FUTURE FISHERIES IMPROVEMENT PROGRAM
GRANT APPLICATION

(please fill in the highlighted areas)

I. APPLICANT INFORMATION

A. Applicant Name: Montana Fish, Wildlife & Parks (Ron Spoon)

B. Mailing Address: P.O. Box 1137

C. City: Townsend State: MT Zip: 59644

Telephone: 406-266-4237 E-mail: rspoon@mt.gov

D. Contact Person: Ron Spoon

Address if different from Applicant: (SEE ABOVE)

City: State: Zip:

Telephone: E-mail:

E. Landowner and/or Lessee Name (if other than Applicant): Chuck Hahn (Deep Creek Landowner Adv. Committee)

Mailing Address: 7996 Hwy 287

City: Townsend State: MT Zip: 59644

Telephone: 406-980-0716 E-mail:

II. PROJECT INFORMATION*

A. Project Name: Deep Creek Riparian Habitat and Streamflow Improvement Project

River, stream, or lake: Deep Creek

Location: Township: T6N Range: R2E Section: 9

Latitude: 46.17.496 Longitude: 111.28.048 *within project (decimal degrees)*

County: Broadwater

B. Purpose of Project:

Eliminate an irrigation diversion from Deep Creek to enhance streamflow and eliminate fish loss, and construct 15 miles of riparian fence to improve streamside vegetation along Deep Creek.

C. Brief Project Description:

In 2014, Broadwater Conservation District was awarded a 319 grant for $257,000 to address impairments in the Deep Creek TMDL (high sediment loading and elevated water temperature). In addition, NRCS prioritized Deep Creek restoration projects by allocating approximately $1.5 million to Deep Creek through the National Water Quality Initiative Program. Matching funds from non-Federal sources (DNRC 223 Grant and the FFIP funds) are critical to implement riparian and streamflow enhancement projects from 2014 through at least 2016. Two projects that will begin implementation in 2015 are the Hahn, Price, Scoffield Gravity Pipeline Project and Riparian Fence Construction Project.

The Hahn, Price, Scoffield Gravity Pipeline Project will remove a major irrigation diversion from Deep Creek and the new diversion will directly obtain water from the Broadwater-Missouri Canal, which originates from the Missouri River. Water savings from this project will improve streamflow and reduce water temperature in Deep Creek. In addition, this project will eliminate fish loss to the irrigation ditch and restore upstream fish passage. The bid for the entire project is $539, 349, and $10,000 of FFIP is being requested to install the new water intake system at Broadwater-Missouri Canal. The bid price for the irrigation pump plant intake is $15,328, and this structure is the focus for the FFIP application. This structure essentially serves as a “fish friendly” diversion because it ensures that no fish from Deep Creek will enter the irrigation system because the water source is isolated from Deep Creek.

Riparian fencing along Deep Creek has proven to improve fisheries habitat over the years. Past fencing was often located too close the stream, and in 2011, severe flooding damaged existing riparian fences approximately 45 locations in the lower 15 miles of Deep Creek. Based on an assessment in 2012, we estimate that 15 miles of new fence is needed in the lower 20 miles of Deep Creek to repair previous fencing projects and to attract new landowners interested in fencing the stream. The estimated cost ($1.40 per foot based on NRCS cost share) of this project is $110,880. In partnership with NRCS, 319 Program, and landowners, we are requesting $10,000 of FFIP funds for this project, or 9% of the total fencing costs for this 15-mile project.

D. Length of stream or size of lake that will be treated: Approximately 15 miles.

E. Project Budget:

Grant Request (Dollars): $ 20,000

Contribution by Applicant (Dollars): $ 0 In-kind $ 0

(salaries of government employees are not considered as matching contributions)

Contribution from other Sources (Dollars): $ 106,208 In-kind $ 0

(attach verification - See page 2 budget template)

Total Project Cost: $ 126,208

F. Attach itemized (line item) budget – see template

G. Attach specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete supplemental questionnaire (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).

H. Attach land management and maintenance plans that will ensure protection of the reclaimed area.

III. PROJECT BENEFITS*

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

Rainbow Trout, Brown Trout, and a variety of other typical species associated with stream in southwest Montana.

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

Improved streamside vegetation will reduce erosion of fine sediment, provide increased shading, and reduce the need for channel armoring such as rip rap. Relocating fences rather than armoring the stream to rebuild old fences allows more natural stream function.

C. Will the project improve fish populations and/or fishing? To what extent?:

Riparian enhancement (including fencing) during 1996-97 were followed by improved brown trout population trends. Brown trout redd counts increased from 100 redds to 350 redds between 2004 and 2013 in a 6 mile reach of Deep Creek. It is expected that this trend will continue with new fence construction projects. Elimination of the irrigation diversion will eliminate all fish loss to this source of irrigation water. Resident fish loss to the irrigation ditch is significant. Loss of migrating spawning fish from the Missouri River and juvenile trout returning to the Missouri River can also be significant based on anecdotal observations, but have not been quantified.

D. Will the project increase public fishing opportunity for wild fish and, if so, how?:

The public will have access to increased numbers of resident trout in Deep Creek due to fence construction and reduced fish loss to irrigation in Deep Creek. In addition, the migratory populations originating from the Missouri River/Canyon Ferry System will also have less mortality to ditch entrainment, and will consequently be available to anglers in downstream waters (Missouri River/Canyon Ferry Lake). A fish trap located downstream of the diversion was operated between 1993 and 2007, and the number of spawning rainbow trout entering the stream ranged from 800 to 3000 fish.

E. If the project requires maintenance, what is your time commitment to this project?:

Landowners will be required to maintain fencing, and water users will maintain the new irrigation structure at Broadwater-Missouri Canal.

F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?:

The primary cause of reduced riparian vegetation along Deep Creek was related to agricultural activities, including livestock access to the stream. The chronic streamflow depletion of Deep Creek (and associated fish loss to irrigation systems) was due to allocation of irrigation water.

G. What public benefits will be realized from this project?:

Improved riparian vegetation will benefit multiple species of wildlife. The gravity-assisted irrigation pipeline will provide significant energy savings.

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

No. The Deep Creek Landowner Advisory Committee supports this project and has been in contact with multiple landowners and water users over the past two years. This project is intended to benefit both fisheries and landowners.

I. Will the project result in the development of commercial recreational use on the site?: (explain):

No. Currently, there are no commercial operations related to fisheries on Deep Creek, and none are anticipated with the completion of this project.

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

No.

Each approved project sponsor must enter into a written agreement with the Department specifying terms and duration of the project.

IV. 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: November 28, 2014

Sponsor (if applicable): _____

***Highlighted boxes will automatically expand.**

Mail To: **Montana Fish, Wildlife & Parks**
Habitat Protection Bureau
PO Box 200701
Helena, MT 59620-0701

E-mail To: **Michelle McGree**

Incomplete or late applications will be returned to applicant.
Applications may be rejected if this form is modified.

*****Applications may be submitted at anytime, but must be received by the Future Fisheries Program office in Helena <u>before</u> December 1 and June 1 of each year to be considered for the subsequent funding period.*****

WORK ITEMS (ITEMIZE BY CATEGORY)	NUMBER OF UNITS	UNIT DESCRIPTION*	COST/UNIT	TOTAL COST	CONTRIBUTIONS			
					FUTURE FISHERIES REQUEST	IN-KIND SERVICES	IN-KIND CASH	TOTAL
Personnel								
Survey	0			$ -				$ -
Design	0			$ -				$ -
Engineering	0			$ -				$ -
Permitting	0			$ -				$ -
Oversight	0			$ -				$ -
Labor	0			$ -				$ -
			Sub-Total	$ -	$ -	$ -	$ -	$ -
Travel								
Mileage	0			$ -				$ -
Per diem	0			$ -				$ -
			Sub-Total	$ -	$ -	$ -	$ -	$ -
Construction Materials								
IRRIGATION INTAKE STRUCTURE	1	LUMP SUM	$15,328.00	$ 15,328.00	10,000.00		5,328.00	$ 15,328.00
				$ -				$ -
FENCE MATERIALS AND INSTALLATION	79,200 FEET	LUMP SUM	$1.40 FT	$110,880	10,000.00		100,880.00	$ 110,880.00
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
			Sub-Total	$ 126,208.00	$ 20,000.00	$ -	$ 106,208.00	$ 126,208.00
Equipment								
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
			Sub-Total	$ -	$ -	$ -	$ -	$ -
Mobilization								
				$ -				$ -
				$ -				$ -
				$ -				$ -

				$ -				$ -
			Sub-Total	$ -	$ -	$ -	$ -	$ -
			TOTALS	$ 126,208.00	$ 20,000.00	$ -	$ 106,208.00	$ 126,208.00

*Units = feet, hours, inches, lump sum, etc.

MATCHING CONTRIBUTIONS

CONTRIBUTOR	IN-KIND SERVICE	IN-KIND CASH	TOTAL	Verified? (Y/N)
NRCS IRRIGATION PUMP PLANT	$ -	$ 5,328.00	$ 5,328.00	YES
NRCS FENCE	$ -	$ 58,310.00	$ 58,310.00	YES
319 GRANT FENCE	$ -	$ 30,000.00	$ 30,000.00	YES
LANDOWNER FENCE	$ -	$ 12,570.00	$ 12,570.00	NO
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	

Existing Hahn, Price, Scoffield (HPS) Diversion from Deep Creek

Fish "Rescue" at HPS Irrigation Canal

Example of Fence at Risk (FAR) at Deep Creek at Reach 13 (ML Bar Ranch)

New fence location (yellow line) at least 30 feet back from outside meanders, rather than following stream channel.

Lower Deep Creek Watershed- Fences at Risk

Reaches 6-14

0 0.225 0.45 0.9 1.35 1.8 Miles

Total at Risk Fences: 43

Deep Creek Fence at Risk Summary - 2014

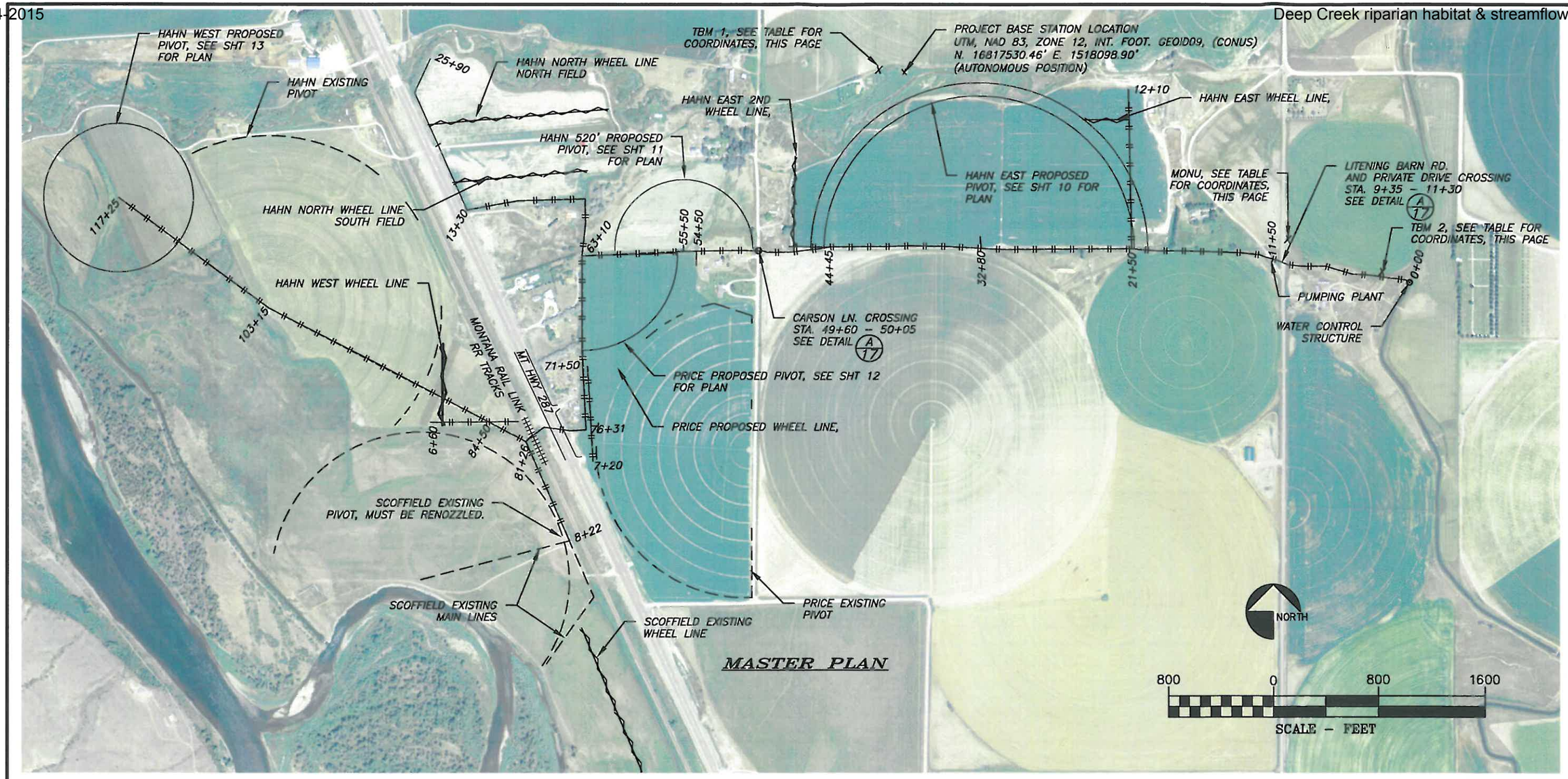
Ident	Lat	Long	Display	Site Number	BANK TMTS	DETAILS	PERF./SEVERITY
Reach 6							
21	46.3085502	-111.4323685	FAR				
52	46.3072407	-111.4360964	FAR				
156	46.30291999	-111.4443045	FAR				CROSS STREAM
Reach 7							
10	46.30996381	-111.4302731	FAR			WATER GAP	MINOR
25	46.31065423	-111.427854	FAR			H BRACE	MINOR
27	46.31093368	-111.4277614	FAR			WATER GAP	MINOR
38	46.31142687	-111.426408	FAR				MINOR
87	46.31402643	-111.4203237	FAR		ALSO 86		OBSTRUCTION
91	46.31454209	-111.4200369	FAR				ELECTRIC
Reach 8							
59	46.31833725	-111.4100851	FAR			ELECTRIC	
70	46.32031772	-111.408812	FAR			LEFT BANK	
Reach 9							
117	46.32346211	-111.3998468	FAR				NEED REPAIR
123	46.32376051	-111.3990758	FAR			EB 124/25	AT RISK
142	46.32409385	-111.3980687	FAR			EB	ALSO 3.0 POOL
195	46.32523346	-111.3938245	FAR			FENCE TERR.	
198	46.32539171	-111.3925514	FAR			MEAND CUT	EASY FIX
210	46.32499374	-111.3915497	FAR			15 FT CLAY BK	
211	46.32510521	-111.3913828	FAR				
218	46.32505224	-111.3900593	FAR			FENCE/PUMP	
224	46.32516598	-111.3889638	FAR			2 POST OVER	
227	46.32454237	-111.3890512	FAR			FENCE/PPOLE	
239	46.32357158	-111.3877453	FAR				
Reach 10							
Reach 11							
5	46.32690037	-111.3683629	FAR			R BANK, No Mgmt. Concern/ Pasture	

56	46.32603594	-111.3646693	FAR			L BANK-pasture fence hanging off bnk/ T IN FENCE-Photo #11	
63	46.32680062	-111.3644154	FAR		Middle OF CROSS CHANNEL	CROSS CHANNEL-OK	
88	46.32605631	-111.3616494	FAR			L BNK-Fence is 15' off bank	moderate
97	46.32567007	-111.3604306	FAR			L BNK - Fence in crk. @ Domino's (photo#14)	moderate
127	46.32555516	-111.3547301	FAR		OLD TMT	L BNK-Riparian Fence in stream	
135	46.32546312	-111.3541872	FAR			LRM - complex fence issues near Gobb's hs./CABLE CROSSES CRK W/FENCE TO S.- photo #15	
Reach 12							
132	46.32499843	-111.3505493		FAR		MINOR	
198	46.32613602	-111.3441487		FAR		NEED MAINT	
199	46.32596897	-111.3437796		FAR			
202	46.32485694	-111.3430109		FAR		WAT GAP MINOR	
Reach 13							
34	46.32167459	-111.3369247	FAR			CORNER HANG	
43	46.32190626	-111.3360908	FAR			ON EB	
50	46.32169303	-111.3346524	FAR				
88	46.32316581	-111.3311713	FAR				
109	46.3234316	-111.3300508	FAR				
126	46.32371524	-111.3275812	FAR				
136	46.32268603	-111.3264081	FAR				
155	46.32233173	-111.3251754	FAR			IN WATER	
199	46.32210759	-111.3179718	FAR			CROSSING	
Reach 14							
319	46.32445344	-111.2933451	FAR			HWY FENCE	

Summary:

43 Sites had fence problems due to channel migration in Reaches 6-14. It is likely that at least 3 other locations had similar problems in reaches not surveyed (Reaches 1 through 5 and Reach 15). Each major "Fence at Risk" location is unique, but on average it is estimated that 0.25 to 0.50 miles of fence re-construction will be needed to resolve most fence at risk problems.

Fence location will be guided by at least 3 considerations: 1) The pending channel migration map; 2) The criteria that fences will be constructed AT LEAST 30 feet back from outside meanders; and 3) specific landowner needs.



EXTIMATED WATER USAGE PER SYSTEM

HAHN EAST WHEEL LINE	107 GPM.	7.5 AC.
HAHN EAST PIVOT	395 GPM.	56 AC.
HAHN EAST 2 ND WHEEL LINE	114 GPM.	3.5 AC.
PRICE EXISTING PIVOT	331 GPM.	47 AC.
HAHN 520' PIVOT	89 GPM.	12.6 AC.
HAHN NORTH WHEEL LINE, SOUTH FIELD	207 GPM.	10 AC.
HAHN NORTH WHEEL LINE, NORTH FIELD	228 GPM.	14 AC.

EXTIMATED WATER USAGE PER SYSTEM

PRICE PROPOSED PIVOT	87 GPM.	12.3 AC.
PRICE NEW WHEEL LINE	62 GPM.	4 AC.
SCOFFIELD EXISTING PIVOT	374 GPM.	53 AC.
SCOFFIELD EXISTING WHEEL LINE	268 GPM.	22 AC.
HAHN WEST WHEEL LINE	100 GPM.	5.6 AC.
HAHN WEST EXISTING PIVOT	431 GPM.	61 AC.
HAHN WEST PROPOSED PIVOT	212 GPM.	30 AC.

BASE AND TBM COORDINATES

POINT	N	E	EL.	NAME	DES.
100	16817530.46	1518098.90	3886.61'	BASE	BOLT
1000	16817518.88	1517900.23	3887.30'	TBM1	X IN CONC.
1002	16816006.62	1521728.35	3886.61'	TBM2	2X2 HUB
1082	16816255.89	1521011.64	3932.54'	MONU.	BRASS CAP

TOTAL PROPOSED WATER USAGE = 3005 GPM

Date ----
Designed M Hansen
Drawn M Hansen
Checked ----
Approved ----

PIPELINE PLAN SHEET
PIVOT & IRRIGATION PIPELINE SYSTEM
HAHN, PRICE, SCOFFIELD EQIP
BROADWATER MONTANA

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

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Drawing No. ----
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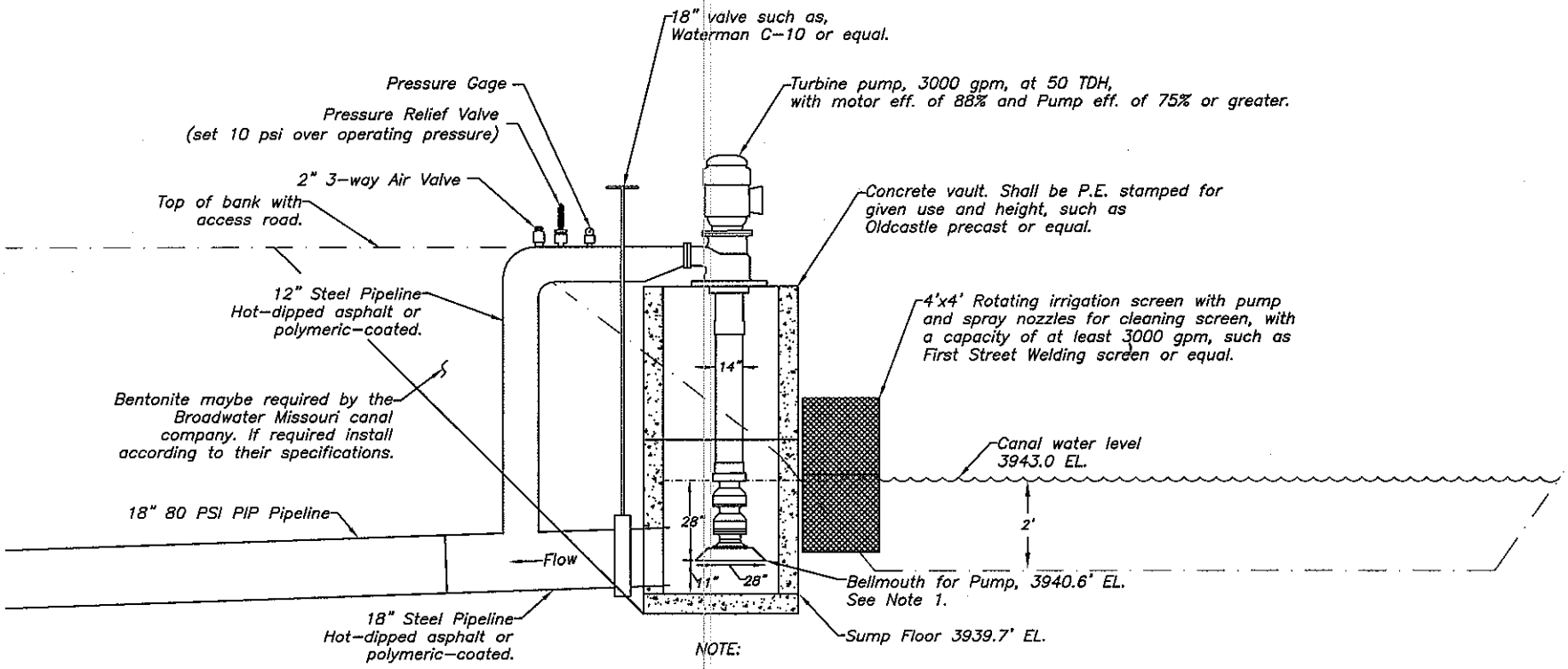
Sheet 3 of 20



NOTE:

1. Submergence dimensions listed are for a 14" diameter bellmouth suction pipe on the turbine pump. If actual pipe dimensions are different, install according to Goulds Engineering Data sheet 200.A.05 (effective June 1, 2006)

PUMPING PLANT DETAIL

NOT TO SCALE

Revision # 1 Pumping Plant Detail

Changes to the orginal drawings or specifications must be authorized by the owners and the NRCS representative with the proper approval authority prior to implementation.

The owners/operators have reviewed and approve this Revision to the original plans and agree to construct in accordance with them:

NRCS Representative	Date	owner/operator	Date
owner/operator	Date	owner/operator	Date

Designed M Hansen Date 11/14
Drawn M Hansen 11/14
Checked
Approved

PUMPING PLANT DETAILS
PIVOT & IRRIGATION PIPELINE SYSTEM
HAHN, PRICE, SCOFFIELD EQIP
BROADWATER MONTANA

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

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