

WATER PERMIT NO. 6635-3

Name of Applicant: Marie O'Farrell

Address: 46548 144th St, Marvin SD 57251 Phone:

Amount of Water Claimed: 34.60 Total Acres: MA

Source of Water Supply: runoff

Water to be used for: domestic, livestock water County: Grant

Type of Waste Disposal System:

Location: 3 miles northwest of Marvin

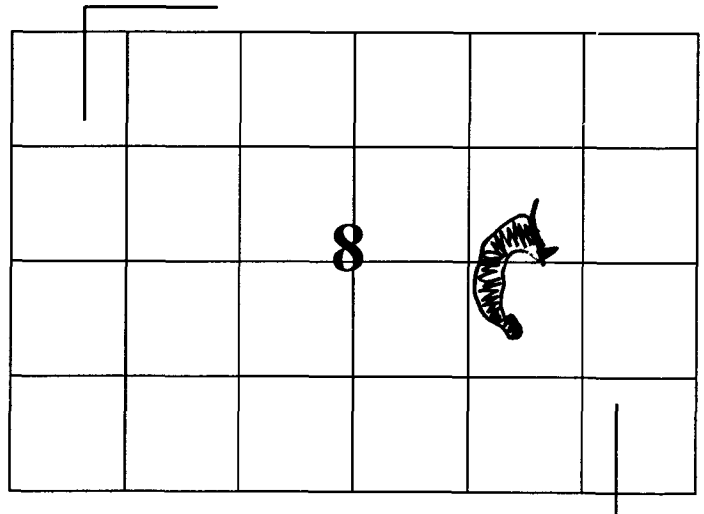
PRIORITY Date Received: 7-7-05 Application/License Fee: \$200

Corrected Application Received: Period of Annual Use: January 1 – December 31

Remarks:

Diversion Point: SE ¼ NE ¼ Sec 8-T121N-R50W

Water Impounded: SE ¼ NE ¼, NE ¼ SE ¼ Sec
8-T121N-R50W



Depth of Well: NA

Well Driller:

Remarks:

Type of Map: aerial

Prepared by: someone w/Waubay NWR

Reviewed and the Number Assigned on: 7-7-05

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

SD EForm - 1585 V1
FORM 2: Application for uses other than irrigation
(type or print)

RECEIVED

JUL - 7 2005

WATER RIGHTS
PROGRAM

Mail to: Water Rights Program Joe Foss Building 523 E. Capitol Pierre, SD 57501-3181 (605) 773-3352	No. <u>6635-3</u> (office use only) Hydrologic Unit <u>07020001</u>
	Basin <u>Minnesota Whetstone</u>
	Newspaper <u>Grant Co. Review, Milbank</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.)

1. Name of Applicant Marie O'Farrell Phone _____
(check one) ☐ Owner ☐ Tenant/lessee
Mailing Address 46548 144th ST Marvin State SD 57251
(Street, RR, or Box and City) (Zip Code)
2. Amount of water claimed _____ *CFS or _____ **GPM 34.60 ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (***Acre Feet - storage capacity of dam/dugout or annual use if applicable)
3. Source of water supply 2,217 acre watershed
4. Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) County Grant
embankment repair in SE1/4NE1/4 Section 8, T. 121 N., R. 50 W.
Water Impounded: SE1/4NE1/4, NE1/4 SE1/4 Sec 8 - T121N-R50W
5. County or counties where water will be used Grant
6. Annual period during which water is to be used spring, summer and fall grazing period. Jan 1 - Dec 31
7. Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)

Rebuild embankment to NRCS design.

STATE OF SOUTH DAKOTA)

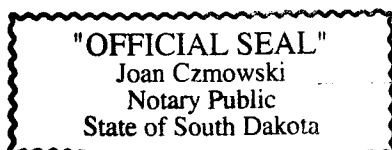
County of Grant) SS

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, Marie O'Farrell, 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 Marie O'Farrell Pres.

Subscribed and sworn to before me this 5th day of July 20 05



Notary Public signature Joan Czmowski

My Commission Expires: 10-17-09

SOUTH DAKOTA
WATER PERMIT NO. 6635-3

Date of first receipt of application July 7, 2005.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 6635-3 to Marie O'Farrell, 46548 144th St, Marvin SD 57251 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. 6635-3 authorizes impoundment of 34.60 acre-feet of water from runoff by constructing a dam located in the SE ¼ NE ¼ Section 8 with water impounded in the SE ¼ NE ¼, NE ¼ SE ¼ Section 8; all in T121N-R50W.
2. The water appropriated shall be used for the purpose of fish and wildlife propagation and livestock water use 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. 6635-3 is September 12, 2005.
5. The date from which applicant may claim right is July 7, 2005.
6. One-fifth of the construction is to be completed on or before March 12, 2008.
7. All construction is to be completed on or before September 12, 2010.
8. Water is to be put to beneficial use on or before September 12, 2014.
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. 6635-3 authorizes a dam with a storage capacity of 34.6 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.

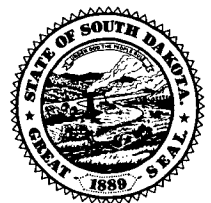
WATER MANAGEMENT BOARD

By: Garland Erbele

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

SEP 30 2005

date



(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

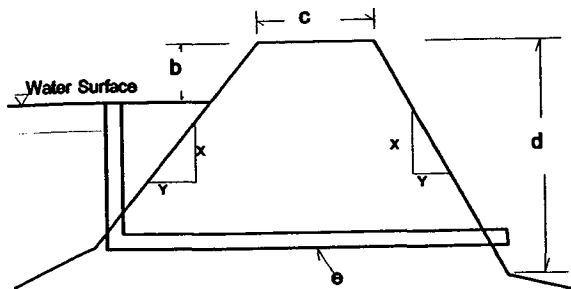
- a) Surface Dimensions _____ Depth _____
- b) Depth to water (ground surface to water level) _____

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:

USDA, NRCS
Brookings Field Support Office
520 Third Ave, P.O. Box 626
Brookings, SD 57006-0626



- b) Freeboard _____ 2.4
- c) Crest Width _____ 12
- Crest Length _____ 400
- d) Height _____ 19.6
- e) Primary Outlet Capacity _____
- If pipe, diameter _____ 18 inch
- f) Secondary Spillway Capacity _____
- Spillway Width _____ 111 feet
- g) X & Y Slope _____
- Upstream _____ 3:1
- Downstream _____ 2.5:1
- h) Surface Area of Impoundment _____ 6.7
- i) Storage _____ 34.6 Acre Feet
- j) Drainage Area Above Dam _____ 2,217.0 Acres

Water Permit Application No. 6635-3

Marie O'Farrell

Cat. 3 - Low Hazard Dam

Top of Dam Elev. - 76.9
 2nd Spillway Elev. - 74.5
 P. Spillway Elev. - 71.0
 DIS Toe Elev. - 57.3

Ht. = 19.6 ft

Normal Storage Capacity - 34.6 A.-Ft
 Int. Storage Capacity - 63
 Max. Storage Capacity - 88

Int Capacity x Eff Ht. = $63 \times 16.7 = 1052 < 3000 \therefore 25\%$
Minimum Spillway Design

From USGS Report No 98-4055 "Tech. for Est. Peak Flow Mag. ... in 50"
 $DA = 3.46 \text{ mi}^2 = 2217 \text{ Ac}$
 $CN = 62$ Region "A" $P_{II} = 0.96$

$$Q_{25} = 218 CA^{.513} P_{II}^{4.80}$$

$$= 218 (3.46)^{.513} (0.96)^{4.80}$$

$$= 218 (1.8904) (0.8221)$$

$$= \underline{340 \text{ cfs}}$$

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

$$= 362 (3.46)^{.521} (0.96)^{4.47}$$

$$= 362 (1.9092) (0.8332)$$

$$= \underline{575 \text{ cfs}}$$

Secondary Spillway Flow

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

$C = 2.6$
 $L = 111$
 $H = 2.4$

$$= 2.6 (111) (2.4)^{1.5}$$

$$= \underline{1070 \text{ cfs}}$$

NRCS Annual Yield

$$DA = 2217 \text{ A. } CN = 62 \text{ ISO} = 2\%$$

$$80\% \text{ chance} = 0.05$$

$$0.05 \times 2217^{1/2} = \underline{9 \text{ A.-Ft}}$$

$$50\% \text{ chance} = 0.11$$

$$0.11 \times 2217^{1/2} = \underline{20 \text{ A.-Ft}}$$

$$10\% \text{ chance} = 1.0$$

$$1.0 \times 2217^{1/2} = \underline{185 \text{ A.-Ft}}$$

Section 74:02:08

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

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date July 7, 20 05

RECEIVED OF J & M Land Company Inc., John O'Farrell, 45548 144th St., Marvin SD 57251

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

Fee for Application for Permit No. <u>6635-3</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>6635-3</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.

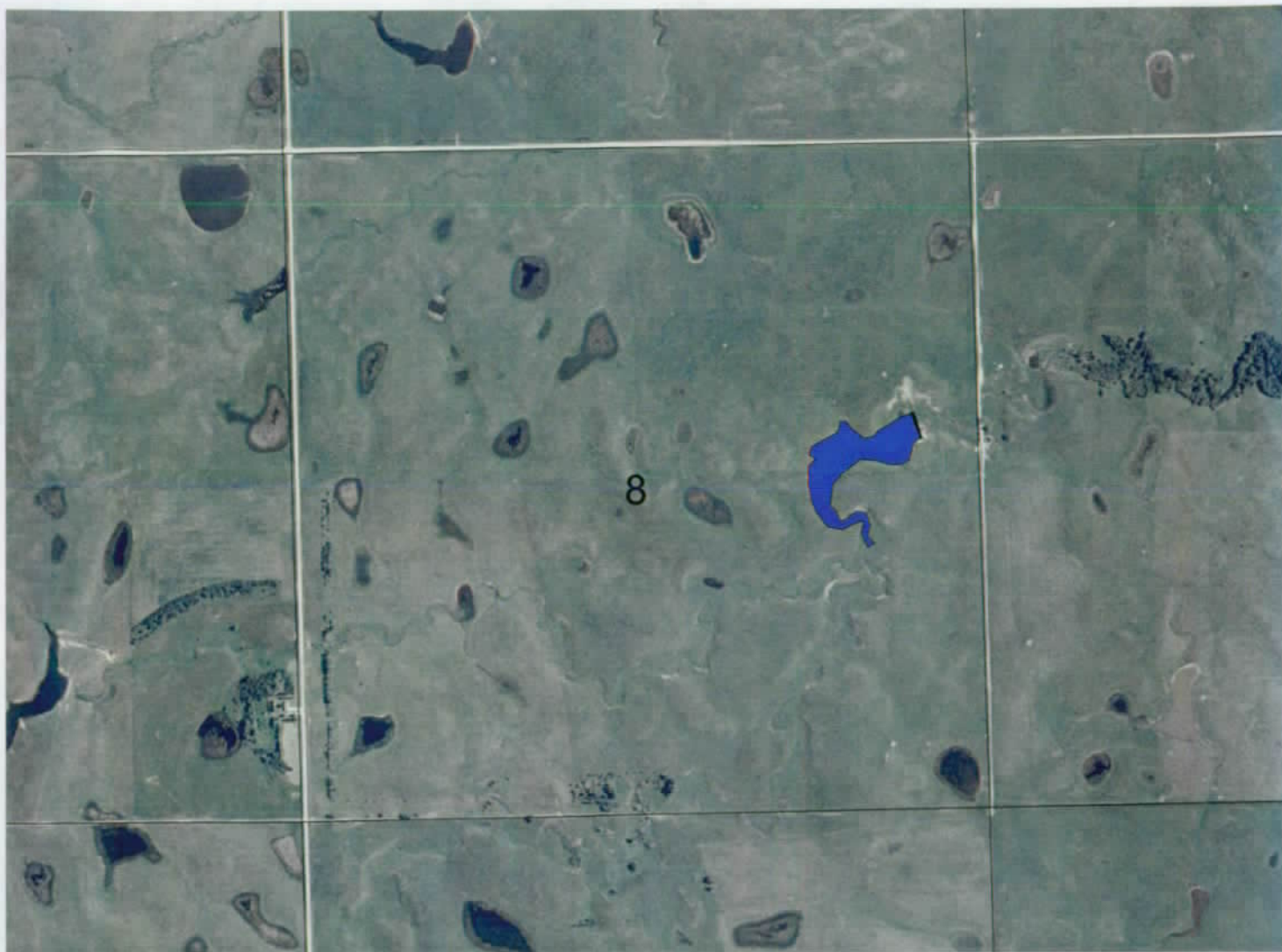
001901

By

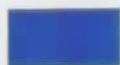
Darland Erbe
Chief Engineer *gm*



O'Farrell
Wetland Repair
Grant County



0 0.5 1 1.5 Miles

 Pool

 Embankment Repair

A. T. White Fish & Wildlife Biologist
Waubesa NWR



6635-3

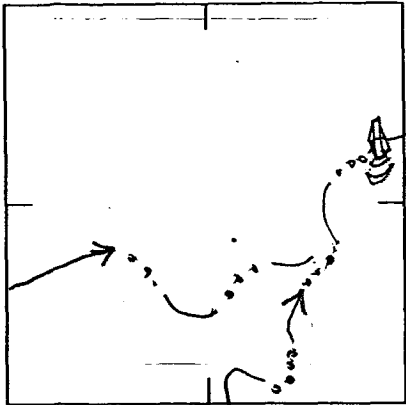
STRUCTURE DATA

DRAINAGE AREA ACRES	ANNUAL YIELD @ 80% AC.FT.	PEAK RUNOFF 50 YR. CFS. (25-50yr)	EMERG. SPWY. 50 YR. CFS.	WATER DEPTH @ P.S. FT.	SURFACE AREA @ P.S. ACRES	SEDIMENT STORAGE AC.FT.	STORAGE		
							@ P.S. AC.FT.	@ E.S. AC.FT.	@ TOP OF DAM AC.FT.
2217	5.2	357	333	11.0	6.7	1.3	34.6	62.8	88.0

CONSTRUCTION & DESIGN NOTES

1. S.D. LAW STATES: "NO EXCAVATOR MAY BEGIN ANY EXCAVATION WITHOUT FIRST NOTIFYING THE ONE-CALL NOTIFICATION CENTER AT THE NUMBER 1-800-781-7474."
2. LANDOWNER IS RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND MAINTAINING THIS DAM IN ACCORDANCE WITH S.D. OPERATION & MAINTENANCE GUIDELINES.
3. THIS PROJECT IS X IS NOT CLASSIFIED AS A "DAM" BY S.D. LAW. ACCORDING TO S.D. LAW, A STRUCTURE IS CLASSIFIED AS A DAM IF IT IS > THAN 25 FT HIGH (TOP TO D.S. TOE) AND IMPOUNDS > THAN 15 AC FT OR IF IT IS > THAN 6 FT HIGH AND IMPOUNDS > THAN 50 AC FT.
4. IF CULTURAL RESOURCES ARE DISCOVERED, DISCONTINUE CONSTRUCTION AND NOTIFY THE LOCAL NRCS OFFICE.
5. SEED ABOVE HWL, THE TOP AND BACKSLOPE OF DAM, THE E.S., ALL DIKES, AND ALL DISTURBED AREAS DESIGNATED BY THE ENGINEER. SEEDING SHALL BE PERFORMED BY THE OWNER.
6. THE CORE TRENCH SHALL BE INSPECTED AND APPROVED BY AUTHORIZED PERSONNEL PRIOR TO BACKFILL. EXCAVATE CORE TRENCH 1 FT INTO IMPERMEABLE MATERIAL. MINIMUM CORE TRENCH IN UNDISTURBED GROUND IS 2 FT. CONSTRUCT THE FULL DEPTH OF THE CORE TRENCH TO HWL. ELEV. (SEE PROFILE OF EMBANKMENT).

7. MINIMIZE EROSION & SEDIMENTATION DURING THE CONSTRUCTION PERIOD BY SLOPING THE TOP SURFACE OF EARTH FILL UPSTREAM TOWARD POOL AREA. (i.e. as dam is being raised, keep the D.S. top edge slightly higher than the U.S. top edge.)
8. EMERGENCY SPWY. IS THE DESIGNATED BORROW AREA.

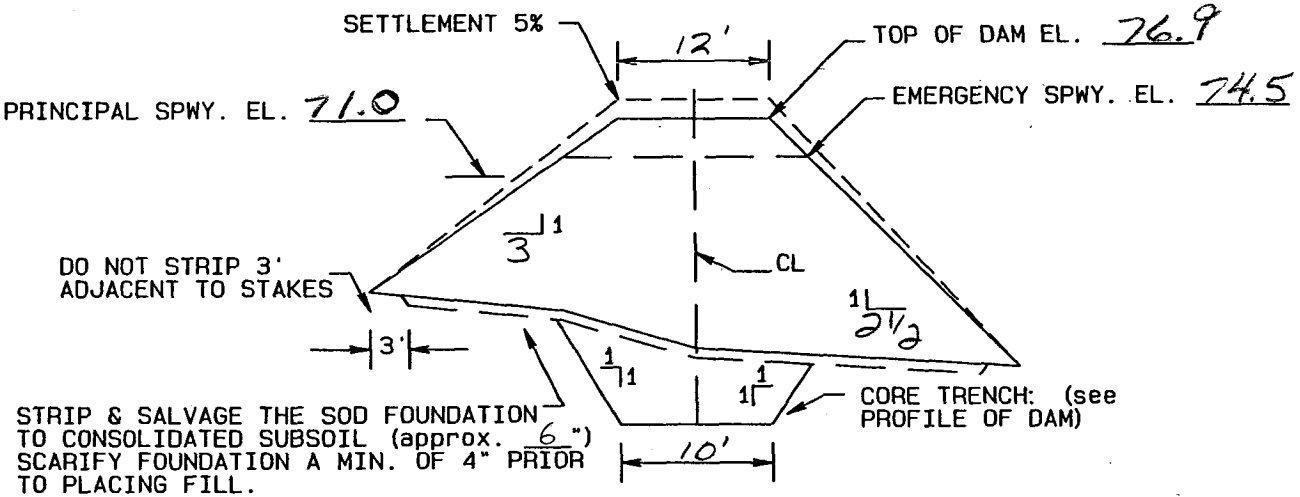


SE4NEY SEC. 8 T121 R 50
LOCATION MAP
APPROX. 3 EAST &
1 1/2 MILE NORTH OF
SUMMIT LAKE.

TABLE OF QUANTITIES

ITEM	UNIT	QUANT.	AS BUILT
EXCAVATION (core trench @ 685cy., stripping @ 397cy.)	CU. YD.	1082	
EXCAVATION (E.S.)	CU. YD.	8700 (borrow)	
EARTH FILL (embankment @ 6780cy., stripping @ 397cy., core @ cy 685)	CU. YD.	8062	
SEEDING	ACRES	1.2	
PRINCIPAL SPWY.	EACH	1	
See sheet # 3 for details of P.S.			

NOTE: Above quantities may be estimated.
Payment will be on surveyed/staked quantities.



TYPICAL CROSS SECTION OF DAM

S. D. CONSTR. & MATERIAL SPECS.

- SD - 4 STRIPPING
- SD - 5 EXCAVATION
- SD - 7S EARTH FILL CLASS "S"
- SD - 10 SALVAGING & SPREADING TOPSOIL
- SD - 15, 50 C.M.P.
- SD - 16 TIMBER FAB. & INSTALLATION
- SD - 17 METAL FAB. & INSTALLATION
- SD - 20B CPE PIPE
- SD - 28 SEEDING

SD-BA ROCK RIPRAP

EARTH DAM

GORDON KANE O'Farrell
GRANT COUNTY

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

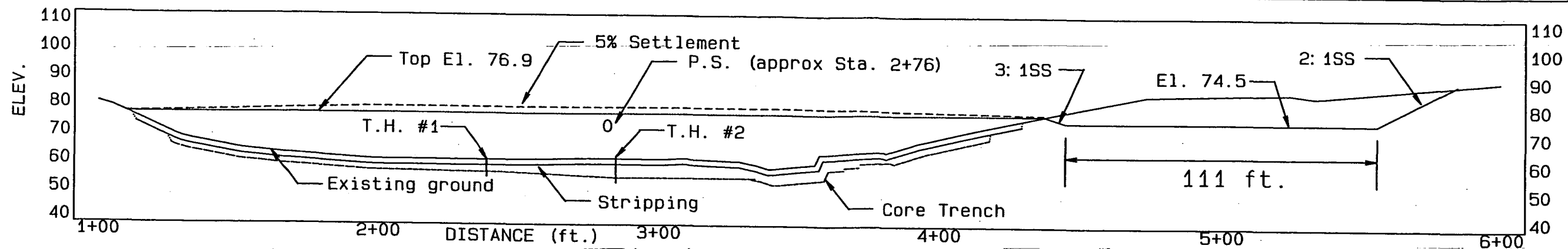
12/21/05 Date
Designed Pete Anderson Approved by: PEA
revised 5/16/05 Title: Ag. Eng.
Drawn
Checked John Sten 2/1/06 Sheet 1 of 5 File Name: JP1.1

SEE SHEET #2
PLAN VIEW OF DAM & POOL AREA
approximate scale 1" = ____ ft.

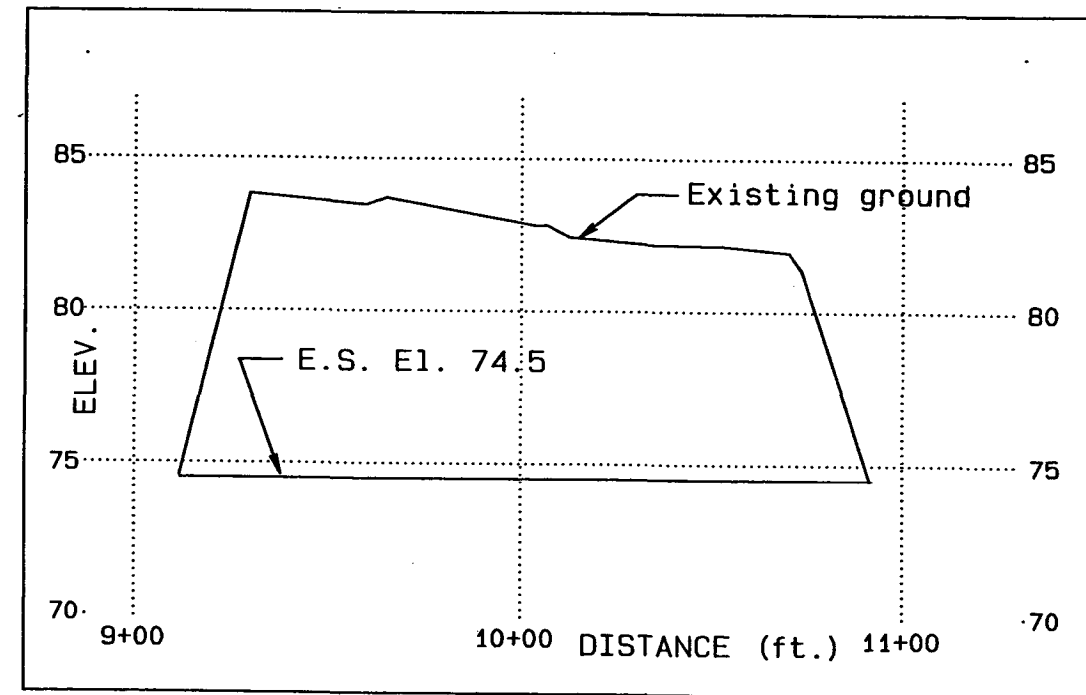
ATTACHMENTS:
SD - 378 O & M GUIDELINES
PARTICIPANT RESPONSE (OWNER COPY)

Rev. 12/11/04 JOB PLAN 1.1B

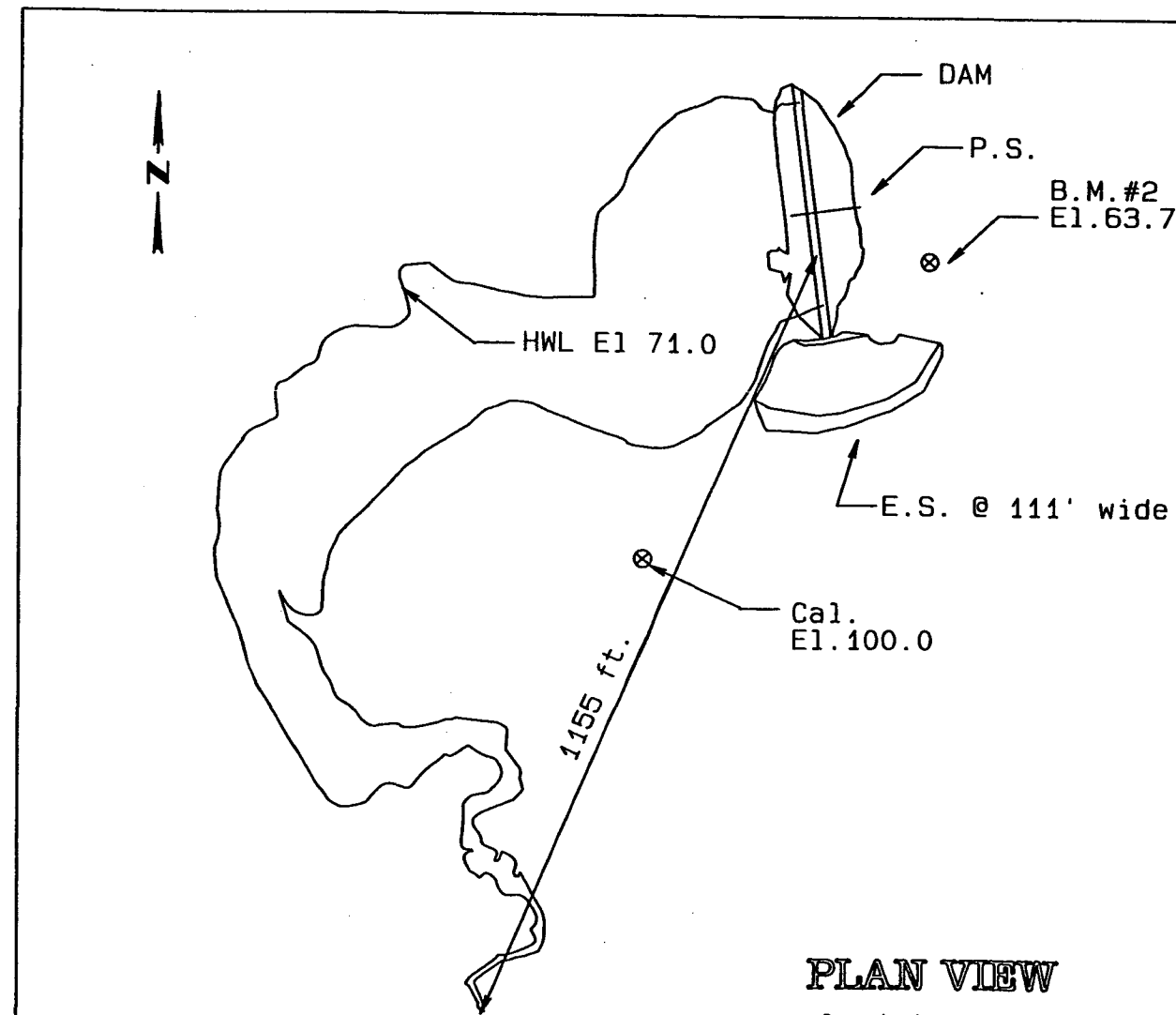
Checked M. Burke 5/17/05



PROFILE of DAM & EMERGENCY SPWY.



PROFILE along CL of EMERGENCY SPWY.



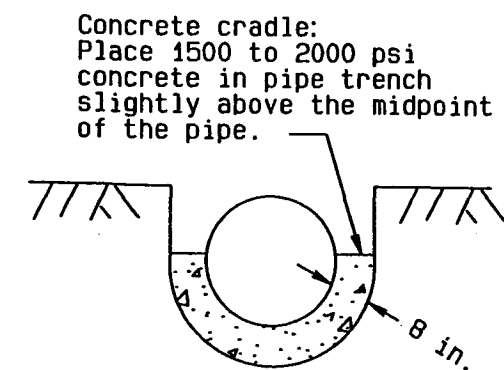
PLAN VIEW
scale 1 in. = 250 ft.

Note: BM #3, Top of orange painted bolt SW corner of bridge El. 61.78

SOIL BORING LEGEND

Test Hole #1
0-3.5 ft. ML
3.5-5 GC
5-11 CL

Test Hole #2
0-5 ft. ML
5-6.5 GC
6.5-9 CL



CONCRETE CRADLE DETAIL

no scale

NRCS NATURAL RESOURCES
CONSERVATION SERVICE

BROOKINGS FIELD SUPPORT OFFICE
520 THIRD AVENUE P.O. BOX 625
BROOKINGS, SOUTH DAKOTA 57005-0625

**GORDON KANE
FARM POND**
NE1/4 Section 8 T. 121 N. R. 50 W.
Grant County, South Dakota

Drawing No.

Sheet 2 of 5

Date: *2/19/05*
Designed & Drafted by: *Pete Anderson*

Revised: *2/18/05*

Checked by:

Approved by:

Title:

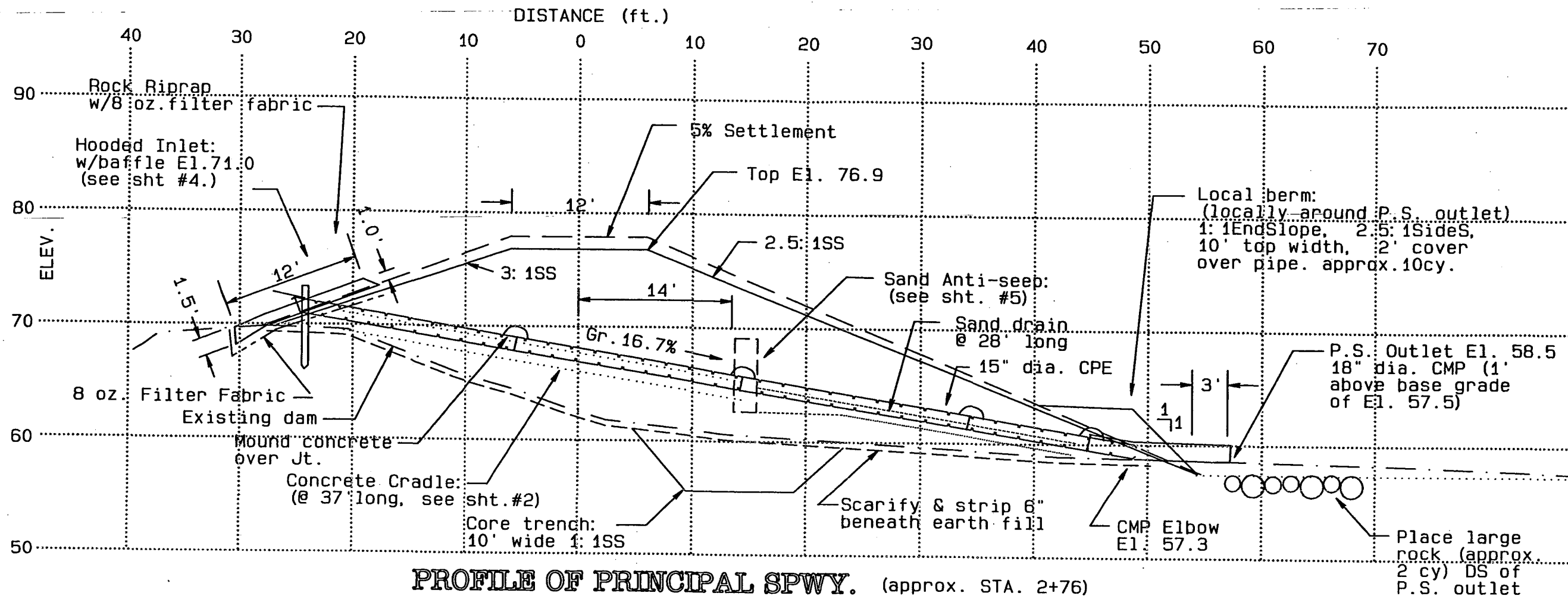


TABLE OF QUANTITIES

ITEM DESCRIPTION	UNIT	QUAN.	AS BUILT
CPE 15" dia.	Lin.Ft.	75	
CMP 18" dia. (with 10 degree elbow 4' from US. end & one 1/2" dia. rod & lug)	Lin.Ft.	12	
SAND ANTI-SEEP COLLAR (@ ____ cu.yd. est.)	Each	1	
BAFFLE	Each	1	
ROCK RIPRAP	Cu.Yd.	22 est.	
CONCRETE CRADLE	Cu.Yd.	3.5 est.	
8 oz. FILTER FABRIC	Sq.Yd.	60	
Note: Some quantities are estimated.			

NOTE:

- 1.) Scarifying & stripping shall be inspected by qualified personnel prior to earthfill.
- 2.) Rock approx. 40' long (20' either side of P.S.), 12' wide & 1' thick except rock is 18" thick at keyway. Place 8 oz. filter fabric beneath rock as shown. Follow SD-8B for rock size. Place larger rock in the 18" keyway along the face of dam. Place 1/3 of rock (about 4' in length) above EL.71 and 2/3 of rock below EL. 71.0.
- 3.) Rock at P.S. outlet shall be placed in 'bowl' shaped configuration, with center approx. 1.5' lower than edges. Place a few rocks beneath P.S. outlet for support. Top of perimeter rock is flush with ground.
- 4.) Extend CPE pipe approx. 3.5' inside CMP at the DS end.
- 5.) CPE pipe shall be smooth inside (@ n=0.01) and have annular corrugations on the outside. Use CPE pipe with 'O-ring' gasketed joints. Position male end DS. Place butyl rubber (good condition truck inner tube) between CPE & CM pipes. Butyl rubber shall be of uniform thickness around the pipe. Cut the top of the CMP 10" long longitudinally with pipe. File any rough edges of CMP prior to tightening the 1/2" rod & lug.
- 6.) May need to excavate small outlet channel to elev. 57.5, from P.S.invert to natural stream, about 40' east.

NRCS NATURAL RESOURCES CONSERVATION SERVICE

BROOKINGS FIELD SUPPORT OFFICE
520 THIRD AVENUE P.O. BOX 626
BROOKINGS, SOUTH DAKOTA 57006-0626

GORDON KANE FARM POND

NE1/4 Section 8 T.121 N. R.50 W.
Grant County, South Dakota

Drawing No.
Sheet No. 3 of 5

Date:

5/14/06

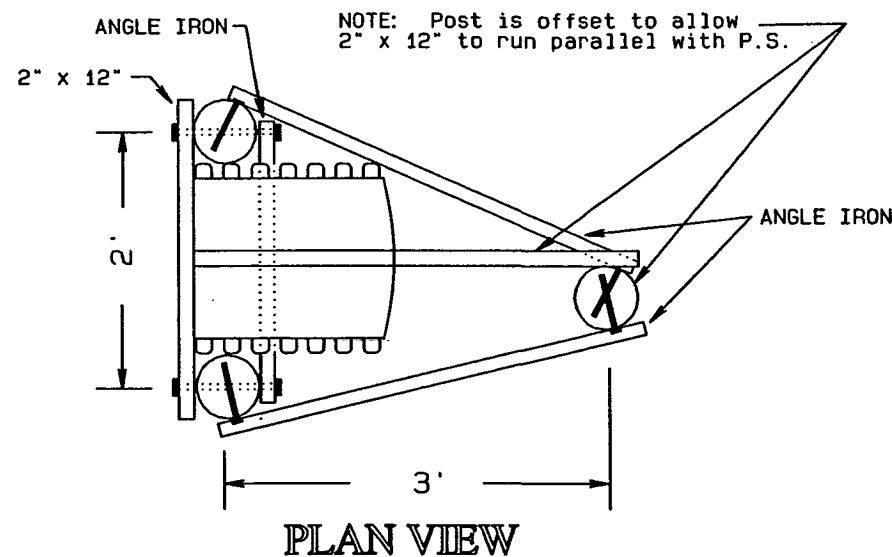
Designed & Drafted by:

Revised

Checked by:

Approved by:

Title:



NOTE: 'TABLE OF QUANTITIES' lengths for lumber and angle iron are approximate. Field cut lumber and angle iron to fit. The above two dimensions govern.

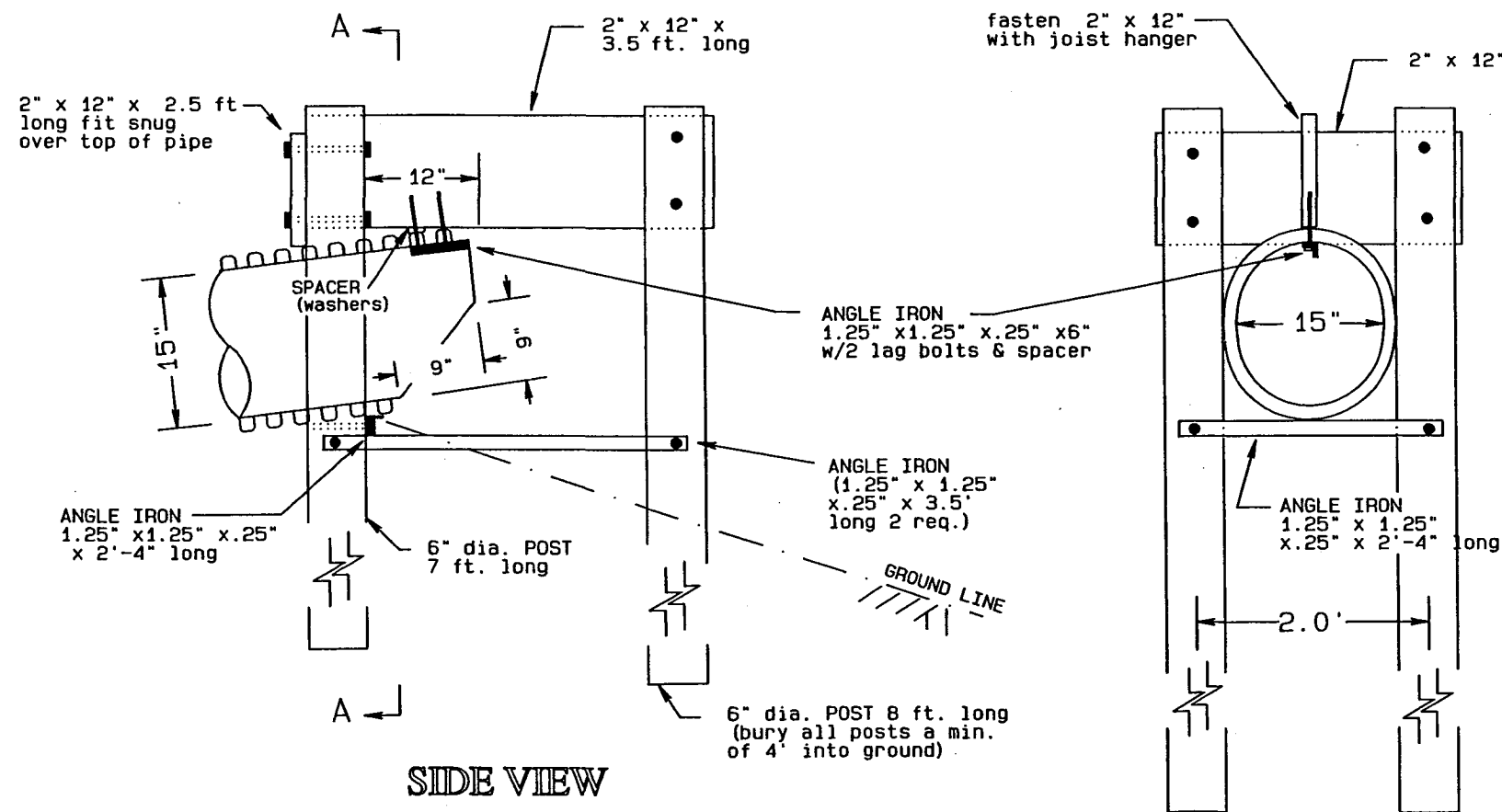
TABLE OF QUANTITIES

ITEM DESCRIPTION	UNIT	QUANTITY	AS BUILT
POST 6" dia: (2 @ 7', & 1 @ 8' long)	EACH	3	
TREATED LUMBER (1 @ 2" x 12" x 2.5' long 1 @ 2" x 12" x 3.5' long)	JOB	1	
ANGLE IRON (1.25"x1.25"x.25" 1 @ 12", 1 @ 2.33' & 2 @ 3.5')	LIN. FT.	10.33	
BOLTS 3/8" dia. x 10" long	EACH	6	
JOIST HANGER	EACH	1	
LAG BOLTS w/washers (3/8" dia. @ 5" long)	EACH	8	

(NOTE: ALL LUMBER SHALL HAVE A PRESERVATIVE TREATMENT)

CONSTR. & MATERIAL SPECS.

SD - 16 WOOD FAB. & INSTALLATION
SD - 17 METAL FAB. & INSTALLATION



CONSTRUCTION NOTES:

1. Bolt 2" x 12" boards to 6" dia. posts using 3/8" x 10" bolts. Do not place bolts closer than 2" from end of board, or 1.5" from edge of board.
2. Bolt steel angle to 6" dia. posts using 3/8" x 5" steel lag bolts. Use 3/8" x 5" lag bolts to attach angle iron through CPE & into 2" x 12". Predrill 1/4" hole for lag screws.
3. Cut the CPE pipe (9" x 9" @ inlet) with care as this material is susceptible to damage.
4. All bolts & lag screws shall be stainless steel.
5. Fit CPE snugly within the 6" dia. posts and the 2" x 12" and angle iron to eliminate vibration by flowing water.

DRAWING SCALE:
1 in = 1.5 ft or 1:18

0 1 2 feet

NRCS NATURAL RESOURCES
CONSERVATION SERVICE

COUNTY: _____
LEGAL: _____

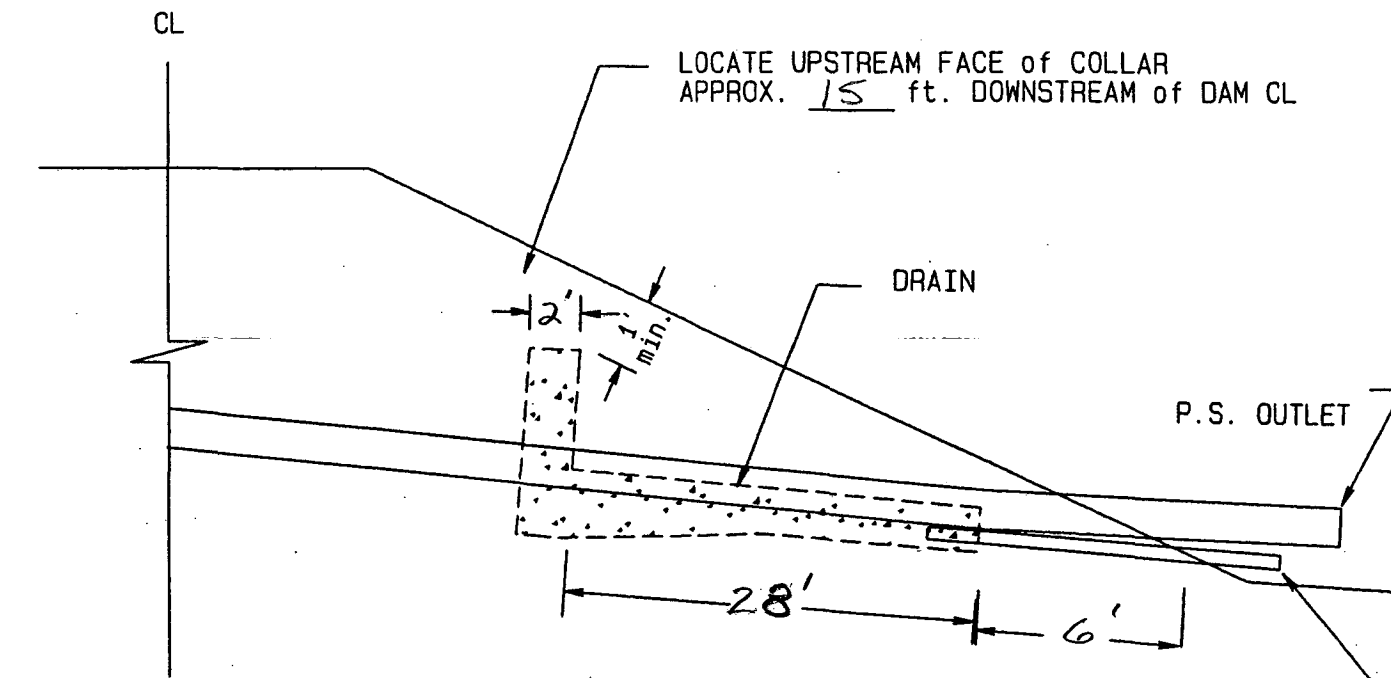
CPE HOOD INLET & WOOD
BAFFLE for 15" dia. CPE

OPERATOR: GORDON KANE

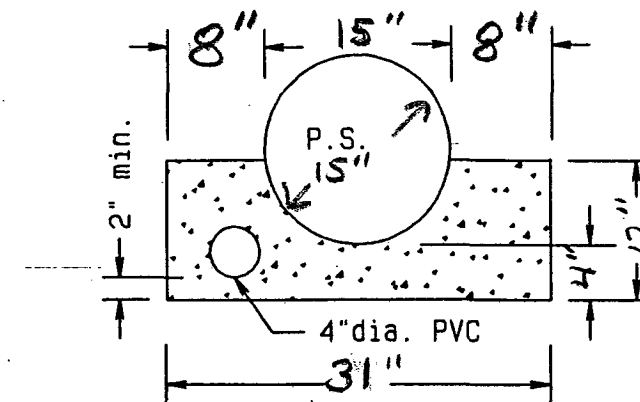
CPE15WoodBaffle2

Sheet No. 4 of 5

REV. 12/27/04



PROFILE VIEW OF SAND ANTI-SEEP COLLAR AND DRAIN
no scale



SECTION VIEW OF DRAIN
no scale

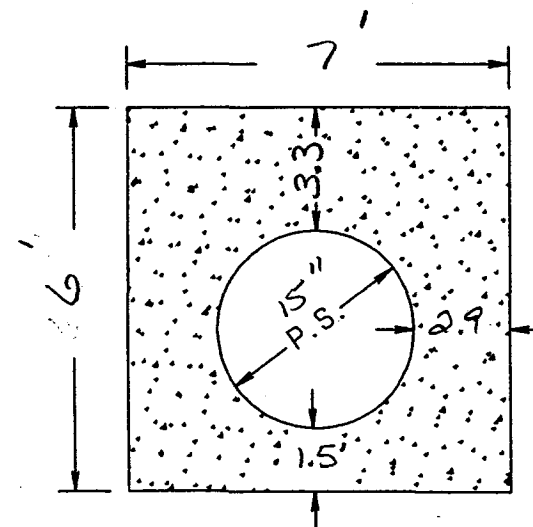
OUTLET 4" dia. PVC PIPE 6" MIN. ABOVE GROUND. CAP U.S. END & PERFORATE 18" AT THE 4 & 8 o'clock POSITIONS WITH 3/8" dia. HOLES SPACED 3" APART, OR COVER WITH FILTER SOCK. PLACE 4" dia. PVC 18" IN DRAIN.

NOTE:

- 1.) The 4" dia. PVC pipe shall be SDR 35 PVC or stronger.
- 2.) Provide an animal guard on the outlet of the drain pipe. Drill 2 holes (1/2" dia.) at the midpoint of the pipe 6" from the end of pipe. Place a 3/8" dia. x 5 1/2" long galvanized steel bolt thru holes and secure with a nut. Place bolt horizontally.
- 3.) Filter sand is similiar to fine aggregate (concrete sand) from a concrete redi-mix plant.

TABLE OF QUANTITIES

- 1.) 4 inch dia. PVC PIPE - 10 - lin.ft.
- 2.) SAND ANTI-SEEP COLLAR - ONE @ 6.6 cu.yd. (est.)
(collar @ 4.0 cu.yd.
& drain @ 2.6 cu.yd.)



SECTION VIEW OF SAND ANTI-SEEP COLLAR
no scale

FILTER GRADATION

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

USDA U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

Sand Anti-Seep Collar
& Drain for

Sec. 1 T. 1 N. R. 1 W.
GRANT County, South Dakota

SERGEON KANE

Date: _____
Designed by: _____
Drawn by: Pete Anderson AE 05/03
Checked by: _____
Approved by: _____
Title: _____

JOB PLAN No. 3.8-B

Drawing No.
JP38B
Sheet No. 5 of 5

1*****
 SITES XEQ 05/17/** WATER RESOURCE SITE ANALYSIS COMPUTER PROGRAM
 VER 96.1 (USER MANUAL - DATED MAY 1996)
 TIME 11:49:10

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

SITES 03/01/96 O'Farrell Sec 8 Gordon Kane
 STRUCTURE

	<i>Surf Area</i>	<i>Vol</i>
60	.03	
62	1.23	<i>Ac-Ft</i>
64	2.23	
66	3.17	
68	4.54	
71	6.65	<i>34.6</i>
72	7.41	
73	8.21	
75	9.89	<i>63</i>
76	10.71	
78	12.63	<i>88</i>
80	14.72	
81	15.88	
82	17.12	
83	18.31	
84	19.81	
85	21.31	

P.S. 71.0
ES. 74.5
TOP 76.9

ENDTABLE
 WSDATA 2A101 AC 62.0 2217 *Ac* 21762 4.55
 PDIRECT 2.5 5
 POOLDATA ELEV 71 71 59.6 57
 PSDATA 1 95 15 .013 57.7
 PSHOOD 85 10 57.3 57 .6 .6
 ASCREST ELEV 74.5
 ASDATA 1 180 .035 2.5 .035 10
 BTMWIDTH FEET 111
 TEMPLATE 10 3 2.5
 CROWN 0
 KIRPICH
 PSFULL
 HOODETL
 * Flow path length, AC, CN, watershed slope, are GIS calculated.
 GO,DESIGN NEL TYPE2 24 TYPE2378 24
 ENDJOB

***** MESSAGE - ALTERNATE STRUCTURE ID (S 1) 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 05/17/** ----- COMMENT PAGE -----
 VER 96.1 Sec 8 Gordon Kane WSID = O'Farrel

Flow path length, AC, CN, watershed slope, are GIS calculate

1SITES

XEQ 05/17/**

Sec 8 Gordon Kane

WSID= O'Farrel

VER 96.1

SUBW= 01

TIME 11:49:10

SITE = S 1

PASS= 1

PAGE= 1

BASIC DATA

HUMID- SUBHUMID CLIMATE AREA

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	
2.50	.00	5.00	.00	
WSDATA - CN	DA-SM	TC/L	-/H	QRF
62.00	3.46	21762.00	4.55	.00
SITEDATA- PERM POOL	CREST PS	FP SED	VALLEY FL	378?
71.00	71.00	.00	57.00	YES
BASEFLOW	INITIAL EL	EXTRA VOL	SITE TYPE	
.00	.00	.00	DESIGN	
PSDATA - NO. COND	COND L	DIA/W	-/H	
1.00	95.00	15.00	.00	
PS N	KE	WEIR L	TW EL	
.013	.00	.00	57.70	
2ND STG	ORF H	ORF L	START AUX.	
.00	.00	.00	.00	
PSHOOD - OUTLET	MITER	LENGTH	LENGTH	
ELEV.	ELEV.	INLET TO	MITER TO	
		MITER (FT)	OUTLET (FT)	
57.00	57.30	85.0	10.0	
ASCRESTS - AUX.1	AUX.2	AUX.3	AUX.4	AUX.5
.00	74.50	.00	.00	.00
AUX.DATA - REF.NO.	RETARD. Ci	TIE STATION	INLET LENGTH	
1	.00	.00	180	
AUX.DATA - INLET N	SIDE SLOPE	EXIT N	EXIT SLOPE	ACTUAL AUX?
.035	2.50	.035	.100	NO
BTM WIDTH - BW1	BW2	BW3	BW4	BW5
ft 111.00	.00	.00	.00	.00

AUXILIARY SPILLWAY RATING DEVELOPED USING WSPVRT.

HOOD INLET DETAILED RATING COMPUTATIONS

CONDUIT DIAMETER = 15.00 INCHES
 MANNINGS N VALUE = .0130
 CREST OF PS = 71.00 FEET

ELEV. OF MITER = 57.30 FEET
 ELEV. OF OUTLET INVERT = 57.00 FEET
 TAILWATER ELEVATION . = 57.70 FEET
 HORZ. LENGTH O-M = 10.00 FEET
 HORZ. LENGTH I-M = 85.00 FEET
 WEIR ENTRANCE COEFF.. = .60
 PIPE ENTRANCE COEFF.. = .60
 PIPE AREA (PIPEA).... = 1.23
 ACTUAL PIPE LENGTH .. = 96.

S (SINE OF ALPHA) = .15912
 COEFF1 (1.83S**.06)= 1.61894
 TOTAL PIPE AREA = 1.22656 SQ. FT.
 Cs - SLUG COEFF = 1.05000
 MITER BEND LOSS Km= .03968
 DEFLECTION ANGLE = 9.15599 DEGREES
 PIPE FRIC. COEFF Kp= .02324
 PIPE FLOW DEM. (M) = 3.84745
 PIPE A *(2g/M**.5) = 5.01818
 ZTW, POT ENERGY = 13.30000
 Q at INTERSECT = 19.41 CFS
 HEAD AT SLUG-PIPE = 1.65635 FT

ELEV AT SLUG-PIPE = 72.66
 ELEV AT WEIR-SLUG = 72.39

PIPE RATING FOR HOOD INLET			
POINT	HEAD	ELEVATION	DISCHARGE
1	.00	71.00	.00
2	.46	71.46	.66
3	.92	71.92	2.46
4	1.39	72.39	4.20
5	1.48	72.48	9.18
6	1.57	72.57	14.20
7	1.66	72.66	19.41
8	2.61	73.61	20.01
9	3.56	74.56	20.60
10	4.50	75.50	21.17
11	5.45	76.45	21.73
12	6.40	77.40	22.28
13	7.35	78.35	22.81
14	8.30	79.30	23.32
15	9.25	80.25	23.83
16	10.20	81.20	24.33
17	11.15	82.15	24.81
18	12.10	83.10	25.29
19	13.05	84.05	25.76
20	14.00	85.00	26.22

1SITES -----

XEQ 05/17/**

Sec 8 Gordon Kane

WSID= O'Farrel

VER 96.1

SUBW= 01

TIME 11:49:10

SITE = S 1

PASS= 1

PAGE= 2

PERM POOL

71.00 FT

34.6 ACFT

6.65 AC

.0 CFS

CREST PS 71.00 FT 34.6 ACFT 6.65 AC .0 CFS
 SED ACCUM 71.00 FT 34.6 ACFT 6.65 AC .0 CFS
 START ELEV 71.00 FT 34.6 ACFT 6.65 AC .0 CFS
 NRCS-PSH D= 24.00 HR P= 2.50 IN Q= .22 IN DA= 3.46 SM
 TC= 7.42 HR CN= 62.00 VOL= 40.5 ACFT
 PEAK = 44.5 CFS, AT 18.1 HRS.

ROUTED RESULT - HYD TYPE EMAX VOL-MAX AMAX QMAX
 NRCS-PSH 73.63 FT 54.8 ACFT 8.74 AC 20.0 CFS
 PS STORAGE 20.2 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.
 DRAWDOWN (DDT) TEST 71.00 FT 34.6 ACFT .00 CFS
 CONTROL IS .000 DETENTION STORAGE
 TIME = 9.00 DAYS, TO .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	71.00	.00	.00	.00	34.62	6.65
2	71.46	.66	.66	.00	37.77	7.00
3	71.92	2.46	2.46	.00	41.09	7.35
4	72.39	4.20	4.20	.00	44.57	7.72
5	72.48	9.18	9.18	.00	45.27	7.79
6	72.57	14.20	14.20	.00	45.97	7.86
7	72.66	19.41	19.41	.00	46.68	7.94
FULL CONDUIT FLOW, ELEV = 72.66 FT						
8	73.61	20.01	20.01	.00	54.58	8.72
9	74.56	20.60	20.60	.00	63.24	9.52
10	75.50	21.17	21.17	.00	72.65	10.30
11	76.45	21.73	21.73	.00	82.82	11.15
12	77.40	22.28	22.28	.00	93.84	12.06
13	78.35	22.81	22.81	.00	105.72	13.00

***** MESSAGE - PSFULL CONTROL ENTERED BUT NOT USED IN THE NEXT RATING:
 BECAUSE EITHER THE PS OR AUX. SPILLWAY RATINGS ARE GIVEN,
 OR THE AUX. CREST ELEVATION 73.63 IS HIGHER THAN THE
 FULL PIPE FLOW ELEVATION 72.66.

1SITES

XEQ 05/17/**
 VER 96.1
 TIME 11:49:10

Sec 8 Gordon Kane
 SITE = S 1

PASS= 1

WSID= O'Farrel
 SUBW= 01
 PAGE= 3

AUX. CREST 73.63 FT 54.8 ACFT 8.74 AC 20.0 CFS

PS STORAGE 20.2 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.

START ELEV 71.03 FT 34.8 ACFT 6.67 AC .0 CFS

EFFECTIVE HEIGHT(H)= 14.0 FEET, PRODUCT= 770. (H * STORAGE AT CREST AUX.).

INPUT DESIGN CLASS = A1 = LT 3000. PRODUCT.

NRCS-SDH D= 24.00 HR P= 5.00 IN Q= 1.44 IN DA= 3.46 SM
 TC= 7.42 HR CN= 62.00 VOL= 265.8 ACFT

PEAK = 357.0 CFS, AT 17.2 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	71.00	.00	.00	.00	34.62	6.65
2	71.46	.66	.66	.00	37.77	7.00
3	71.92	2.46	2.46	.00	41.09	7.35
4	72.39	4.20	4.20	.00	44.57	7.72
5	72.48	9.18	9.18	.00	45.27	7.79
6	72.57	14.20	14.20	.00	45.97	7.86
7	72.66	19.41	19.41	.00	46.68	7.94
FULL CONDUIT FLOW, ELEV = 72.66 FT						
8	72.82	19.51	19.51	.00	47.98	8.07
9	72.98	19.62	19.62	.00	49.31	8.20
10	73.15	19.72	19.72	.00	50.66	8.33
11	73.31	19.83	19.83	.00	52.03	8.47
12	73.47	19.93	19.93	.00	53.42	8.61
13	73.63	20.03	20.03	.00	54.83	8.74
14	74.20	70.79	20.39	50.41	59.93	9.22
15	74.77	211.66	20.73	190.93	65.31	9.70
16	75.79	697.19	21.35	675.84	75.66	10.54
17	77.04	1593.88	22.07	1571.80	89.56	11.71
18	79.32	4087.20	23.33	4063.87	118.74	14.01
19	82.16	8225.49	24.82	8200.67	163.07	17.31
20	85.00	13540.86	26.22	13514.64	217.68	21.31

ROUTED RESULTS	BTM WIDTH FT	MAX ELEV FT	VOL-MAX ACFT	AREA-MAX AC	AUX.-HP FT	VOL-AUX. ACFT
NRCS-SDH	111.0	75.08	68.4	10.0	1.45	13.5

PEAK - CFS	Q-PS	Q-AUX.	Q-TOT.
DISCHARGE =	20.9	334.0	354.9

	CRITICAL DEPTH FT	CRITICAL VELOCITY FT/SEC	CRITICAL SLOPE-Sc FT/FT	25% OF Q Sc FT/FT
AUXILIARY SPILLWAY ---	.65	4.55	.021	.028

AUXILIARY SPILLWAY DURATION FLOW = 18.5 HOURS

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

EXIT CHANNEL FLOW SUPERCRITICAL: MAX VELOCITY= 7.3 FT/SEC
EXIT SLOPE = .100 FT/FT
FLOW DEPTH = .4 FT

DRAWDOWN USING FREEBOARD STORM FOLLOWS, STARTING AT ELEVATION 71.00 FT.

DRAWDOWN (DDT) TEST 71.00 FT 34.6 ACFT .00 CFS
CONTROL IS .000 DETENTION STORAGE

TIME = .00 DAYS, TO .0 CFS (LIMIT = 10.00 DAYS)

***** MESSAGE - NO RUNOFF TO ROUTE NRCS-FBH WITH AUX. SPILLWAY CREST
ELEVATION AT 73.63 AND BOTTOM WIDTH = 111.0 FEET.

PASS NUMBER 1, STOPPED.

***** WARNING - EMBANKMENT QUANTITIES NOT COMPUTED, NO VALID CLPROFILE ENTERED.

***** MESSAGE - PSFULL CONTROL ENTERED BUT NOT USED IN THE NEXT RATING:
BECAUSE EITHER THE PS OR AUX. SPILLWAY RATINGS ARE GIVEN,
OR THE AUX. CREST ELEVATION 74.50 IS HIGHER THAN THE
FULL PIPE FLOW ELEVATION 72.66.

1SITES -----
XEQ 05/17/** Sec 8 Gordon Kane WSID= O'Farrel
VER 96.1 SUBW= 01
TIME 11:49:10 SITE = S 1 PASS= 1 PAGE= 4

AUX. CREST 74.50 FT 62.7 ACFT 9.47 AC 20.6 CFS
PS STORAGE 28.1 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.
START ELEV 71.03 FT 34.8 ACFT 6.67 AC .0 CFS
EFFECTIVE HEIGHT(H)= 14.9 FEET, PRODUCT= 934. (H * STORAGE AT CREST AUX.).
INPUT DESIGN CLASS = A1 = LT 3000. PRODUCT.
NRCS-SDH D= 24.00 HR P= 5.00 IN Q= 1.44 IN DA= 3.46 SM
TC= 7.42 HR CN= 62.00 VOL= 265.8 ACFT
PEAK = 357.0 CFS, AT 17.2 HRS.

RATING TABLE DEVELOPED, SITE = S 1:
BY PROGRAM FOR PS AND AUX. SPILLWAYS
AUX. RATING USED WSPVRT METHOD.

RATING TABLE NUMBER 3

	ELEV. FEET	Q-TOTAL CFS	Q-PS CFS	Q-AUX. CFS	VOLUME AC-FT	AREA ACRE
1	71.00	.00	.00	.00	34.62	6.65
2	71.46	.66	.66	.00	37.77	7.00
3	71.92	2.46	2.46	.00	41.09	7.35
4	72.39	4.20	4.20	.00	44.57	7.72
5	72.48	9.18	9.18	.00	45.27	7.79
6	72.57	14.20	14.20	.00	45.97	7.86
7	72.66	19.41	19.41	.00	46.68	7.94
FULL CONDUIT FLOW, ELEV = 72.66 FT						
8	72.96	19.61	19.61	.00	49.16	8.18
9	73.27	19.80	19.80	.00	51.71	8.44
10	73.58	20.00	20.00	.00	54.34	8.70
11	73.89	20.19	20.19	.00	57.05	8.95
12	74.19	20.38	20.38	.00	59.84	9.21
13	74.50	20.57	20.57	.00	62.72	9.47
14	75.03	63.79	20.89	42.90	67.80	9.91
15	75.55	184.11	21.20	162.91	73.12	10.34
16	76.50	603.02	21.76	581.27	83.27	11.19
17	77.65	1380.48	22.41	1358.07	96.83	12.29
18	79.75	3550.90	23.56	3527.34	124.90	14.46
19	82.38	7153.73	24.93	7128.80	166.85	17.57
20	85.00	11774.46	26.22	11748.25	217.68	21.31

ROUTED RESULTS	BTM WIDTH FT	MAX ELEV FT	VOL-MAX ACFT	AREA-MAX AC	AUX.-HP FT	VOL-AUX. ACFT
NRCS-SDH	111.0	75.94	77.3	10.7	1.44	14.5

PEAK - CFS	Q-PS	Q-AUX.	Q-TOT.
DISCHARGE =	21.4	333.2	354.6

	CRITICAL DEPTH	CRITICAL VELOCITY	CRITICAL SLOPE-Sc	25% OF Q Sc
AUXILIARY SPILLWAY ---	FT .65	FT/SEC 4.55	FT/FT .021	FT/FT .028

AUXILIARY SPILLWAY DURATION FLOW = 18.1 HOURS

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

EXIT CHANNEL FLOW SUPERCRITICAL:	MAX VELOCITY=	7.3 FT/SEC
	EXIT SLOPE =	.100 FT/FT
	FLOW DEPTH =	.4 FT

DRAWDOWN USING FREEBOARD STORM FOLLOWS, STARTING AT ELEVATION 71.00 FT.

DRAWDOWN (DDT) TEST	71.00 FT	34.6 ACFT	.00 CFS
CONTROL IS .000 DETENTION STORAGE			

TIME = .00 DAYS, TO .0 CFS (LIMIT = 10.00 DAYS)

***** MESSAGE - NO RUNOFF TO ROUTE NRCS-FBH WITH AUX. SPILLWAY CREST
ELEVATION AT 74.50 AND BOTTOM WIDTH = 111.0 FEET.

PASS NUMBER 1, STOPPED.

**** WARNING - EMBANKMENT QUANTITIES NOT COMPUTED, NO VALID CLPROFILE ENTERED.

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

O'Farrel Sec 8 Gordon Kane

0 SUBWATERSHED(S) ANALYZED.

1 STRUCTURE(S) ANALYZED.

5 HYDROGRAPHS ROUTED AT LOWEST SITE.

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

SITES.....COMPUTATIONS COMPLETE

1

SUMMARY TABLE 1

SITES VERSION 96.1

DATED 03/01/96

WATERSHED ID				RUN DATE			RUN TIME		
O'Farrel				05/17/**			11:49:10		
>>>	SITE ID	SUBWS ID	SUBWS DA (SQ MI)	CURVE NO.	TC (HRS)	TOTAL DA (SQ MI)	TYPE DESIGN	STRUC CLASS	<<<
	S 1	01	3.46	62.	7.42	3.46	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	15.0	73.6	111.0	1.5	75.1	0.	0.	7.3	NRCS-SDH
1	15.0	74.5	111.0	1.4	75.9	0.	0.	7.3	NRCS-SDH

+ 1' = 76.9

* INTEGRITY DIST. AND EXIT VEL. VALUES ARE BASED ON THE ROUTED HYDROGRAPH SHOWN UNDER TYPE HYD.

SITES.....SUMMARY TABLE 1 COMPLETED.

NRCS SITES VERSION 96.1 ,03/01/96
O'Farrel FILES



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

August 17, 2005

Marie O'Farrell
46548 144th Street
Marvin, SD 57251

Dear Ms. O'Farrell:

We have reviewed the plans and specifications for your dam project located in the SE ¼ NE ¼ of Sec. 8-T121N-R50W, in Grant County. The plans and specifications for your dam are approved. Approval of the plans and specifications does not authorize construction of the dam. The construction of the dam may not begin until Water Permit No. 6635-3 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 O'Farrell Dam will be classified as a small size Category 3, Low Hazard dam with a dam height of 20 ft. and a normal storage capacity of 34.6 acre-feet and a maximum storage capacity of 88 acre-feet.

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

Sincerely,

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

c: Pete Anderson, NRCS, Brookings

REPORT ON
WATER PERMIT APPLICATION No. 6635-3
Marie O'Farrell
August 12, 2005

Water Permit Application No. 6635-3 has been filed by Marie O'Farrell to impound 34.6 acre-feet of water by constructing a dam in the SE ¼ NE ¼ of Section 8-T121N-R50W, in Grant 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 and livestock water purposes.

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; however, construction of the dam can not begin until Water Permit Application No. 6635-3 is approved.

The dam will be 20 feet high with a normal storage capacity of 34.6 acre-feet with a reservoir level at the primary spillway elevation, and a maximum storage capacity of 88 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.

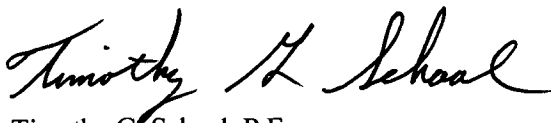
The dam has a drainage area of 2217 acres or 3.46 square miles. The dam is designed to have a 15 inch diameter CPE pipe with a hood inlet and 5.9 feet freeboard as the primary spillway, and a 111 foot wide earthcut secondary spillway with 2.4 feet of available freeboard. A 25 year frequency event produces a peak runoff of 340 cfs and a 100 year frequency event produces a peak runoff of 575 cfs. The 111 foot secondary spillway has a capacity of approximately 1070 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 9.0 acre-feet. The annual yield with a 50 percent chance of occurrence, or 1 out of 2 years, is expected to be 20 acre-feet and the annual yield with a 10 percent chance, or 1 out of 10 years, is expected to be 185 acre-feet.

The O'Farrell Dam will be located in the SE ¼ NE ¼ of Section 8-T121N-R50W on an unnamed tributary to the North Fork of the Whetstone River about 9.0 miles upstream of the confluence of the unnamed tributary and the Whetstone River. There are no existing Water Permits/Rights located on the unnamed tributary between the proposed dam and the Whetstone River.

Conclusions:

1. Water Permit Application No. 6635-3 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 downstream domestic use should be a qualification on Water Permit Application No. 6635-3.



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



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 6635-3, Marie O'Farrell**

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. 6635-3, Marie O'Farrell, 46548 144th Street, Marvin SD 57251.

The Chief Engineer is recommending APPROVAL of Application No. 6635-3 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. 6635-3 authorizes a dam with a storage capacity of 34.6 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 17, 2005



**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 18, 2005

Marie O'Farrell
46548 144th St
Marvin SD 57251

Dear Ms. O'Farrell:

Water Permit Application No. 6635-3 for fish and wildlife propagation and livestock water 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 Co. 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 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 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

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.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

August 18, 2005

Grant Co. Review
PO Box 390
Milbank SD 57252-0390

ATTENTION: Legal Public Notice

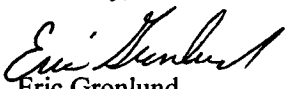
Enclosed is a Notice on Application No. 6635-3 to Appropriate Water to be published twice. Please publish the first notice on August 24, 2005 with the second publication 7 days later. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

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 Marie O'Farrell, 46548 144th St., Marvin SD.

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. 6635-3

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

Date _____

We are in receipt of your letter of August 18, 2005 enclosing Notice to Appropriate Water by Application No. 6635-3 which was first published in our issue of _____. **ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.**

Name

Newspaper

Instruction to Newspaper - Publish first Notice on August 24, 2005 with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 6635-3 to Appropriate Water

Notice is given that Marie O'Farrell, 46548 144th St, Marvin SD 57251 has filed an application for a water permit to impound 34.60 acre-feet of water from runoff by constructing a dam located in the SE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 8 with water impounded in the SE $\frac{1}{4}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 8; all in T121N-R50W. 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. 6635-3 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 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 September 12, 2005.

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.

Printer's Affidavit of Publication

STATE OF SOUTH DAKOTA
COUNTY OF GRANT

} ss.

Holli Seehafer

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. 6635-3 to Appropriate Water

Application No. 6635-3 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:

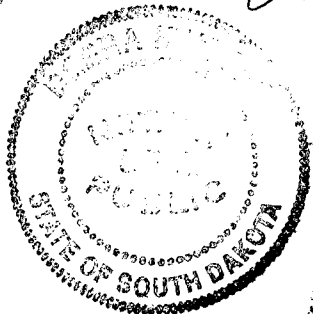
<u>August 24 20 05</u>	<u>20</u>
<u>August 31 20 05</u>	<u>20</u>
<u>20</u>	<u>20</u>

That \$ 41.69, 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 to before me 31st this day of Aug 20 05

Debra L. Hemmer
Notary Public, Grant County, South Dakota



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

RECEIVED
SEP 02 2005
WATER RIGHTS
PROGRAM

NOTICE OF APPLICATION NO. 6635-3 to Appropriate Water

Notice is given that Marie O'Farrell, 46548 144th St., Marvin SD 57251 has filed an application for a water permit to impound 34.60 acre-feet of water from runoff by constructing a dam located in the SE 1/4 NE 1/4 Section 8 with water impounded in the SE 1/4 NE 1/4, NE 1/4 SE 1/4 Section 8; all in T121N-R50W. This application requests impoundment of sufficient water to maintain 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. 6635-3 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 the application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineers 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.

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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 24 2005 August 31

Publication Fee \$ 41.69
Notarial Fee \$
Total \$ 41.69



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

SEP 30 2005

Marie O'Farrell
46548 144th St
Marvin SD 57251

Dear Ms. O'Farrel:

Enclosed is Water Permit No. 6635-3 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

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

Date 11-27-06

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

RECEIVED

NOV 29 2006

WATER RIGHTS
PROGRAM

FROM:

Marie O'Farrell
(name)46548 144th St
(address)Marion S. Dak 57251
(city, state, zip)605-938-4221
(phone)

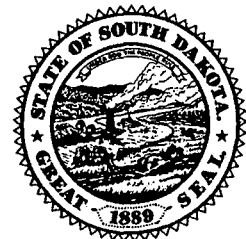
I have completed the construction of the water use system and I have put the water to beneficial use to the maximum extent it is going to be used.

Water Permit No. 6635-3 states that the water use system is to be constructed by Sept. 12, 2010, and water is to be put to beneficial use by Sept. 12, 2014.
(date) (date)

The water use system was completed on Nov 18, 06.
(date)

Applying the water to beneficial use was completed on Nov 18, 06.
(date)

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

Jr M Land Co.Marie O'Snell
(signature)

Permit No. 6635-3
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 19, 2013, made a thorough examination of the water use system constructed by Marie O'Farrell of 46548 144th St., Marvin, SD 57251 holder of Permit No. 6635-3, bearing the priority date of July 7, 2005 authorizing the storage of 34.6 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 19.6 foot high earthen dam with a normal storage capacity of 34.6 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 19.6 foot high earthen dam with a normal storage capacity of 34.6 acre-feet of water.

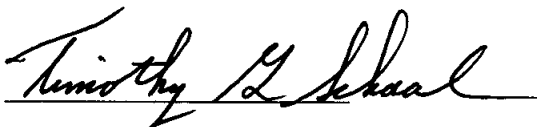
The system is in the following condition good. The point of diversion is located 2100 ft. south and 450 ft. west of the NE corner of Sec. 8-T121N-R50W, SE ¼ NE ¼, (Lat. 45.30602, Long. -96.94592). The works are capable of storing 34.6 acre-feet of water which is to be used for recreation, fish and wildlife propagation and domestic use. Water has been put to beneficial use to the maximum extent as follows:

A 19.6 foot high earthen dam with a normal storage capacity of 34.6 acre-feet of water.

and the license should be issued for 34.6 acre-feet of storage.

Applicable permit qualifications have been complied with: Yes X

Exceptions to compliance are: none Date Report Completed: January 7, 2014



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

REPORT ON INSPECTION OF PERMIT NO. 6635-3

DATE OF INSPECTION: November 19, 2013

NAME & ADDRESS OF PERMIT HOLDER: Marie O'Farrell, 46548 144th St., Marvin, SD 57251

DIVERSION POINT LEGAL LOCATION: 2100 ft. south and 450 ft. west of the NE corner of Sec. 8-T121N-R50W, SE ¼ NE ¼, (Lat. 45.30602, Long. -96.94592).

DAM INFORMATION:

- 1) Height to crest 19.6 feet
- 2) Height to primary spillway 13.7 feet
- 3) Height to secondary spillway 17.2 feet
- 4) Crest width 12 feet
- 5) Crest length 400 feet
- 6) Spillway length XXX feet
- 7) Spillway width 111 feet
- 8) Approx. storage (Normal) 34.6 acre-feet
- 9) Approx. storage (Maximum) 88 acre-feet
- 10) Date constructed: 2005

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. 6635-3



Timothy G. Schaal

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

11/7/14



**DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov



JAN 29 2014

6635-3

Marie O'Farrell
46548 144th St
Marvin SD 57251

Dear Ms. O'Farrell:

Enclosed is Water License No. 6635-3. 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. 6635-3

(1) Marie O'Farrell, 46548 144th St, Marvin SD 57251 made Application No. 6635-3, July 7, 2005 for a water permit to impound 34.6 acre feet of water from runoff in a dam located in Grant County, South Dakota and used for fish & wildlife propagation and domestic livestock water purposes. Permit No. 6635-3, with a priority date of July 7, 2005 was approved September 12, 2005 and issued to the applicant for impoundment of water with construction of the storage dam to be completed on or before September 12, 2010 and the application to beneficial use of water on or before September 12, 2014.

(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 34.6 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 2,100 feet south and 450 feet west of the NE corner of Section 8, T121N, R50W (SE ¼ NE ¼). Water is impounded in the SE ¼ NE ¼ and NE ¼ SE ¼ Section 8, T121N, R50W.

(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 Marie O'Farrell, 46548 144th St, Marvin SD 57251 the holder and/or owner of Water Right No. 6635-3 is issued a license to impound 34.6 acre feet water from runoff in a storage dam with a priority date of July 7, 2005 from the location specified in (2) of this license. The water is used for fish and wildlife propagation and domestic livestock watering.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 6635-3 and subject to the following qualifications:

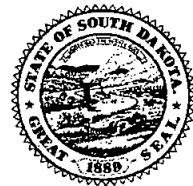
- Water Right No. 6635-3 authorizes a dam with storage capacity of 34.6 acre feet of water and sufficient water annually to maintain the water level to the outlet elevation.
- Low flows as needed for downstream domestic use, including livestock water and prior water rights must be bypassed.



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

JAN 29 2014

date





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
PMB 2020
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
<http://denr.sd.gov>

February 4, 2014

6635-3

Marie O'Farrell
501 4th St
Wilmot SD 57279 2232

Dear Ms. O'Farrell:

Enclosed is your recently issued Water License No. 6635-3.

The license was originally mailed to 46548 144th St, Marvin SD. The post office notified us that your address has changed and I will update our records accordingly.

If you have any questions, please contact me.

Sincerely,

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

enclosures