FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION

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

I. APPLICANT INFORMATION

A. Applicant Name: Clark Fork Coalition

Mailing Address: PO Box 7593

City: Missoula State: MT Zip: 59807

Telephone: (406) 542-0539 E-mail: andy@clarkfork.org

B. Contact Person (if different than applicant): Andy Fischer

Address: Same as above

City: State: Zip:

Telephone: (406) 552-7513 E-mail: andy@clarkfork.org

C. Landowner and/or Lessee Name (if different than applicant): Kohrs Manning Ditch Company

Mailing Address: 1340 Freeze Out Lane

City: Deer Lodge State: MT Zip: 59722

Telephone: Available upon request E-mail: None

II. PROJECT INFORMATION

A. Project Name: Kohrs Manning Diversion Project

River, stream, or lake: Upper Clark Fork River

Location: Township: 8N Range: 9W Section: 33

Latitude: 46.401113 Longitude: -112.742280 *Within project (decimal degrees)*

County: Powell

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

The purpose of the project is to restore fish and recreational passage at the Kohrs Manning Diversion through the replacement of their Clark Fork River and Cottonwood Creek diversions. The project also involves reducing fish entrainment risks by screening the Clark Fork River diversion with an ISI cone screen. The project will benefit primarily westslope cutthroat and brown trout.

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

This project is part of a larger effort in partnership with Trout Unlimited and the Natural Resource Damage Program that began in 2018 to address fish and recreational passage at 8 locations on the mainstem Clark Fork River between Deer Lodge and Warm Springs. To date 5 diversions upstream of the Kohrs Manning Diversion have been addressed and this 6th project will open 12 miles of upstream passage.

The Kohrs Manning Diversion project is located on the Clark Fork River in Deer Lodge, MT and intersects Cottonwood Creek a short distance down the ditch. The Cottonwood Creek diversion dam is a full-spanning pin-and-plank style timber weir dam that blocks all upstream fish passage when it is in use. Metal supports are manually raised seasonally (May-October) to support check boards that form a dam approximately 2 feet high across the entire creek. The Clark Fork River diversion is a rock push up dam that can be a seasonal fish and recreation barrier. The Clark Fork River supplies most of the irrigation water and also presents an entrainment risk to fish.

This project involves replacing the existing Clark Fork diversion structure with a rock ramp diversion and installing an ISI cone screen at the diversion intake. The ditch crossing at Cottonwood Creek will be replaced with a metal pipe or flume over top of the creek and the diversion on Cottonwood Creek will be rebuilt a short distance upstream and accommodate fish passage. The goals of the project are to 1) improve fish passage, 2) prevent entrainment. This project will benefit trout moving upstream and downstream to cold water refuges and reduce the severity of dewatering at this location.

Construction is scheduled for fall of 2025 depending on permitting timelines and contractor availability. Due to state and federal funding, NEPA, Section 106 and 404 permits are all required.

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

The diversion on Cottonwood Creek is a complete fish passage and recreational barrier and the Clark Fork River diversion is a partial barrier. The ditch also entrains fish from the Clark Fork River and Cottonwood Creek. These issues will be corrected by 1) replacing and screening the Clark Fork River diversion and 2) piping a section of open ditch over the creek (eliminating a passage barrier) and 3) moving the Cottonwood Creek diversion upstream. Although the new Cottonwood Creek diversion will remain unscreened, it is expected to only contribute to a small proportion of the diverted flow and could be screened at a future point in time.

E. Length of stream or size of lake that will be treated (project extent): 600 ft

Length/size of impact, if larger than project extent (e.g., stream miles opened): 12 Miles

F. Project Budget Summary:

Grant Request (Dollars):	**$**	**75,000**
Matching Dollars:	**$**	**1,300,000**
Matching In-Kind Services:*	**$**	**0**

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

Other Contributions (not part of this app)	**$**	**349,195**
Total Project Cost:	**$**	**1,724,195**

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

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

[X] Extent of the project, including context (relation to major landmark or town)

[X] 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:

FWP and landowner letters of support attached.

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	No
X	

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

The landowners will sign a 20-year agreement outlining how the new diversion will be operated and the project benefits will be maintained. The Natural Resource Damage Program through their operations and maintenance program for the Upper Clark Fork fish screens will monitor performance of the fish screen and provide maintenance and cleaning as needed.

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.*

Grazing is not a project component.

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?

Post project streamflow and temperature monitoring will occur. In addition, post-project surveys will be conducted to ensure the project was installed according to the design specs and standards.

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

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

Westslope cutthroat trout and brown trout. This section of the Clark Fork River is also listed as critical habitat for bull trout, although their abundance in this section of the river is quite low and FWP surveys have not detected bull trout in Cottonwood Creek.

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

Cottonwood Creek is the most upstream consistent recruitment source for westslope cutthroat trout to the Upper Clark Fork River according to FWP. Numerous upstream fish passage projects have been completed in Cottonwood Creek and this project has been identified as the highest priority project remaining for fish passage. The project will remove a major fish passage barrier in the Upper Clark Fork River and prevent fish entrainment by screening the primary intake on the ditch. Once removed westslope cutthroat in the river will be able to successfully out migrate to the Clark Fork River without being entrained in a ditch and move upstream from the river to more favorable more favorable habitat in Cottonwood Creek during certain times of the year.

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

FWP data suggests that this project will increase recruitment of both brown trout and cutthroat trout to the Clark Fork River in a section of river where recruitment is limited. Fish will benefit from improved passage upstream and downstream during the summer drought periods when they move to cold water refuges in nearby tributaries such as Cottonwood Creek. Fish populations will also benefit from lower entrainment risks in the ditch due to screening and less chance of mortality due to improved water flows in the river.

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 project is located on public land (City and Federal) that is accessible to the public and adjacent to a popular campground in Deer Lodge. Anglers and floaters will gain better access to a section of river that presents a major recreational barrier and safety concern when the diversion dam is in operation. Plans are being developed by the City of Deer Lodge to eventually improve the area near the diversion into a City Park. Grant Kohrs Ranch National Historic Site has a primitive nature trail along Cottonwood Creek in the project area that is accessible to anglers as well. This project should improve angling opportunities in the vicinity due to improved fish recruitment into the river.

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

The proposed improvements to the Kohrs Manning Diversions will improve public safety for floaters in the Clark Fork River, enhance habitat conditions and recruitment of native fish and support the agricultural economy. This section of river is a popular recreational stretch through the city of Deer Lodge and will benefit from improved public safety at the diversion (more gradual drop), especially given there is a campground located immediately upstream and plans to develop a city park near the diversion. Preventing entrainment at the Clark Fork diversion and improving fish passage at Cottonwood Creek will also improve recruitment for native fish by preventing them from getting stuck in the ditch and allowing them to access high quality upstream habitat. Removing the fish passage barrier/diversion on Cottonwood Creek will also improve habitat conditions within this reach and allow for the establishment of riparian vegetation at the confluence with the Clark Fork River. The project will also improve water security for the Kohrs Manning Ditch Company and support agriculture by ensuring there are not disruptions to their irrigation supply because of aging, worn-out infrastructure.

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

No. All property owners adjacent to the project are involved and supportive of the project. There are also no other immediately adjacent irrigation diversions that will be impacted and there are no proposed changes to the water rights other than filing a notice of the new point of diversion 150' upstream on Cottonwood Creek (DNRC form 644 Notice of Replacement Point of Diversion).

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?

Future remediation efforts will not impact the project. The project is located in the Clark Fork River Operable Unit and this location has not been remediated. Contamination sampling is being conducted by the engineer to determine if removal of contaminated soils will be necessary at any locations where stream bank disturbance will occur. Stream bank disturbance will be minimized and will be contained primarily to the ~300' of streambank where the rock weirs/rip rap for the diversion are being installed. Any contaminated material will be hauled off site to the ARCO repository in Opportunity in coordination with DEQ. This will ensure that when future remediation occurs at this location, the diversion can be left in place.

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: 5/15/2024

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 FWPFFIP@mt.gov (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	122	HR	$100.00	$ 12,200.00			12,200.00	$ 12,200.00
Design	352	HR	$180.00	$ 63,370.00			63,370.00	$ 63,370.00
Engineering	417	HR	$180.00	$ 75,000.00			75,000.00	$ 75,000.00
Permitting	306	HR	$180.00	$ 55,000.00		55,000.00		$ 55,000.00
Oversight and Project Management	862	HR	$87.00	$ 75,000.00			75,000.00	$ 75,000.00
Maintenance**	53	HR	$76.00	$ 4,000.00		4,000.00		$ 4,000.00
			Sub-Total	$ 284,570.00	$ -	$ 59,000.00	$ 225,570.00	$ 284,570.00
Travel								
Mileage	4000	EA	$0.70	$ 2,800.00			2,800.00	$ 2,800.00
Per diem				$ -				$ -
			Sub-Total	$ 2,800.00		$ -	$ 2,800.00	$ 2,800.00
Construction Materials								
Rock Ramp	1650	CY	$150.00	$ 247,500.00		247,500.00		$ 247,500.00
Riprap Bank	362	CY	$100.00	$ 36,200.00		36,200.00		$ 36,200.00
Buried Cutoff Liner	100	LF	$100.00	$ 10,000.00		10,000.00		$ 10,000.00
Concrete Intake Structure	165	CY	$1,500.00	$ 247,500.00		247,500.00		$ 247,500.00
3' Headgates	2	EA	$14,000.00	$ 28,000.00		28,000.00		$ 28,000.00
3' Sluice Pipe	50	LF	$250.00	$ 12,500.00		12,500.00		$ 12,500.00
10' Diameter ISI Cone Screen	1	LS	$75,000.00	$ 75,000.00	75,000.00			$ 75,000.00
Log Grate	1	LS	$25,000.00	$25,000.00		25,000.00		$ 25,000.00
3' Ditch intake Gates	2	EA	$14,000.00	$ 28,000.00		28,000.00		$ 28,000.00
3' Ditch intake Pipes	60	LF	$250.00	$ 15,000.00		15,000.00		$ 15,000.00
Articulated Concrete Block Armor	600	SF	$30.00	$ 18,000.00		18,000.00		$ 18,000.00
Walkway	140	SF	$200.00	$ 28,000.00		28,000.00		$ 28,000.00
Handrail	140	SF	$200.00	$ 28,000.00		28,000.00		$ 28,000.00

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

Roughened Riffle Materials	180	CY	$150.00	$ 27,000.00		27,000.00		$ 27,000.00
Rip Rap (Cottonwood)	180	CY	$100.00	$ 18,000.00		18,000.00		$ 18,000.00
Metal intake structure	1	LS	$15,000.00	$ 15,000.00		15,000.00		$ 15,000.00
2' Headgates	2	EA	$10,000.00	$ 20,000.00		20,000.00		$ 20,000.00
2' Intake Pipes	40	LF	$200.00	$ 8,000.00		8,000.00		$ 8,000.00
4' Steel Pipe	140	LF	$1,500.00	$ 210,000.00		130,175.00	79,825.00	$ 210,000.00
Pipe Retaining Walls	2	EA	$10,000.00	$ 20,000.00			20,000.00	$ 20,000.00
Buried Concrete Anchors	6	EA	$1,500.00	$ 9,000.00			9,000.00	$ 9,000.00
			Sub-Total	$ 1,125,700.00	$ 75,000.00	$ 941,875.00	$ 108,825.00	$ 1,125,700.00
Equipment, Labor, and Mobilization								
Mobilzation and Bonding	1	LS	$100,000.00	$ 100,000.00		100,000.00		$ 100,000.00
Temporary Access Road	450	LF	$35.00	$ 15,750.00		15,750.00		$ 15,750.00
CFR Temporary Bypass Channel	1860	CY	$25.00	$ 46,500.00		46,500.00		$ 46,500.00
CFR Temporary Coffer Dam	2	EA	$5,000.00	$ 10,000.00		10,000.00		$ 10,000.00
Demolition and Removal	1	LS	$5,000.00	$ 5,000.00		5,000.00		$ 5,000.00
Site Restoration	1	LS	$15,000.00	$ 15,000.00		15,000.00		$ 15,000.00
Rock Ramp Earthwork	1500	CY	$10.00	$ 15,000.00		15,000.00		$ 15,000.00
Cone Screen Installation	1	LS	$50,000.00	$ 50,000.00		50,000.00		$ 50,000.00
Power Supply	1	LS	$20,000.00	$ 20,000.00		20,000.00		$ 20,000.00
Feeder Ditch Earthwork	1200	CY	$10.00	$ 12,000.00			12,000.00	$ 12,000.00
CC Temporary Bypass Channel	675	CY	$25.00	$ 16,875.00		16,875.00		$ 16,875.00
CC Coffer Dam	2	EA	$2,500.00	$ 5,000.00		5,000.00		$ 5,000.00
			Sub-Total	$ 311,125.00	$ -	$ 299,125.00	$ 12,000.00	$ 311,125.00
			OVERALL TOTALS	$ 1,724,195.00	$ 75,000.00	$ 1,300,000.00	$ 349,195.00	$ 1,724,195.00

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

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:

APPLICATION MATCHING CONTRIBUTIONS

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

CONTRIBUTOR	IN-KIND	CASH	TOTAL	Secured? (Y/N)
USFWS Fish Passage Funding	$ -	$ 1,300,000.00	$ 1,300,000.00	Y
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
TOTALS	$ -	$ 1,300,000.00	$ 1,300,000.00	

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)
State of MT, DOJ, Natural Resource Damage Program	$ -	$ 269,195.00	$ 269,195.00	Y
Resources Legacy Fund, Open Rivers Fund	$ -	$ 80,000.00	$ 80,000.00	Y
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
TOTALS	$ -	$ 349,195.00	$ 349,195.00	

MONTANA FISH, WILDLIFE & PARKS

Future Fisheries Improvement Program

Appendix: FWP Statement

Project Title: Kohrs-Manning Diversion Project

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

The Upper Clark Fork River fishery is supported primarily by brown trout with a smaller component of westslope cutthroat trout. Westslope cutthroat trout do not become abundant enough to provide a fishery until reaches downstream of Deer Lodge, at which point they make up about 10% of the fishery depending on the reach and the flow conditions over the previous few years. Both the brown trout and westslope cutthroat trout fisheries are impacted by entrainment into irrigation infrastructure, including at the Kohrs-Manning diversion. Entrainment of westslope cutthroat trout is especially concerning due to the limited number of tributaries that support recruitment of westslope cutthroat trout to the river.

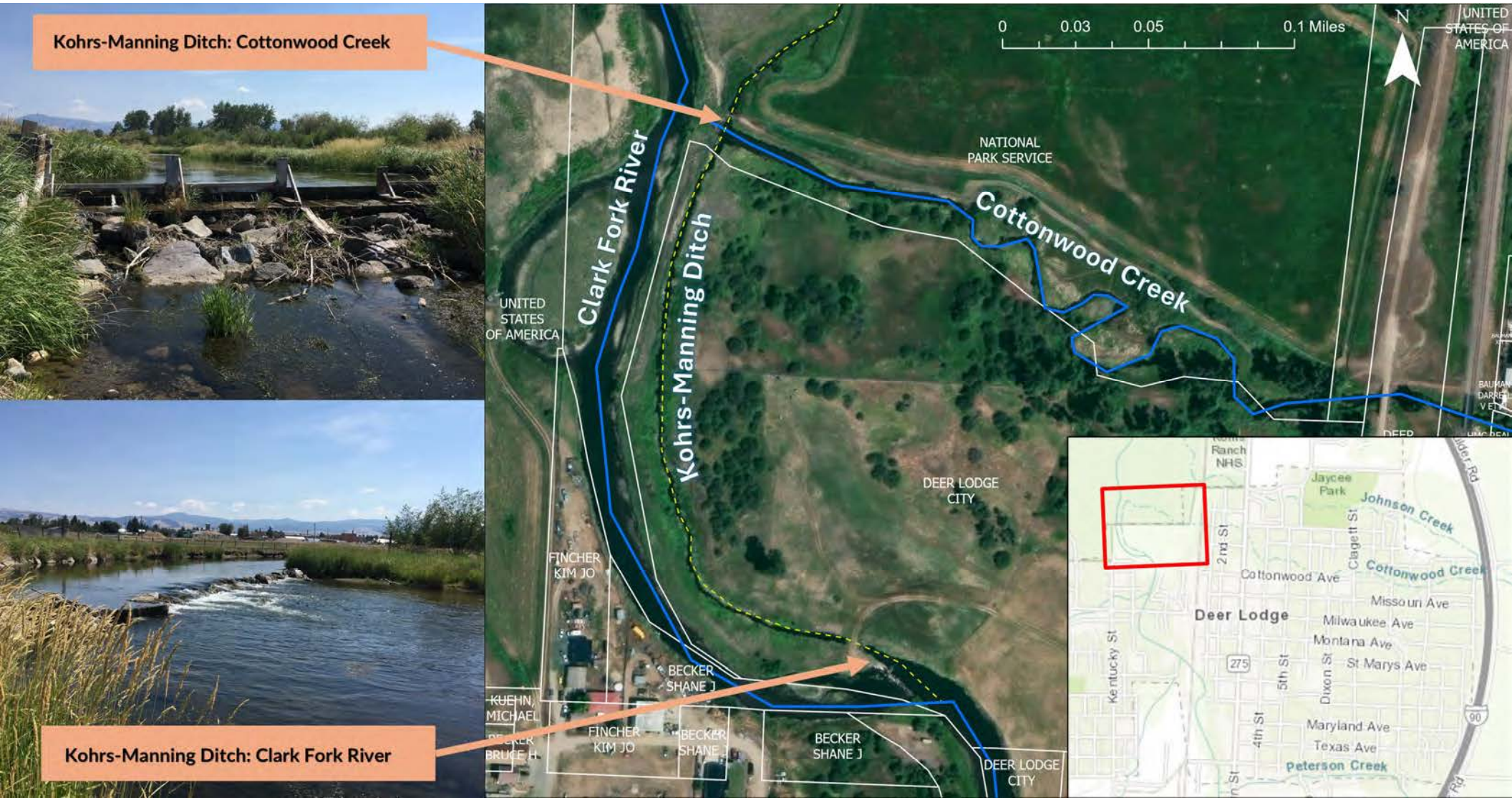
Cottonwood Creek is the most upstream source of consistent recruitment of westslope cutthroat trout to the river. However, the productivity of Cottonwood Creek for cutthroat is severely diminished by passage barriers and entrainment. Numerous studies conducted by FWP, including a 2022-2024 PIT tagging study, have highlighted this issue. Many of the prominent fish barriers and entrainment points within the drainage have been addressed through an investment of over $1,000,000 by the Natural Resource Damage Program into numerous projects throughout the drainage. However, the Kohrs-Manning diversion on the Clark Fork River and the Kohrs-Manning ditch crossing/diversion at the mouth of Cottonwood Creek remain as the top priority to address for FWP in the drainage. The current configuration of the diversion and ditch causes a full barrier to upstream movement of trout into Cottonwood Creek at most flows, a heavy entrainment risk for cutthroat and brown trout coming out of Cottonwood Creek, and an entrainment risk for trout in the Clark Fork River. Without completing this project, the rest of the projects completed in the drainage will not be able to realize full potential and Cottonwood Creek will continue to produce far fewer trout for the Clark Fork River than it could.

The Kohrs-Manning Diversion project is a multifaceted project that will address entrainment at multiple locations for brown trout and cutthroat trout and a barrier to migrating fish at the mouth of Cottonwood Creek. FWP data suggests this project will increase recruitment of both brown trout and cutthroat trout to the Clark Fork River in a section of the river where recruitment is limited. There is consistent angling pressure in this section of the Clark Fork River and additional recruitment will be beneficial to population size and stability. With these benefits to native species and Montana anglers in mind, I urge you to consider this funding request. Please feel free to reach out with any questions or concerns as you evaluate this project for funding.

Caleb Uerling
Montana Fish, Wildlife and Parks
Fisheries Biologist - Upper Clark Fork River
caleb.uerling@mt.gov 406-493-2694

Name of FWP Biologist _____ Date: _____

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


Kohrs-Manning Ditch: Cottonwood Creek
Kohrs-Manning Ditch: Clark Fork River
0 0.03 0.05 0.1 Miles
N
UNITED STATES OF AMERICA
NATIONAL PARK SERVICE
Clark Fork River
Kohrs-Manning Ditch
Cottonwood Creek
DEER LODGE CITY
FINCHER KIM JO
BECKER SHANE J
KUEHN, MICHAEL
BECKER BRUCE H.
Deer Lodge
Johnson Creek
Cottonwood Creek
Missouri Ave
Milwaukee Ave
Montana Ave
St Marys Ave
Maryland Ave
Texas Ave
Peterson Creek
Cottonwood Ave
Kentucky St
2nd St
4th St
5th St
Dixon St
Clagett St
Jaycee Park
275
90

May 12, 2025

ATTN: FWP Future Fisheries Review Committee

RE: Letter of Support for Kohr-Manning Diversion Project

To whom it may concern:

This letter is written in support of the "Kohrs Manning Diversion Project" grant application submitted to the FWP Future Fisheries Program by the ***Clark Fork Coalition*** (CFC) in partnership with the Montana Department of Justice Natural Resource Damage Program (NRDP) and Trout Unlimited (TU) to replace the irrigation diversion infrastructure and improve fish passage in the Upper Clark Fork Basin (UCF) of western Montana. The project involves screening and improving the Kohrs Manning Clark Fork River diversion and relocating the Cottonwood Creek diversion.

I am a landowner and shareholder of the Kohrs-Manning Ditch Company. I support this FWP Future Fisheries grant proposal and will work with CFC, NRDP, TU and contractors to access this site and look forward to working with these partners on implementing this important project.

Sincerely,

Dave Cahoon — 5/12/2025

Signature — Date

Kohrs-Manning Ditch Co.

Name or Entity

2532 Freezeout Lane

Address

May 12, 2025

ATTN: FWP Future Fisheries Review Committee

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Sincerely,

Signature

5/12/25
Date

Name or Entity

Address

May 12, 2025

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Sincerely,

Signature

5-12-25
Date

Kohrs Manning Ditch
Name or Entity

1340 Freemont Lane
Address

United States Department of the Interior

NATIONAL PARK SERVICE
266 Warren Lane
Grant-Kohrs Ranch National Historic Site
Deer Lodge, Montana 59722

A22 (7.B.)

May 7, 2025

Montana Fish Wildlife and Parks
Future Fisheries Improvement Program

Dear FWP Future Fisheries Review Committee:

On behalf of Grant-Kohrs Ranch National Historic Site, I am writing to share how the Kohrs Manning Diversion Project grant application submitted by the Clark Fork Coalition aligns with Grant-Kohrs Ranch's goals to protect our resources.

We are landowners and water right holders that irrigate from the Kohrs-Manning Diversion. This project will replace irrigation diversion infrastructure and improve fish passage in the Upper Clark Fork Basin of western Montana. This project involves screening and improving the Kohrs Manning Clark Fork River diversion and the Cottonwood Creek diversion. This project will be completed in coordination with National Park Service staff.

Once again thank you for your consideration of the Kohrs Manning Diversion Project grant application.

Sincerely,

MCKENZIE NOVAK

Digitally signed by MCKENZIE NOVAK
Date: 2025.05.07 13:33:55 -06'00'

McKenzie Novak
Natural Resource Manager

NATURAL RESOURCE DAMAGE PROGRAM
KOHRS MANNING DIVERSION IMPROVEMENTS
POWELL COUNTY, MONTANA

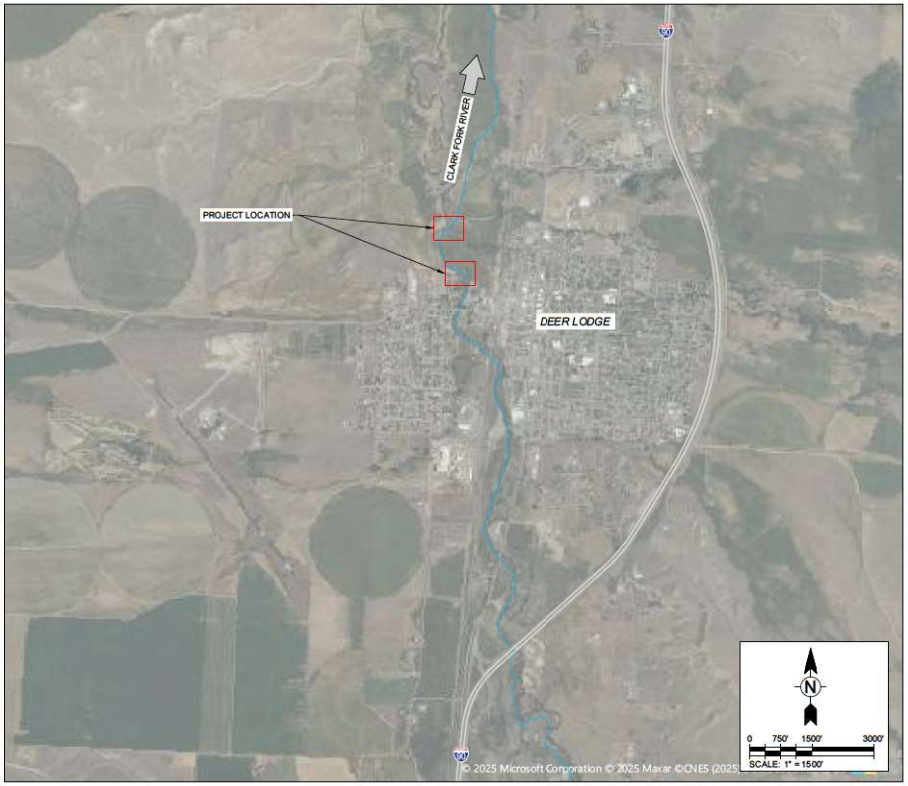
825 W. Custer Ave.
Helena, Montana 59602
PHONE: 406-443-4210 FAX: 406-442-7182
www.tetratech.com

TETRA TECH

PREPARED FOR:

NATURAL RESOURCE DAMAGE PROGRAM
MONTANA DEPARTMENT OF JUSTICE

SHEET INDEX



DRAFT
NOT FOR CONSTRUCTION

PROJECT LOCATION:
CLARK FORK RIVER AT DEER LODGE
POWELL COUNTY, MONTANA

CLIENT INFORMATION:
NATURAL RESOURCE DAMAGE PROGRAM
1720 9TH AVE.
HELENA, MONTANA 59601

Tt PROJECT No.:
117-002166-24006

CLIENT PROJECT No.:
400034,T012

PROJECT DESCRIPTION / NOTES:

PROJECT GOALS INCLUDE IMPROVEMENTS TO DIVERSION STABILITY, FISH PASSAGE, ELIMINATION OF FISH ENTRAINMENT, COTTONWOOD CREEK CONNECTIVITY, AND REDUCTION IN IRRIGATION OPERATION DEMANDS.

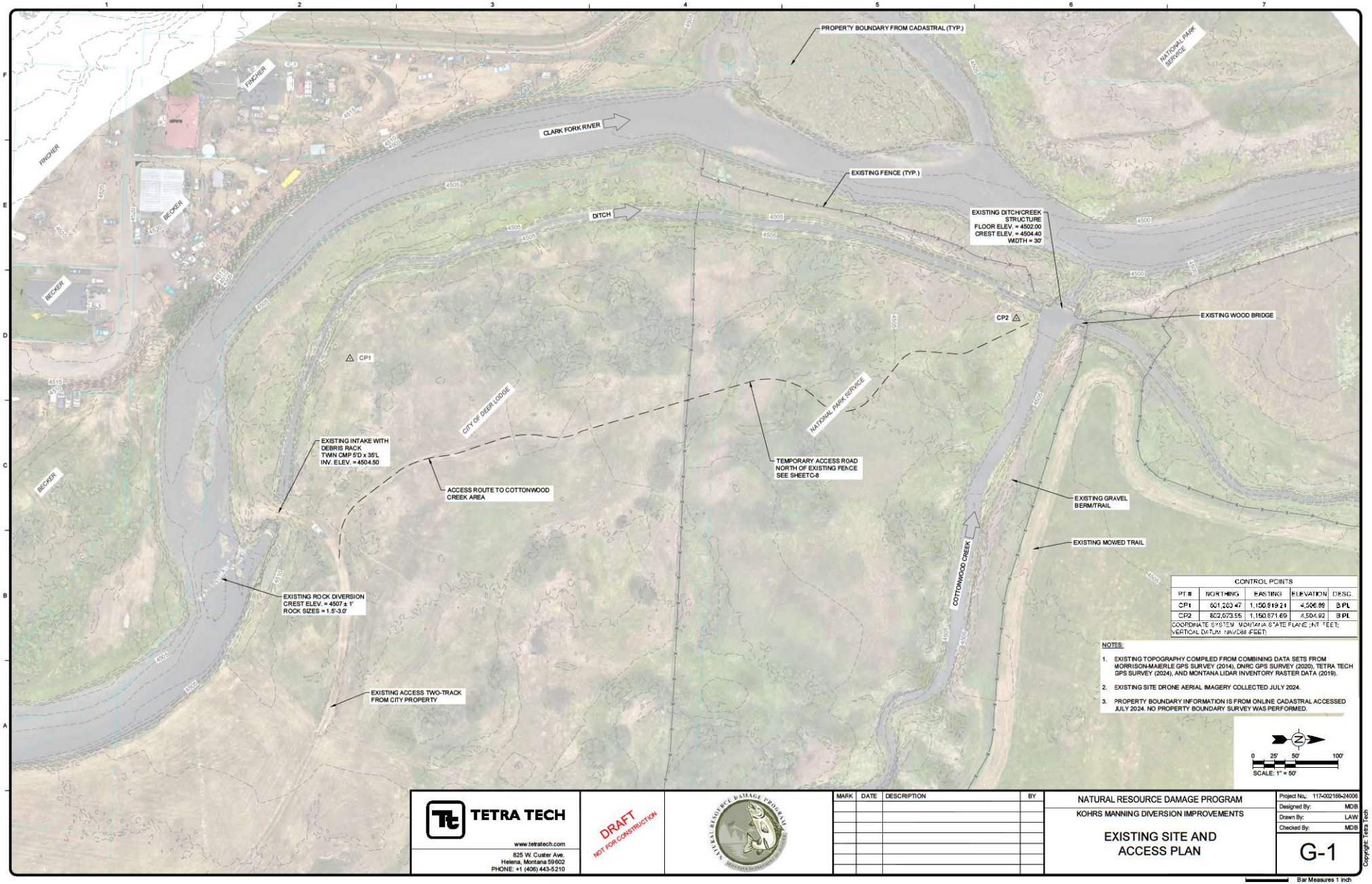
CLARK FORK RIVER (CFR) DESIGN CRITERIA:
- PROVIDE MINIMUM 20 CFS IRRIGATION WATER WITH 40 CFS IN CFR ABOVE DIVERSION
- WITHSTAND CFR FLOOD FORCES UP TO 4,010 CFS (1.0% ANNUAL-CHANCE, Q100)
- IMPROVE UPSTREAM FISH PASSAGE AND PUBLIC RIVER SAFETY
- ELIMINATE FISH ENTRAINMENT TO KOHRS MANNING DITCH WITH NOAA NMFS (2022) COMPLIANT SCREEN FOR APPROACH VELOCITY UP TO 20 CFS CAPACITY

COTTONWOOD CREEK (CC) DESIGN CRITERIA:
- PROVIDE MINIMUM 12 CFS IRRIGATION WATER WITH 15 CFS IN CC ABOVE DIVERSION
- WITHSTAND CC FLOOD FORCES UP TO 1,730 CFS (1.0% ANNUAL-CHANCE, Q100)
- IMPROVE COTTONWOOD CREEK CONNECTIVITY WITH DITCH/CREEK GRADE SEPARATION AND NEW DIVERSION

ISSUED: MAY 2025

DRAFT FOR REVIEW - MAY 2025

VICINITY MAP: NOT TO SCALE



CONTROL POINTS				
PT #	NORTHING	EASTING	ELEVATION	DESC
CP1	801,283.47	1,150,519.21	4,506.99	B PL
CP2	802,073.55	1,150,671.69	4,504.92	B PL

COORDINATE SYSTEM: MONTANA STATE PLANE ; INT. FEET; VERTICAL DATUM: NAVD88 (FEET)

NOTES:

1. EXISTING TOPOGRAPHY COMPILED FROM COMBINING DATA SETS FROM MORRISON-MAIERLE GPS SURVEY (2014), DNRC GPS SURVEY (2020), TETRA TECH GPS SURVEY (2024), AND MONTANA LIDAR INVENTORY RASTER DATA (2019).
2. EXISTING SITE DRONE AERIAL IMAGERY COLLECTED JULY 2024.
3. PROPERTY BOUNDARY INFORMATION IS FROM ONLINE CADASTRAL ACCESSED JULY 2024. NO PROPERTY BOUNDARY SURVEY WAS PERFORMED.

0 25' 50' 100'
SCALE: 1" = 50'

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NATURAL RESOURCE DAMAGE PROGRAM

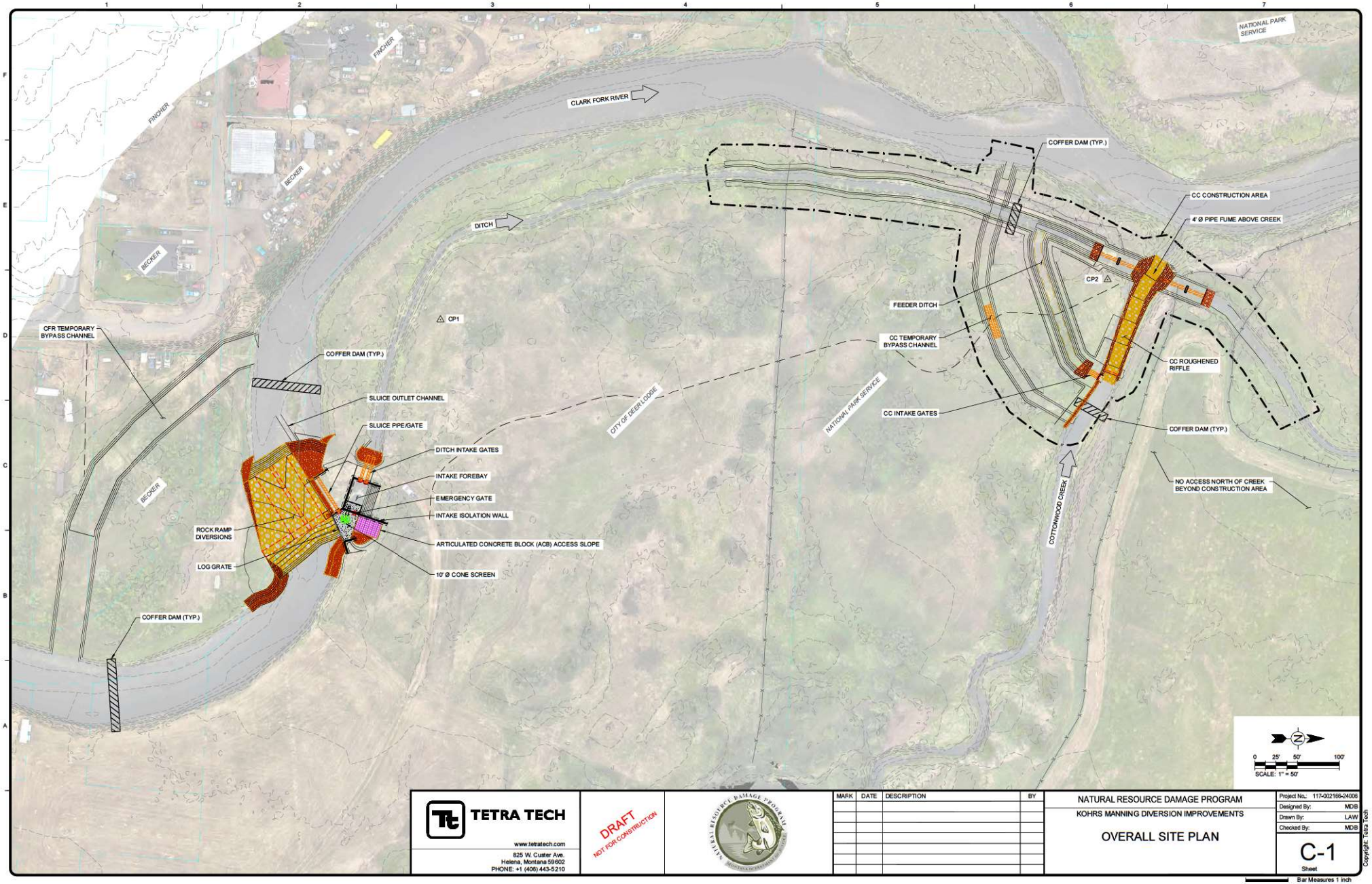
KOHRS MANNING DIVERSION IMPROVEMENTS

EXISTING SITE AND ACCESS PLAN

Project No.:	117-002186-24006
Designed By:	MDB
Drawn By:	LAW
Checked By:	MDB

G-1

Bar Measures 1 inch



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NATURAL RESOURCE DAMAGE PROGRAM

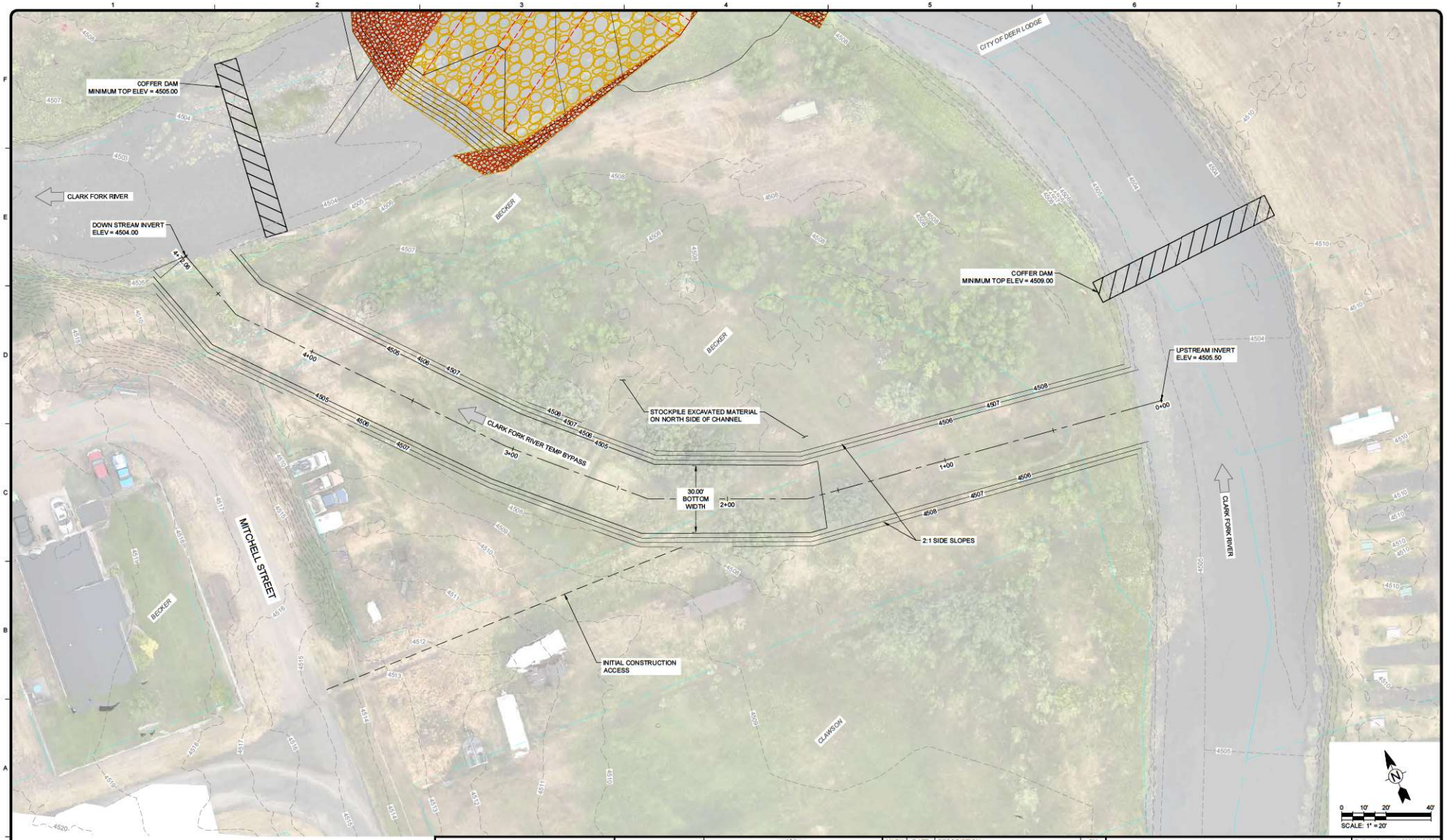
KOHRS MANNING DIVERSION IMPROVEMENTS

OVERALL SITE PLAN

Project No.:	117-002166-24006
Designed By:	MDB
Drawn By:	LAW
Checked By:	MDB

C-1
Sheet

Bar Measures 1 inch



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NATURAL RESOURCE DAMAGE PROGRAM

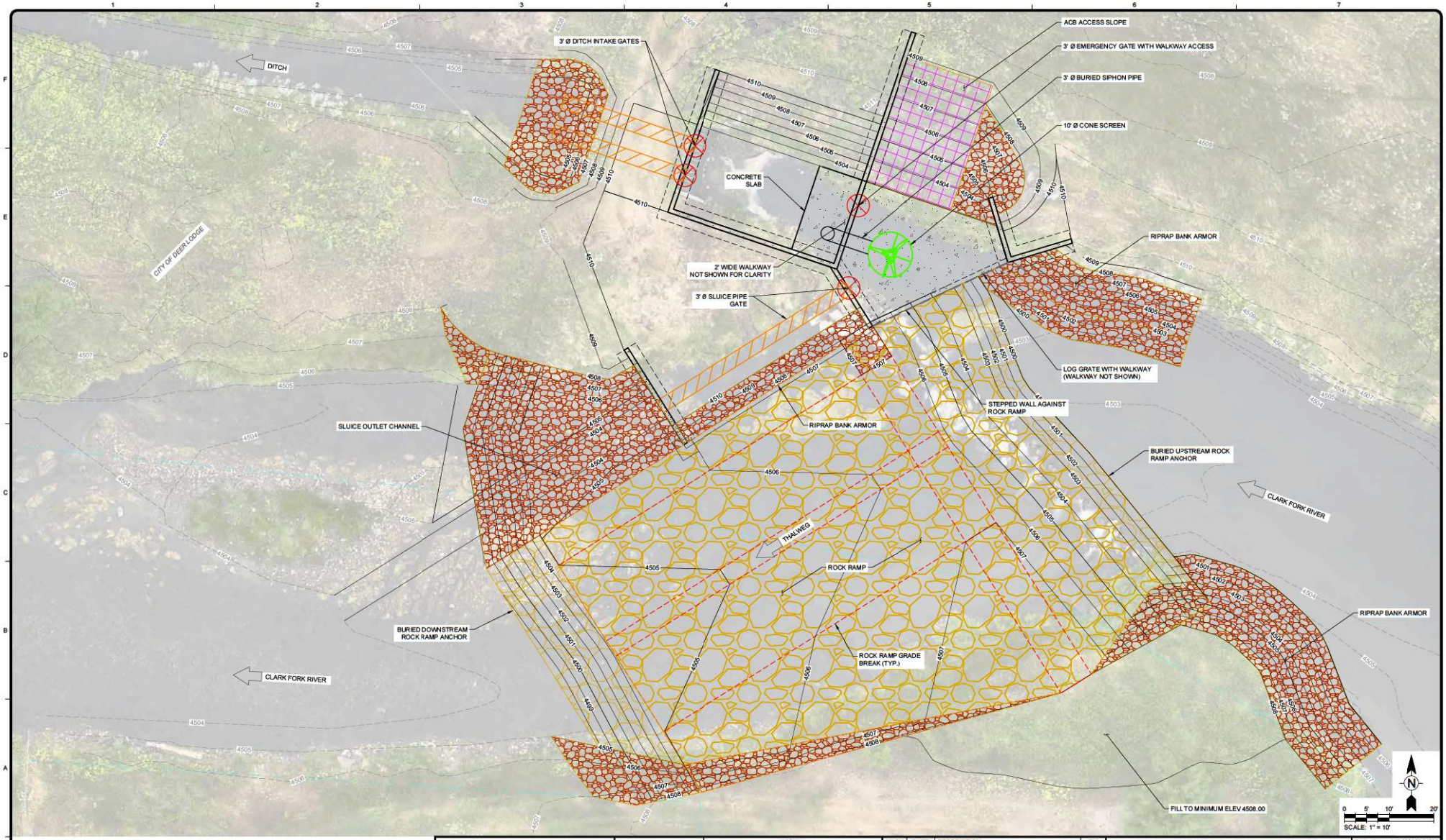
KOHRS MANNING DIVERSION IMPROVEMENTS

CFR TEMPORARY BYPASS

Project No.:	117-002166-24006
Designed By:	MDB
Drawn By:	LAW
Checked By:	MDB

C-2

Bar Measures 1 inch



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NATURAL RESOURCE DAMAGE PROGRAM

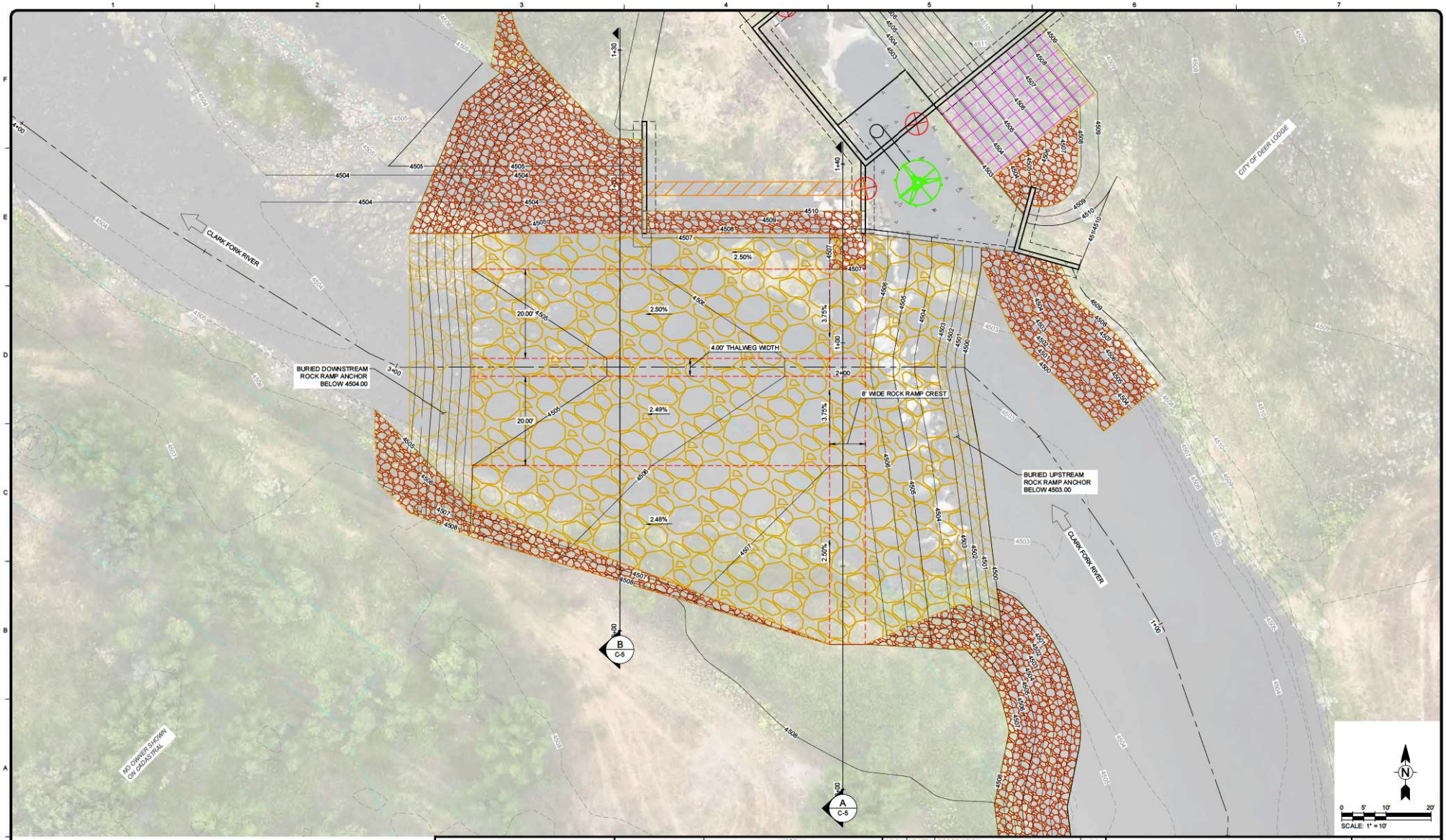
KOHRS MANNING DIVERSION IMPROVEMENTS

CFR SITE PLAN

Project No.:	117-002186-24006
Designed By:	MDB
Drawn By:	LAW
Checked By:	MDB

C-3

Bar Measures 1 inch



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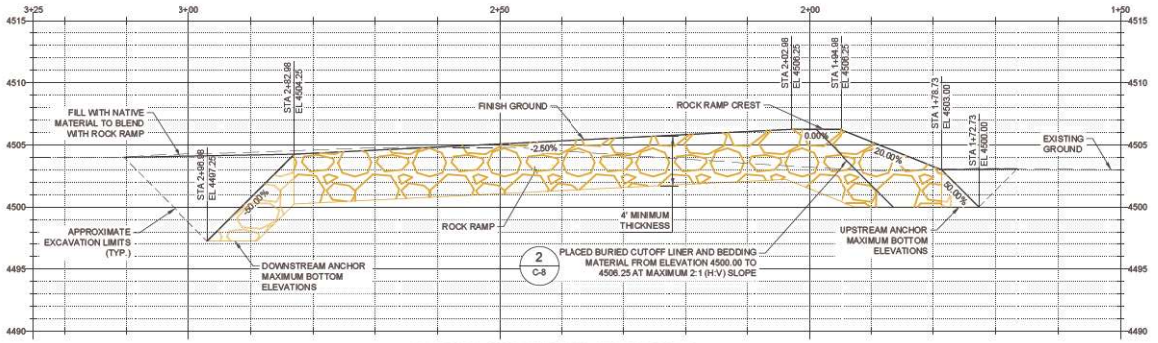
NATURAL RESOURCE DAMAGE PROGRAM
KOHRS MANNING DIVERSION IMPROVEMENTS

CFR DIVERSION GRADING PLAN

Project No.:	117-002186-24006
Designed By:	MDB
Drawn By:	LAW
Checked By:	MDB

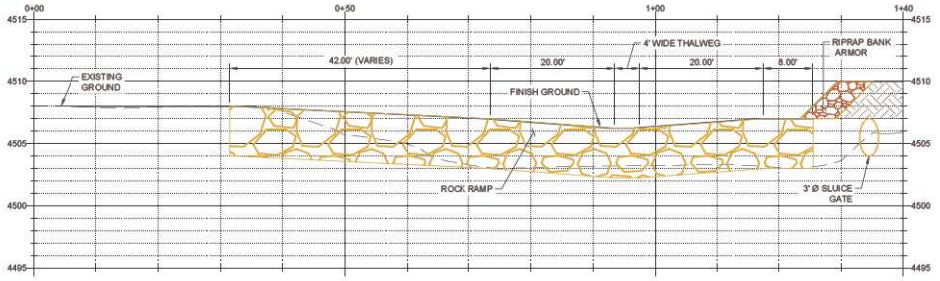
C-4

Bar Measures 1 inch



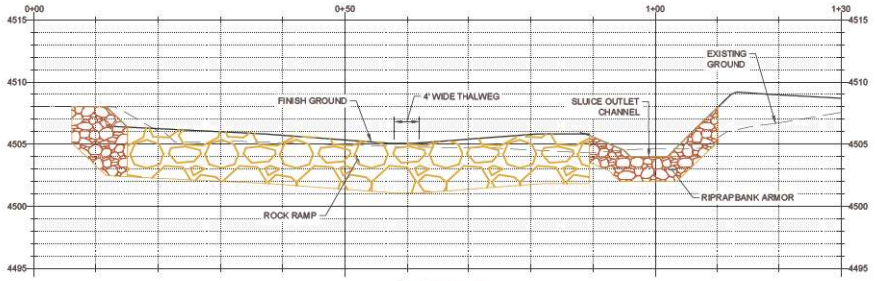
ROCK RAMP THALWEG PROFILE

SCALE: HORIZ: 1"=10', VERT: 1"=5'



SECTION A

SCALE: HORIZ: 1"=10', VERT: 1"=5'



SECTION B

SCALE: HORIZ: 1"=10', VERT: 1"=5'

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NATURAL RESOURCE DAMAGE PROGRAM

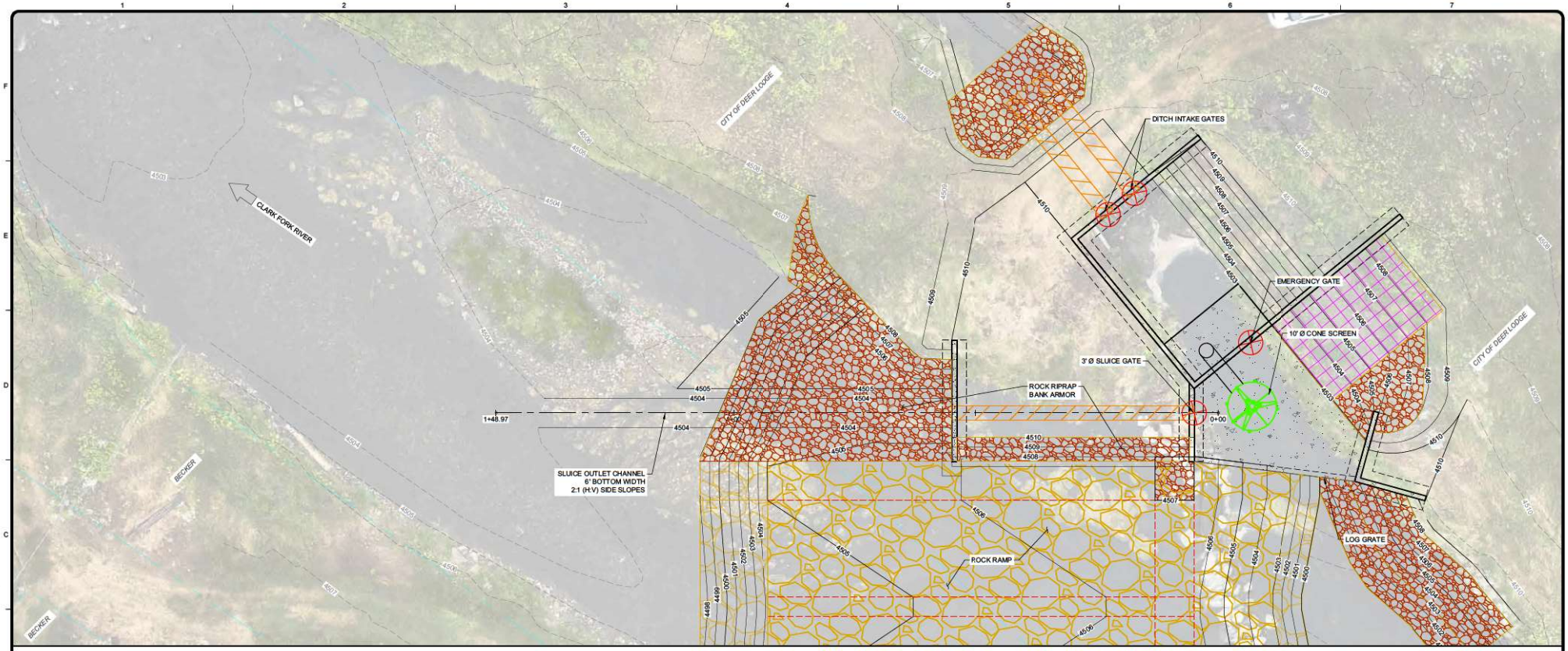
KOHRS MANNING DIVERSION IMPROVEMENTS

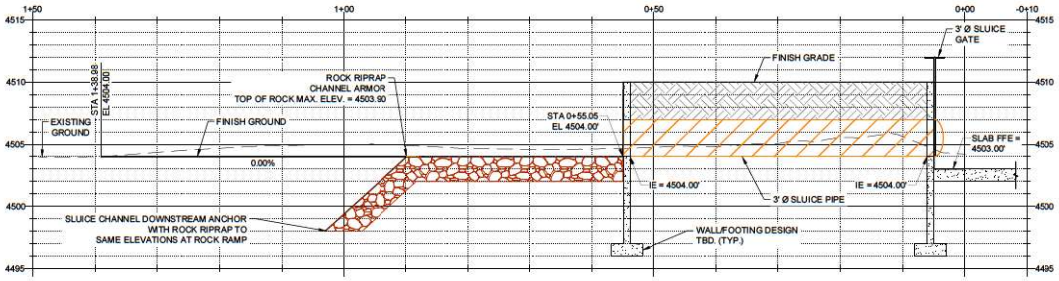
CFR ROCK RAMP
PROFILE AND SECTIONS

Project No.:	117-002186-24006
Designed By:	MDB
Drawn By:	LAW
Checked By:	MDB

C-5

Bar Measures 1 inch





SLUICE OUTLET CHANNEL PROFILE

SCALE: HORIZ: 1"=10', VERT: 1"=5'

SCALE: 1" = 10'

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NATURAL RESOURCE DAMAGE PROGRAM

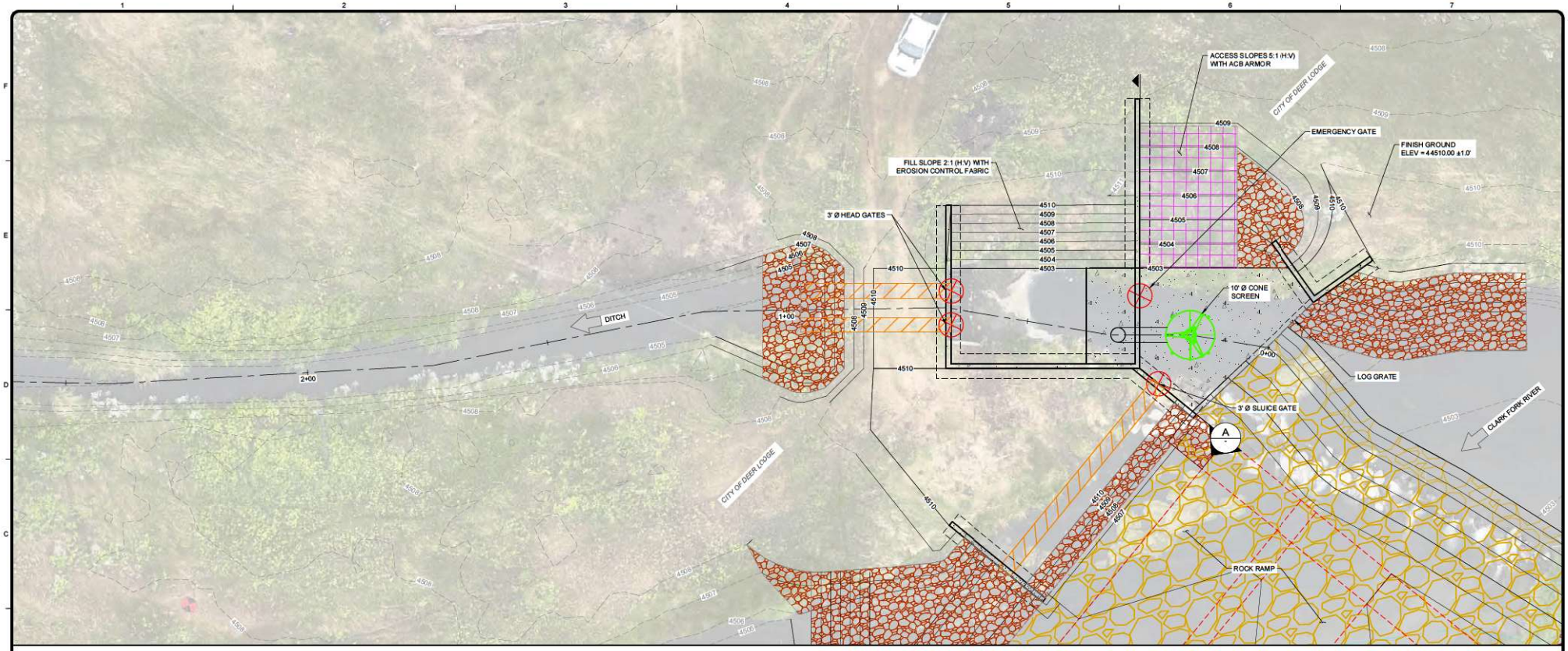
KOHRS MANNING DIVERSION IMPROVEMENTS

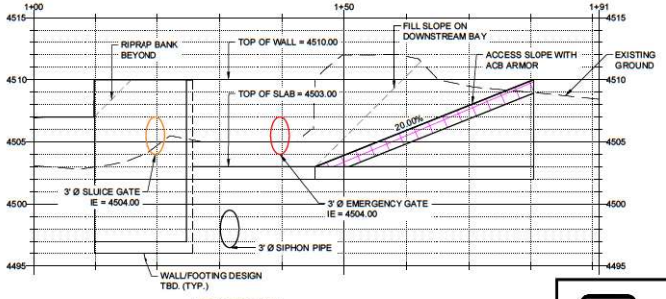
CFR SLUICE
PLAN AND PLAN

Project No.:	117-002186-24006
Designed By:	MDB
Drawn By:	LAW
Checked By:	MDB

C-6

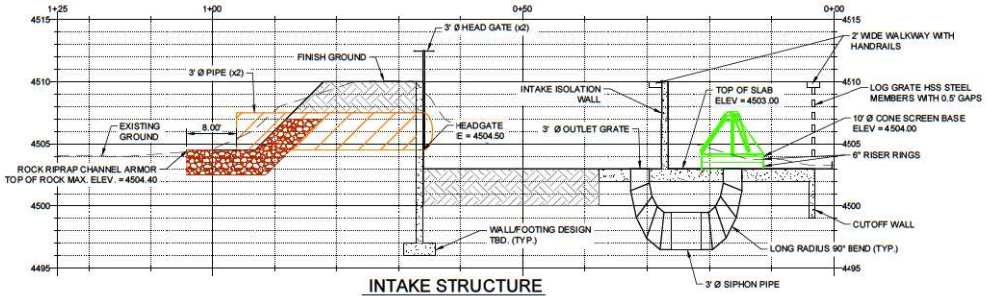
Bar Measures 1 inch





SECTION A

SCALE: HORIZ: 1"=10', VERT: 1"=5'



INTAKE STRUCTURE

SCALE: HORIZ: 1"=10', VERT: 1"=5'

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NATURAL RESOURCE DAMAGE PROGRAM

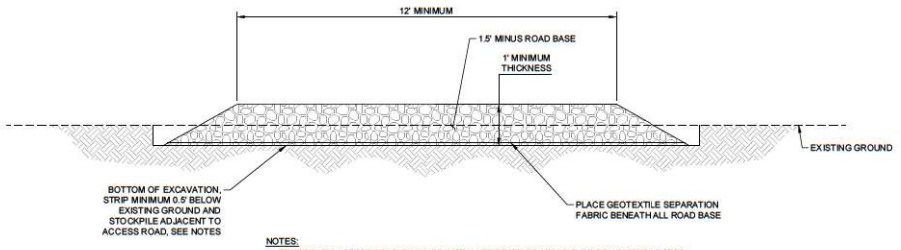
KOHRS MANNING DIVERSION IMPROVEMENTS

CFR INTAKE PLAN AND PROFILE

Project No.:	117-002166-24006
Designed By:	MDB
Drawn By:	LAW
Checked By:	MDB

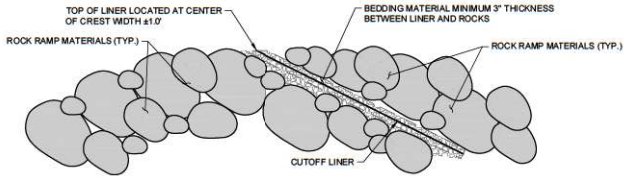
C-7

Bar Measures 1 inch



NOTES:
1. TEMPORARY ACCESS ROAD SHALL BE INSTALLED PRIOR RO VEHICLE OR EQUIPMENT ACCESS.
2. EXISTING MATERIALS SHALL BE STRIPPED TO PRESERVE INTACT SOD MATS. SHRUBS/WILLOWS SHALL BE AVOIDED AND LEFT UNDISTURBED.
3. STOCKPILED MATERIALS SHALL BE PLACED WITHIN 20' OF THEIR ORIGINAL LOCATION AND REPLACED FOLLOWING CONSTRUCTION.
4. ROAD BASE AND FABRIC SHALL BE REMOVED FROM SITE FOLLOWING CONSTRUCTION

1 - ACCESS ROAD
NTS



NOTES:
1. PLACE BEDDING MATERIAL TO FILL GAPS IN ROCK RAMP AND PROVIDE MINIMUM THICKNESS BETWEEN LINER AND ROCKS.

2 - BURIED CUTOFF LINER SECTION
NTS

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NATURAL RESOURCE DAMAGE PROGRAM
KOHRS MANNING DIVERSION IMPROVEMENTS

CFR DETAILS

Project No.:	117-002166-24006
Designed By:	MDB
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C-8

Bar Measures 1 inch

EXAMPLE CONE SCREEN CONTROL PANEL
NTS

APPROXIMATE CONTROL PANEL LOCATION
10' Ø CONE SCREEN
LOG GRATE WITH 2' WIDE WALKWAY ON TOP
2' WIDE WALKWAY
EXISTING DITCH
CLARK FORK RIVER
SEE CFR PLAN
4509
4507
4506
4505
1+00
4510
4510
4510
4509
4508
4507

SCALE: 1" = 10'

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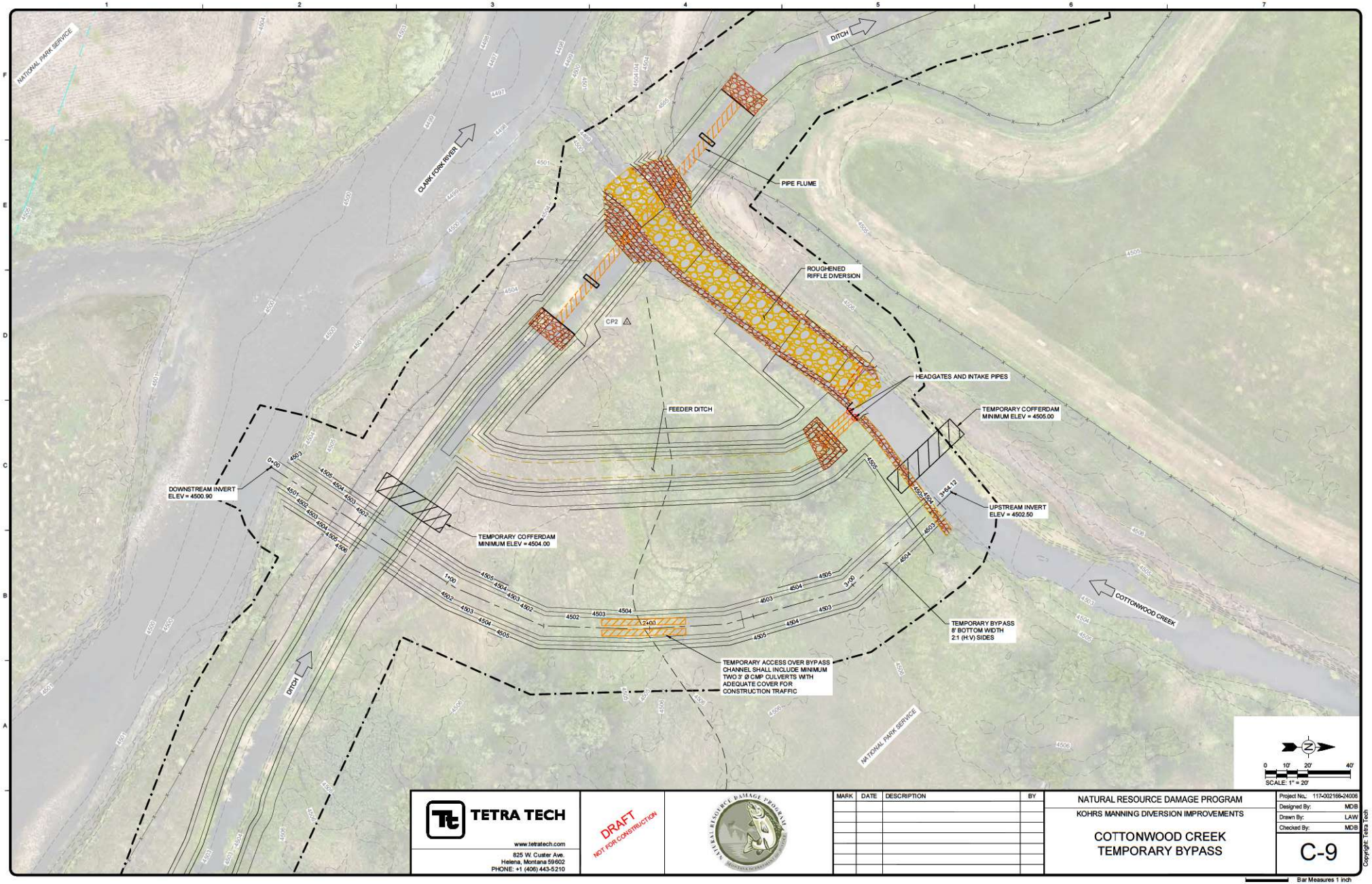
NATURAL RESOURCE DAMAGE PROGRAM
KOHRS MANNING DIVERSION IMPROVEMENTS

CONE SCREEN
ELECTRICAL PLAN

Project No.:	117-002186-24006
Designed By:	MDB
Drawn By:	LAW
Checked By:	MDB

E-1

Bar Measures 1 inch



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NATURAL RESOURCE DAMAGE PROGRAM
KOHRS MANNING DIVERSION IMPROVEMENTS

COTTONWOOD CREEK TEMPORARY BYPASS

Project No.:	117-002186-24006
Designed By:	MDB
Drawn By:	LAW
Checked By:	MDB

C-9

Bar Measures 1 inch

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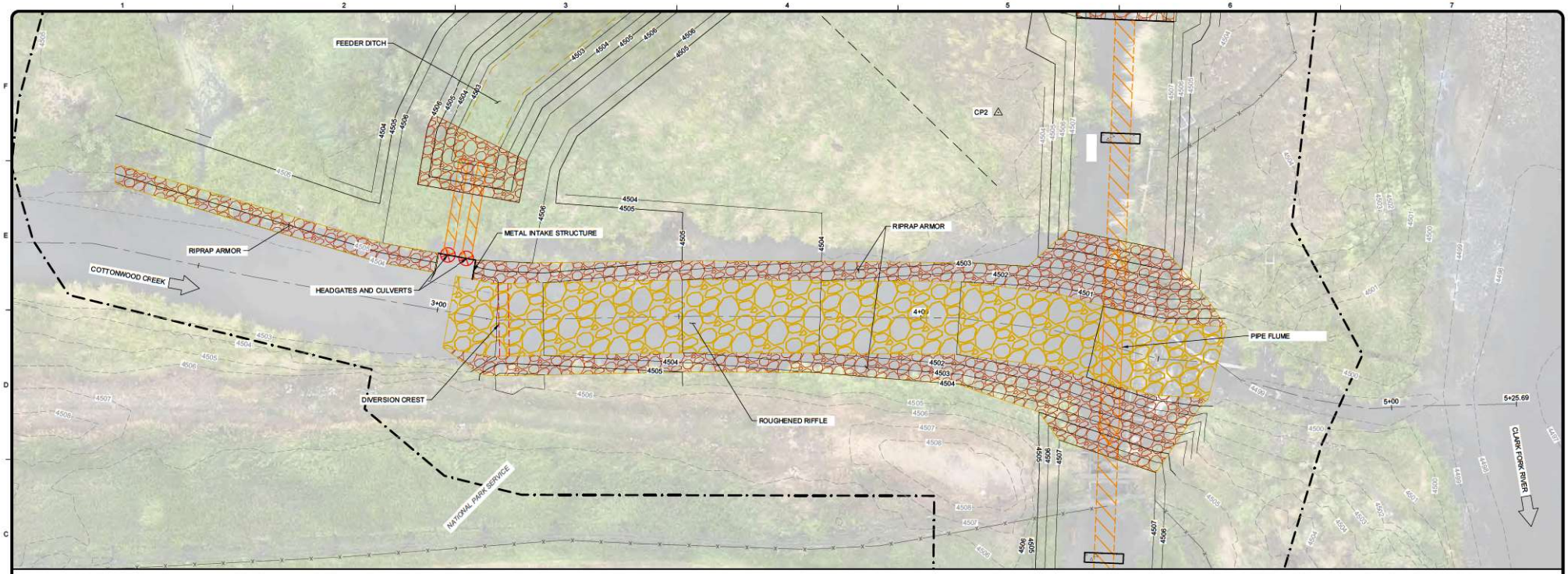
NATURAL RESOURCE DAMAGE PROGRAM
KOHRS MANNING DIVERSION IMPROVEMENTS

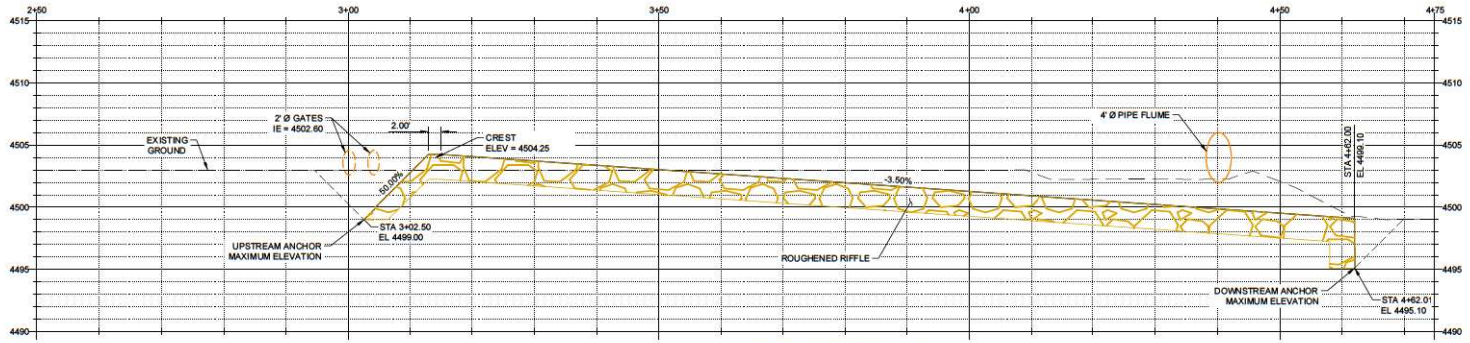
COTTONWOOD CREEK SITE PLAN

Project No.:	117-002166-24006
Designed By:	MDB
Drawn By:	LAW
Checked By:	MDB

C-10

Bar Measures 1 inch





ROUGHENED RIFFLE PROFILE

SCALE: HORIZ: 1"=10', VERT: 1"=5'

SCALE: 1" = 10'

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NATURAL RESOURCE DAMAGE PROGRAM

KOHRS MANNING DIVERSION IMPROVEMENTS

COTTONWOOD CREEK DIVERSION PLAN AND PROFILE

Project No.:	117-002186-24006
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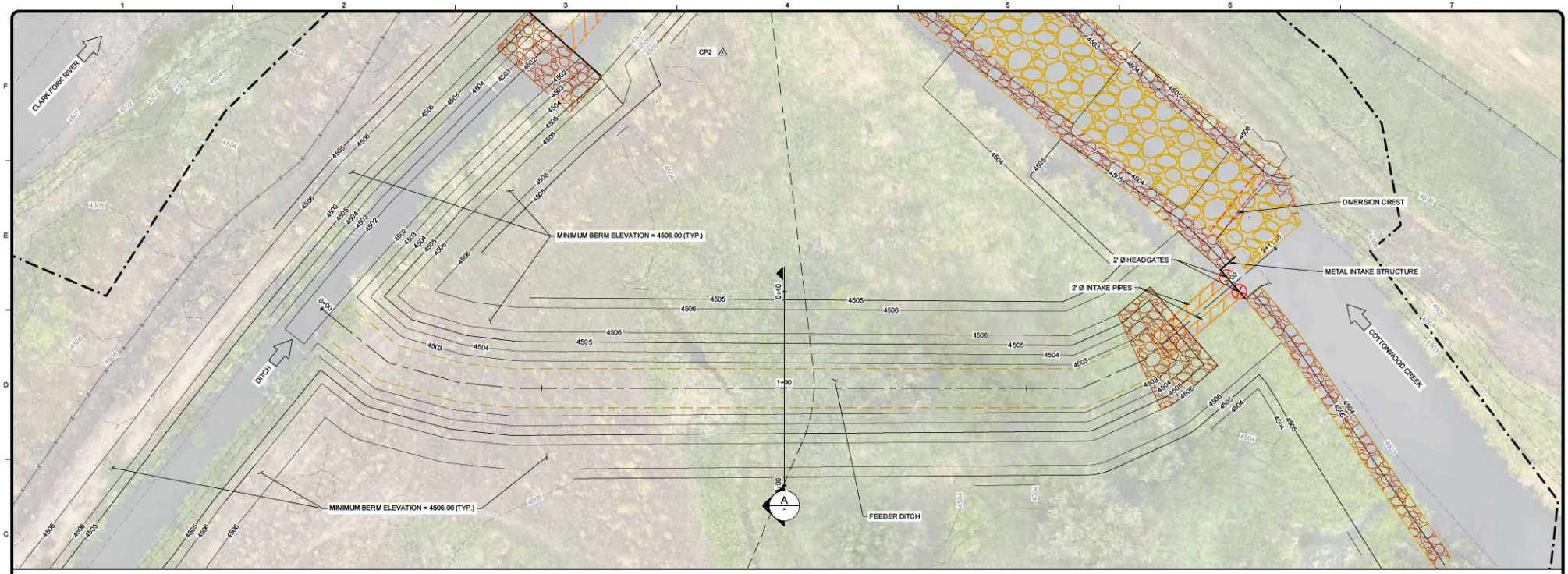
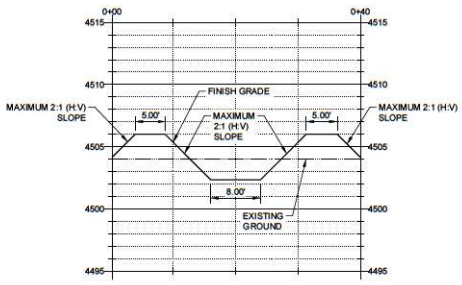
Drawn By:	LAW
Checked By:	MDB

C-11

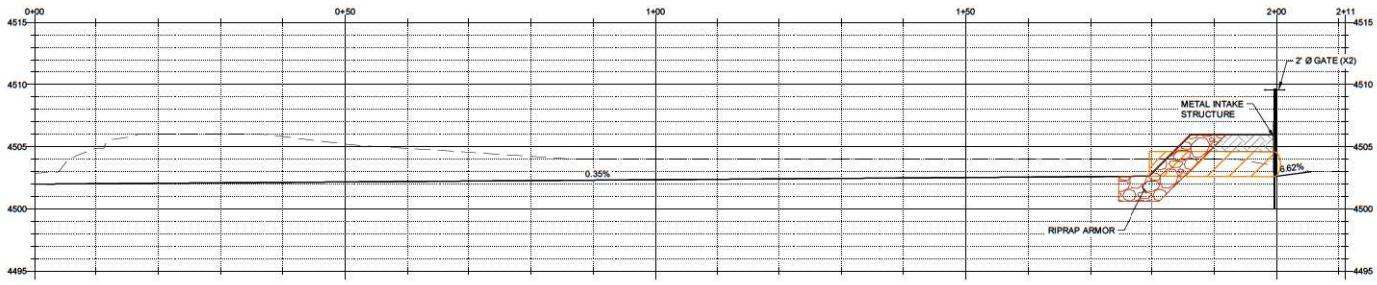
Bar Measures 1 inch





SECTION A

SCALE: HORIZ: 1"=10', VERT: 1"=5'



FEEDER DITCH PROFILE

SCALE: HORIZ: 1"=10', VERT: 1"=5'

SCALE: 1" = 10'

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NATURAL RESOURCE DAMAGE PROGRAM

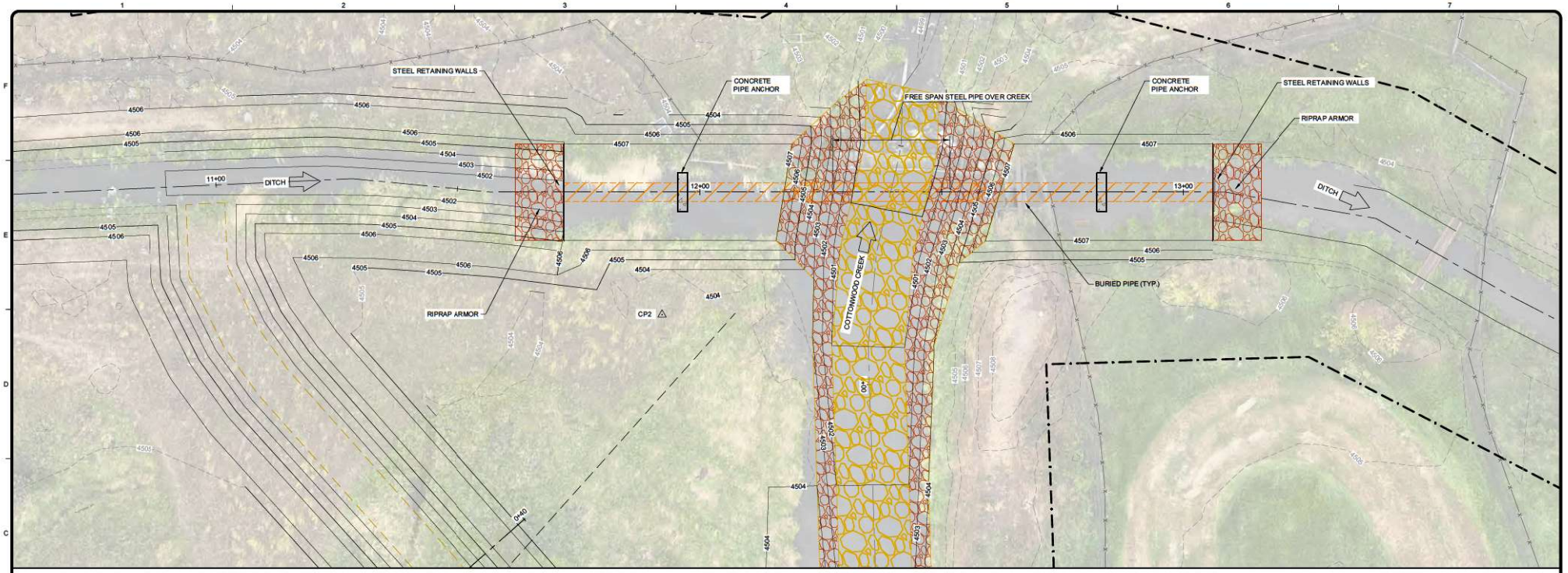
KOHRS MANNING DIVERSION IMPROVEMENTS

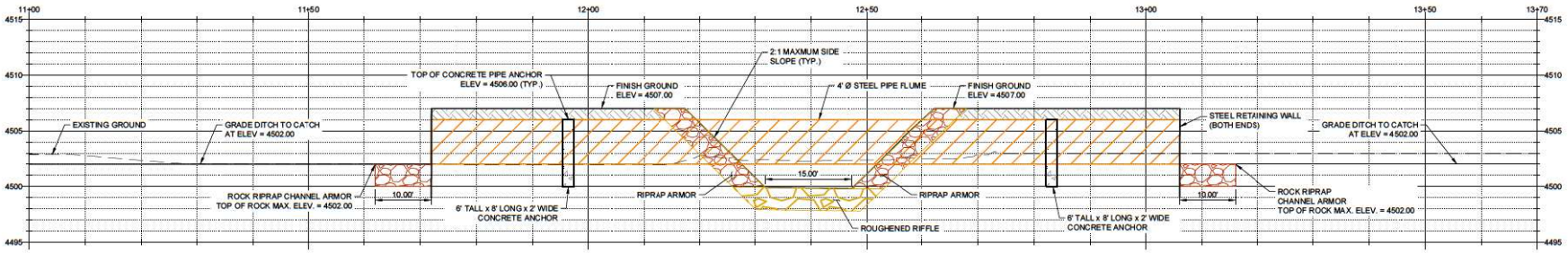
COTTOWOOD CREEK FEEDER DITCH PLAN AND PROFILE

Project No.:	117-002166-24006
Designed By:	MDB
Drawn By:	LAW
Checked By:	MDB

C-12

Bar Measures 1 inch





PIPE FLUME PROFILE

SCALE: HORIZ: 1"=10', VERT: 1"=5'

SCALE: 1" = 10'

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NATURAL RESOURCE DAMAGE PROGRAM
KOHRS MANNING DIVERSION IMPROVEMENTS

COTTONWOOD CREEK PIPE FLUME PLAN AND PROFILE

Project No.:	117-002186-24006
Designed By:	MDB
Drawn By:	LAW
Checked By:	MDB

C-13

Bar Measures 1 inch