

WATER PERMIT NO. 8184-3

Name of Applicant: Darrell Nelson

Address: 44023 306th St, Yankton SD 57078

Phone: 605 665-7216

Amount of Water Claimed: 47.4 AF

Total Acres: NA

Source of Water Supply: runoff

Water to be used for: fish & wildlife propagation

County: Yankton

Type of Waste Disposal System:

Location: 3 miles north of Yankton

PRIORITY Date Received: 9-18-15

Application/License Fee: \$ 700

Corrected Application Received: 9-30-15

Period of Annual Use: January 1 – December 31

Remarks:

Diversion Point: NE 1/4 NE 1/4 Sec 14-T94N-
R56W

Water Impounded: N 1/2 NE 1/4 Sec 14-T94N-
R56W

Depth of Well: NA

Well Driller:

Remarks:

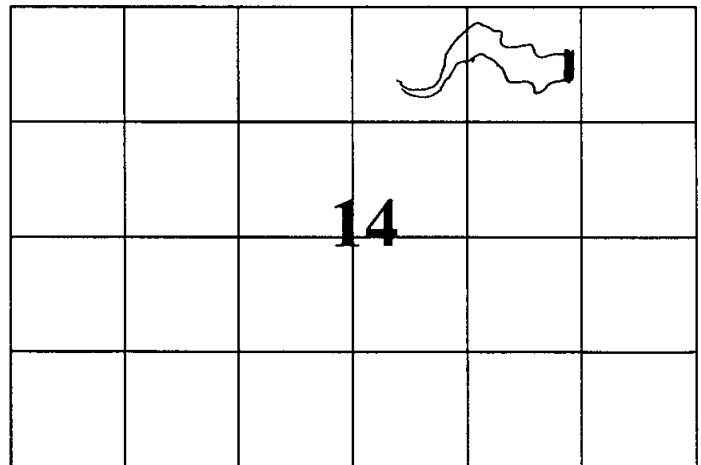
Type of Map: aerial

Prepared by:

Reviewed and the Number Assigned on: 10-7-15

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____



SD EForm - 1585LD V4

FORM 2: Application for uses other than irrigation
(type or print)Mail to:
PMB 2020
DENR - Water Rights
523 E Capitol Ave
Pierre, SD 57501-3182
ph. (605) 773-3352(office use only)
No. 8184-3 Hydrologic Unit 10160011
Basin James River
Newspaper Press & Dakotan
Yankton 605-665-7811

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SEP 18 2015

WATER RIGHTS
PROGRAM

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

Check use(s) of water:

☐ Municipal	☐ Suburban Housing	☐ Recreational	☐ Institutional
☐ Rural Water System	☐ Commercial	☒ Fish & Wildlife	☐ Geothermal Heat
☐ Domestic (over 18 gpm)	☐ Industrial	☐ Other	

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.)

1. Name to Appear on Water Permit Darrell Nelson(check one) ☒ Owner ☐ Tenant/lessee ☐ Owner's Legal Agent

(name and complete address if different than above name)

Mailing Address 44023 306th St. Yankton SD 57078
(Address) (City) (State) (Zip Code)Home Phone 605-665-7216 Cell _____ Email _____2. Amount of water claimed _____ *CFS or _____ **GPM 47.4 ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (***Acre Feet - storage capacity of dam/dugout or annual use if applicable)3. Source of water supply Surface water runoff - water impoundment N 1/2 NE 1/4 Sec 14 T94N R56W4. Location of point of diversion NE1/4 NE1/4, Sec. 14, T94N, R56W County Yankton
(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 ☒ No

If "Yes," where will water be used? _____

(example - NW1/4 section 12-T104N-R53W)

5. County or counties where water will be used Yankton6. Annual period during which water is to be used Year round 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)

An earthen embankment (dam) is to be constructed across an unnamed drainage to an effective height of 28.4 feet. It will be built with 3:1 side slopes up and down stream. It will have a principal spillway with a 48 inch diameter riser and 24 inch diameter pipe leaving the riser. The auxiliary spillway will be 58 feet wide with 3:1 side slopes.

I, Darrell Nelson, the applicant, certify that I have read this application, have examined the attached map, and that the matters stated are true.

SOUTH DAKOTA
WATER PERMIT NO. 8184-3

Date of first receipt of application September 18, 2015.

Date of return to applicant for corrections, amendments or changes September 21, 2015.

Date of receipt of corrected application September 30, 2015.

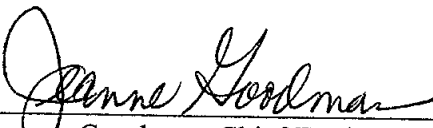
The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8184-3 to Darrell Nelson, 44023 306th St., Yankton SD 57078 authorizing the construction of the dam and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 8184-3 authorizes impoundment of 47.4 acre-feet of water from runoff by constructing a dam located in the NE 1/4 NE 1/4 Section 14 with water impounded in the N 1/2 NE 1/4 Section 14; all in T94N-R56W.
2. The water appropriated shall be used for the purpose of fish and wildlife propagation and 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. 8184-3 is November 30, 2015.
5. The date from which applicant may claim right is September 18, 2015.
6. One-fifth of the construction is to be completed on or before May 30, 2018.
7. All construction is to be completed on or before November 30, 2020.
8. Water is to be put to beneficial use on or before November 30, 2024.
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. 8184-3 authorizes an impoundment with a storage capacity of 47.4 acre feet of water and sufficient water annually to maintain the water level to the outlet elevation at 1,278.0 feet mean sea level.
2. Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.

WATER MANAGEMENT BOARD

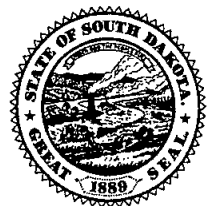
By: 

Jeanne Goodman, Chief Engineer
Water Rights Program

Department of Environment and Natural Resources

DEC 1 1 2015

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 ____
- c) Well Depth ____ Depth to Top of Water Bearing Material ____ Depth to Water from Surface ____
- d) Distance to nearest existing domestic well:
On applicant's property ____ On 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

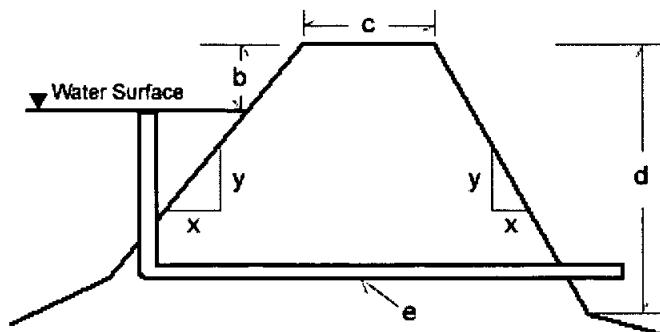
3. Dugout Information

- 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:
Natural Resources Conservation Service
1820 N Kimball St
Mitchell, SD 57301



- b) Freeboard 6.3
- c) Crest Width 15
Crest Length 325
- d) Height 32.9
- e) Primary Outlet Capacity 77.1 cfs
If pipe, diameter 24 inch
- f) Secondary Spillway Capacity 487 cfs
Spillway Width 58 feet
- g) X & Y Slope (e.g. 3 to 1 is a typical slope)
Upstream 3:1
Downstream 3:1
- h) Surface Area of Impoundment 6.12 acres
- i) Storage 47.4 Acre Feet
- j) Drainage Area Above Dam 897.0 Acres

Sec 10
T094N
R56W

Sec 11
T094N
R56W

Sec 12
T094N
R56W

Sec 15
T094N
R56W

Sec 14
T094N
R56W

Sec 13
T094N
R56W

Sec 22
T094N
R56W

Sec 23
T094N
R56W

Sec 24
T094N
R56W

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 9/30, 20 15

RECEIVED OF Morris Nelson Farms Darrell Nelson 44023 306th St Yankton SD 57078

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

Fee for Application for Permit No. _____ to Appropriate Water, to construct and to put water to beneficial use	450	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. _____	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	650	00

No. 07497

By J. Lorne Holman eg
Chief Engineer

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 9/18, 20 15

RECEIVED OF Morris Nelson Farms 44023 306th St Yankton SD 57078

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

Fee for Application for Permit No. _____ to Appropriate Water, to construct and to put water to beneficial use	50	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. _____		
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	50	00

No. 07492

By J. Anne Holman
Chief Engineer

Entity Detail	File Annual Report	Statement of Change	Forms
Name	MORRIS NELSON FARMS, INC. Obtain a Certificate of Good Standing		
Corporate ID	DF016595		
Incorporation/Qualification Date	4/16/1979		
Home State	SOUTH DAKOTA		
Status	Good Standing		
Last Annual Report	2015		
Corporation Type	Domestic Farm		
Stock Info	10,000 @ 100		
Registered Agent	Documents	Officers	

Year	Director	Officer Type	First	Middle	Last	Address	City	State	Zip	Country
2015	☒	President	DARRELL	L.	NELSON	44023 306TH ST	YANKTON	SD	57078-6008	
2015	☒	Vice President	DAVID	G.	NELSON	44112 306TH ST	YANKTON	SD	57078-6011	
2015	☒	Secretary	DENNIS	M.	NELSON	4517 PENINAH ST	YANKTON	SD	57078-6013	
2015	☒	Treasurer	DENNIS	M.	NELSON	4517 PENINAH ST	YANKTON	SD	57078-6013	
2015	☐		MORRIS	I	NELSON	440233 306TH ST	YANKTON	SD	57078-6008	
2015	☐		DENNIS	M	NELSON	4517 PENINAH ST	YANKTON	SD	57078-6013	
2015	☐		DARRELL	L	NELSON	44023 306TH ST	YANKTON	SD	57078-6008	
2015	☐		DAVID	G	NELSON	44112 306TH ST	YANKTON	SD	57078-6011	

Mail to: PMB 2020
DENR - Water Rights Program
523 E Capitol Ave
Pierre, SD 57501-3182

ph. (605) 773-3352

LOCATION NOTICE FOR DAM\DUGOUT

Location Notice No. (Office Use)

I, Darrell Nelson, of _____, of _____

Name

44023 306th St.

Address

Yankton

City

SD

State

57078

Zip Code

(check one) ☒ owner, ☐ operator, of the following described land, do hereby notify the Water Management Board of the State of South Dakota and all others concerned that I am exercising my right under SDCL 46-4, for construction of a (check one) ☒ dam, ☐ ¹dugout for the purpose of impounding runoff waters for fish and wildlife purposes.
(type of use - livestock, recreation, fish & wildlife, etc.)

The following data is presented in compliance with SDCL 46-4-3 and 46-4-4.

(1) Date of:

(a) This notice August 24, 2015

(b) Proposed construction September 24, 2015

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**WATER RIGHTS
PROGRAM**

(2) Legal description of the land upon which the dam\dugout is located:

NE1/4, NE1/4, Sec.14, T94N, R56W

(describe to the nearest 40 acre subdivision, e.g. NE1/4SW1/4 section 10-T98N-R65W)

(3) Location of the dam/dugout from a section corner:

510' South and 440' West of the NE section corner of Sec. 14

(describe distance N.S.E.W. in feet from the section corner)

(4) County where dam\dugout is located Yankton

(5) Name of landowner Darrell Nelson

(6) ²Acre feet of water claimed annually 47.4

¹ A location notice is required for a dugout only if the dugout captures surface runoff.

² If the storage of the proposed structure at the spillway crest or overflow elevation exceeds twenty five (25) acre feet, a water permit from the Water Management Board is required.

(7) Complete the following information for the proposed dam/dugout:
(Items to be completed for a dugout are marked with an asterisk '*')

*a) Dam/Dugout designed by **Natural Resources Conservation Service**
1820 N Kimball St.
Mitchell, SD 57301

b) Freeboard 6.3

c) Crest Width 15

Crest Length 325

d) Height 32.9

*Depth, if Dugout

e) Outlet Dimensions

Pipe diameter 24 inch

Spillway width 58 feet

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

Upstream 3:1

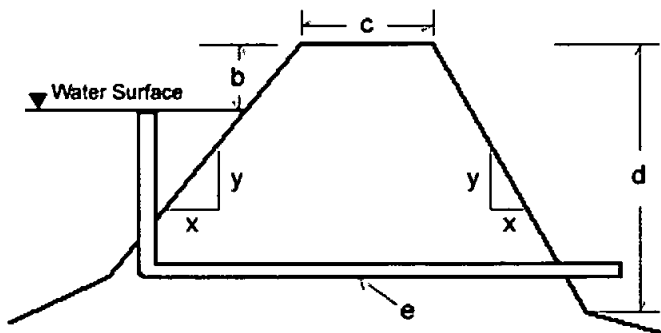
Downstream 3:1

*g) Water surface area 6.1 acres

*h) Storage at spillway crest or overflow elevation
(acre feet) 47.4

i) Maximum storage to top of dam crest
(acre feet) 101.3

*j) Drainage area above dam/dugout
(acres) 897



Enclosed is fifty dollars (\$50.00). The Water Management Board is requested to file this copy of the Location Notice in their official records. The original Location Notice has been filed (do not record) with the Register of Deeds of Yankton County in accordance with SDCL 46-4-3.

Darrell Nelson

(or)

Owner

Locator

STATE OF SOUTH DAKOTA)
COUNTY OF Yankton) SS

I, Darrell Nelson the applicant, certify that I have read this Location Notice and that the matters stated in this notice are true and that I intend, and am able to start construction within sixty days after the filing of this notice.

Signed

[Signature]

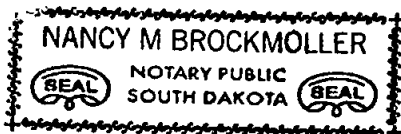
Subscribed and sworn to before me this

16th

day of

September, 20 15

(seal)



[Signature]
Notary

MY COMMISSION
EXPIRES
APRIL 30TH, 2019

Water Permit Application No. 8184-3
Darrall Nelson

Top of Dam Elevation - 1284.3
2nd Spillway Elevation - 1280.8
P. Spillway Elevation - 1278
Dis Emb. Top Elevation - 1251.4

Cat. 3 Low Hazard Dam

H.H. = 32.9 ft

Normal Storage Capacity - 47.4 Ac.-ft
Int. Storage Capacity - 68.1 Ac.-ft
Max Storage Capacity - 101.3 Ac.-ft

Int. Capacity x Est. H.H. = $68.1 \times 28.4 = 1934 < 3000$ ∴ 25 year
Minimum Spillway Design

From USGS WRI 98-4055 "Tech for Est Peak Flows in 50"
Regime B $Dit = 897 \text{ Ac} = 1.4 \text{ mi}^2$ $P_{II} = 1.1$

$$\begin{aligned} Q_{15} &= 148 \text{ CFS}^{.584} P_{II}^{.730} \\ &= 148 (1.4)^{.584} (1.1)^{.730} \\ &= 148 (1.2171) (1.0721) \\ &= \underline{193 \text{ cfs}} \end{aligned}$$

$$\begin{aligned} Q_{100} &= 275 \text{ CFS}^{.625} P_{II}^{.742} \\ &= 275 (1.4)^{.625} (1.1)^{.742} \\ &= 275 (1.2550) (1.0733) \\ &= \underline{370 \text{ cfs}} \end{aligned}$$

Secondary Spillway Capacity

$$\begin{aligned} Q &= CLH^{3/2} \quad C = 2.6 \\ & \quad L = 58 \\ &= 2.6 (58 \times 3.5)^{1.5} \quad H = 3.5 \\ &= \underline{987 \text{ cfs}} \end{aligned}$$

NRCS Annual Yield

Section 74:02:08:09

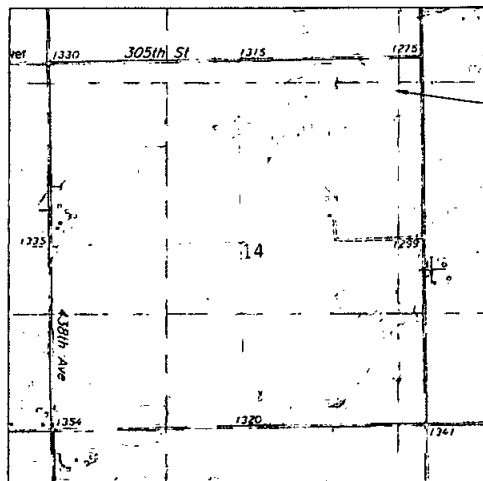
$DA = 897 \text{ Ac}$ $CN = 78$ $ISO = 4$

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 Routing - OK
7. Spillway Details - OK
8. Spent Still NRCS - OK
9. EPP - N/A Cat. 3 - OK

$$\begin{aligned} 80\% \text{ chance} &= 0.5 \\ 0.5 \times 897/2 &= \underline{37 \text{ Ac.-ft}} \end{aligned}$$

$$\begin{aligned} 50\% \text{ chance} &= 1.1 \\ 1.1 \times 897/2 &= \underline{90 \text{ Ac.-ft}} \end{aligned}$$

$$\begin{aligned} 10\% \text{ chance} &= 4.4 \\ 4.4 \times 897/2 &= \underline{329 \text{ Ac.-ft}} \end{aligned}$$



NE1/4, Sec14, T 94N, R 56W
Yankton 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 perishable 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. A utility line is located near the downstream toe of the planned embankment. The operator is requesting to have the line moved. The line shall be clearly flagged before construction begins. See note below.

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 IV

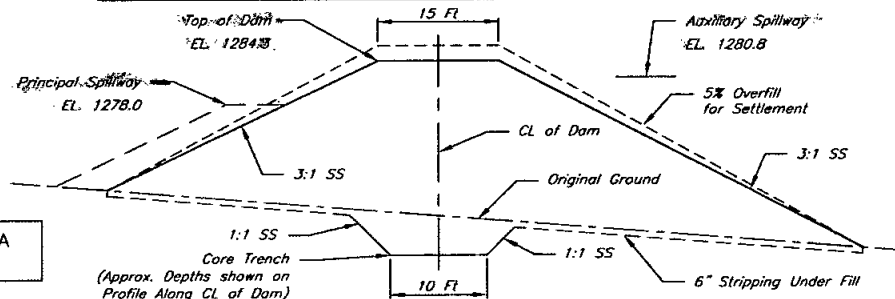
SD CONSTRUCTION AND MATERIAL SPECIFICATIONS

SD-4	Stripping
SD-5	Excavation
SD-75	Earthfill - Class 5
SD-8	Rock Riprap and Bedding
SD-9	Drain Fill and Filter
SD-10	Salvaging And Spreading Topsoil
SD-16	Wood Fabrication and Installation
SD-28	Seeding
SD-35	Plastic Pipe
SD-392	Geotextile

For A Full Text Version See
http://www.sd.usda.gov/technical/SD_Engineering.html

TABLE OF QUANTITIES

ITEM	UNIT	QUANTITY	AS-BUILT
Earthfill Class 5 - Embankment (5% Settlement)	Cu. Yd.	12897	
Earthfill Class 5 - Core Trench	Cu. Yd.	318	
Earthfill Class 5 - Stripping	Cu. Yd.	953	
Total Earthfill (Doesn't include 30% shrinkage)	Cu. Yd.	14168	
Topsoil Auxiliary Spillway	Cu. Yd.	218	
Seeding (Earthfill and Auxiliary Spillway)	Acre	1.2	
Rock Riprap (for Rock Outlet)	Cu. Yd.	36	
Geotextile (for Rock Outlet)	Sq. Yd.	86	
Principal Spillway Pipe			
24" Dia. PVC Pipe DR 18	Lin. Ft.	100	
24" Dia. PVC Pipe DR 25	Lin. Ft.	40	
48" Dia. 4' Tall Riser and Base	Each	1	
with Trash Rack and Baffle	Each	1	
Drainage Diaphragm	Each	1	
Timber Pipe Support	Each	1	
24" Dia. PVC SDR 18 Elbow(11.25 Degree Angle)	Each	1	



TYPICAL CROSS SECTION OF DAM

INDEX OF DRAWINGS

1. Cover Sheet
2. Plan View and Design Data
3. Detail Plan View
4. Soil Borings
5. Profile of Principal Spillway and Maximum Cross-Section of Dam
6. Profile of Dam and Auxiliary Spillway and Cross-Section of Auxiliary Spillway
7. Concrete Riser Detail
8. Trash Rack and Baffle Detail
9. Drainage Diaphragm Detail
10. Timber Pipe Support Detail

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. 1/2012

Designed J. Gelderman 8/21/15
Drawn J. Gelderman 8/21/15
Checked D. Edwards 3/24/15
Approved [Signature] 9/24/15

NAME: DARRELL NELSON
378 POND
COVER SHEET



File No.
Wabon_Darrell.dwg
Drawing No.
8/24/15 11:54 AM
Sheet 1 of 11

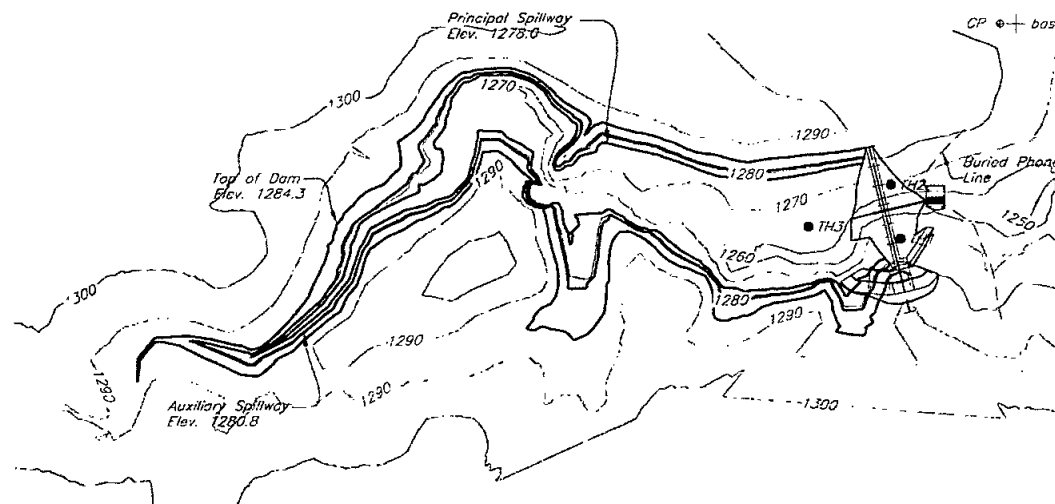
HYDRAULIC DATA		
Drainage Area	897	Acres
Annual Runoff Yield (50% Chance)	86.0	Ac. Ft.
Time of Concentration	3.33	Hours
Runoff Curve Number	78	
Principal Spillway, 2 Year - 24 Hour Rainfall	2.60	Inches
Auxiliary Spillway, 50 Year - 24 Hour Rainfall	5.30	Inches
Peak Runoff 2 Year - 24 Hour Rainfall	166	CFS
Principal Spillway Discharge	77.1	CFS
Peak Runoff 50 Year - 24 Hour Rainfall	637	CFS
Auxiliary Spillway Discharge	487	CFS
Auxiliary Spillway Flow Depth	2.5	Feet

STRUCTURE DATA		
Length of Top of Dam	325	Feet
Water Depth to Crest of Principal Spillway	24.1	Feet
Height of Downstream Toe to Top of Dam	32.9	Feet
Effective Height	28.4	Feet
Product of Storage X Effective Height	1907	

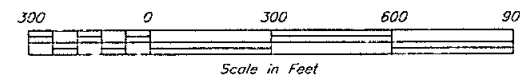
POOL DATA			
	ELEV.	AREA	STORAGE
Crest of Principal Spillway	1278.0	6.12 Ac.	47.4 Ac.-Ft.
Crest of Auxiliary Spillway	1280.8	8.15 Ac.	68.1 Ac.-Ft.
Top of Dam	1284.3	11.19 Ac.	101.3 Ac.-Ft.

SEDIMENT YIELD					
Erodibility Area	Gross Rate (A.F./Ac./Yr.)	Drainage Area (Acres)	Delivery Rate (%)	Design Period (Years)	Required Sediment Volume (Ac.-Ft.)
H	.0028	897	27	25	17.0

BENCHMARK POINTS TABLE					
NO.	ID	ELEVATION	NORTHING	EASTING	BENCHMARK DESCRIPTION
1	base	1275.00	10000.00	10000.00	Top of steel rebar marked with a yellow NRCS cap approximately 90' west of the edge of N-S gravel road near the north edge of the grass
2	CP2	1277.342	9999.521	9960.854	Top of steel rebar marked with a yellow NRCS cap approximately 130' west of the edge of N-S gravel road near the north edge of the grass



PLAN VIEW



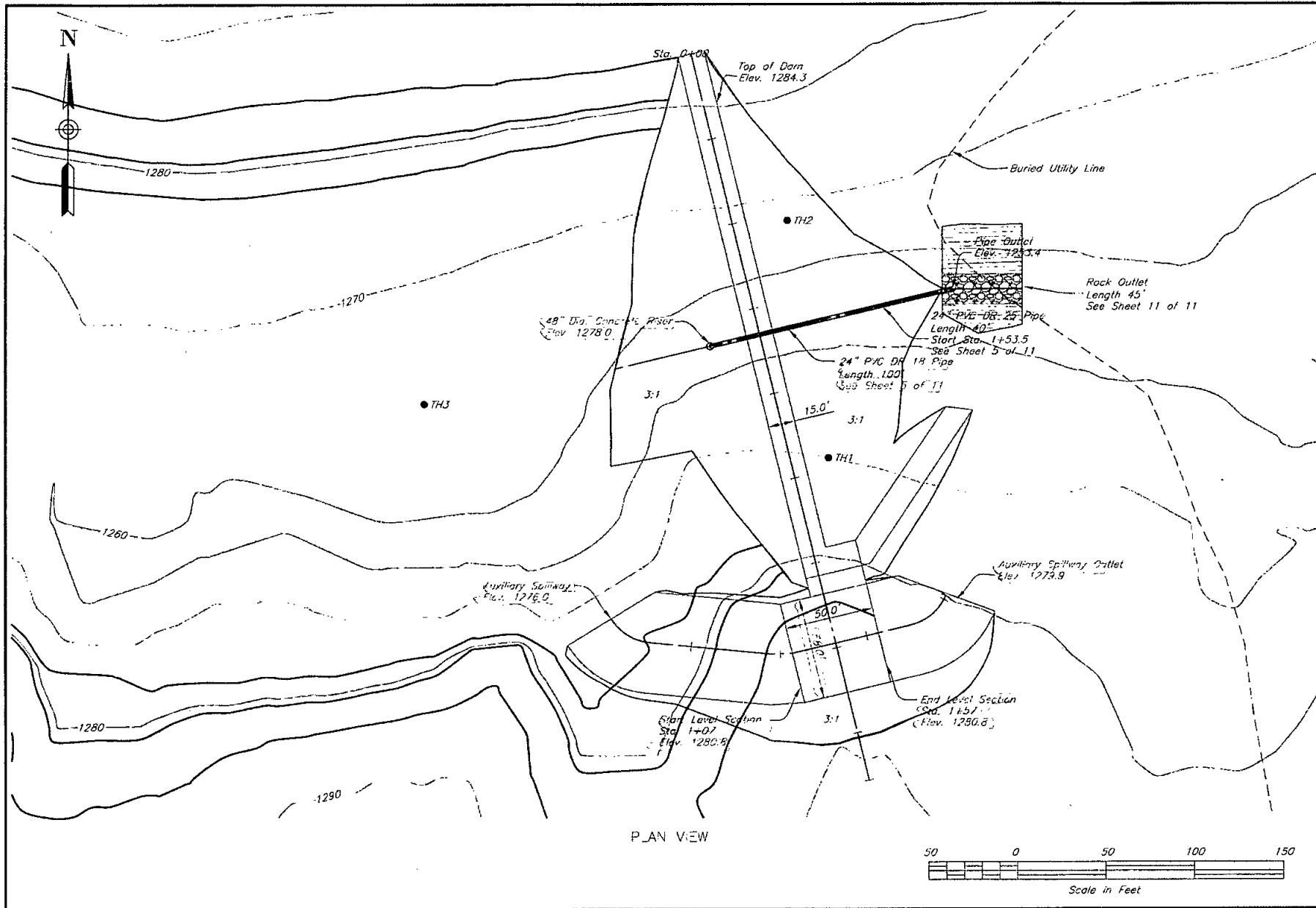
Date: 8/21/15
Designed: J. Gelderman
Drawn: J. Gelderman
Checked: D. Edwards
Approved: [Signature] 8/24/15

NAME: DARRELL NELSON
378 POND
PLAN VIEW AND DESIGN DATA



File No. [blank]
Drawing No. [blank]
8/24/15 11:54 AM
Sheet 2 of 11

Yankton County, South Dakota
NCT 1/4, Sec. 14, T. 94N, R. 56W



 National Resources Conservation Service United States Department of Agriculture	NAME: DARRELL NELSON 378 POND PLAN VIEW	Date Designed <u>J. Gelderman</u> 8/21/15 Drawn <u>J. Gelderman</u> 8/21/15 Checked <u>D. Edwards</u> 3/24/15 Approved <u>[Signature]</u> 9/24/15
	Tunkton County, South Dakota	
	NE 1/4, Sec 14, T. 94N, R. 58W	
	File No. Nelson_Darrell378.pwg	
Drawing No.		8/24/15 11:54 AM Sheet 3 of 11

TH1

Depth Unified Soil Group Name
(ft) Class Symbol Soil Material

1270

ML

silt

CL

lean clay

CL

lean clay

1265

CL

lean clay

1260

1255

1250

1245

Water Table Bar

TH2

Depth Unified Soil Group Name
(ft) Class Symbol Soil Material

1267.8

ML

silt

ML-CL

silty clay

CL

lean clay

1262.8

CL

lean clay

1257.8

1252.8

1247.8

1242.8

Water Table Bar

TH3

Depth Unified Soil Group Name
(ft) Class Symbol Soil Material

1265.7

CL-ML

silty clay

CL

lean clay

1260.7

CL

lean clay

1255.7

1250.7

1245.7

1240.7

Water Table Bar

Date
Designed J. Gelderman 8/21/15
Drawn J. Gelderman 8/21/15
Checked D. Edwards 3/24/15
Approved [Signature] 8/24/15

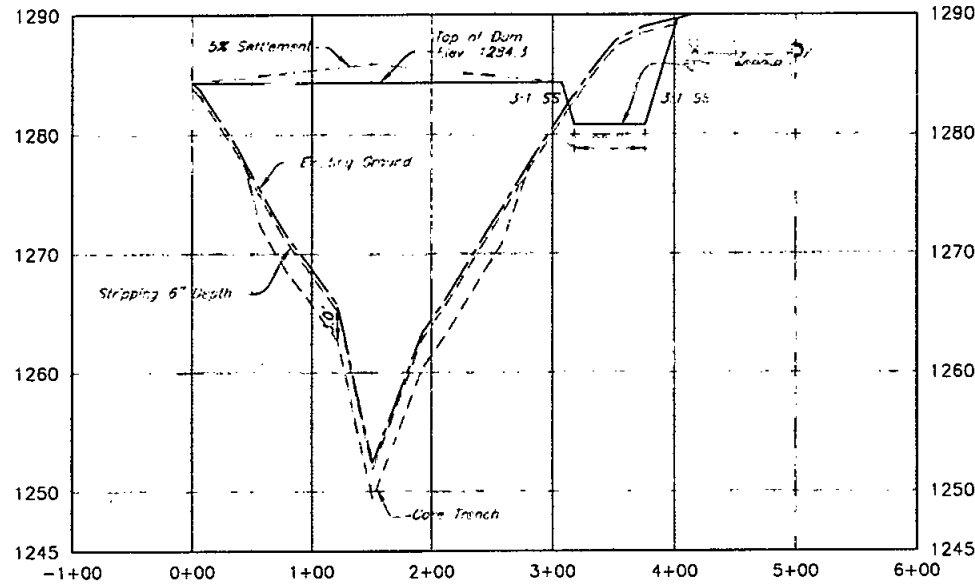
NAME: DARRELL NELSON
378 POND
SOIL BORINGS

NET 1/4 Sec 14, T. 94N, R. 56W
Yankton County, South Dakota

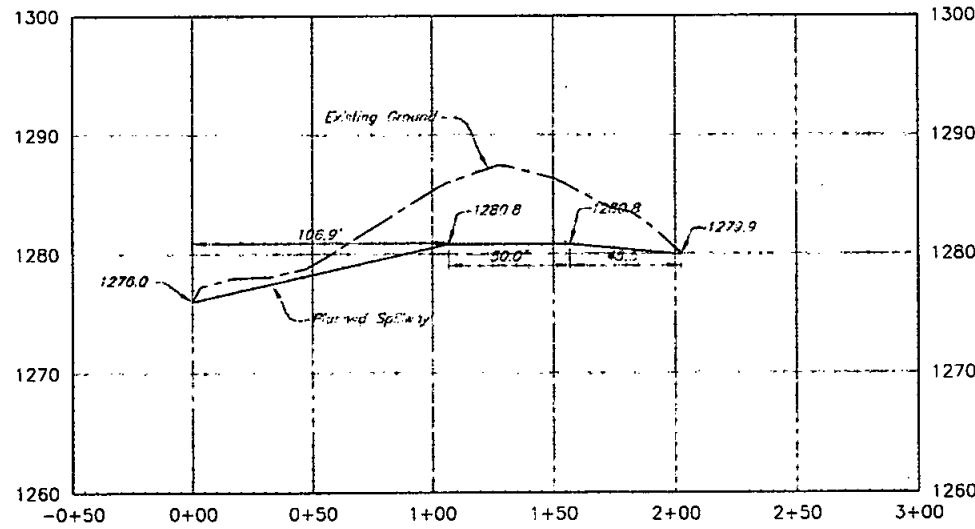


File No.
Hanson_Darrell3.dwg
Drawing No.
—
8/24/15 11:54 AM
Sheet 4 of 11

Horizontal Scale 1"=100', Vertical Scale 1"=10'

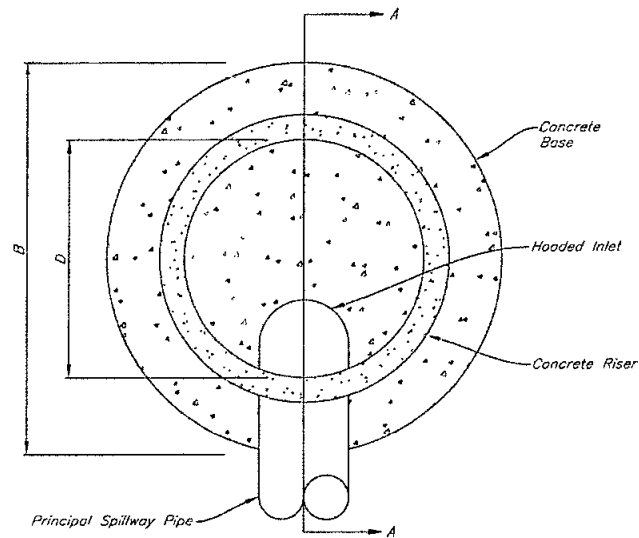


Horizontal Scale 1"=50', Vertical Scale 1"=10'



PROFILE OF DAM AND AUXILIARY
SPILLWAY AND CROSS-SECTION
OF AUXILIARY SPILLWAY

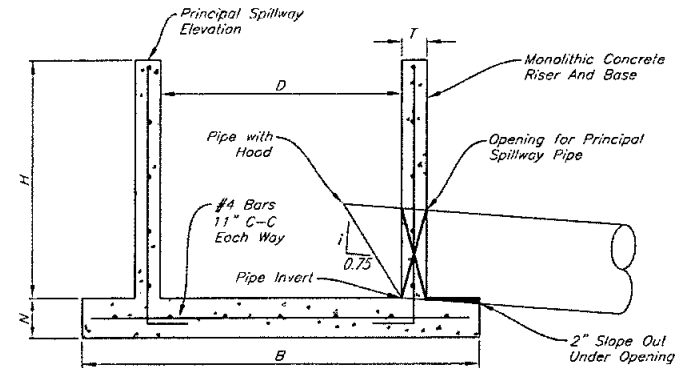
NAME: DARRELL NELSON 378 POND PROJECTS AND CROSS-SECTIONS OF DAM AND AUXILIARY SPILLWAY NE 1/4, Sec 14, T. 94N, R. 58W Yankton County, South Dakota		Date 8/21/15 Drawn A. Underman 8/21/15 Checked R. Edwards 8/21/15 Approved [Signature] 8/21/15
National Resources Conservation Service United States Department of Agriculture		File No. 15-00000-00000-00000 Drawing No. 1 8/24/15 11:54 AM Sheet 5 of 11



PLAN VIEW PRECAST RISER AND BASE

CONSTRUCTION NOTES

1. The riser and base is precast reinforced concrete and is manufactured according to ASTM C478 Standard Specification For Precast Reinforced Concrete Manhole Sections.
2. Provide a watertight joint between the precast concrete riser and the principal spillway pipe barrel.
3. Contact NRCS prior to installation for other options for the construction of the riser if a precast monolithic riser and base is not used.



SECTION VIEW A-A

GUIDE TABLE FOR PRECAST RISER AND BASE DIMENSIONS

(D) RISER DIAMETER	(H) RISER HEIGHT	(T) WALL THICKNESS	(B) BASE DIAMETER	(N) BASE THICKNESS	ESTIMATED WEIGHT	DIA. PIPE BARREL
30"	4'	3.5"	51"	6"	2,600 LBS	10" to 18"
30"	4.5'	3.5"	51"	6"	2,790 LBS	10" to 18"
30"	5'	3.5"	51"	6"	2,980 LBS	10" to 18"
36"	4'	4"	64"	6"	3,770 LBS	10" to 24"
36"	4.5'	4"	64"	6"	4,030 LBS	10" to 24"
36"	5'	4"	64"	6"	4,290 LBS	10" to 24"
36"	5.5'	4"	64"	6"	4,550 LBS	10" to 24"
36"	6'	4"	64"	6"	4,815 LBS	10" to 24"
48	4'	5"	79"	8"	6,870 LBS	10" to 30"
48"	4.5'	5"	79"	8"	7,300 LBS	10" to 36"
48"	5'	5"	79"	8"	7,740 LBS	10" to 36"
48"	5.5'	5"	79"	8"	8,170 LBS	10" to 36"
48"	6'	5"	79"	8"	8,600 LBS	10" to 36"

PRECAST CONCRETE RISER AND BASE
WITH HOODED INLET
REV. 1/2012

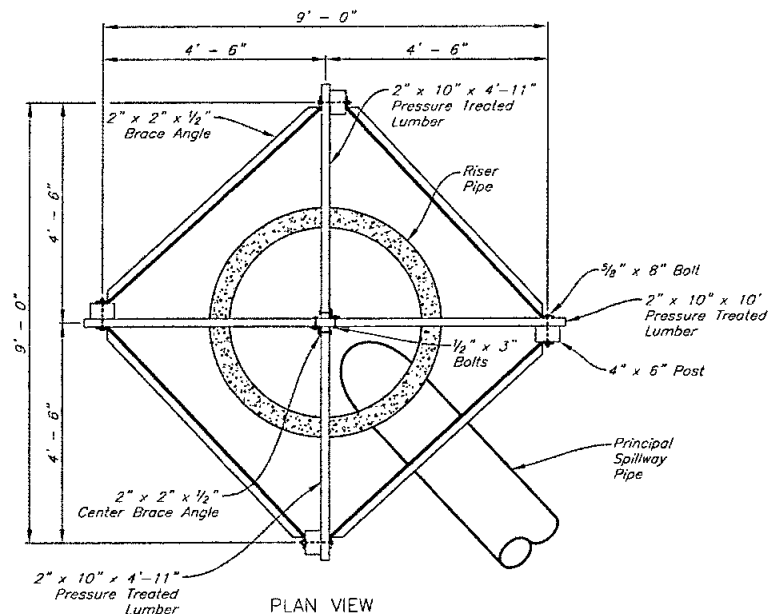
Date
Designed J. Gelderman 8/21/15
Drawn J. Gelderman 8/21/15
Checked D. Edwards 3/24/15
Approved [Signature] 8/21/15

NAME: DARRELL NELSON
378 POND
PRECAST CONCRETE RISER AND BASE WITH HOODED INLET
Yankton County, South Dakota

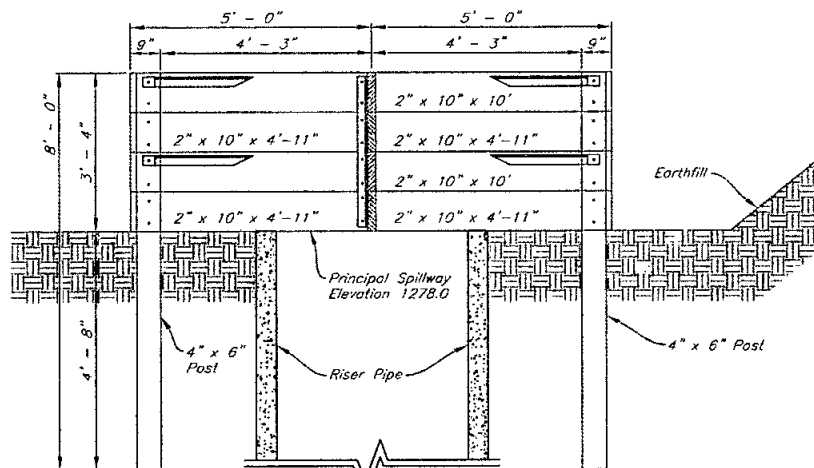
NET 1/4 Sec 14, T 94N, R 56W



File No.
Nelson_Darrell2.dwg
Drawing No.
8/24/15 11:54 AM
Sheet 7 of 11



PLAN VIEW

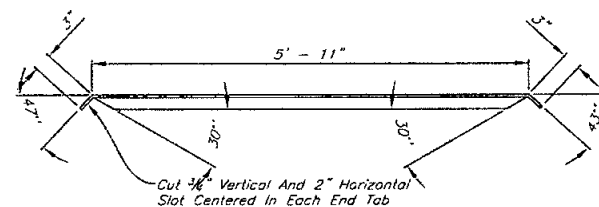


SIDE VIEW

TABLE OF QUANTITIES			
ITEM	LENGTH OR SIZE	UNIT	QUANTITY
4" X 6" Pressure Treated Post	8 Ft	Each	4
2" X 10" Pressure Treated Lumber	10 Ft	Each	4
2" X 10" Pressure Treated Lumber	4' - 11"	Each	8
2" X 2" X 1/4" Steel Angle	5' - 5"	Each	8
2" X 2" X 1/4" Steel Angle	3' - 2"	Each	2
Steel Bolt (with nut and 2 washers)	5/8" X 8"	Sets	32
Steel Bolt (with nut and 2 washers)	1/2" X 3"	Sets	32

CONSTRUCTION NOTES

1. Bolt 4" x 6" posts and 2" x 10" lumber together using two 5/8" x 8" bolts. Do not place bolts closer than 1 1/2" from edge of board.
2. For center brace angles drill eight, 3/8" holes, 3/8" from outer edge of each leg of each angle and centered 5 1/4" apart along the leg.
3. Attach brace angles to top bolt on top of 2" x 10" board and to top bolt on next to bottom board.
4. All nuts, bolts, and washers shall be galvanized.



PLAN VIEW OF BRACE ANGLE

TRASH RACK AND BAFFLE FOR RISER DIA. 36" TO 60"
JOB PLAN NO. 6.4 REV. 1/2012

Date
 Designed J. Gelderman 8/21/15
 Drawn J. Gelderman 8/21/15
 Checked D. Edwards 3/24/15
 Approved [Signature] 9/24/15

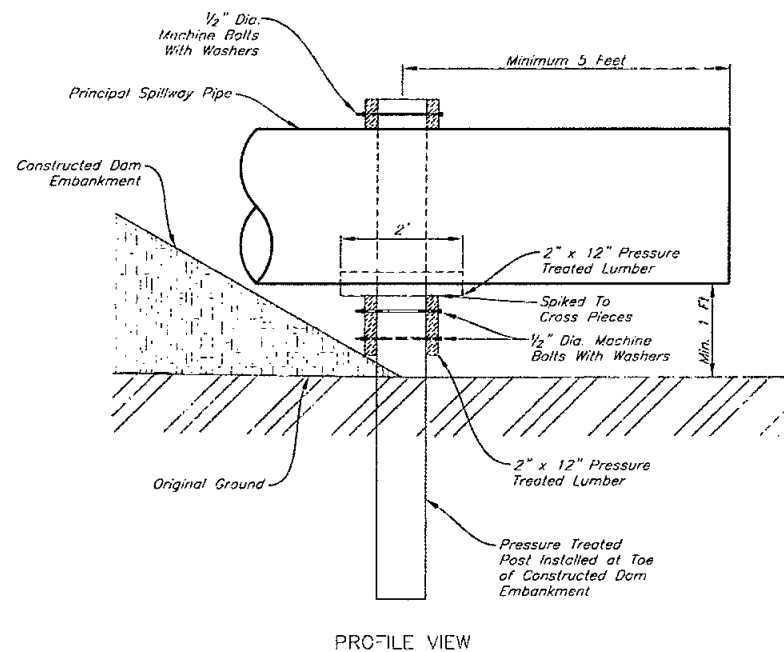
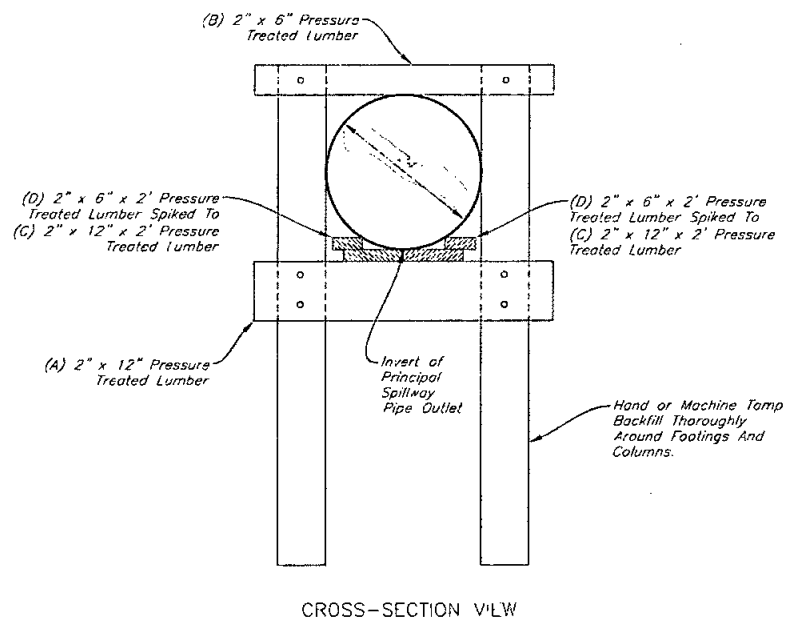
NAME: DARRELL NELSON
 378 POND
 TRASH RACK AND BAFFLE FOR RISER DIA. 36" TO 60"

Yankton County, South Dakota

NET 1/4, Sec 14, T 94N, R 56W

NRCS
 Natural Resources Conservation Service
 United States Department of Agriculture

File No.
 Nelson_Garw3.dwg
 Drawing No.
 8/24/15 11:54 AM
 Sheet 8 of 11



LENGTHS REQUIRED FOR DIFFERENT PIPE DIAMETERS

ITEM	MATERIAL SIZES BASED ON PIPE DIAMETER				UNIT	QUANTITY
	12" TO 18"	*21" TO 24"	30" TO 36"	42" TO 48"		
8" Dia. Pressure Treated Post	8 Ft	--	--	--	Each	2
10" Dia. Pressure Treated Post	--	10 Ft	10 Ft	12 Ft		
(A) 2" X 12" Pressure Treated Lumber	4 Ft	4 Ft	5 Ft	6 Ft	Each	2
(B) 2" X 6" Pressure Treated Lumber	4 Ft	4 Ft	5 Ft	6 Ft	Each	2
(C) 2" X 12" Pressure Treated Lumber	2 Ft	2 Ft	2 Ft	2 Ft	Each	2
(D) 2" X 6" Pressure Treated Lumber	2 Ft	2 Ft	2 Ft	2 Ft	Each	2
1/2" Dia. Machine Bolts With Nuts	12 In.	14 In.	14 In.	14 In.	Each	6
1/2" Dia. Washers					Each	12
Spike Nails					Each	20

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.

TIMBER PIPE SUPPORT
JOB PLAN NO. 4.0 REV. 1/2012

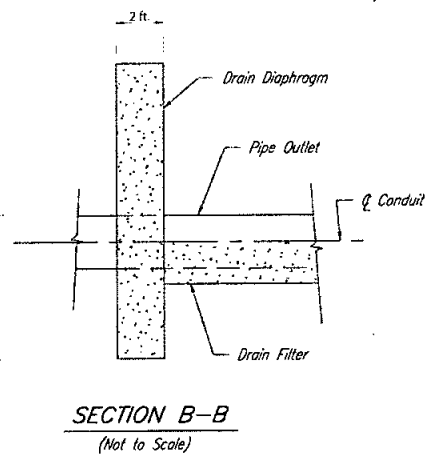
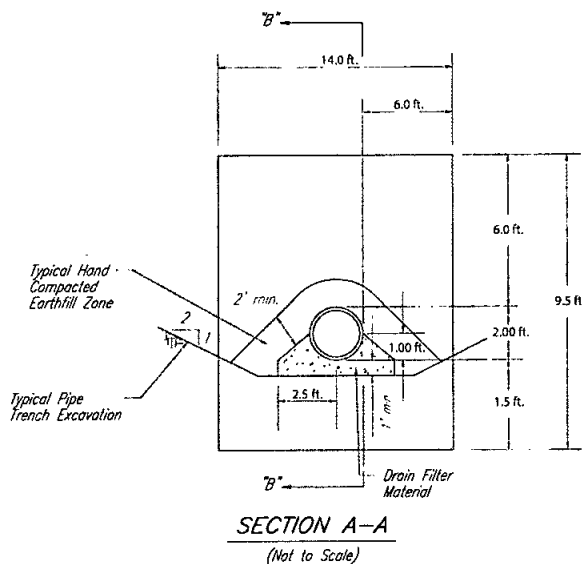
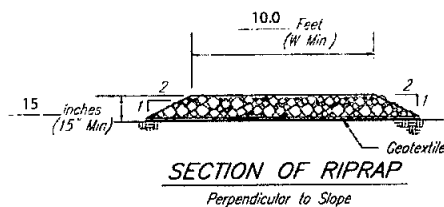
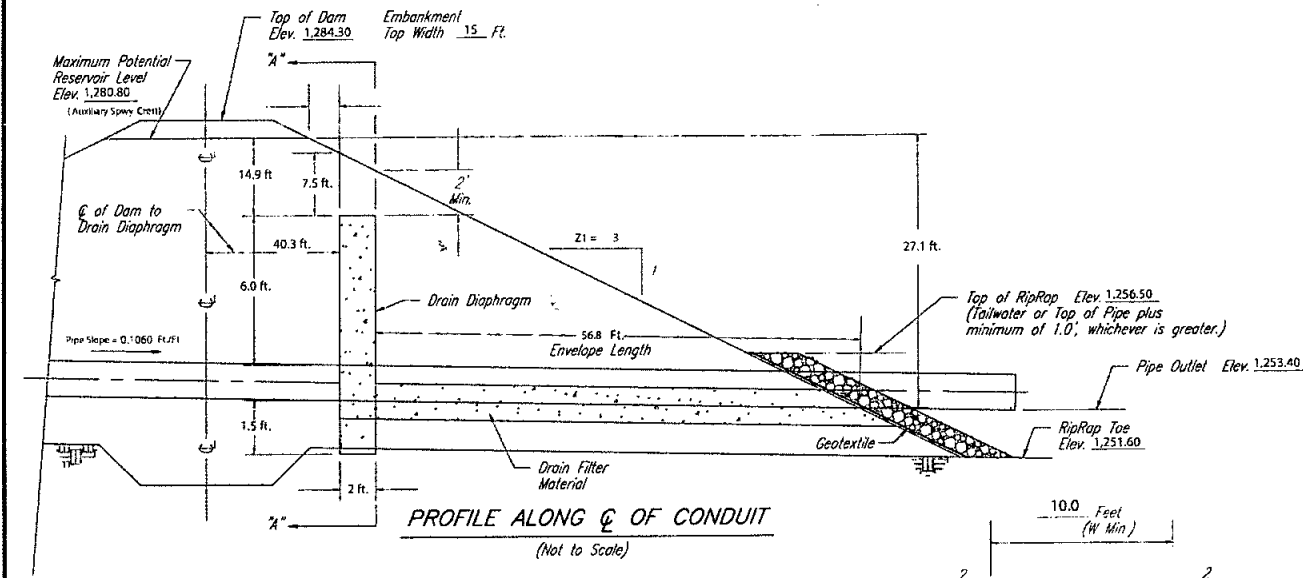
Designed J. Gelderman 8/21/15
Drawn J. Gelderman 8/21/15
Checked D. Edwards 3/24/15
Approved [Signature] 8/21/15

NAME: DARRELL NELSON
378 POND
TIMBER PIPE SUPPORT



File No.
Nelson_Darre3.dwg
Drawing No.
-
8/24/15 11:54 AM
Sheet 9 of 11

Yankton County, South Dakota
NE1/4, Sec 14, T. 94N, R. 56W



SUMMARY OF DESIGN AND DIMENSIONS

DESIGN DATA	
H = 14.9 Feet	Hd = 27.15 Feet
X = 6.0 Feet	D = 24 Inches
R = 1.5 Feet	Y = 6.0 Feet
C = 0 Feet	Aggregate Gradation # 1
Embankment Backslope (Z1) = 3.0 Pipe Slope (S) 0.1060 Ft./Ft.	

DIMENSIONS	
W = 14.0 Feet	(Total Width of Drain Diaphragm)
T = 9.5 Feet	(Total Height of Drain Diaphragm)
L = 2 Feet	(Thickness of Single Filter)

ESTIMATED QUANTITIES

Drain Filter Material	24.2 Cubic Yards
Geotextile	25.8 Square Yards
Rock Riprap	9.0 Cubic Yards

DRAIN FILTER MATERIAL GRADATION

SIEVE SIZE	PERCENT PASSING
3/8 in.	100
#4	95-100
#8	80-100
#16	50-85
#30	25-60
#50	2-30
#100	0-10

ASTM C-#33
FINE CONCRETE
AGGREGATE GRADATION

ROCK RIPRAP GRADATION

PERCENT SMALLER	WEIGHT RANGE (LBS.)	AVERAGE CUBIC DIMENSION
100	50 lb.	10"
50-80	30 lb.	7"
15-50	10 lb.	5"
0-15	3 lb.	3"

CONSTRUCTION NOTES

- 1.) The Drainage Diaphragm and envelope will be installed by placing Drain Filter Material in maximum 15 inch thick uncompacted lifts. Each lift will be saturated uniformly with approximately 1.2 gallons of water per cubic foot of loose Drain Filter Material prior to compaction. Each lift will then be compacted by a minimum of two passes of a hand-directed vibratory compactor over the entire lift surface. No compaction of the drain envelope above the pipe invert will be required.
- 2.) The maximum height of drop of the Riprap onto the Geotextile in the pipe outlet area shall be 3 feet.

MATERIAL NOTES

- 1.) The Geotextile shall conform to the Class 1 requirements specified in Table 2 for Nonwoven Geotextiles in Material Specification SD-592.

DRAINAGE DIAPHRAGM DETAILS

REVISIONS	
DATE	TITLE
07/15/09	Job Plan 3.8
07/21/2009	2.233PM

JOB PLAN 3.8 (07/2009)

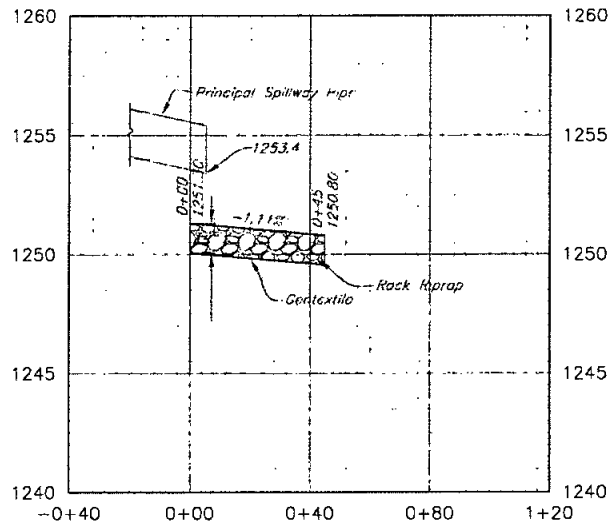
Designed	JMG	05/04/15
Drawn	JMG	05/04/15
Checked	DE	03/24/15
Approved		01/29/15

PRODUCER	Darrell Nelson
SECTION	14
Yankee	94 N R
COUNTY	56 W
CONSERVATION DISTRICT	

USDA - NRCS
State Office Engineering Staff
200 Fourth Street SW
Huron, South Dakota 57350

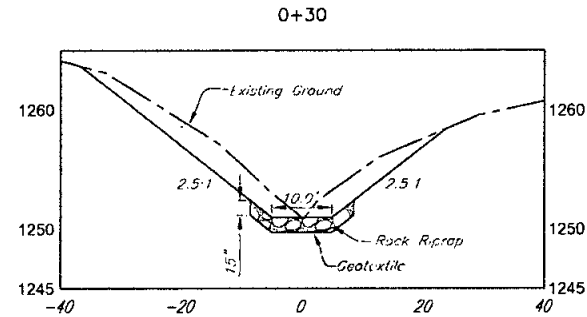


File Name	DrainageDiaphragmDetails.dwg
Drawing No.	
Sheet	10 of 11



Rock Outlet PROFILE

Horizontal Scale 1"=40'; Vertical Scale 1"=5'



Horizontal Scale 1"=20'; Vertical Scale 1"=10'

Rock Riprap Gradation		
% Smaller	Weight (lbs)	Ave Dimension (in)
100	50	10
50-80	30	7
15-30	10	5
0-15	3	3

CONSTRUCTION NOTES

1. Geotextile shall be 8 ounce, Class I non-woven, needle-punched. Splices shall overlap at least 18 inches. Refer to Material Specification SD-592.

DATE
 Design: J. Gerdeman 8/21/15
 Drawn: J. Gerdeman 8/21/15
 Checked: D. Edwards 3/24/15
 Approved: [Signature] 8/24/15

NAME: DARRELL NELSON
 378 POND
 Rock Outlet



Site No.
 Drawing No.
 8/24/15 11:54 AM
 Sheet 11 of 11

Yankton County, South Dakota

RECEIVED

OCT 08 2015

WATER RIGHTS
PROGRAM

SITES XEQ 03/09/2015 WATER RESOURCE SITE ANALYSIS COMPUTER PROGRAM
VER 2005.1.8 (USER MANUAL - DATED DECEMBER 2005)
TIME 13:47:33

***** 80-80 LIST OF INPUT Data *****

SITES 01/01/2005 1.4015625 H5
SAVMOV 0 101
SAVMOV 101 1 1
STRUCTURE
1278.0 6.13 0 47.42
1279.0 6.81 37.41
1279.7 7.33 72.21
1283.0 9.83 76.82
1285.0 11.85 79.47
1288.0 15.66 83.3
ENDTABLE
WSDATA 5A1 AC 78 897 3.33
PDIRECT 2.6 5.30
POOLDATA ELEV 1278.0 1278.0 1278.0 1252.4 1251.4
ASDATA 41 300 157 3 .0195 2
ASINSURF 41 7.6 B
ASINLET 41 0.0 0.0 50 0.0 3
157 4.8
ENDTABLE
ASEXSURF 41 7.6
.8 0
2
2 0
.02
ENDTABLE
ASEXIT 41 N 46
BTMWIDTH FEET 58
GRAPHICS I
GO,DESIGN HL TYPE2 24 TYPE2378 24
SAVMOV 2 101 1
ENDJOB

***** MESSAGE - ALTERNATE STRUCTURE ID (S 1) BEING USED
SINCE USER DID NOT INPUT AN ID.

***** MESSAGE - ALTERNATE SUBWATERSHED ID (A) BEING USED SINCE
USER DID NOT INPUT AN ID.

***** MESSAGE - DRAINAGE AREA FROM WSDATA CONTROL BEING CONVERTED FROM
ACRES TO SQUARE MILES FOR COMPUTATION PURPOSES.

1SITES -----
XEQ 03/09/2015 WSID=
VER 2005.1.8 SUBW= A
TIME 13:47:33 SITE = S 1 PASS= 1 PART= 1

***** BASIC Data *****
CLIMATE AREA - NOT DEFINED DESIGN CLASS A1 = LT 3000.

STORM DISTRIBUTION-PSH 24 HOUR TYPE II RAINFALL DISTRIBUTION

STORM DISTRIBUTION AUX. -24 HOUR TYPE II RAINFALL DISTRIBUTION

PRECIP. - P-PS,1-DAY	P-PS,10-DAY	P-SD	P-FB	
2.60	0.00	0.00	5.30	
WSDATA - CN	DA-SM	TC/L	-/H	QRF
78.00	1.40	3.33	0.00	0.00
SITEDATA- PERM POOL	CREST PS	FP SED	VALLEY FL	378?
1278.00	1278.00	1278.00	1251.40	YES
BASEFLOW	INITIAL EL	EXTRA VOL	SITE TYPE	
0.00	0.00	0.00	DESIGN	
PSDATA - NO. COND	COND L	DIA/W	-/H	
0.00	0.00	0.00	0.00	
PS N	KE	WEIR L	TW EL	
0.000	0.00	0.00	0.00	
2ND STG	ORF H	ORF L	START AUX.	
0.00	0.00	0.00	0.00	
ASCRESTS - AUX.1	AUX.2	AUX.3	AUX.4	AUX.5
0.00	0.00	0.00	0.00	0.00
AUX.Data - REF.NO.	RETARD. Ci	TIE STATION	INLET LENGTH	
41	0.00	300.00	157	
AUX.Data - INLET Ci	SIDE SLOPE	EXIT Ci	EXIT SLOPE	ACTUAL AUX?
7.600	3.00	7.600	0.020	NO
BTM WIDTH - BW1	BW2	BW3	BW4	BW5
ft 58.00	0.00	0.00	0.00	0.00

AUXILIARY SPILLWAY RATING DEVELOPED USING WSPVRT.

1SITES -----
 XEQ 03/09/2015
 VER 2005.1.8
 TIME 13:47:33
 SITE = S 1
 PASS= 1
 WSID=
 SUBW= A
 PART= 2

MESSAGE ---- Climatic Index changed from 0.0 to 1.0 for this run.

PERM POOL	1278.00 FT	47.4 ACFT	6.13 AC	0.0 CFS
CREST PS	1278.00 FT	47.4 ACFT	6.13 AC	0.0 CFS
SED ACCUM	1278.00 FT	47.4 ACFT	6.13 AC	0.0 CFS
START ELEV	1278.00 FT	47.4 ACFT	6.13 AC	0.0 CFS
NRCS-PSH	D= 24.00 HR	P= 2.60 IN	Q= 0.85 IN	DA= 1.40 SM
	TC= 3.33 HR	CN= 78.00	VOL= 63.8 ACFT	

PEAK = 157.0 CFS, AT 14.1 HRS.

ROUTED RESULT - HYD TYPE EMAX VOL-MAX AMAX QMAX
NRCS-PSH 1280.78 FT 67.2 ACFT 8.15 AC 73.6 CFS

PS STORAGE 19.8 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.

DRAWDOWN (DDT) TEST 1278.00 FT 47.4 ACFT 0.00 CFS
CONTROL IS 0.000 DETENTION STORAGE

DRAWDOWN TIME = 1.20 DAYS, TO 0.0 CFS (LIMIT = 10.00 DAYS)

RATING TABLE DEVELOPED, SITE = S 1:
WITH PS GIVEN AND AUX. COMPUTED BY PROGRAM
AUX. RATING USED WSPVRT METHOD.

RATING TABLE NUMBER 1

	ELEV. FEET	Q-TOTAL CFS	Q-PS CFS	Q-AUX. CFS	VOLUME AC-FT	AREA ACRE
1	1278.00	0.00	0.00	0.00	47.42	6.13
2	1279.00	37.41	37.41	0.00	53.89	6.81
3	1279.70	72.21	72.21	0.00	58.84	7.33
4	1283.00	76.82	76.82	0.00	87.15	9.83
5	1285.00	79.47	79.47	0.00	108.83	11.85
6	1288.00	83.30	83.30	0.00	150.10	15.66

1SITES -----
XEQ 03/09/2015 WSID=
VER 2005.1.8 SUBW= A
TIME 13:47:33 SITE = S 1 PASS= 1 PART= 3

AUX. CREST 1280.78 FT 67.2 ACFT 8.15 AC 73.6 CFS

PS STORAGE 19.8 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.

START ELEV 1278.00 FT 47.4 ACFT 6.13 AC 0.0 CFS

EFFECTIVE HEIGHT(H)= 28.4 FEET, PRODUCT= 1907. (H * STORAGE AT CREST AUX.).

INPUT DESIGN CLASS = A1 = LT 3000. PRODUCT.

NRCS-FBH D= 24.00 HR P= 5.30 IN Q= 2.97 IN DA= 1.40 SM
TC= 3.33 HR CN= 78.00 VOL= 221.9 ACFT

PEAK = 593.4 CFS, AT 14.1 HRS.

RATING TABLE DEVELOPED, SITE = S 1:
WITH PS GIVEN AND AUX. COMPUTED BY PROGRAM
AUX. RATING USED WSPVRT METHOD.

RATING TABLE NUMBER 2

	ELEV. FEET	Q-TOTAL CFS	Q-PS CFS	Q-AUX. CFS	VOLUME AC-FT	AREA ACRE
1	1278.00	0.00	0.00	0.00	47.42	6.13
2	1278.23	8.66	8.66	0.00	48.86	6.29
3	1278.46	17.33	17.33	0.00	50.33	6.44
4	1278.69	25.99	25.99	0.00	51.84	6.60
5	1278.93	34.65	34.65	0.00	53.39	6.76
6	1279.16	45.26	45.26	0.00	54.97	6.93
7	1279.39	56.77	56.77	0.00	56.60	7.10
8	1279.62	68.28	68.28	0.00	58.26	7.27
9	1279.85	72.42	72.42	0.00	59.97	7.45
10	1280.08	72.75	72.75	0.00	61.71	7.62
11	1280.32	73.07	73.07	0.00	63.50	7.80
12	1280.55	73.39	73.39	0.00	65.32	7.97
13	1280.78	73.72	73.72	0.00	67.19	8.15
14	1281.14	79.30	74.22	5.08	70.18	8.42
15	1281.50	84.90	74.73	10.17	73.27	8.69
16	1282.15	146.71	75.63	71.07	79.08	9.19
17	1282.95	417.16	76.74	340.42	86.62	9.79
18	1284.39	1146.77	78.66	1068.11	101.79	11.23
19	1286.19	2326.05	81.00	2245.05	123.90	13.37
20	1288.00	3836.15	83.30	3752.85	150.10	15.66

SUMMARY OF AUXILIARY SPILLWAY SURFACE CONDITIONS USED IN COMPUTATIONS BY REACH

REACH	FROM STA (ft)	TO STA (ft)	SLOPE (%)	RETARDANCE CURVE INDEX	VEGETAL COVER FACTOR	MAINT. CODE	ROOTING DEPTH (ft)	REACH LOCATION *
1	143.	250.	-4.5	7.6	**	**	**	INLET
2	250.	300.	0.0	7.6	**	**	**	CREST
3	300.	346.	1.9	7.6	0.80	2	2.0	EXIT !

* Upper case indicates a reach of constructed spillway channel.

** The program does not use vegetal cover factor, maintenance code, and rooting depth for inlet and crest reaches in computations.

! Reach 3 used in computing exit channel velocities.

DRAWDOWN USING FREEBOARD STORM FOLLOWS, STARTING AT ELEVATION 1280.78 FT.

DRAWDOWN (DDT) TEST 1278.00 FT 47.4 ACFT 0.00 CFS
CONTROL IS 0.000 DETENTION STORAGE

DRAWDOWN TIME = 1.00 DAYS, TO 0.0 CFS (LIMIT = 10.00 DAYS)

ROUTED RESULTS	BTM WIDTH FT	MAX ELEV FT	VOL-MAX ACFT	AREA-MAX AC	AUX.-HP FT	VOL-AUX. ACFT
NRCS-FBH	58.0	1283.25	89.7	10.1	2.47	22.5

PEAK - CFS Q-PS Q-AUX. Q-TOT.
DISCHARGE = 77.1 487.1 564.2

CRITICAL CRITICAL CRITICAL 25% OF Q
DEPTH VELOCITY SLOPE-Sc Sc
AUXILIARY FT FT/SEC FT/FT FT/FT
SPILLWAY --- 1.27 6.21 0.038 0.167

EROSIONALLY EFFECTIVE STRESS FOR STABILITY ANALYSIS OF AUX. EXIT CHANNEL
(Refer to Ag. Handbook 667, Chapt. 3, for allowable stresses.)

Aux. Spillway Discharge = 487. cfs; Bottom Width = 58. ft

REACH	FROM	TO	SLOPE	MANNING'S	VELOCITY	TOTAL	EFFECTIVE
NO.	STA	STA	%	n	ft/s	lb/ft^2	lb/ft^2
3	300.	346.	1.95	0.053	5.00	1.89	0.165

AUXILIARY SPILLWAY DURATION FLOW = 11.8 HOURS
ATTACK, OE/B = 2.0 ACFT/FT

***** MESSAGE - NHCP378 CRITERIA USED BUT AUXILIARY SPILLWAY RATING NOT
BASED ON ASFILE RATINGS.

EXIT CHANNEL FLOW SUBCRITICAL: MAX VELOCITY= 5.0 FT/SEC
EXIT SLOPE = 0.019 FT/FT
FLOW DEPTH = 1.6 FT

>>>> NHCP378 RUN - MINIMUM DEPTH, DESIGN FLOW TO TOP OF DAM; 1.00 FT REQUIRED
FOR THIS PASS. NEW TOP OF DAM ELEVATION = 1284.25.

ROUTED	BTM WIDTH	MAX ELEV	VOL-MAX	AREA-MAX	AUX.HP	VOL-AUX.
RESULTS	FT	FT	ACFT	AC	FT	ACFT
MINIMUM AUX.	58.0	1284.25	100.4	11.1	3.47	33.2

PEAK - CFS	Q-PS	Q-AUX.	Q-TOT.
DISCHARGES =	78.4	999.4	1077.9

	CRITICAL	CRITICAL	CRITICAL	25% OF Q
	DEPTH	VELOCITY	SLOPE-Sc	Sc
	FT	FT/SEC	FT/FT	FT/FT
AUXILIARY	2.02	7.71	0.024	0.070
SPILLWAY ---				

Inflow Hyd 1 PSH-Peak = 73.57 CFS at 16.40 hrs., Location Point

Inflow Hyd 1 FBH-Peak = 564.19 CFS at 14.30 hrs., Location Point
HYDOUT 1

1SITES....JOB NO. 1 COMPLETE.

0 SUBWATERSHED(S) ANALYZED.

1 STRUCTURE(S) ANALYZED.

2 HYDROGRAPHS ROUTED AT LOWEST SITE.

0 TRIALS TO OBTAIN BOTTOM WIDTH FOR SPECIFIED STRESS OR VELOCITY.

SITES.....COMPUTATIONS COMPLETE

>>>		SITE ID	SUBWS ID	SUBWS DA (SQ MI)	CURVE NO.	TC (HRS)	TOTAL DA (SQ MI)	TYPE DESIGN	STRUC CLASS	<<<	
		S 1	A	1.40	78.	3.33	1.40	378NR	A1		

PASS NO.	DIA./ WIDTH (IN/FT)	AUX.CREST ELEV (FT)	BTM. WIDTH (FT)	MAX. HP (FT)	MAX. ELEV (FT)	EMB. VOL. (CY)	INTEGR.* DIST. (FT)	EXIT* VEL. (FT/SEC)	TYPE HYD
1	0.0	1280.8	58.0	3.5	1284.2	0.	0.	5.0	MIN. AUX.

* INTEGRITY DIST. AND EXIT VEL. ARE BASED ON THE ROUTED HYDROGRAPH
AND WILL NOT RELATE TO THE MAX. ELEV. (TOP OF DAM),
WHICH IS SET BY MINIMUM DESIGN CRITERIA.

SITES.....SUMMARY TABLE 1 COMPLETED.

NRCS SITES VERSION 2005.1.8 ,01/01/2005
FILES

INPUT = E:\Projects2\Nelson_Darrell\Sites\24inch78_030915.D2C
OUTPUT = E:\Projects2\Nelson_Darrell\Sites\24inch78_030915.OUT
DATED 03/09/2015 13:47:33

GRAPHICS FILES GENERATED

OPTION "L" = E:\Projects2\Nelson_Darrell\Sites\24inch78_030915.DRG DATED 03/09/2015 13:47:
OPTION "P" = E:\Projects2\Nelson_Darrell\Sites\24inch78_030915.DHY DATED 03/09/2015 13:47:
OPTION "E" = E:\Projects2\Nelson_Darrell\Sites\24inch78_030915.DEM DATED 03/09/2015 13:47:



RECEIVED
SEP 30 2015
WATER RIGHTS
PROGRAM

DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

September 21, 2015

Darrell Nelson
44023 306th St
Yankton SD 57078

Dear Mr. Nelson:

Thank you for submitting the *Application for a Permit to Appropriate Water* for the dam to be located in the NE 1/4 Section 14-T94N-R56W, Yankton County. In order to complete the application, the following is required.

- The application/license filing fee for a 47.4 acre-feet storage dam will be \$700.00. We have received your check for \$50.00 and this amount will be applied towards the fee. Please submit an additional \$650.00.

If you have any questions, please contact me.

Sincerely,

Karen Schlaak

Karen Schlaak
Water Rights Program
605 773-3352
karen.schlaak@state.sd.us

Could you send me some
sort of receipt for the
\$700 permit fees for
my records.

Use Darrell Nelson dba
Morris Nelson Farms Inc.

Thank you



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

September 30, 2015

Darrell Nelson
44023 306th St
Yankton SD 57078

Dear Mr. Nelson:

Enclosed are the receipts for the payment of the application/license fee totaling \$700.

Please be aware that the *Application for a Permit to Appropriate Water* was applied for in your name. If you want the permit listed under the name of Morris Nelson Farms Inc., please let us know by letter or email and we will change the name accordingly.

You will receive a letter from us regarding the public notice, after a report and recommendation by the Chief Engineer are prepared.

If you have any questions, please contact me.

Sincerely,

Karen Schlaak
Water Rights Program
605 773-3352
karen.schlaak@state.sd.us

enclosures

No. 8184-3

Water Rights Program - DENR
Conversation File Documentation

NAME OF PERSON OR FILE: Water Permit Application No. 8184-3, Darrell Nelson

ADDRESS: COUNTY: Yankton County

DATE: October 7, 2015 TELEPHONE: cell 605661-4154

RE: livestock watering

I contacted Mr. Nelson and he asked that I amend the application to include domestic livestock watering as a proposed use.

NAME: Eini Humlund



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

November 10, 2015

Darrell Nelson
44023 306th St.
Yankton, SD 57078

Dear Mr. Nelson:

We have reviewed the plans and specifications for your dam project located in the NE ¼ NE ¼ of Section 14-T94N-56W, in Yankton 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 No. 8184-3 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 Nelson Dam will be classified as a small size Category 3, Low Hazard dam with a dam height of 33 feet and a normal storage capacity of 47.4 acre-feet and a maximum storage capacity of 101.30 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: Jared Gelderman, P.E., NRCS, 200 4th St SW, Huron SD 57350



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 8184-3, Darrell Nelson**

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. 8184-3, Darrell Nelson, 44023 306th Street, Yankton SD 57078.

The Chief Engineer is recommending APPROVAL of Application No. 8184-3 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. 8184-3 authorizes an impoundment with a storage capacity of 47.4 acre feet of water and sufficient water annually to maintain the water level to the outlet elevation at 1,278.0 feet mean sea level.
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
November 10, 2015

REPORT ON
WATER PERMIT APPLICATION No. 8184-3
Darrell Nelson
October 20, 2015

Water Permit Application No. 8184-3 has been filed by Darrell Nelson to impound 47.40 acre-feet of water from runoff by constructing a dam located in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 14-T94N-R56W, in Yankton County. The application also requests impoundment of sufficient water to maintain water at the outlet elevation. The water will also be used for fish and wildlife propagation and livestock water 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. 8184-3 is approved.

The dam will be 33 feet high with a normal storage capacity of 47.40 acre-feet with a reservoir level at the primary spillway elevation, and a maximum storage capacity of 101.30 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.

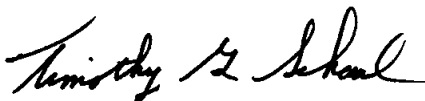
The dam has a drainage area of 897 acres or 1.40 square miles. The dam has a 48 inch diameter concrete riser and a 24 inch diameter PVC pipe with 6.3 feet of available freeboard as the primary spillway, and a 58 foot wide earthcut secondary spillway with 3.50 feet of available freeboard. A 25-year frequency event produces a peak runoff of approximately 193 cfs, and a 100-year frequency event produces a peak runoff of approximately 370 cfs. The earthcut spillway will have a capacity of approximately 987 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 37 acre-feet. The annual yield with a 50 percent chance of occurrence, or 1 out of 2 years, is expected to be 90 acre-feet, and the annual yield with a 10 percent chance of occurrence, or 1 out of 10 years, is expected to be 329 acre-feet.

The Nelson Dam will be located in the NE $\frac{1}{4}$ of Section 14-T94N-R56W on an unnamed tributary to Beaver Creek, about 1.0 mile upstream of the confluence of the unnamed tributary and Beaver Creek, and about 3.50 miles upstream of the confluence of Beaver Creek and the James River. There are no existing Water Rights/Permits filed on the unnamed tributary or Beaver Creek between the proposed dam and the James River.

Conclusions:

1. Water Permit Application No. 8184-3 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 domestic use should be a qualification on Water Permit Application No. 8184-3.



Timothy G. Schaal, P.E.
Engineer IV

RECEIVED

NOV 20 2015

WATER RIGHTS
PROGRAM

AFFIDAVIT OF PUBLICATION

YANKTON DAILY PRESS AND DAKOTAN

Department of Environment and Natural Resources
Water Rights Program
523 E Capitol Ave
Pierre SD 57501

STATE OF SOUTH DAKOTA
COUNTY OF YANKTON

KELLY HERTZ BEING FIRST DULY SWORN ON OATH DEPOSES
AND SAYS THAT HE IS THE MANAGING EDITOR OF, YANKTON
MEDIA INC, A CORPORATION, THE PRINTER AND THE PUBLISHER OF THE
YANKTON DAILY PRESS AND DAKOTAN, A LEGAL DAILY NEWSPAPER
PUBLISHED AND CIRCULATED IN THE CITY OF YANKTON, SAID COUNTY
AND STATE, AND ONE OF THE OFFICIAL NEWSPAPERS OF THE SAID
COUNTY OF FACTS STATED IN THIS AFFIDAVIT; THAT THE ANNEXED
Notice of Application No 8184-3

TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 18th DAY OF November 2015
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$23.60 ENSURES TO THE
BENEFITS OF THE PUBLISHER OF SAID NEWSPAPER AND THAT NO
AGREEMENT AND UNDERSTANDING FOR THE DIVISION THEREOF HAS
BEEN MADE WITH ANY OTHER PERSON, AND THAT NO PART THEREOF
HAS BEEN AGREED TO BE PAID TO ANY PERSON WHOMSOEVER.

PUBLISHED ON: 11/18/2015

FILED ON: 11/18/2015

SUBSCRIBED AND SWORN TO BEFORE ME THIS 18th DAY OF November

2015

NOTARY PUBLIC, SOUTH DAKOTA
MY COMMISSION EXPIRES 8/19/2021

11+18
NOTICE OF APPLICATION NO.
8184-3 to Appropriate Water

Notice is given that Darrell Nelson, 44023 306th St, Yankton SD 57078 has filed an application for a water permit to impound 47.4 acre-feet of water from runoff by constructing a dam located in the NE 1/4 NE 1/4 Section 14 with water impounded in the N 1/2 NE 1/4 Section 14; all in T94N-R56W. This application requests impoundment of sufficient water to maintain water to the outlet elevation of 1278.0 feet mean sea level. The water is for fish and wildlife propagation and livestock water purposes.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8184-3 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. In accordance with SDCL 46-2A-23, the Chief Engineer will act on this application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. 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.

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 November 30, 2015.

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. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pimer, Secretary, Department of Environment and Natural Resources.
Published once at the total approximate cost of \$23.60.

Schlaak, Karen

From: Schlaak, Karen
Sent: Tuesday, November 10, 2015 11:20 AM
To: 'Tera Schmidt'
Subject: 8184-3, Darrell Nelson
Attachments: 8184-3public.short.docx; FORM8.FRM.doc

Attached is a notice to be published on November 18, 2015.

Darrell Nelson, 44023 306th St, Yankton SD 57078 (605-665-7216) 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.

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

Karen Schlaak

Water Rights Program
523 E Capitol Ave
Pierre SD 57501
Phone: 605 773-3352



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

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

November 10, 2015

Darrell Nelson
44023 306th St
Yankton SD 57078

Dear Mr. Nelson:

Water Permit Application No. 8184-3 for irrigation use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Press & Dakotan printed at Yankton SD (Ph # 605-665-7811). You will need to contact the newspaper(s) 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(s) to authorize publication of your Notice and to arrange for payment. Early contact with the paper(s) 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 November 18, 2015. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 8184-3 to Appropriate Water

Notice is given that Darrell Nelson, 44023 306th St, Yankton SD 57078 has filed an application for a water permit to impound 47.4 acre-feet of water from runoff by constructing a dam located in the NE 1/4 NE 1/4 Section 14 with water impounded in the N 1/2 NE 1/4 Section 14; all in T94N-R56W. This application requests impoundment of sufficient water to maintain water to the outlet elevation of 1278.0 feet mean sea level. The water is for fish and wildlife propagation and livestock water purposes.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8184-3 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. In accordance with SDCL 46-2A-23, the Chief Engineer will act on this application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. 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.

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 November 30, 2015.

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. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pirner, Secretary, Department of Environment and Natural Resources.

Published once at the total approximate cost of_____.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

DEC 1 1 2015

Darrell Nelson
44023 306th St
Yankton SD 57078

Dear Mr. Nelson:

Enclosed is Water Permit No. 8184-3 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

**Report of Examination of Works and/or Application of Water to Beneficial Use
For Permit No. 8184-3**

I have this day, April 6, 2020, made a thorough examination of the water use system constructed by Darrell Nelson, 44023 306th St., Yankton, SD of Permit No. 8184-3, bearing the priority of 9/18/2015 authorizing storage of 47.4 acre-feet of water to maintain a water level outlet elevation of 1278.0 for fish and wildlife propagation, domestic purposes in Yankton County.

Inspection contact: Darrell Nelson, Owner

A. Works used to put water to beneficial use:

- 1) Height to crest 32.5 feet from downstream toe.
- 2) Height to outlet pipe 26.3 feet from downstream toe.
- 3) Height to spillway 28.9 feet from downstream toe.
- 4) Crest width 15 feet
- 5) Crest length 325 feet
- 6) Spillway width 58 feet
- 7) Approx. storage to outlet pipe 47.4 ac-ft.
- 8) Approx. storage to spillway 68.1 ac-ft.
- 9) Approx. storage to crest 101.3 ac-ft.
- 10) Date constructed: 2015, as-builts dated 10/19/2015

B. Works used to put water to beneficial use:

- 1) This is an earth fill embankment utilizing a 15-foot wide top trapezoidal dam. The end of the discharge pipe is armored with rock riprap. 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
- 2) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period. N/A
- 3) List any extended period of nonuse: None
- 4) Exceptions to compliance are: None

D. Condition and Location:

- 1) The system is in good condition with the dam centerline located as follows: 430 feet west and 490 feet south of the NE corner of Section 14 T94N R56W (42.96527, -97.49190, NE1/4NE1/4).
- 2) The works are capable of storing 47.4 acre-feet of water with an outlet elevation of 1278.1 feet.
- 3) All structures and lands on map Yes

E. Comments or other permit(s) associated with the project: The dam dimensions and storage area are from as-built plans that NRCS sent to the owner. The dam is well maintained and in very good condition.

Keith DeJong

Keith DeJong
Water Rights Inspector
DENR, Water Rights Program

Date report completed: **April 9, 2020**



Looking S. Along the W. Side of the Dam



Looking West at the Overflow Spillway



Looking West at the Outlet Structure



Looking N. Along the W. Side of the Dam

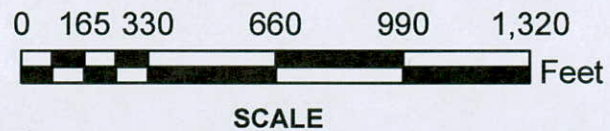
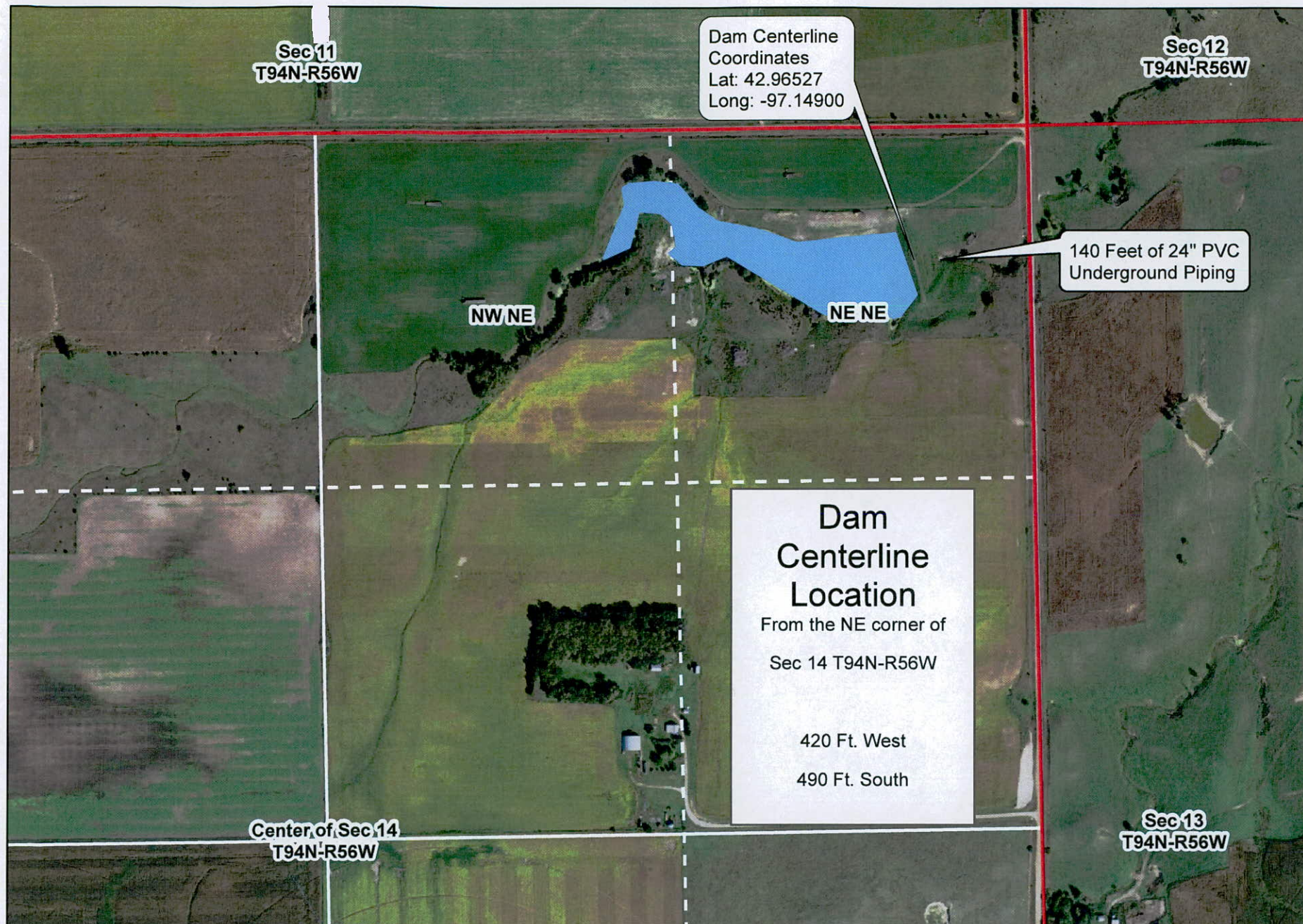


Looking West at the Discharge Pipe Outlet



Looking NE Along the E. Side of the Dam

Water Right No. 8184-3



Keith DeJong
Keith DeJong, PE
Staff Engineer
April 9, 2020



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

May 1, 2020

8184-3

Darrell Nelson
44023 306th St
Yankton SD 57078

Dear Mr. Nelson:

Enclosed is Water License No. 8184-3. 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,

Eric Gronlund, Chief Engineer
Water Rights Program
605 773-3352

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 8184-3**

(1) Darrell Nelson, 44023 306th St, Yankton SD 57078 made Application No. 8184-3, September 18, 2015 for a water permit to impound 47.4 acre feet of runoff water by constructing a dam located in Yankton County, South Dakota for fish & wildlife propagation and domestic livestock watering purposes. Permit No. 8184-3, with a priority date of September 18, 2015 was approved November 30, 2015 and issued to the applicant for impoundment of water with construction of the storage dam to be completed on or before November 30, 2020 and for the application to beneficial use of water on or before November 30, 2024.

The Permit holder submitted a "Notice of Completion of Works and Application of Water to Beneficial Use" on April 15, 2020. The "Notice" stated the water use system was completed on November 1, 2015 and the water placed to beneficial use on May 1, 2016.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the storage dam and is entitled to impound 47.4 acre feet of water annually for beneficial use. The location of the storage dam is:

- 430 feet west and 490 feet south of the NE corner of Section 14, T94N R56W (NE ¼ NE ¼) Latitude 42.96527, Longitude -97.49190

(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 Darrell Nelson, 44023 306th St, Yankton SD 57078 the holder and/or owner of Water Right No. 8184-3 is issued a license to appropriate water, the right to impound 47.4 acre feet of water annually from runoff with a priority date of September 18, 2015 from the location specified in (2) of this license for fish & wildlife propagation and domestic livestock watering purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 8184-3 and subject to the following qualifications:

- Water Right No. 8184-3 authorizes an impoundment with a storage capacity of 47.4 acre feet of water and sufficient water annually to maintain the water level to the outlet elevation of 1,278.0 feet mean sea level.
- Low flows as needed for downstream domestic use including livestock water and prior water rights must be bypassed.

Eric S. Gronlund

Eric Gronlund, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

April 30, 2020

date



8184-3

**NOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USE**

MAIL TO: PMB 2020
DENR - Water Rights Program
523 E Capitol Ave
Pierre, SD 57501-3182
ph. (605) 773-3352

Date 4-15-20FROM: Darrell Nelson
(name)44023 306 St,
(address)Yankton SD 57078 605-661-4154
(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. 8184-3 states that the water use system is to be constructed by
November 30, 2020, and water is to be put to beneficial use by November 30, 2024
(date) (date)

The water use system was completed on November 1, 2015
(date)

Applying the water to beneficial use was completed on May 1, 2016
(date)

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

Darrell Nelson

