

FEASIBILITY REPORT

UPPER PLATTE AND BEAVER CANAL COMPANY DIVERSION STRUCTURE REPLACEMENT PROJECT

MORGAN COUNTY, COLORADO

March 19, 2019



Prepared for:

Upper Platte and Beaver Canal Company
P.O. Box 205
Brush, CO 80723

Prepared by:

HEC

HARRIS
ENGINEERING
CONSULTANTS, INC.

Fort Morgan, CO 80701
(970) 542-0423 | matt@harrisec.com

FEASIBILITY STUDY APPROVAL
Pursuant to Colorado Revised Statutes 37-60-121 & 122, and
in accordance with policies adopted by the Board, the
CWCB staff has determined this Feasibility Study meets all
applicable requirements for approval.

Signed

5/03/19

Date



03/19/19

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TABLE OF CONTENTS

Executive Summary	1
Project Sponsor.....	2
Project Service Area	2
Water Rights	2
Need for the Project.....	3
Alternatives Evaluated	4
The Selected Project.....	6
Cost Estimate.....	6
Implementation Schedule	7
Social, Economic, and Physical Impacts	7
Permitting	7
Financial Plan	7
Alternative Financing Considerations	8
Collateral	8
Institutional Considerations.....	9
Opinion of Feasibility.....	9
References	10

EXHIBITS

- Exhibit A: Articles of Incorporation and Bylaws
- Exhibit B: State Engineer Diversion Reports 1950-2017
Upper Platte and Beaver Canal
Deuel and Snyder Ditch
(from CDSS HydroBase)
- Exhibit C: Service Area Map
- Exhibit D: Site Photos
- Exhibit E: Design Drawings
- Exhibit F: Detailed Construction Cost Estimate
- Exhibit G: Estimated Construction Schedule
- Exhibit H: CWCB Loan Application
- Exhibit I: Financial Statements: 2015 thru 2017
- Exhibit J: Stockholders List

Upper Platte and Beaver Canal Company

Steve Griffith
President

Brad Mortensen
Vice-President

Bart Ginther
Secretary/Treasurer

Rodney Kauk
Brian Rosenbrock
Board Members

Everett Matheny
Ditch Supervisor

Marty Schilling
Ditch Rider

Heather Kalous
Office Manager

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HARRIS ENGINEERING CONSULTANTS, INC. would like to thank the Upper Platte and Beaver Canal Company for the valuable assistance provided during the preparation of this report. Special thanks are offered to the following individuals of the company and other organizations:

Mr. Steve Griffith

President, Upper Platte and Beaver Canal Company

Ms. Heather Kalous

Office Manager, Upper Platte and Beaver Canal Company

Mr. Joe Baumberger

President, Deuel and Snyder Improvement Company

Mr. Jim Boone

Ransom Boone Excavating

Ms. Anna Mauss, P.E.

Colorado Water Conservation Board

Mr. Alex Funk

Colorado Water Conservation Board

Executive Summary

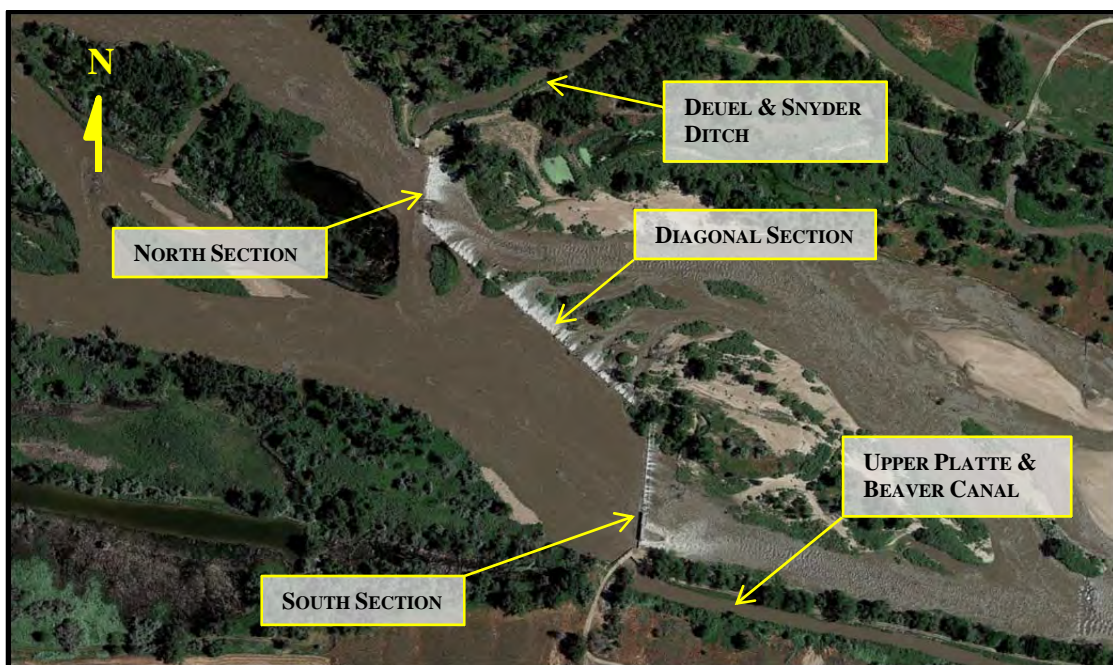
The Upper Platte and Beaver Canal Company (UPBCC) and the Deuel & Snyder Improvement Company (DSIC) each operate agricultural canal systems in Morgan County providing irrigation water serving approximately 11,500 acres for 119 shareholders. Water is diverted from the South Platte River at a diversion structure located approximately 2 miles upstream of State Highway 52 and the Rainbow Arch Bridge in Morgan County, Colorado. The two ditch companies share a common diversion structure and divert water from opposite banks of the river, with the Upper Platte and Beaver Canal on the south side and the Deuel and Snyder Ditch on the north. There were originally two structures in the river, separated by a large center island that bifurcated the main channel. The center island was washed away in the flood of 1965. A long diagonal wall constructed that same year connected the two original structures, creating a single barrage from the south bank to the north bank. An aerial image of the existing structure is provided in Figure 1, below.

The companies have invested heavily over the last dozen years in maintenance to the structure in an effort to keep it operational; however, the structure continues to decay. Investigations in 2015 by TZA Water Engineers (TZA) identified problem areas where the bedrock upon which the structure is founded has been undermined resulting in substantial structural damages that, if left unaddressed, may result in the catastrophic failure of the diversion structure. Photographs of the existing structure are included in Exhibit D.

UPBCC and DSIC have a complete engineering design and have secured firm bids for construction of a new structure. The estimated cost for a new structure is \$4,392,000 (rounded to the nearest thousand dollars). A detailed cost estimate is included in Exhibit F.

UPBCC has applied to the Colorado Water Conservation Board (CWCB) for a Colorado Water Plan Grant and is requesting a low-interest loan from the CWCB to fund the project. Cost sharing between UPBCC and DSIC is by separate agreement between the two ditch companies.

Figure 1: Aerial View of Existing Structure



Upper Platte and Beaver Canal Co.
Diversion Structure
March 2019

Project Sponsor

The Upper Platte and Beaver Canal Company (UPBCC), located in Morgan County, Colorado is a mutual ditch company and a non-profit corporation. Articles of Incorporation and Company Bylaws are included in Exhibit A; a list of current shareholders can be found in Exhibit J.

The UPBCC, incorporated in May of 1888, was formed to construct and operate the Upper Platte and Beaver Canal for the benefit of shareholders by providing direct flow irrigation water. The Company currently has 100 shareholders with 1,187 total shares of stock and a decreed absolute water right of approximately 234 cubic feet per second (cfs) from the South Platte River. Water is diverted at the Company's headworks located on the south bank of the River. The UPBCC shares a diversion structure with the Deuel and Snyder Ditch Company (DSIC), the latter diverts water on the opposite side of the River. The structure is located in Section 26 and 35 of Township 4 North, Range 58 West of the Sixth Principal Meridian. Average annual diversions for the UPBCC and the DSIC are approximately 32,300 acre-feet and 5,300 acre-feet, respectively.

Project Service Area

The service area is located in Morgan County, positioned on the north and south sides of the South Platte River between the cities of Fort Morgan and Brush, Colorado. The combined service area for the UPBCC and the DSIC is comprised of, on the average, approximately 11,500 acres of cultivated cropland. Water diverted from the river is typically used to irrigate corn, alfalfa, beans, and sugar beets. The elevation at the point of diversion is approximately 4275 feet. A location map of the service area can be found in Exhibit C.

Water Rights

A summary of the historic water rights held by the UPBCC and DSIC are included in Table 1, below. This information was obtained from the Structure Summary Report in the Colorado Water Resources Decision Support System (CDSS) attached in Exhibit B. The UPBCC and DSIC have a decreed absolute water right of 234 cfs and 84 cfs, respectively. The total decreed right for the DSIC consists of 63 cfs of conventional irrigation rights and 21 cfs of Meadow Rights, which are in effect from April 10th through July 10th of any given year.

Table 1: Historic Water Rights Data

APPRO. DATE	ADJ. DATE	CASE NO.	AMOUNT (CFS)	COMMENTS
<i>Upper Platte and Beaver</i>				
04/20/1868	11/21/1895	CA11195	15	
05/15/1869	04/28/1883	CA11195	5.17	
06/20/1882	11/21/1895	CA0433	50	
04/15/1888	11/21/1895	CA0433	164	
<i>Deuel and Snyder</i>				
04/02/1871	11/21/1895	CA0433	13	Meadow Right
07/01/1874	11/21/1895	CA7747	8	Meadow Right
04/07/1884	11/21/1895	CA0433	32	
11/01/1888	11/21/1895	CA7747	31	

Table 2: Water Rights and Diversion Summary

DESCRIPTION	UPBCC	DSIC
Decreed Water Right (cfs)	234.17	84
Maximum Day Diversion (cfs)	270	69
Date of Maximum	05/27/2002	04/26/2007
Average Annual Diversion 1950 – 2017 (acre-ft)	32,323	5,333

Yearly diversions over the past fifteen years have generally exceeded the historic averages shown in Table 2 due to the advent of augmentation plans and the proliferation of associated infiltration sites in the service area.

Need for the Project

The diversion dam is a reinforced concrete slab and buttress structure with a height of approximately 9 feet and a length of 1,416 feet. The dam is composed of three sections: north, south, and diagonal. The north and south sections of the dam were constructed in 1936, one year after a substantial flood flanked the original structure located several miles upstream and prompted the transition to the current site. The north and south dams were initially separated by a center large island in a braided section of the river. After the floodwaters of 1965 washed out the island, the diagonal section was built to connect the two dams so that the UPBCC and the DSIC could continue to make water diversions into their respective delivery systems.

UPBCC and DSIC contracted with TZA in 2015 to perform a site investigation and evaluate the condition of the structure. They prepared a feasibility report (2016 Study, see references) identifying several significant deficiencies in the existing structure:

- Seepage under the structure has eroded the underlying bedrock foundation and undermined the floor slab. In the diagonal section, the undermining has resulted in the collapse of the downstream base slab (see photos in Exhibit D).
- Erosion from overtopping has undermined the toe of the downstream base slab and in some locations has exposed the shear keys beneath the slab.
- Significant concrete deterioration has occurred in the buttresses and concrete base slabs. The deterioration has led to corrosion of reinforcement steel, and likely reduced the kinematic stability of the structure.
- The diagonal buttress section is considered to be in unsatisfactory condition [a condition characterized as showing evidence of major deterioration or imminent failure] due to the following observations:
 - There has been significant erosion that has undermined the toe of the concrete base slab.
 - The loss of foundation material beneath the base slab has resulted in the structural failure of the slab in many areas. The failure of the slab has likely reduced the kinematic stability of the structure.
 - Deteriorated condition of reinforcing steel in concrete slab. The structural failure of the base slab, in conjunction with the undermining erosion, has resulted in significant

deterioration of the reinforcement steel. Based on visual observations, it appears that the current condition of the reinforcement steel is inadequate for the base slab. The loss in capacity would result in reduced kinematic stability for the structure.

- Potential deterioration in wall slabs. There were several areas where seepage had developed through the wall slab. The seepage could result in corrosion of the reinforcement steel, which would potentially reduce the structural capacity of the wall slab.

The chief concern with regard to the existing structure is the erosion of the underlying shale bedrock upon which it is founded. Seepage underneath the structure and scour of the downstream channel due to overtopping are the primary mechanisms perpetrating this erosion. The overall physical condition of the structure is poor to unsatisfactory, as identified in the 2016 Study. Much of the floor in the diagonal wall section has collapsed due to a loss of underlying material. Fatigue cracking, spalling, surface deterioration, and exposure of reinforcement is common throughout each section of the structure. The above deficiencies have rendered some sections of the dam structurally compromised and, if left unaddressed, may result in imminent, catastrophic failure. Both ditch companies have made substantial investments in maintenance and repairs to the existing structure over the years in an effort to keep it operational. However, the overwhelming structural deficiencies remain; the structure will continue to deteriorate.

Alternatives Evaluated

Three alternatives were considered: 1) Do not build the project; 2) Repair the existing structure; and 3) Build a new structure. A subjective evaluation of the alternatives is summarized below:

1. Do not build the project:

If this project is not pursued, the diversion structure will remain precariously in the river, at risk of catastrophic failure. The structure will continue deteriorate. The UPBCC and the DSIC will continue to make substantial investments into an 83-year-old structure that may imminently fail. If the structure fails, shareholders would be unable to divert irrigation water supporting approximately 11,500 acres of farmland. This could potentially lead to a substantial loss of crops reliant on the Upper Platte and Beaver Canal and Deuel and Snyder Ditch. The value of affected irrigated lands in the UPBCC and DSIC systems could potentially drop from \$4600 to \$1250 per acre, based on average land values for irrigated and dryland farm ground in the State of Colorado.

For the reasons above, this alternative is not acceptable.

2. Repair the existing structure:

This alternative was evaluated in detail in the 2016 Study. To avert the risk of catastrophic failure intrinsic to the existing structure, the repair would have to accomplish the following objectives: restore kinematic stability to the structure, prevent seepage underneath and through the dam, mitigate erosion, and inhibit further loss of underlying material as a result of scour on the downstream side of the structure. The cost to complete an efficacious repair of the existing structure would be substantial. The integrity of much of the concrete slab base, walls, and buttresses was found to be questionable due to corrosion of reinforcement by seepage and structural deterioration and would require extensive non-destructive and destructive testing to make a definitive evaluation. Many new components, including an

upstream and downstream cut-off wall to arrest seepage and a downstream scour pad to reduce bed scour would be required along the full length of the dam.

This alternative does nothing to address concerns with mitigating flood impacts, improving sediment transport, or restoring river continuity for fish and aqueous habitat. Despite all of the required repairs, much of the structure will still consist of 80-plus year old reinforced concrete slab sections, that will continue to decay. For the reasons noted above, this alternative was not selected.

3. *Build a new structure:*

This alternative will consist of the removal and replacement of the existing structure. The new diversion structure will be constructed 25 feet upstream of the existing north section of the existing dam and will span directly across the river to the south bank. The Upper Platte and Beaver Canal will be extended west along the old alignment up to the new structure. The new structure will be constructed of reinforced concrete arranged in a traditional slab and buttress configuration and will include the following major components:

- Two 80-foot long, 9-foot tall inflatable crest gate spillways (bladder gates) as manufactured by Obermeyer Hydro, Inc. (Obermeyer) on the river channel;
- Two 10-foot wide, 9-foot tall radial arm gates, located adjacent to each headgate for sediment control;
- A new intake structure for the Upper Platte and Beaver Canal;
- One 20-foot long, 5-foot tall Obermeyer headgate on the new Upper Platte and Beaver intake structure;
- Extension of the Upper Platte and Beaver Canal to the new intake structure;
- One vertical slot fish ladder; and,
- One 16-foot by 24-foot control building, constructed of reinforced concrete. The control house will contain the following:
 - Gate air-supply system, including air compressors, dryers, and air receiver tanks.
 - Gate control system, consisting of a pneumatic control panel and PLC for gate automation.

The alternative will restore channel continuity and improve sediment transport along the river. The new Obermeyer crest gate spillways will facilitate sediment passage and provide additional flow conveyance during floods, reducing upstream backwater effects and improving overall channel stability. During intermediate flows, the gates will have the ability to operate in a partially deflated mode to allow fish passage over the dam while maintaining the benefits of a partial pool upstream of the barrage for aquatic habitat and waterfowl. The enhanced sediment control capability of the new structure will mitigate environmental impacts associated with periodic dredging activities on the upstream channel that are currently required to remove sediment retained by the existing structure. The dedicated fish ladder incorporated into the design will provide passage for threatened and endangered fish species under low flow conditions. The target species used in the design of the fish ladder will be the Brassy Minnow, a Tier 1 Species of Concern (CPW 2015).

The cost of this alternative, based on firm construction bids, is approximately \$4,392,380.

The Selected Project

The UPBCC plans to construct alternative #3. Features of this alternative are as follows:

- The new concrete structure will be founded on Pierre shale bedrock and, in areas of incompetent bedrock or substantial overburden, on friction piling driven into the riverbed.
- A reinforced concrete cutoff wall and steel sheet piling will be placed or driven around the perimeter of the foundation to preclude seepage, reduce uplift pressures and exit gradient, and confine the material under the foundation during all conditions of river flow and turbulence. The cutoff wall will extend 8 feet below bedrock.
- The structure will be supported on a monolithic steel reinforced concrete base. The base slab will have a minimum thickness of 24 inches.
- The slab and buttress walls and abutment retaining walls will be constructed of steel reinforced concrete. Walls subject to debris impact in the river channel will have a minimum thickness of 18 inches; abutment retaining walls will have a minimum thickness of 15 inches.
- Two 10-foot wide radial arm gates, one located immediately adjacent to each ditch intake structure, will be provided for enhanced sediment control. The gates will be 9 feet tall and equipped with an electric hoist. A concrete headwall wall installed above the gate protect the gate from debris and provide additional strength to the structure.
- Two 80-foot long Pneumatically Actuated Bladder Gates furnished by Obermeyer will be installed in the river channel. The gates will be 9 feet in height and will have the capability of being independently operated.
- The Upper Platte and Beaver Canal intake structure will consist of 20 feet of Pneumatically Actuated Bladder Gate furnished by Obermeyer. This gate will be 5 feet high. Orientation of the ditch intake structure will be approximately perpendicular to the river structure.
- The vertical slot fish ladder will be constructed of reinforced concrete and consist of a ramped floor with multiple baffles, or steps, with a narrow slot for control of velocity and flow.
- A 16-foot by 24-foot control building constructed of reinforced concrete will house the gate air-supply system and control system.
- The Upper Platte and Beaver Canal will be extended along the historic easement alignment west to the location of the new intake structure.

The features narratively described above are shown on the plan set found in Exhibit E.

Cost Estimate

The estimated total project cost is \$4,392,380. Construction costs reflect firm bid pricing supplied by local contractors. A detailed cost estimate is attached in Exhibit D.

<u>Item</u>	<u>Estimated Cost</u>
1. Planning, Design, and Legal Costs	\$ 227,500
2. Construction Cost	\$ 4,164,880
Total Cost	\$ 4,392,380

Implementation Schedule

The proposed implementation schedule anticipates a completed project by April of 2020. This is based on construction commencing in the late fall, when conditions in the river are optimal. A detailed project construction schedule is included in Exhibit G. Project milestone dates are as follows:

<u>Task</u>	<u>Date</u>
1. Final Engineering and Design	<i>Completed</i>
2. Colorado Water Plan (CWP) Grant Application to CWCB	<i>Completed</i>
3. Feasibility Study Submitted to CWCB	04/01/19
4. Feasibility Study Review and Approval by CWCB	05/15/19
5. CWP Grant Review and Award by CWCB	05/31/19
6. Construction Contract Award	07/15/19
7. Order Long Lead Time Items (piling, gates)	07/22/19
8. Begin Construction	09/30/19
9. Complete Construction	04/01/20

Social, Economic, and Physical Impacts

The project will have no significant social impacts.

The construction activity itself will result in short term, localized economic benefits. The primary economic impact, however, will be borne by the shareholders who will assume a considerable increase in annual assessments to subsidize the acquired debt service. This may be offset somewhat by obviated maintenance expenditures associated with the existing structure. From a reliability perspective, the project will have a long term positive economic impact by assuring continued diversions into the Upper Platte and Beaver Canal and the Deuel and Snyder Ditch. As indicated before, the 'no action' alternative is not acceptable.

The project will have no significant negative physical impacts once construction is complete. Positive environmental impacts include: improved sediment passage; restored channel continuity for fish passage; and enhanced conveyance for flood flows.

Permitting

As the project is located on UPBCC property, no easements or rights of way will be required. The Company expects to be exempt from 404 permitting by Statutory Exemption, 33 CFR Section 323.4 (a) 3 (repair of an existing diversion structure). The Company believes no Environmental Assessment (EA) or Environmental Impact Statement (EIS) will be required.

Financial Plan

The total cost of the project is \$4,392,000 (rounded to the nearest thousand dollars). The UPBCC is requesting a 40-year loan from the Colorado Water Conservation Board (CWCB) for the full amount of the project.

Lending rates for CWCB loans are set based on the designation of the entity applying for a loan. Although primarily agricultural, there are several commercial and municipal entities that own shares of the Upper Platte and Beaver Canal, including the City of Brush and Public Service of Colorado. Although these organizations own a relatively low percentage of the total stock (less than 10%), the

final interest rate on the loan, as determined by the CWCB, will be based on the proportion of stock owned by agricultural, municipal, and commercial entities. For the purpose of this analysis, however, an agricultural lending rate of 2.05% was used to estimate the debt service associated with the project.

The financial analysis summarized on Table 7 is based on a 100-percent loan from the CWCB.

Table 7: Project Loan Summary

Total Project Cost (rounded)	\$ 4,392,000
1% CWCB Service Fee	\$ 43,920
CWCB Loan (including 1% service fee)	\$ 4,436,920
Annual Payment (40 year term @ 2.05%)	\$ 163,584
Number of Shares	1,187
Annual Cost per Share for Loan	\$ 137.81
Current Assessment per Share	\$ 230.00
New Assessment per Share	\$ 367.81
Annual Project Cost per acre-foot – <i>Note 1</i>	\$ 4.35

Note 1: Based on an combined average annual diversion of 37,600 acre-feet.

A \$4,436,920 loan from the CWCB (includes a 1% origination fee) at 2.05% interest over a 40-year repayment period yields an annual payment of approximately \$163,584, for a total principal plus interest payment of \$6,543,347 over the 40-year term. As there are 1,187 shares in the UPBCC, this results in a project cost per share of \$137.81 per year. Based on a combined average annual diversion of 37,600 acre-feet of water, the project will entail an incremental rate increase of \$4.35 per acre-foot. Considering the existing assessment of \$230 per share, the total cost of water diverted after the project is complete will be \$11.61 per acre-foot. This financial analysis should stay consistent over the period of the CWCB debt retirement.

Alternative Financing Considerations

The UPBCC has identified the Colorado Water Plan Grant Program as a potential source of additional funding for the project. The program was initiated in 2017 to help fund projects that implement the goals set forth in the Colorado Water Plan (CWP), a policy document drafted in 2015 that defines the State's priorities with regard to the management of water. The program is administrated by the CWCB and can provide up to a 50-percent match of the total project cost for eligible projects. CWCB water project loans qualify as matching funds. Applications for projects are accepted twice a year, February 1st and August 1st, and are reviewed at regularly scheduled Board meetings. Projects are ranked based on their conformance with CWP criteria, Basin Roundtable Implementation Plans, and their ability to produce the measurable objectives defined in the CWP.

The UPBCC intends to apply for additional funding through the CWP grant program for 25-percent of the project cost. The UPBCC is also intending to apply for funds through the Water Supply Reserve Account (WSRA), and will be submitting an application in May for consideration by the South Platte Basin Roundtable.

Collateral

The UPBCC has the following collateral it can offer for the CWCB loan, in this order of preference:

1. The project itself. The project will be owned by the UPBCC/DSIC and can be offered by vote of the stockholders.
2. A pledge of assessment revenue of the UPBCC/DSIC stockholders, if approved by vote.
3. One annual payment in the form of a Certificate of Deposit (CD), to be held by the State Treasurer.

Institutional Considerations

If grant funding is not approved, the UPBCC would need authorization to borrow \$4,436,920 from the CWCB Construction Fund. The loan, if approved, from the CWCB will be contingent upon the successful negotiation of a contract between CWCB and the UPBCC. Agreements with contractors will be finalized upon authorization of the CWCB loan.

Opinion of Feasibility

The selected alternative is technically and financially feasible. There are no significant roadblocks, which would keep the UPBCC from successfully completing this project.

References

- 1) **Preliminary Design Report, Upper Platte and Beaver / Deuel and Snyder**, TZA Water Engineers, July, 2016.
- 2) **State Wildlife Action Plan**, Colorado Parks and Wildlife, 2015.
- 3) **7.5-Minute Series Topographic Maps**, U.S. Department of the Interior, Geological Survey, Scale 1:24,000, Contour Interval 10 Feet: Fort Morgan, Colorado (1971); Brush West, Colorado (1971); Round Top, Colorado (1963); Miller Ranch, Colorado (1965).
- 4) **Digital Elevation Models**, Colorado GeoData Cache, Colorado Governor's Office of Information Technology, <https://geodata.co.gov/>, January, 2018.
- 5) **Open-Channel Hydraulics**, Chow, Ven Te, McGraw-Hill, Inc., 1959.
- 6) **HEC-RAS River Analysis System, Version 4.1.0**, U.S. Department of the Army, Corps of Engineers, Hydrologic Engineering Center, January 2010.
- 7) **Land Values 2018 Summary**, U.S. Department of Agriculture, National Agricultural Statistics Service, August 2018.

EXHIBIT A

Articles of Incorporation and Bylaws

STATE OF COLORADO



DEPARTMENT OF
STATE

CERTIFICATE.

I, MARY ESTILL BUCHANAN, Secretary of State of the State of Colorado hereby certify that the prerequisites for the issuance of this certificate have been fulfilled in compliance with law and are found to conform to law.

Accordingly, the undersigned, by virtue of the authority vested in me by law, hereby issues A CERTIFICATE OF RESTATED ARTICLES OF INCORPORATION TO THE UPPER PLATTE AND BEAVER CANAL COMPANY, A NON-PROFIT CORPORATION.

Mary Estill Buchanan

SECRETARY OF STATE

DATED MARCH 22, 1979

RESTATED ARTICLES OF INCORPORATION

FILED

OF

22 MAR '79

THE UPPER PLATTE AND BEAVER

CANAL COMPANY

STATE OF COLORADO
DEPT. OF STATE

Pursuant to the provisions of the Colorado Nonprofit Corporation Act, the undersigned corporation adopts the following Restated Articles of Incorporation.

FIRST: The name of the corporation is The Upper Platte and Beaver Canal Company.

SECOND: The following Restated Articles of Incorporation were adopted on the 26th day of February, 1979, in the manner prescribed by the Colorado Nonprofit Corporation Act at a duly called meeting of the stockholders of the corporation at which a quorum of stockholders was present, and the following Restated Articles of Incorporation received at least two-thirds of the votes which stockholders present or represented by proxy were entitled to cast.

THIRD: The following Restated Articles of Incorporation correctly set forth the provisions of the Articles of Incorporation as amended, have been duly adopted as required by law, and supercede the original Articles of Incorporation and all amendments thereto.

RESTATED ARTICLES OF INCORPORATION
OF THE
UPPER PLATTE AND BEAVER
CANAL COMPANY

(as amended and restated February 26, 1979)

FIRST, The corporate name of this Mutual Ditch Company shall be THE UPPER PLATTE AND BEAVER CANAL COMPANY.

SECOND, Said Company was originally incorporated on May 26, 1888, by Jarad L. Brush, Daniel Hawks, and James Max Clark.

THIRD, The objects and purposes for which said Company is formed and incorporated, are, and shall be:

1st. To acquire by proper conveyances, all the rights, title, interest, privileges, appropriations of water, rights of way, powers and franchises, which The Platte and Beaver Improvement Company has or had, in, to, over and concerning that certain irrigating canal, known and called, the Upper or Main Ditch of The Platte and Beaver Improvement Company, now situated in the County of Morgan (formerly Weld) in the State of Colorado, the same being an irrigating ditch constructed in the year 1882 by said The Platte and Beaver Improvement Company, also all head-gates, waste-gates, flumes, sand-chutes, bridges, dams, dikes, lateral and branch ditches, in any way connected with or appurtenant to said irrigating canal.

2nd. To operate, construct, superintend, maintain and keep in repair said ditch or canal, with its branches and

appurtenances, as an irrigation ditch for conveying and supplying water for the irrigation of lands, and for domestic uses incidental to irrigation, to the stockholders of our said Company, and to all and every such person or persons and bodies corporate and to them only, their heirs, successors or assigns, who, by conveyances, deed, contracts or otherwise, have heretofore derived title to, or license from said The Platte and Beaver Improvement Company, to the right to the use of the water from said canal for irrigation uses or domestic uses incidental to irrigation; and if found necessary for the purposes aforesaid, to enlarge the said canal.

3rd. To construct from time to time other appliances or contrivances, for the purpose of diverting water from the South Platte River into said irrigating ditch to fully utilize and maintain the appropriation of water heretofore acquired by said The Platte and Beaver Improvement Company, and established by decree of the District Court in and for the County of Weld and State of Colorado, and to maintain all dams and appliances, now constructed for such purpose.

4th. To divert and appropriate waters flowing or hereafter to flow in Little Beaver Creek, sometimes called Badger Creek, whether said waters result from the seepage or drainage of lands lying above said creek, or from other causes, into

said irrigating canal by means of the dike across the channel of said Little Beaver Creek, heretofore constructed by The Platte and Beaver Improvement Company, where said main ditch crosses said Little Beaver Creek, or by other ditches, appliances or contrivances, to be hereafter constructed, either at said point or at other points, and to utilize the water so diverted for distribution among the stockholders of this Company, and to them only, for irrigation purposes and domestic purposes incidental to irrigation.

5th. To acquire by purchase, grant or otherwise, earlier appropriations of water from the South Platte River, and Little Beaver Creek, to be used in said canal in times of scarcity, and hereafter by enlargement or new construction, to acquire additional appropriations of water.

6th. To construct lateral ditches to more readily distribute water from said main canal or its branches to stockholders, if such course is at any time deemed desirable by the Board of Directors.

7th. To assume all of the duties and obligations of said The Platte and Beaver Improvement Company, concerning said irrigating canal, and the distribution of water therefrom; and to secure and satisfy all the rights and privileges which appertain or belong to the present owner or owners of water

rights under said canal, by virtue or right of any grant, contract, or license heretofore made by said The Platte and Beaver Improvement Company.

8th. To acquire title to any and all lands, easements, tenements and hereditaments, at any time necessary or proper for the prosecution of said corporate purposes above expressed.

9th. To borrow money for the above corporate purposes and pledge its franchise, and property, both real and personal, to secure the payment thereof, if at any time it becomes necessary so to do for the prosecution of the foregoing corporate purposes; and to have and exercise all the powers necessary and requisite to carry out and effect the objects for which said corporation is formed.

FOURTH, The natural streams from which water is to be diverted and taken for the purposes aforesaid, are the South Platte River and the Little Beaver Creek, sometimes called Badger Creek.

FIFTH, The point or place on said South Platte River at which the head-gate of said ditch is now located, and at or near which water is to be diverted and taken from said stream is at a point on the South Bank of said River, whence the Southeast corner of Section 35, Township 4 North, Range 58 West, in Morgan County, Colorado, bears South 13° 57' East, 5020.2 feet.

The point or place on said Little Beaver Creek at or near which water is to be taken, diverted, and appropriated, for the purposes aforesaid, is on the West Bank of said Little Beaver Creek, near the North West corner of the South West quarter of the South East quarter of Section 36, Township 4 North, Range 57 West in the County of Morgan (formerly Weld) and State of Colorado.

SIXTH, The line of said main irrigating canal, as near as the same may be stated, is as follows: commencing at its head-gate in the South Platte River, thence in a South-Easterly, and easterly course through sections 35 and 36, in Township 4 North, Range 58 West, Sections 31 and 32 in Township 4 North, Range 57 West, Sections 5, 4 and 3 in Township 3, North, Range 57 West, Sections 34, 35 and 36 in Township 4 North, Range 57 West, Sections 6, 5, 8, 17, 16, 15 and 14, in Township 3, North, Range 56, West, and terminating at Big Beaver Creek, in the South East quarter of the North East quarter of Section 14, Township 3, North, Range 56, West.

A branch or diverging ditch, heretofore supplied, and to be hereafter supplied with water from said main canal, leaves said main canal at the South West corner of Section 31, Township 4, North, Range 56, West, the line of said branch or diverting ditch as near as may be stated, is as follows commencing at the point aforesaid, running thence in an easterly course through sections 31, 32, 33, 28, 27 and 26 in Township 4, North, Range 56, West, thence in an easterly course, with windings and sinuosities through Sections 26 and 25, Township and Range, last aforesaid, and Section 30 of Township 4, North, Range 55, West, and terminating at Big Beaver Creek, in the South West quarter of the North East quarter of Section 30, Township 4, North, Range 55, West.

Said Company reserves the right and intends to extend said branch or diverging ditch by means of a flume across Big Beaver Creek, to supply water for irrigation purposes, and domestic purposes incidental to irrigation, to lands owned by stockholders of said Company in Sections 20 and 21, Township 4, North, Range 56, West.

SEVENTH, The uses to which the said water heretofore appropriated and hereafter to be acquired, to be conveyed by the irrigating canal or canals of this Company, is intended to be applied are the irrigation of lands lying thereunder, to or in which stockholders of this Company or their lessees, or privies in interest, have or shall have title or interest, and for domestic purposes incidental to the

irrigation of such lands, and also to supply water for irrigation and incidental domestic purposes to water right owners who acquired such water rights heretofore from The Platte and Beaver Improvement Company, and their successors and privies in interest, and to no others.

EIGHTH, The amount of the capital stock of said Company shall be One Hundred Eighteen Thousand, Seven Hundred Fifty-four dollars (\$118,754), to be divided into 1,187.54 shares of one hundred dollars each. Said stock shall be non-assessable, except as by law provided for the maintenance of the canal of said Company. The subscription to such stock shall be limited and confined to those persons and bodies corporate only, and their successors in interest, who have acquired water rights from said canal, and its branch, for irrigation and domestic purposes incidental thereto by purchase from, and grant and license of The Platte and Beaver Improvement Company. Such subscribers shall only be entitled to the stock of this Company upon executing and delivering proper transfers of their said water rights to this Company. Stock in this Company shall be subscribed for and issued in the ratio of eight shares of fully paid stock for each eighty-acre water right acquired from The Platte and Beaver Improvement Company, as aforesaid, and upon any subscription to stock, a full credit of one hundred percent shall be given upon such transfer, provided such water right shall be free and clear of all charges or dues assessed against such water rights by said The Platte and Beaver Improvement Company. The portion of such subscriptions thus unpaid shall be subject to assessments for repairs, superintendence and maintenance of the canal, and such other claims as may be legally incurred on account of, and for the benefit of such canal. The capital stock of this Company shall be used only as a basis for assessment of, and the division of water among the holders of its capital stock.

Only persons, associations and companies owning lands situated below and susceptible of irrigation or domestic use incidental thereto from the Upper Platte and Beaver Canal Company, shall be eligible to become

stockholders of the Company, by transfer, sale or assignment of stock or otherwise. The Board of Directors shall maintain at the office of the Company a map depicting the aforesaid lands situated below and susceptible of use from the Upper Platte and Beaver Canal Company. The water rights evidenced by shares of stock issued by the Company shall only be used for irrigation or domestic purposes incidental thereto on the aforesaid lands situated below and susceptible of use from the Upper Platte and Beaver Canal Company, and each stock certificate issued by the Company shall bear a legend to that effect. The Board of Directors shall establish, by appropriate rules or regulations, reasonable procedures for effectuating inclusion of such a legend on the stock certificates of existing and future stockholders. The Board of Directors shall be the judge as to the eligibility of applicants for stock who hereafter seek to acquire stock by assignment, transfer, sale or otherwise. All existing stockholders of record, as of the date of the adoption hereof, shall be deemed to qualify as eligible stockholders under this section, and all actual, vested uses of water made as of the date of adoption hereof shall be deemed to qualify as irrigation or domestic uses incidental thereto.

NINTH, The corporation shall be a mutual ditch company operated for the mutual benefit of the holders of its capital stock and not for pecuniary profit, and no dividend shall be paid on its capital stock except upon dissolution of the Company.

TENTH, The term of existence of said Company shall be perpetual.

ELEVENTH, The Board of Directors of the Company shall consist of five members who shall be stockholders of the Company. The Board of Directors shall be elected in the manner prescribed in the by-laws.

TWELFTH, The registered office of said Company shall be at Post Office Box 324, City of Brush, County of Morgan, Colorado 80723. Other offices of said Company may be kept at other places in said County of Morgan, or in other counties, in said state, if the

Board of Directors shall so direct. The current registered agent of said Company is John J. Higgins.

THIRTEENTH, The principal operations of said Company shall be carried on in the County of Morgan, and State of Colorado.

FOURTEENTH, The Board of Directors shall have the power to make such prudential by-laws as they deem proper for the management of the affairs of the Company, not inconsistent with the laws of the State of Colorado, for the purpose of carrying on all kinds of business within the objects and purposes of such Company.

FIFTEENTH, These restated Articles of Incorporation correctly set forth the provisions of the Articles of Incorporation as amended, have been duly adopted as required by law, and supersede the original Articles of Incorporation and all amendments thereto.

THE UPPER PLATTE AND BEAVER
CANAL COMPANY

By

John J. Higgins
President of the Upper Platte
and Beaver Canal Company

By

John J. Higgins
Secretary of the Upper Platte
and Beaver Canal Company

STATE OF COLORADO)
COUNTY OF MORGAN) ss.

The foregoing instrument was acknowledged before me
this 13TH day of MARCH, 1974, by
PHILIP MCINTENSEN, President, and
JOHN HIGGINS, Secretary, of The Upper Platte and
Beaver Canal Company.

IN WITNESS WHEREOF, I have hereunto set my hand and
seal.

My commission expires 12 13 81.

[Signature]
Notary Public

**TEXT OF AMENDMENTS TO
THE ARTICLES OF INCORPORATION OF
THE UPPER PLATTE & BEAVER CANAL COMPANY**

1. Pursuant to C.R.S. § 7-123-101(8), the provisions of the “Colorado Business Corporation Act” relating to shares and shareholders, to wit: Articles 107, 110, 111, 113, and 116 of Title 7, C.R.S., shall apply to said Company in lieu of the corresponding provisions of the “Colorado Revised Nonprofit Corporation Act”, to wit: Articles 127, 130, 131, 133, and 136 of Title 7, C.R.S.
2. The Articles of Incorporation of said Company may be amended and restated in accordance with law, PROVIDED HOWEVER, that in no case may any amendment to the Articles of Incorporation be adopted unless the amendment is approved by the affirmative vote of two-thirds of the Company’s shares issued and outstanding.
3. In order to provide for continued agricultural irrigation and incidental domestic use of water on the lands situated below and susceptible of irrigation from the Upper Platte & Beaver Canal Company, the Company’s Board of Directors has the power in its discretion to adopt, adjudicate through the Water Court, and operate, a plan for augmentation pursuant to statute to allow operation of wells of the Company’s stockholders for irrigation of lands situated below and susceptible of irrigation from the Upper Platte & Beaver Canal and domestic use incidental thereto; and the Company’s Board of Directors, in its discretion, may effectuate such changes of use or other adjudications of the priorities held by the Company, and decreed to and diverted through the Company’s canal, as it deems necessary and appropriate for the adoption, adjudication, and operation of such a plan for augmentation.

As adopted, 1/19/79
With Amendments:
5/4/87
4/2/96

BY-LAWS
OF
THE UPPER PLATTE AND BEAVER CANAL COMPANY
ARTICLE I
BOARD OF DIRECTORS

SECTION 1. The Board of Directors of the Company shall consist of five members who shall be stockholders of the Company, and at the annual meeting of the stockholders to be held on February 6, 1978, two (2) of said directors shall be elected to hold office for a period of three (3) years; two (2) of said directors shall be elected to hold office for a period of two (2) years; and one (1) director shall be elected to hold office for a period of one (1) year. The two persons who receive the first and second highest number of votes shall be awarded three-year terms; the two persons receiving, respectively, the third and fourth highest number of votes shall be awarded two-year terms; and the person receiving the fifth highest number of votes shall be awarded the one-year term. Upon the expiration of the term of the office of said directors the stockholders of the Company shall elect their respective successors, each of whom shall hold office for a period of three years from the date of such election.

SECTION 2. The Board of Directors shall have full control of the management of the corporation, and shall have power:

- 1st.** To call special meetings of the stockholders whenever they deem it necessary.
- 2nd.** To employ, appoint and remove at pleasure, all employees and agents of the Company, prescribe their duties and fix their compensation.
- 3rd.** To make such rules and regulations consistent with the laws of the State of Colorado, the Certificate of Incorporation and the By-Laws, for the guidance of the officers and the management of the affairs of the Company, as from time to time they may deem expedient.
- 4th.** To make assessments on the capital stock of the Company for the purpose of superintendence, maintenance and repair of its ditch system and for other necessary purposes connected with the proper management of the affairs of the Company including the payment of debts and liabilities necessarily and properly incurred in the management of the Company, in the event that the stockholders fail to make or authorize any such assessment for any year by April 1st thereof.
- 5th.** To incur such indebtedness as they may deem necessary to carry out the objects and purposes of the Company and for such purpose to authorize the execution of the note of the Company and any proper means of securing the same.
- 6th.** To lease, purchase, or option to purchase additional water for the Company where it is deemed necessary and for the best interest thereof. PROVIDED, that no contract for the purchase of additional water and other assets shall be entered into where the purchase price exceeds 30% of the Company's budget for the year of purchase unless or until the same shall be submitted to and authorized by the stockholders at a regularly called meeting thereof.
- 7th.** To cause to be kept a complete record of all meetings, acts and proceedings of such Board and of the stockholders.
- 8th.** To supervise all the acts of the officers and employees of the Company.

9th. To cause to be issued to the owners of the stock of the Company certificates for shares of stock according to their respective interests, not in excess in the aggregate of the capital stock of the Company.

10th. To adjust, audit and settle all bills and accounts against the Company.

11th. To generally do and perform all acts and things necessary and proper to fully manage the affairs of the Company.

SECTION 3. The Board of Directors at the first meeting after the annual Stockholders meeting shall proceed to organize. They shall elect from their own number a President and a Vice-President, and shall appoint a Secretary and Treasurer, who may be the same person, and a Superintendent, either of whom may or may not be a member of said Board or a stockholder of the Company, which said officers shall be elected, or appointed and qualified, subject however, to the removal at any time by vote of the majority of the Board at a regularly called meeting thereof. Vacancies in any office may be filled at any meeting of the Board by a majority vote of the Directors present.

SECTION 4. The Board of directors shall fix the compensation, if any, to be paid the Secretary, treasurer and the Ditch Superintendent, and the time or times at which the same shall be paid.

SECTION 5. The Board of Directors shall have power to require any officer, agent or employee, to furnish a bond in a suitable amount for the proper discharge of his duty and shall approve all such bonds.

SECTION 6. The first meeting of the Board may be held at any time when not less than four Directors assemble for such purpose, and thereafter at any time when called by the President or Secretary upon written or verbal notice given either by personal delivery or by mailing said notice at the post office at Brush, Colorado; provided, however, that notice may be waived and

that any meeting held without notice shall be lawful providing not less than four directors are present.

SECTION 7. Three or more directors shall constitute a quorum for the transaction of business at any meeting of which notice has been given as provided in Section 6 hereof.

SECTION 8. Vacancies. (A.) A director's office shall be deemed to be vacant upon the occurrence of any one of the following events prior to the expiration of the term of office:

- (1) If for any reason a properly qualified person is not elected to a director's office by the stockholders as required by these By-Laws;
- (2) If a person who was duly elected or appointed fails, neglects, or refuses to furnish the bond in accordance with the provisions of these By-Laws;
- (3) If a person who was duly elected or appointed submits a written resignation to the board;
- (4) If the person who was duly elected or appointed ceases to be qualified for the office to which he was elected;
- (5) If the person who was duly elected or appointed fails to attend three consecutive regular meetings of the board without the board having entered upon its minutes an approval for an additional absence or absences; except that such additional absence or absences shall be excused for temporary mental or physical disability or illness;
- (6) If the person who was duly elected or appointed dies during his term of office.

B. All vacancies occurring in the Board of Directors shall be filled by vote of a majority of the remaining members of the Board, or, if not so filled, by the stockholders, at any annual or special meeting for the election of directors held thereafter.

ARTICLE II

OFFICERS

SECTION 1. THE PRESIDENT shall be the chief executive officer of the Company. He shall sign all official papers and documents of the Company except checks, and it shall be necessary for him to sign them only in the absence of the Secretary. He shall preside at all meetings of the Board of Directors and the Stockholders and shall have general supervision of the business of the Company and its officers. He may vote at the meetings of the Board of Directors as any other member.

SECTION 2. THE VICE-PRESIDENT shall act as President in the absence of or inability of the President to discharge the duties of his office. In the event of the temporary absence or inability to act of both the President and Vice-President, the Board of Directors may elect a President pro tempore.

SECTION 3. THE SECRETARY shall keep a record of all proceedings of all meetings of the Board of Directors and of the stockholders, shall keep the minute book, the stock book and seal of the Company, shall attest, by his signature and the seal of the Company, all official documents and certificates of stock issued; shall be the custodian of all bonds, notes, documents and other papers of the Company; shall keep a complete set of books showing all of the accounts, property, transfer of stock and other transactions of the Company; shall carefully examine all bills and accounts due or against the Company; shall prepare vouchers for such bills as he finds correct and present them to the Board of Directors for proper action; shall pay by check, signed by himself as Secretary of the Company, all bills and expenses properly ordered paid or approved by the Board of Directors; shall certify all bills and vouchers ordered by the Board of Directors; shall collect all assessments and money due the Company and pay the same over to the Treasurer

taking his receipt therefor; shall make a report at the annual stockholders meeting of all business transacted by him during the preceding year and shall report to the Board of Directors at such other time or times as may be required by the President; shall attend to the correspondence of the Company and in all respects perform the duties usually appertaining to such office. In the event of the temporary absence or inability to act of the Secretary at any meeting of the Board of Directors or the stockholders, a Secretary pro tempore may be appointed to act.

SECTION 4. THE TREASURER shall be the custodian and receive from the Secretary all moneys collected for the Company, and shall disburse the same only upon proper warrants or checks signed by the Secretary or President. He shall make a report annually to the Stockholders and to the Board of Directors and also when required by the board of Directors.

SECTION 5. THE DITCH SUPERINTENDENT shall have the direct management and control of the canal and its appurtenances including the lateral headgates, subject to the supervision of the Board of Directors. He shall have charge of the division of the water from the canal and shall divide the same pro rata to all stockholders or others who have rights to the use of the same, and who are actually using the same, in any irrigating season, and who have paid all assessments regularly levied and called, according to the number of shares or water rights which they own or have the use of, respectively.

ARTICLE III

MEETINGS OF STOCKHOLDERS

SECTION 1. THE ANNUAL MEETING OF STOCKHOLDERS for the election of Directors, levying of assessments and other lawful purposes, shall be held at any place designated by the Board of Directors, either within or without the State of Colorado, on the second Monday in February of each year, at such hour of the day as shall be designated in the notice. That notice of

such annual meeting shall be regularly given by publication of said notice in some newspaper published in the City of Brush, Colorado, for not less than ten (10) days immediately preceding such meeting, and not by less than thirty (30) days notice by personally delivering a copy of such notice to each stockholder of the Company or by mailing the same to each stockholder thereof at the last address furnished by each stockholder to the Secretary of the Company.

The stockholders shall be entitled to vote in person or by proxy, one vote for each share of stock held by them. A majority of the total stock of the Company issued and outstanding shall be required to constitute a quorum. In the event that a quorum is not present at the annual meeting, the same may be adjourned by the stockholders present for a period not exceeding sixty days.

SECTION 2. If, for any reason the annual meeting shall not be held on the day provided in Section 1 of this article, the election of directors may be had at any subsequent meeting of the stockholders at which a majority of the stock is present, **PROVIDED HOWEVER**, that regular notice of such meeting shall have been given in the manner provided in Section 1 hereof and **PROVIDED** that if a majority of the stock be not represented at the meeting so called the same may be adjourned by the stockholders present for a period not exceeding sixty days.

SECTION 3. SPECIAL MEETINGS OF THE STOCKHOLDERS of this Company may be called by the board of Directors by the adoption of a suitable resolution at any meeting thereof, or, upon the written request of stockholders of the Company representing at least one-third of the stock issued and outstanding, **PROVIDED HOWEVER**, that notice of all special stockholders meetings shall be given in the same manner as notice of the annual stockholders meeting.

SECTION 4. At all stockholders meetings a majority of the shares of stock of the Company shall be represented either in person or by proxy before any business can be transacted other than adjournment.

ARTICLE IV

CERTIFICATES OF STOCK AND TRANSFER THEREOF

SECTION 1. STOCK in the Company shall be issued in the ratio of eight shares for every eighty acre water right. Certificates of stock shall be issued under the seal of the Company as paid up stock of the par value of \$100.00 per share and shall be signed by the President and sealed and attested by the Secretary. Each certificate shall show on its face its number, the date of its issuance, the person or persons to whom issued, and the number of shares evidenced thereby; further, that the same is assessable for maintenance, superintendence, repairs and legal indebtedness to be incurred by the Company under its by-laws. Stockholders shall have the privilege of having their stock evidenced by certificates of such amount as they may desire, provided that the aggregate shares evidenced thereby do not exceed the number of shares owned by such stockholder. The stock certificate book shall contain margins or stubs on which shall be entered the number, date, number of shares, the name or names of the persons to whom the stock was issued and the person to whom such certificate was delivered and the date of such delivery. PROVIDED that only persons, associations, and companies owning lands situated below and susceptible of irrigation or domestic use incidental thereto from the Upper Platte and Beaver Canal Company, shall be eligible to become stockholders of the Company, by transfer, sale, or assignment of stock or otherwise. The Board of Directors shall maintain at the office of the Company a map depicting the aforesaid lands situated below and susceptible of use from the Upper Platte and Beaver Canal Company. AND PROVIDED that the water rights evidenced by shares of stock issued by the Company shall only be used for irrigation or domestic purposes incidental thereto on the aforesaid lands situated below and susceptible of use from the Upper Platte and Beaver Canal Company, and each stock certificate issued by the Company shall bear a

legend to that effect. The Board of Directors shall establish, by appropriate rules or regulations, reasonable procedures for effectuating inclusion of such a legend on the stock certificates of existing and future stockholders. The Board of Directors shall be the judge as to the eligibility of applicants for stock who hereafter seek to acquire stock by assignment, transfer, sale or otherwise. All existing stockholders of record, as of the date of the adoption hereof, shall be deemed to qualify as eligible stockholders under this section, and all actual, vested uses of water made as of the date of adoption hereof shall be deemed to qualify as irrigation or domestic uses incidental thereto.

SECTION 2. Certificates of stock may be transferred at any time by the holders thereof in person or by attorney, legally constituted, or by their legal representatives, so long as any transfer and any subsequent use of the water rights evidenced by shares of stock is in conformance with the provisos contained in Article IV, Section 1 of these By-Laws. The transfer may be made by an endorsement of the certificate of stock and the delivery of the same, provided that such transfer shall not be valid, except between the parties thereto, until the same shall have been surrendered to the Secretary of the Company and a new certificate issued to the transferee therefor. No transfer of stock shall be valid until all assessments due against the same shall have been paid in full, nor shall any transfer be valid where the holder of the stock at the time of the transfer is in any manner indebted to the Company unless the Board of Directors shall expressly approve and authorize the Secretary of the Company to make such transfer.

SECTION 3. In the event any stock certificate shall be lost or destroyed, the Board of Directors, upon being convinced of the loss or destruction thereof, and upon the furnishing of a suitable bond to be approved by the Board, conditioned so as to indemnify the Company against all loss,

damage, and expense in connection therewith, may in its discretion order the issuance of a new certificate therefor.

ARTICLE V.

STOCK ASSESSMENTS

SECTION 1. THE STOCK of this Company shall be assessable under the laws of Colorado for maintenance, operation, and the payment of any legal indebtedness of the Company. In the event that any assessment or assessments or installments thereof duly levied upon any stock of the Company shall remain unpaid after the due date thereof, the Company through its directors, may after twenty (20) days personal demand therefor, or in case where personal demand is not made, within thirty (30) days after a written or printed notice and demand has been duly mailed to the last known address of such delinquent stockholder, maintain an action in the name of the corporation to recover the same, or, in the event that any assessment or assessments or installment thereof duly levied upon any stock of the Company shall remain unpaid after the due date thereof, the Company, through its Directors, may after the expiration of thirty (30) days from the date of personal demand or after demand made by written or printed notice duly mailed to the last known address of such stockholder at least thirty (30) days prior to the time when such forfeiture is to take effect, forfeit such stock or forfeit and sell such stock at public sale for the amount due thereon, including delinquent interest, costs of collection such as attorneys fees, publication costs, court costs, and other costs of sale; PROVIDED, that the proceeds of any such sale over and above the whole amount due on shares shall be paid to the delinquent stockholder. The Company shall have a perpetual lien upon all shares of stock and the water rights represented thereby for any and all assessments and installments thereof until the same are fully paid. No stock shall be transferred until all assessments due thereon are fully paid.

SECTION 2. In case the stockholders of the Company fail to make or authorize an assessment on the capital stock thereof for the purpose of maintenance, operation, and payment of any legal indebtedness of the Company, by the first of April in any year, then the Directors of the Company shall have power to make and levy such assessment at any regular or special meeting called therefor, for such year. Any assessments so made shall be in all respects considered the same as though made in the usual manner by the stockholders.

SECTION 3. All assessments shall be payable at such time as provided by the resolution levying the same, and in the event that no time is fixed by such resolution the same shall be due and payable ten days after the mailing of notice of such assessments. All delinquent assessments or installments thereof shall draw interest at the rate of 21% per annum from the due date until paid.

SECTION 4. No water shall be delivered on any stock of the Company until all assessments due thereon are paid in full, and the Superintendent of the Company shall have and is hereby granted authority to enforce this provision without special direction or authority from the Board of Directors.

ARTICLE VI

APPORTIONMENT AND DELIVERY OF WATER

SECTION 1. Any stockholder of this Company who has paid all assessments due on his stock shall be entitled to receive water from the canal of the Company delivered at a headgate in the canal to be paid for by the stockholder, but which shall be under the control of the Company. Such water, however, shall be delivered only during the irrigation season and pursuant to the by-laws and rules of the Company. All water flowing in the canal of the Company shall at all times

by divided and pro-rated among the stockholders or their lessees according to the respective rights and interests therein.

SECTION 2. No check or obstruction of any kind shall be placed in the canal of the Company without the permission of the Board of Directors of the Company first had and obtained.

Temporary checks shall be so placed as not to interfere with the running of water therein or injure the canal. Such temporary checks shall be constructed and maintained at the expense of the stockholder using the same and shall be removed when required by the Board of Directors or Superintendent. No permanent check shall be placed in the canal of said Company which shall raise the water in said canal above the established grade thereof.

SECTION 3. The Company has appropriated and adjudicated certain rights to recharge water to the South Platte River and its alluvium by means of the Company's ditch structure and other recharge facilities. These water rights are owned by the Company's stockholders, pro rata to their stock ownership. Ownership or use of a well under the Company's water supply system does not confer any interest in the recharge rights. The Board of Directors of the Company shall be vested with all management and control of the recharge rights, and shall determine from time to time in its discretion, how such water rights shall be exercised, and how the recharge credits generated by such exercise shall be used, whether by lease, by allocation among the stockholders, by offsetting depletions for stockholder's wells included in the Company's Augmentation Plan (W-2968), or by other means.

MEMORANDUM TO SHAREHOLDERS

BY-LAW AMENDMENT

The Board of Directors of the UP&B Company adopted a new By-law on June 3, 2008, to be included as Article VII, Section 1, of the Company's By-laws. The new by-law is stated below:

Article VII: Improper Use of Water. Section 1. Any Stockholder seeking to use Company water for purposes or in a manner not authorized by the Company's Articles of Incorporation and Bylaws (i.e., for purposes other than irrigation or domestic purposes incidental to irrigation on lands situated below and susceptible of use from the Upper Platte & Beaver Canal Company) shall be required to pay the Company's reasonable costs expended in opposing such unauthorized usage, regardless of the outcome of any action concerning such unauthorized use, including, but not limited to: time spent by directors, lawyers, engineers, or other consultants on behalf of the Company in such efforts. Such costs shall be an assessment upon the shares of stock owned by the stockholder seeking to make improper use of Company water, and shall be subject to enforcement and collection as set forth in Article V of the bylaws.

EXHIBIT B

State Engineer Diversion Reports 1950-2017



Structure Summary Report

Structure Name: UPPER PLATTE BEAVER CNL (0100515)

Associated Permits:

Structure Type: DITCH

Water Source Type: Tributary

CIU Code: Active Structure with contemporary diversion records (A)

Water Source: SOUTH PLATTE RIVER [00201759] @ Stream
Mile: 118.40

Physical Location

Feature Type	Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Latitude	Longitude	Location Accuracy
Point of Diversion			NW	NE	NE	35	4.0 N	58.0 W	S	599132.0	4458899.0	40.274699	-103.833983	GPS
Measurement Device			SE	NW	NW	36	4.0 N	58.0 W	S	599733.0	4458738.0	40.273178	-103.826941	GPS

Division: 1 District: 1

County: MORGAN

Designated Basin:

Management District:

Associated Structures

Structure Association	Structure Type	Start Date	End Date	Associated Structure Type	CIU Code
0100515 Ditch System includes 0102903 - UPPER P & B BRUSH LATERAL RT	Ditch	1/1/1901		Other	A
0100515 Ditch System includes 0102904 - UPPER P & B NORTH LATERAL RT	Ditch	1/1/1901		Other	A
0100515 Ditch System includes 0102905 - UPPER P & B SOUTH LATERAL RT	Ditch	1/1/1901		Other	A
0100515 Exchange Plan includes 0102434 - PINNEO ABOVE NORTH STERLING CANAL IMPACT REACH	Ditch	1/1/1901		Reach	U
0100515 Exchange Plan includes 0102435 - PINNEO BELOW NORTH STERLING CANAL IMPACT REACH	Ditch	1/1/1901		Reach	U
0100515 is part of Augmentation Plan 0102520 - PINNEO FEEDLOT AUG	Ditch	1/1/1901		Augmentation/Replacement Plan	A
0100515 is part of Augmentation Plan 0102529 - UPPER PLATTE & BEAVER AUG	Ditch	1/1/1901		Augmentation/Replacement Plan	A
0100515 is part of Augmentation Plan 0103340 - PSCO-REP AUG	Ditch	1/1/1901		Augmentation/Replacement Plan	A
0100515 is part of Recharge System 0101918 - UPPER P & B HOSPITAL ROAD RECHARGE AREA	Ditch	1/1/1901		Recharge Area	A
0100515 is part of Recharge System 0102011 - UPPER P & B KEMBEL INDITCH RECHG AREA	Ditch	1/1/1901		Recharge Area	A
0100515 is part of Recharge System 0102012 - UPPER P & B BEAVER CR INCREEK RCHG AREA	Ditch	1/1/1901		Recharge Area	A
0100515 is part of Recharge System 0102034 - UPPER P & B NORTH LAT 1 INDITCH RECHARGE AREA	Ditch	1/1/1901		Recharge Area	A
0100515 is part of Recharge System 0102041 - UPPER P & B SOUTH LAT INDITCH RECHARGE AREA	Ditch	1/1/1901		Recharge Area	A
0100515 is part of Recharge System 0102053 - UPPER P & B CLARK RCHRG A	Ditch	1/1/1901		Recharge Area	A
0100515 is part of Recharge System 0102054 - UPPER P & B DEGENHART R A	Ditch	1/1/1901		Recharge Area	A
0100515 is part of Recharge System 0102082 - UPPER P & B KROSKOB R A	Ditch	1/1/1901		Recharge Area	A
0100515 is part of Recharge System 0102280 - UPPER P & B BRUSH LAT INDITCH RECHARGE AREA	Ditch	1/1/1901		Recharge Area	A
0100515 is part of Recharge System 0102372 - UPPER P & B NORTH LAT 2 INDITCH RECHARGE AREA	Ditch	1/1/1901		Recharge Area	A
0100515 is part of Recharge System 0102373 - UPPER P & B CAMDEN LAT INDITCH RECHARGE AREA	Ditch	1/1/1901		Recharge Area	A
0100515 is part of Recharge System 0102374 - UPPER P & B MORTENSEN RECHARGE AREA	Ditch	1/1/1901		Recharge Area	N
0100515 is part of Recharge System 0102375 - UPPER P & B LARSEN RECHARGE AREA	Ditch	1/1/1901		Recharge Area	N

Associated Permits

No available data

Water Rights - Net Amounts

Adj Date	Appro Date	Priority Admin No	Order No	Priority No	Associated Case Numbers	Net Absolute	Net Conditional	Net APEX Absolute	Net APEX Conditional	Decreed Units	Seasonal Limits	Comments
11/21/1895	4/20/1868	6685.00000	0		CA2283, CA11195	15.0000	0.0000	0.0000	0.0000	C	No	TB-11 TFR 11-5-1909, TB-101 CPD 8/31/1948 PUBLIC SERVICE AUG W-063, TB-101 CPD 8-31-1948
4/28/1883	5/15/1869	7075.00000	0		CA47394, CA11195	5.1700	0.0000	0.0000	0.0000	C	No	TB-101 CPD 8-31-1948, TB-101 CPD 8/31/1948 PUBLIC SERVICE AUG W-063, TB-101 TFR FM GETZ DITCH IN DIST 2 TB-27
11/21/1895	6/20/1882	11859.00000	0		CA11195, CA0433	50.0000	0.0000	0.0000	0.0000	C	No	506 ASP 468.433, TB-101 CPD 8/31/1948 ASP 551 PUBLIC SERVICE AUG W-063, TB-101 CPD 8-31-1948 ASP 551
11/21/1895	4/15/1888	13985.00000	0		CA11195, CA0433	164.0000	0.0000	0.0000	0.0000	C	No	506, TB-101 CPD 8-31-1948, TB-101 CPD 8/31/1948 PUBLIC SERVICE AUG W-063

Adj Date	Appro Date	Priority Admin No	Order No	Priority No	Associated Case Numbers	Net Absolute	Net Conditional	Net APEX Absolute	Net APEX Conditional	Decreed Units	Seasonal Limits	Comments
12/31/1972	6/12/1972	44723.00000	0		W2968, 87CW0242	234.1700	0.0000	0.0000	0.0000	C	No	REC + AUG LTD 12000AF, MADE ABS 02/09/1989
12/31/1990	12/20/1990	51488.00000	0		90CW0183	0.0000	0.0000	37.0000	0.0000	C	No	EXCH FM PREWITT RES
12/31/2006	8/1/2006	57191.00000	0		16CW3108, 03CW0407	0.0000	0.0000	0.9000	19.1000	C	No	EXCH FM PINNEO ABOVE NORTH STERLING CANAL IMPACT REACH, EXCH FM PINNEO BELOW NORTH STERLING CANAL IMPACT REACH, MADE ABSOLUTE; EXCH FM PINNEO ABOVE NORTH STERLING CANAL IMPACT REACH, MADE ABSOLUTE; EXCH FM PINNEO BELOW NORTH STERLING CANAL IMPACT REACH
12/31/2010	12/14/2010	58787.00000	0		10CW0298	0.0000	234.1700	0.0000	0.0000	C	No	

Diversion Record - Totals

Water Class	Irr Year	FDU	LDU	MaxQ	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Annual Amount	Units	Data Status
Total (Diversions)	2017	11/1/16	10/31/17	183.68	44.33			108.70	3834.48	4303.80	5923.13	9614.62	8304.91	8394.17	5526.82	2570.22	48625.19	AF	Approved
Total (Diversions)	2016	11/1/15	10/31/16	184.59	10.37			123.41	1112.92	1169.27	2831.70	7443.20	8655.00	9084.35	6172.65	4615.21	41218.10	AF	Approved
Total (Diversions)	2015	11/1/14	10/31/15	167.05	23.80			1806.67	4623.88	3867.59	472.91	4354.10	9864.74	7993.96	7279.29	3904.84	44191.77	AF	Approved
Total (Diversions)	2014	2/13/14	10/31/14	172.58				1630.04	4975.61	4485.76	7768.20	4496.16	7843.14	5560.03	3425.82	2345.53	42530.29	AF	Approved
Total (Diversions)	2013	11/1/12	10/28/13	185.73	28.36			75.45	90.88	1599.73	7542.12	8244.75	5873.70	4819.94	5948.75	4032.95	38256.66	AF	Approved
Total (Diversions)	2012	2/13/12	10/31/12	146.60				2102.99	4251.93	6752.94	7483.37	5912.65	6061.71	4723.90	4334.96	2774.18	44398.64	AF	Approved
Total (Diversions)	2011	2/22/11	10/26/11	257.33				834.14	4899.64	7168.31	5773.49	7657.98	7192.94	9588.22	4882.68	2334.86	50332.26	AF	Approved
Total (Diversions)	2010	1/30/10	10/31/10	201.17			50.50	2952.04	3288.19	5498.26	4326.37	4303.30	10058.33	7794.04	5706.01	2910.59	46887.64	AF	Approved
Total (Diversions)	2009	11/21/08	10/31/09	159.00	235.44	901.70	203.29	45.18	6184.55	5402.14	8976.84	4292.73	3435.40	7773.18	4037.43	2202.18	43690.08	AF	Approved
Total (Diversions)	2008	11/1/07	10/31/08	161.00	175.54	2069.19	4544.60	3959.01	2653.33	4903.03	6365.98	3639.54	5361.20	5854.16	4685.56	6302.61	50513.75	AF	Approved
Total (Diversions)	2007	1/24/07	10/31/07	198.03			318.01		2074.54	5430.57	8751.90	8487.63	5449.77	5955.00	6085.04	5475.17	48027.64	AF	Approved
Total (Diversions)	2006	1/5/06	10/31/06	164.87			2130.28		1820.63	3994.77	4335.42	4443.10	5533.45	5413.17	4567.56	4620.35	36858.73	AF	Approved
Total (Diversions)	2005	3/29/05	10/25/05	188.00					335.21	4236.16	7908.87	8255.68	6106.30	5398.10	4924.24	3306.49	40471.06	AF	Approved
Total (Diversions)	2004	4/13/04	10/31/04	186.00						4038.41	6628.86	4418.74	6478.45	5864.10	6536.82	3972.83	37938.21	AF	Approved
Total (Diversions)	2003	4/17/03	10/31/03	161.00						2070.77	6591.17	2774.92	7740.21	6159.46	4811.97	4220.29	34368.80	AF	Approved
Total (Diversions)	2002	11/1/01	10/29/02	135.00	1086.96					2590.45	11281.55	4933.16	3076.41	1396.38	3324.35	3814.27	31503.53	AF	Approved
Total (Diversions)	2001	1/30/01	10/31/01	133.00			29.75	1202.00	778.13	825.14	4371.63	3991.99	5464.54	6521.75	4373.62	2017.22	29575.77	AF	Approved
Total (Diversions)	2000	11/1/99	10/25/00	107.00	920.34				164.63	3191.45	4665.19	5422.89	4946.85	6099.26	2284.99	1672.09	29367.70	AF	Approved
Total (Diversions)	1999	11/1/98	10/31/99	177.00	1753.41	19.84			809.27	1620.52	3213.27	6505.88	9022.94	5896.95	4591.80	2102.51	35536.39	AF	Approved
Total (Diversions)	1998	11/1/97	10/16/98	147.00	478.02	224.14		158.68	763.65	935.62	4720.73	5357.43	6301.58	8402.11	4750.48	739.85	32832.28	AF	Approved
Total (Diversions)	1997	3/27/97	10/31/97	208.70					221.56	5771.99	8531.03	4445.02	8391.99	8144.25	5885.04	3055.98	44446.86	AF	Approved
Total (Diversions)	1996	11/1/95	10/29/96	190.00	1084.97	454.82	0.00			3346.36	5095.61	6702.25	7551.18	7509.53	5109.50	3155.75	40009.97	AF	Approved
Total (Diversions)	1995	11/1/94	10/31/95	191.00	23.80					2528.96	2579.15	4293.48	9080.46	10484.78	5280.08	1937.88	36208.59	AF	Approved
Total (Diversions)	1994	3/7/94	10/31/94	118.00					694.23	1316.25	6343.23	6253.98	6217.68	5735.29	4420.03	1932.13	32912.81	AF	Approved
Total (Diversions)	1993	11/1/92	10/29/93	156.00	2417.89					382.82	5799.75	6152.82	6771.67	6525.72	5254.29	1815.89	35120.84	AF	Approved
Total (Diversions)	1992	3/4/92	10/31/92	165.00					999.68	3475.09	5198.75	6115.13	7898.30	7987.55	5224.54	4066.18	40965.23	AF	Approved
Total (Diversions)	1991	4/4/91	10/28/91	142.00						3982.87	6190.50	6934.32	6414.64	7305.23	5202.72	2952.64	38982.92	AF	Approved

Water Class	Irr Year	FDU	LDU	MaxQ	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Annual Amount	Units	Data Status
Total (Diversions)	1990	4/6/90	10/31/90	129.00						3171.62	5309.83	4203.04	6148.85	5042.06	3804.35	3193.44	30873.18	AF	Approved
Total (Diversions)	1989	4/17/89	10/26/89	119.00						2344.50	4650.32	3116.08	5807.69	5922.73	4647.34	3149.80	29638.45	AF	Approved
Total (Diversions)	1988	11/1/87	10/31/88	120.00	863.81	345.13	307.44	287.61	307.44	1279.36	2761.03	4389.49	6672.49	6583.24	4738.58	3586.17	32121.79	AF	Approved
Total (Diversions)	1987	5/1/87	10/17/87	114.00							4337.50	4025.81	6993.82	6218.27	5234.46	2469.46	29279.32	AF	Approved
Total (Diversions)	1986	5/1/86	10/10/86	184.00							4195.10	5502.15	8128.38	6710.18	4187.17	1102.83	29825.81	AF	Approved
Total (Diversions)	1985	4/12/85	10/6/85	157.00						4074.11	4006.67	5952.48	4675.11	6041.74	4143.27	665.44	29558.83	AF	Approved
Total (Diversions)	1984	5/16/84	10/8/84	203.00							894.56	5396.71	8368.98	9194.32	4779.04	821.17	29454.78	AF	Approved
Total (Diversions)	1983	5/28/83	10/12/83	212.00							444.30	3161.70	9308.57	8332.68	5167.02	1200.02	27614.29	AF	Approved
Total (Diversions)	1982	4/5/82	10/31/82	204.00						2816.57	4746.52	3395.75	7430.19	6728.03	5020.24	3377.90	33515.20	AF	Approved
Total (Diversions)	1981	4/17/81	10/16/81	91.00						848.94	3705.18	3687.33	5208.67	5770.00	4819.91	1701.84	25741.86	AF	Approved
Total (Diversions)	1980	4/25/80	10/20/80	207.00						495.88	3494.93	8753.19	8580.62	8082.76	3961.05	2501.19	35869.61	AF	Approved
Total (Diversions)	1979	4/20/79	10/29/79	140.00						1703.83	5365.37	4566.02	6513.81	6618.94	5289.99	3423.52	33481.48	AF	Approved
Total (Diversions)	1978	4/6/78	10/13/78	196.00						2907.81	2870.12	5456.61	6432.49	5877.11	4272.46	1297.21	29113.81	AF	Approved
Total (Diversions)	1977	4/5/77	10/10/77	89.00						2848.31	3417.57	4679.08	3486.99	5579.59	3877.74	1182.17	25071.44	AF	Approved
Total (Diversions)	1976	4/9/76	10/14/76	110.00						2598.39	4980.57	3808.32	5474.46	5702.56	3949.15	1249.61	27763.05	AF	Approved
Total (Diversions)	1975	4/15/75	10/19/75	234.00						2283.01	4558.08	4191.14	8421.94	7299.28	5051.97	2175.90	33981.32	AF	Approved
Total (Diversions)	1974	4/26/74	10/15/74	180.00						739.85	6492.00	6250.01	6408.69	6008.02	4736.60	2142.18	32777.34	AF	Approved
Total (Diversions)	1973	5/15/73	9/8/73	223.00							4008.65	8378.30	6349.18	8078.80	1467.79		28282.73	AF	Approved
Total (Diversions)	1972	4/4/72	10/15/72	113.00						3980.88	4208.99	5512.15	4429.16	4512.46	3235.09	1868.46	27747.18	AF	Approved
Total (Diversions)	1971	5/15/71	9/17/71	175.00							3375.92	6224.22	6309.51	5698.60	2820.54		24428.79	AF	Approved
Total (Diversions)	1970	5/30/70	10/5/70	190.00							591.08	4946.85	9130.05	7223.91	4655.27	585.13	27132.30	AF	Approved
Total (Diversions)	1969	4/11/69	10/10/69	165.00						2776.90	5188.84	5575.62	7860.61	5244.37	2876.08	357.03	29879.44	AF	Approved
Total (Diversions)	1968	4/8/68	10/15/68	175.00						3998.74	4258.57	4289.32	3836.09	5448.67	4855.61	2231.44	28918.44	AF	Approved
Total (Diversions)	1967	4/2/67	10/14/67	155.00						3879.73	3126.00		5506.20	6605.06	4504.53	1477.71	25099.21	AF	Approved
Total (Diversions)	1966	4/7/66	10/14/66	70.00						638.69	3518.73	2257.22	2941.53	2558.72	3395.75	1793.08	17103.72	AF	Approved
Total (Diversions)	1965	4/8/65	9/22/65	190.00						2935.58	3721.05	833.07	1759.36	3254.92	3804.35		16308.34	AF	Approved
Total (Diversions)	1964	4/18/64	10/23/64	100.00						1864.49	3413.60	4978.59	3018.89	2150.11	2074.74	2396.07	19896.49	AF	Approved
Total (Diversions)	1963	4/8/63	10/20/63	100.00						3721.05	3921.38	4319.07	3163.68	4304.20	3399.72	1781.18	24610.28	AF	Approved
Total (Diversions)	1962	4/19/62	10/10/62	170.00						2360.37	2445.66	1328.95	7015.64	6898.61	5038.09	1102.83	26190.13	AF	Approved
Total (Diversions)	1961	5/1/61	9/24/61	165.00							4429.16	4585.85	6374.97	5881.08	4861.56		26132.61	AF	Approved
Total (Diversions)	1960	4/17/60	10/17/60	110.00						1983.50	3828.16	5192.80	6081.41	3479.06	3245.01	1566.97	25376.90	AF	Approved
Total (Diversions)	1959	5/13/59	9/30/59	105.00							1178.20	4496.59	6297.61	5801.74	4347.83	0.00	22121.98	AF	Approved
Total (Diversions)	1958	5/4/58	10/12/58	163.00							3820.22	4091.96	5601.40	6704.23	4923.05	1313.08	26453.94	AF	Approved
Total (Diversions)	1957	6/2/57	10/7/57	170.00								5664.88	5466.53	5841.41	5666.86	1081.01	23720.68	AF	Approved
Total (Diversions)	1956	4/16/56	10/23/56	100.00						1555.06	1995.40	2747.15	2126.31	2636.07	2610.29	2479.38	16149.66	AF	Approved
Total (Diversions)	1955	4/14/55	10/23/55	80.00						2679.71	3126.00	3717.08	2471.44	2455.57	2640.04	1945.81	19035.65	AF	Approved
Total (Diversions)	1954	4/14/54	10/20/54	78.00						2503.18	4026.51	3954.11	3268.81	3300.54	2548.80	2737.23	22339.17	AF	Approved
Total (Diversions)	1953	5/7/53	10/22/53	120.00							3578.23	4126.67	6329.35	5331.65	5032.14	3282.69	27680.73	AF	Approved

Water Class	Irr Year	FDU	LDU	MaxQ	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Annual Amount	Units	Data Status
Total (Diversions)	1952	4/29/52	10/31/52	180.00						309.43	6162.73	7616.64	6771.67	5922.73	5061.89	4516.43	36361.52	AF	Approved
Total (Diversions)	1951	4/19/51	10/8/51	175.00						1410.27	4502.55	5260.24	6262.90	5292.97	5051.97	1374.57	29155.47	AF	Approved
Total (Diversions)	1950	4/11/50	10/31/50	155.00						3018.89	5710.50	5358.43	6739.93	5704.55	5002.39	4819.91	36354.58	AF	Approved
Total (Releases)	2007	10/12/07	10/29/07	0.51												18.21	18.21	AF	Approved
Total (Releases)	2006	6/18/06	9/30/06	18.01								33.18	235.04	645.77	595.05	0.00	1509.05	AF	Approved
Total (Releases)	2004	6/8/04	10/23/04	20.00								315.87	399.68	589.50	624.80	437.36	2367.21	AF	Approved
Total (Releases)	2003	5/1/03	10/31/03	15.00							144.40	355.13	343.11	430.42	416.54	122.98	1812.56	AF	Approved
Total (Releases)	1991	4/4/91	4/30/91	14.00						749.76	0.00						749.76	AF	Approved

Note:

FDU - First day used

LDU - Last day used

MaxQ - Maximum flow rate (cfs)



Structure Summary Report

Structure Name: DEUEL SNYDER CANAL (0100517)

Associated Permits:

Structure Type: DITCH

Water Source Type: Tributary

CIU Code: Active Structure with contemporary diversion records (A)

Water Source: SOUTH PLATTE RIVER [00201759] @ Stream
Mile: 118.45

Physical Location

Feature Type	Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Latitude	Longitude	Location Accuracy
Point of Diversion				SW	SE	26	4.0 N	58.0 W	S	598953.0	4459224.0	40.277648	-103.836038	Digitized

Division: 1 District: 1

County: MORGAN

Designated Basin:

Management District:

Water Rights - Net Amounts

Adj Date	Appro Date	Priority Admin No	Order No	Priority No	Associated Case Numbers	Net Absolute	Net Conditional	Net APEX Absolute	Net APEX Conditional	Decreed Units	Seasonal Limits	Comments
11/21/1895	4/2/1871	7762.00000	0		03CW0222, CA0433	13.0000	0.0000	0.0000	0.0000	C	No	417 MEADOW 4-10 TO 7-10 ASP 495.552, CHNG USE 5/10/2007, CHNG USE 5/10/2007
11/21/1895	7/1/1874	8948.00000	0		03CW0222, CA7747	8.0000	0.0000	0.0000	0.0000	C	No	TB-81 CPD FM BROWN PYOTT DITCH 6-22-1929 MEADOW, CHNG USE 5/10/2007, CHNG USE 5/10/2007
11/21/1895	4/7/1884	12516.00000	0		03CW0222, CA0433	32.0000	0.0000	0.0000	0.0000	C	No	417 ASP 495.552, CHNG USE 5/10/2007, CHNG USE 5/10/2007
11/21/1895	11/1/1888	14185.00000	0		03CW0222, CA7747	31.0000	0.0000	0.0000	0.0000	C	No	TB-81 CPD FM BROWN PYOTT DITCH 6-22-1929, CHNG USE 5/10/2007, CHNG USE 5/10/2007
12/31/1990	12/20/1990	51488.00000	0		90CW0183	0.0000	0.0000	12.0000	0.0000	C	No	EXCH FM PREWITT RES
12/31/2003	4/23/2003	55995.00000	0		13CW3051, 03CW0222	52.4000	15.6000	0.0000	0.0000	C	No	MADE ABSOLUTE
12/31/2007	5/31/2007	57494.00000	0		07CW0122	0.0000	0.0000	0.0000	0.0000	C	No	EXCH FM DEUEL & SNYDER IMPACT REACH, CANCELLED, CANCELLED; EXCH FM DEUEL & SNYDER IMPACT REACH
12/31/2004	10/22/2008	58004.00000	0		04CW0223	0.0000	0.0000	0.0000	84.0000	C	No	EXCH FM DEUEL & SNYDER IMPACT REACH EXCESS ACCRETIONS

Diversion Record - Totals

Water Class	Irr Year	FDU	LDU	MaxQ	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Annual Amount	Units	Data Status
Total (Diversions)	2017	11/1/16	10/31/17	51.80	24.08			32.31	807.32	1125.14	1425.76	2043.38	1525.91	1578.67	1206.82	1757.98	11527.37	AF	Approved
Total (Diversions)	2016	3/8/16	10/31/16	34.84					997.90	1200.79	933.47	2213.39	1674.37	1897.81	983.92	1756.57	11658.22	AF	Approved
Total (Diversions)	2015	11/1/14	10/29/15	36.40	8.99				604.57	1318.63		539.83	1962.04	1114.45	1047.15	872.86	7468.51	AF	Approved
Total (Diversions)	2014	2/17/14	10/31/14	39.00				157.49	1174.99	1275.27	1634.19	1791.70	1488.46	1458.45	921.20	774.28	10676.01	AF	Approved
Total (Diversions)	2013	11/1/12	10/28/13	51.84	10.81				47.76	97.63	1630.79	1791.12	961.96	379.76	1551.14	693.55	7164.52	AF	Approved

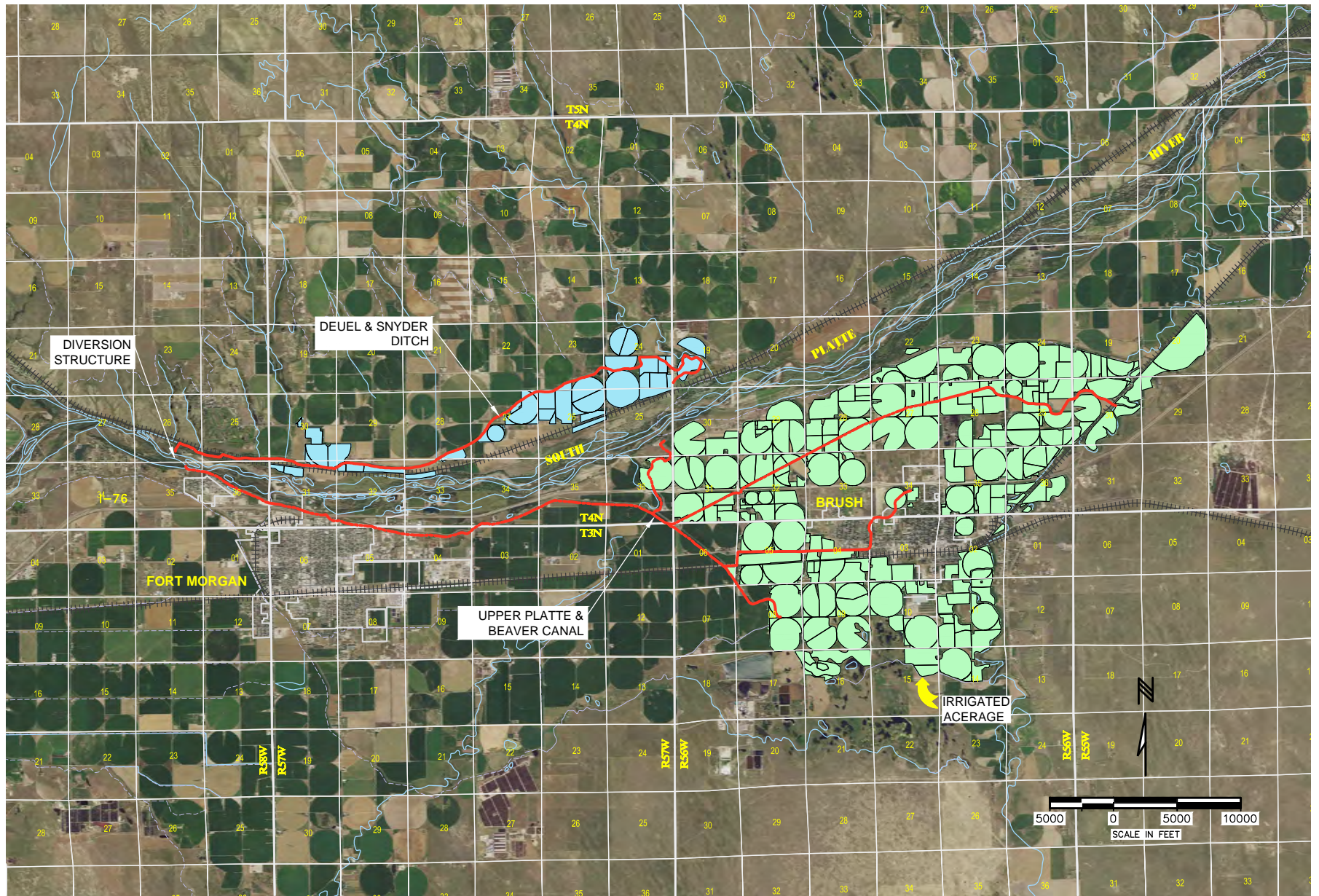
Water Class	Irr Year	FDU	LDU	MaxQ	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Annual Amount	Units	Data Status
Total (Diversions)	2012	11/1/11	10/31/12	46.60	564.07				869.17	861.32	1629.37	1414.89	749.37	97.93	1106.52	1633.11	8925.73	AF	Approved
Total (Diversions)	2011	11/1/10	10/31/11	38.14	13.61				371.79	1254.56	1417.63	1909.18	1859.43	1760.57	1267.14	1838.96	11692.87	AF	Approved
Total (Diversions)	2010	3/9/10	10/31/10	59.39					1007.26	955.81	1561.65	1207.79	1669.12	1592.55	1227.79	894.54	10116.50	AF	Approved
Total (Diversions)	2009	12/20/08	10/31/09	49.35		162.21	25.39	23.15	0.00	850.64	1989.79	1107.88	1177.82	1634.40	1353.34	1245.64	9570.27	AF	Approved
Total (Diversions)	2008	12/20/07	10/24/08	53.60		174.45	142.81	64.46			2158.64	1260.51	788.00	1204.34	1171.49	649.14	7613.86	AF	Approved
Total (Diversions)	2007	1/19/07	10/24/07	69.01			67.84	638.69	94.04	1087.20	2100.76	1366.65	1258.35	1055.18	1372.22	985.18	10026.12	AF	Approved
Total (Diversions)	2006	2/23/06	10/31/06	32.51				74.98	80.31		1355.66	1281.96	706.66	678.14	1855.96	661.38	6695.05	AF	Approved
Total (Diversions)	2005	4/13/05	10/15/05	50.00						599.02	1114.73	1127.62	683.12	977.35	726.62	521.66	5750.11	AF	Approved
Total (Diversions)	2004	4/5/04	10/20/04	62.80						896.54	1521.34	1213.90	857.27	1091.34	1516.21	973.24	8069.85	AF	Approved
Total (Diversions)	2003	5/1/03	10/15/03	38.00							1303.16	952.08	458.29	215.88	1537.21	708.11	5174.73	AF	Approved
Total (Diversions)	2002	11/1/01	10/29/02	60.00	5.95					359.01	1196.05	1269.44	571.25		101.16	541.50	4044.36	AF	Approved
Total (Diversions)	2001	5/1/01	10/31/01	41.00							606.95	841.00	1215.89	541.50	160.66	111.08	3477.08	AF	Approved
Total (Diversions)	2000	4/24/00	10/4/00	37.00						388.77	1485.64	1566.97	983.82	567.28	426.45	77.36	5496.28	AF	Approved
Total (Diversions)	1999	5/7/99	9/30/99	36.00							813.24	1092.91	1368.62	640.67	914.39	0.00	4829.82	AF	Approved
Total (Diversions)	1998	4/27/98	10/10/98	49.00						206.28	1215.89	1321.01	1497.54	1838.70	1356.71	91.24	7527.38	AF	Approved
Total (Diversions)	1997	3/28/97	10/12/97	61.00					162.65	848.94	1390.43	176.13	1596.72	670.42	1084.97	428.44	6358.70	AF	Approved
Total (Diversions)	1996	4/9/96	9/21/96	43.00						1100.84	1237.70	1561.01	1634.40	1561.01	446.29		7541.27	AF	Approved
Total (Diversions)	1995	5/11/95	9/27/95	36.00							759.68	501.83	960.01	658.52	628.77		3508.81	AF	Approved
Total (Diversions)	1994	4/8/94	10/10/94	47.00						392.73	1196.05	1652.26	656.54	444.30	678.36	174.55	5194.79	AF	Approved
Total (Diversions)	1993	11/1/92	10/22/93	35.00	198.35						1305.14	938.20	775.55	467.51	366.95	190.42	4242.11	AF	Approved
Total (Diversions)	1992	4/14/92	10/31/92	33.00						464.14	1535.23	960.01	694.23	604.97	654.56	589.10	5502.23	AF	Approved
Total (Diversions)	1991	4/10/91	10/28/91	38.00						583.15	1094.89	408.60	944.15	1192.08	1223.82	700.18	6146.87	AF	Approved
Total (Diversions)	1990	4/23/90	9/23/90	31.00						283.64	902.49	700.18	751.75	658.52	436.37		3732.95	AF	Approved
Total (Diversions)	1989	4/18/89	10/18/89	39.00						725.96	1656.22	763.65	664.47	706.13	255.87	313.39	5085.69	AF	Approved
Total (Diversions)	1988	5/4/88	9/30/88	38.00							541.50	1079.02	973.90	783.48	412.57	0.00	3790.47	AF	Approved
Total (Diversions)	1987	5/1/87	10/19/87	28.00							729.93	202.32	517.69	483.97	720.01	414.55	3068.47	AF	Approved
Total (Diversions)	1986	5/6/86	10/7/86	45.00							981.83	634.72	1049.27	666.46	495.88	97.19	3925.35	AF	Approved
Total (Diversions)	1985	4/24/85	9/8/85	31.00						120.99	585.13	1124.64	674.39	485.96	162.65		3153.77	AF	Approved
Total (Diversions)	1984	5/22/84	10/7/84	38.00							325.29	864.81	1477.71	1424.15	571.25	61.49	4724.70	AF	Approved
Total (Diversions)	1983	11/1/82	9/17/83	31.00	59.51						65.46	815.22	888.61	1241.67	610.92		3681.38	AF	Approved
Total (Diversions)	1982	4/19/82	10/31/82	36.00						491.91	1211.92	743.81	771.58	630.75	720.01	965.96	5535.95	AF	Approved
Total (Diversions)	1981	4/29/81	10/14/81	24.00						35.70	725.96	866.79	491.91	243.97	729.93	370.91	3465.17	AF	Approved
Total (Diversions)	1980	5/9/80	9/18/80	33.00							680.34	1116.71	694.23	517.69	660.51		3669.48	AF	Approved
Total (Diversions)	1979	5/5/79	9/30/79	30.00							862.82	731.91	817.20	485.96	626.79	0.00	3524.68	AF	Approved
Total (Diversions)	1978	4/5/78	10/13/78	34.00						725.96	890.59	1104.81	626.79	234.05	527.61	515.71	4625.52	AF	Approved
Total (Diversions)	1977	5/13/77	10/3/77	36.00							436.37	950.10	682.32	224.14	979.85	27.77	3300.54	AF	Approved
Total (Diversions)	1976	5/3/76	10/7/76	34.00							771.58	690.26	533.56	487.94	1047.29	259.84	3790.47	AF	Approved
Total (Diversions)	1975	5/3/75	10/31/75	33.00							854.89	995.72	1445.97	854.89	1134.56	636.70	5922.73	AF	Approved

Water Class	Irr Year	FDU	LDU	MaxQ	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Annual Amount	Units	Data Status
Total (Diversions)	1974	5/1/74	10/31/74	41.00							1305.14	999.68	954.06	654.56	1973.58	1434.07	7321.10	AF	Approved
Total (Diversions)	1973	5/16/73	9/8/73	30.00							569.26	1370.60	1253.57	962.00	132.89		4288.33	AF	Approved
Total (Diversions)	1972	4/16/72	9/22/72	32.00						601.00	1144.48	1358.70	971.92	442.32	307.44		4825.86	AF	Approved
Total (Diversions)	1971	5/15/71	9/18/71	30.00							559.35	823.15	1186.13	458.19	384.80		3411.62	AF	Approved
Total (Diversions)	1970	5/30/70	9/25/70	29.00							83.31	553.40	1285.31	783.48	852.91		3558.40	AF	Approved
Total (Diversions)	1969	4/11/69	10/4/69	25.00						837.04	519.68	626.79	531.58	589.10	468.11	47.60	3619.89	AF	Approved
Total (Diversions)	1968	4/10/68	10/14/68	34.00						684.31	960.01	1063.16	547.45	230.09	674.39	327.28	4486.68	AF	Approved
Total (Diversions)	1967	4/16/67	9/28/67	32.00						725.96	565.30		763.65	190.42	303.48		2548.80	AF	Approved
Total (Diversions)	1966	4/25/66	10/15/66	21.00						166.61	1194.07	366.95	616.87	206.28	271.74	481.99	3304.51	AF	Approved
Total (Diversions)	1965	4/15/65	9/19/65	36.00						654.56	1491.59	495.88	331.24	466.12	364.96		3804.35	AF	Approved
Total (Diversions)	1964	5/1/64	10/23/64	24.00							1255.56	900.51	658.52	71.41		287.61	3173.60	AF	Approved
Total (Diversions)	1963	4/9/63	9/30/63	24.00						856.87	1172.25	797.37	547.45	378.85	285.62	0.00	4038.41	AF	Approved
Total (Diversions)	1962	5/1/62	9/30/62	24.00							612.90	291.57	975.88	753.73	795.38	0.00	3429.47	AF	Approved
Total (Diversions)	1961	5/7/61	9/22/61	30.00							1043.32	1194.07	900.51	408.60	539.51		4086.01	AF	Approved
Total (Diversions)	1960	4/22/60	10/8/60	36.00						362.98	880.67	1432.09	658.52	531.58	527.61	228.10	4621.56	AF	Approved
Total (Diversions)	1959	5/12/59	9/30/59	41.00							339.18	1634.40	854.89	305.46	238.02	0.00	3371.95	AF	Approved
Total (Diversions)	1958	5/27/58	9/30/58	50.00							168.60	926.29	436.37	438.35	128.93	0.00	2098.54	AF	Approved
Total (Diversions)	1957	5/28/57	10/8/57	50.00							198.35	1830.77	2148.13	1559.03	777.53	216.20	6730.02	AF	Approved
Total (Diversions)	1956	4/12/56	9/16/56	32.00						874.72	1334.90	1096.88	374.88	126.94	77.36		3885.68	AF	Approved
Total (Diversions)	1955	6/1/55	10/23/55	24.00								468.11	442.32	243.97		446.29	1600.68	AF	Approved
Total (Diversions)	1954	4/23/54	10/23/54	25.00						245.95	864.81	946.13	428.44	174.55	87.27	275.71	3022.85	AF	Approved
Total (Diversions)	1953	5/6/53	10/22/53	34.00	0.00						956.05	1182.17	817.20	695.22	595.05	297.53	4543.21	AF	Approved
Total (Diversions)	1952	4/23/52	10/31/52	46.00						297.53	1162.33	1636.39	797.37	337.20	289.59	614.89	5135.28	AF	Approved
Total (Diversions)	1951	4/24/51	10/8/51	45.00						178.52	1309.11	1352.75	741.83	1081.01	1350.76	220.17	6234.14	AF	Approved
Total (Diversions)	1950	5/1/50	10/6/50	33.00							1045.30	1313.08	745.80	299.51	882.66	190.42	4476.76	AF	Approved
Total (Releases)	2006	8/16/06	10/31/06	4.00										83.31	0.00	113.06	196.37	AF	Approved
Total (Releases)	2004	6/10/04	9/30/04	8.00								58.85	83.41	190.42	275.71	0.00	608.38	AF	Approved

Note:
 FDU - First day used
 LDU - Last day used
 MaxQ - Maximum flow rate (cfs)

EXHIBIT C

Service Area Map



HARRIS ENGINEERING CONSULTANTS, INC.
21484 County Road T.5
Fort Morgan, CO 80701
(970) 542-0423

SCALE: 1" = 5000'

DRAWN: MCH

CAD FILE: 16001 UPBCC MAP VX.DWG

UPPER PLATTE & BEAVER CANAL Co DIVERSION STRUCTURE REPLACEMENT PROJECT SERVICE AREA

DATE: JULY 30, 2018

FIGURE 1

REV. 

EXHIBIT D

Site Photos



Fig. 1: Undermining and exposure of floor dowels, north section.



Fig. 2: Flash board bays, north section (looking upstream).



Fig. 3: North wall of structure (looking south).



Fig. 4: Collapse of downstream floor slab, diagonal section.

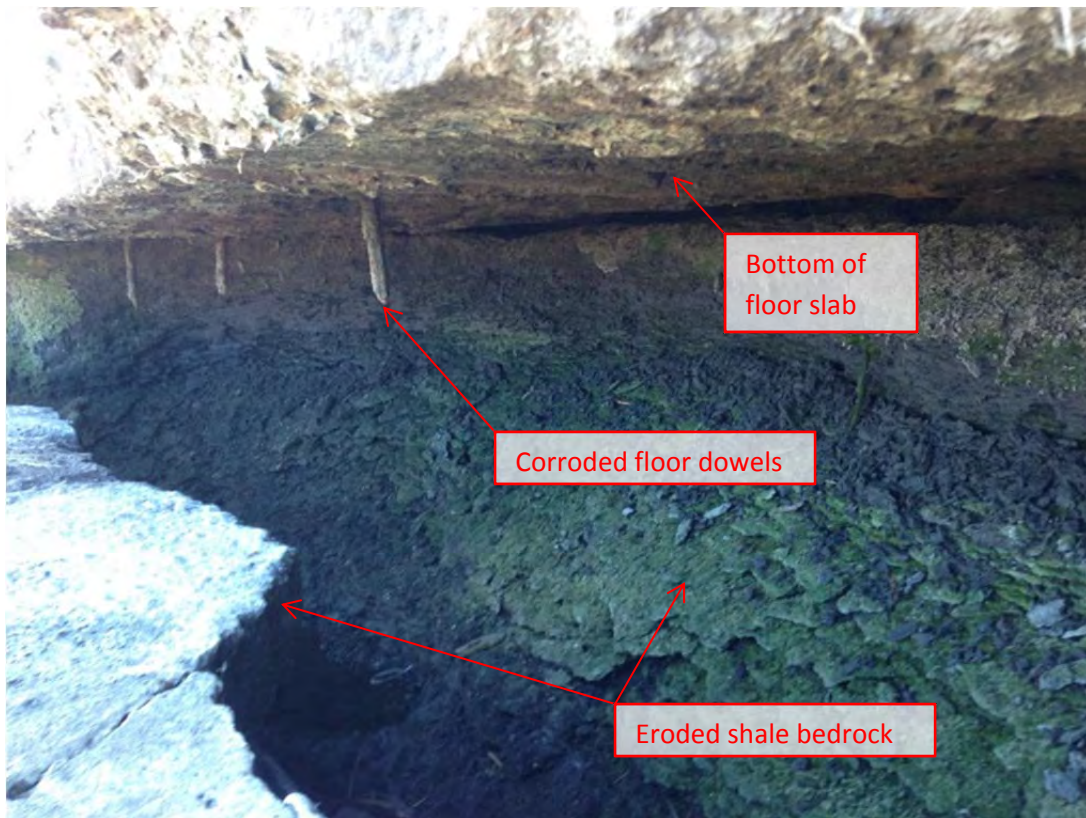


Fig. 5: Erosion and undermining of shale bedrock (note floor dowels).



Fig. 6: Exposure of rebar on downstream floor slab, south section.



Fig. 7: South section buttress wall (looking north).



Fig. 8: Vertical gates and radial gate, south section (looking downstream).



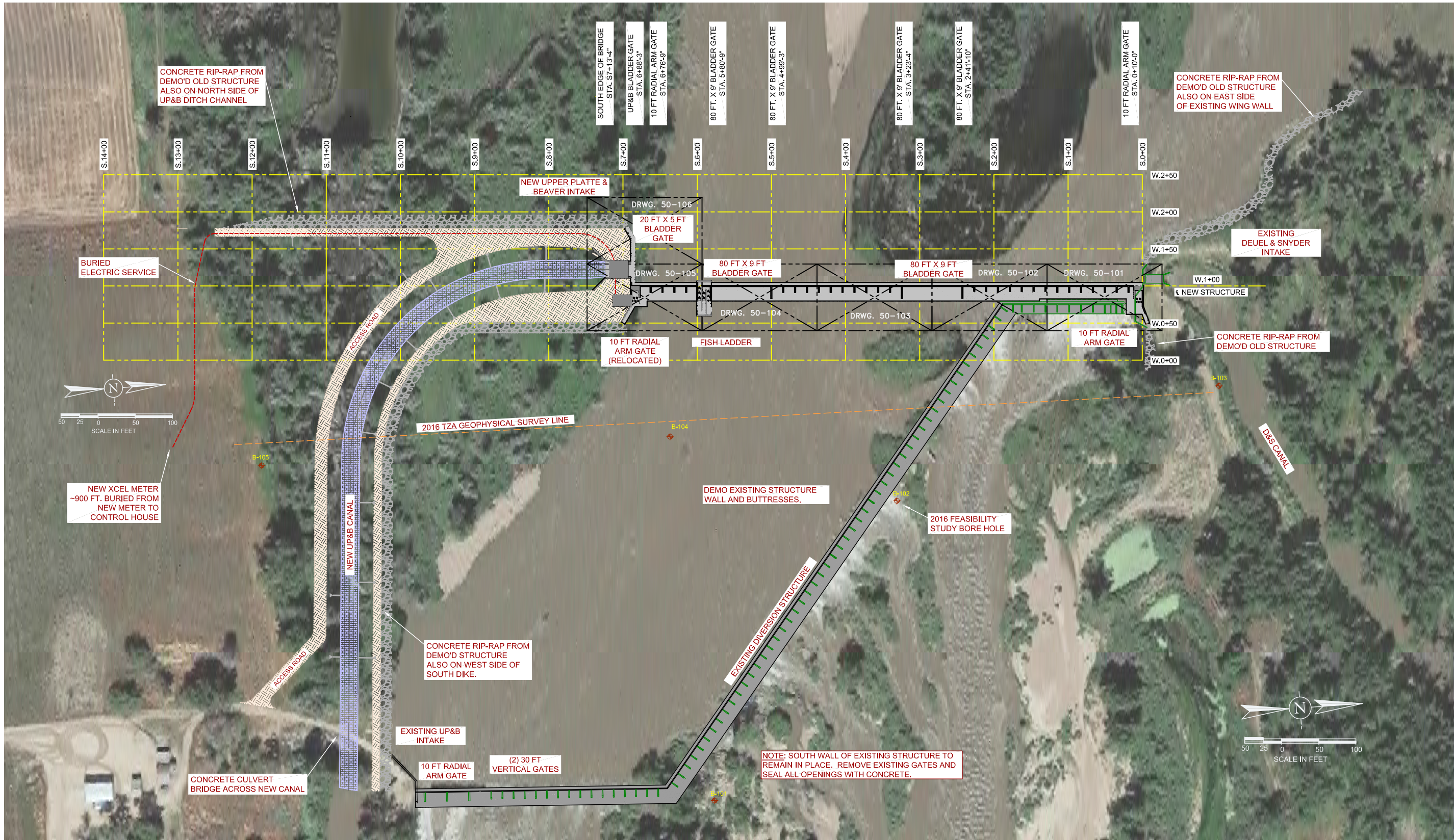
Fig. 9: Vertical gates, south section (looking upstream).

EXHIBIT E

Design Drawings

(full plan set under separate cover)

S:\2000 DEUEL AND SNYDER\AUTOCAD\16101 DEUEL AND SNYDER NEW DAM FISH LADDER V15.DWG, 3/26/2019 11:23:44 AM, Adobe PDF



"ISSUED FOR CONSTRUCTION"

NOTES

REV	REVISIONS	DATE
1	PRELIMINARY: ISSUED FOR CLIENT REVIEW	1/02/17
2	ISSUED FOR DISCUSSION	1/19/17
3	SCRUB	2/2/17
4	ISSUED FOR BOARD APPROVAL	10/23/18
5	ISSUED FOR BID	12/31/18
6	ISSUED FOR CONSTRUCTION	3/18/19

HARRIS ENGINEERING CONSULTANTS, INC.		
DRAWN:	M. C. HARRIS / JGB	1/02/17
CHECKED:	M. C. HARRIS	
CAD FILE:	16101 D&S DAM IMPROVEMENT V15.DWG	
UP&B - DEUEL & SNYDER		
REVIEW:		
APPROVED:		

DRAWING STATUS	
ISSUE	DATE
PRELIMINARY	1/02/17
FOR COMMENTS AND APPROVAL	
APPROVED FOR CONSTRUCTION	3/18/19
REVISED & APPROV. FOR CONSTRUCTION	

PROJECT NUMBER	CLIENT REFERENCE
16101	
THIS DRAWING HAS BEEN PREPARED BY HARRIS ENGINEERING CONSULTANTS, INC. FOR ITS OWN USE AND THAT OF THE CLIENT NAMED IN THE TITLE BLOCK. THIS DRAWING SHALL NOT BE USED FOR ANY OTHER PURPOSE OR DISTRIBUTED TO ANY OTHER PARTY WITHOUT THE WRITTEN PERMISSION OF THE CLIENT.	
HEC	HARRIS ENGINEERING CONSULTANTS, INC. 21484 County Road 125 Fort Morgan, CO 80701 (970) 542-4423

UPPER PLATTE & BEAVER - DEUEL & SNYDER

**SOUTH PLATTE RIVER DIVERSION STRUCTURE
PROJECT PLAN VIEW
MORGAN COUNTY, COLORADO**

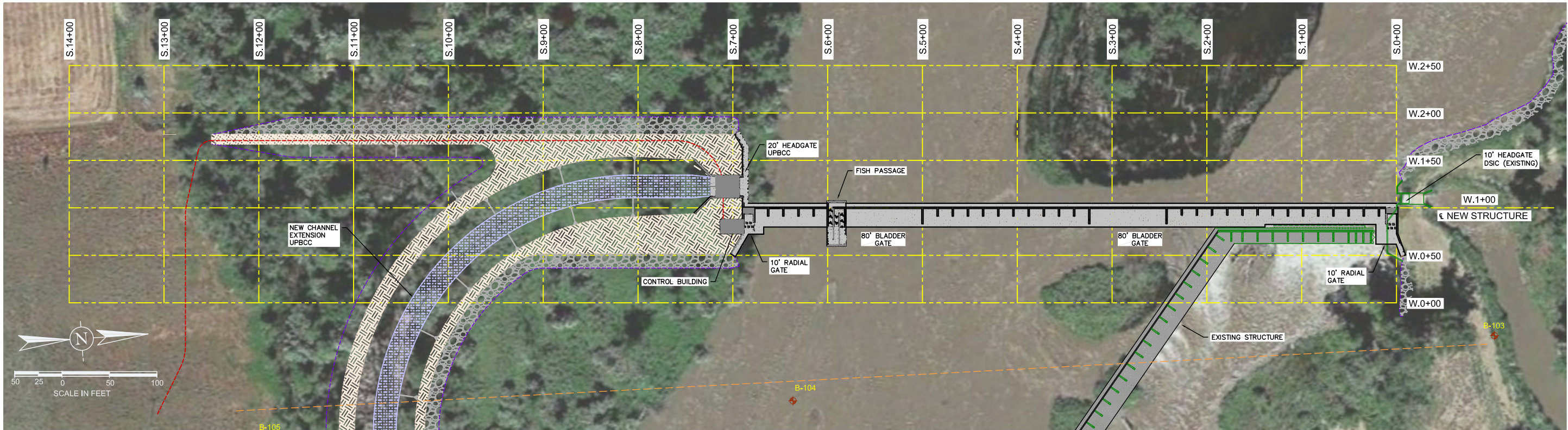
SCALE: 1"=60'

DRWG. NO.: 16101-50-1001

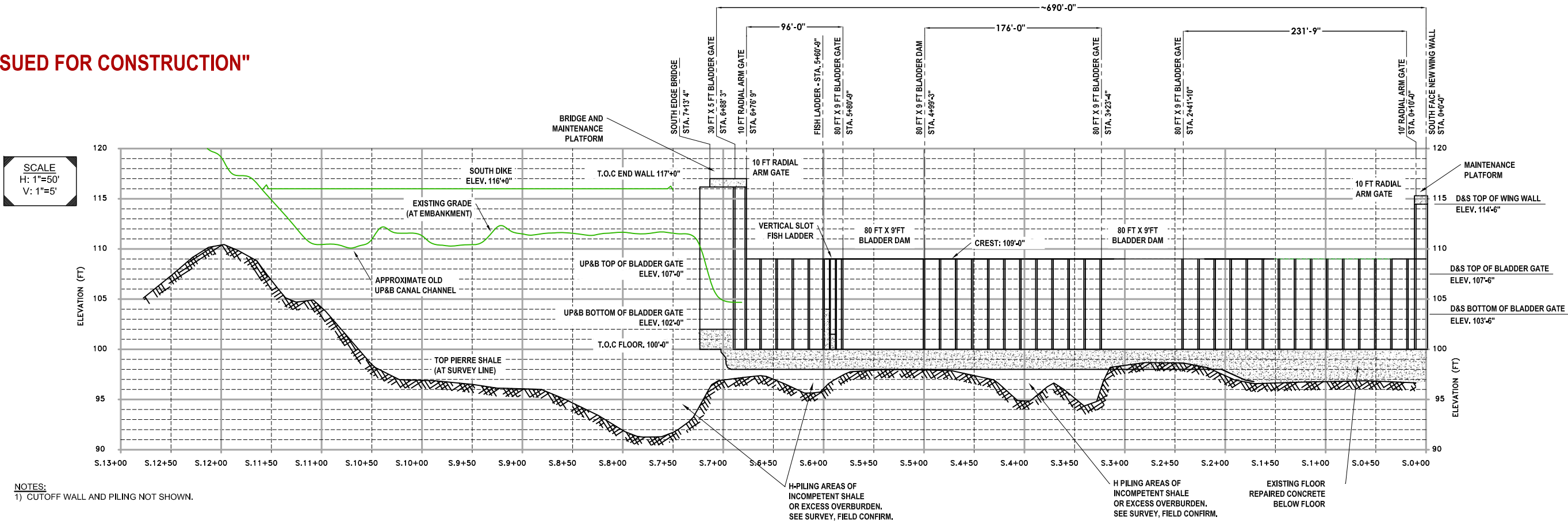
SHEET
1 of 1

REV. **E**

S:\2000 DEUEL AND SNYDER\AUTOCAD\16101 DEUEL AND SNYDER NEW DAM FISH LADDER V15.DWG, 3/26/2019 11:22:57 AM, Adobe PDF



"ISSUED FOR CONSTRUCTION"



NOTES:
1) CUTOFF WALL AND PILING NOT SHOWN.

NOTES

REV	REVISIONS		DATE	HARRIS ENGINEERING CONSULTANTS, INC.		DRAWING STATUS		PROJECT NUMBER	CLIENT REFERENCE
						ISSUE	DATE	16101	
1	PRELIMINARY:	ISSUED FOR CLIENT REVIEW	1/02/17	DRAWN:	M. C. HARRIS / JGB	1/02/17			
2	ISSUED FOR DISCUSSION		1/19/17	CHECKED:	M. C. HARRIS	1/02/17			
3	SCRUB		2/2/17						
4	ISSUE FOR BOARD APPROVAL		10/23/18	CAD FILE:	16101 D&S DAM IMPROVEMENT Vx.DWG				
5	ISSUED FOR BID		12/31/18	UP&B - DEUEL & SNYDER					
6	ISSUED FOR CONSTRUCTION		3/18/19						
				REVIEW:			APPROVED FOR CONSTRUCTION	3/18/19	
				APPROVED:			FOR CONSTRUCTION		

UPPER PLATTE & BEAVER - DEUEL & SNYDER			
SOUTH PLATTE RIVER DIVERSION STRUCTURE PROJECT PLAN AND ELEVATION MORGAN COUNTY, COLORADO			
SCALE: 1"=50'	DRWG. NO.: 16101-50-100	SHEET 1 of 1	REV. 0

EXHIBIT F

Detailed Construction Cost Estimate

UPPER PLATTE AND BEAVER CANAL COMPANY

PO Box 205 Brush, CO 80723

SOUTH PLATTE RIVER DIVERSION STRUCTURE

PROJECT COST ESTIMATE**\$4,392,380****FEASIBILITY COST ESTIMATE****NEW DIVERSION STRUCTURE**

Demolish and Remove Existing Structure. Install New Structure Upstream Including: (2) 9'x80' Spillways,
(1) 5'x20' Headgate, (2) 10' River Bypass Gates, 16'x24' Control Building, Controls & Automation.

**PROCUREMENT AND INSTALLATION**

Description	Quantity	Unit	Unit Cost	Base Cost	Contg.	Total Cost	Basis
1 Mobilization	1	LS	\$15,000	\$15,000		\$15,000	Estimate
2 De-Watering	1	LS	\$150,000	\$150,000		\$150,000	Estimate
3 Provide and Install Bladder Gate, 80 Ft. X 9 Ft.	2	EA	\$483,264	\$966,528		\$966,528	Estimate
4 Provide and Install Bladder Gate, 20 Ft. X 5 Ft.	1	EA	\$125,260	\$125,260		\$125,260	Estimate
5 Concrete Control Building	1	EA	\$40,000	\$40,000		\$40,000	Estimate
6 Provide and Install Radial Arm Gate, 10 Ft.	1	EA	\$37,972	\$37,972		\$37,972	Estimate
7 Relocate UP&B Existing Radial Arm Gate	1	EA	\$3,000	\$3,000		\$3,000	Estimate
8 New UP&B Ditch Channel	940	LF	\$76	\$71,158		\$71,158	Estimate
9 Concrete Culvert Bridge, UP&B Channel	1	LS	\$54,000	\$54,000		\$54,000	Estimate
10 Earthen Dike South Side of Structure	550	LF	\$76	\$41,635		\$41,635	Estimate
11 Sheet Piling, 9" X 22", PZ22	10,500	SF	\$14	\$147,000		\$147,000	Estimate
12 HP Piling, 10X42	2,250	LF	\$27	\$60,750		\$60,750	Estimate
13 Concrete Cut-Off Walls, 18" Wide Into Shale	900	LF	\$545	\$490,347		\$490,347	Estimate
14 Diversion Structure (incl. UP&B intake)	1	LS	\$1,222,805	\$1,222,805		\$1,222,805	Estimate
15 Earthwork, Excavation to Shale	1	LS	\$511,250	\$511,250		\$511,250	Estimate
16 Demo Existing Structure	950	LF	\$27	\$25,175		\$25,175	Estimate
17 Place Rip-Rap	1	LS	\$18,000	\$18,000		\$18,000	Estimate
18 Remove Old UP&B Canal Gates	1	LS	\$15,000	\$15,000		\$15,000	Estimate
19 Fish Ladder	1	LS	\$135,000	\$135,000		\$135,000	Estimate
20 Electrical Service, Electrical Contractor	1	LS	\$35,000	\$35,000		\$35,000	Estimate
21							
22							
23							
24							
25							
26							
27							
28							
29							
SUBTOTAL:				\$4,164,880		\$4,164,880	

ENGINEERING, ADMINISTRATION AND CONTINGENCY

Description	Quantity	Unit	Unit Cost	Base Cost	Contg.	Total Cost	Basis
30 Geotech Borehole Survey	LS	1	\$62,500	\$62,500		\$62,500	Estimate
31 Engineering, Project Management	LS	1	\$75,000	\$75,000		\$75,000	Estimate
32 Construction Inspection	LS	1	\$75,000	\$75,000		\$75,000	Estimate
33 Materials Testing, Concrete	LS	1	\$15,000	\$15,000		\$15,000	Estimate
34							
35							
SUBTOTAL:				\$227,500		\$227,500	
SUBTOTAL ALL ITEMS:				\$4,392,380		\$4,392,380	
TOTAL CONSTRUCTION COST:				\$4,392,380		\$4,392,380	

REV B

TOTAL PROJECT COST **\$4,392,000**

	<u>SOURCE 1</u>	<u>SOURCE 2</u>	<u>TOTAL</u>
FINANCING SOURCE	CWCB Loan	-	
COST SHARE	100%		
BASE LOAN AMOUNT	\$4,392,000	\$0	
SERVICE FEE @ 1%	\$43,920	\$0	
PRINCIPAL	\$4,435,920	\$0	
INTEREST RATE	2.05%		
TERM (YEARS)	40		
ANNUAL PAYMENT	\$163,584	\$0	\$163,584
STARTING YEAR	2020		

District Shares 1,187
Annual Diversions (ac-ft)* 37,600
Cost per Share **\$137.81**
Cost per ac-ft **\$4.35**

<u>YEAR</u>	<u>PAYMENT</u>	<u>INTEREST</u>	<u>PRINCIPAL</u>	<u>BALANCE</u>
2020	\$163,584	\$90,936	\$72,647	\$4,435,920
2021	\$163,584	\$89,447	\$74,137	\$4,363,273
2022	\$163,584	\$87,927	\$75,656	\$4,289,136
2023	\$163,584	\$86,376	\$77,207	\$4,213,480
2024	\$163,584	\$84,794	\$78,790	\$4,136,272
2025	\$163,584	\$83,178	\$80,405	\$4,057,482
2026	\$163,584	\$81,530	\$82,054	\$3,977,077
2027	\$163,584	\$79,848	\$83,736	\$3,895,023
2028	\$163,584	\$78,131	\$85,452	\$3,811,288
2029	\$163,584	\$76,380	\$87,204	\$3,725,835
2030	\$163,584	\$74,592	\$88,992	\$3,638,631
2031	\$163,584	\$72,768	\$90,816	\$3,549,640
2032	\$163,584	\$70,906	\$92,678	\$3,458,823
2033	\$163,584	\$69,006	\$94,578	\$3,366,146
2034	\$163,584	\$67,067	\$96,517	\$3,271,568
2035	\$163,584	\$65,089	\$98,495	\$3,175,051
2036	\$163,584	\$63,069	\$100,514	\$3,076,556
2037	\$163,584	\$61,009	\$102,575	\$2,976,042
2038	\$163,584	\$58,906	\$104,678	\$2,873,467
2039	\$163,584	\$56,760	\$106,823	\$2,768,790
2040	\$163,584	\$54,570	\$109,013	\$2,661,966
2041	\$163,584	\$52,336	\$111,248	\$2,552,953
2042	\$163,584	\$50,055	\$113,529	\$2,441,705
2043	\$163,584	\$47,728	\$115,856	\$2,328,176
2044	\$163,584	\$45,353	\$118,231	\$2,212,320
2045	\$163,584	\$42,929	\$120,655	\$2,094,089
2046	\$163,584	\$40,455	\$123,128	\$1,973,434
2047	\$163,584	\$37,931	\$125,652	\$1,850,305
2048	\$163,584	\$35,355	\$128,228	\$1,724,653
2049	\$163,584	\$32,727	\$130,857	\$1,596,425
2050	\$163,584	\$30,044	\$133,540	\$1,465,568
2051	\$163,584	\$27,307	\$136,277	\$1,332,028
2052	\$163,584	\$24,513	\$139,071	\$1,195,751
2053	\$163,584	\$21,662	\$141,922	\$1,056,680
2054	\$163,584	\$18,753	\$144,831	\$914,759
2055	\$163,584	\$15,784	\$147,800	\$769,927
2056	\$163,584	\$12,754	\$150,830	\$622,127
2057	\$163,584	\$9,662	\$153,922	\$471,297
2058	\$163,584	\$6,506	\$157,077	\$317,375
2059	\$163,584	\$3,286	\$160,298	\$160,298
2060	\$0	(\$0)	\$0	(\$0)
TOTAL	\$6,543,347	\$2,107,427	\$4,435,920	

*Average annual diversion per State of Colorado's records for the years 1950 through 2017 (HydroBase).

EXHIBIT G

Estimated Construction Schedule

UPPER PLATTE AND BEAVER CANAL COMPANY
DEUEL AND SNYDER IMPROVEMENT COMPANY

SOUTH PLATTE RIVER DIVERSION STRUCTURE REPLACEMENT CONSTRUCTION SCHEDULE

REV. 0 Mon 3/25/19

[illegible]

EXHIBIT H

CWCB Loan Application



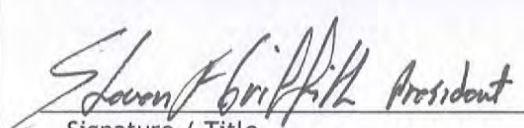
COLORADO

Colorado Water
Conservation Board

Department of Natural Resources

Water Project Loan Program

Projects financed by the Water Project Loan Program must align with the goals identified in Colorado's Water Plan and its measurable objectives.

Application Type	
<input checked="" type="checkbox"/> Prequalification (Attach 3 years of financial statements)	<input type="checkbox"/> Loan Approval (Attach Loan Feasibility Study)
Agency/Company Information	
Company / Borrower Name: Upper Platte and Beaver Canal Company	
Authorized Agent & Title: Steve Griffith, President	
Address: PO Box 205 Brush, CO 80723	
Phone: (970) 842-2552	Email: upbccompany@gmail.com
Organization Type: <input checked="" type="checkbox"/> Ditch Co. <input type="checkbox"/> District <input type="checkbox"/> Municipality <input type="checkbox"/> other: _____	Incorporated? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
County: Morgan	Number of Shares/Taps: 1,187
Water District: 1	Avg. Water Diverted/Yr 32,300 acre-feet
Number of Shareholders/Customers Served: 100	Current Assessment per Share \$ 230.00 (Ditch Co) Average monthly water bill \$ _____ (Municipality)
Contact Information	
Project Representative: Heather Kalous, Secretary	
Phone: (970) 842-2552	Email: upbccompany@gmail.com
Engineer: Matt Harris	
Phone: (970) 542-0423	Email: matt@harrisec.com
Attorney: Mason Brown	
Phone: (303) 861-9000	Email: mbrown@chp-law.com
Project Information	
Project Name: Upper Platte and Beaver Canal Diversion Structure Replacement	
Brief Description of Project: (Attach separate sheets if needed)	
See attached sheet.	
Project Start Date(s) Design: _____ Construction: OCTOBER 2019	
General Location: (Attach Map of Area)	
NE/4 Sec 35 & SE/4 Sec 26 T4N R58W Morgan County, Colorado	
Project Costs - Round to the nearest thousand	
Estimated Engineering Costs: \$227,000	Estimated Construction Costs: \$4,165,000
Other Costs (Describe Above):	Estimated Total Project Costs: \$4,392,000
Requested Loan Amount: \$4,392,000	Requested Loan Term (10, 20, or 30 years): 30/40 Years
Signature	
 Signature / Title	Return to: Finance Section Attn: Anna Mauss 1313 Sherman St #718 Denver, CO 80203 Ph. 303/866.3449 e-mail: anna.mauss@state.co.us