

WATER PERMIT NO. 7049-3

Name of Applicant: **Steve Kane**

Address: **46408 149th St, South Shore SD 57263**

Phone: **605 398-6900**

Amount of Water Claimed: **30 AF**

Total Acres: **NA**

Source of Water Supply: **runoff**

Water to be used for: **fish and wildlife propagation and livestock water**

County: **Grant**

Type of Waste Disposal System:

Location: **14 miles west of Milbank**

PRIORITY

Date Received: **8-4-08**

Application/License Fee: **\$200**

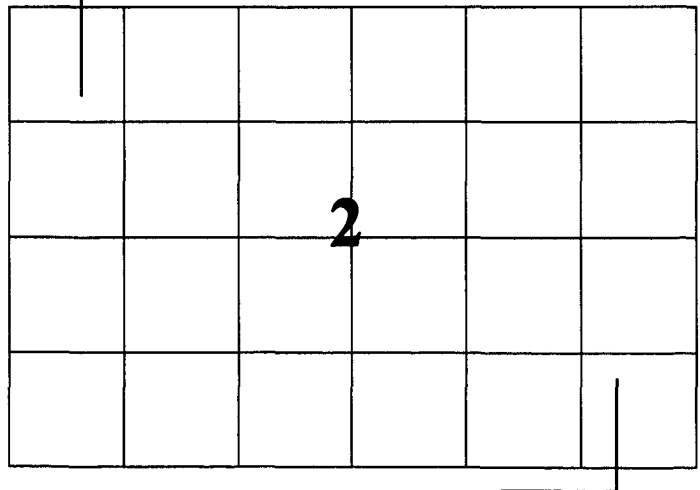
Corrected Application Received:

Period of Annual Use: **January 1 – December 31**

Remarks:

Diversion Point: **SE ¼ NW ¼ Sec 2-T120N-R51W**

Water Impounded: **S ½ NW ¼ Sec 2- T120N-
R51W**



Depth of Well: **NA**

Well Driller:

Remarks:

Type of Map: **aerial**

Prepared by: **Thomas Wickstrom, Waubay Refuge**

Reviewed and the Number Assigned on: **8-4-08**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

Mail to: Water Rights Program Joe Foss Building 523 E. Capitol Pierre, SD 57501-3181 (605) 773-3352	No. <u>7049-3</u>	(office use only) Hydrologic Unit <u>07020001</u>
	Basin <u>Minnesota - Whitestone</u>	
	Newspaper <u>Grant Co. Review PO Box 390</u>	
	<u>605-432-4516 (wed)</u>	<u>Millbank 57252</u>

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AUG - 4 2008
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 <u>livestock</u> | |

Type of Application: (check one)
☐ New ☐ Vested Right (Use predates Mar 2, 1955) ☐ Future Use Reservation
☐ Place to Beneficial Use Water Reserved by Future Use Permit No. _____
☐ Amendment/Correction to Permit No. _____

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

- Name of Applicant Steve Kane Phone (605) 398-6900
(check one) ☐ Owner ☐ Tenant/lessee
Mailing Address 46408 149th Street, South Shore State SD 57263
(Street, RR, or Box and City) (Zip Code)
- Amount of water claimed _____ *CFS or _____ **GPM 30 ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable
- Source of water supply watershed above dam
- Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) County Grant
Embankment located in NE1/4NW1/4 Section 2, T. 120 N., R. 51 W.
water impounded S 1/2 NW 1/4 Sec 2 T 120 N R 51 W
- County or counties where water will be used Grant
- Annual period during which water is to be used annually 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)

See Engineer's Sketch Plan

STATE OF SOUTH DAKOTA)
County of Grant 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 Kane, 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 Kane

Subscribed and sworn to before me this 18th day of July 20 08

Daryl D. Halvorson
My Commission Expires April 13, 2011
Notary Public signature

**SOUTH DAKOTA
WATER PERMIT NO. 7049-3**

Date of first receipt of application August 4, 2008.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 7049-3 to Steve Kane, 46408 149th St, South Shore SD 57263 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. 7049-3 authorizes impoundment of 30 acre-feet of water from runoff by reconstructing a dam located in the SE ¼ NW ¼ Section 2 with water impounded in the S ½ NW ¼ Section 2; all in T120N-R51W.
2. The water appropriated shall be used for fish and wildlife propagation 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. 7049-3 is September 15, 2008.
5. The date from which applicant may claim right is August 4, 2008.
6. One-fifth of the construction is to be completed on or before March 15, 2011.
7. All construction is to be completed on or before September 15, 2013.
8. Water is to be put to beneficial use on or before September 15, 2017.
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. 7049-3 authorizes a dam with a storage capacity of 30.0 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

OCT 30 2008

date



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

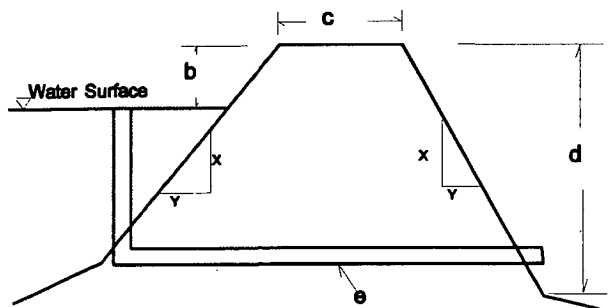
- a) Surface Dimensions _____ Depth _____
- b) Depth to water (ground surface to water level) _____

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:

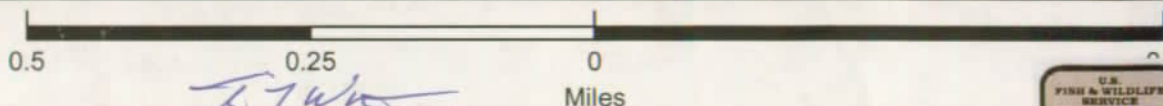
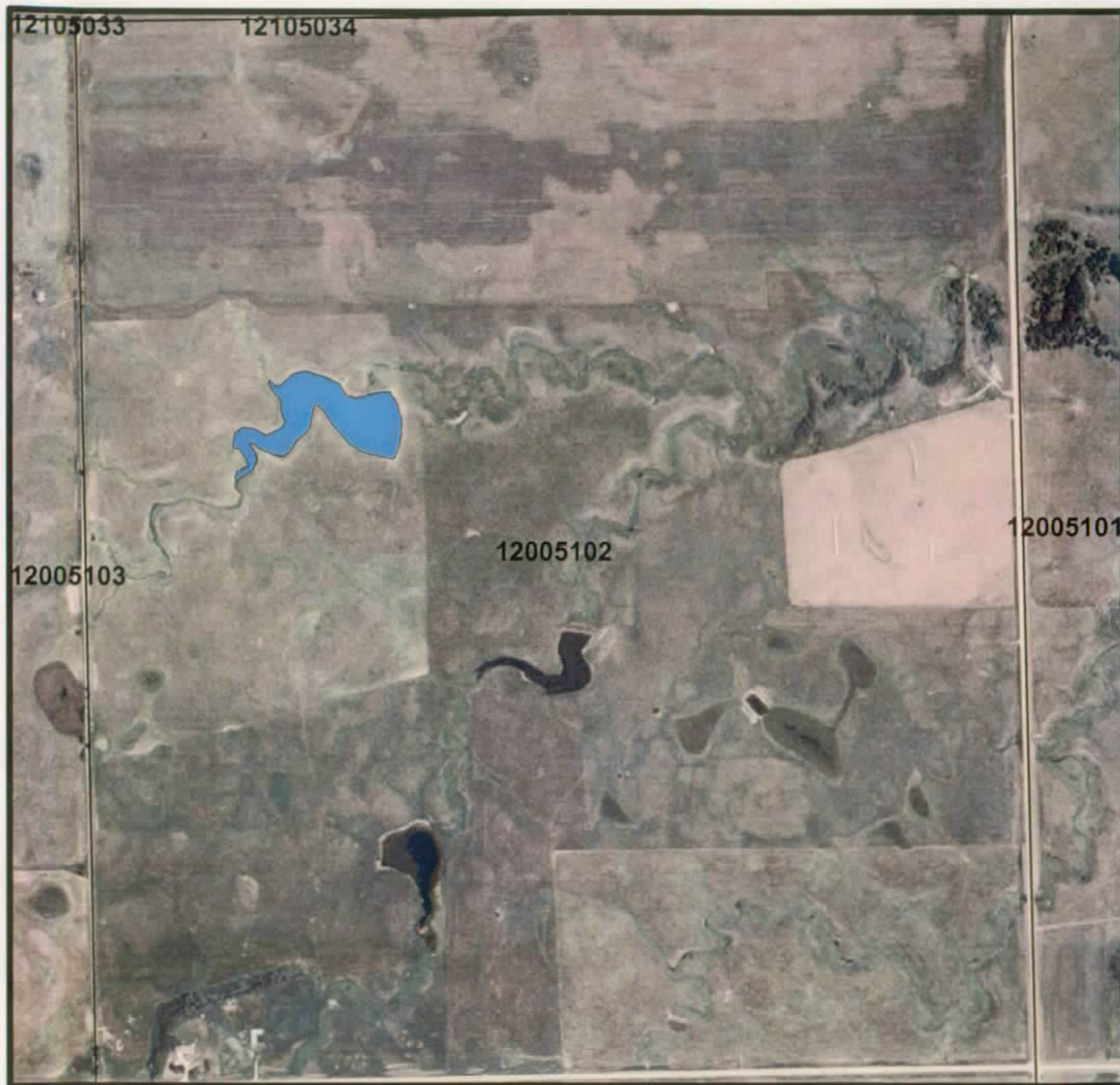
Konechne Engineering
104 Capitol Hill Dr
Pierre, SD 57501



- b) Freeboard _____ 3 feet
- c) Crest Width _____ 12 feet
- Crest Length _____ 220 feet
- d) Height _____ 20.0 feet
- e) Primary Outlet Capacity _____ 55.5 cfs
- If pipe, diameter _____ 48" drop w 24" out
- f) Secondary Spillway Capacity _____ 581.03 cfs
- Spillway Width _____ 80 feet
- g) X & Y Slope _____
- Upstream _____ 3:1
- Downstream _____ 3:1
- h) Surface Area of Impoundment _____ 4.6 acres
- i) Storage _____ 30.0 Acre Feet
- j) Drainage Area Above Dam _____ 1,312.6 Acres



Steve Kane Grant County Pond Repair



T. L. Wickstrom
Thomas L. Wickstrom
Fish & Wildlife Biologist
Waubesa NWR

Legend

FEATURE

 Wetland Created

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RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 8/4, 20 08

RECEIVED OF Steven M Kane 46408 149th St South Shore SD 57263

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

Fee for Application for Permit No. <u>7049-3</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>7049-3</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.

03708

By

Michael Erbe
Chief Engineer

Water Permit Application No. 7049-3

Steve Kane

Top of Dam Elev. - 74
 2nd Spillway Elev. - 71
 P. Spillway Elev. - 67
 D/S Emb. Toe Elev. - 54

Cat. 3 - Low Hazard Dam

Ht. = 20 ft.

Normal Storage Capacity - 30 Ac.-Ft
 Int. Storage Capacity - 51
 Max. Storage Capacity - 72

Int. Capacity x Eff Ht. = $51 \times 17 = 867 < 3000$ $\therefore$ 25 yr
Minimum Spillway Design

From USGS WRI 98-4055 "Tech. for Est Peak Flows ... in SD"
 Region A $P_{II} = 0.95$ $DA = 1312 A_c = 2.05 \text{ mi}^2$

$$Q_{95} = 218 CA^{.513} P_{II}^{4.80}$$

$$= 218 (2.05)^{.513} (0.95)^{4.80}$$

$$= 218 (1.4452) (0.7818)$$

$$= \underline{246 \text{ cfs}}$$

$$Q_{100} = 362 CA^{.521} P_{II}^{4.47}$$

$$= 362 (2.05)^{.521} (0.95)^{4.47}$$

$$= 362 (1.4535) (0.7951)$$

$$= \underline{418 \text{ cfs}}$$

Secondary Spillway Capacity

$$Q = CLH^{3/2}$$

$$C = 2.6$$

$$L = 80$$

$$H = 3$$

$$= (2.6)(80)(3)^{1.5}$$

$$= \underline{1080 \text{ cfs}}$$

NRCS Annual Prob

Section 74:02:08:09

$DA = 1312 A_c$ $CN = 72$ $ISO = 24$

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

$$80\% \text{ chance} = 0.11$$

$$0.11 \times 1312/12 = \underline{12 \text{ Ac.-Ft.}}$$

$$50\% \text{ chance} = 0.33$$

$$0.33 \times 1312/12 = \underline{36 \text{ Ac.-Ft.}}$$

$$10\% \text{ chance} = 1.80$$

$$1.80 \times 1312/12 = \underline{197 \text{ Ac.-Ft.}}$$

DRAINAGE AREA	ANNUAL YIELD	PEAK RUNOFF <i>Ac-Ft</i>	EMERG. SPLWY. CAPACITY	WATER DEPTH	SURFACE AREA	SEDIMENT STORAGE	TOTAL STORAGE
ACRES	AC. FT.	25-YR.	C.F.S.	FEET	ACRES	AC. FT.	AC. FT.
1312		197	581	13	4.6		30

LOCATION

[illegible]

WATER CONTROL PROGRAM

Principal spillway, El. 74⁰

Emergency spillway, El. 71⁰

12

3:1

C of dam

Allowance for settlement 5[%]

3:1

Strip sod and brush from dam foundation to minimum depth

Cutoff trench, (approx. depths shown on Profile Along C of Dam)

REGISTERED PROFESSIONAL ENGINEER
 REG. NO. 3208
 DAVID F. KONECHNE
 SOUTH DAKOTA

SD-2 Clearing & Grubbing
SD-7s Earth Fill
SD-9 Drain Fill
SD-12B Concrete
SD-16 Timber Fabrication
SD-17 Metal Fabrication

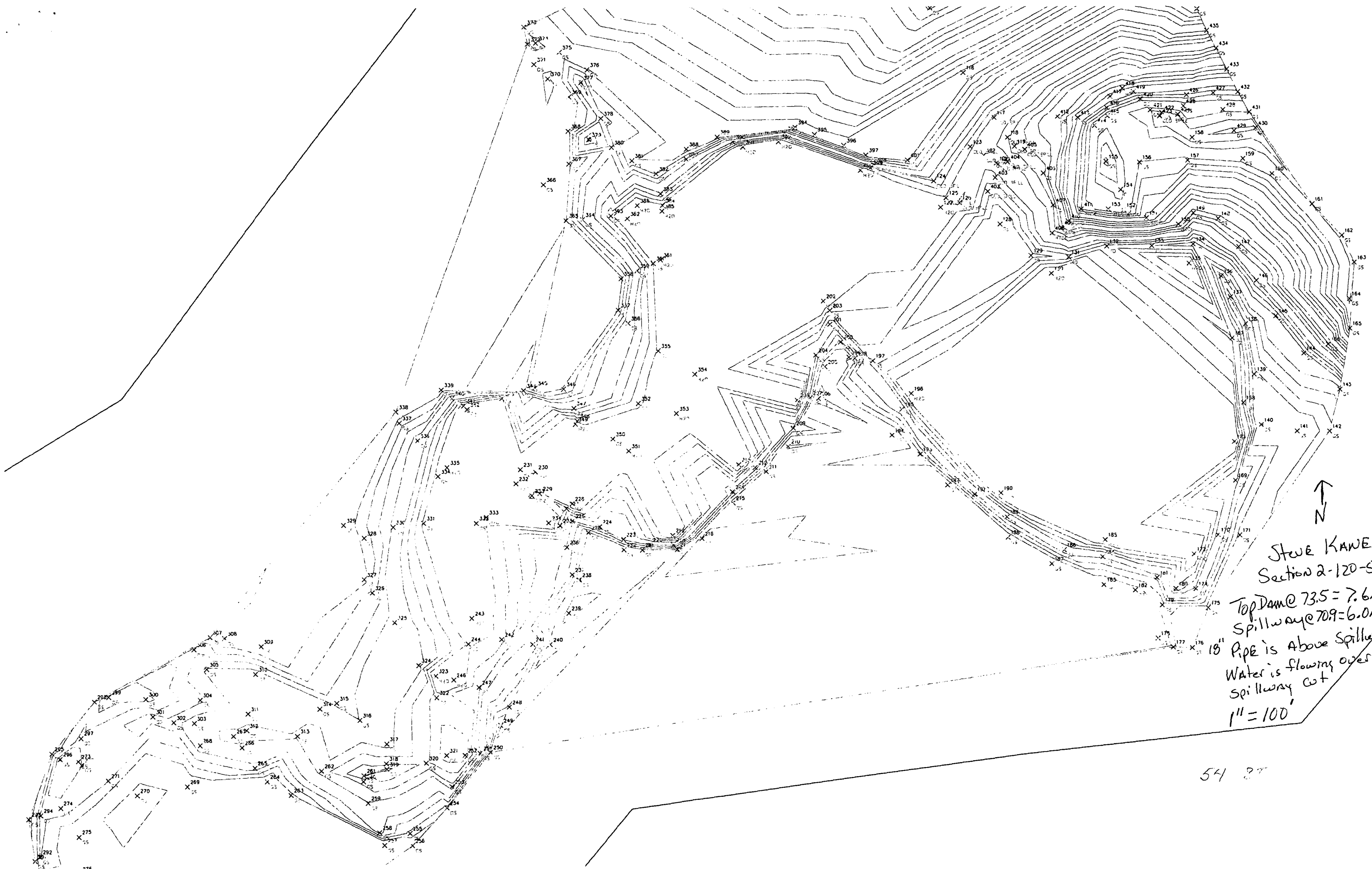
OPERATOR: Steve Kane

CONSERVATION DISTRICT: _____

Class "A" Hazard

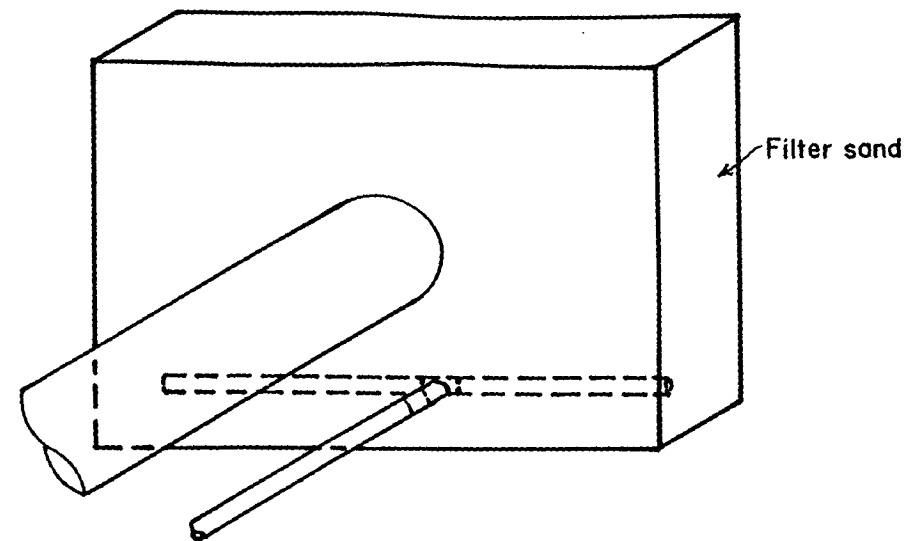
Date		Approved by	
Designed	_____	Title	_____
Drawn	_____	Title	_____
Traced	_____	Sheet	Drawing No
Checked	_____	No	
		of	

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

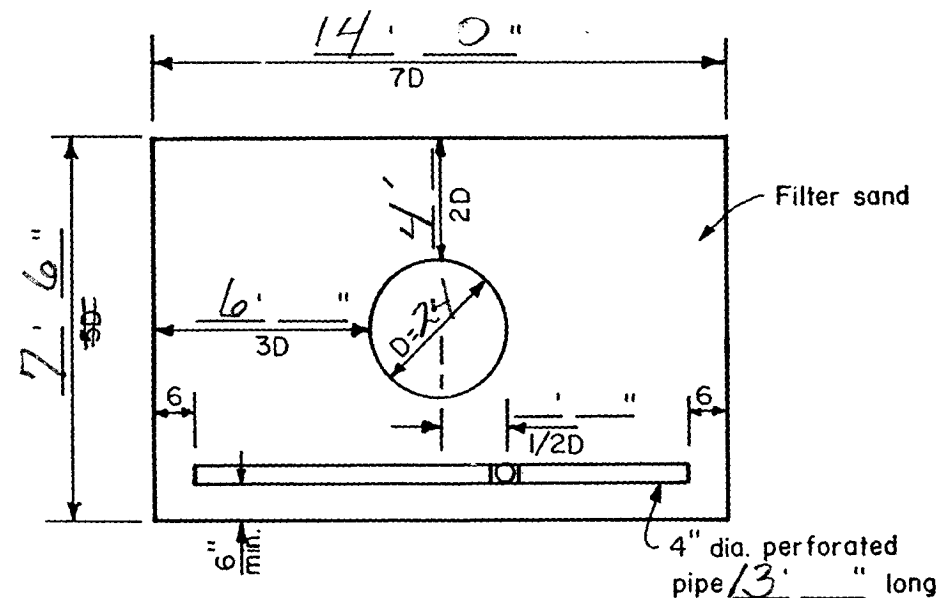


Steve KANE
Section 2-120-S
Top Dam @ 73.5 = 7.64
Spillway @ 70.9 = 6.04
18" Pipe is Above Spillway
Water is flowing over
spillway cut
1" = 100'

54 27



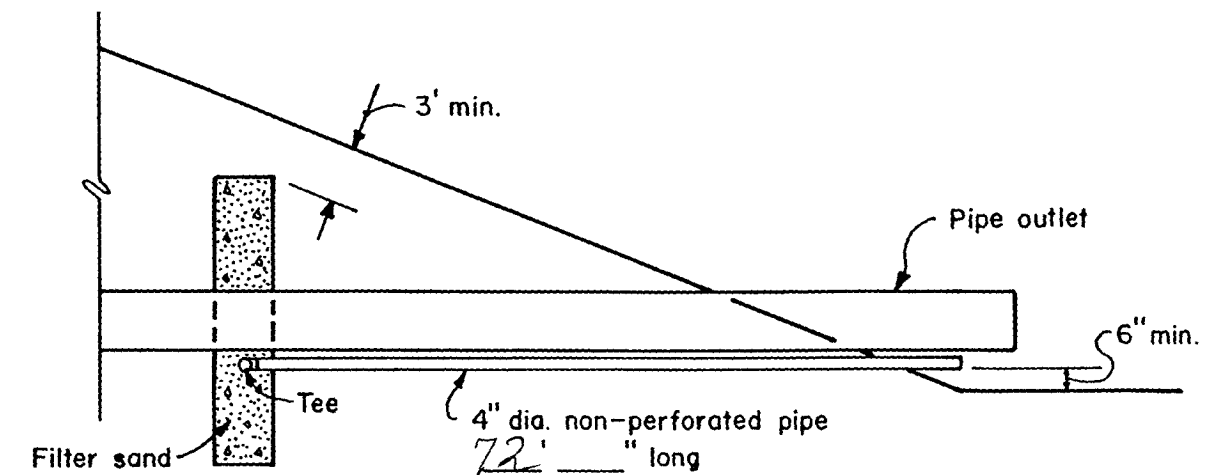
ISOMETRIC VIEW



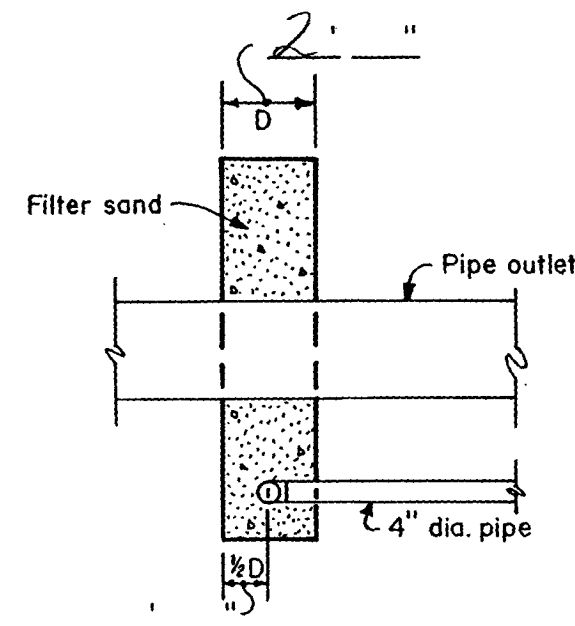
UPSTREAM VIEW

NOTE:

1. THE 4" DIA. PIPE SHALL BE ASTM D1785, SCHEDULE 40, PVC.
2. PROVIDE AN ANIMAL GUARD ON DRAIN OUTLET PIPE. DRILL 2, 1/2" DIA. HOLES, ON ϕ 6" FROM END OF PIPE AND PLACE A 3/8" DIA., 5 1/2" LONG GALVANIZED STEEL BOLT THRU THEM AND SECURE WITH A NUT (PLACE BOLT HORIZONTAL).



OUTLET DETAIL



SIDE VIEW

FILTER GRADATION

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

see spec SD-9
7.8 cy

Sec. _____, T. _____, R. _____

County _____
LOCATION

SAND ANTISEEP COLLAR

OPERATOR Steve Kane

CONSERVATION DISTRICT _____

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed _____	Date _____	Approved by _____
Drawn _____		Title _____
Traced _____		Title _____
Checked _____	Sheet _____	Drawing No. _____
	of _____	

JOB PLAN NO. 3.8

Locate principal spillway pipe at C of dam sta. 0 + , at an angle of to the C of the dam. As directed by Technician

Trash rack and baffle plate
not shown. See job plan
no. A

3:1 slope normal
to C of dam

Top of dam after
settlement El. 74⁰

Note: Allowance for settlement 5 %

Emergency spillway El. 71⁰

Principal spillway El. 672

~~Berm, if required ____: 1
slope normal to $\odot$ of
dam ____~~

El. 59⁷

4/8" dia. riser, see
job plan no. B

Antiseep collars sand seep collar

% gr.

115 ' of 24 " dia. pipe PVC

CROSS SECTION OF DAM ALONG C OF PRINCIPAL SPILLWAY
(Not to scale)

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.

PVC to be SDR-35 or

SDR-26

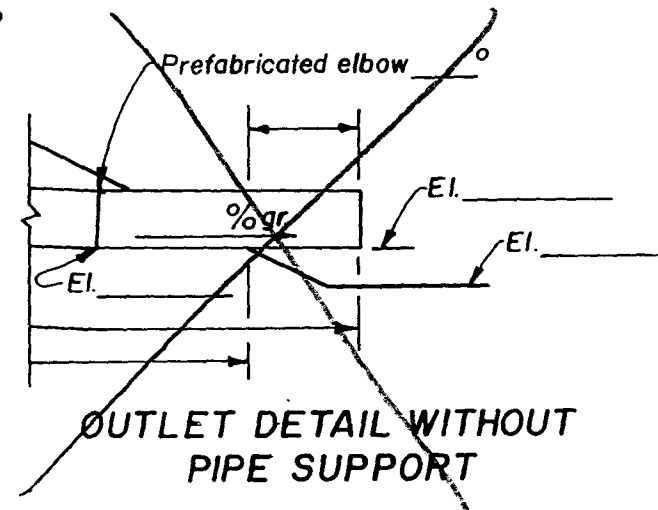
TABLE OF QUANTITIES

[illegible]

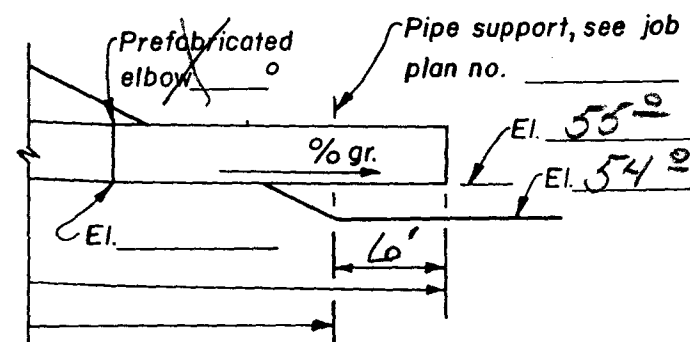
APPLICABLE STANDARD S.C.S. SPECIFICATIONS

Rev. 8/80
JOB PLAN NO. 2.0

REFERENCE: GUIDE PLAN NO. 2.0



~~OUTLET DETAIL WITHOUT
PIPE SUPPORT~~



OUTLET DETAIL WITH PIPE SUPPORT

Sec. _____, T. _____, R. _____
_____ County

LOCATION

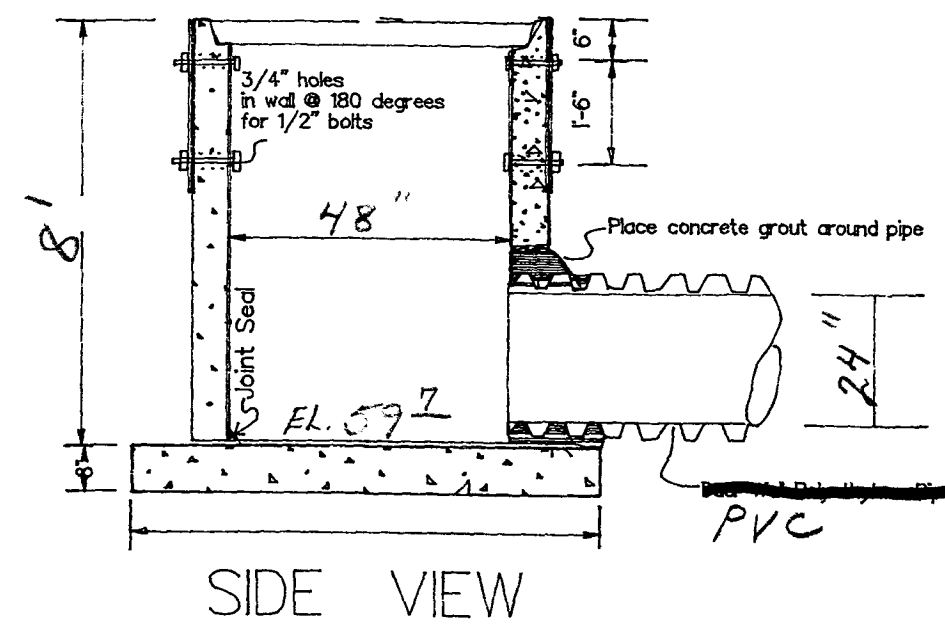
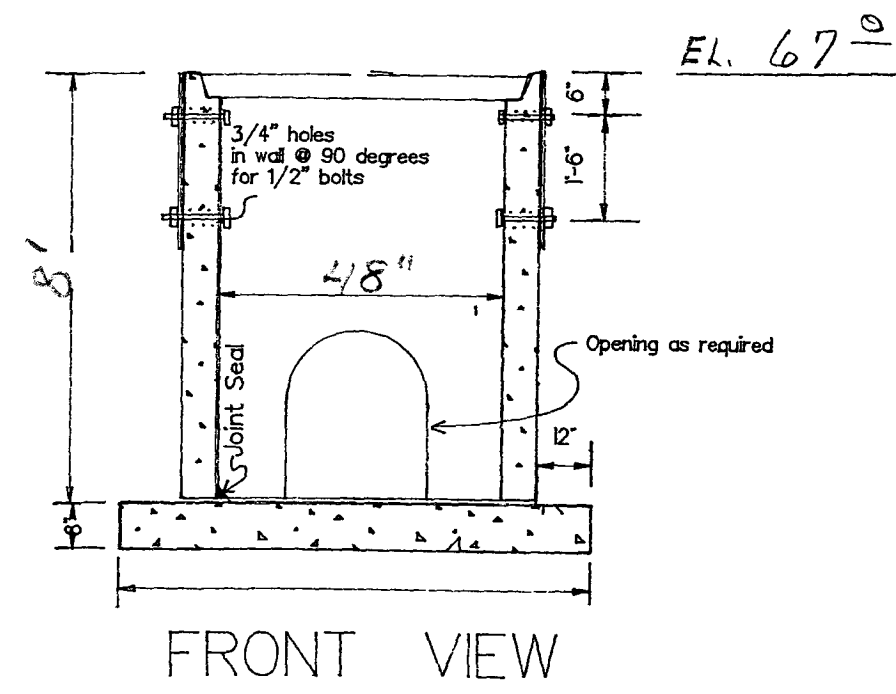
CORRUGATED METAL PIPE
DROP INLET PRINCIPAL SPILLWAY

OPERATOR Steve Kane

CONSERVATION DISTRICT _____

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

	Date	Approved by:	
Designed.....		Title	
Drawn.....		Title	
Traced	Sheet	Drawing No.	
	No.		
Checked	of.		



CONSTRUCTION NOTES:

- 1- Reinforced concrete pipe shall meet ASTM C-478.
- 2- ~~Reinforced concrete pipe shall be equal to~~ **PVC - SDR-35 or SDR-26**
- 3- Provide holes in concrete pipe for lifting lugs.
- 4- Alternative to concrete base is poured in place concrete base

STEEL SCHEDULE

RISER DIA. IN.	BAR SIZE	MARK	TYPE	NO. REQ'D.	LENGTH FT.-IN.	TOTAL LENGTH FT.-IN.	TOTAL WT. LB.	C IN.	L FT.-IN.
	4	1	STR.	12	5-6	66	44	6	6

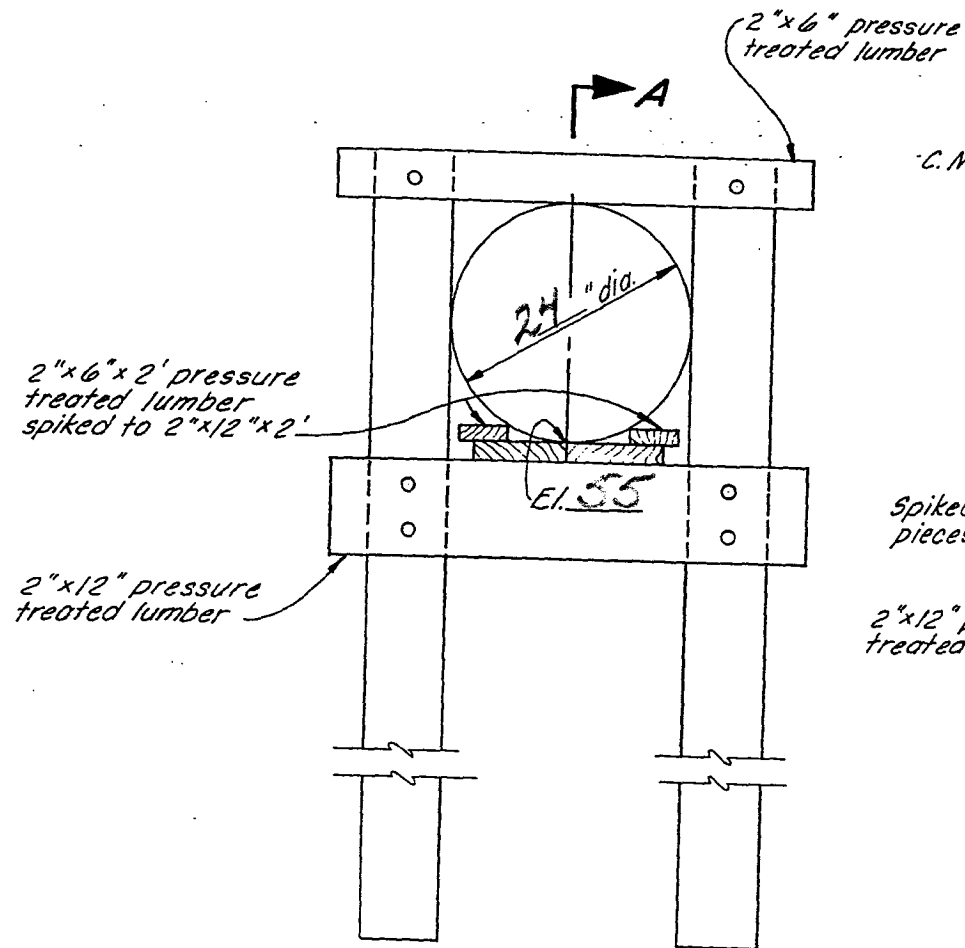
TABLE OF QUANTITIES

ITEM	UNIT	QUANTITY
CONCRETE	CU. YD.	1.3
REINFORCING STEEL	LB.	44

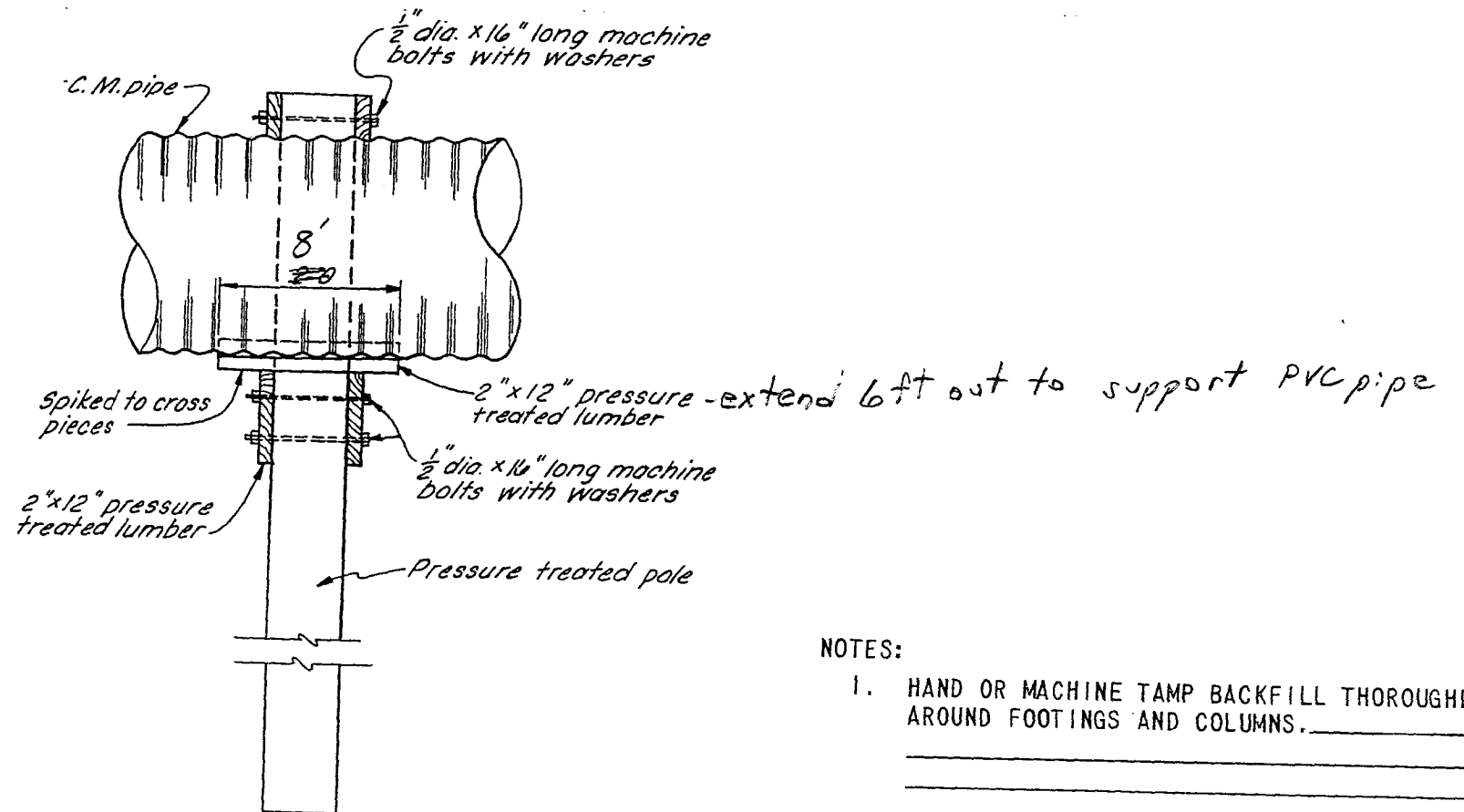
STEVE Kiane

CONCRETE RISER for Reinforced Pipe PVC		
DESIGNED BY <u>D. Kiane</u>	APPROVED BY _____	
DRAFTED BY <u>D. Kiane</u>	TITLE _____	
DATE _____	SHEET OF _____	DWG NO. _____

Job Plan "B"



ELEVATION



SECTIONAL ELEVATION A-A

TABLE OF QUANTITIES

ITEM	LENGTH FOR 24" DIA. PVC C.M. PIPE	UNIT	QUANTITY
PRESSURE TREATED POLE 10" DIA.	10-0	EACH	2
2" X 12" PRESSURE TREATED LUMBER	8-0	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

REFERENCE: GUIDE PLAN NO. 4.0

NOTES:

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

TIMBER PIPE SUPPORT

OPERATOR: Steve Krane

CONSERVATION DISTRICT: _____

Designed _____	Date _____	Approved by _____
Drawn _____		Title _____
Traced _____		Title _____
Checked _____		Sheet _____ of _____
		Drawing No. _____

JOB PLAN NO. 4.0

5, N-29,073.4a

COMPUTATION SHEET

BY	DATE	PROJECT <i>Steve Kane</i>	SHEET ____ OF ____
CHKD BY	DATE	FEATURE <i>NW 2, T 20 N, R 5 W</i>	
DETAILS			

Line

1
2
3
4
5
6
7
8
9

Length

2.7
2.7
2.7
2.7
1.7
2.7
3.4
5.4
4.3
6.8

$$2.7 \times 2000 = 54000$$

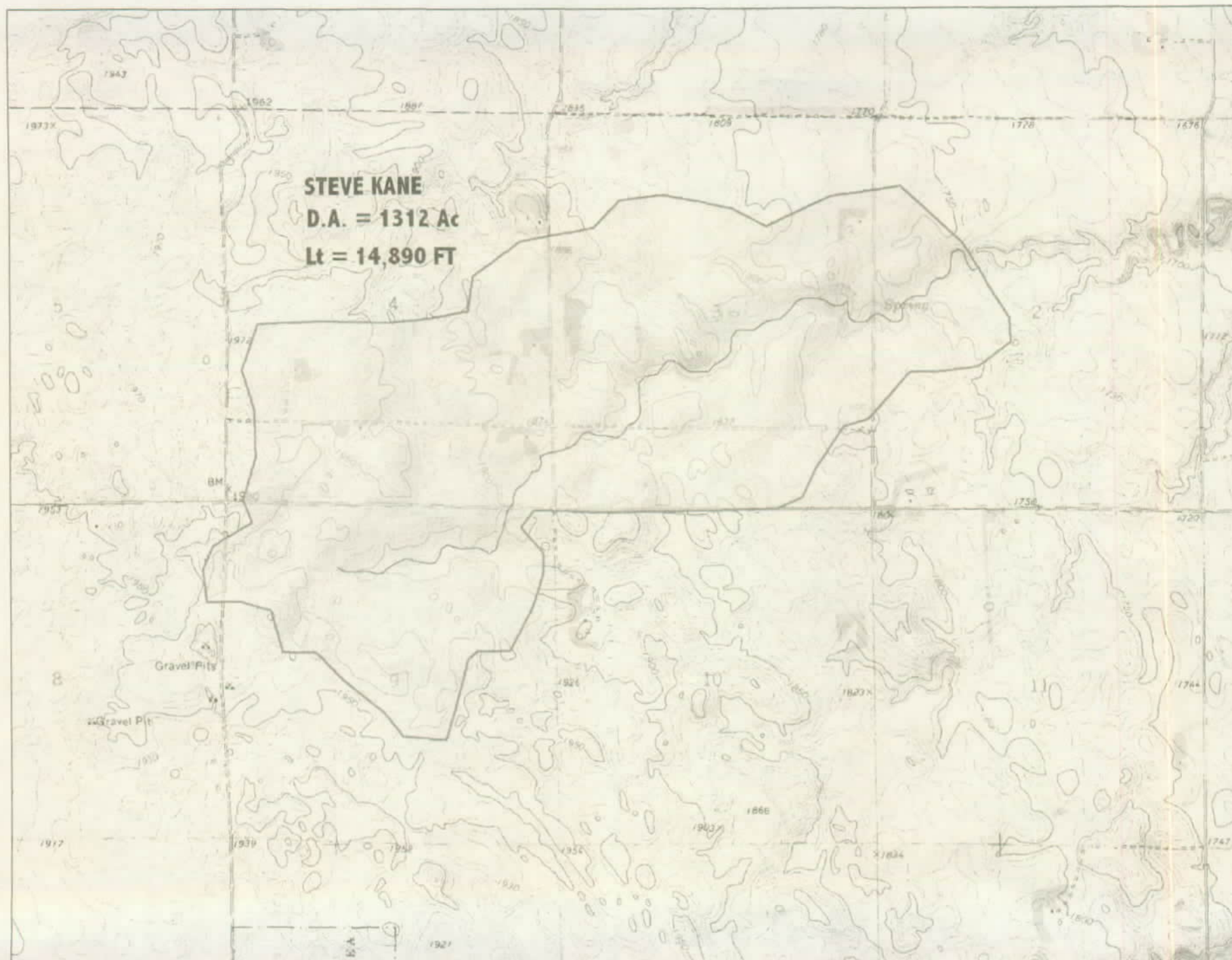
Contour

1750
1800
1850
1900
1950

Grid Contour

5
12
15
9
11
52

$$\frac{(52 + 50)(52)}{54000} = 0.076 \times 100 = 7.6\%$$



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Scale: 1 : 25,000 Map Rotation: 0° Magnetic Declination: 5.1°E

2,000 ft

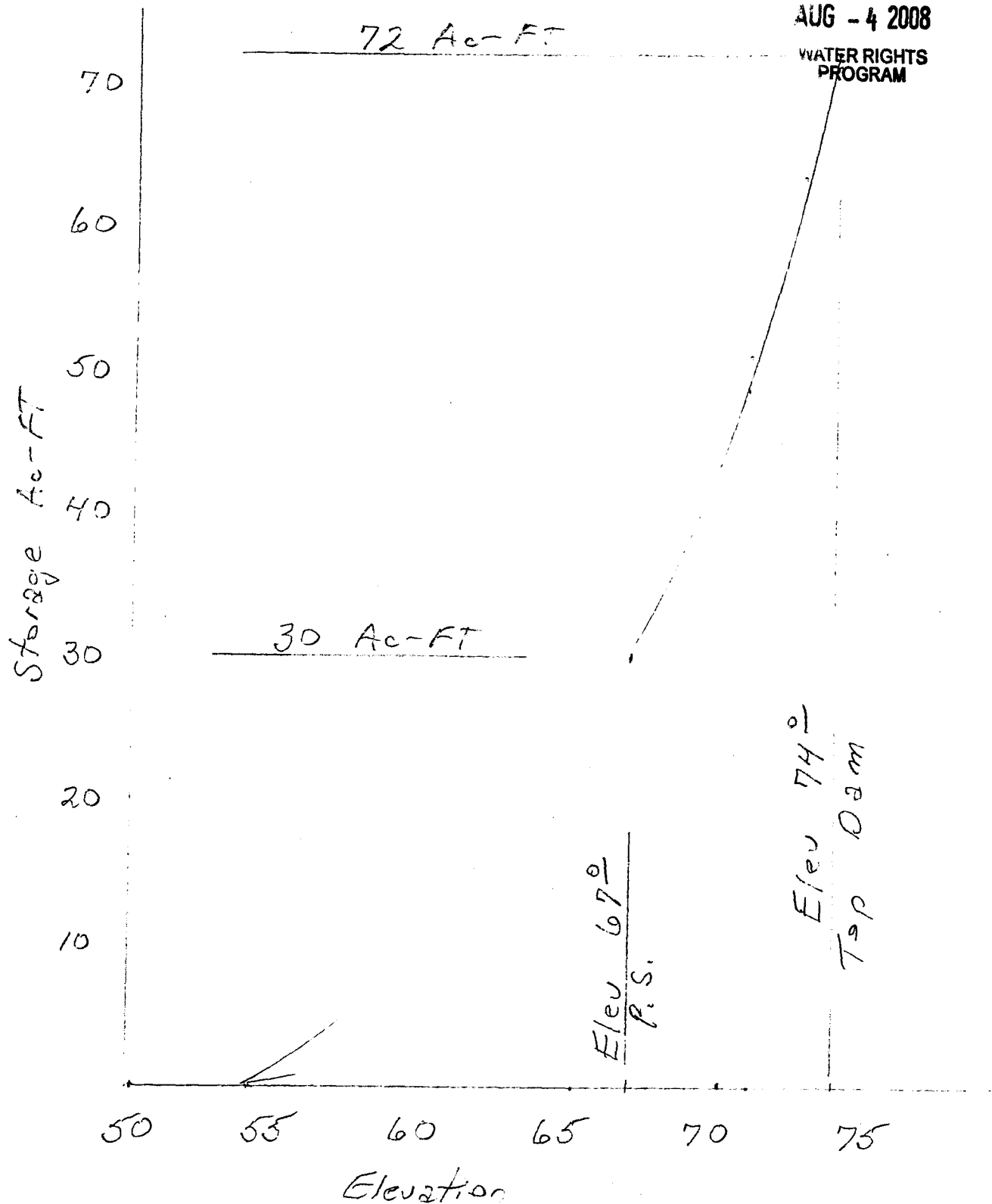
COMPUTATION SHEET

BY	DATE	PROJECT <i>Steve Kene</i>	SHEET ____ OF ____
CHKD BY	DATE	FEATURE <i>NW Sec 2, T120 N, R51 W</i>	
DETAILS			

RECEIVED

AUG - 4 2008

WATER RIGHTS
PROGRAM



=====
| POND DESIGN |
=====

winPond 1.5.2405.11111

Project ---- : Pond repair

Description : Existing 18" PE hood has raised above spillway,
emergency spillway has headcut

State ----- : South Dakota

County ----- : Grant

Landowner -- : Steve Kane

Township --- : 120N

Range ----- : 51W

Section ---- : NW 2

Tract ----- :

Field ----- :

Designed By : Dave Konechne

Date designed: 7/9/2008

Date printed : 7/9/2008

Approved By : _____

Date : _____

File Name : C:\Documents and Settings\Elaine\...\New.prj

PLANNED IN COOPERATION WITH USDA-NRCS

Office Name
Address1
Address2
City

Project --- : Pond repair
 Prepared for: Steve Kane
 Prepared by : Dave Konechne
 Checked by : _____

TWP : 120N RNG : 51W
 SEC : NW 2 FLD :
 Date: _____

***** JOB APPROVAL CLASS *****

Hazard Class	Low	A
Effective Height	Feet	16.9
Effective Storage	Ac-Ft	50.7
Overall Height	Feet	19.9
Total Storage	Ac-Ft	71.5
Storage X Effective Height	Ac-Ft Ft	857
Contributing Drainage Area	Acres	1312
Contributing Drainage Area	Square Miles	2.05
Pipe Conduit Capacity	CFS	55.5
Open Channel Spillway Design Flow	CFS	581.0
Peak Inflow Aux Spillway Design Storm	CFS	659.0
Conduit - Inside Diameter	Inches	24
Conduit Material		SDR
Inlet Type		Drop
Job Approval Class		
INVENTORY SIZE DAM		

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

ELEV (ft)	POOL AREA (acres)	INT.STORAGE (ac.ft.)	ACCUM.STORAGE (ac.ft.)
54.0	0.00		0.00
70.9	6.00	50.70	50.70
73.5	7.60	17.68	68.38

***** STORAGE VOLUMES *****

	ELEVATION (ft)	AREA (acres)	STORAGE (ac.ft.)
Inlet (Princ. spillway)	67.0	4.62	30.00
Aux. spillway	70.9	6.00	50.70
Max. water	72.8	7.19	63.45
Settled top of fill	73.9	7.85	71.47
Sediment - above inlet			0.00
- below inlet			0.00
Inlet to Aux.			20.70
Aux. to max. water			12.75

RUNOFF CURVE NUMBER DETERMINATION

COVER DESCRIPTION

Acres & (curve numbers) for
 Hydrologic Soil Group
 A B C D

ACCUMULATED: 1312.00 Acres

WEIGHTED CURVE NUMBER: 72.0

Project --- : Pond repair
 Prepared for: Steve Kane
 Prepared by : Dave Konechne
 Checked by : _____

TWP : 120N RNG : 51W
 SEC : NW 2 FLD :
 Date: _____

***** HYDROLOGIC DATA *****

Rainfall distr. type ----- :	II		
Drainage area, acres ----- :	1312.0	Watershed slope, % :	7.6
Runoff curve number ----- :	72	Flow length, ft. - :	14890
Time of concentration, hrs : (min.: 126.36)	2.11		
----- Spillway -----			
	Principal	Auxiliary	
Design frequency, yrs.:	2	25	
24 hr. Rainfall, in. :	2.5	4.4	
Runoff, in. ----- :	0.5	$1.8 \times 1312 = 197$	
Peak inflow, cfs ---- :	168.77	658.99×12	
Peak outflow, cfs --- :	55.50	581.03 A.S.	
		59.14 P.S.	

***** PRINCIPAL SPILLWAY TRIALS *****

Inlet type: Drop Inlet Elevation: 67.0

	TRIAL 1	TRIAL 2	TRIAL 3
CONDUIT: Type -----	SDR		
Diameter, in. --	24.00		
Height, in. ----			
Width, in. -----			
Manning's n ----	0.011		
Inlet ext., ft. -	0.0		
Length, ft. ----	115.0		
Entrance Coefficient, Ke	1.000		
RISER : Type -----	RC		
Diameter, in. --	48.00		
Length, in. ----			
Width, in. -----			
Weir length, in.	150.80		
Crest radius, in.			
Invert elevation -----	59.70		
Auxiliary elevation -----	70.9		
STORAGE (ac.ft.):			
Temporary (PS-AS) ----	20.70		
Total at Auxiliary ---	50.70		
Effective height, ft. ---	16.9		
Height x storage -----	857		
Drawdown time, days-hrs.	0-8.1		
Trial used -----	1		

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

Project --- : Pond repair
 Prepared for: Steve Kane
 Prepared by : Dave Konechne
 Checked by : _____

TWP : 120N RNG : 51W
 SEC : NW 2 FLD :
 Date: _____

***** AUXILIARY SPILLWAY DETAILS *****
 Discharge determination: Qe values from ASFILE

Auxiliary elev. :	70.9	Retardance ----- :	C
Bottom width, ft. :	80	Level sect. length, ft.:	25
Flow depth, ft. - :	1.93	Side slope ratio, n:1 :	2.00
EXIT CHANNEL -			
Max. Vel., fps - :	7.0	Retardance ----- :	C

Flow, cfs ----- :	581.03	Exit slope, % --- Min.:	3
		Max.:	3
Settled fill elev.:	73.9	Drawdown time, days-hrs:	0-15.8
Channel elev. --- :	54.0	Overall height, ft. -- :	19.9
(downstream toe)			

***** CONDUIT DETAIL *****

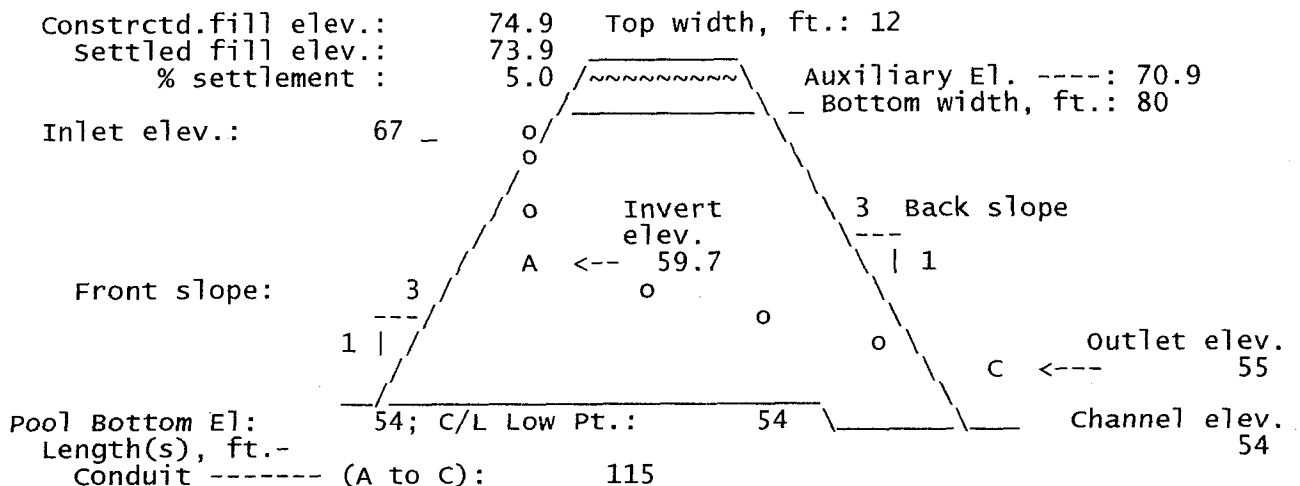
Inlet Type -----	DROP
Conduit Type -----	SDR-26 - PVC SDR-26 Pipe
Diameter, in. -----	24.00
Inlet extension, ft --	0.0
Length, lin. ft. -----	0.0 Extends 6.0 ft. beyond dnstr.toe
Length, lin. ft. -----	115.0 Pipe length used in routing
Slope, % -----	4.1
Max.fill over pipe, ft.	17.4

Horizontal Distances (ft.)	
Upstrm: edge of top width to inlet end of pipe :	29.6
Dnstrm: edge of top width to toe ----- :	66.7

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

Inlet type: DROP

NOT TO SCALE



Project --- : Pond repair
 Prepared for: Steve Kane
 Prepared by : Dave Konechne
 Checked by : _____

TWP : 120N RNG : 51W
 SEC : NW 2 FLD :
 Date: _____

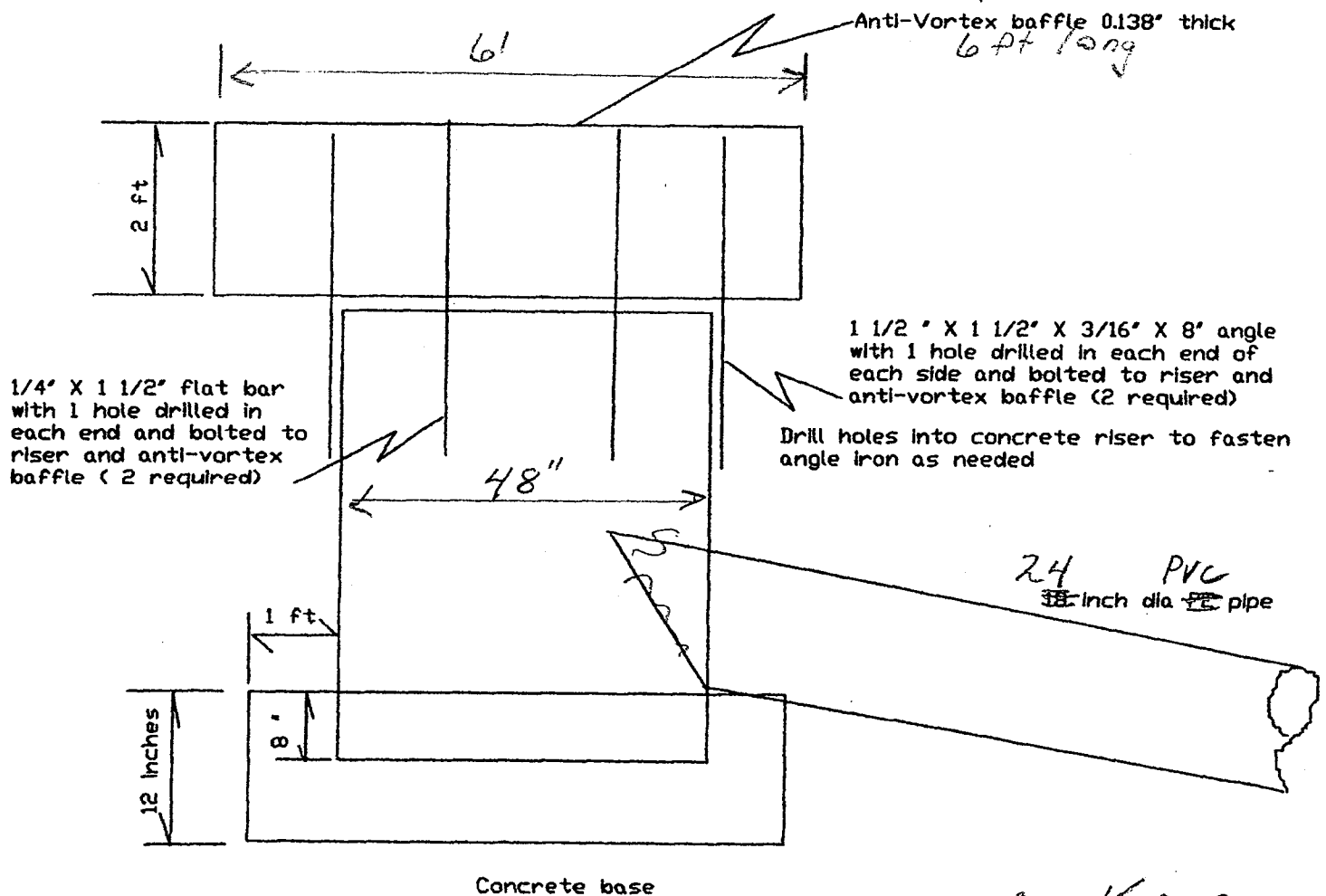
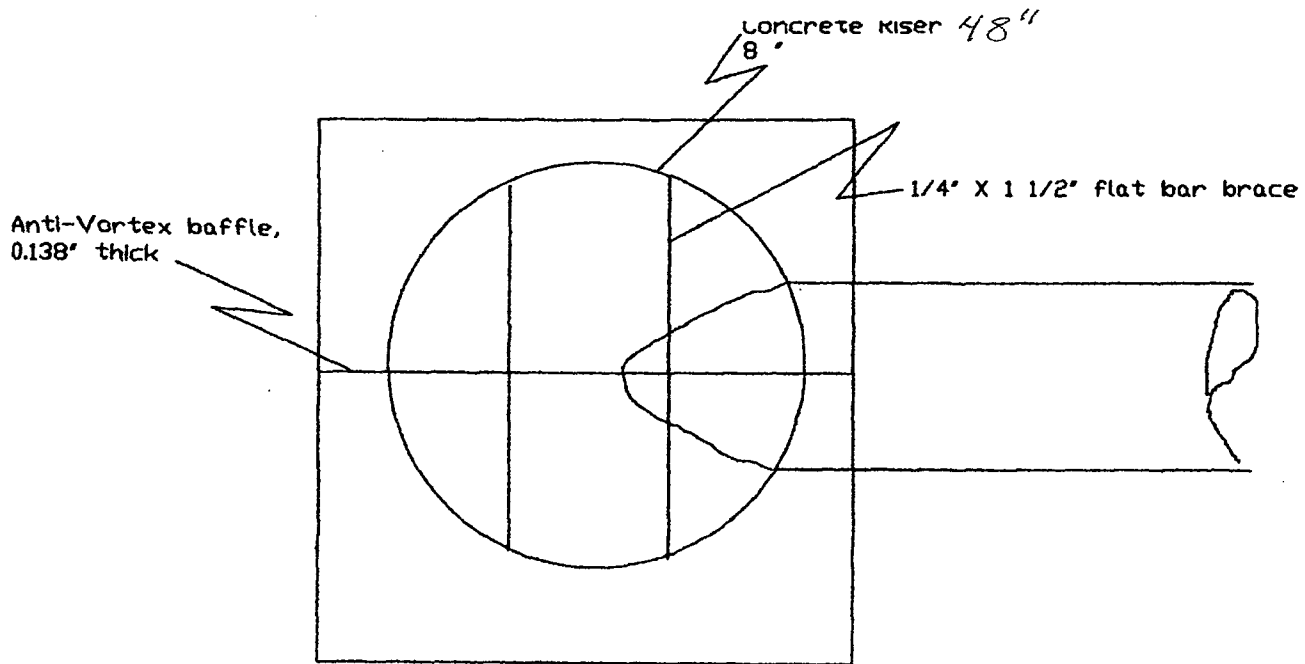
***** SUMMARY *****

Inlet type: DROP Inlet Elevation: 67

CONDUIT: Type -----	SDR-26 - PVC SDR-26 Pipe
Diameter, in. ---	24
Length, lin. ft. -	115 Extends 6 ft. beyond dnstr.toe
RISER : Type -----	RC - Reinforced Concrete
Diameter, in. ---	48
Height, ft. -----	7.3 = Inlet elev. - Invert elev.
Full Pipe Flow El.	72.2
AUX. : Elevation -----	70.9
Bottom width, ft.	80
Hp, flow depth, ft.	1.93
Exit slope, % min.	3
max.	3
Effective height, ft. ----	16.9 = AS elev. - low pt. on C/L
Height x storage -----	857
Overall height, ft. -----	19.9 = stld. fill elev - chan. elev
NOTE -----	***** INVENTORY SIZE DAM

***** PROJECT DEFAULTS *****

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



Job Plan "A"

STEVE Krane
Anti-Vortex



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

August 19, 2008

Steve Kane
46408 149th St.
South Shore, SD 57263

Dear Mr. Kane:

We have reviewed the plans and specifications for your dam repair project located in the SE ¼ NW ¼ of Sec. 2-T120N-R51W, in Grant County. The plans and specifications for your dam are approved. Approval of the plans and specifications does not authorize repair of the dam. The reconstruction of the dam may not begin until Water Permit No. 7049-3 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 Kane Dam will be classified as a small size Category 3, Low Hazard dam with a dam height of 20 feet and a normal storage capacity of 30 acre-feet and a maximum storage capacity of 72 acre-feet.

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

Sincerely,

Timothy G. Schaal, P.E.
Natural Resources Engineering Specialist
for Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

c: Dave Konechne, Konechne Engineering
Tom Wickstrom, USFWS



**DEPARTMENT of ENVIRONMENT
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**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 7049-3, Steve Kane**

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. 7049-3, Steve Kane, 46408 149th Street, South Shore SD 57263.

The Chief Engineer is recommending APPROVAL of Application No. 7049-3 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. 7049-3 authorizes a dam with a storage capacity of 30.0 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
August 18, 2008

REPORT ON
WATER PERMIT APPLICATION NO. 7049-3
Steve Kane
August 6, 2008

Water Permit Application No. 7049-3 has been filed by Steve Kane to impound 30 acre-feet of water from runoff by reconstructing an existing dam located in the SE ¼ NW ¼ of Section 2-T120N-R51W, in Grant County. The application also requests impoundment of sufficient water to maintain water to the outlet elevation. The water will be used for fish and wildlife production and livestock water purposes. In 1996, Location Notice No. 74464 was filed for the dam with a storage capacity of 21.3 acre-feet.

Discussion:

The dam will be classified as a small size, Category 3, Low Hazard dam. The dam has been designed by Konechne Engineering. The plans and specifications have been reviewed and will be approved; however, reconstruction of the dam can not begin until Water Permit Application No. 7049-3 is approved.

The reconstructed dam will be 20 feet high with a normal storage capacity of 30 acre-feet with a reservoir level at the primary spillway elevation, and a maximum storage capacity of 72 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 1312 acres or 2.05 square miles. The dam is designed to have a 48 inch diameter concrete riser with a 24 inch diameter PVC barrel with 7.0 feet of freeboard as the primary spillway, and an 80 foot wide earthcut secondary spillway with 3.0 feet of freeboard. A 25 year frequency event produces a peak runoff of approximately 246 cfs and a 100 year frequency event produces a peak runoff of approximately 418 cfs. The earthcut spillway will have a capacity of approximately 1080 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 12 acre-feet. The annual yield with a 50 percent chance of occurrence, or 1 out of 2 years, is expected to be 36 acre-feet and the annual yield with a 10 percent chance, or 1 out of 10 years, is expected to be 197 acre-feet.

The Kane Dam will be located in the SE ¼ NW ¼ of Section 2-T120N-R51W on an unnamed tributary to the North Fork of the Whetstone River, about 18 miles upstream of the confluence of the unnamed tributary and the North Fork of the Whetstone River. Water Right No. 2711-3 for the Pine Hills Golf Club authorizes 0.57 cfs from the unnamed tributary and is located about 15 miles downstream of the Kane Dam. There are no other existing Water Permits/Rights filed on the unnamed tributary between the proposed dam and the North Fork of the Whetstone River.

Conclusions:

1. Water Permit Application No. 7049-3 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. 7049-3.



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

Printer's Affidavit of Publication

RECEIVED

STATE OF SOUTH DAKOTA
COUNTY OF GRANT

} ss.

SEP - 3 2008

Holli Seehafer

WATER RIGHTS
PROGRAM

of said County and State, being first duly sworn, on oath says that the Grant County Review is a legal weekly newspaper of general circulation, printed and published in Milbank, in said County of Grant and State of South Dakota, by Phyllis Justice, and has been such newspaper during the times hereinafter mentioned; that said newspaper is a legal newspaper; and that it has a bona fide circulation of more than two hundred copies weekly, and has been published within said County of Grant in the English language and has been admitted to the United States mail under second class mailing privilege, for at least one year next prior to the publication of the Notice herein mentioned, and has been printed wholly in an office maintained at the said place of publication, that I, the undersigned, Advertising Manager of said newspaper, in

charge of the advertising department thereof, have personal knowledge of all the facts stated in this affidavit; that the advertisement headed Notice of

Application No. 7049-3 to Appropriate Water

a printed copy of

which, taken from the paper in which the same was published, is attached to this sheet and is made a part of this Affidavit, was published in said newspaper at least once each week for two successive weeks, on the day of each week on which the said newspaper was regularly published, to-wit:

<u>August 27 20 08</u>	<u>20</u>
<u>September 3 20 08</u>	<u>20</u>
<u>20</u>	<u>20</u>

That \$ 43.63, being the full amount of the fee charged for the publication of said Notice, inures to the benefit of the publisher of the Grant County Review; that no agreement or understanding for the division thereof has been made with any person, and that no part has been agreed to be paid to any person whomsoever.

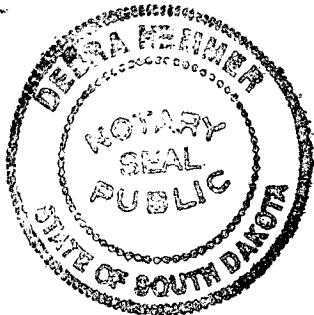
Holli Seehafer

Subscribed and sworn before me this 3rd day of Sept 20 08

Debra L. Hemmer

Notary Public, Grant County, South Dakota

DEBRA HEMMER
Notary Public, GRANT COUNTY, S. DAK.
My Commission Expires OCT 27, 2009



NOTICE OF APPLICATION NO. 7049-3 to Appropriate Water

Notice is given that Steve Kane, 46408 149th St., South Shore SD 57263 has filed an application for a water permit to impound 30 acre-feet of water from runoff by reconstructing a dam located in the SE 1/4 NW 1/4 Section 2 with water impounded in the S 1/2 NW 1/4 Section 2; all in T120N-R51W. This application requests impoundment of sufficient water to maintain water to the outlet elevation. 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. 7049-3 because 1) unappropriated water is available, 2) existing rights will not be lawfully 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 address is given above. A petition filed by either an interested person or the applicant must be filed by September 15, 2008.

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.

August 27

September 3

Publication Fee \$ 43.63
Notarial Fee \$
Total \$ 43.63



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and NATURAL RESOURCES

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

August 19, 2008

Grant County Review
PO Box 390
Milbank SD 57252

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 7049-3 to Appropriate Water to be published twice. Please publish the first notice on August 27, 2008 with the second publication 7 days later. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

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 Kane, 46408 149th St, South Shore SD 57263 (Ph # 605-398-6900).

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. 7049-3

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

Date _____

We are in receipt of your letter of August 19, 2008 enclosing Notice to Appropriate Water by Application No. 7049-3 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.

August 19, 2008

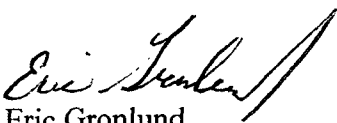
Steve Kane
46408 149th St
South Shore SD 57263

Dear Mr. Kane:

Water Permit Application No. 7049-3 for livestock use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Publisher of the Grant County Review printed at Milbank SD (Ph # 605-432-4516). You will need to contact the newspaper and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper to authorize publication of your Notice and to arrange for payment. Early contact with the paper can eliminate delays. Upon receiving authorization, the publisher has been instructed to publish your notice once each week for two consecutive weeks. 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

c: Tom Wickstrum, Waubay NWR, 4401 134A St., Waubay SD 57273

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 August 27, 2008 with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 7049-3 to Appropriate Water

Notice is given that Steve Kane, 46408 149th St, South Shore SD 57263 has filed an application for a water permit to impound 30 acre-feet of water from runoff by reconstructing a dam located in the SE ¼ NW ¼ Section 2 with water impounded in the S ½ NW ¼ Section 2; all in T120N-R51W. This application requests impoundment of sufficient water to maintain water to the outlet elevation. 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. 7049-3 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 September 15, 2008.

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.



OCT 8 9 2000

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

Steve Kane
46408 149th St
South Shore SD 57263

Dear Mr. Kane:

Enclosed is Water Permit No. 7049-3 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,

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

enclosures

Permit No. 7049-3
Minnesota - Whetstone - 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, November 20, 2013, made a thorough examination of the water use system constructed by Steve Kane of 46408 149th St., South Shore, SD 57263 holder of Permit No. 7049-3, bearing the priority of August 4, 2008 authorizing the storage of 30 acre-feet of the waters of runoff for fish and wildlife propagation and livestock water purposes, in Grant County.

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

A. Works used to divert the water:

A 20 foot high earthen dam with a normal storage capacity of 30 acre-feet of water.

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

N/A

C. Works used to apply water to beneficial use:

A 20 foot high earthen dam with a normal storage capacity of 30 acre-feet of water.

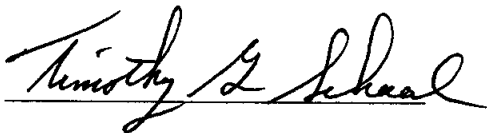
The system is in the following condition good. The point of diversion is located 2200 ft. south and 1650 ft. east of the NW corner of Section 2-T120N-R51W, SE ¼ NW ¼, (Lat. 45.23363 Long. -96.91830). The works are capable of storing 30 acre-feet of water which is to be used for fish and wildlife propagation and livestock water. Water has been put to beneficial use to the maximum extent as follows:

A 20 foot high earthen dam with a normal storage capacity of 30 acre-feet of water.

and the license should be issued for 30 acre-feet of storage.

Applicable permit qualifications have been complied with: Yes X

Exceptions to compliance are: none Date Report Completed: January 10, 2014



Timothy G. Schaal, P.E.
Engineer IV
SD DENR, Water Rights Program

REPORT ON INSPECTION OF PERMIT NO. 7049-3

DATE OF INSPECTION: **November 20, 2013**

NAME & ADDRESS OF PERMIT HOLDER: **Steve Kane, 46408 149th St., South Shore, SD 57263**

DIVERSION POINT LEGAL LOCATION: **2200 ft. south and 1650 ft. east of the NW corner of Sec. 2-T120N-R51W, SE ¼ NW ¼, (Lat. 46.23363 Long. -96.91830).**

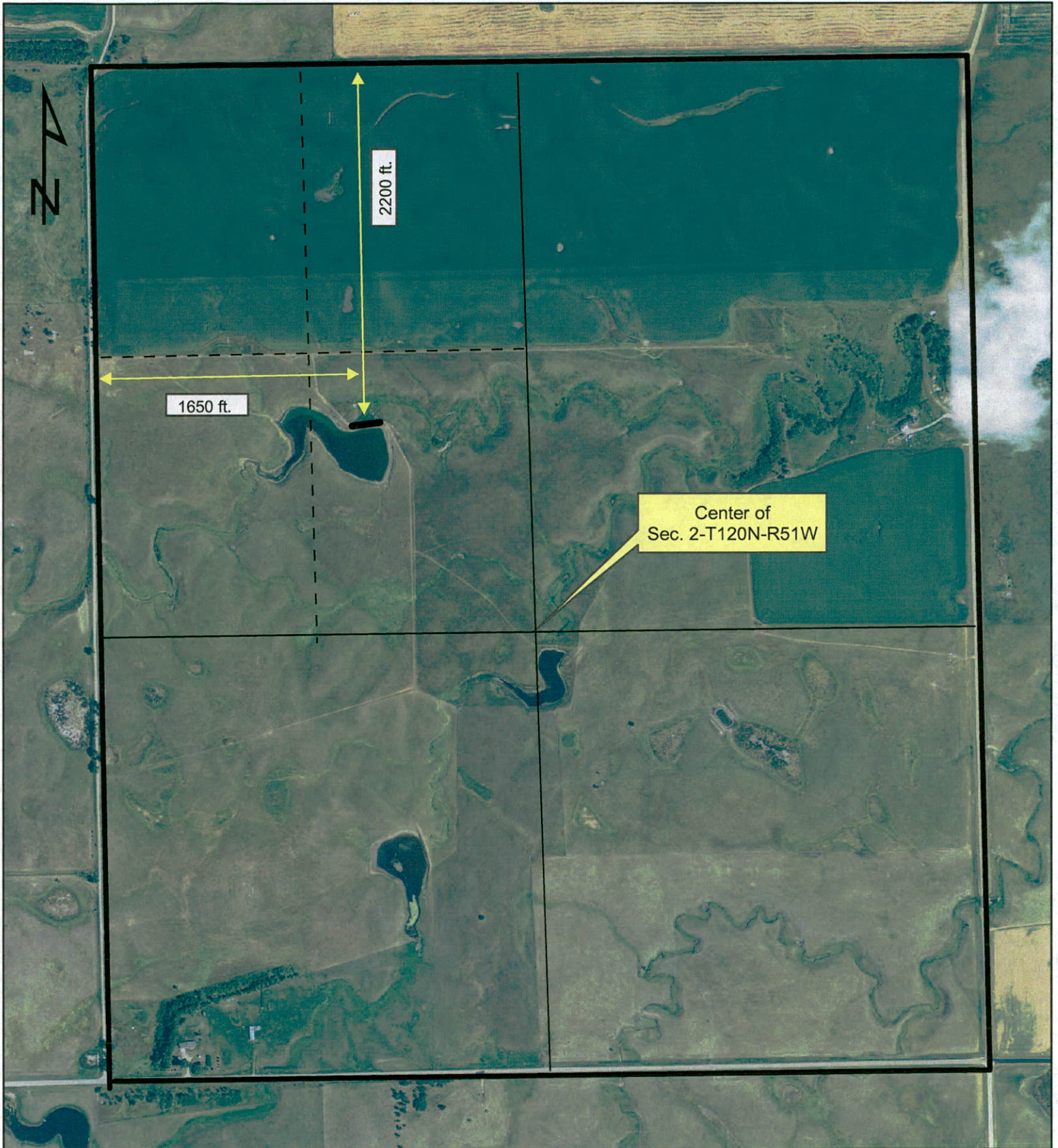
DAM INFORMATION:

- 1) Height to crest **20** feet
- 2) Height to primary spillway **13** feet
- 3) Height to secondary spillway **17** feet
- 4) Crest width **12** feet
- 5) Crest length **220** feet
- 6) Spillway length **XXX** feet
- 7) Spillway width **80** feet
- 8) Approx. storage (Normal) **30** acre-feet
- 9) Approx. storage (Maximum) **72** acre-feet
- 10) Date constructed: **2008**

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. 7049-3



0 0.25 0.5 1 Miles



Timothy G. Schaal

Timothy G. Schaal, P.E.
Engineer IV
SD DENR, Water Rights Program

11/10/14



DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES

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PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov



JAN 29 2014

7049-3

Steve Kane
46408 149th St
South Shore SD 57263

Dear Mr. Kane:

Enclosed is Water License No. 7049-3. 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,

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

enclosures

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 7049-3

(1) Steve Kane, 46408 149th St, South Shore SD 57263 made Application No. 7049-3, August 4, 2008 for a water permit to impound 30 acre feet of water from runoff in a dam located in Grant County, South Dakota and used for fish & wildlife propagation, recreation and domestic livestock water purposes. Permit No. 7049-3, with a priority date of August 4, 2008 was approved September 15, 2008 and issued to the applicant for impoundment of water with construction of the storage dam to be completed on or before September 15, 2013 and the application to beneficial use of water on or before September 15, 2017.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the construction of the storage dam and is entitled to impound 30 acre feet of water beneficial use with sufficient water annually to maintain the water level to the outlet elevation.

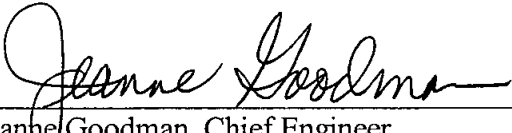
The location of the storage dam (spillway) is 2,200 feet south and 1,650 feet east of the NW corner of Section 2, T120N, R51W (SE ¼ NW ¼). Water is impounded in the S ½ NW ¼ Section 2.

(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 Steve Kane, 46408 149th St, South Shore SD 57263 the holder and/or owner of Water Right No. 7049-3 is issued a license to impound 30 acre feet water from runoff in a storage dam with a priority date of August 4, 2008 from the location specified in (2) of this license. The water is used for fish and wildlife propagation, recreation and domestic livestock watering.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 7049-3 and subject to the following qualifications:

- Water Right No. 7049-3 authorizes a dam with storage capacity of 30 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 bypassed.


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

JAN 29 2014

date

