

WATER PERMIT NO. 1765-1

Name of Applicant: James S Nelson

Address: 4521 S Glenview Place, Rapid City SD 57702

Phone: 605 348-5543

Amount of Water Claimed: ^{154.7}
~~228.7~~ AF

Total Acres: NA

Source of Water Supply: runoff

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

County: Meade

Type of Waste Disposal System:

Location: 30 miles east of Sturgis

PRIORITY Date Received: 1-16-02

Fee: \$225

Corrected Application Received: 2-8-02

Period of Annual Use: January 1 – December 31

Remarks:

Diversion Point: between the NW ¼ NE ¼ and
NE ¼ NW ¼ Sec 26-T5N-R10E

Water Impounded: NW ¼ NE ¼ and NE ¼ NW ¼
Sec 26-T5N-R10E

Depth of Well: NA

Well Driller: : NA

Remarks:

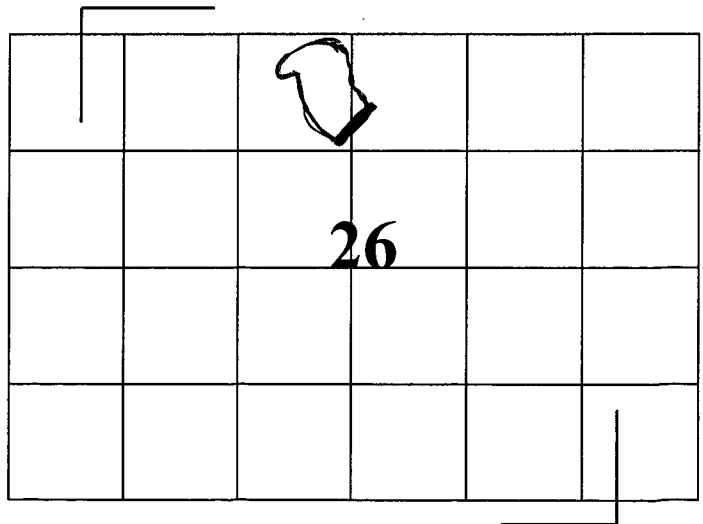
Type of Map: aerial

Prepared by: Roy E Boschee, RPE

Reviewed and the Number Assigned on: 2-8-02

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____



SOUTH DAKOTA
WATER PERMIT NO. 1765-1

Date of first receipt of application January 16, 2002.

Date of return to applicant for corrections, amendments or changes January 18, 2002.

Date of receipt of corrected application February 8, 2002.

The Water Management Board approved Water Permit Application No. 1765-1 on May 1, 2002 for James S. Nelson, 4521 S Glenview Place, Rapid City SD 57702 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. 1765-1 authorizes impoundment of 154.7 acre-feet of water from runoff by constructing a dam located between the NW ¼ NE ¼ and the NE ¼ NW ¼ Section 26 with water impounded in the NW ¼ NE ¼, NE ¼ NW ¼ Section 26; all in T5N-R10E.
2. The water appropriated shall be used for the purpose of fish and wildlife propagation, recreational use 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 from which applicant may claim right is January 16, 2002.
5. One-fifth of the construction is to be completed on or before November 1, 2004.
6. All construction is to be completed on or before May 1, 2007.
7. Water is to be put to beneficial use on or before May 1, 2011.
8. 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. 1765-1 authorizes a dam with a storage capacity of 154.7 acre feet of water and sufficient water annually to maintain the water level to outlet elevation of the primary spillway.
2. Water Permit No. 1765-1 authorizes the dam to be maintained no higher than the following elevations based on Control Point 1 (local datum elevation 500) established by Roy Boschee, PE:

Top of Dam Elevation	495.00
Primary Spillway Elevation	489.59 (invert of 18" CPP)
Secondary Spillway Elevation	490.59

Control Point 1 which is rebar driven into the ground shall be permanently marked and maintained with a steel fence post identifying its location.

WATER MANAGEMENT BOARD

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

MAY 31 2002

date



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

Mail to:
Water Rights Program
Joe Foss Building
523 E. Capitol
Pierre, SD 57501-3181
(605) 773-3352

(office use only)
No. 1765-1 Hydrologic Unit 10120202
Basin Belle Fourche River
Newspaper Meade Co. Times, Sturgis



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 livestock water

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.) _____

- Name of Applicant James S. Nelson Phone 605-348-5543
(check one) ☒ Owner ☐ Tenant/lessee
Mailing Address 4521 S Blenheim Plc Rapid City State SD 57702
(Street, RR, or Box and City) (Zip Code)
- Amount of water claimed _____ *CFS or _____ **GPM 154.7 ***AF 228.7
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable
- Source of water supply SURFACE RUNOFF
- Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) N 1/2 26-5N-10E
DAM between NW1/4 + NE1/4 NW1/4 Sec 26 with water impounded in
NW1/4 NE1/4, NE1/4 NW1/4 Sec 26; all in T5N-R10E County MEADE
- County or counties where water will be used MEADE
- Annual period during which water is to be used ANNUAL Jan 1 - Dec 31
- Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed) EMBANKMENT
POND TO PROVIDE FOR FISH & WILDLIFE FACILITY & RECREATION

STATE OF SOUTH DAKOTA)
County of Pennington 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, James S. Nelson, 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 James S. Nelson

Subscribed and sworn to before me this 15th day of January 20 02

My Commission Expires:
10/11/2006

Renée Cation
Notary Public signature

Supplemental Information

(type or print in ink)

1. Well Information - Proposed Construction

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

2. Wastewater Disposal System Information

- a) Type of System (i.e. septic tank, drain field) _____
- b) System Capacity (gallons) _____ Year Constructed _____
- c) Connected to the City of _____ Sanitary System _____

3. Dugout Information

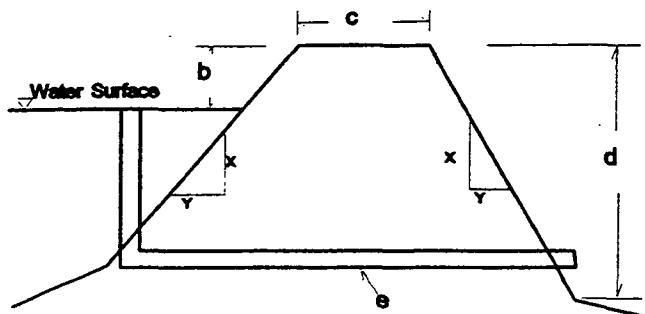
- a) Surface Dimensions _____ Depth _____
- b) Depth to water (ground surface to water level) _____

4. Water Storage Dams

If the proposed water use system contains one or more storage dams, please furnish the information requested below for each dam. The locations of the dams need to be shown on the map submitted with the application.

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

ROY BOSCHKE, P.E., DREAM DESIGN INT., INC.
3202 WEST MAIN ST., RAPID CITY, SD 57701



- b) Freeboard 5.41 FEET
- c) Crest Width 28 FEET
- d) Crest Length 530 FEET
- e) Height 34 FEET
- f) Primary Outlet Capacity 30.5 CFS
- g) If pipe, diameter 18 INCH
- h) Secondary Spillway Capacity 803.4 CFS
- i) Spillway Width 196 FEET
- j) X & Y Slope
- Upstream 3:1
- Downstream 2:1
- k) Surface Area of Impoundment SEE ATTACHED
- l) Storage SEE ATTACHED Acre Feet
- m) Drainage Area Above Dam 7613 Acres

RECEIPT

Water Rights Program

South Dakota Department of Environment and Natural Resources

NR 417051

Pierre, January 16, 20 02

RECEIVED OF Dream Design International, Inc., 3002 West Main St., Suite D, Rapid City SD57702
the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. <u>1765-1</u> to Appropriate Water, to construct and to put water to beneficial use _____	225	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>1765-1</u>	50	00
Fee for Filing Transfer Form _____		
Fee for Filing Extension Request _____		
Fee for _____		

(Any Other Work Provided by Law)	Total	275 00

By

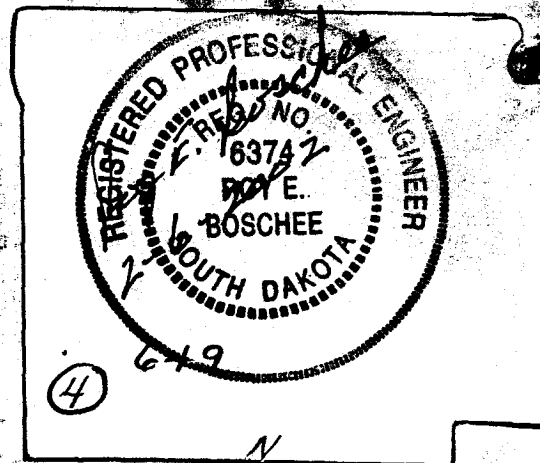
Darland E. White
Chief Engineer

gms

I 18
(5-10)

T 1238

DR. JAMES NELSON
154.7



25.6

①

N

7.4

②

N

N

N

N

N

③

④

⑤

⑥

31.4

③

225.3

1765-1

Elevation	Surface Acres	Interm Storage	Cumulative Storage	
463	0.0164			
		0.2097	0.2097	
465	0.1933			
		0.9372	1.1469	
467	0.7439			
		2.4616	3.6085	
469	1.7177			
		4.265	7.8735	
471	2.5473			
		5.6928	13.5663	
473	3.1455			
		7.7547	21.321	
475	4.6092			
		10.0994	31.4204	
477	5.4902			
		12.381	43.8014	
479	6.8908			
		15.0648	58.8662	
481	8.174			
		17.7502	76.6164	
483	9.5762			
		20.4913	97.1077	
485	10.9151			
		23.1424	120.2501	
487	12.2273			
		25.9801	146.2302	
489	13.7528			
		8.468005	154.6982	
489.59	14.9523			Primary Spillway
		6.365332	161.0635	
490	16.0981			
		9.742995	170.8065	
490.59	16.929			Secondary Spillway
		6.975125	177.7817	
491	17.096			
		36.0552	213.8369	
493	18.9592			
		41.2698	255.077	- Top of Dam
495	22.3106			

Elevation	Surface Acres	Interm Storage	Cumulative Storage	
463	0.0164			
		0.2097	0.2097	
465	0.1933			
		0.9372	1.1469	
467	0.7439			
		2.4616	3.6085	
469	1.7177			
		4.265	7.8735	
471	2.5473			
		5.6928	13.5663	
473	3.1455			
		7.7547	21.321	
475	4.6092			
		10.0994	31.4204	
477	5.4902			
		12.381	43.8014	
479	6.8908			
		15.0648	58.8662	
481	8.174			
		17.7502	76.6164	
483	9.5762			
		20.4913	97.1077	
485	10.9151			
		23.1424	120.2501	
487	12.2273			
		25.9801	146.2302	
489	13.7528			Primary Spillway
		14.92545	161.1557	
490	16.0981			
		16.59705	177.7527	
491	17.096			Secondary Spillway
		36.0552	213.8079	
493	18.9592			
		41.2698	255.0777	
495	22.3106			Crest of Dam

1*****
 SITES XEQ 01/09/2002 WATER RESOURCE SITE ANALYSIS COMPUTER PROGRAM
 VER 2000 (USER MANUAL - DATED MAY 2001)
 TIME 10:17:59

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

SITES 05/01/20001 Dr. Jim Nelson Dam 11.8953125H7
 SAVMOV 0 101
 SAVMOV 101 1 1

* DESIGN STRUCTURE
 * This Run is to determine Emergency Spillway Width
 * to meet the spillway requirements for the
 * State of SD small Dams Criteria

STRUCTURE 1 378 - pond
 463 0.02
 465 0.19
 467 0.74
 469 1.72
 471 2.55
 473 3.15
 475 4.61
 477 5.49
 479 6.89
 481 8.17
 483 9.58
 485 10.92
 487 12.22
 489 13.75
 491 17.10
 493 18.96
 495 22.31

ENDTABLE

WSDATA	5A11	AC	72	7613	67360	1		
PDIRECT			0.25		4.00	4.25		
POOLDATA	ELEV		489	489.59	489	495	463	HD
PSHOOD	78				475.92	0.6	1.0	S
PSDATA	1			18		.013	468.75	
ASDATA	41 182	280			4		.024	2
ASINSURF	41			5.6	5.6			
ASINLET	41	0.0		0.0	130	0.0		
ENDTABLE								
ASEXSURF	41			5.6	5.6			
				.9	.8			
				1	2			
				2	2			
				.02				

ENDTABLE

ASEXIT	41	N				300
BTMWIDTH	FEET	196				
GRAPHICS	I					
GO,DESIGN	HL	TYPE2	24	TYPE2378	24	
SAVMOV	2	101	1	1		
ENDJOB						

1SITES XEQ 01/09/2002 ----- COMMENT PAGE -----
 VER 2000 Dr. Jim Nelson Dam WSID = 1

DESIGN STRUCTURE

This Run is to determine Emergency Spillway Width
 to meet the spillway requirements for the
 State of SD small Dams Criteria

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

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1SITES -----
XEQ 01/09/2002          Dr. Jim Nelson Dam          WSID= 1
VER 2000                378 - pond                  SUBW= 1
TIME 10:17:59          SITE = 1                    PASS= 1    PART= 1

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

STORM DISTRIBUTION-PSH 24 HOUR TYPE II RAINFALL DISTRIBUTION

STORM DISTRIBUTION AUX. -24 HOUR TYPE II RAINFALL DISTRIBUTION

PRECIP. - P-PS,1-DAY	P-PS,10-DAY	P-SD	P-FB	
0.25	0.00	4.00	4.25	
WSDATA - CN	DA-SM	TC/L	-/H	QRF
72.00	11.90	67360.00	1.00	0.00
SITEDATA- PERM POOL	CREST PS	FP SED	VALLEY FL	378?
489.00	489.59	489.00	463.00	YES
BASEFLOW	INITIAL EL	EXTRA VOL	SITE TYPE	
0.00	0.00	0.00	DESIGN	
PSDATA - NO. COND	COND L	DIA/W	-/H	
1.00	0.00	18.00	0.00	
PS N	KE	WEIR L	TW EL	
0.013	0.00	0.00	468.75	
2ND STG	ORF H	ORF L	START AUX.	
0.00	0.00	0.00	0.00	
PSHOOD - OUTLET	MITER	LENGTH	LENGTH	
ELEV.	ELEV.	INLET TO	MITER TO	
		MITER (FT)	OUTLET (FT)	
475.92	0.00	78.0	0.0	
ASCRESTS - AUX.1	AUX.2	AUX.3	AUX.4	AUX.5
0.00	0.00	0.00	0.00	0.00
AUX.DATA - REF.NO.	RETARD. Ci	TIE STATION	INLET LENGTH	
41	0.00	182.00	280	
AUX.DATA - INLET Ci	SIDE SLOPE	EXIT Ci	EXIT SLOPE	ACTUAL AUX?
5.600	4.00	5.600	0.024	NO
BTM WIDTH - BW1	BW2	BW3	BW4	BW5
ft 196.00	0.00	0.00	0.00	0.00

AUXILIARY SPILLWAY RATING DEVELOPED USING WSPVRT.

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1SITES -----
XEQ 01/09/2002          Dr. Jim Nelson Dam          WSID= 1
VER 2000                378 - pond                  SUBW= 1
TIME 10:17:59          SITE = 1                    PASS= 1    PART= 2

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***** MESSAGE - INPUT(146.23) TO INTERPOLATION ROUTINE IS BELOW
ARRAY LIMIT(154.63).

PERM POOL	489.00 FT	146.2 ACFT	13.75 AC	0.0 CFS
CREST PS	489.59 FT	154.6 ACFT	14.74 AC	0.0 CFS
SED ACCUM	489.59 FT	154.6 ACFT	14.74 AC	0.0 CFS
START ELEV	489.59 FT	154.6 ACFT	14.74 AC	0.0 CFS

>>>> MINIMUM DEPTH (1.00 FT) USED FOR NHCP378 RUN - CREST PS TO CREST AUX.

NRCS-PSH	D= 24.00 HR	P= 0.25 IN	Q= 0.00 IN	DA= 11.90 SM
	TC= 19.42 HR	CN= 72.00	VOL= 0.0 ACFT	

PEAK = 0.0 CFS, AT 410.9 HRS.

ROUTED RESULT - HYD TYPE	EMAX	VOL-MAX	AMAX	QMAX
NRCS-PSH	490.59 FT	170.2 ACFT	16.41 AC	3.3 CFS

PS STORAGE 15.6 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.

DRAWDOWN (DDT) TEST	489.59 FT	154.6 ACFT	0.00 CFS
CONTROL IS 0.000 DETENTION STORAGE			

TIME LIMIT REACHED = 10.00 DAYS; FLOW WAS 0.17 CFS, ELEV = 489.72
ROUTING CONTINUING.

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

RATING TABLE NUMBER 1						
	ELEV.	Q-TOTAL	Q-PS	Q-AUX.	VOLUME	AREA
	FEET	CFS	CFS	CFS	AC-FT	ACRE
1	489.59	0.00	0.00	0.00	154.63	14.74
2	489.97	0.49	0.49	0.00	160.37	15.38
3	490.35	1.94	1.94	0.00	166.35	16.01
4	490.73	4.10	4.10	0.00	172.58	16.65
5	491.11	6.22	6.22	0.00	179.04	17.21
6	491.50	7.42	7.42	0.00	185.67	17.56
FULL CONDUIT FLOW, ELEV = 491.80 FT						
7	491.80	29.71	29.71	0.00	191.04	17.84
8	492.33	30.23	30.23	0.00	200.69	18.34
9	492.87	30.74	30.74	0.00	210.60	18.84
10	493.40	31.24	31.24	0.00	220.85	19.63
11	493.93	31.73	31.73	0.00	231.56	20.52
12	494.47	32.22	32.22	0.00	242.75	21.42
13	495.00	32.70	32.70	0.00	254.41	22.31

1SITES -----
XEQ 01/09/2002 Dr. Jim Nelson Dam WSID= 1
VER 2000 378 - pond SUBW= 1
TIME 10:17:59 SITE = 1 PASS= 1 PART= 3

AUX. CREST	490.59 FT	170.2 ACFT	16.41 AC	3.3 CFS
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PS STORAGE 15.6 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.

START ELEV	489.72 FT	156.6 ACFT	14.95 AC	0.2 CFS
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***** WARNING - AUXILIARY CREST LOWER THAN LOW POINT IN SITE.

NRCS-SDH D= 24.00 HR P= 4.00 IN Q= 1.46 IN DA= 11.90 SM
 TC= 19.42 HR CN= 72.00 VOL= 926.3 ACFT

PEAK = 620.3 CFS, AT 25.5 HRS.

NRCS-FBH D= 24.00 HR P= 4.25 IN Q= 1.64 IN DA= 11.90 SM
 TC= 19.42 HR CN= 72.00 VOL= 1039.1 ACFT

PEAK = 697.2 CFS, AT 25.5 HRS.

***** WARNING - MAXIMUM RATING POINT, 490.59, (AS CREST) FOR
 HOOD INLET IS BELOW FULL PIPE FLOW, 491.80.
 RATING INTERPOLATION/EXTRAPOLATIONS MAY BE IN ERROR

 RATING TABLE DEVELOPED, SITE = 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	489.59	0.00	0.00	0.00	154.63	14.74
2	489.67	0.02	0.02	0.00	155.87	14.88
3	489.76	0.09	0.09	0.00	157.11	15.02
4	489.84	0.21	0.21	0.00	158.37	15.16
5	489.92	0.38	0.38	0.00	159.64	15.30
6	490.01	0.59	0.59	0.00	160.92	15.44
7	490.09	0.85	0.85	0.00	162.21	15.58
8	490.17	1.15	1.15	0.00	163.52	15.72
9	490.26	1.50	1.50	0.00	164.83	15.85
10	490.34	1.88	1.88	0.00	166.16	15.99
11	490.42	2.30	2.30	0.00	167.50	16.13
12	490.51	2.75	2.75	0.00	168.85	16.27
13	490.59	3.23	3.23	0.00	170.21	16.41
14	490.81	12.84	4.58	8.25	173.87	16.78
15	491.03	22.52	5.88	16.64	177.61	17.13
16	491.43	38.78	7.21	31.58	184.48	17.50
FULL CONDUIT FLOW, ELEV = 491.80 FT						
17	491.91	189.93	29.82	160.11	193.08	17.95
18	492.79	985.52	30.67	954.85	209.27	18.77
19	493.90	2387.31	31.70	2355.61	230.83	20.46
20	495.00	4163.84	32.70	4131.14	254.41	22.31

SUMMARY OF AUXILIARY SPILLWAY SURFACE CONDITIONS USED IN COMPUTATIONS BY REACH

REACH	FROM STA (ft)	TO STA (ft)	SLOPE (%)	RETARDANCE CURVE INDEX	VEGETAL COVER FACTOR	MAINT. CODE	ROOTING DEPTH (ft)	REACH LOCATION *
1	-98.	182.	0.0	5.6	**	**	**	CREST
2	182.	482.	2.4	5.6	0.90	1	2.0	EXIT !

* Upper case indicates a reach of constructed spillway channel.

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

! Reach 2 used in computing exit channel velocities.

ROUTED RESULTS	BTM WIDTH FT	MAX ELEV FT	VOL-MAX ACFT	AREA-MAX AC	AUX.-HP FT	VOL-AUX. ACFT
NRCS-SDH	196.0	492.40	201.8	18.4	1.81	31.6

PEAK - CFS Q-PS Q-AUX. Q-TOT.

DISCHARGE = 30.3 590.2 620.5

	CRITICAL DEPTH	CRITICAL VELOCITY	CRITICAL SLOPE-Sc	25% OF Q Sc
AUXILIARY	FT	FT/SEC	FT/FT	FT/FT
SPILLWAY ---	0.65	4.55	0.043	0.216

AUXILIARY SPILLWAY DURATION FLOW = 58.5 HOURS

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

EXIT CHANNEL FLOW SUBCRITICAL: MAX VELOCITY= 3.8 FT/SEC
EXIT SLOPE = 0.024 FT/FT
FLOW DEPTH = 0.8 FT

EFFECTIVE STRESS FOR STABILITY ANALYSIS OF AUX. EXIT CHANNEL
(Refer to Ag. Handbook 667, Chapt. 3, for allowable stresses.)
Aux. Discharge = 590. cfs; Bottom Width = 196. ft

REACH NO.	FROM STA	TO STA	SLOPE %	MANNING`S n	VELOCITY ft/s	STRESS lb/ft^2
2	182.	482.	2.40	0.051	3.81	0.011

DRAWDOWN USING FREEBOARD STORM FOLLOWS, STARTING AT ELEVATION 490.59 FT.

DRAWDOWN (DDT) TEST 489.59 FT 154.6 ACFT 0.00 CFS
CONTROL IS 0.000 DETENTION STORAGE

TIME LIMIT REACHED = 10.00 DAYS; FLOW WAS 0.12 CFS, ELEV = 489.77
ROUTING CONTINUING.

ROUTED RESULTS	BTM WIDTH FT	MAX ELEV FT	VOL-MAX ACFT	AREA-MAX AC	AUX.-HP FT	VOL-AUX. ACFT
NRCS-FBH	196.0	492.48	203.4	18.5	1.89	33.2

PEAK - CFS Q-PS Q-AUX. Q-TOT.
DISCHARGE = 30.4 667.4 697.7

	CRITICAL DEPTH	CRITICAL VELOCITY	CRITICAL SLOPE-Sc	25% OF Q Sc
AUXILIARY	FT	FT/SEC	FT/FT	FT/FT
SPILLWAY ---	0.71	4.74	0.038	0.183

AUXILIARY SPILLWAY DURATION FLOW = 59.3 HOURS
ATTACK, OE/B = 4.8 ACFT/FT

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

EXIT CHANNEL FLOW SUBCRITICAL: MAX VELOCITY= 4.1 FT/SEC
EXIT SLOPE = 0.024 FT/FT
FLOW DEPTH = 0.8 FT

>>>> NHCP378 RUN - MINIMUM FLOW IN AUX. SPILLWAY FROM TR60
USING FORMULA WITHOUT 200 CFS MINIMUM LIMIT (803. CFS).

ROUTED RESULTS	BTM WIDTH FT	MAX ELEV FT	VOL-MAX ACFT	AREA-MAX AC	AUX.-HP FT	VOL-AUX. ACFT
MIN. AUX.	196.0	492.63	206.2	18.6	2.04	36.0

PEAK - CFS Q-PS Q-AUX. Q-TOT.
DISCHARGE = 30.5 803.4 833.9

	CRITICAL	CRITICAL	CRITICAL	25% OF Q
	DEPTH	VELOCITY	SLOPE-Sc	Sc
AUXILIARY	FT	FT/SEC	FT/FT	FT/FT
SPILLWAY ---	0.80	5.04	0.033	0.144

>>>> NHCP378 RUN - MINIMUM DEPTH, DESIGN FLOW TO TOP OF DAM, 1.00 FT REQUIRED
FOR THIS PASS. NEW TOP OF DAM ELEVATION = 493.48.

ROUTED	BTM WIDTH	MAX ELEV	VOL-MAX	AREA-MAX	AUX.HP	VOL-AUX.
RESULTS	FT	FT	ACFT	AC	FT	ACFT
MINIMUM AUX.	196.0	493.48	222.7	19.8	2.90	52.5

PEAK - CFS	Q-PS	Q-AUX.	Q-TOT.
DISCHARGES =	31.3	1825.7	1857.0

	CRITICAL	CRITICAL	CRITICAL	25% OF Q
	DEPTH	VELOCITY	SLOPE-Sc	Sc
AUXILIARY	FT	FT/SEC	FT/FT	FT/FT
SPILLWAY ---	1.38	6.57	0.018	0.056

INFLOW HYD 1 SDH-PEAK = 620.51 CFS AT 25.53 HRS, LOCATION POINT

INFLOW HYD 1 FBH-PEAK = 697.72 CFS AT 25.53 HRS, LOCATION POINT
HYDOUT 1 1

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

1 Dr. Jim Nelson Dam

0 SUBWATERSHED(S) ANALYZED.

1 STRUCTURE(S) ANALYZED.

3 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 2000
DATED 05/01/2000

WATERSHED ID	RUN DATE	RUN TIME
1	01/09/2002	10:17:59

>>>	SITE	SUBWS	SUBWS DA	CURVE	TC	TOTAL DA	TYPE	STRUC	<<<
	ID	ID	(SQ MI)	NO.	(HRS)	(SQ MI)	DESIGN	CLASS	
	1	1	11.90	72.	19.42	11.90	378NR	A1	

PASS	DIA./	AUX.CREST	BTM.	MAX.	MAX.	EMB.	INTEGR.*	EXIT*	TYPE
NO.	WIDTH	ELEV	WIDTH	HP	ELEV	VOL.	DIST.	VEL.	HYD
	(IN/FT)	(FT)	(FT)	(FT)	(FT)	(CY)	(FT)	(FT/SEC)	
1	18.0	490.6	196.0	2.9	493.5	0.	0.	4.1	MIN. AUX.

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

SITES.....SUMMARY TABLE 1 COMPLETED.

	NRCS SITES 1	VERSION 2000 FILES	,05/01/2000
INPUT	= C:\Nelson2\Nelson3.D2C		
OUTPUT	= C:\Nelson2\Nelson3.OUT		DATED 01/09/2002 10:17:59
GRAPHICS FILES GENERATED			
OPTION "L"	= C:\Nelson2\Nelson3.DRG		DATED 01/09/2002 10:17:59
OPTION "P"	= C:\Nelson2\Nelson3.DHY		DATED 01/09/2002 10:17:59
OPTION "E"	= C:\Nelson2\Nelson3.DEM		DATED 01/09/2002 10:17:59

Water Permit Application No. 1765-1
James S. Nelson

Top of Dam Elev. - 495 } Cat. 3-Low Hazard Dam
2nd Spillway Elev. - 490.59 }
P. Spillway Elev. - 489.59 } Ht. = 34 ft
D/S Emb. Toe Elev. - 461

* Note: Primary Spillway is an 18 inch CPP and the Secondary Spillway Elevation is only 1 ft above pipe invert.

Normal Storage Capacity - 154.7 A. Ft
Int. Storage Capacity - 170.8
Max. Storage Capacity - 255

Int. Capacity x Eff. Ht. = $170.8 \times 29.59 = 5054 > 3000 \therefore 50 \text{ yr}$
Minimum Spillway Design

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

DA = 7613 Ac = 11.90 mi²

Slope = 53 ft/mi.

SI = 1.90

Secondary Spillway Flow

$$Q_{50} = 106 A^{.63} S^{.45} SI^{-.69}$$

$$= 106 (11.90)^{.63} (53)^{.45} (1.90)^{-.69}$$

$$= 106 (4.76) (5.97) (.6422)$$

$$= \underline{1935 \text{ cfs}}$$

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

$$= 2.6 (196)^{1.5} (4.41)^{1.5} \quad L = 196 \text{ ft.}$$

$$= \underline{4720 \text{ cfs}} \quad H = 4.41$$

This is an existing dam, constructed without P&S or Water Permit Application approval. The engineer who completed the "As Built" P&S, Roy Boschee, P.E., used the NRCS "SITE-S" flood routing program to determine spillway capacity. He routes a Q_{50} peak = 670 cfs through the 196 ft. secondary with 2.4 ft. of freeboard remaining available. This peak is determined within the SITE-S program and is considerably less than that determined by the USGS WRI 80-80 Report; however, the 196 ft. wide spillway has the capacity to handle either. The existing dam has adequate spillway capacity; however, the primary spillway is undersized and/or does not provide adequate freeboard between the two spillways. This will probably result in excess use and erosion in the secondary spillway, which will require more monitoring and maintenance than normal.

Section T4:02:08:09

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

NRCS Annual Yield

$$DA = 7613, ISO = 2, CN = 72$$

$$80\% \text{ chance} = 0.084$$

$$0.084 \times 7613/12 = \underline{53 \text{ Ac.-Ft.}}$$

$$50\% \text{ chance} = 0.26$$

$$0.26 \times 7613/12 = \underline{165 \text{ Ac.-Ft.}}$$

$$10\% \text{ chance} = 1.4$$

$$1.4 \times 7613/12 = \underline{889 \text{ Ac.-Ft.}}$$

Elevation	Surface Acres	Interm Storage	Cumulative Storage	
463	0.0164			
		0.2097	0.2097	
465	0.1933			
		0.9372	1.1469	
467	0.7439			
		2.4616	3.6085	
469	1.7177			
		4.265	7.8735	
471	2.5473			
		5.6928	13.5663	
473	3.1455			
		7.7547	21.321	
475	4.6092			
		10.0994	31.4204	
477	5.4902			
		12.381	43.8014	
479	6.8908			
		15.0648	58.8662	
481	8.174			
		17.7502	76.6164	
483	9.5762			
		20.4913	97.1077	
485	10.9151			
		23.1424	120.2501	
487	12.2273			
		25.9801	146.2302	
489	13.7528			Primary Spillway
		14.92545	161.1557	
490	16.0981			
		16.59705	177.7527	
491	17.096			Secondary Spillway
		36.0552	213.8079	
493	18.9592			
		41.2698	255.0777	
495	22.3106			Crest of Dam

1*****
 SITES XEQ 01/09/2002 WATER RESOURCE SITE ANALYSIS COMPUTER PROGRAM
 VER 2000 (USER MANUAL - DATED MAY 2001)
 TIME 10:17:59

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

SITES 05/01/20001 Dr. Jim Nelson Dam 11.8953125H7
 SAVMOV 0 101
 SAVMOV 101 1 1
 * DESIGN STRUCTURE
 * This Run is to determine Emergency Spillway Width
 * to meet the spillway requirements for the
 * State of SD small Dams Criteria
 STRUCTURE 1 378 - pond
 463 0.02
 465 0.19
 467 0.74
 469 1.72
 471 2.55
 473 3.15
 475 4.61
 477 5.49
 479 6.89
 481 8.17
 483 9.58
 485 10.92
 487 12.22
 489 13.75
 491 17.10
 493 18.96
 495 22.31
 ENDTABLE
 WSDATA 5A11 AC 72 7613 67360 1
 PDIRECT 0.25 4.00 4.25
 POOLDATA ELEV 489 489.59 489 495 463 HD
 PSHOOD 78 475.92 0.6 1.0 S
 PSDATA 1 18 .013 468.75
 ASDATA 41 182 280 4 .024 2
 ASINSURF 41 5.6 5.6
 ASINLET 41 0.0 0.0 130 0.0
 ENDTABLE
 ASEXSURF 41 5.6 5.6
 .9 .8
 1 2
 2 2
 .02
 ENDTABLE
 ASEXIT 41 N 300
 BTMWIDTH FEET 196
 GRAPHICS I
 GO,DESIGN HL TYPE2 24 TYPE2378 24
 SAVMOV 2 101 1 1
 ENDJOB

1SITES XEQ 01/09/2002 ----- COMMENT PAGE -----
 VER 2000 Dr. Jim Nelson Dam WSID = 1

DESIGN STRUCTURE

This Run is to determine Emergency Spillway Width
 to meet the spillway requirements for the
 State of SD small Dams Criteria

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

1SITES -----
XEQ 01/09/2002 Dr. Jim Nelson Dam WSID= 1
VER 2000 378 - pond SUBW= 1
TIME 10:17:59 SITE = 1 PASS= 1 PART= 1

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

STORM DISTRIBUTION-PSH 24 HOUR TYPE II RAINFALL DISTRIBUTION

STORM DISTRIBUTION AUX. -24 HOUR TYPE II RAINFALL DISTRIBUTION

PRECIP. - P-PS,1-DAY	P-PS,10-DAY	P-SD	P-FB	
0.25	0.00	4.00	4.25	
WSDATA - CN	DA-SM	TC/L	-/H	QRF
72.00	11.90	67360.00	1.00	0.00
SITEDATA- PERM POOL	CREST PS	FP SED	VALLEY FL	378?
489.00	489.59	489.00	463.00	YES
BASEFLOW	INITIAL EL	EXTRA VOL	SITE TYPE	
0.00	0.00	0.00	DESIGN	
PSDATA - NO. COND	COND L	DIA/W	-/H	
1.00	0.00	18.00	0.00	
PS N	KE	WEIR L	TW EL	
0.013	0.00	0.00	468.75	
2ND STG	ORF H	ORF L	START AUX.	
0.00	0.00	0.00	0.00	
PSHOOD - OUTLET	MITER	LENGTH	LENGTH	
ELEV.	ELEV.	INLET TO	MITER TO	
		MITER(FT)	OUTLET(FT)	
475.92	0.00	78.0	0.0	
ASCRESTS - AUX.1	AUX.2	AUX.3	AUX.4	AUX.5
0.00	0.00	0.00	0.00	0.00
AUX.DATA - REF.NO.	RETARD. Ci	TIE STATION	INLET LENGTH	
41	0.00	182.00	280	
AUX.DATA - INLET Ci	SIDE SLOPE	EXIT Ci	EXIT SLOPE	ACTUAL AUX?
5.600	4.00	5.600	0.024	NO
BTM WIDTH - BW1	BW2	BW3	BW4	BW5
ft 196.00	0.00	0.00	0.00	0.00

AUXILIARY SPILLWAY RATING DEVELOPED USING WSPVRT.

1SITES -----
XEQ 01/09/2002 Dr. Jim Nelson Dam WSID= 1
VER 2000 378 - pond SUBW= 1
TIME 10:17:59 SITE = 1 PASS= 1 PART= 2

***** MESSAGE - INPUT(146.23) TO INTERPOLATION ROUTINE IS BELOW
ARRAY LIMIT(154.63).

PERM POOL	489.00 FT	146.2 ACFT	13.75 AC	0.0 CFS
CREST PS	489.59 FT	154.6 ACFT	14.74 AC	0.0 CFS
SED ACCUM	489.59 FT	154.6 ACFT	14.74 AC	0.0 CFS
START ELEV	489.59 FT	154.6 ACFT	14.74 AC	0.0 CFS

>>>> MINIMUM DEPTH (1.00 FT) USED FOR NHCP378 RUN - CREST PS TO CREST AUX.

NRCS-PSH	D= 24.00 HR	P= 0.25 IN	Q= 0.00 IN	DA= 11.90 SM
	TC= 19.42 HR	CN= 72.00	VOL= 0.0 ACFT	

PEAK = 0.0 CFS, AT 410.9 HRS.

ROUTED RESULT - HYD TYPE	EMAX	VOL-MAX	AMAX	QMAX
NRCS-PSH	490.59 FT	170.2 ACFT	16.41 AC	3.3 CFS

PS STORAGE 15.6 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.

DRAWDOWN (DDT) TEST	489.59 FT	154.6 ACFT	0.00 CFS
CONTROL IS 0.000 DETENTION STORAGE			

TIME LIMIT REACHED = 10.00 DAYS; FLOW WAS 0.17 CFS, ELEV = 489.72
ROUTING CONTINUING.

RATING TABLE DEVELOPED, SITE = 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	489.59	0.00	0.00	0.00	154.63	14.74
2	489.97	0.49	0.49	0.00	160.37	15.38
3	490.35	1.94	1.94	0.00	166.35	16.01
4	490.73	4.10	4.10	0.00	172.58	16.65
5	491.11	6.22	6.22	0.00	179.04	17.21
6	491.50	7.42	7.42	0.00	185.67	17.56
FULL CONDUIT FLOW, ELEV = 491.80 FT						
7	491.80	29.71	29.71	0.00	191.04	17.84
8	492.33	30.23	30.23	0.00	200.69	18.34
9	492.87	30.74	30.74	0.00	210.60	18.84
10	493.40	31.24	31.24	0.00	220.85	19.63
11	493.93	31.73	31.73	0.00	231.56	20.52
12	494.47	32.22	32.22	0.00	242.75	21.42
13	495.00	32.70	32.70	0.00	254.41	22.31

1SITES

XEQ 01/09/2002	Dr. Jim Nelson Dam	WSID= 1
VER 2000	378 - pond	SUBW= 1
TIME 10:17:59	SITE = 1	PASS= 1 PART= 3

AUX. CREST	490.59 FT	170.2 ACFT	16.41 AC	3.3 CFS
------------	-----------	------------	----------	---------

PS STORAGE 15.6 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.

START ELEV	489.72 FT	156.6 ACFT	14.95 AC	0.2 CFS
------------	-----------	------------	----------	---------

***** WARNING - AUXILIARY CREST LOWER THAN LOW POINT IN SITE.

NRCS-SDH D= 24.00 HR P= 4.00 IN Q= 1.46 IN DA= 11.90 SM
 TC= 19.42 HR CN= 72.00 VOL= 926.3 ACFT

PEAK = 620.3 CFS, AT 25.5 HRS.

NRCS-FBH D= 24.00 HR P= 4.25 IN Q= 1.64 IN DA= 11.90 SM
 TC= 19.42 HR CN= 72.00 VOL= 1039.1 ACFT

PEAK = 697.2 CFS, AT 25.5 HRS.

***** WARNING - MAXIMUM RATING POINT, 490.59, (AS CREST) FOR
 HOOD INLET IS BELOW FULL PIPE FLOW, 491.80.
 RATING INTERPOLATION/EXTRAPOLATIONS MAY BE IN ERROR

 RATING TABLE DEVELOPED, SITE = 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	489.59	0.00	0.00	0.00	154.63	14.74
2	489.67	0.02	0.02	0.00	155.87	14.88
3	489.76	0.09	0.09	0.00	157.11	15.02
4	489.84	0.21	0.21	0.00	158.37	15.16
5	489.92	0.38	0.38	0.00	159.64	15.30
6	490.01	0.59	0.59	0.00	160.92	15.44
7	490.09	0.85	0.85	0.00	162.21	15.58
8	490.17	1.15	1.15	0.00	163.52	15.72
9	490.26	1.50	1.50	0.00	164.83	15.85
10	490.34	1.88	1.88	0.00	166.16	15.99
11	490.42	2.30	2.30	0.00	167.50	16.13
12	490.51	2.75	2.75	0.00	168.85	16.27
13	490.59	3.23	3.23	0.00	170.21	16.41
14	490.81	12.84	4.58	8.25	173.87	16.78
15	491.03	22.52	5.88	16.64	177.61	17.13
16	491.43	38.78	7.21	31.58	184.48	17.50
FULL CONDUIT FLOW, ELEV = 491.80 FT						
17	491.91	189.93	29.82	160.11	193.08	17.95
18	492.79	985.52	30.67	954.85	209.27	18.77
19	493.90	2387.31	31.70	2355.61	230.83	20.46
20	495.00	4163.84	32.70	4131.14	254.41	22.31

SUMMARY OF AUXILIARY SPILLWAY SURFACE CONDITIONS USED IN COMPUTATIONS BY REACH

REACH	FROM STA (ft)	TO STA (ft)	SLOPE (%)	RETARDANCE CURVE INDEX	VEGETAL COVER FACTOR	MAINT. CODE	ROOTING DEPTH (ft)	REACH LOCATION *
1	-98.	182.	0.0	5.6	**	**	**	CREST
2	182.	482.	2.4	5.6	0.90	1	2.0	EXIT !

* Upper case indicates a reach of constructed spillway channel.

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

! Reach 2 used in computing exit channel velocities.

ROUTED RESULTS	BTM WIDTH FT	MAX ELEV FT	VOL-MAX ACFT	AREA-MAX AC	AUX.-HP FT	VOL-AUX. ACFT
NRCS-SDH	196.0	492.40	201.8	18.4	1.81	31.6

PEAK - CFS Q-PS Q-AUX. Q-TOT.

DISCHARGE = 30.3 590.2 620.5

	CRITICAL DEPTH	CRITICAL VELOCITY	CRITICAL SLOPE-Sc	25% OF Q Sc
AUXILIARY	FT	FT/SEC	FT/FT	FT/FT
SPILLWAY ---	0.65	4.55	0.043	0.216

AUXILIARY SPILLWAY DURATION FLOW = 58.5 HOURS

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

EXIT CHANNEL FLOW SUBCRITICAL: MAX VELOCITY= 3.8 FT/SEC
EXIT SLOPE = 0.024 FT/FT
FLOW DEPTH = 0.8 FT

EFFECTIVE STRESS FOR STABILITY ANALYSIS OF AUX. EXIT CHANNEL
(Refer to Ag. Handbook 667, Chapt. 3, for allowable stresses.)
Aux. Discharge = 590. cfs; Bottom Width = 196. ft

REACH NO.	FROM STA	TO STA	SLOPE %	MANNING'S n	VELOCITY ft/s	STRESS lb/ft^2
2	182.	482.	2.40	0.051	3.81	0.011

DRAWDOWN USING FREEBOARD STORM FOLLOWS, STARTING AT ELEVATION 490.59 FT.

DRAWDOWN (DDT) TEST 489.59 FT 154.6 ACFT 0.00 CFS
CONTROL IS 0.000 DETENTION STORAGE

TIME LIMIT REACHED = 10.00 DAYS; FLOW WAS 0.12 CFS, ELEV = 489.77
ROUTING CONTINUING.

ROUTED RESULTS	BTM WIDTH FT	MAX ELEV FT	VOL-MAX ACFT	AREA-MAX AC	AUX.-HP FT	VOL-AUX. ACFT
NRCS-FBH	196.0	492.48	203.4	18.5	1.89	33.2

PEAK - CFS Q-PS Q-AUX. Q-TOT.
DISCHARGE = 30.4 667.4 697.7

	CRITICAL DEPTH	CRITICAL VELOCITY	CRITICAL SLOPE-Sc	25% OF Q Sc
AUXILIARY	FT	FT/SEC	FT/FT	FT/FT
SPILLWAY ---	0.71	4.74	0.038	0.183

AUXILIARY SPILLWAY DURATION FLOW = 59.3 HOURS
ATTACK, OE/B = 4.8 ACFT/FT

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

EXIT CHANNEL FLOW SUBCRITICAL: MAX VELOCITY= 4.1 FT/SEC
EXIT SLOPE = 0.024 FT/FT
FLOW DEPTH = 0.8 FT

>>>> NHCP378 RUN - MINIMUM FLOW IN AUX. SPILLWAY FROM TR60
USING FORMULA WITHOUT 200 CFS MINIMUM LIMIT (803. CFS).

ROUTED RESULTS	BTM WIDTH FT	MAX ELEV FT	VOL-MAX ACFT	AREA-MAX AC	AUX.-HP FT	VOL-AUX. ACFT
MIN. AUX.	196.0	492.63	206.2	18.6	2.04	36.0

PEAK - CFS Q-PS Q-AUX. Q-TOT.
DISCHARGE = 30.5 803.4 833.9

	CRITICAL	CRITICAL	CRITICAL	25% OF Q
	DEPTH	VELOCITY	SLOPE-Sc	Sc
AUXILIARY	FT	FT/SEC	FT/FT	FT/FT
SPILLWAY ---	0.80	5.04	0.033	0.144

>>>> NHCP378 RUN - MINIMUM DEPTH, DESIGN FLOW TO TOP OF DAM; 1.00 FT REQUIRED
FOR THIS PASS. NEW TOP OF DAM ELEVATION = 493.48.

ROUTED	BTM WIDTH	MAX ELEV	VOL-MAX	AREA-MAX	AUX.HP	VOL-AUX.
RESULTS	FT	FT	ACFT	AC	FT	ACFT
MINIMUM AUX.	196.0	493.48	222.7	19.8	2.90	52.5

PEAK - CFS	Q-PS	Q-AUX.	Q-TOT.
DISCHARGES =	31.3	1825.7	1857.0

	CRITICAL	CRITICAL	CRITICAL	25% OF Q
	DEPTH	VELOCITY	SLOPE-Sc	Sc
AUXILIARY	FT	FT/SEC	FT/FT	FT/FT
SPILLWAY ---	1.38	6.57	0.018	0.056

INFLOW HYD 1 SDH-PEAK = 620.51 CFS AT 25.53 HRS, LOCATION POINT

INFLOW HYD 1 FBH-PEAK = 697.72 CFS AT 25.53 HRS, LOCATION POINT
HYDOUT 1 1

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

1 Dr. Jim Nelson Dam

0 SUBWATERSHED(S) ANALYZED.

1 STRUCTURE(S) ANALYZED.

3 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 2000
DATED 05/01/2000

WATERSHED ID	RUN DATE	RUN TIME
1	01/09/2002	10:17:59

>>>	SITE	SUBWS	SUBWS DA	CURVE	TC	TOTAL DA	TYPE	STRUC	<<<
	ID	ID	(SQ MI)	NO.	(HRS)	(SQ MI)	DESIGN	CLASS	
	1	1	11.90	72.	19.42	11.90	378NR	A1	

PASS	DIA./	AUX.CREST	BTM.	MAX.	MAX.	EMB.	INTEGR.*	EXIT*	TYPE
NO.	WIDTH	ELEV	WIDTH	HP	ELEV	VOL.	DIST.	VEL.	HYD
	(IN/FT)	(FT)	(FT)	(FT)	(FT)	(CY)	(FT)	(FT/SEC)	
1	18.0	490.6	196.0	2.9	493.5	0.	0.	4.1	MIN. AUX.

Nelson3

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

SITES.....SUMMARY TABLE 1 COMPLETED.

	NRCS SITES	VERSION 2000	,05/01/2000
	1	FILES	
INPUT	= C:\Nelson2\Nelson3.D2C		
OUTPUT	= C:\Nelson2\Nelson3.OUT		DATED 01/09/2002 10:17:59
GRAPHICS FILES GENERATED			
OPTION "L"	= C:\Nelson2\Nelson3.DRG		DATED 01/09/2002 10:17:59
OPTION "P"	= C:\Nelson2\Nelson3.DHY		DATED 01/09/2002 10:17:59
OPTION "E"	= C:\Nelson2\Nelson3.DEM		DATED 01/09/2002 10:17:59

25.6

①

N

74

②

N

15.8

N

12.2

N

6.4

N

14.9

③

④

⑤

⑥

I 18

(5-10)

T 1238

DR. JAMES NELSON
161.2 FEET

26

31.4

③

2253

64.9

④

N

REGISTER # 01-30446	PHYSICAL ADDRESS	 D.D.I. DREAM DESIGN INTERNATIONAL, INC. PROFESSIONAL STRUCTURAL & CIVIL ENGINEERING CONSULTANTS SUITE 8, MAIN ST., SUITE D, BOSTON CITY, 20 CLEVELAND BOSTON, MA 02128 TEL: 617-247-0000 FAX: 617-247-0045 E-MAIL: engineers@dreamdesigninc.com
REGISTRATION	PORTFOLIO OF WORK	
REGISTERED	SECTION 86.1, 86.2, 86.3, 86.4, 86.5, 86.6, 86.7, 86.8, 86.9, 86.10, 86.11, 86.12, 86.13, 86.14, 86.15, 86.16, 86.17, 86.18, 86.19, 86.20, 86.21, 86.22, 86.23, 86.24, 86.25, 86.26, 86.27, 86.28, 86.29, 86.30, 86.31, 86.32, 86.33, 86.34, 86.35, 86.36, 86.37, 86.38, 86.39, 86.40, 86.41, 86.42, 86.43, 86.44, 86.45, 86.46, 86.47, 86.48, 86.49, 86.50, 86.51, 86.52, 86.53, 86.54, 86.55, 86.56, 86.57, 86.58, 86.59, 86.60, 86.61, 86.62, 86.63, 86.64, 86.65, 86.66, 86.67, 86.68, 86.69, 86.70, 86.71, 86.72, 86.73, 86.74, 86.75, 86.76, 86.77, 86.78, 86.79, 86.80, 86.81, 86.82, 86.83, 86.84, 86.85, 86.86, 86.87, 86.88, 86.89, 86.90, 86.91, 86.92, 86.93, 86.94, 86.95, 86.96, 86.97, 86.98, 86.99, 86.100	
REGISTERED	SECTION 86.1, 86.2, 86.3, 86.4, 86.5, 86.6, 86.7, 86.8, 86.9, 86.10, 86.11, 86.12, 86.13, 86.14, 86.15, 86.16, 86.17, 86.18, 86.19, 86.20, 86.21, 86.22, 86.23, 86.24, 86.25, 86.26, 86.27, 86.28, 86.29, 86.30, 86.31, 86.32, 86.33, 86.34, 86.35, 86.36, 86.37, 86.38, 86.39, 86.40, 86.41, 86.42, 86.43, 86.44, 86.45, 86.46, 86.47, 86.48, 86.49, 86.50, 86.51, 86.52, 86.53, 86.54, 86.55, 86.56, 86.57, 86.58, 86.59, 86.60, 86.61, 86.62, 86.63, 86.64, 86.65, 86.66, 86.67, 86.68, 86.69, 86.70, 86.71, 86.72, 86.73, 86.74, 86.75, 86.76, 86.77, 86.78, 86.79, 86.80, 86.81, 86.82, 86.83, 86.84, 86.85, 86.86, 86.87, 86.88, 86.89, 86.90, 86.91, 86.92, 86.93, 86.94, 86.95, 86.96, 86.97, 86.98, 86.99, 86.100	
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File No. XXX

Water Rights Division -DENR
Conversation or File Documentation

NAME OF PERSON OR FILE: Jim Nelson

ADDRESS: XXXXXXXXXXXXXX

COUNTY: Meade Co.

DATE: November 2, 2001

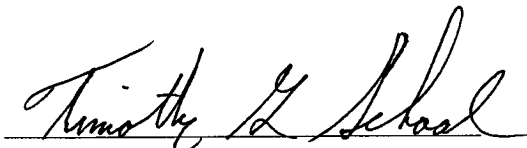
TELEPHONE: XXXXXXX

RE: Unauthorized Dam in Meade Co.

On October 31, 2001, Bill Baer from the Corps of Engineers and I investigated a complaint of an unauthorized dam being constructed by Jim Nelson in the NE 1/4 of Section 26-T5N-R10E in Meade Co. We met with Mr. Nelson, who claims he did not know he did anything wrong. I told him we normally would have P&S and a Water Permit for a dam of this size. We would need to approve "As Built" P&S and a Water Permit Application and if the permit was not approved, the Board could make him remove the dam. This seemed to get his attention and he apologized, and said he would hire an engineer for the "AS Built" P&S and fill out a Water Permit Application.

I talked to him again on November 1, 2001 and he said he contacted Roy Boeschee to do the "As Built" P&S. Also talked to Mr. Boeschee and told him what we needed in the P&S, a cross section with elevations of top of dam and spillways, slopes, etc., H & H routing and thought the current spillway would not meet specs., and reservoir capacities. Mr. Boeschee previously worked for the NRCS, so he knew what we needed.

On November 2, 2001, I talked to Mr. Wm. Scott Phillips, who holds a downstream Water Right. Water Right No. 985-1 exists about one-half mile downstream and appropriates 1.7 cfs out of Dry Creek to irrigate 119 acres located in the E 1/2 NW 1/4, W1/2 & SE1/4 NE 1/4, and the NW 1/4 SE 1/4 of Section 35-T5N-R10E. He said he had concerns with the dam, but probably not enough to force removal of the dam. He said Mr. Nelson approached him about building a dam, and Mr. Phillips did not know it was going to be this large or directly on Dry Creek. We discussed his irrigation permit, and Mr. Phillips thought his irrigation needs would be satisfied by spillway flows. I mentioned that if that did not happen, he could maybe arrange for water to be pumped over the dam.



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



Jim Nelson Dam Upstream slope



Jim Nelson Dam secondary spillway



OCT 31 2001

Jim Nelson Dam primary spillway



Jim Nelson Dam upstream slope



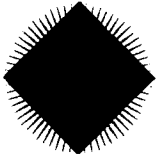
Jim Nelson Dam Upstream slope



Upstream road



Jim Nelson Dam downstream slope



DREAM DESIGN INTERNATIONAL, INC.

3202 West Main Street Suite D

Rapid City, SD 57702

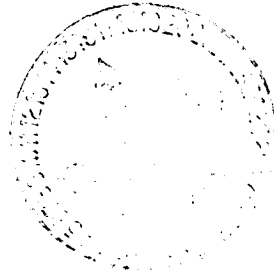
Voice: (605) 348-0538

Fax: (605) 348-0545

Email: engineers@dreamdesigninc.com

January 10, 2002

Timothy Schaal, PE
Joe Foss Bldg.
523 East Capitol Ave.
Pierre, SD 57501



RE: Dr. James Nelson Embankment Pond

Dear Mr. Schaal:

Please find enclosed the permit applications and supporting documentation for the above referenced project. This information is based on the constructed embankment pond.

As currently built the pond has an eighteen corrugated plastic pipe and a 196 foot earthen spillway. The pond has 5.41 feet freeboard above the invert of the eighteen inch pipe.

Storage calculations for the pond are 161 acre-feet at the eighteen-inch pipe, 213.8 acre-feet at the earthen spillway, and 255 acre-feet at the crest of the embankment.

If you require additional information please contact me.

Sincerely,
DREAM DESIGN INTERNATIONAL, INC.

Roy E. Boschee, PE
Drainage Engineer

Cc: Dr. James Nelson, Rapid City, SD



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

January 18, 2002

Roy E Boschee
Dream Design International, Inc.
3202 W Main, Suite D
Rapid City SD 57702

RE: James Nelson application

Dear Mr. Boschee:

Thank you for submitting the *Application for a Permit to Appropriate Water* for James Nelson.

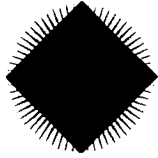
As indicated in your phone conversation with Tim Schaal, we are returning the aerial photo along with the plans and specifications. Both must to be signed and stamped by whoever prepared them. You will also need to include a cross section of the dam with top of the dam and spillway elevations. The storage capacity on the application and the map need to reflect the storage at the true elevations of 489.59 for the primary spillway and 490.59 for the secondary spillway. The application will then be corrected to indicate the accurate storage capacity.

If you have any questions, please contact me.

Sincerely,

Karen Schlaak
Water Rights Program
605 773-3352

c: Dr. James Nelson



DREAM DESIGN INTERNATIONAL, INC.

3202 West Main Street Suite D

Rapid City, SD 57702

Voice: (605) 348-0538

Fax: (605) 348-0545

Email: engineers@dreamdesigninc.com

February 5, 2002

Timothy Schaal, PE
Joe Foss Bldg.
523 East Capitol Ave.
Pierre, SD 57501

RE: Dr. James Nelson Embankment Pond

Dear Mr. Schaal:

Please find enclosed the revised stage storage table, embankment cross-sections, profile along centerline of the embankment and secondary spillway and the signed aerial photo.

If you require additional information please contact me.

Sincerely,
DREAM DESIGN INTERNATIONAL, INC.

Roy E. Boschee, PE
Drainage Engineer

Cc: Dr. James Nelson, Rapid City, SD

RECEIVED
FEB - 8 2002
WATER RIGHTS
PROGRAM



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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. 1765-1, James S. Nelson**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 1765-1, James S. Nelson, 4521 S. Glenview Place, Rapid City SD 57702.

The Chief Engineer is recommending DEFERRAL of Application No. 1765-1 until May 1st to allow the applicant to reach an agreement with the holder of Water Right No. 985-1, Wm. Scott Phillips. The dam as constructed, may unlawfully impair this existing downstream water right. The Chief Engineer may revise the recommendation to approval if an agreement is reached or to denial if agreement can not be reached prior to the May 1st, 2002 hearing before the Water Management Board.

See report on application for additional information.

Garland Erbele, Chief Engineer
March 28, 2002

REPORT ON
WATER PERMIT APPLICATION NO. 1765-1

James S. Nelson
February 28, 2002

Water Permit Application No. 1765-1 has been filed by James S. Nelson to impound 154.7 acre-feet of water from runoff in an existing dam. The dam is located between the NW 1/4 NE 1/4 and NE 1/4 NW 1/4 of Section 26-T5N-R10E, in Meade County. The application also requests impoundment of sufficient water to maintain the reservoir at the outlet elevation. The water will be used for fish and wildlife propagation, recreational use and livestock watering.

Discussion:

On November 2, 2001, an inspection of the project was completed and Mr. Nelson was told that he had an unauthorized dam and would need to file a Water Permit Application and submit "As Built" plans for review and approval. He was also told that the existing 30 foot wide secondary spillway would not meet the Safety of Dams Rules, Chapter 74:02:08, spillway requirements and the spillway would need to be increased.

The Nelson Dam is classified as a small size Category 3, Low Hazard dam. The dam was recently constructed without approval of plans and specifications prepared by a registered Professional Engineer, as specified in our Safety of Dams Rules, Chapter 74:02:08. However, "As Built" plans have been prepared and will be approved.

The dam is 34 feet high with a normal storage capacity of 154.7 acre-feet with a reservoir level at the primary spillway elevation, and a maximum storage capacity of 255 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 50-year frequency event.

The Nelson Dam has a drainage area of 7613 acres (11.90 square miles). The earthcut secondary spillway was widened to 196 feet and has 4.41 feet of available freeboard. The new spillway has a capacity of approximately 4700 cfs. The engineer who completed the "As Built" plans used the NRCS "SITES" flood routing program to determine the spillway capacity of the dam. He routed a 50-year frequency event peak of 670 cfs through the 196 foot wide secondary spillway with 2.4 feet of freeboard remaining available. This peak flow is determined internally within the SITES program and is considerably less than that determined by the USGS WRI 80-80 report; however, the 196 ft wide spillway has the capacity to handle either.

The existing dam has an adequate spillway capacity; however, the 18 inch corrugated plastic pipe primary spillway is undersized and/or does not provide adequate freeboard between the two spillways. The freeboard difference between the two spillways is only one foot, which is less than the diameter of the 18 inch pipe. This will probably result in excess use and erosion in the secondary spillway, which will require more monitoring and maintenance than normal.

The annual yield for this drainage area with a 10 percent chance of occurrence, or 1 out of 10 years, is expected to be 888 acre-feet. The annual yield with a 50 percent chance of occurrence, or 1 out of 2 years, is expected to be 165 acre-feet and the annual yield with a 80 percent chance of occurrence, or 8 out of 10 years, is expected to be 53 acre-feet.

The Nelson Dam is located in the N 1/2 of Section 26-T5N-R10E on Dry Creek, about one mile upstream of its confluence with the Belle Fourche River. Water Right No. 985-1, WM Scott Phillips, exists about one-half mile downstream of the dam and appropriates 1.7 cfs out of Dry Creek and/or the Belle Fourche River to flood irrigate 119 acres located in Section 35-T5N-R10E. Water Right No. 985-1 has a May 8, 1973 priority date.

The Nelson Dam has a surface area of approximately 15 acres and a storage capacity of 154.7 acre-feet at the primary spillway elevation. Assuming an annual evaporation of 3 feet, the dam would have a surface area of 12 acres and storage capacity of 115 acre-feet. That would equal a loss due to evaporation of approximately 40 acre-feet. The annual yield with an 80 percent chance of occurrence produces approximately 53 acre-feet and should offset the losses due to evaporation. Except for the initial filling of the Nelson Dam reservoir, the dam should have sufficient spillway discharges to provide flood irrigation for Water Right No. 985-1. If not, the dam does not have a low level outlet structure and arrangements to pump or siphon water out of the reservoir may be necessary to satisfy Water Permit No. 985-1. Approval of Water Permit Application No. 1765-3, with a low flow bypass agreement, should not have an adverse effect on Water Permit No. 985-1.

Conclusions:

1. The existing dam was constructed without approval of plans and specifications prepared by a registered Professional Engineer; however, "As Built" plans were submitted by a registered Professional Engineer and will be approved. The dam has a spillway capacity that exceeds standards; however, the secondary spillway may require more monitoring and maintenance than normal.
2. Water Permit Application No. 1765-1 should be approved since unappropriated water is available, except for the initial filling of the reservoir, and approval should not have an adverse effect on existing Water Permits/Rights.
3. If approved, the low flow bypass requirement for downstream domestic use and prior Water Rights should be a qualification on Water Permit Application No. 1765-1. An agreement to pump or siphon water may be necessary, since the dam does not have a low level outlet.



Timothy G. Schaal, P.E.

Natural Resources Engineer Specialist

Approved by:



Gale N. Selken, P.E.

Natural Resources Engineer Director



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

**REVISED RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 1765-1, James S. Nelson**

Pursuant to SDCL 46-2A-2, the following is the revised recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 1765-1, James S. Nelson, 4521 S. Glenview Place, Rapid City SD 57702.

The Chief Engineer is recommending APPROVAL of Application No. 1765-1 because agreement has been reached by which the downstream water right holder (No. 985-1) agrees not to oppose the granting of Water Permit Application No. 1765-1 and consents the perpetual right to fill and maintain the dam pursuant to the agreement entered into by parties dated April 22, 2002. Therefore: 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. 1765-1 authorizes a dam with a storage capacity of 154.7 acre feet of water and sufficient water annually to maintain the water level to outlet elevation of the primary spillway.
2. Water Permit No. 1765-1 authorizes the dam to be maintained at the following elevations based on Control Point 1 (local datum elevation 500) established by Roy Bosch, PE:

Top of Dam Elevation	495.00
Primary Spillway Elevation	489.59 (invert of 18" CPP)
Secondary Spillway Elevation	490.59

Control Point 1 which is rebar driven into the ground shall be permanently marked and maintained with a steel fence post identifying its location.

See report on application for additional information.

Garland Erbe, Chief Engineer
April 25, 2002



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

March 28, 2002

Meade Co. Times-Tribune
PO Box 69
Sturgis, SD 57785-0069

ATTENTION: Legal Public Notice

Enclosed is a Notice of Hearing on Application No. 1765-1 to Appropriate Water to be published twice. Please publish the first notice on April 3, 2002 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 James S. Nelson, 4521 S. Glenview Place, Rapid City, SD (Ph # 605-348-5543).

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. 1765-1

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

Date _____

We are in receipt of your letter of March 28, 2002 enclosing Notice of Hearing to Appropriate Water by Application No. 1765-1 which was first published in our issue of _____. ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.

Name

Newspaper



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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.**

March 28, 2002

James S. Nelson
4521 S Glenview Place
Rapid City, SD 57702

Dear Mr. Nelson:

Water Permit Application No. 1765-1 for fish and wildlife propagation, recreation use has been examined and is ready for public notice. A notice of hearing has been sent to the Publisher of the Meade Co Times-Tribune printed at Sturgis, SD (Ph # 605 347-2503). You will need to contact the newspaper and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and a report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper to authorize publication of your Notice of Hearing and to arrange for payment. Early contact with the paper can eliminate delays. Upon receiving authorization, the publisher has been instructed to publish your notice once each week for two consecutive weeks with the last publication to occur twenty days before the board meeting. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,

Eric Gronlund
Natural Resources Engineer
(605) 773-3352

enclosures

c: Roy E. Boschee, PE, Dream Design International, Inc.

NOTE: If you plan to contest any part of the Chief Engineer's recommendation, you must file a petition pursuant to the procedures outlined in the attached notice of hearing. The Water Management Board will then consider your concerns during a hearing on the application.

Instruction to Newspaper - Publish first Notice on April 3, 2002 with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 1765-1 to Appropriate Water

Notice is given that James S Nelson, 4521 S Glenview Plc, Rapid City SD 57702 has filed an application for a water permit to impound 154.7 acre-feet of water from runoff by constructing a dam located between the NW ¼ NE ¼ and the NE ¼ NW ¼ Section 26 with water impounded in the NW ¼ NE ¼, NE ¼ NW ¼ Section 26; all in T5N-R10E. This application requests impoundment of sufficient water to maintain water to the outlet elevation. The water is for fish and wildlife propagation, recreational use and livestock water purposes.

Pursuant to SDCL 46-2A-2, the Chief Engineer is recommending DEFERRAL of Application No. 1765-1 until May 1st to allow the applicant to reach an agreement with the holder of Water Right No. 985-1, Wm. Scott Phillips. The dam as constructed, may unlawfully impair this existing downstream water right. The Chief Engineer may revise the recommendation to approval if an agreement is reached or denial if agreement can not be reached prior to the May 1st, 2002 hearing before the Water Management Board. There will not be future public notice if the Chief Engineer revises the recommendation prior to the board hearing.

Any person interested in opposing or supporting this application must file a written petition with BOTH the applicant and Chief Engineer. The applicant must also file a petition if opposed to 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 April 22, 2002. 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.

The Water Management Board will consider this application at 10:30 A.M. May 1, 2002 in the Matthew Training Center, Foss Building, 523 E. Capitol Ave., Pierre, SD. The Chief Engineer's recommendation is not final or binding upon the Board. The Board is authorized to 1) approve, 2) approve with qualifications, 3) defer, or 4) deny this application based on the facts presented at the public hearing. The May 1, 2002 hearing date will be automatically delayed for at least 20 days upon written request to the Chief Engineer from the applicant or any interested person opposing the application. The request for an automatic delay must be filed by April 22, 2002.

Any hearing will be an adversary proceeding. Any person filing a petition and/or the applicant have the right to be represented by a lawyer and may present evidence or cross-examine witnesses according to SDCL 1-26. These and other due process rights will be forfeited if not exercised. Decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law. Contact Eric Gronlund by April 22, 2002, at the above Water Rights Program address to request copies of information pertaining to this application, to assure access to the hearing by the handicapped or to obtain an interpreter for the hearing impaired.

This application is made pursuant to SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-16; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17; 46-2A-1 thru 46-2A-10, 46-2A-12, 46-2A-14, 46-2A-15, 46-2A-20, 46-2A-21; 46-5-1 thru 46-5-11, 46-5-13 thru 46-5-15, 46-5-24, 46-5-25, 46-5-30.2, 46-5-30.4, 46-5-31; 46-6-3, 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14, 46-6-26; and Board Rules ARSD 74:02:01:01 thru 74:02:01:15. Steven M. Pirner, Secretary, Department of Environment and Natural Resources.

AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA
COUNTY MEADE

Sharon Allison, Being duly sworn, says: That the Meade County Times and Black Hills Press are and, during all times hereinafter mentioned, are legal newspapers as defined in SDDCL 17-2-2, as amended, published in Sturgis, Meade County, South Dakota, by Country Media, Inc.; that affiant is and, during all of said times, was employed as an accounting clerk by the publisher of such newspaper and has personal knowledge of the facts stated in the affidavit; that the notice, order or advertisement, a copy of which is attached, was published in said newspaper for the issues (s) bearing the following dates:

April 3 2002

April 10 2002

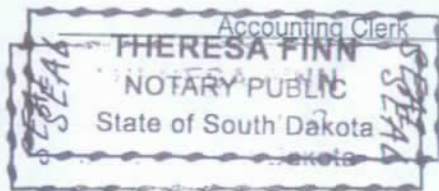
_____ 200 _____

_____ 200 _____

_____ 200 _____

That the full amount of the fee charged for publishing sum of \$ 64.53 insures solely to of said newspaper; that no agreement or understanding the fees has been made with any person, and that agreed to be paid to any other person.

Sharon Allison



Subscribed and sworn before me this

19th day of April 2002

Theresa Finn
Notary Public, South Dakota

My commission expires 11/19/07

Any hearing will be an adversary proceeding. Any person filing a petition and/or the applicant have the right to be represented by a lawyer and may present evidence or cross-examine witnesses according to SDCL 1-26. These and other due process rights will be forfeited if not exercised. Decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law. Contact Eric Gronlund by April 22, 2002, at the above Water Rights Program address to request copies of information pertaining to this application, to assure access to the hearing by the handicapped or to obtain an interpreter for the hearing impaired.

This application is made pursuant to SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-16; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17; 46-2A-1 thru 46-2A-10, 46-2A-12, 46-2A-14, 46-2A-15, 46-2A-20, 46-2A-21; 46-5-1 thru 46-5-11, 46-5-13 thru 46-5-15, 46-5-24, 46-5-25, 46-5-30.2, 46-5-30.4, 46-5-31; 46-6-3, 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14, 46-6-26; and Board Rules ARSD 74:02:01:01 thru 74:02:01:15. Steven M. Pirner, Secretary, Department of Environment and Natural Resources.

Publ April 3 and 10, 2002
Meade County Times-Tribune

Water application

NOTICE OF APPLICATION NO. 1765-1 to Appropriate Water

Notice is given that James S Nelson, 4521 S Glenview Plc, Rapid City SD 57702 has filed an application for a water permit to impound 154.7 acre-feet of water from runoff by constructing a dam located between the NW1/4NE1/4 and the NE1/4NW1/4 Section 26 with water impounded in the NW1/4NE1/4, NE1/4NW1/4 Section 26; all in T5N-R10E. This application requests impoundment of sufficient water to maintain water to the outlet elevation. The water is for fish and wildlife propagation, recreational use and livestock water purposes.

Pursuant to SDCL 46-2A-2, the Chief Engineer is recommending DEFERRAL of Application No. 1765-1 until May 1st to allow the applicant to reach an agreement with the holder of Water Right No. 985-1, Wm. Scott Phillips. The dam as constructed, may unlawfully impair this existing downstream water right. The Chief Engineer may revise the recommendation to approval if an agreement is reached or denial if agreement can not be reached prior to the May 1st, 2002 hearing before the Water Management Board. There will not be future public notice if the Chief Engineer revises the recommendation prior to the board hearing.

Any person interested in opposing or supporting this application must file a written petition with BOTH the applicant and Chief Engineer. The applicant must also file a petition if opposed to 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 April 22, 2002. 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.

The Water Management Board will consider this application at 10:30 A.M. May 1, 2002 in the Matthew Training Center, Foss Building, 523 E. Capitol Ave., Pierre, SD. The Chief Engineer's recommendation is not final or binding upon the Board. The Board is authorized to 1) approve, 2) approve with qualifications, 3) defer, or 4) deny this application based on the facts presented at the public hearing. The May 1, 2002 hearing date will be automatically delayed for at least 20 days upon written request to the Chief Engineer from the applicant or any interested person opposing the application. The request for an automatic delay must be filed by April 22, 2002.

RECEIVED

APR 23 2002

WATER RIGHTS
PROGRAM



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

March 28, 2002

James S. Nelson
4521 S. Glenview Place
Rapid City, SD 57702

Dear Mr. Nelson:

We have reviewed the "As Built" plans for your dam located in the N 1/2 of Section 36-T5N-R10E, in Meade County. The "As Built" plans as submitted are 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 does not release you, as owner of the dam, from the responsibility for operating and maintaining the dam in good repair to ensure the safety of the dam.

The Nelson Dam will be classified as a small size Category 3, Low Hazard dam with a dam height of 34 feet and a normal storage capacity of 154.7 acre-feet and a maximum storage capacity of 255 acre-feet. The existing dam has adequate spillway capacity; however, the 18 inch corrugated plastic pipe primary spillway is undersized and/or does not provide adequate freeboard between the two spillways. The freeboard difference between the two spillways is only one foot, which is less than the diameter of the 18 inch pipe. This will probably result in excess use and erosion in the secondary spillway, which will require more monitoring and maintenance than normal.

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

Sincerely,

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

c: Roy Boschee, P.E., Dream Design International, Inc.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

March 28, 2002

Wm. Scott Phillips
HC 81 Box 17
New Underwood SD 57761

Dear Mr. Phillips:

Enclosed is a copy of the report, recommendation and notice of hearing on Water Right Permit Application No. 1765-1 filed by James Nelson. The notice will be published in the Meade Cty Times-Tribune on April 3 and 10, 2002 and schedules a May 1st hearing before the Water Management Board in Pierre. If you want to participate in the hearing, a petition to intervene must be submitted by April 22, 2002 as set forth in the notice.

This information is being sent to you because of your status as a downstream water right holder.

If you have any questions, please contact Tim Schaal or myself at (605) 773-3352.

Sincerely,


Eric Gronlund
Water Rights Program
(605) 773-3352

enclosure



APR 16 2002



APR 16 2002





APR 16 2002



APR 16 2002



APR 16 2002







GUNDERSON, PALMER, GOODSSELL & NELSON, LLP

WYNN A. GUNDERSON
J. CRISMAN PALMER
G. VERNE GOODSSELL
JAMES S. NELSON
DANIEL E. ASHMORE
DONALD P. KNUDSEN
PATRICK G. GOETZINGER
TALBOT J. WIECZOREK

ATTORNEYS AT LAW
AMERICAN MEMORIAL LIFE BUILDING
440 MT. RUSHMORE ROAD
POST OFFICE BOX 8045
RAPID CITY, SOUTH DAKOTA 57709-8045

TELEPHONE (605) 342-1078 • FAX (605) 342-9503

ATTORNEYS LICENSED TO PRACTICE IN
SOUTH DAKOTA, NORTH DAKOTA, NEBRASKA
MONTANA, WYOMING & MINNESOTA

PAUL S. SWEDLUND
MARK J. CONNOT
JENNIFER K. TRUCANO
MARTY J. JACKLEY
DAVID E. LUST
THOMAS E. SIMMONS
TERRI LEE WILLIAMS
PAMELA S. SNYDER

Writer's e-mail address:
mjackley@gpgnlaw.com

April 23, 2002

RECEIVED

APR 24 2002

**WATER RIGHTS
PROGRAM**

Eric Gronlund
Department of Environment and Natural Resources
Joe Foss Bldg.
523 East Capitol
Pierre, SD 57501

RE: Water Permit Application No. 1765-1 (Nelson)
GPG&N File No. 02-0264

Dear Eric:

Consistent with our previous conversations, you will find enclosed a copy of the Water Permit Agreement/Easement between Phillips and Nelson. If you or DENR's legal department have any questions or concerns, please do not hesitate to contact me. In addition, I would like to confirm that Mr. Nelson and myself will be available telephonically for the May 1, 2002, Water Board meeting from 9:00 to 10:30 a.m. MST.

As always, I enjoy working with you on these matters.

Sincerely,



Marty J. Jackley

MJJ:bjh
Enclosure
C: Clients (w/o enclosure)

WATER PERMIT AGREEMENT/EASEMENT

This Agreement made this 22 day of April, 2002, by and between William Scott Phillips and Paula Marie Phillips, husband and wife (Phillips), and James S. Nelson and Delana D. Nelson, husband and wife (Nelson).

WHEREAS, Phillips are the owners of the following described real property located in Meade County, South Dakota:

119 acres located in N $\frac{1}{2}$ N $\frac{1}{2}$ of Section 35, and the SE $\frac{1}{4}$ SW $\frac{1}{4}$ and the SE $\frac{1}{4}$ of Section 26, Township 5 North, Range 10 East of the Black Hills Meridian, Meade County, South Dakota, (hereinafter referred to as the Phillips' property), and

WHEREAS, Nelson are the owners of the following described real property located in Meade County, South Dakota:

Township 5 North, Range 10 East of the Black Hills Meridian, Meade County, South Dakota:

Section 23: SE $\frac{1}{4}$
Section 25: S $\frac{1}{2}$ N $\frac{1}{2}$; S $\frac{1}{2}$
Section 26: N $\frac{1}{2}$ N $\frac{1}{2}$ less right-of-way
Section 27: NE $\frac{1}{4}$; N $\frac{1}{2}$ SE $\frac{1}{4}$; SE $\frac{1}{4}$ SE $\frac{1}{4}$
Section 34: Lot 1; NE $\frac{1}{4}$ NE $\frac{1}{4}$
Section 35: Lots 6 and 7
Section 36: N $\frac{1}{2}$ SW $\frac{1}{4}$; Lots 4 and 5
(hereinafter referred to as the Nelson property), and

WHEREAS, Nelson has built and maintained a dam with an approximate normal storage capacity of 154.7 acre-feet and an approximate maximum storage capacity of 255 acre-feet and a drainage area of approximately 7,613 acres (11.90 square miles) with water impounded in the:

NW $\frac{1}{4}$ NE $\frac{1}{4}$ and NE $\frac{1}{4}$ NW $\frac{1}{4}$ in Section 26, Township 5 North, Range 10 East of the Black Hills Meridian, Meade County, South Dakota, and

WHEREAS, Nelson have made Water Permit Application No. 1765-1 to the State of South Dakota Department of Environment and Natural Resources to appropriate water to fill and maintain the dam, and

WHEREAS, Phillips is the owner of South Dakota Water Right No. 985-1 which allows them to appropriate approximately 1.7 cubic feet per second of water out of Belle Fourche River and/or Dry Creek (the watershed within which the Nelson dam was constructed), and

WHEREAS, the water right owned by Phillips has a May 8, 1973 priority date, which is superior to the water right which would be granted to Nelson pursuant to Water Permit Number 1765-1, and

WHEREAS, the parties have reached an agreement whereby Phillips agrees not to object or otherwise oppose Water Permit Application No. 1765-1 to Nelson in order to allow Nelson to appropriate water for the dam pursuant to the conditions stated herein, now therefore,

THE PARTIES AGREE AS FOLLOWS:

1. The parties agree that the value of the water to Phillips necessary to fill the dam and to compensate Phillips for the estimated annual loss of water in the dam due to evaporation is the sum of \$6,000.00. Nelson, upon the signing of this Agreement, agrees to pay Phillips the total sum of \$6,000.00 for the loss of said water to Phillips.

2. Phillips agrees not to oppose the granting of Water Permit Application No. 1765-1 by the South Dakota Department of Natural Resources and consents to the issuance of said water permit subject to the terms of this Agreement and the right and obligations of both parties hereto.

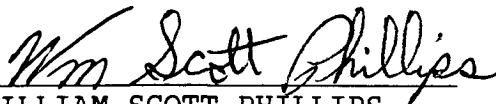
3. Phillips consents that Nelson shall have a perpetual right to fill and maintain the dam from the above described drainage area to the normal storage capacity of 154.7 acre feet annually, and a maximum storage capacity of 255 acre feet when the reservoir level is at the top of the dam elevation. Nelson agree that they shall not elevate the height of the spillways or the 18 inch corrugated plastic pipe primary spillway at anytime in the future. Nelson agrees that any water flowing into the dam, which is in excess of the present capacity of the dam, shall be allowed to flow out of the dam downstream to the Phillips property to be utilized by Phillips under the rights granted to them by South Dakota Water Right No. 985-1.

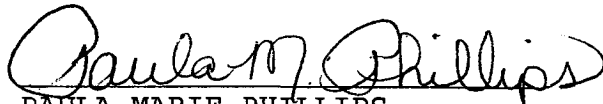
4. Nelson further agree that they shall not construct any other dam or like structure in any portion of the drainage area serving the dam so as to reduce or impede the natural flow of water into the dam, or below the dam to the Phillips property. Nelson further agree that they shall not pump or in any other way remove water from the dam other than the natural overflow, which will occur through the spillways as the dam is presently constructed. It being the intent and agreement of the parties hereto that Nelson shall have a right to maintain the water level of the dam as its present designed capacity with full right of use and enjoyment of the water in the dam without further reducing the flow of water to the Phillips property to be utilized by Phillips under the rights granted to them under South Dakota Water Right No. 985-1.

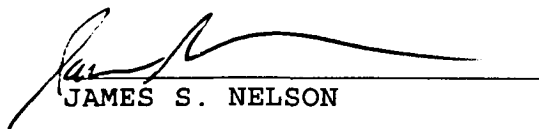
5. The parties agree that a signed copy of this Agreement shall be recorded with the Register of Deeds Office of Meade County, South Dakota, and that this Agreement shall be binding upon the parties hereto, their heirs, successors and assigns and shall be considered to be an easement running with both the Nelson property and the Phillips property. Further, this Agreement shall inure to the benefit of the parties, heirs, administrators, executors and assigns.

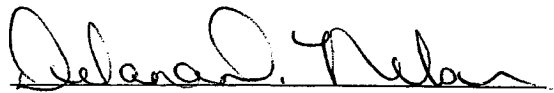
6. The parties hereto agree to file any documents or notifications necessary with the South Dakota Department of Environment and Natural Resources in order to allow the issuance of Water Permit Application No. 1976-1 to Nelson, subject to the terms and conditions of this Agreement.

Dated this 22 day of April, 2002.


WILLIAM SCOTT PHILLIPS

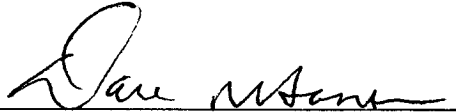

PAULA MARIE PHILLIPS


JAMES S. NELSON


DELANA D. NELSON

STATE OF SOUTH DAKOTA)
)
COUNTY OF MEADE)

On this 22 day of April, 2002, before me a Notary Public within and for said County and State, personally appeared William Scott Phillips and Paula Marie Phillips, known to me to be the persons who are described in and who executed the within and foregoing instrument and they acknowledged to me that they executed the same for the purposes therein contained.



NOTARY PUBLIC

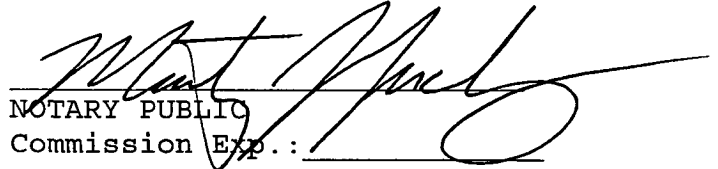
Commission Exp.: _____

(SEAL)

STATE OF SOUTH DAKOTA)
)
COUNTY OF PENNINGTON)

DALE R. HANSEN
NOTARY PUBLIC
COMMISSION EXPIRES JANUARY 27, 2004

On this _____ day of April, 2002, before me a Notary Public within and for said County and State, personally appeared James S. Nelson and Delana D. Nelson, known to me to be the persons who are described in and who executed the within and foregoing instrument and they acknowledged to me that they executed the same for the purposes therein contained.



NOTARY PUBLIC

Commission Exp.: _____

(SEAL)

PREPARED BY:
HANSEN & HUBBARD
Dale R. Hansen
P. O. Box 580
Sturgis, SD 57785
(605) 347-2551

My Commission Expires
September 8, 2003



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

April 25, 2002

NOTICE

TO: James S. Nelson
4521 S. Glenview Place
Rapid City SD 57702

Wm. Scott Phillips
HC 81 Box 17
New Underwood SD
57761

Marty J. Jackley
Gunderson, Palmer, Goodsell & Nelson
PO Box 8045
Rapid City SD 57709-8045

Dale R. Hansen
Hansen & Hubbard
PO Box 580
Sturgis SD 57785

FROM: Garland Erbele, Chief Engineer
Water Rights Program

SUBJECT: Water Management Board meeting to be held by teleconference call for
consideration of Water Permit Application No. 1765-1, James S. Nelson

The May 1, 2002, Water Management Board meeting will be held by teleconference. The Board is scheduled to consider Water Permit Application No. 1765-1 filed by James S. Nelson at this meeting. This application proposes to impound 154.7 acre feet of water in a recently constructed dam. Applicable provisions of the notice published April 3 and 10, 2002 in the Meade County Times-Tribune, will still apply during this teleconference call.

The Chief Engineer has received a copy of the "Water Permit Agreement/Easement" entered into by parties on April 22, 2002. Enclosed is a copy the Chief Engineer's revised recommendation for this water permit application.

The teleconference will commence at 9:00 AM CDT (8:00 AM Mountain time) on Wednesday, May 1, 2002, and agenda items will be taken in order as they appear on the enclosed amended agenda. If you wish to participate in the teleconference call, the following site at the Department's Rapid City Regional Office will be connected to the conference call:

Conference Room
Rapid City Regional Office of DENR
2050 West Main, Suite 1
Rapid City SD 57702-2493

Special arrangements may also be available to be connected directly into the teleconference call depending on telephone line availability. Mr. Jackley has already made a request to be included in the conference call at (605) 342-1078 ext. 149. Please contact Eric Gronlund at (605) 773-3352 if you want to inquire about a direct connection.

Enclosure

c: Diane Best, Assistant Attorney General

CERTIFICATION

I hereby certify that on April 25, 2002, I have personally deposited with the United States mail at Pierre, South Dakota, first class postage, prepaid envelopes containing a Notice dated April 25, 2002, regarding notification of consideration by teleconference call of Water Permit Application No. 1765-1 including the revised recommendation, addressed as stated below.

James S. Nelson
4521 S. Glenview Place
Rapid City SD 57702

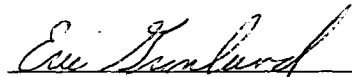
Wm. Scott Phillips
HC 81 Box 17
New Underwood SD 57761

Marty J. Jackley
Gunderson, Palmer, Goodsell & Nelson
PO Box 8045
Rapid City SD 57709-8045

Dale R. Hansen
Hansen & Hubbard
PO Box 580
Sturgis SD 57785

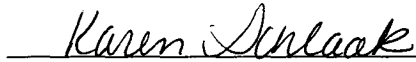
A copy of the Notice was sent Inter-office to:

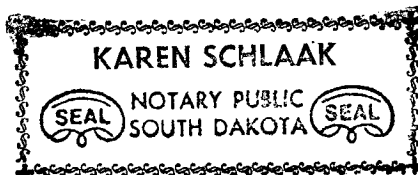
Diane Best, Assistant Attorney General


Eric Gronlund
Natural Resource Engineer
Water Rights Program

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

Sworn to, before me, this 30th day of April, 2002.


Karen Schlaak
Notary Public
My Commission expires April 1, 2007





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

MAY 31 2002

James S. Nelson
4521 S. Glenview Place
Rapid City, SD 57702

Dear Mr. Nelson:

Enclosed is Water Permit No. 1765-1 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.

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 6-10-02

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

FROM: James S. Nelson
(name)

4521 S. Glenview Pl.
(address)

Rapid City, SD 57702
(city, state, zip)

605-348-5543 home
(phone) 341-3670 work

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.

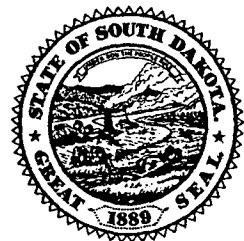
Water Permit No. 1765-1 states that the water use system is to be constructed by May 1, 2007, and water is to be put to beneficial use by May 1, 2001.
(date) (date)

The water use system was completed on May 1, 2002.
(date)

Applying the water to beneficial use was completed on partially filled May 1, 2002.
(date)

You may schedule an investigation so that the water license may be issued. Tim Schaal has
investigated the finished project.

[Signature]
(signature)



Permit No. 1765-1
Belle Fourche 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, April 16, 2002, made a thorough examination of the water use system constructed by James S. Nelson of 4521 S. Glenview Place, Rapid City, SD 57702 holder of Permit No. 1765-1, bearing the priority of January 16, 2002 authorizing the storage of 154.7 acre-feet of the waters of runoff (Dry Creek) for fish & wildlife propagation, recreation, livestock watering purposes, in Meade County.

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

A. Works used to divert the water:

34 foot high dam with an 18 inch HDPE pipe as the primary spillway & 196 foot wide earthen secondary spillway with 154.7 acre-feet storage capacity.

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

N/A

C. Works used to apply water to beneficial use:

34 foot high dam with an 18 inch HDPE pipe as the primary spillway & 196 foot wide earthen secondary spillway with 154.7 acre-feet storage capacity.

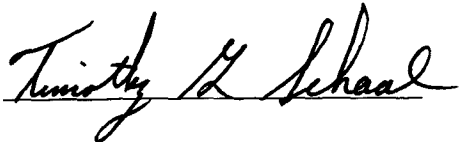
The system is in the following condition good. The point of diversion is located 1100 ft. south & 2640 ft. west of the NE corner of Sec. 26-T5N-R10E (NE 1/4 NW 1/4 & NW 1/4 NE 1/4). The works are capable of storing 154.7 acre-feet of water which is to be used for wildlife propagation, recreation, livestock watering use. Water has been put to beneficial use to the maximum extent as follows:

34 foot high dam with an 18 inch HDPE pipe as the primary spillway & 196 foot wide earthen secondary spillway with 154.7 acre-feet storage capacity.

and the license should be issued for 154.7 acre-feet of storage.

Applicable permit qualifications have been complied with: Yes X

Exceptions to compliance are: none Date Report Completed: June 28, 2002



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

REPORT ON INSPECTION OF PERMIT NO. 1765-1

Other permit(s) associated with the project: XXXX

DATE OF INSPECTION: April 16, 2002

NAME & ADDRESS OF INSPECTION CONTACT/ James S. Nelson

RELATIONSHIP TO PERMIT HOLDER, IF APPLICABLE: owner

NAME & ADDRESS OF PERMIT HOLDER: James S. Nelson, 4521 S. Glenview Place, Rapid City,
SD 57702

DIVERSION POINT LEGAL LOCATION: 1100 ft. south & 2640 ft. west of the NE corner of
Sec. 26-T5N-R10E (NE 1/4 NW 1/4 & NW 1/4 NE 1/4).

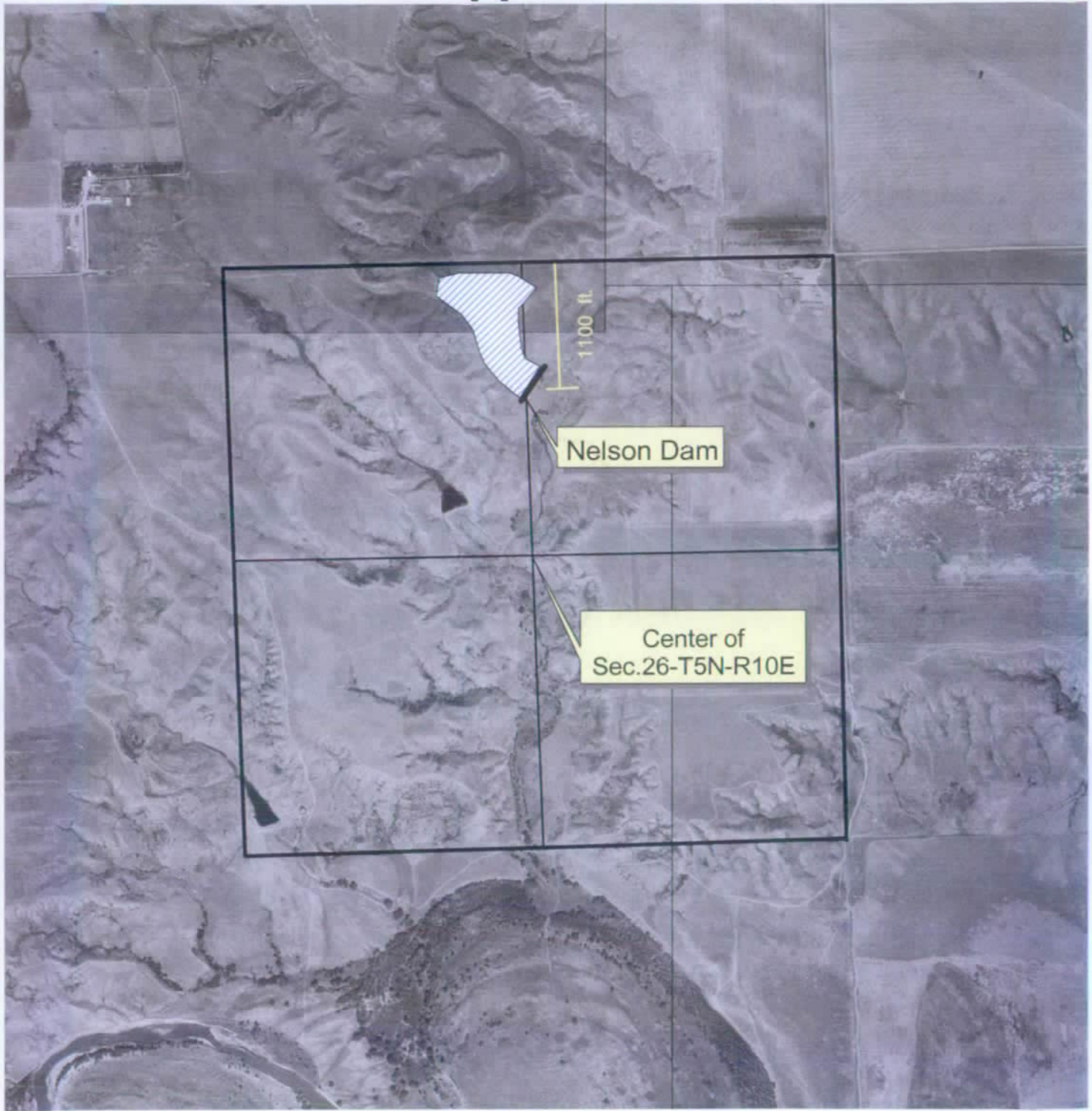
DAM INFORMATION:

- 1) Height to crest 34 feet
- 2) Height to primary spillway 28.6 feet
- 3) Height to secondary spillway 29.6 feet
- 4) Crest width 28 feet
- 5) Crest length 530 feet
- 6) Spillway length XXX feet
- 7) Spillway width 196 feet (**secondary**)
- 8) Approx. storage (Normal) 154.7 acre-feet
- 9) Approx. storage (Maximum) 255 acre-feet
- 10) Date constructed: 2001

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. 1765-1



0.5 0 0.5 1 Miles

South Dakota Department of
Environment and Natural Resources



Protecting South Dakota's Tomorrow ... Today



Timothy G. Schaal
Timothy G. Schaal, P.E. 6/28/02
Natural Resources Engineer Specialist
Water Rights Program

STATE OF SOUTH DAKOTA

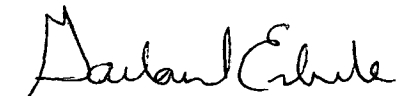
WATER LICENSE NO. 1765-1

(1) James S Nelson, 4521 S Glenview Place, Rapid City, SD 57702 made Application No. 1765-1, January 16, 2002, for a water permit to impound 154.7 acre feet of water from runoff (Dry Creek), with sufficient water annually to maintain the water level to the outlet elevation of the primary spillway. The water impounded, located in Meade County, South Dakota will be used for fish & wildlife propagation, recreational use and domestic livestock watering purposes. Permit No. 1765-1, with a priority date of January 16, 2002 was approved May 1, 2002 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before May 1, 2007 and for the application to beneficial use of said water on or before May 1, 2011.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the storage dam and is entitled to impound 154.7 acre feet of water for beneficial use with sufficient water annually to maintain the water level to the outlet elevation of the primary spillway. The location of the storage dam (spillway) is 1,100'S & 2,640'W of the NE corner of Section 26, T5N, R10E (NE ¼ NW ¼ & NW ¼ NE ¼).

(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 James S Nelson, 4521 S Glenview Place, Rapid City, SD 57702, the holder and/or owner of Water Right No. 1765-1 is issued a license to appropriate water, the right to impound 154.7 acre feet of water from runoff (Dry Creek) with sufficient water annually to maintain the water level to the outlet elevation of the primary spillway from the location specified in (2) of this license. The water is used for the purposes of fish & wildlife propagation, recreational use and domestic livestock watering. This license, bearing a priority date of January 16, 2002, is subject to any limitations or qualifications listed in Water Right No. 1765-1 and subject to South Dakota State Law.



Garland Erbele, Chief Engineer
Water Rights Program

Department of Environment and Natural Resources

JUL 31 2002

date





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

JUL 31 2002

1765-1

James S Nelson
4521 S Glenview Place
Rapid City SD 57702

Dear Mr. Nelson:

Enclosed is your Water License No. 1765-1 and a copy of the map prepared following the field investigation. The water license is the final document which completes the process of obtaining a water right.

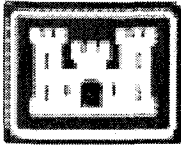
As long as you use the water beneficially, as stated in the Water License, State Water Laws provide that you have a continuing right to use the water.

Sincerely,

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

enclosures

PUBLIC NOTICE



US Army Corps
Of Engineers

Omaha District

APPLICANT: James S. Nelson
APPLICATION NO: 200130391
WATERWAY: Dry Creek

ISSUE DATE: August 12, 2002
EXPIRATION DATE: September 3, 2002

Regulatory Office, 28563 Powerhouse Rd, Room 118, Pierre, SD 57501

21 DAY NOTICE

JOINT NOTICE OF PERMIT PENDING

US ARMY CORPS OF ENGINEERS AND SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

The application of James S. Nelson, Rapid City, South Dakota, 57702, for approval of plans and issuance of a permit under authority of the Secretary of the Army is being considered by the District Engineer, US Army Engineer District, Omaha, Nebraska.

The applicant requests after-the-fact authorization to perform fill placement activities in association with construction of a dam. The dam was constructed in a linear waterway to impound water for recreation and wildlife. The project is located in Dry Creek in Section 26, Township 5 North, Range 10 East, Meade County, South Dakota.

The project consists of the construction of a dam, approximately 600 feet long, 180 feet wide and 30 feet high. Approximately 2.0 acres of Dry Creek, an intermittent stream, will be filled and flooded. The impoundment will have an approximate surface area of 15 acres and will impound 154.7 acre-feet of water.

The unauthorized fill activity in Dry Creek was referred to the U.S. Environmental Protection Agency (EPA) in accordance with established enforcement procedures. The EPA declined to pursue formal enforcement action and referred the matter back to the Corps of Engineers for final resolution.

The purpose of the project is to impound water for recreation, create a fishery impoundment and enhance aquatic habitat for wildlife.

The South Dakota Department of Environment and Natural Resources, Division of Environmental Regulatory, 523 East Capitol Avenue, Pierre, South Dakota, 57501-3181, will review the proposed project for state certification in accordance with the provisions of Section 401 of the Clean Water

Act. The certification, if issued, will express the State's opinion that the operations undertaken by the applicant will not result in a violation of applicable water quality standards. The South Dakota Department of Environment and Natural Resources hereby incorporates this public notice as its own public notice and procedures by reference (ARSD 74:51:01).

Omaha District will comply with the National Historic Preservation Act of 1966, as amended. We have checked the National Register of Historic Places and "its current supplements," and no property listed in the Register or proposed for listing is located in the permit area. This is the extent of our knowledge about historic properties in the permit area at this time. However, we will evaluate input by the State Historic Preservation Officer and the public in response to this public notice, and we may conduct or require a reconnaissance survey of the permit area or check for unknown historic properties, if warranted.

In compliance with the Endangered Species Act, a preliminary determination has been made that the described work will not affect species designated as threatened or endangered or adversely affect critical habitat. In order to complete our evaluation of this activity, comments are solicited from the U.S. Fish and Wildlife Service and other interested agencies and individuals.

The decision whether to issue a permit will be based on an evaluation of the probable impacts including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposals must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the activity will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production, and, in general the needs and welfare of the people. In addition, the evaluation of the impacts of the project on public interest will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act (40 CFR Part 230).

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

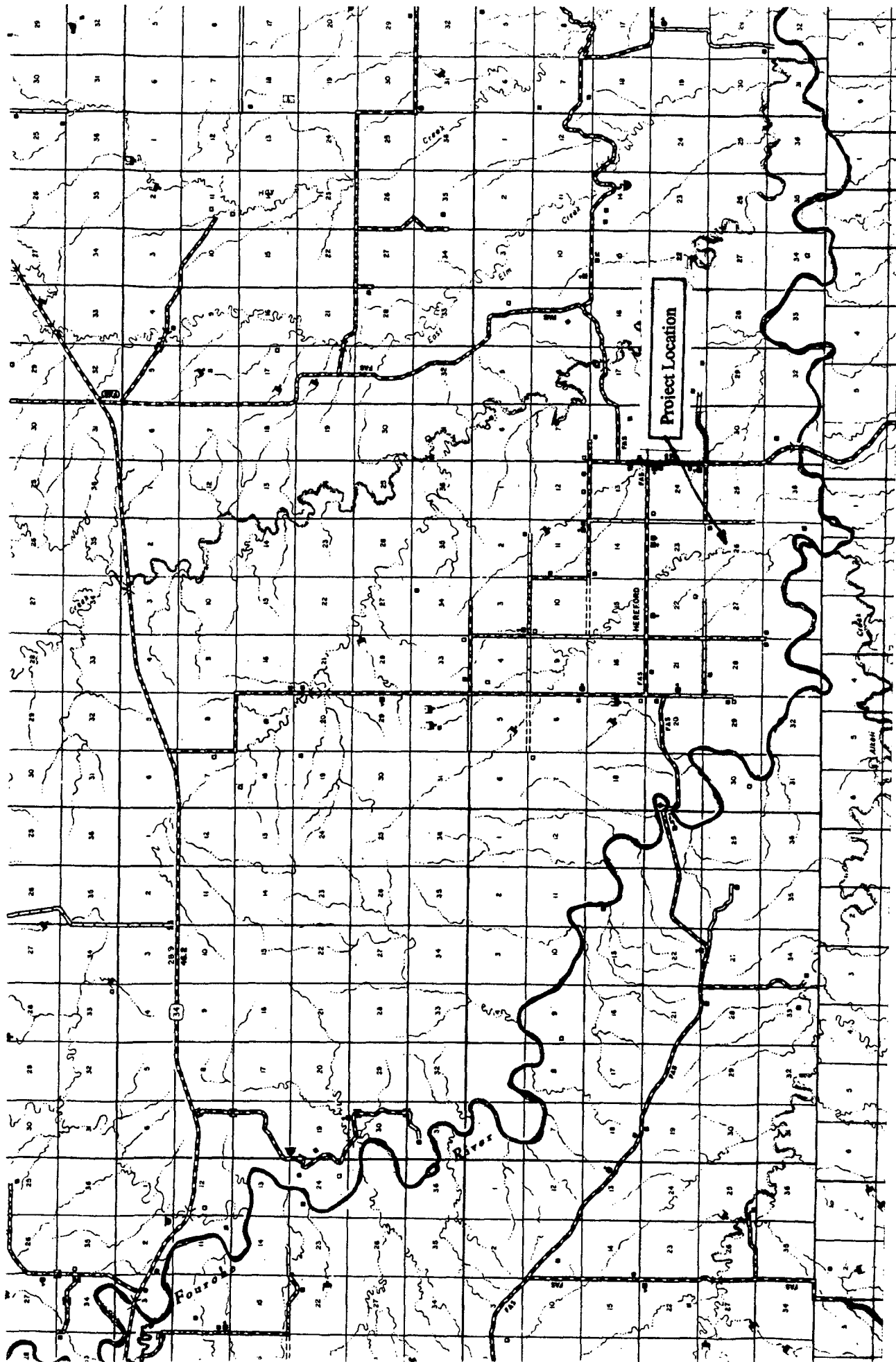
Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reason for holding a public hearing. The request must be submitted to the US Army Corps of Engineers, South Dakota Regulatory Office, 28563 Powerhouse Road, Room 118, Pierre, South Dakota 57501.

Any interested party (particularly officials of any town, city, county, state, Federal agency, Indian Tribe, or local association whose interests may be affected by the proposed work) is invited to submit to this office, written facts, arguments, or objections on or before September 3, 2002. Any agency or individual having an objection to the proposed work should specifically identify it as an objection with clear and specific reasons. Comments, both favorable and unfavorable, will be accepted, made a part of the record and will receive full consideration in subsequent actions on this permit application. All replies to the public notice should be addressed to the address listed in the previous paragraph. Bill Baer, telephone number (605) 224-8531, may be contacted for additional information.

Comments received after the close of the business day on the expiration date of this public notice will not be considered.

This project, if authorized, will be under the provisions of Section 404 of the Clean Water Act.

Drawings showing the location and extent of the work are attached to this notice.



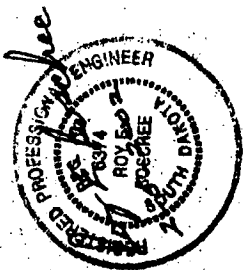
IN: Dry Creek
AT: NE 1/4, S26, T5N, R10E
COUNTY: Meade
DATE: 8/12/2002
SHEET 1 of 4

PURPOSE: Construct Impoundment Dam
APPLICATION BY: James S. Nelson
APPLICATION NO. 200130391



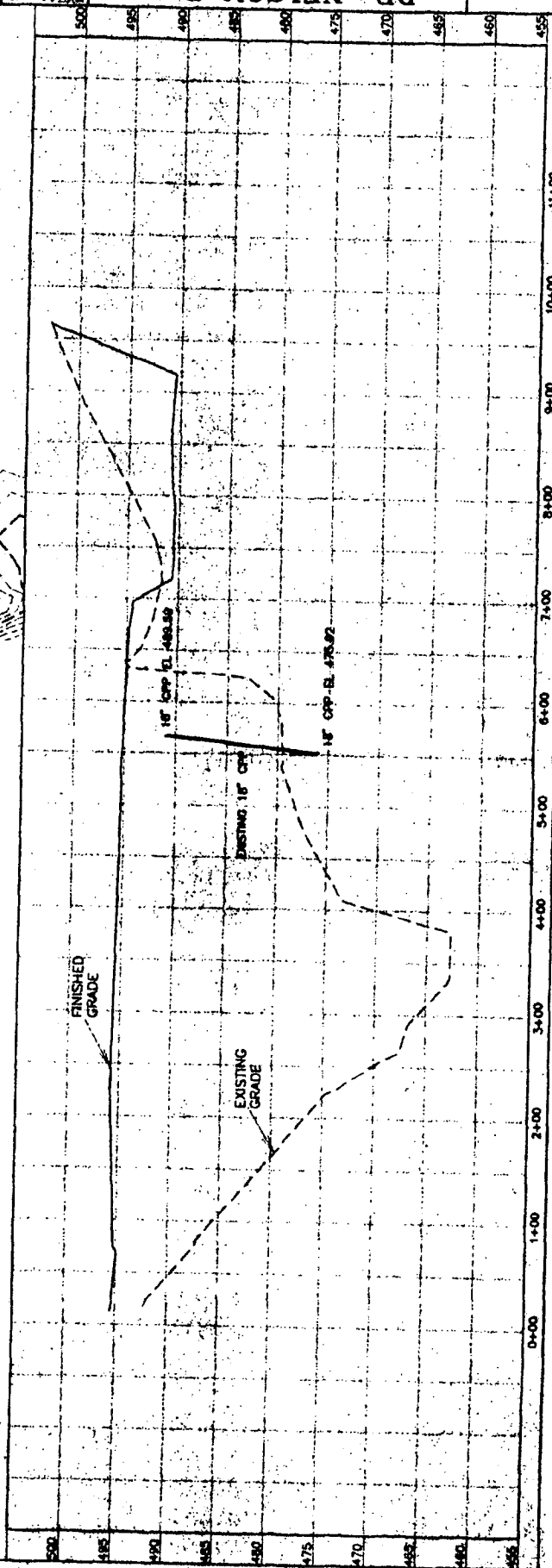
IN: Dry Creek
AT: NE 1/4, S26, T5N, R10E
COUNTY: Meade
DATE: 8/12/2002
SHEET 2 of 4

PURPOSE: Construct Impoundment Dam
APPLICATION BY: James S. Nelson
APPLICATION NO. 200130391



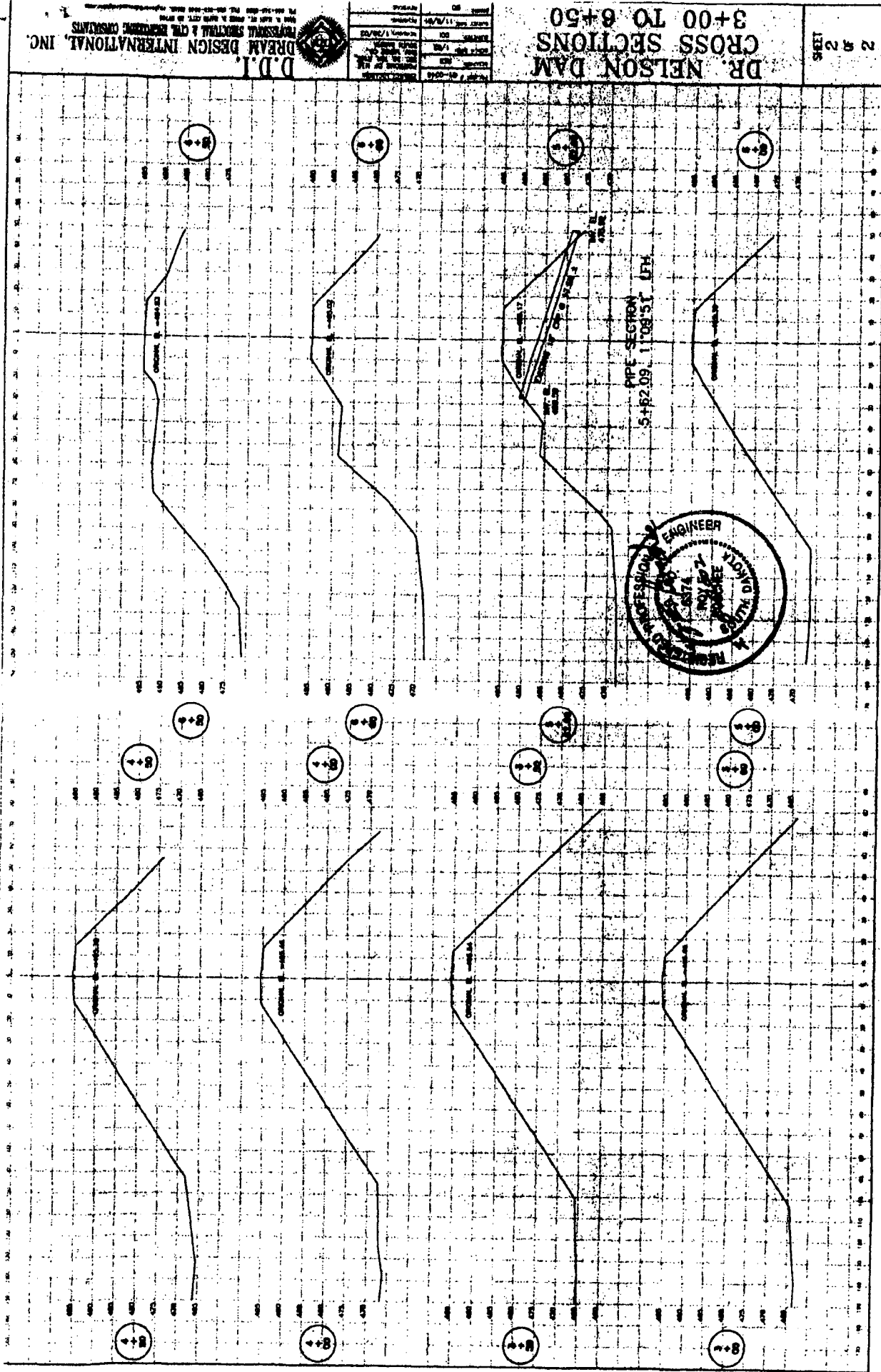
EXISTING
18" CPP
5+62.09;
11'-09".51"

SCALES:
1" = 100' HOR
1" = 10' VER



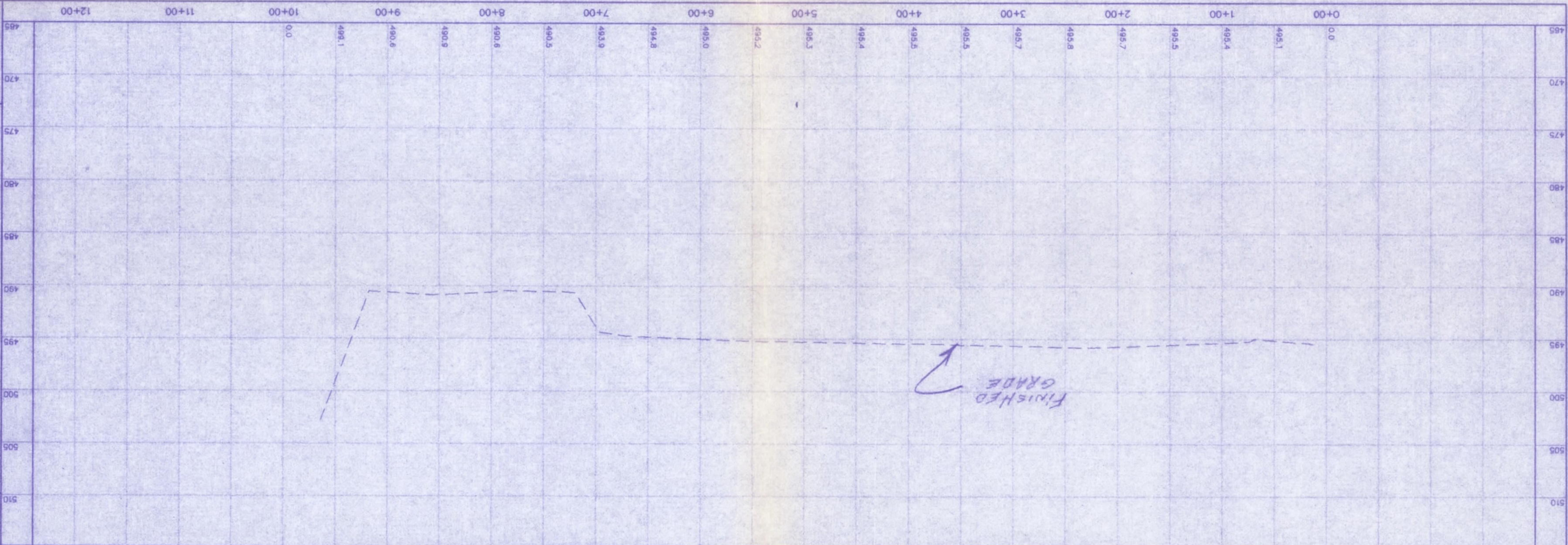
IN: Dry Creek
AT: NE ¼, S26, T5N, R10E
COUNTY: Meade
DATE: 8/12/2002
SHEET 3 of 4

PURPOSE: Construct Impoundment Dam
APPLICATION BY: James S. Nelson
APPLICATION NO. 200130391



IN: Dry Creek
 AT: NE ¼, S26, T5N, R10E
 COUNTY: Meade
 DATE: 8/12/2002
 SHEET 4 of 4

PURPOSE: Construct Impoundment Dam
 APPLICATION BY: James S. Nelson
 APPLICATION NO. 200130391



SCALES:
1" = 50' HOR
1" = 5' VER



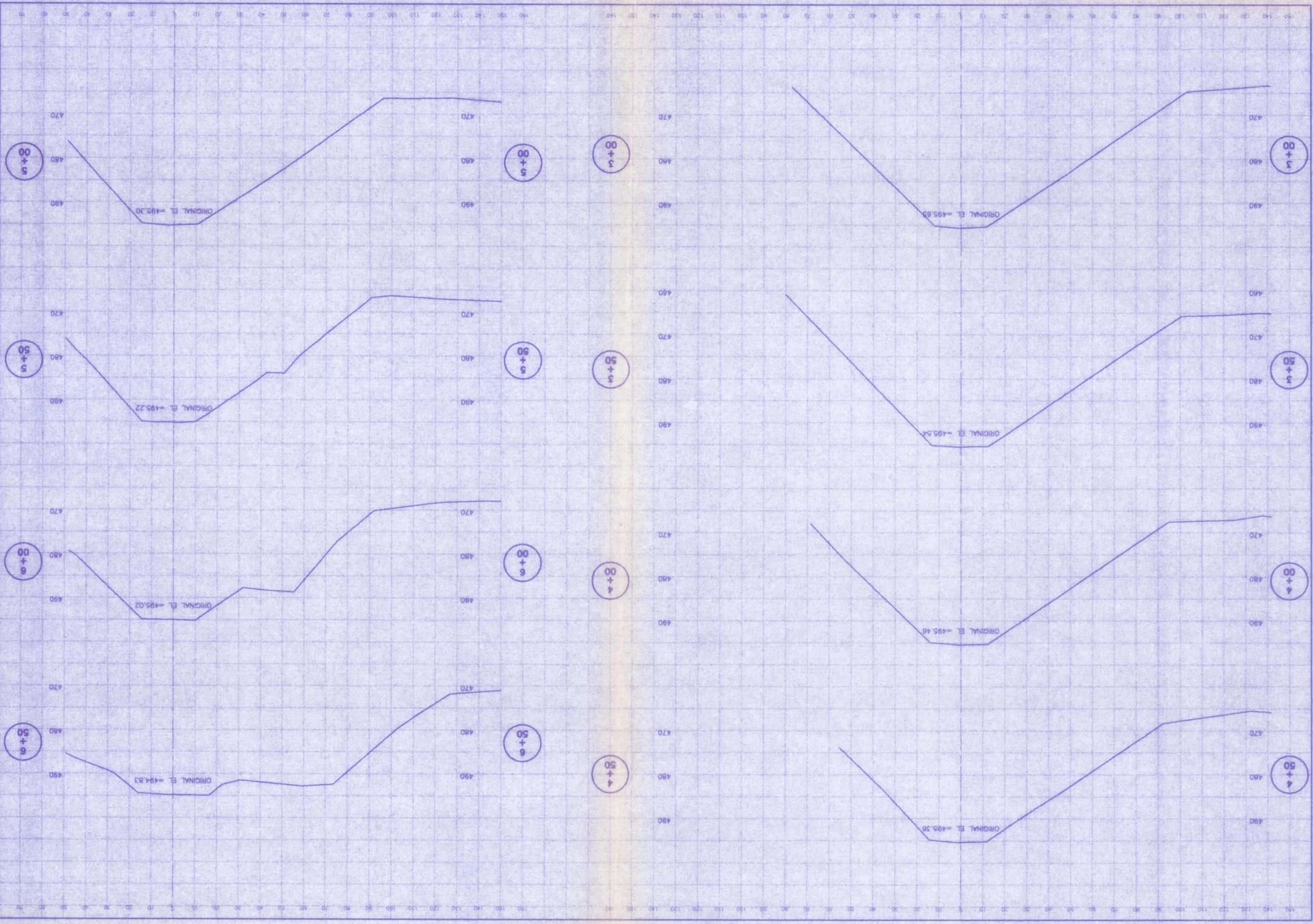
1765-1

DR. NELSON DAM
CROSS SECTIONS
DAM PLAN & PROFILE

PROJECT #	01-0046	PROJECT LOCATION
DESIGNED BY	RES	PORTION OF N1/4 SECTION 28, T9N, R10E
SECTION DATE	1/02	BRAZOS MEADE CO.,
DATE OF	001	SOUTH DAKOTA
DATE OF	11/6/01	REVISIONS
DATE OF	BD	REVISIONS



D.D.I.
DREAM DESIGN INTERNATIONAL, INC.
PROFESSIONAL STRUCTURAL & CIVIL ENGINEERING CONSULTANTS
2002 E. MAIN ST., SUITE D, BAYVIEW CITY, SD 57006
TEL: 605-346-0598 FAX: 605-346-0540 EMAIL: engineers@dreamdesigninc.com



OF
SHEET

DR. NELSON DAM CROSS SECTIONS 3+00 TO 6+50

PROJECT # 01-0046	DESIGNED BY
REB	SECTION 26, T2N, R10E
DESIGN DATE 1/02	BNA, NEADE CO.
SUBMITTED	SOUTH DAKOTA
DOI	REVISIONS
DATE 1/18/01	
DRAWN	
BO	

**D.D.I.**
DREAM DESIGN INTERNATIONAL, INC.
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