

WATER PERMIT NO. 1698-1

Name of Applicant: Brad Besler

Address: 13908 Bixby Road, Bison SD 57620

Phone: 605 244-5600

Amount of Water Claimed: 62 acre-feet

Total Acres: NA

Source of Water Supply: runoff

Water to be used for: recreation, fish & wildlife propagation, livestock

County: Perkins

Type of Waste Disposal System: NA

Location: about 10 miles southwest of Bison

PRIORITY Date Received: 10-13-1999

Fee: \$\$150.00

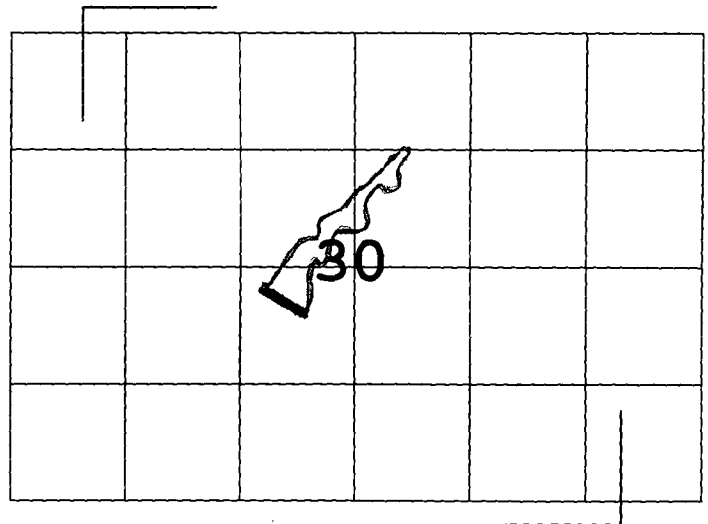
Corrected Application Received: 11-2-1999

Period of Annual Use: January 1 – December 31

Remarks:

Diversion Point: NE ¼ SW ¼ Sec 30-T17N-R13E

Water Impounded: NE ¼ SW ¼, SE ¼ NW ¼,
SW ¼ NE ¼ Sec 30-T17N-R13E



Depth of Well: NA

Well Driller:

Remarks:

Type of Map: topo

Prepared by: Thomas Verhelst, NRSC

Reviewed and the Number Assigned on: 11-2-1999

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

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

Mail to:
Water Rights Division
Joe Foss Building
523 E Capitol
Pierre SD 57501-3181
605 773-3352

No. 1682-1 Hydrologic Unit 10130305
Basin Moreau River
Newspaper Bison Courier, Bison, SD
(office use only)



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

Check use of water:

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

Type of Application: ☒ New ☐ Vested Right (Use predates Mar 2, 1955) ☐ Future Use Reservation
(check one) ☐ 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 Brad Besler Phone 244-5600
(check one) ☒ Owner ☐ Tenant/lessee

Mailing Address 13908 Bixby Road Bison State SD 57620
(Street, RR, or Box) (City) (Zip Code)

2. Amount of water claimed _____ *CFS or _____ **GPM 62.0 ***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 Runoff

4. Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) _____
NE 1/4, SW 1/4 SEC 30 T17N-R13E Water Impounded: NE 1/4 SW 1/4,
SE 1/4 NW 1/4, SW 1/4 NE 1/4 sec. 30-T17N-R13E County PERKINS

5. County or counties where water will be used Perkins

6. Annual period during which water is to be used 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)

Earthen fill dam to be placed across a dry draw with 5427 acres of drainage area.

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)

STATE OF SOUTH DAKOTA)

County of Adams SS

I, Brad W. Besler, 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.

Signed

Brad W. Besler

Subscribed and sworn to before me this 11 day of Oct 19 99

Uronna D. Mollman
Notary Public

**SOUTH DAKOTA
WATER PERMIT NO. 1698-1**

Date of first receipt of application October 13, 1999.

Date of return to applicant for corrections, amendments or changes October 20, 1999.

Date of receipt of corrected application November 2, 1999.

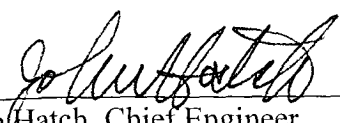
The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 1698-1 to Brad Besler, 13908 Bixby Road, Bison SD 57620 authorizing the construction of the dam and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 1698-1 authorizes impoundment of 62 acre-feet of water from runoff by constructing a dam located in the NE ¼ SW ¼ Section 30 with water impounded in the NE ¼ SW ¼, SE ¼ NW ¼, SW ¼ NE ¼ Section 30; all in T17N-R13E. This permit authorizes impoundment of sufficient water to maintain water to the outlet elevation.
2. The water appropriated shall be used for the purpose of providing habitat for fish and wildlife propagation and livestock water and may not exceed the amount of water needed for beneficial use.
3. The water is to be used during the following described annual period: January 1 – December 31.
4. The date of approval of Permit No. 1698-1 is December 20, 1999.
5. The date from which applicant may claim right is October 13, 1999.
6. One-fifth of the construction is to be completed on or before June 20, 2001.
7. All construction is to be completed on or before December 20, 2004.
8. Water is to be put to beneficial use on or before December 20, 2008.
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. 1698-1 authorizes a dam with storage capacity of 62 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: 
John Hatch, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

DEC 30 1999
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 Thickness _____ 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) _____ c) Year Constructed _____
- d) 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.

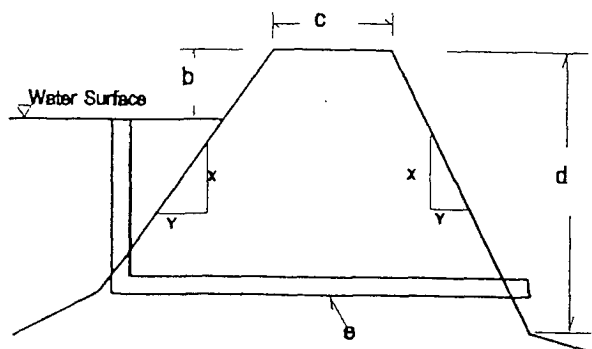
- a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address:

Tom Ver Helst

N R C S

1847 5th Ave. South

Belle Fourche, SD 57783



- b) Freeboard 3'
- c) Crest Width 14'
- Crest Length 374'
- d) Height 22.2'
- e) Primary Outlet Capacity 414 cfs
- If pipe, diameter 60"
- f) Secondary Spillway Capacity 1197 cfs
- Spillway Width 150'
- g) X & Y Slope
- Upstream 3:1
- Downstream 2:1
- h) Surface Area of Impoundment 8.0 Ac
- i) Storage 62.0 Acre Feet
- j) Drainage Area Above Dam 5427 Acres

RECEIPT

Water Rights Program

South Dakota Department of Environment and Natural Resources

No 416242

Pierre, November 2, 1999

RECEIVED OF Brad Besler, 13908 Bixby Road, Bison, SD 57620
the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. <u>1698-1</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>1698-1</u>	50	00
Fee for Filing Transfer Form _____		
Fee for Filing Extension Request _____		
Fee for _____		

(Any Other Work Provided by Law)	Total	200 00

By

Chief Engineer

John Hatch

Water Permit Application No. 1698-1
Brad Bester

Top of Dam Elev. - 100
2nd Spillway Elev. - 97
P. Spillway Elev. - 94.5
D/S Toe Elev. - 77 } Ht. = 23 ft

Cat. 3. Low Hazard Dam

Normal Storage Capacity - 62 Ac-Ft
Int. Storage Capacity - 95 Ac-Ft
Max Storage Capacity - 150 Ac-Ft

Int. Capacity x Eff Ht. = $95 \times 20 = 1900 < 3000$ $\therefore$ 25 year
Minimum Spillway Design

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

DA = 5427 Ac = 8.48 mi.²

Slope = 35 ft/mile

SI = 2.50

$$\begin{aligned} Q_{25} &= 83.4 A^{.60} S^{.44} S_i^{-.72} \\ &= 83.4 (8.48)^{.60} (35)^{.44} (2.50)^{-.72} \\ &= 83.4 (3.6) (4.78) (0.517) \\ &= \underline{742 \text{ cfs}} \end{aligned}$$

$$\begin{aligned} Q_{100} &= 132 A^{.65} S^{.46} S_i^{-.67} \\ &= 132 (8.48)^{.65} (35)^{.46} (2.50)^{-.67} \\ &= 132 (4.01) (5.13) (0.574) \\ &= \underline{1466 \text{ cfs}} \end{aligned}$$

2nd Spillway Flow

$$\begin{aligned} Q &= CLH^{3/2} \quad C=2.6 \quad L=150 \quad H=3 \text{ ft} \\ &= (2.6) (150) (3)^{1.5} \\ &= \underline{2025 \text{ cfs}} \end{aligned}$$

Section 74:02:08:09

1. Topo Map - OK
2. Dam Axis Profile - OK
3. Dam Max X-Sec. - OK
4. Area - Capacity - OK
5. Outlet Details - OK
6. Spillway Rating - OK
7. Spillway Details - OK
8. Specs - Std NRCS - OK
9. EPP - N/A Cat. 3 - OK

NRCS Annual Yield

DA = 5427 Ac - CN = 67 (use 70)
ISO = 1.5

80% chance = 0.045
 $0.045 \times 5427/12 = \underline{20 \text{ Ac-Ft}}$

50% chance = 0.14
 $0.14 \times 5427/12 = \underline{63 \text{ Ac-Ft}}$

10% chance = 0.98
 $0.98 \times 5427/12 = \underline{443 \text{ Ac-Ft}}$



CONSTRUCTION SPECIFICATIONS

for

DAM

BRAD BESLER

PERKINS CO.

Prepared by:

USDA-NATURAL RESOURCES CONSERVATION SERVICE

Assisting:

PERKINS Conservation District

1DAMS2 XEQ 09/23/99
REV 01/01/90 SCS TECHNICAL RELEASE 48, (USER MANUAL) DATED JAN. 1990
TIME 10:52:09

***** THIS PROGRAM IS IN TEST STATUS *****

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

DAMS2	01/01/90	WAYNE BESLER DAM	PERKINS
STRUCTURE	BESLER	WILDLIFE DAM	BUTTE CO. SD.
		79.0	CLASS A SEC30 T17N-R13E
		85.0	0.0
		92.0	4.60
		101.4	37.80
ENDTABLE			180.7
WSDATA	2A101	AC 67	5427
PDIRECT		2.9	7.2
POOLDATA	ELEV	94.5	3.6
PSDATA	1	80	60
PSINLET	ELEV	1.0	16.1
ESCREST	ELEV		0.024
ESDATA	01	50	0.025
BTMWIDTH	FEET	100	150
ENDTABLE			
COMMENT	10 YR.	PRIN SPWY STORM	
COMMENT	25 YR	HR. EMER.SPWY STORM	
COMMENT	378 SPECS.		
GO,DESIGN		6	
ENDJOB			TYPE2 378 24

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

1DAMS2 XEQ 09/23/99
REV 01/01/90 ER DAM BUTTE CO. SD. WSID = WAYNE BE

10 YR. PRIN SPWY STORM

25 YR HR. EMER.SPWY STORM

378 SPECS.

1DAMS2 -----
XEQ 09/23/99 ER DAM BUTTE CO. SD. WSID= WAYNE
BE
REV 01/01/90 WILDLIFE DAM CLASS A SEC30 T17N-R13E SUBW= 01
TIME 10:52:09 SITE = BESLE 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 USED FOR EMERGENCY SPILLWAY IS;
SCS DESIGN STORM RAINFALL DISTRIBUTION. (CHAPTER 21 NEH4 AND SCS TR-60)

PRECIP.-	P-PS1 DAY 2.90	P-PS10 DAY .00	P-ES 3.60	P-FB 3.60
WSDATA-	CN 67.00	DA-SM 8.48	TC/L 7.20	-/H .00
SITEDATA-	PERM POOL 94.50	CREST PS 94.50	FP SED .00	QRF .00
	BASEFLOW .00	INITIAL EL .00	EXTRA VOL. .00	
PSDATA-	NO. COND. 1.00	COND L 80.00	D/W 60.00	-/H .00
	PS N .024	KE 1.00	WEIR L 16.10	TW EL 79.00
	2ND STG .00	ORF H .00	ORF L .00	START ES .00
CRESTS-	ES1 .00	ES2 .00	ES3 .00	ES4 .00
				ES5 .00
EMG DATA-	SIDE SLOPE 3.00	EXIT N .030	EXIT SLOPE .050	
EMG DATA-	ES TYPE 1	ES LENGTH 50	ES ENTRANCE N .025	
BTM WIDTH-	BW1 100.00	BW2 150.00	BW3 .00	BW4 .00
				BW5 .00

***** NOTE - THIS IS ONLY A PRELIMINARY EMG RATING CURVE OF DISCHARGE/FT
OF WIDTH AND DOES NOT INCLUDE SIDESLOPE CORRECTION OR
REVISED RATING USING ACTUAL EMG. CONFIGURATION.

EMG ID CODE	01	ELEVATION INCREMENT (FT)= 1.000	
DISCHARGES-Q1	Q2	Q3	Q4
2.356	7.563	14.547	22.998
Q5	Q6	Q7	Q8
32.652	43.347	55.028	67.592
Q9	Q10	Q11	Q12
80.980	95.163	110.069	125.678

1DAMS2 -----
XEQ 09/23/99 ER DAM BUTTE CO. SD. WSID= WAYNE
BE
REV 01/01/90 WILDLIFE DAM CLASS A SEC30 T17N-R13E SUBW= 01
TIME 10:52:09 SITE = BESLE PASS= 1 PAGE= 2

PERM POOL 94.50 FT 75.8 ACFT .00 AC .0 CFS
 CREST PS 94.50 FT 75.8 ACFT .00 AC .0 CFS
 SED ACCUM 94.50 FT 75.8 ACFT .00 AC .0 CFS
 STARTING E 94.50 FT 75.8 ACFT .00 AC .0 CFS
 SCS-PSH D= 24.00 HR P= 2.90 IN Q= .54 IN DA = 8.48 SM
 TC= 7.20 HR CN= 67.00 VOL= 242.4 ACFT

PEAK = 309.0 CFS, AT 17.4 HRS.

ROUTED RESULTS - HYD TYPE EMAX VOL-MAX AMAX QMAX
 SCS-PSH 47.56 FT 122.4 ACFT .00 AC 266.3 CFS

PS STORAGE 46.6 ACFT BETWEEN ES CREST AND SED ACCUM ELEVATIONS

DRAWDOWN (DDT) TEST 94.50 FT 75.8 ACFT .00 CFS
 CONTROL IS .000 DETENTION STORAGE

TIME = 1.68 DAYS, TO .0 CFS (LIMIT = 10.00 DAYS)

1DAMS

XEQ 09/23/99 ER DAM BUTTE CO. SD. WSID= WAYNE
 BE
 REV 01/01/90 WILDLIFE DAM CLASS A SEC30 T17N-R13E SUBW= 01
 TIME 10:52:09 SITE = BESLE PASS= 1 PAGE= 3

ES CREST 97.56 FT 122.4 ACFT .00 AC 266.3 CFS

PS STORAGE 46.6 ACFT BETWEEN ES CREST AND SED ACCUM ELEVATIONS

STARTING E 94.50 FT 75.8 ACFT .00 AC .0 CFS

ELEVATION OF LOW POINT IS ZERO. NO CRITERIA CHECK MADE FOR STRUCTURE CLASSIFICATION

SCS-ESH D= 6.00 HR P= 3.60 IN Q= .91 IN DA = 8.48 SM
 TC= 7.20 HR CN= 67.00 VOL= 410.1 ACFT

PEAK = 742.7 CFS, AT 8.0 HRS.

***** WARNING - TR-60 REQUIRES AN INCREASE IN RAINFALL AMOUNT COMPATIBLE
 WITH INCREASE IN EMERGENCY STORM DURATION WHEN TC EXCEEDS 6-
 HRS.

SCS-TSH D= 6.00 HR P= 3.60 IN Q= .91 IN DA = 8.48 SM
 TC= 7.20 HR CN= 67.00 VOL= 410.1 ACFT

PEAK = 742.7 CFS, AT 8.0 HRS.

ROUTED STM WIDTH MAX ELEV VOL-MAX AREA-MAX EMG. HF VOL-ES

RESULTS	FT	FT	ACFT	AC	FT	ACFT
SCS-ESH	100.0	98.73	140.2	.0	1.17	17.8

PEAK - CFS	Q-PS	Q-ES	Q-TOT
DISCHARGE =	404.1	330.3	734.4

	CRITICAL	CRITICAL	CRITICAL	25% OF
	DEPTH	VELOCITY	SLOPE-S/C	S/C
EMERGENCY	FT	FT/SEC	FT/FT	FT/FT
SPILLWAY----	.69	4.68	.015	.020

	DURATION	ATTACK	SUMMATION
	FLOW	OE/B	VEL**2 DELTA T
EMERGENCY	HRS	ACFT/FT	(FT/SEC)**2 HRS
SPILLWAY----	6.9	1.0	185.0

***** MESSAGE - ES378 CRITERIA USED BUT EMERGENCY SPILLWAY NOT BASED ON RETARDANCE.

EXIT CHANNEL FLOW SUPERCRITICAL: MAX VELOCITY= 6.74 FT/SEC
 EXIT SLOPE = .050 FT/FT
 FLOW DEPTH = .483

DRAWDOWN USING FREEBOARD STORM FOLLOWS, STARTING AT ELEVATION 97.56 FT.

DRAWDOWN (DDT) TEST 94.50 FT 75.8 ACFT .00 CFS
 CONTROL IS .000 DETENTION STORAGE

TIME = 2.05 DAYS, TO .0 CFS (LIMIT = 10.00 DAYS)

ROUTED	BTM WIDTH	MAX ELEV	VOL-MAX	AREA-MAX	EMG. HP	VOL-ES
RESULTS	FT	FT	ACFT	AC	FT	ACFT
SCS-FBH	100.0	98.73	140.2	.0	1.17	17.8

PEAK - CFS	Q-PS	Q-ES	Q-TOT
DISCHARGE =	404.1	330.3	734.4

	CRITICAL	CRITICAL	CRITICAL	25% OF
	DEPTH	VELOCITY	SLOPE-S/C	S/C
EMERGENCY	FT	FT/SEC	FT/FT	FT/FT
SPILLWAY----	.69	4.68	.015	.020

	DURATION	ATTACK	SUMMATION
	FLOW	OE/B	VEL**2 DELTA T
EMERGENCY	HRS	ACFT/FT	(FT/SEC)**2 HRS
SPILLWAY----	6.9	1.0	185.0

***** MESSAGE - ES378 CRITERIA USED BUT EMERGENCY SPILLWAY NOT BASED ON RETARDANCE.

EXIT CHANNEL FLOW SUPERCRITICAL: MAX VELOCITY= 6.74 FT/SEC
 EXIT SLOPE = .050 FT/FT
 FLOW DEPTH = .483

***** ES378 RUN - MINIMUM FLOW IN EMG. SPILLWAY FROM TR60

USING FORMULA WITHOUT 200 CFS MINIMUM LIMIT. *****

ROUTED RESULTS MINIMUM ES	BTM WIDTH FT 100.0	MAX ELEV FT 99.38	VOL-MAX ACFT 149.9	AREA-MAX AC .0	EMG. HP FT 1.81	VOL-ES ACFT 27.5
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PEAK - CFS DISCHARGE =	Q-PS 410.6	Q-ES 679.9	Q-TOT 1090.5
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	CRITICAL DEPTH FT 1.12	CRITICAL VELOCITY FT/SEC 5.90	CRITICAL SLOPE-S/C FT/FT .013	25% OF S/C FT/FT .017
EMERGENCY SPILLWAY----				

***** ES378 RUN - MINIMUM DEPTH, CREST EMG TO TOP OF DAM IS 2.00 FT
NEW TOP OF DAM ELEVATION = 99.56

ROUTED RESULTS MINIMUM ES	BTM WIDTH FT 100.0	MAX ELEV FT 99.56	VOL-MAX ACFT 152.8	AREA-MAX AC .0	EMG. HP FT 2.00	VOL-ES ACFT 30.4
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PEAK - CFS DISCHARGES =	Q-PS 412.5	Q-ES 808.1	Q-TOT 1220.6
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	CRITICAL DEPTH FT 1.25	CRITICAL VELOCITY FT/SEC 6.23	CRITICAL SLOPE-S/C FT/FT .012	25% OF S/C FT/FT .017
EMERGENCY SPILLWAY----				

***** ES378 RUN - MINIMUM DEPTH, DESIGN FLOW TO TOP OF DAM, REQUIRED
FOR THIS PASS. NEW TOP OF DAM ELEVATION = 99.73

ROUTED RESULTS MINIMUM ES	BTM WIDTH FT 100.0	MAX ELEV FT 99.73	VOL-MAX ACFT 155.4	AREA-MAX AC .0	EMG. HP FT 2.17	VOL-ES ACFT 33.0
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PEAK - CFS DISCHARGES =	Q-PS 414.2	Q-ES 923.7	Q-TOT 1337.9
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	CRITICAL DEPTH FT 1.37	CRITICAL VELOCITY FT/SEC 6.50	CRITICAL SLOPE-S/C FT/FT .012	25% OF S/C FT/FT .016
EMERGENCY SPILLWAY----				

ROUTED RESULTS SCS-ESH	BTM WIDTH FT 150.0	MAX ELEV FT 98.50	VOL-MAX ACFT 136.7	AREA-MAX AC .0	EMG. HP FT .94	VOL-ES ACFT 14.3
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PEAK - CFS DISCHARGE =	Q-PS 399.8	Q-ES 335.2	Q-TOT 735.0
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	CRITICAL DEPTH FT .53	CRITICAL VELOCITY FT/SEC 4.13	CRITICAL SLOPE-S/C FT/FT .016	25% OF S/C FT/FT .022
EMERGENCY SPILLWAY----				

	DURATION	ATTACK	SUMMATION
EMERGENCY	FLOW	OE/B	VEL**2 DELTA T
SPILLWAY----	HRS	ACFT/FT	(FT/SEC)**2 HRS
	6.7	.7	140.9

***** MESSAGE - ES378 CRITERIA USED BUT EMERGENCY SPILLWAY NOT BASED ON RETARDANCE.

EXIT CHANNEL FLOW SUPERCRITICAL: MAX VELOCITY= 5.80 FT/SEC
 EXIT SLOPE = .050 FT/FT
 FLOW DEPTH = .382

DRAWDOWN USING FREEBOARD STORM FOLLOWS, STARTING AT ELEVATION 97.56 FT.

DRAWDOWN (DDT) TEST 94.50 FT 75.8 ACFT .00 CFS
 CONTROL IS .000 DETENTION STORAGE

TIME = 2.01 DAYS, TO .0 CFS (LIMIT = 10.00 DAYS)

ROUTED	BTM WIDTH	MAX ELEV	VOL-MAX	AREA-MAX	EMG. HP	VOL-ES
RESULTS	FT	FT	ACFT	AC	FT	ACFT
SCS-FBH	150.0	98.50	136.7	.0	.94	14.3

PEAK - CFS	Q-PS	Q-ES	Q-TOT
DISCHARGE =	399.8	335.2	735.0

	CRITICAL	CRITICAL	CRITICAL	25% OF
EMERGENCY	DEPTH	VELOCITY	SLOPE-S/C	S/C
SPILLWAY----	FT	FT/SEC	FT/FT	FT/FT
	.53	4.13	.016	.022

	DURATION	ATTACK	SUMMATION
EMERGENCY	FLOW	OE/B	VEL**2 DELTA T
SPILLWAY----	HRS	ACFT/FT	(FT/SEC)**2 HRS
	6.7	.7	140.9

***** MESSAGE - ES378 CRITERIA USED BUT EMERGENCY SPILLWAY NOT BASED ON RETARDANCE.

EXIT CHANNEL FLOW SUPERCRITICAL: MAX VELOCITY= 5.80 FT/SEC
 EXIT SLOPE = .050 FT/FT
 FLOW DEPTH = .382

***** ES378 RUN - MINIMUM FLOW IN EMG. SPILLWAY FROM TR60
 USING FORMULA WITHOUT 200 CFS MINIMUM LIMIT. *****

ROUTED	BTM WIDTH	MAX ELEV	VOL-MAX	AREA-MAX	EMG. HP	VOL-ES
RESULTS	FT	FT	ACFT	AC	FT	ACFT
MINIMUM ES	150.0	98.97	143.7	.0	1.40	21.3

PEAK - CFS	Q-PS	Q-ES	Q-TOT
DISCHARGE =	406.5	679.9	1086.4

	CRITICAL	CRITICAL	CRITICAL	25% OF
	DEPTH	VELOCITY	SLOPE-S/C	S/C

EMERGENCY	FT	FT/SEC	FT/FT	FT/FT
SPILLWAY----	.86	5.21	.014	.019

***** ES378 RUN - MINIMUM DEPTH, CREST EMG TO TOP OF DAM IS 2.00 FT
 NEW TOP OF DAM ELEVATION = 99.56

ROUTED	BTM WIDTH	MAX ELEV	VOL-MAX	AREA-MAX	EMG. HP	VOL-ES
RESULTS	FT	FT	ACFT	AC	FT	ACFT
MINIMUM ES	150.0	99.56	152.8	.0	2.00	30.4

PEAK - CFS	Q-PS	Q-ES	Q-TOT
DISCHARGES =	412.5	1197.3	1609.8

	CRITICAL	CRITICAL	CRITICAL	25% OF
	DEPTH	VELOCITY	SLOPE-S/C	S/C
EMERGENCY	FT	FT/SEC	FT/FT	FT/FT
SPILLWAY----	1.25	6.26	.012	.017

1DAMS2.....JOB NO. 1 COMPLETE

WAYNE BE ER DAM BUTTE CO. SD.

0 SUBWATERSHED(S) ANALYZED

1 STRUCTURE(S) ANALYZED

5 HYDROGRAPHS ROUTED AT LOWEST SITE

0 TRIALS TO OBTAIN BOTTOM WIDTH FOR SPECIFIED VELOCITY(S)

DAMS2.....COMPUTATIONS COMPLETE

1 SUMMARY TABLE 1 DAMS2 VERSION 01/01/90

WATERSHED ID	RUN DATE	RUN TIME
-----	-----	-----
WAYNE BE	09/23/99	10:52:09

>>>	SITE	SUBWS	SUBWS DA	CURVE	TC	TOTAL DA	TYPE	STRUC	<<<
	ID	ID	(SQ MI)	NO.	(HRS)	(SQ MI)	DESIGN	CLASS	
	-----	-----	-----	-----	-----	-----	-----	-----	
	BESLE	01	8.48	67.	7.20	8.48	378CR	A1	

PASS	DIA/	ES CREST	BTM	MAX	MAX	YARDAGE	OE/B*	EXIT*	TYPE
NO.	WIDTH	ELEV	WIDTH	HP	ELEV	EMB	(AF/FT)	VELOCITY	HYD
	(IN/FT)	(FT)	(FT)	(FT)	(FT)	(CY)		(FT/SEC)	
	-----	-----	-----	-----	-----	-----	-----	-----	-----
* 1	60.0	97.56	100.00	2.17	99.73	0.	1.0	6.74	MINIMUM ES

1 60.0 97.56 150.00 2.00 99.56 0. .7 5.80 MINIMUM ES

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

DAMS2.....SUMMARY TABLE 1 COMPLETED

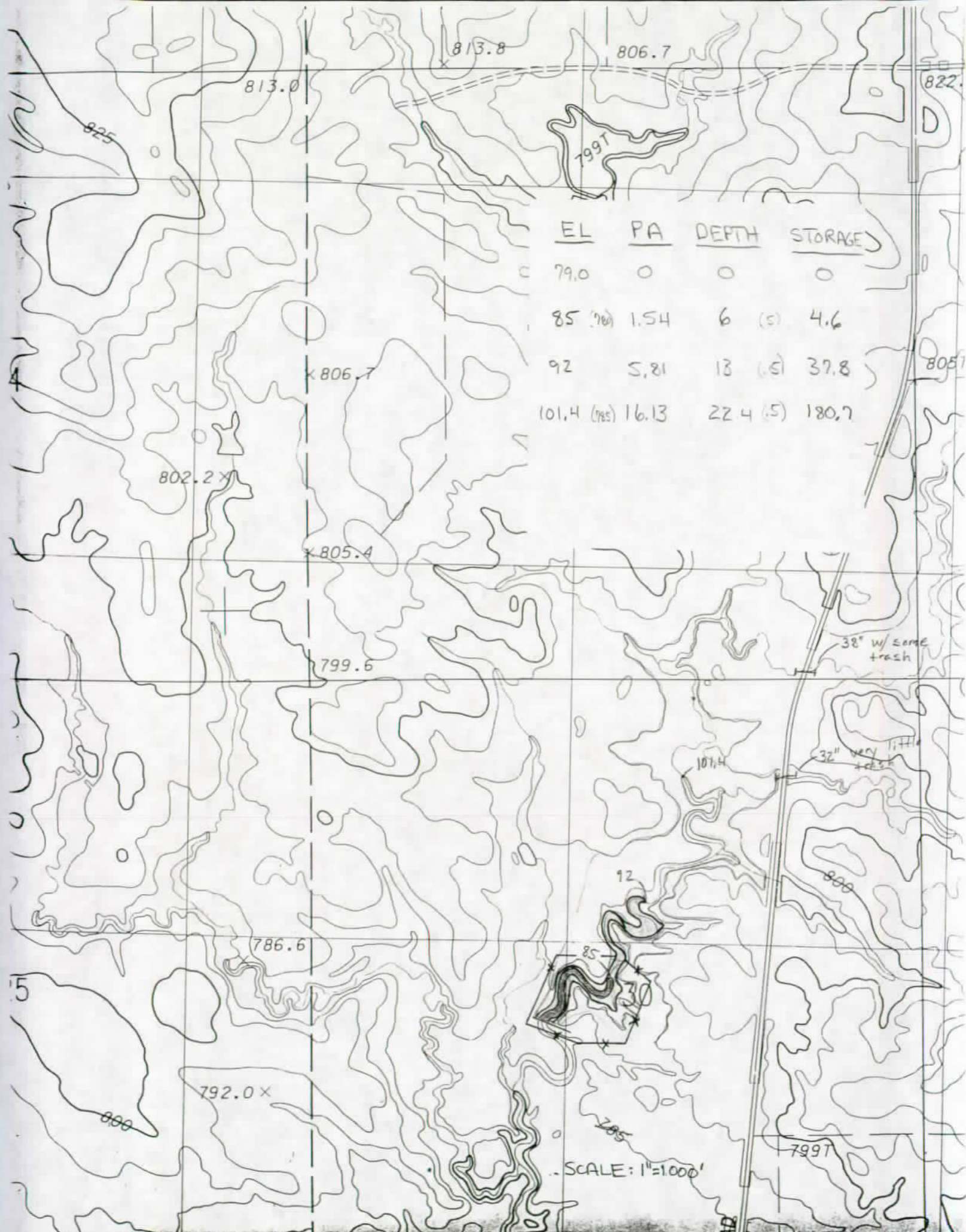
SCS DAMS2 VERSION 01/01/90
WAYNE BE FILES

INPUT = besler2
OUTPUT = besler2.out

DATED 09/23/99 10:52:09

Note:

- Will use 60" dia barrel w/ 28" drop inlet.
- Principal Spillway elevation will be set @ EL 94.5
- Emergency spillway could be @ 97.56 but a natural spillway exists @ EL 97.0 and that is what will be planned.
- Top of dam could be @ 99.73 but will set top of dam @ EL 100.0.



STRUCTURE DATA

DRAINAGE AREA	ANNUAL YIELD	PEAK RUNOFF	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.
5427	54.3	743	1197	16.7	8.0	20.4	62.0

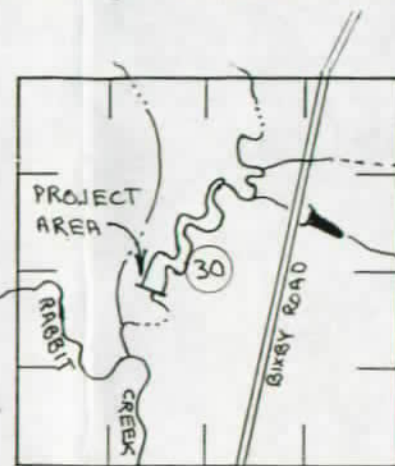
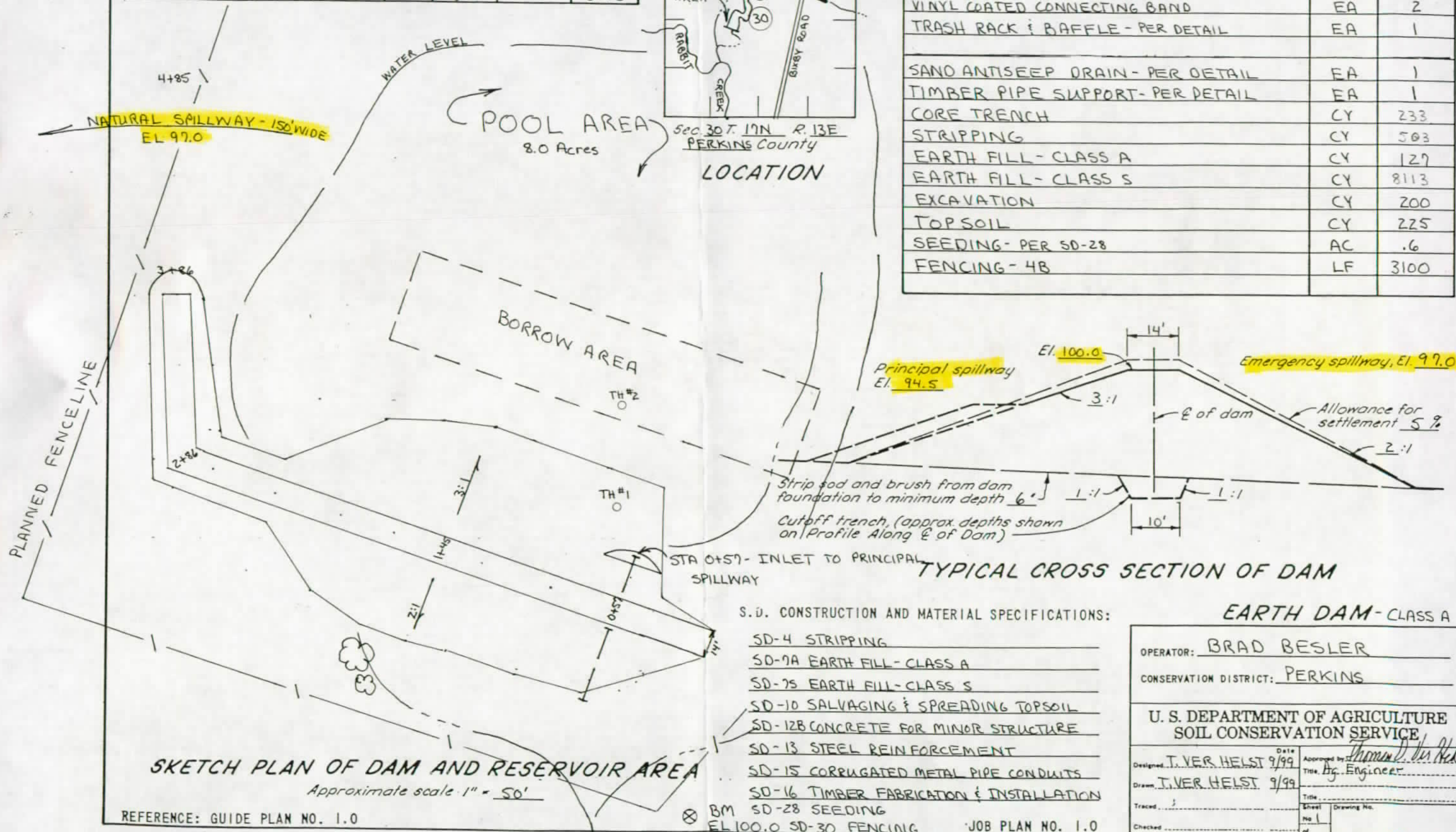
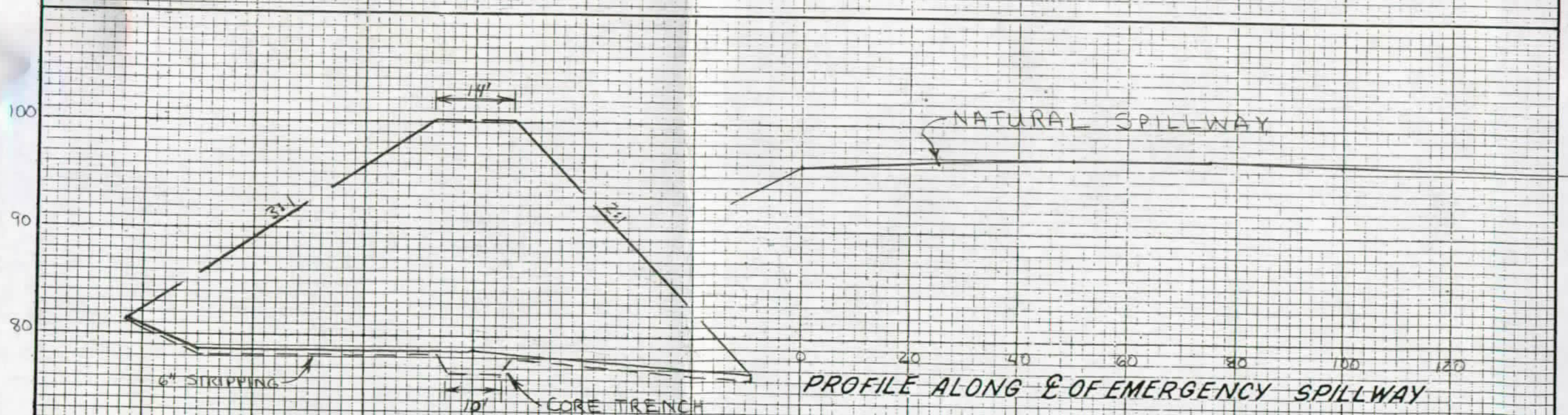
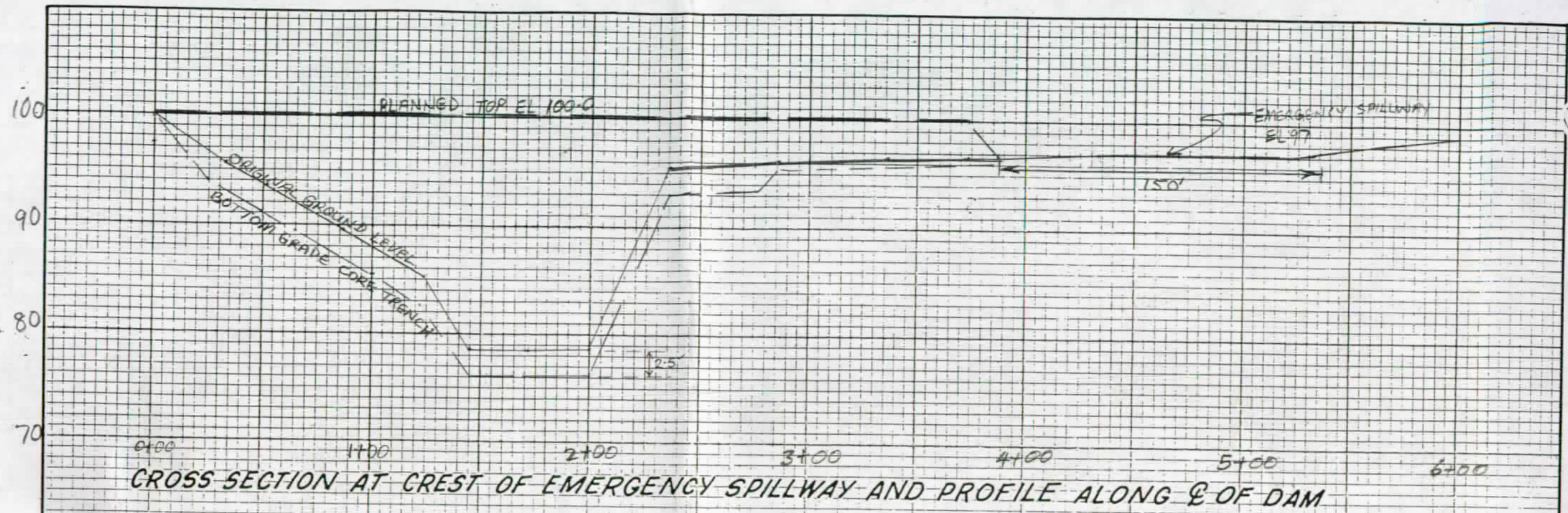


TABLE OF QUANTITIES

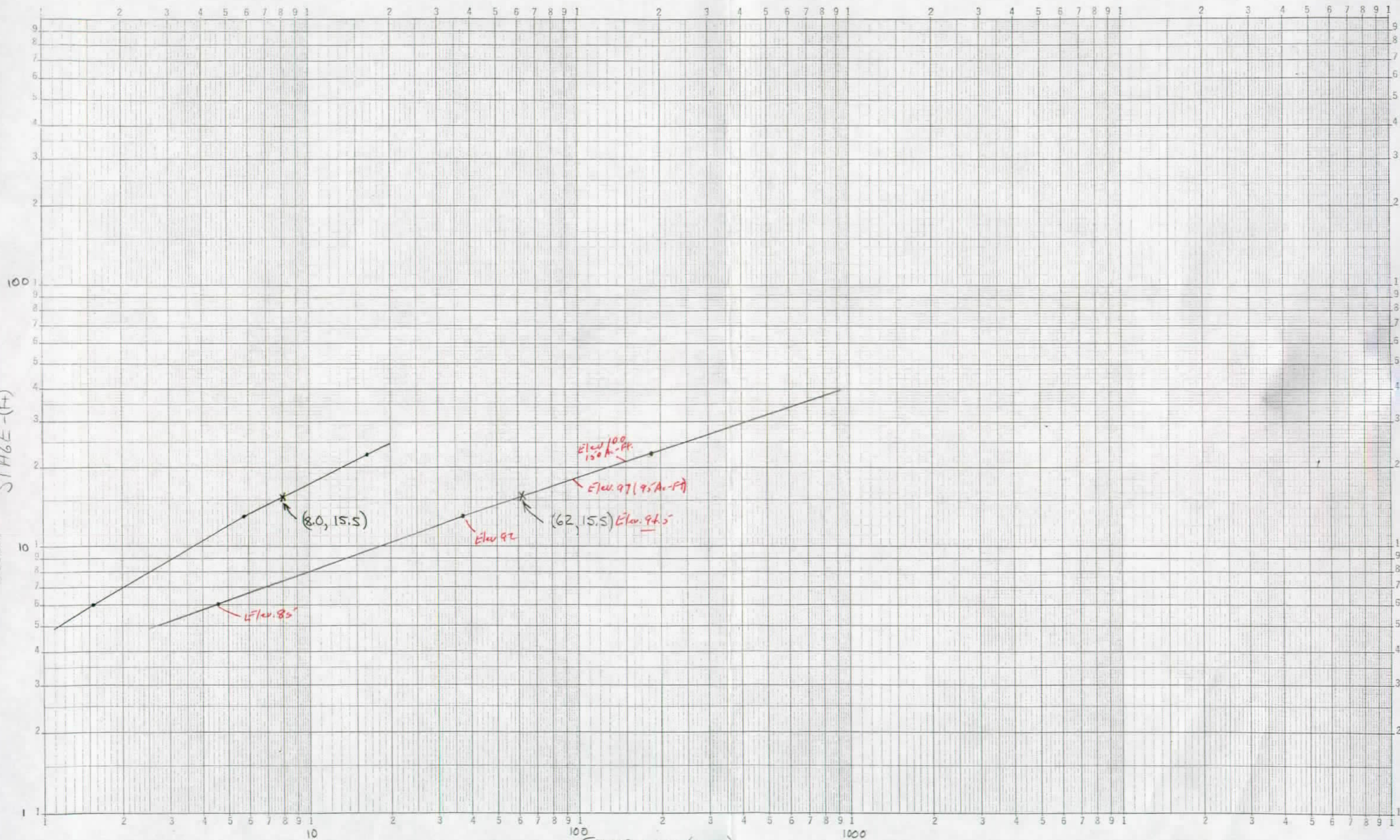
ITEM	UNIT	QUANTITY
VINYL COATED CORRUGATED METAL RISER - PER DETAIL	EA	1
VINYL COATED CORRUGATED METAL PIPE - 60" DIA	LF	72
VINYL COATED CONNECTING BAND	EA	2
TRASH RACK & BAFFLE - PER DETAIL	EA	1
SAND ANTISEEP DRAIN - PER DETAIL	EA	1
TIMBER PIPE SUPPORT - PER DETAIL	EA	1
CORE TRENCH	CY	233
STRIPPING	CY	503
EARTH FILL - CLASS A	CY	127
EARTH FILL - CLASS S	CY	8113
EXCAVATION	CY	200
TOP SOIL	CY	225
SEEDING - PER SD-28	AC	.6
FENCING - 4B	LF	3100



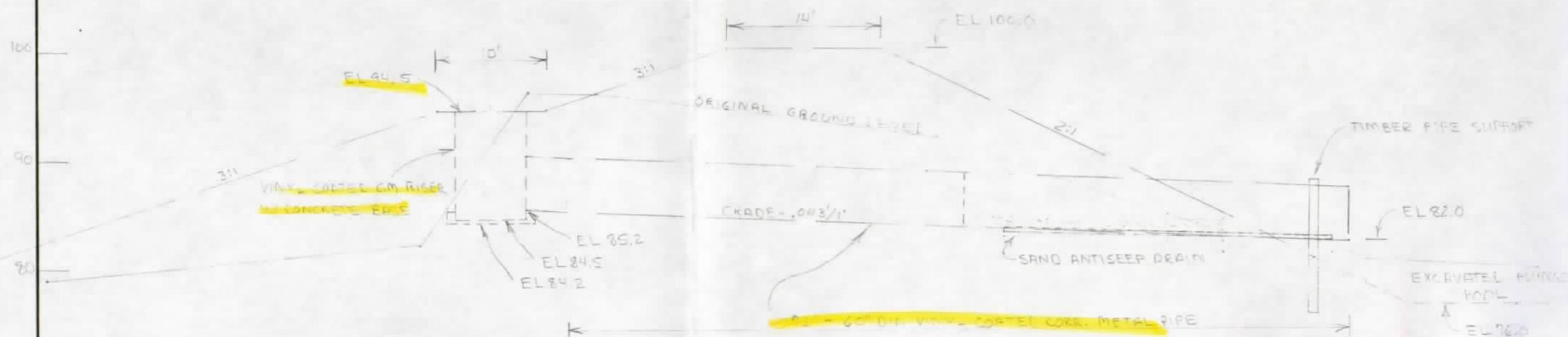


SEDIMENT YIELD

ERODIBILITY AREA ACRES	GROSS RATE A.F./AC./YR.	DRAINAGE AREA ACRES	DELIVERY RATE %	DESIGN PERIOD YEARS	REQ'D. SEDIMENT VOLUME AC.FT.
5427	.0015	5427	10	25	20.4



STORAGE (Ac-Ft)
SURFACE AREA (A)



CROSS SECTION DAM ALONG E OF PRINCIPAL SPILLWAY

SCALE: 1" = 10'

FABRICATE ANGLE:

$$\frac{(82.0 - 82.0) 3.2}{75} = \frac{3.2}{75} = 1.0^\circ$$

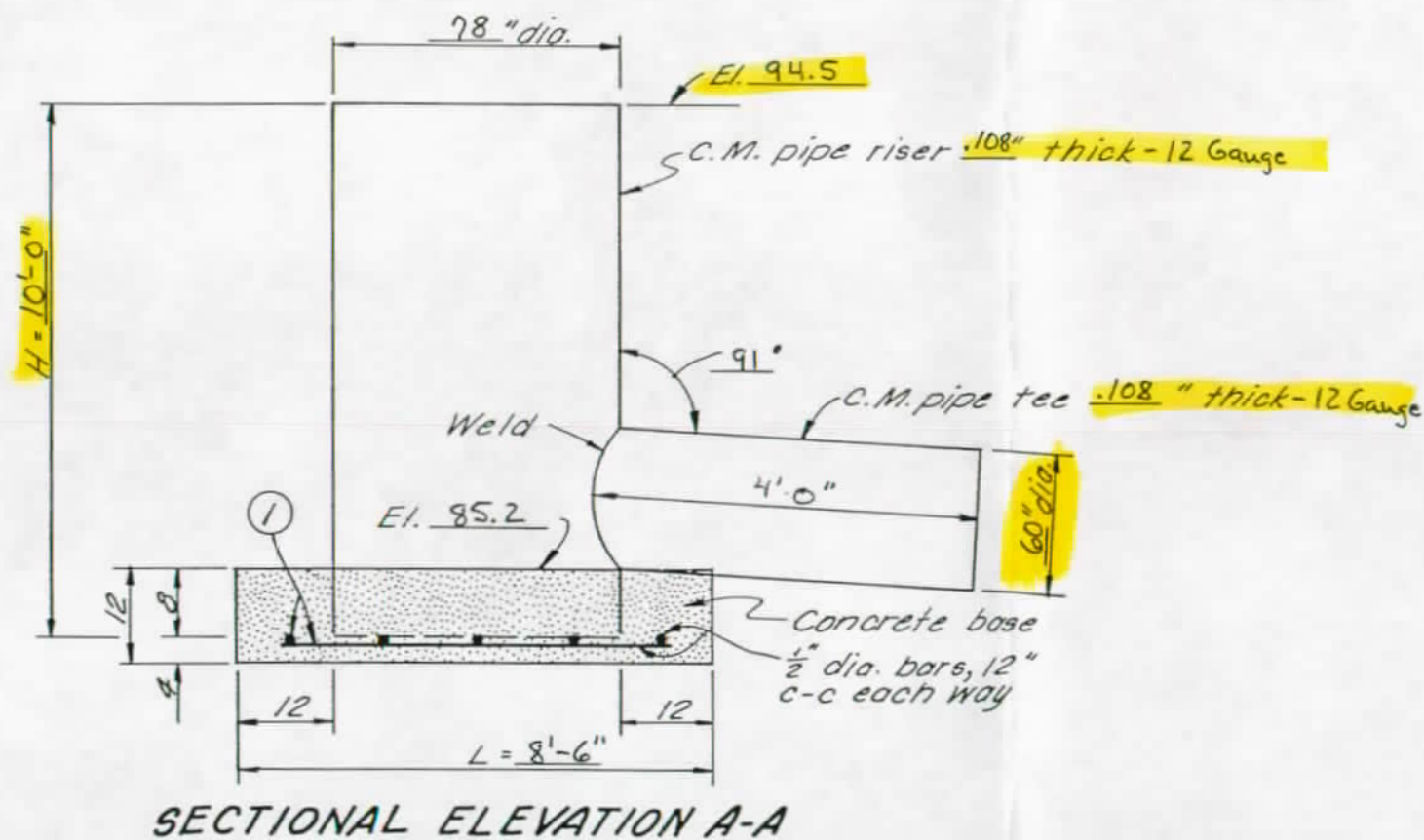
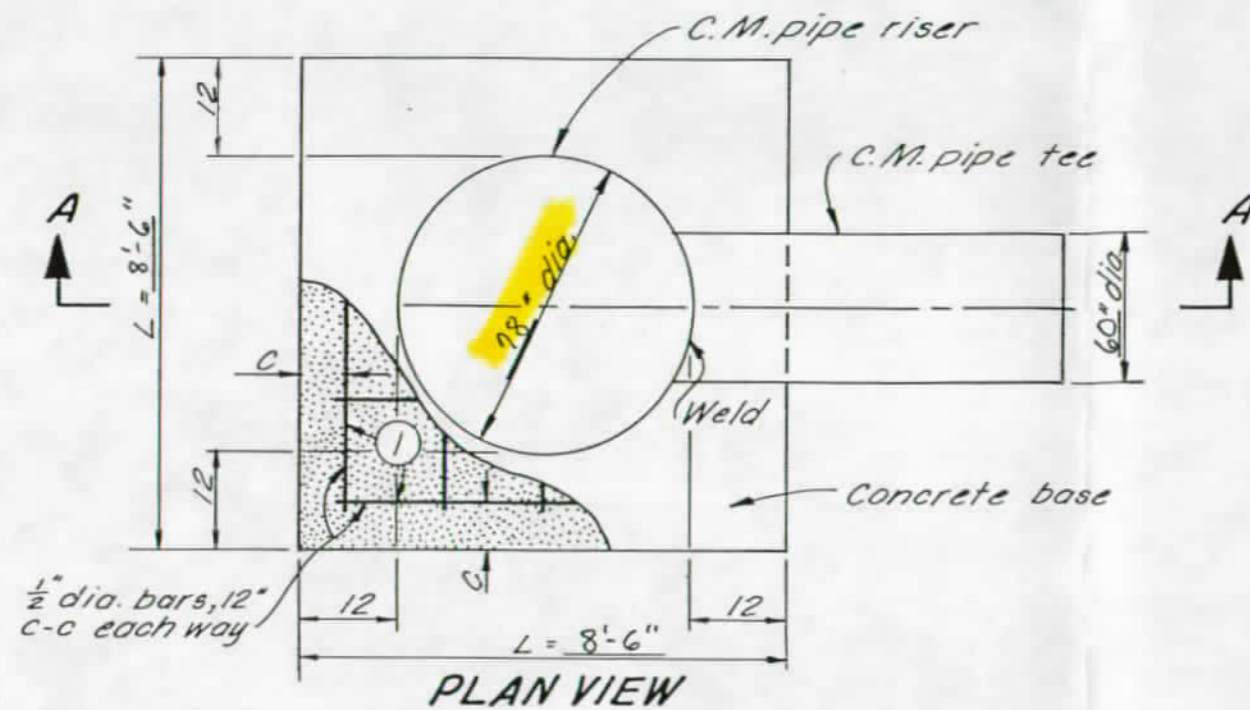
$$\cos \theta = \frac{3.2}{75.068} = 1.0^\circ$$

PIPE GRADE:

$$\frac{3.2}{75} = .043/1'$$

PRINCIPAL SPILLWAY
BRAD WELLSU. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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



REFERENCE: GUIDE PLAN NO. 5.3

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.
78"	4	1	STR.	18	8'-0"	144'-0"	96#	3	8'-6"

TABLE OF QUANTITIES

ITEM	UNIT	QUANTITY
CONCRETE	CU. YD.	2.7
REINFORCING STEEL	LB.	96#

NOTE: 1) USE 12 Gauge OR THICKER CMP

C.M. PIPE RISER WITH FABRICATED TEE

OPERATOR: BRAD BESLER

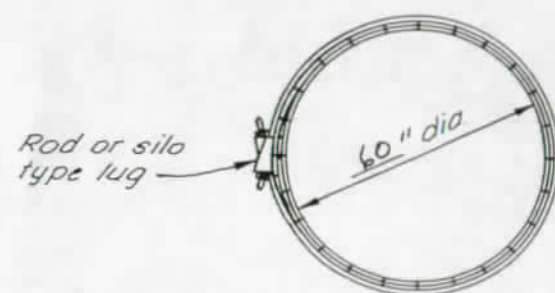
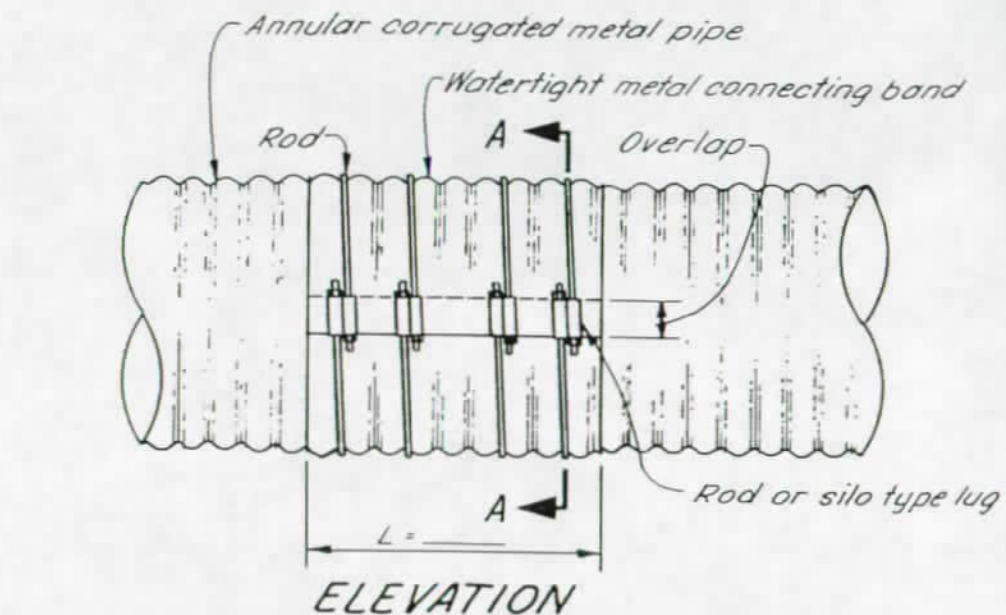
CONSERVATION DISTRICT: PERKINS

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

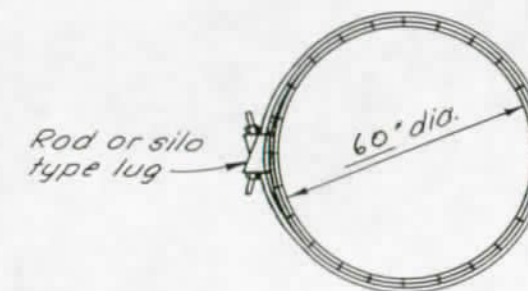
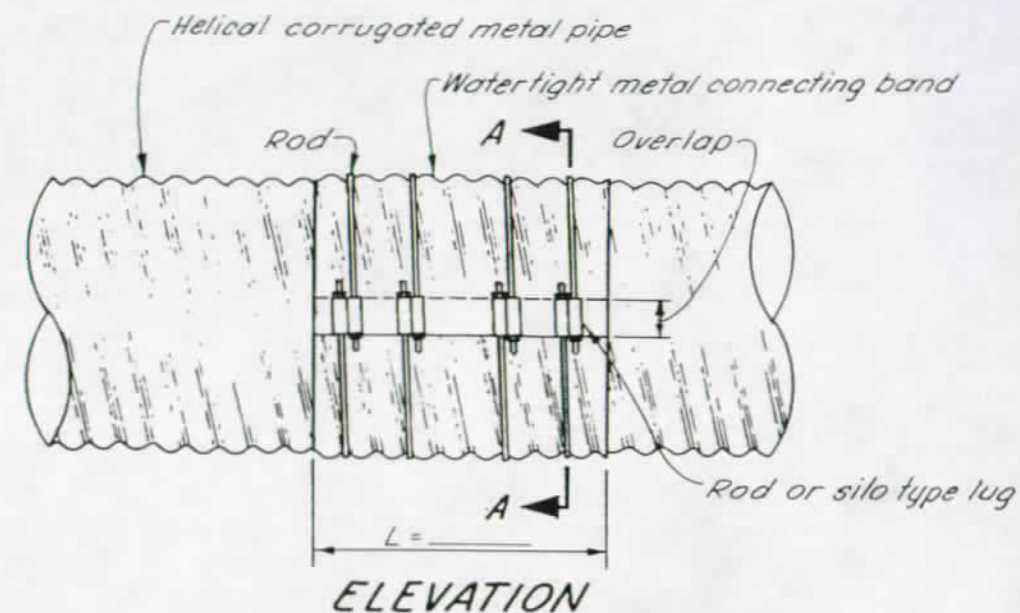
Designed _____	Date _____	Approved by _____
Drawn _____		Title _____
Traced _____		Title _____
Checked _____		Sheet _____ of _____
		Drawing No. _____

JOB PLAN NO. 5.3

5, N-29,073.5-30



SECTIONAL ELEVATION A-A



SECTIONAL ELEVATION A-A

DIMENSIONS AND QUANTITIES

PIPE DIA. INCHES	MINIMUM "L" INCHES	APPROX. OVERLAP INCHES	NUMBER OF RODS & LUGS	MINIMUM ROD DIA. IN.	NEOPRENE GASKET WIDTH INCHES	ASPHALT MASTIC GAL.
6-18	12	2	2	1/2	12	1/2
21-30	24	3	4	1/2	12	1 1/2
36-48 60"	24	6	4	1/2	12	2

NOTES:

1. WATERTIGHTNESS WILL BE OBTAINED BY USE OF (1) 3/8" THICK NEOPRENE GASKET (WIDTH AS SHOWN) OR (2) ASPHALT MASTIC SEALING MATERIAL TO COVER FULL WIDTH OF BAND.
2. CROSS OUT BAND AND QUANTITIES NOT APPLICABLE.

WATERTIGHT CONNECTING BAND FOR ANNULAR AND HELICAL CORRUGATED METAL PIPE

OPERATOR: BRAD BESLER

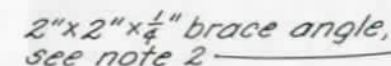
CONSERVATION DISTRICT: PERKINS

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

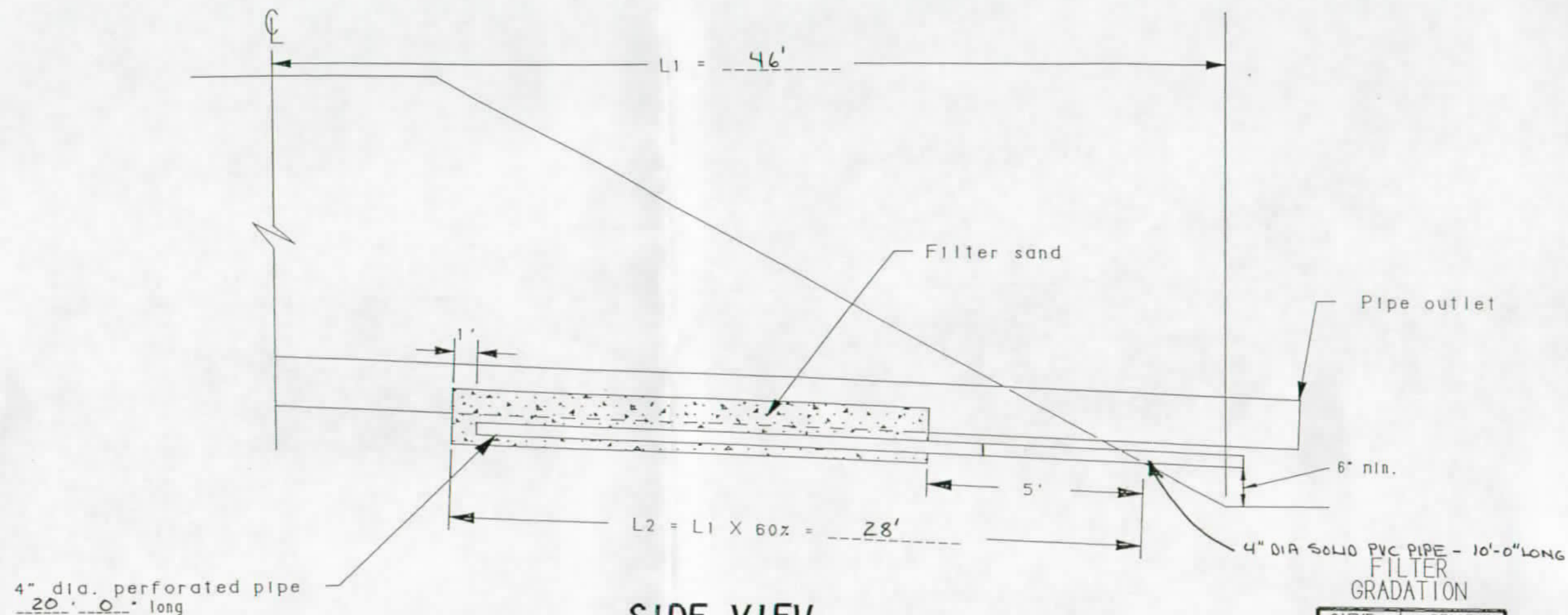
Designed	Date	Approved by
Drawn		Title
Traced		Title
Checked		Sheet No.
		Drawing No.
		of

JOB PLAN NO. 3.0

5, N-29, 073.30

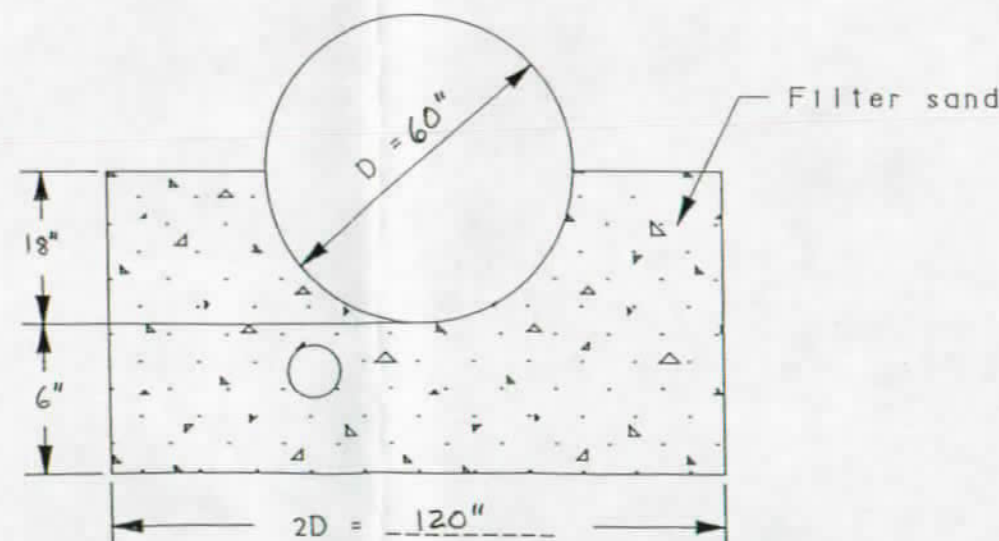


5,N-29,073.6-40



SIDE VIEW

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



UPSTREAM VIEW

NOTE:

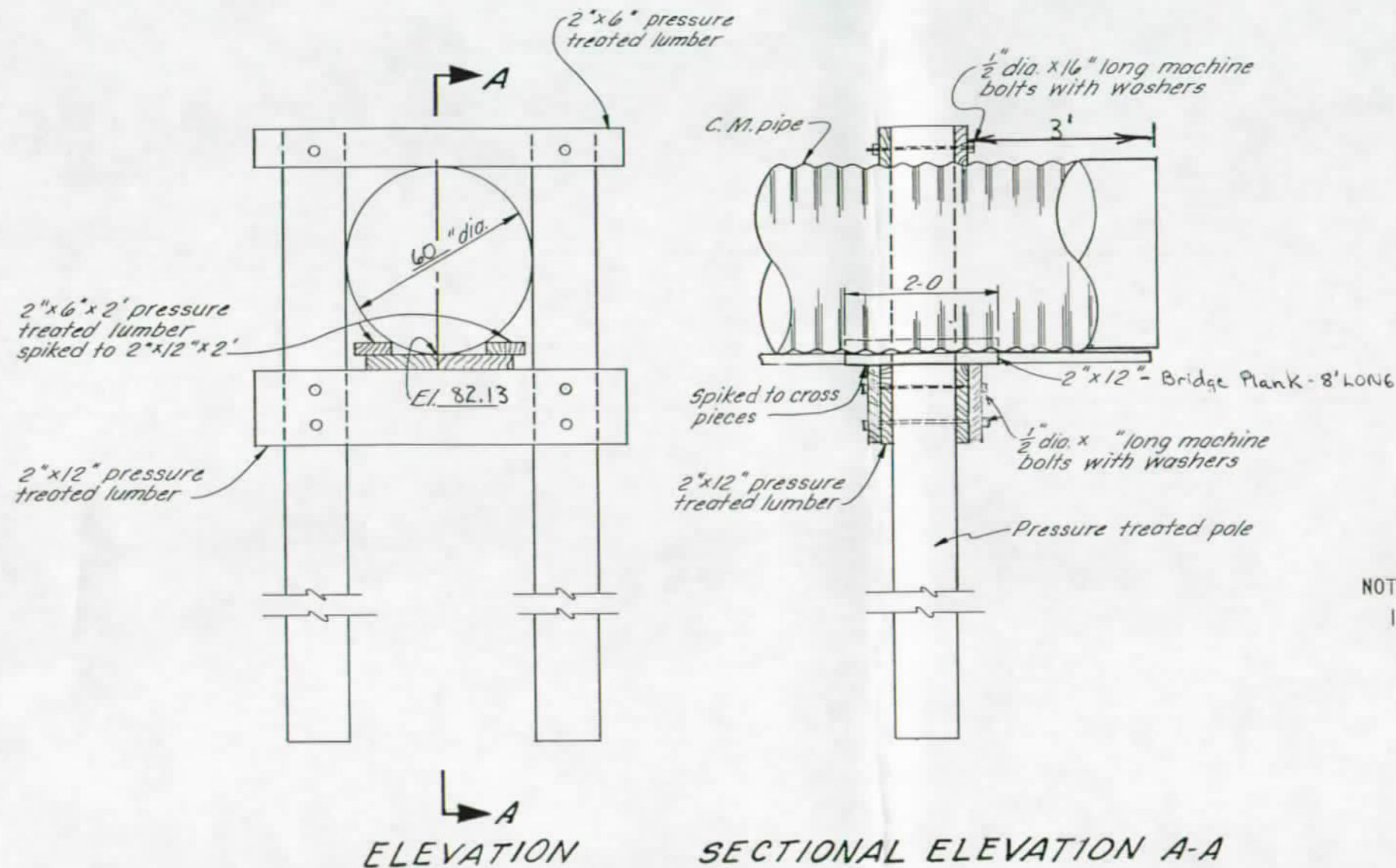
1. THE 4" DIA. PIPE SHALL BE SDR 35 PVC, OR STRONGER
2. PROVIDE AN ANIMAL GUARD ON DRAIN OUTLET PIPE. DRILL 2. 1/2" DIA. HOLES, ON $\varnothing$ 6" FROM END OF PIPE AND PLACE A 3/8" DIA., 5 1/2" LONG GALVANIZED STEEL BOLT THRU THEM AND SECURE WITH A NUT (PLACE BOLT HORIZONTAL).
3. FILTER SAND WILL BE CLEAN PEA AGGREGATE OR CONCRETE SAND.

SAND ANTISEEP DRAIN

OPERATOR <u>BRAD BESLER</u>	
CONSERVATION DISTRICT <u>PERKINS</u>	
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	
Designed _____	Date _____
Drawn _____	Approved by _____
Traced _____	Title _____
Checked _____	Title _____
Sheet No. _____	Dwg. No. _____
of _____	

Rev. 3/96

JOB PLAN NO. 3.8-P



NOTES:

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

TABLE OF QUANTITIES

ITEM	LENGTH FOR 60" DIA. C.M. PIPE	UNIT	QUANTITY
PRESSURE TREATED POLE 10" DIA.	12'-0"	EACH	2
2" X 12" PRESSURE TREATED LUMBER	7'-0"	EACH	4
2" X 6" PRESSURE TREATED LUMBER	7'-0"	EACH	2
2" X 12" Bridge Plank - Rough Cut	8'-0"	EACH	2
2" X 6" PRESSURE TREATED LUMBER	2'-0"	EACH	2
1/2" DIA. MACHINE BOLTS WITH NUTS	1'-8"	EACH	6
1/2" DIA. WASHERS		EACH	20

REFERENCE: GUIDE PLAN NO. 4.0

JOB PLAN NO. 4.0

TIMBER PIPE SUPPORT

OPERATOR: BRAD BESLER

CONSERVATION DISTRICT: PERKINS

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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

5, N-29,073.4a



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181
www.state.sd.us/denr

October 20, 1999

Brad Besler
13908 Bixby Road
Bison SD 57620

Dear Mr. Besler:

Thank you for submitting the *Application for a Permit to Appropriate Water* for a 62 acre-feet storage dam located in Perkins County. The application filing fee will be \$150. In addition to the application filing fee, the Water Rights Program now collects the \$50 licensing fee at the time of filing. Please submit a total of \$200.

Tim Schaal with this office, has contacted Tom VerHelst, NRCS. Mr. VerHelst indicated he will be submitting the map, plans and specifications and risk assessment which are required prior to processing the application.

If you have any questions, please contact me.

Sincerely,

Karen Schlaak
Water Rights Program
605 773-3352

c: Tom VerHelst, NRCS



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181
www.state.sd.us/denr

November 24, 1999

Brad Besler
13908 Bixby Road
Bison, SD 57620

Dear Mr. Besler:

We have reviewed the plans and specifications for your dam located in the NE ¼ SW ¼ of Section 30-T17N-R13E, in Perkins County. The plans and specifications as submitted are approved. Approval of the plans and specifications does not authorize construction of the dam. Construction may not begin until Water Permit Application No. 1698-1 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 Besler Dam will be classified as a small size Category 3, Low Hazard dam with a dam height of 23 feet and a normal storage capacity of 62 acre-feet and a maximum storage capacity of 150 acre-feet.

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

Sincerely,

Gale N. Selken, P.E.
Natural Resources Engineer IV
for John Hatch, Chief Engineer
Water Rights Program
(605) 773-3352

c: Tom Ver Helst, NRCS, Belle Fourche

REPORT ON
WATER PERMIT APPLICATION NO. 1698-1
Brad Besler
November 22, 1999

Water Permit Application No. 1698-1 has been filed by Brad Besler to impound 62 acre-feet of water from runoff by constructing a dam located in the NE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 30-T17N-R13E, in Perkins County. The water will be used for fish and wildlife production and livestock watering.

Discussion:

The new dam will be classified as a Category 3, Low Hazard dam. The project has been designed by the Natural Resources Conservation Service (NRCS). The plans and specifications have been reviewed and will be approved; however, construction of the dam can not begin until Water Permit Application No. 1698-1 is approved.

The Besler Dam will be 23 feet high with a normal storage capacity of 62 acre-feet with a reservoir level at the primary spillway elevation, and a maximum storage capacity of 150 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.

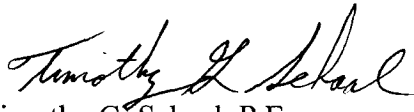
The dam has a drainage area of 8.48 square miles. A 25-year frequency event for this drainage area produces a peak runoff of approximately 742 cfs. A 100-year frequency event produces a peak of approximately 1466 cfs. The dam is designed to have a CMP drop inlet structure as the primary spillway, with a 72 inch riser and 60 inch barrel and 5.5 feet of available freeboard; and a 150 foot wide natural earth secondary spillway with 3 feet of available freeboard. The 150 foot wide secondary spillway will have a capacity of approximately 2025 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 20 acre-feet. The annual yield with a 50 percent chance of occurrence, or 1 out of 2 years, is expected to be 63 acre-feet and the annual yield with a 10 percent chance, or 1 out of 10 years, is expected to be 443 acre-feet.

The Besler Dam will be located in the NE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 30-T17N-R13E on an unnamed tributary of Rabbit Creek about one mile upstream of its confluence with Rabbit Creek. There are no existing Water Permits/Rights located on the unnamed tributary between the proposed dam and Rabbit Creek. The nearest permit below the dam would be Water Right No. 782-1, held by Burdine & Sons, Inc. This permit is located two to four miles below the confluence of the unnamed tributary and appropriates 2.25 cfs from Rabbit Creek to irrigate 445 acres of lands. Approval of Water Permit Application No. 1698-1 should not have any adverse effect on Water Right No. 782-1.

Conclusions:

1. Water Permit Application No. 1698-1 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. 1698-1.



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

Approved by:



Gale N. Selken, P.E.
Natural Resources Engineer IV

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 1698-1, Brad Besler**

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. 1698-1, Brad Besler, 13908 Bixby Road, Bison SD 57620.

The Chief Engineer is recommending APPROVAL of Application No. 1698-1 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. 1698-1 authorizes a dam with storage capacity of 62 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.

A handwritten signature in black ink, appearing to read "John Hatch", written in a cursive style.

JOHN HATCH, Chief Engineer
November 23, 1999



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181
www.state.sd.us/denr

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

November 24, 1999

Brad Besler
13908 Bixby Road
Bison, SD 57620

Dear Mr. Besler:

Water Permit Application No. 1698-1 for recreation, fish and wildlife propagation, and livestock use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice of hearing has been sent to the Publisher of the Bison Courier printed at Bison, SD (Ph # (605) 244-7199). For your information, a copy of the notice, the recommendation of the Chief Engineer and a report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper to authorize publication of your Notice of Hearing and to arrange for payment. Early contact with the paper can eliminate delays. The publisher has been instructed to publish your notice once each week for two consecutive weeks with the last publication to occur twenty days before the board meeting. The newspaper has 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

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181
www.state.sd.us/denr

November 24, 1999

Bison Courier
Box 429
Bison, SD 57620-0429

ATTENTION: Legal Public Notice

Enclosed is a Notice of Hearing on Application No. 1698-1 to Appropriate Water to be published twice. Please publish the first notice on December 2, 1999, with the second publication 7 days later.

The applicant must verify to you that the notice is to be published, before you make the first publication. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is Brad Besler, 13908 Bixby Road, Bison, SD 57620 (Ph # (605) 244-5600).

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

-----CU T HERE-----

No. 1698-1

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

Date _____

We are in receipt of your letter of November 24, 1999, enclosing Notice of Hearing to Appropriate Water by Application No. 1698-1 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 December 2, 1999, with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 1698-1 to Appropriate Water

Notice is given that Brad Besler, 13908 Bixby Road, Bison SD 57620 has filed an application for a water permit to impound 62 acre-feet of water from runoff by constructing a dam located in the NE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 30 with water impounded in the NE $\frac{1}{4}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 30; all in T17N-R13E. This application requests impoundment of sufficient water to maintain water to the outlet elevation. The water is to be used for recreation, fish & wildlife propagation and livestock watering.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1698-1 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 December 20, 1999.

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. Nettie H. Myers, Secretary, Department of Environment and Natural Resources.

PUBLISHER'S AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA

)SS

COUNTY OF PERKINS

Marsha Veal, of said County and State, being duly sworn, on oath says: THE BISON COURIER is a weekly newspaper of general circulation, printed and published in Bison, in said County and State and has been such newspaper during the times hereinafter mentioned; that the said BISON COURIER is a legal newspaper and has been in existence for more than one year immediately preceding the first publication herein mentioned; and has more than 200 bonafide subscribers; that I, the undersigned, am Office Manager, of said newspaper, and in charge of the advertising department thereof, and have personal knowledge of all facts stated in this affidavit; and that the advertisement headed

NOTICE OF APPLICATION NO. 1698-1 TO APPROPRIATE WATER

a printed copy of which is hereto attached, was printed and published in said newspaper for 2 successive issues, the first publication being on the 2 day of Dec., 19 99 and the last publication on the 9 day of Dec., 19 99 that \$ 46.58 being the full amount of the fee for publication of the annexed notice insures solely to the benefit of the publishers of the said newspaper; that no arrangement or understanding for a division thereof has been made with any person and that no part thereof has been agreed to be paid to any other person whomsoever.

Marsha Veal
12-20-99

Subscribed and sworn to before me this _____ day of _____, 19 ____.

My commission expires: _____

Notary Public, Perkins County



NOTICE OF APPLICATION NO. 1698-1 to Appropriate Water

Notice is given that Brad Besler, 13908 Bixby Road, Bison SD 57620 has filed an application for a water permit to impound 62 acre-feet of water from runoff by constructing a dam located in the

NE 1/4 SW 1/4 Section 30 with water impounded in the
NE 1/4 SW 1/4, SE 1/4 NW 1/4, SW 1/4 NE 1/4 Section 30; all in T17N-R13E.

This application requests impoundment of sufficient water to maintain water to the outlet elevation. The water is to be used for recreation, fish & wildlife propagation and livestock watering.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1698-1 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 December 20, 1999.

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. Nettie H. Myers, Secretary, Department of Environment and Natural Resources.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181
www.state.sd.us/denr

DEC 30 1999

Brad Besler
13908 Bixby Road
Bison, SD 57620

Dear Mr. Besler:

Enclosed is Water Permit No. 1698-1 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.

Very truly yours,

JOHN HATCH, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

Permit No. 1698-1
Moreau River - Water District

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

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

I have this day, **November 18, 2003**, made a thorough examination of the water use system constructed by **Brad Besler** of **13908 Bixby Road, Bison, SD 57620** holder of Permit No. **1698-1**, bearing the priority of **October 13, 1999** authorizing the storage of **62** acre-feet of the waters of **runoff** for **recreation, fish & wildlife propagation and livestock water** purposes, in **Perkins** County.

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

A. Works used to divert the water:

A 23 foot high earthen dam with a normal storage capacity of 62 acre-feet

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

N/A

C. Works used to apply water to beneficial use:

A 23 foot high earthen dam with a normal storage capacity of 62 acre-feet

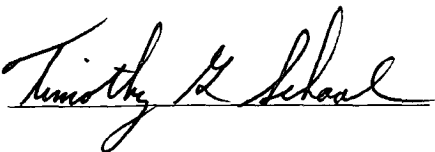
The system is in the following condition **good**. The point of diversion is located **2250 feet north & 2000 feet east of the SW corner of Sec. 30-T17N-R13E (NE ¼ SW ¼) (45.406584, -102.573167)**. The works are capable of storing **62** acre-feet of water which is to be used for **recreation, fish & wildlife propagation and livestock water**. Water has been put to beneficial use to the maximum extent as follows:

A 23 foot high earthen dam with a normal storage capacity of 62 acre-feet

and the license should be issued for **62** acre-feet of storage.

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

Exceptions to compliance are: **none** Date Report Completed: **February 11, 2004**



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

REPORT ON INSPECTION OF PERMIT NO. 1698-1

DATE OF INSPECTION: November 18, 2003

NAME & ADDRESS OF INSPECTION CONTACT/ Brad Besler
RELATIONSHIP TO PERMIT HOLDER, IF APPLICABLE: owner

NAME & ADDRESS OF PERMIT HOLDER: Brad Besler, 13908 Bixby Road, Bison, SD 57620

DIVERSION POINT LEGAL LOCATION: 2250 feet north & 2000 feet east of the SW corner of Sec. 30-T17N-R13E (NE ¼ SW ¼) (45.406584, -102.573167).

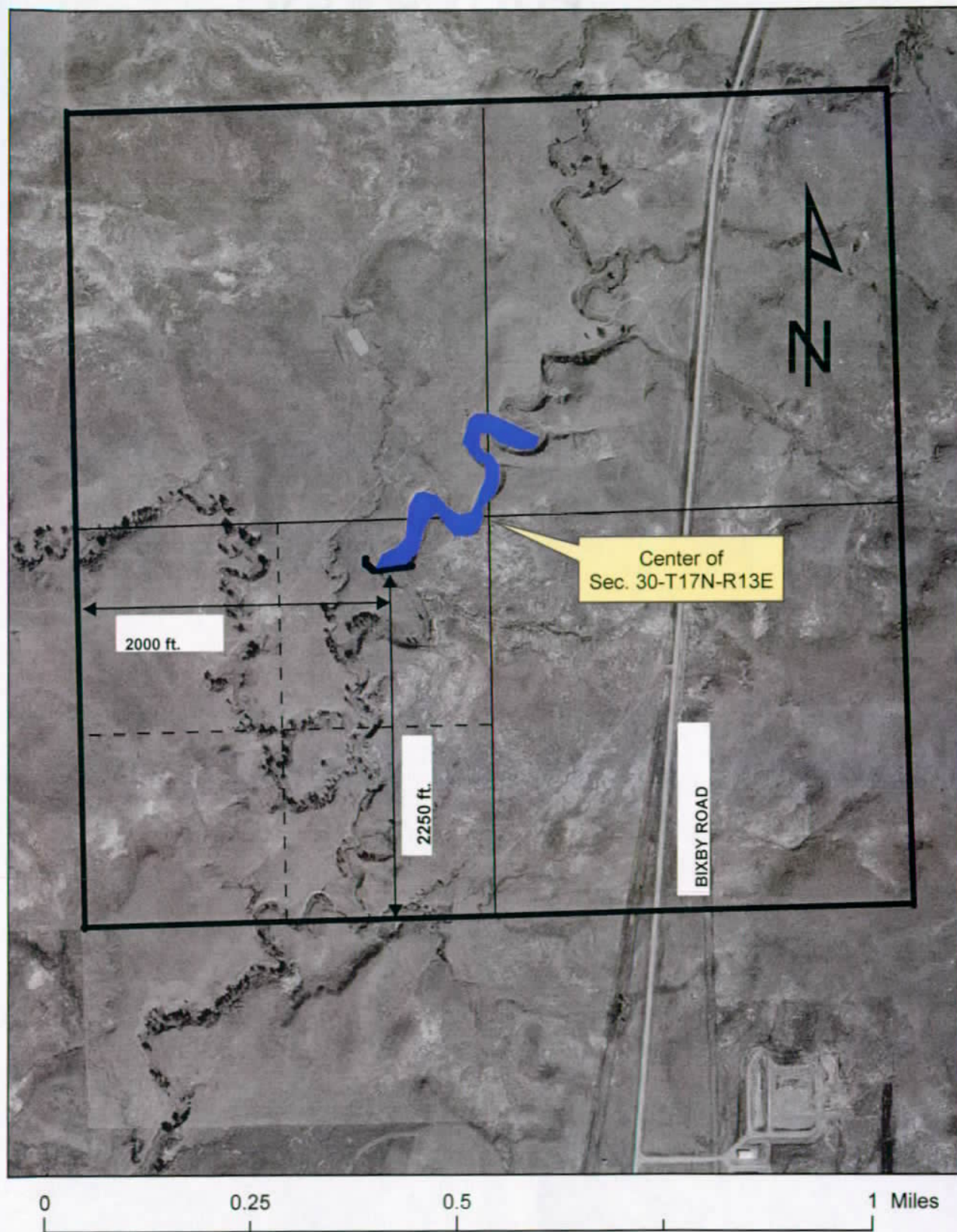
DAM INFORMATION:

- 1) Height to crest 23 feet
- 2) Height to primary spillway 17.5 feet
- 3) Height to secondary spillway 20 feet
- 4) Crest width 14 feet
- 5) Crest length 374 feet
- 6) Spillway length XXX feet
- 7) Spillway width 150 feet
- 8) Approx. storage (Normal) 62 acre-feet
- 9) Approx. storage (Maximum) 150 acre-feet
- 10) Date constructed: Fall 2000

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. 1698-1



STATE OF SOUTH DAKOTA

WATER LICENSE NO. 1698-1

(1) Brad Besler, 13908 Bixby Road, Bison SD 57620 made Application No. 1698-1, October 13, 1999 for a water permit to impound 62 acre feet of water from runoff, Perkins County, South Dakota for fish and wildlife propagation and livestock watering purposes. Permit No. 1698-1, with a priority date of October 13, 1999 was approved December 20, 1999 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before December 20, 2004 and for the application to beneficial use of water on or before December 20, 2008.

(2) The water supply system has been completed and water applied to beneficial use in accordance with South Dakota State Law. Pursuant to South Dakota Codified Law 46-5-30.1, the holder and/or owner of Water Right No. 1698-1 is issued a license, bearing a priority date of October 13, 1999, to impound 62 acre feet of water.

The location of the storage dam (spillway) is 2,250 feet north and 2,000 feet east of the southwest corner of Section 30-T17N-R13E (NE ¼ SW ¼).

(3) This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Permit No. 1698-1, including the following now applicable qualifications:

- Water Permit No. 1698-1 authorizes a dam with storage capacity of 62 acre feet of water and sufficient water annually to maintain the water level to the outlet elevation.
- Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.



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

MAY 10 2004

date





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

MAY 10 2004

1698-1

Brad Besler
13908 Bixby Road
Bison SD 57620

Dear Mr. Besler:

Enclosed is Water License No. 1698-1. This is the final water right document completing your process of obtaining a Water Right.

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

Sincerely,

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

enclosures