Converting Open Dead End Ditch

Jones Ditch

Open Ditch to a Flooded Pipe System

Funding Opportunity Announcement NO.BOR-DO-20-F006

Water Smart Grants: Small Scale Water Efficiency Projects for Fiscal Year 2020

Applicant:

Idaho Irrigation District

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Executive Summary

February 5 2020
Idaho Irrigation District
Idaho Falls ID. 83404

Idaho Irrigation District Proposes To Put In A Flooded Pipe System In The Jones Ditch End That Is Currently A Open Channel This Section Of The Ditch Is Controlled By A Head Gate Just Bellow The Spillway Back To The Main Sand Creek The problem With This Section Is it's a Dead End Ditch
We Are Estimating the Project WOULD Start At the End of the 2020 Water Season and We Would Have It Completed Prior To the 2021 Irrigation Season

This Project Is Not Located On Any Federal Ground

Background Data

The Idaho irrigation District Was Formed In 1905 It Serves About 1700 Patrons And Delivers Water To Approximately 35,995 Acres Trough Approximately 118 Miles Of Canals And Ditches That Start With Our Main Canal The Idaho That Comes Of The Snake River Approximately 10 Miles North Of Idaho Falls In Jefferson County On The East Side Of The River And Then Branches Off To Two Other Main Canals In Idaho Falls The Meppen Canal That Feeds Sand Creek That Has Multiple Ditches Coming Off From It And The Butte Arm Canal That Has A Couple Of ditches That Come Off It And The Idaho Goes On To Feed Two More Laterals That Supplies Surface Water To Farm Ground Pastures And Lawns
The District Water Rights Include Multiple Decreed Natural Flow Rights With Priorities Dating Back To August Of 1888 To April Of 1939 With A Cumulative Total Of 1430 CFS The District Also Has Contracted Storage Space In Jackson Lake Of 13,230 A.F Of Storage Palisades With 45,760 A.F Of Storage And 13,040 A.F Of Winter Water Savings And American Falls 22,911 A.F Of Storage For A Total Of 94,941 AF.
The District Started Working With The Bureau On Water Conservation Grants Back In 2001 And With Our First Project Of Automating The Gates At The Head Of Our Main Canal The Idaho So To Better Manage The Water Coming Out Of The River We Also Installed A Scada System To Control The Gates And Monitor The Flows From Our Office With The Help Of Another Grant From The Bureau We Installed A Sonar Measuring Device At The Head Of The Idaho Canal To Have A Constant Measure Of The CFS We Are Using Over The Years We Have Installed Nine Broad Crested Weirs In Our Canal To Better Track Or Water In Certain Canals And Ditches .

With The Help Of Another Grant We Have Installed A Over Shot Gate At The Head Of Our Butte Arm Canal That Come Of The Main Idaho Canal In Idaho Falls By Our District Office That Was Formerly Controlled By Boards In Slots So When Ever The Idaho Came Up We Would Get To Much Water And When It Dropped Off We Would Be Out OF Water And In 2011 With A Grant From The Bureau We Installed A Weir At The End Of The Butte arm Canal Along With A Scada Monitoring The Return Flows That Leave Our District That Same Grant We Were Able To install A Scada And Monitoring On The End Of Our Sand Creek Broad Crested Weir Track The Water Going Out Or System That Same Year With The Help Of The Bureau We Installed A Rubicon Flume Gate At The End Of Or Idaho Canal That Measures The Water That Is Going Over The Top And Out Of Our District It Also Serves As A Check Structure To Keep The Water Level Up At The End For Our Patrons That Water That We Control And monitor From Our Office.

Project Location

Jones Ditch Piping Location is Two Miles East of Shelley Idaho 83274 and a Mile and a Quarter South On 1100 East Bingham County In Township 1 south Range 37 E Section 11 East of The Boise Meridian Line

Technical Project Description

The Idaho irrigation District Jones Ditch Starts At The East Branch Of Sand creek Travels Some 4,510 feet To A Spillway Back To The Same Creek Some Fifteen Feet Below It Is A head gate To The Last Section Of The Jones Ditch That Is 2,900 Feet Long That Dead Ends To Three Head Gates That Are Private Ditches.

If We Receive This Grant We Are Planning On Burying This Section with a 30 Inch PVC Pipe with Concrete Vaults At All the Turnouts for an Enclosed System

If We Are Chosen For The Grant We Will Get The Materials For The Production Of The Concrete Vaults That We Will Be casting During The 2020 Water Season To Have Them All Ready When we Shut The Water Out Of This Ditch Sometime In October We Will give It Some Time To Dry Out

Once We Get Started About The First Of November 2020 We Will Start Trenching And Getting The Pipe Installed And Back Filled And Setting The Vaults With Weather Permitting We Will Get What We Can Get Done In 2020 And We Should Be Able To Get The Rest Of The project Completed Before The Beginning Of The 2021 Water Season.

The project Should Address The Problem Of The Flooding Issue That Have Been increasing Over The Last Few Years And Stop The Patrons From Being Cut Short Of Water At The End Of The Ditch By keeping A Constant Water Height In This New System

The Other Expected Outcome Will Be Of Course The Flooding And Water Savings But Also The Time That The Ditch Riders Have Had To Control This Little Ditch.

Project Description

The Idaho irrigation District Jones Ditch This Last Section Starts At A Head Gate Just Below The Spillway It Is A open Channel That Travels Some 2,900 Feet To A Dead end The District Would Like To Convert This section To A Buried 30' PVC Pipe Flooded System Along With The Seven Concrete Vaults That Will Be Needed For the Turnout Head gates We Have had Numerous Problems With This Ditch Over The Years With Flooding Or Drying Out At The End The Patrons On This Section Will Go And Turn On Their Head gates And Not Add Anymore Water Trough The Main Head gate And Then Eventually The Patrons At The End Start Losing Their Water And They Go Up And Open The Head gate And When the other patrons get done and shut their gate down that's when we start seeing the flooding the water starts rushing over the tops of the three head gates at the end And flooding over the ditches into the road or other peoples yards Or we have a problem with people that just turn it up to much at the main gate And cause flooding over the banks and at the end it has been really Hard To manage This Ditch For The Ditch rider that takes care of it So That's way we are wanting to put in a enclosed pipe system we think that with the new system we can keep the System Flooded And we can probably leave the main gate all the way up and control the water depth in it using the height of the water That is controlled by the check at the spillway that is upstream of the main gate some fifteen feet or so.

Evaluation Criteria A Project Benefits

Describe The Expected Benefits And Outcomes Of Implementing The Proposed Project.

The Benefits To Our Water Supply Would Be The Water That We Can Save That was Previously Lost Out The System When The Ditch Was Flooding Over At The End And Probably Some Seepage Trough The Bottom Of The Channel Other Benefits Would Be The Manpower That We Have Previously Spent Taking Care Of All The Problems On This Ditch.

Extent to Which the Proposed Project Improves Overall Water Supply Reliability.

This project Could Save Water That Has Previously Went To Waste That Could Be Utilized Elsewhere On The System And With This Dead End Ditch And The Water In It All The Time Who Knows How Much We Are Losing In The Ground.

The Expected Geographic Scope Benefits From The Proposed Project.

While the project Annual Water Savings Is Undetermined but Every One of These Conservation Efforts Do Have A lot Of Positive Effect on the Long Term Water Supply for the Future.

Any anticipated Positive Impacts/Benefits to Local Sectors and Economies.

The benefit would be a More Fluid Water Supply to help the patron Get the Watering Done More proficient and Quicker with a More Level Water Flow Trough the Ditch.

Extent to which proposed project Will Increase Collaboration and Information Sharing among Water Managers in the Region.

The Collaboration Has Always Been A Helpful Tool In Water Management As I Have Always Had All The Other Managers In Our Area Out To Look At Our Conservation Project As they Have To Me So We Might Get A Idea From Each Other On Future Projects.

Extent The project Will Complement Work Done in Coordination with NRCS in the Area.

At This Time This project Is Not Near Any NRCS Project But The Little Bit Of Water Saved In This Ditch Could Go To better Use And If They Were To Put One In The New Proposed Piped Ditch They Would Have A Better Supply Of Water.

Evaluation Criterion B
Planning Efforts Supporting the Project

Describe How Your Project Is Supported By An Existing Planning Effort.

With The Approval Of This Application The District Will Be Converting A Open Ditch To A Piped System To Further Our Objective To Conserving Water As Stated Earlier That The District Has been Involved With many Conservation Projects With The Bureau Since 2001.

Does The Project Implement A Goal Or Address A Need Or Problem Identified In The Existing Planning Effort.

The Piping of This section Of Ditch Will Address a Huge Problem with Flooding and management

Explain How the proposed Project Has Been Determined as a Priority In The existing Planning Effort As Opposed To Other Potential Projects or measures.

With The problems The District Has Had With Management Of This Little Ditch And All Off The Problems With The Flooding And maybe Some seepage The District Has Looked Into This For Years Trying To Figure Out A Solution And The Only option We Have Come Up With Was To put It Into An Enclosed System To Keep The Water Level Up In The Ditch To Keep The Patrons With A steady Flow Of Water And Help Us With the Management Of This Ditch And Of Course take Care Of The Flooding.

Evaluation Criterion C Project Implementation

Describe the implementation Of the Plan for the Proposed Project.
If We Are Awarded The Grant
Stage One:
The First Things We Will Be Doing Is Getting The Materials Ordered For The Seven Concrete Vaults That We Are Going To Be Doing In House We Will Get These Done During The 2020 Water Season So We Will Have Them All Set To Go
After The Water Season Around the End of October We Will Jive the Ditch A Week or So to Dry Out We Don't Want To Install the Pipe in a Wet Bottom.
Stage Two:
When We Get Started Around The First Of November 2020 We Would Like To Get The 1,255 Feet Of Pipe Installed To Were The First Vault Will Be Installed Which We Are Estimating Will Take About 7 Days With Installing The pipe And Backfill And Compact Set The Vault.
Stage Three:
With Weather Permitting We Will Work On Installing The pipe To The Vault That is 1,738 Feet From The Head And Backfill We Estimating 3 Days For This Section.

Stage Four:
We Will Be Working On Installing Pipe To The Vault That Is 2,024 Feet From The Head We Are Estimating 2 Days.
Stage Five:
We Will Be Installing The Pipe And Vault That Will Be At 2,188 Feet from The Head We Are Estimating 2 Days.
Stage Six:
We Will Be Installing The Pipe To The Vault Will Be At 2,200 Feet From The Head We Are Estimating 1 Day.
Stage Seven:
We Will Be Installing Pipe To The Vault That Will Be at 2,460 Feet From The Head We Are Estimating 2 Days.
Stage Eight:
We Will Be Installing The Pipe To The Vault That Will Be At 2,915 Feet From The Head This Will Be To The End Of The Ditch We Are Estimating 3 Days.
Stage None:
We Will Be Reinstalling The 11 Head Gates And Pouring And Finish Any Odds And Ends We Are Estimating About 5 Days To Do This.

Evaluation Criterion D Nexus to Reclamation
The Idaho irrigation District Has contracts With the Bureau of Reclamation for Storage Water in Jackson Lake Reservoir, Palisades Reservoir, and American Falls Reservoirs.
This Project In On A District Ditch Which Supplies Water Including Storage When Used To District Patrons In The Area.

Evaluation Criterion E Department Of Interior Priorities
This project meets the Department of Interior Priorities Such As creating A Conservation Stewardship by Best practices to manage Land and Water Resources with the Elimination of an Opened Ditch Seepage loss Evaporation Loss and the Operational Loss and with this project The Flooding Losses
This Project Supports The White House Public/Private Partnership Initiative To Modernize U.S. Infrastructure by Utilizing District, And Federal Funds to Pay for This Project.
The Project Also Meets The Department Of Interior Priority Of Construction Of Infrastructure By Replacing Open Ditch With Buried Pipe.

Environmental and Cultural Resource Compliance

The proposed Project Should Have Minimal Impact To The Surrounding Environment The earth Disturbing Work That Will Occur With The Project Will Be To Excavate The Existing Ditch Setting Pipe And Back Fill With An Excavator The Only Way Any Air Quality Would Be Affected Through The Project Could Be By Some dust kicked up By Tires Or Tracks On The Machines While They Are In Operation.

There Are No Known Issues in This Location Concerning Federally Listed Threatened or Endangered Species or Critical habitat in the project Area.

There Are No Know Issues With wetlands In This project Area.

The Idaho Canal Company started in the Late 1880 the Idaho irrigation District Took It over In 1905 With Varies Canals and Ditches I Don't Know For Sure When the Jones Ditch Was Constructed.

The Only modification this project would go from an Open Ditch to a Buried System All the Head gates Will Be Reinstalled in the Concrete Vaults.

There Are No Listed Structures Or features Within The District System There Are Several Structures That May Be Eligible Due To Their Age But No Of Them Are In The Proposed Project Area.

There Are Not Any Know Archeological Sites in the Proposed Project Area

The proposed Project Will Have No Effect on Low Income or Minority populations

There Will Be No Impact To Any Ceremonial Sacred Sites Used By The Indians in The Proposed Project Area.

There should be minimal Impact to the Contribution of Noxious Weeds from This project.

Permits or Approvals

No permits Needed For This project As All The Work Will Be Done In The Existing Ditch We Have Sought And Received Good responses From The patrons On The Ditch The Board Of Directors Of The Idaho Irrigation District Have Stated The District Will Approve The Funding For This Project We Will be Having A Board Meeting On The 12th Of March And We Can Have A Resolution For This Project That I can Get Sent In Shortly After.

Budget Narrative

Richard Lockyer Is The Manager Of The Idaho Irrigation District And Will Be The project Manager He Will Be In charge Of The Day To Day Operations of The project His Salary Will Be Included In The Direct Cost of The project Along With The Field Crew All The Labor Rates Included For All Personnel Is Certified To Be The Actual Labor Rates Of Each individual Identified In This Application Also Included In The Above Table Are The Actual Fringe Benefits For Each Individual.

Idaho irrigation District Owns All The Necessary Equipment And Machinery That Will Be required For This Project Idaho irrigation District Has Established Hourly Rates For The Equipment For This application By using Rates Established By The United States Army Corp Of Engineers Within Their Construction Equipment Ownership And Expense Schedule

The Seven Concrete Vaults Will Be Formed And Poured In House My One Ditch Rider Used To Own A Precast Company By Doing This It Will Be A Huge Savings To The Project.

All Of The Materials And Supplies For This Project Are Listed Above In The Budget Proposal Table The Supplies Are Listed By major Category Unit Price Quantity And Purpose All Of The items Listed Will Be Used In The Project All Cost Were Derived From Actual Product Cost Or By Quotes Received By Idaho Irrigation On All Of The Products That Will Be Needed To Complete This Project And Other Prices That Will Be Included In The Budget Proposal Sheet.

The District Does Not Foresee Any Other Cost Than What Are Listed In The Budget Sheet As All Of The Work Will Be Done In A Existing Ditch That the District Already Has A right Of Way And easements Authority And Is Within The District Boundary

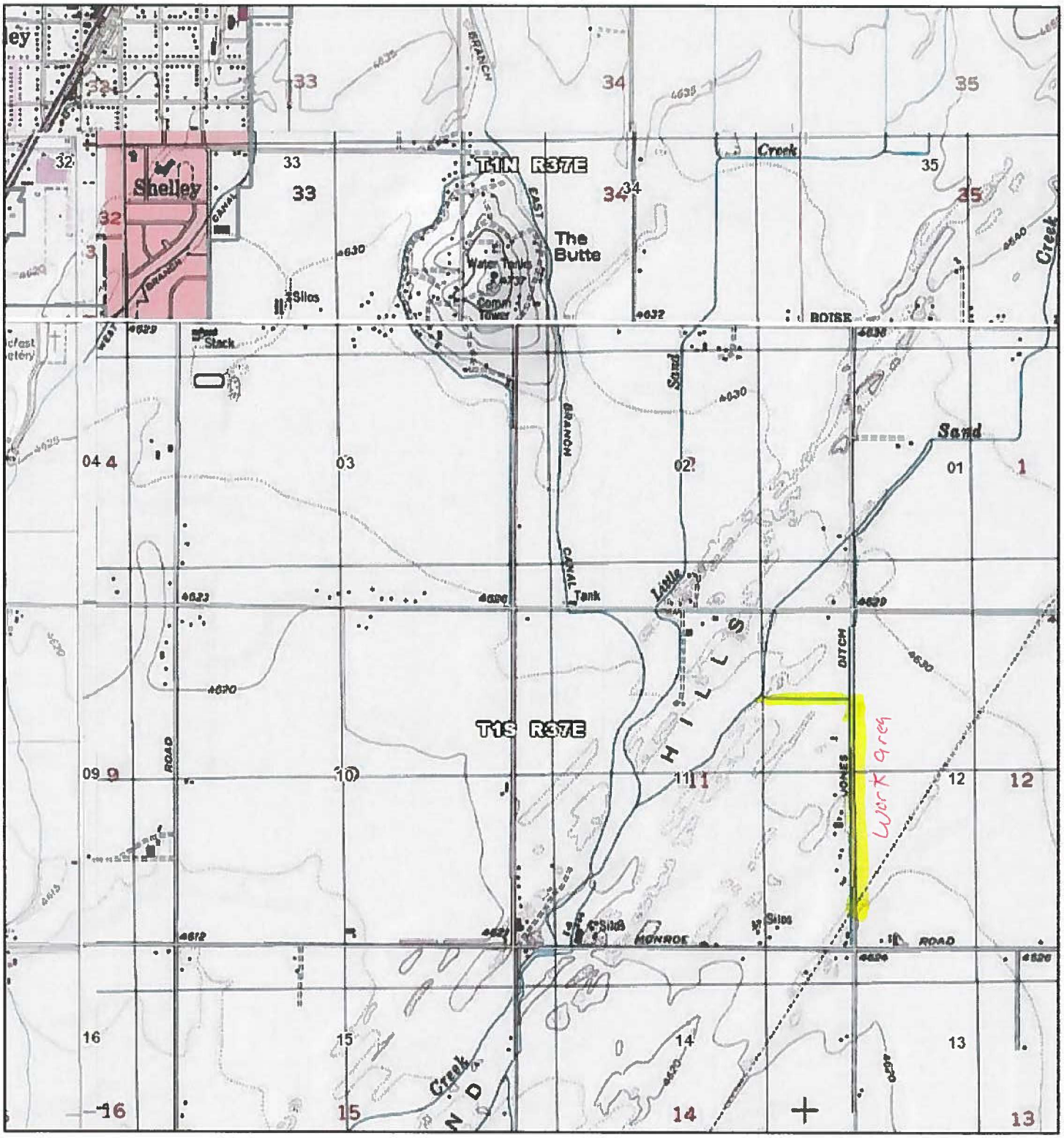
No other Expenses Or indirect Cost Have Been Identified.

The Total Cost of the Project Is $168,540.71

Idaho Irrigation District Jones Ditch Pipping Project Budget Proposal
February 14 2020

Budget Item Decription	Computation		Quantity Type	Total Cost
Salaries And Wages	$/unit	Quantity		
Richard Lockyer Manager	32	144	Hour	4,608.00
Ditch Rider Equipment operator Construction	25	144	Hour	3,600.00
Ditch Rider Equipment operator Construction	22.5	144	Hour	3,240.00
Ditch Rider Equipment operator Construction	22	144	Hour	3,168.00
Ditch Rider Equipment operator Construction	20	144	Hour	2,880.00
Fringe benefits Full Time employees	2.88	720	Hour	2,073.60
Equipment				
323 Catepillar Excavator	105	90	Hour	9,450.00
420 F backhoe caterpillar	69	84	Hour	5,796.00
D5 Dozer Caterpiller	84	45	Hour	3,780.00
2003 Kenworth Dump Truck Ten Wheeler	52	84	Hour	4,368.00
Suplies And Materials				
30" 80lb Pvc Pipe For Main Ditch	38.94	2,800	Per feet	109,032.00
30" 100lb Pvc Pipe For All Drivway Crossings	49.37	120	Per Feet	5,924.40
Concrete Vaults Materials				
#4x20' Epoxy Coated Rebar	18.1766	60	Per Feet	1,090.60
4'x8'x3/4 Sheets MDO Plywood	51.5	15	per Sheet	772.5
5'x5'x3/4 Sheets Of Birch Plywood	42.8	10	Per Sheet	428
2x4x92 5/8 Inch	2.85	60	Per Board	171
2x6x92 5/8 Inch	4.05	10	Per Board	40.5
Dog Bone Incerts And Lifts Varies Pieces			Per Package	750
1-1/4x3/16 3'x24' Bar Grating to Cover vaults	900	3	Per Section	2,700.00
Concrete For vaults Minimun Truck Rates Yard	133	17.5	Per Yard	2,327.50
Labor Wages For Building Concrete Vaults				
Ditch Rider Equipment Operator Construction	22.5	48.5	Hour	1,091.25
Ditch Rider Equipment Operator Construction	20	48.5	Hour	970
Fringe Benefits For Building Concrete Vaults	2.88	97	Hour	279.36
Total Estimated Project Costs				168,540.71
	Total Cost Table			
cost To Be Reimbursed With Requested Federal Funding				75,000
Cost To Be Paid By The Applicant				93,540.71
		Total Project Cost		168,540.71

Bingham County Web Map



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City Boundaries

County Boundary

Section Lines

Parcels

Townships

Snake River

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Bingham County Web Map

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0 0.17 0.35 0.7 km

Jones Spillway and Vault Location

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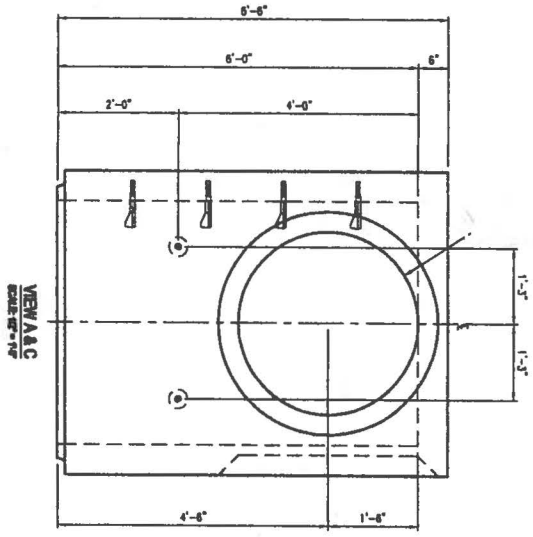
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Bingham County GIS
USDA FSA, DigitalGlobe, GeoEye, CNES/Airbus DS |



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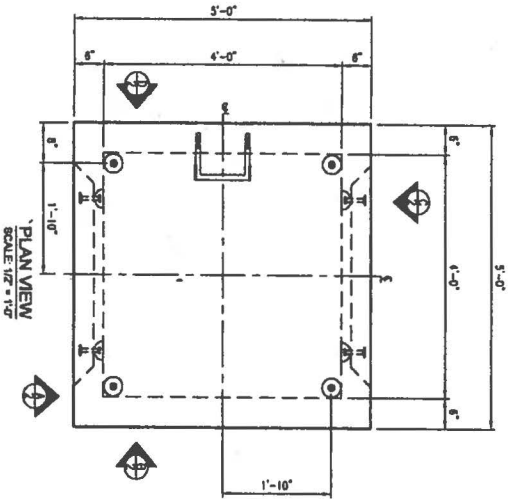

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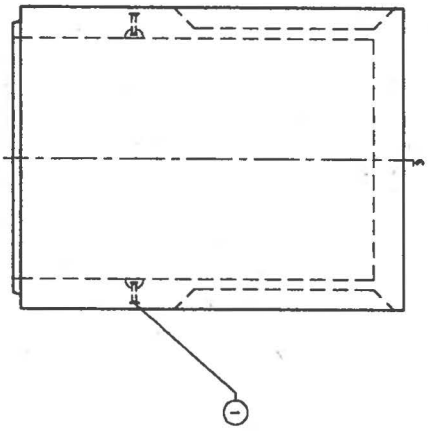

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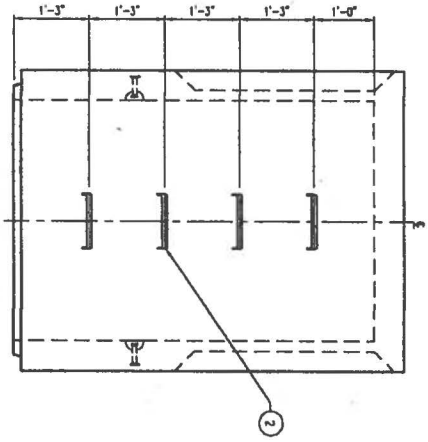

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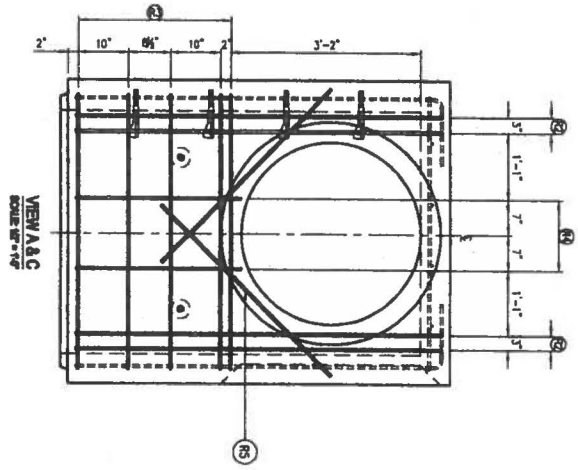
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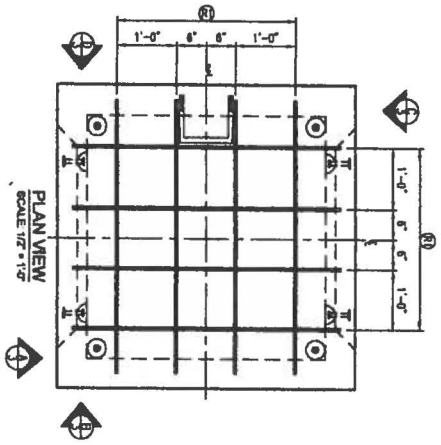
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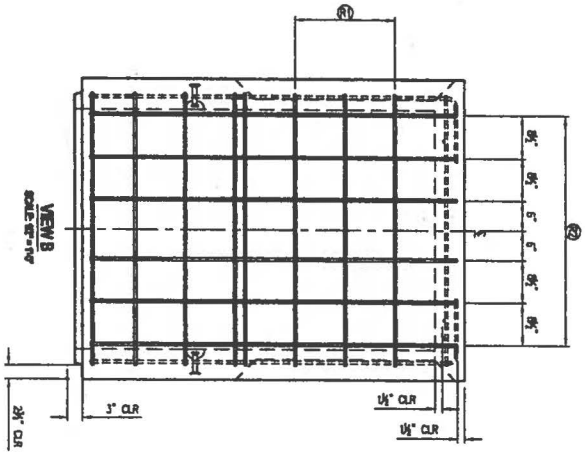
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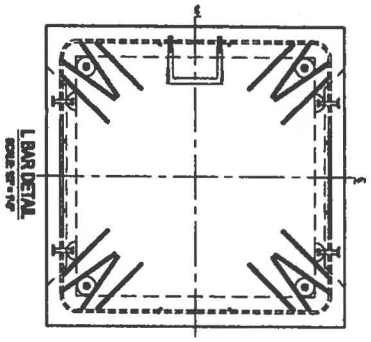
2½" CLR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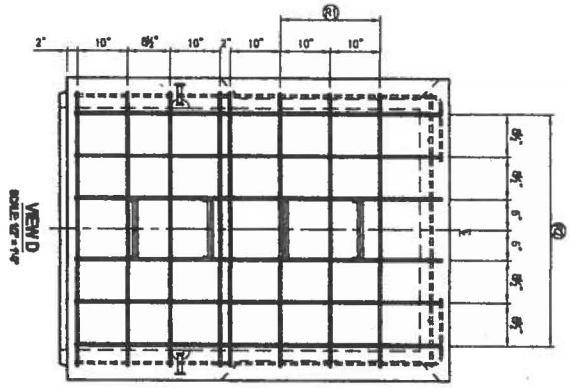
VIEW D


R2 DETAIL
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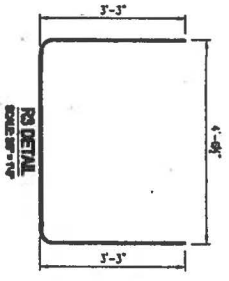
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3'-3"