

**WATER PERMIT NO. 2777-2**

Name of Applicant: **Dale Boydston**

Address: **PO Box 248, New Underwood SD 57761** Phone: **605 484-3027**

Amount of Water Claimed: **65.4 AF** Total Acres: **NA**

Source of Water Supply: **runoff**

Water to be used for: **livestock** County: **Pennington**

Type of Waste Disposal System:

Location: **4 miles southeast of New Underwood**

**PRIORITY** Date Received: **10-30-17**

Application/License Fee: **\$ 700**

Corrected Application Received: **11-07-17**

Period of Annual Use: **Jan 1 – Dec 31**

Remarks:

Diversion Point: **SE 1/4 SE 1/4 Sec 10-T1N-R11E**

Water Impounded: **SE 1/4 SE 1/4 Sec 10 and NE  
1/4 NE 1/4 Sec 15; all in T1N-R11E**

Depth of Well: **NA**

Well Driller:

Remarks:

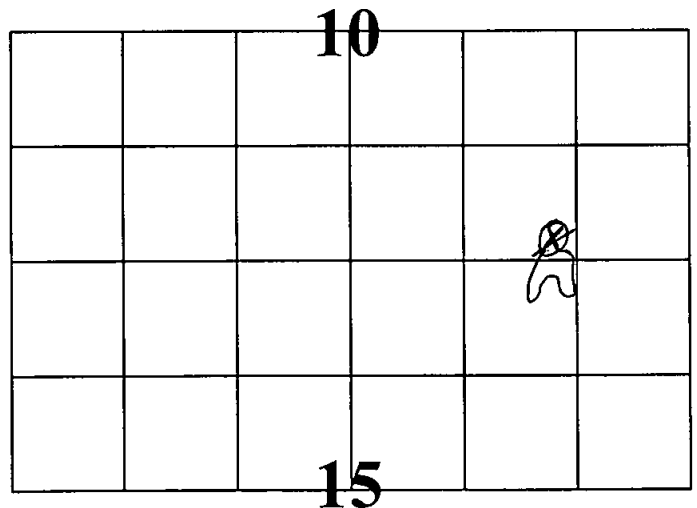
Type of Map: **aerial**

Prepared by:

Reviewed and the Number Assigned on: **11-7-17**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: \_\_\_\_\_



FORM 2: Application for uses other than irrigation  
(type or print)

RECEIVED

OCT 30 2017

WATER RIGHTS  
PROGRAM

|                                                                                                         |                                     |                                                      |
|---------------------------------------------------------------------------------------------------------|-------------------------------------|------------------------------------------------------|
| Mail to:<br><br>DENR - Water Rights<br>523 E Capitol Ave<br>Pierre, SD 57501-3182<br>ph. (605) 773-3352 | No. <u>2777-2</u>                   | (office use only)<br>Hydrologic Unit <u>10/20111</u> |
|                                                                                                         | Basin <u>Upper Cheyenne</u>         |                                                      |
|                                                                                                         | Newspaper <u>Rapid City Journal</u> |                                                      |
|                                                                                                         |                                     |                                                      |

## Application For Permit To Appropriate Water Within The State Of South Dakota

## Check use(s) of water:

|                                                 |                                                    |                                                            |                                        |
|-------------------------------------------------|----------------------------------------------------|------------------------------------------------------------|----------------------------------------|
| <input type="checkbox"/> Municipal              | <input type="checkbox"/> Water Distribution System | <input type="checkbox"/> Recreational                      | <input type="checkbox"/> Institutional |
| <input type="checkbox"/> Rural Water System     | <input type="checkbox"/> Commercial                | <input type="checkbox"/> Fish & Wildlife                   | <input type="checkbox"/> Geothermal    |
| <input type="checkbox"/> Domestic (over 18 gpm) | <input type="checkbox"/> Industrial                | <input checked="" type="checkbox"/> Other <u>Livestock</u> |                                        |

Type of Application:  
(check one)

☒ New ☐ Vested Right (Use predates Mar 2, 1955) ☐ Future Use Reservation

☐ Place to Beneficial Use Water Reserved by Future Use Permit No. \_\_\_\_\_

☐ Amendment/Correction to Permit No. \_\_\_\_\_

Description of amendment/correction: (i.e. change diversion point(s), add diversion point(s), change use, etc.)

Construct new pond for livestock water.1. Name to Appear on Water Permit Dale BoydstonMailing Address 22690 1st Ave. PO Box 248 New Underwood SD 57761  
(Address) (City) (State) (Zip Code)Phone 605-754-6908 Mobile 605-484-3027 Email dale.boydston@gmail.com2. Amount of water claimed 35.6 \*CFS or 65.4 \*\*GPM and 65.4 \*\*\*AF or \_\_\_\_\_ Gallons  
Flow rate and volume are both required. (\*Cubic Feet per Second) (\*\*Gallons per Minute) (\*\*\*)Acre Feet - storage capacity of dam/dugout or annual use)3. Source of water supply runoff4. Location of point of diversion SE 1/4 new pond in SE 1/4 Sec 10 T1N R11E County Pennington  
(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)If not a public water supply (e.g. municipal), will water be used outside of the area described above? ☐ Yes ☒ NoIf "Yes," where will water be used? Water Impounded: SE 1/4 SE 1/4 Sec 10 & NE 1/4 NE 1/4 Sec 15  
(example - NW1/4 section 12-T104N-R53W) all in T1N-R11E5. County or counties where water will be used Pennington6. Annual period during which water is to be used summer grazing Jan 1 - Dec 31

7. Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)

Construct a new pond consisting of approximately 6900 cubic yards of earth fill to store runoff water for livestock. The pond will have an 18" principal spillway and two auxiliary spillways totaling 140' of width to allow for the controlled release of excess runoff. The pond will be located in the SE 1/4 of Section 10 T1N R11E in Pennington County approximately 3 miles South and 3 miles East of New Underwood, SD.

I, Dale Boydston, the applicant, certify under  
Name of person Title (if applicable)

penalty of perjury that I have read this application, examined the attached map, and that the matters stated are true. I further certify, if acting on behalf of an entity or individual other than myself, that I am authorized to submit this application.

**SOUTH DAKOTA**  
**WATER PERMIT NO. 2777-2**

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Date of first receipt of application October 30, 2017.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 2777-2 to Dale Boydston, PO Box 248, New Underwood SD 57761 authorizing the construction of the dam and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 2777-2 authorizes impoundment of 35.6 acre-feet of water from runoff by constructing a dam located in the SE 1/4 SE 1/4 Section 10 with water impounded in the SE 1/4 SE 1/4 Section 10 and NE 1/4 NE 1/4 Section 15; all in T1N-R11E which is approximately four miles southeast of New Underwood SD.
2. The water appropriated shall be used for the purpose of livestock water and may not exceed the amount of water needed for beneficial use.
3. The water is to be used during the following described annual period: January 1 – December 31.
4. The date of approval of Permit No. 2777-2 is January 2, 2018.
5. The date from which applicant may claim right is October 30, 2017.
6. One-fifth of the construction is to be completed on or before July 2, 2020.
7. All construction is to be completed on or before January 2, 2023.
8. Water is to be put to beneficial use on or before January 2, 2027.
9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

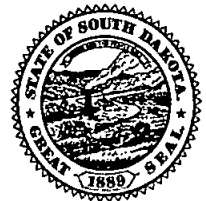
**QUALIFICATIONS**

1. Water Permit No. 2777-2 authorizes an impoundment with a storage capacity of 35.6 acre feet of water.
2. Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.

**WATER MANAGEMENT BOARD**

By:   
Jeanne Goodman, Chief Engineer  
Water Rights Program  
Department of Environment and Natural Resources

JAN 09 2018  
date



## Supplemental Information

(type or print)

### 1. Well Information

(check one or both as applicable) ☐ Drilling new well(s) ☐ Using existing well(s)

a) If new wells, how many \_\_\_\_ Have test holes been drilled ☐ Yes ☐ No Drilled by \_\_\_\_  
(if yes, please provide copies of logs)

b) If existing wells, how many \_\_\_\_ Provide copy of log(s), if available. Drilled by \_\_\_\_

For either Existing or Proposed Wells:

c) Well Depth (required) \_\_\_\_ Depth to Top of Water Bearing Material \_\_\_\_ Depth to Water from Surface \_\_\_\_

d) Distance to nearest domestic well on applicant's property \_\_\_\_ Property owned by others \_\_\_\_

### 2. Wastewater Disposal System Information

a) Type of System (i.e. septic tank, drain field) \_\_\_\_

b) System Capacity (gallons ) \_\_\_\_ Year Constructed \_\_\_\_

c) Connected to the City of \_\_\_\_ Sanitary System

### 3. Dugout Information

a) Surface Dimensions \_\_\_\_ Depth \_\_\_\_

b) Depth to water (ground surface to water level) \_\_\_\_

### 4. Water Storage Dams

If the proposed water use system contains one or more storage dams, please furnish the information requested below for each dam. The locations of the dams need to be shown on the map submitted with the application.

a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address:

USDA-NRCS  
414 E. Stumer Rd. Ste 700  
Rapid City, SD 57701

b) Freeboard 3'

c) Crest Width 12'

Crest Length 540'

d) Height 12'

e) Primary Outlet Capacity 21.4 CFS

If pipe, diameter 18"

f) Secondary Spillway Capacity 348 CFS

Spillway Width 140' total

g) X & Y Slope (e.g. 3 to 1 is a typical slope)

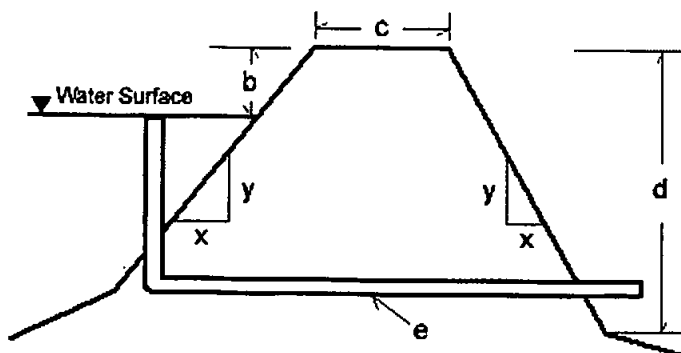
Upstream 3:1

Downstream 3:1

h) Surface Area of Impoundment 10.3 acres

i) Storage 65.4 35.6 Acre Feet

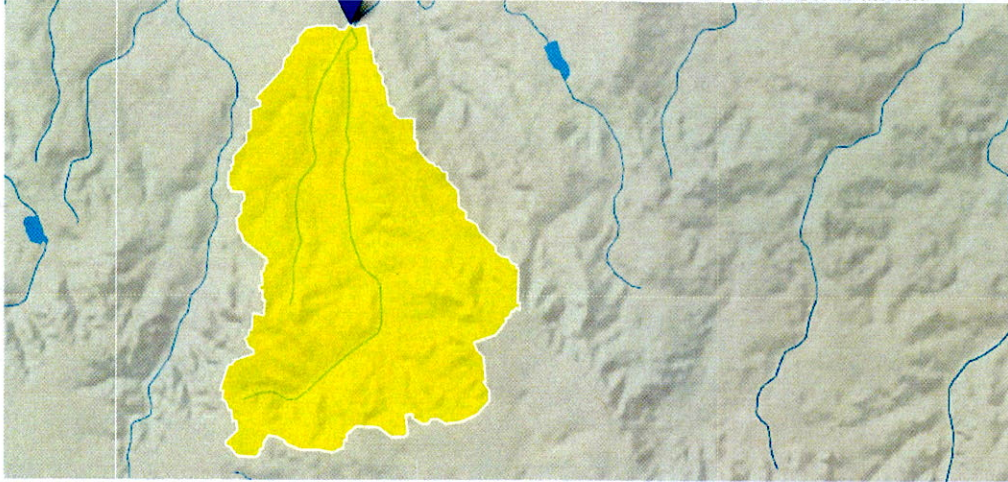
j) Drainage Area Above Dam 681.0 Acres



## StreamStats Report

Region ID:  
Workspace ID:  
Clicked Point (Latitude, Longitude):  
Time:

SD  
SD20171206204632283000  
44.05417, -102.77102  
2017-12-06 14:46:50 -0600



### Basin Characteristics

| Parameter Code | Parameter Description                             | Value | Unit         |
|----------------|---------------------------------------------------|-------|--------------|
| CONDA          | Area that contributes flow to a point on a stream | 1.07  | square miles |

### Peak-Flow Statistics Parameters (Subregion C)

| Parameter Code | Parameter Name             | Value | Units        | Min Limit | Max Limit |
|----------------|----------------------------|-------|--------------|-----------|-----------|
| CONDA          | Contributing Drainage Area | 1.07  | square miles | 0.06      | 904       |

### Peak-Flow Statistics Flow Report (Subregion C)

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

| Statistic           | Value | Unit               | PII  | PIu  | SE  | SEp | Equiv. Yrs. |
|---------------------|-------|--------------------|------|------|-----|-----|-------------|
| 2 Year Peak Flood   | 26    | ft <sup>3</sup> /s | 5.97 | 113  | 108 | 108 | 1.8         |
| 5 Year Peak Flood   | 75.4  | ft <sup>3</sup> /s | 27.1 | 210  | 67  | 67  | 4.8         |
| 10 Year Peak Flood  | 130   | ft <sup>3</sup> /s | 52.9 | 319  | 58  | 58  | 8.3         |
| 25 Year Peak Flood  | 215   | ft <sup>3</sup> /s | 93.1 | 497  | 53  | 53  | 12          |
| 50 Year Peak Flood  | 297   | ft <sup>3</sup> /s | 129  | 684  | 53  | 53  | 14.9        |
| 100 Year Peak Flood | 394   | ft <sup>3</sup> /s | 166  | 932  | 55  | 55  | 16.5        |
| 500 Year Peak Flood | 689   | ft <sup>3</sup> /s | 253  | 1880 | 65  | 65  | 16.6        |

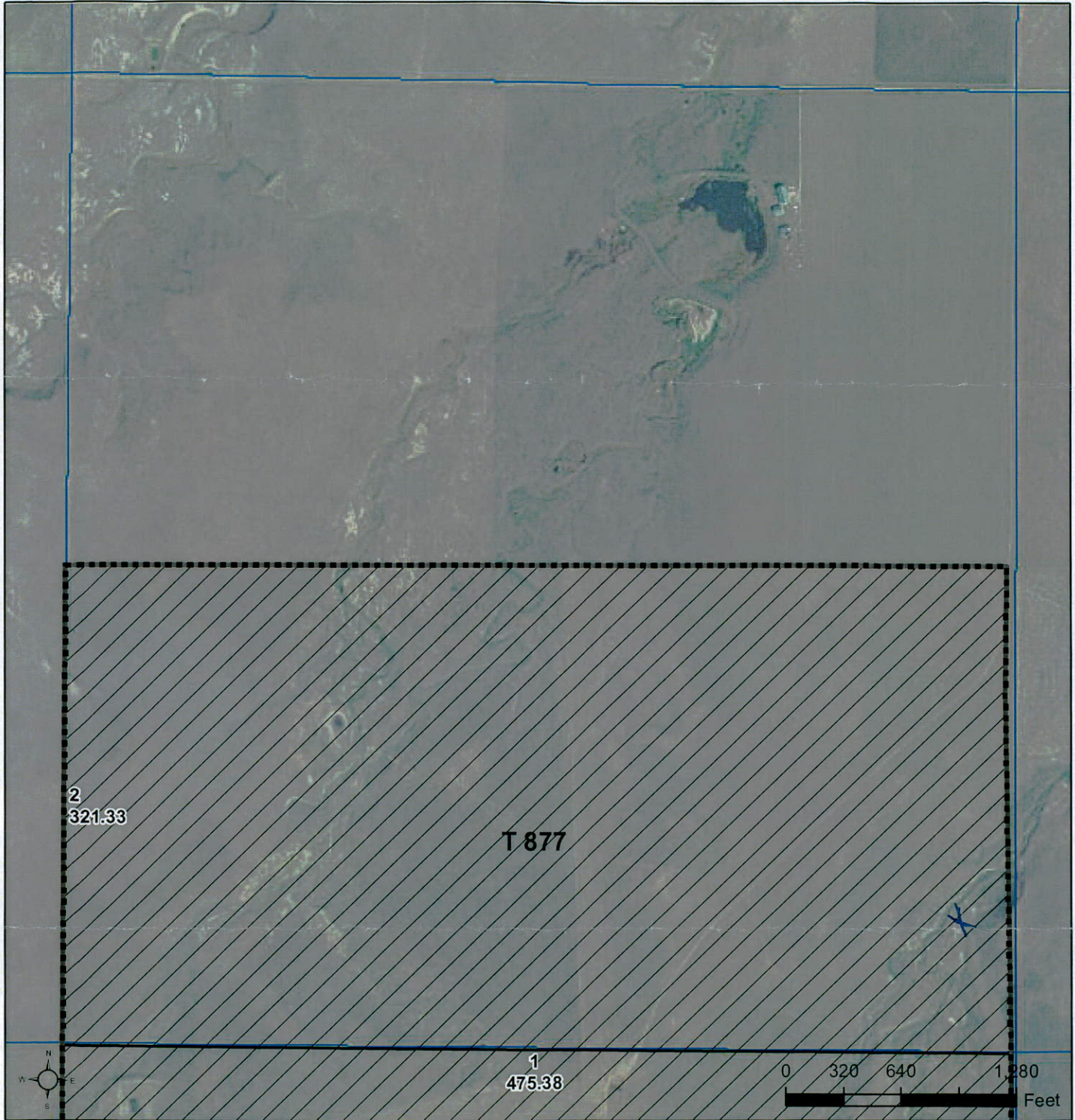
### Peak-Flow Statistics Citations

Sando, Steven K., 1998, A Method for Estimating Magnitude and Frequency of Floods in South Dakota: U.S. Geological Survey Water-Resources Investigations Report 98-4055, 48 p. (<http://pubs.water.usgs.gov/wri98-4055/>)



United States  
Department of  
Agriculture

## Pennington County, South Dakota



Common Land Unit ☐ PLSS

- ☒ Non-Cropland
- ☐ Tract Boundary

### Wetland Determination Identifiers

- ☒ Restricted Use
- ☐ Limited Restrictions
- ☐ Exempt from Conservation
- ☐ Compliance Provisions

2017 Program Year

Map Created April 13, 2017

Farm 1642

10-1N-11E

United States Department of Agriculture (USDA) Farm Service Agency (FSA) maps are for FSA Program administration only. This map does not represent a legal survey or reflect actual ownership; rather it depicts the information provided directly from the producer and/or National Agricultural Imagery Program (NAIP) imagery. The producer accepts the data 'as is' and assumes all risks associated with its use. USDA-FSA assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data outside FSA Programs. Wetland identifiers do not represent the size, shape, or specific determination of the area. Refer to your original determination (CPA-026 and attached maps) for exact boundaries and determinations or contact USDA Natural Resources Conservation Service (NRCS).

# RECEIPT

## WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date October 30, 20 17

RECEIVED OF Boydston Enterprises, Inc. PO Box 248 New Underwood 57761

The following amount in fees for services rendered as provided for by law:

|                                                                                                                        |       |        |
|------------------------------------------------------------------------------------------------------------------------|-------|--------|
| Fee for Application for Permit No. <u>2777-2</u> to Appropriate Water, to construct and to put water to beneficial use | 500   | 00     |
| Fee for Application for Permit No. _____ to Appropriate Water for Future use                                           |       |        |
| Fee to retain Future Use Permit No. _____ after period of seven years.                                                 |       |        |
| Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. <u>2777-2</u>            | 200   | 00     |
| Fee for Filing Transfer Form _____                                                                                     |       |        |
| Fee for _____                                                                                                          |       |        |
| Fee for Issuing New Well Driller's License No. _____ for C.Y. _____                                                    |       |        |
| Fee for Renewal of Well Driller's License No. _____ for C.Y. _____                                                     |       |        |
| Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____                                                 |       |        |
| Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____                                              |       |        |
| (Any Other Work Provided by Law)                                                                                       | TOTAL | 700 00 |

No. **08372**

By

Jeannie Hoodman

Chief Engineer

2700

## Schaal, Tim

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**From:** Schaal, Tim  
**Sent:** Monday, December 11, 2017 8:27 AM  
**To:** 'Boschee, Roy - NRCS, Rapid City, SD'  
**Subject:** RE: [EXT] Boydston Final

OK thanks, I also called Mr. Boydston Friday and explained we would be changing his application to 35.6 acre-feet.

Tim

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**From:** Boschee, Roy - NRCS, Rapid City, SD [<mailto:Roy.Boschee@sd.usda.gov>]  
**Sent:** Monday, December 11, 2017 7:58 AM  
**To:** Schaal, Tim  
**Subject:** RE: [EXT] Boydston Final

Tim – that is correct. Also storage at the top of the dam is 100.9 ac-ft.

*Roy E. Boschee, PE*  
414 E. Stumer Road, Ste 700  
Rapid City, SD 57701  
605 – 343 – 1643 Ext 132  
[Roy.Boschee@sd.usda.gov](mailto:Roy.Boschee@sd.usda.gov)

**From:** Schaal, Tim [<mailto:Tim.Schaal@state.sd.us>]  
**Sent:** Friday, December 08, 2017 1:19 PM  
**To:** Boschee, Roy - NRCS, Rapid City, SD <[Roy.Boschee@sd.usda.gov](mailto:Roy.Boschee@sd.usda.gov)>  
**Subject:** RE: Boydston Final

Roy—just checking with you on the correct spillway capacity. Mr. Boydston's application claims 65.4 acre-feet, which would be the storage capacity at the auxiliary spillway elevation. It looks like the correct capacity for the application should be 35.6 acre-feet, the capacity at the primary spillway elevation. Right ??

---

**From:** Boschee, Roy - NRCS, Rapid City, SD [<mailto:Roy.Boschee@sd.usda.gov>]  
**Sent:** Tuesday, November 07, 2017 11:11 AM  
**To:** Schaal, Tim  
**Subject:** FW: [EXT] Boydston Final

Tim,

Attached are the plans for Boydston's dam. Let me know if you need anything else.

*Roy E. Boschee, PE*  
414 E. Stumer Road, Ste 700  
Rapid City, SD 57701  
605 – 343 – 1643 Ext 132  
[Roy.Boschee@sd.usda.gov](mailto:Roy.Boschee@sd.usda.gov)

FO COPY

RECEIVED

NOV 07 2017

WATER RIGHTS  
PROGRAM

winPond.txt

=====

|             |
|-------------|
| POND DESIGN |
|-------------|

=====

WinPond 1.7.3684.13166

Project ---- : Boydston Pond

Description :

State ----- : South Dakota

County ----- : Pennington East

Landowner -- : Dale Boydston

Township --- : 1 N

Range ----- : 11 E

Section ---- : 10

Tract ----- :

Field ----- :

Designed By : M. O'Dea

Date designed: 6/23/2017

Date printed : 6/23/2017

Approved By : \_\_\_\_\_

Date : \_\_\_\_\_

File Name : C:\Users\Michael.O'Dea\AppData\Local\...\New.prj

PLANNED IN COOPERATION WITH USDA-NRCS

Office Name  
Address1  
Address2  
City

The use of this software is intended for low-hazard dams conforming to Natural Resources Conservation Service, Pond (378) Conservation Practice Standard.

Failure of the dam will not result in loss of life; damage to homes, commercial or industrial buildings, main highways, or railroads; or in interruption of the use or service of public utilities.

NRCS 378 Pond Conservation Practice Standard limits the Effective Height to less than 35 feet and a height x storage value of less than 3,000 acre-feet-ft.

WinPond.txt  
 \*\*\*\*\* JOB APPROVAL CLASS \*\*\*\*\*

|                                       |              |       |
|---------------------------------------|--------------|-------|
| Hazard Class                          | Low          | A     |
| Effective Height                      | Feet         | 12.0  |
| Effective Storage                     | Ac-Ft        | 65.4  |
| Overall Height                        | Feet         | 10.0  |
| Total Storage                         | Ac-Ft        | 100.9 |
| Storage X Effective Height            | Ac-Ft Ft     | 784   |
| Contributing Drainage Area            | Acres        | 681   |
| Contributing Drainage Area            | Square Miles | 1.06  |
| Pipe Conduit Capacity                 | CFS          | 17.3  |
| Open Channel Spillway Design Flow     | CFS          | 348.3 |
| Peak Inflow Aux Spillway Design Storm | CFS          | 688.4 |
| Conduit - Inside Diameter             | Inches       | 18    |
| Conduit Material                      |              | SDR   |
| Inlet Type                            |              | Hood  |
| Job Approval Class                    |              |       |
| INVENTORY SIZE DAM                    |              |       |

\*\*\*\*\* ELEVATION-STORAGE INPUT DATA \*\*\*\*\*

| ELEV<br>(ft) | POOL AREA<br>(acres) | INT. STORAGE<br>(ac.ft.) | ACCUM. STORAGE<br>(ac.ft.) |
|--------------|----------------------|--------------------------|----------------------------|
| 2882.0       | 0.00                 | 0.70                     | 0.00                       |
| 2884.0       | 0.70                 | 2.50                     | 0.70                       |
| 2886.0       | 1.80                 | 5.10                     | 3.20                       |
| 2888.0       | 3.30                 | 7.70                     | 8.30                       |
| 2890.0       | 4.40                 | 10.10                    | 16.00                      |
| 2892.0       | 5.70                 | 13.00                    | 26.10                      |
| 2894.0       | 7.30                 | 16.50                    | 39.10                      |
| 2896.0       | 9.20                 | 20.60                    | 55.60                      |
| 2898.0       | 11.40                | 24.70                    | 76.20                      |
| 2900.0       | 13.30                | 28.80                    | 100.90                     |
| 2902.0       | 15.50                | 33.80                    | 129.70                     |
| 2904.0       | 18.30                |                          | 163.50                     |

\*\*\*\*\* STORAGE VOLUMES \*\*\*\*\*

|                         | ELEVATION<br>(ft) | AREA<br>(acres) | STORAGE<br>(ac.ft.) |
|-------------------------|-------------------|-----------------|---------------------|
| Inlet (Princ. spillway) | 2893.5            | 6.90            | 35.55               |
| Aux. spillway           | 2897.0            | 10.30           | 65.35               |
| Max. water              | 2898.5            | 11.87           | 81.93               |
| Settled top of fill     | 2900.0            | 13.30           | 100.90              |
| Sediment - above inlet  |                   |                 | 0.00                |

|                    |             |       |
|--------------------|-------------|-------|
|                    | WinPond.txt |       |
| - below inlet      | -----       | 11.70 |
| Inlet to Aux.      | -----       | 29.80 |
| Aux. to max. water | -----       | 16.58 |

# RUNOFF CURVE NUMBER DETERMINATION

Acres & (curve numbers) for  
Hydrologic Soil Group

COVER DESCRIPTION

A B C D

ACCUMULATED: 681.00 Acres

WEIGHTED CURVE NUMBER: 79.0

## \*\*\*\*\* HYDROLOGIC DATA \*\*\*\*\*

|                                  |           |                      |             |
|----------------------------------|-----------|----------------------|-------------|
| Rainfall distr. type -----       | II        |                      |             |
| Drainage area, acres -----       | 681.0     | Watershed slope, % : | 10.7        |
| Runoff curve number -----        | 79        | Flow length, ft. - : | 10138       |
| Time of concentration, hrs ----- | 1.07      |                      |             |
| (min. -----)                     | 63.92)    |                      |             |
| -----                            |           |                      |             |
|                                  | Principal | Spillway             | Auxiliary   |
| Design frequency, yrs.:          | 2         |                      | 25          |
| 24 hr. Rainfall, in. :           | 2.1       |                      | 3.7         |
| Runoff, in. -----                | 0.6       |                      | 1.7         |
| Peak inflow, cfs ----            | 214.94    |                      | 688.43      |
| Peak outflow, cfs ---            | 17.30     |                      | 348.34 A.S. |
|                                  |           |                      | 21.14 P.S.  |

## \*\*\*\*\* PRINCIPAL SPILLWAY TRIALS \*\*\*\*\*

Inlet type: Hood

Inlet Elevation: 2893.5

|                           | TRIAL 1 | TRIAL 2 | TRIAL 3 |
|---------------------------|---------|---------|---------|
| CONDUIT: Type -----       | SDR     |         |         |
| Diameter, in. --          | 18.00   |         |         |
| Height, in. ----          |         |         |         |
| Width, in. -----          |         |         |         |
| Manning's n ----          | 0.011   |         |         |
| Inlet ext., ft. --        | 1.0     |         |         |
| Length, ft. ----          | 74.0    |         |         |
| Entrance Coefficient, Ke  | 1.000   |         |         |
| -----                     |         |         |         |
| Auxiliary elevation)----- | 2897.0  |         |         |
| STORAGE (ac.ft.):         |         |         |         |
| Temporary (PS-AS) ----    | 29.80   |         |         |
| Total at Auxiliary ---    | 65.35   |         |         |
| Effective height, ft. --- | 12.0    |         |         |
| Height x storage -----    | 784     |         |         |
| Drawdown time, days-hrs.  | 2-6.5   |         |         |
| Trial used -----          | 1 --    |         |         |

CONDUIT TYPES ----- : SDR-26 - PVC SDR-26 Pipe

## \*\*\*\*\* AUXILIARY SPILLWAY DETAILS \*\*\*\*\*

Discharge determination: Qe values from ASFILE

| Auxiliary elev. : 2897.0 ^ Retardance ----- : B |

winPond.txt

|                                                       |                                 |
|-------------------------------------------------------|---------------------------------|
| Bottom width, ft. : 140                               | Level sect. length, ft. : 25    |
| Flow depth, ft. : 1.49                                | Side slope ratio, n:1 : 3.00    |
| EXIT CHANNEL -                                        |                                 |
| Max. Vel., fps : 5.0                                  | Retardance : B                  |
| -----                                                 |                                 |
| Flow, cfs : 348.34                                    | Exit slope, % --- Min.: 4       |
|                                                       | Max.: 22                        |
| Settled fill elev.: 2900.0 ^                          | Drawdown time, days-hrs: 2-19.4 |
| Flow, cfs : 2614.6 (Aux. Spillway Flow at Top of Dam) |                                 |
| Channel elev. : 2890.0                                | Overall height, ft. : 10.0      |
| (downstream toe)                                      |                                 |

^: Increased by User

\*\*\*\*\* CONDUIT DETAIL \*\*\*\*\*

|                          |                                       |
|--------------------------|---------------------------------------|
| Inlet Type -----         | HOOD                                  |
| Conduit Type -----       | SDR-26 - PVC SDR-26 Pipe              |
| Diameter, in. -----      | 18.00                                 |
| Inlet extension, ft --   | 1.0                                   |
| Length, lin. ft. -----   | 74.0 Extends 5.0 ft. beyond dnstr.toe |
| Slope, % -----           | 3.5                                   |
| Max. fill over pipe, ft. | 7.0                                   |
| Hood Length -----        | 13-1/2"                               |
| Baffle size -----        | 27" square or diameter                |

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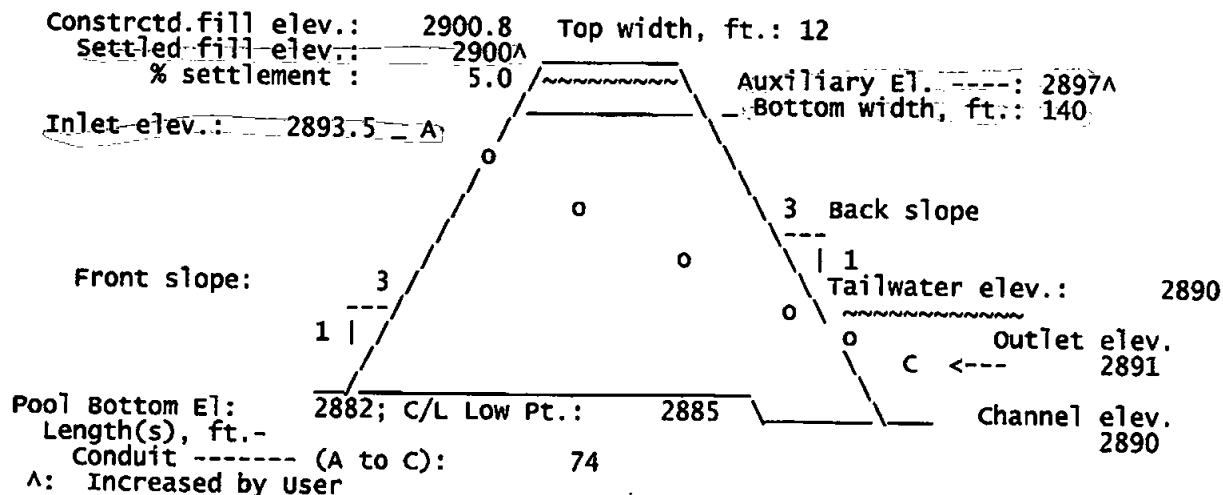
Horizontal Distances (ft.)

|                                                  |      |
|--------------------------------------------------|------|
| Upstrm: edge of top width to inlet end of pipe : | 24.0 |
| Dnstrm: edge of top width to toe ----- :         | 32.3 |

\*\*\*\*\* DESIGN ELEVATIONS (at principal spillway) \*\*\*\*\*

Inlet type: HOOD

NOT TO SCALE



\*\*\*\*\* SUMMARY \*\*\*\*\*

Inlet type: HOOD

Inlet Elevation: 2893.5

|                     |                          |
|---------------------|--------------------------|
| CONDUIT: Type ----- | SDR-26 - PVC SDR-26 Pipe |
| Diameter, in. ---   | 18                       |

|       |                            |                                   |
|-------|----------------------------|-----------------------------------|
|       | Length, lin. ft. -         | WinPond.txt                       |
| AUX.  | Elevation                  | 74 Extends 5 ft. beyond dnstr.toe |
|       | Bottom width, ft.          | 2897                              |
|       | Hp, flow depth, ft.        | 140                               |
|       | Exit slope, % min.         | 1.49                              |
|       | max.                       | 4                                 |
|       |                            | 22                                |
| <hr/> |                            |                                   |
|       | Effective height, ft. ---- | 12 = AS elev. - low pt. on C/L    |
|       | Height x storage           | 784                               |
|       | Overall height, ft. ----   | 10 = Stld. fill elev - chan. elev |
| NOTE  | -----                      | ***** INVENTORY SIZE DAM          |

\*\*\*\*\* PROJECT DEFAULTS \*\*\*\*\*

|                                          |                    |
|------------------------------------------|--------------------|
| Design based on                          | Constructed Slopes |
| Berms settled                            | False              |
| Auxiliary spillway to Top of Dam:        | 2.0 (ft)           |
| Freeboard                                | 1.0 (ft)           |
| Minimum bottom width                     | 10.0 (ft)          |
| Maximum bottom width                     | 150 (ft)           |
| Feet above inlet (Drawdown)              | 0.0 (ft)           |
| Percent or storage drained (Drawdown)    | 85.0 (ft)          |
| Minimum flow (Drawdown)                  | 0.1 (cfs)          |
| Orifice Coefficient                      | 0.71 (ft)          |
| Full Pipe Flow Required?                 | Yes                |
| Stage required above Prin. Spwy. Crest:  | 0.5 (ft)           |
| Max. drainage area for required stage:   | 20.0 (acres)       |
| All PS Outflow included in Prin. Routing | Yes                |
| All PS Outflow included in Aux. Routing  | Yes                |



SE 1/4, Sec 10, T1N R11E  
Pennington County, South Dakota

#### LOCATION MAP

#### GENERAL NOTES

1. If cultural resources are discovered during construction, discontinue construction and notify the local Natural Resources Conservation Service office.
2. The landowner is responsible for complying with all federal, state, and local laws.

#### CONSTRUCTION NOTES

1. Clear and grub the entire area within the work limits.
2. All fill material must not contain frozen material, sod, roots, or other pernicious material, or rock larger than eight inches in diameter as described in SD Construction Specification SD-75.
3. Any shale, gravel, or sand that is exposed during borrow operations shall be immediately backfilled with 2 feet of clay material.
4. Six inches topsoil will be incorporated into the earthfill to meet the neat lines shown on the typical section.
5. All areas top-dressed with topsoil and disturbed during construction will be seeded according to SD Construction Specification SD-28.
6. \_\_\_\_\_

NO EXCAVATOR MAY BEGIN ANY EXCAVATION WITHOUT FIRST NOTIFYING THE ONE-CALL NOTIFICATION CENTER OF THE PROPOSED EXCAVATION AT 1-800-781-7474.

NRCS HAZARD CLASS A  
NRCS JOB CLASS -#

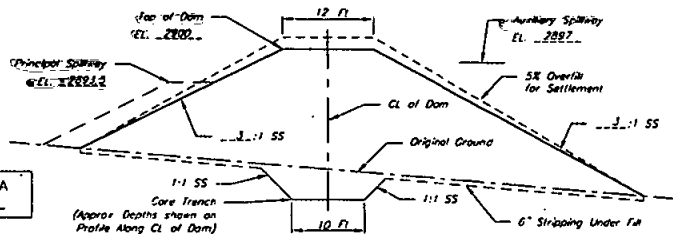
#### SD CONSTRUCTION AND MATERIAL SPECIFICATIONS

- SD-4 Stripping
- SD-5 Excavation
- SD-75 Earthfill - Class S
- SD-10 Salvaging And Spreading Topsoil
- SD-28 Seeding
- SD-14 Wood and Steel Structures
- SD-55 Plastic Pipe

For A Full Text Version See  
[http://www.nrcs.usda.gov/aps/pdof/nrcs/detail/sd/technical/engineering/tcd=nrcs141p2\\_036575](http://www.nrcs.usda.gov/aps/pdof/nrcs/detail/sd/technical/engineering/tcd=nrcs141p2_036575)

#### TABLE OF QUANTITIES

| ITEM                                       | UNIT    | QUANTITY | AS-BUILT |
|--------------------------------------------|---------|----------|----------|
| Earthfill Class S - Embankment             | Cu Yd   | 4917     |          |
| Earthfill Class S - Core Trench            | Cu Yd   | 504      |          |
| Earthfill Class S - Stripping              | Cu Yd   | 1457     |          |
| Total Earthfill                            | Cu Yd   | 6878     |          |
| Topsoil Auxiliary Spillway                 | Cu Yd   | 737      |          |
| Seeding (Earthfill and Auxiliary Spillway) | Acre    | 1.5      |          |
| Principal Spillway Pipe                    |         |          |          |
| 18" Dia PVC SDR 26 Pipe                    | Lm. Ft. | 60       |          |
|                                            |         |          |          |
| J Post Hooded Inlet                        | Each    | 1        |          |
| Rubber Diaphragm Anti-seep Collar          | Each    | 2        |          |
| Timber Pipe Support                        | Each    | 1        |          |



TYPICAL CROSS SECTION OF DAM

#### INDEX OF DRAWINGS

1. Cover Sheet
2. Plan View and Design Data
3. Plan View - Full Page
4. Hooded Inlet & Pond Profile
5. J Post Hooded Inlet Details
6. Timber Pipe Support
7. Pond & Auxiliary Spillway Profiles

#### STATEMENT OF COMPLIANCE

Construction (was) (was not) completed in accordance with approved construction plans and specifications.

JAA Date

POND WITH PRINCIPAL SPILLWAY PIPE  
JOB PLAN 1.0P REV. 4/2016

Designed by: M. O'Donoghue  
Drawn by: J. O'Donoghue  
Checked by: J. O'Donoghue  
Date: 9/18/17

DALE BOYDSTON  
378 POND  
COVER SHEET

USDA  
NATURAL RESOURCES  
CONSERVATION SERVICE

File No.  
Boydston2.dwg  
Drawing No.  
6/22/17 1:47 PM  
Sheet 1 of 1

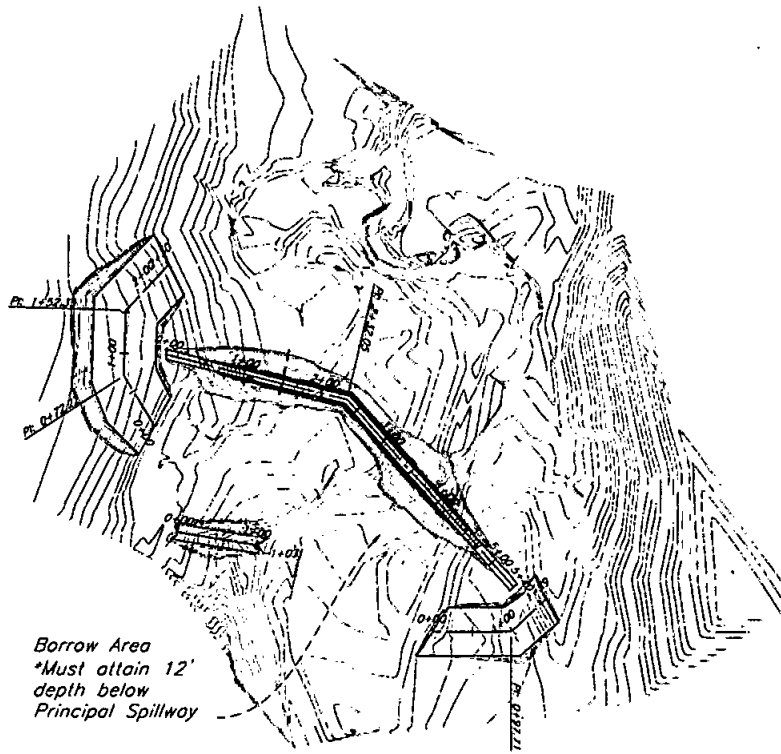
| HYDRAULIC DATA                                 |       |         |
|------------------------------------------------|-------|---------|
| Drainage Area                                  | 681   | Acres   |
| Annual Runoff Yield (50% Chance)               | 39.7  | Ac. Ft. |
| Time of Concentration                          | 1.07  | Hours   |
| Runoff Curve Number                            | 79    |         |
| Principal Spillway, 2 Year - 24 Hour Rainfall  | 2.2   | Inches  |
| Auxiliary Spillway, 22 Year - 24 Hour Rainfall | 3.9   | Inches  |
| Peak Runoff 2 Year - 24 Hour Rainfall          | 215   | CFS     |
| Principal Spillway Discharge                   | 17.3  | CFS     |
| Peak Runoff 22 Year - 24 Hour Rainfall         | 688   | CFS     |
| Auxiliary Spillway Discharge                   | 348   | CFS     |
| Auxiliary Spillway Flow Depth                  | 1.490 | Feet    |

| STRUCTURE DATA                             |     |      |
|--------------------------------------------|-----|------|
| Length of Top of Dam                       | 540 | Feet |
| Water Depth to Crest of Principal Spillway | 10  | Feet |
| Height of Downstream Toe to Top of Dam     | -12 | Feet |
| Effective Height                           | 12  | Feet |
| Product of Storage & Effective Height      | 768 |      |

| POOL DATA                   |        |      |         |
|-----------------------------|--------|------|---------|
|                             | ELEV.  | AREA | STORAGE |
| Crest of Principal Spillway | 2893.5 | 6.9  | 33.6    |
| Crest of Auxiliary Spillway | 2897   | 10.3 | 63.4    |
| Top of Dam                  | 2900   | 13.3 | 100.9   |

| SEDIMENT YIELD   |                           |                       |                   |                       |                                    |
|------------------|---------------------------|-----------------------|-------------------|-----------------------|------------------------------------|
| Erodibility Area | Gross Rate (A.F./Ac./Yr.) | Drainage Area (Acres) | Delivery Rate (%) | Design Period (Years) | Required Sediment Volume (Ac.-Ft.) |
| P                | 0.00345                   | 681                   | 20                | 25                    | 11,700                             |

| BENCHMARK POINTS TABLE |     |           |          |         |                       |
|------------------------|-----|-----------|----------|---------|-----------------------|
| N.O.                   | ID  | ELEVATION | NORTHING | EASTING | BENCHMARK DESCRIPTION |
|                        | BM1 |           |          |         |                       |
|                        | BM2 |           |          |         |                       |



PLAN VIEW

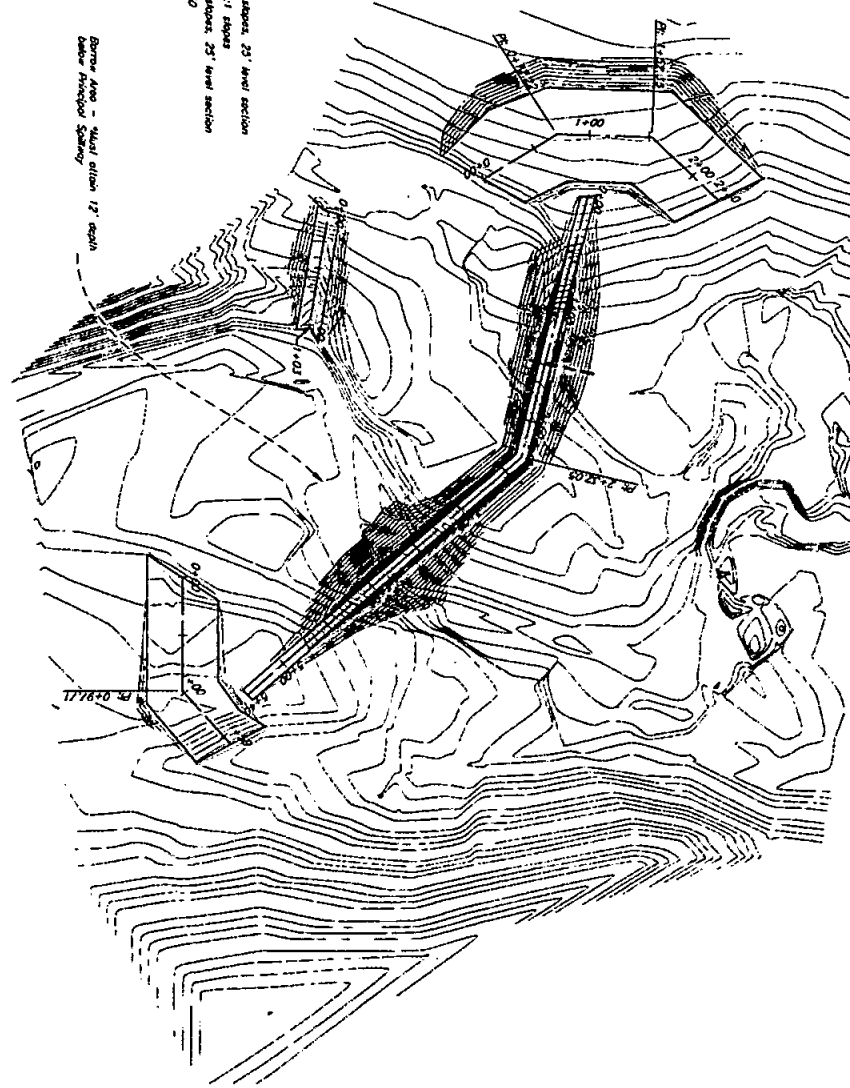
|                                                             |                                                          |
|-------------------------------------------------------------|----------------------------------------------------------|
| Designed: M. O'Dow                                          | 5-28-17                                                  |
| Drawn: M. O'Dow                                             | 5-28-17                                                  |
| Checked: R.B.B.                                             | 7-28-17                                                  |
| Approved: R.E. G. G. G.                                     | 7-28-17                                                  |
| DALE BOYDSTON<br>378 POND<br>PLAN VIEW AND DESIGN DATA      |                                                          |
| SE 1/4, Sec 10, T14N, R11E<br>Ponchaix County, South Dakota |                                                          |
| USDA<br>NATURAL RESOURCES<br>CONSERVATION SERVICE           | File No.<br>Boydston2.dwg<br>Drawing No.<br>Sheet 2 of 2 |



Slopes and Crosses:  
 West Slope: 60' width, 3:1 slope, 25' level section  
 South Crosses: 20' width, 3:1 slopes  
 East Slope: 60' width, 3:1 slope, 25' level section  
 Projected Slope Station 1+50

Bottom Area - 1/4" at 12' depth  
 before proposed Slope

PLAN VIEW

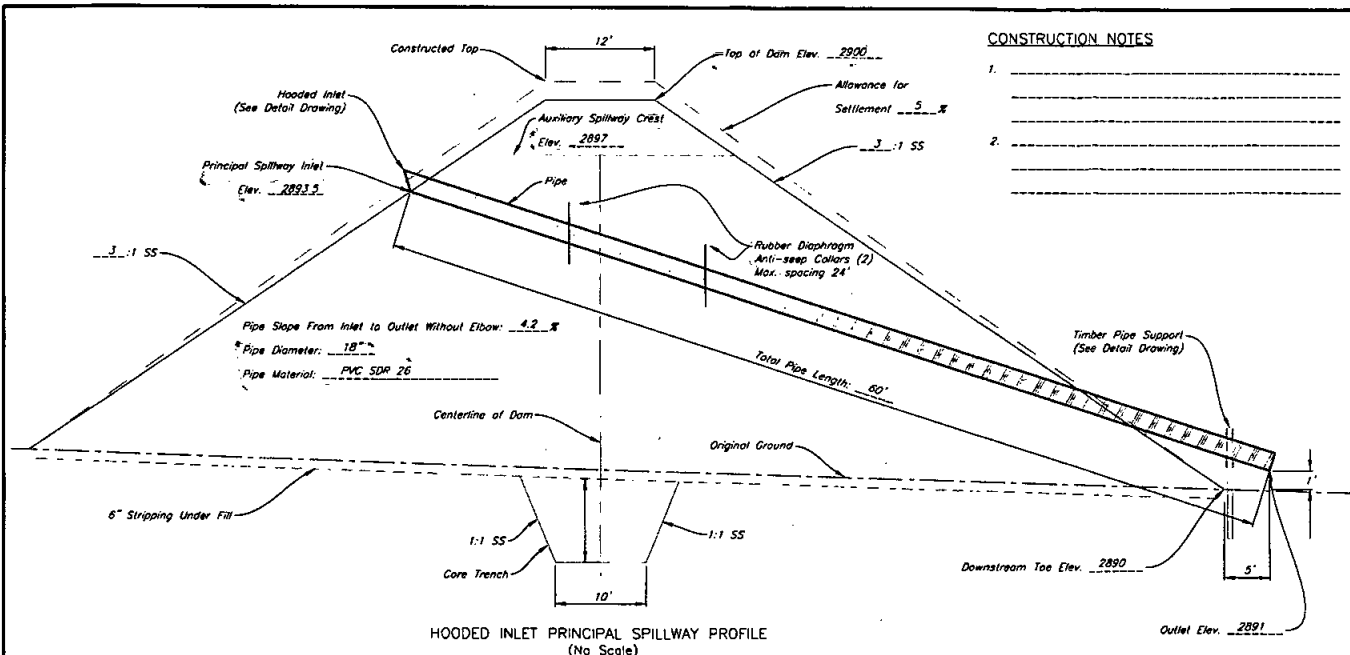


Sheet 1 of 1

File No.  
 Boydston 378  
 Drawing No.

**USDA** United States  
 Department of  
 Agriculture  
 Natural Resources  
 Conservation Service

|                                                         |  |                                       |  |
|---------------------------------------------------------|--|---------------------------------------|--|
| <b>DALE BOYDSTON<br/>         378 POND</b><br>PLAN VIEW |  | Designed <i>M. O'Deno</i> 5-25-77     |  |
|                                                         |  | Drawn <i>M. O'Deno</i> 5-25-77        |  |
| SE 1/4, Sec 10, T1N R11E                                |  | Checked <i>LEG</i> 9-28-77            |  |
| Pennington County, South Dakota                         |  | Approved <i>Ray E. Becken</i> 9-29-77 |  |



**CONSTRUCTION NOTES**

1. \_\_\_\_\_
2. \_\_\_\_\_

**TRENCH SAFETY NOTES**

1. All trench work shall comply with the Occupational Safety and Health Administration (OSHA) regulations.
2. Any trench over four (4) feet deep shall have a means of egress from the trench by a ladder, ramp, or other means of egress; and
3. Any trench over five (5) feet deep shall be protected from cave-ins by a shoring, benching or shoring protection system. Benches must be constructed so the overall slope meets the slope required by OSHA regulations.

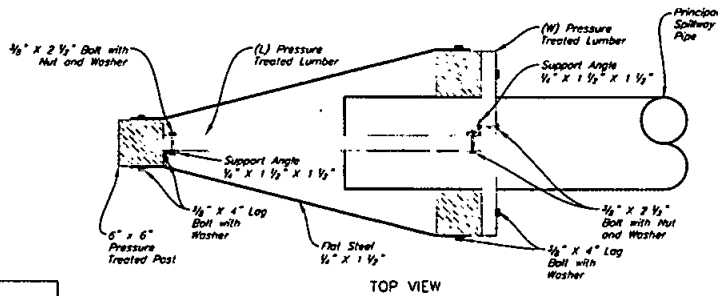
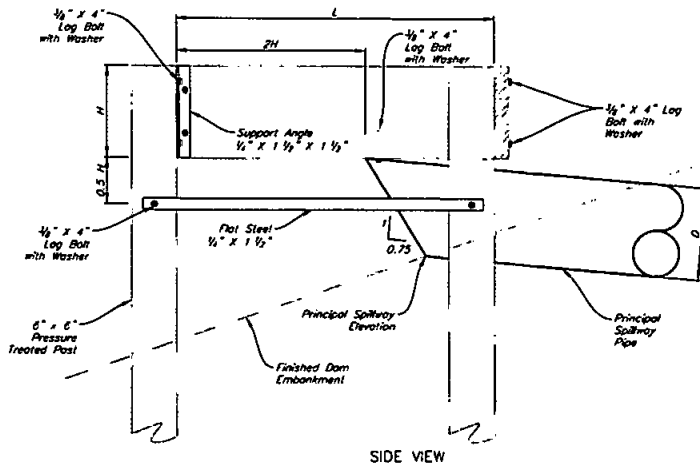
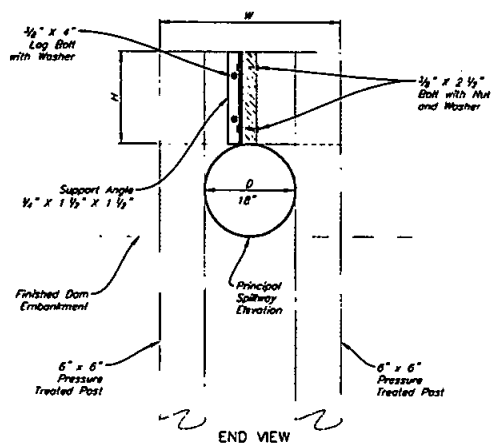
HOODED INLET PRINCIPAL SPILLWAY PROFILE

|                    |         |
|--------------------|---------|
| Designed: M. O'Dea | 5-25-17 |
| Drawn: M. O'Dea    | 5-25-17 |
| Checked: J. E. H.  | 5-25-17 |
| Approved: J. E. H. | 5-25-17 |

**DALE BOYDSTON**  
**378 POND**  
 PROFILE OF PRINCIPAL SPILLWAY  
 Pennington County, South Dakota  
 SC 1/4, Sec 10, T1N 11E

United States Department of Agriculture  
**USDA**  
 Natural Resources Conservation Service

File No. Boydston2.dwg  
 Drawing No. \_\_\_\_\_  
 Sheet 4 of 4



| Pipe Dia. (D) | (H) | No. of Posts 6" x 6" (6' Long) | Pressure Treated Lumber (L) | No. of L | Pressure Treated Lumber (W) | No. of W |
|---------------|-----|--------------------------------|-----------------------------|----------|-----------------------------|----------|
| 10"           | 10" | 2                              | 2" x 10" x 2'-11"           | 1        | 2" x 10" x 1'-10"           | 1        |
| 12"           | 12" | 2                              | 2" x 12" x 3'-6"            | 1        | 2" x 12" x 2'-0"            | 1        |
| 15"           | 16" | 2                              | 2" x 8" x 4'-3"             | 2        | 2" x 8" x 2'-3"             | 2        |
| 18"           | 20" | 2                              | 2" x 10" x 5'-0"            | 2        | 2" x 12" x 2'-6"            | 2        |

| Pipe Dia. (D) | 1 1/2" x 1 1/2" x 1/2" Steel Angle Length | No. Angle | 1 1/2" x 1/2" Flat Steel Length | No. Flat | Number of Log Bolts with Washers 1/2" x 4" | Number of Bolts with Nuts and Washers 1/2" x 2 1/2" |
|---------------|-------------------------------------------|-----------|---------------------------------|----------|--------------------------------------------|-----------------------------------------------------|
| 10"           | 0'-10"                                    | 2         | 3'-0"                           | 2        | 11                                         | 6                                                   |
| 12"           | 1'-0"                                     | 2         | 3'-6"                           | 2        | 11                                         | 6                                                   |
| 15"           | 1'-4"                                     | 2         | 4'-6"                           | 2        | 17                                         | 12                                                  |
| 18"           | 1'-8"                                     | 2         | 5'-4"                           | 2        | 17                                         | 12                                                  |

#### CONSTRUCTION NOTES

1. All nuts, bolts, and washers shall be galvanized.
2. Steel bar and angle shall be clean and dry. Paint with two coats of zinc-rich cold galvanized compound or zinc dust - zinc oxide primer.
3. Log bolt through top of pipe shall be 1/2" x 4" with large washer on the pipe side.

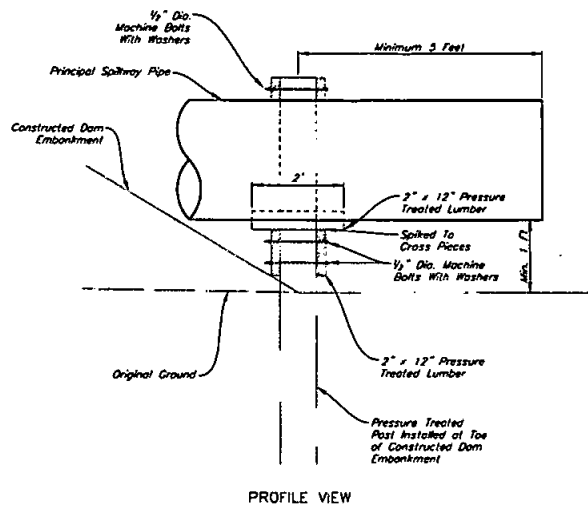
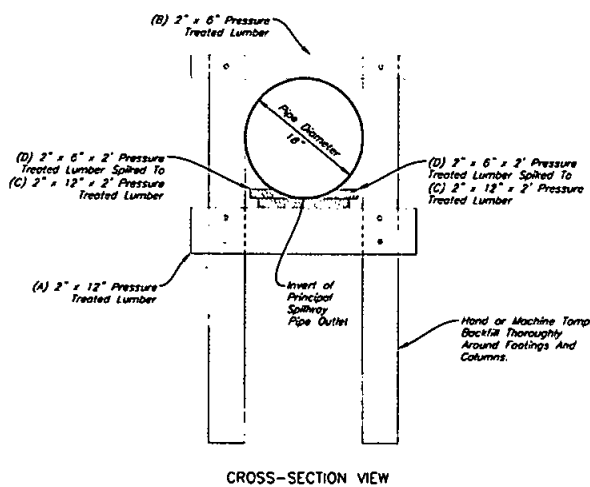
THREE POST BAFFLE, HOODED INLET,  
AND TRASH RACK  
JC3 PLAN 5.4CI REV. 1/2012

|                      |         |
|----------------------|---------|
| Designed: M. O'Brien | 5-25-17 |
| Drawn: M. O'Brien    | 5-25-17 |
| Checked: J.E.B.      | 7-29-17 |
| Approved: J.E.B.     | 7-29-17 |

DALE BOYDSTON  
378 POND  
THREE POST BAFFLE, HOODED INLET AND TRASH RACK  
Pendleton County, South Dakota  
SE 1/4, Sec 10, T1N, R1E

USDA  
Natural Resources  
Conservation Service

File No: Boydston2.dwg  
Drawing No: ---  
Sheet: 1 of 1



| LENGTHS REQUIRED FOR DIFFERENT PIPE DIAMETERS |                                       |            |            |            |          |
|-----------------------------------------------|---------------------------------------|------------|------------|------------|----------|
| ITEM                                          | MATERIAL SIZES BASED ON PIPE DIAMETER |            |            |            | QUANTITY |
|                                               | 12" TO 18"                            | 21" TO 24" | 30" TO 36" | 42" TO 48" |          |
| 8" Dia. Pressure Treated Post                 | 8 ft                                  | --         | --         | --         | 2        |
| 10" Dia. Pressure Treated Post                | --                                    | 10 ft      | 10 ft      | 12 ft      | Each     |
| (A) 2" x 12" Pressure Treated Lumber          | 4 ft                                  | 4 ft       | 5 ft       | 6 ft       | Each     |
| (B) 2" x 6" Pressure Treated Lumber           | 4 ft                                  | 4 ft       | 5 ft       | 6 ft       | Each     |
| (C) 2" x 12" Pressure Treated Lumber          | 2 ft                                  | 2 ft       | 2 ft       | 2 ft       | Each     |
| (D) 2" x 6" Pressure Treated Lumber           | 2 ft                                  | 2 ft       | 2 ft       | 2 ft       | Each     |
| 1/2" Dia. Machine Bolts With Nuts             | 12 in.                                | 14 in.     | 14 in.     | 14 in.     | Each     |
| 1/2" Dia. Washers                             |                                       |            |            |            | Each     |
| Splice Nuts                                   |                                       |            |            |            | Each     |

#### CONSTRUCTION NOTES

1. All nuts, bolts, and washers shall be galvanized.
2. If PVC pipe is used, protect the portions of pipe that will be permanently exposed to ultraviolet light from sunlight by priming the pipe with PVC solvent and painting with two coats high quality exterior latex paint.
3. Hand or machine tamp backfill thoroughly around footings and columns.

11MBER PIPE SUPPORT  
JOB PLAN NO. 4.0 REV. 1/2012

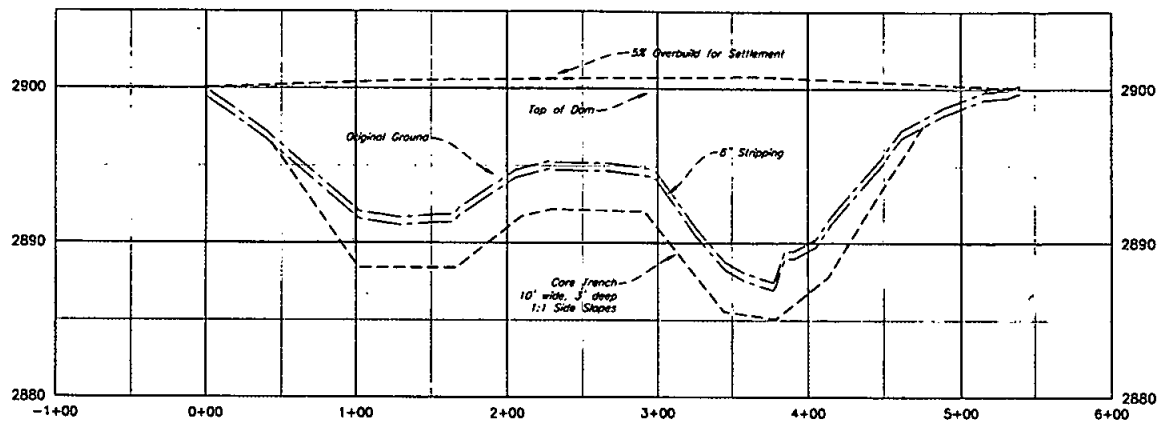
|                        |         |
|------------------------|---------|
| Designed: M. O'Dea     | 5-25-17 |
| Drawn: M. O'Dea        | 5-25-17 |
| Checked: LPA           | 7-28-17 |
| Approved: K. E. Bunker | 5-25-17 |

DALE BOYDSTON  
378 POND  
TIMBER PIPE SUPPORT

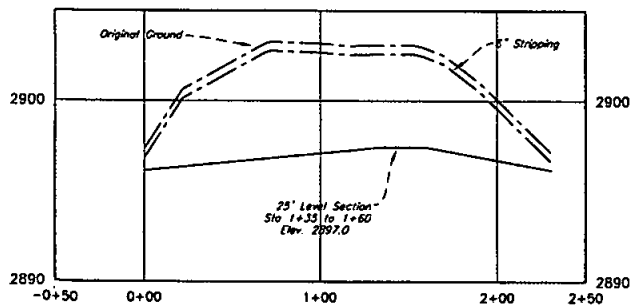
SE 1/4, Sec. 10, T1N, R1E  
Pawnee County, South Dakota

USDA  
UNITED STATES  
DEPARTMENT OF  
AGRICULTURE  
Natural Resources  
Conservation Service

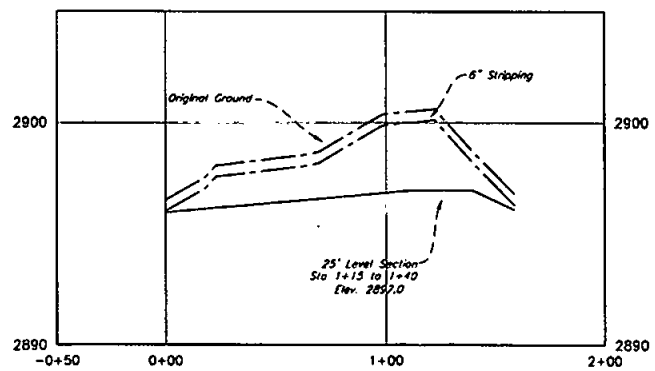
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Drawing No.  
Sheet 1 of 1



Pond CL PROFILE



CL West Spillway PROFILE



CL East Spillway PROFILE

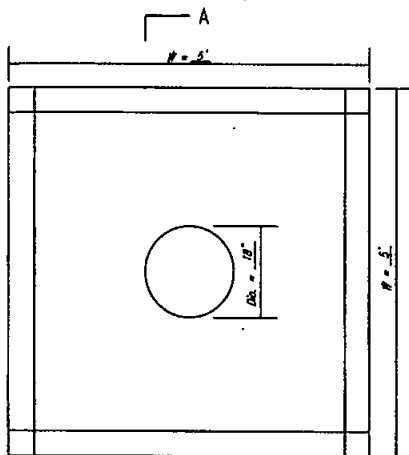
Designed by M. O'Neil  
 Drawn by M. O'Neil  
 Checked by J. E. B.  
 Approved by J. E. B.

DALE BOYDSTON  
 378 POND  
 COVER SHEET

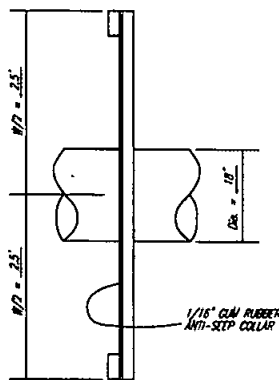
SE 1/4, Sec. 18, T. 11N, R. 11E

USDA  
 NATIONAL  
 SERVICE  
 SOIL CONSERVATION SERVICE

File No.  
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 Drawing No.  
 Sheet 1 of 1



ELEVATION



SECTION A - A

TABLE OF QUANTITIES

| PIPE DIA.<br>INCHES | " W<br>FEET | MAXIMUM<br>COLLAR<br>SPACING | NUMER<br>OF COLLARS<br>EA. |
|---------------------|-------------|------------------------------|----------------------------|
| 10                  | 4           | 27'                          |                            |
| 12                  | 4           | 21'                          |                            |
| 15                  | 4           | 15'                          |                            |
| 18                  | 5           | 24'                          | 2                          |

NOTE:

1. Cut a ROUND hole (SMOOTH NOT-MOURED) .33\" smaller than pipe size in center of Collar.  
Cut is very important to maintain water-tightness around pipe.  
(DO NOT CUT X or SPLIT PIPE CAUSE RUBBER TO RIP; MUST BE A ROUND HOLE)
2. Insert Collar over pipe from UPSTREAM to DOWNSTREAM direction.
3. Collars are supplied by Agri Drain, 1452 340 St. Acton MA 02002 (1-800-252-4742).

Number of Collars Required:

- L1 = Distance from Riser or Inlet to Centerline of Dam  
L2 = Distance from Centerline of Dam to downstream intersection of backslope  
and Pipe outlet as measured along the pipe.

$$\frac{0.15 (L1 + L2)}{\text{Height of Collar minus Diameter of Pipe}} = \frac{0.15 ( \frac{14}{3.5} + \frac{35}{3.5} )}{3.5} = \frac{2.1}{3.5}$$

RUBBER DIAPHRAGM  
ANTI-SEEP COLLAR

|                                                                                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Date <u>6/27/2017</u><br>Drawn <u>M. O'Brien</u><br>Checked <u>W. J. Smith</u><br>Approved <u>W. J. Smith</u>                                  |  |
| PRODUCER <u>DATA BOX DESIGN</u><br>SECT. <u>1. L. ROAD R. ILLINOIS</u><br>COUNTY <u>CO. JEFFERSON</u><br>DISTRICT <u>CONSERVATION DISTRICT</u> |  |
| USDA - NRCS<br>FIELD SUPPORT OFFICE<br>1530 S. MAIN ST.<br>RENO, NV 89501                                                                      |  |
|                                                                                                                                                |  |
| The National Conservation Resource Center<br>United States Department of Agriculture                                                           |  |

# Water Permit Application No. 2777-Z

## Dale Boydston

$$\left. \begin{array}{l} \text{Top of Dam Elevation} - 2900.0 \\ \text{2nd Spillway Elevation} - 2897.0 \\ \text{P. Spillway Elevation} - 2893.5 \\ \text{O/S Emb Toe Elevation} - 2888.0 \end{array} \right\} \text{Hd} = 12 \text{ ft.}$$

Cat. 3 - Low Hazard Dam

$$\begin{array}{l} \text{Normal Storage Capacity} - 35.55 \text{ Ac-Ft} \\ \text{Int. Storage Capacity} - 65.35 \\ \text{Max. Storage Capacity} - 100.90 \end{array}$$

$$\text{Eff. Hd.} \times \text{Int. Capacity} = 12 \times 65.35 = 784 < 3000 \therefore \text{25 year Minimum Spillway Design}$$

From USGS WRI 98-4055 "Tab. for Est Peak Flow in SD"  
Region C DA = 681 Ac. 1.06 mi<sup>2</sup>

$$Q_{25} = 207 \text{ cfs}^{.573}$$

$$= 207(1.06)^{.573}$$

$$= 207(1.074)$$

$$= \underline{214 \text{ cfs}}$$

$$Q_{100} = 379 \text{ cfs}^{.566}$$

$$= 379(1.06)^{.566}$$

$$= 379(1.07385)$$

$$= \underline{392 \text{ cfs}}$$

## Secondary Spillway Capacity

$$Q = CLH^{2.6} \quad C = 2.6$$

$$= 2.6(140 \times 3)^{2.6} \quad L = 140 \text{ (2-tubes)} \quad H = 3 \text{ ft}$$

$$= \underline{1890 \text{ cfs}}$$

## NRCS Annual Yield

$$CN = 79 \text{ DA} = 681 \text{ Ac. ISO} = 2.0$$

Section 74:02:08:09

1. Topo Map - OK
2. Dam Axis Profile - OK
3. Dam Max X sec - OK
4. Area Capacity - OK
5. Outlet Details - OK
6. Spillway Rating - OK
7. Spillway Details - OK
8. Spem - See Notes - OK
9. EPP - Note Cat. 3 - OK

$$80\% \text{ chance} = 0.23$$

$$0.23 \times 681 \text{ Ac} = \underline{156 \text{ Ac-Ft}}$$

$$50\% \text{ chance} = 0.58$$

$$0.58 \times 681 \text{ Ac} = \underline{395 \text{ Ac-Ft}}$$

$$10\% \text{ chance} = 2.4$$

$$2.4 \times 681 \text{ Ac} = \underline{1634 \text{ Ac-Ft}}$$



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE SOUTH DAKOTA 57501-3182  
<http://denr.sd.gov>

December 13, 2017

Dale Boydston  
PO Box 248  
New Underwood, SD 57761

Dear Mr. Boydston:

We have reviewed the plans and specifications for your dam project located in the SE ¼ SE ¼ of Section 10-T1N-R11E, in Pennington County. The plans and specifications for the construction of the dam are approved. Approval of the plans and specifications does not authorize construction of the dam. The construction of the dam may not begin until Water Permit Application No. 2777-2 is approved.

Our review was to determine compliance with the requirements of the Water Management Board Safety of Dams Rules, Chapter 74:02:08. Approval of these plans and specifications does not release you, as owner of the dam, from the responsibility for operating and maintaining the dam in good repair to ensure the safety of the dam.

The Boydston Dam will be classified as a small size Category 3, Low Hazard dam with a dam height of 12.0 feet and a normal storage capacity of 35.6 acre-feet and a maximum storage capacity of 101 acre-feet.

If you have any questions, please feel free to contact us.

Sincerely,

Timothy G. Schaal, P.E.  
Engineer IV  
for Jeanne Goodman, Chief Engineer  
Water Rights Program  
(605) 773-3352

c: Roy Boschec, NRCS Rapid City

RECEIVED

DEC 27 2017

WATER RIGHTS  
PROGRAM

# Affidavit of Publication

STATE OF SOUTH DAKOTA

County of Pennington

SS:

Sheri Sponder being first duly sworn, upon his/her oath says: That he/she is now and was at all time hereinafter mentioned, an employee of the RAPID CITY JOURNAL, a corporation of Rapid City, South Dakota, the owner and publisher of the RAPID CITY JOURNAL, a legal and daily newspaper printed and published in Rapid City, in said County of Pennington, and has full and personal knowledge of all the facts herein stated as follows: that said newspaper is and at all of the times herein mentioned has been a legal and daily newspaper with a bonafide paid circulation of at least Two Hundred copies daily, and has been printed and published in the English language, at and within an office maintained by the owner and publisher thereof, at Rapid City, in said Pennington County, and has been admitted to the United States mail under the second class mailing privilege for at least one year prior to the publication herein mentioned; that the advertisement, a printed copy of which, taken from said Rapid City Journal, the paper in which the same was published, is attached to this sheet and made a part of this affidavit, was published in said paper once each day for one successive day, the first publication there of being on the 20th day of Dec 2017 that the fees charged for the publication there of are 63 dollars and 40 cents.

Sheri Sponder

Subscribed and sworn to before me this 21<sup>st</sup>  
day of December, 2017.

Kerri Berard  
Notary public

02/2019

My commission expires

**NOTICE OF APPLICATION**

NO. 2777-2 to

Appropriate Water

Notice is given that Dale Boydston, PO Box 248, New Underwood SD 57761 has filed an application for a water permit to impound 35.6 acre-feet of water from runoff by constructing a dam located in the SE 1/4 SE 1/4 Section 10 with water impounded in the SE 1/4 SE 1/4 Section 10 and NE 1/4 NE 1/4 Section 15; all in T1N-R11E which is approximately four miles southeast of New Underwood SD. The water is for livestock watering purposes.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2777-2 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <http://denr.sd.gov/public> or contact Eric Gronlund for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by January 2, 2018.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

If the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the recommendation with no hearing held before the Water Management Board. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider this application. Notice of the hearing will be given to the applicant and any person filing a petition.

Steven M Pirner,  
Secretary  
Department of Environment  
and Natural Resources

(Published once at the total approximate cost of \$63.48)

KERRI BERARD

NOTARY PUBLIC  
SOUTH DAKOTA

## Schlaak, Karen

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**From:** Schlaak, Karen  
**Sent:** Tuesday, December 12, 2017 4:41 PM  
**To:** RCY Legals (legals@rapidcityjournal.com)  
**Subject:** 2777-2, Dale Boydston  
**Attachments:** 2777-2public.short.docx; FORM8.FRM.doc

Attached is a notice to be published on December 20, 2017.

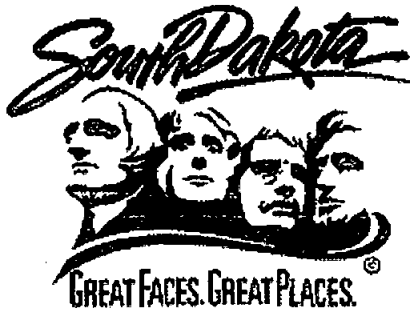
Dale Boydston, PO Box 248, New Underwood SD 57761 (605 484-3027) has been notified to contact you to authorize publication and arrange for payment.

Please send the affidavit or return the attached Proof of Publication form ASAP to the Water Rights Program, 523 E Capitol, Pierre SD 57501.

Let me know if you have questions. Please acknowledge receipt of this email.

*Karen Schlaak*  
SD DENR, Water Rights Program  
(605) 773-3352





**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE SOUTH DAKOTA 57501-3182  
<http://denr.sd.gov>

**NOTE: TO BE SURE OF PUBLICATION ON  
THE CORRECT DATES, CONTACT  
THE NEWSPAPER RIGHT AWAY.**

December 13, 2017

Dale Boydston  
PO Box 248  
New Underwood SD 57761

Dear Mr. Boydston:

Water Permit Application No. 2777-2 for livestock watering use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Rapid City Journal (Ph # 605-394-8300). You will need to contact the newspaper and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper to authorize publication of your Notice and to arrange for payment. Early contact with the paper can eliminate delays. Upon receiving authorization from you, the publisher has been instructed to publish your notice. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,

Eric Gronlund  
Natural Resources Engineer  
(605) 773-3352

enclosures

**NOTE:** If you plan to contest any part of the Chief Engineer's recommendation, you must file a petition pursuant to the procedures outlined in the attached notice of hearing. The Water Management Board will then consider your concerns during a hearing on the application.

Instruction to Newspaper - Publish the Notice on December 20, 2017. The applicant is responsible for payment.

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NOTICE OF APPLICATION NO. 2777-2 to Appropriate Water

Notice is given that Dale Boydston, PO Box 248, New Underwood SD 57761 has filed an application for a water permit to impound 35.6 acre-feet of water from runoff by constructing a dam located in the SE 1/4 SE 1/4 Section 10 with water impounded in the SE 1/4 SE 1/4 Section 10 and NE 1/4 NE 1/4 Section 15; all in T1N-R11E which is approximately four miles southeast of New Underwood SD. The water is for livestock watering purposes.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2777-2 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <http://denr.sd.gov/public> or contact Eric Gronlund for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by January 2, 2018.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

If the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the recommendation with no hearing held before the Water Management Board. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider this application. Notice of the hearing will be given to the applicant and any person filing a petition.

Steven M. Pirner, Secretary, Department of Environment and Natural Resources. Published once at the total approximate cost of \_\_\_\_\_.



**DEPARTMENT of ENVIRONMENT  
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<http://denr.sd.gov>

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT  
APPLICATION NO. 2777-2, Dale Boydston**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 2777-2, Dale Boydston, PO Box 248, New Underwood SD 57761.

The Chief Engineer is recommending APPROVAL of Application No. 2777-2 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualifications:

1. Water Permit No. 2777-2 authorizes an impoundment with a storage capacity of 35.6 acre feet of water.
2. Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.

See report on application for additional information.

Jeanne Goodman, Chief Engineer  
December 13, 2017

REPORT ON  
WATER PERMIT APPLICATION No. 2777-2  
Dale Boydston  
December 12, 2017

Water Permit Application No. 2777-2 has been filed by Dale Boydston to impound 35.6 acre-feet of water from runoff by constructing a dam located in the SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  of Section 10-T1N-R11E, in Pennington County. The water will be used for livestock watering purposes.

Discussion:

The dam will be classified as a small size, Category 3, Low Hazard dam. The dam has been designed by the Natural Resources Conservation Service (NRCS). The plans and specifications have been reviewed and will be approved; however, construction of the dam cannot begin until Water Permit Application No. 2777-2 is approved.

The dam will be 12 feet high with a normal storage capacity of 35.6 acre-feet with a reservoir level at the primary spillway elevation, and a maximum storage capacity of 101 acre-feet with a reservoir level at the top of dam elevation. A dam of this size and hazard classification is required to have a minimum spillway design capable of passing a 25-year frequency event.

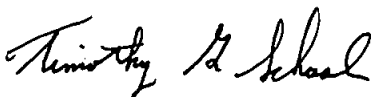
The dam has a drainage area of 681 acres or 1.06 square miles. The dam will have an 18 inch diameter PVC conduit with 6.5 feet of freeboard as the primary spillway; and two earthcut secondary spillways with a total width of 140 feet and 3.0 feet of available freeboard. A 25-year frequency event produces a peak runoff of approximately 214 cfs and a 100-year frequency event produces a peak runoff of approximately 392 cfs. The earthcut secondary spillways will have a total capacity of approximately 1890 cfs.

The annual yield for this drainage area with an 80 percent chance of occurrence, or 8 out of 10 years, is expected to be 13 acre-feet. The annual yield with a 50 percent chance of occurrence, or 1 out of 2 years, is expected to be 33 acre-feet. The annual yield with a 10 percent chance of occurrence, or 1 out of 10 years, is expected to be 136 acre-feet.

The Boydston Dam will be located in the SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  of Section 10-T1N-R11E on an unnamed tributary to Boxelder Creek, about two miles upstream of the confluence of the unnamed tributary and Boxelder Creek. There are no existing Water Rights/Permits filed on the unnamed tributary between the proposed dam and Boxelder Creek

Conclusions:

1. Water Permit Application No. 2777-2 should be approved since unappropriated water is available and approval should not have any adverse effect on existing Water Permits/Rights.
2. If approved, the low flow bypass requirement for downstream domestic use should be a qualification on Water Permit Application No. 2777-2.



Timothy G. Schaal, P.E.  
Engineer IV



DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES

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PIERRE SOUTH DAKOTA 57501-3182  
<http://denr.sd.gov>

JAN 09 2018

Dale Boydston  
PO Box 248  
New Underwood SD 57761

Dear Mr. Boydston:

Enclosed is Water Permit No. 2777-2 authorizing construction of the water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, is enclosed. Please return this completed form after you have finished the system and have put the water to beneficial use. An investigation can then be scheduled so the water license may be issued, thus completing the acquisition of a water right.

An informational sheet *Common Water Right Questions?* is also enclosed. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

A handwritten signature in cursive script that reads "Jeanne Goodman".

Jeanne Goodman, Chief Engineer  
Water Rights Program  
(605) 773-3352

enclosures

2777-2

RECEIVED

JAN 29 2018

WATER RIGHTS  
PROGRAMNOTICE OF COMPLETION OF WORKS AND  
APPLICATION OF WATER TO BENEFICIAL USE

Date

1/23/18

TO: Water Rights Program, DENR  
523 E. Capitol  
Pierre, SD 57501-3181

FROM:

Dale Boydston

(name)

22690 161st Ave, PO Box 248

(address)

New Underwood, SD 57761 605 4843027

(city, state, zip)

(phone)

I have completed the construction of the water use system and I have put the water to beneficial use to the maximum extent it is going to be used.

Water Permit No. 2777-2 states that the water use system is to be constructed by

2 Jan 2023

(date)

, and water is to be put to beneficial use by 2 JAN 2027

(date)

The water use system was completed on

1 Dec 2017

(date)

Applying the water to beneficial use was completed on

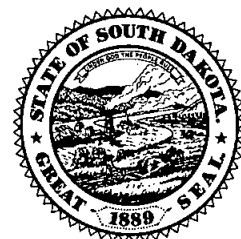
1 Dec 2017

(date)

You may schedule an investigation so that the water license may be issued.

Dale Boydston

(signature)





**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

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523 EAST CAPITOL  
PIERRE SOUTH DAKOTA 57501-3182  
<http://denr.sd.gov>

January 29, 2018

2777-2

Dale Boydston  
PO Box 248  
New Underwood SD 57761-0248

Dear Mr. Boydston:

I am writing to acknowledge receipt of the "Notice of Completion of Works" form that you sent in to let us know your project has been completed.

The system is now ready for inspection. Inspections are done on a county-by-county basis as staff time permits. You have done everything you need to do and the intervening time between the completion of your project and the staff inspection has no bearing on your water permit.

Someone from our office will contact you prior to the inspection to set up a time that is convenient for you. If you have any questions, please contact me.

Sincerely,

  
Genny McMath  
Water Rights Program  
(605) 773-3352  
email: [genny.mcmath@state.sd.us](mailto:genny.mcmath@state.sd.us)

## Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 2777-2

I have this day, June 11, 2018 made a thorough examination of the water use system constructed by Dale Boydston, PO Box 248, New Underwood, So. Dak. 57761 of Permit No. 2777-2, bearing the priority of 10/30/2017 authorizing the diversion and storage of 35.6 acre-feet of water of a dry draw tributary of Box Elder Creek for domestic (livestock) purposes in Pennington County.

Inspection contact & relationship to permit holder, if applicable:

**Dale Boydston, owner**  
**605-484-3027 (cell)**

### A. Dam Information:

- 1) Height to crest 12.0 feet from downstream toe
- 2) Height to primary spillway 5.5 feet from downstream toe
- 3) Height to secondary spillway 9.0 feet from downstream toe
- 4) Crest width 12 feet
- 5) Crest length 540 feet
- 6) Primary Spillway diameter 18 inches
- 7) Secondary Spillway width 140 feet
- 8) Approx. storage to primary spillway 35.6 ac-ft
- 9) Approx. storage to crest 100.9 ac-ft

Date constructed: December 2017

### B. Works used to put water to beneficial use:

This is an earth fill embankment utilizing a PVC pipe principal spillway and two vegetated earth emergency spillways. The water impounded in the reservoir is put to beneficial use in-place.

### C. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by: Yes

List any extended period of nonuse: none

- 2) Exceptions to compliance are: none

### D. Condition and Location:

1. The system is in good condition with the point of diversion located as follows:  
695' W and 320' N of the SE corner Section 10 T1N R11E (44.053493, -102.771599)

The works are capable of diverting to the place of use and storing 35.6 acre-feet of water which is to be used for domestic (livestock) use. Water has been put to beneficial use to the maximum extent and the license should be issued for 35.6 acre-feet storage.

2. All structures, wells and lands on map Yes

E. Comments or other permit(s) associated with the project: none



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Steven Quissell  
Water Rights Inspector  
DENR, Water Rights Program

Date report completed: **6/11/2018**



Top of embankment and front slope from east end of fill

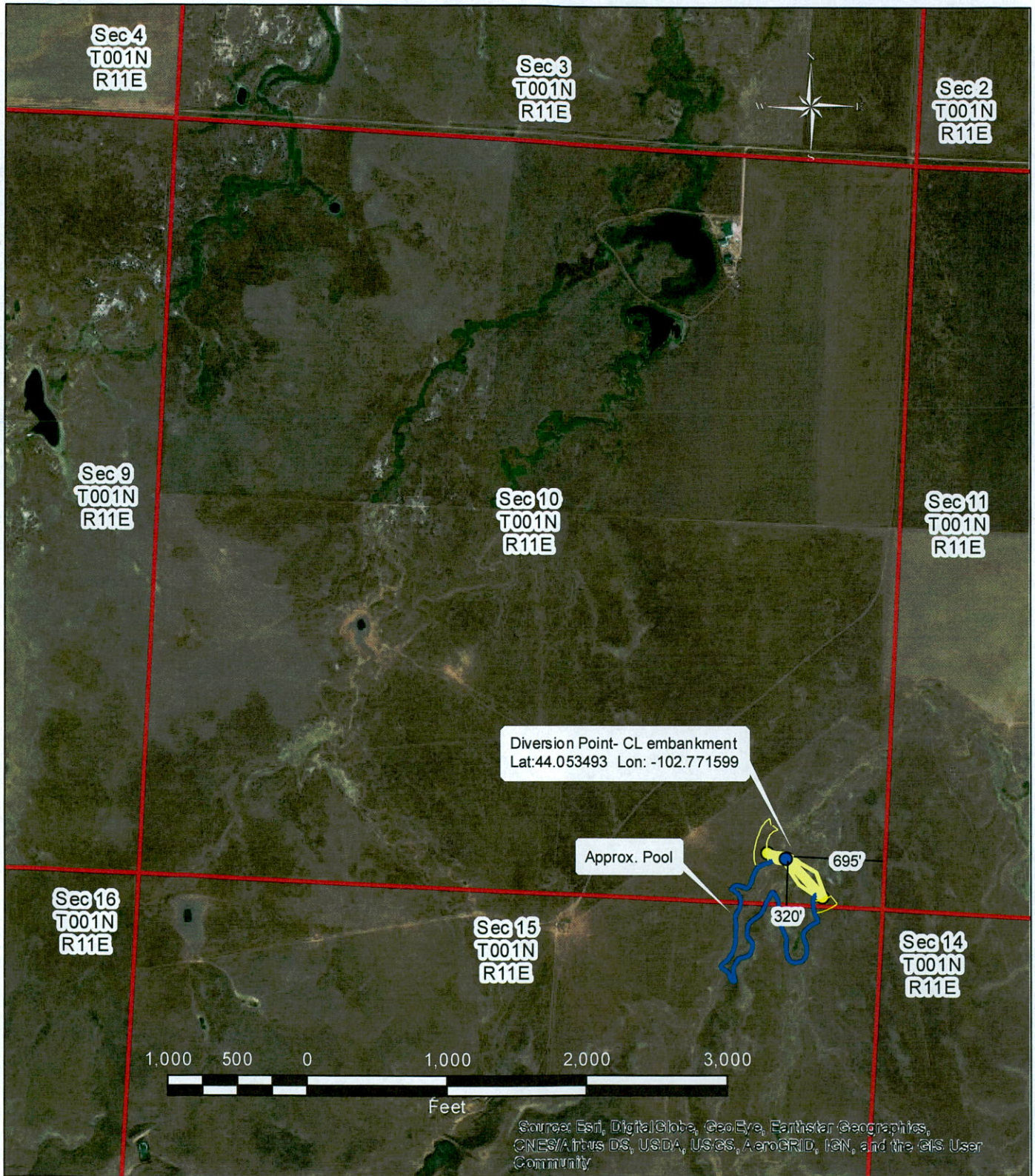


Principal Spillway inlet and anti-vortex/trash rack



Pool @ low water elevation

Water Right # 2777-2  
Dale Boydston  
6/11/2018



*Steven Quissell*

Steven Quissell  
Water Rights Inspector  
DENR Water Rights Program





DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES

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523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182

[denr.sd.gov](http://denr.sd.gov)

JUN 20 2018

2777-2

Dale Boydston  
PO Box 248  
New Underwood SD 57761-0248

Dear Mr. Boydston:

Enclosed is Water License No. 2777-2. This is the final water right document completing your process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

As long as you use the water beneficially, as stated in the Water License, State Water Laws provide that you have a continuing right to use the water.

Sincerely,

Jeanne Goodman, Chief Engineer  
Water Rights Program  
(605) 773-3352

enclosures

# STATE OF SOUTH DAKOTA

## WATER LICENSE NO. 2777-2

(1) Dale Boydston, PO Box 248, New Underwood SD 57761 made Application No. 2777-2, October 30, 2017 for a water permit to impound 35.6 acre feet of water from runoff, Pennington County, South Dakota for domestic livestock watering purposes. Permit No. 2777-2, with a priority date of October 30, 2017 was approved January 2, 2018 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before January 2, 2023 and for the application to beneficial use of said water on or before January 2, 2027.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to impound 35.6 acre feet of water for beneficial use. The location of the impoundment is about four miles southeast of New Underwood with the spillway located:

- 695'W and 320'N of the SE corner Section 10, T1N, R11E (SE ¼ SE ¼ Section 10)  
Latitude 44.053493 and Longitude of -102.771599

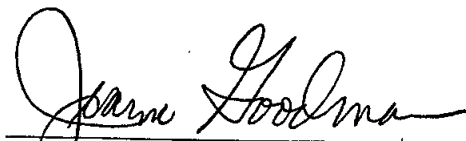
Water is impounded within the SE ¼ SE ¼ Section 10 and the NE ¼ NE ¼ Section 15, T1N, R11E

(3) The permit holder has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use.

(4) Pursuant to South Dakota Water Law 46-5-30.1 Dale Boydston, PO Box 248, New Underwood SD 57761 the holder and/or owner of Water Right No. 2777-2 is issued a license to appropriate water, the right to impound 35.6 acre feet of water from runoff with a priority date of October 30, 2017 from the location specified in (2) of this license for domestic livestock watering purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 2777-2 and subject to the following qualifications:

- Water Right No. 2777-2 authorizes an impoundment with a storage capacity of 35.6 acre feet of water.
- Low flows as needed for downstream domestic use, including livestock water and prior water rights must be bypassed.



Jeanne Goodman, Chief Engineer  
Water Rights Program

Department of Environment and Natural Resources

JUN 20 2018

date

