

Considered: _____

WATER PERMIT NO. 5628-3

Phone: 605 997-3441

Name of Applicant: Reg M Bauske

Post Office Address: Rt 2, Box 146, Flandreau SD 57028

Amount of Water Claimed: 36 acre-feet Total Acres: NA

Source of Water Supply: Mud Creek

Water to be used for: fish & wildlife County: Moody

About 5 miles NE of Flandreau

PROOF OF PUBLICATION: Received _____ Not Received _____

APPLICATION: Approved _____ Subject to _____

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

PRIORITY Date Received: 2-24-92 Fee: \$150 Remarks _____

Corrected Application Received 2-27-92 Period of Annual Use Jan 1 - Dec 31

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

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

Diversion Point: W 1/2 SW 1/4 Sec 5-T107N-R47W

Land to be Irrigated: _____

			\$	

Well Log: Driller: _____ Licensed YES _____ NO _____

Depth of Well: _____ REMARKS _____

Type of Map: plat PREPARED BY: Doug Lipetsky, P.E. Reviewed and the Number

Assigned on 2-28-92 By Karen Schlaak

No. 5628-3 Hydrologic Unit 10170203
Map No. _____ Basin Big Sioux River
Newspaper Moody Co. Enterprise, Box 71Flandreau 57028 (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 ☒ Fish & Wildlife

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. _____

(605) 997-2352 - work

(605) 997-3441 - Home

1. Name of Applicant Reg M. Bauske Phone No. _____Post Office Address Rt. 2, Box 146, Flandreau State SD 57028
(Street, RR or Box) Zip Code2. Amount of water claimed (c.f.s) 36 acre-feet, 16 1/2 fsl3. Source of water supply Mud Creek which runs into the Big Sioux River.4. Location of point of diversion SW 1/4 of Section 5, T. 107 N., R. 47 W., 5th P.M., of Moody
County, South Dakota.County Moody5. Counties where water will be used Moody6. Annual period during which water is to be used January 1 to 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)

Reg M. Bauske has a U.S. Fish and Wildlife Service Wildlife Extension Agreement for land to be inundated. A earthen and concrete dam will be constructed to create a permanent to semi-permanent wetland for wildlife use. The structure is being designed by and work will be contracted by Ducks Unlimited. Hopefully we will get help financially from ASCS & planning help from MOODY COUNTY BCS.

Engineering drawings are 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)
County of Moody) ssI, Reg M. Bauske the applicant, certify that I have read the foregoing application, have examined the attached map and that the matters therein stated are true and that I intend, and am able to complete the necessary construction.

Signed

Reg M BauskeSubscribed and sworn to before me this 30th day of January 1992My Commission Expires
March 16, 1996
SOUTH DAKOTAKenneth W. Pahr
Notary Public (or other qualified officer)

The Water Management Board hereby approves Water Permit Application No. _____

(Applicant)

(Post Office Address)

(State)

(Zip Code)

With the following qualifications.

Date of first receipt of application _____, 19____.

Date of return to applicant for correction, amendments or changes required _____, 19____.

Date of receipt of corrected application _____, 19____. Approved _____, 19____.

The Water Management Board hereby approves this Water Permit No. _____ authorizing the construction of the water use system and the placing of water to beneficial use as stated in the Application and as qualified in the Water Permit approval, subject, however, to the following limitations and conditions:

1. The date from which applicant may claim right is _____, 19____.
2. The equivalent of at least one-fifth of the specified work is to be completed on or before _____, 19____.
3. The whole of said work is to be completed on or before _____, 19____.
4. The limit of time from proof of beneficial use of water appropriated in accordance herewith is _____, 19____.
5. The water appropriated shall be used for the purpose of _____

6. The prior right of all persons who, by compliance with the laws of the State of South Dakota, have acquired a right to the use of water must not be unlawfully impaired by this appropriation.
7. The amount of the appropriation herein granted shall not exceed _____ cubic feet per second; neither shall it exceed the capacity of the above described water supply system nor shall it exceed the amount of water needed for beneficial uses served and to which water is actually and beneficially applied for _____ on or before _____, 19____; said water to be used during the following described annual period: _____

WATER MANAGEMENT BOARD

By: _____

Division of Water Rights
Dept. of Water and Natural Resources

Chief Engineer

**SOUTH DAKOTA
WATER PERMIT No. 5628-3**

Date of first receipt of application February 24, 1992.

Date of return to applicant for corrections, amendments or changes
February 25, 1992.

Date of receipt of corrected application February 27, 1992.

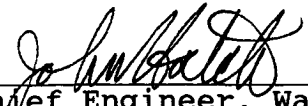
The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 5628-3 to Reg M. Bauske, Rt 2, Box 146, Flandreau SD 57028 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 5628-3 impounds 36 acre-feet of water by constructing a dam on a tributary of Mud Creek. The dam site is to be located in the W 1/2 SW 1/4 Section 5-T107N-R47W. Water is to be stored annually to an approximate elevation of 1641.0 feet mean sea level and is to be used to provide habitat for fish and wildlife production.
2. The water appropriated shall be used for the purpose of supplying water habitat for fish and wildlife and may not exceed the amount of water needed for beneficial use for fish and wildlife production purposes.
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. 5628-3 is April 28, 1992.
5. The date from which applicant may claim right is February 24, 1992.
6. One-fifth of the construction is to be completed on or before October 28, 1994.
7. All construction is to be completed on or before April 28, 1997.
8. Water is to be put to beneficial use on or before April 28, 2001.
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. 5628-3 authorizes storage of up to 36 acre-feet of water annually.

WATER MANAGEMENT BOARD

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

AUG 7 1992
date

Supplemental Information

(type or print in ink)

1. Well Information - Proposed construction

- a) Drill Hole Diameter _____ Depth _____
- b) Casing Type _____ Diameter _____ Thickness _____
- c) Screen Type _____ Diameter _____ Thickness _____
- d) Gravel Pack Thickness _____ Length of Gravel Pack _____
- e) Depth to Top of Water Bearing Material _____
- f) Depth of 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

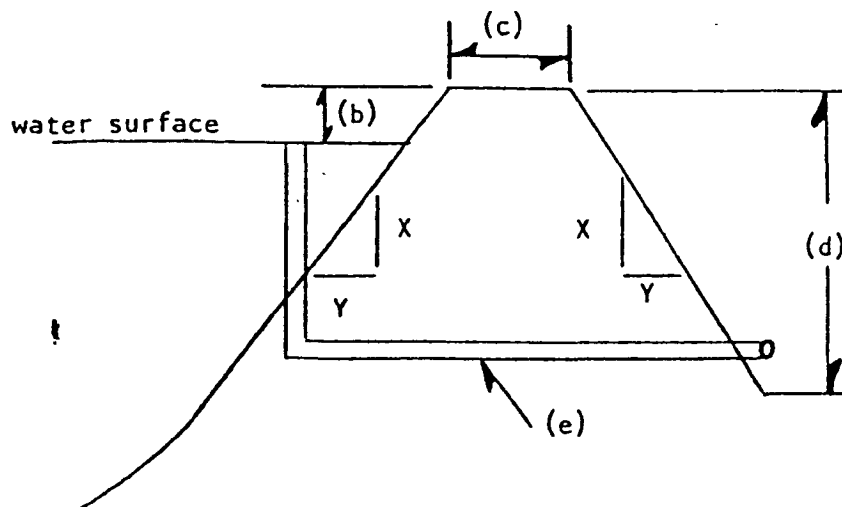
If the proposed water use system contains one or more storage dams, please furnish the information requested below. The locations of each dam should be shown on the map submitted with the application.

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

Ducks Unlimited, Inc.
6115 East Main
Bismarck, ND 58501

- b) Freeboard 4 ft
- c) Crest Width 12 ft
 Crest Length 100 ft
- d) Height 10 ft

- e) Outlet Dimensions:
 Pipe diameter 2 - 48 inch tubes
 Spillway width 80 ft
- f) X & Y Slope
 Upstream 3:1
 Downstream 3:1



Surface Area of Impoundment 11.1 acres
 Storage 36.0 acre feet
 Drainage area above dam 1400 acres

Reggie Bunsle

Signature of Applicant



Application No. 5628-3
 Ducks Unlimited Project - Reg Bauske Impoundment
 SW 1/4 Sec. 5-T107N-R47W-Moody Co.

Top of Dam Elev. = 1645
 P. Spillway Elev. = 1641
 2nd Spillway Elev. = 1643
 D/S Toe Elev. = 1632

Cat. 3 Small Size Dam

Eft. Height x Int. Storage

$$11 \times 63 = 693 < 3000$$

Max. Storage = 95 A.-Ft
 Int. Storage = 63 "
 Normal Storage = 36 "

∴ 25 year frequency Event

From USGS "Tech. for Estimating Flood Peaks"

$$\begin{aligned} Q_{25} &= 83.4 A^{.65} S^{.46} S_i^{.72} \\ &= 83.4 (2.25)^{.65} (.40)^{.46} (3.16)^{.72} \\ &= 83.4 (1.69) (5.45) (0.44) \\ &= \underline{\underline{305 \text{ cfs}}} \end{aligned}$$

$$\begin{aligned} DA &= 2.25 \text{ mi.}^2 \\ S &= 40 \text{ ft/mi.} \\ S_i &= 3.16 \end{aligned}$$

$$\begin{aligned} Q_{100} &= 132 A^{.65} S^{.46} S_i^{.67} \\ &= 132 (2.25)^{.65} (.40)^{.46} (3.16)^{.67} \\ &= 132 (1.69) (5.45) (0.46) \\ &= \underline{\underline{560 \text{ cfs}}} \end{aligned}$$

80 ft wide 2nd Spillway

$$\begin{aligned} Q &= C H^{3/2} \\ &= 2.6 (80) (2)^{1.5} \\ &= \underline{\underline{590 \text{ cfs}}} \end{aligned}$$

Primary Spillway - 2'-60" Riser w/ 48" Barrel w/ 4' head

2nd Spillway - 80' wide Earth cut w/ 2' head

Maximum Capacity Primary & 2nd Spillway = 650 cfs > 305 cfs ∴ OK

Section 74:02:08:09 Review

- 1) Topo Map - OK
- 2) Dam Axis Profile - OK
- 3) Dam X-Section - OK
- 4) Area Capacity Curve - OK
- 5) Detailed Drawings of Outlet - OK
- 6) Spillway Rating Curve - OK
- 7) Plans on Spillway Structure - OK
- 8) Specifications - OK
- 9) EPP - N/A - OK



BOOSTER

AND ADVERTISING AGENCY

Box 285

Flandreau, S.D. 57028

Phone 605-997-2872 or 605-997-2352

TO: Department of Water
& Natural Resources

ATTN
KAREN

Date.....2-17.....1992

MESSAGE:

ENCLOSED ARE PLANS - ²REQUESTS FOR
PERMIT - + CHECK FOR \$150 FOR
A PERMIT FOR ME TO BUILD THIS
DUCK SLOUGH - I'VE WANTED TO
DO THIS FOR 12 YEARS & I FINALLY
THINK I HAVE FOUND SUFFICIENT FUNDING
& HELP TO DO THIS FROM DU, SCS,
ASCS & USFWS - IF YOU NEED
any more info - CALL ME AT 997-2352
PLEASE RETURN MY PLANS!
TO ABOVE ADDRESS

FROM... REG BAUSKE

"WE'VE GOT YOU COVERED"

RECEIPT

Division of Water Rights

South Dakota Department of Water and Natural Resources

413080

Pierre, February 24, 1992

RECEIVED OF Bauske Farm, Reg Bauske, RR 2, Box 146, Flandreau, SD 57028

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

Fee for Application for Permit No. <u>5628-3</u> 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

Jah. Hootch (CF)
Chief Engineer

Conversation or File Documentation

NAME OF PERSON OR FILE: Reg BauskeADDRESS: Rt 2 Box 146, Flandreau SD 57028 COUNTY MoodyDATE: 2/24/92 TELEPHONE 997-2352 (Work)
997-3441 (Home)RE: Ducks Unlimited Plans & Specs.

COMMENTS:

I talked to Mr. Bauske today about the Ducks Unlimited Plans & Specs he submitted with his Water Right Application. I told him we needed more spillway information, a Preliminary Risk Assessment and a Final set of Plans & Specs. Told him I would call DU and ask them for this information.

Talked to Doug Lipetzky with Ducks Unlimited. He would send us a copy of the Design Report with the spillway information and Preliminary Risk Assessment. They are still working on some Soils Information and when they have that, they will send a Final set of Plans & Specs.

File in Permit or other file as necessary. Use to document conversations and what the other party was told; why action or decision was made.

NAME: Tami Schaal



DUCKS
UNLIMITED
INC.



DUCKS UNLIMITED, INC.
GREAT PLAINS REGIONAL OFFICE

6115 East Main Avenue
Bismarck, North Dakota, 58501
(701) 258-5599

February 25, 1992

Tim Schaal
SD Dept. of Water & Natural Resources
Division of Water Rights
Joe Foss Building
Pierre, SD 57501

RE: Reg Bauske Impoundment
Moody County

Dear Tim:

Per your request, enclosed is a final set of plans for the proposed wetland creation project on property owned by Reg Bauske. The plans have been updated to include soils information. Also, enclosed is a copy of my Design Report for the project including a Discharge Curve.

If you have any questions or need additional information, please contact me at (701) 258-5599. Thank you.

Sincerely,

Doug Lipetzky, P.E.
Regional Engineer

cc: Colleen Leslie, US Fish & Wildlife Service-Madison
Reg Bauske, Flandreau

DESIGN REPORT

Revised February 25, 1992

PROJECT: REG BAUSKE IMPOUNDMENT
SD-115-01

LOCATION: Sections 5, T107N, R47W
Moody County, South Dakota

MARSH DATA: Full Service Level (FSL) @ 1641.0
12.3 Surface Acres @ FSL
36 Acre-Feet Capacity @ FSL

PROJECT DESCRIPTION:

The proposed dam and created marsh are located on private land in the SW 1/4 of Section 5, T107N, R47W, in Moody County, near Flandreau, South Dakota. The proposed dam is on an unnamed tributary that flows into Mud Creek which eventually discharges into the Big Sioux River. The watershed consists of approximately 1450 acres.

CLASSIFICATION OF PROPOSED DAM:

Based on the classification criteria outlined in Chapter 74:02:08 "Safety of Dams," it is recommended that the proposed dam be classified as a small, Category 3 dam. No loss of life and minimal economic loss potential is expected should failure occur. The product of the intermediate storage capacity times the effective height is 775 which is less than 3000. Therefore, the minimum spillway design flood is a 25-year frequency per 74:02:08:07:01 and must be passed through the spillways without overtopping the embankment.

PRELIMINARY RISK ASSESSMENT:

The proposed dam will be located in a rural area in Moody County. Land use consists of primarily agricultural with some pasture.

A north-south gravel section line road with a timber bridge exists approximately 1400 feet downstream from the proposed dam. The waterway opening of the bridge is approximately 15.8' wide by 9.5' high. The top of the deck is at elevation 1635.6.

The channel then crosses an east-west gravel section line road approximately 700 feet downstream from the first crossing. A timber bridge also exists at this location. The bridge waterway opening is approximately 15.5' wide by 4' high with a deck elevation of 1626.3.

No residences or buildings are located immediately adjacent to the channel. Based on the rural setting, information obtained in the field, data present on the U.S.G.S. quadrangular maps, and the relative small size and capacity of the created marsh, the crossings should be in little danger in the unlikely event of a failure. Also, the proposed dam will help to reduce potential downstream flooding during spring runoff. The risk to the general public would appear minimal.

DESIGN:

In accordance with South Dakota requirement 74:02:08:07.01, the minimum spillway design flood for the proposed dam is a 25 year frequency event. The proposed dam is designed to exceed the South Dakota requirements. The primary spillway will pass flows produced by a 24 hour rainfall event with a frequency between 5 and 10 years without utilizing the emergency spillway. The primary and emergency spillways combined will pass flows produced by the 100 year 24 hour rainfall without overtopping the embankment. The level crest is of sufficient length to prevent failure in the event of any headcutting during infrequent high flow events.

Twin 60" diameter corrugated metal pipe (CMP) full round risers with a 48" diameter CMP outlet barrel is proposed as the primary spillway. An 80' wide emergency spillway with a 100' level crest will be constructed around the south end of the embankment.

The Soil Conservation Service (SCS) TR-20 Hydrology program was used to determine the discharge at various reservoir stages with respect to time. The program uses accepted procedures to develop inflow and outflow hydrographs. The primary spillway capacity was calculated by comparing discharges developed by the weir flow formula and formulas for calculating head loss through corrugated metal pipe. The emergency spillway capacity was calculated using Technical Release No. 39 Hydraulics of Broad-Crested Spillways developed by the SCS. A total discharge curve for the proposed dam is attached.

The following is a relationship between peak inflows, corresponding outflows, and reservoir elevations:

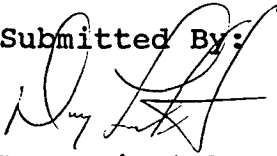
<u>EVENT</u>	<u>PEAK INFLOWS</u>	<u>MAXIMUM WATER SURFACE ELEVATION</u>	<u>FREEBOARD AVAILABLE*</u>	<u>TOTAL DISCHARGE</u>
5 YR	203 CFS	1642.77	2.73 FT	161 CFS
10 YR	274 CFS	1643.58	1.92 FT	214 CFS
25 YR	364 CFS	1644.07	1.43 FT	315 CFS
50 YR	467 CFS	1644.42	1.08 FT	419 CFS

*After final topsoil placement.

REG BAUSKE Design Report
February 25, 1992
Page Three

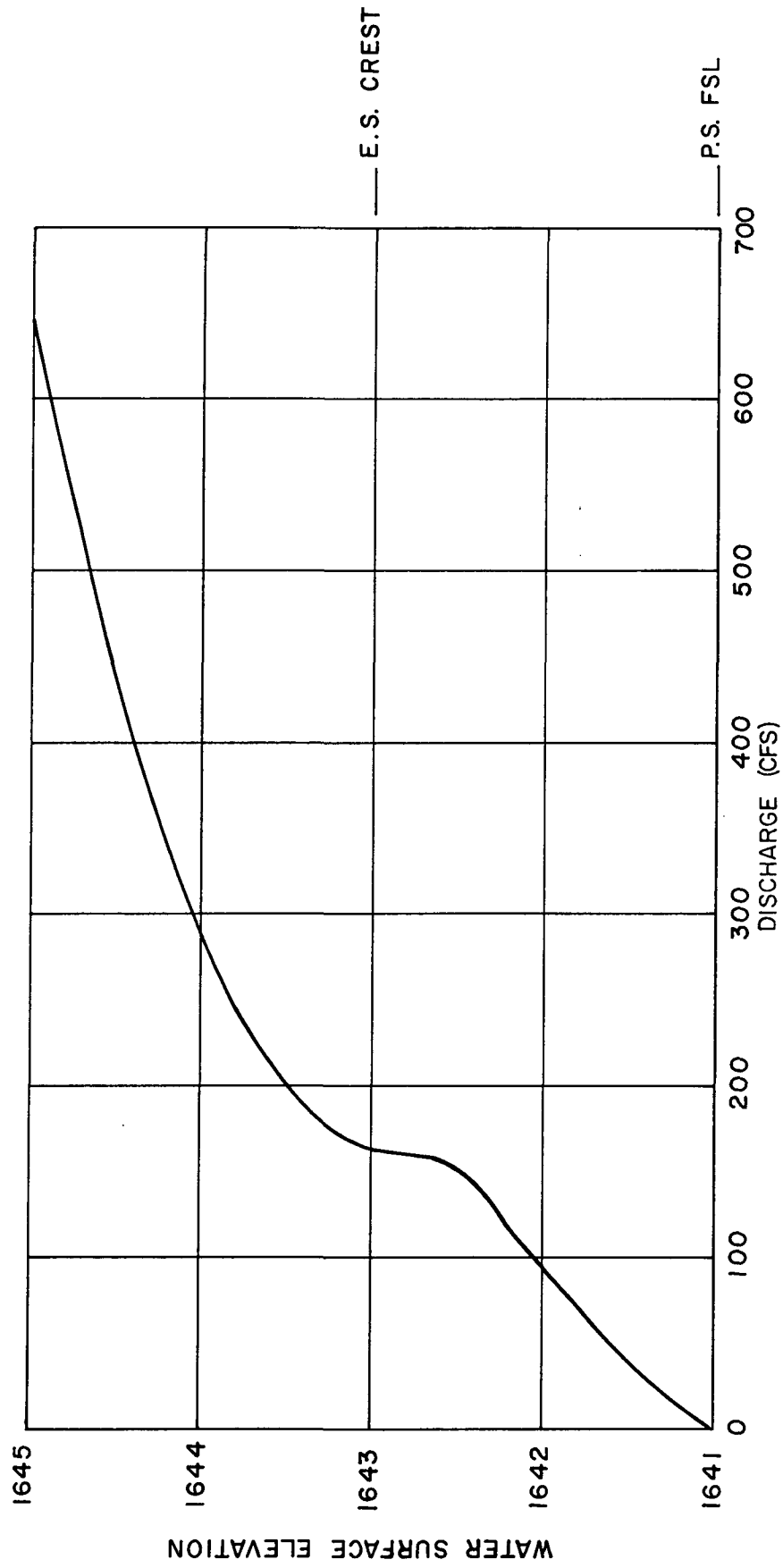
A set of plans is submitted with the Design Report. A set of standard construction specifications has previously been submitted to the Division of Water Rights for the purposes of permit review.

Submitted By:

A handwritten signature in black ink, appearing to read "Doug Lipetzky", written over the "Submitted By:" text.

Doug Lipetzky, P.E.
PE-4499

DISCHARGE CURVE



REG BAUSKE IMPOUNDMENT
SD-115-01

DOUBLE 60" RISERS W/48" BARREL
80' WIDE EMERGENCY SPILLWAY



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

February 25, 1992

Reg M. Bauske
Rt 2, Box 146
Flandreau SD 57028

Dear Mr. Bauske:

In regard to the water permit application received on February 24, 1992, before the application can be processed we must receive a copy of the Design Report with the spillway information, a Preliminary Risk Assessment and a final set of plans and specifications.

Tim Schaal, with this office talked with Doug Lipetzky with Ducks Unlimited. Mr. Lipetzky stated he would send us the requested information as soon as it was available.

Upon receipt of the above, further processing of your application will continue. Please contact this office, if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads 'Karen Schlaak'.

Karen Schlaak
Natural Resources Analyst
605 773-3352

cc: Doug Lipetzky, Ducks Unlimited



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

March 2, 1992

Reg M. Bauske
Rt 2, Box 146
Flandreau SD 57028

Dear Mr. Bauske:

We have received the requested Design Report with the spillway information, a Preliminary Risk Assessment and a final set of plans and specifications from Doug Lipetzky, Ducks Unlimited.

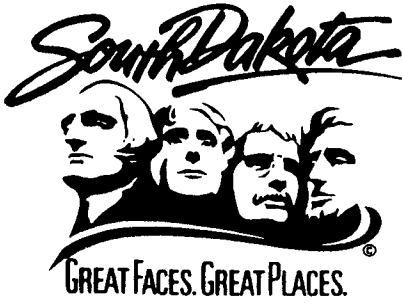
Enclosed is the copy of the plans which you originally submitted with the application. Mr. Lipetzky submitted another set.

We now have all the necessary information to process your application. Please contact this office, if you have any questions.

Sincerely,

Karen Schlaak
Natural Resources Analyst
605 773-3352

enclosure



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

March 16, 1992

Roger Smith, P.E.
Ducks Unlimited, Inc.
6115 E. Main Ave.
Bismarck, ND 58501

Dear Mr. Smith:

We have reviewed the plans and specifications for the U.S. Fish & Wildlife Service Reg Bauske Impoundment (Water Permit Application No. 5628-3) located in the SW 1/4 of Section 5-T107N-R47W in Moody County. The plans and specifications as submitted are approved.

Our review was to determine compliance with the Water Management Board Safety of Dams Rules, Chapter 74:02:08. Approval of these plans and specifications does not release the U.S. Fish & Wildlife Service as owner of the project, from the responsibility for operating and maintaining the dam in good repair to assure the safety of the dam.

If you have further question, please feel free to contact me.

Sincerely,

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

cc: Colleen Leslie, US Fish & Wildlife Service-Madison
Reg Bauske, Flandreau

REPORT ON
WATER PERMIT APPLICATION NO. 5628-3
REG BAUSKE
MARCH 16, 1992

Water Permit Application No. 5628-3 was filed by Reg Bauske to impound 36 acre-feet of water in a dam constructed on a tributary of Mud Creek. The proposed dam will be located in the W 1/2 SW 1/4 of Section 5-T107N-R47W in Moody County. The dam will be a cooperative Ducks Unlimited and U.S. Fish & Wildlife Service project and the water will be used for fish and wildlife production.

Discussion:

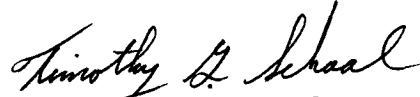
The dam will be 13 feet high with a normal storage capacity of 36 acre-feet and a maximum storage capacity of 95 acre-feet. It will be classified as a Category 3, Small size dam. A dam of this size and category is required to have a minimum spillway capacity capable of passing a 25 year frequency event.

The plans and specifications for this project have been reviewed and approved. The proposed dam will have a drainage area of 2.25 square miles and a 25 year frequency event will produce a peak runoff of 305 cfs. The dam is designed with a CMP primary spillway consisting of two 60 inch risers with a 48 inch barrel and a 80 foot wide earthcut secondary spillway. The spillways will have a combined maximum capacity of 650 cfs.

The dam will be located on a tributary of Mud Creek, approximately 3 miles upstream of the confluence of Mud Creek and the Big Sioux River. There are no existing Water Permits or Water Rights on Mud Creek.

Conclusions:

1. Water Permit Application No. 5628-3 should be approved since unappropriated water is available and approval will not have any adverse effects on existing Water Rights.
2. If approved, the low flow bypass requirement for downstream domestic use should be a qualification on Water Permit Application No. 5628-3.



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

Approved by:



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

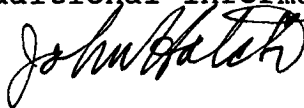
RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 5628-3, Reg M Bauske

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Division, Department of Environment and Natural Resources concerning Water Permit Application No. 5628-3, Reg M Bauske, Rt 2 Box 146, Flandreau, SD 57028.

The Chief Engineer is recommending APPROVAL of Application No. 5628-3 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 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. 5628-3 authorizes storage of up to 36 acre-feet of water annually.

See report on application for additional information.



JOHN HATCH, Chief Engineer
March 24, 1992



**DEPARTMENT of ENVIRONMENT
and 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.

March 26, 1992

Reg M Bauske
Rt 2 Box 146
Flandreau, SD 57028

Dear Mr. Bauske:

Water Permit Application No. 5628-3 for fish and wildlife production 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 Moody County Enterprise printed at Flandreau, SD (Ph # 997-3725). For your information, a copy of the notice, the recommendation of the Chief Engineer and a report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

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

Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

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



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

March 26, 1992

Moody County Enterprise
Box 71
Flandreau, SD 57028

ATTENTION: Legal Department

Enclosed is a Notice of Hearing on Application No. 5628-3 to be published twice. Please publish the first notice on April 1, 1992, 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 Reg M Bauske, Rt 2 Box 146, Flandreau, SD 57028 (Ph # 997-3441).

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

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

-----CUT HERE-----
FIRST TRANSMITTAL NOTICE

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.

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

Name _____

Newspaper _____

Instruction to Newspaper - Publish first Notice on April 1, 1992, with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF HEARING on Application No. 5628-3 to Appropriate Water

Notice is given that Reg M Bauske, Rt 2 Box 146, Flandreau, SD 57028 has filed an application for a water permit to impound 36 acre-feet of water by constructing a dam on a tributary of Mud Creek. The dam site is to be located in the W 1/2 SW 1/4 Section 5-T107N-R47W. Water is to be stored annually to an approximate elevation of 1641.0 feet mean sea level and is to be used to provide habitat for fish and wildlife production.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 5628-3 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. 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 April 20, 1992. 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. 5628-3 and 2) the chief engineer's recommendation, a meeting at the Division of Water Rights office to hear this application is scheduled for April 28, 1992, 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 April 28, 1992, hearing date will be rescheduled for a regularly scheduled Board meeting. Notice of the time and place of the rescheduled hearing before the Board 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 April 28, 1992, hearing date will be automatically delayed for at least 20 days upon written request to the Chief Engineer from the applicant or any interested person opposing the application. The request for an automatic delay must be filed by April 20, 1992.

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 Moody) ss.

I, Angela Nibbelink

certify that the attached printed Notice was taken
 from the Moody County Enterprise

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 Flandreau

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

March 31, 1992

April 7, 1992

Angela Nibbelink
 (Signature)

Bookkeeper
 (Title)

4-8-92
 (Date Signed)

Cost of Printing: 57.29



NOTICE OF HEARING
on Application No. 5628-3
to Appropriate Water

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(March 31 & April 1, 1992)



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

AUG 7 1992

Reg M Bauske
Rt 2 Box 146
Flandreau, SD 57028

Dear Mr. Bauske:

Enclosed is Water Permit No. 5628-3 authorizing construction of your water diversion system and beneficial use of the water, 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.

REPORT ON INSPECTION OF PERMIT NO. 5628-3

DATE OF INSPECTION: 8/11/98

Contact Person & Address: Reg Bauske, RR2 Box 146 Flandreau SD

DIVERSION POINT LEGAL LOCATION: W1/2 SW1/4 Sec 5 T107N-R47W

WATER SUPPLY Source: surface water, tributary to Mud Creek

DAM INFORMATION:

- | | |
|--|---|
| 1) Height to crest <u>13</u> feet | 2) Height to primary spillway <u>9</u> feet |
| 3) Height to secondary spillway <u>11</u> ft | 4) Crest width <u>12</u> feet |
| 5) Crest length <u>475</u> feet | 6) Spillway length <u>200</u> feet |
| 7) Spillway width <u>60</u> feet | 8) Approx. storage <u>36</u> ac-ft |
| 9) Approx. storage to crest <u>95</u> ac-ft | 10) Date constructed: <u>1992</u> |
| 11) Outlet tubes: | |
| a) diameter <u>48</u> inches | b) type <u>CMP</u> |
| c) valved <u>y</u> | d) valve type <u>stop log</u> |
| e) location on structure <u>near center</u> | |
| 12) Category of Dam <u>3</u> | |

PERMIT QUALIFICATIONS AND REGULATIONS:

- 1) Special qualifications to permit being abided by yes
- 2) All structures, wells and lands on map yes

Permit No. 5628-3
Big Sioux 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

On, **August 11, 1998**, I made a thorough examination of the water use system constructed by **Reg Bauske** of **RR2 Box 146, Flandreau SD** holder of Permit No. **5628-3**, bearing the priority of **February 24, 1992** authorizing the storage of **36** acre-feet of the waters of **surface water** for **fish and wildlife production** purposes, in **Moody** County.

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

A. Works used to divert the water:

A 13 foot high dam capable of impounding 36 acre feet

The system is in the following condition **good**. The point of diversion is located **W1/2 SW1/4 Sec 5 T107N-R47W**. The works are capable storing **36** acre-feet of water which is to be used for **fish and wildlife production**. Water has been put to beneficial use to the maximum and the license should be issued for **36** acre-feet of storage.

Applicable permit qualifications have been complied with: **yes**

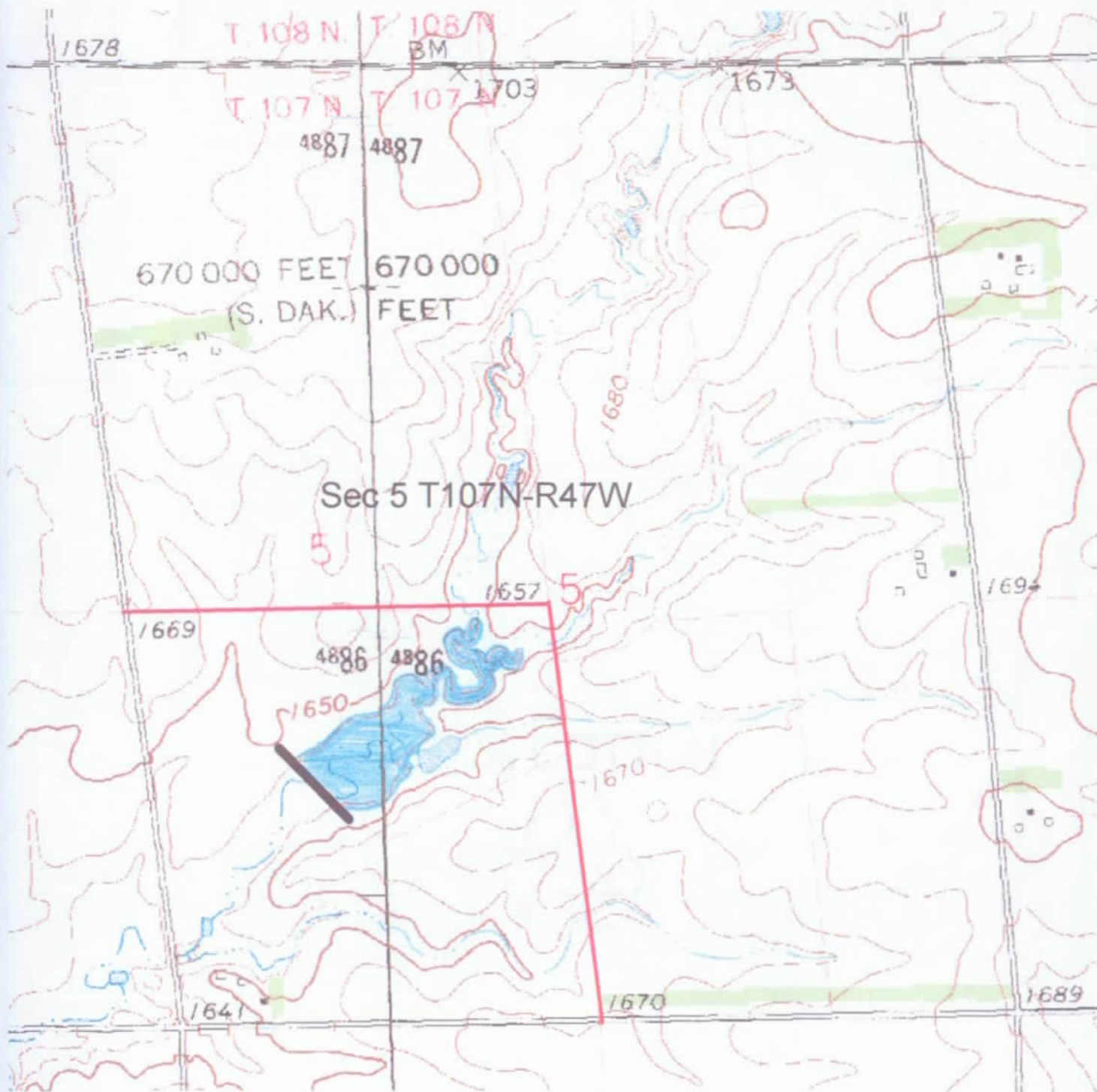
Exceptions to compliance are: **none**



Mark D. Rath
Natural Resources Engineer
DENR, Water Rights Program



Date



Mark D Rath

8/24/98

Mark D Rath
Natural Resources Engineer

5628-3

STATE OF SOUTH DAKOTA

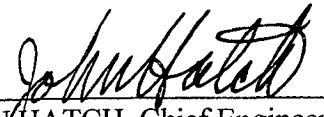
WATER LICENSE NO. 5628-3

(1) Reg Bauske, RR 2 Box 146, Flandreau SD 57028 made Application No. 5628-3, February 24, 1992 for a water permit to impound 36 acre-feet of water by diverting flows on a tributary of Mud Creek, Moody County, South Dakota for providing habitat for fish and wildlife production. Permit No. 5628-3, with a priority date of February 24, 1992 was approved April 28, 1992 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before April 28, 1997 and for the application to beneficial use of said water on or before April 28, 2001.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the of the storage dam and is entitled to impound 36 acre-feet of water for beneficial use with sufficient water annually to maintain the water level to the outlet elevation of approximately 1641.0 feet mean sea level. The location of the storage dam is in the W ½ SW ¼ Section 5-T107N-R47W.

(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 Reg Bauske, RR 2 Box 146, Flandreau SD 57028 the holder and/or owner of Water Permit No. 5628-3 is issued a license to appropriate water, the right to impound 36 acre-feet of water from a tributary of Mud Creek with sufficient water annually to maintain the water level to the outlet elevation of approximately 1641.0 feet mean sea level with a priority date of February 24, 1992 from the location specified in (2) of this license. The water is used to provide habitat for fish and wildlife production. This license is subject to any limitations or qualifications listed in Water Permit No. 5628-3 and subject to South Dakota State Law.



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

SEP 10 1998

date





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

August 26, 1998

5628-3

Reg Bauske
RR 2, Box 146
Flandreau, SD 57028

Dear Mr. Bauske:

The investigation of your water use system was conducted on August 11, 1998, by Mark D. Rath, staff engineer. The investigation included the extent of application of water to beneficial use, as developed under Water Permit No. 5628-3. Your final water right document, the Water License, can now be issued.

Statutes require 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 begin processing your Water License.

**Please remit fee to:
Department of Environment & Natural Resources
Water Rights Program
523 E. Capitol
Pierre, SD 57501-3181**

Sincerely,

Cheryl F. Frost
Secretary
Water Rights Program
(605) 773-3352

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

RECEIPT

Water Rights Program

South Dakota Department of Environment and Natural Resources

N2 415851

Pierre, September 3, 1998

RECEIVED OF Reg Bauske, RR 2, Box 146, Flandreau, SD 57028
the following amount in fees for services rendered as provided for by law:

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. 5628-3

50 00

Fee for Filing Transfer Form _____

Fee for Filing Extension Request _____

Fee for _____

(Any Other Work Provided by Law)

Total

50 00

By

Chief Engineer

John Hatch (Signature)



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

SEP 10 1998

5628-3

Reg Bauske
RR 2, Box 146
Flandreau, SD 57028

Dear Mr. Bauske:

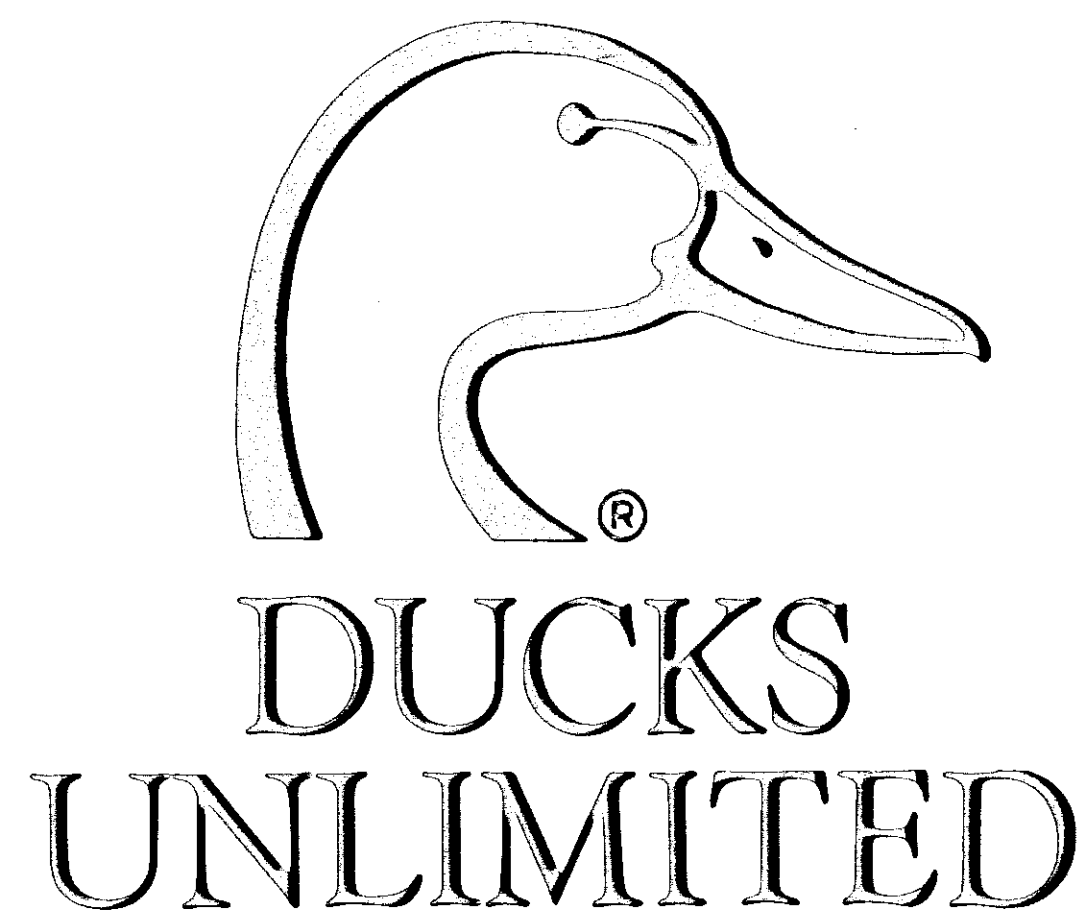
Enclosed is Water License No. 5628-3 and Receipt No. 415851 for \$50.00 which was assessed for an investigation and issuance of the license. Water License No. 5628-3 is the final document which completes the process of obtaining a water right.

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

Very truly yours,

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

ks
enclosures



DUCKS UNLIMITED

PROJECT

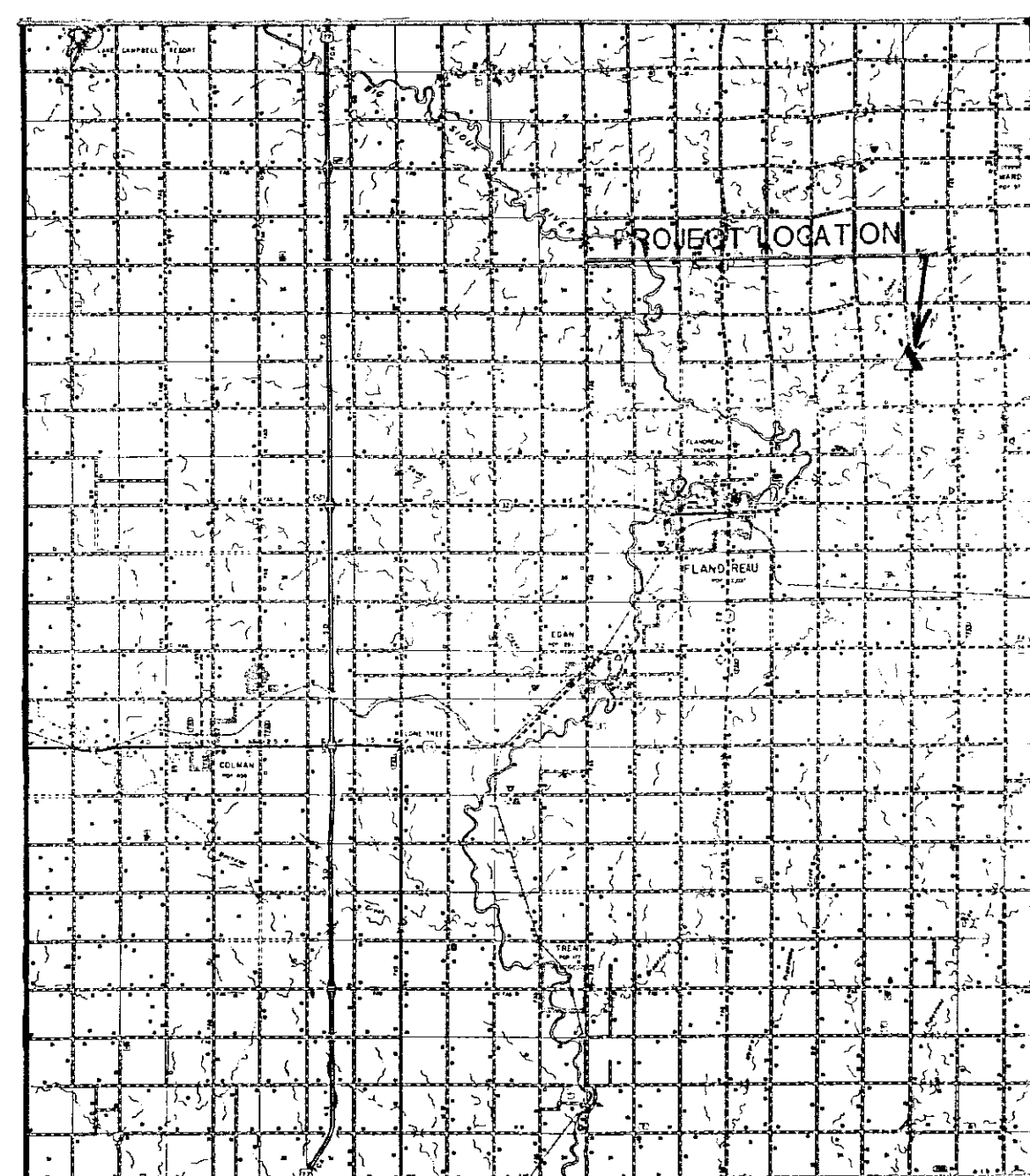
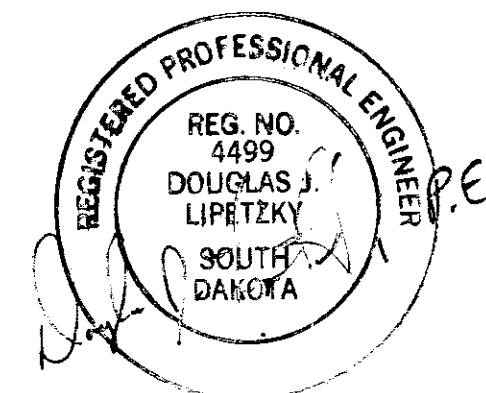
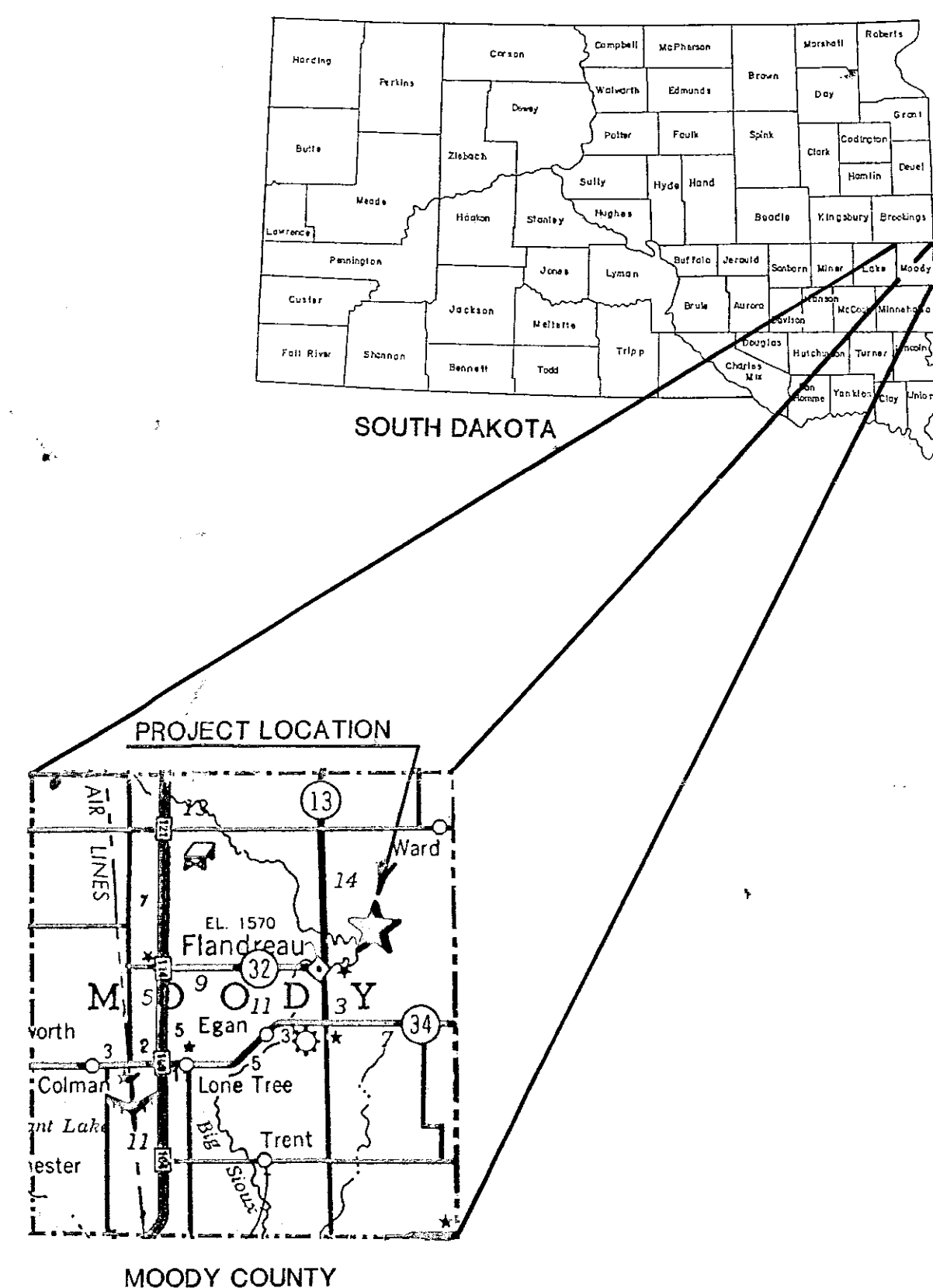
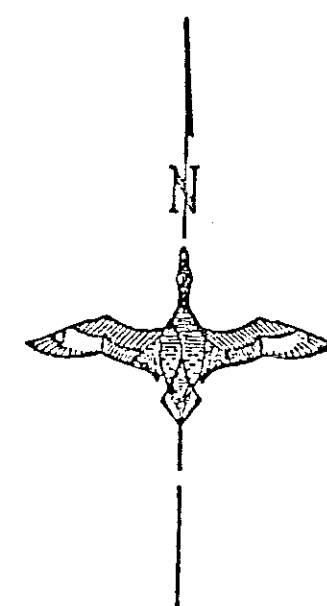
REG BAUSKE IMPOUNDMENT

SEC. 5 TWP. 107 N., RGE. 47 W.

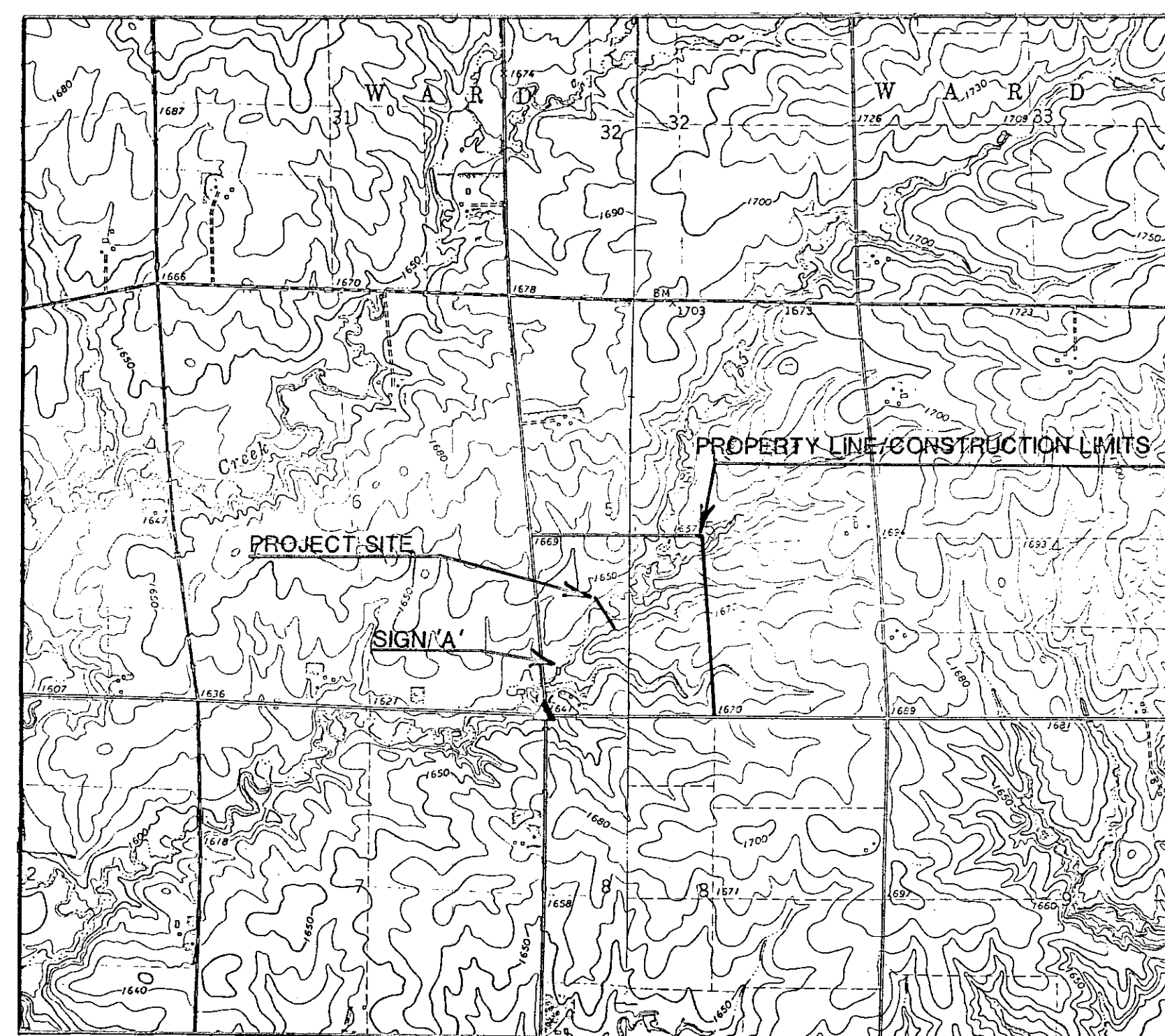
MOODY COUNTY, SOUTH DAKOTA

IN COOPERATION WITH

U.S. FISH & WILDLIFE SERVICE



LOCATION MAP
NTS



▲ IS 4 MI. EAST & 3 MI. NORTH OF JCT. OF HWY. 13 & 32 IN FLANDREAU.

VICINITY MAP
SCALE: 1" = 2,000'

INDEX

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

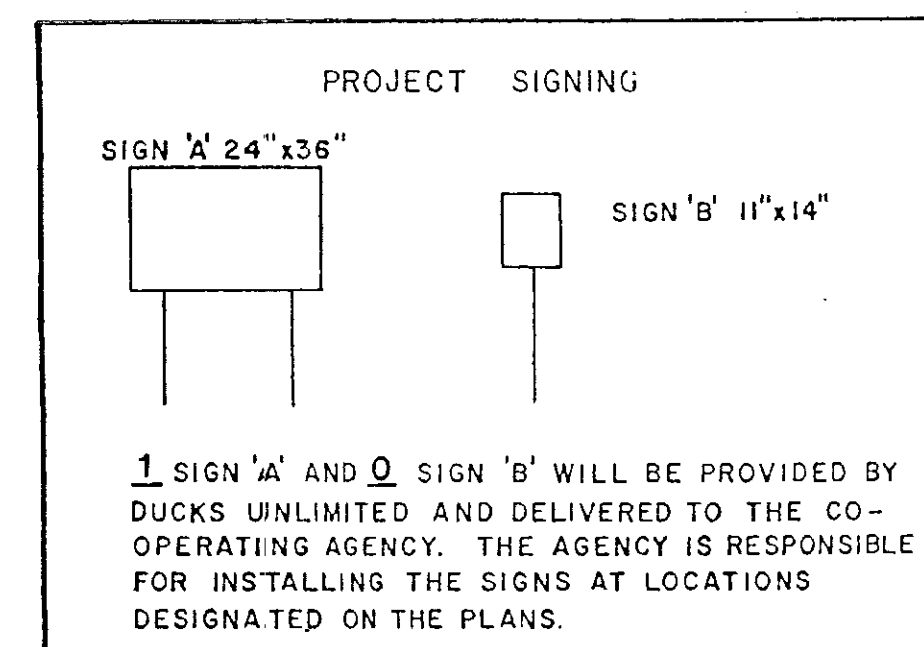
SPECIFICATIONS

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CULVERT INSTALLATION	207
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ESTIMATED QUANTITIES

MOBILIZATION	1 L.S.
SITE PREPARATION	562 C.Y. -P
EMBANKMENT CONSTRUCTION	7,484 C.Y. -S*
WATER	XXX M. GAL.
WATER CONTROL STRUCTURE INSTALLATION	1 L.S.
WATER CONTROL STRUCTURE APPURTENANCES	1 INC.
CULVERT INSTALLATION 48" CMP, 14 GA.	64 L.F.

* INCLUDES 15% FOR SHRINKAGE



	PROJECT NO. DU-1-SD-115-01	DESIGNED BY: DJL
	REG BAUSKE IMP. VICINITY MAP	DRAWN BY: TD
GREAT PLAINS REGIONAL OFFICE	SHEET NO. 1 OF 4	CHECKED BY: [Signature]
DATE: 2-25-92	APPROVED BY: [Signature] P.E.	APPROVED BY:



DUCKS UNLIMITED

PROJECT

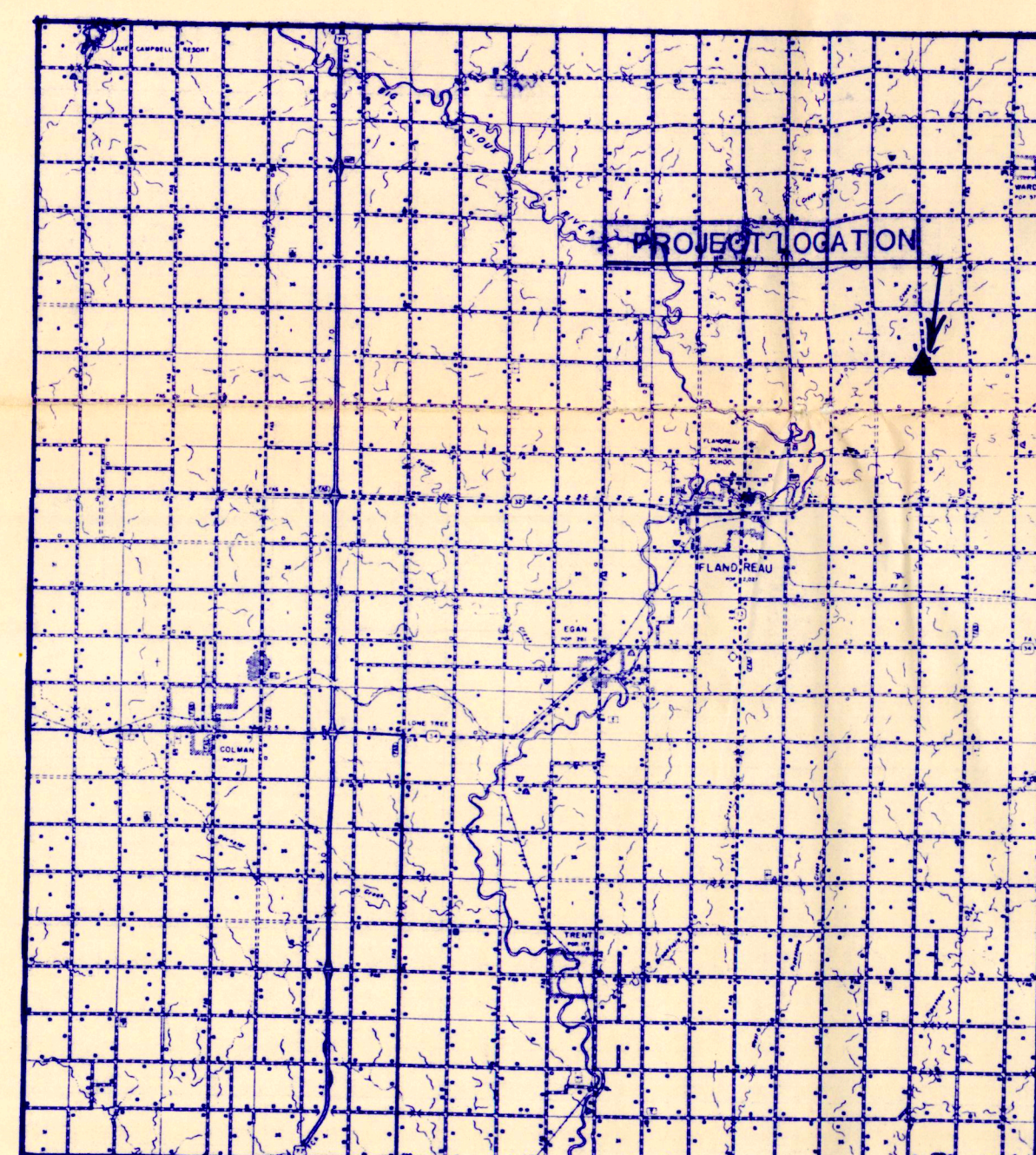
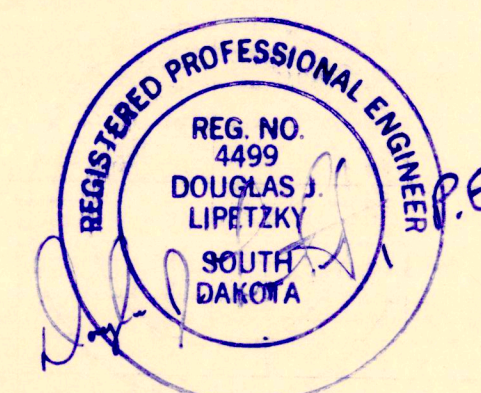
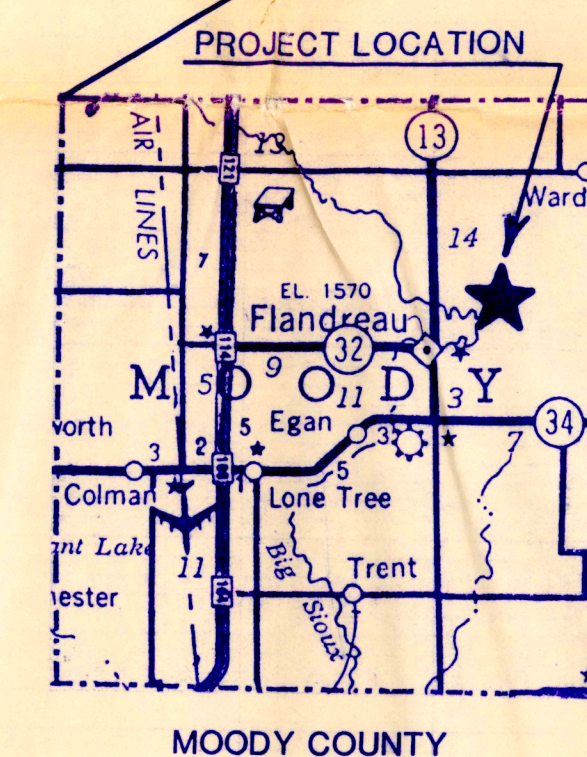
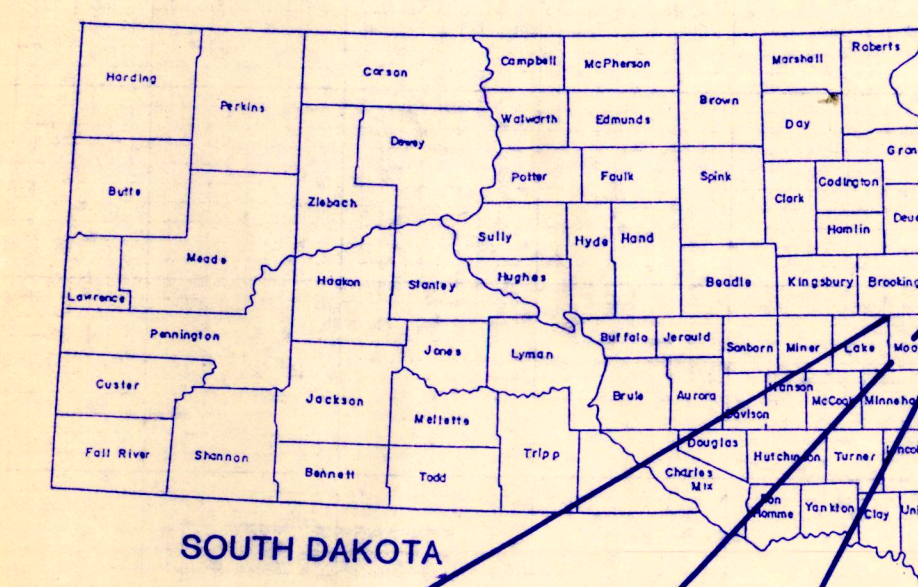
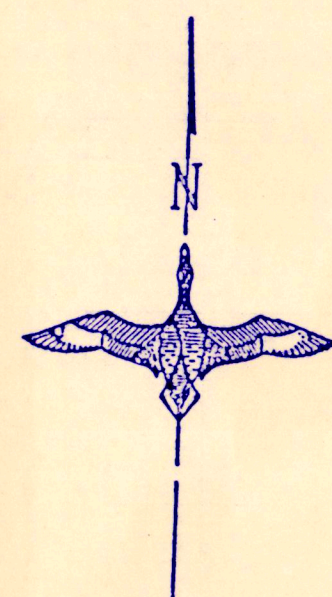
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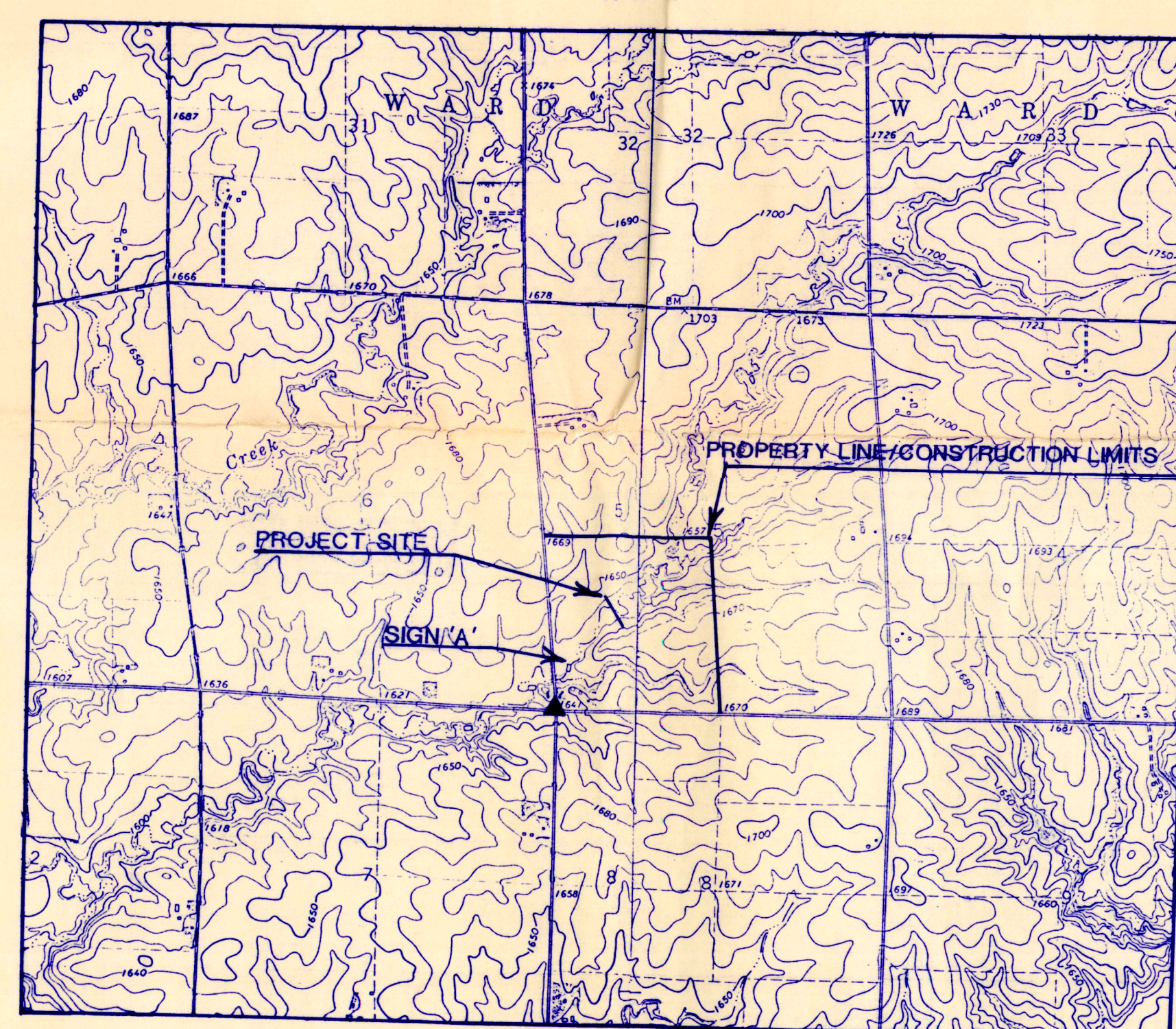
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IN COOPERATION WITH

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SCALE: 1" = 2,000'

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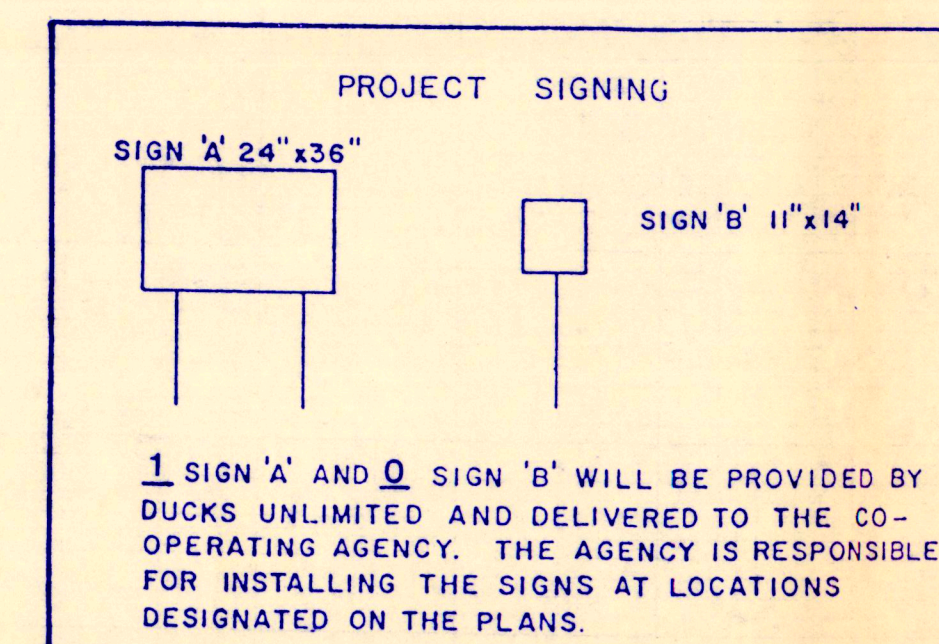
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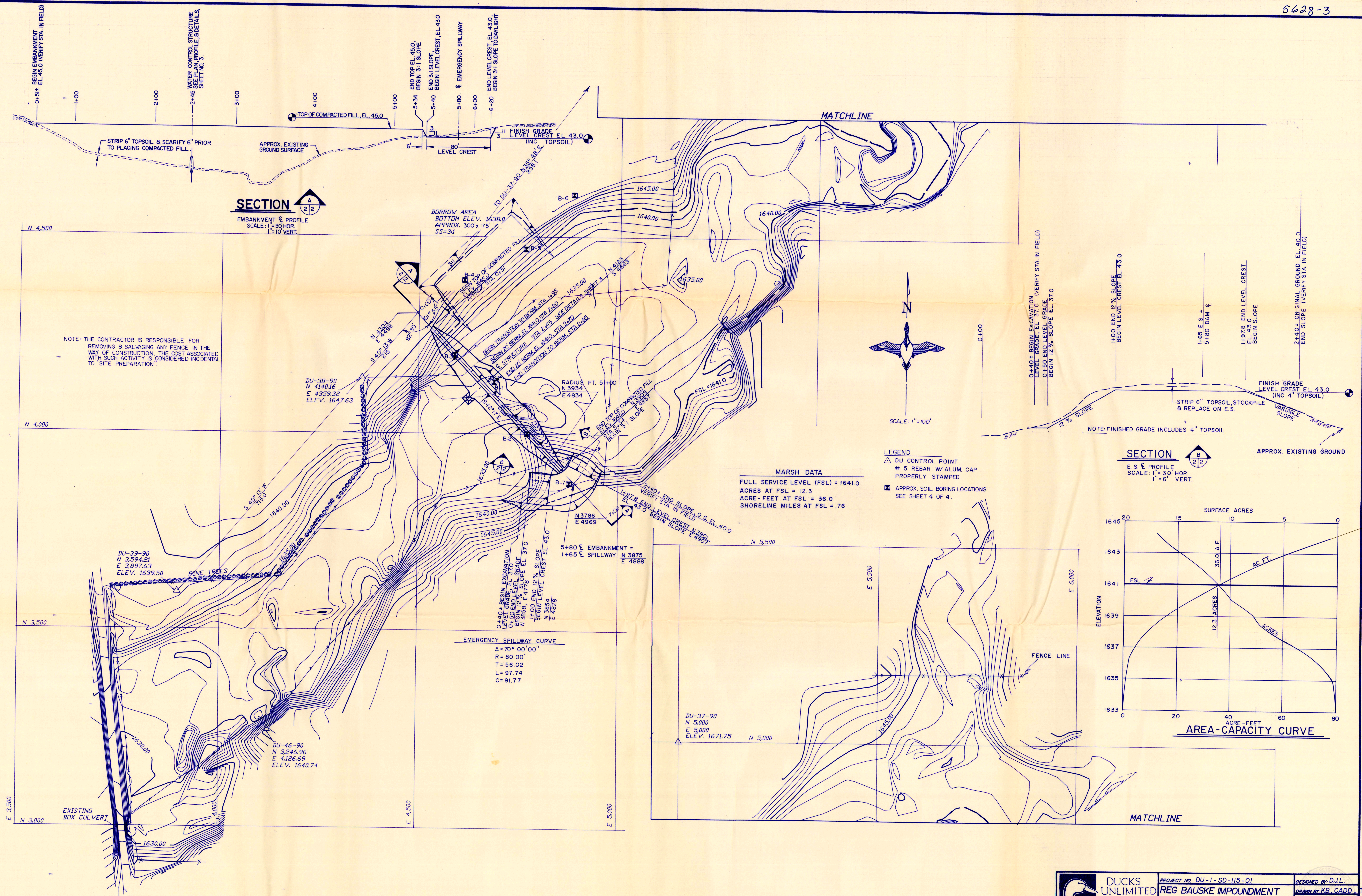
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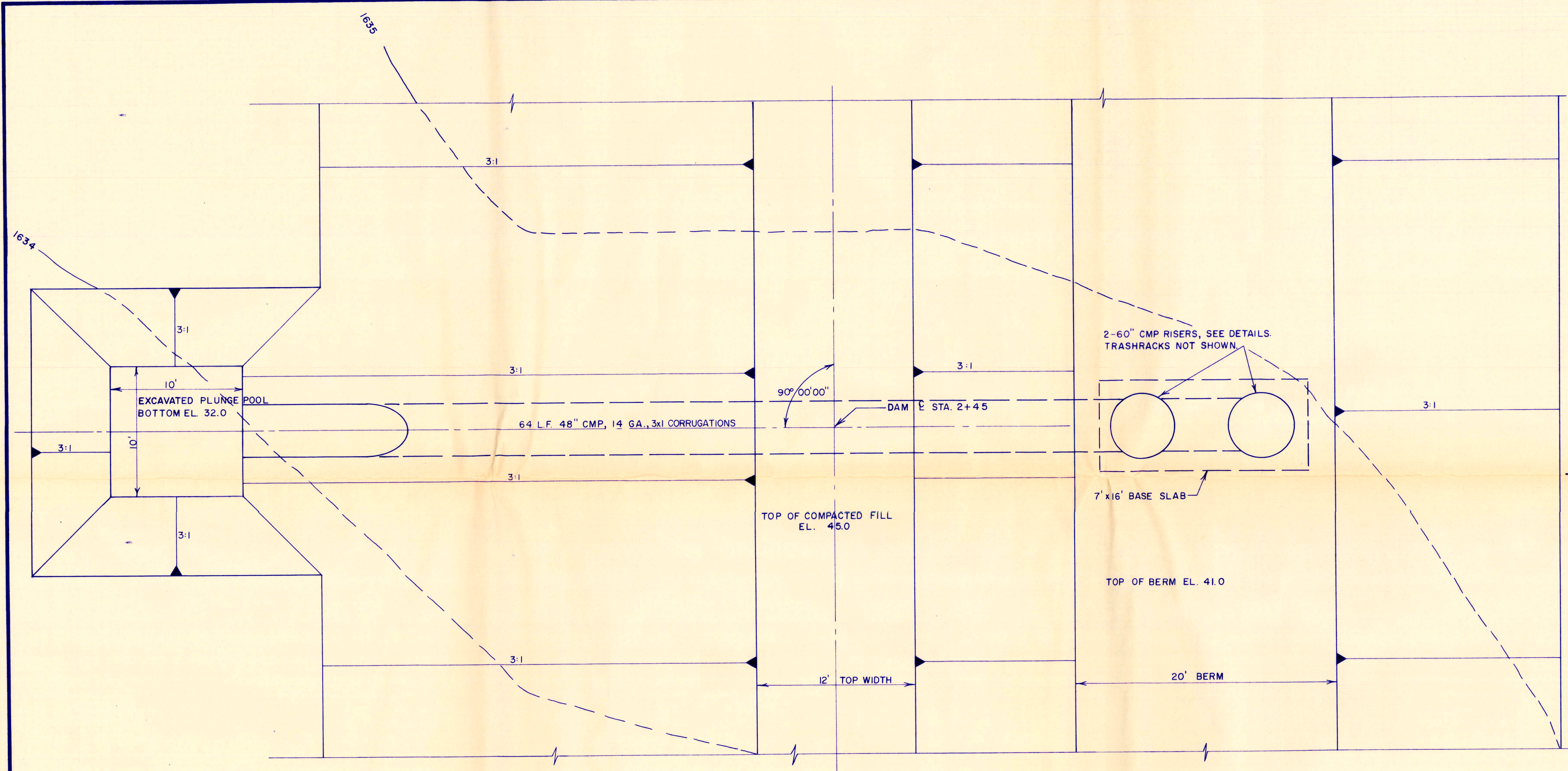
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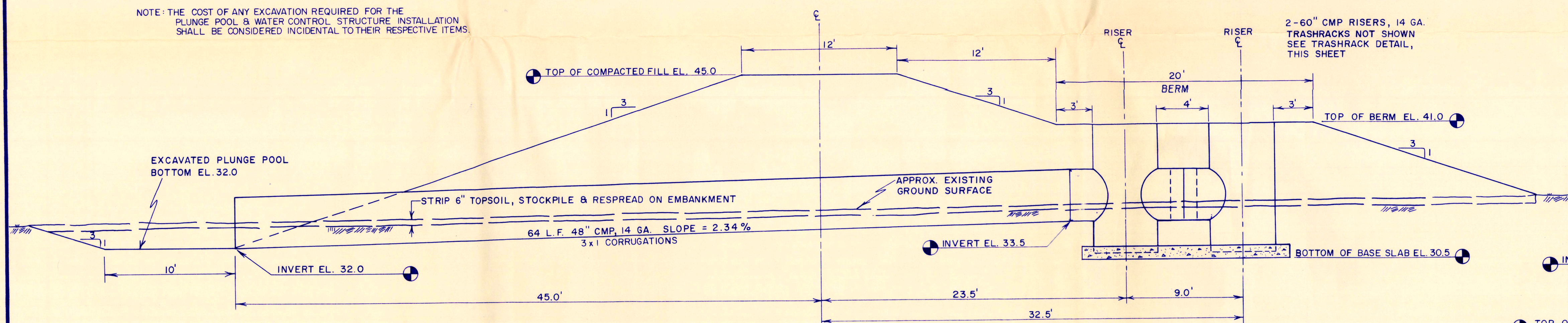
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	REG BAUSKE IMP.	DRAWN BY: TD
GREAT PLAINS REGIONAL OFFICE	VICINITY MAP	SURVEYED BY:
DATE: 2-25-92	SHEET NO. 1 OF 4	CHECKED BY:
		APPROVED BY:





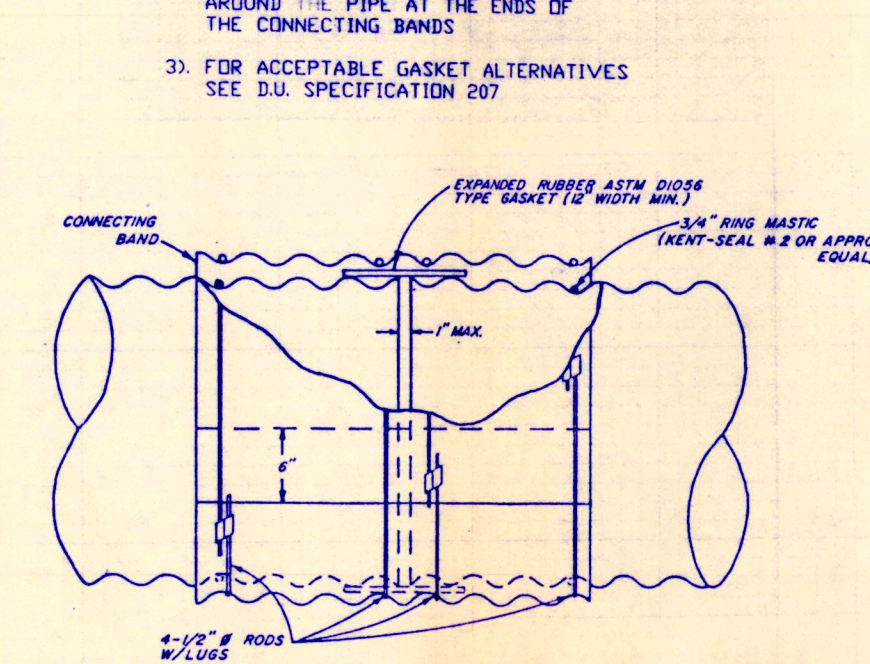
PLAN VIEW
SCALE: 1" = 5' HOR. & VERT.

NOTE: THE COST OF ANY EXCAVATION REQUIRED FOR THE PLUNGE POOL & WATER CONTROL STRUCTURE INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO THEIR RESPECTIVE ITEMS.

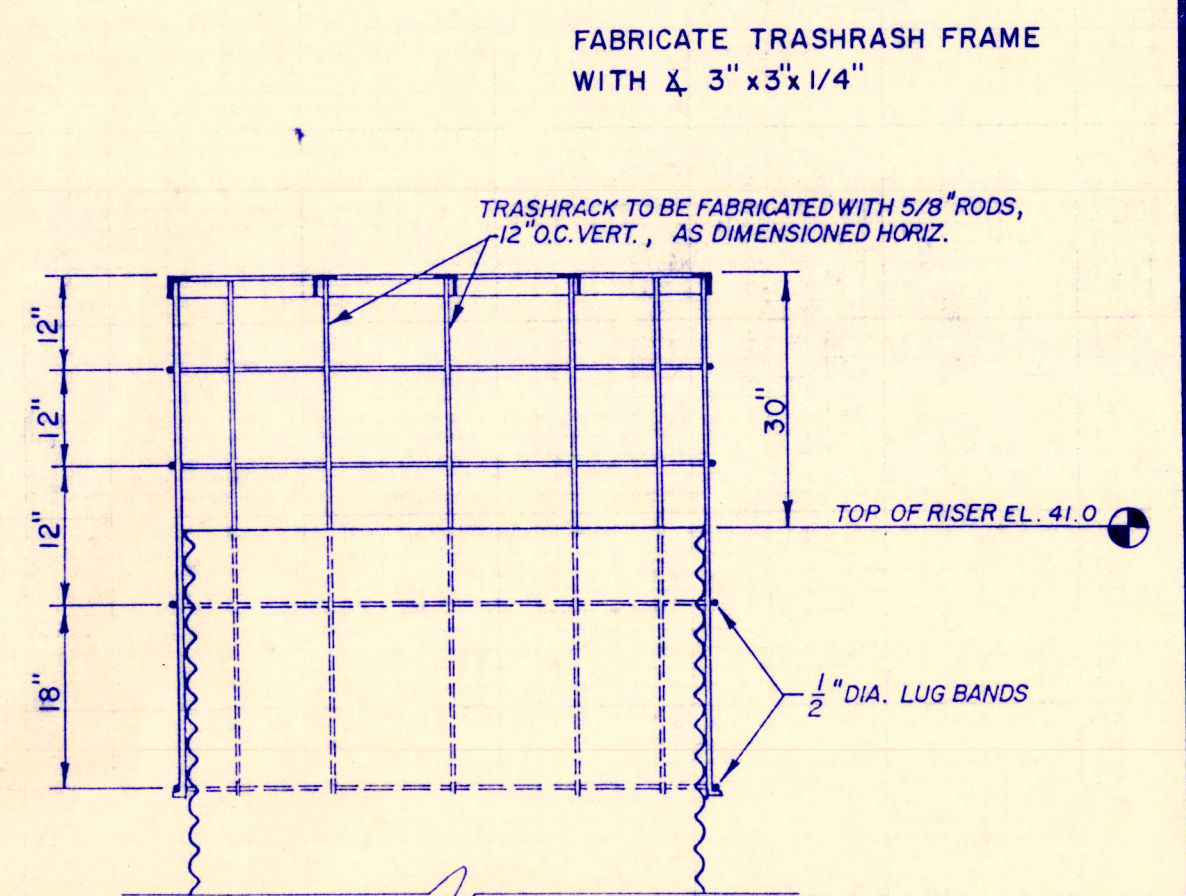


PROFILE
SCALE: 1" = 5' HOR. & VERT.

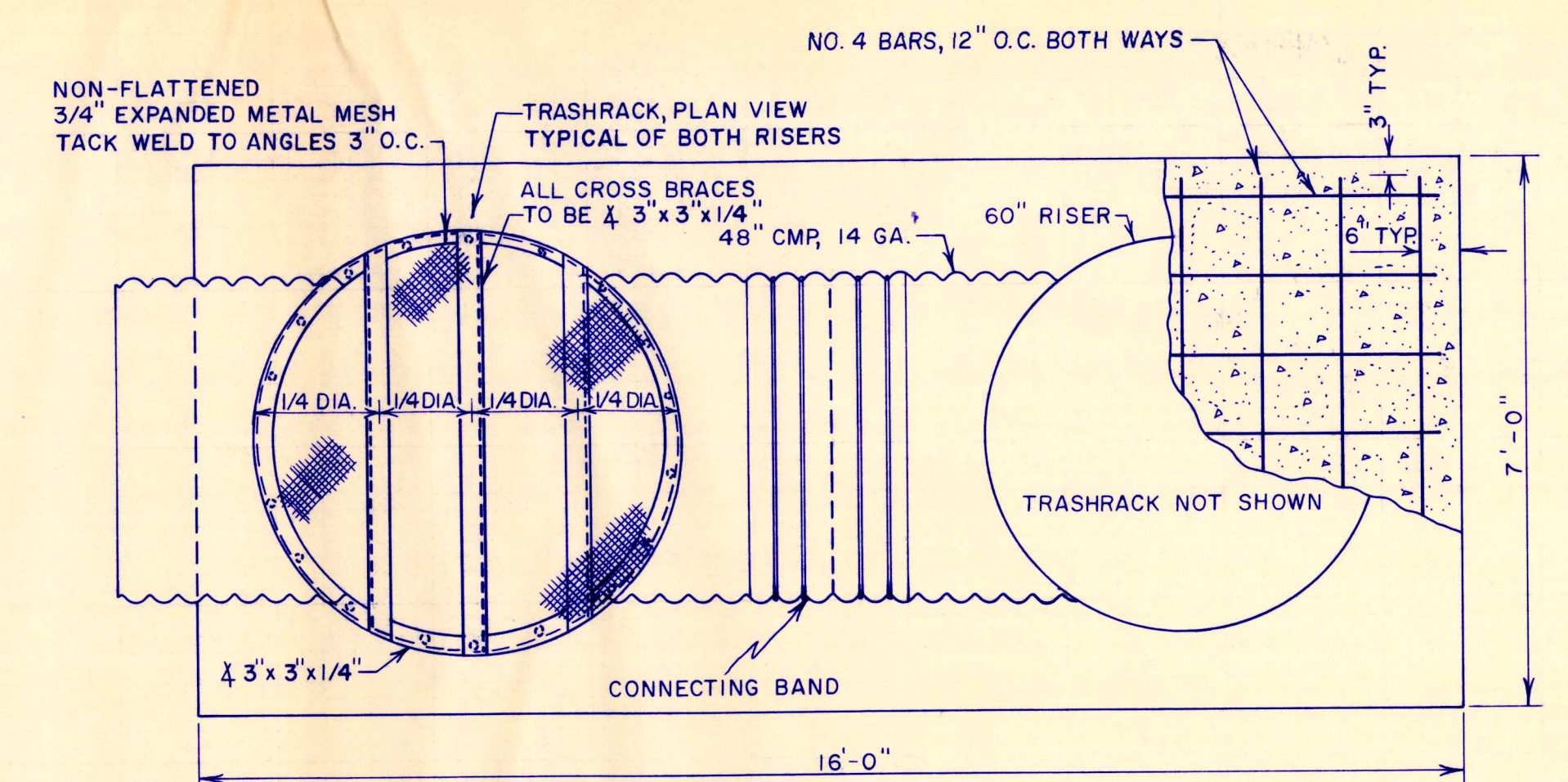
- SUPPLIERS NOTES**
- 1) IF ANNUAL PIPE IS USED, SUPPLY 6" WIDE ANNUAL BANDS.
 - 2) IF HELICAL PIPE WITH THE 4 END CORRUGATIONS ROLLED TO ANNUAL IS SUPPLIED, SUPPLY 6" WIDE ANNUAL BANDS.
 - 3) SEE SPECIFICATION 207.3
- CONTRACTOR'S NOTES**
- 1) 6" BAND OVERLAP SHALL BE COVERED WITH TAR, PRIOR TO SECURING RODS.
 - 2) AFTER BANDS HAVE BEEN TIGHTENED, A COAT OF TAR SHALL BE PLACED AROUND THE PIPE AT THE ENDS OF THE CONNECTING BANDS.
 - 3) FOR ACCEPTABLE GASKET ALTERNATIVES SEE DIV. SPECIFICATION 207



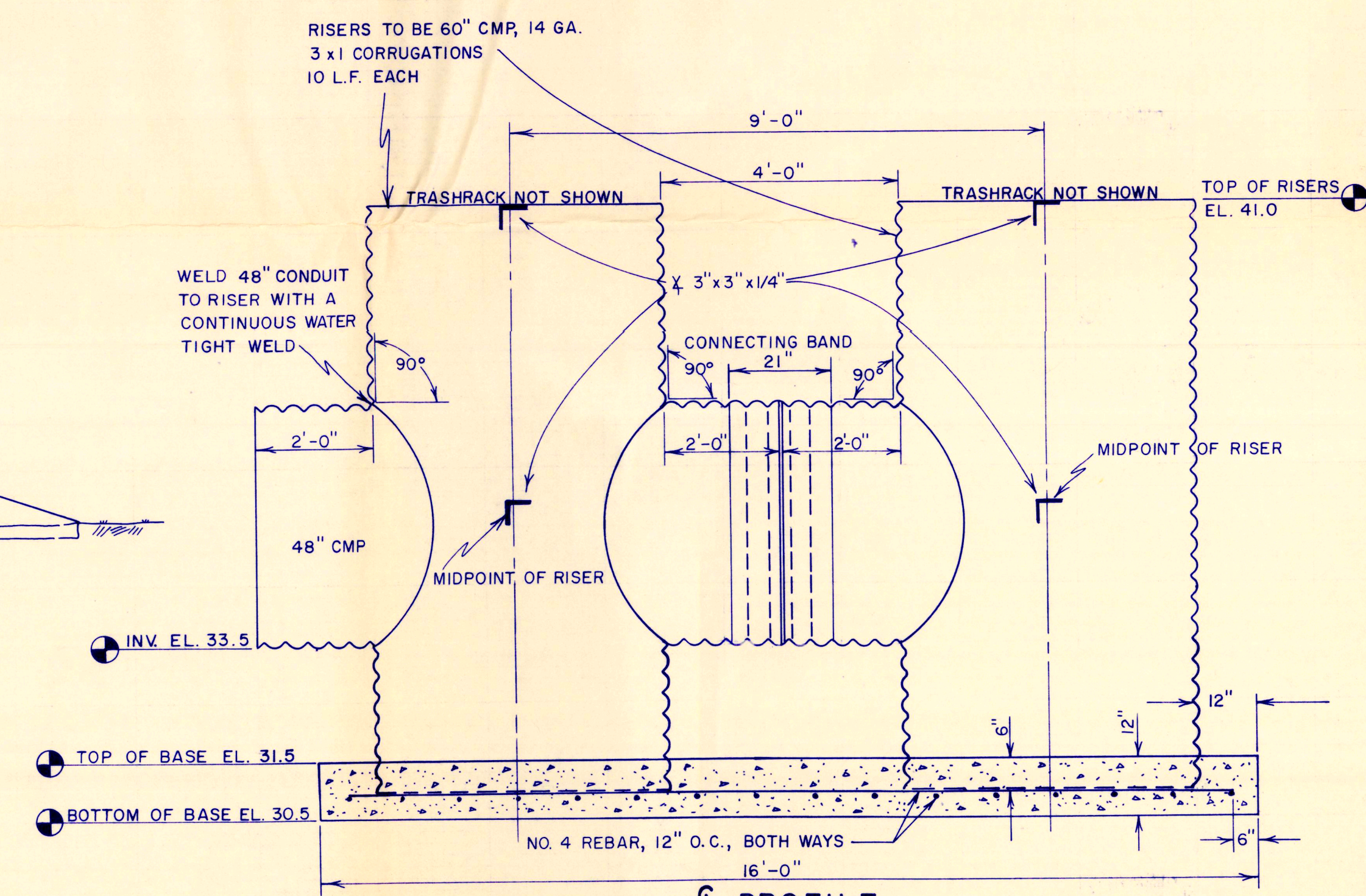
CONNECTING BAND DETAIL



TRASHRACK DETAIL
NTS



PLAN VIEW
SCALE: 1" = 2'-0"



PROFILE
SCALE: 1" = 2', HOR. & VERT.

WATER CONTROL STRUCTURE

DUCKS UNLIMITED INC. GREAT PLAINS REGIONAL OFFICE	PROJECT NO. DU-1-SD-115-01	DESIGNED BY: DJL
	REG. BAUSKE IMPOUNDMENT	DRAWN BY: TD
	PLAN & PROFILE, DETAILS	SURVEYED BY:
	CHECKED BY:	
DATE: 2-25-92	SHEET NO. 3 OF 4	APPROVED BY:

LOG OF TEST BORING

JOB NO. 6600 92-227 VERTICAL SCALE 1" = 3' BORING NO. 1

PROJECT REG BAUSKE WETLANDS-DUCKS UNLIMITED, FLANDREAU, SOUTH DAKOTA

DEPTH FEET	DESCRIPTION OF MATERIAL	GEOLOGIC ORIGIN	N OF CR	ML NO.	TYPE	W	D	LL	PL	QU OF RSD
0.0	LEAN CLAY, black, soft (CL-OL)	TOPSOIL	1	2	SB					
5.0	LEAN CLAY, light brown, soft (CL)	FINE ALLUVIUM	2	3	SB	22	105			
7.5	SAND, fine grained, brown, moist, very loose (SP)	COARSE ALLUVIUM	2	4	SB					
8.5	SANDY LEAN CLAY, brown, medium (CL)	MIXED ALLUVIUM	5	5	SB					
11.0	FAT CLAY, gray, medium to rather stiff (CH)	FINE ALLUVIUM	8	6	SB					
16.0	END OF BORING		12	7	SB					

WATER LEVEL MEASUREMENTS				START	COMPLETE
DATE	TIME	SAMPLED DEPTH	CAVE-IN DEPTH	2-3-92	2-3-92
2-3	11:27	16'	15'		11:27

CREW CHIEF P. Ollerich

twin city testing corporation

LOG OF TEST BORING

JOB NO. 6600 92-227 VERTICAL SCALE 1" = 3' BORING NO. 2

PROJECT REG BAUSKE WETLANDS-DUCKS UNLIMITED, FLANDREAU, SOUTH DAKOTA

DEPTH FEET	DESCRIPTION OF MATERIAL	GEOLOGIC ORIGIN	N OF CR	ML NO.	TYPE	W	D	LL	PL	QU OF RSD
0.0	LEAN CLAY, black, frozen to 1/4" (CL-OL)	TOPSOIL	1	1	FA					
1.5	LEAN CLAY, with a little gravel, brown mottled, rather stiff (CL)	TILL	10	2	SB					
5.0	LEAN CLAY, with a little gravel, brown, rather stiff (CL)		13	3	SB					
10.0	FAT CLAY, dark brown, stiff (CH)	FINE ALLUVIUM	17	5	SB					
11.0	END OF BORING									

WATER LEVEL MEASUREMENTS				START	COMPLETE
DATE	TIME	SAMPLED DEPTH	CAVE-IN DEPTH	2-3-92	2-3-92
2-3	1:57	11'	---		1:57

CREW CHIEF P. Ollerich

twin city testing corporation

LOG OF TEST BORING

JOB NO. 6600 92-227 VERTICAL SCALE 1" = 3' BORING NO. 3

PROJECT REG BAUSKE WETLANDS-DUCKS UNLIMITED, FLANDREAU, SOUTH DAKOTA

DEPTH FEET	DESCRIPTION OF MATERIAL	GEOLOGIC ORIGIN	N OF CR	ML NO.	TYPE	W	D	LL	PL	QU OF RSD
0.0	LEAN CLAY, black, frozen to 1/4" then medium (CL-OL)	TOPSOIL	1	1	HSA					
5.0	LEAN CLAY, brown, soft to medium, a lens of sand at 6' (CL)	FINE ALLUVIUM	3	3	SB	22	108			900
8.5	FAT CLAY, brown, rather stiff (CH)		5	4	SB					
11.0	END OF BORING		9	5	SB					

WATER LEVEL MEASUREMENTS				START	COMPLETE
DATE	TIME	SAMPLED DEPTH	CAVE-IN DEPTH	2-3-92	2-3-92
2-3	10:43	11'	10'		10:49

CREW CHIEF P. Ollerich

twin city testing corporation

LOG OF TEST BORING

JOB NO. 6600 92-227 VERTICAL SCALE 1" = 3' BORING NO. 4

PROJECT REG BAUSKE WETLANDS-DUCKS UNLIMITED, FLANDREAU, SOUTH DAKOTA

DEPTH FEET	DESCRIPTION OF MATERIAL	GEOLOGIC ORIGIN	N OF CR	ML NO.	TYPE	W	D	LL	PL	QU OF RSD
0.0	LEAN CLAY, black (CL-OL)	TOPSOIL	1	1	FA					
1.5	SANDY LEAN CLAY, with a little gravel, brown mottled, medium to rather stiff (CL)	TILL	8	2	SB					
7.5	FAT CLAY, gray, rather stiff to stiff (CH)	FINE ALLUVIUM	11	5	SB					
11.0	END OF BORING		17	6	SB					

WATER LEVEL MEASUREMENTS				START	COMPLETE
DATE	TIME	SAMPLED DEPTH	CAVE-IN DEPTH	2-3-92	2-3-92
2-3	12:12	11'	---		12:12

CREW CHIEF P. Ollerich

twin city testing corporation

* Bag sample obtained adjacent to boring from 2 1/2'-5'.
** See attached moisture-density curve and permeability data sheet.

LOG OF TEST BORING

JOB NO. 6600 92-227 VERTICAL SCALE 1" = 3' BORING NO. 5

PROJECT REG BAUSKE WETLANDS-DUCKS UNLIMITED, FLANDREAU, SOUTH DAKOTA

DEPTH FEET	DESCRIPTION OF MATERIAL	GEOLOGIC ORIGIN	N OF CR	ML NO.	TYPE	W	D	LL	PL	QU OF RSD
0.0	LEAN CLAY, black (CL-OL)	TOPSOIL	1	1	FA					
1.5	LEAN CLAY, with a little gravel, brown mottled, medium (CL)	TILL	8	2	SB					
5.0	FAT CLAY, brown, rather stiff (CH)	FINE ALLUVIUM	11	3	SB					
11.0	END OF BORING		10	4	SB					

WATER LEVEL MEASUREMENTS				START	COMPLETE
DATE	TIME	SAMPLED DEPTH	CAVE-IN DEPTH	2-3-92	2-3-92
2-3	12:39	11'	---		12:39

CREW CHIEF P. Ollerich

twin city testing corporation

LOG OF TEST BORING

JOB NO. 6600 92-227 VERTICAL SCALE 1" = 3' BORING NO. 7

PROJECT REG BAUSKE WETLANDS-DUCKS UNLIMITED, FLANDREAU, SOUTH DAKOTA

DEPTH FEET	DESCRIPTION OF MATERIAL	GEOLOGIC ORIGIN	N OF CR	ML NO.	TYPE	W	D	LL	PL	QU OF RSD
0.0	LEAN CLAY, black, frozen to 1/4" (CL-OL)	TOPSOIL	1	1	FA					
1.5	LEAN CLAY, with a little gravel, brown, medium, a lens of sand at 2 1/2' (CL)	TILL	5	2	SB					
5.0	FAT CLAY, brown, rather stiff (CH)	FINE ALLUVIUM	10	3	SB					
6.0	END OF BORING									

WATER LEVEL MEASUREMENTS				START	COMPLETE
DATE	TIME	SAMPLED DEPTH	CAVE-IN DEPTH	2-3-92	2-3-92
2-3	2:19	6'	---		2:19

CREW CHIEF P. Ollerich

twin city testing corporation

LOG OF TEST BORING

JOB NO. 6600 92-227 VERTICAL SCALE 1" = 3' BORING NO. 6

PROJECT REG BAUSKE WETLANDS-DUCKS UNLIMITED, FLANDREAU, SOUTH DAKOTA

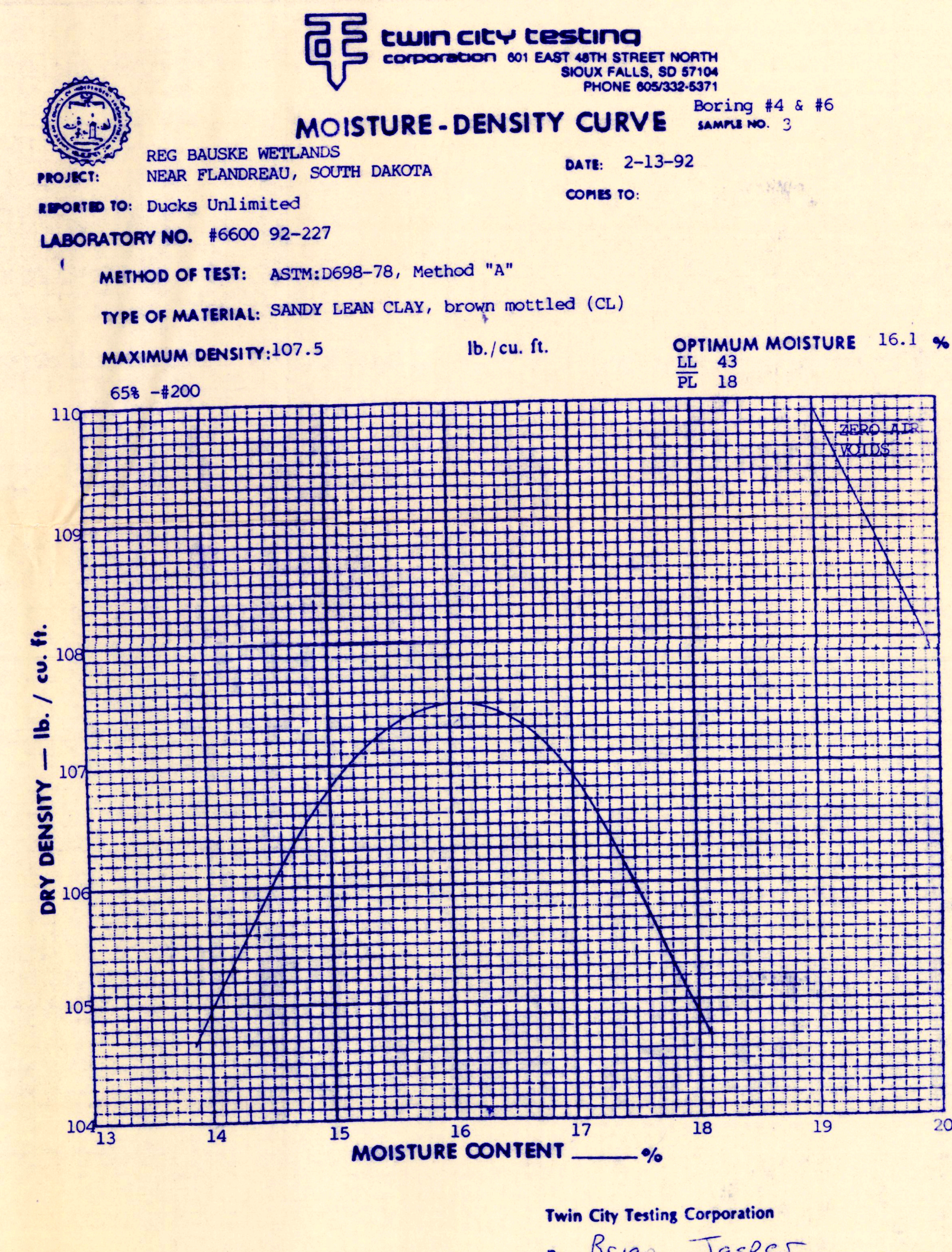
DEPTH FEET	DESCRIPTION OF MATERIAL	GEOLOGIC ORIGIN	N OF CR	ML NO.	TYPE	W	D	LL	PL	QU OF RSD
0.0	LEAN CLAY, black (CL-OL)	TOPSOIL	1	1	FA					
1.5	SANDY LEAN CLAY, with a little gravel, brown, rather stiff (CL)	TILL	10	2	B*					
3.5	SAND WITH CLAY, fine grained, light brown, moist, loose (SP-SC)	COARSE ALLUVIUM	6	4	SB					
7.0	FAT CLAY, light brown, rather stiff (CH)	FINE ALLUVIUM	10	5	SB					
11.0	END OF BORING		11	6	SB					

WATER LEVEL MEASUREMENTS				START	COMPLETE
DATE	TIME	SAMPLED DEPTH	CAVE-IN DEPTH	2-3-92	2-3-92
2-3	1:00	11'	---		1:00

CREW CHIEF P. Ollerich

twin city testing corporation

* Bag sample obtained adjacent to boring from 1 1/2'-3 1/2'.



THE BORINGS DONE ON THIS PROJECT REPRESENT THE SOILS FOUND AT THE LOCATIONS OF THE BORINGS ONLY. SOILS MAY VARY BETWEEN LOCATIONS AND OTHER AREAS OF THE PROJECT SITE NOT DRILLED. A COMPLETE GEOTECHNICAL ENGINEERING REPORT IS AVAILABLE FOR REVIEW AT DUCKS UNLIMITED GREAT PLAINS REGIONAL OFFICE. THE CONTRACTOR WARRANTS THAT SITE CONDITIONS HAVE BEEN EXAMINED AS REQUIRED BY SECTION 101.03 "EXAMINATION OF SITE CONDITIONS" OF THE GENERAL CONDITIONS PRIOR TO BIDDING OR CONSTRUCTION OF THIS PROJECT. NO ADJUSTMENT TO THE CONTRACT WILL BE MADE DUE TO CHANGED SITE CONDITIONS.

DUCKS UNLIMITED INC.

GREAT PLAINS REGIONAL OFFICE

PROJECT NO. SD-115-1

REG BAUSKE IMP.

SOILS INFORMATION

DESIGNED BY: DJL

DRAWN BY: KB

SUPERVISED BY:

CHECKED BY:

APPROVED BY:

DATE: 2-25-92

SHEET NO: 4 OF 4

SEE SHEET 2 OF 4 FOR SOIL BORING LOCATIONS