

WATER PERMIT NO. 2508-2

Name of Applicant: Steve Halverson

Address: 1613 Hilltop Dr., Pierre SD 57501

Phone: 605 224-6334

Amount of Water Claimed: 76.40 AF

Total Acres: NA

Source of Water Supply: runoff

Water to be used for: livestock, FWP, recreation

County: Lyman

Type of Waste Disposal System:

Location: 5 south of Kennebec

PRIORITY Date Received: 6-11-03

Application/License Fee: \$200

Corrected Application Received:

Period of Annual Use: January 1 – December 31

Remarks: 4 miles south of Kennebec

Diversion Point: SW ¼ SW ¼ Sec 9-T104N-R75W

Water Impounded: SW ¼ Sec 9-T104N-R75W

Depth of Well: NA

Well Driller: : NA

Remarks:

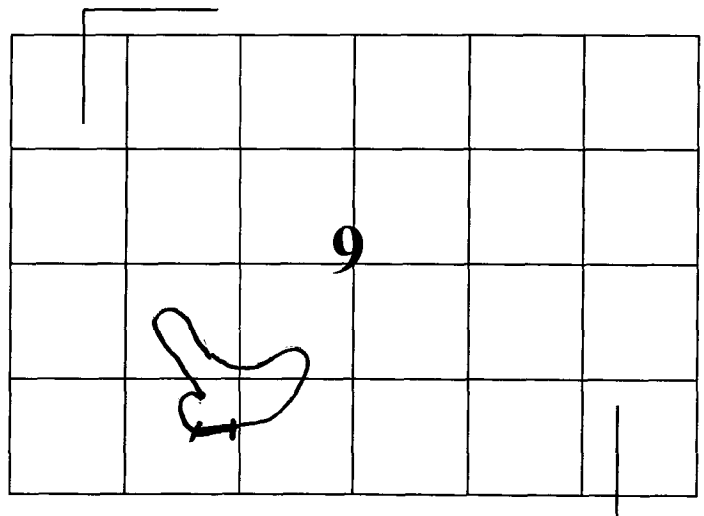
Type of Map: topographic

Prepared by: Tim Olson, GF&P

Reviewed and the Number Assigned on: 6-12-03

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____



**SOUTH DAKOTA
WATER PERMIT NO. 2508-2**

Date of first receipt of application June 11, 2003.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 2508-2 to Steve Halverson, 1613 Hilltop Drive, Pierre SD 57501 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. 2508-2 authorizes impoundment of 76.40 acre-feet of water from runoff by constructing a dam located in the SW ¼ SW ¼ Section 9 with water impounded in the SW ¼ Section 9; all in T104N-R75W.
2. The water appropriated shall be used for the purpose of fish and wildlife propagation, recreational use and livestock water purposes 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. 2508-2 is July 28, 2003.
5. The date from which applicant may claim right is June 11, 2003.
6. One-fifth of the construction is to be completed on or before January 28, 2006.
7. All construction is to be completed on or before July 28, 2008.
8. Water is to be put to beneficial use on or before July 28, 2012.
9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

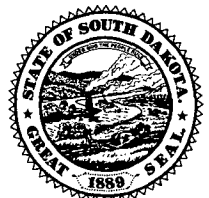
1. Water Permit No. 2508-2 authorizes a dam with a storage capacity of 76.4 acre feet of water and sufficient water annually to maintain the water level to the outlet elevation.
2. Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.

WATER MANAGEMENT BOARD

By: Garland Erbele
Garland Erbele, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

AUG 06 2003

date



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

RECEIVED

JUN 11 2003

WATER RIGHTS
PROGRAM

Mail to: Water Rights Program Joe Foss Building 523 E. Capitol Pierre, SD 57501-3181 (605) 773-3352	No. <u>2508-2</u>	(office use only) Hydrologic Unit <u>10140104</u>
	Basin <u>Missouri River</u>	
	Newspaper <u>Lyman Co. Herald, Presho</u>	

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.)

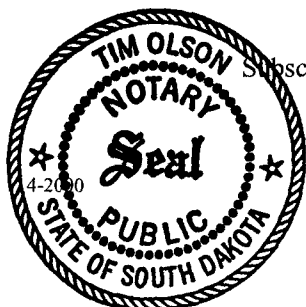
- Name of Applicant Steve Halverson Phone 224-6334
(check one) ☐ Owner ☐ Tenant/lessee
Mailing Address 1613 Hilltop Dr. Pierre State SD 57501
(Street, RR, or Box and City) (Zip Code)
- Amount of water claimed _____ *CFS or _____ **GPM 76.40 ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (***Acre Feet - storage capacity of dam/dugout or annual use if applicable)
- Source of water supply dry draw, run off
- Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) County Lyman
SW 1/4, SW 1/4, Section 9, T104N, R75W Water Impounded: SW1/4 Sec 9-T104N-R75W
- County or counties where water will be used Lyman
- Annual period during which water is to be used year around Jan 1-Dec 31
- 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)
Dam to be constructed in cooperation with SD Game, Fish and Parks, Wildlife Division for stockwater, fish, wildlife and recreational purposes

STATE OF SOUTH DAKOTA)

County of Hughes

SS

Attachments: Attach Form 2A if diversion is from a well or dugout, or if storage of water is proposed. Attach map and any other technical information. (see instructions)

I, Steve Halverson, the applicant, certify that I have read this application, have examined the attached map and that the matters stated are true and that I intend, and am able to complete the necessary construction.Applicant's signature Steve HalversonSubscribed and sworn to before me this 6th day of June 20 03
T. Olson
 Notary Public signature

My Commission Expires May 18, 2007

Supplemental Information

(type or print in ink)

1. Well Information - Proposed Construction

- a) Drill Hole Diameter _____ Depth _____
- b) Casing Type _____ Diameter _____ Thickness _____
- c) Screen Type _____ Diameter _____ Thickness _____
- d) Gravel Pack _____ Length of Gravel Pack _____
- e) Depth to Top of Water Bearing Material _____
- f) Depth to Water (ground surface to water level) _____
- g) Distance to nearest existing domestic well:
On applicants 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

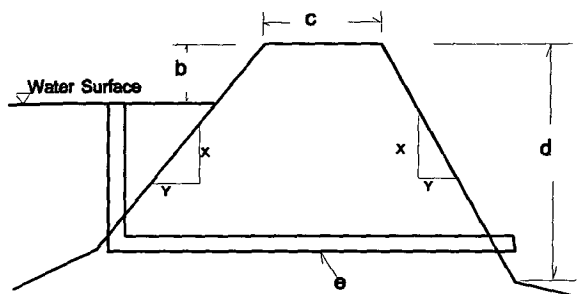
- a) Surface Dimensions _____ Depth _____
- b) Depth to water (ground surface to water level) _____

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.

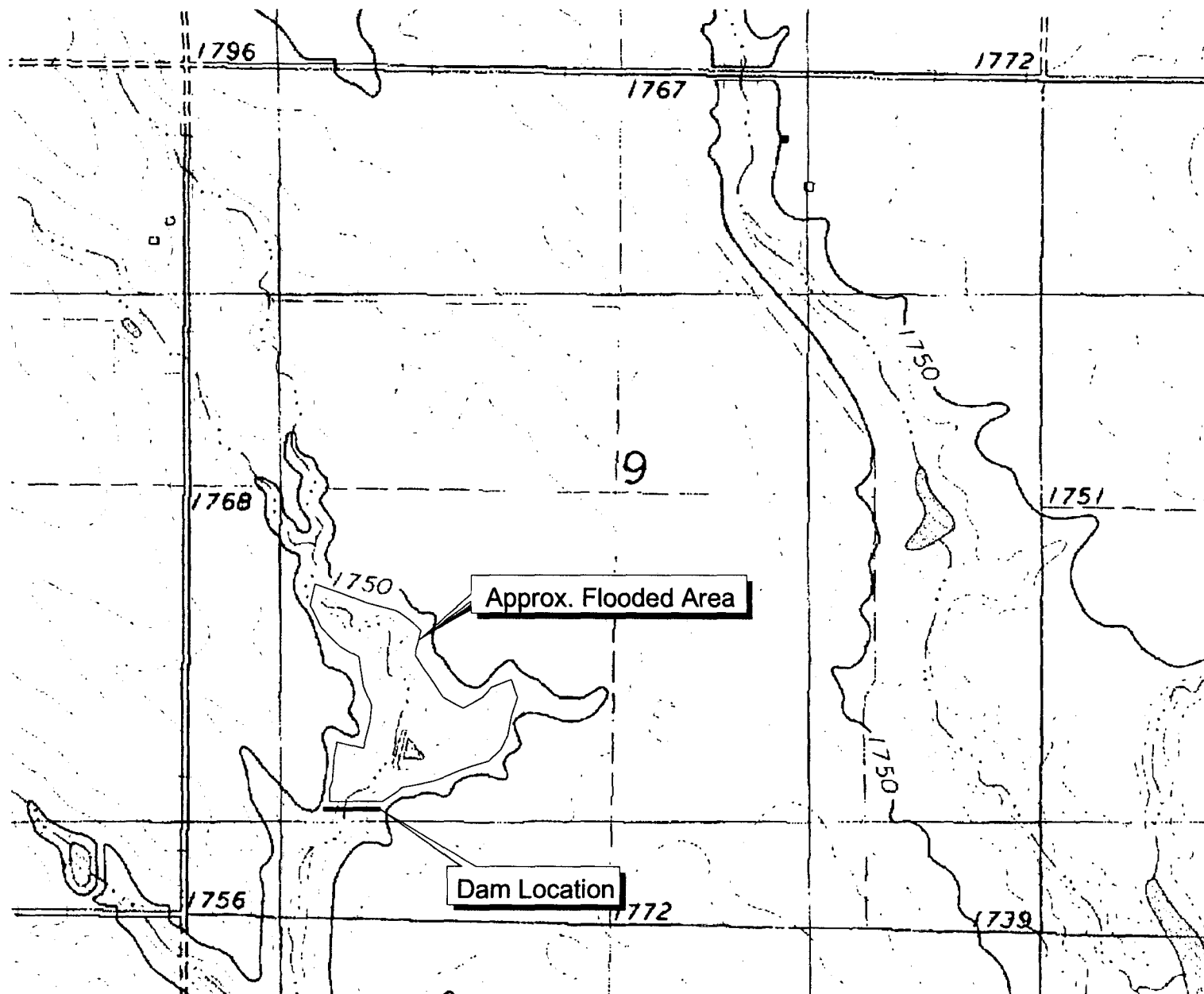
- a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address:

Kennebec NRCS Office
202 S. Main St., Suite 1
PO Box 156
Kennebec, SD 57544

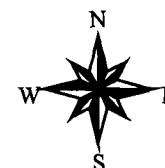


- b) Freeboard _____ 4.7 ft. to primary
- c) Crest Width _____ 12 ft
Crest Length _____ 325 ft
- d) Height _____ 17.4 ft
- e) Primary Outlet Capacity _____ 32.7 cfs
If pipe, diameter _____ 18 in pipe w/ riser
- f) Secondary Spillway Capacity _____ 303 cfs
Spillway Width _____ 50 ft
- g) X & Y Slope _____
Upstream _____ 3:1
Downstream _____ 3:1
- h) Surface Area of Impoundment _____ 17.3 acre
- i) Storage _____ 76.4 Acre Feet
- j) Drainage Area Above Dam _____ 691.0 Acres

Steve Halverson Wildlife Pond Project
SW 1/4, SW 1/4, Section 9, T104N, R75W, Lyman County



0.4 0 0.4 0.8 Miles



T. Olson, SDGFP

2508-2

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date June 12, 20 03

RECEIVED OF Steve Halversen 1613 Hilltop Drive, Pierre SD 57501

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

Fee for Application for Permit No. <u>2508-2</u> to Appropriate Water, to construct and to put water to beneficial use	150	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>2508-2</u>	50	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	200.00

No.

000802

By

Garland Erbeley

Chief Engineer

1165



United States
Department of
Agriculture

Natural
Resources
Conservation
Service

Field Office
Main Street
P. O. Box 156
Kennebec, SD 57544-0156
Telephone: (605) 869-2216
Fax: (605) 869-2205

Subject: Steve Halverson pond

Date: May 8, 2003

RECEIVED

JUN 11 2003

WATER RIGHTS
PROGRAM

To: Tim Olson
Wetland Habitat Biologist
SD Dept. Game Fish & Parks
523 E Capitol Ave.
Pierre, SD 57501

Tim,

Attached for review are the plans and specifications for Steve Halversons pond. Location:
SW 9-104-75 Lyman County, SD. The structure data is as follows:

Hazard Class – A as per NRCS criteria

Drainage Area: 691 acres

Storage: Principal spillway elev. 102- ^{76.4}17.4 ac. Ft. , Surface area 17.3 ac.

Emergency spillway elev. 103.7 – 109.0 ac. Ft., S. A. 22.0 ac.

Top of dam elev. 106.7 – 187 ac. Ft.

Fill Height: 17.4 ft.

Effective Height: 14.4

Storage X Height: 1565

Principal Spillway Design Storm- 2 yr.

Emergency Spillway Design Storm- 50 yr. 303cfs at 2.0 ft. depth

Principle spillway – 18" PE hood inlet and cement riser combination (32.7cfs peak discharge)

Also , Tim, in filling out a NEPA form we are required to complete for each practice I found that for a structure impounding > 10 surface area we need to consult with your agency and Fish & Wildlife (Fish and Wildlife Coordination Act). I have contacted Rich Madson and he is working on this from his end . I will need documentation from this consultation. You may like to visit with Rich concerning this. Any Questions please give me a call.

Lee Ozanne
Resource Conservation Technician
NRCS
PO Box 156
Kennebec, SD 57544

1*****
 SITES XEQ 05/06/2003 WATER RESOURCE SITE ANALYSIS COMPUTER PROGRAM
 VER 2000 (USER MANUAL - DATED MAY 2001)
 TIME 11:29:57

***** 80-80 LIST OF INPUT DATA *****

SITES 05/01/2000 Steve Halverson Pond 1.0796875 H5
 SAVMOV 0 101
 SAVMOV 101 1 1
 STRUCTURE .

90 .03
 92 .75
 94 2.5
 96 5.1
 98 8.5
 100 12.7
 102 17.3
 104 23
 106 29

ENDTABLE
 WSDATA 5A1 AC 84 691 9715 5
 BASEFLOW 0
 PDIRECT 2.3 .00 4.70
 POOLDATA ELEV 102 102 89.3 89.3 SC
 PSINLET 1 12
 PSDATA 1 84 18 .009 91.1
 ASDATA 41 300 250 3 .1 2
 ASINSURF 41 .03
 ASINLET 41 0.0 0.0 150 0.0 3
 250 14

ENDTABLE
 ASEXSURF 41 .035
 .65 0
 3
 2 0
 .02

ENDTABLE
 ASEXIT 41 N 100
 BTMWIDTH FEET 50
 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 05/06/2003 Steve Halverson Pond WSID=
 VER 2000 SUBW= A
 TIME 11:29:57 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	
2.30	0.00	0.00	4.70	
WSDATA - CN	DA-SM	TC/L	-/H	QRF
84.00	1.08	9715.00	5.00	0.00
SITEDATA- PERM POOL	CREST PS	FP SED	VALLEY FL	378?
102.00	102.00	0.00	89.30	YES
BASEFLOW	INITIAL EL	EXTRA VOL	SITE TYPE	
0.00	0.00	0.00	DESIGN	
PSDATA - NO. COND	COND L	DIA/W	-/H	
1.00	84.00	18.00	0.00	
PS N	KE	WEIR L	TW EL	
0.009	1.00	12.00	91.10	
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	250	
AUX.DATA - INLET N	SIDE SLOPE	EXIT N	EXIT SLOPE	ACTUAL AUX?
0.030	3.00	0.035	0.100	NO
BTM WIDTH - BW1	BW2	BW3	BW4	BW5
ft 50.00	0.00	0.00	0.00	0.00

AUXILIARY SPILLWAY RATING DEVELOPED USING WSPVRT.

1SITES

XEQ 05/06/2003
VER 2000
TIME 11:29:57

Steve Halverson Pond

WSID=
SUBW= A
PART= 2

SITE = S 1 PASS= 1

PERM POOL	102.00 FT	76.4 ACFT	17.30 AC	0.0 CFS
CREST PS	102.00 FT	76.4 ACFT	17.30 AC	0.0 CFS
SED ACCUM	102.00 FT	76.4 ACFT	17.30 AC	0.0 CFS
START ELEV	102.00 FT	76.4 ACFT	17.30 AC	0.0 CFS
NRCS-PSH	D= 24.00 HR	P= 2.30 IN	Q= 0.96 IN	DA= 1.08 SM
	TC= 1.28 HR	CN= 84.00	VOL= 55.4 ACFT	

PEAK = 285.6 CFS, AT 12.6 HRS.

ROUTED RESULT - HYD TYPE	EMAX	VOL-MAX	AMAX	QMAX
NRCS-PSH	103.66 FT	109.0 ACFT	22.02 AC	30.4 CFS
PS STORAGE	32.6 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.			
DRAWDOWN (DDT) TEST	102.00 FT	76.4 ACFT	0.00 CFS	

CONTROL IS 0.000 DETENTION STORAGE

TIME = 3.36 DAYS, TO 0.0 CFS (LIMIT = 10.00 DAYS)

RATING TABLE DEVELOPED, SITE = S 1:
BY PROGRAM FOR PS AND AUX. SPILLWAYS
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	102.00	0.00	0.00	0.00	76.43	17.30
2	102.21	3.67	3.67	0.00	80.19	17.91
3	102.43	10.38	10.38	0.00	84.08	18.52
4	102.64	19.07	19.07	0.00	88.10	19.13
FULL CONDUIT FLOW, ELEV = 102.85 FT						
5	102.85	29.36	29.36	0.00	92.24	19.73
6	103.25	29.88	29.88	0.00	100.22	20.85
7	103.64	30.36	30.36	0.00	108.65	21.98
8	104.03	30.83	30.83	0.00	117.51	23.10
9	104.43	31.30	31.30	0.00	126.82	24.28
10	104.82	31.76	31.76	0.00	136.60	25.46
11	105.21	32.21	32.21	0.00	146.85	26.64
12	105.61	32.65	32.65	0.00	157.56	27.82
13	106.00	33.09	33.09	0.00	168.73	29.00

1SITES

XEQ 05/06/2003

VER 2000

TIME 11:29:57

Steve Halverson Pond

SITE = S 1

PASS= 1

WSID=

SUBW= A

PART= 3

AUX. CREST 103.66 FT 109.0 ACFT 22.02 AC 30.4 CFS

PS STORAGE 32.6 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.

START ELEV 102.00 FT 76.5 ACFT 17.31 AC 0.0 CFS

EFFECTIVE HEIGHT(H) = 14.4 FEET, PRODUCT = 1565. (H * STORAGE AT CREST AUX.).

INPUT DESIGN CLASS = A1 = LT 3000. PRODUCT.

NRCS-FBH D= 24.00 HR P= 4.70 IN Q= 3.00 IN DA= 1.08 SM
TC= 1.28 HR CN= 84.00 VOL= 172.5 ACFT

PEAK = 934.8 CFS, AT 12.6 HRS.

RATING TABLE DEVELOPED, SITE = S 1:
BY PROGRAM FOR PS AND AUX. SPILLWAYS
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	102.00	0.00	0.00	0.00	76.43	17.30
2	102.21	3.67	3.67	0.00	80.19	17.91
3	102.43	10.38	10.38	0.00	84.08	18.52
4	102.64	19.07	19.07	0.00	88.10	19.13
FULL CONDUIT FLOW, ELEV = 102.85 FT						

5	102.85	29.36	29.36	0.00	92.24	19.73
6	102.95	29.52	29.52	0.00	94.24	20.02
7	103.05	29.64	29.64	0.00	96.26	20.31
8	103.16	29.77	29.77	0.00	98.31	20.59
9	103.26	29.89	29.89	0.00	100.39	20.88
10	103.36	30.01	30.01	0.00	102.50	21.16
11	103.46	30.14	30.14	0.00	104.64	21.45
12	103.56	30.26	30.26	0.00	106.81	21.74
13	103.66	30.38	30.38	0.00	109.01	22.02
14	103.77	33.86	30.52	3.34	111.61	22.36
15	103.89	37.33	30.66	6.67	114.24	22.69
16	104.10	46.48	30.91	15.57	119.09	23.31
17	104.36	70.83	31.22	39.61	125.20	24.08
18	104.83	144.91	31.76	113.15	136.81	25.49
19	105.41	272.06	32.44	239.63	152.26	27.24
20	106.00	443.72	33.09	410.63	168.73	29.00

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	50.	150.	-14.0	0.030	**	**	**	INLET
2	150.	300.	0.0	0.030	**	**	**	CREST
3	300.	400.	10.0	0.035	0.65	3	2.0	EXIT !

@ The program interprets retardance curve index entries of less than 1 as Manning's n values.

* 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 103.66 FT.

DRAWDOWN (DDT) TEST 102.00 FT 76.4 ACFT 0.00 CFS
CONTROL IS 0.000 DETENTION STORAGE

TIME = 3.44 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	50.0	105.64	158.4	27.9	1.98	49.4

PEAK - CFS	Q-PS	Q-AUX.	Q-TOT.
DISCHARGE =	32.7	303.1	335.8

	CRITICAL DEPTH FT	CRITICAL VELOCITY FT/SEC	CRITICAL SLOPE-Sc FT/FT	25% OF Q Sc FT/FT
AUXILIARY SPILLWAY ---	1.02	5.58	0.018	0.024

EFFECTIVE STRESS FOR STABILITY ANALYSIS OF AUX. EXIT CHANNEL
(Refer to Ag. Handbook 667, Chapt. 3, for allowable stresses.)
Aux. Discharge = 303. cfs; Bottom Width = 50. ft

REACH NO.	FROM STA	TO STA	SLOPE %	MANNING'S n	VELOCITY ft/s	STRESS lb/ft^2
3	300.	400.	10.00	0.035	9.48	2.341

AUXILIARY SPILLWAY DURATION FLOW = 16.0 HOURS

ATTACK, OE/B = 1.9 ACFT/FT

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

EXIT CHANNEL FLOW SUPERCRITICAL: MAX VELOCITY= 9.5 FT/SEC
EXIT SLOPE = 0.100 FT/FT
FLOW DEPTH = 0.6 FT

>>>> NHCP378 RUN - MINIMUM DEPTH, CREST AUX. TO TOP OF DAM IS 2.00 FT.
NEW TOP OF DAM ELEVATION = 105.66.

ROUTED	BTM WIDTH	MAX ELEV	VOL-MAX	AREA-MAX	AUX.HP	VOL-AUX.
RESULTS	FT	FT	ACFT	AC	FT	ACFT
MINIMUM AUX.	50.0	105.66	159.1	28.0	2.00	50.1
PEAK - CFS		Q-PS	Q-AUX.	Q-TOT.		
DISCHARGES =		32.7	310.5	343.2		
		CRITICAL	CRITICAL	CRITICAL	25% OF Q	
		DEPTH	VELOCITY	SLOPE-Sc	Sc	
AUXILIARY		FT	FT/SEC	FT/FT	FT/FT	
SPILLWAY ---		1.04	5.62	0.018	0.024	

>>>> NHCP378 RUN - MINIMUM DEPTH, DESIGN FLOW TO TOP OF DAM; 1.00 FT REQUIRED
FOR THIS PASS. NEW TOP OF DAM ELEVATION = 106.64.

ROUTED	BTM WIDTH	MAX ELEV	VOL-MAX	AREA-MAX	AUX.HP	VOL-AUX.
RESULTS	FT	FT	ACFT	AC	FT	ACFT
MINIMUM AUX.	50.0	106.64	186.6	30.8	2.94	77.6
PEAK - CFS		Q-PS	Q-AUX.	Q-TOT.		
DISCHARGES =		33.7	596.3	630.1		
		CRITICAL	CRITICAL	CRITICAL	25% OF Q	
		DEPTH	VELOCITY	SLOPE-Sc	Sc	
AUXILIARY		FT	FT/SEC	FT/FT	FT/FT	
SPILLWAY ---		1.59	6.86	0.016	0.021	

***** WARNING - SOLUTION EXCEEDED MAX. INPUT ELEVATION (106.00) BY 0.60 FT.

INFLOW HYD 1 PSH-PEAK = 30.38 CFS AT 16.51 HRS, LOCATION POINT
INFLOW HYD 1 FBH-PEAK = 335.76 CFS AT 13.72 HRS, LOCATION POINT
HYDOUT 1

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

Steve Halverson Pond

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	1.08	84.	1.28	1.08	378CR	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	18.0	103.7	50.0	3.0	106.6	0.	0.	9.5	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 2000 ,05/01/2000
FILES

INPUT

C:\Program Files\usda\SITES\shalveson\18tSites.D2C

OUTPUT - DATED 05/06/2003 11:29:57

C:\Program Files\usda\SITES\shalveson\18tSites.OUT

GRAPHICS FILES GENERATED

OPTION "L" DATED 05/06/2003 11:29:57

C:\Program Files\usda\SITES\shalveson\18tSites.DRG

OPTION "P" DATED 05/06/2003 11:29:57

C:\Program Files\usda\SITES\shalveson\18tSites.DHY

OPTION "E" DATED 05/06/2003 11:29:57

C:\Program Files\usda\SITES\shalveson\18tSites.DEM

Client: Steve Halverson
 County: Lyman
 Practice:
 Calculated By: LDO
 Checked By: _____

State: SD

Date: 5/1/03

Date: _____

Drainage Area: 691 Acres (User entered value)
 Curve Number: 84 (User entered value)
 Watershed Length: 9715 Feet
 Watershed Slope: 5 Percent
 Time of Concentration: 1.282 Hours (Calculated value)
 Rainfall Type: II

Storm Number	1	2	3	4	5	6	7
Frequency (yrs)	1	2	5	10	25	50	100
24-Hr rainfall (in)	1.80	2.30	3.10	3.60	4.20	4.70	5.30
Ia/P Ratio	0.21	0.17	0.12	0.11	0.09	0.08	0.07
Used	0.21	0.17	0.12	0.11	0.10	0.10	0.10
Runoff (in)	0.61	0.96	1.60	2.02	2.55	3.00	3.55
Unit Peak Discharge (cfs/acre/in)	0.428	0.449	0.467	0.475	0.477	0.477	0.477
Peak Discharge (cfs)	179	299	516	664	841	989	1,170

<<Earthfill quantities based of centerline of fill section>>

Under file code SteveHa.xse

*** Hydro-Yardage Version 5.31 Dated: 12/2/97 ***

(Includes berm, main fill, core trench & spway dike)

Landowner ----- Steve Halverson Site no.-----

District ----- Lyman County

Location ----- SW 9-104-75

Computed by --- LDO

Date ----- 04-30-2003 @ 10:40:23

Top of fill elev ----- 106.7

Top width ----- 12 Feet

Emergency spillway elev. ----- 103.7

The emergency spillway is located on the right side

Upstream fill slope = 3.0:1 Downstream fill slope = 3.0:1

Elevation of crest ----- 102.0

Berm width ----- 10 feet

Core trench depth = 3.0 feet with a length of 247.6 feet

(Core trench assumed 10.0 ft. bottom w/ 1.0:1 sideslopes)

Spillway dike length = 0 feet with a 12 % sidehill slope

Emergency dike topwidth = 8 feet with sideslopes of 3.0:1 and 3.0:1
with a fill height of 0.0 feet

* * * * *	* * * * *	* * * * *	* * * * *
* Station	Elevation	Yardage x 2	*
* -----	-----	-----	*
* 0.0	108.9	0.0	*
* 56.9	106.7	0.0	*
* 75.0	106.0	18.1	*
* 121.6	102.0	310.4	*
* 160.0	98.7	773.7	*
* 225.0	91.0	3782.5	*
* 255.0	89.7	2831.7	*
* 285.0	89.3	3087.5	*
* 325.0	96.9	2894.8	*
* 369.2	102.0	1140.4	*
* 377.9	103.0	89.0	*
* 383.9	103.7	45.8	*
* 390.0	104.4	0.0	*
* 480.0	111.7	0.0	*
* * * * *	* * * * *	* * * * *	*

Main fill including berm (if any berm) ----- 7487.0 cu. yds.

Emergency spway dike fill ----- 0.0 cu. yds.

Core trench ----- 286.6 cu. yds.

Total structure yardage ----- 7773.6 cu. yds.

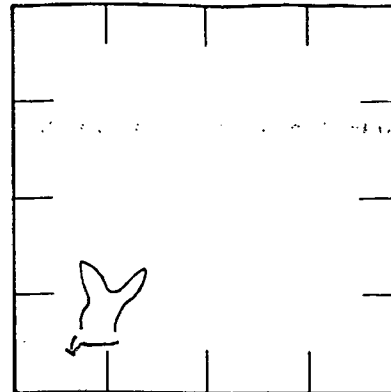
<<< Notes >>>

Fill yardage includes stripping 0.50 ft. deep plus (berm yardage)
Emergency dike yardage based on depth plus 0.50 ft. deep stripping
Core trench yardage based on depth minus 0.50 ft. deep stripping
Settlement of 5.0 % was used on the earthfill computations

STRUCTURE DATA

DRAINAGE AREA	ANNUAL YIELD	PEAK RUNOFF	EMERG. SPLWY. CAPACITY	WATER DEPTH	SURFACE AREA	SEDIMENT STORAGE	TOTAL STORAGE
ACRES	AC. FT.	CFS 25-YR.	C.F.S.	FEET	ACRES	AC. FT.	AC. FT.
691	35.1	793	303	12.0	17.3	18.7	76.4

at 2.6'



Sec. 9 T. 104 R. 75
Lyman County

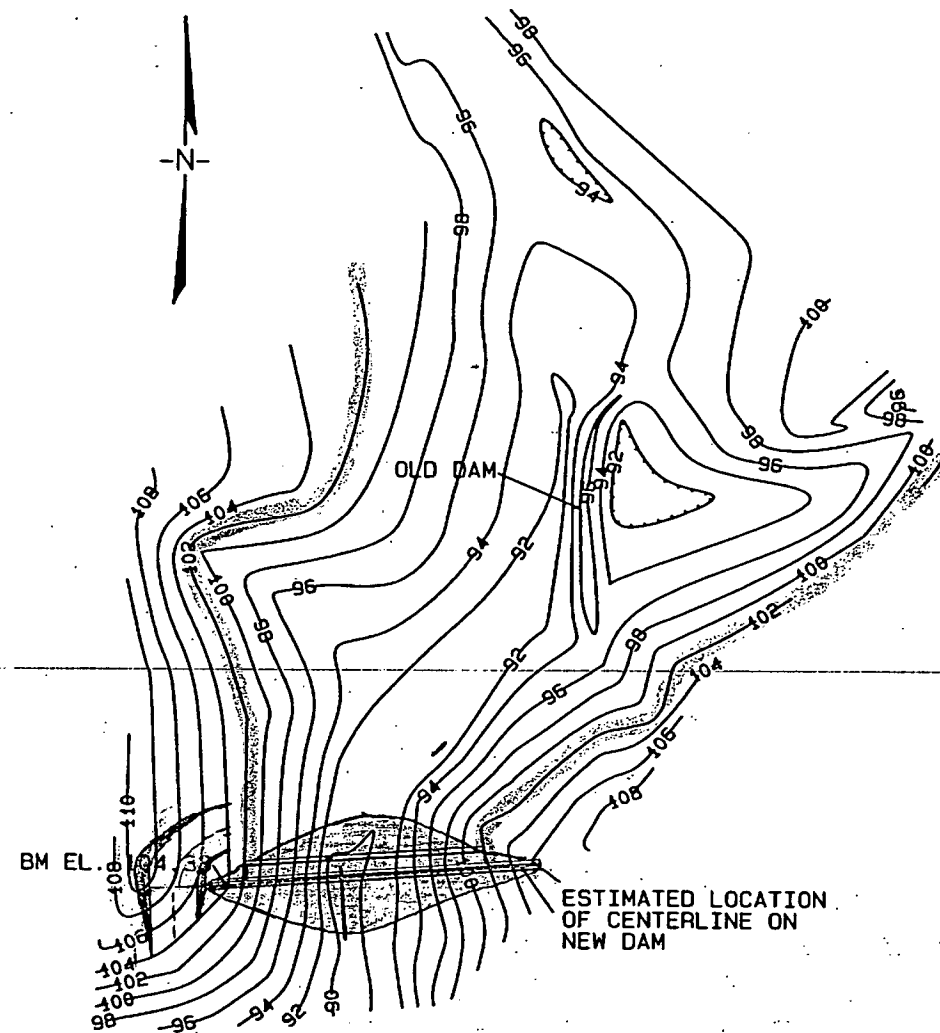
LOCATION

STAGE STORAGE TABLE FOR DAM

ELEV feet	DEPTH feet	SURFACE AREA acres	CUMULATIVE VOLUME ac.-ft.
90.0	0.0	0.03	0.0
92.0	2.0	0.75	0.78
94.0	4.0	2.50	4.03
96.0	6.0	5.10	11.63
98.0	8.0	8.50	25.23
100.0	10.0	12.70	46.43
102.0	12.0	17.30	76.43
104.0	14.0	23.00	116.73
106.0	16.0	29.00	168.73
106.7		31	181

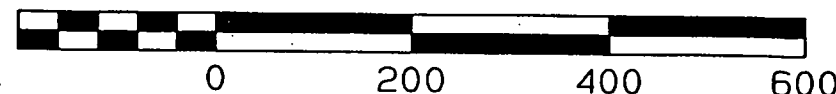
TABLE OF QUANTITIES

ITEM	UNIT	QUANTITY
EARTHWORK: EMBANKMENT		
(INCLUDES 5% STRIPPING)	C.YD.	7487
CORE TRENCH	C.YD.	287
UNDERCUTTING & BACKFILL E. Spwy	C.YD.	280
18" CORRUGATED SMOOTH LINED PE PIPE	L. FT.	84
CONCRETE RISOR (SEE JP# 5.4A)	ea.	1
TIMBER PIPE SUPPORT (SEE JP# 4.0)	ea.	1
ANTIVORTEX BAFFLE (SEE JP# 5.4B)	ea.	1
6'x6' Rubber Anti-Seep collar	ea.	1
SEEDING	AL	1



GRAPHIC SCALE

1"=200'

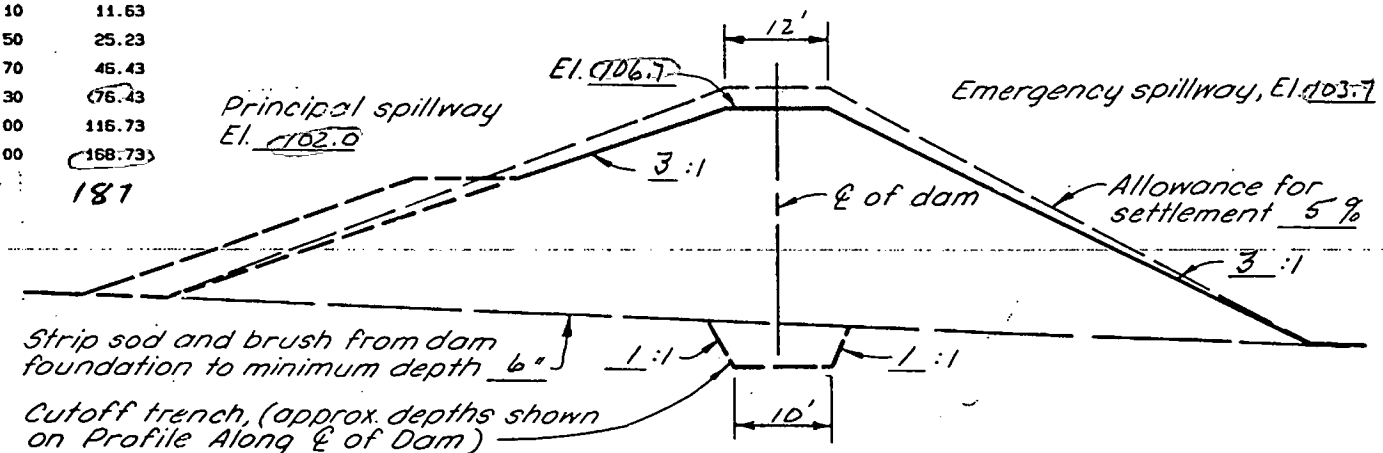


SKETCH PLAN OF DAM AND RESERVOIR AREA

Approximate scale 1" = 200'

REFERENCE: GUIDE PLAN NO. 1.0

USDA-SCS-LINCOLN, NEBR. 1973



TYPICAL CROSS SECTION OF DAM

Class A

EARTH DAM

S.D. CONSTRUCTION AND MATERIAL SPECIFICATIONS:

- SD-4 STRIPPING
- SD-5 Excavation
- SD-7S EARTHFILL - CLASS S
- SD-10 SALVAGING & SPREADING TOPSOIL
- SD-12B CONCRETE FOR MINOR STRUCTURES
- SD-16 TIMBER FABRICATION & INSTALLATION
- SD-28 SEEDING
- SD-55 PLASTIC PIPE

OPERATOR: STEVE HALVERSON
CONSERVATION DISTRICT: AMERICAN CREEK

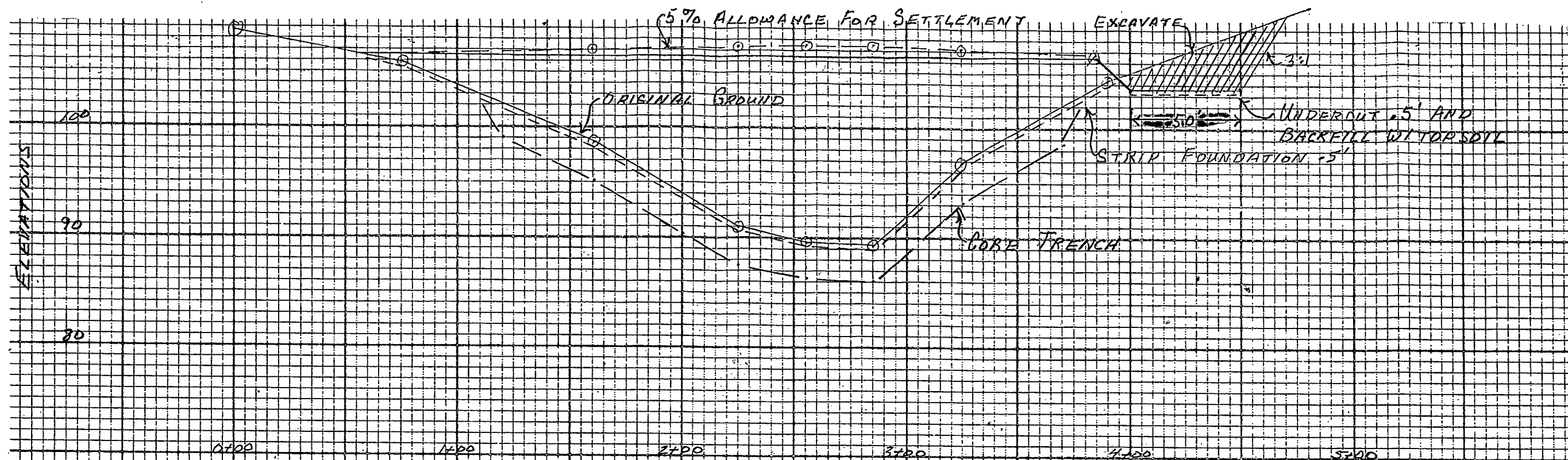
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Date: 5-03
Designed: Jan. Byrne
Drawn:
Traced:
Checked:
Approved by:
Title: RLT
Sheet:
Drawing No.
No.
of

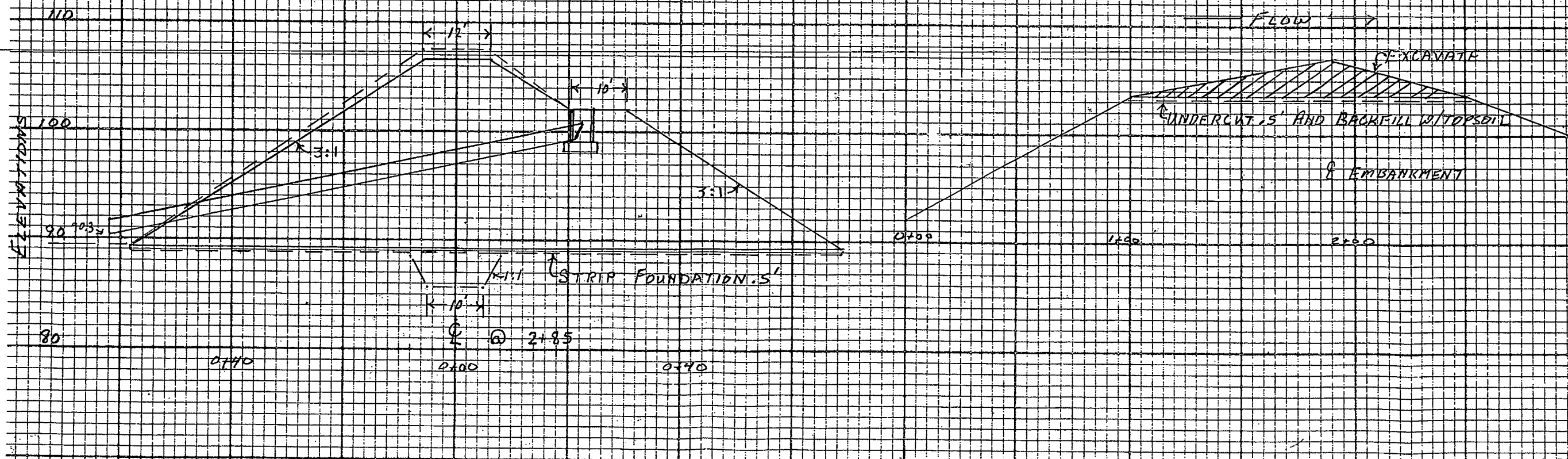
JOB PLAN NO. 1.0

(Rev. 4-73) 5, N-29, 073.1a(1)

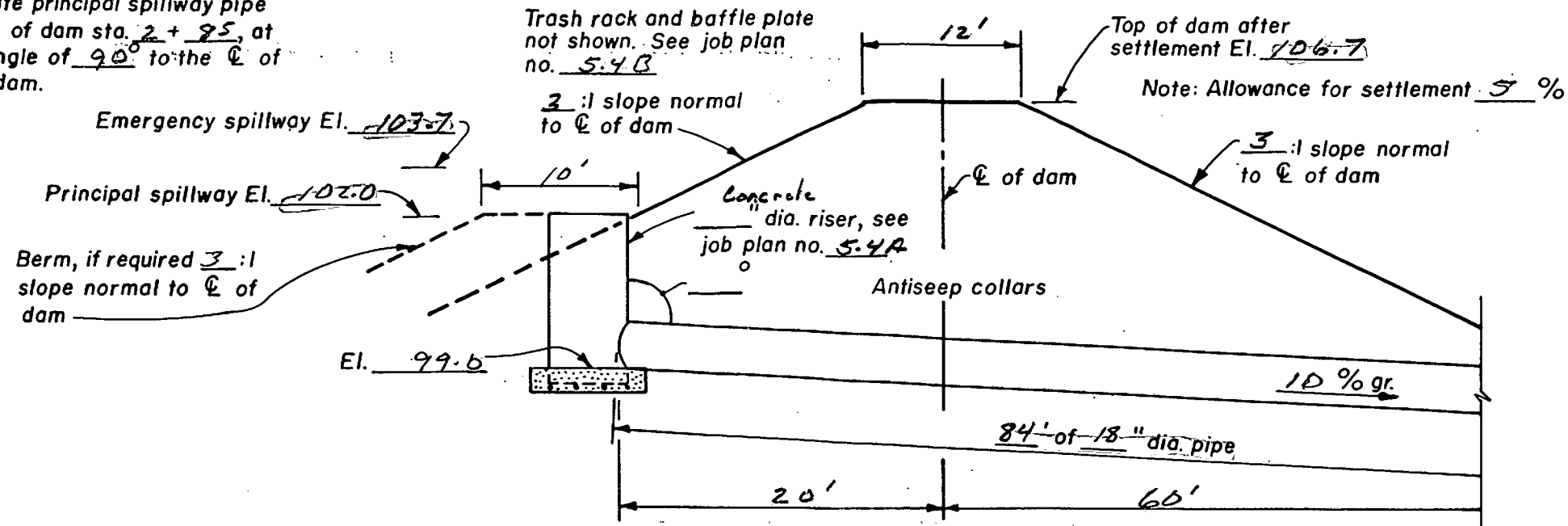
2508-2



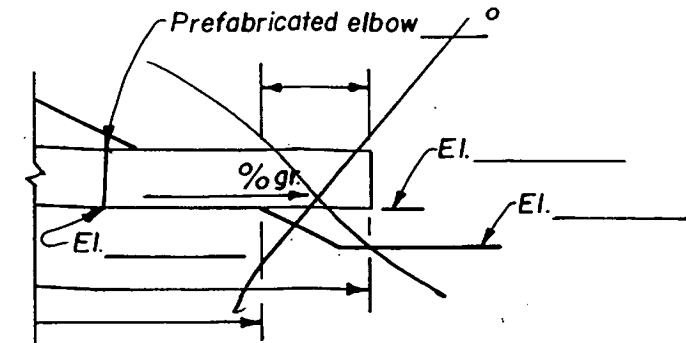
CROSS SECTION AT CREST OF EMERGENCY SPILLWAY AND PROFILE ALONG C OF DAM



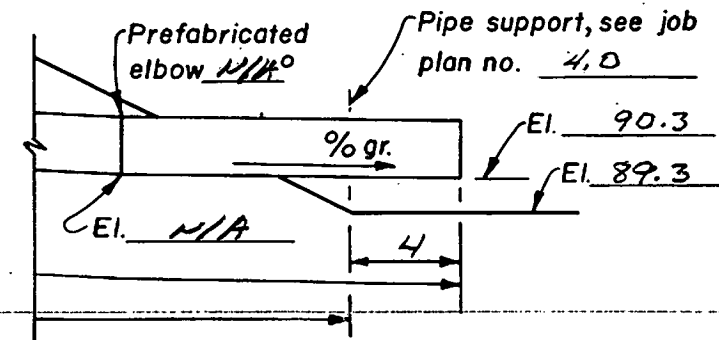
Locate principal spillway pipe at $\mathcal{C}$ of dam sta. $2 + 25$, at an angle of 90° to the $\mathcal{C}$ of the dam.



CROSS SECTION OF DAM ALONG $\mathcal{C}$ OF PRINCIPAL SPILLWAY
(Not to scale)



OUTLET DETAIL WITHOUT PIPE SUPPORT



OUTLET DETAIL WITH PIPE SUPPORT

Sec. 9, T. 104, R. 75
LYMAN County

LOCATION

~~CORRUGATED METAL PIPE~~
DROP INLET PRINCIPAL SPILLWAY

SPECIFICATION NOTES

1. ELBOW, IF REQUIRED, MAY BE FABRICATED BY CONTINUOUS WELDING SEPERATE PIPE SECTIONS OR BY FABRICATING A CONTINUOUS WELDED JOINT ON THE UPSTREAM END OF LAST SECTION OF PIPE.
2. PIPE WALL THICKNESS SHALL BE _____ GAGE OR _____ INCHES.

Distance between Riser and $\mathcal{C}$ 25'
Effective Height 2.15'
Use 1 1/2" x 6"
Anti-seep collar placed on center line

TABLE OF QUANTITIES

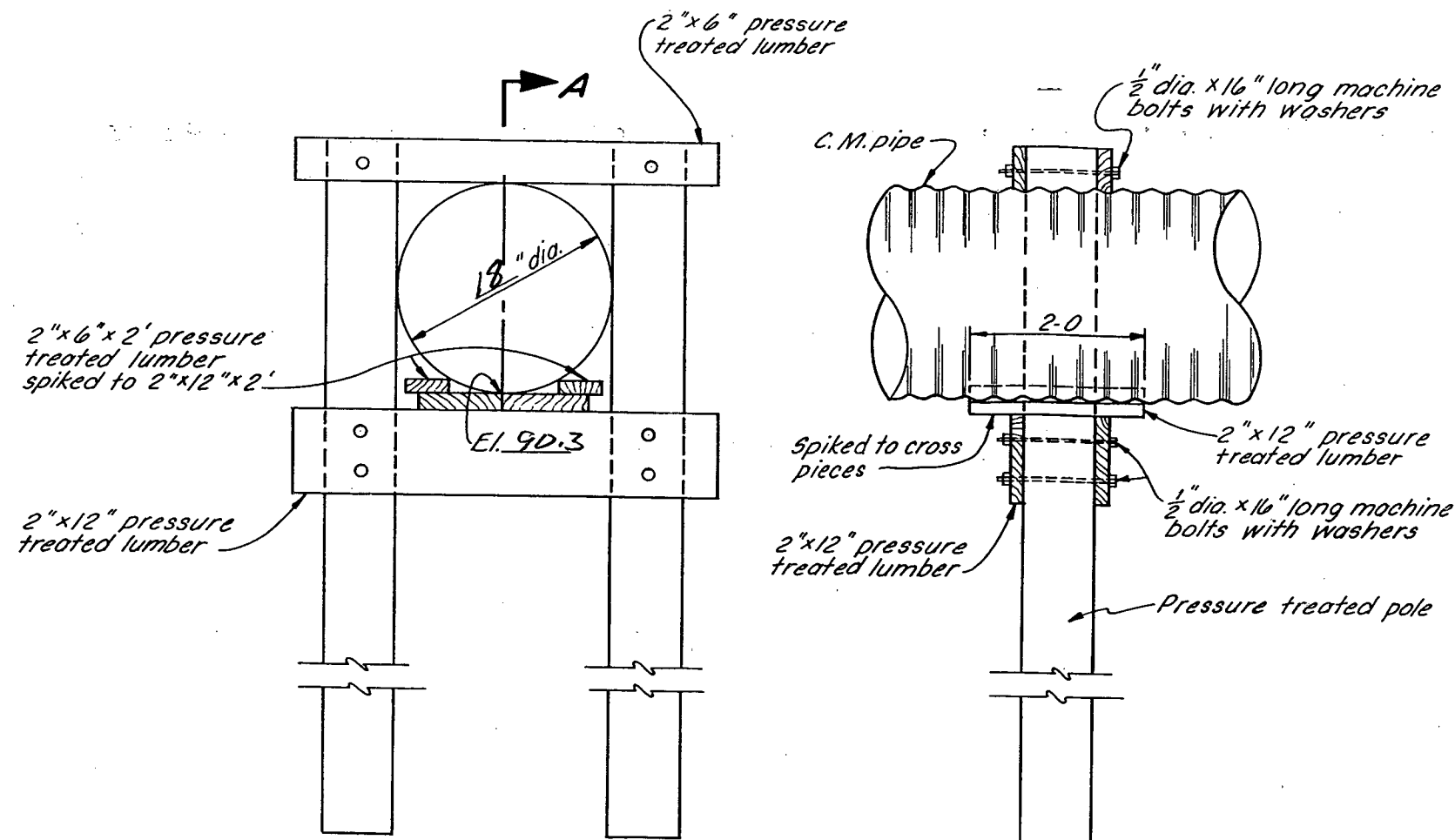
ITEM	UNIT	QUANTITY
SEE Job Plan #1		

APPLICABLE STANDARD S.C.S. SPECIFICATIONS

Rev. 8/80
JOB PLAN NO. 2.0

REFERENCE: GUIDE PLAN NO. 2.0

OPERATOR <u>STEVE HALVERSON</u>	
CONSERVATION DISTRICT <u>AMERICAN CREEK</u>	
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	
Designed <u>A. G. Smith</u>	Date <u>5-23</u>
Drawn <u>A. G. Smith</u>	Approved by <u>A. G. Smith</u>
Traced <u>A. G. Smith</u>	Title <u>REL</u>
Checked <u>A. G. Smith</u>	Sheet <u>1</u> Drawing No. <u>1</u>



ELEVATION
SECTIONAL ELEVATION A-A

TABLE OF QUANTITIES

ITEM	LENGTH FOR 18" DIA. PE C.M. PIPE	UNIT	QUANTITY
PRESSURE TREATED POLE 10" DIA.	8.0	EACH	2
2" X 12" PRESSURE TREATED LUMBER	4-0	EACH	2
2" X 6" PRESSURE TREATED LUMBER	4-0	EACH	2
2" X 12" PRESSURE TREATED LUMBER	2-0	EACH	2
2" X 6" PRESSURE TREATED LUMBER	2-0	EACH	2
1/2" DIA. MACHINE BOLTS WITH NUTS	1-4	EACH	10
1/2" DIA. WASHERS		EACH	20

NOTES:

- HAND OR MACHINE TAMP BACKFILL THOROUGHLY AROUND FOOTINGS AND COLUMNS.

TIMBER PIPE SUPPORT

OPERATOR: STEVE HALVERSON

CONSERVATION DISTRICT: AMERICAN CREEK

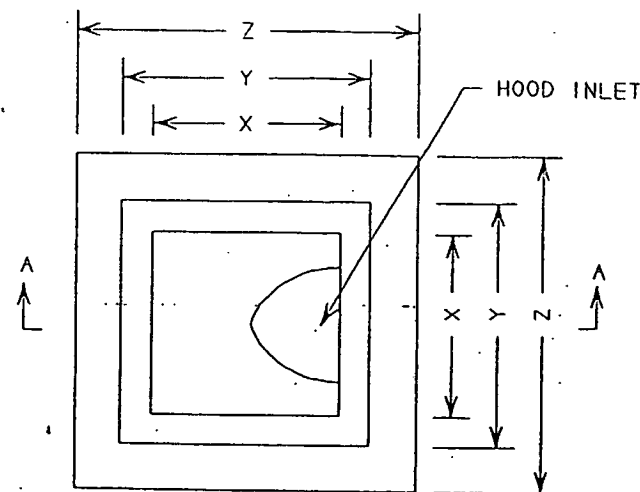
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed <u>De J</u> Date <u>5-83</u>	Approved by <u>[Signature]</u>
Drawn _____	Title _____
Traced _____	Title _____
Checked _____	Sheet No. _____ of _____
	Drawing No. _____

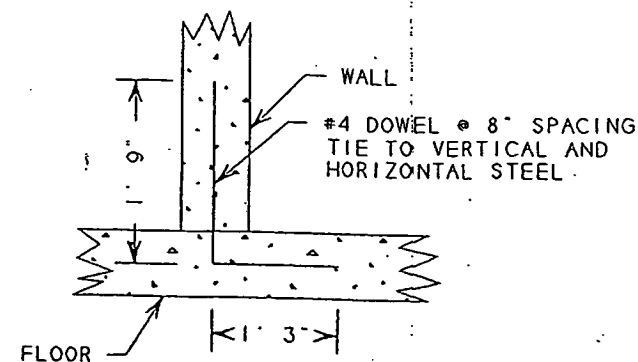
REFERENCE: GUIDE PLAN NO. 4.0

JOB PLAN NO. 4.0

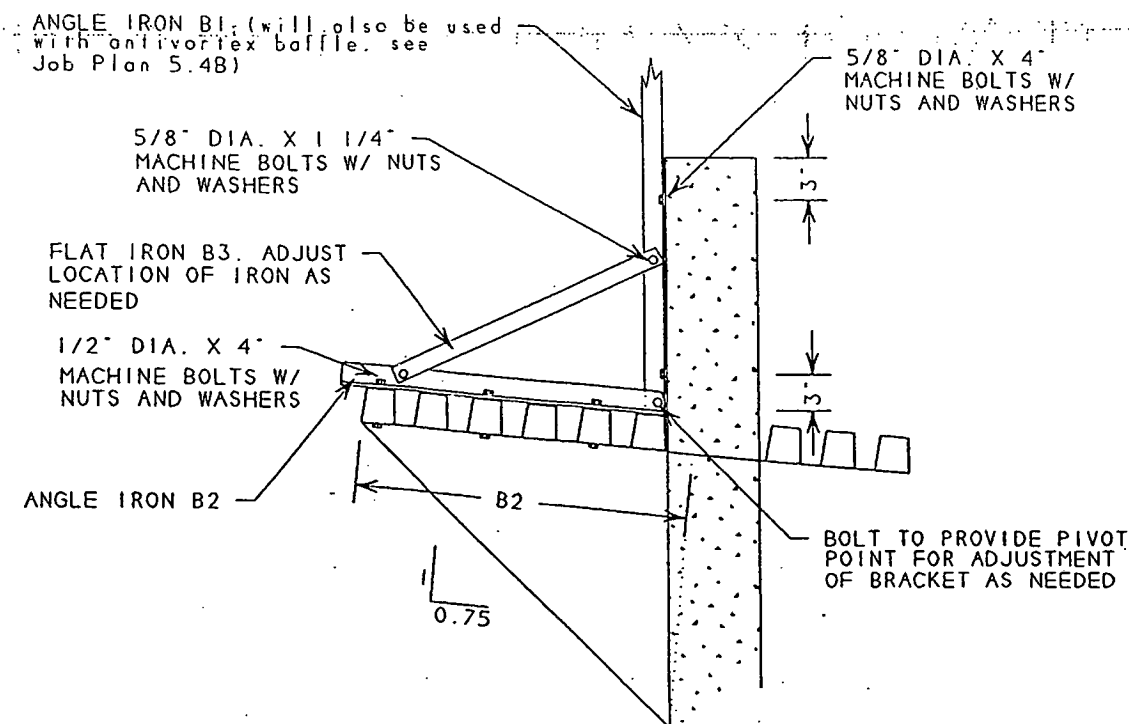
5, N-29,073.4a



PLAN VIEW

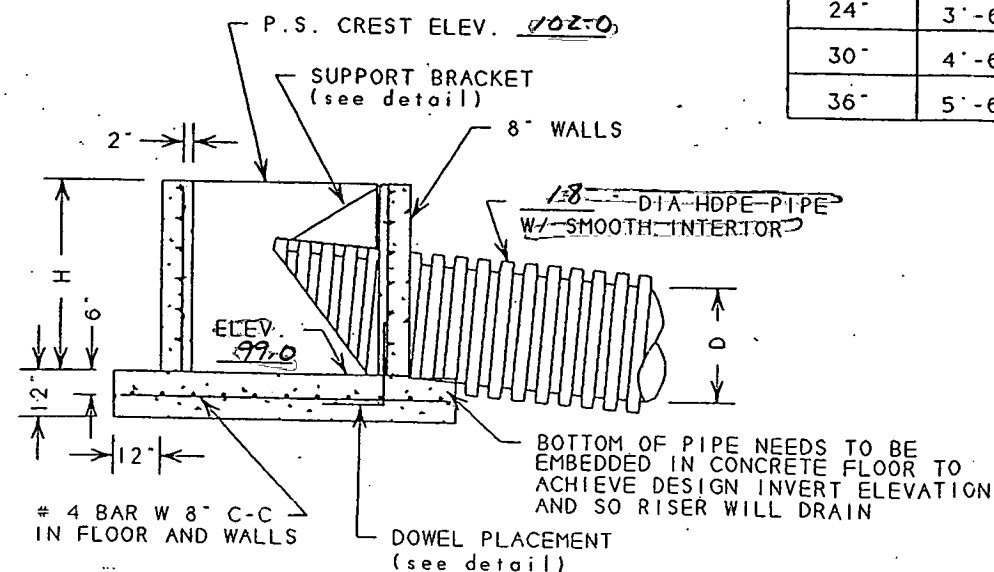


DOWEL DETAIL



SUPPORT BRACKET DETAIL

BARREL DIA. D	FT.-IN. X	FT.-IN. Y	FT.-IN. Z	FT.-IN. H	CONCRETE CU. YDS.	#4 REBAR LBS.	SUPPORT BRACKET			BOLTS W/ WASHERS & NUTS		
							2" X 2" 3/16" ANGLE IRON LENGTH FT.-IN. B1	3/16" X 2" FLAT IRON LENGTH FT.-IN. B2	3/16" X 2" FLAT IRON LENGTH FT.-IN. B3	1/2" DIA X 4"	5/8" DIA X 1 1/4"	5/8" DIA X 4"
10"	3'-0"	4'-4"	6'-4"	3'-0"	2.6	220	2'-10 1/4"	7 1/2"	1'-3"	2	2	2
12"	3'-0"	4'-4"	6'-4"	3'-0"	2.6	220	2'-10 1/8"	9"	1'-4"	2	2	2
15"	3'-0"	4'-4"	6'-4"	3'-0"	2.6	220	2'-10 3/8"	11 1/4"	1'-5"	2	2	2
18"	3'-0"	4'-4"	6'-4"	3'-0"	2.6	220	2'-10 3/4"	1'-1 1/2"	1'-6"	2	2	2
24"	3'-6"	4'-10"	6'-10"	4'-0"	3.4	295	3'-8 1/4"	1'-6"	1'-9"	3	2	2
30"	4'-6"	5'-10"	7'-10"	4'-0"	4.4	345	3'-8"	1'-10 1/2"	2'-0"	3	2	2
36"	5'-6"	6'-10"	8'-10"	4'-6"	5.6	430	4'-3/4"	2'-3"	2'-4"	3	2	2



SECTIONAL ELEV. A-A

NOTE: 1. CONCRETE AROUND PIPE NEEDS TO BE VIBRATED TO INSURE A GOOD SEAL AROUND PIPE.

2. CONSTRUCTION JOINT BETWEEN WALLS AND FLOOR OF CONCRETE RISER WILL HAVE #4 DOWELS @ MAX. 8" SPACING.

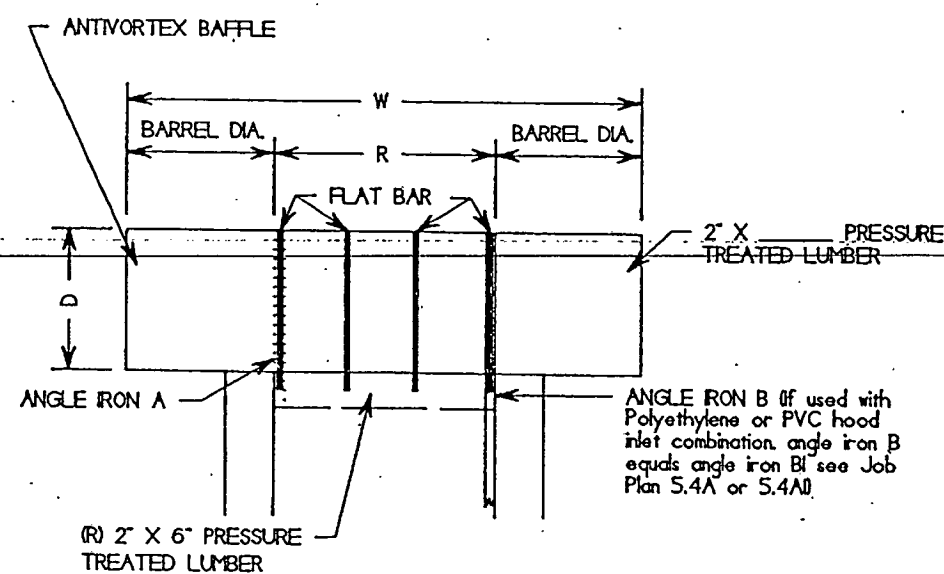
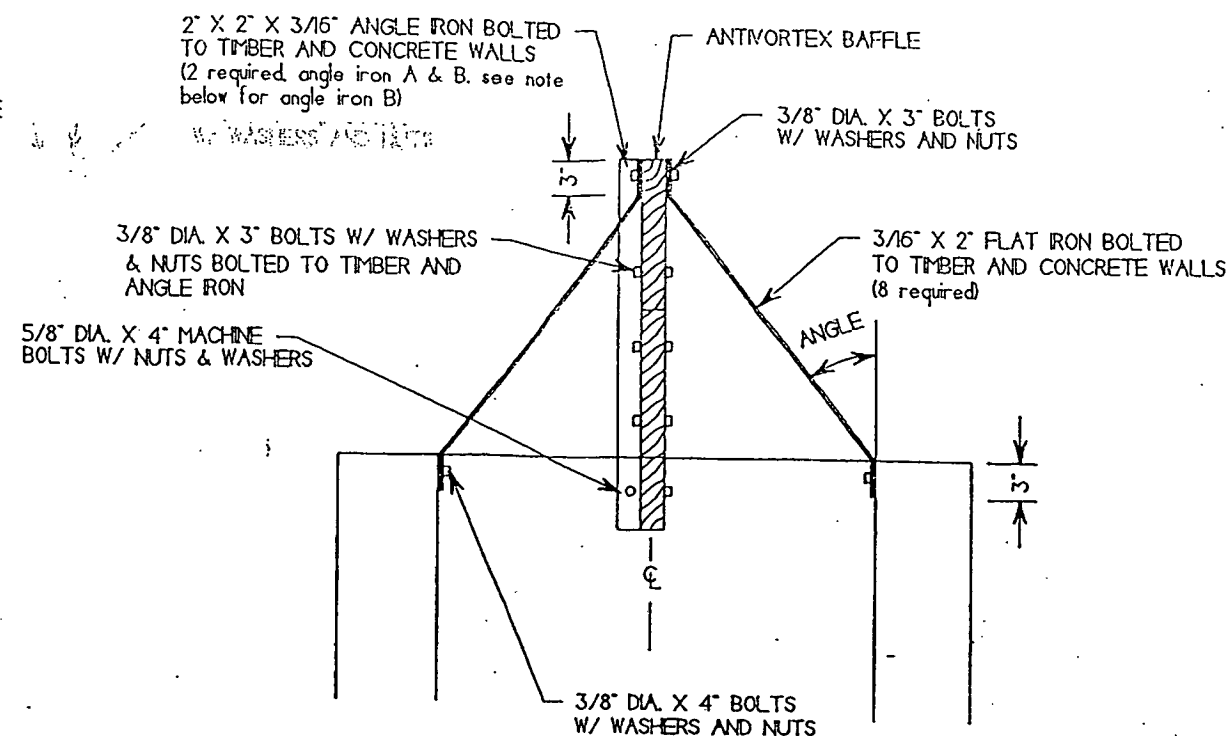
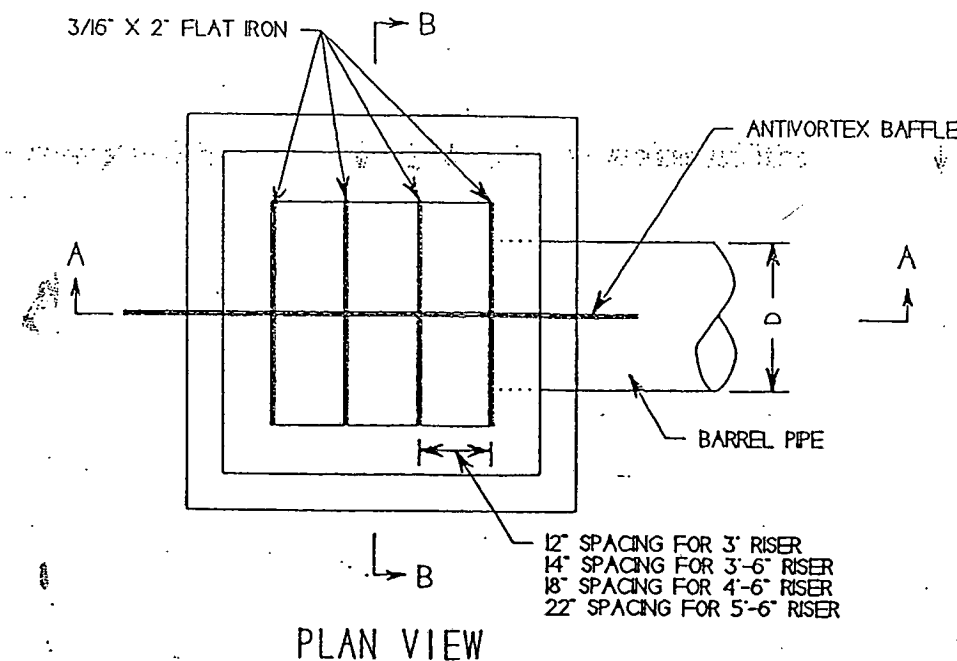
3. PE DOUBLE-WALL CORRUGATED PIPE W/ SMOOTH INTERIOR (AASHTO M294 TYPE S) WITH BELL & SPIGOT JOINT AND WATER-TIGHT GASKET.

CONCRETE RISER
AND POLYETHYLENE
HOOD INLET COMBINATION

STEVE HALVERSON
AMERICAN CREEK CONS. DIST.

USDA U.S. Department of Agriculture
Natural Resources Conservation Service

DESIGNED: *Steve Halverson* APPROVED BY: *Steve Halverson*
DRAFTED: *Steve Halverson* TITLE: *RLT*
DATE: 5.05 SHEET 1 OF 1 DWG NO. FH46R.gcd



BARREL DIA.	D	R (Riser) LENGTH FT.-IN.	W LENGTH FT.-IN.	NO. REQ'D	(R) 2" X 6" LENGTH FT.-IN.	NO. REQ'D	ANGLE IRON A & B LENGTH FT.-IN.	FLAT IRON LENGTH FT.-IN.	3/8" DIA. X 3" BOLTS, NUTS & WASHERS	3/8" DIA. X 4" BOLTS, NUTS & WASHERS	5/8" DIA. X 4" BOLTS, NUTS & WASHERS	ANGLE
10"	0'-9 1/4"	3'-0"	(2" X 10") X 4'-8"	1	3'-0"	1	1'-2 3/4"	2'-1"	4 (8 washers)	8	2	70°
12"	0'-11 1/4"	3'-0"	(2" X 12") X 5'-0"	1	3'-0"	1	1'-4 3/4"	2'-1 3/4"	4 (8 washers)	8	2	65°
15"	1'-2 3/4"	3'-0"	(2" X 10") X 5'-6" (2" X 6") X 5'-6"	1	3'-0"	1	1'-8 1/4"	2'-3 3/4"	8 (16 washers)	8	2	57°
18"	1'-6 1/2"	3'-0"	(2" X 10") X 6'-0"	2	3'-0"	1	2'-0"	2'-5 3/4"	8 (16 washers)	8	2	49°
24"	1'-10 1/2"	3'-6"	(2" X 12") X 7'-6"	2	3'-6"	1	2'-4"	2'-10 3/4"	8 (16 washers)	8	2	47°
30"	2'-4"	4'-6"	(2" X 12") X 9'-6" (2" X 6") X 9'-6"	2	4'-6"	1	2'-9 1/2"	3'-6 3/4"	12 (24 washers)	8	2	47°
36"	2'-9 3/4"	5'-6"	(2" X 12") X 11'-6"	3	5'-6"	1	3'-3 1/4"	4'-3 1/8"	12 (24 washers)	8	2	47°

SECTIONAL ELEVATION A-A

SECTIONAL ELEVATION B-B

ANTIVORTEX BAFFLE FOR
CONCRETE RISER

STEVE HALVERSON

USDA U.S. Department of Agriculture
Natural Resources Conservation Service

DESIGNED BY *[Signature]* APPROVED BY *[Signature]*
DRAFTED *[Signature]* TITLE *[Signature]*
DATE 5-03 SHEET OF 1 Dwg No. AVBAF-CR-001

JOB PLAN 5.4B 1/02

P&S Review

Water Permit Application No 2508-2
Steve Halverson

Top of Dam Elev. - 106.7
2nd Spillway Elev. - 103.7
P. Spillway Elev. - 102
D/S Toe Elev. - 89.3

Cat. 3 - Low Hazard Dam

Ht. = 17.4 ft

Normal Storage Capacity - 76.4 A.-Ft
Int. Storage Capacity - 109
Max. Storage Capacity - 187

Int. Capacity x Eff. Ht = $109 \times 14.4 = 1569 < 3000 \therefore 25 \text{ yr.}$
Minimum Spillway Design

From USGS WRI 80-80 "Tech for Est. Flood Peaks ... in SD"

DA = 691 ac = 1.08 mi.²
Slope = 50 ft/mi
SI = 2.05

$$Q_{25} = 83.4 A^{.6} S^{.44} S_i^{-.72}$$

$$= 83.4 (1.08)^{.6} (50)^{.44} (2.05)^{-.72}$$

$$= 83.4 (1.047) (5.59) (.5964)$$

$$= \underline{291 \text{ cfs}}$$

$$Q_{100} = 132 A^{.65} S^{.46} S_i^{-.67}$$

$$= 132 (1.08)^{.65} (50)^{.46} (2.05)^{-.67}$$

$$= 132 (1.05) (6.05) (.6182)$$

$$= \underline{520 \text{ cfs}}$$

Secondary Spillway Flow

$$Q = CLH^{3/2} \quad C = 2.6$$

$$= 2.6 (5)^{1.5} \quad L = 50$$

$$= \underline{368 \text{ cfs}} \quad H = 2$$

NRCS Annual Yield

DA = 691 ac CN = 84 ISO = 2

$$80\% \text{ chance} = 0.44$$

$$0.44 \times 691^{1/2} = \underline{25 \text{ A.-Ft}}$$

$$50\% \text{ chance} = 1.0$$

$$1.0 \times 691^{1/2} = \underline{58 \text{ A.-Ft}}$$

$$10\% \text{ chance} = 3.5$$

$$3.5 \times 691^{1/2} = \underline{201 \text{ A.-Ft}}$$

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. Specs. std NRCS - OK
9. EPP - N/A Cat. 3 - OK



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

July 1, 2003

Steve Halverson
1613 Hilltop Drive
Pierre, SD 57501

Dear Mr. Halverson:

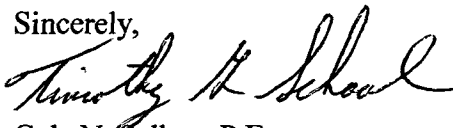
We have reviewed the plans and specifications for your dam project located in the SW 1/4 of Section 9-T104N-R75W, in Lyman County. The plans and specifications as submitted are approved. Approval of the plans and specifications does not authorize construction of the dam. The construction of the dam may not begin until Water Permit No. 2508-2 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 Halverson Dam will be classified as a small size Category 3, Low Hazard dam with a dam height of 17.4 feet and a normal storage capacity of 76.4 acre-feet and a maximum storage capacity of 187 acre-feet.

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

Sincerely,


for Gale N. Selken, P.E.
Natural Resources Engineer Director
for Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

c: Lee Ozanne, NRCS, Kennebec
Tim Olson, GF&P, Pierre

REPORT ON
WATER PERMIT APPLICATION No. 2508-2
Steve Halverson
June 20, 2003

Water Permit Application No. 2508-2 has been filed by Steve Halverson to impound 76.4 acre-feet of water by constructing a dam, located in the SW ¼ SW ¼ of Section 9-T104N-R75W, in Lyman County. The application also requests impoundment of sufficient water to maintain water at the outlet elevation. The water will be used for fish and wildlife production, recreation and livestock use.

Discussion:

The dam will be classified as a small size, Category 3, Low Hazard dam. The Natural Resources Conservation Service (NRCS) has designed the dam. The plans and specifications have been reviewed and will be approved.

The dam will be 17.4 feet high with a normal storage capacity of 76.4 acre-feet with a reservoir level at the primary spillway elevation, and a maximum storage capacity of 187 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.

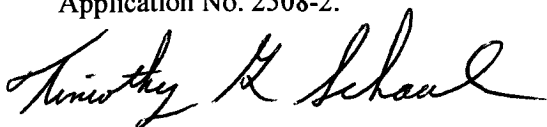
The dam has a drainage area of 691 acres or 1.08 square miles. The project is designed to have a 36 inch concrete riser with an 18 inch diameter corrugated plastic pipe barrel and 4.70 feet of freeboard serving as the primary spillway structure, and a 50 foot wide earthcut secondary spillway with 2.0 feet of available freeboard. A 25-year frequency event produces a peak runoff of approximately 291 cfs and a 100-year frequency event produces a peak runoff of approximately 520 cfs. The earthcut secondary spillway will have the capacity to pass approximately 368 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 25 acre-feet. The annual yield with a 50 percent chance of occurrence, or 1 out of 2 years, is expected to be 58 acre-feet and the annual yield with a 10 percent chance, or 1 out of 10 years, is expected to be 201 acre-feet.

The Halverson Dam is located in the SW ¼ SW ¼ of Section 9-T104N-R75W on an unnamed tributary to the White River, about five miles upstream of the confluence of the unnamed tributary and the White River. There are no existing Water Permit/Rights located between the proposed dam and the White River.

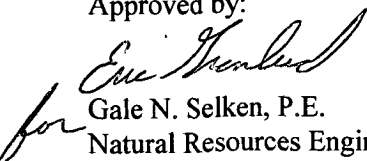
Conclusions:

1. Water Permit Application No. 2508-2 should be approved since unappropriated water is available and approval should not have an 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. 2508-2.



Timothy G. Schaal, P.E.
Natural Resources Engineer Specialist

Approved by:



for
Gale N. Selken, P.E.
Natural Resources Engineer Director



**DEPARTMENT of ENVIRONMENT
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www.state.sd.us/denr

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 2508-2, Steve Halverson**

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. 2508-2, Steve Halverson, 1613 Hilltop Drive, Pierre SD 57501.

The Chief Engineer is recommending APPROVAL of Application No. 2508-2 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. 2508-2 authorizes a dam with a storage capacity of 76.4 acre feet of water and sufficient water annually to maintain the water level to the outlet elevation.
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.

Garland Erbele, Chief Engineer
July 1, 2003

Publisher's Affidavit of Publication

STATE OF SOUTH DAKOTA)
)SS
COUNTY OF LYMAN)

Lucy Halverson, of said county and state being duly sworn on her oath says: The Lyman County Herald is a weekly newspaper of general circulation and published in Presho, Lyman County, and State of South Dakota; and has been such newspaper during the times hereinafter mentioned; That said newspaper is a legal weekly, that it has a bonafide circulation of more than 200 copies weekly, that it has been published within said County of Lyman more than fifty-two successive weeks next prior to publication of the notice hereinafter mentioned and maintained at the place of publication; That I, the undersigned am editor of said newspaper, in charge of the advertising department thereof, and have personal knowledge of all the facts stated in this affidavit; that the advertisement headed:

Notice of Application # 2508-2

a printed copy of which is hereto attached and published in the said newspaper for 2 consecutive week(s).

The first publication of said notice in said newspaper aforesaid was on Wednesday, the 9 day of July A.D., 2003

and that the succeeding publications were severally

Wednesday, the _____ day of _____ A.D., 2003

Wednesday, the _____ day of _____ A.D., 2003

Wednesday, the _____ day of _____ A.D., 2003

Wednesday, the _____ day of _____ A.D., 2003

Wednesday, the _____ day of _____ A.D., 2003

Wednesday, the _____ day of _____ A.D., 2003

Wednesday, the _____ day of _____ A.D., 2003

Wednesday, the _____ day of _____ A.D., 2003

and the last publication on Wednesday, the 16 day of July, 2003, that the full sum of fees charged for publishing the same, to-wit; the sum of \$ 39.76 insures solely to the editor of The Lyman County Herald.

That no agreement or understanding for any division thereof had been made with any other person, and that no part thereof has been agreed to be paid to any person whatsoever.

Lucy Halverson
Renelle Utke
Notary Public

Subscribed and sworn to before me this 18 day of July, 2003

My Commission expires _____
NOTARY PUBLIC - SOUTH DAKOTA
My Commission Expires
September 20, 2007

NOTICE OF APPLI

Appropri

Notice is given that Steve Halverson, 1613 Hilltop Dr., Pierre SD 57501 has filed an application for a water permit to impound 76.40 acre-feet of water from runoff by constructing a dam located in the SW1/4 SW1/4 Section 9 with water impounded in the SW1/4 Section 9; all in T104N-R75W. This application requests impoundment of sufficient water to maintain water to the outlet elevation. The water is for fish and wildlife propagation, recreational use and livestock water purposes.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2508-2 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 the 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 the application. Notice of the hearing

RECEIVED

JUL 21 2003

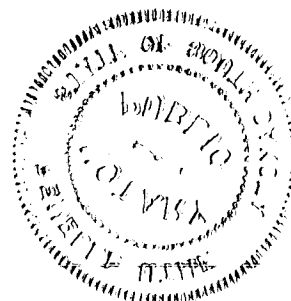
WATER RIGHTS
PROGRAM

CATION NO. 2508-2 to riate Water

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 July 28, 2003.

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.





DEPARTMENT of ENVIRONMENT
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PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

July 1, 2003

Lyman County Herald
PO Box 518
Presho SD 57568

ATTENTION: Legal Public Notice

Enclosed is a Notice of Hearing on Application No. 2508-2 to Appropriate Water to be published twice. Please publish the first notice on July 9, 2003 with the second publication 7 days later.

The applicant must verify to you that the notice is to be published, before you make the first publication. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is Steve Halverson, 1613 Hilltop Dr., Pierre SD 57501 (Ph # 605-224-6334).

Please send the Water Rights Program the first publication immediately. The publication is checked for accuracy so any corrections can be made in the second publication. You may use the form below or fax a copy of the first publication. Any fax should be sent to the attention of Karen Schlaak at (605) 773-4068. Publication errors can invalidate the public notice.

After the second publication, **please send us an affidavit or use the enclosed Proof of Publication form.** The applicant pays the cost of publication, but the Water Rights Program records require an affidavit or Proof of Publication. Delays in receiving the affidavit can be costly to the applicant.

Sincerely,


Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

-----CUT HERE-----

No. 2508-2

TO: Eric Gronlund
Water Rights Program
Joe Foss Building
Pierre SD 57501-3181

Date _____

We are in receipt of your letter of July 1, 2003 enclosing Notice of Hearing to Appropriate Water by Application No. 2508-2 which was first published in our issue of _____. ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.

Name

Newspaper



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

www.state.sd.us/denr

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

July 1, 2003

Steve Halverson
1613 Hilltop Drive
Pierre SD 57501

Dear Mr. Halverson:

Water Permit Application No. 2508-2 for livestock, FWP, recreational use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice of hearing has been sent to the Publisher of the Lyman County Herald printed at Presho, SD (Ph # 605-895-6397). 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 a 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 of Hearing and to arrange for payment. Early contact with the paper can eliminate delays. Upon receiving authorization, the publisher has been instructed to publish your notice once each week for two consecutive weeks with the last publication to occur twenty days before the board meeting. 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 first Notice on July 9, 2003 with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 2508-2 to Appropriate Water

Notice is given that Steve Halverson, 1613 Hilltop Dr., Pierre SD 57501 has filed an application for a water permit to impound 76.40 acre-feet of water from runoff by constructing a dam located in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 9 with water impounded in the SW $\frac{1}{4}$ Section 9; all in T104N-R75W. This application requests impoundment of sufficient water to maintain water to the outlet elevation. The water is for fish and wildlife propagation, recreational use and livestock water purposes.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2508-2 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 the 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 the 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 July 28, 2003.

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.



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AUG 06 2003

Steve Halverson
1613 Hilltop Drive
Pierre SD 57501

Dear Mr. Halverson:

Enclosed is Water Permit No. 2508-2 authorizing construction of your 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 black ink, appearing to read "Garland Erbele". The signature is fluid and cursive, with a large initial "G" and a long, sweeping underline.

Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

Permit No. 2508-2
Missouri River - Water District

Report Of Examination Of Works And/Or Application of Water To Beneficial Use

TO: Chief Engineer, Water Rights Program, DENR, Foss Bldg., Pierre, SD 57501

I have this day, **October 19, 2005**, made a thorough examination of the water use system constructed by **Steve Halverson** of **1613 Hilltop Drive, Pierre, SD 57501** holder of Permit No. **2508-2**, bearing the priority of **June 11, 2003** authorizing the storage of **76.40** acre-feet of the waters of **runoff** for **livestock water, fish & wildlife production and recreational use** purposes, in **Lyman** County.

I have to report on the conditions of the same as follows:

A. Works used to divert the water:

A 17.4 foot high dam with a normal storage capacity of 76.40 acre-feet

B. Works used to transport water to place of use:

N/A

C. Works used to apply water to beneficial use:

A 17.4 foot high dam with a normal storage capacity of 76.40 acre-feet

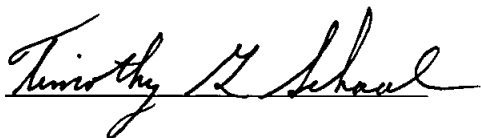
The system is in the following condition **good**. The point of diversion is located **700 ft. north & 1000 ft. east of the SW corner of Sec. 9-T104N-R75W (SW ¼ SW ¼) (Lat. 43.820313, Long. -99.819366)**. The works are capable of storing **76.4** acre-feet of water which is to be used for **livestock water, fish & wildlife production and recreational use**. Water has been put to beneficial use to the maximum extent as follows:

A 17.4 foot high dam with a normal storage capacity of 76.40 acre-feet

and the license should be issued **76.40** acre-feet of storage.

Applicable permit qualifications have been complied with: Yes **X**

Exceptions to compliance are: **none** Date Report Completed: **February 7, 2006**



Timothy G. Schaal, P.E.
Natural Resources Engineering Specialist
DENR, Water Rights Program

REPORT ON INSPECTION OF PERMIT NO. 2508-2

DATE OF INSPECTION: October 19, 2005

NAME & ADDRESS OF INSPECTION CONTACT/ Steve Halverson

RELATIONSHIP TO PERMIT HOLDER, IF APPLICABLE: owner

NAME & ADDRESS OF PERMIT HOLDER: Steve Halverson, 1613 Hilltop Drive, Pierre, SD 57501

DIVERSION POINT LEGAL LOCATION: 700 ft. north & 1000 ft. east of the SW corner of Sec. 9-T104N-R75W (SW ¼ SW ¼) (Lat. 43.820313, Long. -99.819366).

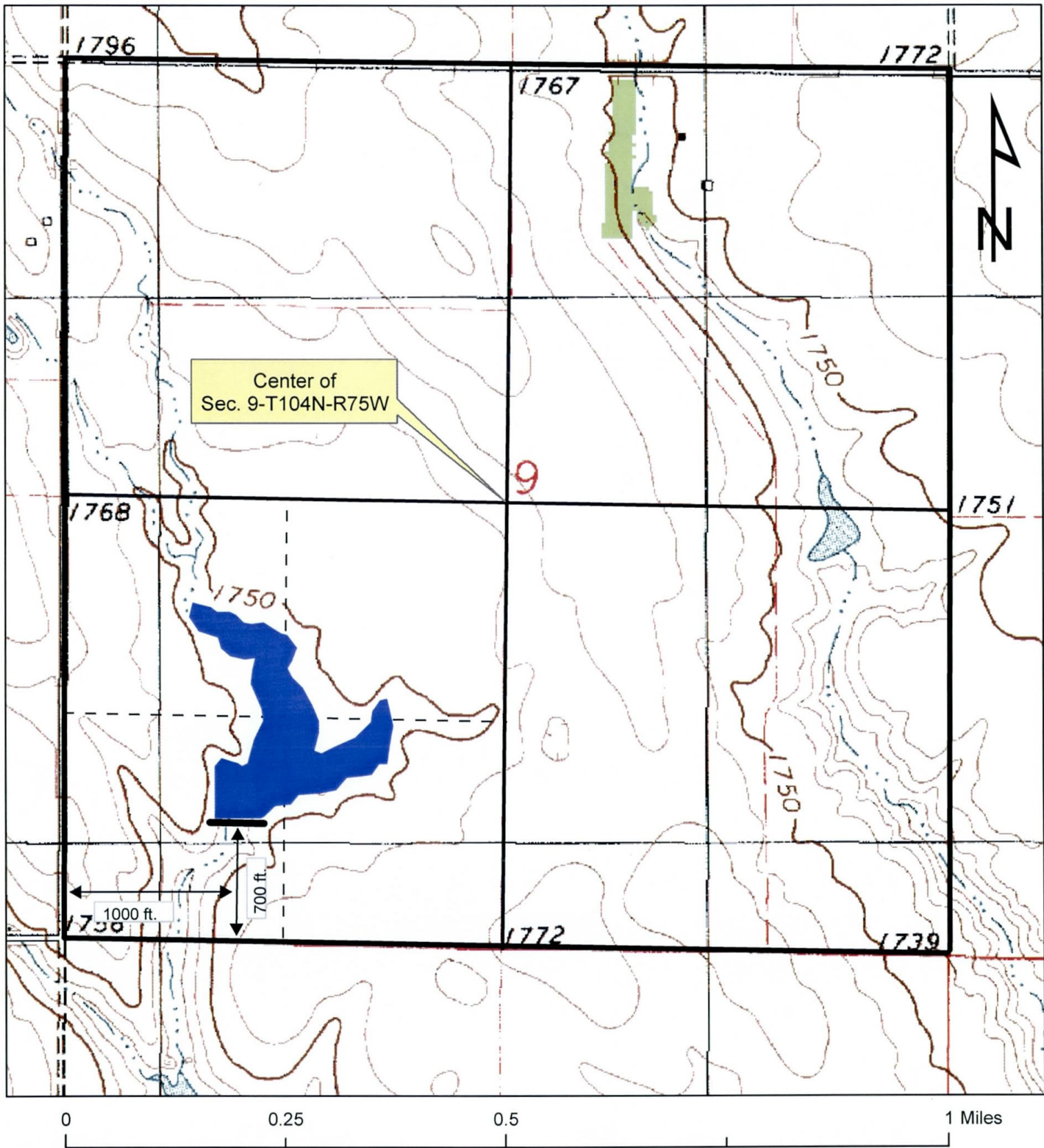
DAM INFORMATION:

- 1) Height to crest 17.4 feet
- 2) Height to primary spillway 12.7 feet
- 3) Height to secondary spillway 14.4 feet
- 4) Crest width 12 feet
- 5) Crest length 325 feet
- 6) Spillway length XXX feet
- 7) Spillway width 50 feet
- 8) Approx. storage (Normal) 76.4 acre-feet
- 9) Approx. storage (Maximum) 187 acre-feet
- 10) Date constructed: 2004

PERMIT QUALIFICATIONS AND REGULATIONS:

- 1) Soil and water permit lands agree with lands being irrigated and lands listed on permit N/A
- 2) Special qualifications to permit being abided by yes
- 3) All structures, wells and lands on map yes
- 4) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period N/A

Water Permit Application No. 2508-2



Timothy G. Schaal
Timothy G. Schaal, P.E.
Natural Resources Engineering Specialist
DENR, Water Rights Program

2/7/06



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APR 07 2008

2508-2

Steve Halverson
1613 Hilltop Drive
Pierre SD 57501

Dear Mr. Halverson:

Enclosed is your Water License No. 2508-2 and a copy of the map prepared by the staff engineer who conducted the field investigation. Water License No. 2508-2 is the final document which completes the process of obtaining a water right.

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,

Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 2508-2

(1) Steve Halverson, 1613 Hilltop Drive, Pierre SD 57501 made Application No. 2508-2, June 11, 2003 for a water permit to impound 76.4 acre-feet of water from runoff, Lyman County, South Dakota for fish and wildlife propagation, recreational use and domestic livestock watering purposes. Permit No. 2508-2, with a priority date of June 11, 2003 was approved July 28, 2003 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before July 28, 2008 and for the application to beneficial use of said water on or before July 28, 2012.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to construction of the storage dam and is entitled to impound 76.4 acre-feet of water for beneficial use with sufficient water annually to maintain the water level to the outlet elevation.

The location of the storage dam (spillway) is: 700 feet north and 1,000 feet east of the SW corner of Section 9, T104N, R75W (SW ¼ SW ¼).

(3) The permit holder has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use for fish and wildlife propagation, recreational use and domestic livestock watering purposes.

(4) Pursuant to South Dakota Water Law 46-5-30.1 Steve Halverson, 1613 Hilltop Drive, Pierre SD 57501 the holder and/or owner of Water Right No. 2508-2 is issued a license to appropriate water, the right to impound 76.4 acre-feet of runoff water with sufficient water annually to maintain the water level to the outlet elevation from the location specified in (2) of this license. Water Right No. 2508-2 carries a priority date of June 11, 2003.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 2508-2 and subject to the following qualifications:

- Water Right No. 2508-2 authorizes a dam with a storage capacity of 76.4 acre feet of water and sufficient water annually to maintain the water level to the outlet elevation.
- Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.



Garland Erbele, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

APR 07 2008

date

