

FEASIBILITY REPORT

DEUEL AND SNYDER IMPROVEMENT COMPANY DIVERSION STRUCTURE REPLACEMENT PROJECT

DIVISION 1, WATER DISTRICT 1
MORGAN COUNTY, COLORADO

January 31, 2020



Prepared for:

Deuel and Snyder Improvement Company
P.O. Box 89
Fort Morgan, CO 80701

In cooperation with the Colorado Water Conservation Board.

Prepared by:

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EXHIBITS

- Exhibit A: Articles of Incorporation, Bylaws and Historic Easement Records
- Exhibit B: State Engineer Diversion Reports 1950-2018
Deuel and Snyder Ditch
(from CDSS HydroBase)
- Exhibit C: Service Area Map
- Exhibit D: Site Photos
- Exhibit E: Preliminary Design Drawings
- Exhibit F: Detailed Construction Cost Estimate and Loan Amortization
- Exhibit G: CWCB Loan Application
- Exhibit H: Financial Statements: 2017 thru 2019
- Exhibit I: Stockholders List

Deuel and Snyder Improvement Company

Brian Kembel
President

Joe Baumberger
Vice-President

Irma Baumberger
Secretary/Treasurer

Brad Kembel
Sumner Rule
Dan Kendrick
Board Members

Kyle Kembel
Ditch Rider

Attorney for the Deuel and Snyder Improvement Company

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HARRIS ENGINEERING CONSULTANTS, INC. would like to thank the Deuel and Snyder Improvement 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. Brain Kembel

President, Deuel and Snyder Improvement Company

Mr. Joe Baumberger

Vice-President, Deuel and Snyder Improvement Company

Mrs. Irma Baumberger

Secretary, Deuel and Snyder Improvement Company

Mr. Jim Boone

Ransom Boone Excavating

Mr. Cole Bedford, P.E.

Colorado Water Conservation Board

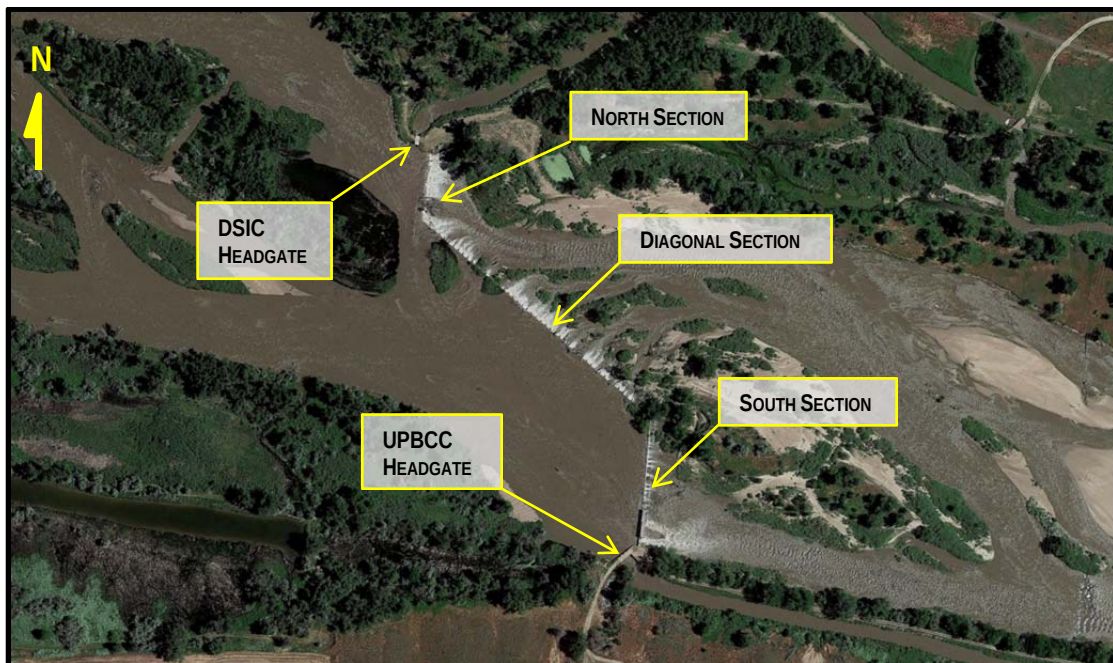
Executive Summary

The Deuel and Snyder Improvement Company (DSIC) owns and operates an agricultural ditch system in Morgan County that provides irrigation water serving approximately 1,500 acres for 15 shareholders. Water is diverted from the north side of the South Platte River at a diversion structure located approximately 2 miles upstream of the State Highway 52 and Rainbow Arch Bridge in Morgan County, Colorado. The DSIC shares the diversion structure with the Upper Platte and Beaver Canal Company (UPBCC); the latter diverts water from the south bank of the river. Prior to 1965, the two ditch companies had separate diversion structures that were divided by a large island bifurcating the river. Shortly after the flood washed away the island in the spring of 1965, a long diagonal wall was constructed to connect the two structures so that each Company could continue to divert water. The result was a 1,330-foot long concrete barrage that spanned the channel from the north to south bank. An aerial image of the existing structure is provided in Figure 1, below.

The two companies have invested heavily over the last two decades in maintenance to the structure in an effort to keep it operational; however, the structure continues to decay. Structural investigations in 2015 [Reference 1] 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. The UPBCC had a Feasibility Study prepared in 2019 [Reference 2] that included a design and cost estimate for a new structure at \$4,392,000. The UPBCC applied for a 40-year low-interest loan from the CWCB and was approved in May of 2019.

The DSIC is requesting a loan from the CWCB for \$643,000; this amount corresponds to their proportionate share of the total project. Project costs will be apportioned to each Company in a manner agreed upon by the DSIC and UPBCC.

Figure 1: Aerial View of Existing Structure



Project Sponsor

The Deuel and Snyder Improvement Company (DSIC), 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 I.

The DSIC, incorporated in January of 1884, was formed to construct and operate the Deuel and Snyder Ditch for the benefit of shareholders by providing direct flow irrigation water. The Company currently has 15 shareholders with 161 total shares of company ownership. The 161 shares are broken into two different categories based upon two different types of water rights owned by the DSIC. The smallest division of Company ownership is the 21 shares associated with the company's Meadow Rights. The DSIC has two Meadow Rights decrees which allow them to divert up to 21 cubic feet per second (cfs) from the South Platte River but only from April 10th through July 10th of any given year. The remaining 140 shares are associated with the Company's conventional irrigation rights which allow them to divert up to 63 cfs from the South Platte River. Water is diverted at the Company's headworks located on the north bank of the river. The DSIC shares a diversion structure with the Upper Platte and Beaver Canal Company (UPBCC); the latter diverts water on the south 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 DSIC are in the neighborhood of 5,300 acre-feet, which equates to approximately 38 acre-feet per share.

Project Service Area

The service area is located in Morgan County, positioned on the north side of the South Platte River between the cities of Fort Morgan and Brush, Colorado. The service area for the DSIC is comprised of, on the average, approximately 1,500 acres of cultivated cropland. The UPBCC's service area consists of an additional 10,000 acres (approximately) on the south side of the river. 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 DSIC are included in Table 1. This information was obtained from the Structure Summary Report in the Colorado Water Resources Decision Support System (CDSS) attached in Exhibit B. The DSIC has a decreed absolute water right of 84 cfs. The total decreed right consists of 63 cfs of conventional irrigation rights and 21 cfs of Meadow Rights, the latter of which is only 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
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	AMOUNT
Decreed Water Right (cfs)	84
Maximum Day Diversion (cfs)	69
Date of Maximum	04/26/2007
Average Annual Diversion 1950 – 2018 (acre-ft)	5,333

Yearly diversions over the past fifteen years have generally exceeded the historic average shown in Table 2 due to the advent of augmentation plans and the proliferation of associated infiltration sites across the service area. In fact, annual diversions over the last fifteen years have averaged 8,890 acre-feet, with an average over the past five years of 9,780 acre-feet.

Need for the Project

The diversion dam is a reinforced concrete slab and buttress structure with a height of approximately 9 feet and a overall length of 1,330 feet measured between the north and south abutments. 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 Water Engineers (TZA) in 2015 to perform a site investigation and evaluate the condition of the structure. They prepared a feasibility report (2016 Study, Reference 1) 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.

In 2012, the DSIC elected to invest in a new headgate structure into the Deuel and Snyder Ditch, which consist of a 10-foot long, 4-foot tall Pneumatically-actuated Obermeyer gate with a reinforced concrete structure and control house. The gate is operated manually with nitrogen bottles. The structure is well maintained and is in good condition. The DSIC does not intend to replace this structure in the proposed project.

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 84-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 Deuel and Snyder Ditch and the Upper Platte and Beaver Canal. The value of affected irrigated lands in the DSIC and UPBCC 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 approximately 25 feet upstream of the 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; 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 cost of this alternative, based on firm construction bids, is approximately \$4,392,380. DSIC's proportionate share of the project, with 20% contingency, is \$642,901.

The Selected Project

The DSIC and UPBCC plan to construct alternative #3. Features of this alternative are as follows:

- The new concrete structure will be founded on Pierre shale bedrock.
- Reinforced concrete cutoff walls will be placed under the floor slab to provide lateral support, preclude seepage, reduce uplift pressures and exit gradient, and confine the material under the foundation

during all conditions of river flow and turbulence. The upstream and downstream cutoff walls will extend 8 to 10 feet below bedrock; an intermediate cutoff wall will extend 3 feet below bedrock.

- The structure will be supported on a monolithic steel reinforced concrete base. The base slab will have a minimum thickness of 18 inches.
- The slab and buttress walls and abutment retaining walls will be constructed of steel reinforced concrete. 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 installed above the gate will 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.
- 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 drawings in Exhibit E.

Cost Estimate

The estimated project cost for DSIC is \$642,901, which corresponds to their proportionate share of the total project cost. 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	\$ 23,348
2. Construction Cost	\$ 512,403
3. Contingency @ 20%	\$ 107,150
Total Cost	\$ 642,901

Implementation Schedule

The proposed implementation schedule anticipates a completed project by April of 2021. This is based on construction commencing on the north side of the river in August of 2020, if flows in the river permit. The DSIC is uniquely positioned to divert water west of their existing intake structure with minor modifications. This will allow DSIC to make required diversions during the initial stages of construction. Project milestone dates are as follows:

<u>Task</u>	<u>Date</u>
1. Feasibility Study Submitted to CWCB	02/03/20
2. Final Engineering and Design	02/28/20
3. Feasibility Study Review and Approval by CWCB	03/19/20
4. Order Long Lead Time Items (Obermeyer gates)	04/13/20
5. Construction Contract Award	05/18/20
6. Begin Construction	08/03/20
7. Complete Construction	04/01/21

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 both the Deuel and Snyder Ditch and Upper Platte and Beaver Canal. 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; river continuity for habitat migration at intermediate flows when the bladder gate in the river is sufficiently lowered; and enhanced conveyance of low to moderate flood flows.

Permitting

As the project is located entirely 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 to be financed by DSIC is \$643,000. The DSIC is requesting a 40-year low interest loan from the Colorado Water Conservation Board (CWCB) for their full, proportionate share of the project.

Lending rates for CWCB loans are set based on the designation of the entity applying for a loan. Ownership of shares in the Deuel and Snyder Ditch are 100% agricultural. It is therefore anticipated that the Company will qualify for an interest rate of 1.6% at current lending rates. Accordingly, a rate of 1.6% was used to estimate the debt service associated with the project. The financial analysis summarized in Table 3 is based on a 100% loan from the CWCB.

The DSIC has an existing debt service for a loan from CWCB, contract number C150288, used to finance their new headgate structure, built in 2012. Shareholders are currently assessed \$32 per share (applicable to both conventional irrigation shares and meadow right shares).

Table 3: Project Loan Summary

Total Project Cost (rounded)	\$ 643,000
1% CWCB Service Fee	\$ 6,430
CWCB Loan (including 1% service fee)	\$ 649,430
Annual Payment (40 year term @ 1.60%)	\$ 22,107
Number of Shares	161
Annual Cost per Share for Loan	\$ 137.31
Current Assessment per Share	\$ 191.04
New Assessment per Share	\$ 328.35
Annual Project Cost per acre-foot (Based on an average annual diversion of 8,150 acre-feet)	\$ 4.15

A \$649,430 loan from the CWCB (including a 1% origination fee) at 1.6% interest over a 40-year repayment period yields an annual payment of approximately \$22,107, for a total principal plus interest payment of \$884,275 over the 40-year term. If Meadow Right shares are included, the resulting project cost per share will be \$137.31 per year. Based on a combined average annual diversion of 5,333 acre-feet of water, the project will entail an incremental commodity rate increase of \$4.15 per acre-foot of water diverted. Shareholders are currently assessed \$161 per share on the 140 shares associated with conventional irrigation rights; an additional \$146 per share on the 21 shares associated with Meadow Rights; and, \$32 per share on the total 161 shares to finance existing debt service to the CWCB. This results in a total assessment of \$191.04 per share, over 161 shares. Therefore, the total cost of water diverted after the project is complete will be \$9.91 per acre-foot. Shareholders may see a rate reduction upon debt retirement of the CWCB loan for the new headgate structure.

Collateral

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

1. The project itself. A portion of the total project will be owned by the DSIC and can be offered by vote of the stockholders. The UPBCC has been approved by the CWCB for a loan to finance their share of the total project and have offered similar collateral.
2. A pledge of assessment revenue of the 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

The DSIC would need authorization to borrow \$643,000 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 DSIC. Agreements with contractors will be finalized upon authorization of the CWCB loan.

Project costs will be apportioned to each Company in a manner agreed upon by the DSIC and UPBCC. A memorandum will be prepared and submitted to the CWCB that details the results of the final agreement prior to the first request for payment.

Opinion of Feasibility

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

References

- 1) **Preliminary Design Report, Upper Platte and Beaver / Deuel and Snyder**, TZA Water Engineers, July, 2016.
- 2) **Feasibility Report, Upper Platte and Beaver Canal Company Diversion Structure Replacement Project**, Harris Engineering Consultants, March, 2019.
- 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

Fort Morgan, Colorado

March 4, 1920

To Whom it May Concern:

This is to certify that L. C. JACOB and A. H. Cutler both of the city of Fort Morgan, Morgan County, Colorado and at present President and Secretary of The Daniel & Snyder Improvement Company, do hereby make affidavit that the Daniel & Snyder Improvement Company as operating at this time, is a mutual corporation operated for the delivery of water from the South Platte River for the irrigating of lands that can be served therefrom and that its only source of income is from assessments levied upon the stock outstanding and that said assessments are used for the maintaining and operating of said canal and not for the individual benefit or profit of any stockholder or corporation.

L. C. JACOB

President

A. H. CUTLER

Secretary

State of Colorado)

County of Morgan) SS

Subscribed and sworn to before me this _____
day of March A. D. 1920 by L. C. Jacob, President and A.
H. Cutler, Secretary of The Daniel & Snyder Improvement Co.

M. Lynn Judy

Notary Public

Seal

My Commission expires ~~My Commission Expires~~ Feb. 20, 1921

CERTIFICATE OF INCORPORATION.

KNOW ALL MEN BY THESE PRESENTS: That we Lafayette More, Hartwell S. Tracey, and James A. Conyers residents of the State of Colorado, have associated ourselves together as a corporation under the name and style of THE DEUEL & SNYDER IMPROVEMENT COMPANY for the purpose of becoming a body corporate and politic under and by virtue of the laws of the State of Colorado, and in accordance with the provisions of the laws of said State we do hereby make, execute, and acknowledge in severality this certificate in writing of our intention so to become a body corporate under and by virtue of said laws.

First.

The corporate name and style of our said company shall be THE DEUEL & AMY SNYDER COMPANY.

Second.

The object for which our said company is formed and incorporated is for the purpose of constructing, owning, and running an irrigating ditch the water for which is to be taken from the North side of the South Platte River at a point in the NW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Section 26 in TWP 4 North of Range 56 West. Thence running easterly through section 26 and 25 of TWP and Range; Thence through sections 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, and 31 in TWP 4 North of Range 57 West; and thence through 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, and 22 of TWP 4 North of Range 56 West; thence through sections 24, 25, 26 of TWP 5 North of Range 56 West; thence through sections 21, 22, 23, 24, 25, 26, 27, and 28 in TWP 5 North of Range 55 West in the State of Colorado.

Third.

The capital stock of our said company is FIFTY THOUSAND DOLLARS to be divided into ONE THOUSAND shares of FIFTY DOLLARS for each share.

Fourth.

Our said company is to exist for the term of TWENTY years.

Fifth.

The affairs and management of our said company is to be under the control of three trustees and LaFayette More, Hartwell S. Tracy and James A. Conyers are hereby selected to act as said Trustees and to manage the affairs and concerns of said company until January, 1886.

Sixth

The operations of our said company will be carried on in the County of Weld and State of Colorado and the principal place and business office of said company be located in the house of LaFayette More in the County and State aforesaid.

Seventh.

The said Trustees shall have power to make such prudential by-laws as they may deem proper for the management of the affairs of said company according to the statute in such case made and provided.

In testimony whereof we have hereunto set our hands and seals on this Twelfth day of January, 1884.

(Signed) Hartwell S. Tracy

(Signed) James A. Conyers

(Signed) LaFayette More

**BY -LAWS
OF
THE DEUEL AND SNYDER IMPROVEMENT COMPANY
OF MORGAN COUNTY, COLORADO
ADOPTED FEBRUARY 24, 1921 and AMENDED MARCH 25, 2010**

ARTICLE I

This Company shall be known as "The Deuel and Snyder Improvement Company," and its capital stock is seven thousand dollars, divided into one hundred forty shares of the par value of fifty dollars each.

ARTICLE II

Section 1. The corporate powers shall be exercised by a "Board of Directors" composed of five stockholders, who shall have been duly elected as Directors of the Company.

Section 2. The Directors shall elect one of their number as President, and one of their number as Vice President, who, together with the remaining Directors, shall constitute "The Board of Directors", who shall have the exclusive and entire direction, control and management of all the business, property, concerns and affairs of the Company.

Section 3. The Directors shall elect a Treasurer and Secretary. One person may be elected both secretary and treasurer. It shall not be necessary that either the secretary or treasurer be a stockholder or a member of the board of directors. Either such secretary or treasurer may be selected from persons not stockholders, if such action is found to be in the best interests of the Company.

Section 4. The officers shall consist of a President, Vice President, Treasurer, and Secretary.

ARTICLE III

Section 1. The election of Directors, provided for in Section 1 of Article II, shall be held on the last Saturday of January of each year. Each share of stock shall be entitled to one vote, and the persons receiving the greatest number of votes shall be Directors; provided a majority of the stock is represented. The Directors-elect shall hold their offices for the term of one year from the first day of the next month following their election, and until their successors are elected and qualified.

Section 2. The election for Directors shall be held at the office of the Company in Morgan County, Colorado; and public notice of the time and place of holding such election shall be published not less than ten days previous thereto, in one of the weekly newspapers in Morgan County. And this election shall be made by such of the stockholders as shall attend for the

purpose, either in person or by proxy, provided a majority of the stock is represented; if a majority of the stock shall not be represented such meeting may be adjourned by the stockholders present for a period not exceeding sixty days at any one adjournment.

Section 3. When it is found that a majority of the stock is represented at such meeting, or adjourned meeting, the stockholders shall proceed to nominate the number of Directors to be elected, each stockholder having the right to nominate. The election shall be by ballot, on which each person voting shall write the names of as many parties as are to be elected from the nominees; each stockholder shall have the right to vote in person or by proxy for the number of shares owned by him or her. And in balloting for directors he or she may vote said number of shares for as many directors as are to be elected; or he or she may cumulate such shares and give candidates as many votes as the number of directors multiplied by the number of his or her shares of stock shall acquire or to distribute them on the name principle among as many candidates as he or she may desire, and the persons having the highest number of votes in consecutive order shall be declared elected the Board of Directors for that year.

Section 4. In addition to the published notice required in Section 2 of this Article, a written notice to each stockholder shall be mailed at least thirty days before such meeting, signed by the President or Secretary, stating the time and object of said meeting, by delivering personally or depositing in the post office addressed to his last known post office address.

Section 5. In case any vacancy shall happen among the Directors, by death, resignation or otherwise, it shall be filled for the remainder of the year by the Board of Directors electing some stockholder to fill such vacancy.

ARTICLE IV

PRESIDENT and VICE-PRESIDENT

Section 1. The President shall preside at all meetings of the Directors or stockholders. He shall sign, as President, all certificates of stock and all contracts and other instruments in writing which have been first approved by the Board of Directors. He shall sign all checks and warrants on the treasury. In the absence of the President the Vice President shall perform his duties.

TREASURER

Section 2. It shall be the duty of the Treasurer to keep safely all moneys belonging to the Company and disburse the same under the direction of the Board of Directors, on check or warrant signed by the President and countersigned by the Secretary. At each annual meeting of the stockholders he shall submit a complete statement of his accounts for the past year, with the proper vouchers for their information. He shall make no payments except on a check or warrant drawn by the Secretary and signed by the President. He shall discharge such other duties pertaining to his office, as shall be prescribed by the Board of Directors.

SECRETARY

Section 3. It shall be the duty of the Secretary to keep a record of the meeting of the Board of Directors and of the stockholders. He shall keep the book of blank certificates of stock, fill up and countersign all the certificates issued, and make the corresponding entries on the margin of each book on such issuance. He shall keep a stock ledger in due form, showing the number of shares issued to and transferred by any stockholder, and the date of said issuance and transfer. He shall have charge of the corporate seal and affix the same to all instruments requiring a seal. He shall keep in the manner prescribed by the Board of Directors all the accounts of the Company in books to be provided for that purpose. He shall discharge such other duties as pertain to his office and as shall be prescribed by the Board of Directors.

BOARD OF DIRECTORS

Section 4. The Board of Directors shall have the powers: 1st. To call meetings of the stockholders whenever they deem it necessary, giving notice as provided in Sections 2 and 4 of Article III, and they shall call meetings of the stockholders at any time upon a written request of persons representing one-third of the capital stock. 2nd. To appoint and remove at pleasure all employees and agents of the Company, prescribe their duties fix their compensation and require from them security for the faithful performance of their duties. 3rd. To make rules and regulations not inconsistent with the laws of the State of Colorado, or the Articles of Incorporation or By-Laws of the Company, for the guidance of the officers and management of the affairs of the Company. 4th. To make any and all assessments necessary to carry out the objects and purposes of the Company as expressed in its Articles of incorporation. 5th. To forfeit and sell the stock which is delinquent on account of unpaid assessments. 6th. To levy and collect such assessments and any and all assessments as may be necessary for the uses of the Company. 7th. To incur such indebtedness as they may deem necessary for carrying out the objects and purposes of the Company, and to authorize the President and Secretary to make the note of the Company, with which to raise money to pay such indebtedness.

Section 5. It shall be the duty of the Board of Directors: 1st. To cause to be kept a complete record of all their meetings and acts, also of the proceedings of the stockholders, present a full statement at the regular annual meeting of the stockholders, showing in detail the assets and liabilities of the Company, and generally the condition of its affairs. A similar statement shall be presented at any other meeting of the stockholders when thereto previously requested by persons representing at least one-third of the capital stock of the Company. 2nd. To supervise all the acts of the officers and employees, require the Secretary and Treasurer to keep full and accurate books and accounts, and to prescribe the form and mode of keeping such books. 3rd. To cause to be issued to the subscribers for the stock of the Company, under the provision of the act of incorporation, certificates, not to exceed in the aggregate the capital stock of the Company; all stock so issued to be subject to assessments and forfeiture and sale if such assessments shall remain unpaid ninety days after the same is due. 4th. To audit and adjust all bills and accounts against the Company; and such as are allowed to direct payment thereof. 5th. To assess applications for a change

in the historic use of shares, as more fully described in Article IX and XVII of these bylaws.

Section 6. A majority of the Board of Directors shall constitute a quorum for the transaction of business.

Section 7. A director of the Company who is present at a meeting of the board of directors at which action on any Company matter is taken shall be presumed to have assented to the action taken unless his dissent shall be entered into the minutes of the meeting or unless he shall file his written dissent to such action with the adjournment thereof or shall forward such dissent by registered mail to the secretary of the Company not more than 10 business days after the adjournment of the meeting. Such right to dissent shall not apply to a director who voted in favor of such action.

Section 8. Any action required or permitted to be taken at a meeting of the directors may be taken without a meeting if consent in writing, setting the actions so taken, shall be signed by all of the directors entitled to vote with respect to the subject matter thereof. Such consent shall have the same force and effect as a unanimous vote of the directors.

Section 9. By resolution of the board of directors, the directors may be paid their expenses, if any, for attendance at each meeting of the board of directors, or other meetings necessary for the business of the Company and may be paid reasonable compensation for attendance at each such meeting. Any compensation in addition to expenses shall be approved yearly by the stockholders.

ARTICLE V

A water superintendent shall be appointed by the Board of Directors, and under the supervision of the Water Commissioner of the District, divert such amounts of water as are available for said canals use. He shall also have the direct management of the canal, and its employees. He shall divide the water from the canal pro rata to all shares issued, and entitled to be issued except that at such times shares are not being used or leased by a shareholder, they maybe used by the remaining shareholders; he shall keep a record of the amount of water entering the canal during the irrigation season, its distribution, waste, loss in carrying, and file daily records thereof with the Secretary, who shall keep permanent record of the same; he shall make correct returns to the Board of Directors of all persons hired and employed on the canal or elsewhere in the interest of and on behalf of the Company, with a statement of their wages, and to perform such other duties as the Board of Directors may direct.

ARTICLE VI

No contract with any officer of the Company shall be valid without the previous authorization or subsequent ratification of the Board of Directors.

ARTICLE VII

Section 1. The regular annual meeting of the stockholders shall be held on the last Saturday of January of each year, at the office of the Company in Morgan County, Colorado. A quorum of the stockholders of the Company shall consist of a majority of the outstanding capital stock whether represented in person or by proxy. Such majority shall have the power to transact business herein described. All actions of the stockholders must be approved by a majority of the stock represented in person or by proxy, except as otherwise provided in these Bylaws. If a quorum is present at the beginning of a meeting the meeting may continue until adjournment, notwithstanding the fact that less than a majority of stock remain represented at the meeting. If a quorum of stockholders is not present at the annual meeting, the meeting may be adjourned for a period not to exceed sixty (60) days.

Section 2. The office of the Company shall be located in Morgan County, Colorado.

Section 3. All meetings of the Board of Directors shall be held at the offices of the Company, upon the call of the President or Secretary, at which time any business pertaining to the Company may be transacted.

Section 4. The books and papers and other records of this Company kept by its secretary and treasurer shall at all times during reasonable business hours be open to inspection by the board of directors or any of the stockholders of this Company. The Board of Directors may however withhold confidential legal documents from any stockholder, person or party in an adversarial relationship to the Company.

ARTICLE VIII

Section 1. Certificates of stock shall be signed by the President and Secretary, and each certificate shall express on its face, its number, the date of its issuance and the number of shares for which, and the person or persons to whom it is issued; and several certificates may be issued to the same person or persons, provided that in the aggregate they do not exceed the number of shares belonging to such person or persons. The certificate book shall contain, a margin on which shall be entered the number, date, number of shares, and the name or names of the person or persons expressed in the corresponding certificates.

ARTICLE IX

Section 1. Shares of the Company when issued shall be issued as full paid-up stock of the par value of fifty dollars for each share, and such shares of the Company may be transferred at any time by the holders thereof, or by attorney legally constituted, or by their legal representatives. The transfers shall be made by endorsement on the certificates of stock and surrender of the same, provided that such transfer shall not be valid except between the parties

thereto, until the same shall have cancelled before a new certificate in lieu thereof shall be issued. And no transfer of any share of stock shall be valid upon which any assessments are due and unpaid, or the holder of which is indebted to the Company on any account whatever.

Section 2. Any person acquiring stock by purchase, or transfer, either at public or private sale, shall be subject to all liabilities incurred and assumed by the original subscriber to the certificate of stock, and to all provisions of these by-laws.

Section 3. The secretary may collect, a fee for each transfer of capital stock, such sum as set by the Board of Directors from time to time, the same to be paid by the person, or persons, making such transfer. Any attorney fees incurred by the Company as a result of the request for a transfer of stock shall be assessed by the secretary to the person, or persons, requesting such transfer which shall be in addition to the fee set by the Board.

Section 4. Each stockholder in the Company shall be entitled to transfer his stock to any other stockholder or to any purchaser of land heretofore irrigated by shares of the Company, and each holder of capital stock shall be entitled to receive from the Company's ditch, water owned or controlled by the stockholder for the irrigation of lands heretofore irrigated by use of the Company ditch, in such amount of water as carried in said ditch, in the ratio and proportion which his shares shall bear to the total outstanding shares of said Company, subject to the limitations and conditions set forth in Section 5 of this Article and Articles IX and XVII of these bylaws.

Section 5. No transfer of shares for uses on land not historically irrigated by water of the Company ditch (hereinafter "new land") or for uses not historically made (hereinafter "new uses") shall be permitted, except by and upon orders and approval of the board of directors. If a person acquiring stock (hereinafter the "applicant") expresses an intent to use the shares to be transferred for new uses or upon new lands, or if such information otherwise comes to the attention of the board or secretary, the secretary of this Company shall suspend the re-issuance of certificates pending review by the board of directors. The applicant shall submit an application to the board describing the new uses and/or locations that is sufficiently detailed to permit the board to determine whether the proposed uses will be detrimental to the operation of the Company's delivery system, in violation of the Company's water rights decrees or these bylaws, or otherwise injurious to the stockholders and the Company as a whole. The board shall review any such application in a timely manner, and, if the board determines that the application cannot be granted as presented, it shall allow the applicant an opportunity to revise its plan to address the board's concerns. The board is authorized to engage engineering and legal help to assist in its review of the application, and any fees thereby generated which would not have been incurred but for the application shall be borne by the applicant.

Section 6. Any person seeking reissuance of a lost stock certificate may do so pursuant to Sections 7-42-113 to 117 C.R.S. If the Board of Directors determines a bond would protect the Company, a new certificate may be issued upon proof of a bond in an amount to be determined by the Board. The person seeking reissuance of a lost stock certificate shall also pay all the costs incurred by the Company to reissue the lost certificate, including, secretary time, all costs and attorney fees.

ARTICLE X

Any stockholder failing to pay any assessments duly levied by the Board of Directors, within 30 days of the date the secretary has mailed notice of same to the stockholders, or personal delivery is made, a late fee of ten (10) dollars per share shall be due and owing at once, and the board of directors may cease delivery of water. If the assessment has not been paid by sixty (60) days of the date the secretary mailed notice, or personal delivery is made, then interest at the rate of twenty (20) percent per annum shall begin to accrue on the unpaid assessment, and shall continue to accrue until the assessment, including interest, is paid in full. If the assessments are not paid within ninety (90) days of the date the secretary mailed notice of same, or personal delivery is made, the board of directors may proceed to collect said assessments, with interest, costs and attorneys fees, by suit for the recovery thereof against the delinquent stockholder. If the Board of Directors shall deem it more expedient to declare a forfeiture or sale of the stock on failure to pay the assessments that may from time to time become due; then upon the action of the Board of Directors declaring the stock of such delinquent stockholder as forfeited and subject to sale for the unpaid assessments, then thereupon such delinquent stock shall become forfeited and subject to sale to pay such unpaid assessments as may then be due, provided that no forfeiture of stock or of the amounts paid thereon shall be declared as against any estate, or against any stockholder, before demand shall have been made for the amount due thereon, either in person or by a written or printed notice duly mailed to the last known address of such stockholder at least sixty days prior to the time when such forfeiture is to take effect. Any proceeds of any sale, over and above the amount due on said shares, shall be paid to the delinquent stockholder.

ARTICLE XI

The books and papers in the office of the Secretary and Treasurer shall at all times in business be open to the inspection of the Board of Directors, and of any stockholder.

ARTICLE XII

These by-laws may be amended at any annual meeting of the Company, or at any special meeting of the Company called for that purpose, provided a notice of such intended amendment be given in the call for such special meeting. Any amendment to the by-laws must be approved at such meeting by the vote of a majority of the all of the outstanding shares of the Company by voting in person or by proxy.

ARTICLE XIII

These by-laws shall always remain in the possession of the secretary of the Company.

ARTICLE XIV

The secretary shall notify the stockholders by mail at the last known post office address of assessments to be made, and such notice shall be given at least fifteen (15) days before assessment is due. If the assessment or assessments upon such share or shares shall remain unpaid for the period of ninety days after the day upon which it is required to be paid as aforesaid, such share or shares shall be is hereby declared as forfeited to the Company, and subject to the sale on order of the Board of Directors, directing the Secretary to sell said share or shares for the purpose of paying to the Company the assessments remaining unpaid as aforesaid. Notice of time and place of sale shall be given by publication. Notice of the time and place of sale shall be given by publication once a week for two weeks successively in one of the papers printed in Morgan County. Any surplus over and above paying the expenses of sale and paying the unpaid assessments shall be paid to the owner or holder of the shares so forfeited and sold.

ARTICLE XV

Pursuant to §7-123-101(8) C.R.S., 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.

ARTICLE XVI

Any stockholder not desiring to use for himself the water from said ditch to which he is entitled on account of his capital stock ownership in any year, shall have the right to dispose of such water for such year to another or others, as long as said uses are in accordance with the water right decrees; but in no event shall water represented by the ownership of capital stock of the ditch Company be transferred, used or utilized by any stockholder or user of said water without first going through the headgate and/or measuring weir of the Company on the South Platte River as presently constructed or as may be hereafter constructed.

ARTICLE XVII

Section 1. Any stockholder ("applicant") desiring a change of water rights as defined in the Water Right Determination and Administration Act of 1989, Colorado Revised Statutes Sections 37-92-101 through 37-92-603, including, but not limited to, a change in point of diversion, type of use or place of use of any water that the applicant is entitled to receive as a result of stock ownership must first make a written application to the directors of the Company. A change of water right shall include the use of water the shareholder is entitled to as a result of

stock ownership as augmentation water in a plan for augmentation or exchange. The request should detail the requested change and include adequate terms and conditions to prevent injury to the Company and its shareholders. If, in the opinion of the directors, such change may be approved without injury to the Company and all of its stockholders, the directors shall then submit the change application including all necessary terms and conditions to the stockholders for approval. Approval of the change application by the stockholders shall be by vote of a majority of all the outstanding shares of the Company by voting in person or by proxy at any meeting called for the purpose of approving the application. In evaluating whether the requested change of water rights can be made without injury to the Company and its shareholders, the Company may obtain an engineering and legal analysis of the requested change by the applicant and the terms and conditions offered by the applicant.

Section 2. The Company shall evaluate the application for change of water right once it is submitted in its complete and final form,. The Board of Directors shall set a time for the stockholders to vote on the application after considering the time necessary for review of the application by the Company's legal, engineering or other consultants and the time necessary for review of the application and the recommendations of the consultants by the Board and the stockholders. Revisions or amendments to the application may be proposed but, in the sole discretion of the Board, may result in the extension of the date to vote on the application.

Section 3. No application for approval of a change of water right or plan for augmentation as described above may be made to the District Court for Water Division No. 1, State of Colorado (Water Court) unless the same has been submitted to the Company and has either been approved or denied by the shareholders. If an application has been approved by the Company shareholders, the applicant must include terms and conditions at least as stringent as those approved by the Company in any application to the District Court for Water Division No. 1, State of Colorado.

Section 4. An applicant for a change of water right must reimburse the Company for the Company's reasonable costs and fees, including a charge for time spent by the directors and Company employees in analyzing the application to the Company and in any judicial litigation that follows. This specifically includes a challenge to the Company's denial of an application. Prior to analyzing the proposed change, the Company shall obtain an estimate of the costs. The Company shall make said estimate of cost within 30 days of submission of an application and the applicant shall have 30 days after receipt of the estimate from the Company to make a deposit of the full amount of estimated costs. The Company shall not take final action on any application until, and unless, the applicant makes said deposit. If the estimate and deposit needs to be adjusted by further payment or reimbursement, said adjustment shall be made upon the completion of the analysis. In no event shall the Company be required to finally approve or disapprove the application until all fees incurred by the Company are reimbursed.

ARTICLE XVIII

Section 1. That the Company shall indemnify any person who was or is an involuntary party or is threatened to be made a party to any threatened, pending or contemplated action, suit or proceeding, whether civil, criminal, administrative, or investigative (other than an action by or

in the right of the Company) by reason of the fact that he is or was a director, officer, employee, fiduciary or agent of the Company or is or was serving, at the request of the Company as a director, officer, employee, fiduciary or agent of another Company, partnership, joint venture, trust or other enterprise, against expenses (including attorney fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him in connection with such action, suit, or proceeding, if he acted in good faith and in a manner he reasonably believed to be in the best interests of the Company and, with respect to any criminal action or proceeding had no reasonable cause to believe his conduct was unlawful. The termination of any action, suit, or proceeding by judgment, order, settlement, or conviction, or upon a plea of nolo contendere or its equivalent shall not of itself create a presumption that the person did not act in good faith and in a manner which he reasonably believed to be in the best interest of the Company and, with respect to any criminal action or proceeding, had reasonable cause to believe his conduct was unlawful.

Section 2. That the Company shall indemnify any person who was or is a party defendant or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the Company to procure a judgment in its favor by reason of the fact that he is or was a director, officer, employee, fiduciary or agent of another Company, partnership, joint venture, trust or other enterprise against expenses (including attorney fees) actually and reasonably incurred by him in connection with the defense or settlement of such action or suit if he acted in good faith and in a manner he reasonably believed to be in the best interest of the Company; but no indemnification shall be made in respect to any claim, issue, or matter as to which such person has been adjudged to be liable for negligence or misconduct in the performance of his duty to the Company unless and only to the extent that the court in which such action or suit was brought determines upon application that despite the adjudication such person is fairly and reasonably entitled to indemnification for such expenses which such court deems proper.

Section 3. To the extent that a director, officer, employee, fiduciary or agent of the Company has been successful on the merits in defense of any action, suit or proceeding referred to in paragraphs A or B of this Bylaw or in defense of any claim, issue, or matter therein, he shall be indemnified against expenses (including attorney fees) actually and reasonably incurred by him in connection therewith.

Section 4. Any indemnification under this Bylaw (unless ordered by a court) shall be made by the Company only as authorized in a specific case upon determination that indemnification of the director, officer, employee, fiduciary or agent is proper in the circumstances because he has met the applicable standard of conduct set forth in the paragraphs above. Such determination shall be made by the Board of Directors by a majority vote of a quorum consisting of directors who were not parties to such action, suit, or proceeding, or if such a quorum is not obtainable, or, even if obtainable, if a quorum of disinterested directors so directs, by independent legal counsel in written opinion.

Section 5. The Company may pay for or reimburse the reasonable expenses incurred by a director, officer, fiduciary, employee or agent who is a party to a proceeding in advance of final disposition of the proceeding if:

- (a) The party seeking indemnification furnishes to the Company a written affirmation demonstrating a good faith belief that the party has met the standard of conduct described in Sections 1 and 2 of this bylaw;
- (b) The party seeking indemnification furnishes to Company a written undertaking, executed personally or on the party's behalf, to repay the advance if it is ultimately determined that the party did not meet the standard of conduct; and
- (c) A determination is made that the facts then known to those making the determination would not preclude indemnification under this bylaw.

Section 6. That the indemnification provided by this Bylaw shall not be deemed exclusive of any other rights to which those indemnified may be entitled to under any other Bylaw, agreement, vote of Shareholders or disinterested directors, or otherwise any procedure provided for by any of the foregoing, both as to action in his official capacity and as to action in another capacity while holding such office, and shall continue as to a person who has ceased to be a director, officer, employee, fiduciary or agent and shall inure to the benefit of heirs, executors, and administrators of such a person.

Section 7. That the Company may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee, fiduciary or agent of the Company or who is or was serving at the request of the Company as a director, officer, employee, fiduciary or agent of another Company, partnership, joint venture, trust, or other enterprise against any liability asserted against him and incurred by him in any such capacity or arising out of his status as such, whether or not the Company would have the power to indemnify him against such liability under provisions of this Bylaw.

The undersigned hereby certifies that he is the duly appointed, qualified, and acting Secretary of the aforesaid Company and that the foregoing and annexed Bylaws constitute a true and complete copy of the Bylaws of the said Company presently in full force and effect.

IN WITNESS WHEREOF, the undersigned has signed the Certificate and affixed hereto the seal of said Company.

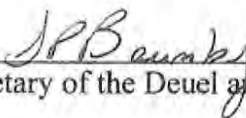

Secretary of the Deuel and Snyder Improvement Company.

EXHIBIT B

State Engineer Diversion Reports 1950-2018



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)	2018	11/1/17	10/31/18	37.50	23.01				968.34	897.32	1399.97	2013.85	898.27	1104.61	1589.89	1291.26	10186.52	AF	Approved
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

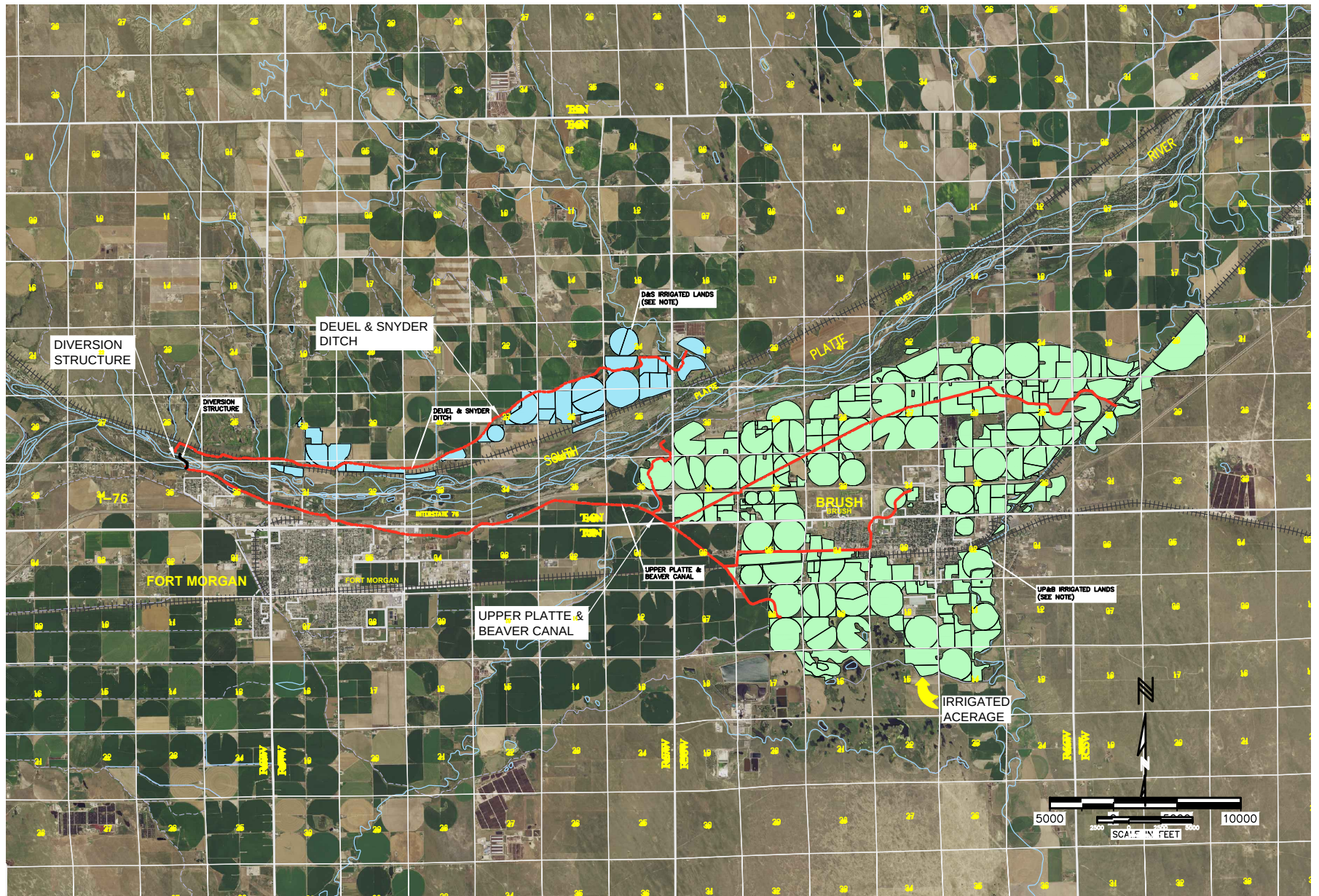
Water Class	Irr Year	FDU	LDU	MaxQ	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Annual Amount	Units	Data Status
Total (Diversions)	2013	11/1/12	10/28/13	51.84	10.81				47.76	97.63	1630.79	1791.12	961.96	379.76	1551.14	693.55	7164.52	AF	Approved
Total (Diversions)	2012	11/1/11	10/31/12	46.60	564.07				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

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)	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
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: 20004 DSIC MAP VX.DWG

DEUEL & SNYDER IMPROVEMENT COMPANY PROJECT SERVICE AREA

DATE: JULY 30, 2018

FIGURE C.1

REV. A

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.

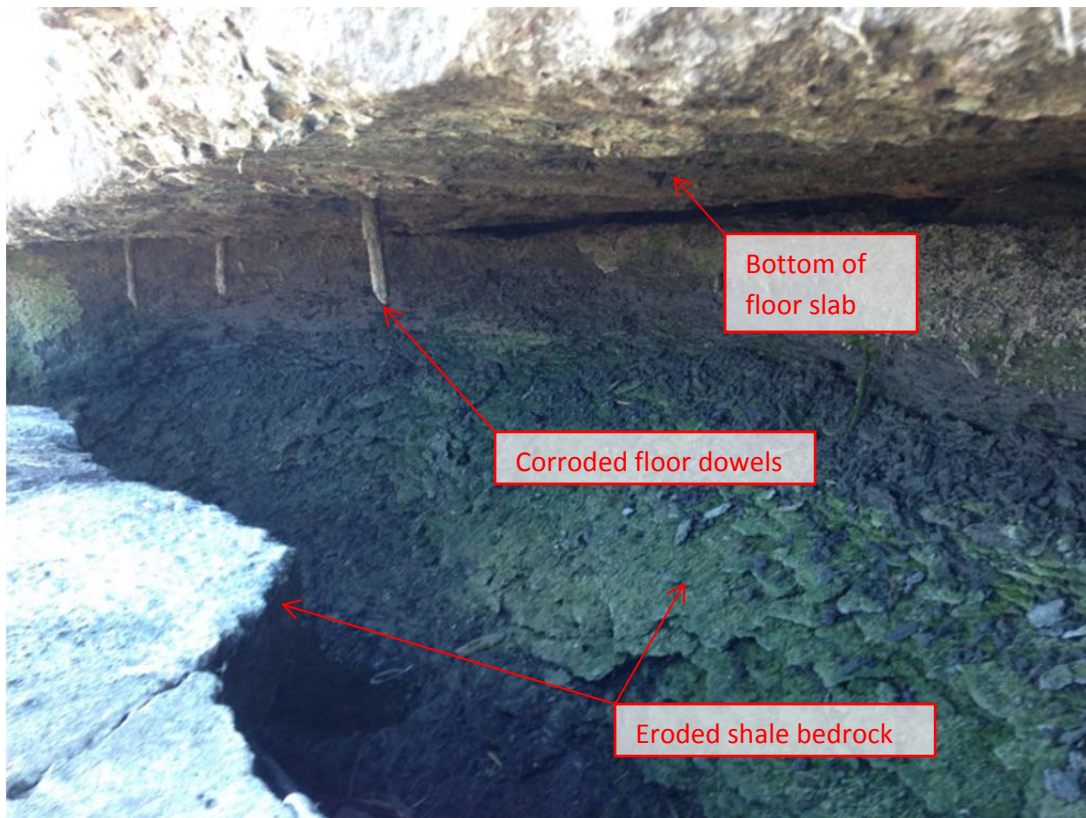


Fig. 5: Erosion and undermining of shale bedrock (note floor dowels).



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



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



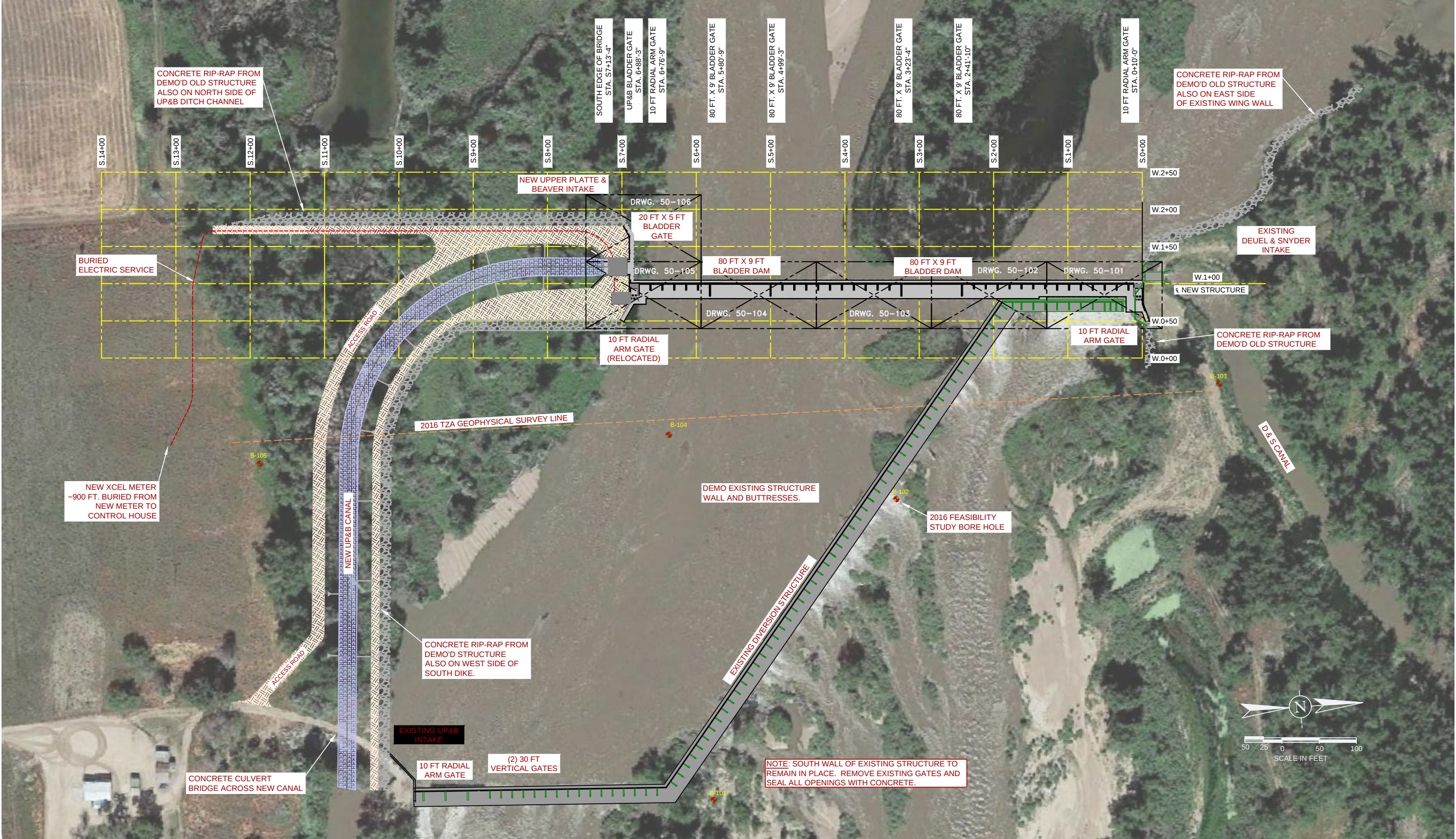
Fig. 8: Vertical gates and radial gate, south section (looking downstream).



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

EXHIBIT E

Design Drawings



"ISSUED FOR BID"

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

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

DRAWING STATUS	
ISSUE	DATE
PRELIMINARY	1/02/17
FOR COMMENTS AND APPROVAL	
APPROVED FOR CONSTRUCTION	
REVISED & APPROVED FOR CONSTRUCTION	

PROJECT NUMBER	16101
CLIENT REFERENCE	

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 T.5
Fort Morgan, CO 80701
(970) 542-9423

UPPER PLATTE & BEAVER - DEUEL & SNYDER

UP&B - D&S RIVER DIVERSION STRUCTURE IMPROVEMENTS
PROJECT PLAN VIEW
MORGAN COUNTY, COLORADO

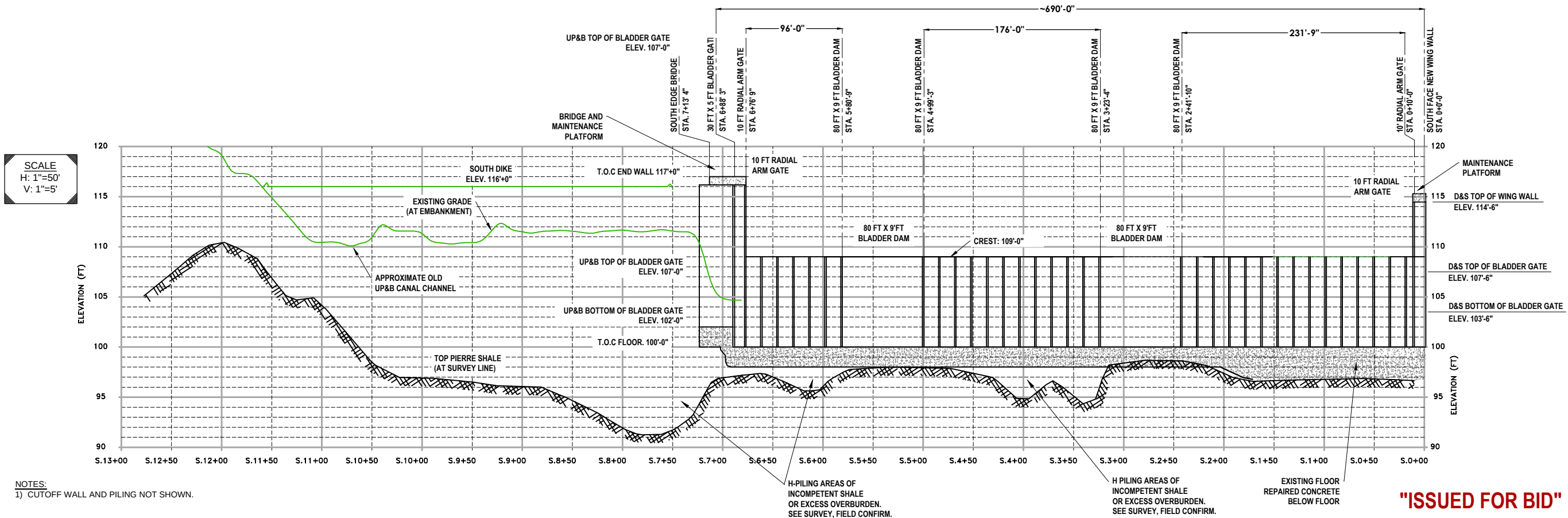
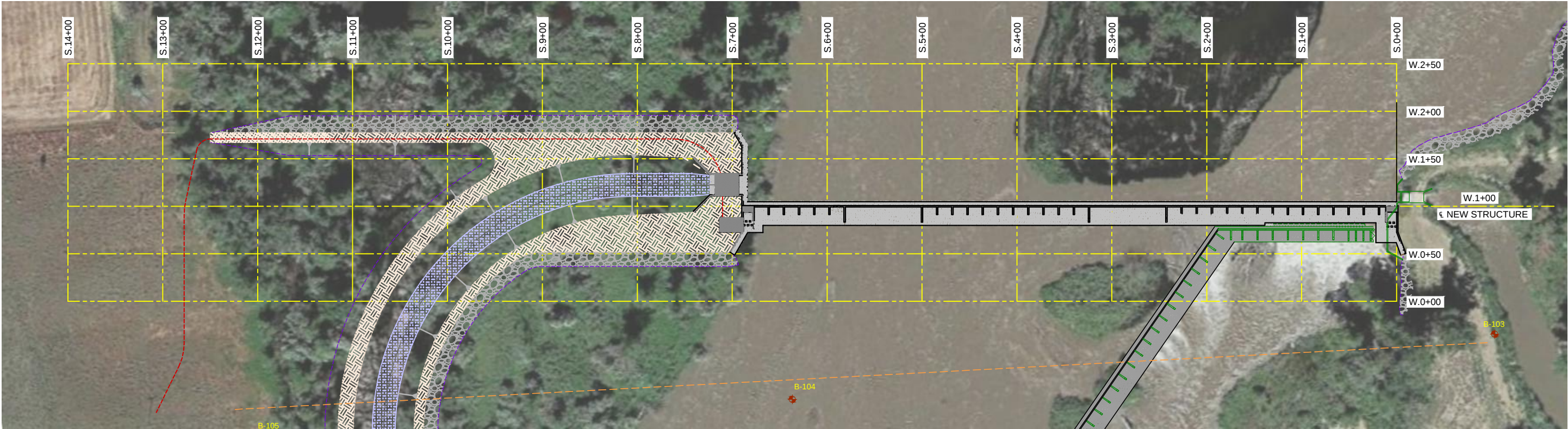
SCALE: 1"=60'

DRWG. NO.: 16101-50-1001

SHEET

1 of 1

REV. **E**



"ISSUED FOR BID"

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	ISSUE FOR BOARD APPROVAL	10/23/18
5	ISSUED FOR BID	12/31/18

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

DRAWING STATUS	
ISSUE	DATE
PRELIMINARY	1/02/17
FOR COMMENTS AND APPROVAL	
APPROVED FOR CONSTRUCTION	
REVISED & APPROVED FOR CONSTRUCTION	

PROJECT NUMBER	16101
CLIENT REFERENCE	

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.



HARRIS ENGINEERING CONSULTANTS, INC.
21484 County Road T.5
Fort Morgan, CO 80701
(970) 542-9423

UPPER PLATTE & BEAVER - DEUEL & SNYDER

UP&B - D&S RIVER DIVERSION STRUCTURE IMPROVEMENTS
PROJECT PLAN AND ELEVATION
MORGAN COUNTY, COLORADO

SCALE: 1"=50'

DRWG. NO.: 16101-50-100

SHEET 1 of 1

REV. E

EXHIBIT F

Detailed Construction Cost Estimate

TOTAL PROJECT COST		\$643,000		
		<u>SOURCE 1</u>	<u>SOURCE 2</u>	<u>TOTAL</u>
FINANCING SOURCE	CWCB Loan		-	
COST SHARE	100%			
BASE LOAN AMOUNT	\$643,000		\$0	
SERVICE FEE @ 1%	\$6,430		\$0	
PRINCIPAL	\$649,430		\$0	
INTEREST RATE	1.60%			
TERM (YEARS)	40			
ANNUAL PAYMENT	\$22,107		\$0	\$22,107
STARTING YEAR	2021			

District Shares 161
Annual Diversions (ac-ft)* 5,333
Cost per Share **\$137.31**
Cost per ac-ft **\$4.15**

<u>YEAR</u>	<u>PAYMENT</u>	<u>INTEREST</u>	<u>PRINCIPAL</u>	<u>BALANCE</u>
2021	\$22,107	\$10,391	\$11,716	\$649,430
2022	\$22,107	\$10,203	\$11,903	\$637,714
2023	\$22,107	\$10,013	\$12,094	\$625,811
2024	\$22,107	\$9,819	\$12,287	\$613,717
2025	\$22,107	\$9,623	\$12,484	\$601,429
2026	\$22,107	\$9,423	\$12,684	\$588,945
2027	\$22,107	\$9,220	\$12,887	\$576,262
2028	\$22,107	\$9,014	\$13,093	\$563,375
2029	\$22,107	\$8,805	\$13,302	\$550,282
2030	\$22,107	\$8,592	\$13,515	\$536,980
2031	\$22,107	\$8,375	\$13,731	\$523,464
2032	\$22,107	\$8,156	\$13,951	\$509,733
2033	\$22,107	\$7,933	\$14,174	\$495,782
2034	\$22,107	\$7,706	\$14,401	\$481,607
2035	\$22,107	\$7,475	\$14,632	\$467,206
2036	\$22,107	\$7,241	\$14,866	\$452,575
2037	\$22,107	\$7,003	\$15,104	\$437,709
2038	\$22,107	\$6,762	\$15,345	\$422,606
2039	\$22,107	\$6,516	\$15,591	\$407,260
2040	\$22,107	\$6,267	\$15,840	\$391,670
2041	\$22,107	\$6,013	\$16,094	\$375,830
2042	\$22,107	\$5,756	\$16,351	\$359,736
2043	\$22,107	\$5,494	\$16,613	\$343,385
2044	\$22,107	\$5,228	\$16,879	\$326,772
2045	\$22,107	\$4,958	\$17,149	\$309,894
2046	\$22,107	\$4,684	\$17,423	\$292,745
2047	\$22,107	\$4,405	\$17,702	\$275,322
2048	\$22,107	\$4,122	\$17,985	\$257,620
2049	\$22,107	\$3,834	\$18,273	\$239,635
2050	\$22,107	\$3,542	\$18,565	\$221,363
2051	\$22,107	\$3,245	\$18,862	\$202,798
2052	\$22,107	\$2,943	\$19,164	\$183,936
2053	\$22,107	\$2,636	\$19,471	\$164,772
2054	\$22,107	\$2,325	\$19,782	\$145,301
2055	\$22,107	\$2,008	\$20,099	\$125,519
2056	\$22,107	\$1,687	\$20,420	\$105,421
2057	\$22,107	\$1,360	\$20,747	\$85,000
2058	\$22,107	\$1,028	\$21,079	\$64,254
2059	\$22,107	\$691	\$21,416	\$43,175
2060	\$22,107	\$348	\$21,759	\$21,759
2061	\$0	\$0	\$0	\$0
TOTAL	\$884,275	\$234,845	\$649,430	

*Average annual diversion per State of Colorado's records for the years 1950 through 2018 (HydroBase).

EXHIBIT G

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	
☐ Prequalification (Attach 3 years of financial statements) ☒ Loan Approval (Attach Loan Feasibility Study)	
Agency/Company Information	
Company / Borrower Name: Deuel and Snyder Improvement Company	
Authorized Agent & Title: Brian Kembel, President	
Address: PO Box 89 Fort Morgan, CO 80701	
Phone: ()	Email: kembelb@ymail.com
Organization Type: ☒ Ditch Co, ☐ District, ☐ Municipality ☐ other: _____	
Incorporated? ☒ YES ☐ NO	
County: Morgan	Number of Shares/Taps: 161 shares
Water District: 1	Avg. Water Diverted/Yr 5,333 acre-feet
Number of Shareholders/Customers Served: 15	Current Assessment per Share \$ 191.04 (Ditch Co)
Federal ID Number: 84-0189066	Average monthly water bill \$ _____ (Municipality)
Contact Information	
Project Representative: Irma Baumberger	
Phone: ()	Email: irma@sdcbbaumberger.com
Engineer: Matt Harris	
Phone: (970) 867-4971	Email: matt@harrisec.com
Attorney: Kim Lawrence	
Phone: (970) 674-9888	Email: kim@llolaw.com
Project Information	
Project Name: DSIC/UPBCC Diversion Structure Replacement	
Brief Description of Project: (Attach separate sheets if needed)	
See attached summary sheet.	
Project Start Date(s) Design: February 2021 Construction: August 2020	
General Location: (Attach Map of Area)	
NW/4 Sec. 35 T7N R53W, Logan County, Colorado	
Project Costs - Round to the nearest thousand	
Estimated Engineering Costs: \$24,000	Estimated Construction Costs: \$512,000
Other Costs (Describe Above): \$107,000 (20% contg.)	Estimated Total Project Costs: \$643,000
Requested Loan Amount: \$643,000	Requested Loan Term(10, 20, or 30 years): 40 Years
Signature	
 Signature / Title Date 1-31-2020	Return to: Finance Section Attn: Matt Stearns 1313 Sherman St #718 Denver, CO 80203 Ph. 303/866.3441 e-mail: matthew.stearns@state.co.us

DEUEL AND SNYDER IMPROVEMENT COMPANY

Diversion Structure Replacement Project

BACKGROUND INFORMATION

The diversion structure for the Deuel and Snyder Improvement Company (DSIC) is a lowhead dam located on the South Platte River in Morgan County, Colorado approximately one mile west of the City of Fort Morgan. The structure is used to supply water for irrigation and augmentation to shareholders in the DSIC and the Upper Platte and Beaver Canal Company (UPBCC); the two ditch companies share the structure and have headgates located on opposite sides of the River. A combined water delivery of 37,600 acre-feet a year is made to the two ditch companies, with a total service area of approximately 11,500 acres.

The original diversion structure was built in 1936 and initially consisted of two separate concrete barrages separated by a large island. After the flood of 1965 washed out the island, a long concrete wall spanning diagonally across the river was constructed to connect the two structures. In total, the present structure is nearly 1,400 feet in length and consists of a solid concrete buttressed wall. Two 30-foot vertical gates, one 10-foot wide radial gate, and three 6-foot wide flashboard bays constitute the available openings for managing sediment across the structure. Sediment deposition at the upstream face of the structure is a recurring problem and often requires dredging activities to mitigate.

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 are the primary mechanisms perpetuating the erosion (*see attached photos*). The overall physical condition of the structure is poor. Much of the floor in the diagonal wall section has fractured and collapsed due to the loss of underlying material. Fatigue cracking, spalling, surface deterioration, and exposure of reinforcement is prevalent throughout the concrete structure. The above deficiencies have rendered much of the dam structurally compromised and, if left unaddressed, may result in imminent failure. Both ditch companies have invested a substantial amount of capital for maintenance and repairs to the structure over the years in an attempt to keep it operational. However, the principal structural deficiencies remain.

PROJECT DESCRIPTION

The Project will entail the removal of the existing structure and installation of a new concrete structure located immediately upstream (*see attached site plan*). Components of the new structure will include:

- Two 80-foot long inflatable crest gate spillways on the River channel;
- Two 10-foot wide 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 inflatable crest 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 control building, constructed of reinforced concrete, to house the new gate controls and air-supply system.

The Project will restore channel continuity and improve sediment transport along the River reach. The new adjustable 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.

EXHIBIT H

Financial Statements: 2017 through 2019

EXHIBIT I

Stockholders List