

Considered: _____

WATER PERMIT NO: 5177-3

HAP No. same 303-236-5321

Name of Applicant US Fish and Wildlife Service

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

Amount of Water Claimed 36.8 acre-feet Total Acres NA

Source of Water Supply local runoff

Water to be used for F&W propagation County Codington

About 9 miles N of Henry.

PROOF OF PUBLICATION: Received _____ Not Received _____

APPLICATION: Approved _____ Subject to _____

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

PRIORITY _____ Date Received Dec 28, 1987 Fee \$150⁰⁰ Remarks 1-26-88

Corrected Application Received _____ Period of Annual Use Jan 1 - Dec 31

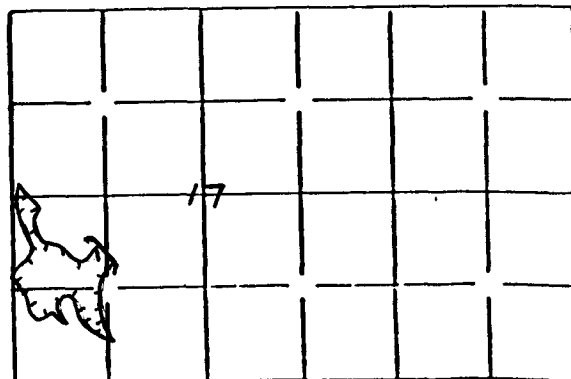
WATER QUALITY APPROVAL RECEIVED NA APPROVED/CONDITIONAL (Circle one)

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

Diversion Point dam: N $\frac{1}{2}$ SW $\frac{1}{4}$ section 17-T118N-

R55W

Land to be Irrigated NA



Well Log: Driller NA Licensed YES _____ NO _____

Depth of Well _____ REMARKS _____

Type of Map topo PREPARED BY US Fish & Wildlife & Ducks Unlimited Reviewed and the Number

assigned on January 26, 1988 By Ron Duvall

Mail to: Water Rights Div.
DWNR, Foss Bldg.
Pierre, SD 57501
(605) 773-3352

No. 5177-3 Hydrologic Unit 10170201
Map No. same Basin Big Sioux R
Newspaper Watertown Public Opinion, Box 10

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 ☒ Fish & Wildlife Production

Type of Application: Check one or more of the following

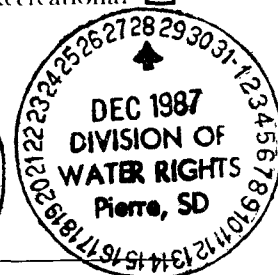
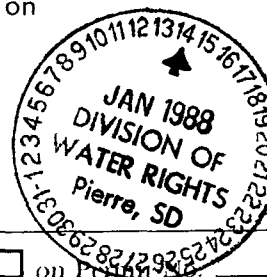
New ☒ Vested Right ☐ Future Use ☐ Change Use ☐

☐ Amend Permit No. _____ with old priority date retained

Change 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 US Fish and Wildlife Service Phone No. 303-236-5321

Post Office Address PO Box 25486, Denver Federal Center, Denver State CO 80225
(Street, RR or Box) (City) Zip Code

2. Amount of water claimed (c.f.s) 36.8 acre-feet

3. Source of water supply local runoff within watershed (Big Sioux Drainage Area)

4. Location of point of diversion SE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 17-T118N-R55W

Roe Waterfowl Production Area

County Codington

5. Counties where water will be used Codington

6. 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)

Engineering drawings and specifications attached.

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, JOHN L. SPINKS, JR. 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 John L. Spinks Jr.

Subscribed and sworn to before me this 5th day of January 1988

Susan E. Craddock
Notary Public

My Commission Expires: August 05, 1989

**SOUTH DAKOTA
WATER PERMIT**

Date of first receipt of application December 28, 1987

Date of return to applicant for correction, amendments or changes required December 28, 1987

Date of receipt of corrected application January 26, 1988

The Water Management Board approved Water Permit Application No. 5177-3

on May 11, 1988 for the US Fish and Wildlife Service
(Applicant)

PO Box 25486 Denver Federal Center Denver CO 80225
(Street, RR or Box) (City) (State) (Zip Code)

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. 5177-3 authorizes storage of 36.8 acre-feet of water by construction of a dam in the Roe Waterfowl Production Area. The storage dam is to be located in the N $\frac{1}{2}$ SW $\frac{1}{4}$ section 17 - T118N - R55W and water is to be stored annually to an outlet elevation of 1778.0 feet mean sea level.
2. The water appropriated shall be used for the purpose of providing habitat for fish and wildlife production and may not exceed the amount of water needed for beneficial use for fish & wildlife propagation.
3. The water is to be used during the following described annual period: Jan 1 - Dec 31
4. The date from which applicant may claim the right is December 28, 1987
5. One-fifth of the construction is to be completed on or before November 11, 1990
6. All construction is to be completed on or before May 11, 1993
7. Water is to be put to beneficial use on or before May 11, 1997
8. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

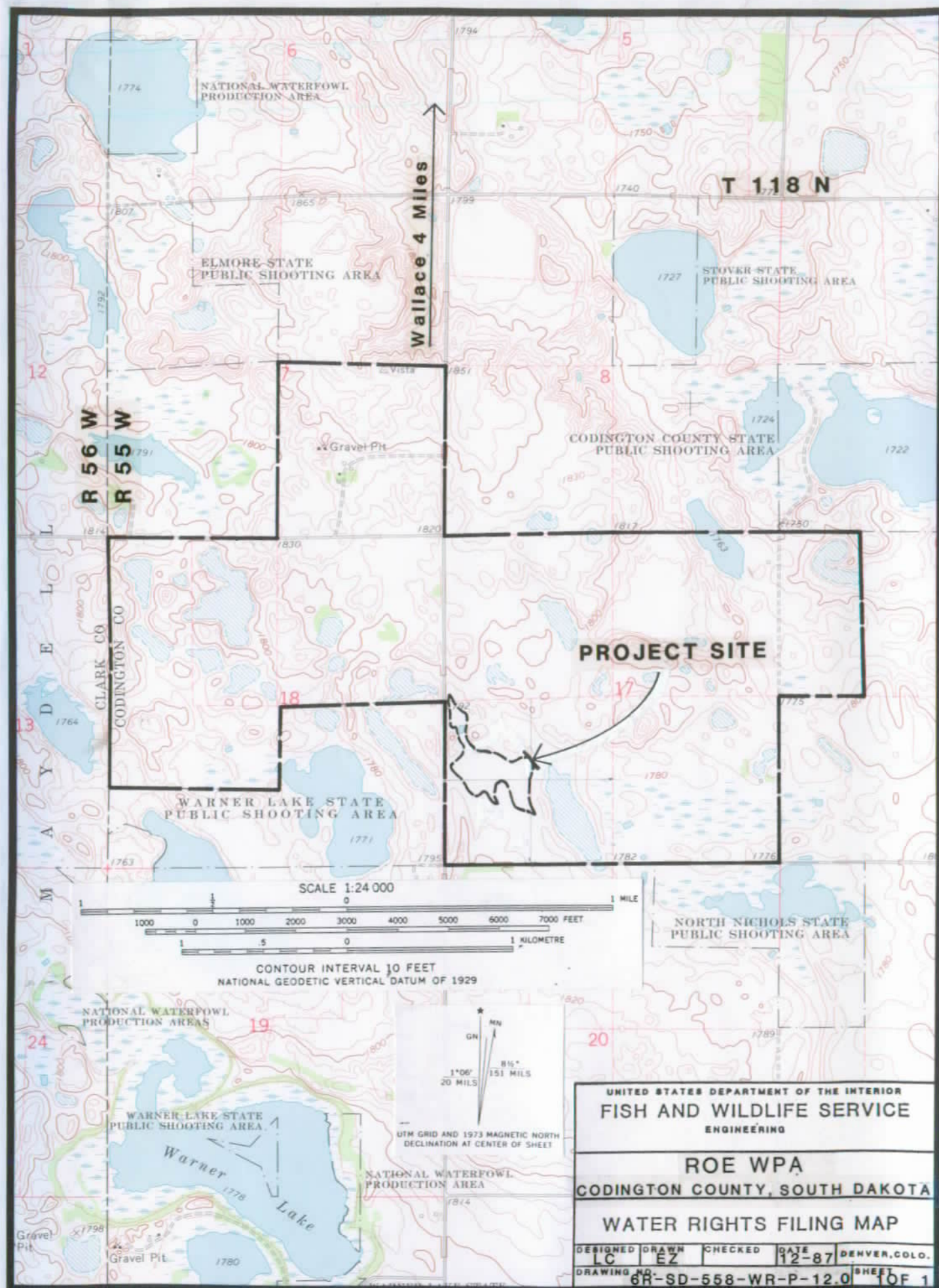
QUALIFICATIONS

WATER MANAGEMENT BOARD

By: John H. Bata
Chief Engineer

Division of Water Rights
Dept. of Water and Natural Resources

JUL 7 1988



Appl. No. 5177-3



DUCKS UNLIMITED, INC.

North American Habitat Field Office
6115 East Main Avenue • Bismarck, North Dakota 58501 • Telephone: (701) 258-5599

CONSTRUCTION SPECIFICATIONS FOR

ROE WPA

- 201 - SPECIFICATION FOR MOBILIZATION
- 202 - SPECIFICATION FOR SITE PREPARATION
- 203 - SPECIFICATION FOR EXCAVATION
- 204 - SPECIFICATION FOR EMBANKMENT CONSTRUCTION
- 302 - SPECIFICATION FOR SHEET PILING
- 303 - SPECIFICATION FOR STRUCTURAL STEEL
- 208 - SPECIFICATION FOR RIPRAP PLACEMENT

201 - SPECIFICATION FOR MOBILIZATION

201.1 DESCRIPTION

The work shall include the supply of all labor, material and equipment to transport all needed labor, material and equipment to and from a project site to successfully complete that project as shown on the plans or described by the Engineer.

201.2 METHOD

The Contractor shall conduct all mobilization operations in a timely orderly manner. Unless otherwise approved by the Engineer, mobilization operations shall commence no later than one week after the pre-construction meeting. Mobilization shall commence no later than one week after project completion and be finished within two weeks of project completion.

During all operations, the Contractor is responsible for maintaining public and private property in original condition.

201.3 METHOD OF MEASURE AND BASIS OF PAYMENT

Mobilization shall be measured on a unit basis. Payment shall be made at the contract unit price for "Mobilization" according to the following schedule:

25% of contract unit price at project start up.
50% of contract unit price at half project completion.
100% of contract unit price at project completion.

A Contractor is eligible for a separate mobilization payment when the Contractor is required to discontinue work by the Corporation for reasons other than seasonal termination of work. The payment shall be payment in full for supply of all necessary labor, equipment, and materials to perform mobilization operations herein described and all work in this specification. The payment shall be commensurate to the amount of equipment and materials that are required to be removed from the project site and that payment shall not exceed the original unit price specified for mobilization.

202 - SPECIFICATION FOR SITE PREPARATION

202.1 DESCRIPTION

This specification shall cover the supply of all labor, materials, and equipment required for clearing and grubbing a site as well as topsoil excavation and placement. Clearing and grubbing shall include removal from site and disposal of all trees, roots, brush, stone, rubbish and all other surface litter in designated areas. Topsoil excavation shall include the excavation, removal, stockpiling and placement of topsoil in designated areas of borrows, dikes, and channels.

202.2 MATERIAL

Clearing and grubbing material shall include all trees, tree roots, large stones and boulders, and unsuitable material. Topsoil shall consist of organic surface soils, peats, and black mineral soils free of clearing and grubbing material.

202.3 CONSTRUCTION METHODS

202.31 CLEARING & GRUBBING

Clearing shall consist of the cutting, removing, disposal and cleaning up all timber, brush and fallen timber, stumps, shrubs, and rubbish. Trees and shrubs designated for preservation shall be marked and protected from scoring, barking or other injury during construction operations. Where grubbing is not to be done, trees, roots and stumps shall be cut off level to the original ground surface and all depressions filled with insitu-material.

Grubbing shall consist of the removal and disposal of all roots, stumps, imbedded logs or objectionable debris to a depth of not less than 12" below the original ground surface. The resulting excavation must be rough filled with clean earth.

Trees, logs, stumps, brush and other debris shall be buried or disposed of in areas designated by the Engineer. Areas such as borrows, pits, excavations so designated shall be left in a neat and finished appearance free from debris. All materials disposed of shall be covered with clean fill, levelled in such a way as to promote drainage.

202.32 TOPSOIL HANDLING

No topsoil excavation shall commence until necessary clearing and grubbing methods are completed. Topsoil (organic surface soils, peat or black mineral soils) shall be excavated in the area of dikes, channels or borrows as staked or in accordance with plans and specifications to depths designated and approved by the Engineer. The work shall include the excavation, stockpiling as necessary and the placement of the topsoil over the surface of constructed embankment, berms, borrows or in those areas designated by the Engineer. Topsoil materials shall be removed to the lateral limits of the dikes, borrows, or berms specified and shall be placed in windrows outside the indicated toe of the embankment or borrow. Upon completion of embankment construction the topsoil shall be blended against the embankment, berm or borrow and trimmed to blend with the area or slopes. The topsoil shall be placed over designated areas evenly in a layer four to six inches in thickness over the entire crest, side slopes, berms of an embankment and/or the surface of borrows. The placed material shall be trimmed to specified tolerances above the lines and grades shown on the plans and as staked in the field.

202.4 METHOD OF MEASUREMENT AND PAYMENT

Site Preparation shall be measured on a plan quantity basis. The quantity to be payed for shall be the estimated topsoil quantities shown on the plans or described herein for areas under the proposed dikes only. Clearing and grubbing and topsoil removal and replacement of other areas of the project site are not included in the plan quantity and shall be considered incidental to Site Preparation. The plan quantity listed shall be the final quantity for Site Preparation.

203 - SPECIFICATION FOR EXCAVATION

203.1 DESCRIPTION

This specification shall cover the supply of all labor, materials, and equipment required for the excavation, hauling and spreading of materials from within the limits of the cut area as shown on the plans including a) excavation of designated areas; b) peninsula cutoffs; c) dugout construction; d) key trench. The work shall include control of water during excavation, the shaping of slopes to the lines and grades shown on the drawings and the disposal of materials within designated areas. Unless otherwise specified all material to be excavated shall be considered unclassified regardless of their nature or the manner in which they are removed.

203.2 CONSTRUCTION METHODS

203.21 SITE PREPARATION

Prior to any excavation, sites shall be cleared and grubbed with topsoil removed as specified in the "SPECIFICATION FOR SITE PREPARATION". Material cleared and grubbed shall be disposed of per the Engineer's directions. Topsoil removed shall be stockpiled and later respread on those areas and at thicknesses shown on the plans.

203.22 EXCAVATION

Excavation shall mean the removal of all materials encountered within the limits of excavation as shown on the drawings or as staked by the Engineer. Excavation shall be performed in as nearly a continuous operation as possible, trimmed and levelled to conform to the required lines, grades and tolerances. Areas overexcavated shall be replaced with suitable materials compacted to a density at least equal to that of the insitu material or to the satisfaction of the Engineer.

Suitable material excavated from the excavation areas shown on the plans shall be used in any embankments called for on the plans. This shall include areas stripped of topsoil or unsuitable material that need to be backfilled with suitable material or key trenches. Placement of these

embankments or backfills shall be done in accordance with the SPECIFICATION FOR EMBANKMENT CONSTRUCTION.

Excavated material unsuitable for embankments shall be deposited in locations shown on the plans or as directed by the Engineer. Unsuitable excavated materials shall be deposited as uniformly and continuously as possible in successive layers. No specific compaction will be required but where the material is placed with equipment other than tractor scrapers, blading and levelling is required to minimize voids. The fill shall be leveled upon completion to conform to lines and grades and enable the area to be seeded.

Rock excavation operations shall be controlled by the Contractor to produce the size gradations specified for other parts of the work, if the rock is designated by the Engineer as suitable for use. The Contractor will dispose as directed by the Engineer.

203.23 DISPOSAL OF WASTE MATERIALS

All surplus or unsuitable excavated materials designated as waste by the Engineer shall be disposed of at the locations shown on the plans or as directed by the Engineer.

203.24 CONTROL OF SURFACE AND SUBSURFACE WATER

The Contractor is responsible for control of surface/subsurface water and drainage during the construction period. All temporary fills and/or crossings necessary to promote construction will be installed and removed at the Contractor's expense prior to acceptance of the work.

203.3 METHOD OF MEASURE

All excavation except Key Trench Excavation shall be measured on a volume basis. The number of cubic yards of excavation paid for shall be made by superimposing the final cross-section on the applicable stripped or original ground profile and using average end area methods of volume calculation. No measurement for payment will be made for over-excavated materials.

Any Key Trench Excavation called for in the plans shall be measured as a neat line quantity

calculated from the construction plans. The quantity shown on the plans represents the quantity to be paid.

203.4 METHOD OF PAYMENT

Excavation shall be paid for at the unit price per cubic yard bid for "EXCAVATION". The unit price bid for excavation shall be payment in full for supplying all materials, equipment, labor and any incidental items necessary for performing all excavation operations described in the SPECIFICATION FOR EXCAVATION. No payment for excavation of suitable material will be made when excavating in a designated borrow area to obtain material that is to be placed, measured and paid in accordance with the "EMBANKMENT CONSTRUCTION" specification.

204 - SPECIFICATIONS FOR EMBANKMENT CONSTRUCTION

204.1 DESCRIPTION

The work shall include the supply of all labor, material and equipment required to complete the construction of key trenches and dams/dikes or roadway embankments as shown on the plans and as staked in the field. The work shall include:

-excavation of suitable materials from borrows or excavations.

-placement of materials from designated borrow areas or excavation into embankments such as dams, dikes, or roadway.

-levelling and trimming of embankments and borrow areas.

204.2 CONSTRUCTION METHODS

204.21 FILL MATERIAL

Unless otherwise specified, all material shall be placed in loose lifts of not more than 8" thickness and shall be compacted by suitable compaction equipment to a minimum of 95% of maximum density as determined by the Standard Proctor Method ASTM D698. Moisture content shall be in the range of -1% to +3% of optimum moisture content.

204.22 KEY TRENCH CONSTRUCTION

The Contractor shall not commence key trench construction until such work specified under "SITE PREPARATION" has been completed to the satisfaction of the Engineer.

The key trench excavation shall be made to the lines and grades shown on the drawings but may be altered during construction upon the direction of the Engineer to adjust for variation in soil conditions. Excavated material if acceptable in quality to the Engineer may be stockpiled for use in "SITE PREPARATION" or "EMBANKMENT CONSTRUCTION" in accordance with those specifications and the items included herein. Unacceptable materials shall be disposed of by placing into designated areas.

During construction, the control of drainage in the key trench excavation, dewatering placement area and borrows must be maintained and is the responsibility of the Contractor. Should material quality lessen through inadequate drainage the Contractor may be directed by the Engineer to construct drainage facilities.

The key trench completed to the original ground surface elevation shall be rough levelled prior to commencing embankment construction.

204.23 EMBANKMENT CONSTRUCTION

The Contractor shall not commence embankment construction until such work specified under "SITE PREPARATION" and the key trench has been completed to the satisfaction of the Engineer.

Embankment material excavated from ditches/borrows with tractor-scraper units shall be placed in successive layers across the entire width of the embankment. Each layer must be spread as deposited longitudinally along the embankment with each layer not exceeding 8" in thickness. The initial layer may be increased in thickness in wet areas to provide a working pad capable of supporting the hauling equipment. The embankment at all times must be maintained in a reasonably level condition and hauling equipment shall be directed over the full width of each layer to facilitate uniform compaction.

Where embankment material is excavated with bucket equipment from ditches or borrow, it shall be deposited into the embankment within reach of the equipment. To prevent berm failure, stock piling on berms will not be permitted. Materials shall be placed and spread in layers with each layer after spreading not to exceed eight inches in thickness.

All embankments will be construction staked to final grade elevations shown on the drawings. Embankments shall be brought to these elevations using embankment material graded to a tolerance of ± 0.1 ft. Topsoil or riprap materials are to be placed on top of embankment construction. Topsoil depths shall be four to six inches while riprap depths shall be as specified on the drawings.

All embankment construction must be as continuous as possible and the fill maintained such that drainage is assured at all time.

Should fill settlement occur during the construction of the embankment and within seven days of substantial completion, and prior to acceptance of the work, additional material shall be placed and trimmed to achieve final grade by the Contractor at his own expense. After embankments have been constructed to grade, they shall be levelled and trimmed to conform with the lines, grades and cross-sections shown on the plans and/or as staked. Acceptance of finished embankment may be made progressively during the course of construction upon the request of the Contractor. A completed embankment once accepted by the Engineer shall not be used by the Contractor for haulage, access or other purposes without the consent of the Engineer.

204.24 HAUL ROADS AND BORROWS

The construction, maintenance and removal of all haul roads from the borrow areas shall be the responsibility of the Contractor and be considered incidental to the work. Borrow areas shall be maintained during construction in a graded condition such that drainage is assured and that operations can resume quickly after precipitation periods. Following completion of the work, borrows are to be left in a graded condition acceptable to the Engineer and all haul roads, access roads and temporary crossings are to be removed.

204.25 TRIMMING

The crest, side slopes and berms of the embankment shall be levelled and trimmed to conform to the lines and grades shown on the drawings. The crest shall be constructed to the elevation shown on the plans prior to acceptance of the work. Acceptance of the finished embankment may be made progressively during the course of construction upon the request of the Contractor. A completed embankment once accepted by the Engineer shall not be used by the Contractor for haulage, access or other purposes.

204.3 METHODS OF MEASURE

Embankment construction shall be measured on a volume basis. The volume to be paid for shall be the total number of cubic yards of key trench, embankment, berms or incidental embankments acceptably installed as measured by the Engineer. Measurements shall be made by cross-sectioning the borrow area minus topsoil quantities and using the average end area method of volume calculation. Material used from the key trench as fill will be measured using neat lines found in the plans minus topsoil quantities.

204.4 METHOD OF PAYMENT

Embankment construction shall be paid at the contract unit price per cubic yard for "EMBANKMENT CONSTRUCTION". Each cubic yard to be measured as specified herein which shall be payment in full for supplying all materials and for performing all operations herein described and all other items incidental to the work included in this specification.

Additional costs incurred for the supply and application of water will be at a unit price agreed to by the field engineer and Contractor prior to application and is not to be included as part of the unit price for "EMBANKMENT CONSTRUCTION."

302 - SPECIFICATION FOR SHEET PILING

302.1 DESCRIPTION

The work in this section shall consist of furnishing and driving the specified kinds and types of piles at the location shown on the plans. This shall include the furnishing of all labor, materials, tools, equipment, transportation, and any incidental items required to furnish and drive the sheet piling.

302.2 MATERIALS

The sheet piling shall be made of steel and be of sections shown or specified on the plans. The sides of each piling shall be furnished with an interlock that is continuous for the full length of the pile. Interlock shall have an opening of sufficient width to allow free slippage of the adjoining sheet pile.

302.3 CONSTRUCTION

The Contractor shall provide a sufficient amount of steel sheet piles to construct a structure of the dimensions shown on the plans. The pile driving equipment shall be capable of providing the depth shown on the plans. Piles shall be handled in such a manner as to ensure no injury to the pile.

302.31 PROTECTION OF PILE HEADS

The heads of all piles shall be protected during driving by suitable caps, rings, heads, blocks, mandrels, and other devices. The heads of steel piles shall be cut square and fitted with a steel driving cap. Driving head, mandrels, and other devices shall be provided by the Contractor as needed for special types of piles and shall conform to the recommendation of the pile manufacturer.

302.32 DRIVING

Pile driver leads shall be of a type that will hold the pile and pile hammer in proper alignment during the driving operations, and shall be long enough to preclude the necessity for the use of punches or chasers. Leads for drop hammers shall be steel or steel shod. Generally, the recommendations of the pile hammer manufacturer shall be followed with respect to pile leads.

The Contractor shall notify the Engineer at least 24 hours before beginning any pile driving operations.

The piling shall be driven in such a manner as to insure perfect interlocking throughout the entire length of each pile. The piles shall be held in proper alignment during driving by means of assembling frames or other suitable temporary guide structures. Temporary guide structures shall be removed when they have served their purpose.

At any time that the forward edge of the sheet pile wall is found to be out of correct alignment, the piling already assembled and partly driven shall be driven to the required depth and taper piles shall then be driven to bring the forward edge into correct alignment before additional regular piling is assembled and driven. The maximum permissible taper in a single pile shall be one-fourth inch per foot of length.

All piles shall be driven to the full length shown or specified on the plans unless otherwise directed by the Engineer in the field.

302.33 PILE CUTOFF

The Contractor shall cut the piles off at the elevations shown or specified on the plans. The head of each pile, after cutoff, shall be sound, undamaged material. The length of cutoff shall be sufficient to permit the removal of all damaged material.

302.34 DEFECTIVE PILES

Any pile damaged, driven out of its proper location, driven below the specified cutoff elevation or inaccurately cut off shall be corrected by one of the following methods, whichever is approved by the Engineer in the field.

- A. The defective pile shall be pulled and replaced or redriven.
- B. A new pile shall be driven adjacent to the defective pile.
- C. The defective pile shall be spliced or built up or a sufficient portion of the footing shall be extended to properly embed the pile.

All piles pushed up due to the driving of adjacent piles or by any other cause, shall be driven down again to their specified elevation. Any sheet pile ruptured in the interlock, or otherwise damaged during driving, shall be pulled and replaced.

302.35 CORRECTIVE SURFACE HEAVE

Any excess material resulting from displacement of earth by pile driving shall be removed. Materials disturbed by pile driving shall be reconditioned and compacted to a density equal to that of the adjacent undisturbed material.

302.4 MEASUREMENT

Sheet piling shall be measured by the horizontal projection of the driven pile onto a vertical plane. The area of this projection shall be measured to the nearest square foot of piling in place as accepted by the Engineer.

302.5 METHOD OF PAYMENT

The cost of all labor, materials, equipment, and any incidental items required to furnish and drive the sheet pile as specified shall be paid for in the price bid per square foot for "SHEET PILE".

303 - STRUCTURAL STEEL

303.1 DESCRIPTION

The work of this section will cover the fabrications, supply and placement of the structural steel portions of the project.

The work shall consist of supplying all labor, materials and equipment required to furnish and install catwalk, catwalk frame, stoplog channels, bracing, grating and sheet piling cap and all other structural steel frames shown on the plans.

303.2 MATERIALS

Catwalk metal grating shall be grip strut planking or equal. The grating shall be painted and attached to the structural steel frame as per the manufacturers recommendations.

All structural channels, angles, and plates specified shall be AISC A36 steel.

Hand rail shall be 1½" schedule 80 steel pipe welded and painted.

Fasteners, bolts and anchors shall be AISC A36 steel.

Arc-welding electrodes shall conform to the requirements of the American Welding Society Specifications for Iron and Steel Arc Welding Electrodes, latest edition.

303.3 FABRICATION

Fabrication shall be shown on the drawings. Weld all contact edges with a continuous ¼" fillet weld. The technique, appearance and quality of all welds made shall conform to the American Welding Society code for Arc-Welding in Building Construction.

Shop drawings and materials list shall be submitted for approval by the Engineer.

303.4 PAINTING

Structural steel and miscellaneous iron shall be given one shop coat of zinc base primer and one coat of zinc base primer after erection is completed. Apply two coats of zinc base flat black paint to all exposed structural steel surfaces.

303.5 MEASUREMENT AND PAYMENT

The structural steel work described shall be paid on a unit basis for each type of structure installed. The cost of all labor, materials, equipment and incidental items required to furnish all structural steel as specified shall be paid for in the unit price bid for "Structural Steel."

208 - SPECIFICATION FOR RIPRAP PLACEMENT

208.1 DESCRIPTION

This work shall consist of supply and placement of filter materials and rock riprap as protective covering along side slopes and bases of channels, slopes around culvert inlets and outlets and on embankments or such other places as may be indicated on the plans, as specified herein, or as directed by the Engineer.

208.2 SUPPLY OF MATERIALS

208.21 BEDDING MATERIAL

Material used for bedding shall be a well graded sand and gravel with the following gradation:

<u>Grain Size</u>	<u>% Passing By Weight</u>
3"	100%
1"	75-85
3/8	45-65
#4 sieve	15-35
#200	Less than 15%

The bedding material shall be from a source approved by the field engineer.

208.22 FILTER FABRIC

The filter fabric shall be a nonwoven polyester or polypropylene geotextile. This geotextile shall have a minimum grab tensile strength of 150 pounds as determined by ASTM D-1682. The geotextile shall have a maximum equivalent opening size (E.O.S.) of a number 70 U.S. standard sieve.

The Contractor shall supply all pins and other items necessary to fasten the filter fabric to the ground so it will not slide or form gaps when placing rock riprap.

All materials shall be handled and stored in a careful and workmanlike manner to the satisfaction of the Engineer.

208.23 RIPRAP

The Contractor shall supply rock which will consist of field stone or rough, unhewn quarry rock. Unless otherwise specified, the stone shall be well graded and range in size from a 6" to 18" in diameter with not more than 25% greater than 12". Rock shall be approved by the Engineer prior to installation.

208.3 CONSTRUCTION METHODS

208.31 SUBGRADE PREPARATION

The areas on which the bedding material or fabric is to be placed shall be graded to the lines shown on the plans. The soil surface shall be smooth and free from any obstructions to provide adequate contact area between the soil and the bedding material or filter fabric.

208.32 BEDDING MATERIAL

A 6" layer of bedding material shall be placed as shown on the plans prior to the placing of any rock riprap.

208.33 FILTER FABRIC

The filter fabric shall be placed as shown on the plans in such a way that there is adequate contact area between the soil and the fabric. Installation shall start on the downstream end of the slope. Pins shall be installed to prevent the filter fabric from sliding or forming gaps during installation of the filter material and placing of the rock riprap.

When filter fabric is required on a slope, an anchor trench shall be constructed on the upstream end of the filter fabric and a toe trench shall be constructed on the downstream end of the installation. The trenches shall be perpendicular to the slope and must be at least one foot wide and one foot deep. The filter fabric shall be placed in the anchor trench and the toe trench. The trenches shall be backfilled and compacted to adequately anchor the filter fabric.

Where a seam is needed to provide a continuous coverage of the filter fabric, the two pieces of filter material shall be overlapped a minimum of two feet. Pins shall be placed in the overlap area to prevent slipping during placement of the filter material and rock riprap.

Great care shall be taken to protect the filter fabric from damage either from the wheels or tracks or any sliding that may be caused by the equipment.

208.34 RIPRAP

A. Placing of Riprap

Riprap shall be dumped, rolled or placed in such a manner that the smaller stones will be uniformly distributed throughout the mass. Sufficient hand work shall be done to provide a neat and uniform surface, with the depth being specified herein and as shown on the plans.

B. Thickness of Riprap

The surface may not vary from the theoretical surface by more than 4" at any point, unless otherwise specified.

208.4 METHOD OF MEASURE

Bedding material and riprap shall be measured in cubic yards of acceptably placed rock only. The volume of riprap to be paid shall be the volume of rock placed to the depth shown on the plans and the area on which acceptable placement has been made. The total quantity will be computed to the nearest cubic yard. No separate measurement will be made for the bedding material of filter fabric.

208.5 METHOD OF PAYMENT

Bedding material or filter fabric and rock riprap placement shall be paid for at the contract unit price per cubic yard for "RIPRAP PLACEMENT". Each cubic yard to be measured as specified herein, which price shall be payment in full for supplying all materials and for performing all operations herein described and all other items including supplying and placing bedding material and filter fabric which are incidental to the work included in these specifications.

RECEIPT

Division of Water Rights

South Dakota Department of Water and Natural Resources

411136

Pierre, January 26, 1988

RECEIVED OF Fish & Wildlife Service, RR 1, Box 79, Waubay, SD 57273-9736

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 _____	150	00
Fee for Application for Permit No. _____ to Appropriate Water for Future Use _____		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. _____		
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	150 00

By John Hatch
Chief Engineer JOHN HATCH (ms)



United States Department of the Interior
FISH AND WILDLIFE SERVICE



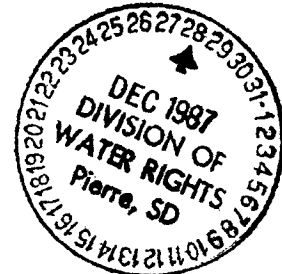
IN REPLY REFER TO:

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

STREET LOCATION:
134 Union Blvd.
Lakewood, Colorado 80228

BA/EN
WR SD
Mail Stop 60190

DEC 22 1987



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

Gentlemen:

The U.S. Fish and Wildlife Service and Ducks Unlimited, Inc., propose to construct an impoundment on the Roe Waterfowl Production Area in Codington County. Enclosed are the following materials pertaining to the project:

1. Form 2, Application for Permit to Appropriate Water (in duplicate)
2. Form 2A, Supplemental Information (in duplicate)
3. Filing Map No. 6R-SD-558-WR-P-12.0
4. Specifications
5. Engineering drawings, 3 sheets
6. Government Purchase Order in the amount of \$150

Please sign the purchase order where indicated and return to this office, or send an invoice so that payment can be issued.

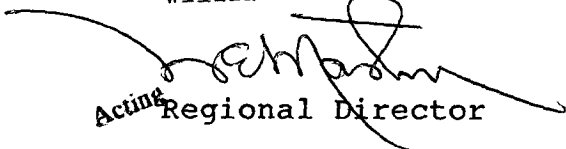
We would appreciate your advising us of the name and address of the newspaper selected to publish the Notice of Application, so that we can forward the required Authorization of Advertisement prior to publication.

Waterfowl Production Area

Please direct any technical questions to Roger Smith of Ducks Unlimited, Inc., 6115 East Main Avenue, Bismarck, ND 58501 (701) 258-5599. Any other questions should be addressed to Cheryl Williss at (303) 236-5321.

Sincerely,

William E. Martin


Acting Regional Director

Enclosures

cc: Ducks Unlimited, Inc.



Department of Water & Natural Resources

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

December 28, 1987

William E. Martin, Acting Regional Director
US Fish and Wildlife Service
PO Box 25486, DFC
Denver CO 80225

Dear Mr. Martin:

This letter is in response to the water permit application received on December 28, 1987 for the Roe Waterfowl Production Area. Enclosed is the purchase order for \$150.00.

The water permit application forms also need to be notarized. I have also transferred the information to the correct type of application forms and have also enclosed blank forms for future use. Please sign and notarize the enclosed forms and return to the Division of Water Rights. Contact me if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Ron Duvall". The signature is written in a cursive, flowing style.

Ron Duvall
Natural Resources Engineer
605-773-3352

enc



United States Department of the Interior
FISH AND WILDLIFE SERVICE



IN REPLY REFER TO:

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

STREET LOCATION:
134 Union Blvd.
Lakewood, Colorado 80228

BA/EN
WR SD
Mail Stop 60190

JAN 5 1988

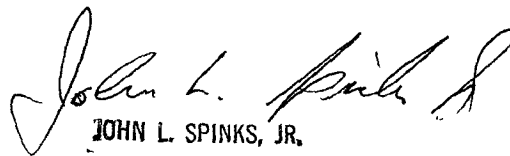


South Dakota Department of Water
and Natural Resources
Water Rights Division
Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

Gentlemen:

We received your letter of December 28, 1987. Please accept our apologies for any inconvenience we may have caused. Enclosed are signed and notarized application forms on the Roe Waterfowl Production Area in Codington County.

Sincerely,


JOHN L. SPINKS, JR.
Deputy Regional Director

Enclosures



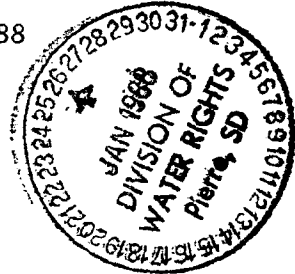
IN REPLY REFER TO:

United States Department of the Interior

FISH AND WILDLIFE SERVICE
WAUBAY NATIONAL WILDLIFE REFUGE
RR 1, BOX 79
WAUBAY, SD 57273-9736
605/947-4521

January 22, 1988

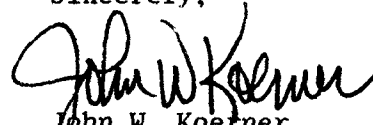
Ron Duvall
Division of Water Rights
523 East Capitol
Joe Foss Building
Pierre, SD 57501



Ron,

Enclosed is the \$150.00 postal money order as discussed. Please return verification of its receipt in form of an invoice marked "Paid" with receiving individual signing for it receipt. Questions? 947-4521. Thanks.

Sincerely,


John W. Koerner
Refuge Manager

REPORT ON APPLICATION NO. 5177-3
US Fish and Wildlife Service
February 29, 1988

Application No. 5177-3, US Fish and Wildlife Service, proposes to construct a dam which will serve to provide habitat for fish and wildlife production. The dam is to be located in the N1/2 SW1/4 of Section 17, T118N, R55W within the Roe Waterfowl Production Area in Codington County.

Project Description

The dam will be constructed to a height of 7.5 feet with the dam crest at elevation 1781.0 feet mean sea level (msl). It will have a crest length of 152 feet. A weir shaped outlet will act as a spillway for the structure. The outlet is located near the center of the embankment and has a bottom width of 20 feet and a top width of 44 feet. The crest of the spillway will be at an elevation of 1778.0 feet msl. The reservoir will have a storage capacity of 36.8 acre-feet (ac-ft) with the pool elevation at the spillway crest and a maximum storage capacity of 101 ac-ft. There is also a three foot wide stoplog bay located near the center of the outlet which can be used to draw the reservoir down to elevation 1773.5 feet msl.

Hydrology

A dam of this height and storage capacity is classified as a small size, low hazard category 3 dam. According to Section 74:02:08:07.01 of the Water Management Board's Safety of Dam Rules, this dam is required to pass a 25-year flood without overtopping. The flow generated by a 25-year flood over a drainage basin of this size (349 acres) would be approximately 172 cubic feet per second (cfs). The outlet has the capacity for a flow of 376 cfs. Therefore, the outlet of this dam will have the ability to pass the design flood through the spillway and comply with the Safety of Dams Rules.

Existing Water Rights

Existing water rights should not be affected by this application. The South Dakota Department of Game, Fish and Parks has Vested Right Water Claims on four surrounding lakes. However, none of these claims will be adversely affected by the construction of this dam.

<u>Vested Right No.</u>	<u>Lake</u>	<u>Annual Claim</u>
866-3	Todd Lake	240 ac-ft
872-3	Carson Lake	240 ac-ft
879-3	Lake Nicholson	2400 ac-ft
1851-3	Warner Lake	1206 ac-ft

Conclusions

1. Preliminary assessment of topographical maps showing the downstream area of the dam site indicates that this dam is a low hazard, category 3 dam.
2. The outlet has the capacity to pass a 25-year flood without overtopping the embankment as required by Section 74:02:08:07.01 of the Safety of Dams Rules.
3. The plans and specifications submitted with this application meet the requirements set forth by Water Management Board Rules Chapter 74:02:08 Safety of Dams for a small size, category 3 dam.
4. The application will not adversely affect existing water rights.
5. It is recommended that Water Permit Application No. 5177-3 be approved with no qualifications.

James L. Wendte

James L. Wendte
Natural Resources Engineer

Reference:

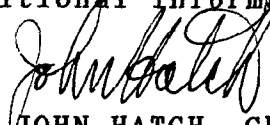
U.S. Geological Survey, Techniques for Estimating Flood Peaks, Volumes, and Hydrographs on Small Streams in South Dakota, September, 1980.

RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 5177-3, 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. 5177-3, U.S. Fish & Wildlife Service, PO Box 25486, DFC, Denver CO.

The Chief Engineer is recommending APPROVAL of Application No. 5177-3 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) in the public interest.

See the attached report for additional information.



JOHN HATCH, Chief Engineer
March 15, 1988

Hydrology For Fish & Wildlife Dam (Appl. No. 5177-3)

JLW

S.T. Index = 3.70

3-16-88

$$\begin{aligned} V_{75} &= 403 A^{0.75} S_L^{-1.59} \\ &= 403 (0.55)^{0.75} (3.7)^{-1.59} \\ &= 32 \text{ ac-Ft} \end{aligned}$$

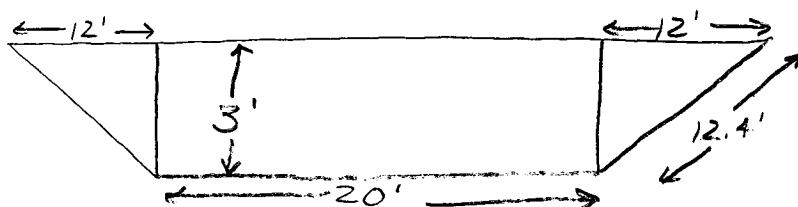
$$\begin{aligned} Q_{25} &= 83.4 A^{0.6} S^{0.44} S_L^{-0.72} \\ &= 83.4 (0.55)^{0.6} (100)^{0.44} (3.7)^{-0.72} \end{aligned}$$

$$\begin{aligned} \frac{50}{3500} &= \frac{5}{5280} \\ &= 75 \frac{\text{ft}}{\text{mi}} \end{aligned}$$

* $Q_{25} = 172 \text{ cfs}$

*(conservative slope value of 100 ft/mi used in flow calculation)

Spillway Capacity w/ pool elevation at top of embankment



$$\begin{aligned} A &= 96 \text{ ft}^2 \\ w_p &= 44.8 \text{ ft} \end{aligned}$$

$$\left. \begin{aligned} s &= .001 \\ n &= .02 \end{aligned} \right\} \text{assumed values}$$

$$R = A/w_p = 2.14$$

$$\begin{aligned} Q &= \frac{1.49}{n} A R^{2/3} S^{1/2} \\ &= \frac{1.49}{.02} (96)(2.14)^{.67} (.001)^{.5} \\ Q &= 376 \text{ cfs} \end{aligned}$$

376 > 172
∴ Spillway capacity capable of passing 25-year flood.

Storage Capacities

<u>Elev.</u>	<u>Area</u>	<u>Ave. Area</u>	<u>Depth</u>	<u>ΔV</u>	<u>ΣV</u>
1773.5	0	8.2	1.5	36.8	36.8
1778	16.4	21.4	3	64.2	101.0
1781	26.4				

Digitized area of 1781 contour line
 $\approx 1,150,240 \text{ ft}^2 = .041 \text{ mi}^2$
 $= 26.4 \text{ acres}$

Instruction to Newspaper - Publish first publication of the following Notice on or before March 31, 1988 with 2nd publication 7 days later. The applicant is responsible for payment.

NOTICE OF HEARING on Application No. 5177-3 to Appropriate Water
~~and/or to Amend Water Permit or Water Right No. _____~~

Notice is hereby given that the U.S. Fish & Wildlife Service whose mailing address is PO Box 25486, DFC, Denver, Colorado 80225 ~~XXXXXXXXXXXX~~ has made an application for a permit

to construct a dam (36.8 acre-feet storage capacity) in the Roe Waterfowl Production Area. The storage dam is to be located in the N $\frac{1}{2}$ SW $\frac{1}{4}$ Section 17-T118N-R55W and store water to outlet elevation 1778.0 feet mean sea level. A channel is also to be constructed to connect low areas to be flooded by the dam. Water is to be used to provide habitat for fish and wildlife production.

Pursuant to SDCL 46-2A-2 the Chief Engineer of the Water Rights Division recommends APPROVAL of Application No. 5177-3 because 1) unappropriated water is available, 2) will be no unlawful impairment of existing rights, 3) is beneficial use of water and 4) is in the public interest.

This application will be considered by the Water Management Board at room 216, Joe Foss Building, 523 E. Capitol, Pierre, South Dakota, May 11 19 88 at 10:00 am.

The recommendation of the Chief Engineer is not final or binding upon the Board and the Board is authorized to 1) approve, 2) approve with qualifications, 3) defer, or 4) deny this application after it reaches a conclusion based upon facts presented at the public hearing. Any interested person who may be affected by a Board decision and who intends to participate in the hearing before the Board and present evidence or cross-examine witnesses according to SDCL 1-26, must file a written petition with BOTH the applicant and the Chief Engineer by April 29, 1988. The petition may be informal, but it must include a statement describing the petitioners interest in the application, the reasons for the petitioner's opposition to or support of the application, and the signature and mailing address of the petitioner or his legal counsel if legal counsel is obtained. The applicant need not file a petition.

This application is made pursuant to the provisions of SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-15; 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; ~~(ground) 46-6-3, 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14, (future use) 46-5-38 thru 46-5-40, (transfer lands) 46-5-30.4, 46-5-33 thru 46-5-35, (10,000 AFA) 46-5-20.1, 46-5-8.1, and Board Rules ARSD 74:02:01:01 thru 74:02:01:15, (future use) 74:02:01:24 thru 74:02:01:25, (10,000 AFA) 74:02:01:15:02 thru 74:02:01:15:05.~~

This hearing is an adversary proceeding. The applicant or any person, after filing a petition, has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised. Decisions of the Board may be appealed to the Circuit Court and the State Supreme Court as provided by law.

Any person wishing a copy of the Chief Engineer's recommendation, further information on this application or to assure access to the hearing by the handicapped can contact the Water Rights Division, DWNR, Joe Foss Bldg, Pierre SD (605 773-3352) for assistance prior to the hearing date. The time of the hearing will be automatically extended for at least twenty days upon written request of the applicant or any person who has filed a petition to oppose or support the application. The request for extension must be filed with the Chief Engineer by April 29, 1988.

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
County Codington) ss.

I, Monica K. Saathoff hereby

certify that the annexed printed copy of Notice of Intent to Appropriate

Water was taken from the Watertown Public Opinion

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 Watertown

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

March 30th, 1988

April 6th, 1988

Monica Saathoff
(Signature)

Bookkeeper

(Title)

April 6th, 1988

(Date Signed)

Cost of Printing: 75.04

PIERRE

NOTICE OF HEARING
On Application No. 5177-3
to Appropriate Water

Notice is hereby given that the U.S. Fish & Wildlife Service whose mailing address is P.O. Box 25486, DFC, Denver, Colorado 80225 has made an application for a permit to construct a dam (36.8 acre-feet storage capacity) in the Roe Waterfowl Production Area. The storage dam is to be located in the NW 1/4 Section 17-T118N-R55W and store water to outlet elevation 1778.0 feet mean sea level. A channel is also to be constructed to connect low areas to be flooded by the dam. Water is to be used to provide habitat for fish and wildlife production.

Pursuant to SDCL 46-2A-2 the Chief Engineer of the Water Rights Division recommends APPROVAL of Application No. 5177-3 because 1) unappropriated water is available; 2) will be no unlawful impairment of existing rights; 3) is beneficial use of water and 4) is in the public interest.

This application will be considered by the Water Management Board at Room 216, Joe Foss Building, 523 E. Capitol, Pierre, South Dakota, May 11, 1988 at 10:00 a.m.

The recommendation of the Chief Engineer is not final or binding upon the Board and the Board is authorized to 1) approve, 2) approve with qualifications, 3) defer, or 4) deny this application after it reaches a conclusion based upon facts presented at the public hearing.

Any interested person who may be affected by a Board decision and who intends to participate in the hearing before the Board and present evidence or cross-examine witnesses according to SDCL 1-26, must file a written petition with BOTH the applicant and the Chief Engineer by April 29, 1988.

The petition may be informal, but it must include a statement describing the petitioners interest in the application, the reasons for the petitioner's opposition to or support of the application, and the signature and mailing address of the petitioner or his legal counsel if legal counsel is obtained. The applicant need not file a petition.

This application is made pursuant to the provisions of SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-15; 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.

This hearing is an adversary proceeding. The applicant or any person, after filing a petition, has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised. Decisions of the Board may be appealed to the Circuit Court and the State Supreme Court as provided by law.



Any person wishing a copy of the Chief Engineer's recommendation, further information on this application or to assure access to the hearing by the handicapped can contact the Water Rights Division, DWR, Joe Foss Bldg., Pierre, SD, (605) 773-3352 for assistance prior to the hearing date. The time of the hearing will be automatically extended for at least 20 days upon written request of the applicant or any person who has filed a petition to oppose or support the application. The request for extension must be filed with the Chief Engineer by April 29, 1988.
(March 30; April 6, 1988)

$10\frac{1}{4} @ 3.66 \times 2 =$
\$75.04



Department of Water & Natural Resources

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

April 4, 1988

John L. Spinks, Jr.
US Fish and Wildlife Service
PO Box 25486, Denver Federal Center
Denver, Co 80225

Dear Mr. Spinks:

We have reviewed the plans and specifications for the Ducks Unlimited Project at the ROE WPA project in Codington County. The plans and specifications as submitted are approved.

Our review was to determine compliance with the minimum spillway design flood requirements as specified by Water Management Board Rules Chapter 74:02:08 Safety of Dams. Approval applies only to the portion of the plans and specifications that could result in uncontrolled releases of water from the ROE WPA project. Approval of these plans and specifications does not release the US Fish and Wildlife Service as owner of the ROE WPA project from the responsibility for operating and maintaining the dam in good repair to assure the safety of the dam.

If you have any questions, please contact us.

Very truly yours,

A handwritten signature in cursive script, appearing to read "John Hatch".

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

cc: John Koerner, Refuge Manager
Waubay National Wildlife Service



Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501

Water Rights Division
605 773-3352

JUL 7 1988

U.S. Fish & Wildlife Service
PO Box 25486, DFC
Denver, Colorado 80225

Dear Sir:

Enclosed herewith is your Water Permit No. 5177-3 as approved by the Water Management Board authorizing you to construct your water diversion system and the water to beneficial use, not exceeding the limits as specified in said Water Permit No. 5177-3.

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 your Water License may be issued to you, thus completing your acquisition of a Water Right.

Very truly yours,

A handwritten signature in black ink, appearing to read "John Hatch".

JOHN HATCH, Chief Engineer
Water Rights Division

JH:ms

enclosure

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.

WNR-809-5/83

Permit No. 5177-3

Big Sioux River Water District

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

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

I have this day made a thorough examination of the water use system constructed by US Fish And Wildlife Service of Denver, CO holder of Permit No. 5177-3, bearing the priority of 12/28/1987 authorizing the diversion of 0 cu. ft. per second and/or the storage of 36.8 acre-feet of the waters of surface water for providing habitat for fish and wildlife production purposes, in Codington County.

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

A. Works used to divert the water:

A dam located in the N1/2 SW1/4 of Section 17-T118N-R55W with a 36.8 ac-ft capacity

The system is in the following condition good. The point of diversion is located N1/2 SW1/4 of Section 17-T118N-R55W. The works are capable of diverting and conveying to the place of use 0 cu. ft. per second of water and/or storing 36.8 acre-feet of water which is to be used for providing habitat for fish and wildlife production. Water has been put to beneficial use to the maximum extent as follows:

comprising a total of 0 acres of land and the license should be issued for 0 cfs and/or 36.8 acre-feet of storage.

Application permit qualifications have been complied with ☒ Yes ☐ No

Exceptions to compliance are: none

Date 5/14/1991



Mark D. Rath
Natural Resources Engineer II
DENR, Water Rights Division

LICENSE FOR PERMIT NUMBER 5177-3

1. Legal location of wells:

Dams and Structures N1/2 SW1/4 Section 17-T118N-R55W

2. Well Information: Well Drilling Firm

Completion Report? Yes No No. of Wells Depth(s) feet

Casing a) diameter inches Screen a) type
b) length feet b) length feet
c) type Static Water Level feet

Pump a) make Motor a) make
b) model b) model no.
c) size c) horsepower rating
d) capacity GPM d) serial no.
e) turbine pump - no. of stages
f) operating PSI

3. Distribution lines or canals

a) size inches
b) type
c) length feet

4. Dam Information:

a) height to crest 8 feet m) Outlet tubes:
b) height to primary spillway 4 feet 1) diameter inches
c) height to secondary spillway 4.5 feet 2) type
d) crest width 12 feet 3) valved (Y/N) y
e) crest length 70 feet 4) valve type stop log

4. Dam Information Continued:

- f) spillway length 1 feet 5) location on structure:
g) spillway width 20 feet center
h) approx. storage 36.8 AC-FT n) Category of Dam 3
i) approx. storage to crest AC-FT
j) date constructed 1988
k) inspection sheet completed? (Y/N)
l) name of contractor Ducks Unlimited

5. System Type a) sideroll:

- 1) length feet
2) diameter of pipe inches
3) make, model & number of
sprinklers
4) spacing of sprinklers feet
5) nozzle size

b) towline:

- 1) length feet
2) make, model & number of
sprinklers
3) spacing of sprinklers
4) nozzle size

c)gun:

- 1) make
2) nozzle size
3) capacity (GPM)
4) hose size inches
5) hose length feet

d) center pivot:

- 1) make
2) number of towers
3) distance between towers
4) overall length feet
5) end gun (Y/N)

e) gated pipe:

- 1) length feet
2) diameter inches
3) spacing of gates inches

6) high or low pressure

- 7) make and size of nozzles:
8) capacity (GPM)

5. System Type Continued:

- | | |
|-------------------|---------------------|
| f) portable boom: | g) siphons: |
| 1) make | 1) size inches |
| 2) nozzle size | 2) number |
| 3) capacity (GPM) | |

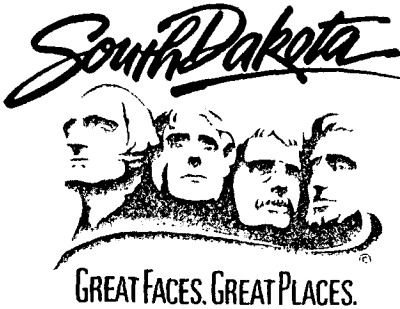
NOTE: For Permits with additional wells or changes in well locations, record the following for each well: pumping capacity, date constructed, well driller and if a well log is available.

Indicate any other permit(s) which are associated with project

Yes No Check Items

- | | |
|-----------|---|
| <u>NA</u> | 1. Soil and water permit lands agree with lands being irrigated and lands listed on permit? |
| <u>Y</u> | 2. Special qualifications to permit being abided by? |
| <u>Y</u> | 3. All structures, wells and lands on map? |
| <u>NA</u> | 4. Irrigation Questionnaires checked to determine if permit owner started irrigation by end of construction period? |
| <u>NA</u> | 5. Is chemigation used? |
| <u>NA</u> | 6. If yes, does equipment comply with chemigation rules? |

REMARKS:



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

July 18, 1991

Cheryl Williss
US Fish & Wildlife Service
Denver Federal Center
PO Box 25486
Denver, CO 80225

RE: Licensing of Water Permit Nos. 4865-3, 5091-3, 5135-3,
5177-3, 5188-3, 5221-3 and 5472-3

Dear Ms. Williss:

The inspection of the water use systems and the inspection of the extent of application of water to beneficial use, as developed under Water Permit Nos. 4865-3, 5091-3, 5135-3, 5177-3, 5188-3, 5221-3 and 5472-3, have been completed. The water licenses for these permits can now be issued.

Statutes require that we charge a \$50.00 fee for the inspection and issuance of each of the Water Licenses. Upon receipt of \$350.00 from you, we will begin processing your Water Licenses.

South Dakota Water Law 46-5-30.1 requires that a permit holder may not divert water until the \$50.00 license fee has been paid. Please contact us if you have any questions.

Sincerely,

Genny McMath
Natural Resources Analyst
(605) 773-3352

NOTE: On check or money order, please specify your permit numbers. This will insure proper handling of the fee.



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



JUL 26 1991

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

Dear Ms. McMath:

In response to your letter of July 18, 1991, please find enclosed a Money Order in the amount of \$350 to cover the inspection and issuance of the following Water Licenses:

4865-3	Janssen WPA (Grant County)
5091-3	Ringer WPA (Marshall County)
5135-3	Medenwald WPA, Marshall County)
5177-3	Roe WPA (Codington County)
5188-3	Hofland WPA (Marshall County)
5221-3	Reyelts WPA (Grant County)
5472-3	Spink County WPA (Spink County)

If you have any questions or require further information, please contact Linda Coe in our Engineering office at (303) 236-5321.

Sincerely,

William A. Godby
Regional Engineer

Enclosure

RECEIPT

Division of Water Rights

South Dakota Department of Water and Natural Resources

412769

Pierre, _____ August 1, 1991

RECEIVED OF U.S. Dept of Interior, Fish & Wildlife Serv, PO Box 25486, 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 _____		
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>5177-3</u>	50	00
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	50 00

By

John H. Hatcher (F)

Chief Engineer

South Dakota



GREAT FACES. GREAT PLACES.

SEP 27 1991

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

U.S. Fish & Wildlife Service
Denver Federal Center
P.O. Box 25486
Denver, CO 80225

Dear Sirs:

Enclosed are Water License Nos. 4579-3, 4865-3, 5091-3, 5135-3, 5177-3, 5221-3, and 5472-3. They are the final water right documents completing your process of obtaining water rights. Enclosed are the receipts which you paid for the inspection and issuance of these water licenses.

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

Very truly yours,

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

enclosures

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 5177-3

(1) The U.S. Fish & Wildlife Service of Denver Federal Center, P.O. Box 25486, Denver, CO 80225 made Application No. 5177-3, December 28, 1987 for a water permit to store 36.8 acre feet of water annually from local runoff in a dam within the Roe Waterfowl Production area, Codington County, South Dakota for fish and wildlife propagation purposes. Permit No. 5177-3 with a priority date of December 28, 1987 was approved May 11, 1988 and issued to applicant(s) for diversion of water with construction of the described water supply system to be completed on or before May 11, 1993 and for the application to beneficial use of said water on or before May 11, 1997.

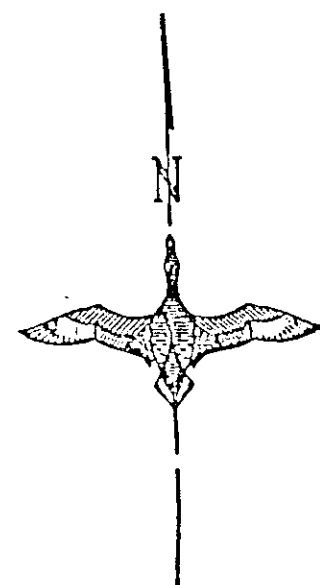
(2) It is certified that the applicant has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to store 36.8 acre feet of water annually for beneficial use. The location of the dam is: in the N 1/2 SW 1/4 Section 17, T118N, R55W.

(3) The applicant has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use.

(4) Pursuant to Section 46-5-30.1 the U.S. Fish & Wildlife Service of Denver Federal Center, P.O. Box 25486, Denver, CO 80225 the holder(s) and/or owner(s) of Water Permit No. 5177-3 is issued a license for storage of water, the right to store 36.8 acre feet of water annually from local runoff in a dam within the Roe Waterfowl Production area with a priority date of December 28, 1987 from the location specified in (2) of this license. The water is to be stored for the purpose of providing habitat for fish and wildlife propagation. This license is subject to any limitations or qualifications listed in Water Permit No. 5177-3 and subject to South Dakota State Law.

 SEP 27 1991

JOHN HATCH, Chief Engineer
Water Rights Division
Department of Environment and
Natural Resources



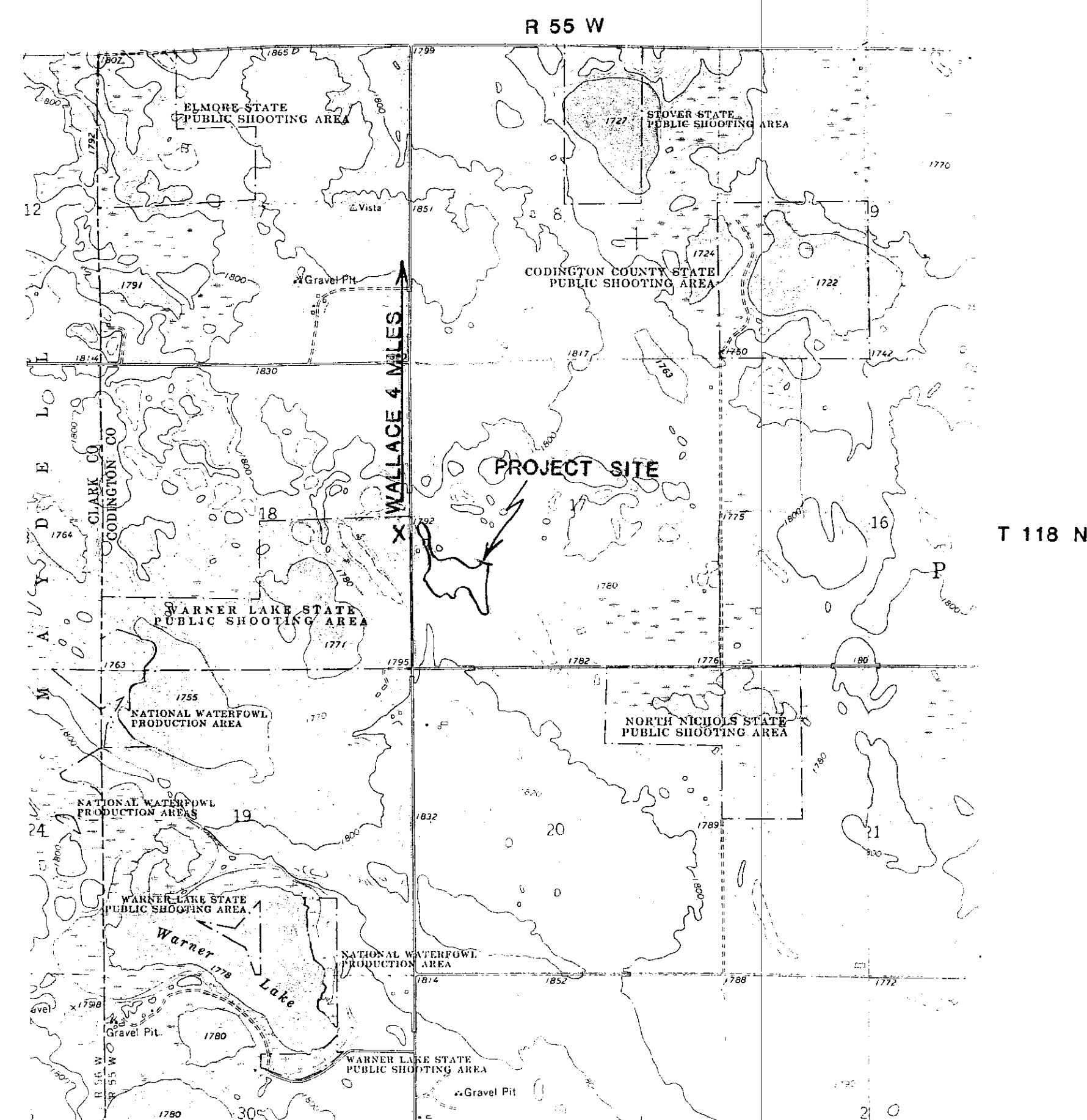
PROJECT AT

SEC. 17, TWP. 118 N., RGE. 55 W.

CODINGTON COUNTY, SOUTH DAKOTA

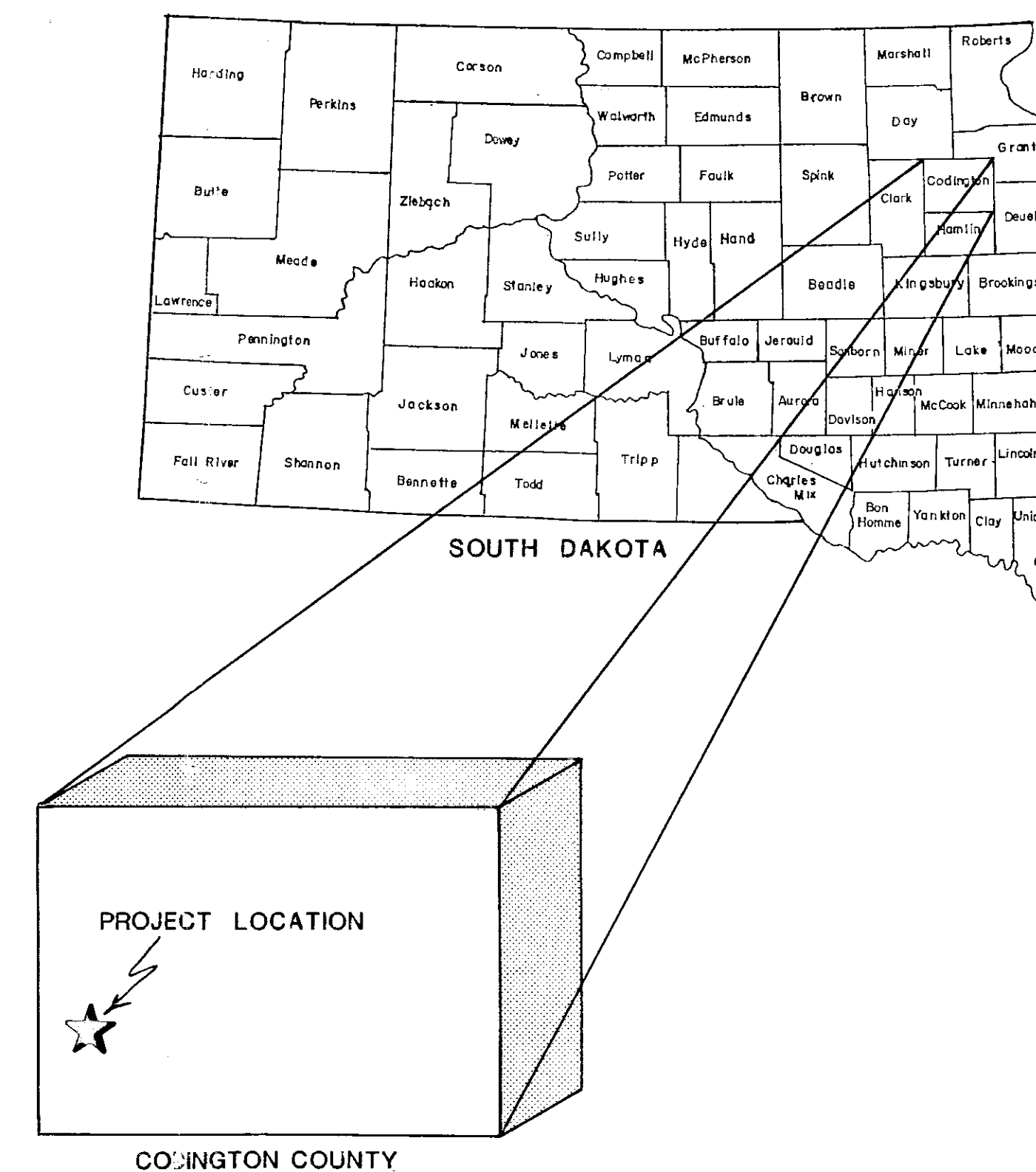
IN COOPERATION WITH

U.S. FISH & WILDLIFE SERVICE

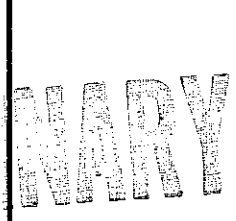
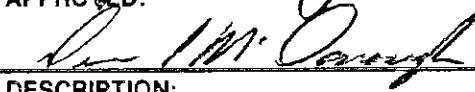


VICINITY MAP

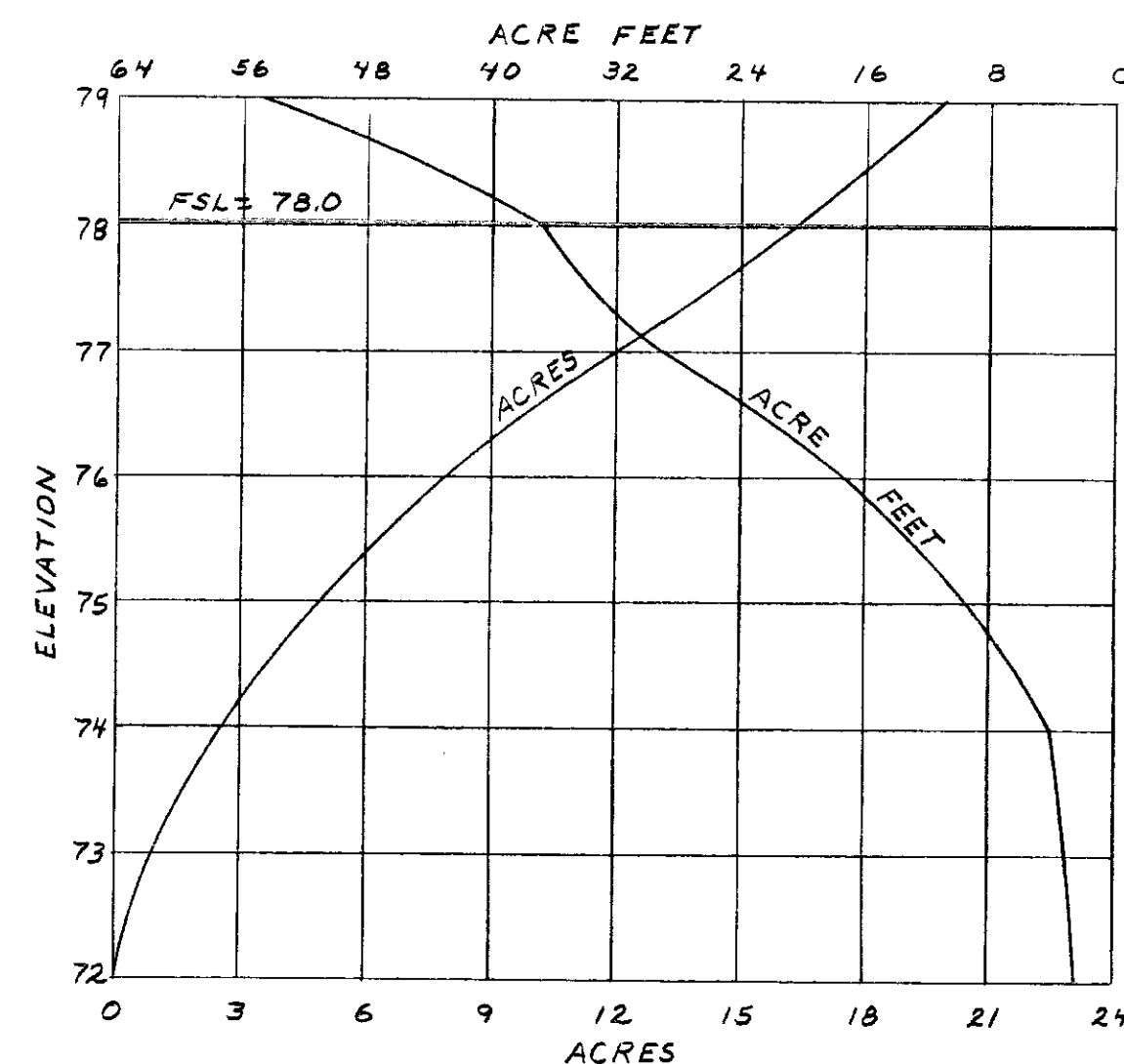
SCALE : 1" = 2,000'



1. VICINITY MAP
2. STRUCTURE SITE PLAN
3. SITE TOPOGRAPHY

NO.	DESCRIPTION OF REVISION			DATE	BY
 DUCKS UNLIMITED, INC.					
					
		DESIGNED: RCS	DRAWN: TD	SURVEYED:	CHECKED:
APPROVED: 					
APPROVED: 					
DESCRIPTION:					
SEC. 17 TWP. 118 N RGE. 55 W					
DATE:	DRAWING NO:				REV.
10-03-87	DU-SD -062-01 OF 3				

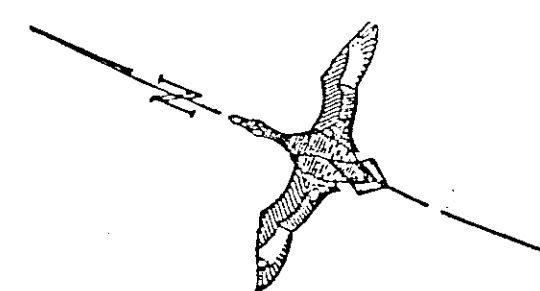
Appl No. 5177-3



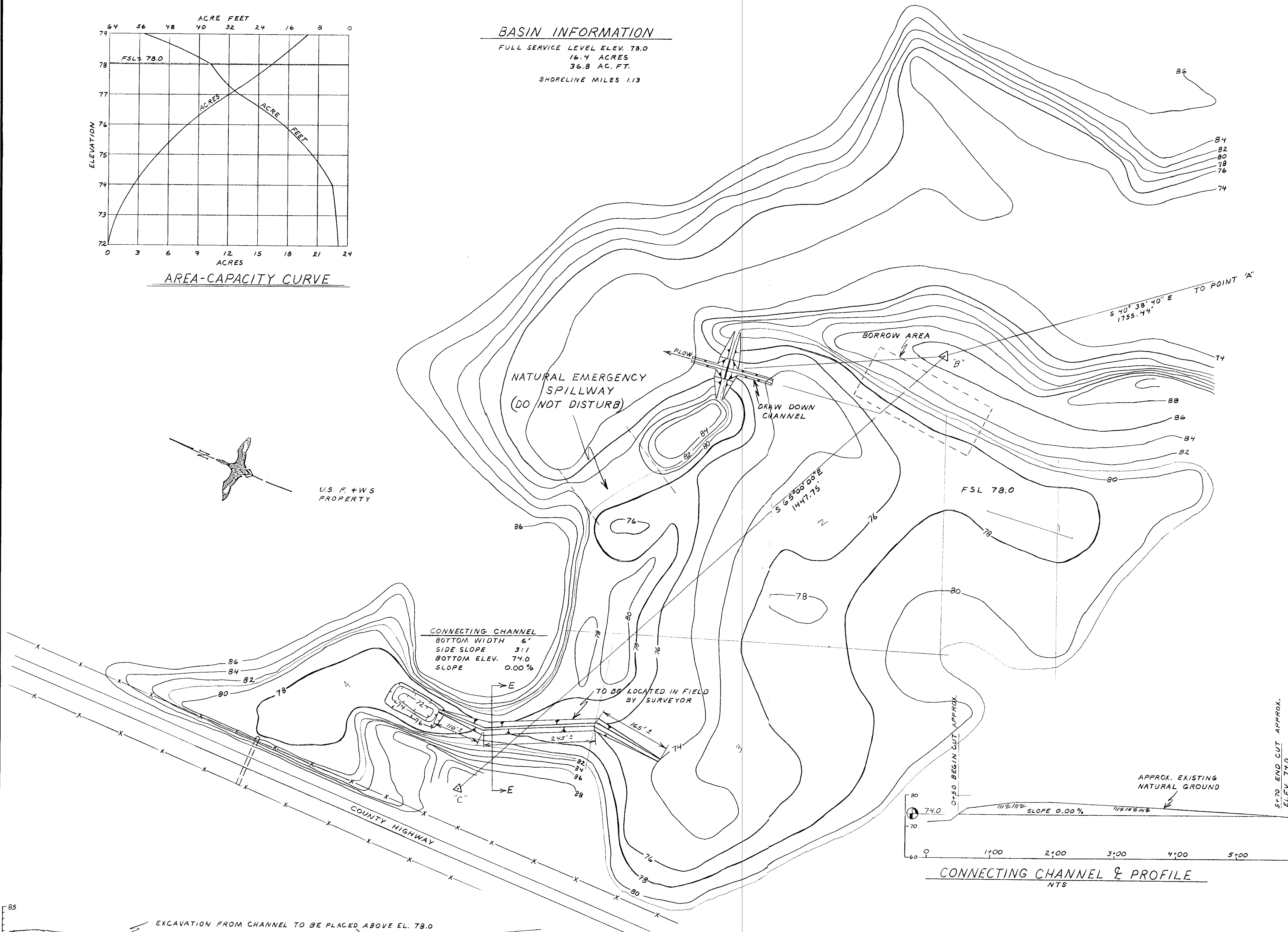
AREA-CAPACITY CURVE

BASIN INFORMATION

FULL SERVICE LEVEL ELEV. 78.0
16.4 ACRES
36.8 AC. FT.
SHORELINE MILES 1.13



U.S. F. & W.S.
PROPERTY



CONNECTING CHANNEL
BOTTOM WIDTH 6'
SIDE SLOPE 3:1
BOTTOM ELEV. 74.0
SLOPE 0.00%

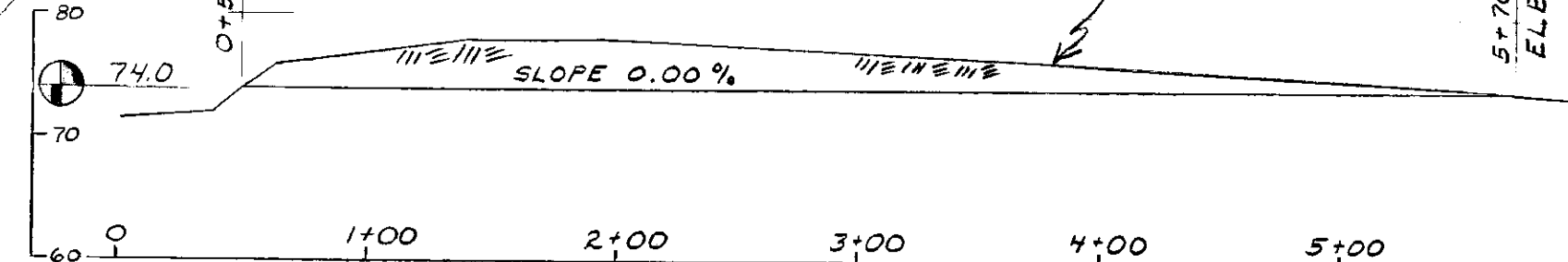
NATURAL EMERGENCY
SPILLWAY
(DO NOT DISTURB)

BORROW AREA

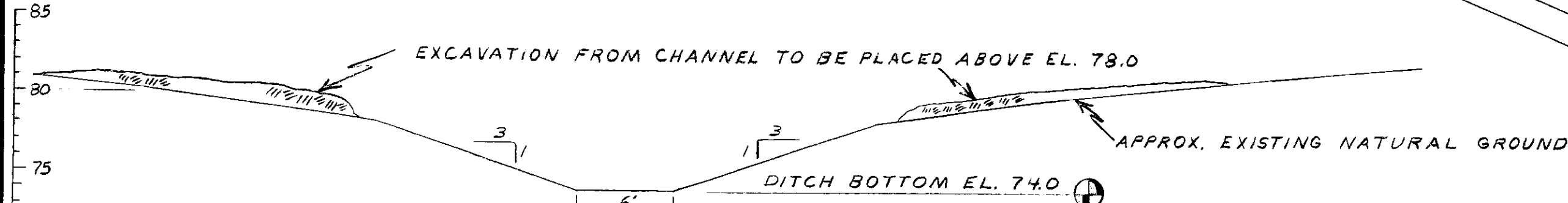
S 65° 30' 00" E
1447.75'

FSL 78.0

COUNTY HIGHWAY



CONNECTING CHANNEL & PROFILE
NTS



SECTION E-E
NTS

SITE TOPOGRAPHY

SCALE: 1"=100'
0 50' 100' 200'

NOTES

BORROW AREA:
TOPSOIL TO BE STRIPPED AND STOCKPILED.
TOPSOIL SHALL BE REPLACED ON ALL DISTURBED
AREAS TO A MINIMUM DEPTH OF 4".
MINIMUM SIDESLOPES IN BORROW AREA 4:1

CONNECTING CHANNEL:
EXACT LOCATION WILL BE STAKED IN THE
FIELD.
MATERIAL EXCAVATED FROM THE CHANNEL
MAY BE PLACED ADJACENT TO THE
CHANNEL ABOVE ELEVATION 78.0.
SPOIL SHALL BE BLENDED INTO THE NATURAL
SLOPE. A MINIMUM OF 4" OF TOPSOIL
SHALL BE PLACED ON SPOIL AREA.

BENCH MARKS

1781.93 POINT "A" CAPPED 4" PIN WITH POST
1787.73 POINT "B" CAPPED 4" PIN WITH POST
1797.12 POINT "C" 60 P. SPK. WITH POST

ESTIMATED QUANTITIES

EMBANKMENT (FILL) 500 CU. YDS.
EXCAVATION 60 CU. YDS.
CONNECTING CHANNEL 742 CU. YDS.
SHEET PILE 864.5 SQ. FT.
ROCK RIP RAP 35 CU. YD.
(ROCK RIP RAP QUANTITY INCLUDES THE
VOLUME OF ROCK TO FILL THE GABIONS.)
*EXCAVATION FIGURE REPRESENTS EXCAVATION
REQUIRED TO CONSTRUCT THE DRAW
DOWN CHANNEL

NO.	DESCRIPTION OF REVISION	DATE	BY
1			
DUCKS UNLIMITED, INC.			
ROE WPA			
SITE TOPOGRAPHY			
DESIGNED:	DRAWN:	SURVEYED:	CHECKED:
RCS	TD		
APPROVED:			
APPROVED:			
DESCRIPTION:			
SEC. 17 TWP. 118 N. RGE. 55 W.			
DATE:	DRAWING NO:	REV.	
10-2-87	DU-SD-062-03 OF 3		



DUCKS UNLIMITED

PROJECT AT

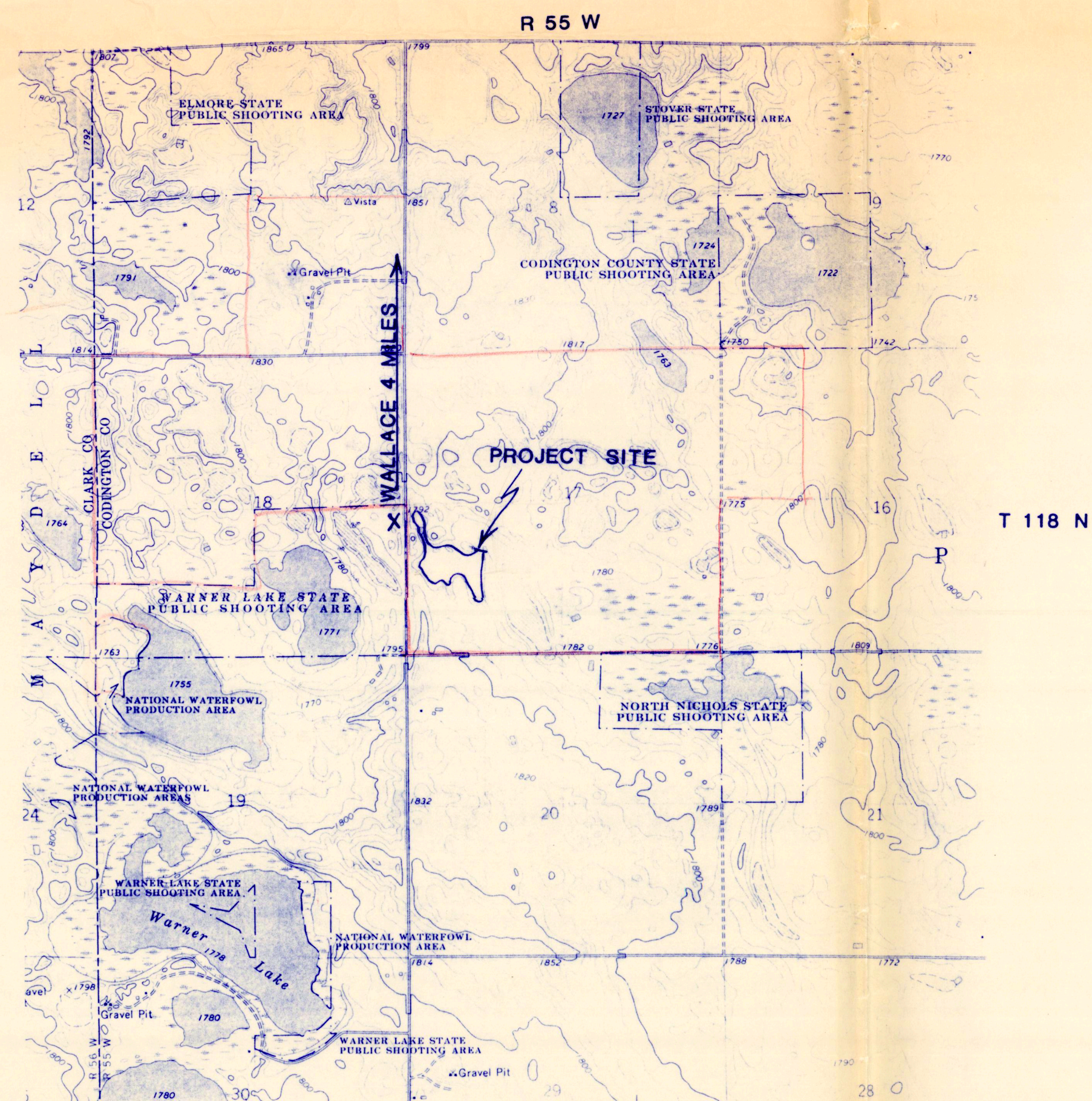
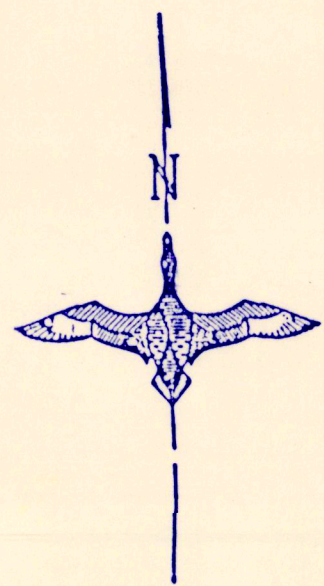
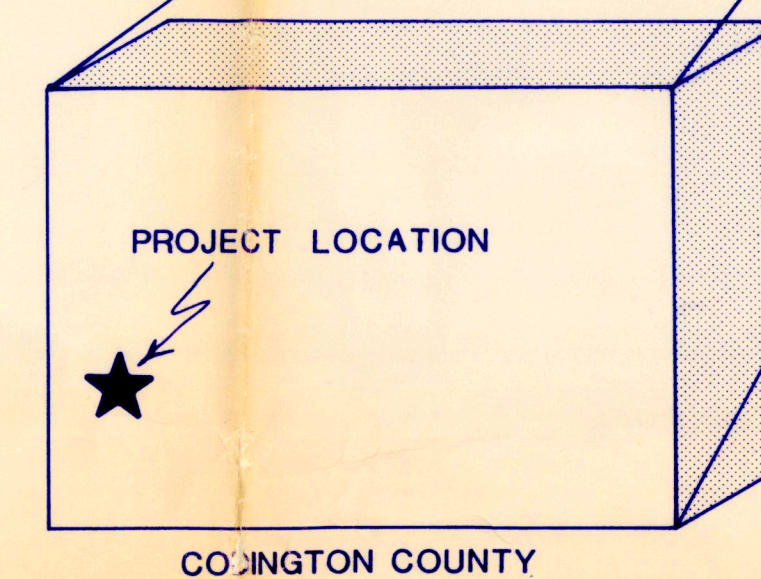
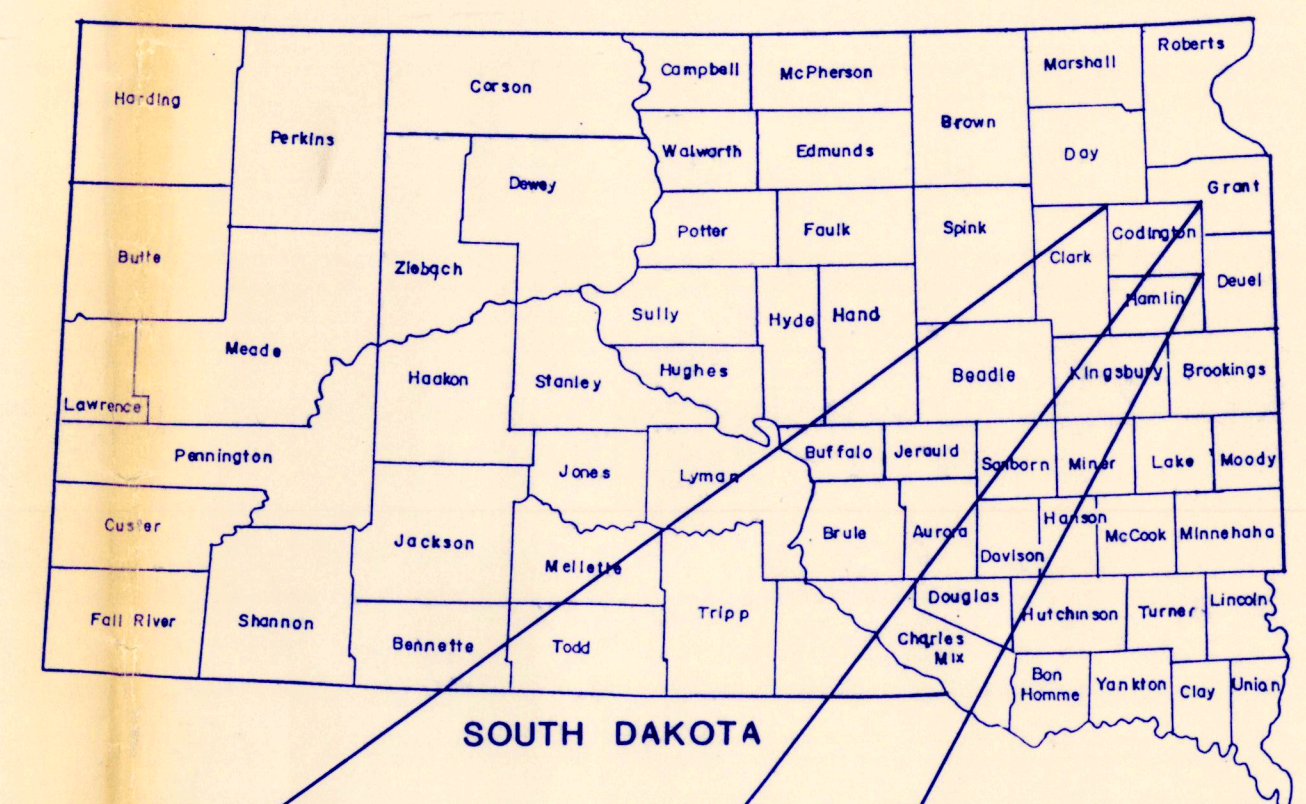
ROE WPA

SEC. 17, TWP. 118 N., RGE. 55 W.

CODINGTON COUNTY, SOUTH DAKOTA

IN COOPERATION WITH

U.S. FISH & WILDLIFE SERVICE



VICINITY MAP
SCALE: 1" = 2,000'

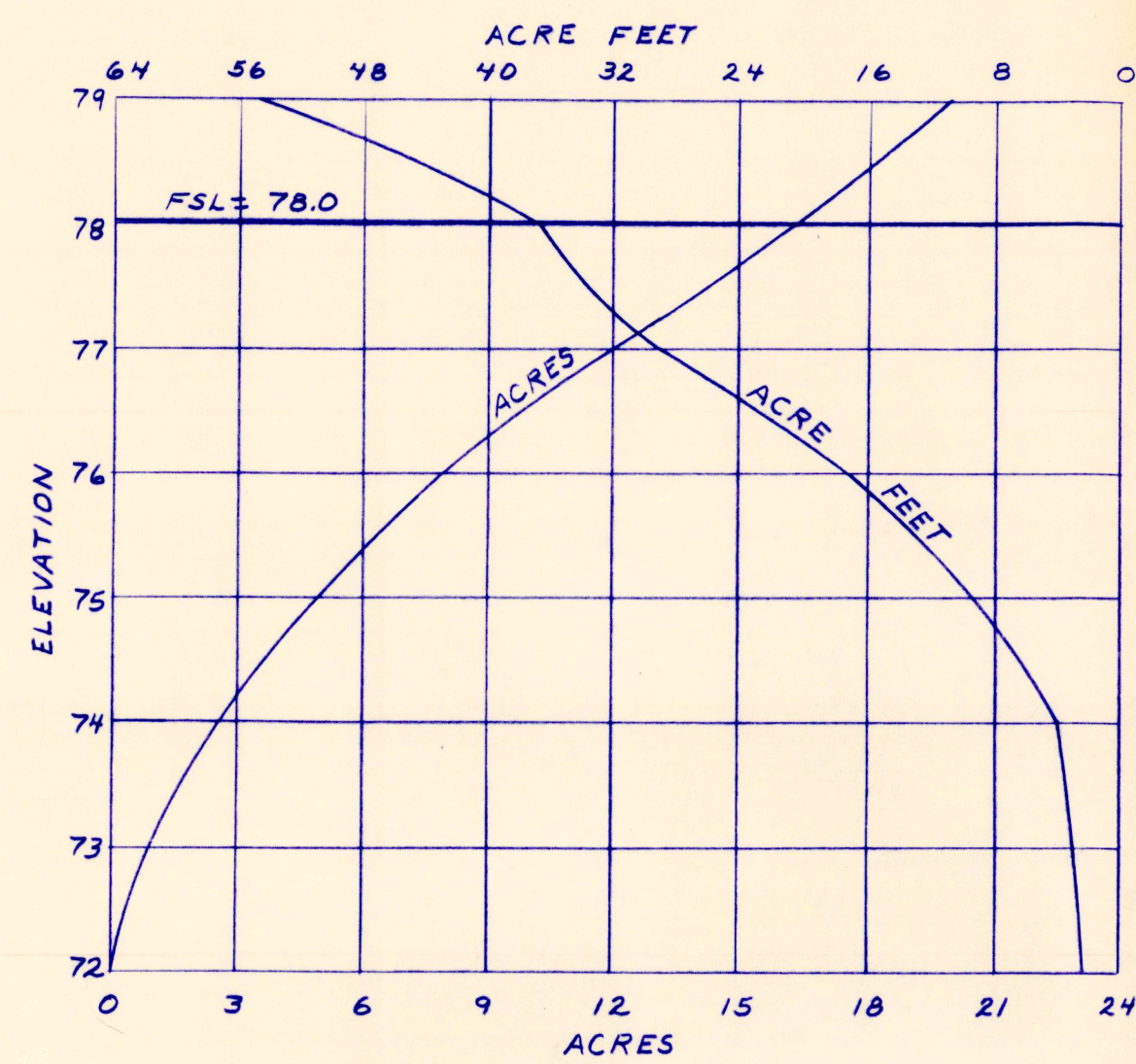
INDEX

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PRELIMINARY

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 DUCKS UNLIMITED, INC.			
ROE WPA VICINITY MAP			
DESIGNED: RCS	DRAWN: TD	SURVEYED:	CHECKED:
APPROVED: <i>[Signature]</i> P.E.			
APPROVED: <i>[Signature]</i>			
DESCRIPTION: SEC. 17 TWP. 118 N RGE. 55 W			
DATE: 10-9-87	DRAWING NO: DU-SD-082-01 OF 3		

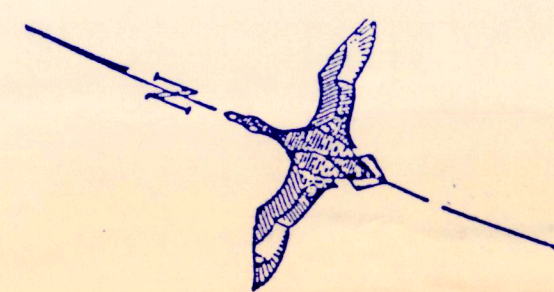
App'l No. 5177-3



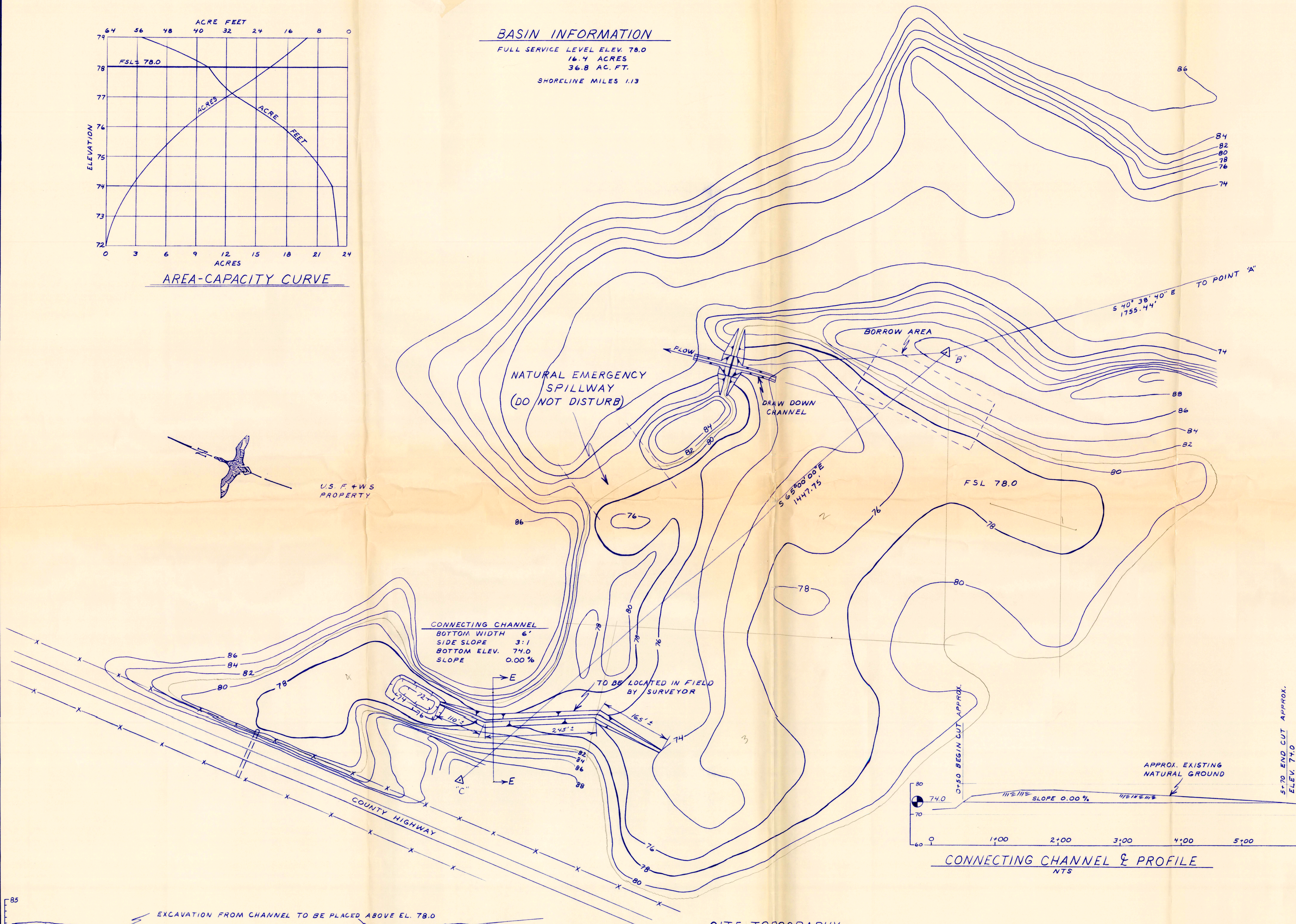
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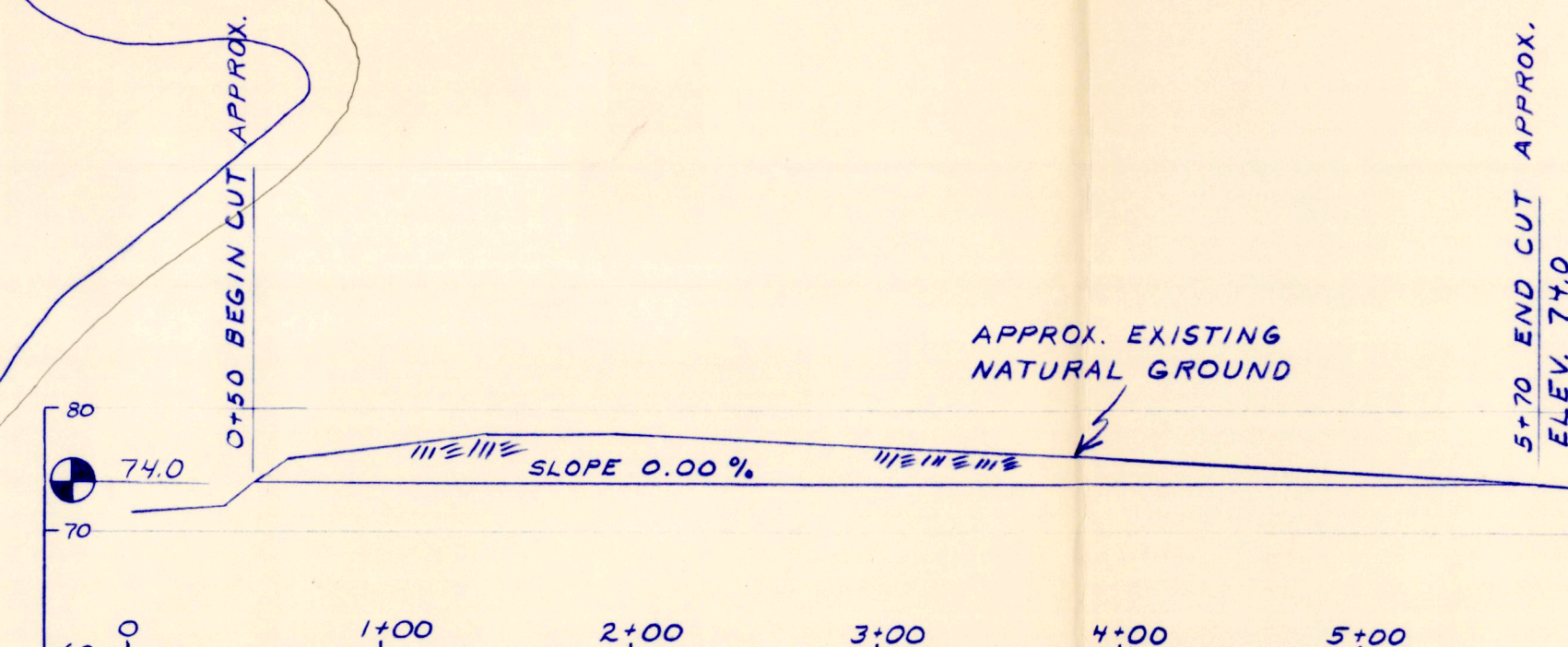
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ROE WPA
SITE TOPOGRAPHY

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APPROVED:			
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DESCRIPTION:			
SEC. 17 TWP. 118 N. RGE. 55 W.			
DRAWING NO:		REV.	
10-2-87		DU-SD-062-03 OF 3	