

Considered: _____

WATER PERMIT NO. 2147-2

Phone: 303 236-5321

Name of Applicant: U.S. Fish & Wildlife Service

Post Office Address: PO Box 25486, Denver Federal Center, Denver CO 80225

Amount of Water Claimed: 167.5 AF Total Acres: NA

Source of Water Supply: Lake Creek & Tributaries

Water to be used for: wildlife propagation County: Bennett

About 11E, 5 miles S of Martin

PROOF OF PUBLICATION: Received _____ Not Received _____

APPLICATION: Approved _____ Subject to _____

F.F. & C/.L. Adopted _____ Not Approved _____ Deferred _____

PRIORITY Date Received: 11-1-90 Fee: 225 Remarks _____

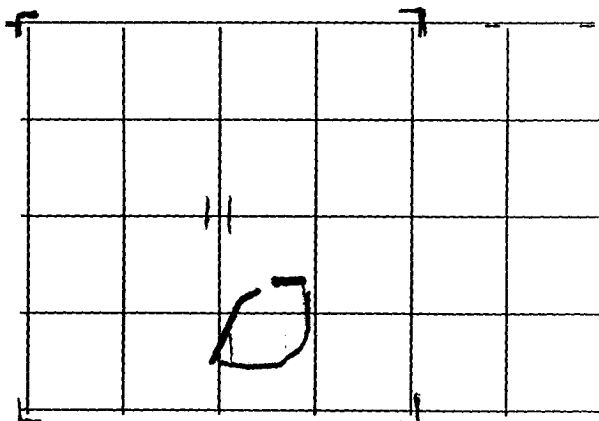
Corrected Application Received 11-13-90 Period of Annual Use January 1 - Dec 31

WATER QUALITY APPROVAL RECEIVED NA APPROVED/CONDITIONAL (Circle one)

WI-1 Description same as Application YES _____ NO _____ REMARKS _____

Diversion Point: S 1/2 Section 11-36-36

Land to be Irrigated: _____



Well Log: Driller: NA Licensed YES _____ NO _____

Depth of Well: _____ REMARKS _____

Type of Map: plat PREPARED BY: William A Godby Reviewed and the Number

Assigned on 11-14-90 By Karen Schlaak

523 E. Capitol
Pierre, SD 57501
(605) 773-3352

No. 2147-2 Hydrologic Unit 10140203
 Map No. _____ Basin White River
 Newspaper Martin-Bennett Co. Booster II
 Box 610, 57551 (Wed)

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

Check use of water: Industrial ☐ Commercial ☐ Municipal ☐ Other Common Distribution System ☐
 Rural Water System ☐ Suburban Housing ☐ Geothermal Heat ☐ Institutional ☐ Recreational ☐
 Domestic ☐ (above 18gpm) Other ☒ Wildlife Propagation

Type of Application: Check one or more of the following

New ☒ Vested Right ☐ Future Use ☐ Change Use ☐☐ Amend Permit No. _____ with old priority date retainedChange diversion point(s) ☐ Add diversion point(s) ☐ Other ☐ _____☐ Application to: Change diversion point(s) ☐ Add diversion point(s) ☐ on Permit No. _____☐ Construction to use water reserved by Future Use Permit No. _____1. Name of Applicant Fish and Wildlife Service Phone No. (303) 236-5321Post Office Address P.O. Box 25486, Denver Federal Center, Denver State Colorado 80225
(Street, RR or Box) (City) Zip Code2. Amount of water claimed (c.f.s.) 51.8 acres - 167.5 acre-feet3. Source of water supply Lake Creek and Tributaries4. Location of point of diversion Dikes A & BS1/2 Section 11 T36N R36WCounty Bennett5. Counties where water will be used Bennett6. Annual period during which water is to be used January 1 - December 31

7. Give a brief description of proposed 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)

Together Dikes A & B will create Pool 9B subimpoundment. This subimpoundment increases water covered under Withdrawal 2-2 by a total of 167.5 acre-feet.

Attachments: Attach Form 2A if diversion from a well or dugout, or if storage of water, is proposed. Attach map (see instruction)

STATE OF ~~SOUTH DAKOTA~~ COLORADO
 County of Jefferson)^{ss}

I, Robert D. Jacobsen the applicant, certify that I have read this application, have examined the attached map and that the matters stated are true and that I intend, and am able to complete the necessary construction.

Signed Robert D. Jacobsen
 Acting REGIONAL DIRECTOR

Subscribed and sworn to before me this 23rd day of October 1990

Susan E. Craddock
 My Commission Expires Aug. 5, 1993

Supplemental Information

(type or print in ink)

1. Well Information - Proposed construction

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

2. Dugout Information Estimates

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

3. Water Storage Dams

If the proposed water use system contains one or more storage dams, please furnish the information requested below. The locations of each dam should 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

b) Freeboard 2 feet

c) Crest Width 12 feet

Crest Length 385 feet

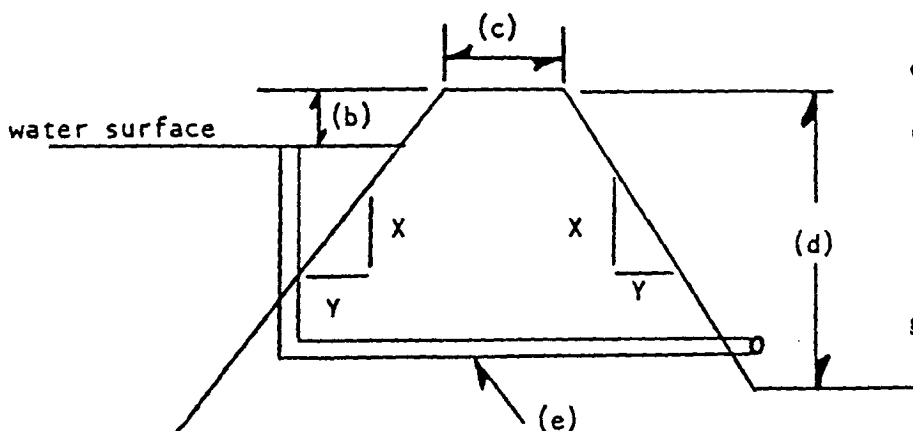
d) Height 5 feet

e) Primary Outlet Capacity none
If Pipe, diameter _____

f) Secondary Spillway Capacity _____
Spillway width none

g) X & Y Slope
Upstream 4:1

Downstream 4:1



Surface Area of Impoundment See Attached

Storage See Attached acre feet

Drainage area above dam N/A - See Attached

Robert D. Jacobsen

Signature of Applicant

REGIONAL DIRECTOR



Supplemental Information

(type or print in ink)

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- a) Drill Hole Diameter _____ Depth _____
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If the proposed water use system contains one or more storage dams, please furnish the information requested below. The locations of each dam should 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

b) Freeboard 2 feet

c) Crest Width 12 feet

Crest Length 1810 feet

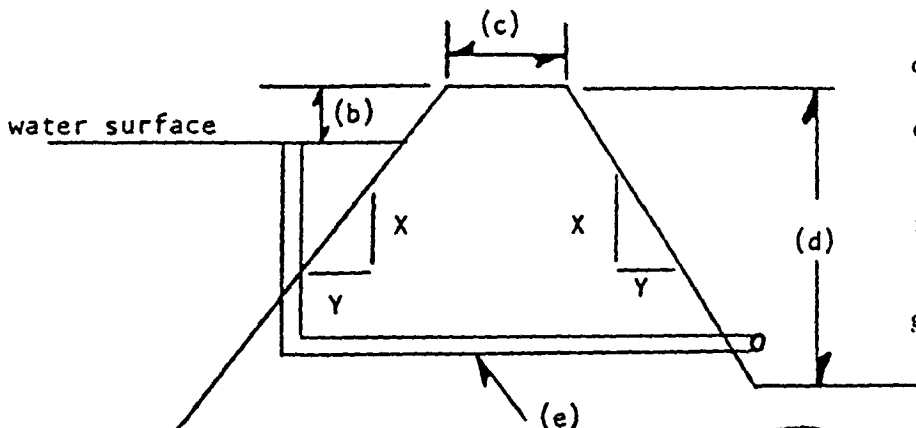
d) Height 7 feet

e) Primary Outlet Capacity 18" CMP at elev. 70
If Pipe, diameter _____

f) Secondary Spillway Capacity _____
Spillway width Control Structure
(48" riser) spills @ 74

g) X & Y Slope
Upstream 4:1

Downstream 4:1



Surface Area of Impoundment See Attached

Storage See Attached acre feet

Drainage area above dam N/A-See Attached

Robert D. Jacobsen

Signature of Applicant

REGIONAL DIRECTOR



ATTACHMENT TO FORM 2A

Dikes A & B Combined at Elevation 74

Surface Area of Impoundment	63.8 acres
Storage	174.5 acre-feet



Currently covered under Withdrawal 2-2 at elevation 70.21

12 surface acres	Storage - 7 acre-feet
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Total requested under this application:

51.8 surface acres	167.5 acre-feet
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Drainage Area

The water to be impounded by these dikes originates within the drainage area of LaCreek and its tributaries as specified in U.S. Withdrawal No. 2-2.

SOUTH DAKOTA
REISSUED WATER PERMIT No. 2147-2

Date of first receipt of application November 1, 1990.

Date of return to applicant for corrections, amendments or changes
November 6, 1990.

Date of receipt of corrected application November 13, 1990.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 2147-2 to the U.S. Fish and Wildlife Service, P.O. Box 25486, Denver Federal Center, Denver, CO 80225 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 2147-2 appropriates 167.5 acre feet of water annually by constructing a subimpoundment in the LaCreek National Wildlife Refuge. The subimpoundment is to be located in the S1/2 Section 11, T36N, R36W.
2. The water appropriated shall be used for the purpose of providing wildlife habitat and may not exceed the amount of water needed for beneficial use for wildlife propagation.
3. The water is to be used during the following described annual period: January 1 - December 31.
4. The date of approval of Permit No. 2147-2 is February 7, 1991.
5. The date from which applicant may claim right is November 1, 1990.
6. One-fifth of the construction is to be completed on or before August 7, 1993.
7. All construction is to be completed on or before February 7, 1996.
8. Water is to be put to beneficial use on or before February 7, 2000.
9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.
2. Approval of Permit No. 2147-2 authorizes storage of up to 167.5 acre-feet of water annually.

WATER MANAGEMENT BOARD

By: 
Chief Engineer, Water Rights Division
Department of Water and Natural Resources

APR 9 1991
(date)

**SOUTH DAKOTA
WATER PERMIT No. 2147-2**

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WATER MANAGEMENT BOARD

By: _____

John Hatch
Chief Engineer, Water Rights Division
Department of Water and Natural Resources

MAR 27 1991

(date)

Appendix No. 1

WHITE RIVER BASIN

189

06449000 LAKE CREEK BELOW REFUGE, NEAR TUTHILL, SD

LOCATION.--Lat 43°08'46", long 101°30'38", in SW 1/4 sec.30, T.37 N., R.35 W., Bennett County, Hydrologic Unit 10140203, on left bank 400 ft downstream from east boundary of LaCreek game refuge, 1.2 mi southwest of Tuthill, and 5.5 mi upstream from mouth.

DRAINAGE AREA.--120 mi², approximately, of which about 60 mi² probably contributes directly to surface runoff.

PERIOD OF RECORD.--February 1938 to September 1940, July 1962 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,055 ft, by barometer. Prior to Aug. 4, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--29 years, 16.5 ft³/s, 11,950 acre-ft/yr; median of yearly mean discharges, 17 ft³/s, 12,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 594 ft³/s, Mar. 25, 1987, gage height, 5.57 ft, from rating curve extended above 150 ft³/s; maximum gage height, 6.46 ft, Mar. 12, 1988, backwater from ice; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 88 ft³/s at 1345 hours, Apr. 3, gage height, 3.86 ft; no flow Nov. 17-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.79	.05	.06	4.0	18	8.9	33	18	9.2	22	4.4	.70
2	.83	.05	.06	4.1	.88	9.3	37	18	7.3	20	4.2	.70
3	.72	.07	.06	4.0	4.3	15	51	22	7.1	19	3.6	.70
4	.72	.06	.07	4.0	6.9	18	28	26	7.3	17	3.2	.70
5	.76	.04	.07	6.0	13	13	28	23	9.4	17	3.0	.73
6	.71	.07	.05	8.0	17	21	28	18	8.2	17	2.8	.76
7	.70	.05	.04	e9.5	16	23	31	20	14	18	2.7	.75
8	.71	.07	.06	e9.0	11	24	23	20	22	18	2.5	.72
9	.62	.07	.08	e8.8	14	26	24	19	32	17	2.1	.70
10	.56	.06	.11	8.7	14	28	27	20	40	17	2.0	.72
11	.56	.13	.09	8.5	10	29	23	20	17	16	1.8	.70
12	.55	.11	.13	8.3	8.9	30	31	19	14	16	1.7	.70
13	.56	.09	.11	8.3	8.4	32	37	23	12	19	1.8	.70
14	.55	.10	.05	8.3	8.2	35	33	22	9.5	22	1.5	.71
15	.47	.17	.02	8.4	8.1	36	32	21	9.6	22	1.1	.73
16	.50	.01	.05	8.6	8.2	36	27	21	9.5	21	1.0	.72
17	.45	.00	12	8.5	8.7	38	27	25	9.2	20	1.0	.68
18	.45	.00	14	8.2	8.6	39	29	23	8.6	18	.96	.61
19	.48	.00	4.3	8.1	8.8	38	27	23	8.3	17	1.0	.45
20	.42	.00	4.2	8.3	8.9	37	26	18	8.2	16	1.0	.46
21	.33	.00	4.2	8.3	9.0	36	25	19	6.9	15	.95	.58
22	.28	.00	4.9	8.0	9.1	37	25	16	6.6	14	.88	.41
23	.19	.01	8.5	8.0	9.2	37	22	14	6.5	13	.86	.22
24	.11	.02	4.2	e7.8	9.2	37	21	15	6.6	26	.86	.21
25	.08	.06	3.8	e7.6	9.1	36	20	15	6.6	32	1.0	.19
26	.08	.09	5.0	e7.6	9.0	36	21	5.5	6.8	5.1	1.3	.18
27	.04	e.10	6.6	e7.8	9.0	36	23	5.7	11	5.5	.56	.17
28	.05	.10	7.1	8.2	8.9	36	30	5.2	11	5.3	.61	.19
29	.06	.08	7.1	8.3	---	36	20	5.8	14	5.1	.66	.17
30	.05	.07	5.7	8.2	---	33	18	7.0	22	4.8	.68	.17
31	.05	---	4.3	8.9	---	34	---	7.0	---	4.6	.70	---
TOTAL	13.43	1.73	97.01	238.3	274.38	930.2	827	534.2	360.4	499.4	52.42	16.13
MEAN	.43	.058	3.13	7.69	9.80	30.0	27.6	17.2	12.0	16.1	1.69	.54
MAX	.83	.17	14	9.5	18	39	51	26	40	32	4.4	.76
MIN	.04	.00	.02	4.0	.88	8.9	18	5.2	6.5	4.6	.56	.17
AC-FT	27	3.4	192	473	544	1850	1640	1060	715	991	104	32

CAL YR 1988 TOTAL 9371.36 MEAN 25.6 MAX 146 MIN .00 AC-FT 18590
WTR YR 1989 TOTAL 3844.60 MEAN 10.5 MAX 51 MIN .00 AC-FT 7630

e Estimated

Taken from: U.S. Geological Survey Water-Data Report SD-89-1, Water Resources Data South Dakota, Water Year 1989.

WHITE RIVER BASIN

06447500 LITTLE WHITE RIVER NEAR MARTIN, SD

LOCATION.--Lat 43°10'00", long 101°37'47", in NW¼ sec.19, T.37 N., R.36 W., Bennett County, Hydrologic Unit 10140203, on right bank 70 ft downstream from highway culvert and 5.4 mi east of Martin.

DRAINAGE AREA.--310 mi², approximately, of which about 230 mi² probably contributes directly to surface runoff.

PERIOD OF RECORD.--February 1938 to September 1940, July 1962 to current year. Prior to October 1965, published as South Fork White River near Martin.

GAGE.--Water-stage recorder. Elevation of gage is 3,045 ft, by barometer. Prior to Aug. 14, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--29 years, 19.3 ft³/s, 13,980 acre-ft/yr; median of yearly mean discharges, 18 ft³/s, 13,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,190 ft³/s, July 19, 1965, gage height, 12.90 ft, from rating curve extended above 340 ft³/s on basis of computation of peak flow through culvert and flow-over-road measurement of peak flow; maximum gage height, 13.21 ft, Mar. 11, 1966, backwater from ice; minimum daily discharge, 0.6 ft³/s, Aug. 14, 16, 18, 1940; no flow for part of each day Oct. 19, 20, 22, 1962 (regulation caused by construction work above station).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 5, 1932, reached a stage of 13.3 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 13	2245	*197	*5.81	No other peak greater than base discharge.			

Minimum daily discharge, 3.1 ft³/s, July 30, 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	12	e16	e10	e11	e6.6	33	25	11	7.3	3.5	4.9
2	8.8	13	e17	e9.0	e5.0	e5.6	31	25	12	7.5	3.6	5.0
3	8.7	13	e18	e8.6	e4.0	e5.4	32	26	11	7.1	3.5	5.1
4	8.7	13	e17	e9.0	e4.2	e5.0	38	25	10	7.0	3.4	5.1
5	8.6	13	e17	e10	e4.5	e5.4	37	26	10	6.3	3.3	5.3
6	8.7	13	e18	e9.0	e5.0	e7.0	37	25	9.9	6.0	3.2	5.1
7	9.3	13	e19	e8.0	e5.6	e8.0	29	24	9.2	5.4	3.2	5.1
8	e9.3	13	e17	e7.0	e5.8	e10	23	23	8.5	4.8	3.2	5.2
9	9.5	13	e17	e6.4	e5.4	e20	22	22	8.2	4.4	3.3	5.6
10	9.6	14	e18	e6.6	e6.4	e40	22	21	8.2	3.9	3.5	6.4
11	9.5	14	e17	e6.8	e7.0	69	22	20	8.4	3.6	3.8	7.2
12	9.6	14	e17	e6.8	e7.0	93	21	19	8.1	3.4	4.2	8.3
13	9.7	15	e18	e7.4	e6.6	141	21	19	7.9	3.3	4.4	8.8
14	9.7	15	e19	e7.6	e6.4	151	20	19	7.9	3.4	4.6	8.6
15	10	15	e16	e7.4	e6.2	82	20	20	7.8	3.6	4.8	8.3
16	e10	16	e13	e7.2	e6.4	68	20	20	7.8	3.8	4.8	8.2
17	e10	e15	e14	e7.8	e6.6	49	21	22	7.6	4.1	4.8	8.0
18	11	16	e15	e8.4	e4.5	e44	23	26	7.3	4.3	4.8	7.4
19	11	e15	e15	e8.2	e5.0	e40	23	22	7.0	4.4	4.8	7.0
20	11	e15	e14	e8.0	e5.4	e38	24	20	6.5	4.3	5.9	7.2
21	12	e14	e13	e8.2	e6.0	e41	23	18	6.1	4.3	5.4	8.3
22	12	e14	e13	e9.0	e5.6	e43	21	15	5.8	4.0	5.0	8.9
23	12	e14	e13	e9.0	e5.4	45	20	14	5.7	3.8	4.8	12
24	11	e15	e12	e7.0	e8.0	47	18	13	6.8	3.6	4.5	12
25	e12	e15	e11	e6.4	e9.0	44	19	11	7.6	3.4	4.4	11
26	e12	e15	e10	e7.0	e8.0	38	19	11	9.1	3.3	4.5	9.9
27	12	e15	e9.0	e8.0	e7.4	38	21	10	9.2	3.3	4.5	9.2
28	12	e15	e9.5	e9.6	e7.8	39	22	10	9.2	3.2	4.5	8.5
29	12	e14	e10	e8.6	---	38	24	9.8	8.2	3.2	4.6	8.0
30	12	e15	e10	e9.6	---	36	25	9.7	7.6	3.1	4.7	7.8
31	12	---	e10	e10	---	34	---	11	---	3.1	4.6	---
TOTAL	322.5	426	452.5	251.6	175.2	1331.0	731	581.5	249.6	136.2	132.1	227.4
MEAN	10.4	14.2	14.6	8.12	6.26	42.9	24.4	18.8	8.32	4.39	4.26	7.58
MAX	12	16	19	10	11	151	38	26	12	7.5	5.9	12
MIN	8.6	12	9.0	6.4	4.0	5.0	18	9.7	5.7	3.1	3.2	4.9
AC-FT	640	845	898	499	348	2640	1450	1150	495	270	262	451

CAL YR 1988 TOTAL 8177.4 MEAN 22.3 MAX 277 MIN 3.3 AC-FT 16220
WTR YR 1989 TOTAL 5018.6 MEAN 13.7 MAX 151 MIN 3.1 AC-FT 9950

e Estimated

Taken from: U.S. Geological Survey Water-Data Report SD-89-1, Water Resources Data, South Dakota, Water Year 1989.

WHITE RIVER BASIN

06449100 LITTLE WHITE RIVER NEAR VETAL, SD

LOCATION.--Lat 43°06'03", Long 101°13'49", in NE&NW sec.17, T.36 N., R.33 W., Bennett County, Hydrologic Unit 10140203, on left bank 120 ft downstream from highway bridge, 0.3 mi downstream from small right-bank tributary, 10.8 mi southeast of Vetal, and 15.3 mi upstream from Spring Creek.

DRAINAGE AREA.--590 mi², approximately, of which about 415 mi² probably contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1959 to current year. Prior to October 1965, published as South Fork White River near Vetal.

GAGE.--Water-stage recorder. Datum of gage is 2,780.69 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 14, 1959, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some small diversion for irrigation and some storage in several small lakes above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--30 years, 53.0 ft³/s, 38,400 acre-ft/yr; median of yearly mean discharges, 55 ft³/s, 39,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,330 ft³/s, Mar. 13, 1966, gage height, 7.75 ft; minimum daily, 9.0 ft³/s, Dec. 24, 25, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 26	1615	a	*4.78	Mar. 11	--	*140	a4.50

a Backwater from ice.

Minimum daily discharge, 10 ft³/s, Feb. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	27	e33	e28	e23	e34	83	56	35	39	21	17
2	21	27	34	e27	e16	e32	80	57	34	41	20	17
3	21	27	34	e27	e10	e31	75	56	33	40	21	17
4	22	27	33	e28	e11	e30	84	56	32	42	19	19
5	22	28	33	e29	e12	e29	77	61	32	37	18	20
6	22	28	34	e28	e15	e29	70	59	33	34	19	19
7	22	28	35	e27	e18	e30	70	58	32	34	20	19
8	22	28	30	e26	e21	e32	70	59	32	34	20	20
9	22	28	31	e25	e24	e40	65	57	40	35	18	22
10	23	29	37	e25	e27	e70	62	56	45	33	18	25
11	23	29	35	e26	e30	e120	65	55	54	32	18	23
12	23	29	33	e27	e33	e105	62	54	45	32	18	17
13	23	29	37	e27	e32	e95	66	59	36	31	18	17
14	23	29	34	e28	e32	e90	72	59	34	33	18	18
15	23	29	33	e28	e32	e85	71	58	32	39	18	17
16	23	29	33	e29	e32	e80	73	55	31	40	17	16
17	23	29	33	e30	e33	e76	68	59	30	40	17	15
18	23	32	38	e31	e32	e74	67	60	30	39	17	15
19	23	29	41	33	e31	e72	69	56	29	38	18	14
20	23	29	40	e33	e31	e74	69	56	28	37	19	21
21	23	31	38	34	e32	e76	69	53	27	34	20	28
22	24	33	39	33	e32	e78	68	53	26	33	19	20
23	24	33	36	33	e31	e80	67	51	26	32	18	18
24	25	34	e35	29	e32	e82	65	48	30	30	18	17
25	25	31	e33	29	e35	e84	61	45	31	31	18	16
26	25	32	e32	e27	e38	e86	61	42	30	45	17	16
27	25	e31	e30	e24	e36	e88	60	39	28	32	17	16
28	26	e30	e29	23	e35	e90	59	35	29	25	17	16
29	27	e31	e28	22	---	90	64	35	31	23	17	16
30	27	e32	e27	25	---	87	61	33	30	21	17	16
31	26	---	e27	24	---	81	---	35	---	21	16	---
TOTAL	725	888	1045	865	766	2150	2053	1615	985	1057	566	547
MEAN	23.4	29.6	33.7	27.9	27.4	69.4	68.4	52.1	32.8	34.1	18.3	18.2
MAX	27	34	41	34	38	120	84	61	54	45	21	28
MIN	21	27	27	22	10	29	59	33	26	21	16	14
AC-FT	1440	1760	2070	1720	1520	4260	4070	3200	1950	2100	1120	1080

CAL YR 1988 TOTAL 21307 MEAN 58.2 MAX 318 MIN 15 AC-FT 42260
WTR YR 1989 TOTAL 13262 MEAN 36.3 MAX 120 MIN 10 AC-FT 26310

e Estimated

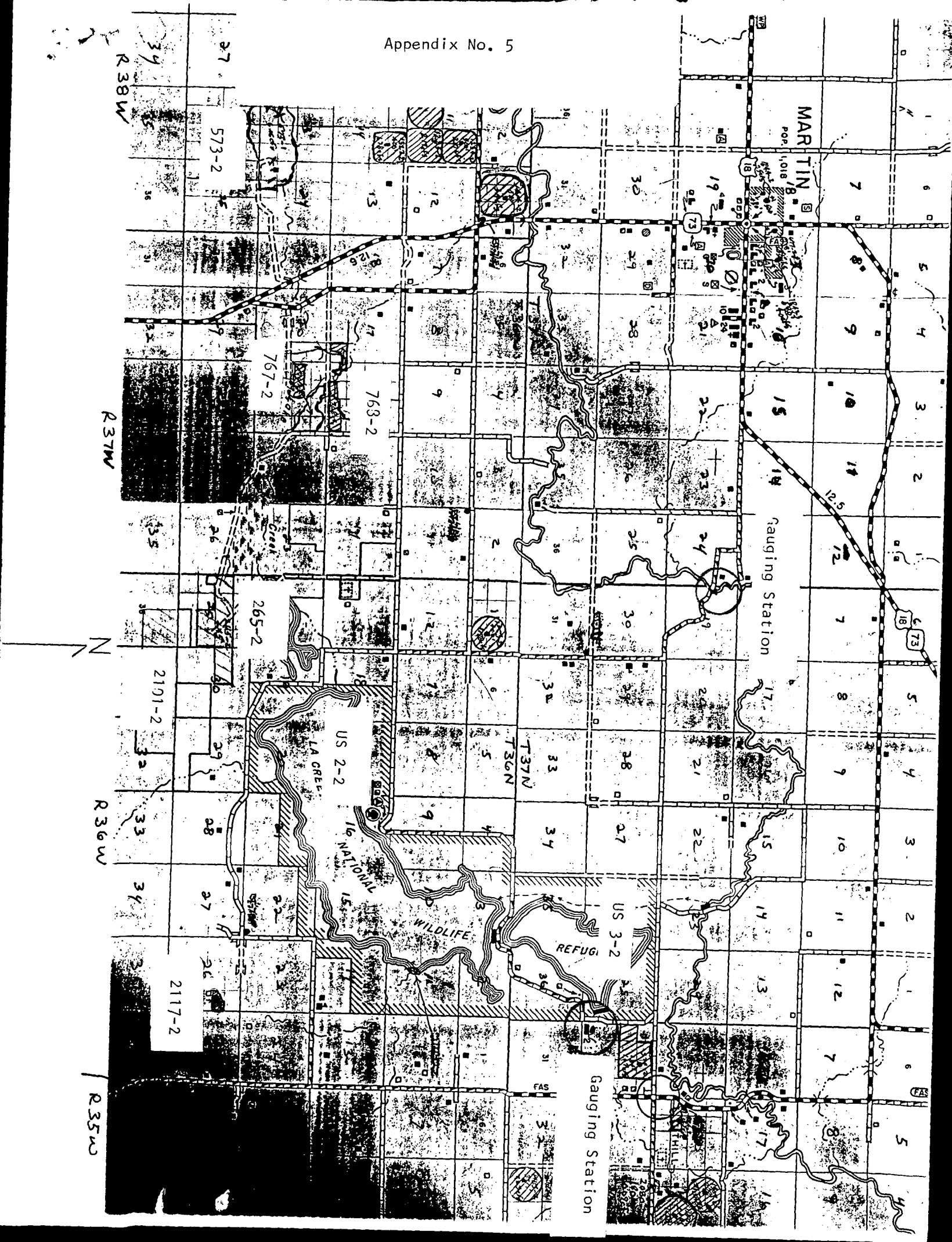
Taken from: U.S. Geological Survey Water-Data Report SD-89-1, Water Resources Data, South Dakota, Water Year 1989.

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPER- ATURE WATER (DEG C) (00010)	TEMPER- ATURE AIR (DEG C) (00020)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)
06447500 LITTLE WHITE R NEAR MARTIN SD (LAT 43 10 00N LONG 101 37 47W)					
NOV 1988					
03...	0945	13	6.0	7.0	201
DEC					
14...	0945	19	0.0	-1.0	240
JAN 1989					
11...	1015	8.8	0.0	3.0	264
FEB					
14...	0915	6.4	0.0	4.0	234
MAR					
29...	0835	39	9.5	7.0	254
APR					
26...	0930	18	7.0	10.0	305
MAY					
24...	0840	13	19.0	--	295
JUN					
13...	0910	7.8	14.0	9.5	254
JUL					
24...	1715	3.6	25.5	30.5	222
SEP					
15...	0845	8.1	12.5	10.0	217
06449000 LAKE CR BELOW REFUGE NEAR TUTHILL SD (LAT 43 08 46N LONG 101 30 38W)					
NOV 1988					
03...	1145	0.07	8.0	15.0	648
DEC					
14...	1050	0.06	1.5	0.0	605
JAN 1989					
11...	1200	8.4	0.0	4.0	853
FEB					
14...	1055	8.4	0.0	2.0	648
MAR					
29...	1105	38	10.0	9.5	361
APR					
26...	1150	20	8.0	13.0	376
MAY					
23...	1735	15	32.0	35.0	410
JUN					
20...	0850	8.7	22.0	21.0	456
JUL					
24...	1540	38	26.0	28.5	565
SEP					
14...	1645	0.73	20.0	20.5	808
06449100 LITTLE WHITE R NEAR VETAL SD (LAT 43 06 03N LONG 101 13 49W)					
JAN 1989					
11...	1515	26	0.0	4.0	379
FEB					
14...	1410	32	0.0	4.0	353
MAY					
23...	1430	51	25.5	31.5	346
JUL					
24...	1320	30	25.5	28.5	420
06449300 LITTLE WHITE R ABV ROSEBUD SD (LAT 43 15 47N LONG 100 55 02W)					
NOV 1988					
02...	1645	72	10.5	17.0	275
DEC					
14...	1300	91	2.0	9.5	280
JAN 1989					
12...	1330	60	0.0	7.0	322
FEB					
16...	1030	70	0.0	--	298
JUL					
25...	1020	59	22.0	23.0	345

Taken from: U.S. Geological Survey Water-Data Report SD-89-1, Water Resources Data, South Dakota, Water Year 1989.



RECEIPT

Division of Water Rights

South Dakota Department of Water and Natural Resources

412417

Pierre, November 5, 1990

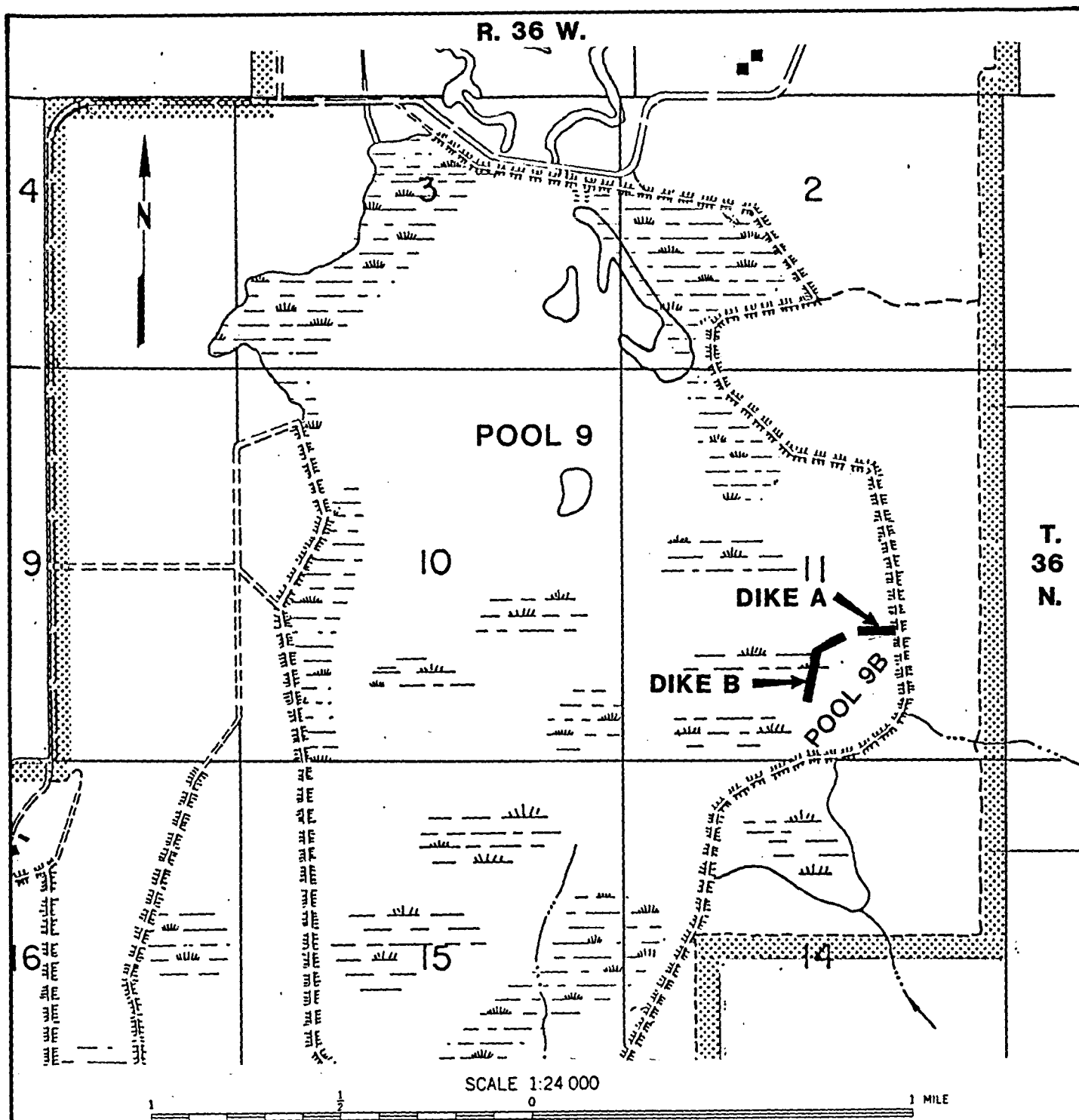
RECEIVED OF USDI, Fish & Wildlife Service, Box 25486, DFC, Denver CO 80225

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

Fee for Application for Permit No. _____ to Appropriate Water, to construct works 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. _____		
Fee for Filing Transfer Form _____		
Fee for Filing Extension Request _____		
Fee for Certified Copy of _____		
Fee for Print Copy of Map _____		
Fee for Certifying _____		
Fee for _____		
(Any Other Work Provided by Law)	Total	225 00

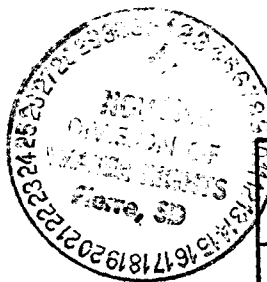
By

John Detcher
Chief Engineer



I, William A. Godby, Regional Engineer, do hereby certify that this map was prepared under my direction and correctly represents the works for the accompanying application.

William A. Godby
William A. Godby



UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
ENGINEERING

LA CREEK
NATIONAL WILDLIFE REFUGE
BENNETT COUNTY, SOUTH DAKOTA

WATER RIGHTS FILING MAP

DESIGNED GC	DRAWN MCG	CHECKED CW	DATE 10/90	DENVER, COLO.
DRAWING NO. 6R-SD-169-WR-P-20.0				SHEET 1 of 1



United States Department of the Interior
FISH AND WILDLIFE SERVICE



IN REPLY REFER TO:

BA/EN
WR SD
Mail Stop 60190

MAILING ADDRESS:
Post Office Box 25486
Denver Federal Center
Denver, Colorado 80225

STREET LOCATION:
134 Union Blvd.
Lakewood, Colorado 80228

OCT 23 1990



South Dakota Department of
Water and Natural Resources
523 East Capitol, Foss Building
Pierre, South Dakota 57501-3181

Gentlemen:

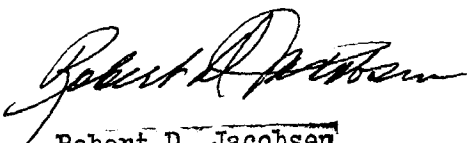
Enclosed please find the following documentation for Pond 9B at the Lacreek National Wildlife Refuge located in Bennett County, South Dakota:

1. - Application For Permit to Appropriate Water - Form 2;
2. - Supplemental Information - Form 2A (2);
3. - Attachment to Form 2A;
4. - Filing Map No. 6R-SD-169-P-20.0; and
5. - Money Order in the amount of \$225 to cover the appropriate filing fees.

Prior to publication of the Notice of Hearing, please advise this office of the newspaper selected so that the necessary documents can be forwarded to them.

If you have any questions or require further information, please contact Ginger Chesy of our Engineering Division at (303) 236-5321.

Sincerely,


Robert D. Jacobsen
Acting Regional Director

Enclosures (6)



**US Army Corps
of Engineers**
Omaha District

Public Notice

Reply to:
Regulatory Branch
Federal Building, Room 260
Pierre, South Dakota 57501

Application No: SD 2SB OXT 2 015640
Date: July 2, 1990
Expiration Date: July 23, 1990

CEMRO-OP-R
LaCreek National Wildlife Refuge
Dikes/Nesting Islands
Wetlands

21 DAY NOTICE



NOTICE OF PERMIT PENDING

The application of the LaCreek National Wildlife Refuge, HWC 3, Box 14, Martin, South Dakota 57551, for the approval of plans and issuance of a permit under authority of the Secretary of the Army is being considered by the District Engineer, U.S. Army Engineer District, Omaha, Nebraska.

The applicant requests authorization to place fill material in a wetland (LaCreek Pool #9) in conjunction with the construction of water control dikes, nesting islands and level ditching. The project is located in Section 14, Township 36 North, Range 36 West, Bennett County, South Dakota.

The project will consist of constructing two (2) dikes. Dike A will be four hundred five (405) feet long, thirty-six (36) feet wide at the base, twelve (12) feet wide at the top and three (3) feet high. The sides of the dike will be sloped at 4 to 1. Approximately two thousand, eight hundred (2,800) cubic yards of dirt will be moved for the construction of the dike. The dirt for construction will be obtained from an upland area adjacent to the proposed dike location (see sheet 2 of 4). The construction of dike B will consist of upgrading and enlarging an existing breached embankment. Dike B will be one thousand, eight hundred fifty (1,850) feet long, fifty-eight (58) feet wide at the base, twelve (12) feet wide at the top and five (5) feet high. The sides of the dike will be sloped at 4 to 1. The dirt necessary for construction of this dike will be borrowed from the wetland basin adjacent to the dike location. Approximately twenty-one thousand, five hundred (21,500) cubic yards of dirt will be moved to construct dike B. A water control outlet structure will be placed in this dike. The structure will consist of a sixteen (16) gauge, eighteen (18) inch diameter corrugated metal pipe (CMP) with a fourteen (14) gauge, forty-eight (48) inch diameter CMP riser. The riser will be six (6) feet tall with two (2) inch by six (6) inch by forty-five (45) inch steel stoplogs in the center of the riser, and will have a cast-in-place concrete base. The length of the structure through the dike will be sixty (60)

feet. The top of the riser will be at elevation 74.0 which is the full service level of the pool. The invert elevation of the outlet pipe will be at elevation 70.00 (see sheets 3 and 4 of 4).

In addition to the rehabilitation/construction of the two (2) dikes, a total of twenty-four (24) nesting islands will also be constructed. Five (5) of these islands will be constructed from stockpiled topsoil stripped during dike construction (approximately four thousand, one hundred (4,100) cubic yards total). The islands will be seventy (70) feet by seventy (70) feet at the base with sides sloped at 4 to 1. The remaining nineteen (19) nesting islands will be thirty-five (35) feet by fifty (50) feet (base dimensions) with 3 to 1 side slopes. These islands will be constructed with the excavated material associated with the level ditching. Approximately three thousand, three hundred twenty (3,320) cubic yards of material will be excavated in conjunction with the construction of approximately one thousand, two hundred thirty-five (1,235) feet of level ditches. The ditches will have thirty (30) and twelve (12) feet top and bottom widths respectively. The sides will be sloped at 3 to 1 (see sheets 2 and 3 of 4 for locations and detail). It is anticipated that the dirt moving will be accomplished with scrapers and/or dozers. Excavation/dragline and a grader may also be utilized. Both borrow areas for dike construction will be flooded upon project completion. All disturbed areas will be seeded to native grasses.

The purpose of the project is to rehabilitate, enlarge and enhance the existing marsh to improve waterfowl nesting and brood habitat adjacent to upland nesting cover in order to meet waterfowl/wildlife production objectives on LaCreek National Wildlife Refuge. The dikes and water control structure will allow precise water management and will deepen and enlarge the marsh from forty-seven (47) to sixty (60) acres. The project will also improve the open water/emergent vegetation mixture. The existing marsh is too shallow and is choked with emergent vegetation.

Certification that the proposed project will not violate applicable water quality standards has been requested from the Regional Administrator, U.S. Environmental Protection Agency, Region VIII, One Denver Place, Suite 1300, 999 - 18th Street, Denver, Colorado.

In compliance with the National Environmental Policy Act of 1969 and Section 106 of the National Historic Preservation Act of 1966, as amended, the National Register of Historic Places and current supplements have been consulted. There are no sites included or which have been determined eligible for inclusion therein which will be affected by the proposed project.

In compliance with the Endangered Species Act, our review indicates that the proposed activity will not affect species designated as threatened or endangered pursuant to the Endangered Species Act or their critical habitat.

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 § 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.

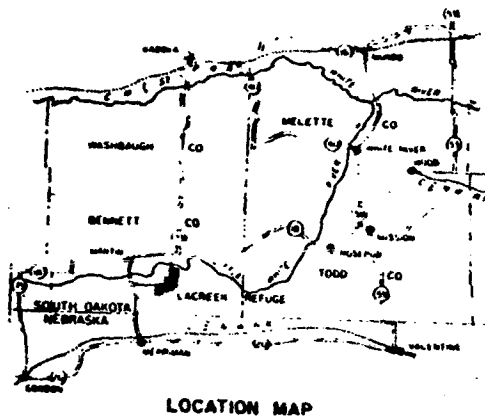
Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reason for holding a public hearing. The request must be submitted to the U.S. Army Corps of Engineers, Pierre Regulatory Branch, Federal Building, Room 260, Pierre, South Dakota 57501.

Any interested party (particularly officials of any town, city, county, state, Federal agency, 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 July 23, 1990. 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. Mr. Steve Naylor, 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.

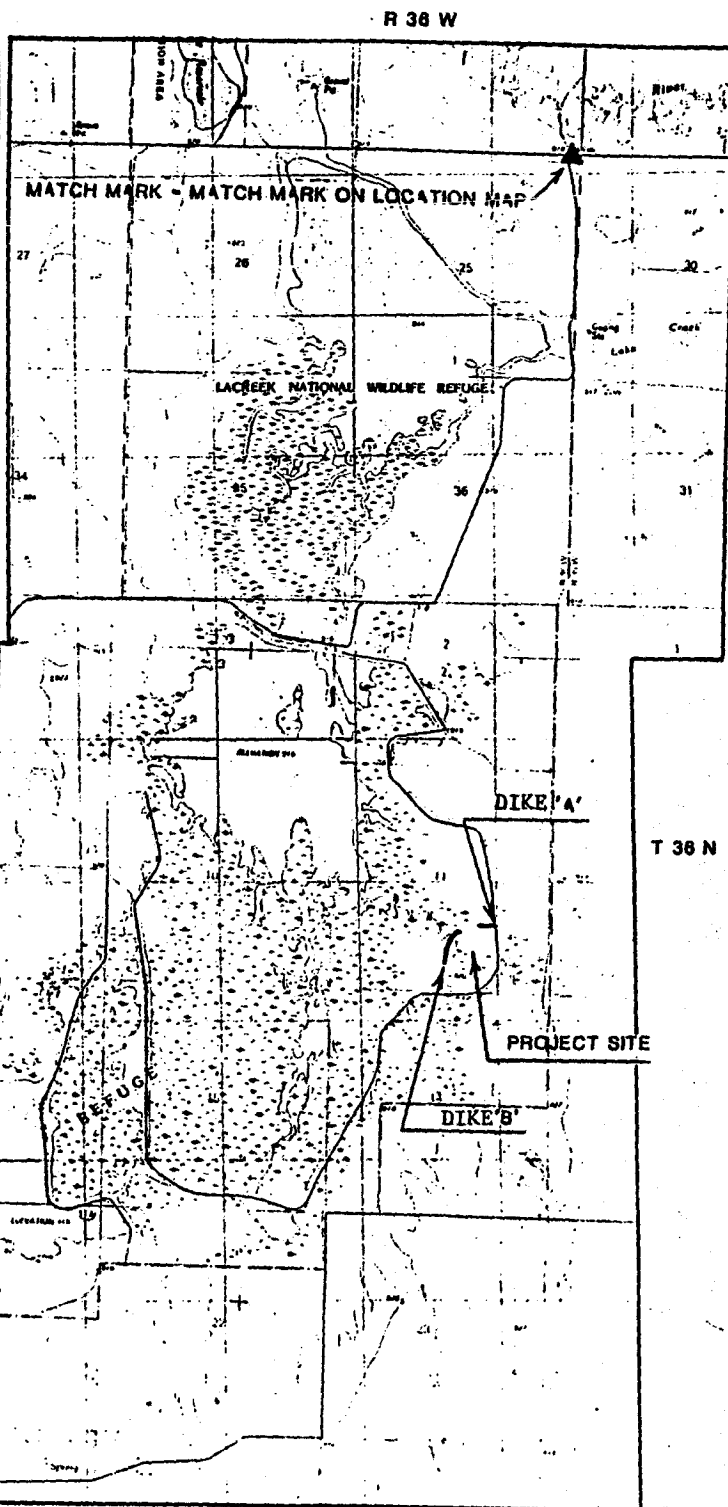
This project, if authorized, will be under the provisions of Section 404 of the Clean Water Act.

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



LOCATION MAP

**LACREEK
NATIONAL WILDLIFE REFUGE
BENNETT COUNTY
SOUTH DAKOTA**



VICINITY MAP

PURPOSE: DIKE / NESTING ISLANDS

DATUM

ADJACENT PROPERTY OWNERS:

1 Denzel Richards

2 Cliff McDonnell

Oglala Sioux Tribe

SD 25B OXT 2 015640

170 FORM 12-11-1

IN WETLANDS

AT LACREEK NATL. WILDLIFE REFUGE

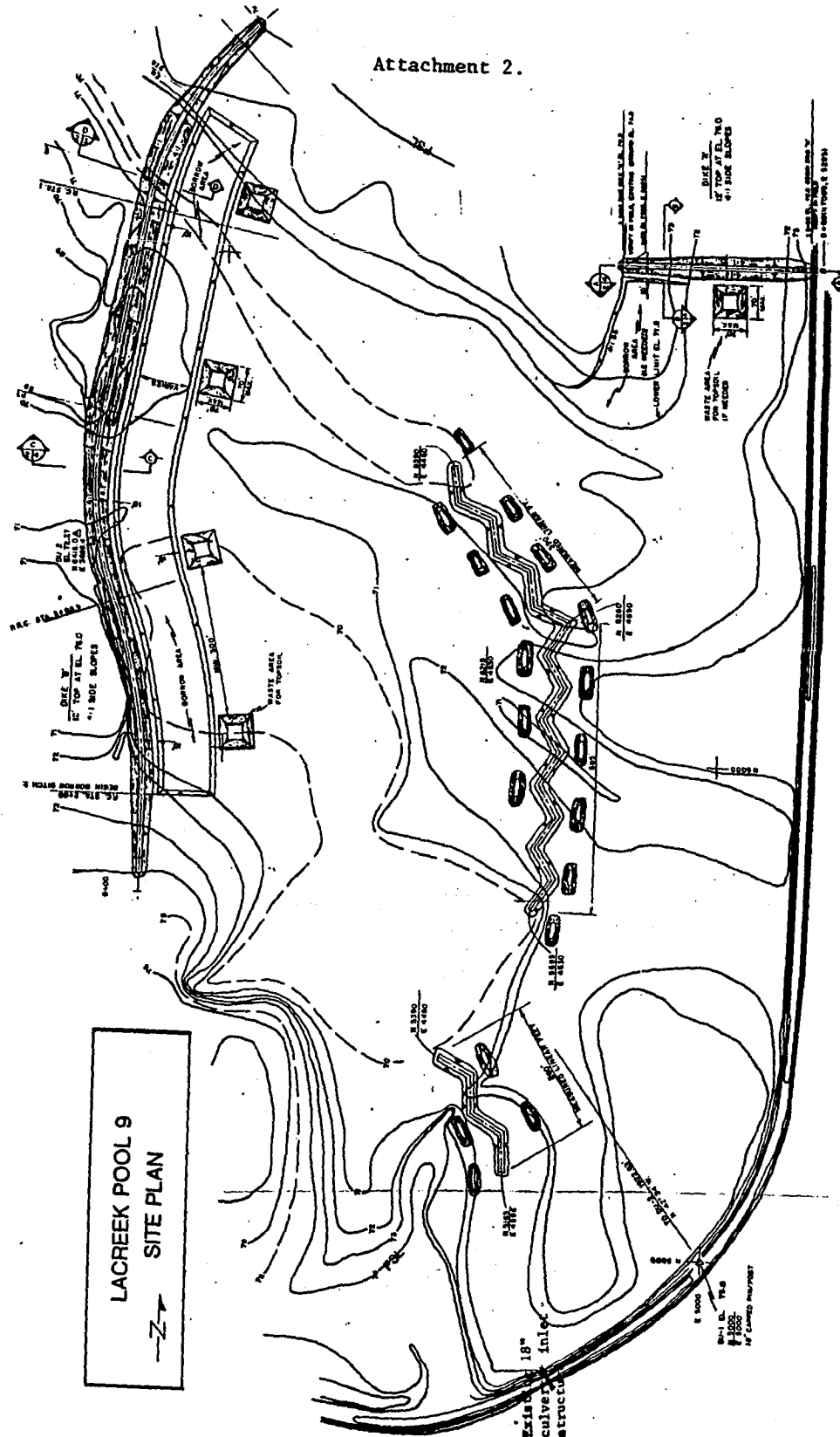
COUNTY OF BENNETT

STATE SD

APPLICATION BY LACREEK NATL. WILDLIFE REFUGE

SHEET 1 OF 4 DATE JUNE 1990

Attachment 2.



LACREEK POOL 9
SITE PLAN
-Z-

PURPOSE: DIKE / NESTING ISLANDS

DATUM

ADJACENT PROPERTY OWNERS:

1 Denzel Richards

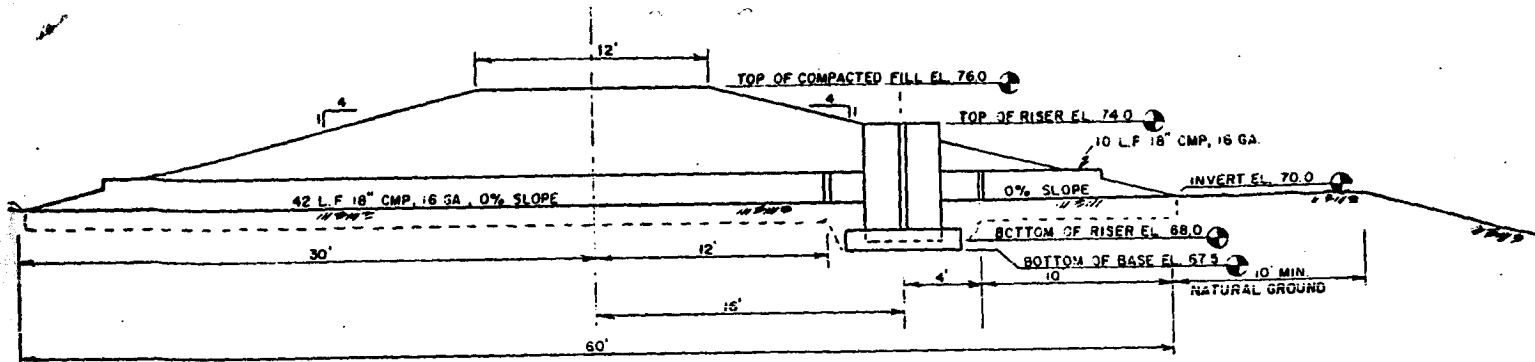
2 Cliff McDonnell

Oglala Sioux Tribe

SD 253 OXT 2 015640

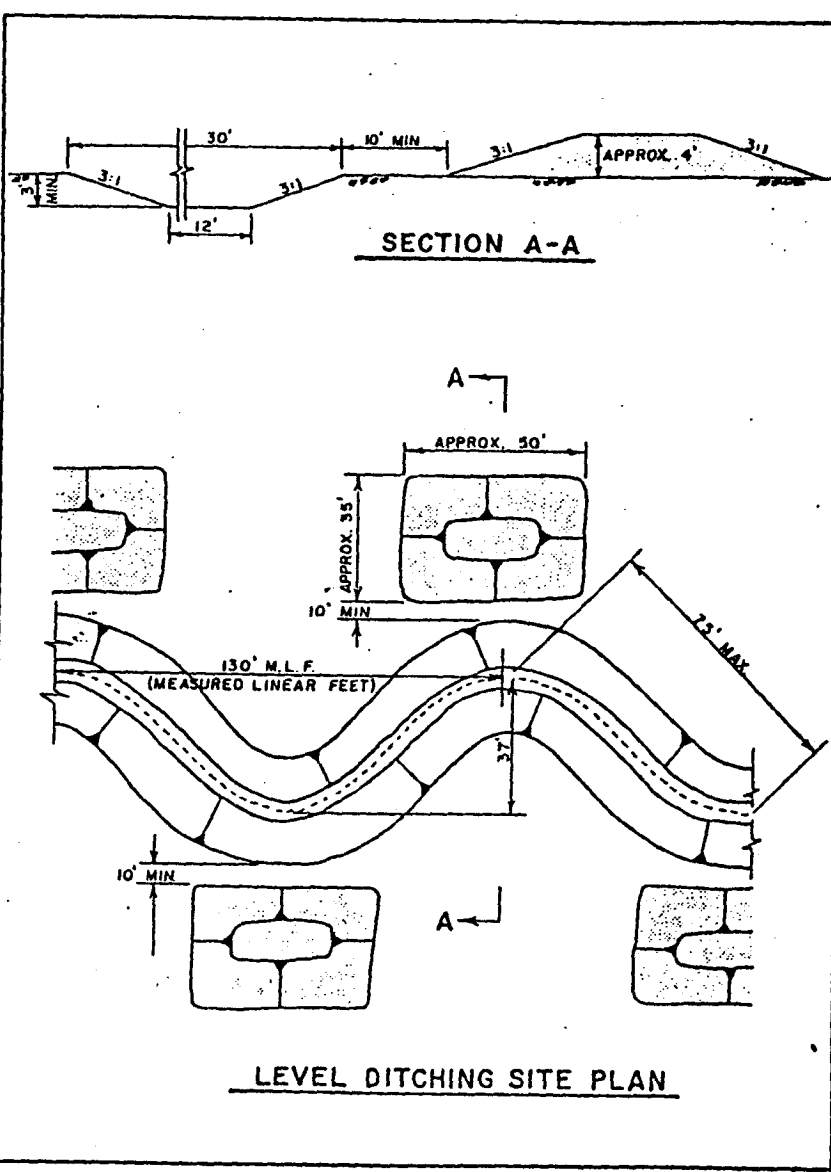
IPD FOR 12 MAY 11

IN WETLANDS
AT LACREEK NATL. WILDLIFE REFUGE
COUNTY OF BENNETT STATE SD
APPLICATION BY LACREEK NATL. WILDLIFE REFUGE
SHEET 2 OF 4 DATE JUNE 1990



E PROFILE

Profile view and elevation of water control structure in Dike "B".



NOTES: LEVEL DITCHING

TOTAL EXCAVATION 2.33 C.Y. PER FOOT OF LEVEL DITCHING.

150 ACTUAL LINEAR FEET OF LEVEL DITCHING IS REQUIRED FOR EACH 130 MEASURED LINEAR FEET.

2.69 C.Y. OF EXCAVATION IS REQUIRED PER MEASURED LINEAR FOOT (M.L.F.) OF LEVEL DITCH.

THE LEVEL DITCH ISLANDS SHALL BE GIVEN A TRACK-TYPE FINISH (DRIVEN OVER BY EQUIPMENT WITH TRACKS).

CONTRACTOR WILL BE GIVEN A STARTING AND ENDING STAKE ON THE STRAIGHT LINE DISTANCE OF THE LEVEL DITCH.

PURPOSE: DIKE / NESTING ISLANDS

DATUM

ADJACENT PROPERTY OWNERS:

1 Denzel Richards

2 Cliff McDonnell

Oglala Sioux Tribe

SD 25B OXT 2 015640

1PD FORM 12-1-1

IN WETLANDS
AT LACREEK NATL. WILDLIFE REFUGE
COUNTY OF BENNETT STATE SD
APPLICATION BY LACREEK NATL. WILDLIFE REFUGE
SHEET 3 OF 4 DATE JUNE 1990

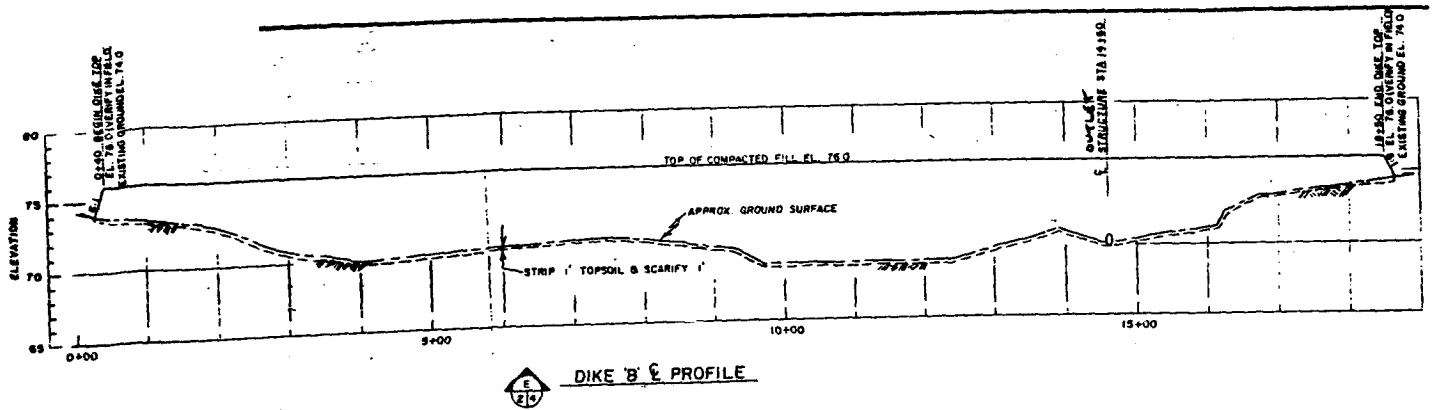
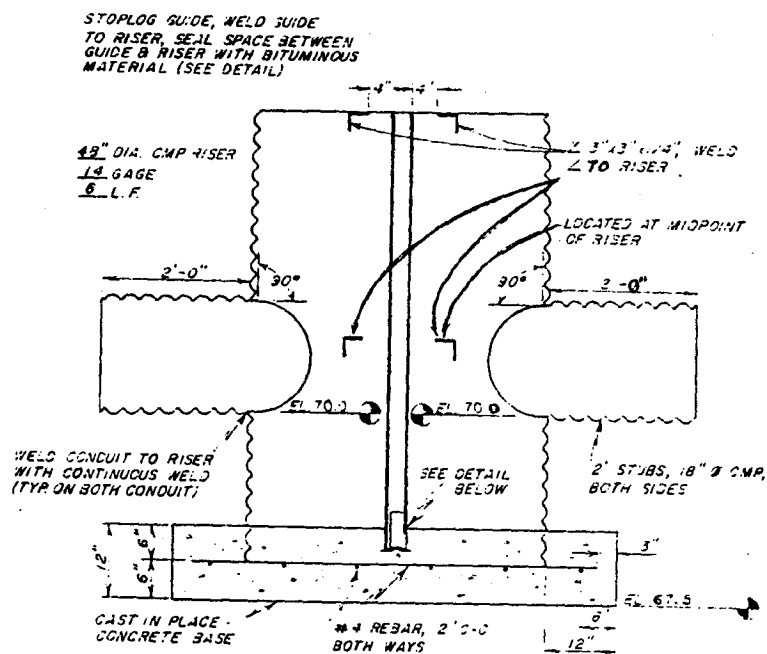


Figure 1. Location of stop-log water control structure in Dike "B".



CONTROL STRUCTURE DETAIL

Profile view of water control structure riser in Dike "B".

PURPOSE: DIKE / NESTING ISLANDS

DATUM

ADJACENT PROPERTY OWNERS:

1 Denzel Richards

2 Cliff McDonnell

Oglala Sioux Tribe

SD 253 OXT 2 015640

170 FORM 13-1

IN WETLANDS

AT LACREEK NATL. WILDLIFE REFUGE

COUNTY OF BENNETT

STATE SD

APPLICATION BY LACREEK NATL. WILDLIFE REFUGE

SHEET 4 OF 4 DATE JUNE 1990



United States Department of the Interior
FISH AND WILDLIFE SERVICE



IN REPLY REFER TO:

BA/EN
WR SD
Mail Stop 60190

MAILING ADDRESS:
Post Office Box 25486
Denver Federal Center
Denver, Colorado 80225

STREET LOCATION:
134 Union Blvd.
Lakewood, Colorado 80228

NOV 06 1990

Mr. Eric Gronlund
South Dakota Department of Water
and Natural Resources
523 East Capitol, Foss Building
Pierre, South Dakota 57501-3181



Dear Mr. Gronlund:

As per your telephone conversation of November 5, 1990, with Ginger Chesy of my staff regarding the U.S. Fish and Wildlife Service's application for permit to appropriate water for Pond 9B at the Lacreek National Wildlife Refuge, we have enclosed the required plans and specifications for both dikes A and B.

Since these dikes are within the Refuge boundary and only create a subimpoundment of Pool 9, if either dike were breached, the waters would flow into Pool 9 commingling with refuge waters impounded by dikes 9 and 10. There is no risk to life or property associated with these dikes.

If you have any questions or require further information, please don't hesitate to contact Ginger at (303) 236-5321.

Sincerely,

William A. Godby
Regional Engineer

Enclosure



Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

November 6, 1990

Ginger Chesy
U.S. Fish and Wildlife Service
P.O. Box 25486
Denver Federal Center
Denver, Colorado 80225

Dear Ginger:

This letter is a follow-up to our phone conversation regarding the application submitted on the proposed pool 9B of the Lacreek National Wildlife Refuge. Pursuant to Board General Rules Chapter 74:02:08 (copy attached), proposed Dike B is considered a dam and must meet safety of dams rules.

Please submit plans and specifications for Dike B for review by this office. Also a preliminary risk assessment should describe the downstream area below the proposed project.

If you have any questions please feel free to contact me.

Sincerely,

Eric Gronlund
Water Rights Division
605 773-3352

attachment



DEPARTMENT OF WATER & NATURAL RESOURCES

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

December 14, 1990

Pat Ginsbach
Farrell, Farrell & Ginsbach
441 N. River
Hot Springs, SD 57747

Dear Mr. Ginsbach:

Enclosed is the information you requested regarding U.S. Fish and Wildlife Service's applications for Lacreek National Wildlife Refuge. The report and recommendations for Vested Right Claim Application Nos. 1926-2 & 1927-2 are included in this packet, however, the report and recommendations for Water Permit Application Nos. 1921-2 and 2147-2 have not been finalized and will be forwarded to you at a later date.

Also, you should have recently received a letter sent to William Godby of the U.S. Fish & Wildlife Service explaining the need to publish a new notice of intent to validate Vested Right Claim Nos. 1926-2 & 1927-2. A new notice of intent to validate will be published in accordance with SDCL 46-2A-16.

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

Sincerely,

Eric Gronlund
Eric Gronlund
Water Rights Division
605 773-3352

enc.

RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 2147-2, U.S. Fish & Wildlife Service

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Division, Department of Water and Natural Resources concerning Water Permit Application No. 2147-2, U.S. Fish & Wildlife Service, Federal Center, P.O. Box 25486, Denver, CO.

The Chief Engineer is recommending APPROVAL of Application No. 2147-2 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) in the public interest with the following qualifications:

1. Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.
2. Approval of Permit No. 2147-2 authorizes storage of up to 167.5 acre-feet of water annually.

See report on application for additional information.


JOHN HATCH, Chief Engineer
December 18, 1990



DEPARTMENT OF WATER & NATURAL RESOURCES

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

December 28, 1990

Martin-Bennett Co. Booster II
Box 610
Martin, SD 57551

ATTENTION: Legal Department

Enclosed is a Notice of Hearing on Application No. 2147-2 to be published twice. Please publish the first notice on January 9, 1991, 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 U.S. Fish & Wildlife Service, PO Box 25486, Denver Federal Center, Denver, CO 80225.

A copy of BOTH publications must be SENT to the WATER RIGHTS DIVISION. IMMEDIATELY return the FIRST publication with the FIRST Transmittal form on the bottom of this page. The first copy is needed to check the publication for errors so any corrections can be made in the second publication. Publication errors can invalidate the public notice and cause the applicant costly delays.

Please be sure the SECOND publication is returned IMMEDIATELY with the enclosed Proof of Publication form. DO NOT WAIT until the end of the month or the billing cycle. No action may be taken on the permit application until proof of publication has been received.

Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

CUT HERE

FIRST TRANSMITTAL NOTICE

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

No. _____

Date _____

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

Name _____

Newspaper _____



DEPARTMENT OF WATER & NATURAL RESOURCES

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

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

December 28, 1990

Robert D. Jacobsen
U.S. Fish & Wildlife Service
PO Box 25486
Denver Federal Center
Denver CO 80225

Dear Mr. Jacobsen:

Water Permit Application No. 2147-2 for wildlife propagation use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice of hearing has been sent to the Publisher of the Martin-Bennett Co. Booster II printed at Martin, SD. For your information, a copy of the notice, the recommendation of the Chief Engineer and a report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

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

Sincerely,


Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

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

Instruction to Newspaper - Publish first Notice on January 9, 1991, with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF HEARING on Application No. 2147-2 to Appropriate Water

Notice is given that U.S. Fish & Wildlife Service, PO Box 25486, Denver Federal Center, Denver, CO 80225 has filed an application for a water permit to appropriate and impound up to 167.5 acre feet of water annually by constructing a subimpoundment in the LaCreek National Wildlife Refuge. The subimpoundment is to be located in the S 1/2 Section 11, T36N, R36E. Water is to be used to provide habitat for wildlife propagation.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2147-2 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. Unless a petition is filed opposing the application or the applicant files a petition contesting the chief engineer's recommendation, the Water Management Board will NOT CONDUCT a HEARING to consider this application and the chief engineer will issue the permit as recommended. Petitions filed in support of the application will NOT require the Board to hear the application.

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 Division, 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 January 28, 1991. 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.

For purposes of publishing 1) the notice of hearing on Application No. 2147-2 and 2) the chief engineer's recommendation, a special Board meeting is scheduled for February 7, 1991, at 9:00 am in Room 413, Joe Foss Building, 523 E Capitol, Pierre SD. If this application is opposed or the recommendation is contested, the February 7, 1991, hearing date may be rescheduled for another Board meeting. If the hearing is rescheduled, notice of the time and place will be given by First Class Mail to the applicant and persons filing petitions. Anyone not filing a petition, but interested in attending the hearing, may contact the Division of Water Rights to confirm a hearing date and location. The February 7, 1991, 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 January 28, 1991.

If a hearing is held, 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. 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 the Water Rights Division to request copies of information pertaining to this application or to assure access to the hearing by the handicapped.

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; 46-5-1 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; and Board Rules ARSD 74:02:01:01 thru 74:02:01:15.

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
 County Bennett) ss.

I, Mary E. Long

certify that the attached printed Notice was taken
 from the Bennett County Booster II

A newspaper which during the whole time of publication of
 said notice herein after stated, has been and is printed and
 published in the _____

City of Martin

County of Bennett and State of South Dakota;
 that the said notice was published in said newspaper on the
 following two dates:

January 9, 1991

January 16, 1991

Mary E. Long
 (Signature)

Ad Manager

(Title)

1/16/91

(Date Signed)

Cost of Printing: 60.55



NOTICE OF HEARING
On Application No. 2147-2
To Appropriate Water

Notice is given that U.S. Fish & Wildlife Service, P.O. Box 25486, Denver Federal Center, Denver, CO 80225 has filed an application for a water permit to appropriate and impound up to 167.5 acre feet of water annually by constructing a subimpoundment in the LaCreek National Wildlife Refuge. The subimpoundment is to be located in the $5\frac{1}{2}$ Section 11, T36N, R36W. Water is to be used to provide habitat for wildlife propagation.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL, of Application No. 2147-2 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. Unless a petition is filed opposing the application or the applicant files a petition contesting the chief engineer's recommendation, the Water Management Board will NOT CONDUCT a HEARING to consider this application and the chief engineer will issue the permit as recommended. Petitions filed in support of the application will NOT require the Board to hear the application.

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 Division, 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 January 28, 1991. 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.

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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; 46-5-1 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; and Board Rules ARSD 74:02:01:01 thru 74:02:01:15.

21-32



South Dakota

GREAT FACES. GREAT PLACES.

MAR 27 1991

DEPARTMENT OF WATER & NATURAL RESOURCES

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

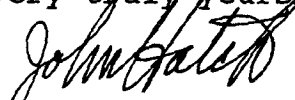
Robert D. Jacobsen
U.S. Fish & Wildlife Service
Denver Federal Center
PO Box 25486
Denver, CO 80225

Dear Mr. Jacobsen:

Enclosed is Water Permit No. 2147-2 authorizing construction of your water diversion system and put the water to beneficial use, not exceeding the limits as specified in the Water Permit.

Also enclosed is Form 10, Notice of Completion of Works and Application of Water to Beneficial Use, which you are to complete and submit to the Chief Engineer when you have completed the system and/or have put the water to beneficial use. An inspection can then be scheduled so that the Water License may be issued, thus completing your acquisition of a Water Right.

Very truly yours,



JOHN HATCH, Chief Engineer
Water Rights Division
605 773-3352

enclosures

PLEASE NOTE: Certain changes can be made in your permit within the five year construction period, usually without affecting the priority date provided an application to amend your permit is made within the five year period - i.e. changes in location or number of diversion points (wells) or location of land to be irrigated. Well locations for wells into the same aquifer can be moved up to 660 feet without application.

Applications to amend a permit after the five year construction period will be assigned a new priority date. Applications to change water sources, to add lands or increase original diversion rates, if approved will usually receive the date of the new application as a priority date regardless of the five year construction period.



DEPARTMENT OF WATER & NATURAL RESOURCES

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

April 8, 1991

Robert D. Jacobsen
U.S. Fish & Wildlife Service
Denver Federal Center
PO Box 25486
Denver, CO 80225

Dear Mr. Jacobsen:

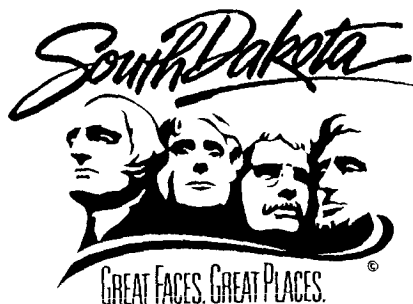
Enclosed is reissued Water Permit No. 2147-2 for a subimpoundment in the LaCreek National Wildlife Refuge. The water permit has been reissued excluding the 51.8 acre-foot capacity of the subimpoundment which was inadvertently listed on the originally issued permit.

If you have any question concerning the enclosed water license, please contact us.

Very truly yours,


JOHN HATCH, Chief Engineer
Water Rights Division
605 773-3352

enclosure



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

February 27, 2002

2147-2

Cheryl C Willis
US Fish & Wildlife Service
Denver Federal Center
PO Box 25486
Denver CO 25486

Dear Sir:

On October 23, 2001, the investigation of your water use system, including the extent of application of water to beneficial use, as developed under Water Permit No. 2147-2 (impoundment at LaCreek Refuge, Bennett County, SD) was completed by Tim Schaal, a staff engineer with our program. Your final water right document, the water license, can now be issued.

State law requires that we charge a \$50.00 fee for the investigation and issuance of the water license. Upon receipt of the \$50.00 fee from you, we will complete processing your water license. The check or money order for the fee should be made payable to the "Water Rights Program".

Your licensed water right will be similar to a property right that can not be lost as long as the water use continues and you abide by the permit requirements.

If you have any questions regarding the water permit, investigation of your water use system or payment of the fee, please contact me.

Sincerely,

A handwritten signature in cursive script that reads "Genny McMath".

Genny McMath
Environmental Scientist
Water Rights Program
(605) 773-3352



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

* INVOICE *

Invoice No. 20411-2147-2

US Fish & Wildlife Service
PO Box 25486
Denver Federal Center
Denver, CO 80225-0486

Fee for water license Permit #2147-2

\$50.00

PLEASE PAY THIS AMOUNT:

\$50.00

Glenda Marks
Secretary
Water Rights Program
(605) 773-3352



United States Department of the Interior

FISH AND WILDLIFE SERVICE Mountain-Prairie Region



IN REPLY REFER TO:

WTR BA

WR SD

Mail Stop 60189

MAILING ADDRESS:

Post Office Box 25486

Denver Federal Center

Denver, Colorado 80225-0486

STREET LOCATION:

134 Union Blvd.

Lakewood, Colorado 80228-1807

MAR 06 2002

Ms. Genny McMath
Department of Environment and
Natural Resources
Water Rights Program
523 East Capitol
Pierre, South Dakota 57501-3182

RE: Water Permit No. 2147-2

RECEIVED

MAR - 8 2002

WATER RIGHTS
PROGRAM

Dear Ms. McMath:

In response to your letter dated February 27, the \$50 water license inspection fee under Water Permit 2147-2, Lacreek National Wildlife Refuge, Bennett County, has been forwarded via electronic fund transfer. Upon receipt of payment, please complete processing Water License 2147-2.

If you have questions or require further information, please contact me at (303) 236-5321 extension 227.

Sincerely,

Linda Coe
Water Rights Specialist

RECEIPT

Water Rights Program

South Dakota Department of Environment and Natural Resources

NO 417126

Pierre, March 18, 20 02

RECEIVED OF Cheryl C Willis, US Fish & Wildlife Service, Denver Federal Center, PO Box 25486,
the following amount in fees for services rendered as provided for by law: Denver CO 25486

Fee for Application for Permit No. _____ to Appropriate Water, to construct

and to put water to beneficial use _____

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. 2147-2

50 00

Fee for Filing Transfer Form _____

Fee for Filing Extension Request _____

Fee for _____

Payment was electronic transfer

(Any Other Work Provided by Law)

Total

50 00

By Darland Erbe
Chief Engineer

gm

REPORT ON INSPECTION OF PERMIT NO. 2147-2

Other permit(s) associated with the project: US Withdrawal 2-2

DATE OF INSPECTION: October 23, 2001

NAME & ADDRESS OF INSPECTION CONTACT/ Joseph Nichols, USFWS, Lacreek National Wildlife Refuge, HC 5 Box 114, Martin, SD 57551

RELATIONSHIP TO PERMIT HOLDER, IF APPLICABLE: Technician

NAME & ADDRESS OF PERMIT HOLDER: USFWS, PO Box 25486, Denver Federal Center, Denver, CO 80225

DIVERSION POINT LEGAL LOCATION: Dike A--1800 ft. north & 1500 ft. west and Dike B--1500 ft. north & 2640 ft. west of the SE corner of Sec. 11-T36N-R36W (S 1/2 Sec.11-T36N-R36W).

DAM INFORMATION: DIKE "A"

- 1) Height to crest 5 feet
- 2) Height to primary spillway 3 feet
- 3) Height to secondary spillway N/A feet
- 4) Crest width 12 feet
- 5) Crest length 385 feet
- 6) Spillway length XXX feet
- 7) Spillway width approx. 850 (natural) feet
- 8) Approx. storage (Normal) 174.5 acre-feet
- 9) Approx. storage (Maximum) 335 acre-feet
- 10) Date constructed: 1991

Dike "B"

- 7 feet
- 5 feet
- 5 feet
- 12 feet
- 1810 feet
- approx. 850 feet (natural)
- 174.5 acre-feet
- 335 acre-feet
- 1991

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

U. S. - 5

CERTIFICATE OF WITHDRAWAL
OF
PUBLIC WATERS

BENNETT COUNTY

LaCRECK

The Bureau of Biological Survey of the United States, Department of Agriculture, having made application for the withdrawal of certain heretofore unappropriated public waters of the State of South Dakota, and having complied with the requirements of the statute of the State of South Dakota providing for such withdrawal, such statute and authority being contained in and described as Vol. 2, Chapter 2, Article 1, Paragraph 8247 of the Revised Code of 1919, now therefore:

This is to Certify that all of the unappropriated waters of LaCreek lying in Bennett County in the State of South Dakota from its source in section 22, township 36N, range 36 west of the sixth principal meridian thru section 25, township 37 N, range 36 west of the sixth principal meridian together with all tributary and feeder streams, springs, rivers, draws, coolies and watersheds which in any way, either directly or indirectly, contribute water to and/or help to maintain and increase the water flow of LaCreek, are hereby withdrawn from future appropriation during the continuance of the right herein granted and contained.

This certificate and withdrawal shall in no manner prejudice, alter, amend or affect the rights of any prior appropriator or prior appropriation of water, nor of any application for appropriation pending upon the date of this certificate, but the rights and privileges of any and all such prior appropriators or applicants for appropriation of water shall remain inviolate and intact, the same as if the within withdrawal had not been made.

This certificate shall be and is subject to cancellation in accordance with the provisions of the statute hereinbefore referred to and under the authority of which this certificate is issued.

In accordance with the provisions of the statute hereinbefore referred to, this Certificate is executed at the State Capitol at Pierre, South Dakota on this 16th day of October 1934.

Chas. A. Zimmerman
STATE ENGINEER

Permit No. 2147-2
White River - Water District

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

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

I have this day, **October 23, 2001**, made a thorough examination of the water use system constructed by **USFWS** of **PO Box 25486** holder of Permit No. **2417-2**, bearing the priority of **November 1, 1990 (167.5 Ac-ft) & October 16, 1934 (7.0 Ac-ft)** authorizing the storage of **174.5 (total)** acre-feet of the waters of **Lake Creek & Tributaries** for **wildlife propagation** purposes, in **Bennett** County.

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

A. Works used to divert the water:

Dike "A" which is 5 ft. high & 385 ft. long and Dike "B" which is 7 ft. high & 1810 ft. long that create a 63.8 acre surface area wetland with a storage capacity of 174.5 acre-feet. Water Permit No. 2147-2 authorizes 167.5 acre-feet of storage and US Withdrawal 2-2 authorizes 7.0 acre-feet of storage.

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

N/A

C. Works used to apply water to beneficial use:

Dike "A" which is 5 ft. high & 385 ft. long and Dike "B" which is 7 ft. high & 1810 ft. long that create a 63.8 acre surface area wetland with a storage capacity of 174.5 acre-feet. Water Permit No. 2147-2 authorizes 167.5 acre-feet of storage and US Withdrawal 2-2 authorizes 7.0 acre-feet of storage.

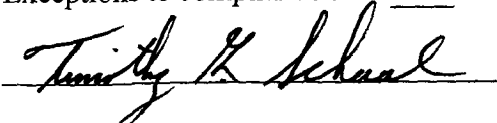
The system is in the following condition good. The point of diversion is located Dike A--1800 ft. north & 1500 ft. west and Dike B--1500 ft. north & 2640 ft. west of the SE corner of Sec. 11-T36N-R36W. (S 1/2 Sec.11-T36N-R36W). The works are capable of diverting and conveying to the place of use 174.5 (total) acre-feet of water which is to be used for wildlife propagation. Water has been put to beneficial use to the maximum extent as follows:

Dike "A" which is 5 ft. high & 385 ft. long and Dike "B" which is 7 ft. high & 1810 ft. long that create a 63.8 acre surface area wetland with a storage capacity of 174.5 acre-feet. Water Permit No. 2147-2 authorizes 167.5 acre-feet of storage and US Withdrawal 2-2 authorizes 7.0 acre-feet of storage.

and the license should be issued for 174.5 acre-feet of storage.

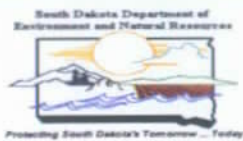
Applicable permit qualifications have been complied with: Yes X

Exceptions to compliance are: none Date Report Completed: February 26, 2002



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

Water Permit Application No. 2147-2



Timothy G. Schaal
Timothy G. Schaal, P.E. 2/26/02
Natural Resources Engineer Specialist
Water Rights Program

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 2147-2

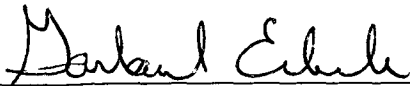
(1) The US Fish & Wildlife Service, PO Box 25486, Denver Federal Center, Denver, CO 80225 made Application No. 2147-2, November 1, 1990 for a water permit to appropriate 167.5 acre feet of water annually by constructing a subimpoundment in the LaCreek National Wildlife Refuge, Bennett County, South Dakota for wildlife propagation purposes. Permit No. 2147-2, with a priority date of November 1, 1990 was approved February 7, 1991 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before February 7, 1996 and for the application to beneficial use of said water on or before February 7, 2000.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the impoundment and is entitled to store 174.5* acre feet of water annually for beneficial use. The location of the dikes are: **Dike A** – 1,800'N and 1,500'W of the SE corner; **Dike B** – 1,500'N and 2,640'W of the SE corner, both in Section 11, T36N, R36W. (S ½ Section 11). Dike "A" which is 5' high and 385' long and Dike "B" which is 7' high and 1,810' long create a 63.8 acre surface area wetland.

*** Water Right No. 2147-2 authorizes 167.5 acre feet of storage and US Withdrawal No. 2-2 authorizes 7.0 acre feet of storage for a total of 174.5 acre feet. US Withdrawal No. 2-2 carries a priority date of October 16, 1934.**

(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 the US Fish & Wildlife Service, Denver Federal Center, PO Box 25486, Denver, CO 80225 the holder and/or owner of Water Right No. 2147-2 is issued a license to appropriate 167.5 acre feet of water annually (No. 2147-2) and 7.0 acre feet of water annually (US Withdrawal No. 2-2) for wildlife propagation purposes. The subimpoundment, with a capacity of 174.5 acre feet of water is located within the LaCreek National Wildlife Refuge and carries a priority date of November 1, 1990 (No. 2147-2) and October 16, 1934 (US Withdrawal No. 2-2). This license is subject to any limitations or qualifications listed in Water Right No. 2147-2 and subject to South Dakota State Law.



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

APR 16 2002

date





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

APR 16 2002

2147-2

Cheryl C. Willis
US Fish & Wildlife Service
PO Box 25486
Denver Federal Center
Denver, CO 80225

Dear Ms. Willis:

Enclosed is Water License No. 2147-2. This is the final water right document completing your process of obtaining a Water Right. Enclosed is Receipt No. 417126 in the amount of \$50.00 which you paid for the investigation and issuance of the Water License.

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

c: Joe Nichols, US Fish & Wildlife Service

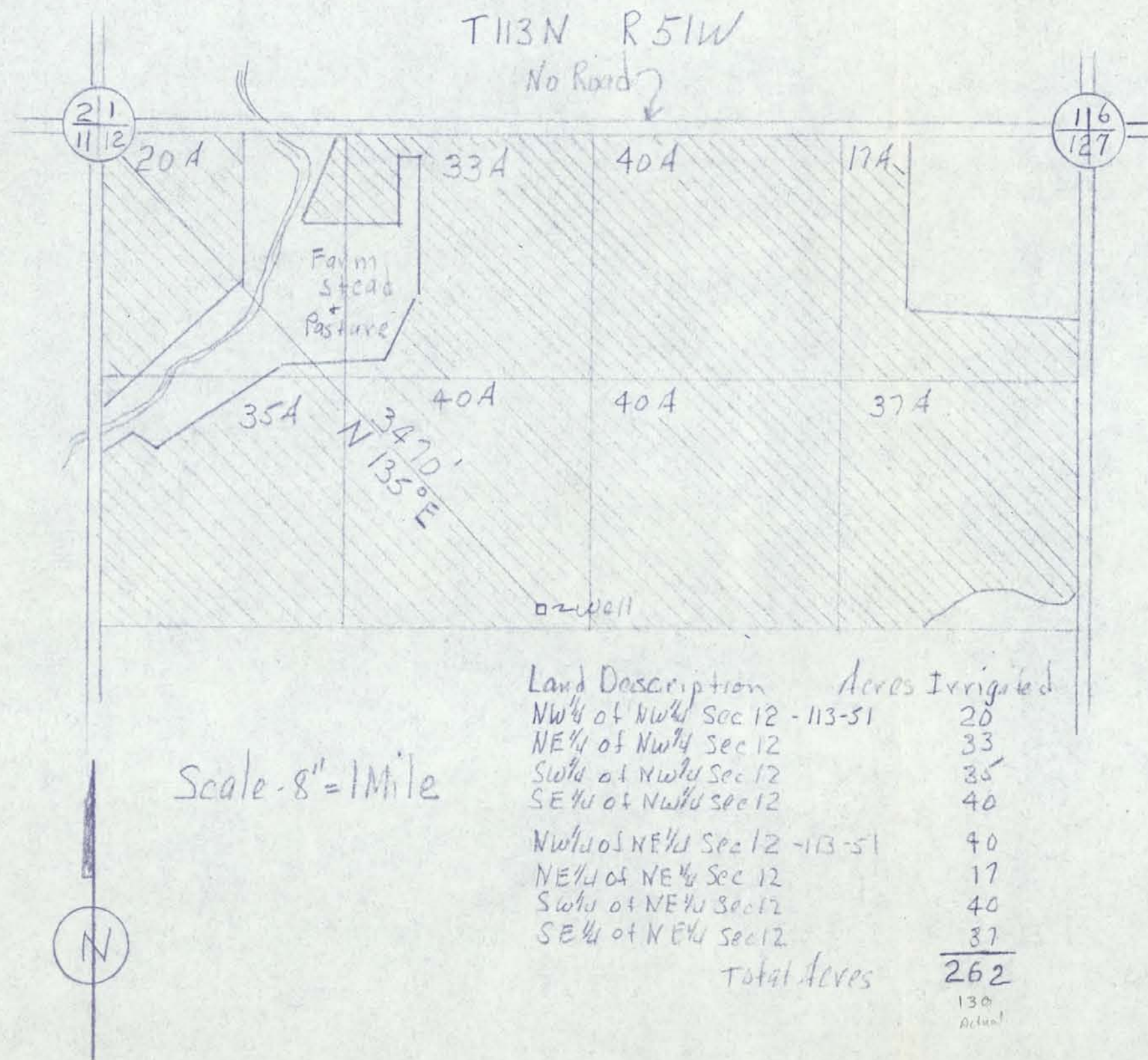
1986

NOT TO SCALE



Rasool Akhadi Engineer

8/25/86



JAMES BLACKKETTER IRRIGATION PROJECT

1
Estelline South Dakota
Hamlin County

Water claimed - 3.7 cfs

Cross hatch indicates irrigated area

Point of Diversion - 3470' N 135° E
of NW corner of Section 12 - 113-51

Land Description	Acres Irrigated
NW 1/4 of NW 1/4 Sec 12 - 113-51	20
NE 1/4 of NW 1/4 Sec 12	33
SW 1/4 of NW 1/4 Sec 12	35
SE 1/4 of NW 1/4 Sec 12	40
NW 1/4 of NE 1/4 Sec 12 - 113-51	40
NE 1/4 of NE 1/4 Sec 12	17
SW 1/4 of NE 1/4 Sec 12	40
SE 1/4 of NE 1/4 Sec 12	37
Total Acres	262

130
Actual

Surveyor's Certificate

I, John L. Wiersma, do hereby certify that
this map identifies a reasonably accurate
record of the land of:

James Blacketter

Estelline, South Dakota

Hamlin County

Drawn by J.L.W.

11-14-74

John L. Wiersma

P.E. 1916

Brookings, S.D.

(APPL No 2147-3)



DUCKS UNLIMITED

PROJECT AT

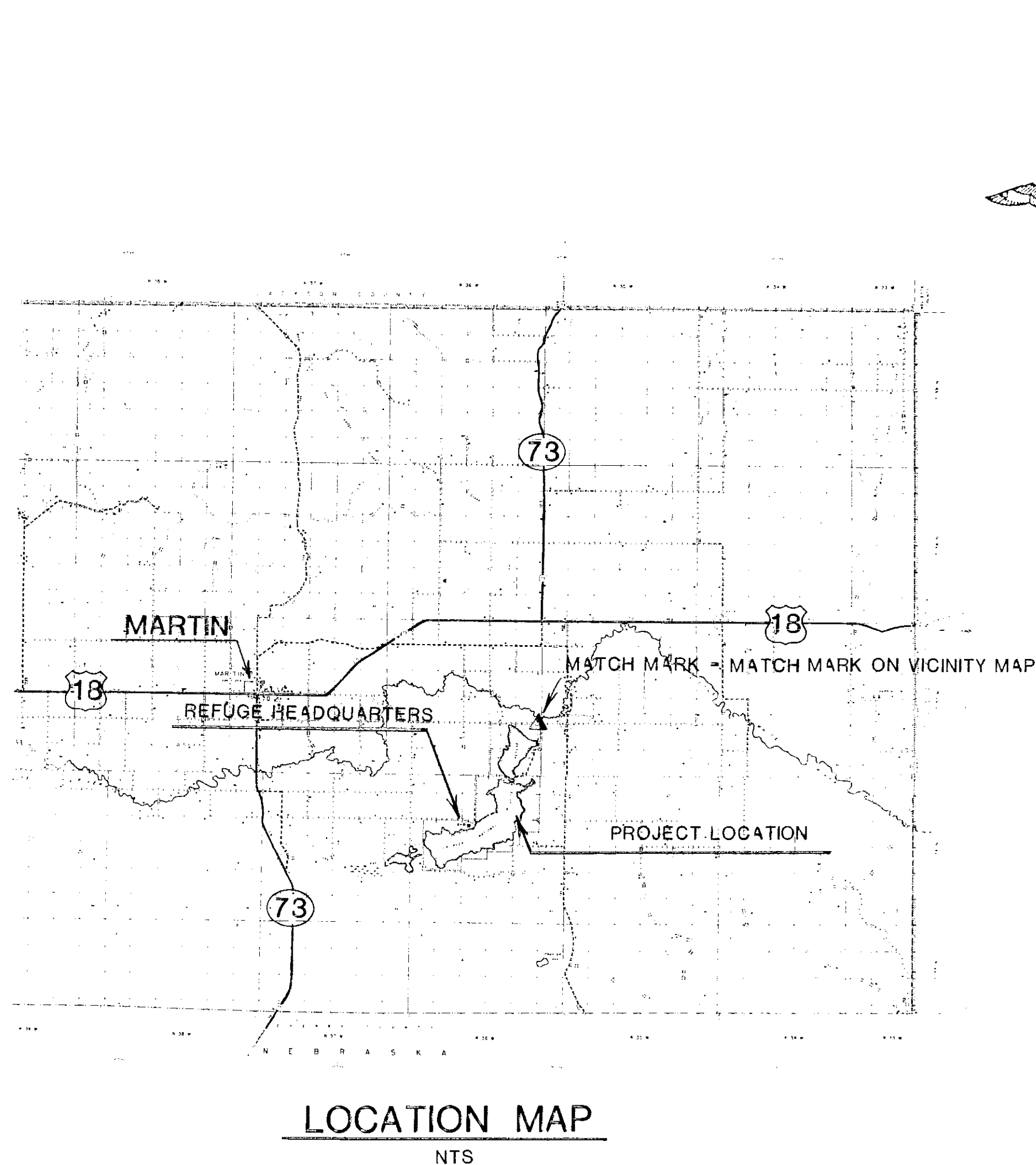
LACREEK POOL 9

SEC. 11, TWP. 36 N., RGE. 36 W.

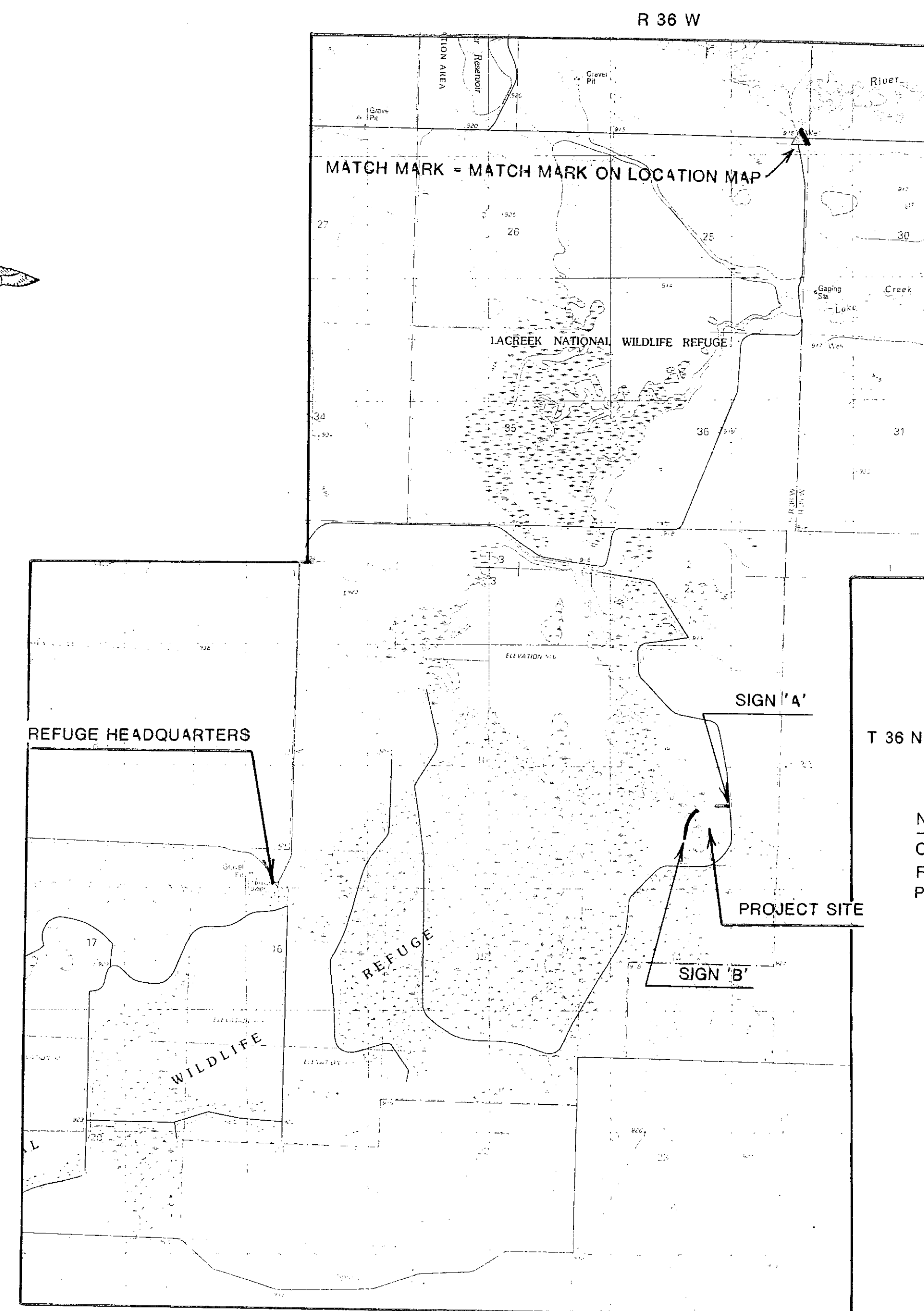
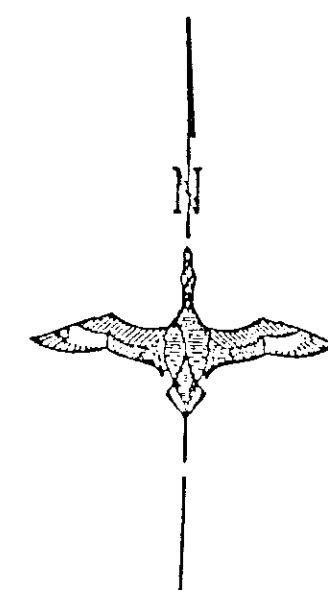
BENNETT COUNTY, SOUTH DAKOTA

IN COOPERATION WITH

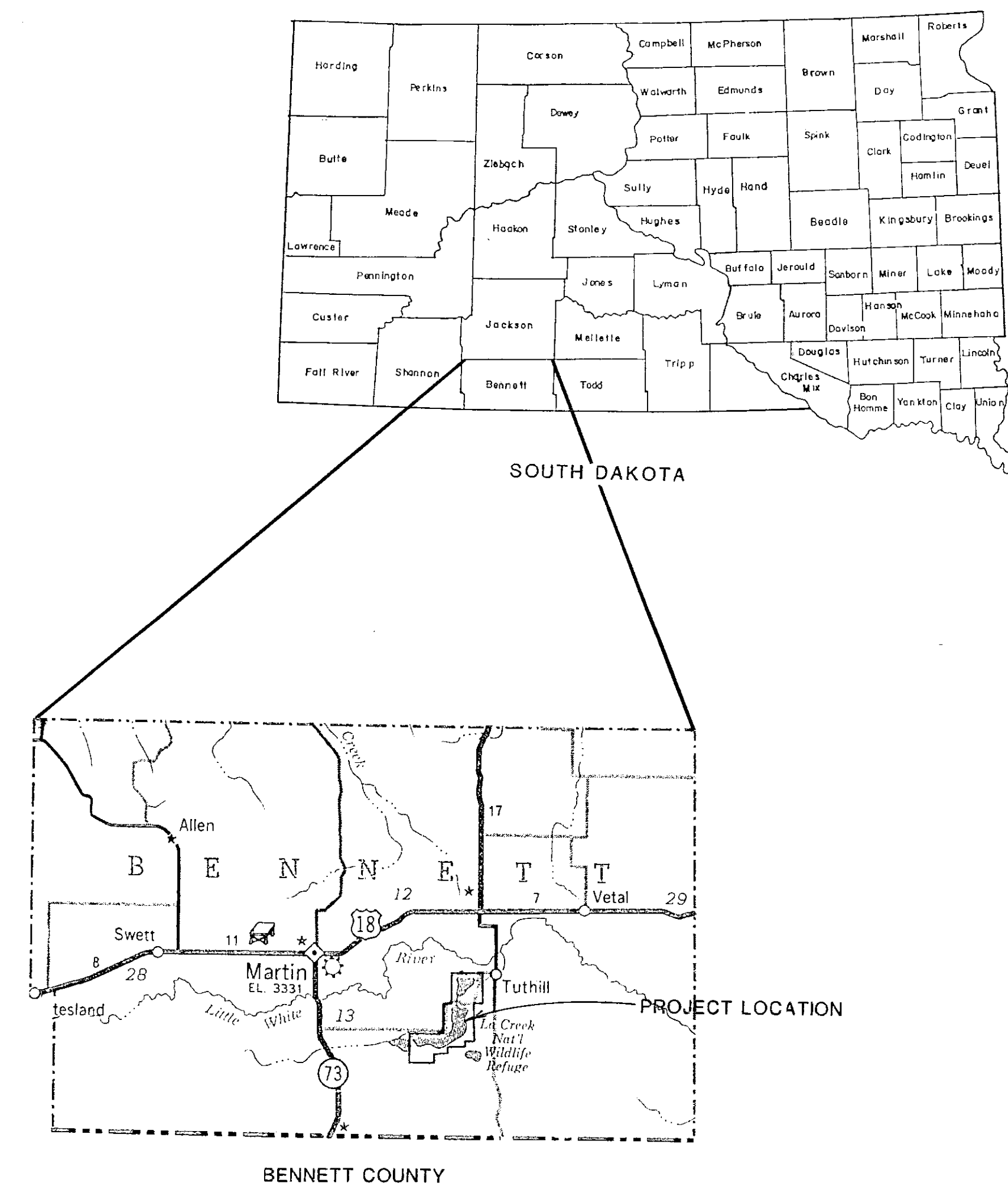
U.S. FISH & WILDLIFE SERVICE



LOCATION MAP
NTS



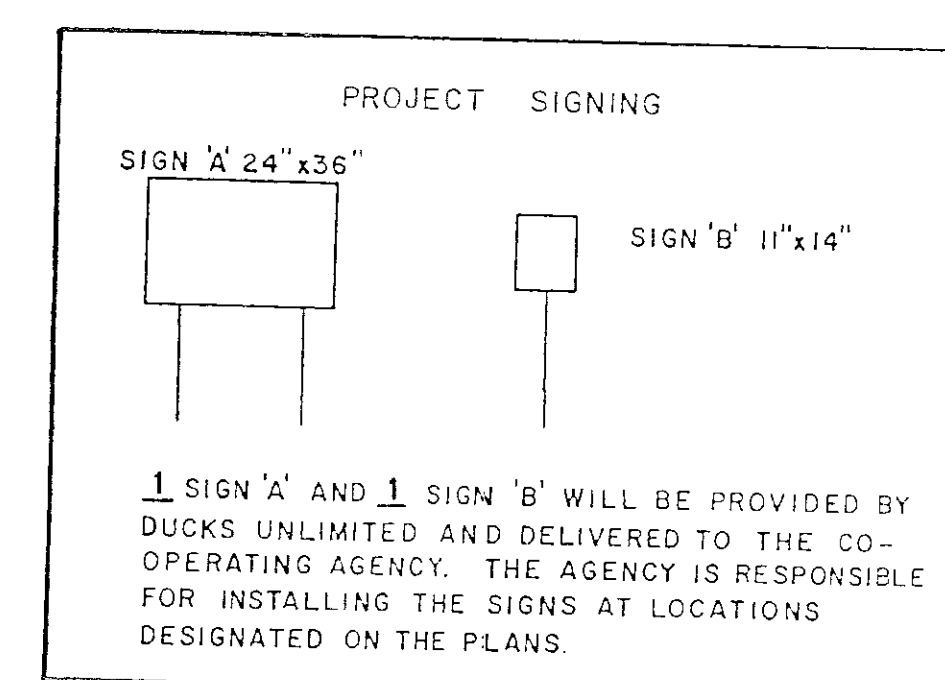
VICINITY MAP
NTS



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1. VICINITY MAP
2. SITE PLAN
3. PLAN & PROFILE, DETAILS
4. PROFILES & SECTIONS

NOTE:
OBTAIN SITE ACCESS INSTRUCTIONS
FROM THE REFUGE HEADQUARTERS
PRIOR TO ENTERING THE PROJECT SITE.



SPECIFICATIONS

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MOBILIZATION	201
SITE PREPARATION	202
EXCAVATION	203
EMBANKMENT CONSTRUCTION	204
WATER	205
WATER CONTROL STRUCTURE INSTALLATION	206
CULVERT INSTALLATION	207

ESTIMATED QUANTITIES

DIKE 'A'	
SITE PREP	577 C.Y.
EMBANKMENT CONSTRUCTION	2,182 C.Y.
DIKE 'B'	
SITE PREP	3,557 C.Y.
EMBANKMENT CONSTRUCTION	17,900 C.Y.
LEVEL DITCH	1235 M.L.F.
18" CMP	52 L.F.
WATER CONTROL STRUCTURE	1 EA.

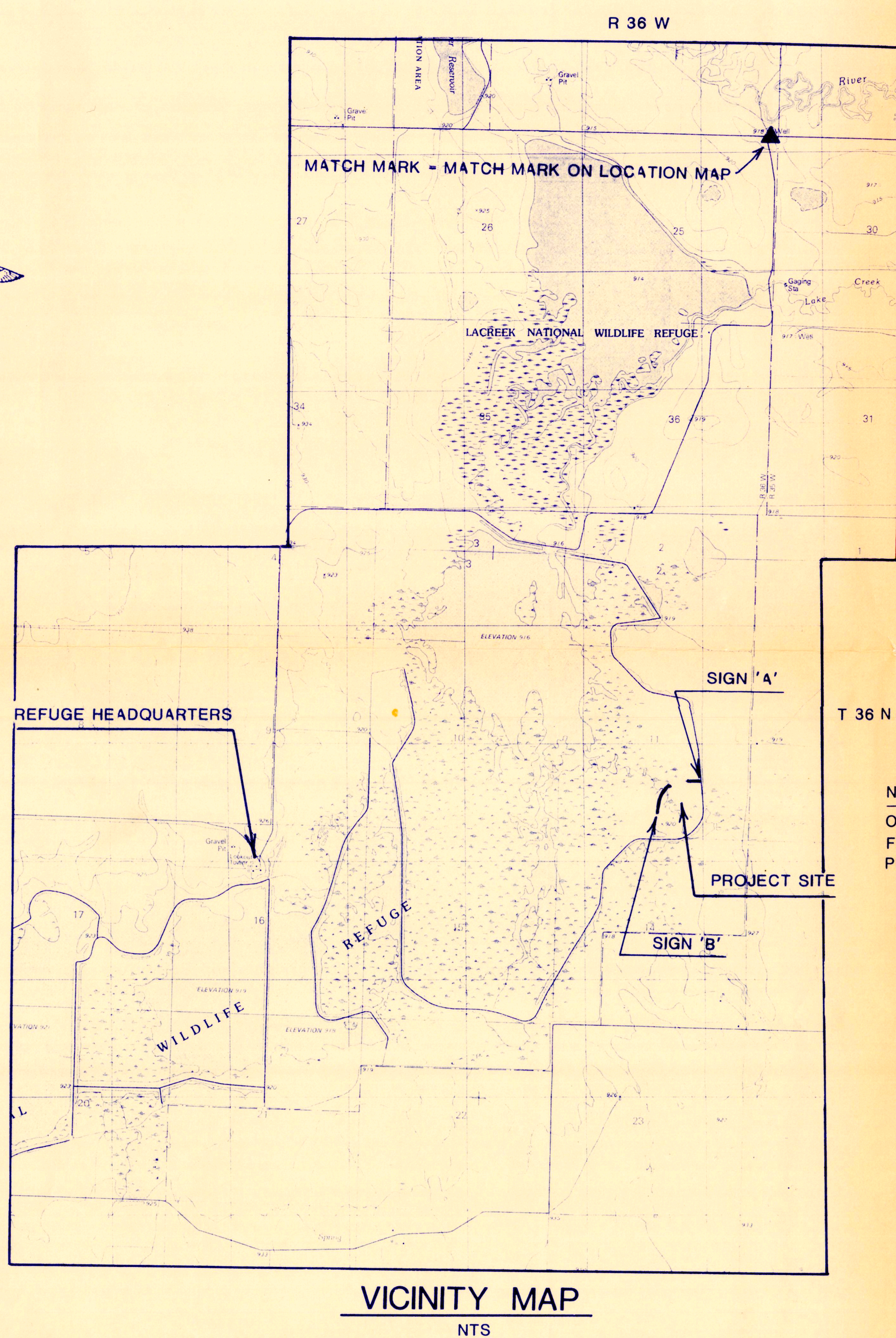
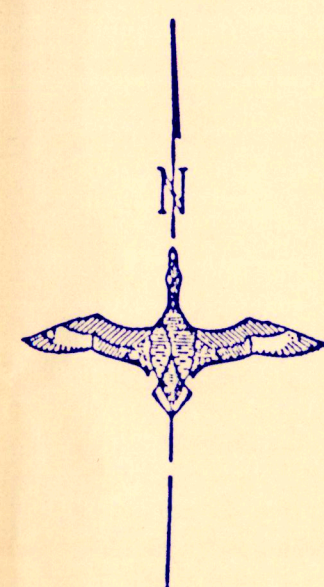
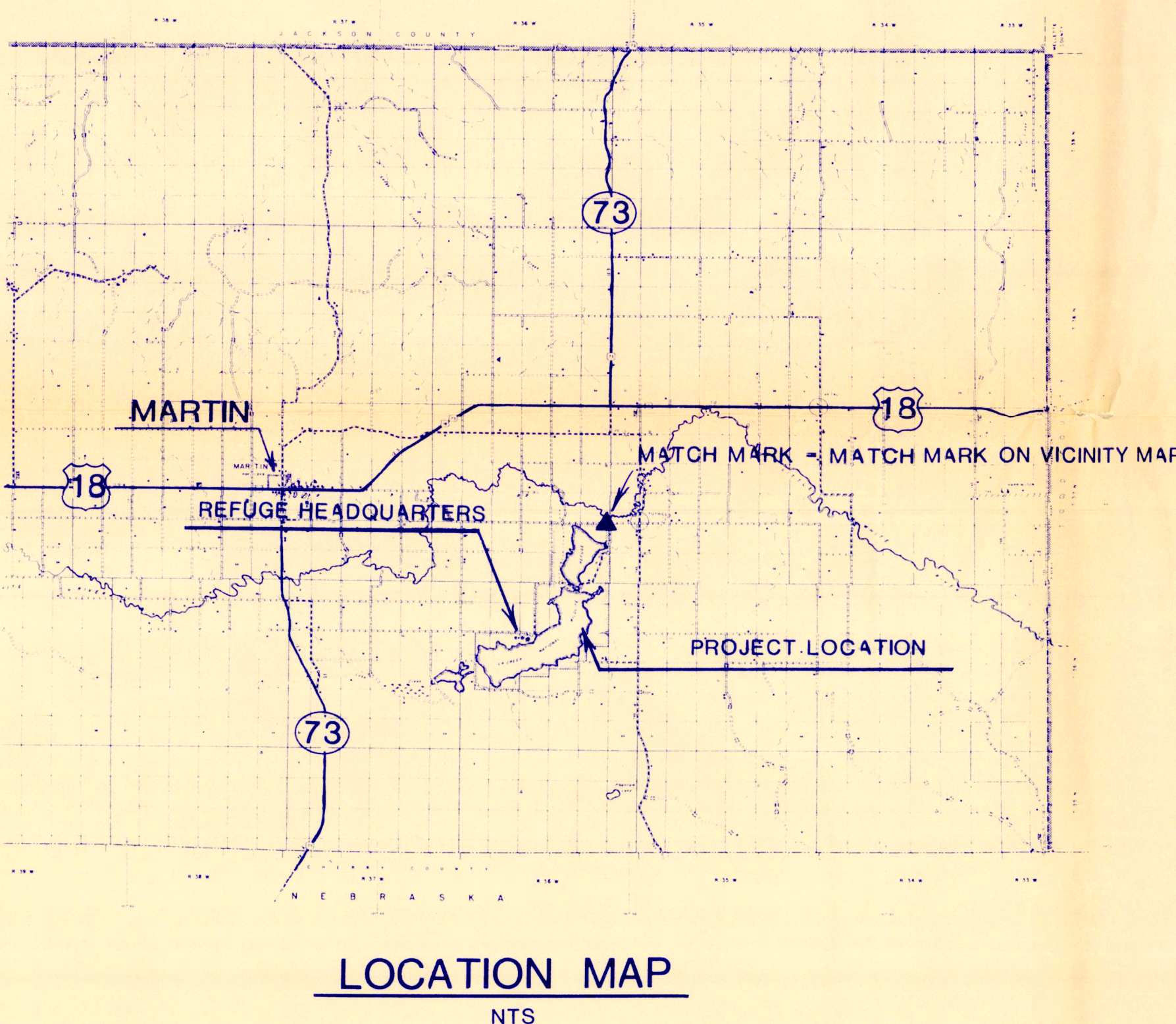
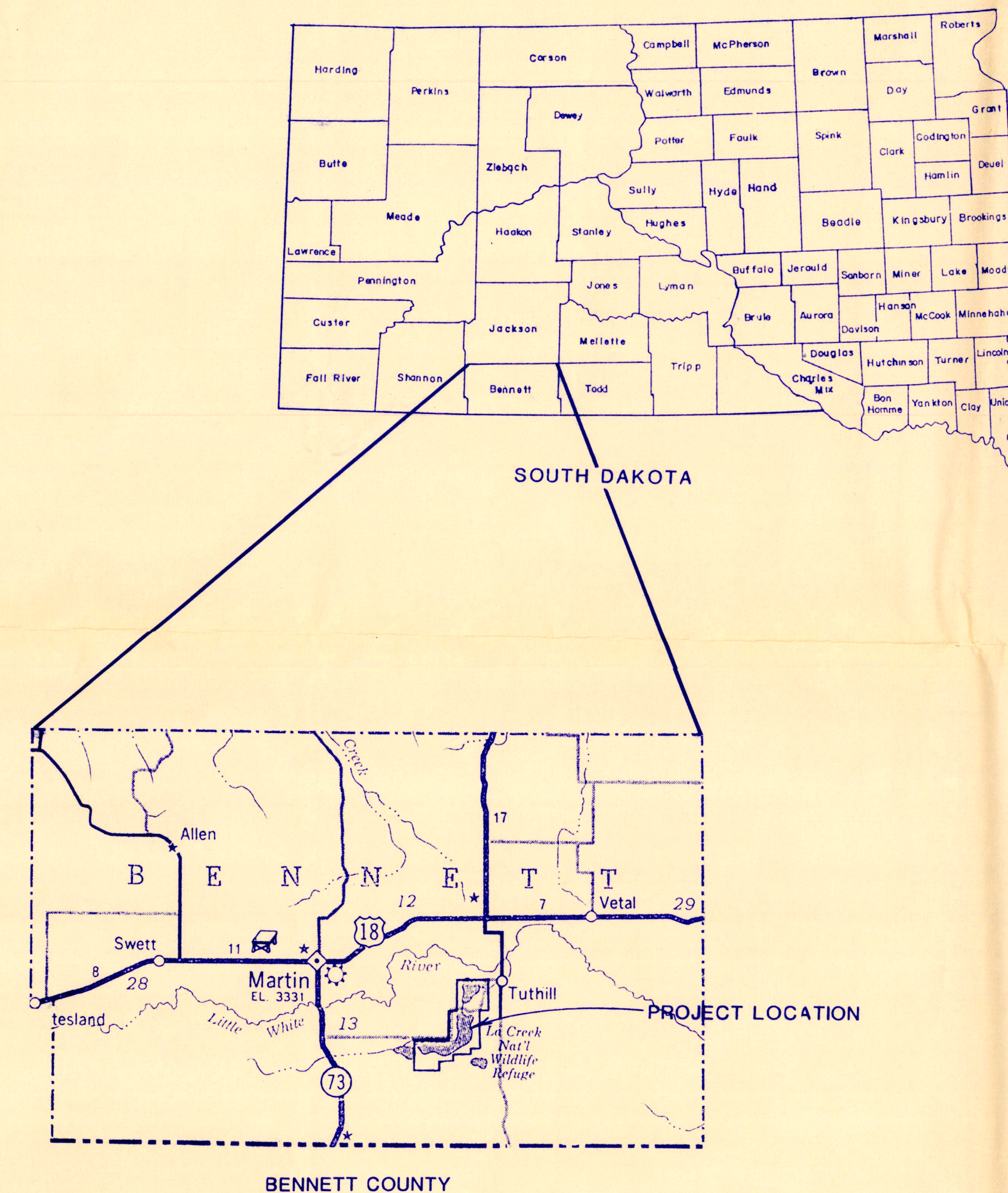


DUCKS UNLIMITED INC.	PROJECT NO. SD-063-02-001	DESIGNED BY: RCS
GREAT PLAINS REGIONAL OFFICE	LACREEK POOL 9	DRAWN BY: TD
DATE: 11-30-89	SHEET NO. 1 OF 4	SURVEYED BY:
		CHECKED BY:



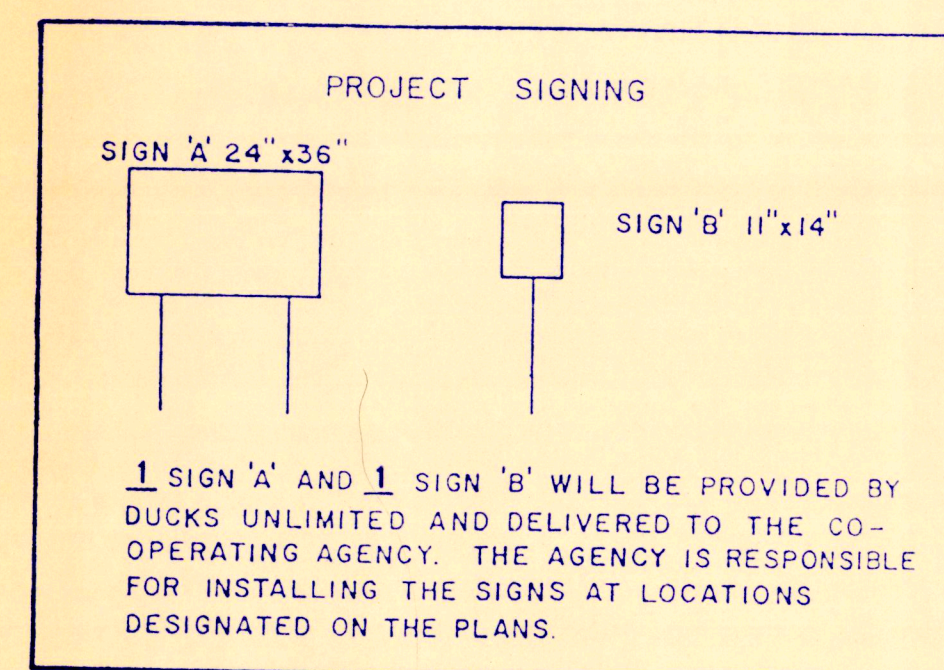
DUCKS UNLIMITED

PROJECT AT
LACREEK POOL 9
SEC. 11, TWP. 36 N., RGE. 36 W.
BENNETT COUNTY, SOUTH DAKOTA
IN COOPERATION WITH
U.S. FISH & WILDLIFE SERVICE



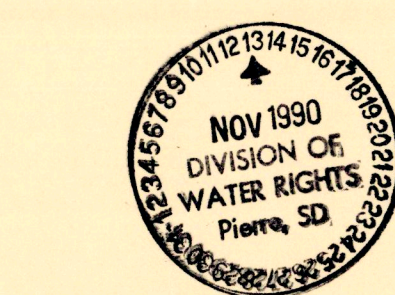
- ### INDEX
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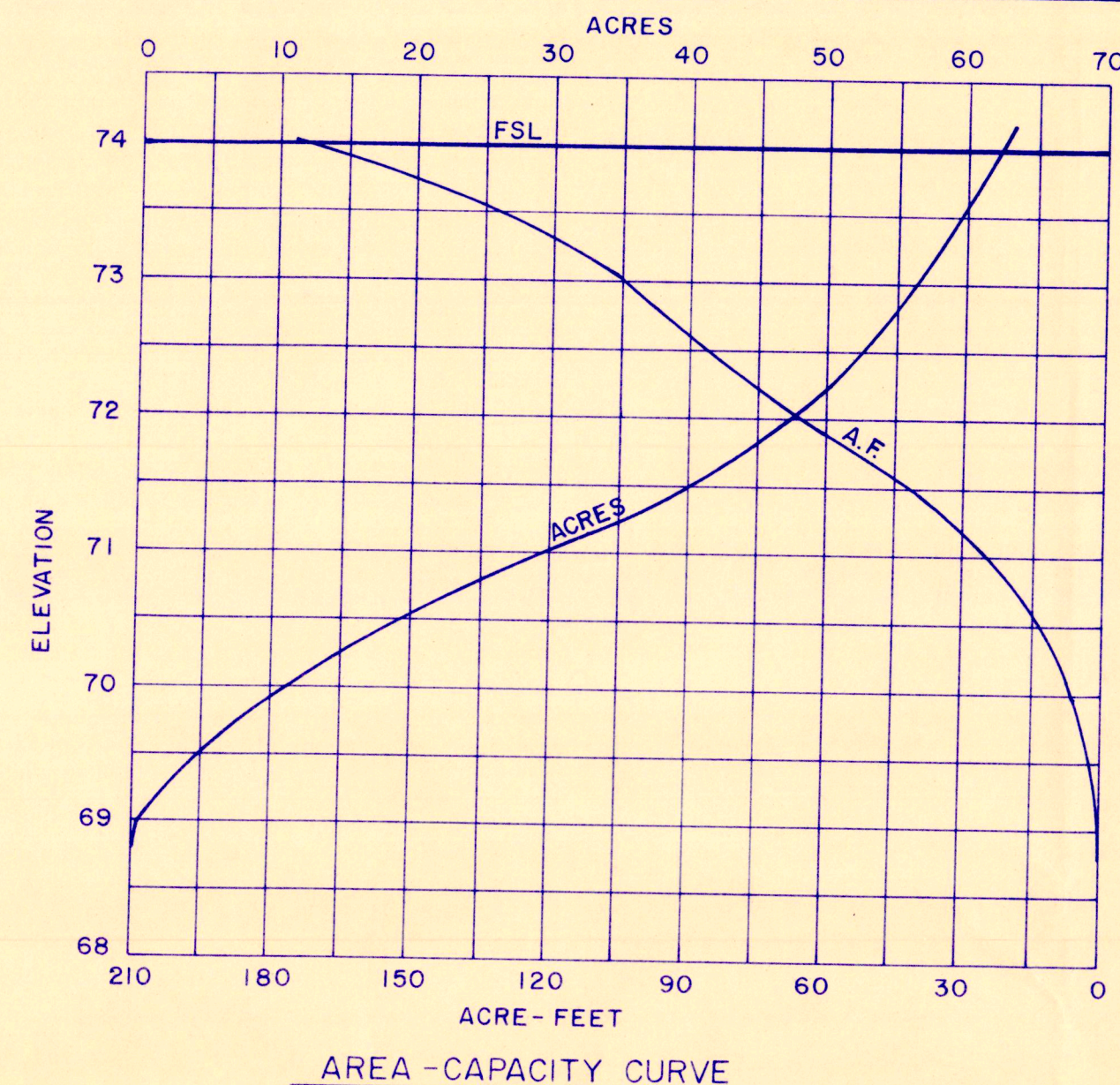
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	PROJECT NO. SD-063-02-001	DESIGNED BY: RCS
	LACREEK POOL 9	DRAWN BY: TD
	VICINITY MAP	SURVEYED BY:
	DATE: 11-30-89	APPROVED BY: [Signature] SHEET NO. 1 OF 4

2147-2



MARSH DATA
FULL SERVICE LEVEL (FSL) = 74.0
ACRES AT FSL = 63.8
ACRE FEET AT FSL = 174.5
SHORELINE MILES AT FSL = 1.5

Handwritten:
73.5 = 195
74 = 174.5
76 = 335

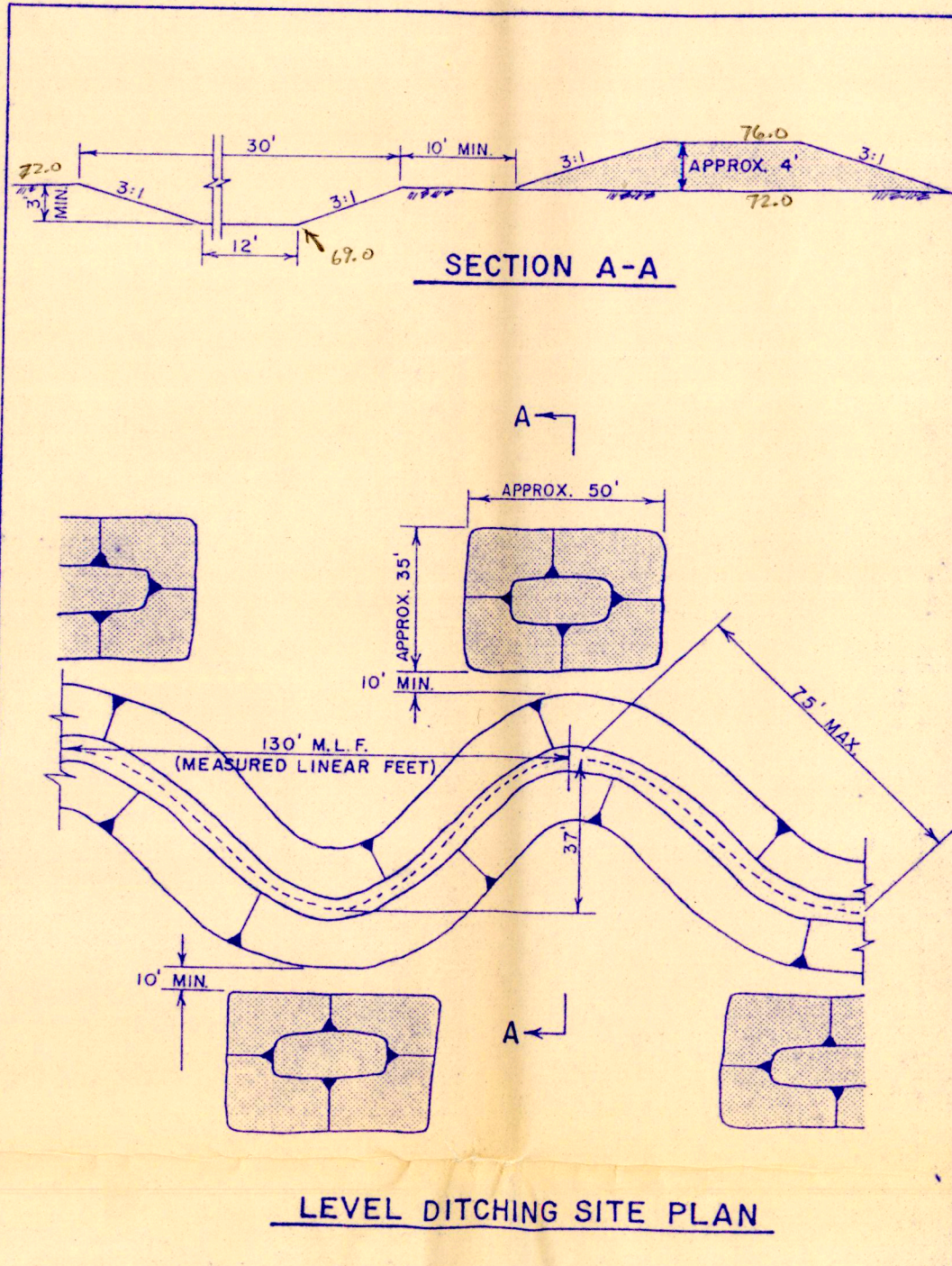
CURVE 'A'
Δ = 20°
R = 1134.26'
T = 200.00'
L = 395.9'

DIKE 'B'
12' TOP AT EL. 76.0
4:1 SIDE SLOPES
SEE SHEET 3 FOR E PROFILE

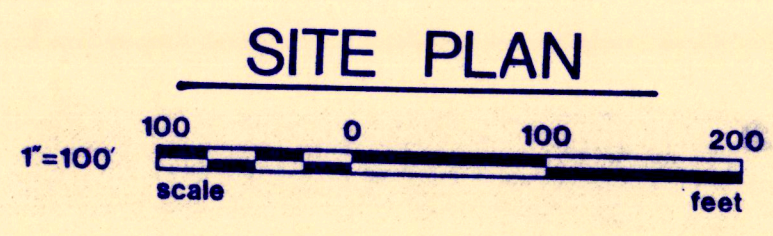
CURVE 'B'
Δ = 31°
R = 721.2'
T = 200.0'
L = 390.2'

CURVE 'C'
Δ = 33°
R = 675.2'
T = 200.0'
L = 388.9'

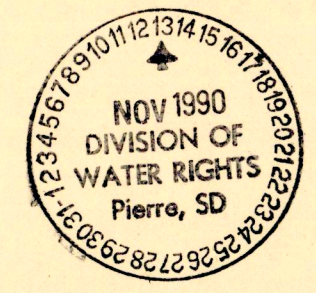
NOTES: LEVEL DITCHING
TOTAL EXCAVATION 2.33 C.Y. PER FOOT OF LEVEL DITCHING.
150 ACTUAL LINEAR FEET OF LEVEL DITCHING IS REQUIRED FOR EACH 130 MEASURED LINEAR FEET.
2.69 C.Y. OF EXCAVATION IS REQUIRED PER MEASURED LINEAR FOOT (M.L.F.) OF LEVEL DITCH.
THE LEVEL DITCH ISLANDS SHALL BE GIVEN A TRACK-TYPE FINISH (DRIVEN OVER BY EQUIPMENT WITH TRACKS).
CONTRACTOR WILL BE GIVEN A STARTING AND ENDING STAKE ON THE STRAIGHT LINE DISTANCE OF THE LEVEL DITCH.



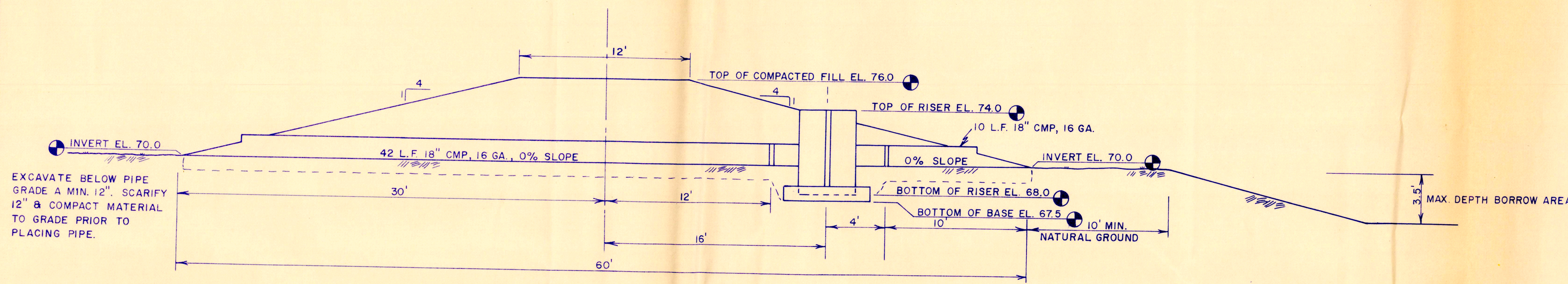
ATTENTION SURVEYORS:
VERIFY THAT ELEVATION 74.0 OR HIGHER IS CONTINUOUS ON THE NORTH AND SOUTH ENDS OF THE IMPOUNDMENT AREA.



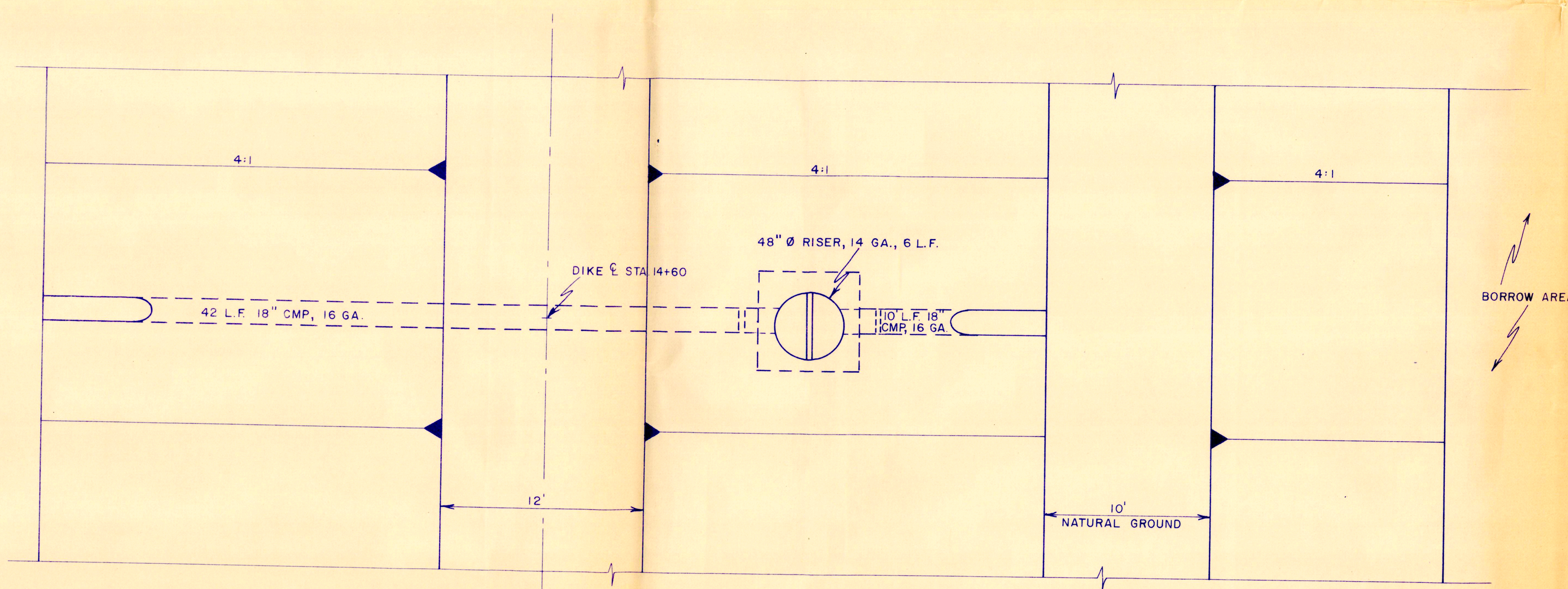
NOTE:
VERTICAL DATUM BASIS IS FROM U.S.F.W. DATUM ON B.M. 103. THE NORTH ANGLE IRON OF SCREW GATE STATION 88+82.13' LEFT WITH AN ELEVATION OF 76.55. THIS IS NOT AN M.S.L. DATUM.



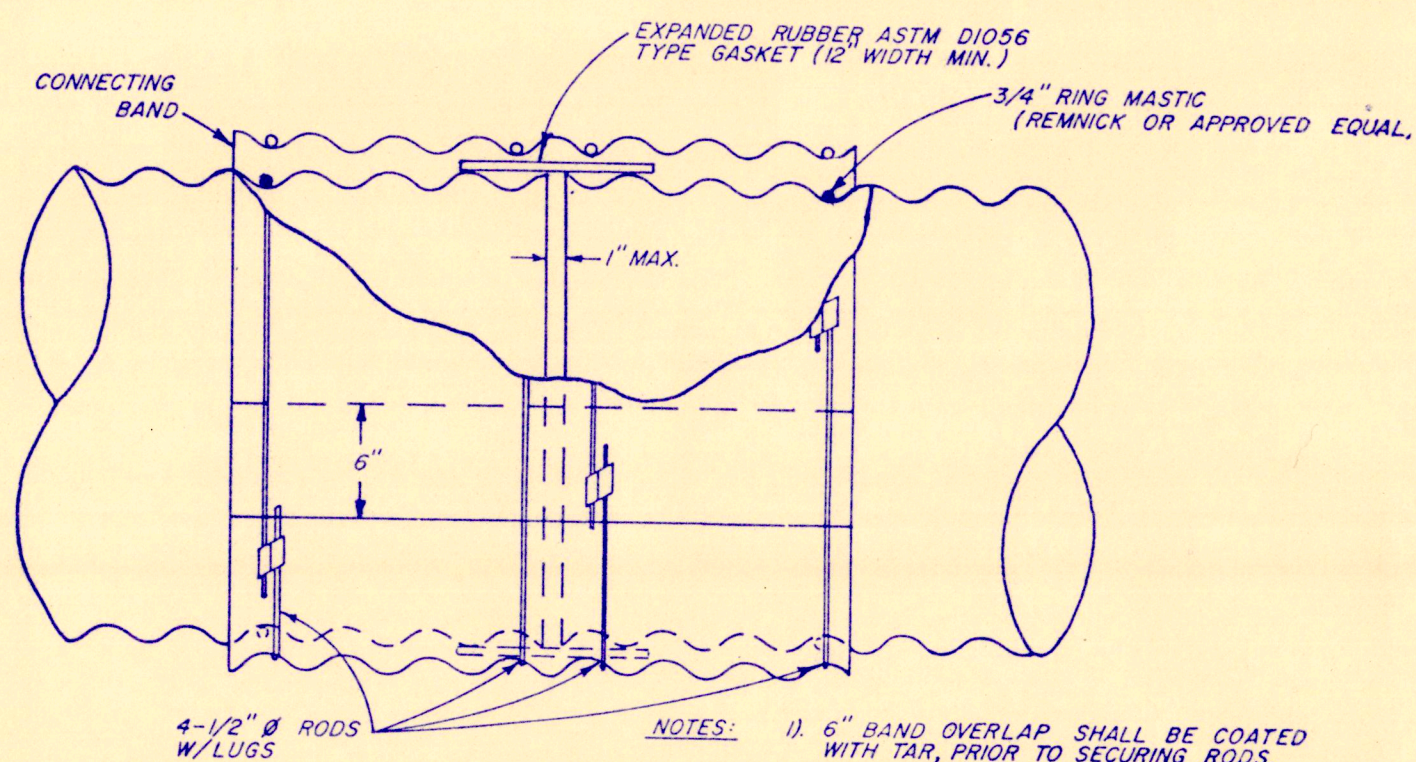
NO. DESCRIPTION OF REVISION				DATE	BY
DUCKS UNLIMITED, INC.					
LACREEK POOL 9 SITE PLAN					
DESIGNED: RCS	DRAWN: TD	SURVEYED:	CHECKED:		
APPROVED:					
APPROVED:					
DESCRIPTION:					
SEC. TWP. RGE.					
DATE: 11-27-89	DRAWING NO: SD-063-02-001		REV. 2 OF 4		



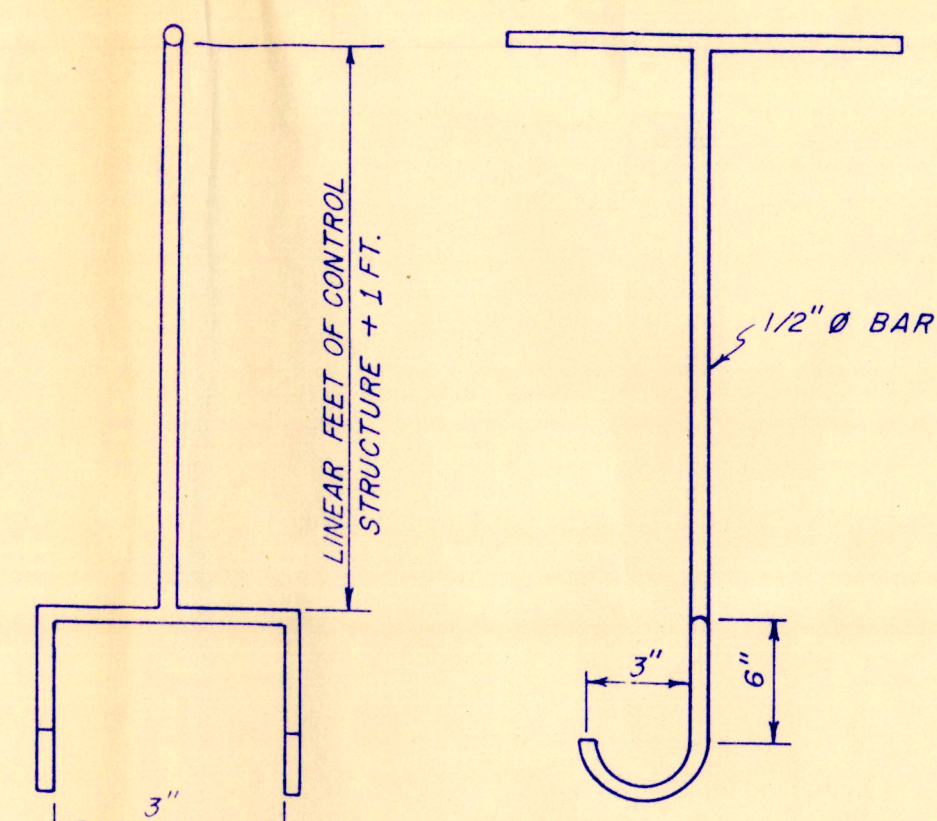
PROFILE
SCALE: 1" = 5' HOR. & VERT.



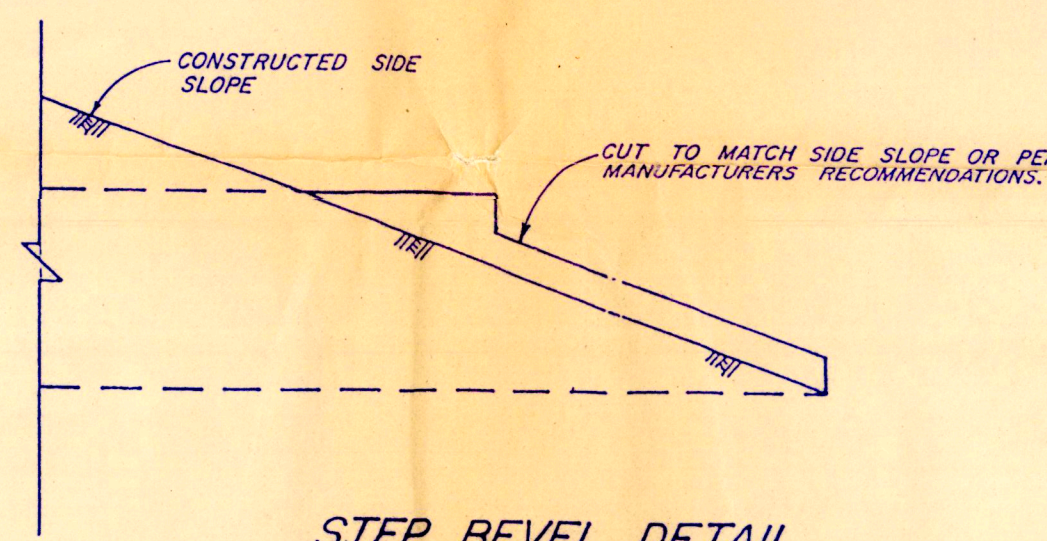
PLAN VIEW
SCALE: 1" = 5' HOR. & VERT.



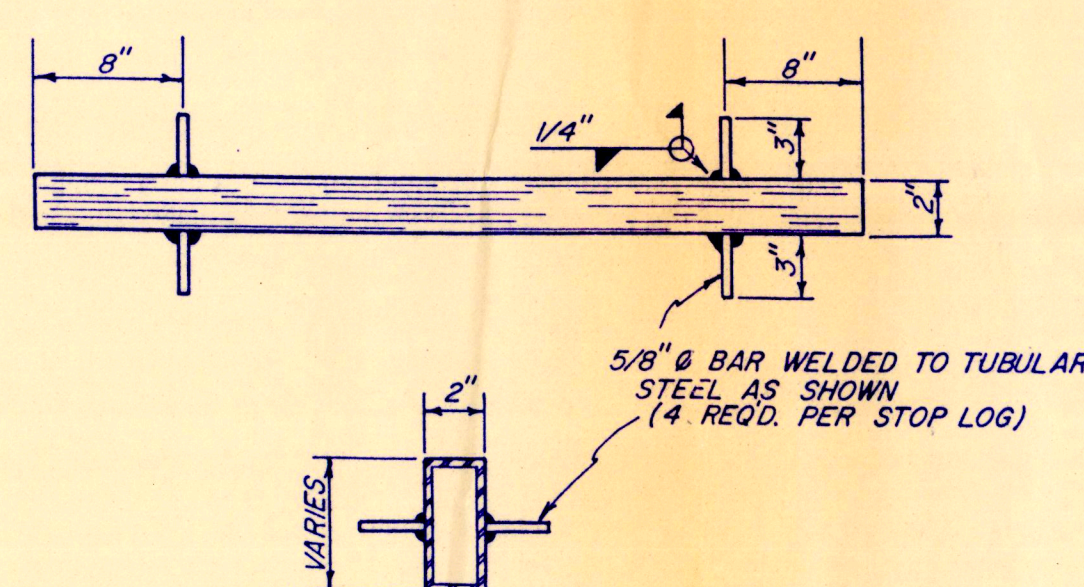
CONNECTING BAND DETAIL
NTS



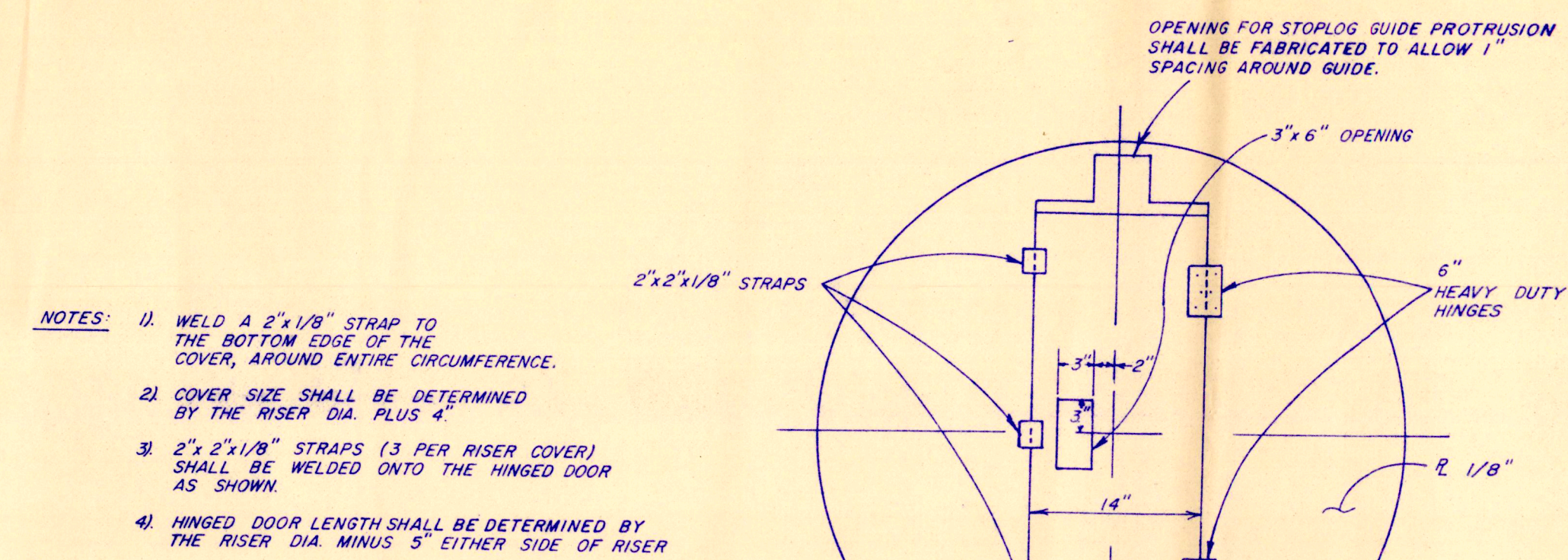
LIFTING HOOK DETAIL
NTS 2 REQUIRED PER STRUCTURE



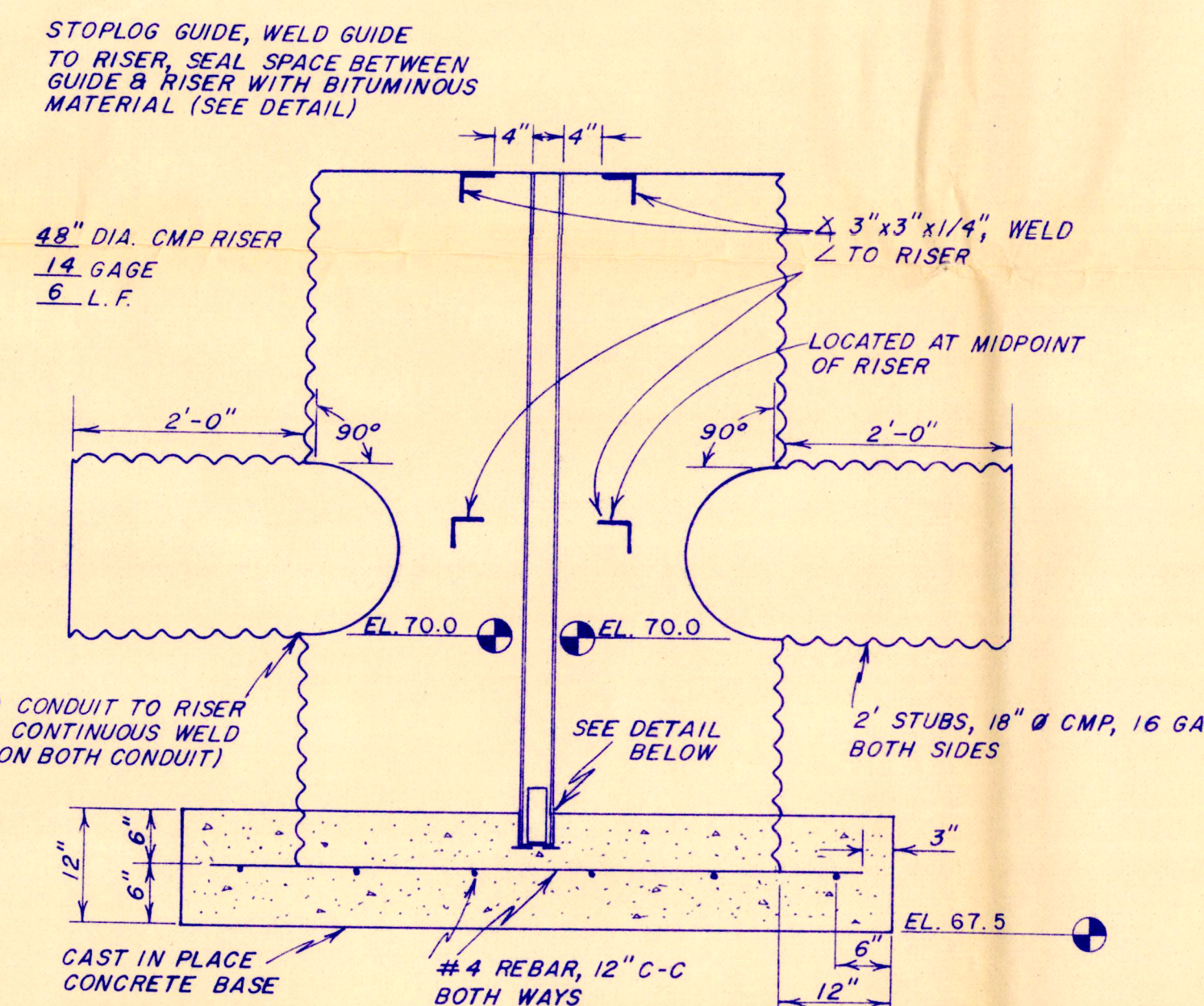
STEP BEVEL DETAIL
NTS



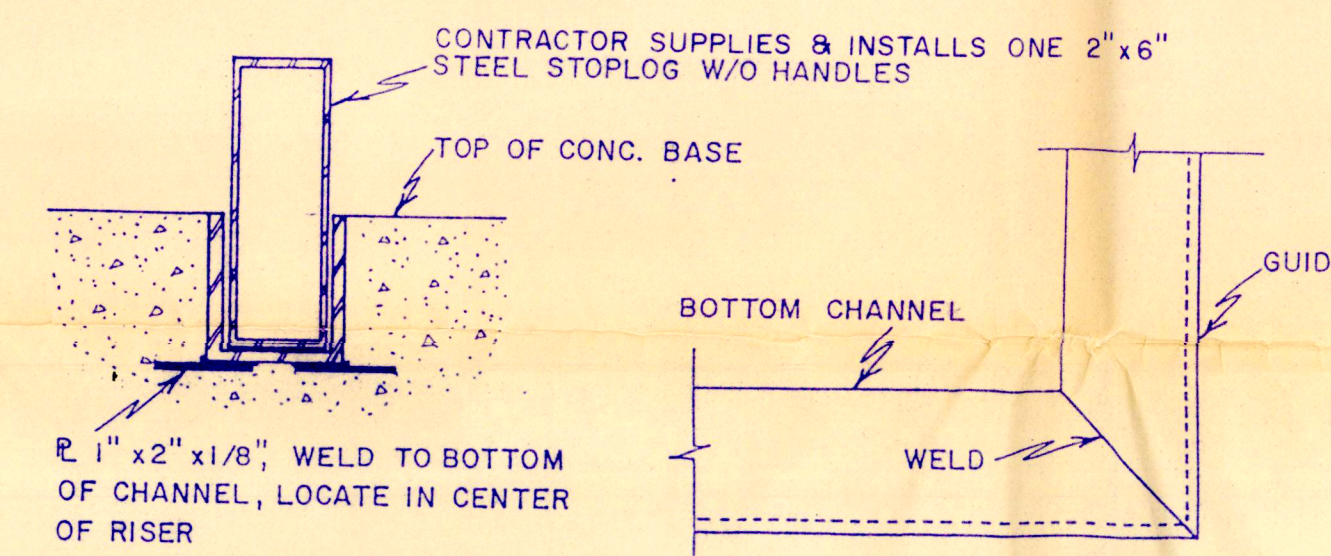
STEEL STOPLOG DETAIL
NTS
STEEL STOPLOGS FURNISHED BY DUCKS UNLIMITED, CONTRACTOR SHALL FABRICATE & INSTALL.



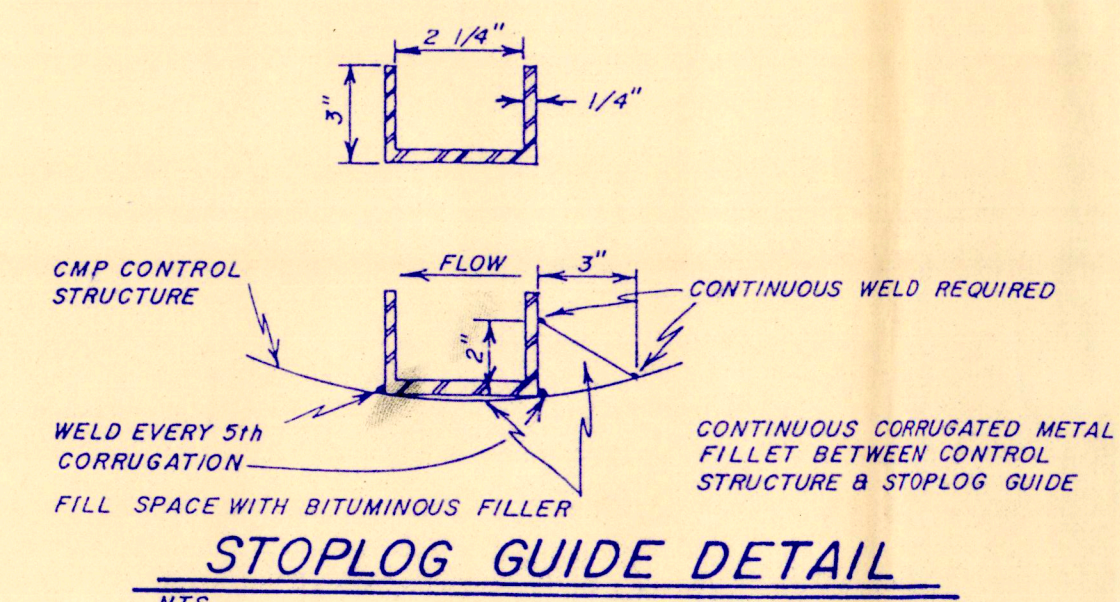
COVER DETAIL
NTS



CONTROL STRUCTURE DETAIL
SCALE: 3/4" = 1'-0"



HORIZONTAL STOPLOG GUIDE DETAIL
SCALE: 3" = 1'-0"

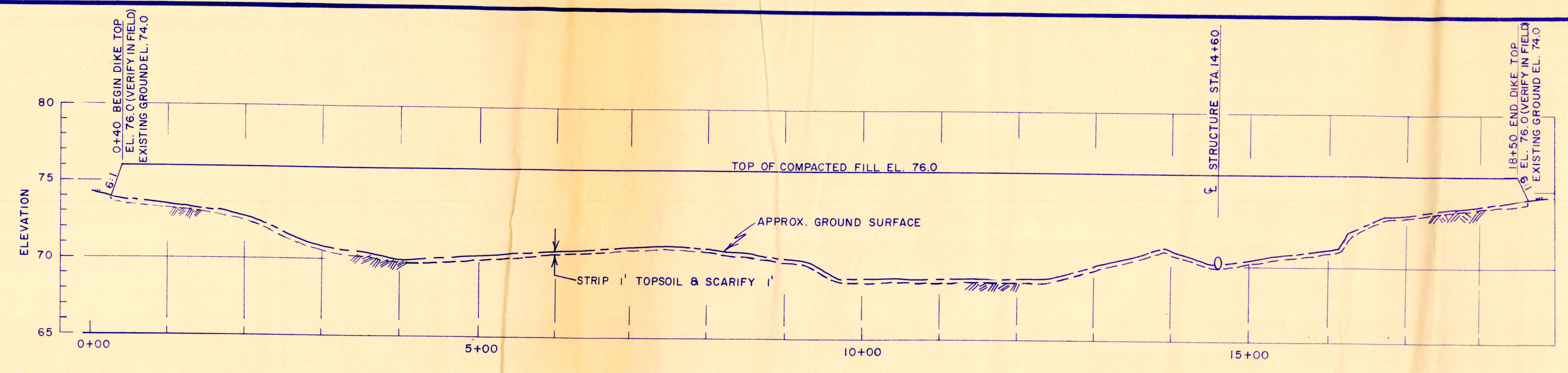


STOPLOG GUIDE DETAIL
NTS



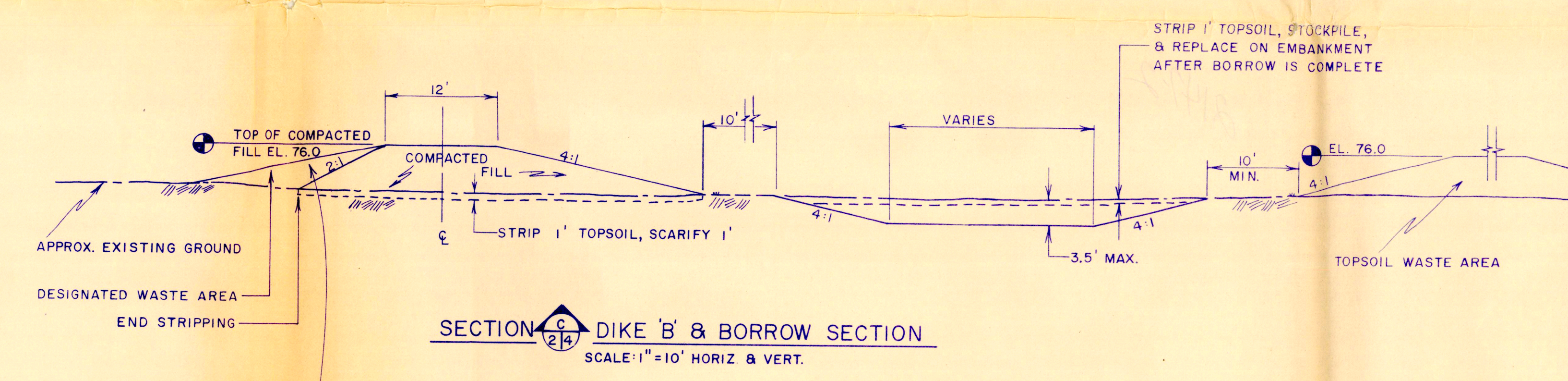
DUCKS UNLIMITED INC. DIVISION OF GREAT PLAINS REGIONAL OFFICE DATE: 2-8-90	PROJECT NO. SD 063-02-001	DESIGNED BY: RCS
	LA CREEK POOL 9	DRAWN BY: TD
	PLAN & PROFILE, DETAILS	SURVEYED BY:
	CHECKED BY:	APPROVED BY:
SHEET NO. 3 OF 4		

2147-2



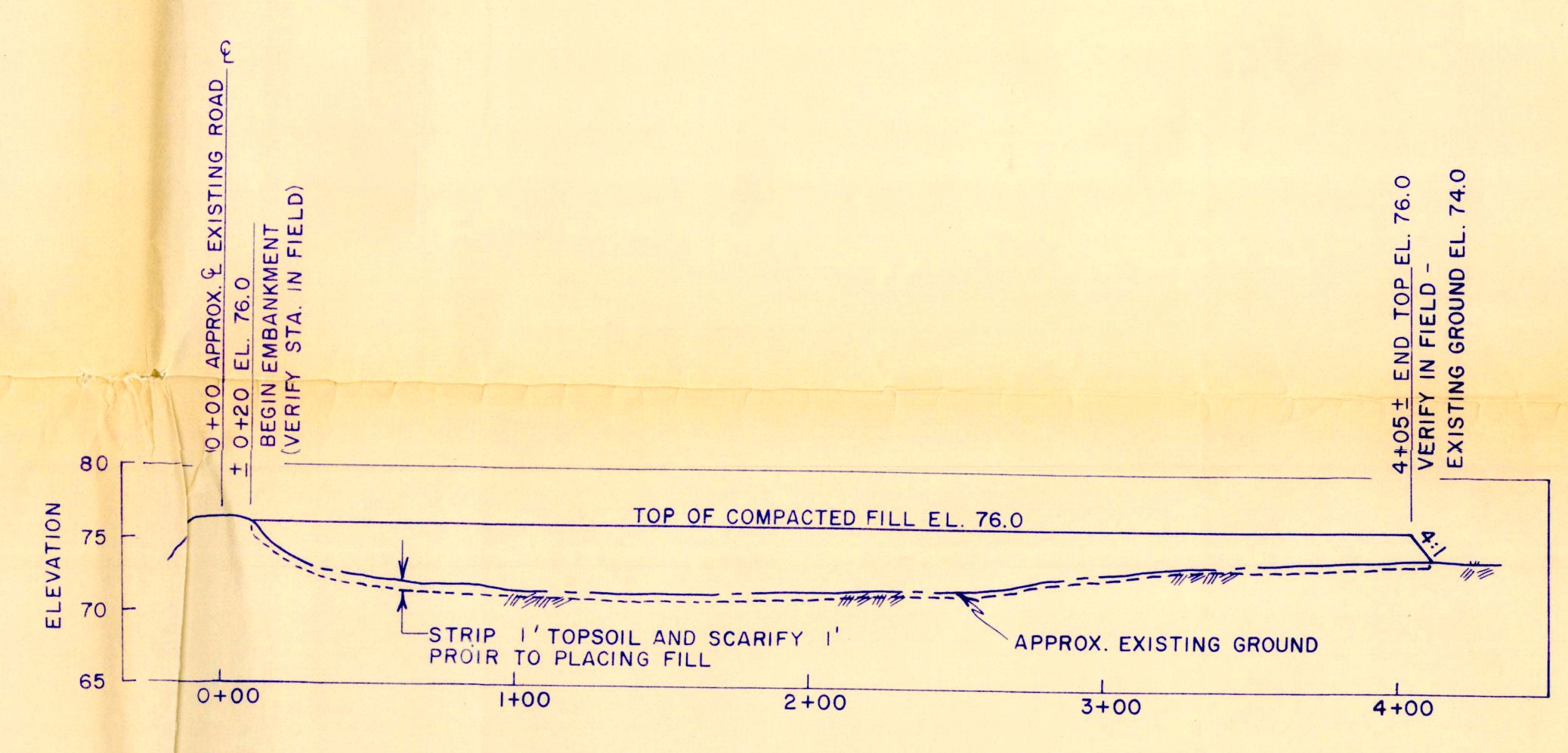
DIKE 'B' C PROFILE
SCALE: 1"=100' HORIZ.
1"= 5' VERT.

THIS AREA FOR SOILS

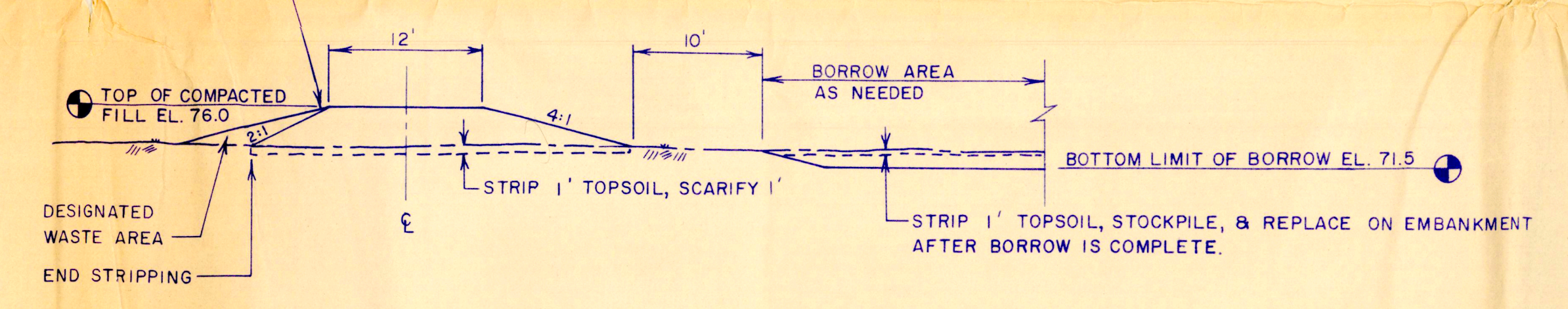


SECTION DIKE 'B' & BORROW SECTION
SCALE: 1"=10' HORIZ & VERT.

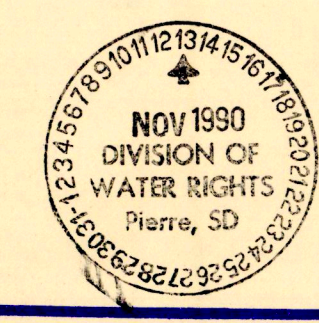
NOTE:
MATERIAL UNSUITABLE FOR COMPACTED FILL MAY BE PLACED IN THE PORTION OF THE EMBANKMENT SO DESIGNATED.



SECTION DIKE 'A' C PROFILE
SCALE: 1"= 50' HORIZ.
1"= 10' VERT.



SECTION DIKE 'A' & BORROW SECTION
SCALE: 1"=10' HORIZ. & VERT.



DUCKS UNLIMITED INC. GREAT PLAINS REGIONAL OFFICE DATE: 11-29-89	PROJECT NO.: SD-063-02-001	DESIGNED BY: RCS
	LACREEK POOL 9	
SHEET NO.: 4 OF 4 APPROVED BY: _____ APPROVED BY: _____	DRAWN BY: TD SURVEYED BY: _____ CHECKED BY: _____	