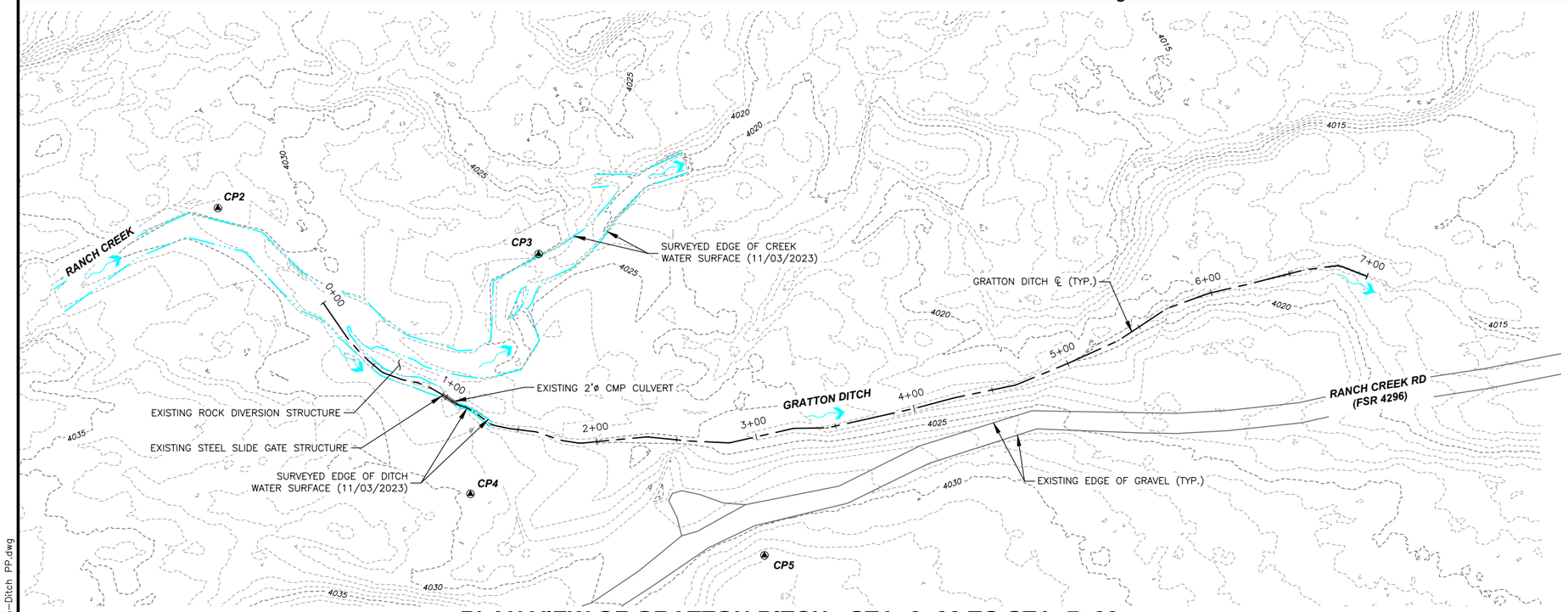
GreatWest ENGINEERING
2501 BELT VIEW DRIVE
HELENA, MT 59601
(406)449-8627

TROUT UNLIMITED

RANCH CREEK FISH SCREEN

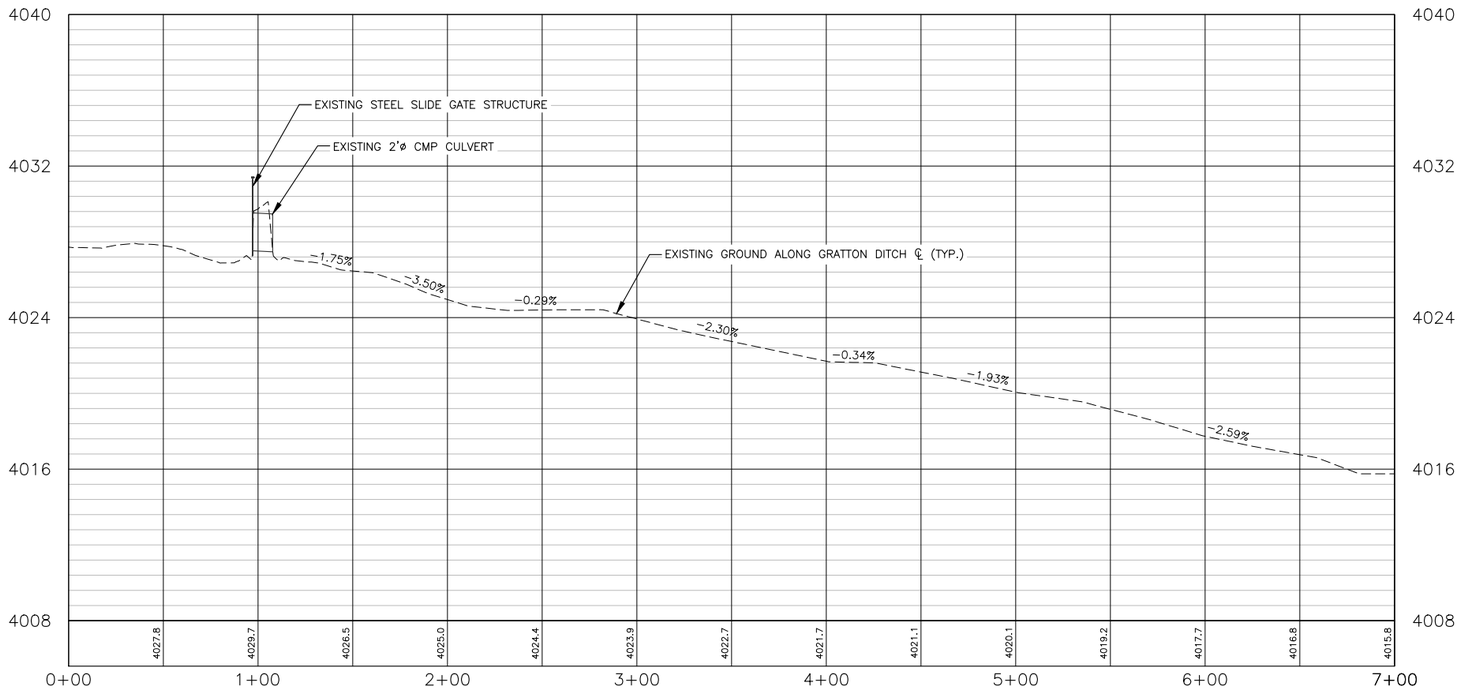
EXISTING SITE PLAN OF GRATTON DIVERSION & CONTROL DIAGRAM

SHEET NO.
2
OF 7



PLAN VIEW OF GRATTON DITCH - STA. 0+00 TO STA. 7+00

0 40 80
SCALE IN FEET



PROFILE VIEW OF GRATTON DITCH - STA. 0+00 TO STA. 7+00

HORIZONTAL SCALE: 1" = 80'
VERTICAL SCALE: 1" = 8'

PRELIMINARY DESIGN

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT: 1-22109
DESIGNED: EAC
DRAWN: EAC
CHECKED: ---
APPROVED: ---
DATE: FEBRUARY 7, 2024

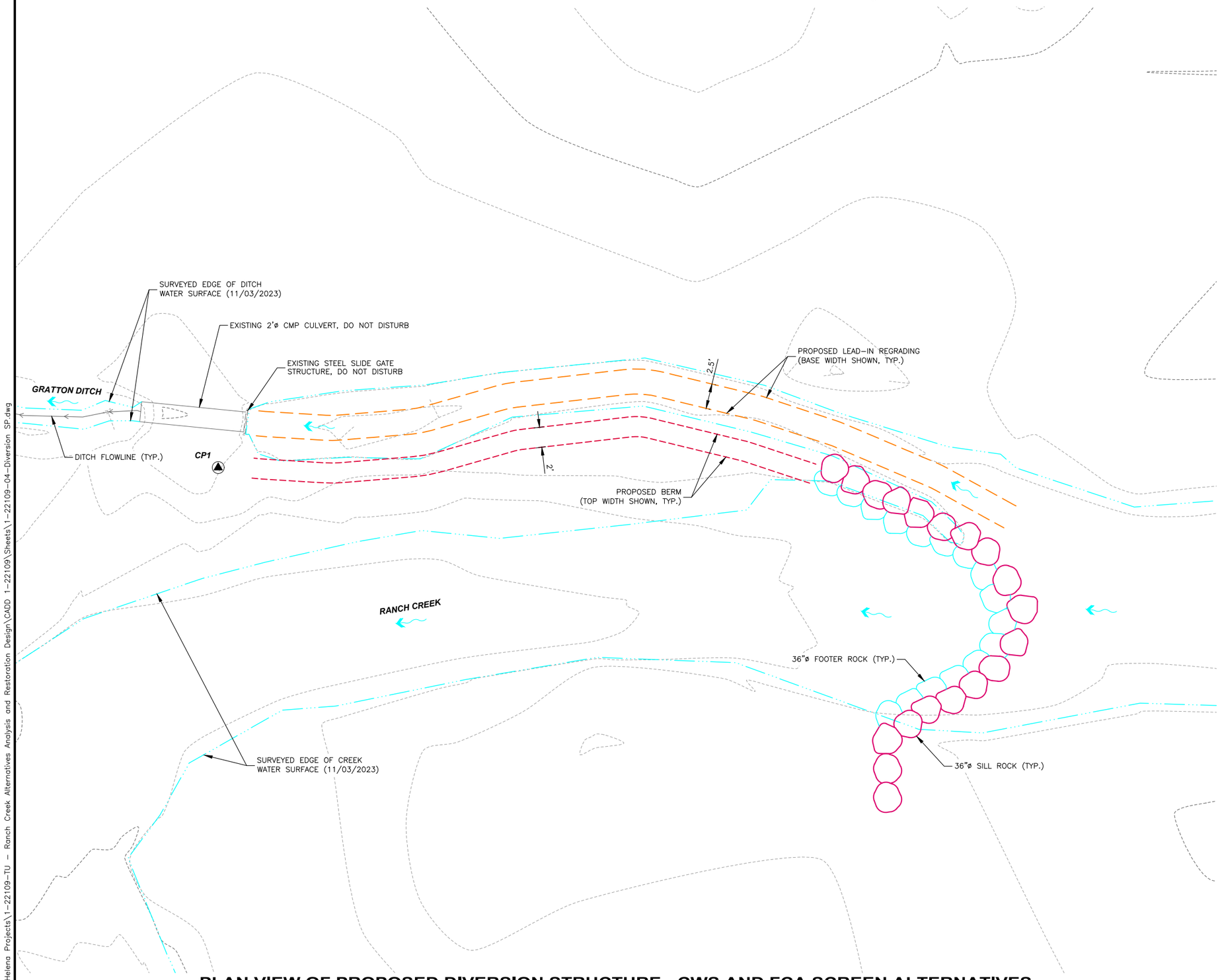
DRAFT
RYAN ELLIS SLOPE
MONTANA LICENSED PROFESSIONAL ENGINEER

GreatWest ENGINEERING
2501 BELT VIEW DRIVE
HELENA, MT 59601
(406) 449-8627

TROUT UNLIMITED
RANCH CREEK FISH SCREEN
GRATTON DITCH - EXISTING PLAN & PROFILE

SHEET NO.
3
OF 7

Y:\shared\Helena Projects\1-22109-TU - Ranch Creek Alternatives Analysis and Restoration Design\CADD 1-22109\Sheets\1-22109-03-Ditch PP.dwg



PLAN VIEW OF PROPOSED DIVERSION STRUCTURE - CWS AND FCA SCREEN ALTERNATIVES

0 5 10
SCALE IN FEET

PRELIMINARY DESIGN

NO.	REVISION DESCRIPTION	BY	DATE

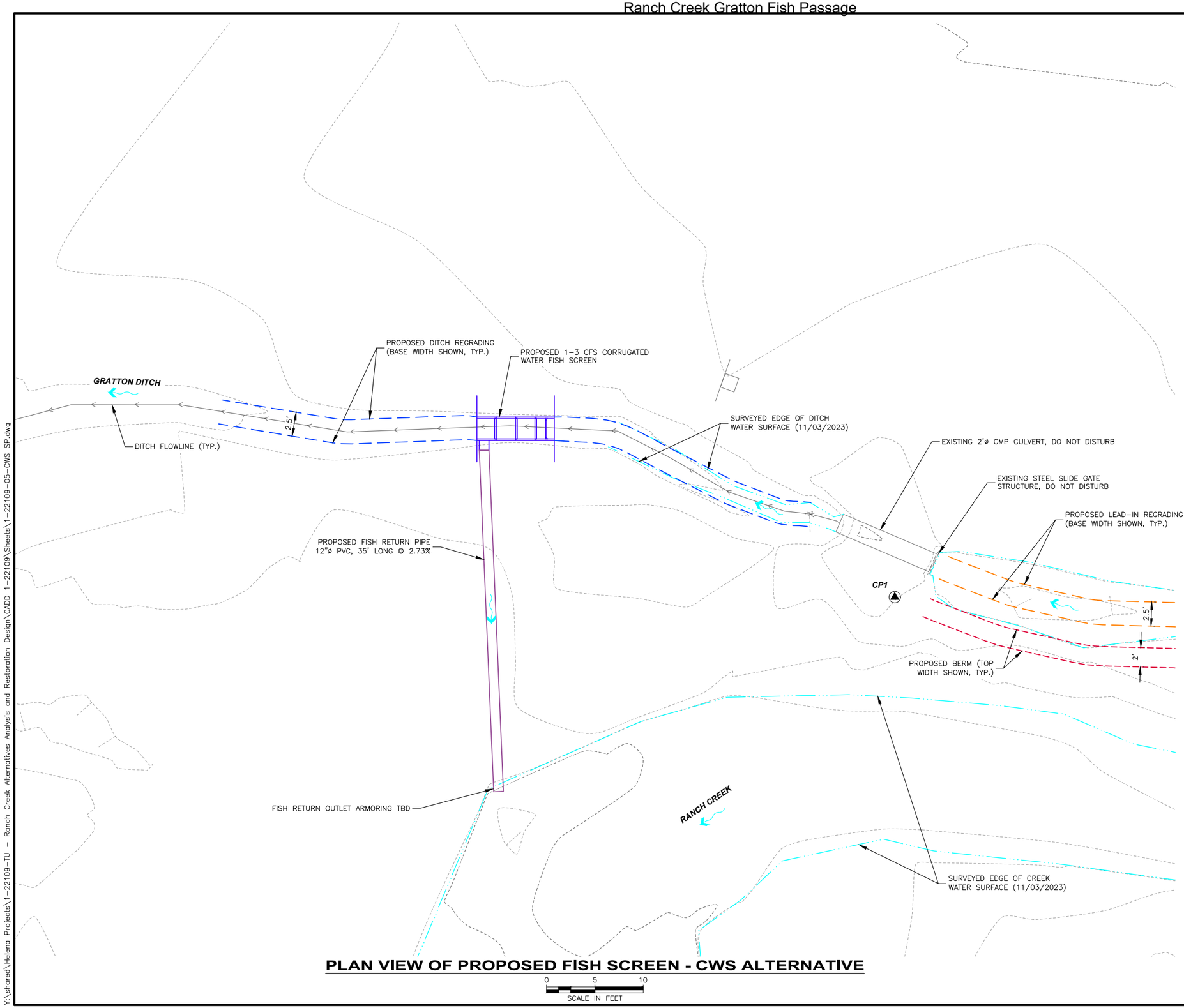
PROJECT: 1-22109
DESIGNED: EAC
DRAWN: EAC
CHECKED: ---
APPROVED: ---
DATE: FEBRUARY 7, 2024

DRAFT
RYAN ELLIOTT SLOPE
MONTANA LICENSED PROFESSIONAL ENGINEER

GreatWest ENGINEERING
2501 BELT VIEW DRIVE
HELENA, MT 59601
(406)449-8627

TROUT UNLIMITED
RANCH CREEK FISH SCREEN
PROPOSED DIVERSION STRUCTURE SITE PLAN

SHEET NO.
4
OF 7



PLAN VIEW OF PROPOSED FISH SCREEN - CWS ALTERNATIVE

0 5 10
SCALE IN FEET

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PRELIMINARY DESIGN

NO.	REVISION DESCRIPTION	BY	DATE

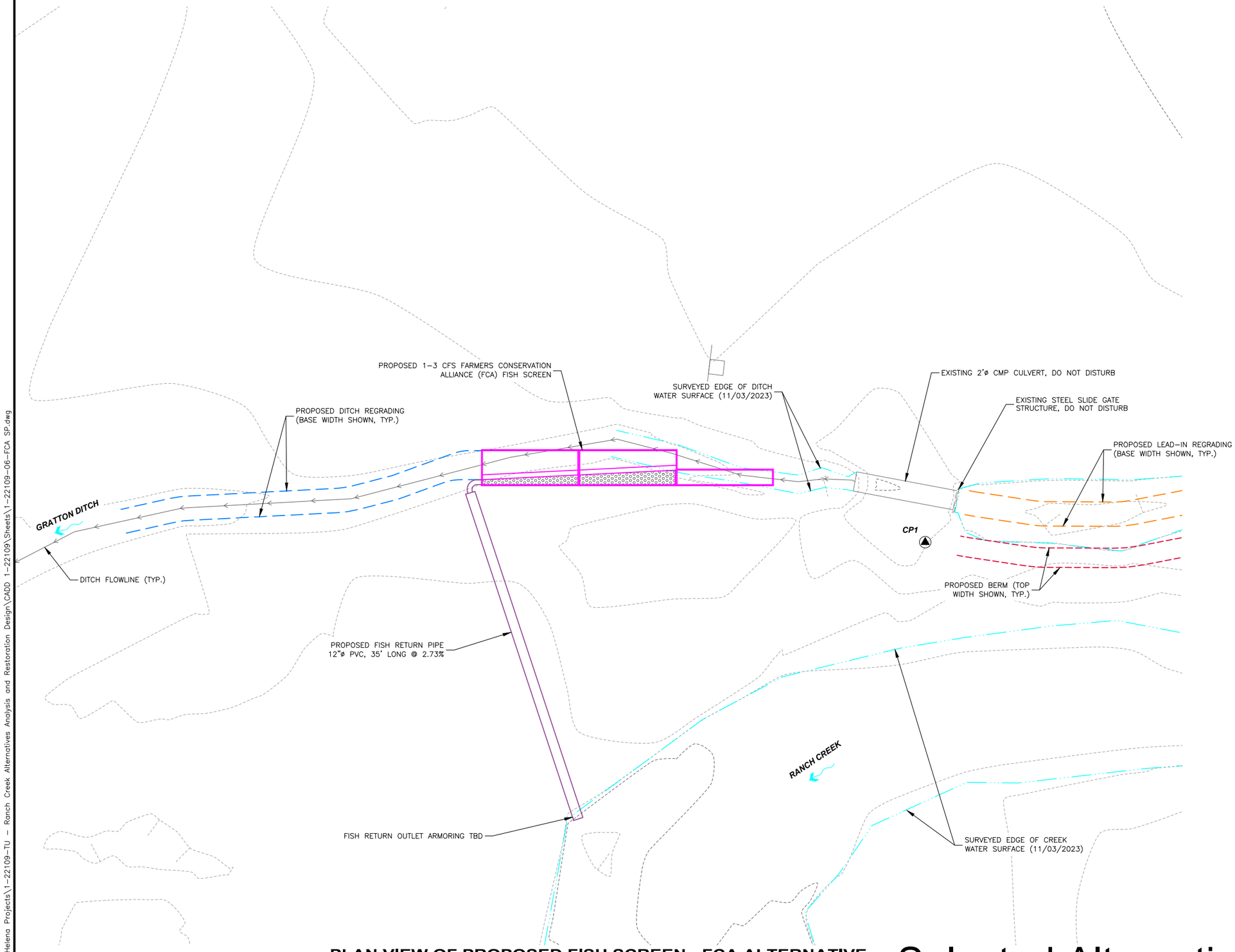
PROJECT: 1-22109
DESIGNED: EAC
DRAWN: EAC
CHECKED: ---
APPROVED: ---
DATE: FEBRUARY 7, 2024

DRAFT
MONTANA
RYAN
ELLIOTT
SLOPE
LICENSED
PROFESSIONAL ENGINEER

GreatWest ENGINEERING
2501 BELT VIEW DRIVE
HELENA, MT 59601
(406) 449-8627

TROUT UNLIMITED
RANCH CREEK FISH SCREEN
PROPOSED CORRUGATED WATER SCREEN PLAN

SHEET NO.
5
OF 7



PLAN VIEW OF PROPOSED FISH SCREEN - FCA ALTERNATIVE

0 5 10
SCALE IN FEET

Selected Alternative

PRELIMINARY DESIGN

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT: 1-22109
DESIGNED: EAC
DRAWN: EAC
CHECKED: ---
APPROVED: ---
DATE: FEBRUARY 7, 2024

DRAFT

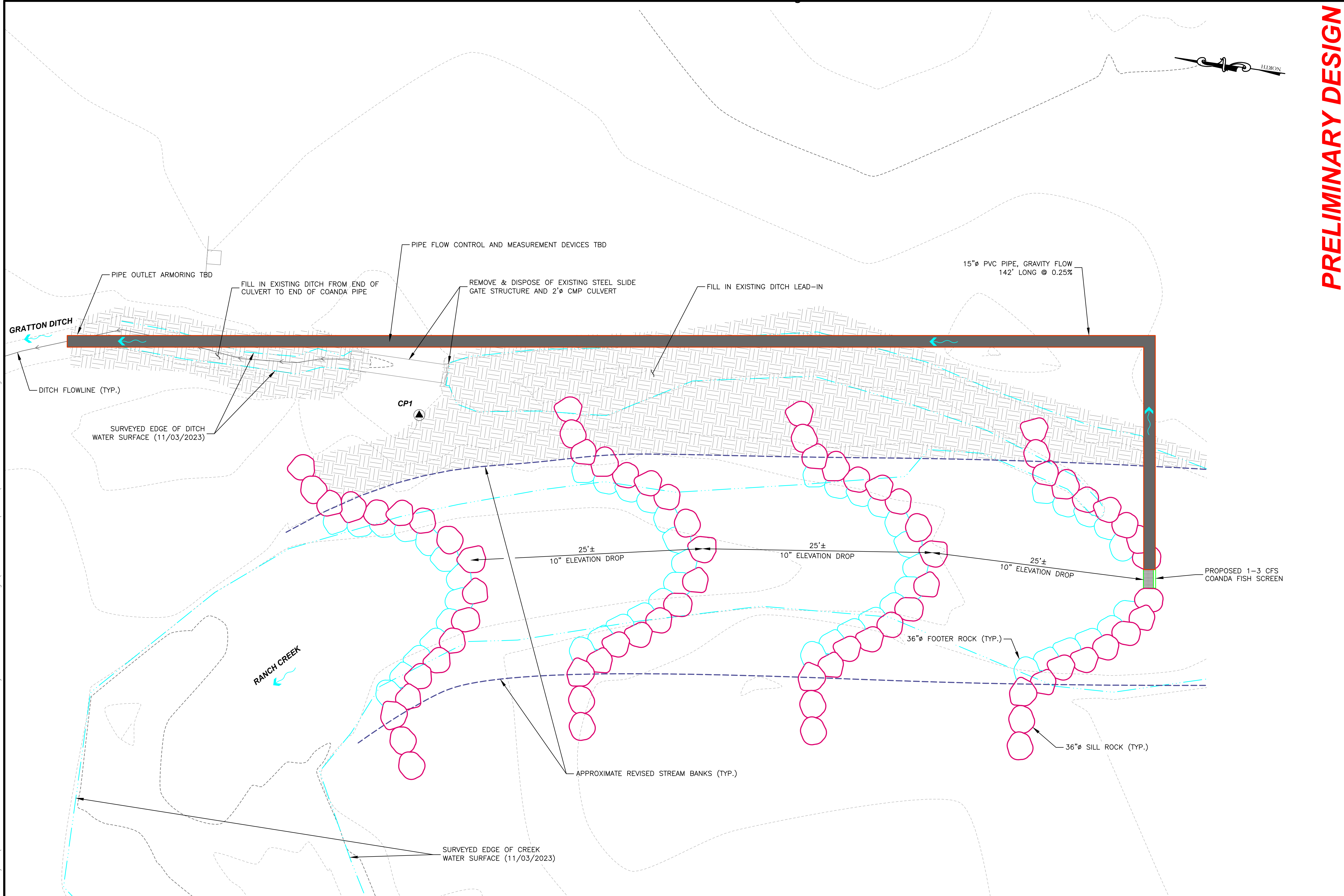
MONTANA RYAN ELLIOTT SLOPE LICENSED PROFESSIONAL ENGINEER

GreatWest ENGINEERING
2501 BELT VIEW DRIVE
HELENA, MT 59601
(406)449-8627

TROUT UNLIMITED
RANCH CREEK FISH SCREEN
PROPOSED FCA SCREEN PLAN

SHEET NO.
6
OF 7

Y:\shared\Helena Projects\1-22109-TU - Ranch Creek Alternatives Analysis and Restoration Design\CADD 1-22109\Sheets\1-22109-06-FCA SP.dwg


GRATTON DITCH
PIPE OUTLET ARMORING TBD
FILL IN EXISTING DITCH FROM END OF CULVERT TO END OF COANDA PIPE
PIPE FLOW CONTROL AND MEASUREMENT DEVICES TBD
REMOVE & DISPOSE OF EXISTING STEEL SLIDE GATE STRUCTURE AND 2'ø CMP CULVERT
FILL IN EXISTING DITCH LEAD–IN
15"ø PVC PIPE, GRAVITY FLOW 142' LONG @ 0.25%
DITCH FLOWLINE (TYP.)
CP1
SURVEYED EDGE OF DITCH WATER SURFACE (11/03/2023)
25'±
10" ELEVATION DROP
25'±
10" ELEVATION DROP
25'±
10" ELEVATION DROP
PROPOSED 1–3 CFS COANDA FISH SCREEN
36"ø FOOTER ROCK (TYP.)
RANCH CREEK
36"ø SILL ROCK (TYP.)
APPROXIMATE REVISED STREAM BANKS (TYP.)
SURVEYED EDGE OF CREEK WATER SURFACE (11/03/2023)
NORTH

PLAN VIEW OF PROPOSED DIVERSION STRUCTURE - COANDA ALTERNATIVE

0 5 10
SCALE IN FEET

PRELIMINARY DESIGN

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT: 1-22109
DESIGNED: EAC
DRAWN: EAC
CHECKED: ----
APPROVED: ----
DATE: FEBRUARY 7, 2024

DRAFT

GreatWest ENGINEERING
2501 BELT VIEW DRIVE
HELENA, MT 59601
(406)449-8627

TROUT UNLIMITED
RANCH CREEK FISH SCREEN
PROPOSED COANDA SCREEN & DIVERSION PLAN

SHEET NO.
7
OF 7

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GreatWest ENGINEERING

OPINION OF PROBABLE COST

Preliminary Submittal

PROJECT	DATE	
TU Ranch Creek Fish Screen	***2/6/2024***	
STRUCTURE	COUNTY	GWE PROJECT NO.
Rock Step Diversion Structure (CWS & FCA Alternatives)	***Granite***	***1-22109***

ITEM NO.	*DESCRIPTION*	*UNIT*	*QUANTITY*	*UNIT PRICE*	*AMOUNT*
1	Mobilization and Demobilization	Lump Sum	1	$2,500.00	$2,500.00
2	Construction Staking	Lump Sum	1	$1,500.00	$1,500.00
3	Furnish & Install 36" Diameter Rock	Lump Sum	1	$15,000.00	$15,000.00
4	Seed & Mulch Disturbed Areas	Lump Sum	1	$500.00	$500.00
				SUBTOTAL:	**$19,500.00**
				CONTINGENCY (20%):	**$3,900.00**
				TOTAL:	**$23,400.00**

GreatWest ENGINEERING

OPINION OF PROBABLE COST

Preliminary Submittal

PROJECT	DATE	
TU Ranch Creek Fish Screen	***2/6/2024***	
STRUCTURE	COUNTY	GWE PROJECT NO.
1-3 CFS Farmers Conservation Alliance (FCA) Fish Screen	***Granite***	***1-22109***

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Mobilization and Demobilization	Lump Sum	1	$8,500.00	$8,500.00
2	Construction Staking	Lump Sum	1	$2,500.00	$2,500.00
3	Structure Excavation	Lump Sum	1	$4,000.00	$4,000.00
4	Ditch Excavation	Lump Sum	1	$1,000.00	$1,000.00
5	Furnish & Install 3"-Minus Structural Backfill Material	Lump Sum	1	$3,000.00	$3,000.00
6	Furnish & Install 1"-Minus Bedding Material	Lump Sum	1	$500.00	$500.00
7	Furnish & Install Non-Woven Separation Geotextile	Lump Sum	1	$1,000.00	$1,000.00
8	Furnish & Install Class I Riprap	Lump Sum	1	$1,000.00	$1,000.00
9	Furnish & Install FCA Screens & Appurtenances	Lump Sum	1	$37,500.00	$37,500.00
10	Furnish & Install 12" Dia. PIP (Fish Return Pipe)	Lump Sum	1	$3,500.00	$3,500.00
11	Seed & Mulch Disturbed Areas	Lump Sum	1	$500.00	$500.00
				SUBTOTAL:	**$63,000.00**

OPTION ITEMS

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
12	Furnish & Install EZ Ramp Steel Modular Ramp Flume	Lump Sum	1	$5,500.00	$5,500.00
				SUBTOTAL:	**$5,500.00**
				CONTINGENCY (20%):	**$13,700.00**
				TOTAL:	**$82,200.00**

Letters of Support

MONTANA FISH, WILDLIFE & PARKS

Future Fisheries Improvement Program

Appendix: FWP Statement

Project Title: Gratton Diversion Ranch Creek Fish Passage Improvement Project

Please describe the potential impact of the project, including the priorities of the Fisheries Division and the importance to Montana's anglers.

To the FWP Future Fisheries Review Committee:

On behalf of Montana Fish Wildlife and Parks, please consider this statement as written confirmation of our full support of the proposed Ranch Creek Gratton Ditch Fish Passage Project, as well the Grant Application to the Montana Fish Wildlife and Parks Future Fisheries Improvement Program. Ranch Creek provides considerable ecological value. It offers essential spawning habitat for native westslope cutthroat trout and bull trout, and wild brown trout and rainbow trout. Evidence from recent Montana FWP studies shows that Ranch Creek is a source of juvenile westslope cutthroat trout recruitment to Rock Creek as well for fish from the Clark Fork River. Ranch Creek is also a valued recreational fishery offering publicly accessible angling opportunities.

The Gratton Ditch irrigation diversion infrastructure in lower Ranch Creek adversely affects fish passage and natural stream processes. The current diversion structure blocks migratory fish passage by entraining fish in the irrigation canal. A reduction in riparian vegetation and sedimentation at the diversion site affects water quality and aquatic and riparian habitat.

The proposed Gratton Ditch fish passage project on the Lolo National Forest will improve passage to ten miles of Ranch Creek and address disturbances to the natural stream channel. The proposed project to install a fish screen and build a rock diversion that mimics a natural channel step pool feature will improve fish passage and stabilize the channel morphology. The upgraded infrastructure will promote bank vegetation and reduce sediment loads that negatively impact fisheries and water quality.

This project will improve habitat conditions and connectivity between Rock Creek and spawning habitat in Ranch Creek for the benefit of native and wild fish populations in Ranch Creek and Rock Creek. The project will also provide improved recreational opportunities for anglers.

We encourage you to reach out to Brad Liermann, Rock Creek/Flint Creek Fisheries Biologist, Bradley.Liermann@mt.gov, 406-825-5525, as the primary contact person with any questions or concerns about this project.

Thank you very much for your consideration of this funding application for this important project and we look forward to its swift completion.

Name of FWP Biologist Brad Liermann Date: 10/28/24

Please attach to the FFIP application and materials and submit according to listed deadlines.

November 12, 2024

Future Fisheries Improvement Program
c/o Michelle McGree
Montana Fish, Wildlife & Parks
P.O. Box 200701
1420 E. 6th Avenue
Helena, MT 59620-0701

RE: Trout Unlimited Funding Request for Ranch Creek Diversion Fish Passage Project

Dear Panel Members:

Please accept this letter as the Lolo National Forest's support and endorsement of Trout Unlimited's application for funding to implement the Ranch Creek Gratton Diversion Fish Passage Project. Ranch Creek is a major tributary to lower Rock Creek that drains more than 40 square miles of roadless national forest lands and is designated critical spawning habitat for ESA-listed threatened Bull trout by the US Fish and Wildlife Service. The fishery is comprised of both fluvial and resident bull trout, westslope cutthroat trout, wild rainbow trout, brook trout, brown trout, and other non-game fish.

Montana FWP has documented the diversion to capture juvenile and resident adults of bull trout and westslope cutthroat trout, among other fish. The structure also impacts natural stream function, bank erosion rates, and reduces riparian vegetation. Water withdrawals are difficult to control, leading to excessive ditch flow and reduced stream baseflow. The proposed project would remedy these impacts while also assisting the water right holders in maintaining historic water use.

The Lolo National Forest, LNF, has secured $325,000 to assist our partnership effort with Trout Unlimited towards stream rehabilitation efforts in Ranch Creek in support of healthy aquatic habitat and fishery. Addressing this diversion structure is a priority project identified in our Rock Creek Watershed Restoration Action Plan and would ensure fish passage and eliminate fish loss down the ditch. Overall, the project will provide benefits to the blue-ribbon trout fishery and angling opportunities in both Ranch Creek and Rock Creek. The Lolo National Forest is committed to helping support funding and implementation of this project.

We really appreciate your consideration,

Sincerely,

/s/ Traci Sylte

Traci L. Sylte, PE/hydrologist
Watershed Program Manager
Lolo National Forest

/s/ Josh Schulze

Josh Schulze, Fisheries Biologist
Fisheries Program Manager
Lolo National Forest

The RCPA was established in 1974. Its mission is to preserve and protect Rock Creek's environment and its community. Our membership projects focus on communication and emergency preparedness, safety, and service.

Rock Creek Protective Association
P.O. Box 235
Clinton, MT 59825

November 13, 2024

Montana Fish, Wildlife and Parks
Future Fisheries Improvement Program

Dear Future Fisheries Review Panel,

I am writing on behalf of the Rock Creek Protective Association (RCPA). We are a neighborhood organization with approximately 100-member households. The mission of the RCPA is "to preserve and protect Rock Creek's environment and its community." As Rock Creek residents, we are fortunate in that we can enjoy the natural beauty, fish, and wildlife that is so abundant in this mountain valley.

We are collectively saddened to learn that when the head gate of the Gratton Irrigation Ditch off Ranch Creek was recently closed, it left hundreds of small trout (including bull trout) that had entered the ditch high and dry. We would like to make sure this issue is addressed. We support Trout Unlimited's Future Fisheries Improvement Program proposal for the Ranch Creek Fish Passage Project to reconstruct the existing diversion structure in Ranch Creek and install a fish screen on the Gratton Ditch. The neighborhood has worked with Trout Unlimited on fisheries-related projects in the past, and we believe TU can be trusted with the design, construction, and management of this project.

If there is a place for the RCPA and its members to partner with TU and help with any volunteer maintenance or clearing of a newly constructed fish screen, we hope that Trout Unlimited will reach out to us.

Please consider supporting their proposal for funding on this project.

On behalf of the RCPA and its members,

Daniel Minelli, Board President

Board Members: Linden Beegle, Jerry Breindel, George Brooker, Lynn Farmer, Ingrid Johnson-Evavold, John Kane, Peter Maul, Jim Rolando, Stephen Speckart, Joe York

November 12, 2024

Montana Fish, Wildlife & Parks
Fisheries Division
Future Fisheries Improvement Program
1420 E. Sixth Ave.
P.O. Box 200701
Helena, MT 59620-0701

Dear Future Fisheries Review Panel:

I am landowner in Rock Creek with Ranch Creek water rights. My family has owned our property for over 40 years. We enjoy the wildlife viewing and angling opportunities that exist outside our back door in Rock Creek, and we want to help preserve the habitat that supports the diversity of fish and wildlife that live here.

We support Trout Unlimited's Future Fisheries Improvement Program grant application for the Ranch Creek Fish Passage Project. We have water rights and use the water from the Gratton Ditch to feed our fish and wildlife pond and for fire suppression. It is important to us that we retain our right to use water from the ditch and that we also do right by the fish by keeping them out of the ditch and in the creek. We think that TU's project to rebuild the existing Gratton ditch diversion structure in Ranch Creek and to install a fish screen on the Gratton Irrigation ditch is a good way to protect the fishery by preventing fish from entrapment in the ditch in the future.

Please consider supporting this funding proposal.

Thank you,

Colin Hall

Colin Hall

Ranch Creek Ranch
1099 Rock Creek Road
Clinton, MT 59825

Montana Fish, Wildlife and Parks
Future Fisheries Improvement Program

Dear Future Fisheries Review Panel,

I am a Rock Creek resident, and I also help to maintain the Gratton Irrigation Ditch off Ranch Creek in lower Rock Creek. One of the benefits of being a landowner in Rock Creek is that we get to enjoy the natural beauty and fish and wildlife that are abundant in the area. Because of this, there is a long history of community led conservation efforts to preserve the resources in this valley.

We support Trout Unlimited's Future Fisheries Improvement Program proposal for the Ranch Creek Fish Passage Project to reconstruct the existing diversion structure in Ranch Creek and install a fish screen on the Gratton Ditch. TU has coordinated with the water users and landowners on the ditch to garner support for the project, and we believe it is necessary in order to protect the fishery in Ranch Creek and ensure fish are prevented from getting caught in the irrigation ditch in the future.

This year after the irrigation season, we shut down the ditch and found hundreds of fish in it, including several bull trout. It's a shame this happens, and we would like to make sure this issue is addressed. We have worked with TU on other projects to improve the fishery in the past. We think they will do a good job making sure the design and construction are well managed, so that the project successfully keeps fish in the creek and out of the ditch for years to come.

Please consider supporting TU's proposal for funding support for this project.

Thank you,

Joseph and Debra Peltier

Deb Peltier
Rock Creek Trout Bums
824 Rock Creek Road
Clinton, MT 59825

WestSlope Chapter
Trout Unlimited

November 13, 2024

Future Fisheries Review Panel:

The WestSlope Chapter of Trout Unlimited partnered with Trout Unlimited National to establish the Rock Creek Restoration Program in 2018. The WestSlope Chapter's grassroots program gives chapter members and local volunteers, who care deeply about the landscape and recreation opportunities to participate in fisheries restoration and natural resource conservation. We work with TU staff and others to support activities that conserve resources and help sustain the fish populations in Rock Creek future anglers to enjoy.

The Ranch Creek Fish Passage Project is another exciting opportunity for the WestSlope Chapter to elevate our reputation as a leader in conservation and increase membership and engagement. With support from the Future Fisheries Improvement Program, the Chapter board will coordinate with TU staff to grassroots engagement and public outreach for volunteer planting opportunities at the restored site.

The project also provides WestSlope Chapter opportunities to support restoration of fish passage on public lands in Rock Creek for the benefit of the fishery and anglers alike. Focused outreach about the Ranch Creek Fish Passage Project and our Chapter's Rock Creek Restoration Program will burnish our brand and demonstrate our influence as a Chapter that "gets things done".

For these reasons, we are excited to support this project. We hope the Future Fisheries Review Panel considers funding this project proposal.

Sincerely,

Brandon Dwyer
President, WestSlope Chapter Trout Unlimited