

19-01 - McDowell Dam Supplemental Supply Project

Application Details

Funding Opportunity: 14877-Outdoor Heritage Fund May 2021 - Round 19
Funding Opportunity Due Date: Sep 2, 2021 11:59 PM
Program Area: Outdoor Heritage Fund
Status: Under Review
Stage: Final Application

Initial Submit Date: Sep 1, 2021 10:06 AM
Initially Submitted By: Travis Johnson
Last Submit Date: Sep 3, 2021 2:19 PM
Last Submitted By: Travis Johnson

Contact Information

Primary Contact Information

Active User*: Yes
Type: External User
Name: Mr. Travis Johnson
Salutation First Name Middle Name Last Name
Title: Civil Engineer
Email*: tjohnson@houstoneng.com
Address*: 3712 Lockport Street

Bismarck North Dakota 58503
City State/Province Postal Code/Zip
Phone*: (701) 226-0227 Ext.
Phone
###-####
Fax: (701) 323-0300
###-####
Comments:

Organization Information

Status*: Approved
Name*: Burleigh County Water Resource District
Organization Type*: County Government
Tax Id:
Organization Website:

Address*:

1926 Frontier Drive, Suite B

Bismarck North Dakota 58504-0000
City State/Province Postal Code/Zip

Phone*:

(701) 222-3499 Ext.

###

Budget

Objective of Grant

Objective of Grant:

The objective of the grant is to assist in funding the construction of a supplemental water supply for the McDowell Dam Reservoir to prevent the potential loss of a valuable recreational resource and degradation of the natural habitat during periods of continued drought.

Summary

Grant Request:	\$696,223.84
Matching Funds:	\$524,124.92
Total Project Costs:	\$1,220,348.76
You must have at least 25% match	
Percentage of Match:	42.95%

Project Expenses

Project Expense Description	OHF Request	Match Share (Cash)	Match Share (In-Kind)	Match Share (Indirect)	Other Project Sponsor's Share	Total Each Project Expense
Construction and Contingencies	\$674,635.50	\$224,878.50	\$0.00	\$0.00	\$0.00	\$899,514.00
Engineering/CMS	\$21,588.34	\$284,246.42	\$0.00	\$0.00	\$0.00	\$305,834.76
Easements	\$0.00	\$15,000.00	\$0.00	\$0.00	\$0.00	\$15,000.00
	\$696,223.84	\$524,124.92	\$0.00	\$0.00	\$0.00	\$1,220,348.76

Budget Narrative

Budget Narrative:

Amount of Grant Request \$ 696,223.84 (57.05%)

This grant amount requested is based on 75% of the projected construction cost, including contingencies, and an allowable 10% for engineering design and construction management services. The remaining regulatory permitting and environmental costs (FEMA/USACE) are not eligible.

Total Project Costs \$ 1,220,348.76

The BCWRD is not considering in-kind or indirect costs for matching funds.

A minimum of 25% Match Funding is required.

Amount of Matching Funds \$ 524,124.92 (42.95%)

Matching funds are based on direct payments for remaining construction costs, along with the remaining engineering, easement, administrative costs and regulatory fees.

Source(s) of Matching Funds

Matching funds will be provided by the Burleigh County Water Resource District.

Bid Attachments

Description	File Name	Type	Size	Upload Date
McDowell Dam Water Supply Opinion of Probable Cost	McDowell Dam Water Supply OPC Grant Format.pdf	pdf	55 KB	09/03/2021 02:18 PM

Match Funding

Match Amount	Funding Source	Match Type
\$524,124.92	Burleigh County Water Resource District	Cash
\$524,124.92		

Description

Directives

Major Directive*: Directive B
Choose One

Additional Directive: Directive C
Choose All That Apply

Type of Agency*: Political Subdivision
Choose One

Abstract/Executive Summary

Abstract/Executive Summary*:

The Burleigh County Water Resource District (BCWRD) intends to construct a supplemental water supply for the McDowell Dam Reservoir to prevent the potential degradation of the natural habitat and loss of a valuable recreational resource during periods of continued drought. This degradation will adversely impact the swimming, canoeing, kayaking, pedal boat and recreational concession activities. This is a major recreational facility and use is dramatically increasing.

This project accomplishes the key objectives by providing a supplemental water supply by diverting appropriated waters from Apple Creek to the McDowell Dam reservoir. The McDowell Dam watershed is inadequate to maintain full service levels during extended droughts. Water quality also suffers during normal and low water levels, which negatively impacts the shoreline habitat, fishery and overall public recreational value of the facility. By supplementing the water supply, service levels can be maintained and water quality maintained or improved. Water imported from Apple Creek will be treated prior to discharge into the reservoir to reduce the nitrogen and phosphorous loading.

The BCWRD has not finalized the routing of the intake line and two alternatives are under consideration. Factors that will determine the final route include cost, ease of construction, ease of access for operation and maintenance, and landowner willingness to grant an easement.

Project Duration

Project Duration*:

It is anticipated design would occur in 2022 and construction would occur in late 2022 or possibly extend into 2023.

Narrative

Narrative

Briefly summarize your organization's history, mission, current programs and activities. Include an overview of your organizational structure, including board, staff and volunteer involvement.

Organization Information*:

The Burleigh County Water Resource District (BCWRD) has a five-member Board of Commissioners, including a Chairman, Vice Chairman, Secretary/Treasurer and two Managers.

The general authorities of the BCWRD are described in ND Century Code Section 61-16.1-09. In addition to these broadly defined general authorities, the BCWRD has other specific and statutorily defined regulatory authorities.

The BCWRD was the original local sponsor for the construction of McDowell Dam by the Soil Conservation Service (now NRCS). In accordance with the 1975 project agreement, the BCWRD is the owner of the project and since its creation has acquired additional properties to expand this recreation area. The BCWRD is responsible for operation and maintenance throughout the projected 50 year project life, as well as after the agreement expires.

Describe the proposed project identifying how the project will meet the specific directive(s) of the Outdoor Heritage Fund Program.

Identify project goals, strategies and benefits and your timetable for implementation. Include information about the need for the project and whether there is urgency for funding. Indicate if this is a new project or if it is replacing funding that is no longer available to your organization. Identify any innovative features or processes of your project.

Note: if your proposal provides funding to an individual, the names of the recipients must be reported to the Industrial Commission/Outdoor Heritage Fund. These names will be disclosed upon request.

If your project involves an extenuating circumstance to [exempted activities](#) please explain.

Purpose of Grant*:

The project's goal is to provide a supplemental water supply by diverting available waters from Apple Creek in the spring into the McDowell Dam reservoir. The ND State Engineer has allocated 300 acre-feet annually for such use. The recreation area saw over 58,000 vehicles entering the site in 2020 and attendance is on pace to exceed that number in 2021. Water quality suffers during low reservoir levels, which negatively impacts the facility's public recreational value. By supplementing the reservoir's water supply from Apple Creek, full services levels can be maintained, and water quality will improve. The grant funding will help to preserve and protect the water levels and water quality enjoyed by community residents.

Attachment A contains figures depicting a preliminary design layout. The BCWRD has not finalized the routing of the intake line, and two alternatives are still being considered. Factors that will determine the final route include cost, ease of construction, ease of access for operation and maintenance, and landowner willingness to grant an easement. All disturbed areas will be fully restored to preconstruction status. Additionally, trees will be placed near the project structures to enhance the aesthetic and provide a visual barrier for the pump station and treatment structure. Exact tree and shrub placements have not yet been determined; however, a planting plan will need to be developed as part of final facility design and easements.

The project will take an innovative approach by employing a water treatment facility to remove nitrogen and phosphorous from the waters being delivered from Apple Creek to and prevent additional detrimental nutrient loading in the reservoir.

If selected this project will likely be designed and constructed in 2022 with the possibility of construction extending into 2023.

Please list the counties that would be impacted by this project:

Counties*: Burleigh

Is This Project Part of a Comprehensive Conservation Plan?* No

If Yes, Please Provide Copy of Plan:

Does Your Project Involve an Extenuating Circumstance?* No

Please Explain:

Provide a description of how you will manage and oversee the project to ensure it is carried out on schedule and in a manner that best ensures its objectives will be met. Include a brief background and work experience for those managing the project.

Management of Project*:

The project will be designed by Houston Engineering Inc. (HEI) as the BCWRD's engineering consultant. HEI is experienced in the design and construction of such projects. HEI has provided guidance to the BCWRD on these facilities including the completion of a TMDL Study {2004}, a strategic plan {2005}, an alum treatment {2006} a supplemental water supply study {2009}, and various facility maintenance and improvements. The BCWRD has an onsite Park Manager as well as a contract with the Bismarck Parks and Recreation District to manage this facility. It has taken time for the BCWRD to accumulate the necessary funds, during which it has been fortunate that no extended drought has occurred.

Indicate how the project will be funded or sustained in future years. Include information on the sustainability of this project after OHF funds have been expended and whether the sustainability will be in the form of ongoing management or additional funding from a different source.

Sustainability*:

After construction, the BCWRD will be responsible for funding the Operations and Maintenance of the supplemental waters supply system. Routine maintenance assistance may be provided by the Bismarck Parks and Recreation District (BPRD) as part of the park management agreement.

Indicate how the project will be affected if less funding is available than that requested.

Partial Funding*:

If for some reason the grant is either not or only partially funded, BCWRD would work to consider other funding sources. There is the possibility of obtaining addition cost share through the North Dakota Department of Water Resources. The BCWRD has already contacted NDWRD to discuss this opportunity.

If you are a successful recipient of Outdoor Heritage Fund dollars, how would you recognize the Outdoor Heritage Fund partnership? * There must be signage at the location of the project acknowledging OHF funding when appropriate. If there are provisions in that contract that your organization is unable to meet, please indicate below what those provisions would be.

Partnership Recognition*:

Yes, preliminarily plans are to place signs at the intake pump station and near the treatment facility. A news release will also be completed noting the project funding and intent. The implementation itself will not directly impact park operations.

Do you have any supporting documents, such as maps or letters of support that you would like to provide? If so, please provide them in a single file.

Supporting Documents*: Yes

If Yes, Please Provide Copies in a Single File: [1032-0200 McDowell Dam Supplemental Water Supply.pdf](#)

Awarding of Grants - Review the appropriate sample contract for your organization. [Sample Contract](#)

Can You Meet All the Provisions of the Sample Contract?* Yes

If there are provisions in that contract that your organization is unable to meet, please indicate below what those provisions would be:

Provisions Unable to Meet:

Tasks

Tasks

Task	Start Date	Completion Date
Acquire Easements	04/01/2022	06/30/2022
Project Construction	06/01/2022	08/31/2023
Project Design	01/01/2022	04/30/2022
Solicitation of Quotes/Contractor Selection	05/01/2022	05/28/2022

Description of Tasks

Please Describe Tasks:

Deliverables

Deliverables

Deliverable	Quantity	Unit of Measurement, if applicable
Expenditure Report	1.000	
Final Project Acceptance	1.000	
Monthly Construction Progress Report	12.000	Each
Project Completion and Certification Letter	1.000	Each

Certification

Certification

Certification:

Name: Travis Johnson
First Name Last Name

Title: Engineer
Title

Date: 08/31/2021

Internal Application Number

#/ID: 19-01

Attachment B **McDowell Dam Water Supply - Opinion of Probable Costs (Project Budget)**
Burleigh County Water Resource District
Outdoor Heritage Fund Grant Application
HEI Project No. 1032-0100
Date: 8/23/21
Revised: 8/31/21

TOTAL ESTIMATED QUANTITIES ALTERNATE #1

Item No.	Description	Unit	QUANTITY	Unit Price	Total Cost
1	Mobilization	LS	1	\$40,000.00	\$40,000.00
2	Site Preparation & Restoration	LS	1	\$30,000.00	\$30,000.00
3	36-Inch RCP	LF	690	\$175.00	\$120,750.00
4	36-Inch RCP Flared End Section	EA	1	\$3,000.00	\$3,000.00
5	24-Inch RCP	LF	320	\$140.00	\$44,800.00
6	Structure 1 - Fish Screen	LS	1	\$40,000.00	\$40,000.00
7	Structure 2 - Pump Station	LS	1	\$40,000.00	\$40,000.00
8	Structure 2 - Power & Control Panel	LS	1	\$30,000.00	\$30,000.00
9	100-Horsepower Pump/Controls	LS	1	\$75,000.00	\$75,000.00
10	10-Inch PE Discharge Pipe	LF	5732	\$30.00	\$171,960.00
11	Miscellaneous Fittings	LS	1	\$10,000.00	\$10,000.00
12	10-Inch Gate Valves	EA	2	\$3,000.00	\$6,000.00
13	Air Release Manhole/Valve	EA	2	\$12,000.00	\$24,000.00
14	Flush Riser	EA	2	\$2,500.00	\$5,000.00
15	15-Inch Casing Pipe	LF	100	\$250.00	\$25,000.00
16	Stream Crossing	EA	2	\$6,000.00	\$12,000.00
17	Outlet Structure	LS	1	\$12,000.00	\$12,000.00
18	Electrical Hookup	LS	1	\$12,000.00	\$12,000.00
	Preliminary Treatment				
19	A) Washed Sand	Ton	1,840	\$22.00	\$40,480.00
20	B) Pea Gravel	Ton	1,227	\$24.00	\$29,448.00
21	C) Grading	CY	2,322	\$8.00	\$18,576.00
22	D) Structures	LS	1	\$50,000.00	\$50,000.00
23	E) Piping	LS	1	\$15,000.00	\$15,000.00
24	Trees	EA	50	\$300.00	\$15,000.00
25	Tree Gator	EA	50	\$50.00	\$2,500.00
26	Seeding Class VI	AC	6	\$4,500.00	\$27,000.00

CONSTRUCTION COST	\$899,514.00
ENGINEERING DESIGN/EASEMENTS/PERMITTING (12%)	\$107,941.68
CONSTRUCTION MANAGEMENT SERVICES (CMS) (12%)	\$107,941.68
CONTRACT ADMINISTRATION (10%)	\$89,951.40
EASEMENTS	\$15,000.00
TOTAL PROJECT COST	\$1,220,348.76

Project Value	OHF	BCWRD
	75% Const	25% Const
\$899,514.00	\$674,635.50	\$224,878.50
12.00%	10%	90%
\$305,834.76	\$21,588.34	\$284,246.42
10.00%	0.00%	100.00%
\$15,000.00	\$0.00	\$15,000.00
\$1,205,348.76	\$696,223.84	\$524,124.92

Combined Construction Costs and Engineering Fees \$1,220,348.76

		Share of Cost
Heritage Fund Grant Request (75% + 10% Eng/CMS)	\$ 696,223.84	57.05%
Burleigh County Water Resource District	\$524,124.92	42.95%
State Water Commission Cost Share	\$0.00	0.00%
	\$ 1,220,348.76	100%

TOTAL ESTIMATED QUANTITIES ALTERNATE #2 (Note - unit prices carried from above, do not modify)

Item No.	Description	Unit	QUANTITY	Unit Price	Total Cost
1	Mobilization	LS	1	\$40,000.00	\$40,000.00
2	Site Preparation & Restoration	LS	1	\$30,000.00	\$30,000.00
3	36-Inch RCP	LF	53	\$175.00	\$9,275.00
4	36-Inch RCP Flared End Section	EA	1	\$3,000.00	\$3,000.00
5	24-Inch RCP	LF	68	\$140.00	\$9,520.00
6	Structure 1 - Fish Screen	LS	1	\$40,000.00	\$40,000.00
7	Structure 2 - Pump Station	LS	1	\$40,000.00	\$40,000.00
8	Structure 2 - Power & Control Panel	LS	1	\$30,000.00	\$30,000.00
9	100-Horsepower Pump/Controls	LS	1	\$75,000.00	\$75,000.00
10	10-Inch PE Discharge Pipe	LF	6257	\$30.00	\$187,710.00
11	Miscellaneous Fittings	LS	1	\$10,000.00	\$10,000.00
12	10-Inch Gate Valves	EA	2	\$3,000.00	\$6,000.00
13	Air Release Manhole/Valve	EA	2	\$12,000.00	\$24,000.00
14	Flush Riser	EA	2	\$2,500.00	\$5,000.00
15	15-Inch Casing Pipe	LF	100	\$250.00	\$25,000.00
16	Stream Crossing	EA	2	\$6,000.00	\$12,000.00
17	Outlet Structure	LS	1	\$12,000.00	\$12,000.00
18	Electrical Hookup	LS	1	\$12,000.00	\$12,000.00
	Preliminary Treatment				
19	A) Washed Sand	Ton	1,840	\$22.00	\$40,480.00
20	B) Pea Gravel	Ton	1,227	\$24.00	\$29,448.00
21	C) Grading	CY	2,322	\$8.00	\$18,576.00
22	D) Structures	LS	1	\$50,000.00	\$50,000.00
23	E) Piping	LS	1	\$15,000.00	\$15,000.00
24	Trees	EA	50	\$300.00	\$15,000.00
25	Tree Gator	EA	50	\$50.00	\$2,500.00
26	Seeding Class VI	AC	6	\$4,500.00	\$27,000.00

CONSTRUCTION COST	\$768,509.00
ENGINEERING DESIGN/EASEMENTS/PERMITTING (12%)	\$92,221.08
CONSTRUCTION MANAGEMENT SERVICES (CMS) (12%)	\$92,221.08
CONTRACT ADMINISTRATION (10%)	\$76,850.90
EASEMENTS	\$15,000.00
TOTAL PROJECT COST	\$1,044,802.06

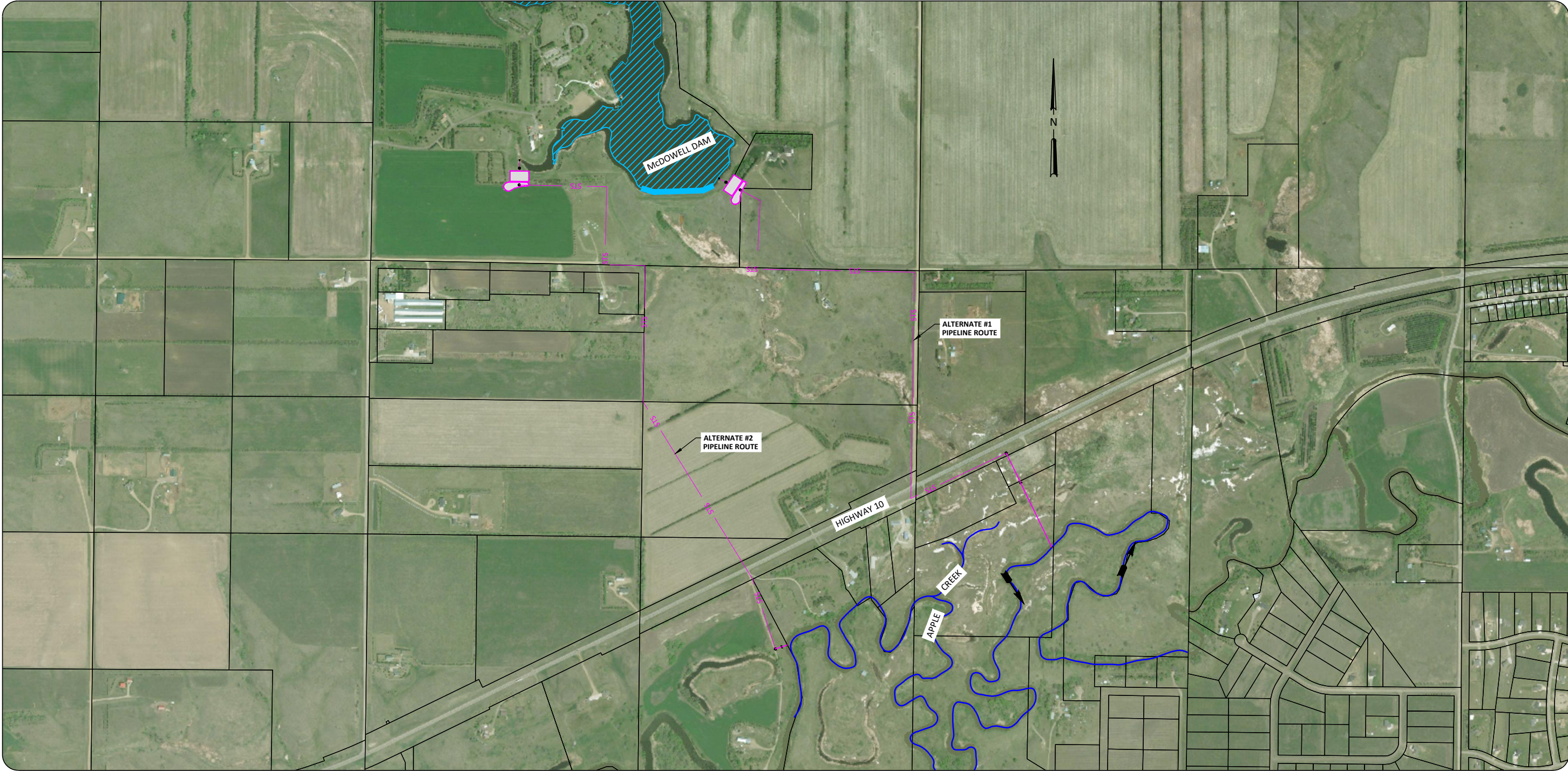
	Project Value	OHF	BCWRD
		75% Const	25% Const
	\$768,509.00	\$576,381.75	\$192,127.25
12.00%		10%	90%
12.00%	\$261,293.06	\$18,444.22	\$242,848.84
10.00%		0.00%	100.00%
	\$15,000.00	\$0.00	\$15,000.00
	\$1,044,802.06	\$594,825.97	\$449,976.09

Combined Construction Costs and Engineering Fees \$1,044,802.06

		Share of Cost
Heritage Fund Grant Request (75% + 10% Eng/CMS)	\$ 594,825.97	56.93%
Burleigh County Water Resource District	\$449,976.09	43.07%
State Water Commission Cost Share	\$0.00	0.00%
	\$ 1,044,802.06	100%

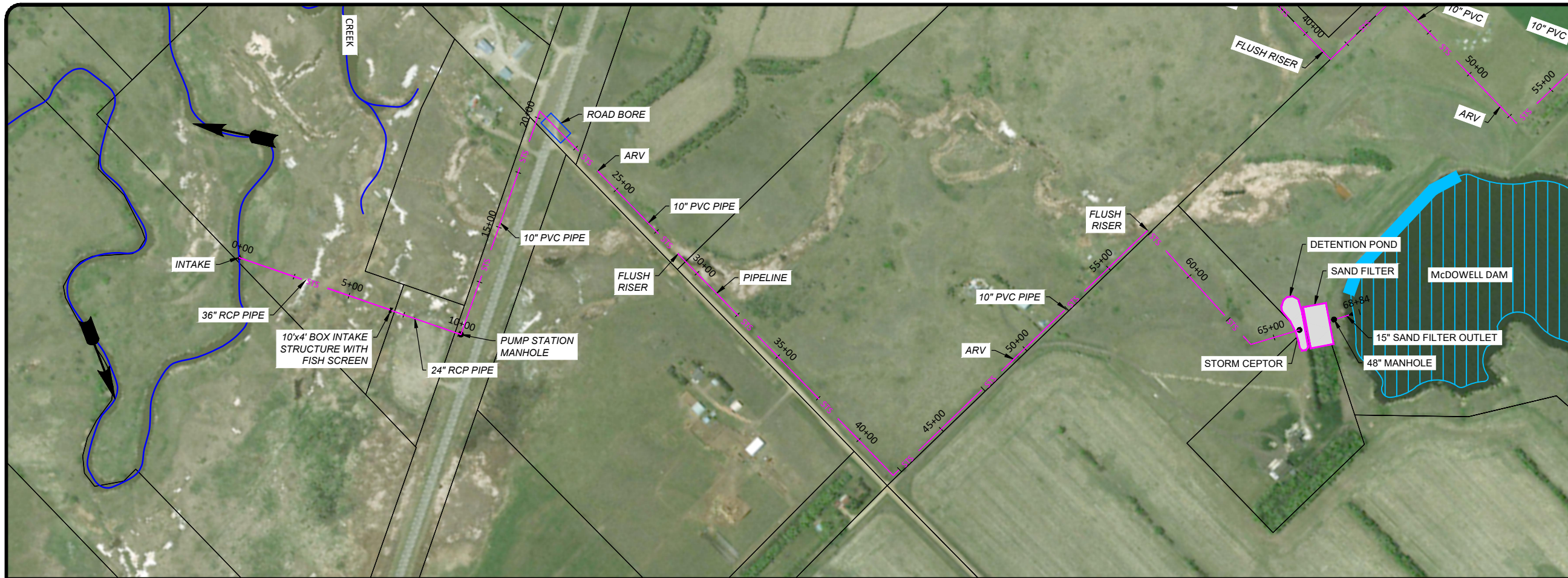
PRELIMINARY PLANS FOR
McDOWELL DAM
SUPPLEMENTAL WATER SUPPLY
BURLEIGH COUNTY, NORTH DAKOTA
AUGUST, 2021

HOUSTON
engineering, inc.
3712 LOCKPORT STREET
BISMARCK, ND 58503
P: 701.323.0200
www.houstoneng.com



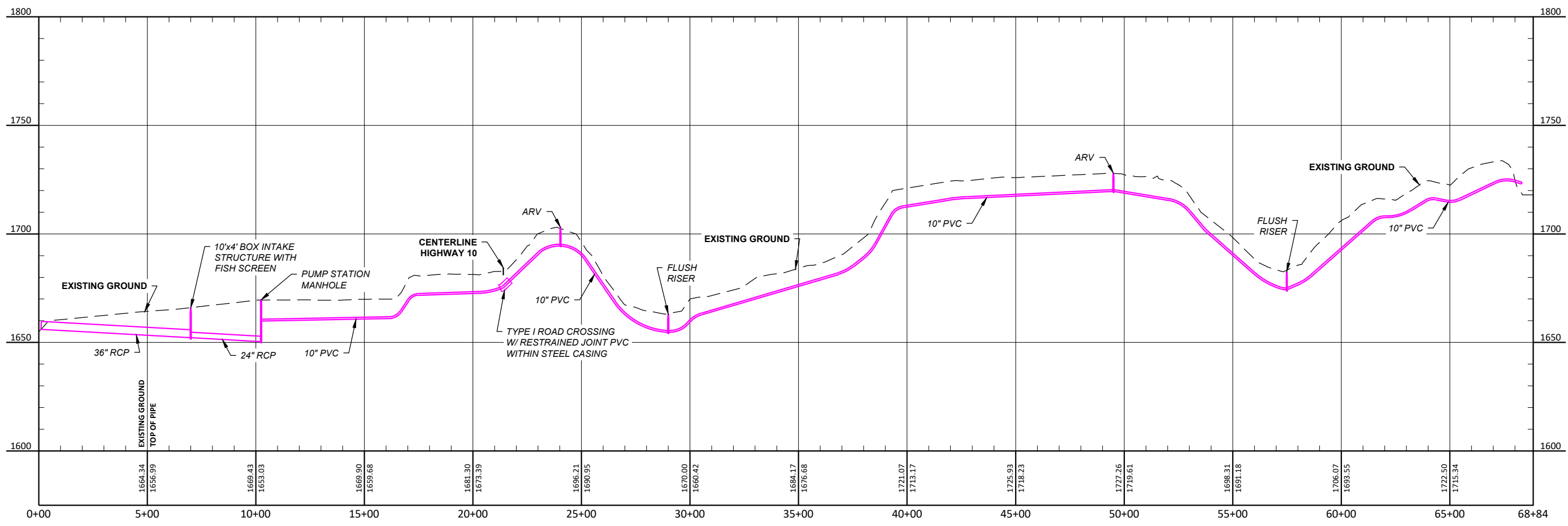
LOCATION MAP

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PIPE LENGTHS
 36" RCP = 690 FT
 24" RCP = 320 FT
 10" PVC = 5732 FT
 TOTAL = 7052 FT

PRELIMINARY
 NOT FOR CONSTRUCTION



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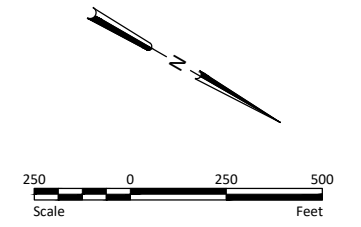
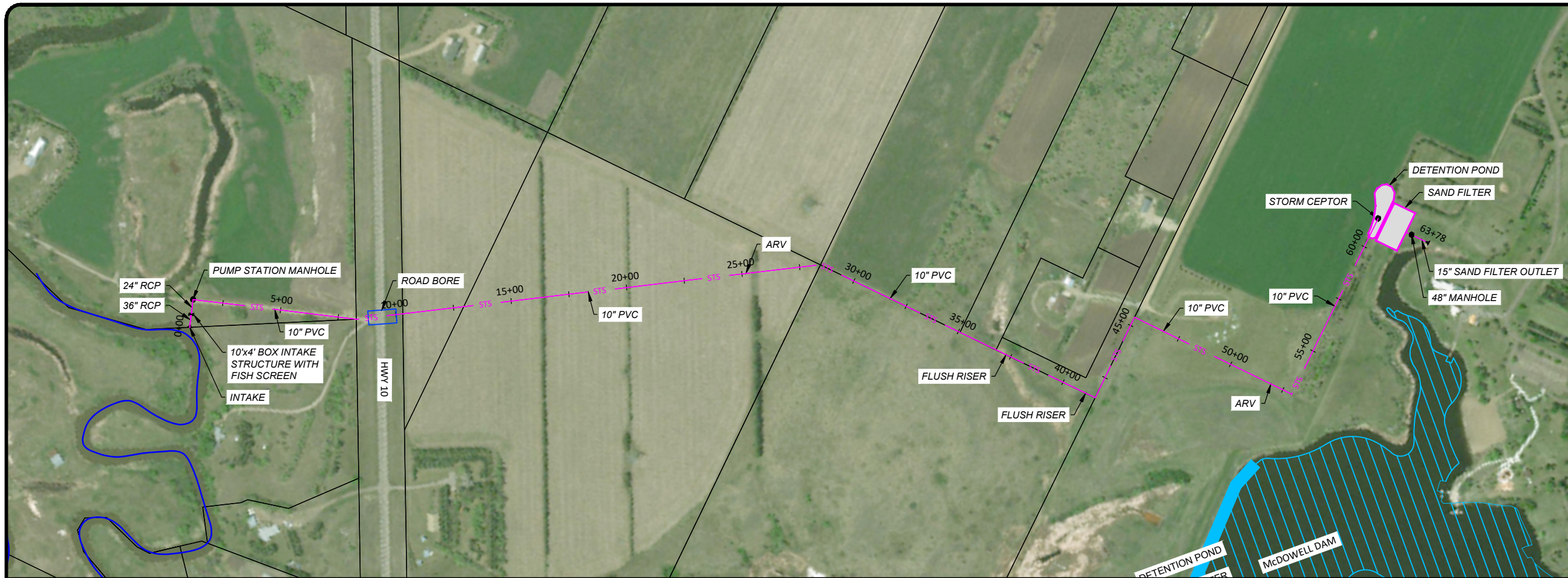


Drawn by TP Date 8-30-21
 Checked by TJ Scale AS SHOWN

MCDOWELL DAM SUPPLEMENTAL WATER SUPPLY
 BURLEIGH COUNTY WATER RESOURCE DISTRICT
 BURLEIGH COUNTY, NORTH DAKOTA

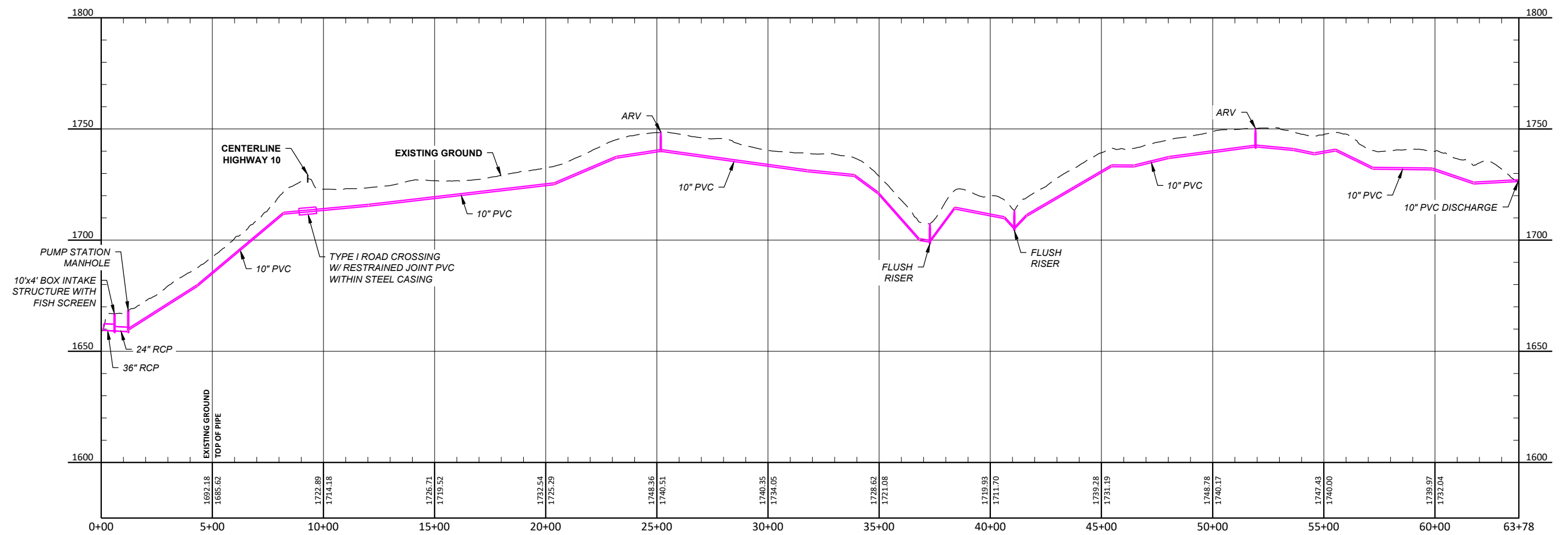
ALTERNATE #1 WATER SUPPLY
 PIPELINE PLAN & PROFILE
 PROJECT NO. 1032-0200

SHEET 2



PIPE LENGTHS
 36" RCP = 53 FT
 24" RCP = 68 FT
 10" PVC = 6257 FT
 TOTAL = 6378 FT

PRELIMINARY
 NOT FOR CONSTRUCTION



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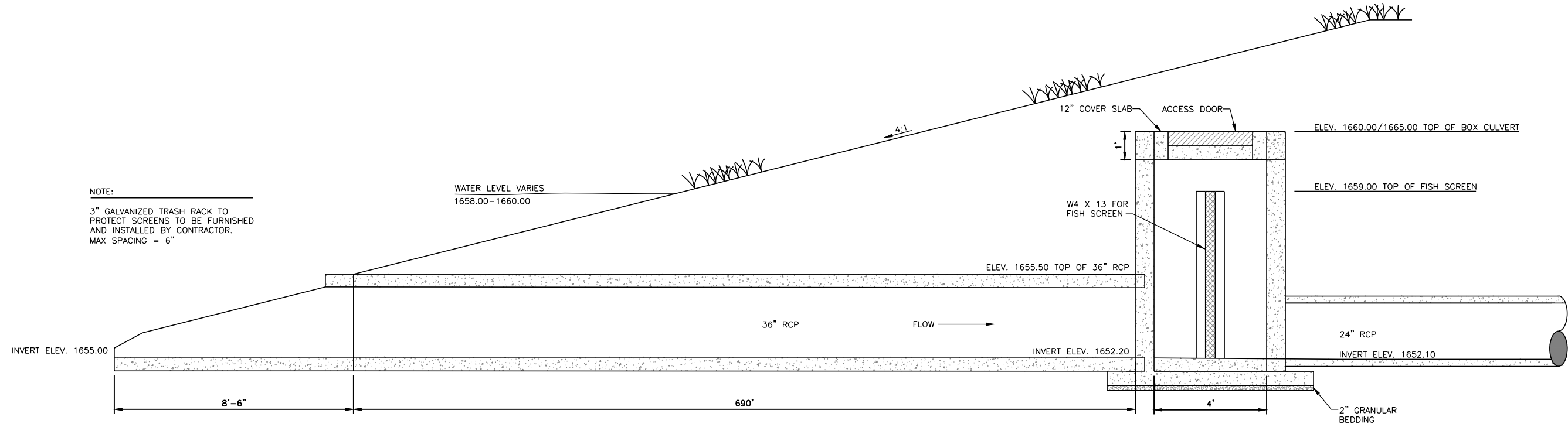
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MCDOWELL DAM SUPPLEMENTAL WATER SUPPLY
 BURLEIGH COUNTY WATER RESOURCE DISTRICT
 BURLEIGH COUNTY, NORTH DAKOTA

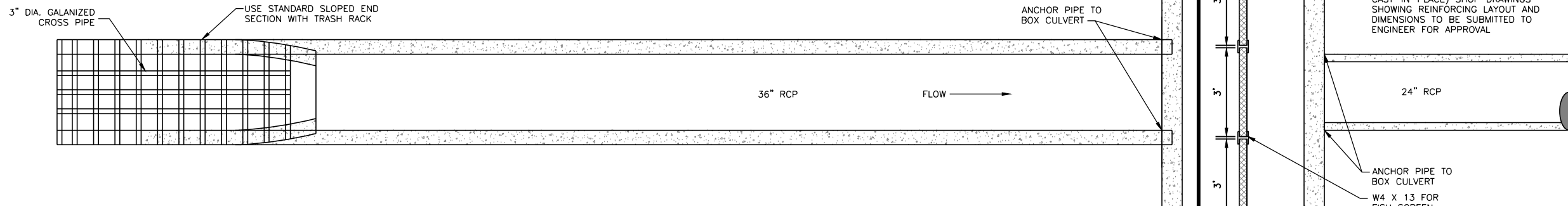
ALTERNATE #2 WATER SUPPLY
 PIPELINE PLAN & PROFILE
 PROJECT NO. 1032-0200

SHEET
3

NOTE:
 3" GALVANIZED TRASH RACK TO PROTECT SCREENS TO BE FURNISHED AND INSTALLED BY CONTRACTOR. MAX SPACING = 6"



A
 4 INTAKE STRUCTURE ELEVATION VIEW
 NOT TO SCALE



B
 4 INTAKE STRUCTURE PLAN VIEW
 NOT TO SCALE

*FOR SECTION A-A SEE DETAIL **A**/**5**

PRELIMINARY
 NOT FOR CONSTRUCTION

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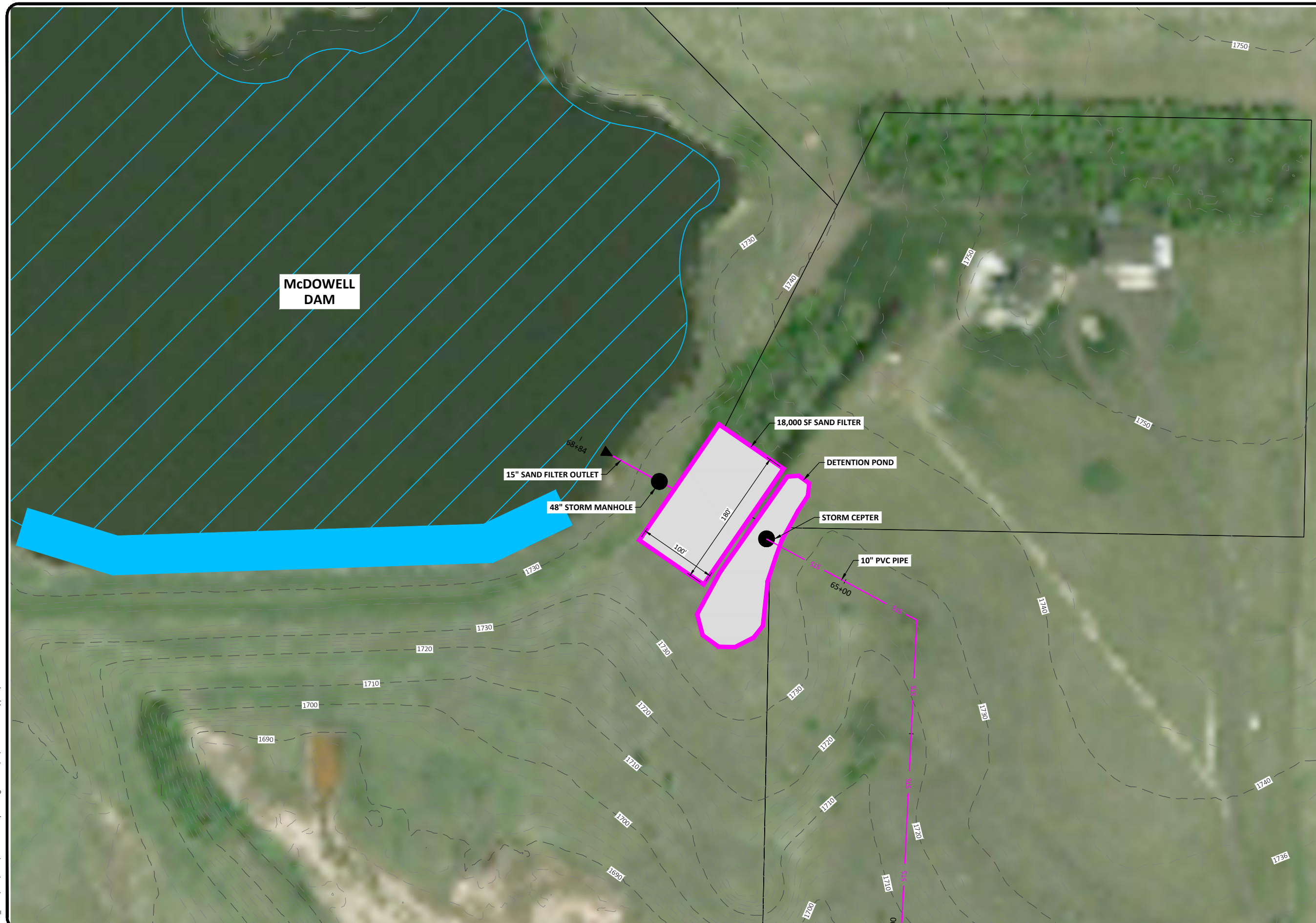
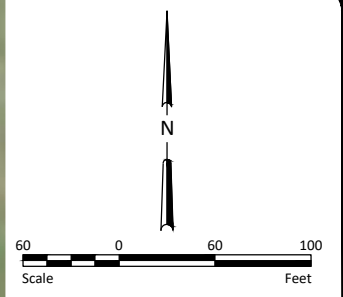


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TJ	AS SHOWN

MCDOWELL DAM SUPPLEMENTAL WATER SUPPLY
 BURLEIGH COUNTY WATER RESOURCE DISTRICT
 BURLEIGH COUNTY, NORTH DAKOTA

INTAKE STRUCTURE LAYOUT
 PROJECT NO. 1032-0200

SHEET
 4



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PRELIMINARY
NOT FOR CONSTRUCTION

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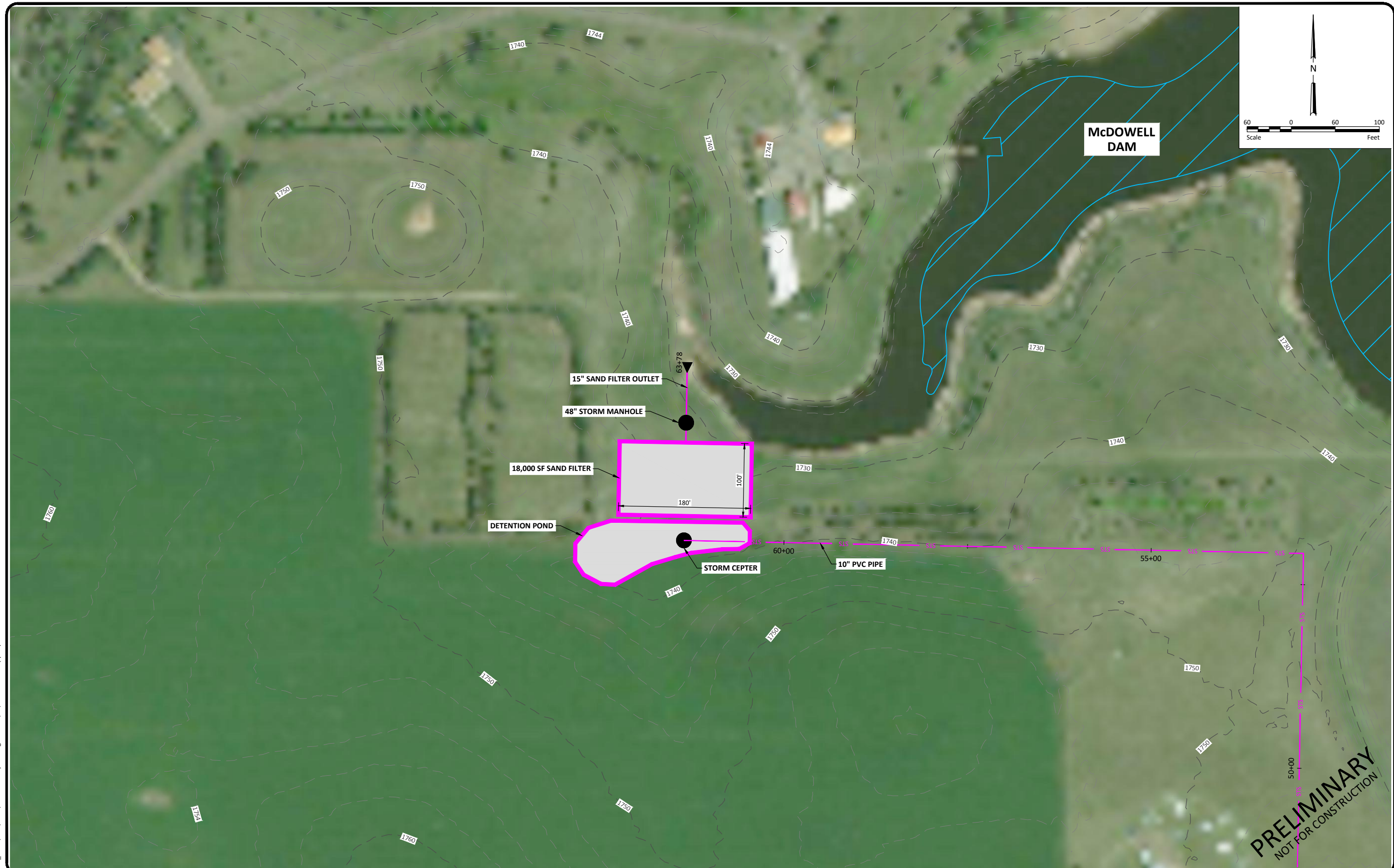
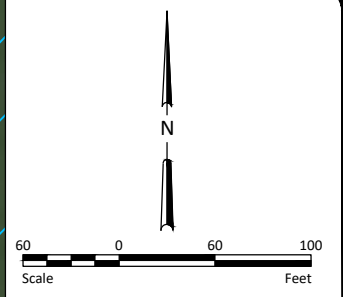


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MCDOWELL DAM SUPPLEMENTAL WATER SUPPLY
BURLEIGH COUNTY WATER RESOURCE DISTRICT
BURLEIGH COUNTY, NORTH DAKOTA

ALTERNATE #1 SAND FILTER
LAYOUT
PROJECT NO. 1032-0200

SHEET
5



PRELIMINARY
NOT FOR CONSTRUCTION

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No.	Revision	Date	By

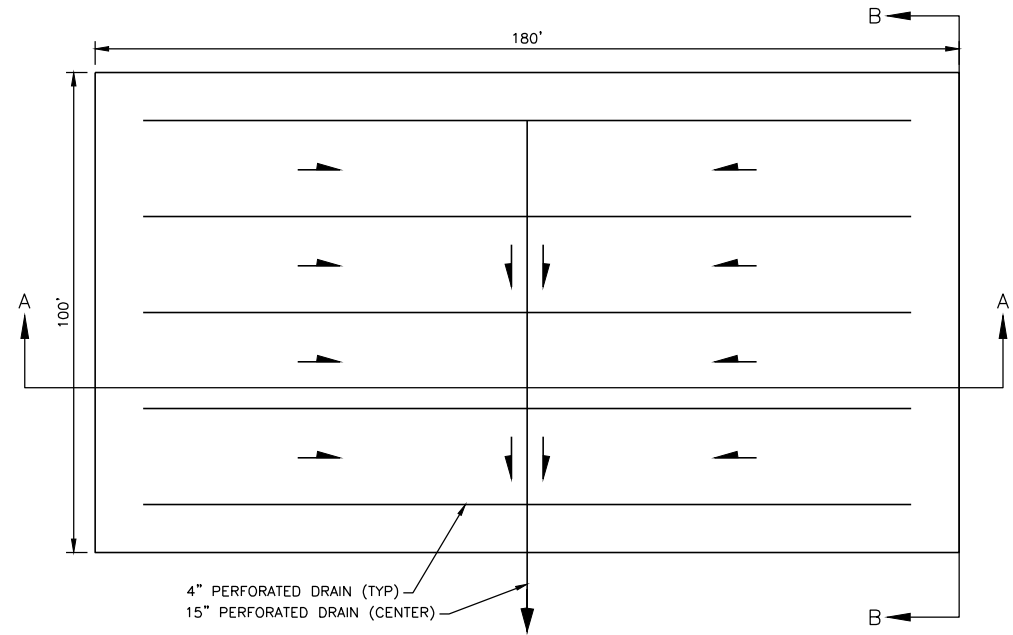


Drawn by TP	Date 8-30-21
Checked by TJ	Scale AS SHOWN

MCDOWELL DAM SUPPLEMENTAL WATER SUPPLY
BURLEIGH COUNTY WATER RESOURCE DISTRICT
BURLEIGH COUNTY, NORTH DAKOTA

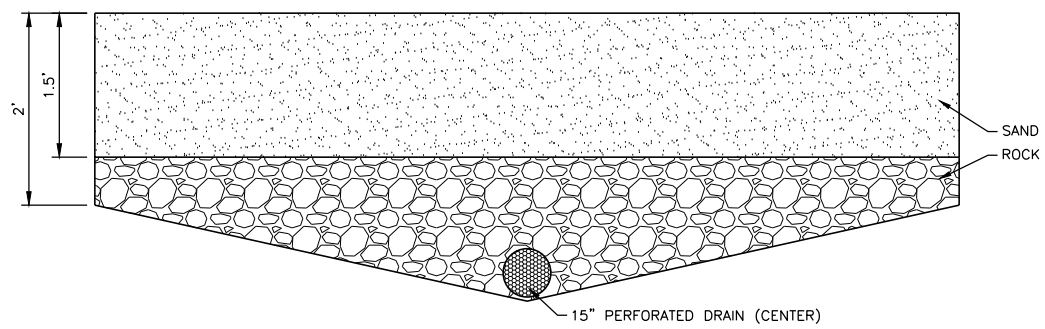
ALTERNATE #2 SAND FILTER LAYOUT
PROJECT NO. 1032-0200

SHEET
6



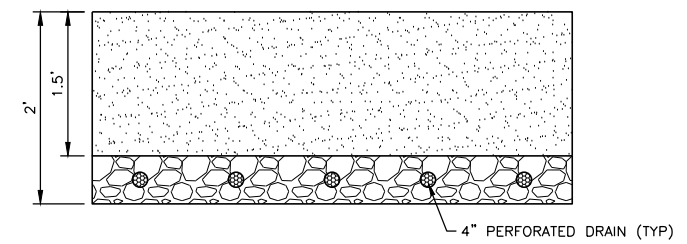
4" PERFORATED DRAIN (TYP)
15" PERFORATED DRAIN (CENTER)

A PLAN VIEW
7 NOT TO SCALE



SAND
ROCK

B SECTION A-A
7 NOT TO SCALE



4" PERFORATED DRAIN (TYP)

C SECTION B-B
7 NOT TO SCALE

PRELIMINARY
NOT FOR CONSTRUCTION

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Drawn by TP	Date 8-30-21
Checked by TJ	Scale AS SHOWN

MCDOWELL DAM SUPPLEMENTAL WATER SUPPLY
BURLEIGH COUNTY WATER RESOURCE DISTRICT
BURLEIGH COUNTY, NORTH DAKOTA

SAND FILTER DETAILS
PROJECT NO. 1032-0200

SHEET
7